

13HP PRO MINI TRUCK TECHNICAL RULES

2019

DIVISION HIGH LIGHTS

> Pro Mini Truck > ages 16 and up @ 825lbs / 60 % L.S. with 3 year age rule

> Jr Mini Truck > ages 11-15 @ 750lbs with a 5/8" Restrictor Plate on motor

1. CHASSIS SPECIFICATIONS:

- Chassis – JCAR Mfg. Old M.K.S. Or home built Chassis allowed.
- Chassis can be altered or modified with approval from JCAR tech..
- Class is open to any chassis that meets spec.
- **Truck - 70" wheelbase X 47" outside to outside wheel track.**
- .095. Main frame rail const. 1 ¼ " square tube.
- .095. Main cage tube supports, 1 1/4x.095 O.D Mild tube.
- Left side drivers door bars must be plated with .100 steel at bumper hieght maddatory.

2. UPPER / LOWER CONTROL ARMS. SPINDLES AND WHEEL HUBS:

- Any upper/lower control arms any length. No alum.
- 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 alum.

3. SUSPENSION:

- Pro / AFCO/ Carreria springs and shocks allowed .
- One shock & spring per wheel..
- Small steel body shocks only 1500 or 1600 series only .No adjustable shocks Any ratio.
- NO solid struts.

4. SWAY BARS:

- Front sway bars are allowed. NOTE: It is not mandatory to run a front sway bar.
- Rear sway bars are allowed.
- Any size of bar is allowed.

5. AIR DUCTING:

- No ducting through interior.
- Off bottom of truck to engine.
- Or tunnel cover only (not side body)
- No ducting to carb.,

6. 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 mandatory

7. MOTOR LOCATION:

- Centre line of chassis, minimum 14" engine face to outside drivers side frame rail. (Left side)

8. FLOOR PAN:

- Full steel firewall behind drivers seat and up right side to front dash of truck mandatory.
- No floor and/or belly pans allowed behind rear firewall.
- All Trucks must have .100 steel floor plate or alum. 3/16 bolted in under drivers seat (MANDATORY)
- alum. 1/8" floor plate allowed to be bolted in foot box area ahead of drivers seat

9. FIREWALL:

- Firewall must be steel and go full width of cage behind driver to upright cage post
- No ducting through firewall is allowed

10. GROUND CLEARANCE:

- Bottom of chassis to ground must be a minimum of 2" with driver measured at rocker panel on main frame rail on both sides.
Body nose min. of 1" rockers does, nt matter.

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11. **WHEEL BASE:**
 - **Wheelbase must be 70"** a minimum of 69 ½" and a maximum of 70 ½". - **But only ½ "** between both sides max.
12. **TREAD WIDTH:**
 - **Maximum tread width of 47" (MAX)** measured from outside to outside face of tires at spindle height.
13. **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 same offset of 3 ½" backsides.
 - Only one size tire will be allowed. 15" x 8" x 7" American Racer. M-32 or M33.
 - Tires must be racing slick and must be approved
14. **STEERING:**
 - Quick release mechanism is mandatory. (Must be tight).
 - Rack & Pinion steering is permitted. PT# ARC SC 1200 or EMP00-3147-7
 - Universal joint allowed on steering shaft.
 - Front or rear steer allowed.
15. **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.
16. **SEATS:**
 - High back aluminum seat to top of helmet with left and right head supports is mandatory.
 - Seat must be bolted in four places with minimum of 5/16" diameter 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)
17. **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.
18. **WEIGHT:**
 - **PRO Trucks must have a minimum weight of 825lbs with the driver.**
 - **JR. Mini Truck must have a minimum weight of 750lbs with driver .**
 - **Maximum left side weight is 60%** of total weight with the driver.
 - Lead Weight requires 2 bolts per pc. connected to frame rail or welded in bracket.
 - **DO NOT BOLT TO TIN FLOOR- MUST BE BETWEEN FRONT AND REAR WHEEL BASE.**
19. **BATTERY:**
 - Battery must be located behind firewall and securely fastened.
20. **CLUTCH:**
 - Dry type engine mounted clutch is mandatory.
 - No transmission gearbox 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:
Hortsmen Redhawk Clutch.
 - No direct drives allowed.
 - Crank shaft can be no more than 7" LONG.
 - Adjustable type clutch only.
 - Old style clutches are still allowed.(Noram)
21. **CHAIN > #35 size Max**

22.

