IXTHIS.COM

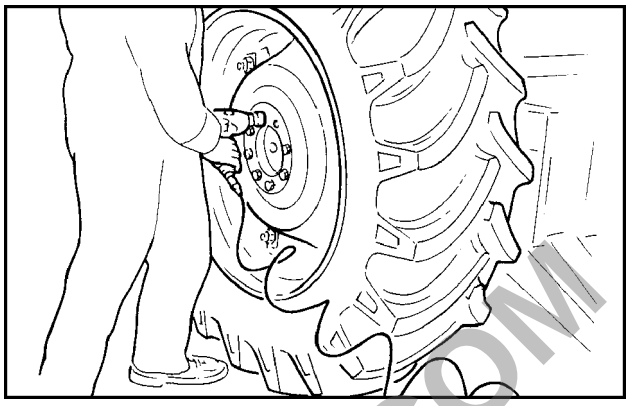
FARMALL® 90C
FARMALL® 100C
FARMALL® 110C
FARMALL® 120C
Efficient Power
Tier 4B (final)
Tractor

SERVICE MANUAL

Part number 47878246
1st edition English
June 2015

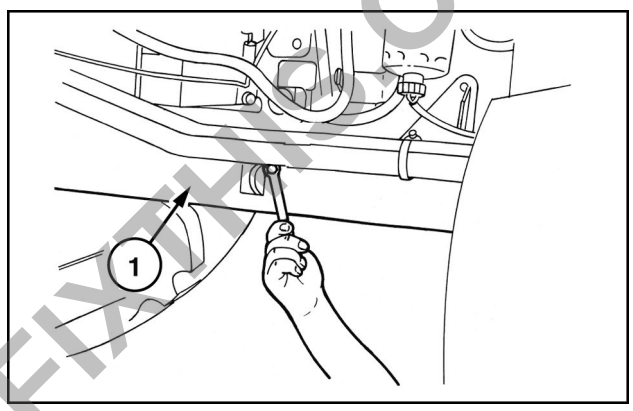
CASE IH AGRICULTURE

6. Raise the rear of the tractor with a hydraulic jack. Place a mechanical jack stand under the reduction gear case. Use a pneumatic gun to remove the retaining nuts of the left-hand rear wheel. Then remove the wheel.



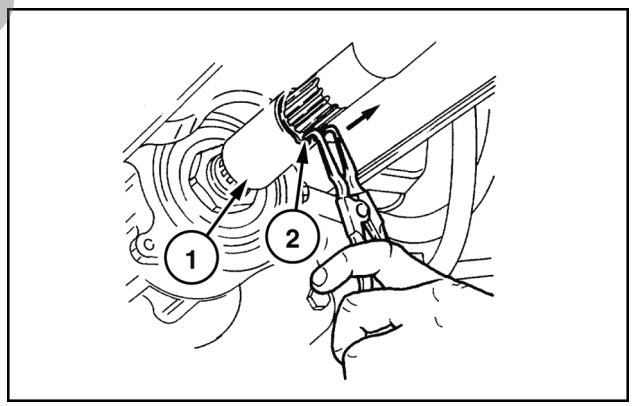
WLAPL4S10C110A 4

7. Unscrew the front, central, and rear retaining bolts on the guard of the front axle control shaft. Then remove the guard **(1)**.



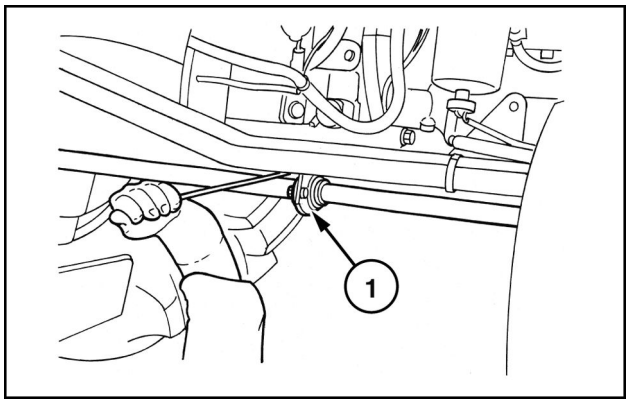
WLAPL4S10C112AA 5

8. Remove the circlip **(2)** and move the front sleeve **(1)** in the direction indicated by the arrow until it is released from the groove on the front axle.



WLAPL4S10C113AA 6

9. Remove the bolts that secure the central support **(1)** of the drive shaft. Remove the shaft complete with the support. Also remove the shim that adjusts the clearance of the shaft on the back.

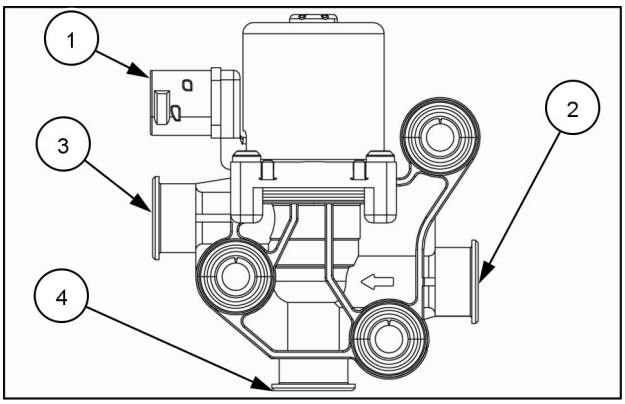


WLAPL4S10C115AA 7

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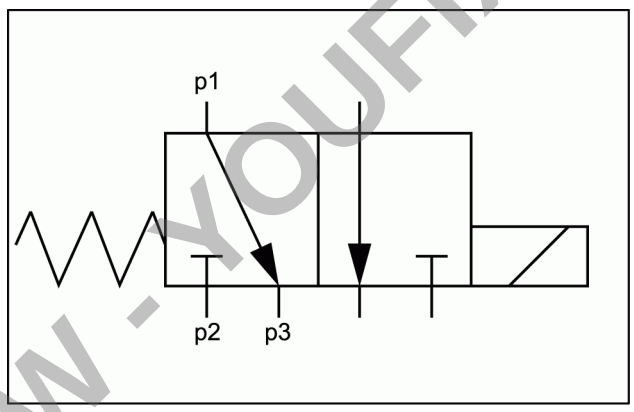
Coolant control valve - Overview



MOIL14TR00716AA 1

1. Electrical connection
2. Input
3. Output
4. Drain charge

Rated voltage	**12 V**
Nominal current at **24 V** and **20 °C**	**0.75 A**
Operating pressure	**0 - 2.5 bar** (**0.0 - 36.3 psi**)
Displacement rate	**350 l/hour** (**92.5 US gal/hour**)
Retaining bolt torque	**20 N·m** (**14.8 lb ft**)

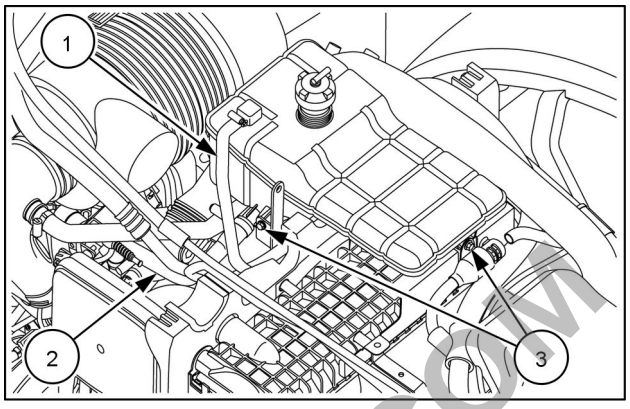


MOIL14TR00718AA 2

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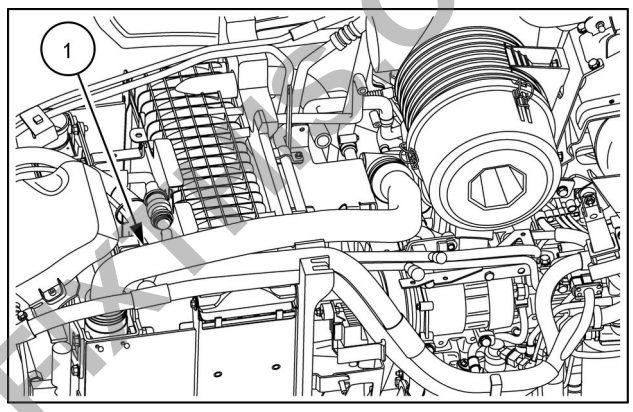
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4. Disconnect the lines **(1)** and **(2)** for the coolant reservoir. Loosen the two screws **(3)** and loosen the screw on the left-hand side of the vehicle. Remove the reservoir.



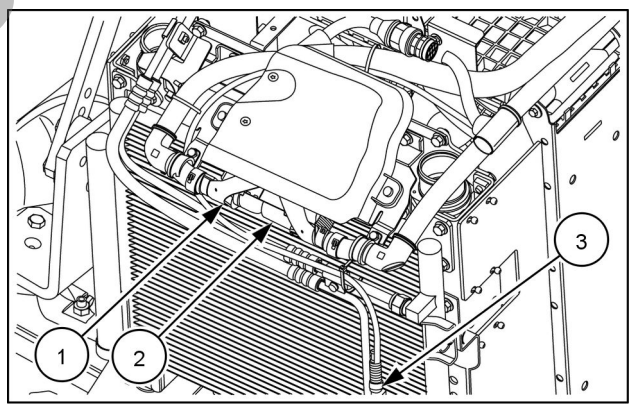
MOIL14TR00687AA 4

5. Remove the line **(1)** for the intercooler, on the left-hand side of the vehicle.



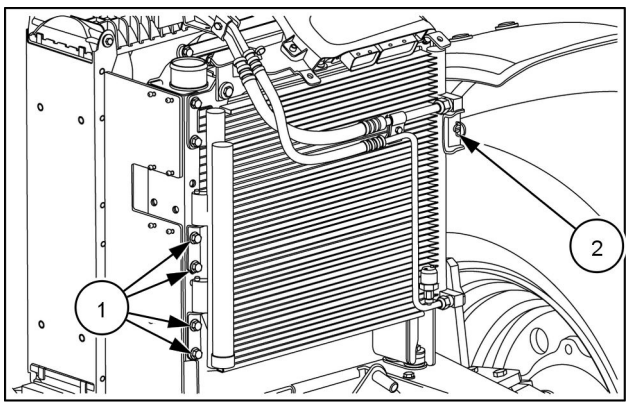
MOIL14TR00688AA 5

6. Disconnect the connections **(1)** and **(2)** for the engine control unit. Disconnect the connection **(3)** for the pressure sensor of the air conditioner.
Remove any cable tires. Move the wiring harnesses to the side.



