N843H / N843L / N843 / N844LT / N844L / N844T / N844
ISM Tier 3
Engine

SERVICE MANUAL

Part number 47632257
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CASE CONSTRUCTION

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Engine - General specification

Engine model	N843	N843L
Number of cylinders	3	3
Bore x stroke	**84 mm x 90 mm (3.31 in x 3.54 in)**	**84 mm x 100 mm (3.31 in x 3.94 in)**
Displacement	**1496 cm³ (91.3 in³)**	**1662 cm³ (101.4 in³)**
Compression ratio	22:1	22.4:1
Engine speed (Low idle no load)	**950 - 1050 RPM**	**950 - 1050 RPM**
Engine speed (High idle no load)	**3130 - 3180 RPM**	**3420 - 3500 RPM**
PTO engine horsepower	**28.3 kW (38.5 Hp)**	**26.1 kW (35.5 Hp)**
Firing order	1-2-3	1-2-3
Cylinder arrangement	In-Line vertical	In-Line vertical
Valve arrangement	Overhead	Overhead
Compression pressure at **200 RPM** (cylinder speed)	**2944 ± 345 kPa (427 ± 50 psi)**	**2944 ± 345 kPa (427 ± 50 psi)**
Variation between cylinders	**345 kPa (50 psi)**	**345 kPa (50 psi)**

NOTE: *If bore size exceeds **85.2 mm (3.3543 in)** replace with long block.*

Engine - General specification

Engine model	N844	N844T	N844L	N844LT
Number of cylinders	4	4	4	4
Bore x stroke	**84 mm x 90 mm (3.31 in x 3.54 in)**	**84 mm x 90 mm (3.31 in x 3.54 in)**	**84 mm x 100 mm (3.31 in x 3.94 in)**	**84 mm x 100 mm (3.31 in x 3.94 in)**
Displacement	**1995 cm³ (121.7 in³)**	**1995 cm³ (121.7 in³)**	**2216 cm³ (135.2 in³)**	**2216 cm³ (135.2 in³)**
Compression ratio	22:1	22:1	22.4:1	22.4:1
Aspiration			Indirect naturally aspirated	Indirect turbocharged with waste gate
Emissions control			N/A	Internal Exhaust Gas Recirculation (EGR)
Engine speed (Low idle no load)	**900 - 1000 RPM**	**900 - 1000 RPM**	**1200 RPM +/- 50**	**1050 - 1150 RPM**
Engine speed (Rated - full load)			**2800 RPM**	
Engine speed (High idle no load)	**3090 - 3190 RPM**	**3090 - 3190 RPM**	**3000 RPM +/- 40**	**3090 - 3190 RPM**
Horsepower @ **2800 RPM**	**29.8 kW (40.5 Hp)**	**38.8 kW (52.8 Hp)**	**35.9 kW (48.8 Hp)**	**44.1 kW (60.0 Hp)**
Peak torque @ **1800 RPM**			**143 N·m (105.5 lb ft)**	**171 N·m (126 lb ft)**
Firing order	1-3-4-2	1-3-4-2	1-3-4-2	1-3-4-2
Cylinder arrangement	In-Line vertical	In-Line vertical	In-Line vertical	In-Line vertical
Valve arrangement	Overhead	Overhead	Overhead	Overhead
Compression pressure at **200 RPM** (cylinder speed)	**2944 ± 345 kPa (427 ± 50 psi)**	**2944 ± 345 kPa (427 ± 50 psi)**	**2944 ± 345 kPa (427 ± 50 psi)**	**2944 ± 345 kPa (427 ± 50 psi)**
Variation between cylinders	**345 kPa (50 psi)**	**345 kPa (50 psi)**	**345 kPa (50 psi)**	**345 kPa (50 psi)**
Oil filtration	Replaceable full flow spin on cartridge			
Oil capacity with filter			**10.4 L (11 US qt)**	
Water pump (Style)			Centrifugal	
Water pump (Flow @ rated RPM)			**57.5 L/min (15.2 US gpm)**	
Injection pump			Bosch In-Line mechanical injection	

NOTE: *If bore size exceeds **85.2 mm (3.3543 in)** replace with long block.*

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Problem	Possible Cause	Correction
	Incorrect engine timing	Check for improper valve adjustment or faulty valve
Engine emits black smoke	Restricted air intake	Check for restrictions in the air intake
	Engine overheating	Check cooling system
	Faulty injectors	See: **Fuel injectors - Troubleshooting (10.218).**
	Low compression	Check for air leaks on the suction side of system. Bleed the fuel system
	Incorrect engine timing	Check for improper valve adjustment or faulty valve.
Pump fails to deliver fuel to all injectors	Blocked fuel lines to pump	Remove fuel lines and flush or replace
	Air in system	Check for air leaks on the suction side of system. Bleed the fuel system
	Control rod seized in "OFF" position	Repair or replace control rod
Pump fails to deliver fuel to one injector	Air in fuel line to injector	Bleed fuel line
	Plunger spring broken	Replace spring
	Plunger seized	Repair or replace barrel and plunger assembly
	Delivery valve seized	Repair or replace delivery valve
	Badly scored plunger and barrel	Replace plunger and barrel assembly
Governor fails to maintain maximum or minimum no-load fuel delivery	Control spring broken	Replace control spring
	Governor weights seized	Repair or replace weight assembly and/or camshaft
	Governor weight carrier broken	Replace weight assembly
	Nose cone seized	Replace nose cone and/or camshaft
	Pump link spring broken	Replace spring

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