



2019 TAG USA / TAG Racing Int. Speedway / Oval Technical Manual

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DISCLAIMER

It is the purpose of TAG™ Racing International and TAG™ USA is to create FAIR, FUN and SAFE racing™ programs on a worldwide basis within the Karting industry.

Use of these Rules and Regulations require Tracks, Clubs, Promoters or Series be sanctioned by the TAG™ Racing International / TAG™ USA Any other use is strictly Prohibited without the express written consent of the TAG™ Racing International / TAG™ USA

ANYTHING, WHICH IS NOT EXPRESSLY ALLOWED, IS FORBIDDEN!

TAG™ Racing International/TAG™ USA and its organization(s) Reserve the Right to Refuse any and all entries, membership and or corporate participation at any or all sanctioned or series events.

‘The rules and / or regulations set forth herein are designed to provide for the orderly conduct of racing events and to establish minimum acceptable requirements for such events. These rules shall govern the condition of all events; all participants are deemed to have complied with these rules.

NO EXPRESSED OR IMPLIED WARRANTY OF SAFTY SHALL RESULT FROM PUBLICATIONS OF OR COMPLIANCE WITH THESE RULES AND OR REGULATIONS. They are intended as a guide for the conduct of the sport and are in no way a guarantee against injury or death to a participant, spectator, or official.

Living Document

This is a “living document”, and as such is subject to revisions and changes as deemed necessary to continue the integrity of the TAG™ program.

2019 TAG USA – Speedway / Oval Class Structure

Speedway and Oval Class Structure

4 CYCLE JUNIOR I LITE Age 8 to 10 years - 250 lbs. - Methanol only - Approved engine: Briggs & Stratton stock 5hp only, with .425 inch maximum intake restrictor, no steering fairing allowed, maximum nose height 14 inches from ground level to top of nose, and Exhaust Silencer Required

4 CYCLE JUNIOR I HEAVY Age 8 to 10 years - 265 lbs. - Methanol only - Approved engine: Briggs & Stratton stock 5hp only, with .425 inch maximum intake restrictor, no steering fairing allowed, maximum nose height 14 inches from ground level to top of nose, and Exhaust Silencer Required

4 CYCLE JUNIOR II LITE Age 10 to 12 years - 265 lbs. - Methanol only - Approved engine: Briggs & Stratton stock 5hp only, with .500 inch maximum intake restrictor, no steering fairing allowed, maximum nose height 14 inches from ground level to top of nose, allowed and Exhaust Silencer Required

4 CYCLE JUNIOR II HEAVY Age 10 to 12 years - 280 lbs. - Methanol only - Approved engine: Briggs & Stratton stock 5hp only, with .500 inch maximum intake restrictor, no steering fairing allowed, maximum nose height 14 inches from ground level to top of nose, and Exhaust Silencer Required

4 CYCLE JUNIOR III LITE Age 12 to 15 years - 290 lbs. - Methanol only - Approved engine: Briggs & Stratton stock 5hp only, with .575 inch maximum intake restrictor, and Exhaust Silencer Required

4 CYCLE JUNIOR III HEAVY Age 12 to 15 years - 310 lbs. - Methanol only - Approved engine: Briggs & Stratton stock 5hp only, with .575 inch maximum intake restrictor, and Exhaust Silencer Required

4 CYCLE SENIOR LITE Age 15 years & up - 325 lbs. - Methanol only -Approved engine: Briggs & Stratton stock 5hp only, with Exhaust Silencer Required

4 CYCLE SENIOR MEDIUM Age 15 years & up - 345 lbs. - Methanol only -Approved engine: Briggs & Stratton stock 5hp only, with Exhaust Silencer Required

4 CYCLE SENIOR HEAVY Age 15 years & up - 365 lbs. - Methanol only -Approved engine: Briggs & Stratton stock 5hp only, with Exhaust Silencer Required

4 CYCLE SPORTSMAN Age 35 years & up - 365 lbs. - Methanol only -Approved engine: Briggs & Stratton stock 5hp only, with Exhaust Silencer Required

BRIGGS 206 NOVICE / Cadet Age 7 thru 10 years – 200 lbs. – 206 Junior engines with Carb Lock per 2019 TAG™ Tech Manual.- BS (#555728) Slide required with 4,100 RPM Rev Limiter Exhaust silencer required, **Pull starter** must be present and remain stock. chest protector is mandatory.

BRIGGS 206 SPORTSMAN Age 8 thru 10 years – 225 lbs. – 206 Junior engines with Carb Lock per 2019 TAG™ Tech Manual.- BS (#555735) “Purple” Slide required Exhaust silencer required, **Pull starter** must be present and remain stock. chest protector is mandatory.

BRIGGS 206 JR-1 Age 8 thru 12 years – 260 lbs. – 206 Junior engines with Carb Lock per 2019 TAG™ Tech Manual.- BS (#555733) “Red” Slide required Exhaust silencer required, **Pull starter** must be present and remain stock. chest protector is mandatory.

BRIGGS 206 JR Age 11 thru 15 years – 300 lbs. – 206 Junior engines with Carb Lock per 2019 TAG™ Tech Manual.- BS (#555734) “Blue” Slide required Exhaust silencer required, **Pull starter** must be present and remain stock. chest protector is mandatory.

BRIGGS 206 SR Age 15 years & up - 375 lbs. – 206 engines per 2019 TAG™ Tech Manual.. Exhaust silencer required, **Pull starter** must be present and remain stock

BRIGGS 206 MASTERS Age 30 years & up - 405 lbs. – 206 engines per 2019 TAG™ Tech Manual.. Exhaust silencer required, **Pull starter** must be present and remain stock

4 CYCLE JUNIOR ANIMAL Age 12 thru 15 years – 305 lbs. Briggs & Stratton Stock Animal 6.5hp w/.360 throttle stop maximum exhaust pipe length 24” may be one or two piece must be inside bumper. Alcohol only allowed. Exhaust silencers required. Aftermarket connecting rods are allowed, stock length only, chest protector is mandatory for JR participants

4 CYCLE SPRINT ANIMAL 370 Age 15 years & up - 370 lbs. - Alcohol only - Briggs & Stratton engines. Exhaust silencers required. Aftermarket connecting rods are allowed.

4 CYCLE SPRINT ANIMAL 385 Age 15 years & up - 335 lbs. - Alcohol only - Briggs & Stratton engines. Exhaust silencers required. Aftermarket connecting rods are allowed.

BRIGGS WORLD FORMULA JR Age 11 thru 15 years – 300 lbs. – World Formula Junior engines per 2019 TAG™ Tech Manual.- Exhaust silencer required. chest protector is mandatory.

BRIGGS WORLD FORMULA SR Age 15 years & up - 390 lbs. – World Formula engines per 2019 TAG™ Tech Manual.. Exhaust silencer required

BRIGGS WORLD FORMULA MASTERS Age 30 years & up - 405 lbs. – World Formula engines per 2019 TAG™ Tech Manual.. Exhaust silencer required

4 CYCLE SUPERSTOCK Age 15 years & up - 370 lbs. - Methanol only - Approved engine: Briggs & Stratton stock 5hp only, with any Tillotson HL (except HL334A) series carburetor with .900 inch maximum venturi diameter, any single piece intake manifold and Exhaust Silencer Required Auxiliary vacuum fuel pump, pulsed from the intake, is permitted.

BRIGGS LIMITED MODIFIED Age 15 years & up - 360 lbs. - Methanol only -Approved engine: Briggs & Stratton 5hp with any Tillotson HL-series carburetor with .850 inch minimum and .900 inch maximum venturi diameter, and Exhaust Silencer Required Auxiliary vacuum fuel pump, pulsed from the intake, is permitted.

4 CYCLE INTERNATIONAL NOVICE (CLONE) Age 7 thru 11 years – 225 lbs. – 6.5 clone engines per 2019 TAG™ Tech Manual.. ARC/.550" Blue Restrictor With stock Muffler, **Pull starter** must be present and remain stock chest protector is mandatory.

4 CYCLE INTERNATIONAL JR (CLONE) Age 11 thru 15 years – 305 lbs. – 6.5 clone engines per 2019 TAG™ Tech Manual.. Exhaust silencer required, **Pull starter** must be present and remain stock chest protector is mandatory.

4 CYCLE INTERNATIONAL SR (CLONE) Age 15 years & up – 360 lbs– 6.5 clone engines per 2019 TAG™ Tech Manual.. Exhaust silencer required, **Pull starter** must be present and remain stock.

4 CYCLE INTERNATIONAL MASTERS (CLONE) Age 30 years & up – 385 lbs– 6.5 clone engines per 2019 TAG™ Tech Manual.. Exhaust silencer required, **Pull starter** must be present and remain stock.

4 CYCLE INTERNATIONAL BULLDERS SR (CLONE) Age 15 years & up – 360 lbs– 6.5 clone engines per 2019 TAG™ Tech Manual.. Exhaust silencer required, Approved SFI certified billet aluminum flywheel only

4 CYCLE INTERNATIONAL STOCK APPEARING SR (CLONE) Age 15 years & up – 385 lbs– 6.5 clone engines per 2019 TAG™ Tech Manual.. Exhaust silencer required, Approved SFI certified billet aluminum flywheel only

TECUMSEH STAR Age 15 years & up 375 lbs. - Methanol only - Approved engine: Tecumseh 10hp with Exhaust Silencer Required

FORMULA-OHV Age 15 years & up - 360 lbs. – Gas only - Approved engines are overhead valve 4 cycle engines as follows: Kohler C6 XKE, Briggs & Stratton Intek 5.5 and Animal, Honda GX-200 and Tecumseh OHH55 – Exhaust Silencer Required

BRIGGS CHAMP KART Age 15 years & up - 410 lbs. - Methanol only - Approved engine: Briggs & Stratton stock 5hp only. Exhaust Silencer Required

JUNIOR CHAMP KART Age 12 to 15 years - 345 lbs. - Methanol only - Approved engine: Briggs & Stratton stock 5hp only. Exhaust Silencer Required

JUNIOR SPORTSMAN CHAMP KART Age 8 to 12 years - 315 lbs. - Methanol only - Approved engine: Briggs & Stratton stock 5hp only, with .425 inch maximum intake restrictor, Exhaust Silencer Required

KID KARTS* Age 5 to 7 years – Gas and oil only - Approved engine: Comer 50cc Box stock, unaltered, 1.8 HP, fixed jet carburetor, stock exhaust required, unaltered 89 tooth sprocket, maximum nose height 14 inches from ground level to top of nose.

YAMAHA SPORTSMAN LITE Age 15 years & up - 340 lbs. - Gas and oil only - Approved engine: Yamaha KT100S only, with RLV SSX exhaust. approved air box required.

YAMAHA SPORTSMAN HEAVY Age 15 years & up - 365 lbs. - Gas and oil only - Approved engine: Yamaha KT100S only, with RLV SSX exhaust, approved air box required.

UNLIMITED 2-CYCLE Age 16 years & up – Fuel Open – a) 100cc - 315 lbs, b) 135cc - 345 lbs, c) up to 150cc - 360 lbs, Any reciprocating, normally aspirated, single-cylinder 2-cycle engine up to 150cc without gearbox. approved air box required.



