

**Future Stars
Developmental Drivers Series
2009 Rules and guidelines**

Purpose and Vision

1. To provide a regional rulebook maintaining uniformity among local mini-cups.
2. To provide an affordable first step into the world of racing with our kids.
3. To lower the expense and complexity of minicup racing making it easy for new racers to join the sport.
4. To enforce this rulebook firmly and fairly, providing a level playing field among all local competitors.
5. To recognize and promote the achievements of our racers and help attract more sponsorship for their teams.

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RULES

1. GENERAL RULES

- 1.1. The rules shall apply to each and every driver, owner, sponsor, mechanic, crew member and/or any other pit personnel (collectively known as participants) participating in any sanctioned or recognized event. **ALL PARTICIPANTS ARE SUBJECT TO THE RULES ARE EXPECTED TO KNOW THE RULES AND ANY CLAIMED IGNORANCE OF THE RULES WILL NOT BE ACCEPTED OR TOLERATED AS AN EXCUSE.**
- 1.2. All rules in this book apply to all DDS events.
- 1.3. All rules are subject to change at any time.
- 1.4. **No modifications other than those specified in this rulebook are acceptable. If this rulebook does not specifically say that something can be done or not done, then you must consider that the change or action is illegal.**
- 1.5. Anyone attempting to circumvent the rules or judged to be going against the spirit and intent of these rules or the DDS is subject to disqualification or suspension. Only authorized officials may decide if a change, alteration or action is an attempt to circumvent the rules.
- 1.6. Cars are designed for closed road course or speedway use **only!** The car may **not** be modified for street use!
- 1.7. THE DECISIONS OF OFFICIALS, OR TRACK OFFICIALS, AT DDS EVENTS, INCLUDING THE INTERPRETATION AND APPLICATION OF RULES AND THE SCORING OF POSITIONS, SHALL BE FINAL, BINDING AND, AT THE DISCRETION OF THESE OFFICIALS. THIS IS NON-APPEALABLE.
- 1.8. **No equipment or car will be considered as having been approved by reason of having passed through inspection "unobserved".**
- 1.9. All of the following companies are currently or have been "Approved Manufacturers" of in the past, but not exclusive.
MMI, Braits Precision, Ultimate Motorsports, NC Chassis, and Minicup Motorsports.

2. MEMBERSHIP and Age

- 2.1. Membership runs from January 1st through December 31st **of the same year. All memberships must be renewed on an annual basis.**
- 2.2. The Series may allow as a member any individual interested in Racing, as long as that individual has completely and truthfully completed a membership application, agreed to abide by the Rules and code of conduct, and paid the determined fee(s) due for membership. The DDS reserves the right to reject or deny any application that is deemed unacceptable and terminate any membership that has failed to comply with rules, guidelines, and code of conduct.

2.3. A minor release form must be signed by all parents or court-appointed guardians. All applicants under are required to submit with their application a copy of their birth certificate. All birth certificates, whether a copy or an original will not be returned and kept on file.

2.3.1. Drivers 8 – 13 years of age are eligible to race the DDS, but must be cleared to race by the local track and be covered by local track insurance.

2.3.1.1. Drivers under the age of 8 is eligible to participate, but must be cleared to race by a DDS.

2.3.1.2. A driver that is 13 at beginning of the season but turns 14 before end of season is eligible to compete for entire season.

2.3.1.3. All 1st year drivers will have to pass a track safety evaluation by the DDS.

3. ACCIDENTS AND SAFETY

3.1. DDS events are competitive racing events. The rules of racing have been established to provide for orderly conduct of the racing events and to establish minimum acceptable standards for these events. Entrants are required to comply with these rules.

3.2. No express or implied warranty of safety shall result from publication of, or compliance with these rules and regulations. These rules are strictly a guide and in no way guarantee against property damage, injury or death to any participant, spectator or official. All competitors assume full responsibility for any and all injuries sustained, including death and property damage, anytime they are in the racing areas or in route to or from.

3.3. All competitors agree to inspect the racing facilities, safety personnel and equipment, and conditions at the racetrack on a continuing basis before, during and after the event. All competitors are solely and directly responsible for the safety of their racecars, equipment, crewmembers, guests, other persons in their pit area and themselves.

3.4. Any party who willfully or maliciously uses a racecar, or any object, on the track or in the pits to injure, destroy or damage another person or personal property will be suspended plus subject to arrest.

3.5. Drivers may not get out of their cars while on the racetrack except in an emergency (such as fire or fuel leak) or if requested by an official.

3.6. No one (except the driver) is allowed to ride in or on the racecars at any time unless requested by an official.

3.7. All drivers must wear approved seat belts, safety suit, all safety suit accessories such as gloves, shoes, etc. and helmet on the race track at all times or whenever the car is in motion. This includes pit and staging areas. These items are detailed later in section 14.

4. ENTRY AND SIGN IN

- 4.1. Entry fee and pit passes differ from track to track. Members must adhere to track policy.
- 4.2. No person will sign at any time, for any reason, an entry form, waiver and release of liability form or pit permit for anyone other than themselves.
- 4.3. All entries must be signed in at least 20 minutes before the scheduled starting time of the first practice session. If late, they must report to an official. Late arrivals may be denied competing in that day's events.
- 4.4. All drivers must be in attendance during the entire course of all drivers' meetings and drawings or will start at the rear of the field.
- 4.5. **No one under the minimum age required by the track**, even if they are an member, will be allowed in the pit area or other restricted areas.
- 4.6. All participants under the age of eighteen (18) must have signed a minor's release with all parent's or guardian's signatures and have it on file at each racetrack which they desire to enter.

