



# 2015

## RULES AND PROCEDURES

### **RULES DISCLAIMER**

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. 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 impose any further restrictions that in his/her opinion do not alter the minimum acceptable requirements. Any interpretation of, or deviation from, these rules is left to the discretion of the officials. Their decision is final.

### **RED RIVER KART CLUB OFFICERS**

President: Nick Skalicky

Secretary/Treasurer: Deanne Schatz-Eisenschenk

### **RED RIVER KART CLUB BOARD OF DIRECTORS**

Dominic Froemke

Scott Sailer

Chad Spieker

## **FLAGS AND THEIR MEANINGS**

1. Green - Start, race underway.
2. Yellow - Caution, reduce speed immediately and maintain your position. The kart causing the yellow will be put in the back of the lineup, unless no fault can be determined.
3. Red - You must make a safe stop immediately where you are on the track and shut your engine off. No one is allowed on the track during a red flag until track personnel grants permission. No working on karts. If your kart causes a red flag you will not be allowed to re-start.
4. Rolled Black Flag - Pointed in the direction of a driver is a warning about a driving infraction. This will be your only warning before receiving the black flag.
5. Black Flag - Leave the track and return to the pits. You will be awarded a finishing position reflecting when you left the track.
6. White Flag - The leader is on the last lap.
7. Checkered Flag - You have completed the race

## **RACE LINEUP PROCEDURES**

1. All karts are required to draw a number during registration; the number will be used determine the starting line-up for the first heat. The second heat will be run in an inverted order.
2. The feature line up will be determined by the combined finishing points in the previous two heats.
  - 2a. If there is a tie in the combined finishing points, the initial draw number from the beginning of the night will determine the feature line-up.
3. If a kart is a no show at the starting grid, or drops out prior to the green flag, karts will move straight forward maintaining their position in the inside or outside line.
4. Karts not leaving the starting grid with the class will have 2 minutes to join the class. If the deadline is not met, you will NOT be allowed to race and will be given the black flag.
5. Karts that stall during a race will be allowed ONE restart per heat or feature. If a yellow comes out and the stalled kart is not the cause of the yellow, the engine may be restarted, and the kart returned to it's current running position. If the stalled kart is the cause of the yellow the engine may be restarted, but the kart will go to the back as usual.

## **RACE STARTS**

1. The pole position will set the parade lap speed; the flag personnel will determine if the speed is appropriate.
2. There will be a maximum of two double file starts, the original start, and one additional restart. If both are unsuccessful the karts will be rearranged for a single file restart.
3. All starts and re-starts will begin with the stoplight; the kart on the pole does not determine when to start accelerating.
4. No passing until the green flag waves.

5. No sling shot starts or holding back the line to gain momentum. This will cause a restart and you will go to the back.
6. A kart not accelerating properly at the start and holding up a line will cause a restart. (If you know your kart is not performing properly be a good sport and go to the back before causing a restart.)
7. Following a yellow flag, any karts that have been lapped start at the back of the pack.
8. There will be 3 yellows allowed per race. The next driver to cause the 4th yellow will be sent to the pits. If one driver causes 2 yellows in a race, they will be sent to the pits.

## **SCALING**

1. Karts must weigh immediately after exiting the track. Karts not in a single file line waiting to get on the scale will be considered out of the scaling area, therefore they will not be allowed to weigh in, and will be disqualified. Once the kart has left the scale area it cannot be re-weighed.
2. The top 3 karts after heat races must weigh in and the top 3 karts after feature races must weigh in if orange cone is gone.
3. Only the driver and the scale official will be allowed in the scale area. No Pit Crew will be allowed in the area unless scale personnel grants permission.
4. If you disagree with the weight of your kart, you will be allowed to re-scale one time. The scale will be re-calibrated for the second attempt. If your kart does not meet the weight requirement, you will be disqualified. It is your responsibility to have your kart weighed before the start of the race to ensure that you are at the proper weight.
5. Karts failing to meet the minimum weight for their class will be considered disqualified and will not be scored.
6. No Hot Pits. Karts must be shut off immediately after driving off the track and before entering the scaling area. If a violation occurs, both driver and team will be removed from RRKC premises, plus 2 week suspension.

