



Tom Argy's vision and passion.

In 2002 - 2003 TAG Racing was started by my father, Thomas Argy Jr. The idea was, is for engine manufacturers to be creative, imaginative and create new technology, to grow and improve the sport. In 2003 my father passed away, very few people understand and think the same way, In 2002 my dad, Dave Larson and Rodney Berryhill traveled to Europe that's when the Rotax program went sideways, with my dad focused on racing in North America. The idea of out of the box multiple engines in classes at the grass roots of racing "TAG" was started. My mom, sister and I asked Marty Casey to take over the technical aspect of TAG to create the fun, competitive, tech rules at an affordable environment. Dave Larson and Marty Casey will continue to make Tom Argy SR dream involve into a household name in the racing world.

Tom Argy III

2023 TAG™ USA Rules & Regulations

*(A downloadable/printer-friendly version of these rules & regulations can be found at bottom of this page.)

A. Introduction

The purpose of TAG™ Racing International and TAG™ USA (aka TAG™) is to create FAIR, FUN and SAFE new racing programs on a worldwide basis within the karting industry. TAG™ endeavors to unify manufacturers into a limited class structure and provide a basis for the development of better products. For the competitor, TAG™ is the opportunity to participate in a widely accepted program beginning at the basic club level up to highly organized festival events, producing a true National Champion. Above all else, it shall be the direction of TAG™ to be:

"Dedicated to making KART racing fun!"

B. Status of TAG™ Racing International Programs

TAG™ Racing International/TAG™ USA shall be run as an independent national club sport program. Sanctioning of events is only available through the TAG™ Racing International office and it's designated National Director of Racing. The program reserves the right to assign operations and promotion of regional programs other sanctioning bodies, dealers and/or promoters who shall strictly adhere to these rules herein and the direction of the TAG™ Racing International/TAG™ USA National Director of Racing. Changes to TAG™ Racing International/TAG™ USA regulations require the written approval of the National Director of Racing.

C. General Prescriptions

Everything not specifically specified within these regulations will be covered by the CIK/FIA International Karting Regulations.

TAG™ Racing International/TAG™ USA Homologation periods are for a Two Year period and commence on January first of the Homologation Year. Homologation years are the even number years IE: 2010, 2012, 2014, 2016, 2018, 2020, 2022, 2024 unless otherwise designated in the Homologation forms. If at any time during that Two Year time period the Homologated product is changed or falls out of the submitted and approved specifications it may be removed from the TAG™ Racing International/TAG™ USA rules.

ANY RULE CHANGES APPROVED AND POSTED TO THE WEBSITE WILL BE EFFECTIVE FROM THE POSTING DATE.

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 SAFETY 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.

The race director shall be empowered to permit reasonable and appropriate deviation from any of the specifications herein or impose any further restrictions that in his / her opinion do not alter the minimum acceptable requirements. *NO EXPRESSED OR IMPLIED WARRANTY OF SAFETY SHALL RESULT FROM SUCH ALTERATION OF SPECIFICATIONS.* Any interpretation or deviation of these rules is left to the discretion of the officials. Their decision is final.’

D. 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. All changes will be documented in the update table on this site.



E. TAG™ Racing International TAG™ USA Officials

Marty Casey	International/National Technical Operations Director
Dave Larson	President/CEO
Tim Wilkerson	Insurance Director
Tom Argy III	Event Director official
Deanne Olsen	Timing & Scoring official
Destiny Poe	Timing & Scoring official
Jack Lehman	Technical Director
Marty Murray	Technical official
Tim Lang	Technical official
Mike Lapke	Technical official
Mike Manning	Technical official
Lewis Stout	Technical official
Earl Clement	Race Event official
Bill Schatz	Race Event official
Chris Burke	Race Event official
Charlie Larson	Race Event staff
Rachel Sternberg	Race Event staff
Nash Larson	Race Event staff
Craig Ellsworth	Media/Marketing
Stan O'Daffer	Website Design

Any protest, to a disqualification, made by any TAG™ Racing International/TAG™ USA Technical official will be presented to the National Technical Director and the board. Once presented and discussed a final decision will be rendered. The decisions of TAG™ Racing International/TAG™ USA are final and may not be protested.

International Officials:

Gregory Tromp	International Technical official
Simon Oduber	International Official Caribbean Region
Victor Castro	International Official Panama
Peter Kerr	International Official Venezuela
Jose Pepe Ventimilla	International Technical official

Any proposed changes or improvements must be submitted in writing and will be submitted along with the proper forms. All submissions must include the fees associated with the change requested. These fees are non-refundable regardless of the outcome of the proposed changes approval or disapproval by TAG™ Racing International/TAG™ USA its board and its national technical director. These submittals must be from the importer and/or the manufacture only, no exceptions. If the submitted change is approved, the length of that approval will only be for the remainder of that products Homologation period.

All TAG™ engines are to be used just the way the manufacturer submitted them for approval with no exceptions.

If an importer supplies any engine part and/or component that has not been submitted and approved by TAG™ Racing International/TAG™ USA, that engine may be fined and or removed from the program for a period of 1 year.

Note: TAG™ Racing International/TAG™ USA has a basic set of rules that may differ from the homologation papers and these rules must be in force first before the homologation papers are enforced.

Please note that TAG™ Racing International/TAG™ USA classes and rules are designed as a picking list to help enhance your racing events and series programs. All sanctioning bodies, clubs and event promoters should use these class structures and their accompanying rules as written to their benefit to pick and choose the classes within our structure that best help perpetuate participation and growth within their racing programs. These rules and classes have been designed to provide a stable platform across all US and International sanctions to help promote one set of classes and rules that will allow stability for all TAG™ racing on a world-wide platform.



2023 TAG™ USA Tech 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 to 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.

TAG™USA and TAG™ Racing International are the sole creators and owners of all of the rules which are posted here for access by interested racing entities. All rights are reserved and retained by TAG™USA and TAG™ Racing International and no others. By utilizing these rules for your series or team, or other racing entity, you are agreeing, in advance, that you are a TAG™ sanctioned track or series operation. Any attempt to copy, reproduce (by any Medias) by a non-TAG™ operation is strictly prohibited and illegal. Any ‘copy and paste’ of the rules herein, any re-typed and re-print of the rules herein, by non-TAG™ Operations is illegal and violates U.S. and International Copyright laws and will be prosecuted immediately. This is in the spirit of the sport and the effortless work by TAG™USA and TAG™ Racing International to provide consistent and executable standardized rules so that all Karters can race with the knowledge that they are on an equal competitive playing ground.





TAG USA 2023 Rules



Forward 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 1 – General Rules and 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 in which you participate. These rules should be available at registration. If you do not understand a rule, please ask a race official.

A. 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 encounter 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.

B. SERIES STICKER

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



C. DRIVER ELIGIBILITY & REQUIREMENTS

1. You must be entered in a class in order to practice in all TAG™ sanctioned events or have paid a separate practice-only fee.
2. You must be a TAG™ member, in good standing, in order to receive year-end awards.
3. Pregnant women are not allowed to practice or compete.
4. 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.
5. Relief/substitute drivers are allowed only when permitted by local option rules AND approved by Race Director; in addition, they must meet all class rule requirements. If anyone is found to be driving for another entrant without Race Director approval, both will be ejected from the event and face possible suspension.
 - Enduro: Driver of record must complete at least one lap of race and be scored.
 - Speedway: Driver of record must qualify kart. Relief driver may race in feature.
 - 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.
6. Competition Age: 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.
7. Drivers meetings are mandatory. If you are unable to attend the drivers meeting you are required to check in with the race director.

D. WAIVERS AND LIABILITY REQUIREMENTS

Liability Waiver: All drivers must sign a waiver of liability before being allowed to drive on the track.

Release and Waiver of Liability, Assumption of Risk, Indemnity Agreement: All persons who intend to enter a restricted area shall sign the official Release and Waiver of Liability, Assumption of Risk, and Indemnity Agreement before being allowed to participate in any event. All participants, by signing the waiver, hereby elect to use the track at their own risk, and thereby release and forever discharge TAG™ USA and it’s Member Clubs, together with their heirs, assigns, officers, representatives, agents, employees and members, from all liability from injury to person, property, employees and/or reputation, that may be received by said entrant and/or driver, and from all claims of said injuries to parties listed above growing out of, or as resulting from the event contemplated under the entry form, or caused by any construction or condition of the course over which the event is held.

Parental Consent Release and Waiver: It is mandatory that at least one parent or legal guardian of a minor 17 years old or younger fully execute the Parental Consent and Release and Waiver of Liability, Assumption of Risk, and Indemnity Agreement before being allowed to participate at any TAG™ USA Event. The Minor Report is to be signed by a parent or legal guardian at each event, and reaffirms the agreement of the Parental Consent.

Incident Report: A TAG USA incident report must be completed by the race director or their designee any time an injury occurs during an event. Reports must be submitted within 24hrs of the end of the event.

E. VIOLATIONS

Violence: Physical violence or threat of to any individual at any TAG™ USA event will subject that person(s) to immediate expulsion and will subject that person(s) to further disciplinary action, up to and including suspension.

Verbal: Verbal abuse, threats or abusive language will subject that person(s) to expulsion and possible further disciplinary action, up to and including suspension.

Prohibited Substances: All participants of a TAG™USA sanctioned event including family, friends, teams, and crew as well as drivers shall adhere to a zero-tolerance policy drug and alcohol whenever the track is live, and shall be sober and not under the influence of any substance (whether illegal or legal). If the judgement of any event official is that an individual is under the influence of alcohol and or drugs which may include over the counter medications. Individuals



under the influence may be ejected from the event and or banned for life with local authorities calling to intervene. Only after racing has finished, and if local ordinance allows, will the consumption of alcohol be allowed..

Crews and Spectators: Drivers are responsible for conduct of any crew and spectators in their pits. Any unacceptable conduct could subject the driver to disqualification from an event and may subject the offending person(s) to disciplinary action.

Legal Action: Any Competitor, Parent or Legal Guardian, or General participant that threatens or takes legal action via an attorney against the TAG™ USA or TAG™ USA Member Club/Facility, or any of its legal agents or staff, will be ejected from the event and suspended from all TAG™ USA events.

Miscellaneous: The following will be cause for immediate ejection and suspension:

- Falsification of age
- Modification of engine to deceive officials and compete in a class illegally
- Competing at a TAG USA event without being the driver of record
- Driving a kart on a public street/highway or assisting anyone that drives a kart on a public street/highway

F.

PIT RULES

1. Only those persons that have signed a waiver of liability and have received a pit pass shall be allowed in the pit or restricted area. Each participant is responsible to enforce this rule. Any competitor that knowingly allows a person(s) who has not signed a waiver of liability, and purchased a pit pass to be present in their pit, may be disqualified for the day, ejected from the event, or face further disciplinary action up to and including suspension.
2. Driving or coasting in the pits is not allowed. The only acceptable area karts can be driven is exiting the grid, the track, and up to but not on the scale.
3. Drip Pans or mats are required. Any entrant disposing of fuels or lubricants in the pit area or track, by pouring or spilling such fuels or lubricants upon the ground, may be subject to expulsion from the event. All lubricants used or unused, are the responsibility of the participant.
4. Any crew or spectator not following competition rules, disobedient, or having general lack of respect towards others may be expelled from the pit area, and disciplinary action may be taken against the driver.
5. Host Club, Race Director or Pit Steward may at time limit the number of people per entrant allowed in the pit.
6. Host Club, Race Director or Pit Steward may at any time limit the number of tow vehicles, kart transport vehicles or trailers in the pits.
7. 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.
8. Hot Pit area is defined as an area of the pit to include a portion of the grid area where karts can be driver under their own power.
 - a. When utilizing the hot pit area, drivers will use extreme caution, slow to a reduced rate of speed. Upon exiting the hot pit onto the track, the driver will yield to oncoming traffic, and stay out of the fast line until up to speed.
 - b. Access to the hot pit area will be limited to drivers and their crews. Crews will be limited to a sufficient number to service the kart.
 - c. Fueling karts on the hot pit can only be done after the driver has exited the kart and the engine has been turned off.

G. POINTS & SCORING

1. To receive year-end awards in each class, the entrant must be a TAG™ member and pass post-tech.
2. 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.
3. 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.
4. 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.

5. 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.
6. In the event of a rainout, all entrants will receive 200 points plus the number of entries in the class.
7. 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 + “ “		

H. MISCELLANEOUS RULES

1. Data acquisition is legal in all classes.
2. Radio communication is allowed only in Road Racing, for all classes except novice.
3. All individuals entering the event site must sign and execute all insurance related documents as prescribed for that event.
4. Vendor fee of \$100.00 per event will apply to anyone selling product or service at any and all series events with the exception of series or class sponsors.
5. TAG™ Racing International/TAG™ USA and its series and organization(s) reserve the right to refuse any and all entries and/or admission at or to any event(s).
6. Social Media: From time to time there may be differences of opinion in regards to TAG™ Racing International/TAG™ USA Sanctioned Rules and Regulations and decisions by event officials, or policies. In these particular cases, any communications and discussions of differences must be handled directly between TAG™ Racing International/TAG™ USA Officials and the specific officials and parties involved in the dispute. Any publishing and/or discussion of such a situation regarding these differences on any social media or other forms of media may result in disciplinary action by TAG™ Racing International/TAG™ USA, including loss of ability to participate in TAG™ Racing International/TAG™ USA Sanctioned events.



Section 2 - Race/Competition Procedures and Rules

A. SPORTSMANSHIP

It is the intent of these rules and regulations that all competitors exhibit good sportsmanship when driving. Drivers are expected to behave with fairness, respect, and drive without touching or endangering other karts, while accepting defeat or victory graciously. All drivers are reminded to remain alert and respect fellow drivers at all times.

Inadvertent and occasional contact between karts while on the track is a reality of racing, it will be the judgment of the officials to determine when inadvertent contact becomes deliberate. Pushing, bumping, nerfing and blocking will not be tolerated and is solely at the discretion of the Race Director and his/her officials to determine when the line has been crossed. The Race Director may penalize or disqualify any racer, who, in their judgment is not displaying good sportsmanship. An effort should always be made to prevent rough driving, and when it occurs, offenders will be punished. **Driving penalties assessed by the Race Director are not eligible for protest.**

B. PRACTICES

All procedures, rules and regulations that apply to competition shall also apply to practices.

C. NUMBER OF KARTS

The number of karts permitted at any one time on the track during an event shall be determined by the following; track layout and design, competitor safety, ability of participants, and Race Director judgment.

D. JUNIOR DRIVERS

Jr. Classes should be should be separated at all times. Nevertheless:

Kid Karts: Will not be allowed on the track at any time with any other classes. Kid karts will have the track to themselves at all times.

Jr. I or Cadet Classes: Jr. I Classes will not be permitted to practice, qualify or race with any Sr. Classes. At the discretion of the Race Director, Jr. I and Jr. II classes may practice, qualify, and race together as long as they do not compete and are scored separately.

Jr. II Classes: Jr. II Classes will be allowed to practice, qualify, and race with Sr. Classes as long as they do not compete and are scored separately.

E. 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 Black Flag

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 competitor’s 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, the race 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 by ambulance, due to an accident, 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 the driver does not return from the health care facility prior to the end of post-tech, scales will be waived.

Green Flag

The race track 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.

F. RACE STARTS

1. Caution will be taken during all race starts due to the close proximity of karts to one another. Drivers should avoid sudden changes, and if evasive action is necessary, care is needed to ensure the intended course is clear.
2. Once karts have left the grid and the 90 second clock has expired, karts that leave the track and enter the pits may not return to the track unless directed to do so by the Race Director.
3. If an entry is scratched before the karts leave the grid, the karts will be crossed over to make the grid correct. If a kart is scratched after leaving the grid, the karts will fill the empty position by moving forward.

G. ESTABLISHED COURSE

Drivers are to follow the established course, with all four wheels remaining on the track. Any driver that leaves the course or attempts to cut the apex of a corner while attempting to make a pass may be assessed a penalty or disqualification. Deviation is only acceptable when avoiding an accident.

H. RE-ENTERING THE COURSE

When a driver leaves the racing surface they may re-enter only under their own power - no outside assistance is allowed. A driver may only enter the racing surface at a point that will allow them no advantage of time and/or position. When re-entering, drivers are to take care to avoid other karts and stay away from the racing line while allowing competing karts sufficient room to pass.

I. OVERTAKING

1. When two or more karts enter a corner, the lead inside kart will have the right of way. All karts will maintain a constant line through corners and avoid sudden changes.
2. For an overtaking kart to establish position, they must have the centerline of their front axle midway between the lead kart’s front and rear axle as they enter the corner.
3. Once an overtaking kart has established position, the lead driver must maintain position. Both karts have equal right to the corner and will give the other racing room. This does not obligate either driver to concede the corner.



J. **DEFENDING**

Drivers are allowed to make one (1) lane adjustment coming to a corner. If an overtaking driver has broken the rear plane of the lead kart with the nose of their kart, the lead kart may not make a lane adjustment.

K. **LAPPED DRIVERS**

Drivers that are being lapped will not impede overtaking karts. When receiving the blue flag, they will maintain their position and allow the overtaking driver to pass. It is recommended that when being overtaken lapped driver should signal to the faster kart what side is the safest to make the pass.

L. **SIGNALING**

Drivers are required to signal other drivers by raising one arm when the following occurs: entering/exiting racing surface; slowing; obstruction or incident on track. Road Race laydown drivers should sit up as a signal to other drivers that they are at a reduced speed and caution should be taken.

M. **ON-TRACK ADJUSTMENTS**

Adjustments made to karts, equipment and carburetors should take place on straight-a-ways.

N. **DISABLED KARTS**

1. No drivers will be allowed to continue if they get out of their kart for any reason, except in the case of a Red Flag or in a Hot Pit area.
2. Any driver unable to continue due to a dead engine (karts with onboard starters excluded), mechanical failure, or lack of fuel will move their kart well off the racing surface to a safe position or assist the corner marshal in doing so. The driver will then move behind the nearest protective barrier. Do not attempt to move the kart back to the pit area until the conclusion of the race.
3. Kart retrieval vehicles will remain behind protective barriers until directed to proceed by the Race Director. They must wait until the conclusion of practice, qualifying, and racing. All karts must be off the track or stopped prior to entering the racing surface.

O. **POST-RACE INSPECTION**

1. After the conclusion of each qualifying, pre-final and final race, drivers will immediately proceed to the scale to be weighed. Failure to make scale, failure to make minimum weight, carrying weight on the driver, or failure of driver to identify themselves to officials will be grounds for disqualification from that portion of the event. After the final race, karts and drivers will proceed to the designated impound area.
2. The Race Director and Head Technical Inspector must review all tech disqualifications. At the Race Director's discretion, they may consult other resources for clarification in order to make a final decision.
3. The addition or removal of weight other than fuel during the race is prohibited.

P. **FUEL INSPECTION**

All competitors will be given one courtesy fuel check before the start of racing. If fuel does not pass tech during qualifying and or pre-final, the competitor will start at the back of the lineup for the next event. If fuel does not pass tech after the final, the competitor will be disqualified for the day. Repeated use of illegal fuel will result in disciplinary action up to and including suspension.

Q. **RACING PENALTIES AND OTHER DISCIPLINARY ACTIONS**

The Race Director may levy any of the following penalties for infractions committed by a driver, crew or any spectator associated with a driver or crew:

- Finishing position may be changed by one or more positions.
- A time penalty may be assessed
- Disqualification while on track or at scale by use of black flag.
- Disqualification from race or event due to an infraction either on or off track. Note: Disqualification cannot be retroactive to previous days or events.
- Race Director can request that the TAG™ USA Coordinator levy additional penalties.



The TAG™ USA Coordinators may levy the following penalties for infractions committed by a driver, crew or any spectator associated with a driver or crew. Penalties do not have to be progressive:

Warning Letters are written in order to warn a participant about his or her behavior. A warning letter is used to inform that person that his or her actions will result in further disciplinary action if he or she does not change his or her behavior.

Probation may be used to further discipline a participant. Time frame will be stated on the official letter and will not exceed one year from the date of violation. TAG USA Coordinators will notify all member club representatives of the probation.

Suspensions are used only as a last resort and are at the discretion of the TAG USA Coordinators. Participants will be placed on suspension for a defined length of time, beginning at the date of violation. The suspension letter will be sent to the participant as well as the Presidents of all TAG USA member clubs. When suspended, a participant may not participate, attend, or vote at any TAG USA Events.

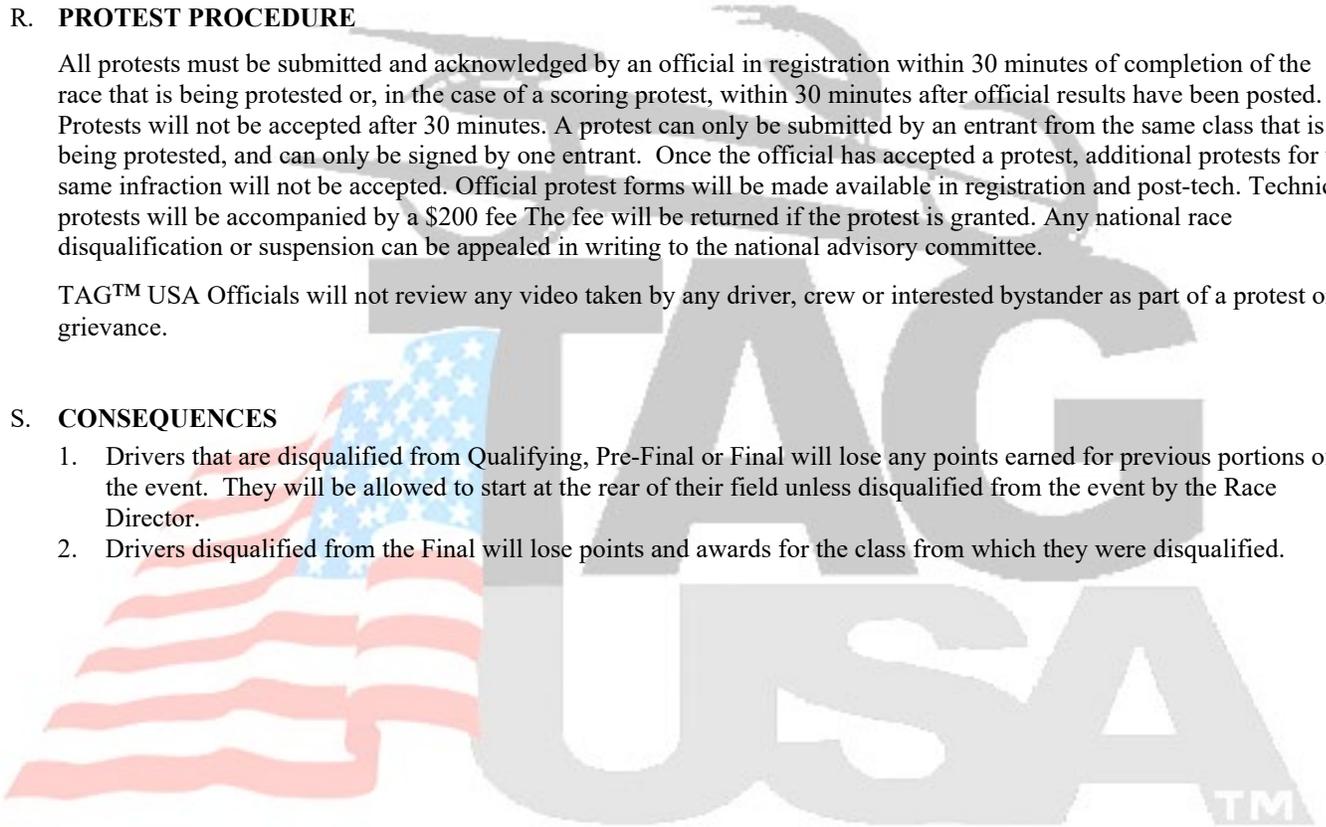
R. **PROTEST PROCEDURE**

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. Technical protests will be accompanied by a \$200 fee. The fee will be returned if the protest is granted. Any national race disqualification or suspension can be appealed in writing to the national advisory committee.

TAG™ USA Officials will not review any video taken by any driver, crew or interested bystander as part of a protest or grievance.

S. **CONSEQUENCES**

1. Drivers that are disqualified from Qualifying, Pre-Final or Final will lose any points earned for previous portions of the event. They will be allowed to start at the rear of their field unless disqualified from the event by the Race Director.
2. Drivers disqualified from the Final will lose points and awards for the class from which they were disqualified.



Section 3 - 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 $\pm 1/32$ 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 gauge of maximum size shall be employed to measure these dimensions. For example, a .500 max diameter should be measured with a .500 gauge pin. If the gauge enters the feature in question, it shall be found out of tolerance. For designated inside minimum dimensions, a gauge of minimum size shall be employed. For example, a .625 minimum diameter should be measured with a .625 gauge pin. The gauge 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 gauges 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 gauges at ambient temperature.



Section 4 – Classes and Weights

Please note that TAG™ Racing International/TAG™ USA Classes and rules are designed as a picking list to help enhance your racing events and series programs. All sanctioning bodies, clubs and event promoters should use these class structures and their accompanying rules as written to their benefit to pick and choose the classes within our structure that best help perpetuate participation and growth within their racing programs. These rules and classes have been designed to provide a stable platform across all US and International sanctions to help promote one set of classes and rules that will allow stability for all TAG™ racing on a world-wide platform.

NOTE: At the discretion of the club, series, and/or race director, a 200 pound driver may run TAG™ Masters if he or she is 16 years of age and he or she weighs 200 pounds (minimum) post-race on race day. This is solely at the discretion of the club, series, and/or race director.

A. TAG™ INTERNATIONAL – JUNIOR, SENIOR & MASTERS COMBINED CLASS WEIGHTS

Engine ---- <u>Sprint Weights</u>	Junior	Senior	Masters	x	Engine -- <u>Road Race Weights</u>	Junior	Senior	Masters
I. Parilla Leopard	320 lbs	360 lbs	390 lbs.	x	I. Parilla Leopard	320 lbs.	360 lbs	390 lbs.
K. Rotax Max FR125	320 lbs	370 lbs	400 lbs.	x	K. Rotax Max FR125	320 lbs	375 lbs	400 lbs.
K. Rotax Max FR125-EVO	330 lbs	370 lbs	400 lbs.	x	K. Rotax Max FR125. EVO	330 lbs	390 lbs	410 lbs.
R. X 30	330 lbs	360 lbs	400 lbs	x	R. X 30	320 lbs	370 lbs	400 lbs
S. X 125 T	320 lbs	360 lbs	400 lbs	x	S. X125T	320 lbs	360 lbs	390 lbs
X125 T-WC	320 lbs	360 lbs	400 lbs		X125 T-WC	-----	-----	440 lbs
O. SGM – GT 20	-----	370 lbs	390 lbs	x	O. SGM – GT 20	-----	380 lbs	400 lbs
V. Vortex Rok	320 lbs	360 lbs	390 lbs	x	V. Vortex Rok	330 lbs	400 lbs	420 lbs

NACAM - Jr-2 Class will utilize a restricted intake manifold with a 15mm intake opening

The SSX-30 Steel clutch assembly is approved for use on the Rok and the IAME X30 in Road Racing only no modified clutches will be allowed

B. TAG™ INTERNATIONAL - CADET CLASS WEIGHTS

Engine	Cadet
Gazelle 60cc	235 lbs.
Parilla Mini Swift 60cc	235 lbs.
Vortex Rok 60cc	235 lbs.

Mini Swift & Rok 60cc Cadet 2 engines will utilize the same carburetor and pipe
 NOTE: CADET will be the same as the Italian federation engines without modifications
 #Note: Panama will allow the Parilla Mini-Swift 2010-2023 as Local option in Cadet class

C. TAG™ USA BRIGGS LO 206

Engine	Junior	Senior	Masters
Briggs LO 206	300 lbs.	375 lbs.	390 lbs

D. TAG™ USA TILL0TSON T225TR

Engine	Cadet	Junior	Senior	Masters
T225TR	200 lbs.	300 lbs.	350 lbs.	390 lbs.

E. TAG™ USA STOCK MOTO

Engine	Junior	Senior	Masters
Honda	340 lbs.	395 lbs.	405 lbs.

F. TAG™ USA ICC/KZ 125cc SHIFTER

Engine	Junior	Senior	Masters
ICC Shifter		395 lbs.	425 lbs.
KZ Shifter		385 lbs.	415 lbs.

G. TAG™ USA 100cc



Engine	Junior	Senior	Masters
VLR 100	320 lbs.	360 lbs.	380 lbs.
KA 100	320 lbs.	360 lbs.	380 lbs.



Section 5 - Pre-Tech Requirements

A. PERSONAL SAFETY EQUIPMENT

1. Head Gear

Full-face helmets designed for competitive motorsports use that comply with Snell Foundation and SFI specifications. Snell 2015 SA and M2015, and K2015 will expire at the end of 2026 year, CMS 2016 and CMR 2017 will be legal thru the 2027 calendar year., Snell 2020 SA and M2020, K2020 and or newer are mandatory and will expire at the end of the 2031 year. 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.

All Helmets must be present at pre-Tech for inspections and must be in OEM factory condition without any modifications and damage. Any helmet that has damage and has been deemed not useable by any official will not be allowed for any on-track usage.

Video or recording equipment may not be mounted on any helmet for any on-track usage at any time. Helmets that are factory internally pre-wired for radios and or Cameras are allowed as long as the connections are secured. Use of radios is allowed only in Road Racing, for all classes except novice. All kart-mounted cameras must be identifiably marked by owner or team

2. Neck Brace

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. Laydown kart drivers are exempt from this requirement.

3. Driver Apparel

- a. 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.
- b. 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.
- c. Loose clothing, bandanas, scarves, hoods, loose belts, etc. are not allowed.
- d. 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.
- e. Video or recording equipment may not be worn on the driver. All cameras must be identifiably marked by owner or team

All personal safety equipment is subject to, and shall be available for, pre-tech inspection.

B. KART REQUIREMENTS

1. General

- a. The kart must be neat in appearance, in good repair, and show quality workmanship.
- b. The kart must meet the requirements set forth in the TAG™ Tech manual for its particular class.
- c. Rear view mirrors are allowed as long as they are mounted to the kart. No hand mounted mirrors allowed.
- d. European style clevis snap pins shall be safety wired.
- e. Single-Use fasteners/Nylocks must not be used on previously drilled bolts without secondary retention.
- f. Approved exhaust silencers or mufflers are mandatory in all classes.

2. Methods of Securing Fasteners

- a. Fasteners that are required to be secured may be locked by double-nutting, safety wire, cotter pin, snap rings, all-metal locking nuts, or Nylocks (unless otherwise prohibited in this document).
- b. When using safety wire or cotter pins, the screw or bolt must be drilled so that the safety wire or cotter pin will pass through. Safety wire may not be wrapped around the fastener.
- c. Nylocks are single use locks and may not be re-used. Nylocks may not be used on screws or bolts drilled for safety wire or cotter pins.

3. Ballast

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 large fender washers on both sides of the bolts. All bolts used to fasten weights to the kart must be cotter keyed, safety wired, or double nutted. Any Sheet Lead formed in the seat must bolted. No doubling of weights exceeding 10lbs.



3. Steering Components

- a. All steering component bolts and nuts must be cotter keyed, safety wired, e-clipped or utilize single use Nylock Nuts
- b. All steering component bolts must be a minimum Grade 5 rating.
- c. All rod ends must have universal type swivel joints and jam nuts.
- d. Fasteners used on any component that will enable adjustment of camber, caster, etc. must be cotter keyed and/or safety wired, or utilize single use Nylock Nuts.
- e. Steering Shafts
 - i. 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.
 - ii. 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 1/4 inch minimum diameter bolt through the axis of the shaft.
- f. Steering Wheels
 - i. Steering wheels may be circular, with a ten inch minimum diameter, and a minimum of three spokes.
 - ii. 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.

4. Wheels and Tires

- a. Pneumatic tires designed specifically for racing only.
 - i. Minimum 9.0-inch diameter. Maximum 12.5-inch diameter.
 - ii. Maximum width, mounted on wheel 10.375 inches
- b. Tires must be available on the general market for a minimum of sixty days prior to use in a TAG sanctioned event.
- c. Wheel balancing weights shall be tape-on type and not exceed 1 ounce each.
 - i. It is recommended that additional tape be placed over stick-on type weights.
- d. Bleed valves and wheel covers are prohibited
- e. The use of tire warmers is not legal in speedway and oval racing.

5. Wheel Hubs and Axles

- a. Wheel hubs and axles shall be constructed of metallic materials.
- b. Rear axles shall be one-piece design, driving both wheels.
 - i. Either solid or hollow axles are allowed.
 - ii. .984-inch minimum diameter. 2.00-inch maximum diameter.
 - iii. Axles over 1.375 inch diameter shall be constructed of ferrous material.
 - iv. Axle stiffeners are allowed as long as they are secured by cotter key, circlip, or through bolted.
 - v. Axle may not protrude beyond the outside of rim and tire.
 - vi. Any device that allows the rear wheels to rotate at different speeds is not allowed.
- c. Front axles
 - i. Front axle nuts must be secured with safety wire, cotter keys, circlips or berry clips.
 - ii. Ground ball or roller type bearings only, and must be adjusted so there is not excessive play. Split race type bearings are not allowed.
 - iii. The spindle axle may not protrude beyond the outside of rim and tire.

6. Brakes

- a. Karts must, at minimum, have a braking system capable of braking both rear wheels equally and adequately.
- b. All karts must have a tether attached from the master cylinder to the brake pedal in addition to the brake rod.
- c. Shifter 125cc classes require the use of a dual braking system. These systems shall consist of two independent braking systems operated by separate master cylinders. One system operates the front brakes and the other system the rear.
- d. TAG classes of 125cc displacement and over may allow dual braking systems as a local option for senior, masters and/or heavy classes.
- e. 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 used to prevent loss of the fasteners.



- i. 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)
 - ii. 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.
 - iii. 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.
 - iv. Master cylinder actuating rod must be .250-inch diameter minimum, or equal quality cable with positive stops on both ends.
- f. No carbon fiber components allowed.

7. Driveline Components

- a. Clutches are mandatory in all classes except those designated as direct drive.
 - i. Oil bath clutches are allowed as long as they are sealed to prevent leakage.
 - ii. 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.
 - iii. 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.
- b. Chain and Belt Guards
 - i. All karts shall be equipped with a chain or belt guard to prevent the chain/belt from contacting the driver during a failure. Chain guards are typically metal mounted above and forward of the crank shaft.
 - (1) 4-Cycle chain guards must cover the clutch when viewed from above. There will be no void between the seat and chain that is large enough to allow any part of the driver's body to pass through.
 - (2) Additionally, Kid Karts, TAG engines, and Shifters require the use of a chain cover. The chain cover is a plastic or metal strip that covers the chain and rear sprocket when viewed from above.
 - ii. Outboard drive systems will be allowed only if the chain or belt, and sprocket are completely enclosed from the front, top, rear, and sides.
 - iii. 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.

8. Fuel Systems

- a. No pressurized fuel delivery systems allowed. No fuel injection systems allowed.
- b. 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.
- c. Fuel lines must be safety wrapped at all connection points.
- d. Fuel tanks must be securely bolted to the primary structure, frame, or floor pan.
- e. Fuel tanks on sprint karts must be located between the frame rails and beneath the steering shaft.
- f. The length of fuel line shall be only of adequate length to supply fuel to the carburetor. Extensive fuel line length is not allowed.
- g. 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.
- h. 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.
- i. 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.

9. Cooling Systems

- a. Coolant may not contain any glycol-based material.
- b. Water wetter or other surfactants may be added.
- c. Radiator OPEN used as supplied by manufacturer, or after-market product.
- d. Must be mounted to the right or the left of the driver.
- e. After-market water pumps are allowed, but must be driven by the rear axle.

10. Seats

Seats must be securely mounted to a minimum of 4 points to the chassis, with two at the front and two on the sides to solid metal frame or adjustable mounts.



11. Throttle

Throttle pedal must be secured with safety wire, cotter pin, c-clip, or snap rings. Pedal must also utilize a secondary return spring that returns the pedal to idle when released. The primary carburetor return spring is not adequate.

Section 6 – Tire Specifications

A. DUROMETER READING

46 Durometer hardness minimum for slicks and 35 Durometer minimum for rain tires unless otherwise specified.

B. TIRE MANUFACTURER / COMPOUND

SPRINT specification chart:

<u>Manufacturer</u>	<u>Slicks</u>	<u>Wets</u>
MG	SM-Yellow & SH-Red	WT
Hoosier	R60A & R55	WET
Vega	XM/XM-3 & XH/XH-3	W6
Le Cont	LP-F/Z White	LW-Purple
Mojo	-----	-----

Note: Same compound must be run on all 4 tires.

ROAD RACE will run open compound and allow all manufacturers' tires.

C. TIRE SIZES

TAG™ Junior, Senior and Master classes - 4.5 front / 7.10 rears in all classes

TAG™ Cadet & Mini Max classes - 4.5 front / 4.5 rears

D. MODIFICATION

No modification or tire treatment of any type is permitted.

E. TIRE USAGE

SPRINT/ ROAD RACING - A maximum of ONE set (four tires) per event. Tires used for qualifying must start the race.

TEAM ENDURANCE - A maximum number of sets (four tires) will be set based on the length of the event and include all official practice:

3 Hours - 2 Sets (8 tires) Club level
6 Hours - 3 Sets (12 tires) Regional
12 Hours - 4 Sets (16 tires) National Qualifier
24 Hours - 6 Sets (24 tires) National Festival

F. SPARE TIRES

Spare tires are permitted on a one for one basis due to uncontrolled damage. Replacement is based on competitors' safety. Regular wear during competition shall not be a consideration for replacement. Replacement is permitted only by decision of the Race Director.



Section 7 – Fuels and Lubricants

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

Unless otherwise specified in class structure description, the only acceptable fuel in two cycle classes is gasoline and lubricating oil. All additives to fuels are prohibited.

B. FOUR-CYCLE FUELS AND LUBRICANTS

As specified in the class structure descriptions, four-cycle fuels may be gasoline, oxygenated gasoline or methanol. All additives to fuels are prohibited.

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.

C. FUEL ADDITIVES

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 bona fide 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

D. TESTING

1. Field Testing Gasoline

Digatron meter: The preferred method of field testing two cycle fuel is with a Digatron 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.

2. Field Testing Methanol

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.

3. Laboratory Testing

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.



Section 8 - Kart Types and Construction

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, .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.
1. Wheelbase: 43.0 inches maximum, 40.0 inches minimum. Wheelbase is measured from true axle centerlines, each side.
2. 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.
3. 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.
4. Overall length: 74.0 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. 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. Dry kart weight: 85 pounds minimum in race ready trim without fuel.
7. 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.
8. 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.
9. 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.
10. 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 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 "Spirit and Intent rule".
11. 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, .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: 80.0 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: If CIK style Bumper is not used, 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 for junior and senior classes. The rearrest 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 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 "Spirit and Intent rule".
12. The use of any type of suspension components is strictly prohibited.
13. Rain Setups: All karts are allow to have the Tire width a maximum of 1 inch inward of the rear bumper as measured from the outside edge of the bumper to the leading edge of the rim.

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: If CIK style bumper is not used, 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 of 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 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 "Spirit 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.

E. CHAMP KART 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 1.125 inch nominal minimum diameter and .083 inch wall thickness. Only conventional tubular space frame construction methods are allowed. Non-conventional construction techniques must receive review and approval of the race director and/or tech inspector prior to competition.
2. Wheelbase: 42.0 inches minimum, 45.0 inches maximum. Wheelbase is measured on true axle centerline, each side.
3. Overall width: 40.0 inches minimum, 52.0 inches maximum. Overall width shall be measured from outside tire sidewall to opposite outside tire sidewall.
4. Overall length: 95.0 inches maximum. Overall length is measured at any cross section of the kart, parallel to the longitudinal centerline.
5. Roll cage specific specifications
 - a. Full roll cage of four-point conventional construction is mandatory. The four uprights and top horizontal connecting tubes must be constructed of 1.125 inch nominal minimum diameter mild steel tubing. All attachments by welding unless otherwise specified.
 - b. Uprights and positioning: Each of the rear uprights must be welded to the main frame rails at a point aft of the rear axle centerline. Each of the front uprights must be welded to the side frame rails at a point forward of the steering wheel mount point and aft of the leading edge of the front tire. All uprights must create an angle of no less than 45 degrees with the main frame rails and have no bends within three inches of attachment point except for left rear.
 - c. Top hoop rails: Corner construction shall be of rounded type with no sharp edges or corners allowed.
 - d. Shoulder harness mounting bar shall be welded laterally between rear uprights, double braced to the top lateral bar, at a height suitable for harness mounting. A minimum 6.0 inch square headrest shall be mounted to the bra tag, level with the driver's head.
 - e. Side protection bars are mandatory and must run horizontally between front and rear uprights each side. One end connection may be slip jointed. Side protection bars must be positioned vertically between the driver's shoulder and elbow.
 - f. Roll cage overall width: 16.0 inches minimum. Width to be measured outside to outside between any two uprights.
 - g. Roll cage overall height: 38.0 inches minimum. Height to be measured vertically from highest lateral cross bar centerline to main frame rail centerline.
 - h. All roll cages that deviate in any way from the above description must be brought into conformance or receive approval from the race director or tech inspector prior to be used in competition.
6. Front bumper: All components shall be constructed of round steel tubing of .750 inch nominal diameter minimum. Front bumper must encircle entire front nose area at a height of 7.75 inches minimum from ground level. Double bumpers are recommended.



7. Rear bumper: All components shall be constructed of round steel tubing of .750 inch nominal diameter minimum. Double bar construction is mandatory. Rear bumper must encircle the tail section of the kart. The top of at least one bar must be 7.50 inches maximum from ground level.
8. Nerf bars: All components shall be constructed of round steel tubing of .750 inch nominal diameter minimum. Double bar construction is mandatory. The top of the upper bar must be no higher than the top of the rear tire. The bottom of the lower bar must be no lower than the bottom of the main frame rails. Nerf bar must extend from an area inside a longitudinal line from the outer portion of the front tire to a point no further outboard than 1.0 inch from outer tire surface.
9. Seat positioning: No part of the seat may be positioned closer than six inches inside the left-hand nerf bar.
10. Harness: Five point, SFI-rated racing harness is mandatory. Metal to metal harness fastener is mandatory. Mounting bolts must be cotter-keyed and attach to a 3/16 inch minimum thick, 2.0 inch minimum square steel mounting plate that is welded to the frame and/or roll cage. Arm restraints, attached to the harness, are mandatory.

F. JUNIOR CHAMP KART 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 1.125 inch nominal minimum diameter and .083 inch wall thickness. Only conventional tubular space frame construction methods are allowed. Non-conventional construction techniques must receive review and approval of the race director and/or tech inspector prior to competition.
2. Wheelbase: 40.0 inches minimum, 43.0 inches maximum. Wheelbase is measured on true axle centerline, each side.
3. Overall width: 38.0 inches minimum, 50.0 inches maximum. Overall width shall be measured from outside tire sidewall to opposite outside tire sidewall.
4. Overall length: 80.0 inches maximum. Overall length is measured at any cross section of the kart, parallel to the longitudinal centerline.
5. Roll cage specific specifications
 - a. Full roll cage of four point conventional construction is mandatory. The four uprights and top horizontal connecting tubes must be constructed of 1.125 inch nominal minimum diameter mild steel tubing. All attachments by welding unless otherwise specified.
 - b. Uprights and positioning: Each of the rear uprights must be welded to the main frame rails at a point aft of the rear axle centerline. Each of the front uprights must be welded to the side frame rails at a point forward of the steering wheel mount point and aft of the leading edge of the front tire. All uprights must create an angle of no less than 45 degrees with the main frame rails and have no bends within three inches of attachment point except for left rear.
 - c. Top hoop rails: Corner construction shall be of rounded type with no sharp edges or corners allowed.
 - d. Shoulder harness mounting bar shall be welded laterally between rear uprights, double braced to the top lateral bar, at a height suitable for harness mounting. A minimum 6.0 inch square headrest shall be mounted to the braces level with the driver's head.
 - e. Side protection bars are mandatory and must run horizontally between front and rear uprights each side. One end connection may be slip jointed. Side protection bars must be positioned vertically between the driver's shoulder and elbow.
 - f. Roll cage overall width: 16.0 inches minimum. Width to be measured outside to outside between any two uprights.
 - g. Roll cage overall height: 30.0 inches minimum. Height to be measured vertically from highest lateral cross bar centerline to main frame rail centerline.
 - h. All roll cages that deviate in any way from the above description must be brought into conformance or receive approval from the race director or tech inspector prior to be used in competition.
6. Front bumper: All components shall be constructed of round steel tubing of .750 inch nominal diameter minimum. Front bumper must encircle entire front nose area at a height of 7.75 inches minimum from ground level. Double bumpers are recommended.
7. Rear bumper: All components shall be constructed of round steel tubing of .750 inch nominal diameter minimum. Double bar construction is mandatory. Rear bumper must encircle the tail section of the kart. The top of at least one bar must be 7.50 inches maximum from ground level.
8. Nerf bars: All components shall be constructed of round steel tubing of .750 inch nominal diameter minimum. Double bar construction is mandatory. The top of the upper bar must be no higher than the top of the rear tire. The bottom of the lower bar must be no lower than the bottom of the main frame rails. Nerf bar must extend from an area inside a longitudinal line from the outer portion of the front tire to a point no further outboard than 1.0 inch from outer tire surface.
9. Seat positioning: No part of the seat may be positioned closer than six inches inside the left hand nerf bar.
10. Harness: Five point, SFI-rated racing harness is mandatory. Metal to metal harness fastener is mandatory. Mounting bolts must be cotter-keyed and attach to a 3/16 inch minimum thick, 2.0 inch minimum square steel mounting plate that is welded to the frame and/or roll cage. Arm restraints, attached to the harness, are mandatory.

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.. hoop must be 7.75 inches minimum from ground level. Otherwise, front bumper must conform to CIK specifications.
4. Rear bumper: If CIK style bumper is not used, 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.
5. Nerf bars: If CIK-style side pods are not utilized, nerf bars must be double rail type. All components shall be constructed of 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.
6. 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 "Spirit and Intent rule"
7. The use of any type of suspension components is strictly prohibited.
8. Rain Setups: All karts are allow to have the tire width a maximum of 1 inch inward of the rear bumper as measured from the outside edge of the bumper to the leading edge of the rim.

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: 47.0 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.

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 nose cone 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 the 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. The steering fairing may not extend rearward of a perpendicular plane of the rearmost end of steering shaft, as determined by placing a plate on the steering wheel. 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 item 5 above, 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 nose cone 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. The steering fairing may not extend rearward of a perpendicular plane of the rearmost end of steering shaft, as determined by placing a plate on the steering wheel. 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. 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
10. Height from ground level of all side panels and rear pods: 16.0 inches maximum.
11. Except as noted in item 5 above, 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 ROAD RACING BODYWORK GENERAL REQUIREMENTS (applies to laydown enduro and sprint 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 nose cone 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 item K.5 above, 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 item K.5 above, 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. Belly pans: Full width belly pans, open in construction, are allowed. No aerodynamic sealing devices allowed aft of the front wheels
8. 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. The steering fairing may not extend rearward of a perpendicular plane of the rearmost end of steering shaft, as determined by placing a plate on the steering wheel.
9. CIK style nose cones and side pods are allowed. The use of CIK mounting hardware is not mandatory.
10. 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; 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. The steering fairing may not extend rearward of a perpendicular plane of the rearmost end of steering shaft, as determined by placing a plate on the steering wheel.
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 9 – TAG Engines: General Requirements and Inspection Procedures

If an importer supplies any engine part and or component that has not been submitted and approved by TAG™ Racing International/TAG™ USA, that engine may be fined and or removed from the program for a period of 1 year.

Note: TAG™ Racing International/TAG™ USA has a basic set of rules that may differ from the homologation papers and these rules must be in force first before the homologation papers are enforced.

Note: Any part may be verified against a known stock part supplied by the manufacture through the chain of distribution, this purpose is allowed for the means of determining the legality of a part and or component. Some specifications may not be attainable, and modifications are not allowed to achieve the specification posted.

A. STARTER

Entry must have all the starter components intact and working properly. The aftermarket Eclipse starter is approved and should be used as intended without any modifications, it may not be allowed within the RMAX series. The penalty for starting on the grid with an auxiliary starter will be to start at the back of the grid.

The use of an aftermarket starter nut is allowed but again if a remote starter is used the entry will go to the back of the grid.

A jumper battery pack for the purpose of starting on grid connected to the battery only will be allowed.

At the discretion of the Race director or club-

If a competitor comes to the grid and is unable to start his or her kart, he or she may, at the discretion of the race director or club, use an auxiliary starter to start without being penalized. Only if announced at the drivers meeting by the race director or club.

B. BATTERY

Battery is non-tech, but must be of the same size and shape and must be of the same amperage and voltage as OEM 12volt, 6.5 - 9.5 amp/hour. Battery must be gel cell or sealed AGM type. Kart may only have one battery installed and connected to the engine. Any battery found to be cracked or broken and leaking will be removed from the event.

C. AIR BOX

OPEN, but must be CIK or, RLV approved air box with two inlet tubes not to exceed 22.0 mm (+/- 1.0 mm) inside diameter and 95.0 mm minimum length. All CIK homologated KG and Freeline boxes with internal filters are legal and must remain as manufactured. All air boxes may not be modified although the rubber flange may be trimmed on the inside of the air box to the flange lip. Aftermarket internal foam air filters are allowed as long as no modification is made to the air box itself. The position of the air box is non-tech. The new KG air box with internal filter is allowed- CIK homologation is 37-38/SA/15 and must remain as manufactured. The K&N RK1000 is approved. The air box/cleaner cup adapter must be the OEM as manufactured, some manufactures have multiple adapters due to very early manufacturing; TAGUSA has allowed for updated adapters that have been submitted by the manufacturer. NO aftermarket adapters are allowed. No modifications are allowed to the adapter.