5. COMPETITION AND RACE PROCEDURE

- 5.1. The only cars eligible to compete in events are those that meet all the league rule and regulations for mini-cup racecars.
- 5.2. The driver of the racecar must be a full member.
- 5.3. No engine, camshaft, cylinder head or carburetor body may be changed after a racecar has posted a qualification time, placement drawing or competed in a qualifying heat race without the permission of officials. If permission is granted, they must start at the tail of the field in the next race and the replaced part (engine, camshaft, cylinder head or carburetor body) will be impounded by officials and is subject to technical inspection before/after the race.
- 5.4. Officials may at their discretion, make a determination regarding the line-up of cars for any qualifying, heat races, semi features or consolation races and feature races.
- 5.5. Drivers may not attempt to qualify more than one car in heat races when time trials are not used to set a starting order. If time trial qualifications are used, a driver may attempt to qualify with a second car provided the first car is withdrawn. Once a car has qualified, or qualified and then withdrawn, it cannot be re-qualified by any driver.
- 5.6. Drivers may attempt to qualify a different car in a semi feature or consolation race, if the change is reported to officials prior to the lineup. If a second car is used it must start at the end of the field.
- 5.7. Any driver change will result in that car starting at the rear of the field. This will apply only to the first race after a change of drivers.

- 5.8. All starts and restarts are to be determined by track officials.
- 5.9. All racecars will line up in the designated staging area prior to their respective heats, consolations and features. Any car not on the track in the designated time will not be permitted to start the race or they will be placed at the rear of the field at the discretion of officials.
- 5.10. If a car does not make a call for a heat, it cannot start in another heat. The car must run in the consolation race or start at the rear of the field if the field is not full. If the field is full the car will be considered to have not qualified.
- 5.11. On all starts, all cars must remain in double file, nose to tail formation (not to either side or more than 1-2 car lengths behind the car ahead).
- 5.12. On all starts and restarts, after the green flag and/or light is displayed, all drivers must maintain their relative positions until crossing the start/finish line or specified marker. If, in the opinion of the officials, a driver flagrantly improves his position without cause prior to crossing the start/finish line or marker, they could be assessed a detention penalty or sent to the rear of the field. The official's decision to penalize or not to penalize in accordance to this rule is not protest able.
- 5.13. All starts and restarts will be at a consistent slow to medium speed. The pole or lead car must maintain this speed until the display of the green flag.
- 5.14. If the race is red flagged or stopped before the completion of lap 1, it is common practice to restart in the original starting order.
- 5.15. If a race is stopped, or if a yellow flag (only a full course yellow on road courses) is displayed after the completion of 1 lap, all cars will line up in the physical order they were running on the track at the end of the last completely scored green flag lap. All cars must hold their position, even if trailing a lapped car and fall into a single file nose-to-tail formation.
- 5.16. Any car involved in three yellow flags, for any reason, may be disqualified. (remember this is a developmental series for young drivers)
- 5.17. All cars involved in an accident will restart behind all cars not involved, regardless of the number of laps completed. Track officials have the right to deviate from this policy if they determine an incident was caused intentionally.**
- 5.18. All cars going to the pits under a yellow or a red must restart at the rear of the field, if they wish to return to that event.
- 5.19 Any car(s) in the pits when the yellow is turned off must remain there until cleared for return by the pit official.

- 5.20. Cars that spin out on the track must attempt to resume race speed and refrain from slowing current competition. If anyone is deemed to be deliberately stopping the race, his/her car will be disqualified from that event.
- 5.21. During the course of a race under the green or yellow flag, all work to a racecar competing in that race must be done in the pit area or any area which is designated by the pit officials at the driver's meeting.
- 5.22. If a car is worked on outside of these defined areas under the green or yellow flag the car will be disqualified.
- 5.23. If rough driving is observed, officials will first warn the driver with the point of a furred black flag. Further rough driving will result in disqualification or consultation with officials. The track officials will determine rough driving during the race only. The officials can make additional sanctions in the form of loss of position or points, after the race if the officials deem it necessary.
- 5.24. A black flag can be given to any car that is losing a part of the racecar, appears to be unsafe, or smoking badly. The starter or pit officials will make the black flag decision.
- 5.25. The race will be officially completed when the leader has completed the specified race distance or with the starter's display of the checkered flag.
- 5.26. All of the above race policies and procedures are for general information only. The specific policies and procedures used for the event will be determined by the track hosting the race. Racers must attend the drivers meeting to ensure they understand a particular track's policies and procedures. All minors must be accompanied at drivers meeting by their parent or guardian. Ignorance of track policies and procedures is not an excuse.**
- 5.27. Any driver who achieves two consecutive first place finishes may be asked to add weight to his/her car. This weight may be in 5 or 10 lb increments determined by the track official.**

6. FLAG RULES

- 6.1. Competitors will be given information from the officials, during events via flags or lights as listed below:
- 6.1.1. **Green:** Go. The entire track is open for racing.
- 6.1.2. **Yellow:** Caution. All cars must come to a slow and consistent speed immediately. All cars must maintain their position, even if the car is a lapped vehicle, maintaining a single file nose-to-tail formation. *Note:* A yellow flag is full-course on all oval tracks but may pertain only to a corner / flag station on a road-type course. **Specific instructions for the event are provided at the driver's meeting and shall apply for that event.**
- 6.1.3. **Red:** Stop. The race has been stopped and all cars must come swiftly and safely to a complete stop.

6.1.4. **Black:** Any car given the black flag must pull into the pits immediately for consultation. Failure to obey a black flag will result in your car not being scored for the remainder of the race.

6.1.5. **Blue with Yellow Stripe:** Move over, you are being lapped.

6.1.6. **Crossed Flags:** The halfway signal.

6.1.7. **White:** You are beginning your last lap of the race.

6.1.8. **Checkered:** The race is officially completed.

7. TIMING AND SCORING

7.1. Track officials will handle timing and scoring of all cars. Drivers must be sure they understand track policies regarding timing and scoring. If a driver has a question or concern about timing and scoring, the driver should ask the question in the pre-race drivers meeting.