## **RACE CONDUCT**

1. The flagman and Race Director will be the final word for all on track activity.
2. Drivers, Pit Crew or Fans may not speak with the flag personnel or race scorers during competition. Penalties will be issued for irate behavior and will be a minimum 2 week suspension.
3. Drivers failing to follow flag rules will be black flagged.
4. Aggressive driving will not be tolerated. The Competition Director and/or Board Members will review the situation and issue any penalties. Minimum penalty will be a 1 week suspension.
5. After the checkered flag, drivers will slow to a safe speed and exit the track and proceed to the scaling area.
6. If you have any complaints either on or off track, you have 2 options: Go to our website ([redriverkartclub.com](http://redriverkartclub.com)) and click on the "Suggestion Box" link at the top of the page. It is anonymous. Or for a more formal complaint that you want on the record, fill out a grievance form. These are available in the tech shed and we will go over them at our next scheduled meeting.

## **PRE-RACE TECH INSPECTION**

1. Your kart must go through Pre-Tech before Each Race Night.
2. All karts and safety apparel will be required to go through Pre-Race Tech inspection prior to the race.
3. If the violations are minor, and at the Pre-Race Tech Directors discretion, you may pass with reservation. (meaning it will have to be fixed for the next race.)
4. RRKC takes Pre-Race Tech very seriously! Practice good maintenance on your kart, and inspect your kart between heats and features.
5. If you place in the heats or feature and don't have a Pre-Race Tech sticker, you will be disqualified.
6. The Pre-Race Tech Director is performing an extremely important function for our racers, so their decision will be final. If you take Pre-Race Tech seriously, you will not have Pre-Race Tech inspection problems. If you flagrantly disregard Pre-Race Tech, you will not race at a RRKC event.
7. The Pre-Race Tech director will be the final word on what will be allowed. Minor violations will be allowed for a 1 week period to allow time for it to get fixed. More serious issues will be required to be fixed before the kart can go on the track.

## **POST-RACE TECH INSPECTION**

1. Top 3 karts from each class must report to the tech area after scaling.
2. Absolutely No pit crew members or drivers allowed in the post tech area, unless asked to enter for tear down reasons.
3. Karts must remain in the tech area until cleared to leave.
4. No working on the kart in the tech area unless instructed to start a tear down by the tech official.
5. Driver or Crew Chief are responsible for making sure their kart passes tech.
6. Karts without proof of Pre-Race Tech inspection are subject to disqualification.
7. Any kart failing tech inspection will be disqualified. Additional penalties could include a 2 week suspension. Decision will be made by Competition Director and/or Board Members.
8. Fuel infractions:
  - 8a. If bad fuel is found coming off of the track you will not be scored for that particular heat or feature.
  - 8b. If discovered by random checks in the pits during the races, you will be asked to drain your tank and fix the problem, then you will be re-checked. You will also be checked after each of your races to ensure that the problem is fixed.
  - 8c. A fuel infraction could result in a 2 week suspension.

## **TECH INSPECTION PENALTIES**

1. Failure to report immediately to impound will result in a disqualification. No driver/owners allowed in impound once the driver has exited the kart.
2. Fuel and oil samples may and will be taken at any time during the race to determine legality.
3. Tear-downs will be at the discretion of the Competition Director and/or Tech Official and carried out by the head technician and inspectors.
4. Engines may be held for 72 hours by the RRKC for further inspection. Engines will NOT be re-assembled by the RRKC if torn down.
5. If you choose to have RRKC re-assemble the engine, it will cost \$25/hour plus parts.

## **ILLEGAL ENGINE**

1. First offense will result in a 2 week suspension.
2. Second offense will result in a 4 week suspension.
3. If the RRKC finds an engine altered from the factory, the RRKC can keep the complete engine with no return. (Minus the clutch and clutch guard.)
4. Illegal engines must be repaired and inspected prior to returning to racing.
5. Board members will have the final decision. (If a pending ruling is a conflict of interest with one of the board members, the remaining board members will make the final decision.)

\* (The rules for the Briggs 206 engine can be found on their website: [www.briggsandstratton.com/engines-racing/racing-engines/karting/local-option-206](http://www.briggsandstratton.com/engines-racing/racing-engines/karting/local-option-206) or by clicking [HERE](#) to download.)

