SAFETY NOTES

To ensure that machines entrusted to Authorised Service Centres for repair or overhaul continue to function correctly, it is very important that all repair work is carried out in the prescribed manner.

The procedures for checks and repairs indicated in this manual are safe and effective.

Some of the operations described require the use of special tools and equipment: these tools have been designed for a specific purpose and may ordered directly from the Manufacturers.

DO NOT USE MAKESHIFT TOOLS; not only is there is risk of personal injury, but such tools are rarely suited to the purpose for which they are used.

To prevent injury to operators, the symbols ⚠ and ☣ are used in this manual to indicate the safety precautions required. The warnings accompanying these symbols must always be adhered to carefully.

In potentially hazardous situations, always give priority to personal safety and take the necessary actions to eliminate the danger.

GENERAL SAFETY RULES

1 - Even if you have a thorough knowledge of the machine as regards its components, operation and controls, always take particular care when carrying out the following operations. Remember that the machine you are working on is in need of repair or overhaul and consequently may not always behave as expected.

2 - Before starting work, clean the machine thoroughly to remove all mud, dust and road dirt.
Also clean the cab to remove all traces of oil, snow and ice from the access steps and grab rails.

3 - When climbing up to or down from the cab, always ensure you maintain three points of contact at a time (foot or handholds) in order to keep your balance and prevent accidental falls.

4 - Always take special care when carrying out fault diagnosis operations; these operations often require two persons, who must never stand in front of the wheels when the engine is running.

5 - When carrying out checks and repairs, wear close-fitting clothing, safety goggles and protective gloves that are suitable for the task (cleaning, draining fluids, repairs).
When working near moving parts, long hair should be gathered up and secured safely under a cap to prevent the risk of entanglement and sever injury.

6 - Do not allow anyone who is not directly involved in the work to come near the machine; ensure that they remain at a safe distance.

7 - Keep well clear of moving parts; when the engine is running, some moving parts are not easily visible and therefore present a risk of entanglement, even if protected by safety guards.

8 - Ensure that the area is well ventilated before starting the engine in order to avoid the formation of dangerous concentrations of toxic gases; always connect suitable fume extraction equipment to the exhaust pipe.

9 - Under no circumstances start the engine with the safety guards removed; all repair and adjustment operations must be carried out with the engine stopped.

10 - Do not top up fuel, oil or coolant levels when the engine is running.

11 - Never smoke and ensure there are no naked flames nearby when topping up fuel or oil.
Always remove the battery from the machine before recharging.

12 - Before checking or removing the battery, stop the engine and remove the key from the starter switch.

13 - Remove the battery and recharge in a well-ventilated area where the temperature exceeds 0°C.

14 - When checking or recharging the battery, do not smoke or allow naked flames in the vicinity as the hydrogen gas given off by the battery is highly explosive.

15 - The liquid (electrolyte) contained in the battery is very harmful if it comes into contact with the skin and the eyes; for this reason, always wear gloves and safety goggles with side shields when checking or topping up the battery.
Should any electrolyte accidentally come into contact with your skin, wash the affected parts immediately with copious amounts of water. If electrolyte comes into contact with your clothing, this should be removed as soon as possible.

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SECTION 10

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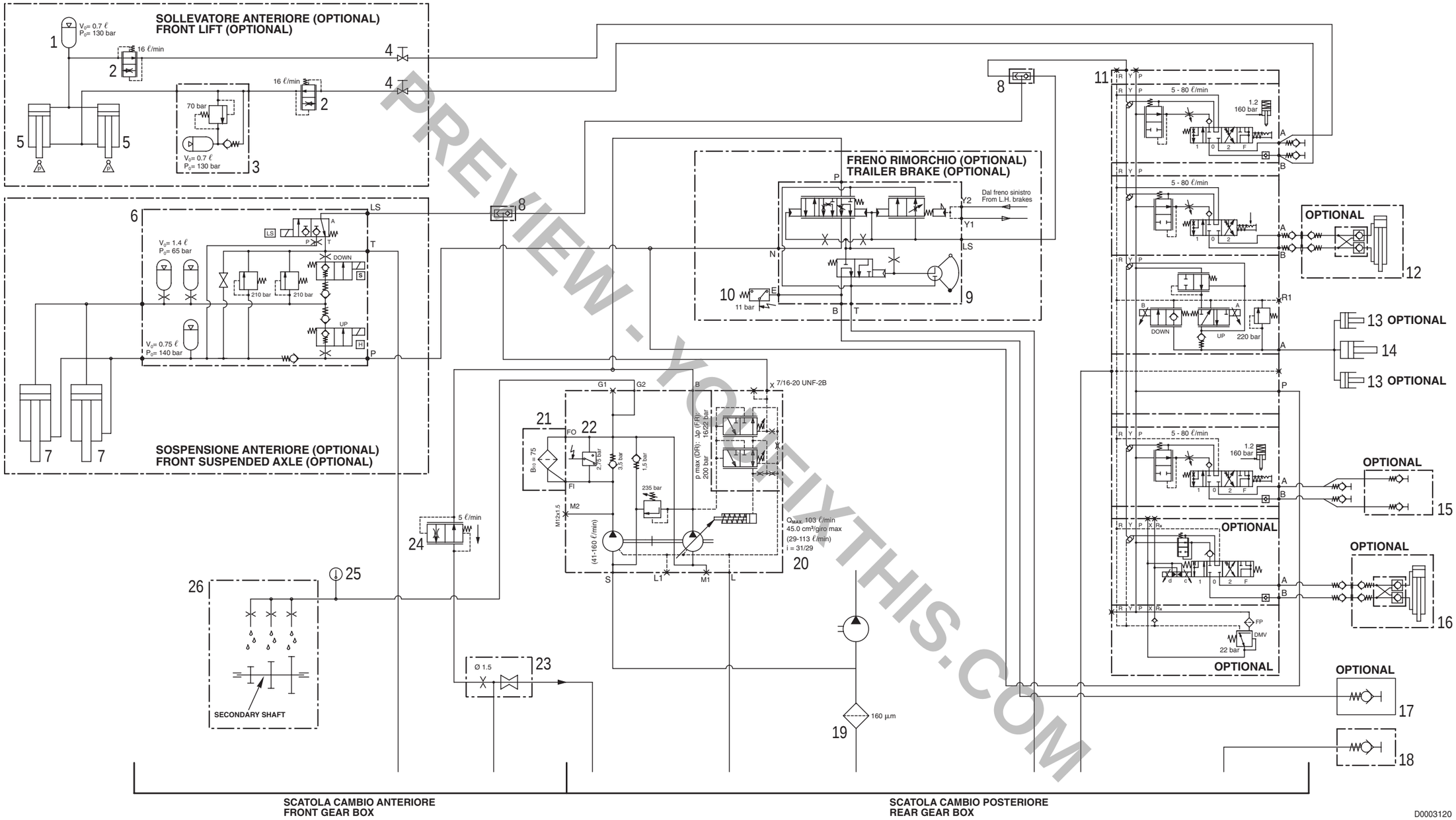
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FRONT SUSPENSION CONTROL VALVE 84

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HYDRAULIC DIAGRAM (1/3)

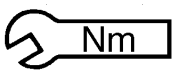


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1 - Accumulator
2 - Flow control valve
3 - Damper
4 - Front lift shut-off cock
5 - Front lift cylinders
6 - Front suspension control valve block
7 - Front axle suspension cylinders
8 - Bistable valve
9 - Trailer braking valve
10 - NC pressure switch
11 - Auxiliary services control valve
12 - Hydraulic lift rod cylinder
13 - Auxiliary lift cylinders
14 - Lift cylinder
15 - Quick-action front couplers
16 - Top link hydraulic cylinder
17 - Quick-action trailer brake coupler
18 - Quick-action drain coupler
19 - Wire mesh filter
20 - Variable displacement pump
21 - Filter (10 µn)
22 - Clogged filter sensor
23 - Hydraulic ejector
24 - Flow control valve
25 - Temperature sensor
26 - Secondary shaft lubrication

STANDARD TIGHTENING TORQUES FOR NUTS AND BOLTS



⚠ The tightening torques for certain specific components and special tightening methods are indicated in the relative assembly paragraphs.