7.2. The finishing order as determined by track officials is final.

8. POINTS

8.1. All DDS races will use the point system described in this rulebook.

8.2. **Point System Explained** - uses a simple, yet effective points system to reward drivers for local races. Our goal is to reward drivers who make the commitment to give it all, the opportunity to win the overall regional championship.

8.3. **Basic Point Allocation** – The basic points system awards points based on finishing positions in every event.

8.3.2. The winner receives 100 points.

8.3.3. 2nd-5th position received 5 points less; 6th-14th position receive 3 points less; 15th-23rd receive 2 points less; 24th-end of field receive 1 point less

8.3.3.1. Finish Points

1 st	100	4 th	85	7 th	74	10 th	65	13 th	56	16 th	49	19 th	43	22 nd	37
2 nd	95	5 th	80	8 th	71	11 th	62	14 th	53	17 th	47	20 th	41	23 rd	35
3 rd	90	6 th	77	9 th	68	12 th	59	15 th	51	18 th	45	21 st	39	24 th end	-1 point per spot

9. Drivers

9.1. Points are non-transferable from one driver to another.

9.2. All suspensions must be fully served to be considered in good standing.

9.3. If a driver is disqualified from the feature event the remaining field (position & points) shall move up accordingly. This only pertains to the feature event and not the heat races.

9.4. DDS races will be run between January 1st and December 31st.

9.5. If crew conduct issues arise in the junior events, special considerations may be given so the junior drivers will not be penalized by actions beyond their control by adult crew members.

10. ADVERTISING AND PROMOTION RELEASE

10.1. By entering into any event, drivers, car owners, crew and agents assign all commercial communication and broadcast rights including photos, videos, or sounds of the event to and name as their agent and representative regarding such rights. And its assigned may use any of the aforementioned likenesses for an indefinite period of time. The league reserves the right to assign, to approve or disapprove any advertising, sponsorship or similar agreement in connection with any event. All members agree to accept the league's decision in this regard.

11. DISPLAY NUMBERS AND SPONSOR LOGOS

11.1. Drivers in DDS races agree to display contingency decals and a series or race sponsors' name or logo. 1 set of decals to be provided by the DDS at no charge to driver. Each additional set will be provided for a low price.

11.2. All official decals and sponsor decals must also be displayed in order to participate in any point awards

11.3. Failure to display the required decals could result in refusal of competition.

11.4. Car numbers must be at least twelve (12) inches high and neatly attached to both sides of the car located on the center of the door.

11.5. A number eighteen (18) inches must be attached on the roof, reading from the OUTSIDE of the racetrack.

11.6. Numbers can be placed on right (passenger) rear taillight or bumper max height is three (3) inches.

11.7. A three (3) inch fluorescent number can also be placed in upper right corner of windshield.

11.8. Numbers are 1st come 1st serve, and can be reserved for the season for \$5.00.

11.9. Numbers need to be contrasting from color of car. Any color or style that may prevent scoring by the local track may not be allowed.

11.10. Track Officials have the right to change racecar numbers to avoid duplication. All number designs are subject to DDS approval. DDS reserves the right to assign or restrict the display, and location on the car, of any decals, logos, identification, markings and advertising on racecars.

12. GENERAL BODY REQUIREMENTS

12.1. All bodies must be styled to resemble a NASCAR stock car or truck.

12.2. Hinges and pin kits required.

- 12.2.1. Roof opening must be hinged in front only. Positive latches that can be opened from inside and outside body required.
- 12.2.2. Hood and trunk must be held shut with positive pin fasteners-one (1) on each side or fastened in a manner acceptable to official(s).
- 12.2.3. Roof rails no taller than 3/4 inches running the length of the roof and rear window are permissible. These are for aesthetics only and provide no performance advantage.
- 12.3. Cars must be neat appearing.
- 12.4. Chassis must be painted or powder coated.
- 12.5. Body interior may be left unpainted. Any body damaged must be neatly repaired by the next event.
- 12.6. Body exterior dimensions shall be no more than 120 inches long, 47 inches in width.
- 12.7. Body must remain level with chassis and cannot be offset on frame.
- 12.8. All components shall be in top quality condition.
- 12.9. Bodies cannot be altered from original manufacturer. Any reinforcement of the body must be acceptable to official(s).
- 12.10. Fenders may not be cut or altered except for tire clearance, subject to approval by official(s).
- 12.11. No fender flairs.
- 12.12. At post race tech all Developmental Driver Series cars must weigh a minimum of 550 pounds with driver ready to race.
 - 12.12.1. Maximum left side weight is 55% of total race weight.
 - 12.12.2. All weights will be calculated on scales approved by the league.
 - 12.12.3. It is the responsibility of the racecar driver to see that their car meets the specified minimum weight requirements.
 - 12.12.4. If weight is needed to meet minimum requirements, DDS recommends the use of square steel tubing weight containment bars. League suggests poured lead – no buckshot or BB's.
 - 12.12.5. Weight should be painted white and have the car number written on it for easy identification.
 - 12.12.6. Weight must be attached to frame, or placed inside frame rails, with grade 8 hardware, and cannot slide from front to back or side to side.

