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WKA's Karting Scene  
is published by the  
World Karting Association  
6051 Victory Lane  
Concord, NC 28027  
Phone: 704-455-1606  
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[www.worldkarting.com](http://www.worldkarting.com)

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To the Entire WKA Community,

It is my great pleasure to present to you the 2023 WKA Tech Manual, which represents a year of marked changes in WKA's organizational structure.

As with a new year, change is eminent. This manual represents a pivotal moment of change in karting history, where the manual is now, for the first time ever, an online Tech Manual. WKA was the very last racing organization to migrate from a printed version to an online version. Frankly, the quotes to print the manual this year more than doubled printing costs from just two years ago, making a printed manual beyond reach.

Some of the benefits for racing members of an online manual include the ability to access the tech manual on mobile devices and the ability to click the exact rule or page members wish to access. For WKA's advertising partners, the new format allows users to go right to each ad from the advertisers' table of contents and access the advertisers' online assets on command...anytime, anywhere. Another benefit for all users, is any tech updates are added immediately. The manual is now an evolving tool for the entire WKA Community, rather than just a printed book thrown into a toolbox.

Aside from the online manual, WKA has restructured some of its racing programs to meet today's karting environment, driven solely by the racers.

WKA has always positioned itself to listen to the members and have a place for everyone in Karting. The racers have spoken, and WKA listened to support more 4-cycle programs on all levels. As a result, WKA has brought back the historic Gold Cup Program on the Sprint Tracks in a big way for 2023. Additionally, WKA made more room in both Road Racing and Speedway racing for these racers. Also in Road Racing, WKA separated the crowd favored SuperKart category in Road Racing as its own National Championship Class. And finally, with the support of WKA's Presenting Sponsor, Summit Racing Equipment, the famed WKA Eagle has been brought back, highlighting the hard work of the National Series' Champions.

And of course all these new enhancements for 2023, get kicked off with the official Opening Day of Karting, Daytona Kartweek. Enhancements there include more efficient registration procedures, increased class offerings, launches of new racing programs, and an overall customer experience that has not been seen before at Daytona.

All these improvements to WKA could not have been possible without input from YOU, the WKA Members, the community that makes up everything that WKA is. Thank you for your continued support, and please pay special attention to the advertising partners in this manual

See you at the races!



Kevin Williams  
President



# ***2023 WKA TECHNICAL MANUAL TERMS AND CONDITIONS***

## ***Read These Advisories Before Opening The Remaining Manual***

This document contains the competition regulations, specifications and racing procedures of the World Karting Association (“WKA”). These regulations specifications and racing procedures are provided solely for use at events sanctioned by the WKA as detailed below.

The enclosed document contains the competition regulations, specifications and racing procedures of the World Karting Association (“WKA”). These regulations, specifications and racing procedures are provided solely for use at events sanctioned by the WKA as detailed below.

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# GOLD CUP 2023

## Gold Cup North Region

**\*\* April 14-16 Whiteland Raceway Park**

**June 9-11 G&J Kartway (OVKA)**

**\*\* August 4-6 Whiteland Raceway Park**

**\*\*We will be using Whiteland's new track configurations each race will be a different configuration.**

## Gold Cup South Region

**February 17-19 103<sup>rd</sup> Street (Counter)**

**May 26-28 Lamar County**

**July 14-16 103<sup>rd</sup> Street (Clockwise)**

## Series Overall Championship

## Grand Nationals North/South Shootout

**September 1-3 Kershaw, SC**

[www.worldkarting.com](http://www.worldkarting.com)



## *WKA/Summit Racing National Dirt Series*

### *One Series 2 National Championships*

**Round 1 Daytona Kart Week Dec 29<sup>th</sup>, 2022**

**Round 2 Daytona Kart Week Dec 30<sup>th</sup>, 2022**

**Round 3 Triple T April 22<sup>nd</sup>**

**Round 4 Tri County May 20<sup>th</sup>**

**Round 5 Paradise Raceway June 17<sup>th</sup>**

**Round 6 TBD Sept 23<sup>rd</sup>**

**Round 7 Triple T Oct 21<sup>st</sup> (Grand Nationals)**

### *WKA Dirt National Championship Classes Starting with Daytona (Maxxis HT3)*

**Future Stars Warmup**

**Junior 1 Warmup**

**Junior 2 Warmup**

**Junior 3 Warmup**

**Semi Pro Warmup**

**Clone Heavy Warmup**

**Super Heavy Warmup**

**Future Stars National**

**Junior 1 National**

**Junior 2 National**

**Junior 3 National**

**Semi Pro National**

**Clone Heavy National**

**Super Heavy National**

*\* Classes listed with National are the WKA National Championship Classes  
(1 Drop best 6 out of 7)*

### *WKA HBM Reaper National Championship Classes below Starting with Round 3*

*@ Triple T (1 Drop best 4 out of 5) (HBM Reaper Tires)*

**HBM Reaper Junior Super Pro 11-15**

**HBM Reaper Junior 1 Super Pro 8-10**

**HBM Reaper Semi Pro**

**HBM Reaper Clone Heavy**

**HBM Reaper Super Heavy**

**HBM Reaper Clone Medium**

### *Special Non-Points Event HBM Reaper Battle at the ROCK*

**HBM Hanging Rock September 1<sup>st</sup> (Night) & 2<sup>nd</sup>**





*Inaugural Winter Series Championship*  
*Who's Ready for Some Fun in the Sun*  
*WKA National Payout Structure*

**Round 1 Daytona Kart Week December 28, 2022**  
**Round 2 Cross Roads Motorplex January 28, 2023**  
**Round 3 Cross Roads Motorplex March 11, 2023**



*Save the dates (WKA National Transfer Series)*

**Round 1 Speedway Park - February 25, 2023**  
**Round 2 Callahan Speedway - March 25, 2023**  
**Round 3 Dirt Devils Speedway - April 22, 2023**  
**Round 4 Cross Roads Motorplex - May 20, 2023**  
**Round 5 Volusia Speedway - June 10, 2023**

[www.worldkarting.com](http://www.worldkarting.com) - Facebook - World Karting & WKA Dirt Series  
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# 100 INTRODUCTION & GENERAL REGULATIONS

## 101 STATEMENT OF PURPOSE

### 101.1 GENERAL:

The regulations and technical specifications in this manual are intended for the orderly conduct of World Karting Association (WKA) sanctioned events. They have been created following processes set forth by the WKA Board of Trustees and are based on over forty years of involvement with the sport.

### 101.2 RULES FAMILIARITY:

Individuals who register for a WKA sanctioned event as a kart owner or driver and all individuals who enter the restricted area or racing surface of a racing facility during a WKA sanctioned event are required to be familiar with these regulations and any supplementary rules or instructions governing the event and are bound by them.

### ++101.3 RESPONSIBILITIES:

The kart owner/driver is responsible for the safe condition and operation of a kart or any vehicle placed in competition at WKA sanctioned events. The track operator is responsible for providing a reasonably maintained place for racing configured to generally accepted practice. The WKA serves to provide the important link between the participant and the track by making available regulations and technical specifications for the orderly conduct of WKA sanctioned kart racing events. The quest for safety is a responsibility shared among the participant, the track operator and the WKA. The purpose of this document is to provide common standards that may benefit all involved. Thus, observation and compliance of the rules set forth in this document is fundamental to the welfare of each participant in a WKA sanctioned event.

### ++101.4 NOMENCLATURE:

Where possible, the terminology in this manual is of general and common usage, and of the English Language.

### ++101.4.5 TECHNICAL MANUAL ORGANIZATION:

Most specifications and regulations are included in sections specific to the WKA national series to which they pertain. These series include:

**National Road Racing Series** – Competes on full size, paved road racing courses. It includes classes for karts with reclined and traditional sit-up driving positions with 2-cycle and 4-cycle engines.

**Manufacturers Cup Series** – Competes on karting specific, paved short courses and includes classes for traditional karts.

**Gold Cup Series** - Competes on karting specific, paved short courses and includes classes for traditional karts.

**Speedway Pavement Series** - Competes on paved oval tracks and includes classes for traditional (flat) and championship (cage) style karts with 4-cycle engines.

**Speedway Dirt Series** - Competes on dirt oval tracks and includes classes for traditional (flat) and championship (cage) style karts. Engine specifications are included in sections particular to either 2-cycle or 4-cycle engines.

**Electric Series** – Competes on karting specific, paved indoor and outdoor courses, traditional karts, electric motors, (specific regulations supplemented with each program).

### 101.5 SPIRIT AND INTENT:

This manual provides sporting regulations, technical specifications and inspection procedures to establish the legality of engines, racing chassis, and associated components used in WKA sanction events. Officials at WKA sanctioned events are authorized to decide if any change or design is an attempt to “beat the rules.” Also, just because a technical specification or part is not described in this manual does not imply or guarantee its legality. In these cases, the race officials will disqualify an entry, and the World Karting Association will uphold

the disqualification based on the “spirit and intent” of these rules. “Just because this Technical Manual does not specify that you cannot, do not assume that you can.” While these rules are intended to be a guide for competition officials, technical inspectors, they will also provide guidelines for WKA members in preparing legal engines and karts.

### 101.5.1 HAZARDOUS CONDITIONS:

Any WKA official or WKA representative has the right to initiate action to correct any hazardous condition or any condition not in compliance with the “spirit and intent” of these regulations.

### 101.5.2 SUPPLEMENTARY RULES:

Any WKA sanctioned event may have its own special set of rules supplementing WKA's published regulations. Should these supplementary rules conflict with WKA's published regulations; the supplementary rules will take precedence for the duration of the specific WKA sanctioned event by virtue of their specialized nature. WKA must approve in writing any planned deviation from WKA's published regulations or technical specifications prior to the event. The Race Director may also implement supplementary rules at the event as local conditions may dictate and with review of the series competition committee. In situations where the committee is not available, the Race Director may get concurrence from other WKA officials such as the event manager, Trustees or officers present. Supplementary rules may be included on the Official Entry Form or in handouts or public announcements at the WKA sanctioned event.

### 101.7 NOMINAL DIMENSIONS:

All tubing, bar, rod, and threaded fastener dimensions shown in this Technical Manual are “nominal dimensions.”

### 101.8 INCONSISTENCY:

Where a discrepancy exists in this manual between a written rule and a figure or picture, the written rule shall take precedence.

### 101.9 CANCELLATION POLICY

WKA reserves the right to alter or cancel any scheduled event.

## 102 MEMBER CATEGORIES

### 102.0 MEMBER IN GOOD STANDING:

A competitor must be a WKA member in good standing to earn race points in WKA sanctioned events.

### 102.1 MASTER MEMBERS:

Master Members must be age 18 or older. Master Member privileges and obligations are stated on the Membership Application Form.

### 102.2 ASSOCIATE MEMBERS:

Associate Members must be (a) a member of the immediate family of, or (b) a legal ward of a Master Member in good standing. Associate Member privileges and obligations are stated on the Membership Application Form.

**NOTE:** WKA reserves the right to request appropriate legal documentation regarding the status of the legal ward of a Master Member.





## 102.4 TEMPORARY MEMBERS:

Non WKA members may apply for a temporary membership to compete in WKA sanctioned events. All regulations in this manual and any event Supplemental Rules apply equally to Temporary Members. Temporary Members in violation to these rules and regulations are subject to the same disciplinary actions as are WKA Master and Associate Members including probation and suspension of member privileges. A temporary member:

- Can compete in any class for which their age and experience qualifies them.
- Can receive event awards, however merchandise awards are excluded.
- Can appeal a disqualification to the Race Director or Committee at the Track but cannot appeal to the Board of Trustees.
- Can protest another competitor for on track or technical violations.
- Cannot transfer points to a WKA national series.
- Cannot accumulate points for year-end awards.

See Sections 807.1 & 812.1 for additional Temporary Membership rules.

## 103 DRIVER REQUIREMENTS

### 103.0 GENERAL:

Drivers must be WKA members in good standing to enter WKA sanctioned events. Entry into certain classes depends on driver age, capability, experience, and holding an appropriate license where required.

### 103.1 MINORS:

Persons under the age of 18 must submit a properly executed Minor Release Form to WKA prior to competing in any WKA sanctioned event.

#### 103.1.1 DOCUMENTATION:

WKA requires that a certified birth certificate and/or other documentation of age must be submitted with a license application.

#### 103.1.2 DRIVING CAPABILITY:

Drivers must satisfactorily demonstrate their driving capability to race officials when requested.

### 103.2 DRIVER AGE REQUIREMENTS:

All WKA classes have a minimum "competition age" requirement for drivers; some classes also have a maximum age limit. Both limits are stated in the specific class description.

#### ++103.2.1 COMPETITION AGE:

Unless otherwise noted, a driver's actual age between December 25, 2020 to December 24, 2021 shall establish his/her "competition age" for the 2021 competition year. Unless otherwise noted, a driver's actual age between December 25, 2021 to December 24, 2022 shall establish his/her "competition age" for the 2022 competition year.

#### 103.2.2 ELIGIBILITY TO ADVANCE AN AGE CATEGORY:

A driver has the option to complete the racing season in the age level that they started, provided their actual age at the start of the year is within the class requirements.

#### ++103.2.3 PROHIBITION FROM MOVING BACK AN AGE CATEGORY:

If a minor driver meets the requirements stated in Section 103.2.2 and chooses to move up to a class with a higher age requirement, he or she may do so at any WKA national, divisional, or regional event. However, once the minor driver advances to the next higher age level in any of these events, he or she must continue to compete at that level in all WKA events in all WKA national and divisional series. Exception: If a minor driver advances to the next higher age or performance level but is unable to demonstrate the driving skills necessary to safely compete at the higher level, the driver may be moved back to his or her original level. If the minor driver is moved back to his or her original level, he or she must remain at that level at all WKA events in all national or divisional series for the remainder of the competition year. The decision to move a driver back is at the sole discretion of the Race Director. Competition at a higher age level in local and non-sanctioned events does not affect the driver's

status in WKA national, divisional, or regional events. EXAMPLES: If a 15 year old driver who is currently racing a junior (12-15) class in the national dirt series competes in a senior (15 & older) class at a national, divisional, or regional, he will also be required to advance to the higher age group in the dirt series. If a 12 year old driver who is currently racing in the Jr. Sportsman II class of the National Gold Cup series wishes to compete in the Manufacturers Cup Series or a divisional, he may do so but will be required to advance to the next higher age group in the Gold Cup Series.

### 103.3 FALSIFICATION OF AGE:

Falsification of any competitor's age or any other information required on the Membership Application Form will subject that member to disqualification and/or suspension of membership privileges. Master Members are entirely responsible for supplying accurate information for their Associate Members.

### 103.4 NOVICES:

A driver with fewer than three races of experience must place an "X" on a brightly colored (preferably orange) number panel on the rear of the kart and start the race at the rear of the grid. In Road Racing, the "X" may be placed on the back of the driver's helmet.

### 103.5 COMPETITION LICENSE:

To compete in WKA sanctioned events, all drivers must have a valid WKA membership and competition license. All WKA Master and Associate Memberships are considered as the driver's competition license. Some series as well as some classes require license endorsements. The WKA Membership Application Form and Membership Card include space where the endorsement information is included. To determine what endorsements apply, see the class information summaries included in Sections 214, 263, 312, 362, 413 and 463.

#### 103.5.1 ROAD RACING ENDORSEMENT:

In addition to their WKA membership, all competitors in WKA sanctioned road racing events must have a road racing endorsement. The road racing endorsement entails a fee in addition to the basic WKA membership fee.

#### 103.5.2 CLASS 1 & 2 ENDORSEMENTS:

Prior to competing in certain Manufacturers Cup and National Road Racing Series classes, a driver must have a Sprint Class 1, Road Race Class 1, Road Race Class 2 Shifter, Road Race Class 2 TAG or Road Race Class 2 license endorsement. These endorsements recognize that the driver has complied with additional age and experience requirements. The applicant must fulfill experience requirements listed on the license application before being considered. Some experience requirements may be waived based on an applicant's experience in a parallel motor sport. License upgrade may be denied or limited based on the applicant's actual ability or if too many levels of upgrade are requested in one step, and whether or not sufficient number of races and amount time have been documented.

#### 103.5.2.1 ROAD RACE CLASS 1 & CLASS 2 SHIFTER ENDORSEMENT:

To be approved for a Road Race Class 1 and/or Class 2 Shifter endorsement, a driver must reach at least age 18 by December 31 of the competition year in which he or she applies.

#### 103.5.2.2 ROAD RACE CLASS 2 AND/OR CLASS 2 TAG ENDORSEMENT:

To be approved for a Road Race Class 2 and/or Class 2 TAG endorsement, a driver must reach at least age 16 by December 31 of the competition year in which he or she applies.

#### 103.5.2.3 SPRINT CLASS 1 ENDORSEMENT:

To be approved for a Sprint Class 1 endorsement, a driver must reach at least age 15 by June of the competition year in which he or she applies.

#### 103.5.2.4 ROAD RACE CLASS 3 ENDORSEMENT:

To be approved for a Road Race Class 3 endorsement, a driver must be at least 12 years of age.

### **103.5.2.5 SPRINT CLASS 1 JUNIOR ENDORSEMENT:**

An Applicant must be at least 12 years of age by December 31 of the competition year in which he or she applies to secure a Sprint Class 1 Junior license.

### **103.5.2.6 PROVISIONAL ENDORSEMENT:**

The Race Director at any WKA sanctioned event may grant a provisional endorsement under which the driver may be subject to certain restrictions such as being observed in practice or starting at the rear of the grid. The Race Director may cause an individual to be denied a license endorsement or may approve the individual for a non-provisional license endorsement based upon observation of the driver and upon recommendation to the WKA office. In all cases final License Endorsement approval is at the discretion of the WKA office.

### **103.6 DRIVER'S CONDITION:**

The Race Director may refuse to allow a driver to continue to participate based on the driver's physical condition or on advice from track medical personnel or from a hospital or other medical facility. Advice from a track, hospital or medical facility health professional not to allow a driver to continue to participate shall take precedence.

### **103.7 DISABLED DRIVERS:**

Drivers with disabilities wishing to compete in WKA sanctioned events may apply in writing to the Board of Trustees for the waiver of a specific rule or specification. The requested waiver may not negatively affect safety and may not provide a significant performance enhancement.

## **104 EVENT REGISTRATION REQUIREMENTS**

### **104.1 MEMBERSHIP CARD:**

The driver must present his or her WKA Membership Card and WKA issued wristband when registering for any WKA sanctioned event when required.

### **104.2 PROPER LICENSE & EQUIPMENT:**

If a competitor enters the racing surface in either practice or race without the proper license and equipment for the classes entered, he or she is subject to disqualification and possible suspension.

### **104.3 ENTRY FOR PRACTICE:**

A competitor must be entered in at least one class before going onto the track for official practice, qualifying, or racing. Failure to do so may result in disqualification for that event and possible suspension. There may be only one entry per class per driver in any WKA sanctioned events.

#### **104.3.1 IDENTITY OF ENTRY:**

The official entry at all WKA sanctioned events except Road Racing includes the driver, kart frame, engine, and relief driver. Once the kart passes through scoring on an official lap, the kart frame, engine, and relief driver cannot be changed without permission of the Race Director. If an approved change is made, the entrant will start at the rear of the field in the next round of competition. (See sections 214.4 and 262.1.9) for tire replacement). The same driver cannot reenter the kart in the same event. In Road Racing, the official entry is the driver.

### **104.4 DRIVER OF RECORD:**

The driver of record must be a WKA member, meet all class rule requirements and be recorded on the entry sheet. Relief and replacement drivers are permitted in all WKA series. Relief and replacement drivers must meet the same requirements as the driver of record, pay a \$5.00 registration fee and be approved by the Race Director. Relief and replacement drivers do not receive points or race credit. In either case all points will go to the driver of record.

#### **104.4.1 DRIVER OF RECORD - ROAD RACING:**

To be considered the driver of record, the driver must grid and weigh-in. A relief driver must be registered prior to race and can take over for driver of record after one lap of scoring has been completed. See sections 803.8.1 Event Credit (Road Racing) & 803.17.8 Unable to Race (Road Racing) for exceptions.

### **104.4.2 DRIVER OF RECORD – SPRINT DIVISIONS:**

To be considered the driver of record, the driver must qualify the kart. The relief driver may take over for the pre-final (heat) and final races if he or she has properly registered and must start at the back of the grid. See Sections 104.4.4 Replacement Driver and 803.8 Points Eligibility and Weigh-in for exceptions.

### **104.4.3 DRIVER OF RECORD - SPEEDWAY DIVISIONS:**

To be considered the driver of record, the driver must qualify the kart. Relief driver may then race in feature if he or she has properly registered prior to the start of the race and must start at the back of the grid. See Sections 104.4.4 Replacement Driver and 803.8 Points Eligibility and Weigh-in for exceptions.

### **104.5 PRE-ENTRY:**

Pre-entry for a WKA sanctioned event is final and is not refundable unless notification of withdrawal is made 24 hours prior to the scheduled opening day of the WKA sanctioned event or by specified date stated on OFFICIAL ENTRY BLANK for the WKA sanctioned event. Pre-entries may not be canceled selectively by class. Cancellation of any part of a pre-entry voids pre-entry in all other classes..

### **104.6 INSUFFICIENT FUNDS:**

Failure to properly pay registration, entry, and/or pit pass fees, including un-collectible checks, may submit individual to disqualification from the WKA sanctioned event and possible suspension of membership privileges.

## **105 GENERAL RULES OF CONDUCT**

### **105.1 CONDUCT:**

Everyone associated in any way with World Karting Association events is expected to behave in a respectful and orderly manner. This policy includes but is not limited to drivers, family members, crew members, spectators, sponsors, and guests.

#### **105.1.1 CONDUCT AT EVENTS:**

Physical violence, verbal abuse, threats, or intimidation directed at anyone at the site of a WKA sanctioned event will be subject to immediate disciplinary action by the Race Director including disqualification and ejection from the event. The Race Director may also recommend additional action to the President and WKA Board of Trustees including probation, suspension of membership privileges or termination of membership. The Race Director must report such incidents to the WKA office within 72 hours of the event's conclusion with recommendation for final disciplinary action.

#### **105.1.2 CONDUCT BEYOND EVENTS:**

Inappropriate off-site actions such as physical violence, verbal abuse, threats, or intimidation directed at anyone regarding a WKA sanctioned event are also prohibited and will be subject to the offender to immediate disciplinary action. Such actions may be through but not limited to face-to-face contact, telephone, mail, E-mail, Internet forums or social media. Such action may subject the offender to disqualification, suspension of membership privileges or termination of membership.

### **105.2 PROHIBITED SUBSTANCES:**

All participants entering the restricted area (pits) of a WKA sanctioned event shall be sober and not under the influence of any substance that may impair their ability to participate in a safe and orderly manner. It is the responsibility of the participant to withdraw from competition if they are taking medication that may display side effects that would impair their ability to safely compete. If, in the judgment of the officials in charge, an individual is under the influence of alcohol or any controlled substance during a WKA sanctioned event, he or she may be ejected from the restricted area and/or WKA sanctioned event site immediately.

#### **105.2.1 DRUG TESTING:**

WKA reserves the right to administer random drug screening to participants at the track. The WKA Board of Trustees must approve any screening before it is used.



**105.3 PIT CREWS:**

Drivers are responsible for the control and actions of their pit crew and family members. Unacceptable actions of crew members and family members may subject the driver to penalty or disqualification from a WKA sanctioned event and possible suspension of membership privileges.

**105.4 RESTRICTED AREA:**

All individuals including race officials and track workers who wish to enter the restricted area of a WKA sanctioned event must sign and execute all insurance-related documents and follow all registration procedures as prescribed for that WKA sanctioned event. Failure to do so or entrance by fraud, deceit, or passage into the restricted area other than through designated gates will subject an individual to immediate removal from the restricted area and possible suspension of membership privileges. Note: This provision may be waived for emergency personnel in an urgent situation.'

**106 GENERAL RACING RULES****106.1 COURSE MARKINGS:**

Course markings such as curbs, pylons, or other markings designated by the Race Director must be observed by all drivers at all times. If, in the Race Director's opinion, a driver is purposely ignoring course markings, the driver will be subject to disqualification from the WKA sanctioned event and possible suspension of membership privileges.

**106.2 SPORTSMANLIKE AND SAFE DRIVING:**

The spirit and intent of sportsmanlike driving is to compete without touching or endangering the vehicles of fellow drivers. Inadvertent contact is a reality of racing.

**++106.2.1 UNSPORTSMANLIKE DRIVING:**

Unsportsmanlike driving is defined as bumping, crowding, chopping, impeding a passing maneuver, or forcing another kart offline or off track, or pushing other karts. Such actions may occur from the time a driver enters the track through the time the driver exits kart at the scale area after the checkered flag. If in the judgment of the race officials, a competitor demonstrates unsportsmanlike driving, he or she may be disqualified and is subject to further penalties including but not limited to suspension. Overtaking, according to the circumstances, may be carried out either on the right or the left. However, maneuvers liable to hinder other Drivers such as more than one change of direction to defend a position, deliberate crowding of karts beyond the edge of the track or any other dangerous change of direction, are strictly prohibited.

**106.2.2 UNSAFE DRIVING:**

Unsafe driving includes the demonstration of poor driving skills or judgment and violation of on-track procedures or regulations. If in the judgment of the race officials, a competitor demonstrates unsafe driving at any time, he or she may be disqualified. However, if the disqualification occurs during a race that is not completed and finish positions are determined by qualifying position, the disqualification will be void.

**106.3 LAPPED KARTS:**

Participants about to be lapped by faster competitors are responsible for being aware of the approaching faster karts and must yield the racing line until the faster karts have passed. Lapped competitors will observe the passing (blue) flag or subject themselves to disqualification. In some circumstances, for safety reasons, lapped karts may be removed at race directors discretion.

**106.4 DIRECTION OF TRAVEL:**

All competitors must observe the normal direction of travel around a track. Failure to do so by driving or pushing a kart opposite to normal direction of track, unless specifically directed by a race official, will subject the driver to disqualification and possible suspension of membership privileges.

**106.5 STOPPING ON COURSE:**

If a driver is forced to stop on the racing surface during practice or a race, the competitor must raise both hands to signal approaching drivers that he or she is immobile. The driver is also responsible for moving the kart to a safe area as quickly as possible.

**++106.6 RE-ENTRY TO COURSE:**

If a driver leaves the racing surface other than at a designated pit lane during practice or a race, he or she will re-enter the racing surface at a point as far from the racing "line" as possible and may not re-enter the course at a point that will provide any time or distance advantage. Re-entry must be done in a safe manner and not to impede the progress of other drivers. It is the race Director's decision as to whether or not any advantage was attained by course re-entry, and that decision is final. Drivers must follow the directions of the turn marshals or officials in charge.

**106.7 RESTARTING KARTS:**

See each division's special rules; Manufacturers Cup 212.2, Gold Cup 262.8, Road Race 363.13, Dirt 411.5.1, Pavement 461.5.1.

**106.8 SLOWING ON COURSE:**

When a kart slows from racing speed on course, the driver must signal to approaching competitors by raising a hand high enough to be clearly visible from behind. This requirement includes slowing to enter a pit entrance lane during practice, qualifying or racing.

**106.9 PRACTICE OUT OF CLASS:**

If a driver participates in an unassigned practice session without Race Official approval, the Race Director may take punitive action such as causing the driver to skip a practice session or start the race at the rear of grid. For specific Road Race rule, see Section 363.12.

**106.10 STARTING PROCEDURES:**

See each division's special rules for normal starting procedures. Starting procedures will be explained in the pre-race drivers meeting.

**106.11 EXITING TRACK:**

At the completion of any qualifying session or race during a WKA sanctioned event, all karts exiting the track must proceed to the area designated by the Race Director or they will be ineligible for points and/or awards.

**106.12 COMBINING CLASSES:**

The Race Director may combine classes; classify entrants into groups according to driver experience, lap times, or other factors for purposes of safety or event expediency. Race officials may conduct events restricting certain races to a certain classification of drivers or total number of entries.

**106.13 NO-PASSING ZONES:**

The Race Director may designate certain portions of the race track as no passing zones.

**106.14 ACCIDENTS:**

Accidents will be investigated, and the involved karts may be required to stop for inspection by officials in charge. Race officials may also inspect driver helmet and other safety apparel for damage. The Race Director may impound damaged karts or apparel.

**106.15 RED FLAGS / RESTARTING RACES****106.15.1 PIT CREW:**

Pit crew and family members are not permitted on the track at any time the track is active, i.e. during practice, qualifying, racing, or during a red-flag period except with specific permission from officials in charge.

**106.15.2 DRIVER INJURY:**

If a driver involved in an accident appears to be injured, the Race Director may refuse to allow the driver to continue to race. (See 103.6 DRIVER'S CONDITION.) If the Race Director decides that unsafe or unsportsmanlike driving caused the red flag, the offending driver(s) will be placed at the back of restart order. The Race Director may also take disciplinary action as described in Section 106.2.

**106.15.3 WEIGH IN AFTER ACCIDENT:**

If the track medical personnel advise that a driver needs to be transported due to an accident, the driver will receive finish position points regardless of whether they are able to weigh-in or not. If the track medical personnel detain a driver for examination, the Race Director may waive the weigh-in requirement if the driver's class has already cleared the scales area.

**106.15.4 REPAIRS:**

If a race is red-flagged or stopped under a yellow to realign the field, all work on the karts is prohibited unless the Race Director (1) declares a complete restart, or (2) allows repairs for safety reasons. A complete restart occurs when the field has not completed a full lap under green. The Race Director may disqualify a damaged kart for safety reasons.

**106.15.5 RESTARTS:**

See Sections 212.3, 262.3, 363.5, 411.5.2, and 461.5.2 for restart procedures specific to each series.

**106.16 INCOMPLETE RACE****106.16.1 LAPS:**

In all divisions except Road Racing, if at least one complete lap of the scheduled race has been completed at the time of a red-flag, the Race Director may consider the race complete or may restart the race. Generally, it is desirable to run all races for the scheduled distance. However, if this is not possible for reasons of time, weather, or other extenuating circumstances, the Race Director may act upon his or her discretion. If none of the scheduled race laps have been reached and the race is called, the official finish will be determined by qualifying times.

**106.16.2 TIME:**

In Road Racing, if at least one half of the advertised or announced time has been reached at a red flag, the race is considered complete. Refer to 363.5.

**106.16.3 COMPLETE RACE:**

The finishing order of races completed due to a red flag or completed under a full course yellow will be the running order of the last completed lap. The finishing order of races completed under waving yellow and checkered flags or red and checkered flags will be as follows: If no karts have completed the last lap and received the checkered flag, the finishing positions of the complete field will revert to the race order as of the last completed lap. If any karts have passed the finish line (scoring loop) before the yellow or red flag was displayed, they shall be scored as they finished. All other karts will be scored based on their positions on the last completed lap. The competitors responsible for the red or yellow flag will be scored at the rear of the last completed lap they were running or be disqualified. A lap is considered to be complete when all karts on the lead lap have passed the finish line (scoring loop).

**106.17 DISQUALIFICATIONS & POINTS:**

In the event a driver is disqualified for unsportsmanlike conduct, the driver must use that race finish in his or her divisional or national points and may not use the race as a "drop race." In the event that a driver is disqualified for an unsafe or unsportsmanlike driving infraction; mechanical failure on the track; post-race engine, oil, or fuel tech; or being underweight, the race may be used as a "drop race." However, if the driver is disqualified repeatedly for any reason he/she could be subjected to the same penalty as unsportsmanlike conduct at the Race Director's discretion. Any attempt to counterfeit or re-manufacture OEM parts will result in a disqualification, and the race may not be used as a "drop race."

**106.18 SCRATCHED ENTRIES:**

In the event of a scratched entry in Sprint and Speedway racing, the space shall be filled 1) if on the track, by moving karts forward directly and 2) if on the grid, by crossing over to make the starting grid proper based on the karts available for the race based on qualifying position.

**106.19 NINETY-SECOND RULE:**

All drivers have 90 seconds to start from the grid and enter onto the track once the Grid Steward has released the karts from the grid. The competitor must be on the grid, in starting position, in the kart, and ready to race for the 90-second rule to be in effect for that competitor. Once the Grid Steward radios to the Flagman and Race Director that the grid is clear and all karts have entered onto the track the 90-second rule no longer applies. If a kart stalls after that and enters the hot pit to restart he may do so, however the race can start at any time. This rule applies to all divisions except Road Racing.

**106.20 PENALTY GUIDELINES:**

Many rules in this Technical Manual include specific minimum penalties for violations. This section provides race officials with guidelines in determining penalties where none are specified in the rules.

**106.20.1 PROGRESSIVE PENALTIES:**

Race officials should fit the penalty to the severity and impact of the violation. Penalties may include loss of position, loss of points, stop and go, placement of competitor in "penalty box," starting competitor at the back of the grid, to disqualification, disqualification no drop, probation, and suspension. The severity of penalties may be increased for repeat violations.

**106.20.2 ENGINE AND CHASSIS:**

Any deviation from engine and chassis specifications will result in disqualification. Major deviations intended to improve performance will result in disqualification and may result in loss of points; zero points, no drop for a race; probation; or suspension. Kart must be technically compliant in every way when presented at the scales -- this includes but not limited to bumpers - Fairings, side protection, air boxes and engine tech.

**106.20.3 BODYWORK:**

Major deviations from engine, bodywork, or chassis specifications intended to improve performance will result in disqualification and may also result in loss of points; zero points, no drop; probation; or suspension. Minor bodywork deviations should be assessed lesser penalties.

**106.20.4 DRIVING:**

Penalties for driving and race procedure infractions should fit the violation. Competitor must be notified when penalized for an on track infraction. If it occurs on the track, the competitor should receive a rolled black flag or waving black flag. If the violation occurs near the end of the race, the race will end with black and checkered flags.

**106.20.5 PENALTIES:**

Overall finish position penalties may be issued to a competitor(s) by the Race Director for infractions of these regulations.

**106.21 MANDATORY DRIVERS' MEETING:**

All drivers must attend drivers' meetings if the entry form specifies a drivers meeting time or if all competitors are notified of a drivers meeting through public address announcements. At that time, the Race Director may announce special conditions and/or supplementary rules for that event. Failure to attend a mandatory drivers' meeting will waive the competitor's right of protest for that day.

**106.22 ELECTRONIC TIMING & SCORING:**

Where electronic timing & scoring is used, it is the driver's responsibility to ensure that the transponder is securely and correctly mounted and functioning before entering the track for qualifying or racing. Failure of the electronic scoring system to pick up the transponder signal may prevent the competitor from being timed for qualifying or scored in the race. However, if a transponder fails to function during a race, the race director shall contact the finishers immediately in front of and immediately behind the non-scoring kart and consult with the other race officials to verify its finishing position. If the position can be verified, the Race Director can award the non-scoring kart its correct position.

**107 PIT AREA RULES****107.1 CONTROL OF RESTRICTED AREAS:**

That area of the track, which requires a pit pass for entrance, is restricted and under complete control of the race officials. The Race Director may limit the number of pit crew members who can enter this area to a set number per entry. All persons entering this area, whether connected with a driver or not, are subject to all regulations regarding deportment and behavior and may be ejected from this area by the officials in charge.



**107.2 GRID AREA:**

Race officials may designate the number of individuals allowed in the restricted grid area for each racing kart. Entry to the grid area is strictly under control of the race officials. Failure to comply with their directives will subject violators and associated driver to disqualification, immediate removal from the restricted pit area and possible suspension of membership privileges.

**++107.3 FIRE SAFETY:**

The use of open flames to treat or pre-heat tires in the pit or grid area is prohibited. An area away from fuel or other flammables must be designated for welding, grinding and cutting. No smoking is permitted on the grid and in pump-around areas. No fuels, lubricants or other hazardous substances may be disposed of in the restricted/pit area except in containers specifically designated for such purpose. Failure to comply will subject individual to suspension of membership privileges.

**107.3.1 FIRE EXTINGUISHER:**

There must be a working fire extinguisher in each competitor's pit at all WKA national and divisional events.

**107.4 OIL CONTAINMENT:**

Drivers using chain oilers must have a drip pan to retain lubricant while in the grid area. Drivers creating a lubricant spill are responsible for cleaning it up.

**++107.5 DRIVING KARTS IN PITS:**

Karts may not be driven in the restricted pit area except for specific areas designated by the officials in charge, but never onto, nor past the scales.

**107.6 HOT PITS:**

All pit area regulations also apply to "hot pit" areas when such an area is designated.

**++107.7 REFUELING:**

Karts must be refueled in the pit or hot grid area only. During refueling, the engine must be stopped and the driver must vacate the kart. Race Director or a race supplement may dictate refueling area at the event.

**107.8 PERSONAL VEHICLES:**

Vehicles for personal transportation, machine or human-powered, may be restricted at the discretion of the officials in charge. Skateboards (powered or manual) are specifically prohibited from these areas.

**107.9 UNDERAGE DRIVERS:**

Vehicles requiring state driver's licenses may not be driven on track property by unlicensed drivers.

**108 FLAG RULES****108.1 GREEN FLAG:**

The green flag is used during practice and the race to indicate that the track is clear. It is used to start a race and to restart a race after a yellow or red flag.

**108.2 YELLOW FLAG:**

The yellow flag indicates an unsafe condition on the track. Under the yellow flag, drivers are to reduce speed, stay in line, maintain a close interval with kart directly ahead, and proceed with caution. Passing is not permitted. Drivers may not race back to the start/finish line. Specific instructions for the WKA sanctioned event are provided at the driver's meeting, and shall apply for that event.

**108.2.1 YELLOW FLAG IN ROAD AND SPRINT RACING:**

In road racing and sprint racing, when a yellow flag is displayed in a corner, it may only pertain to that corner. A waving yellow indicates a danger on the racing surface. A standing yellow indicates a danger near the racing surface. When a yellow flag is being waved in a corner and a double yellow is displayed by the Head Flagman at the finish line, it signifies a full course caution.

**108.2.2 YELLOW FLAG IN SPEEDWAY RACING:**

In speedway racing, when a standing yellow is displayed in a corner, it only pertains to that corner.

**108.3 RED FLAG:**

The red flag indicates that all drivers are to stop as quickly and safely as possible at the point designated by the race officials. Drivers may not race back to the start/finish line. Disobeying the red flag will result in immediate disqualification. The red flag will only be given by Head Flagman / starter at the start/finish line. If red flag is displayed on a sprint course, all corner workers will display waving yellow and black flags. In Road Race only, all corner workers will display waving yellow flags, and in at least four corners, the corner workers will display waving black flags to signify that the track is red. In this situation all karts are to proceed slowly to a place on the track or grid as designated by the Race Director or Flagman during the drivers meeting. See Section 106.15 & 106.16 and each division's section for restart procedures.

**108.4 BLUE FLAG:**

The blue flag tells a driver that he or she is being lapped and must yield the racing line to allow lapping karts to pass. Failure to obey the blue flag will result in disqualification.

**108.5 BLACK FLAG:**

A waving black flag tells a driver to leave the track immediately due to a rules infraction and proceed to a location designated by the race officials. It should be displayed with the offending kart's number.

**108.5.1 BLACK FLAG FOR DRIVING INFRACTION:**

The waving black flag is used to tell a driver that he or she has been disqualified due an on-track infraction such as bumping, pushing, blocking, rough driving, or other unsafe or unsportsmanlike activity. If it is given during qualifying or a pre-final, the driver will start at the rear of the next round of competition. If it is in the final, the driver will receive zero points for the race. Based on the severity of the infraction, the Race Director will inform the driver immediately if further penalties are being assessed. Failure to leave the track after receiving the black flag in two laps may also result in additional penalties. A rolled black flag is a warning regarding unsafe or unsportsmanlike driving. Ignoring a warning will result in the use of a waving black flag.

**108.5.2 BLACK FLAG FOR MECHANICAL VIOLATION:**

The waving black flag is also used during practice, qualifying and racing to signal the driver of a technical or mechanical infraction (i.e. missing neck brace, broken muffler, etc.). It should be displayed along with the offending kart's number. Failure to leave the track after receiving the black flag on two consecutive laps may result in disqualification or suspension. If the flag is displayed for a safety violation, scoring will cease as of the lap on which the flag is first displayed. If the flag is displayed for a technical violation that could potentially improve performance (e.g. muffler falling off), and the violation occurred during qualifying or the pre-final and the violation can be corrected, the driver will start at the rear of the next round of competition. If it is in the final, the driver will receive zero points for the race. In sprint and speedway racing, the driver cannot return to competition after exiting the track. In the case of a safety violation in Road Racing the driver may return to the track if the defect can be corrected.

**108.6 WHITE FLAG:**

Indicates that one lap remains in the race. The white flag is a courtesy flag and its use is not required.

**108.7 CHECKERED FLAG:**

The checkered flag is used in practice to indicate that practice laps are over. When displayed in a race it indicates that the race is complete, and drivers are to proceed to pits or scale/impound area. If the white flag is used, the checkered flag must follow the white flag. A red or yellow flag cannot be displayed alone after the white flag. They may be used with the checkered to indicate caution on the track, and under these conditions, racing to the checker is prohibited. Waving checkered and black flags indicate that the race is ending under conditions subject to review and potential action by race officials.

**108.8 BLACK FLAG WITH ORANGE DISK (MEATBALL FLAG):**

The black flag with an orange disk is displayed with kart number in practice and race to signal technical or mechanical infractions (neck braces, mufflers, etc.). In all series practice, a driver may resume after repairs. In Road Race only the driver can reenter the race after repairs and if approved by officials.

When in use, the meatball flag assumes the functions of the black flag stated in Section 108.5.2 BLACK FLAG FOR MECHANICAL VIOLATION.

**108.9 CROSSED FLAGS:**

In speedway and sprint racing, crossed flags indicate that the race is half over. Use is optional.

**108.10 TWO ROLLED FLAGS:**

In speedway and sprint racing, two rolled flags indicate two laps remain in a race. Use is optional.

**108.11 SPECIAL FLAGS:**

Special flag rules may apply for certain events and will be explained at the pre-race driver's meeting.

**109 RACE OFFICIALS****109.1 ELIGIBILITY:**

At WKA national events, all race officials except corner marshals must be WKA Master Members in good standing. At divisional/regional events, the Race Director and Head Tech Inspector must be WKA Master Members in good standing.

**109.2 RACE DIRECTOR:**

The Race Director is WKA's senior race official with responsibility for all aspects of a WKA sanctioned event. He or she is in charge of all other race officials and personnel and has complete charge of the karts while on the track. The Race Director is responsible for enforcement of all WKA rules and regulations stated in the WKA Technical Manual, Tech Updates, and all supplementary rules in force for an event. The Race Director may direct the Head Flagman to warn competitors of unsportsmanlike or unsafe driving via pointing furlled black flag. He or she may direct the removal of a driver from the track for driving infractions or defective equipment by presenting a waving black flag. The Race Director has the authority to assess more severe penalties for unsportsmanlike driving or conduct.

**109.3 FLAGMAN:**

The Flagman is in charge of the corner marshals and is responsible for making flag signals to drivers under the direction of the Race Director. The Flagman may participate in drivers meetings to brief competitors on the use of flags, special track conditions, and other relevant information.

**109.4 HEAD TECHNICAL INSPECTOR:**

The Head Technical Inspector is in charge of pre- and post-race inspections for both general safety and compliance with technical specifications. The Head Technical Inspector and assistants will verify compliance with stated specifications to certify all finishes at WKA sanctioned events as official. The Head Technical Inspector at all WKA national racing series events must be SFI/WKA Certified at Level 3. The Head Technical Inspector for all Divisional and Regional events must be SFI/WKA Certified at Level 2.

**109.5 CHIEF SCORER:**

The Chief Scorer is in charge for timing and scoring. The Chief Scorer or designee posts all official race finishes.

**109.6 GRID STEWARD:**

The Grid Steward is in charge of hot pit and grid area including all officials, drivers, and pit crew in these areas. The Grid Steward will assign pits, direct gridding and maintain orderly conduct in these areas.

**109.7 CORNER MARSHALS:**

The Corner Marshals will be posted around the course to assist the Race Director and Head Flagman in the safe and orderly conduct of the event.

**109.8 OTHER:**

Other officials may be appointed to supervise and assist in the conduct of WKA sanctioned points events. These officials may include the WKA Technical Director, Series Directors, and Divisional Directors. Individual WKA sanctioned event officials will cooperate with national/ divisional officials in the conduct of events. All officials must report all rule infractions to assigned Race Director.

**110 PROTEST AND APPEAL PROCEDURES****110.1 PROTEST:**

All protests of technical specification legality, driver conduct and scoring must be submitted in writing by a legal entrant from the same class in which the alleged violation occurred. If a kart specification is protested, the protesting driver's own kart can also be subject to full inspection. If an engine specification is protested, the protesting driver's engine can also be subject to full inspection. **VERBAL PROTESTS WILL NOT BE ACCEPTED.**

**++110.2 PROTEST PROCEDURE:**

All protests must be submitted in writing to the Race Director (or designated official) of the WKA sanctioned event within 30 minutes after completion of the race that is being protested, or in the case of a scoring protest, 30 minutes after the results have been announced and/or posted. After the close of the 30 minute time window all races are official and final unless posted otherwise by a race official. The written protest must refer to (1) the specific Technical Manual page and section, (2) the Technical Update section, or (3) the specific supplementary rules in force for an event. A \$200 fee is required for the initial protest. The fee will be returned if the protest is upheld. Anyone filing a protest on another competitor's equipment must keep his or her own equipment in the impound area following the race. Once a competitor's equipment has been removed from the impound area, he or she has waived the right to file a protest on another competitor's equipment regardless of whether 30 minutes have elapsed from the completion of the race in question. If a driver's finishing position is adversely affected by an incident on the track, the driver cannot be reinstated to his or her previous position. However, this does not prevent the driver from filing a protest after the race to argue a position penalty given by the officials.

**LEVEL 1 PROTEST** – The Race Director will make the decision based on information gathered by officials and involved competitors. The Race Director will then deliver the decision to the competitor.

**LEVEL 2 PROTEST** - The competitor will then have the opportunity to appeal the decision to (a) the WKA Board of Trustees or (b) protest committee at the track.





## **++110.2.1 APPEAL OF A RACE DIRECTOR CALL PROCEDURE:**

If a protest is denied by the Race Director and the driver wishes to appeal, there are two options, (1) he or she may do so with an Appeal Committee at the track for an additional fee of \$100. The fee will be returned if the protest is upheld. In order for the appeal to be heard at the track the protesting driver must sign a waiver waiving his or her rights to have the appeal heard by the WKA Board of Trustees. The Appeal Committee will meet and decide the outcome of the appeal and deliver the decision to the Race Director, so that the driver can be informed and the correct finishing order can be posted at the event. (2) If the protesting driver chooses to have the WKA Board of Trustees hear the protest, the fee is \$400. The fee will be returned if the appeal is upheld. The appeal will be placed on the agenda for hearing at the next scheduled board meeting. When the appeal goes to the Board of Trustees and involves an engine or chassis part, the item must be packaged and sealed by the protestor and given to the event Race Director to be taken to the Board of Trustee meeting. The driver must file his or her appeal within fifteen minutes after the race official has given the decision on his/her initial protest. (See 110.2.2 for procedures). If a driver's protest is denied, he or she may appeal that protest only after the final/feature race has been completed. If protest is denied on an issue prior to the running of the final/features, there is no appeal. Appeals that are not resolved at the track may also be heard by a five-person committee at another location in lieu of the upcoming Board meeting.

### **110.2.2 APPEAL MEETING:**

This section describes the format and protocol for executing Appeals Committee protest meetings. Note: If a driver files a protest but is not available when the protest is heard, the protest is denied.

#### **110.2.2.1 APPEALS COMMITTEE:**

The Appeals Committee will consist of five individuals as described in 110.2.1. One of those five will be designated Chairman. The Appeals Committee will consist of five individuals as described in 110.2.1. One of those five will be designated Chairman. Based on availability at the event, the Chairman should be in order: a current Trustee, a former Trustee, or a WKA Officer. If none of these are available, the Chairman should be selected from among the committee members.

The Chairman is responsible for running the meeting according to 110.2.1 and the guidelines described as follows, including

- (1) Setting the date, place, and time of the meeting and notifying all interested parties
- (2) Bringing in the appropriate race official that made the disqualification.
- (3) Bringing in the disqualified parties and/or their representatives.
- (4) Determining the length of time each party is allowed to present his or her perspective.

#### **110.2.2.2 ELEMENTS OF APPEAL MEETING:**

The appeal meeting should be conducted as follows:

- A) Chairman outlines the meeting purpose, time limits, and format as described in this Technical Manual.
- B) Chairman describes to the disqualified member his or her rights in the appeal and confirms that member has signed the waiver indicating that the committee is to make the final ruling, and the member has waived his or her right to appeal to the Board of Trustees.
- C) WKA official describes the reason for disqualification along with any supporting demonstration. Maximum time: 10 minutes.
- D) Competitor shall respond to WKA official and give his or argument as to why the disqualification should be reversed. Maximum time: 10 minutes.
- E) The WKA official, competitor and committee members may question each other regarding the disqualification and the presentations given by each party. Maximum time: 5 minutes.
- F) Competitor and race official have two minutes for closing comments.
- G) The competitor, his or her representatives, and disqualifying race official are dismissed. Only the appeals committee members remain for deliberations.
- H) Committee members discuss the presentations among themselves.

- I) A blind vote is taken of each committee member, including the chairman. Each member has one vote in determining whether the appeal should be upheld and disqualification reversed, or the appeal should be denied and disqualification should stand.
- J) After the vote, the chairman will notify the competitor and the WKA official of the outcome. The written decision shall be presented in person to each party.

**Note: It is not the responsibility of the chairman or any committee member to rationalize or explain the committee's ruling to any of the parties but only to indicate that the ruling was made in accordance with the evidence submitted and the rules as stated in the WKA Tech Manual.**

### **110.2.2.3 CONDUCT OF APPEAL MEETING:**

Chairman, with agreement of committee members, can change the time length of agenda items C, D, E, and F as needed. If any member to the committee has a conflict of interest in their ability to vote on the matter, prior to, during or after the presentation of each party, he/she should make this conflict known to the chairman. If the chairman feels that this conflict could influence the committee's decision, that member will be excused from any further committee action.

It is essential that the chairman and all committee members understand that they are acting as a decision making body based on the evidence submitted to them and the provisions of the regulations stated in the WKA Tech Manual, current Tech Updates, and supplementary regulations. While the competitor is to be given every possible chance to explain the situation, it is the committee's responsibility to enforce the regulations as written. The committee members should remember that they are acting in the place and stead of the Board of Trustees and for the benefit of all WKA members.

### **110.2.3 IMPOUNDING AN APPEALED ITEM:**

1. Ensure that all information on the three-part WKA Protest/Appeal Form is complete and the form is signed, and dated.
2. Collect the appeal fee
3. Give one copy of the WKA Protest/Appeal Form to the competitor, one copy to the Head Tech Inspector, and place one in the container with the impounded part in the presence of the competitor filing the appeal and seal the container.
4. Ensure that the Race Director, Head Technical Inspector and protestor sign and date the sealed container in a way such that the seal cannot be broken without disturbing the signatures and date.
5. Keep sealed item in the presence of Race Director or Head Technical Director until delivered in person or shipped to WKA office.

### **110.2.4 DRIVING INFRACTION APPEALS:**

Any protests regarding penalties imposed by Race Director for driving infractions must be decided at the track by appeal to the race Director and/or Protest Committee established by the Race Director. This requirement applies to all levels of WKA sanctioned events. This requirement does not prevent a competitor from filing an appeal as covered in section 110.2.1 for other types of penalties such as tech disqualifications and scoring errors.

### **110.3 COLLECTIVE PROTESTS:**

Only one protest from only one entrant in the class will be accepted for each incident or alleged technical violation. Once a protest is properly filed, no additional protests for the same incident or technical violation will be accepted.

### **++110.4 VIDEO AND PHOTOGRAPHS IN PROTESTS AND APPEALS:**

Competitor submitted video and photographs will not be considered as evidence in protests and appeals of on-track calls and violations. (unless otherwise noted in individual Series Regulations)

### **110.5 RACE AWARDS DURING PROTESTS AND APPEALS:**

Participants who are affected by a protest or appeal will not receive race awards until such time as the protest or appeal is resolved.

## 111 DISCIPLINARY ACTIONS

### 111.1 DEFINITIONS:

**Probation:** A period of time during which a member's actions are under review, usually as the result of a rule infraction. During this period, the member retains full membership privileges.

**Suspension:** A period of time during which a member's driving privileges are revoked usually as a result of a rule infraction. The member may also not be allowed to purchase pit passes or attend WKA sanctioned events.

**Termination:** The act of permanently removing all WKA membership privileges.

### 111.1.2 PROBATION:

The President or his or her authorized representative may immediately place any member on probation for just cause.

### 111.1.3 SUSPENSION:

The President or his or her authorized representative may immediately suspend (1) any WKA member who violates any rule in this manual that lists suspension as an appropriate penalty, (2) any WKA member whose actions the President deems to be sufficiently detrimental to the association or its members, or (3) any member who is on probation and violates the terms of the probation.

### 111.2 DURATION OF PROBATION AND SUSPENSION:

A probation or suspension will be effect until the next Board of Trustees Meeting where the Board will establish the final terms and duration of the disciplinary action.

### 111.3 NOTIFICATION OF DISCIPLINARY ACTIONS:

The WKA will notify members placed on probation, suspension, or terminated in writing within ten (10) business days of the action.

### 111.4 BOARD REVIEW OF PENALTIES:

The Board of Trustees will review all probations and suspensions at the regularly scheduled meeting following the disciplinary action and has the final authority to determine further penalties and durations.

### 111.5 RACES CONDUCTED WHILE UNDER SUSPENSION:

During a suspension, a driver will receive zero points for any race missed while under suspension, and these races cannot be used as drop races.

## 112 APPEAL PROCEDURES

### 112.1 NOTIFICATION OF INTENT TO APPEAL:

The member has the right to appeal a disciplinary action to the Board of Trustees. To do so, the member must submit a written request for a hearing within thirty (30) days of receipt of notification (Section 111.2). The request for a hearing must be addressed to the WKA President or Secretary.

### 112.2 HEARING:

The hearing will be held at the next scheduled Board of Trustee Meeting, and WKA will notify the member of the hearing date. The appeal may be made in writing to the Board of Trustees, or the member may ask to appear in person before the Board.

### 112.3 EXPEDITED HEARING:

The member may request that a hearing be conducted at special trustee meeting or telephone conference call to expedite the review. In this case, the call will be held as soon as a quorum of trustees can be scheduled. In this case, the member is responsible for paying for the call in advance.

## 113 IMPOUNDED COMPONENTS

### 113.1 ILLEGAL COMPONENTS:

Any engine, or other component found to be illegal during technical inspection may be impounded at the discretion of the Head Technical Inspector or Race Director for later inspection. Any such components that become the subject of a disqualification appeal are to be handled as described in Section 110.2.2. If the components are found to be illegal, they will become the property of WKA.

### 113.2 UNSAFE EQUIPMENT:

Any kart or part that the race officials find to be unsafe may be impounded for review and/or inspection at a later time by WKA at the race officials' discretion.

## 114 MISCELLANEOUS OVERALL RULES

### 114.1 KARTS ON PUBLIC ROADS:

Any WKA Member driving a kart on public thoroughfares or who assists a person driving a kart on public thoroughfares is subject to immediate suspension of membership privileges.

### 114.2 NO KART PASSENGERS:

Karts may not be operated with more than one person on board at any time.

### 114.3 ENGINE SILENCER POLICY:

Karts competing in all WKA national, divisional, and regional events must comply with all specific inlet silencer (air box) and exhaust silencer requirements as specified in the series and class sections.

**NOTE:** WKA strongly recommends that all WKA sanctioned tracks follow the silencer policy for all events. The purpose of this policy is to help tracks avoid possible noise problems and remain operational. Even the most remotely located track can be victimized by capricious ordinances and/or neighbor complaints. The purpose of single-source silencers such as a spec muffler is to minimize technical inspection of the silencers. If many types were allowed, it would be necessary to sound-meter check all karts on a regular basis, an expensive and time-consuming process.

### 114.4 IMPOUND AREA:

Karts retiring from a WKA sanctioned race must weigh in and proceed to the impound area or they will be ineligible for points and/or awards.

### 114.5 TECHNICAL INSPECTION:

The Race Director or Head Technical Inspector may require any competitor to submit to technical or safety inspection at any time. Failure to do so may result in the loss of all points and awards for all classes run at that event and may result in suspension of membership privileges. At all WKA sanctioned divisional and regional events, the 1st place finisher and one of the other top 5 finishers must be post-race inspected. At all national events, the top five finishers must be post-race inspected. In the case of incident, accident, or injury, all involved karts are subject to inspection by WKA officials.

### 114.6 VENDOR'S LICENSE:

Any non-sponsor vendor wishing to sell or display at a WKA national event must contact the WKA office for a vendor's license at least 30 days prior to the event. WKA reserves the right to disallow a non-sponsor to sell or display at WKA national events.

### 114.7 AWARDS:

WKA will dispose of all year-end trophies and awards not claimed within 90 days of first presentation. All race trophies and awards must be claimed from race promoter within 10 days. Competitors are responsible for any shipping and handling costs incurred to get the award to them. WKA will not ship awards or bring them to next event.



## 115 PERSONAL SAFETY ATTIRE

### 115.1 HEAD GEAR:

Full coverage (full face) helmets designed for competitive motorsports use are mandatory and must comply with one of following:

SNELL FOUNDATION SPECIFICATIONS	CHANGE UNTIL
K 2015	valid through 2026
K 2020	valid through 2031
SA 2015	valid through 2026
SA 2020	valid through 2031
M 2015	valid through 2026
M 2020	valid through 2031
CMS/CMR 2016	valid through 2027
<b>NOTE: Snell SA 2000 &amp; M 2000 Helmets are no longer legal</b>	
SFI SPEC	VALID UNTIL
24.1 / 2010 (Youth Helmet)	12/31/2021
31.1 / 2010	12/31/2021
41.1 / 2010	12/31/2021
24.1 / 2015 (Youth Helmet)	12/31/2026
31.1 / 2015	12/31/2026
41.1 / 2015	12/31/2026
24.1 / 2020 (Youth Helmet)	12/31/2031
31.1 / 2020	12/31/2031
41.1 / 2020	12/31/2031

**NOTE:** Although the “youth helmet” standards do not specify a precise age range, the helmets are intended for children and particularly for young, pre-pubertal children. They are not appropriate for adult drivers.

Helmet must be in good condition and is subject to pre-race technical inspection. It may also be inspected if it is damaged in an accident. (See Section 106.14 ACCIDENTS.) If the helmet shows any damage, WKA recommends that it be returned to the manufacturer for testing and re-certification. Helmet must be secured with a strap. The driver is responsible for making sure that his or her helmet fits properly and is securely fastened before entering the racing surface. In the case of a minor, this is the parent or guardian's responsibility. Failure to properly secure the helmet before entering the racing surface may result in disqualification.

Snell K-2015 and Snell K-2010 Helmets are permissible in all WKA Sanctioned Events.

#### 115.1.1 HELMET CAMERAS:

Cameras may not be mounted on helmets in any way, if the helmet has been manufactured (OEM) without a camera. Cameras embedded in helmets during the manufacturing process are permissible ONLY if the helmet is FIA Homologated and listed in FIA Presentation Forms for Advanced Helmets, Standards 8858, 8859, and 8860.

### 115.2 FACE SHIELD:

Eye protection is required using a full-face shield integral with the helmet.

### 115.3 HELMET SUPPORTS:

When helmet supports are required, supports must be unaltered, OEM manufacturer specified collar-style helmet supports designed for motorsports use when on track (except in Road Racing laydown style karts). Any driver losing a required helmet support while on the track will receive a black flag and be removed from the track immediately. After replacing the helmet support and at the discretion of the race official in charge, the competitor may resume racing in whatever position he or she may safely reenter the track. If requested by race officials, drivers must supply the name of the helmet support manufacturer. The EVS Evolution Race Collar and R4

Race Collar, Leatt-Brace Moto Kart and Moto GPX, Safety Solutions R3 and D-cel, Sparco DPC helmet support and Team Valhalla 360 Plus D vice are approved as helmet supports. The Hans Sport Series and Safety Solutions Hybrid are approved as helmet supports in Champ Karts only.

### 115.4 DRIVER CLOTHING:

Drivers are required to wear Jackets/Suits of leather, vinyl, ballistic nylon or other abrasion resistant material and full-length pants to prevent or minimize abrasions. No sweat pants. Shoes, socks and gloves are mandatory. For all champ kart drivers in all series: Full fire resistant driving suits with an SFI rating of 3.2A/1, 3.2A/3, 3.2A/5, 3.2A/10, 3.2A/15 or 3.2A/20 are mandatory; fire resistant racing gloves with an SFI rating of 3.3/1, 3.3/5, 3.3/10, 3.3/15 or 3.3/20 are mandatory; fire resistant shoes with an SFI rating of 3.3/5, 3.3/15 or 3.3/20 are mandatory. Note: Impact Racing Products fire resistant suits manufactured prior to 2009 are not approved. Chest protectors meeting SFI Specification 20.1 are mandatory for all drivers in all classes where the maximum age is 12 or lower. Champ kart drivers in these age categories are exempt. Ballast weight may not be added to the driver, i.e. addition of weight to driving apparel, weight belts, ankle weights, etc. without written permission from the Race Director. If requested, driver must supply name of manufacturer of driving apparel for comparison purposes.

**NOTE:** If driver's hair extends appreciably from beneath helmet, it is **MANDATORY** that the driver wears a “balaclava” or head-sock to prevent the hair from extending outside helmet. Also, no apparel items such as bandanas, sweater hoods, loose belts, etc., will be permitted. **NOTE:** In Road Racing only either a full one-piece driving suit or a two-piece suit connected at the waist by a zipper is required.

**Effective 12/1/2017 -- full driving suit required for all asphalt racing (includes two piece suits that are connected by a zipper at the waist)**

### 115.5 PRE-RACE TECH:

All driver personal safety equipment is subject to pre-race tech inspection and is subject to re-inspection at any time. Kart-mounted cameras **MUST** have kart numbers on them.

## 116 LOCAL OPTION CLASS GUIDELINES

### 116.1 DEFINITION:

A Local Option Class is any class of karts that compete at a WKA sanctioned track at a local, regional, divisional or national level that is not specifically described in this Technical Manual or subsequent Technical Update.

### 116.2 APPROVAL:

Local Option Classes that represent a deviation from WKA's published classes must have prior WKA approval. To receive approval, each WKA sanctioned track must submit a written proposal that includes engine specifications and class weight, and describes any deviation from WKA's standard classes and kart specifications. Driver age and license requirements must be clearly stated. Minor deviations from published class rules do not require WKA approval. Such changes include establishing a Medium weight class when WKA's published rules only include Lite and Heavy categories or electing not to use a published spec tire rule.

### 116.3 STANDARDS:

Karts competing in Local Option Classes must meet all published WKA safety specifications. All drivers in Local Option Classes must meet all WKA licensing requirements.

**NOTE:** The track is responsible for notifying WKA of all Local Option Classes. Failure to do so could result in the invalidation of the track's insurance coverage.

## 117 HOMOLOGATION AND APPROVAL

### 117.1 WKA ENGINE AND PARTS APPROVAL PROCESS:

#### 117.1.1 ENGINES

WKA will accept engines for homologation yearly before March 1. Interested parties wishing to submit engines must meet the following requirements:

1. The engine manufacture must certify the name of the US importer or distributor.
2. The submitter must have a US business location and must have been in business for at least two years prior to the submission. A federal tax number and sales tax ID number must also be included.
3. The submission must include a complete engine or engine kit and a submission fee of 500 US dollars as well as drawings, homologation fiche paperwork, photo's and any other related items.
4. Engine must include tools to aid in post race inspection such as head templates, port gauges, carb gauges, etc.
5. WKA will inspect the submission and advise the submitting organization as to the acceptance or rejection by June 1.
6. If accepted, proof of 100 units in the United States must be documented by Sept 1.
7. A 1500 US dollar homologation fee must be paid by Sept 1.

#### 117.1.2 ENGINE PARTS

Manufacturers, distributors and importers wishing to submit a new part or modified part for approval for an existing approved engine may submit the item for inspection by March 1. A \$100 submission fee must accompany the request. WKA will inspect the parts, set the approval fee and define the number of parts required by June 1. The parts will need to be available for count by Sept 1 -- All fee's must be paid by Sept 1 -- If accepted, the part will become legal for competition at the beginning of the next competition year.

#### 117.1.3 ENGINE AND PARTS AVAILABILITY:

To ensure an adequate supply of parts and engines importers must provide proof of availability within 60 days of a WKA request for verification. Upon receipt of this information WKA will determine whether or not the parts and engines are available in sufficient quantity. If sufficient parts and engines are not available and there is no immediate plan to comply, WKA will place the engine on probation for the next competition year. Once the engine is on a probationary period, WKA will then decide (1) a date upon which the engine is no longer approved for competition year or (2) immediately remove the engine for the next competition year. WKA recognizes that each case may be different based on a variety of circumstances. WKA will be monitor engine performance and make adjustments to achieve a level playing field. In some cases the process defined above may be used to phase overachieving and/or obsolete engines out of use.

### 117.2 FIELD APPROVAL OF PARTS:

The Race Director or Head Tech Inspector may approve a questionable part at a national WKA sanctioned event for use at that event only and only if the competitor agrees to submit the part to WKA at the conclusion of the event. The approving official must then forward the part to WKA following the provisions in TM Section 110.2.3 IMPOUNDING AN APPEALED ITEM. The part must then be reviewed by the appropriate WKA technical or competition committee and approved by the Board of Trustees. A letter from the WKA President or Technical Director will certify that the part has been through the approval process and is legal for use at future WKA sanctioned events.

### ++117.3 CIK HOMOLOGATED EQUIPMENT

Any equipment, except engines, approved within CIK for the next homologated period will not be allowed at National Events until the equipment is valid according to the CIK Regulations, unless approved as outlined in TM 117.2 above.

## 118 WKA AND INTERNATIONAL KARTING

### 118.1 INTERNATIONAL MOTORSPORTS ORGANIZATION:

International motorsports are regulated by the FEDERATION INTERNATIONALE L'AUTOMOBILE (FIA). International kart racing is regulated by the COMMISSION INTERNATIONALE DE KARTING (CIK-FIA). The International Sporting Code and International Karting Regulations are published in the CIK's annual Yearbook of Karting. (Complete CIK-FIA regulations are available on-line at <http://www.fiakarting.com>.)

### 118.2 THE AUTOMOBILE COMPETITION COMMITTEE FOR THE UNITED STATES FIA INC.

(ACCUS) is the National Sporting Authority (ASN) in the US. It serves as the interface between the FIA and the United States member clubs. (<http://www.accusfia.us/>)

### 118.3 WKA RESPONSIBILITIES:

#### 118.3.1 MAINTAIN US NATIONAL KARTING CALENDAR:

WKA maintains the National Karting Calendar for the United States, in accordance with Article 2 of the CIK-FIA International Sporting Code. Event Organizers wishing to accept International Drivers, and listing their event on the National Calendar should contact WKA directly at 704-455-1606 to obtain the proper application and license fee schedule.

#### 118.3.2 INTERNATIONAL LICENSES FOR US DRIVERS:

Drivers wishing to obtain an International License, for participation of events in countries other than the USA, drivers must hold a National License of their home country. International License requests should be directed to WKA at 704-455-1606.

## 119 CLAIMING PROCEDURE GUIDELINES

### 119.1 PURPOSE:

Although WKA does not offer classes at its national events in which competitor's' engines may be "claimed," some WKA division racing series and Master Tracks do. At their request WKA is publishing the following guidelines for such classes. They may be used in their entirety or used as a basis for a series or track to develop its own rules. In either case, the rules should be published at the beginning of the competition year and made available to all competitors in order to avoid misunderstandings. It is the responsibility of the series or track to establish the specific value of each engine involved in the claiming procedure as well as the specific parts to be included when the engine is claimed. This fee and the parts list are also to be established at the beginning of the competition year and published as part of the claiming procedure for each engine.

### 119.2 DRIVER FILING CLAIM:

The person claiming the engine must:

#### 119.2.1

Be entered in the class in which the engine being claimed is run.

#### 119.2.2

Race the class.

#### 119.2.3

Have raced the class in this specific series or track no less than twice in order to be eligible the claim engine in the third race..

### 119.3 FREQUENCY OF CLAIM:

A participant may only claim one time per calendar year in each club program, series or venue including National and Grand National events.

### 119.4 MANUFACTURER OR IMPORTER PREFERENCE:

The manufacturer or importer reserves the right to claim any engine at any time, any where with no exception. This claim will hold preference over all other claims.



**119.5 PARTICIPANT AGREEMENT:**

Any participant in a claiming class must agree to the current claiming rules of the class. If a participant fails/refuses to surrender the claimed engine, the participant will forfeit all points and will be ineligible to compete in the class for the remainder of the current venue or series program.

**119.6 FILING A CLAIM:**

Engine claiming will be made to the Chief Technical Official in writing within 30 minutes after the end of the race in which the engine has been run.

**119.7: PRIORITY IN MULTIPLE CLAIMS:**

If more than one participant claims the same engine, the participant with the lowest point total of the series or venue will be awarded the claim.

**119.8: POST RACE TECH:**

The engine being claimed must pass post-race technical inspection.

**NOTE: Please be advised: Just because a claimed engine passes post-race technical inspection does not imply or guarantee that it is legal or that it will pass future technical inspections. "Let the buyer beware."**  
Engines are claimed as is.

**119.9: ENGINE TRANSFER AFTER POST RACE TECH:****119.9.1 PRESENTATION OF CLAIMING FEE:**

The person claiming the engine i.e. making the claim will present the Chief Technical Official either in cash or a certified cashier check in the amount announced for the engine as part of the claiming procedure.

**119.9.2 CLAIM BY MANUFACTURER OR IMPORTER:**

If a claim is made by the manufacturer, importer or agent of either, that person will present the Chief Technical Officer with a new engine (including all parts listed in the track or series claiming procedure) and \$400.00 cash.

**119.9.3 PRESENTATION OF THE ENGINE:**

The present engine owner will present the Chief Technical Official with the claimed engine complete with the parts listed in the procedure announced and published by the track or series.

**119.9.4 FINAL EXCHANGE:**

The Chief Technical Official will then complete the exchange of engine and cash or cashier check.



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# 2023 TECHNICAL MANUAL

## Manufacturers Cup Regulations (2-Cycle Sprint Racing)

# 200

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## 200 MANUFACTURERS CUP SERIES REGULATIONS

### 201 FRAME AND OVERALL DIMENSIONS

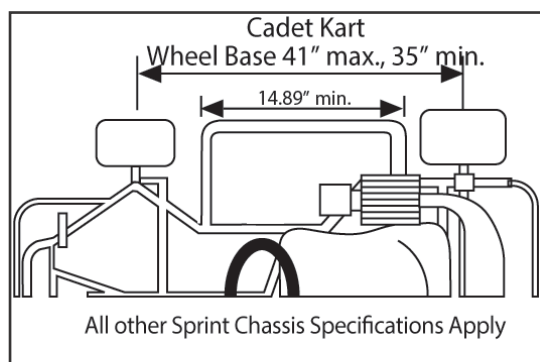
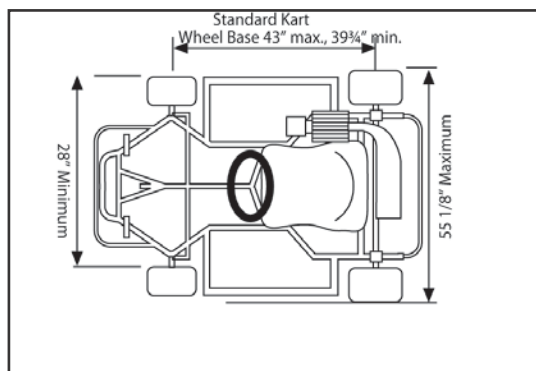
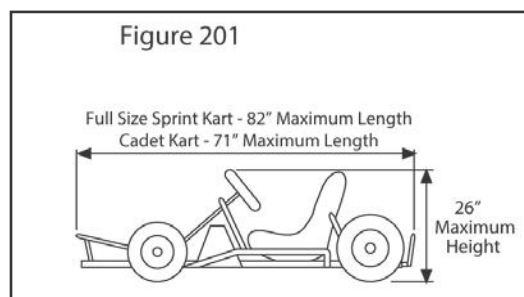
#### 201.1 FRAME:

Of proven safe design, main frame members shall be constructed of nominally round tubing, allowing for normal distortion and elongation near bends radii. Minimum diameter for main frame members is 1.0" and maximum diameter is 1.4". Minimum tubing wall thickness at 1.0" diameter is .078". Minimum wall thickness at 1.125" diameter or greater is .060". Frame material shall be, at minimum, cold-rolled, electric-weld (ERW) steel tubing or material of at least equal strength.

**NOTE:** Tubular steel construction technology is the only type of frame design method currently considered to be within the spirit and intent of the rules for all classes, in all Divisions. The Board of Trustees shall, via an appointed Competition Committee, maintain an open policy to investigate examples of monocoque or unit-type frame design and/or non-traditional construction materials utilization on the basis of safety, availability and cost impact upon the sport, making recommendations as necessary.

Oval tubing-type frames are subject to material approval. Approved makes are eligible for competition in shifter class.

See Figure 201 for specifications in following paragraphs:



#### 201.2 DRIVER POSITION:

When normally positioned on the kart for racing competition, the entirety of the driver shall be within the specified width and length dimensions of the kart..

#### 201.3 WHEELBASE:

Standard Kart Maximum 43.0", minimum 39.750", Cadet Kart maximum 41", minimum 35". Wheelbase measurement is to be taken on a line beginning at a point perpendicular (90 degrees) to the rear axle centerline forward to the point on the horizontal spindle shaft (front axle) centerline on which the hub rides nearest to the kingpin bolt. Both sides must meet the wheelbase specification for the class.

#### 201.4 MINIMUM TREAD WIDTH:

28.0" as measured from outside of one tire to inside of opposite tire laterally.

#### 201.5 OVERALL MAXIMUM WIDTH:

55 1/8" for all classes. Maximum Width includes side pods.

#### 201.6 OVERALL MAXIMUM LENGTH:

Standard Kart 82.0", Cadet Kart 71.0". Overall length includes nose cones on all karts. See Figure 201.

#### 201.7 HEIGHT:

Maximum of 26.0". Maximum Height includes steering fairing.

#### 201.10 WEIGHT BALLAST:

Non-structural weights added to meet minimum kart/driver weight requirements must be bolted securely to the kart using bolts of at least 5/16" in diameter. Weights in excess of 7 lbs. must use two or more 5/16" bolts. All bolts must be cotter-keyed, safety wired or double nutted.

**NOTE:** All bolt-on weights must be white in color for visibility. Mounting of weights to nerf bars, front bumper, and rear bumper is prohibited. No added weight allowed on driver.

#### 201.11 DRIVER WEIGHT AND WEIGH-IN:

All drivers are subject to a minimum combined kart/driver weight check prior to events and a mandatory post-race weight check. (See Section 803.8.).

#### 201.12 SUSPENSION COMPONENTS:

Use of suspension components of any type, including springs, shocks, etc., is prohibited.

## 202 WHEELS AND TIRES

Spec Tires and rain tires to be run as produced with no alteration.

#### 202.1 TIRES:

Pneumatic, designed for racing application types only, maximum diameter 12.5", and minimum diameter 9.0". Tires (slick or rain) must be available to USA general market at least 60 days prior to use in any WKA sanctioned event. Recapped tires are not approved for any application. Tire bleeders, tire relief valves or "pop offs" are not legal. See Section 212 for information regarding wet weather racing.

**NOTE:** WKA reserves the right to establish spec tire regulations for all classes. Any attempt to alter the performance of a spec tire through the use of chemicals is illegal. WKA officials shall use any means they deem necessary to identify tires that have been treated with chemicals at National events.

##### 202.1.1 RAIN TIRES:

Only PRODUCTION-TYPE rain tires that have been manufactured specifically for wet weather racing conditions will be permitted. Dry condition tires, competitor modified, grooved, etc., are NOT acceptable for wet weather racing conditions. Rain tires must be of same manufacturer as the spec slick tire for that class, i.e., class spec with Vega Rain Tires must use Vega Rain Tires.

#### 202.2 WHEELS:

Material optional, but must be of proven design capable of maintaining tire bead seal in competition conditions. 5" diameter rim size accepted only. No "G-rings" or lateral-supported wheels allowed.

##### 202.2.1 WHEEL COVERS:

The dish (opening) of the wheels may not be covered. No hubcaps, tape or any other material allowed.

### 202.3 WHEEL WEIGHTS:

Clip-on or double back tape wheel balancing weights are allowed and may not exceed one-fourth (1/4) ounce weight each. Additional security is suggested when using stick-on weights. A lack of security is not grounds for disqualification.

## 203 AXLES AND HUBS

### 203.1 WHEEL HUBS:

Must be constructed of metallic materials. Wheel studs must be a minimum of 0.3125" (8mm) in diameter.

### 203.2 WHEEL BEARINGS:

Ground-ball or roller-type bearings only. Split race bearings are not acceptable. Wheel bearings must be adjusted so there is no excessive wheel play.

### 203.3 FRONT SPINDLE NUTS/FASTENERS:

Front spindle nuts must be nylon lock nuts, double nuts, or cotter pinned, or safety wired. Axles may be solid or tubular of one-piece design. Minimum diameter is 25mm (25.4 millimeter = 1.0"). Maximum axle diameter is 50 mm. Minimum axle wall thickness is 0.075" (1.9mm). Axles over 1 3/8" diameter must be of a ferrous material. No carbon fiber or carbon fiber composite axle allowed. Both driving wheels must be locked to the rear axle with a "live" axle design. Axle stiffeners are allowed as long as they are secured by cotter pin, through-bolt or cir-clip. Snap ring grooves may not be cut in axles anywhere between the wheel hubs

### 203.5 AXLE WIDTH:

Front spindle axle and rear axle may not protrude beyond outside of rim and tire.

## 204 STEERING AND STEERING SHAFT SPECIFICATIONS

### 204.1 STEERING GENERAL:

Must be of a direct mechanical type. Tiller and vertical shaft steering systems are not allowed. Rack and pinion steering is not allowed. All steering assembly bolts and nuts, including spindle bolts, must be nylon lock nuts, double nuts, cotter-keyed or safety wired. Spring clips and E-clips are allowed with manufactured bolts or studs designed for their use. All bolts will be minimum 14,000 lbs. tensile strength and be minimum 1/4" diameter, and Grade 5 or US Mark 3 rating or better. All rod ends must have universal type swivel joints. Tie rods must be steel or aluminum. No carbon fiber or other non-metallic material allowed.

## 204.2 STEERING SHAFT

### 204.2.1 SOLID SHAFT:

Must be minimum 0.625" diameter cold-rolled steel, one piece design. Steering hub must be one piece with keyed or splined attachment. Hub to be secured to the shaft by a minimum 1/2" diameter nut or bolt and must be safety wired. Single through bolts as used on the larger hollow shaft is not legal. Steering wheel must be secured to the hub by a minimum of three bolts with a minimum 6mm diameter. All hardware in the steering system must be grade 5 hardware or better. This does not apply to the kingpins or steering shaft stubs. No welding of the hub to the shaft or the steering wheel to the hub. Bottom of shaft will have a 5/16" minimum diameter bolt or minimum 1/8" steel roll pin (safety wired). No shaft extensions allowed. No cutting or welding to alter the length of shaft allowed. No quick release steering hubs allowed.

### 204.2.2 HOLLOW SHAFT:

Minimum 0.700" diameter steel tubing, one-piece design, with minimum 0.070" wall thickness, with minimum 5/16" diameter fastener at bottom end. Steering hub (one piece) will be secured through the axis to the steering shaft with minimum 6mm (1/4") bolt through the steering shaft/hub parallel to the axis point. No welding the steering wheel to the hub or the hub to the shaft allowed. No shaft extensions allowed. No quick release steering hubs allowed.

### 204.2.3 OPTIONAL STEERING SHAFT ADAPTER:

An optional adapter may be inserted between the steering hub and steering wheel to change the angle of the steering wheel or to move the steering wheel closer to the driver. Maximum length 2" measured on the longest side. Minimum diameter of adapter must be the diameter of the steering hub. Adapter must be designed such that all fasteners may be visually inspected and all mounting bolts must be a minimum diameter of 1/4" and must be nylon lock nuts, double nuts, cotter-keyed or safety wired. Spring clips and E-clips are allowed with manufactured bolts or studs designed for their use.

### 204.3 STEERING WHEEL:

All classes must utilize a steering wheel with a circular shape. Steering wheels must be of a design with a minimum of 3 spokes and a minimum of 10" in diameter. The upper 1/3 part of the circumference of the steering wheel may be flat or open. Open steering wheels must be of a design by a manufacture and approved by WKA. 3 spoke steering wheels that are not designed to be open above 1/3 of the circumference may not be cut.

## 205 BRAKES

### 205.1 BRAKES GENERAL:

All karts must have brakes which, at minimum, stop both rear wheels equally and adequately. All bolts and nuts must be secured with nylon lock nuts, double nuts, cotter pins, safety-wire, spring clips, or "E" clips. Brake pedal must be secured to the kart with cotter pins, safety-wire, spring clips, or "E" clips. No scrub or band-type brakes allowed. The linkage from the brake pedal to the master cylinder(s) or bias adjuster must be a steel rod of 6mm (.236") or larger in diameter. The rod must have either (1) a clevis or swivel fitting (Heim joint) at each end and jam nuts in tension with fittings or (2) other OEM brake rod fittings. CIK homologated karts may use a cable in place of the rod. The cable must be at least 2.5mm in diameter, supplied by the kart manufacturer, and marked with the brand or part number. Cadet Karts may use an OEM cable in place of a rod.

### 205.2 DUAL BRAKE SYSTEMS:

Dual system four-wheel brakes are optional in all classes. When dual brake systems are used, they will consist of two independent brake systems operated by separate master cylinders. One system shall be fully operational if the other system fails. If a bias control is used, it must allow proper operation of the remaining system should either system fail.

### 205.3 BRAKE MOUNTING:

All master cylinder and caliper mounting bolts and master cylinder roll pins are to be attached by nylon lock nuts, double nuts, or are to be drilled and cotter-pinned/safety wired. Spring clips and E-clips are allowed with manufactured bolts/studs designed for their use. The use of steel locking nuts or a minimum of two drilled bolts with steel/castellated nuts, cotter-pinned/safety wired, are acceptable fasteners for brake disk. Use of Nylock-style nuts to attach the brake disk to the hub is PROHIBITED unless all bolts are double nutted or drilled and cotter-pinned or safety wired.

### 205.4 PAD MOUNTING:

Since most competition karts have brake pads secured by counter sunk bolts, safety wiring is not feasible. Each karter should monitor proper tightness, and use appropriate thread locking substance to prevent loss of this hardware.

### 205.5 CONNECTIONS AND ROUTING:

Hydraulic brake connections must be tight and free of any visible leaks. All brake lines should be safely routed to prevent any possibility of being rubbed through or pulled loose while kart is in motion.

### 205.6 BRAKE COMPONENTS:

Traditional type brake components only, i.e. steel or aluminum. No carbon fiber components, etc. allowed.