★ The tightening torques indicated below refer to bolts and nuts assembled without lubrication and, where applicable, with anaerobic threadlocking compound.
The values apply to tightening on steel or cast iron components; for soft materials such as aluminium, copper, plastic, sheet metal or panels, the indicated tightening torques must be reduced by 50%.

BOLT SIZE		BOLT CLASS					
		8.8		10.9		12.9	
		Nm	lb.ft.	Nm	lb.ft.	Nm	lb.ft.
COARSE THREAD	M6x1	8.0–8.8	5.9–6.5	11.8 – 13.0	8.7–9.6	13.8 – 15.2	10.2–11.2
	M8x1.25	19.4–21.4	14.3–15.8	28.5 – 31.5	21.0 – 23.2	33.3 – 36.9	24.5 – 27.2
	M10x1.5	38.4 – 42.4	28.3 – 31.2	56.4 – 62.4	41.6 – 46.0	67.4 – 74.4	49.7 – 54.8
	M12x1.75	66.5 – 73.5	49.0 – 54.2	96.9 – 107	71.4 – 78.9	115 – 128	84.8 – 94.3
	M14x2	106 – 117	78.1 – 86.2	156 – 172	115.0 – 126.8	184 – 204	135.6 – 150.3
	M16x2	164 – 182	120.9 – 134.1	241 – 267	117.6 – 196.8	282 – 312	207.8 – 229.9
	M18x2.5	228 – 252	168.0 – 185.7	334 – 370	246.2 – 272.7	391 – 432	288.2 – 318.4
	M20x2.5	321 – 355	236.6 – 261.6	472 – 522	347.9 – 384.7	553 – 611	407.6 – 450.3
	M22x2.5	441 – 487	325.0 – 358.9	647 – 715	476.8 – 527.0	751 – 830	553.5 – 611.7
	M24x3	553 – 611	407.6 – 450.3	812 – 898	598.4 – 661.8	950 – 1050	700.2 – 773.9
	M27x3	816 – 902	601.4 – 664.8	1198 – 1324	882.9 – 975.8	1419 – 1569	1045.8 – 1156.4
FINE THREAD	M8x1	20.8 – 23.0	15.3 – 17.0	30.6 – 33.8	22.6 – 24.9	35.8 – 39.6	26.4 – 29.2
	M10x1.25	40.6 – 44.8	29.9 – 33.0	59.7 – 65.9	44.0 – 48.6	71.2 – 78.6	52.5 – 57.9
	M12x1.25	72.2 – 79.8	53.2 – 58.8	106 – 118	78.1 – 87.0	126 – 140	92.9 – 103.2
	M12x1.5	69.4 – 76.7	51.1 – 56.5	102 – 112	75.2 – 82.5	121 – 134	89.2 – 98.8
	M14x1.5	114 – 126	84.0 – 92.9	168 – 186	123.8 – 137.1	199 – 220	146.7 – 162.1
	M16x1.5	175 – 194	129 – 143	257 – 285	189.4 – 210.0	301 – 333	221.8 – 245.4
	M18x1.5	256 – 282	188.7 – 207.8	375 – 415	276.4 – 305.9	439 – 485	323.5 – 357.4
	M20x1.5	355 – 393	261.6 – 289.6	523 – 578	385.5 – 426.0	611 – 676	450.3 – 498.2
	M22x1.5	482 – 532	355.2 – 392.1	708 – 782	521.8 – 576.3	821 – 908	605.1 – 669.2
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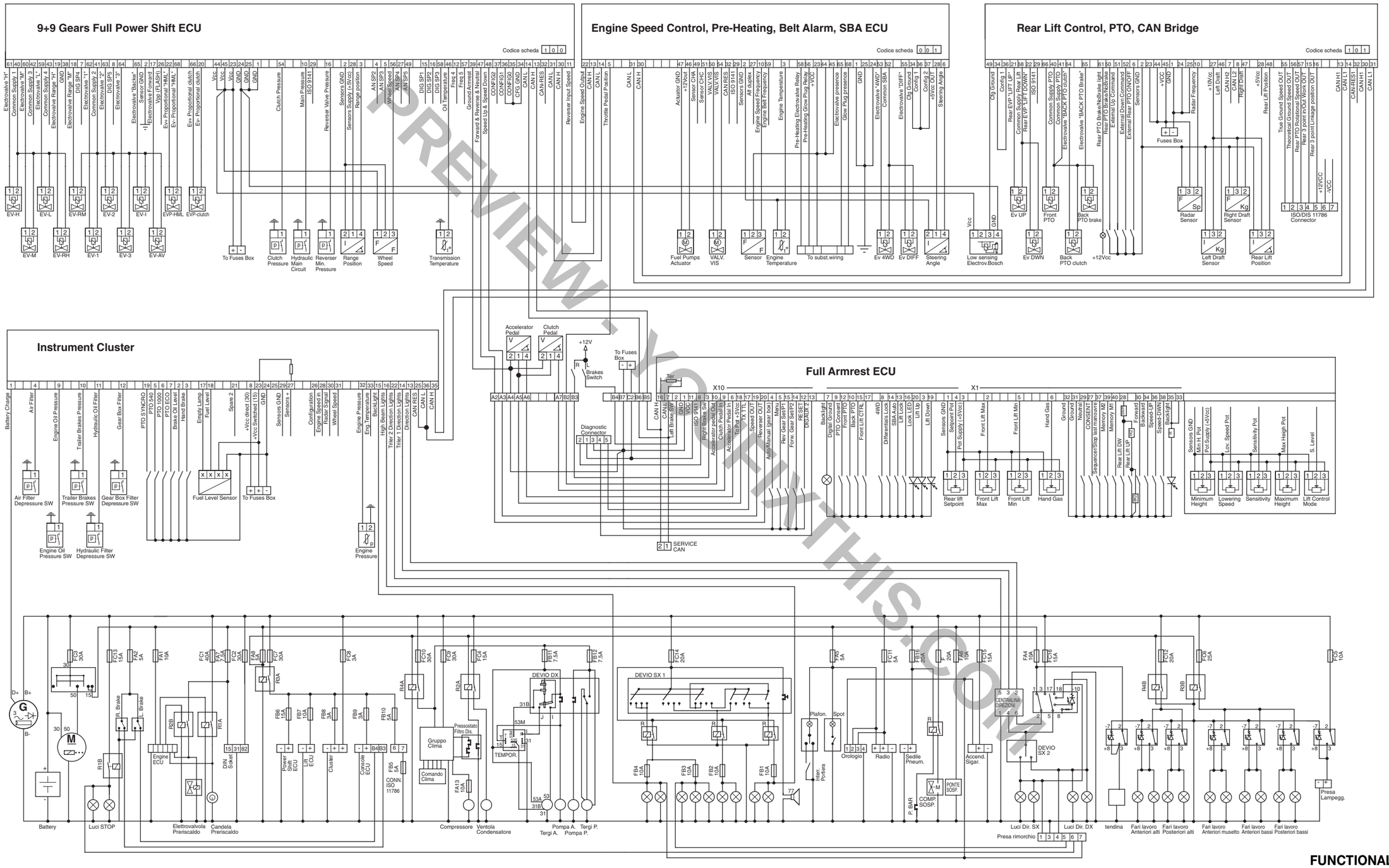
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LIST OF ENGINE ECU ALARM CODES

