



MSCS Engine Guide

www.MidwestSuperCupSeries.com

GENERAL ENGINE REQUIREMENTS

MSCS requires the use of approved sealed engines. MSCS approved sealed engines have numbered seals with MSCS engraved on them. Engine can only be built and sealed by CKT Racing Engines.

Honda GX390 (Car & Truck) and Predator 420cc # 60340 (Car & Truck) will be used in MSCS Mini Cup competition.

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

Engines cannot be altered from stock factory Honda / Predator specifications unless otherwise noted in this rulebook.

All parts must be factory Honda parts designed for the GX390K1 and GX390U1 will be checked against factory Honda parts unless otherwise noted in this rulebook. All official decisions are final.

Specifications for the Honda GX390K1 engines can be found on page 2-4 of the Honda Shop Manual, part number 61ZH910.

MSCS DETAILED ENGINE REQUIREMENTS (for car & truck)

Internal and external governor system may be removed. Governor shaft hole may be plugged or vented.

Crankshaft may be shortened by a maximum of 1.250 inches at the clutch end.

Rotating the piston or rod is expressly forbidden.

CYLINDER HEAD

Cylinder head must remain stock.

No porting, polishing or sizing of any part of the cylinder head is allowed.

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

CAMSHAFT

Spec MSCS Camshaft Part # NR 280 0811

VALVE TRAIN

Spec MSCS/CKT

Valve Springs 390-Blue Stripe

Rocker Arms REINFROCKERS390

HONDA CARBURETOR

Spec MSCS Carb Part # 16100-Z1C-24mm-GAS

Honda carburetor needle and seat must remain stock.

Carburetor must not exceed a bore of .930

ENGINE/CAR ELECTRICAL SYSTEM ALTERNATOR

Oil alert system may be removed.

Charging system may be removed.

Charging magnets may be removed.

FLYWHEEL

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

No other alterations to the flywheel allowed.

SPARK PLUG

Spec MSCS Spark Plug Part # Autolite AR3910X

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

IGNITION SYSTEM

Altering the ignition timing from MSCS/CKT Spec specifications is not allowed.

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

Spark intensifiers are prohibited.

STARTER

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

ELECTRICAL SWITCH LOCATIONS

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

A switch must be wired to ground the ignition.

ACCESSORIES

Lap timers and other automated electronics (oil pressure, temperature, and rpm) are allowed providing they are mounted securely. Data acquisition devices are allowed as long as they do not interfere with race track operations or other competitors.

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.

ENGINE COOLING SYSTEM

Air cooling components cannot be altered from Honda GX390K1.

No tampering with the fan shroud and/or grille.

ENGINE EXHAUST SYSTEM

Exhaust pipe must be made by approved MSCS manufacturers. Pipe must have no interior restrictions and be a minimum of 22 inches end to end for all cars. Pipe must be 1 ¼' tubing from the flange.

Mufflers may not be used at any MSCS event.

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

Exhaust pipe wrap and Ceramic coating is approved.

FUEL & OIL

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

Oil is to be used to lubricate the engine only – not for combustion. MSCS strongly recommends the use of MSCS HPL oil in all engines. Any brand of oil is allowed, provided it does not contain any prohibited additives. Prohibited additives designed to increase power include but are not limited to nitro methane, polypropylene oxide, etc. These can be dangerous and will bring a stiff penalty and/or suspension from MSCS.