



# 2010 Technical Guide And Race Procedures

National Speedway Partnership, LLC

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## GENERAL INFORMATION

The rules and specifications in this guide are intended to make all National Speedway Partnership (NSP) sanctioned events a safe, fun, and fair experience.

**Rules Knowledge:** Everyone who registers for a NSP sanctioned event as a kart owner or driver and all individuals who enter the pit area or racing surface during a NSP sanctioned event are required to know these rules and any supplementary rules or instructions concerning the event and must abide by them.

**Responsibilities:** The kart owner and or driver is responsible for the safe condition and operation of any kart at NSP sanctioned events. The track owner is responsible for providing a properly maintained and safe place for the event.

**Spirit and Intent:** This manual provides technical specifications and inspection procedures to establish the legality of engines, racing chassis, and associated components used in NSP sanctioned events. Officials at NSP sanctioned events are authorized to decide if any change or design is an attempt to “beat the rules.” Also, just because a technical specification or part is not described in this manual does not imply or guarantee its legality. In these cases, the race officials will disqualify an entry, and the National Speedway Partnership will uphold the disqualification based on the “spirit and intent” of these rules. “Just because this Technical Manual does not state that you cannot, do not assume that you can.” While these rules are intended to be a guide for technical inspectors, they will also provide guidelines for NSP members in preparing legal engines and karts.

**Membership Requirements:** A competitor must be a NSP member in good standing to earn race points in NSP national events.

**Junior Members:** Junior Members must be under the age of 18 and will be part of (a) membership of the immediate family of, or (b) a legal ward of a Member in good standing.

**Temporary Memberships:** Weekend memberships may be purchased for participation in a NSP National event for a fee of \$15.00.

## DRIVER RULES AND REGULATIONS

**General:** Drivers must be NSP members in good standing to enter NSP sanctioned events. Drivers must abide by any age restrictions in any given class.

**Minors Age Requirements:** Persons under the age of 19 must submit a properly executed minor release form and a certified unaltered birth certificate must be on file prior to competing in any NSP sanctioned events.

**Driving Ability:** Race director has the right to refuse any junior driver from participating in a NSP Event based on his or her driving ability.

**Competitor Age Requirements:** All NSP classes have a minimum “competition age” requirement for drivers; some classes also have a maximum age limit. Both limits are stated in the class descriptions.

**Competition Age:** A driver’s actual age as of December 31 shall establish his/her “competition age” for the next calendar year. *EXAMPLE: A Driver is competing in a class that has a maximum age of 15 years. If the driver is 15 on December 31, 2000, the driver may compete in that class for the entire 2001 calendar year, no matter when the sixteenth birthday occurs.*

**Advancing in Age Category:** Drivers who are in the “option year” may compete in the lower age class for the entire calendar year; however, if a driver moves up an age class, he may not compete at the lower age at any NSP sanctioned event for the remainder of that year. *EXAMPLE: Driver is 12 at the beginning of the 2008 season but turns 13 during the 2008 calendar year. He may race either in Junior 2 or Junior 3 classes. If the driver chooses to move up to Junior 3 at a NSP sanctioned event, he may not return to Junior 2 status.*

**Attained Age:** Any driver that is racing the Junior 1 class must be the actual age of 8 years. This is the attained age of the driver. Any driver who is moving up to adult classes must be the attained age of 15. Rookies must be the attained age of 5 years and may not be 8 have reached their 8<sup>th</sup> birthday to compete in the rookie class. (Chase’n Race’n kids class is a rookie class)

**Attempting to Falsify Documents:** Falsification of any competitor’s age or any other information required on the membership application form will subject that member to disqualification and suspension of membership privileges. Family Members are entirely responsible for supplying accurate information for the Minor Members.

**Driver’s Physical Condition:** The Race Director may refuse to allow a driver to race based on the driver’s physical condition or advice from track medical personnel or from a hospital or other medical facility.

**Disabled Drivers:** Drivers with disabilities wishing to compete in NSP sanctioned events may apply in writing to the Partnership for the waiver of a specific rule or specification. The request may not negatively affect safety and may not provide a significant performance enhancement.

## EVENT REGISTRATION RULES

**Membership Cards:** The driver must present his or her NSP membership card and have a wristband when registering for any NSP sanctioned event when requested.

**Practice:** A competitor must be entered in at least one class before going onto the track for official practice, qualifying, or racing. Failure to do so may result in disqualification for that event and possible suspension. All competitors must have a paid practice sticker suffixed to the left side of the drivers helmet for practice day.

**Official Entry:** The official entry at all NSP sanctioned events includes the driver, kart frame, and engine. Once the kart passes through scoring on an official lap, the kart frame and engine cannot be changed without permission of the Race Director. If an approved change is made, the entrant will be subject to tech of all engines and/or chassis used during the qualifying session or race.

**Relief Driver:** No relief driver is allowed at NSP sanctioned speedway events.

**Pre-Entry:** Pre-entry for a NSP sanctioned event is final and is not refundable unless notification of withdrawal is made 24 hours prior to the scheduled opening day of the NSP sanctioned event or by specified date stated on OFFICIAL ENTRY BLANK for the NSP sanctioned event. Pre-entries may not be cancelled selectively by class.

**Payment of Entry:** Failure to properly pay registration, entry, an/or pit pass fees, including uncollectible checks or cancelled credit card transactions, may submit individual to disqualification from the NSP sanctioned event and possible suspension of membership privileges. No points will be given to any entry that has not been paid in full.

## GENERAL DRIVER RULES

**Behavior:** All drivers shall conduct themselves in a safe and orderly manner. Physical violence or abuse of any individual, official, participant, or spectator at the site of a NSP sanctioned event will subject the offender to immediate disqualification, ejection from the event site and possible suspension of membership status. The Race Director must report such incidents to the Partnership office within 24 hours of the event's conclusion with the recommendation for disciplinary action.

**Verbal Abuse:** Any verbal abuse will be subject to unsportsmanlike conduct penalties. This rule applies to any person on track property. Verbal abuse to any official or partner of the NSP at any time by a NSP member will result in possible suspension or termination of membership.

**Banned Substances:** No alcohol is allowed in the pit area during a NSP event. Local track rules will dictate whether alcohol may be consumed on the track property after a NSP event. No driver shall be under the influence of any medication that may interfere with the driver's ability to operate a racing vehicle in a safe manner.

**Drug and Alcohol Testing:** NSP reserves the right to administer random drug screening to participants at the track. If deemed necessary by the Race Director, a breathalyzer may be administered to any participant at any time.

**Pit Crew:** Pit crew and family members are the responsibility of the drivers. Any unsportsmanlike conduct by a crew member or family member will result in action being taken against the driver.

**Pit Area:** All persons entering the restricted area of a NSP sanctioned event site must sign all insurance-related documents as prescribed for that NSP sanctioned event. Failure to do so will subject the individual to disqualification, immediate removal from the restricted area and/or suspension of membership privileges.

**Drivers' Meeting:** All drivers must attend drivers' meetings. Failure to attend could mean the loss of the driver's fastest qualifying lap.

**Rolling in of the Track:** When called for, all drivers will be required to slow roll track surface. Any driver not participating in track roll in procedure will be excluded from last round practice in all classes for that day.

**Transponder Scoring:** Where transponders are used, it is the driver's responsibility to ensure that the transponder is securely and correctly mounted and functioning before entering the track for qualifying or racing. Failure of the electronic scoring system to pick up the transponder signal may prevent the competitor from being timed for qualifying or scored in the event; however, if a transponder fails to function during a race, the Race Director shall contact the finishers immediately in front of and immediately behind the non-scoring kart and consult with

the other race officials to be sure of its finishing position. If the position can be confirmed, the Race Director can award the non-scored kart its correct position.

**NOTE:** In the event of transponder system problems, NSP will convert to pill draw and one heat race format.

## GENERAL RACING RULES

**Course Boundaries:** Course boundaries such as discs, pylons, or other markings designated by the Race Director must be observed by all drivers at all times. Practice pylons are used to help prepare the track for optimum racing conditions. Any driver hitting a pylon during a practice session will be black flagged from that round of practice and must immediately leave the racing surface.

