

**Full Throttle Motor Speedway @ Varney  
2024 Mini Truck Rule Book**

**MUST be 13 years or older to compete (unless pre-approved by Home Track officials)**  
**Rookie drivers must display yellow rookie stripe on rear**  
**850 lbs minimum / 59% Left Side weight maximum**

**CHASSIS SPECIFICATIONS**

- Chassis can be altered or modified with approval from Tech Official.
- Class is open to any chassis that meets Home Track rules and has a 2024 Home Track Approved Tech Sticker.
- **Truck - 70" wheelbase X 47" outside to outside wheel track.**
- .065. Main frame rail const. 1 1/4" square tube.
- .065. Main cage tube supports, 1 1/4x.065 O.D Mild tube.
- Left side drivers door bars must be plated with .065 steel at bumper height mandatory.

**UPPER/LOWER CONTROL ARMS, SPINDLES AND WHEEL HUBS**

- Any upper/lower control arms any length. No aluminum
- Altering of these components allowed within reason.
- Everything must be nylock nuts tie rods, rod ends, on steering parts
- No aluminum rod ends are allowed
- Spring and shock rear location in or outboard of the frame is allowed
- Spindle min. 3/4" shaft must be steel. No aluminum

**SUSPENSION**

- PRO/AFCO/Carrera springs and shocks allowed.
- One shock and spring per wheel
- Small steel body shocks only 1500 or 1600 series only
- Bump stops allowed
- NO solid struts

**SWAY BARS**

- Front sway bars are allowed. **NOTE: It is mandatory to run a front sway bar**
- Rear sway bars are allowed
- Any size of bar is allowed

**AIR DUCTING**

- For engine cooling only

**REAR END**

- Wishbone one-piece solid with motor mounted to it with one or two steel rod ends on front
- Solid frame with motor mounted/Aluminum 4 link trailing arms allowed with steel rod end (Must be approved)
- Solid frame with motor mounted/trailing arms, truck arms design 2 steel rod ends.
- Pan Hard Bar with frame slider and 2 steel rod ends 1/2" heim's.

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### MOTOR LOCATION

- Center line of chassis, minimum 14" engine face to outside drivers side frame rail (left side)

### FLOOR PLAN

- Full steel 22 – gauge firewall behind driver's seat and up right side to side mandatory
- No floor and/or belly pans allowed behind rear firewall
- All trucks must have .100 steel floor plate or aluminum 3/16 bolted under driver's seat **(MANDATORY)**
- Aluminum 1/8" floor plate allowed to be bolted in foot box area ahead of driver's seat

### FIREWALL

- Firewall must be steel 22-gauge steel or .40 aluminum with mud flap or rubber backing of some sort in chain area and go full width of cage behind driver to upright cage post
- No ducting through firewall is allowed

### GROUND CLEARANCE

- Bottom of chassis to ground must be a minimum of 2" with driver in measured at rocker panel on main frame rail on both sides. Front body nose and rockers minimum of 1"

### WHEEL BASE

- Wheelbase must be 70" a minimum of 69 ½" and a maximum of 70 ½"
- But only ½" between both sides max.

### TREAD WIDTH

- Maximum tread width of 47" MAX measured from outside-to-outside face of tires at spindle height.

### WHEELS/TIRES

- Wheels must be aluminum approved racing wheel (example: Douglas) .125 min. Thick
- Only one size wheel will be allowed. 8" dia x 6" width. All 4 wheels must have the same offset of 3 ½" backsides
- Only three tires will be allowed: 15"x8"x7" (American Racer. M-32 or M33) or (Hoosier tire MC – 780)
- Tires must be racing slick and must be approved

### STEERING

- Quick release mechanism is mandatory (Must be tight)
- Rack and Pinion steering is permitted. PT# ARC SC 1200 or EMPI 00-3147-7 or replacement
- Universal joint allowed on steering shaft
- Front or rear steer allowed (Steering components must be covered from driver's leg area)

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## **STEERING SHAFT SPECIFICATIONS**

- Solid .625 (5/8") diameter cold rolled steel
- Hollow .750 (3/4") .070 wall d.o.m. tube
- Recommend collapsible steering column

## **SEATS**

- High back aluminum racing seat to top of helmet with left and right head supports is mandatory
- Seat must be bolted in four places with minimum 5/16" diameter. Grade 8 bolts
- The seat must be located a minimum of 8 ¼" from outside of left frame rail to the narrowest part of the seat. (Where side of seat meets back of seat)
- Driver's helmet when belted in properly must be 1" below top halo on roll cage (mandatory)

## **FUEL CELLS**

- Fuel cells are mandatory. 1 Gallon or 1 ½ gallon
- Fuel cells must be a plastic or bladder type
- Fuel lines must be installed in a safe manner
- No fuel cooling devices are allowed. Example ice canisters
- Must be behind rear axle

