

SERVICE MANUAL

U80C Tier 4B (final) Tractor Loader

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SERVICE MANUAL

U80C FOUR-WHEEL DRIVE (4WD) TIER 4B (FINAL)
U80C TWO-WHEEL DRIVE (2WD) TIER 4B (FINAL)

Link Product / Engine

Product	Market Product	Engine
U80C FOUR-WHEEL DRIVE (4WD) TIER 4B (FINAL)	North America	F5HFL463D*F005
U80C TWO-WHEEL DRIVE (2WD) TIER 4B (FINAL)	North America	F5HFL463D*F005

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INTRODUCTION

Safety rules

⚠ DANGER

Improper operation or service of this machine can result in an accident.
Do not operate this machine or perform any lubrication, maintenance, or repair on it until you have read and understood the operation, lubrication, maintenance, and repair information.
Failure to comply will result in death or serious injury.

D0010A

⚠ WARNING

Maintenance hazard!
Always perform all service procedures punctually at the intervals stated in this manual. This ensures optimum performance levels and maximum safety during machine operation.
Failure to comply could result in death or serious injury.

W0132A

⚠ WARNING

Pressurized system!
Before attempting any service procedure, it is your responsibility to know the number of accumulators on the machine, and the correct procedure for releasing the pressure of each accumulator.
Failure to comply could result in death or serious injury.

W0136A

NOTICE: *Extreme working and environmental conditions require shortened service intervals.*

Use Case fluids, lubricants, and filters for the best protection and performance of your machine. All fluids, lubricants, and filters must be disposed of in compliance with environmental standards and regulations. Contact your dealer with any questions regarding the service and maintenance of this machine.

Read the safety decals and information decals on the machine. Read the Operator's Manual and safety manual. Understand the operation of the machine before you start any service.

Before you service the machine, put a 'Do Not Operate' tag on the steering wheel or over the key switch. Ensure the tag is at a location where everyone who might operate or service the machine may see clearly. One tag is included with your new machine. Additional tags are available from your dealer.

Plastic and resin parts

- Avoid using gasoline, paint thinner, etc. when cleaning plastic parts, console, instrument cluster, etc.
- Use only water, mild soap, and a soft cloth when you clean these parts.
- Using gasoline, thinners, etc. can cause discoloration, cracking, or deformation of the part being cleaned.

Safety rules Ductile iron



⚠ DANGER

Improper operation or service of this machine can result in an accident.

Any unauthorized modifications made to this machine can have serious consequences. Consult an authorized dealer on changes, additions, or modifications that may be required for this machine. Do not make any unauthorized modifications.

Failure to comply will result in death or serious injury.

D0030A

Before you weld, cut, or drill holes on any part of this machine, make sure the part is not cast ductile iron. See your dealer if you do not know if a part is cast ductile iron. The following are cast ductile iron parts:

- two wheel drive steering link
- dump links
- front axle
- Air Conditioning (A/C) compressor mounting bracket

Unauthorized modifications to cast ductile iron parts can cause injury or death. Welding, cutting, or drilling can cause cast ductile iron to break. Do not weld, cut, or drill to repair or to attach items to cast ductile iron parts on this machine.

Safety rules

Before welding on the machine you must do the following. If you have any questions about welding on the machine contact your dealer.

- Disconnect the batteries.
- Disconnect the alternator terminal wires.
- Disconnect the instrument cluster.
- Disconnect the engine control unit. Disconnect all connectors from the engine harness to the ECU.
- Disconnect the controller for the loader 4 in 1 bucket or auxiliary hydraulics, if equipped (one connector, located under the loader valve at the rear, left underside of the machine).

Safety rules

Unless otherwise instructed, always perform these steps before you service the machine:

1. Park the machine on a flat, level surface.
2. Place the loader bucket on the ground, with the bottom of the loader bucket parallel to the surface.
3. Place the direction control lever and the transmission in neutral.
4. If you need to open the hood to perform service, raise the loader arms and install the support strut.
5. Shut down the engine.
6. Place a 'Do Not Operate' tag on the key switch so that it is visible to other workers or remove the key.