Rotax Max FR125 –AS PER RMC RULES

D. CARBURETOR

OEM as supplied from the engine manufacturer, jetting is open. Washers may be added to the stock needle jets for the purpose of tuning, must be the OEM needle jets. The way the throttle cable connects to the arm and the bracket that holds the cable are non-tech; the manifold or carburetor cannot be modified. The arm, throttle shaft and butterfly are OEM with no modifications. The slide assembly is included in jetting but must retain OEM replacement parts. No button head screws in butterfly. Surface finish of venturi and bore must remain as manufactured. Butterfly type must be of original manufacture and stock. The Welch plugs are non-tech but must be of the same size and shape that come in the overhaul kit. Fuel may only pass through stock metering orifices. Any means taken to bypass fuel to the engine in any other manner is not allowed. Any components not specified herein must be stock appearing. Inlet springs are non-tech item. Machine work to the throttle shaft is not allowed. Surface finish of venturi and bore must remain as manufactured. Carburetors must be matched to engine as homologated. All pumper style carburetors are single-pumpers with plastic fuel cap. All IAME engines must use blue cap. Fuel adjustment needles must be stock from the needle top to the “O” ring step. Needles may be modified beyond the “O” ring step to attach needle extensions. No remote carb adjusters or triggers. The carburetor may be installed upside-down for the purpose of tuning on the track as long as there are no modifications to the carburetor, manifold, or any other component related to completing this change.

E. FUEL PUMP

Fuel pumps must be of a diaphragm pulse type; manufacturer and location are open. No electric fuel pumps and no secondary pumps allowed. Rotax Max FR125 must utilize stock pump location.

F. IGNITION AND ELECTRICAL SYSTEM

OEM, as supplied and per factory specifications (the battery in non-tech). Electrical harness and starter control must be as manufactured. Static timing must be at the factory settings, key must be in place, with no modifications allowed. Spark plug is open, must have the washer intact unless a head temp sensor is used, only then may the washer be removed. The spark plug wire and cap are non-tech items.

Rotax Max FR125 - AS PER RMC RULES



- G. PISTON /RINGS /CYLINDER HEADS**
OEM as supplied by engine manufacturer only no interchange is allowed. Wrist pin must be made of ferrous material. No painting, plating, or ceramic coatings permitted.
- H. EXHAUST SYSTEM**
Exhaust and silencers OEM as supplied by manufacturer. No plating or ceramic coatings permitted. Header and pipe: No interchange allowed. Pipe and header must be of original manufacture with no modifications. Exhaust system must start and complete race intact as intended for use by the manufacturer. Connector pipe where applicable must be round and of proper OD as to connect pipe to header as supplied by manufacturer. Connector pipe length non-tech unless otherwise specified. Addition of exhaust gas temperature lead and/or O-2 sensor is legal, but hole must be plugged if either sensor is not used. No welding for repairs allowed.
- I. CLUTCH**
OEM, as supplied with engine from manufacturer and as per factory specifications. Non-adjustable, single disk or shoe type clutch only. Clutch engagement not to exceed 7,000 RPM for the Cadet I and II, and 6000 RPM for all other classes. To be tested with remote RPM meter attached to the spark plug lead. Test procedure: from a dead stop driver will accelerate at full throttle for approximately ten feet and clutch may not exceed posted RPM limit. Clutch drum gear (amount of teeth on drive sprocket) is non-tech. You may not make any modifications to the OEM clutch drum; only factory clutch drums from the manufacture will be allowed. All engines must have the clutch and drive chain covered. This is for the purpose of safety and this will be a mandatory technical item.
- J. COOLING SYSTEM**
Coolant may not contain any glycol based material. Water wetter or other surfactants may be added. Radiator OPEN used as supplied by manufacturer, or after-market product. (Must be mounted to right or the left of the driver.) Aftermarket water pumps are allowed, but must be driven by the rear axle, and be of the same type as OEM.
- K. INTERNAL MODIFICATIONS**
All internal modifications of any kind are strictly prohibited.
- L. REED CAGE AND REEDS**
Will be OEM with no modifications. Must retain stock reeds and reed screws with no modification.
- M. EXHAUST FLEX TUBING**
Exhaust Flex tubing is a non-tech item but must only be flexible tubing). PRD will use the OEM solid pipe. Some engines require a controlled exhaust flex length see section 1.0, the following engines have a controlled length: **Sonik TX125,**
Only the USA MY 09 leopard may run the solid exhaust pipe as per pdf, the 09 exhaust pipe may not be used on older leopards.
- N. BEARINGS, SEALS AND GASKETS**
Bearings are open but must be of the same type, material and design as the OEM bearings. Replacement bearings must be standard type, conventional bearings with steel or plastic retainers. They must be of the same width and outside diameter as original bearings. Ceramic or angular contact bearings are not allowed. Seals are open, but they must be unmodified, and must be installed as the manufacturer intended. Gaskets are open.
- O. COMBUSTION CHAMBER VOLUME (CCV)**
CCV will be checked to the top of spark plug hole.
Rotax Max FRI25 - AS PER RMC RULES
- P. PORT OPENING DURATION VERIFICATION PROCEDURE WITH THE ELECTRIC ENCODER**
- Equipment required:
 - Electronic rotary encoder device
 - One 10mm wide piece of 0.2mm thick shim stock, sharpened to a point on one end
 - To verify top edge controlled port opening duration (all exhaust ports and reed induction transfer ports):
 - Exhaust opening angles apply to all exhaust ports
 - Install the rotary encoder on the crankshaft of the engine
 - Insert the shim stock into the port, perpendicular to the chord of the port, and rotate the crankshaft in such a manner as to "lock" the shim in place with the top of the piston
 - Set a "zero" on rotary encoder display
 - Rotate the crankshaft such that the port remains open during the rotation
 - As the piston rises to a closing position for the port carefully locking the shim in place with the top of the piston
 - The difference between the starting, or "zero" point, and the ending point or total readout on the rotary encoder must conform to the maximum listed angle or less

Section 10 - TAG Engines: Specific Technical Inspection Data

Gazelle 60cc	See Homologation sheet (PDF link) Exhaust length is open. IGN-Selettra 4 pole or Digital K The base gaskets are open. The only IAME filter adapter being manufactured is the 10771-c; this is the only allowed and approved filter cup adapter (square version); all other cups are deemed not legal. The Gazelle may use the OEM mini Swift piston and ring; piston and ring must remain as manufactured, without any modification.	
Vortex Mini Rok	See Homologation sheet (PDF link)	
Parilla Mini Swift 60cc	See Homologation sheet (PDF link)	
Vortex VLR 100cc	See Homologation sheet (PDF link)	
IAME KA 100cc	See Homologation sheet (PDF link)	
Motori Seven		
CCV	9.5 cc	
Minimum squish	0.028	
Carburetor	VHSH 30 CS (max. dia. - 30.06mm) or HL360 series with new style intake. Includes the JR engine also.	
Venturi	1.185	
Carburetor bore	1.19	
Reed Thickness	0.015	
Exhaust height	See Homologation sheet (PDF link)	
Ignition	Digital	
Exhaust SR & Master	STAMPED w/MUFFLER (The new style exhaust pipe is allowed as submitted without any modifications) Note: Complete Crank weight Kg 2,450 Tolerance= ± gr100	
Parilla Leopard USA MY 09		 
CCV	9.5 cc	
Minimum squish	0.026	
Carburetor	HL 334A, HL 334AB and HL 334AA	
Venturi	0.905	
Carburetor bore	1.005	
Reed Thickness	0.012	
Exhaust height	See Homologation sheet (PDF link)	



Ignition Selettra 4 pole or Digital K
 Crank complete weight 1875g - +/- 3%

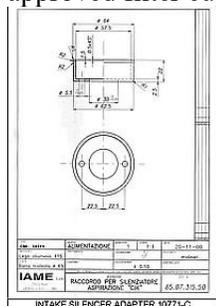
Jr- Restrictor

Exhaust Header

Exhaust

IAME Part # IA-A-125366 with a 25mm opening

Note: Air cups must be the square only (see spec. sheet). Must say USA on cylinder. (see Leopard spec. sheet, serial numbers) **P.N.-10381** - Screws M3 x 4.5-Gold finish original - the threaded portion of the screw is: 4.60mm- 4.85mm - the diameter of the head is: 4.80mm- 4.90mm **P.N.-10380** - Screws M3 x4.5-Silver finish sold as spares. - threaded portion of the screw: 4.40mm - 4.60mm - diameter of head: 5.00mm - 5.50mm. The base gaskets are open. The only Iame filter adapter being manufactured is the 10771-c this is the only allowed and approved filter cup adapter (square version) all other cups are deemed not legal.



All new 'P' series engines that come with the new Digital K Ignition must use the Digital K Ignition. You may not install the old style ignition on a 'P' series engine. You may remove the three tabs as this will allow the Digital K Ignition to be retro fitted into an old case.

PRD Fireball

CCV 10.0 cc
 Minimum squish 0.028
 Carburetor HL360 A
 Venturi 0.950
 Carburetor bore 1.065
 Reed Thickness 0.015
 Exhaust height See Homologation sheet (PDF link)
 Ignition PRD
 Crank complete weight 1975g - +/- 10 grams

Note: Exhaust header must use the solid pipe that the engine comes with (no flex pipe allowed). Engine must have "U.S." stamped on it with the serial number.

Exhaust Jr. - 30.0 mm inner dia.

Note: The Jr. engine will be controlled by a restricted header pipe. This can be purchased through RLV or any of its dealers. The only restricted header allowed is this one, submitted and approved by TAG™ USA. Allowed base gaskets are .006-.014 to achieve the minimum squish and CCV. Base gaskets may not be stacked.

Rotax Max FR125 - AS PER RMC RULES Excluding EVO
CARBURATORS per 2014 RMC RULES



Rotax Max Jr

Rotax Mini-Max Jr

Rotax Max FR125---EVO

Vortex TT

CCV	10.8cc
Minimum squish	0.038
Carburetor	HL360
Venturi	0.950
Carburetor bore	1.065
Reed Thickness	0.008
Exhaust height	See Homologation sheet (PDF link)
Ignition	Selletra 36/A/09
Crank complete weight	1860g+/-10g
Cylinder Head Gasket Thickness	0.2 Note: you may add two 0.1 gaskets to equal out specification
Ignition Timing	.065-.070 BTDC

The Junior header must be **OEM** as supplied by the manufacture.

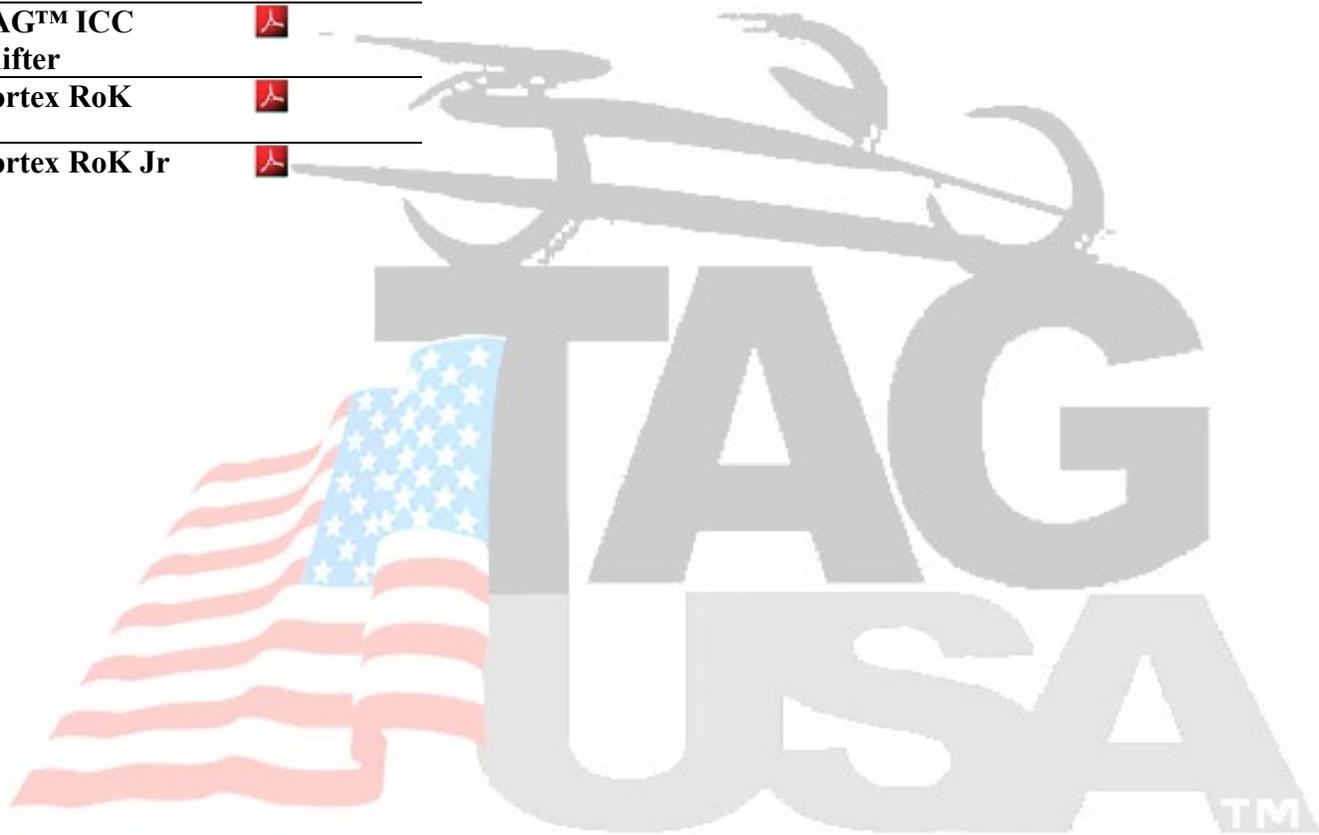
IAME X-30

CCV	9.7 cc
Minimum squish	
The base gaskets are open	
Carburetor	Tryton Hobby HB-27 / C Or- Tillotson HW-27A
Venturi	26mm
Carburetor bore	
Reed Thickness	0.012
Exhaust height	See Homologation sheet (PDF link)
Ignition	Selettra Digital K Only- as MFG
Crank complete weight	2150g - +/- 1%
Exhaust JR	31.0 mm inner dia.(IAME JR header pipe)

**SELETTRA DIGITAL "K" IGNITION as manufactured,
PVL is not allowed.**



X125 T -WC	
X125 T	
Junior Modifications	
SGM – GT 20	
TAG™ Stock Moto	
TAG™ ICC Shifter	
Vortex RoK	
Vortex RoK Jr	



Section 11 – Four Cycle Engines: General Requirements and Inspection Procedures

A. 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.

1. 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.
2. 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.

3. 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 convert 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.
4. 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.
5. 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.
6. 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.
7. 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.

8. 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.
9. 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 gauge (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:

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

10. 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 to 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.
11. 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.

B. FOUR CYCLE EXHAUST SYSTEMS

1. 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.
 - a. RLV B91 dimensional requirements
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.
 - b. RLV B91L dimensional requirements
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.
 - c. RLV B91XL dimensional requirements
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.
 - d. RLV B91MO dimensional requirements
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.
2. 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.

C. FOUR CYCLE FUEL DELIVERY SYSTEMS

1. General Requirements

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.

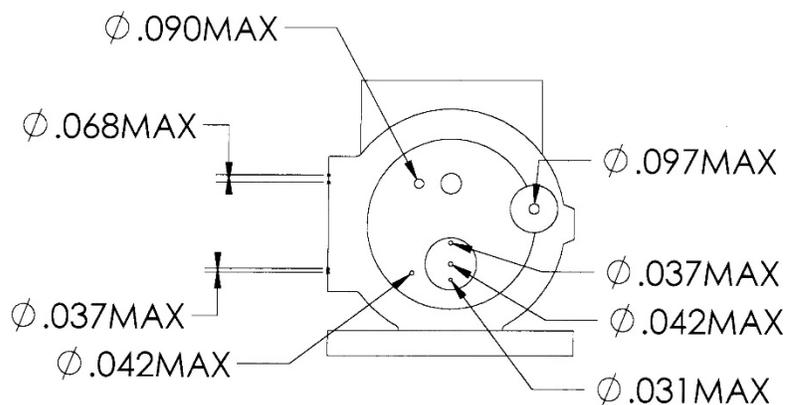
2. Homologated Carburetors

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

- High speed needle seat diameter .068 inch maximum.
- Low speed needle seat diameter .037 inch maximum.
- Idle speed pick-off diameter .042 inch maximum. (omit for HL250A)
- Idle jet diameter .031 inch maximum.
- Transition jet diameter .042 inch maximum.
- Air pre-mix orifice diameter .037 inch maximum.
- Fuel inlet valve seat diameter .097 inch maximum.
- High speed fuel pick-off diameter .090 inch maximum.
- High speed jet check valve must be intact and unmodified.
- 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 12 - Four-Cycle Engines: 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: 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: 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 spot faced for valve spring stabilization. Depth and geometry of spot face 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.

Ignition system: Stock, unaltered coil and coil air vane required. Stock, unaltered plug connector required. Resistance from spark plug wire to ground is 2,000 ohms minimum, 5,000 ohms maximum. Any means to alter position of coil is prohibited. Stock, unaltered 5hp flywheel required. Flywheel weight 6.0 pounds minimum. Flywheel coating of any type is prohibited. Revolving or adjustable flywheel screens are prohibited.

Piston: Any commercially available aluminum piston and ferrous ring configuration is permitted, subject to comparison to known stock item. Length from top of piston to top of wrist pin bore .937 inch minimum. Wrist pin outside diameter .490 inch maximum, inside diameter .290 inch maximum, length 1.727 inch minimum, 1.737 inch maximum. Wrist pin must be manufactured of ferrous material.



Connecting rod: Any commercially available aluminum connecting rod and oil dipper is permitted. Length from bottom of wrist pin bore to top of crankshaft journal bore 3.1233 inch minimum, 3.1333 inch maximum. Connecting rod bolts are non-tech.

Crankshaft: Stock crankshaft required. Machining, polishing, addition of material or otherwise altering of counterweights is prohibited. Stock timing gear in stock configuration required. Connecting rod journal diameter .990 inch minimum. Crankshaft journals may be clearanced to .775 inch minimum diameter to facilitate bearing removal. Thermal treatment of crankshaft is permitted.

Camshaft: Camshaft journal diameter .770 inch maximum. Titanium lifters are prohibited. Lifter head diameter .982 inch minimum, 1.005 inch maximum; length 1.606 inch maximum.

Camshaft profile limits

Lift	Exhaust degrees	Intake degrees
.050	38°BBDC to 33°BBDC	7°BTDC to 0°TDC
.100	21°BBDC to 16°BBDC	10°ATDC to 17°ATDC
.150	2°BBDC to 3°ABDC	29°ATDC to 36°ATDC
.200	21°ABDC to 31°ABDC	55°ATDC to 64°ATDC
Max	.233 inch maximum	.233 inch maximum
.200	76°BTDC to 65°BTDC	43°BBDC to 33°BBDC
.150	48°BTDC to 40°BTDC	13°BBDC to 6°BBDC
.100	28°BTDC to 21°BTDC	6°ABDC to 13°ABDC
.050	10°BTDC to 4°BTDC	23°ABDC to 31°ABDC

EZ Spin start 45° to 60° ABDC

EZ Spin lift base .013 inch minimum, .019 inch maximum, 30° minimum duration, .001 inch maximum drop during duration.

Block: Side cover must be stock. Stub for governor may be removed and hole plugged. Gasket mounting surface of side cover and block may be pin punched. A maximum of three stock configuration side cover gaskets are permitted. Block must be unaltered stock with the following exceptions: The lifter bores may be countersunk to provide lifter head fillet radius clearance. Any means to raise the bottom of the lifter bore boss is prohibited. Welding to the block shall be for damage repair or lifter bore reinforcement only and may not constitute a functional modification. The cylinder deck may be machined, not to extend into the rear fin. Carburetor and exhaust pipe mounting surfaces must be unaltered stock. Alterations to inside surfaces of intake and exhaust ports are allowed so long as the intake port will not accept a .880 inch diameter No-Go plug gauge and the exhaust port will not accept a 1.005 inch diameter No-Go plug gauge. No addition of material is allowed. No additional holes may exist in the intake and/or exhaust ports. No alterations on the underside of the valve seats are allowed. Cylinder sleeve, if present, shall be ferrous and uncoated.



Engine Specific Tech Sheet for: Briggs & Stratton Limited Modified

Description: Single cylinder, two valve, four cycle

Displacement: 13.017 cubic inches maximum

Cylinder head: Machining permitted. Helicoil repair of spark plug threads is permitted, no protrusion into combustion chamber allowed. Bolt hole diameters .348 inch maximum. Combustion chamber depth in spark plug area .400 inch minimum. Any head gasket is permitted. Eight stock diameter head bolts or studs required.

Bore and stroke: 2.6025 inch maximum bore, 2.437+/-0.10 inch stroke

Carburetor: Any Tillotson HL series, with butterfly throttle assembly, and with .850 inch minimum and .900 inch maximum venturi diameter. Auxiliary vacuum fuel pump, pulsed from the intake, is permitted.

Valve train: Crankcase breather permitted. Stock, unaltered, single angle valves only. Length of flat from seating surface to end of valve .035 inch minimum. Intake valve angle $30^{\circ} \pm 1^{\circ}$, 1.115 inch minimum head diameter. Exhaust valve $45^{\circ} \pm 1^{\circ}$, .990 inch minimum head diameter. Valve springs and lower retainers non-tech. Both upper valve chamber surfaces may be spot faced for valve spring stabilization. Depth and geometry of spot face non-tech. Stock, single angle valve seats required. Valve seat thickness .205 inch maximum, .199 inch minimum. Valve seat height to cam centerline 5.740 inch minimum, 5.775 inch maximum. Valve seat may not protrude above cylinder deck surface.

Ignition system: Stock, unaltered coil required. Stock, unaltered plug connector required. Resistance from spark plug wire to ground is 2,000 ohms minimum, 5,000 ohms maximum. Any means to alter position of coil is prohibited. Unaltered billet flywheels only, ARC #6608, Clements #BAFWL, #FWSLTD, J.R. Race car # 555-3284, or UMMF #1001 only. Flywheel weight 4 pounds 12 ounce minimum. Revolving or adjustable flywheel screens are prohibited.

Piston: Any commercially available aluminum flat-topped piston is permitted. Coating permitted.

Connecting rod: Any commercially available aluminum connecting rod and oil dipper is permitted. Connecting rod bolts are non-tech.

Crankshaft: Stock crankshaft required. Machining, polishing, addition of material or otherwise altering of counterweights is prohibited except for minor clearancing for camshaft may be tolerated. Connecting rod journal diameter .990 inch minimum. Crankshaft journals may be clearanced to .775 inch minimum diameter to facilitate bearing removal. Thermal treatment of crankshaft is permitted.

Camshaft: Camshaft is non-tech.

Block: Side cover may be clearanced to allow for adjustable camshaft bolts. Stub for governor may be removed and the hole plugged. Gasket mounting surface of side cover and block may be pin punched. A maximum of three stock configuration side cover gaskets are permitted. Block must be unaltered stock with the following exceptions: The lifter bores may be countersunk to provide lifter head fillet radius clearance. Any means to raise the bottom of the lifter bore boss is prohibited. Welding to the block shall be for damage repair or lifter bore reinforcement only and may not constitute a functional modification. The cylinder deck may be machined, not to extend into the rear fin. Carburetor and exhaust pipe mounting surfaces must be unaltered stock. Alterations to inside surfaces of intake and exhaust ports are allowed so long as the intake port will not accept a .880 inch diameter No-Go plug gauge and the exhaust port will not accept a 1.005 inch diameter No-Go plug gauge. No addition of material is allowed. No additional holes may exist in the intake and/or exhaust ports. No alterations on the underside of the valve seats are allowed. Cylinder sleeve, if present, shall be ferrous and uncoated.





Engine Specific Tech Sheet for: Tecumseh Star

Description: Single cylinder, two valve, four cycle

Displacement: 22.379 cubic inches maximum

Cylinder head: Machining permitted on the gasket mating surface and fin may be modified to accept CHT lead only. Welding on the cylinder head is prohibited. Helicoil repair of spark plug threads in original position permitted, no protrusion into combustion chamber allowed. Combustion chamber depth in spark plug area .360 inch minimum. Stock head gasket is mandatory and .043 inch minimum thickness midway between bolt holes is permitted. Stock head bolts required. Compression release is permitted in cylinder head.

Sealants permitted for header mounting.

Bore and stroke: 3.348 inch maximum bore, 2.532+/- .010 inch stroke. Protrusion of the piston above the top of the cylinder deck .015 inch maximum parallel and inline with the wrist pin.

Carburetor: Only Tillotson HL series carburetors are allowed. Maximum venturi diameter .900 inch. Stock Tecumseh carburetor mounting flange is required. Any air filter is required. Filter may not be configured as an air ram. Auxiliary fuel pump, pulsed from the crankcase only, is permitted. Air filter adapter is non-tech.

Valve train: Any breather valve is permitted. Factory stock valves only, head diameter non-tech. Stock upper retainers required. Valve spring length 1.700 inch maximum; .106 inch maximum wire diameter. Stock, single angle valve seats required. Intake valve seat angle 30°+/-1°, inside diameter 1.200 inch maximum. Exhaust valve seat angle 45°+/-1°, inside diameter 1.025 inch maximum.

Ignition system: Stock, unaltered ignition system only. Stock, unaltered flywheel only. Flywheel weight 7 lbs. 5 oz. minimum. Flywheel coating of any type is prohibited. Offset keys are prohibited.

Piston: Any commercially available aluminum piston allowed, no coating allowed, subject to comparison to known stock item, including compression height. Rings may not be multi-piece; two compression and one oil ring only. Wristpin outside diameter .624+/- .001 inch, inside diameter .448 inch maximum.

Connecting rod: May not be manufactured of titanium.

Crankshaft: Stock crankshaft required. Machining, polishing, addition of material or otherwise altering of counterweights is prohibited.

Camshaft: No visual check on lifter surfaces of camshaft. Maximum duration of lift, either lobe, measured at .003 inch off seat, is 265°, springs installed. Maximum lift, either lobe, is .325 inch, springs installed. Pre-2000 year cam gears may be machined to conform to current factory-lightened cam gear.

Block: Side cover must be stock with the exception of a 1/8-27NPT fitting for pulse line. Stub for governor may be removed and the hole plugged. Crankshaft PTO main bearing retainer may be removed and holes plugged. Gasket mounting surface of side cover and block may be pin punched. Block must be unaltered stock except machining of the cylinder head mating surface is permitted. Welding to the block shall be for damage repair or lifter bore reinforcement only and may not constitute a functional modification. Intake and exhaust ports must be unaltered stock. Cylinder sleeve and valve guides may be replaced with stock items.



Engine Specific Tech Sheet for: Kohler C6 XKE (Formula OHV)

Description: Single cylinder, two valve, four cycle

Combustion chamber volume: 24 cubic centimeter minimum, with piston at TDC, using prescribed procedure.

Cylinder head requirements: Must be OEM casting. Porting and/or grinding permitted. No external addition of material to enhance performance. Must maintain stock spark plug location and orientation. Must maintain stock valve location and orientation. Valve spacing 1.380 inch nominal. Valve orientation is perpendicular to deck mounting face.

Bore and stroke: 2.783 inch maximum bore, 2.008+/- .010 inch stroke.

Carburetor requirements: Only Tillotson HL series carburetors allowed. Carburetor to be stock appearing with venturi bore .790 inch maximum diameter. No further carburetor tech. Any air filter is required. Filter may not be configured as an air ram. Filter cup/adaptor is non-tech. Auxiliary fuel pump, pulsed from the crankcase or intake manifold, is permitted. Intake manifold length 2.000 inch maximum, manufactured of aluminum only.

Valve train: Any breather valve is permitted with catch can. No titanium valve train components allowed. Factory stock rocker arms and rocker plate only. Rocker arms may be welded or reinforced for strength. Two valves maximum. Intake valve head diameter 1.080 inch maximum, exhaust valve head diameter .990 inch maximum. Stock appearing, flat tappets only. All other valve train components non-tech. Clearancing for increased lift is permitted.

Ignition system: Aftermarket or OEM flywheels permitted. If OEM flywheel is used, it must be unaltered stock and OEM ignition system must be used. Only approved aftermarket flywheels may be used. Spec diameter and weight as follows: 6.75 inch +/- .05 inch outside diameter. 5.00 lbs +/- .25 lbs weight. When using aftermarket flywheels, any stock OEM F200 coil may be used on any engine. Ignition timing, coil mounts, flywheel key, spark plug boots and plug wires are non-tech items.

Piston requirements: Any commercially available three-ring, flat-top aluminum piston allowed, no coating allowed, subject to comparison to known stock item. Aftermarket ferrous rings allowed. Wrist pin is non-tech with the exception of outside diameter to be .551 +/- .0025 inch.

Connecting rod requirements: 3.425 +/- .005 inch length. Must be manufactured of aluminum.

Crankshaft requirements: Stock crankshaft required. Machining, polishing, addition of material or other alteration of crankshaft is prohibited. Thermal treatment and shot peening is allowed. Rod journal diameter 1.218 +/- .0025 inch.

Camshaft requirements: Maximum lift, either lobe, is .275 inch, measured at valve.

Block requirements: Stub for governor may be removed and the hole plugged. Block must be unaltered stock except machining of the cylinder head mating surface is permitted. Overbore and installation of ferrous cylinder sleeve allowable. Sleeve must be installed in stock location and orientation. Welding to the block shall be for damage repair only and may not constitute a functional modification. Fasteners and gaskets are non-tech. Must retain splash-type oiling system.

Additional requirements: External surfaces of cylinder heads and blocks may be machined to remove excess material from mounting bosses, cast-in brackets, etc. that are no longer in use. No external machining allowed that produces a performance gain. If recoil starter assembly is removed, starter cup must also be removed and a non-rotating flywheel screen must be installed.



Engine Specific Tech Sheet for: Tecumseh OHH55 (Formula - OHV)

Description: Single cylinder, two valve, four cycle

Combustion chamber volume: 24 cubic centimeter minimum, with piston at TDC, using prescribed procedure.

Cylinder head requirements: Must be OEM casting. Porting and/or grinding permitted. No external addition of material to enhance performance. Must maintain stock spark plug location and orientation. Must maintain stock valve location and orientation. Valve spacing 1.250 inch nominal. Valve orientation is perpendicular to deck mounting face.

Bore and stroke: 2.833 inch maximum bore, 1.938+/- .010 inch stroke.

Carburetor requirements: Only Tillotson HL series carburetors allowed. Carburetor to be stock appearing with venturi bore .790 inch maximum diameter. No further carburetor tech. Any air filter is required. Filter may not be configured as an air ram. Filter cup/adaptor is non-tech. Auxiliary fuel pump, pulsed from the crankcase or intake manifold, is permitted. Intake manifold length 2.000 inch maximum, manufactured of aluminum only.

Valve train: Any breather valve is permitted with catch can. No titanium valve train components allowed. Factory stock rocker arms and rocker plate only. Rocker arms may be welded or reinforced for strength. Two valves maximum. Intake valve head diameter 1.080 inch maximum, exhaust valve head diameter .990 inch maximum. Stock appearing, flat tappets only. All other valve train components non-tech. Clearancing for increased lift is permitted.

Ignition system: Aftermarket or OEM flywheels permitted. If OEM flywheel is used, it must be unaltered stock and OEM ignition system must be used. Only approved aftermarket flywheels may be used. Spec diameter and weight as follows: 6.75 inch +/- .05 inch outside diameter. 5.00 lbs +/- .25 lbs weight. When using aftermarket flywheels, any stock OEM F200 coil may be used on any engine. Ignition timing, coil mounts, flywheel key, spark plug boots and plug wires are non-tech items.

Piston requirements: Any commercially available three-ring, flat-top aluminum piston allowed, no coating allowed, subject to comparison to known stock item. Aftermarket ferrous rings allowed. Wrist pin is non-tech with the exception of outside diameter to be .563 +/- .0025 inch.

Connecting rod requirements: 3.484 +/- .005 inch length. Must be manufactured of aluminum.

Crankshaft requirements: Stock crankshaft required. Machining, polishing, addition of material or other alteration of crankshaft is prohibited. Thermal treatment and shot peening is allowed. Rod journal diameter .999+/- .0025 inch.

Camshaft requirements: Maximum lift, either lobe, is .275 inch, measured at valve.

Block requirements: Stub for governor may be removed and the hole plugged. Block must be unaltered stock except machining of the cylinder head mating surface is permitted. Overbore and installation of ferrous cylinder sleeve allowable. Sleeve must be installed in stock location and orientation. Welding to the block shall be for damage repair only and may not constitute a functional modification. Fasteners and gaskets are non-tech. Must retain splash-type oiling system.

Additional requirements: External surfaces of cylinder heads and blocks may be machined to remove excess material from mounting bosses, cast-in brackets, etc. that are no longer in use. No external machining allowed that produces a performance gain. If recoil starter assembly is removed, starter cup must also be removed and a non-rotating flywheel screen must be installed.



Engine Specific Tech Sheet for: Honda GX-200 (Formula - OHV)

Description: Single cylinder, two valve, four cycle

Combustion chamber volume: 24 cubic centimeter minimum, with piston at TDC, using prescribed procedure.

Cylinder head requirements: Must be OEM casting. Porting and/or grinding permitted. No external addition of material to enhance performance. Must maintain stock spark plug location and orientation. Must maintain stock valve location and orientation. Valve spacing 1.219 inch nominal. Valve orientation is perpendicular to deck mounting face.

Bore and stroke: 2.709 inch maximum bore, 2.125 \pm .010 inch stroke.

Carburetor requirements: Only Tillotson HL series carburetors allowed. Carburetor to be stock appearing with venturi bore .790 inch maximum diameter. No further carburetor tech. Any air filter is required. Filter may not be configured as an air ram. Filter cup/adaptor is non-tech. Auxiliary fuel pump, pulsed from the crankcase or intake manifold, is permitted. Intake manifold length 2.000 inch maximum, manufactured of aluminum only.

Valve train: Any breather valve is permitted with catch can. No titanium valve train components allowed. Factory stock rocker arms and rocker plate only. Rocker arms may be welded or reinforced for strength. Two valves maximum. Intake valve head diameter 1.080 inch maximum, exhaust valve head diameter .990 inch maximum. Stock appearing, flat tappets only. All other valve train components non-tech. Clearancing for increased lift is permitted.

Ignition system: Aftermarket or OEM flywheels permitted. If OEM flywheel is used, it must be unaltered stock and OEM ignition system must be used. Only approved aftermarket flywheels may be used. Spec diameter and weight as follows: 6.75 inch \pm .05 inch outside diameter. 5.00 lbs \pm .25 lbs weight. When using aftermarket flywheels, any stock OEM F200 coil may be used on any engine. Ignition timing, coil mounts, flywheel key, spark plug boots and plug wires are non-tech items.

Piston requirements: Any commercially available three-ring, flat-top aluminum piston allowed, no coating allowed, subject to comparison to known stock item. Aftermarket ferrous rings allowed. Wrist pin is non-tech with the exception of outside diameter to be .708 \pm .0025 inch.

Connecting rod requirements: 3.303 \pm .005 inch length. Must be manufactured of aluminum.

Crankshaft requirements: Stock crankshaft required. Machining, polishing, addition of material or other alteration of crankshaft is prohibited. Thermal treatment and shot peening is allowed. Rod journal diameter 1.180 \pm .0025 inch.

Camshaft requirements: Maximum lift, either lobe, is .275 inch, measured at valve.

Block requirements: Stub for governor may be removed and the hole plugged. Block must be unaltered stock except machining of the cylinder head mating surface is permitted. Overbore and installation of ferrous cylinder sleeve allowable. Sleeve must be installed in stock location and orientation. Welding to the block shall be for damage repair only and may not constitute a functional modification. Fasteners and gaskets are non-tech. Must retain splash-type oiling system.

Additional requirements: External surfaces of cylinder heads and blocks may be machined to remove excess material from mounting bosses, cast-in brackets, etc. that are no longer in use. No external machining allowed that produces a performance gain. If recoil starter assembly is removed, starter cup must also be removed and a non-rotating flywheel screen must be installed.



Engine Specific Tech Sheet for: Briggs and Stratton Intek 5.5 (Formula - OHV)

Description: Single cylinder, two valve, four cycle

Combustion chamber volume: 24 cubic centimeter minimum, with piston at TDC, using prescribed procedure.

Cylinder head requirements: Must be OEM casting. Intek 6.5 or "Animal" cylinder head is permissible. Porting and/or grinding permitted. No external addition of material to enhance performance. Must maintain stock spark plug location and orientation. Must maintain stock valve location and orientation. Valve spacing 1.382 inch nominal. Valve orientation is perpendicular to deck mounting face.

Bore and stroke: 2.760 inch maximum bore, 2.040 \pm .010 inch stroke.

Carburetor requirements: Only Tillotson HL series carburetors allowed. Carburetor to be stock appearing with venturi bore .790 inch maximum diameter. No further carburetor tech. Any air filter is required. Filter may not be configured as an air ram. Filter cup/adaptor is non-tech. Auxiliary fuel pump, pulsed from the crankcase or intake manifold, is permitted. Intake manifold length 2.000 inch maximum, manufactured of aluminum only.

Valve train: Any breather valve is permitted with catch can. No titanium valve train components allowed. Factory stock rocker arms and rocker plate only. Rocker arms may be welded or reinforced for strength. Two valves maximum. Intake valve head diameter 1.080 inch maximum, exhaust valve head diameter .990 inch maximum. Stock appearing, flat tappets only. All other valve train components non-tech. Clearancing for increased lift is permitted.

Ignition system: Aftermarket or OEM flywheels permitted. If OEM flywheel is used, it must be unaltered stock and OEM ignition system must be used. Only approved aftermarket flywheels may be used. Spec diameter and weight as follows: 6.75 inch \pm .05 inch outside diameter. 5.00 lbs \pm .25 lbs weight. When using aftermarket flywheels, any stock OEM F200 coil may be used on any engine. Ignition timing, coil mounts, flywheel key, spark plug boots and plug wires are non-tech items.

Piston requirements: Any commercially available three-ring, flat-top aluminum piston allowed, no coating allowed, subject to comparison to known stock item. Aftermarket ferrous rings allowed. Wrist pin is non-tech with the exception of outside diameter to be .625 \pm .0025 inch.

Connecting rod requirements: 3.375 \pm .005 inch length. Must be manufactured of aluminum.

Crankshaft requirements: Stock crankshaft required. Machining, polishing, addition of material or other alteration of crankshaft is prohibited. Thermal treatment and shot peening is allowed. Rod journal diameter 1.098 \pm .0025 inch.

Camshaft requirements: Maximum lift, either lobe, is .275 inch, measured at valve.

Block requirements: Stub for governor may be removed and the hole plugged. Block must be unaltered stock except machining of the cylinder head mating surface is permitted. Overbore and installation of ferrous cylinder sleeve allowable. Sleeve must be installed in stock location and orientation. Welding to the block shall be for damage repair only and may not constitute a functional modification. Fasteners and gaskets are non-tech. Must retain splash-type oiling system. Use of steel bore block originally intended for Intek 6.5 or "Animal" is permissible.

Additional requirements: External surfaces of cylinder heads and blocks may be machined to remove excess material from mounting bosses, cast-in brackets, etc. that are no longer in use. No external machining allowed that produces a performance gain. If recoil starter assembly is removed, starter cup must also be removed and a non-rotating flywheel screen must be installed.



Engine Specific Tech Sheet for: Kohler C6 XKE Box Stock

Description: Single cylinder, two valve, four cycle

Cylinder head requirements: The stock factory cylinder head assembly must be used. The intake and exhaust ports are to remain as cast with no polishing, sand/bead blasting, acid washing or smoothing of ports allowed. Factory deburring is allowed. Maximum inside diameter of exhaust and intake ports is .846 inch. Minimum thickness of cylinder head assembly from valve cover gasket surface to cylinder head gasket surface is 3.259 inch.

Bore and stroke: 2.665 inch maximum bore, 2.008+/-0.010 inch stroke.

Carburetor requirements: The stock factory standard air cleaner assembly must be used in its stock configuration. No additional holes are allowed to be drilled or tapped into the air cleaner element or air cleaner base. Factory foam pre-cleaner may be removed. Stock factory Keihin carburetor, Kohler Part Number 15 053 05, is to be used with no alterations. Original jets and emulsion tube must be used. Float height changes allowed. The slow jet hole size is 0.015 inch and the main jet hole size is .027 inch. Choke plate must be in place and functional. Boring and polishing of carburetor bore is not permitted. Maximum venturi diameter .555 inch.

Valve train: The stock factory breather system must be functional and used in its stock configuration. No catch tanks allowed. Stock factory intake and exhaust valves mandatory. No multiple cut angles or polishing to the valves permitted. Maximum intake valve diameter 1.053 inch. Maximum exhaust valve diameter .974 inch. Stock factory valve seats are mandatory but may be refaced. Maximum inside diameter of intake seat is .913 inch. Maximum inside diameter of exhaust seat is .835 inch. Any valve lash setting is permitted. Stock factory rocker arms and push rods are mandatory. Rocker arm minimum length is 2.146 inch. Stock factory, Kohler part number 220238, valve springs mandatory. Wire diameter is .094 inches. Stock, unaltered tappets only. Tappet diameter .830 inch maximum, .750 inch minimum.

Ignition system: Stock, unaltered ignition system only. Stock factory flywheel must be used with factory flywheel key in place. The flywheel keyway must not be altered in any way. Minimum width of flywheel key .125 inch. Painting and coatings other than minimum factor overspray are not permitted. Broken flywheel fins are not allowed. Minimum flywheel weight is 8.0 pounds.

Piston requirements: Stock Kohler factory pistons, rings and wrist pins mandatory. The maximum length of the piston skirt is 1.523 inch. The wrist pin maximum inside diameter is 0.378 inch, minimum outside diameter is .551 inch and minimum length is 1.586. Stock ring tensions cannot be changed by any means. Ring tensions to be compared to known stock component. Piston must be installed with arrow pointing towards flywheel.

Connecting rod requirements: Stock, unaltered factory connecting rod mandatory. Length 3.4268 inch minimum, 3.4284 inch maximum.

Crankshaft requirements: Stock, unaltered crankshaft required. Stock factory crank gear is to be used in its factory position. Rod journal diameter 1.218+/-0.0025 inch.

Camshaft requirements: The stock factory camshaft, Kohler part number 15 012 09, mandatory with no alterations allowed. Max lift either lobe is .232 inch, measured at the valve. Refer to Kohler factory specifications for cam profile.

Block requirements: Block assembly must be stock as produced from the factory with no alterations. Repairs are permitted from damage that does not constitute a functional modification of the original block assembly. Offset, angle boring and/or circular machined grooving of cylinder are not allowed. Minimum distance between cylinder deck to top of piston at TDC is .008 inch.

Additional requirements: Only stock factory components allowed in unaltered form. Blueprinting to change part to maximum or minimum tolerance specifications is not permitted. All engine components and assemblies must meet Kohler part print specifications and tolerances, including gaskets. The stock factory Mikuni fuel pump, Kohler Part Number 15 393 01, is to be used with the pulse line connected to the crankcase only. Recoil assembly to remain on engine and is to be the only means of starting the engine. Only stock factory C6 XKE shrouds, covers and baffles may be used in their original factory locations. Competitor is responsible to produce factory service manual for year and model of engine upon request from technical inspector.





Engine Specific Tech Sheet for: Briggs and Stratton Animal

All parts must be original Briggs & Stratton production parts unless otherwise specified in this manual. No machining or alteration of parts is permitted unless specifically noted. All parts are subject to be compared to a known stock Briggs & Stratton part. No reading between the lines. If it is not in the rules, it must remain stock. Unless otherwise stated, engine will be inspected as raced.

Shroud and Covers: Engine shroud and covers and control bracket must be intact and not modified, except control cover which can be modified to attach fuel pump (fuel pump must be visible) and throttle bracket also cylinder cover maybe cut for thermal coupler, intake manifold and exhaust flange clearance. Flywheel guard mandatory. All flywheel guards must be bolted to blower housing. Taping of flywheel guard allowed. Tape on block disallowed. No part of Flywheel guard may protrude inside of the flat plane of the blower housing. NO revolving flywheel guards allowed. Any bolt utilized to secure sheet metal, shrouding, etc., with the exception of sheet metal secured by the head bolts, may be replaced with larger diameter bolt(s). Stock kill switch must remain in stock location but may or may not be used.

Header/Silencer: Exhaust pipe/header must not extend past rear bumper (including silencer, where applicable) and have no exposed sharp edges. Header shall have a maximum length of 24" to be measured in the ID using a 0.250" wide tape measure. Measurement to be made with silencer off of the pipe and tape tight. If any part of the pipe is less than maximum the pipe is legal. Loop Header pipes NOT ALLOWED. Header/exhaust pipe MAY NOT PROTRUDE inside of exhaust port. Studs allowed for header pipe attachment to block. Header pipes MUST be wrapped to protect driver from burns. Gasket and/or Silicone allowed to seal the header. Header must be of fixed design. NO SLIPPY PIPES allowed. No extra tubes or extra holes allowed except hole for heat sensor probe if sensor is used. Extra heat shield above chain guard allowed. All header pipes must be of continuous length from flange to end of pipe with stages or butt welds permitted (no chamber, infusers, or covers of any type allowed on muffler etc.). A header support brace and safety wiring of header bolts or studs is MANDATORY to assure header bolts remain tight. It is required that the safety wire wrap around pipe to insure that bolts remain with pipe in case they are stripped out of block. Silencer must be tight, secure, and completely intact on the header through out the entire event. Silencer must be clamped to header tube and no welding of silencer in any area. Silencer must be visible when viewed from any angle. Header tube and silencer only legal parts.

Silencer: In events where silencing device is MANDATORY (Divisional, National, etc., points event and where required for non-points, local events), use of RLV 8-91 SILENCER IS MANDATORY. Silencer must be utilized as produced, with no modifications or alterations permitted. Silencer Baffle holes 0.1 285" maximum all baffles. The flange that bolts the header to the block cannot be thicker than 0.312" Max.

Air filter: Any air cleaner permitted. Must be installed directly to carb. No filter adapter allowed. Filter may not be used as an air ram and must filter from all areas as raced. Any open areas in filter must be covered with a filter sock. (No open areas allowed)

Carburetor: PZ model carburetors are the only legal carb and are recognizable by the Walbro PZ stamping or the Briggs and Stratton Diamond logo. Must be stock as from the factory except any parts that are inside the float bowl or that can be removed through the float bowl are non-tech items. Any 1/4" bolts may be used to attach carb to intake. NO STUDS ALLOWED. Carb to intake sealer is by O-ring only. No sealer allowed. Air must enter carb at air horn ONLY. Choke must be as stock as from the factory except choke arm may be secured in the open position. Adapter will be allowed on end of fuel inlet of carburetor for attachment of 1/4" fuel line. The fuel nozzle must protrude into the venturi between 0.040" and 0.060". Maximum throttle bore inside dimension is 0.874" NO-GO. Must be as cast.

Choke bore: 1.149" No-Go. Must be as cast.

Choke lever: Pin punching is allowed to tighten choke cover. Silicone or Epoxy may be used to secure choke lever in place.

Venturi: Vertical 0.792" No-Go Horizontal 0.618" NO-GO for top and bottom of venturi (widest part), and 0.605" NO-GO will be for the horizontal check for the narrowest part of venture, and this NO-GO may not enter slide area. No machining allowed. The 0.618" no-go gauge must be held horizontal to properly check carburetor bore. Air pick off hole maximum 0.065" No-Go.

Slide: Deepest part of slide cutaway at the bottom of the slide must be a maximum of 0.074". Must be stock as from the factory.

Needle jet: 1.677" minimum length and 1.692" maximum length. Taper on needle must remain stock and will be checked at 0.500" from the tip of the needle and must not be smaller than 0.070" NO-GO.

Restrictor plates: Must be stock as manufactured, NO ALTERATIONS ALLOWED. Single-hole restrictor plate will be used. A 0.505" (to be checked with 0.506" NO-GO) gold restrictor will be used for the Briggs Sportsman 2 classes. A 0.575" (to be checked with a 0.576" NO-GO) black restrictor plate will be used in the Briggs Jr. classes. A 3-hole purple restrictor plate with 0.225" holes (to be checked with a 0.226" NO-GO) will be used in the Jr. Sportsman 1 classes. A two-hole restrictor plate with a top hole 0.275" and a bottom hole of 0.325" turquoise restrictor plate (to be checked with a 0.276" and 0.326 NO-GO) will be used in the Jr. Sportsman 2 classes. Restrictor plate must be flat and placed between carb and intake, and sealed within gasket area. There must be one gasket between the restrictor plate and the intake manifold. Addition of material or funneling of gasket(s) not allowed. Any attempt to bypass, modify restrictor is prohibited. Anodizing may not be removed from restrictor plate. Horstman lettering must be present, and tang on plate must be on right side when looked at from the carb side. Intake restrictors are to be unaltered, and must be as originally manufactured. Along with NO-GO gauges, officials may use a known factory plate, or any other tool necessary to determine legality of part. Restrictor plate violations subject competitor to disqualification and suspension.

Note: In all divisions, issued restrictor plates may be required to be used at selected events.

Intake: Stock Animal intake as supplied from the factory. The gasket surfaces may be machined to meet the length specification, but the gasket surfaces must remain flat for proper gasket seal. The two intake to block mounting holes and one intake to carburetor mounting hole may be drilled out and will be checked with a 0.328" NO-GO; the width of the intake to carb slotted hole will be checked with the same NO-GO. The intake may NOT be drilled and tapped for fitting to pulse fuel pump.



Length: 1.740" NO-GO, 1.760 MUST-GO.

Inside diameter: 0.885" MUST-GO, 0.905" NO-GO. Minor paint runs or welding slag inside manifold are not grounds for disqualification.

Intake to block gasket: After-market gaskets are allowed. No sealants are allowed. Gasket thickness 0.070" max.

Fuel pump: Auxiliary pulse-type fuel pump allowed. Fuel pump must be externally mounted. Fuel pump must be pulsed from the crankcase upper oil fill cap or intake manifold only. Fuel pump must be mounted on engine. Pulse line from crankcase to fuel pump not to exceed 15". Fuel pump pulse line must be standard 1/4" inch or smaller inside diameter fuel line. Single diaphragm type fuel pump only. No double or triple diaphragm pumps allowed. A fuel pump return line to fuel tank is not allowed.