## **ENGINE PROTEST**

1. An engine protest fee is \$50 and must be provided to and approved by the RRKC board prior to the feature race. After the feature race, a track official will notify the driver/owner of the relevant kart that his/her kart has been protested. The protested driver/owner shall then proceed directly to the tech area for inspection and tear-down pursuant to a protest. Only the tech inspector has the final word on the legality of the karts involved in a protest. After tear-down, the engine is found to be legal, the \$50 protest fee will be paid to the protested team. If, after the tear-down, the engine is found to be illegal, \$50 of the protest fee will be returned to the protesting driver/owner and the illegal kart's team will be suspended for 2 to 4 weeks. (Only 2 protest claims per team per year are allowed.)

## **ILLEGAL KART**

1. Must be changed before the race or will not be allowed to race.

## **ILLEGAL WEIGHT**

1. It is the responsibility of each racer to check their weight within that class. A track official will assist with the weighing upon request. The track scale is the official scale.
2. Offenses will result in 0 points and no award.
3. Failure to cross the scale after a race will result in 0 points and no award.
4. The top 3 karts in each race must cross the scale when the orange cone is not out.

## **PIT RULES**

1. No smoking in the pit area before or during the races. This includes the pavement or bleachers.
2. Everyone in the pit area must have signed the waiver and release form and must be wearing a wristband. Everyone in the pit area must have a pit pass on your wrist. If found without a pit pass, you will be asked to leave and receive a 2 week suspension.
3. Driving in the pit area will not be allowed.
4. Coaching of the drivers will not be permitted from anywhere on the track or in the pit area during a race.
5. Unsportsmanlike conduct will not be tolerated. If you or any of your pit-crew or owner are found to be swearing, fighting, making obscene gestures or causing trouble, you will be penalized. Approaching the flagman during the races is considered unsportsmanlike conduct and will not be tolerated. Do not approach the flagman. All calls are final. Remember, flagmen and officials are human and your view of the situation may well be different than theirs. They are doing their job the best they can and Official's rulings are final.
6. If disqualified, you must leave the pit area. Additional penalties could include up to a 2 to 4 week suspension.

## **DISQUALIFICATIONS**

1. Failing to pass post tech inspection
2. Failing to weigh or not meeting the minimum weight
3. Failing to pass Fuel Tech.
4. Profanity or aggressive behavior directed towards anyone. Some form of suspension will accompany this as well.
5. Repeat Pre-Tech offenses.

## **PENALTIES FROM PIT AREAS AND GRANDSTANDS**

1. First Offense - Both driver and team removed from RRKC premises, plus 2 week suspension.
2. Second Offense - Both driver and team removed from RRKC premises, plus 3 week suspension for both.
3. Third Offense - Both driver and team removed from RRKC premises, plus 4 week suspension.
4. Penalties will carry over to the next racing season if needed.
5. No refunds will be given out.
6. Board members will have the final decision. (If a pending ruling is a conflict of interest with one of the board members, the remaining board members will make the final decision.)

## **SAFETY REQUIREMENTS**

1. Helmets are required to be Snell 2005 or SFI youth specifications or newer. Helmets are subject to tech during Pre-Race Tech inspection.
2. Chest Protectors are required for anyone age 16 and younger. The chest protectors must meet SFI Section 20.1 Certification.
3. Gloves are required and must be made of abrasion resistant material. (Must be worn in all classes)
4. Face Shields are mandatory. No goggle helmets.
5. Neck Collars/Neck Braces are mandatory.
6. Jackets must be made of leather, heavy weight vinyl, or approved abrasion resistant nylon material. Full length pants must be worn with a jacket. Driving Suits must be made of leather, heavy weight vinyl, or approved abrasion resistant nylon.
7. Shoes must be high top shoes or boots and must cover the ankle bone area.
8. Long Hair is a safety issue, and competitors with long hair will have to demonstrate a satisfactory method for retaining their hair.
9. Rub Strips (material added to the outside of the body to protect the panels when karts rub together) cannot be metal, but must be of flexible plastic material.
10. Brake rotor guards or Wolf Plates are mandatory in all classes. You will not pass Pre-Race Tech without one.
11. Full width rear bumpers will be required on all karts.
12. 75% of the header pipe from the head to the muffler be wrapped in a htemp thermal insulation material.
13. The area between the seat and the engine must be protected so that the drivers arm cannot get down to the clutch or chain. A piece of heavy gauge plastic or similar piece of material riveted or bolted to the chain guard is an acceptable means of protection.