SERVICE MANUAL

Engine

**U80C FOUR-WHEEL DRIVE (4WD) TIER 4B (FINAL)
U80C TWO-WHEEL DRIVE (2WD) TIER 4B (FINAL)**

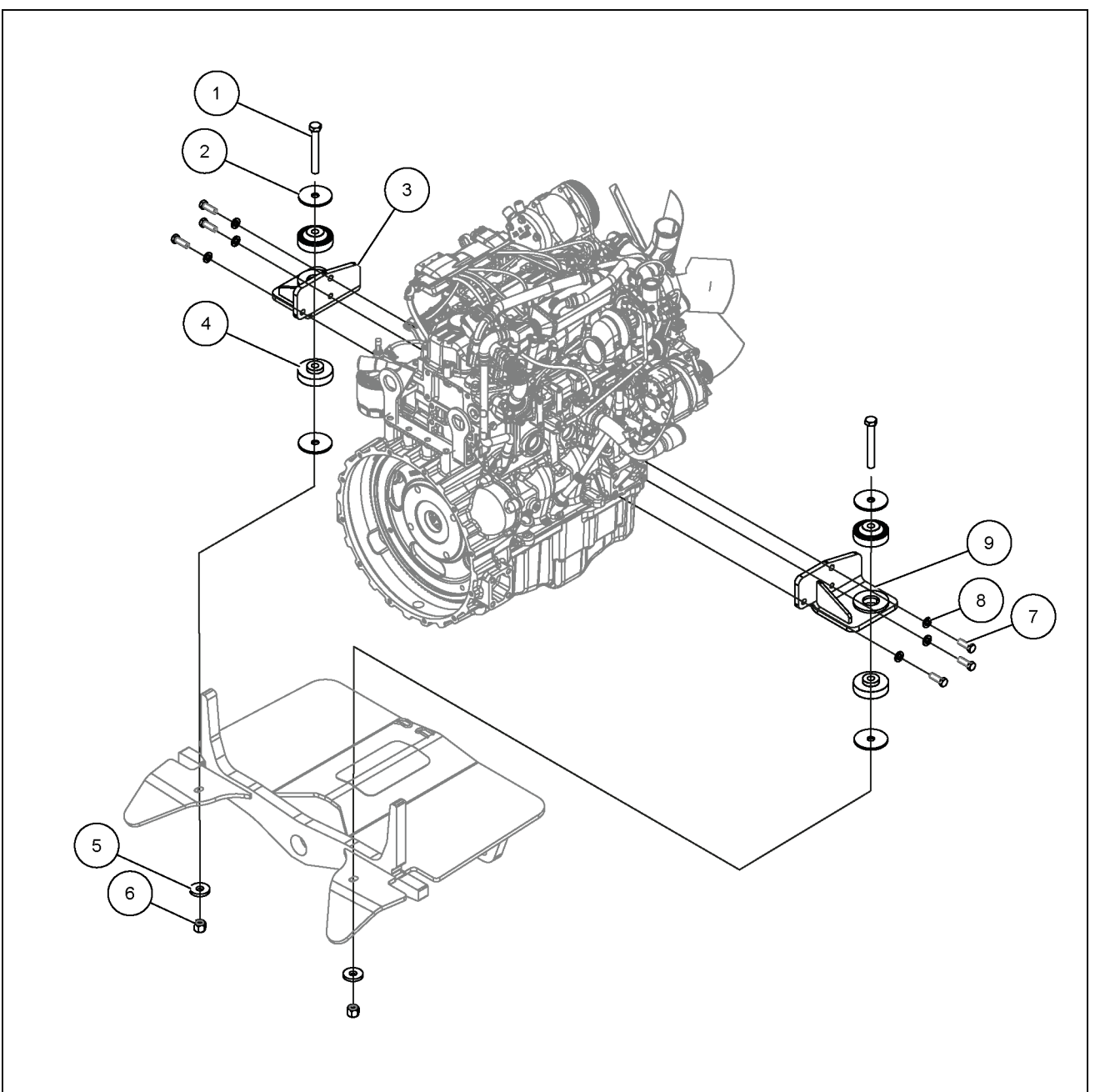
Engine - General specification

Model	Diesel, F5HFL463D*F005, Tier 4B (Final) emissions compliant
Type	Four cylinder, turbocharged
Firing order	1-3-4-2
Bore and stroke	99 mm x 110 mm (3.90 in x 4.33 in)
Displacement	3.4 L (207.5 in³)
Compression ratio	17 to 1
Fuel injection	Direct High Pressure Common Rail (HPCR)
Horsepower - rated at 2200 RPM	
Gross	55 kW (75 Hp)
Net with 33° fan	51 kW (69 Hp)
Net with viscous fan	53.5 kW (72.7 Hp)
Peak torque at 1400 RPM	
Gross	316 N·m (233 lb ft)
Net with 33° fan	298 N·m (220 lb ft)
Net with viscous fan	310 N·m (229 lb ft)
Maximum torque rise	35% ± 5 RPM
Engine speeds – standard powertrain configuration	
Rated speed, full load	2200 RPM
Low idle	900 - 1000 RPM
High idle, no load	2330 - 2430 RPM
Converter stall	2025 - 2200 RPM
Loader stall	2150 - 2300 RPM
Combined stall	1450 - 1720 RPM
Engine speeds – PTO or PTO ready powertrain configuration	
Rated speed, full load	2200 RPM
Low idle	900 - 1000 RPM
High idle, no load	2330 - 2430 RPM
Converter stall	1925 - 2075 RPM
Loader stall	2150 - 2300 RPM
Combined stall	1375 - 1625 RPM