Valve cover: Stock valve cover as from factory that includes the breather hole for the tube that runs to the catch can (no threading of hole allowed). Valve cover gasket must meet stock configuration. No sealer allowed.

Rocker arms: Must be stock as from the factory. Minimum length is 2.850".

Camshaft: All cam profile readings must be taken with zero valve lash and degree wheel at top dead center (TDC) of compression stroke. Readings shall be measured from push rods. Set dial indicator at zero and do not reset during the profile process. Only stock factory camshaft cores from Briggs & Stratton are permitted, part numbers 555532 and 555584. Lobes may be ground, but not to exceed 0.870 base circle. Mechanical compression relief is non-tech. Camshaft lobes must remain flat and of original width. Maximum valve lift of 0.255" taken directly off the valve assembly at zero valve lash. Place dial indicator on valve keeper, then tighten ball rocker until you see indicator move 0.001" to 0.002"; this will assure that all the lash is taken out of the valve. When checking the lift off the valve keeper the only dial indicator holder that will be used is a three leg holder Sox holder #AT320A or similar indicator holder.

Camshaft profile limits:

INTAKE

Lift Degrees

0.020" 18° TO 13° BTDC

0.050" 0 TDC TO 4° ATDC

0.1 00" 16° ATDC TO 20° ATDC

0.1 50" 33° ATDC TO 37° ATDC

0.1 75" 42° ATDC TO 46° ATDC

0.200" 53° ATDC TO 57° ATDC

0.225" 67° ATDC TO 71° ATDC

MAX Max. lift is 0.257"

0.225" 39° BBDC TO 35° BBDC

0.200" 25° BBDC TO 21° BBDC

0.175" 15° BBDC TO 11° BBDC

0.150" 5° BBDC TO 1° BBDC

0.1 00" 1 2° ABDC TO 1 6° ABDC

0.050" 28° ABDC TO 32° ABDC

0.020" 44° ABDC TO 49° ABDC

EXHAUST

Lift Degrees

0.020" 61° BBDC TO 56° BBDC

0.050" 44° BBDC TO 40° BBDC

0.1 00" 27° BBDC TO 23° BBDC

0.150" 1 10° BBDC TO 7° BBDC

0.175" 10° BBDC TO 3° ABDC

0.200" 10° ABDC TO 14° ABDC

0.225" 24° ABDC TO 28° ABDC

MAX Max. lift is 0.257"

0.225" 78° BTDC TO 74° BTDC

0.200" 64° BTDC TO 60° BTDC

0.1 75" 53° BTDC TO 49° BTDC

0.1 50" 43° BTDC TO 39° BTDC

0.100" 27° BTDC TO 23° BTDC

0.050" 1 0° BTDC TO 6° BTDC

0.020" 5 ATDC TO 1 0° ATDC

Ball rocker: As Stock from factory. 0.590" NO-GO, 0.610" MUST-GO.

Push rod: Stock as from factory. .185" - 0.190" diameter. Length 5.638" NO-GO, 5.658" MUST-GO.

Bolts: Stock head bolt must be utilized and four are mandatory. All other external metric bolts may be replaced with American standard bolts of the appropriate size.

Head gasket: B & S and after-market head gaskets are allowed of stock design. Gasket sealer cannot be utilized on head gasket. No aluminum or copper head gaskets allowed. 0.049" minimum thickness measured in four places between head bolts. Measurement to be made from inside of gasket. Measurement to be made with micrometers. Briggs and Stratton Fire Ring head gaskets are allowed. Minimum thickness is 0.042" measured on the metal Fire Ring part of the gasket.

Cylinder head plate: Must be stock as from the factory. Cylinder head plate gasket must be stock configuration. 0.060" max thickness.

Rocker arm studs: Must be in stock as from the factory.

Valves: Stock valves ONLY. Must be one angle. Valves may not be polished or lightened. If working area (that portion of the valve stem translating with the valve guide area) of valve stem is cleaned, no material may be removed, such as linear grooves, cross-hatching, etc.



Minimum intake and exhaust valve length 3.372" + or - 0.010".

Intake valve: 45 degrees. Intake valve diameter is 1 .055" NO-GO, 1 .065" MUST- GO. Depth of dish in valve 0.084" – 0.104". Minimum height from angle of valve face to top of valve 0.057" using gauge (Check using a depth micrometer from top of valve to the gauge.)

Exhaust valve: 45 degrees. Exhaust valve diameter is 0.935" NO-GO, .945" MUST-GO. Depth of dish in valve 0.084" - 0.1 04". Minimum height from angle of valve face to top of valve 0.060"using gauge. (Check using a depth micrometer from top of valve to top of gauge.)

Valve springs: Stock Briggs & Stratton valve springs and keepers are mandatory. Springs must remain unaltered as supplied by factory.

Intake and exhaust springs: Maximum valve spring length is 0.940" NO-GO. 0.103" -0.107" wire diameter, measured in three places on spring. Inside diameter of spring 0.615" minimum, 0.635" maximum.

Valve spring retainers: Stock as from the factory. 0.060" - 0.075" thickness.

Cylinder head: Stock Briggs & Stratton cylinder head part # 555635. Machining of head gasket surface only allowed. No machining of ports allowed. Bosses on head may be tapped to allow for the attaching of a header brace. Depth of head at shallow part of head 0.011" min. The measurement on the shallow side of the combustion chamber will be taken with a depth gauge on the push rod side of an imaginary line drawn from dowel pin to dowel pin on the valve side of the dowel. It will also be taken over the spark plug area. The rest of the recess area in the head has no depth dimension, but the recess must remain visible. Depth at floor of head 0.319" min.

Depth to top of valve seat: 0.360" max, 0.335" min (Old Style Head), RT-1 Head – min 0.320".

Head thickness measured from head gasket surface to head plate gasket surface is 2.420" (RT-1 Head min 2.405"). Head thickness to be checked in four places through the valve guides and the push rod holes with gauge, not calipers. Width of combustion chamber at the widest part across the valve seats area check with a 2.640" NO-GO at a depth of 0.200 in the combustion chamber.

Valve seats: Must be one angle ONLY on valve seats. Stock Briggs & Stratton valve seats are mandatory.

Intake seat inside diameter, 0.966" NO- GO, 0.972" MUST-GO.

Exhaust seat inside diameter, 0.841" NO-GO, 0.850" MUST-GO.

Exhaust and Intake seat 45 ° angles.

Ports: Must have stock configuration. No porting or modifications of any kind allowed.

Intake inlet: 0.918" NO-GO when checking 90 degrees to stud pattern. NO-GO will be straight when checking in line with stud pattern. NO-GO will sit on floor of port at bottom and stop at upper edge of port on top. 0.864" NO-GO cannot touch the valve guide of the intake port. 0.860" plug gauge will be used as a visual check of the eyebrow area; this is not a NO-GO but a visual assist tool.

Exhaust outlet: 0.980" NO-GO.

Valve guides: Stock valve guides as supplied from factory. Stock replacement guide part # 555645 allowed. Maximum depth from cylinder gasket surface to top of intake valve guide is 1.255".

Deck/piston clearance: Machining of deck surface is permitted. No peak decking allowed. Piston pop-up CANNOT exceed 0.005" above block surface in the center of the piston. When measuring piston pop-up, it should be accomplished with bar stock on a parallel with the piston wrist pin and, using a dial indicator, check the piston pop-up in this area. Then, without moving the dial indicator, rotate the bar 90 degrees on the center line of the piston and check the pop-up - it should not exceed 0.005".

Cylinder bore: No circular or machined grooving of cylinder is allowed in any position of cylinder. Stock cylinder bore is 2.690"; overbore is permitted providing it does not exceed 2.725" (approximately 0.035" overbore).

Stroke: Stroke is 2.204" max. Check with stroke pin or dial indicator. Stroke is checked by pushing piston down to take up play of rod clearance. Stroke is checked from bottom dead center (BDC) to top dead center (TDC).

Starter: Recoil starter may be retained as produced and intact; if recoil is removed, starter cup must also be removed. Any style nut and use of electric starter allowed.

Flywheel: Any flywheel key or NO flywheel key is allowed. No machining, glass beading or sandblasting of flywheel is allowed. Flywheel washer must be stock.

Weight of the PVL flywheel: 4 lbs. 1oz. minimum.

Ignition: If stock flywheel part # 555625 is used, the coil must be stock Briggs coil part # 557040; must be utilized in unaltered form. NO slotting of mounting holes or machining of attaching bolts is permitted. There must be resistance from ground to the spark end of the plug wire. Spark plug connector must be stock factory type. Rubber plug boot is allowed. If PVL flywheel part # 555683 is used, the stock PVL Magneto Briggs Part # 555681 must be utilized in unaltered form. NO slotting of mounting holes or machining of attaching bolts is permitted. Spark plug connector must be stock factory type. Rubber plug boot is allowed.

Crankcase side-cover: Side-Cover must remain stock

Crankcase side-cover gasket: Aftermarket gaskets approved; however, must be of same size and material as stock gasket(s). One or two crankcase gaskets are allowed.

Valve lifters: Stock lifter as supplied OEM factory. Head of lifter 0.820" NO-GO, 0.860" MUST-GO. Length of lifter 1.515" NO-GO, 1.525" MUST-GO.

Connection rod: Stock Animal, World Formula or commercially available Billet Rods, with or without inserts are allowed. No polishing or grinding allowed. Minimum rod length is 2.414". Maximum length is 2.429 measured from bottom of wrist pin to top of crankshaft journal. Oil hole opening is 0.185". Stock rod length is 2.419" minimum, 2.429" maximum. Measured from bottom of wrist pin to top of crankshaft journal. Oil hole opening, new and old style rod, is 0.185" NO-GO.

Wrist pin: Wrist pin must not be altered. Maximum inside dimension of wrist pin is 0.414". Outside dimension is 0.624" - 0.626". Minimum length 1.901".

Rings: Three rings are MANDATORY. Compression, or top ring, chamfer or 0 must face up, and must remain as manufactured. Scraper ring must be installed with inside chamfer down and 0 up. Stock oil ring must be installed as from factory. Ends of ring must remain flat. Excessive end gapping of rings not allowed. Rings must conform to all listed factory specifications and be of stock configuration. Known standards for piston/ring configurations are Briggs & Stratton factory-approved parts. No machining of rings allowed. Exception: lapping and end gapping allowed. Rings must be in one piece when removed from block. Minimum width top two rings 0.095". Thickness top two rings 0.059" - 0.064". Oil ring minimum width 0.065" ring groove must be present. Expander ring must be installed. Oil ring thickness 0.098" - 0.102".



Piston: Stock, unaltered Briggs & Stratton Animal piston MANDATORY. Wrist pin bore must not be altered or relocated except minimum honing of wrist pin bore allowed. New style Briggs & Stratton piston with circlip on both sides of wrist pin bore allowed. Deck above top ring must not be altered. NO machining is allowed on piston. Arrow must point toward flywheel. From top piston to wrist pin bore 0.658" minimum measurement. Check on circlip side of piston. Minimum piston length is 1.762".

Crankshaft: Stock factory crankshaft mandatory. Stock factory timing gear mandatory; must be installed properly. Lightening, polishing of counter weights, addition of metal or other material is not permitted. Offset crankshafts are not permitted. Aftermarket bearing of non self-aligning type, with or without shield, is permitted. Shims if used must be installed as from factory. No ceramic bearings allowed. Crankshaft journal diameter is 1 .094" - 1.100". Must be as produced with no alterations or reworking. Blocks repaired from broken rod damage are permitted providing that repair does not constitute a functional modification of original block. No bushings of any kind allowed except for bushings approved in this Tech Manual. The repair of one coil post is allowed, as long as the remaining post is factory and unaltered. No KNURLING of guides allowed. No welding can be done to an engine from the cooling fins upwards. Cam boss repair or welding not allowed. External welding of block is only allowed to repair damage from broken rod. Dry clutches are mandatory (same clutch used in all other Briggs & Stratton classes).

Engine seals: The engine will be sealed with two wires. One wire will run between a valve-cover bolt and an intake-to-engine bolt, then to the nut side of a carb-to-intake bolt. The other wire seal will seal the front-side cover bolt.





2023 TAG™ 4-Cycle Clone Rules



Tech Sheet for Stock Clone Claimer Class

Stock Engine Rules: All parts must be Box Stock factory production parts unless otherwise specified in this rules manual. No machining or alteration of parts is allowed unless specifically noted. **Tumbling of engine parts is strictly prohibited.**

ANYTHING WHICH IS NOT EXPRESSLY ALLOWED IS FORBIDDEN (All new parts must be sent to TAG-USA for approval)

All parts presented in tech may be compared to a known stock part.

Fuel: Gasoline only (ethanol 10% only).

Tires: Front 4.50 x 5 minimum; Rear 6.00 x 5 minimum. Sprint will utilize CIK Homologated hard compounds. Road race will allow for open compound.

Approved engines: Lifan, Greyhound, Harbor Freight Blue & Yellow, Jaing Dong, Yamakoyo, Blue Max, Ducar, Dupor, BSP (196 cc ONLY)

Clutches: Any stamped drum clutch allowed. No machined drums allowed. Must be shoe type clutch. No disc clutches will be allowed.

Fuel tank: Must be floor-mounted.

Carburetor: Huayi or RUI*ING model carb only. Carb to intake sealer is gasket only; no other sealer allowed. Choke must be as supplied from factory, but may be fixed to stay in open position. (Choke area must remain as cast). Venturi .615" NO-GO. Venturi may be machined to spec; minimum venturi size is .608"; no polishing permitted and all transitions must remain stock in and out of venturi. Rear carb bore .751" NO-GO. Carb bore at rear of carb .750" maximum depth (this measurement is taken from the flat surface on the rear of the carb down to the circular ridge at venturi edge). Main fuel jet .042" NO-GO. No use of Loctite or other materials on high speed jets or damaged threads permitted in an attempt to lock jet in a non-stock location. Main jet must seat firmly on bottom of emulsion tube. Low speed idle jet is a non-tech item (carb body subject to tech). Stock emulsion tube must be used and unaltered, .066" max ID (NO-GO). Side holes in emulsion tube: 4 holes in bottom section max and must have 20 holes in middle section. Minimum emulsion tube length 1.092" (and must be straight). The minimum protrusion of the emulsion tube into the venturi must be checked by the newly approved NO-GO gauge (.488, .478). Minimum outside diameter of the emulsion tube at any point is .154". Side holes in emulsion tube diameter .036" NO-GO. Throttle shaft .115" minimum. Stop arm of throttle shaft may be filed to adjust for butterfly position. Butterfly .037" minimum thickness. Butterfly screw minimum length .305", screw must remain stock as produced (must have factor taper). If screw has factored flare, it can be filed on the sides to remove burrs from screws. Aftermarket air filter adapter allowed (max length 1.375"). Phenolic spacer must be flat across entire gasket mating surface with a minimum thickness on gasket surface of .265" (not including gasket). Gasket surfaces must remain parallel; no angle cutting allowed. Center inlet hole is non-tech (size, configuration, finish), but no rifling, grooving, dimpling, etc. allowed. Maximum mounting hole(s) size .300" NO-GO (checked with .300"+ pin gauge). Phenolic spacer/gasket(s) subject to spray test to check for leakage or introduction of air into intake track.

Air filter: Air filter cannot be configured as a ram air induction. Inspect inside air filter for an obstruction of air to pass through filter. Any one piece round body filter, maximum overall length (excluding flange) 8 1/4", maximum diameter 6 1/4". Air may only enter from exterior surface of sides of the filter body only. End of filter must be flat with no entrance air from end of filter. Foam or nylon pre-filter allowed. Any additional holes, vents, ports, etc. in the fuel system, carburetor or any other means of air introduced into air flow is strictly prohibited.

Fuel pump: Fuel pump must be pulsed from either the crank case or the valve cover. (Maximum pulse hose length is 9".) You may install a flat metal plate in the original tank location for the purpose of mounting the throttle linkage and fuel pump.

Engine block: Must remain stock. No machining allowed. Maximum bore is 2.685". Stroke is 2.123", plus .007" or minus .005". No piston pop-out allowed. Matting surface finish of block and cylinder head is a non-tech item; surfacing of both to correct gasket failure and meet cc check allowed, however, no piston pop-out is allowed. May use two side cover gaskets of stock configuration. (Oil drain hole between lifters .250" max, .251" NO-GO. Any type side cover fastener and lock washer permitted; must be original size; sealer permitted.) Solid dowel pin replacement for the side cover to block .317" maximum diameter allowed (factory stock dowel pin is 8mm or .315"). Dowel pin must remain in the factory position. Block must remain stock as produced. Stub for governor may be removed and hole plugged. No machining of block allowed. Welding to the block shall be for rod damage repair only and may not constitute a functional modification. No welding above the block on the cylinder fins or on the flywheel side for bracing.)

Cylinder head: OEM head style only. Valve seats have two angles: single 45* bottom and single 30* top angle. OEM valves with 45* seat angle only; no lighting or polishing. Intake seat maximum ID .899"; exhaust seat maximum ID .863" (resulting in a 1mm minimum margin on valve). Outside face of valve may not be below floor of combustion chamber (i.e. don't sink the valves). Allen head bolts permitted on header to head. The use of aftermarket FLANGED bolts of similar OEM design (head size, diameter, length and thread length/pitch) allowed as replacement for stock head bolts. No studs allowed. No additional washers allowed. Breather-hole on valve cover may be tapped with 1/4" pipe tap to accommodate breather fittings; no oversize drilling allowed. Head gaskets may be after-market; must be of stock configuration. Depth check between the valves, front to back and side to side may not vary by more than .005" max. (Measured from gasket service to the center of valves.) No copper or aluminum gaskets allowed. Any stock configuration exhaust gasket allowed; sealer permitted. Header may also be run without gasket; sealer only. Allen head bolts permitted on header to head. Head gasket must be stock configuration (.009" minimum thickness).

Combustion chamber: Measure from the gasket service of the head to the center of the valves, minimum .275" depth. May wipe carbon off the head before the test. Must use a head gasket minimum .009" thick measured in 4 places between head bolts (0 deck no pop out). Take tool R2217 and lay on block with piston at TDC; tool cannot touch piston while swiping from top to bottom of block. No peek decking allowed.

Valve train: Stock four-bolt valve cover only with any stock configuration gasket; sealer allowed. Factory stock rocker arms 1:1 ratio and push rods only. Minimum overall length of rocker arm 2.145". Minimum thickness of the upper valve stem end of rocker arm .030". Surface finish of



contact area of rocker arm to valve stem only, non-tech, to adjust for proper running lift. Square-tipped rockers allowed. Stock steel/stainless nitrate-coated valves only, 45 degree angle only, both valves with a minimum weight of 21 grams each (1 mm minimum on valves). Valves cut at 45 degree angle only (both valves). Intake valve Max OD .982" +/- .005", exhaust valve Max OD .945" +/- .005". No (other) modifications to valves allowed. Single valve springs (10.8 pounds) only. (Installed height for valve springs .815"; must be checked by using the .815" spring MUST-GO gauge with retainer seal and shims in place on intake and exhaust valve if used.) Shims may be used to achieve .815" installed height, maximum thickness of shims used .075"; any combination of valve seal and spring shims allowed. The ruling on the .075" shim thickness includes the oil seal if used. (Rubber seal may be removed and closed as shim only.) The valve stem seal has no tech other than its thickness combined into the max of .075" to obtain a minimum of .815" installed spring height. In other words, the valve stem seal can be used or not used and is no longer a tech item unless used as a shim. Also, the rubber inside it is a non-tech item. *Prescribed check procedure as follows:* Remove valve spring, reinstall spring retainer and shims, insert (tool fully under retainer) .815" MUST-GO gauge in spring location. Gauge must go in both locations (intake and exhaust) with any allowed retainers and shims in place, as raced, during check procedure. Max wire diameter on spring wire is .071" with a maximum tension of 10.8 pounds at a height of .850", and a maximum tension of 18 lbs at .650". *Prescribed procedure for using weight checker is as follows:* Spring must slide over post on its own to the bottom. When weight is placed gently on the spring, push weight down onto spacer so that it bottoms out. Release weight and shine a flashlight between weight and spacer. Light must be visible in its entirety of 360 degrees to disqualify spring. (Additional check for valve springs) Each spring is to be checked using a .750" height by .800" width plate gauge and a .250" (square) NO-GO gauge to check the center spacing of the spring coils while inserted in the plate gauge. *Prescribed check procedure as follows:* Insert the spring in the .750" by .800" plate gauge; spring must be centered (can slide to either side) in plate gauge and must fit inside of gauge with the ends of the spring wires perpendicular to the plate. Once inserted in the plate gauge, take the .250" NO-GO gauge and check the center coil spacing on both sides. The .250" NO-GO gauge must be parallel to the spring wire and perpendicular to the center of the spring when checking. The .250" NO-GO must pass check on at least one side of the spring. This check is to be performed after the 10.8 lb/18 lb check and the .071" max wire diameter check have been performed. Ends of the valve springs may be sanded to help meet spring checks. Lash cap on exhaust valve only. Valve stem seal allowed on intake and exhaust valve. BS lifters only, no modifications allowed. Overall length of push rod 5.285" max, 5.230" min. Push rod must be of 3-piece design (hollow or solid tube with 2 solid ball ends). Lifter head diameter .915" min with no visible modifications. Weight check lifters 18 grams min and push rods 9 grams min.

Spark plug: 14 mm X .75 reach only.

Stock rod only: No modifications. OEM cast rods, no modifications. No machining of any type allowed. Stock rod bolts only.

Stock crankshaft only: OEM, no modifications. Stock stroke length 54 mm or 2.126" (+.007 or minus .005); max stroke 2.133". Machining, polishing, addition of material or other alteration of crankshaft is prohibited. Crankshaft journal diameter is 1.180" max, 1.168" min.

Stock piston & rings only: Piston must be unaltered Box Stock only. Overall piston length 1.935" max, 1.920" min, and from top of wrist pin to top of piston .580" max. Arrow on top of piston must be pointed toward valves/lifters. Overall length wrist pin 2.100" min, inside diameter .550" max. Top ring and middle ring .115" max width, .060" max thickness. Filing of ring end gaps permitted including oil expander; max end gap .040" (top 2 rings only). Lapping of rings permitted for proper seal. Piston ring must be in one piece (unbroken) when presented for tech. Piston rings must be self-supporting in cylinder bore and concentric to cylinder bore. Oil ring assembly must be self-supporting in cylinder bore when checked, installed on piston with connecting rod attached (rod cap and bolts installed are not required for this check). Minimum weight of piston 145 grams (must conform to this spec by 4/15/2015). Honing of wrist pin journals permitted; bore surface must remain flat and retain stock configuration edges. Skirt of piston must remain as produced; no chamfering, radiusing or breaking of edges permitted. Up to .010" over pistons allowed (2.691" NO GO).

Camshaft: Must be stock. Stock camshaft cores only; ez-spin assembly must remain as stock. Cam lobe base circle diameter .865" (-.005"/+.010"). Duration check for intake and exhaust lobes (taken off pushrod). Intake duration of 219 degrees at .050 lift, 86 degrees at .200 lift.* Exhaust duration of 222 degrees at .050" lift, 97 degrees at .200" lift.* (*+2/-5 degrees for wear and gauge variances) Max intake lift on cam .225", min .215" lift taken at the pushrod. Max intake lift at the valve .238" taken on valve spring retainer with zero lash. Max exhaust lift on cam .232", min .222" lift taken at the pushrod. Max exhaust lift at the valve .242" taken on valve spring retainer (as run).

Flywheel and ignition system: Stock Box Stock system only; must be unaltered. Kill switch and low oil sensor may be disabled and removed. Flywheel: BSFW-1 and DJ-168F-16200. A steel billet flywheel is allowed, same weight check as stock flywheel (5lbs 4oz minimum) including plastic fins. Also allowed: ARC 6619, ARC 6618, Raceseng Flywheels RSP-13-075 Rewheel NF- S1 & RSP-13-077 Rewheel F-S1, PVL 211-900 in the BS classes. Non-fin flywheels must utilize stock plastic fins. No alterations of any type allowed. As of 1/1/2013 stock cast flywheel are no longer allowed. Timing and flywheel key is non-tech.

Spark plug boot: Must be the stock black hard plastic boot ONLY, resistor or non-resistor.

Header pipe and muffler: Any single stage, one-piece header made from .750" OD steel tubing, with the RLV Mini B-91 silencer installed at the end of pipe. The B-91 silencer must be thread-fitted to the pipe end. The entire exhaust pipe including the muffler is 15" max length and 10" min length. Exhaust pipe must be double-nutted or safety-wired and silencer must be wired to the brace. Pro Box Stock header length 16 1/2" min and 20 1/2" max, measured on inside of pipe with 1/4" steel tape. Sealer may be used to assist gasket seal. Header may also be run without gasket, sealer only. "Wennie" pipe silencer end cannot be higher than 14 1/2" from the bottom edge of the block mounting surface. Tech the pipe by placing engine on flat surface and measuring from the flat surface to the bottom edge of silencer; cannot exceed 14 1/2". Flange for header maximum thickness of 1/2". Allen bolts of original diameter allowed. Maximum height from top of header flange to top of pipe curve is 10". Bottom edge of silencer end cannot be higher than 9" from the bottom edge of the block mounting surface. Tech the pipe by placing engine on flat surface and measuring from the flat surface to the bottom edge of silencer; cannot exceed 9".

RLV Mini 91 silencer: Part #4117. Overall length 5.470" minimum (+/- .005"); 5.600" maximum (+/- .005"). Threaded nipple .685" maximum ID (ID as manufactured; NO grinding, reaming, or polishing allowed). Rear baffle holes .1285" maximum; inner baffle holes .0965" maximum. Silencer must be utilized as produced, with no modifications or alterations permitted. Silencer must be strapped or braced for support and to ensure silencer does not turn and unscrew. New RLV B91 silencers with safety cable attachment device allowed. Note: all B91 silencers must be so equipped with safety device by January 1, 2019. Add-on safety devices will also be allowed.

Blower housing and pull starter: Must be present and remain stock. You may rotate pull starter for a better angle to crank from.

Engine oil recovery system: Mandatory (oil catch can).



Oil sensor: May be removed.

Governor and governor component: Non-tech; may be removed.

Bearings: Crankshaft bearings shall be metallic (magnetic steel) construction (excluding retainers) and be of conventional ball design (9 Ball only).

Coatings: Internal performance coating of any type is not allowed.

This will be a **Claiming Class**. The Claiming rules are as follows:

- Only a competitor participating in the same class as the person whose engine they are claiming may place a claim on another competitor's engine.
- The Claim must be made prior to the start of the race event by posting a \$225.00 deposit or \$300.00 deposit if the billet STEEL flywheel is included.
- The engine being claimed must finish in the top 5 and pass post tech.
- A \$25.00 processing fee will be kept by the host club whether or not the claim is executed.
- The person placing the Claim must finish the event and pass post tech prior to their engine claim becoming valid.
- \$200.00 will be paid to the person whose engine has been claimed only if that person passes post tech. At that time, the engine only will be made available to the person posting the deposit. The engine does not include motor mount, chain guard, muffler, header, air filter assembly, and aftermarket throttle linkage, top plate, fuel pump or Clutch.
- Additional rules may be added as the 2023 season progresses; rule changes and additions will be posted to the website www.tagracing.net. Any rule changes approved and posted to the website will be effective from the date of posting.

Class structure:

4-Cycle Stock Clone Novice: 225 lbs. 7 to 11 years ARC/.550" blue restrictor with stock muffler

4-Cycle Stock Clone Junior: 305 lbs. 11 to 15 years

4-Cycle Stock Clone Senior: 360 lbs. 15 years and up

4-Cycle Stock Clone Masters: 385 lbs. 35 years and up

Important Note: Any attempt to increase the RPM of the "Stock Clone" classes engine (examples: stronger, non-stock valve springs or decreasing exhaust restriction from stock levels) is strictly prohibited.

Any increase in RPM of the "Stock Clone" class engines will mandate the use of an after-market Billet-style flywheel for high RPM use (e.g., Super Box). ARC currently has these parts in their product line (part numbers 6618/6619) and they are approved by TAG Racing Int./TAG USA for use; others may become available as demand increases. Note: Under no circumstances is this type of flywheel allowed in the Box Stock (Stock Classes); stock flywheel ONLY. No other alterations to or from stock components are allowed.



Tech Sheet for Box Stock Clone

Stock Engine Rules: All parts must be Box Stock factory production parts unless otherwise specified in this rules manual. No machining or alteration of parts is allowed unless specifically noted. **Tumbling of engine parts is strictly prohibited.**

ANYTHING WHICH IS NOT EXPRESSLY ALLOWED IS FORBIDDEN (All new parts must be sent to TAG-USA for approval)

All parts presented in tech may be compared to a known stock part.

Fuel: Gasoline only (ethanol 10% only).

Tires: Front 450 x 5 minimum; Rear 600 x 5 minimum. Sprint will utilize CIK Homologated hard compounds. Road race will allow for open compound.

Approved Engines: Lifan, Greyhound, Harbor Freight Blue & Yellow, Jaing Dong, Yamakoyo, Blue Max, Ducar, Dupor, BSP (196 cc ONLY)

Clutches: Any stamped drum clutch allowed. No machined drums allowed. Must be shoe type clutch. No disc clutches allowed. (Allow new temp or new members to run disc clutches for a period of 3 races, but must switch to a shoe clutch to continue in the series.)

Fuel tank: Must be floor-mounted.

Carburetor: Huayi or RUI*ING model carb only. Carb to intake sealer is gasket only; no other sealer allowed. Choke must be as supplied from factory, but may be fixed to stay in open position. (Choke area must remain as cast). Venturi .615" NO-GO. Venturi may be machined to spec; minimum venturi size is .608"; no polishing permitted and all transitions must remain stock in and out of venturi. Rear carb bore .751" NO-GO. Carb bore at rear of carb .750" maximum depth (this measurement is taken from the flat surface on the rear of the carb down to the circular ridge at venturi edge). Main fuel jet .042" NO-GO. No use of Loctite or other materials on high speed jets or damaged threads permitted in an attempt to lock jet in a non-stock location. Main jet must seat firmly on bottom of emulsion tube. Low speed idle jet is a non-tech item (carb body subject to tech). Stock emulsion tube must be used and unaltered, .066" max ID (NO-GO). Side holes in emulsion tube: 4 holes in bottom section max and must have 20 holes in middle section. Minimum emulsion tube length 1.092" (and must be straight). The minimum protrusion of the emulsion tube into the venturi must be checked by the newly approved NO-GO gauge (.488, .478). Minimum outside diameter of the emulsion tube at any point is .154". Side holes in emulsion tube diameter .036" NO-GO. Throttle shaft .115" minimum. Stop arm of throttle shaft may be filed to adjust for butterfly position. Butterfly .037" minimum thickness. Butterfly .037" minimum thickness (must have factory taper on butterfly). Butterfly screw minimum length .305", screw must remain stock as produced (must have factory taper). If screw has factory flare, it can be filed on the sides for removal of burrs from screw to perform tech procedure. Aftermarket air filter adapter allowed (max length of 1.375").

ADDITIONAL CARBURETOR GAUGES EXPLANATION: 2023 CARBURETOR TOOLS

The following gauges are additional to the currently used gauges for inspecting the carburetor:

Mounting flange gauge: Measures the distance from the e-tube to the mounting flange of the carburetor. Gauge may not touch e-tube.

Front air bleed gauge: Measures the size of the air bleeds on the air cleaner end of the carburetor. This is a MUST-GO gauge. Measures both left and right bleeds.

Low speed air bleed gauge: Measures the 4 small holes opposite the butterfly. This gauge is a NO-GO gauge. Do not apply excessive pressure when using the gauge.

Venturi gauge: (2-piece emulsion tube gauge and .750 step gauge) Gauge is designed for use in the Huayi, Ruxing and Tillotson carburetors. Gauge is stepped for different bore sizes. Gauge measures the .750 step distance from emulsion tube. Place the largest of the two gauges (.750 step gauge) in the mounting flange end of the carburetor and seat against the .750 step area. NOTE: Be sure to use the tightest fitting end. Next, place the appropriate end of the of the emulsion tube gauge in the opposite end of the carburetor and shove firmly against the emulsion tube. NOTE: The emulsion tube gauge has a long slot and a short slot in each end. The long slot is used for this check. If the emulsion tube gauge pushes the step gauge away (out of the bore), the carburetor is out of spec (i.e. illegal).

Emulsion Tube Gauge: This gauge is used for checking the amount of visible highly-machined venturi in front of the gauge. The short slot is used for the check. NOTE: Be sure to choose the tightest fit section for the proper carburetor. Slide the gauge in the mounting flange end of the carburetor and shove against the emulsion tube. Visually inspect the opposite end of the gauge for highly visible-machined venturi in front of the gauge. NOTE: It may be necessary to move the gauge to 12 o'clock or 6 o'clock while holding firmly against the emulsion tube to allow a visible area to be noticed. If no visible-machined area of the venturi can be seen, the carburetor is out of spec (i.e. illegal).

Phenolic spacer must be flat across entire gasket mating surface, with a minimum thickness on gasket surface of .265" (not including gasket). Gasket surfaces must remain parallel; no angle cutting allowed. Center inlet hole is non-tech (size, configuration, finish), but no rifling, grooving, dimpling, etc. allowed. Maximum mounting hole(s) size .300" NO-GO (checked with .300"+ pin gauge). Phenolic spacer/gasket(s) subject to spray test to check for leakage or introduction of air into intake track. (Restrictor plates must have a gasket on each side of plate, subject to spray test for interdiction of air. No modification allowed to the restrictor plates. Red .375; green .425; purple .500; blue .550.)

Air filter: Air filter cannot be configured as a ram air induction. Inspect inside air filter for an obstruction of air to pass through filter. Any one piece round body filter, maximum overall length (excluding flange) 8 1/4", maximum diameter 6 1/4". Air may only enter from exterior surface of sides of the filter body only. End of filter must be flat with no entrance air from end of filter. Foam or nylon pre-filter allowed. Any additional holes, vents, ports, etc. in the fuel system, carburetor or any other means of air introduced into air flow is strictly prohibited.

Fuel pump: Fuel pump must be pulsed from either the crank case or the valve cover. (Maximum pulse hose length is 9".) You may install a flat metal plate in the original tank location for the purpose of mounting the throttle linkage and fuel pump.

Engine block: Must remain stock. (Excessive beveling at top of cylinder for the purpose of gasket matching strictly prohibited.) Maximum bore is 2.685. Stroke is 2.123", plus .010" or minus .005". No piston pop-out allowed. Matting surface finish of block and cylinder head is a non-tech item; surfacing of both to correct gasket failure and meet cc check allowed, however, no piston pop-out is allowed. May use two side cover gaskets of stock configuration. (Oil drain hole between lifters .250" max, .251" NO-GO. Any type side cover fastener and lock washer permitted; must be original size; sealer permitted.) Solid dowel pin replacement for the side cover to block .317" maximum diameter allowed (factory stock dowel pin is 8mm or .315"). Dowel pin must remain in the factory position. Stub for governor may be removed and hole plugged. Welding to the



block shall be for rod damage repair only and may not constitute a functional modification. No welding on fins of the block or flywheel side for bracing.

Cylinder head: OEM head (JT, TG1 or the Tag USA SRE/GAUGE head). Valve seats may have three angles: (30°, 45°, 60°) Must not touch the guides or seats in the porting process; guides must be in original location. OEM valves with 45° seat angle only; no lighting or polishing. Intake seat maximum ID .897"; exhaust seat maximum ID .863" (1mm minimum margin on valve.) Outside face of valve may not be below floor of combustion chamber (i.e. don't sink the valves). Allen head bolts permitted on header to head. The use of aftermarket FLANGED bolts of similar OEM design (head size, diameter, length and thread length/pitch) allowed as replacement for tech valve cover; may be tapped with 1/4" pipe tap to accommodate breather fittings; no oversize drilling allowed. Head gaskets maybe aftermarket; must be of stock configuration; gasket thickness is a tech item. Depth check between the valves, front to back and side to side may not vary by more than .005" max. (Measure from gasket service to the center of valves). No copper or aluminum gaskets allowed; sealer permitted. Header may also be used without gasket; sealer only. Allen head bolts permitted on header to head (must be wired or double-nutted). Head gasket must be stock configuration (.009" minimum thickness).

Combustion chamber: Measure from the gasket service of the head to the center of the valves, minimum .275" depth. May wipe carbon of the head before the test. Must use a head gasket minimum .009" thick measured in 4 places between head bolts (0 deck no pop-out). Take tool R2217 and lay on block with piston at TDC; tool cannot touch piston while swiping from top to bottom of block. No peek decking allowed.

Valve train: Stock four bolt valve cover only with any stock configuration gasket, sealer allowed. Factory stock rocker arms 1:1 ratio and push rods only. Minimum overall length of rocker arm 2.145". Minimum thickness of the upper valve stem end of rocker arm .030". Surface finish of contact area of rocker arm to valve stem only, non-tech, to adjust for proper running lift. Square tipped rockers allowed. Stock steel/stainless nitrate-coated valves only. Both valves with a minimum weight of 21 grams each (1mm margin minimum on valves, no knife edging of the intake or exhaust valves). Valves cut at 45 degree angle only (both valves). Intake valve Max OD .982" +/- .005" and Exhaust valve Max OD .945" +/- .005", no (other) modifications allowed. Single valve springs (10.8 pounds) only. Installed height for valve springs .815"; must be checked by using the .815" spring MUST-GO gauge with retainer seal (and shims in place on intake and exhaust valve if used). Shims may be used to achieve .815" installed height, maximum thickness of shims used .075"; any combination of valve seal and spring shims allowed. The ruling on the .075" shim thickness includes the oil seal if used. (Rubber seal may be removed and closed as shim only.) The valve stem seal has no tech other than its thickness combined into the max of .075" to obtain a minimum of .815" installed spring height. In other words, the valve stem seal can be used or not used and is no longer a tech item unless used as a shim. Also, the rubber inside it is a non-tech item. *Prescribed check procedure as follows:* Remove valve spring, reinstall spring retainer and shims, insert (tool fully under retainer) .815" MUST-GO gauge in spring location. Gauge must go in both locations (intake and exhaust) with any allowed retainers and shims in place, as raced, during check procedure. Max wire diameter on spring wire is .071" with a maximum tension of 10.8 lbs. at a height of .850", and a maximum tension of 18 lbs at .650". *Prescribed procedure for using weight checker is as follows:* Spring must slide over post on its own to the bottom. When weight is placed gently on the spring, push weight down onto spacer so that it bottoms out. Release weight and shine a flashlight between weight and spacer. Light must be visible in its entirety of 360 degrees to disqualify spring. Additional check for valve springs: Each spring is to be checked using a .750" height by .800" width plate gauge and a .250" (square) NO-GO gauge to check the center spacing of the spring coils while inserted in the plate gauge). *Prescribed check procedure as follows:* Insert the spring in the .750" by .800" plate gauge; spring must be centered (can slide to either side) in plate gauge and must fit inside of gauge with the ends of the spring wires perpendicular to the plate. Once inserted in the plate gauge, take the .250" NO-GO gauge and check the center coil spacing on both sides. The .250" NO-GO gauge must be parallel to the spring wire and perpendicular to the center of the spring when checking. The .250 pin can only pass through one side of the spring. (If it will not pass through either side it is deemed legal.) This check is to be performed after the 10.8 lb/18 lb check and the .071" max wire diameter check have been performed. Ends of the valve springs may be sanded to help meet spring checks. Lash cap on exhaust valve only. Valve stem seal allowed on intake and exhaust valve. BS lifters only, no modifications allowed. Overall length of push rod 5.285" max, 5.230" min. Push rod must be of 3-piece design (hollow or solid tube with 2 solid ball ends). Lifter head diameter .915" min (may grind bottom of lifter but must meet min weight of 18 grams). Weight check push rods 9 grams min.

Spark plug: 14mm by .75 reach only. After-market plugs allowed.

Stock rod only: OEM cast rods. Stock rod bolts only. (May hone rod journal and risk pins for proper clearance only; new performance rod allowed; no bullet rods.)

Stock crankshaft only: OEM, no modifications. Stock stroke length 54 mm or 2.126" (+.007 or minus .005); max stroke 2.133". Machining, polishing, addition of material or other alteration of crankshaft is prohibited. Crankshaft journal diameter is 1.180" max, 1.168" min.

Stock piston & rings only. Piston must be unaltered Box Stock only. Overall piston length 1.935" max, 1.920" min, and from top of wrist pin to top of piston .580" max. Arrow on top of piston must be pointed toward valves/lifters. Overall length wrist pin 2.100" min, inside diameter .550" max. Top ring and middle ring .115" max width, .060" max thickness. (1 mm rings allowed.) Filing of ring end gaps permitted including oil expander, max end gap .040" (top 2 rings only). Lapping of rings permitted for proper seal. Piston ring must be in one piece (unbroken) when presented for tech. Piston rings must be self-supporting in cylinder bore and concentric to cylinder bore. Oil ring assembly must be self-supporting in cylinder bore when checked, installed on piston with connecting rod attached (rod cap and bolts installed are not required for this check). Minimum weight of piston 145 grams (must include oil scrap rings while performing this test). Honing of wrist pin journals permitted; bore surface must remain flat and retain stock configuration edges. Skirt of piston must remain as produced; no chamfering, radiusing or breaking of edges permitted. Up to .010" over pistons allowed (2.691" NO GO).

Camshaft: Must be stock. Stock camshaft cores only, ez-spin assembly must remain as stock. Cam lobe base circle diameter .865" (-.005"/+.010"). Duration check for intake and exhaust lobes (taken off pushrod). Intake duration of 219 degrees at .050 lift, 86 degrees at .200 lift.* Exhaust duration of 222 degrees at .050" lift, 97 degrees at .200" lift.* (*+2/-5 degrees for wear and gauge variances) Max intake lift on cam .225", min .215" lift taken at the pushrod. Max intake lift at the valve .238" taken on valve spring retainer with zero lash. Max exhaust lift on cam .232", min .222" lift taken at the pushrod. Max exhaust lift at the valve .242" taken on valve spring retainer (as run).

Flywheel and Ignition system: Stock Box Stock system only; must be unaltered. Kill switch and low oil sensor may be disabled and removed. Flywheel: BSFW-1 and DJ-168F-16200-A steel billet flywheels allowed, same weight check as stock flywheel.(5lbs 4oz minimum) including plastic fins.Also allowed the ARC 6619, ARC 6618, Raceseng Flywheels RSP-13-075 Rewheel NF- S1 & RSP-13-077 Rewheel F-S1, PVL 211-



900 in the BS classes. Non-fin flywheels must utilize stock plastic fins. No alterations of any type allowed. As of 1/1/2013 stock cast flywheel are no longer allowed. Timing and flywheel key is non-tech.

Spark plug boot: Must be the stock black hard plastic boot ONLY, resistor or non-resistor.

Header pipe and muffler: Any single stage, one-piece header made from .750" OD steel tubing, with the RLV Mini B-91 silencer installed at the end of pipe. The B-91 silencer must be thread-fitted to the pipe end. The entire exhaust pipe including the muffler is 15" max length and 10" min length. Exhaust pipe must be double-nutted or safety-wired and silencer must be wired to the brace. Pro Box Stock header length 16 1/2" min and 20 1/2" max, measured on inside of pipe with 1/4" steel tape. Sealer may be used to assist gasket seal. Header may also be run without gasket, sealer only. "Wennie" pipe silencer end cannot be higher than 14 1/2" from the bottom edge of the block mounting surface. Tech the pipe by placing engine on flat surface and measuring from the flat surface to the bottom edge of silencer; cannot exceed 14 1/2". Flange for header maximum thickness of 1/2". Allen bolts of original diameter allowed. Maximum height from top of header flange to top of pipe curve is 10". Bottom edge of silencer end cannot be higher than 9" from the bottom edge of the block mounting surface. Tech the pipe by placing engine on flat surface and measuring from the flat surface to the bottom edge of silencer; cannot exceed 9".

RLV Mini 91 silencer: Part #4117. Overall length 5.470" minimum (+/- .005"); 5.600" maximum (+/- .005"). Threaded nipple .685" maximum ID (ID as manufactured; NO grinding, reaming, or polishing allowed). Rear baffle holes .1285" maximum; inner baffle holes .0965" maximum. Silencer must be utilized as produced, with no modifications or alterations permitted. Silencer must be strapped or braced for support and to ensure silencer does not turn and unscrew. New RLV B91 silencers with safety cable attachment device allowed. Note: all B91 silencers must be so equipped with safety device by January 1, 2019. Add-on safety devices will also be allowed.

(All headers must be wrapped from flange to end of header. Muffler cannot be wrapped.)

Blower housing and pull starter: Must be present and remain stock. You may rotate pull starter for a better angle to crank from.

Engine oil recovery system: Mandatory (oil catch can).

Oil sensor: May be removed.

Governor and governor component: Non-tech; may be removed.

Bearings: Crankshaft bearings shall be metallic (magnetic steel) construction excluding retainers) and be of conventional ball design (9 Ball only). Bearings may slip fit in block and side cover.

Coatings: Internal performance coating of any type is not allowed.

Class structure:

4-Cycle Box Stock Clone Novice: 225 lbs. 7 to 11 years ARC/.550" blue restrictor with stock muffler

4-Cycle Box Stock Clone Junior: 305 lbs. 11 to 15 years

4-Cycle Box Stock Clone Senior: 360 lbs. 15 years and up

4-Cycle Box Stock Clone Masters: 385 lbs. 35 years and up



Tech Sheet for Clone Builder's 6.5 OHV Class

Approved engine: 6.5 OHV 196cc clone engine modified only according to BP OHV engine spec.

Description: Single cylinder, 2-valve overhead 4-cycle engine. No aftermarket coatings of any type are permitted on any part of the engine (exception blower housing and shrouds).

Fuel: Methanol ONLY.

Cylinder head: Stock cylinder (TAG-USA 1 Gauge-1 SRE approved). Machining of gasket surface is allowed. No addition of material in ports or to cylinder head allowed. Porting and/or grinding are permitted. Valve seats may have two angles, 45° valve face and 30° top relief. Inside diameter of valve seats must be stock (Int .899" max ID and Ex .863" max ID NO-GO Gauge). Stock head bolts are required and all four are required. Head gasket/s may be aftermarket; must be of stock configuration and gasket thickness. Depth check between the valves, front to back and side to side, may not vary by more than .005" max. Cylinder head guide plate f or pushrods must remain stock. No other alterations to the stock head are permitted. (Champion 1:1 rockers allowed in May).

Bore and stroke: Stock bore is 2.685" and may be over-bored to 2.718". Stroke is 2.123" (+.010"/-.005").

Connecting rod: Stock or billet aluminum rods, with or without bearing inserts, allowed. No titanium rods allowed. Rod length is a non-tech item.

Combustion chamber volume: 25 cubic centimeter minimum, with piston at TDC, using prescribed procedure. The liquid CC check is the official check (IF THE ENGINE FAILS THE CC LIQUID CHECK AT ANY TIME DURING THE TECH PROCEDURE, IT MUST BE CALLED ILLEGAL).

Carburetor/intake: Stock Huayi or RUI*ING carb. Venturi .625" NO-GO. Rear carb bore .751" NO-GO. Carb bore finish is non-tech. Throttle shaft .115" minimum. Butterfly .037" minimum. Air filter adapter of 1.375" max length allowed. No air rams. Pulse-type fuel pump is mandatory. Fuel pump must be pulsed from either the crankcase or the valve cover. Black phenolic carb insulator must be used. Choke assembly may be removed. Jets, air bleed jets and emulsion tubes are non-tech. Throttle shaft, washer and butterfly must be stock and must be present; butterfly screw is non-tech. Stock intake runner gasket configuration only. One extra gasket may be used with restrictor plates. No other alterations are permitted.

Ignition system: Ignition timing is non-tech. Stock ignition module only. No modifications of any type allowed. Spark plug connector must be stock as from factory.

Piston: Must be stock dished piston with no modifications. Oversize Clone or Honda ZOT dished piston is allowed up to .035" oversize. Rings must appear stock and all rings must be installed. Piston may not pop out above cylinder deck.

Valve-train: Stock valve-train only in stock configuration, except any single valve springs and valve spring shims are allowed. No additional support for rocker studs permitted. Valves must be one angle only, 45°. No polishing, lightening or knife edging of valves (1mm min. margin). Valve length is non-tech. Outside face of valve head may not be below the combustion chamber floor (i.e. don't sink the valves). Valve cover may be drilled for fuel pump pulse fitting; otherwise, it must remain unaltered. Valve cover gasket is non-tech.

Camshaft: Stock camshaft cores only, ez-spin assembly must remain as stock. Duration check for intake and exhaust lobes (taken off pushrod). Intake duration of 248 degrees at .050 lift; 107 degrees at .200 lift. Exhaust duration of 247 degrees at .050 lift; 116 degrees at .200 lift. Max lift at the valve retainers, intake .238" and exhaust .242", taken on valve spring retainer with zero lash. (To achieve zero valve lash for checking running lift, preload dial indicator by .001".)

Crankshaft Requirements: Stock, factory crankshaft only with stock, factory timing gear in factory location. No modifications to crankshaft allowed. Aftermarket steel main bearings of non-self-aligning type, with or without seal, are allowed. No ceramic bearings. Crankshaft journal diameter is 1.180" maximum, 1.168" minimum.

Block: Stock block, as cast and produced with no alterations or modifications other than those specifically permitted. Block head mating surface may be machined; however, no piston pop-out is allowed. Blocks may NOT be welded for repairs. No addition of material to block (e.g. welding, jb weld). All bolt bosses in block may be drilled and tapped for repairs or other uses. Additional side cover gaskets as required for crankshaft thrust are permitted. All parts associated with the governor and the low oil sensor may be removed, plugging any associated holes.

Flywheel: Approved SFI certified billet aluminum flywheel only. No machining or alteration of any kind allowed. Minimum weight for flywheel is 3.3 lbs. Any timing key or no key at all may be used. A flat washer or spacer may be used, and is recommended, between the flywheel and the nut. Handheld electric starter may be used, but compression release mechanism must remain on camshaft.

Current Approved flywheels: ARC 6619, ARC 6618, Raceseng Flywheels RSP-13-075 Rewheel NF- S1 & RSP-13-077 Rewheel F-S1

Header and muffler: Header pipe length - minimum 18" and maximum 22". Silencer must be an RLV 91-L type with .1285" NO-GO hole. Header must be securely wrapped from flange to muffler prior to the race. Exhaust pipe must be double-nutted or safety-wired, and silencer must be supported by clamped-on brace to secure it in place.