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)

23.

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 with out push start.

24.

REAR AXLE:

- Rear axle dimension must be 1 1/4" 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.**

25.

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 3 years old or newer.

26.

WINDOW NETS:

- All trucks must have a window net located on driver's side.
- Minimum window net size as 14" x 12".
- 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.

27.

SAFETY HELMET and APPAREL:

- HELMET - Minimum Snell rated full-face helmet with eye shield required.
(SA2010 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 FLAMABLE MATERIAL
- FOOTWEAR - Full leather upper shoe or Nomex shoe required
BALACLAVA - Nomex balaclava strongly recommended
- Right & left head supports MANDATORY
- GLOVES - Single layer Nomex glove or full leather glove MANDATORY
- **HEAD and NECK RESTRAINTS - (MANDATORY FOR 2018)** If running head and neck restraints - (HAANS) or(ZAMP) is worn, you still need left and right side head support.
- **NO TWO WAY RADIOS ALLOWED**

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.

28.

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 out No wider than wheel track – 47" only.
- Door panels (No hood pins or Dsuz fasteners allowed sticking out of the side of the body ,(cut- tires).
- NACA ducts allowed. Only in rear deck.
- Rear spoiler not to exceed 4 inches height x 34 inches in width any angle and is not mandatory to run.
- .5 - 2" dim., holes in top rear bumper fiberglass allowed for hot air to get out or upper center can be cut out for better cooling .

29.

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 the flag stand. **Make as big as possible.**

30.

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.

• **APPEARANCE:**

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

31.

MOTOR:

- Honda GX390 QAE 13.0 HP motor is mandatory.
> **Jr Mini Truck ages 11-15 needs to run 5/8" Plate between Carb. Plate and head with gaskets on both sides .**

OLD GX390 ENGINE SPECIFICATIONS

- Governor mechanism may be removed.
- Decompressor mechanism may be removed.
- Block may be bored to the three over sizes available from Honda .25mm, .50mm, 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 64.1 mm or 2.524" maximum.
- Stock or .010" undersize rods allowed.
- Stock air cleaners or washable snorel type.
- Any heat range spark plug allowed with stock reach and stock gasket.
- Stock valves and keepers, satellite ex allowed.
- Valves may be refaced but not excessively.
- Any valve spring allowed.
- 13HP carb stock Jets and emulsion tube allowed only, **NO jets larger than 110 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 degree 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.
- **Any Pump fuel and/or an approved racing fuel allowed . No straight Alcohol, or Methanol allowed** Note: some pump fuel contains 8% alcohol and or additives is ok .
- **1" to 1 1/8". Maximum O.D. Header pipe is permitted with a minimum length of 24" to maximum 30" to the end of muffler measured on the outside of bend.**
- **RVL approved mufflers are mandatory, square or round hole end plate welded to the end .Mod .Model #B91XLMO Part # 4106 There must be an end plate .MANDATORY**
- No porting, no polishing, deburring or machining allowed.
- Restrictor plates may be required at discretion of **JCAR** officials
- Motor seals must be installed in the following places:
 - Crank case cover - Cylinder head bolt

NOTE: All engines must be properly assembled in accordance with Honda shop manuals.

MOTORS :

Engines may be built by anyone to accordance to Honda shop manual BUT can only be dyno. tested or sealed by either Keith Marshman, Dave McAdams and Ryan Custer (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 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 & installed properly
7. Any ring gap allowed
8. Stroke shall be a maximum of 64.1mm or 2.524
9. Stock or .010 undersize rods allowed
10. Any heat range spark plug as long as stock reach
11. Stock 25T valves & keepers, stellite exhaust allowed
12. Valves may be refaced but not excessively
13. Any valve spring allowed
14. **13hp carb.** stock jets & emulson tube allowed **Max venturi size .833 / NO JETS LARGER THAN 110 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 & flywheel may be used
19. ZF6 old style coil & 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 lash at exhaust valve is .305
28. Cam must have stock lobe separation angle
29. Any vacuum operated fuel pump allowed
30. Three angle seat 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 a know stock Honda part to verify originality

New replacement rod with bearing G X 390 – A R C -# 6272 .

MAX . Horse Power for these motors with stock parts allowed is 20.5 HP

NOTE: Some new engines have 3 groove cast iron camshafts and some have camshafts with sintered lobes pressed on a billet shaft