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FARMALL® 75N / FARMALL® 85N / FARMALL® 95N / FARMALL® 105N / FARMALL® 105V

Tier 3

FARMALL® 75N with cab PIN Z8JF19102 - ZCJF10907; FARMALL® 75N with cab PIN ZCJF06107 and above; FARMALL® 75N without cab PIN Z9JF01865 - ZCJF07697; FARMALL® 75N without cab PIN ZCJF07813 and above; FARMALL® 85N with cab PIN Z8JF17086 - ZCJF09425; FARMALL® 85N with cab PIN ZCJF08828 and above; FARMALL® 85N without cab PIN Z9JF01936 - ZCJF10868; FARMALL® 85N without cab PIN ZCJF16077 and above; FARMALL® 95N with cab PIN Z9JF00469 - ZCJF10732; FARMALL® 95N with cab PIN ZCJF13045 and above; FARMALL® 95N without cab PIN Z9JF01090 - ZCJF05141; FARMALL® 95N without cab PIN ZCJF15989 and above FARMALL® 105N with cab PIN ZBJF20417 and above; FARMALL® 105N without cab PIN ZCJF16900 and above; FARMALL® 105V with cab PIN ZBJF20562 and above; FARMALL® 105V without cab PIN ZDJF09419 and above

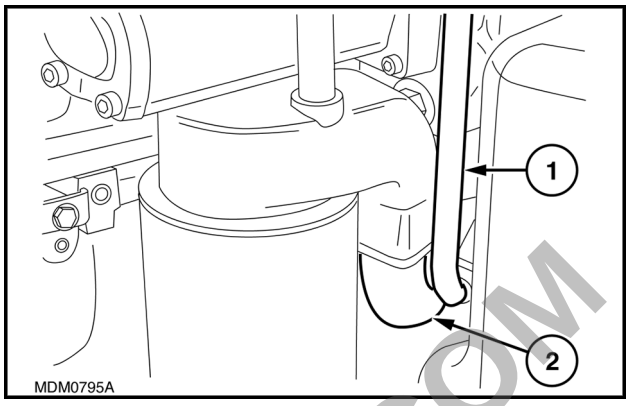
Tractor

SERVICE MANUAL

Part number 47888397
1st edition English
July 2016

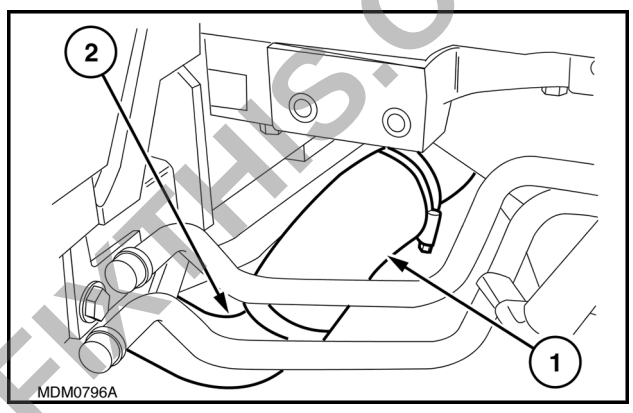
CASE IH AGRICULTURE

7. Unscrew: the retaining bolts of the pipe **(1)** delivering oil to the pump and the bolts retaining the pipe **(2)** to the filter support.



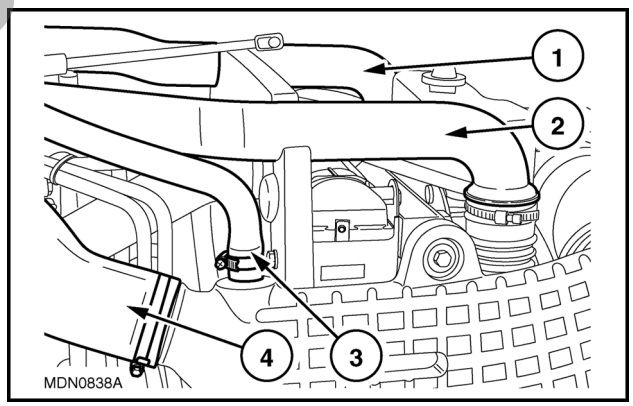
WLSPVNS10C1-14A 5

8. Loosen the related clamps and remove the sleeve **(2)** from the pipe **(1)** and remove the transmission oil inlet pipe together with the above-mentioned sleeve.



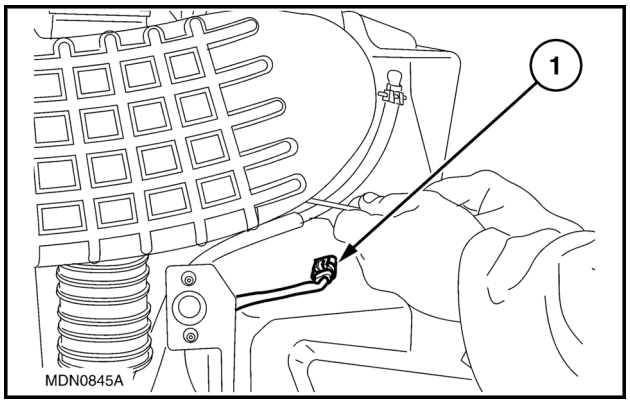
WLSPVNS10C1-15A 6

9. Unscrew the fixing clamps and disconnect the pipes (**(1)** and **(2)**) from the cooler, the sleeve **(4)** between the air filter and the turbocharger and the oil vapour recirculation pipe **(3)** .



WLSPVNS10C1-16A 7

10. Disconnect the secondary tank fuel level connection **(1)** and the clogged air filter pressure switch connection.

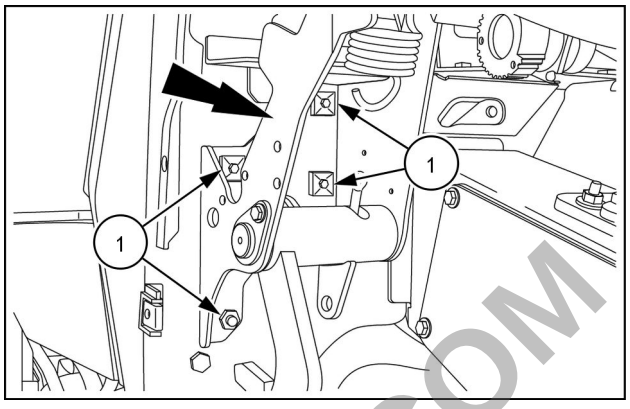


WLSPVNS10C1-17A 8

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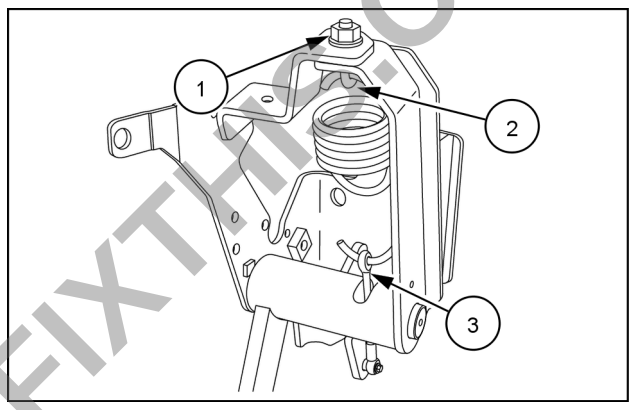
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6. Unscrew the four nuts **(1)** on the master clutch pedal.



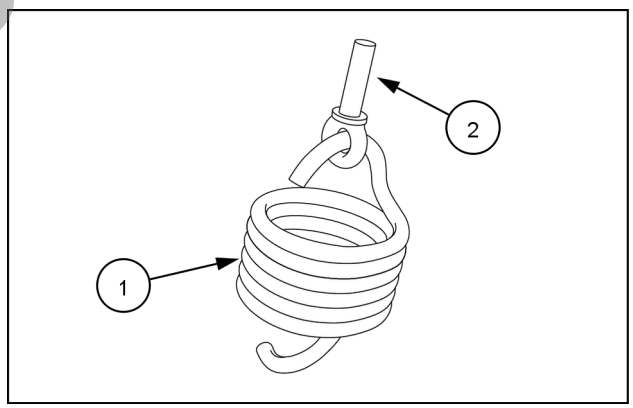
MOIL16TR00373AA 4

7. Unscrew the nut **(1)** and release the upper side of the spring **(2)**.
8. Remove the lower side of the spring from the small rod **(3)**.



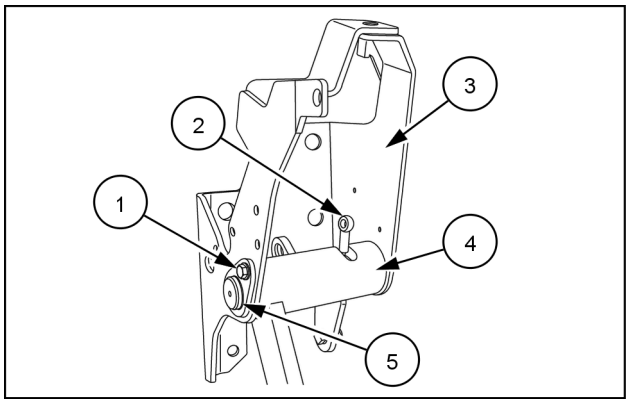
MOIL16TR00374AA 5

9. Manually remove the spring **(1)** including eyelet screw **(2)** and store them in a suitable place.



MOIL16TR00375AA 6

10. Loosen the screw **(1)**.
11. Move down the tie rod **(2)**.
12. Manually extract the pedal axle rod **(5)** and store it in a suitable place.
13. Manually remove the master clutch pedal **(4)** including the tie rod **(2)** from the pedal holder **(3)**.