### 205.6.1 HAND BRAKES:

Tradition foot operated brakes only; karts with hand brakes are illegal.

**Note:** WKA may approve handbrakes on an individual basis to compensate for driver disabilities, See Section 103.7.



## 206 DRIVE-LINE COMPONENTS

### 206.1 CLUTCHES:

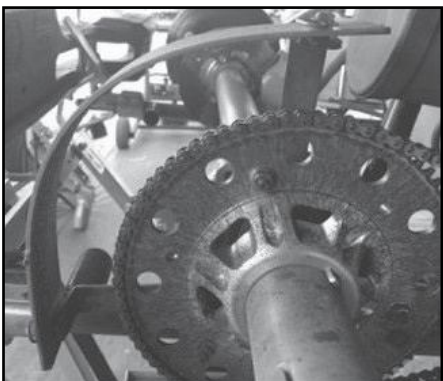
Clutches are mandatory in all classes except where otherwise specified.

### 206.2 WET CLUTCH:

The use of wet-type clutches (where allowed) must be sealed to prevent fluid leakage.

### 206.3 CHAIN GUARDS AND BELT GUARDS:

All chain, belt or gear-driven karts must be equipped with a chain, belt or gear guard designed to retain a broken chain, belt or gear. Karts with outboard drive systems, must have a guard or third bearing support on the engine. Kart must also have a rear sprocket guard. Rear guard must cover 25% of rear sprocket and be a minimum of 1.5" wide.



### 206.4 EXPOSED SPROCKETS:

Karts starting a race or practice, which are equipped with an axle clutch or sprocket hub not being used, MUST NOT have an exposed sprocket mounted in any manner. Sprocket must be removed.

### 206.5 CHAIN OILERS:

Chain oilers are prohibited.

### 206.6 TRANSMISSIONS AND TORQUE CONVERTERS:

No transmission, gearbox or other device which permits a change of gear/sprocket ratios while the vehicle is in motion is allowed unless otherwise noted for specific classes. Torque converters are prohibited.

### 206.7 CHAIN SIZES:

#219 or #35 are the only acceptable chain sizes allowed in all classes except gearbox, which is #428, pitch.

## 207 FUEL SYSTEM

### 207.1 FUEL TANK:

Fuel tank must be constructed of puncture-resistant material and have a secure, leak-proof fill closure. Fuel tank must be mounted between frame rails and beneath steering shaft. Fuel tank must be securely fastened to primary structure/frame/floor-pan of the kart. Tank may be of a design to mount between steering uprights.

### 207.2 FUEL TANK CAPACITY:

Maximum of one fuel tank permitted with maximum nine-liter (2.38 Gal.) capacity. Fuel line will be of adequate length to connect between fuel tank and carburetor. Excessive fuel line will not be allowed.

### 207.3 FUEL SYSTEMS:

No pressurized fuel systems are allowed. No axle or electric fuel pumps allowed. Fuel pump must be pulse-driven. Fuel lines must be secured at all connecting points with approved fasteners such as safety wire or cable ties.

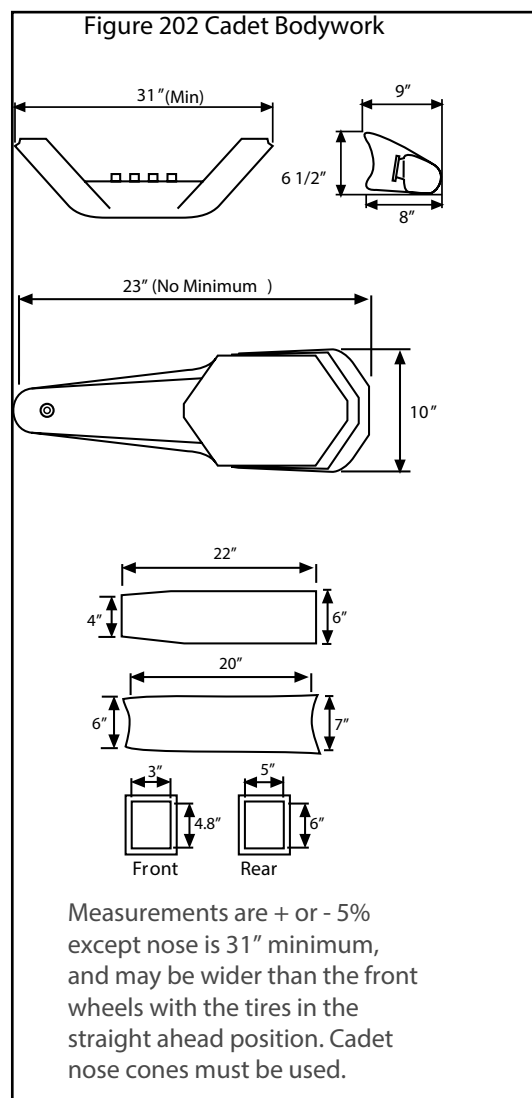
## 208 BODYWORK COMPONENTS

### ++208.1 DEFINITION:

Bodywork includes two side-pods, one nose cone, one steering fairing panel, and a floor pan. All bodywork must be CIK-style in appearance. CIK Homologated and aftermarket bodywork manufactured of traditional materials to the dimensions in TM Section 200 are legal.

All bodywork must be neat in appearance and in good repair. Bodywork that appears loose and in danger of falling off may subject the entrant to black flag and/or disqualification during the running of an event. Mounting method open but must be secure and of good workmanship. The minimum radius of any angles or corners is 3/16" (5 mm).

**NOTE:** See Figure 208 for Standard Kart bodywork specifications and Figure 202 for Cadet Kart bodywork specifications.



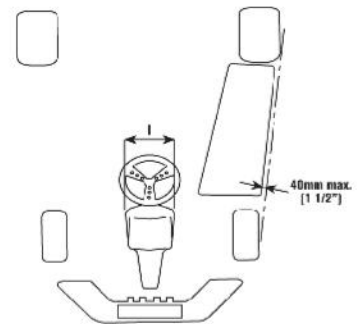
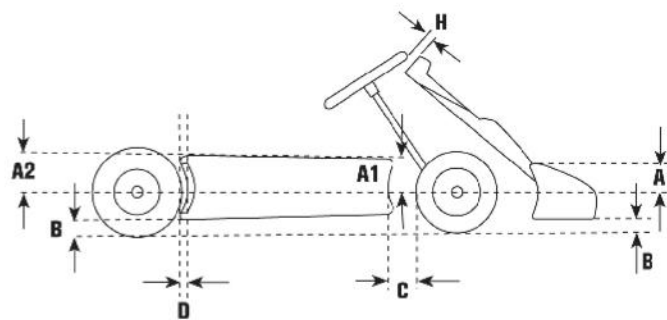
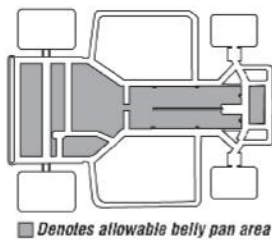
### 208.1.1 REQUIREMENTS:

Nose cone, side pods, and rear bumpers or CIK style rear wheel protection are mandatory in all classes. They must remain intact throughout the race as per specification published in this section.

### ++208.2 NOSE CONES:

Only CIK style nose cones are legal. Quick-attaching systems for mounting of nose cones are optional. Butterfly clamps are allowed. Nose Cones must be intact as per specifications throughout race event. If not, entrant will be disqualified. Nose cones are mandatory in all classes. See Figure 202 for Cadet Bodywork dimensions. Cadet style noses only on Cadet Karts. Nose cones may not be altered, and must be as manufactured.

Figure 208



CODE	DIMENSIONS	LIMITS	COMMENTS
A1	.....Top of nose cone/ Top front of side pod	.....Less than the front wheel radius	.....Nose cone/front of side pod
A2	.....Top rear of side pod	.....Less than the rear wheel radius	.....Rear of side pod
B	.....1/2"	.....Minimum	.....Without driver
B	.....2 5/8" (60mm)	.....Maximum	.....Without driver
C	.....5 7/8 (150mm)	.....Maximum	.....Gap between front tire and side pods
D	.....2 5/8 (60mm)	.....Maximum	.....Gap between rear tire and side pod
H	.....1 15/16 (50mm)	.....Minimum	.....Gap between steering wheel and steering fairing
I	.....9 7/8 (250mm)	.....Minimum	.....Steering fairing
I	.....11 13/16 (300mm)	.....Maximum	.....Steering fairing

### ++208.25 PUSH BACK NOSE/FAIRING

The front nose must be affixed to the kart with the CIK-stamped Front Fairing Mounting Kit, with the stamped arrow facing up. It must be possible for the front fairing to move freely back in the direction of the chassis without any obstruction from any part that may restrict movement. Any mechanical work or other intervention to maximize the friction of the front bumpers is strictly forbidden. There must be a clearance at all points between the front bumpers, (upper and lower tubes), and the front fairing of 25.4 mm, (1-inch), at all times.

Starting with Qualifying and every competitive element that follows, each kart must enter the grid with the front fairing detached from their kart. Drivers, (or crew), must mount the front fairing on the grid under the supervision of the officials.

The front fairing must be in the correct position at all times during competitive elements, (see CIK Technical drawings 2c and 2d). Should a driver or other person put back in place a front fairing that was not correctly positioned before the driver crosses the scales and reports to Tech, the driver will be disqualified from that competitive element.

### ++208.25.1 PUSH BACK BUMPER/FAIRING PENALTY

Front Fairings that are verified to be pushed back in the scales/tech areas will be penalized 2-positions from the results of the qualifying or race if only one side is pushed in, and 5-positions from the results of the qualifying or race if both sides are pushed in.

### ++208.25.2 PUSH BACK FAIRING PENALTY APPEAL

For Qualifying, Heats, and Pre-Finals, appeals for push back fairing penalties cannot be appealed. For Finals, competitors that were penalized may (but is not mandatory), submit video from only their on-board video only relating to the incident(s) where the fairing was pushed back for only that final. As with all appeals, the appeal must be submitted within the required time restraints.

### 208.3 NOSE CONE GUIDELINES:

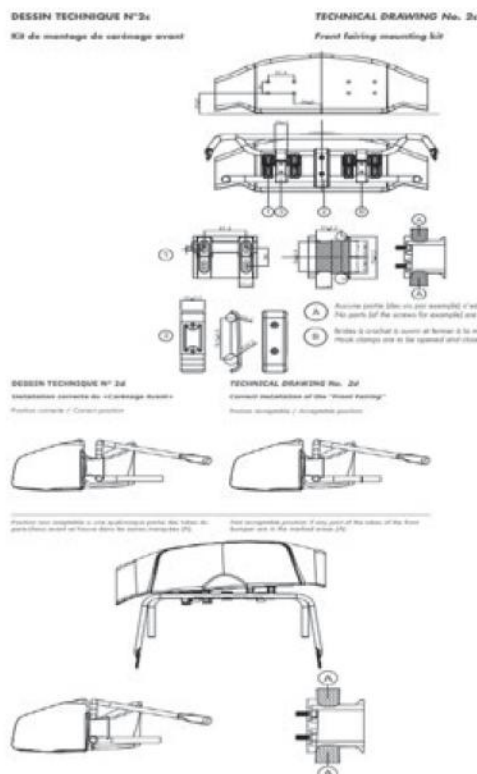
For Standard karts: (1) Bottom of nose cone must be a minimum of 1 1/2" from ground plane as raced and measured without driver in kart. (2) Top of nose cone must be below top plane of front tires as raced with driver seated in normal driving position. (3) Minimum nose cone width is 39 3/8" (1000mm) and maximum nose cone width may be no wider than outside edge of front tires with wheels in the straight-ahead position. (4) Maximum front overhang of nose cone from the center of front axle (wheels positioned straight ahead) to front edge of nose cone is 25 9/16" (650mm). (5) No strengthening pieces inside or support for nose allowed. (6) Nose cones manufactured with holes for front brake cooling are legal. See Figure 208. For Cadet Karts, see Figure 202.

### 208.4 STEERING COLUMN FAIRING:

Only CIK style steering fairing is legal. Steering fairing must not be located above the horizontal plane through the top of the steering wheel. No portion of the steering fairing may be located within 1 15/16" (50mm) of any part of the steering wheel. Minimum width of steering fairing is 9 7/8" (250mm) and maximum width of the fairing is 11 13/16" (300mm) (chord measurement) and mounted with easily bendable tabs or struts. The steering fairing and/or mounting materials must expose no sharp edges to the driver. Steering fairing may connect to the chassis- frame directly or indirectly or to the floor area of kart with a connecting strip not exceeding 3.0" (76mm) in width. Competition number must be located on the steering fairing near the top. All dimensional checks are to be done with the steering wheel in the straight ahead position. (See Figure 208).

### 208.5 SIDE PODS:

Only CIK style side pods are legal. The surface of the side pods must be uniform and smooth. No cutting of side pods is allowed except a hole in pod for insertion of engine starter and for radiator installation in classes allowing water-cooled engines. No part of the side pods may cover any part of the driver seated in the normal driving position. The side pods must not overlap the chassis-frame as seen from underneath. Side pod must be solidly attached to the nerf bar. Competition numbers must be located on the rear vertical surface, close to the rear wheels.





### 208.5.1 SIDE POD DIMENSIONS:

(1) Top of side pods may not be located either above the plane through the top of the front and rear tires or beyond the plane through the external part of the front and rear tires (wheels positioned straight ahead). (2) Side pods may not be located inside the vertical plane through the two external edges of tires (wheels positioned straight ahead) by more than 1 5/16" (40mm). Only the rear tire may be inside of pod. (3) Bottom of side pods must have a minimum clearance of 1/2" and a maximum of 2 5/8" from the ground plane as raced and measured without driver in kart. (4) Gap between the front of the side pods and the rear of the front tires (wheels positioned straight ahead) is 5 7/8" (150mm). (5) Gap between the back of the side pods and the front of the rear tires is 2 5/8" (60mm). (6) Maximum width of side pods is that of the rear track 55 1/8" (1400mm). See Figure 208

**NOTE:** (1) 2003 chassis and beyond must utilize bumpers and nerf bars that are CIK style and meet 2003 specifications (must be of style for the type of bodywork being utilized). (2) See 2003 Tech Manual for 2002 and previous bumpers and nerf bar specifications.

### 208.6 BELLY PAN:

A full floor or belly pan is allowed providing it is within the area inside of the main frame rails, side to side and front to back and is no higher than the center of the rear axle. Additional floor pan is allowed within the front foot cage area. See Fig. 208.

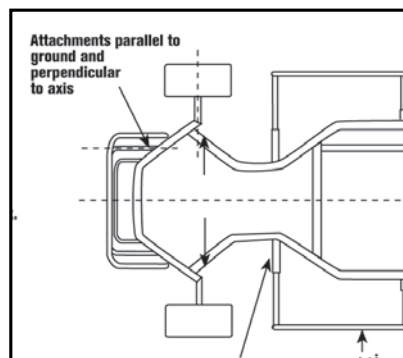
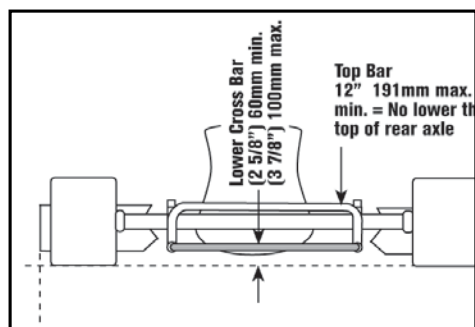
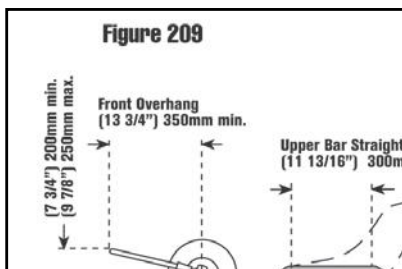
### 208.7 NUMBERS AND NUMBER PANELS:

Four numbers are to be displayed on the kart including one at the front of the vehicle, on both sides in a vertical plane between front and rear wheels; and one at the rear of the vehicle as viewed from behind. Number panels must be of adequate size to accept assigned, disposable numbers. Whether paper-type numbers are utilized or numbers are painted or decaled on bodywork, they must be readily readable to the scoring and race officiating personnel. Numbers must be minimum 3 3/4" in height -- numbers and background to be of contrasting colors that are EZ to read.

## 209 BUMPERS AND NERF BARS

### 209.1 FRONT BUMPER:

The front bumper must consist in at least 2 steel elements. A steel upper bar with a minimum diameter of 0.625" (16mm) and a steel lower bar with a minimum diameter of 0.750" (19mm), both bars being connected together. These 2 elements must be independent from the attachment of the pedals. The front bumper must permit the attachment of the mandatory nose cone. Front bumper must be attached to the chassis- frame by 4 points. The front bumper overhang is 13 3/4" (350mm) minimum measured from the center of front axle (wheels positioned straight ahead) to front edge of bumper. The front bumper height to the top of the upper bar is 7 3/4" (200mm) minimum and 9 7/8" (250mm) maximum from the ground as raced with driver seated in normal driving position. See Figure 209.



### 209.2 BUMPER AND PEDALS:

Front bumper that incorporates pedal mounting points must be either welded to the frame or through-bolted or dowel pinned with safety wire/cotter pins.

### 209.3 REAR BUMPER:

All karts must be equipped with a rear bumper to protect the driver and kart from rear impact and to keep a following kart from reaching the rear tires. The bumper may be either CIK style "rear wheel protection" or a double bar design.

#### 209.3.1 CONSTRUCTION:

Double bar bumpers must be constructed of steel tubing with a minimum diameter of 0.630" (16mm) with a minimum tubing wall thickness of 0.065". The complete bumper assembly must be fastened to the frame at a minimum of 2 points on the 2 main chassis tubes.

#### 209.3.2 DOUBLE BAR BUMPER HEIGHT:

Top bar must be located no more than 12" and no less than 6 1/2" above the ground plane as measured from the top of the bar to the ground plane as raced with driver seated in the normal driving position. The bottom of the bottom bar must be no lower than the bottom of the frame, and the top of the bottom bar must be no higher than the bottom of the rear axle. The bottom bar may be interrupted in the space between the frame rails if there is a rear cross member that serves as that part of the rear bumper. The bottom bar may have a slip joint located between the frame rails to allow for frame flex. See Figure 209.

#### 209.3.3 MAXIMUM WIDTH:

The ends of a double bar rear bumper shall not extend beyond the outside of the rear tires. See Figure 209. The maximum width of CIK style rear wheel protection is 55.1". (Exception – Bumper may extend beyond rear tires in rain conditions.)

#### 209.3.4 MINIMUM WIDTH:

The double bar rear bumper shall extend to at least the center of the rear tires as raced. The minimum width of CIK style rear wheel protection is 52.8".

#### 209.3.5 DOUBLE BAR BUMPER DESIGN:

The ends of the upper and lower tubes must be connected. Connection may be tube bent 180 degrees or by bending the top tube to meet the bottom tube with the upper ends of the top tube bent down to meet the bottom tube. 90 degree corners at the end of the upper tube are not allowed. Additional horizontal and vertical tubes are allowed within the dimensions listed above. The top horizontal tube must be directly above or to the rear of the bottom tube. The bumper may be tilted to the rear by up to 45° (degrees) from the vertical plane.

#### 209.3.6 ADJUSTABLE WIDTH:

The bumper may be designed so that the overall width may be adjusted to fit the rear tread width. Such design must provide for the same rear protection as non-adjustable bumpers.

#### 209.3.7 BUMPER LOCATION:

The bumper must be at least 1" behind the rear tire at its closest point to the tire.

#### 209.3.8 MEASUREMENT:

Measurement of all specifications shall be taken "as raced."

## 209.4 NERF BARS:

Nerf bars must be composed of a lower and upper bar. The minimum straight length of the lower bar is 15 1/2" (400mm) and the upper bar minimum straight length is 11 13/16" (300mm). Nerf bars must be of style for the type of side pods being utilized. Nerf bars must be made of steel tubing and have a diameter of 0.630" (16mm) as a minimum and 0.787" (20mm) maximum. Nerf bars must attach to the chassis/ frame by two points. Minimum width of attachments is 18 7/8" (480mm) center to center and a maximum of 20 1/2" (520mm), measurements are in relation to the longitudinal axis of the kart. Attachments should be horizontal and attach to main frame/side rail as shown in Figure 209. The height to the top of the upper bar from the ground as raced with driver seated in normal driving position is 6 5/16" (160mm) minimum. See Figure 209.

## 210 SEAT

### 210.1 DRIVER'S SEAT:

Driver's seat must be constructed in such a manner to securely locate driver laterally and longitudinally on the kart, i.e. a 100 lb. driver should not be in an XXL size seat in an attempt to gain an aerodynamic advantage. Seat must be of one-piece or molded construction with no "peaks" or add-on sections intended to subvert the seat back height requirements noted below. Seat must be mounted using four or more mounting points using traditional and integral chassis mounting components and may not be adjustable while the vehicle is underway. Additional "stay bars" are legal.

### 210.2 SEAT LOCATION:

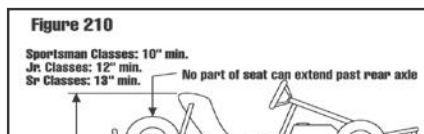
The seat bottom must be located between the frame rails laterally. Seat bottom may extend below frame rails or rise above frame rails. But the seat must still be in compliance with all other dimensions listed. No portion of the seat may be located rearward of a plane projected vertically from rear of rear axle. Seat height requirements are as follows:

#### 210.2.1 SPORTSMAN AND ROOKIE CLASSES (7 TO 12 AGE GROUP)

10" minimum as raced. See Figure 210.

#### 210.2.2 JUNIOR CLASSES (12 TO 15 AGE GROUP):

12" minimum as raced. See Figure 210.



#### 210.2.3 ALL OTHER CLASSES:

13" minimum as raced. See Figure 210. NOTE: Measurement is a vertical plane from ground to top center of seat back as raced with driver seated in normal driving position. See Figure 210.

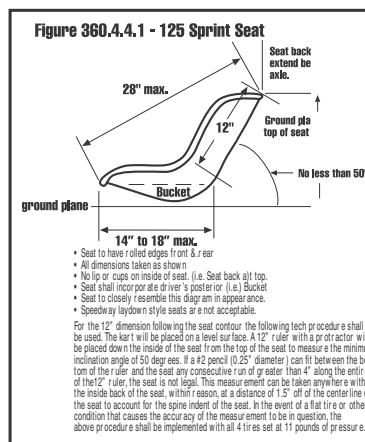
### 210.3 SEAT STYLE:

Sprint-style bucket seat with concave ("bucket") bottom is mandatory in buttocks area with raised front edge to limit forward movement of driver. Seat must be of rigid bottom construction that will reasonably protect driver from objects passing beneath seat bottom and track surface. Seat must be designed to provide the driver with positive lateral location and support.

### 210.4 SEAT DIMENSIONS:

The maximum chord length of the seat is 28" from front to rear. The chord is measured down the seat centerline from the front to the top of rear. The chord of the seat bottom is a minimum of 14" and a maximum of 18" as measured from the front of the seat to a point 12" down the seat from the top. The front of the seat is defined as the center of a line drawn across the front most points on the seat. The lowest portion of the seat may be no higher than the frame rails, but the seat must still be in compliance with all other dimensions listed. Seat is to closely resemble seat in Figure 360.4.4.1. Dimensions may be added to clarify and enforce the spirit and intent of this rule as needed. Conformance to dimensions does not ensure legality.

**NOTE:** Due to the physical differences in drivers, portions of the legs may be obscured by the bubble fairing when viewed directly from above. Steering support struts and/or padding on the struts must be positioned close enough to the forward portion of the driver's seat to prevent the driver's buttocks to move from the seat's indentation forward enough to be off the seat or seat edge. Position of steering struts and/or padding on it must not be movable under racing conditions.



## 211 MISCELLANEOUS

### 211.1 THROTTLE:

It is mandatory for all karts to be equipped with a positive acting throttle-return spring.

### 211.2 RESTRAINTS:

Seat belts or other driver restraints are prohibited.

### 211.3 REAR VIEW MIRRORS:

Rear view mirrors are illegal.

### 211.4 COMMUNICATIONS:

Drivers may not utilize any type of radio communication devices.

### 211.5 DATA ACQUISITION SYSTEMS:

On-board data acquisition systems and/or computer systems are allowed to retrieve the following information only: on-board RPM, water temperature, cylinder temperature, speed, exhaust temperature, lap timing (lateral G sensing), and computer scoring systems. Sensors and wiring for other inputs must be removed from the kart during practice and racing. GPS based systems are allowed. Telemetry is not allowed; data can only be downloaded when kart is off of the racing surface and stationary. Only one beacon from each manufacture is allowed on the race circuit on race days. It must be located in a designated area by a designated person. All other beacons found on the race circuit on race days will be confiscated and held by WKA to be returned through a request to the Board of Trustees.

### 211.6 ADJUSTMENTS:

The only items that can be adjusted on the kart while in motion are the carburetor and brake bias.

#### 211.6.1 GRID ADJUSTMENTS:

No working on karts on the grid, except for checking tire pressure with a tire gauge. If adjustments need to be made, the Grid Steward must be notified to seek permission.

### 211.7 WATER COOLED ENGINES:

All water cooled engines must have a catch container for radiator over flow. Coolant may not contain any ethylene glycol based material. Surfactants such as Water Wetter® may be used.

### 211.8 TRANSPONDER MOUNTING

Transponders are to be mounted safely on kart and located no less than 9" to the rear of the centerline of the top of the kingpin to leading edge of the transponder. Only one properly mounted transponder is allowed.



**211.9 RADIATORS:**

Tape may be used to restrict airflow through the radiator. Adjustable louver system also allowed.

**211.10 RUNNING ENGINES WHILE KART IS ON STAND:**

Engines may only be run on kart stands in their assigned pit areas. They may not be run on the stand outside of the assigned pit area or while being rolled through the pits. Engines may be started on the grid when the karts are on the ground and the grid steward gives permission. This will be about one minute before the karts are allowed on the track.

**211.11 FREE PRACTICE**

Practice organized by class, or group within a class. Transponders may be required as specified and published by event Officials. Non-Event Practice at a scheduled Manufacturers Cup Facility, if authorized, will be "event-specific", and indicated on each individual event supplement.

## 212 MANUFACTURERS CUP SERIES EVENT FORMAT AND SPECIAL RULES:

**212.1 EVENT RACE FORMAT:**

Normal Manufacturers Cup Series events will be as per published schedule provided at registration the morning of the event. Every effort possible must be made to keep with times posted.

**212.1.1 QUALIFYING:**

Qualifying practice will be a designated time on track, for each class, as specified by event Officials. Drivers must enter the track as directed by the Grid Marshalls. The time retained is that of the best lap covered during the session. Laps fully covered are counted. Any times will be decided by the second best time of each driver, and so on in the case of further ties. The final classification of Qualifying Practice will be drawn up in order of the fastest time achieved by each driver, pending penalties, which determines the start position of each driver for the Heat Races. If no time is taken into account by any driver, he/she shall take the start at the end of the grid for the Heat Races. If several drivers are in that situation, their starting positions will be decided by random draw. Once a driver has proceeded to the Scales area, or has otherwise left the Qualifying Practice, he/she will not be allowed to restart in Qualifying Practice.

**212.1.2: HEAT RACES:**

Each Heat Race distance will be published in the Event Supplement. For the Heat Races, points will be awarded as follows: 0 points for 1st, 2 points for 2nd, 3 points for 3rd and so on. If a driver does not take the start, he/she will receive a number of points equal to the number of participants, plus 1. If in the Heat Races, a driver has been black flagged or disqualified, he/she will receive a number of points equal to the number of participants, plus 2. At the end of the Heat Races, an intermediate classification will be established, where drivers with the least number of Heat Race Points will be classified 1st, and so on. Classifications will determine starting positions for the Final Phase according to the intermediate classification.

**212.1.3 PRE-FINAL:**

If Pre-Final is used during an event, it will be published in the Event Supplement with specific times on track. Starting positions for the Pre-Final will be determined by posted results of Qualifying or Heat Race as outlined by the Event Supplement. Pre-Final race distances will be posted in the Event Supplement.

**212.1.4 FINAL PHASE:**

Starting Positions will be determined according to the classification established in the Heat Races. Race distances will be determined independently at each event.

**212.1.5 OVERALL CLASS WINNER:**

Weekend class Champion will be determined by the (0,2,3,4, etc.) point system based on day one and day two combined results. If a tie exist, the tie will be broken based on qualifying position from day two.

**212.2 RESTARTING KARTS:**

If a driver's engine stops while on or adjacent to the course, it may only be restarted after the green flag has been displayed. If the kart has an on-board starter, it may be restarted and re-enter the course

at the end of the field, unless otherwise covered by race official at drivers meeting. If a driver's engine stops on or adjacent to the course and the kart is taken to the pits, the engine may not be restarted and the kart may not reenter the race.

**212.3 RESTARTS:**

Restarts after a yellow or red flag will revert to the most current order of last completed lap. If no laps have been completed, the field will revert to the order as lined-up when last green flag was given. In either case, the kart(s) causing or directly involved in the incident will be placed at the back of the field. A lap is considered to be complete when all karts on lead lap have passed the finish line or scoring loop.

**212.4 INCOMPLETE EVENT:**

If an event can't be completed due to inclement weather or other circumstances, awards / points will be distributed based on:

- a) Qualifying results, or
  - b) If pre-final is completed for a class, starting positions of final.
- If some classes have qualified, and other classes are unable to qualify, those classes that have qualified will receive points according to time trials. All other entrants will receive 200 points.

**212.5 TIMING PROCEDURE:**

If timer (not transponder system) is utilized, effort should be made to give each qualifier two timed laps. If, for time or other considerations, this is not possible, a single timed lap will suffice. Once the car has begun a timed lap, there is no "wave-off" and the lap will be considered official.

**212.6 TRANSPONDER MOUNTING:**

Transponders are to be mounted safely on kart and located no less than 9" to the rear of the centerline of the top of kingpin to leading edge of transponder. Only one properly mounted transponder is allowed per class.

**++212.6.1 CAMERAS**

Cameras may only be mounted on drivers fairing under the number panel, top of radiator, left side chassis mounted bracket. Top of camera cannot exceed 26" from ground. Kart-mounted cameras MUST have kart number on them.

**212.7 WET AND INCLEMENT WEATHER:**

Wet weather racing condition rules will be in effect when the Race Director declares such conditions.

**212.8 WET TRACK:**

Race-able wet conditions are defined as a wet track but without deep standing water or heavy running water on the track surface. Heavy rainfall or the presence of an electrical storm in an area does not constitute acceptable wet weather racing conditions. When wet weather conditions are declared during practice sessions, competitors may continue on dry tires or switch to wets at their option.

**212.9 DRY TO WET CONDITIONS:**

When a race has started under dry conditions and wet weather occurs necessitating a red flag, the event will be considered complete if one-half or more of the scheduled laps have been completed. If less than one-half of scheduled laps have been completed, the Race Director may declare wet weather conditions and provide competitors a reasonable period of time (approx. 15 minutes) to make any adjustments to karts to accommodate the conditions. Depending on weather and track conditions, the Race Director may either (1) allow wet or dry tires, or (2) require wet tires. In either case, all four tires must be either rain or dry and the wet bodywork rules must be observed based wet or option conditions apply. Upon restart, event will revert to original starting line-up and be run (a) either the originally scheduled distance or (b) a shorter distance prescribed by the Race Director to accommodate for conditions.

**212.10 WET CONDITIONS PROCEDURES:**

When wet weather conditions are declared:

**212.10.1:**

The Race Director will announce whether competitors have the option of (1) racing on either wet or dry tires or (2) must switch to rain tires. **NOTE:** Side pod, nerf bar and bumper rules do not apply during wet conditions. However, side pods, nerf bars and bumpers may not create safety hazard.

**212.10.4:**

If Race Director deems wet weather conditions have passed, subsequent races on program will revert to use of tires normally acceptable for competition. At this point, ALL competitors must switch from rain tires to original tires. Also, Race Director may elect to red flag an event started on wet weather tires and direct competitors to return to normal, dry track tires. In this situation, procedure shall be the reverse of procedure noted in 212.3 i.e., if half distance is reached, event will be considered completed. If half distance not reached, event will be restarted according to original line-up and will be run either (a) the originally scheduled distance or (b) a shorter distance deemed necessary by Race Director.

**212.10.5:**

In wet weather conditions: Race Director will make every effort to notify upcoming events coming to grid if wet weather conditions will prevail. When dry/wet, wet/dry tire changes are necessary, Race Director may determine reasonable time period for competitors to effect changes and state as a time limit. Failure to meet the prescribed time limit will disqualify competitor from event. When wet weather conditions are declared during practice conditions, the competitors may continue on dry tires or switch to wets at their option.

**212.10.6:**

The Race Director may adjust the number of laps in the Pre-final and Final to compensate for time lost due to inclement weather or other unforeseen circumstances.

**212.11 QUALIFYING AND RACING RULES:****212.11 PASSING:**

If, in the opinion of the Officials, a driver has impeded another driver during a passing maneuver, the impeding driver may be assessed a penalty. A Driver may make one move to defend their line, however it is prohibited to make a move to prohibit a pass on them in any way, or in any other way to prohibit a pass. A Driver may make one move to defend their line, however it is prohibited to make a move to prohibit a pass on them in any way, or in any other way to prohibit a pass.

**212.12 ENGINE CHANGE:**

In the event of an approved engine change, the competitor will start in the rear of the next round of competition.

**212.13 FALSE STARTS:**

In the event that the front row is waived off twice, the front two karts are moved back one row and the third and fourth karts are moved to the front of the field. This procedure will be followed continuing to move rows forward until the starter gives the green flag for a clean start. In the event the starting attempts are waived off due to no fault of the front row, penalties may apply to competitors causing the waive-off attempt. After two failed starting attempts, any further false starts may be counted as laps in all classes except the Junior Sportsman classes at the discretion of the Race Director. If false starts are to be counted, this procedure will be announced in the drivers meeting.

**212.14 TIRE CONTROL****212.14.1: TIRE REGISTRATION OR MARKING:**

Tires (wet and slick) will be registered or marked in classes or divisions where applicable before time trials/qualifying heats. Number of tires to be marked for a class on a race day is as follows. Two sets (two front and two rear) of slicks. Rain tires must be Bridgestone (any quantity).

**212.14.2 TIRE REPLACEMENT:**

If a competitor replaces a tire after the tire is registered or marked, he or she must bring the original tire and replacement tire to the Head Technical Inspector for inspection and registration or marking. The replacement tire must be of the same usage value as the original tire. If the tire was damaged in the course of competition or is overly worn, the competitor must start at the rear of the field in the next round of competition. If the original tire is damaged due to catastrophic tire failure, i.e. a chord separation creating a bubble, or is badly out of round, the Head Technical Inspector can present the tire to the Race Director. If in their collective judgment, the tire is unsafe and was not damaged in competition, they can allow the competitor to retain his or her starting position in the next round of competition.

**212.14.3 TIRE ALTERATIONS:**

Spec Tires and rain tires to be run as produced with no alterations.

**++212.15 MINIMUM EVENT PARTICIPATION**

Drivers must be present on grid, and make a qualifying attempt to advance to the heat races and be present on the grid and attempt to participate in heats and finals.

**214 MANUFACTURERS CUP SERIES CLASSES****++214.1 KID KARTS (KART NUMBER 00-99)**

DRIVER REQ: Attained age of 5 through 7  
ENGINE: Comer C51 only. (See Section 621)  
FUEL: Spec Fuel 87 octane Fuel will be Purchased from WKA  
MINIMUM WEIGHT: 150 lbs.  
TIRES: Bridgestone YLC or YPC – 10 x 4.50 - 33 1/4 max circumference.  
GEAR RATIO: 10/89  
OTHER: (1) See Section 900 for chassis and bodywork specifications.

**++214.2 MICRO SWIFT (KART NUMBER 00-99)**

DRIVER REQ: Attained age of 7 through 10  
ENGINE: IAME Mini Swift engine with manufacturer-supplied exhaust  
CARBURETOR: Tillotson HW-31A  
MINIMUM WEIGHT: 235lbs.  
SPEC TIRE: Bridgestone YPC – 10 x 4.50 - 5  
Notes: Tires must be new to start each event – 1 set per event

**++214.2.25 MICRO ROK (KART NUMBER 00-99)**

DRIVER REQ: Attained age of 7 through 10  
ENGINE: Vortex Micro ROK with restricted exhaust header as supplied by manufacturer. Gear Selection 11/82 - 10/79  
CARBURETOR: Dellorto  
FUEL: Spec Fuel.  
KART: Cadet or standard kart chassis allowed.  
MINIMUM WEIGHT: 230lbs.  
SPEC TIRE: Bridgestone YPC – 10 x 4.50 - 5 Front and rear same set of tires for the event; new set required at the qualifying round.

**++214.3.1 BRIGGS CADET 206 (KART NUMBER 400-499)**

DRIVER REQ: Age 7 through 12  
ENGINE: Briggs LO206 Engine Sealed  
EXHAUST: RLV #5506 or #5507  
CARBURETOR: As Supplied by Manufacturer  
CARBURETOR ADDITIONAL: Must have Locking Cap #555726  
SLIDE: Briggs Green .490 Part Number #555740  
FUEL: Spec Fuel 87 Octane WKA will Specify the Location  
KART: CADET or standard kart chassis allowed  
MINIMUM WEIGHTS: 265 lbs.  
SPEC TIRES: Bridgestone YPC - 10 x 4.50 - 5 Front and rear same set of tires for the event; new set required at qualifying round

**214.4 MINI SWIFT (KART NUMBERS 100-199)**

DRIVER REQ: Age 8 through 12  
ENGINE: Parilla Swift  
EXHAUST: Must be stock pipe and exhaust header as supplied by manufacturer  
CARBURETOR: Tillotson HW-31A  
FUEL: Spec Fuel  
KART: Cadet or standard chassis allowed  
MINIMUM WEIGHTS: 245 lbs.  
SPEC TIRE: Bridgestone YPC – 10 X 4.50 – 5 Front and rear same set of tires for the event; new set required at qualifying round

**214.4.1 MINI ROK (KART NUMBERS 100-199)**

DRIVER REQ: Age 8 through 12  
ENGINE: Vortex Mini ROK  
EXHAUST: Must be stock pipe and exhaust header as supplied by manufacturer  
CARBURETOR: Dellorto  
FUEL: Spec Fuel  
KART: Cadet or standard chassis allowed  
MINIMUM WEIGHTS: 245 lbs.  
SPEC TIRE: Bridgestone YPC – 10 X 4.50 – 5 Front and rear same set of tires for the event; new set required at qualifying round.



**214.5 BRIGGS 206 JUNIOR, (KART NUMBERS 300-399)**

DRIVER REQ: Age 12 through 15  
 ENGINE: Briggs LO206 Sealed Engine  
 EXHAUST: RLV #5506 or #5507  
 CARBURETOR: As supplied by the manufacturer with Locking Cap #555726  
 SLIDE: Briggs Gold Slide .590 Part Number 555741  
 FUEL: Spec – 87 Octane  
 MINIMUM WEIGHTS: 320 lbs.  
 SPEC TIRE: Bridgestone YPC – 10x4.50-5 / 11x7.10-5  
 Notes: Tires must be new to start each event – 1 set per event

**++214.5.1 F100 JUNIOR (KART NUMBERS 800-899)**

(previously KA100 JUNIOR)  
 DRIVER REQ: Attained Age 11 through 15  
 ENGINE: IAME KA100/ROK VLR  
 FUEL: Spec Fuel  
 MINIMUM WEIGHTS: 320 lbs.  
 EXHAUST: Must be spec exhaust system as supplied by manufacturer with Restrictor.  
 CARBURETOR: as factory supplied, see 626.4  
 SPEC TIRE: Bridgestone YPC - 10 x 4.50 - 5 front, 11 x 7.10-5 rear  
 Class runs on same tires both days; new set required at qualifying round.

**214.6 IAME X30 JUNIOR (KART NUMBERS 700-799)**

DRIVER REQ: Age 12 through 15  
 ENGINES: IAME X30  
 MINIMUM WEIGHTS: 330 lbs.  
 FUEL: Spec fuel  
 EXHAUST PIPE/SILENCER: Must be stock pipe and restricted 26mm exhaust header 16 3/4" – as measured from the back side of the header flange around the right side of the header, connector and pipe to the first weld at the end of the divergent cone. Pipe to be measured on the kart as raced. See Figure 609.9  
 SPEC TIRE: 1 Set Bridgestone YNB – 10 X 4.50 -5 front, 11 x 7.10-5 rear Free use.  
 AIR-BOX: Required, see section 551

**214.6.1 ROK GP JUNIOR (KART NUMBERS 200-299)**

DRIVER REQ: Age 12 through 15  
 ENGINES: Vortex ROK GP  
 MINIMUM WEIGHTS: 320 lbs.  
 FUEL: Spec fuel  
 EXHAUST PIPE/SILENCER: Must be OEM stock pipe with Restricted exhaust header  
 CARBURETOR: Dellorto  
 SPEC TIRE: 1 Set Bridgestone YNB - 10 x 4.50-5 front, 11 x 7.10-5 rear Free use.  
 AIR-BOX: Required Per ROK Rules

**214.8 IAME X30 SENIOR (KART NUMBERS 300-399)**

DRIVER REQ: Age 15 and older.  
 ENGINE: IAME X30  
 MINIMUM WEIGHT: 360 lbs.  
 FUEL: Spec Fuel  
 EXHAUST PIPE/SILENCER: Must be stock pipe and exhaust header as supplied by manufacturer. The minimum combined length: X30 = 16 3/4" --- as measured from the back side of the header flange around the right side of the header, connector, and pipe to the first weld at the end of the divergent cone. Pipe to be measured on the kart as raced. See Figure 609.1  
 CARBURETOR: As factory supplied. See Figure 610  
 SPEC TIRE: 1 Set Bridgestone YNB – 10 x 4.50 - 5 front, 11 x 7.10 - 5 rear  
 AIR-BOX: Required. See Section 551.  
 OTHER: (1) In the event that the engine cannot be started on the grid with the on-board starter, an auxiliary starter may be used. In any case, the on-board starter is subject to post race tech inspection to ensure that all components are present and correctly installed. (2) One new set of tires required for qualifying.

**214.8.1 ROK GP SENIOR (KART NUMBERS 300-399)**

DRIVER REQ: Senior Age 15 and older  
 ENGINE: Vortex ROK GP with manufacturer-supplied exhaust  
 CARBURETOR: Dellorto

MINIMUM WEIGHT: 355lbs  
 SPEC TIRE: Bridgestone YNB – 10x4.50-5 / 11x7.10-5 – 1 set per event  
 NOTES: Air-box required per ROK Rules

**214.8.2 BRIGGS 206 SENIOR (KART NUMBERS 500-599)**

DRIVER REQ: Senior Age 15 and older  
 ENGINE: Briggs LO206 Sealed Engine  
 EXHAUST: RLV #5506 or #5507  
 CARBURETOR: As supplied by the manufacturer  
 SLIDE: Briggs Black Slide  
 FUEL: Spec – 87 Octane  
 MINIMUM WEIGHT: 360lbs  
 SPEC TIRE: Bridgestone YPC – 10x4.50-5 / 11x7.10-5  
 NOTES: Tires must be new to start each event – 1 set per event

**214.8.3 ROK GP MASTERS (KART NUMBERS 600-699)**

DRIVER REQ: Masters Age 32 and older or +190 body weight  
 ENGINE: Vortex ROK GP  
 MINIMUM WEIGHTS: Senior -355lbs – Masters 390lbs  
 FUEL: Spec fuel  
 EXHAUST PIPE/SILENCER: Must be OEM stock pipe  
 CARBURETOR: Dellorto  
 SPEC TIRE: 1 Set Bridgestone YNB – 10 X 4.50 -5 front, 11 x 7.10-5 rear Free use.  
 AIR-BOX: Required Per ROK Rules

**214.9 F100 SENIOR (KART NUMBERS 900-999)**

(previously KA100 SENIOR)  
 DRIVER REQUIREMENT: Age 15 and older  
 ENGINE: IAME KA100/ VORTEX ROK VLR  
 MINIMUM WEIGHT: 360 lbs.  
 FUEL: Spec Fuel  
 EXHAUST: Must be spec exhaust system as supplied by manufacturer  
 CARBURETOR: as factory supplied, see 626.4  
 SPEC TIRE: Bridgestone YPC – 10 X 4.50 -5 front, 11 x 7.10-5 rear Class runs on same tires both days; new set required at qualifying round

**214.10 TAG MASTERS (LOCAL OPTION):**

DRIVER REQ: Age of 30 and older. Attained age of 21 for drivers whose minimum weight is 220 # in a drivers suit but without helmet  
 ENGINES: Cheetch SQ125--370#, Eastkart-370#, X30-390#, MotoriSeven-400#, Parilla Leopard-385#, Rotax FR125-385#, Sonik TX125-415#, SonikVX(118) -385#, VortexRokTT-405#, PRD Fireball ('05+'07) -370# -- see section 609 for specific engine rules.  
 FUEL: Spec Fuel.  
 EXHAUST: Must be stock pipe as supplied by the manufacture for the specific engine. See figure 609.1 for length's.  
 SPEC TIRE: Bridgestone – 10 x 4.50 - 5 front, 11 x 7.10 - 5 rear OTHER: (1) In the event that the engine cannot be started on the grid with the on-board starter, an auxiliary starter may be used. In any case, the on-board starter is subject to post race tech inspection to ensure that all components are present and correctly installed. (2) One new set of tires required each day for qualifying

**214.11 ROK SHIFTER (KART NUMBERS 400-499)**

DRIVER REQUIREMENT: Age 15 and older  
 ENGINE: Vortex ROK Shifter with manufacturer-supplied exhaust  
 CARBURETOR: Dellorto  
 MINIMUM WEIGHT: 395 lbs.  
 SPEC TIRE: Bridgestone YNB – 10x4.50-5 / 11x7.10-5 – 1 set per event  
 NOTES: Air-box required per ROK Rules

**214.12 ROK SHIFTER MASTERS (KART NUMBERS 500-599)**

DRIVER REQ: Masters Age 32 and older or +190 body weight  
 ENGINE: Vortex ROK Shifter  
 MINIMUM WEIGHTS: Senior -395lbs - Masters -410lbs  
 FUEL: Spec fuel  
 EXHAUST PIPE/SILENCER: Must be OEM stock pipe and silencer  
 CARBURETOR: Dellorto  
 SPEC TIRES: Bridgestone YNB - 10 X 4.50 -5 front, 11 x 7.10-5 – 1 set per event  
 AIR-BOX: Required Per ROK Rules



# 2023 TECHNICAL MANUAL

## Gold Cup Regulations (4-Cycle Sprint Racing)

# 250

### 250 GOLD CUP SERIES REGULATIONS

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## 250 GOLD CUP SERIES REGULATIONS

### 251 FRAME AND OVERALL DIMENSIONS

#### 251.1 FRAME:

Of proven safe design, main frame members shall be constructed of nominally round tubing, allowing for normal distortion and elongation near bend radii. Minimum diameter for main frame members is 1.0" and maximum diameter is 1.4". Minimum tubing wall thickness at 1.0" diameter is 0.078". Minimum wall thickness at 1.125" diameter or greater is 0.060". Frame material shall be, at minimum, cold-rolled, electric-weld (ERW) steel tubing or material of at least equal strength.

**NOTE:** Tubular steel construction technology is the only type of frame design method currently considered to be within the spirit and intent of the rules for all classes, in all Divisions. The Board of Trustees shall, via an appointed Competition Committee, maintain an open policy to investigate examples of monocoque or unit-type frame design and/or non-traditional construction materials utilization on the basis of safety, availability and cost impact upon the sport, making recommendations as necessary. Oval tubing-type frames are subject to material approval. Approved makes are eligible for competition in shifter class.

#### 251.2 DRIVER POSITION:

When normally positioned on the kart for racing competition, the entirety of the driver shall be within the specified width and length dimensions of the kart.

#### 251.3 WHEELBASE:

Cadet Kart maximum 41.0", minimum 35". Wheelbase measurement is to be taken on a line beginning at a point perpendicular (90 degrees) to the rear axle centerline forward to the point on the horizontal spindle shaft (front axle) centerline on which the hub rides nearest to the kingpin bolt. Both sides must meet the wheelbase specification for the class.

#### 251.4 MINIMUM TREAD WIDTH:

28.0" as measured from outside of one tire to inside of opposite tire laterally.

#### 251.5 OVERALL MAXIMUM WIDTH:

55 1/8" for all classes. Maximum Width includes side pods.

55 1/8" for karts compliant with Manufacturers Cup rules TM Section 200-210.4.

#### 251.6 OVERALL MAXIMUM LENGTH:

Standard Kart 82.0", Cadet Kart 71.0". Overall length includes nose cones on all karts. See Figure 201.

#### 251.7 HEIGHT:

Maximum of 26.0". Maximum Height includes Steering Fairing.

#### 251.10 WEIGHT BALLAST:

Non-structural weights added to meet minimum kart/driver weight requirements must be bolted securely to the kart using bolts of at least 5/16" in diameter. Weights in excess of 7 lbs. must use two or more 5/16" bolts. All bolts must be cotter-keyed or double nutted.

**NOTE:** All bolt-on weights must be white in color for visibility. Mounting of weights to nerf bars, front bumper, and rear bumper is prohibited. No added weight allowed on driver.

#### 251.11 DRIVER WEIGHT AND WEIGH-IN:

All drivers are subject to a minimum combined kart/driver weight check prior to events and a mandatory post-race weight check. (See Section 803.8.).

#### 251.12 SUSPENSION COMPONENTS:

Use of suspension components of any type including springs, shocks, etc., is prohibited.

#### 252.1 TIRES:

Pneumatic, designed for racing application types only, maximum diameter 12.5", minimum diameter 9.0". Tires must be available to general USA market at least 60 days prior to use in any sanctioned event. Tires will be marked in classes or divisions where applicable after time trials/qualifying heats and same tires must be run in all races. Maximum width on any tire and wheel of 9 3/4". Under wet weather conditions, refer to sec. 262

**NOTE:** WKA reserves the right to establish spec tire regulations for all classes. Any attempt to alter the performance of a spec tire through the use of chemicals is illegal. WKA officials shall use any means they deem necessary to identify tires that have been treated with chemicals at National events.

#### 252.1.1: RAIN TIRES:

Only PRODUCTION-TYPE rain tires that have been manufactured specifically for wet weather racing conditions will be permitted. Dry condition tires, competitor modified, grooved, etc., are NOT acceptable for wet weather racing conditions. Rain tires must be of same manufacturer as the spec slick tire for that class, i.e., class spec with Vega Rain Tires must use Vega Rain Tires.

#### 252.2 WHEELS:

Material optional, but must be of proven design capable of maintaining tire bead seal in competition conditions. 5" diameter rims only. No "G-rings" or lateral-supported wheels allowed. Bead locks allowed.

#### 252.2.1: WHEELS:

The dish (opening) of the wheels may not be covered. No hubcaps, tape or any other material allowed.

#### 252.3 WHEEL WEIGHTS:

Clip-on or double back tape wheel balancing weights are not to exceed one-fourth (1/4) ounce weight each. Additional security is suggested when utilizing stick-on weights. A lack of security is not grounds for disqualification.

### 253 AXLES AND HUBS

#### 253.1 WHEEL HUBS:

Wheel hubs must be constructed of metallic materials. Wheel studs must be a minimum of 0.3125" (8mm) in diameter.

#### 253.2 WHEEL BEARINGS:

Ground-ball or roller-type bearings only. Split race bearings are not acceptable. Wheel bearings must be adjusted so there is no excessive wheel play.

#### 253.3 FRONT SPINDLE NUTS/FASTENERS:

Front spindle nuts must be nylon lock nuts, double nuts, or cotter pinned, or safety wired. Axles may be solid or tubular of one-piece design. Minimum diameter is 25mm (25.4 millimeter = 1.0"). Maximum axle diameter is 50 mm. Minimum axle wall thickness is 0.075" (1.9mm). Axles over 1 3/8" diameter must be of a ferrous material. No carbon fiber or carbon fiber composite axle allowed. Both driving wheels must be locked to the rear axle with a "live" axle design. Axle stiffeners are allowed as long as they are secured by cotter pin, through-bolt or cir-clip. Snap ring grooves may not be cut in axles anywhere between the wheel hubs

#### 253.4 REAR AXLE ASSEMBLY:

Axles may be solid or tubular of one-piece design. Minimum diameter is 25mm (25.4 millimeter = 1.0"). Maximum axle diameter is 50 mm. Minimum axle wall thickness is 0.075" (1.9mm). Axles over 1 3/8" diameter must be of a ferrous material. No carbon fiber or carbon fiber composite axle allowed. Both driving wheels must be locked to the rear axle with a "live" axle design. Axle stiffeners are allowed as long as they are secured by cotter pin, through-bolt or cir-clip. Snap ring grooves may not be cut in axles anywhere between the wheel hubs.

#### 253.5 AXLE WIDTH:

Front spindle axle and rear axle may not protrude beyond outside of rim and tire.

### 252 WHEELS AND TIRES

Spec Tires and rain tires to be run as produced with no alteration.

## 254 STEERING AND STEERING SHAFT SPECIFICATIONS

### 254.1 STEERING GENERAL:

Must be of a direct mechanical type. Tiller and vertical shaft steering systems are not allowed. Rack and pinion steering is not allowed. All steering assembly bolts and nuts, including spindle bolts, must be attached by nylon lock nut, double nutted or cotter-keyed and/or safety wired. Spring clips and E-clips are allowed with manufactured bolts or studs designed for their use. All bolts will be minimum 14,000 lbs. tensile strength and be minimum 1/4" diameter, and Grade 5 or US Mark 3 rating or better. All rod ends must have universal type swivel joints.

## 254.2 STEERING SHAFT

### 254.2.1 SOLID SHAFT:

Must be minimum 0.625" diameter cold-rolled steel, one piece design. Steering hub must be one piece with keyed or splined attachment. Hub to be secured to the shaft by a minimum 1/2" diameter nut or bolt and must be safety wired. Single thru bolts as used on the larger hollow shaft is not legal. Steering wheel must be secured to the hub by a minimum of three bolts with a minimum 6mm diameter. All hardware in the steering system must be grade 5 hardware or better. This does not apply to the kingpins or steering shaft stubs. No welding of the hub to the shaft or the steering wheel to the hub. Bottom of shaft will have a 5/16" minimum diameter bolt or minimum 1/8" steel roll pin (safety wired). No shaft extensions allowed. No cutting or welding to alter the length of shaft allowed. No quick release steering hubs allowed.

### 254.2.2 HOLLOW SHAFT:

Minimum 0.700" diameter steel tubing, one-piece design, with minimum 0.070" wall thickness, with minimum 5/16" diameter fastener at bottom end. Steering hub (one piece) will be secured through the axis to the steering shaft with minimum 6mm or 1/4" bolt through the steering shaft/hub parallel to the axis point. No welding the steering wheel to the hub or the hub to the shaft allowed. No shaft extensions allowed. No quick release steering hubs allowed.

### 254.2.3 OPTIONAL STEERING SHAFT ADAPTER:

An optional adapter may be inserted between the steering hub and steering wheel to change the angle of the steering wheel or to move the steering wheel closer to the driver. Maximum length 2" measured on the longest side. Minimum diameter of adapter must be the diameter of the steering hub. Adapter must be designed such that all fasteners may be visually inspected and all mounting bolts must be a minimum diameter of 1/4" and must be attached by nylon lock nut, double nutted, cotter-keyed or safety wired. Spring clips and E-clips are allowed with manufactured bolts or studs designed for their use.

### 254.3 STEERING WHEEL:

All classes must utilize a steering wheel with a circular shape. Steering wheels must be of a design with a minimum of 3 spokes and a minimum of 10" in diameter. The upper 1/3 part of the circumference of the steering wheel may be flat or open. Open steering wheels must be of a design by a manufacture and approved by WKA. 3 spoke steering wheels that are not designed to be open above 1/3 of the circumference may not be cut.

## 255 BRAKES

### 255.1 BRAKES GENERAL:

All karts must have brakes which, at minimum, stop both rear wheels equally and adequately. All bolts and nuts must be secured with nylon lock nuts, double nuts, cotter pins, safety-wire, spring clips, or "E" clips. Brake pedal must be secured to the kart with cotter pins, safety-wire, spring clips, or "E" clips. No scrub or band-type brakes allowed. The linkage from the brake pedal to the master cylinder(s) or bias adjuster must be a steel rod of 6mm (.236") or larger in diameter. The rod must have either (1) a clevis or swivel fitting (Heim joint) at each end and jam nuts in tension with fittings or (2) other OEM brake rod fittings. CIK homologated karts may use a cable in place of the rod. The cable must be at least 2.5mm in diameter, supplied by the kart manufacturer, and marked with the brand or part number. Cadet Karts may use an OEM cable in place of a rod.

### 255.2 DUAL BRAKE SYSTEMS:

When used, these systems will consist of two independent brake systems, operated by separate master cylinders. One system shall be fully operational if either front or rear system fails; i.e., if bias control is used, it must allow proper operation of the remaining system should either system fail, etc.

### 255.3 BRAKE MOUNTING:

All master cylinder and caliper mounting bolts and master cylinder roll pins are to be attached by nylon lock nuts, double nuts, or are to be drilled and cotter-pinned/safety wired. Spring clips and E-clips are allowed with manufactured bolts/studs designed for their use. The use of steel locking nuts or a minimum of two drilled bolts with steel/castellated nuts, cotter-pinned/safety wired, are acceptable fasteners for brake disk. Use of Nylock-style nuts to attach the brake disk to the hub is PROHIBITED unless all bolts are double nutted or drilled and cotter-pinned or safety wired.

### 255.4 PAD MOUNTING:

Since most competition karts have brake pads secured by countersunk bolts, safety wiring is not feasible. Each karter should monitor proper tightness, and use appropriate thread locking substance to prevent loss of this hardware.

### 255.5 CONNECTIONS AND ROUTING:

Hydraulic brake connections must be tight and free of any visible leaks. All brake lines should be safely routed to prevent any possibility of being rubbed through or pulled loose while kart is in motion.

### 255.6 BRAKE COMPONENTS:

Traditional type brake components only. No carbon fiber components, etc.

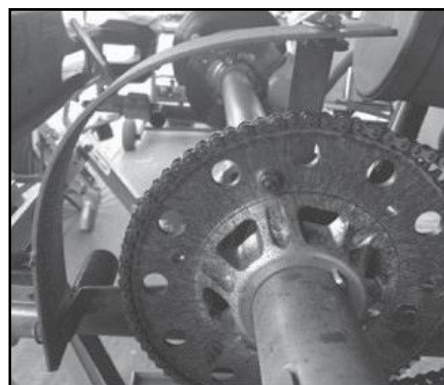
## 256 DRIVE-LINE COMPONENTS

### 256.1 CLUTCHES:

Dry clutches are mandatory in all 4-cycle classes. No axle clutches allowed.

### 256.3 EXPOSED SPROCKETS:

All chain, belt or gear-driven karts must be equipped with a chain, belt or gear guard designed to retain a broken chain, belt or gear. Karts with outboard drive systems, must have a guard or third bearing support on the engine. Kart must also have a rear sprocket guard. Rear guard must cover 25% of rear sprocket and be a minimum of 1.5" wide.



### 256.4 CHAIN OILERS:

Chain oilers are prohibited.

### 256.5 TRANSMISSIONS AND TORQUE CONVERTERS:

No transmission, gearbox or other device which permits a change of gear/sprocket ratios while the vehicle is in motion is allowed unless otherwise noted for specific classes. Torque converters are prohibited.

### 256.6 CHAIN SIZES:

#219 or #35 are the only acceptable chain sizes allowed in all classes. No Belt drives allowed.



### 256.6.1 HAND BRAKES:

Traditional foot operated brakes only; karts with hand brakes are illegal.

**NOTE:** WKA may approve handbrakes on an individual basis to compensate for driver disabilities, See Section WKA TM-103.7

### 256.7 Jack-shaft:

Jack-shaft system allowed, Dry clutch only, Clutch must mounted to engine. Primary and secondary drive must be #219 or #35 chain.

## 257 FUEL SYSTEM

### 257.1 FUEL TANK:

If other than stock engine and fuel tank is used, fuel tank must be constructed of puncture-resistant material and have a secure, leak-proof fill closure. Fuel tank must be securely bolted to primary structure / frame / floor pan of the kart. Fuel tank must be located within mainframe rails beneath the steering shaft.

### 257.2 FUEL TANK CAPACITY:

Maximum of one fuel tank permitted with maximum nine-liter (2.38 Gal.) capacity.

### 257.3 FUEL SYSTEM:

No pressurized fuel systems are allowed. No axle driven or electric fuel pumps allowed. Fuel pump must be pulse-driven. Excessive fuel line will not be allowed. Fuel lines must be secured at all connecting points with approved fasteners such as safety wire or cable ties.

## 258 BODYWORK COMPONENTS

### 258.0 GOLD CUP BODYWORK:

CIK front fairing and steering column fairing mandatory for all Gold Cup classes. See Section 208 for CIK specifications.

### 258.1 APPEARANCE:

All bodywork must be neat in appearance and in good repair. Bodywork that appears loose and in danger of falling off may subject the entrant to black flag and/or disqualification during the running of an event. Mounting method open but must be secure and of good workmanship.

### 258.2 SIDE PANELS / PODS:

Only CIK style side pods are legal. The surface of the side pods must be uniform and smooth. No cutting of side pods is allowed except a hole in pod for insertion of engine starter and for radiator installation in classes allowing water-cooled engines. No part of the side pods may cover any part of the driver seated in the normal driving position. The side pods must not overlap the chassis-frame as seen from underneath. Side pod must be solidly attached to the nerf bar. Competition numbers must be located on the rear vertical surface, close to the rear wheels.

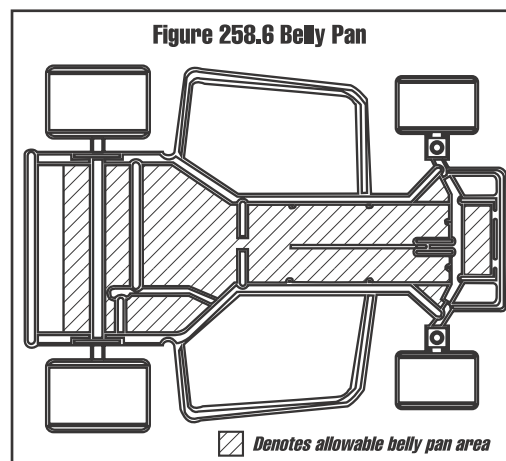
#### 258.2.1 SIDE PANEL DIMENSIONS:

(1) Top of side pods may not be located either above the plane through the top of the front and rear tires or beyond the plane through the external part of the front and rear tires (wheels positioned straight ahead). (2) Side pods may not be located inside the vertical plane through the two external edges of tires (wheels positioned straight ahead) by more than 1 5/16" (40mm). Only the rear tire may be inside of pod. (3) Bottom of side pods must have a minimum clearance of 1/2" and a maximum of 2 5/8" from the ground plane as raced and measured without driver in kart. (4) Gap between the front of the side pods and the rear of the front tires (wheels positioned straight ahead) is 5 7/8" (150mm). (5) Gap between the back of the side pods and the front of the rear tires is 2 5/8" (60mm). (6) Maximum width of side pods is that of the rear track 55 1/8" (1400mm). See Figure 208

**NOTE:** (1) 2003 chassis and beyond must utilize bumpers and nerf bars that are CIK style and meet 2003 specifications (must be of style for the type of bodywork being utilized). (2) See 2003 Tech Manual for 2002 and previous bumpers and nerf bar specifications.

### 258.3 BELLY PAN:

A full floor or belly pan is allowed providing it is within the area inside of the main frame rails and is no higher than the center of the rear axle. Additional floor pan is also required within front foot cage area. (See Figure. 258.6).



### 258.8 NUMBERS AND NUMBER PANELS:

Four numbers are to be displayed on the kart. Including one at the front of the kart, on both sides in a vertical plane between front and rear wheels, and at the rear of the kart as viewed from behind. Number panels must be of adequate size to accept assigned, disposable numbers. Whether paper-type numbers are utilized or numbers are painted or decaled on bodywork. They must be readily readable to the scoring and race officiating personnel. Numbers must be minimum 3 3/4" in height -- numbers and background to be of contrasting colors that are EZ to read.

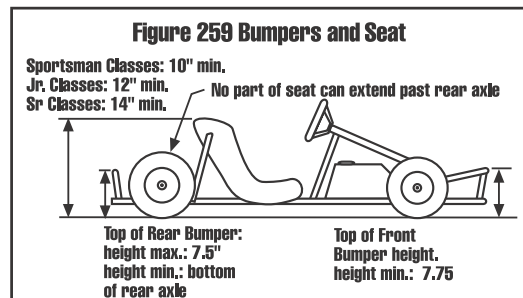
### 258.9 INNER BODY PANELS:

No inner body panels are allowed.

## 259 BUMPERS AND NERF BARS

See Figure 259 for following specifications. Also see figure 259.2 & v

**Note:** Refer to section 210 for CIK bodywork seat specifications



### 259.1 FRONT BUMPER:

The front bumper must consist in at least 2 steel elements. A steel upper bar with a minimum diameter of 0.625" (16mm) and a steel lower bar with a minimum diameter of 0.750" (19mm), both bars being connected together. These 2 elements must be independent from the attachment of the pedals. The front bumper must permit the attachment of the mandatory nose cone. Front bumper must be attached to the chassis- frame by 4 points. The front bumper overhang is 13 3/4" (350mm) minimum measured from the center of front axle (wheels positioned straight ahead) to front edge of bumper. The front bumper height to the top of the upper bar is 7 3/4" (200mm) minimum and 9 7/8" (250mm) maximum from the ground as raced with driver seated in normal driving position. See Figure 209.

### 259.2 BUMPER AND PEDALS:

Front bumper that incorporates pedal mounting points must be either welded to the frame or through-bolted or dowel pinned with safety wire/ cotter pins.

### 259.3 REAR BUMPER:

All karts must be equipped with a rear bumper to protect the driver and kart from rear impact and to keep a following kart from reaching the rear tires. The bumper may be either CIK style "rear wheel protection" or a double bar design.

### 259.3.1 CONSTRUCTION:

Double bar bumpers must be constructed of steel tubing with a minimum diameter of 0.630" (16mm) with a minimum tubing wall thickness of 0.065". The complete bumper assembly must be fastened to the frame at a minimum of 2 points on the 2 main chassis tubes.

### 259.3.2 DOUBLE BAR BUMPER HEIGHT:

Top bar must be located no more than 12" and no less than 6 1/2" above the ground plane as measured from the top of the bar to the ground plane as raced with driver seated in the normal driving position. The bottom of the bottom bar must be no lower than the bottom of the frame, and the top of the bottom bar must be no higher than the bottom of the rear axle. The bottom bar may be interrupted in the space between the frame rails if there is a rear cross member that serves as that part of the rear bumper. The bottom bar may have a slip joint located between the frame rails to allow for frame flex. See Figure 209.

### 259.3.3 MAXIMUM WIDTH:

The ends of a double bar rear bumper shall not extend beyond the outside of the rear tires. See Figure 209. The maximum width of CIK style rear wheel protection is 55.1". (Exception – Bumper may extend beyond rear tires in rain conditions.)

### 259.3.4 MINIMUM WIDTH:

The double bar rear bumper shall extend to at least the center of the rear tires as raced. The minimum width of CIK style rear wheel protection is 52.8".

### 259.3.5 DOUBLE BAR BUMPER DESIGN:

The ends of the upper and lower tubes must be connected. Connection may be tube bent 180 degrees or by bending the top tube to meet the bottom tube with the upper ends of the top tube bent down to meet the bottom tube. 90 degree corners at the end of the upper tube are not allowed. Additional horizontal and vertical tubes are allowed within the dimensions listed above. The top horizontal tube must be directly above or to the rear of the bottom tube. The bumper may be tilted to the rear by up to 45° (degrees) from the vertical plane.

### 259.3.6 ADJUSTABLE WIDTH:

The bumper may be designed so that the overall width may be adjusted to fit the rear tread width. Such design must provide for the same rear protection as non-adjustable bumpers.

### 259.3.7 BUMPER LOCATION:

The bumper must be at least 1" behind the rear tire at its closest point to the tire.

### 259.3.8 MEASUREMENT:

Measurement of all specifications shall be taken "as raced."

## 259.4 NERF BARS:

Nerf bars must be composed of a lower and upper bar. The minimum straight length of the lower bar is 15 1/2" (400mm) and the upper bar minimum straight length is 11 13/16" (300mm). Nerf bars must be of style for the type of side pods being utilized. Nerf bars must be made of steel tubing and have a diameter of 0.630" (16mm) as a minimum and 0.787" (20mm) maximum. Nerf bars must attach to the chassis/ frame by two points. Minimum width of attachments is 18 7/8" (480mm) center to center and a maximum of 20 1/2" (520mm), measurements are in relation to the longitudinal axis of the kart. Attachments should be horizontal and attach to main frame/side rail as shown in Figure 209. The height to the top of the upper bar from the ground as raced with driver seated in normal driving position is 6 5/16" (160mm) minimum. See Figure 209.

## 260.1 DRIVER'S SEAT:

Driver's seat must be constructed in such a manner to securely locate driver laterally and longitudinally on the kart, i.e. a 100 lb. driver should not be in an XXL size seat in an attempt to gain an aerodynamic advantage. Seat must be of one-piece or molded construction with no "peaks" or add-on sections intended to subvert the seat back height requirements noted below. Seat must be mounted using four or more mounting points using traditional and integral chassis mounting components and may not be adjustable while the vehicle is underway. Additional "stay bars" are legal.

## 260.2 SEAT LOCATION:

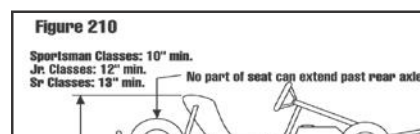
The seat bottom must be located between the frame rails laterally. Seat bottom may extend below frame rails or rise above frame rails. But the seat must still be in compliance with all other dimensions listed. No portion of the seat may be located rearward of a plane projected vertically from rear of rear axle. Seat height requirements are as follows:

### 260.2.1 SPORTSMAN AND ROOKIE CLASSES (7 TO 12 AGE GROUP)

10" minimum as raced. See Figure 210.

### 260.2.2 JUNIOR CLASSES (12 TO 15 AGE GROUP)

12" minimum as raced. See Figure 210.



### 260.2.3 ALL OTHER CLASSES:

13" minimum as raced. See Figure 210. NOTE: Measurement is a vertical plane from ground to top center of seat back as raced with driver seated in normal driving position. See Figure 210.

## 260.3 SEAT STYLE:

Sprint-style bucket seat with concave ("bucket") bottom is mandatory in buttocks area with raised front edge to limit forward movement of driver. Seat must be of rigid bottom construction that will reasonably protect driver from objects passing beneath seat bottom and track surface. Seat must be designed to provide the driver with positive lateral location and support.

## 260.4 SEAT DIMENSIONS:

The maximum chord length of the seat is 28" from front to rear. The chord is measured down the seat centerline from the front to the top of rear. The chord of the seat bottom is a minimum of 14" and a maximum of 18" as measured from the front of the seat to a point 12" down the seat from the top. The front of the seat is defined as the center of a line drawn across the front most points on the seat. The lowest portion of the seat may be no higher than the frame rails, but the seat must still be in compliance with all other dimensions listed. Seat is to closely resemble seat in Figure 360.4.4.1. Dimensions may be added to clarify and enforce the spirit and intent of this rule as needed. Conformance to dimensions does not ensure legality.

**NOTE:** Due to the physical differences in drivers, portions of the legs may be obscured by the bubble fairing when viewed directly from above. Steering support struts and/or padding on the struts must be positioned close enough to the forward portion of the driver's seat to prevent the driver's buttocks to move from the seat's indentation forward enough to be off the seat or seat edge. Position of steering struts and/or padding on it must not be movable under racing conditions.

## 261 MISCELLANEOUS

### 261.1 THROTTLE:

It is mandatory for all karts to be equipped with a positive acting throttle- return spring.

### 261.2 RESTRAINTS:

Seat belts or other driver restraints are prohibited.

## 260 SEAT

Driver's seat must be constructed in such a manner to securely locate driver laterally and longitudinally on the kart, i.e. a 100 lb. driver should not be in an XXL size seat in an attempt to gain an aerodynamic advantage. Seat must be of one-piece or molded construction with no "peaks" or add-on sections intended to subvert the seat back height requirements noted below. Seat must be mounted using four or more mounting points using traditional and integral chassis mounting components and may not be adjustable while the vehicle is underway. Additional "stay bars" are legal.



**261.3 REAR VIEW MIRRORS:**

Rear view mirrors are illegal.

**261.4 COMMUNICATIONS:**

Drivers may not utilize any type of radio communication devices, to include ear-buds.

**261.5 DATA ACQUISITION SYSTEMS:**

On-board data acquisition systems and/or computer systems are allowed to retrieve the following information only: on-board RPM, water temperature, cylinder temperature, speed, exhaust temperature, lap timing (lateral G sensing), and computer scoring systems. Sensors and wiring for other inputs must be removed from the kart during practice and racing. GPS based systems are allowed. Telemetry is not allowed; data can only be downloaded when kart is off of the racing surface and stationary. One beacon only from each manufacture allowed on the race circuit on race days to be located in a designated area by a designated person. All other beacons found on the race circuit on race days will be confiscated and held by WKA to be returned through a request to the Board of Directors. Data can only be downloaded in pits.

**261.6 ADJUSTMENTS:**

The only item that can be adjusted on the kart while in motion is the carburetor.

**261.7 GRID ADJUSTMENTS:**

No working on karts on the grid. If adjustments need to be made, the grid steward must be notified to get permission.

**261.8 TRANSPONDER MOUNTING:**

Transponders are to be mounted safely on kart and located no less than 9" to the rear of the centerline of the top of kingpin to leading edge of transponder. Only one properly mounted transponder is allowed.

**262.9 RUNNING ENGINES WHILE KART IS ON STAND:**

Engines may only be run on kart stands in their assigned pit areas. They may not be run on the stand outside of the assigned pit area or while being rolled through the pits. Engines may be started on the grid when the karts are on the ground and the grid steward gives permission. This will be about one minute before the karts are allowed on the track.

heat race.)

**262.1.5 ENGINE CHANGE:**

In the event of an approved engine change, the competitor will start in the rear of the next round of competition.

**262.1.6 TIRE REGISTRATION OR MARKING:**

Tires (wet and slick) will be registered or marked in classes or divisions where applicable before time trials/qualifying heats. Number of tires to be marked for a class on a race day is as follows: One set (2-front, 2-rear) of slicks and one set plus two spares (any combination) of rain tires.

**262.1.7 TIRE REPLACEMENT:**

If a competitor replaces a tire after the tire is registered or marked, he or she must bring the original tire and replacement tire to the Head Technical Inspector for inspection and registration or marking. The replacement tire must be of the same usage value as the original tire. If the tire was damaged in the course of competition or is overly worn, the competitor must start at the rear of the field in the next round of competition. If the original tire is damaged due to catastrophic tire failure, i.e. a chord separation creating a bubble, or is badly out of round, the Head Technical Inspector can present the tire to the Race Director. If in their collective judgment, the tire is unsafe and was not damaged in competition, they can allow the competitor to retain his or her starting position in the next round of competition.

**262.2 INCOMPLETE EVENT:**

If an event can't be completed due to inclement weather or other circumstances, awards / points will be distributed based on:

- a) qualifying results, or
- b) if heats completed for a class, starting positions of main.

If some classes have qualified, and other classes are unable to qualify, those classes which have qualified all registered karts will receive points according to time trials. All other entrants will receive 200 points.

**262.3 TIMING PROCEDURE:**

If timer (not transponder system) is utilized, effort should be made to give each qualifier two timed laps. If, for time or other considerations, this is not possible, a single timed lap will suffice. Once the car has begun a timed lap, there are no "wave-offs" and the lap will be considered official.

**262.4 WET AND INCLEMENT WEATHER:**

Wet Weather Racing Condition rules will be in effect when the Race Director declares such conditions.

**262.5 WET TRACK:**

Race-able wet conditions are defined as a wet track but without deep standing water or heavy running water on the track surface. Heavy rainfall or the presence of an electrical storm in an area are not acceptable wet weather racing conditions. When wet weather conditions are declared during practice sessions, competitors may continue on dry tires or switch to wets at their option.

**262.6 DRY TO WET CONDITIONS:**

When a race has started under dry conditions and wet weather occurs, necessitating a red flag condition, the event will be considered completed if one-half or more of the scheduled laps have been completed. If less than one-half of scheduled laps have been completed, the Race Director may declare wet weather conditions and provide competitors a reasonable period of time (approx. 15 minutes) to make any adjustments to karts to accommodate the conditions. Depending on weather and track conditions, the Race Director may either (1) allow wet or dry tires, or (2) require wet tires. In either case, all four tires must be either rain or dry and the wet bodywork rules must be observed based on wet or dry conditions apply. Upon restart, event will revert to original starting line-up and be run (a) either the originally scheduled distance or (b) a shorter distance prescribed by the Race Director to accommodate for conditions.

## 262 GOLD CUP SERIES EVENT FORMAT AND SPECIAL RULES

**262.1 EVENT RACE FORMAT:**

Normal Gold Cup Series event will be as follows:

**262.1.1 QUALIFYING:**

Qualifying time trials will be conducted by groups of karts within the same class for three timed laps. The race director will determine the number of groups and karts per group.

**262.1.2 PUSHING DURING QUALIFYING:**

Any pushing during qualifying may result in at least those laps being deleted from the scoring of the offending driver or drivers. Blue Flag in qualifying means to separate.

**262.1.2 HEAT:**

Heat races will be lined up in the order of qualifying times.

**262.1.3 FEATURE:**

Feature races will be lined up from the finish order of the heat. Event feature race results determine overall class winners for the event.

**262.1.4 CONSOLATION RACE:**

If class has more entries than number of karts allowed in the feature, a consolation race will determine the transfer positions for the remainder of the starting field for feature race. (i.e. 35 entries in a class where starting field is limited to 30, the top 25 from qualifying will transfer to the heat race and the remaining 10 karts will compete in a consolation race with the top 5 finishers transferring to the last 5 positions of the

## 262.7 PROCEDURES:

When wet weather conditions are declared:

### 262.7.1:

The Race Director will announce whether competitors have the option of (1) racing on either wet or dry tires or (2) must switch to rain tires.

**NOTE: Side pod, nerf bar and bumper rules do not apply during wet conditions. However, side pods, nerf bars and bumpers may not create safety hazard.**

### 262.7.4:

If Race Director deems wet weather conditions have passed, subsequent races on program will revert to use of tires normally acceptable for competition. At this point, ALL competitors must switch from rain tires to original tires. Also, Race Director may elect to red flag an event started on wet weather tires and direct competitors to return to normal, dry track tires. In this situation, procedure shall be the reverse of procedure noted in 262.3 i.e., if half distance is reached, event will be considered completed. If half distance not reached, event will be restarted according to original line-up and will be run either (a) the originally scheduled distance or (b) a shorter distance deemed necessary by Race Director.

### 262.7.5

In wet weather conditions: Race Director will make every effort to notify upcoming events coming to grid if wet weather conditions will prevail. When dry/wet, wet/dry tire changes are necessary, Race Director may determine reasonable time period for competitors to effect changes and state as a time limit. Failure to meet the prescribed time limit will disqualify competitor from event. When wet weather conditions are declared during practice conditions, the competitors may continue on dry tires or switch to wets at their option.

### 262.7.6:

In the event of rain and the rain tire rule is put into effect, the air filter may be relocated using flexible tubing. A standard air filter or a WKA approved 2-cycle air box may be used. A rain deflector may be used as long as it does not provide a ram air effect".

### 262.7.7:

The Race Director may adjust the number of laps in the Pre-Final and Final to compensate for time lost due to inclement weather or other unforeseen circumstances.

## 262.8 RESTARTING KARTS:

If a driver's engine stops while on or adjacent to the course, it may only be restarted after the caution (yellow) flag has been displayed, unless otherwise covered by race official at drivers meeting. If a driver's engine stops on or adjacent to the course and the kart is taken to the pits, the engine may not be restarted and the kart may not re-enter the race.

## 262.9 RESTARTS:

Restarts after a yellow or red flag will revert to the most current order of last completed lap. If no laps have been completed, the field will revert to the order as lined-up when last green flag was given. In either case, the kart(s) causing or directly involved in the incident will be placed at the back of the field. A lap is considered to be complete when all karts on lead lap have passed the finish line or scoring loop.

## 262.10 FALSE STARTS:

In the event that the front row is waived off twice, the front two karts are moved back one row and the third and fourth karts are moved to the front of the field. This procedure will be followed continuing to move rows forward until the flagman gives the green flag for a clean start. False starts may be counted as laps in all classes except the Junior Sportsman classes at the discretion of the Race Director. If false starts are to be counted, this procedure will be announced in the drivers meeting.

## 263 GOLD CUP SERIES CLASSES

Note: all classes - new tires are required for first day qualifying

### 263.1 LO206 KID KARTS (FINAL 1 & FINAL 2)

DRIVER REQ: Attained age 5 through 8

ENGINE: Briggs & Stratton LO 206 Kid Kart engine

FUEL: Spec Fuel

MINIMUM WEIGHT: 200 lbs.

TIRES: Bridgestone YLC or YPC – Front and Rear 4:50 x 5". Maximum rear circumference 33".

GEAR RATIO: 17/57

CLUTCH: Briggs & Stratton part number 555727 only.

MAXIMUM WHEEL WIDTH: See Section 252.2.2

OTHER: (1) Kid Kart, Cadet and standard size go-karts are legal. See Section 900 for Kid Kart chassis and bodywork specifications. See Section 200 for Cadet Kart Specifications. (2) Class runs same tires both days.

#### 263.1.1 KID KART -- 2 CYCLE (FINAL 1 + FINAL 2)

DRIVER REQ: Attained age of 5 through 8 ENGINE: Comer C51 only. (See Section 621) FUEL: Spec Fuel.

MINIMUM WEIGHT: 150 lbs.

TIRES: Bridgestone YLC or YPC – 10 x 4.50 - 5 -- 33" max circumference

GEAR RATIO: 10/89

OTHER: (1) See Section 900 for chassis and bodywork specifications -- (2) Class runs on same tires both days. (3) New tires not required.

**NOTE: Kid Kart class is run combined (2 + 4 cycle) and scored separately**  
-- winner in each class will receive an award  
-- not a national points class  
-- time trial will be the last practice session (transponder must be in place)  
-- drivers in kid kart class may not enter other classes.

### 263.2 ROOKIE (FINAL 1 + FINAL 2)

DRIVER REQ: Age 6 TO 9

ENGINE: Briggs and Stratton LO 206 with kid kart - 0.310" slide (#555732) and 6100 green coil

FUEL: Spec Fuel

WEIGHT: 235#

KART: cadet chassis only

BODYWORK; no steering fairing allowed. With Gold Cup bodyworks, CIK steering column fairing allowed only with CIK front nose.

