

# Wake County Speedway Future Stars Developmental Drivers Series Rules & Guidelines – 2011

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## Age Requirements

- All drivers at the beginning of the season must be between the ages of 8 and 13.
- If a driver is 7 or 14, they will be allowed to participate pending a safety evaluation by the track official for the series.

## Driver's Meeting

- After practice, all drivers will be required to attend the driver's meeting with one parent or guardian present. Meetings will be held at the infield pit scales.

## Conduct

- Drivers, crew, visitors, spectators, etc, will conduct themselves in a proper and good sportsman like manner.
- Rough driving will not be tolerated during practice or main event. If a driver is black-flagged for rough driving, they will report immediately to the infield scales. The track official for the series will review the infraction with the driver and parent or guardian at that time.
- See WCS General Rules for further detail.

## Flags & Signals

- See current WCS rules.

## Competition

- Starting positions are set by random drawing. New or drivers in training may be relegated to the back of the field regardless of draw at the track official's discretion.
- Competition is for trophies only. No points or money are disbursed in this class.
- (2) Consecutive first place finishes will require that competitor to start at the back of the field at the next event.
- WCS will make adjustments if necessary to maintain class parity. All technical and competition decisions are final.

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- For new driver training and or new team technical assistance, contact Technical / Series Officials listed at the back of the rule book.

#### Post Race Technical Inspection

- Top finishing car will go immediately to the scales for post race inspection. Driver must remain in the car until given clearance by a track official. Upon release by track official, driver may proceed to Winner's Circle.

#### Safety Equipment

- Personnel safety equipment shall be at a minimum:
  - Full racing suit, single layer fire suit minimum, SFI rated
  - Full face helmet
  - Neck restraint system
  - Gloves
  - Racing shoes recommended, but not required
  - Right side head rest. Head rest is strongly recommended on both sides.
- A fully charged fire extinguisher mounted inside the driver's compartment is required. This must be accessible by a track safety official from the left side of the car.
- 2-way radio systems are required.
- Aluminum racing seat, fitted to the driver is required. Seat must be mounted centerline, no offset allowed. Driver must be at least 1" below the roof while in the driving position with the helmet on.
- Roll bar, steering shaft and block padding are required. Door bar and foot box area padding are strongly recommended.
- 5 point harness:
  - Properly fitted and adjusted.
  - Belts must be SFI rated, at least 2" wide, and no more than 3 years old.
  - A quick release lap seat belt is required.
  - Belts must be fastened to the roll cage with grade 8 bolts, not less than 3/8" in diameter.
  - Shoulder harness must come from behind the driver's seat. Inertia reels cannot be used.

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#### General Body Requirements

- All bodies must be styled to resemble a NASCAR stock car / truck.
- Hinges and or pin kits are required for hood, roof, trunk or other access panels.
- Roof rails may be added along the roof and rear window,  $\frac{3}{4}$ " maximum height.
- Body requirements:
  - No more than 120" in length and 47" in width.
  - $\geq 30\text{-}1/2$ " high in race condition.
  - Mounted level on chassis and not offset on frame.
  - Fenders may be cut or altered only for tire clearance, and is subject to the track official review.
  - Must be maintained in good overall condition. Any damage incurred must be repaired neatly for the next event.
  - Rear spoiler must have a minimum angle of  $35^\circ$  measured from the horizontal plane, and be no more than 4" tall as measured from base to top.
  - Left hand window area must have a window net fastened to the roll cage with a quick release mechanism within easy reach of the driver and track safety officials.
  - Right hand window must have a safety net installed. A lexan window (speedway window), that can be easily removed by track safety officials may also be installed. No vents are permitted in the speedway window.
  - No side or review mirrors are permitted.
- Chassis requirements:
  - Painted or powder coated.
  - In good overall condition. Any repairs must be properly made with sound welding and sheetmetal fabrication techniques. No homemade chassis modifications or alterations are allowed.
  - Weights must be of solid lead, no buckshot or BBs. All weight must be securely fastened with a minimum of grade 5 bolts and locknuts. Weights must be painted white and marked with the car number. Weights mounted inside of the frame rail or weight tubes do not have to be painted.
  - Bumpers must be of hollow steel tubing and fastened to the chassis. It is recommended to 'pin' rather than hard bolt or weld the bumpers in place to allow for some breakaway and dissipate force from an impact.
- Other requirements:
  - Ignition and start switches must be mounted on the left side of the dash within easy reach of the driver, and clearly labeled.
  - Foot boxes may be installed to accommodate driver height. Boxes must be made of aluminum or steel and have to be securely mounted to the frame.