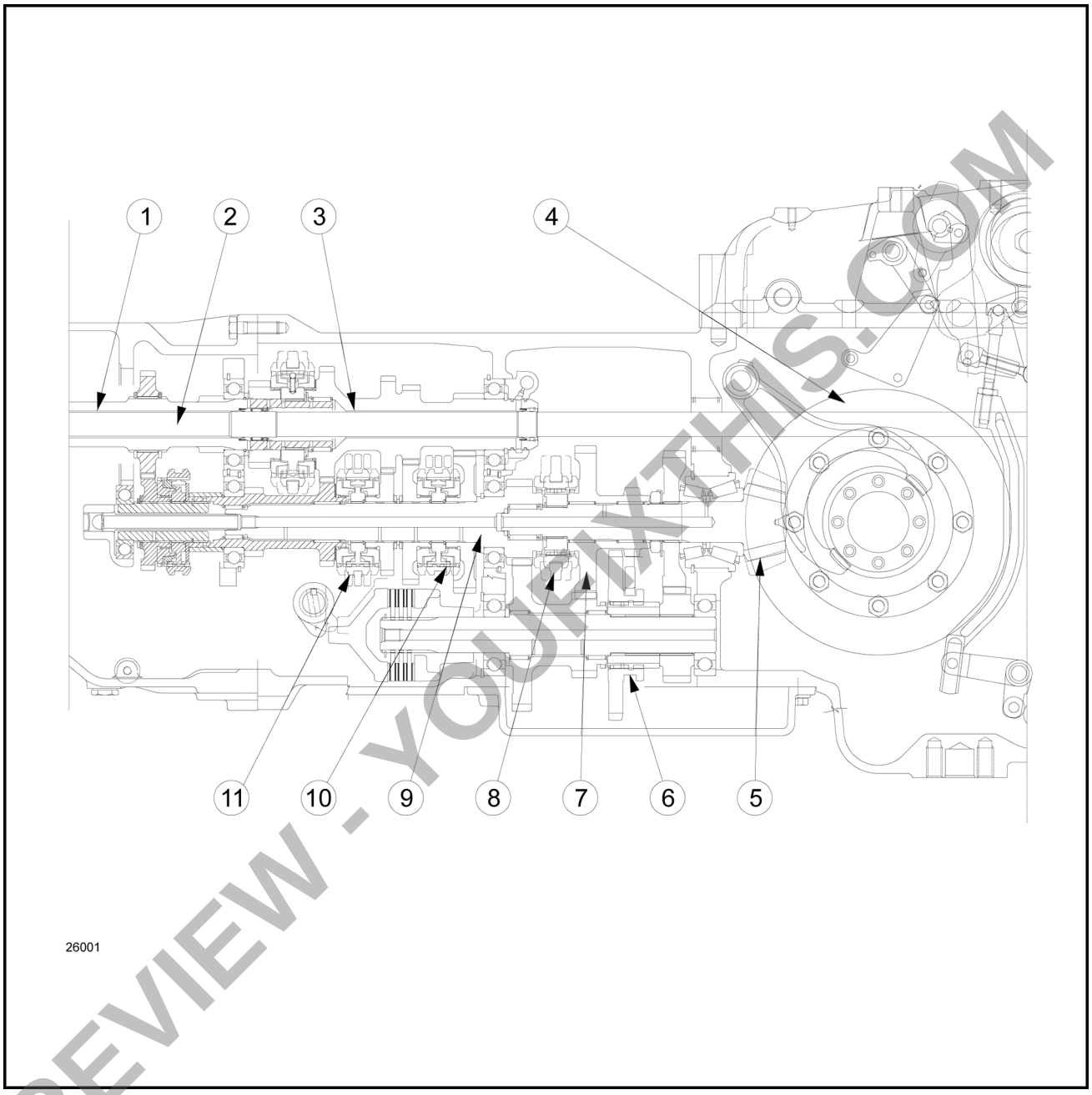


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Mechanical transmission - Sectional view Longitudinal section of gearbox-transmission



WLSPVNS27C1-38G 1

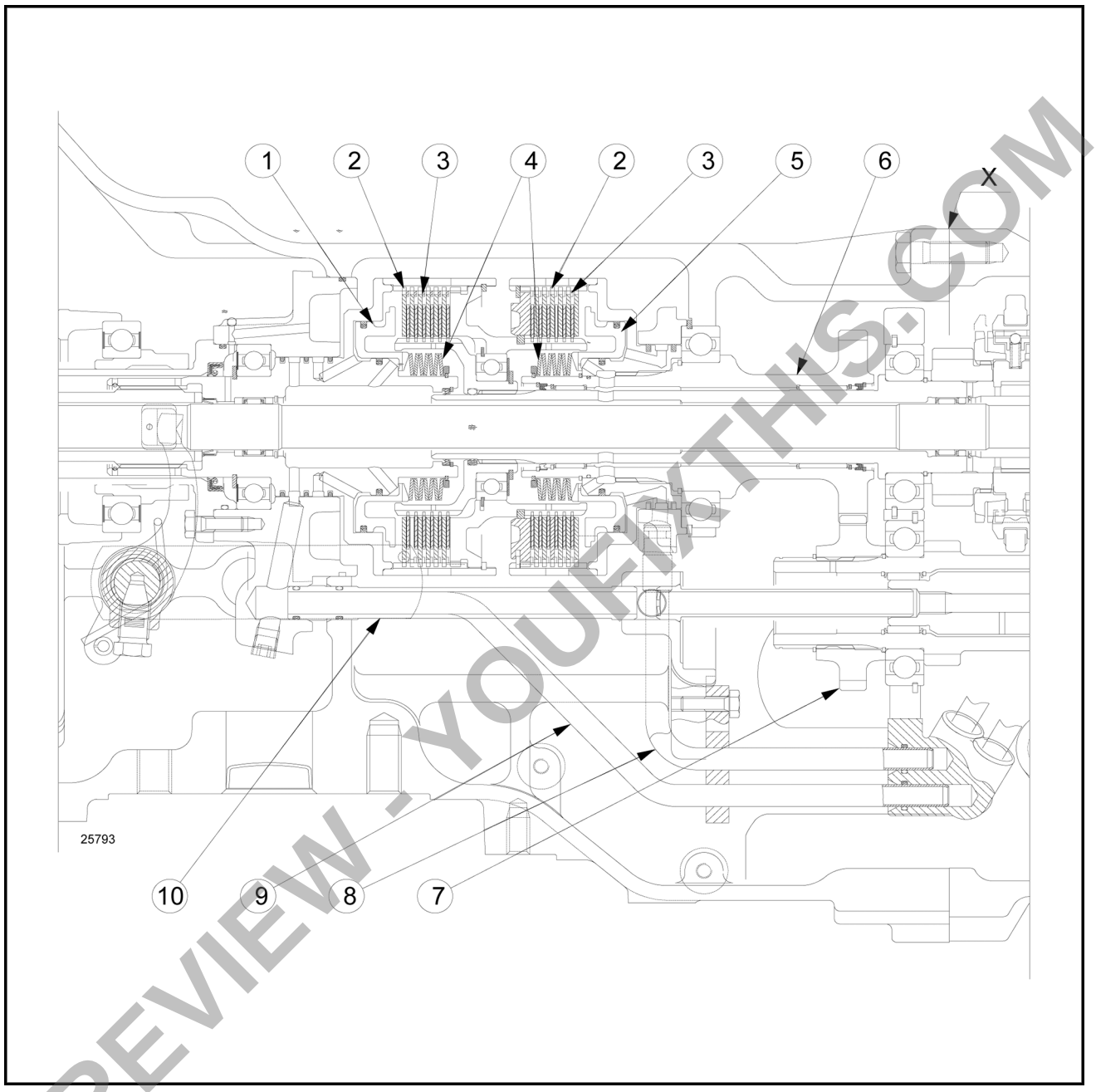
1. Gearbox driving shaft
2. Power take-off control shaft
3. Gearbox driving gear
4. Bevel crown wheel
5. Bevel pinion shaft
6. Gearbox low - mid - upper range gear engagement sleeve
7. Low - mid driven gear shaft
8. Low - mid - upper range gear engagement
9. Gearbox driven shaft
10. 1st and 2nd gear engagement synchroniser
11. 3rd and 4th gear engagement synchroniser

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Power shuttle transmission - Sectional view

Longitudinal cross-sectional view of Power-Shuttle gearbox



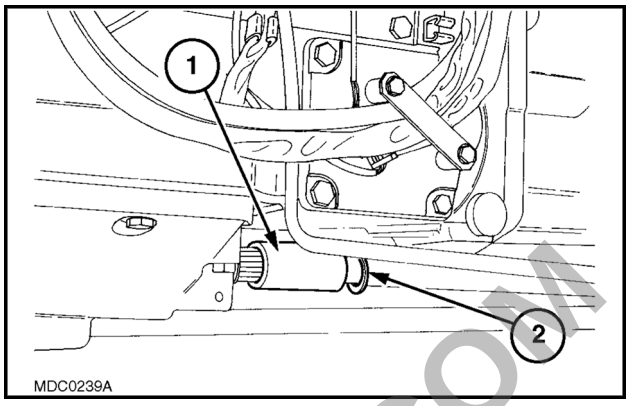
WLSPVNS21C3-08G 1

1. High speed and reverse clutch control piston
2. Steel disks
3. Friction disks
4. Piston return belleville washer
5. Low speed clutch control piston
6. Driving gear
7. Driven gear
8. Low speed clutch control pipes
9. High speed and reverse clutch control pipes
10. Lubrication control pipes

NOTE: *On assembly apply a bead of sealing compound to the surfaces "X" as indicated in* ***Transmission housing - Reseal (21.114)****.*

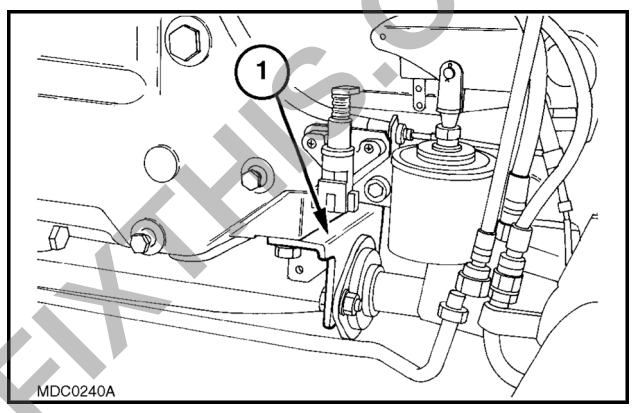
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5. Extract the circlip **(2)** and slide back on the sleeve **(1)**.



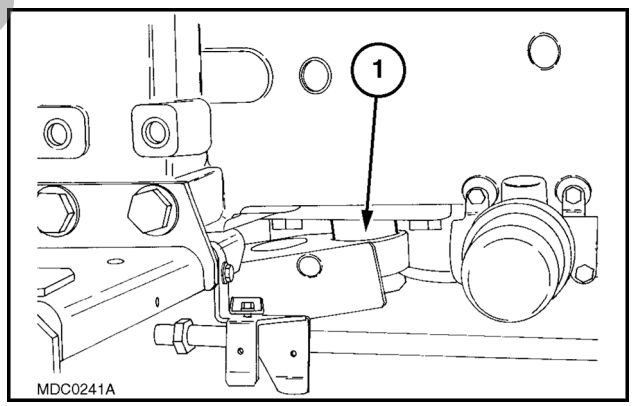
WLSPVNS23C1-18A 4

6. Unscrew the support retaining bolts **(1)** and extract the propeller shaft assembly.



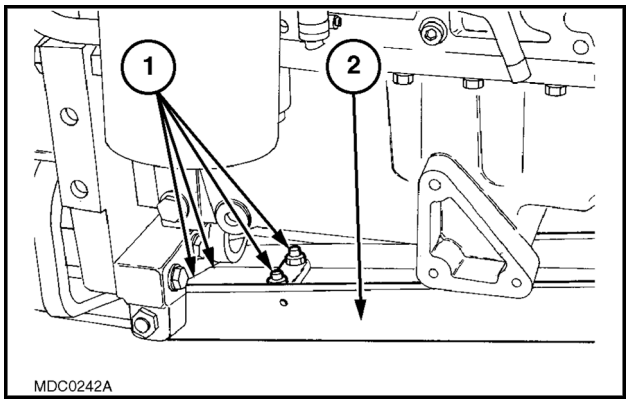
WLSPVNS23C1-19A 5

7. Unscrew the rear pivot **(1)** retaining bolts.



WLSPVNS23C1-20A 6

8. Position a hydraulic jack under the guard **(2)**.
9. Unscrew the bolts **(1)** and the lower pivot pin, then remove the guard **(2)**.