- 12.12.7. All weight must be located inside driver compartment or approved weight containment box.
- 12.12.8. When attaching additional weight in an MMI manufactured chassis, the league strongly recommends additional bracing beyond the standard chassis tabs to attach weight to frame. This bracing should be welded to the frame to ensure weight remains fastened to frame under any racing conditions.
- 12.12.9. Weight and/or fastening systems subject to approval by officials.
- 12.13. A non-adjustable spoiler may be attached to the rear deck lid. The spoiler must not be modified in anyway from the original design. The spoiler must maintain the same contour as the production deck lid with a minimum angle of 35 degrees. No longer than four (4) inches tall.
- 12.14. Lexan must be a minimum thickness of .060, but may be thicker.
- 12.15. Tinting of windshield only is permitted, not any of the other windows. Rivets or nut and bolt may attach Lexan. Bracing is allowed on windshield or rear window.
- 12.16. Front window may have displayed in the right hand corner the car number no larger then 3" in a fluorescent color.
- 12.17. Left side speedway window must have approved window net fastened to roll cage (may have quick release mechanism). Right hand window may have Lexan window that can be easily removed by safety crew. No enclosures of any kind will be allowed in the left speedway window
- 12.18. No vents are permitted in right side speedway window.
- 12.20. All dashboards must be constructed of aluminum and fastened in place.
- 12.21. All switches must be installed in dashboard on the left side of the steering wheel.
- 12.22. Dashboard may be painted flat black. All dashboards are subject to approval by official(s).
- 12.23. Ignition shut-off switch must be labeled, showing on and off.
- 12.24. Foot box interior must be constructed of aluminum at least 22 gauge. Panels must be securely fastened to chassis.
- 12.25. Panels may be added to keep debris from driver's compartment. All interior panels are subject to approval by official(s).
- 12.26. When enclosing front of foot box, material used must be aluminum not to exceed .090 thick and not to extend past vertical and horizontal bars.

- 12.27. A maximum of 2 openings with a total of 16 square inches are permitted in the nose of the car. These must be covered by a layer of wire mesh attached by a one half-inch strip to hold the wire to the outer-edge of the opening. All openings are subject to approval by official(s).
- 12.28. No openings are allowed in rear body section.
- 12.29. No engine cooling hose from the outside of the vehicles into the engine compartments are permitted.
- 12.30. The rear window may not be altered or drilled.
- 12.31. Engine covering referenced in rule 13.28 must extend to the body in all directions.
- 12.32. Bumpers must be hollow steel tubing and fastened to chassis.
- 12.33. Side Numbers must be at least twelve (12) inches high and neatly attached to both sides of the car located on the center of the door. Numbers must be located on the doors only. (ref: 12.4)
- 12.34. Roof number must be at least eighteen (18) inches high must be attached on the roof, reading from the left side. (Ref: 12.5)
- 12.36. Track Officials have the right to change racecar numbers to avoid duplication. All number designs are subject to DDS approval. DDS reserves the right to assign or restrict the display, and location on the car, of any decals, logos, identification, markings and advertising on racecars. (Ref 12.10)
- 12.37. Drivers are responsible for notifying DDS of their current car number changes.

13. EQUIPMENT AND GENERAL ACCESSORIES

- 13.1. The DDS requires that all cars be fitted with an aluminum racing seat that fits the driver's physical characteristics.
- 13.2. All seats must be securely mounted in the centerline of the vehicle. The seat center line must match that of the vehicle. The seat cannot be off set.
- 13.3. No driver shall compete in any event with head or arm extended outside of a car opening. The top of the driver's helmet must be at least one (1) inch below the top edge of the roll cage. This will be measured with the driver securely buckled in the car's seat.
- 13.4. All drivers must wear a racing type helmet. No bicycle helmets allowed. Drivers must also check local track regulations to ensure their helmet meets local track regulations.
- 13.5. All drivers must wear an approved driving suit (1 or 2 piece) and gloves. A single layer fire suit is the minimum allowed. All drivers are to wear close toed shoes (preferably racing shoes).

13.6. The DDS highly recommends all drivers use arm restraints. All drivers must also wear neck restraints.

13.7. The DDS highly recommends all drivers wear underwear, shoes, socks, neck collars and gloves made of fire resistant material.

13.8. Two-way radios will be permitted and highly recommended for use to help guide the young drivers.

13.9. The DDS strongly required a fully charged fire extinguisher securely mounted in the drivers' area, and/or a built-in fire extinguishing system, being a minimum of the cold fire system type or equivalent.

13.10. All entrants must have in their pit area, at all times, as part of their equipment, a fully charged fire extinguisher.

13.11. All belts and harnesses must be of the 5-point type and meet the following minimum requirements:

13.11.1. Have a minimum SFI rating of 16.1

13.11.2. Be at least 2 inches wide for our young drivers.

13.11.3. Be dated by the manufacturer and no more than 5 years old.

13.11.4. A quick-release seat lap belt is required.

13.11.5. Both ends of the lap belt must be fastened to the roll cage with grade 8 bolts not less than 3/8" in diameter.

13.11.6. Shoulder harness must come from behind the driver's seat. Inertia reels cannot be used.

13.12. Approved manufacturers must manufacture minicup specific parts such as spindles, cradles, A-arms etc. No homemade or "better engineered" parts. Bolt on or replacement parts such as heim joints, clutches, wheels, etc. must conform to this rulebook but may be purchased from any source. In order to make it easier for racers to keep their cars on the track, the region will allow interchanging of parts. i.e. suspension parts from one approved manufacturer may be installed on a chassis built by another approved manufacturer. All homemade or "better engineered" parts remain illegal.

14. GENERAL ENGINE REQUIREMENTS

14.1. Only Honda GX390K1 engines will be used in Mini Cup competition. Serial numbers cannot be removed from engine block.

14.2. Engine must remain in stock location. Offsetting of engine is expressly prohibited.

14.3. No interchanging of parts from different engine models allowed. This includes the GX390 QAE also.

- 14.4. Engines cannot be altered from stock factory Honda specifications unless otherwise noted in this rulebook.
- 14.5. All parts must be **factory** Honda parts designed for the GX390K1 and will be checked against **factory** Honda parts unless otherwise noted in this rulebook. All official decisions are final.
- 14.6. Specifications for the Honda GX390K1 engines can be found on page 2-4 of the Honda Shop Manual, part number 61ZH900.