Tech Sheet for Stock Appearing 6.5 OVH

Description: Single cylinder, 2-valve overhead 4-cycle engine. The engine, unless otherwise noted, must appear like a BSP, or Harbor Freight 6.5 HP engine. Parts may be interchanged between engines. Internally, you can change whatever you want as long as it meets the restrictions below. The restrictions are only for cost control by restricting some expensive machining options, expensive billet parts and containing performance to levels with reasonable durability expectations.

Fuel: Methanol only.

Cylinder head: Stock cylinder head only. Machining of gasket surface allowed. Porting allowed; no addition of material in ports or to cylinder head allowed. Stock head bolts are required and all four are required. Must use stock configuration head gasket, thickness non-tech. Cylinder head guide plate for pushrods must appear stock.

Bore and stroke: Stock bore is 2.685" and may be over-bored to 2.745" (approximately .060" overbore). Stroke is 2.133" max taken from top piston.

Combustion chamber volume: Non-tech.

Carburetor: Stock appearing Huayi or RUI*ING carb. Air filter adapter of 1.375" max length allowed, Air filter may be up to 8" long. Floor pan mounted fuel tank required (stock tank to be removed) and pulse-type fuel pump allowed. Fuel pump must be pulsed from either the crankcase or the valve cover. Black phenolic carb insulator must be used. No epoxy on carb exterior. Choke assembly may be removed; if removed, choke shaft hole must be plugged. Jets, tubes and orifices are non-tech. Any throttle mechanism allowed that works with the stock throttle shaft bell crank. Remaining stock throttle mechanism parts may be removed. A plate may be bolted to the top of the engine to mount fuel pumps and/or throttle mechanisms.

Valve train: Rockers, ball adjusters, rocker arm studs, lock nuts, pushrods and lifters must appear stock. No additional support for rocker studs permitted. Any single valve springs allowed. Valves and retainers may be used in any combination on either side. (Example: Exhaust valve, retainer and lash cap may be used on intake side.) Valve head diameters must be between .940" and .990".

Camshaft: Max lift of .285" taken with zero valve lash directly off valve retainer.

Ignition system: Box Stock ignition module only. No modifications of any type allowed. Sparkplug connector must be stock as from factory.

Piston: Oversized piston must be flat top or dished. Honda OEM dished (ZOT) pistons or Box Stock Project pistons may be used. Piston MAY NOT ALLOW FOR ANY POP-OUT!

Connecting rod: Billet aluminum rods, with or without bearing inserts, allowed. No titanium rods allowed. Rod length is a non-tech item.

Crankshaft: Stock, factory crankshaft only with stock, factory timing gear in factory location. Timing gear may be tack-welded to crankshaft in two places to avoid slippage. No modifications to crankshaft allowed. Aftermarket main bearings of non-self-aligning type, with or without seal, allowed. (No ceramic bearings.) Crankshaft journal diameter is 1.180" maximum, 1.175" minimum.

Block: Stock block, as cast and produced with no alterations or modifications other than those specifically permitted. Block head mating surface may be machined; however, no piston pop-out is allowed. Blocks may be welded for repairs as long as the repair does not constitute a functional modification to the block. No welding to block from cooling fins upward to deck surface. Governor stub hole may be tapped and plugged. All bolt bosses in block may be drilled and tapped for repairs or other uses. Additional side cover gaskets as required for crankshaft thrust are permitted. No welding or addition of material (such as epoxy) of any kind to the head, side cover or block.

Flywheel: SFI-certified flywheel with cooling fins only (mandatory) with no machining or alteration of any kind allowed. Minimum weight for flywheel is 3.3 lbs. Any timing key or no key at all may be used. A flat washer may be used, and is recommended, between the flywheel and the nut. Pull starter may be replaced with a flywheel cover and any electric starter nut may be employed.

Header and muffler: Any header is allowed. No muffler unless required by track. If required, use RLV-4106. Header may be bent in any configuration to keep it away from the driver and so the muffler will not extend past the rear bumper. Header must be securely wrapped from flange to swedge prior to the race. Exhaust pipe must be double-nutted or safety-wired, and silencer must be supported by clamped-on brace to secure it in place.



Tech Sheet for Predator Box Stock

Predator hemi or non-hemi 212 cc engines. Run as produced out-of-the box. NO modifications unless otherwise specified in the rules. This is an out-of-the box class. No interchanging of parts.

Fuel: 87 octane.

Tank: Must be run as produced from factory.

Muffler: Run as produced. Spark arrestors must be in place.

Governors: Must be intact and functional. Preset to 5000 rpm for adults and 3500 rpm for juniors. Checks will be performed by any Digatron or Micron tachometer mounted on the kart. The tach on the kart will be used to determine the max rpm of the engine. If the kart does not have a tach, the tech official will provide one to test the rpm. The test will be performed with the kart on a stand, from the foot throttle being pushed full throttle to determine max rpm.

Breather box: Run as produced, filter or foam allowed. No extra holes allowed. Vent hoses must be intact.

Clutches: Shoes clutches only. Tooth and gears to be determined by track officials.

Carburetor: SP carburetors, hemi only. Main jet .031" max; no other modifications allowed. All gaskets must be factory and present. (Non-hemi has Ruxing, Huayi and SP carburetors.)

Phenolic insulator: Stock only.

Oil sensor: May be disconnected, but must be present.

Blower cover: Must be stock. No aftermarket stickers or taped up pull starters.

Flywheel: Stock cast as produced from factory. Plastic fan, no alteration. Stock timing key.

Coil: Factory coil only. Minimum air gap .020"; no alteration to the screws or coil body.

Timing key: Stock, no alterations.

Cam: Must be stock cast with compression relief. Lift to be checked with tool P2000 and tool C20012 with 1" indicator. Max lift .245" both intake and exhaust.

Cam profile:

Max lift .245

Intake .245

.050 open 10* @ ATDC

.050 close 35* @ ABDC

Total 205*

Exhaust .245

.200 open 77* @ ATDC

.200 close 31* @ BBDC

Total 72*

Note: These checks will only be performed if the track tech suspects it is non-complaint to spec parts or a protest is submitted.

Head: Run as produced. No alterations. No swapping of parts.

Block: Stock, no alterations. Flat top piston - hemi; dished piston - non-hemi.

Bore: Stock 70 mm or 2.756"

Stroke: Stock 56mm or 2.204"

Claimer rules:

1. \$150.00 engine buy-out; no clutch, chain guard or throttle assembly.
2. \$50.00 and engine exchange; no clutch, chain guard or throttle assembly. Competitor must be on the lead lap and claim the engine while in the tech area.

Option: Buy a new engine and bring it to the track unopened. It will be numbered. The drivers will draw a number and that is the motor they will run that night. They can opt to leave the engine at the track to be raced next race.



Formula-OHV Quick Reference Guide



Approved, commercially available, single cylinder air-cooled overhead valve engines. 210 cc maximum displacement.

- Block, cylinder head, crankshaft and side cover to be approved OEM items.
- Carburetor: Any commercially available Tillotson HL series carb. Maximum venturi diameter = .790". Metering holes non-tech. Filter cups, adapters and air filters are non-tech items. Pulse type fuel pumps permitted.
- Intake manifold: Aluminum only. Maximum inlet tract length of 2". (See note 1)
- Connecting Rods: Aluminum only. (Fasteners and inserts/bushings excluded) Stock length (plus or minus .005") to be maintained. See chart for specific details.
- Pistons: Any aluminum three ring, flat top piston. Rings and wrist pin non-tech except OEM wrist pin diameter to be maintained. See chart for maximum bore size and wrist diameter for a specific engine.
- Crankshaft: Standard OEM item with stock stroke length (plus or minus .010"). Thermal treating (+.008/-003) and shot peening permitted. No other alterations allowed. See list for specific stroke details.
- Flywheel and ignition coil: Aftermarket or OEM flywheels permitted. If OEM flywheel is used, it must be unaltered and meet minimum listed weight and stock OEM coil (ignition system) must be used. Approved aftermarket flywheels only may be used. Spec diameter and weight as follows: 6 .75" +/- .05" dia. X 5.00 lbs. (Aftermarket weight) +/- .25 lbs.) When using aftermarket flywheels, any approved OEM F200 coil may be used on any engine (e.g. Briggs coil on a Honda, Tecumseh coil on a Kohler). Coil mounts, flywheel key, spark plug boots and plug wires are non-tech items.
- Cylinder head: Original factory casting only. Two valves maximum and must maintain original location (listed spacing and angles). Porting and grinding permitted. No external addition of metal to enhance performance allowed. Stock spark plug size and location to be maintained. Minimum combustion chamber volume when mounted on engine using prescribed procedure. (See note 2) This is to be done after the event and when the engine has cooled down to a reasonable temperature.
- Valve train: Steel valves only. No titanium components allowed. Intake 1.080" maximum, exhaust is .990" (ambient temperature) maximum. Stock OEM rocker arms and rocker plates and Champion rocker arms only. Stock rocker arms may be welded or reinforced for strength. No other alterations to original configuration permitted. Flat tappets only, must be stock appearing. Push rods, retainers, springs, keepers, rocker adjusters, etc. are TECHABLE.
- Camshaft: Maximum actual lift .275" measured at valve. Cam and crank gear non-tech. This is to be done after the event and when the engine has cooled down to a reasonable temperature.
- Cylinder head and block external surface may be machined to remove extra material from mounting bosses, cast in brackets, etc. that are no longer in use. No external machining allowed to enhance performance.

- Fuel: Commercially available non-ethanol pump gas. Test method to be Digitron set at -75 in cyclohexane. Fuel must read zero or below on meter. For major events it is recommended to use a spec fuel. Use the supplied fuel as a standard to “zero” the meter. Tolerance to be +/- 5 points.
- Fasteners: Non-tech, but must remain in original location. Heli-coils, studs, etc. allowed.
- Gaskets: Non-tech.
- Lubrication system: Must retain splash type oiling system.
- Exhaust system: Non-tech except must run a TAG-approved silencer/muffler. (NO-GO .1285 :985)

NOTES:

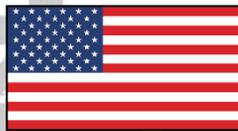
1. Length determined by adding the longest and shortest tract distance (flange to flange) together and dividing by 2.
2. It is recommended to use ATF (automatic transmission fluid) diluted 20%/30% with mineral spirits to help eliminate air entrapment during the procedure on OHV engines.

Make	Briggs	Honda	Kohler	Tecumseh	Additional Information
Model	Intek 5.5 *	GX200	C6 XKE	OHH 5.5	* Animal (Intek 6.5) block, head and side cover OK.
Bore	2.688	2.679	2.638	2.797	Standard Bore
Bore Max.	2.760 (+.072)	2.709 (+.030)	2.783 (+.145)	2.833 (+.036)	Maximum allowed
Stroke	2.040	2.125	2.008	1.938	Standard Stroke +/- .010
Rod length	3.375	3.303	3.425	3.484	Cntr to Cntr. Tolerance is +/- .005
Rod length	2.514	2.358	2.540	2.703	Inside length (including insert if applicable)
Wrist pin dia.	0.625	0.708	0.551	0.563	Tolerance is +/- .0025
Rod journal	1.098	1.180	1.218	0.999	Tolerance is +/- .0025
Flywheel	5.50 lbs	5.50 lbs	7.75 lbs	6.75 lbs	Minimum Weight for OEM Unit
Valve spacing	1.382	1.219	1.380	1.250	Valve angles are 90 deg from deck





2023 206 United States Rule Set



1. **Effective December 14, 2020** (Last updated January 30, 2020)

The 206 engine platform was designed and engineered exclusively for racing. Each engine is hand-built in Milwaukee, Wisconsin using dedicated tooling and dies to provide a level of consistency unmatched in the industry today.

The 206 is intended to simplify racing, from hitting the track to the tech process needed to ensure a level playing field at the end of the day. In combination with Briggs & Stratton Racing's slide restriction system a complete racing ladder can be developed by simply changing a carburetor slide and/or by a slide and ignition change. With the base engine the basis for today's 'box stock' classifications, the 206 engine gives racers and tracks the ability to have one engine, from start to finish.

All Briggs & Stratton (B&S) racing engines are manufactured solely for sanctioned racing only. B&S does not recommend the products referenced herein to be used for any application outside of sanctioned racing as serious injury or death could result.

**UNLESS THESE RULES STATE THAT YOU
CAN DO IT, YOU CANNOT DO IT.**

**EACH RACER IS SOLELY RESPONSIBLE TO MAINTAIN AND
CHECK ENGINE LEGALITY PER THIS PUBLISHED RULE SET**

This rule package has been prepared by Briggs & Stratton Racing and is intended to establish the sole basis for technical control of the 206 engine in competition. For all supplemental rules contact your sanctioning body.



**This rule package covers all engine related technical specifications.
For all other regulations beyond the engine please refer or contact your sanctioning body.**

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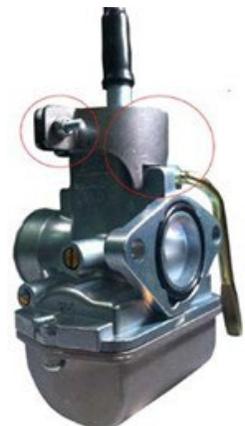


1. Briggs & Stratton Racing Class Structure

The following class structure chart is intended as a **reference only**.
Sanctioning bodies and organizations can alter the class structures to suit their driver licensing protocols.

Briggs & Stratton Racing Class Structure			
Class	Age & Weight	Engine Package	Technical Configuration
Briggs Kids Kart .310 Restrictor	5 thru 8 years— 190 lbs	Junior 206 w/carb lock	RLV pipe #EXF5507 or new #EXF5511 .310 Slide (#555732) 4,100 RPM Rev Limiter
National Briggs Cadet - .440	7 thru 10 years— 200 lbs	206 w/carb lock	RLV pipe #EXF5520 (formerly 5506), #EXF5507, or new #EXF5511 'Red' Slide (#555733)
Briggs Junior Light .520	8 thru 12 years— 225 lbs	206 w/carb lock	RLV pipe #EXF5520 (formerly 5506), #EXF5507, or new #EXF5511 'Blue' Slide (555734)
Briggs Junior - .570	11 to 15 years— 300 lbs .570 Restrictor	206 w/carb lock	RLV pipe #EXF5520 (formerly 5506), #EXF5507, or new #EXF5511 'Yellow' Slide (#555741)
Briggs & Stratton 206 Senior	15 years & up— 375 lbs	206	RLV pipe #EXF5520 (formerly 5506), #EXF5507, or new #EXF5511 Stock Slide (#555590)
Briggs & Stratton Masters	30 years & up— 405 lbs	206	RLV pipe #EXF5520 (formerly 5506), #EXF5507, or new #EXF5511 Stock Slide (#555590)
Additional Slide Options Available:			
.285" – Black (#555728)			
.450" – Purple (#555735)			
.490" – Green (#555740)			

Cadet, Novice, Junior 1, Junior 2 and National Junior classifications require the installation of the locking cap Part #555726 on the carburetor slide cover. It is not permitted to run the classes without the specified slide and locking cap. Locking cap and carburetor cap MUST be tight. A seal can be utilized at the discretion of the organizer, or alternatively painted by the technical officials. Opening is to be verified by pulling on the throttle cable, not the pedal, to determine maximum opening.



Optimization of the slide opening in Briggs & Stratton Cadet, Novice, Junior 1, Junior 2 and National Junior classes is permitted. The only allowable method of slide optimization is by removing material from the throttle cap area highlighted in RED. The use of multiple gaskets and/or machining of the slide is prohibited.



Slide opening must not exceed the appropriate No-Go specification as per class regulations. For information on slide optimization see video section at www.BriggsRacing.com

CAUTION – The risk of pushing the limit on the slide opening can lead to an unnecessary DQ. An additional .010” of slide opening has the potential to give only .1 hp. Give yourself a buffer to ensure success at tech inspection.

2. These Regulations Are the Only Regulations

- a. Only the B&S Racing Department in Milwaukee can make changes to the technical specifications herein.
- b. B&S dealers and their agents are not authorized to alter, verbally or otherwise, any technical specifications or competition rule herein.
- c. Should any B&S literature, catalogues, manuals, videos, etc. be different than these regulations, these regulations take precedence.
- d. Changes, corrections, addendums, etc. will be submitted to sanctioning bodies and posted at www.karting.com for republication and will become effective on a date specified.
- e. Previous mid-season updates are to be considered void upon publication of an annual update.

2.5. The 3 Core Rule Set Technical Inspection Principles

- a. Unless these rules state that you can do it, you cannot do it.
- b. Spirit and Intent (Syd White rule): Covered, stated, restated, or unstated any change or action with the sole intent to wrongfully create a performance advantage is grounds for disqualification.
- c. All parts are subject to comparison with a known stock part. This includes specified and mandated aftermarket parts. Example: RLV exhaust and silencer.

3. Briggs & Stratton 206 Product Availability

The 206 engine products and service parts manufactured by Briggs & Stratton are available only through the authorized Briggs & Stratton Racing dealers.

A list of authorized dealers can be found at www.karting.com



4. General Rules

- a. The terms stock, original equipment, OEM, unaltered, etc., refer to Original Equipment supplied by Briggs & Stratton or specified manufacturer.
- b. Only the original equipment Briggs & Stratton 206 #124332-8201-01 or Junior 206 #124332-8202-01 engines are allowed in the classes recommended herein.
- c. All parts must be unaltered Briggs & Stratton 206 parts specifically made for these engines by Briggs & Stratton. No aftermarket parts to be used unless specified in these regulations.
- d. All parts are subject to comparison with a known stock part. This includes specified and mandated aftermarket parts. Example: RLV exhaust

e. A tech official may use additional means of measuring components to compare against a known stock part.

and silencer.

- f. The tech official, at their sole discretion, may at any time replace a competitor's sealed engine, carburetor, or head assembly with another sealed engine or known stock part. Failure to comply is grounds for disqualification.
- g. If a competitor's part is replaced per 4f it must be drilled or reconfigured in a way that prohibits the reuse of that part.
- h. All Briggs & Stratton 206 classes must have a serialized block. Blocks without a factory serialization on the front base next to the oil drain are illegal in competition.
- i. Standard organizational protest procedures can allow for short block inspection (seal removal) if a new, replacement short block, p/n 555715 is offered in replacement. Competitor short block to be forfeited to the series or club as terms of this procedure.

5. Things That Are NOT Permitted

- a. Tampering with either of the two factory-installed engine seals.
- b. Addition or subtraction of material in any form or matter.
 - Exception – Valve maintenance (valve job). Valve seats must remain with the factory specification of 30 and 45 degree angles only. Valve seats of additional angles and/or angles not comparable to the factory stock of 30 and 45 degrees are not permitted. Grinding of valve stem or excessive material removal prohibited.
 - Exception – Optimization of the slide opening in Briggs & Stratton Cadet, Novice, Junior 1, Junior 2 and ASN National



Junior classes are permitted per Section 1 guidelines.

- c. "Blueprinting" unless stated herein.
Modification to or the machining of any parts in order to bring them to stated minimum/maximum specification, (or for any reason).
- d. Machining or alteration of any kind to the engine or replacement parts unless specifically stated herein.
- e. Deburring, machining, honing, grinding, polishing, sanding, media blasting, etc.
- f. Sandblasting or glass-beading any interior engine surfaces.
- g. No device may be used that will impede, or appear to impede, airflow to the engine cooling system including the recoil starter or blower housing.

6. Factory Security Seals

There are two custom security seals with matching serialization installed from the factory. Tampering of the seals is not permitted. Should the seals be tampered with, the engine is no longer eligible for competition. If an engine require dismantling for any reason that requires breaking of the seals, contact Briggs & Stratton at: briggsracing@basco.com



The reflective hologram aluminum seal features a black tracer wire and a silver or black anodized body as shown



The orange housing seal features a red and black tracer wire, etched 'B&S Racing' type, and matching seal serial numbers

The only security seals that are legal have either a single black tracer wire with a reflective hologram seal or a red/black tracer wire with an orange housing seal. Plain cable seals are not approved for competition.

Each competitor is responsible for the condition of their seal. We recommend that each seal be wrapped (plastic bag, etc.) to prevent exposure from harsh chemicals.

7. Technical Inspection Tools

Briggs & Stratton have made available a number of tools for the convenience of technical checking of components when necessary. They are indicated throughout the rule set this way: "**Tech Tool #**" See Section 38 for tool description. The tools are available from Sox Racing (803) 791-7050.

8. Engine Ignition Switch

The B&S ignition switch and wires must remain in stock location. It is not permitted to alter the OEM wiring.



9. Engine Air Filter

The only air filter permitted is the Briggs & Stratton Green Air Filter Service Part #555729. No modification to the filter element is allowed.



A protective shield may be attached for wet-weather competition. It is not permitted for the protective shield to create any ram-air effect. A fabric prefilter is allowed as long as it does not create a ram-air effect. Foam or any other prefilter material is NOT legal for use.

A racer MUST start each race with the air filter properly attached but will NOT be penalized if the air filter falls off during the race. If air filter falls off during a race, it is STILL subject to tech.

10. Engine Fuel Recommendations

Premium Gasoline no greater than 94 octane sold at normal roadside fuel stations open to the public. The addition of fuel additives in any manner is not permitted. Fuel dispensing location may be specified in Event Supplementary Regulations. Specific gravity and hydrometer testing are acceptable tests when used in accordance to sanctioning body guidelines.

11. Engine Oil

High-quality synthetic oil within a 10W-20 range recommended. No oil additives are permitted.

Briggs & Stratton only recommends the use of Briggs & Stratton 4T Synthetic Racing Oil. 4T was engineered exclusively for the rigors of high revving, air-cooled racing engines (available through both Briggs Racing and Amsoil dealers). The use of 'karting' or 'automotive' oils is not recommended as many are hydroscopic in nature (attract water), offer limited protection over time, and/or were engineered for pressure, not splash lube systems. The use of these oils can induce engine failure and/or accelerate wear.

Engine oil testing/verification procedure is per standard sanctioning body guidelines.

12. Oil Breather

Rocker cover oil breather must vent to a catch container.

13. Oil Catch Container

An oil overflow catch system is mandatory. Overflow tube must run from the rocker cover breather to a catch container. The container must be vented to the atmosphere.

13.5 Oil Drain and Fill (Updated 12/14/20)

One magnetic drain plug may be used (recommended in the lower opening).
Oil fill caps are non-tech but must be secure and air tight.

14. Carburetor Overflow

Carburetor overflow must be vented to a catch container. The container must be vented to the atmosphere.

15. Fuel Pump (Updated 12/14/20)

Only fuel pump, B&S service part number 808656 or 597338, is legal for competition. This fuel pump can be identified by the Briggs & Stratton diamond logo and number 808492 or 027013 stamped on the pump face. All other pumps are prohibited. It is prohibited to pulse from the intake manifold.

Relocation of the fuel pump is legal as long as it is spaced to less than 3/4 inch off the control plate, B&S #555699, in a similar location that is both safe and secure. Measurement is from the base of the control plate to the bottom of the fuel pump. Vertical mounting or mounting the fuel pump upside down is illegal. The fuel pump must be pulsed from a pulse fitting mounted on the oil fill fitting located on the engine side cover. Aftermarket one-piece filler/pulse fittings such as shown on the right are permitted. Check valves prohibited.



The use of silicone sealant on the brass vent IS permitted and recommended. A fuel pump return line to the fuel tank is prohibited.

A fuel filter is not required but highly recommended to insure that dirt and contamination within your fuel system does not impact engine performance.

The fuel filter itself is not a tech item but only one fuel filter is legal for use and it can only be located between the fuel tank and fuel pump inlet (not between the pump outlet and carburetor).

16. Cooling Shrouds, Covers and Blower Housings (Updated 12/14/20)

All pieces of the engine cooling shroud/blower housing and control panel must be stock B&S and properly installed. Rewind housing and cooling shroud (air guard) must remain stock as painted from the factory.

Engine Shroud may be painted any color. Any bolt, with the exception of the head bolt, that is used to secure sheet metal shrouds and covers may be replaced with larger diameter bolts.

No taping, covering, or restricting of air to the rewind shroud is permitted.

Quick-release throttle cable linkages are allowed, provided they are securely mounted to control plate.

17. Damaged Thread Repair

It is permitted to use Heli-coil, Time-sert or a similar thread repair insert for shrouds, valve cover, oil drain, oil fill holes, blower housing, and exhaust pipe attachment studs on the head and lower brackets.

18. Carburetor & Intake Manifold (Updated 12/14/20)

The B&S stock carburetor part #555658 is the only carburetor permitted. 'Walbro', 'Briggs' diamond logo and/or #590890 etched in the body are additional visual indicators. No alterations allowed unless stated below. All parts will be compared to a stock known B&S part for eligibility. This includes the nozzle, emulsion tube, jets, float, float needle and all other carburetor parts. It will be allowed however to adjust the float height by means of bending the small tab on the float arm.

A slight chamfer around the choke bore ID (air horn) may be present. 1.149" no go **Tech Tool A7**.

Both idle and main jet must remain stock, as shipped from the factory.



Slide to remain B&S stock unaltered. Slide cutaway to be measured on flat surface. .075 no go **Tech Tool A10**. All intake manifold fasteners to remain factory stock. The use of studs, etc. is illegal.

The fastener that attaches the carburetor to the intake manifold closest to the valve cover may be replaced by a longer drilled M6x1.0 bolt for wire engine sealing by a sanctioning body. Fastener must remain stock as approved by the sanctioning body

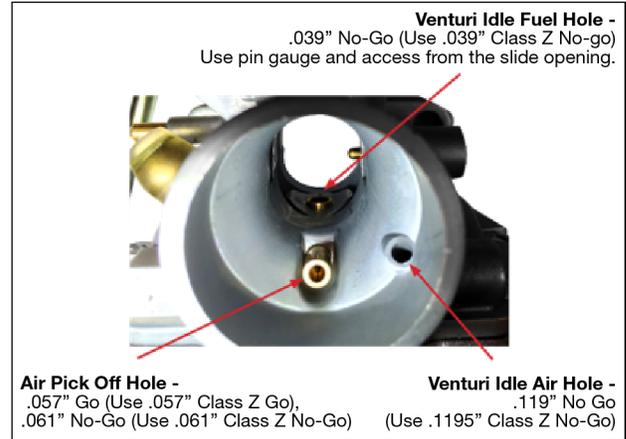
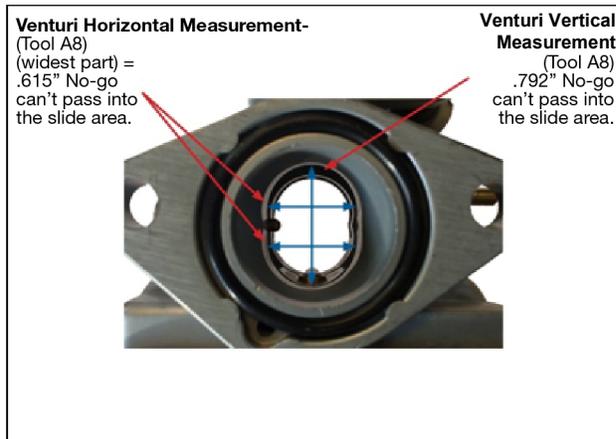
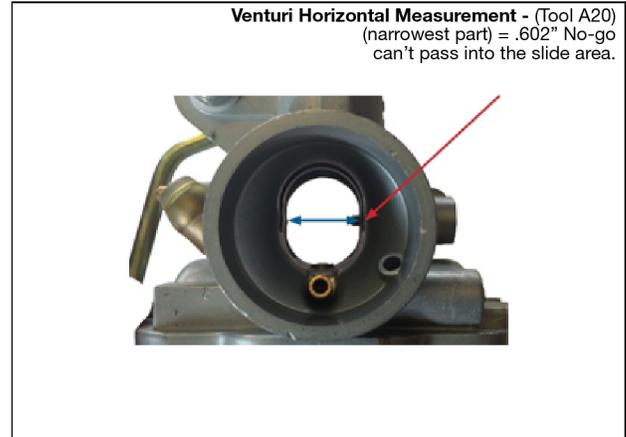
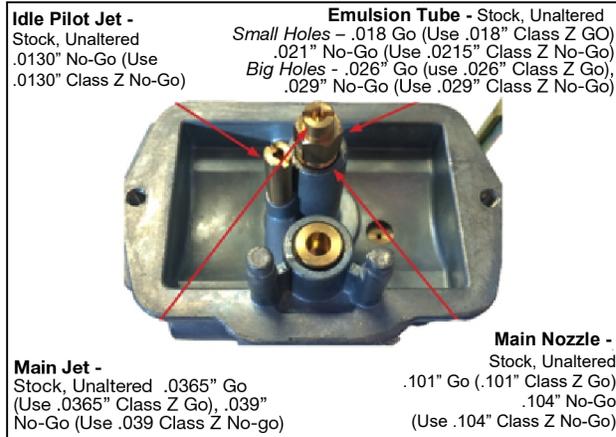
All individual carburetor components must be tight, and must remain UNALTERED as shipped from the factory.

B&S stock unaltered aluminum needle is required part number 555602 marked #BGB. Needle to be inspected using **Tech Tool A4**. Needle, when placed in tool A4, should not protrude through the other side. If needle protrudes through the block it is out of specification.

Throttle cable cap on the top of the carburetor must be properly installed and secured in the fully tight position.

Metal choke cover must remain in place but may be secured with silicone or epoxy sealer. Additional pin punching is allowed to tighten choke cover.

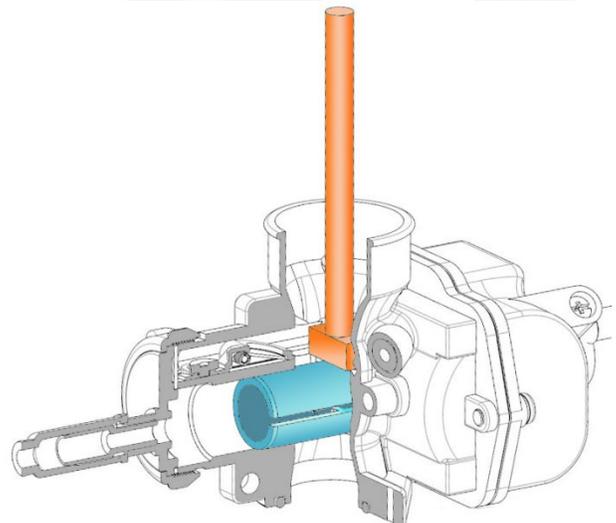
Air must only enter the engine from the air filter horn of the carburetor. Air entering through any other method or opening is illegal. An approved spray test method can be used for tech validation.



The "Slide Area" is the cylindrical space occupied by the carburetor slide as it moves up and down. Measurement surfaces of Tool A8 and A20 may not enter this space.

Recommended Test Procedure:

1. Set the carb down on its flange or nozzle opening. Ensure the tool (A8 or A20) is being positioned perpendicular to the direction of the carburetor slide travel.
2. Pull the slide out of the venturi opening.
3. Move the tool into the venturi vertically until it makes contact with the inside wall of the carburetor under its own weight.
4. Move the slide in to check for contact



with the measurement surface of the tool.

- 5.** If the slide can move to the full extent of its travel without contact with the measurement surface of the tool, the tool is not in the Slide Area.

NOTE: Fastener on A8 is not part of the measurement surface and may enter.

- 6.** Repeat on reverse side of carburetor slide.



NOTE: Slide openings should be measured only with the Briggs & Stratton slide tool listed on the tool reference chart.

Technical Item	Description	Tech Tool
a. Needle Jet C-Clip	Needle Jet C-clip must be properly installed but may be installed at any of the 5 factory settings on the needle jet.	
b. Throttle Cable Cap	Throttle cable cap on the top of the carburetor must be used and properly installed in tight position.	
c. Choke	Choke: OEM unaltered, but lever may be fastened open with a spring, rubber band, wire, etc.	
d. Idle Pilot Jet	Idle Pilot Jet – Stock, Unaltered .0130" No-Go (Use .0130" Class Z No-Go)	
e. Idle Circuit Air Hole	No drilling, reaming, elongating of the hole allowed. .119" max. diameter. A small chamfer at the outer edge, as compared to a stock part, can be present. The measurement of that chamfer is subject to sanctioning body guidelines.	.1195" Pin gauge
f. Main Jet	Main jet – Stock, Unaltered .0365" Go (Use .0365" Class Z Go), .039" No-Go (Use .039 Class Z No-go)	
g. Emulsion Tube	Main nozzle – OEM stock unaltered hole size = .101, .104" Small holes – .018 Go (Use .018" Class Z GO) .021" No-Go (Use .0215" Class Z No-Go) Big Holes - .026" Go (use .026" Class Z Go), .029" No-Go (Use .029" Class Z No-Go)	
h. Venturi Measurement	Venturi Measurement: Vertical: .792 max inches.	A8
	Horizontal: .615 max inches at widest part	A8
	Horizontal: .602 max inches at narrowest part.	A20
i. Air Pick Off Hole	Air pick off hole - .057 go .061 no go	A9
j. Throttle Bore	Throttle bore – Must be as cast and bore max diameter = .874 inches.	A7
k. Venturi Idle Fuel Hole	Venturi idle fuel hole = .039" No-Go (Use .039" Class Z No-go)	
l. Air Filter	Air filter: Only GREEN air filter, part # 555729 is allowed. Filter adapters are not allowed, filter must attach directly to carburetor air horn	
m. Carburetor Overflow	Carburetor overflow: Must be vented to a catch container.	
n. O-Ring	O-Ring part number B&S part # 555601 is required and must be unaltered.	A12
o. Intake Manifold	Intake manifold – max length = 1.740 inches min to 1.760 inches max	
	Intake manifold – bore diameter = .885 inches min to .905 inches max	A11
p. Choke Bore/Air Horn	1.149 no-go	A7
q. Carb Slide Cutaway	.075 no-go	A10
r. Widest part of Combustion Chamber	2.640	A30



19. Cylinder Head

- a. The ONLY head casting for the B&S 206 herein is the 'RT-1', cast into the head just off the head gasket surface (towards the rear of the engine, PTO side). The overall head minimum thickness is 2.431".
- b. Cylinder head must be "as cast". Factory machining marks left on the head gasket surface is NOT a tech item.
- c. Hard carbon may be scraped from head before measuring.
- d. Depth of shallow area of combustion chamber must be .031 inch minimum. This measurement to be taken with a depth gage on both the combustion side and spark plug side of cylinder head.
- e. Depth of the combustion chamber is .342" inches minimum.
- f. Inspect retainers for alterations that would increase valve spring pressure - .055 to .075 maximum flange thickness. Both intake and exhaust must have OE stock B&S valve keepers.
- g. Unaltered B&S part #55552 (exhaust) and #55551 (intake) can be checked for appearance, weight, and dimensions. No machining, polishing, easing, or alterations of any kind allowed. Valve surface must remain as factory, with one single 45 degree face. No other additional angles allowed on any part of the valve. **Tech Tool A22.**
- h. Valve Guides: Replacement of valve guides with B&S part #555645 only is allowed. Maximum depth from the head gasket surface to the intake valve guide is 1.255".
- i. Briggs & Stratton heat disperser, p/n 555690 can be installed in the exhaust bolt boss per factory instructions.

20. Head Gasket

- a. Unaltered B&S part #555723 is the only head gasket allowed.
- b. Minimum thickness allowed is .047". Measurement must be performed using a micrometer. Readings are taken from inside the cylinder hole of the gasket closest to the combustion chamber (see diagram). Four measurements are to be taken in the four defined quadrants with three meeting the minimum thickness of .047".



21. Ports

- a. No de-burring, machining, honing, grinding, polishing, sanding, media blasting, etc.
- b. The transition from intake bowl to port must have factory defined machining burr at this junction.

No addition or subtraction of material in any form or matter.

No alterations of any kind may be made to the intake or exhaust ports.

- c. Intake Port: Maximum diameter measurement = .918 inches max. **Tech Tool A6.**
- d. Exhaust Port AS CAST. Exhaust Outlet -.980 – **Tech Tool A6.**
- e. Valve Seats. Intake and exhaust: Must remain factory specification with one 30 and one 45 degree angle only. Valve seats of additional angles and/or angles not comparable to the factory stock are not permitted.
- f. Valve maintenance permitted (valve job). Valve seats must remain with the factory specification of 30 and 45 degree angles only. Valve seats of additional angles and/or excessive material removed when compared to the factory stock is prohibited.
- g. Intake valve seat diameter inside = maximum .972 inches. **Tech Tool A2.**
- h. Intake port pocket bowl (area just below valve seat) = .952 no go **Tech Tool A2**
- i. Exhaust valve seat diameter inside = maximum .850 inches. **Tech Tool A1.**

22. Valves

a. Intake valve

Minimum Weight of Valve	27.8 grams
Diameter of valve stem	.246 to .247 inches
Diameter of valve head	1.055 to 1.065 inches Tech Tool A17
Diameter of valve seat	.972 inches ID maximum
Valve length	Minimum 3.3655 inches
Height from angle of valve face to top of the valve	.057 inches minimum Tech Tool A26

b. Exhaust valve

Minimum Weight of Valve	27.2 grams
Diameter of valve stem	.246 to .247 inches
Diameter of valve head	.935 to .945 inches Tech Tool A18
Diameter of valve seat	.850 inches ID maximum
Valve length	Minimum 3.3655 inches
Height from angle of valve face to top of the valve	.060 inches minimum Tech Tool A27

23. Valve Springs

- a. Valve Springs are single coil stock, unaltered B&S part #26826. Must be identical in appearance to factory part and have 4.00 to 4.75 coils in stack.
- b. Spring Wire Diameter: .103 to .107 inches
- c. Valve spring length: .940 max inches **Tech Tool A15** Inside diameter: .615" Go (Use .615 Class Z Go), .635" No-Go (Use .635" Class Z No-Go)

24. Rocker Arms, Rocker Ball and Rocker Arm Studs

- a. Rocker arm must be stock B&S serviced part #555711 (US) or #797443 (METRIC) and may not be altered in any way.
- b. Rocker studs must be stock, unaltered B&S service part #694544 US (1/4-28 thread) or #797441 Metric (M8x1.00 thread) and in stock location.
Rocker arm #555711 (US) must be used with rocker stud #694544 (US).
Rocker arm #797443 (Metric) must be used with rocker stud #797441 (Metric).
- c. Rocker Ball must B&S stock. Diameter .590 inch min. to .610 inch maximum.
Tech Tool A16.
- d. Rocker arm mounting positions may not be altered in any manner. No heli-coiling of mounting holes. No bending of studs.
- e. Rocker arm stud plate must be bolted to the head with one, OEM stock B&S gasket only – no alterations. Maximum thickness of gasket is .060 inches. Rocker plate to head fastener holes must remain stock, .289" max.
- f. Rocker arm – overall length 2.820 inch minimum. Can be checked with a pair of dial calipers.

25. Push Rods (updated 01/15/2018)

- a. Push rods must be unaltered stock B&S service part #555531.
- b. Push rod diameter .183 minimum inches to .190 maximum inches.
Push rod length 5.638 minimum inches to 5.658 maximum inches.
Tech Tool A5.
- c. Push rod diameter to be checked 3 points along the length and must pass two planes on each 360 degrees of rotation.

26. Engine Block

- a. Engine block must be unaltered "as cast" B&S factory machined condition. There must be no addition or subtractions of metal or any substance to the inside or outside of the cylinder block.
- b. Both (2) B&S engine seals must be present with both the fastener and seal in



“as shipped” from the factory location and condition. Any defined tampering with the fasteners or damage to the wire/seal itself (example: delaminated hologram) are grounds for disqualification.

Take proper care of your seals to ensure their integrity. It is recommended that you wrap your seals (using a plastic bag, etc.) to prevent exposure to harsh solvents such as carb cleaner, etc...

- c. Deck gasket surface finish is not a tech item. Piston pop up can be .0035” maximum. Piston pop-up to be checked with flat bar in center of piston parallel to piston pin and then again checked 90 degrees to piston pin. Push piston down to take up rod play. **Tech Tool A25.**

Angle milling or peak decking is not allowed.

- d. Carbon build-up can be removed before pop-up is measured as long as material is not removed from the piston. Exception – Competitors can deburr the manufacturing part number/marks IF needed as long as:
 - Removal does not extend beyond the defined script area.
 - De-burring does not extend below the original piston surface area.
 - The original part numbers and script are still clearly visible.
- e. Cylinder bore will not be bored oversize
- f. Cylinder bore will not be re-sleeved.
- g. Cylinder bore position is not be moved or angled in any manner.
- h. Cylinder bore dimension: - Briggs & Stratton stock bore is 2.690”. Allowance for wear is permitted up to 2.693” maximum for entire length, top to bottom.
- i. Maximum stroke is 2.204”. Push piston down to take up rod play. Check stroke on BDC to TDC. **Tech Tool A21.**

27. Valve Lift

- a. Maximum valve lift is checked from the top of the valve spring retainer. Valves must be adjusted to zero clearance.
- b. Valve Lift: Camshaft check is taken at the valve spring retainers. With the lash set at zero, the movement of the valve spring retainers may not exceed the following: Intake and exhaust: .255 inches maximum.

27.5 Rocker Cover Fasteners

The rocker cover fastener closest to the carburetor is non-tech and may be replaced with a drilled bolt for the purposes of wire engine sealing mandated by a sanctioning body. The fastener must remain stock as approved by the sanctioning body.



28. Camshaft Profile Limits (measured at the push rod)

Push gently down on dial indicator stem to ensure that there is no lash when push rods are going down.

NOTE: Due to the extended life of the engine, a single point on each lobe can be off by a maximum of 2 degrees without issue, the exception being on the .006" check, both intake and exhaust.

Intake lift		Exhaust lift	
0.006	59 TO 51 BTDC	0.006	101 TO 93 BBDC
0.020	16 TO 12 BTDC	0.020	59 TO 55 BBDC
0.050	.5 TO 4.5 ATDC	0.050	43 TO 39 BBDC
0.100	17 TO 21 ATDC	0.100	26 TO 22 BBDC
0.150	33.5 TO 37.5	0.150	9 TO 5 BBDC
0.175	43 TO 47 ATDC	0.175	1 TO 5 ABDC
0.200	54 TO 58 ATDC	0.200	11.5 TO 15.5
0.225	68 TO 72 ATDC	0.225	25 TO 29 ABDC
MAX LIFT	0.257	MAX LIFT	0.259
MIN LIFT	0.252	MIN LIFT	0.252

Intake lift		Exhaust lift	
0.225	38 to 34 BBDC	0.225	76 TO 72 BTDC
0.200	24.5 TO 20.5	0.200	62.5 TO 58.5
0.175	14 TO 10 BBDC	0.175	52 TO 48 BTDC
0.150	4.5 TO .5 BBDC	0.150	42 TO 38 BTDC
0.100	12 TO 16 ABDC	0.100	25.5 TO 21.5
0.050	29 TO 33 ABDC	0.050	8.5 TO 4.5 BTDC
0.020	45.5 TO 49.5	0.020	8 TO 12 ATDC
0.006	83 TO 91 ABDC	0.006	47 TO 55 ATDC

29. Flywheel

- No modifications are allowed to the flywheel.
- The minimum weight of the flywheel, fins and attachment bolts is 4 pounds 1 ounce.
- Stock B&S service part #555683 only. No machining, glass beading, sand blasting, painting or coating of flywheel is allowed.
- A flywheel fan, B&S service part #692592, with broken fins must be replaced.
- Stock, unaltered B&S flywheel key with the B&S logo is required. Width of the key allowed is .1825"-.1875". No offset keyways allowed.

30. Ignition System (Updated 12/14/20)

- Unaltered B&S stock ignition** part #555718 is mandatory. Only "GREEN" ignition module allowed. Maximum RPM: 6,150.

Exception – Cadet Junior 206 class requires the use of unaltered B&S stock ignition part #555725 (BLACK in color). Maximum RPM: 4,150.

- Coil or its position**, other than air gap, may not be altered in any way. Coil



mounting bolts must be stock and cannot be altered in any way to advance or retard timing. Attachment bolts and/or bolt holes may not be altered.

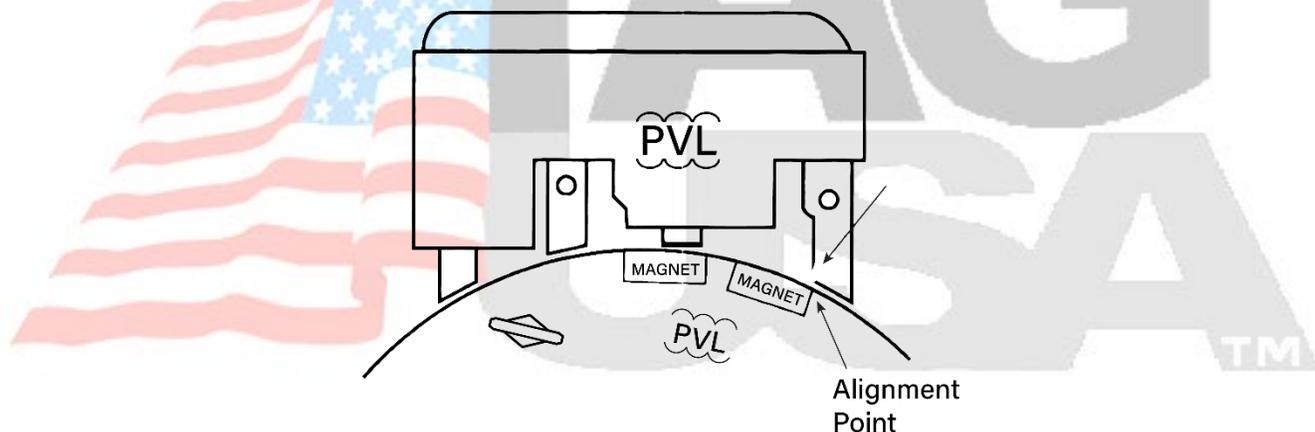
- c. **Spark plug:** Only the AutoLite AR3910X spark plug UNALTERED in any way from the OEM (B&S service part number #84005196) is permitted. Spark plug must have the "AutoLite" and "AR3910X" identification on the insulator.

NOTE: Technical Inspectors may, at their own discretion, at any time, visually inspect and retain a competitor's spark plug and replace it with a new AutoLite AR3910X spark plug.

Sealing washer must be in place, unmodified from the factory.

Temperature thermocouple is permitted as long as sealing washer and/or cylinder heat shield with spark plug hole are not modified.

- d. **Spark plug connector:** Only the OEM B&S part #555714 is permitted.
- e. Magneto air gap is non-tech (recommended clearance of .016")
- f. **Static check for timing:**
 - Install a degree wheel using a positive stop method.
 - With the left edge of the first magnet aligned with the start of the lead leg of the ignition (refer to photo), the engine must not exceed 26 degrees with air gap set at .016". Timing checked in the direction the engine operates.



31. Crankcase

Crankcase and cover must be Briggs & Stratton stock, unaltered, "as cast in factory" condition. No alterations or subtractions of metal or any other substance to crankcase cover.

32. Clutch

- a. Novice class must run the supplied Max-Torque clutch, part #555727. No alteration to the clutch is allowed. Springs, driver (when applicable) and clutch key are non-tech.



- b. Sportsman, Junior 1, Junior 2, Senior, and Masters Classes must run one of the following clutches:
 1. Inferno Racing by Hilliard: Fire, Flame, Blaze or Fury
 2. Max-Torque: Draggin Skin or SS
 3. Noram/Premier: Magnum, GE, Ultimate or Stinger*
 - * NOTE: Noram/Premier Stinger must be converted to stamped drum (Noram P/N 01600715) to be legal for competition.
- c. Sprocket conversion drums/kits manufactured by Inferno by Hilliard, Max-Torque or Noram may be used. Sprocket conversion drums/kits from other manufacturers are prohibited.
- d. Refer to Page 21-25 for diagrams/photos of approved clutches
- e. Clutch or sprocket conversion drum/kit must be used as shipped from the original manufacturer – Inferno by Hilliard, Max-Torque or Noram. Mixing of parts between clutch lines, manufacturers or removing parts (i.e.; grease guard, etc.) is prohibited. No alteration or machining to the clutch allowed except light sanding to shoe and drum mating surface for maintenance.
- f. Interchangeable drivers (i.e.; 15T, 16T, etc) and driver configuration (#35 or 219), driver clip/lock, clutch key, and crankshaft fastener kit are non-tech. OEM springs and weights MUST remain unmodified, OEM but are a racer's choice. Clutch coolers are not allowed. The use of aftermarket coatings is prohibited.
- g. Clutch Claim Rule: Per standard sanctioning body guidelines, claiming can be implemented, maximum of \$160.00.
- h. Manufacturers who wish to be considered for future rule sets may submit requests to: briggsracing@basco.com

33. Starter

Recoil starter, B&S service part #695287, must be retained, as produced and intact. Starter maybe rotated.

34. Exhaust Header (Updated 12/14/20)

- a. Header must be RLV #EXF5520 (formerly 5506), EXF5507, **or new EXF5511** for all non-Kid Kart classes.
 - **NOTE: RLV EXF5520 may not be allowed in the 2023 Briggs 206 Rule Set.**
- b. Header length:
 - EXF5507 **and new EXF5511** will measure 18.75" +/- .25" along the short side using a 0.250" wide tape measure.
 - EXF5520 (formerly 5506) will measure 17.50" +/- .25" along the short side using a 0.250" wide tape measure.
- c. Gasket and/or silicone are allowed to seal header to head (One gasket maximum).
- d. Studs or bolts are permitted to fasten header to head.



- e. Bolts or nuts must be safety wired to prohibit threads from backing out.
- f. If header bolts loosen during a race but the header remains attached to the head with two bolts/nuts, this is not grounds for disqualification.
- g. Helicoiling of the exhaust is allowed.
- h. Supplied header support brace is mandatory. The addition of a mechanical support bracket (no welding involved) is allowed provided that there are no alterations to the shape or dimensions of the exhaust configuration.
- i. Any modification for or use of an O2, EGT, CO2 sensor is prohibited.