N°	Tester Message	Cause of fault - Remedy	Control unit action
1	OVERSPEED	• **Engine speed >3200 rpm** Restart the engine	Actuator control removed
2	ACTUATOR OPEN	• **Actuator not connected** • **Wiring fault** Check Pin [46], Pin [47]	Actuator not controlled
3	ACTUATOR SHOR.CIRC	• **Actuator faulty** • **Wiring fault** check Pin [46], Pin [47]	Actuator control removed
4	RPM Sen.n.c.	• **Pickup not connected** Check Pin [10]	Actuator control removed
5	RPM Sen.inter.	• **Pickup faulty** • **Poor contact** Check Pin [10]	Actuator control removed
6	Acc.Ped.sh.cir.	• **Short circuit of pedal potentiometer** • **Wiring fault** Check Pin [5]	When the CAN is not active, engine remains at idle speed; otherwise no effect ✻
7	Acc.Ped.n.c.	• **Pedal potentiometer not connected** • **Wiring fault** Check Pin [5]	When the CAN is not active, engine remains at idle speed; otherwise no effect ✻
8	Glowp.Rel. n.c.	• **Glowplug relay faulty (located in fuse holder)** • **No connection between the control unit (Pin [56]) and the relay**	Preheating inhibited
9	Glowplug n.c.	• **Glowplug not connected** • **No connection between the relay and glowplug** Check Pin [56] Pin [68]	Preheating inhibited ✻
10	Glowp.Rel. Faul.	• **Glowplug relay faulty** • **Wiring fault** • **No power to glowplug** Check fuse • **Shortcircuit of glowplug** Check Pin [56] Pin [68]	Preheating inhibited ✻
11	Preh.Rel.n.c.	• **Preheating solenoid relay faulty (located in fuseholder)** • **No connection between control unit (Pin [58]) and relay**	Preheating inhibited
12	Preh.Sol. n.c.	• **Preheating solenoid not connected** • **Wiring fault** Check Pin [58], Pin [65]	Preheating inhibited ✻
13	Prh.Sol.Re.C.fau	• **Preheating solenoid relay faulty** • **Wiring fault** • **No power to solenoid** Check fuse • **Short circuit of solenoid** Check Pin [58], Pin [65]	Preheating inhibited ✻

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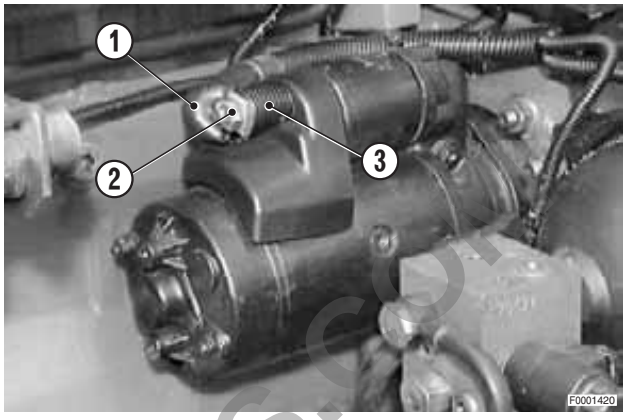


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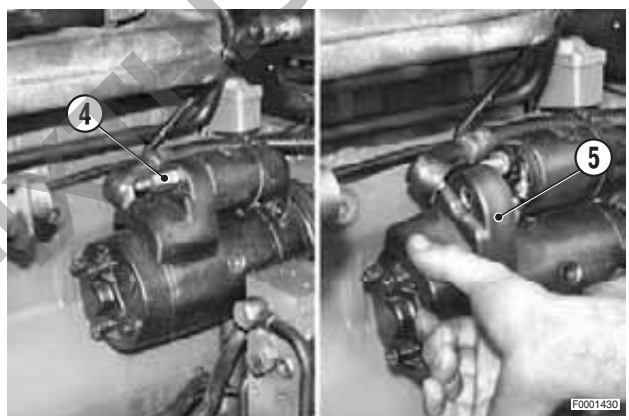
REMOVAL OF THE STARTER MOTOR

⚠ Remove the battery cover and disconnect the lead from the negative (–) battery terminal.

1 - Peel back sleeve (1) and remove nut (2) and shroud (3).

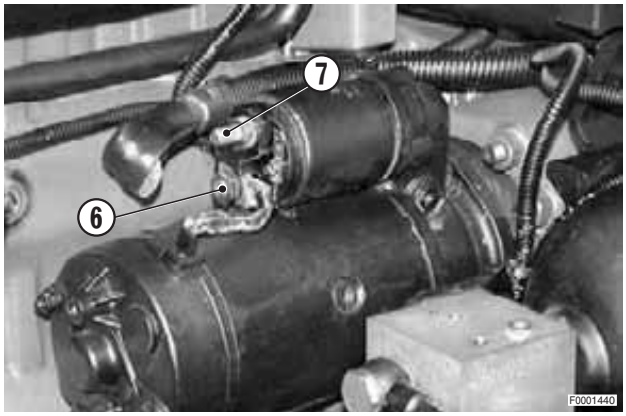


2 - Peel back sleeve (1) and remove nut (2) and shroud (3).



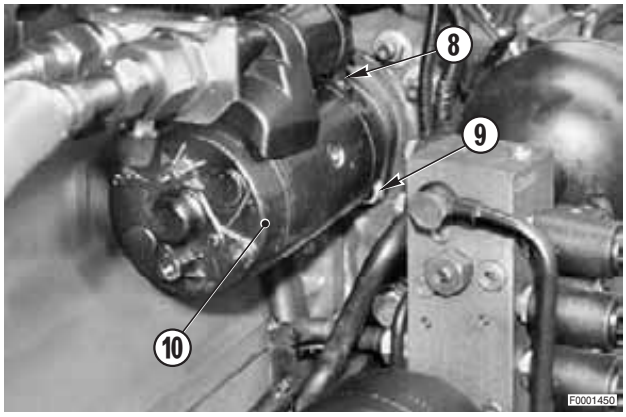
3 - Disconnect terminals (6) and (7).

4 - Undo and remove locknut (8) and screw (9) with the relative washers; remove the starter motor (10).



REFITTING THE STARTER MOTOR

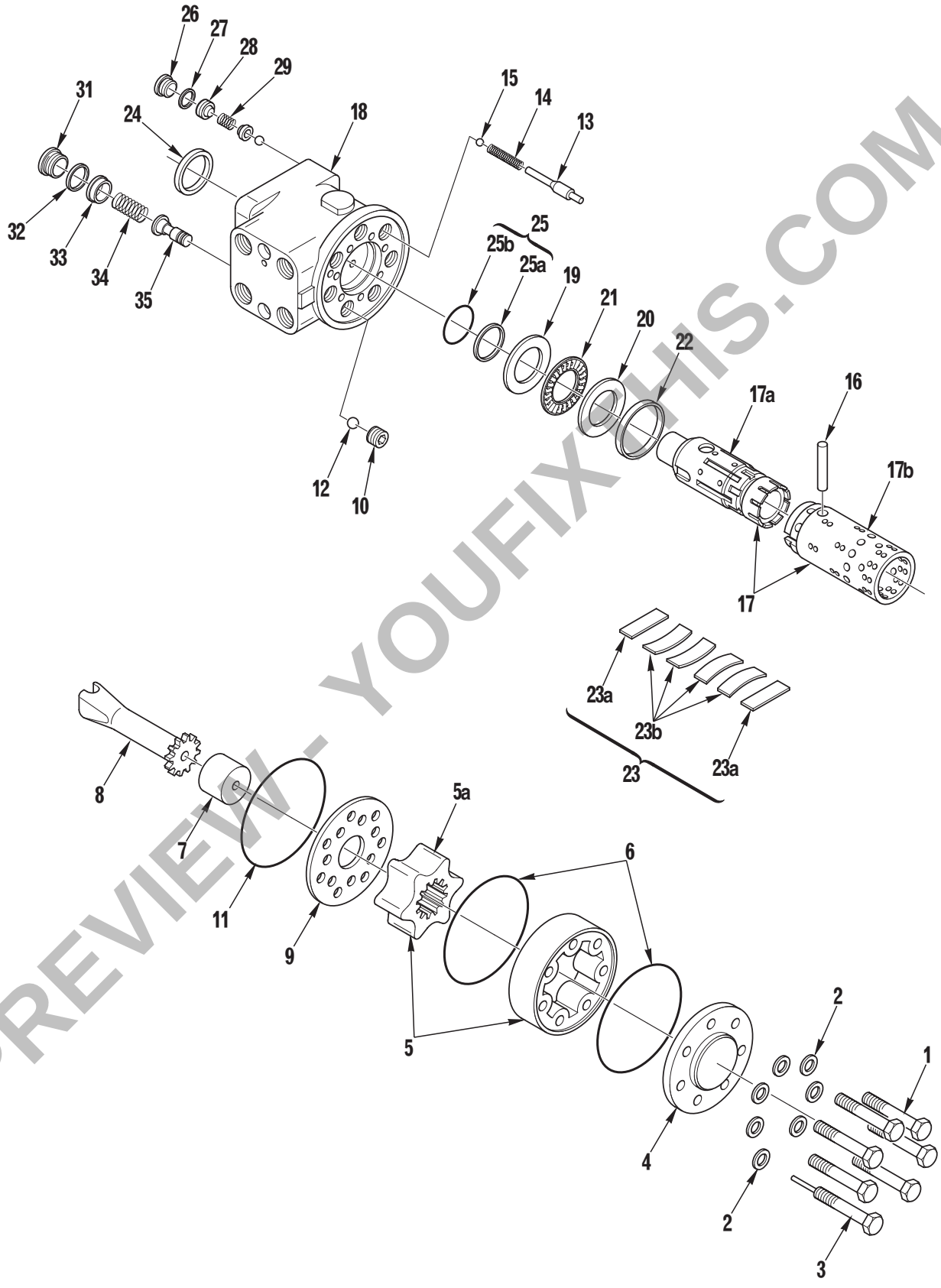
- Refit the starter motor following the removal operations in reverse order.