ALL DDS ENGINES MUST BE SEALED BY EES, AND HAVE APPROVED EES SEALS IN PLACE DURING RACE. (not a protest item)

15. DETAILED ENGINE REQUIREMENTS

- 15.1. Internal and external governor system may be removed. Governor shaft hole may be plugged or vented.
- 15.2. Zero pistons pop-up is allowed. Bore may be clearance, and may not exceed the maximum service limits. Bore may be oversized by 10 thousandths (.010), 20 thousandths (.020), or 30 thousandths (.030) with Honda replacement pistons only.
- 15.3. Top piston ring may be oversized. Stock or aftermarket ring permitted. Top ring gap is a non-tech item. No gapless rings. No tech on rings except for thickness and width.
- 15.4. Crankshaft may be shortened by a maximum of 1.250 inches at the clutch end. Clutch bolt hole may be retapped. No lightening, polishing, or balancing of the crankshaft is allowed. Crankshaft may be ground .010 and the use of a Honda .010 replacement rod is permissible. Machining of a stock rod to allow for a .010 insert is also permissible.
- 15.5. Piston and connecting rod must remain stock standard size, no grinding, polishing or sizing modifications allowed, although modifying oil lubrication hole is allowed.
- 15.6. Rotating the piston or rod is expressly forbidden.
- 15.7. Any replacement rod bolt is allowed, as long as the rod is not altered or modified, except for oil lubrication hole as specified in rule 16.5 above.

16. CYLINDER HEAD

- 16.1. Cylinder head must remain stock.
- 16.2. Cylinder head may be machined to a minimum thickness of 3.730 inches
- 16.3. No porting, polishing or sizing of any part of the cylinder head is allowed.
- 16.4. Only stock valve grinding angles allowed. 30° first & 45° second

16.5. All cylinder head dimensions will be taken from stock Honda parts.

16.6. Worn valve guides may be replaced with stock Honda valve guides or with a bronze guide-liner.

17. CAMSHAFT

18.1. Camshaft timing cannot be changed from Honda factory specifications. (See Honda Manual)

17.2. A reground Honda camshaft may be used, as long as it remains within the following profile and must be checked at the lifter against the camshaft. Specifications below.

17.2.1. INTAKE

LIFT DEGREES POSITION

.050 3BTDC - 3 ATDC
.100 14 - 20 ATDC
.150 30 - 36 ATDC
.200 50 - 56 ATDC
.250 81 -87 ATDC
.265 MAX
.250 48 - 42 BBDC
.200 19 - 13 BBDC
.150 1 - 7 ABDC
.100 17 - 23 ABDC
.050 34 -40 ABDC

17.2.2. EXHAUST

LIFT DEGREES POSITION

.050 37 - 31 BBDC
.100 19 - 13 BBDC
.150 2BBDC - 4 ABDC
.200 21 - 27 ABDC
.245 MAX
.200 68 - 62 BTDC
.150 46 - 40 BTDC
.100 29 - 23 BTDC
.050 12 - 6 BTDC

18. VALVE TRAIN

18.1. All valves, lifters, push rods and rocker arms must remain stock Honda GX390K1 engines. Aftermarket valve springs okay if they meet the dimensions, specifications & exact number of coils of the stock spring (see tech procedures for dimensions & specifications). One stock Honda shim allowed under both intake and exhaust springs. All dimensions will be taken from known stock Honda GX390K1 engine parts. All other specifications will be from Honda GX390K1 shop manual.

18.2. A small groove may be cut in the valve stem for a safety (rubber) "O" ring to be installed. Groove must be no more than: 0.020" deep - 0.100" wide - 0.750" from end of valve stem.

18.3. Slot in rocker arm may be elongated to prevent binding.

18.4. A stock Honda valve seal may be used on intake valve only.

19. HONDA CARBURETOR

19.1. Honda Carburetor is Stock Honda GX270

19.1. Choke may be removed from carburetor. Shaft holes must be plugged.

19.3. Any stock Honda jet may be used. Jet may be drilled.

19.4. When using the Honda carburetor needle and seat must remain stock Honda GX270.

19.5. The following modifications are allowed to the stock HONDA CARBURETOR:

A. Jet size is open.

B. No modification of shaft or butterfly allowed. Must be stock shaft.

C. No grinding or polishing.

D. A pick up hole can be drilled parallel to the existing hole of the same size.

E. Hole can be drilled in bottom of carb nut for remote adjustment.

F. May remove tab on low idle mix pilot screw

G. Shaft size minimum .268

H. Shaft size between screws minimum of .145 Throttle plates minimum .036

J. No-go bore gauge .635

K. Gasket must remain stock Honda GX390K1.

L. No electronic fuel pumps.

M. No grinding, polishing or sizing of insulators or adapters is allowed.

N. No Tillotson Carburetor allowed

20. CARBURETOR GASOLINE FILTER

20.1. Gasoline filters may be used. The location and size of the filter must be acceptable to official(s).

21. AIR FILTER AND ADAPTER

21.1. All engines are required to have an air filter and carburetor adapter.

21.2. Air filter may be K & N part # RU2780 and must remain unaltered.

21.3 Air filter adapter must remain unaltered.

21.4. Air filter cannot act as a ram air device.

22. ENGINE/CAR ELECTRICAL SYSTEM ALTERNATOR

22.1. Oil alert system may be removed.

22.2. Charging system may be removed.

22.3. Charging magnets may be removed.

23. FLYWHEEL

23.1. Flywheel may be balanced. Minimum flywheel weight must be 11 lbs. 10 oz. Weight must be removed from the outer edge of the flywheel. Any flywheel that shows signs of machining on the inside area will be deemed illegal. The tech official will have sole discretion and authority on this matter.

23.2. No other alterations to the flywheel allowed.

24. SPARK PLUG

24.1. Any make or brand of spark plug may be used. Plug must remain unaltered from factory but sealing ring may be removed for head temperature sensor.