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

**Re-Entry to Track:** There will be no re-entry once the green flag has dropped. If a competitor leaves the track, he or she will be scored in accordance with the number of laps completed..

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

**Class Practice:** If a driver participates in an unassigned practice session, the Race Director may take action such as causing the driver to skip a practice session or start the race at the rear of grid.

**Unsafe Driving:** Unsportsmanlike driving will be determined by the race officials. Bumping or erratic driving such as blocking or pushing should be avoided. If, in the judgment of the race officials, a competitor shows unsportsmanlike driving, he or she may be disqualified and is subject to further penalties. Unsafe driving will be the sole call of the Race Director and Head Flagman. Competitors who are deemed to be driving in an unsafe manner will be black flagged and must leave the racing surface in a safe and courteous manner.

**Lapped Karts:** Participants about to be lapped by faster competitors are responsible for knowing of the approaching faster karts and must move out of the racing line until the end of the race. Lapped competitors will observe the move over (blue) flag or subject themselves to disqualification.

**Initial Start of Race:** Double file initial start. Front 2 karts must be within an acceptable distance of each other (preferably side by side). Start will be determined by the Flagman and/or Race Director. If after 2 attempts (or fewer, if Race Director sees fit), drivers cannot achieve a fair start, field will be lined up single file in qualifying order and started.

**Exiting the Track:** At the completion of any qualifying session or race during a NSP sanctioned event, all karts exiting the track must proceed to the area designated by the Race Director or they will be ineligible for points and/or awards. NO DRIVING IN THE PITS! This will be cause for immediate disqualification.

**Accidents:** Race officials will, at their discretion, inspect all karts involved in an accident. Officials may also inspect all safety apparel after such an incident.

**Crew Members:** Pit crew and family members are not permitted on the track at any time the track is active. The only exception to this rule is if the Race Director or other race official directs non-drivers to the track.

**Injured Driver:** If a driver involved in an accident appears to be injured, the Race Director may refuse to allow the driver to continue to race. If the Race Director decides that unsafe or unsportsmanlike driving caused the red flag, the offending driver(s) will be placed at the back of restart order. The Race Director may disqualify the offender(s) if he deems the infraction to be serious enough to warrant. The Race Director may also take disciplinary action.

**Accident Weigh-In Procedure:** If the medical personnel on site state that a driver needs to be transported due to an accident, the driver will receive finish position points regardless of whether he/she is able to weigh-in or not. If the medical personnel keep a driver for examination, the Race Director may waive the weigh-in requirement if the driver's class has already cleared the scale.

**Kart Repairs:** If a race is red-flagged or stopped under a yellow to realign the field, all work on the karts is prohibited without the permission of the Race Director. A complete restart occurs when the field has not completed a full lap under green. The Race Director may disqualify a damaged kart for safety reasons.

**Race Restarts:** Restarts after a yellow or red flag will revert to the most current order of last completed lap. If no laps have been completed, the field will revert to qualifying order. Karts involved in the incident causing the delay may be put to the rear of the field at the Race Director's discretion. A lap is considered to be complete when all karts on the lead lap have passed the finish line or scoring loop.

**Incomplete Qualifying Policy:** In the event of inclement weather, time constraints, or other extenuating circumstances during qualifying or any portion of qualifying, classes that have qualified will line up according to qualified position for main; classes that have not qualified will then be lined up according to current point standings. If no qualifying is possible, the entire race may be, at the Race Director's discretion, lined up according to current point standings for the main. If there are no current point standings, NSP will revert to pill draw for lineup of mains.

**Incomplete Race Policy:** If at least ten green-flag completed laps (by the leader) of the scheduled race have been completed at the time of a red flag, the Race Director may restart the race or may consider the race complete, with the official finish being based on the running order at that time. If less than ten of the scheduled race green-flag laps (by the leader) have not been completed and the race is called, the entire field will receive first place points.

**Complete Race:** The finishing order of races completed due to a red flag or completed under a full course yellow will be the running order of the last completed lap. The finishing order of races completed under waving yellow and checkered flags or red and checkered flags will be as follows:

- A. Upon displaying the white flag to the leader, the race is considered complete. If there is an incident prohibiting the completion of the race and the checkered flag is waived with either the yellow or red flag the race will be considered complete and the finishing order will revert back to the position achieved when the leader crossed the finish line at the white flag.
- B. If any karts have passed the finish line (scoring loop) before the yellow or red flag was displayed, they shall be scored as they finished. All other karts will be scored based on their positions on the last completed lap.
- C. The competitors responsible for the red or yellow flag will be scored at the rear of the last completed lap they were running or be disqualified. A lap is considered to be complete when all karts on the lead lap have passed the finish line (scoring loop).
- D. There will be a 20-minute time limit on all races. At the 20-minute mark, the Flagman will display the white flag to the leader at his or her next crossing of the scoring loop, no matter how many laps have been completed. The race will be complete after the checkered flag falls.

**Grid:** There is to be only one person with each driver in the grid area. Entrant may be ejected from event if more than one person is in the grid.

**Points after Disqualifications:** In the event a driver is disqualified for unsportsmanlike conduct or driving, the driver must use that race finish in his or her national points and may not use the race as a “drop.” In the event of mechanical failure on the track, post-race engine, oil, or fuel tech, or being underweight, the race may be used as a “drop race.” However, if the driver is disqualified repeatedly for any reason, **he/she** could be subjected to the same penalty as unsportsmanlike driving or conduct. Any attempt to counterfeit or remanufacture OEM parts will result in a disqualification, and the race may not be used as a “drop race.”

**Scratch Entries:** If an entrant is scratched, the space shall be filled (a) if on the track, by moving karts forward directly and (b) if still on the grid, by crossing over to make the starting grid proper, based on the karts available for the race based on qualifying position.

**Ninety Second Rule:** All drivers have 90 seconds to start from the grid and enter onto the track at the beginning of the race. The competitor must be on the grid, in starting position, in the kart, and ready to race for the 90 second rule to be in effect for that competitor. Once the Grid Official radios to the Flagman and Race Director that the grid is clear and all karts have entered onto the track, the 90-second rule no longer applies. If a kart stalls after that and enters the hot

pit to restart, he may do so; however, the race can start at any time and if the race starts before driver leaves the grid, he may not re-enter the race.

### **National Race Format**

**Qualifying:** All National events will utilize a qualifying format.

- A. A five lap format will be used. (This may be shortened due to time constraints) Each competitor will be allowed to use the fastest lap to determine his/her starting position in the main event.
- B. Race director, may at his discretion, shorten the number of qualifying laps due to time constraints, or revert to points standings to set the race field if time does not permit qualifying. If no points have been established, a pill draw will determine starting positions.
- C. Racers must qualify in the groups posted. Failure to qualify with the posted group will mean the entrant will lose credit for the fastest two (2) qualifying laps. Race director has the authority waive this statute if there are extenuating circumstances.
- D. There is to be no drafting during qualifying. Drafting, or bump drafting may result in competitor's 2 fastest lap being disqualified from scoring.
- E. It is the competitor's responsibility to have a transponder mounted on his or her kart. If the competitor is utilizing his or her own transponder, it is his or her responsibility to have that transponder fully charged. If no transponder is attached to kart, the competitor will not be scored. If more than the maximum number of entrants attempts to qualify for the feature event, any competitor who is not scored due to no transponder being installed will not be allowed to start the feature.

**Race:** All NSP features will be scheduled for 20 laps. (Please see sections, COMPLETE and INCOMPLETE RACES for exceptions) Race director may at his discretion shorten race length.

### **PIT AREA RULES**

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

**Insurance Regulations:** Everyone, including race officials and track workers, who enter the track's restricted area must comply with all registration procedures and insurance. Failure to do

so or entrance by fraud, deceit, or passage into the area except by designated gates will subject an individual to immediate removal from the restricted area and possible suspension of membership privileges. Everyone receiving a pit pass is required to sign all insurance documents. There will be no signing of these documents by any person other than the actual entrant receiving the pit pass.