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DISMANTLING THE POWER STEERING UNIT



D0001200

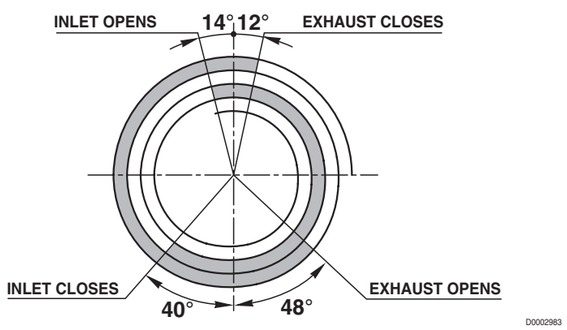
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ENGINE TECHNICAL DATA

TRACTOR MODEL		RUBIN		
		160	180	200
ENGINE	TYPE	1000.6 WTI2	1000.6 WTI3	1000.6 WTI4
Configuration and type		4-stroke diesel, in-line, liquid-cooled		
Cylinders	N°	6	6	6
Valves per cylinder	N°	1 inlet / 1 exhaust		
Aspiration		Turbo and Intercooler	Turbo and Intercooler	Turbo and Intercooler
Boost pressure (2100 rpm)	bar (psi)	1.1 (15.9) (before intercooler) 0.98 (14.2) (after intercooler)	1.26 (18.3) (before intercooler) 1.13 (16.4) (after intercooler)	1.4 (20.3) (before intercooler) 1.3 (18.8) (after intercooler)
Bore	mm (in.)	105 (4.137)	105 (4.137)	105 (4.137)
Stroke	mm (in.)	115.5 (4.551)	115.5 (4.551)	115.5 (4.551)
Stroke-bore ratio		1.1	1.1	1.1
Total displacement	cm³ (ℓ)	6000 (6)	6000 (6)	6000 (6)
Cylinder swept volume	cm³ (ℓ)	1000 (1)	1000 (1)	1000 (1)
Compression ratio		16:1	16:1	16:1
Inlet valve opens / closes		14° ppms / 40° dpmi	14° ppms / 40° dpmi	14° ppms / 40° dpmi
Exhaust valve opens / closes		48° ppmi / 12° dpms	48° ppmi / 12° dpms	48° ppmi / 12° dpms
Maximum power	kW / rpm	117.8/2350	132.5/2350	142/2350
Maximum torque	Nm / rpm	678.8/1400	762.8/1400	791/1400
Minimum specific fuel consumption	g/kWh / rpm	220/1400	222/1400	219/1400
Specific fuel consumption / max. power	g/kWh / rpm	224.6/2350	224.4/2350	220/2350
Idle speed	rpm	650 - 700	650 - 700	650 - 700
Maximum permitted engine speed	rpm	2520 - 2550	2520 - 2550	2520 - 2550
Firing order		1-5-3-6-2-4		
Direction of rotation		Counter-clockwise (viewed from flywheel end)		
Fuel injection system		Direct injection - BOSCH unit injection pumps type PFR 1K		
Injector type and configuration		4-hole Minisac		
Engine governor		Electronic		
Injection pressure	bar (psi)	700 (10152)	700 (10152)	700 (10152)
Static advance		16° ppms	16° ppms	16° ppms
Lubrication		Forced with gear pump		
Cold-starting system		Glowplug thermostarter		
Starter motor		12 V - 3 kW	12 V - 3 kW	12 V - 3 kW
Alternator		12 V - 150 A	12 V - 150 A	12 V - 150 A

VALVE TIMING DIAGRAM



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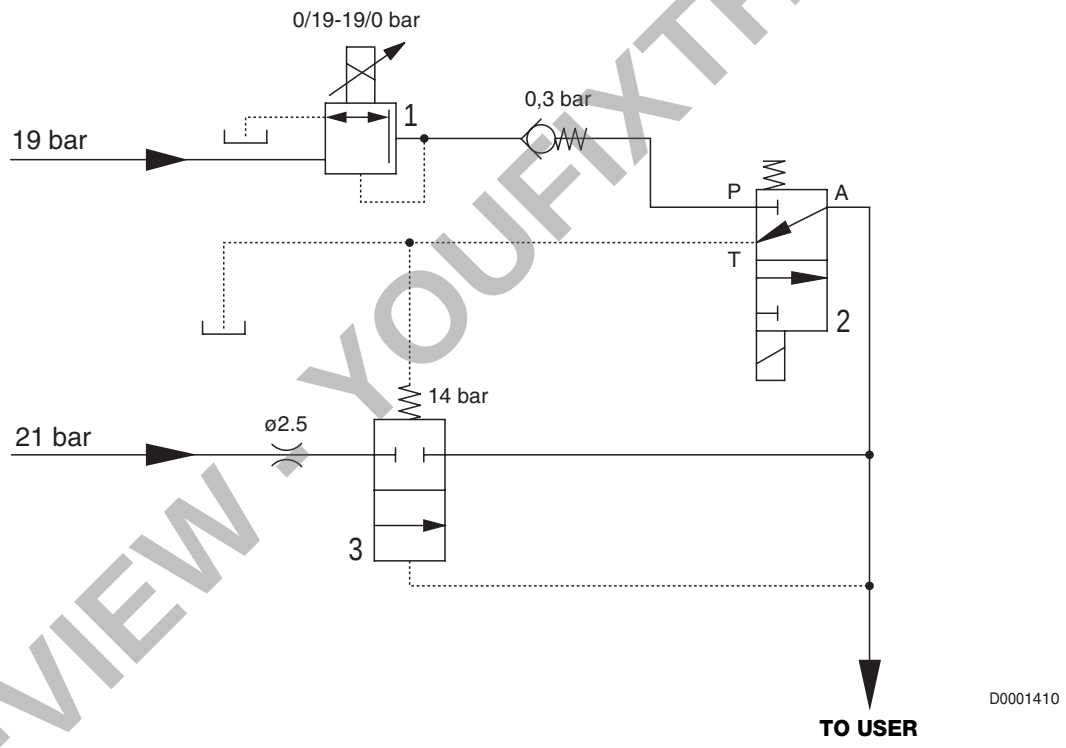
2. GEAR ENGAGEMENT CONTROL SYSTEM (EXCLUDING M)

FUNCTION

The function of the gear engagement control system is to ensure correct and gradual gear shifts. The system comprises:

- Proportional solenoid valve (1)
- Gear control solenoid valves (2)
- Gear engagement valve (3)

The clutches (with the exception of the M gear clutch) are of the "positive" type: the clutch is engaged by the oil supply pressure.