TAG USA / TAG Racing International

Speedway / Oval Rules

General Rules & Regulations

The following rules are as stated "General". There may be additional rules and regulations for each track and event. It is your responsibility to be familiar with the rules for each event that you participate in. These rules should be available in registration. If you do not understand a rule please ask a race official.

Spirit and Intent

Even if you are new to karting you have heard the term "spirit and intent". It is the concise description of how karting is run, pure, simple and undeniable. It is not some politically correct catch phrase that has its day and then fades away. It is the law governing the sport of karting for the last 50 years. It means that you may be judged based on your perceived spirit and apparent intent for your conduct at any time at the track. Indeed, you should judge yourself using the same criteria. The law of spirit and intent comes into effect when race officials are encountered with facets of karting not specifically addressed in the rulebook. At this point, officials must make decisions based not only on fact, but also on whether the infraction was a clear case of attempting to controvert the spirit of the event. It is many times the hardest decision for an official to make. Nobody likes to invoke the spirit and intent rule.

We urge you avoid causing a spirit and intent ruling by being fully aware of all the regulations that apply to you and your kart. It is impossible to write a rule for every aspect of karting. Before attempting modifications to your kart that are not specifically addressed in the rulebook talk to the technical inspector and clarify the requirements. You should "intend" to compete successfully, but if your "intent" is winning by circumventing the rules, then you should reconsider your involvement in this sport.

Series Sticker

All karts entered in a series race will be required to display, in plain view, a legible series sponsor sticker.

Driver Eligibility & Requirements

- A. You must be entered in a class in order to practice in all TAG sanctioned events or have paid a separate practice only fee.
- B. You must be a TAG member, in good standing, in order to receive year-end awards.
- C. The kart is the official entry in the race. Once a lap has been made in a race with the entered kart, the kart cannot be changed without the permission of the race director.
- D. Relief Drivers must meet all class rule requirements and be approved by race officials.
 - a. Enduro: Driver of record must complete at least one lap of race and be scored.
 - b. Speedway: Driver of record must qualify kart. Relief driver may race in feature.
 - c. Sprint: Driver of record must take the green flag and weigh in during the 1st qualifying heat. Relief driver can take over for 2nd qualifying heat and feature.
- E. Minimum driver age is listed in all class structures. However, if during the racing season, the driver has a birthday that would make them old enough to move to an "older" class, they will have the option to move up at any time during the racing season, with the exception of the Novice class. If a driver chooses to move up to a senior class he may not move back to a junior class. All drivers must produce a current state photo I.D. card or certified birth certificate upon request. A minor's release is required for all persons under the age of 18.

Protest Procedure

All protests must be submitted and acknowledged by an official in registration within 30 minutes of completion of the race that is being protested or, in the case of a scoring protest, within 30 minutes after official results have been posted. Protests will not be accepted after 30 minutes. A protest can only be submitted by an entrant from the same class that is being protested, and can only be signed by one entrant. Once the official has accepted a protest, additional protests for the same infraction will not be accepted. Official protest

forms will be made available in registration and post tech. Any national race disqualification or suspension can be appealed in writing to the TAG Racing International advisory committee.

Points & Scoring

- A. To receive year-end awards in each class the entrant must be a TAG member, and pass post-tech.
- B. In the event of a tie in the year end point total, the tie will be broken by the highest finishing position of the last race either or both drivers competed in.
- C. Entrants will be required to place a scoring transponder on their kart in a location that is recommended for proper signal strength. It is the driver’s responsibility to securely fasten the scoring transponder in a proper location prior to entering the track.
- D. Disqualification: In the event that a driver is disqualified from an event for unsportsmanlike conduct on or off the racetrack he may NOT use that race as a drop race. If a driver is disqualified for mechanical failure on the track, improper driving, post-race engine, oil or fuel tech or at the scales in post tech he may use that as a drop race. However, if repeatedly disqualified for any reason the driver may be subject to penalty of not being able to use a race as a drop race.
- E. To receive points you must leave the grid under power, take the green flag, sign at the scales when you are weighed in and pass post tech.
- F. In the event of a rainout all entrants will receive 200 pts. plus the number of entries in the class.
- G. The following point method will be used for calculating season points in all divisions:

Finish	Points	Finish	Points	Finish	Points	Finish	Points
1 st	200 + # of entries	9 th	90 + # of entries	17 th	45 + # of entries	25 th	15 + # of entries
2 nd	175 + “ “	10 th	80 + “ “	18 th	40 + “ “	26 th	12 + “ “
3 rd	155 + “ “	11 th	75 + “ “	19 th	35 + ” “	27 th	9 + “ “
4 th	140 + “ “	12 th	70 + “ “	20 th	30 + “ “	28 th	6 + “ “
5 th	130 + “ “	13 th	65 + “ “	21 st	27 + “ “	29 th	3 + “ “
6 th	120 + “ “	14 th	60 + “ “	22 nd	24 + “ “	30 th	0 + “ “
7 th	110 + “ “	15 th	55 + “ “	23 rd	21 + “ “		(All remaining finishers will receive entry points)
8 th	100 + “ “	16 th	50 + “ “	24 th	18 + “ “		

Miscellaneous Rules

- A. The pit lane will be a yellow flag condition and a safe speed will be maintained. No passing will be allowed entering the pit lane. Passing and/or unsafe driving in the pit lane will result in disqualification.
- B. Data acquisition is legal in all classes.
- C. Radio communication is legal in all classes except novice.
- D. Approved exhaust silencers or mufflers are mandatory in all classes.
- E. The use of tire warmers is not legal in speedway and oval racing.
- F. Drivers are responsible for their pit crewmembers. Unacceptable behavior may subject the driver to disqualification from an event. Verbal and/or physical abuse or threats directed at any individual at any event will subject the offender to immediate ejection from the event and/or a 1-year suspension.
- G. All individuals entering the TAG event site must sign and execute all insurance related documents as prescribed for that event.
- H. Drivers meetings are mandatory. If you are unable to attend the drivers meeting you are required to check in with the race director.
- I. Vendor fee of \$100.00 per event will apply to anyone selling product or services at any and all series events with the exception of series or class sponsors.
- J. TAG USA, Series its series and organization(s) reserve the right to refuse any and all entries at any event(s).
- K. TAG USA, its series and organization(s) reserve the right to refuse any and all entries at any event(s).
- L. The clock will start when the flag drops for the first class on the grid in a multi-class race, not each individual class.
- M. All Championship Series classes have an open tire rule except if otherwise specified.
- N. Dual brake system will NOT be required in all classes but it is suggested for road racing. However, a dual brake system is required on all karts powered by 125cc engines or larger except if otherwise specified. TAG Brake rules per TAG USA.
- O. In the event of rain or wet track conditions, the race will be declared rain points and all entered competitors will be issued 200 points. If the track is usable, the race time slot will be offered to the competitors to compete for trophies ONLY. This will allow the competitor to gain wet track experience at his or her discretion

Flags

Checkered Flag

The race is finished. Slow to a moderate pace for exiting the track. Proceed slowly to the post tech area.

White Flag

One lap to go in the race.

Black Flag

Racing is not a contact sport, although it is understood some inadvertent contact will occur, intentional and avoidable bumping, nerfing, pushing, etc., will be grounds for disqualification. You may be warned only once with a rolled black flag, second warnings will result in a waved black flag.

Rolled & pointed: A warning about driver conduct

Waved Black Flag: You must exit the track immediately you have been disqualified for a driving infraction. If a participant ignores the black flag along with his/her number being displayed by the flagman, that person will be disqualified for that day.

Meatball Flag (Black with a red ball): Will be thrown for technical or mechanical problems, requiring the driver to stop for consultation. The flag will also be used for a pushing stop & go.

Transponder Flag (Black with a yellow "X" or rectangle): Will be thrown for transponder problems if scoring personnel find a competitors transponder is not being picked up.

Red Flag

The race has been temporarily halted. Slow to a safe stop, drivers shall proceed safely to the starting grid under direction of the corner workers and flagman.

If the red flag occurs prior to the halfway point in a race it will be restarted. Restarts will be in the same order as the last completed and scored green flag lap prior to the red flag. If the red flag occurs at or after the halfway point it will be a completed race and the results will be the last completed and scored green flag lap.

Any kart or driver flipping over (turning over) causing a red flag will not be allowed to restart. Any driver leaving the racetrack, due to an accident, by ambulance will not be allowed to restart. Any driver causing a red flag may be subject to not restarting or disqualification, as determined by the race director. Any kart involved in an accident whose driver is transported to a health care facility is subject to post tech. If driver does not return from the health care facility prior to the end of post tech, scales will be waived.

Green Flag

The racetrack is clear for racing.

Blue w/ Orange Stripe Flag

Faster traffic is about to overtake you; this is not the time to try to protect your position. You are to allow those attempting to pass to do so safely and without difficulty. If you continue to block the process of the lapping karts, you may be black flagged and pulled off the course.

Yellow Flag

There is a need for caution. There is something in the track ahead and you should proceed with caution. If the flag is waving there is a problem in that corner. No passing will be allowed in the corner when a waving yellow flag is displayed. If the flag is a standing yellow flag there is a problem in the next corner or there is debris in the straightaway. When the yellow flag is displayed at the starters stand this is a full course yellow slow down no passing until the green flag is displayed again.

NOTE: Flags can vary from track to track. If there is a variation from the above it will be brought up at the drivers meeting.



Section 1 - Foreword and Introduction

The following document and those that support it are authored with one intent – the clarification and consolidation of the technical performance rules that govern kart racing. As such, the primary issues dealt with in this manual are those metrics from which a direct performance gain may be achieved by violation. Kart standards are also addressed in this manual though no implication of safety is made or warranted if the rules specified herein are adhered to. Personal conduct is not directly addressed in this manual as it is expected that the competitor, builder, inspector and administrator will conduct themselves in a manner conducive to orderly and proper results.

The sport of karting has always been governed by the rule of spirit and intent. No effort is made here to change that. No pretense is made that the documentation herein will cover every situation that can be encountered in technical inspection. The ultimate responsibility for chassis and engine legality lies with the competitor. Should the competitor encounter a situation that is not specifically addressed in this manual it is his responsibility to get clearance from the technical inspector *prior* to using the kart in a race. Should the technical inspector encounter a situation in post-race technical inspection that is not specifically addressed in this manual it is his responsibility to make a determination of legality based first on whether or not the modification represents a definable performance gain and ultimately on the spirit and intent of the competitor/builder. If, in the opinion of the technical inspector, the spirit or intent of the modification was clearly that of circumventing the rules to provide performance gain then he has the right to disqualify the competitor based solely on this criteria. When confronted with this scenario the inspector must weigh the decision carefully and use discretion, insight and integrity.

In all cases, where series specific rules contradict the rules specified herein the series specific rules shall have precedence. There is no expressed or implied warranty given here in regards to safety if the rules herein are adhered to and the authors and authorizers of this document are to be held harmless in any litigation or actions as a result of accident.

