

HONDA ENGINE WARRANTY AND REPAIRS

NOTE: The Honda engine used in this machine is warranted against any defects in materials or workmanship during manufacture for 3 years and is covered by Honda Australia; **provided the engine has been serviced in accordance with the Maintenance Schedule in the Engine Operator's Manual**, (prior approval from Honda Australia must be obtained).

Your dealership must have a parts and service agreement with Honda Australia to be able to obtain parts and service back up. If you do not have this service agreement, please make contact with our local authorized Honda dealer to make arrangements to have the necessary work carried out.

SPECIFICATIONS

ENGINE:

Identification	Manufacturer: Honda Motor Company Model Number: GX390UT2 Type: QXC9 Specification Number: 655461
Ratings	Power (Gross): 9.7 kW (13 hp) @3600 rpm Power (Net): 8.7 kW (11.7 hp) @ 3600 rpm Peak Torque (Net): 26.4 Nm (19.5 lb-ft) @ 2500 rpm Displacement: 389 cc (24 cu in) Bore: 88 mm (3.5 in) Stroke: 64 mm (2.5 in) Compression Ratio: 8.2:1
Configuration	Air Cooled, petrol, 4-stroke, overhead valve, 1 cylinder, horizontal shaft Fitted with Cyclone air pre-cleaner Fitted with an oil cooler Sealed and tethered CARB / EPA fuel cap Rotation: Anti-clockwise at PTO side
Amounts	Dry Weight: 31.3 kg (69 lbs) Fuel Tank Capacity: 6.2 litres (5.4 Imperial qts) Oil Capacity: 1.1 litres (0.97 Imperial qts)
Electrical	Capacitive discharge ignition system Ignition Logic: ground to run Low oil level alert system
Regulatory Compliance	EPA Phase 3 and CARB Tier 3

CLUTCH:

Type	A centrifugal clutch engages and transmits power to the drive belt from the engine.
Engagement Speed	1,800 rpm
Max Torque Transmission	159.9 Nm (118.0 ft-lbs) @ 3,800 rpm
Pulley Diameter	101.6 cm (4.0 inches)
Belt	A double 3V laminated belt transfers power from the clutch to the cutter wheel. Belt construction: Aramid cords with neoprene cushion, 4 ply.
Pulley	A cast, taper lock pulley mounts to the cutter wheel shaft. Pulley diameter is 9.3 cm (3.65 inches).

CONSTRUCTION:

Frame	The main frame is a fabricated weldment constructed primarily from 7 gauge (4.6 mm / 0.18 inch) thick steel. The frame has integrated lift handles and mounting locations for the cutter wheel, belt system, operator handle, engine and flaps.
Handlebar	Operator handle is fabricated weldment constructed primarily steel tubing. The handlebar has a round tubular reference bar for working the grinder and or operator presence. The handlebar also has integrated lift handles and is isolated through a rubber mounting pad to the main frame and engine.
Belt Cover	The belt cover is a fabricated weldment constructed from 14 gauge (1.9 mm / 0.074 inch) steel.

WHEELS:

Wheel Shaft	Wheels are mounted to the frame through a 1.9 cm / 0.75 inch diameter steel shaft.
Wheels	The transports wheels are 33.02 cm / 13.0 inch pneumatic 'snow' tyres mounted on double bearing wheel hubs. Wheels are held on the shaft with a set locking collar.
Brake	The parking brake locks one wheel, providing a rigid pivot for working the grinder over a stump. The brake is style brake, actuated by an adjustable over-centre parking brake lever.

CUTTING SYSTEM:

Cutter Shaft	The cutter wheel shaft is a fabricated weldment with a 2.54 mm (1.0 inch) diameter drive shaft with a 1.59 cm (0.625 inch) thick cutter tooth mounted disc.
Cutter Bearings	Two sealed and greaseable pillow block ball bearings with set screw locking collars holding the cutter wheel shaft.
Cutter Teeth	Stump cutting is done by three 'Greenteeth'. Each tooth can be indexed with three positions so they can rotated twice, exposing a new sharp edge before replacing the tooth.
Flaps	Two ply 48.3 mm (0.19 inch) thick rubber flaps on the sides and rear of the frame capture and contain wood chips. The flaps are secured in place by steel clamp plates.

ELECTRICAL SYSTEM:

Gauges	A panel mounted, digital hourmeter is standard.
Ignition	Unit is a recoil pull-start with an on-engine and operator presence start switches.
Interlocks	A bail actuated operator presence switch will prevent the engine from running if not held down by the operator.

CONTROLS:

Engine	The throttle is remote lever / cable operated. The throttle also controls cutter wheel engagement through the centrifugal clutch by setting engine speed above or below the engagement speed. Choke control and primary engine shutoff is on the engine.
Brake	Brake is actuated through a cable by an over-centre, adjustable brake lever.

PERFORMANCE:

Cutter Wheel Diameter	23.8 cm (9.36 inch)
Cutter	3,945 rpm @ 3,600 rpm engine speed
Max. Cutting Height	35.6 cm (14.0 inches) @ max 30 degrees engine angle.
Max. Cutting Depth	27.94 cm (11.0 inches) @ max 30 degrees engine angle

DIMENSIONAL:

Width	73.7 cm (29.0 inches)
Length	185.4 cm (73.0 inches)
Height	104.1 cm (41.0 inches) at the operator's controls.
Weight	108.0 kg (240.0 lbs)

SGR-13 RECOMMENDED MAINTENANCE SCHEDULE

All parts listed in this bulletin are available from Toro Australia except where noted.

The following chart includes all the engine specific servicing requirements for both machines.

IMPORTANT: The machine may be tipped backward or on its side to facilitate access for cleaning or service, but no longer than 2 minutes. If the machine is held in this position for too long, the engine can be damaged by fuel draining into the crankcase. Should this happen, perform an extra oil change on the engine. Then turn the engine over a few revolutions with the starter handle before attempting to start the engine again.

Maintenance Service Interval	Maintenance Procedure
After the first 25 hours	Change the engine oil. – Crankcase oil capacity: 2.0 litres
Before each use or daily	Check the engine oil level and top up as necessary. Grease the machine. Check the condition of the cutting wheel teeth, replace any that are worn or damaged. Remove any debris from the machine. Check the air filter. Check the drive belt tension and adjust as necessary. Check for any loose fasteners and tighten as necessary. Check for any fuel or oil leakage and repair as necessary.
Every 50 hours	Service the air filter (more frequently if the machine is operating in dusty or sandy conditions).
Every 100 hours	Change the engine oil (more frequently if the machine is operating in dusty or sandy conditions). – Crankcase oil capacity: , 2.0 litres Remove and clean out the carburetor sediment cup. Check, clean and re-gap the spark plug. – Spark plug gap: 0.75 mm (0.030 inch) Replace the drive belt
Every 200 hours	Replace the air filter.
Yearly or before storage	Change the engine oil. – Crankcase oil capacity: 2.0 litres Remove and clean out the carburetor sediment cup. Replace the spark plug. – Spark plug gap: 0.75 mm (0.030 inch) Check engine idle speed and adjust as necessary. – Engine idle speed setting: 1250 to 1550 RPM Check and if necessary adjust the valve clearances. – Valve clearance specification (engine cold): Intake 0.13 to 0.17 mm (0.005 to 0.007 in) Exhaust 0.18 to 0.22 mm (0.007 to 0.009 in)
Every 1000 hours	Clean combustion chamber