

Engine Specifications	GD321
Model	GD321
Type	4-stroke, OHV, single cylinder
Displacement	317 cm ³ (19.34 cu-in)
Max. horsepower	S,Q,W,V,P type: 7.0 HP (5.2 kW) at 3,600 rpm B type: 6.0 HP (4.4 kW) at 3,000 rpm L type: 6.8 HP (5.0 kW) at 1,800 rpm
Max. torque (crank PTO)	S,Q,W,V,P type: 15.7 N·m (1.6 kg·m, 11.57 ft·lb) at 2,500 rpm B type: 15.7 N·m (1.6 kg·m, 11.57 ft·lb) at 1,800 rpm L type: 30.4 N·m (3.1 kg·m, 23 ft·lb) at 1,250 rpm
Cooling system	Forced-air
Lubricating system	Forced spray
Starting system	Recoil starter or starter motor
Stopping system	Fuel cut with speed control lower (Stop lever)
Fuel used	Diesel fuel
Fuel tank capacity	4.6 l (1.21 US. Gal, 1.2 Imp. Gal.)
Fuel consumption	S,Q,W,V,P type: 180 g/HPh B type: 196 g/HPh
PTO shaft rotation	Counterclockwise (from PTO shaft side)
CYLINDER BLOCK AND HEAD	
Compression ratio	19:1, 20:1
Bore x Stroke	76 mm X 70 mm (2.99 x 2.76 in)

Sleeve internal diameter	76.000-76.017 mm (2.9921-2.9928 in)
Piston skirt outer diameter	75.940-75.960 mm (2.9898-2.9905 in)
Number of piston rings	(compression / oil): 2 / 1
Ring side clearance	Top: 0.065-0.095 mm (0.0026-0.0037 in) Second: 0.055-0.085 mm (0.0022-0.0033 in) Oil: 0.020-0.055 mm (0.0008-0.0022 in)
Ring end gap	Top: 0.20-0.35 mm (0.008-0.014 in) Second: 0.20-0.35 mm (0.008-0.014 in) Oil: 0.20-0.40 mm (0.008-0.016 in)
Ring width	Top: 1.990-1.975 mm (0.0783-0.0778 in) Second: 1.990-1.975 mm (0.0783-0.0778 in) Oil: 3.990-3.970 mm (0.1571-0.1563 in)
Connecting rod small end ID	20.010-20.028 mm (0.7878-0.7885 in)
Connecting rod big end ID	41.000-41.024 mm (1.6142-1.6151 in)
Crankpin outer diameter	37.976-38.000 mm (1.4951-1.4961 in)
Main journal outer diameter	46.970-46.994 mm (1.8492-1.8502 in)
Cylinder Head	
Distortion of cylinder head	0.05 mm (0.002 in)
Valve Arrangement	OHV
Valves	2

Stem outer diameter (standard)	INTAKE: 6.590-6.575 mm (0.2594-0.2589 in) EXHAUST: 6.550-6.540 mm (0.2579-0.2575 in)
Guide internal diameter	INTAKE / EXHAUST: 6.600-6.615 mm (0.2598-0.2604 in)
Spring free length	33.7 mm (1.33 in)
Cam lobe height	INTAKE / EXHAUST: 41.022 mm (1.6150 in)
Valve rocker arm internal diameter	INTAKE / EXHAUST: 16.000-16.018 mm (0.6300-0.6306 in)
Rocker arm shaft outer diameter	INTAKE / EXHAUST: 15.984-15.966 mm (0.6293-0.6286 in)
TIGHTENING TORQUE SPECS	
Cylinder head bolts	43 Nm; 4.3 kg·m; 31 ft·lb
Cylinder head nuts	11 Nm; 1.1 kg·m; 8 ft·lb
Rocker arm shaft nuts	11 Nm; 1.1 kg·m; 8 ft·lb
Tappet adjusting nuts	9 Nm; 0.9 kg·m; 6.5 ft·lb
Oil pan bolt bolts	M11: 71 Nm; 7.1 kg·m; 51 ft·lb M8: 22 Nm; 2.2 kg·m; 16 ft·lb
Connecting rod cap nuts	32 Nm; 3.2 kg·m; 23 ft·lb
Relief valve	33 Nm; 3.3 kg·m; 24 ft·lb
Drain plug bolt	33 Nm; 3.3 kg·m; 24 ft·lb
Flywheel nut	250 Nm; 25.0 kg·m; 180 ft·lb
Injection nozzle	10 Nm; 1.0 kg·m; 7 ft·lb

Air breather joint nuts	18 Nm; 1.8 kg·m; 13 ft·lb
Fuel injection pump bolts	22 Nm; 2.2 kg·m; 16 ft·lb
Fuel joint bolts	28 Nm; 2.8 kg·m; 20 ft·lb
Air breather bolt	18 Nm; 1.8 kg·m; 13 ft·lb
Fuel pipe nuts	20 Nm; 2.0 kg·m; 14 ft·lb
Muffler nuts, bolts	22 Nm; 2.2 kg·m; 16 ft·lb
Fuel tank bolts	11 Nm; 1.1 kg·m; 18 ft·lb
Fuel filter bolts	11 Nm; 1.1 kg·m; 18 ft·lb
Drain bolt	11 Nm; 1.1 kg·m; 18 ft·lb
SERVICE INFORMATION	GD321
Engine	
Maximum speed	3,750 ± 150 rpm
Idle speed	1,400 ± 150 rpm
Cylinder compression	26.0 kg/cm ² (370 psi) at 300 rpm
Valve clearance	Intake valve: 0.15 ± 0.02 mm (0.006 ± 0.00078 in) Exhaust valve: 0.15 ± 0.02 mm (0.006 ± 0.00078 in)
Oil system	
Oil type	Diesel oil (API Service Classification CC or CD)
Recommended oil	SAE 10W-30

Oil capacity	1.15 l (1.21 US. qt, 1.01 Imp. qt.)
Oil pressure	3.9-5.2 kg/cm ² (55.5-74.0 psi) at 3,600 rpm
Generator	
Resistance	2.0 ±0.5 Ω
Starter motor	
Brush length	10 mm (0.39 in)
Mica depth	0.4-0.5 mm (0.016-0.020 in)