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#### General Engine Requirements

- Stock Honda GX390K1 or U1 13HP engine with a 630/9HP carburetor.
- Serial numbers must remain on the block.
- Engine may be assembled by anyone, but must be technically reviewed and sealed by either of the following:
  - Extreme Engine Systems      828.625.0333      ees8.com
  - Mountain Machine Shop      336.446.0098      mountainmachineshop.com
- Engine seals for the side cover, cylinder head, and flywheel cover must be in place at all times with no signs of tampering. Missing or tampered seals are grounds for immediate disqualification.
- Engine must be mounted in stock engine cradle location. No offset is allowed.

#### Detailed Engine Requirements

- Internal assembly:
  - Maximum overbore of .030 with Honda replacement pistons only
  - No gapless rings
  - Crank may be ground .010 under
  - Piston, connection rod, and crankshaft must remain standard size without grinding, polishing lightening or re-sizing allowed
  - Modification of oil lubrication passages is permitted
  - No piston pop out above deck. Piston must retain .080 dish
- Cylinder head:
  - Head may be decked to a minimum thickness of 3.730"
  - No porting, polishing, sizing or filling of any part of cylinder head
  - Stock valve grind angles of 30° first and 45° second only
  - Worn valve guides may be replaced with stock Honda valve guides or with a bronze guide-liner and must remain in stock location
- Camshaft:
  - Profile must match factory stock with allowances for wear
  - Cam timing cannot be changed from Honda specifications. See track official for specification.

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- Valve train:
  - Valves, lifters, pushrods, and rocker arms must be stock Honda GX390K1/U1
  - Valve springs permitted:
    - Stock Honda
    - EES 5 coil
    - MMI 6 coil
  - A safety rubber O-ring may be installed on valve. See track official for specification.
  - Stock Honda valve seal may be used on the intake valve only
  
- Carburetor:
  - 630/9HP carburetor
  - Choke may be removed and holes filled
  - Any stock Honda jet may be used and can be drilled
  - Needle and seat must remain stock 630/9HP
  - Aftermarket throttle linkages may be used on the top for throttle actuation only
  - No modification of shaft or butterfly
  - No grinding or polishing of carburetor, insulators, or adapters allowed
  - A pickup hole can be drilled in parallel to the existing hole of the same size
  - A hole can be drilled in the bottom of the carb nut for remote adjustment
  - Tab may be removed on low idle mix screw
  - Gasket must be stock Honda 630/9HP
  - Carburetor insulator must be drilled for pulse pump. Only one hole is allowed, no air leaks.
  - Emulsion tube length must remain 1.185" +/- .005"
  - Emulsion tube inner diameter must remain stock
  - Emulsion tube pickup holes may be modified
  - Pilot jet holes; must be (4), but can be any size
  
- Flywheel:
  - May be balanced; minimum weight is 11lbs, 10oz
  - Weight may be removed from the outer edge of the flywheel only
  - No other alterations permitted
  
- Filters:
  - Clear fuel filter for carburetor is recommended
  - Direct mount air filter and carburetor adapter is required
  - Air filter cannot act as a ram air device or have outside air ducted to it
  
- Engine Cooling:
  - Air cooling components cannot be altered from stock Honda GX390
  - The stock cylinder head shroud can be replaced with an aluminum shroud, maximum dimension of 5" x 10" with the intent of equalizing cooling over the head for durability

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- Exhaust:
  - Single stage pipe only
  - Minimum length of 28" end to end
  - Mufflers required, (WCS), minimum of (1) baffle, minimum length of 30" including muffler
  - Muffler may be welded or secured with manufacturer's clamping system
  - Exhaust wrap is permitted
  - Painted coatings are permitted
  
- Electrical:
  - All wiring must be secured properly inside the driver and engine compartments
  - Battery must be mounted in the factory location. Over current protection is strongly recommended.
  - Electrical switches, general:
    - Must be located on the left hand side for access by track safety officials.
    - Clearly labeled for ON – OFF positions.
    - Ignition must be wired to ground the system
  - Oil alert system may be removed
  - Charging system may be removed
  - Charging magnets may be removed
  - Any brand of spark plug may be used
  - Ignition timing may only be stock Honda GX390K/U1 specification. No alterations to the starter coil or other electrical parts are allowed. Spark intensifiers prohibited.
  - Electric starter required

#### Detailed Chassis & Suspension Requirements

- Rigid or suspended chassis are allowed.
- Post race weight minimum in race condition is 550lbs.
- Maximum left side weight percentage is 58%.
- Frame rail and body clearance must be  $\geq 1$ " in race condition.
- Air dam clearance must be  $\geq 1$ " in race condition.
- No mechanical or electrical devices permitted for any type of chassis / weight adjustments by driver.
  