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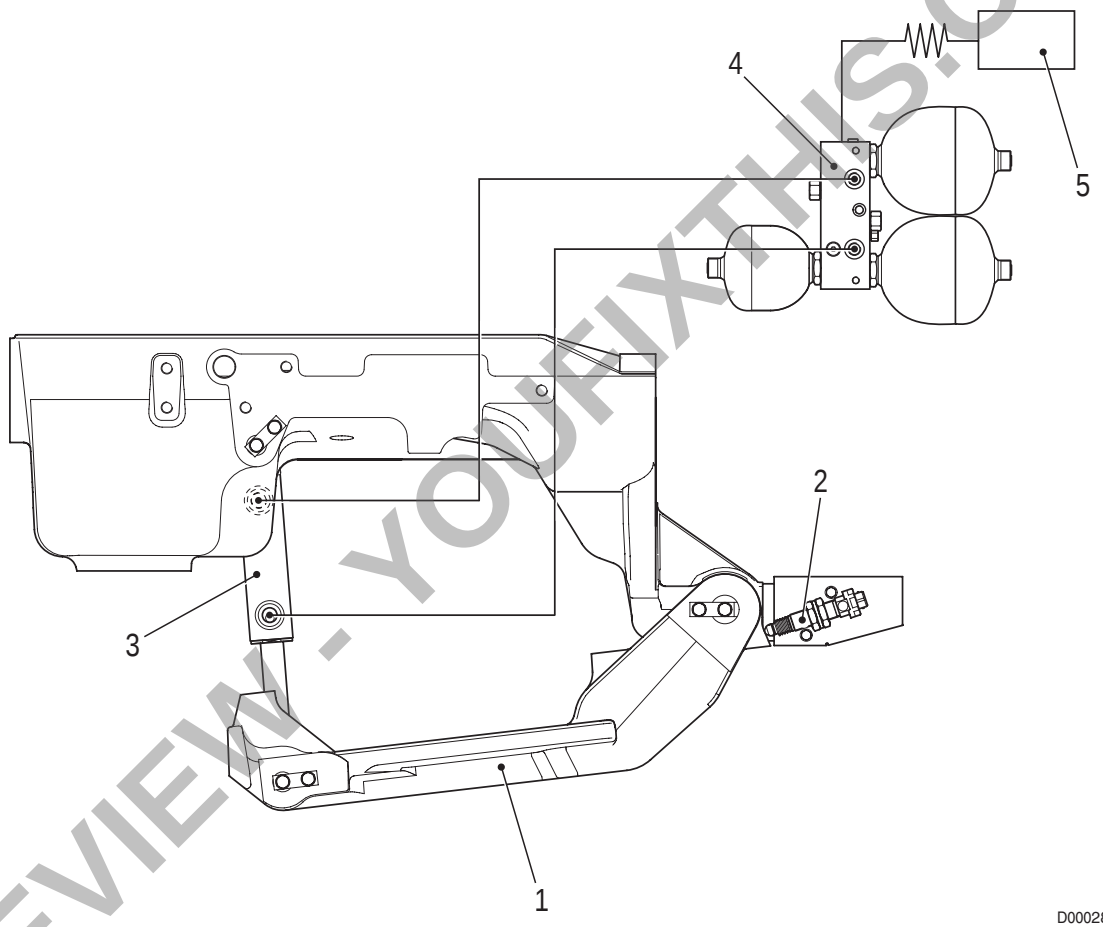
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HYDRAULIC FRONT AXLE SUSPENSION

The hydraulic front axle suspension serves to smooth the ride over rough terrain and to maintain the tractor level during road transport.

The system comprises:

- axle support arm (1)
- position sensor (2)
- 2 suspension cylinders (3)
- front suspension control valve (4)
- electronic control unit (5)



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N°	Tester Message	Cause of fault - Remedy	Control unit action
20	C.C. Ev1 (L)	Short-circuit of 1st gear solenoid **not controlled** • **Wiring fault** Check electrical continuity Pin[62] - Pin[41] • **Solenoid faulty** Check integrity of solenoid • **ECU faulty** Check using EV On-Off from Tests Menu on the ART® (with engine switched off)	With earlier software versions, tractor operation could be inhibited With more recent software versions, the tractor will operate in minimal safety conditions
21	C.C. Ev2 (L)	Short-circuit of 2nd gear solenoid **not controlled** • **Wiring fault** Check electrical continuity Pin[63] - Pin[41] • **Solenoid faulty** Check integrity of solenoid • **ECU faulty** Check using EV On-Off from Tests Menu on the ART® (with engine switched off)	With earlier software versions, tractor operation could be inhibited With more recent software, the tractor will operate in minimal safety conditions
22	C.C. Ev3 (L)	Short-circuit of 3rd gear solenoid **not controlled** • **Wiring fault** Check electrical continuity Pin[64] - Pin[41] • **Solenoid faulty** Check integrity of solenoid • **ECU faulty** Check using EV On-Off from Tests Menu on the ART® (with engine switched off)	With earlier software versions, tractor operation could be inhibited With more recent software, the tractor will operate in minimal safety conditions
24	C.C. EvL (L)	Short-circuit of L solenoid **not controlled** • **Wiring fault** Check electrical continuity Pin[59] - Pin[40] • **Solenoid faulty** Check integrity of solenoid • **ECU faulty** Check using EV On-Off from Tests Menu on the ART® (with engine switched off)	With earlier software versions, tractor operation could be inhibited With more recent software versions, the tractor will operate in minimal safety conditions
25	C.C. EvM (L)	Short-circuit of M solenoid **not controlled** • **Wiring fault** Check electrical continuity Pin[60] - Pin[40] • **Solenoid faulty** Check integrity of solenoid • **ECU faulty** Check using EV On-Off from Tests Menu on the ART® (with engine switched off)	With earlier software versions, tractor operation could be inhibited With more recent software versions the tractor will operate in minimal safety conditions
26	C.C. EvH (L)	Short-circuit of H solenoid **not controlled** • **Wiring fault** Check electrical continuity Pin[61] - Pin[40] • **Solenoid faulty** Check integrity of solenoid • **ECU faulty** Check using EV On-Off from Tests menu on the ART® (with engine switched off)	With earlier software versions, tractor operation could be inhibited With more recent software, the tractor will operate in minimal safety conditions

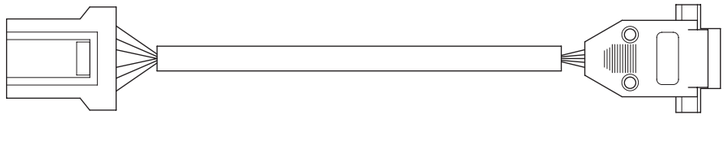
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6 VIE 070 P.F.

CONNETTORE AMP HDP 20
CONTATTI AMP 5-166051-
CORAZZA AMP 745122-1



N	1	ISO 4191	GND
Z	2	ISO 4191	VCC
A	3	ISO 4191	H.D. SOLL.-LIFT
GM	4	ISO 4191	H.D. FPS
BR	5	ISO 4191	H.D. MOTORE ENGINE

N	15	ISO 4191	GND
Z	14	ISO 4191	VCC
A	13	ISO 4191	H.D. SOLL.-LIFT
GM	11	ISO 4191	H.D. FPS
BR	12	ISO 4191	H.D. MOTORE ENGINE

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REFITTING THE TRAILER AIR BRAKING UNITS AND THE CAB SUSPENSION

- Refit the units following the removal operations in reverse order.

※ 1

★ Start the engine, recharge the reservoir and check that the operating pressure is maintained and there are no leaks.