MOIL14TR00689AA 6

7. To unclamp the air conditioning condenser, rotate the pin **(2)**. Loosen the screws **(1)**. Move the condenser to the side. Release the lines from any support clamps.

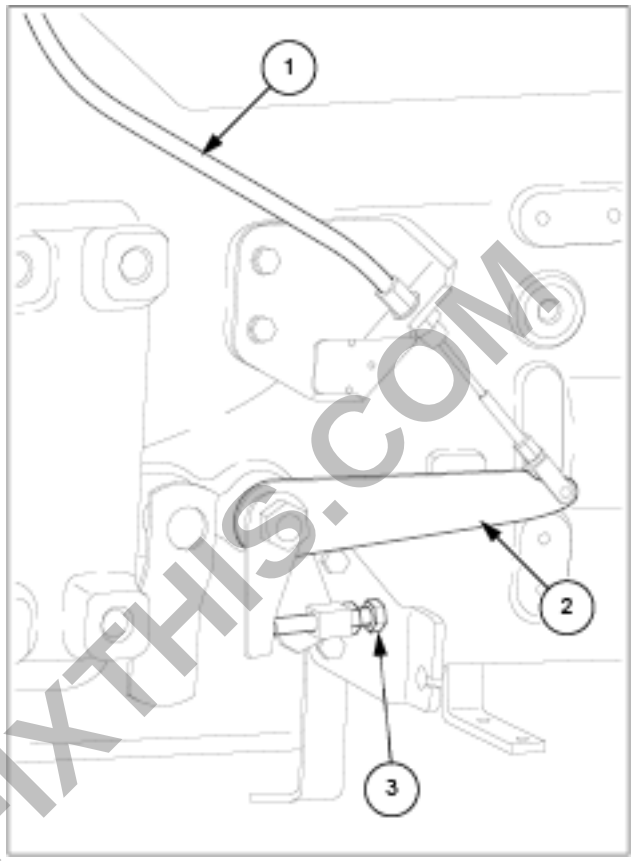


MOIL14TR00690AA 7

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1. Connect the clutch control cable **(1)** to the lever **(2)** on the left-hand side of the transmission case.
2. Turn the adjusting screw **(3)** to obtain the specified distance **(A)** of Figure **1**.



MOIL13UTL0011AA 2

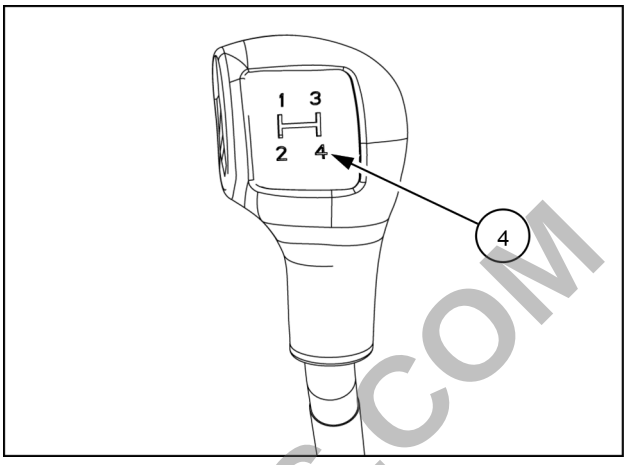
3. Lock the cable by tightening the relative lock nut.
4. Depress the clutch control pedal several times. Check again that the clutch pedal height **(A)** of Figure **1** is as specified.

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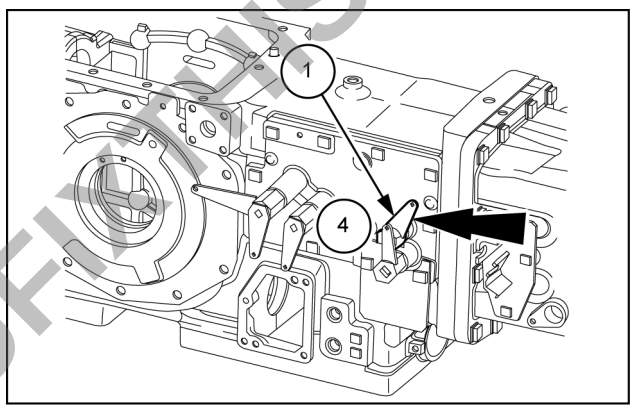
Third / fourth gear cable (no marking)

1. Pull the gear lever in the cab into position **(4)**.



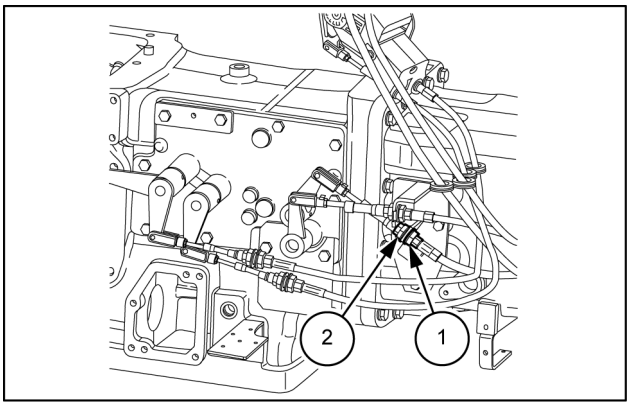
NHVM12TR00685AA 4

2. Move the third/forth lever **(1)** on the right-hand side of the transmission to position **(4)**.



MOIL13TR01355AB 5

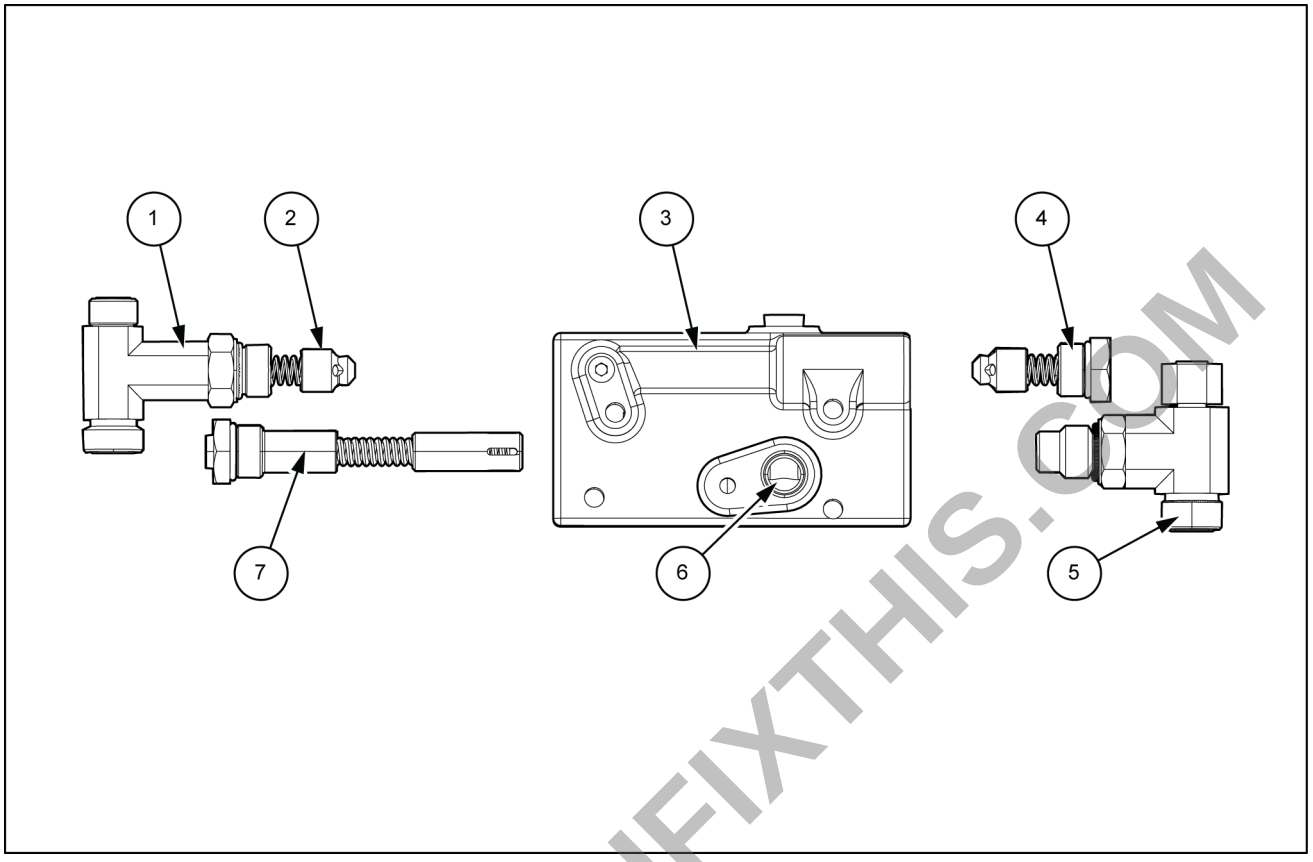
3. Loosen nuts **(1)** and **(2)** completely.
4. Push the cable (no marking) with about **5 kg** (**11.0 lb**) load and screw nut **(1)** to the mounting bracket until the clevis can be connected to the lever.
5. Unscrew nut **(1)** two revolutions.
6. Tighten nut **(2)** to the mounting bracket until the requested torque of **15 N·m** (**11.1 lb ft**) is reached.