**Open Flame Policy:** The use of open flames to treat or heat tires is prohibited in the pit or grid areas. An area away from fuel or other flammables must be designated for welding. No smoking is permitted in grid and in the pump-around areas. Each person is responsible for the disposal of their own fuels, oil, and other liquids. Containers may be provided by the track but this is not mandatory. There will be no dumping of harmful products on the grounds of any facility hosting a NSP event. Failure to do so will subject individual to suspension.

**Mandatory Fire Extinguisher:** There must be a working fire extinguisher in each competitor's pit at all NSP sanctioned events. Insurance personnel have the right to inspect every trailer for compliance.

**Driving in the Pits:** Karts may not be driven in the restricted pit area except for specific areas designated by the race or track officials.

**Personal Transportation:** All transport vehicles (bikes, motorcycles, skateboards, ATV's) or any other motorized vehicle is not allowed in the pits without express consent from the Race Director.

## FLAGGING

**Green:** Track is clear and ready for karts at race speed. Indicates the start or re-start of race, qualify, or practice.

**Red:** When the red flag is displayed, all drivers are to bring their karts to a stop as soon as safely possible.

**Blue:** This flag warns lapped traffic that another kart is approaching and the lapped kart is to move up and out of the racing line for the duration of the race. Failure to move out of the racing line will result in disqualification.

**Black:** A rolled black flag is a warning to a driver for rough driving, unsportsmanlike conduct, or other infraction. A warning may or may not be given depending on the offense. A waving black flag tells a driver to immediately leave the track surface in a safe and sportsmanlike manner. The black flag can be waved for conduct on the track or for a mechanical issue. Failure to leave the track will result in disqualification or suspension.

**White:** Tells the field that there is one lap remaining in the race. The white flag is not mandatory; it is a courtesy to the drivers.

**Checkered:** Indicates to the field that the session is over, whether it is practice, qualifying, or a race.

**Crossed Flags:** Indicates the race is half over. This is not mandatory.

**Two Rolled Flags:** Indicates two laps remain in a race. This is not mandatory.

## OFFICIALS

**Race Director:** The Race Director is NSP's race official with responsibility for all aspects of a NSP sanctioned event. He or she is in charge of all other race officials and personnel and has complete charge of the karts while on the track. The Race Director is responsible for enforcing all NSP rules and regulations stated in the NSP rule book, tech updates, and all supplementary rules in force for an event. The Race Director may direct the Head Flagman to warn competitors of unsportsmanlike or unsafe driving by pointing a rolled black flag. He or she may direct the removal of a driver from the track for driving infractions or defective equipment by waving a black flag. The Race Director has the authority to hand out more severe penalties for unsportsmanlike driving or conduct.

**Flagman:** The Head Flagman is in charge of the corner marshals and is responsible for making flag signals to drivers under the direction of the Race Director. The Head Flagman and Race Director shall hold pre-race drivers' meetings to brief competitors on the use of flags, special track conditions, and other information.

**Technical Inspector:** Technical Inspectors are in charge of pre- and post-race inspections for both safety and compliance with technical specifications. The Technical Inspectors and assistants will verify compliance with states specifications to certify all finishes at NSP events as official.

**Head Score Keeper:** The Chief Scorer is in charge for timing and scoring.

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

**Cornermen:** The Cornermen will be posted around the course to assist the Race Director and Head Flagman in and safe and orderly running of the event.

## PROTEST PROCEDURES

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

**Protest Procedure:** All protests must be submitted in writing to the Race Director (or designated official) of the NSP event within 30 minutes after completion of the race that is being protested, or, in the case of a scoring protest, 30 minutes after official results have been announced and/or posted. The written protest must refer to (1) the specific Technical Manual page and section, (2) The Technical Update Section, or (3) the specific supplementary rules in force for an event. No money is required for the protest procedure. Anyone filing a protest on another competitor's equipment must keep his or her own equipment in the impound area following the race. Once a competitor's equipment has been removed from the impound area, he or she has waived the right to file a protest on another competitor's equipment, regardless of whether 30 minutes have elapsed from the completion of the race in question. If a driver's finishing position is adversely affected by an incident on the track, the driver cannot be reinstated to his or her previous position. However, this does not prevent the driver from filing a protest after the race to argue a position penalty given by the officials. The Race Director will make the decision based on information gathered by officials and involved competitors. The Race Director will then deliver the decision to the competitor. Only one protest from only one entrant in the class will be accepted for each incident or alleged technical violation. Once a protest is properly filed, no additional protests for the same incident or technical violation will be accepted.

**Appeals:** If a protest is denied by the Race Director and the driver wishes to appeal, he or she may do so with the Appeal Committee at the track for a fee of \$100.00. The Appeal Committee will meet and decide the outcome of the appeal and deliver the decision to the Race Director so that the driver can be informed and the correct finishing order can be posted at the event. The final decision will be made at the track the day of the appeal. There will be no further appeals.

## **DISCIPLINARY ACTIONS**

**Probation:** A warning. The Partnership or Race Directors may place any member on probation for just cause. Probation period to be determined by the Sportsmanship Committee. Any further infraction while member is on probation could result in suspension.

**Suspension:** The Partnership may immediately suspend (1) NSP member who violates any rule in this manual that lists suspension as an appropriate penalty, (2) any NSP member whose actions the Partnership deems to be sufficiently detrimental to the Partnership or its members, or (3) any NSP member who is on probation and violates the terms of the probation.

**Duration of Assigned Penalties:** A probation or suspension will be in effect until the next Sportsmanship Committee meeting where the Committee will establish the final terms and duration of the disciplinary action.

**Notifying Members of Penalties:** NSP will notify members placed on probation, suspension, or termination in writing within ten (10) business days of the action.

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

## IMPOUNDED ITEMS

**Illegal Parts:** Any engine or other component found to be illegal during technical inspection may be impounded at the discretion of the Head Technical Inspector or Race Director for later inspection.

**Equipment Deemed Unsafe:** Any kart or part that the race officials find to be unsafe may be impounded for review and/or inspection at a later time by NSP at the race officials' discretion.

## MISCELLANEOUS RULES

**Post Race Tech:** Top 2 qualifiers in each class will be held for technical inspection. Top five competitors' karts and motors will be held in impound area after the completion of each race. Any kart may be inspected at any time at the request of the Technical Inspector or Race Director.

**Awards:** NSP will dispose of all trophies and awards not claimed within 45 days of first presentation. Competitors are responsible for any shipping and handling costs incurred to get the award to them. NSP will ship year end awards at racers' expense. NSP will bring series awards to the next event. After 45 days awards will be destroyed or donated to charity.

## PERSONAL SAFETY ATTIRE

**Neck Braces:** All drivers in all series must wear an unaltered collar-type neck brace designed for motorsports use when on the track. Any driver losing a neck brace while on the track will receive a black flag and will be removed from the track immediately.

**Clothing:** Drivers are required to wear jackets of leather, vinyl, ballistic nylon or other abrasion resistant material and full-length pants to prevent or minimize abrasions. No sweat pants. Shoes, socks, and gloves are mandatory. Chest Protectors meeting SFI Specification 20.1 are mandatory for all drivers in all classes where the maximum age is 12 or lower. Ballast weight may not be added to the driver, i.e. addition of weight to driving apparel, weight belts, ankle weights, etc., without written permission from the Race Director. If requested, driver must supply name of manufacturer of driving apparel for comparison purposes. NOTE; Driver may not have hair extending below helmet line. Hair must be kept inside helmet or tucked into racers jacket.

**Pre-Tech:** All driver personal safety equipment is subject to pre-race tech inspection and is subject to re-inspection at any time. Any safety item may be subject to inspection at post race inspection. All weight bolts must be either pinned or double nutted.

## **Pre-Race Inspections**

The primary purpose of pre-race inspection is to establish that safety requirements have been met by each competitor prior to entering the track at speed. It is the responsibility of the entrant to provide for pre-race inspection, the chassis, helmet, neck collar brace, exactly as to be raced that day. Passing pre-race tech does not guarantee post race legality.

### **ALL EQUIPMENT MAY BE SUBJECT TO INSPECTION AT ANYTIME DURING THE EVENT.**

All steering assembly bolts and nuts, including spindle bolts must be cotter-keyed or safety wired. Any fastener (nut bolt, ect) of a component that would enable movement or adjustment of spindles such as castor, camber must be drilled for and utilize either cotter-pin or safety wired.