Section 2 - Metrology

Wherein this manual deals specifically with dimensional conformity to specifications some discussion regarding measurement and gaging is necessary. Field metrology is limited and handicapped by a number of factors including, but not limited to, available measuring instruments and environmental conditions. The inspector must give some consideration to measurement uncertainty especially when approaching a dimension's limits of acceptability. Especially when a dimension as measured exceeds its tolerance limits the inspector must ensure that the best and most accurate available method of measurement is being employed prior to a disqualification decision being made. *The inspector may take whatever steps he deems necessary to ensure proper results, including impound and inspection at another location. Method of measurement in all cases is at the sole discretion of the inspector.* The preferred method will be designated later in this manual under generic technical procedures. Standard industrial metrology techniques shall be used as a guideline for methods used in the field. All dimensions given in this manual will either be toleranced or designated as maximum or minimum. Limits of size are absolute and are not to be rounded to the nearest whole integer to facilitate acceptability; i.e. a .500 diameter max hole that actually measures .5001 is to be found out of tolerance and not rounded to .500. The exception to the limits of size rule is when measuring "nominal" sized tubing or bar stock. This material comes from the manufacturer with rather generous tolerances and this must be considered when inspecting same. If "nominal" is noted on the element in question, a tolerance of +/-1/32 inch is generally acceptable with consideration to spirit and intent.

Many of the inside (width of slot, diameter, etc.) dimensions found in this manual are listed as maximum. Wherever possible, a gage of maximum size shall be employed to measure these dimensions. For example, a .500 max diameter should be measured with a .500 gage pin. If the gage enters the feature in question it shall be found out of tolerance. For designated inside minimum dimensions a gage of minimum size shall be employed. For example, a .625 minimum diameter should be measured with a .625 gage pin. The gage must pass through the entire area in question with light, torsional, finger pressure. Perceptible drag on engagement is not reason for disqualification as long as full feature engagement may be achieved. All gages and measuring instruments must be calibrated to standards with a direct line of traceability to the National Institute of Standards and Technology a minimum of once per year. Visual checks of gaging should be performed periodically to ensure that damage has not occurred. Whenever possible, all inspections should be performed with components and gages at ambient temperature.

Section 3 - Pre-tech Requirements

1 Personal Safety Equipment

A. Head Gear

1. Full-face helmets designed for competitive motorsports use, that comply with Snell Foundation specifications M2005, SA2005, K98, K2005 or SFI 24.1, 31.1A, 31.2A, 31.1/2005, 41.1/2005, 41.2a or FIA 8860-2004 or Snell-FIA CMS/CMR2007 or newer are mandatory. SA rated helmets recommended for champ karts. Helmet must be available at pre-tech inspection. Helmets must be secured with a strap. Failure to do so will result in disqualification. A full visor, integral with the helmet, is mandatory.

B. Neck Brace

1. Collar-type, unaltered neck brace designed for motorsports use are mandatory in all sit up classes. Loss of neck brace during an event will cause a black flag with an orange circle “meatball flag” to be given to the driver losing the neck brace. He must immediately proceed to the pits, and may replace the missing neck brace and then return to the race or practice session.

C. Driver Apparel

1. Drivers are required to wear jackets made of leather, vinyl, abrasion resistant nylon, or equivalent, and full length pants. Gloves, socks, and shoes are mandatory. Nomex apparel is recommended for champ kart drivers.
2. If driver’s hair extends appreciably below the helmet it is mandatory that the driver wear a head sock or balaclava to prevent the driver’s hair from extending below the helmet.
3. Loose clothing, bandanas, scarves, hoods, loose belts, etc. are not allowed.
4. The use of Flak jackets or other chest protection devices is Mandatory in all Junior and Cadet classes and is strongly recommended in all classes.
5. All personal safety equipment is subject to, and shall be available for, pre-tech inspection.

2 Kart Requirements

A. General

6. The kart must be neat in appearance, in good repair, and show quality workmanship.
7. The kart must meet the requirements set forth in the TAG Tech manual for its particular class.
8. Rear view mirrors are allowed as long as they are mounted to the kart. No hand mounted mirrors allowed.
9. European style clevis snap pins shall be safety wired.
10. Single-Use fasteners/Nylocks must not be used on previously drilled bolts without secondary retention

B. Ballast

1. All weights added to the kart will be painted white and must be securely fastened to the kart with a minimum 5/16-inch diameter bolt with Fender washers on each side of the bolts. Any single weight weighing in excess of 9 pounds shall utilize a minimum of two 5/16-inch minimum diameter bolt with fender washers on both sides of the bolts.
2. All bolts used to fasten weights to the kart must be cotter keyed, safety wired, or double nutted.

C. Steering Components

1. All steering component bolts, and nuts, must be cotter keyed, safety wired, e-clipped or utilize single use Nylock Nuts
2. All steering component bolts, must be a minimum Grade 5 rating.
3. All rod ends must have universal type swivel joints and jam nuts.
4. Fasteners used on any component that will enable adjustment of camber, caster, etc. must be cotter keyed and/or safety wired.
5. Steering Shafts
 - A) Solid steering shafts shall be a minimum .625-inch diameter, made of cold rolled steel, and one-piece design. Welding the steering wheel or hub to the shaft is not allowed. Shaft extensions, and cutting and welding the shaft to alter its length is not allowed. The steering wheel must be secured to the shaft with a nut or cap screw in the axial position.
 - B) Hollow steering shafts shall be a minimum .700-inch diameter, with a minimum wall thickness of .070 inch, made of steel tubing, and one-piece design. Welding the steering wheel or hub to the shaft is not allowed. Shaft extensions, and cutting and welding the shaft to alter its length is not allowed. The steering wheel hub must be secured using a 5/16 inch minimum diameter bolt through the axis of the shaft.
6. Steering Wheels
 - A) Steering wheels may be circular, with a ten inch minimum diameter, and a minimum of three spokes.
 - B) Steering wheels may be of the butterfly type, with a ten-inch minimum diameter, and four spokes, and a minimum grip length of five inches on each side.

D. Wheels and Tires

1. Pneumatic tires designed specifically for racing only.
 - A) Minimum 9.0-inch diameter. Maximum 12.5-inch diameter.
 - B) Maximum width, mounted on wheel 10.375 inches
2. Tires must be available on the general market for a minimum of sixty days prior to use in an TAG sanctioned event.
3. Wheel balancing weights shall not exceed ¼ ounce each.
 - A) It is recommended that additional tape be placed over stick on type weights.
4. “G-Rings” or lateral supported wheels are not permitted.

E. Wheel Hubs and Axles

1. Wheel hubs and axles shall be constructed of metallic materials.
2. Rear axles shall be one-piece design, driving both wheels.
 - A) Either solid or hollow axles are allowed
 - B) .984-inch minimum diameter. 2.00-inch maximum diameter.
 - C) Axles over 1.375 inch diameter shall be constructed of ferrous material.
 - D) Snap rings or similar fasteners are required at both ends of the rear axle, and must be safety wired.
 - E) Axle stiffeners are allowed as long as they are secured by cotter key, circlip, or through bolted.
 - F) Axle may not protrude beyond the outside of rim and tire.
 - G) Any device that allows the rear wheels to rotate at different speeds is not allowed.
3. Front axles
 - A) Front axle nuts must be secured with safety wire, cotter keys, circlips or berry clips.
 - B) Ground ball or roller type bearings only, and must be adjusted so there is not excessive play. Split race type bearings are not allowed.
 - C) The spindle axle may not protrude beyond the outside of rim and tire.

F. Brakes

1. Karts must, at minimum, have a braking system capable of braking both rear wheels equally and adequately.
2. All Karts must have a tether attached from the master cylinder to the brake pedal in addition to the brake rod
3. Classes of 125cc displacement and over require the use of dual braking systems unless otherwise stated, one front, and one rear or Dual rear. This shall consist of two independent and separate systems, operated by separate master cylinders.
 - A) One system must be fully functional if either system fails.
4. All brake system fasteners, including pedals, clevis pins, and master cylinder roll pins, must be safety wired or cotter keyed e-clipped or utilize Single use nylock nuts . If safety wiring or cotter keying is infeasible, as in the case of some brake pad fasteners an appropriate thread locking compound shall be use to prevent loss of the fasteners.
 - A) All-metal locking type nuts to secure the brake disk or drum to the hub are allowed in lieu of safety wire or cotter pinning.(NYLOCKS NOT ALLOWED)
 - B) If the pedal is mounted to the front bumper, the bumper must be welded to the frame, or through bolted or pinned, and the through bolts or pins shall be safety wired or cotter keyed.
 - C) Hydraulic brake fittings shall be tight and leak free. Hydraulic brake lines shall be routed in a fashion, so as to not wear through, or be pulled loose.
 - D) Master cylinder actuating rod must be .250-inch diameter minimum, or equal quality cable with positive stops on both ends.
5. No carbon fiber components allowed.

G. Driveline Components

1. Clutches are mandatory in all classes except those designated as direct drive.
 - A) Oil bath clutches are allowed as long as they are sealed to prevent leakage.
 - B) If outboard clutch mounting is used, a third bearing support or guard to contain the clutch in the event the crankshaft breaks, is mandatory. Clutches mounted inboard are not required to have a support or guard.
 - C) Transmissions or other devices that allow the change of gear ratios while the kart is in motion are not allowed, except in shifter classes. Torque converters are not allowed.
2. Chain and Belt Guards
 - A) All karts shall be equipped with a chain or belt guard. Outboard drive systems will be allowed only if the chain or belt, and sprocket are completely enclosed from the front, top, rear, and sides.
 - B) Any sprocket not used for driving the kart must be fitted with a device to prevent exposure from any angle, or be completely encircled with a chain.
 - C) Chain oilers up to 8-ounce capacity are allowed. Competitors using chain oilers shall use a drip pan while on the grid. If a chain oiler is the highest point on the kart it must be protected with a roll bar, not to exceed 26 inches high from the ground.

H. Fuel Systems

1. No pressurized fuel delivery systems allowed. No fuel injection systems allowed.
2. Fuel capacity: Laydown enduro – no capacity limit. All others – 9-liter maximum capacity. Fuel tanks must be constructed of puncture resistant material, and have a secure leak proof closure.
3. Fuel lines must be safety wrapped at all connection points.
4. Fuel tanks must be securely bolted to the primary structure, frame, or floor pan.
5. Fuel tanks on sprint karts must be located between the frame rails, and beneath the steering shaft.
6. The length of fuel line shall be only of adequate length to supply fuel to the carburetor. Excessive fuel line length is not allowed.
7. If other than metallic side tanks are used on an enduro kart, the use of double rail nerf bars per the TAG tech manual is mandatory.
8. If a fuel tank is the highest point on the kart it must be protected with a roll bar, not to exceed 26 inches high from the ground.
9. If “pump-around” or “recirculating” type fuel delivery and evacuation systems are used, a positive, free vent to atmosphere must be employed on the fuel tank to prevent tank pressurization.

I. Cooling systems

1. Coolant may not contain any Glycol based material.
2. Water wetter or other surfactants may be added.
3. Radiator OPEN used as supplied by manufacturer, or after-market product.
4. Must be mounted to right or the left of the driver.
5. After market water pumps are allowed, but must be driven by the rear axle.

Section 4 - Kart types and construction

There are eight different types of racing karts described herein. A general description of a kart chassis is a welded, tubular steel spaceframe. Side nerf bars, front and rear bumpers are required, except as noted. Aerodynamic bodywork covering the chassis is permitted but not required in any type except as noted. While overall construction of each is similar there are significant dimensional differences and as such will be detailed separately below.