## **WEIGHT**

- Mini Trucks must have a minimum weight of 850 lbs with the driver after race completion as raced
- Maximum left side weight is 59% of total weight with the driver
- Lead weight requires 2 bolts per piece. Connected to frame rail or welded in bracket
- DO NOT bolt tin floor – must be between front and rear wheel base

## **BATTERY**

- Battery must be located behind firewall and securely fastened

## **CLUTCH**

- Dry type engine mounted clutch is mandatory
- No transmission gear box or other device which permits a change of gear sprocket ratio while vehicle is in motion is allowed
- Torque converters are not allowed
- Disc type clutches allowed. 4 disc max
- Hortsman Redhawk Clutch or Jammer
- No direct drives allowed
- Crankshaft can be no more than 7" long
- Adjustable type clutch only
- Old style clutches are still allowed (Noram)
- No weight can be added or subtracted from clutch assembly from stock production

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### CHAIN

- #35 size max (chain guides strongly recommended)

### BRAKES

- Hydraulic brakes only (no scrubs or band type brakes allowed)
- All brake systems must be in good working order
- Front and rear brakes are allowed, only one master cylinders allowed
- All bolt on brake components must be cotter keyed for safety (not rear brake rotor)

### KILL SWITCHES

- Trucks must have a kill switch located on the left side of the dash panel with a maximum of 7 ½" from door bar
- Key ignition, on dash allowed without push start

### REAR AXLE

- Rear axle dimensions must be 1 ¼" diameter maximum. No longer than 44"
- **No floater hubs on drive hub.** They will be allowed on gear and brake hubs.
- Axle must have safety clips and both keys in drive hubs on each end to prevent hubs from coming off or slipping
- No titanium or aluminum axles allowed. **No ceramic bearings allowed**

### SAFETY BELTS

- All trucks must have a 3" or 2" wide 5-point harness
- Harness cannot be cut in any place
- Any belts in question will not be allowed
- All belts must be 5 years old or newer and in good condition.

### WINDOW NETS

- All trucks must have a window net located on driver's side
- Minimum window net size is 14"x12"
- Window net must be removable for safety crew to have access
- Right side window allowed. Must be removable from outside with no tools, or with finger pull holes

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### SAFETY HELMET and APPAREL

- **Helmet** – Minimum Snell rated full face helmet with eye shield required (**SA2015 or newer MANDATORY**)
- **Driver Suit** – 1-or 2-piece, full body, single layer Proban or Nomex required. (SFI rating mandatory) **ABSOLUTELY NO NYLON OR OTHER FLAMMABLE MATERIAL**
- **Footwear** – Full leather upper shoe or Nomex shoe required
- **Balaclava** – Nomex balaclava strongly recommended
- **Right and left head supports** – **MANDATORY**
- **Gloves** – Single layer Nomex glove or full leather glove **MANDATORY**
- **Head and Neck Restraints** – **MANDATORY FOR 2024** if running head and neck restraints – HANS or ZAMP is worn, you still need left and right-side head support
- **NO TWO WAY RADIOS ALLOWED**

### BODY DIMENSIONS

- Body must be fiberglass body unaltered from original body
- Roof hatch must be fastened at rear to keep closed while racing
- Exterior scrub rails. Can be inside body or outside body Lexan “V” type 11/4” sticking
- Door panels
- No hood pins or Dsuz fasteners allowed sticking out of the side of the body. (Cut – tires)
- Rear spoiler optional
- .5 – 4” diameter holes in top of rear bumper fiberglass allowed for hot air to get out or rear cover can be open for better cooling

### BUMPER BAR

- Max tube size 1” x .095 1- Rear, 2 – Front. No external bars, bottom of rear bumper – no higher than 13” from ground.

### NUMBERS

- Numbers must be located on both door panels and on roof hatch
- Numbers on door must be 14 ½” high – minimum
- Numbers on roof must be a minimum of 12” high
- Numbers must be easily read from scoring tower
- Numbers must be easy to read from flag stand
- **Make as big as possible**

### MIRRORS

- Only approved mirrors will be allowed
- Maximum size of mirrors is 4” x 8” or 32 sq. inches
- Inside cab, upper right side
- Small left side mirrors allowed so you can see the blind spot, no bigger than 3” around

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### APPEARANCE

- All trucks must be kept neat in appearance
- Any trucks in question will be at the discretion of the tech department

