

# Honda Performance Development GXH50 Class Information

The intent of the class is to provide a low cost, simple and reliable engine package for beginning Kid Karters to utilize. The engine must be run as produced. No deviation from the “as produced” engine is allowed. All components must remain OEM unless otherwise specified. No addition or substitution of components.

## General Rules:

1. Engine: Honda GXH50 as supplied by Honda Performance development.
  - a. Engine seal: As installed by HPD. If seal damaged, missing or disturbed in any way the entrant will be disqualified.
  - b. Gas tank: Must remain on engine in factory location and mounting. Fuel line must run directly from tank to carburetor without interruption.
  - c. Fuel: 87 octane pump gas or VP MS93 or VP MS98. Fuel to be specified by the series/track. No additives allowed. Failure to meet fuel inspection results in a disqualification.
  - d. Carburetor: KEIHIN BF32E
    - No change or modification to the carburetor is permitted.
    - Throttle plate: # 140 as manufactured with sharp edges. Must retain stock screw.
    - Main nozzle: Minimum length 1.140”
      1. Through hole: .055” No go
      2. Two holes at bottom, 180° apart .028” No go
      3. Eight holes above bottom band 90° apart .020” No go
      4. Four holes at top 90° apart .020” No go
    - Float: F3
    - Main Jet: #52S. Go .50mm; No-go .52mm
    - Pilot Jet: #35
    - Maximum venturi size (no-go): **11.1mm**
    - All jets must be TIGHT. Loose jets will be disqualified.
  - e. Throttle linkage must be as supplied by HPD.
  - f. Air Filter: Must remain stock, with stock foam insert. No internal or external modifications of any type.
  - g. Spark plug: NGK CR5HSB or Denso U16FSR-UB. Washer must remain on both spark plugs. If Cylinder Head Temp sensor installed, spark plug washer must be removed.
  - h. Kill switch: Stock switch must remain connected. An additional switch may be installed in reach of the driver.

- i. Oil Alert switch: Yellow wire must be disconnected or cut.
- j. Oil: SAE 10W-30 or SAE 30 only. Hondaline oil recommended. No exotic oils such as those containing “combustion enhancers”. Tech on oil using a refractometer is encouraged.
- k. HPD chain cover (pending availability) or other chain cover mandatory.
- l. Clutch: HPD supplied. White and Blue spring are only legal options. No mixing of colors. Total of (2) springs per clutch. No oiling or greasing of clutch shoes or drum allowed. Stall speed 2400 rpm. No modification of clutch drum allowed. Maximum id to be 4.004”.
- m. Gearing: 16:89 or 15:89. Series/track to decide which gearing spec. Max 8000 rpm. No mixing of gear combinations within class.
- n. Exhaust: As supplied, modification or repair not allowed. Cracked or broken exhausts will be disqualified. Any evidence of exhaust leaking is grounds for disqualification.
- o. No additional decals or other signage allowed on engine except for Honda or Honda Racing HPD.**

2. Engine Mount pattern: 112mm X 54mm

#### **Additional technical inspection:**

##### **GX 50 Ignition Timing Procedure:**

- Remove the starter assembly and large cover.
- Install a dial indicator in the spark plug hole, using a 10mm X 1.00 adapter.
- Make sure the indicator has a ball end to ride across the crown of the piston without damage.
- Place light grease or oil on the ball.
- “0” the indicator at top dead center, it does not have to be on the compression stroke as long as piston is at TDC. Remember, this is a 4-stroke.
- Rotate the flywheel clockwise until the two magnets on the flywheel are to the right of the coil.
- Rotate the flywheel counter clockwise until the left hand edge of the left hand coil mount leg is in line with the left hand edge of the left hand magnet.
- Dial indicator reading should be between 245” and 265”.

1. External visual check of engine for required components: Pipe and muffler, shrouds and sheet metal, oil level sensor (this can be observed from outside).
  - A. Blocking Air Flow to the engine: Only factory heat shield is legal. No device may be used that will/or appear that it may impede airflow into the engine cooling system. This may require that the engine be run at a speed above idle by the tech personnel at the scale after the car has qualified or raced.
  - B. Engine should be at ambient temperature when presented to Pre-Grid.

**Intake:**

2. Remove Carburetor:
  - A. Only stock Honda insulator gasket between black plastic insulator and head. Air passageway in insulator will not be altered in anyway.
    1. Insulator thickness: .277" +/- .001". Hole is rough edged and is "as molded"
    2. Insulator (head side) gasket thickness: 0.019" maximum.
    3. Insulator (carb side) gasket thickness: 0.022" maximum.
  - B. Check for any alterations or worn parts that would allow additional air into engine: holes, slots, perforations, spacers, loose bolts, warped flanges etc. Any evidence of air leaking is grounds for disqualification.

**Valve Springs:**

*Valve springs will be stock Honda springs and will not be altered in any way.*

- A. Wire diameter: 0.064" maximum
- B. Outside diameter of spring: 0.588" maximum
- C. Number of coils: 6
- D. Spring pressure: 11 LBS maximum at 0.514"
- E. Stacked length will be: 0.652" maximum

**Rocker Arms – Push Rods – Studs:**

*Rocker arms will be stock Honda and will not be altered in any way. Rocker arm studs will be stock Honda. They or their mounting position may not be altered in any manner. No heli-coiling of mounting holes. No bending of studs. Push rods will be stock Honda and will not be altered in any way.*

Push rod length is 2.774" +/- .002"

**Chassis:**

- Minimum wheelbase 29" (737 mm), maximum 31 1/2" (800 mm).
- Overall Maximum width 42" (1067 mm) Minimum 39" (991 mm).

**Tires:** (4) 460 (450) X 5 as specified by series.

**Rear Wheels/tires:** Overall width 130 -140mm Circumference: 32.250" to 33.250"

**Bodywork:** CIK, FIK or IKF/WKA style allowed. Must include: front fairing, nose, side pods and full rear protection.

**Front bumper:** (nose) maximum width 40" (1016mm). May not extend beyond the front tires.

**Front fairing:** Maximum width 9".

**Rear protection/bumper:** CIK, FIK or IKF/WKA style allowed. Under no conditions may the rear protection extend beyond the plane of the rear tires.

**Chest protection:** All drivers in this class are required to wear a chest protector with SFI Section 20.1 Certification during any on-track session. Failure to comply may result in disqualification.

**All entrants are subject to technical inspection.**

**Claiming:** any competitor may claim an engine entered in the event subject to the following conditions:

- Claimant must be entered in the race and have participated in at least two events in the class during the calendar year.
- Claimed engine must have cleared Technical Inspection for the event.
- Claimant must provide certified funds or cash in the amount of \$1000.00 US\$.
- Claimed engine will be delivered to the Claimant under the Supervision of the event Technical Director and Race Director at the end of the event.
- Claimed engine will be complete as supplied by HPD.
- Failure to deliver the claimed engine will result in forfeiture of all Awards for the series.
- HPD or their designate, reserves the right to claim and replace any engine under this program. HPD is not required to pay \$1000.00 US\$ if engine is replaced with new engine.

**Recommendations:**

1. Drain fuel from carburetor after every event. *This prevents pump gas and other fuel from clogging internal carburetor jets.*
2. Do not 'power rev' engine on the stand. *This only creates excessive wear on the crankshaft key.*
3. Inspect clutch key frequently, replace if wear is developing.
4. Only used approved oil and change every 3 race weekends.
5. Inspect and replace valve springs if soft.