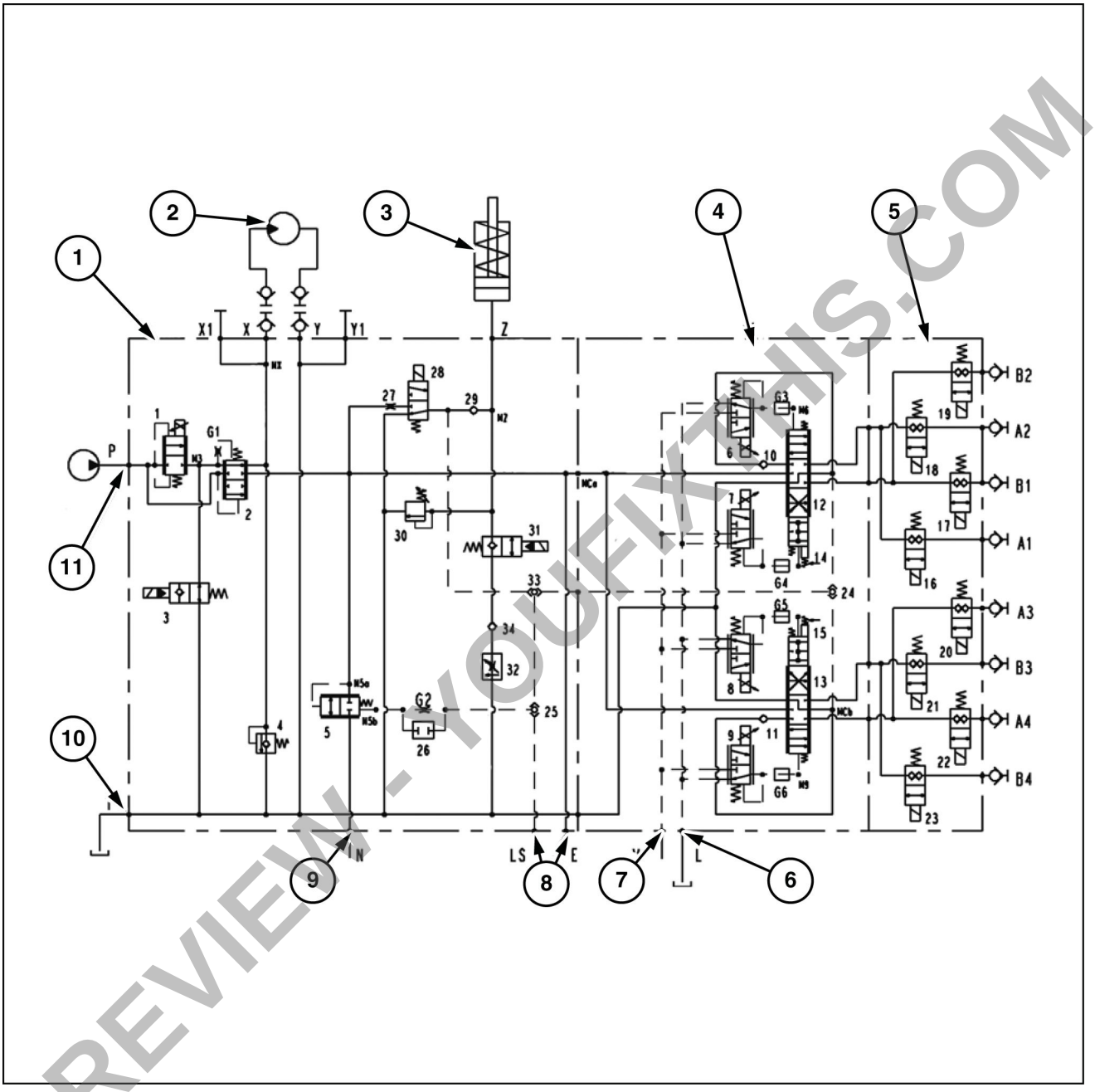
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Electro-hydraulic control - Component diagram

Farmall® 75N With cab [Z8JF19102 - ZCJF10907]	NA Four-Wheel Drive (4WD) - Manual engagement
Farmall® 85N With cab [Z8JF17086 - ZCJF09425]	NA Four-Wheel Drive (4WD) - Manual engagement
Farmall® 95N With cab [Z9JF00469 - ZCJF10732]	NA Four-Wheel Drive (4WD) - Manual engagement



MOLI12SVN0084GB 1

Hydraulic diagram

1. Side spool valve body
2. Hydraulic motor
3. Front lift
4. Spool valve control intermediate solenoid valve body
5. Spool valve control solenoid valve body
6. Blow-by outlet pipe
7. Pilot pressure pipe
8. Connecting pipes for implement linkage stabilizers assembly
9. Rear auxiliary spool valve and lift supply pipe
10. Outlet pipe
11. Hydraulic pump

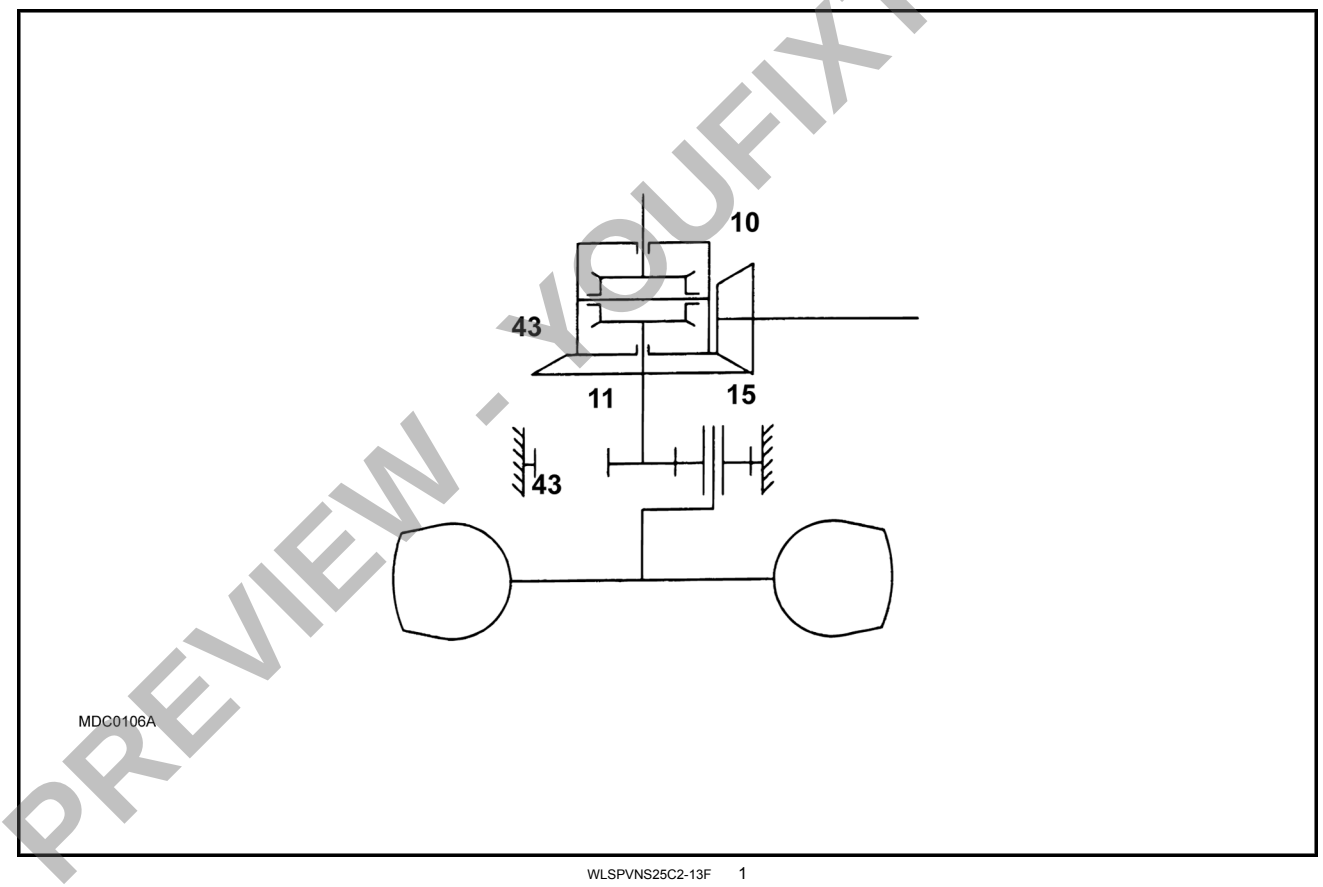
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Powered front axle - Functional diagram

Farmall® 105N With cab [ZBJF20417 -]	NA Four-Wheel Drive (4WD) - Automatic engagement
Farmall® 105N Without cab [ZCJF16900 -]	NA Four-Wheel Drive (4WD) - Automatic engagement
Farmall® 105V With Cab [ZBJF20562 -]	NA Four-Wheel Drive (4WD) - Automatic engagement
Farmall® 105V Without cab [ZDJF09419 -]	NA Four-Wheel Drive (4WD) - Automatic engagement
Farmall® 75N With cab - Model Year 2012 [ZCJF06107 -]	NA Four-Wheel Drive (4WD) - Automatic engagement
Farmall® 75N With cab [Z8JF19102 - ZCJF10907]	NA Four-Wheel Drive (4WD) - Automatic engagement --- NA Four-Wheel Drive (4WD) - Manual engagement
Farmall® 75N Without cab [Z9JF01865 - ZCJF07697]	NA Four-Wheel Drive (4WD) - Automatic engagement --- NA Four-Wheel Drive (4WD) - Manual engagement
Farmall® 75N Without cab - Model Year 2012 [ZCJF07813 -]	NA Four-Wheel Drive (4WD) - Automatic engagement
Farmall® 85N With cab - Model Year 2012 [ZCJF08828 -]	NA Four-Wheel Drive (4WD) - Automatic engagement
Farmall® 85N With cab [Z8JF17086 - ZCJF09425]	NA Four-Wheel Drive (4WD) - Automatic engagement --- NA Four-Wheel Drive (4WD) - Manual engagement
Farmall® 85N Without cab - Model Year 2012 [ZCJF16077 -]	NA Four-Wheel Drive (4WD) - Automatic engagement
Farmall® 85N Without cab [Z9JF01936 - ZCJF10868]	NA Four-Wheel Drive (4WD) - Automatic engagement --- NA Four-Wheel Drive (4WD) - Manual engagement
Farmall® 95N With cab - Model Year 2012 [ZCJF13045 -]	NA Four-Wheel Drive (4WD) - Automatic engagement
Farmall® 95N With cab [Z9JF00469 - ZCJF10732]	NA Four-Wheel Drive (4WD) - Automatic engagement --- NA Four-Wheel Drive (4WD) - Manual engagement
Farmall® 95N Without cab - Model Year 2012 [ZCJF15989 -]	NA Four-Wheel Drive (4WD) - Automatic engagement
Farmall® 95N Without cab [Z9JF01090 - ZCJF05141]	NA Four-Wheel Drive (4WD) - Automatic engagement --- NA Four-Wheel Drive (4WD) - Manual engagement

Front axle gearing unit diagram − For V models – 30 km/h version with or without brakes



WLSPVNS25C2-13F 1

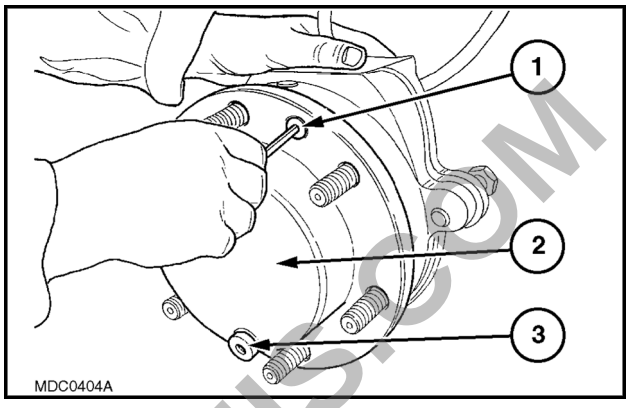
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Planetary drive and hub - Disassemble