All karts must have brakes to be able to brake both rear wheels equally and adequately. All bolts and nuts to be cotter-keyed or safety wired. All master cylinder and caliper mounting bolts to be cotter-keyed or safety wired. Brake disc bolts must use steel crimped locknuts or be cotter-keyed or safety wired. **NO NYLOCK STYLE NUTS ALLOWED!**

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

Weights must be white in color for visibility. Mounting of weight to nerf bars and rear bumpers is prohibited. Weights may be mounted on front bumper only if there is a front nose cone.

Weights added to meet minimum kart/driver weight must be bolted securely to the kart with bolts of at least 5/16" in diameter. Weight in excess of 7 lbs must use two or more 5/16" bolts. All bolts must be cotter-keyed or double nutted. **NO LOOSE WEIGHTS ALLOWED ON DRIVER.**

Animal Headers must be heat wrapped.

Any competitor may be subject to random oil and fuel inspections at any time. This includes in the hot grid. NSP officials reserve the right to draw oil or fuel for testing prior to qualifying or racing.

**Helmets:** Full coverage (full face) helmets designed for competitive motorsports use are mandatory and must comply with one of the following: Eye protection is required using a full-face shield integral with the helmet.

<u>Snell Foundation</u>	<u>Specifications</u>	<u>Legal Until</u>
1998 K (kart)	12/25/07 NO LONGER LEGAL FOR USE IN KARTING EVENTS!	
2000 SA and M		12/25/10
2005 SA and M		12/25/14
2005 K		12/25/14
<b>SFI Specifications</b>		<b>Legal Until</b>
24.1 (Youth Helmet)		12/25/12
31.2a		12/25/12
41.2a		12/25/12
24.1/2005 (Youth Helmet)		12/25/14
31.1/2005		12/25/14
41.1/2005		12/25/14

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

## **CHASSIS SPECIFICATIONS**

MAXIMUM OVERALL KART LENGTH: 74"

MAXIMUM OVERAL KART WIDTH: 50"

MINIMUM TREAD WIDTH: 28", measured from the centerline of right tire to the centerline of left tire.

MAXIMUM OVERALL KART HEIGHT: 26" This does not include windshield fairing or steering wheel. Windshield fairing may be installed higher to protect the driver. Fairing cannot be installed in such a manner as to obstruct the driver's vision. It can be no higher than the driver's eye level while sitting in the kart in a normal driving position.

SEAT: No portion of the seat may be located rearward or a plane projected vertically from rear of rear axle.

SEAT HEIGHT REQUIREMENTS ARE AS FOLLOWS:

Junior 1 and 2 classes: 10" minimum

Junior 3 classes: 12" minimum

All other classes: 14" minimum

NOTE: Measurement is a vertical plane from ground to center of seat back.

\*\*There may be no device attached or mounted to the seat that is higher than the seat itself. Padding of 1" or less is acceptable at top of seat lip.

TIRES: Maximum width on any tire and wheel combination of 10-3/8"

**Axles must be made of steel. No Carbon Fiber, titanium, or aluminum nor any other type of non steel or material may be used.**

### **Senior and Junior Champ Kart**

Main frame rails must be constructed of minimum 1 1/8" diameter 0.083 wall thickness mild steel round tubing.

WHEELBASE: must me minimum of 42" and maximum 45"

MAXIMUM WIDTH: shall be 52" measured from outside to outside of tires.

MAXIMUM LENGTH: shall be 95"

ROLL CAGE: Please refer to WKA or IKF technical manual for frame and roll cage specifications. Both sanctioning bodies rules are acceptable for NSP events.

\*\*\*\*DRIVERS HED MAY NOT PROTRUDE FOR TOP OF ROLL CAGE. THIS RULE CAN BE ENFORCED AT ANY TIME DURING THE RACE PROGRAM.

\*\*\*\*\*DRIVERS SEAT MUST BE MOUNTED AT LEAST 6" FROM THE LEFT SIDE NERF BAR. THIS CAN BE PRE-RACE AND POST-RACE INSPECTED.

## **CLASS STRUCTURE**

### **Adult Champ Lite and Heavy**

Age 15 and older

Engine: Briggs and Stratton Animal

Fuel: Methanol

Weight Lite: 410

Weight Heavy 425

Tire: Maxxis HT-3

### **Junior 1 Champ**

Age: 8-10

Engine: Briggs and Stratton Animal 3 Hole .225" Purple Restrictor

Fuel: Methanol

Minimum Weight: 300

Tires: Maxxis HT-3

### **Junior 2 Champ**

Age: 10-12

Engine: Briggs and Stratton Animal. 3 Hole .250" Black Restrictor

Fuel: Methanol

Minimum Weight: 315

Tires: Maxxis HT-3

### **Junior 3 Champ**

Age: 13-15

Engine: Briggs and Stratton Animal. 3 Hole .312" Gold Restrictor

Fuel Methanol

Minimum Weight: 340

Tires: Maxxis HT-3

### LOCAL AND REGIONAL 4-CYCLE SPEEDWAY CLASSES

Local Track Classes to be run at regional and local points races. National classes may also be run at any weekly event.

<u>CLASS</u>	<u>WEIGHT</u>	<u>AGE</u>
Junior 1 (blue, .425 funnel)	235# (Lite) 270# (Heavy)	Must be attained age of 8-11
Junior 1 Briggs OHV (3 hole 251)	245# (Med) 270# (Heavy)	Must be attained age of 8-11
Junior 2 (red, .500 funnel)	285# (Lite) 320# (Heavy)	12-15
Junior 2 Briggs OHV (3 hole 312)	305# (Med) 330# (Heavy)	12-15
Jr. 2 Super Briggs (gold, .575 flat)	325#	12-15
Stock Lite	330#	15-up
Stock Medium	350#	15-up
Stock Heavy	375#	15-up
Super Heavy*	395#	15-up
Unlimited – Super Stock	310# (per tech)	16-up
Ltd. Modified	350# (per tech)	16-up
Modified Briggs	360# (per tech)	16-up
Briggs OHV Stock Medium	350#	15-up
Briggs OHV Stock Heavy	375#	15-up
Briggs OHV Blue Wazoom Med	350#	16-up
Briggs OHV Blue Wazoom Hvy	375#	16-up

\*Minimum driver weight in driver apparel (i.e., suit, helmet, gloves, neck brace is 200 lbs. No extra weight may be carried by the driver.

Local tracks may have other classes but all information must be submitted in writing to NSP for approval.

## NATIONAL POINTS SCHEDULE

FINISH	POINTS		
		16th	50 + # of Entries
1st	200 + # of Entries	17th	45 + # of Entries
2nd	175 + # of Entries	18th	40 + # of Entries
3rd	155 + # of Entries	19th	35 + # of Entries
4th	140 + # of Entries	20th	30 + # of Entries
5th	130 + # of Entries	21st	27 + # of Entries
6th	120 + # of Entries	22nd	24 + # of Entries
7th	110 + # of Entries	23rd	21 + # of Entries
8th	100 + # of Entries	24th	18 + # of Entries
9th	90 + # of Entries	25th	15 + # of Entries
10th	80 + # of Entries	26th	12 + # of Entries
11th	75 + # of Entries	27th	9 + # of Entries
12th	70 + # of Entries	28th	6 + # of Entries
13th	65 + # of Entries	29th	3 + # of Entries
14th	60 + # of Entries	30th	1 + # of Entries
15th	55 + # of Entries	31st	0 + # of Entries

**Year End National Points Series Awards:** All Competitors must participate in at least 4 of the 5 NSP/Mid America Speedway Nationals events to qualify for year-end points. Points totals will be based on the best 4 of 5 races for the season.

NOTE: There will be a 50-point Grand Nationals Bonus for participation in the Mid America Speedway Grand Nationals.