Engine - Exploded view

1. Bolt	6. Nut
2. Washer	7. Bolt
3. Bracket, Left hand engine mount	8. Washer
4. Mount	9. Bracket, Right hand engine mount
5. Washer	

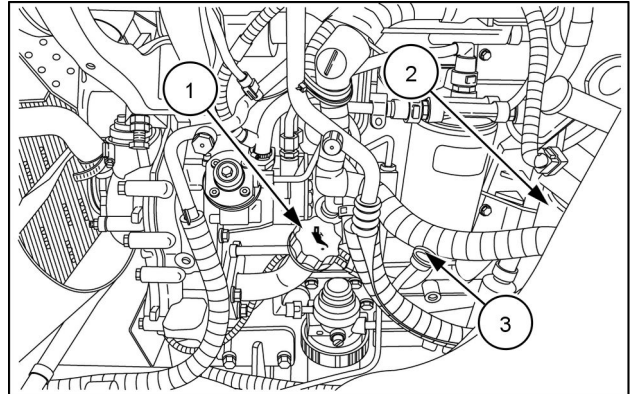
Engine - Engine and crankcase



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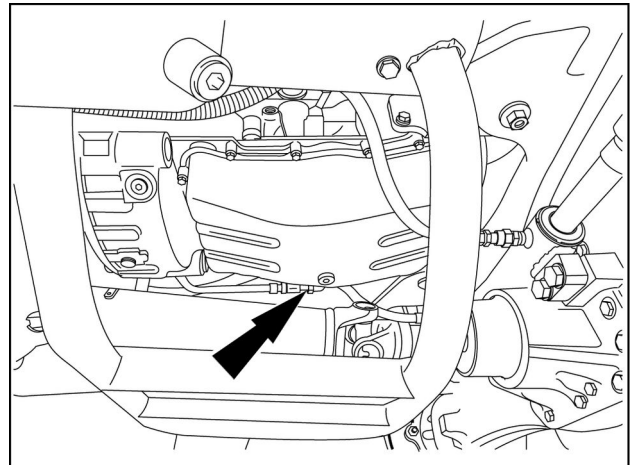
Engine - Drain fluid

1. Start the engine and run until the engine is warm. A warm engine allows a more complete removal of foreign material.
2. Park on level ground, raise the loader arms, engage the safety support strut, and shut down the engine.
3. Clean the areas around the:
 - Engine fill cap **(1)**
 - Engine oil filter and head **(2)** (located underneath the fixed hood)
 - Engine oil dipstick **(3)**
 - Oil pan drain plug (not shown)



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4. Slowly open the drain plug for the engine oil pan and drain the oil into a suitable container.



