

<b>Engine Specifications</b>	<b>GD1250</b>
Model	GD1250
Type	4-stroke, OHV, three cylinder
Displacement	1,235 cm <sup>3</sup> (75.6 cu-in)
Max. horsepower	SH1: 20 HP (14.9 kW) at 2,600 rpm
	SH2: 22 HP (16.4 kW) at 3,000 rpm
	SH3: 24 HP (17.9 kW) at 3,600 rpm
Max. torque (crank PTO)	SH1: 64.7 N·m (6.6 kg·m, 47.73 ft·lb) at 2,600 rpm
	SH2: 61.8 N·m (6.3 kg·m, 45.56 ft·lb) at 2,000 rpm
	SH3: 55.9 N·m (5.7 kg·m, 41.22 ft·lb) at 2,200 rpm
Firing order	1-3-2 (1-2-3 from timing belt side)
Injection timing	SH1, SH2: B.T.D.C 15°
	SH3: B.T.D.C 18°
Cooling system	Liquid-cooling
Lubricating system	Forced oil by trochoid pump
Starting system	Starter motor
Fuel used	Diesel fuel
Fuel tank capacity	20.0 l (5.28 US. Gal, 4.40 Imp. Gal.)
Fuel consumption	SH1: 180 g/psh (20 HP/2,600 rpm)

	SH2: 194 g/psh (22 HP/3,000 rpm)
	SH3: 214 g/psh (24 HP/3,600 rpm)
PTO shaft rotation	Counterclockwise (from PTO shaft side)
<b>DIMENSIONS AND WEIGHT</b>	SH1
Length, mm (in)	520 (20.5)
Width, mm (in)	415 (16.3)
Height, mm (in)	540 (21.3)
Dry weight, kg (lb)	100.0 (220.5)
<b>CYLINDER BLOCK AND HEAD</b>	
Compression ratio	18:1
Bore x Stroke	82 mm X 78 mm (2.99 x 3.07 in)
Sleeve internal diameter	82.000-82.017 mm (3.2283-3.2290 in)
Piston skirt outer diameter	81.930-81.950 mm (3.225-3.226 in)
Number of piston rings	(compression / oil): 2 / 1
Ring side clearance	Top: 0.085-0.115 mm (0.0033-0.0045 in)
	Second: 0.055-0.085 mm (0.0022-0.0022 in)
	Oil: 0.020-0.055 mm (0.0008-0.0022 in)
Ring end gap	Top: 0.20-0.40 mm (0.008-0.016 in)
	Second: 0.20-0.40 mm (0.008-0.016 in)

	Oil: 0.20-0.40 mm (0.008-0.016 in)
Piston pin outer diameter	22.994-23.000 mm (0.9053-0.9055 in)
Connecting rod small end ID	23.010-23.028 mm (0.9060-0.9066 in)
<b>Cylinder Head</b>	
Distortion of cylinder head	0.05 mm (0.002 in)
Valve Arrangement	OHV
Valves	2
Stem outer diameter (standard)	INTAKE: 6.575-6.590 mm (0.2589-0.2594 in)
	EXHAUST: 6.545-6.560 mm (0.2577-0.2583 in)
Guide internal diameter	INTAKE / EXHAUST: 6.600-6.615 mm (0.2598-0.2604 in)
Spring free length	38.1 mm (1.33 in)
Cam lobe height	INTAKE / EXHAUST: 39.538-39.938 mm (1.5566-1.5724 in)
Valve rocker arm internal diameter	16.012-16.030 mm (0.6304-0.6311 in)
Rocker arm shaft outer diameter	15.976-16.994 mm (0.6290-0.6691 in)
<b>TIGHTENING TORQUE SPECS</b>	
Camshaft holder bolts	22 Nm; 2.2 kg·m; 16 ft·lb
Head cover nuts	10 Nm; 1.0 kg·m; 7 ft·lb
Cylinder head bolts (M12)	Step 1: 45 Nm; 4.5 kg·m; 32 ft·lb
	Step 2: Turn all bolts 90°

	Step 3: Turn all bolts 90° once more
Cylinder head bolts (M8)	30 Nm; 3.0 kg·m; 22 ft·lb
Timing belt driven pulley bolt	38 Nm; 3.8 kg·m; 27 ft·lb
Timing belt adjuster bolt	43 Nm; 4.3 kg·m; 31 ft·lb
Crankshaft bearing cap bolts	68 Nm; 6.8 kg·m; 49 ft·lb
Connecting rod cap nuts	32 Nm; 3.2 kg·m; 23 ft·lb
Rear end plate bolts	55 Nm; 5.5 kg·m; 40 ft·lb
Flywheel bolts	115 Nm; 11.5 kg·m; 83 ft·lb
Flywheel housing	55 Nm; 5.5 kg·m; 40 ft·lb
Oil filter holder	55 Nm; 5.5 kg·m; 40 ft·lb
Oil filter cartridge	22 Nm; 2.2 kg·m; 16 ft·lb
Fuel pipe nuts	22.5 Nm; 2.25 kg·m; 16.3 ft·lb
Fuel joint bolts	22.5 Nm; 2.25 kg·m; 16.3 ft·lb
Injection nozzle nuts	Step 1: 5 Nm; 0.5 kg·m; 3.6 ft·lb
	Step 2: 10 Nm; 1.0 kg·m; 7 ft·lb
Governor shaft	43 Nm; 4.3 kg·m; 31 ft·lb
Glow plugs	17.5 Nm; 1.75 kg·m; 12.7 ft·lb
Glow plug nuts	1.25 Nm; 0.125 kg·m; 0.9 ft·lb
Injection pump nut and bolts	22 Nm; 2.2 kg·m; 16 ft·lb

Oil pressure switch	20 Nm; 2.0 kg·m; 14 ft·lb
Drain plug bolt	45 Nm; 4.5 kg·m; 32 ft·lb
Thermostat switch	22.5 Nm; 2.25 kg·m; 16.3 ft·lb
Crankshaft pulley	115 Nm; 11.5 kg·m; 83 ft·lb
SERVICE INFORMATION	GD1250
<b>Engine</b>	
Maximum speed	SH1: 2,750 rpm
	SH2: 3,120 rpm
	SH3: 3,740 rpm
Idle speed	800 rpm
Cylinder compression	27.0 kg/cm <sup>2</sup> (384 psi) at 200 rpm
Valve clearance	Intake valve: 0.20 ± 0.02 mm (0.006 ± 0.00078 in)
	Exhaust valve: 0.20 ± 0.02 mm (0.006 ± 0.00078 in)
<b>Oil system</b>	
Oil type	Diesel oil (API Service Classification CC or CD)
Recommended oil	SAE 10W-30
Oil capacity	SH1: 2.9 l (3.07 US. qt, 2.55 Imp. qt.)
	SH2, SH3: 4.8 l (5.07 US. qt, 4.22 Imp. qt.)
Oil pressure	4.0 kg/cm <sup>2</sup> (57 psi) at 800 rpm