**National Points Champion Benefits:** If past National Points Champion driver is NSP member and in good standing, the following benefits will apply:

- A. Retention of kart number at no additional cost for all classes entered, effective for the following calendar year.
- B. Qualifying attempt is required; however, inability to qualify for class in which he/she is previous National Points Champion, the last starting spot in the main will be awarded, effective for the following calendar year.
- C. NSP Logo Driving Jackets:
  - a. Red Jacket – (One) Class National Points Champion
  - b. Black Jacket – (Two) Classes National Points Champion
  - c. Gold Jacket – (Three) Classes National Points Champion
  - d. Platinum Jacket – (Four+) Classes National Points Champion

**Triple Crown Award:** A driver who wins a minimum of three National Point Championships in classes that average a minimum of six entries will be awarded a Triple Crown Championship.

**Minimum Participation:** An average number of ten entries per class for the racing season is required for a **National Points Title** to be awarded. No class with less than an average of 10 entries will be eligible for the manufacturer's cup competition. Any class that does not meet the minimum average will be eliminated from the next season's schedule unless class is voted in by a majority of the partnership.

**Tie Breaker:** Any class points series ending the season in a tie will be broken by the competitor's best finish at the Grand National event.

Official Results: Competitors have 30 days from the date that results are posted on the internet site ([kartseries.com](http://kartseries.com)) to protest the points awarded.

## **SPEEDWAY DIRT NATIONAL SERIES CLASSES**

### **JUNIOR 1 LITE & HEAVY**

Driver Requirements: Ages 8-10

Engine: Briggs & Stratton Stock 5HP, with a 0.425" (purple) restrictor plate

Fuel: Methanol

Minimum Weight: 250 lbs. (Lite)

Minimum Weight: 265 lbs. (Heavy)

Other: No steering fairing

Body: Junior style only

Spec Tire: Maxxis HT3

### **OHV JUNIOR 1 LITE & HEAVY**

Driver Requirements: Ages 8-10

Engine: Briggs and Stratton Stock OHV Engine with a restrictor plate top hole 0.225" and a bottom hole of 0.225" (purple)

Fuel: Methanol

Minimum Weight: 260 lbs. (Medium)

Minimum Weight: 275 lbs. (Heavy)

Other: No steering fairing

Body: Junior style only

Spec Tire: Maxxis HT3

## **JUNIOR 2 LITE & HEAVY**

Driver Requirements: Ages 10-12

Engine: Briggs & Stratton Stock Raptor 5HP, with a 0.500" (turquoise) restrictor plate

Fuel: Methanol

Minimum Weight: 275 lbs. (Lite)

Minimum Weight: 290 lbs. (Heavy)

Other: No steering fairing

Body: Junior style only

Spec Tire: Maxxis HT3

## **OHV JUNIOR 2 LITE & HEAVY**

Driver Requirements: Ages 10-12

Engine: Briggs & Stratton Stock OHV Engine, with a restrictor plate top hole of 0.250" and a bottom hole of 0.250" (black)

Fuel: Methanol

Minimum Weight: 285 lbs. (Medium)

Minimum Weight: 300 lbs. (Heavy)

Other: No steering fairing

Body: Junior style only

Spec Tire: Maxxis HT3

### **JUNIOR 3 LITE & HEAVY**

Driver Requirements: Ages 12-15

Engine: Briggs & Stratton Stock Raptor with a .575" (gold) restrictor plate

Fuel: Methanol

Minimum Weight: 300 lbs. (Lite)

Minimum Weight: 320 lbs. (Heavy)

Spec Tire: Maxxis HT3

### **OHV JUNIOR 3 LITE & HEAVY**

Driver Requirements: Ages 12-15

Engine: Briggs & Stratton Stock OHV Engine with a restrictor plate 3 hole 0.312" (gold)

Fuel: Methanol

Minimum Weight: 310 lbs. (Medium)

Minimum Weight: 330 lbs. (Heavy)

Spec Tire: Maxxis HT3

### **STOCK LITE, MEDIUM, & HEAVY**

Driver Requirements: Age 15 and older

Engine: Briggs & Stratton Stock Raptor Engine

Fuel: Methanol

Minimum Weight: 330 lbs. (Lite)

Minimum Weight: 350 lbs. (Medium)

Minimum Weight: 375 lbs. (Heavy)

Spec Tire: Maxxis HT3

### **OHV LITE MEDIUM AND HEAVY**

Driver Requirements: Age 15 and older

Engine: Briggs & Stratton Stock OHV Engine

Fuel: Methanol

Minimum Weight 330 lbs (Lite)

Minimum Weight: 350 lbs. (Medium)

Minimum Weight: 375 lbs. (Heavy)

Spec Tire: Maxxis HT3

### **BRIGGS BLUE WAZOOM**

Driver Requirements: Age 16 and up. May not run this class at 15 years old.

Engine: Briggs OHV Sealed Blue Wazoom

Minimum Weight: 360 lbs. (Medium)

Spec Tire: Maxxis HT3

### **KID KARTS (EXHIBITION ONLY)**

Driver Requirements: Ages 5-7

Engine: Blueprinted Briggs & Stratton Stock 5HP Engine with .235" Buller Blue Restrictor Plate

Weight: 250 lbs.

Tire: Open Tire Rule

## NSP 4-CYCLE TECHNICAL GUIDE

**All ENGINES** in impound must be ready to be teched within 30 minutes of the finish of the final event for that engine for the day. All engines will be teched on the day they are raced unless otherwise announced at the event.

### STOCK BRIGGS & STRATTON ENGINE RULES

#### Technical Inspection Procedure

Engine Nos. 130202, 130232, 131232, 132232, 133230, 133232, 135230, 135232

UNLESS OTHERWISE SPECIFIED, ALL PARTS ARE TO BE STOCK AND UNALTERED. PARTS MAY BE TECHED AGAINST A KNOWN STOCK PART. DO NOT ASSUME ANY ITEM IS LEGAL BECAUSE SPECIFIC REFERENCE IS NOT MADE IN THE "TECH MANUAL." ASK YOUR TECH OFFICIAL. HE WILL OBTAIN AN OFFICIAL ANSWER.

1. Any aftermarket fastener may be used except for rod bolts, head bolts, and carb butterfly. Repairing of stripped bolt holes allowed but stock size and location must be retained. Gasket surfaces may be machined, stock angles must be maintained. Excessive removal of material now allowed. Aftermarket gaskets and diaphragms may be used as long as they remain the same dimensions.
2. Engine may be run without an air filter. May not have filter adapter if no filter is used. If a filter is used, it must be used with a legal adapter. Filter may not act as a ram tube. Sides of filter may not be of less dense material than top. May use two gaskets between carb and air filter adapter. Silicon or O-ring permitted.
3. Exhaust pipe may not protrude into block. Holes other than for thermocouple not permitted.
4. All shrouds must be used. May be run with or without coil air vane. Flywheel screen must be on flywheel or shroud. All sheet metal shrouds must be in factory location.
5. Recoil may or may not be used. Stock ratchet, starter cup or aftermarket starter nut allowed.
6. Briggs magnetron ignition only. Coil 2,000 ohms minimum, 6,000 ohms maximum. Any plug connector allowed but must be included in ohms check. Silicone may be used on low tension wires. Slight rework of legs for mounting armature B&S #557040 allowed.

7. Tank may have one or two gaskets installed. Clearancing for tire, repairing and bracing allowed. Briggs cap must be used. Briggs part No. 555220 Splash Shield may be used. No pressurizing of fuel tanks allowed. Overflow gap must be present if splash guard is used.
  