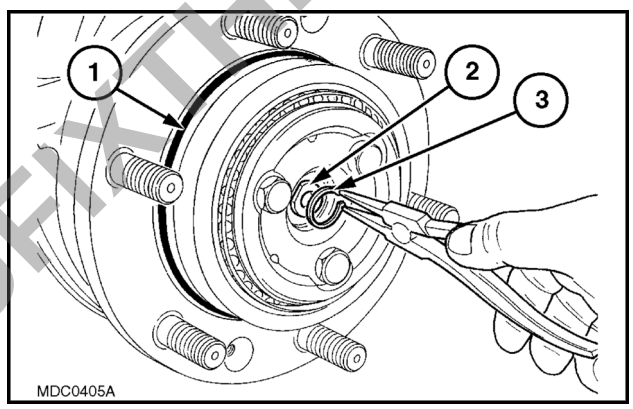
NOTE: *Front epicyclic final drive removal and installation can be carried out with the axle detached and positioned on the stand 380000251 or with the axle fitted on the tractor; in this case, position a support stand under the sump and apply the handbrake.*

1. Turn the wheel hub so that the oil level plug **(3)** is on the lower part of the wheel.
2. Remove the plug **(3)** and drain off the oil through the final drives.
3. Remove the two retaining bolts **(1)** and the external cover **(2)**.



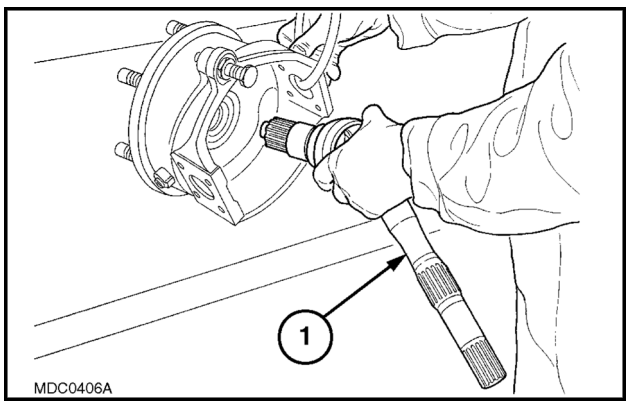
WLSPVNS25C2-68A 1

4. Remove the circlip **(3)**, flat washer **(2)** and O−ring **(1)**.



WLSPVNS25C2-69A 2

5. Remove the complete cardan shaft **(1)**.



WLSPVNS25C2-70A 3

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Planetary final drive - General specification

Type	epicyclic with three side pinions with straight toothing
Gear ratio: all models	 15: (15+65) = 1:5.33 (1)
Thickness of side pinion shim rings (**(8)**, **Mechanical transmission - Sectional view (21.114)**)	**1 mm** (**0.0394 in**)
Adjusting end float of side pinion casing	see **Driving wheel shaft and gears - Disassemble Epicyclic final drive (27.126)**
Thickness of end float adjuster rings for side pinion casing (**(10)**, **Mechanical transmission - Sectional view (21.114)**)	**4.5 mm** (**0.1772 in**) — **4.6 mm** (**0.1811 in**) — **4.7 mm** (**0.1850 in**) — **4.8 mm** (**0.1890 in**) — **4.9 mm** (**0.1929 in**) — **5 mm** (**0.1969 in**) — **5.1 mm** (**0.2008 in**) — **5.2 mm** (**0.2047 in**) — **5.3 mm** (**0.2087 in**) — **5.4 mm** (**0.2126 in**) — **5.5 mm** (**0.2165 in**) — **5.6 mm** (**0.2205 in**) — **5.7 mm** (**0.2244 in**) — **5.8 mm** (**0.2283 in**)

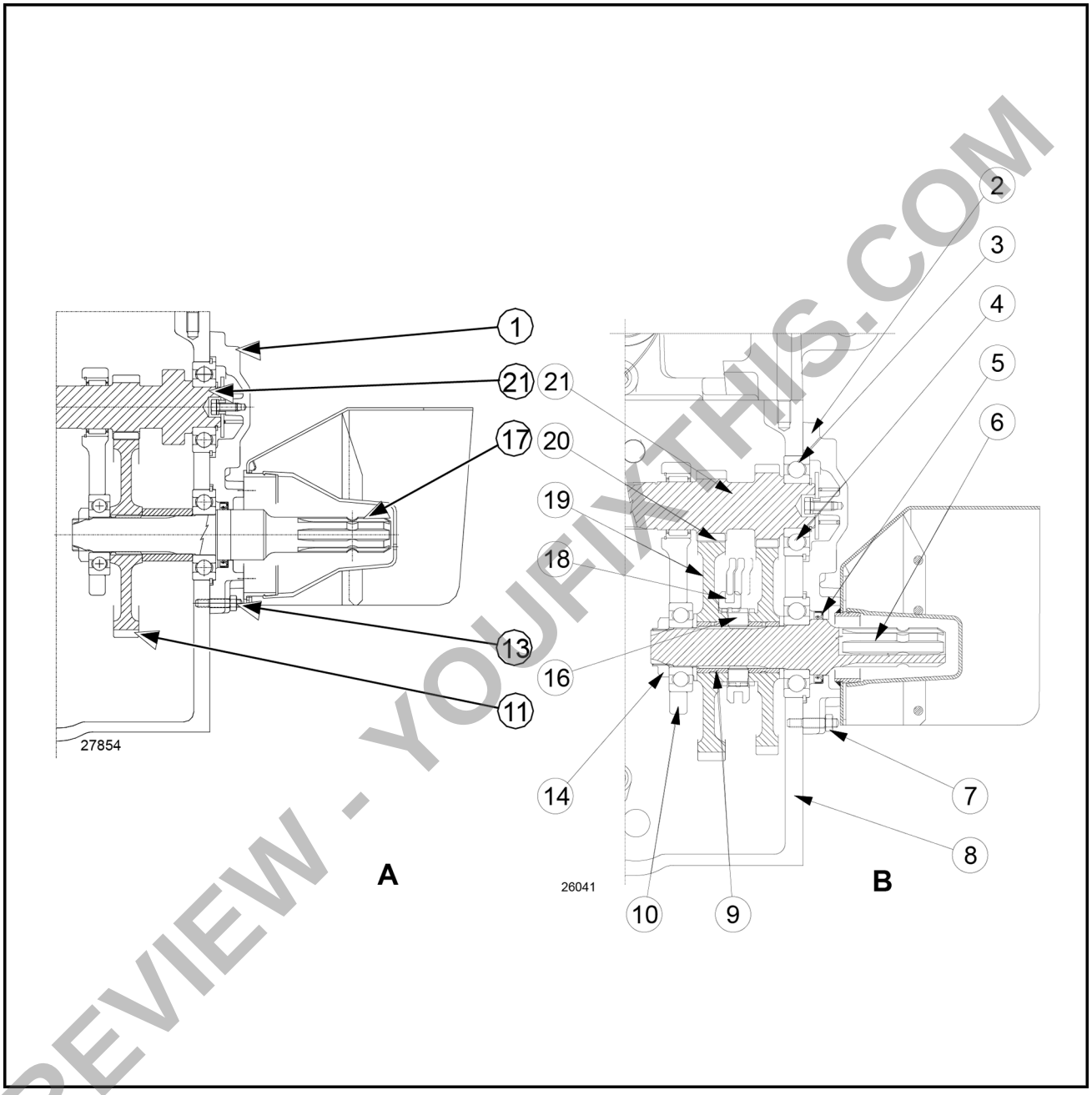
NOTE: *(1) For models with 20” tyres and* ***30 km/h*** *(****18.64 mph****) 13 : (13+65) = 1 : 6*

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Rear mechanical control - Sectional view

Longitudinal sectional diagram of 540 RPM and 540/540E RPM power take-off (P.T.O.)



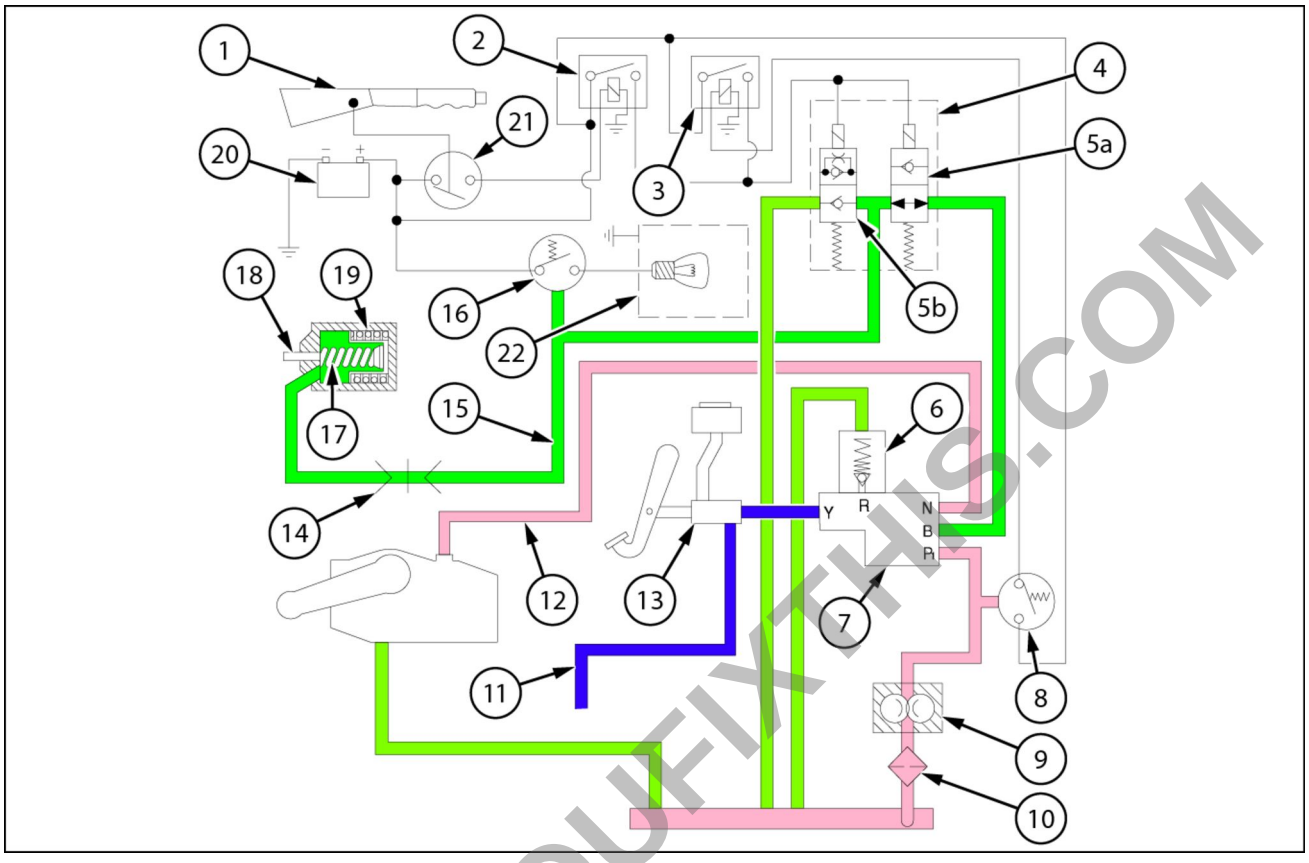
WLSPVNS31C1-07G 1

(A): Sectional diagram of **540 RPM** P.T.O.
(B): Sectional diagram of **540/540E RPM** P.T.O.
(1): **540 RPM** P.T.O. cover
(2): **540/540E RPM** P.T.O. cover
(3): Drive shaft bearings
(4): Driven shaft bearings
(5): Compression ring
(6): Grooved terminal **540/540E RPM**
(7): P.T.O. cover retaining bolt
(8): Rear transmission casing
(9): Driven gears support bushings
(10): Rear bearing support
(11): **540 RPM** driven gear
(13): P.T.O. cover retaining bolts
(14): Nut locking driven gear shaft
(16): Fixed gear
(17): Grooved terminal
(18): Coupling sleeve
(19): **540 RPM** driven gear
(20): **540E RPM** driven gear
(21): Driving gear