35. Exhaust Silencer

Silencer must be RLV B91XL (part number 4104) with round baffle holes only. Safety wiring of the silencer to header is mandatory. All 4 baffles must remain unaltered and the hole size can be verified using a no-go pin of .1285. Exhaust gases may only exit through the muffler baffles. Muffler must be mounted on the header in a way that does not allow exhaust to leak at this joint.



36. Exhaust Protection

The header must be completely wrapped (360 degrees) with a non-asbestos, approved insulation material or sleeve starting approx. 3 inches from the exhaust flange but MUST extend to where the stock supplied RVL support (welded or clamped) meets the header.

37. Technical Inspection Tools

Videos of tools and processes are available at www.BriggsRacing.com.

38. IMPORTANT Online Support Resources

Please refer to **Error! Hyperlink reference not valid.** for a host of resources. Due to the sealed nature of this engine we highly recommend reading and viewing important documents and videos to insure a great racing experience.

- a. 206 Engine tips and guide supplement – A must to print out and read BEFORE installing your engine!
- b. Carburetor tuning guide – Understand your carburetor to get the most out of your 206.
- c. Videos:
 - Proper clutch installation: Properly installing your clutch will prevent the possibility of crankshaft damage.
 - Setting the float height: A simple video highlighting a necessary technique to insure a properly tuned carburetor.
 - Setting, measuring, and optimizing your junior slide restrictor.

**UNLESS THESE RULES STATE THAT YOU
CAN DO IT, YOU CANNOT DO IT.**

**EACH RACER IS SOLELY RESPONSIBLE TO MAINTAIN AND
CHECK ENGINE LEGALITY PER THIS PUBLISHED RULE SET**



TOOL REFERENCE

	Exhaust Valve Seat Diameter Max: 0.850 Tool: A1
	Intake Valve Seat Diameter Max: 0.972 Tool: A2
	Intake Port Pocket Bowl Gauge Max: 0.952
	Needle Jet Diameter Max: 0.070 Tool: A4
	Push Rods Length Max: 5.658 Min: 5.638 Tool: A5
	Intake Inlet Diameter Max: 0.918 Tool: A6
	Exhaust Outlet Diameter Max: 0.980 Tool: A6
	Throttle Bore Diameter Max: 0.874 Tool: A7
	Choke Bore Diameter Max: 1.149 Tool: A7
	Venturi Measurement Vertical Max: 0.792 Tool: A8
	Horizontal Max: 0.615
	Air Pick Off Hole Tool: A9 Diameter .057" Go (Use .057" Class Z Go) .061" No-Go (Use .061" Class Z No-Go)
	Slide Cutaway Tool: A10 Max: .075 No go
	Intake Manifold Diameter Max: 0.905 Min: 0.885 Tool: A11
	Intake Manifold Length Max: 1.760 Min: 1.740 Tool: A12
	Rocker Arm Length Min: 2.820 Tool: A13

	Valve Spring Length Max: 0.930 Tool: A15												
	Rocker Ball Length Max: 0.610 Min: 0.590 Tool: A16												
	Intake Valve Head Diameter Max: 1.065 Min: 1.055 Tool: A17												
	Exhaust Valve Head Diameter Max: 0.935 Min: 0.945 Tool: A18												
	Venturi Measurement Horizontal Min: 0.602 Tool: A20												
	Stroke Length Max: 2.204 Tool: A21												
	Valve Angle Angle Max: 45° Min: 45° Tool: A22												
	Piston Pop Out Length Max: .0035 Tool: A25												
	Intake Valve - Height from angle of valve face to top of the valve Length Min: 0.057 Tool: A26												
	Exhaust Valve - Height from angle of valve face to top of the valve Length Min: 0.060 Tool: A27												
	Width of Widest Part of Combustion Chamber Length Max: 2.640 Tool: A30												
	Slide Tool ASN Canada FIA National Class Structure <table border="1" style="font-size: small;"> <thead> <tr> <th>Class</th> <th>Max. Slide Opening</th> </tr> </thead> <tbody> <tr> <td>Junior</td> <td>.570" 'Yellow'</td> </tr> </tbody> </table> Briggs & Stratton 206 Club Class Options <table border="1" style="font-size: small;"> <thead> <tr> <th>Class</th> <th>Max. Slide Opening</th> </tr> </thead> <tbody> <tr> <td>Cadet</td> <td>.310" 'Black'</td> </tr> <tr> <td>Novice</td> <td>.342" 'Purple'</td> </tr> <tr> <td>Junior I</td> <td>.490" 'Green'</td> </tr> </tbody> </table>	Class	Max. Slide Opening	Junior	.570" 'Yellow'	Class	Max. Slide Opening	Cadet	.310" 'Black'	Novice	.342" 'Purple'	Junior I	.490" 'Green'
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Class	Max. Slide Opening												
Cadet	.310" 'Black'												
Novice	.342" 'Purple'												
Junior I	.490" 'Green'												
	Jetting Idle Pilot Jet – Stock, Unaltered .0130" No-Go (Use .0130" Class Z No-Go) Main Jet – Stock, Unaltered .0365" Go (Use .0365" Class Z Go), .039" No-Go (Use .039 Class Z No-go)												
	Emulsion Tube Main nozzle – OEM stock unaltered hole size = .101, .104" Emulsion Tube - Small holes – .018 Go (Use .018" Class Z GO) .021" No-Go (Use .0215" Class Z No-Go) Big Holes - .026" Go (use .026" Class Z Go), .029" No-Go (Use .029" Class Z No-Go)												



APPROVED CLUTCH GUIDE

Inferno by Hilliard Fire

FRONT



BACK



Inferno by Hilliard Flame

FRONT



If Bronze Bushing is used,
Grease Trap may be omitted

BACK



Inferno by Hilliard Blaze

FRONT



If Bronze Bushing is used,
Grease Trap may be omitted

BACK



APPROVED CLUTCH GUIDE

Inferno by Hilliard Fury

FRONT



If Bronze Bushing is used,
Grease Trap may be omitted

BACK



Max-Torque Draggin Skin

FRONT



BACK



Max-Torque SS

FRONT



BACK



APPROVED CLUTCH GUIDE

Premier Magnum Heavy

FRONT



BACK



Premier Magnum Light

FRONT



BACK



Noram GE Heavy

FRONT



BACK



APPROVED CLUTCH GUIDE

Noram GE Light

FRONT



BACK



Noram GE Ultimate Heavy

FRONT



BACK



Noram GE Ultimate Light

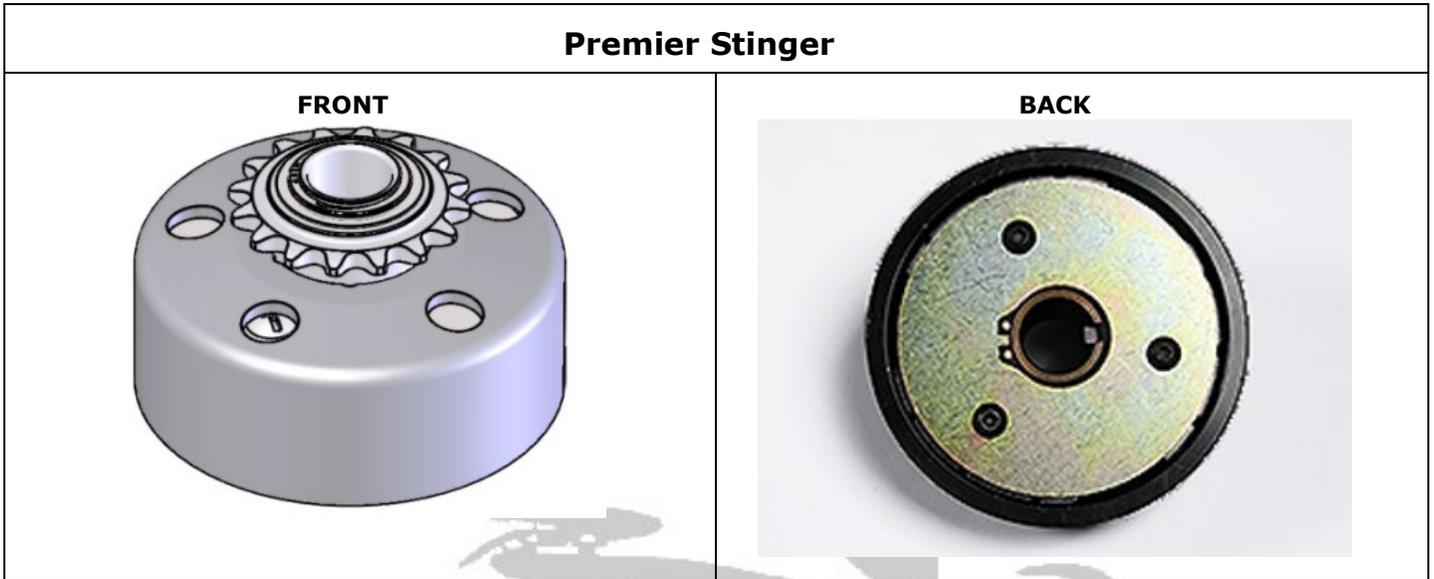
FRONT



BACK



APPROVED CLUTCH GUIDE



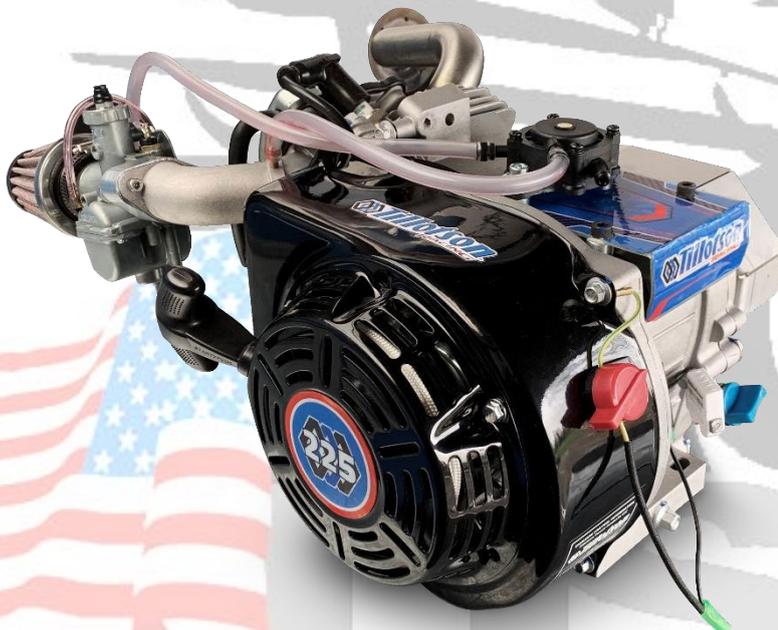
Manufacturers who wish to be considered for future rule sets may submit requests to: briggsracing@basco.com

TORQUE SETTING GUIDELINES

Description	Tool Size	Torque
Air Guard	7mm	40-50 lb-in. (4.5-5.6 Nm)
Blower Housing	10mm	60-110 lb-in. (7-12.5 Nm)
Rewind Starter	10mm	25-35 lb-in. (2.8-4 Nm)
Carburetor (to manifold)	10mm	80-110 lb-in. (9-12.4 Nm)
Cylinder Head Bolts	10mm	200-220 lb-in. (20-27 Nm)
Exhaust Brace Screws	10mm	95-125 lb-in. (11-14 Nm)
Flywheel Nut	15/16	105-115 ft-lbs. (142.4-156 Nm)
Flywheel Fan	10mm	180-240 lb-in. (20-27 Nm)
Intake (to Head)	5mm Allen	70-90 lb-in. (8-10.2 Nm)
Oil Drain Plug	10mm Star Socket	100-125 lb-in. (11-14 Nm)
Ignition Module	7mm	20-35 lb-in. (2.3-4 Nm)
Rocker Arm Stud	10mm	90-120 lb-in. (10-14 Nm)
Rocker Arm Plate	10mm	70-90 lb-in. (7.9-10.1 Nm)
Rocker Arm Set Screw	4mm Allen	50-70 lb-in. (5.6-7.9 Nm)
Spark Plug	5/8" Deep	140-200 lb-in. (15.8-22.6 Nm)
Top Control Plate	10mm	70-90 lb-in. (8-10 Nm)
Center Fuel Pump Bolt	10mm	50-60 lb-in. (5.6-6.8 Nm)
Valve Cover	10mm	30-60 lb-in. (3.5-7 Nm)



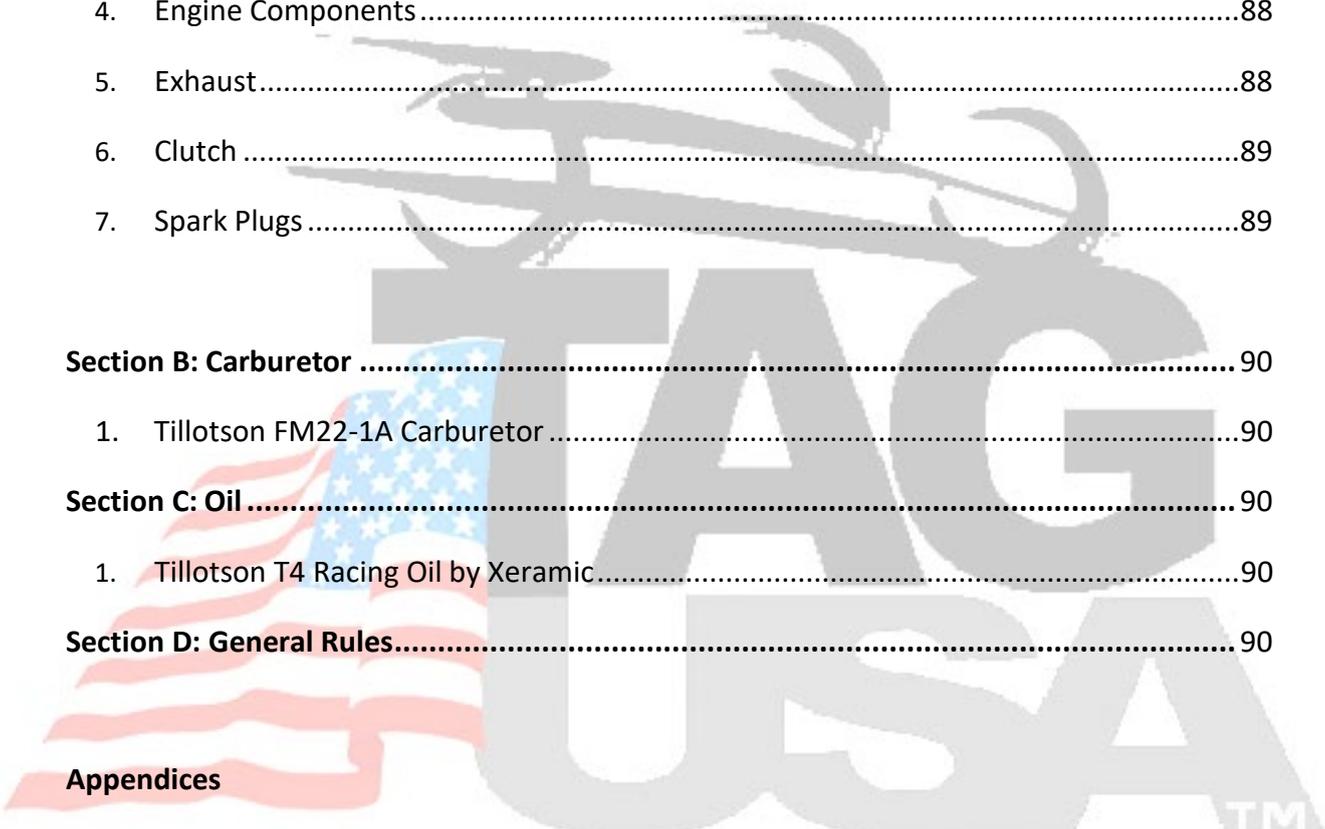
Tillotson TPP-225RS Engine Rulebook USA 2023





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Section A: Engine

1. Tillotson TPP-225RS Engine:

- 1.1 The engine must remain as original from factory.
- 1.2 No after-market parts are permitted unless stated in TPP-225RS engine fiche document.
- 1.3 No machining or other modification of interior engine surfaces (deburring, honing, grinding, polishing, sanding, media blasting, heat treatment) is permitted.
- 1.4 All parts are subject to visual comparison and must remain in substantially unaltered form when compared to an original part.
- 1.5 Engine and all components must comply with engine fiche document.

2. Sealing:

- 2.1 TPP-225RS engines must be fitted with the original engine ID Seal correlating with the engine ID number as supplied from the Tillotson factory. If an alternative seal number is identified the engine is not valid for competition.
- 2.2 Tillotson are the only sealing agent permitted to open the engines and re-seal as necessary unless there is an appointed sealing agent in the designated country.
- 2.3 Sealing agent must notify Tillotson immediately after changes are made to any engine seal numbers.
- 2.4 Two seal types which are currently in use:



- 2.5 Starting from Engine Serial Number 20110001 only the 2023 Production Engine seal is permitted. Any engine from this Serial Number using the previous model engine seal will not be allowed in competition.

3. Material Permitted to Manipulate:

The following areas of adjustment and cleaning are permitted within reason. Any effect that alters the integrity of the components or which in the sole opinion of the scrutineer extends beyond reasonable cleaning is prohibited.

- 3.1 Valve clearances may be adjusted, and valves may be cleaned; however, valves must remain with the factory specification of 45-degree angle only. Valve seats of additional angles and/or angles not comparable to the factory stock of 30-45-60 degrees are not permitted.
- 3.2 Spark plugs may be cleaned to remove carbon.
- 3.3 The piston and combustion chamber may be cleaned to remove carbon.
- 3.4 Damaged thread repair: It is permitted to use Heli-coil or a similar thread repair insert as long as the part, after repair, is within the dimension, weight or measurements set on the engine fiche document.





4. Engine Components:

- 4.1 Engine ignition switch and wires must remain in original location. It is not permitted to alter the wiring.
- 4.2 It is mandatory to use the original Air filter, P/N: T-AIRFILTER-01. No modification to the filter element is permitted.
- 4.3 A breathable rain sock or protective shield may be attached for wet-weather competition. It is not permitted for the protective shield to create any ram-aireffect.
- 4.4 Oil breather valve cover: It is recommended to connect the oil breather pipe to a catch container. The container must be vented to the atmosphere.
- 4.5 Pulse signal from the engine must be taken from the inlet manifold to the fuel pump connection. The length of the pulse hose is recommended not to exceed 28cm.
- 4.6 Only original Fuel Pump is permitted. P/N: FP-10A
- 4.7 It is recommended to use the latest clutch guard as supplied (T-CLU-GRD-01). It is permitted to modify the chain guard if necessary due to chassis design. A minimum of 2 bolts must be used to mount the supplied chain guard. The use of an alternative chain guard is also permitted.
- 4.8 A maximum of one in-line fuel filter is recommended to ensure that dirt and contamination within the fuel system does not affect engine performance. A fuel filter is not mandatory.
- 4.9 Blower housing / starter assembly must be original and properly installed. No taping, covering, or restricting of air of any part of this assembly is permitted.
- 4.10 Exhaust gasket must be original, and one and only one piece must be used. Use of silicone is permitted.
- 4.11 It is not grounds for disqualification if the exhaust nuts loosen during a race so long as the exhaust remains attached to the head with at least two nuts.
- 4.12 Use of an O2, EGT or CO2 sensor is permitted.
- 4.13 Exhaust protection is recommended. The exhaust should be completely wrapped with a non-asbestos insulation material or sleeve.
- 4.14 No aftermarket kill switch may be allowed and the OEM kill switch must be as supplied by manufacture.

5. Exhaust:

- 5.1 Exhaust Model TILL4625 (T-EXH-001) as supplied with the engine is mandatory for all competitions unless of special exemptions as requested by the organizing Club, Series or Track.
- 5.2 There are two versions permitted:
 - 2020 Version: Silencer Welded to Header Pipe (RLV P/N:TILL4625)
 - 2023 Version: Silencer (RLV P/N:EXF4125) mounted to Header Pipe (RLV P/N:EXF5200) by T-Bolt Clamp (RLV P/N:FAS6580).
- 5.3 If the track, club or organizing series wish to use an alternative exhaust option for reduced noise limits the following exhaust option is recommended:
 - RLV P/N:EXF4110 (using Header Pipe RLV P/N:EXF5200 and Mounting Kit RLV P/N:MNT5910)



6. Clutch:

- 6.1 The original clutch is recommended. P/N: T-NORAM-CLU-21T
- 6.2 The use of one of the following alternative clutches is permitted.
- Noram GE Heavy
 - Noram GE Light
 - Noram GE Ultimate Heavy
 - Noram Ultimate GE Light
 - Max-Torque S-S
 - Max-Torque Draggin Skin
 - Premier Magnum Heavy
 - Premier Magnum Light
 - Premier Stinger
 - Inferno by Hilliard Fire
 - Inferno by Hilliard Flame
 - Inferno by Hilliard Blaze
 - Inferno by Hilliard Fury

6.3 All clutches must be original as supplied by the manufacturer and no tuning, modification or manipulating of material is permitted. The use of either 35 or 219 pitch is allowed for both clutch options.

6.4 It is recommended that the clutch is mounted inboard. It is permitted to mount the clutch outboard if necessary due to chassis design but doing so can put extra stress on the crankshaft.

7. Spark Plugs:

7.1 The original spark plug supplied with the engine is recommended. The following spark plugs are permitted for use:

- Autolite AR3910X
- E3-106

7.2 Sealing washer must be in place and remain original on the stock spark plug used. Temperature thermocouple is permitted once the sealing washer is not modified.

During technical inspections, a new stock part can be used as reference to compare a competitor's part for legality.



Section B: Carburetor

1. Tillotson FM22-1A Carburetor:

- 1.1 The carburetor must remain as original from the factory.
- 1.2 No after-market parts are permitted.
- 1.3 No machining or other modification of the surface finish is permitted.
- 1.4 Only the Tillotson supplied jets and slides are permitted for use.
- 1.5 All parts are subject to visual comparison and must remain in substantially unaltered form when compared with an original part.
- 1.6 Carburetor and all components must comply with carburetor fiche document.
- 1.7 The following exemption is only applicable to Road racing events, non-circuit racing, where main jets ranging from 115 - 125 (1.15-1.25mm) may be used.

Section C: Oil

1. Tillotson T4 Racing Oil by Xeramic:

- 1.1 Tillotson T4 Racing Oil by Xeramic is the only oil permitted for use in the T225RS engine for competition.
- 1.2 Recommended volume of oil to be filled is 500ml. A minimum of 450ml of oil must be present in each engine after the race or will result in disqualification from the session, heat or final just competed in.
- 1.3 Any additives or substances mixed with the oil is strictly prohibited.
- 1.4 Failure of the DYE test will result in penalties decided by event organisers.

Section D: General Rules

1. Only Tillotson authorized personnel are permitted to make changes to the rules package, fiche documentation or technical specification.
2. Tillotson distributors and their dealers are not authorised to alter any technical specifications or competition rules relating to the engine.
3. Any alterations, corrections and/or addendums will be submitted to sanctioning bodies and posted at www.tillotson.ie and will become effective on the date specified in the posting.
4. Previous mid-season updates are to be considered void upon publication of an annual update.
5. Technical inspection tools are available for the convenience of checking components against the measures set on the fiche document. The tools are available from Tillotson. For further enquiries contact sales@tillotson.ie.
6. Recommended minimum total weight (Kart and Driver combined): Senior: 355lbs (Check event supplementary regulations)
7. Pump or station fuel / gas is permitted or as set in the supplementary regulations set by the local track, club or race series where competing (recommend not to use anything higher than 93 octane). Use of fuel additives is not permitted.

Refusal to adhere to any of the rules set out will be investigated by the race officials and may result in disqualification from the race results.



APPENDIX 1

TPP-225RS Parts List



1.1 TPP-225RS ENGINE PACKAGES

<u>TILLOTSON P/N</u>	<u>DESCRIPTION</u>
TPP225RS-PKG-USA	225RS COMPLETE USA VERSION
TPP225RS-SB1	225RS LONG BLOCK ENGINE (LESS FLYWHEEL, IGNITION AND ANCILLARIES)

1.2 CRANKCASE & ACCESSORIES

<u>TILLOTSON P/N</u>	<u>DESCRIPTION</u>
138220002	CRANKCASE ASSEMBLY-S
138190002	BEARING, CRANKCASE-S
138220028	CRANKCASE PLATE-S
138220026	HEXAGON SOCKET HEAD CAP SCREW M6*20-S
138220025	SPACER-TOP MOUNTING PLATE
138190004	WASHER, DRAIN PLUG-S
138190005	BOLT, DRAIN PLUG-S
138190003	OIL SEAL-S
138220053	STICKER, TOP MOUNTING PLATE-S

1.3 CRANKSHAFT, CONNECTING ROD & PISTON

<u>TILLOTSON P/N</u>	<u>DESCRIPTION</u>
138210107	CRANKSHAFT ASSEMBLY-S
138220031	CONNECTING ROD ASSEMBLY-S
138220017	HALF-SLEEVE BEARING-S
138220016	BOLT, CONNECTING ROD-S
138220004	PISTON-S
138220006	PISTON PIN-S
138220008	CIRCLIP, PISTON PIN-S
138220005	RING SET, PISTON-S

1.4 CRANKCASE COVER, CLUTCH & CHAIN GUARDS

<u>TILLOTSON P/N</u>	<u>DESCRIPTION</u>
138190017	GASKET, CRANKCASE-S
138190016	DOWEL PIN BUSHING, CRANKCASE-S
138190002	BEARING, CRANKCASE-S
138190018	CRANKCASE COVER-S
138190020	DIPSTICK ASSEMBLY-S
138190019	OIL PLUG ASSEMBLY-S
138190003	OIL SEAL-S
138190015	FLANGE BOLT M8*30-S
138220032	CHAIN GUARD-S ALUMINIUM TYPE 2020
138190060	FLANGE BOLT 5/16*20-S
T-CLU-GRD-01	CLUTCH GUARD 2023



1.5 CLUTCH & COMPONENTS (OPTIONAL)

<u>TILLOTSON P/N</u>	<u>DESCRIPTION</u>
T-NORAM-CLU-21T	NORAM CLUTCH, 21T-S
T-NORAM-KEY-01	NORAM KEYWAY VERSION SHORT
T-NORAM-KEY-02	NORAM KEYWAY VERSION LONG 2023
T-CLU-SPACER-01	CLUTCH MACHINED SPACER
T-CLU-BOLT-01	CLUTCH BOLT
T-CLU-WASH-01	CLUTCH WASHER
T-CLU-WASH-02	CLUTCH SPRING WASHER
T-CLU-SPR-01	NORAM CLUTCH SPRING GREEN

1.6 CYLINDER HEAD & COMPONENTS

<u>TILLOTSON P/N</u>	<u>DESCRIPTION</u>
138190037	FLANGE BOLT M6*12-S
138190088	VALVE COVER-S
138190096	TUBE, BREATHER-S
138190038	GASKET, VALVE COVER-S
138190021	FLANGE BOLT M8*60-S
T-E3-106	SPARK PLUG, E3
138210100	CYLINDER HEAD ASSEMBLY-S
138190056	STUD, EXHAUST MANIFOLD-S
138220033	STUD, INTAKE MANIFOLD-S
138220030	CYLINDER HEAD GASKET-S
138190022	PIN, DOWEL, CYLINDER HEAD-S
138220014	FLANGE BOLT M6*16-S
138210125	AIR LEADING COVER-S

1.7 VALVE TRAIN & CAMSHAFT ASSEMBLY

<u>TILLOTSON P/N</u>	<u>DESCRIPTION</u>
138190035	VALVE LOCKING NUT-S
138190034	VALVE ADJUSTING NUT-S
138190033	ROCKER ARM-S
138190030	ROCKER ARM SUPPORT-S
138190031	PLATE, PUSH ROD GUIDE-S
138190032	PUSH ROD-S
138190013	TAPPET, VALVE-S
138220012	CAMSHAFT ASSEMBLY-S
138210101	VALVE, INTAKE-S
138210102	VALVE, EXHAUST-S
138210112	VALVE SEAL-S
138220029	VALVE SPRING (26LBS)-S
138210103	RETAINER, VALVE SPRING-S
138210104	VALVE COLLET-S

1.8 CARBURETTOR, AIR FILTER, FUEL PUMP & ACCESSORIES

<u>TILLOTSON P/N</u>	<u>DESCRIPTION</u>
138190050	GASKET, INTAKE MANIFOLD-S
138220034-PLATE	INTAKE MANIFOLD ASSEMBLY WITH ADAPTER PLATE
138220073	SPRING WASHER, M6 INTAKE STUD
138220020	STYLE 1 HEXAGON NUT,M6 INTAKE STUD
FP-10A	FUEL PUMP
138220035	GASKET, CARBURETOR-S
FM22-1A	CARBURETOR, FM22-1A
306222598	CARBURETOR MOUNTING BOLTS, M6 x 16mm
T-AIRFILTER-01	AIR FILTER-S
138190055	FUEL LINE CLIP-S
138190092	FUEL LINE PULSE CONNECTION
138190093	PULSE FUEL LINE PROTECTIVE SLEEVE-S

1.9 STARTER, RECOIL, FLYWHEEL & IGNITION COIL

<u>TILLOTSON P/N</u>	<u>DESCRIPTION</u>
138220024	FLYWHEEL ADAPTOR-2019
138220063	FLYWHEEL ADAPTOR-2020
138220022	HEXAGON SOCKET HEAD CAP SCREW M6*12-S
138220007	PVL IGNITION COIL, 6500rpm.-S
138220067	PVL IGNITION COIL, 6000rpm.-S
138220068	PVL IGNITION COIL, 5800rpm.-S
138220019	IGNITION COIL STOP WIRE-S
138220023	HEXAGON SOCKET HEAD CAP SCREW 3/16 *20-S
138220018	FLYWHEEL ASSEMBLY-S
138220040	STARTER PULLEY CUP(47mm)-S
138190042	NUT, M14-S
138220069	STARTER ASSY, PULL(black)-S
138190047	KILL SWITCH-S
138220061	BLOWER HOUSING ONLY (BLACK)
138220066	STARTER RECOIL ONLY (BLACK)
138190037	FLANGE BOLT M6*12-S

1.10 EXHAUST OPTIONS & COMPONENTS

<u>TILLOTSON P/N</u>	<u>DESCRIPTION</u>
138190058	GASKET, EXHAUST-S
T-EXH-001	EXHAUST SILENCER-USA VERSION
138220021	SPRING WASHER GB 93-87 8-S
138190057	EXHAUST NUT-S
138220027	SPACER, SILENCER BRACKET-S
138220014	FLANGE BOLT M6*16-S
T-EXH-SIL-01	EXHAUST SILENCER-EUR VERSION
T-EXH-MAN-01	EXHAUST MANIFOLD
T-FLEX-01	EXHAUST FLEX



T-EXH-SPRING-01	EXHAUST SPRING
138220054	EXHAUST WRAP-S
138220055	HOSE CLAMP(21-38)-S

1.11 AUXILIARY PARTS

<i>TILLOTSON P/N</i>	<i>DESCRIPTION</i>
138220046	GASKET SET
T-OIL-01	T4 ENGINE OIL



Contact Information and Resources

Email: sales@tillotson.ie

Website: www.tillotson.ie

YouTube Page: <https://youtube.com/channel/UCZgldHZl8EBj93WnvcKFRHA>

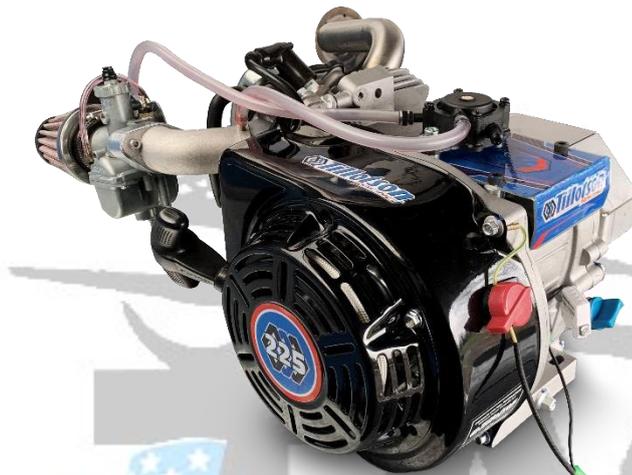


APPENDIX 2

Engine Fiche

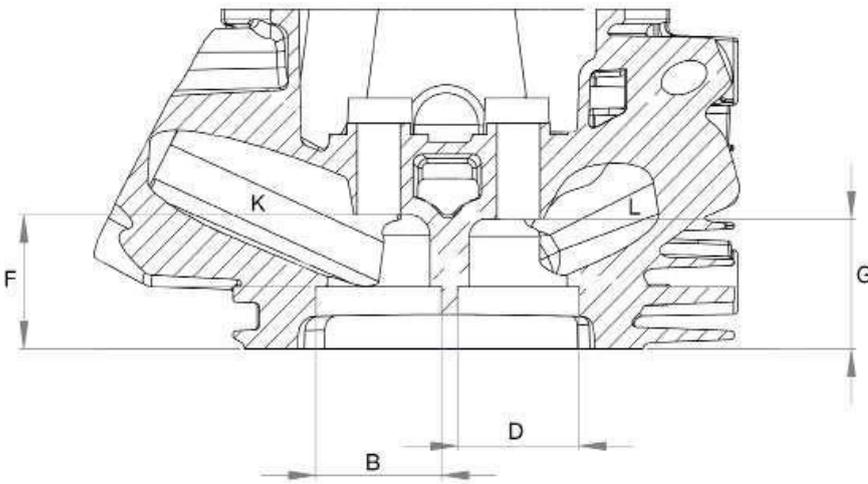


Tillotson TPP-225RS Engine Fiche USA2021



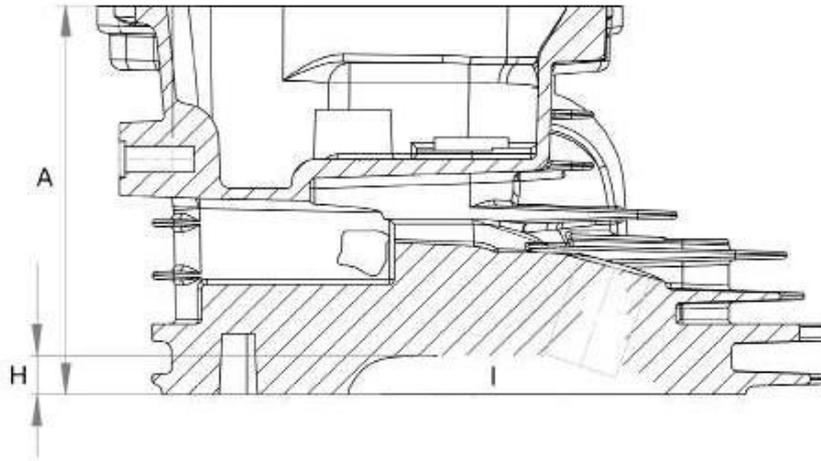
Feature	Specification
Engine Type	2 Valve 4-Stroke
Fuel Type	Unleaded Petrol
Cylinder	Single/35° Heavy Reinforced Aluminum Block w/Cast Iron Sleeve
Cylinder Volume	225cc
Bore	72 mm/2.834 in maximum
Stroke	55 mm/2.165 in maximum
Piston - Deck Clearance	.4mm± .2 mm
Cooling System	Air
Carburetor	Tillotson FM22-1A
Cylinder Head	Aluminum Alloy 2-Valve Over Head Valve
Combustion Chamber Shape	26cc Factory Designed
Compression Ratio	9:1
Ignition Coil	PVL/Tillotson 4 Poles Digital Built in Limiter 6500RPMS
Flywheel	Digital Ignition Billet Aluminum 29° Advance Timing
Connecting Rod	Race Spec w/Bearing Inserts
Rod Length	88 mm/3.4646 in
Camshaft	Race Cam with Built in Compression Release
Engine Oil and Volume	Tillotson T4 Racing Oil, 500 ml ± 50 ml

Engines must conform to the technical data provided with no modification or machining allowed. Parts must be original as supplied by the manufacturer.



Cylinder Head Gasket PN:138220030

Material	Composite
Thickness	1.26 mm ± .2 mm
Fire Ring	Steel



Rocker Arm PN: 138190033

Material	Steel
Ratio	1:1 max
Length	54.9 mm minimum
Tip Shape	Rectangular
Weight	16.5g ± .5g

Cylinder Head PN:138210100

A. Overall Height	74.02 mm minimum
B. Intake Seat ID	24.75 mm +.1 mm
C. Intake Seat Angle	60-45-30
D. Exhaust Seat ID	22.6 mm +.1 mm
E. Exhaust Seat Angle	60-45-30
F. Bowl Depth Intake	29.3 mm± .2mm
G. Bowl Depth Exhaust	28.4 mm ± .2 mm
H. Combustion Chamber Depth	7.0 mm± .2 mm
I. Combustion Chamber Vol	19.4cc minimum
J. Valve Head Height from Gasket Surface	6.5 mm± .3 mm
K. Intake Port Volume	30cc maximum
L. Exhaust Port Volume	24cc maximum



Guide Plate PN 138190031

Material	Steel
----------	-------



Valve Lifter/Tappet PN: 138190013

Material	Mild Steel
Overall Length	34.7 mm ± .2 mm
Stem Diameter	8 mm ± .2 mm
Head Diameter	23.6 mm ± .2 mm
Weight	19.5 g ± 1 g



Valve Spring PN 138220029

Material	Steel
Relaxed Height	26mm ± .2 mm
Wire Diameter	2.5 mm ± .2 mm
Overall O.D.	21.1mm ± .2 mm
Spring Force	26 lbs max @ .815 in (20.7mm) height



Valve Spring Retainer & Lock
PN: 138210103

Material	Steel
Overall Height	7.9 mm min
Overall O.D	20.7 mm ± .2 mm
Retainer Weight	6.4 g min



Push Rod PN: 138190032

Material	Steel
Overall Length	134 mm ± .25 mm
Ball End Diameter	5 mm ± .2 mm
Rod Diameter	4 mm ± .2 mm
Weight	11 g ± .5 g



Intake Valve PN: 138210101

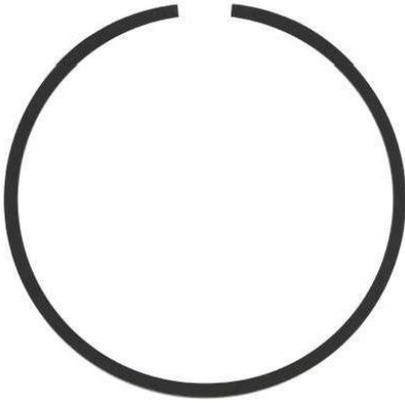
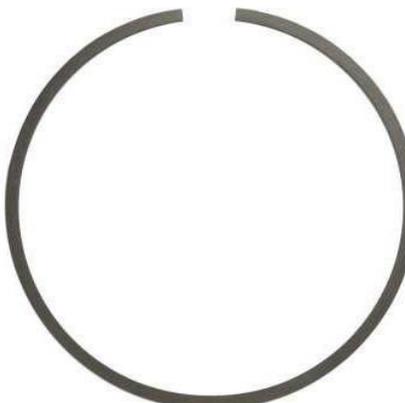
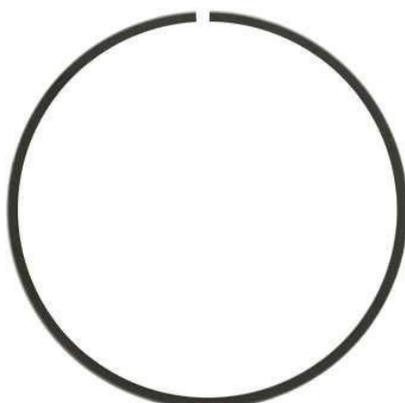
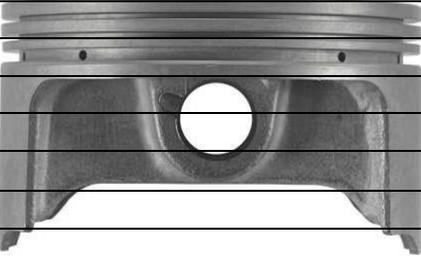
Material	Alloy Steel
Overall Length	63.8 mm min
Stem Diameter	4.8 mm min
Head Diameter	27 mm ± .2 mm
Valve Margin	2.3 mm ± 0.5 mm
Valve Angle	45°
Weight	21 g ± .25 g
Valve Marking	IN Z81 YF

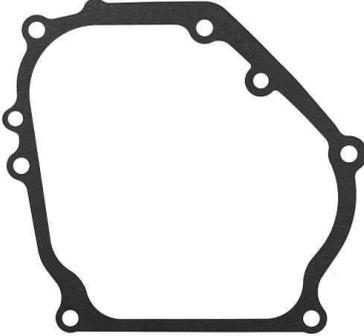
Brand Open



Exhaust Valve PN 138210102

Material	Alloy Steel
Overall Length	63.8 mm min
Stem Diameter	4.8 mm min
Head Diameter	25 mm ± .2 mm
Valve Margin	2.3 mm ± 0.5 mm
Valve Angle	45°
Weight	19.5 g ± .5 g
Valve Marking	EX Z81 YF

 <p>Piston Top Ring PN:13822005</p> <table border="1"> <tr> <td>Material</td> <td>Steel</td> </tr> <tr> <td>Thickness</td> <td>1 mm± .05 mm</td> </tr> </table>		Material	Steel	Thickness	1 mm± .05 mm	 <p>Piston Second Ring PN:13822005</p> <table border="1"> <tr> <td>Material</td> <td>Steel</td> </tr> <tr> <td>Thickness</td> <td>1 mm± .05mm</td> </tr> </table>		Material	Steel	Thickness	1 mm± .05mm	 <p>Piston Oil Scraper Ring PN:13822005</p> <table border="1"> <tr> <td>Material</td> <td>Steel</td> </tr> <tr> <td>Thickness</td> <td>.40mm±.05mm</td> </tr> </table>		Material	Steel	Thickness	.40mm±.05mm														
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 <p>Crankcase Side Cover PN:138190018</p>		 <p>Crankcase Side Cover Gasket PN:138190017</p>		 <p>Crankcase Bearing PN:13819002</p>	
Material	Cast Aluminum	Material	Paper	Material	Steel
Bearing OD	52mm ± .2 mm	Thickness	0.5 mm ± .15mm	Ball Material	Steel
Bearing ID	25mm± .2 mm	Color	Black	Retainer Matera!	Steel
Dowel Material	steel			Bearing OD	52mm± .2mm
				Bearing ID	25mm± .2 mm
 <p>Crankshaft PN:138210107</p>				 <p>Crankcase Seal PN:13819003</p>	
Material	Forged Steel			Material	Fluopolymer - Red
Crank Pin Diameter	88mm- .3mm			Outside Diameter	41.25 mm± .2 mm
PTO Shaft Diameter	19.05 mm± .2 mm			Inside Diameter	23.6 mm ± .25 mm
Weight	1870g±10g				

 <p>Camshaft Specs PN:138220012</p>	<p>Camshaft lift table</p> <table border="1"> <thead> <tr> <th><u>Lift</u></th> <th><u>Intake</u></th> <th></th> <th><u>Exhaust</u></th> </tr> </thead> <tbody> <tr> <td>0.006</td> <td>44 +/- 4°</td> <td>BBDC</td> <td>83 +/-4°</td> </tr> <tr> <td>0.05</td> <td>13 +/- 4°</td> <td>BBDC</td> <td>51 +/-4°</td> </tr> <tr> <td>0.1</td> <td>5.5 +/- 4°</td> <td>BBDC</td> <td>32 +/-4°</td> </tr> <tr> <td>0.15</td> <td>24 +/- 4°</td> <td>BBDC</td> <td>14 +/-4°</td> </tr> <tr> <td>0.2</td> <td>45 +/- 4°</td> <td>ABDC</td> <td>6.5 +/-4°</td> </tr> <tr> <td>0.25</td> <td>77 +/- 5°</td> <td>ABDC</td> <td>38 +/-5°</td> </tr> <tr> <td>Max Lift</td> <td>0.28</td> <td></td> <td>0.28</td> </tr> <tr> <td>Min Lift</td> <td>0.26</td> <td></td> <td>0.26</td> </tr> </tbody> </table>				<u>Lift</u>	<u>Intake</u>		<u>Exhaust</u>	0.006	44 +/- 4°	BBDC	83 +/-4°	0.05	13 +/- 4°	BBDC	51 +/-4°	0.1	5.5 +/- 4°	BBDC	32 +/-4°	0.15	24 +/- 4°	BBDC	14 +/-4°	0.2	45 +/- 4°	ABDC	6.5 +/-4°	0.25	77 +/- 5°	ABDC	38 +/-5°	Max Lift	0.28		0.28	Min Lift	0.26		0.26
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Ignition Coil PN:138220007

RPM Limit 6500
 Brand PVL
 Type Digital



Ignition Coil Alternative Version

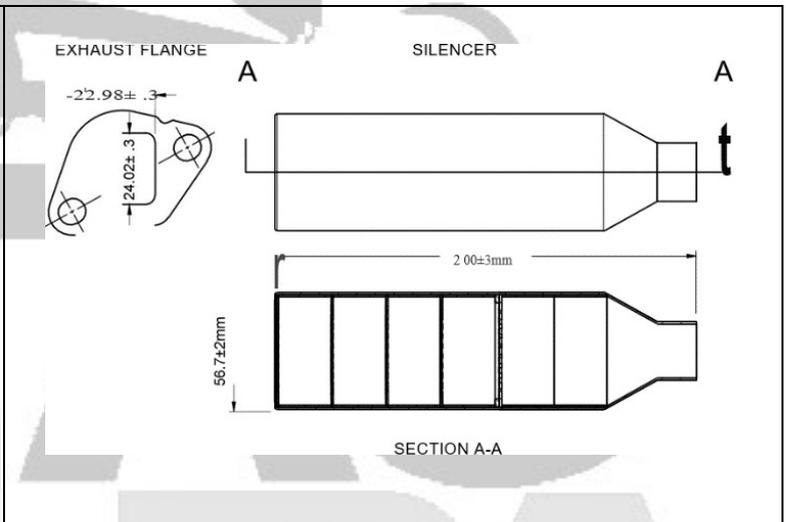


Flywheel PN:138220018

Material Billet Aluminum
 Diameter 165mm ± .2mm
 Weight 1.43 kg ± .05 kg
 Timing 29°

Exhaust Header/Muffler (PN:T-EXH-001)

Model	TILL 4625
Brand	RLV
Qty. of baffles	5
Dia. of holes in baffles	31.7± .5mm

Exhaust Header/Muffler Type B (P/N: T-EXH-001)



Mounting Kit RLV P/N: MNT5910)



Header Pipe RLV P/N: EXF5200



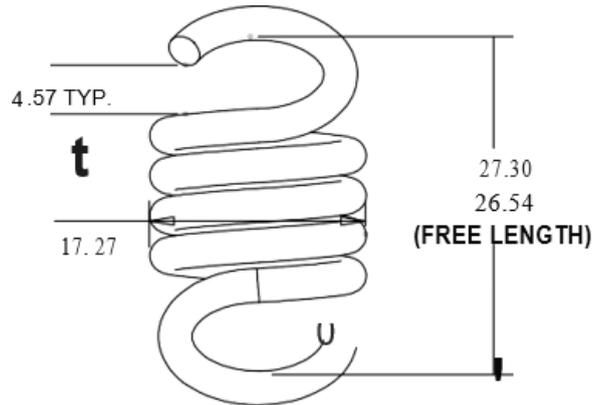
Header Pipe RLV P/N: EXF5200





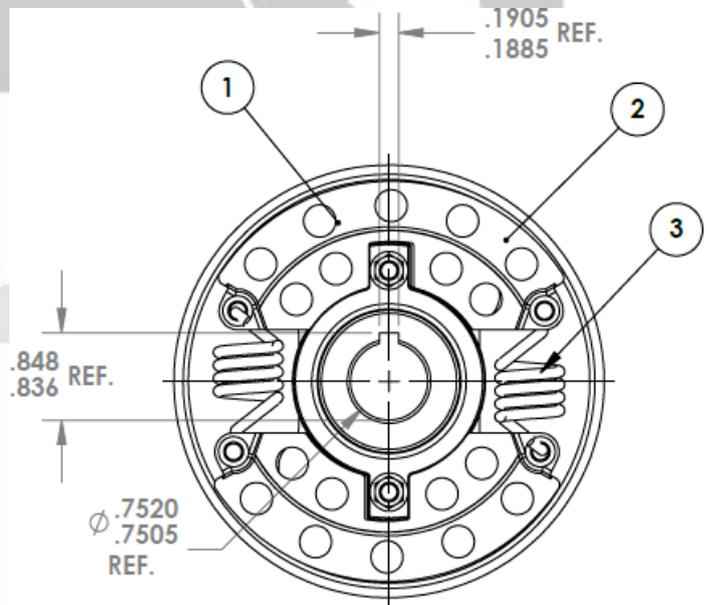
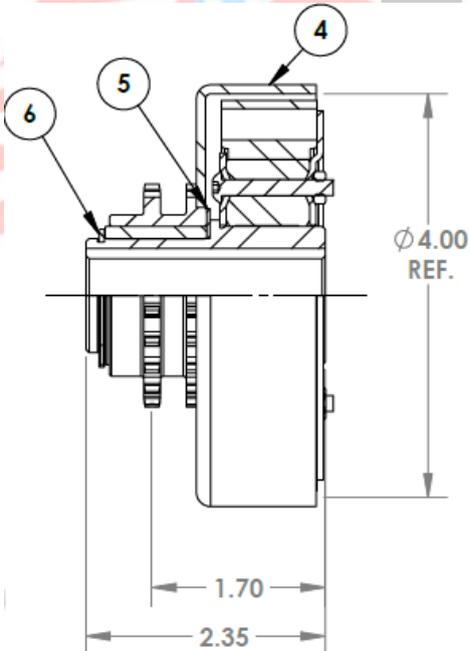
Clutch

Brand	Noram
Model	4000 S174
Engagement	3000 rpm Max
Weight	1.35 kg± .2 kg
Clutch Shoe Weight	.22 kg ± .02 kg



Clutch Spring (PN:T-CLU-SPR -01)

No. of Turns	4
Colour	Dark Green (non tech)
Wire Diameter	2.89mm ± .5mm
Overall OD	1727mm±.15mm