8. CARBURETOR
  - A. Flange may use one or two Briggs stock configured gaskets
  - B. With the .696 No-Go in the back side of the carb, it cannot hit the butterfly when opened. No sealers anywhere other than end plug, pickup tube and as a sealer between air filter adapter and carb.
  - C. Swirl may be removed, choke may be removed, and holes plugged. Plugging material may not enter into carburetor bore. Carburetor boss on new style carburetors may be plugged with silicone on exterior only.
  - D. Bore .695" maximum inside dimension includes the entire length of the carburetor bore. Metering hole protrusions not permitted. Counter bore .726 round no-go only.
  - E. Throttle shaft .086" minimum at back, .040" at front. Stock butterfly screw or new torx screw allowed. Minimum length .322". Butterfly mating surface to throttle shaft minimum dimension .056" and back of ramp thickest point .101". No alterations allowed. Rubber throttle shaft seal must be installed in carb body. Minimum of one felt / foam washer must be on throttle shaft.
  - F. Jet may have remote tuner. Jet must be installed as from factory. Hole size in jet non-tech. No recessing of hole permitted from back side. No funneling or oblonging of hole permitted.
  - G. Idle hole .028" no-go. High speed hole .062" no-go. Straight round holes only. No tapered or oblong holes allowed.
  - H. Pickup tube screens optional and non-tech. I.D. .066" no-go for short tube steel winding. No-Go cannot pass completely through tube when checked from either end.
  - I. Maximum air horn inlet 1.011", checked from bottom up and top down. No machining allowed. Choke-style carburetors to be checked in area away from and below breather hole.
  - J. Aftermarket device to repair broken ear on carb permitted.
  - K. Air filter adapter may not be run without filter
  - L. Filter may no be run without adapter
  - M. Filter adapter must be centered on and concentric with carb air horn.
  - N. OD of adapter may be grooved to grip filter
  - O. Silicone may be used as a sealer between adapter and carb
  - P. Up to 2 stock gaskets may be used between adapter and carb.
  
9. Head Gaskets of same size and material are permitted. Minimum thickness .043" checked halfway between bolt holes. No sealers allowed. No aluminum or copper gaskets allowed.

10. Head must check .011", .408", .300" minimum; .315" maximum. Soft carbon may be wiped with rag before checking. Hard carbon may not be removed. Only headbolt mating surface and gasket surface may be machined. Glass beading or sanding for carbon removal only. Head bolt holes .348 no-go.
11. Deck: Maximum piston pop out at wrist pin centerline .015". Deck must remain above valve seats and be on one plane. If piston pop out is .005" or less at wrist pin, deck may have more than one angle. However, pop out may not exceed .005" at the front of the piston. Deck must also remain above the valve seat. Top of piston may be wiped off with cloth to remove soft carbon.
12. Maximum bore 2.607". Inspect deck for reworking of eyebrow area.
13. Stroke 2.4270" to 2.4470"
14. Intake valve 30 Degree one angle, minimum diameter 1.115". Minimum margin .025
15. Exhaust valve 45 Degree one angle, minimum diameter .990". Minimum margin .025
16. Intake valve seat one angle, seat diameter no-go. 1.005" intake
  - A. Exhaust valve seat one angle, seat diameter no-go. .880" exhaust
  - B. Inlet port .880" no-go.
  - C. Exhaust outlet 1.005" no-go.
  - D. No-go check to be made at intake port inlet and exhaust port outlet. Port area surface non-tech, but there can be no addition of any material. Valve seat inserts must remain unaltered. No chamfering or radiusing of valve seat.
17. Any upper spring retainer allowed. .058" maximum thickness. Upper part of valve spring chamber may be machined to prevent coil bind.
18. Stacking of stock valve guides and one-piece guides allowed, installed as factory intended.
19. Flywheel may not be altered in any way. No broken fins or painting allowed. Minimum flywheel weight 6 lbs. 4 oz. New Briggs and Stratton flywheel Part #555657 with machined backside allowed. If new flywheel is used, the ignition may be spaced out on coil post.
20. Multiple side plate gaskets allowed. Center punching of gasket surface allowed.
21. Cam has no visual check on the lifter surface. Cam block boss O.D. and finish are non-tech.

22. Lifters O.D. .982” minimum, 1.005” maximum. 1.606” maximum overall length. Chamfering at bottom of lifter bore for clearance purposes only. Max I.D. of chamber is .500. (The intent of this is not to back face lifter bore area.) Billet lifters permitted. Check to stock dimensions.

23. Cam Profile

Zero degree wheel with positive piston stop.

EXHAUST LOBE

Lift	Degrees
.050	38-33BBDC
.100	21-16BBDC
.150	2 BBDC – 3 ABDC
.200	21-31ABDC
.233 Max	
.200	76-65BTDC
.150	48-40BTDC
.100	28-21BTDC
.050	10-4 BTDC

INTAKE LOBE

Lift	Degrees
.050	7DTDC-0TDC
.100	10-17ATDC
.150	29-36ATDC
.200	55-64ATDC
.233 Max	
.200	43-33 BBDC
.150	13-6 BBDC
.100	6-13 ABCD
.050	23-31 ABDC

E-Z Start 45-60 ABDC

E-Z Lift .013” minimum

E-Z Lift .019” maximum

E-Z Duration 30 degree minimum at .001” drop

NOTE: All cam profile readings must be taken with zero valve lash. When checking cam profile, rotate engine in the direction it runs only. (Valves should have no clearance and no spring tension when checked.)

24 Rod bolt locks, washers and dipper are non-tech and optional. Stock rod bolts must be used. The dipper area only of the Raptor II #555207 rod is non-tech. Oil hole size non-tech. No .020” undersize rods allowed.

25. Any unmodified, series-produced aluminum alloy rod that is available to the karting industry is allowed. Rods other than the Briggs factory rod may be no lighter than 135 grams with bolts and inserts, if used. Rod length, from bottom of wrist pin hole to top of crank hole must measure between 3.120” and 3.143”.

26. Wrist Pin: Maximum I.D. .290” Maximum O.D. .490” Raptor III wrist pin I.D. .281, Maximum O.D. .490” Length 1.731 +/- .005.

27. Piston: Minimum length 1.869” Minimum top of wrist pin to top of piston .937” IC engines may run IC Or cool bore piston. Raptor III piston allowed, arrow facing coil or PTO. Piston length 1.672 +/- .005. Top of piston hole to top of piston .937 +/- .005.

A. Raptor III ring .090 min. width, .058 +/- .005 thickness

B. Raptor III oil ring .070 min. width, .100 +/- .005 thickness

28. Stock type cool bore rings only. No IC rings allowed. Machining back side of rings allowed.

- A. Top groove – compression ring installed. Minimum width: .095". (No chrome ring or expander under ring.) May or may not have bevel.
- B. Middle groove – oil scraper ring installed with outside scraper groove down. Minimum width .095" (No expander under ring.)
- C. Bottom groove – one piece oil ring installed either way, and no three piece or four piece oil ring from chrome set allowed. Minimum width .085".

29. Heat treating of stock crankshafts legal. Bushing type PTO journal crankshaft may be turned down to allow the use of bearing. Cam gear must be in place on an unaltered key.

30. Stock Briggs Bushing #399268 or 297565 may be installed on flywheel side. Inspect block for alterations and reworking. Blocks welded for broken rods are legal if not used to disguise modifications. Minor welding to lower exhaust bolt hole is allowed for repair (weld cannot protrude into exhaust port.) Reinforcement or repair of lifter boss area is allowed. Installation of bushing guide to help reinforce lifter bore area allowed. Removal of governor mandatory. Extra .125" hole may be added on flywheel side of block for better bearing lubrication. Aftermarket PTO bearing of non-self-aligning type, with or without shields, is permitted.

**NOTE:** Ceramic bearings allowed if motor qualifies under rule No. 11. (Deck height .005" or less.)

31. Valve Seat Heights: Check valve seat heights 5.485" minimum / 5.520" maximum. Install a .500" rod in place of cam and replace side cover. Measure through the valve guide from top edge intake or exhaust valve seat. Lifter bore and valve guide bore must accept seat height gauge rod.

### **BRIGGS OHV BLUE WAZOOM ENGINE RULES**

This engine is to be run as originally manufactured in Council Bluffs, Iowa or Omaha, Nebraska (no modifications of any kind.) In order to assure that no modifications are performed, the side of the engine is sealed. The side cover seal is required in order for the participant to be allowed to race. No tampering of any kind is allowed. The following specifications are to aid the Tech personnel in determining whether the engine has been altered from when originally manufactured. The seals are not to be re-used. In no way do these specifications constitute a need for additional blueprinting. Any other method of determining the legality of the engine is OK. Tech gauging is available from Uncle Frank's upon request. After an engine is rebuilt, it must be re-checked and re-sealed by an authorized service center. Most items are stock, unaltered parts from Briggs & Stratton. Most parts can be compared to known stock parts.