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Trailer brake valve - Hydraulic schema



ITIL11T40109G0C 1

Electro-hydraulic operation of trailer brake valve (Italia version)

Engine running-no action on brake pedals

Oil in suction or delivery

Tractor brake circuit oil (brakes off)

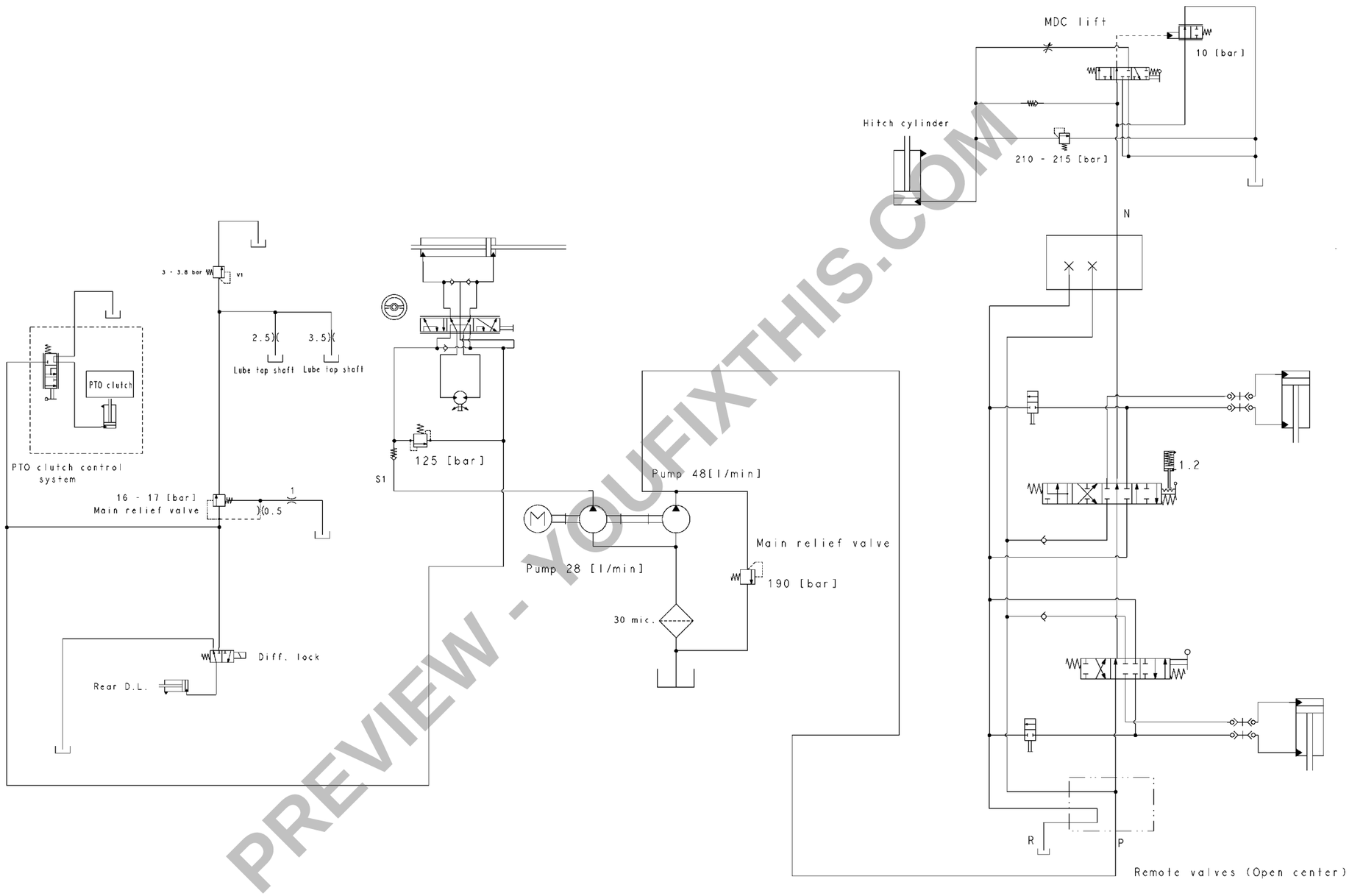
Discharge oil

Oil at trailer brake release pressure

1. Parking brake control lever
2. Relay-parking brake warning light circuit
3. Relay-trailer brake circuit
4. Trailer brake control solenoid valves
5a. Delivery solenoid valve (normally open)
5b. Discharge solenoid valve (normally closed)
6. Trailer brake release pressure control valve
7. Trailer brake valve (see **Trailer brake valve - Dynamic description (33.220)**)
8. Trailer brake circuit safety switch
9. Hydraulic pump
10. Filter
11. Brake control line
12. Delivery lines to auxiliary control valve and hydraulic lift
13. Brake pump
14. Tractor-trailer coupling
15. Trailer brake line
16. Trailer brake “ON” indicator switch
17. Spring
18. Trailer brake control pin
19. Spring
20. Battery
21. Parking brake “ON” indicator switch
22. Trailer brake “ON” warning light

Oil from the hydraulic pump **(9)** arrives at the trailer brake valve **(7)**, from where the majority is sent through line **(12)**, to the auxiliary control valves and the hydraulic lift. A small amount of oil reaches valve **(6)** where it is discharged in order to maintain the pressure at a level of **11 - 12 bar** (**159 - 174 psi**). Oil at a pressure of **11 - 12 bar** (**159 - 174 psi**) flows from the trailer brake valve through solenoid valve **(5a)**, line **(15)** and coupling **(14)** to arrive at the trailer brake. This pressure level is required to overcome the resistance of the spring **(19)** and move the relative spring cap. At the same time, spring **(17)** shifts the piston **(18)** to prevent any braking action on the trailer.

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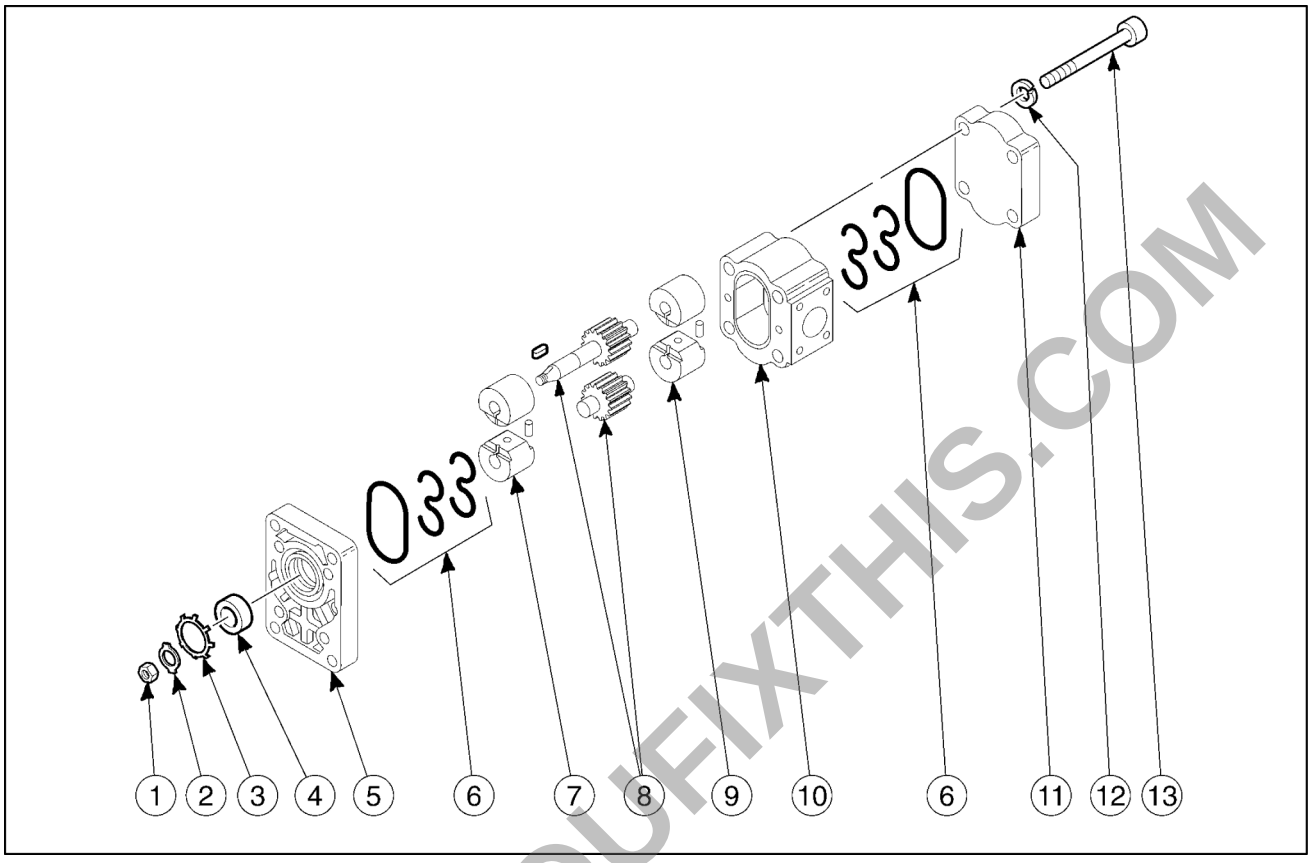