## **RULES TO BE “PHASED-IN”**

1. Only a Briggs 206 engine will be allowed in all classes in 2015. (Except in Stock Animal & Adult classes. See rules for Stock Animal) The rules for the Briggs 206 engine can be found on their website: [www.briggsandstratton.com/engines-racing/racing-engines/karting/local-option-206](http://www.briggsandstratton.com/engines-racing/racing-engines/karting/local-option-206) or by clicking **HERE** to download.
2. If you come with a Flathead, you will be allowed to turn laps but will NOT be competing.

## **ASPHALT TIRE RULES**

1. All four tires need to be Dunlop with any compound you choose. (Old compound or new.)
2. Tire prepping is not allowed at the track.
3. No tire blankets or hot boxes allowed at the track.
4. Dunlops with the new tire compound will be available in early 2015 at Performance Auto in Fargo.

## **VIDEO/AUDIO/PHOTOGRAPHY DISCLAIMER**

1. By attending and entering the premises of a Red River Kart Club event, I consent to the creation and use of photographs, film, video tape, sound recording, and/or other likenesses of me and my image (jointly referred to as the “Images”) captured during Red River Kart Club events. Such Images may be used in perpetuity the advertising and promotion of the the Red River Kart Club, the events at the track or for historical reference without further soliciting further permission or compensation.
2. Any “images” captured by anyone other than a RRKC approved Media Official at a RRKC event may not be used in a manner deemed detrimental to the Red River Kart Club. Also, video, audio or photographic recordings will not be used to overturn decisions made by track officials.

## **RED RIVER KART CLUB SAFETY TECH LIST**

1. Weights pinned, painted white with number on them, and mounted safely. No weight shall be bolted to the underside of kart.
2. Seat mounting
3. Clips on axle
4. Spindles pinned
5. Brakes pinned
6. Steering system pinned
7. Wolf plate on brakes
8. Muffler must be safety wired.
  - 8b. 75% of the header pipe from the head to the muffler must be wrapped in a hi-temp thermal insulation material.
9. Header bolts wired

10. Nothing sticking out past wheels

11. Kids can reach pedals properly

12. Chain Guard

12b. The area between the seat and the engine must be protected so that the drivers arm cannot get down to the clutch or chain. A piece of heavy gauge plastic or similar piece of material riveted or bolted to the chain guard is an acceptable means of protection.

13. Full Floor Boards

14. Belly Pan must extend from the front of the frame to front edge of seat

15. Full Body-Must cover front wheels

16. Rear Bumpers – Full width

17. Improved catch tank

18. Helmet safety rating - Helmets are required to be Snell 2005 or SFI youth specifications or newer.

19. Have a neck brace

20. Proper jacket/racing suit-gloves - Must be jean jacket or racing suit

21. Chest protector for all kids ages 16 and under

22. Novice karts should have green tape on the gas pedal and red tape on the break pedal to help new drivers understand the difference

\* Before each heat it's a good idea to inspect your kart for potential problems. Check the play in the spindle and front axle bearings. Inspect the front spindles, frame, bearing hangers, bumper, steering mounts and steering wheel for the signs of cracking. Double check that all bolts and mounting fasteners are tight. A little maintenance can be the difference between watching the race from the pits or the front of the pack.

\* This list is by no means complete and additional items may be added and checked when necessary. There may be some things that were missed, and once again, the Pre-Race Tech Director will have the final say on all violations.

## **GO-KART CLASSES & SPECIFICATIONS**

1. Classes may be combined depending on entries.
2. We reserve the right to move a driver into any class depending on their driving ability.
3. All Karts Subject To Pre-Tech Inspection
4. All 206 classes follow the Briggs 206 rule set. ([www.briggsandstratton.com/engines-racing/racing-engines/karting/local-option-206](http://www.briggsandstratton.com/engines-racing/racing-engines/karting/local-option-206) or by clicking **HERE** to download.)