MOIL13TR01358AB 6

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MOIL13TR01458FB 2

Exploded view of the pressure regulating valve

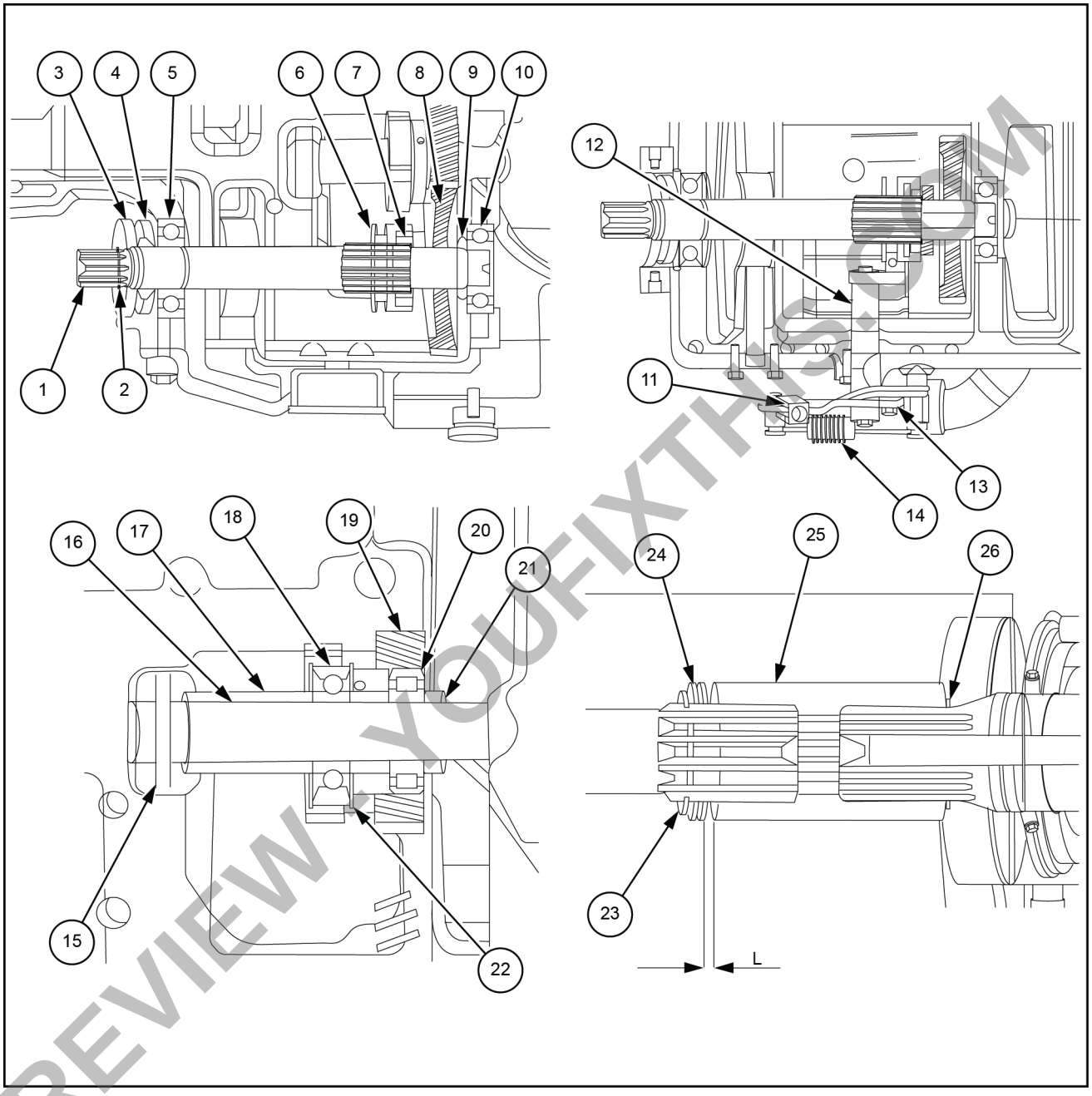
1. T-fitting to primary shaft lubrication
2. T-fitting to transmission oil heat exchanger
3. Valve Body
4. Lubrication relief valve (**3.5 bar** (**50 psi**))
5. T-fitting to auxiliary control valves
6. Hydraulic oil supply attachment
7. Clutch engagement relief valve (**18 bar** (**261 psi**))

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Front-Wheel Drive (FWD) - Sectional view

Sectional view of drive gear with mechanical coupling

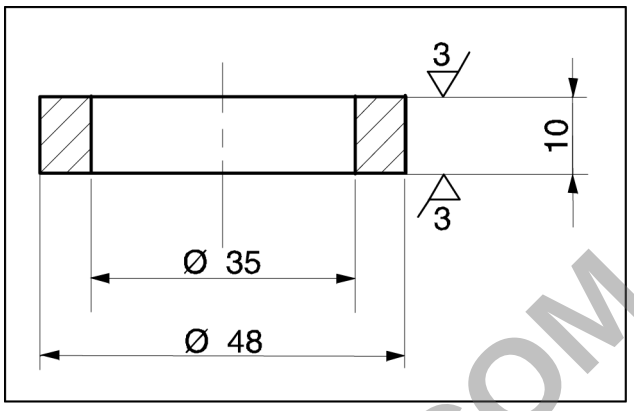


MOIL13TR01898GA 1

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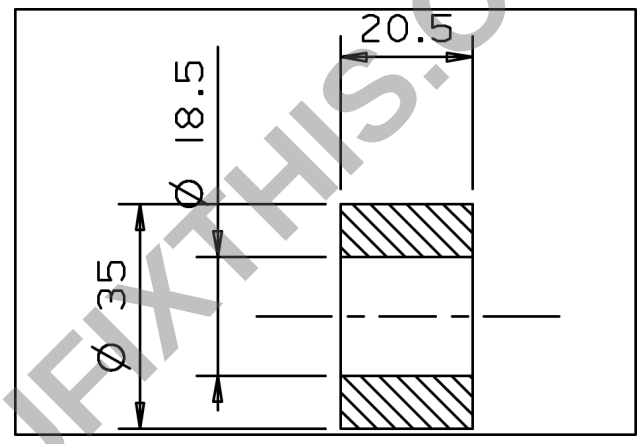
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Tool to be made to adjust the bevel pinion. To be used in conjunction with tool **380000248** (mark tool No. 50118 − measurements in mm).
Make in UNI C40.

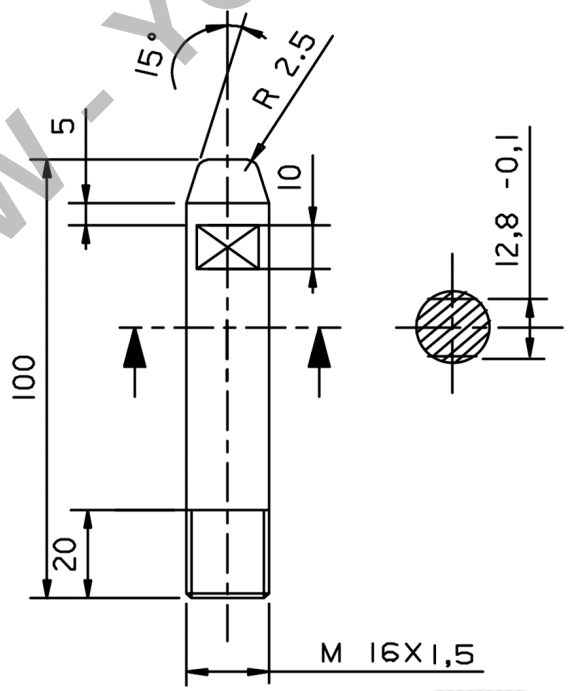


MOLI11U0138AA 1

Spacer to make for securing axle-engine assembly, for mod. TN 60S, TN 70S and TN 75S (mark the tools with no. 50162 − measurements in mm).
Make from Fe 42C material Make 4 spacers.



MOIL14UTL0171FA 2



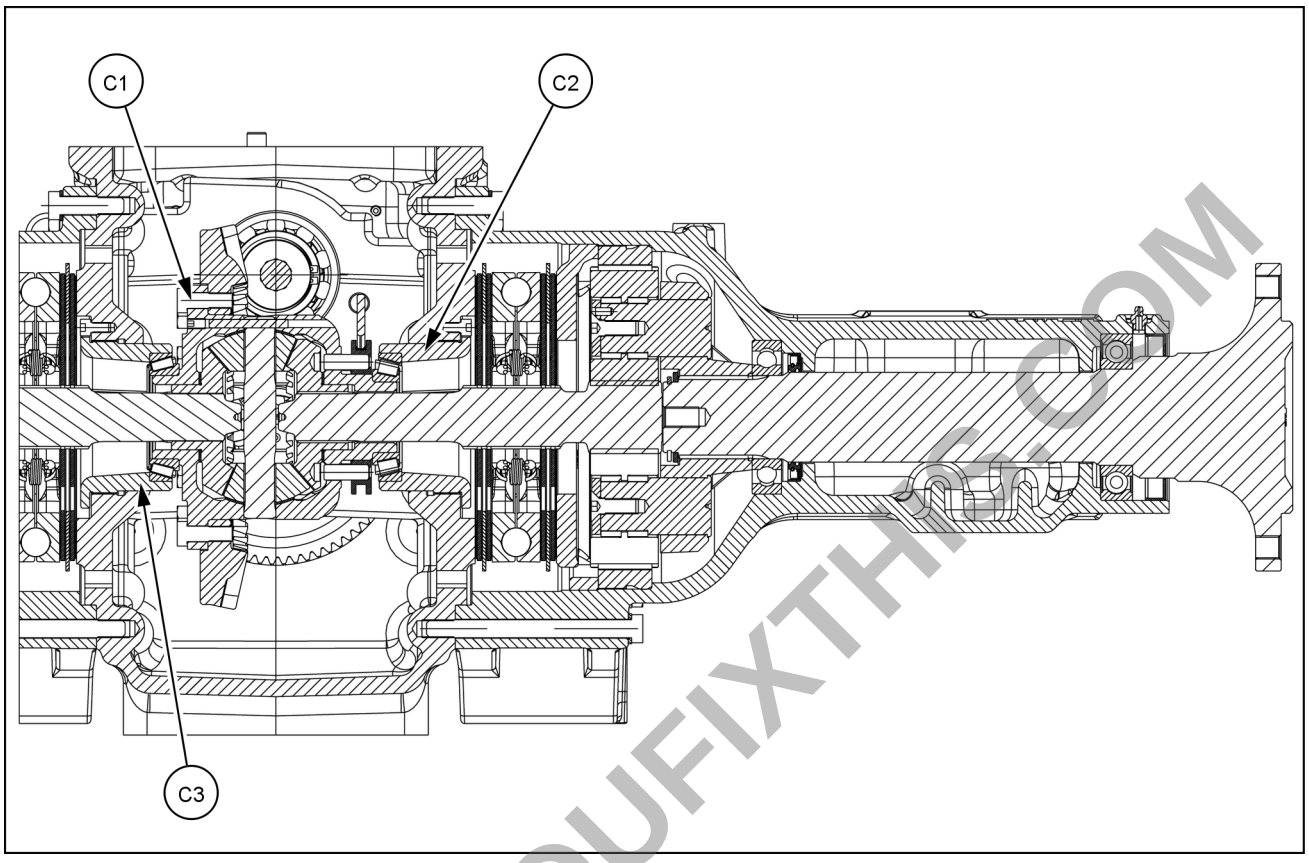
MOIL14UTL0172FA 3

Tool to make for front axle wheel disassembly-assembly (mark tool with no. 50165 − measurements in mm)
Make from UNI C40 material