A. Sprint speedway chassis specifications

1. Main frame members shall be constructed of cold rolled, electric weld, round, steel tubing or other material of equal or greater strength, of one inch minimum nominal outside diameter and .078 inch minimum wall thickness and 1.400 inch maximum nominal diameter. Tubing of 1.125 inch nominal and greater may have a wall thickness of .060-inch minimum. Main frame rail members shall be no higher than a horizontal line extending from the centerline of the front wheel to the centerline of the rear wheel. No oval tubing allowed.
2. Wheelbase: 43.0 inches maximum, 40.0 inches minimum. Wheelbase is measured from true axle centerlines, each side.
3. Track width: 28.0 inches minimum. Track width may be measured from the outside edge of one tire to the inside edge of the opposite tire when both tires are of identical width.
4. Overall width: 50.0 inches maximum for all classes. Overall width is measured at any cross section of the kart, perpendicular to the longitudinal centerline axis.
5. Overall length: 74.0 inches maximum. Overall length is measured at any cross section of the kart, parallel to the longitudinal centerline axis.
6. Overall height: 26.0 inches maximum. Overall height is measured such that all elements of the kart must pass under a bar set parallel to ground level, 26.0 inches above ground level.
7. Dry kart weight: 85 pounds minimum in race ready trim without fuel.
8. Front bumper: If CIK-style nose cone is not used all components shall be constructed of round, steel tubing of .750 inch nominal diameter minimum. The upper hoop of the bumper must be supported by a minimum of two vertical uprights. These uprights must be within .50 inch of vertical when measured 3.0 inches down from the top of the top hoop. The uppermost tangent point of the top hoop must be 7.75 inches minimum from ground level. Otherwise, front bumper must conform to CIK specifications.
9. Rear bumper: All components shall be constructed of round, steel tubing of .750-inch nominal diameter minimum. The uppermost tangent point of the top hoop shall be 7.5 inches maximum from ground level and above the lowermost tangent point of the rear axle minimum. Minimum width shall be no less than the lateral distance between the main chassis frame rails as measured at the rear of the kart. Maximum width shall be no wider than the rear overall width of tires. Continuous loop type bumpers with vertical or angled supports are allowed. The lower bar of this type must be below the rear axle, the upper bar no higher than the top of the rear tires. Bar must be in place frame rail to frame rail.
10. Nerf bars: If CIK-style side pods are not utilized nerf bars must be double rail type. All components shall be constructed round, steel tubing of .750-inch nominal diameter minimum. Overall height from uppermost to lowermost tubing tangent points shall be 6.0 inches minimum. Vertical uprights are mandatory at the leading and trailing ends of the nerf bar, creating a closed, rectangular construction. The leading and trailing vertical uprights must be positioned such that the smallest gap created between the front and rear tires respectively measures 3.0 inches maximum. If CIK-style side pods are utilized nerf bars must conform to CIK specifications.

11. Seat: Must be of conventional, unaltered, bucket type, molded construction, designed to keep the driver's posterior in place without undue movement. The seat shall be mounted between the main frame rails. The lowermost point of the seat must be positioned no lower than the lowermost point of the adjacent frame rails and no higher than the uppermost point of the adjacent frame rails. Height of the uppermost point of the seat backrest is 10.0 inches minimum from ground level for junior sportsman classes, and 12.0 inches minimum from ground level for junior and senior classes. The rearmost point on the seat may not extend beyond the back of the rear axle. Headrests are not permitted. Steering uprights shall be positioned in such a manner as to prevent the driver's posterior from being positioned forward of the bucket portion of the seat. Seat Rules for CIK body work classes: Sit-up sprint style seat only, 13" minimum height cannot pass rear axle CIK style seats are defined as Sprint style bucket seats unaltered. Home made, modified, non production and Stallion road race seats are **NOT** Legal Any attempts to circumvent this rule will be covered by the "Sprit and Intent rule"
12. The use of any type of suspension components is strictly prohibited.

B. Sprint chassis specifications

1. Main frame members shall be constructed of cold rolled, electric weld, round, steel tubing or other material of equal or greater strength, of one inch minimum nominal outside diameter and .078 inch minimum wall thickness and 1.400 inch maximum nominal diameter. Tubing of 1.125 inch nominal and greater may have a wall thickness of .060 inch minimum. Main frame rail members shall be no higher than a horizontal line extending from the centerline of the front wheel to the centerline of the rear wheel. No oval tubing allowed.
2. Wheelbase: 43.0 inches maximum, 40.0 inches minimum. Wheelbase is measured from true axle centerlines, each side.
3. Track width: 28.0 inches minimum. Track width may be measured from the outside edge of one tire to the inside edge of the opposite tire when both tires are of identical width.
4. Overall width: 55.125 inches maximum for all classes. Overall width is measured at any cross section of the kart, perpendicular to the longitudinal centerline axis.
5. Overall length: 74.0 inches maximum. Overall length is measured at any cross section of the kart, parallel to the longitudinal centerline axis.
6. Overall height: 26.0 inches maximum. Overall height is measured such that all elements of the kart must pass under a bar set parallel to ground level, 26.0 inches above ground level.
7. Dry kart weight: 85 pounds minimum in race ready trim without fuel.
8. Front bumper: If CIK-style nose cone is not used all components shall be constructed of round, steel tubing of .750 inch nominal diameter minimum. The upper hoop of the bumper must be supported by a minimum of two vertical uprights. These uprights must be within .50 inch of vertical when measured 3.0 inches down from the top of the top hoop. The uppermost tangent point of the top hoop must be 7.75 inches minimum from ground level. Otherwise, front bumper must conform to CIK specifications.
9. Rear bumper: All components shall be constructed of round, steel tubing of .750-inch nominal diameter minimum. The uppermost tangent point of the top hoop shall be 7.5 inches maximum from ground level and above the lowermost tangent point of the rear axle minimum. Minimum width shall be no less than the lateral distance between the main chassis frame rails as measured at the rear of the kart. Maximum width shall be no wider than the rear overall width of tires. Continuous loop type bumpers with vertical or angled supports are allowed. The lower bar of this type must be below the rear axle, the upper bar no higher than the top of the rear tires. Bar must be in place from frame rail to frame rail
10. Nerf bars: If CIK-style side pods are not utilized nerf bars must be double rail type. All components shall be constructed round, steel tubing of .750-inch nominal diameter minimum. Overall height from uppermost to lowermost tubing tangent points shall be 6.0 inches minimum. Vertical uprights are mandatory at the leading and trailing ends of the nerf bar, creating a closed, rectangular construction. The leading and trailing vertical uprights must be positioned such that the smallest gap created between the front and rear tires respectively measures 3.0 inches maximum. If CIK-style side pods are utilized nerf bars must conform to CIK specifications.
11. Seat: Must be of conventional, unaltered, bucket type, molded construction, designed to keep the driver's posterior in place without undue movement. The seat shall be mounted between the main frame rails. The lowermost point of the seat must be positioned no lower than the lowermost point of the adjacent frame rails and no higher than the uppermost point of the adjacent frame rails. Height of the uppermost point of the seat backrest is 10.0 inches minimum from ground level for junior sportsman classes and 12.0 inches minimum from ground level for junior and senior classes. The rearmost point on the seat may not extend beyond the back of the rear axle. Headrests are not permitted.
Seat Rules for CIK body work classes: Sit-up sprint style seat only, 13" minimum height cannot pass rear axle CIK style seats are defined as Sprint style bucket seats unaltered. Home made, modified, non production and Stallion road race seats are **NOT** Legal any attempts to circumvent this rule will be covered by the "Sprit and Intent rule"
12. The use of any type of suspension components is strictly prohibited.

C. Sprint ENDURO chassis specifications

1. Main frame members shall be constructed of cold rolled, electric weld, round, steel tubing or other material of equal or greater strength, of one inch minimum nominal outside diameter and .083 inch minimum wall thickness. Main frame rail members shall be no higher than a horizontal line extending from the centerline of the front wheel to the centerline of the rear wheel. No oval tubing allowed.
2. Wheelbase: 43.0 inches maximum, 40.0 inches minimum. Wheelbase is measured from true axle centerlines, each side.
3. Track width: 28.0 inches minimum. Track width may be measured from the outside edge of one tire to the inside edge of the opposite tire when both tires are of identical width.
4. Overall width: 50.0 inches maximum for all classes except four cycle classes. 46.0 inches maximum for all four-cycle classes. Overall width is measured at any cross section of the kart, perpendicular to the longitudinal centerline axis.
5. Overall length: 74.0 inches maximum. Overall length is measured at any cross section of the kart, parallel to the longitudinal centerline axis.

6. Overall height: 26.0 inches maximum. Overall height is measured such that all elements of the kart must pass under a bar set parallel to ground level, 26.0 inches above ground level.
7. Dry kart weight: 85 pounds minimum in race ready trim without fuel.
8. Front bumper: If CIK-style nose cone is not used all components shall be constructed of round, steel tubing of .750 inch nominal diameter minimum. The upper hoop of the bumper must be supported by a minimum of two vertical uprights. These uprights must be within .50 inch of vertical when measured 3.0 inches down from the top of the top hoop. The uppermost tangent point of the top hoop must be 7.75 inches minimum from ground level. Otherwise, front bumper must conform to CIK specifications.
9. Rear bumper: All components shall be constructed of round, steel tubing of .750-inch nominal diameter minimum. The uppermost tangent point of the top hoop shall be 7.5 inches maximum from ground level and above the lowermost tangent point of the rear axle minimum. Minimum width shall be no less than the lateral distance between the main chassis frame rails as measured at the rear of the kart. Maximum width shall be no wider than the rear overall width of tires. Continuous loop type bumpers with vertical or angled supports are allowed. The lower bar of this type must be below the rear axle, the upper bar no higher than the top of the rear tires. Bar must be in place from frame rail to frame rail
10. Nerf bars: If CIK-style side pods are not utilized nerf bars must be double rail type. All components shall be constructed round, steel tubing of .750-inch nominal diameter minimum. Overall height from uppermost to lowermost tubing tangent points shall be 6.0 inches minimum. Vertical uprights are mandatory at the leading and trailing ends of the nerf bar, creating a closed, rectangular construction. The leading and trailing vertical uprights must be positioned such that the smallest gap created between the front and rear tires respectively measures 3.0 inches maximum. If CIK-style side pods are utilized nerf bars must conform to CIK specifications.
11. Seat: Must be of conventional, unaltered, bucket type, molded construction, designed to keep the driver's posterior in place without undue movement. The seat shall be mounted between the main frame rails. The lowermost point of the seat must be positioned no lower than the lowermost point of the adjacent frame rails and no higher than the uppermost point of the adjacent frame rails. Height of the uppermost point of the seat backrest is 12.0 inches minimum from ground level. The rearmost point on the seat may not extend beyond the back of the rear axle. Headrests are not permitted. Steering uprights shall be positioned in such a manner as to prevent the driver's posterior from being positioned forward of the bucket portion of the seat. Seat Rules for CIK body work classes: Sit-up sprint style seat only, 13" minimum height cannot pass rear axle CIK style seats are defined as Sprint style bucket seats unaltered. Home made, modified, non production and Stallion road race seats are **NOT** Legal any attempts to circumvent this rule will be covered by the "Sprit and Intent rule"
12. The use of any type of suspension components is strictly prohibited.