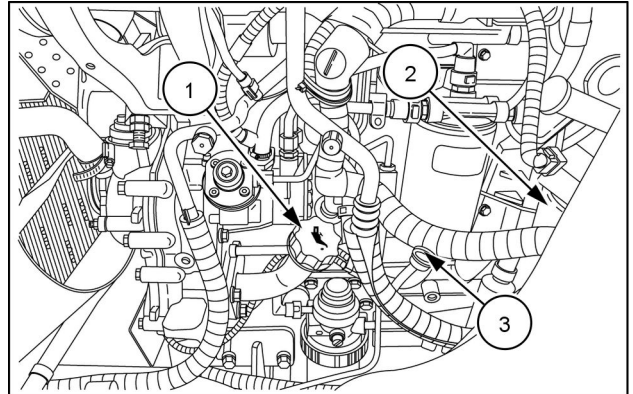
RCPH11TLB016AAD 2

5. Install the drain plug for the engine oil tank.

Engine - Filling

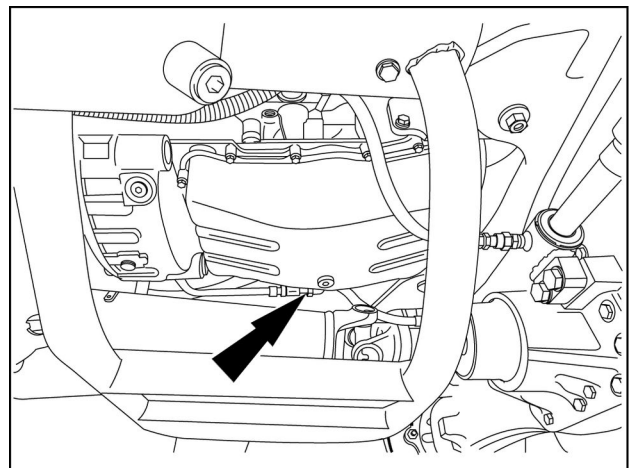
Engine oil specifications: **8.0 L (8.5 US qt)** of **NEW HOLLAND AMBRA UNITEK MASTERGOLD SBL CJ-4 SAE 10W-40**. For machines operating in cold regions, see “Engine oil viscosity - Recommended engine oil for operating temperature ranges” **Engine lubrication system - General specification (10.304)**.

1. Clean the areas around the:
 - Engine fill cap **(1)**
 - Engine oil filter and head **(2)** (located underneath the fixed hood)
 - Engine oil dipstick **(3)**
 - Oil pan drain plug (not shown)



RAIL11TLB0008AA 1

2. Make sure that the oil drain plug is installed.



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3. Put new oil into the engine.
4. If applicable, clear the Oil life reset active warning symbol for the display screen. See “Oil life reset” **Engine oil system - Program (55.013)**.



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Engine - Remove

Prior operation:

Remove the engine hood. See **Engine hood - Remove (90.105)**.

Prior operation:

Remove the Particulate Matter Catalyst tray. See **Diesel Oxidation Catalyst (DOC) - Remove (10.501)**

Prior operation:

Drain the engine cooling system. See **Radiator - Drain fluid (10.400)**.

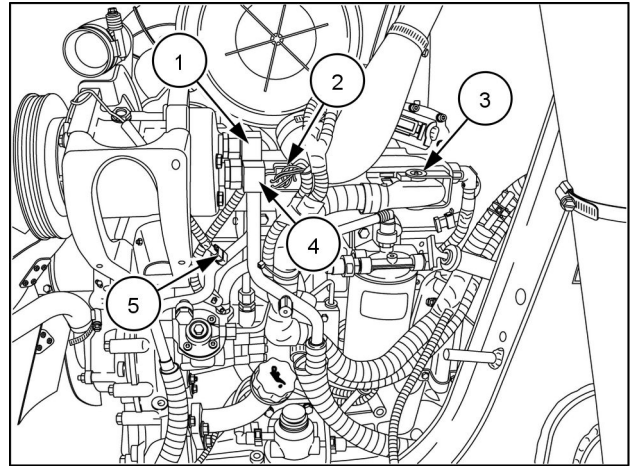
Prior operation:

Remove the engine cooling system. See **Radiator - Remove (10.400)**.

Prior operation:

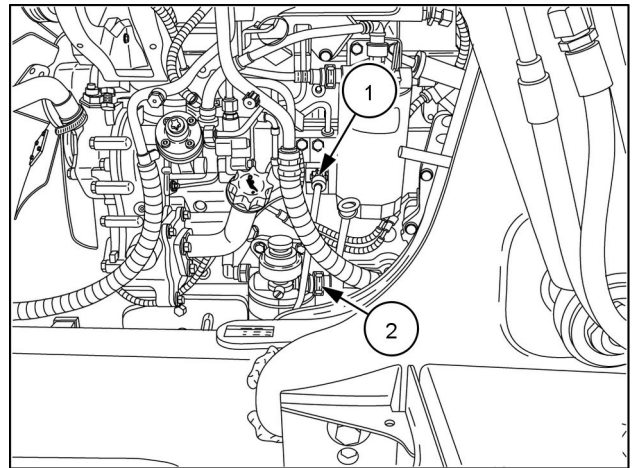
If equipped, evacuate the air-conditioning system. See **Air conditioning - Charging Air conditioner system evacuation and recharging (50.200)**

1. If equipped, disconnect the A/C high pressure line (1).
2. If equipped, disconnect electrical connectors (2) and (3).
3. If equipped, disconnect the A/C low pressure line (4).
4. If equipped, disconnect the A/C condenser voltage wire (5).



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5. Disconnect fuel lines (1) and (2).



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6. Disconnect the water sensor electrical connector (not shown).

NOTE: Water sensor is located at the bottom of the primary fuel filter.

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