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Rear bevel gear set and differential - Torque



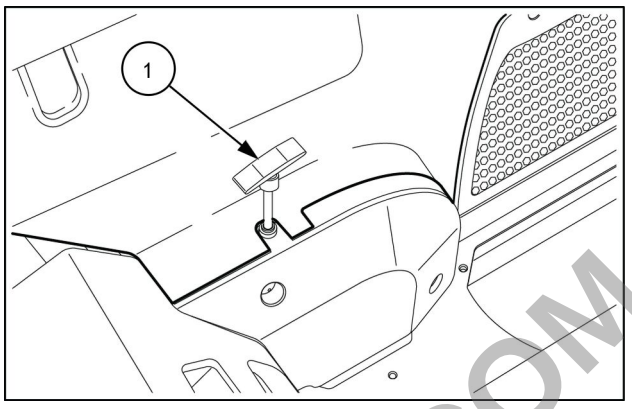
MOIL15TR00254FA 1

Parts to be torqued	Thread	Tighten Torque
Crown wheel to gearbox retaining bolts **(C1)**	M12 x 1.25	**131 - 144 N·m** (**96.62 - 106.21 lb ft**)
Differential bearings support nuts **(C2)**	M120 x 2	**49 N·m** (**36.14 lb ft**)

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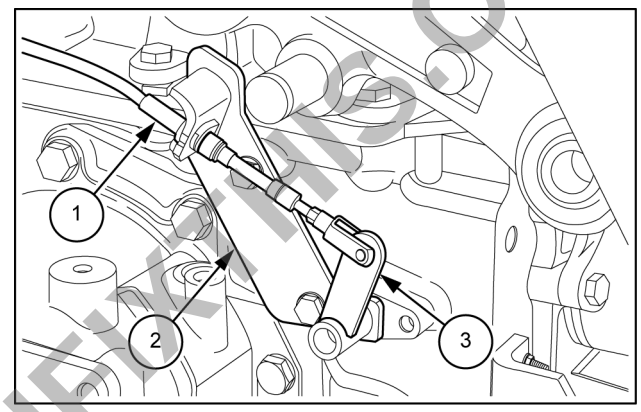
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2. Change the transmission from **540 RPM** to **1000 RPM** by operating the knob **(1)** that is located to the left of the driver.



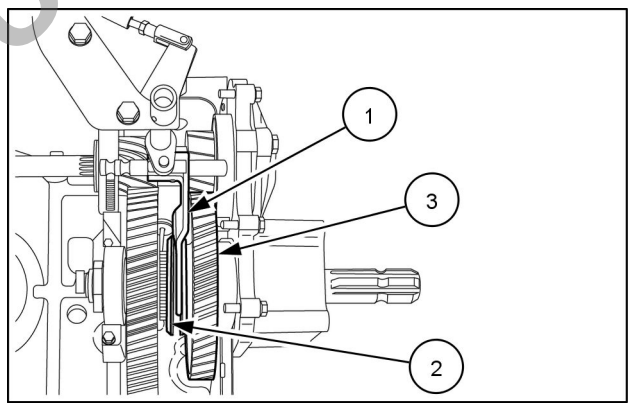
MOIL14UTL0085AA 4

3. Operation of the knob causes the mechanical cable **(1)**, which is located on the reaction bracket **(2)**, to activate the lever **(3)** that is located on the transmission case.



MOIL13TR01642AB 5

4. The lever moves the fork **(1)**, which engages the speeds **(3)** by means of the sleeve **(2)**.

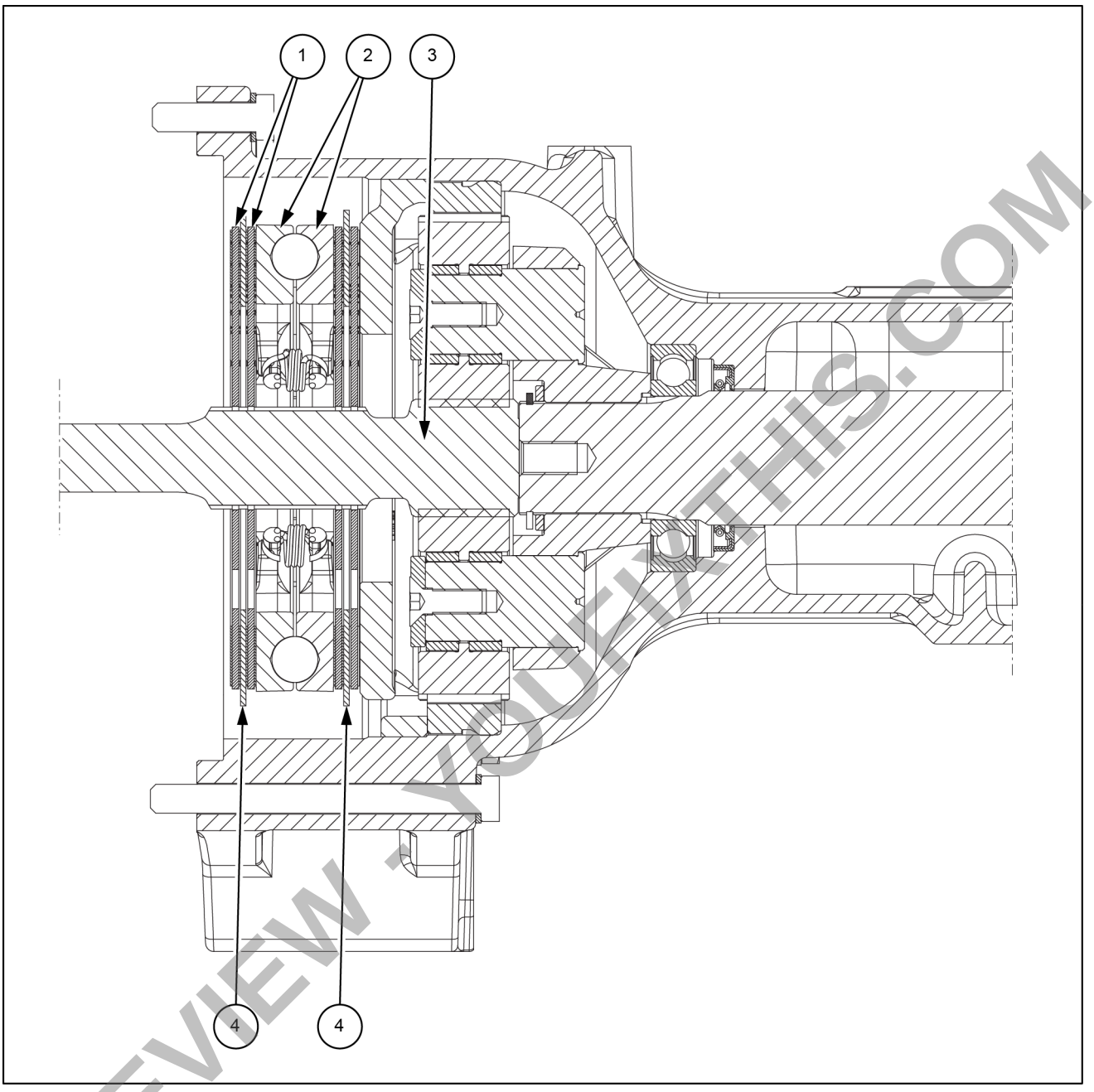


MOIL14UTL0089AA 6

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Hydraulic service brakes - Sectional view



MOIL13TR01795GA 1

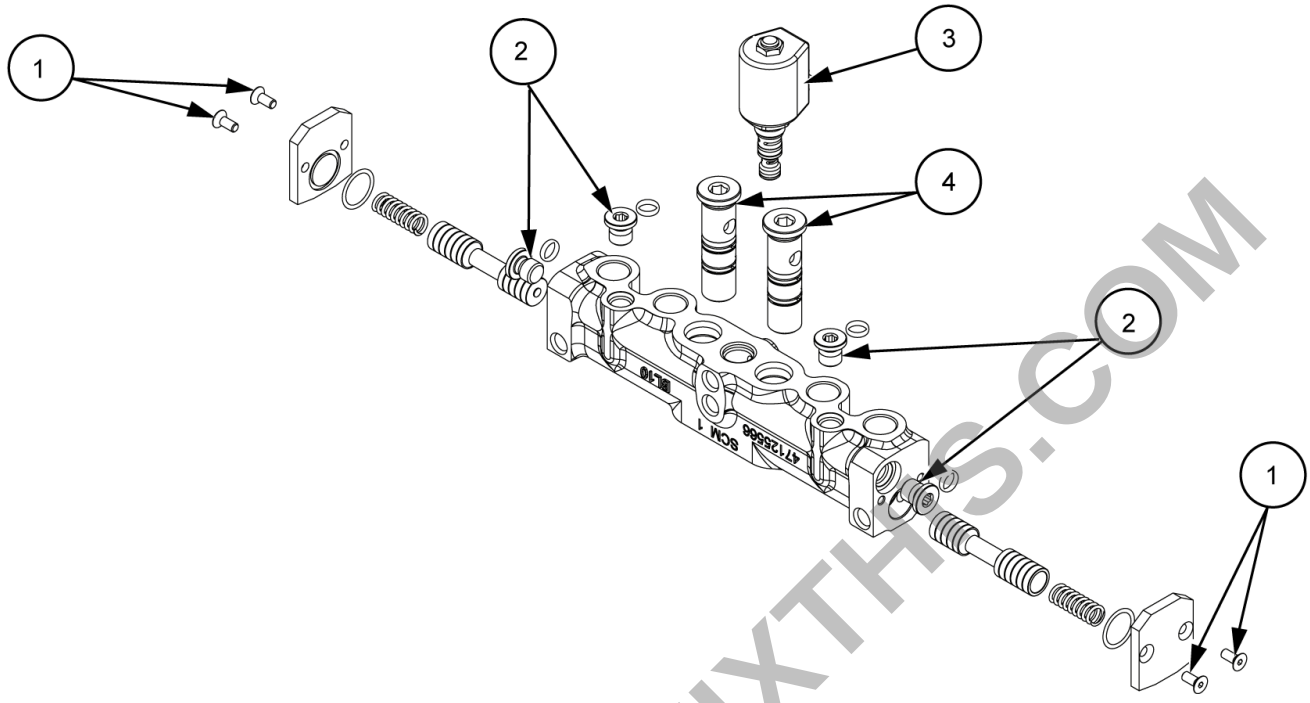
Service brakes sectional drawings

1. Service Brake Discs
2. Service brake actuator
3. Axle shaft
4. Brakes intermediate disc

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Remote control valve - Torque - Diverter



Torque rates

Parts to be torqued	Thread	Torque rates
Side cover fixing screws **(1)**	—	**6.6 N·m** (**4.9 lb ft**)
Plug **(2)**	—	**24.0 N·m** (**17.7 lb ft**)
Solenoid Valve **(3)**	**5/8 in** - 18 UNF 2B	**40.0 - 45.0 N·m** (**29.5 - 33.2 lb ft**)
Sleeves **(4)**	M18 x 1,5	**40.0 - 45.0 N·m** (**29.5 - 33.2 lb ft**)

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Drawbar support - Remove

⚠ WARNING

Avoid injury!
Handle all parts carefully. Do not place your hands or fingers between parts. Use Personal Protective Equipment (PPE) as indicated in this manual, including protective goggles, gloves, and safety footwear.
Failure to comply could result in death or serious injury.