D. Laydown enduro chassis specifications

1. Main frame members shall be constructed of cold rolled, electric weld, round, steel tubing or other material of equal or greater strength, of 1.0 inch nominal minimum and 1.40 inch nominal maximum outside diameter. For nominal outside diameter tubing of 1.0 to 1.125 inch the tubing wall thickness shall be .078 inch minimum. For nominal outside diameter tubing of greater than 1.125 inch the tubing wall thickness shall be .060 inch minimum. Oval tube frames must receive prior approval from tech director.
2. Wheelbase: 50.0 inches maximum, 40.0 inches minimum. Wheelbase is measured from true axle centerlines, each side.
3. Track width: 30.0 inches minimum. Track width may be measured from the outside edge of one tire to the inside edge of the opposite tire, when both tires are of identical width.
4. Overall width: 50.0 inches maximum for all classes. Overall width is measured at any cross section of the kart, perpendicular to the longitudinal centerline axis. Air filters may extend beyond the 50.0 inch maximum.
5. Overall length: 97.0 inches maximum for single engine karts; 110.0 inches for dual engine karts and shifter karts. Overall length is measured at any cross section of the kart, parallel to the longitudinal centerline axis.
6. Overall height: 26.0 inches maximum. Overall height is measured such that all elements of the kart must pass under a bar set parallel to ground level, 26.0 inches above ground level.
7. Dry kart weight: 85 pounds minimum for single engine karts; 105 pounds for dual engine karts in race ready trim without fuel.
8. The use of any type of suspension components is strictly prohibited.

G. Sprint Shifter chassis specifications

1. Main frame members shall be constructed of cold rolled, electric weld, round, steel tubing or other material of equal or greater strength, of one inch minimum nominal outside diameter and .078 inch minimum wall thickness and 1.400 inch maximum nominal diameter. Tubing of 1.125 inch nominal and greater may have a wall thickness of .060-inch minimum. Main frame rail members shall be no higher than a horizontal line extending from the centerline of the front wheel to the centerline of the rear wheel. No oval tubing allowed.
2. Wheelbase: 43.0 inches maximum, 40.0 inches minimum. Wheelbase is measured from true axle centerlines, each side.
3. Track width: 28.0 inches minimum. Track width may be measured from the outside edge of one tire to the inside edge of the opposite tire when both tires are of identical width.
4. Overall width: 55.125 inches maximum. Overall width is measured at any cross section of the kart, perpendicular to the longitudinal centerline axis.
5. Overall length: 84.0 inches maximum. Overall length is measured at any cross section of the kart, parallel to the longitudinal centerline axis.
6. Overall height: 26.0 inches maximum. Overall height is measured such that all elements of the kart must pass under a bar set parallel to ground level, 26.0 inches above ground level.
7. Dry kart weight: 85 pounds minimum in race ready trim without fuel.
8. Front bumper: If nose cone is not used all components shall be constructed of round, steel tubing of .750 inch nominal diameter minimum. The upper hoop of the bumper must be supported by a minimum of two vertical uprights. These uprights must be within .50 inch of vertical when measured 3.0 inches down from the top of the top hoop. The uppermost tangent point of the top hoop must be 7.75 inches minimum from ground level. Otherwise, front bumper must conform to CIK specifications.

9. Rear bumper: All components shall be constructed of round, steel tubing of .750 inch nominal diameter minimum. The uppermost tangent point of the top hoop shall be 7.5 inches maximum from ground level and above the lowermost tangent point of the rear axle minimum. Minimum width shall be no less than the lateral distance between the main chassis frame rails as measured at the rear of the kart. Maximum width shall be no wider than the rear overall width of tires. Continuous loop type bumpers with vertical or angled supports are allowed. The lower bar of this type must be below the rear axle, the upper bar no higher than the top of the rear tires. Bar must be in place from frame rail to frame rail
10. Nerf bars: If CIK-style side pods are not utilized nerf bars must be double rail type. All components shall be constructed round, steel tubing of .750-inch nominal diameter minimum. Overall height from uppermost to lowermost tubing tangent points shall be 6.0 inches minimum. Vertical uprights are mandatory at the leading and trailing ends of the nerf bar, creating a closed, rectangular construction. The leading and trailing vertical uprights must be positioned such that the smallest gap created between the front and rear tires respectively measures 3.0 inches maximum. If CIK-style side pods are utilized nerf bars must conform to CIK specifications.
11. Seat: Must be of conventional, bucket type, molded construction, designed to keep the driver's posterior in place without undue movement. Sprint-type, sit-up seats only. Laydown-type, sprint-enduro or oval-track seats are prohibited. Minimum seat back height 14.0 inches, measured at the center of the seat back rest. The seat shall be mounted between the main frame rails. The lowermost point of the seat must be positioned no lower than the lowermost point of the adjacent frame rails and no higher than the uppermost point of the adjacent frame rails. The seat shall be positioned in such a manner that no part of the driver's head may extend aft of the vertical plane determined by the trailing edge of the rear tires, when seated normally. Headrests are not permitted
Seat Rules for CIK body work classes: Sit-up sprint style seat only, 13" minimum height cannot pass rear axle CIK style seats are defined as Sprint style bucket seats un-altered. Home made, modified, non production and Stallion road race seats are **NOT** Legal any attempts to circumvent this rule will be covered by the "Sprint and Intent rule"
12. The use of any type of suspension components is strictly prohibited.

H. Superkart chassis specifications

1. Main frame members shall be constructed of cold rolled, electric weld, round, steel tubing or other material of equal or greater strength, of 30mm minimum nominal outside diameter and 2mm inch minimum wall thickness.
2. Wheelbase: 49.0 inches maximum, 42.0 inches minimum. Wheelbase is measured from true axle centerlines, each side.
3. Overall width: 55.0 inches maximum, 46.0 inches minimum. Overall width is measured at any cross section of the kart, perpendicular to the longitudinal centerline axis.
4. Overall length: 86.0 inches maximum. Overall length is measured at any cross section of the kart, parallel to the longitudinal centerline axis.
5. Overall height: 26.0 inches maximum, excluding seat headrest. Overall height is measured such that all elements of the kart must pass under a bar set parallel to ground level, 26.0 inches above ground level.
6. Steering system: May be tie rod or rack and pinion system. Top of steering wheel must be at least 19.0 inches above ground level. Minimum steering shaft outside diameter is .625 inch and minimum wall thickness is .078 inch. Tie rod minimum diameter is .500 inch with minimum wall thickness of .118 inch for aluminum and .059 inch for steel. Quick disconnect steering hubs permitted.
7. Front bumper must conform to CIK specifications.
8. Rear bumper must conform to CIK specifications.
9. Nerf bars are not required in this class.
10. Seat may be a high-back (headrest) or low-back design. Seat must be attached in at least four places. It must be positioned such that the driver can see over the top of the steering wheel when seated in normal position.
11. The use of any type of suspension components is strictly prohibited.
12. Wheels: 6.0 inch maximum wheel rims. Three bead retention screws are required, inside and out, on rear wheels. Bead retention screws are recommended on front wheels.

J. Sprint racing bodywork requirements

1. All bodywork components must be constructed of high strength plastic, fiberglass, aluminum or advanced composites only, with the exception of no metallic materials to be used for side panels.
2. No component of the bodywork may be adjusted or controlled in any way while the kart is in motion.
3. Skirting devices must be constructed of a flexible, non-metallic material.
4. The sides of the tires may not be covered in any way by the nose cone or side panels. It must be possible to remove the wheel straight through the opening in the bodywork.
5. Nose cones: The nosecone may cover the driver's foot area, but not to extend further than 3.0 inches rear of the pedals in relaxed position. This measurement shall be made directly over each of the two pedals. The bottom of nose cone may extend full width no farther than the rear of the front tires, in a straight ahead position, beyond that the bottom of the nose cone must be within the main frame rails. The nose cone may be no narrower than to expose one half of a tire width per side. Maximum nose cone height 14.0 inches for 4 cycle novice classes only.
6. A connecting strip from nose cone or floor to steering fairing is allowed up to 6.0 inches maximum chord width, so as not to cover the driver's feet, or legs. Minimum six inch clearance from connecting strip or steering fairing to any other bodywork component begins three inches maximum aft of the pedals, extending rearward to the mounting point for the steering wheel.
7. Steering fairings: Chord length 14.0 inches maximum. Chord width 14.0 inches maximum. Clearance to steering wheel 3.0 inches minimum. Clearance to any other bodywork or fuel tank 6.0 inches minimum. Clearance from steering wheel to any other bodywork 6.0 inches minimum. No steering fairings allowed in 4 cycle novice classes only.
8. Tire recess: All or any of the four wheels may be inside the bodywork a maximum of one inch per side, regardless of bodywork configuration. This measurement shall be made square to the outer face of the tire nearest the bodywork component in question, wheels straight.
9. Belly pans: Full width belly pans within the main frame rails are allowed for all classes. Belly pans can be bent up to a point no higher than the centerline of the rear axle.
10. Height from ground level of all side panels and rear pods: 16.0 inches maximum.
11. Except as noted in section 4.i.5, no part of the driver's body may be covered by any bodywork component, as viewed from above.