SPEC TIRES: Bridgestone YPC 4.50 x 5 front and rear

MAXIMUM WHEEL WIDTH: see 452.5.2

OTHER: class runs same tires both days

### 263.3 SPORTSMAN LO206 (FINAL 1 & FINAL 2)

DRIVER REQ: Age 7 thru 12.

ENGINE: Briggs & Stratton LO206 engine with Green slide (#555740--0.490") and lock cap #555726.

FUEL: Spec fuel.

MINIMUM WEIGHT: 265 lbs.

KART: Cadet or standard kart chassis allowed.

BODYWORK: No steering fairing allowed. With Gold Cup bodyworks, CIK steering column fairing allowed only with CIK front nose.

SPEC TIRES:

Bridgestone YLC – Front 4.50 x 5", Rear 4.50x5" or 6.00x5".

MAXIMUM WHEEL WIDTH: See Section 252.2.2

OTHER: Class runs same tires both days.

### 263.4 SPORTSMAN PRO GAS

(Final 1 & Final 2)

DRIVER REQ: age 7 thru 12.

ENGINES: Briggs & Stratton Pro Gas Animal engine with green slide and locking cap (#555740--0.490")

FUEL: Spec Fuel.

MINIMUM WEIGHT: 275 lbs.

BODYWORK: No steering fairing allowed. With Gold Cup bodyworks, CIK steering column fairing allowed only with CIK front nose.

SPEC TIRES: Bridgestone YPC – Front 4.50 x 5", Rear 4.50x5" or 6.00x5".

MAXIMUM WHEEL WIDTH: See Section 252.2.2

OTHER: Class runs same tires both days.



**263.5 LO206 JUNIOR (FINAL 1 & FINAL 2)**

DRIVER REQ: Age 12 thru 15.

ENGINES: Briggs & Stratton LO206 with Yellow slide (#555741--0.570") and lock cap.

FUEL: Spec Fuel.

MINIMUM WEIGHTS: 320 lbs.

SPEC TIRES: Bridgestone YPC – Front: 4.50 x 5", Rear 6.00 x 5".

MAXIMUM WHEEL WIDTH: See Section 252.2.2

**263.6 JUNIOR PRO GAS (FINAL 1 & FINAL 2)**

DRIVER REQ: Age 12 thru 15.

ENGINES: Briggs & Stratton Pro Gas Animal engine with Orange restricter plate – 0.620" Jr (Hole No Go size 0.621").

FUEL: Spec fuel.

MINIMUM WEIGHTS: 330 lbs.

SPEC TIRES: Bridgestone YPC – Front: 4.50 x 5", Rear 6.00 x 5".

MAXIMUM WHEEL WIDTH: See Section 252.2.2.

**263.7 LO206 SENIOR (FINAL 1 & FINAL 2)**

DRIVER REQ: Age 15 and older.

ENGINE: Briggs & Stratton LO206.

FUEL: Spec Fuel

MINIMUM WEIGHT: 375 lbs.

SPEC TIRES: Bridgestone YPC – Front 4.50 x 5", Rear 7.10 x 5".

MAXIMUM WHEEL WIDTH: See Section 252.2.2.

**263.8 SENIOR PRO GAS (FINAL 1 & FINAL 2)**

DRIVER REQ: Age 15 and older.

ENGINE: Briggs & Stratton Stock Animal.

FUEL: Spec fuel

MINIMUM WEIGHTS: 375 lbs.

SPEC TIRES: Bridgestone YPC – Front 4.50 x 5", Rear 7.10 x 5"

MAXIMUM WHEEL WIDTH: See Section 252.2.2

MUFFLER: RLV #4106--B91MO

**263.9 MASTERS SENIOR (FINAL 1 & FINAL 2)**

DRIVER REQ: Age 40 or older.

ENGINE: Briggs & Stratton LO206

FUEL: Spec Fuel

MINIMUM WEIGHTS: Age 35-44 = 395 lbs. ---- Age 45+ = 385 lbs.

SPEC TIRES: Bridgestone YPC – Front 4.50 x 5", Rear 7.10 x 5"

MAXIMUM WHEEL WIDTH: See Section 252.2.2





# 2023 TECHNICAL MANUAL

## Road Racing Laydown Regulations

# (2-Cycle Racing) 300

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# 300 NATIONAL ROAD RACING LAYDOWN CLASS REGULATIONS

Sections 301 through 312 apply to laydown Road Racing classes. See Section 363 for the National Road Racing Series special rules.

**IMPORTANT:** Only laydown style karts are eligible to compete in the laydown classes at WKA national and regional events, except in unlimited 1 & 2 where IC/E Karts are allowed. (See rule 310.4)

## 301 FRAME AND OVERALL DIMENSIONS

### 301.1 FRAME:

Of proven safe design, main frame members shall be constructed of nominally round tubing, allowing for normal distortion and elongation near bend radii. Minimum diameter for main frame members is 1.0" and maximum diameter is 1.4". Minimum tubing wall thickness at 1.0" diameter is 0.078". Minimum wall thickness at 1.125" diameter or greater is 0.060". Frame material shall be, at minimum, cold-rolled, electric-weld (ERW) steel tubing or material of at least equal strength.

**NOTE:** Oval tubing-type frames are subject to material approval. Approved oval tubing-type frames are eligible for competition in the following classes: Controlled Limited, Formula 100, B-Stock, Formula 125, and Unlimited.

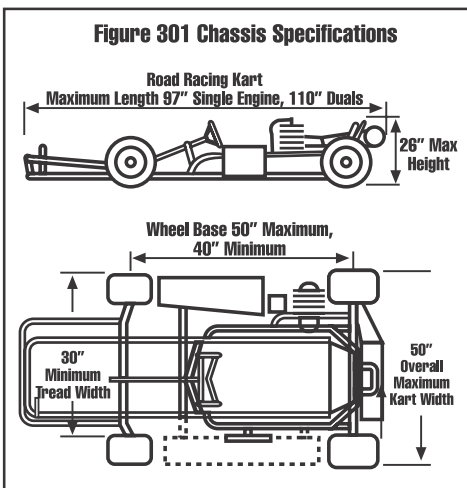


Figure 301 Chassis Specifications

### 301.2 DRIVER POSITION:

When normally positioned in the kart for racing competition, the entirety of the driver shall be within the specified width and length dimensions of the kart.

### 301.3 WHEELBASE:

Maximum 50.0", minimum 40.0", as measured longitudinally between the true axle centers. (See Figure 301.)

### 301.4 MINIMUM TREAD WIDTH:

30.0" as measured from outside of one tire to inside of opposite tire laterally. (See Figure 301.)

### 301.5 OVERALL MAXIMUM WIDTH:

50.0" Maximum width includes bodywork.

### 301.6 OVERALL MAXIMUM LENGTH:

Maximum kart length including bodywork is 97.0" for single engine, non-gearbox karts and 110.0" for twin engine and gearbox karts. (See Figure 301)

### 301.7 HEIGHT:

Maximum of 26.0" Maximum height includes helmet fairing and measured from ground plane as raced. (See Figure 301)

### 301.8 FLOOR PAN:

Floor pan and seat back shall be of a design that would prevent any portion of the driver's body to pass between frame structure of kart to track surface. Seat must be of rigid bottom construction that will reasonably protect driver from objects passing beneath track surface and seat bottom. Single panel floor pan is NOT considered to be an acceptable seat bottom. When the bottom of a laydown seat has been

removed, a second floor pan of at least 0.050" aluminum must be mounted on top of the frame tabs. Seat must be of a design providing driver with positive lateral location and support.

### 301.10 WEIGHTS:

Non-structural weights added to meet minimum kart/driver weight requirements must be bolted securely to the kart using bolts of at least 5/16" in diameter. Weights in excess of 7 lbs. must use two or more 5/16" bolts. All bolts must be cotter-keyed or double nutted.

**NOTE:** All bolt-on weights must be white in color for visibility.

### 301.11 DRIVER WEIGHT AND WEIGH-IN:

All drivers are subject to a minimum combined kart/driver weight check prior to events and a mandatory post-race weight check. (See 803.8.)

### 301.12 SUSPENSION COMPONENTS:

Use of suspension components of any type, including springs, shocks, etc., is prohibited.

## 302 WHEELS AND TIRES

### 302.1 TIRES:

Pneumatic, designed for racing application wet and dry types only. Maximum diameter 18.5", and minimum diameter 9.0". Tires must be available to USA general market at least 60 days prior to use in any sanctioned event. Recapped tires are not approved for practice or competition use. Tires must be run as manufactured.

**NOTE:** WKA reserves the right to establish spec tire regulations for all classes. WKA does not condone and discourages the use of chemical tire prep. It reserves the right to implement supplemental rules to control this practice.

### 302.2 WHEELS:

Material optional but must be of proven design capable of maintaining tire bead seal in competition conditions. 5" and 6" rim sizes are the only accepted sizes. No "G-rings" or lateral-support type wheels are approved for competition.

#### 302.2.1 WHEEL DISH / OPENING:

The dish (opening) of the wheels may not be covered. No hubcaps, tape or any other material allowed.

### 302.3 WHEEL WEIGHTS:

Clip-on or double back tape wheel balancing weights are not to exceed one-fourth (1/4)-ounce weight each. Additional security is suggested when utilizing stick-on weights. A lack of security is not grounds for disqualification.

## 303 AXLES AND HUBS

### 303.1 WHEEL HUBS:

All wheel hubs must be constructed of metallic material. Wheel studs must be a minimum of 0.3125" (8mm) in diameter.

### 303.2 WHEEL BEARINGS:

Ground ball or roller-type bearings only. Split race bearings are not acceptable. Wheel bearings must be adjusted so there is no excessive wheel play.

### 303.3 AXLE NUTS:

Front axle nuts must be keyed using cotter keys or ring cotters. Rear axle nuts must be safety wired, cotter-keyed or snap-ringed. Self-clamping wheels may utilize snap rings instead of nuts.

**NOTE:** Any fastener (nut on bolt, etc.) of a component that would enable movement of or adjustment of spindle(s), such as for castor, camber, etc., must be drilled for and utilize either a cotter pin or safety wire.

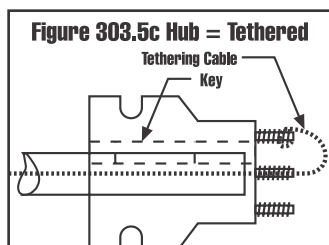
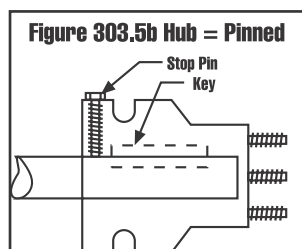
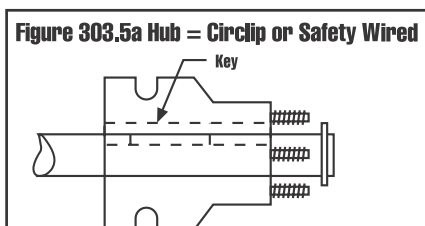
### 303.4 CASTLE NUTS:

The use of castle-type nuts is suggested. Bolts must be keyed in such a manner to prevent any movement of bolt or nut without key removal.

### 303.5 REAR AXLE ASSEMBLY:

Axles may be solid or tubular of one-piece design; minimum diameter is 25mm (25.4 mm = 1.0"). Maximum axle diameter is 50mm. Minimum axle wall thickness is 0.075" (1.9mm). Axles over 1.375" diameter must be of a ferrous material. No carbon fiber or carbon fiber composite axle allowed.

Both driving wheels must be locked to the rear axle with a “live” axle design. Snap rings or similar fasteners are required at each end of rear axle. Snap ring grooves may not be cut in axles anywhere between the wheel hubs. If hub extends beyond end of axle, hub must be pinned or tethered. Axle stiffeners are allowed but must be secured by cotter pin, through-bolt or cir-clip. (See Figure 303.5a, 303.5b, 303.5c)



### 303.6 AXLE WIDTH:

Front spindle axle and rear axle may not protrude beyond outside of rim and tire.

## 304 STEERING AND STEERING SHAFT SPECIFICATIONS

### 304.1 STEERING GENERAL:

Must be of a direct mechanical type. Tiller and vertical shaft steering systems are not allowed. Rack and pinion steering is not allowed. All steering assembly bolts and nuts, including spindle bolts, must be cotter-keyed and/or safety wired. Spring clips and E-clips are allowed with manufactured bolts or studs designed for their use. All bolts will be minimum 14,000 lbs. tensile strength and be minimum 1/4" diameter, and Grade 5 or US Mark 3 rating or better. All rod ends must have universal type swivel joints.

**Note:** All fasteners (nut on bolt, etc.) of any component that would enable movement of or adjustment of spindles, such as for castor, camber, etc. must be drilled for and utilize either a cotter pin or safety wire. Spring clips and E-clips are also allowed with manufactured bolts or studs designed for their use.

### 304.2 STEERING SHAFT

#### 304.2.1 SOLID SHAFT:

Must be minimum 0.625" diameter cold-rolled steel, one piece design. Steering hub must be one piece with keyed or splined attachment. Hub to be secured to the shaft by a minimum 1/2" diameter nut or bolt and must be safety wired. Single thru bolts as used on the larger hollow shaft is not legal. Steering wheel must be secured to the hub by a minimum of three bolts with a minimum 6mm diameter. All hardware in the steering system must be grade 5 hardware or better. This does not apply to the kingpins or steering shaft stubs. No welding of the hub to the shaft or the steering wheel to the hub. Bottom of shaft will have a 5/16" minimum diameter bolt or minimum 1/8" steel roll pin (safety wired). No shaft extensions allowed. No cutting or welding to alter the length of shaft allowed. No quick release steering hubs allowed.

#### 304.2.2 HOLLOW SHAFT:

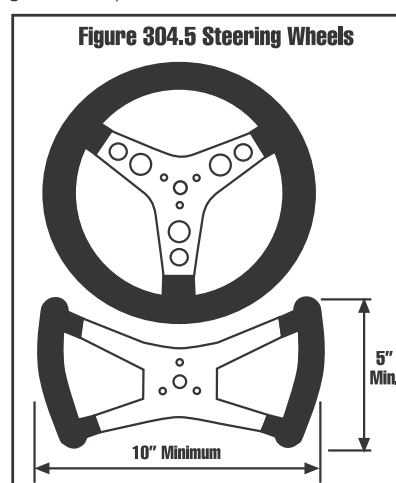
Minimum 0.700" diameter steel tubing, one-piece design, with minimum 0.070" wall thickness, with minimum 5/16" diameter fastener at bottom end. Steering hub (one piece) will be secured through the axis to the steering shaft with minimum 6mm (1/4") bolt through the steering shaft/hub parallel to the axis point. No welding the steering wheel to the hub or the hub to the shaft allowed. No shaft extensions allowed. No quick release steering hubs allowed.

#### 304.2.3 OPTIONAL STEERING SHAFT ADAPTER:

An optional adapter may be inserted between the steering hub and steering wheel to change the angle of the steering wheel or to move the steering wheel closer to the driver. Maximum length 2" measured on the longest side. Minimum diameter of adapter must be the diameter of the steering hub. Adapter must be designed such that all fasteners may be visually inspected and all mounting bolts must be a minimum diameter of 1/4" and must be cotter-keyed or safety wired. Spring clips and E-clips are allowed with manufactured bolts or studs designed for their use.

### 304.3 STEERING WHEEL:

Steering wheels may be completely circular, minimum 10" diameter and minimum 3 spoke design; or may be butterfly-type with 10" minimum diameter, 4 spoke design with minimum 5" grip length on opposing sides. (See Figure 304.5.)



## 305 BRAKES

### 305.1 BRAKES GENERAL:

All karts must have brakes working to stop both rear wheels equally and adequately. All linkage and master cylinder and caliper mounting bolts must be safety wired or cotter pinned to prevent the nut from moving. Spring clips and E-clips are allowed with manufactured bolts or studs designed for their use. Brake pedal must be secured to the kart with safety wire, cotter keys, spring clips or E-clips. The linkage from the brake pedal to the master cylinder(s) or bias adjuster must be a steel rod of 6mm (0.236") or larger in diameter. The rod must have either (1) a clevis or swivel fitting (Heim joint) at each end and jam nuts in tension with fittings or (2) other OEM brake rod fittings. Only CIK approved karts may use a cable in place of the rod. The cable must be at least 2.5mm in diameter, supplied by the kart manufacturer, and marked with the brand or part number. The brake rod should be visible or preferably flush with the inside of the clevis. A washer should back up the cotter pin in the brake clevis pin. A bolt, castellated nut, and cotter key may be used in place of the clevis pin. Scrub or band-type brakes are NOT ALLOWED. The axle key in the brake hub must have some kind of positive retention feature.

#### 305.1.1 BRAKE LINKAGE BACK UP:

There must be a second link between the brake pedal and the master cylinder that will function in the event that the primary linkage fails. The secondary linkage must not interfere with the operation of the primary linkage or bias bar if so equipped. The secondary linkage may be a second rod or a cable. If a rod is used, it must conform to the specifications of the primary rod. If a cable is used, it must be at least 1/16" in diameter and clamped with a two (2) screw flat plate (CIK style) clamp, a swag style crimp fitting or a similar, equally secure clamp.



### 305.2 DUAL BRAKE SYSTEMS:

Unless otherwise noted, dual braking systems are required in all WKA laydown classes. Dual brake systems are composed of two redundant and independent sets of components including master cylinders and calipers. The system may be of two or four wheel design. The master cylinders may not be hydraulically connected. A two wheel design applies braking force to the rear wheels only. Dual rear brakes may utilize one or two disks on the rear axle. Dual rear brakes may also use one caliper as long as the calipers are connected to separate master cylinders and the caliper sides are not hydraulically connected to each other. A four wheel design applies braking force to both rear and front wheels. In either case the system must be designed such that, if one system fails, the other system must remain fully operational. If a bias control is used, it must allow proper operation of the remaining system should either system fail. Dual system four-wheel brakes are required for all laydown karts over 100cc.

### 305.3 BRAKE MOUNTING:

All master cylinder and caliper mounting bolts and master cylinder roll pins are to be cotter-pinned or safety wired in such a manner that they cannot be loosened without removal of the cotter pins or safety wire. Spring clips and E-clips are allowed with manufactured bolts or studs designed for their use. Steel locking nuts or drilled bolts with castellated nuts, properly pinned, are the only methods for fastening disks or drums to hubs. Use of Nylock style nuts to attach brake disk or drum to its hub is PROHIBITED.

### 305.4 PAD MOUNTING:

The inside pads on front wheel brakes must be safety wired. Since most competition karts have brake pads secured by countersunk bolts on the anvil side of front wheel brakes, and the pads on rear wheel brakes, safety wiring is not feasible. Each karter should monitor proper tightness, and use appropriate thread locking substance to prevent loss of this hardware.

### 305.5 CONNECTIONS AND ROUTING:

Hydraulic brake connections must be tight and free of any visible leaks. All brake lines should be safely routed to prevent any possibility of being rubbed through or pulled loose while kart is in motion. Brake lines must not protrude beyond the bottom of chassis and be on topside of floor pan.

### 305.6 BRAKE COMPONENTS:

Traditional type brake components only. No carbon fiber components, etc. allowed.

## 306 DRIVE-LINE COMPONENTS

### 306.1 CLUTCHES:

Clutches are mandatory in all classes except where otherwise specified.

### 306.2 WET-TYPE CLUTCH:

The use of a wet-type clutch is allowed only when the unit is sealed to prevent fluid leakage.

### 306.3 CHAIN GUARDS AND BELT GUARDS:

All chain, belt or gear-driven karts must be equipped with a chain, belt or gear guard designed to retain a broken chain, belt or gear. Karts with outboard drive systems must have an enclosed guard or third bearing support. On an outboard drive kart, fully enclosed bodywork over the drive pulleys and belt qualifies as a cover. However, a minimum opening of 8" in diameter must remain over the wheel itself to allow for inspection of the wheel bolts.

### 306.4 EXPOSED SPROCKETS:

Karts starting a race or practice, which are equipped with an axle clutch or sprocket hub not being used, MUST NOT have an exposed sprocket mounted in any manner. Sprocket must be removed.

### 306.5 CHAIN OILERS:

Maximum 8-ounce capacity. Reservoir must be securely fastened to structure of kart.

### 306.6 TRANSMISSIONS AND TORQUE CONVERTERS:

No transmission, gearbox or other device which permits a change of gear/sprocket ratios while the vehicle is in motion is allowed unless otherwise noted for specific classes. No torque converters allowed.

### 306.7 CHAIN AND BELT SIZES:

219 and 35 chain or 8 mm and 5mm belt are the only acceptable sizes allowed in all classes except gearbox, which is 428 or heavier pitch when chain is used.

## 307 FUEL SYSTEM

### 307.1 FUEL TANK:

Fuel tank must be constructed of puncture-resistant material and have a secure, leak-proof fill closure. Fuel tank must be securely fastened to primary structure/frame/floor pan of kart. Primary structure of Road Racing "laydown" karts is considered to include the customary tank rods, and if nerf bars are used, gas tanks shall be securely mounted inboard of the nerf bars. No fuel tank allowed inside main frame rails, i.e. under steering column.

### 307.2 FUEL LINE:

Fuel lines must be secured at all connecting points with approved fasteners such as safety wire or cable ties. Amount of fuel line from tank to carburetor must be only of sufficient length to safely conduct fuel between the two components. Excessive fuel line length will not be allowed.

### 307.3 FUEL SYSTEMS:

No pressurized fuel systems are allowed. No axle driven or electric fuel pumps allowed.

### 307.4 RESERVOIRS:

Any fuel tank or chain oiler that is the highest point of the kart must be protected by a roll bar not to exceed 26" in height above ground plane. Roll bar must be of suitable strength to prevent the tank and or cap from making contact with the ground in the event of an upset.

### 307.5 NON-METAL FUEL TANKS:

If other than metal side tanks used, double-row nerf bars are mandatory. Nerf bars must conform to requirements stated in Section 309.

## 308 BODY COMPONENTS

### 308.1 APPEARANCE:

All bodywork will be neat in appearance and securely mounted. Bodywork that appears loose and in danger of falling off may subject the entrant to black flag and/or disqualification during the running of an event. Mounting method open but must be secure and of good workmanship.

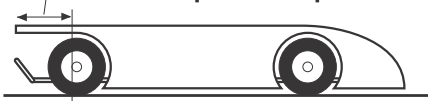
### 308.2 BODYWORK:

All 100cc classes will have the same bodywork rules. No tails allowed except on karts running Open engines in the Formula 100 class.

**NOTE:** Except as noted above, tail sections are approved for all other classes. In these classes, bodywork extending beyond the rear tires is allowed but may not extend more than 25" behind the rear of axle. Helmet fairing may come no further forward than the rear of the headrest assembly. (See Figure 308.2b)

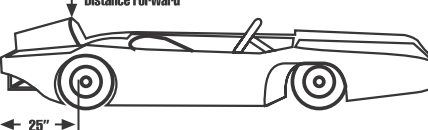
**Figure 308.2a Lay-Down - All 100cc classes  
Except Formula 100 (308.2b)**

Not to extend past rear bumper



**Figure 308.2b Lay-Down - Other Classes**

Maximum Distance Forward



#### 308.2.1 SIDE PANELS / PODS:

In all classes, Side Panels/Pods refers to the bodywork that extends rearward of the rear edge of the front tire. If single-plane (vertical) panels are used, they must have a rolled or radiused edge on the top and the front and rear wheel openings. All side panels are allowed an inward radiused lower lip.

### 308.2.2 SIDE PANEL / POD DIMENSIONS:

90° side panels begin at the back edge of the front tire and may extend to the back edge of the rear bumper with a continuous radius from the front to the rear of the panel. They may connect to the nose cone. Their maximum height is 14" from the ground. Side panels cannot have more than two flat planes, one vertical and one horizontal. They may have an additional lip up or down to reinforce the inside edge of the top panel. If the lip is mounted under the horizontal plane, it cannot exceed 1". Exception: Karts with liquid cooled engines may have inner body panels from the side panel to the belly pan to cover coolant lines.

## 308.3 BODYWORK SPECIFICATIONS:

### 308.3.1 WIDTH DIMENSIONS:

Maximum width controlled by widest set of wheels with no bodywork extending beyond the widest set of wheels and tires with the exception of air filters. This includes bodywork, nerf bars, carburetors, etc. If full bodywork extends forward and rearward of the tires by use of a panel, pod or tails that will protect the tire from contact from another object from the rear, maximum width of kart may be the bodywork. If 90° attached panels are used, rear tires may be inside bodywork 1" maximum per side without exceeding the minimum kart width of 30".

### 308.3.2 NERF BAR REQUIREMENTS:

Bodywork must accommodate applicable bumper/nerf bar requirements.

### 308.3.3 COCKPIT OPENING:

The kart must have an open cockpit from the front of the nose cone to the back of the headrest. The nose cone must have an opening above the driver's legs with a 6" minimum width and may cover foot area up to 3" rearward of both pedals in relaxed position. The nose cone must not interfere with driver's ability to operate pedals. From the back of the nose to the steering wheel there must be a minimum 12" opening in the bodywork. The cockpit opening shall be no less than 20" wide with a 10" maximum side panel width from the steering wheel to the front of the headrest (where back of helmet rests). Karts over 40" wide at the steering wheel are excluded from the 10" maximum side panel measurement. The 20" cockpit opening excludes the motor. There must be 6" clearance between the steering wheel and side panels with the wheels in a straight-ahead position. If used, the connector strip behind the headrest may not be made of metal.

### 308.3.4 BODYWORK CONSTRUCTION:

Bodywork will be constructed of high-strength plastics, fiberglass or aluminum only. Sharp corners or edges are not allowed. Material utilized for side pods must be shatterproof.

### 308.3.5 BODY COMPONENTS:

Body components may not be adjustable while kart is in motion.

### 308.3.6 FAIRINGS:

Steering fairings are allowed, providing they meet the following criteria: maximum width 14.0", maximum length 14.0" (these are chord measurements). Minimum clearance between the fairing and any tank or bodywork, is 6.0" and a minimum of 1 15/16" (50mm) from any part of the steering wheel (steering wheel in any position). The fairing must be mounted with easily bendable tabs or struts and all edges of the bubble fairing and mounting tabs or struts must be rounded so as not to present a hazard to the driver. NO steering fairing allowed in the following classes: Junior Enduro Lite and Heavy.

### 308.3.7 BODYWORK CLEARANCE:

All bodywork with the exception of the fairing must be a minimum of 6.0" from the steering wheel when the front wheels are in a straight-ahead position.

**NOTE:** This rule is to ensure that there is a minimum of 6.0" between any bodywork and/or tank and the steering wheel, allowing room for driver entry/ egress.

### 308.3.8 TRANSPARENT BODYWORK:

No transparent bodywork allowed behind the rear axle. Bodywork extending beyond the rear axle must be painted or marked to make it readily visible to karts approaching from the rear.

### 308.3.9 WHEEL OPENING:

Vertical panel (sides) of wheels and tires may not be enclosed by bodywork. Wheel opening must be greater than tire size used.

### 308.3.10 FLOOR PAN/BELLY PAN:

A full floor pan/belly pan is allowed in all classes, providing it is within the bodywork on the front and sides of the kart and does not extend past the frame at the rear. No part of the floor pan/belly pan can be any higher than the center of rear axle.

### 308.3.11 SKIRTING:

Any add-on skirting devices must be flexible, non-metallic materials.

### 308.3.12 FENDER WELLS:

Fender wells are legal in all classes. However, all brake and steering components must be visible at safety inspection.

## 308.4 NUMBERS AND NUMBER PANELS:

Three numbers are to be displayed on the kart - one on the front of the vehicle, angled right or left to be seen from scoring and one on "each side in a vertical plane between the front and rear wheels. Number panels must be of adequate size to accept assigned, disposable numbers. Whether paper-type numbers are utilized or numbers are painted or decaled on bodywork, they must be in contrasting colors and easily readable by the scoring and race officiating personnel.

## 309 BUMPERS AND NERF BARS

### 309.1 FRONT BUMPERS:

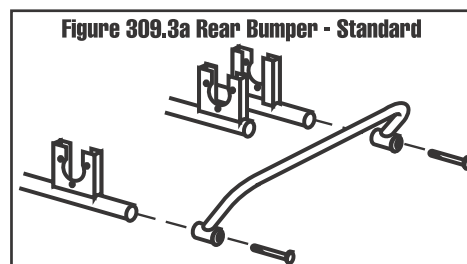
Front bumpers incorporated into frame for the purpose of protecting the driver's feet are mandatory. Bumpers must be constructed of steel material with a minimum 3/4" outside diameter with minimum tubing wall thickness of 0.065". Roller-type bumpers are not allowed. No lubricant may be applied to bumpers or nerf bars.

### 309.2 BUMPER AND PEDALS:

Bumpers must not constitute a hazard to other competitors. Front bumpers that incorporate pedal mounting points must be either welded to the frame or through-bolted or dowel pinned with safety wire/cotter pins.

### 309.3 REAR BUMPER:

Rear bumper must be constructed of 3/4" minimum diameter steel tubing with minimum tubing wall thickness of 0.065". (See Figure 309.3a.) Additional bars on rear bumper are allowed to a maximum height of 26". All bumpers must comply with the following measurements as raced.



#### 309.3.1 MAXIMUM HEIGHT:

7.50"

#### 309.3.2 MINIMUM HEIGHT:

At least height of bottom of rear axle.

#### 309.3.3 MAXIMUM WIDTH:

No wider than lateral measurement from outside rear tires.

#### 309.3.4 MINIMUM WIDTH:

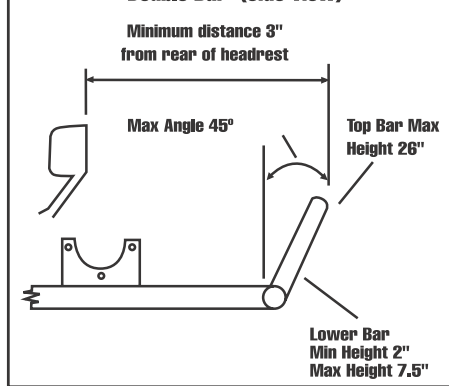
No less than lateral distance between frame rails.

### 309.3.5 DOUBLE-BAR REAR BUMPER:

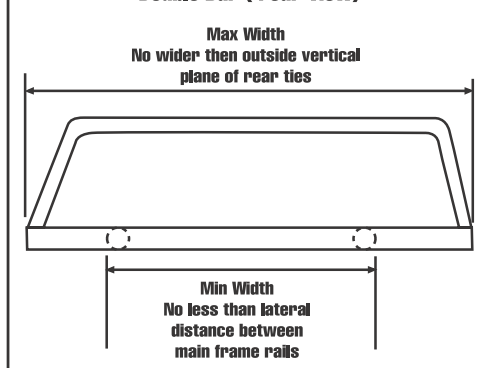
If an optional double-bar design rear bumper is used, the following (as raced) measurements must be met. The same material specifications described in 309.3 for single-bar bumpers must also be met. (See "Figures 309.3b & 309.3c.)



**Figure 309.3b - Rear Bumper Double Bar (side view)**



**Figure 309.3c - Rear Bumper Double Bar (rear view)**



#### **309.3.5.1 TOP BAR MAXIMUM HEIGHT:**

Top bumper bar maximum height is 26.0".

#### **309.3.5.2 MIDDLE BAR HEIGHT:**

A middle bar must be a maximum of 7.5" above the ground plane and a minimum of at least 2" above the ground plane but no lower than the main frame rails, whichever is lower.

#### **309.3.5.3 BOTTOM BAR MINIMUM HEIGHT:**

Bottom bar must be at least height of bottom of rear axle.

#### **309.3.5.4 MAXIMUM WIDTH:**

Bumper must be no wider than lateral measurement from outside rear tires.

#### **309.3.5.5 MINIMUM WIDTH:**

Bumper must be no less than lateral distance between frame rails.

#### **309.3.5.6 ANGLE:**

The top crossbar or tube may be above or to the rear of the lower crossbar or tube but angled no more than 45° (degrees) from the vertical.

#### **309.4 NERF BARS:**

If full-side metal fuel tanks not utilized, remaining area between wheels/tires defined as a plane projected by outside of wheels must be protected by nerf bars that may not extend laterally beyond plane of widest set of wheels. Double-high nerf bars will be minimum 4.0" apart, constructed of steel material of minimum 3/4" diameter, minimum tubing wall thickness of 0.065". Adequately braced between upper and lower bars, Nerf bars will fasten securely to a primary component of kart structure with a 1/4" minimum bolt.

## **310 MISCELLANEOUS**

#### **310.1 REAR VIEW MIRRORS:**

Rear view mirrors are allowed provided they are mounted securely and safely to the kart and do not present a hazard to other vehicles. They are not to be used as an aggressive device to facilitate blocking.

#### **310.2 ELECTRONICS AND REMOTE ADJUSTERS:**

Radios, timing, data-acquisition equipment and remote adjusting units, where allowed, must be securely mounted in a manner that not will not restrain or impede operation of, or ingress/egress of driver in vehicle.

#### **310.2.1 COMMUNICATIONS:**

Drivers may utilize 2-way radio communications in all classes in the National Road Racing Series to facilitate communication between the driver and pit crew. They are not to be used as an aggressive device to facilitate blocking or as a way for drivers to communicate race strategy among themselves.

#### **310.3 DATA ACQUISITION SYSTEMS:**

On-board data acquisition systems and/or computer systems are allowed to retrieve the following information only: on-board RPM, water temperature, cylinder temperature, speed, exhaust temperature, lap timing (lateral G sensing), and computer scoring systems. Sensors and wiring for other inputs must be removed from the kart during practice and racing. GPS based systems are allowed. Telemetry is not allowed; data can only be downloaded when kart is off of the racing surface and stationary. One beacon only from each manufacture allowed on the race circuit on race days to be located in an area designated by a race official. All other beacons found on the race circuit on race days will be confiscated and held by WKA to be returned through a request to the WKA Board of Trustees.

#### **310.4 IC/E KART ELIGIBILITY:**

Any IC/E legal kart (i.e. Anderson/Zip/Swift/Stratos) is eligible for competition in the Unlimited class with the appropriate engine. They are exempt from the rules covering seat height and position, fuel tank location, and rack and pinion steering. They must meet all CIK IC/E bodywork rules. They must meet all the other WKA competition rules for these classes.

#### **310.5 SEATS:**

When the bottom of a laydown seat has been removed, a second floor pan of at least 0.050" aluminum must be mounted on top of the frame tabs.

#### **310.6 WATER COOLED ENGINES:**

All water cooled engines must have a catch container for radiator overflow. Coolant may not contain any ethylene glycol based material. Surfactants such as Water Wetter® may be used. Inner body panels from side panel to belly pan are allowed to cover coolant lines.



## 312 NATIONAL ROAD RACING CLASSES

ALL CLASSES NOTED AS FINAL ONE + FINAL TWO RUN BOTH DAYS FOR A SINGLE YEAR END CHAMPIONSHIP  
ALL AGES ARE ATTAINED AGE  
ALL LAYDOWN CLASSES MUST USE A DUAL BRAKING SYSTEM, UNLESS OTHERWISE NOTED.

### 312.1 JUNIOR ENDURO (FINAL 1 & FINAL 2)

DRIVER REQ: Age 12 through 16 only, Road Race Class 3 License.  
ENGINE(S): Yamaha only. Only heads with OEM casting "Yamaha" and cylinders with Y3 or Y4 and 787 are legal.  
EXHAUST: RLV SSX box muffler or RLV SBX muffler and 26S Header with tube protruding through flange intact, 11.0" to 12.0" of flex from piston face to end of flex. 7/8" restrictor. (See Section 554.2 and 554.3)  
FUEL: Spec Fuel.  
MINIMUM WEIGHT: 340 lbs

### 312.2 YAMAHA SPORTSMAN MEDIUM (FINAL 1 & FINAL 2)

DRIVER REQ: Age 15 and older. Road Race Class 3 License.  
Yamaha KT100S (Only heads with OEM casting "Yamaha" and cylinders with Y3 or Y4 and 787), ARC Comer and PRD RK 100.  
EXHAUST: (1) RLV SBX muffler and RLV 26S Header with tube protruding through flange intact, 11.0" to 12.0" of flex from piston face to end of flex. (See Section 554.2)  
MINIMUM WEIGHT: 385 lbs  
FUEL: Spec Fuel.

### 312.3 YAMAHA SPORTSMAN HEAVY (FINAL 1 & FINAL 2)

DRIVER REQ: Age 15 and older. Road Race Class 3 License.  
Yamaha KT100S (Only heads with OEM casting "Yamaha" and cylinders with Y3 or Y4 and 787), ARC Comer and PRD RK 100.  
EXHAUST: (1) RLV SBX muffler and RLV 26S Header with tube protruding through flange intact, 11.0" to 12.0" of flex from piston face to end of flex. (See Section 554.2)  
MINIMUM WEIGHT: 410 lbs  
FUEL: Spec Fuel.

### 312.5 YAMAHA SENIOR (FINAL 1 & FINAL 2)

DRIVER REQ: Age 16 and older. Road Race Class 3 License  
ENGINES: Yamaha (Only heads with OEM casting "Yamaha" are legal.)  
EXHAUST: Any fixed WKA approved pipe  
FUEL: Spec Fuel  
MINIMUM WEIGHT: 400 lbs.

### 312.6 100CC PISTON PORT (FINAL 1 & FINAL 2)

DRIVER REQ: Age 16 & older, RR Class 3 license.  
ENGINE(S): ENGINE(S): Yamaha KT100 (only Yamaha heads with OEM casting "Yamaha" are legal), ARC Comer P-50, ARC Comer P-51, PRD-RK-100, Parilla PV-92, Komet K-71 per Section 605, TKM BT82, PRC PP-100, DAP T-50, HPV 100, Komet Piston Valve.  
EXHAUST: Any fixed WKA approved pipe.  
FUEL: Spec Fuel.  
MINIMUM WEIGHTS---Yamaha-385 lbs---Piston Port-410 lbs---Comer P51-425 lbs.  
OTHER: Comer P51 minimum timing 0.090" BTDC, minimum squish 0.048" -- 12cc minimum combustion chamber volume.

### 312.7 100CC CONTROLLED (FINAL 1 & FINAL 2)

DRIVER REQ: Age 16 and older. Road Race Class 2 License.  
ENGINES: Yamaha, Piston Port, 100cc Controlled, ICA Reed  
EXHAUST: Any WKA approved pipe. All engines - 1.75" header.  
FUEL: Spec Fuel.  
MINIMUM WEIGHTS: Yamaha and Piston Port engines 360 lbs. Controlled or ICA engines 390 lbs with fixed pipe -- 410 lbs. with slippery pipe.  
OTHER: (1) ICA Reed (See Section 607, 608 and Figures 608.2, 608.3a and b for approved engines and specifications). (2) WKA approved 1 3/4" header and pipe only; head volume 9cc's and Tillotson HL360A carburetor. (See Figure 554.6 for IR2 Specs. See Section 607.3 for carb specs.)

### 312.7.5 100cc LAYDOWN AIR COOLED TAG CLASS

DRIVER REQ: Age 16 and Older, Road Race Class 3 License  
WEIGHT: 400 lbs.  
ENGINES: IAME KA 100 and Vortex VLR  
Engine Tech per the WKA rulebook for Man Cup class  
CARB: As specified by WKA Rulebook for Man Cup class  
Starter system components/battery may be removed, or used competitors choice  
EXHAUST: As supplied by manufacturer per WKA rulebook for Man Cup  
CLUTCH: May run axle clutch  
FUEL: Spec Fuel

### ++312.8 FORMULA 100 (FINAL 1 & FINAL 2)

DRIVER REQ: Age 16 and older. Road Race Class 2 License.  
ENGINE, WEIGHT:  
100cc Open - Open fuel - 410 lbs.  
100cc Stock Appearing Piston Port - Open Fuel - 310 lbs.  
100cc Stock Appearing Reed or Rotary Valve - Spec Fuel - 390 lbs.  
100cc Controlled Stock 2000 - Spec Fuel - 370 lbs.  
135cc Controlled Stock - Spec Fuel - 370 lbs. - Any WKA approved pipe  
FUEL: Open  
EXHAUST: All engines can run a WKA approved slippery or fixed pipe.  
Exception: All headers must be 1 3/4" except Open engines.  
OTHER: COMER MIK351L, CRG S10-T1, DAP T85, ITAL ML21, JAKO 2LA, PARILLA REED JET, PCR TSL95, TSL98 and ROTAX R-100 VM-E engines must use the Tillotson HL360A carburetor.  
9cc minimum combustion chamber for Controlled engines.

### 312.9 FORMULA 125

DRIVER REQ: Age 18 and older. Road Race Class 1 License.  
ENGINES: 125 Gearbox (laydown), B Limited(150cc Open), or 100cc Open.  
EXHAUST: 125 Gearbox - no adjustable pipes. B Limited and Open - any WKA approved pipe.  
FUEL: Open  
MINIMUM WEIGHTS: B Limited 380 lbs -- 125 Gearbox: 420 lbs -- 100cc Open: 375 lbs.

### ++312.10 UNLIMITED FINAL 1 & FINAL 2:

DRIVER REQ: Age 18 and older. Road Race Class 1 License.  
ENGINES(S), Weight, Carburetor.

Gearbox Engines	Weight
One 125cc gearbox single cylinder	420 lbs
One 250cc gearbox single cylinder	460 lbs
One 250cc gearbox twin cylinder	490 lbs
One 450cc gearbox single cylinder 4-cycle	460 lbs
Non-Gearbox Engines	Weight
One 150cc single cylinder	380 lbs
One 250cc single	460 lbs
cylinder Two 100cc single cylinder	465 lbs
Two 150cc single cylinder	490 lbs

#### Notes:

- (1) All engines are 2-cycle except 450 cc gearbox.
- (2) Exhaust System: The exhaust system must be a WKA approved design and comply with WKA and local ordinance exhaust noise suppression requirements. Adjustable pipes are legal on all non-gearbox engines.
- (3) Technical inspection: Post race technical inspection will include kart weight, engine displacement, fuel, and exhaust system. Other tech items for specific engines are specified below.
- OTHER: (1) Additional restrictions may be placed on these engines at any time if it is deemed necessary to maintain parity within the class.
- (2) Unlimited races will run for 30 minutes. (3) . All engines are 2-cycle except 450cc gearbox.(4) The Exhaust System: The exhaust system must be a design that will comply with WKA and local noise suppression requirements. (5)Technical Inspection: Post race technical inspection will include kart, weight, engine displacement, and exhaust systems.
- (6) Slipper clutch, axle clutch, and sprag units are allowed.

### ++312.11 B-STOCK

DRIVER REQ: Age 18 and older. Road Race Class 1 License.  
ENGINES: Yamaha; Piston Port; 100cc Controlled. All engines may be stock appearing except ICA Reed (i.e. Reed Jet, PCR, etc.) which must be controlled stock specifications.  
EXHAUST: Any Fixed WKA approved pipe (No adjustable pipes allowed)  
FUEL: Open.  
MINIMUM WEIGHTS: Yamaha & Piston Port engines: 395 lbs.; 100cc Controlled: 465 lbs.  
OTHER: Karts must be dual-engine with engines of like category.

300



### 312.12 X30 (FINAL 1 & 2)

DRIVER REQ: age 15 + older. Road race class 2 license.  
 ENGINE: IAME X30 - rules per section 609 -- exceptions: air-box, starter, battery, air-box, chain guard and starter components may be removed.  
 Axle clutch and belts drive allowed.  
 FUEL: spec fuel  
 MINIMUM WEIGHT: 410 lbs  
 EXHAUST: RLV X30-1 minimum length 10" see 609.9.2

## 313 SUPERKART

### 313.1 DIVISION 1 SUPERKART

DRIVER REQ: Age 18+, Road Race Class 1 License  
 ENGINE(S): (1) Twin Cylinder, 2-cycle, maximum 250cc, weight 490-lbs.  
 (2) Single Cylinder 250cc, (GasGas, Viper SK, DEA, THR), weight 460-lbs.  
 Fixations of the carburetor(s), ignition coil, exhaust and engine may be modified. No limit on carburetor size, electronic/manual powerjets, or EFI.  
 DATA ACQUISITION: Open  
 FUEL: Open  
 TIRES: Open, 6" wheels  
 CHASSIS: Wheelbase: 106-127 cm. Track: at least 2/3 of the wheel base used. Overall length: 210 cm maximum, without rear bumper, front fairing and rear fairing. Overall width: 140 cm maximum. Height: 65 cm maximum from the ground, without the seat. The chassis must respect at all times the dimensions given. No part may protrude beyond the quadrangle formed by the front. Minimum Steering Wheel Height 19" from ground.  
 BODYWORK: Bodywork must be constructed of fiberglass, carbon fiber, high strength plastic or other advanced non-metal components, no transparent bodywork. It must consist of a minimum of 2 side pods, a rear wing, a front nose cone and a steering fairing. All rounded edges or corners must be a minimum radius of 5mm. Must be in general conformance with current industry standards, clearance from steering wheel to any bodywork is 2" minimum. Nose Cone width is 38" minimum, 50" maximum. Height from ground is 10" minimum. Any tuning veins/winglets, must be within the maximum requirements. Side pod height is 10" minimum, width is 8" minimum and the length 24" minimum. Rear wing is 36" minimum width, 50" maximum width, height/thickest of wing to be 1" minimum, with multiple wings "must total" at least 1". Minimum wing area of 250 square inches. Wing end plate must have all corners radiused. Steering wheel- top of steering wheel must be at least 19" above ground level. Race number to be displayed on at least 3 sides, (front, right side and left side) Belly pans can be full width and not pass the rear bumper, construction is open. Wheels to be 6", front wheels cannot be completely covered. Rear wheels can be covered on the top but not the sides.

### 313.2 DIVISION 2 SUPERKART

DRIVER REQ: Age 18+, Road Race Class 1 License  
 ENGINES: Single Cylinder, maximum 250cc MOTO 4-cycle  
 Fixations of the carburetor(s), ignition coil, exhaust and engine may be modified. No limit on carburetor size, electronic/manual powerjets, or EFI.  
 DATA ACQUISITION: Open  
 FUEL: Open  
 TIRES: Open, 6" wheels  
 CHASSIS: Wheelbase: 106-127 cm. Track: at least 2/3 of the wheel base used. Overall length: 210 cm maximum, without rear bumper, front fairing and rear fairing. Overall width: 140 cm maximum. Height: 65 cm maximum from the ground, without the seat. The chassis must respect at all times the dimensions given. No part may protrude beyond the quadrangle formed by the front. Minimum Steering Wheel Height 19" from ground.  
 BODYWORK: Bodywork must be constructed of fiberglass, carbon fiber, high strength plastic or other advanced non-metal components, no transparent bodywork. It must consist of a minimum of 2 side pods, a rear wing, a front nose cone and a steering fairing. All rounded edges or corners must be a minimum radius of 5mm. Must be in general conformance with current industry standards, clearance from steering wheel to any bodywork is 2" minimum. Nose Cone width is 38" minimum, 50" maximum. Height from ground is 10" minimum. Any tuning veins/winglets, must be within the maximum requirements. Side pod height is 10" minimum, width is 8" minimum and the length 24" minimum. Rear wing is 36" minimum width, 50" maximum width, height/thickest of wing to be 1" minimum, with multiple wings "must total" at least 1". Minimum wing area of 250 square inches. Wing end plate must have all corners radiused. Steering wheel- top of steering wheel must be at least 19" above ground level. Race number to be displayed on at least 3 sides, (front, right side and left side) Belly pans can be full width and not pass the rear bumper, construction is open. Wheels to be 6", front wheels cannot be completely covered. Rear wheels can be covered on the top but not the sides.



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# 2023 TECHNICAL MANUAL

## Road Racing Sprint Regulations (2-Cycle & 4-Cycle)

# 350

350

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## 350 NATIONAL ROAD RACING REGULATIONS (SPRINT ROAD RACING)

350-362 Refers to Sprint Road Racing ONLY

**IMPORTANT:** Sprint-style karts are the **ONLY** eligible types for competition in all Sprint classes at WKA National and Divisional Road Racing Series events.

See Section 363 for Road Racing Series overall special rules.

## 351 FRAME AND OVERALL DIMENSIONS

### 351.1 FRAME:

Of proven safe design, main frame members shall be constructed of minimum 1.0" diameter, 0.083" wall thickness, cold rolled, electric weld (ERW) steel tubing or other material of at least equal strength. Main frame rail members may be no higher than a line projected horizontally between the front and rear wheel hubs. Oval tube frames are subject to material approval by WKA. Approved oval tube frames are only eligible for competition in the 125 Sprint classes.

### 351.2 DRIVER POSITION:

When normally positioned in the kart for competition, the entirety of the driver shall be within the specified width and length dimensions of the kart.

### 351.3 WHEELBASE:

Maximum 43.0", minimum 39 3/4". Wheelbase measurement is to be taken on a line beginning at a point perpendicular (90 degrees) to the rear axle centerline forward to the point on the horizontal spindle shaft (front axle) centerline on which the hub rides nearest to the kingpin bolt. Both sides must meet the wheelbase specification for the class.

### 351.4 MINIMUM TREAD WIDTH:

28.0" as measured from outside of one tire to inside of opposite tire laterally. (See Figure 351)

### 351.5 OVERALL MAXIMUM WIDTH:

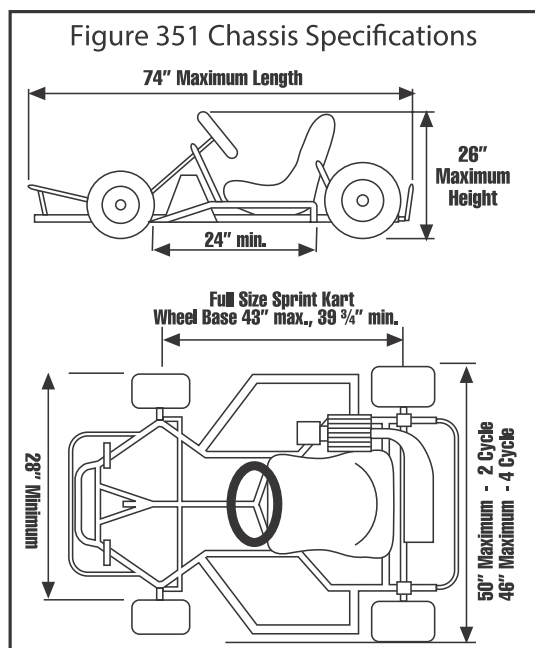
50.0" for all classes except 46.0" for all 4-cycle classes. Maximum Width includes side nerf bars, panels / pods. 125cc Sit-up Shifter kart maximum width 55 1/8" (See Figure 351.)

### 351.6 OVERALL MAXIMUM LENGTH:

76.0" for karts with WKA bodywork defined in Section 358. 80" for karts with CIK bodywork. Overall length includes nose cones. (See Figure 351.)

### 351.7 HEIGHT:

Maximum 26.0" from ground plane. (See Figure 351.)



### 351.8 FLOOR PAN/BELLY PAN:

A floor pan/belly pan is allowed in all NRRS sprint classes. In those classes requiring CIK style bodywork, the floor pan/belly pan must be within the main frame rails, side to side and front to back and no higher than the center of the rear axle. (See Figure 208.) In the other sprint classes, the floor pan/belly pan must be within the bodywork on the front and sides of the kart and cannot extend past the frame at the rear.

### 351.10 WEIGHTS:

Non-structural weights added to meet minimum kart/driver weight requirements must be bolted securely to the kart using bolts of at least 5/16" in diameter. Weights in excess of 7 lbs. must use two or more 5/16" bolts. All bolts must be cotter-keyed or double nutted.

**NOTE:** All bolt-on weights must be white in color for visibility.

### 351.11 DRIVER WEIGHT AND WEIGH-IN:

All drivers are subject to a minimum combined kart/driver weight check prior to events and a mandatory post-race weight check. In some classes, karts are subject to a maximum post-race kart weight as specified in class structure. (See Section 803.8.)

### 351.12 SUSPENSION COMPONENTS:

Use of suspension components of any type, including springs, shocks, etc., is prohibited.

## 352 WHEELS AND TIRES

### 352.1 TIRES:

Pneumatic, designed for racing application wet and dry types only. Maximum diameter 12.5", and minimum diameter 9.0". Tires must be available to USA general market at least 60 days prior to use in any sanctioned event. Recapped tires are not approved for practice or competition use. Tires must be run as manufactured.

**NOTE:** WKA reserves the right to establish spec tire regulations for all classes. WKA does not condone and discourages the use of chemical tire prep. It reserves the right to implement supplemental rules to control this practice.

#### 352.1.1

Tires must be run as produced by the manufacture -- no additional grooving or alterations allowed.

### 352.2 WHEELS:

Material optional but must be of proven design capable of maintaining tire bead seal under competition conditions. 5" and 6" rim sizes are the only accepted sizes. No "G-rings" or lateral-support wheels are approved.

#### 352.2.1 WHEEL DISH/OPENING:

The dish (opening) of the wheels may not be covered. No hubcaps, tape or any other material allowed.

### 352.3 WHEEL WEIGHTS:

Clip-on or double back tape wheel balancing weights are not to exceed one-fourth (1/4) ounce weight each. Additional security is suggested when utilizing stick-on weights. A lack of security is not grounds for disqualification.

## 353 AXLES AND HUBS

### 353.1 WHEEL HUBS:

All wheel hubs must be constructed of metallic material. Wheel studs must be a minimum of 0.3125" (8mm) in diameter.

### 353.2 WHEEL BEARINGS:

Ground ball or roller-type bearings only. Split race bearings are not acceptable. Wheel bearings must be adjusted so there is no excessive wheel play.

### 353.3 AXLE NUTS:

Front axle nuts must be keyed to the axle using cotter key or ring cotter. Rear axle nuts must be safety wired, cotter-keyed or snap-ringed. Self-clamping wheels may utilize snap rings instead of nuts.

**NOTE:** Any fastener (nut on bolt, etc.) of a component that would enable movement of or adjustment of spindle(s), such as for castor, camber, etc., must be drilled for and utilize either a cotter pin or safety wire. Spring clips and E-clips are allowed with manufactured bolts or studs designed for their use.

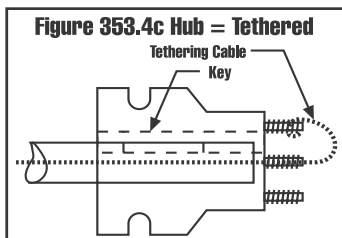
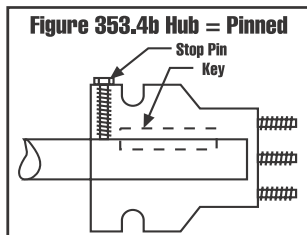
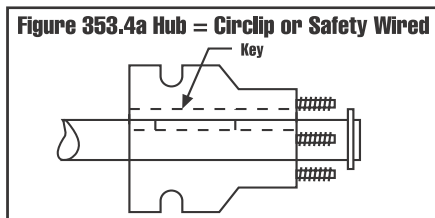
### 353.4 CASTLE NUTS:

The use of castle-type nuts is suggested. Bolts must be keyed in such a manner to prevent any movement of bolt or nut without key removal.

### 353.5 REAR AXLE ASSEMBLY:

Axles may be solid or tubular of one-piece design; minimum diameter is 25 mm (25.4 mm = 1.0"). Maximum axle diameter is 50mm. Minimum axle wall thickness is 0.075" (1.9mm). Axles over 1.375" diameter must be of a ferrous material. No carbon fiber or carbon fiber composite axle allowed.

Both driving wheels must be locked to the rear axle with a "live" axle design. Snap rings or similar fasteners are required at each end of rear axle. Snap ring grooves may not be cut in axles anywhere between the wheel hubs. If hub extends beyond end of axle, hub must be pinned or tethered. Axle stiffeners are allowed and if used, must be secured by cotter pin, through-bolt or cir-clip. (See Figures 353.4a, 353.4b, 353.4c.) the steering wheel to the hub or the hub to the shaft allowed. No shaft extensions allowed. No cutting or welding of the shaft to alter the length allowed. No quick release steering hubs allowed.



### 353.6 AXLE WIDTH:

Front spindle axle and rear axle may not protrude beyond outside of rim and tire.

## 354 STEERING AND STEERING SHAFT SPECIFICATIONS

### 354.1 STEERING GENERAL:

Must be of a direct mechanical type. Tiller and vertical shaft steering systems are not allowed. Rack and pinion steering is not allowed. All steering assembly bolts and nuts, including spindle bolts, must be cotter-keyed and/or safety wired. Spring clips and E-clips are allowed with manufactured bolts or studs designed for their use. All bolts will be minimum 14,000 lbs. tensile strength and be minimum 1/4" diameter, and Grade 5 or US Mark 3 rating or better. All rod ends must have universal type swivel joints.

**Note:** All fasteners (nut on bolt, etc.) of any component that would enable movement of or adjustment of spindles, such as for castor, camber, etc. must be drilled for and utilize either a cotter pin or safety wire. Spring clips and E-clips are also allowed with manufactured bolts or studs designed for their use.

### 354.2 STEERING SHAFT

#### 354.2.1 SOLID SHAFT:

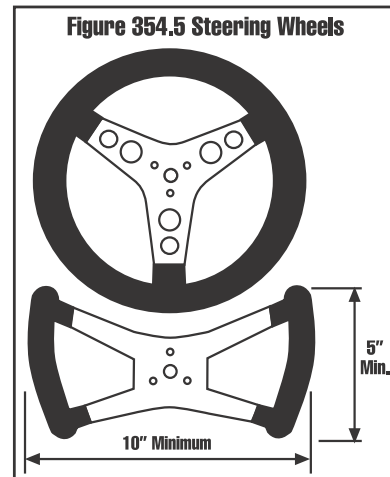
Minimum 0.625 diameter cold-rolled steel, one -piece design. Steering hub (one piece) must be secured with minimum diameter 5/16" quality nut or cap screw in an axial position with the centerline of the shaft. Bottom of shaft will have a minimum diameter 5/16" bolt/ cap screw or minimum 1/8" steel roll pin (safety wired). No welding.

#### 354.2.2 HOLLOW SHAFT:

Minimum 0.700" diameter steel tubing, one-piece design, with minimum 0.070" wall thickness, with minimum 5/16" diameter fastener at bottom end. Steering hub (one piece) will be secured through the axis to the steering shaft with minimum 6mm or 1/4" bolt through the steering shaft/hub parallel to the axis point. No welding the steering wheel to the hub or the hub to the shaft allowed. No shaft extensions allowed. No quick release steering hubs allowed.

#### 354.2.3 OPTIONAL STEERING SHAFT ADAPTER:

An optional adapter may be inserted between the steering hub and steering wheel to change the angle of the steering wheel or to move the steering wheel closer to the driver. Maximum length 2" measured on the longest side. Minimum diameter of adapter must be the diameter of the steering hub. Adapter must be designed such that all fasteners may be visually inspected and all mounting bolts must be a minimum diameter of 1/4" and must be cotter-keyed or safety wired. Spring clips and E-clips are allowed with manufactured bolts or studs designed for their use.



### 354.3 STEERING WHEEL:

"Steering wheels may be completely circular, minimum 10" diameter and minimum 3 spoke design; or may be butterfly-type with 10" minimum diameter, 4 spoke design with minimum 5" grip length on opposing sides. (See Figure 354.5.)

## 355 BRAKES

### 355.1 BRAKES GENERAL:

All karts must have brakes working to stop both rear wheels equally and adequately. All linkage and master cylinder and caliper mounting bolts must be safety wired or cotter pinned to prevent the nut from moving. Spring clips and E-clips are allowed with manufactured bolts or studs designed for their use. Brake pedal must be secured to the kart with safety wire, cotter keys, spring clips or E-clips. The linkage from the brake pedal to the master cylinder(s) or bias adjuster must be a steel rod of 6mm (0.236") or larger in diameter. The rod must have either (1) a clevis or swivel fitting (Heim joint) at each end and jam nuts in tension with fittings or (2) other OEM brake rod fittings. Only CIK approved karts may use a cable in place of the rod. The cable must be at least 2.5mm in diameter, supplied by the kart manufacturer, and marked with the brand or part number. The brake rod should be visible or preferably flush with the inside of the clevis. A washer should back up the cotter pin in the brake clevis pin. A bolt, castellated nut, and cotter key may be used in place of the clevis pin. Scrub or band-type brakes are NOT ALLOWED. The axle key in the brake hub must have some kind of positive retention feature.

#### 355.1.1 BRAKE LINKAGE BACK UP:

There must be a second link between the brake pedal and the master cylinder that will function in the event that the primary linkage fails. The secondary linkage must not interfere with the operation of the primary linkage or bias bar if so equipped. The secondary linkage may be a second rod or a cable. If a rod is used, it must conform to the specifications of the primary rod. If a cable is used, it must be at least 1/16" in diameter and clamped with a two (2) screw flat plate (CIK style) clamp, a swag style crimp fitting or a similar, equally secure clamp. Many current chassis manufacturers install their own version of these back up cables/rods. These OEM cables/rods are acceptable and meet the intent of this requirement.



### 355.2 DUAL BRAKE SYSTEMS:

Unless otherwise noted in each individual class specifications, Dual braking systems are required in all WKA national road racing classes. Dual brake systems are composed of two redundant and independent sets of components including master cylinders and calipers. The system may be of two or four wheel design. The master cylinders may not be hydraulically connected. A two wheel design applies braking force to the rear wheels only. Dual rear brakes may utilize one or two disks on the rear axle. Dual rear brakes may also use one caliper as long as the calipers are connected to separate master cylinders and the caliper sides are not hydraulically connected to each other. A four wheel design applies braking force to both rear and front wheels. In either case the system must be designed such that, if one system fails, the other system must remain fully operational. If a bias control is used, it must allow proper operation of the remaining system should either system fail. Dual system four-wheel brakes are required on all sprint shifter karts and all clutch karts over 125cc.

### 355.3 BRAKE MOUNTING:

All master cylinder and caliper mounting bolts and master cylinder roll pins are to be cotter-pinned or safety wired in such a manner that they cannot be loosened without removal of the cotter pins or safety wire. Spring clips and E-clips are allowed with manufactured bolts/ studs designed for their use. Steel locking nuts or drilled bolts with castellated nuts, properly pinned, are the only methods for fastening disks or drums to hubs. Use of Nylock-style nuts to attach brake disk or drum to its hub IS PROHIBITED.

### 355.4 PAD MOUNTING:

The inside pads on front wheel brakes must be safety wired. Since most competition karts have brake pads secured by countersunk bolts on the anvil side of front wheel brakes, and the pads on rear wheel brakes, safety wiring is not feasible. Each karter should monitor proper tightness, and use appropriate thread locking substance to prevent loss of this hardware.

### 355.5 CONNECTIONS AND ROUTING:

Hydraulic brake connections must be tight and free of any visible leaks. All brake lines should be safely routed to prevent any possibility of being rubbed through or pulled loose while kart is in motion.

### 355.6 BRAKE COMPONENTS:

Traditional type brake components only. No carbon fiber components etc. allowed.

## 356 DRIVE-LINE COMPONENTS

### 356.1 CLUTCHES:

Clutches are mandatory in all classes except where otherwise specified.

### 356.2 WET-TYPE CLUTCH:

Wet-type clutches, where allowed, must be sealed to prevent fluid leakage.

### 356.3 CHAIN GUARDS AND BELT GUARDS:

All chain, belt or gear-driven karts must be equipped with chain, belt or gear guard designed to retain a broken chains, belt or gear. Karts with outboard drive systems, must have enclosed guard or third bearing support.

### 356.4 EXPOSED SPROCKETS:

Karts starting a race or practice which are equipped with an axle clutch or sprocket hub not being used, MUST NOT have an exposed sprocket mounted in any manner. Sprocket must be removed.

### 356.5 CHAIN OILERS:

Maximum 8-ounce capacity. Reservoir must be securely fastened to structure of kart.

### 356.6 TRANSMISSIONS AND TORQUE CONVERTERS:

No transmission, gearbox or other device which permits a change of gear/sprocket ratios while the vehicle is in motion is allowed unless otherwise noted for specific classes. No torque converters allowed.

### 356.7 CHAIN AND BELT SIZES:

219 and 35 chain or 8 mm and 5mm belt are the only acceptable sizes allowed in all classes except gearbox, in which 428 pitch when chain is used.

## 357 FUEL SYSTEM

### 357.1 FUEL TANK:

Fuel tank must be constructed of puncture-resistant material and have a secure, leak-proof fill closure. Fuel tank must be mounted between frame rails and beneath steering shaft. An optional sump tank may be mounted outside the frame rails in front of the motor. All fuel tanks must be securely bolted to primary structure/frame/floor pan of the kart. Tank may be of design to mount between steering uprights, unless it is an integral part of the engine.

### 357.2 FUEL TANK CAPACITY:

Maximum of one fuel tank permitted with a maximum ten liters (2.64 Gal.) capacity plus and optional sump tank with a maximum capacity of one quart. Amount of fuel line from tank to sump or tank to carburetor must be only of sufficient length to safely conduct fuel between the components. Excessive fuel line length will not be allowed.

### 357.3 FUEL SYSTEMS:

No pressurized fuel systems are allowed. No pumper-type carburetors, axle or electric fuel pumps allowed. Where an external pump is allowed, it must be pulse-driven. Fuel lines must be secured at all connecting points with approved fasteners such as safety wire or cable ties.

## 358 BODY COMPONENTS

### 358.1 APPEARANCE:

All bodywork must be neat in appearance and in good repair. Body work that appears loose or in danger of falling off may subject the entrant to black flag and/or disqualification during the running of an event. Mounting method open but must be secure and of good workmanship.

### 358.2 NOSE CONES:

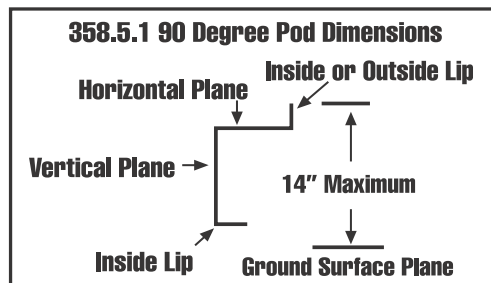
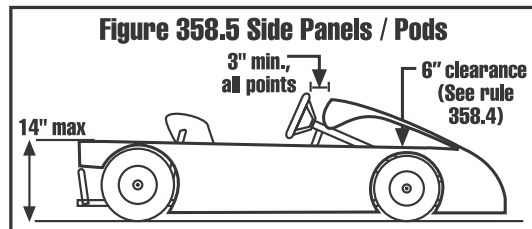
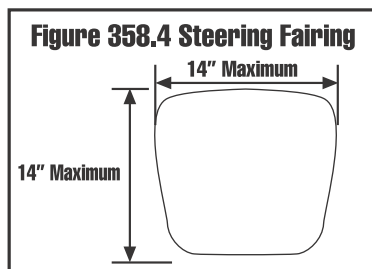
The nose cone is the bodywork that extends forward of the rear edge of the front tire. No "scoop" type pointed nose cones. Nose cone must be a minimum of 8" high, and cannot be inclined less than 40° from horizontal. Nose cone may be wider than front tires. If the nose cone is narrower than front tires, no more than 1/2 of the width of either front tire may protrude to be checked at the front edge of tire/ nose cone intersection at centerline of front axle with the wheels pointed straight ahead. All nose cones must have a tire opening equal to or greater than the tire used. No covering of the side of the tire is allowed.

### 358.3 NOSE CONE GUIDELINES:

Nose cone must allow for easy driver ingress, egress and removal from the kart. Nose cones may cover foot area up to 3" rearward of both pedals in relaxed position, and must not interfere with driver's ability to operate pedals.

### 358.4 STEERING FAIRING:

A fairing may be mounted roughly paralleling the steering shaft. Maximum width of the fairing is 14.0" (chord measurement, not across the rounded surface). The fairing must be mounted with easily bendable tabs or struts. The fairing and/or mounting materials must not expose sharp edges to the driver. No portion of the steering fairing may be located within 1 15/16" (50mm) of any part of the steering wheel, measured with the steering wheel straight ahead. Steering fairing must have 6" clearance between all surrounding bodywork. (See Figure 358.4 and 358.5.)



#### 358.4.1 CIK STYLE FAIRING:

The top of the steering fairing on all karts equipped with CIK style bodywork must be no more than 1" above the steering wheel with the front wheels in the straight ahead position.

#### 358.5 SIDE PANELS & PODS:

Single plane (vertical) panels, 90-degree side panels or CIK style side pods may be used. All must be securely mounted. All side panels are allowed an inward radiused lower lip. Pods, side panels or nerf bars can be a maximum of 1" per side wider than the rear wheel and tire with a maximum width being 55 1/8" for all 125 Sprint Shifter and Spec 125 Sprint classes, 50" for all other 2-cycle sprint classes, and 46" for all 4 cycle classes. All side pods must have a tire opening equal to or greater than the size of the tire used. No covering of the side of the tire is allowed.

#### 358.5.1 SINGLE PLANE (VERTICAL) PANELS:

Flat side panels (vertical style) start behind rear edge of front tire and end at front edge of rear tire with proper spacing. They must have a rolled or radiused edge on the top and at the front and rear wheel openings.

#### 358.5.2 90-DEGREE SIDE PANELS:

90-degree side panels begin at the back edge of the front tire and may extend to the back edge of the rear bumper, not to exceed 11" from the back of the axle. They may connect to the nose cone. They may not cover any part of the driver's body. Their maximum height is 14" from the ground. The minimum clearance from the seat to any part of the side panel is 1". 90-degree side panels cannot have more than 2 flat planes, one vertical, and one horizontal. They may have an additional lip to reinforce the top edge of the side panel. If the lip is mounted under the horizontal plane, it cannot exceed 1". The minimum distance between the two side panels from the back edge of the front tires to the back bumper is 22". A connecting panel may be installed between the side panels behind the seat. The connecting panel must be easily removable for tech inspection. NACA style ducts are legal in the tops and side of the side pods and in the floor pan. Ducts are allowed up to a maximum width of 6" and length of 7".

#### 358.6 APPLIES TO ALL BODYWORK:

##### 358.6.1 BODY COMPONENTS:

Body components may not be adjustable while the kart is in motion.

##### 358.6.2 BODYWORK REQUIREMENTS:

Bodywork must accommodate all applicable bumper and nerf bar requirements.

#### 358.6.3 BODYWORK CLEARANCE:

All bodywork with the exception of the steering column fairing must be a minimum of 6.0" from the steering wheel when the front wheels are in a straight-ahead position. This is to ensure there is adequate driver entry/egress area.

#### 358.6.4 SKIRTING:

Any add-on skirting devices must be flexible, non-metallic materials.

#### 358.6.5 FENDER WELLS:

Fender wells are legal in all classes.

#### 358.6.6 MINIMUM WIDTH:

The minimum width of the bodywork or the wheels/tires on the kart shall be 36", unless otherwise specified under specific class rules, to be measured at or before the upper steering column mount. The minimum width must be continuous on a vertical surface of minimum 5" height. Tabs and flares to meet the minimum dimension are specifically not permitted.

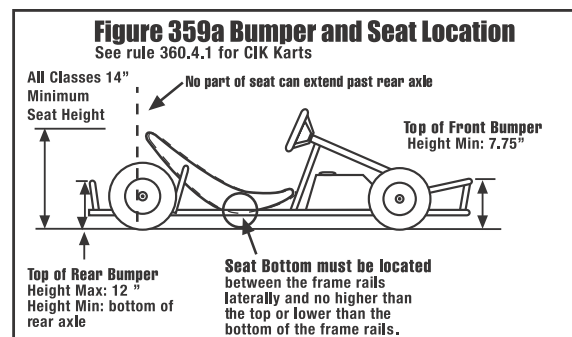
#### 358.7 NUMBERS AND NUMBER PANELS:

Three numbers are to be displayed on the kart - one on the front of the vehicle, angled right or left to be seen from scoring and one on each side in a vertical plane between the front and rear wheels. Number panels must be of adequate size to accept assigned, disposable numbers. Whether paper-type numbers are utilized or numbers are painted or decaled on bodywork, they must be in contrasting colors and easily readable by the scoring and race officiating personnel.

### 359 BUMPERS AND NERF BARS

#### 359.1 FRONT BUMPER:

A front bumper incorporated into the frame for the purpose of protecting the driver's feet is mandatory. The bumper must be constructed of minimum 3/4" diameter steel tubing with a minimum tubing wall thickness of .065". The top of the upper "hoop" of the front bumper must be a minimum of 7.75" above the ground as raced. The upper hoop must be supported in at least 2 places in the front portion of the bumper by 3/4" or larger tubing uprights. These uprights shall be within 1/2" of vertical when measured 3.0" down from the top of the upper hoop. Uprights must be welded to upper hoop and welded or bolted at bottom. (See Figure 359a.)



#### 359.2 BUMPER PEDALS:

A front bumper that incorporates pedal mounting points must be either welded to the frame, through-bolted, or dowel pinned with safety wire or cotter pins.

#### 359.3 REAR BUMPER:

All Sprint Road Racing Karts must be equipped with rear bumpers to protect the driver and kart from rear impact and to keep a following kart from reaching the rear tires.

##### 359.3.1 BODYWORK:

Karts with WKA bodywork must use a double bar bumper design. Karts with CIK bodywork must use either a double bar design or CIK style "rear wheel protection." (See CIK rules for "rear wheel protection" specifications.)

##### 359.3.2 CONSTRUCTION:

The bumper must be constructed of minimum 3/4" diameter steel tubing with a minimum tubing wall thickness of 0.065".



### 359.3.3 MAXIMUM WIDTH:

The ends of a double bar bumper shall not extend beyond the outside of the rear tires as raced. The maximum width of CIK style "rear wheel protection" is 1,340mm (55.8").

### 359.3.4 MINIMUM WIDTH:

The bumper shall extend to at least the center of the rear tires. (See Figure 359.3.5)

### 359.3.5 DOUBLE BAR BUMPER HEIGHT:

Top bar must be located no more than 12" and no less than 6 1/2" above the ground plane as measured from the ground plane to the top of the bar. The bottom of the bottom bar must be no lower than the bottom of the frame, and the top of the bottom bar must be no higher than the bottom of the rear axle. The bottom bar may be interrupted in the space between the frame rails if there is a rear cross member that serves as that part of the rear bumper. The bottom bar may have a slip joint located between the frame rails to allow for frame flex.

### 359.3.6 DOUBLE BAR BUMPER DESIGN:

The ends of the upper and lower tubes must be connected. Connection may be tube bent 180 degrees or by bending the top tube to meet the bottom tube with the upper ends of the top tube bent down to meet the bottom tube. 90 degree corners at the end of the upper tube are not allowed. Additional horizontal and vertical tubes are allowed within the dimensions listed above. The top horizontal tube must be directly above or to the rear of the bottom tube. The bumper may be tilted to the rear by up to 45° (degrees) from the vertical plane.

### 359.3.7 ADJUSTABLE WIDTH:

The bumper may be designed so that the overall width may be adjusted to fit the rear tread width. Such design must provide for the same rear protection as non-adjustable bumpers.

### 359.3.8 BUMPER LOCATION:

The bumper must be at least 2" behind the rear tire at its closest point to the tire.

### 359.3.9 MEASUREMENT:

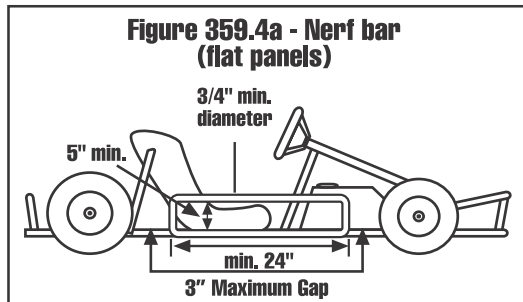
Measurement of all specifications shall be taken "as raced."

## 359.4 NERF BARS:

Double nerf bars are mandatory. The nerf bar and supporting arms must be constructed of minimum 3/4" diameter steel tubing, with a minimum tubing wall thickness of 0.065". It must be attached to the frame with minimum 1/4" bolt.

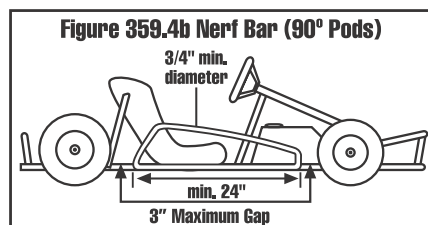
### 359.4.1 SINGLE PLANE (VERTICAL) PANELS:

Specifications for Nerf Bars when utilizing flat vertical panels or Number panels. Distance from tire to end of nerf bar to be no more than 3.0". Nerf bars are to run parallel with outside of tires. Inside distance top to bottom of the upper and lower bars shall be a minimum of 5.0". Vertical members must be included at minimum on forward-most and rearward-most extensions of horizontal bars to form a "closed" rectangle. (See Figure 359.4a.)



### 359.4.2 90-DEGREE SIDE PANELS:

When 90-degree side panels are utilized, any WKA approved double rail nerf bar is allowed. (See Figure 359.4b.)



### 359.4.3 CIK SIDE PODS:

CIK-style nerf bars are allowed only with CIK side pods.

## 360 MISCELLANEOUS

### 360.1 THROTTLE:

It is mandatory for all karts to be equipped with a positive acting throttle return spring.

### 360.2 RESTRAINTS:

Seat belts or other driver restraints are prohibited.

### 360.3 REAR VIEW MIRRORS:

Mirrors are allowed providing they are securely mounted to the kart and do not present a hazard to other vehicles. They are not to be used as an aggressive device to facilitate blocking.

### 360.4 DRIVER'S SEAT:

Driver's seat must be constructed in such a manner to securely locate driver laterally and longitudinally on the kart, i.e. a 100 lb driver should not be in an XXL size seat in an attempt to gain an aerodynamic advantage. Seat must be of one-piece or molded construction, with no "peaks" or add-on sections intended to subvert the seat back height requirements noted below. Seat must be mounted using four or more mounting points using traditional and integral chassis mounting components and may not be adjustable while the vehicle is underway. Additional "stay bars" are legal.

### 360.4.1 SEAT LOCATION:

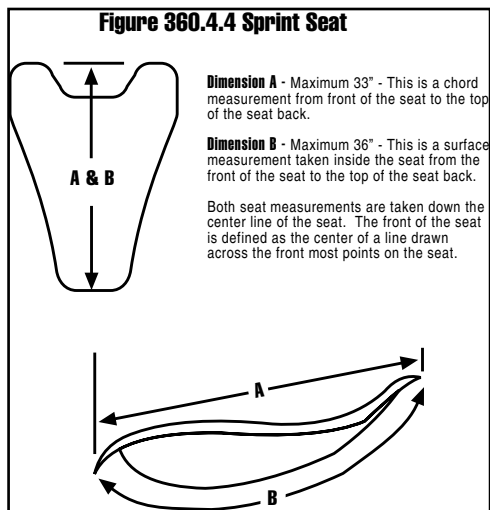
The seat bottom must be located between the frame rails laterally. No portion of the seat may be located behind the rear of the rear axle. The lowest portion of the seat may be no higher or lower than the frame rails in all classes except 125 Sprint Shifter classes. In those classes, the lowest portion of the seat may be no higher than the frame. The center of the seat back must be a minimum of 13" above the ground plane in all classes requiring CIK bodywork and 14" in all other classes.

### 360.4.2 SEAT STYLE:

Sprint-style bucket seat with concave ("bucket") bottom is mandatory in buttocks area with raised front edge to limit forward movement of driver. Seat must be of rigid bottom construction that will reasonably protect driver from objects passing beneath seat bottom and track surface. Seat must be designed to provide the driver with positive lateral location and support.

### 360.4.3 WKA SPRINT SEAT:

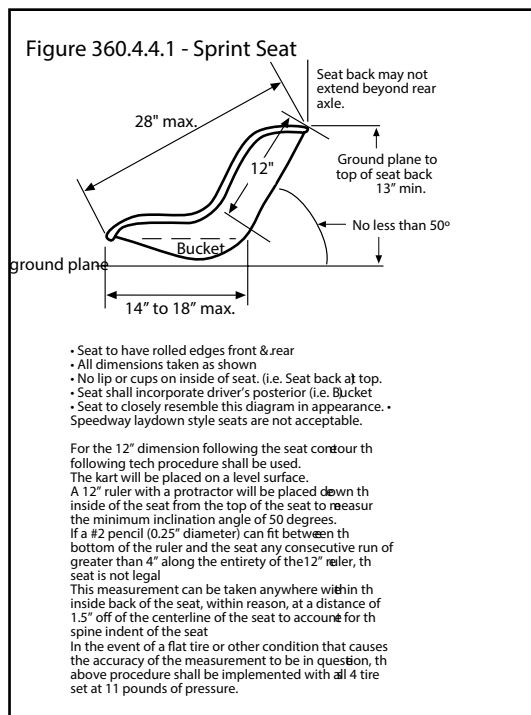
This style seat is legal in all WKA Sprint Road Racing classes except 125 Sprint Shifter and Stock Honda. The maximum chord length of the seat is 33" from front to rear. The chord is measured down the seat centerline from the front to the top rear. The maximum surface length of the seat is 36". The surface is measured inside the seat from the front to the top rear. In both cases, the front of the seat is defined as the center of a line drawn across the front most points on the seat. (See Figure 360.4.4.)



### 360.4.3.1 125 SPRINT SHIFTER AND STOCK HONDA SEAT:

This style seat is legal in all WKA Sprint Road Racing classes. The maximum chord length of the seat is 28" from front to rear. The chord is measured down the seat centerline from the front to the top of rear. The chord of the seat bottom is a minimum of 14" and a maximum of 18" as measured from the front of the seat to a point 12" down the seat from the top. The front of the seat is defined as the center of a line drawn across the front most points on the seat. The lowest portion of the seat may be no higher than the frame rails. Seat to closely resemble seat in Figure 360.4.4.1. Dimensions may be added to clarify and enforce the spirit and intent of this rule as needed. Conformance to dimensions does not ensure legality.

**NOTE:** Due to the physical differences in drivers, portions of the legs may be obscured by the bubble fairing when viewed directly from above. Steering support struts and/or padding on the struts must be positioned close enough to the forward portion of the driver's seat to prevent the driver's buttocks to move from the seat's indentation forward enough to be off the seat or seat edge. Position of steering struts and/or padding on it must not be movable under racing conditions.



### 360.4.4 HEADREST:

Headrests are permitted in all sprint road racing classes except shifter and TaG classes. Headrest may be used with or without padding. No portion of the headrest can extend past the rear bumper of the kart. Headrest will not be included in the maximum seat height measurement. No aerodynamic bodywork or a headrest shaped

aerodynamically is allowed. No sharp or protruding edges. Tubing shaped in a hoop is the recommended style. Headrest must be attached to the seat.

### 360.5 COMMUNICATIONS:

Drivers may utilize 2-way radio communications in all classes in the Road Racing Series to facilitate communication between a driver and pit crew. They are not to be used as an aggressive device to facilitate blocking or as a way for drivers to communicate race strategy among themselves.

### 360.6 DATA ACQUISITION SYSTEMS:

On-board data acquisition systems and/or computer systems are allowed to retrieve the following information only: on-board RPM, water temperature, cylinder temperature, speed, exhaust temperature, lap timing (lateral G sensing), and computer scoring systems. Sensors and wiring for other inputs must be removed from the kart during practice and racing. GPS based systems are allowed. Telemetry is not allowed; data can only be downloaded when kart is off of the racing surface and stationary. One beacon only from each manufacture allowed on the race circuit on race days to be located in a designated area by a designated person. All other beacons found on the race circuit on race days will be confiscated and held by WKA to be returned through a request to the Board of Directors. Data can only be downloaded in pits.