24.2. Aftermarket spark plug connectors may be used to replace stock Honda connectors.

25. IGNITION SYSTEM

25.1. Altering the ignition timing from stock Honda GX390K1 specifications is not allowed.

25.2. No alterations to the starter coil or other electrical parts are allowed.

25.3. Spark intensifiers are prohibited.

26. STARTER

26.1. The electric self-starter must be in working order. All cars must be capable of starting under their own power.

26.2. The starter cup is an extension of the recoil starter assembly and can be removed if desired. It also presents a hazard when adjusting the carburetor. The cup may be removed and replaced with the following Honda fan flange (Honda part # 19512-ZE2-000) **ONLY**. The screen must be replaced and firmly attached to the motor in the original location and made of ¼ inch mesh. Honda part # 19620-ZE3-810 may be used. It cannot be made of solid materials or be partially covered. A hole may be cut in the center of the mesh to allow access to the crankshaft nut.

27. BATTERY

27.1. Battery must be located in stock location.

27.2. All batteries subject to approval by official(s).

28. ELECTRICAL SWITCH LOCATIONS

28.1. All electrical switches must be located on the left side of the dash panel and must be labeled showing the on/off positions.

28.2. A switch must be wired so as to ground the ignition.

28.3. A working gravity type shut off switch is mandatory on cars with electric fuel pumps.

29. ACCESSORIES

29.1. Lap timers and other automated electronics (oil pressure, temperature and rpm) are allowed providing they are mounted securely.

29.2. Tach/temp sensor devices may be attached to the spark plug or exhaust. A small hole can be drilled in the exhaust pipe to accommodate the sensor.

30. ENGINE COOLING SYSTEM

30.1. Air-cooling components cannot be altered from Honda GX390K1.

30.2. The stock shroud covering the head can be replaced with an aluminum shroud with maximum dimensions of 5" by 10". The replacement of this shroud is not a performance enhancement. The shroud must not extend further forward than the leading edge of the fins on the head. The intent is to equalize cooling over the surface of the aluminum head thus adding durability.

30.3. Refer to section 12.28-12.29 on additional engine cooling

31. ENGINE EXHAUST SYSTEM

31.1. Approved manufacturers must make exhaust pipe. Pipe must have no interior restrictions and be a minimum of 28 inches end to end.

31.2. Mufflers may be used at any event. All mufflers must be welded to the header pipe and contain a minimum of one baffle. The final measurement of the pipe length in rule 33.1 will include the length of the muffler.

31.3. Additional bracing and brackets to reinforce and support pipe are legal.

31.4. Exhaust pipe wrap only is legal. No coatings.

32. FUEL

32.1. Unleaded gasoline available at a corner service station only. No racing fuel, aviation fuel or additives of any type are not allowed. This reserves the right to use a pump around system. Any competitor who does not allow fuel to be pumped will be disqualified.

32.2. Oxygenated fuel is not permitted

33. FUEL CELL

33.1. The use of fuel cell, capacity 1-½ gallons or less, as supplied from factory is mandatory.

33.2. The approved fuel cell location shall remain unaltered from stock.

34. FUEL LINES AND FUEL PUMP

36.1. Electric fuel pumps may not be used

36.2. Clamps or safety wire must secure all fuel lines.

35. CLUTCH

35.1. Only a dry centrifugal clutch is allowed. No transmissions, belt driven torque converters, oil bath clutches or axle clutches.

36. CHAIN / GEAR SPROCKETS

36.1. Only # 35 chain allowed.

36.2. Only sprocket gears 50-80 tooth.

36.3. No skip-tooth gears allowed.

36.4. Chain guards permitted and must be acceptable to official(s).

36.5. No automatic or manual chain oiling systems permitted.

37. BRAKE COMPONENTS

37.1. Only hydraulic disc brakes with steel rotors are permitted.

37.2. All cars must have brakes on front and rear wheels.

37.3. Rotors may not be altered from stock.

37.4. No alternate materials may be used.

37.5. Brake bias may be adjusted from driver compartment.

37.6. All brake and brake cooling component parts and installation must be acceptable to the official(s).

38. REAR AXLE

38.1. The rear axle must meet the following requirements:

38.1.1. Axle must be mounted solid to suspended chassis.

38.1.2. 1" or 1.25" steel or chromemoly hollow axles permitted.

38.1.3. Maximum axle length is 40".

38.1.4. No alternate materials allowed.

38.2. Both rear hubs must be keyed securely to axle. No floating hubs allowed.

38.3. Snap rings must be in place.

38.4. Axle key stock must be secured in an additional fashion (tie wrap, tape, etc.) on all cars.

38.5. Self-oiling carrier bearings are prohibited.

39. WHEELS

39.1. All wheels must meet the following requirements:

39.1.1. These wheels are 8" diameter aluminum with a 6.5" rim width. Wheels may be painted or polished.

39.1.2. The DDS **strongly recommends 4 bolt hubs and wheels for maximum safety.**

40. TIRES

40.1. The DDS requires Hoosier MC780 or American Racer M32 compound tires. Mix matched sets of tires are permitted.

40.3. The official(s) may conduct durometer reading to verify compound.

40.4. No liquid or other tire softeners are allowed.

40.5. Nitrogen is allowed for use in tires.

41. TIRE TRACK

41.1. All cars must maintain a tread width between 43 and 45 inches measured at the widest point (sidewall) of the tire set at zero toe-in. Aluminum spacers are permitted to utilize maximum front tread width.

41.2. The body must enclose all tires and wheels.

42. WHEELBASE REQUIREMENTS

42.1. The maximum allowable wheelbase for either side of the car is 60.5 inches. The minimum allowable wheelbase for either side of the car is 59.5 inches.

42.2. When measuring, both sides must measure within 1/2 inch of each other.

42.3. Measurement is to be taken from the center of axle to center of hub specifically at the tire sidewall, not from points extending out from those locations

43. CHASSIS (Rigid or suspended)

43.1. All chassis must be painted or powder coated.

43.2. The following modifications are recommended for old MMI chassis:

43.2.1. A stub can be welded to the front corner of the chassis on the lower frame rail to accommodate the insertion of the optional bumper bracket. The bumper, or body where the bumper mounts, may be reinforced in other ways as long as the intent is not to add ballast or support in such a way that would create unfair advantage for the driver.