VIEW SHOWN THROUGH COVER PLATE

Recommended Torque Values

<u>Description</u>	<u>Socket Size</u>	<u>Torque (Nm)</u>
Cylinder Head	12mm	37Nm
Flywheel	21mm	70Nm
Rocker Arm Support	12mm	24Nm
Valve Locking Nut	10mm	10Nm
Spark Plug	21mm	24Nm
Crankcase Side Cover	10mm	33Nm
Blower Housing	8mm	10Nm
Carburetor to Manifold	10mm	10Nm
Connecting Rod	10mm	19Nm
Exhaust to Engine	13mm	28Nm
Intake Manifold to Engine	10mm	10Nm
Oil Drain Plug	10mm	22Nm
Valve Cover	8mm	7Nm

Contact Information and Resources

Email: sales@tillotson.ie

Website: www.tillotson.ie

YouTube Page: <https://youtube.com/channel/UCZgldHZl8EBj93WnvcKFRHA>



APPENDIX 3
Carburetor Fiche



CARBURETOR
Tillotson FM22-1A

<p>Manufacturer</p>	<p>TILLOTSON LTD.</p>
<p>Make</p>	<p>TILLOTSON</p>
<p>Model</p>	<p>FM22-1A</p>

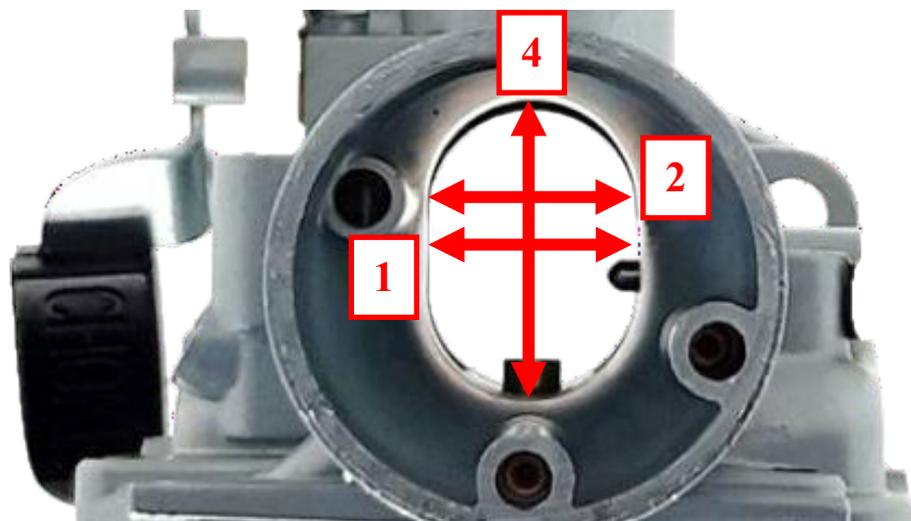


Measurements & Tolerance Index

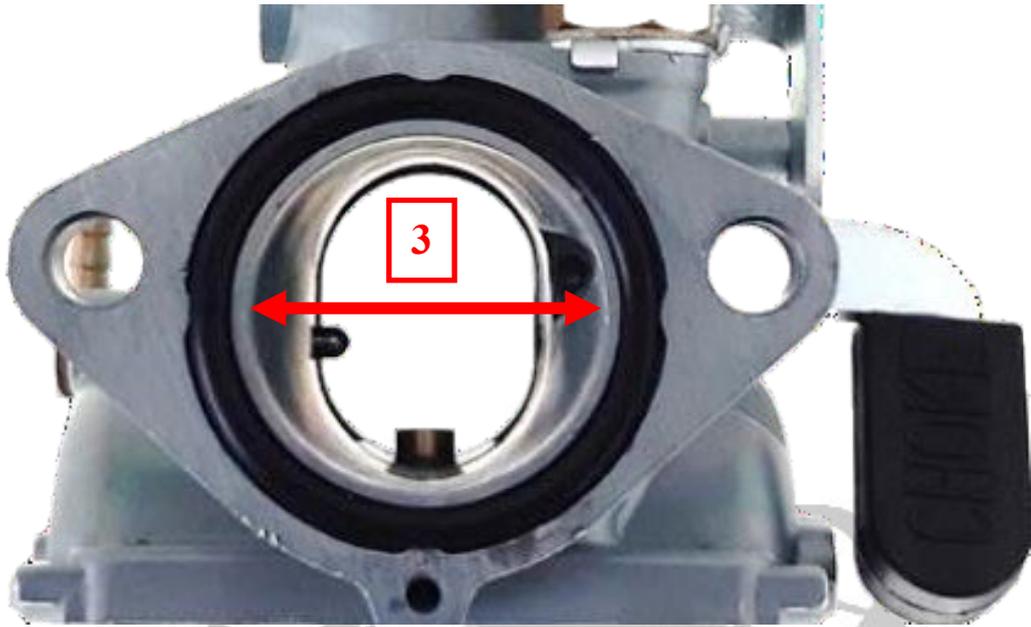
ITEM	DESCRIPTION	TOLERANCE
1	Venturi Horizontal Measurement Centre	18.22mm Max (0.717")
2	Venturi Horizontal Measurement Max	18.72mm Max (0.737")
3	Throttle Bore Diameter	26.25mm Max (1.034")
4	Venturi Vertical Measurement	25.05mm Max (0.986")
5	Air Pick Off Hole	1.9mm +/- 0.1mm (0.075" +/- 0.004")
6	Venturi Idle Air Hole	1.9mm +/- 0.1mm (0.075" +/- 0.004")
7	Fuel In	1.65mm Max (0.065")
8	Main Feed Hole	2.65mm Max (0.104")
9	Pilot Feed Hole	0.97mm +/- 0.06mm (0.038" +/- 0.002")
10	Idle Feed Hole	0.80mm +/- 0.05mm (0.32" +/- 0.002")
11	Choke Feed Hole	0.65mm Max (0.26")
12	Emulsion Tube & Main Jet Length	39.0mm +/- 0.15mm (1.536" +/- 0.007")
13	Main Jet Orifice	1.20mm +/- 0.04mm (0.046" +/- 0.0015")
14	Main Jet Emulsion Orifice x12	0.86mm Max (0.034")
15	Pilot Jet Length	29.05 +/- 0.15mm (1.144" +/- 0.007")
16	Pilot Jet Orifice	0.36mm +/- 0.04mm (0.014" +/- 0.0015")
17	Pilot Jet Emulsion x6	0.73mm Max (0.029")
18	Slide Length Max	37.00mm +/- 0.15mm (1.457" +/- 0.007")
19	Slide Diameter	20.4mm +/- 0.15mm (0.804" +/- 0.007")
20	Needle Length	50.0mm +/- 0.2mm (1.970 +/- 0.01")

Measurement Diagrams

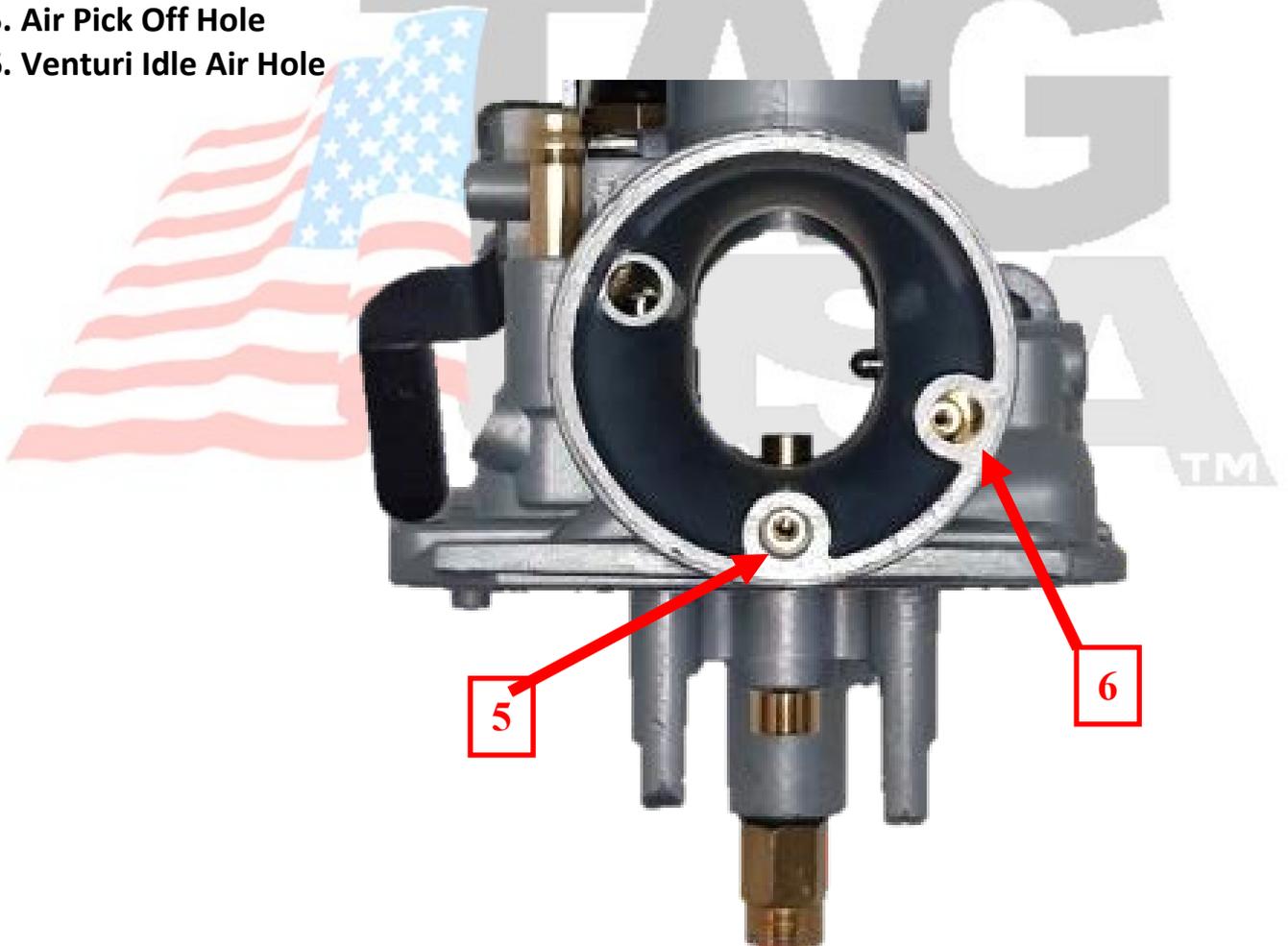
1. Venturi Horizontal Measurement Centre
2. Venturi Horizontal Measurement Max
4. Venturi Vertical Measurement



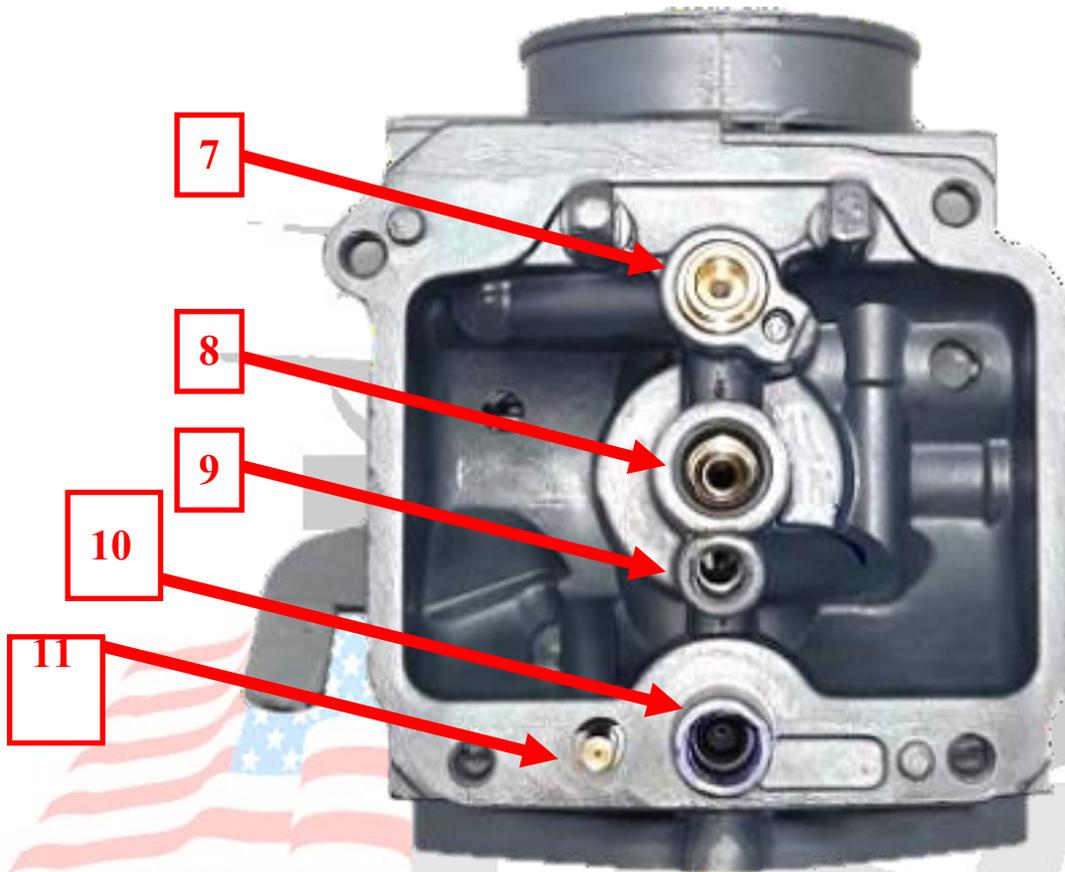
3. Throttle Bore Diameter



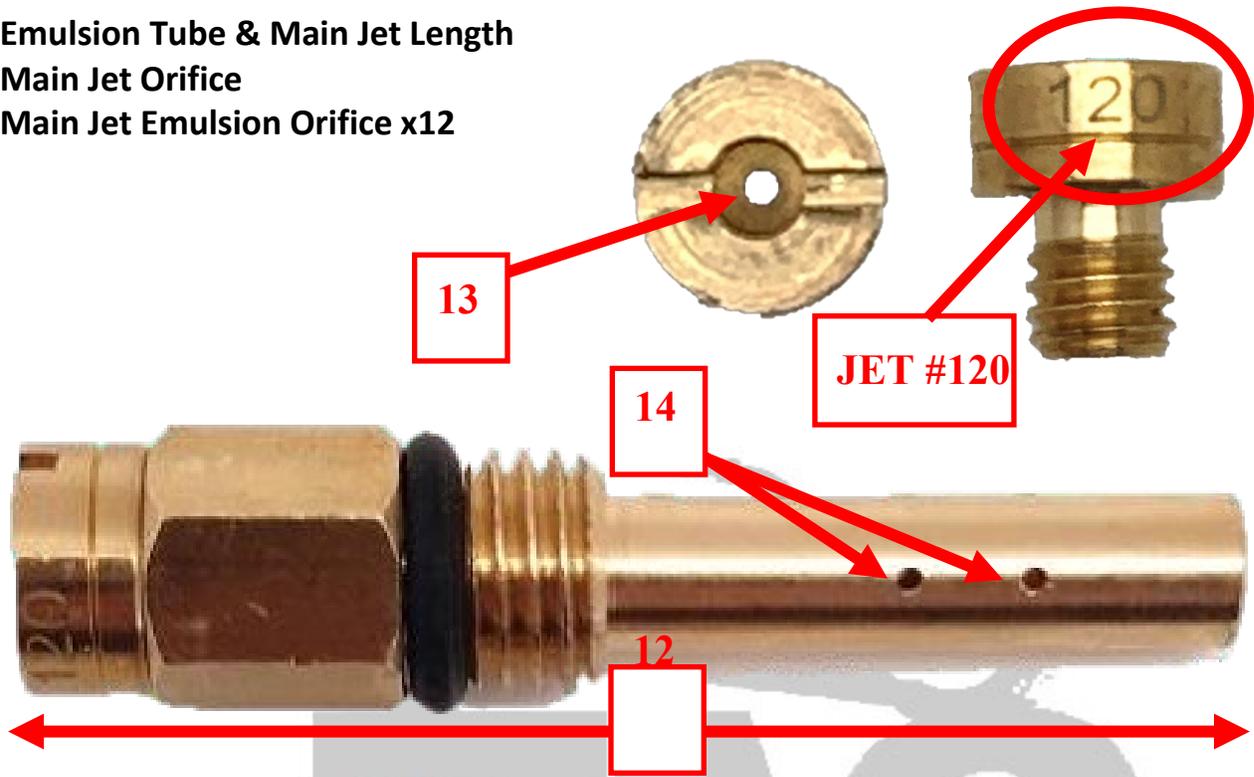
- 5. Air Pick Off Hole
- 6. Venturi Idle Air Hole



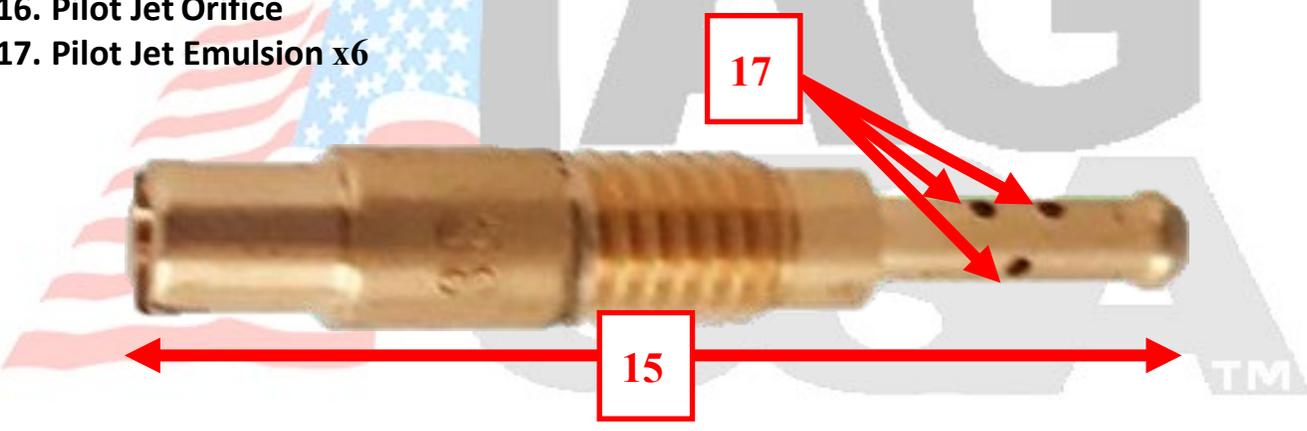
- 7. Fuel In
- 8. Main Feed Hole
- 9. Pilot Hole
- 10. Idle Hole
- 11. Choke Feed Hole



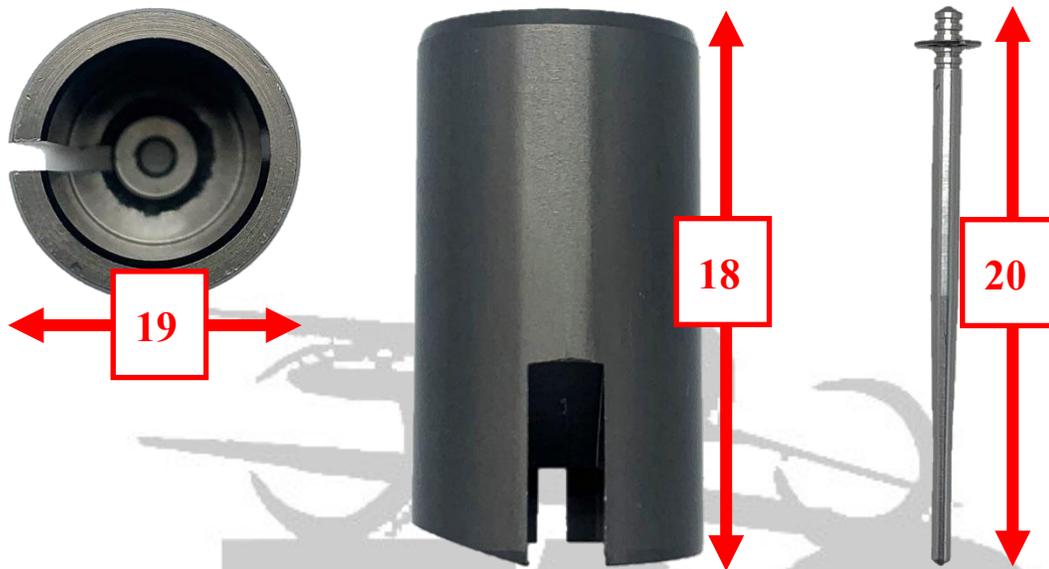
- 12. Emulsion Tube & Main Jet Length
- 13. Main Jet Orifice
- 14. Main Jet Emulsion Orifice x12



- 15. Pilot Jet Length
- 16. Pilot Jet Orifice
- 17. Pilot Jet Emulsion x6



- 18. Slide Length Max
- 19. Slide Diameter
- 20. Needle Length



Contact Information and Resources

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Section 13 – Two Cycle Engines: General Requirements and Inspection Procedures

A. GENERIC TWO CYCLE TECH PROCEDURE

Note: The following is a description of a full, generic two 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.

1. 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.
2. Verify minimum combustion chamber volume. Fill a calibrated, glass burette up above the zero line with clean Marvel Mystery Oil. 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 LAD 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. 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.

3. Verify intake. Remove carburetor. Using a nominal sized gauge pin milled to a flat of approximately .250 inch wide flat (preferred) or a two point indicating bore gauge (alternate), verify maximum venturi diameter to specification. Disassemble carburetor as required to verify all prescribed dimensions listed in the tech sheet for that particular carburetor. Visually inspect body and components for alterations in violation of allowances for that particular carburetor. Verify inlet tract length by rotating the crankshaft until the piston closes the intake port. Measure with a depth micrometer (preferred) or caliper (alternate) from the carburetor mounting flange to the forward most tangent point of the piston. Verify intake spacer and carburetor mounting plate for maximum bore dimension and geometry. Deliberate taper or ovality in the bore of the spacer or mounting plate is grounds for disqualification. Remove reed cage or other induction control device, if so equipped, and verify compliance to specifications. Verify intake port area for compliance to specifications.
4. Verify exhaust. 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 for stock appearance and configuration. Inspect for maximum prescribed size, number and orientation of exhaust exit holes. Disassemble exhaust as required and verify all prescribed dimensions for that particular exhaust system. Verify exhaust port area for compliance to specifications.
5. Verify ignition system. Inspect spark plug for .750 inch or 20 millimeter nominal reach and stock configuration. Remove ignition cover and visually inspect ignition assembly for stock appearing configuration and class type. Unless otherwise specified, all ignition components must be unaltered stock with the exception that silicone or epoxy repair of coil or ignition module damage is allowed. Inspect ignition timing if specified. 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 (slotting of the mounting holes, machining of the mounting screws, etc.) 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 dimensional conformance to specifications. Verify key and crankshaft keyway width as specified. Crankshaft keyway must be in stock position with no filling and machining to alter keyway position allowed.
6. Verify port timing. Remove cylinder head. Verify any cylinder head requirements as specified. Install a long travel dial indicator on a bridge over the center of the piston. Turn the crankshaft such that the piston comes to top dead center. Zero the indicator at top dead center. Turn the crankshaft to a point slightly beyond the prescribed limit for exhaust port height for that particular engine. Insert the exhaust end of a standard port checking tool, tight against the cylinder wall and hooked under the upper ledge of the highest exhaust port. Both ports may be checked if determination of the highest port is impossible. Turn the crankshaft to contact the top of the piston under the bottom of the tool, locking the tool in place with moderate pressure. Read the indicator. The reading for the exhaust port(s) must be less than or equal to the specification for that particular engine. Similarly, turn the crankshaft to a point slightly beyond the prescribed limit for intake port height for that particular engine. Insert the intake end of a standard port checking tool, through the intake port and hooking the center of the lower



ledge of the intake port. Turn the crankshaft to contact the piston skirt on top of the tool, locking the tool in place with moderate pressure. Read the indicator. The reading for the intake port must be greater than or equal to the specification for that particular engine.

7. Alternate method of checking ports. Visible light check, using stated dimensions minus .125 inch.
8. Exhaust opening duration check (as applicable); Install the degree wheel on the crankshaft of the engine. Insert a piece of .008 inch shim stock into the exhaust port, perpendicular to the chord of the port, and rotate the crankshaft in such a manner as to “lock” the shim in place with the top of the piston. Set a “zero” with the degree wheel pointer or note the degree setting at current location. Remove the shim stock from the port, rotate the crankshaft such that the exhaust port remains open during the rotation. As the piston rises to a closing position for the exhaust port, re-insert the shim stock into the port, again “locking” the shim in place with the top of the piston. The difference between the starting, or “zero” point, on the degree wheel and the ending point is the exhaust opening duration.
9. Verify bore, stroke and displacement. Install a long travel dial indicator on a bridge over the center of the piston. Turn the crankshaft such that the piston comes to top dead center. Zero the indicator at top dead center. Turn the crankshaft until bottom dead center is seen on the indicator. Total indicator reading from top to bottom dead center is the stroke. Using an indicating, two point bore gauge (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:

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

For total cubic centimeter engine displacement (bore and stroke dimensions taken in millimeters) the formula is:

$$[\text{bore} \times \text{bore} \times \text{stroke} \times .7854] / 1000 = \text{total cubic centimeter displacement}$$

10. Verify cylinder. Remove cylinder from the crankcase. Using a light if necessary, visually inspect the port surfaces of the cylinder wall. Unless otherwise specified, all intake and exhaust port surfaces in the cast iron area of the cylinder liner must remain as cast with no alterations allowed. Minor grinding nicks may be present as a result of blending the aluminum portions of the port area but no deliberate machining, chamfering, blending, smoothing, shot peening, glass beading, or other alteration is allowed on the cast iron portion of the port. Likewise, the transfer ports and passages must remain as cast with no alterations as described above. Using a caliper, divider or dedicated chord checking gauge with a .060 inch minimum thickness, verify port dimensions for that particular engine.
11. 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 crankshaft/piston assembly. Inspect crankshaft counterweights for visual and dimensional conformance to specification. Unless otherwise specified, no machining other than polishing and shot peening is allowed to crankshaft counterweights. Verify connecting rod location configuration and conformance to specification. Disassemble crankshaft. Remove connecting rod from crankshaft and piston from connecting rod. Inspect connecting rod for visual and dimensional conformance to specification. Verify crankpins and wrist pin for conformance to specification. Verify piston for visual and dimensional conformance to specification. Verify crankcase pulse-hole diameter and location.

B. TWO CYCLE EXHAUST SYSTEMS

1. Tuned Pipe Exhaust

Unless otherwise specified in the engine's tech sheet or class structure, a tuned pipe exhaust system must consist of either a conventional designed header (mounting flange, tubular head pipe and flex cup), a flex pipe and a silencing can or a conventional designed header (mounting flange and tubular head pipe) and a silencing can. The head and/or flex pipe may be no larger than 1.750 inch nominal diameter and the flex cup in the header and/or silencing can must be designed to accept a head and/or flex pipe no larger than 1.750 inch nominal diameter. All head pipes and flex pipes must be nominally circular in any cross section. Nominal sized tubing diameter allowances apply. Please see section 2. The outside diameter of the silencing can must be 3.5 inches minimum. The exhaust gas outlet hole must be .7854 square inches maximum. The expansion chamber must discharge into the rear half of the silencing can. Multiple pipes are not allowed and there may be no means of adjusting header or flex pipe length. The second or convergent cone may be adjustable. No cooling fins, water jackets, cooling adapters allowed.

2. Restricted Exhaust Systems

All restricted exhaust systems detailed below must be of original manufacture and configuration and securely attached to the engine throughout the event. A loose attachment or assembly fastener is grounds for disqualification. Exhaust temperature probe fittings are allowed. Any unused probe fitting holes must be plugged. Any attempt to circumvent the manufacturer's intended exhaust gas flow is grounds for disqualification. One and one only exhaust gasket must be used. All exhaust deflectors must be a minimum of two inches from the nearest outlet hole(s), measured along axis of hole.

a. RLV SSX dimensional requirements (all dimensions decimal inch):

- Overall length including flange and end cap 5.500+/- .125
- Body length including end cap 4.140+/- .125
- Inlet tube length including flange (on centerline) 2.000+/- .125



- Inlet tube inside diameter 1.515 +/- .030
 - End of inlet tube to center baffle 1.000 +/- .125
 - End of body (less end cap) to center baffle 2.200 +/- .0625
 - Center baffle shall have (14) .380 maximum diameter through holes equally spaced on a 2.937 +/- .0625 bolt circle diameter
 - Body shall have (4) .500 maximum diameter through holes in any configuration or placement originally available from RLV
- b. RLV YBX dimensional requirements (all dimensions decimal inch):
- Overall length including flange and end cap 6.000 +/- .125
 - Body length including end cap 4.000 +/- .125
 - End of inlet tube to center baffle 1.250 maximum (end of inlet tube must be parallel to center baffle within .125)
 - Inlet tube inside diameter 1.375 +/- .062
 - End of body (less end cap) to center baffle 1.375 +/- .125
 - Body outside diameter 3.500 +/- .125
 - Center baffle and end cap shall each have (3) .380 maximum diameter through holes spaced 1.250/1.312 from the adjacent hole. The distance from the centerline of any hole to the opposite side of the baffle or end cap shall be 3.030 minimum.
 - In assembled state, the end cap holes shall be rotated 180° from the center baffle holes.
- c. RLV SBX dimensional requirements (all dimensions decimal inch):
- Overall length 8.500 +/- .125
 - Overall body length including end cap 7.500 +/- .125
 - Inlet tube inside diameter 1.375 +/- .031
 - Inlet tube outside diameter (within body) 1.500 nominal maximum.
 - Inlet tube length 3.250 +/- .0625
 - Inside front end of body to rear face of center baffle 5.000 +/- .125
 - Center baffle shall have (7) .380 maximum diameter through holes equally spaced on a 2.9375 +/- .0625 bolt circle diameter. Center baffle must be 100% edge welded to the inside of the body.
 - Body outside diameter 3.875 +/- .0625
 - End cap shall have one, centralized .9375 +/- .0625 / -0 through hole
 - SBX muffler must be used with RLV 26S header. Flex pipe shall be 1.750 nominal max outside diameter, .100 maximum wall thickness, rigid pipe, circular in any cross section. Distance from rear cylinder wall to end of flex pipe shall be 11.0 minimum, *RLV Jr. Enduro restrictor is not to be included as part of overall flex length dimension.*
- d. KPV3 exhaust pipe (all dimensions decimal inch):
- Header must be stock RLV KPV100.
 - Header shall have an overall length inside header pipe of 3.9375 +/- .250.
 - Flex pipe 1.750 nominal maximum diameter.
 - Distance from rear cylinder wall to end of flex pipe shall be 12.0 minimum, 12.5 maximum.
 - Exhaust pipe flex cup inside diameter 1.750 nominal maximum.
 - Length from mating diameter to start of straight can 6.575 +/- .250 measured on true centerline.
 - Length from start of straight can to centerline of outlet holes 10.550 +/- .250.
 - Length of straight can 16.875 +/- .250.
 - Outside diameter of straight can 3.570 +/- .188.
 - Distance from end of can to end baffle 4.375 +/- .250.
 - End baffle shall have (3) maximum holes, .380 maximum diameter.
 - Distance between end and center baffle 3.000 +/- .250.
 - Center baffle transfer pipe outside diameter 1.500 nominal; length 6.500 +/- .250.
 - Maximum of (3) external outlet holes, .500 maximum diameter.
- e. KPV2 exhaust pipe (all dimensions decimal inch):
- Header must be stock RLV KPV100
 - Header shall have an overall length inside header pipe of 3.9375 +/- .250
 - Flex pipe 1.750 nominal maximum diameter
 - Distance from rear cylinder wall to end of flex pipe shall be 12.0 minimum, 12.5 maximum.
 - Exhaust pipe flex cup inside diameter 1.750 nominal maximum
 - Length from mating diameter to start of straight can 7.880 +/- .250 measured on true centerline
 - Length from start of straight can to centerline of outlet holes 10.550 +/- .250
 - Length of straight can 15.875 +/- .250
 - Outside diameter of straight can 3.570 +/- .188
 - Distance from end of can to end baffle 3.375 +/- .250
 - End baffle shall have (3) maximum holes, .380 maximum diameter



- Distance between end and center baffle 3.000+/- .250
 - Center baffle transfer pipe outside diameter 1.500 nominal; length 5.500+/- .250
 - Maximum of (3) external outlet holes, .500 maximum diameter.
- f. KPV1 exhaust pipe (all dimensions decimal inch):
- Header must be stock RLV KPV100
 - Header shall have an overall length inside header pipe of 3.9375 +/- .250
 - Flex pipe 1.750 nominal maximum diameter
 - Distance from rear cylinder wall to end of flex pipe shall be 12.0 minimum, 12.5 maximum
 - Exhaust pipe flex cup inside diameter 1.750 nominal maximum
 - Length from mating diameter to start of straight can 8.935+/- .250 measured on true centerline
 - Length from start of straight can to centerline of outlet holes 10.550+/- .250
 - Length of straight can 14.875+/- .250
 - Outside diameter of straight can 3.570+/- .188
 - Distance from end of can to end baffle 2.375+/- .250
 - End baffle shall have (3) maximum holes, .380 maximum diameter
 - Distance between end and center baffle 3.000+/- .250
 - Center baffle transfer pipe outside diameter 1.500 nominal; length 4.500+/- .250
 - Maximum of (3) external outlet holes, .500 maximum diameter
- g. RLV IR1 exhaust header, flex and pipe (all dimensions decimal inch):
- Any Exhaust Header with 1.750 nominal outside diameter flex or pipe
 - Headers may be angled or straight. Straight headers shall have overall length of inside header pipe 4.875+/- .250. Angled headers shall be measured on both sides, the short side length shall be 4.750+/- .250; the long side length shall be 5.000+/- .250.
 - Header flange may be matched to block
 - Flex pipe outside diameter 1.750 nominal maximum. Wall thickness .080.
 - Length from rearmost tangent of piston skirt to end of flex pipe 9.0 minimum.
 - Exhaust pipe flex mating diameter 1.750 nominal maximum.
 - Length from mating diameter to largest diameter of pipe 13.250+/- .250, measured on true centerline.
 - Largest cone diameter of pipe 4.500+/- .186
 - Length from largest cone diameter to closest tangent of outlet hole 7.375+/- .250
 - Length of outlet hole 1.500+/- .020
 - Width of outlet hole .565+/- .020
 - Length of straight section of can 15.750+/- .250
 - Outside diameter of straight section of can 3.500 nominal.
- h. US820 specific exhaust system (all dimensions decimal inch):
- Header part number 100820 and muffler part number 300820 only. Must be unaltered stock except for minor grinding of header to match exhaust gasket and removal of excess weld at header flange.
 - Connector pipe bend 20 degrees maximum.
 - Pipe length 5.250 minimum, 5.500 maximum.
 - Pipe outside diameter 1.750 nominal.
 - One exhaust gasket permitted. Thickness .032 minimum, .042 maximum.
 - Header flange thickness .242 minimum, .252 maximum.
 - Muffler inner pipe length 23.750 minimum, 24.250 maximum.
 - Outlet hole diameter .500 maximum.

C. TWO CYCLE FUEL DELIVERY SYSTEMS

1. General Requirements

- a. External fuel pumps are not allowed.
- b. Except in the case of throttle shaft sealing devices, some models' venturi and 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. Inlet tract length applies from top to bottom of inlet tract to forward most tangent of piston. Angle cutting of carburetor mounting face to circumvent inlet tract length requirements is prohibited.
- c. Air filter adapters if used, must have either a proper fitting air filter or air box in place. Adapter may not be configured as an air ram or velocity stack. Maximum corner break on inside diameter of adapter .030 inch, all other inside or outside corner radii, .125 inch radius maximum. Flange thickness maximum .150 inch.



- d. Induction silencers are mandatory in all two cycle classes, except enduro and sprint enduro classes, in which the use of induction silencers is optional.
- e. Any induction silencer used must conform to the following specifications:
 - Length less rubber mounting flange: 10.236 inch minimum, 11.022 inch maximum.
 - Circumference of main body: 16.535 inch minimum, 18.109 inch maximum.
 - Baffle tube length: 3.732 inch minimum.
 - Baffle tube inside diameter: .905 inch maximum.
 - Engines up to 110cc displacement must have two baffle tubes.
 - Engines over 110cc displacement must have three baffle tubes.
 - US820 engines may use either two baffle tube or three baffle tube induction silencer.
 - External filter adapters maybe utilized provided air enters the engine only via the baffle tubes specified above. Baffle tubes must extend above the floor of the filter adapter. Height of filter adapter: 1.25 inch maximum. All corners of filter adapter may have a corner break of .125 inch maximum.

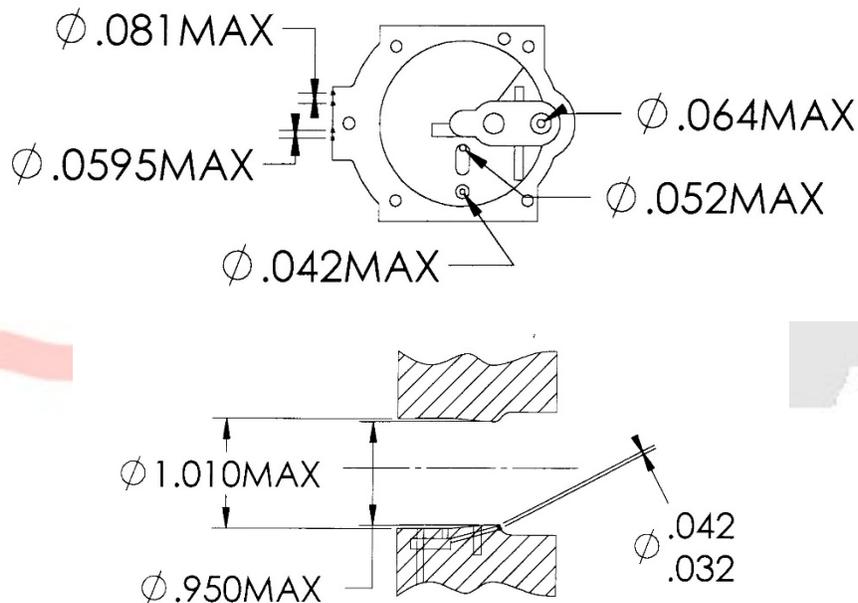
2. Homologated carburetors

a. Walbro

i. Model WB3A

- High speed needle seat diameter .081 inch maximum.
- Low speed needle seat diameter .0595 inch maximum.
- Idle jet diameter .042 inch maximum.
- Transition jet diameter .052 inch maximum.
- Air pre-mix orifice diameter .032 inch minimum, .042 inch maximum.
- Fuel inlet valve seat diameter .064 inch maximum.
- Venturi diameter .950 inch maximum.
- Throttle bore diameter 1.010 inch maximum.
- High speed jet diameter .074 inch maximum.
- Throttle bore length .500 inch maximum.
- Overall length 1.480 inch minimum.
- Air filter adapter inside diameter 1.150 inch minimum.

Walbro WB3A



Note: Diaphragms may be captive or non-captive type, rubber or Teflon. Pumper diaphragm to be fully intact, unaltered stock. Both circuit plate and inlet needle screens must be intact. If machined, the venturi diameter may not be taper bored. The air entry area (from top face of carburetor to beginning of venturi diameter) and the transition area from venturi diameter to throttle bore must be as cast. Spacer must be manufactured of phenolic material, inside diameter must be straight bored, 1.000 inch minimum, 1.050 inch maximum. Carburetor mounting plate must be manufactured of aluminum, inside diameter must be straight bored, 1.000 inch minimum, 1.050 inch maximum.



ii. Model WA55B

- High speed needle seat diameter .037 inch maximum.
- Low speed needle seat diameter .037 inch maximum.
- Venturi diameter .440 inch maximum.
- Throttle bore diameter .630 inch maximum.
- Throttle bore length .480 inch maximum.
- Overall length 1.100 inch minimum.
- Air filter adapter inside diameter .750 inch minimum.
- Butterfly thickness .025 inch minimum.
- Inlet tract length 2.600 inch minimum, 2.800 inch maximum.
- Intake manifold length .750 inch minimum, .800 inch maximum.
- Intake manifold inside diameter .625 inch minimum, .655 inch maximum.
- Intake manifold flange thickness .450 inch minimum, .484 inch maximum.

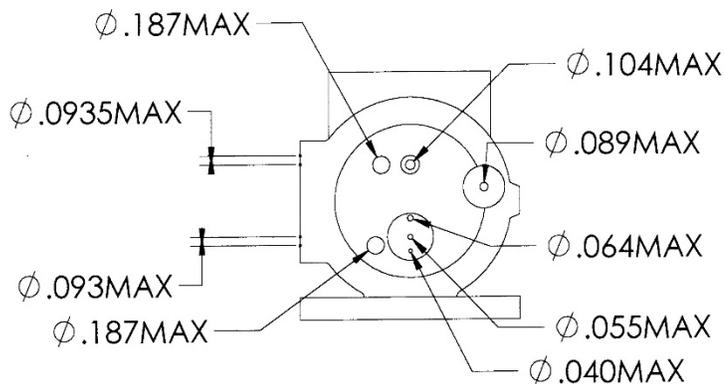
b. Mikuni

i. Model BMC-34G

- High speed needle seat diameter .0935 inch maximum.
- Low speed needle seat diameter .093 inch maximum.
- Idle speed pick-off diameter .187 inch maximum.
- Idle jet diameter .040 inch maximum.
- Not applicable.
- Transition jet diameter .055 inch maximum.
- Air pre-mix orifice diameter .064 inch maximum.
- Fuel inlet valve seat diameter .089 inch maximum.
- High speed fuel pick-off diameter .187 inch maximum.
- High speed jet check valve .104 inch maximum.
- Throttle bore diameter 1.360 inch maximum.
- Air filter adapter inside diameter 1.450 inch minimum.

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

Mikuni BMC-34G



c. Tillotson

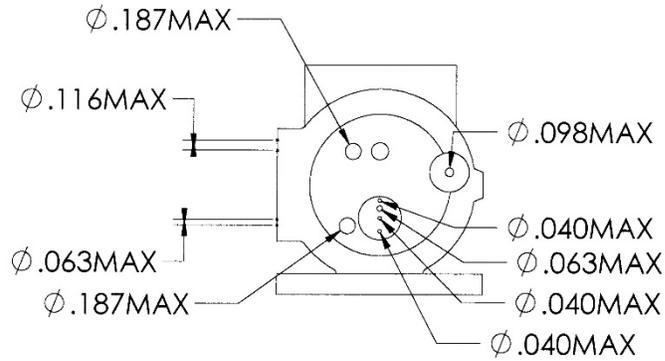
i. HR191

- High speed needle seat diameter .116 inch maximum.
- Low speed needle seat diameter .063 inch maximum.
- Idle speed pick-off diameter .187 inch maximum.
- Idle jet diameter .040 inch maximum.
- Transition jet diameter .040 inch maximum.
- Transition jet diameter .063 inch maximum.
- Air pre-mix orifice diameter .040 inch maximum.
- Fuel inlet valve seat diameter .098 inch maximum.
- High speed fuel pick-off diameter .187 inch maximum.
- Throttle bore diameter 1.360 inch maximum.
- Air filter adapter inside diameter 1.450 inch minimum.

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



Tillotson HR191



ii. HL360A

- Venturi diameter .950 inch maximum.
- Throttle bore diameter 1.065 inch maximum.
- Overall length 2.590 inches minimum.
- Air filter adapter inside diameter 1.300 inch minimum

Notes: Metering hole sizes non-tech. Butterfly may not be altered from stock in any way. Modifications to venturi and throttle bore limited to polishing only.-

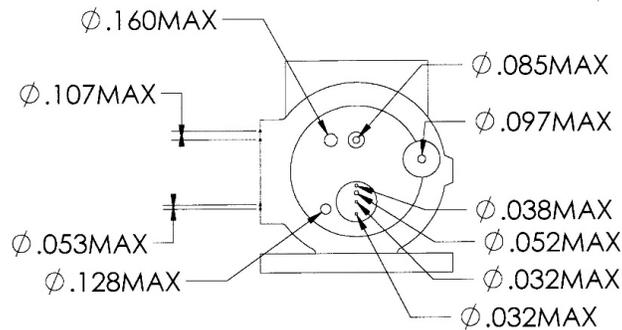
iii. HR181, HR181A, HR184 and HR184A*

- High speed needle seat diameter .107 inch maximum.
- Low speed needle seat diameter .053 inch maximum.
- Idle speed pick-off diameter .128 inch maximum.
- Idle jet diameter .032 inch maximum.
- Transition jet diameter .032 inch maximum.
- Transition jet diameter .052 inch maximum.
- Air pre-mix orifice diameter .038 inch maximum.
- Fuel inlet valve seat diameter .097 inch maximum.
- High speed fuel pick-off diameter .160 inch maximum.
- High speed jet check valve (HR184A only) .085 inch maximum.
- Throttle bore diameter 1.325 inch maximum.
- Air filter adapter inside diameter 1.450 inch minimum.

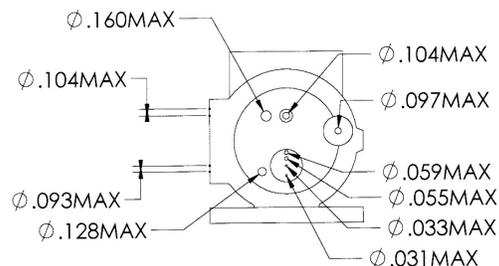
* HR184A comes in two separate hole configurations. See (d) below.

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

Tillotson HR181,HR181A,HR184,HR184A



Tillotson HR184A Alternate configuration



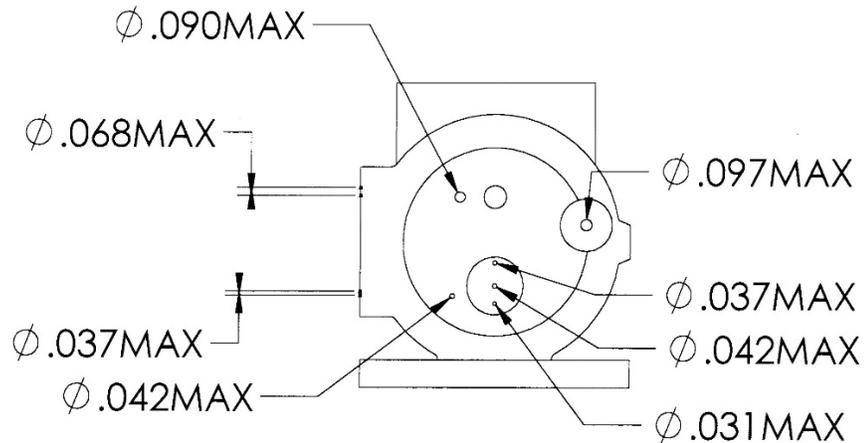
- iv. HR184A (alternate configuration)
- High speed needle seat diameter .104 inch maximum
 - Low speed needle seat diameter .093 inch maximum
 - Idle speed pick-off diameter .128 inch maximum.
 - Idle jet diameter .031 inch maximum.
 - Transition jet diameter .033 inch maximum.
 - Transition jet diameter .055 inch maximum.
 - Air pre-mix orifice diameter .059 inch maximum.
 - Fuel inlet valve seat diameter .097 inch maximum.
 - High speed fuel pick-off diameter .160 inch maximum.
 - High speed jet check valve .104 inch maximum.
 - Throttle bore diameter 1.325 inch maximum.
 - Air filter adapter inside diameter 1.450 inch minimum.