### 360.7 ADJUSTMENTS:

The only items that can be adjusted while the kart is in motion are the carburetor, brake bias and clutch.

### 360.8 DRIVING POSITION:

No tucking or ducking of the driver's head in practice or during competition.

### 360.9 WATER COOLED ENGINES:

All water cooled engines must have a catch container for radiator overflow. Coolant may not contain any ethylene glycol based material. Surfactants such as Water Wetter ® may be used.

## 362 NATIONAL ROAD RACING SPRINT CLASSES

ALL CLASSES NOTED AS FINAL ONE + FINAL TWO RUN BOTH DAYS FOR A SINGLE YEAR END CHAMPIONSHIP

ALL AGES ARE ATTAINED AGE

### ++362.1 CADET SPORTSMAN LO206 (FINAL 1 AND 2) NON-NATIONAL -- LOCAL OPTION CLASS

DRIVER AGE: 8-12

ENGINE: Briggs and Stratton with green slide(555470-0.490") and lock cap

FUEL: Unleaded Gas WKA will specify source

MINIMUM WEIGHT: 230 lbs

BODYWORK: CIK only. No radio communications allowed.

CHASSIS: Cadet Chassis allowed

CLUTCH: Any rim centrifugal clutch. Clutch coolers not allowed

HEADER PIPE: Pipe must be inside rear bumper LO 206 header RLV 5506 or 5507 EGT may not be installed in header. Muffler: RLV B with 0.1285 no go holes. Also see 708.2.1.1

Other: Class runs 15 minute races after lunch break each day No other karts on track during this time. Dual brakes not required.



## **++362.2 JUNIOR LO206 (N) (FINAL 1 AND 2) NON-NATIONAL- LOCAL OPTION CLASS**

DRIVER AGE: 13-15  
ENGINE: Briggs and Stratton LO 206 Yellow Slide 555741-0570"  
HEADER PIPE: Pipe must be inside rear bumper Lo206 header RLV 5506 or 5507 EGT may not be installed in header Muffler RLV B with 0.1285 no go holes Also see 708.2.1.1  
MUFFLER: Muffler must be a RLV B with 0.1285 No-go holes.  
MINIMUM WEIGHT: 205 lbs  
FUEL: Unleaded gas WKA will specify source  
CHASSIS: Cadet chassis allowed  
BODYWORK: CIK only. No radio communications allowed  
CLUTCH: Any rim centrifugal clutch Clutch coolers not allowed  
OTHER: (1) Class race runs after lunch break each day+ (2) Dual brakes not required. {3} Yellow slide- #555741-0.570" with locking cap #555726

## **++362.3 JUNIOR ANIMAL (FINAL 1 + FINAL 2)**

DRIVER REQ: Age 12 thru 15 only. Road Race Class 3 License.  
ENGINES: Briggs & Stratton Pro Gas Animal with Black restricter plate. Gold Cup Pro Gas engine rules apply -OR- Briggs & Stratton Stock Animal with 0.575" black restricter plate. (See Section 700). WKA approved aftermarket billet rods allowed. See Section 704.33. Briggs #555690 - Heat Disperser allowed.  
PIPE: Pro Gas Animal rules apply to Pro Gas engine. Stock Animal maximum length 24". May be one or two piece. Must be inside the rear bumper. Silencer mandatory.  
MINIMUM WEIGHT: Animal-305 lbs --- Pro Gas 315 lbs.  
FUEL: 94-octane, unleaded gasoline. WKA will specify source for gasoline.  
OTHER: (1) Dual Brakes Not Required. Rear brake disc minimum diameter 7", minimum width 3/16". (2) Dry engine clutch only.

## **++362.4 ANIMAL SPRINT (FINAL 1 + FINAL 2)**

DRIVER REQUIREMENT: Age 15 and older -- Road Race class 3 license  
ENGINE: Briggs & Stratton Animal Model 124-432 Type 8001 -- #555690 heat disperser allowed.  
PIPE: maximum length 24" -- may be one or two piece -- silencer mandatory - must be inside rear bumper  
MINIMUM WEIGHT: 390#  
FUEL: Methanol  
OTHER: "Dual Brakes Not Required. Rear brake disc minimum diameter 7", minimum width 3/16" -- dry engine clutch only.

## **++362.5 LO206 SPRINT (FINAL 1 + FINAL 2)**

DRIVER REQUIREMENT: Age 15 and older -- Road Race class 3 license  
ENGINE: Briggs & Stratton LO206 -- see section 708  
PIPE: see section 708.2.1 and 708.2.1.1 and silencer 708.2.2  
MINIMUM WEIGHT: 390#  
FUEL: 94-octane, unleaded gasoline. WKA will specify source for gasoline.  
OTHER: Dual Brakes Not Required. Rear brake disc minimum diameter 7", minimum width 3/16". Dry clutch only per section 708.24

## **++362.6 CLONE SPRINT (FINAL 1 + FINAL 2)**

DRIVER REQUIREMENT: Age 15 and older -- Road Race class 3 license  
ENGINE: Clone -- see section 711 and 713 for engine rules  
PIPE: minimum length 18" -- maximum length 22" -- RLV R91 silencer with 0.1285" no-go holes required. Pipe must be inside rear bumper.  
MINIMUM WEIGHT: 390#  
FUEL: 94-octane, unleaded gasoline. WKA will specify source for gasoline.  
OTHER: Dual Brakes Not Required. Rear brake disc minimum diameter 7", minimum width 3/16". Dry clutch only

## **++362.7 CIK/LO206 SPRINT (FINAL 1 & FINAL 2)**

DRIVER REQ. Age 15 and older, Road Race Class 3 License  
CHASSIS: Must meet Man Cup CIK sprint chassis rules per section: 200.  
ENGINE: Briggs and Stratton LO206 (see Section 708).  
HEADER PIPE AND SILENCER: see section 708.  
CLUTCH: Any rim centrifugal clutch with a maximum of 9 springs and

6 shoes. No alteration to clutch allowed, except springs. Clutch coolers are not allowed.

MINIMUM WEIGHT: 375 lbs.

FUEL: 94-octane, unleaded gasoline. WKA will specify source for gasoline.

TIRES: open tires, rear tires 7" minimum width.

REAR TRACK WIDTH: a minimum of 50" and maximum of 55 1/8".

OTHER: (1) Dual brakes not required. (2) Bodywork: CIK style bodywork only, conforming to all dimensions listed in Section 200 (except the forward "C") dimension, or CIK approved bodywork that is readily available at least 90 days prior to the beginning of the racing season. Carbon fiber, Kevlar and metal are not legal construction materials for nose, side pods and steering fairing. (3) Must use the 125 Sprint Shifter seat rule described in section 360.4.3.1.

## **++362.9 JUNIOR SPRINT (FINAL 1 + FINAL 2)**

DRIVER REQ: Age 12 through 15 only, Road Race Class 3 License.  
ENGINES: Yamaha (Only heads with OEM casting "Yamaha" and cylinders with Y3 or Y4 and 787 are legal), ARC Comer, and PRD RK100.  
EXHAUST: RLV YBX #7500. (See Section 554.1.)  
FUEL: Spec Fuel.  
MINIMUM WEIGHT: 315 lbs  
OTHER: Dual Brakes Not Required. Rear brake disc minimum diameter 7", minimum width 3/16".

## **362.10 TAG JUNIOR (FINAL 1 & FINAL 2)**

NON-NATIONAL LOCAL OPTION CLASS

DRIVER REQ: Age 13 through 16.

ENGINES: Parilla Leopard or IAME X-30 - Rotax FR125 Jr is permitted, (see section TM-609 for engine spec's)

MINIMUM WEIGHT: 320 lbs

FUEL: Spec Fuel

EXHAUST PIPE / SILENCER: Must be stock pipe and restricted factory header as supplied for each specific engine model.

Parilla Leopard = 28 mm -- IAME X-30 = 29 mm. See section 609 for other exhaust particulars -- Both engines run at 18.5" min length. See 609.1 for measuring instructions.

CARBURETOR: Must be stock as factory supplied for each specific engine

AIR-BOX: Required per section 551

TIRES: Open tires, rears tires 7" minimum width

OTHER: (1) CIK style bodywork only, either conforming to all dimensions listed in Section 200 (except the forward "C" dimension) or CIK approved bodywork that is readily available at least 90 days prior to the beginning of the racing season. Carbon fiber, Kevlar and metal are not legal construction materials for nose, side pods and steering fairing.

(2) Radiator must be mounted to the left of driver between front and rear axles. (3) Belt or chain drives are legal. (4) Dual brake system is not required. Rear disc minimum diameter - 7" --- minimum width - 3/16" (5) All karts must use rear bumper rule 359.3.5. (6) Kart must meet all 125 Sprint chassis requirements. (7) Rear track width must be a minimum of 50" and a maximum of 55 1/8". (8) Must use the 125 Sprint Shifter Seat rule described in Section 360.4.4. (9) No butterfly style steering wheels allowed. (10) Standing start procedure utilized. CLUTCHES: No axle or disc clutches allowed. After Market clutches of same design and weight allowed, (lined or unlined). Drum Mounting location and method must be OEM. All other TAG requirements apply.

### **++362.11 YAMAHA SPORTSMAN SPRINT (FINAL 1 & FINAL 2)**

DRIVER REQ: Age 15 and older. Road Race Class 3 License.  
 ENGINES: Yamaha (only heads with OEM casting "Yamaha" and cylinders with Y3 or Y4 and 787 are legal).  
 EXHAUST: RLV SBX muffler and RLV 26S Header with tube protruding through flange intact, 11.0" to 12.0" of flex from piston face to end of flex. (See Section 554.2 and Figure 554.2)  
 FUEL: Spec Fuel.  
 MINIMUM WEIGHT: 360 lbs.  
 Dual Brakes Not Required. Rear brake disc minimum diameter 7", minimum width 3/16".  
 OTHER: Class runs both race days for a single points championship

### **362.12 YAMAHA SPRINT (FINAL 1 & FINAL 2)**

DRIVER REQ: Age 15 and older. Road Race Class 3 License  
 ENGINE: Yamaha KT100S, Only heads with OEM casting "Yamaha" and cylinders with Y3 or Y4 and 787 are legal.  
 EXHAUST: Any WKA approved fixed pipe.  
 MINIMUM WEIGHT: 360 lbs.  
 FUEL: Spec Fuel  
 Dual Brakes Not Required. Rear brake disc minimum diameter 7", minimum width 3/16".  
 OTHER: Class runs both race days for a single points championship.

### **++362.13 WKA SPRINT (FINAL 1 & FINAL 2)**

DRIVER REQ: Age 16 and older. Road Race Class 3 License.  
 ENGINES: Yamaha KT100S (only Yamaha heads with OEM casting "Yamaha" are legal), ARC Comer, PRD RK100 and Piston Port.  
 EXHAUST: Any Fixed WKA approved pipe (No adjustable pipes allowed.)  
 MINIMUM WEIGHTS: Yamaha, ARC & PRD - 360 lbs., Piston Port - 380 lbs., and Comer P51 - 395 lbs.  
 FUEL: Spec Fuel  
 Dual Brakes Not Required. Rear brake disc minimum diameter 7", minimum width 3/16".  
 OTHER: (1) Class runs both race days for a single points championship.  
 (2) Comer P51 minimum timing 0.090" BTDC, minimum squish 0.048", 12 cc combustion chamber volume.

### **362.14 IAME SPRINT (FINAL 1 & FINAL 2)**

DRIVER REQ: Age 16 and older. Road Race Class 3 License.  
 ENGINES: Stock Parilla Leopard and X30  
 AIR-BOX: Stock OEM  
 FUEL: Spec Fuel.  
 MINIMUM WEIGHT: X30 = 390 lbs. -- Leopard = 375 lbs.  
 CLUTCHES: No axle or disc clutches allowed. After Market clutches of same design and weight allowed, (lined or unlined) Drum Mounting location and method must be OEM. All other TAG requirements apply.  
 TIRES: Open tires, rear tires 7" minimum width.  
 OTHER: (1) CIK style bodywork only, either conforming to all dimensions listed in Section 200 (except the forward "C" dimension) or CIK approved bodywork that is readily available at least 90 days prior to the beginning of the racing season. Carbon fiber, Kevlar and metal are not legal construction materials for nose, side pods and steering fairing. (2) Radiator must be mounted to the left of driver between front and rear axles. (3) Belt or chain drives are legal. (4) Dual brake system is not required. Rear disc minimum diameter - 7" --- minimum width - 3/16" (5) All karts must use rear bumper rule 359.3.5. (6) Kart must meet all 125 Sprint chassis requirements. (7) Rear track width must be a minimum of 50" and a maximum of 55 1/8". (8) Must use the 125 Shifter Seat described in section 360.4.3.1 and figure 360.4.4.1 (9) No butterfly style steering wheels allowed. (10) Standing start procedure utilized.

### **362.15 TAG HEAVY (FINAL 1 & FINAL 2)**

DRIVER REQ: Age 16 and older. Road Race Class 2 TaG License.  
 ENGINES & MINIMUM WEIGHTS: Cheetah SQ 125 - 370 lbs., Easykart IAME & BMB - 360 lbs., Motori Seven - 425 lbs., Stock Parilla Leopard - 370 lbs., OEM Vortex Rok GP at 390-lbs, per TM 500., Ported Parilla Leopard - 390 lbs., Parilla X30 370 lbs. PRD Fire Ball

(2005 & 2008) - 360 lbs., Rotax FR 125 - 390 lbs., Sonik TX 125 (125cc) - 425 lbs., Sonik VX 125 (118 cc) - 390 lbs., Vortex Rok TT - 370 lbs., OEM Rotax EVO at 410-lbs, per TM 500.  
 AIR-BOX: Must use either (1) an air box originally supplied with any approved TAG engine or (2) any CIK registered air box. (Exception: Rotax Max FR 125 must use the stock air box.)  
 CLUTCHES: No axle or disc clutches allowed. After Market clutches of same design and weight allowed, (lined or unlined). Drum Mounting location and method must be OEM. All other TAG requirements apply.  
 FUEL: Spec Fuel.  
 TIRES: Open tires, rear tires 7" minimum width. OTHER: (1) CIK style bodywork only, either conforming to all dimensions listed in Section 200 (except the forward "C" dimension) or CIK approved bodywork that is readily available at least 90 days prior to the beginning of the racing season. Carbon fiber, Kevlar and metal are not legal construction materials for nose, side pods and steering fairing. (2) Radiator must be mounted in the stock location. (3) Belt or chain drives are legal. (4) Dual brake system not required. Rear disc minimum diameter - 7" --- minimum width - 3/16" (5) All karts must use rear bumper rule 359.3.5. (6) Kart must meet all 125 Sprint chassis requirements. (7) Rear track width must be a minimum of 50" and a maximum of 55 1/8". (8) Must use the 125 Sprint Shifter Seat rule described in Section 360.4.4. (9) No butterfly style steering wheels allowed. (10) Standing start procedure utilized. (11) Performance differences between the various manufacturers will be adjusted by kart weight, or restrictions to the engine or exhaust system. WKA will make every effort to make it a level playing field among engine manufacturers. (12) Class runs both race days for a single points championship.

### **362.16 STOCK HONDA (FINAL 1 & FINAL 2)**

DRIVER REQ: Age 18 and older. Road Race Class 2 Shifter License.  
 ENGINE: For engine rules, see Section 620.0. NOTE: For 2015 legacy cases, aftermarket bearings, seals, gasket, micro-polished transmission gears are all legal -- must conform to 620.0 in full by December 15, 2015.  
 TRANSMISSION: See Section 620.  
 INTAKE SILENCER: Air cleaner or air box is required. (See Section 551.4.2.) Where specific track or ordinance requires the use of an air-box, this will be noted on entry form. Competitor is responsible to maintain compliance with any rules or ordinances regarding noise regulation.  
 MINIMUM WEIGHT: 390 lbs.  
 FUEL: Spec Fuel.  
 TIRES: Open Compound, 5" or 6" Diameter Rims, Rear Tires 7.00" Min. Width  
 PIPE: RLV R2, RLV R4, RCE T-3 or SKUSA SK-1.  
 INTAKE SYSTEM: Stock Keihin PWM or PWK 38mm carburetor.  
 OTHER: (1) CIK Style bodywork only, either conforming to all dimensions listed in Section 200 or CIK approved bodywork that is readily available at least 90 days prior to the beginning of the racing season. Carbon fiber, Kevlar and metal are not legal construction materials for nose, side pods and steering fairing. (2) Radiator must be mounted on the right or left side of the driver between the tires. (3) All karts must utilize lower bumper cross-bar (See Section 209.3.5.). (4) Standing start procedure utilized. (5) Rear track width must be a minimum of 50" and a maximum of 55 1/8". (6) Must use the 125 Sprint Shifter Seat rule described in Section 360.4.4. OEM water pumps must be retained. Cooling system may use only water and / or water based coolants. Catch containers and / or alternative plumbing is mandatory. Chain guards are required. Addition of a starter nut to crankshaft for external starter allowed. (7) Coating of head gasket legal. (8) four wheel brakes required.

### **362.17 125 SPRINT SHIFTER (FINAL 1 & FINAL 2)**

DRIVER REQ: Age 18 and older. Road Race Class 2 Shifter license.  
 ENGINES: (1) Mass produced, single-cylinder, motorcycle engines of up to 125cc displacement, currently available production, approved by WKA: Honda CR Reed, Kawasaki KX Reed, Suzuki RM Reed, Yamaha YZ Reed, Gilera 125cc and TM Motocross will be allowed. (See Section 613 for specifications.). OEM Rok Shifter at 390-lbs, per TM 500. All engine specs must be unaltered OEM parts unless otherwise specified in this manual. All competitors must be prepared to produce verification documentation of proper dimensions and



component data for the engine utilized for competition prior to the time of post tech inspection. (2) ICC engines with homologated pipe and 30 mm carburetor.

EXHAUST: Motorcycle engines - Any fixed WKA approved pipe (No adjustable pipes allowed) with silencer. ICC engines – stock homologated ICC pipe and silencer.

INTAKE SILENCER: ICC requires stock, homologated air box. Motorcycle requires air box (See 551.4.2.) and/or air filter. Where specific track or ordinances requires the use of an air box, this will be noted on entry form. Competitor is responsible to maintain compliance with any rules or ordinances regarding noise regulation.

FUEL: Open Fuel.

MINIMUM WEIGHT: CIK Bodywork with Stock Honda 390 lbs.; CIK bodywork with modified engine 400 lbs.; Full bodywork 420lbs.

TIRES: Open Compound, 5" or 6" Diameter Rims, Rear Tires 7.00" Min. Width

OTHER: (1) CIK style bodywork only, either conforming to all dimensions listed in Section 200 (except the forward "C" dimension) or CIK approved bodywork that is readily available at least 90 days prior to the beginning of the racing season. Carbon fiber, Kevlar and metal are not legal construction materials for nose, side pods and steering fairing. (2) Radiator must be mounted on the right or left side of the driver between the tires. (3) All karts must use rear bumper rule 359.3.5.(4) Standing start procedure utilized. (5) Rear track width must be a minimum of 50" and a maximum of 55 1/8". (6) Must use the 125 Sprint Shifter Seat rule described in Section 360.4.4. (7) No butterfly style steering wheels allowed. (8) Class runs both race days for a single points championship. (9) WKA sprint bodywork allowed; bumper and nerf bar rules apply to these kart except that the minimum bodywork width as defined in 358.6.6 shall be 42". Either CIK style side pods or Sprint Enduro side panels are allowed. (9) four wheel brakes required.

### **++362.18 100CC AIR COOLED TAG SENIOR (FINAL 1 & FINAL 2)**

DRIVER REQ: Age 16 and over. Road Race Class 3 License.

ENGINES: Stock IAME KA100 per TM 626 and Vortex VLR per TM 500, both OEM, scored together.

AIR BOX: Stock OEM

FUEL: Spec Fuel

MINIMUM WEIGHT: 370 lbs.

TIRES: Open Tires, Rear Tires Minimum Width 7"

OTHER: (1) CIK Style Bodywork only, either conforming to all dimensions listed in TM 200 (except the forward C dimension or CIK approved bodywork that is readily available at least 90-days prior to the beginning of the racing season. Carbon Fiber, Kevlar and metal are not legal construction materials for nose, side pods, or steering fairing. (2) Chain drive only. (3) Dual brake system is not required. Rear disc minimum diameter 7" minimum, 3/16" width. (4) All karts must use rear bumper rule TM 359.3. (5) Kart must meet all 125 Sprint Chassis requirements. (6) Rear Track Width must be a minimum of 50" and a maximum of 55 1/8". (7) Must use the 125 Sprint Shifter seat rule described in TM 360.4.3.1, figure TM 360.4.4.1. (8) No butterfly style steering wheels. (9) Standing Start Procedure utilized.

### **++362.19 100CC AIR COOLED TAG JUNIOR (FINAL 1 & FINAL 2)**

NATIONAL CLASS

DRIVER REQ: Age 12 through 15. Road Race Class 3 License.

ENGINES: Stock IAME KA100 per para: 626 with 19 mm exhaust header.

Motor, spec OEM Vortex VLR, per section TM 500, scored together.

AIR-BOX: Stock OEM

FUEL: Spec Fuel.

MINIMUM WEIGHT: 320 lbs.

TIRES: Open tires, rear tires 7" minimum width.

OTHER: (1) CIK style bodywork only, either conforming to all dimensions listed in Section 200 (except the forward "C"

dimension or CIK approved bodywork that is readily available at least 90 days prior to the beginning of the racing season. Carbon fiber, Kevlar and metal are not legal construction materials for nose, side pods and steering fairing. (2) Chain drive only. (3) Dual brake system is not required. Rear disc minimum diameter - 7" --- minimum width - 3/16" (4) All karts must use rear bumper rule 359.3 (5) Kart must meet all 125 Sprint chassis requirements. (6) Rear track width must be a minimum of 50" and a maximum of 55 1/8". (7) Must use the 125 Sprint Shifter Seat rule described in Section 360.4.3.1, fig 360.4.4.1 (8) No butterfly style steering wheels allowed. (9) Standing start procedure utilized.

## **363 ROAD RACING SERIES FORMAT AND SPECIAL RULES**

Note: Covers laydown and sprint divisions and 2 and 4-cycle.

### **363.1 FORMAT:**

Event format will consist of one timed race per class. Classes are combined into daily race groups. Classes will be lined up on the starting grid with the fastest class gridding first followed by the slower classes. Green flag is to be raised 1 minute prior to race start, with race time beginning when flag is dropped. All competitors race to the checkered flag. The greatest distance achieved in the time allotted determines the finishing order. The driver does not have to take the checkered flag to win.

### **363.2 SPLIT-TIME & RACE STARTS:**

Split starts may be implemented upon the discretion of the Race Director. Standing starts only. Kart must leave starting line under own motive power with no external assists.

### **363.3 STARTING POSITION:**

Starting positions are determined by registration order via pre-registration and at track entry.

### **363.4 RACE LENGTH:**

Under normal circumstances, race length will be as follows: Laydown/enduro classes – 45 minutes, sprint classes – 30 minutes. On track delays, weather and other circumstances may affect the overall length of the race. The Race Director will advise of any changes in the race distances.

### **363.5 RED FLAGS / RESTARTS:**

A race stopped in the first five minutes on the official clock of the original start (first flag) will be restarted with the karts in their original grid position. When the race is restarted, the event must be run for a minimum of one-half the original scheduled or announced race length. Races stopped after five minutes have elapsed on the official clock and prior to the halfway distance will be restarted in the most current race order as compiled by the scorers. Races stopped after one-half of the scheduled distance completed are final. If a race is stopped after one-half of scheduled distance due to a red flag, the drivers causing the red flag may be moved to the last finishing position of the lap they were on or disqualified at the Race Director's discretion. Finish order will be determined by reverting to the last completed lap. Restarts revert to most current order of last completed lap with involved parties moved to the rear of the lap they were currently running or disqualified. The total time a race group will be allowed to run will be 15 minutes beyond the scheduled or announced duration of the race: one hour for a 45 minute race, 45 minutes for a 30 minute race, 30 minutes for a 15 minute race. This time limit may be enforced or may be extended at the Race Director's discretion if time permits.

### **363.6 INCOMPLETE RACE DUE TO INCLEMENT WEATHER:**

Unless conditions are deemed un-safe (standing water--lightening, etc) by the race (director), all races will be run rain or shine -- please come prepared for racing in wet conditions.

### **363.6.1 INCOMPLETE RACE DUE TO INCLEMENT WEATHER:**

In the case of inclement weather that causes the event to end prior to completion, any class run less than half the time scheduled, or any classes that do not run at all, will receive rain points listed in Section 803.7, as they apply. All completed classes will receive proper race points.

### **363.7 CANCELED RACE DAY DUE TO INCLEMENT WEATHER:**

In the event of a complete rain-out, i.e., no classes raced on any day of the event, excluding local option classes scheduled to compete on a practice day, all legally entered participants, including PROPERLY PRE-ENTERED DRIVERS, will receive points as per Section 803.7, as they apply.

### **363.8 ROAD RACING EVENT INCLEMENT WEATHER POLICY:**

Race Director has final say on any decisions concerning rain and wet conditions. IE Lightning, High winds, extremely heavy rain, Flooding, Water running across track, or other unsuitable conditions.

#### **Friday Practice Day**

Run the schedule as published for the day with Race Director determining conditions as the day goes on as to track safety.

#### **Saturday Race Day**

Practice will run during the allotted time. If deemed unsafe by the Race Director there will be no practice but races will grid at the scheduled time. Run race schedule at times as published. Races grid as scheduled, drivers have the option to grid and race or taking their kart to the scales after gridding for points. Non-starting racers, will grid at back of racing karts, notifying their intent to grid personnel. After race start, competitors push directly to scales for weighing. Drivers must take necessary drivers equipment to grid. Drivers will not be able to add additional equipment or objects for weight after leaving the grid. If the conditions are such that the Race Director feels it is too dangerous to race, he can call the race for rain points or wait for the half way point and either call the race or start it, if conditions permit for a half race length. Next race will start at published time, not moved forward of the scheduled time. Finish by grid starting position after going over scales for non-starting racers that meet minimum class weight. All competitors choosing to compete and take the green flag, will be scored ahead of all non-starters. Those non-starters will be awarded finishing positions and points according to their grid start positions. For those taking the green flag, there is no requirement to complete one entire lap to be scored.

### **363.8.1 TERMINATION OF EVENT:**

Termination of event day, Day 1 or Day 2 (or other, if applicable), will not be declared prior to 1:00 PM except in the event of:

- Uncorrectable flooding conditions.
- Snow/ice conditions.
- Other uncorrectable climactic or facility-related situations.

### **363.8.2 IF PROGRAM IS BEGUN SIGNIFICANTLY LATE:**

- Run shortened practices on a fair and timely basis.
- Combine classes and shorten races as necessary, not to be run less than one-half of scheduled time. If Day 1 is terminated due to darkness, inclement weather, curfew, etc., after late start, weather delays, etc., the Day 1 events remaining shall be canceled and rain points awarded.

### **363.8.3:**

If Day 1 begins under adverse weather, etc., conditions and continues throughout the day making it impossible to conduct the Day 1 schedule of events, either partially or completely, as decided by the Race Director, a complete rain-out will be declared and rain points will be awarded.

### **363.9 ELECTRONIC SCORING:**

The AMB TranX 160 transponder electronic scoring system shall be the official method of timing and scoring at WKA National Road Racing Events. (See Section 106.23.)

### **363.10 TRANSPONDER MOUNTING:**

All transponders shall be mounted securely and in a vertical position forward of the front wheels.

### **363.11 PUSHING:**

Karts may not push another kart during a competitive event. If obvious pushing is detected by the officials in charge, both the pushing and pushed kart may be subject to disqualification or penalized finishing position to be determined by the officials in charge.

### **363.12 PRACTICE AND RACE GROUPS:**

Classes of similar category will be combined to create practice and race groups. With the approval specific of the Race Director, a kart may be allowed to participate in an unassigned practice session for engine break-in.

#### **363.12.1 RACE GROUPS:**

When classes are combined into race groups, karts in one class shall not interfere with the race of another class in the race group. In this case, it is the responsibility of slower kart in one class to yield to the faster karts in the other class or classes. The flagman may use the "move over" flag to instruct the slower kart of the oncoming traffic. In the event the "move over" flag is used and the driver in question ignores the direction of the flagman, the driver will be subject to penalties and/or disqualification.

### **363.13 RESTARTING KARTS:**

No restarting of karts during practice or a race after exiting the grid area. If a driver's engine stops on or adjacent to the course and the kart is taken to the pits, the engine may not be restarted and the kart may not reenter the race. Failure to comply may result in a disqualification.

### **363.14 ENTERING 2 CLASSES RUNNING AT THE SAME TIME**

A competitor may enter more than one class in the same race group by meeting provisions:

- (1) The competitor is properly registered in both classes
- (2) The competitor has a proper license for the classes entered
- (3) The competitor provides two transponders and indicates which transponder number is associated with each particular class. (The competitor is responsible for the correct operation of transponders.)
- (4) The competitor must meet all class requirements for both classes entered (chassis, bodywork, fuel, engine, weight etc).
- (5) The competitor must grid and start with class starting furthest back on the grid.
- (6) The competitor may be required to display the numbers of both classes entered.

### **363.15 SPEC FUEL PROVISIONS:**

- (1) The Race Director may authorize the addition of one ounce of acetone per gallon of spec gasoline to enable fuel/oil blending in cold weather conditions. The Race Director will announce implementation of the provision at the drivers meeting the first day of the event. Fuel test samples will be adjusted to reflect the addition of the acetone.
- (2) Competitors may mix 8 – 10 ounces of one type of spec oil with the spec fuel. The baseline sample will be mixed at 9 ounces per gallon. The competitor's fuel must be within + or – 10 points of the baseline sample. If a competitor fails this test then the tech area must mix a sample of fuel using the same number of ounces of oil that the competitor used. All future fuel testing will follow the fuel testing procedure found beginning in Section 502.4.3. The competitor must purchase the fuel to be mixed to verify the legality of their race fuel.





# 2023 TECHNICAL MANUAL

## Speedway Dirt Regulations (4-Cycle Oval Track Racing)

# 400

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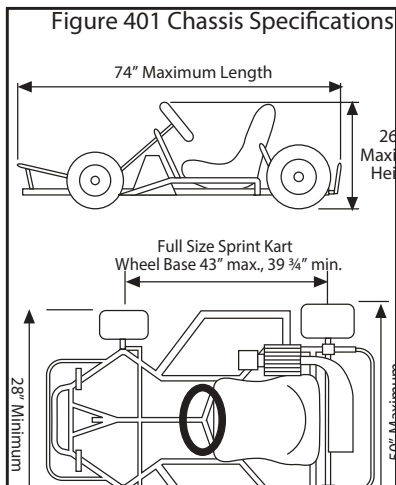
# 400 SPEEDWAY DIRT SERIES REGULATIONS

NOTE: All Speedway Dirt Series classes: Only American made chassis using the specifications stated in this section are allowed.

## 401 FRAME AND OVERALL DIMENSIONS

### 401.1 FRAME:

Of proven safe design, main frame members shall be constructed of nominally round tubing, allowing for normal distortion and elongation near bend radii. Minimum diameter for main frame members is 1.0" and maximum diameter is 1.4". Minimum tubing wall thickness at 1.0" diameter is 0.078". Minimum wall thickness at 1.125" diameter or greater is 0.060". Frame material shall be, at minimum, cold-rolled, electric-weld (ERW) steel tubing or material of at least equal strength. Oval-type tubing is not approved at this time for Speedway Division classes.



### 401.2 DRIVER POSITION:

When normally positioned on the kart for racing competition, the entirety of the driver shall be within the specified width and length dimensions of the kart.

### 401.3 WHEELBASE:

Maximum 43.0", minimum 39.750". Wheelbase measurement is to be taken on a line beginning at a point perpendicular (90 degrees) to the rear axle centerline forward to the point on the horizontal spindle shaft (front axle) centerline on which the hub rides nearest to the kingpin bolt. Both sides must meet the wheelbase specification for the class.

### 401.4 MINIMUM TREAD WIDTH:

28.0" as measured from outside of one tire to inside of opposite tire laterally.

### 401.5 OVERALL MAXIMUM WIDTH:

50.0" for all classes.

### 401.6 OVERALL MAXIMUM LENGTH:

74.0".

### 401.7 HEIGHT:

Maximum of 26.0".

### ++401.8 WEIGHTS:

Non-structural weights added to meet minimum kart/driver weight requirements must be bolted securely to the kart. Weights must be clearly marked with weight and kart number, weights under 7-lbs must be secured with 5/16" bolt, double nutted and weights over 7-lbs, secured with 3/8" bolt double nutted. Washers must also be on the seat side and weight side.. All bolts must be double-nutted.

NOTE: All bolt-on weights must be white in color for visibility. Mounting of weights to nerf bars & rear bumper is prohibited. Weights may be mounted on front bumper if nose cone is used. No added weight allowed on driver.

### 401.9 DRIVER WEIGHT AND WEIGH-IN:

All drivers are subject to a minimum combined kart/driver weight check prior to events and a mandatory post-race weight check. In some classes karts are subject to a maximum post race kart weight as specified in class structure. (See 803.8.)

### 401.10 SUSPENSION:

Use of suspension components of any type, including springs, shocks, etc., is prohibited.

## 402 WHEELS AND TIRES

### 402.1 TIRES:

Pneumatic, designed for racing application types only, maximum diameter 12.5", minimum diameter 9.0", maximum overall width 10.375". Tires must be available to USA general market at least 60 days prior to use in any sanctioned event.

NOTE: WKA reserves the right to establish spec tire regulations for all classes. WKA does not condone and discourages the use of chemical tire prep. It reserves the right to implement supplemental rules to control this practice.

### 402.2 WHEELS:

Wheel bolt pattern (Std. U.S. pattern 3 bolts on 2 1/2" bolt circle where hubs apply). Spool wheels allowed. Material optional but must be of proven design capable of maintaining tire bead seal in competition conditions. 5" and 6" rim sizes are the only accepted sizes. No "G-rings" or lateral-supported wheels allowed.

#### 402.2.1:

The dish (opening) of the wheels may not be covered. No hubcaps, tape or any other material allowed.

### 402.3 WHEEL WEIGHTS:

Clip-on or double back tape wheel balancing weights are not to exceed 1/4 oz. weight each. Additional security is suggested when utilizing stick-on weights. A lack of security is not grounds for disqualification.

### 402.4 RECAPPED TIRES:

Recapped tires are allowed in all non-spec tire classes. Tires other than "slicks" may be prohibited for dirt track events due to surface considerations.

## 403 AXLES AND HUBS

### 403.1 WHEEL HUBS:

Must be constructed of metallic materials.

### 403.2 WHEEL BEARINGS:

Ground-ball or roller-type bearings only. Split race bearings are not acceptable. Wheel bearings must be adjusted so there is no excessive wheel play.

### 403.3 FRONT SPINDLE ASSEMBLY:

Front spindle axle 5/8". Spindles that start out with a 3/4" inside bearing and reduce to a 5/8" outer bearing are legal. Front axle nuts must be cotter-keyed. Berry clips or circlip-type safety fasteners are allowed in place of cotter pins where applicable. The use of castle type nuts is suggested. Bolts must be keyed in such a manner to prevent any movement of bolt or nut without key removal.

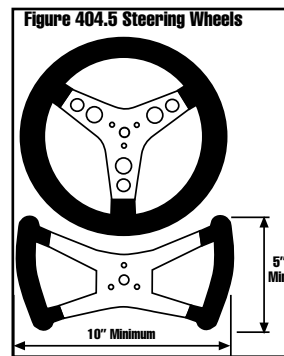
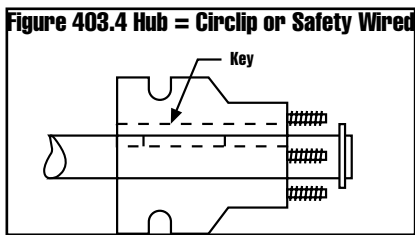
NOTE: Any fastener (nut on bolt, etc.) of a component that would enable movement of or adjustment of spindle(s), such as for castor, camber, etc., must be drilled for and utilize either a cotter pin or safety wire.

### 403.4 REAR AXLE ASSEMBLY:

Axles may be solid or tubular of one-piece design. Minimum diameter is 1". (25.4 millimeters). Maximum axle diameter is 1.25". Minimum axle wall thickness is 0.075" (1.9mm). No carbon fiber or carbon fiber composite axle allowed.

Both driving wheels must be locked to the rear axle with a "live" axle design. Self-clamping hubs may utilize snap ring instead of nut. (Champ Kart axles: Maximum diameter is 1.375"). Snap-rings, or similar fasteners are required at each end of the rear axle. Snap ring grooves may not be cut in axles anywhere between the wheel hubs. If hub extends beyond end of axle, hub must be pinned or tethered. Axle stiffeners are allowed as long as they are secured by cotter pin, through-bolt or cir-clip. (See Figure 403.4)





#### 403.5 AXLE WIDTH:

Front spindle axle and rear axle may not protrude beyond outside of rim and tire.

## 404 STEERING AND STEERING SHAFT SPECIFICATIONS

### 404.1 STEERING GENERAL:

Must be of a direct mechanical type. Tiller and vertical shaft steering systems are not allowed. Rack and pinion steering is not allowed. All steering assembly bolts and nuts, including spindle bolts, must be cotter-keyed and/or safety wired. Spring clips and E-clips are allowed with manufactured bolts or studs designed for their use. All bolts will be minimum 14,000 lbs. tensile strength and be minimum 1/4" diameter, and Grade 5 or US Mark 3 rating or better. All rod ends must have universal type swivel joints.

**Note:** All fasteners (nut on bolt, etc.) of any component that would enable movement of or adjustment of spindles, such as for castor, camber, etc., must be drilled for and utilize either a cotter pin or safety wire. Spring clips and E-clips are also allowed with manufactured bolts or studs designed for their use.

### 404.2 STEERING SHAFT

#### 404.2.1 SOLID SHAFT:

Minimum 0.625 diameter cold-rolled steel, one-piece design. Steering hub (one piece) must be secured with minimum diameter 5/16" quality nut or cap screw in an axial position with the centerline of the shaft. Bottom of shaft will have a minimum diameter 5/16" bolt/cap screw or minimum 1/8" steel roll pin (safety wired). No welding the steering wheel to the hub or the hub to the shaft allowed. No shaft extensions allowed. No cutting or welding of the shaft to alter the length allowed. No quick release steering hubs allowed except in champ karts where they are required.

#### 404.2.2 HOLLOW SHAFT:

Minimum 0.700" diameter steel tubing, one-piece design, with minimum 0.070" wall thickness, with minimum 5/16" diameter fastener at bottom end. Steering hub (one piece) will be secured through the axis to the steering shaft with minimum 6mm or 1/4" bolt through the steering shaft/hub parallel to the axis point. No welding the steering wheel to the hub or the hub to the shaft allowed. No shaft extensions allowed. No quick release steering hubs allowed.

#### 404.2.3 OPTIONAL STEERING SHAFT ADAPTER:

An optional adapter may be inserted between the steering hub and steering wheel to change the angle of the steering wheel or to move the steering wheel closer to the driver. Maximum length 2" measured on the longest side. Minimum diameter of adapter must be the diameter of the steering hub. Adapter must be designed such that all fasteners may be visually inspected and all mounting bolts must be a minimum diameter of 1/4" and must be cotter-keyed or safety wired. Spring clips and E-clips are allowed with manufactured bolts or studs designed for their use.

### 404.3 STEERING WHEEL:

"Steering wheels" may be completely circular, minimum 10" diameter and minimum 3 spoke design; or may be butterfly-type with 10" minimum diameter, 4 spoke design with minimum 5" grip length on opposing sides. (See Figure 404.5.)

## 405 BRAKES

### 405.1 BRAKES GENERAL:

All karts must have brakes working in such a manner to at minimum, brake both rear wheels equally and adequately. All bolts and nuts must be cotter-keyed in such a way to prevent the nut from moving. Brake pedal must be secured to the kart with safety wire or cotter keys. No scrub or band-type brakes allowed. The linkage from the brake pedal to the master cylinder(s) or bias adjuster must be a steel rod of 6mm (0.236") or larger in diameter. The rod must have either (1) a clevis or swivel fitting (Heim joint) at each end and jam nuts in tension with fittings or (2) other OEM brake rod fittings.

### 405.2 DUAL BRAKE SYSTEMS:

When used, these systems will consist of 2 independent brake systems, operated by separate master cylinders. One system shall be fully operational if either front or rear system fails; i.e., if bias control is used, it must allow proper operation of the remaining system should either system fail, etc.

### 405.3 BRAKE MOUNTING:

All master cylinder and caliper mounting bolts and master cylinder roll pins are to be cotter-pinned or safety wired in such a manner that they cannot be loosened without removal of the cotter pins or safety wire. Nylock-style nuts used to hold the brake disk or drum to their hubs IS PROHIBITED. Use of steel locking nuts or drilled bolts with castellated nuts, properly pinned, are the only acceptable fastener for disk or drums.

### 405.4 PAD MOUNTING:

Since most competition karts have brake pads secured by countersunk bolts, safety wiring is not feasible. Each karter should monitor proper tightness, and use appropriate thread locking substance to prevent loss of this hardware.

### 405.5 CONNECTIONS AND ROUTING:

Hydraulic brake connections must be tight and free of any visible leaks. All brake lines should be safely routed to prevent any possibility of being rubbed through or pulled loose while kart is in motion.

### 405.6 BRAKE COMPONENTS:

Traditional type brake components only. No carbon fiber components, etc. Brake rotors must be round.

### 405.7 BRAKE DISK GUARD:

All karts must be equipped with a brake disk guard (A.K.A Wolfe Plate) located between the brake disk and the back of the seat.

## 406 DRIVE-LINE COMPONENTS

### 406.1 ENGINE CLUTCHES:

Dry clutches are mandatory in all 4-cycle classes. No axle clutches allowed in 4-cycle classes.

### 406.2 CHAIN GUARDS:

All chain, or gear-driven karts must be equipped with a chain, or gear guard designed to retain a broken chain, or gear. Outboard drive systems will be allowed only if the chain and sprockets are completely enclosed from front, rear, top and outside.



### 406.3 TRANSMISSIONS AND TORQUE CONVERTERS:

No transmission, gearbox or other device which permits a change of gear/sprocket ratios while the vehicle is in motion is allowed unless otherwise noted for specific classes. Torque converters are prohibited.

### 406.4 EXPOSED SPROCKETS:

Karts starting a race or practice which are equipped with an axle clutch or sprocket hub not being used MUST NOT have an exposed sprocket mounted in any manner. Sprocket must be removed. Rear Sprocket hub must not be able to freewheel in the reverse direction.

### 406.5 CHAIN OILER:

Chain oilers are prohibited.

### 406.6 CHAIN SIZES:

#35 chain is the only acceptable type for 4-cycle classes. No belt drives allowed in 4-cycle classes.

## 407 FUEL SYSTEM

### 407.1 FUEL TANK:

If other than stock engine and fuel tank is used. Fuel tank must be constructed of puncture-resistant material and have a secure, leakproof fill closure. Fuel tank must be securely bolted to primary structure/frame/floor pan of the kart. Fuel tank must be located within mainframe rails beneath the steering shaft.

### 407.2 FUEL TANK CAPACITY:

Maximum of one fuel tank permitted with maximum nine-liter (2.38 GAL) capacity. Fuel line will be of adequate length to connect between fuel tank and carburetor. Excessive fuel line will not be allowed.

### 407.3 FUEL SYSTEM:

No pressurized fuel systems are allowed. No axle or electric fuel pumps allowed. Must be pulse-driven fuel pump. Fuel lines must be secured at all connecting points with approved fasteners such as safety wire or cable ties.

## 408 BODYWORK COMPONENTS

### 408.1 APPEARANCE:

All bodywork must be neat in appearance and in good repair. Bodywork that appears loose and in danger of falling off may subject the entrant to black flag and/or disqualification during the running of an event. Mounting method open but must be secure and of good workmanship.

### 408.2 SOLID NOSE CONES:

Nose cone is the bodywork that extends forward of the rear edge of the front tire. Nose cone must be of a design outlined in diagram. Nose will be teched 6" vertically high from ground; 1" horizontally. (Refer to diagram Figure 258.3) Nose will be teched from front of wheel opening to front of wheel opening. To allow for minor variation in noses in "as raced condition" tech inspectors will allow an additional 0.2500" in the 1" horizontal dimension. No air inlets allowed. Nose cone must be a minimum of 8" high, and a maximum of 17" high except Briggs Jr. Sportsman classes in which nose cannot be taller than 14" as measured from ground to highest point on nose cone. All nose cones must have a tire opening equal to or greater than the tire used. No covering of the side of the tire is allowed. (See Figure 258.5.) Use of nose cone as floor pan: The bottom of the nose cone can extend back full width to the rear edge of the front tire. Any part of nose cone behind rear edge of front tire (i.e., used as floor pan) must be within main frame rails. No fasteners may be used such as bolts, screws, pop rivets, etc to attach additions to the nose. Tape may be added to the nose cone provided it does not interfere with the 1 inch tech rule. Decals are allowed. Rubber baseboard or rubber molding may be used in a safe manner below the 6 inch measured area. No fiberglass or other rigid material may be added. NO CIK NOSE CONES ALLOWED.

Figure 258.3 Nose Cone

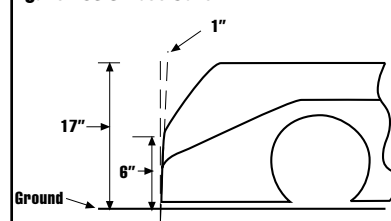


Figure 258.5 Side Panels / Pods

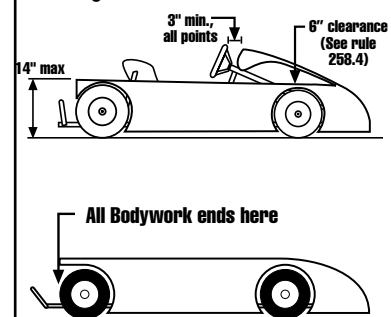
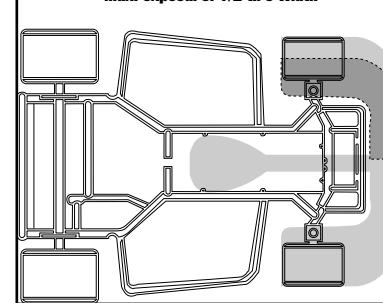


Figure 408.2 Nose Cone  
max. exposure: 1/2 tire width



### 408.3 NOSE CONE GUIDELINES:

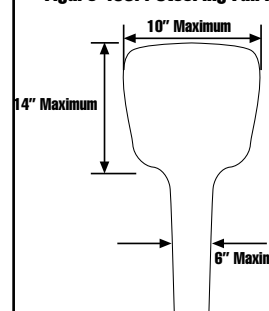
Nose cone must allow for easy driver ingress, egress and removal from the kart. It may cover foot area up to 3" rearward of both pedals in relaxed position, and must not interfere with driver's ability to operate pedals.

### 408.4 STEERING FAIRING:

A fairing may extend from the nose cone rearward on an angle roughly paralleling the steering shaft. Maximum width of the fairing is 10.0" (chord measurement, not across the rounded surface). No portion of the steering fairing may be located within 1 15/16" (50mm) of any part of the steering wheel. The fairing must be mounted with easily bendable tabs or struts. The fairing and/or mounting materials must expose no sharp edges to the driver. Fairing may connect to the nose cone or floor area of kart with a connecting strip not exceeding 6.0" in width, and must not cover the driver's feet, ankles or legs as viewed from above. Steering fairing, if used, must have 6" clearance between all surrounding bodywork. (See Figure 408.4 and 408.5.)

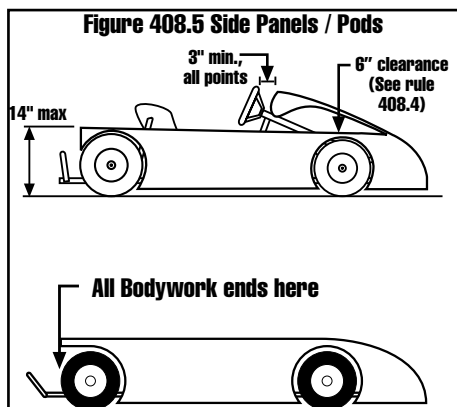
**NOTE: NO steering fairings allowed in the following classes: Junior Sportsman 1 and Junior Sportsman 2.**

Figure 408.4 Steering Fairing



#### 408.5 SIDE PANELS / PODS:

Side Panels/Pods is the bodywork that extends rearward of the rear edge of front tire to rear edge of rear tire. Side panels or CLK-style pods may be used and must be securely mounted. Side panels (both flat and 90° style) must have a rolled or radiuses edge on the front and rear wheel opening if it protrudes beyond the wheel and tire as presented for pre- or post-race tech, unless attached to a nose cone. If flat (vertical) style panels are used, side panel top edge must have inward radiuses edge. All side panels allowed maximum 1" lower lip. No metallic side panels allowed. (See Figure 408.5.)

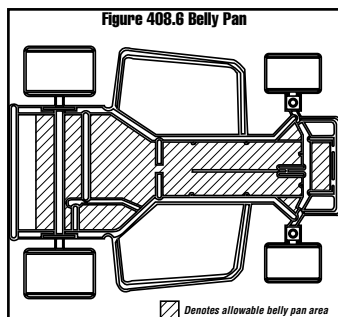


##### 408.5.1 SIDE PANELS / PODS DIMENSIONS:

If 90° panels are used, they may not cover any part of the driver's forward of rear bumper to rearward edge of front tires is 22" minimum, measured with tires in straight-ahead position. Panels may connect to nose cone. The side panels/bodywork may be wider than rear or front tires. If the side panels/bodywork is narrower than front or rear tires, no more than 1" of the tires may protrude beyond the plane of the side panel/bodywork with maximum overall width being 50. (to be checked at rear edge of tires with wheels pointed straight ahead). PANELS / PODS may not extend beyond rear edge of rear tire. (See Figure 258.5.)

#### 408.6 BELLY PAN:

A full floor or belly pan is allowed providing it is within the area inside of the main frame rails and is no higher than the center of the rear axle. Additional floor pan is also required within front foot cage area. (See Figure 408.6.)



#### 408.7 APPLIES TO ALL BODYWORK:

##### 408.7.1 BODY COMPONENTS:

Body components may not be adjustable while the kart is in motion.

##### 408.7.2 BODYWORK REQUIREMENTS:

Bodywork must accommodate all applicable bumper and nerf bar requirements.

##### 408.7.3 COCKPIT:

Kart must have an open cockpit area as viewed from above, except for steering column fairing and nose cone as per above provisions.

#### 408.7.4 BODYWORK CLEARANCE:

All bodywork with the exception of the steering column fairing must be a minimum of 6.0" from the steering wheel when the front wheels are in a straight-ahead position. This is to ensure there is adequate driver entry/egress area.

#### 408.8 NUMBER AND NUMBER PANELS:

Four numbers are to be displayed on the kart. Including one at the front of the vehicle, on both sides in a vertical plane between front and rear wheels; and at the rear of the vehicle as viewed from behind. Number panels must be of adequate size to accept assigned, disposable numbers. Whether paper-type numbers utilized or numbers are painted or decal on bodywork, they must be readily readable to the scoring and race officiating personnel.

#### 408.9 INNER BODY PANELS:

No inner panels are allowed.

#### 408.10 2-CYCLE WEDGE BODY:

This rule only pertains to 2-Cycle Speedway karts that choose to not run the conventional speedway side panels as described in rule 408.5. All other rules still apply. The body will consist of a framework, a top panel, and two (2) side panels. The body must be measured in race ready configuration. The body will allow for at least 1" clearance to the seat in all areas. No sharp edges or corners may be present on the body

##### 408.10.1 FRAMEWORK:

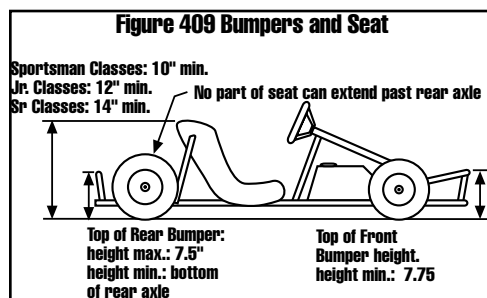
The framework must be of adequate construction to safely hold the other body components for expected race conditions.

##### 408.10.2 TOP AND SIDE PANELS:

The top and side panels must be constructed of non-metallic, fracture resistant material. Clear plastic that is likely to crack is not acceptable. Most other race plastics, corrugated plastic signboard and fiberglass are acceptable. The side panels must provide full wheel openings. They must not be more than 26" above the ground at any point. They may not extend over a line projecting from approximately the front axle centerline to a point no more than 26" above the ground, approximately vertical of the rear axle centerline. They may not overhang any wheel by more than 2" and not exceed 50" in total width.

#### 409 BUMPERS AND NERF BARS

See Figure 409 for following specifications.



##### 409.1 FRONT BUMPER:

Bumper must be constructed of minimum 3/4" diameter steel tubing, minimum tubing wall thickness of 0.065". The top of the upper "hoop" of the front bumper must be a minimum of 7.75" above the ground as raced. The upper hoop must be supported in at least 2 places in the front portion of the bumper by 3/4" or larger tubing uprights. These uprights shall be within 1/2" of vertical when measured 3.0" down from the top of the upper hoop. Uprights must be welded to upper hoop and welded or bolted at bottom. No weights may be attached to front bumper except approved attachment if bumper is enclosed by nose cone.

##### 409.2 BUMPER AND PEDALS:

Front bumpers that incorporate pedal mounting points must be either welded to the frame or through-bolted or dowel-pinned with safety wire/cotter pins.

### 409.3 REAR BUMPER:

Constructed of 3/4" minimum diameter steel tubing, minimum tubing wall thickness of 0.065" and positioned so that the following requirements are met:

#### 409.3.1 MAXIMUM HEIGHT:

7.5" (as raced)

#### 409.3.2 MINIMUM HEIGHT:

No lower than bottom of rear axle.

#### 409.3.3 MAXIMUM WIDTH:

No wider than rear tires.

#### 409.3.4 MINIMUM WIDTH:

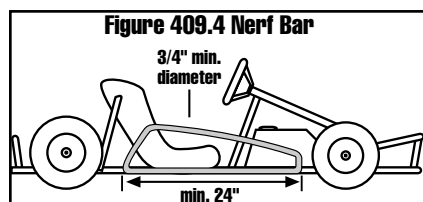
No less than lateral width of main frame rails.

**NOTE:** Oil Catch Cans not allowed to be attached to Rear Bumper.

### 409.4 NERF BARS:

Nerf bars must be constructed of minimum 3/4" diameter steel tubing, minimum tubing wall thickness of 0.065", attached with a 1/4" minimum bolt. The overall length of the side nerf bar(s) shall be a minimum of 24.0", measured from the backside of the nerf bar closest to the rear tire in a straight line to where it attaches to the kart at the front. The rear portion of the nerf bar may not protrude laterally beyond the rear tire. Double-high nerf bars are required. 2-cycles may use CIK-style pods. (See Figure 409.4.)

**NOTE:** Oil Catch Cans not allowed to be attached to Nerf Bars.



## 410 SEATS

See Figure 409 & 410.2 for following specifications.

### 410.1 SEAT STYLE:

Sprint-style "bucket" seats only, no laydown seats allowed. Seat must securely locate driver laterally and longitudinally. Seat must be of one-piece or molded construction, with no "peaks" or add-on sections intended to subvert the seat back height requirements noted below. Seat must bolt securely to the frame and not be adjustable while the kart is underway. No portion of the seat may be located rearward of a plane projected vertically from rear of rear axle. Seat height requirements are as follows:

#### 410.1.1 SPORTSMAN CLASSES (8-12 AGE GROUP):

10" minimum as raced.

#### 410.1.2 JUNIOR CLASSES (12-15 AGE GROUP):

12" minimum as raced.

#### 410.1.3 ALL OTHER CLASSES:

14" minimum as raced.

**NOTE:** Measurement is a vertical plane from ground plane to center of seat back.

### 410.2 SEAT ANGLE:

Seats must conform to angles specified in Figure 410.2. This check will be made in an "As Raced Condition"; the surface where the kart is placed will be the plane the angles will be referenced to.



## 411 SPEEDWAY DIRT SERIES EVENT FORMAT AND SPECIAL RULES

### 411.1 FORMAT:

Event format will consist of group qualifying sessions, second round qualifying if needed and twenty lap feature races. Under unusual conditions, event format may be changed at the discretion of Race Director. Feature races determine overall class winners for the event. Race distances are depending upon the size and configuration of track, and the Race Director will make the final determination of race distances.

#### 411.1.1 QUALIFYING:

Group qualifying format will be used, and the top 30 qualifiers will be locked into feature. If time allows, the Race Director may use "second round qualifying" in which case, the top 20 qualifiers will be locked into the starting field, and the 21st and up karts will re-qualify with the 10 fastest transferring to the feature. The number of qualifying laps will be set by the Race Director depending on track size or configuration and will be announced at the drivers meeting. Drivers must qualify with their assigned group. Any pushing in qualifying will result in those laps being deleted from scoring. Blue flag in qualifying means to separate.

#### 411.1.2 RAIN DELAY POLICY:

In the event of a rain delay, first round qualifying may be canceled at the discretion of the race director with the top twenty (20) competitors (attending the event) in points (derived from top thirty (30)) to transfer to the feature (lined up by points), and the remaining starting spots shall be determined by group qualifying. If second round qualifying is not required, competitors not established in points shall be lined up in rear of the field by blind draw. Only the top thirty (30) in points will be considered for the top twenty (20) starting positions for this policy. The Competition Committee will work with the Race Director as to when to enforce the rain delay policy.

#### 411.1.3 QUALIFYING RAIN-OUT POLICY:

If qualifying for the first race of the competition year (Daytona) is rained out, starting positions will be based the previous year's points as described in Section 411.1.1.

### 411.2 RAIN-OUT AFTER QUALIFYING:

If every competitor in the class has had the opportunity to qualify, or compete in a last chance race to determine the starting order of the main event, and there is a rain-out in that class, points and awards will be distributed according to the main event lineup or time trials if last chance race not run. If a day's event is rained-out, all classes for that day are canceled and will not carry over to the following day.

### 411.3 INCOMPLETE RACE DUE TO INCLEMENT WEATHER:

If a race is called due to weather, the race cannot be restarted, and if one or more laps have been completed; the finish shall be determined by the running order as of the last completed lap.

#### 411.3.1

The Race Director may adjust the number of laps in the race to compensate for time lost due to inclement weather or other unforeseen circumstances.



**411.4 20-MINUTE RULE:**

Each class will be given a maximum of 20 minutes to complete its race. If the field does not complete a single lap within 20 minutes due to false starts or accidents, the Race Director may, (1) call the race and assign finishing positions based on qualifying, or (2) impound the karts and try to restart the race later in the program. If the field completes at least one lap but fails to complete the scheduled number of laps, the Race Director may, (1) call the race and assign finishing positions based on the order at the end of the last completed lap, or (2) impound the karts and try to restart the race later in the program. If the race is running under green past the 20 minutes mark, it will run the scheduled distance or to the first caution or red flag, whichever comes first. The clock does not run during red flag situations.

**411.5 STARTS:**

Race starts will be on front straight away by flagman. Acceleration is not allowed until green flag is displayed. Anyone accelerating before green flag is displayed will be penalized. There will be one try at a double file start. If not able to start on first try, we will go to single file original line up. After one to go notice is given, either on double file initial start or single file complete restart, no restarting of karts allowed. On single file start, track will stay green unless track is blocked or a competitor is at risk or injured. No slingshot starts allowed. On restarts karts may only be started by duly assigned personnel.

**411.5.1 RESTARTING KARTS:**

If a driver's engine stops while on or adjacent to the course, it may only be restarted after the caution (yellow) flag has been displayed, unless otherwise covered by race official at drivers meeting. If a driver's engine stops on or adjacent to the course and the kart is taken to the pits, the engine may not be restarted and the kart may not reenter the race.

**411.5.2 RESTARTS:**

Restarts after a yellow or red flag will revert to the most current order of last completed lap. If no laps of the original start have been completed, the field will revert to qualifying order. If one or more laps have been completed, the kart(s) causing or directly involved in the incident will be placed at the back of the field. A lap is considered to be complete when all karts on the lead lap have passed the finish line or scoring loop.

**411.6 NINETY SECOND RULE:**

There will be NO waiting on the grid. When Grid Steward releases the karts, drivers must be ready. If a kart has problems when the grid is released, the 90 second grid rule will start. After 90 seconds, the grid will close.

**411.7 PUMP AROUND/GRID:**

Tires to be qualified or raced on must be on kart through pump-around. Tire warmers, covers, etc. or working on karts will not be allowed on the grid. If adjustments need to be made, get permission from the Grid Steward(s).

**411.8 PROVISIONAL STARTS:**

At all races (where applicable), the top 30 starting positions will be based on qualifying results. If not qualified on time, the previous year's class champion will start in the 31st position. If time and weather permit, the Race Director can lock in the top 25 number of karts from qualifying based on their time and the next 5 based on second round qualifying times. To earn a provisional starting position, drivers must be registered in the class, must attempt to qualify, must not violate any qualifying rules, and must pass post qualifying weight check and technical inspection. (Points for 31st will be zero plus the number of entries up to 30. See section 803.2.2. & 803.2.5.) Any reigning class champion advancing to the next age group class or a different class will not have the provisional benefit.

**412 SPEEDWAY DIRT SERIES MISCELLANEOUS RULES:****412.1 REAR VIEW MIRRORS:**

Rear view mirrors are illegal.

**412.2 COMMUNICATIONS:**

Drivers may utilize no type of radio communication devices.

**412.3 DATA ACQUISITION SYSTEMS:**

On-board data acquisition systems and/or computer systems are allowed to retrieve the following information only: on-board RPM, water temperature, cylinder temperature, speed, exhaust temperature, lap timing (lateral G sensing), and computer scoring systems. Sensors and wiring for other inputs must be removed from the kart during practice and racing. GPS based systems are allowed. Telemetry is not allowed; data can only be downloaded when kart is off of the racing surface and stationary. One beacon only from each manufacture allowed on the race circuit on race days to be located in a designated area by a designated person. All other beacons found on the race circuit on race days will be confiscated and held by WKA to be returned through a request to the Board of Directors.

**412.4 ADJUSTMENTS:**

The only item that can be adjusted on the kart while in motion is the carburetor.

**412.5 TRANSPONDERS:**

Transponder must be mounted 9" behind the king pin. Transponder mounted vertical to the ground. Only one properly mounted transponder is allowed 9" behind the king pin.

**412.6 MANDATORY DRIVERS MEETING:**

Failure to attend driver's meeting will result in loss of fastest qualifying lap.

**413 WKA SPEEDWAY DIRT CLASSES****413.1 JUNIOR 1 CLONE LITE & HEAVY:**

DRIVER REQ: Attained age 7 thru 10.  
ENGINE: 6.5HP Clone with Clone Green 0.425 restrictor plate.  
EXHAUST: Weenie pipe with standard muffler.  
FUEL: Gasoline.  
MINIMUM WEIGHTS: LITE: 250 lbs.; HEAVY: 265 lbs.  
OTHER: No steering fairing.

**413.2 JUNIOR 1 LITE & HEAVY:**

DRIVER REQ: Attained age of 7 thru 10.  
ENGINE: Briggs & Stratton stock Animal with three-hole restrictor plate with 0.225" holes (purple).  
FUEL: Methanol.  
MINIMUM WEIGHTS: 250 lbs. LITE, 265 lbs. HEAVY  
OTHER: No steering fairing.

**413.3 JUNIOR 1 CHAMP:**

DRIVER REQ: Attained age 7 thru 10.  
ENGINE: Briggs & Stratton stock Animal with three-hole restrictor plate with 0.225" holes (purple).  
FUEL: Methanol.  
MINIMUM WEIGHT: 300 lbs.

**413.4 JUNIOR 2 CLONE LITE & HEAVY:**

DRIVER REQ: Attained age 10 to 12  
ENGINE: 6.5HP Clone with Clone Purple 0.500" restrictor plate.  
EXHAUST: Weenie pipe with standard muffler.  
FUEL: Gasoline.  
MINIMUM WEIGHTS: LITE: 275 lbs.; HEAVY: 290 lbs.  
OTHER: No steering fairing.

**413.5 JUNIOR 2 LITE & HEAVY:**

DRIVER REQ: Attained age 10 thru 12.

ENGINE: Briggs & Stratton stock Animal with Blue restrictor plate – top hole 0.275" and bottom hole 0.325" OR Briggs Raptor (flathead) with WKA Jr. 2 Blue restrictor plate 0.500".

FUEL: Methanol.

MINIMUM WEIGHTS: LITE: Animal 275 lbs., Raptor 265 lbs.; HEAVY: Animal 290 lbs., Raptor 280 lbs.

OTHER: No steering fairing.

**413.6 JUNIOR 2 CHAMP:**

DRIVER REQ: Attained age 10 thru 12.

ENGINE: Briggs & Stratton stock Animal with Blue restrictor plate – top hole 0.275" and bottom hole 0.325" OR Briggs Raptor (flathead) with WKA Jr. 2 Blue restrictor plate 0.500".

FUEL: Methanol.

MINIMUM WEIGHTS: Animal 315 lbs., Raptor 305 lbs.

**413.7 JUNIOR 3 CLONE LITE & HEAVY:**

DRIVER REQ: Attained age 12 to 15.

ENGINE: 6.5HP Clone (no restrictor plate).

EXHAUST: Weenie pipe with standard muffler.

FUEL: Gasoline.

MINIMUM WEIGHTS: LITE: 300 lbs.; HEAVY: 320 lbs.

**413.8 JUNIOR 3 LITE & HEAVY:**

DRIVER REQ: Attained age 12 to 15.

ENGINE: Briggs & Stratton stock Animal with Gold restrictor plate – 0.505" single hole.

FUEL: Methanol.

MINIMUM WEIGHTS: LITE: 300 lbs.; HEAVY: 320 lbs.

**413.9 JUNIOR 3 CHAMP LITE & HEAVY:**

DRIVER REQ: Attained age 12 thru 15.

ENGINE: Briggs & Stratton stock Animal with Black restrictor plate – 0.575" single hole..

FUEL: Methanol.

MINIMUM WEIGHTS: 335 lbs. LITE, 355 lbs. HEAVY

**413.10 CLONE LITE, MEDIUM & HEAVY:**

DRIVER REQ: Age 15 and older.

ENGINE: 6.5HP Clone.

EXHAUST: Big pipe with standard muffler.

FUEL: Gasoline.

MINIMUM WEIGHTS: LITE: 325 lbs.; MEDIUM: 350 lbs.; HEAVY: 375 lbs.

**413.11 CLONE SUPER HEAVY:**

DRIVER REQ: Age 15 and older.

ENGINE: 6.5HP Clone.

EXHAUST: Big pipe with standard muffler.

FUEL: Gasoline.

MINIMUM WEIGHT: 400 lbs. Maximum kart weight is 200lbs.

**413.12 CLONE SENIOR STOCK:**

DRIVER REQ: Age 35 and older.

ENGINE: 6.5HP Clone.

EXHAUST: Big pipe with standard muffler.

FUEL: Gasoline.

MINIMUM WEIGHT: 375 lbs.

**413.13 ANIMAL LITE, MEDIUM & HEAVY:**

DRIVER REQ: Age 15 and older.

ENGINE: Briggs & Stratton stock Animal.

FUEL: Methanol.

MINIMUM WEIGHTS: LITE: 325 lbs.; MEDIUM: 350 lbs.; HEAVY: 375 lbs.

**413.14 ANIMAL SUPER HEAVY:**

DRIVER REQ: Age 15 and older.

ENGINE: Briggs & Stratton stock Animal.

FUEL: Methanol.

MINIMUM WEIGHT: 400 lbs. Maximum kart weight is 200lbs.

**413.15 ANIMAL SENIOR STOCK:**

DRIVER REQ: Age 35 and older.

ENGINE: Briggs & Stratton stock Animal.

FUEL: Methanol.

MINIMUM WEIGHT: 375 lbs.

**413.16 CHAMP LITE & HEAVY:**

DRIVER REQ: Age 15 and older.

ENGINE: Briggs & Stratton stock Animal.

FUEL: Methanol.

MINIMUM WEIGHTS: LITE: 410 lbs.; HEAVY: 425 lbs.

**413.17 RAPTOR LITE, MEDIUM & HEAVY:**

DRIVER REQ: Age 15 and older.

ENGINE: Briggs & Stratton stock Raptor (flathead).

FUEL: Methanol.

MINIMUM WEIGHTS: LITE: 325 lbs.; MEDIUM: 350 lbs.; HEAVY: 375 lbs.

**413.18 PRO GAS ANIMAL LITE, MEDIUM & HEAVY:**

DRIVER REQ: Age 15 and older.

ENGINE: Briggs & Stratton WKA Pro Gas Animal.

FUEL: Gasoline.

MINIMUM WEIGHTS: LITE: 325 lbs.; MEDIUM: 350 lbs.; HEAVY: 375 lbs.

**413.19 KID KARTS (EXHIBITION ONLY):**

DRIVER REQ: Attained age of 5 through 7

ENGINE: Comer C-50 or Comer C-51: (See Section 900)

FUEL: Gasoline and Oil

MINIMUM WEIGHT: 150 lbs.

TIRES: Open Compound, Front & Rear size 10 x 4:50 or 4:60 – 5, Max rear circumference 33.75"

GEAR RATIO: 10/89

**413.20 KID CHAMP KARTS (EXHIBITION ONLY):**

DRIVER REQ: Attained age of 5 through 7

ENGINE: Subaru Robin EX13 Overhead Cam 4.5 HP Engine

MINIMUM WEIGHT: 260 lbs. minimum kart and driver

SPEC TIRES: Open Compound – 7:10 x 6" Right Side, 5:00 x 6" Left Side. Maximum tire circumference 34 1/4" New or used. Event tire prep rules apply.

FUEL: Gasoline.

**413.21 UNLIMITED 2-CYCLE**

DRIVER REQ: Age 15 and older.

ENGINE & MIN WEIGHT: 105cc – 300 lbs., 120cc – 340 lbs., 140cc – 380 lbs., 155cc – 420 lbs.

FUEL: Open

OTHER: No turbochargers, superchargers, or nitrous oxide.



# 2023 TECHNICAL MANUAL

## Speedway Pavement Regulations (4-Cycle Oval Track Racing)

# 450

These regulations are available at [www.WorldKarting.com/technical-docs](http://www.WorldKarting.com/technical-docs)

## NOTES

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# 2023 TECHNICAL MANUAL

## Champ Kart Regulations

# 475

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## 475 SENIOR AND JUNIOR CHAMP KART

### 476 FRAME AND OVERALL DIMENSIONS

For specifications, see Figures 476 a, b & c.

#### 476.1 FRAME:

Main frame rails must be constructed of minimum 1 1/8" diameter, 0.083" wall thickness mild steel, round tubing.

**NOTE:** Tubular steel construction technology is the only type of frame design method currently considered to be within the spirit and intent of the rules for all classes, in all Divisions. The Board of Trustees shall, via an appointed Competition Committee, maintain an open policy to investigate examples of monocoque or unit-type frame design and/or non-traditional construction materials utilization on the basis of safety, availability and cost impact upon the sport, making recommendations as necessary.

#### 476.2 WHEELBASE:

Shall be minimum of 42.0" and maximum of 45.0".

#### 476.3 MAXIMUM OVERALL WIDTH:

Shall be 52.0" measured outside tire to outside tire.

#### 476.4 MINIMUM OVERALL WIDTH:

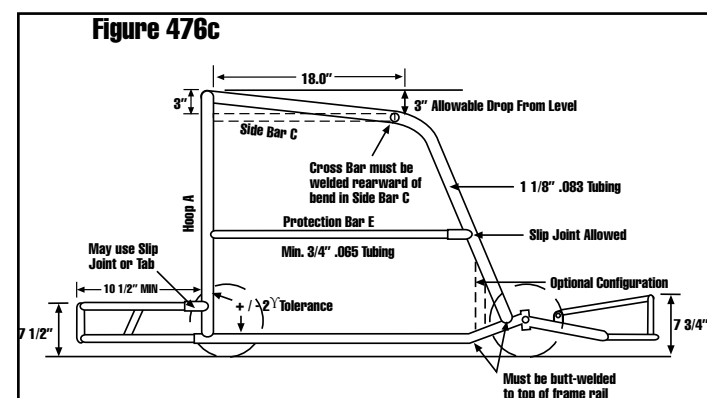
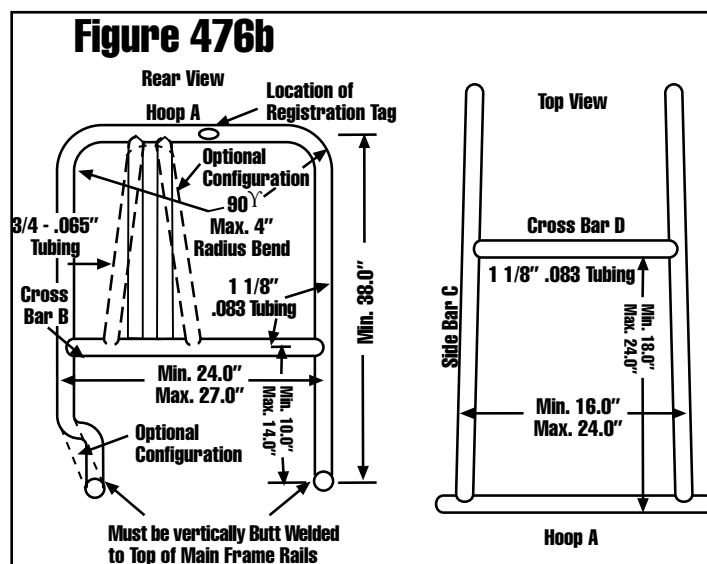
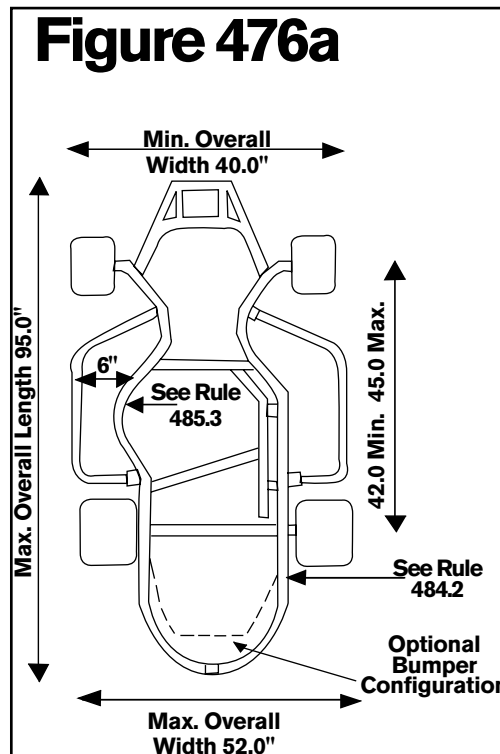
Shall be 40.0" measured outside tire to outside tire.

#### 476.5 OVERALL MAXIMUM LENGTH:

Shall be 95.0".

#### 476.6 ROLL-CAGE:

Full Roll cage of four-point configuration is mandatory. Roll cage must be constructed of 1 1/8" diameter, 0.083" wall thickness D.O.M., mild steel, or better grade tubing. For configuration and dimensions on roll cage, refer to drawing 476.6b. Welding attachment points to main frame rails must be in areas as depicted by dark shadow areas of top view of kart. Rear Hoop A must be one continuous tube with either three or four bends depicted in drawing Rear Hoop A. Right upright must be butt-welded vertically to the main frame rail; left side must be butt-welded to the main frame rail not more than 45° to the top of the main frame rail. Rear Hoop A must be attached in the area from behind the bearing hanger to the end of main frame rails. "Tolerances of + or - 2 degrees will be allowed on the vertical uprights of Hoop A." Rear cross bar B must be 1 1/8" diameter 0.083" thickness D.O.M., mild steel, or better grade tubing. It must be butt welded horizontally and laterally between the two vertical uprights of hoop A. Height of rear cross bar B will be a minimum of 10.0" and a maximum of 14.0" from center line of main frame rails. Rears support braces between top of hoop A and cross bar B are mandatory. They must be a minimum of 3/4" diameter 0.065" wall mild steel tubing. They may be two straight bars welded to bar B and the bottom of hoop A. They may be of one piece configuration with approximately a 180 degree bend welded to the bottom of hoop A and the bottom welded to the top of cross bar B. The width of the bar and location must be in a position so the drivers helmet will be protected from coming out the rear of the roll-cage. Sidebars C must be one continuous tube of 1 1/8" diameter 0.083" wall thickness D.O.M., mild steel, or better grade tubing. The distance between sidebars C must be a minimum of 16" and a maximum of 24". It must be vertically butt welded to mainframe rails in an area 6" on either side of kingpins shown in shaded area on drawing. It must be butt welded to the horizontal cross bar or no more than 3" below the Horizontal cross bar of Hoop A (see Figure 476a). Side rail can drop 3.0" when measured 18" from the horizontal bar of Hoop A. Side rail C can have no other bends other than those shown in drawing. Front cross bar D must be 1 1/8" diameter, 0.083" D.O.M., mild steel, or better grade tubing. It must be butt welded horizontally and laterally between the two sides of side bar C. "Location of front bar D is a minimum of 18.0" and a maximum of 24.0" forward from the top of rear bar of hoop A." It must be welded rearward of the front bend in side bar C.





#### **476.6.1 ROLL-CAGE NOTES:**

Drivers head may not protrude above hoop A, side bar C, or front bar D. Extra gussets welded in the top corners of roll cage are acceptable. Any other attachments to the roll cage will be determined legal by safety tech personnel with safety being the determining factor.

#### **476.6.1.1 ROLL-CAGE CORNERS:**

Roll-cage "corners" and/or structure extremities must be of a rounded design. Square, triangulated or sharp-ended tube junctions on the upper "hoop" portion of the roll-cage structure is not acceptable (see Drawing 476.6).

#### **476.6.1.2 REAR UPRIGHTS:**

Cross bar B has a two fold purpose. To lend strength to the rear hoop A and to be an anchoring point for the shoulder harness of driver restraints. The location of this bar if at all possible should be below the driver's shoulders when seated in a normal position.

#### **476.6.1.3 SIDE PROTECTION:**

It is mandatory that side-protection bars E, (See drawing for perimeters) extend longitudinally on both sides of the roll-cage structure from front roll-cage upright to rear roll-cage upright, located at a height approximately between the driver's elbow and shoulder when driver is seated normally. Side protection bars must weld directly to one of the roll-cage uprights (front or rear), however, opposite end may have a slip-joint connection. Slip-joint must be located directly at end of side protection bar/upright junction and be designed to keep bar securely captive. The side-protection bars or braces are the only bars that can be slip jointed on the champ kart.

#### **476.7 WEIGHTS:**

Non-structural weights added to meet minimum kart/driver weight requirements must be bolted securely to the kart using bolts of at least 5/16" in diameter. Weights in excess of 7 lbs. must use two or more 5/16" bolts. All bolts must be cotter-keyed or double nutted.

**NOTE: All bolt-on weights must be white in color for visibility. Mounting of weights to nerf bars / rear bumper is prohibited. No added weight allowed on driver.**

### **477 WHEEL AND TIRES**

#### **477.1 WHEELS:**

Material optional, but must be of proven design capable of maintaining tire bead seal in competition conditions. Maximum 6" diameter. No "G-rings" or lateral-supported wheels allowed.

#### **477.2 WHEEL WEIGHTS:**

Clip-on or double back tape balancing weights are not to exceed 1/4 oz. weight each. Additional security is suggested when utilizing stick-on weights. A lack of security is not grounds for disqualification.

#### **477.3 MAXIMUM WIDTH:**

Maximum width on any tire and wheel combination of 10 3/8".

### **478 AXLES AND HUBS**

#### **478.1 WHEEL HUBS:**

All wheel hubs, both front and rear, must be constructed of metallic materials.

#### **478.2 WHEEL BEARINGS:**

Ground-ball or roller-type bearings only. Split race bearings are not acceptable. Wheel bearings must be adjusted so there is no excessive wheel play.

#### **478.3 AXLE NUTS AND FASTENERS:**

Front axle nuts must be cotter-keyed and rear must be safety wired, cotter-keyed or snap-ringed. Self-clamping wheels may utilize snap-rings instead of nuts. Berry clips or circlip-type safety fasteners ARE ALLOWED in place of safety wire or cotter pins where applicable. The use of castle-nuts is suggested. Bolts must be keyed in such a manner to prevent any movement of bolt or nut without key removal.

#### **478.4 REAR AXLE ASSEMBLY:**

Axles may be solid or tubular of one-piece design. No carbon fiber or carbon fiber composite axle allowed. Minimum diameter is 25mm (25.4 mm = 1.0"). Maximum axle diameter is 1.375". Minimum axle wall thickness is 0.075" (1.9mm). Axles over 1 3/8" diameter must be of a ferrous material. Both driving wheels must be locked to the rear axle

with a "live" axle design. Snap rings or similar fasteners are required at each end of rear axle. Snap ring grooves may not be cut in axles anywhere between the wheel hubs. Axle stiffeners are allowed as long as they are secured by cotter pin, through-bolt or cir-clip.

#### **478.5 AXLE WIDTH:**

Front spindle axle and rear axle may not protrude beyond outside of rim and tire.

### **479 STEERING AND STEERING SHAFT SPECIFICATIONS**

#### **479.1 STEERING GENERAL:**

Must be of direct, mechanical type. Tiller and vertical shaft steering systems are not allowed. Rack and pinion steering is not allowed. All steering assembly bolts and nuts, including spindle bolts, must be cotter-keyed and/or safety wired. All bolts will be minimum 14,000 lbs. tensile strength and be minimum 1/4" diameter, and at least Grade 5 or US Mark 3 rating. All rod ends must have universal type swivel joints.

**Note: All fasteners (nut on bolt, etc.) of any component that would enable movement of or adjustment of spindles, such as for caster, camber, etc., must be drilled for and utilize either cotter pin or safety wire. Spring clips and E-clips are also allowed with manufactured bolts or studs designed for their use.**

#### **479.2 STEERING SHAFT:**

Steering shaft must be one-piece with no extensions.

#### **479.3 SOLID SHAFT:**

Minimum 0.625" diameter cold-rolled steel.

#### **479.4 STEERING WHEEL:**

Quick-release type steering wheel is MANDATORY. May be of splined shaft or hexagonal design. Attachment bolts must be safety wired.

### **480 BRAKES**

#### **480.1 BRAKES GENERAL:**

All karts must have brakes working in such a manner to at minimum, brake both rear wheels equally and adequately. All bolts and nuts must be cotter-keyed in such a way to prevent the nut from moving. Brake pedal must be secured to the kart with safety wire or cotter keys. No scrub or band-type brakes allowed. The linkage from the brake pedal to the master cylinder(s) or bias adjuster must be a steel rod of 6mm (0.236") or larger in diameter. The rod must have either (1) a clevis or swivel fitting (Heim joint) at each end and jam nuts in tension with fittings or (2) other OEM brake rod fittings.