43.2.2. A vertical bar may be welded at the juncture of the A-pillar and the front of the hoop and run directly down to the top two side/door protection bars.

43.2.3. Both bars A or B (as specified in graphic above) may be added using only mild steel 1.125 in diameter and .065 in thickness. These bars must be mig welded.

43.2.4. Front upper frame rail cross bar located 16 inches (center-to-center) below the upper shock tower cross bar. Must be parallel to shock tower cross bar. Will also serve as mount for foot net..

43.2.5. Officials may add additional bars for SAFETY ONLY to chassis subject to approval.

43.3. Damage to the frame may be repaired.

43.4. Any frame that shows poor workmanship from damage repair will not be approved to race until necessary corrections have been made.

43.5. No filled or solid tubing allowed.

43.6. Mini Cup Chassis that pass the track technical inspection for safety and compliance to these rules will be allowed to compete.

44. SUSPENSION

44.1. DDS suspended chassis must have a suspension consisting of:

44.1.1. Four (4) Carrera shocks, Carrera part #3361, are standard. Either one or both of the front shocks may be replaced by Carrera part #3364.

44.1.2. Two (2) Carrera front springs, MMI/TRP part # 1006580

44.1.3. Two (2) Carrera rear springs, MMI/TRP part # 1006560

44.1.4. Afco shocks, part numbers 1553 and 1551 with associated spring part numbers 29350-2 and 29135-2 .

44.1.5. All cars must have steel bodied shocks only

44.2. Springs and shocks cannot be altered and must meet original factory specifications. Shocks/springs must be used in designated areas with no combinations other than specified above.

44.3. Front shock spacing may not exceed one (1) inch width.

44.4 Spring rubbers may be used, one piece design only, maximum of 2 rubbers per spring only.

44.5. DDS Rigid suspended chassis may have the following.

44.5.1. Adjustable wedge suspension

44.5.2. No type of adjustable suspension that can be adjusted by driver while inside the car.

45. STEERING

- 45.1. All cars must be equipped with a steering column constructed of 0.750 x .065 steel tubing.
- 45.2. A quick release steel coupling acceptable to the official(s) on the steering wheel is mandatory.
- 45.3. Only rack and pinion steering is permitted.
- 45.5. The steering shaft and mounting block must be padded to protect driver's legs and lower body.

46. BODY HEIGHT AND GROUND CLEARANCE REQUIREMENTS

- 46.1. All cars must maintain a minimum roof height of no less than 30.5 inches. Not including roof rails.
- 46.2. Car height off the ground and body height, including rake or degrees of body angle, shall be determined by measuring overall height of car at rear of the hatch on the roof center line.
- 46.3. Frame rail, body and front air dam clearance will be at least 1 3/4 inches for suspended and 1" for ridged. No part of the engine or suspension can be lower than frame clearance. Ride height of the car will be checked with the driver in car as raced.
- 46.4. No mechanical or electrical devices for shifting weight or adjusting weight or ride height will be permitted.
- 46.5. Body may not be off set on chassis.
- 46.6. When measuring ride height, obvious body or bumper damage incurred as a result of an on-track incident in the race for which tech is being performed should be taken into consideration. The tech official will determine whether body or bumper damage incurred during that race has caused the vehicle to fail ride height inspection.
- 46.7. If a car is submitted for tech with a completely flat tire (0 lbs pressure) which was caused by racing or an on track incident, and the tech official determines this to be the case, the competitor will be allowed to add a maximum of 18 lbs of air to the tire or replace the wheel and tire with another (18 lbs pressure max.) for the purposes of tech.

47. POST RACE TECH AND SCALES

- 47.1. A minimum of the top (3) three in each qualifying event and the top (6) six in their feature race must go directly to the scales or tech area immediately following the heat or feature.
- 47.2. The driver **must** remain in the car until the official gives permission to get out.
- 47.3. Trunk and hood must remain closed until such time as a tech official opens one or the other. The driver and car must remain in tech until given permission to leave by the official in charge.

47.4. Drivers failing to follow this procedure are subject to disqualification.

47.5. TECHNICAL PROCEDURES FOR HONDA GX390:

47.5.1. General:

47.5.1.1. Check for approved air filter

47.5.1.2. Check for air filter adapter

47.5.1.3. Air Leak check (WD-40 or starting fluid around carb and insulator with engine running and listen for increase or decrease in idle)

47.5.1.4. Check carb bore with no-go gauge

50.5.1.4.1. Stock Honda: .830

47.5.1.5. Check fuel (take sample from line at carb)

47.5.1.6. Flame test oil

47.5.1.7. Check engine seal

47.5.2. Carburetor and Intake system:

47.5.2.1. Air leak check as above # 3

47.5.2.2. Fuel tests as above # 6

47.5.2.3. Check carb bore for polishing or material removal

47.5.2.4. Check throttle shaft and plate measurements

47.5.2.5. Check for stock gaskets

47.5.2.6. Check carb insulator block for material removal (no polishing, grinding or sizing, check for cracks)

47.5.2.7. If choke removed hole must be plugged

47.5.2.8. Check engine seal

47.5.2.9. Test air filter by rolling in pan of water to see if water infiltrates uniformly around entire surface. Look for blockage.

47.5.3. Cylinder head and related parts

47.5.3.1. Check for stock rocker arms

47.5.3.2. Check for stock retainers

47.5.3.3. Check valve springs:

47.5.3.3.1. Wire dia. .110 min. - .118 max.

47.5.3.3.2. Spring free length 1.590 max

47.5.3.3.3. Outside spring dia. 1.020 max

47.5.3.3.4. Inside spring dia. .785 min

47.5.3.3.5. Must have 6 coils

47.5.3.4. Check for only 1 stock spring seat under each spring (max thickness .025)

47.5.3.5. Check for stock valves (only 45 degree angle)

47.5.3.6. Check compression chamber for weld

47.5.3.7. Check valve ports for material removal, valve seat for match up with ports, valve seat one 45 degree and one 30 degree angle only, extra holes in intake port.