### **NOVICE CLASS (No Experience)**

Novice 1: Ages 5 to 6

Novice 2: Ages 6 - 7

Weight: Minimum 235 lbs

Engine: Factory Sealed Briggs Local Option 206 Motor with a Purple Slide Restrictor

### **ROOKIE 1 CLASS**

Ages: 6 to 8

Weight: Minimum 250 lbs

Engine: Factory Sealed Briggs Local Option 206 Motor with a Purple Slide Restrictor

### **ROOKIE 2 CLASS**

Ages: 8 to 10

Weight: Minimum 250 lbs

Engine: Factory Sealed Briggs Local Option 206 Motor with a Red Slide Restrictor

### **BRIGGS LOCAL OPTION 206 CLASS - BLUE SLIDE**

Ages: 9 to 11

Weight: Minimum 265 lbs

Engine: Factory Sealed Briggs Local Option 206 Motor with a Blue Slide Restrictor

### **BRIGGS LOCAL OPTION 206 CLASS**

Ages: 12 to 15

Weight: Minimum 275 lbs

Engine: Factory Sealed Briggs Local Option 206 Motor with the factory Black Slide

## **STOCK ANIMAL**

Ages: 15 and Up

Weight: Minimum 325 lbs

Engine: NKA Stock Animal (SEE BRIGGS ANIMAL ENGINE TECHNICAL INSPECTION GUIDE BELOW)

Restrictor: No Restrictor Plate

Fuel: Methanol or Gas with No Additives

## **ADULT STOCK ANIMAL**

Ages: 16 and Up

Weight: Minimum 325 lbs

Tires: 4 Dunlops of any size or compound

Engine: NKA Stock Animal (SEE BRIGGS ANIMAL ENGINE TECHNICAL INSPECTION GUIDE BELOW)

Restrictor: No Restrictor Plate

Fuel: Methanol or Gas with No Additives

## **ADULT OPEN ANIMAL**

Ages: 16 to Adult

Weight: Minimum 350 lbs

Tires: 4 Dunlops of any size or compound

Engine: Briggs Animal (Block, head & crankshaft)

- No Billet crankshaft
- Stock Briggs rocker arms
- NO roller rockers
- Intake & exhaust ports must remain in stock location (Carb in stock location)
- Stock ignition
- Stock Briggs Animal flywheel
- Stock Briggs Animal carburetor. (Internal modifications allowed)

Restrictor: No Restrictor Plate

Fuel: Methanol Or Gas With No Additives

## STOCK ANIMAL/ADULT CLASS - BRIGGS ANIMAL ENGINE TECHNICAL INSPECTION GUIDE

(From the National Karting Alliance TracBook – [http://www.nkaonline.com/wp-content/uploads/2014/02/TrakBOOK-2014\\_web-version.pdf](http://www.nkaonline.com/wp-content/uploads/2014/02/TrakBOOK-2014_web-version.pdf))

### SECTION 16: BRIGGS ANIMAL ENGINE SPECIFICATIONS

All components to be OEM unless otherwise specified. Gaskets and fasteners non-tech unless otherwise specified. Gasket sealer acceptable on all machined surfaces unless otherwise specified. All parts to be stock appearing and are subject to be compared to a known stock OEM part.

**16.1 Blocks:** to be OEM and can be repaired for broken rod or other damage providing the repair cannot be considered a performance enhancement. Ball and roller bearings shall be of metallic (magnetic steel) construction (excluding retainers) and be of conventional design. This includes inner and outer races as well as the balls and rollers. No other materials allowed. The repair of both coil post is allowed.

**16.2 Piston Pop Up:** .005" max. (Machining of block deck surface allowed to adjust pop up.) When measuring piston pop-up, it should be accomplished with bar stock on 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 centerline of the piston and check the popup it should not exceed 0.005".

**16.3 Maximum Cylinder Bore:** is 2.725", which provides for approx. .035" over bore.

**16.4 Crankshafts:** OEM only with stock factory timing gear. No modifications allowed. Stroke is 2.204" max and crankpin journal diameter min/max is 1.094" - 1.100"

**16.5 Connecting Rod:** Any aluminum connecting rod is permitted. (insert bearing optional) Length from bottom of wrist pin bore to top of crankshaft journal bore 2.419" " minimum, 2.429" maximum. Connecting rod bolts are non-tech. Rod grinding/"clearancing" is acceptable providing that it is in an area that needs clearance. Oil hole diameter non-tech

**16.6 Pistons:** OEM or Burris pistons only. Length from top of piston to top of wrist pin bore .655" minimum. Minimum overall piston length is 1.762".

