# **Engine Remove and Install**

## -: Specifications

SPECIFICATIONS		
Cooling System Capacity	2.7 L 2.9 qt.	
Canopy Support Weight (approximate)	23 kg 50 lb.	
Engine Weight (approximate)	140 kg 309 lb.	
Engine Mount Cap Screw Torque	88 N∙m 65 lbft.	

## REMOVAL

- 1. Park and prepare machine for service safely. See Park and Prepare for Service Safely . (Group 0001.)
- 2. Disconnect battery negative (-) cable.
- 3. Drain cooling system. See Drain Cooling System . (Operator's Manual.)

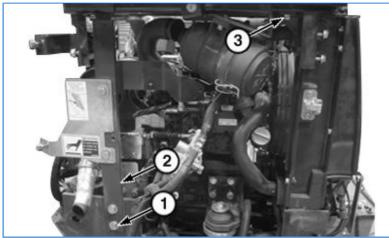
Item	Measurement	Specification
Cooling System	Capacity	2.7 L 2.9 qt.

- 4. Remove canopy. See Canopy Remove and Install . (Group 1800.)
- 5. Remove seat. See Seat Remove and Install . (Group 1821.)
- 6. Remove seat platform. See Seat Platform Remove and Install . (Group 1821.)
- 7. Remove counterweight. See Counterweight Remove and Install . (Group 1749.)
- 8. Remove primary fuel filter and water separator housing. <u>See Primary Fuel Filter and Water Separator Housing</u> <u>Remove and Install</u>. (Group 0560.)
- 9. Remove final fuel filter housing. See Final Fuel Filter Housing Remove and Install . (Group 0560.)
- 10. Remove fan and fan guard. See Fan Remove and Install . (Group 0510.)
- 11. Remove air cleaner assembly. See Air Cleaner Assembly Remove and Install . (Group 0520.)

12.



Avoid possible crushing injury from heavy component. Use appropriate lifting device.



TX1190615A-UN: Canopy Support Assembly

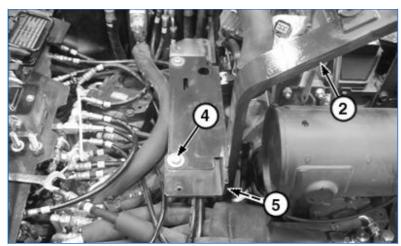
#### LEGEND:

- 1 Cap Screw (2 used) 2 Canopy Support Assembly
- 3 Cap Screw (2 used)

Using appropriate lifting device, support canopy support assembly (2).

Item	Measurement	Specification
Canopy Support Assembly	Weight (approximate)	23 kg 50 lb.

13. Remove cap screws (1 and 3).



14.

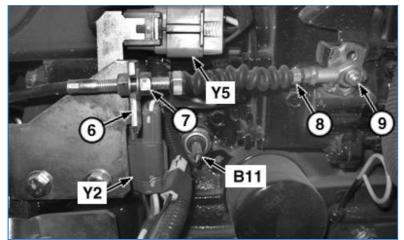
TX1190616A-UN: Canopy Support Assembly

LEGEND:

- 2 Canopy Support Assembly 4 Cap Screw (2 used)
- 5 Cap Screw (2 used)

Remove cap screws (4 and 5) and canopy support assembly.

15. Remove hydraulic pump. See Hydraulic Pump 1, 2, and 3 Remove and Install . (Group 3360.)



#### 16.

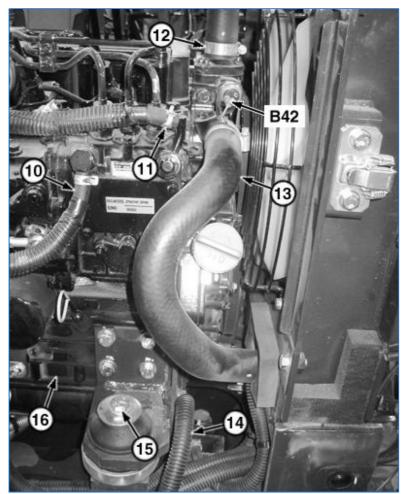
TX1190623A-UN: Throttle Cable

#### LEGEND:

6 - Bracket 7 - Nut 8 - Throttle Cable 9 - Nut B11 - Engine Oil Pressure Switch Y2 - Fuel Shutoff Solenoid Y5 - High-Altitude Solenoid

Remove nut (9) and disconnect throttle cable (8).

- 17. Apply alignment marks and loosen nut (7). Slide throttle cable out of bracket (6).
- 18. Install identification tags and disconnect engine oil pressure switch (B11).
- 19. Install identification tags and disconnect fuel shutoff solenoid (Y2).
- 20. Install identification tags and disconnect high-altitude solenoid (Y5).



21.

## TX1190624A-UN: Engine

## LEGEND:

- 10 Final Fuel Filter-to-Injector Pump Hose (supply)
- 11 Injector Pump-to-Final Fuel Filter Hose (return)
- 12 Coolant Pump-to-Radiator Hose (upper)
- 13 Radiator-to-Coolant Pump Hose (lower)
- 14 Cap Screw
- 15 Engine Mount Cap Screw (4 used)
- 16 Engine
- B42 Engine Overheat Switch

Install identification tags and disconnect fuel hoses (10 and 11). Close all openings using caps and plugs.

- 22. Install identification tags and disconnect coolant hoses (12 and 13). Close all openings using caps and plugs.
- 23. Install identification tags and disconnect engine overheat switch (B42).
- 24. Remove cap screw (14).



25.

TX1190626A-UN: Engine

#### LEGEND:

15 - Engine Mount Cap Screw (4 used)
16 - Engine
B4 - Engine Coolant Temperature Sensor
G3 - Alternator
M1 - Starter Motor
W102 - Main Harness Ground
W103 - Floor Harness Ground

Install identification tags and disconnect engine coolant temperature sensor (B4).

- 26. Install identification tags and disconnect alternator (G3).
- 27. Install identification tags and disconnect starter motor (M1).
- 28. Install identification tags and disconnect harness grounds (W102 and W103).
- 29.



Avoid possible crushing injury from heavy component. Use appropriate lifting device.

Using appropriate lifting device, support engine.

Item	Measurement	Specification
Engine	Weight (approximate)	140 kg 309 lb.

30. Remove engine mount cap screws (15) and remove engine.

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