#### **480.2 DUAL BRAKE SYSTEMS:**

When used, these systems will consist of 2 independent brake systems, operated by separate master cylinders. One system shall be fully operational if either front or rear system fails; i.e., if bias control is used, it must allow proper operation of the remaining system should either system fail, etc.

#### **480.3 BRAKE MOUNTING:**

All master cylinder and caliper mounting bolts and master cylinder roll pins are to be cotter-pinned or safety wired in such a manner that they cannot be loosened without removal of the cotter pins or safety wire. Nylock-style nuts used to hold the brake disk or drum to their hubs IS PROHIBITED. Use of steel locking nuts or drilled bolts with castellated nuts, properly pinned, are the only acceptable fastener for disk or drums.

#### **480.4 PAD MOUNTING:**

Since most competition karts have brake pads secured by countersunk bolts, safety wiring is not feasible. Each karter should monitor proper tightness, and use appropriate thread locking substance to prevent loss of this hardware.

#### **480.5 CONNECTIONS AND ROUTING:**

Hydraulic brake connections must be tight and free of any visible leaks. All brake lines should be safely routed to prevent any possibility of being rubbed through or pulled loose while kart is in motion.

#### **480.6 BRAKE COMPONENTS:**

Traditional type brake components only. No carbon fiber components, etc. All brake disks must be round.



#### **480.7 BRAKE DISK GUARD:**

All karts must be equipped with a brake disk guard (A.K.A Wolfe Plate) located between the brake disk and the back of the seat.

### **481 DRIVE-LINE COMPONENTS**

#### **481.1 CLUTCH:**

Dry-type engine clutch is mandatory. No axle clutches allowed.

#### **481.2 CHAIN GUARDS:**

A chain guard designed to retain a broken chain from reaching the driver is mandatory.

#### **481.3 TRANSMISSIONS AND TORQUE CONVERTERS:**

No transmission, gearbox or other device which permits a change of gear/sprocket ratios while the vehicle is in motion is allowed. Torque converters are not allowed. Jack-shafts not allowed; must be on unaltered crankshaft.

#### **481.4 EXPOSED SPROCKET:**

Karts starting a race or practice which are equipped with a sprocket hub not being used **MUST NOT** have an exposed sprocket mounted in any manor. Sprocket must be removed.

#### **481.5 CHAIN OILER:**

Chain oilers are prohibited.

#### **481.6 CHAIN SIZES:**

#35 chain is the only acceptable chain size allowed. No belt drives allowed.

### **482 FUEL SYSTEM**

#### **482.1 FUEL TANK:**

Must conform to specifications contained in Section 407. Fuel cell is optional. Tank must be vented to the outside of drivers compartment, and a check valve must be in place to prevent fuel from spilling in case of accident. Tank must have only one (1) outside vent with check valve attached **DIRECTLY** to the gas cap or tank.

#### **482.2 FUEL SYSTEM:**

No pressurized fuel systems are allowed. No axle or electric fuel pumps allowed. Must be pulse-driven fuel pump.

#### **482.3 FUEL LINES:**

Fuel lines must be secured at all connecting points with approved fasteners such as safety wire or cable ties.

### **483 BODY COMPONENTS**

#### **483.1 BODY:**

A full, midget/sprint-type, open-wheel body is mandatory. Entire cockpit area will be open as viewed from above. Rounded, compound curve body components consisting, at minimum of nose/cowl section. Tail sections are optional. Flat and angular body components with non-rounded edges are not acceptable. Body components must be located within area defined by vertical inner surfaces of tires. Only flat style side panels or standard number panels are allowed to be attached to side nerf bars. The side panels/nerf bars may be wider than rear and front tires. If the side panels/bodywork is narrower than front and rear tires, no more than 1" of the tires may protrude beyond the plane of the side panel/nerf bars.

#### **483.2 WINGS, SPOILERS, ETC:**

No wings, spoilers or air-channeling devices are acceptable.

#### **483.3 BODYWORK MATERIAL:**

Fiberglass or similar material is acceptable for construction of bodywork.

#### **483.4 BODYWORK GUIDELINE:**

Bodywork will be contained approximately within an area defined by lines within the inner tire surfaces and within the front and rear bumpers.

#### **483.5 BODYWORK COMPONENTS:**

Body components may not be adjustable while kart is in motion. All body components must be securely attached to kart frame. All body components shall be painted or of a colorful gel-coat type finish. A number easily readable for scoring purposes shall be included, at minimum, on nose and both sides of tail surfaces or roll cage. When roll cage is used for number mounting, a number panel must be included on the roll-cage structure providing it does not interfere with the normal vision field of the driver.

#### **483.6 WINDSHIELD:**

A clear windshield constructed of Plexiglas-type material may be added to the cowl section to a height of approximately the driver's eye level.

#### **483.7 HEADER PIPE:**

Header must extend beyond the fuel tank.

#### **483.8 TAIL SECTION:**

(optional) If used, tail section shall be a full, midget / sprint type. Minimum length 15", minimum width 13", minimum height 14", and shall be fully enclosed.

#### **483.9 BELLY PAN:**

A full floor or belly pan is allowed providing it is within the area inside of the main frame rails and is no higher than the center of the rear axle. Additional floor pan is also required within front foot cage area. (See Figure 458.6.)

### **484 BUMPERS AND NERF BARS**

#### **484.1 FRONT BUMPER:**

Mandatory steel tubing bumper constructed of minimum 3/4" diameter material, with a minimum tubing wall thickness of 0.065". Bumper must encircle the front nose area at a minimum height of 7-3/4" above the ground plane. Double bumper is optional. The upper bumper bar and vertical bars may not be connected by tape or other means to the nose.

#### **484.2 REAR BUMPER:**

Steel tubing bumper constructed of 3/4" minimum diameter material, with a minimum tubing wall thickness of 0.065". If tail section is used, bumper must encircle the rear tail section at a maximum height of 7.5" above the ground plane. Double bumper is optional. At least one of the bars must be no higher than 7.5" from the ground plane as raced. See attached drawing for configuration and option on rear bumper. Bumper must measure no less than 10 1/2" minimum from the backside of hoop A to the outer edge of both top and bottom rear bar of bumper. (See FIG. 476C)

**Note:** Oil Catch Cans not allowed to be attached to Rear Bumper.

#### **484.3 NERF BARS:**

Double-row nerf bars constructed of 3/4" diameter steel tubing, with a minimum tubing wall thickness of 0.065". Nerf bars are required in the area between the front and rear wheels as viewed from both sides of the kart, attached with a 1/4" minimum bolt. Bottom bar should be no lower than normal frame ride-height. Upper bar should be no higher than top of rear tire(s).

**NOTE:** No ballast weights or catch cans may be bolted on nerf bars.

### **485 MISCELLANEOUS**

#### **485.1 DRIVER RESTRAINTS:**

A five point "bolt in" or "wrap-around" harness meeting SFI certification 16.1 is required and must be installed in such a manner as to hold the driver firmly in place. If the seat prevents the harness from holding the driver securely in place, clean, rounded slots must be cut into the seat allowing the harness straps to pass through the slots. Metal-to-metal type fasteners are mandatory when a "bolt in" harness is used. Retaining nuts must be cotter-keyed or safety wired and must attach to a 3/16" steel plate (minimum 2" square) that is welded directly to the kart frame and/or roll-cage structure. See Figure 485.1 for approved restraint attachment locations. Harness must be re-certified or replaced every two years. Driver restraints must be installed as specified by the restraint manufacturer.

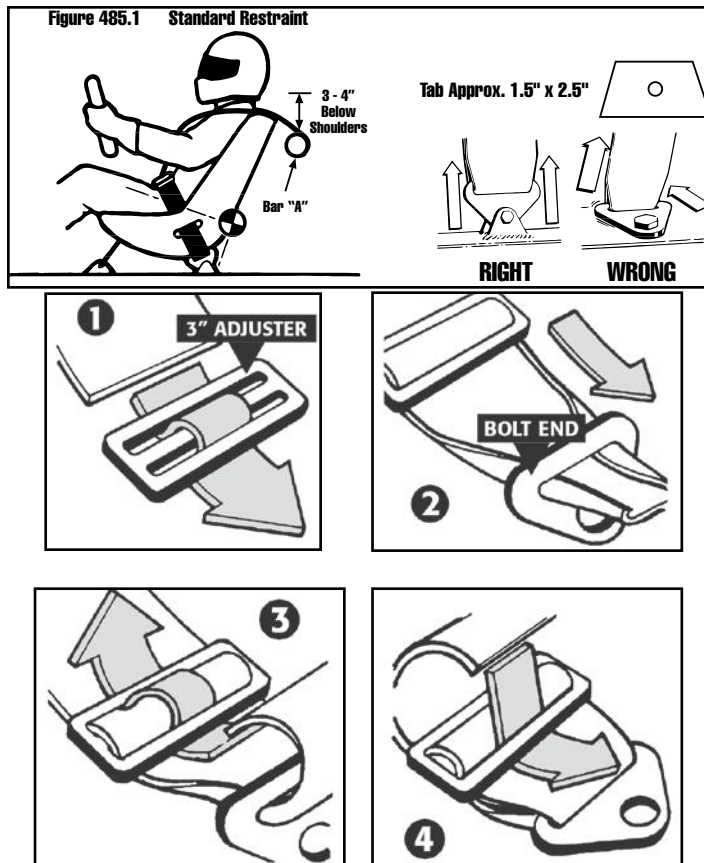
#### **485.2 ARM RESTRAINTS:**

Arm restraints are mandatory and must attach to driver restraint lap belt and the other end should be attached between the wrist and elbow of each arm.

### 485.3 SEAT:

The driver must be seated in a bucket-type seat providing adequate lateral support and back support. Seat back should extend to within a minimum of 5" of horizontal line projected across shoulders, or where shoulder straps normally run, with driver seated normally. Seat must be constructed of material resisting bending or fracture. Seat must have 4-point, bolted mounting to kart frame structure with minimum 5/16" diameter bolts and load-spreading washers.

**NOTE:** Driver's seat must be positioned in such a manner that **NO PORTION OF THE DRIVER'S SEAT MAY BE CLOSER THAN 6" MINIMUM FROM THE INSIDE OF THE LEFT NERF BAR.** This requirement is for "as raced" configuration and can be subjected to post-race technical inspection (see Fig. 485.1) Illustration by G-Force Racing Gear.



### 485.4 THROTTLE SPRING:

It is mandatory for all karts to be equipped with a positive acting throttle return spring.

### 485.5 REAR VIEW MIRRORS:

Are illegal.

### 485.6 RADIOS:

Driver may utilize no type of radio communication devices.

### 485.7 CHASSIS ADJUSTMENT:

No type of chassis-adjusting, frame-loading, etc., device may be available for adjustment by the driver while the kart is being raced. Any means taken to circumvent this requirement could result in suspension of membership privileges for the driver.

### 485.9 DATA ACQUISITION SYSTEMS:

On-board data acquisition systems and/or computer systems are allowed to retrieve the following information only: on-board RPM, water temperature, cylinder temperature, speed, exhaust temperature, lap timing (lateral G sensing), and computer scoring systems. One beacon only from each manufacture allowed on the race circuit on race days to be located in a designated area by a designated person. All other beacons found on the race circuit on race days will be confiscated and held by WKA to be returned through a request to the Board of Directors. Down loading in pits only.

### 485.10 DRIVING SUITS:

All champ kart drivers in all series **MUST WEAR** a full fire resistant driving suit with an SFI rating of 3.2 A1 or better.

### 485.11 CHAMP KART MANUFACTURER REGISTRATION AND INSPECTION

#### 485.11.1 PURPOSE:

The purpose of this rule is to ensure that, to the best of WKA's ability, Champ Kart roll cages are manufactured to a minimum standard of construction and materials by experienced and qualified chassis builders.

#### 485.11.2 MANUFACTURER REGISTRATION:

Champ Karts competing in sanctioned WKA oval track events must have been produced by a chassis manufacturing company registered with WKA. The chassis manufacturer is responsible for manufacturing Champ Kart roll cages in compliance with the standards set forth in this manual. Such companies must have at least five year's experience in kart manufacture, have a business location, and be able to deliver a chassis within 90 days of the order date. To register, kart manufacturers must submit an application obtained from WKA and pay a \$250 registration fee and an annual fee of \$25.

#### 485.11.3 CHAMP KART IDENTIFICATION:

All Champ Karts manufactured after January 1, 2007 must have the Manufacturer's name and a serial number stamped in the frame in a location that will be visible without removing body work or wheels. All Champ Karts with existing M, N, or E registration tags must retain those tags and those tags may not be transferred between Champ Karts. All champ karts that do not have a registration tag must be inspected as outlined in rule 485.11.4. Manufacturer must retain a record of the Champ Kart serial number, date build and dealer or first owner of the kart.

#### 485.11.4 CHAMP KART INSPECTION:

To be eligible to compete in a WKA sanctioned event all Champ Karts must have a registration tag attached to the roll cage in the location shown in Fig. 476b. All untagged Champ Karts must be inspected by a Level 2 (two) or Level 3 (three) certified WKA/SFI tech inspector at their first appearance at a WKA sanctioned event. The inspector will check all roll cage measurements, tubing sizes and thickness with sonic tester or by drilling a 0.125" hole in the tubing and using a no-gauge to check the thickness of the tubing in more than one location on the roll cage (all tubing sizes and thicknesses are nominal dimensions). The tech inspector will then affix a numbered self-destructive tag to the roll cage. This tag will have the date of inspection punched out on it. The tech inspector will then fill out a form with the Kart Manufacturer's name, date inspected, serial number and tag number on it and forward it to the WKA office within thirty days of inspection. Champ Karts tagged with existing M, N or E-tags will be Grandfathered in for the 2007 racing season but sometime during the 2007 season must be inspected in the above manner and tagged with the numbered self-destructive tag so that by the beginning of the 2008 racing season all karts will have the new tags. All karts grandfathered in must retain their original registration tags. All Champ karts that are inspected in the above manner must be manufactured by a registered Champ kart Manufacturer and that Manufacturer has complied with all the procedures in rule 485.11.2. All chassis manufacturing companies registered with WKA may purchase from WKA non-sanctioned event stickers for regional and local track use. If the chassis is raced at a WKA national event, the local sticker will be replaced with a WKA certification sticker after the chassis has been inspected and approved.

#### 485.11.5 DISCLAIMER:

Compliance with the roll cage specifications in this manual is not an indication or assurance that the roll cage will provide adequate driver protection in all situations of a vehicle crash or mishap. It is suggested, however, that roll cages which do not comply with these specifications may not perform their intended function, nor might they provide adequate protection to a driver in a crash situation.

## 486 SPORTSMAN CHAMP KART

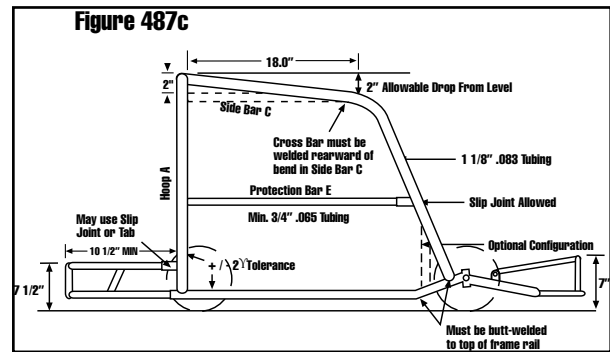
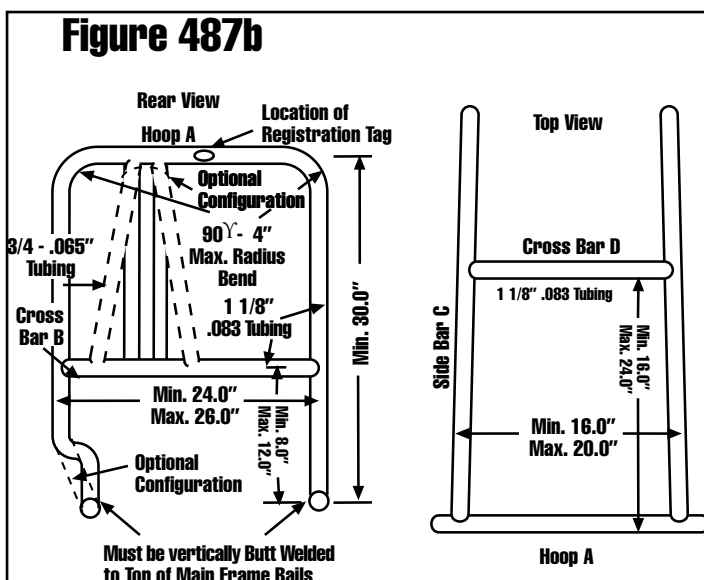
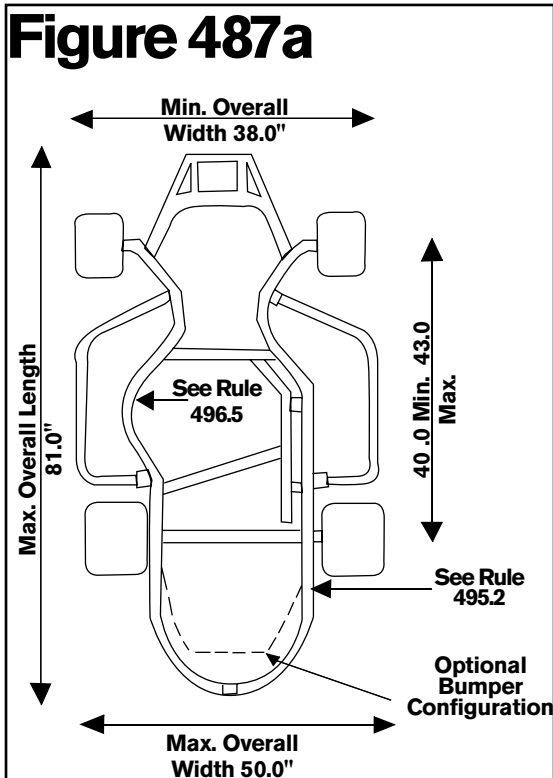
### 487 FRAME AND OVERALL DIMENSIONS

For specifications, see Figures 487 a, b & c.

#### 487.1 FRAME:

Main frame rails must be constructed of minimum 1 1/8" diameter, 0.083" wall thickness mild steel, round tubing.

**NOTE:** Tubular steel construction technology is the only type of frame design method currently considered to be within the spirit and intent of the rules for all classes, in all Divisions. The Board of Trustees shall, via an appointed Competition Committee, maintain an open policy to investigate examples of monocoque or unit-type frame design and/or non-traditional construction materials utilization on the basis of safety, availability and cost impact upon the sport, making recommendations as necessary.



#### 487.2 WHEELBASE:

Shall be minimum of 40.0" and maximum of 43.0".

#### 487.3 MAXIMUM OVERALL WIDTH:

Shall be 50.0" measured outside tire to outside tire.

#### 487.4 MINIMUM OVERALL WIDTH:

Shall be 38.0" measured outside tire to outside tire.

#### 487.5 OVERALL MAXIMUM LENGTH:

Shall be 80.0".

#### 487.6 ROLL-CAGE:

Full Roll cage of four-point configuration is mandatory. Roll cage must be constructed of 1 1/8" diameter, 0.083" wall thickness D.O.M., mild steel, or better grade tubing. For configuration and dimensions on roll cage, refer to drawing 487b. Welding attachment points to main frame rails must be in areas as depicted by dark shadow areas of top view of kart. Rear Hoop A must be one continuous tube with either three or four bends depicted in drawing Rear Hoop A. Right upright must be butt welded vertically to the main frame rail; left side must be butt-welded to the main frame rail not more than 45° to the top of the main frame rail. Rear Hoop A must be attached in the area from behind the bearing hanger to the end of main frame rails. "Tolerances of + or - 2 degrees will be allowed on the vertical uprights of Hoop A." Rear cross bar B must be 1 1/8" diameter 0.083" thickness D.O.M., mild steel, or better grade tubing. It must be butt welded horizontally and laterally between the two vertical uprights of hoop A. Height of rear cross bar B will be a minimum of 8.0" and a maximum of 12.0" from center line of main frame rails. Rears support braces between top of hoop A and cross bar B are mandatory. They must be a minimum of 3/4" diameter 0.065" wall mild steel tubing. They may be two straight bars welded to bar B and the bottom of hoop A. They may be of one piece configuration with approximately a 180 degree bend welded to the bottom of hoop A and the bottom welded to the top of cross bar B. The width of the bar and location must be in a position so the drivers helmet will be protected from coming out the rear of the roll-cage. Sidebars C must be one continuous tube of 1 1/8" diameter 0.083" wall thickness D.O.M., mild steel, or better grade tubing. The distance between sidebars C must be a minimum of 16" and a maximum of 20". It must be vertically butt welded to mainframe rails in an area 6" on either side of kingpin as shown in shaded area on drawing. It must be butt welded to the horizontal cross bar or no more than 2" below the Horizontal cross bar of Hoop A (see Figure 487a). Side rail can drop 2.0" when measured 18" from the horizontal bar of Hoop A. Side rail C can have no other bends other than those shown in drawing. Front cross bar D must be 1 1/8" diameter, 0.083" D.O.M., mild steel, or better grade tubing. It must be butt welded horizontally and laterally between the two sides of side bar C. Location of front bar D is a minimum of 16.0" and a maximum of 24.0" forward from the top of rear bar of hoop A. It must be welded rearward of the front bend in side bar C.

##### 487.6.1 ROLL-CAGE NOTES:

Drivers head may not protrude above hoop A, side bar C, or front bar D. Extra gussets welded in the top corners of roll cage are acceptable. Any other attachments to the roll cage will be determined legal by safety tech personnel with safety being the determining factor.

##### 487.6.1.1 ROLL-CAGE CORNERS:

Roll-cage "corners" and/or structure extremities must be of a rounded design. Square, triangulated or sharp-ended tube junctions on the upper "hoop" portion of the roll-cage structure is not acceptable (see Fig. 421).



**487.6.1.2 REAR UPRIGHTS:**

Cross bar B has a two fold purpose. To lend strength to the rear hoop A and to be an anchoring point for the shoulder harness of driver restraints. The location of this bar if at all possible should be below the driver's shoulders when seated in a normal position.

**487.6.1.3 SIDE PROTECTION:**

It is mandatory that side-protection bars E, (see drawing for perimeters) extend longitudinally on both sides of the roll-cage structure from front roll-cage upright to rear roll-cage upright, located at a height approximately between the driver's elbow and shoulder when driver is seated normally. Side protection bars must weld directly to one of the roll-cage uprights (front or rear), however, opposite end may have a slip-joint connection. Slip-joint must be located directly at end of side protection bar/upright junction and be designed to keep bar securely captive. The side-protection bars or braces are the only bars that can be slip jointed on the champ kart.

**487.7 WEIGHT BALLAST:**

Non-structural weights added to meet minimum kart/driver weight requirements must be bolted securely to the kart using bolts of at least 5/16" in diameter. Weights in excess of 7 lbs. must use two or more 5/16" bolts. All bolts must be cotter-keyed or double nutted.

**NOTE: All bolt-on weights must be white in color for visibility. Mounting of weights to nerf bars and rear bumper is prohibited. No added weight allowed on driver.**

**488 WHEELS AND TIRES****488.1 WHEELS:**

Material optional, but must be of proven design capable of maintaining tire bead seal in competition conditions. No "G-rings" or lateral supported wheels allowed.

**488.2 WEIGHTS:**

Clip-on or double back tape balancing weights are not to exceed 1/4 oz. weight each. Additional security is suggested when utilizing stick-on weights. A lack of security is not grounds for disqualification.

**489 AXLES AND HUBS****489.1 WHEEL HUBS:**

All wheel hubs, both front and rear, must be constructed of metallic materials.

**489.2 WHEEL BEARINGS:**

Ground-ball or roller-type bearings only. Split race bearings are not acceptable. Wheel bearings must be adjusted so there is no excessive wheel play.

**489.3 AXLE NUTS/FASTENERS:**

Front axle nuts must be cotter-keyed and rear must be safety wired, cotter-keyed or snap-ringed. Self-clamping wheels may utilize snaprings instead of nuts. Berry clips or circlip-type safety fasteners ARE ALLOWED in place of safety wire or cotter pins where applicable. The use of castle-nuts is suggested. Bolts must be keyed in such a manner to prevent any movement of bolt or nut without key removal.

**489.4 REAR AXLE ASSEMBLY:**

Axles may be solid or tubular of one-piece design. No carbon fiber or carbon fiber composite axle allowed. Minimum diameter is 25mm (25.4 mm = 1.0"). Maximum axle diameter is 1.375". Minimum axle wall thickness is 0.075" (1.9mm). Axles must be of a ferrous material. Both driving wheels must be locked to the rear axle with a "live" axle design. Snap rings or similar fasteners are required at each end of rear axle. Snap ring grooves may not be cut in axles anywhere between the wheel hubs. If hub extends beyond end of axle, hub must be pinned or tethered. Axle stiffeners are allowed as long as they are secured by cotter pin, through bolt or cir-clip.

**489.5 AXLE WIDTH:**

Front spindle axle and rear axle may not protrude beyond outside of rim and tire.

**490 STEERING AND STEERING SHAFT SPECIFICATIONS****490.1 STEERING GENERAL:**

Must be of direct, mechanical type. Tiller and vertical shaft steering systems are not allowed. Rack and pinion steering is not allowed. All steering assembly bolts and nuts, including spindle bolts, must be cotter-keyed and/or safety wired. All bolts will be minimum 14,000 lbs. tensile strength and be minimum 1/4" diameter, and at least Grade 5 or US Mark 3 rating. All rod ends must have universal type swivel joints.

**Note: All fasteners (nut on bolt, etc.) of any component that would enable movement of or adjustment of spindles, such as for caster, camber, etc., must be drilled for and utilize either cotter pin or safety wire. Spring clips and E-clips are also allowed with manufactured bolts or studs designed for their use.**

**490.2 STEERING SHAFT:**

Steering shaft must be one-piece with no extensions.

**490.3 SOLID SHAFT:**

Minimum 0.625" diameter cold-rolled steel.

**490.4 STEERING WHEEL:**

Quick-release type steering wheel is MANDATORY. May be of splined shaft or hexagonal design.

**491 BRAKES****491.1 BRAKES GENERAL:**

All karts must have brakes working in such a manner to at minimum, brake both rear wheels equally and adequately. All bolts and nuts must be cotter-keyed in such a way to prevent the nut from moving. Brake pedal must be secured to the kart with safety wire or cotter keys. No scrub or band-type brakes allowed. The linkage from the brake pedal to the master cylinder(s) or bias adjuster must be a steel rod of 6mm (0.236") or larger in diameter. The rod must have either (1) a clevis or swivel fitting (Heim joint) at each end and jam nuts in tension with fittings or (2) other OEM brake rod fittings.

**491.2 DUAL BRAKE SYSTEMS:**

When used, these systems will consist of 2 independent brake systems, operated by separate master cylinders. One system shall be fully operational if either front or rear system fails; i.e., if bias control is used, it must allow proper operation of the remaining system should either system fail, etc.

**491.3 BRAKE MOUNTING:**

All master cylinder and caliper mounting bolts and master cylinder roll pins are to be cotter-pinned or safety wired in such a manner that they cannot be loosened without removal of the cotter pins or safety wire. Nylock-style nuts used to hold the brake disk or drum to their hubs IS PROHIBITED. Use of steel locking nuts or drilled bolts with castellated nuts, properly pinned, are the only acceptable fastener for disk or drums.

**491.4 PAD MOUNTING:**

Since most competition karts have brake pads secured by countersunk bolts, safety wiring is not feasible. Each karter should monitor proper tightness, and use appropriate thread locking substance to prevent loss of this hardware.

**491.5 CONNECTIONS & ROUTING:**

Hydraulic brake connections must be tight and free of any visible leaks. All brake lines should be safely routed to prevent any possibility of being rubbed through or pulled loose while kart is in motion.

**491.6 BRAKE COMPONENTS:**

Traditional type brake components only. No carbon fiber components, etc. All brake disks must be round.

**491.7 BRAKE DISK GUARD:**

All karts must be equipped with a brake disk guard (A.K.A Wolfe Plate) located between the brake disk and the back of the seat.

## 492 DRIVE-LINE COMPONENTS

### 492.1 CLUTCH:

Dry-type engine clutch is mandatory. No axle clutches allowed.

### 492.2 CHAIN GUARDS:

A chain guard designed to retain a broken chain from reaching the driver is mandatory.

### 492.3 TRANSMISSIONS & TORQUE CONVERTERS:

No transmission, gearbox or other device which permits a change of gear/sprocket ratios while the vehicle is in motion is allowed. Torque converters are not allowed. Jack-shafts not allowed; must be on unaltered crankshaft.

### 492.4 EXPOSED SPROCKET:

Karts starting a race or practice which are equipped with a sprocket hub not being used MUST NOT have an exposed sprocket mounted in any manor. Sprocket must be removed.

### 492.5 CHAIN OILER:

Chain oilers are prohibited.

### 492.6 CHAIN SIZES:

#35 chain is the only acceptable chain size allowed. No Belt drives allowed.

## 493 FUEL SYSTEM

### 493.1 FUEL TANK:

Must conform to specifications contained in Section 407. Fuel cell is optional. Tank must be vented to the outside of drivers compartment, and a check valve must be in place to prevent fuel from spilling in case of accident. Tank must have only one (1) outside vent with check valve attached DIRECTLY to the gas cap or tank.

### 493.2 FUEL SYSTEM:

No pressurized fuel systems are allowed. No axle or electric fuel pumps allowed. Must be pulse-driven fuel pump.

### 493.3 FUEL LINES:

Fuel lines must be safety-wrapped at all connecting points.

## 494 BODY COMPONENTS

### 494.1 BODY:

A full, midget/sprint-type, open-wheel body is mandatory. Entire cockpit area will be open as viewed from above. Rounded, compound curve body components consisting, at minimum of nose/cowl section. Tail sections are optional. Flat and angular body components with non rounded edges are not acceptable. Body components must be located within area defined by vertical inner surfaces of tires. Only flat style side panels or standard number panels are allowed to be attached to side nerf bars. The side panels/nerf bars may be wider than rear and front tires. If the side panels/bodywork is narrower than front and rear tires, no more than 1" of the tires may protrude beyond the plane of the side panel/nerf bars.

### 494.2 WINGS, SPOILERS, ETC:

No wings, spoilers or air-channeling devices are acceptable.

### 494.3 BODYWORK MATERIAL:

Fiberglass or similar material is acceptable for construction of bodywork.

### 494.4 BODYWORK GUIDELINES:

Bodywork will be contained approximately within an area defined by lines within the inner tire surfaces and within the front and rear bumpers.

### 494.5 BODYWORK COMPONENTS:

Body components may not be adjustable while kart is in motion. All body components must be securely attached to kart frame. All body components shall be painted or of a colorful gel-coat type finish. A number easily readable for scoring purposes shall be included, at minimum, on nose and both sides of tail surfaces or roll cage. When

roll cage is used for number mounting, a number panel must be included on the roll-cage structure providing it does not interfere with the normal vision field of the driver.

### 494.6 WINDSHIELD:

A clear windshield constructed of Plexiglas-type material must be added to the cowl section at a size of 12" x 12" minimum, at a height of approximately the driver's eye level.

### 494.7 HEADER PIPE:

Header must extend beyond the fuel tank.

### 494.8 TAIL SECTION:

(optional) If used, tail section shall be a full, midget / sprint type. Minimum length 15", minimum width 13", minimum height 14", and shall be fully enclosed.

### 494.9 BELLY PAN:

A full floor or belly pan is allowed providing it is within the area inside of the main frame rails and is no higher than the center of the rear axle. Additional floor pan is also required within front foot cage area. (See Figure 458.6.)

## 495 BUMPERS AND NERF BARS

### 495.1 FRONT BUMPER:

Mandatory steel tubing bumper constructed of minimum 3/4" diameter material, minimum tubing wall thickness of 0.065". Bumper must encircle the front nose area at a minimum height of 7-3/4" above the ground plane. Double bar bumper is optional. The upper bumper bar and vertical bars may not be connected by tape or other means to the nose.

### 495.2 REAR BUMPER:

Steel tubing bumper constructed of 3/4" minimum diameter material, with a minimum tubing wall thickness of 0.065". If tail section is used, bumper must encircle the rear tail section at a maximum height of 7.5" above the ground plane. Double bumper is mandatory. At least one of the bars must be no higher than 7.5" from the ground plane as raced. See attached drawing for configuration and option on rear bumper. Bumper must measure no less than 10 1/2" minimum from the backside of hoop A to the outer edge of both top and bottom rear bar of bumper. (See FIG. 487C)

**Note:** Oil Catch Cans not allowed to be attached to Rear Bumper.

### 495.3 NERF BARS:

Double-row nerf bars constructed of 3/4" diameter steel tubing, with a minimum tubing wall thickness of 0.065". Nerf bars are required in the area between the front and rear wheels as viewed from both sides of the kart, attached with a 1/4" minimum bolt. Bottom bar should be no lower than normal frame ride-height. Upper bar should be no higher than top of rear tire(s).

**NOTE:** No ballast weights or catch cans may be bolted on nerf bars.

## 496 MISCELLANEOUS

### 496.3 DRIVER RESTRAINTS:

A five point "bolt in" or "wrap-around" harness meeting SFI certification 16.1 is required and must be installed in such a manner as to hold the driver firmly in place. If the seat prevents the harness from holding the driver securely in place, clean, rounded slots must be cut into the seat allowing the harness straps to pass through the slots. Metal-to-metal type fasteners are mandatory when a "bolt in" harness is used. Retaining nuts must be cotter-keyed or safety wired and must attach to a 3/16" steel plate (minimum 2" square) that is welded directly to the kart frame and/or roll-cage structure. See Fig. 485.1 for approved restraint attachment locations. Harness must be re-certified or replaced every two years. Driver restraints must be installed as specified by the restraint manufacturer.

### 496.4 ARM RESTRAINTS:

Arm restraints are mandatory and must attach to driver restraint lap belt and the other end should be attached between the wrist and elbow of each arm.



#### **496.5 SEAT:**

The driver must be seated in a bucket-type seat providing adequate lateral support and back support. Seat back should extend to within a minimum of 5" of horizontal line projected across shoulders, or where shoulder straps normally run, with driver seated normally. Seat must be constructed of material resisting bending or fracture. Seat must have 4-point, bolted mounting to kart frame structure with minimum 5/16" diameter bolts and load-spreading washers.

**NOTE:** Driver's seat must be positioned in such a manner that **NO PORTION OF THE DRIVER'S SEAT MAY BE CLOSER THAN 6" MINIMUM FROM THE INSIDE OF THE LEFT NERF BAR.** This requirement is for "as raced" configuration and can be a subjected to post-race technical inspection (see Fig. 485.1) Illustration by G-Force Racing Gear.

#### **496.6 THROTTLE SPRING:**

It is mandatory for all karts to be equipped with a positive acting throttle return spring.

#### **496.7 REAR VIEW MIRRORS:**

Are illegal.

#### **496.8 RADIOS:**

Driver may utilize no type of radio communication devices.

#### **496.9 CHASSIS ADJUSTMENT:**

No type of chassis adjusting, frame loading, etc., device may be available for adjustment by the driver while the kart is being raced. Any means taken to circumvent this requirement could result in suspension of membership privileges for the driver.

#### **496.11 DATA ACQUISITION SYSTEMS:**

On-board data acquisition systems and/or computer systems are allowed to retrieve the following information only: on-board RPM, water temperature, cylinder temperature, speed, exhaust temperature, lap timing (lateral G sensing), and computer scoring systems. One beacon only from each manufacture allowed on the race circuit on race days to be located in a designated area by a designated person. All other beacons found on the race circuit on race days will be confiscated and held by WKA to be returned through a request to the Board of Directors. Downloading in pits only.

#### **496.12 DRIVING SUITS:**

All champ kart drivers in all series **MUST WEAR** a full fire resistant driving suit with an SFI rating of 3.2 A1 or better.

### **496.13 CHAMP KART MANUFACTURER REGISTRATION AND INSPECTION**

#### **496.13.1 PURPOSE:**

The purpose of this rule is to ensure that, to the best of WKA's ability, Champ Kart roll cages are manufactured to a minimum standard of construction and materials by experienced and qualified chassis builders.

#### **496.13.2 MANUFACTURER REGISTRATION:**

Champ Karts competing in sanctioned WKA oval track events must have been produced by a chassis manufacturing company registered with WKA. The chassis manufacturer is responsible for manufacturing Champ Kart roll cages in compliance with the standards set forth in this manual. Such companies must have at least five year's experience in kart manufacture, have a business location, and be able to deliver a chassis within 90 days of the order date. To register, kart manufacturers must submit an application obtained from WKA and pay a \$250 registration fee and an annual fee of \$25.

#### **496.13.3 CHAMP KART IDENTIFICATION:**

All Champ Karts manufactured after January 1, 2007 must have the Manufacturer's name and a serial number stamped in the frame in a location that will be visible without removing body work or wheels. All Champ Karts with existing M, N, or E registration tags must retain those tags and these tags may not be transferred between Champ Karts. All champ karts that do not have a registration tag must be inspected as outlined in rule 485.11.4. Manufacturer must retain a record of the Champ Kart serial number, date build and dealer or first owner of the kart.

#### **496.13.4 CHAMP KART INSPECTION:**

To be eligible to compete in a WKA sanctioned event all Champ Karts must have a registration tag attached to the roll cage in the location shown in Fig. 476b. All untagged Champ Karts must be inspected by a Level 2 (two) or Level 3 (three) certified WKA/SFI tech inspector at their first appearance at a WKA sanctioned event. The inspector will check all roll cage measurements, tubing sizes and thickness with sonic tester or by drilling a 0.125" hole in the tubing and using a no-gauge to check the thickness of the tubing in more than one location on the roll cage (all tubing sizes and thicknesses are nominal dimensions). The tech inspector will then affix a numbered self-destructive tag to the roll cage. This tag will have the date of inspection punched out on it. The tech inspector will then fill out a form with the Kart Manufacturer's name, date inspected, serial number and tag number on it and forward it to the WKA office within thirty days of inspection. Champ Karts tagged with existing M, N or E-tags will be Grandfathered in for the 2007 racing season but sometime during the 2007 season must be inspected in the above manner and tagged with the numbered self-destructive tag so that by the beginning of the 2008 racing season all karts will have the new tags. All karts grandfathered in must retain their original registration tags. All Champ karts that are inspected in the above manner must be manufactured by a registered Champ kart Manufacturer and that Manufacturer has complied with all the procedures in rule 485.11.2. All chassis manufacturing companies registered with WKA may purchase from WKA non-sanctioned event stickers for regional and local track use. If the chassis is raced at a WKA national event, the local sticker will be replaced with a WKA certification sticker after the chassis has been inspected and approved.

#### **496.13.5 DISCLAIMER:**

Compliance with the roll cage specifications in this manual is not an indication or assurance that the roll cage will provide adequate driver protection in all situations of a vehicle crash or mishap. It is suggested, however, that roll cages which do not comply with these specifications may not perform their intended function, nor might they provide adequate protection to a driver in a crash situation.







# 2023 TECHNICAL MANUAL

## 2-Cycle General Technical Inspection Procedures

# 500

### 500 2-CYCLE GENERAL TECHNICAL INSPECTION PROCEDURES

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## 500 2-CYCLE GENERAL TECHNICAL INSPECTION PROCEDURES

### 501 PURPOSE OF TECHNICAL INSPECTION

#### 501.1 GENERAL:

Technical specifications and procedures are intended to provide a means for orderly conduct of karting events with regard to reasonable safety and competitive equality.

#### 501.2 SPIRIT AND INTENT:

It is not possible to establish rules and procedures that can provide for every possible condition and situation encountered in the field. In all cases, where rule interpretation is required, the primary consideration will be the spirit and intent of the written rule. Establishing the spirit and intent of a rule in the field is the responsibility of the officials in charge and ultimately rests with the WKA Board of Trustees.

#### 501.2.1

Items being inspected may be compared to known stock parts to insure compliance. Homologation material may also be used if deemed necessary.

#### 501.2.2

Engines and related components are to be inspected and teched in as raced condition, however some engines could require the use of special profile gauges and comparison to known stock parts, therefore these parts may be cleaned at the discretion of the tech inspector or by the competitor under the supervision of the technical inspector in order to properly perform the inspection process.

#### 501.3 ATTITUDE:

The attitude of those individuals charged with the responsibility of conducting technical inspection is (a) help the competitor be aware of possible deficiencies in a timely manner that may pose a safety danger or could constitute a rules infraction. (b) help establish that all entrants are competing under equal conditions and (c) that specifications and regulations established by this document are adhered to by all competitors.

#### 501.4 PRE-RACE INSPECTIONS:

The primary purpose of pre-race inspections is to establish that safety requirements have been met by each competitor prior to their entering the track at speed. It is the responsibility of the entrant to provide for pre-race inspection the vehicle; helmet and racing apparel exactly as is to be raced on that day. If a vehicle, helmet or racing apparel has been pre-inspected and the entrant changes/adjusts, etc., components that have been inspected without making inspectors aware of said changes, the prior inspection may be invalidated and the entrant may be subject to disqualification for the event and/or suspension. Passing pre-race tech does not guarantee post race legality.

#### 501.5 POST-RACE INSPECTIONS:

It is the responsibility of the entrant to proceed directly to scale and/or inspection areas immediately at the conclusion of an event. At National events, positions 1-5 will be escorted to the designated impound area by a WKA official. It is required for National point events that the top five finishers be inspected. After the inspection of 4th & 5th place kart/engine, they may be released immediately. The 3rd place kart/engine may be inspected but, must remain in impound until 1st and 2nd place has been inspected and the class has been released. The inspection of each is at the discretion of the Head Tech official. It is mandatory that each entrant who enters the post race tech inspection area (impound) as a top five finisher, must provide an individual to stay with the kart and be prepared to do post-race engine inspection until released by tech officials. Failure to do so may result in disqualification. Divisional events 1st place finisher and one other of the top 5 finishers must be post-race teched.

#### 501.6 ENGINES RUN IN MULTIPLE CLASSES:

Engines run in more than one class in a day may be marked or sealed after the first class has run and be inspected after all other classes have been run. If the engine is found to be illegal, it will be considered to be illegal in all of the classes in which it was run, whether or not it was selected for inspection for the other classes.

#### 501.7 WKA MEMBERS ONLY IN TECH AREA:

All persons present in the engine tech area must be WKA members

## 502 GENERAL TECH PROCEDURES

#### 502.1 PERSONAL SAFETY GEAR:

Driver's personal safety equipment and racing attire should be ready for pre-tech inspection.

#### 502.2 WORKMANSHIP:

General suitability for competition, workmanship and appearance of kart will be considered in approving it for entry in an event. Decision of the race officials is final.

#### 502.3 ENTRANT RESPONSIBILITY:

It is the competitor's responsibility to assure that all technical safety requirements have been met, including safety-wiring and other items specified in other Sections of this document.

#### 502.4 FUEL CHECKS:

Following are recommended fuel tests. The Race Director may implement additional tests when deemed necessary. Any competitor disqualified at a WKA National, Regional or Divisional race event for illegal fuel or oil may be subject to additional disciplinary action including probation or suspension by WKA.

##### 502.4.1 DIGATRON METER TEST (PRIMARY):

Set meter to minus -45 using cyclohexane. When testing complete, competitor's fuel must not exceed zero.

##### 502.4.2 DIGATRON METER TEST (SECONDARY):

Take sample of racing fuel (track preferable). Set meter to minus -45. When test is complete, competitor's fuel must not exceed zero.

**NOTE: SPEC GASOLINE AND OIL USAGE:** When spec gas and oil standard is in effect, the standard should match competitor's fuel sample when tested. Small variances on the Digatron Tester scale of +5 or -5 are allowable. All other tests should provide a virtual match.

##### 502.4.3 ALCOHOL AND WATER TEST:

Equipment required to perform test consists of 1 ea. 100 ml graduated cylinder with stopper, 2 ea. 50 ml graduated cylinders with stoppers, distilled water, and methanol alcohol. Procedures for test, Step #1 put 30 ml of distilled water in one of the 50 ml graduated cylinders. Step #2 put 30 ml of menthol alcohol in remaining 50 ml graduated cylinder and step #3 put 30 ml of competitor's fuel in the 100 ml graduated cylinder and (slowly) add first the menthol alcohol followed by distilled water (very slow), place stopper in graduated cylinder and (slowly) rotate 180 degrees. A distinct separation line must form at the 60 ml line or equal to loss of mixture when rotating graduated cylinder; 5 ml loss is acceptable. If distinct line does not form in 10 min. fuel is illegal. If a competitor's fuel fails the water test, the baseline sample must also be tested for comparison to the competitor's fuel.

##### 502.4.4 SPEC FUEL TEST PROCEDURE:

When the Spec Fuel rule is in effect, the following procedures apply.

##### 502.4.4.1 FUEL AND LUBRICANT:

Fuel available at the track (see note) will be selected as the spec fuel for the event. Approved lubricants and the fuel/oil ratio for each lubricant will be announced on the pre-registration form.

**NOTE: This does not mean the same fuel as sold at the track but that was purchased some place else. Batches of fuel differ even when sold under a particular brand name.**

##### 502.4.2 TOOLS AND SUPPLIES:

The following tools and supplies are required: One pint or larger graduated cylinders marked in millimeters or ounces. See section 502.4.3 for graduated cylinder specifications. Glass containers for baseline fuel samples. Non contaminated, labeled sample containers, Digatron meter - for convenience, multiple meters are recommended. Hydrometer, Methanol for water test. Distilled water for water test. Other test equipment and supplies as provided by fuel supplier.

##### 502.4.3 FOR GRADUATED CYLINDER SPECIFICATIONS:

Glass containers for baseline fuel samples Non contaminated, labeled sample containers Digatron meter - for convenience, multiple meters are recommended Hydrometer Methanol for water test Distilled water for water test Other test equipment and supplies as provided by fuel supplier

##### 502.4.4.3 PROCEDURE:

Create baseline samples by mixing spec fuel with a sample of each lubricant in the ratio specified on the registration form. Store baseline spec fuel samples in a sealed container out of direct sunlight.



**Digatron Test:** Check each competitor's fuel with the Digatron meter – Digatron meter to be set to zero using the baseline sample. The competitor's fuel must be within + or – 5 points of the baseline sample. If competitor's fuel fails Digatron meter test, probe must be cleaned per manufacturer's specifications

**Color Test:** Draw a fuel sample into a graduated cylinder – compare sample to baseline sample for color

**Hydrometer Test:** Place hydrometer in graduated cylinder with competitors' fuel. The competitor's fuel must be within + or – 3 points of the baseline sample.

**Water Test:** If any questions remain about the legality of the competitor's fuel, conduct the 3 part water test on the fuel sample in graduated cylinder. See TM 502.4.3 for water test procedure.

Other tests as needed including fuel manufacturers test, reagent test for specific additives, etc.

### 502.5 POST RACE TECH:

It is recommended that post-race tech consist of weight-check, fuel, oil, engine, kart and items that may be changed in the course of an event resulting in a performance gain, or which may cause a safety hazard. In case of protest, the protester will be required to submit his/her kart/engine to a full inspection per the Race Director and Tech Director discretion.

### 502.6 REFUSAL TO TECH:

Refusal to submit to post-race tech shall be considered an admission of non-compliance with specifications by the competitor, subjecting the competitor to disqualification for that event and possible suspension of membership privileges.

### 502.7 TECH TOOLS:

The technical inspector may utilize whatever WKA approved tools deemed necessary to accomplish tech procedures with the exception of NO GO gauges. NO GO gauges will be used for chord widths of ports, exhaust systems, carburetor air horn, venturi and flanged end (throttle bore). Pin gauges for metering holes. PLUG NO GO gauges must be blade type with blade made from tool steel, heat-treated, ground and clearly marked. All plug NO GO gauges up to 0.361, blade must have a MIN. thickness of 0.060" and MAX. of 0.125". All plug NO GO gauges 0.362" and up blade must have with a MIN. thickness of 0.125" and MAX. of 0.250". All chord NO GO gauges must have a MIN. thickness of 0.060" and MAX. of 0.125". NO GO gauges may not enter or pass through the opening or gap of a measured part. On chamfered or angular openings, the NO GO gauge may not be self-supporting when part is turned 90 degrees; i.e., tool cannot support itself at any angle. NO GO gauge is to be used without holder. It is recommended that plug gauges be held in an aluminum handle to reduce the total gauge weight.

#### 502.7.1 NO GO GAUGES:

The WKA Technical Manual requires the use of "NO GO" gauges to determine the legality of certain engines, exhaust systems and carburetors. A NO GO gauge is a nonadjustable tool that is inserted into a specified opening. A part is illegal if the NO GO gauge enters the opening being measured. When measuring a chamfered or angular opening, the NO GO gauge may enter the chamfered area, but the gauge may not be self-supporting when the part is rotated at any angle.

**NOTE: A vernier caliper is not a NO GO gauge and may not be used to tech any opening where this manual specifies a NO GO gauge.**

NO GO gauges are defined as follows:

**Plug gauges** – Plug gauges are used to measure round openings. Plug NO GO gauges must be made from tool steel, heat treated, ground and clearly marked. Plug gauges up to a diameter of 0.361" are to be round. Plug gauges larger than 0.361" are to be machined on each side to achieve a blade thickness of 1/8" minimum and 1/4" maximum. The tolerance on plug gauges up to 0.750" is  $\pm 0.001$ " / -0". The tolerance on plug gauges over 0.750" is  $\pm 0.0003$ " / -0". It is recommended that plug gauges be held in an aluminum handle to reduce the total gauge weight.

**Chord gauges** – These gauges are used primarily to check port widths. All chord NO GO gauges must have a blade thickness of 1/8". The tolerance for chord gauges (width) is  $\pm 0.0002$ " / -0".

**NOTE: Fractional dimensions for blade thickness of chord gauge are nominal dimensions with a tolerance of  $\pm 0.015$ " / -0.015".**

### 502.8 TECH AREA:

Inspection areas impound areas and/or other areas so designated by the officials in charge are off-limits to all participants. Competitors may enter these areas only upon the specific direction of the officials in charge.

#### 502.8.1 WKA MEMBERS ONLY IN TECH AREA:

All persons present in the engine tech area must be WKA members.

#### 502.8.2 USE OF CELL PHONES AND CAMERAS:

Use of cell phones and cameras is not allowed in the tech area by anyone other than race officials.

### 502.9 PARTS I.D.:

It is recommended that tags with competitor's name and kart number be attached to components submitted to impound areas for inspection so the items may be returned to the rightful owners.

### 502.10 INSPECTION MARKING:

Method of engine and/or tire marking is at the discretion of the officials in charge. Any means undertaken by a competitor to duplicate, counterfeit or otherwise avoid normal component-marking procedures is cause for immediate disqualification and possible suspension of membership privileges. Competitor is responsible for his/her equipment to be marked.

### 502.11 TIRE REQUIREMENTS:

Tires slick and wet must be available to the USA general consumer market, to all competitors, for a minimum of sixty (60) days prior to an event in which they will be accepted for use. WKA reserves the right to prohibit tires from competition that are not generally available to all competitors.

#### 502.11.1 RAIN TIRES:

Only PRODUCTION-TYPE rain tires that have been manufactured specifically for wet weather racing conditions will be permitted. Competitor modified, grooved, etc., dry condition tires are NOT acceptable for wet weather racing conditions. Any production rain tire is acceptable for use.

#### 502.11.2 SPEC TIRES (ALL DIVISIONS):

All classes, any means taken to remove or alter code or identification numbers on sidewalls is PROHIBITED, and is grounds for disqualification and will be subject to suspension.

### 502.12 WEIGHT:

In all cases, minimum weight is defined as observed total weight of driver and kart in as-raced condition upon completion of event. The competitor must sit or stand in seat or stand on designated point for weighing. Should the competitor be under the specified weight he/she has one opportunity to push the kart off the scale and re-scale while sitting in the seat or standing on designated point. Prior to rescaling the scale official must notify the race director or head technical personal for witness of the final weighing. (The designated point, if any, will be named prior to racing). Failure to make legal weight will result in disqualification from the race.

### 502.13 DIMENSIONS:

Unless otherwise specified, all listed dimensions are  $\pm 0.001$ ", EXCEPT for stated minimum, maximum or NO-GO dimensions. This means for a stated dimensions plus or minus 0.001" is the NO-GO value. This applies to all Divisions.

## 503 CYLINDER BORE/PISTON STROKE

### 503.1 FORMULA FOR CALCULATING CUBIC INCHES:

Bore x Bore x .7854 x stroke = Cubic Inch Displacement

## 504 CYLINDER HEAD VOLUME CHECK

### 504.1 VOLUME CHECK FLUID:

Marvel Mystery Oil is the only liquid acceptable for test.

### 504.2 PROCEDURE:

Test should be conducted after engine has cooled to ambient temperature. No cleaning of piston or head is allowed.



### 504.3 BURETTE SPECIFICATION:

Used to meter Marvel Mystery Oil when measuring combustion chamber volume. Test must be performed with a glass Certified or Calibrated "Grade A" burette with a Teflon stopcock.

**NOTE:** When a Certified burette is not utilized, Tech Inspector must have in his possession a Calibration Rod for the burette being utilized.

### 504.4 FILLING BURETTE:

Fill the burette with the appropriate fluid carefully, minimizing the amount of air bubbles formed during the filling process. Allow sufficient time for all air bubbles to rise to the surface.

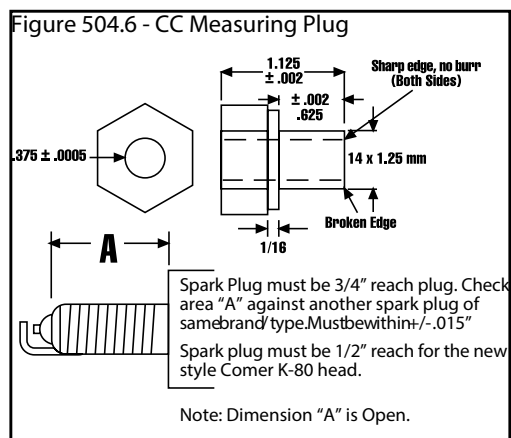
### 504.5 PREPARATION FOR CHECK:

Bleed all air from the stopcock and outlet stem. Run fluid out of the burette until the lowest point on the shadow formed by the fluid surface is in line with the top of the starting cc mark. Any residual fluid remaining on the tip of the outlet stem should be removed.

### 504.6 MEASURING PLUG:

A WKA approved measuring plug is used to measure combustion chamber volume. The measuring plug must be steel only and meet the dimensions in Figure 504.6. Install measuring plug and torque to 90-inch pounds minimum. Set the piston level of the engine to be inspected between 0.050" and 0.150" before top dead center. With the centerline of the spark plug hole in a vertical position, dispense the fluid (Marvel Mystery oil) through the CC adapter hole into the combustion chamber one CC shy of legal combustion chamber volume. Verify the remaining volume in the burette and dispense the remaining fluid into the measuring plug. (See Figure 504.6.)

**Note:** Comer K-80 with new style head/cylinder requires a 0.200" thick washer be used with the cc measuring plug.



### 504.7 CHECKING FLUID LEVEL:

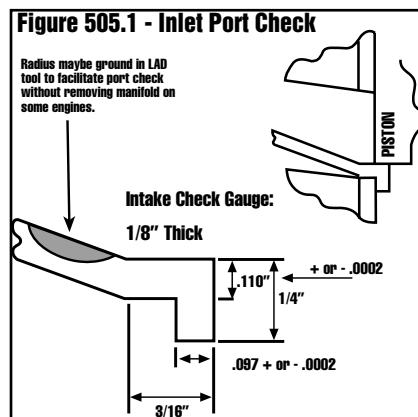
Slowly turn the crankshaft of the engine causing the piston to rise to top dead center. If any fluid rises to above the level of the top of the 2-cycle cc measuring plug, the engine is not within specification.

**NOTE:** When reading the fluid level, hold a finger behind the burette and slightly lower than the fluid level. When held up to the light, the fluid level line will become much more distinct. A certified or Calibrated "GRADE A" glass burette with Teflon stopcock is to be used at all National and Divisional Events. This tech procedure will be performed one time and should only be performed: (1) after the engine has cooled to insure that a legal engine is not disqualified due to thermal expansion of the petroleum fluid used to check the combustion chamber volume. (2) Confirm with competitor the starting and finishing point on the burette.

## 505 INLET PORT CHECKING

### 505.1 INLET PORT CHECK:

Inlet port opening is checked by the dial indicator being zeroed at TDC, holding LAD port checking gauge against bottom (lowest point) of the inlet port. Piston is then rotated to contact gauge. Lock gauge in place with moderate pressure. Indicator reading must now be the same, or less than the stated dimension for the particular engine being checked. Inlet opening is difference between minimum/maximum dimensions, or maximum ATDC. Indicator must be centered over wrist pin. (See Figure 505.1.)

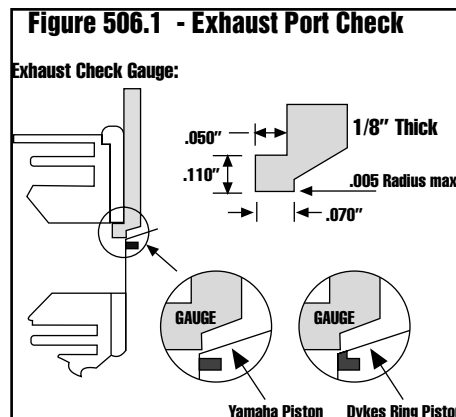


## 506 EXHAUST PORT CHECKING

### 506.1 EXHAUST PORT CHECK WITH LAD GAUGE:

Exhaust port height is checked by the dial indicator being zeroed at TDC, then rotate crankshaft until piston has traveled just past the allowable distance for the engine being checked. Then insert LAD exhaust port checking gauge, holding tight against cylinder wall, between the controlling edge of the piston and the top of the highest exhaust port. Roll the piston up until contact is made. Lock gauge in place with moderate pressure. Indicator reading must now be the same, or greater, than the stated dimension for the particular engine being checked. Exhaust port height is a minimum/ maximum dimension.

Indicator must be centered over wrist pin. (See Figure 506.1.)



### 506.2 EXHAUST PORT CHECK USING LIGHT CHECK:

Exhaust port height is checked by the dial indicator being zeroed at TDC, then rotate crankshaft until piston has traveled just past the allowable distance for the engine being checked. Then roll the piston up to the dimension listed for the engine being checked, shine light into cylinder bore and look directly into exhaust port if light can be seen, engine is out of tolerance. This additional tech procedure was derived from the standard LAD gauge dimension, with subtraction of the 0.110" thickness of the lad tool and 0.015" for port and ring chamfer.

**NOTE:** Comer K-80 new style cylinder the tolerance allowed for port and ring chamber is 0.030".

### 506.3 TORQUING CYLINDER:

When using procedures if question arises regarding compliance of port, the cylinder should be torqued to 140- inch pounds and checked.

### 506.4 EXHAUST PORT CHECK USING DOWEL METHOD (APPLIES TO SEALED ROTAX FR 125 METHOD):

To check Rotax FR 125 port height, begin by remove power valve spring or entire valve. Then secure dial indicator in spark plug hole and zero dial indicator at TDC. Rotate crankshaft until piston has traveled just past the allowable exhaust port dimension for the engine being checked. Insert dowel through exhaust port approximately 1/4 of the distance across piston top. Roll piston up to make contact with dowel. Move dowel side to side to find highest point in port. Lock dowel in place with moderate pressure. Indicator reading must now be the same.

or greater, than the stated dimension for the particular engine being checked. Exhaust port height is a minimum/ maximum dimension. (Dowel is 0.250" in diameter, approximately 4" to 6" in length. Drill blank of proper dimension or precision rod is acceptable. Drill bit is not to be used.)

### 506.5 PISTON PORT INLET TRACT MEASUREMENT:

The inlet tract on a piston port engine is measured at any point along the vertical center line of the port from the gasket surface to the face of the piston. The gasket must be removed. Measure the inlet tract with a depth micrometer. To be legal the measurement must be within the range specified for the engine being measured at any point on the vertical line perpendicular to the side of the piston.

### 507 PISTON SQUISH -- SOLDER TEST

Piston squish is defined as the distance from the top of the piston to the cylinder head. Specific cylinder head to piston minimum dimensions are published in Section 600 for engines where they apply. The inspection procedure requires a piece of 1/16" diameter solder (50 % / 50% tin) and a micrometer. To check the squish, insert the solder through the spark plug hole pointed toward the side of the cylinder and parallel to the wrist pin. With the solder in place rotate the engine one revolution in the direction that the engine runs. Use a wrench to rotate the engine. Do not use the electric starter on a TaG engine. Measurements must be taken with the engine in racing conditions at any time during the event. The minimum measurement must be observed at ALL POINTS. A feeler gauge should be used to varify the minimum measurement / instrument accuracy.

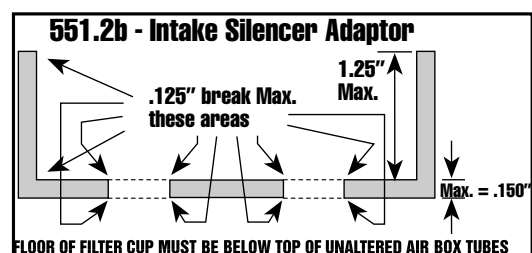
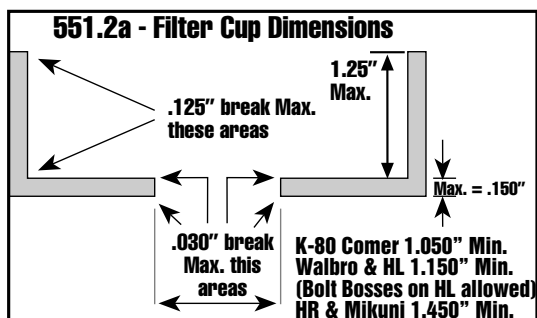
## 550 INTAKE SILENCERS & EXHAUST SYSTEMS

### 551 INTAKE SILENCER (AIR BOX)

#### 551.1 AIR-BOX SPECIFICATIONS:

Air-box must be run as manufactured, registered, and/or homologated without modification. No coatings, no painting, and no taping except at boot connector to prevent rotation. Air box must be intact and operational throughout race. If not, competitor will be disqualified. One 0.200" drain hole is allowed in all cases. A pre-filter cover is allowed in all cases. See Figure 551.3 for design. Extended tubes are allowed on WKA Approved air boxes and CIK Registered air boxes if so documented or supplied. In case of wet conditions, a rain shroud designed specifically to prevent the entry of water into the intake system is permissible. The acceptability of the rain shroud lays with the event Tech Inspectors.

### 551.2 AIR BOX DIMENSIONS



#### 551.2.1 WKA APPROVED INTAKE SILENCERS: (SEE FIGURE 551.3 FOR AIR BOX DESIGN.)

A: 270mm,  $\pm 10$  mm (10.629",  $\pm 0.393$ ") B: 440mm,  $\pm 20$  mm (17.322",  $\pm 0.787$ ")

C: Baffle tubes: Two tubes except on engines 110 cc or larger which are allowed three tubes.

D: Baffle tube minimum length: 94.8 mm (3.732").

E: Baffle tube inside diameter: 23mm maximum (0.905").

#### 551.2.2 CIK REGISTERED 22 MM TWO-TUBE:

Two 22 mm (+ or - 1 mm) baffle tubes.

#### 551.2.4 CIK REGISTERED 29 MM TWO-TUBE:

Two 29 mm (+ or - 1 mm) baffle tubes.

#### 551.2.5 CIK HOMOLOGATED 30 MM TWO-TUBE:

Two 30 mm baffle tubes.

#### 551.2.6 CIK HOMOLOGATED 23 MM TWO-TUBE:

Two 23 mm baffle tubes.

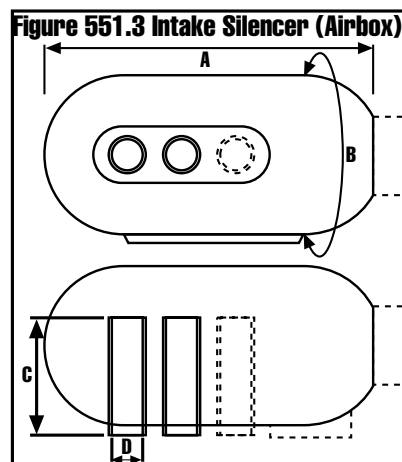
## 551.3 MANUFACTURERS CUP

#### 551.3.1 TAG ENGINES:

Must be equipped with either (1) a WKA Approved air box or (2) any CIK or FMK Registered 22 mm air box or (3) any 23mm CIK Homologated air box. (Exception: Rotax Max FR 125 must run the stock air box. It must be as designed and unaltered. 23 mm maximum inlet tube diameter.)

#### 551.3.4 YAMAHA, KOMET PISTON VALVE AND CADET:

Must use a WKA Approved two- tube 23mm air box. (See Figure 551.3.) (Also see Figure 618.7)



### 551.4 NATIONAL ROAD RACING SERIES:

#### 551.4.1 SPEC 125 TAG ENGINES:

Must be equipped with either (1) a WKA Approved air box or (2) any CIK (or FIK) Registered 22 mm air box or (3) any CIK Homologated air box. (Exception: Rotax Max FR 125 must run the stock air box. It must be as designed and unaltered. 23 mm maximum inlet tube diameter.)

#### 551.4.2 125CC SPRINT SHIFTER:

ICC engines must be equipped with CIK Registered or CIK Homologated air box. When required by track or local ordinance, moto and Stock Honda engines must be equipped with (1) a WKA Approved 22 mm two-tube or three-tube air box, (2) a CIK Registered 29 mm two-tube air box, or (3) a CIK Homologated 30 mm air box.

#### 551.4.3 OTHER ENGINES UNDER 110CC:

May run either (1) a WKA Approved 22 mm two-tube air box, or (2) a CIK Registered 22 mm two-tube air box.

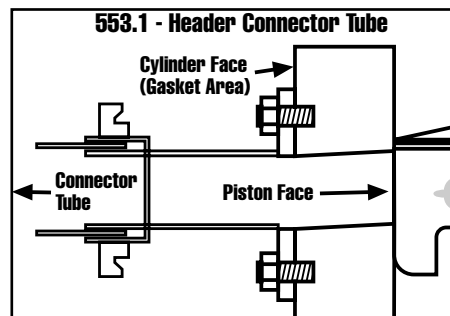
#### 551.4.4 OTHER ENGINES OVER 110CC:

May run either (1) a WKA Approved 22 mm three-tube air box, (2) a CIK Registered 29 mm two-tube air box, or (3) a CIK Homologated 30 mm two tube air box.

#### 551.6 CARBURETOR/AIR BOX FILTER ADAPTERS:

Carburetor to air filter and carburetor to air box adapters must meet the specifications shown in Figure 551.2a. Air box to air filter adapters must meet the specifications shown in Figure 551.2b. Adapters may not be designed to provide a ram-air or velocity stack effect. Air box to air filter adapters must direct air into the air box intake tubes only. The air-box tubes must extend above the floor of air box adapter making a ridge that is visible during inspection. (See Figure 551.2b). All openings and edges of air filter adapters and air box adapters may have a maximum 0.125" radius break, a maximum flange height of 1.250" and a maximum thickness of 0.150". The only approved method for sealing the carburetor/air box filter adapter to the carburetor is an "O" ring. The use of sealant or gasket is not legal.

DIRECT DRIVE classes where the connector tube has a maximum outside diameter of 2". All connector tubes must be of spherical shape. The connector cup on the header and exhaust pipe must be of a design to only accept 1.780" connector tube or smaller "EXCEPT" for OPEN and DIRECT DRIVE it is 2". Connector tube length measurements are taken from face of piston to connector tube end being utilized. (See Figure 553.1.)



### 552 EXHAUST PIPE SILENCING CAN

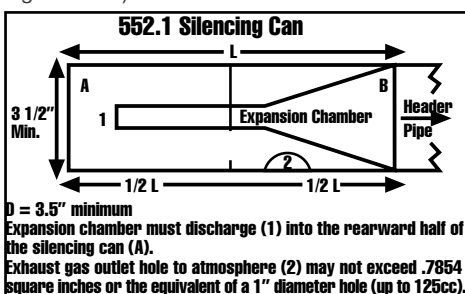
#### 552.1 SILENCING CAN, (2-CYCLE):

(1) All exhaust systems must be equipped with a silencing can meeting the following specifications. (See Figure 552.1) (2) All silencing cans must have a blunt closed or rolled surface end.

**NOTE:** Exhaust system must be intact as per specifications, and operational, throughout race event; if not, entrant will be disqualified.

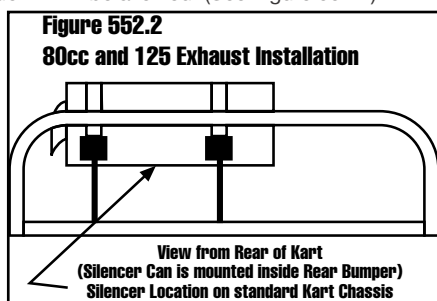
##### 552.1.1:

Engines of 125cc displacement or greater may use one or more exhaust discharge holes to atmosphere of equal area not to exceed 1.571 square inches or the equivalent of two 1" holes. (See Figure 552.1)



#### 552.2 MOUNTING:

All fore and aft exhaust systems must have a blunt, closed or rolled surface end. Any projection over 0.25" in length must have a minimum 2" OD blunt surface. 125 and 80cc shifter exhaust systems mounted in a cross/bar position inside rear bumper with longest part of stinger rotated down will be allowed. (See Figure 552.2)



### 553 EXHAUST HEADER

#### 553.1 HEADER/CONNECTOR TUBE:

In all Sprint and Road Racing classes (except Open), multiple adjustable pipes are not allowed. There may be no means for adjusting the allowable head pipe length. The convergent (second cone) may be adjusted in listed Road Racing Classes. Headers for all Stock and Stock Appearing classes (except open) must be of contemporary design, i.e., constructed of a flange, tubular head pipe and connector cup if connector tube is utilized. No cooling fins, water jackets, header cooling adapters, etc., are permitted. In all 2-cycle classes the connector tube has a maximum outside diameter of 1.780" "EXCEPT" for OPEN and

### 554 RLV SPEC MUFFLERS

**NOTE:** Any modification to the RLV YBX, SBX, SSX/SSX-V can type exhaust mufflers and RLV/HPV 1, 2, and 4 pipes will be considered a performance enhancement and will result in immediate disqualification. Said infraction will be reported to the Board of Trustees which may result in further action. (Addition of safety wire or a hose clamp to secure the cap retaining screws is not considered to be a modification. Sheet metal screws up to size #12 may be substituted in loose holes. Replacement of the end cap is not a modification as long as the original sheet metal screw holes in the can are used. New holes may not be drilled in the can.) End caps may be either welded on or screw attached.

#### 554.1 RLV-YBX MUFFLER:

The YBX Muffler shall be used as manufactured by RLV. This is a restricted muffler and shall not be modified in any way. YBX muffler must be installed in "horizontal" position. The header flange and end cap must be securely fastened with no leakage. End cap fastening holes (3-only) must have solid type screws in place i.e., body (can) and end cap. Check of exhaust gas leakage to be made by a gas leak detector. End cap must be removed for inspection of baffle for location and hole size. Hole sizes in the end cap and baffle plate are (0.380" no-go) and rotated 180 degrees opposite. Exhaust gas temperature probe allowed one hole only. EGT sensor probe must be located between header flange and front-end cap. If hole exists in pipe for EGT sensor, EGT sensor probe must be in place or the hole must be plugged. Any attempt to modify or bypass muffler is not allowed. One exhaust gasket only must be used with a maximum thickness of 0.200". Exhaust gaskets are subject to be compared to known stock for I.D., O.D., and gasket material. (See Figure 554.1 for Specifications).



**Figure 554.1 - RLV YBX Muffler**

The diagram illustrates the dimensions for the RLV YBX Muffler. The side view (top) shows a rectangular body with a front cap and a baffle. Key dimensions include: overall length (5.875" Min. to 6.125" Max.), distance from front cap to baffle (3.875" Min. to 4.125" Max.), baffle width (1.250" Min. to 1.500" Max.), air gap (1.25" Max.), distance from front cap to air gap (2.410" Min.), baffle height (3.125" Min. to 3.375" Max. on center line), and body O.D. (3.375" Min. to 3.625" Max.). The end view (bottom) shows two circular cross-sections: the baffle and the end cap. Both have three holes with a diameter of .380" (No-Go Holes). The distance between the centers of the holes is 2.840" Min. (All 3 holes). The end cap holes are positioned 1.250" Min. to 1.312" Max. from the top edge (2 places). The end cap also has a diameter of 2.840" Min. (All 3 holes). Additional notes specify that the end of the tube must be parallel to the baffle within 1/8", 3 screws are required in the O.D. of the end cap at 90 degrees apart, and brace straps may be added.

**Dimensions:**

- Overall Length: 5.875" Min. to 6.125" Max.
- Distance from Front Cap to Baffle: 3.875" Min. to 4.125" Max.
- Baffle Width: 1.250" Min. to 1.500" Max.
- Air Gap: 1.25" Max.
- Distance from Front Cap to Air Gap: 2.410" Min.
- Baffle Height: 3.125" Min. to 3.375" Max. (On Center Line)
- Body O.D.: 3.375" Min. to 3.625" Max.
- End of tube must be parallel to baffle within 1/8"
- 3 screws in O.D. of end cap min. 90 Degrees apart.
- Brace straps may be added.

**End View Details:**

- Baffle and End Cap Diameter: 2.840" Min. (All 3 holes)
- Hole Diameter: .380" No-Go Holes
- End Cap Hole Position: 1.250" Min. to 1.312" Max. (2 places)
- The end cap holes are above the 9, and 3 o'clock centerline.

Technical drawing of a circular plate with 7 holes. The drawing includes the following dimensions and specifications:

- Overall diameter: 8.375" min. - 8.625" max.
- Inner diameter (hole spacing): 7.375" min. - 7.625" max.
- Outer diameter (hole spacing): 4.875" min. - 5.125" max.
- Inner diameter (hole spacing): 4.875 Min.
- Inner diameter (hole spacing): Air Gap 2.750" min.
- Inner diameter (hole spacing): 3.125" max.
- Inner diameter (hole spacing): 1.344" min. / 1.406" max.
- Inner diameter (hole spacing): 1.494" min. / 1.527" max.
- Inner diameter (hole spacing): 7 - .380" no-go Holes equally spaced see end view
- Inner diameter (hole spacing): .937" min. / 1.000" max.
- Inner diameter (hole spacing): 3.812" min. / 3.937" max.
- Inner diameter (hole spacing): 3.187" min. / 3.312" max.
- Inner diameter (hole spacing): Baffle (Weld baffle 100%)
- Inner diameter (hole spacing): 1.875" min. / 2.125" max.

7 - .380" no-go holes  
1.281" apart + / - .031"

1.406" + / - .031" RCL

.380 No-Go Holes

**Figure 554.3**

The diagram illustrates the assembly of a tube into a header flange. The tube must protrude through the flange with a height dimension of  $.100 + .020$ . The distance from the tube's centerline to the end of the header is specified as  $3.125''$  Min. and  $3.375''$  Max. The header's outer diameter (D) is  $1.312''$  Min. and  $1.437''$  Max. The header flange is labeled, and a note indicates the flex cup must be flush with the end of the tube with a tolerance of  $+ \text{ or } -.030$ .

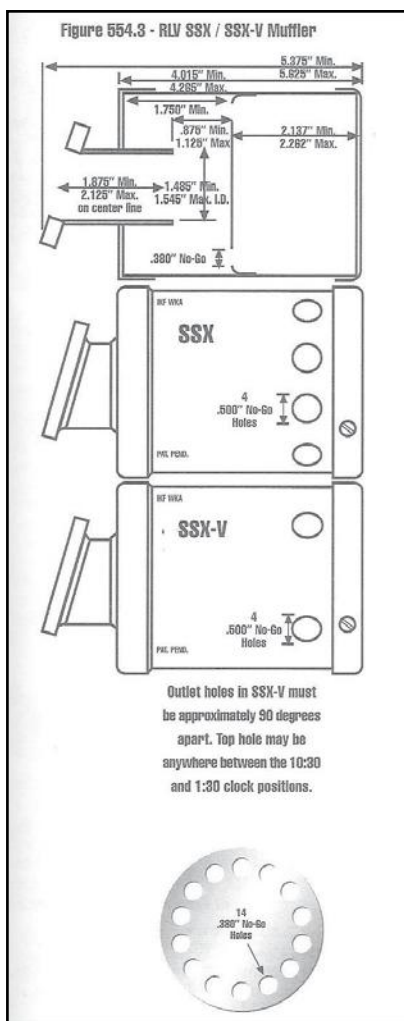
Tube must protrude through flange  
 $.100 + .020$

$D = 1.312''$  Min.  
 $1.437''$  Max.

Header Flange

$3.125''$  Min.  
 $3.375''$  Max.

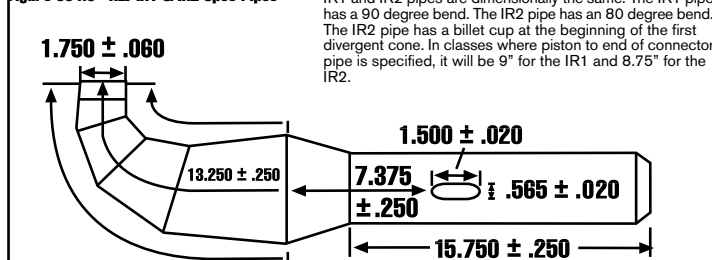
Flex Cup must be flush with end of tube  
 $+ \text{ or } -.030$



## 554.6 RLV IR2 PIPE:

The overall length of connector tube from face of piston to connector tube end on the IR2 Pipe is 8.75" with no maximum length. The connector tube shall be rigid pipe with a maximum O.D. of 1.780". The IR2 pipe shall be used as manufactured by RLV. No modifications allowed. (See Figure 554.6 for specifications.)

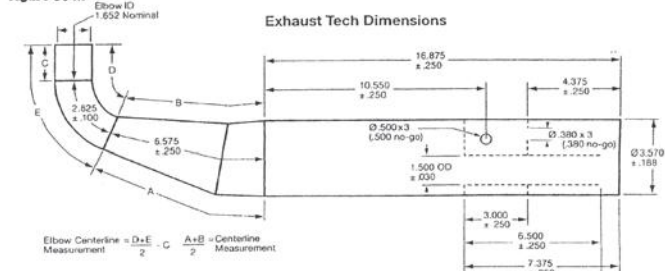
**Figure 554.6 - RLV IR1 & IR2 Spec Pipes**



## 554.7 SR-Y PIPE

Pipe to be run as supplied with no modifications. Must be run with unaltered RLV9110 header and 1.75" straight steel connector tube max 1.780" - 9.5" minimum length from piston to end of connector tube.

**Figure 554.7**



## 554.8 KOMET PISTON VALVE HEADER AND PIPE:

Header and pipe must be stock Komet Piston Valve. No modifications or wrappings allowed except hole may be added for EGT sensor probe. If hole exists, EGT sensor probe must be in place or hole must be plugged. The header and pipe is to be used with maximum 1.780" OD connector tubing. Pipe to be stock Komet Piston Valve Sportsman, Komet Piston Valve Junior or Komet Piston Valve Senior. (See class structures in Section 214 for proper pipe and Figure 554.8 for specifications). Length from piston face to end of connector pipe on Komet Piston Valve Sportsman and Junior pipes is 12" min. and 12.5" max. Length from piston face to end of connector pipe on Komet Piston Valve Senior pipe is 10" minimum, no maximum. (See class structures in Section 214 for proper pipe and Figure 554.8 for specifications).

**Note:** HPV Pipes no longer allowed in any Komet classes.

## 556 ENGINE TAGGING

### 556.1

All engines running in the WKA Man-Cup competition must be sealed using the official WKA engine seal. Any modification, tampering or attempt to violate the spirit and intent of the engine tagging system will result in immediate disqualification. Said infraction will be reported to the board of Trustees and may result in further disciplinary action. All bolts and nuts involved in the sealing process must be thru drilled. Holes should be 3/32" minimum in diameter and should be de-burred or chamfered on the edges to avoid damage to the wire sealing device. The wire must pass through BOTH sides of the nut or bolts being used.

- X30 Sr -- thru two head bolts
- X30 Jr -- two head bolts and header strap
- Micro Swift--head bolt and header nut
- Yamaha -- two head bolts and muffler strap
- Mini Swift -- one head nut and thru hole in cylinder head





# 2023 TECHNICAL MANUAL

## 2-Cycle Engine Specifications and Regulations

# 600

### 600 2-CYCLE ENGINE SPECS / TECH

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## 601 YAMAHA KT-100S

**NOTE:** This section covers stock Yamaha KT-100S engines under 6.23 cubic inches (102.11cc) maximum displacement. Engines must be single-cylinder and utilize single, stock carburetor. Unless otherwise specified, all parts are to be of original manufacture and be stock in appearance.

### 601.1 EXTERNAL MODIFICATIONS:

External modifications which do not in any way effect a performance gain are permissible, i.e. painting of head fins for advertisement, fin dampeners, cutting hole in ignition cover for installation of a starter nut. No Anodizing of any parts allowed unless otherwise noted.

#### 601.1.1

**NOTE:** Depending upon specific class requirements, the following items may be considered open: air cleaner, clutch, muffler, rock guard, chain guard, motor mount, starter nut, external extension of carburetor jet needles, carburetor return springs, temperature gauge, tachometer, main bearing shims and external third-bearing, gaskets, oil seals, and fasteners. Bearings are a non-tech item but must be of same width and outside diameter as stock production components.

### 601.2 CRANKCASE:

Pulse hole may be relocated to front of engine for use with reversed cylinder. Hole not in use must be plugged. Internal diameter of pulse pipe may not exceed 0.128" NO-GO.

### 601.3 BOLTS:

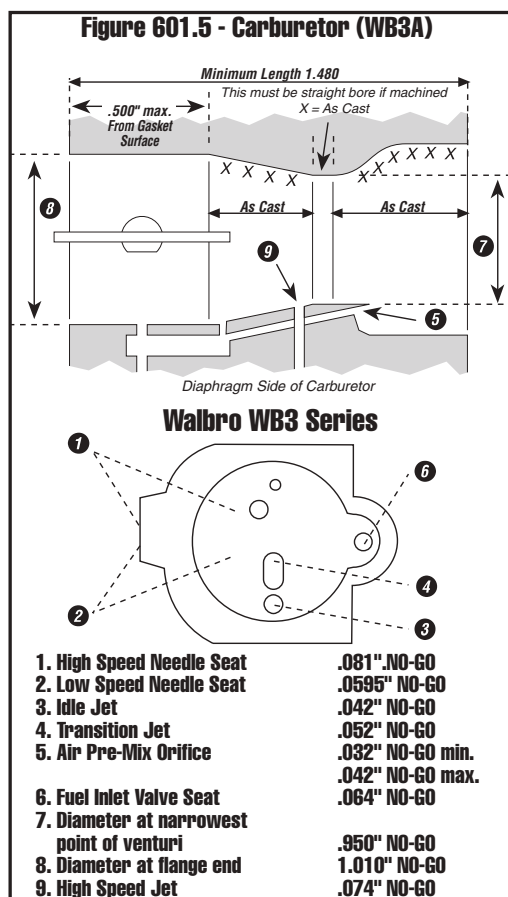
Non-tech item unless otherwise stated.