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Pump - Exploded view



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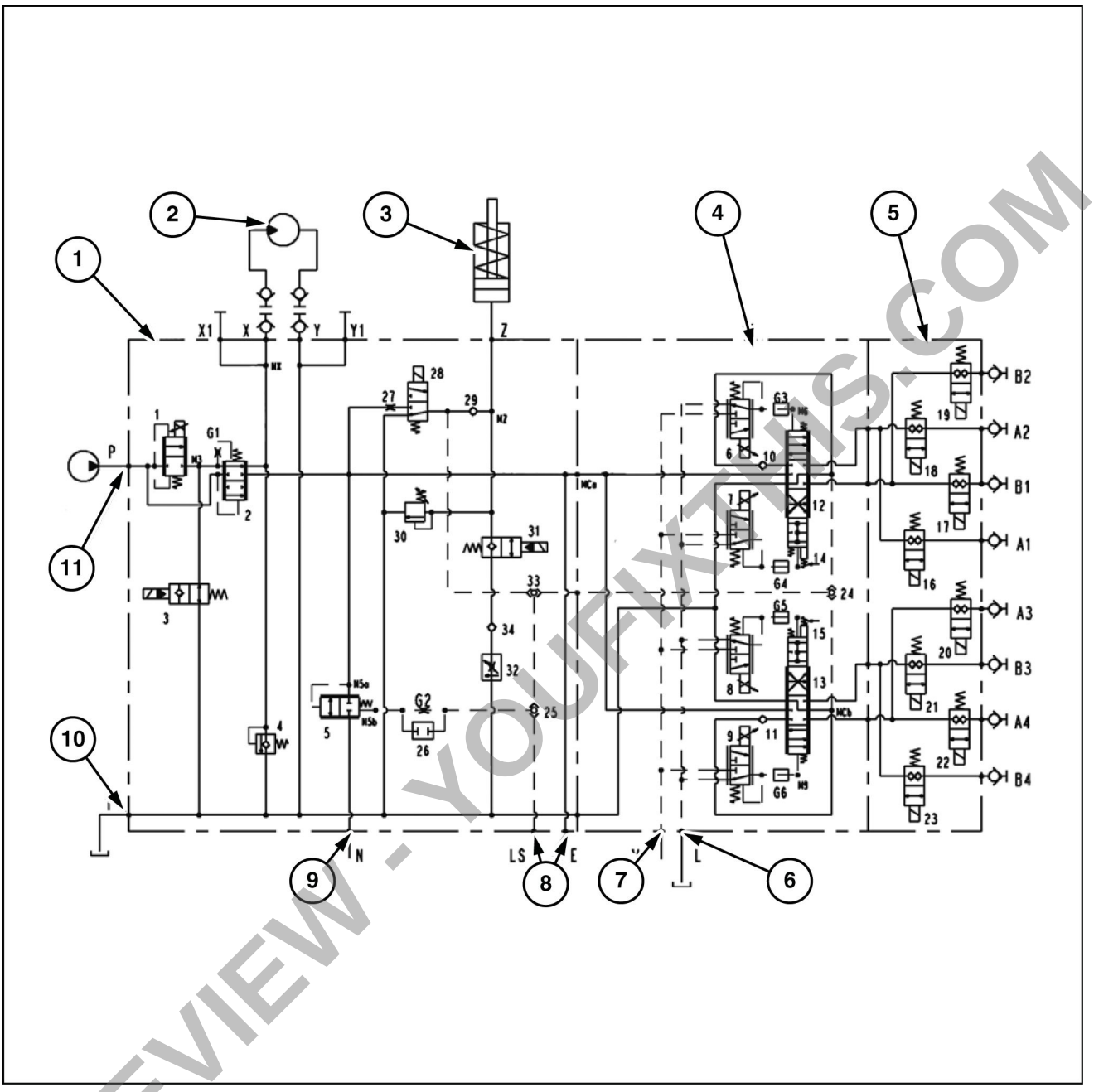
A 25 pump components

1. Nut
2. Lock washer
3. Ring, snap
4. Driving shaft seal
5. Control side cover
6. Cover seals
7. Gear support
8. Driven and driving gear shafts
9. Gear support
10. Pump body
11. Front cover
12. Lock washer
13. Bolt

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Remote control valves - Hydraulic schema



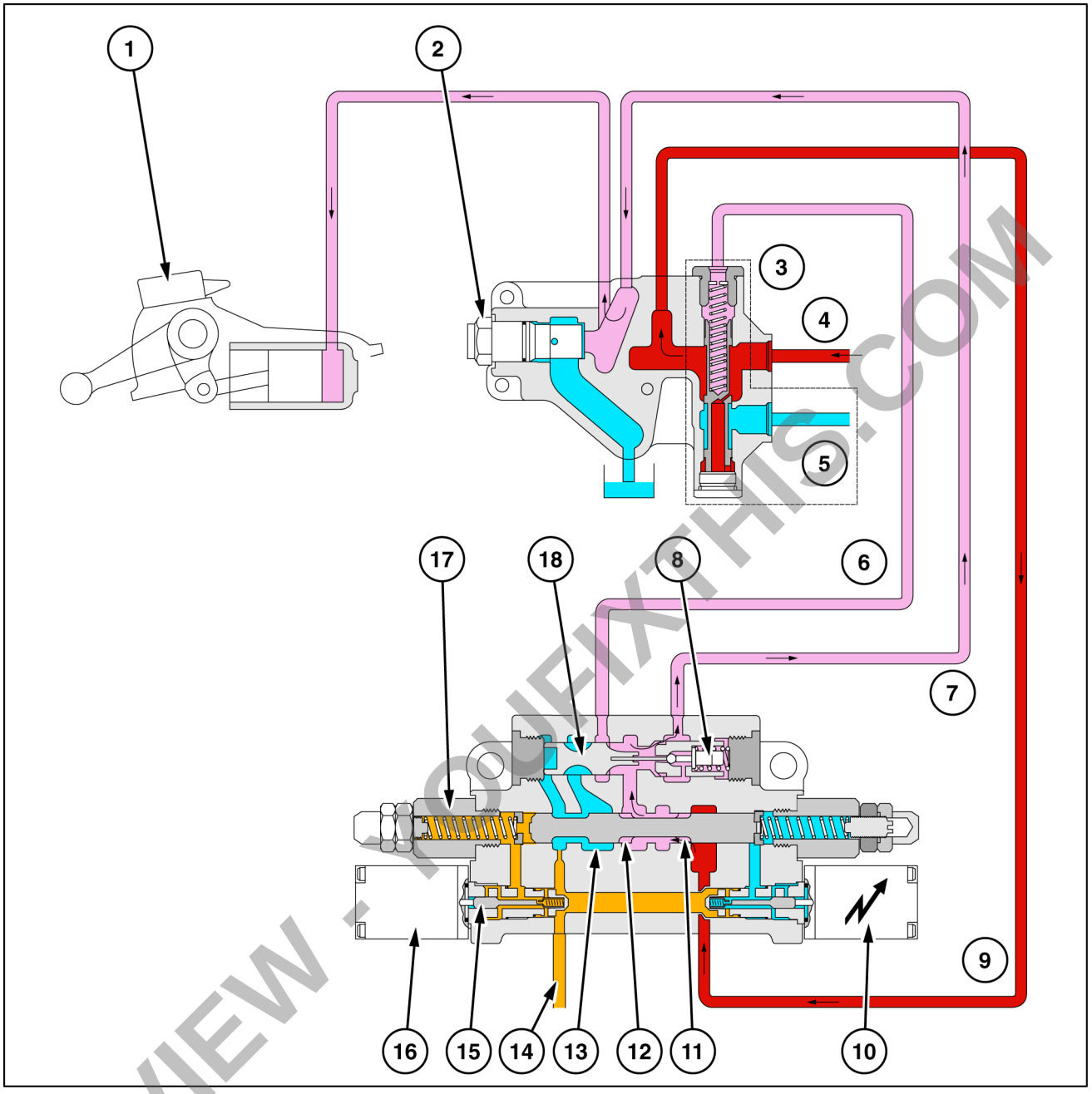
MOLI12SVN0084GB 1

Hydraulic diagram

1. Side spool valve body
2. Hydraulic motor (maximum flow rate **20 l/min**)
3. Front lift
4. Spool valve control intermediate solenoid valve body
5. Spool valve control solenoid valve body
6. Blow-by outlet pipe
7. Pilot pressure pipe
8. Connecting pipes for implement linkage stabilizers assembly
9. Rear auxiliary spool valve and lift supply pipe
10. Outlet pipe
11. Hydraulic pump

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Electronic draft control functional diagram. Lifting phase

1. Hydraulic lift
2. Lift cylinder safety valve
3. Load maintaining valve
4. Hydraulic pump flow
5. Discharge in transmission casing
6. Load measuring line
7. To hydraulic lift
8. Non-return valve
9. Pump flow to hydraulic control valve
10. Solenoid valve (Lowering)
11. Control valve block pin in feed dosage device
12. Control valve block pin return to tank dosage device
13. Oil discharge hole
14. Low pressure circuit pilot pressure
15. Pilot valve
16. Solenoid valve (Lifting)
17. Control valve block pin centring spring
18. Lifting valve

Oil in delivery line from pump

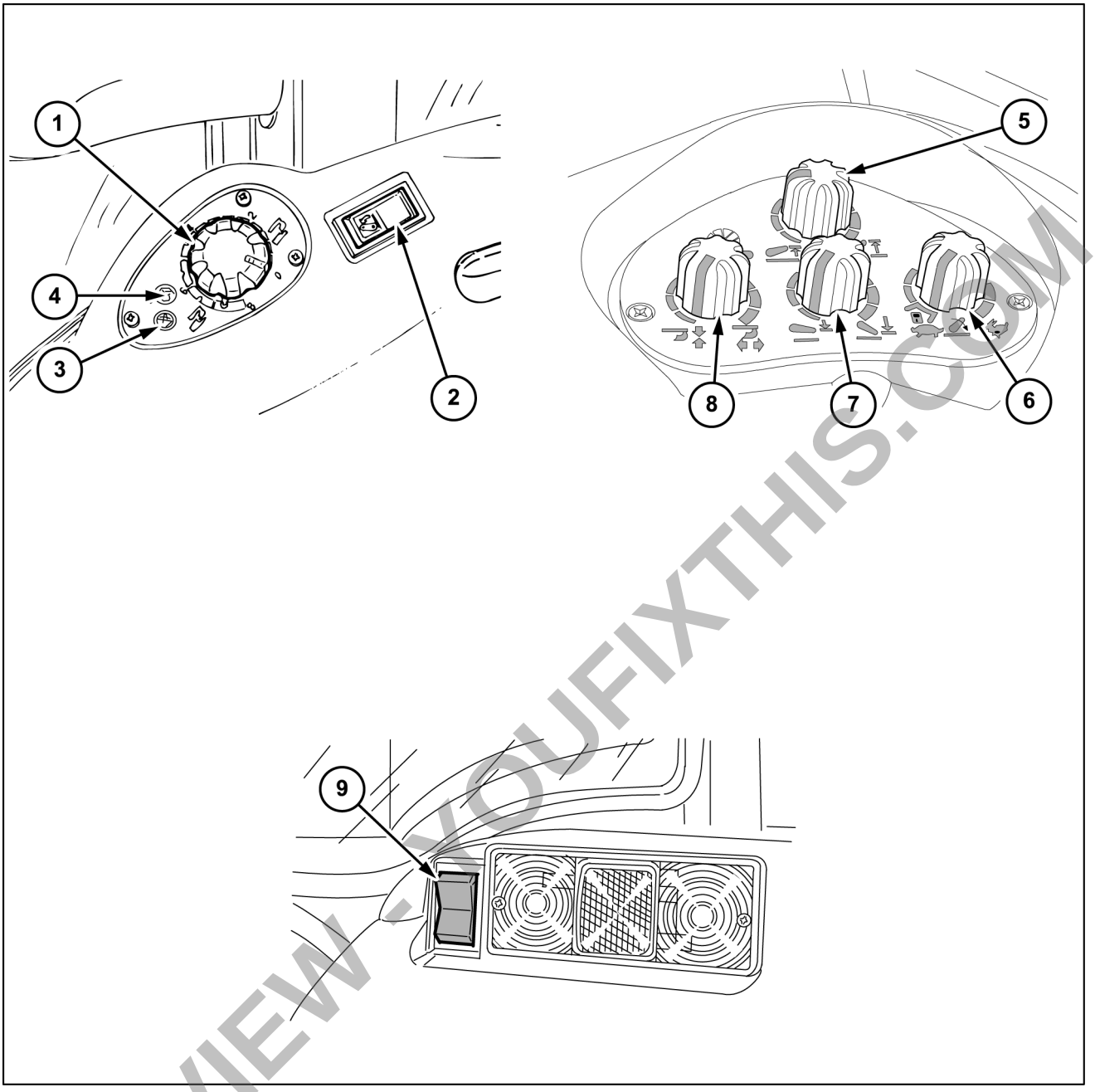
Pilot oil at a pressure of **16 bar** (**232 psi**)