Technical Procedure: Engine to be run as supplied. No blueprinting allowed. Check side cover seals for tampering. Remove carburetor, manifold, and air filter adapter.

## **OHV SPORTSMAN RULES (for gasoline fuel classes)**

Briggs & Stratton (B&S) Model 124-(332 or 432) Type 8001/2

All parts must be B&S factor production parts unless otherwise noted in these rules. No machining or alteration of parts is permitted unless specifically noted in these rules. All parts are subject to comparison to a known stock B&S part. Engine shroud, covers, and control bracket must be intact and not modified, except control cover may be modified to attach fuel pump and throttle bracket. Cylinder cover may be cut for thermal coupler, intake manifold and exhaust flange clearance. Any bolt, except head bolts, used to secure sheet metal shrouds and covers may be replaced with a larger diameter bolt. Stock kill switch optional.

### 1. Header and Muffler

- A. Header shall have a maximum length of 24" to be measured in the ID using a ¼" wide steel tape measure. Loop pipes, 360 deg. turns are not allowed.
- B. Silencer must be RLV B91 with round baffle holes only.
- C. Gasket and/or silicone allowed to seal header to head.
- D. Studs or bolts allowed to fasten header to head. Bolts or nuts must be safety wired. Header support brace is mandatory.
- E. Pipe may not extend into port to fit the pocket cast into head.

### 2. Air Filter: Any air cleaner is permitted. Must be installed directly to carb. No filter adapters 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.

### 3. Carburetor: PZ Model 22 Carburetor only. Any ¼" bolts may be used to attach carb to manifold. No studs allowed. Carb to manifold seal is by O ring only. No sealer allowed. Air must enter carb at air horn only. Choke must be stock as from factory and must operate. Spring or rubber band may be used to hold choke lever in position. Choke lever may have a hole drilled in it to attach spring.

- A. Throttle bore I.D. is .874" no-go. Must be as cast.
- B. Choke bore I.D. is 1.149" no-go. Must be as cast.
- C. Venturi: Vertical dimension is .792" no-go. Horizontal dimension is .615" no-go. No machining allowed. Must be as cast.
- D. Air pick off hole is .061" no-go.
- E. Throttle slide: Minimum length from top edge of slide to deepest part of cut away is 1.148". Must be stock.
- F. Jets must be stock gasoline jets only. Needle jet – BGB set at any notch. Pilot jet - #32, Main jet - #95. Factory marking required.

- 4: Intake Manifold: Stock intake as supplied from the factory. No modifications allowed except machining of gasket surface is permitted to meet rule specs. Also may be drilled and tapped, or welded, for fitting to pulse fuel pump. Allow for oversize drilling of holes on head side only.
- A. Length: 1.740" minimum to 1.765" maximum
  - B. Inside Diameter: .885" must-go, .905" no-go.
  - C. Stock manifold to block gasket required. Gasket may be modified to open hole to diameter larger than manifold.
  - D. Two (2) intake to block mounting holes may be drilled out and will be checked with a .328 no-go.
4. Fuel Pump: Auxiliary pulse type pump required. Pump must be pulsed from crankcase only. Hose pulse fitting and line must be ¼".
5. Valve Cover: Stock valve cover from factory.
- A. Valve cover gasket must be stock. No sealer allowed. Tubing may be fitted to outlet. No welding or tapping of valve cover allowed.
  - B. Tube to catch can required.
6. Rocker Arms: Must be stock. Minimum length is 2.685".
7. Camshaft: All cam profile readings must be taken with zero valve lash and degree wheel set at top dead center (TDC) of the compression stroke with a positive stop inserted through spark plug hole. Readings shall be measured from the push rods. Zero dial indicator at TDC and do not reset during the profile process. Only stock factory camshaft with stock alignment as shipped from factory is permitted. Mechanical compression relief lift is required on exhaust lobe. Maximum valve lift of .255 taken directly off the valve assembly at zero valve lash. Place dial indicator on valve keeper then tighten ball rocker till you see indicator move .001" to .002". This will assure that the lash is taken out of the valve.

Camshaft Profile Limits: Each lobe may be out of specification in two places, provided that subsequent visual inspection of camshaft lobes reveals no alteration to surface finish of lobes. **NOTE:** Minimum lift of .252" on intake and exhaust lobes.



**INTAKE LOBE****EXHAUST LOBE**

<u>Lift</u>	<u>Degrees</u>	<u>Lift</u>	<u>Degrees</u>
.020	18-13 BTDC	.020	61-56BBDC
.050	0TDC-4ATDC	.050	44-40BBDC
.100	16-20ATDC	.100	27-23BBDC
.150	33-37ATDC	.150	11-7BBDC
.175	42-46ATDC	.175	1BBDC-3ABDC
.200	53-57ATDC	.200	10-14ABDC
.225	67-71ATDC	.225	24-28ABDC
.257 Max / .252 Min.		.257 Max / .252 Min.	
.225	39-35BBDC	.225	78-74BTDC
.200	25-21BBDC	.200	64-60BTDC
.175	15-11BBDC	.175	53-49BTDC
.150	5-1BBDC	.150	43-39BTDC
.100	12-16ABDC	.100	27-23BTDC
.050	28-32ABDC	.050	10-6BTDC
.020	44-49ABDC	.020	5-10ATDC

8. Ball Rocker: Must be stock. Diameter .600" +/- .010"
9. Push Rods: Must be stock. Diameter is .185" - .190". Length is 5.638" – 5.656".
10. Head Bolts: Four stock head bolts are mandatory.
11. Head Gasket: Must be of stock B & S part, .042" minimum thickness measured in four places between head bolts. Measurement to be made with micrometer from inside of gasket. Fire ring head gasket allowed. Must be stock configuration .042 min. thickness.
12. Cylinder Plate: Must be stock. Cylinder head plate gasket must be stock configuration with maximum thickness of .055" Head thickness measured from head gasket surface to head plate gasket surface is 2.420".

13. Rocker Arm Studs: Must be stock.
14. Valves: Stock valves only. One angle only. Valve may not be polished or lightened. If working area (that portion of the valve stem translating with the valve guides) of valve stem is cleaned, no material may be removed. No grooves, cross hatching, etc.
  - A. Intake Valve: 45 Deg. face. Head diameter is 1.055" – 1.065". Depth of dish in valve .099" - .119". Minimum Height from angle of valve face to top of valve .057" (check using a depth micrometer from top of valve to top of gauge.)
  - B. Exhaust Valve: 45 Deg. face. Head diameter is .935" - .945". Depth of dish in valve .084" - .104". Minimum height from angle of valve face to top of valve .060" (check using a depth micrometer from top of valve to top of gauge.)
15. Valve Springs: Stock B&S valve springs and keepers are mandatory. Springs must remain unaltered as supplied from the factory. Maximum valve spring length is .930". Wire diameter is .103" to .107" measured in three places on the spring. Inside diameter of spring is .615" minimum to .635" maximum.
16. Valve Spring Retainers: Thickness is .060" - .070".
17. Cylinder Head: Stock B&S Part #555558 as shipped from factory is only configuration approved. No machining of head allowed. Machining marks left on head gasket surface are a tech item. Bosses on back of head, just below valve cover gasket surface may be tapped for attachment of header supports.
18. Valve Seats: Must be one 45 deg. angle only on valve seats. Stock B&S seats are mandatory.
  - A. Intake seat diameter is .966" - .972".
  - B. Exhaust seat diameter is .844" - .850".
19. Ports: Must be stock, no machining.
  - A. Intake inlet port: .918" no-go. When checking 90 deg. to line between center of studs, no-go will be straight. When checking on line with center of studs, no-go will set on floor of port at bottom and stop at upper edge of port on top.
  - B. Exhaust outlet: .980" no-go.
  - C. Valve guides must be stock as supplied from factory. Maximum depth from the cylinder gasket surface to the intake valve guide is 1.255".
20. Deck / Piston Clearance: Machining of deck surface is permitted. Piston pop up cannot exceed .005" above block surface in the center of the piston. When measuring piston pop up, set bar stock across piston parallel to wrist pin. When measuring piston pop up, hard carbon may be scraped from piston crown, set bar stock across piston parallel to wrist pin.
21. Cylinder Bore: No circular or machined grooving of cylinder is allowed. Stock bore is 2.690". Over boring permitted up to maximum of 2.725", approximately .035" over.

