# SERVICE MANUAL

## S3L2

Engine

**Part number 84523916**
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MidWestTech | New Holland S3L2 Engine Service Manual | Publication 84523916

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# Engine - Service instruction General Troubleshooting Information

***NOTICE:*** *For fuel injection pump, the injection quantity of each cylinder can be measured only with a pump tester. Do not adjust or disassemble the fuel injection pump even during troubleshooting unless absolutely necessary.*

***NOTICE:*** *To inspect the combustion state of each cylinder, loosen the fuel injection pipe of any cylinder to stop injection, and compare the extent of a drop in the engine speed with that of other cylinders.*

1. Symptoms of the diesel engine often occur in combination of various problems, Therefore it is often very difficult to determine the defect from a problem.
   Similar symptoms can be caused by the fuel injection pump, fuel injection nozzles and compression pressure. It is necessary to conduct a careful study to determine the cause.
   From the reason above, troubleshooting described in this manual is summarized as items which are more likely to cause problems or items easy to inspect.
2. The diesel engine has the following characteristics from its structure and combustion system. It is necessary to fully understand these characteristics before performing troubleshooting.
   - The engine produces unique combustion noise (diesel knock) in the normal condition.
   - The engine discharges slight black smoke at heavy load.
   - High compression and high torque cause vibration on a single unit of the engine.
   - Slight hunting is caused during acceleration and deceleration.



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# Engine cooling system - General specification

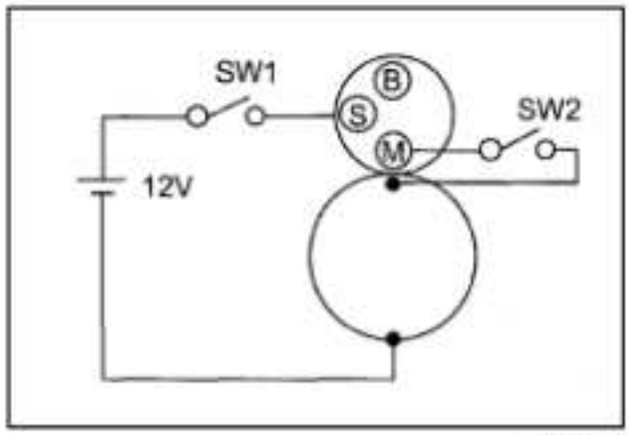
| Engine model | S3L2 |
|---|---|
| Type | Water cooled, forced circulation type |
| Coolant capacity (main unit of engine) | **1.8 l (0.48 US gal)** |
| Water pump | |
| - Type | Centrifugal |
| - Discharge rate | **30 l/min (7.9 US gpm) @ 2000 RPM** |
| Thermostat | |
| - Type | Wax type |
| - Valve opening temperature | **76.5 °C (169.7 °F)** |
| Cooling fan | |
| - Type | Suction (PPG fan) |
| - Number of blades / Outside diameter | 5/ **340 mm (13.4 in)** |



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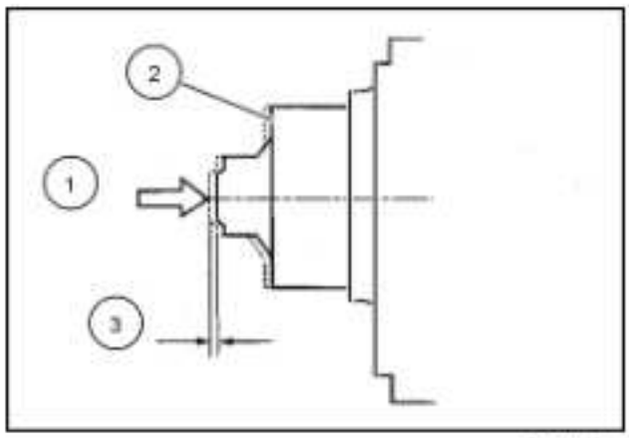
***NOTICE:*** *Do not apply current continuously for longer than 10 seconds.*

22. Connect the starter to the circuit as shown in the illustration.
23. When the switches SW1 and SW2 are turned ON, the pinion springs out to the cranking position and the armature rotates.
24. Turn the switch SW2 OFF to stop the rotation of the armature.




25. Gently push back the pinion **(1)** in the out position with a finger and measure the distance **(3)** over which the pinion **(2)** has returned (movement amount).
26. If the measured value is out of the standard, increase or decrease the number of packing between the magnet switch and the front bracket for adjustment, or replace the lever with a new one.

***NOTE:*** *When the number of packing is increased, the pinion clearance becomes small.*




| Item | Standard |
|---|---|
| Pinion gap | **0.5 - 2.0 mm (0.020 - 0.079 in)** |



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