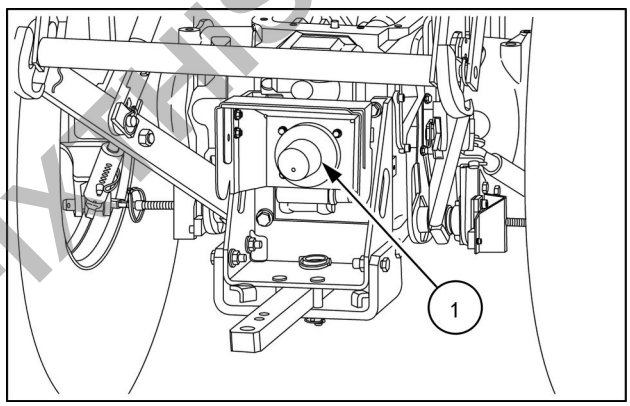
W0208A

⚠ DANGER

Heavy objects!
Lift and handle all heavy components using lifting equipment with adequate capacity. Always support units or parts with suitable slings or hooks. Make sure the work area is clear of all bystanders.
Failure to comply will result in death or serious injury.

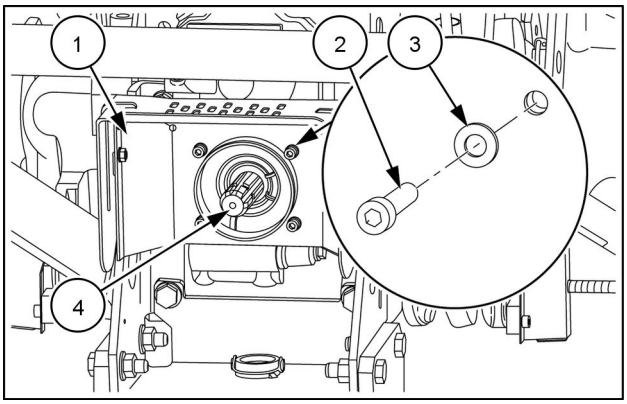
D0076A

1. Remove the guard of the splined output shaft **(1)** of the Power Take−Off (PTO).



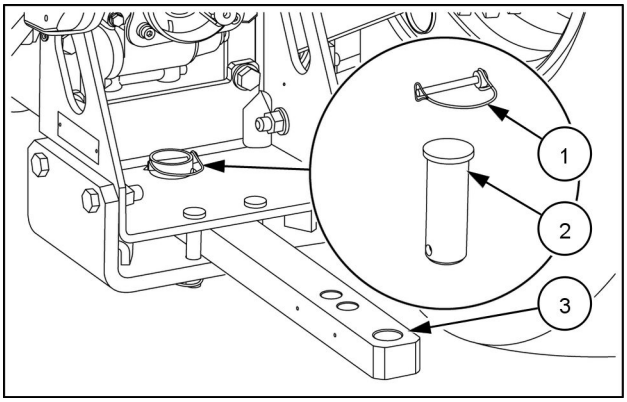
MOIL15TR00247AA 1

2. Remove the rear guard **(1)** of the splined output shaft of the PTO **(4)** by unscrewing the four fixing screws **(2)** and removing the spacers **(3)**.



MOIL15TR00248AA 2

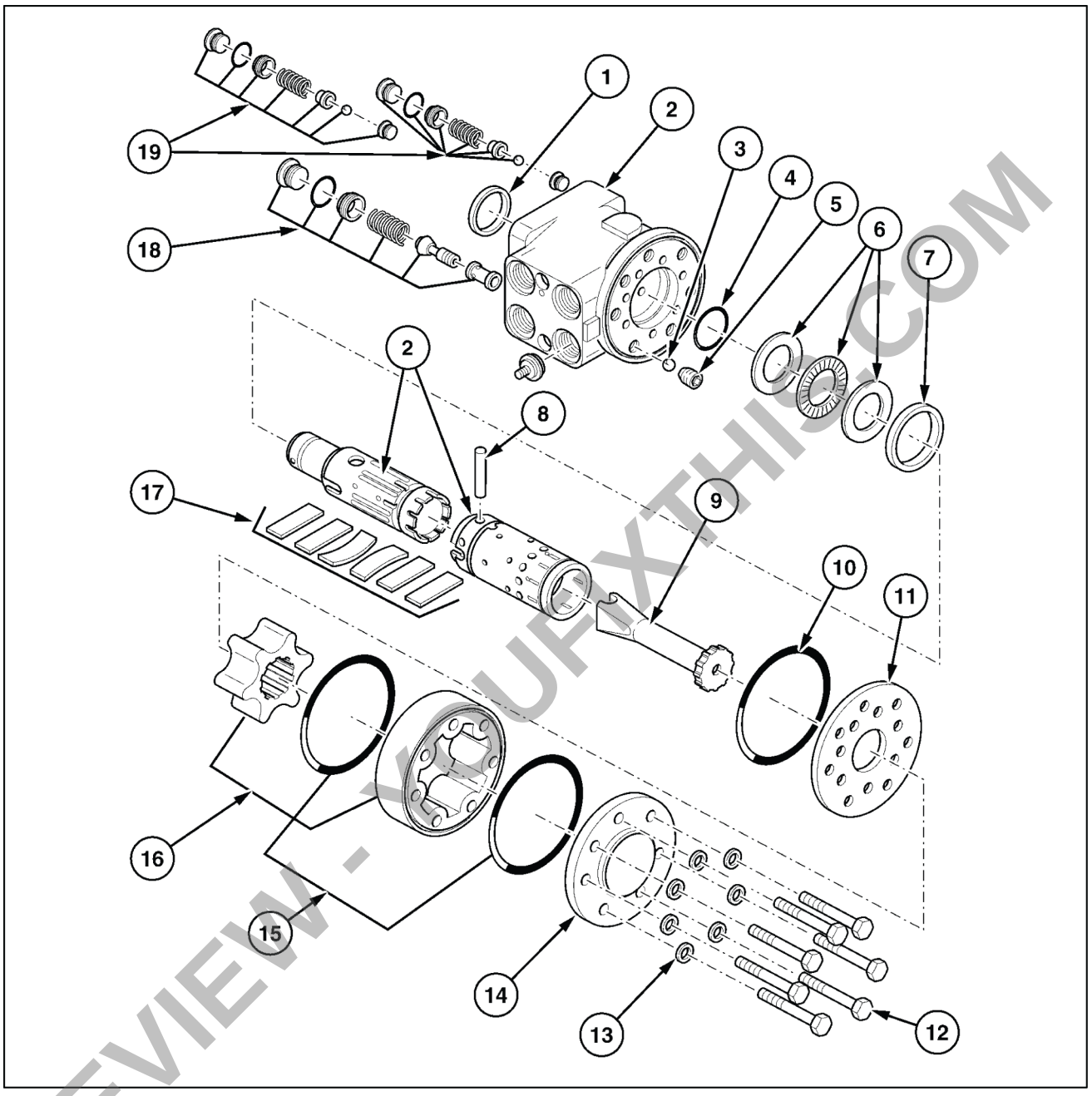
3. Remove the retaining pin **(1)** and slide out the lock pin **(2)** of the drawbar **(3)**.
4. Remove the drawbar.



MOIL15TR00251AA 3

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Power steering control valve - Exploded view