### 601.4 BORE/STROKE:

Maximum bore diameter, 2.090"; maximum stroke, 1.816". See Section 503 for measuring procedures.

### 601.5 WALBRO WB3A CARBURETOR:

(JR. and SR. classes) must be of original manufacture and stock appearing. Captive or non-captive diaphragms are legal. Shims under the inlet spring are allowed. Fuel can only pass through stock metering orifices. Any means taken to bypass fuel to the engine in any other manner is not acceptable, no matter how it is accomplished. Any components not specified herein must be stock appearing. Inlet spring is a non-tech item. Carburetor may be run in either position. Both screens must be intact, circuit plate and inlet needle. Any stock Walbro filter screen is allowed. Filtering devices to protect metering diaphragm allowed. No means of depressing diaphragm allowed. No machining of throttle shaft is allowed. Shaft may be sealed with O-ring. Funneling of brass inlet not allowed. The minimum length of the inlet tract measured from the carburetor-mounting surface to the face of piston is 2.600" minimum, 2.700" maximum (with carburetor base gasket removed). See Figure 601.5 for specifications. Dimension Number 8 on diagram 601.5 - The measurement is a 1.010" maximum straight bore area only. Throttle shaft removal may be necessary to telescope gauge in front of butterfly. Nowhere throughout the throttle bore can the measurement exceed 1.010". Minimum throttle shutter thickness is 0.030"



### 601.5.1 FUEL PUMP:

Fuel pump must be stock equipment with carburetor; either Teflon or rubber fuel pump diaphragm is allowed.

### 601.5.2 PHENOLIC SPACER:

Phenolic spacer must be OEM straight-bore, 1.000" minimum I.D., 1.050" maximum I.D., and maximum thickness of 0.405". New style black plastic spacer allowed.

### 601.5.3 ALUMINUM MOUNTING PLATE:

Aluminum carburetor mounting plate must be OEM straight-bore, 1.000" minimum I.D., 1.050" maximum I.D., and maximum thickness 0.485". Drilling of holes to rotate carburetor allowed. (Max. 2 sets of mounting holes allowed)

### 601.5.4 AIR FILTER/AIR-BOX ADAPTER:

Air filter/air box mounting adapter cannot be velocity stacked-shaped or act as a ram tube. (See Figure 551.2a for specifications)

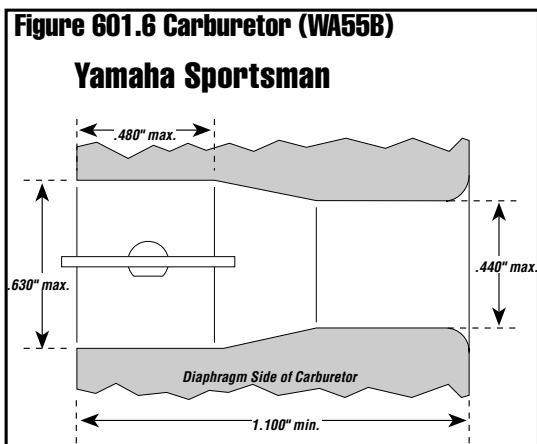
### 601.5.5:

- 1 -- carb base gasket (gaskets) --minimum thickness = 0.010" No-Go
- 2 -- throttle shaft minimum diameter = 0.212" No-Go shaft to be round
- 3 -- throttle shaft hole in carb body = 0.221" No-Go hole to be round

### 601.6 WALBRO WA55B SPORTSMAN CARBURETOR:

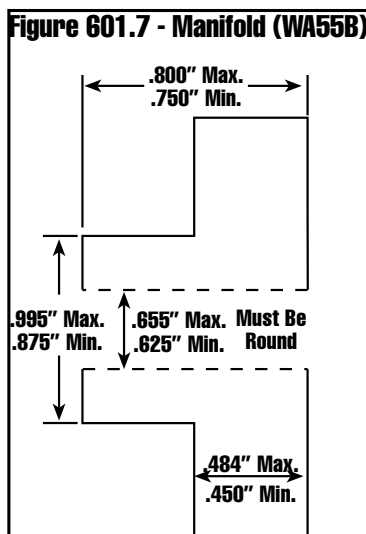
(Sportsman and Yamaha Cadet classes) Must be of original manufacture and stock appearing. Shims under the inlet spring are allowed. Fuel can only pass through stock metering orifices. Any means taken to bypass fuel to the engine in any other manner is not acceptable, no matter how it is accomplished. Any components not specified herein must be stock appearing. Inlet spring is a non-tech item. Carburetor may be run in either position. Both screens must be intact, circuit plate and inlet needle. Filtering devices to protect metering diaphragm allowed. Any stock Walbro filter screen is allowed. No means of depressing diaphragm allowed. No machining of throttle shaft is allowed. May be sealed with O-rings. Funneling of brass inlet not allowed. The minimum length of the inlet tract measured from the carburetor-mounting surface to the cylinder bore diameter 2.600" minimum, 2.700" maximum (with carburetor base gasket removed). High and Low needle seats Maximum of 0.037". High and Low speed extended metering screws allowed. NO auxiliary carburetor tuners allowed. Minimum throttle shutter thickness is 0.030". (See Figure 601.6 for specifications.)

- 1-- carb base gasket (gaskets) -- minimum thickness = 0.010" NO-GO
- 2-- throttle shaft minimum diameter = 0.181" NO-GO - shaft to be round
- 3-- throttle shaft hole in carb body = 0.189" NO-GO - hole to be round



### 601.7 WALBRO WA55B MANIFOLD:

Manifold must be constructed of aluminum and machined in such a manner to prevent any type of air leaks. Air may only pass through carburetor. No leakage allowed. Manifold bolts directly to Phenolic spacer; replaces factory aluminum carburetor mount. Carburetor air box adapter cannot be velocity stacked-shaped or act as a ram tube. I.D. of air box adapter is 0.750" minimum. WA manifold may be anodized. (See 601.7 for specifications.)



### 601.8 CYLINDER HEAD:

Any matching of the cylinder head or cylinder liner to accept a sealing device is not allowed unless it is stock equipment on the KT-100S engine. Cylinder recess must be only locating method for head gasket. Cylinder head gasket surface may not be stepped to center or locate head gasket, flat surface area only at gasket surface (no protrusion of any part of head through gasket). The combustion chamber volume shall be a Minimum of 11 cubic centimeters and spherical in shape. (See Section 504 for cc'ing procedures) All Cylinder heads must have OEM "Yamaha" casting into underside area. The spark plug hole, combustion chamber and squish band must be concentric to the head bolt circle within 0.020" (See Figure 601.8.) The stud holes in the cylinder head may be no larger than 0.365" and the cylinder head studs may be no smaller than 0.300".

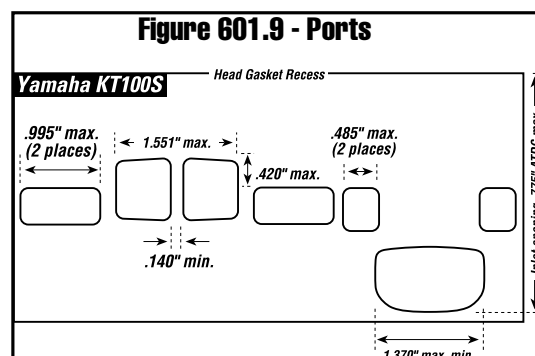


#### 601.8.1 HEAD GASKET:

Head gasket shall be copper or aluminum and stock appearing. Maximum outside diameter is 2.580". Must be OEM or exact copy in all dimensions except thickness.

### 601.9 EXHAUST, INTAKE AND TRANSFER PORTS:

ALL ports are to be in "as cast" condition, "except" Aluminum only may be blended in the inlet track behind carburetor and exhaust outlet areas only. The original design of the intake and exhaust port must be maintained. Surface finish is non-tech item in these two areas only. Port edges may not be chamfered. (See Figure 601.9 for port dimensions.)



### BLOW-DOWN CHECKING PROCEDURE FOR YAMAHA ENGINES --- (601.9 AND FIGURE 606.2)

- 1 -- By a careful visual inspection (light check) , identify the highest exhaust port and the highest intake port.
- 2 -- Using the Lad tool, zero the dial indicator on the highest exhaust port, taking care to hold the shaft of the tool against the cylinder wall.
- 3 -- roll the crankshaft backwards five turns (.500" on the dial indicator)
- 4 -- insert the Lad tool into the highest intake port, holding the shaft of the tool against the cylinder wall.
- 5 -- roll the crankshaft forward until the piston stops on the Lad tool and note the value.
- 6 -- the value must be between .390" and .420" to be considered legal
- 7 -- engine to be checked as raced

## IT IS "NOT" PERMISSIBLE TO:

### 601.9.1

Alter by any method the aluminum to change the roof angle of the transfer ports.

### 601.9.2

Alter by any method the cast-iron to change port height, width or angle of transfer, intake or exhaust ports.

### 601.9.3

Alter by any method to change the shape or size of the passages from the cylinder base to the port.

### 601.9.4

Alter by any method to match the cases to the port passages (when cylinder is or is not reversed).

### 601.9.5

Sandblast, glass-bead, peen, etc., port areas.

### 601.9.6

Cast iron may show minor grinding nicks only. The cast iron in the lower transfer opening may have a minor chamfer from the factory. Minor damage to the transfer ports caused by foreign objects passing through the engine (i.e. broken cir-clip, carb screw, etc.) is not illegal.

**NOTE:** Due to manufacturing procedures, it is possible that some engines may have slightly "broken" port edges. When this exists, it is uniform on all port edges (top, bottom and sides) of all ports in the cylinder. The intersection of the port edges and the cylinder wall must still be within tech measurement specifications. As the bore size increases, the amount of "break" diminishes. If the cylinder bore size is 2.065" or larger, no "broken" edges are permitted. Minor damage to the transfer ports caused by foreign objects passing through the engine (i.e. broken circlip, carb screw, etc.) is not illegal.

### 601.9.7 EXHAUST PORTS, NEW & OLD-STYLE CYLINDERS:

A boss is cast into each side of the new-style cylinder barrels between the bottom and first cooling fin, approximately in the middle of the cylinder. One boss will have 787 designation cast into this area and opposite boss will have Y3 or Y4 designation cast into it. This identifies cylinder as "new" style.

#### 601.9.7.1 NEW STYLE:

Cylinder tech procedure will be with dimensions appropriate for new-style cylinder. No grinding is allowed on the cast-iron portion of the new-style cylinders. Any means taken to remove or alter identifying boss will result in that cylinder being teched as a new-style cylinder.

#### 601.9.7.2 OLD STYLE:

Cylinder tech will be done utilizing listed port data and requirements noted in 601.9 through 601.9.7 above, with the exception that 1 exhaust port may have the cast iron ground to bring exhaust measurements closer to specification. The remaining (other) exhaust port must be unaltered, as-cast finish on cast iron portion.

**NOTE:** When a cylinder has been thus ground, it is required that the aluminum surface on top of the cylinder next to the stud located above the port altered be **MARKED**. An arrow or an "x" is an acceptable mark. The altered port must be ground a minimum of 90° to the cylinder wall. No chamfer is allowed. **NO** free porting of exhaust ports is allowed. **OLD STYLE CYLINDERS ARE LEGAL IN OPEN PIPE CLASSES ONLY.**

### 601.9.8 EXHAUST PORT HEIGHT:

Exhaust port height is a max. Dimension of 1.155" ATDC or a min. of 1.155" BTDC. See Section 506 for measuring procedures.

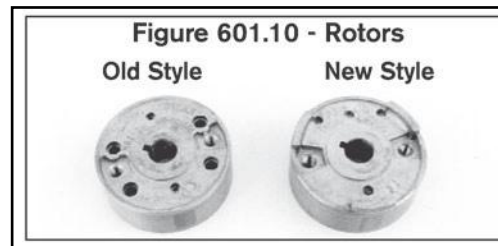
### 601.9.9 INTAKE PORT HEIGHT:

Intake port height is a max. Dimension of 0.775" ATDC or a min. of 0.775" BTDC. See Section 505 for measuring procedures.

### 601.10 IGNITION ROTOR/TIMING:

**NOTE:** Ignition Timing is the primary ignition inspection and inspection "must" take place before rotor nut has been broken loose from crankshaft. See 601.11 for procedure.

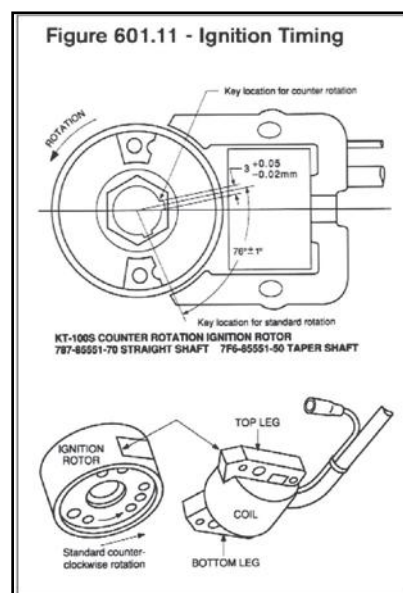
Ignition must be of original manufacture and stock appearing. Right-hand rotor has machined side out; left-hand rotor has cast-side out. Rotor minimum diameter is 2.350", minimum width .817" boss area (3-bosses) minimum thickness .950", and minimum length .750" with two threaded holes to accept puller. Acceptable Yamaha Part Nos. is 7F6-85551-00, 7F6-85551-50, 7F6-85551-01, 7F6-85551-51, and 7F6-85510-03-00. The PRD T.C.I. ignition unit is approved for the KT100S (Metal case is stamped with the letters PRD). Inserts may be used to repair ignition-mounting holes; inserts must maintain the original centerline. External coil damage may be repaired with silicone or epoxy. Ignition bearing may be removed. Key is required, but is a non-tech item. See Figure 601.10



### 601.11 IGNITION TIMING:

**NOTE:** Inspection "must" take place before rotor nut has been broken loose from crankshaft.

The leading edge of the ignition rotor's magnet must line up with the trailing edge of the ignition coil's leg when the piston is at T.D.C. to 0.015 B.T.D.C. Max. On clockwise ignitions, the coil's trailing is the bottom leg. See Figure 601.11

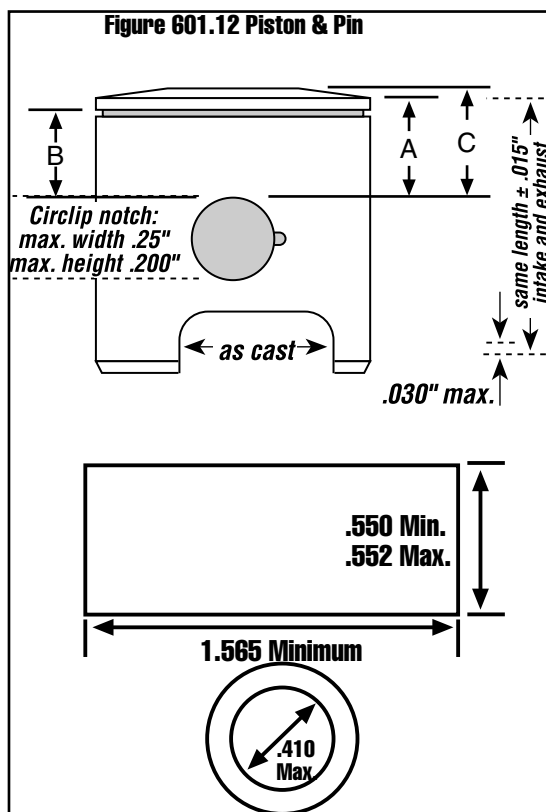


### 601.12 PISTON, PIN & RINGS:

Piston must be stock and approved single ring design with manufacturer's name cast or forged inside. Acceptable pistons are Yamaha, Burris, Wiseco, Vinart and KSI. Bottom of piston may be machined for adjustment of port timing but must be flat. Top of piston may not be modified in any way. No scalloping of transfer or exhaust area, top must be dome shaped, bottom of piston must be flat and 90 degrees to sides, maximum corner break top and inside and outside of bottom only, 0.030". If bottom of piston is machined, both sides must be equal distance front and back,  $\pm 0.015$ ". No external piston coating will be allowed above the ring land area of the piston. Exception: OEM Yamaha piston is approved with stock external coating above the ring land. See Figure 601.12. Ring must be of ferrous material. Wrist pin may not be tapered. Minimum Wrist pin length 1.565", maximum outside diameter 0.552", minimum outside diameter 0.550", maximum inside diameter is 0.410". The newest YAMAHA piston models are marked with the digits "3", "4" or "5" cast inside the piston. All are three are legal. The "4" and "5" pistons lack the oil hole in the pin boss found in the "3". Drilling a single oil hole with deburred edge and up to 0.120" in diameter in the piston boss is permitted.



PISTON BRAND	A	B	C
Burris	0.633"	0.533"	0.760"
KSI	0.609"	0.470"	0.736"
RKE-787	0.635"	0.489"	0.756"
Vinart	0.635"	0.489"	0.756"
Wiseco	0.635"	0.496"	0.760"
Yamaha	0.635"	0.489"	0.756"
A-Top of piston pin to controlling edge of the piston			
B- Top of piston pin to top of ring groove			
C- Top of piston pin to top of piston			
All dimensions are + or - 0.010"			
Ring groove is 0.040"			
(See Figure 601.12 Piston & Pin)			

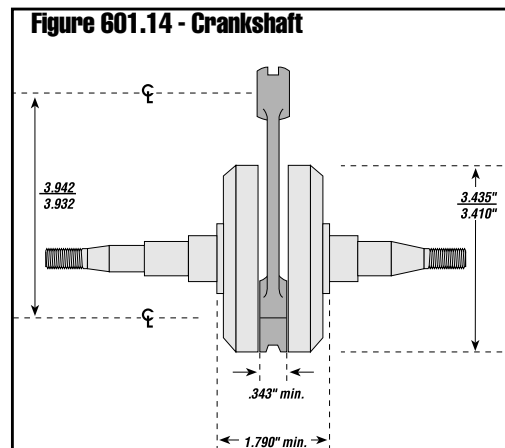


### 601.13 CONNECTING ROD:

Rod must be of original manufacture and stock appearing. Shot peening is allowed. Maximum rod length, center to center: 3.932 to 3.942". No grinding or polishing allowed. Approved rods are Yamaha part # 7F6-11651-01, 50W-11651-00 and 7F6-11651-02. Bottom-located rod is now approved. If connecting rod is located at the top, the top of the rod shall have two or more spacers with loose or caged bearings. Spacer material may be brass, steel or aluminum. The bottom of the rod shall have a solid bearing and no spacers. If bottom location is used, connecting rod must utilize a lower solid bearing and two spacers (one each side). Top of rod may use a cage bearing or loose needles. If loose needles utilized, thrust washers are permitted. The use of 2 styles of crank-pins is allowed. (a) Original stepped and plugged crank pin must have a minimum inside diameter of 0.400" after removal of steel plug. If this type of pin is utilized, plugs must be in place. Steel plugs must be drill-able and removable in tech inspection and removal is the responsibility of the competitor. (b) New style, non-stepped crank pin is with no plugs allowed. Maximum inside diameter is 0.425", minimum inside diameter is 0.390". See Figure 601.14

### 601.14 CRANKSHAFT:

Crankshaft assembly must be of original manufacture and stock appearing. Shot peening and polishing are allowed. Outside diameter measurement is 3.410" minimum, 3.435" maximum. Concentric bushings may be added to crankshaft journals to repair worn crankshafts. Inside diameter of bearings used with repaired crankshaft is not subject to tech. Additional removal of material in bearing recess area for proper bearing clearance is allowed. This shall be for clearance purposes only and not for lightening or balancing purposes. See Figure 601.14



### 601.15 PIPE/MUFFLER:

See class structures in Sections 214, 312, 362 and 413 for requirements for specific classes. (See Sections 552 through 554 for specifications)

## 603 KOMET PISTON VALVE

**NOTE:** This section covers stock Komet Piston Valve 100cc engines (previously titled HPV). Engines must be single-cylinder, under 6.23 cubic inches (1012.11cc) maximum displacement and utilize single, stock carburetor specified for this class. Unless otherwise specified, all parts are to be of original manufacture and be stock in appearance. The Komet Piston Valve is the only approved engine. **NO INTERCHANGE OF K71 PARTS ALLOWED.**

### 603.1 EXTERNAL MODIFICATIONS:

No External modifications allowed (including clutch guard). Painting of head fins for advertisement is allowed. No anodizing of any parts allowed.

**NOTE:** Unless otherwise specified, non-tech items include gaskets, oil seals, bearings, bearing cages and fasteners. Bearings are a non-tech item but must be of same width and outside diameter as original parts.

### 603.2 PULSE HOLE:

Crank Case Pulse Hole opening for Komet Piston Valve Junior and Senior engines is 0.128" No-Go; for Komet Piston Valve Sportsman engines, the hole size is 0.085" No-Go.

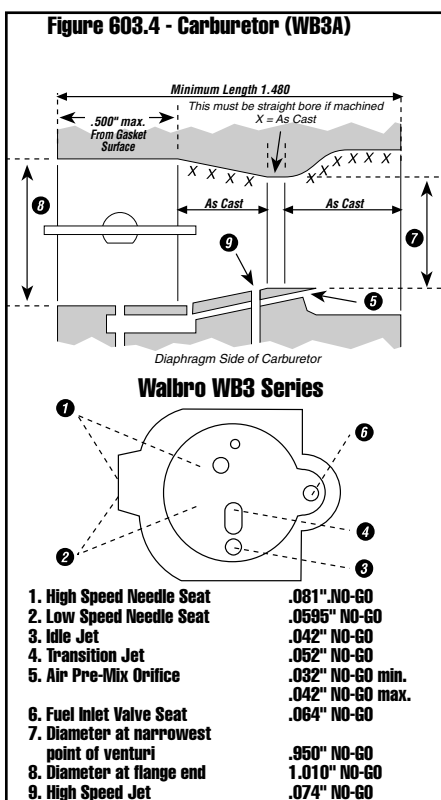
### 603.3 BORE/STROKE:

Maximum bore diameter is 2.090" and a maximum stroke of 1.816". See Section 503 for measuring procedures.

### 603.4 CARBURETOR:

The Walbro WB3A Carburetor is the only legal carburetor for Junior and Senior classes. It must be of original manufacturing and stock appearing. Captive or non-captive diaphragms are legal. Shims under the inlet spring are allowed. Fuel can only pass through stock metering orifices. Any means taken to bypass fuel to the engine in any other manner is not acceptable, no matter how it is accomplished. Any components not specified herein must be stock appearing. Inlet spring is a non-tech item. Carburetor may be run in either position. Circuit plate and inlet needle screens must be intact. Filtering devices to protect metering diaphragm allowed. Any stock Walbro filter screen is allowed. No means of depressing diaphragm allowed. No machining of throttle shaft is allowed. Shaft may be sealed with O-rings. Funneling of brass inlet not allowed. The minimum length of the inlet tract measured from the carburetor-mounting surface to the cylinder bore diameter 2.600" minimum, 2.700" maximum (with carburetor base gasket removed). Carburetor mounting adapter and spacer must be straight bore. See Figure 603.4 for specifications. Minimum throttle shutter thickness is 0.030"

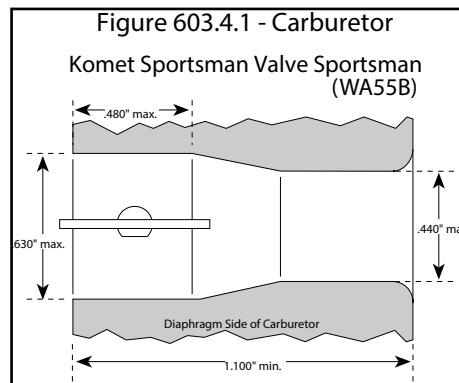
- 1 -- carb base gasket (gaskets) --minimum thickness = 0.010" No-Go
- 2 -- throttle shaft minimum diameter = 0.212" No-Go shaft to be round
- 3 -- throttle shaft hole in carb body = 0.221" No-Go hole to be round.



#### 603.4.1 KOMET PISTON VALVE SPORTSMAN CARBURETOR:

Komet Piston Valve Sportsman classes must use either the Walbro WA55B carburetor. The carburetor body may have choke holes plugged. Shaft must remain unaltered. High and low speed extended metering screws are allowed. No auxiliary carburetor tuners allowed. Carburetor must be as supplied from manufacturer, with no modifications allowed. No boring, polishing or altering of butterfly, shaft, dump tube or carburetor body. All supplied parts must be used, including stock fuel reducer (to be compared to known stock). Any stock Walbro filter screen is allowed. Maximum of 0.037" No-Go on high & low speed needle seats. Carburetor-to-manifold and manifold-to-block must be sealed to air intake and is subject to tech. All air and fuel must enter engine as originally designed. Any attempt to circumvent this will subject competitor to disqualification and/or possible suspension. Minimum throttle shutter thickness 0.030". See Figure 601.6 for specifications.

- 1 -- carb base gasket (gaskets) --minimum thickness = 0.010" No-Go
- 2 -- throttle shaft minimum diameter = 0.181" No-Go shaft to be round
- 3 -- throttle shaft hole in carb body = 0.189" No-Go hole to be round.



#### 603.4.2 CARBURETOR MOUNTING ADAPTER:

Komet Piston Valve aluminum carburetor mounting adapter with maximum I.D. 0.630" is the only legal adapter. Non-metallic carburetor insulator minimum diameter is 1.000"; maximum diameter is 1.050". The minimum length of the inlet tract measured from the carburetor mounting adapter surface to the face of piston is 2.900" minimum, 3.000" maximum (with carburetor base gasket removed).

#### 603.4.3 AIR FILTER/AIR-BOX ADAPTER:

Air filter/air box mounting adapter cannot be velocity stacked-shaped or act as a ram air tube. See Figure 551.2a for specifications.

### 603.5 CYLINDER HEAD AND VOLUME CHECK:

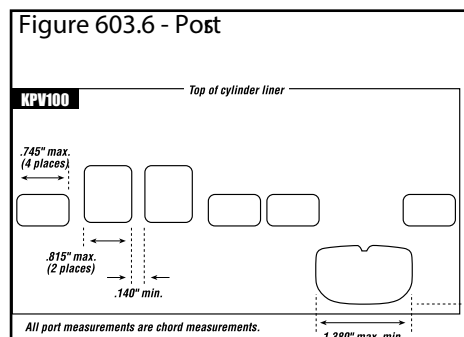
The combustion chamber volume shall be a minimum of 11 cubic centimeters and spherical in shape. The spark plug hole, combustion chamber and squish band must be concentric to the head bolt circle within 0.020". See Section 504 CYLINDER HEAD VOLUME CHECK for inspection procedures.

#### 603.5.1 CYLINDER FIN:

Komet Piston Valve cylinder fins may have two holes in the top two fins 0.075" in diameter approximately 0.765" apart and 40° from the center of the intake side (as manufactured).

### 603.6 EXHAUST, INTAKE & TRANSFER PORTS:

All ports must be of original intended design. The aluminum and cast iron finish of the intake and exhaust ports are not tech items but must meet all listed dimensions, per Figure 603.6: There shall be no removal or addition of materials in the aluminum or cast iron areas of the transfer passages.



#### 603.6.1 EXHAUST PORT HEIGHT:

Exhaust port height is a max. Dimension of 1.155" ATDC or a min. of 1.155" BTDC. See Section 506 for measuring procedures.

#### 603.6.2 INTAKE PORT HEIGHT:

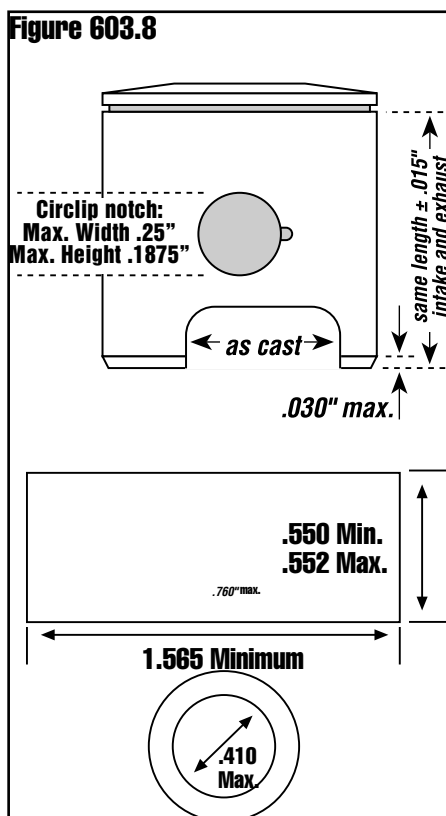
Intake port height is a max. Dimension of 0.775" ATDC or a min. of 0.775" BTDC. See Section 505 for measuring procedures.

### 603.7 IGNITION:

Either PVL 458 rotor and stator and PVL 458 coil or Selettra P3356 ignition with black or blue P3356 coil. For Selettra part #P3356, finned rotors are legal; no modifications to fins allowed. Ignition parts are subject to comparison to known stock. Ignition parts may not be mixed between Selettra and PVL ignitions.

### 603.8 PISTON, PIN AND RINGS:

Komet Piston Valve piston and rings only. Komet Piston Valve piston #1319 is legal. Piston must have name and mold number cast on the inner skirt surface. Pistons and rings are subject to comparison to known stock. Bottom of piston may be machined for adjustment of port timing. No scalloping of transfer or exhaust area, top must be dome shaped. Bottom of piston must be 90 degrees to sides, maximum skirt corner break 0.030. If bottom of piston is machined must be equal distant front and back,  $\pm 0.015$ ". Rings cannot drop through cylinder. The ring end gap is 0.030". Wrist pin may not be tapered, stock-type only. The minimum wrist pin length is 1.565". The minimum outside diameter is 0.550" and maximum outside diameter is 0.552". The maximum inside diameter is 0.410". See Figure 603.8. Distance from the top of the piston pin to the top of the ring land - 0.655". Distance from top of piston pin to top of dykes ring, the actual port controlling edge - 0.632". Distance from top of piston pin to top of piston - 0.813". All dimensions are + or - 0.010".

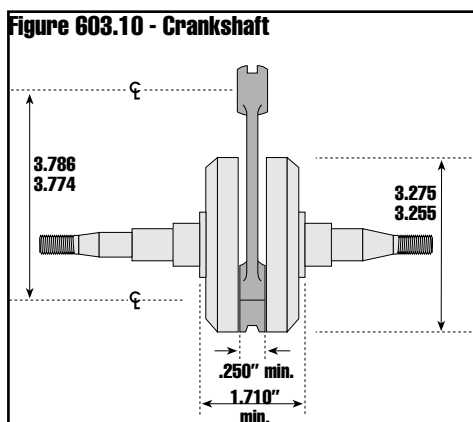


### 603.9 CONNECTING ROD:

Rod must be of original manufacture. In Komet Piston Valve classes, no interchange of connecting rods is allowed. Maximum connecting rod length, center-to-center, is 3.774" to 3.786". See Figure 603.10 for other dimensions.

### 603.10 CRANKSHAFT:

Crankshaft assembly must be of original manufacture. No interchange of Crankshaft is allowed. See Figure 603.10 for dimensions



### 603.11 CLUTCH:

The Komet Piston Valve spec drum clutch with the three factory installed external cooling holes in the outside drum face is the only clutch and drum combination legal for competition use. The original six hole drum is no longer legal.

#### 603.11.1 CLUTCH SPECIFICATIONS:

No modifications of any kind are allowed. The clutch must be raced as manufactured. No material may be removed from the drum, clutch lining or clutch center. All clutch components are subject to comparison to known stock parts. No oiling or greasing of clutch allowed. The maximum Komet Piston Valve three hole spec drum ID is 3.360".

#### 603.11.2 KOMET PISTON PORT CLUTCH CHECK:

To further validate clutch rule compliance, the clutch stall speed may be subject to tech inspection at any time during an event, including pre and post-race tech, if deemed necessary by the tech officials. Drivers taking the test will be required to drive the rear wheels of the kart over a 3/4" by 3/4" square tech tool without exceeding the maximum stall test limit of 5,000 RPM. The front tires must be pointed straight ahead and both of the driver's hands must be on the steering wheel. Drivers will be allowed two attempts per test to comply with the rule. Competitors failing the stall speed test will be required to make necessary clutch repairs, and retake the stall speed test and pass the test in order to compete in the remainder of the day's event. The courtesy retest will only be extended if time permits and at the tech officials' discretion. Competitors failing the test for a second time the same day will be disqualified for the remainder of the day's activities including qualifying, the pre-final and the final.

## 605 PISTON PORT

**HOMOLOGATED ENGINES: YAMAHA KT100, HPV 100, KOMET PISTON VALVE, PARILLA PV92, COMER P50, COMER/ARC, PRD RK100, COMER P51 and K71.**

**NOTE:** This section covers stock piston valve engines under 6.20 (101.6cc) maximum displacement. Engines must be single-cylinder and utilize single, stock carburetor. Unless otherwise specified, all parts are to be of original manufacture and be stock in appearance. Gas and oil fuel only. FOR OTHER LEGAL DATED ENGINES, REFER TO 1999 TECH MANUAL FOR SPECIFICATIONS AND APPLICATIONS.

### 605.1 EXTERNAL MODIFICATIONS:

External modifications which do not in any way effect a performance gain are permissible, i.e. painting of head fins for advertisement, fin dampeners, cutting hole in ignition cover for installation of a starter nut. No Anodizing of any parts allowed.

### 605.2 CRANKCASE:

Pulse hole may be relocated to front of engine for use with reversed cylinder. Hole not in use will be plugged.

### 605.3 BOLTS:

Non-tech item unless otherwise stated.

### 605.4 BORE/STROKE:

See Figure 606.3 for listing of specific engines.

### 605.5 CARBURETOR:

Walbro WB3A must be of original manufacture and stock appearing. Captive or non-captive diaphragms are legal. Shims under the inlet spring are allowed. Fuel can only pass through stock metering orifices. Any means taken to bypass fuel to the engine in any other manner is not acceptable, no matter how it is accomplished. Any components not specified herein must be stock appearing. Inlet spring is a non-tech item. Carburetor may be run in either position. Both screens must be intact, circuit plate and inlet needle. Filtering devices to protect metering diaphragm allowed. No means of depressing diaphragm allowed. Any stock Walbro filter screen is allowed. No machining of throttle shaft is allowed. May be sealed with O-rings. Funneling of brass inlet not allowed. Carburetor mounting block and spacer must straight bore. All air and fuel must enter engine as designed. Intake track length is measured from face of piston to mounting surface as raced. (With carburetor base gasket removed). Carburetor mounting plate and spacer must be straight bore. No external fuel pumps allowed. See Figure 603.4.

- 1 -- carb base gasket (gaskets) --minimum thickness = 0.010" No-Go
- 2 -- throttle shaft minimum diameter = 0.212" No-Go shaft to be round
- 3 -- throttle shaft hole in carb body = 0.221" No-Go -- hole to be round



### **605.6 CONNECTING ROD:**

Interchange of Homologated connecting rods of similar length is permitted and may be located at either end. Rod must be of original manufacture and stock appearing. Shot peening is permitted.

### **605.7 CYLINDER:**

Cylinder may be notched for rod clearance. Removal of cylinder locating pin is permitted. The use of a single o-ring as a sealing device in the top of the cylinder is permitted.

### **605.8 CYLINDER HEAD AND VOLUME CHECK:**

Any machining of the cylinder head to accept a sealing device is not permitted. See Section 504 for cylinder head volume check procedure and Figure 606.3 for specifications.

### **605.9 CRANKSHAFT:**

Crankshaft assembly must be stock appearing. Shot peening and polishing is allowed. Aluminum crankshaft stuffer may be notched (removed) above crank pin.

### **605.10 EXHAUST, INTAKE & TRANSFER PORTS:**

All ports must be of original intended design, conforming to specifications listed in Figure 606.2. Stock piston valve engines may be machined in the intake and the exhaust port areas including the iron liner. These engines shall be inspected by the procedures listed in Sections 505, 506 and dimensions listed in Inspection Data Figures 606.2 and 606.3. Secondary check will be the visible light-break. There shall be no removal or addition of materials in the transfer passage areas (aluminum areas), except minor amount of grinding allowed at the junction for blending of cast iron and aluminum. The cast iron finish of the transfer ports is not a tech item. The transfer ports (cast iron) must meet the size listed in each engine section.

### **605.11 HEAD GASKET:**

Material shall be copper or aluminum. May run without head gasket.

### **605.12 IGNITION:**

The following ignition systems are allowed:

#### **605.12.1 MOTOPLAT:**

#9600-903-1 (standard rotation)

#### **605.12.2 MOTOPLAT:**

#9600-916-1 (counter rotation)

#### **605.12.3 PVL:**

The only legal PVL coil should be with a black or blue plastic outer shell and be numbered 105.458. The only legal PVL stators should be potted stators numbered 1050, 1051, 1053, 1056, 1057, 1060, 1062, 1063. The only legal tape wrapped stators are marked 01, 02, 04, 05, 06, 09, 10, 11, 12, 16, and 18.

#### **605.12.4**

Ducatti 436161191(CW)  
Ducatti 436161190(CCW).  
Coil #443213220090.

**NOTE: For Ducatti and Motoplat, rotor and stator serial numbers must match.**

#### **605.12.5**

Selettra P3356 ignition with black or blue P3356 coil. Finned rotors are legal; no modifications to fins allowed.

#### **605.12.6**

Komet Piston Valve and HPV 100 engines must use either the PVL or Selettra P3356 ignitions. Ignition parts may not be mixed between ignition brands.

### **605.13 PISTON, PIN & RINGS:**

Piston must be an approved single or double-ring design only and stock appearing. Accepted pistons are DAP, Wiseco, Asso, TKM, PCR, Burris, IAME and PRD. Maximum break on all machined edges is 0.030", skirt area only. Rings must be ferrous materials. All approved pistons should have name visibly cast inside. Stock-type wrist pins only with no special alloys. Wrist pin may not be tapered. Minimum wrist pin length, 1.565". Maximum wrist pin outside diameter, 0.552", minimum 0.550". Maximum wrist pin inside diameter, 0.410". PV-92 and PRD } wrist pin max. I.D.: 0.405", 1.520" min. length. Coating of pistons allowed below ring land. (See Figure # 606.3.)

### **605.14 AIR FILTER/AIR-BOX ADAPTER:**

Air filter/air box mounting adapter cannot be velocity stacked-shaped or act as a ram tube. (See Figure 551.2a for specifications)

### **605.15 OTHER:**

Allowable additions to the engine shall be limited to the following unless otherwise stated: air cleaner, clutch, muffler, rock guard, chain guard, starter pulley, motor mount, starter nut, header pipe, external extension of carburetor jet needles, carburetor return springs, temperature gauge, tachometer, main bearing shims and external third-bearing.

### **605.16: COMER P51 SPECIAL SPECIFICATIONS:**

Comer P51 minimum timing 0.090" BTDC. Minimum squish 0.048", 12cc combustion chamber volume.

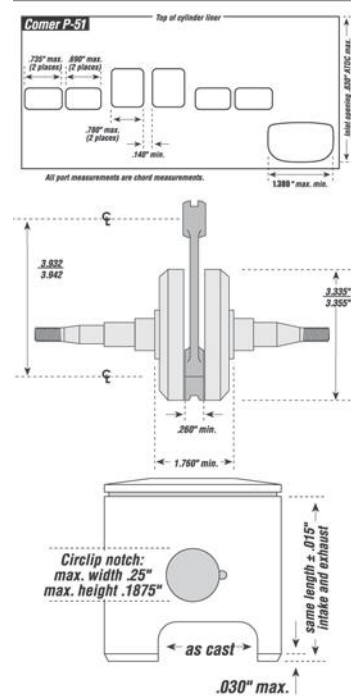
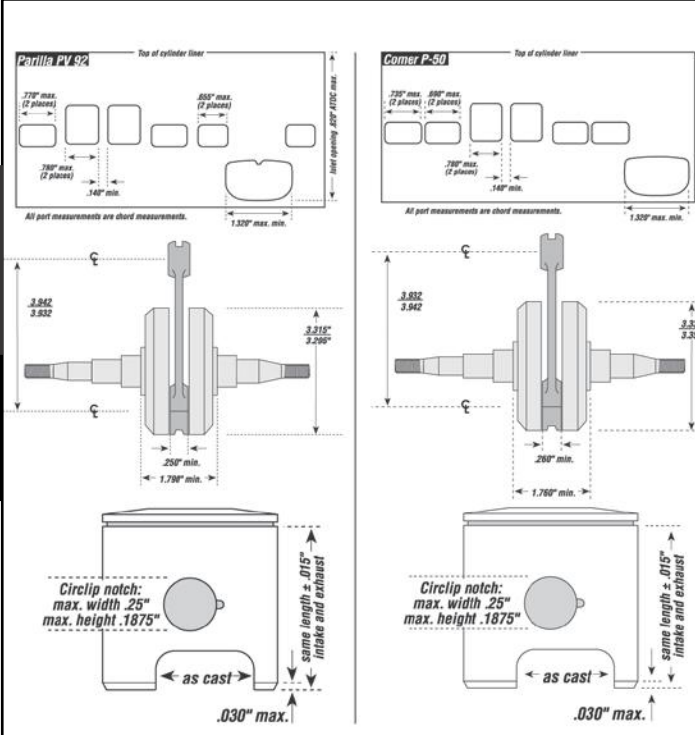
## **606 PISTON PORT ENGINE TECHNICAL INSPECTION DATA**

**NOTE: Unless otherwise specified, non-tech items include gaskets, oil seals, bearings, bearing cages, fasteners and crank pin. Bearings are a non-tech item but must be of same width and outside diameter as original parts. FOR OTHER LEGAL DATED ENGINES, REFER TO 1999 TECH MANUAL FOR SPECIFICATIONS AND APPLICATIONS.**

### **606.1 INSPECTION DATA:**

See text 605 through 605.15, and Figures 606.2 and 606.3 for all specifications and tolerances for all current homologated engines. For other legal dated engines, refer to the 1999 WKA Tech Manual.

# 500



## Figure 606.3 Piston Port Engine Technical Inspection Data Chart

For additional P51 information refer to 605.16

	YAMAHA	Komet/HPV	PV92	P50	COMER/ARC	PRD RK100	P51	K71
CARBURETOR WALBRO WB3A	X	X	X	X	X	X	X	X
FILTER CUP MINIMUM 1.D.	1.150"	1.150"	1.150"	1.150"	1.150"	1.150"	1.150"	1.150"
INTAKE TRACK LENGTH MINIMUM	2.600"	2.600"	2.600"	2.600"	2.600"	2.600"	2.600"	2.600"
INTAKE TRACK LENGTH MAXIMUM	2.700"	2.700"	2.700"	2.700"	2.700"	2.700"	2.700"	2.700"
PHENOLIC SPACER MINIMUM 1.D.	1.000"	1.000"	1.000"	1.000"	1.000"	1.000"	1.000"	1.000"
PHENOLIC SPACER MAXIMUM 1.D.	1.050"	1.050"	1.050"	1.050"	1.050"	1.050"	1.050"	1.050"
PHENOLIC SPACER MAX. THICKNESS	.405"	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CARB MNTING PLATE MINIMUM 1.D.	1.000"	1.000"	1.000"	1.000"	1.000"	1.000"	1.000"	1.000"
CARB MNTING PLATE MAXIMUM 1.D.	1.050"	1.050"	1.050"	1.050"	1.050"	1.050"	1.050"	1.050"
CARB MNTING PLATE MAX. THICKNESS	.485"	N/A	N/A	N/A	N/A	N/A	N/A	N/A
AIRBOX HAS A MAX. OF TWO TUBES NOT EXCEEDING .905" 1.D. WITH A MINIMUM LENGTH. OF 3.740" MINUS .008" FOR SHRINKAGE. SEE SECTION 550 FOR DETAILED INFORMATION.								
COMBUSTION CHAMBER VOLUME MIN.	11cc	11cc	11cc	11cc	11cc	11cc	12cc	11cc
MAX. EX. PORT HT. W/LAD GAUGE	1.155"	1.155"	1.280"	1.295"	1.155"	1.255"	1.295"	1.155"
MAX. EX. PORT HT. W/LGT. CHECK	N/A	1.030"	1.155"	1.170"	N/A	1.130"	1.170"	1.030"
EXHAUST RIB MINIMUM WIDTH	.140"	.140"	.140"	.140"	.140"	.140"	.140"	.140"
EXHAUST MAXIMUM CHORD WIDTH	1.551"	.815"	.780"	.780"	1.551"	.795"	.780"	.815"
INLET PORT MAXIMUM OPENING	.775"	.775"	.820"	.835"	.775"	.835"	.830"	.775"
INLET MAXIMUM CHORD WIDTH	1.370"	1.380"	1.320"	1.320"	1.370"	1.500"	1.380"	1.380"
TRANSFER PORTS MAXIMUM	.485"	.745"	.655"	.690"	.540"	.610"	.690"	.745"
CHORD WIDTHS (2EA.)	.995"	.745"	.770"	.735"	.950"	.835"	.835"	.745"
MAXIMUM CYLINDER BORE	2.090"	2.090"	1.990"	1.990"	2.085"	1.990"	1.990"	2.090"
MAXIMUM PISTON STROKE	1.816"	1.816"	1.975"	1.995"	1.816"	1.975"	1.995"	1.816"
PISTON SKIRT MAX. CHAMFER	.030"	.030"	.030"	.030"	.030"	.030"	.030"	.030"
WRIST PIN MINIMUM LENGTH	1.565"	1.565"	1.520"	1.520"	1.565"	1.520"	1.520"	1.565"
WRIST PIN MAXIMUM 1. D.	.410"	.410"	.405"	.405"	.410"	.405"	.405"	.410"
WRIST PIN MAXIMUM O. D.	.552"	.552"	.552"	.552"	.552"	.552"	.552"	.552"
CRANKSHAFT OUTSIDE MIN. WIDTH	1.790"	1.710"	1.790"	1.760"	1.790"	1.790"	1.760"	1.710"
CRANKSHAFT INSIDE MIN. WIDTH	.343"	.250"	.250"	.260"	.335"	.235"	.260"	.250"
CRANKCASE PULSE-HOLE MAX. 1.D.	.128"	.128"	.128"	.128"	.128"	.128"	.128"	.128"
IGNITIONS								
YAMAHA	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A
COMER/ARC	N/A	N/A	N/A	N/A	X	N/A	N/A	N/A
PRD	N/A	N/A	N/A	N/A	N/A	X	N/A	N/A
MOTOPLAT	N/A	N/A	X	X	N/A	N/A	X	X
PVL	N/A	N/A	X	X	N/A	N/A	X	X
DUCATTI	N/A	N/A	X	X	N/A	N/A	X	X
SELETTA (BLACK OR BLUE)	N/A	X	X	X	N/A	N/A	X	X
PISTONS								
YAMAHA	X	N/A	N/A	N/A	X	N/A	N/A	N/A
IAME	N/A	X	X	X	N/A	N/A	X	X
BURRIS	X	N/A	N/A	N/A	X	N/A	N/A	X
WISECO	X	N/A	N/A	N/A	X	N/A	N/A	N/A
VINART	X	N/A	N/A	N/A	X	N/A	N/A	N/A
KSI	X	N/A	N/A	N/A	X	N/A	N/A	N/A
ASSO	N/A	N/A	N/A	X	N/A	N/A	X	N/A
ARC	N/A	N/A	N/A	N/A	X	N/A	N/A	N/A
PRD	N/A	N/A	N/A	N/A	N/A	X	N/A	N/A

### 607 100CC CONTROLLED STOCK HOMOLOGATED ENGINES

ATOMIK, PARILLA TT75, PCR PC93, COMER MIK351L, CRG S10-T1, DAP T85, ITAL ML21, JAKO 2LA, PARILLA REED JET, PCR TSL95, TSL98 and ROTAX R-100 VM-E.

See Sections 607 through 607.12 and Figures v, 608.3a, and 608.3b for all specifications and tolerances for all current homologated engines. For other legal, out of date engines refer to the 1999 WKA Tech Manual.

**NOTE:** Unless otherwise specified, non-tech items include: gaskets, oil seals, bearings and cages (replacement bearings must be of same width and outside diameter of original bearings), fasteners, rings, carb pulse hole, manifold inlet hole and crank pin.

#### 607.1 EXTERNAL MODIFICATIONS:

External modifications which do not in any way effect a performance gain are permissible, i.e. painting of head fins for advertisement. No anodizing of any parts allowed.

#### 607.2 BORE/STROKE:

See data chart for listing of specific engines. Remove maximum more bore on controlled stock motors homologated prior to 98 ICA Motors.

#### 607.3 CARBURETORS:

Must be of original manufacture and stock. Fuel may only pass through stock metering orifices. Any means taken to bypass fuel to the engine in

any other manner is not allowed. Any components not specified herein must be stock appearing. Inlet springs are a non-tech item. Machine work to the throttle shaft is not allowed. O-ring and/or sealing devices are approved for carburetor shafts. This includes machining of the carburetor body to install the sealing device. Approved carburetors are: The HL360A is the only Carburetor Legal for COMER MIK351L, CRG S10-T1, DAP T85, ITAL ML21, JAKO 2LA, PARILLA REED JET, PCR TSL95, TSL98 and ROTAX R-100 VM-E engines in the Road Racing and Speedway Dirt Series. (Maximum throttle bore, 1.065" No Go, venturi 0.950" No Go). CIK/FIA Butterfly type carburetor with through shaft (2 or 3 jet)(maximum throttle bore 27.8mm (1.095") No Go, venturi 24mm (0.945") No Go) legal in Mfg.'s Cup Series, Direct Drive Class only. Tillotson Models HR181, HR181A, HR184, HR184A (maximum throttle bore, 1.325" No Go, venturi 1.110" No Go). The HR191 (maximum throttle bore 1.360" No Go, venturi 1.195" No Go). The HL227A, HL250A, HL304A, HL307A, HL317A, HL317E, HL322 and Mikuni BMC-34G (maximum throttle bore 1.360" No Go, venturi 1.195" No Go) are the only legal carburetors for the ATOMIK, PARILLA TT75, AND PCR PC93 engines. (See Figure 608.2). LEGAL CARBURETORS FOR OLDER DATED ENGINES, SEE 1999/2000 TECH MANUL

**NOTE:** HR184A comes in 2 hole configurations, but cannot be a combination of hole sizes. Carburetor may be installed with fuel pump up, down or side ways. TKM LAD 90° manifold approved. Burris-Mikuni throttle shaft may be used in Tillotson HR Series carburetors. Tillotson HR181-184-191 plate (Part #014877) may have a machined recess of 0.562" maximum diameter and 0.150" maximum depth as measured from the gasket surface of the plate.



#### 607.4 CONNECTING ROD:

Connecting rod must be of original length and constructed of ferrous material.

#### 607.5 CYLINDER HEAD AND VOLUME CHECK:

Head gasket optional, however, sealing devices are allowed only on the cylinder and not on the cylinder head. See Section 504 for cc'ing procedures and Figure 608.3 for specifications.

#### 607.6 CRANKSHAFT:

Must be of original manufacture. No counterweight plugging is allowed. No metal removing, shot peening or polishing is allowed. Any roller cage is permitted. Aluminum stuffer may be notched above pin area (stuffing material may be aluminum or plastic). Crankshaft must be of same manufacture as engine brand as Homologated. No interchange between engine brands is permitted.

#### 607.7 EXHAUST, INTAKE & TRANSFER PORTS:

All ports must be of original location and original number of ports (example if cylinder starts with two exhaust ports it must retain two; three transfer ports it must retain three). Port widths are non-tech. Exhaust height is the only port height to be measured at its highest point on all exhaust ports each engine. These engines shall be teched by the dimensions listed in inspection data chart. (See Figure 608.3a.). Secondary check will be the visible light-break. For procedures see Section 506. Fuel flow through ports can only be as factory intended (ports must resemble stock factory ports). The aluminum next to the liner in the transfer ports may be removed. No material may be added to outside diameter of liner. All WKA approved engines prior to 2000 (ATOMIK, PARILLA TT75, PCR PC93) must have only two exhaust ports and a rib (See Figure 608.3b). ALL 2000 WKA approved engines, (COMER MIK351L, CRG S10-T1, DAP T85, ITAL ML21, JAKO 2LA, PARILLA REED JET, PCR TSL95, TSL98 and ROTAX R-100 VM-E) ports per Homologation fiche diagram for each engine.

#### 607.8 IGNITION:

The ignition system must be of original manufacture and stock appearing. Complete homologated ignition systems may be interchanged among controlled stock engines provided that (1) the rotor and stator can be installed without modifying the engine or ignition and (2) that the ignition includes the matching coil from the original manufacturer. The following ignitions have been homologated on controlled stock engines:

DANSI - Point type

CEV - Point type

MotoPlat - Part Nos. 9600-903-1 (standard rotation) and 9600-916-1 (counter rotation).

PVL - Part Nos. NR1051 and 05458XX (where XX is any number from 01 to 18). Both potted and unpotted stator coils are legal.

Ducatti - Part Nos. 436161191(CW) & 436161190(CCW) and coil.

Selettra - Part Nos. P3356E black, tan or red

Ital Sistem - CIK951.

#### 607.9 PISTON, PIN & RINGS:

Must be of original manufacture. No metal removal is allowed except boost port window or TT-notch (both may be in piston). The following single or two ring design pistons are allowed: Asso, BM, Burris, DAP, Dino, Elko, IAME, PCR, RKE, Sirio, TKM, Wiseco, Metoer and PRD. Approved pistons are interchangeable between ATOMIK, PARILLA TT75, AND PCR PC93 engines. Approved pistons have names cast inside the piston. Both skirts must be intact and the same length. Maximum break on all machined edges is 0.030", skirt area only. No lightening of pistons allowed. A maximum of two holes, 0.093" NO-GO, may be drilled to facilitate lubrication of the exhaust rib. For window type, piston window size is .900" NO-GO for width and 0.400" maximum depth from skirt. Cir-clip notch maximum width, 1/4", maximum height, and 3/16". Piston pin must be ferrous material. Piston rings must be ferrous material and must be in place.

#### 607.9.1

Approved pistons for the COMER MIK351L, CRG S10-T1, DAP T85, ITAL ML21, JAKO 2LA, PARILLA REED JET, PCR TSL95, TSL98 and ROTAX R-100 VM-E engines is Asso - Comer, CRG, DAP, talsistem, Jako, IAME, PCR and Rotax. Pistons must be of original manufacturer. Maximum break on all machined edges is 0.030", skirt area only. No lightening of pistons allowed.

**NOTE: All Controlled Engines allowed coated pistons, however, no external piston coating will be allowed above the ring land area of the piston.**

#### 607.10 REED ASSEMBLY:

ATOMIK, PARILLA TT75, AND PCR PC93 engines. Reed assembly must be of original manufacture with stock number of openings. Any non-metallic, single-thickness petal per opening is allowed. Polishing and/or grinding is allowed to Reed Cages. Any bolt or reed stops are legal, but No machine work on cases allowed too retrofit the reed cages. Stock rubber coated reed assemblies allowed are PCR, TKM RS80. IAME 6-petal reed cage assembly is allowed in any engine. No machine work is allowed on cases to accept different reed cages or reed stops. Reed stops and/or retainers must be of solid construction and non-movable. TKM 8-petal reed cage assembly allowed in TKM manufactured engines only. Additional rubber-coated reed assemblies approved are Hartman 4-petal, PCR, IAME and TKM, with interchange permitted to all other engines. No machine work is allowed on cases to accept different reed cages or reed stops.

#### 607.10.1

REED ASSEMBLY: COMER MIK351L, CRG S10-T1, DAP T85, ITAL ML21, JAKO 2LA, PARILLA REED JET, PCR TSL95, TSL98 and ROTAX R-100 VM-E engines Must be of original manufacture coated reed cage only. Any non-metallic single thickness petal per opening is allowed and must have and use stock number of openings. Reed thickness non-tech. Polishing and/or grinding allowed. Manifold must be stuffer style only. No machine work is allowed on cases to accept different reed cages or reed stops.

#### 607.11 AIR FILTER/AIR-BOX ADAPTER:

Air filter/air box mounting adapter cannot be velocity stacked-shaped or act as a ram tube. (See Section 551.6 and Figure 551.2a for specifications.)

### Figure 608.2 100cc Controlled Carburetor Specifications Data Chart

	1 HS Needle Seat	2 LS Needle Seat	3 Idle Speed Pick-Off	4 Idle Jet	5 Transition Jet Minimum	6 Transition Jet Maximum	7 Air Pre- Mix	8 Fuel Inlet Valve Seat	9 High Speed Pick- Off	10 High Speed Jet Check Valve
TILLOTSON HR MODELS; 181, 181A, 184, 184A, WITH MAX THROTTLE BORE 1.325"	.107"	.053"	.128"	.032"	.032"	0.052	.038"	*.097"	.160"	**.085"
HR191 MAX THROTTLE BORE 1.360"	.116"	.063"	.187"	.040"	.040"	.063"	.040"	.098"	.187"	NA
TILLOTSON HL MODELS 227A, 250A, 304A, 307A, 317A, 317E,322 WITH MAX THROTTLE BORE 1.195"	.107"	.053"	.128"	.032"	.032"	.052"	.038"	.097"	.160"	.085"
TILLOTSON HL360A IS THE ONLY CARBURETOR LEGAL FOR 98' HOMOLOGATED REED ENGINES IN THE Road Racing AND SPEEDWAY DIRT SERIES. CARBURETOR MIN. OVERALL LENGTH 2.590", VENTURI .950", THROTTLE BORE 1.065" AND METERING HOLES ARE NON-TECH.										
MIKUNI MODEL BMC-34G WITH MAX THROTTLE BORE 1.360"	.0935"	.093"	.187"	.040"	NA	.055"	.064"	.089"	.187"	.104"
CIK/FIA BUTTERFLY TYPE CARBURETORS WITH THROUGH SHAFT (2or3 jet) WITH VENTURI .945" THROTTLE BORE 1.095" AND MAX. TOTAL LENGTH OF 4.0" (including filter adapter) LEGAL IN MFG'S CUP DIRECT DRIVE CLASS ONLY.										

CARBURETORS	ATOMIC	PAR TT75	PCR PC93	COM 351L	CRG S10T1	DAP T85	ITAL ML21	JAKO 2LA	PAR RD-JET	PCR TSL98	PCR TSL95	ROTAX 100VME
TILLOTSON-HR181,181A, 184,184A,191; HL227A, 250A 304A,307A, 317A, 317E & 322	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MIKUNI-BMC-34G	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TILLOTSON-HL360A	N/A	N/A	N/A	X	X	X	X	X	X	X	X	X
CIK/FIA 2 OR 3 JET	N/A	N/A	N/A	*X	*X	*X	*X	*X	*X	*X	*X	*X
CC MINIMUM	**9	**9	**9	**9	**9	**9	**9	**9	**9	**9	**9	**9
MAX. EX. PRT HT. W/LAD GA.	1.270"	1.255"	1.255"	1.270"	1.260"	1.260"	1.260"	1.260"	1.275"	1.255"	1.255"	1.300"
MAX. EX. PRT HT. W/LGT CHK	1.145"	1.130"	1.130"	1.135"	1.135"	1.135"	1.135"	1.135"	1.150"	1.130"	1.130"	1.175"
MAX. CYLINDER BORE	1.985"	1.990"	1.990"	1.992"	1.992"	1.992"	1.992"	1.992"	1.988"	2.002"	2.002"	1.958"
MAX. PISTON STROKE	1.995"	1.975"	1.976"	1.996"	1.996"	1.996"	1.996"	1.996"	2.004"	1.977"	1.977"	2.036"
MIN. PISTON STROKE	1.980"	1.960"	1.960"	1.984"	1.984"	1.984"	1.984"	1.984"	1.992"	1.965"	1.965"	2.024"
MAX. CRANK OD	3.315"	3.315"	3.315"	3.310"	3.000"	3.000"	3.000"	3.000"	3.310"	3.310"	3.310"	3.310"
MAX. ROD LENGTH	100mm	100mm	100mm	100mm	100mm	100mm	100mm	100mm	100mm	100mm	100mm	100mm
IGNITIONS												
DANSI OR CEV POINT TYPE	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MOTO PLAT - CW or CCW	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PVL - CW or CCW	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	X
DUCATTI - CW or CCW	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SELETTA	X	X	X	X	X	X	N/A	X	N/A	X	X	N/A
PISTONS												
ASSO	X	X	X	X	X	X	X	X	X	X	X	X
COMER	N/A	N/A	N/A	X	X	X	X	X	X	X	X	X
DAP	X	X	X	X	X	X	X	X	X	X	X	X
CRG	N/A	N/A	N/A	X	X	X	X	X	X	X	X	X
ITAL	N/A	N/A	N/A	X	X	X	X	X	X	X	X	X
JAKO	N/A	N/A	N/A	X	X	X	X	X	X	X	X	X
IAME	X	X	X	X	X	X	X	X	X	X	X	X
PCR	X	X	X	X	X	X	X	X	X	X	X	X
ROTAX	N/A	N/A	N/A	X	X	X	X	X	X	X	X	X

\* CIK/FIA CARBURETORS LEGAL IN MFG'S CUP SERIES "DIRECT DRIVE CLASS ONLY".

\*\* 9cc RULE DOES NOT APPLY TO MFG'S CUP SERIES DIRECT DRIVE CLASS.

### 607.12 OTHER:

Approved additions to engine unless specified otherwise herein, include: air cleaner, clutch, muffler, rock guard, chain guard, starter pulley or nut, motor mount, header pipe, external extensions of the carburetor jet needles, carburetor return springs, temperature gauge, tachometer, main bearing shims, external third bearing supports and extension shaft.

### 607.13 INTERCHANGE OF PARTS:

Interchange of ignitions and rotating parts of like dimensions among homologated controlled engines is legal. Rotating parts include pistons, rods, and crankshafts.

## 609 TAG 125 CC (TOUCH AND GO)

Note: All parts subject to comparison to known stock parts to determine legality.

### 609.1 INTRODUCTION:

The following TAG engine specifications and technical inspection procedures apply to sprint and road racing TAG classes. WKA will make every effort to establish parity among the various TaG engines through adjustments to kart/driver weight or restrictions to the engines or exhaust systems.

### 609.2 STARTER/BATTERY:

In the event that the engine cannot be started on the grid with the onboard starter, an auxiliary starter may be used. In any case, the on-board starter is subject to post race tech inspection to ensure that all components are present and correctly installed. Battery must be sealed or dry cell and be securely mounted.

### 609.3 AIR BOX:

Must be equipped with either (1) A WKA Approved air box (2) any CIK (or FIK) Registered 22 mm TWO TUBE air box, or any CIK Homologated (2005 or later) air box. (See Section 551.2.2) Air box adapter must conform to the general design and dimensions shown in use the stock air box. Air box adapter must conform to the general design and dimensions shown in Section 551.6 and Figure 551.2b.  
-- Also see 618.7.

### 609.4 CARBURETOR:

OEM as supplied from the engine manufacturer; open jetting. Must use OEM needle jets but washers may be added for the purpose of tuning. How the throttle cable connects to the arm and the bracket that holds the cable are non-tech. The manifold and carburetor may not be modified. The arm, throttle shaft and butterfly are OEM with no modifications. The slide assembly is included in jetting but must retain OEM replacement parts. Fuel may only pass through stock metering orifices. Any means taken to bypass fuel to the engine in any other manner is not allowed. Any components not specified herein must be stock. Surface finish of venturi and bore must remain as manufactured. Engine must be equipped with carburetor as specified by the engine manufacturer. Carburetor must be mounted to the engine as manufacturer specifies. See carburetor dimensions listed in Table 610. All fasteners in carburetor are open.

#### 609.4.1 BUTTERFLY CARBURETORS:

Inlet springs are non-tech item. Machine work to the throttle shaft is not allowed. All pumper style carburetors are single-pumpers with plastic fuel cap. Fuel adjustment needles must be stock from the needle top to the "O" ring step. Needles may be modified beyond the "O" ring step to attach needle extensions. No remote carb adjusters or triggers. (Remote carb adjusters are approved for TAG engines run in laydown road racing karts.) Machined bore in the throttle shaft area must be straight from shaft to flange surface and carburetor must meet all other dimensions submitted. The surface of the Tillotson 334 AB carburetor air horn, venturi and back side of the are not subject to visual tech. Tillotson 334 A and AA Carburetors have a machined air horn and venturi area. Air horn must be one continuous plane from the front of the carburetor to the intersection of the straight venturi bore. The two planes must intersect forward of the dump tube. The venturi shall be straight except for a radius/break at the forward and rearward blend area. The machined bore in throttle shaft area must be straight from shaft to rear flange surface and meet all other dimensions submitted. Minimum throttle shutter thickness 0.029".

### 609.4.2 SLIDE CARBURETORS:

Must remain stock as supplied by the manufacturer. Competitors running the Rotax Max FR125 engine may use any stock Dell'Orto jets, metering rods, and emulsion tubes. These parts may not be modified in any way and must be used as supplied by the carburetor manufacturer. (Rotax Max FR125 engines must continue to use only the stock #40 slide.)

### 609.5 FUEL PUMPS:

Must be of diaphragm pulse type. Manufacturer and location are open.

### 609.6 IGNITION SYSTEM:

Must be OEM, as supplied and per factory specifications. Static timing must be at the factory settings; flywheel key must be in place; no modifications allowed. Spark plug is open. Ignition system must be used as supplied in its entirety. Factory marking on ignition control box must be visible as manufactured. Parilla '03 and My'09 are marked "A". X30 is marked "C". Boxes must be mounted with designation visible for ease of inspection. Ignition control boxes and starter relay are potted in black or blue resin. Stator mounting holes (4) - 0219 No Go. Mounting bolts must be 5mm diameter / stock unaltered. Flywheel key required.

### 609.6.1 SPARK PLUGS -- X30

Allowable spark plugs -- NGK R6252K-105 --and-- NGK R6254E-105  
For declared rain events -- NGK B10EG --and-- NGK BR10EG may also be used

### 609.7 PISTON AND RINGS:

Must be OEM with no modifications. Piston must be of original engine manufacturer; no interchange is allowed. Stock piston coating allowed. Wrist pin must be made of ferrous material. Maximum skirt chamfer 0.030" To be run as factory supplied - maybe be subject to profile check on dome.

### 609.8 BEARINGS:

Must be of original type as per engine manufacturer's specifications; i.e.: 6205. No dual-row, ceramic ball, or other exotic bearing allowed. Replacement bearings must be standard type, conventional bearings with steel or plastic retainers. They must be of the same width and outside diameter as original bearings. Ceramic or angular contact bearings are not allowed.

### 609.9 HEADER AND PIPE:

Must be used as supplied by manufacturer. No plating or ceramic coatings permitted. No interchange allowed. Pipe and header must be of original manufacture with no modifications. Exhaust system must start and complete race intact as intended for use by the manufacturer. Connector pipe where applicable must be round and of proper O.D. as to connect pipe to header as supplied by manufacturer. Solid connector pipe in lieu of flex permissible providing O.D. is the same as flex connector supplied by the manufacturer. Connector pipe length non-tech unless otherwise specified. Addition of exhaust gas temperature lead is legal, but hole must be plugged if exhaust temp lead is not used.

Figure 609.9

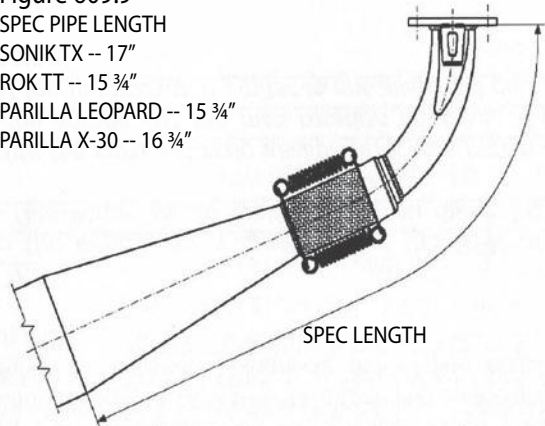
SPEC PIPE LENGTH

SONIK TX -- 17"

ROK TT -- 15 3/4"

PARILLA LEOPARD -- 15 3/4"

PARILLA X-30 -- 16 3/4"

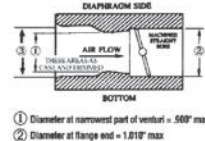
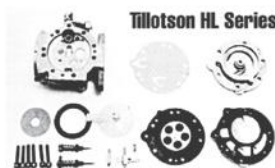


### 609.9.1 HEADER AND PIPE LENGTH:

There is a minimum combined length of the header, connector and pipe on the Sonik TX, ROK TT, Parilla Leopard and Parilla X30 engines in WKA competitions. This measurement is taken from the

Figure 608.3b

All Except HL 334 A, 334 AA, & HL 334 AB

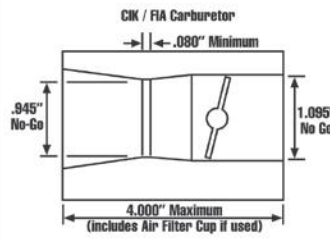
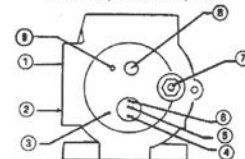


- ① Diameter of narrowest part of venturi = .500" max.
- ② Diameter of flange end = 1.010" max.

Note: Bores are usually non-concentric.

### Applies to ALL Carburetors

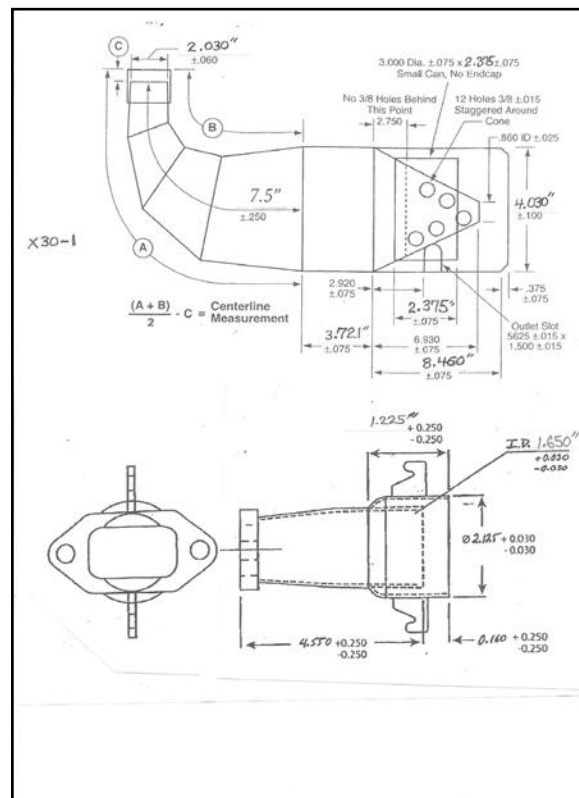
Note: Needle and seat may be rubber seat and solid needle or solid seat with rubber-tipped needle - captive or non-captive.



back side of the header flange (not the cylinder side), around the right side of the header, connector and pipe to the weld at the end of the first divergent cone. It is as raced and installed on the kart. The minimum length is 17" on the Sonik TX, 15 3/4" on the ROK TT and Parilla Leopard engines and 16 3/4" on the Parilla X30 engines.

### 609.9.2 X30 ROAD RACE EXHAUST SYSTEM

Minimum length = 10" from piston to end of connector tune



### 609.10 CLUTCH:

OEM, as supplied with engine from manufacturer and as per factory specifications. Non-adjustable; either single disk or shoe type only. Facturing supply 17mm hex nut required. Clutch engagement not to exceed 6,000 RPM. No oiling of clutch. Clutch test procedure as written under 603.11.2 but using 6000 RPM Limit. Minimum friction hub diameter - 83mm (3.268") -- Maximum drum inside diameter - 85.2mm (3.354").

### 609.11 COOLING SYSTEM:

Radiator OPEN. Must be mounted to right or the left of the driver. System must have a catch container for radiator overflow. Coolant may not contain any ethylene glycol based material. Surfactants such as Water Wetter ® may be used. Aftermarket thermostat is allowed.



**++ FIGURE 609 TAG SPECIFICATIONS -- ALL WITH LAD TOOL**

ENGINE NAME	STROKE	MAX BORE	ROD LENGTH	PISTON TYPE	PORT HEIGHT, LIGHT CHECK	PORT HEIGHT, LAD TOOL	COMBUSTION CHAMBER VOLUME (E3)	MIN SQUISH	MINIMUM REED THICKNESS	IGNITION	TIMING	CLUTCH
CHEETA SQ125	54.0 MM	54.35MM	102 MM	SINGLE DYKES RING	1.280"	1.410"	10.0 CC	0.028"	0.009"	OPPMA PVL	FIXED	3 SHOE NO SPRINGS
EASYKART IAME & BMB	54.0 MM	54.35 MM	102 MM	SINGLE DYKES RING	1.280"	1.405"	11.5 CC	0.031"	0.010"	SELLETRA 4 POLE	FIXED	3 SHOE NO SPRINGS
MOTORI SEVEN TAG L4	54.4 MM	V	110 MM	SINGLE RAIL RING	1.215"	1.350"	9.5 CC	0.025"	0.010"	SELLETRA OR PVL	0.060" TO 0.075" BTDC	3 SHOE WITH SPRINGS
IAME PARILLA LEOPARD "03 AND MY'09	54.0 MM	54.35 MM	102 MM	SINGLE DYKES RING	1.255"	1.380"	9.5 CC	0.026"	0.010"	SELLETRA 4 POLE OR DIGITAL K	FIXED	3 SHOE NO SPRINGS
IAME PARILLA LEOPARD ROAD RACING	54.0 MM	54.35 MM	102 MM	SINGLE DYKES RING	1.215"	1.340"	9.5 CC	0.026"	0.010"	SELLETRA 4 POLE OR DIGITAL K	FIXED	3 SHOE NO SPINGS
IAME X30	54.0 MM	54.35 MM	102 MM	SINGLE DYKES RING	1.215"	1.340"		0.035"	0.010"	SELLETRA DIGITAL K	FIXED	3 SHOE NO SPRINGS
(E1) PRD FIRE BALL 2007	54.0 MM	54.45 MM	100 MM	SINGLE DYKES RAIL	1.260"	1.385"	10.0 CC WITH LAD TOOL	0.028"	0.009"	OPPMA OR PRD-5110	0.090" BTDC MAX.	3 SHOE NO SPRINGS
(E2) ROTAX MAX FR 125	54.50 MM	54.035 MM	100 MM	SINGLE RAIL RING	N/A	1.350"	10.8 CC	0.035"	0.022"	DENSO	FIXED	3 SHOE WITH SPRINGS
SONIK TX125	54.1 MM NO STUFFERS	54.30 MM	102 MM	SINGLE DYKES RAIL	1.210"	1.335"	10.5 CC	0.038"	.007"	SELLETRA 3356	.070" TO .085" BTDC	SINGLE DISK OR SHOE NON ADJUSTABLE
SONIK VX125 (118)	50.6 MM	54.55 MM	100 MM	SINGLE DYKES RAIL	1.130"	1.255"	11.0 CC	0.038"	.006"	SELLETRA 3356	.070" TO .085"	(SEE NOTE E4)
VORTEX ROK TT	54.00 MM	54.28 MM	102 MM	SINGLE RAIL RING	1.245"	1.370"	10.8 CC	0.038"	0.06"	SELLETRA OR PVL	0.70" TO 0.85" BTDC	3 SHOE NO SPRING
<b>Note: 1.110" Light Check varies from normal light check ratio. Piston port intake timing is 0.580" minimum. check ignition timing to rear stator line. 0.015" to 0.040" before TDC.</b>												
<b>Note: The BM Jaguar, Comer K365, Italsistem ML47, 2005 PRD Fireball, Vortex ROK '03 and Vortex ROK '04 TaG engines are no longer approved for WKA National competition. Specifications for use of these engines in local or divisional events are available in the WKA 2007 Technical Manual.</b>												

#### TAG ENGINE NOTES:

- (E1) IAME X30 no hole in clutch drum allowed
- (E3) Combustion chamber volume to be checked as raced with WKA approved CC measuring plug (see Figure 504.6).
- (E4) In Road Racing, SONIK VX 125 (118 CC) must use 3 shoe clutch with no springs. In Sprint Racing, single disk non adjustable or shoe clutch allowed.
- (E5) Parilla X30 3 shoe clutch. Original clutch shoe assembly part number X30125840 (with trailing edge pivot) and new clutch assembly part number X30125841 (pusher type) are both approved.
- (E6) New Leopard starter wheel #1A1-30000 for pusher-style clutch is approved. Pusher clutch part number X30125841 is legal for MY'09 Leopard -- pusher clutch A125841 legal for older Leopard models (direct crank shaft mounting)
- (E7) X30 Passport Card required for post-race tech.

Pressurized cooling system or electric water pumps are not allowed.

#### 609.12 INTERNAL MODIFICATIONS:

No internal engine modifications including addition or deletion of parts.

#### 609.13 REED CAGE, REEDS:

No polishing or grinding of reed cage allowed. Resurfacing of rubber contact surface area to reeds and gasket surface area is allowed. Removal of excess loose rubber at manufacturing parting lines is allowed. No machine work, polishing, or metal removal or addition to manifold is allowed. Deburring is allowed to remove production burrs. Reed attachment screws are non-tech. Minor grinding is allowed at reed attachment screws. Manifold must remain of original shape and design as manufacturer intended.

#### 609.14 EXHAUST CONNECTOR PIPE:

Exhaust connector pipe may be flex or solid tubing. Connector pipe length is non tech. (See 609.9)

(E8) Leopard and X30-IAME fiberglass reeds only -- No carbon types

#### TAG CARBURATOR NOTES

Carburetor venturi diameter checked at narrowest point of venturi.

(C1) EasyKart has a fixed high-speed jet. No polishing of carburetor allowed. Butterfly stop in bore must be in place.

(C2) When PRD Fireball engines run in the Controlled TAG Classes, Tillston HL166B or HL166C are required. See figure 611.6 for specifications.

(C3) The Dell'Orto VHSB 34 carburetor has an oval shaped venturi. No spec is published. However, the venturi must be "as cast" and may be compared to a know stock carburetor.

(C4) X30 Tillston carb - stock butterfly screw required.

#### 609.15 SEALS:

Must be of original type and size as per manufacturer's specifications with no modifications. No trimming or spring removal. Must be installed as manufacturer intended, i.e. not reversed. Also see 618.6.

#### 609.16 GASKETS:

Open.

#### 609.17 PORTS:

The intent is that the ports remain as manufactured. May be compared to know stock part.

**NOTE: Research has shown that all manufacturers use some hand grinding to remove casting imperfections as part of their manufacturing process. However, every effort will be made to distinguish between factory grinding and that done to improve performance by the engine builder or owner.**

#### 609.18 CONNECTING ROD:

Rod must of original manufacturer no modification or metal removal allowed.

### 609.19 CYLINDER HEAD:

Cylinder head must be stock, as manufactured part. Cylinder head must be stock appearing in combustion area. (i.e. if head comes with a step at gasket surface to squish area, the step must remain visible.) Each engine will have a specific minimum squish area. See Section 507 PISTON SQUISH MEASUREMENT for procedure and Figure 609 for specific squish area. Each engine has its own specific cylinder head combustion chamber volume specification. (See specifications in Figure 609.) Engine combustion chamber volume will be checked with head installed and as raced. Fluid level to the top of the LAD Tool. No modifications to circumvent engine cc requirements. Outside of water cooled cylinder head may be painted or anodized for appearance purposes only. For X30 engine, head profile tool may be used for inspection.

### 609.20 BORE AND STROKE:

Measurements are taken from engine as raced and will be plus or minus 0.2 mm (0.008"). Refer to chart for all bore and stroke measurements.

### 609.21 CRANKSHAFT:

Must be of original manufacturer. No counterweight plugging is allowed. No metal removing, shot peening or polishing is allowed. Any rod bearing is permitted. Crankshaft stuffing material may be aluminum or plastic as supplied by manufacturer. Crankshaft must be of the same manufacturer as the engine brand as approved by WKA. No interchange between engine brands is permitted. Crankshaft stuffers must be used as approved by WKA.

### 609.22 CRANKCASE:

Must be as manufactured no polishing or metal removal, other than a break at machine junctions for purpose of deburring. Exception: Main bearing pockets may be repaired but may not be relocated in the repair process.

### 609.23 ROTAX MAX FR 125:

Rotax Max FR 125 engines are allowed to run with or without a seal, but it will be subject to the same post race technical inspection as all other TAG engines. It is the competitor's responsibility to have a Rotax engine resealed if the seal is cut during technical inspection. Rotax Max FR 125 exhaust port height is measured using special tool inserted in exhaust port. See Section 506.4.

### 609.24 OTHER:

Motor mounts are non-tech. Third bearings are optional.

### 609.25

Engines approved with counter balance systems must be run with system complete and in working order.

FIGURE 610			
TAG CARBURETOR SPECIFICATIONS			
ENGINE NAME	CARBURETOR	VENTURI	THROTTLE BORE
CHEETA SQ125	TILLOTSON 334A, AB or AA	0.905"	1.010"
(C1) Easykart IMME & BMB	TILLOTSON 384B	0.902"	1.010"
MOTORI SEVEN TAG L4	DELL'ORTO VVSH30CS	1.185"	1.190"
IAME PARILLA LEOPARD '03 & '09	TILLOTSON 334A, AB or AA	0.905"	1.010"
IAME PARILLA LEOPARD RR	TILLOTSON 334A, AB or AA	0.905"	1.010"
IAME X30	TILLOTSON HW27	1.065" no -go	1.146" no go
(C2) PRD FIREBALL 2007	TILLOTSON 360A	0.950"	1.065"
(C3) ROTAX MAX FR 125	DELL'ORTO VVSB34	N/A	N/A
SONIK TX125	TRYTON VAMECM1	0.943"	1.075"
VORTEX ROK TT	TILLOTSON 360A	0.950"	1.065"
VORTEX MINIROK 60	DELL'ORTO PHBG 18 BS		

## 611 COMER K-80

For section 611, please see the 2017 WKA technical manual or refer to the Tech Docs--> archived technical rules section on the WKA website

## 613 80CC AND 125CC MOTO ENGINES

For section 613, please see the 2017 WKA technical manual or refer to the Tech Docs--> archived technical rules section on the WKA website.

## 614 STOCK APPEARING ENGINES

For section 614, please see the 2017 WKA technical manual or refer to the Tech Docs--> archived technical rules section on the WKA website

## 615 OPEN ENGINES

For section 615, please see the 2017 WKA technical manual or refer to the Tech Docs--> archived technical rules section on the WKA website.

## 618 GENERAL NOTES - ALL 2-CYCLE ENGINES

### 618.1 FLYWHEELS:

Flywheels must be as manufactured. Balancing holes are allowed.

### 618.2 CRANKSHAFTS:

All engines may utilize two flywheel-side crankshaft halves to allow use of drive sprockets, axle-clutches, etc. Crank stuffers may be notched above the crank pin in all classes.

### 618.3 BEARING HOUSING REPAIR:

Inserts may be installed in the aluminum engine cases to repair worn bearing housings. Original centerline must be maintained.