**16.7 Rings:** Three rings are mandatory. Compression (top) ring to have chamfer (or dot) facing up. Scraper (2nd) ring to have the inside chamfer down and dot up. Rings must be in one piece when removed from block. Minimum width top two rings .095". Thickness top two rings .059"- .064". Oil ring minimum width .065", ring groove must be present. Expander ring must be installed. Oil ring thickness .098" - .102".

**16.8 Wrist Pin:** Must be magnetic steel. .624" to .626" OD, .438" max ID and 1.901" min length.

**16.9 Crankcase Side Cover:** Side-Cover must remain stock OEM item.

**16.10 Cylinder Head:** Stock OEM cylinder head part #555635. Machining of gasket surface only allowed. No grinding/machining of ports allowed. Depth of head at shallow part of head .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 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 .319" min. Depth to top of valve seat is .360" max. Head thickness measured from head gasket surface to head plate gasket surface is 2.420". Head thickness to be checked in four places through the valve guides and the push rod holes with gauge. Width of combustion chamber at the widest part across the valve seats area checked with a 2.640" NO GO at a depth of 0.200" in the combustion chamber.

**16.11 Valve Seats:** To be one angle only. Seats are non-tech and be stock appearing. Intake seat inside diameter, .966" GO - .972" No Go. Exhaust seat inside diameter, .844" GO - .850" No Go. Exhaust and intake seat 45-degree angle.

**16.12 Ports:** To have stock configuration. No porting or modifications of any kind allowed. Intake inlet: .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 set on floor 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. .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: .980 No Go.

**16.13 Valve Guides:** Valve guides non-tech and to be stock appearing. Maximum depth from cylinder gasket surface to top of valve guide is 1.255.

**16.14 Head Gasket:** OEM or after market head gaskets are allowed. No aluminum or copper head gaskets allowed. .042" Min. thickness measured in four places between head bolts. Measurements to be made with micrometers from inside of gasket.

**16.15 Cylinder Head Plate:** Must be OEM item. Cylinder head plate gasket must be stock configuration .055" maximum thickness.

**16.13 Rocker Arm Studs:** To be stock factory item.

**16.14 Rocker Arm Pivot Ball:** Stock factory item. Min/max diameter to be .590" - .610".

**16.15 Push Rod:** Stock factory item. Min/max diameter is .185" - .190". Min/max length is 5.638" - 5.656".

**16.16 Rocker Arms:** Must be stock as from the factory. Minimum overall length is 2.865".

**16.17 Valve Spring Retainers:** Stock OEM item. Min/max thickness is .055" - .075".

**Camshaft Profile Limits**

<b>Intake Degrees</b>	<b>Lift</b>	<b>Exhaust Degrees</b>
18 to 13 BTDC	0.020	61 to 56 BBDC
0 TDC to 4 ATDC	0.050	44 to 40 BBDC
16 to 20 ATDC	0.100	27 to 23 BBDC
33 to 37 ATDC	0.150	11 to 7 BBDC
42 to 46 ATDC	0.175	1 BBDC to 3 ABDC
53 to 57 ATDC	0.200	10 to 14 ABDC
67 to 71 ATDC	0.225	24 to 28 ABDC
Min. Lift	0.252	Min. Lift
Max. Lift	0.257	Max. Lift
39 to 35 BBDC	0.225	78 to 74 BTDC
25 to 21 BBDC	0.200	64 to 60 BTDC
15 to 11 BBDC	0.175	53 to 49 BTDC
5 to 1 BBDC	0.150	43 to 39 BTDC
12 to 16 ABDC	0.100	27 to 23 BTDC
28 to 32 ABDC	0.050	10 to 6 BTDC
44 to 49 ABDC	0.020	5 to 10 ATDC

**16.18 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 OEM camshaft cores are permitted: part numbers 555532 and 555584. Lobes may be ground, but not to exceed .870 base circle. Mechanical compression relief non-tech. Camshaft lobes must remain flat and of original width. Maximum valve lift of 0.255" taken directly off the valve retainer at zero valve lash. Place dial indicator on valve retainer then tighten ball rocker till you see indicator move 0.001" to 0.002" this will assure that all the lash is taken out of the valve. Set dial indicator to zero and then check lift. When checking the lift off the valve retainer the only dial indicator holder that will be used is three-leg holder.