Oil in delivery line from pump

Discharge oil

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Electronically controlled hydraulic lift data

Diameter of arm lifting shaft **(5)** (Fig. **1**) in relation to bushings	
Right-hand side	**54.968 - 54.999 mm** (**2.1641 - 2.1653 in**)
Left-hand side	**47.973 - 47.998 mm** (**1.8887 - 1.8897 in**)
Internal diameter of bushings fitted on lift body	
Right-hand side **(4)** (Fig. **1**)	**55.098 - 55.182 mm** (**2.1692 - 2.1725 in**) ([1])
Left-hand side **(6)**	**48.097 - 48.184 mm** (**1.8936 - 1.8970 in**) ([1])
Clearance between lifting arm shaft and relative right-hand side bushings	**0.099 - 0.213 mm** (**0.0039 - 0.0084 in**)
Clearance between lifting arm shaft and relative left-hand side bushings	**0.099 - 0.208 mm** (**0.0039 - 0.0082 in**)
Interference between bushings and relative seats	**0.064 - 0.160 mm** (**0.0025 - 0.0063 in**)
End float of shaft complete with lift arms	**0.2 - 1.4 mm** (**0.0078 - 0.0551 in**)

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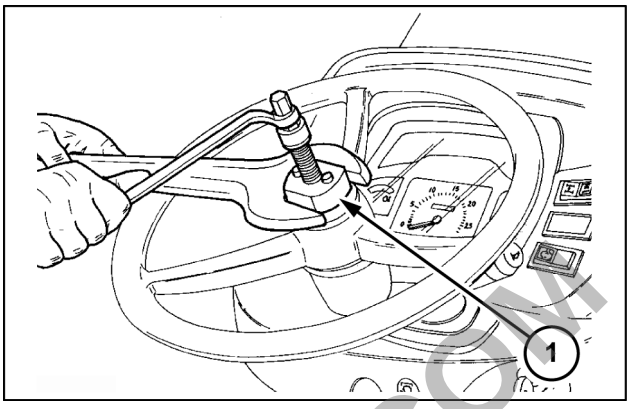
4. To refit the steering wheel, proceed as follows:

⚠ CAUTION

Pinch hazard!
Always use suitable tools to align mating parts.
DO NOT use your hand or fingers.
Failure to comply could result in minor or moderate injury.

C0044A

- Position and secure the steering wheel.
- Position and secure the steering wheel height adjustment knob.
- Fit the symbol with two drops of glue.



ITIL11T40190A0B 4

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Heating, Ventilation, and Air-Conditioning (HVAC) unit - Disassemble

Farmall® 105N With cab [ZBJF20417 -]	NA
Farmall® 105V With Cab [ZBJF20562 -]	NA
Farmall® 75N With cab - Model Year 2012 [ZCJF06107 -]	NA
Farmall® 75N With cab [Z8JF19102 - ZCJF10907]	NA
Farmall® 85N With cab - Model Year 2012 [ZCJF08828 -]	NA
Farmall® 85N With cab [Z8JF17086 - ZCJF09425]	NA
Farmall® 95N With cab - Model Year 2012 [ZCJF13045 -]	NA
Farmall® 95N With cab [Z9JF00469 - ZCJF10732]	NA

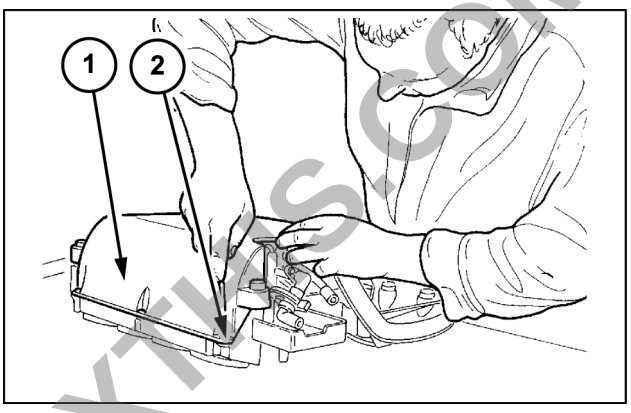
⚠ WARNING

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.

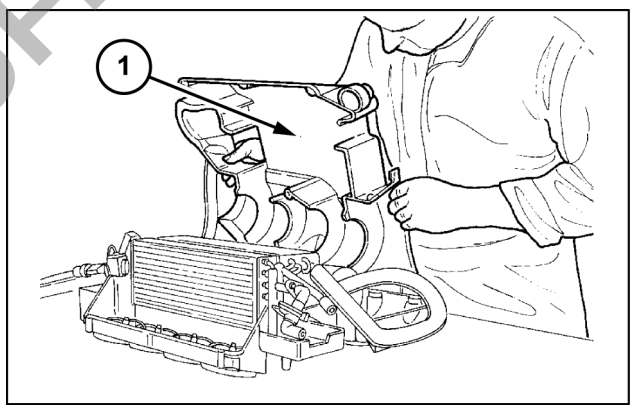
W0208A

With the unit on the work bench, proceed as follows:

1. Remove the heater − conditioning unit half-casing **(1)** retaining screws **(2)**.
2. Remove the half-casing **(1)**.

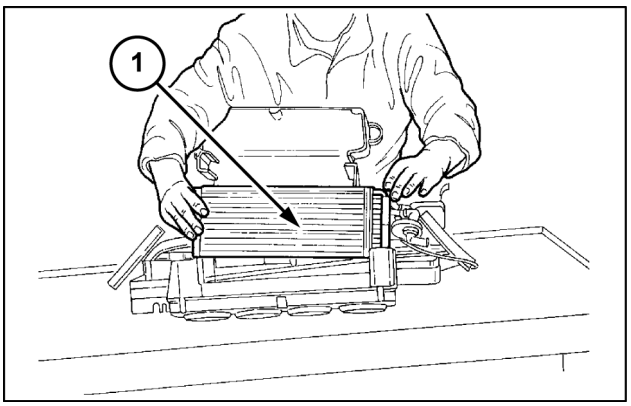


ITIL11T40345A0B 1



ITIL11T40346A0B 2

3. Remove the heater radiator **(1)**.



ITIL11T40347A0B 3

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Electrical system - Component identification Electrical circuit components

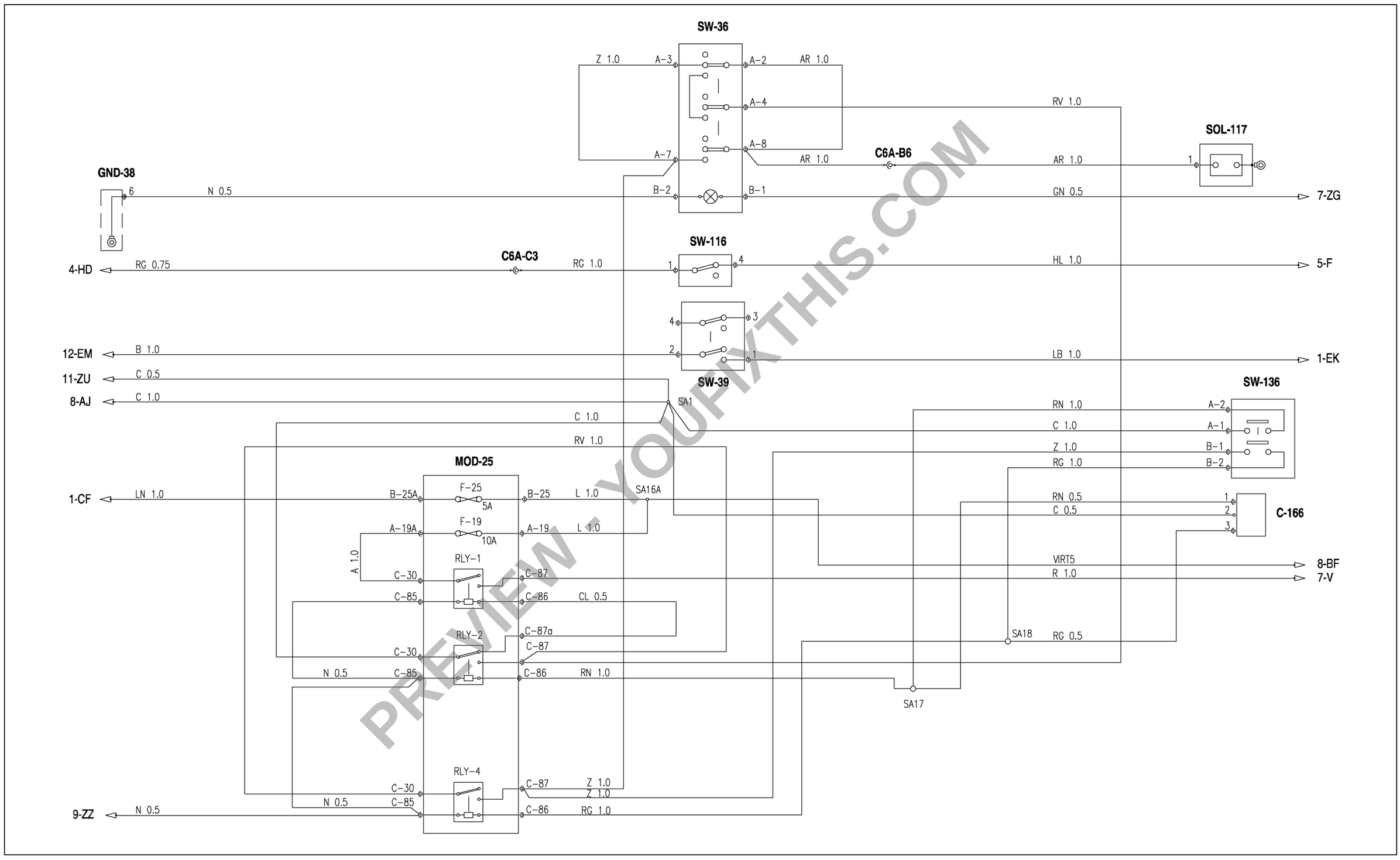
Farmall® 105N With cab [ZBJF20417 -]	NA
Farmall® 105V With Cab [ZBJF20562 -]	NA
Farmall® 75N With cab - Model Year 2012 [ZCJF06107 -]	NA
Farmall® 75N With cab [Z8JF19102 - ZCJF10907]	NA
Farmall® 85N With cab - Model Year 2012 [ZCJF08828 -]	NA
Farmall® 85N With cab [Z8JF17086 - ZCJF09425]	NA
Farmall® 95N With cab - Model Year 2012 [ZCJF13045 -]	NA
Farmall® 95N With cab [Z9JF00469 - ZCJF10732]	NA

Below is an explanation of the suffixes related to each component.