★ Pressure: 7.8± 0.2 bar (113.1±2.9 psi)

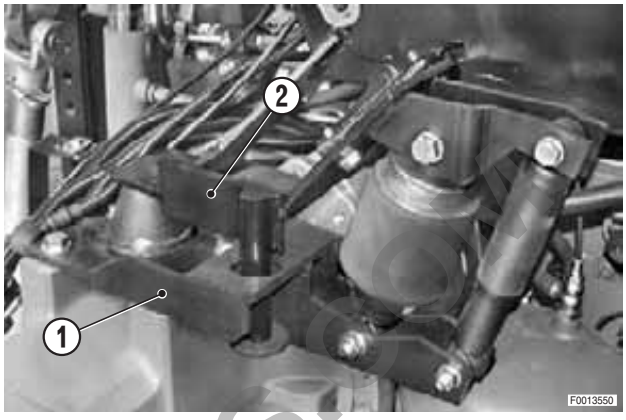
※ 2

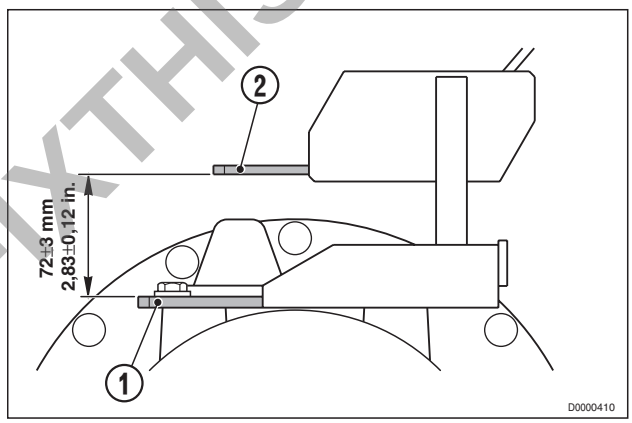
★ Bleed the braking system.
(For details see «BLEEDING THE BRAKING SYSTEM»).

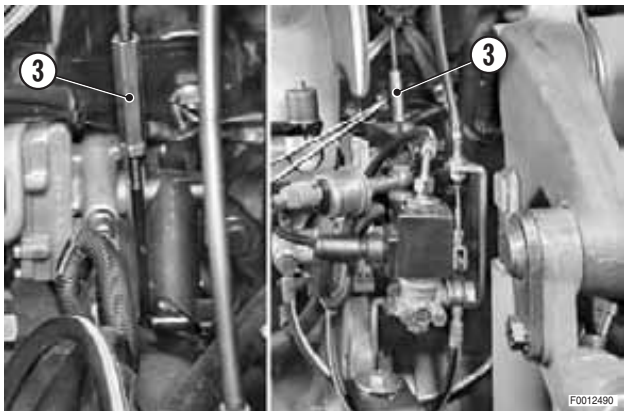
※ 3

★ When the reservoir is pressurised, check the cab suspension system by measuring the distance between the buffer mounting plate (1)and the cab support plate (2).

- If the distance is **greater** than the maximum limit, **shorten** the length of the valve control linkage.
- If the distance is **less** than the minimum limit, **lengthen** the valve control linkage.







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TESTING THE POWER STEERING

1. Testing

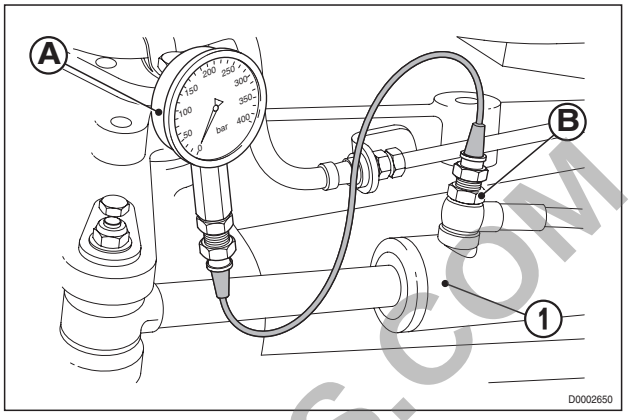
1 - Remove the supply fitting from one of the steering cylinders (1) and replace it with fitting "**B**" connected to a 400 bar pressure gauge "**A**".

2 - Start the engine and repeatedly turn the steering wheel to full lock position to eliminate all the air from the system.

3 - Force the steering to the full lock position towards the side on which the pressure gauge "**A**" is connected and read off the maximum continuous pressure on the gauge.

★ Maximum permissible pressure:
150 $^{+5}_{0}$ bar (2175.6 $^{+72.5}_{0}$ psi)

4 - If the pressure is outside the permissible range, it will be necessary to calibrate the power steering pressure relief valve).



2. Calibration

1 - Remove the power steering unit (2).
(For details see «REMOVAL OF THE POWER STEERING UNIT»).

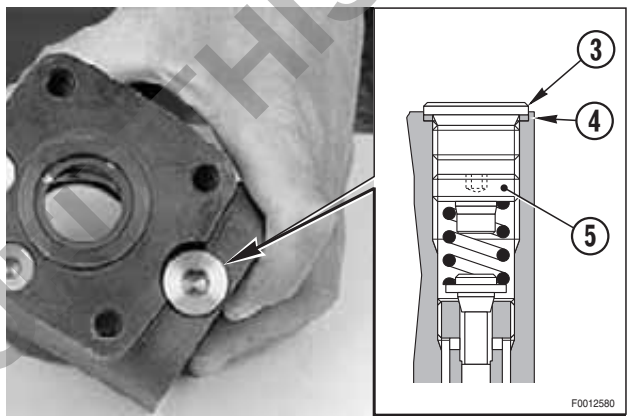
2 - Remove plug (3) and its seal (4).

3 - Insert a hex wrench in the hole and adjust the maximum pressure by turning the screw (5).

- To INCREASE the pressure, turn the screw CLOCKWISE.
- To REDUCE the pressure, turn the screw COUNTER-CLOCKWISE.

4 - Replace plug (3), making sure that the seal (4) is correctly seated.

Nm Plug: 50÷60 Nm (36.9 – 44.2 lb.ft.)

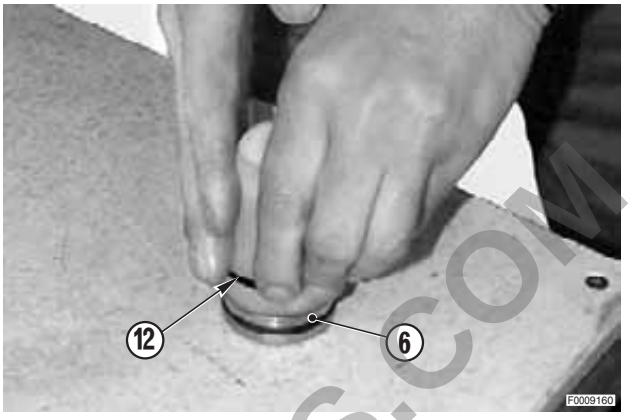


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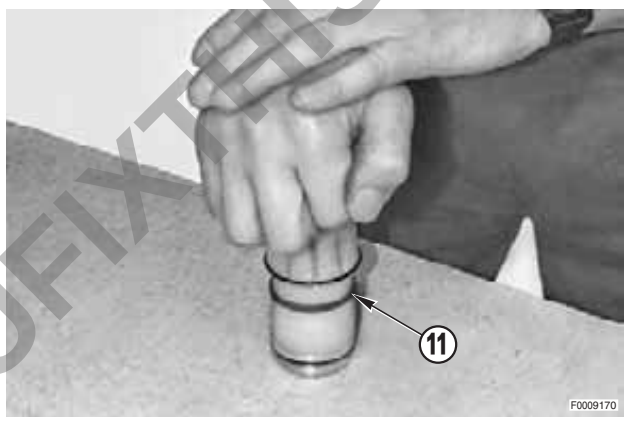
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3 - Fit a suitable seal installation tool on to the piston (6) and manually fit piston seal O-ring (12).

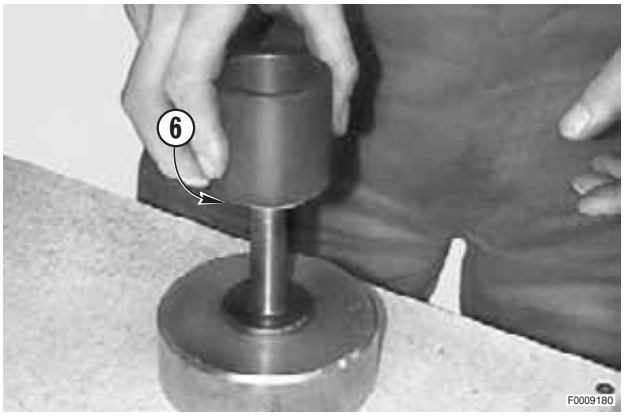
4 - Fit the outer piston seal (11) on the installation tool.