47.5.3.8. Check cylinder head for angle cut

47.5.3.9. Check cylinder head thickness (min 3.730)

47.5.3.10. Check head gasket; measure at several places, and inside compression ring (min thickness .043), metal or graphite stock gasket O.K.

47.5.3.11. Check push rod for stock and length; 6.535 + - .005.

47.5.4. Ignition system:

47.5.4.1. Flywheel key must be in place cannot be offset

47.5.4.2. Coil mounting holes cannot be slotted to enable adjustment of timing

47.5.4.3. Check coil mounts for bending or plugged and rethreading

47.5.5. Flywheel:

47.5.5.1. Measure flywheel inner steel ring with hook gauge .335 +- .005

47.5.5.2. Check flywheel for lightening

47.5.5.3. O.K. to remove magnets

47.5.5.4. O.K. to balance flywheel with no intent to lighten

47.5.5.5. Min. flywheel weight is 11 lbs 10 oz.

47.5.6. Block:

- 47.5.6.1. Check for piston pop-out (zero allowed)
- 47.5.6.2. Top of piston should appear to be a stock GX390 piston. Dish in top of piston .085 +- .005
- 47.5.6.3. Stroke: 2.52-2.54
- 47.5.6.4. Bore: 3.465-3.490 (may bore up to .30 over with clearance)
- 47.5.6.5. Profile cam must meet 2002 specifications
- 47.5.6.6. Remove side cover and check to see if timing dots align. O.K. to remove oil alert system and governor
- 47.5.6.7. Check wrist pin for stock Honda GX390 measurements:
 - 47.5.6.7.1. Inside- .552
 - 47.5.6.7.2. Length- 2.438
- 47.5.6.8. Check rod for stock Honda GX390:
 - 47.5.6.8.1. No grinding, polishing, or sizing
 - 47.5.6.8.2. Enlarging of oil hole and slotting allowed
 - 47.5.6.8.3. Rod inserts O.K. Approx. length 3.300
- 47.5.6.9. Check piston for stock Honda GX390:
 - 47.5.6.9.1. Piston crown to bottom of skirt: 2.620
 - 47.5.6.9.2. Dish in top of piston: .085 +- .005
 - 47.5.6.9.3. Compression height (top of wrist pin to top of piston): .710
 - 47.5.6.9.4. Check for lightening
 - 47.5.6.9.5. No coatings
 - 47.5.6.9.6. No tech on rings except for thickness and width
- 47.5.6.10. Check crankshaft for stock Honda GX 390:
 - 47.5.6.10.1. No grinding or polishing
 - 47.5.6.10.2. No balancing
 - 47.5.6.10.3. Crank journal may be reground to -.010

47.5.6.10.4. Journal size: 1.416 std.

47.5.6.10.5. Journal size for -.010: 1.406

47.5.6.10.6. Weld and regrind for rod inserts O.K.

47.5.6.11. Check camshaft for stock Honda GX390:

47.5.6.11.1. Easy spin in working order

47.5.6.11.2. No lightening

47.5.6.11.3. May be welded and reground

47.5.6.12. Check balancer for stock Honda GX390:

47.5.6.12.1. NO lightening or balancing

47.6. No equipment or car will be considered as having been approved by reason of having passed through inspection "unobserved".

48. PROTEST GUIDELINES

48.1. Protestor must have finished on lead lap of feature or heat race.

48.2. Protest has to be written and turned in to the race director no later than fifteen minutes after completion of feature or heat. Must include what item or component is under protest.

48.3. Fee is \$150.00 to be included with written protest.

48.4. Fifty dollars of the \$150 fee will go to ENGINE TECH official. If engine item or component under protest is legal, the fee minus \$50 is paid to car protester. If the item or component is illegal the fee minus \$50 is returned to protestor.

48.5. Sealed engines are protestable. Sealed engines may not be honored for tech purposes in all regions. Contact local directors before participating.

48.6. Engine tear down will be limited to the following people only:

48.6.1. One authorized mechanic

48.6.2. One member from car in question

48.6.3. One local director/representative or track official.

48.7. No protest on non-performance items.

48.8. Any driver/car owner who refuses protest is assumed illegal.

49. RACE TRACKS

49.1. All DDS events will be held on oval or enclosed tracks less than ½ mile in length, or on road courses. **NO EXCEPTIONS**

50. SEAT AND PEDALS

50.1. Seat must be aluminum racing seat made by a reputable manufacturer. No home made seats are allowed.

50.2. Seat must be bolted in place. Minimum of grade 8 hardware only. The use of straps or tape to anchor the seat is prohibited.

50.3. Seat size will be appropriate for driver.

50.4. All pedals must be within appropriate reach of the driver. Any deemed inappropriate by tech official will have to be modified prior to the car being allowed on the track.

50.5. A raised foot box may be constructed for elevating the driver's feet or legs above the steering rack and to allow for moving the pedals closer to the driver. The box may be constructed from aluminum or steel of a thickness sufficient to support the driver's feet and allow for the bolting of the pedal assembly directly to the box if necessary. Minimum .040 gauge aluminum or a maximum of 14-gauge steel may be used. The box must be easily removed for safety inspection of steering and suspension components. The sole purpose is to allow proper pedal location for a small driver. Any attempt to utilize the box for ballast or weight distribution is expressly forbidden.

50.6. All pedals must be securely fastened to the chassis rails using grade 8 hardware.

50.7. The car will fail tech, if at the discretion of the tech inspector, the seat, pedals or box are mounted in an unsafe or inappropriate manner.

Rain Policy – If a series race is stopped before half the laps are completed, the race is cancelled and no points are awarded. No points will ever be awarded based on qualifying, heat races, etc.