MOLI11U0360GA 1

Hydrostatic steering control valve components

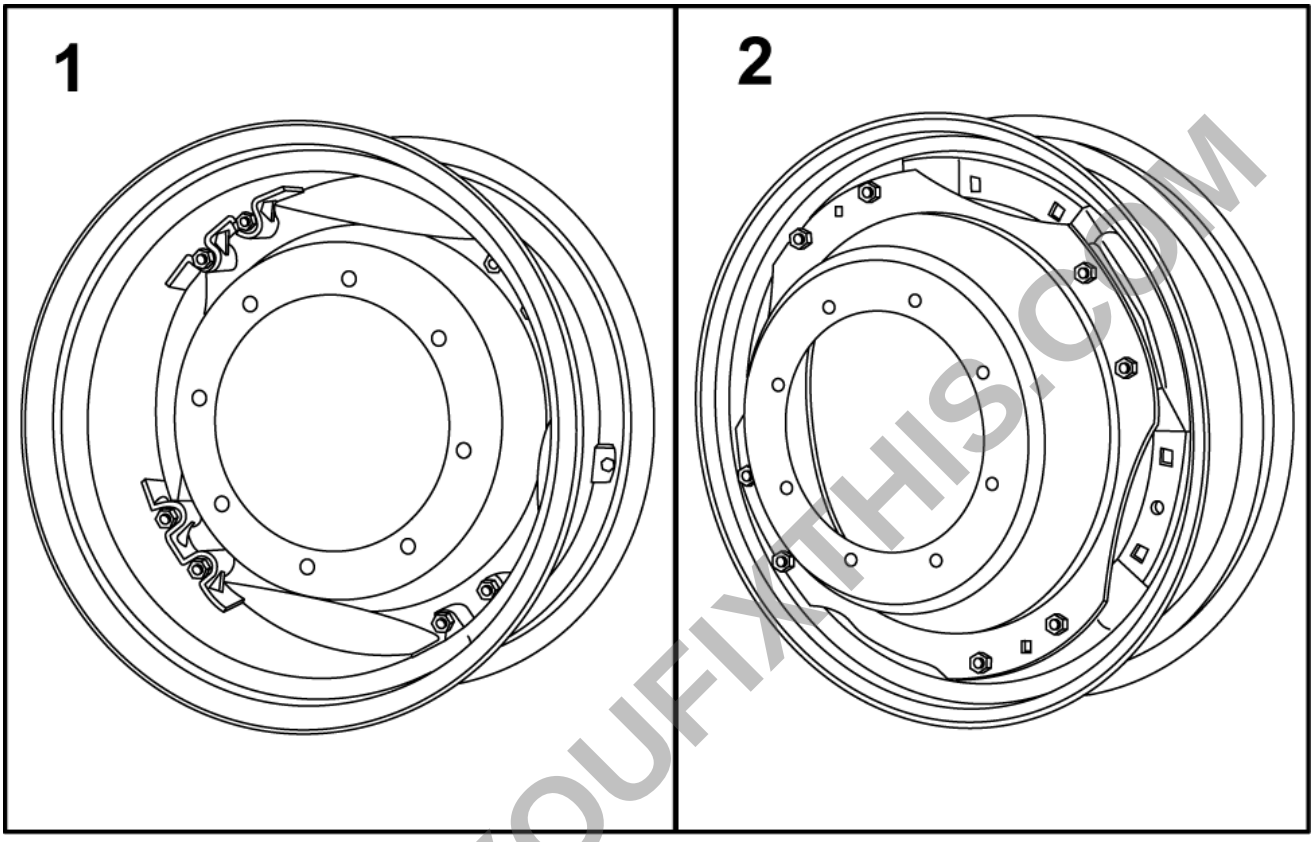
1. Dust ring
2. Control valve body, rotary valve and rotary valve seat sleeve
3. Check valve ball
4. Seal
5. Check valve threaded plug
6. Thrust bearing components
7. Retaining ring for springs **(17)** (Danfoss only)
8. Rotor drive shaft - sleeve trim pin
9. Rotor drive shaft
10. O-ring
11. Shim ring
12. Cover retaining screws
13. Washers
14. Cover
15. O-rings
16. Rotor and fixed ring for rotor
17. Springs for returning sleeve to neutral position
18. Pressure relief valve
19. Cylinder safety valve

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Rear wheel - Torque

Rear wheels - Rear flange axle



MOIL13TR00011AA 1

Description	Screw to nut tightening torque - Nm (lb ft)
Rear disc to hub nuts	**310.0 N·m** (**228.6 lb ft**)
1. Rear disc to rim nuts	**250.0 - 310.0 N·m** (**184.4 - 228.6 lb ft**)
2. Rear disc to rim nuts	**280.0 - 340.0 N·m** (**206.5 - 250.8 lb ft**)

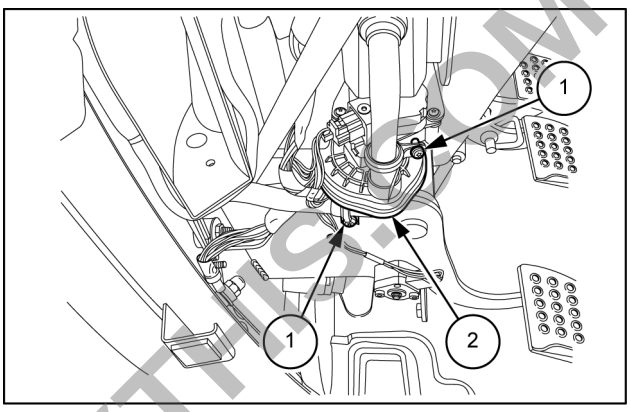
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Heater control valve - Remove - Heater Valve

Farmall® 100C with cab, with Hi-Lo transmission	
Farmall® 100C with cab, with mechanical or Power shuttle transmission	
Farmall® 110C with cab, with Hi-Lo transmission	
Farmall® 110C with cab, with mechanical or Power shuttle transmission	
Farmall® 120C with cab, with Hi-Lo transmission	
Farmall® 120C with cab, with mechanical or Power shuttle transmission	
Farmall® 90C with cab, with Hi-Lo transmission	
Farmall® 90C with cab, with mechanical or Power shuttle transmission	

1. Remove the cover on the left side of the cab, (not shown). Drain the coolant from the system.
2. Remove the hose clamps, **(1)**.
3. Remove the hoses from both sides of the heater valve, **(2)**.
4. Disconnect the cable from the valve, (not shown). Remove valve from the roof.



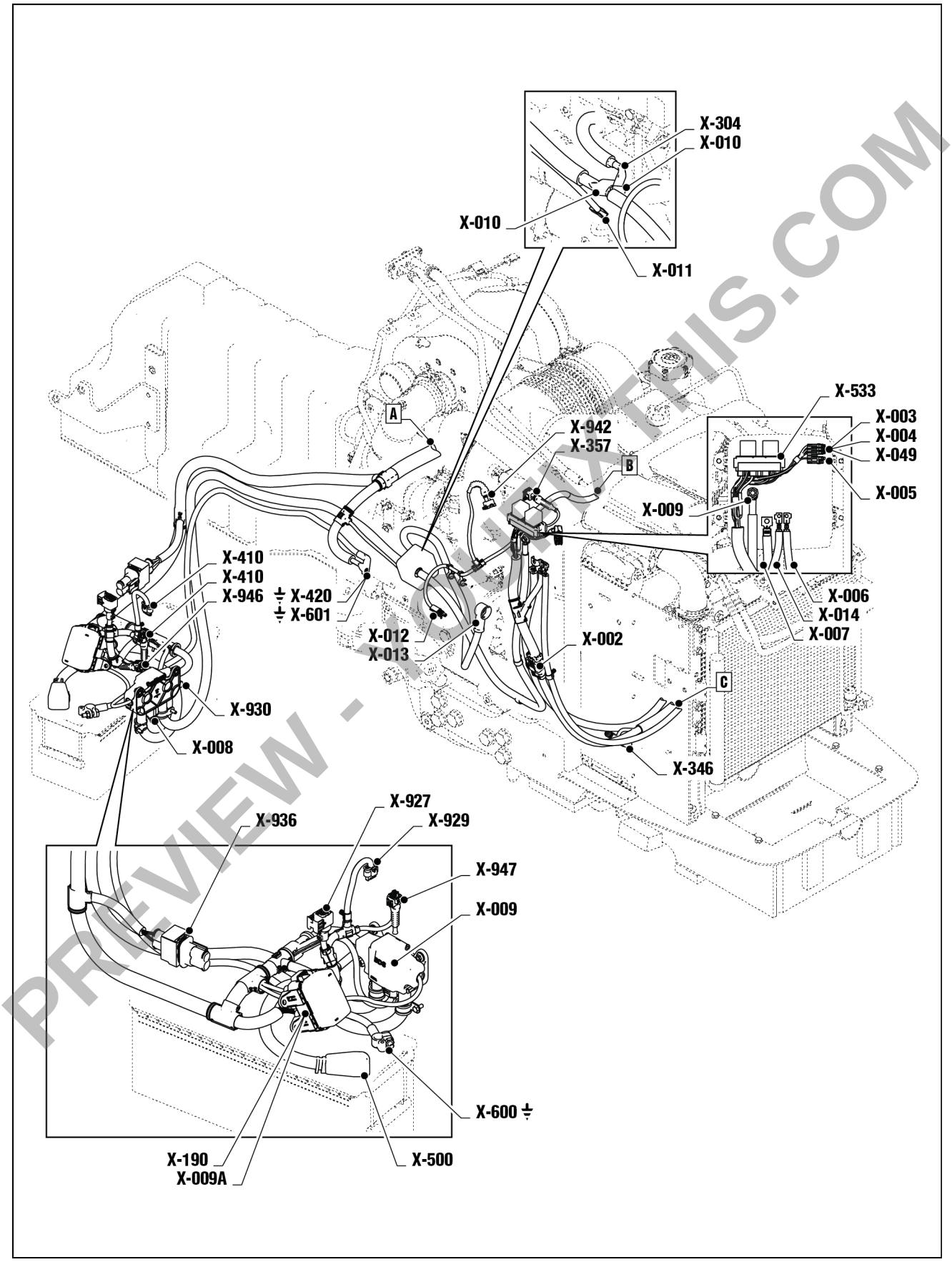
MOIL13TR01585AB 1

Next operation:
Heater control valve - Install (50.100)

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Harnesses and connectors - Component localization - Engine cable 2