### 618.4 CARBURETOR (GENERAL):

O-ring and/or sealing devices are approved for carburetor shafts, including machining the carburetor body to install the sealing device. Button-head screws may be utilized on carburetor shafts in all classes. The throttle shaft butterfly screw(s) must be of adequate size that it is readily removable for technical inspection purposes.

### 618.5 DAMAGED THREAD REPAIR:

Damaged threads on all parts may be repaired using the following thread repair methods: wire style inserts (such as HeliCoil Inserts), solid inserts (such as TIME-SERTS) or stepped studs. Stepped studs must meet proper size dimension in the area above the surface that is meant to be used for location of attaching part. All replacement inserts or studs must maintain the original location and center line of the hole being repaired. Under no circumstance are they to be used to relocate holes (such as Yamaha coil mounts).

**NOTE:** For other legal dated engines and carburetors not listed in this manual refer to "1999/2000" tech manual for specifications and applications. (i.e. 135 Controlled, 250 Gearbox etc.).

### 618.6 PRESSURE/VACUUM TESTING:

Testing may be performed to insure extra air is not being pulled for a performance gain. Any means to bypass the intent of the class rules is illegal. Both pressure and vacuum tests may be performed -- engine must hold 5 psi for 60 seconds and/or 5 HG of vacuum for 60 seconds.

### 618.7 AIR-BOX

The factory intended function of the air-box must be maintained -- no chemical or substance of any type may be added or used at anytime with the exception of glue, silicone or tape which may be used to insure the tubes are properly positioned and sealed.

### 618.8

All two cycle karts competing in WKA events are required to utilize an auxiliary carb return spring. This rule does not apply to karts using a slide carb with an internal compression type return spring --- several acceptable types are available. Some are compression type, some are tension type. If you are not sure about the legality of a particular design, please consult a WKA tech official.

## 620 STOCK HONDA

### 620.1 ENGINE:

1999-2002 Honda CR125R. Parts may be interchanged between model years except as noted below. All items may be compared to a known stock part to determine compliance.

### 620.2 CARBURETOR:

Approved carbs are Keihin PWM 38mm (sudco number 16-170) or Keihin PWK 38mm (sudco number 16-153). These are the only two legal carburetors. PWK Air Striker carb (sudco number 016-167) is not legal. Pump around recirculation systems are allowed. Polishing or alteration of the carburetor throat is not allowed. Bore may not exceed 38.6mm through the 0.400" long throat as measured on the engine side of the slide valve. No additional internal or external performance items may be added to the carburetor. No oval boring allowed. No modification to the internal passages. Aftermarket float bowl drains that allow jet changes and jet needle vibration absorbers are legal.

#### 620.2.1 CARBURETOR BOOT:

Stock 1999 CR125 30° Boot, RS125 Straight Boot, or RS125 5° Boot are allowed.

#### 620.2.2 CARBURETOR MOUNTING FLANGE:

Stock unaltered 1999 Honda manifold.  
#16221-KZ4-A10 (marked KZ4M)

### 620.3 REED CAGE AND REEDS:

Reed petals are non tech (after market reeds OK), but must be of a single petal design and attach directly to the stock cage. No dual stage petal designs. Reed cage must be stock, unaltered 1999 CR125 Honda six petal design #14100-KZ4-J11. Reed stiffeners allowed but only may be installed to a stock cage. No removal of material from reed stops allowed. Stops may be bent to fit into crankcase passage.

### 620.4 CRANKSHAFT AND CONNECTING ROD:

Must be stock OEM Honda crankshaft and connecting rod with no alterations. No lightening of any components allowed. No polishing. No addition of counter weigh material. Rod may be shot peened. Polishing of main bearing journal surfaces to facilitate slip fitting is allowed. Key must remain in place with no modification to key or key-way.

### 620.5 BEARINGS:

OEM type only. No exotic designs allowed. Must be steel material only.

### 620.6 GASKETS AND SEALS:

Gaskets are non-tech except where dimensions are specifically called out. Seals must be of same sizing of original OEM type.

### 620.7 CYLINDER AND CYLINDER HEAD:

1997 to 2002 cylinders are legal. No modification of the cylinder is allowed. No porting, added or deleting of ports. No decking. Stock power valve may be removed and after market plugs installed. No grinding of the cylinder, welding or filling. No machining of any portion of the exhaust port allowed. Power valve actuator hole may be plugged. Cylinder length 3.007" minimum, 3.316" maximum. Cylinders with damage in ports may not be acceptable. Small nicks in one port (broken ring or cir-clip damage) are accepted. Large damage to the top of the port that could alter the intended port timing is not acceptable.

Motorcycle mounting lug may be removed from head. Any water spigots may be used. Head gasket to be stock Honda OEM - Gasket 0.009"min. / 0.011" max. Squish measurement 0.040" minimum (using 1/16" soldier). Head subject to inspection with profile gauge.

### 620.8 IGNITION:

Must be stock OEM 1999 including coil with no modifications. This includes wiring with the excepting of minor repairs to correct damage. Stock Honda or aftermarket SKUSA stator plates acceptable in unaltered condition. No modification allowed that allows for additional timing adjustment. No modification to any ignition component that allows for alteration of the static timing is allowed. Key and key-way must be unaltered. Key-way must be in place. Spark plug is non-tech but must be commercially available and of the correct OEM thread reach. Coil must be 1999 OEM with no modifications. Lead and ground wires may be altered to facilitate mounting.

### 620.9 EXHAUST SYSTEM:

Legal exhausts are the SK-1, RLV R4H two-piece #6820 or RLV R4H one-piece #6830. Systems must be run unaltered with no modifications. No spacers of any type in any location are allowed that alter the exhaust length. Silencer is mandatory for noise reduction but is non-tech. Silencer must operate in an effect manner as designed to reduce noise.

### 620.10 PISTON ASSEMBLY:

Honda 1999 OEM only. No modifications or coatings of any kind are allowed. Minor deburring of rough edges is allowed as long as all original dimensions are maintained. Piston - ring - piston pin and bearing must be OEM Honda and in stock condition.

### 620.11 TRANSMISSION:

Transmission must be Honda five-speed or six-speed as originally delivered. All components must be stock OEM. No polishing, grinding or modifications of any kind. Mechanical gearbox only. No ignition interrupt systems allowed.

**NOTE:** While air / electric / pneumatic shifters are not allowed, this restriction may be waived to accommodate special driver needs and requires prior written approval by WKA. Transmission bearings are to be steel material only. Micro polishing of gears is allowed.

### 620.12 CLUTCH:

All parts must remain OEM with no modifications of any type. The number of plates must be as factory intended with no deletion of plates or discs.

### 620.13 WATER PUMP:

Water pump must be used as originally intended. No external or axle driven pumps allowed.

FIVE OR SIX GEARS ARE ALLOWED	
GEARS ARE PER THE 1994 - 1996 RATIOS AS FOLLOWS	
First	14/33
Second	15/28
Third	19/29
Fourth	21/27
Fifth	23/26
Sixth	24/24



## 620.14 ENGINE CASES:

Must be run as supplied as OEM stock. No modifications allowed. Kick-start boss may be machined and plugged.

### 620.14.1 LEGACY CASES:

Legacy cases are previously used modified cases. Engines with legacy cases are allowed but must utilize all other stock components such as cylinder, head, ignition etc. A weight penalty may be imposed on engines with legacy cases. The use of legacy cases will be reviewed annually and may end at a pre-announced date.

## 620.15 AIR BOX:

Must be run as manufactured. May have up to three tubes. Tubes 30mm (1.181") maximum internal diameter – 95mm (3.740") minimum length. Must be CIK approved or RLV #0300 (red) --#0301 (black). Also see 618.7.

## 621 COMER C-51 & COMER C-52

**Note:** All parts subject to comparison to known stock parts to determine legality.

### 621.0 COMER C-51 & COMER C-52:

Engine is to remain stock as supplied by the manufacturer. No grinding or aftermarket accessories permitted except those specified. The only changes permitted are those that will promote equality among competitors rather than increasing performance. The Comer C-50 engine is no longer allowed. No C-50 parts are allowed in C-51 or C-52 engines. Divisional series and local clubs withing to allow the C-50 engine can refer to the 2012 WKA Technical Manual. The relevant specifications are somewhat different for the C-51 and C-52 engines because of the difference in the stroke length. The C-51 engine has a stroke length of 1.486" (38mm) and the C-52 has a stroke length of 1.575" (40mm). The C-51 has a displacement of 48cc and the C-52 a displacement of 50cc. The stroke of the crankshaft is the factor that positively identifies which engine it is. Only C-51 crankcase, cylinder and piston may be used with a C-51 crankshaft. Only C-52 crankcase cylinder and piston may be used with a C-52 crankshaft. To positively determine which engine is being teched, use a dial indicator fitted to the spark plug hole to measure the stroke. Zero the dial indicator at bottom dead center then measure the stroke. The C-51 engine stroke will be at or just under 1.486". The C-52 will be at or just under 1.575". Some of the specified measurements are different for the C-51 and C-52 engines. In order to maintain parity in performance, some modifications are allowed to the C-51 cylinder and piston that are not allowed for the C-52.

### 621.1 CARBURETOR:

Dell'Orto model SHA-14-12L only. All parts must be "as cast". No repairs to broken carburetor bodies. Stripped screw holes may be repaired with thread inserts or the next larger machine screw may be installed.

#### 621.1.1 VENTURI:

0.475" No-go venturi.

#### 621.1.2 JET SIZE:

0.019" Must-Go, 0.026" No-Go. Non-tech

#### 621.1.3 ATOMIZER TUBE:

Bottom hole, (float bowl side) 0.035" No-Go. Top hole (slide side) 0.049" No-Go.

#### 621.1.4 INTAKE PIPE (MANIFOLD):

Intake pipe must be stock. No polishing.

#### 621.1.5 INTAKE PIPE RESTRICTOR:

Intake pipe restrictor to be issued by WKA in Gold Cup, Dirt and Pavement Series. In manufacturer's Cup, on those tracks with very long straights where a higher than desired top speed is anticipated, the race director may require the use of a restrictor pill as well. The restrictor pill is to have 0.276" id NO-GO.

### 621.2 AIR FILTER:

An aftermarket fabric and wire mesh type filter may be used to replace the factory air filter. Flange inside diameter 57mm. Filter base

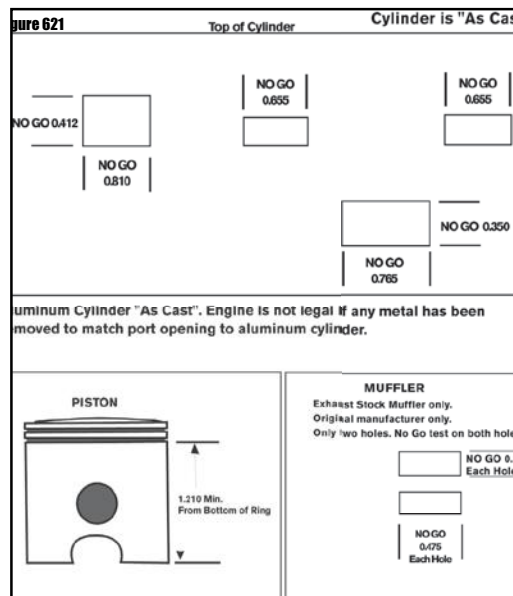
diameter 89mm. Filter length 102mm. Flange length 16mm. Flange style centered. Filter must remain unmodified.

### 621.3 COMBUSTION CHAMBER:

OEM shape. Volume to be checked using a LAD cc measuring plug, the .310 washer, glass burette and Marvel Mystery oil. Combustion chamber to remain as manufactured. All threads are to be intact. If a thread insert is used it must be full length. Any attempt to bypass the intent of this rule is illegal. C-51 minimum combustion chamber volume is 7.4 cc C-52 minimum combustion chamber volume is 7.7 cc (Please note that this will give both engines a 6.49:1 compression ratio.)

### 621.4 CYLINDER:

With only the exception listed below, the cylinder liner and aluminum cylinder must remain "as cast". C-51 engines only; the top of the exhaust port may be ground in order to obtain the minimum allowable exhaust port height. Only the top edge of the port may be ground and the top edge must be straight across and shaped identical to the original cast port. The port may not be widened.



### 621.5 PORT HEIGHT CHECK:

Install dial indicator onto cylinder head and zero at Top Dead Center. Insert 3mm rod, no longer than 3" long approximately .25" (6mm) into appropriate port. Rotate crankshaft until piston makes gentle contact with the rod. Release the 3mm rod. It is to remain supported. Read dial indicator.

C-51; Exhaust 1.204" minimum (112 degrees ATDC with 3mm rod), Intake 0.417" maximum (17 degrees ATDC with 3mm rod)  
C-52; Exhaust 1.206" minimum (114 degrees ATDC with 3mm rod), intake 0.435" maximum (17 degrees ATDC with 3mm rod)

### 621.6 CYLINDER BASE GASKET:

A gasket must be in place. There is no minimum thickness and multiple gaskets may be used to adjust tolerances.

### 621.7 PISTON:

Must be OEM and stock appearing. A C-51 piston must be used in C-51 engines and a C-52 piston must be used in C-52 engines. C-51 engines only; the intake side of the piston skirt may be ground or filed in order to achieve the maximum allowable intake timing. No other alterations are permissible. C-52 engines only: The minimum length from the bottom of the lower ring land to the bottom of the piston is 1.155".

### 621.8 RINGS:

Maximum ring gap is 0.040". Rings cannot fall through cylinder. Both rings must be installed.

### 621.9 CRANK PIN AND WRIST PIN:

OEM

### 621.10 MAIN BEARINGS:

Brand is non tech. Must be same size as OEM. Self-aligning and nylon cage bearings are permitted.

### **621.11 SEALS:**

Must be installed as OEM. Brand is non-tech.

### **621.12 IGNITION:**

Timing shall be checked with a dial indicator as per published procedure. The flywheel key is non-tech. Timing for C-51 and C-52 engines is as follows; C-51 engines; 0.050" to 0.063" (approximately 19 to 21 degrees BTDC) C-52 engines; 0.055" to 0.067" (approximately 19 to 21 degrees BTDC)

#### **621.12.1 IGNITION QUICK CHECK:**

Remove flywheel nut and visually check to ensure that key is in place.

#### **621.12.2 COMPLETE IGNITION TIMING CHECK PROCEDURE**

- Remove spark plug.
- Remove starter cover.
- Install dial indicator in spark plug hole.
- Set dial indicator to 0.0" at top dead center.
- Rotate flywheel in counter clockwise direction until the left hand (leading) edge of the first magnet is exposed to the left side of the coil.
- Observe mounting lug of coil. Note that the bottom of the lug is machined to match the curve of the flywheel. The left hand edge of the lug (nearest to engine center) is the edge that will be used to determine ignition timing.
- Continue to rotate the flywheel counter clockwise to align the right hand (trailing) edge of the magnet with the left hand side of the mounting lug and read dial indicator. Right hand (trailing) edge of the magnet should be between 0.040" and 0.060" before top dead center. Any dial indicator reading outside these dimensions is illegal.

### **621.13 SPARK PLUG BOOT:**

Non-tech

### **621.14 HIGH TENSION LEAD (PLUG WIRE):**

Non-tech

### **621.15 SPARK PLUG:**

Spark plug brand is non tech. Plug reach must be OEM.

### **621.16 MUFFLER:**

OEM C-50, C-51 or C-52. Exit holes maximum height is 0.110 no go and maximum width is 0.475" no go. One OEM exhaust gasket. Machine screws must be tight.

### **621.17 CLUTCH:**

Clutch must be run as manufactured. Shoes must have "Comer" name cast into them. Shoes must be stock appearing. No polishing or removing of metal. Minimum allowed width of shoes and assembly 0.065". Shoe length maximum diameter 0.430" and 9 coils. Wire diameter 0.075" to 0.080".

#### **621.17.1 CHAIN & GEARING:**

A comer 10 tooth clutch drum for use with 219 chain is required. The axle sprocket is non-tech (any size permissible) in order to allow new tuners to learn how to match the gearing to the power curve of the engine, track size and configuration as in any other class.

### **621.18 BLOWER HOUSING (SHROUD):**

Taping of blower housing is permissible. Replacement fasteners allowed.

### **621.19 GEAR RATIO:**

Open

## **622 PRD FIREBALL RK125CC WC**

For section fill in # , please see the 2016 WKA technical manual or refer to the Tech Docs--> archived technical rules section on the WKA website

## **624 MINI ROK 60CC**

For section fill in # , please see the 2016 WKA technical manual or refer to the Tech Docs--> archived technical rules section on the WKA website.

## **625 IAME SWIFT - 60CC**

**Note: All parts subject to comparison to known stock parts to determine legality. (this does not supply to hardware unless specifically called out. Passport card required for post race tech.**

### **625.1:**

The intent of the class is to run the engine as produced by the manufacturer. Items inspected may be compared to known stock parts to insure compliance. Homologation material and factory identification information may be used if deemed necessary.

### **625.2:**

No external modifications allowed. Painting of the head fins for advertisement is allowed. No anodizing or coatings of any parts allowed. Unless otherwise specified, non-tech items include gaskets, oil seals and fasteners.

### **625.3**

Max bore = 42.07mm (1.656")

Max stroke = 43.15mm (1.699")

Conrod length = 88mm (=/- 0.1mm)

### **625.4**

Tillotson HW31A

Max venturi--17.15mm(0.675")

Max throttle bore--22.10mm (0.870")

Stock butterfly screw required

### **625.5 CYLINDER HEAD:**

Squish minimum = .025" -- head maybe checked profile tool to insure compliance.

### **625.6 AIR BOX:**

Blue colored type as factory supplied with engine kit – no modifications allowed – one 23mm tube – addition of #0204 RLV or IAME #10751-A filter insert is allowed (replaces stock factory rubber boot)

### **625.7 PORTS----CHECKED WITH LAD TOOL**

Exhaust height—1.230"

Exhaust light break check—1.095"

Inlet port--.585"

If check is to be performed by degree method –

Exhaust duration – 155.5 max

Transfer ports (2) --115.5 max

Inlet --143 max

### **625.8 EXHAUST SYSTEM:**

To be run as factory supplied with no modifications. Exhaust heat sensor permitted.

### **625.9 CLUTCH:**

To be run as factory supplied with no modifications – drum max ID=85.2mm (3.354") – minimum center friction hub diameter 83mm (3.268") -- 10 or 11 tooth IAME sprocket only. No holes in drum allowed. Facturing supply 17mm hex nut required. No oiling of clutch allowed. Clutch subject to test procedure as written under 603.11.2. Using 5000 rpm limit.

### **625.10 IGNITION SYSTEM:**

To be run as factory supplied with no modifications

### 625.11 SPARK PLUGS:

Only the following plugs are allowed:

NGK BR\_EG --or-- B\_EG

DENSO W\_ESZU

AUTOLITE AR51 -- or -- AR50

Must be stock and unmodified. May be compared to know stock part to determine legality. Factory sealing washer or thermocouple must be in place

### 625.12 BEARINGS:

Must be of original manufacture's specifications -- No double row, ceramic ball or other exotic bearings allowed -- Ceramic and angular contact type are not allowed -- Replacement bearings must be standard type conventional bearing with metal or plastic retainers. They must be of the same dimensions as the original.

### 625.13 EXHAUST RESTRICTOR -- MINI-SWIFT:

Max diameter -- 16mm (.630" - No Go) -- must be straight bore in restricted area and unaltered factory supplied condition. --

Part# A-85365 625.14 PISTON

Maximum skirt chamfer -- 0.030". To be run as factory supplied -- may be subject to profile check on dome.



600

## ++626 IAME KA100 REED VALVE --100CC

### 626.1 CLASS INTENT

The intent of the class is to run the engine (kit) as produced from the manufacturer. Items inspected may be compared to know stock parts to insure compliance. This does not apply to hardware unless specifically called out. Homologation material, supplemental rules and factory identification information may be used if deemed necessary.

### 626.2 EXTERIOR MODIFICATIONS

No external modifications allowed. Painting of the head fins for advertisement is allowed. No anodizing or coatings of any parts allowed. Unless otherwise specified, non-tech items include gaskets, oil seals and fasteners.

### 626.3 STROKE AND BORE

Max bore = 48.53 (1.911") Max stroke = 54.05 (2.128") Conrod length = 88mm (+ - 0.1mm)

### 626.4 CARBURETOR

Tillotson HW-33A -- Max venturi = .950" No-Go -- Maximum throttle bore = 1.107" No-Go

To be run as factory supplied. Butterfly screw must be as factory supplied type.

### 626.5 CYLINDER HEAD

Swish = .041" minimum (using 1/16" soldier) Subject to inspection with profile gauge.

### 626.6 AIR BOX

Factory supplied # IAG-90000 blue colored type -- no modifications allowed --

two tubes (.871" No-Go) -- lame #10751-A air filter insert required except in declared rain conditions

### 626.7 PORTS

To be run as factory supplied without alteration.

Ports heights checked with LAD tool.

Exhaust -- 1.420" min

exhaust light break check -- 1.295" min

### 626.8 EXHAUST

Exhaust system to be run as factory supplied with no modifications.

### 626.9 CLUTCH

To be run as factory supplied with no modifications. Drum max ID = 85.2mm (3.354") -- IAME sprocket only -- 6000 max -- center friction hub minimum diameter 83mm (3.268") Facturing supply 17mm hex nut required -- no holes in drum allowed -- clutch subject to test procedure as written under 603.11.2 using 6000 rpm limit.

### 626.10 IGNITION

To be run as factory supplied with no modifications. Timing .080" min -- .106" max

Spark plug -- only the following plugs are allowed, heat range is not specified -- NGK B10EG -- NGK BR10EG -- NGK R6252K-105 -- NGK R6254E-105 Spark plug must be stock and unmodified. May be compared to a known stock plug to determine any modification. Spark plug washer or head temperature sensor must be in place. Indexing washer or temp gauge washer allowed, in replacement of stock spark plug washer, provided the plug reach does not exceed 18.5mm.

### 626.11 BEARINGS

Bearings must be of original manufactures specifications. No double row, ceramic ball or other exotic bearings allowed. Ceramic and angular contact type not allowed. Replacement bearings must be of standard type with metal or plastic retainers and must be of the same dimensions as the factory original type.

### 626.12 REED VALVES

IAME OEM fiberglass reeds marked "IAME" only -- #X30125840 -- minimum thickness 0.25mm (0.010") -- .009" No-Go

### 626.13 PISTON

To be run as factory supplied -- may be subject to profile check on dome area.

## NOTES



# ROK Motors



Mini Rok, TM-624, per Rok Cup USA  
Technical Regulations, [www.rokcupusa.com](http://www.rokcupusa.com)



Rok VLR, TM-627, per Rok Cup USA  
Technical Regulations, [www.rokcupusa.com](http://www.rokcupusa.com)



Rok GP, TM-628, per Rok Cup USA  
Technical Regulations, [www.rokcupusa.com](http://www.rokcupusa.com)



Rok Shifter, TM-629, per Rok Cup USA Technical Regulations,  
[www.rokcupusa.com](http://www.rokcupusa.com)

# ROTAX Motors



Rotax EVO Micro, TM-630 per  
Rotax Technical Regulations, [www.racerotax.com](http://www.racerotax.com)



Rotax EVO Mini, TM-631 per  
Rotax Technical Regulations, [www.racerotax.com](http://www.racerotax.com)



Rotax EVO Junior/Senior, TM-632 per  
Rotax Technical Regulations, [www.racerotax.com](http://www.racerotax.com)



Rotax EVO DD2, TM-633 per  
Rotax Technical Regulations, [www.racerotax.com](http://www.racerotax.com)





# 2023 TECHNICAL MANUAL

## 4-Cycle Engine Specifications and Regulations

# 700

### 700 4-CYCLE ENGINE SPECIFICATIONS

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# NOTES

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## 700 4-CYCLE ENGINE SPECIFICATIONS

### 701 BRIGGS & STRATTON STOCK RAPTOR 5 HP ENGINE

For section 701, please see the 2016 WKA technical manual or refer to the Tech Docs--> archived technical rules section on the WKA website

### 704 BRIGGS & STRATTON STOCK ANIMAL ENGINE

**NOTE:** All parts must be Briggs & Stratton Series 12 Engine Model Number 124332 factory production parts unless otherwise specified in this manual. No machining or alteration of parts is permitted unless specifically noted. All parts are subject to be compared to a known stock Briggs & Stratton part. No reading between the lines. If it is not in the rules, it must remain stock. **UNLESS OTHERWISE STATED ENGINE WILL BE TECHED AS RACED.**

**NOTE:** Tech tools to be used to inspect part / parts or used in a tech procedure are noted with the part number of tool shown in parenthesis. (Example: (A12)).

#### 704.1 SHROUDS & COVERS:

Engine shroud and covers and control bracket must be intact and not modified, except control cover, which can be modified to attach fuel pump (fuel pump must be visible) and throttle bracket also cylinder cover maybe cut for thermocouple, intake manifold and exhaust flange clearance. Refer to Figure 704.1 for maximum removal of metal from engine shroud. New Briggs & Stratton Air shield/guard Part # 555699 may replace plastic control cover and control bracket. Flywheel guard mandatory. All flywheel guards must be bolted to blower housing. Taping of flywheel guard allowed. Tape on block disallowed. No part of Flywheel guard may protrude inside of the flat plane of the blower housing. NO revolving flywheel guards allowed. Any bolt utilized to secure sheet metal, shrouding, etc., with the exception of sheet metal secured by the head bolts, may be replaced with larger diameter bolt(s). The stock kill switch is not mandatory. However, if installed, the stock kill switch must remain in stock location



#### 704.2 HEADER/SILENCER:

Exhaust pipe/header must not extend past rear bumper (including silencer, where applicable) and have no exposed sharp edges. Header shall have a maximum length of 24" to be measured in the ID using a 0.250" wide tape measure. Measurement to be made with silencer off of pipe and tape tight. If any part of the pipe is less than the maximum the pipe is legal. Loop Header pipes NOT ALLOWED. Header/exhaust pipe MAY NOT PROTRUDE inside of exhaust port. Studs allowed for header pipe attachment to block. Header pipes MUST be wrapped to protect driver from burns.

##### 704.2.1

Gasket and/or Silicone allowed to seal the header.

##### 704.2.2

Header must be of fixed design. NO SLIPPY PIPES allowed. No extra tubes or holes allowed in header except hole for EGT sensor. If EGT sensor hole is present, sensor must be in place or hole must be plugged.

##### 704.2.3

Extra HEAT SHIELD above chain guard is allowed. Shield to be no higher than a level plane to the top of the valve cover.

##### 704.2.4

All header pipes must be of continuous length from flange to end of pipe with stages or butt welds permitted (no chamber, infusers, or covers of any type allowed on muffler etc.). A header support brace and safety wiring of header bolts or studs is MANDATORY to assure header bolts remain tight. It is required that the safety wire wrap around pipe to insure that bolts remain with pipe in case they are stripped out of block. Silencer must be tight, secure, and completely intact on the header through out the entire event with no leaks or breaks. Silencer must be clamped to header tube and no welding of silencer in any area. Header tube and silencer are only legal parts.

#### 704.2.5 SILENCER:

In events where silencing device is MANDATORY (Divisional, National, etc., points event and where required for non-points, local events), use of RLV B-91 SILENCER IS MANDATORY. Silencer must be utilized as produced, with no modifications or alterations permitted.

##### 704.2.5.1

Silencer Baffle holes 0.1285" maximum all baffles.

##### 704.2.6

The flange that bolts the header to the block cannot be thicker than 0.312" Max.

#### 704.3 AIR FILTER:

AIR FILTER NOT REQUIRED. Any air filter permitted. Air filter must be installed directly to carburetor. Filter may not be used as an air ram and must filter from all areas as raced. Any open areas in filter must be covered with a filter sock.

#### 704.4 CARBURETOR:

PZ Model 22 Carburetor only. Must be stock as from the factory. Exception: Any parts that can be removed through the float bowl are non-tech items. The carburetor body and other parts that cannot be removed through the float bowl are tech items and must remain as manufactured. Any 1/4" bolts may be used to attach Carb to intake. NO STUDS ALLOWED. Carb to intake seal is by O-Ring only. No sealer allowed. Air must enter engine at carburetor air horn ONLY. Choke must be as stock as from the factory except choke arm may be secured in the open position. The float and needle must be present in their stock locations and function as intended. No additional parts may be added. Effective July 1, 2011 -- The fuel nozzle should extend between 0.040" and 0.060" into the venturi. The nozzle must maintain stock configuration on top with no notching or grinding.

##### 704.4.1 THROTTLE BORE:

Maximum throttle bore inside dimension is 0.874" (A7) NO-GO. Must be as cast.

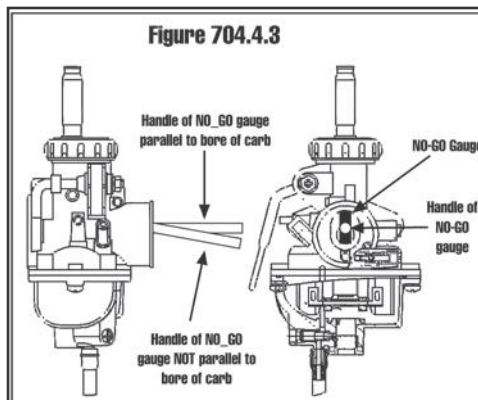
##### 704.4.2 CHOKE BORE:

1.149" (A7) No-Go. Must be as cast.

##### 704.4.3 VENTURI:

Vertical maximum is 0.792" No-Go (A8). Horizontal maximum is 0.615" NO-GO for top and bottom of venturi (widest part). Horizontal maximum is 0.602" NO-GO for the narrowest part of venturi (center). When measured from the front (air filter) side of the carburetor, (1) the vertical (0.792") NO-GO shall be held parallel with the carburetor bore (See Fig. 704.4.3), and (2), the horizontal 0.615" and 0.602" NO-GOs cannot start into the venturi. When measured from the back (intake manifold) side, none of the NO-GOs can start into the venturi. No machining of the venturi is allowed.

Figure 704.4.3



#### 704.4.4 AIR PICK OFF HOLE:

Maximum 0.061" No-Go (A9)

#### 704.4.5 SLIDE:

Slide must be stock as from the factory. No grinding or other alteration. Deepest part of cut away at bottom of slide must be a maximum of 0.074". Depth of cut away may be measured by placing slide on a flat surface and attempting to insert a 0.075" NO-GO into cut away. Depth may be measured with slide in carburetor by backing the idle screw out such that the slide rests on the bottom of the venturi. Then attempt to insert the 0.075" NO-GO into cut away.

#### 704.4.6 NEEDLE JET:

1.692" maximum length and 1.677" minimum length. Taper on needle must remain stock and will be checked at 0.500" from the tip of the needle and must not be smaller than 0.070" NO-GO (A4).

#### 704.4.7 CHOKE LEVER COVER:

Metal choke cover must remain in place but may be secured with silicone or epoxy sealer. Additional pin punching is allowed to tighten choke cover.

#### 704.4.8:

AIR METERING HOLE: The air metering hole must be round and have no camphor or break. and may not be relocated. The diameter is .065 No-Go.

#### 704.5 RESTRICTOR PLATES:

Intake restrictors are to be unaltered, and must be as originally manufactured. Restrictor plate must be flat and placed between carburetor and intake, and sealed within gasket area. There must be one gasket between the restrictor plate and the intake manifold. Addition of material or funneling of gasket(s) not allowed. Any attempt to bypass, modify restrictor is prohibited. Anodizing may not be removed from restrictor plate. Horstman or APS lettering must be present, and tang on plate must be on right side when looked at from the carburetor side. In addition to the WKA Tech NO-GO gauges listed below WKA officials may compare competitor's plate to a known stock plate and any use any other tool necessary to determine plate legality. Restrictor plate violations subject competitor to disqualification and suspension.

##### 704.5.1 BLACK PLATE:

A Black 0.575" plate is to be checked with a 0.576" NO-GO. It is used in Gold Cup Briggs Junior and Dirt and Pavement Junior Champ classes.

##### 704.5.2 GOLD PLATE:

A Gold 0.505" plate is to be checked with a 0.506" NO-GO. It is used in Gold Cup Briggs Sportsman 2 and Dirt and Pavement Junior classes.

##### 704.5.3 BLUE/TURQUOISE PLATE:

A two-hole plate with a top hole of 0.275" and a bottom hole of 0.325" to be checked with 0.276" and 0.326 NO-GOs. It is used in the Gold Cup Briggs Sportsman 1 and Dirt and Pavement Sportsman 2 classes.

##### 704.5.4 PURPLE PLATE:

A three-hole plate with 0.225" holes to be checked with 0.226" NO-GO. The two mounting holes may be drilled to allow alignment of 0.226" no go holes with carburetor. Maximum size of mounting holes is checked with 0.328" NO-GO. Plate is used in Dirt and Pavement Sportsman 1 classes.

**Note:** Use of WKA issued restrictor plates may be required at selected divisional events.

#### 704.6 INTAKE MANIFOLD:

Stock Animal intake as supplied from the factory. The gasket surfaces may be machined to meet the length specification in Section 704.6.1, but the gasket surfaces must remain flat for proper gasket seal. The two intake-to-block mounting holes and one intake-to-carburetor mounting hole may be drilled out and will be checked with a 0.328" NO-GO and the width of the intake to carburetor slotted hole will be checked with the same NO-GO.

##### 704.6.1 LENGTH:

1.740" NO.-GO 1.760 MUST-GO (A12).

##### 704.6.2 INSIDE DIAMETER:

Inside I.D. 0.885" MUST GO. 0.905" NO-GO (A11). Minor paint runs or welding slag inside manifold are not grounds for disqualification.

##### 704.6.3 INTAKE TO BLOCK GASKET:

After market gaskets are allowed. No sealants are allowed. Gasket thickness 0.070" max..

#### 704.7 FUEL PUMP:

Auxiliary pulse-type fuel pump allowed. Fuel pump must be externally mounted. Fuel pump must be pulsed only from the crankcase upper oil fill cap. Fuel pump must be mounted on engine. Pulse line from crankcase to fuel pump not to exceed 15". Fuel pump pulse line must be standard 1/4" inch or smaller inside diameter fuel line. Single diaphragm type fuel pump only. No double or triple diaphragm pumps allowed. A fuel pump return line to fuel tank is not allowed.

#### 704.8 VALVE COVER:

Stock valve cover as from factory that includes the breather hole for the tube that runs to the catch can. (No threading of hole allowed.)

##### 704.8.1

Valve cover gasket must meet stock configuration. No sealer allowed.

#### 704.9 ROCKER ARMS:

Must be stock as from the factory.  
Minimum length is 2.820"

#### ++704.10 CAMSHAFT:

All cam profile readings must be taken with zero valve lash and degree wheel at top dead center (TDC) of compression stroke. Readings shall be measured from push rods. Set dial indicator at zero and do not reset during the profile process. Only stock factory camshaft cores from Briggs & Stratton are permitted, part numbers 555532 and 555584. Lobes may be ground but not to exceed 0.870" maximum base circle. Mechanical compression relief is non-tech. Camshaft lobes must remain flat and of original width. Push rod guides may be removed if necessary to re-check the cam if found non-compliant when checking camshaft profile.

##### 704.10.1

Maximum valve lift of 0.255" taken directly off the valve assembly at zero valve lash. Place dial indicator on valve keeper then tighten ball rocker till you see indicator move 0.001" to 0.002" this will assure that all the lash is taken out of the valve. Set dial indicator to zero and then check lift. When checking the lift off the valve keeper, the only dial indicator holder that will be used is a three leg holder Sox holder #AT320A or similar indicator holder. If lift exceeds 0.255", competitor may rotate the valve retainer one time and ask for a valve lift recheck.



## 704.10.2 CAMSHAFT PROFILE LIMITS:

INTAKE LIFT	DEGREES
0.020"	18° T 13° BTDC
0.050"	0° TDC TO 4° ATDC
0.100"	16° ATDC TO 20° ATDC
0.150"	33° ATDC TO 37° ATDC
0.175"	42° ATDC TO 46° ATDC
0.200"	53° ATDC TO 57° ATDC
0.225"	67° ATDC TO 71° ATDC
MINIMUM LIFT	0.252"
MAXIMUM LIFT	0.257"
0.225"	39° BBDC TO 35° BBDC
0.200"	25° BBDC TO 21° BBDC
0.175"	15° BBDC TO 11° BBDC
0.150"	5° BBDC TO 1° BBDC
0.100"	12° ABDC TO 16° ABDC
0.050"	28° ABDC TO 32° ABDC
0.020"	44° ABDC TO 49° ABDC
EXHUAUST LIFT	DEGREES
0.020"	61° BBDC TO 56° BBDC
0.050"	44° BBDC TO 40° BBDC
0.100"	27° BBDC TO 23° BBDC
0.150"	11° BBDC TO 7° BBDC
0.175"	1° BBDC TO 3° ABDC
0.200"	10° ABDC TO 14° ABDC
0.225"	24° BC TO 28° ABDC
MINIMUM LIFT	0.252"
MAXIMUM LIFT	0.257"
0.225"	78° BTDC TO 74° BTDC
0.200"	64° BTDC TO 60° BTDC
0.175"	53° BTDC TO 49° BTDC
0.150"	43° BTDC TO 39° BTDC
0.100"	27° BTDC TO 23° BTDC
0.050"	10° BTDC TO 6° BTDC
0.020"	5° ATDC TO 10° ATDC

### 704.11 BALL ROCKER:

As Stock from factory.

#### 704.11.1

0.590" NO-GO – 0.610" MUST-GO (A16).

### 704.12 PUSH ROD:

Stock as from factory.

#### 704.12.1 PUSH ROD DIAMETER:

0.185" - 0.190"

#### 704.12.2 PUSH ROD LENGTH:

5.638" NO-GO - 5.658" MUST-GO (A5).

### 704.13 HEAD BOLTS:

Stock head bolt must be utilized and four are mandatory. All other external metric bolts may be replaced with American standard bolts of the appropriate size.

### 704.14 HEAD GASKET:

Briggs & Stratton and after market head gaskets are allowed of stock design. Gasket sealer cannot be utilized on head gasket. No aluminum or copper head gaskets allowed.

### 704.14.1 HEAD GASKET THICKNESS:

0.049" Min. thickness measured in four places between head bolts. Measurement to be made with micrometer from inside of gasket.

### 704.14.2 FIRE RING HEAD GASKET:

Briggs & Stratton fire ring head gasket part # 555698 allowed. Minimum thickness 0.042" on the metal fire ring part of the gasket. Measurement to be made with a micrometer in four places between head bolt holes from inside of fire-ring head gasket.



### 704.15 CYLINDER HEAD PLATE:

Must be stock as from the factory.

### 704.15.1 CYLINDER HEAD PLATE GASKET:

Gasket must be stock configuration. 0.060" Max thickness.

### 704.16 ROCKER ARM STUDS:

Must be stock as from the factory, Rocker studs must be installed as per factory.

### 704.17 VALVES:

Stock valves ONLY. Valve face must be one angle. Valves may not be polished or lightened. If the valve is cleaned, no material may be removed from the valve, No alterations to surface finish or shape allowed. Tip of valve must be at 90 degrees to stem. Keeper groove location must remain stock. Minimum intake and exhaust valve length 3.250"

### 704.17.1 INTAKE VALVE:

45 degrees (A22). Intake valve diameter is 1.055" NO-GO - 1.065" MUST-GO (A17). Depth of dish in valve 0.099" - 0.119". Minimum height from angle of valve face to top of valve 0.057" using gauge (A26) (Check using a depth micrometer from top of valve to the gauge). Refer to Figure 704.17.2

### 704.17.2 EXHAUST VALVE:

45 degrees (A22). Exhaust valve diameter is 0.935" NO-GO - .945" MUST-GO (A18). Depth of dish in valve 0.084" - 0.104". Minimum height from angle of valve face to top of valve 0.060" using gauge (A27) (Check using a depth micrometer from top of valve to top of gauge). Refer to Figure 704.17.2

### 704.18 INTAKE AND EXHAUST SPRINGS:

Maximum valve spring length is 0.930" NO-GO (A15). 0.103" to 0.107" wire diameter, measured in three places on spring. Inside diameter of spring 0.615" minimum, 0.635" maximum. Must be identical in appearance to factory part and have 4 to 4.5 coils in stack.

### 704.19 VALVE SPRING RETAINERS AND KEEPERS:

Stock as from the factory. 0.055" - 0.075" thickness.

### 704.20 CYLINDER HEAD:

Stock Briggs & Stratton cylinder head part #555635. Machining of head gasket surface only allowed. No machining of ports allowed. Bosses on head may be tapped to allow for the attaching of a header brace. Briggs #555690 - Heat Dispenser is approved for all classes, all series.

#### 704.20.1

Depth of head at shallow part of head 0.011" Min. The measurement on the shallow side of the combustion chamber will be taken with a depth gauge on the push rod side of an imaginary line drawn from dowel pin to dowel pin on the valve side of the dowel. It will also be taken over the spark plug area. The rest of the recess area in the head has no depth dimension, but the recess must remain visible. Depth at floor of head 0.319" min..

#### 704.20.2 DEPTH TO TOP OF VALVE SEAT:

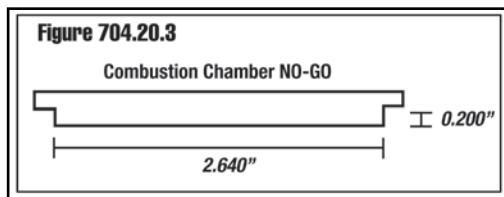
Max 0.360". Old style head Min. 0.335". RT-1 head Min 0.320".

#### 704.20.3

Head thickness measured from head gasket surface to head plate gasket surface is Min 2.420" on old style heads, Min 2.405" on RT-1 heads. Head thickness is to be checked in four places through the valve guides and the push rod holes with gauge. Not calipers.

#### 704.20.4

Width of combustion chamber at the widest part across the valve seats area checked with a 2.640" NO-GO (A30) at a depth of 0.200" in the combustion chamber. (Figure 704.20.3)



#### 704.20.5

The maximum diameter of the bowl is 0.951" checked with a 0.952" NO-GO gauge parallel to the intake port.

### 704.21 VALVE SEATS:

Must be one angle ONLY on valve seats. Stock Briggs & Stratton valve seats are mandatory.

#### 704.21.1

Intake seat inside diameter, 0.966" MUST GO - 0.972" (A2) NO-GO.

#### 704.21.2

Exhaust seat inside diameter, 0.841" MUST GO - 0.850" (A1) NO-GO

#### 704.21.3

Exhaust and Intake seat 45° angles.

### 704.22 PORTS:

Must have stock configuration. No porting or modifications of any kind allowed. There must be a single angle with a defined edge at the transition between end of intake port and the bowl behind the valve. No media blasting.

### 704.22.1

INTAKE INLET: 0.918" NO-GO (A6) when checking 90 degrees to stud pattern, no-go will be straight; when checking in line with stud pattern, no-go will set on floor of port at bottom and stop at upper edge of port on top.

### 704.22.2 INTAKE PORT:

0.864" NO-GO (A28) cannot touch the valve guide of the intake port. 0.860" (A28) plug gage will be used as a visual check of the eyebrow area. This is not a no-go but a visual assist tool.

### 704.22.3 EXHAUST PORT:

Maximum diameter 0.980" NO-GO (A6). The port is legal if (1) there is at least one entry point to the port where the NO-GO gauge cannot enter the port, and (2) the port is as supplied from the factory with no grinding or alteration.

### 704.23 VALVE GUIDES:

Stock valve guides as supplied from factory. Stock replacement guide part # 555645 allowed. Maximum depth from cylinder gasket surface to top of intake valve guide is 1.255.

### 704.24 DECK/PISTON CLEARANCE:

Machining of deck surface is permitted. No peak decking allowed. Piston pop-up CANNOT exceed 0.005" above block surface in the center of the piston. When measuring piston pop-up, it should be accomplished with bar stock (A25) on a parallel with the piston wrist pin and, using a dial indicator check the piston pop-up in this area. Then without moving the dial indicator rotate the bar 90 degrees on the center line of the piston and check the pop-up it should not exceed 0.005".

### 704.25 CYLINDER BORE:

No circular or machined grooving of cylinder is allowed in any position of cylinder.

#### 704.25.1

Stock cylinder bore is 2.690" and overbore is permitted providing it does not exceed 2.725" (approximately 0.035" overbore).

### 704.26 STROKE:

Stroke is 2.204" Max. Check with stroke pin (A21) or dial indicator. Stroke is checked by pushing piston down to take up play of rod clearance. Stroke is checked from bottom dead center (BDC) to top dead center (TDC).

### 704.27 STARTER:

Recoil starter may be retained as produced and intact, if recoil is removed, starter cup must also be removed. Any style nut and use of electric starter allowed.

### 704.28 FLYWHEEL:

Stock flywheel Briggs Part # 555526 plastic fin kits to be used on STOCK PVL flywheel Briggs Part # 555683. Any flywheel key or NO flywheel key is allowed. No machining, glass beading or sandblasting of flywheel is allowed. Flywheel washer must be stock.

#### 704.28.1 WEIGHT OF THE PVL FLYWHEEL:

4lbs. 1oz. MINIMUM. No modifications allowed.

### 704.29 IGNITION:

If stock flywheel part # 555625 is used the coil must be stock Briggs coil part # 557040 must be utilized in unaltered form. NO slotting of mounting holes or machining of attaching bolts is permitted. There must be resistance from ground to the spark end of the plug wire. SPARK PLUG CONNECTOR must be stock factory type. Rubber plug boot is allowed.

#### 704.29.1

If PVL flywheel part # 555683 is used the stock PVL Magneto Briggs Part # 555681 must be utilized in unaltered form. NO slotting of mounting holes or machining of attaching bolts is permitted. SPARK PLUG CONNECTOR must be stock factory type. Rubber plug boot is allowed.

#### 704.29.2

SPARK PLUG: Any commercially available, 14 mm thread spark plug allowed.

### **704.30 CRANKCASE SIDE COVER:**

Side cover must remain stock

### **704.31 CRANKCASE SIDE COVER GASKET:**

Aftermarket gaskets approved, however, must be of same size and material as stock gasket(s). One or two crankcase gaskets are allowed.

### **704.32 VALVE LIFTERS:**

Stock Briggs & Stratton lifters as supplied from factory.

#### **704.32.1**

Head of lifter 0.820" NO-GO - 0.860" MUST-GO (A19).

#### **704.32.2**

Length of lifter 1.515" NO-GO - 1.525" MUST-GO (A14).

### **704.33 CONNECTING ROD:**

Stock Animal, World Formula, or WKA approved commercially available billet aluminum rods with or without inserts are allowed. No titanium rods allowed. Maximum oil hole is 0.185". No polishing or grinding on the rod. No modifications to the rod. Rod length is 2.414" minimum, 2.429" maximum as measured from bottom of wrist pin to top of crankshaft journal. Minimum weight is 130 grams.

#### **704.33.1**

Stock rod length is 2.419" minimum, 2.429" maximum measured from bottom of wrist pin to top of crankshaft journal.

#### **704.33.2**

Oil hole opening, new or old style rod, is 0.185" NO-GO (B16).

#### **704.33.3**

ROD IDENTIFICATION: For identification purposes rod must be marked with either a Registered Trade Mark or manufacturer's name

### **704.34 WRIST PIN:**

Wrist pin must not be altered.

#### **704.34.1**

Maximum inside dimension of wrist pin is 0.414". Measure at outside edge.

#### **704.34.2**

Outside dimension is 0.624" - 0.626".

#### **704.34.3**

Minimum length, 1.901".

### **704.35 RINGS:**

Three rings are MANDATORY. Compression, or top ring, chamfer or "O" must face up, and must remain as manufactured. Scraper Ring must be installed with inside chamfer down and "O" up. Stock oil ring must be installed as from factory. Rings must be self-supporting in the cylinder bore of the engine being teched. Ends of ring must remain flat. Excessive end gapping of rings not allowed. Rings must conform to all listed factory specifications and be of stock configuration. Known, standards for piston/ring configurations are Briggs & Stratton factory approved parts. No machining of rings allowed. Exception; lapping and end gapping allowed. Rings must be in one piece when removed from block.

#### **704.35.1**

Minimum width top two rings 0.095".

#### **704.35.2**

Thickness top two rings 0.059" - 0.064".

#### **704.35.3**

Oil ring minimum width 0.065", ring groove must be present. Expander ring must be installed.

#### **704.35.4**

Oil ring Thickness 0.098" - 0.102".

### **704.36 PISTON:**

Briggs & Stratton Animal or Burris replacement piston only. Piston must be unaltered and conform to the specifications listed below. Wrist Pin bore must not be altered or relocated except minimum honing of wrist pin bore allowed. New style Briggs & Stratton piston with cir-clip on both sides of wrist pin bore allowed. Deck above top ring must not be altered. NO machining is allowed on piston. Arrow must point toward flywheel.

### **704.36.1**

From top of piston to wrist pin bore 0.658" minimum measurement. Check on cir-clip side of piston.

### **704.36.2**

Minimum piston length is 1.762".

### **704.37 CRANKSHAFT:**

Stock factory crankshaft mandatory. Stock factory timing gear mandatory, and must be installed properly. Lightening, polishing of counter weights, addition of metal or other material is not permitted. Offset crankshafts are not permitted. Aftermarket bearing of non self aligning type, with or without shield, is permitted. Shims if used must be installed as from factory. No ceramic bearings allowed.

#### **704.37.1**

Crankshaft journal diameter is 1.094" - 1.100".

### **704.38 BLOCK:**

Must be as produced with no alterations or reworking. Blocks repaired from broken rod damage are permitted providing that repair does not constitute a functional modification of original block. No bushings of any kind allowed except for bushings approved in this Tech Manual. The repair of one coil post is allowed, as long as the remaining post is factory and unaltered. No KNUURLING of guides allowed. The hole between the valve lifters shall be a maximum of 0.250" no-go. No resleeving allowed.

### **704.39 WELDING:**

No welding can be done to an engine from the cooling fins upwards. Cam boss repair or welding not allowed. External welding of block is only allowed to repair damage from broken rod.

### **704.40 CLUTCH:**

Dry clutches are mandatory (same clutch used in all other Briggs & Stratton classes).

### **704.41 ENGINE SEALS:**

The engine will be sealed with two wires one wire will run between a valve cover bolt and a intake to engine bolt to a the nut side of a carb to intake bolt the other wire seal will seal the front side cover bolt.

### **704.42 FUEL LINES:**

Only conventional karting fuel hose allowed. Fuel hose must be run by the most direct route with no excessive length. Hose must properly fit nipple on fuel pump and nipple on carb (slip fit by minimal effort). Nipple on carb - .315" diameter (.316" diameter gauge must go on). Nipple on fuel pump - .324" diameter (.325" diameter gauge must go on). Nipple on carb is .125" NO-GO internal diameter. Fuel hose must be secured at all connection points by approved fasteners such as safety wire, hose clamp or tie wrap. Fuel filters are allowed between the fuel pump nipple and the carb nipple.

## **705 BRIGGS & STRATTON PRO GAS ANIMAL ENGINE**

**NOTE: All parts must be Briggs & Stratton Series 12 Engine Model Number 124332 factory production parts unless otherwise specified in this manual. No machining or alteration of parts is permitted unless specifically noted. All parts are subject to comparison to a known stock Briggs & Stratton part. No reading between the lines. If it is not in the rules, it must remain stock. UNLESS OTHERWISE STATED ENGINE WILL BE TECHED AS RACED.**

**NOTE: Tech tools to be used to inspect parts or used in a tech procedure are noted with the part number of tool shown in parenthesis. (Example: (A12))**

### **705.1 SHROUD & COVERS:**

Engine shroud and covers and control bracket must be intact and may not be modified, except control cover which can be modified to attach throttle bracket and fuel pump. Fuel pump must be visible. Cylinder cover cannot be cut, trimmed or modified for head temperature thermocouple, intake manifold or exhaust header flange clearance. New Briggs & Stratton Air Shield/Guard Part # 555699 may replace plastic control cover and control bracket. Flywheel guard is mandatory. All flywheel guards must be bolted to blower housing. Flywheel guard may not be taped or covered. Tape on block is not allowed. The kart side panel cannot be closer than 3 inches to the blower housing air shield guard. Briggs & Stratton Part # 555255 plastic flywheel guard shield is the only approved cover and must be used as produced from factory unaltered. Air hole diameters are a tech item as shown on page 118.



Large center hole – 2.125" minimum diameter  
12 medium holes – 0.350" minimum diameter  
12 Small holes – 0.225 minimum diameter  
Any bolt used to secure sheet metal, shrouding, etc., with the exception of sheet metal secured by the head bolts, may be replaced with larger diameter bolt(s). The stock kill switch is not mandatory. However, if installed, the stock kill switch must remain in stock location

## **705.2 HEADER/SILENCER:**

The only approved header is RLV # 5511. Header must be used as manufactured by RLV with no alterations or modifications. EGT and O2 Sensors may not be installed in header pipe. Exhaust pipe/header and silencer must not extend past rear bumper and have no exposed sharp edges. Studs are allowed for header pipe attachment to cylinder head. Header pipes MUST be wrapped to protect driver from burns.

### **705.2.1 HEADER SEALER:**

Header may be sealed to cylinder head with gasket and/or silicone

### **705.2.2 HEAT SHIELD:**

Extra HEAT SHIELD above chain guard is allowed. Shield may be no higher than a level plane to the top of the valve cover.

### **705.2.3 HEADER PIPES:**

All header pipes must be of continuous length from flange to end of pipe with stages or butt welds permitted (no chamber, infusers, or covers of any type allowed on muffler etc.). A header support brace and safety wiring of header bolts or studs is MANDATORY to assure header bolts remain tight. Safety wire must be wrapped around pipe to ensure that bolts remain with the pipe in case they are stripped out of the block. Silencer must be tight, secure, and completely intact on the header through out the entire event with no leaks or breaks. Silencer must be clamped to header tube and no welding of silencer in any area. Header tube and silencer are only legal parts.

### **705.2.4 SILENCER:**

The RLV B-91 SILENCER IS MANDATORY in WKA national and divisional events and at local events where a silencer is required. The silencer must be used as produced with no modifications or alterations permitted. Silencer baffle holes are to be 0.1285" maximum - all baffles.  
Pro Gas Senior uses B-91-MO Silencer (RLV #4106)

### **705.2.5 HEADER FLANGE:**

The maximum thickness of the header to block flange is 0.312" max.

## **705.3 AIR FILTER:**

AIR FILTER NOT REQUIRED. Any air filter is permitted. Air filter must be installed directly to carburetor. Filter may not be used as an air ram and must filter from all areas as raced. Any open areas in filter must be covered with a filter sock.

## **705.4 CARBURETOR:**

PZ Model 22 Carburetor only. Carburetor must remain stock as from factory unless otherwise allowed in these specifications. Exceptions: Any size main jet can be used. Main jet can be drilled or reamed to any size hole (see 705.4.10 spec below for detailed jet specifications). The float can be adjusted to any height and drop locations by means of bending the small tabs on the float arm. Any 1/4" bolts may be used to attach carb to intake. NO STUDS ALLOWED. Carb to intake seal is by O-Ring only. No sealer allowed.

Air must enter engine at carburetor air horn ONLY. Choke must be as stock as from the factory except choke arm may be secured in the open position. The float and needle must be present and stock as produced by manufacturer, in their stock locations and function as intended. No additional parts may be added. The fuel nozzle must extend between 0.040" and 0.060" into the venturi. The nozzle must maintain stock configuration on top with no notching, chamfering or grinding. No alterations are allowed unless stated. All parts can be compared to known stock Briggs & Stratton parts. This includes the nozzle, emulsion tube, jets, float, float needle and all other carb parts. The float height may be adjusted by bending the small tab on the float arm.

### **705.4.1 THROTTLE BORE:**

Maximum throttle bore inside dimension is 0.874" (A7) No Go. Bore must be as cast.

### **705.4.2 CHOKE BORE:**

1.149" (A7) No Go. Bore must be as cast.

### **705.4.3 VENTURI:**

Vertical maximum is 0.792" No Go (A8).

Horizontal maximum is 0.615" No Go for top and bottom of venturi (widest part). Horizontal maximum is 0.602". No Go for the narrowest part of venturi (center). When measured from the front (air filter) side of the carburetor, (1) the vertical (0.792") No Go shall be held parallel with the carburetor bore (See Fig. 704.4.3), and (2), the horizontal 0.615" and 0.602" No Go gauges cannot enter the venturi area. When measured from the back (intake manifold) side, the No Go gauge cannot start into the venturi. No machining of the venturi is allowed.

### **705.4.4 AIR PICK-OFF HOLE:**

Maximum 0.061" No Go (A9)

### **705.4.5 SLIDE:**

Slide must be stock as from the factory. No grinding or other alteration. Deepest part of cut away at bottom of slide must be a maximum of 0.074". Depth of cut-away may be measured by placing slide on a flat surface and attempting to insert a 0.075" No Go into the cut-away. Depth may be measured with slide in carburetor by backing the idle screw out such that the slide rests on the bottom of the venturi. Then attempt to insert the 0.075" No Go into cut-away.

### **705.4.6 NEEDLE JET:**

1.692" maximum length and 1.677" minimum length. Taper on needle must remain stock and will be checked at 0.500" from the tip of the needle and must not be smaller than 0.070" NO GO (A4).

### **705.4.7 CHOKE LEVER COVER:**

Metal choke cover must remain in place but may be secured with silicone or epoxy sealer. Additional pin punching is allowed to tighten choke cover.

### **705.4.8 AIR METERING HOLE:**

The air metering hole must be round and have no chamfer or break and may not be relocated. Hole must remain as produced from factory.

### **705.4.9 VENTURI FLOOR IDLE FUEL HOLE:**

0.038" max diameter and must be unaltered as from factory production.

### **705.4.10 JETS:**

Jets must be stock configuration. The main jet center hole can be drilled or reamed to any size. This specification refers to the main jet primary small center hole only. It is not legal for any other jet modifications and will be compared to a stock known factory jet. Counter boring and/or chamfering of the larger holes of the jet on both the front and back sides of jet are not legal.

Needle jet – BGB – may be set at any notch.

Pilot jet - #32, hole size is 0.0130" No Go.

Main jet – Any size hole is allowed.

Main Air Jet - #1.50, hole size is 0.0620" No Go.

Main Nozzle - #2.6, hole size is 0.103" No Go.

Emulsion tube – Stock unaltered – 4 small holes 0.018" min to 0.020" max diameter.

Emulsion tube – 4 big holes .026" min to .028" max diameter.

No machining or alteration of parts is permitted unless specifically noted.

## **705.5 RESTRICTOR PLATES: INTAKE**

Restrictors are to be unaltered, and must be as originally manufactured. Restrictor plate must be flat and placed between carburetor and intake and sealed within gasket area. There must be one gasket only between the restrictor plate and the intake manifold. Addition of material or funneling of gasket(s) not allowed. Any attempt to bypass or modify restrictor is prohibited. Anodizing may not be removed from restrictor plate. WKA identification stamp must be present, and tang on plate must be on right side when viewed from the carburetor side. In addition to the WKA Tech No Go gauges listed below, WKA officials may compare competitor's plate to a known stock plate and may use any other tool necessary to determine plate legality. Restrictor plate violations subject competitor to disqualification and suspension.

### 705.5.1 RESTRICTOR PLATE SIZES

Briggs Pro Gas Sportsman – Green plate – 0.475" (Hole No Go size 0.476") Briggs Pro Gas Junior – Orange plate – 0.620" (Hole No Go size 0.621")

**Note:** Use of WKA issued restrictor plates may be required at selected divisional or local events.

### 705.6 INTAKE MANIFOLD:

Stock Animal intake as supplied from the factory. The gasket surfaces may be machined to meet the length specification in Section 705.6.1, but the gasket surfaces must remain flat for proper gasket seal. The two intake-to-block mounting holes and one intake- to-carburetor mounting hole may be drilled out and will be checked with a 0.328" No Go and the width of the intake to carburetor slotted hole will be checked with the same No Go.

#### 705.6.1 LENGTH:

1.740" No Go, 1.760" Must Go. (A12).

#### 705.6.2 INSIDE DIAMETER:

Inside I.D. 0.885" Must Go. 0.905" No Go (A11). Minor paint runs or welding slag inside manifold are not grounds for disqualification.

#### 705.6.3 INTAKE TO BLOCK GASKET:

Aftermarket gaskets are allowed. Sealants are not allowed. Maximum gasket thickness is 0.070" maximum.

### 705.7 FUEL PUMP:

Must be factory production Briggs & Stratton part number 808656 pulse style fuel pump. No alterations or modifications to fuel pump are legal with the exception of the small top brass filter can be plugged with silicone, epoxy or super glue to prevent oil leakage. Fuel pump must be mounted directly to top plate. Fuel pump must be pulsed only from the crankcase upper oil fill cap. Crankcase pulse fitting must have a thru hole in center with a minimum hole diameter of .129 inches,.1285 no-go pin must pass thru hole. No restrictors and/or check valves can be mounted in pulse fitting, pulse line or fuel pump. Pulse line length from crankcase to fuel pump may not exceed 7". Fuel pump pulse line must be standard 1/4" inch inside diameter fuel line for its entire length. Fuel pump return line to fuel tank is not allowed. Fuel pump will be compared to a factory stock part. Spacers or dampeners permitted up to 3/4" thickness.

### 705.8 VALVE COVER:

Stock valve cover as from factory that includes the breather hole for the tube that runs to the catch can. (No threading of hole allowed.)

#### 705.8.1 VALVE COVER GASKET:

Must meet stock configuration. No sealer allowed.

### 705.9 ROCKER ARMS:

Must be stock as from the factory. Minimum length is 2.820"

### 705.10 CAMSHAFT PRO GAS:

The Bordeaux DynoCams Pro Gas camshaft is the only legal camshaft. Camshaft lobe profile readings must be taken from pushrod ends. Set dial indicator at zero while degree wheel is set at TDC on the compression stroke and do not reset dial indicator during the profile reading process. Only stock factory camshaft cores from Briggs & Stratton are permitted, part numbers 555532 and 555584. Lobes may be ground but not to exceed 0.870" maximum base circle. Camshaft lobes must remain flat and of original width. Camshaft must be as manufactured without any grinding, polishing, filing, machining, etc. No addition or subtraction of material to camshaft. Camshaft must have Identification LOGO stamped on face as shown below. No machining or alteration of parts is permitted unless specifically noted. No machining or alteration of parts is permitted unless specifically noted. Push rod guides may be removed if necessary to re-check the cam if found non compliant when checking camshaft profile.

#### 705.10.1 VALVE LASH CHECK:

Minimum valve lash as raced is 0.003" for both intake and exhaust valves. Valve lash check is to be made at room temperature prior to loosening rocker arm nut. A 0.003" thick feeler gage must pass freely between rocker arm and top of valve stem.

#### 705.10.2 VALVE LIFT CHECK:

Maximum valve lift of 0.255" taken directly off the valve retainer at zero valve lash setting. Place dial indicator on valve retainer then tighten ball rocker nut until the indicator moves 0.001" to 0.002", This will assure that all of the lash is taken out of the valve to rocker arm clearance. Set dial indicator to zero and then check lift. When checking the lift off of the valve retainer, the only dial indicator holder that should be used is a three leg holder Sox #AT320A or similar indicator holder. If lift exceeds 0.255", competitor may rotate the valve retainer up to three times and ask for a valve lift recheck

#### 705.10.3 CAMSHAFT DURATION:

Maximum intake and exhaust camshaft lobe duration specifications:

267 maximum degrees @ 0.020"

237 maximum degrees @ 0.050"

115 maximum degrees @ 0.200"

Specifications shall be measured at push rods.

#### 705.10.4 CAMSHAFT DEGREE WHEEL PROFILE LIMITS

INTAKE LIFT	DEGREES
0.020"	28° to 24° BTDC
0.050"	13° to 9° BTDC
0.100"	6° to 10° ATDC
0.150"	25° to 29° ATDC
0.175"	36° to 40° ATDC
0.200"	48° to 52° ATDC
0.225"	63° to 67° ATDC
MINIMUM LIFT 0.252"	
MAXIMUM LIFT 0.257"	
0.225"	34° to 30° BBDC
0.200"	19° to 15° BBDC
0.175"	6° to 2° BBDC
0.150"	5° to 9° ABDC
0.100"	23° to 27° ABDC
0.050"	42° to 46° ABDC
0.020"	57° to 61° ABDC
EXHAUST LIFT	DEGREES
0.020"	65° to 61° BBDC
0.050"	50° to 46° BBDC
0.100"	30° to 26° BBDC
0.150"	11° to 7° BBDC
0.175"	1° BBDC to 3° ABDC
0.200"	12° to 16° ABDC
0.225"	28° to 32° ABDC
MINIMUM LIFT 0.252"	
MAXIMUM LIFT 0.257"	
0.225"	69° to 65° BTDC
0.200"	54° to 50° BTDC
0.175"	42° to 38° BTDC
0.150"	32° to 28° BTDC
0.100"	13° to 9° BTDC
0.050"	6° to 10° ATDC
0.020"	21° to 25° ATDC

**705.11 BALL ROCKER:**

Must be stock as from the factory.

**705.12 PUSH ROD:**

Must be stock as from the factory.

**705.13 HEAD BOLTS:**

Stock head bolts must be used and four are mandatory. All other external metric bolts may be replaced with American standard bolts of the appropriate size.

**705.14 HEAD GASKET:**

Briggs & Stratton and aftermarket head gaskets approved by WKA. Gasket sealer cannot be used on head gasket. No aluminum or copper head gaskets allowed. Measurement is to be made with micrometer from inside of gasket. Thickness measured in four places between head bolts.

**705.14.1 STANDARD – LO206 HEAD GASKET:**

Briggs & Stratton part #555723. Minimum thickness: 0.049".

**705.14.2 FIRE RING HEAD GASKET:**

Briggs & Stratton fire ring head gasket part #555698. Minimum thickness 0.042" measured on the metal fire ring part of the gasket.

**705.14.3 AFTERMARKET HEAD GASKET:**

Minimum thickness 0.042".

**705.15 CYLINDER HEAD PLATE:**

Must be stock as from the factory.

**705.15.1 CYLINDER HEAD PLATE GASKET:**

Gasket must be stock configuration. Maximum thickness is 0.060".

**705.16 ROCKER ARM STUDS:**

Must be stock as from the factory, Rocker studs must be installed as per factory.

**705.17 VALVES:**

Stock valves ONLY. Valve face must be one angle. Valves may not be polished or lightened. If the valve is cleaned, no material may be removed from the valve. No alterations to surface finish or shape are allowed. Tip of valve must be at 90 degrees to stem. Keeper groove location must remain stock. Minimum intake and exhaust valve length is 3.250".

**705.17.1 INTAKE VALVE:**

45 degrees (A22). Intake valve diameter is 1.055" No Go - 1.065" Must Go (A17). Depth of dish in valve is 0.099" to 0.119". Minimum height from angle of valve face to top of valve is 0.057" using gauge (A26). (Check using a depth micrometer from top of valve to the gauge). Refer to Figure 704.17.

**705.17.2 EXHAUST VALVE:**

45 degrees (A22). Exhaust valve diameter is 0.935" No Go, 0.945" Must Go (A18). Depth of dish in valve 0.084" to 0.104". Minimum height from angle of valve face to top of valve is 0.060" using gauge (A27) (Check using a depth micrometer from top of valve to top of gauge). Refer to Figure 704.17.

**705.18 INTAKE AND EXHAUST SPRINGS:**

Maximum valve spring length is 0.930" No Go (A15). Wire diameter is 0.103" minimum, 0.107 maximum to be measured in three places on the spring. Inside diameter of spring is 0.615" minimum, 0.635" maximum. Must be identical in appearance to factory part and have 4 to 4.5 coils in stack.

**705.19 VALVE SPRING RETAINERS AND KEEPERS:**

Stock as from the factory. Retainer flange thickness is 0.055" minimum to 0.075" maximum.

**705.20 CYLINDER HEAD:**

Stock Briggs & Stratton cylinder head part #555635. Machining of head gasket surface only allowed. No machining of ports allowed. Bosses on head may be tapped to allow for attachment of a header brace. Heat Dispenser Briggs part #55569 is approved. No machining or alteration of parts is permitted unless specifically noted.

**705.20.1 HEAD DEPTH SPECIFICATIONS:**

Minimum depth of head at shallow part of head is 0.011". The measurement on the shallow side of the combustion chamber will be taken with a depth gauge on the push rod side of an imaginary line drawn from dowel pin to dowel pin on the valve side of the dowel. It will also be taken over the spark plug area. The rest of the recess area in the head has no depth dimension, but the recess must remain visible. The minimum depth at floor of head is 0.319". Carbon buildup may be removed from head at check locations prior to inspection if necessary to meet depth specifications. (A razor blade may be used to remove the carbon, but aluminum may not be removed from the head surface.)

**705.20.2 DEPTH TO TOP OF VALVE SEAT:**

Max 0.360". RT-1 head Min 0.320". Old style head Min. 0.335".

**705.20.3 HEAD THICKNESS:**

Head thickness measured from head gasket surface to head plate gasket surface is 2.405" minimum on RT-1 heads and 2.420" minimum on old style heads. Head thickness is checked in four places through the valve guides and the push rod holes with gauge. Calipers may not be used.

**705.20.4 COMBUSTION CHAMBER WIDTH:**

Width of combustion chamber at the widest part across the valve seats area is checked with a 2.640" No Go (A30) at a depth of 0.200" in the combustion chamber. (Figure 704.20.3)

**705.20.5 COMBUSTION CHAMBER BOWL:**

The maximum diameter of the bowl is 0.951" checked with a 0.952" No Go gauge parallel to the intake port.

**705.21 VALVE SEATS:**

Stock Briggs & Stratton valve seats are mandatory. Valve seats must be one angle ONLY.

**705.21.1:**

Intake valve seat inside diameter is 0.966" Must Go, 0.972" (A2) No Go

**705.21.2:**

Exhaust valve seat inside diameter – 0.841" Must Go – 0.850" (A1) No Go.

**705.21.3:**

Exhaust and Intake seat 45° angles only.

**705.22 PORTS:**

Must have stock configuration. No porting or modifications of any kind allowed. There must be a single angle with a defined edge at the transition between end of intake port and the bowl behind the valve. No media blasting.

**705.22.1 INTAKE INLET:**

0.918" No Go (A6) when checking 90 degrees to stud pattern, No Go will be straight; when checking in line with stud pattern, No Go will sit on floor of port at bottom and stop at upper edge of port on top.

**705.22.2 INTAKE PORT:**

0.864" No Go (A28) cannot touch the valve guide of the intake port. 0.860" (A28) plug gage will be used as a visual check of the eyebrow area. This is not a No Go but a visual assist tool.

**705.22.3 EXHAUST PORT:**

Maximum diameter 0.980" No Go (A6). The port is legal if (1) there is at least one entry point to the port where the No Go gauge cannot enter the port, and (2) the port is as supplied from the factory with no grinding or alteration.

**705.23 VALVE GUIDES:**

Stock valve guides as supplied from factory. Stock replacement guide part # 555645 allowed. Maximum depth from cylinder gasket surface to top of intake valve guide is 1.255".

**705.24 DECK/PISTON CLEARANCE:**

Machining of deck surface is permitted. No peak decking allowed. Piston pop-up CANNOT exceed 0.005" above block surface in the center of the piston. When measuring piston pop-up, it should be accomplished with bar stock (A25) on a parallel with the piston wrist pin and, using a dial indicator check the piston pop-up in this area. Then, without moving the dial indicator, rotate the bar 90 degrees on the center line of the piston and check the pop-up it should not exceed 0.005". Carbon buildup on piston top may be removed prior to checking piston pop up if necessary to meet 0.005" spec.



### **705.25 CYLINDER BORE:**

No circular or machined grooving of the cylinder is allowed in any position of cylinder. Maximum cylinder bore is 2.693".

### **705.26 STROKE:**

Stroke is 2.204" maximum. Check with stroke pin (A21) or dial indicator. Stroke is checked by pushing piston down to take up play due to rod clearance. Stroke is checked from bottom dead center (BDC) to top dead center (TDC).

### **705.27 STARTER:**

Recoil starter and cup cannot be used and must be removed. Any style flywheel electric starter nut and washer can be used as long as it does not extend beyond the end of the crankshaft end face and the maximum diameter of the nut does not exceed 1.25".

### **705.28 FLYWHEELS AND IGNITION:**

PVL flywheel Briggs Part #555683 and PVL Magneto Briggs Part # 555681 only. (Plastic flywheel fan is part #692592.) PVL flywheel minimum weight: 4lbs.1oz. No modification of parts allowed. Flywheel key is optional. No machining, glass beading or sandblasting of flywheel are allowed. No slotting of mounting holes or machining of attaching bolts is permitted. Spark plug connector must be stock factory type. Rubber plug boot is allowed.

#### **705.28.1 FLYWHEEL TIMING KEY:**

Flywheel key optional. No tech if used.

#### **705.28.2 IGNITION TIMING:**

Ignition timing 31 degrees BTDC Maximum. Timing to be checked with ignition timing light rotating engine in the direction of operation between 2000 and 4000 RPM.

### **705.29 SPARK PLUG:**

The Champion Part # RC12YC, RC9YC, and RC7YC are the only legal spark plugs. The plug must be as produced from factory with no modifications. It must be stock! Either a sealing washer or a cylinder head temperature sensor must be used. The spark plug electrode gap is non tech. No machining or alteration of parts is permitted unless specifically noted.

### **705.30 CRANKCASE SIDE COVER:**

Side cover must remain Stock.

### **705.31 CRANKCASE SIDE COVER GASKET:**

Aftermarket gaskets allowed, however, they must be of same size and material as stock gasket(s). One or two crankcase gaskets are allowed.

### **705.32 VALVE LIFTERS:**

Stock Briggs & Stratton lifters as supplied from factory are required. Head of lifter is 0.820" No Go – 0.860" Must Go (A19). Length of lifter is 1.515" No Go – 1.525" Must Go (A14)

### **705.33 CONNECTING ROD:**

Stock Animal, World Formula or WKA approved commercially available billet aluminum rod with or without inserts are allowed. No titanium rods allowed. Maximum oil hole is 0.185". No polishing or grinding on the rod. No modifications to the rod except crank bore and pin bore can be honed. Rod length is 2.414" minimum, 2.429" maximum as measured from bottom of wrist pin to top of crankshaft journal. Minimum weight is 130 grams.

#### **705.33.1 ROD LENGTH:**

Stock rod length is 2.419" minimum, 2.429" maximum measured from bottom of wrist pin to top of crankshaft journal.

#### **705.33.2 ROD OIL HOLE:**

Oil hole opening in Animal, World Formula or aftermarket billet rods is 0.185" No Go (B16)

#### **705.33.3 ROD IDENTIFICATION:**

For identification purposes rod must be marked with either a Registered Trade Mark or manufacturer's name.

### **705.34 WRIST PIN:**

Wrist pin must not be altered.

#### **705.34.1:**

Maximum inside dimension of wrist pin is 0.414" measured at outside edge.

#### **705.34.2:**

Outside dimension is 0.624" to 0.626".

#### **705.34.3:**

Minimum length, 1.901".

### **705.35 RINGS:**

Three rings are MANDATORY. Compression or top ring must be installed with the chamfer or "O" facing up and must remain as manufactured. Scraper ring must be installed with inside chamfer facing down and "O" up. Stock oil ring must be installed as from factory. Rings must be self-supporting in the cylinder bore of the engine being teched. Ends of ring must remain flat. Excessive end gapping of rings is not allowed. Rings must conform to all listed factory specifications and be of stock configuration. Known standards for piston/ring configurations are Briggs & Stratton factory approved parts. No machining or heat treating to reduce friction of rings allowed. Exception; lapping and end gapping allowed except the oil ring expander ring must be as produced from factory. The oil expander ring minimum length is 8.200". Rings must be in one piece when removed from block. No machining or alteration of parts is permitted unless specifically noted.

#### **705.35.1:**

Minimum width of top two rings 0.100".

#### **705.35.2:**

Thickness top two rings is 0.059" minimum to 0.064" maximum.

#### **705.35.3:**

Oil ring minimum width 0.070", Ring groove must be present. Expander ring must be installed. Oil ring expander minimum length is 8.200".

#### **705.35.4:**

Oil ring Thickness 0.098" to 0.102".

#### **705.35.5:**

Ring Outside Diameter: Minimum outside diameter of top and second rings is 2.780 inches. To be checked prior to removing rings from piston.

### **705.36 PISTON:**

Briggs & Stratton Animal standard bore piston only part # 555660. Piston must be unaltered and conform to the specifications listed below. Wrist pin bore must not be altered or relocated except minimum honing of wrist pin bore allowed. New style Briggs & Stratton piston with cir-clip on both sides of wrist pin bore allowed. Deck above top ring must not be altered. NO machining is allowed on piston. Arrow must point toward flywheel.

#### **705.36.1**

From top of piston to wrist pin bore 0.658" minimum measurement. Check dimension on cir-clip side of piston.

#### **705.36.2**

Minimum piston length is 1.762".

### **705.37 CRANKSHAFT:**

Stock factory crankshaft mandatory. Stock factory timing gear mandatory and must be installed properly. Lightening, polishing of counter weights or addition of metal or other material is not permitted. Offset crankshafts are not permitted. Aftermarket bearings of non-self aligning type, with or without shield, are permitted. Shims, if used, must be installed as from factory. No ceramic bearings allowed.

#### **705.37.1**

Crankshaft journal diameter is 1.094" minimum, 1.100" maximum.

### 705.38 BLOCK:

Must be as produced with no alterations or reworking. Blocks repaired from broken rod damage are permitted providing that repair does not constitute a functional modification of original block. No bushings of any kind allowed except for bushings approved in this Tech Manual. One coil post may be repaired as long as the remaining post is factory and unaltered. No KNURLING of guides allowed. The maximum diameter of the hole between the valve lifters is 0.250" No Go. No re-sleeving allowed.

### 705.39 WELDING ON BLOCK:

No welding can be done to an engine from the cooling fins upwards. Cam boss repair or welding not allowed. External welding of block is only allowed to repair damage from broken rod..

### 705.40 CLUTCH:

Dry engine clutch only.

### 705.41 ENGINE SEALS:

The engine will be sealed with two wires. One wire will run between a valve cover bolt, an intake to engine bolt and the nut side of a carb to intake bolt. The other wire seal will seal the front side cover bolt.

### 705.42 FUEL LINES:

Only conventional karting fuel hose allowed. Fuel hose must be run by the most direct route with no excessive length. Hose must properly fit nipple on fuel pump and nipple on carb (slip fit by minimal effort). Nipple on carb - .315" diameter (.316" diameter gauge must go on). Nipple on fuel pump - .324" diameter (.325" diameter gauge must go on). Nipple on carb is .125" NO-GO internal diameter. Fuel hose must be secured at all connection points by approved fasteners such as safety wire, hose clamp or tie wrap. Fuel filters or fuel restrictors are allowed between the fuel pump nipple and the carb nipple. If utilized, the hole in the restrictor must be at least .037" in diameter (.036" diameter gauge pin must pass thru). Fuel filters are also allowed between the fuel tank and the fuel pump. No machining or alteration of any parts is allowed unless specifically noted in these specifications.

### TORQUE SPECIFICATIONS:

Following are torque specifications recommended by Briggs & Stratton. They are not technical inspection items. Non Tech, recommended by Briggs & Stratton

Flywheel Nut	55-75 ft. lbs. (74.5-101 Nm)
Cylinder Head	200-220-in. lbs. (20-25 Nm)
Connecting Rod – Cast	115-120 in. lbs. (13.5-15.8 Nm)
Connecting Rod – WF Billet	145-150 in. lbs. (16-17 Nm)
Crankcase Cover	95-125 in. lbs. (13.5-15.8 Nm)
Cylinder Head Plate	70-90 in. lbs. (8-10 Nm)
Rocker Arm stud	90-120- in. lbs (8-12.5 Nm)
Valve Cover	30-60 in. lbs (11-16 Nm)
Spark Plug	95-145 in. lbs. (11-16 Nm)

## 706 BRIGGS & STRATTON MODIFIED ENGINE

For section 706 , please see the 2016 WKA technical manual or refer to the Tech Docs--> archived technical rules section on the WKA website.

### 706.7 VALVE COVER

Stock valve cover as from factory, that includes the breather hole for the tube that runs to the catch can (no threading of hole allowed). The breather by-pass kit part # 555687 or # 555688 may be used. If by-pass kit is used a 0.625" hole must be drilled in the opposite size of the valve cover from the existing breather hole.

#### 706.7.1

Breather by-pass kit part # 555687 or # 555688 may be used. If by-pass kit is used a 0.625" hole must be drilled in the opposite size of the valve cover from the existing breather hole.

**UPDATE:** Substitution part CPG-0716, (from CPG Motorsports), is permissible to replace Briggs part #555687 and #555688.

## 707 BRIGGS & STRATTON WORLD FORMULA ENGINE

For section 707 , please see the 2017 WKA technical manual or refer to the Tech Docs--> archived technical rules section on the WKA website.

### 708 BRIGGS LO206

Briggs and Stratton factory rules set may be utilized if deemed necessary. [www.racing.briggsandstratton.com/support](http://www.racing.briggsandstratton.com/support) -- See USA edition - LO206 rules set

All items may be compared to know stock parts to insure compliance. The Briggs and Stratton 2016 LO206 Engine Class Regulations may be used in conjunction with rules listed here in section 708.

Briggs & Stratton (B&S) Model 124332 Type 8201 only. The intent of this class is to provide a sealed, simple-to-operate, ultra dependable and ultra-reliable, engine using only factory parts.

The crankcase is sealed at the factory to help control costs and maintain equality while simplifying tech. Only the top end must be inspected. No engine may enter this class without a crankcase seal or with a seal that shows evidence of tampering.

This engine must be raced exactly as it comes from the factory. All parts must be B&S factory production parts unless otherwise noted in these rules. No machining, media blasting or alteration of parts is permitted unless specifically noted in these rules. All parts are subject to comparison to a known stock B&S part.

### 708.1 SHROUD & COVERS:

Engine shroud may be painted any color. Engine shroud, covers, and control panel must be intact and not be modified. Any bolt, except head bolts, used to secure sheet metal shrouds and covers may be replaced with a larger diameter bolt. Stock kill switch must remain in stock location and wires must remain in place. No taping or covering of the rewind shroud allowed.

### 708.2 HEADER AND SILENCER:

#### 708.2.1 HEADER

Header must be RLV Model 5506, RLV Model 5507 Header must be used as manufactured by RLV with no alterations or modifications. EGT and O2 sensors may not be installed in the header pipe. The exhaust header must be completely wrapped with a non-asbestos insulation material starting approximately 3 inches from the exhaust flange and running up to the silencer.

#### 708.2.1.1 HEADER – ROAD RACE

For road race only – RLV model 5506 pipe may be heated in the bend area to allow the pipe to be twisted toward the kart centerline for frame clearance – pipe may be twisted not more than 3" from original configuration measured at the tip – no kinking may be present that could alter the flow characteristics.

#### 708.2.2 SILENCER

Silencer must be RLV B91 with round baffle holes only. Baffle holes 0.1285" maximum. Must not be wrapped.

#### 708.2.3 HEADER GASKET

Gasket and/or silicone allowed to seal header to head.