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

- v. HL227A, HL250A, HL304A, HL307A, HL317A, HL317E, HL322 and HL334A
- High speed needle seat diameter .068 inch maximum.
 - Low speed needle seat diameter .037 inch maximum.
 - Idle speed pick-off diameter .042 inch maximum. (omit for HL250A)
 - Idle jet diameter .031 inch maximum.
 - Transition jet diameter .042 inch maximum.
 - Air pre-mix orifice diameter .037 inch maximum.
 - Fuel inlet valve seat diameter .097 inch maximum.
 - High speed fuel pick-off diameter .090 inch maximum.
 - High speed jet check valve must be intact and unmodified.
 - Throttle bore diameter 1.195 inch maximum.
 - Air filter adapter inside diameter 1.150 inch minimum

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



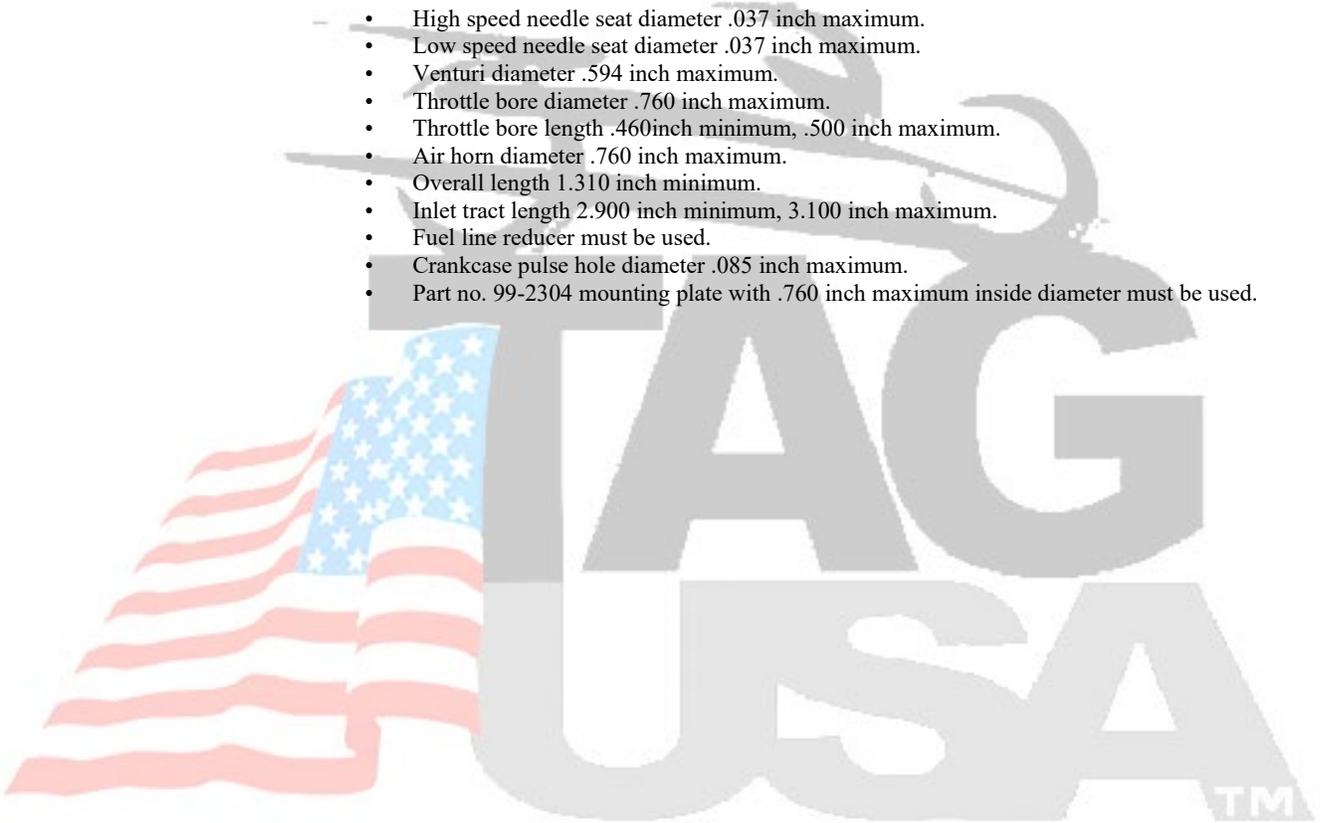
d. KPV

i. Model KPV1

- High speed needle seat diameter .037 inch maximum.
- Low speed needle seat diameter .037 inch maximum.
- Venturi diameter .440 inch maximum.
- Throttle bore diameter .630 inch maximum.
- Throttle bore length .480inch maximum.
- Overall length 1.100 inch minimum.
- Butterfly thickness .025 inch minimum.
- Inlet tract length 2.900 inch minimum, 3.100 inch maximum.
- Fuel line reducer must be used.
- Crankcase pulse hole diameter .085 inch maximum.
- Part no. 99-2321 mounting plate with .630 inch maximum inside diameter must be used.

ii. Model KPV2

- High speed needle seat diameter .037 inch maximum.
- Low speed needle seat diameter .037 inch maximum.
- Venturi diameter .594 inch maximum.
- Throttle bore diameter .760 inch maximum.
- Throttle bore length .460inch minimum, .500 inch maximum.
- Air horn diameter .760 inch maximum.
- Overall length 1.310 inch minimum.
- Inlet tract length 2.900 inch minimum, 3.100 inch maximum.
- Fuel line reducer must be used.
- Crankcase pulse hole diameter .085 inch maximum.
- Part no. 99-2304 mounting plate with .760 inch maximum inside diameter must be used.



Ignition system: Only stock spark plugs with a .750 inch or 20 millimeter nominal reach are allowed. Approved flywheels are Yamaha part numbers 7F6-85551-00, 7F6-85551-50 (Old style), 7F6-85551-01, 7F6-85551-51 and 7F6-85510-03-00 (New style). Flywheel outside diameter 2.350 inch minimum. New style flywheel thickness over (3) lugs .950 inch minimum, all other areas .817 inch minimum. New style lug length, (3) places .750 inch minimum. Old style flywheel thickness .827 minimum. Flywheel and crankshaft keyway width .1173 inch minimum, .1201 inch maximum. Key width .115 inch minimum. Ignition module must be original Yamaha, PRD or Atom, stock unaltered, silicone or epoxy damage repair is allowed. Coil may be repaired with silicone or epoxy. Alterations of any type to facilitate adjustment of flywheel or coil position to alter timing are strictly prohibited. The leading edge of the flywheel pickup magnet must line up visually with the trailing edge of the coil leg between .015 inch before top dead center to top dead center.

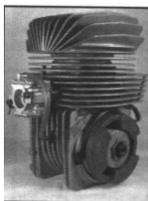
Piston requirements: Piston coating below the ring land only is approved. Piston skirt length must be the same within .015 inch. Maximum .030 piston skirt corner break, measured axially. Circlip circumferential height .250 inch maximum, axial width .200 inch maximum. Piston transfer areas must be as cast. Approved pistons are Yamaha, Burris (single or double ring), Wiseco, Vinart and KSI RKE-787. All approved pistons have manufacturer's name cast inside and this must be present. Piston must be domed. All pistons (except Burris double ring) must have one ring only. Rings must be manufactured of ferrous material. Wrist pin length 1.565 inch minimum. Wrist pin outside diameter .550 inch minimum, .552 inch maximum. Wrist pin inside diameter .400 inch maximum. Wrist pins must be manufactured of ferrous material.

Connecting rod requirements: Approved connecting rods are Yamaha part numbers 7F6-11651-01, 7F6-11651-02 and 50W-11651-00 only. The connecting rod must be of original manufacture and stock appearing with no machining, grinding, blending or polishing allowed. Shot peening the connecting rod is allowed. Center of crankshaft journal diameter to center of wrist pin diameter 3.932 inch minimum, 3.942 inch maximum. Top or bottom connecting location is approved. If top location method is employed, the top of the rod shall have two or more spacers manufactured of steel, brass or aluminum and loose or caged bearings. The bottom of the rod shall have no spacers and a caged bearing. If bottom location method is employed, the bottom of the rod shall have a caged bearing and one spacer per side. The top of the rod shall have caged or loose bearings. If loose bearings are used at top of rod, thrust washers are allowed.

Crankshaft requirements: Original manufacture only. Crankshaft counterweights outside diameter 3.410 inch minimum, 3.435 inch maximum. Width over bearing lands 1.790 inch minimum. Inside width between counterweights .343 inch minimum. Concentric bushings may be added to repair damaged crankshaft journals. Removal of material in bearing recess area is allowed for bearing clearancing only, not for lightening or balancing purposes. Either stepped/plugged or non-stepped/non-plugged crankpins are allowed. If stepped/plugged crankpins are employed, the plugs must be in place with crankpin inside diameter of .400 inch minimum. If non-stepped/non-plugged crankpins are employed there may not be any plugs installed with crankpin inside diameter .390 inch minimum, .425 inch maximum.

Additional requirements: Surface finish of aluminum portion of intake and exhaust ports are non-tech. Crankcase pulse hole inside diameter .128 inch maximum. Pulse hole may be relocated to front of engine for use with reversed cylinder. Old style cylinders (those without cast markings) are allowed for use. The aluminum portions of the transfer passages must be as cast with the exception of minor blending at the junction of the cast iron only. The top cast iron surface of one exhaust port may be ground to bring its dimension closer to specification. Port must be ground basically perpendicular to the bore, no freeporting. Port height dimensions apply to altered port. When altered in this fashion, an "X" must be placed above the altered port for identification.





Engine Specific Tech Sheet for: Komet K-71 (piston port)

Description: Two cycle, single cylinder, piston port

Displacement: 6.201 cubic inches, 101.61 cubic centimeters maximum

Combustion chamber volume: 11 cubic centimeters minimum

Cylinder head requirements: One single O-ring, groove cut into cylinder only, may be used as a sealing device. Cylinder head gasket shall aluminum or copper. Gasket is not required.

Bore and stroke: 2.085 inch maximum bore, 1.816 inch maximum stroke.

Intake system: Piston port

Carburetor type: Walbro WB3A only

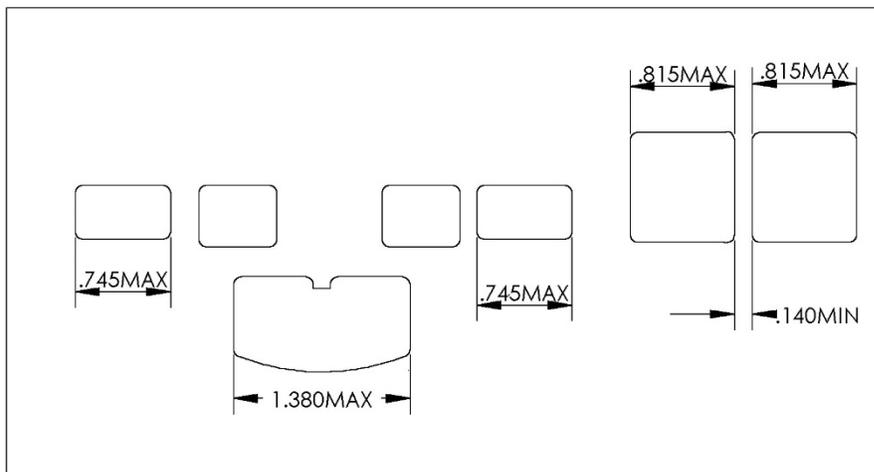
Inlet tract length: 2.600 inches minimum, 2.800 inches maximum

Intake port height dimension: .775 inch maximum

Exhaust port height dimension: 1.155 inch minimum

Port dimension diagram:

K71 Port Diagram



Ignition system: Approved ignition systems are as follows: MotoPlat 9600-903-1 and 9600-916-1, Ducati 436161191 and 436161190, PVL, and Selletra P3356. Serial numbers of rotor and stator for MotoPlat and Ducati must match. Approved Ducati coil 443213220090 only. Approved PVL ignition systems have potted or taped stators. Legal potted stators are numbered 1050, 1051, 1053, 1056, 1057, 1060, 1062, and 1063. Legal taped stators are numbered 01, 02, 04, 05, 06, 09, 10, 11, 12, 16 and 18. Approved PVL coil 105.458 only.

Piston requirements: The only approved piston is IAME or Burris. Piston coating allowed below the ring-land only. Circlip notch .250 inch maximum circumferential height, .1875 inch maximum axial width. Maximum .030 inch axial skirt corner break. Piston skirts must be the same length within .015 inch. Stock wrist pin only; 1.565 inch minimum length; outside diameter .550 inch minimum, .552 inch maximum; inside diameter .400 inch maximum.

Connecting rod requirements: Length 3.774 inch minimum, 3.786 inch maximum. The connecting rod must be of original manufacture and stock appearing with no machining, grinding, blending or polishing allowed. Shot peening the connecting rod is allowed. Rod may be located either top or bottom and interchange of stock length connecting rods from other homologated piston port engines is allowed.

Crankshaft requirements: Counterweights outside diameter 3.255 inch minimum, 3.275 inch maximum. Width across bearing lands 1.710 inch minimum. Distance between counterweights .250 inch minimum.

Additional requirements: Crankcase pulse hole diameter .128 inch maximum. Any or all ports, including the cast iron liner, may be changed in size and/or finish. Port sizes and height must conform to specifications. Aluminum area of transfer passages to remain unaltered, except to blend at junction of cast iron.





Engine Specific Tech Sheet for: Parilla PV-92 (piston port)

Description: Two cycle, single cylinder, piston port

Displacement: 6.143 cubic inches, 100.66 cubic centimeters maximum

Combustion chamber volume: 11 cubic centimeters minimum

Cylinder head requirements: One single O-ring, groove cut into cylinder only, may be used as a sealing device. Cylinder head gasket shall aluminum or copper. Gasket is not required.

Bore and stroke: 1.990 inch maximum bore, 1.975 inch maximum stroke.

Intake system: Piston port

Carburetor type: Walbro WB3A only

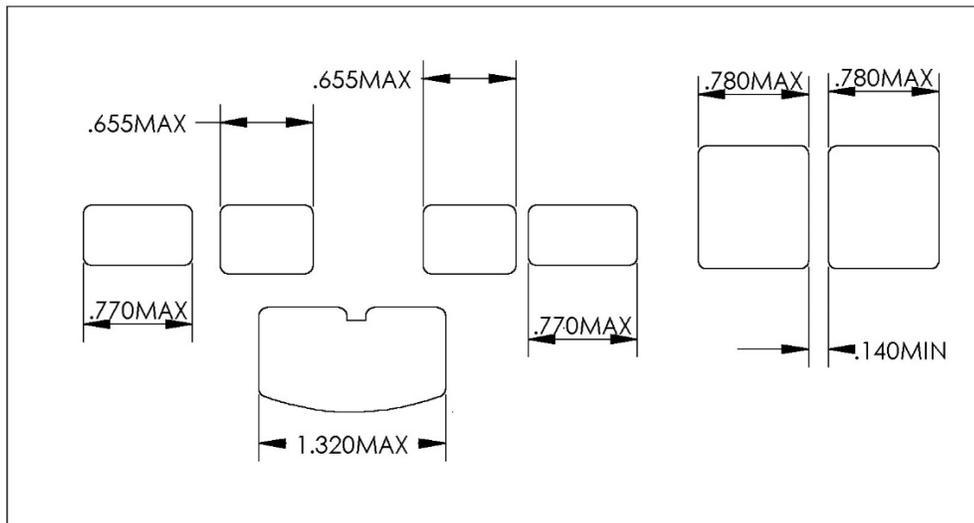
Inlet tract length: 2.600 inches minimum, 2.800 inches maximum

Intake port height dimension: .820 inch maximum

Exhaust port height dimension: 1.280 inch minimum

Port dimension diagram:

PV92 Port Diagram



Ignition system: Approved ignition systems are as follows: MotoPlat 9600-903-1 and 9600-916-1, Ducatti 436161191 and 436161190, PVL, and Selletra P3356. Serial numbers of rotor and stator for MotoPlat and Ducatti must match. Approved Ducatti coil 443213220090 only. Approved PVL ignition systems have potted or taped stators. Legal potted stators are numbered 1050, 1051, 1053, 1056, 1057, 1060, 1062, and 1063. Legal taped stators are numbered 01, 02, 04, 05, 06, 09, 10, 11, 12, 16 and 18. Approved PVL coil 105.458 only.

Piston requirements: The only approved piston is IAME. Piston coating allowed below the ring-land only. Circlip notch .250 inch maximum circumferential height, .1875 inch maximum axial width. Maximum .030 inch axial skirt corner break. Piston skirts must be the same length within .015 inch. Stock wrist pin only; 1.520 inch minimum length; outside diameter .550 inch minimum, .552 inch maximum; inside diameter .405 inch maximum.

Connecting rod requirements: Length 3.932 inch minimum, 3.942 inch maximum. The connecting rod must be of original manufacture and stock appearing with no machining, grinding, blending or polishing allowed. Shot peening the connecting rod is allowed. Rod may be located either top or bottom and interchange of stock length connecting rods from other homologated piston port engines is allowed.

Crankshaft requirements: Counterweights outside diameter 3.295 inch minimum, 3.315 inch maximum. Width across bearing lands 1.790 inch minimum. Distance between counterweights .250 inch minimum.

Additional requirements: Crankcase pulse hole diameter .128 inch maximum. Any or all ports, including the cast iron liner, may be changed in size and/or finish. Port sizes and height must conform to specifications. Aluminum area of transfer passages to remain unaltered, except to blend at junction of cast iron.





Engine Specific Tech Sheet for: KPV100

Description: Two cycle, single cylinder, piston port

Displacement: 6.201 cubic inches, 101.61 cubic centimeters maximum

Combustion chamber volume: 11 cubic centimeters minimum

Cylinder head requirements: One single O-ring, groove cut into cylinder only, may be used as a sealing device. Cylinder head gasket shall aluminum or copper. Gasket is not required.

Bore and stroke: 2.085 inch maximum bore, 1.816 inch maximum stroke.

Intake system: Piston port

Carburetor type: Walbro WB3A only

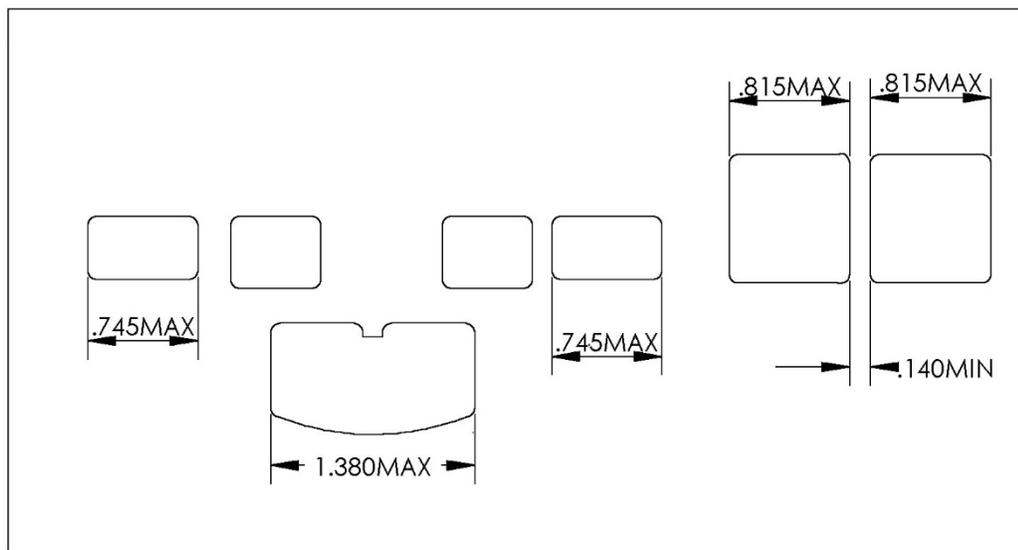
Inlet tract length: 2.600 inches minimum, 2.800 inches maximum

Intake port height dimension: .775 inch maximum

Exhaust port height dimension: 1.155 inch minimum

Port dimension diagram:

HPV100 Port Diagram



Ignition system: Selletra P3356 only.

Piston requirements: The only approved piston is IAME. Piston coating allowed below the ring-land only. Circlip notch .250 inch maximum circumferential height, .1875 inch maximum axial width. Maximum .030 inch axial skirt corner break. Piston skirts must be the same length within .015 inch. Stock wrist pin only; 1.565 inch minimum length; outside diameter .550 inch minimum, .552 inch maximum; inside diameter .400 inch maximum.

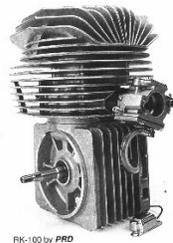
Connecting rod requirements: Length 3.774 inch minimum, 3.786 inch maximum. The connecting rod must be of original manufacture and stock appearing with no machining, grinding, blending or polishing allowed. Shot peening the connecting rod is allowed.

Crankshaft requirements: Counterweights outside diameter 3.255 inch minimum, 3.275 inch maximum. Width across bearing lands 1.710 inch minimum. Distance between counterweights .250 inch minimum.

Additional requirements: Crankcase pulse-hole diameter .128 inch maximum. Any or all ports, including the cast iron liner, may be changed in size and/or finish. Port sizes and height must conform to specifications. Aluminum area of transfer passages to remain unaltered, except to blend at junction of cast iron.

Clutch: For KPV100 only classes, must be unaltered, stock, dry KPV EXPD-A only, with 6000 rpm maximum stall speed





Engine Specific Tech Sheet for: PRD RK100 (piston port)

Description: Two cycle, single cylinder, piston port

Displacement: 6.143 cubic inch / 100.662 cubic centimeter maximum

Combustion chamber volume: 11.00 cubic centimeter minimum

Cylinder head requirements: One single O-ring, groove cut into cylinder only, may be used as a sealing device. Cylinder head gasket shall aluminum or copper. Gasket is not required.

Bore and stroke: 1.990 inch maximum bore, 1.975 inch maximum stroke

Intake system: Piston port

Carburetor type: Walbro WB3A only

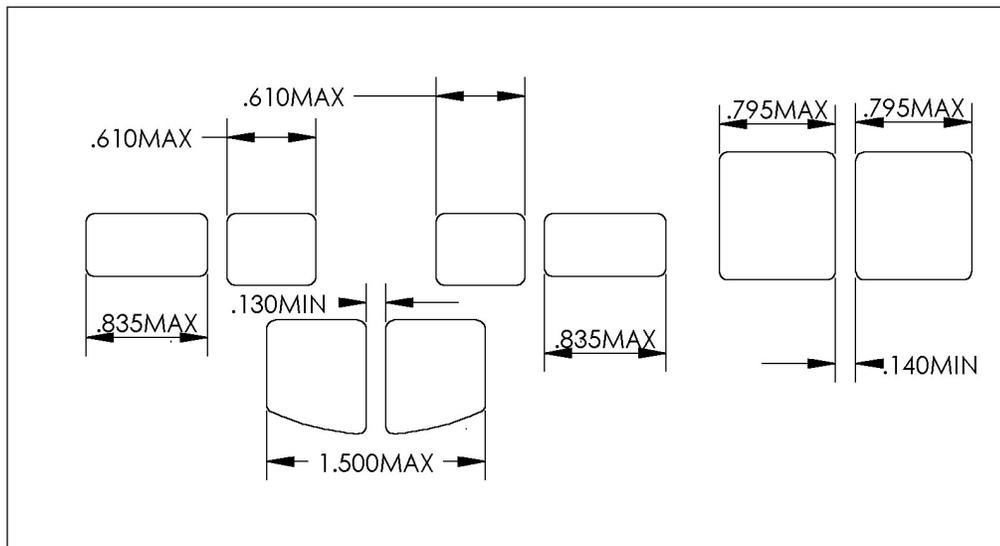
Inlet tract length: 2.600 inch minimum, 2.800 inch maximum

Intake port height dimension: .835 inch maximum

Exhaust port height dimension: 1.255 inch minimum

Port dimension diagram:

PRD RK100 Port Diagram



Ignition system: Approved ignition system must be of PRD original manufacture and stock appearing. PRD name shall be embossed on coil and TCI. Lidadenki or PRD flywheel only.

Piston requirements: The only approved piston is PRD. Piston coating allowed below the ring-land only. Circlip notch .250 inch maximum circumferential height, .1875 inch maximum axial width. Maximum .030 inch axial skirt corner break. Piston skirts must be the same length within .015 inch. Stock wrist pin only; 1.520 inch minimum length; outside diameter .550 inch minimum, .552 inch maximum; inside diameter .405 inch maximum.

Connecting rod requirements: Approved connecting rod is forged PRD only. Center of crankshaft journal diameter to center of wrist pin diameter 3.932 inch minimum, 3.942 inch maximum. Bottom connecting rod location only is approved.

Crankshaft requirements: Original manufacture only. Crankshaft counterweights outside diameter 3.285 inch minimum, 3.310 inch maximum. Width over bearing lands 1.790 inch minimum. Inside width between counterweights .235 inch minimum.

Additional requirements: Surface finish of aluminum portion of intake and exhaust ports are non-tech. Crankcase pulse hole inside diameter .128 inch maximum. The aluminum portions of the transfer passages must be as cast with the exception of minor blending at the junction of the cast iron only.





Engine Specific Tech Sheet for: Comer P50 and P51 (piston port)

Description: Two cycle, single cylinder, piston port

Displacement: 6.205 cubic inches, 101.68 cubic centimeters maximum

Combustion chamber volume: P50-11 cubic centimeters minimum P51-12cc w/ .048 min Squish

Cylinder head requirements: One single O-ring, groove cut into cylinder only, may be used as a sealing device. Cylinder head gasket shall aluminum or copper. Gasket is not required.

Bore and stroke: 1.990 inch maximum bore, 1.995 inch maximum stroke.

Intake system: Piston port

Carburetor type: Walbro WB3A only

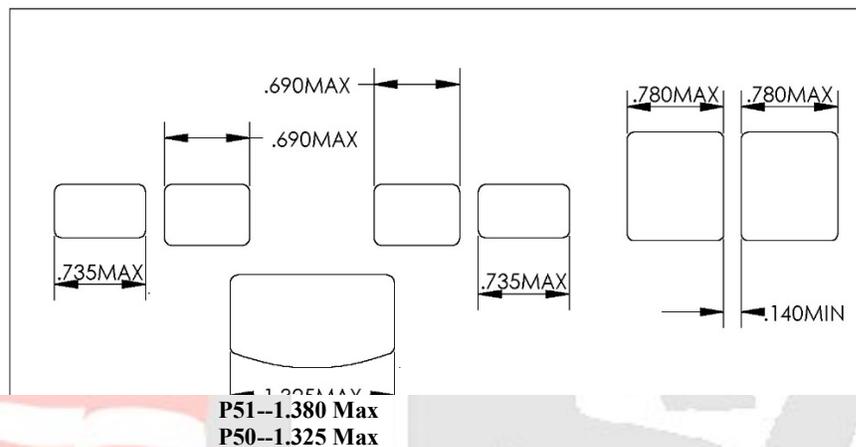
Inlet tract length: 2.600 inches minimum, 2.800 inches maximum

Intake port height dimension: P50--.835 inch maximum P51--.830

Exhaust port height dimension: 1.295 inch minimum

Port dimension diagram:

Comer P50/P51 Port Diagram



Ignition system: Approved ignition systems are as follows: MotoPlat 9600-903-1 and 9600-916-1, Ducati 436161191 and 436161190, PVL, and Selletra P3356. Serial numbers of rotor and stator for MotoPlat and Ducati must match. Approved Ducati coil 443213220090 only. Approved PVL ignition systems have potted or taped stators. Legal potted stators are numbered 1050, 1051, 1053, 1056, 1057, 1060, 1062, and 1063. Legal taped stators are numbered 01, 02, 04, 05, 06, 09, 10, 11, 12, 16 and 18. Approved PVL coil 105.458 only. P51 min timing .090

Piston requirements: Approved pistons are IAME or ASSO. Piston coating allowed below the ring-land only. Circlip notch .250 inch maximum circumferential height, .1875 inch maximum axial width. Maximum .030 inch axial skirt corner break. Piston skirts must be the same length within .015 inch. Stock wrist pin only; 1.520 inch minimum length; outside diameter .550 inch minimum, .552 inch maximum; inside diameter .405 inch maximum.

Connecting rod requirements: Length 3.932 inch minimum, 3.942 inch maximum. The connecting rod must be of original manufacture and stock appearing with no machining, grinding, blending or polishing allowed. Shot peening the connecting rod is allowed. Rod may be located either top or bottom and interchange of stock length connecting rods from other homologated piston port engines is allowed

Crankshaft requirements: Counterweights outside diameter 3.335 inch minimum, 3.355 inch maximum. Width across bearing lands 1.760 inch minimum. Distance between counterweights .260 inch minimum.

Additional requirements: Crankcase pulse hole diameter .128 inch maximum. Any or all ports, including the cast iron liner, may be changed in size and/or finish. Port sizes and height must conform to specifications. Aluminum area of transfer passages to remain unaltered, except to blend at junction of cast iron.



Engine Specific Tech Sheet for: Comer-ARC (piston port)

Description: Two cycle, single cylinder, piston port

Displacement: 6.201 cubic inch / 101.61 cubic centimeter maximum

Combustion chamber volume: 11.00 cubic centimeter minimum

Cylinder head requirements: Matching or machining of the cylinder head or cylinder liner to accept a sealing device is prohibited. The cylinder face groove must be flat bottomed with the outside diameter of the face groove being the only method allowed for locating the cylinder head gasket. The gasket mating face of the cylinder head must be flat with no means employed to locate the cylinder head gasket. Cylinder head gasket shall be manufactured of aluminum or copper only, having a 2.580 inch maximum outside diameter.

Bore and stroke: 2.085 inch maximum bore, 1.816 inch maximum stroke

Intake system: Piston port

Carburetor type: Walbro WB3A only

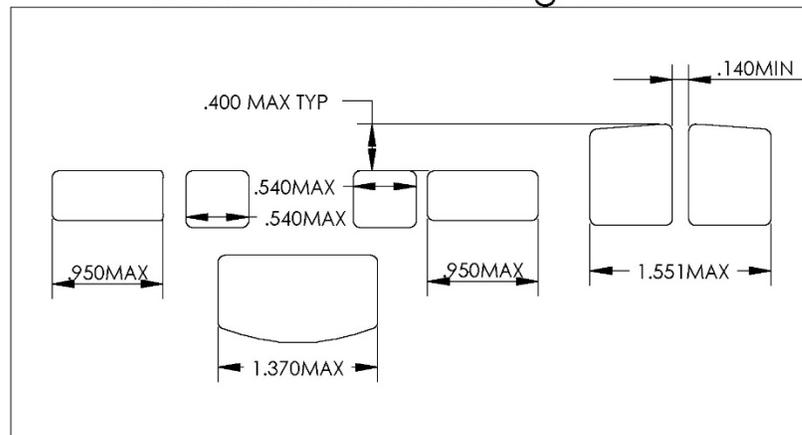
Inlet tract length: 2.600 inch minimum, 2.800 inch maximum

Intake port height dimension: .775 inch maximum

Exhaust port height dimension: 1.155 inch minimum

Port dimension diagram:

Comer ARC Port Diagram



Ignition system: Approved ignition systems are as follows: MotoPlat 9600-903-1 and 9600-916-1, Ducatti 436161191 and 436161190, PVL, and Selletra P3356. Serial numbers of rotor and stator for MotoPlat and Ducatti must match. Approved Ducatti coil 443213220090 only. Approved PVL ignition systems have potted or taped stators. Legal potted stators are numbered 1050, 1051, 1053, 1056, 1057, 1060, 1062, and 1063. Legal taped stators are numbered 01, 02, 04, 05, 06, 09, 10, 11, 12, 16 and 18. Approved PVL coil 105.458 only.

Piston requirements: Piston coating below the ring land only is approved. Piston skirt length must be the same within .015 inch. Maximum .030 piston skirt corner break, measured axially. Circlip circumferential height .250 inch maximum, axial width .200 inch maximum. Piston transfer areas must be as cast. Approved pistons are forged ARC, Yamaha, Burris (single or double ring), Wiseco, Vinart and KSI RKE-787. All approved pistons have manufacturer's name cast inside and this must be present. Piston must be domed. All pistons (except Burris) must have one ring only. Rings must be manufactured of ferrous material. Wrist pin length 1.565 inch minimum. Wrist pin outside diameter .550 inch minimum, .552 inch maximum. Wrist pin inside diameter .400 inch maximum. Wrist pins must be manufactured of ferrous material.

Connecting rod requirements: Approved connecting rod is forged ARC only. Center of crankshaft journal diameter to center of wrist pin diameter 3.932 inch minimum, 3.942 inch maximum. Bottom connecting rod location is required.

Crankshaft requirements: Original manufacture only. Crankshaft counterweights outside diameter 3.410 inch minimum, 3.435 inch maximum. Width over bearing lands 1.790 inch minimum. Inside width between counterweights .335 inch minimum. Concentric bushings may be added to repair damaged crankshaft journals. Removal of material in bearing area is allowed for bearing clearance only, not for lightening or balancing purposes. Crankpin must be hollow, inside diameter .390 inch minimum, .425 inch maximum.

Additional requirements: Surface finish of aluminum portion of intake and exhaust ports are non-tech. Crankcase pulse hole inside diameter .128 inch maximum. Any or all ports, including the cast iron liner, may be changed in size and/or finish. Port sizes and height must conform to specifications. Aluminum area of transfer passages to remain unaltered, except to blend at junction of cast iron.





Engine Specific Tech Sheet for: Parilla Reed Jet (controlled stock)

Description: Two cycle, single cylinder reed intake

Displacement: 6.208 cubic inch, 101.73 cubic centimeter maximum

Combustion chamber volume: 9 cubic centimeters minimum

Cylinder head requirements: Sealing device groove cut into cylinder only. Cylinder head gasket is optional.

Bore and stroke: 2.000 inch maximum bore, 1.996 +/- .004 inch stroke

Intake system: Reed type. Original manufacture coated reed cage alterations to reed openings allowed. Reeds must be non-metallic, single thickness. Any reed stops must be of solid construction and immovable. Rubber coated reed assemblies approved are PCR, TKM RS80, IAME, and Hartman with no machine work allowed.

Carburetor type: Tillotson HL360A Only

Exhaust port height dimension: 1.275 inch minimum

Ignition system: Approved ignition system PVL #NR1051 only

Piston requirements: Approved pistons are: Asso, BM, Burris, DAP, Dino, Elko, IAME, Minarelli, PCR, RKE, Sirio, TKM, Wiseco, and PRD. Interchange of piston with any other approved engine is allowed. Piston coating below the ring-land is allowed. Maximum skirt corner break is .030 inch axial maximum. Skirt length same both sides within .015 inch. No metal removal allowed except boost port window or TT notch. For window type pistons, window size is .900 inch maximum width and .400 inch maximum axial distance from skirt end. Circlip notch .250 inch maximum circumferential, .1875 inch maximum axial. A maximum of two .093 inch maximum diameter holes may be drilled to facilitate lubrication of the exhaust rib. Wrist pins and piston rings must be magnetic.

Connecting rod requirements: 3.932 inch minimum, 3.942 inch maximum, ferrous material only.

Crankshaft requirements: No modifications of any type are allowed. Counterweight outside diameter 3.310 inch maximum. Any roller cage is allowed. May interchange crankshaft with engines of the same brand name only. Aluminum stuffer may be notched above pin area. Stuffer material shall be aluminum or plastic.

Additional requirements: Maximum of three intake and three exhaust ports only. All cylinder ports may be altered in size and/or finish. All exhaust ports must meet port height requirements. No addition of material in any port is allowed. Port flow must be the same as original manufacture.





Engine Specific Tech Sheet for: PCR TSL98 (controlled stock)

Description: Two cycle, single cylinder reed intake

Displacement: 6.211 cubic inches, 101.78 cubic centimeters maximum.

Combustion chamber volume: 9 cubic centimeters minimum

Cylinder head requirements: non-tech

Bore and stroke: 2.002 inch maximum bore, 1.969+/-0.004 inch stroke

Intake system: Reed type. Original manufacture coated reed cage; alterations to reed openings allowed. Reeds must be non-metallic, single thickness. Any reed stops must be of solid construction and immovable. Rubber coated reed assemblies approved are PCR, TKM RS80, IAME, and Hartman with no machine work allowed.

Carburetor type: Tillotson HL360A Only

Exhaust port height dimension: 1.255 inch maximum

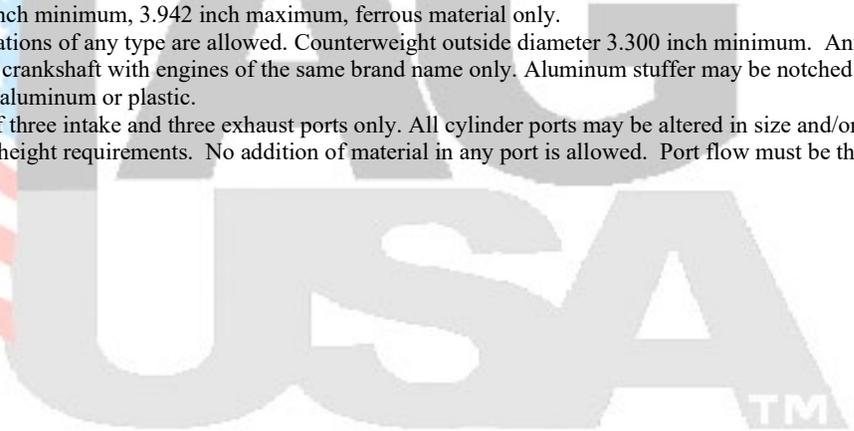
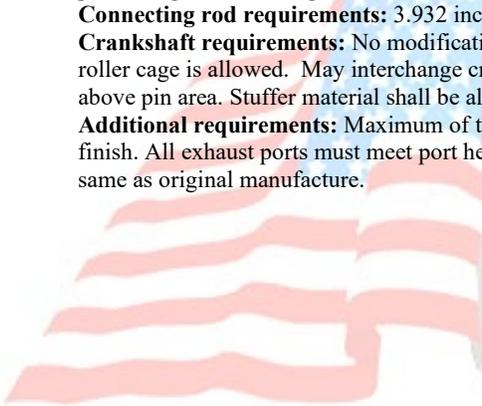
Ignition system: Approved ignition systems are as follows: MotoPlat 9600-903-1 and 9600-916-1, Ducatti 436161191 and 436161190, PVL, and Selletra P3356. Serial numbers of rotor and stator for MotoPlat and Ducatti must match. Approved Ducatti coil 443213220090 only. Approved PVL 105458 ignition systems have potted or taped stators. All potted stators are approved. Approved taped stators are numbered from 01 to 18. Point type (DANSI or CEV) ignitions legally interchangeable between all engines.

Piston requirements: Approved pistons are: Asso, BM, Burris, DAP, Dino, Elko, IAME, Minarelli, PCR, RKE, Sirio, TKM, Wiseco, and PRD. Interchange of piston with any other approved engine is allowed. Piston coating below the ring-land is allowed. Maximum skirt corner break is .030 inch axial maximum. Skirt length same both sides within .015 inch. No metal removal allowed except boost port window or TT notch. For window type pistons, window size is .900 inch maximum width and .400 inch maximum axial distance from skirt end. Circlip notch .250 inch maximum circumferential, .1875 inch maximum axial. A maximum of two .093 inch maximum diameter holes may be drilled to facilitate lubrication of the exhaust rib. Wrist pins and piston rings must be magnetic.

Connecting rod requirements: 3.932 inch minimum, 3.942 inch maximum, ferrous material only.

Crankshaft requirements: No modifications of any type are allowed. Counterweight outside diameter 3.300 inch minimum. Any roller cage is allowed. May interchange crankshaft with engines of the same brand name only. Aluminum stuffer may be notched above pin area. Stuffer material shall be aluminum or plastic.

Additional requirements: Maximum of three intake and three exhaust ports only. All cylinder ports may be altered in size and/or finish. All exhaust ports must meet port height requirements. No addition of material in any port is allowed. Port flow must be the same as original manufacture.





Engine Specific Tech Sheet for: Comer M1K351L (controlled stock)

Description: Two cycle, single cylinder reed intake

Displacement: 6.208 cubic inch, 101.73 cubic centimeter maximum

Combustion chamber volume: 9 cubic centimeters minimum

Cylinder head requirements: Sealing device groove cut into cylinder only. Cylinder head gasket is optional.

Bore and stroke: 2.000 inch maximum bore, 1.988 +/- .004 inch stroke

Intake system: Reed type. Original manufacture coated reed cage; alterations to reed openings allowed. Reeds must be non-metallic, single thickness. Any reed stops must be of solid construction and immovable. Rubber coated reed assemblies approved are PCR, TKM RS80, IAME, and Hartman with no machine work allowed.

Carburetor type: Tillotson HL360A Only

Exhaust port height dimension: 1.270 inch minimum

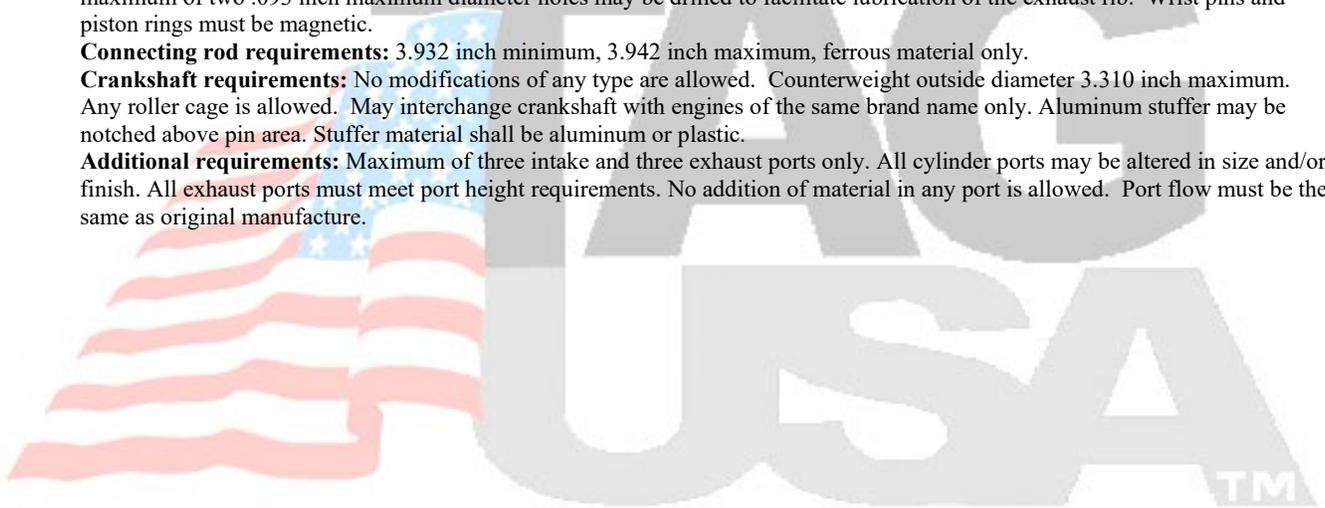
Ignition system: Approved ignition system Selletra P3356 only

Piston requirements: Approved pistons are: Asso, BM, Burris, DAP, Dino, Elko, IAME, Minarelli, PCR, RKE, Sirio, TKM, Wiseco, and PRD. Interchange of piston with any other approved engine is allowed. Piston coating below the ring-land is allowed. Maximum skirt corner break is .030 inch axial maximum. Skirt length same both sides within .015 inch. No metal removal allowed except boost port window or TT notch. For window type pistons, window size is .900 inch maximum width, and .400 inch maximum axial distance from skirt end. Circlip notch .250 inch maximum circumferential, .1875 inch maximum axial. A maximum of two .093 inch maximum diameter holes may be drilled to facilitate lubrication of the exhaust rib. Wrist pins and piston rings must be magnetic.

Connecting rod requirements: 3.932 inch minimum, 3.942 inch maximum, ferrous material only.

Crankshaft requirements: No modifications of any type are allowed. Counterweight outside diameter 3.310 inch maximum. Any roller cage is allowed. May interchange crankshaft with engines of the same brand name only. Aluminum stuffer may be notched above pin area. Stuffer material shall be aluminum or plastic.

Additional requirements: Maximum of three intake and three exhaust ports only. All cylinder ports may be altered in size and/or finish. All exhaust ports must meet port height requirements. No addition of material in any port is allowed. Port flow must be the same as original manufacture.



Engine Specific Tech Sheet for: Parilla TT75 (controlled stock)

Description: Two cycle, single cylinder reed intake

Displacement: 6.143 cubic inch, 100.66 cubic centimeter maximum

Combustion chamber volume: 9 cubic centimeters minimum

Cylinder head requirements: Sealing device groove cut into cylinder only. Cylinder head gasket is optional.

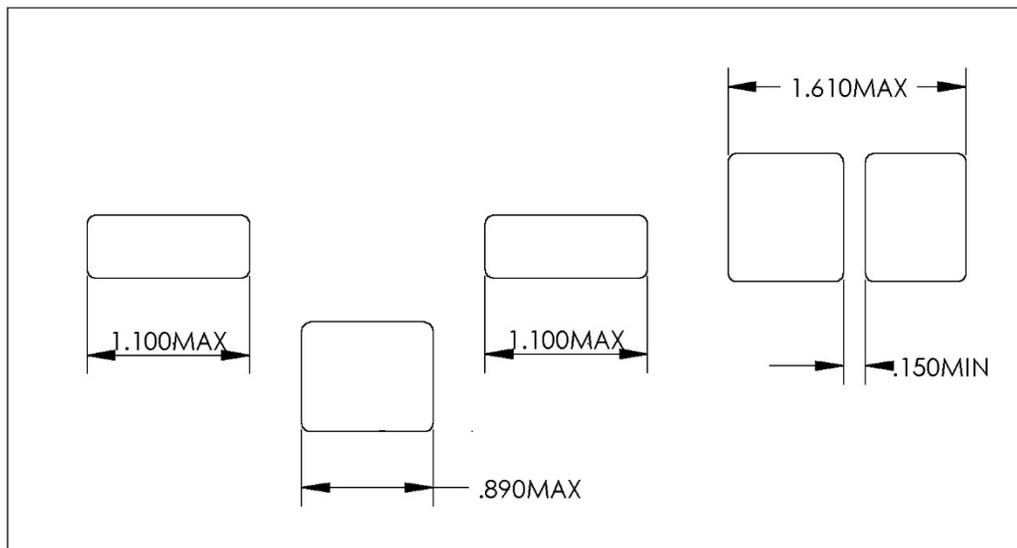
Bore and stroke: 2.000 inch maximum bore, 1.975 \pm .000/-.015 inch stroke

Intake system: Reed type. Original manufacture coated reed cage; alterations to reed openings allowed. Reeds must be non-metallic, single thickness. Any reed stops must be of solid construction and immovable. Rubber coated reed assemblies approved are PCR, TKM RS80, IAME, and Hartman with no machine work allowed.

Carburetor type: Any Tillotson HR series or Mikuni BMC-34G

Exhaust port height dimension: 1.255 inch minimum

Port Widths only apply for Controlled '99



Ignition system: Approved ignition systems are as follows: MotoPlat 9600-903-1 and 9600-916-1, Ducati 436161191 and 436161190, PVL, and Selletra P3356. Serial numbers of rotor and stator for MotoPlat and Ducati must match. Approved Ducati coil 443213220090 only. Approved PVL 105458 ignition systems have potted or taped stators. All potted stators are approved. Approved taped stators are numbered from 01 to 18. Point type (DANSI or CEV) ignitions legally interchangeable between all engines

Piston requirements: Approved pistons are: Asso, BM, Burris, DAP, Dino, Elko, IAME, Minarelli, PCR, RKE, Sirio, TKM, Wiseco, and PRD. Interchange of piston with any other approved engine is allowed. Piston coating below the ring-land is allowed. Maximum skirt corner break is .030 inch axial maximum. Skirt length same both sides within .015 inch. No metal removal allowed except boost port window or TT notch. For window type pistons, window size is .900 inch maximum width and .400 inch maximum axial distance from skirt end. Circlip notch .250 inch maximum circumferential, .1875 inch maximum axial. A maximum of two .093 inch maximum diameter holes may be drilled to facilitate lubrication of the exhaust rib. Wrist pins and piston rings must be magnetic.

Connecting rod requirements: 3.932 inch minimum, 3.942 inch maximum, ferrous material only.

Crankshaft requirements: No modifications of any type are allowed. Counterweight outside diameter 3.315 inch maximum. Any roller cage is allowed. May interchange crankshaft with engines of the same brand name only. Aluminum stuffer may be notched above pin area. Stuffer material shall be aluminum or plastic.

Additional requirements: Maximum of three intake and two exhaust ports only. All cylinder ports may be altered in size and/or finish. All exhaust ports must meet port height requirements. No addition of material in any port is allowed. Port flow must be the same as original manufacture.

Engine Specific Tech Sheet for: PCR PC93 (controlled stock)

Description: Two cycle, single cylinder reed intake

Displacement: 6.143 cubic inch, 100.66 cubic centimeter maximum

Combustion chamber volume: 9 cubic centimeters minimum

Cylinder head requirements: Sealing device groove cut into cylinder only. Cylinder head gasket is optional.

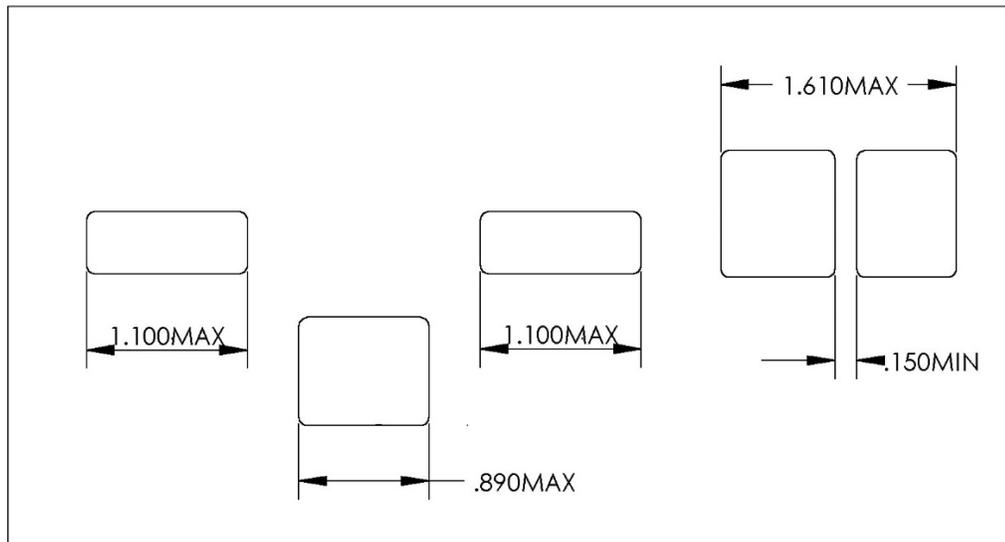
Bore and stroke: 2.000 inch maximum bore, 1.975 \pm .000/-.015 inch stroke

Intake system: Reed type. Original manufacture coated reed cage; alterations to reed openings allowed. Reeds must be non-metallic, single thickness. Any reed stops must be of solid construction and immovable. Rubber coated reed assemblies approved are PCR, TKM RS80, IAME, and Hartman with no machine work allowed.

Carburetor type: Any Tillotson HR series or Mikuni BMC-34G

Exhaust port height dimension: 1.255 inch minimum

Port Widths only apply for Controlled '99



Ignition system: Approved ignition systems are as follows: MotoPlat 9600-903-1 and 9600-916-1, Ducati 436161191 and 436161190, PVL, and Selletra P3356. Serial numbers of rotor and stator for MotoPlat and Ducati must match. Approved Ducati coil 443213220090 only. Approved PVL 105458 ignition systems have potted or taped stators. All potted stators are approved. Approved taped stators are numbered from 01 to 18. Point type (DANSI or CEV) ignitions legally interchangeable between all engines

Piston requirements: Approved pistons are: Asso, BM, Burris, DAP, Dino, Elko, IAME, Minarelli, PCR, RKE, Sirio, TKM, Wiseco, and PRD. Interchange of piston with any other approved engine is allowed. Piston coating below the ring-land is allowed. Maximum skirt corner break is .030 inch axial maximum. Skirt length same both sides within .015 inch. No metal removal allowed except boost port window or TT notch. For window type pistons, window size is .900 inch maximum width and .400 inch maximum axial distance from skirt end. Circlip notch .250 inch maximum circumferential, .1875 inch maximum axial. A maximum of two .093 inch maximum diameter holes may be drilled to facilitate lubrication of the exhaust rib. Wrist pins and piston rings must be magnetic.

Connecting rod requirements: 3.932 inch minimum, 3.942 inch maximum, ferrous material only.