### MOTOR

- Honda GX390 QAE 13.0 HP motor is mandatory

### OLD GX390 ENGINE SPECIFICATIONS

- Governor and choke mechanism may be removed
- Decompressor mechanism may be removed
- Block may be bored to the three over sizes available from Honda .25mm, .50 mm, and .75mm
- Piston dish must be a minimum of .080"
- Piston may be a maximum of .005" above deck
- Stock Honda rings must be used and installed properly
- Any ring gap allowed
- Stroke shall be 64.1mm or 2.524" maximum
- Stock or .010" undersize rods allowed
- Spark Plug – Autolite P/N 3910X
- Stock valves and keepers, satellite ex allowed
- Valves may be refaced but not excessively
- Any valve spring allowed
- Only 12HP carb stock jets and emulsion tube allowed. **NO jets larger than 120 allowed. NO modified carbs**
- Minimum head cc is 26.5
- 3 angle valve jobs allowed
- Cylinder head thickness from deck surface to valve cover surface is 3.640 minimum
- Head gasket is composition .042" minimum
- Any flywheel air gap permitted
- Any ignition timing allowed as per the flywheel with 3 deg offset key
- Carb throttle bore 1.070" maximum
- Carb venturi .833" max no go
- Any vacuum operated fuel pump is allowed
- Any camshaft timing is allowed
- No metal removed or added to camshaft
- Cam lobe height intake 1.270" minimum – 1.290" maximum
- Cam lobe height exhaust 1.250" minimum – 1.270" maximum
- Lashed at factory recommendations maximum life intake valve .313"
- Lashed at factory recommendations maximum life exhaust valve .290"
- Camshaft may not have lobe separation angle changed from stock angle

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- Any fuel pump and/or an approved racing fuel allowed. No straight alcohol, or methanol allowed. Note: some pump fuel contains 8% alcohol and/or pre-approved additives is ok. Track approved fuel – no additives.
- 1 1/4" maximum OD header pipe is permitted with a mandatory length of 24" to 32" to the end of pipe measured on the outside bend.
- No porting, no polishing, deburring or machining allowed.
- Motor seals must be installed in the following places
  - Crankcase cover – Cylinder head bolt
  - Rockers, Push rods – stock
- **Note: All engines must be properly assembled in accordance with Honda shop manuals. OEM/STOCK components ONLY**

### **MOTORS:**

Engines may be built by anyone in accordance to Honda shop manual BUT can only be dyno tested or sealed by an approved Home Track Builder:

Keith Marshman – (519) 245-0425

Dave McAdams – (519) 686-8034

Ryan Custer – (519) 819-0481 (with a serial trace)

Crankcase oil > 4 cycle engine lubricating oil that conforms to SAE or API standards with any additives a sample of oil maybe provided at any time by tech

### **NEW GX390VT2 ENGINE RULES**

1. Governor and choke may be removed
2. De-compressor must not be removed
3. Block may be bored to the 3 Honda oversizes
4. Piston may be a minimum of .035 below deck
5. Piston dish must be a minimum of .080
6. Stock Honda rings must be used and installed properly
7. Any ring gap allowed
8. Stroke shall be a maximum of 64.1 mm or 2.524
9. Stock or .010 undersize rods allowed
10. Spark Plug Autolite P/N 3910X
11. Stock 25T valves and keepers, stellite exhaust allowed
12. Valves may be refaced but not excessively
13. Any valve spring allowed
14. 13hp carb, stock jets and emulsion tube allowed. Max venturi size .833/NO JETS LARGER THAN 120 ALLOWED. No Modified carbs
15. Minimum head thickness is 3.728
16. Head is a 25T with minimum CC of 37
17. Head gasket is steel approximately .010 thickness
18. ZF6 old style coil and flywheel may be used

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19. ZF6 old style coil and rebroached new flywheel allowed
20. Any ignition timing allowed
21. Any flywheel to coil air-gap allowed
22. Any camshaft to crankshaft timing allowed
23. No metal added or removed from camshaft
24. Cam lobe height for intake is 1.275 – 1.290
25. Cam lobe height for exhaust is 1.255 – 1.270
26. Max lift with 0 lash at intake valve is .325
27. Max lift with 0 last at exhaust valve is .305
28. Cam must have stock lobe separation angle
29. Any vacuum operated fuel pump allowed
30. Three angle seats grinding allowed
31. Valved guards to be in stock location
32. No porting, no polishing, no deburring, no matching

**All engines to be properly assembled as per Honda shop manuals**

**All parts to be compared with know stock Honda part to verify originality**

**New replacement rod with bearing GX390 – A R C - #6272**

MAX Horse Power for these motors with stock parts allowed is approx. 20 HP

**NOTE: Some new engines have 3 groove case iron camshafts and some have camshafts with sintered lobes pressed on billet shaft.**

**Transponder location: 75" from the front of the car. Must be mounted facing downwards**

**FULL THROTTLE MOTOR SPEEDWAY 2024 MINI TRUCK RULES**

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