12. No bodywork component may extend aft of the rear bumper.
 13. Distance from seat to any bodywork component: 1.0 inch minimum.
 14. Lateral distance between bodywork components in area from the mounting point for steering wheel to the point where the seat rises above the side panels: 22.0 inches minimum. If the seat remains below the side panels 22 inch minimum distance applies from mounting point for steering wheel to rearmost part of seat.
 15. CIK style nose cones and side pods are allowed. The use of CIK mounting hardware is not mandatory.
- K. Enduro roadracing bodywork general requirements (applies to sprint enduro and laydown enduro kart types)
1. All bodywork components must be constructed of high strength plastic, fiberglass, aluminum or advanced composites only, with the exception of no metallic materials to be used for side panels.
 2. No component of the bodywork may be adjusted or controlled in any way while the kart is in motion.
 3. Skirting devices must be constructed of a flexible, non-metallic material.
 4. The sides of the tires may not be covered in any way by the nose cone or side panels. It must be possible to remove the wheel straight through the opening in the bodywork.
 5. Nose cones: The nosecone may cover the driver's foot area, but not to extend further than 3.0 inches rear of the pedals in relaxed position. This measurement shall be made directly over each of the two pedals.
 6. Steering fairings: Chord length 14.0 inches maximum. Chord width 14.0 inches maximum. Clearance to steering wheel 3.0 inches minimum. Clearance to any other bodywork or fuel tank 6.0 inches minimum. Clearance from steering wheel to any other bodywork 6.0 inches minimum.
 7. Belly pans: Full width belly pans with or without integral wheel wells allowed for all classes. Belly pans can be bent up to a point no higher than the centerline of the rear axle.
- L. Laydown enduro specific bodywork requirements
1. Tail sections may extend no further aft than 25.0 inches from the back of the rear axle.
 2. Helmet fairings may extend no further forward than the rear of the headrest assembly.
 3. Except as noted in section 4.j.5, no part of the driver's body may be covered by any bodywork component, as viewed from above.
 4. Tire recess: Rear wheels may be inside the bodywork a maximum of 1.0 inch per side, regardless of bodywork configuration. No limit to front wheel recess. This measurement shall be made square to the outer face of the tire nearest the bodywork component in question, wheels straight.
- M. Sprint ENDURO specific bodywork requirements
1. Height from ground level of all side panels and rear pods: 16.0 inches maximum.
 2. Except as noted in section 4.j.5, no part of the driver's body may be covered by any bodywork component, as viewed from above.
 3. No bodywork component may extend aft of the rear bumper.
 4. Distance from seat to any bodywork component: 1.0 inch minimum.
 5. Lateral distance between bodywork components in area from the mounting point for steering wheel to the point where the seat rises above the side panels: 22.0 inches minimum. If the seat remains below the side panels 22 inch minimum distance applies from mounting point for steering wheel to rearmost part of seat.
 6. The nose cone may be no narrower than to expose one half of a tire width per side.
 7. A connecting strip from nose cone or floor to steering fairing is allowed up to 6.0 inches maximum chord width, so as not to cover the driver's feet, or legs. Minimum six inch clearance from connecting strip or steering fairing to any other bodywork component begins three inches maximum aft of the pedals, extending rearward to the mounting point for the steering wheel.
 8. CIK style nose cones and side pods are allowed. The use of CIK mounting hardware is not mandatory.
 9. Tire recess: All or any of the four wheels may be inside the bodywork a maximum of one inch per side, regardless of bodywork configuration. This measurement shall be made square to the outer face of the tire nearest the bodywork component in question, wheels straight.
- O. Sprint Shifter bodywork requirements
1. Bodywork components consisting of a nose cone, steering fairing and side pods, if employed, must be CIK-style or similar, and represent current industry standards in shape and construction. Maximum steering fairing chord width 15.0 inches.
 2. Floor pans: Required for all classes. Floor pans must be within the main frame rails and not extend aft of the central lateral frame tube.
 3. The outboard panels of the side pods must be nominally perpendicular to the ground and shaped in such a manner as to preclude a "ramping" effect in case of lateral contact.
 4. The use of CIK mounting hardware is not mandatory.
 5. The width of the nose cone may not exceed the overall width of the front tires, wheels straight.
- P. Superkart bodywork specifications
1. Bodywork must consist at minimum of two side pods, a front nose cone and a steering fairing.
 2. Must be in general conformance with current industry standards. Six inch clearance rule is specifically waived for this class. Clearance from steering wheel to any bodywork is 2.0 inches minimum.
 3. Steering fairing chord width is 14.0 inches minimum, 21.0 inches maximum. Height from ground level is 19.0 inches minimum, 26.0 inches maximum.
 4. Nose cone width is 38.0 inches minimum, 50.0 inches maximum. Height from ground level is 10.0 inches minimum.
 5. Side pod height is 10.0 inches minimum; width is 8.0 inches minimum; length is 24.0 inches minimum.
 6. Rear wing width is 42.0 inches minimum, 48.0 inches maximum. Thickness at the thickest point of the wing is 1.0 inches minimum. Minimum wing area is 250 square inches. Wing end plate must have all corners radiused.
 7. Belly pans: Full width belly pans, open in construction are allowed. No aerodynamic sealing devices allowed aft of the front wheels.

I. Sprint Speedway racing bodywork requirements

1. All bodywork components must be constructed of high strength plastic, fiberglass, aluminum or advanced composites only, with the exception of no metallic materials to be used for side panels.
2. No component of the bodywork may be adjusted or controlled in any way while the kart is in motion.
3. Skirting devices must be constructed of a flexible, non-metallic material.
4. The sides of the tires may not be covered in any way by the nose cone or side panels. It must be possible to remove the wheel straight through the opening in the bodywork.
5. Nose cones: The nosecone may cover the driver's foot area, but not to extend further than 3.0 inches rear of the pedals in relaxed position. This measurement shall be made directly over each of the two pedals. The bottom of nose cone may extend full width no farther than the rear of the front tires, in a straight ahead position, beyond that the bottom of the nose cone must be within the main frame rails. The nose cone may be no narrower than to expose one half of a tire width per side. Maximum nose cone height 14.0 inches for 4 cycle novice classes only.
6. A connecting strip from nose cone or floor to steering fairing is allowed up to 6.0 inches maximum chord width, so as not to cover the driver's feet, or legs. Minimum six inch clearance from connecting strip or steering fairing to any other bodywork component begins three inches maximum aft of the pedals, extending rearward to the mounting point for the steering wheel.
7. Steering fairings: Chord length 14.0 inches maximum. Chord width 14.0 inches maximum. Clearance to steering wheel 3.0 inches minimum. Clearance to any other bodywork or fuel tank 6.0 inches minimum. Clearance from steering wheel to any other bodywork 6.0 inches minimum. No steering fairings allowed in 4 cycle novice classes only.
8. Tire recess: All or any of the four wheels may be inside the bodywork a maximum of one inch per side, regardless of bodywork configuration. This measurement shall be made square to the outer face of the tire nearest the bodywork component in question, wheels straight.
9. Belly pans: Full width belly pans within the main frame rails are allowed for all classes. Belly pans can be bent up to a point no higher than the centerline of the rear axle.
10. Height from ground level of all side panels and rear pods: 16.0 inches maximum.
11. Except as noted in section 4.h.5, no part of the driver's body may be covered by any bodywork component, as viewed from above.
12. No bodywork component may extend aft of the rear bumper.
13. Distance from seat to any bodywork component: 1.0 inch minimum.
14. Lateral distance between bodywork components in area from the mounting point for steering wheel to the point where the seat rises above the side panels: 22.0 inches minimum. If the seat remains below the side panels 22 inch minimum distance applies from mounting point for steering wheel to rearmost part of seat.
15. CIK style nose cones and side pods are allowed. The use of CIK mounting hardware is not mandatory.

J. Sprint racing bodywork requirements

1. All bodywork components must be constructed of high strength plastic, fiberglass, aluminum or advanced composites only, with the exception of no metallic materials to be used for side panels.
2. No component of the bodywork may be adjusted or controlled in any way while the kart is in motion.
3. Skirting devices must be constructed of a flexible, non-metallic material.
4. The sides of the tires may not be covered in any way by the nose cone or side panels. It must be possible to remove the wheel straight through the opening in the bodywork.
5. Nose cones: The nosecone may cover the driver's foot area, but not to extend further than 3.0 inches rear of the pedals in relaxed position. This measurement shall be made directly over each of the two pedals. The bottom of nose cone may extend full width no farther than the rear of the front tires, in a straight ahead position, beyond that the bottom of the nose cone must be within the main frame rails. The nose cone may be no narrower than to expose one half of a tire width per side. Maximum nose cone height 14.0 inches for 4 cycle novice classes only.
6. A connecting strip from nose cone or floor to steering fairing is allowed up to 6.0 inches maximum chord width, so as not to cover the driver's feet, or legs. Minimum six inch clearance from connecting strip or steering fairing to any other bodywork component begins three inches maximum aft of the pedals, extending rearward to the mounting point for the steering wheel.
7. Steering fairings: Chord length 14.0 inches maximum. Chord width 14.0 inches maximum. Clearance to steering wheel 3.0 inches minimum. Clearance to any other bodywork or fuel tank 6.0 inches minimum. Clearance from steering wheel to any other bodywork 6.0 inches minimum. No steering fairings allowed in 4 cycle novice classes only.
8. Tire recess: All or any of the four wheels may be inside the bodywork a maximum of one inch per side, regardless of bodywork configuration. This measurement shall be made square to the outer face of the tire nearest the bodywork component in question, wheels straight.
9. Belly pans: Full width belly pans within the main frame rails are allowed for all classes. Belly pans can be bent up to a point no higher than the centerline of the rear axle.
10. Height from ground level of all side panels and rear pods: 16.0 inches maximum.
11. Except as noted in section 4.i.5, no part of the driver's body may be covered by any bodywork component, as viewed from above.
12. No bodywork component may extend aft of the rear bumper.
13. Distance from seat to any bodywork component: 1.0 inch minimum.
14. Lateral distance between bodywork components in area from the mounting point for steering wheel to the point where the seat rises above the side panels: 22.0 inches minimum. If the seat remains below the side panels 22 inch minimum distance applies from mounting point for steering wheel to rearmost part of seat.
15. CIK style nose cones and side pods are allowed. The use of CIK mounting hardware is not mandatory.

K. Enduro roadracing bodywork general requirements (applies to sprint enduro and laydown enduro kart types)

1. All bodywork components must be constructed of high strength plastic, fiberglass, aluminum or advanced composites only, with the exception of no metallic materials to be used for side panels.
2. No component of the bodywork may be adjusted or controlled in any way while the kart is in motion.
3. Skirting devices must be constructed of a flexible, non-metallic material.

4. The sides of the tires may not be covered in any way by the nose cone or side panels. It must be possible to remove the wheel straight through the opening in the bodywork.
5. Nose cones: The nosecone may cover the driver's foot area, but not to extend further than 3.0 inches rear of the pedals in relaxed position. This measurement shall be made directly over each of the two pedals.
6. Steering fairings: Chord length 14.0 inches maximum. Chord width 14.0 inches maximum. Clearance to steering wheel 3.0 inches minimum. Clearance to any other bodywork or fuel tank 6.0 inches minimum. Clearance from steering wheel to any other bodywork 6.0 inches minimum.
7. Belly pans: Full width belly pans with or without integral wheel wells allowed for all classes. Belly pans can be bent up to a point no higher than the centerline of the rear axle.

L. Laydown enduro specific bodywork requirements

1. Tail sections may extend no further aft than 25.0 inches from the back of the rear axle.
2. Helmet fairings may extend no further forward than the rear of the headrest assembly.
3. Except as noted in section 4.j.5, no part of the driver's body may be covered by any bodywork component, as viewed from above.
4. Tire recess: Rear wheels may be inside the bodywork a maximum of 1.0 inch per side, regardless of bodywork configuration. No limit to front wheel recess. This measurement shall be made square to the outer face of the tire nearest the bodywork component in question, wheels straight.

M. Sprint ENDURO specific bodywork requirements

1. Height from ground level of all side panels and rear pods: 16.0 inches maximum.
2. Except as noted in section 4.j.5, no part of the driver's body may be covered by any bodywork component, as viewed from above.
3. No bodywork component may extend aft of the rear bumper.
4. Distance from seat to any bodywork component: 1.0 inch minimum.
5. Lateral distance between bodywork components in area from the mounting point for steering wheel to the point where the seat rises above the side panels: 22.0 inches minimum. If the seat remains below the side panels 22 inch minimum distance applies from mounting point for steering wheel to rearmost part of seat.
6. The nose cone may be no narrower than to expose one half of a tire width per side.
7. A connecting strip from nose cone or floor to steering fairing is allowed up to 6.0 inches maximum chord width, so as not to cover the driver's feet, or legs. Minimum six inch clearance from connecting strip or steering fairing to any other bodywork component begins three inches maximum aft of the pedals, extending rearward to the mounting point for the steering wheel.
8. CIK style nose cones and side pods are allowed. The use of CIK mounting hardware is not mandatory.
9. Tire recess: All or any of the four wheels may be inside the bodywork a maximum of one inch per side, regardless of bodywork configuration. This measurement shall be made square to the outer face of the tire nearest the bodywork component in question, wheels straight.