Suffix	Description
ALT	Alternator
AUD	Audio devices
BAT	Battery
CB	Battery cut-out
C	Connections
CAP	Capacitor
D	Diode
F	Fuse
GND	Ground
LMP	Lamps
LED	LED
MOD	Control units
M	Engine
RLY	Relays
RES	Resistor
SEN	Sensor
SOL	Solenoid valve
SW	Switch

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ITIL11T41052J0A 1

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Ignition switch - Dynamic description

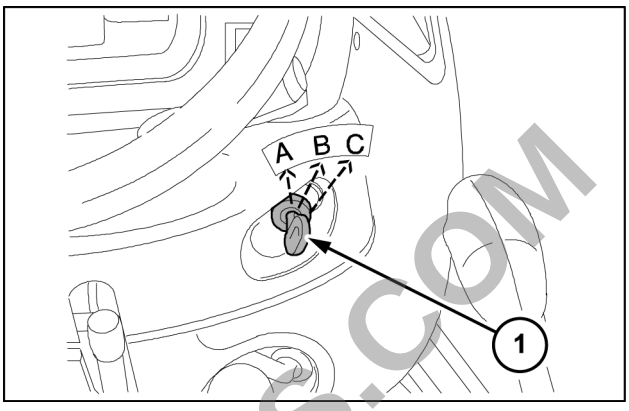
Ignition switch

To operate the three functions on the switch **(1)** (Fig. **1**) turn the key to the following positions:

A. No power supply to any of the circuits (key can be removed). Engine stopped: automatic activation of fuel injection cut-off.

B. Standby for engine start up. Operation of panel lights and instruments. Power supplied to various circuits.

C. Engine start up: if released, the key returns automatically to position **(B)**.



ITIL11T40315A0B 1

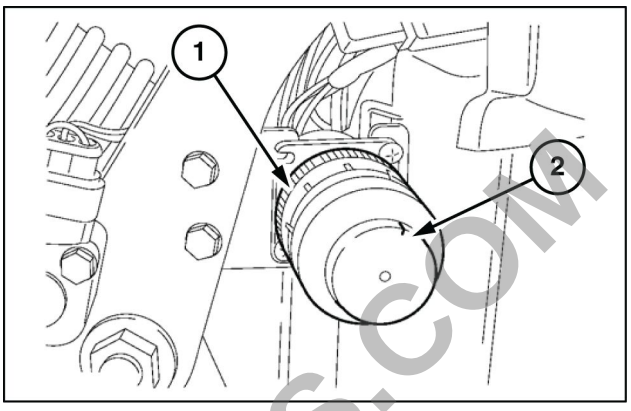
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Electronic modules - Configure

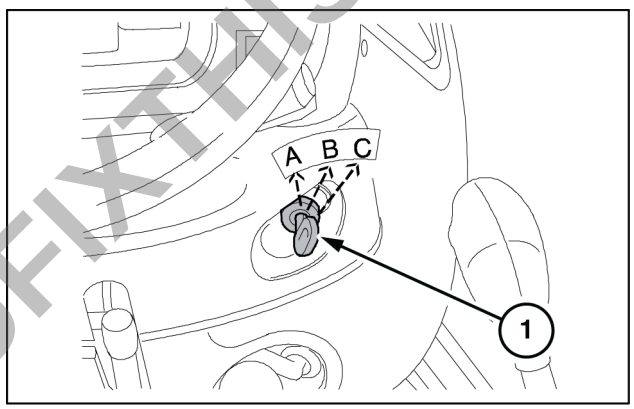
HH menu access

Connect instrument 380000843 **(1)** to the diagnostics socket **(2)**.



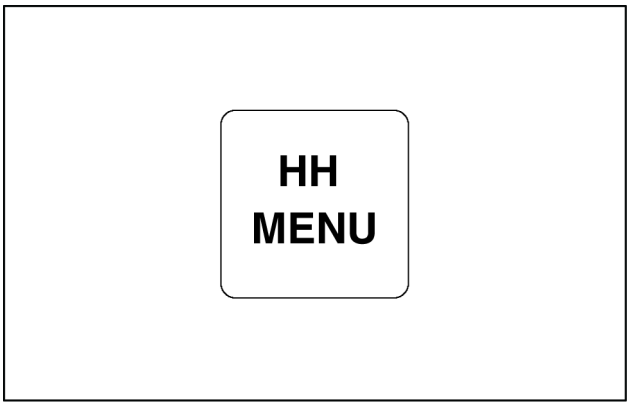
ITIL11T40760A0B 1

Turn the key start switch **(1)** to position "B" (control panel power).



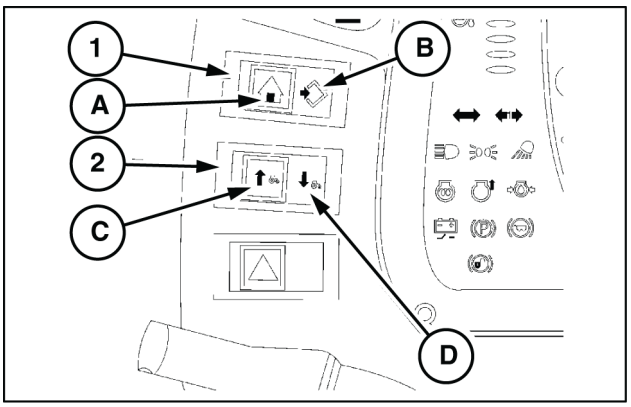
ITIL11T40761A0B 2

The information display will show "HH MENU".



ITIL11T40762A0A 3

Now, using the switch **(2)**, it is possible to select the module to examine. The modules are:
ZA = control panel
SA = Rear electronic draft control
SB = Power-Shuttle
SC = Automatically engaged four−wheel drive
SD = Automatically engaged four−wheel drive and front power take−off
MW = Electronically controlled side spool valves



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Electrical systems - 55

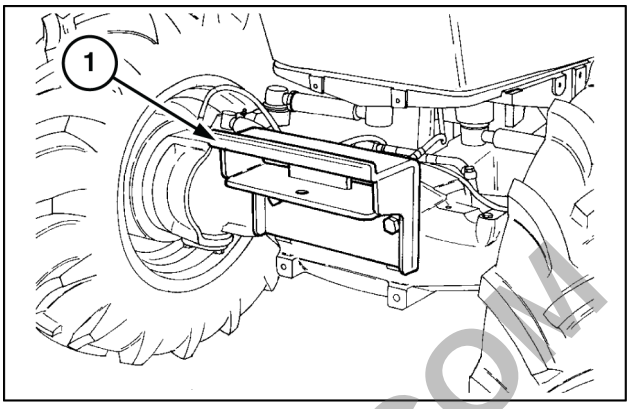
FAULT CODES - DTC

Farmall® 105N With cab [ZBJF20417 -], Farmall® 105N Without cab [ZCJF16900 -], Farmall® 105V With Cab [ZBJF20562 -], Farmall® 105V Without cab [ZDJF09419 -], Farmall® 75N With cab - Model Year 2012 [ZCJF06107 -], Farmall® 75N With cab [Z8JF19102 - ZCJF10907], Farmall® 75N Without cab [Z9JF01865 - ZCJF07697], Farmall® 75N Without cab - Model Year 2012 [ZCJF07813 -], Farmall® 85N With cab - Model Year 2012 [ZCJF08828 -], Farmall® 85N With cab [Z8JF17086 - ZCJF09425], Farmall® 85N Without cab - Model Year 2012 [ZCJF16077 -], Farmall® 85N Without cab [Z9JF01936 - ZCJF10868], Farmall® 95N With cab - Model Year 2012 [ZCJF13045 -], Farmall® 95N With cab [Z9JF00469 - ZCJF10732], Farmall® 95N Without cab - Model Year 2012 [ZCJF15989 -], Farmall® 95N Without cab [Z9JF01090 - ZCJF05141]

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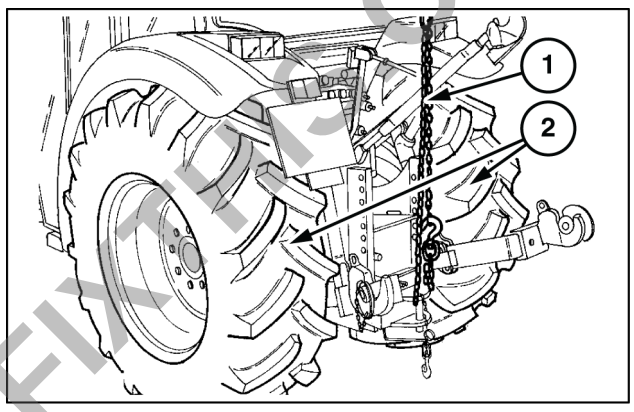
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6. Unscrew the retaining bolts and remove the ballast support **(1)**.



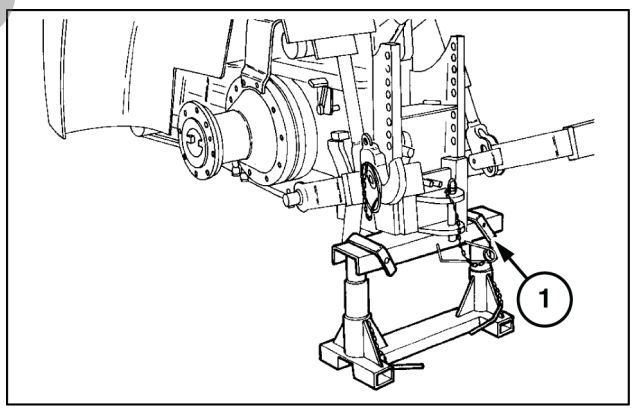
ITIL11T40861A0B 3

7. Connect, using a chain **(1)**, the rear part of the tractor to a hoist, lock the front wheels with chocks and raise the tractor slightly, then unscrew the retaining bolts and detach both rear wheels **(2)**.
8. Remove the pivot pin and remove the link rod.



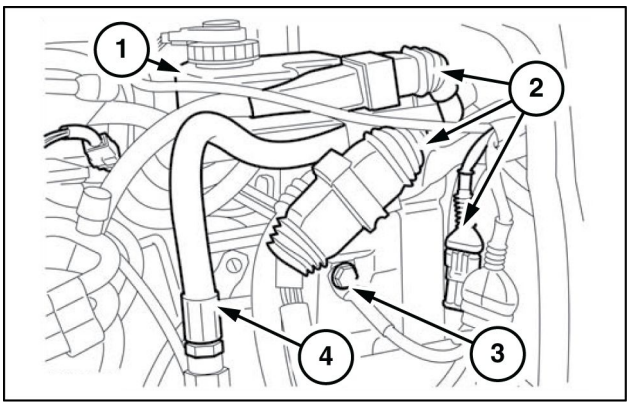
ITIL11T40862A0B 4

9. Position a fixed stand **(1)** under the rear transmission and lower the hoist.



ITIL11T40863A0B 5

10. Remove the electrical connections **(2)**.
11. Disconnect the cab ground **(3)**.
12. Disconnect the clips and detach the brake fluid reservoir **(1)** from the support on the engine.
13. Disconnect the hydrostatic steering control valve supply line **(4)**.
14. Disconnect the lights connection on the roll bar (to be done on both sides).



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