**16.19 Valves:** Stock valves only and to 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 3.250".

**16.19.1 Intake Valve:** 45 degree seat face. Valve head min/max diameter is 1.055" - 1.065". Depth of dish in valve .099" - .119".

**16.19.2 Exhaust Valve:** 45 degree seat face. Valve head min/max diameter is .935" - .945". Depth of dish valve .084" - .104".

**16.20 Intake and Exhaust Spring:** Maximum spring length is .930". Min/max wire diameter .103" - .107", measured in three places on spring. Inside diameter of spring .615" minimum, .635" maximum. Must be stock appearing and have 4/4.5 coils.

**16.21 Valve Lifter:** Stock OEM lifter. Head of lifter to have a min/max diameter of .820" - .860". Min/max length of lifter 1.515" - 1.525".

**16.22 Valve Cover:** Stock OEM valve cover, that includes the breather hole for the tube that runs to the catch can (no threading of hole allowed).

**16.23 Intake Manifold:** Stock OEM intake manifold only. No modifications allowed except machining of gasket surface is permitted to meet rule specs. The gasket surface must remain flat for proper gasket seal the intake to head. The intake carburetor mounting holes may be drilled out to 0.328" max, and the width of the intake to carb slotted hole will be checked with the same max dia. Min/max length 1.740" - 1.760. Inside diameter min/max .885" - .905". Intake to block max gasket thickness .070".

**16.24 Carburetor:** "PZ Model 22" only. OEM factory carburetor only. Parts inside the float bowl or that can be removed through the float bowl are non-tech. Any 1/4" bolts may be used to attach carburetor 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 stock appearing as from factory except choke maybe secured in open position. Adapter will be allowed on end of fuel inlet of carburetor for attachment of 1/4" fuel line.

**16.24.1 Throttle Bore:** Max diameter is .874" must be as cast.

**16.24.2 Choke Bore:** Max diameter is 1.149" and must be as cast.

**16.24.3 Venturi:** Vertical max width is .792", this measurement shall be made with the No Go held parallel to the bore of the carburetor. Horizontal max width is .615" for top and bottom of Venturi (widest part), and .602" max will be the horizontal check for the narrowest part of Venturi, and this No Go may not enter slide area. Air pick off

hole maximum diameter .061”.

**16.24.4 Throttle Slide:** OEM item only. Minimum length top edge of slide to deepest part of cut away 1.142”. Alternate method is to check the depth of the cut away on the slide by placing it on a flat surface and attempting to run a .075” No Go pin into the .074” max cut away.

**16.24.5 Main Jet Metering Rod:** Min/max length is 1.677” to 1.692”. Taper on needle must not be less than .070” at .500” from the tip.

**16.25 Air Filter:** Air filter is optional and any air cleaner permitted. If air filter is used it must be installed directly to carb and no filter adapter is 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.

**16.26 Fuel Pump:** Pulse-type fuel pumps allowed. Fuel pump to be externally mounted and has to be pulsed only from the crankcase upper oil fill cap.

**16.27 Ignition:** If “JR” flywheel is used, the coil must be stock OEM coil part # 557040 to 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 plug wire. Spark Plug Connector must be stock factory type. Rubber plug boot allowed. Min weight 4 lb. 8 oz.

**16.28 Ignition:** If “PVL” flywheel is used the “PVL” coil 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 plug wire. Spark Plug Connector must be stock factory type. Min weight 4 lb. 4 oz.

**16.29 Flywheel:** key, coil air gap, spark plug boot and flywheel nut and washer non- tech. Any 14mm commercially allowed.

**16.30 Recoil Starter:** Non-tech and optional. Any style starter nut is allowed.

**16.31 Header and 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 .250” wide tape measure. Measurement to be made with silencer off of pipe and tape tight. If any part of the pipe is less than maximum the pipe is legal. Loop header pipes not allowed. Header/exhaust pipe may not protrude inside of exhaust port more than .625”. Header to be of fixed design and no sloppy pipes allowed. No extra tubes or extra holes allowed except hole for heat sensor probe if sensor is used. All header pipes must be of continuous length from the 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.

**16.32 Shrouds and Covers:** Engine shroud and covers and control bracket to be intact and stock appearing. The exception is the 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. New OEM air shield/guard “Part #555680” may replace plastic control cover and control bracket.

**16.34 Clutch:** Dry clutches only.