#### 708.2.4 HEADER TO HEAD ATTACHMENT

Studs or bolts are allowed to fasten header to head. Bolts or nuts must be safety wired. Header support brace is mandatory.

### 708.3 AIR FILTER:

The only air filter permitted is the Briggs & Stratton Green Air Filter Part #555729. No modification to the filter element is permitted. A protective shield may be attached for wet-weather competition. It is not permitted for the protective shield to create any ram-air effect.

### 708.4 FUEL PUMP:

Must be factory production Briggs and Stratton part number 808656 pulse style fuel pump. No alterations or modifications to fuel pump are legal with the exception of the small top brass filter can be plugged with silicone, epoxy or super glue to prevent oil leakage. Fuel pump must be mounted directly to top plate. Fuel pump must be pulsed only from the crankcase upper oil fill cap. Crankcase pulse fitting must have a

thru hole in center with a minimum hole diameter of .129 inches. .1285 no-go pin must pass thru hole. No restrictors and/or check valves can be mounted in pulse fitting, pulse line or fuel pump. Fuel pump pulse line must be standard 1/4" inch inside diameter fuel line for its entire length. Fuel pump return line to fuel tank is not allowed. Fuel pump will be compared to a factory stock part. Spacers or dampeners permitted up to 3/4" thickness.

#### 708.4.1 FUEL LINES:

Only conventional karting fuel hose allowed. Fuel hose must be run by the most direct route with no excessive length. Hose must properly fit nipple on fuel pump and nipple on carb (slip fit by minimal effort). Nipple on carb - .315" diameter (.316" diameter gauge must go on). Nipple on fuel pump - .324" diameter (.325" diameter gauge must go on). Nipple on carb is .125" NO-GO internal diameter. Fuel hose must be secured at all connection points by approved fasteners such as safety wire, hose clamp or tie wrap. Fuel filters are allowed between the fuel pump nipple and the carb nipple. 708.4.2  
Spec fuel.

#### 708.4.3

Fuel pump is Briggs & Stratton #808656, mounted in the factory holes and pulsed from the top of the side cover only. Fuel line and pulse line must be 1/4" I.D. No extra fuel line anywhere in the system. Return fuel line from the pressure side of the pump is not allowed.

#### 708.5 CARBURETOR:

The B&S stock carburetor part #555658 is the only carburetor permitted -- "Walbro", "Briggs" diamond logo and or #590890 etched in the body are additional visual indicators -- No alterations allowed unless stated below -- all parts will be compared to a stock known B&S part for eligibility -- this includes the nozzle, emulsion tube, jets, float, float needle and all other carb parts -- it will be allowed however to adjust the float height by means of bending the small tab on the float arm -- slide must remain B&S stock unaltered -- slide cutaway to be measured on flat surface = .075" no go -- B&S stock unaltered aluminum needle is required part number 555602 marked #BGB

#### 708.5.1

Throttle bore I.D. is 0.874" no-go. Must be as cast.

#### 708.5.2

Choke bore I.D. is 1.149" no-go. Must be as cast.

#### 708.5.3 VENTURI FLOOR IDLE FUEL HOLE:

0.038" max diameter and must be unaltered as from factory production.

#### 708.5.3.1 VENTURI:

Vertical dimension is 0.792" no-go. Horizontal dimension is 0.615" -- the gauge may not pass into the slide area. When no go is inserted horizontally into the air filter side of the venturi, it may not pass into the slide area. When the no go is inserted horizontally into the manifold side of the venturi, it may not enter the venturi section at all. When Sox Tool # AT331 - 0.602" gauge is inserted horizontally, it may not pass into the slide area at the narrow point formed by the overlap of the two venturi circles. No machining allowed. Must be as manufactured. Venturi idle fuel hole = .038" max

#### 708.5.4

Air pick off hole is 0.061" no-go.

#### 708.5.5 THROTTLE SLIDE & LOCKING CAP:

Note: to Junior, Sportsman, and Kid Kart classes. It is required to have in place the locking cap Part #555726 on the carburetor slide cover. It is not permitted to race any of the LO206 classes without the specified slide and locking cap. The locking cap must be tightened. A seal can be utilized at the discretion of the organizer, or alternatively painted by the technical officials. Locking cap not required for Senior Class.

**Senior LO206 Black Slide:** Briggs & Stratton slide part # 555590. Slide must be stock as from the factory. No grinding or other alteration. Deepest part of cut away at bottom of slide must be a maximum of 0.074". Depth of cut-away may be measured by placing slide on a flat surface and attempting to insert a 0.075" No Go into the cut-away. Depth may be measured with slide in carburetor by backing the idle screw out such that the slide rests on the bottom of the venturi. Then attempt to insert the 0.075" No Go into cut-away.

**Sportsman LO206 Green Slide:** Briggs & Stratton slide part #555740. At full throttle the maximum opening of the carburetor slide is 0.490". This dimension to be checked with a 0.491"+ plug gauge held against the bottom of the venturi. The gauge may need to be ground on one

side to clear the brass pick off tube.

**Note: The surface of the carburetor cap that contacts the slide may be machined to attain proper opening.**

**Junior LO206 Yellow Slide:** Briggs & Stratton slide part # 555741. At full throttle the maximum opening of the carburetor slide is 0.570". This dimension to be checked with a 0.571"+ plug gauge held against the bottom of the venturi. The gauge may need to be ground on one side to clear the brass pick off tube.

**Note: The surface of the carburetor cap that contacts the slide may be machined to attain proper opening.**

For restricted LO206 classes, the original factory design criteria calls for the slide travel to be stopped by the throttle cap.

For inspection purposes, the cable will be pulled until the slide is stopped by this method.

This is the only valid inspection method.

Pedal stops are not a method that will be considered.

#### 708.5.6

Jets must be stock gasoline jets only. Factory marking is required.

Needle jet - BGB - set at any notch.

Pilot jet - #32, hole size is 0.0130" no go.

Main jet - #95, hole size is 0.0380" no go.

Main Air Jet - #1.50, hole size is 0.0620" no go.

Main Nozzle - #2.6, hole size is 0.103" no go.

#### 708.5.7

Overflow from float bowl must be vented to catch can.

#### 708.6 INTAKE MANIFOLD:

#### 708.6.1

Length of manifold must be from 1.740" minimum to 1.760" maximum.

#### 708.6.2

Inside Diameter must be 0.885" must go minimum, 0.905" no-go maximum.

#### 708.6.3

Stock manifold to block gasket required.

#### 708.7 ROCKER COVER:

Stock rocker cover from factory is required.

#### 708.7.1

Rocker cover gasket must be stock. No sealer allowed.

#### 708.7.2

Filter or tubing to a catch can may be fitted to outlet. No welding or tapping of rocker cover allowed.

#### 708.7.3

Tube to catch can is required.

#### 708.8 CAMSHAFT:

Cam check must be taken with zero valve lash. Total lift check will be taken at the valve spring retainers. The movement of the valve spring retainer 0.255 maximum. Competitor may rotate the valve retainer up to three times and ask for a valve lift recheck after each rotation.

#### 708.9 VALVE OPERATING MECHANISM:



#### 708.9.1 ROCKER ARMS:

Must be unaltered from stock. Overall length 2.820" minimum.



### **708.9.2 BALL ROCKER:**

Must be stock. Diameter 0.600" +/- 0.010"

### **708.9.3 PUSH RODS:**

Must be stock. Diameter is 0.185" - 0.190". Length is 5.638" - 5.658".

### **708.10 HEAD BOLTS:**

Four stock head bolts are mandatory.

### **708.11 HEAD GASKET:**

Unaltered B&S part #555723 is the only head gasket allowed. Minimum thickness allowed is .049" -- measurement must be performed using a micrometer -- readings are taken from inside the cylinder hole of the gasket closest to the combustion chamber -- four measurements must be taken with 3 meeting the minimum thickness of .049" -- No fire ring gasket allowed. 708.12 CYLINDER HEAD PLATE:

Must be stock.

#### **708.12.1**

Cylinder head plate gasket must be stock with maximum thickness of 0.060".

### **708.13 ROCKER ARM STUDS:**

Must be stock.

### **708.14 VALVES:**

Intake valve -- minimum weight of valve 27.80 grams -- diameter of valve stem = .246" to .247" -- diameter of valve head = 1.055" to 1.065" -- diameter of valve seat = .972" inches ID maximum -- valve length minimum 3.3655" -- height from angle of valve face to top of the valve .057" minimum -- single angle only = 45 degrees -- B&S #555551.

Exhaust valve -- minimum weight of valve = 27.20 grams -- diameter of valve stem = .246" to .247" -- diameter of valve head = .935" to .945" -- diameter of valve seat = .850 inches ID maximum -- valve length minimum = 3.3655" -- height from angle of valve face to top of the valve = .060" minimum -- single angle only = 45 degrees -- B&S #555552.

### **708.16 VALVE SPRINGS:**

Valve Springs are single coil stock, unaltered B&S part # 26826 -- must be identical in appearance to factory part and have 4.00 to 4.75 coils in stack -- Spring Wire Diameter .103" to .107" -- Valve spring length = .940" max -- Inside diameter = .615" to .635"

#### **708.16.1**

Maximum valve spring length is 0.940". Wire diameter is 0.103" to 0.107", measured in three places on the spring. Inside diameter of spring is .615" minimum to .635" maximum.

#### **708.16.2**

Valve Spring Retainers: Thickness is 0.055" - 0.075".

### **708.17 CYLINDER HEAD:**

Stock Briggs & Stratton RT1 cylinder head as shipped from factory is the only approved cylinder head. No machining of head allowed. Machining marks left on head gasket surface are a tech item. Bosses on back of head, just below valve cover gasket surface may be tapped for attachment of header supports. No media blasting of combustion chamber or ports.

#### **708.17.1 COMBUSTION CHAMBER:**

Hard carbon may be scraped from head before measuring.

##### **708.17.1.1**

From head gasket surface the depth of head at shallow part is 0.030" minimum. Depth at floor of head is 0.340" minimum.

##### **708.17.1.2**

Depth to top of valve seats is 0.335" minimum, 0.360" maximum.

##### **708.17.1.3**

Shoulders of Sox tool # AT 341 may not touch head gasket surface when tool is placed into combustion chamber.

### **708.17.2 VALVE SEATS:**

Valve maintenance permitted (valve job). Valve seats must remain with the factory specification of 30 and 45 degree angles only. Valve seats of additional angles and/or excessive material removed when compared to the factory stock is prohibited.

#### **708.17.2.1**

Intake seat -- 0.972" max inside diameter.

#### **708.17.2.2**

Exhaust seat -- 0.850". max inside diameter.

### **708.17.3 PORTS:**

Must be stock, no machining, no polishing.

#### **708.17.3.1 INTAKE INLET PORT:**

0.918" no-go. When checking 90° to line between center of studs, no - go will be straight. When checking on line with center of studs, no-go will set on floor of port at bottom and stop at upper edge of port on top.

#### **708.17.3.2 EXHAUST OUTLET:**

0.980" no-go.

### **708.17.4 VALVE GUIDES:**

Must be stock as supplied from factory. Maximum depth from the head gasket surface to the intake valve guide is 1.255".

### **708.18 DECK/PISTON:**

No machining of deck surface is permitted. Factory machining marks on deck are a tech item. Arrow on piston must point to flywheel side of motor. Maximum pop out allowed is 0.005" measured with a flat bar set on top of piston parallel to the wrist pin.

### **708.19 CYLINDER BORE:**

Stock bore is 2.690". Allowance for wear is permitted, up to 2.693".

### **708.20 STROKE:**

Maximum stroke is 2.204". Push piston down to take up rod play. Check stroke from BDC to TDC.

### **708.21 IGNITION:**

Unaltered B&S PVL components are mandatory.

#### **708.21.1**

Coil unit color is green. Rev limit specified on coil is 6100. No alterations or disturbance of coil is allowed.

#### **708.21.2 CHECK IGNITION TIMING:**

Set up degree wheel on motor with using a piston stop inserted in the spark plug hole. With the left edge of the right coil leg aligned with the right edge of the right magnet, maximum timing 31 degrees.

#### **708.21.3**

Attachment bolts must not be altered.

#### **708.21.4**

Spark plug connector must be stock factory type.

#### **708.21.5**

Rubber plug boot is allowed.

#### **708.21.6**

Coil air gap is non tech. The recommended air gap is 0.022".

#### **708.21.7 SPARK PLUG:**

The only allowable spark plug is the Champion RC12YC with Briggs brand logo. Sealing ring as factory supplied must be in place.

### **708.22 FLYWHEEL:**

PVL flywheel Briggs Part # 555683 and PVL Magneto Briggs Part # 555718 only. (Plastic flywheel fan is part #692592.) PVL flywheel minimum weight: 4lbs. 1oz. Only "GREEN" ignition module allowed. Maximum RPM: 6150.

### **708.22.1 IGNITION TIMING**

Maximum of 31 degrees BTDC. Timing to be checked with ignition timing light rotating engine in the direction of operation between 2000 and 4000 RPM.

No modification of parts. No machining, glass beading or sandblasting of flywheel is allowed. No slotting of mounting holes or machining of attaching bolts is permitted. Spark plug connector must be stock factory type. Rubber plug boot is allowed.

### **708.22.2 FLYWHEEL TIMING KEY:**

Factory production stock aluminum timing key Briggs and Stratton part number 222698s with Briggs & Stratton logo is only legal key. No modifications allow and will be compared to stock know part.

### **708.22.3**

Minimum weight of flywheel, fins and fin attachment bolts is 4 pounds, 1 ounce.

### **708.23 CYLINDER AND SIDE COVER:**

Unaltered seal must be in place. No alterations or welding are allowed to any component.

### **708.24 CLUTCH:**

Clutch/Chain: any rim centrifugal stamped steel shoe type dry clutch with a maximum of 9 springs and 6 shoes is allowed -- No alteration to clutch allowed except springs. Clutch coolers not allowed -- 219 or #35 chain only

### **708.25 STARTER:**

Recoil starter must be retained, as produced and intact. Starter may be rotated.

All parts must be unaltered Briggs & Stratton LO206 parts specifically made for this engine by Briggs & Stratton. No aftermarket parts to be used unless specified in these regulations. All parts are subject to comparison with a known stock part.

## **709 BRIGGS & STRATTON LOCAL OPTION 206 KID KART ENGINE**

The Briggs & Stratton Local Option Kid Kart engine is based on the Local Option 206 engine described in Section 708. ALL of the Local Option 206 engine rules apply with the exceptions described in this section. All parts must be Briggs & Stratton factory production parts unless otherwise noted in this section. No machining or alteration of parts is permitted unless specifically noted in this section. All parts are subject to comparison to known stock Briggs & Stratton parts.

### **709.1 HEADER AND SILENCER:**

#### **709.1.1**

RLV Model 5507 or RLV 5506 header only. Header must be used as manufactured by RLV with no alterations or modifications. EGT and O2 sensors may not be installed in header pipe.

#### **709.1.2**

RLV B91 silencer only. Baffle holes are 0.1285" maximum

#### **709.1.3**

Gasket and / or silicone is allowed to seal header to head.

#### **709.1.4**

Studs or bolts are allowed to fasten header to cylinder head. Bolts or nuts must be safety wired. Header support brace is mandatory.

#### **709.1.5**

Header must be wrapped to protect the driver from heat.

### **709.2 AIR FILTER:**

Briggs # 555729 green air filter required -- loss of filter during event does not constitute a disqualification however filter must be in place when kart goes out.

### **709.3 CARBURETOR SLIDE:**

#### **709.3.1**

Briggs & Stratton black slide part # 555732. At full throttle the maximum opening of the carburetor slide is 0.310". This dimension

to be checked with a 0.311" + plug gauge held against the bottom of the venturi. The gauge may need to be ground on one side to clear the brass pick off tube.

Note: The surface of the carburetor cap that contacts the slide may be machined to attain proper opening.

### **709.3.2**

At full throttle the maximum opening of the carburetor slide is 0.310". This dimension to be checked with a 0.311" + plug gauge held against the bottom of the venturi. The gauge may need to be ground on one side to clear the brass pick off tube.

### **709.3.3**

The surface of the carburetor cap that contacts the slide may be machined to attain proper opening.

### **709.3.4**

The carburetor top must be secured with a Briggs Carburetor cap lock, part number 555726. Cap lock to carburetor will be an additional place to paint a tech seal.

### **709.4 EMULSION TUBE:**

Center hole maximum diameter is 0.113" no-go, minimum diameter is 0.110" must-go. Top three side holes are 0.020" no-go. Middle three side holes are 0.028" no go.

### **709.5 IGNITION:**

Unaltered Briggs PVL module, part number 555725, is required. Only "BLACK" ignition module allowed. Maximum RPM: 4150.

#### **709.5.1 SPARK PLUG:**

The only allowable spark plug is the Champion RC12YC with Briggs brand logo. Sealing ring as factory supplied must be in place.

## **709.6 DRIVE SYSTEM:**

### **709.6.1 CLUTCH:**

Max Torque Model SS17334IK (Briggs part number 555727) clutch is required. Clutch must remain stock,; unaltered. Engagement speed is approximately 2000 rpm with lock up at approximately 2300-2400 rpm

### **709.6.2**

Sprocket must have 17 teeth for #35 chain.

### **709.6.3**

Rear axle sprocket must have 57 teeth.

## **710, 711, 712, AND 713 CLONE CLASS ENGINES**

Sections 710, 711, 712 and 713 describe the specifications for Clone Class engines. These are 6.5 horsepower "Clone" engines only. All parts must be factory production parts unless otherwise specified in this manual. No machining or alteration of parts is permitted unless specifically noted. All parts are subject to be compared to known stock parts. No reading between the lines. If it not in the rules, it must remain, stock. UNLESS OTHERWISE STATED ENGINE WILL BE TECHED AS RACED. Additional rules may be added as WKA moves forward with this program.

## **710 CLONE CLASS PURE STOCK**

For section 710 , please see the 2016 WKA technical manual or refer to the Tech Docs--> archived technical rules section on the WKA website 711 CLONE CLASS BOX STOCK

## **711 CLONE STOCK CLASS**

### **711.1 CLUTCH:**

Shoe type clutch and disc clutches allowed -- Drum may be stamped or billet steel -- No cooling fins -- may be either machined into drum or added on/

### **711.2 FUEL TANK:**

Must be floor mounted -- OEM tank must be removed

### 711.3 CARBURETOR:

Huayi or Ruixing only  
All stock carb gaskets must be present  
Choke assembly must be functioning, cannot be altered, and must remain flat  
Venturi: 0.608" Must Go -- No-Go with blade gauge = 0.615"  
Venturi may not be polished  
Back carb bore: 0.751" No-Go  
Emulsion tube must remain stock -- must have 20 holes on top -- minimum tube length = 1.092" -- minimum diameter = 0.154" -- I.D. = 0.066" No-Go  
Emulsion tube may have 2 or 4 holes on bottom  
Main jet and low speed idle jet are non-tech -- Jet may not be drilled through to outside air  
Throttle Shaft 0.115 minimum thickness  
Butterfly 0.037" minimum -- Butterfly screw minimum length = 0.305"

### 711.4 FUEL PUMP:

Any pulsed type fuel pump is allowed -- Fuel pump may be pulsed from the valve cover, sidecover or crankcase

### 711.5 AIR FILTER:

After market air filter adapters are allowed -- Maximum length: 1.375"  
Filter element is non tech but must not be of a ram air design

### 711.6 BLOCK:

Block must remain stock. Maximum bore is 2.700" -- Stroke is 2.126" plus or minus 0.007"  
No pop-up allowed. Mating surfaces of block and cylinder head are non-tech items.

### 711.7 CYLINDER HEAD:

"JT 4 bolt and TG-1 allowed -- No porting, grinding or modification.  
Valve seats may have two or three angles -- Two angle seats have a 30° top and a 45° valve face  
Three angle valve seats have angles of 30° at the top, 45° at the valve face and 60° at the base  
Intake seat is 0.899" maximum -- Exhaust seat is 0.862 maximum  
Head gasket must be stock configuration. Gasket must be steel --- copper or aluminum not allowed.  
No minimum head gasket thickness -- no angle milling of head -- multiple head gaskets are allowed with no maximum thickness  
Sealer may be used  
Head thickness from the valve breather mating surface to in between the valve guides is 1.150" max.  
Port depth measured from the top of the valve seat to the port floor -- intake = 0.880" -- exhaust = 0.830" max  
Maximum head thickness 2.640" as measured from the valve breather mounting surface to in between the valve seats and the combustion chamber.  
Clip on guide must be down all the way against head all the way around the clip. Guide must be in stock position.

### 711.7.1 COMBUSTION CHAMBER VOLUME:

Minimum volume 26.5cc as measured through the spark plug hole using the LAD tool and with head on the engine. See Section 504 for instructions how to use the LAD tool to check cylinder head volume.

### 711.8 VALVE TRAIN:

Valve train will remain stock -- No polishing -- No grinding -- No alterations  
Intake valve diameter - 0.975" minimum with 45° angle  
Exhaust valve diameter - 0.937" minimum with 45° angle  
Minimum valve weight 21 grams  
Valve angle = 45 degrees  
Stock OEM steel rocker arms only -- 1 to 1 ratio -- rockers subject to magnetic check  
Rocker arms are allowed to be ground on valve stem location only or on bottom of rocker arm to allow running lift to be legal -- grinding on the sides of the rocker arm is not allowed -- no minimum thickness tech.  
Stock valve springs only -- must be of magnetic material with 4 coils -- Maximum wire diameter is .071" -- Maximum spring pressure is 10.8 lbs at height of 0.850"  
Spring shims are allowed -- must be magnetic -- any thickness -- must maintain the 0.815" height check.  
Maximum spring pressure @ .650 is 18 lbs. If light shows all the way around spacer the spring is illegal on .850 and .650 tech.  
Lash cap on exhaust valve only -- Valve stem seals are optional on

intake and exhaust valves  
Stock lifters -- length = 1.350" -- 1.390" --- OD = 0.935" minimum -- minimum weight = 18 grams  
Minimum valve installed height is 0.815" -- Valve spring shims are allowed.  
Inside diameter of valve seats -- intake = 0.899" maximum -- exhaust = 0.862" maximum  
Top of valves may not be below the floor of the combustion chamber.  
Pushrods -- 5.285" maximum length -- must be 3 piece design -- minimum weight = 9 grams

### 711.9 ROD:

Stock rod only; Rod may be honed. No modifications are allowed -- must maintain factory defined edge -- rod length = 2.350" min -- 2.375" max  
Conrod minimum weight = 133 grams including cap and rod bolts.

### 711.10 PISTON AND RINGS:

Stock pistons and rings only -- three ring design -- minimum weight 145 grams with all rings installed -- no machining allowed  
Piston length 1.935" max -- 1.910" minimum  
No flat top pistons allowed -- must be dished OEM type with no modifications (may be compared to a known stock item)  
All three rings must be in place and functional.  
Top and middle rings -- 0.053" min -- 0.063" max thickness -- 0.115" max width  
Both must be self supporting in cylinder when removed from piston (can not fall thru)  
Oil ring -- 0.090" min -- 0.100" max thickness ----- 0.087" minimum -- 0.097" maximum width  
When oil pack is mounted as run on piston, it should support piston when inserted upside down (must not fall thru)  
Piston pin I.D. = 0.555" maximum -- length 2.100" -- 2.200" -- O.D. .712"/.702"

### 711.11 CRANKSHAFT:

Stock crankshaft only; no modifications. Crankshaft journal is 1.180" maximum and 1.168 minimum.

### 711.11.1 CRANKSHAFT BEARINGS

Must be the same dimensions as stock bearings (includes races and balls) -- conventional magnetic design -- no exotic or ceramic types -- retainers may be steel or non-metallic material

### 711.12 CAMSHAFT:

Stock appearing camshaft cores only with EZ-spin assembly unaltered and in stock condition -- cam base circle 0.860" minimum -- 0.875" maximum -- duration measured at pushrod -- intake duration 221 degrees at .050" lift and 88 degrees at 0.200" lift ---- exhaust duration 224 degrees at 0.050" lift and 99 degrees at 0.200" lift -- tolerance plus 2 degrees with no minimum duration -- Intake lift at pushrod 0.215-0.225" -- Exhaust lift at pushrod 0.222"-0.232" -- Intake lift at retainer 0.238" max -- Exhaust lift at retainer 0.242" -- lift checks to be performed as raced

### 711.13 FLYWHEEL AND IGNITION:

The following flywheels are the only approved flywheels: (1) ARC Model 6619, (2) PVL, (3) Raceseng REV WHEEL - FINNED - S1, all at a minimum weight of 3 pounds 2 ounces. The Speed Karts Steel Billet S1 flywheel is also approved at a minimum weight of 5 pounds, 3 ounces. The stock flywheel is no longer approved and may not be used. No machining or alterations of any kind are allowed. Ignition coil must be stock, but ignition timing is non-tech. The flywheel may be run with or without a key. Stock pull starter or handheld electric starter may be used

### 711.14 HEADER PIPE:

Exhaust pipe/header must not have exposed sharp edges. No aftermarket coatings of any type are allowed. Header/exhaust pipe must be wrapped if the pipe design exposes the driver to burns. Studs allowed for header pipe attachment to block. Header/exhaust pipe MAY NOT PROTRUDE inside of exhaust port. 24 inches max length -- Must be safety wired



### **711.14.1 HEADER PIPE SPORTSMAN AND JUNIOR:**

Sportsman and Junior header pipe must be single stage maximum 0.750" outside diameter, 0.635" ID inside measurement. Maximum length on header and muffler is 15" and minimum is 10".

### **711.15 MUFFLER:**

No aftermarket coatings of any type are allowed.

### **711.15.1 MUFFLER - SPORTSMAN AND JUNIOR:**

Muffler must be RLV Mini 91. Box Stock, Threaded Nipple. No grinding. ID is 0.685" + or - 0.005". Rear baffle holes maximum ID is 0.1285". Inner baffle holes maximum ID is 0.0965". Muffler must be screwed on end of header pipe, not welded.

### **711.15.2 MUFFLER - SENIOR:**

Muffler must be a RLV 91\_L type with 0.1285" no-go holes.

### **711.16 STARTER:**

Pull starter must be present and remain stock. Pull starter may be rotated for a better cranking angle.

### **711.17 ENGINE OIL RECOVERY SYSTEM:**

Engine oil recovery system (catch can) mandatory.

### **711.18 OIL SENSOR:**

Oil sensor may be removed.

### **711.19 GOVERNOR:**

Governor and governor components are non-tech.

### **711.20 SIDE COVER GASKETS:**

2 gaskets maximum.

### **711.20.1 GASKETS**

Must be OEM design -- non-tech -- sealer OK except on intake or carburetor side.

### **711.21 AFTER MARKET COATINGS:**

No aftermarket coatings of any type are allowed except on blower housing shroud -- no tumbling or polishing allowed

### **++711.22 SHEET METAL:**

All sheet metal must be used as supplied with the engine and may be painted.

### **711.23 VALVE BREATHER:**

Tab must be intact and not broken or missing --- Bending tab up into breather OK -- flapper valve must be operational and stock -- crank case breather to be routed internally thru valve cover as factory intended -- no extra breathers allowed.

### **711.24 HARDWARE AND FASTENERS:**

Type is non-tech but must be original size -- thread repair by inserts, studs or heli coils OK

## **712 CLONE CLASS BUILDER PREPARED ENGINE**

For section 712 , please see the 2016 WKA technical manual or refer to the Tech Docs--> archived technical rules section on the WKA website.

## **713 CLONE CLASS ENGINES – ROAD RACE**

Note: For Clone Class engines run in the National Road Race Series, all rules in Section 711 apply with the following exceptions:

### **713.2 CLUTCHES:**

Engine clutch only. Either drum or disc clutch.

### **713.3 CARBURETOR:**

Main jet and low speed jet may be drilled to any size. E-tube is non tech.

### **713.4 AIR FILTER ADAPTER:**

A 90° 2" diameter PVC pipe elbow may be used to attach the air filter to the air filter adapter.

### **713.5: FLYWHEEL:**

Flywheel must be a Billet ARC model 6619 or 6618.

### **713.6 HEADER PIPE AND SILENCER:**

Header Pipe Length: Minimum 18" - Maximum 22".

### **713.7. MUFFLER:**

Muffler must be a RLV 91\_L type with 0.1285 no-go holes.

### **713.8: STARTER:**

Recoil starter components may be replaced with a flat flywheel fan cover bolted in place of the recoil starter housing. Starter nut may be added to employ a handheld electric starter.

## **714 SUBARU ROBIN EX13**

For section 714 , please see the 2016 WKA technical manual or refer to the Tech Docs--> archived technical rules section on the WKA website

## **715 HONDA GXH50 Kid Kart Motor**

Stock OEM throughout, as per [www.hpd.honda.com](http://www.hpd.honda.com)

## **716 -TILLOTSON-TPP - 1 96R-B Motor**

Regulations as per WKA Clone Regulations  
1B Carb is NOT legal





# 2023 TECHNICAL MANUAL

## 4-Cycle General Technical Inspection Procedures

# 750

### 750 4-CYCLE GENERAL TECH PROCEDURES

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## 750 4-CYCLE GENERAL TECH PROCEDURES

### 751.1 GENERAL:

Technical specifications and procedures are intended to provide a means for orderly conduct of karting events with regard to reasonable safety and competitive equality.

### 751.2 SPIRIT AND INTENT:

It is not possible to establish rules and procedures that can provide for every possible condition and situation encountered in the field. In all cases, where rule interpretation is required, the primary consideration will be the spirit and intent of the written rule. Establishing the spirit and intent of a rule in the field is the responsibility of the officials in charge and ultimately rests with the WKA Board of Trustees.

### 751.3 ATTITUDE:

The attitude of those individuals charged with the responsibility of conducting technical inspection is (a) help the competitor be aware of possible deficiencies in a timely manner that may pose a safety danger or could constitute a rules infraction. (b) Help establish that all entrants are competing under equal conditions and (c) that specifications and regulations established by this document are adhered to all competitors.

### 751.4 PRE-RACE INSPECTIONS:

The primary purpose of pre-race inspections is to establish that safety requirements have been met by each competitor prior to their entering the track at speed. It is the responsibility of the entrant to provide, for pre-race inspection, the vehicle, helmet and racing apparel exactly as is to be raced on that day. If a vehicle, helmet or racing apparel has been pre-inspected and the entrant changes/adjusts, etc., components that have been inspected without making inspectors aware of said changes, the prior inspection may be invalidated and the entrant may be subject to disqualification for the event and/or suspension. Passing pre-race tech does not guarantee post race legality.

#### 751.4.1 KARTS/ENGINES/SAFETY:

Equipment may be subject to be inspection at any time during event.

#### 751.4.2 PERSONAL SAFETY GEAR:

Driver's personal safety equipment and racing attire should be ready for pre-tech inspection.

### 751.5 INSPECTION MARKING:

Method of engine and/or tire marking is at the discretion of the officials in charge. Any means undertaken by a competitor to duplicate, counterfeit or otherwise avoid normal component-marking procedures is cause for immediate disqualification and possible suspension of membership privileges. Competitor is responsible for his/her equipment to be marked before Qualifying or first Qualifying heat. (painted or sealed)

### 751.6 POST-RACE INSPECTIONS:

It is the responsibility of the entrant to proceed directly to scale and/or inspection areas immediately at the conclusion of an event. Failure to do so will result in disqualification. Once a vehicle or components of a vehicle are submitted for inspection, they may not be removed from the inspection area without expressed permission of the tech official in charge. It is mandatory that each entrant who enters the post race tech inspection area (impound) as a top five finisher must provide an individual to stay with the kart.

#### 751.6.1 PARTS I.D.:

It is recommended that tags with competitor's name and kart number be attached to components submitted to impound areas for inspection so the items may be returned to the rightful owners.

#### 751.6.2 IMPOUND / TECH AREA:

Inspection areas, impound areas and/or other areas so designated by the officials in charge are off-limits to all participants. Competitors may enter these areas only upon the specific direction of the officials in charge.

##### 751.6.2.1 WKA MEMBERS ONLY IN TECH AREA:

All persons present in the engine tech area must be WKA members.

##### 751.6.2.2

USE OF CELL PHONES AND CAMERAS: Use of cell phones and cameras is not allowed in the tech area by anyone other than race officials.

##### 751.6.3

It is recommended that post-race technical inspection in all classes be limited to weight check and engine tech as outlined herein.

##### 751.6.4

Positions 1-5 will be escorted to the designated impound area by a WKA Official. The top three (3) karts/engines in the class being teched must remain in impound until that class has been released. The fourth and fifth place kart/engines may be teched and released immediately. The inspection of each is at the discretion of the Head Tech official. It is required for National and Divisional point events that the top five finishers be teched.

##### 751.6.5

All engines in impound must be ready to be teched within 30 minutes of the finish of that classes race. If not the engine / kart may be subject to disqualification.

##### 751.6.6

Engine will be teched on the day it is raced.



### **751.6.7**

Refusal to submit to post-race tech shall be considered an admission of non-compliance with specifications by the competitor, subjecting the competitor to disqualification for that event and possible suspension of membership privileges.

### **751.6.8**

All portions of the engine will be subject to be teched. In the case of broken parts, every effort will be made to tech the parts. If this is not possible, it will be the decision of the tech officials to determine if the broken part(s) would have facilitated a performance gain and their decision regarding the legality of the broken part(s) is final. Cracked and/or broken parts may be replaced during the course of the event after an engine has been sealed and/or painted **ONLY** with the expressed permission of the tech officials.

### **751.6.9**

If entrant changes engine(s) during the course of the days event for a class(es) that they qualified the engine in. Kart will start at rear of field in that class(es).

### **751.6.10 ENGINES RUN IN MULTIPLE CLASSES:**

Engines run in more than one class in a day may be marked or sealed after the first class has run and be inspected after all other classes have been run. If the engine is found to be illegal, it will be considered to be illegal in all of the classes in which it was run, whether or not it was selected for inspection for the other classes.

### **751.7 TECH TOOLS:**

Where possible, a Tech Kit expressly designed for teching of engines to WKA specifications should be utilized. They are available from a variety of sources. cursory checks may be made with dial-type calipers, however, if the component being checked is questionable, additional checks should be made with micrometers or equivalent.

#### **751.7.1**

All blade type NO-GO gauges must have with a MIN. thickness of 0.125" and MAX. of 0.250". NO-GO gauges may not enter or pass through the opening or gap of a measured part. The NO-GO gauge may not be self supporting when part is turned 90 degrees; i.e., tool cannot support itself at any angle. NO-GO gauges are to be used without holder.

### **751.8 WORKMANSHIP:**

General suitability for competition, workmanship and appearance of kart will be considered in approving it for entry in an event. Decision of the race officials is final.

### **751.9 ENTRANT RESPONSIBILITY:**

It is the competitor's responsibility to assure that all technical safety requirements have been met, including safety-wiring and other items specified in other Sections of this document.

### **751.10 FUEL REQUIREMENTS (ALL 4 CYCLE CLASSES):**

Methanol fuel **ONLY** (Except gasoline in World Formula and Briggs & Stratton Local Option 206). NO additives or oil in fuel.

#### **751.10.1**

Pressurized fuel systems (except for approved fuel pumps, where permitted) are **NOT ALLOWED**.

#### **751.10.2 FUEL PUMP-AROUND:**

If a pump-around is used at WKA events, the following system must be followed.

**NOTE:** (1) Proper type and size fire extinguishers available in immediate pump-around area (2) Only explosion-proof type motors be utilized on pumps (3) Area around pump-around be cordoned-off by proper barrier to eliminate congestion; that No Smoking signs be posted in pump-around area and that absolute minimum personnel be permitted into pump-around area.

### **751.11 FUEL CHECKS:**

Included are recommended fuel tests. Additional tests may be made when deemed necessary. Any competitor disqualified at a WKA National, or Regional race event for illegal fuel may be subject to additional disciplinary action (not limited to probation or suspension by WKA). This provision, which also includes the use of any potentially harmful or prohibited substances anywhere on the kart, will subject the entrant to disqualification and/or further penalties as outlined, but not limited to, those in this manual.

#### **751.11.1**

It shall be the Tech official's decision as to which system is used and/or any additional fuel checks. Additional checks may include fuel sampling, hydrometer, and water test, chemical or electronic evaluation of fuel.

##### **751.11.1.1**

If water test is used to insure legality of fuel use Distilled water and mix the same amounts of water and Methanol in a clean container. **DO NOT SHAKE THE CONTAINER**. If the mixture turns cloudy or a dark or cloudy ring forms the fuel is illegal. Always back up the water test with a hydrometer test of the suspect fuel.

#### **751.11.2**

WKA reserves the right to specify fuel use for an event and/or take samples for laboratory analysis.

#### **751.11.3**

Any system introducing an oxygen-bearing additive or any other substance not specifically approved into the engine induction system is strictly prohibited.

#### **751.11.4**

Violation of any stated fuel specification subjects offender to immediate suspension.

### **751.12 OIL TESTS:**

Engine lubricating oil is subject to test for oxygen-bearing and/or vapor-producing substances, which are strictly prohibited. WKA reserves the right to conduct oil sampling and testing at any time and by any method.

#### **751.12.1**

Among approved methods that may be utilized are various oil "sniffers," TIF Instruments Model 5500 or Snap-On Tools Model ACT 5600.

#### **751.12.2**

The Flame test is another method of testing oil and the proper way of doing it is as follows: Drain oil from crankcase into large spoon. Heat the oil between 250-300 degrees and test the temperature with a Raytex heat gun. When heat reaches 250-300 degrees, pass the torch over the top of oil (do not put flame directly into the oil). If the oil ignites, and it continues to burn when flame is removed, it would be considered illegal (remember Methanol will burn with a blue/blueish flame and some may leak into the crankcase if the motor is idled a lot and this is not the additive you are checking for).

#### **751.12.3**

Violation of any stated oil specification subjects offender to immediate suspension.

### **751.13 OIL / FUEL SPILLS:**

Any competitor purposely spilling fuel or lubricants on the track, grid or pit area may be subject to suspension for the entire event.

### **751.14 OIL CATCH TANKS:**

Oil overflow recovery system is mandatory in all 4-cycle classes. Overflow tube must run from crankcase breather to approved catch-can. Overflow recovery system is subject to tech inspection at any time. Oil catch-can must be vented to atmosphere and is subject to tech inspection.

### **751.15 TIRE REQUIREMENTS:**

Tires must be available on the general consumer market, to all competitors, for a minimum of sixty (60) days prior to an event in which they will be accepted for use. WKA reserves the right to prohibit tires from competition that are not generally available to all competitors.



### **751.15.1 SPEC TIRES (ALL DIVISIONS):**

All classes, any means taken to remove or alter code or identification numbers on either side of tire is PROHIBITED. Taping or any other means to cover up or hide tire compound/serial numbers is not allowed and will be grounds for disqualification / suspension.

### **751.16 WEIGHTS:**

In all cases, minimum weight is defined as observed total weight of driver and kart in as-raced condition upon completion of event. The competitor must sit or stand in seat or stand on designated point for weighing. Should the competitor be under the specified weight he/she has one opportunity to push the kart off the scale and re-scale while sitting in the seat or standing on designated point. Prior to rescaling the scale official must notify the race director or head technical personal for witness of the final weighing. (The designated point, if any, will be named prior to racing). Failure to make legal weight will result in disqualification.

## **760 GENERAL 4-CYCLE NOTES**

### **760.1 BATTERY TYPE:**

Battery-type ignition is NOT ALLOWED.

### **760.2 AIR FILTER:**

Air filter adapters in the Stock classes are subject to tech inspection at any time during an event. These adapters should be marked (painted) along with other parts of the engine so subject after qualifying and/or heat events. If at any time during the race (before crossing scales for weight in) and the air filter comes off, and the adapter remains on the carb the engine will be declared illegal in post race tech.

### **760.3 AFTERMARKET COATINGS:**

Aftermarket coatings are expressly prohibited on all engine components unless a specific exception is contained in this Tech Manual for that class.

### **760.4 HEADER /MUFFLER:**

Coating of header tube/exhaust pipe is allowed in all 4-cycle classes. Heat protective wrapping of header/exhaust pipe up to the silencer is permitted. Wrapping must be securely fastened to prevent loss during an event, which may subject competitor to black flag. Coating/wrapping may NOT be applied to the silencer, such as the specified RLV part. No coating of header allowed.

**NOTE:** Specified silencer must be installed upon the header pipe in such a manner to prevent exhaust discharge from being diverted to any point except the unmodified discharge of the silencer. Loss of the silencer or silencer that becomes loose on header pipe during an event or any obvious attempt by the competitor to install the silencer so exhaust gases will be diverted from the designed discharge point will be a disqualification.

### **760.5 SLEEVEING:**

Sleeving of cylinder block is permitted in all Briggs & Stratton engine classes. Does not apply to Briggs Animal Block where no re-sleeving is allowed.



# 2023 TECHNICAL MANUAL

## National & Divisional Regional Point System

# 800

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## 800 NATIONAL, DIVISIONAL REGIONAL POINTS SYSTEM

### 800 NATIONAL POINTS SYSTEM

WKA members can compete for National and Divisional/Regional class championships by earning points based on their race finishing positions. Members can also earn bonus points that apply toward national finishes in the Manufacturers Cup, Gold Cup and National Road Race Series by participating in specific National and Divisional/Regional events. Events qualifying for race and bonus point credit are announced at the beginning of each race season.

#### 800.1 NATIONAL EVENTS:

Events awarding national points will be announced on the WKA official website or directly to members by Pit Board announcement, website post or direct mail.

#### 800.2 NATIONAL SERIES:

Point championships will be awarded in the following WKA annual racing series:

##### 800.2.1

National Road Racing Series.

##### 800.2.2

National Manufacturers Cup Series.

##### 800.2.3

National Gold Cup Series.

#### 800.3 NATIONAL POINTS SCHEDULE:

All WKA National Series will award points at National events according to the following schedule. Bonus points may be awarded for specific events.

FINISH	POINTS	FINISH	POINTS
1st	200	16th	50
2nd	175	17th	45
3rd	155	18th	40
4th	140	19th	35
5th	130	20th	30
6th	120	21st	27
7th	110	22nd	24
8th	100	23rd	21
9th	90	24th	18
10th	80	25th	15
11th	75	26th	12
12th	70	27th	9
13th	65	28th	6
14th	60	29th	3
15th	55	30th	1
31st and lower	0		

## 801 NATIONAL POINTS PROVISIONS – SPRINT

#### ++801.1 MANUFACTURERS CUP:

No Drops. A competitor's best three out of three event results at Manufacturers Cup events count toward the national championship.

#### 801.2 GOLD CUP:

A competitor's best six out of eight final finishes at Gold Cup events count toward the national championship standings. There are four Gold Cup events with two finals per class at each event.

#### 801.2.2 GOLD CUP YEAR-END AWARDS PROVISIONS:

Will be provided in a WKA 2023 Tech Update

## 802 NATIONAL POINTS PROVISIONS – ROAD RACING

### 802.1 NATIONAL ROAD RACING

See 2023 WKA Tech Updates

#### 802.1.1 ROAD RACING BONUS

Bonus points will be offered at the WKA Road Racing Grand Nationals.

#### 802.1.2 NATIONAL ROAD RACING YEAR-END AWARDS PROVISIONS

Will be provided in a WKA 2023 Tech Update

## 803 GENERAL POINTS PROVISIONS/ APPLICATIONS (NATIONALS & DIVISIONALS)

**NOTE:** Carefully note provisions set forth in this section as to whether they apply (1) to all series or (2) to a specific series only. If a specific series is not noted, the provision applies to all series.

### 803.1 EVENT RESULTS:

The track, club or individual promoting an event is responsible for reporting results and points to the WKA Office.

### 803.2 POINT SCHEDULE:

The point schedule in Section 803 will be used by all series. Finish position and number of entry points will be determined as follows:

#### ++803.2.1 SPRINT:

Finish position points plus total number of entries in class. Total number of entries in class points are not used for Manufacturers Cup Series events.

#### 803.2.2 SPEEDWAY PAVEMENT:

Finish position points plus total number of entries in class (maximum 30 entry points).

#### 803.2.3 ROAD RACING:

Finish position points plus total number of entries in class, (maximum 60 entry points).

#### 803.2.6 SPECIAL POINTS:

Special points provisions for a racing season may be posted at the time the season schedule is announced.

### 803.7 RAIN-OUT POINTS (ROAD RACING):

If a Road Racing event is rained out, 200 points plus points for the number of entries in that class will be awarded to each entrant properly registered for and attending the event. In the case where a competitor has pre-entered the event but does not attend the event, he/she will receive only 200 points for the rained-out event (no entry points). In order to receive the full rain points, the competitor must be present at the event, purchase a pit pass and pick up their pre-entry confirmation at registration.

#### 803.7.1 RAIN-OUT POINTS (SPRINT / SPEEDWAY PAVEMENT):

If a Sprint or Speedway Pavement event is rained out, 200 points will be awarded to each entrant.

**NOTE:** The spirit and intent of all rules regarding rain-outs and points distribution is to give all entrants the same opportunities and to make every effort to give each competitor an opportunity to race if track-time is shortened due to inclement weather or unforeseen situations. The "rain out provisions" may also apply when an event must be canceled due to unforeseen circumstances other than weather.



### **803.8 POINTS ELIGIBILITY & WEIGH-IN:**

To receive points at all Speedway Pavement and Sprint events, a driver must take the green flag for qualifying or a race and must weigh-in. To receive points at all Road Racing events, driver must grid and weigh-in. The driver is responsible for making certain that the scale operator checks and records the weight after the race. (See Section 803.17 for additional points and scoring information.) Failure to make legal minimum weight will result in disqualification.

#### **803.8.1 EVENT CREDIT (ROAD RACING):**

In the event a competitor must leave a WKA Road Racing event for a family emergency, the competitor may request credit for the event and for last place points. The request must be filed with the Race Director prior to the competitor leaving the track. The Race Director shall ensure that this waiver is noted on the official race results reported to WKA.

### **803.9 BONUS POINT RACES (SPEEDWAY PAVEMENT AND SPRINT):**

Any competitor, who has properly pre-entered for an event or has registered in person at an event, will receive 25 bonus points for that event. If competitor races and has a finishing position that entitles him/her to race points (i.e., top 30 finisher), that competitor will receive 50 bonus points.

**NOTE: If the competitor does not report to the grid, is light at the scales, is disqualified in post race tech, or is disqualified for driving infractions, the competitor is only eligible for 25 bonus points.**

#### **803.9.1 BONUS POINT RACES (ROAD RACING):**

Any competitor who is properly pre-entered or has registered in person at the event will receive 25 points for that event. If a competitor grids, takes the green flag, and weighs in, he/she will receive 50 bonus points.

**NOTE: If a competitor does not report to the grid, is light at the scales, is disqualified in tech or is disqualified for driving infractions, that competitor is only eligible for 25 bonus points.**

#### **803.9.2**

WKA reserves the right to designate additional races not already mentioned in Sections 801 & 802 as Bonus Point races

#### **803.9.3**

Bonus points will count for a competitor regardless of whether the race is counted or dropped.

### **803.10 DISQUALIFICATIONS & POINTS:**

If a driver is disqualified for unsafe driving or failure to pass post-race weight or technical inspection, the driver may count the race as a "drop race." If a driver is disqualified for unsportsmanlike conduct, the race may not be dropped and will be counted as a zero. (For more information, see Section 105 GENERAL RULES OF CONDUCT.) If a driver is disqualified for the use of counterfeit or re-manufactured OEM parts, the race may not be dropped and will be counted as a zero. If a driver is disqualified for repeated violations of any of the provisions above, the Race Director may determine that the race may not be dropped.

### **++803.11 TIE-BREAKING:**

In the event of a tie in the year-end point totals, the tie will be broken by the driver who possesses the most wins. If there is still a tie or there are no wins, the tie will be broken by the driver with the most seconds.

### **803.12 OFFICIAL POSTED POINTS STANDINGS:**

Competitors have 30 days after the posting of National points on the WKA website to protest their points standings calculation. After 30 days have lapsed, point standings are final for what has been posted to date.

### **803.13 ACCIDENTS / TRANSPORTS:**

In the case of a driver needing to be transported (under the advisement of track medical personnel) due to an accident, he/she will receive points for their finishing position regardless of whether he or she is able to weigh-in. If the medical personnel detain the driver for examination, WKA has the right to waive the weigh-in requirement if his/her class has already cleared the scale area.

### **803.14 MINIMUM PARTICIPATION (DIVISIONAL/ REGIONAL BONUS TRANSFERS) – ALL SERIES:**

The minimum participation rule refers to participation and transfers within the same class. Participation in two different classes cannot be combined to meet the minimum participation rule for one class.

### **803.15 PHANTOM ENTRIES:**

Phantom entries are competitors who enter or are entered in classes for the sole purpose of increasing the kart count and therefore influencing total points. It is a violation to participate in any scheme to create phantom points. Punishable activities include (1) entering a class for the sole purpose of adding to the kart count and (2) entering another competitor without the competitor's written permission. WKA headquarters or the Board of Trustees may also disallow any points suspected of being the result of phantom entries.

### **803.16 TRIPLE CROWN AWARD:**

A Triple Crown winner must win three National Point Championships in classes that average ten or more entries for the season or must win four or more National Point Championships. Any driver not meeting the criteria will be considered a multi-class champion.

### **803.17 SCORING & POINTS APPLICATIONS:**

**Note: Refer to each National Series special rules section for additional event format information.**

#### **803.17.1 AWARDING POINTS:**

Qualified competitors receive points based on the order in which they finish a race unless they are disqualified for failure to pass post race weight and technical inspection or by the Race Director for on track violations or failure to observe General Rules of Conduct. (See Section 105.) In the event the starting field is less than 30 karts (such as due to track size), those who race the main event will receive finish points followed by the qualifying order of those not allowed to race. Example: there are 30 karts registered in a class, but due to track size, the starting field is reduced to 25. The 25 driver's participating in the main will receive finish positions 1 – 25. Finish positions 26 – 30 will be awarded to the first 5 competitors from qualifying that did not make the feature (i.e. qualifying positions 25 – 30). In the Gold Cup Series (or any series utilizing the moto-cross points system where the qualifying and heat results are combined to determine the main event starting lineup), the remaining positions will be awarded points based on the moto-cross feature lineup.

#### **803.17.2 BLACK FLAGS:**

Failure to comply with the black flag will result in the competitor not being scored for all laps after black flag has been displayed. Failure to heed black flag may also result in suspension of competition and/or membership privileges. Also see Section 108.5.

#### **803.17.3 EVENT NO SHOWS:**

A competitor is considered a "no show" to an event if they do not present themselves and their kart to the grid for at least one round of competition for the class in which they are registered. "No shows" are not eligible to receive race credit and/or finish position points.

#### **803.17.4 NO SHOW TO HEAT OR MAIN:**

A competitor that has successfully qualified their kart but is a "no show" to the next round of competition for the class they are registered are eligible for overall finish position points provided there are less than 30 karts in the class. These finish positions shall be awarded based on the main event lineup as determined by qualifying.

#### **803.17.5 NO PASS SCORING (SPRINT OR SPEEDWAY PAVEMENT):**

If a driver falls out on the warm-up lap(s) or first lap of the main event, he/she shall be awarded finish positions points based on the starting line-up of the main event provided they pass post race weigh-in and tech and were not disqualified by the Race Director.

### **803.17.6 NO PASS SCORING (ROAD RACING):**

Drivers falling out on the first lap of a road race event shall be awarded the next finish position after the finish positions of those competitors who crossed the scoring line one or more times during the race, provided they passed post race weigh-in and technical inspection, and were not disqualified by the Race Director.

### **803.17.7 UNABLE TO RACE (ROAD RACING):**

Any registered competitor unable to race for any reason may receive last-place finishing position points for that race if they report to the grid with their kart and all appropriate personal equipment. They should grid at the rear of all classes after explaining the circumstances to the grid man and flag man. After the race is started, the competitor should move their kart directly to post race weigh-in. By meeting the weight requirements for the class, the competitor has met all requirements to get last place points.

EXCEPTIONS: (1) If the competitor is injured during practice or while racing at the event, the competitor will be awarded last place finishing position and points for the affected classes provided he/she is properly registered in those class(es) prior to the incident. (2) If the competitor's kart is damaged beyond immediate repair at the event, he/she may request last place finish position and points. The request must be presented to the Race Director in writing by the competitor before the race(s) and competitor must be a registered entrant in the class(es) prior to the incident.

**NOTE: Competitors who have registered but fail to follow the above procedure or do not meet the weight requirements (where applicable) shall receive zero points for that race.**

### **803.17.8 POST RACE WEIGH-IN:**

At any time a competitor presents him or herself to the grid for a round of competition, it is mandatory that they weigh-in. Failure to do so will result in being disqualified from that round of competition and/or for the day. Also see Section 803.8.

## **804 DIVISIONAL AND REGIONAL SERIES REGULATIONS**

### **804.1 GENERAL (EXCEPT ROAD RACING):**

See sections 363 & 812-814 for all Road Racing Regional rules: Divisional Series may be conducted for all recognized National Classes. Participation for races in the Road Race Regional and Sprint Divisional Series will be recognized by bonus points transferred to classes in the National Classes.

### **804.2 DIVISIONAL TECH INSPECTOR:**

The Head Tech Inspector for all Divisional and Regional events must be SFI/WKA Certified at Level 2.

### **804.3 DELINQUENT SERIES:**

Any race series delinquent in sending race results to the WKA office in a timely manner could jeopardize the rest of their respective series and possible sanctioning for the following year.

### **804.4 DIVISIONAL/REGIONAL OFFICIALS:**

The Series Director, Race Director, and Chief Tech Inspector must be WKA members in good standing at all WKA Divisional/Regional events.

### **804.5 DIVISIONAL SERIES RULES COMPLIANCE:**

It is MANDATORY that all WKA Divisional / Regional Series adhere to the WKA Tech Manual class specifications (ages, weights, chassis, engines, etc.). Divisional Series may request approval for combining multiple weight classes into one single class.

### **804.6 DOCUMENTATION:**

Series must provide WKA with copies of any contracts and paperwork distributed to its series host tracks and any handouts or mailings distributed to its membership base. WKA reserves the right at any time to request copies of all financial records of a divisional series.

### **804.7 DIVISIONAL SERIES RENEWAL:**

The Divisional Series Director is approved by the WKA annually. The position is not transferable without WKA approval. WKA has no intention of constantly changing the Divisional leadership. However, if the WKA has reason to believe that the membership is not being served properly, the Association maintains the right to review any Divisional structure and its leadership and make changes as necessary.

### **804.8 DIVISIONAL TRACK REQUIREMENTS:**

All Divisional Series tracks must be approved and sanctioned WKA tracks for the Divisional season. All tracks must apply for sanctioning by the WKA before May 4, 2016. Tracks failing to apply for sanctioning approval by this date will be subject to removal from the Divisional Series schedule for that season. All Divisional event host tracks must utilize the WKA Track Benefits Program for said event(s).

## **805 ESTABLISHING A DIVISIONAL SERIES – SPRINT AND SPEEDWAY**

### **805.1 DIVISIONAL APPLICATION DATE:**

Any current WKA Master Track(s) or Divisional Series Committees representing the tracks involved may apply for Divisional Series status. Applications must be submitted to the WKA Office by March 18, 2014. Submission of application does not guarantee approval of petitioned series.

### **805.2 SPEEDWAY DIRT DIVISIONALS:**

A Speedway Dirt Divisional Series will consist of oval-type dirt tracks. Bonus transfer points are not available for transfer to the WKA Dirt National Championship.

### **805.3 SPEEDWAY PAVEMENT DIVISIONALS:**

A Speedway Pavement Divisional Series will consist of oval-type paved tracks. Divisional transfer points will not be available for transfer to the National Speedway Pavement Series.

### **805.4 SPRINT DIVISIONALS:**

Sprint Divisional Series will consist of road-type circuits with left and right-hand turns. The individual participant may transfer eligible 2-Cycle Divisional Series bonus points to the Manufacturers Cup Series and eligible 4-Cycle Divisional Series bonus points to the Gold Cup Series.

### **805.5 DIVISIONAL SERIES STRUCTURE:**

Ideally, a Divisional Series should consist of three or more tracks.

### **805.5.1 DIVISIONAL SPECIAL WAIVERS:**

Where fewer than three tracks will comprise the Divisional, WKA has the right to consider whether the petitioning track(s) should (a) be granted Divisional status or (b) be included in the nearest existing Divisional of the same type (sprint or speedway). Generally, the geographically larger Divisional is preferable; however, WKA will consider factors such as travel distance and convenience for members wishing to compete in the Divisional Program.

### **805.6 DIVISIONAL SERIES RACE COUNTS & MINIMUM PARTICIPATION TRANSFER REQUIREMENTS:**

All 2019 Divisional Series must host a minimum of four events and maximum of six events requiring participation in three of four, four of five or five of six events to transfer bonus points to National Series point standings.

**NOTE: All Divisional Series must complete at least four events. A rain-out where "rain points" are issued counts as a completed event.**

### **805.7 DIVISIONAL SERIES RAIN OUTS:**

For the 2019 season Divisional Series will be allowed to schedule one rain date to make up a previously rained out event. Said event MUST be declared on the Divisional Application. If the Divisional Series has more than one "rained out" event, the second (or more) event(s) must utilize the WKA Rain-Out Points provisions as stated in sec. 803.7.1. In the event of extreme circumstance the Divisional Series has the right to request additional rain dates to the WKA Office.

### **805.8 DIVISIONAL SCHEDULE CHANGES:**

Divisionals must provide the WKA Office with requests for any scheduling changes (deletions or additions) in a timely manner, so every effort can be made to publish such changes on the WKA web site and in a Pit Board announcement prior to the affected date(s). All schedule changes must be approved by WKA before they are official.

### **805.9 DIVISIONAL SCHEDULE GUIDELINES:**

WKA will not approve a Divisional Event to be run the same weekend as a National Event of the same series. See National race schedule for dates. Where a conflict exists between National event and a Divisional event, competitors who race at the National event will be allowed to count that event toward their Divisional attendance record and receive appropriate divisional bonus transfer points. Waivers of this type are approved on an annual basis per event per series and must be approved by the WKA office.

#### **805.9.1**

Every effort should be made to schedule Divisional Events to avoid conflict with neighboring Divisional Events. WKA retains the right to approve or disapprove specific Divisional Event dates should conflicts arise.

### **805.10 DIVISIONAL COMPETITION YEAR:**

For most areas of the country the Divisional Competition Year will begin with each new calendar year and end no later than early October. In warm climate areas an option is to begin the Divisional Competition Year in October or November of the current year and finish by the following October. For example, a series in Florida or Texas may wish to begin the 2014 Divisional Season as early as October 2014, carrying the 2014 points through to the 2014 season. All rules for the upcoming Competition Year will apply to Divisional Series beginning their season prior to the December 20 Tech Manual effective date.

### **805.11 DIVISIONAL DEADLINE:**

All Divisional Series must be completed by October 10, 2014. No exceptions. WKA recommends that the series be completed by the last weekend of September 2014 to allow for rain dates (or other circumstances) within the first two weekends of October.

### **805.12 DIVISIONAL FINAL RESULTS DEADLINE:**

All 2014 Divisional Series final points and accounting requirements must be received at the WKA Office no later than October 21, 2014.

## **806 DIVISIONAL CLASSES – SPRINT**

### **806.4 NATIONAL VS. DIVISIONAL CLASS STRUCTURES:**

Where a National class offers more than a single weight category, such as Lite and Heavy or Lite, Medium, and Heavy, the Divisional Series may offer only a single weight category agreed upon by the Series, with the weight set in between the National weights. Participants may then designate to which National weight class they wish their eligible transfer bonus points to be applied. The Divisional Series must notify the WKA office in writing which National class the Divisional points should be transferred to for the competitor at the time the second Divisional race results are sent to WKA, and the class must also be recorded on the final Divisional points tabulations. If the Divisional Series sets the class at a specific weight (and not an in between weight, i.e. in between light and heavy) the bonus points will transfer to the specific class (i.e. Div class is Briggs Spts 1 at 265 lbs. = Briggs Spts 1 Heavy National class transfer).

### **806.5 DIVISIONAL VS. NATIONAL CLASS STRUCTURES:**

If the Divisional Series chooses to split the weight of a National class (i.e. Briggs Lite and Briggs Heavy whereas WKA offers only Briggs), the Divisional Series must notify both WKA and the participants that only one class will transfer points. The Divisional class that most closely matches the WKA National class will be determined as the transfer class. This is not the participant's decision. The Divisional Series must notify the WKA office in writing which National class the Divisional bonus points should be transferred to. The other class will be a Local Option Class.

### **806.7 REPORTING OF CLASSES:**

Classes are to be reported to WKA using nationally recognized class names as published in this manual.

### **806.9 CLASS STRUCTURES - COMPETITOR RESPONSIBILITIES:**

Not all nationally recognized WKA National classes are offered within the class structures of each Divisional Series. It is the competitor's responsibility to check before the start of the Divisional Series season to determine which classes are transfer classes. In classes where transfer declarations are required, it is the competitor's responsibility to complete and turn in the Divisional Series Class Transfer Declaration for National Points slips to the Divisional Series registration personnel by the close of registration of the second Divisional Series race. WKA encourages each Divisional Series to include as many of the National classes as possible.

### **806.10 DIVISIONAL CLASS LISTINGS:**

The Divisional classes must be listed on the Divisional schedule at the beginning of the racing season and must be recognized by the Divisional Series with awards.

## **807 HOW DIVISIONAL POINTS ARE CALCULATED – SPRINT**

### **807.1 MEMBERSHIP REQUIREMENTS:**

Only current WKA Members in good standing are eligible to accrue Divisional bonus points. A non-member wishing to compete in a Divisional Series event may do so by purchasing a Temporary Membership from the Divisional Series registration personnel. The fee for Temporary Memberships is published on the application and is per Divisional event. An event is considered to be practice and one complete round of classes. If two complete rounds of classes are offered in the same weekend, two Temporary Memberships are required. The event fee is to be paid to WKA at the conclusion of the event. Temporary members are eligible to receive race awards but NO merchandise and NO points. Their finishes neutralize the points for the position he or she finished. (EXAMPLE: A Temporary Member finishes 5th in a Divisional event. All other finishers ahead and behind are regular WKA members, 1st thru 4th receive normal points and 6th and beyond receive normal points for those positions. No 5th place points are awarded for the race.) (See Section 102.4 for additional Temporary Membership rules.)

### **807.3 DIVISIONAL POINTS SCHEDULE / PROVISIONS:**

All Divisional events will use the National points schedule as published in Section 800.3 and observe all points provisions stated in Section 800

### **807.5 DISQUALIFICATIONS & POINTS:**

If a driver is disqualified for unsafe driving or for failure to pass post-race weight or technical inspection, the driver may count the race as a "drop race." If a driver is disqualified for unsportsmanlike conduct, the race may not be dropped and will be counted as a zero. (For more information, see Section 105 GENERAL RULES OF CONDUCT.) If the driver is disqualified for the use of counterfeit or re-manufactured OEM parts, the race may not be dropped and will be counted as a zero. If a driver is disqualified for repeated violations of any of the provisions above, the Race Director may determine that the race may not be dropped.

### **807.6 RACE RESULTS REPORTING DEADLINES:**

Individual Divisional race results must be reported to WKA within 5 days of each event. Current points standings must be submitted starting with the second series race and continue being submitted throughout the divisional season.



## **808 TRANSFER OF DIVISIONAL BONUS POINTS TO NATIONALS – SPRINT**

### **808.1.1 DIVISIONAL BONUS POINTS TRANSFERS:**

Drivers who compete in Sprint Divisional events are eligible for bonus points that they may transfer to their National Series point totals.

### **808.1.2 BONUS POINTS SCHEDULE:**

Drivers earn twenty (20) bonus points for competing in his or her first two (2) Divisional events and ten (10) additional points per event for competing in their third (3rd) and fourth (4th) events for a total of (40) bonus points within a specific series. Drivers can earn an additional of four (4) bonus points if they compete in all of the events offered in their Divisional Series for a total of 44 bonus points. (Example A: Divisional A offers 6 races and the competitor runs all 6 races; he/she will earn a total of (44) bonus points. Example B: Divisional A offers 6 races and the competitor runs only 5 races; he/she will earn a total of (40) bonus points.)

### **808.1.3 POINTS PLAN:**

Bonus points may only be earned in and transferred from a single Divisional Series. Bonus points may be earned in any Divisional class for which the driver is qualified and transferred to any National class in which the driver is competing. To receive the bonus points in a class other than the class entered, the driver must declare at registration the class to which points are to be transferred and complete a Regional Transfer Slip. Drivers must compete in a minimum of two (2) Divisional events for the bonus to be applied. Drivers must also meet the National Series minimum participation requirement to be credited with bonus points.

### **808.1.4 BONUS POINTS FOR MULTIPLE CLASSES:**

Bonus points from a single Divisional event for two or more National classes require entry in two or more Divisional classes.

### **808.1.5 PARTICIPATION REQUIREMENTS:**

To receive the bonus points, the driver must take a competition green flag and must not be disqualified.

### **808.1.6 RAIN-OUTS:**

Bonus points will be awarded at rained-out events. However, drivers must be present at the event, purchase a pit pass, and enter the classes in which they wish to earn Bonus Transfer Points. Drivers who pre-enter but do not attend the event will not be eligible for the bonus points.

### **808.1.7 PARTICIPATION IN MULTIPLE DIVISIONAL SERIES:**

Drivers may participate in multiple Divisional Series. They may transfer bonus points from both series, but they may not accumulate bonus points from more than one series in each National Class. (Example: Two Divisional Series each offer a single Animal class. A competitor can run Animal in both series and transfer the bonus points to National Animal Lite from one Divisional Series and National Animal Heavy from the other Divisional Series.)

### **808.1.8 RACE PARTICIPATION REPORTING:**

A list by National class of WKA members participating in the Divisional event must be submitted starting with the first race of the season and continue to be submitted throughout the Divisional season. The list must include the participant's WKA number.

### **808.2 NATIONAL MINIMUM TRANSFER REQUIREMENTS:**

To transfer Divisional Bonus Points for National standings, refer to Section 801 & 805.6.

## **809 DIVISIONAL SANCTION FEES & AWARDS PROGRAM - SPRINT**

### **809.1 DIVISIONAL SANCTION FEES:**

All entries at WKA sanctioned Sprint Divisional events will be subject to a per entry sanction fee. The divisional sanction fee will be determined for each competition year and will be published on the annual application / contract. This sanction fee shall be paid to WKA when the event report is submitted. The Divisional report should be submitted within one week after the completion of the event.

### **809.2 DIVISIONAL AWARDS PROVISIONS:**

At the conclusion of the Divisional season, the Divisional Series will be provided with a special list of karting-related merchandise with special purchase prices offered by participating manufacturer/sponsors. All Divisional series will be responsible for the purchase of any awards items. The per entry sanction fee is WKA's portion for administrative costs and is not applicable to awards.

### **809.3 DIVISIONAL AWARDS:**

The Divisional Series is responsible for all event and year end awards. WKA has no responsibility for Divisional Series awards.

### **809.3.1 DIVISIONAL AWARDS DISTRIBUTION:**

The Divisional Series may provide awards and merchandise at its discretion. At the conclusion of the season, the Divisional Series will be provided with a list of karting-related merchandise with special purchase prices offered by participating manufacturer and sponsors.

### **809.3.2 DIVISIONAL AWARDS MINIMUM REQUIREMENTS:**

The Divisional Series may establish a minimum number of events in which a competitor must participate in order to earn year-end awards. The Series may also establish a minimum entry count by class for awards recognition. These stated event and series awards minimums have no bearing on National Bonus Transfers. See Section 805.6 & 808.1 for transfer requirements.

## **810 ESTABLISHING A ROAD RACING REGIONAL POINTS SERIES**

### **810.1 REGIONAL APPLICATION DATE:**

Any current WKA track(s) or Regional Committee representing the tracks in a series may apply for Regional Series status. Applications must be submitted to the WKA Office by March 18, 2015. Submission of application does not guarantee approval of a series petition.

### **810.2 REGIONAL SCHEDULE CHANGES:**

Regionals must provide the WKA Office with any scheduling changes (deletions or additions) in a timely manner, so every effort can be made to publish such changes on the WKA web site and in a Pit Board announcement prior to the affected date(s).

### **810.3 REGIONAL TRACK REQUIREMENTS:**

All Regional event host tracks have the choice of applying for sanctioning approval by WKA and use of the Track Benefit Program or insuring the Regional event through another carrier. All Regional Series tracks opting for the WKA Track Benefit Program must apply for sanctioning by the WKA before May 4, 2015. Tracks failing to apply for sanctioning approval by this date will be subject to removal from the Regional Series schedule for that season. Any track using an insurance carrier other than WKA may do under the following conditions. 1) Coverage shall be equal or greater than the WKA program; 2) WKA is listed as an Additional Insured on the event policy; and 3) a copy of the insurance certificate is received at WKA 30 days prior to the event.

### **810.4 REGIONAL SERIES RAIN OUTS:**

For the 2019 season, Regional Series will be allowed to schedule one rain date to make up a previously rained out event. Said date must be declared with the Regional Application. If a rain date is not possible, refer to Section 803.7 for Road racing "Rain Out" Points provisions.

### **810.5 REGIONAL SCHEDULE GUIDELINES:**

All efforts should be made to schedule Regional races around National races. The WKA Office is the only one who can authorize conflicting race dates.

### **810.5.1**

All efforts should be made to schedule regional events around neighboring events. WKA retains the right to approve or disapprove specific regional dates should conflicts arise.

### **810.6 REGIONAL SCHEDULE DEADLINES:**

All Regional Series must be completed by October 10, 2014. No exceptions. WKA recommends that the series be completed by the last weekend of September, 2014 to allow for rescheduling of rain dates (or for other circumstances) within the first two weekends of October. There is no grace period.

### **810.7 REGIONAL FINAL RESULTS DEADLINE:**

All 2014 Regional Series final event results must be provided to the WKA Office no later than October 21, 2014.

## **811 ROAD RACING REGIONAL SERIES CLASSES**

### **811.1 REGIONAL CLASS STRUCTURES:**

All efforts should be made to offer all National classes at the Regional races. However, classes may be modified to best fit the Regional's needs. When this occurs, the Regional track/club MUST submit these class crossovers to WKA for approval first.

### **811.2 REGIONAL CLASS STRUCTURES - COMPETITOR RESPONSIBILITIES:**

Not all recognized WKA National classes are offered within the class structures of each Regional Series. It is the competitor's responsibility to check before the start of the Regional Series season as to which classes are transfer classes.

## **812 HOW ROAD RACING REGIONAL POINTS ARE CALCULATED AND TRANSFERRED**

### **812.1 MEMBERSHIP REQUIREMENTS:**

Only current WKA members in good standing are eligible to accrue Regional/Divisional points. A non-member wishing to compete in a Regional/Divisional Series event may do so by purchasing a temporary membership from the Regional Series registration personnel. The fee for said membership is published on the application and is per each Regional event. An event is considered to be practice and one complete round of classes. If two complete rounds of classes are offered in the same weekend, two Temporary Memberships are required. In addition to the temporary membership form, the applicant is required to complete a license endorsement application documenting the driver's racing history and meet all licensing requirements for classes he/she is registering for. Temporary Membership fees are to be paid to WKA at the conclusion of the event. The Temporary Member is eligible to receive race awards but receives NO merchandise and NO POINTS and neutralizes the points offered for the position he or she finished. (EXAMPLE: A temporary finishes 5th in a Regional points event. All other finishers ahead and behind are regular WKA members, 1st thru 4th receive normal points and 6th, etc., receive normal points for that position. No 5th place points are awarded for the event.) The use of Temporary Memberships is required at WKA insured Regional events only.

### **812.3 REGIONAL POINTS TRANSFERS:**

Drivers who compete in Regional Road Racing events are eligible for bonus points. A driver earns fifteen (15) bonus points per event for competing in his or her first two Regional events, five (5) additional points for competing in three Regional events, and five (5) additional points for competing in four Regional events, thus a maximum of 40 bonus points. Drivers must compete in a minimum of two Regional Events for the bonus to be applied. In each case the events can be in the same or different Regional Series. Bonus points may be earned at a Regional Road Racing event in any class (National or Local Option) for which the driver is qualified and transferred to any National class. To receive the bonus points in a class other than the class entered, the driver must declare at registration the class to which points are to be transferred and complete a Regional Transfer Slip. To receive the bonus

points, the driver must grid and weigh, and must not be disqualified. Bonus points will be awarded at rained-out events. However, the driver must be present at the event and purchase a pit pass. Drivers who pre-enter but do not attend the event will not be eligible for the bonus points.

### **812.4 REGIONAL POINTS PROVISIONS:**

All points provisions stated in Section 363 and 800 of the current Technical Manual apply to Regional point calculations.

### **812.5 DISQUALIFICATIONS & POINTS:**

If a driver is disqualified for unsafe driving or failure to pass post-race weight or technical inspection, the driver may count the race as a "drop race." If a driver is disqualified for unsportsmanlike conduct, the race may not be dropped and will be counted as a zero. (For more information, see Section 105 GENERAL RULES OF CONDUCT.) If the driver is disqualified for the use of counterfeit or re-manufactured OEM parts, the race may not be dropped and will be counted as a zero. If a driver is disqualified for repeated violations of any of the provisions above, the Race Director may determine that the race may not be dropped.

### **812.6 REGIONAL RESULTS REPORTING:**

At the completion of each Regional race, the Regional Series must submit race results of their Series to the WKA Office. All results must reflect the finishers name as it appears on their WKA Membership card and WKA Member number.

## **814 ROAD RACING REGIONAL SANCTION FEES & AWARDS PROGRAM**

### **814.1 REGIONAL SANCTION FEES:**

All WKA sanctioned Regional events will be subject to a per event sanction fee. The Regional sanction fee to be determined for each competition year and will be published on the annual application / contract. The sanction fees shall be paid to WKA when the event report is submitted. The event report must be submitted to the WKA office within two weeks after the completion of the event.

### **814.2 REGIONAL AWARDS:**

The Regional Series is responsible for all event and year end awards. WKA has no responsibility for Regional Series awards.

#### **814.2.1 REGIONAL AWARDS DISTRIBUTION:**

The Regional Series may provide awards and merchandise at its discretion. At the conclusion of the season, the Regional Series will be provided with a list of karting-related merchandise with special purchase prices offered by participating manufacturer and sponsors.

#### **814.2.2 REGIONAL AWARDS MINIMUM REQUIREMENTS:**

The Regional Series may establish a minimum number of events in which a competitor must participate in order to earn year-end awards. The Series may also establish a minimum entry count by class for awards recognition. These stated event and series awards minimums have no bearing on National Bonus Transfers. See Section 812.3 for transfer requirements.

## **815 ANNUAL CHASSIS AWARDS:**

### **815.1: ANNUAL CHASSIS AWARDS:**

Each year the World Karting Association recognizes the chassis manufacturers with the highest number of wins in each racing series. To earn points toward the Annual Chassis Awards, wins in the main event, i.e., feature or final, in classes with three or more competitors earn one point. Wins in classes with two or fewer entries do not count toward the award. The chassis manufacturer with the highest number of points in each series is recognized with the Annual Chassis Award in that series. In the event of a tie for first place, the chassis manufacturer that earns more second-place finishes will be awarded the championship. In the event there is still a tie, the chassis manufacturer that earns more third place finishes will be awarded the championship.





# 2023 TECHNICAL MANUAL

## Kid Karts

# 900

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### 905 ENGINE SPECIFICATIONS

## 900 KID KARTS

### 901 SAFETY AND EVENT FORMAT

#### 901.1 SAFETY:

Karts must pass pre-race technical inspection before being allowed " on track.

#### 901.1.1 CHEST PROTECTORS:

Chest protectors meeting SFI Specification 20.1 are mandatory for all Kid Kart drivers. Chest protectors are not required for Kid Champ Kart drivers.

#### 901.1.2 DRIVERS MEETING:

Kid Kart driver / parent meeting will be held before event.

#### 901.1.3 TRAINING EVENT FORMAT:

Training event will be of nine (9) lap duration. Event will be from a standing start, two abreast. Line up will be by draw. The training race will proceed under green, barring the need for a yellow or red flag for three (3) laps. The yellow flag will be displayed at the beginning of the fourth (4th) lap. The field will proceed at reduced speed, single file, and will maintain position for two laps. The green flag will be displayed at the beginning of the sixth (6th) lap. Green flag conditions will prevail, barring the need for a yellow or red flag, for four (4) laps. The training event will be white flagged at the conclusion of lap eight (8) with the checkered flag being given at the conclusion of the ninth (9th) lap. Awards may be given out at the completion of the event. All participants will proceed to the scale / tech compound (or other designated area) for a critique of the event. Official weigh-in is not necessary but may be done for training purposes.

### 902 KID KART CHASSIS SPECIFICATIONS

#### 902.1 CHAIN GUARD:

Chain guard is to completely cover chain when viewed from above.

#### 902.2 CHAIN & GEARING

##### 902.2.1 COMER C51:

#219 chain, 10 tooth driver, 89 tooth rear sprocket.

##### 902.2.2 BRIGGS & STRATTON LO206 KID KART ENGINE:

17 tooth driver, 57 tooth rear sprocket.

#### 902.3 CHASSIS DESIGN:

No offset karts. Seat must not be offset beyond outside edge of left frame rail. Also see TM section 263.01 for Gold Cup Kid karts.

#### 902.4 WHEELBASE:

Minimum 29 ", maximum 35.5".

#### 902.5 WIDTH:

Front, maximum 40 ", as measured to outside of rim / tire (no min.) Rear minimum 39", maximum 42" as measured to outside of rim / tire.

#### 902.6 REAR BUMPER:

Continuous loop shaped with vertical or angled bracing connecting upper and lower loop rails. Bumper must protect rear tires.

#### 902.7 STEERING & SEAT HEIGHT:

Maximum 20 ". Seat height minimum 12 ".

#### 902.8 BODYWORK:

Side pods or double nerf bars and nose cones are mandatory.

#### ++902.9 TIRES:

Bridgestone YLC or YPC 10 x 4.50 - 5. Maximum rear tire circumference, 33 1/4"

#### 902.10 WEIGHT:

Official weigh-in optional. Local ruling dependent upon physical size of class participants. Suggested weight 125 lbs. to 150 lbs.

## 904 KID KART SPECIFICATIONS

#### 904.1 CHASSIS:

Champ Kid Karts utilize the Junior Sportsman Champ Kart rules with the exceptions listed below. See Section 487 for the Junior Sportsman Champ Kart specifications.

#### 904.2 TIRES:

See Sections 413.19 and 263.1.

#### 904.3 GEAR RATIO:

15 tooth driver, 65 tooth sprocket

#### 904.4 CHAIN:

#35

#### 904.5 INSTRUMENTATION:

No gauges or data loggers of any kind including tachometer, temperature, speed.



**904.6 BODYWORK:**

Bodywork on the Champ Kid Kart should be reduced in size from the standard Junior Sportsman Champ Kart to ensure that the driver has adequate visibility. A clear windshield constructed of clear plastic material such as Lexan or other polycarbonate sheet must be added to the cowl section at a size of 12" x 12" minimum, at a height of approximately the driver's eye level.

**904.7 SEAT:**

The seat should be located forward and up from the normal position relative to the steering wheel to provide for driver control.

**904.8 PEDALS:**

The pedals should be located back to position them such that the driver can easily reach and operate them.

**904.9 MINIMUM WEIGHT:**

150 lbs. kart & driver

**905 ENGINE SPECIFICATIONS**

See Section 621 for Comer C51 and Comer C52 engine specifications. See Section 709 for Briggs & Stratton LO205 Kid Kart engine specifications

See Section 714 for Subaru Robin EX13 engine specifications.

# NOTES



# **2023 TECHNICAL MANUAL**

## **West Coast Regulations**

# **1000**

### **1000 - WKA WEST REGULATIONS**

These regulations are available at [www.WorldKarting.com/technical-docs](http://www.WorldKarting.com/technical-docs)

**1000**



# 2023 TECHNICAL MANUAL

## WKA America Regulations

# 1100

### WKA AMERICA REGULATIONS

WKA America is a new program that provides structure to WKA local tracks, with class structures and regulations printed in its own section of the WKA Tech Manual, section 1100. The program also provides a National Program for racers to participate in, where they can support their local tracks, while accumulating points to compete against other WKA America racers in other locales around the country.

WKA will maintain points for the regions, provide the regions with Regional Class Champion Trophies, and promote notable regional events/races weekly throughout the year. Additionally, WKA will organize one end-of-year WKA America Grand Nationals, scheduled for Fall, 2020 at Whiteland Raceway Park, in Whiteland, Indiana, for these grass roots racers to participate in, with the famed WKA Eagles as the Grand National Champion Award.

### 1100 – WKA AMERICA

#### 1110 – Tracks/Promoters

Tracks/Promoters must register with WKA by February 1, 2020 as a participant of the the WKA America National Program. There is no additional fee to a track/promoter to register, however the track/promoter must be a WKA approved facility/series. WKA America Tracks/Promoters must identify a minimum of two, maximum of four, races of their regularly scheduled races as an Official WKA America Regional Event, and identify classes they are offering in the program from the below list of classes, (section 1120). Tracks/Promoters must submit the results for the WKA America Regional Events within 5-days of the conclusion of each WKA America Regional Event to the WKA Office to be counted into the points structures for their region. Tracks/Promoters may select their event format that best suits their region, or refer to the WKA Tech Manual for event formats, sections 100 and/or 200 and/or 250. Additionally, My WKA Tracks/Promoters will adhere to Section 100 of the WKA Tech Manual, unless deviations outlined in the WKA Track Application are approved by the WKA Office, prior to the season's first event.

#### 1120 – Classes – Sprint

<u>Briggs 206</u>	<u>IAME</u>	<u>ROK</u>	<u>Rotax</u>	<u>Kid Kart</u>
Cadet	Micro Swift	Micro ROK	Micro	Comer
Junior	Mini Swift	Mini ROK	Mini	Honda
Senior	Jr KA100	Jr VLR 100	Junior	
Masters	Sr KA100	Sr VLR100	Senior	
	Master KA100	Master VLR100	Master	
	Jr X30	Jr ROK GP	DD2	
	Sr X30	Sr ROK GP	DD2 Master	

WKA Tech Manual governs the technical regulations for the above classes, except specific Kart Numbers, unless indicated below:

Briggs LO206 Classes per Briggs & Stratton 206 [Technical Regulations](#)  
ROK Classes per Rok Cup USA Technical Regulations, [www.rokcupusa.com](http://www.rokcupusa.com)  
[Rotax Classes per Rotax Stars & Stripes Technical Regulations](#),  
[www.racerotax.com](http://www.racerotax.com)

IAME and Kid Kart Classes per WKA Technical Regulations, sections 200, 500, 600, and 900

#### 1130 – Participants

Participants in the WKA AMERICA Program must be valid WKA members prior to their first participation in the WKA America Regional Program. Membership can be obtained by the My WKA Region Track/Promoter.

#### 1140 – Point Structures

Points for each class will be awarded according to Section 200 of the WKA Tech Manual.

#### 1150 – Protests and Appeals

WKA America Tracks/Promoters will establish their own Protest and Appeals Procedures, however, should competitors wish to Appeal further, Section 112 – Appeal Procedures apply, with a \$250 Appeal Fee, paid to the Track/Promoter.







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