- Clutch:
  - Dry centrifugal only
  - Drum or multi-disk style

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- Chain:
  - Must be #35
  - Sprocket gears 53-80 tooth. No skip tooth gears.
  - No automatic or manual chain oiling systems
  
- Brakes:
  - Front and rear required
  - Hydraulic only
  - Steel rotors, no alterations allowed
  - Must be in good working order
  
- Rear Axle:
  - Must be mounted solid on suspended chassis
  - 1-1/4" steel or chrome moly hollow tube
  - Maximum length is 40"
  - Hubs must be keyed to axle, no floating hubs
  - Snap rings must be in place
  - Axle collars must be secure and keyed to axle. It is strongly recommended to use steel collars and double collar the trust side of all axle mounted components.
  
- Track Width:
  - Must maintain a tread width between 43 and 45" measured at the widest point, (sidewall), of the tire set at zero toe-in.
  - Aluminum spacers are permitted to adjust track width. Lug nuts must be fully engaged on lugs if spacers are added.
  - Tires and wheels must be enclosed by the body
  
- Wheelbase:
  - Maximum either side is 60-1/2"
  - Minimum either side is 59-1/2"
  
- Wheels:
  - 4 lug Douglas Wheel, PN 005-31, 8" diameter x 6" rim width
  - Older 6 lug wheels are permitted, 8" diameter x 6-1/2" rim width
  
- Tires:
  - Hoosier MC780 or American Racer only
  - No soaking. Any chemical or physical alteration to the tire compound or tire is grounds for immediate disqualification. A random durometer check will be performed by track officials.
  - Nitrogen is permitted

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- Springs & shocks:
  - Springs & shocks must meet original factory specifications and cannot be altered
  - Shock spacing cannot exceed 1"
  - Coilover spring & shock combinations permitted are:
    - 400/400 front, 150/150 rear with Carrera 3361 shocks.
      - 3364 shocks may be used on one or both front coilovers.
    - 350/350 front, 135/135 rear with Afco 1553 shocks front and 1551 rear.
    - Up to (2) spring rubbers are allowed per spring.
- Control arms, panhard bar, etc:
  - All components must be original and without alteration
  - Homemade or modified suspension components are not permitted
  - Spindles must be manufactured by approved manufacturers only. King pin angles, spindle diameters, spindle arm length, angle, and location of outer ball joint must be as originally designed.
- Steering:
  - Manufacturer supplied rack & pinion only
  - Steering shaft to be of ¾" x .065 steel or chrome moly tubing only
  - Steering shaft assembly is to be securely mounted
  - A single u-joint may be used to facilitate correct shaft angle
  - Steering wheel must have a quick release coupling
  - Steering shaft and mounting block must be completely padded to protect driver's legs

#### Other Requirements

- Accessories:
  - Lap timers and other electronic devices are permitted for monitoring engine temperature, rpms, etc.
  - A hole may be added to the exhaust to mount an EGT sensor if desired
- Fuel & oil:
  - Unleaded gasoline only as purchased at a typical service station
  - No racing fuel, aviation gasoline or additives of any type allowed
  - Oil is to be used for lubricating engine only. Any brand of oil is permitted.
  - No combustion or power additives may be mixed with the oil such as but not limited to:
    - Nitro methane
    - Polypropylene oxide
  - Any additives to the gasoline or oil will as noted above will result in immediate disqualification.

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- Fuel cell:
  - 1-1/2 gallon capacity cell, no alterations allowed.
  - Mounted in factory location
  - Foam insert required
  
- Fuel pump:
  - Mechanical only
  - No electric pumps, even when used with inertia or gravity switches
  - All fuel lines must be maintained in good condition, properly clamped, secured and routed

#### Contacts

- Technical Assistance:
  - Paul Bommer                      919.291.5067                      bommeracengines@nc.rr.com

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