5 - Using the elastic installer drive seal (11) into its seat.



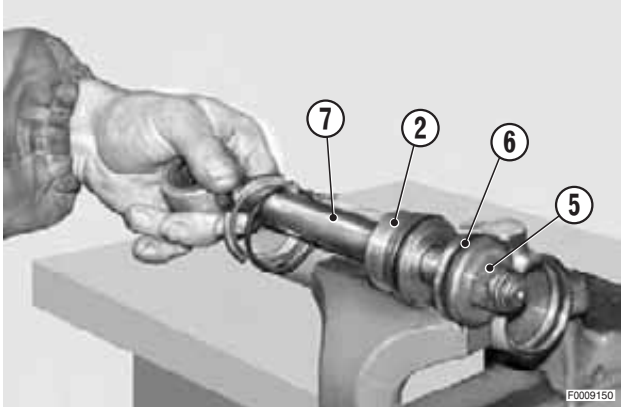
6 - Using the gauge and a suitable support, calibrate the seal (11) by sliding the gauge over the full length of the piston (6).



7 - Fit end cap (2) and piston (6) to rod (7); secure the piston (6) with self-locking nut (5).

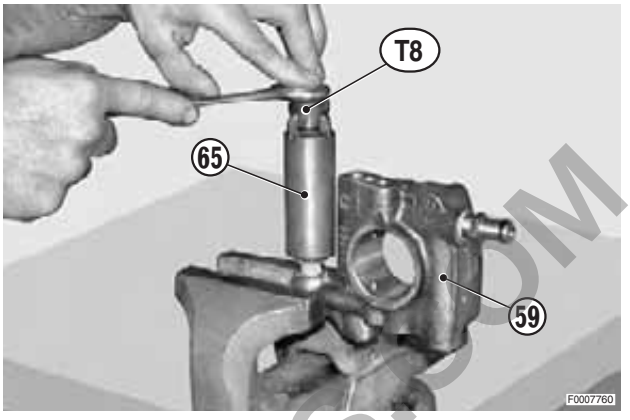
End cap: Gearbox oil.

Nut: 80 Nm (59 lb.ft.)

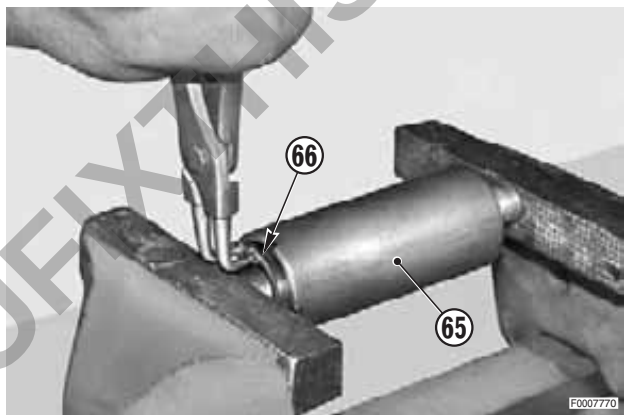


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14 - Using special wrench **T8** (code 5.9030.859.0), remove the complete damper unit (65).

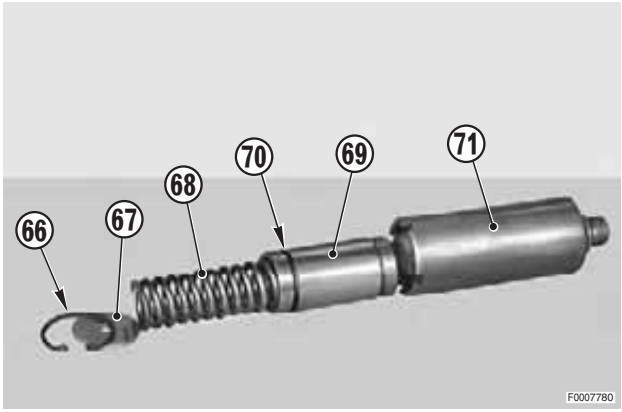


15 - With a press, compress the damper (65) and remove circlip (66).

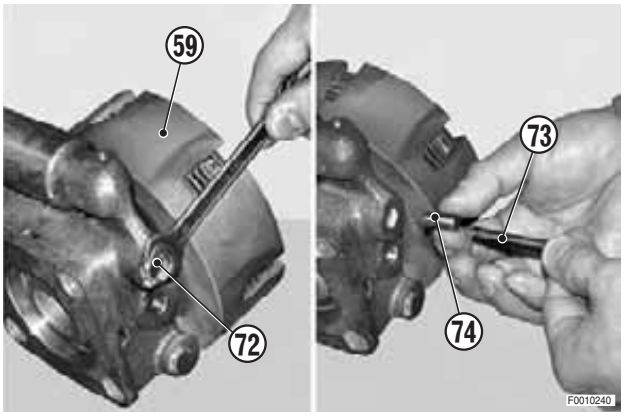


16 - Release the damper and withdraw, in order, thrust plate (67), spring (68) and piston (69) complete with O-ring (70).

★ Renew O-ring (70) at each re-assembly.

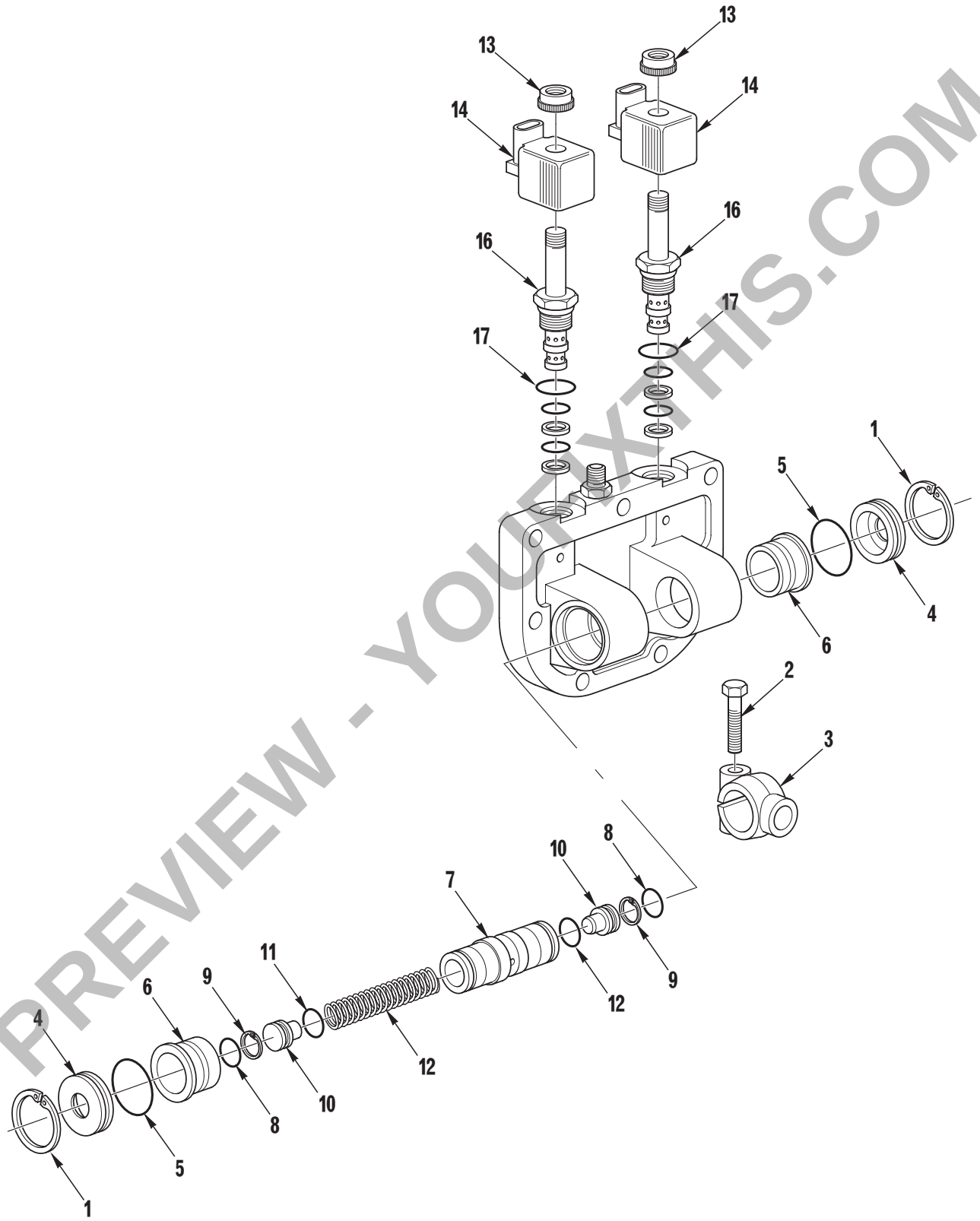


17 - Remove plug (72) from the control valve body (59) and remove spring (73) and plunger (74).