N. Champ kart bodywork requirements

1. All bodywork components must be constructed of high strength plastic, fiberglass or advanced composites only.
2. No component of the bodywork may be adjustable in any way while kart is in motion.
3. Bodywork must be confined to the area defined by the front and rear bumpers, inside the area defined by the inside sidewalls of the tires.
4. Cockpit must be entirely open when viewed from above.
5. Wings, spoilers or other aerodynamic effects are prohibited.
6. Full, midget/sprint type, open wheel, conventional construction methods only are approved. Flat panels are allowed only for side panels and all other body components must have rounded, compound curve configuration. Nose and tail bodywork is mandatory.
7. Tail section must be full, midget/sprint type, fully enclosing the tail section, 15.0 inches minimum length, 13.0 inches minimum width and 14.0 inches minimum height.

O. Sprint Shifter bodywork requirements

1. Bodywork components consisting of a nose cone, steering fairing and side pods, if employed, must be CIK-style or similar, and represent current industry standards in shape and construction. Maximum steering fairing chord width 15.0 inches.
2. Floor pans: Required for all classes. Floor pans must be within the main frame rails and not extend aft of the central lateral frame tube.
3. The outboard panels of the side pods must be nominally perpendicular to the ground and shaped in such a manner as to preclude a "ramping" effect in case of lateral contact.
4. The use of CIK mounting hardware is not mandatory.
5. The width of the nose cone may not exceed the overall width of the front tires, wheels straight.

P. Superkart bodywork specifications

1. Bodywork must consist at minimum of two side pods, a front nose cone and a steering fairing.
2. Must be in general conformance with current industry standards. Six inch clearance rule is specifically waived for this class. Clearance from steering wheel to any bodywork is 2.0 inches minimum.
3. Steering fairing chord width is 14.0 inches minimum, 21.0 inches maximum. Height from ground level is 19.0 inches minimum, 26.0 inches maximum.
4. Nose cone width is 38.0 inches minimum, 50.0 inches maximum. Height from ground level is 10.0 inches minimum.
5. Side pod height is 10.0 inches minimum; width is 8.0 inches minimum; length is 24.0 inches minimum.
6. Rear wing width is 42.0 inches minimum, 48.0 inches maximum. Thickness at the thickest point of the wing is 1.0 inches minimum. Minimum wing area is 250 square inches. Wing end plate must have all corners radiused.
7. Belly pans: Full width belly pans, open in construction are allowed. No aerodynamic sealing devices allowed aft of the front wheels.

Section 5 – Fuels and Lubricants

1. Fuels and fuel testing: It shall be the right of the technical inspector on his own volition or on instruction from the race director to conduct any type of fuel testing deemed necessary at any time the competitor is under race administration direction, i.e. during pre-tech inspection, on the grid or in post-tech inspection.
 - a. Two cycle fuels
 1. Unless otherwise specified in class structure description, the only acceptable fuel in two cycle classes is gasoline and lubricating oil.
 2. None of the following substances may be added to the fuel. This list is inclusive only in that these are known ingredients that have been used in the past. Additionally, all other substances recognized by bonafide race sanctioning bodies or deemed to exceed the Threshold Limit Value for human exposure as listed by the American Conference of Governmental Industrial Hygienists.

Alcohols (all), Aldehydes, Aminodiphenyl, Benzene (in excess of EPA limits), Benzidine, Beryllium compounds, Bromine compounds, Butadienes, Chlorinated compounds, Chromates, Dioxanes, Ethyl acrylate, Ethylene oxide, Hydrazine compounds, Methylene dianiline, Naphthylamine, Nitrogen compounds (nitromethane, nitropropane, etc.), Styrenes, Toluidine, Zylidine.
 2. Testing
 - a. Field testing
 1. Digitron meter: The preferred method of field testing two cycle fuel is with a Digitron meter. The meter shall be set at – 75 with the probe fully immersed in a plastic container of clean cyclohexane at ambient temperature. The probe is then fully immersed in the competitor’s fuel and allowed to settle. Care must be taken to not touch the probe on any part of the fuel tank while the meter is coming to settle. The final meter reading must be zero or below (negative). The competitor has the right, and the inspector may allow removal of the fuel from the kart’s fuel tank into a suitable plastic container for testing. This is done to eliminate the effects of aluminum tanks on the meter and to facilitate cooling to **ambient** temperature. Artificial cooling of the sample (ice baths, etc.) is not allowed. Final testing shall occur no later than ten minutes after time of sample removal.
 - b. Laboratory testing may be performed on a competitor’s fuel either on the tech inspector’s own volition or on instruction from the race director. Upon request, the competitor shall draw a sample from his tank or container (inspector’s preference) into a suitable, clean container. The tech inspector shall then mark the container in an indelible fashion and provide tamper-proof sealing of the container. The sample shall be forwarded to an accredited testing laboratory for full chemical analysis. Presence of any listed prohibited substances shall be grounds for disqualification.
 - b. Four cycle fuels and lubricants
 1. All additives to methanol fuel are prohibited.
 2. Testing
 - a. Field testing
 1. The preferred method for field testing methanol is the water test. The premise is that methanol is completely water-soluble. Equal parts methanol and pure, distilled water shall be combined in a clean, transparent container. The mixture shall be shaken and allowed to settle for approximately thirty seconds. After settling, the mixture shall be completely clear. Comparison to a sample of pure, distilled water is an acceptable clarity comparison. Contamination prevention is paramount when using this technique. All sample gathering equipment, test containers and hands that come into contact with the fuel must be absolutely clean. If a contaminated sample is found all tooling and hands must be cleaned prior to testing another sample.
 - b. Laboratory testing may be performed on a competitor’s fuel either on the tech inspector’s own volition or on instruction from the race director. Upon request, the competitor shall draw a sample from his tank or container (inspector’s preference) into a suitable, clean container. The tech inspector shall then mark the container in an indelible fashion and provide tamper-proof sealing of the container. The sample shall be forwarded to an accredited testing laboratory for full chemical analysis. Chemically significant presence of any substance other than methanol is grounds for disqualification.
 3. Crankcase lubricants may contain no oxygen bearing or vapor producing substances. Tech inspector reserves the right to test for these substances by any means deemed necessary.

Section 6 – Four cycle engines: General requirements and inspection procedures

1. Generic four cycle tech procedure

Note: The following is a description of a full, generic four cycle technical inspection procedure. The inspector may choose to inspect all or parts of the competitor's engine and chassis. All paragraphs that follow in this section apply universally unless specifically excepted by engine tech sheet.

It is the competitor's responsibility to provide the necessary tools and labor to disassemble the engine and/or chassis upon the technical inspector's request for verification. Refusal to disassemble for inspection is grounds for immediate disqualification. The competitor has the right to request a reasonable time period to allow for cooling to ambient temperature prior to inspection.

- a. Visually inspect engine for class type acceptability and appearance of compliance. Unless otherwise specified, all components must be of the same make and model as originally supplied for that engine, i.e. no interchanging components from different makes or models is allowed.
- b. Verify minimum combustion chamber volume (OHV only). Fill a calibrated, glass burette up above the zero line with clean automatic transmission fluid, diluted 20-30 percent with mineral spirits. Hold the burette as close to vertical as possible, open the stopcock and run the fluid out until the bottom of the curved line is lined up with the zero line. Wipe any drips from the tip of the burette. Install the cc plug in the spark plug hole and bottom by hand. Back the cc plug out two turns. Set the engine such that the centerline axis of the spark plug hole is plumb. Turn the crankshaft by hand until the piston is .100 inch (approximately) before top dead center with both valves closed. Re-check the zero and add the prescribed fluid amount from the burette to the combustion chamber such that the bottom of the curved line is lined up with the prescribed combustion chamber volume for that particular engine. Torque cc plug to 90 inch/pounds. Slowly turn the crankshaft such that the piston moves through top dead center. An acceptable result is if all fluid remains within the combustion chamber or bore of the special tool with no fluid spilling over the upper edge of the tool, with piston at top dead center. An unacceptable result is if any fluid spills out onto the top of the tool.
Note: Verification of combustion chamber volume may only be done reliably one time. It is therefore in the best interest of the inspector and competitor to reach consensus on the readings of the burette both before and after adding the fluid and before turning the piston through top dead center. The zero of the burette should be checked immediately prior to adding the fluid to the chamber. Due to the geometry of some four cycle combustion chambers, air entrapment during the verification process is possible. When in doubt, the engine may be disassembled and the volume of each element verified separately.
- c. Verify intake. Air filter may not be configured as an air ram. Verify air filter adapter to specifications. Air filter adapter not permitted without air filter. Visually inspect carburetor for class type acceptability and stock appearance. Any additional holes, vents, ports, etc. in the carburetor or any other means to controvert manufacturer's intended flow is strictly prohibited. Remove carburetor and verify mounting gasket and intake restrictor requirements. Intake restrictors must be unaltered stock with one only gasket on each side. Disassemble and verify carburetor to specifications. If required, verify fuel tank to specifications.
- d. Verify exhaust. Entire exhaust system must be attached to the engine and intact for the entire race and when submitted for tech inspection. Silencer brace is mandatory and may not be welded. Visually inspect exhaust system for class acceptability and stock appearance. Coating or wrapping of the exhaust header and pipe is permitted. Coating or wrapping of the silencer is prohibited. Visually inspect exhaust system for any supplementary holes or ports venting to atmosphere. Unless specifically allowed, all holes other than those intended for exhaust exit must either be plugged or have a sensor fitted in them. An unplugged, supplementary hole in the exhaust system is grounds for disqualification. Inspect entire system for stock appearance and configuration. Header must be of fixed design with no adjustability permitted. Preferred method for silencer attachment is clamping although three .250 inch maximum diameter spot welds are permitted at junction of silencer and exhaust pipe for secure attachment. Silencer must be removable for tech. Remove exhaust system and verify that header pipe does not protrude into the exhaust port. Disassemble exhaust as required and verify all prescribed dimensions for that particular exhaust system. Excepting sensors, no protrusions or projections into the interior of the header, pipe or silencer are permitted.
- e. Verify ignition system. Inspect spark plug for reach and stock configuration. Remove ignition cover and visually inspect ignition assembly for stock configuration and class type. Unless otherwise specified, all ignition components must be unaltered stock. Using an ohmmeter, check resistance from spark plug wire to ground, if applicable. Remove coil and, if applicable, verify that coil positioning is stock, i.e. no means to alter coil position has been attempted. Unless otherwise specified, any means to alter the position of the coil from stock is grounds for disqualification. Remove flywheel and inspect for stock appearance. No machining to alter position of the flywheel on the crankshaft is allowed. Verify flywheel conformance to specifications.
- f. Verify valve train and running cam lift (OHV only). Remove valve cover. Inspect valve train for visual conformance to specification. Establish a dial indicator bearing on the top of the intake valve spring retainer and ensure free range of motion. Turn engine over by hand to find lowest point of valve travel and set indicator to zero. Turn engine over to find the highest point of valve travel. The indicator reading at the highest point of valve travel is total running cam lift. Repeat for exhaust valve. Verify running lift for each lobe is within specifications.