Crankshaft requirements: No modifications of any type are allowed. Counterweight outside diameter 3.315 inch maximum. Any roller cage is allowed. May interchange crankshaft with engines of the same brand name only. Aluminum stuffer may be notched above pin area. Stuffer material shall be aluminum or plastic.

Additional requirements: Maximum of three intake and two exhaust ports only. All cylinder ports may be altered in size and/or finish. All exhaust ports must meet port height requirements. No addition of material in any port is allowed. Port flow must be the same as original manufacture.



Engine Specific Tech Sheet for: Atomik (controlled stock)

Description: Two cycle, single cylinder reed intake

Displacement: 6.174 cubic inches, 101.17 cubic centimeters maximum

Combustion chamber volume: 9 cubic centimeters minimum

Cylinder head requirements: Sealing device groove cut into cylinder only. Cylinder head gasket is optional.

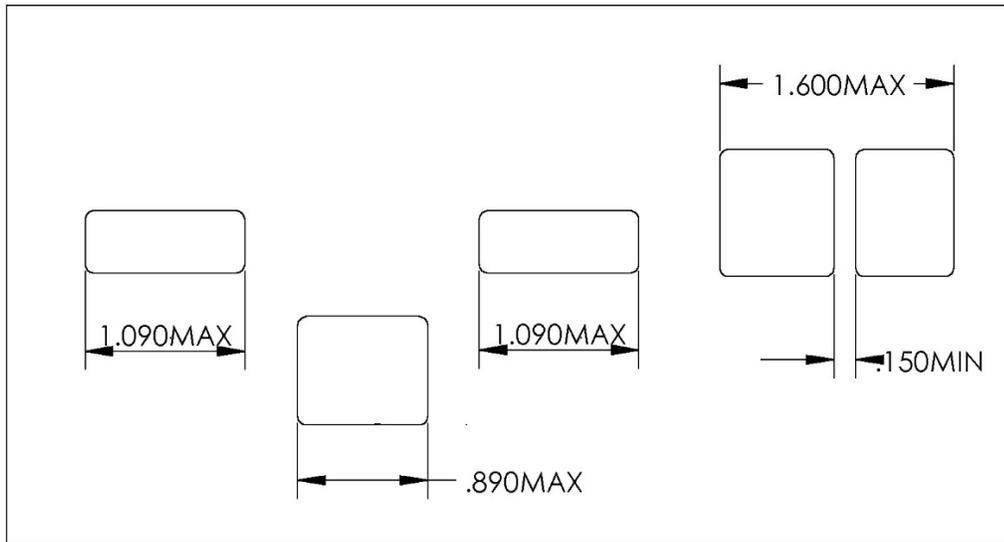
Bore and stroke: 2.000 inch maximum bore, 1.995 +.000/-.015 inch stroke

Intake system: Reed type. Original manufacture coated reed cage; alterations to reed openings allowed. Reeds must be non-metallic, single thickness. Any reed stops must be of solid construction and immovable. Rubber coated reed assemblies approved are PCR, TKM RS80, IAME, and Hartman with no machine work allowed.

Carburetor type: Any Tillotson HR series or Mikuni BMC-34G

Exhaust port height dimension: 1.145 inch minimum

Port Widths only apply for Controlled '99



Ignition system: Approved ignition systems are as follows: MotoPlat 9600-903-1 and 9600-916-1, Ducati 436161191 and 436161190, PVL, and Selletra P3356. Serial numbers of rotor and stator for MotoPlat and Ducati must match. Approved Ducati coil 443213220090 only. Approved PVL 105458 ignition systems have potted or taped stators. All potted stators are approved. Approved taped stators are numbered from 01 to 18. Point type (DANSI or CEV) ignitions legally interchangeable between all engines

Piston requirements: Approved pistons are: Asso, BM, Burris, DAP, Dino, Elko, IAME, Minarelli, PCR, RKE, Sirio, TKM, Wiseco, and PRD. Interchange of piston with any other approved engine is allowed. Piston coating below the ring-land is allowed. Maximum skirt corner break is .030 inch axial maximum. Skirt length same both sides within .015 inch. No metal removal allowed except boost port window or TT notch. For window type pistons, window size is .900 inch maximum width and .400 inch maximum axial distance from skirt end. Circlip notch .250 inch maximum circumferential, .1875 inch maximum axial. A maximum of two .093 inch maximum diameter holes may be drilled to facilitate lubrication of the exhaust rib. Wrist pins and piston rings must be magnetic.

Connecting rod requirements: 3.932 inch minimum, 3.942 inch maximum, ferrous material only.

Crankshaft requirements: No modifications of any type are allowed. Counterweight outside diameter 3.315 inch maximum. Any roller cage is allowed. May interchange crankshaft with engines of the same brand name only. Aluminum stuffer may be notched above pin area. Stuffer material shall be aluminum or plastic.

Additional requirements: Maximum of three intake and two exhaust ports only. All cylinder ports may be altered in size and/or finish. All exhaust ports must meet port height requirements. No addition of material in any port is allowed. Port flow must be the same as original manufacture.





Engine Specific Tech Sheet for: PCR TSL95 (controlled stock)

Description: Two cycle, single cylinder reed intake

Displacement: 6.211 cubic inches, 101.78 cubic centimeters maximum.

Combustion chamber volume: 9 cubic centimeters minimum

Cylinder head requirements: non-tech

Bore and stroke: 2.002 inch maximum bore, 1.969+/-0.004 inch stroke

Intake system: Reed type. Original manufacture coated reed cage only. Alterations to reed openings allowed. Reeds must be non-metallic, single thickness. Manifold must be stuffer style.

Carburetor type: Tillotson HL360A only

Exhaust port height dimension: 1.255 inch minimum

Ignition system: Approved ignition systems are as follows: MotoPlat 9600-903-1 and 9600-916-1, Ducatti 436161191 and 436161190, PVL, and Selletra P3356. Serial numbers of rotor and stator for MotoPlat and Ducatti must match. Approved Ducatti coil 443213220090 only. Approved PVL 105458 ignition systems have potted or taped stators. All potted stators are approved. Approved taped stators are numbered from 01 to 18. Point type (DANSI or CEV) ignitions legally interchangeable between all engines

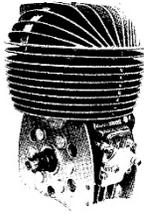
Piston requirements: Approved pistons are: Asso, BM, Burris, DAP, Dino, Elko, IAME, Minarelli, PCR, RKE, Sirio, TKM, Wiseco, and PRD. Interchange of piston with any other approved engine is allowed. Piston coating below the ring-land is allowed. Maximum skirt corner break is .030 inch axial maximum. Skirt length same both sides within .015 inch. No metal removal allowed except boost port window or TT notch. For window type pistons, window size is .900 inch maximum width and .400 inch maximum axial distance from skirt end. Circumferential notch .250 inch maximum circumferential, .1875 inch maximum axial. A maximum of two .093 inch maximum diameter holes may be drilled to facilitate lubrication of the exhaust rib. Wrist pins and piston rings must be magnetic.

Connecting rod requirements: 3.932 inch minimum, 3.942 inch maximum, ferrous material only.

Crankshaft requirements: No modifications of any type are allowed. Counterweight outside diameter 3.300 inch minimum. Any roller cage is allowed, crankpin may have a .170 inch maximum diameter hole.

Additional requirements: All cylinder ports may be altered in size and/or finish. Maximum of three intake and three exhaust ports only. All exhaust ports must meet port height requirements. No addition of material in any port is allowed. Port flow must be the same as original manufacture.





Engine Specific Tech Sheet for: DAP T85 (controlled stock)

Description: Two cycle, single cylinder reed intake

Displacement: 6.208 cubic inches, 101.73 cubic centimeters maximum.

Combustion chamber volume: 9 cubic centimeters minimum

Cylinder head requirements: non-tech

Bore and stroke: 2.000 inch maximum bore, 1.988+/- .004 inch stroke

Intake system: Reed type. Original manufacture coated reed cage only. Alterations to reed openings allowed. Reeds must be non-metallic, single thickness. Manifold must be stuffer style.

Carburetor type: Tillotson HL360A only

Exhaust port height dimension: 1.270 inch minimum

Ignition system: Approved ignition systems are as follows: MotoPlat 9600-903-1 and 9600-916-1, Ducati 436161191 and 436161190, PVL, and Selletra P3356. Serial numbers of rotor and stator for MotoPlat and Ducati must match. Approved Ducati coil 443213220090 only. Approved PVL 105458 ignition systems have potted or taped stators. All potted stators are approved. Approved taped stators are numbered from 01 to 18. Point type (DANSI or CEV) ignitions legally interchangeable between all engines

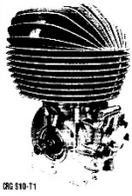
Piston requirements: Approved pistons are: Asso, BM, Burris, DAP, Dino, Elko, IAME, Minarelli, PCR, RKE, Sirio, TKM, Wiseco, and PRD. Interchange of piston with any other approved engine is allowed. Piston coating below the ring-land is allowed. Maximum skirt corner break is .030 inch axial maximum. Skirt length same both sides within .015 inch. No metal removal allowed except boost port window or TT notch. For window type pistons, window size is .900 inch maximum width and .400 inch maximum axial distance from skirt end. Circlip notch .250 inch maximum circumferential, .1875 inch maximum axial. A maximum of two .093 inch maximum diameter holes may be drilled to facilitate lubrication of the exhaust rib. Wrist pins and piston rings must be magnetic.

Connecting rod requirements: 3.932 inch minimum, 3.942 inch maximum, ferrous material only.

Crankshaft requirements: No modifications of any type are allowed. Counterweight outside diameter 3.300 inch minimum. Any roller cage is allowed, solid crankpins only. May interchange crankshaft complete with JAKO 2LA, CRG S10-T1 or Ital M21 only.

Additional requirements: All cylinder ports may be altered in size and/or finish. Maximum of three intake and three exhaust ports only. All exhaust ports must meet port height requirements. No addition of material in any port is allowed. Port flow must be the same as original manufacture.





Engine Specific Tech Sheet for: CRG S10-T1 (controlled stock)

Description: Two cycle, single cylinder reed intake

Displacement: 6.208 cubic inches, 101.73 cubic centimeters maximum.

Combustion chamber volume: 9 cubic centimeters minimum

Cylinder head requirements: non-tech

Bore and stroke: 2.000 inch maximum bore, 1.988+/-0.004 inch stroke

Intake system: Reed type. Original manufacture coated reed cage only. Alterations to reed openings allowed. Reeds must be non-metallic, single thickness. Manifold must be stuffer style.

Carburetor type: Tillotson HL360A only

Exhaust port height dimension: 1.270 inch minimum

Ignition system: Approved ignition systems are as follows: MotoPlat 9600-903-1 and 9600-916-1, Ducatti 436161191 and 436161190, PVL, and Selletra P3356. Serial numbers of rotor and stator for MotoPlat and Ducatti must match. Approved Ducatti coil 443213220090 only. Approved PVL 105458 ignition systems have potted or taped stators. All potted stators are approved. Approved taped stators are numbered from 01 to 18. Point type (DANSI or CEV) ignitions legally interchangeable between all engines

Piston requirements: Approved pistons are: Asso, BM, Burris, DAP, Dino, Elko, IAME, Minarelli, PCR, RKE, Sirio, TKM, Wiseco, and PRD. Interchange of piston with any other approved engine is allowed. Piston coating below the ring-land is allowed. Maximum skirt corner break is .030 inch axial maximum. Skirt length same both sides within .015 inch. No metal removal allowed except boost port window or TT notch. For window type pistons, window size is .900 inch maximum width and .400 inch maximum axial distance from skirt end. Circlip notch .250 inch maximum circumferential, .1875 inch maximum axial. A maximum of two .093 inch maximum diameter holes may be drilled to facilitate lubrication of the exhaust rib. Wrist pins and piston rings must be magnetic.

Connecting rod requirements: 3.932 inch minimum, 3.942 inch maximum, ferrous material only.

Crankshaft requirements: No modifications of any type are allowed. Counterweight outside diameter 3.300 inch minimum. Any roller cage is allowed, solid crankpins only. May interchange crankshaft complete with JAKO 2LA, DAP T85 or Ital M21 only.

Additional requirements: All cylinder ports may be altered in size and/or finish. Maximum of three intake and three exhaust ports only. All exhaust ports must meet port height requirements. No addition of material in any port is allowed. Port flow must be the same as original manufacture.





Engine Specific Tech Sheet for: Italsistem M21 (controlled stock)

Description: Two cycle, single cylinder reed intake

Displacement: 6.208 cubic inches, 101.73 cubic centimeters maximum.

Combustion chamber volume: 9 cubic centimeters minimum

Cylinder head requirements: non-tech

Bore and stroke: 2.000 inch maximum bore, 1.988+/-0.004 inch stroke

Intake system: Reed type. Original manufacture coated reed cage only. Alterations to reed openings allowed. Reeds must be non-metallic, single thickness. Manifold must be stuffer style.

Carburetor type: Tillotson HL360A only

Exhaust port height dimension: 1.270 inch minimum

Ignition system: Approved ignition systems are as follows: CIK951, MotoPlat 9600-903-1 and 9600-916-1, Ducatti 436161191 and 436161190, PVL, and Selletra P3356. Serial numbers of rotor and stator for MotoPlat and Ducatti must match. Approved Ducatti coil 443213220090 only. Approved PVL 105458 ignition systems have potted or taped stators. All potted stators are approved. Approved taped stators are numbered from 01 to 18. Point type (DANSI or CEV) ignitions legally interchangeable between all engines.

Piston requirements: Approved pistons are: Asso, BM, Burris, DAP, Dino, Elko, IAME, Minarelli, PCR, RKE, Sirio, TKM, Wiseco, and PRD. Interchange of piston with any other approved engine is allowed. Piston coating below the ring-land is allowed. Maximum skirt corner break is .030 inch axial maximum. Skirt length same both sides within .015 inch. No metal removal allowed except boost port window or TT notch. For window type pistons, window size is .900 inch maximum width and .400 inch maximum axial distance from skirt end. Circlip notch .250 inch maximum circumferential, .1875 inch maximum axial. A maximum of two .093 inch maximum diameter holes may be drilled to facilitate lubrication of the exhaust rib. Wrist pins and piston rings must be magnetic.

Connecting rod requirements: 3.932 inch minimum, 3.942 inch maximum, ferrous material only.

Crankshaft requirements: No modifications of any type are allowed. Counterweight outside diameter 3.300 inch minimum. Any roller cage is allowed, solid crankpins only. May interchange crankshaft complete with JAKO 2LA, DAP T85 or CRG S10-T1 only.

Additional requirements: All cylinder ports may be altered in size and/or finish. Maximum of three intake and three exhaust ports only. All exhaust ports must meet port height requirements. No addition of material in any port is allowed. Port flow must be the same as original manufacture.





MO 2LA

Engine Specific Tech Sheet for: JAKO 2LA (controlled stock)

Description: Two cycle, single cylinder reed intake

Displacement: 6.208 cubic inches, 101.73 cubic centimeters maximum.

Combustion chamber volume: 9 cubic centimeters minimum

Cylinder head requirements: non-tech

Bore and stroke: 2.000 inch maximum bore, 1.988+/- .004 inch stroke

Intake system: Reed type. Original manufacture coated reed cage only. Alterations to reed openings allowed. Reeds must be non-metallic, single thickness. Manifold must be stuffer style.

Carburetor type: Tillotson HL360A only

Exhaust port height dimension: 1.270 inch minimum

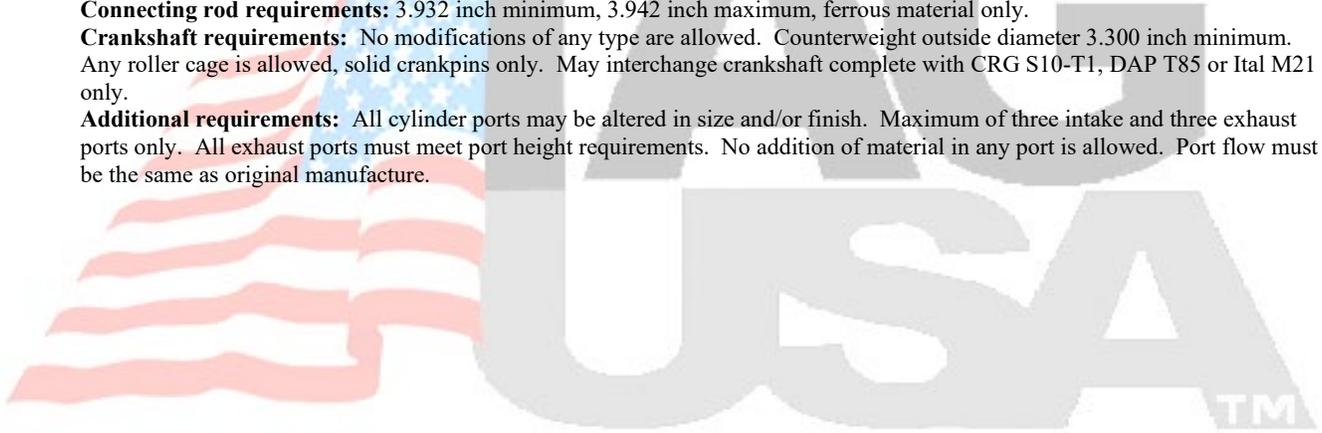
Ignition system: Approved ignition systems are as follows: MotoPlat 9600-903-1 and 9600-916-1, Ducati 436161191 and 436161190, PVL, and Selletra P3356. Serial numbers of rotor and stator for MotoPlat and Ducati must match. Approved Ducati coil 443213220090 only. Approved PVL 105458 ignition systems have potted or taped stators. All potted stators are approved. Approved taped stators are numbered from 01 to 18. Point type (DANSI or CEV) ignitions legally interchangeable between all engines

Piston requirements: Approved pistons are: Asso, BM, Burris, DAP, Dino, Elko, IAME, Minarelli, PCR, RKE, Sirio, TKM, Wiseco, and PRD. Interchange of piston with any other approved engine is allowed. Piston coating below the ring-land is allowed. Maximum skirt corner break is .030 inch axial maximum. Skirt length same both sides within .015 inch. No metal removal allowed except boost port window or TT notch. For window type pistons, window size is .900 inch maximum width and .400 inch maximum axial distance from skirt end. Circlip notch .250 inch maximum circumferential, .1875 inch maximum axial. A maximum of two .093 inch maximum diameter holes may be drilled to facilitate lubrication of the exhaust rib. Wrist pins and piston rings must be magnetic.

Connecting rod requirements: 3.932 inch minimum, 3.942 inch maximum, ferrous material only.

Crankshaft requirements: No modifications of any type are allowed. Counterweight outside diameter 3.300 inch minimum. Any roller cage is allowed, solid crankpins only. May interchange crankshaft complete with CRG S10-T1, DAP T85 or Ital M21 only.

Additional requirements: All cylinder ports may be altered in size and/or finish. Maximum of three intake and three exhaust ports only. All exhaust ports must meet port height requirements. No addition of material in any port is allowed. Port flow must be the same as original manufacture.



Engine Specific Tech Sheet for: US820 (models 82040 and 82050 only)

Description: Two cycle, single cylinder reed intake

Displacement: 8.185 cubic inches, 134.22 cubic centimeters maximum

Combustion chamber volume: 11.5 cubic centimeter minimum (senior), 14.5 cc minimum (junior), 18.0 cc minimum (junior sportsman)

Cylinder head requirements: Center combustion chamber style is required. Head depth from gasket mounting surface to spark plug base .865 inch minimum. No machining to the head except for gasket mounting surface. Head gasket of aluminum, copper or brass is required. Coatings and sealants allowed.

Bore and stroke: 2.5325 inch maximum bore, 1.626 inch maximum stroke

Intake system: Reed type. Any non-metallic, single thickness reed petals of .012 inch minimum thickness allowed. Reed guards must be in place. Reed cage must be stock with flash removal only on the inside of the cage allowed. Any other alteration to the reed cage is prohibited.

Carburetor type: Tillotson HL334A only. Manifold, back cover and stuffer plate to be unaltered stock.

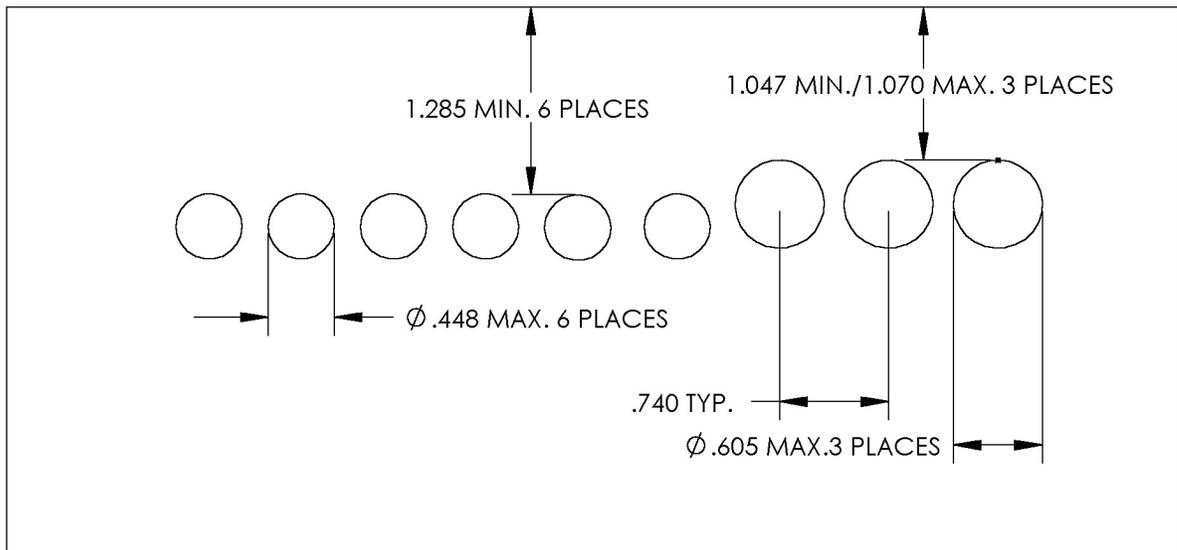
Intake port height dimension: Dimension from top of cylinder to top of intake ports, 1.285 inch minimum

Exhaust port height dimension: Dimension from top of cylinder to top of exhaust ports 1.047 inch minimum, 1.070 inch maximum. (Visible light test dimension .970 inch minimum)

Exhaust system: Stock header part number 100820 and stock muffler part number 300820 only required.

Port dimension diagram:

US 820 PORT DIAGRAM



Ignition system: Ignition module part number A180074 (purple) is required. Alterations of any type to facilitate adjustment of flywheel or coil position to alter timing is strictly prohibited. PVL coil part number A180560 and Atom coil part number SA180095 are allowed. The leading edge of the flywheel pickup magnet must line up visually with the trailing edge of the coil leg between .085 inch before top dead center to top dead center. Factory stock flywheel required with no alterations of any type including coating allowed. Flywheel key of .122 inch minimum thickness required. Crankshaft keyway width .126 inch minimum, .128 inch maximum.

Piston requirements: Unaltered, factory stock piston required. Wrist pin bore diameter .505 inch maximum. Dimension from center of wrist pin bore to top of piston .875 inch minimum. Overall piston height 1.910 inch minimum. Diameter above ring land 2.523 inch minimum. Maximum .030 piston skirt corner break, measured axially. Wrist pin length 2.130 inch minimum. Wrist pin outside diameter .500 inch minimum, inside diameter .338 inch maximum. Piston rings must be unaltered stock part number A175260-1 only. Ring outside diameter 2.531 inch maximum.

Connecting rod requirements: Unaltered factory stock connecting rod required. Center to center length 3.129 inch maximum.

Crankshaft requirements: Unaltered factory stock crankshaft and crankshaft bearings required.

Additional requirements: Unaltered stock Horstman HMC-841 Rev-Grip clutch required. All components are subject to comparison to known stock item. All stock air shrouds and covers must be in place.

Engine Specific Tech Sheet for: 80cc Moto (inclusive)

Description: Two cycle, single cylinder, reed intake. Approved makes and models are: Honda CR80, Yamaha YZ80, Suzuki RM80 and Kawasaki KX80. Engines must be mass-produced and commercially available. No special prototypes or "works" type engines allowed.

Displacement: Per manufacturer's specification.

Cylinder head requirements: Original equipment casting, open to modifications.

Combustion chamber volume: 7.4 cubic centimeter minimum.

Bore and stroke: Per manufacturer's specification.

Intake system: Open.

Carburetor type: One only, single barrel, bowl or pump-type carburetor, 28.6mm maximum venturi diameter.

Inlet tract length: As supplied from manufacturer with no alterations.

Ignition system: Open, but may not control any vehicle function other than ignition.

Piston requirements: Open.

Cylinder requirements: Original equipment casting with no alterations except in port areas. Port areas are open to modification. No addition or deletion of ports.

Connecting rod requirements: Original equipment with no alterations.

Crankshaft requirements: Original equipment with no alterations.

Clutch: Electronic controls prohibited. Clutch basket and hub assembly must be original equipment. Alterations to clutch basket are allowed.

Transmission: Original equipment (parts and ratios). Grinding is allowable.

Exhaust: Must have a pipe/expansion chamber, stinger and silencer although requirements are open. No means of adjustment while in motion is allowed.

Additional requirements: Interchange of original equipment parts between engines of same make and model is allowed, regardless of model year. One and only one, pulse-type external fuel feed pump allowed. Secondary fuel pump, if used, must be for fuel evacuation to fuel tank only. Ignition kill speed shifters are prohibited. No glycol components allowed in cooling system. Competitor is responsible to produce factory service manual for year and model of engine upon request from technical inspector.

Engine Specific Tech Sheet for: 125cc Moto (inclusive)

Description: Two cycle, single cylinder, reed intake. Approved makes and models are: Honda CR125, Yamaha YZ125, Suzuki RM125, Kawasaki KX125 and TM125. Engines must be mass-produced and commercially available. No special prototypes or "works" type engines allowed.

Displacement: Per manufacturer's specification.

Cylinder head requirements: Original equipment casting, open to modifications.

Bore and stroke: Per manufacturer's specification.

Intake system: Open.

Carburetor type: One only, single barrel, bowl or pump-type carburetor.

Inlet tract length: As supplied from manufacturer with no alterations.

Ignition system: Open, but may not control any vehicle function other than ignition.

Piston requirements: Open.

Cylinder requirements: Original equipment casting with no alterations except in port areas. Port areas are open to modification. No addition or deletion of ports.

Connecting rod requirements: Original equipment with no alterations.

Crankshaft requirements: Original equipment with no alterations.

Clutch: Electronic controls prohibited. Clutch basket and hub assembly must be original equipment. Alterations to clutch basket are allowed.

Transmission: Original equipment (parts and ratios). Grinding is allowable.

Exhaust: Must have a pipe/expansion chamber, stinger and silencer although requirements are open. No means of adjustment while in motion is allowed.

Additional requirements: Interchange of original equipment parts between engines of same make and model is allowed, regardless of model year. One and only one, pulse-type external fuel feed pump allowed. Secondary fuel pump, if used, must be for fuel evacuation to fuel tank only. Ignition kill speed shifters are prohibited. No glycol components allowed in cooling system. Competitor is responsible to produce factory service manual for year and model of engine upon request from technical inspector.



Engine Specific Tech Sheet for: ICE-250 (Intercontinental E inclusive)

Description: Two cycle, single cylinder, reed intake. Approved makes and models are: Honda CR250 and 4TRX250R, Yamaha YZ250, Suzuki RM250, Kawasaki KX250, TM250 and ROTAX 257. Engines must be production-based, water or air-cooled. All components must be commercially available. No special prototypes or "works" type engines and/or components allowed.

Displacement: 250 cubic centimeters maximum.

Cylinder head requirements: Open with respect to manufacturer and modifications.

Intake system: Open.

Carburetor type: Carburetor only, open with respect to manufacturer and modifications.

Ignition system: Open.

Piston requirements: Open.

Cylinder requirements: Open with respect to manufacturer and modifications.

Connecting rod requirements: Open with respect to manufacturer and modifications.

Crankshaft requirements: Original equipment with no alterations.

Clutch: Must be intact and fully operational wet clutch only. Open to modifications.

Transmission: Must be integral with engine case. Original equipment components or aftermarket equivalent. Drive to the rear wheels only.

Exhaust: Open with respect to manufacturer and modifications.

Additional requirements: Interchange of original equipment parts between engines of same make and model is allowed, regardless of model year. No glycol components allowed in cooling system. Competitor is responsible to produce factory service manual for year and model of engine upon request from technical inspector.





TAG™ KZ-ICC 125cc Shifter (Intercontinental C inclusive)



Must have Homologation sheet/spec for the engine being used for tech (this is the drivers responsibility)

Description: Two cycle, single cylinder, reed intake. Approved makes and models are: All 2016 – 2023 CIK approved engines as well as CBM L 125/98, CMS Cassani E. 125cc, CRS 125 MF 2, HRT 125 L, Italsistem Seven, KZH 125 ICC 98, Moto TM K8, Pavesi & C Lamellare 98, SGM L 198, and Vortex VL/125.

Combustion chamber volume: 13 cubic centimeters minimum. 13.4cc w/ LAD Tool

Cylinder head requirements: Spark plug, when installed and tightened in the cylinder head, must not protrude into the combustion chamber beyond the upper part of the dome. Spark plug thread may be repaired with a thread insert.

Bore and stroke: Per CIK Homologation Form. Bore diameter may not exceed maximum listed diameter on the Homologation Form. Stroke length must conform to the homologated dimension within +/-0.2mm.

Intake system: Dell'Orto model VSH 30 only, stock and unmodified. All parts must be original-supplied Dell'Orto VSH 30 parts. The incorporated fuel filter may be removed, but, if retained, must be original. Venturi bore must be round and 30mm maximum diameter.

Exhaust opening duration: 199 degrees maximum, measured per exhaust opening duration procedure.

Exhaust requirements: All systems of "power valve" are prohibited.

Port dimension diagram: Per CIK Homologation Form. No addition or deletion of ports.

Ignition system: Must be homologated by CIK. Ignition timing tolerance shall be +/- 2 degrees of the homologated specification. Spark plug - Make and model is open, subject to the following restrictions: Thread type – M14 x 1.25. Length from sealing shoulder to end of thread – 18.5mm nominal.

Piston requirements: Open.

Connecting rod requirements: Per CIK Homologation Form in material and +/-0.2mm in length, centerline to centerline.

Transmission: Must be as homologated by CIK, with a minimum of three ratios and maximum of six ratios. Mechanical, unassisted shift only. Ignition kill shifters are prohibited.

Additional requirements: The original parts of the engine must always comply with and be similar to the photographs, drawings and physical dimensions described on the CIK Homologation Form, as supplied with the engine. The competitor is responsible to produce the CIK Homologation Form upon request by the technical inspector. Internal modifications – subject to the restrictions previously defined on this sheet, modifications are allowed to any internal element of the engine.

Carburetor: Dell'Orto 30.08mm

Airbox: Any current or previously homologated CIK air box is allowed. Two 29 mm tubes.

Exhaust pipe: Must be a current or previous homologation for the brand of motor upon which it is being used.

Exhaust Silencer: Must meet CIK dimensional specifications and must meet local noise specifications





Spirit and Intent

The following rules are applied in order to provide fair and equal competition within the class. The specifications and limitations are supplied in order to allow each competitor to insure that his or her engine meets these rules. Compliance is the competitor's responsibility. Any attempt to circumvent these rules violates the basic premise of the class and will be dealt with as any direct violation of the rules. Violation of spirit and intent is defined as any attempt to elaborate on the existing rule in order to gain a competitive advantage. Anything not specifically outlined in the rules should be considered illegal.

NOTE: Parts numbers may vary depending on American Honda/Mugen/RS and may supersede at any time. All engines must be USA over-the-counter sold along with parts.

Engine: The 1999 Honda CR125 "kit motor" is generally accepted as the motor that the class is designed around.

Cylinder: Cylinder must be unaltered 1997-1999 CR125 or 2000-2002 CR125. No modifications allowed to the cylinder height, port inlets, passages, or port windows of the OEM part as supplied from Honda. The cylinder must be as cast, no modifications, and no replating for any reason.

Cylinder Height: 1997-1999 minimum is 3.311" min to 3.316" max, measured from the cylinder base to the head surface. 2000-2002 minimum is 3.307" min to 3.312" max, measured from the cylinder base to the head surface. Exhaust valves (power valves) may be removed and plugged. Plug is a non-tech item and may be blended to match the exhaust port. All modifications to plug must be done prior to installation in cylinder and no grinding, polishing, or machining of any type may be done to the exhaust port.

Allowable base gasket OEM thickness: .020"

Exhaust port - cylinder top minimum distance: 1.145" (29.08 mm)

Stroke: 2.149" (54.59 mm) maximum

Bore: 2.129" (54.10 mm) maximum

Cylinder head: 1997-1999 / 2000-2002 CR125 cylinder heads only. No modification to the OEM combustion chamber volume, shape, or dimensions. 1997-1999 cylinder head combustion chamber profile must match the approved Shockwave 99 CR125 cylinder head gauge. 2000-2002 cylinder heads will be checked by squish dimension. Cylinder head gasket will be OEM only. Thickness = .010" + or -.001". Cooling spigots may be replaced with a substitute in the original location. One spigot may be plugged for single water outlet.

Head Gasket 2001 part# 12251-KZ4-A91

Base Gasket 2001 part# 12191-KZ4-L10

Combustion chamber profile: Using approved Shockwave 99 CR125 cylinder head gauge, inspect parabola of chamber dome and squish recess for apparent gaps greater the .005" deep. Spark plug sealing surface must be above spark plug stem of gauge. The overall height is measured also. "The "go" portion of the stem of the profile gauge should protrude above the spark plug sealing surface. The "No Go" portion of the stem should not.

Squish: 1997-1999 .050 using .060 solder; 2000-2002 .045 using .060 solder

Crankcase: Crankcase halves must be OEM. Internal crankcase modifications are not allowed with the following exception. Minor grinding of casting flash is allowed, but only to eliminate the possibility of flash breaking off and damaging the motor. Kick starter may be removed and plugged.

Crankshaft: Crankshaft must be OEM Honda CR125 any year. The crankshaft main bearing journals may be polished for slip fit of bearings.

Precision alignment of crank is allowed. No material may be added or removed from crank wheels or rod. No "heavy metal" balancing allowed.

Connecting rod: Connecting rod must be OEM with no lightening or polishing. Bearings, piston pin and cir-clips are direct replacement OEM only.

Piston: 1999 OEM flat top design direct replacement OEM only. This piston has a window and cannot be replaced with non-window piston. Piston ring minimum thickness: .038" (.96 mm) as measured with calipers. Coatings are NOT allowed on the piston or ring.

Bearings: All crankshaft and rod bearings must be stock OEM without modifications.

Gaskets and seals: Gaskets are OEM. Seals must be stock OEM without modifications and installed as manufactured.

Clutch: Stock OEM 1999 CR125 clutch basket and pressure plate must be used. No modifications allowed to any component. All 7 clutch disks and 6 clutch plates must be installed. Aftermarket replacement clutch discs, plates, springs and hardware parts are NOT allowed.

Transmission: Transmission bearings are to be stock OEM. Five or six gears are allowed. Gears are per the 1994-96 ratios as follows:

First - 14/33

Second - 15/28

Third - 19/29

Fourth - 21/27

Fifth - 23/26

Sixth - 24/24

Water pump: Water pump must be used as originally intended. No external or axle driven pumps allowed.



Carburetor: Approved carburetors are Keihin PWM, Keihin PWK. The Air Striker and the Quad Vent are not allowed. No modifications allowed. No polishing, grinding or machining allowed. Venturi diameter may not exceed 38.6 mm in diameter measured from the first .450" of the venturi diameter downstream from the slide. Round bore only. Pump-around Carburetor Fuel Feed Systems are allowed.

Fuel Pump: Fuel pump(s) must be driven by pulse pressure in the motor. No electronic fuel pumps. Dual fuel pumps for pump-around carburetors allowed. Fuel pump must be a separate component from the carburetor.

Carburetor Boot: The stock 1999 CR125 30° boot is recommended. The RS125 straight boot or the RS125 5° boots are allowed for seat clearance purposes. However, the stuffer lobes of the straight boot and the 5° boot must be cut off flush with mounting surface and may not extend into reed cage. SwedeTech RS replacement boot part number SRE – RS125 is allowed. Use SwedeTech tech tool SRE – T – RS125 for inspection.

Reed cage and reeds: Reeds are open but must be single petal design. No dual stage reed petals. Reed cage must be 1999 CR125 6-petal design. No material may be added or removed. Reed stops (stiffeners) must be 1999 CR125. Bending stops to fit into unaltered reed throat of crankcase is allowed. No removal of material from reed stops allowed.

Air filters and air boxes: Motor may be equipped with either air filter or air box. Air box requirements may be imposed by local track regulations.

Pipe/expansion chamber: The pipe/expansion chamber is restricted to the following:

RLV 6800 series (also marked as RLV-R2)

RLV-R4 and RLV-R4 ---two piece

Pro Circuit Pipe #SK-1

RCE T3 pipe

The pipe/expansion chamber maximum circumference is 17-1/8" (440mm) measured at the drum/dwell section. Addition of exhaust gas temperature lead is legal, but hole must be plugged if exhaust temp lead is not used. External mounting brackets may be added.

Silencer: Silencer are mandatory. The dimensions are open as long as they meet safety and noise requirements. Tracks that have noise emission requirements shall provide any necessary supplemental rules for where noise abatement is required.

Exhaust flange: The exhaust flange is open, but aftermarket headers may not alter the effective length of the exhaust system by more than plus or minus .050".

Coil: Coil must be stock 1999 Honda CR125 coil. Coil part number 30500-KZ3-B01 or 30500-GY8-901.

Capacitive Discharge Ignition (CDI): CDI must be Stock 1999 Honda CR125. Denso Part Number 071000-1410 should be legible on tag.

Flywheel and stator: Flywheel and stator must be stock 1999 Honda CR125 parts. No material may be removed from flywheel. Flywheel key may not be machined to offset timing. Stator may be mechanically advanced or retarded but must remain in a fixed position while running. Stator plate may NOT be slotted for adjustment and must remain OEM or utilize the Red-MSE or Blue replacement.

Spark plug and ignition wires: The spark plug manufacturer is open, but the plug must be commercially available and measure 18.5mm long by pitch M14 x 1.25. Exception: The spark plug washer may be removed to facilitate the use of a cylinder head temperature sensor and the gap of the electrode may be adjusted. Ignition wires are non-tech. No additional components may be electrically connected to the CDI or coil. Only an inductive RPM sensor may be used.

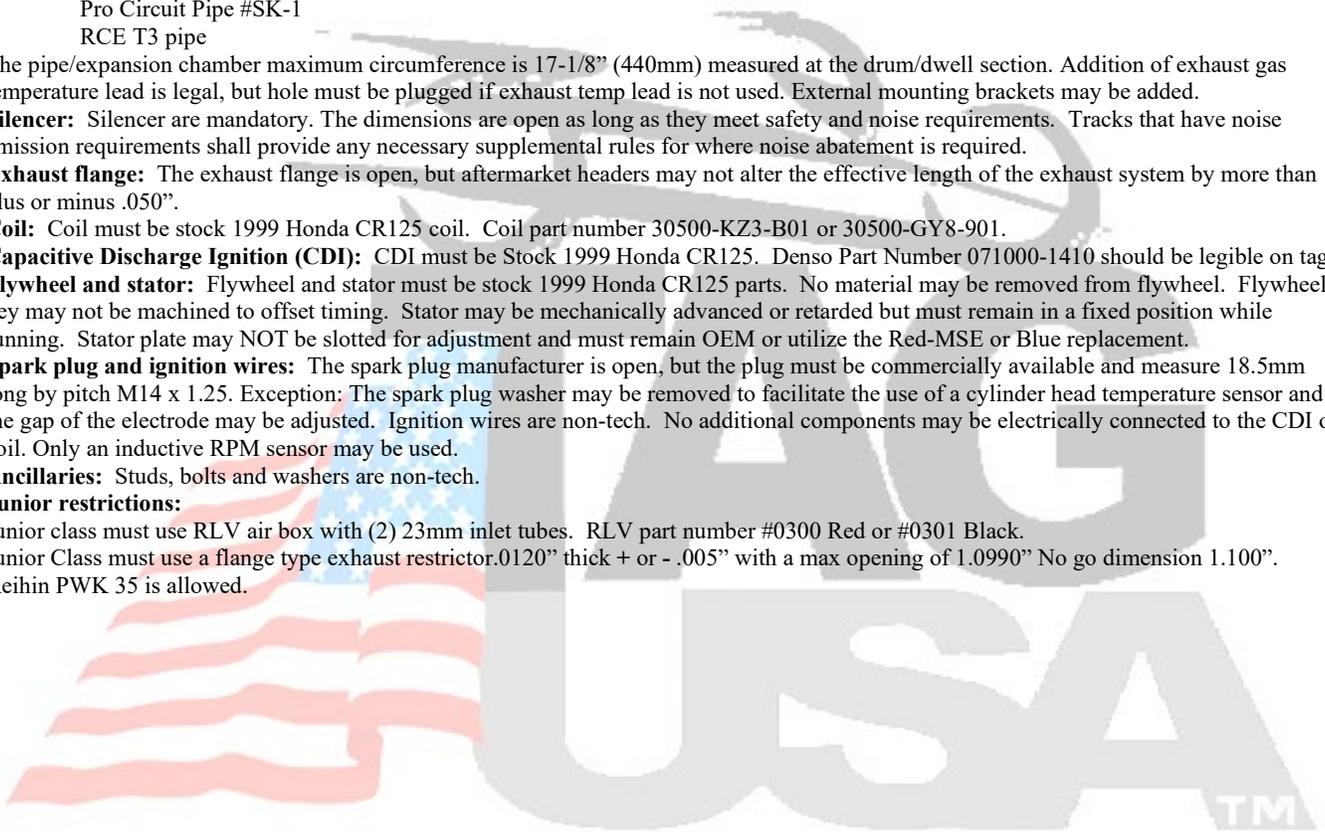
Ancillaries: Studs, bolts and washers are non-tech.

Junior restrictions:

Junior class must use RLV air box with (2) 23mm inlet tubes. RLV part number #0300 Red or #0301 Black.

Junior Class must use a flange type exhaust restrictor.0120" thick + or - .005" with a max opening of 1.0990" No go dimension 1.100".

Keihin PWK 35 is allowed.



Stock Moto 125 - Technical Inspection Procedure and Specifications

Cylinder Height Minimum

3.311" min to 3.316" max., as cast, no modifications, and NO replating for any reason. Measure base surface to head surface with calipers.

Port Inspection

If ports appear substantially different, the tech inspector should follow up with a close inspection for any evidence of grinding to modify the port sizes. Small differences in sizes make very little difference in performance gains. Any DQ actions should be based on obvious modification evidence.

Exhaust Port - Cylinder top Minimum Distance: 1.145" (29.08 mm)

Note 1: This measurement is taken from the top of the cylinder to the exhaust port opening. It is not intended to measure opening in relation to piston travel alone.

Note 2: Exhaust valves may be plugged. Plug is a non-tech item. Plugs may have blades removed or angled to blend flow into passage. This does not allow for blending of plug to port all modifications to plug must be done prior to installation in cylinder. In some cases the blades may seem to provide a false reading of depth - this is OK as long as inspection does not indicate any grinding. CR125 exhaust ports have a height that is controlled by the machining operation of the exhaust valve and is very accurate in controlling port location. Insert approved port height check gauge (1.140" step) tool into cylinder in line with exhaust port center. Inspect through port - gauge end should not extend past port opening at edge. Check both ports at highest points.

Combustion Chamber Profile

1997-1999 cylinder heads: Using approved Shockwave 99 CR125 cylinder head gauge, inspect parabola of chamber dome and squish recess for apparent gaps greater than .005" deep. Competitor may clean off carbon build up with abrasive pad. Spark plug sealing surface must be above spark plug stem of gauge. The overall height is measured also. "The "go" portion of the stem of the profile gauge should protrude above the spark plug sealing surface; the "No Go" portion of the stem should not.

2000-2002 cylinder heads: Checked by squish.

Cylinder Head Gasket

Thickness is .010" +or -.001". OEM only. Measure thickness of head gasket with calipers.

Piston Deck Height

Rotate flywheel to bring piston close, but not at, Top Dead Center. Insert .060 solder thru spark plug opening making sure that the solder reaches the cylinder wall and roll piston over top dead center. Measure with calipers

Squish

1997-1999: .050 using .060 solder

2000-2002: .045 using .060 solder

Piston Inspection and Dimensions

Flat top design OEM piston has window and cannot be replaced with non-window piston. Only direct 1999 OEM replacement allowed.

Distance from top of piston pin to top of piston: .807" (20.5mm) plus or minus .0025"

Slide piston pin out of piston with no more than 1/4" protruding. Measure depth from top of piston to top of piston pin with caliper slide.

Piston ring minimum thickness: .038" (.96 mm) as measured with calipers.

Stroke

2.149" (54.59 mm) maximum. Piston may rock on pin. Measure depths directly above pin. Measure piston depth at TDC. Measure piston depth at BDC. Subtract TDC from BDC to get the stroke.

Bore

2.129" (54.10 mm) maximum; measure with inside micrometer.

Allowable Base Gasket Thickness

.020"; measure base gaskets with a caliper.

Carburetor

Max diameter 38.6 mm round bore only Approved carburetors are Keihin PWM, Keihin PWK. The Air Striker and the Quad vent are not allowed. No modifications to carburetor. No polishing or machining of air intake allowed. Control point for measuring purposes is the first .450" of the venturi diameter downstream from the slide. This .450" wide zone cannot exceed 38.6mm in diameter.

Carburetor Boot

The stock 1999 CR125 30° boot is recommended. As this part is optimal from the factory and measurements very subjective, there are no other restrictions on it. For seat clearance purposes, the RS125 straight boot or the RS125 5° boots are allowed. As a handicap, the stuffer lobes of the straight boot and the 5° boot must be cut off flush with mounting surface and may not extend into reed cage. SwedeTech RS replacement boot part number SRE - RS125 is allowed. Use SwedeTech tech tool SRE - T - RS125 for inspection.

Pipe/Expansion Chamber

Measure largest diameter of the drum/ dwell section (between convergence and divergence cones) with a flexible tape measure. Pipes may have obstructions such as mounting flanges, metal tags, seams or weldments in the way. It is the competitor's obligation to assure there is an area where the circumference can be measured by tech.

Ignition

Stock 1999 Honda CR125 coil



Stock 1999 Honda CR125 Capacitive Discharge Ignition (CDI) System

Denso part number 071000-1410 should be legible on ID tag. CDI cannot be DQ'd over ID tag legibility. Sanctioning body may take possession of CDI unit to test for illegal altering of the component. CDI unit must be returned to owner or replaced with a new part within 30 days.

CDI Swap

The tech director shall have the option to collect CDI units between heats and redistribute them at Tech/Impound. This is at the tech director's or promoter's discretion.

Flywheel and Stator

Stock 1999 Honda CR125. No material may be removed from flywheel. Flywheel key may not be machined to offset timing. Stator may be mechanically advanced or retarded but must remain in a fixed position while running. Stator plate may NOT be slotted for adjustment and must remain OEM or utilize the red-MSE or blue replacement.

Spark Plug and Ignition Wires

The spark plug manufacturer is open, but the plug must be commercially available and measure 18.5mm long by pitch M14 x 1.25.

Exception: The spark plug washer may be removed to facilitate the use of a cylinder head temperature sensor and the gap of the electrode may be adjusted. Non-tech. No additional components may be electrically connected to the CDI or coil. Only an inductive RPM sensor may be used.

Section 15 – Archived Engines for 2023

Archived for Local option only

Deregulated for TAG™ Racing International and TAG™ USA Competition

Parilla Leopard 125, Easykart 125, ITALSISTEM 125, PCR Windfire, SONIC VX125, VORTEX ROK 125, Comer 125, Easykart 60, Biland, Sonik TX125, Vortex TT

Engine	Cadet	Junior	Senior	Masters	TAG USA Specs	PDF
Biland		370 lbs.	400 lbs.	415 lbs.		
Parilla Leopard		320 lbs.	360 lbs.	390 lbs.		
Comer		390 lbs.	420 lbs.	435 lbs.		
Easykart 60	240 lbs.	-----	-----	-----	-----	
Easykart 125		320 lbs.	360 lbs.	390 lbs.		
ITALSISTEM 125		-----	360 lbs.	390 lbs.		
SONIC VX125		-----	390 lbs.	420 lbs.		
SONIC TX125		-----	390 lbs.	420 lbs.		
Vortex TT		-----	370lbs.	405 lbs.		
PRD Fireball		320 lbs.	350 lbs.	380 lbs.		
Motori Seven		-----	415 lbs.	430 lbs.		



Section 16 - The Official TAG™ Technical Glossary

Ambient — Surrounding.

CIK — Commission Internationale de Karting. International kart racing sanctioning arm of the Federation Internationale de Automobile (FIA).

Chord — A line segment that joins two points on a curve.

Compared to Known Stock — Must resemble the OEM part that the given part is replacing.

Ferrous — Iron based material.

Go Gauge — A gauge for determining if a feature is larger than the minimum allowable size. The size of this gauge is normally two ten-thousandths of an inch less than the minimum allowable size.

Homologation Form — The official certification by the CIK of an engine, chassis or other equipment, describing its as-supplied condition, characteristics and dimensions. Used an article of comparison for conformance.

Longitudinal — of or relating to length or the lengthwise dimension.

Maximum - The largest allowable measurement that a given feature may possess.

Minimum — The smallest allowable measurement that a given feature may possess.

No-Go Gauge — A gauge for determining if a feature is smaller than the maximum allowable size. The size of this gauge should be exactly that of the maximum allowable size.

Nominal — Of a designated or theoretical size that may vary from the actual.

Non-Tech — Not subject to technical inspection, open in construction, configuration, material, and dimensions.

Perpendicular — At a ninety-degree angle to the prescribed base item.

Stock — The basic configuration intended by the manufacturer.

Stock Appearing — Must be visually indistinguishable from the OEM original part in shape and finish.

Stock Unaltered — Factory OEM part with no modifications of any kind allowed.

Unaltered Stock — In the same condition as supplied from the manufacturer.