MOIL15TR01161HA 1

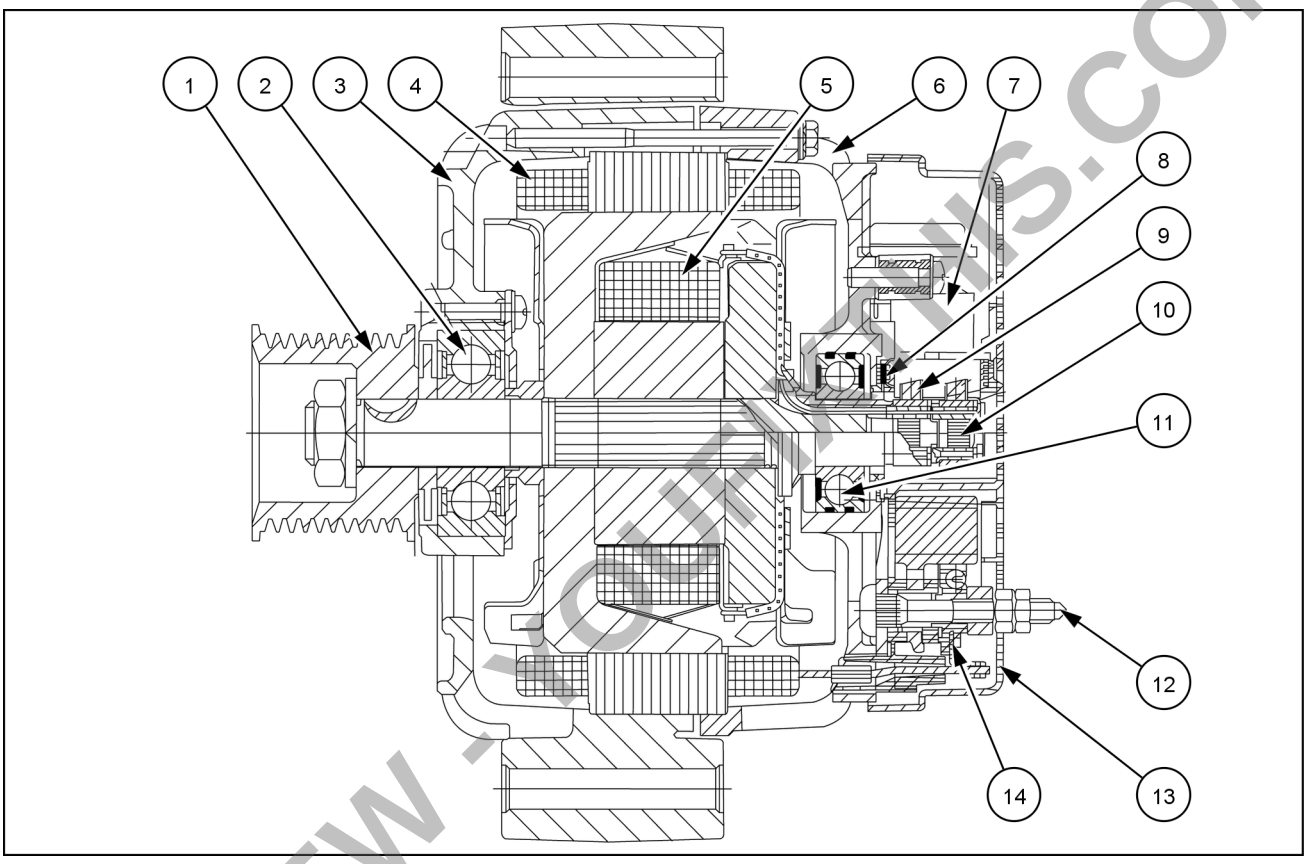
Table 3 - Engine cable 2, right-hand side view

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Alternator - Component localization

Farmall® 100C with cab, with Hi-Lo transmission	
Farmall® 100C with cab, with mechanical or Power shuttle transmission	
Farmall® 110C with cab, with Hi-Lo transmission	
Farmall® 110C with cab, with mechanical or Power shuttle transmission	
Farmall® 120C with cab, with Hi-Lo transmission	
Farmall® 120C with cab, with mechanical or Power shuttle transmission	
Farmall® 90C with cab, with Hi-Lo transmission	
Farmall® 90C with cab, with mechanical or Power shuttle transmission	

Alternator components



MOIL15TR01085FA 1

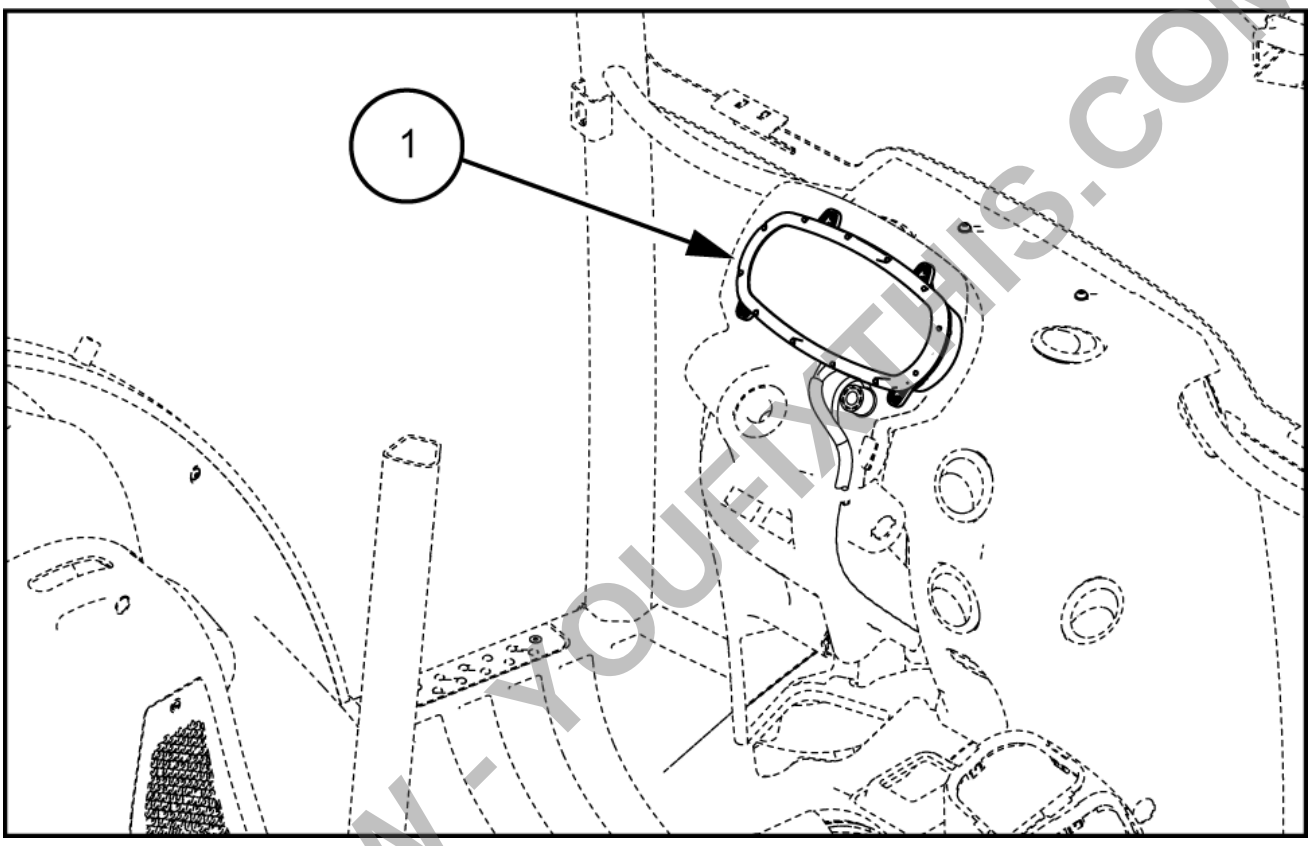
1. Pulley
2. Bearing on belt side
3. Front support plate
4. Stator
5. Rotor
6. Rear support plate
7. Brush holder with voltage regulator
8. Seal
9. Brushes
10. Contact rings
11. Rear Bearing
12. Terminals: B+, D+ and W
13. Safety cover
14. Rectifier

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Electronic module - Component localization - ADIC unit for cab models

Farmall® 100C with cab, with Hi-Lo transmission	
Farmall® 100C with cab, with mechanical or Power shuttle transmission	
Farmall® 110C with cab, with Hi-Lo transmission	
Farmall® 110C with cab, with mechanical or Power shuttle transmission	
Farmall® 120C with cab, with Hi-Lo transmission	
Farmall® 120C with cab, with mechanical or Power shuttle transmission	
Farmall® 90C with cab, with Hi-Lo transmission	
Farmall® 90C with cab, with mechanical or Power shuttle transmission	



MOIL12TR00942AA 1

The ADIC unit is mounted inside the dashboard.

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1004-Wheel speed sensor - signal too high

Control Module : CCU

Possible failure modes:

1. Faulty connector
2. Faulty speed sensor
3. Faulty harness
4. Faulty speed pickup gear

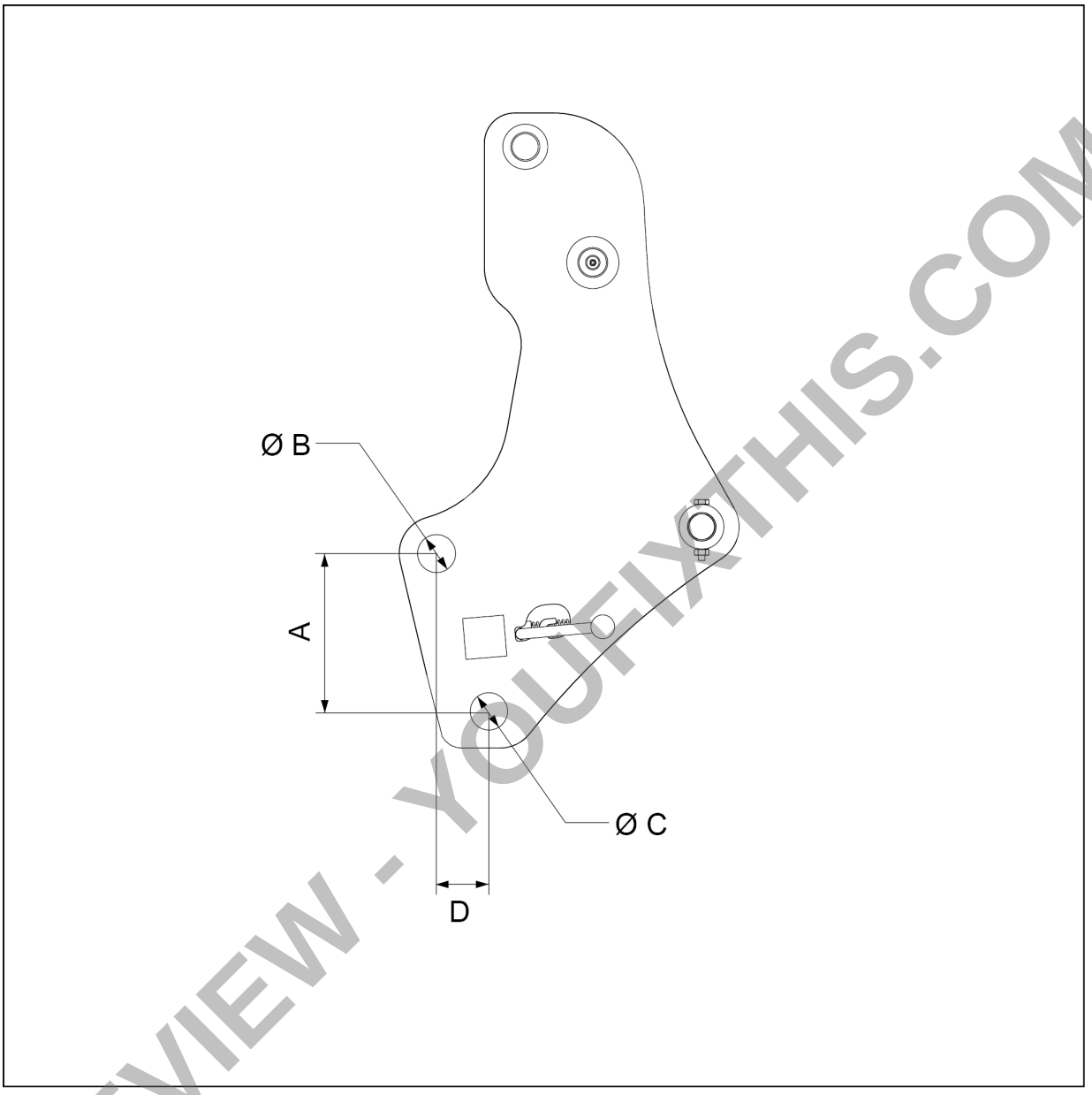
Solution:

1. Check for other fault codes being displayed.
   A. If other error codes are indicated, continue to test for these errors.
   B. If no other error code is displayed,Continue to step **2**
2. Check the wheel speed sensor in H9, ch. 99 mode.
   A. If the values shown are regular, again in H9, ch. 99 mode, shake the wiring harness and the control panel connector **X-240**, the main cable - transmission intermediate connection connector **X-300B** and finally the sensor connector **X-309**, to check for an intermittent circuit. The values of ch 99 will change if an intermittent circuit is indicated;
   B. If the values displayed are not between 40 and 55, Continue to step **3**
3. Visually check the wheel speed sensor
   A. If the sensor is loose, tighten it in the rear transmission housing; if it is damaged, remove and/or replace as required.
   B. If the sensor is okay, Continue to step **4**
4. Visually check the connectors **X-240**, **X-300B**, **X-309**
   A. Disconnect and check that the connectors are connected and not damaged, that the pins are in the correct position and the fit is tight.
   If there are any faults, Repair or replace the unit as needed.
   B. If the connectors are okay, Continue to step **5**
5. Check the sensor power supply
   A. Disconnect the **X-240** connector from the control panel and the sensor connector **X-309**;
   Turn the starter key to ON and measure the voltage between:
   Connector **X-309**, pin 1 and ground.
   If approximately + **12 V** is not indicatedRepair or replace the wiring harness as required.
   B. If wiring harness test is good, .Continue to step **6**
6. Check the signal continuity
   A. Turn the starter key to OFF and measure the continuity between:
   X-309 pin 2 and **X-240** pin 22.
   If there was no continuity,Repair or replace the wiring harness as required.
   B. If wiring harness test is good, .Continue to step **7**
7. Check for an open ground circuit.
   A. Check between connector **X-309**, pin 3 and ground. If an open circuit is indicated, repair or replace the wiring as necessary.

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Coupling brackets - Drawing – With Mechanical Self-Leveling (MSL) system



MOIL14TR00926GA 1

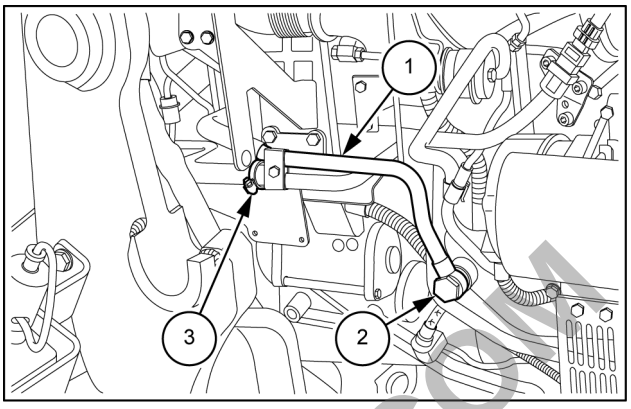
Reference dimensions of the connecting bracket

- A = **210 mm** (**8.2677 in**)
- B = **50 mm** (**1.9685 in**)
- C = **50 mm** (**1.9685 in**)
- D = **70 mm** (**2.7559 in**)

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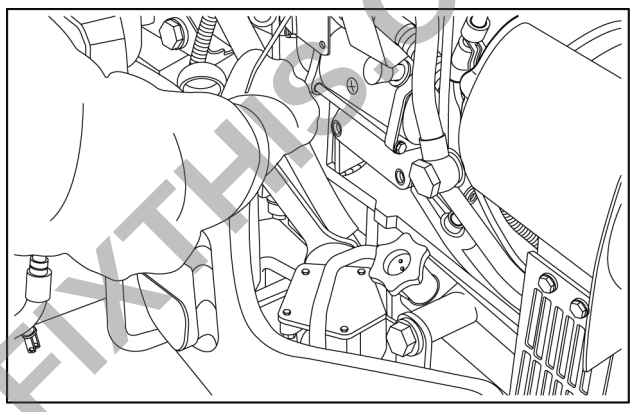
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3. Remove the pipe support plate **(1)**. Loosen the hydraulic fitting **(2)** to empty the engine cooling system. Slacken the clamps **(3)**. Disconnect the two hoses.



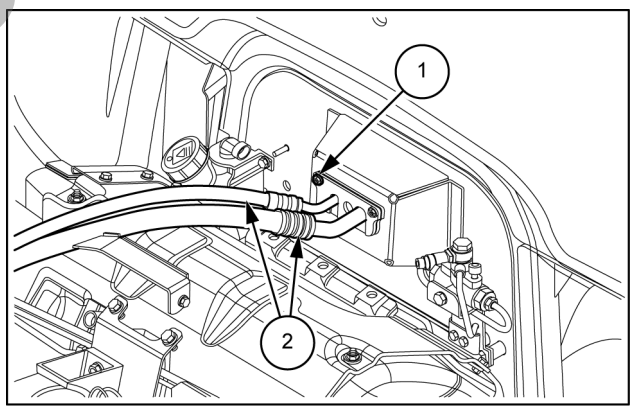
MOIL13TR01692AB 3

4. Detach the oil return line that connects the steering cylinder to the filter on the right-hand side of the engine.



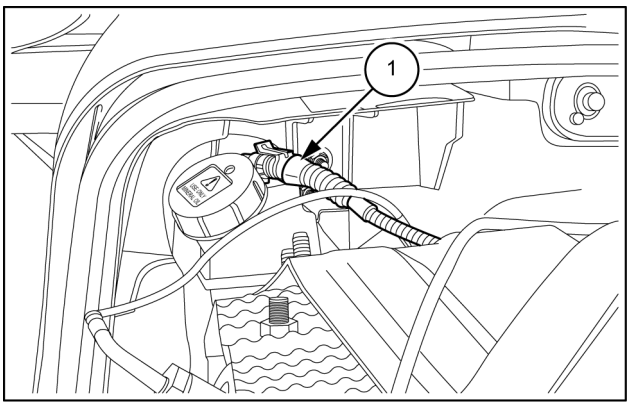
MOIL13TR01703AA 4

5. Remove the seal, loosening the two fixing screws **(1)**. Disconnect the air-conditioning system pipes **(2)** from the cab.



MOIL13TR01693AB 5

6. Disconnect the electrical connection **(1)** from the brake fluid reservoir.



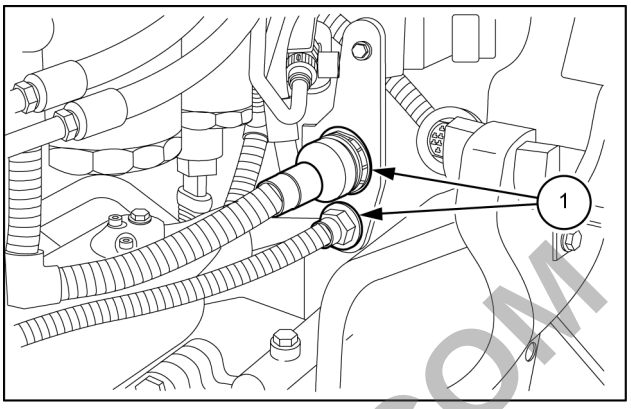
MOIL12TR00553AA 6

7. Perform the operation **Fuel tank - Remove (10.216)**.

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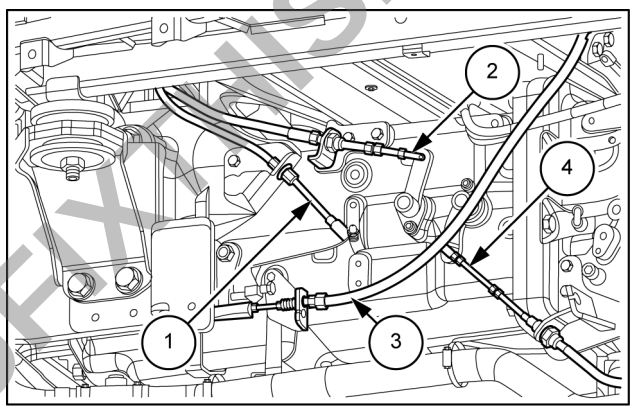
6. Remove the electrical connections **(1)** .
7. Disconnect the **(1)**steering cylinder control pipes.
8. Disconnect the steering cylinder feed pipeline **(2)**.



MOIL13TR01700AB 4

NOTE: *The following operation applies only to models with mechanical transmission, once they are done proceed to operation* ***12****.*

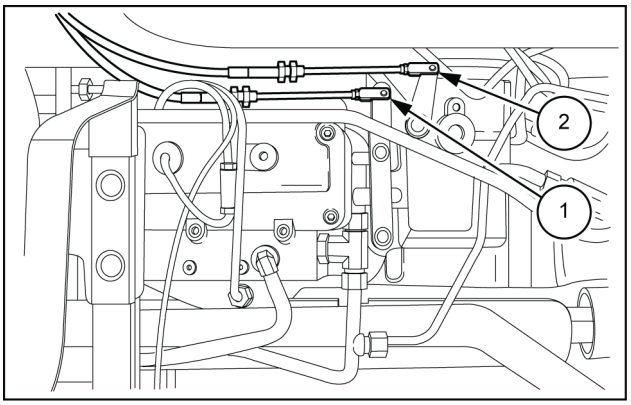
9. Disconnect the clutch control cable **(1)**, the reverser control cable **(2)**, the PTO clutch cable **(3)** and the creeper unit control cable **(4)** and remove them from their fixing brackets.



MOIL13TR01706AB 5

NOTE: *The following operations apply only to models with Power Shuttle transmission, once they are done proceed to operation* ***12****.*

10. Disconnect the clutch control cable **(1)**, the reverser control cable **(2)** and release them from their fixing brackets.



MOIL13TR01704AB 6

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