22. Stroke: Maximum stroke is 2.204". Push piston down to take up rod play. Check stroke from BDC (Bottom Dead Center) to TDC (Top Dead Center).
23. Ignition: Unaltered B & S stock coil is mandatory. Attachment bolts must not be altered.
  - A. Spark plug connector must be stock factory type. Rubber plug boot is allowed.
  - B. There must be resistance from plug wire to ground. Resistance must be between 3000 ohms minimum to 6000 ohms maximum. Coil resistance may be rechecked after a minimum of 10 minutes if correct reading is not attained upon first check.
  - C. Coil air gap is non tech. Any commercially available spark plug allowed. Spark plug must be stock except plug sealing ring may be removed. If stock flywheel part #555625 is used, the coil must be stock Briggs coil part #557040. If PVL Flywheel part #555683 is used, the stock PVL Magneto part #555681 must be used. Attachment bolts must not be altered.
24. Recoil starter must be retained, as produced and intact. May be rotated.
25. Flywheel: Briggs part #555625 and PVL part #555683 with plastic fins assembly #555526, are the only flywheels allowed. No machining, glass beading, sandblasting, painting, or coating of flywheel is allowed. Minimum factory overspray allowed.
  - A. Stock flywheel key required.
  - B. Flywheel weight 4 lbs. 4 oz. Minimum.
26. Crankcase Side Cover: Must remain stock, except fuel pump may be pulsed from upper oil fill hole on front of cover. One or two stock gaskets are required.
27. Valve Lifters: Must be stock.
  - A. Lifter head diameter to be .820" minimum to .860" maximum.
  - B. Overall length of lifter to be 1.515" minimum to 1.525" maximum.
28. Connecting Rod: Stock B&S Part #555561 rod only. Rod may be not lighter than known stock rod. No under-sizing of rod is permitted. Rod may be clearanced, providing that it is in stock configuration and finish, with no dimpling or media blasting. Rod ends must be concentric with crank journal and wrist pin with no chamfer or breaking of edges.
  - A. Rod length, measured from bottom of wrist pin hole to top of crank journal hole, is 2.419" minimum to 2.429" maximum.
  - B. Oil hole opening is .185" no-go.
  - C. Briggs replacement rod bolts part #555654 are allowed. Minor grinding of crankcase allowed for clearance of new rod bolts.
29. Wrist Pin: Maximum I.D. is .414". O.D. is .624"-.626". Minimum length is 1.901"

30. Piston Rings: Three rings mandatory.
- A. Top compression ring must have chamfer or O toward top of piston.
  - B. Second scraper ring must be installed with inside chamfer down and O toward top of piston.
  - C. Minimum width of top two rings is .095". Thickness of top two rings is .059" - .064".
  - D. Oil ring must be installed as from factory.
  - E. Minimum width of oil ring is .065". Ring groove must be present. Expander must be installed. Thickness of oil ring is .098" - .102"
  - F. No alteration of rings allowed except end gapping and lapping. Rings must be in one piece when removed from block. The tension of the ring must be substantial enough to be self-supporting of the ring in the cylinder. **NO SHRINKING OF THE RINGS.**
31. Piston: No alteration of piston allowed. Arrow must point toward flywheel. New style Briggs and Stratton piston with circlips on both sides of wrist pin bore allowed.
- A. Minimum from top of piston to top of wrist pin in circlip side is .658".
  - B. Minimum piston length is 1.768".
32. Crankshaft: Stock B&S #555565 crankshaft with stock timing gear installed in stock location only. No alteration in any manner allowed. Offset crankshafts not permitted. Aftermarket bearing of non-self-aligning type, with or without shield, is permitted. No ceramic bearings allowed. Shim(s) must be installed as from factory. Crankshaft journal diameter is 1.094" – 1.100".
33. Block: Must be stock with no alterations, except blocks may be repaired from broken rod damage, providing that repair does not constitute a functional modification of original block. No welding is permitted from the cooling fins upwards. Block may not be machined on intake or exhaust port gasket surface. No knurling of guides allowed. The repair of one coil post is allowed, as long as the remaining post is factory and unaltered. No re-sleeving of block allowed.

### **OHV MOTORS (for methanol fuel classes)**

OHV Sportsman Rules, except for the following:

1. Carburetors: PZ22 only. Needle Jet: 1.690" maximum length and 1.680" minimum length. Taper on needle must remain stock and will be checked at .500" from the tip of the needle and must not be small than .070". Any parts that are inside the float bowl or that can be removed through the float bowl are non-tech items.
2. Camshaft: Lobes may be ground, but not to exceed .870" base circle. Mechanical compression relief is non-tech. Camshaft lobes must remain flat and of original width.
3. Deck: Machining of gasket surface allowed. Piston pop up cannot exceed .005" above block surface parallel to piston wrist pin. Top of piston may be wiped off with soft cloth for carbon removal.
4. Cylinder Head: Depth of head at shallow part of head .011" minimum. Depth at floor of head .319" minimum. Depth of top of valve seat .360" maximum, .335" minimum. Machining of gasket surface only. Head thickness measured from head gasket surface to head plate gasket surface is 2.420". Briggs and Stratton and aftermarket head gaskets of stock design and material allowed. B & S fire ring head gasket of stock configuration allowed.
5. Valves: Minimum intake and exhaust valve length 3.250".
6. Starter: If starter recoil is removed, starter cup must be removed also. Stock flywheel washer and any style not for use with an electric starter allowed. Any screen or guard that fully covers the flywheel fins is allowed. All screens must be bolted to blower housing.
7. Crankshaft: Shim(s) must be installed as from factory.
8. Rod: Any unmodified, series-produced aluminum alloy rod that is available to the karting industry is allowed. Any aftermarket, unaltered stock configuration billet aluminum rod allowed. Minimum weight 128 grams.



## **HEADER OR MUFFLER**

1. Header or muffler must extend beyond fuel tank, but not to extend past rear bumper. Minimum 1.990" washer or flange mandatory on pipe end. No sharp edges. Washer thickness .075" minimum.
2. Exhaust header end or muffler may not protrude inside of port.
3. Header support allowed. Bracket to support header or muffler allowed, except Briggs Blue Wazoom. Bracket may not be secure under more than 4 head bolts.
4. Must be fixed position pipe. No adjustable pipes.
5. No extra tubes to, in, or through header allowed.
6. Hole for exhaust thermocouple allowed. Thermocouple must be in place.
7. Headers and mufflers will be required on all 4-cyle engines at all Speedway sanctioned events and Nationals. RLV B-91 on all motors.
8. B-91-MO on Ltd. Mod. And Mod. Briggs, and RLV #4103 on Blue Wazoom. Block savers / exhaust rotator allowed except in Briggs Blue Wazoom.
9. Bolt or studs securing header must be safety-wired. Muffler must be safety-wired through a hole in the header bracket and perforations on end of the muffler. Do not weld on or drill holes in the muffler.

## **FUEL AND OIL**

1. Any competitor intentionally spilling oil or fuel on the track will be subject to suspension.
2. 100% methanol in all classes. No additives.
3. Fuel may be pumped around or tested by any means available to NSP or track officials. Violators may be suspended.
4. Crankcase contents are subject to test, at any time, for dangerous, oxygen-bearing or flammable vapor-producing substances, which are prohibited.
5. Flame test procedure is as follows:
  - A. Drain approximately 1 fl. oz. of crankcase oil into a large steel spoon or ladle.
  - B. Apply heat to the bottom of the spoon with propane torch while checking the surface temperature of the oil with an infrared temperature gun.
  - C. When the oil temperature is between 250 and 300 degrees maximum, pass the flame 3 times over the oil approximately 1 inch above the surface. Do not touch the flame to the surface of the oil.
  - D. If the oil ignites and continues to burn when the flame is removed, it is illegal. If the oil flashes and the flame goes out immediately when the torch is removed, the oil is legal.



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