- g. Verify cylinder head. Inspect cylinder head gasket for conformance to specification. Visually inspect cylinder head for conformance to specification. Using a depth micrometer, inspect combustion chamber depths as required. Carbon deposits in the combustion chamber that cannot be easily removed by wiping with a rag are considered part of the cylinder head and are subject to tech. Chamber depths apply full width and length of the area in question, i.e. all measurements taken anywhere in area of question must conform to depth requirements.
- h. Verify valve train. Remove and inspect valve cover/breather and inspect for conformance to specification. Visually inspect valve train for conformance to specification. Remove valves, springs and retainers and inspect for conformance to specification. Inspect valve chamber, valve seats and ports for conformance to specification.
- i. Verify bore, stroke, piston-cylinder deck protrusion and cam profile. Install a long travel dial indicator on a bridge over the center of the piston. Turn the crankshaft such that the piston comes to bottom dead center. Lightly tap on the top of the piston to take up any play in the crankshaft journal. Zero the indicator at bottom dead center. Turn the crankshaft until top dead center is seen on the indicator. Total indicator reading from bottom to top dead center is the stroke. Using an indicating, two point bore gage (preferred) or caliper (alternate) measure the diameter of the cylinder. This is the bore.

For total cubic inch engine displacement (bore and stroke dimensions taken in decimal inch units) the formula is:

$$\text{bore} \times \text{bore} \times \text{stroke} \times .7854 = \text{total cubic inch displacement}$$

- j. Turn crankshaft to recess piston below cylinder deck. Clean cylinder deck mating surface of any residual head gasket material. Lay a precision parallel bar on top of the cylinder deck, parallel and inline with the wrist pin. Zero the indicator on top of the parallel bar. Turn the crankshaft through top dead center. As piston goes through top dead center, read the indicator. Maximum reading is the piston-cylinder deck protrusion (pop-up). *Note: Coil should be removed for this procedure.* Replace intake valve with a dummy valve with head ground down so as to not bear on the valve seat. Install a dial indicator directly over the centerline of the intake valve. Install a degree wheel on the crankshaft and establish top dead center of the combustion stroke using standard practice. Zero both indicators at top dead center. Verify that cam profile limits at specified lift conforms to specification. Repeat procedure on exhaust valve.
 - k. Verify crankcase and associated components. (*Note: Complete disassembly of the crankcase and associated components is only necessary to verify certain elements of this paragraph.*) Disassemble crankcase. Remove side cover. Visually inspect side cover and gaskets for conformance to specification. Remove camshaft. Inspect camshaft for conformance to specification. Remove valve lifters. Inspect lifters and lifter bores for conformance to specification. Remove connecting rod bolts and connecting rod/ piston assemblage. Disassemble piston from connecting rod. Inspect connecting rod, piston, rings and wrist pin for conformance to specification. Remove crankshaft. Inspect crankshaft counterweights for visual and dimensional conformance to specification. Unless otherwise specified, no alteration of any kind is permitted to crankshaft counterweights. Verify block for conformance to specification.
2. Four cycle exhaust systems
- a. RLV B91 series silencers are the only approved four cycle silencers. Silencer must be stock, unaltered as delivered by RLV. All B91 series silencers, outside diameter 2.240 inch maximum. All B91 silencers must exit aft of the fuel tank and forward of the rear bumper.
 - 1. RLV B91 dimensional requirements
 - a. Silencer shall be equipped with minimum of three internal baffles and one end baffle. All baffle holes diameter .1285 inch maximum. Exhaust pipe mating inside diameter 1.0 inch nominal.
 - 2. RLV B91L dimensional requirements
 - a. Silencer shall be equipped with minimum of three internal baffles and one end baffle. All baffle holes diameter .1285 inch maximum. Exhaust pipe mating inside diameter 1.125 inch nominal.
 - 3. RLV B91XL dimensional requirements
 - a. Silencer shall be equipped with minimum of three internal baffles and one end baffle. All baffle holes diameter .1285 inch maximum. Exhaust pipe mating inside diameter 1.3125 inch nominal.
 - 4. RLV B91MO dimensional requirements
 - a. Silencer shall be equipped with minimum of three internal baffles and one end baffle. All internal baffle holes diameter .1285 inch maximum. End baffle may have round holes of .1935 inch maximum diameter or square screen of .2031 inch maximum width and height. Exhaust pipe mating inside diameter 1.3125 inch nominal.
 - a. Exhaust pipe/header must extend beyond the fuel tank but not extend past the rear bumper (including silencer). Header pipe must be of fixed design. Loop type header pipes must be wrapped to protect the driver from burns. Header pipe may not protrude inside the exhaust port so as to alter the port configuration. Studs are allowed for header pipe attachment. Header support brace is optional and may be welded.

3. Four cycle fuel delivery systems

a. General requirements

1. *The following paragraph applies only to Tillotson carburetors as utilized per class structure description and/or specific engine tech sheets. This does not apply to Briggs & Stratton stock 5hp carburetors. Please refer to engine specific tech sheet for all Briggs & Stratton stock 5hp carburetor requirements.* Except in the case of throttle shaft sealing devices, throttle bores, mounting face and blueprinting of metering holes, carburetors and all components therein may not be machined or altered in any way. Machining of the carburetor body is allowed to accept a sealing device for the throttle shaft. All components must be of original manufacture and stock appearing. Fuel may pass only through the stock metering orifices. Any means to bypass or alter manufacturer's intended fuel flow is prohibited. Inlet spring is non-tech. Carburetors may be run in any position. Filtering devices to protect metering diaphragm are allowed. Funneling of inlet not allowed.

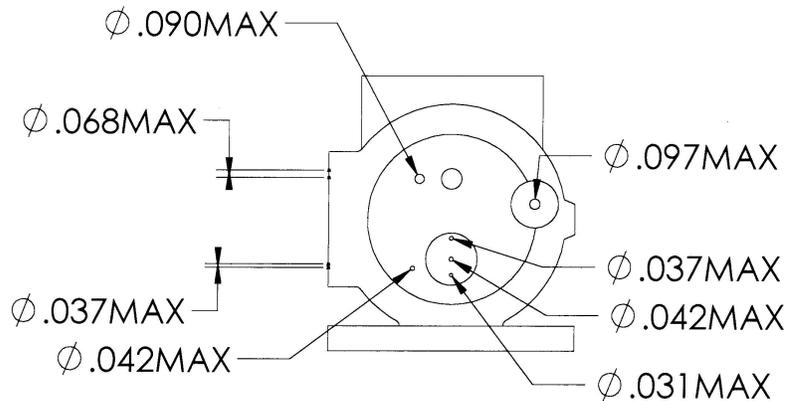
2. Homologated carburetors

a. Tillotson models HL227A, HL250A, HL304A, HL307A, HL317A, HL317E, HL322 and HL334A

1. High speed needle seat diameter .068 inch maximum.
2. Low speed needle seat diameter .037 inch maximum.
3. Idle speed pick-off diameter .042 inch maximum. (omit for HL250A)
4. Idle jet diameter .031 inch maximum.
5. Transition jet diameter .042 inch maximum.
6. Air pre-mix orifice diameter .037 inch maximum.
7. Fuel inlet valve seat diameter .097 inch maximum.
8. High speed fuel pick-off diameter .090 inch maximum.
9. High speed jet check valve must be intact and unmodified.
10. Throttle bore diameter 1.195 inch maximum.

Notes: Venturi bore must be as cast with minor deburring and removal of casting flash only allowed.

Tillotson HL227A,HL250A,HL304A,HL307A,HL317A,HL317E,HL322, and HL334A



Section 7 - Four-cycle engine specific technical inspection data

Note: Generic requirements are listed in section 6.1 and are applicable in their entirety unless specifically excepted on the engine specific tech sheet. The following specifications take precedence over any contradicting requirements of section 6. Exhaust requirements per section 6.2 and class structure description. Carburetor requirements per section 6.3 and class structure description.



Engine Specific Tech Sheet for: Briggs & Stratton 5hp Stock

Description: Single cylinder, two valve, four cycle

Displacement: 13.017 cubic inches maximum

Cylinder head requirements: Machining permitted on the gasket mating surface and the top of the post bosses only. Welding on the cylinder head is prohibited. Helicoil repair of spark plug threads in original position permitted, no protrusion into combustion chamber allowed. Bolt hole diameters .348 inch maximum. Combustion chamber depths: piston area .011 inch minimum, spark plug area .408 inch minimum, valve area .300 inch minimum. Any head gasket, not made of aluminum or copper, in stock configuration and .043 inch minimum thickness midway between bolt holes is permitted. Gasket sealer of any type is prohibited. Eight stock head bolts required.

Bore and stroke: 2.6025 inch maximum bore, 2.437+/-0.10 inch stroke. Protrusion of the piston above the top of the cylinder deck .005 inch maximum parallel and inline with the wrist pin. *Note: Acceptance criteria of .015 inch maximum is allowable if specifically stated in series-specific rules and/or class structure.*

Carburetor requirements: Stock Briggs & Stratton 5hp carburetor only. Pressurized fuel delivery systems are prohibited. Any means of providing fuel or air flow not originally intended by the manufacturer is strictly prohibited. No welding to carburetor body or any component except outside end of mixture screw is permitted. Filter adapter top surface must be flat and .250 inch maximum thickness from mounting face. Inside diameter of adapter may be radiused .250 inch maximum. No more than one filter adapter gasket may be used, thickness .075 inch maximum. One or two carburetor mounting flange gaskets may be used with no sealer of any type. Swirl non-tech. Throttle shaft washer and rubber seal must be in place and stock configuration. Throttle shaft leading edge .040 inch minimum, trailing edge .086 inch maximum. Butterfly must be unaltered stock with .059 inch minimum thickness at throttle shaft mating location. Butterfly screw must be unaltered stock, .322 inch minimum length. Except for outside end, needle screw must be unaltered stock with o-ring and washer present. Jet must have stock recess on backside with no funneling of hole allowed. Main metering hole diameter .062 inch maximum. Idle hole diameter .028 inch maximum. Air horn diameter 1.011 inch maximum. Recess at flange end must be as cast, .726 inch maximum diameter. Carburetor bore, from flange end recess to intersection of air horn diameter, .695 inch maximum diameter - no attempts to modify fuel/air flow permitted (rifling, dimpling, protrusions, etc. not permitted). Diaphragm cover plate may be faced for proper sealing. Aftermarket diaphragm of stock configuration permitted. No sealing agents permitted on diaphragm side of cover plate gasket. Spring and cup must be unaltered stock. Long fuel pickup tube may not be brass. Short tube inside diameter .066 inch maximum. Breather tube must be removed. Any stock, single hole, domed Briggs & Stratton fuel tank cap is permitted including those with integral splash shields.

Valve train: Stock, unaltered breather valve only. Two gaskets permitted.

Grommet and internal foam must be in place. Stock, unaltered, single angle valves only. Length of flat from seating surface to end of valve .035 inch minimum. Intake valve angle 30°+/-1°, 1.115 inch minimum head diameter. Exhaust valve 45°+/-1°, .990 inch minimum head diameter. Stock valve springs and lower retainers required. Springs may be machined to meet length requirements. Exhaust spring must be used on exhaust valve and may be used on intake valve. One stock upper retainer may be used on either valve, .058 inch maximum lip thickness. Intake valve spring length 1.240 inch maximum; .087 inch maximum wire diameter. Exhaust valve spring length 1.300 inch minimum, 1.500 inch maximum; .088 inch minimum wire diameter; inside spring diameter .625 inch minimum, .640 inch maximum. Both upper valve chamber surfaces may be spotfaced for valve spring stabilization. Depth and geometry of spotface non-tech. Stock, single angle valve seats required. Valve seat height to cam centerline 5.740 inch minimum, 5.775 inch maximum. Valve seat may not protrude above cylinder deck surface.