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DISMANTLING THE RANGE GEARBOX CONTROL UNIT

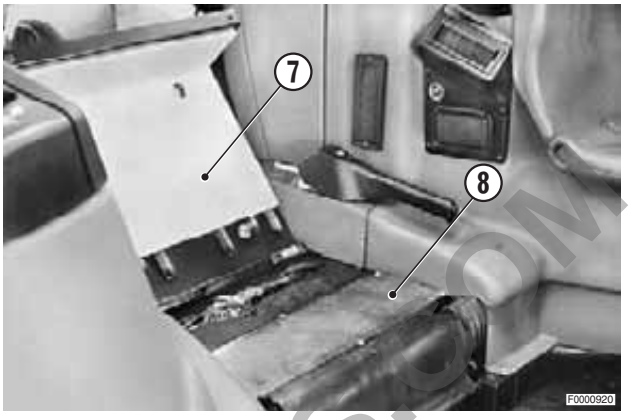


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6 - Remove the screws and raise the seat support (7).

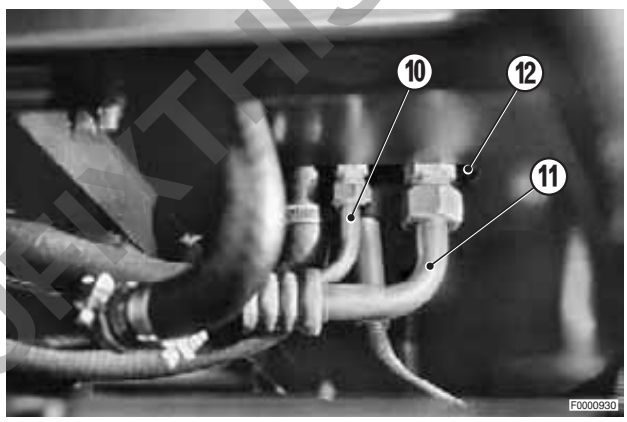
7 - Remove the screws and remove the cover (8) of the air conditioning system.



8 - Disconnect the inlet (10) and outlet (11) pipes from the evaporator (9). ※ 2

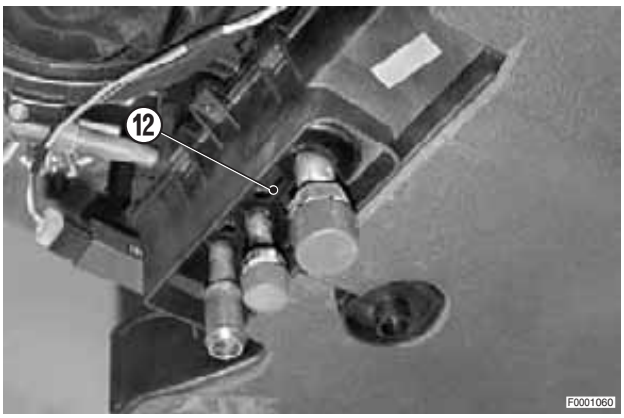
⚠ Immediately seal the ends of the pipes (10), (11) to prevent atmospheric moisture from getting into the air conditioning system.

9 - Release the rubber diaphragm (12).



10 - Lift up the evaporator (9); remove the temperature sensor (13) and place it on one side. ※ 3

11 - Remove the evaporator (9).



REFITTING THE EVAPORATOR

- Refit the evaporator following the removal operations in reverse order.

※ 1

★ Quantity of R134a: 1600 g

★ After recharging the system, the seals of pipes (R and S) and the air conditioning system in general using a specific leak detector.

※ 2

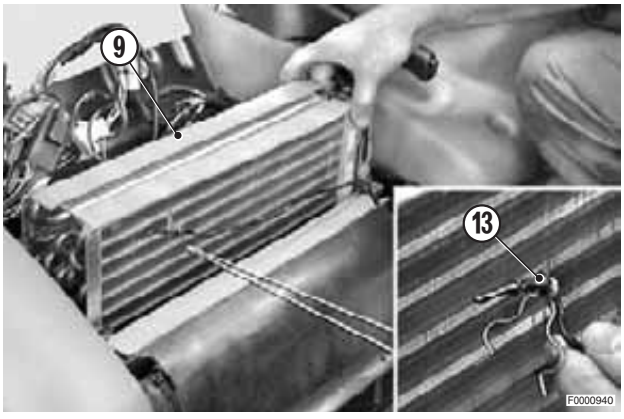
Nm High pressure fitting (5/8' - 18UNF): 13.6 – 20.3 Nm (10 – 15 lb.ft.)

Nm Low pressure fitting (7/8' - 14UNF): 35.3 – 42 Nm (26 – 31 lb.ft.)

※ 3

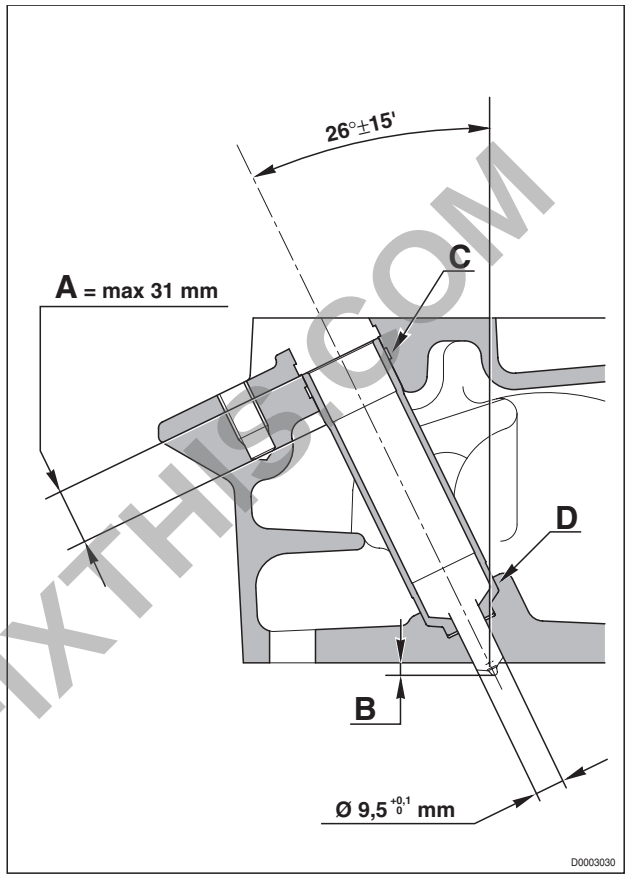
★ Carefully check the fixing of the temperature sensor.

1 - Carefully check the seal around the cover (8).



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1.8 Renewal of the copper bushes



★ These operations should be carried out by a specialised machine shop.

1 - Ream out the old bush mechanically using a system with swarf extraction; remove enough material from the inside diameter so that the bush can be easily deformed and thus withdrawn.

2 - Remove all traces of old sealant and metal particles from the groove "**C**" .

★ Take care not to damage the bush seating bore.

3 - Thoroughly degrease the bush seating bore and the new bush.

4 - Apply silicone sealant to groove "**C**".

Sealant: DIRKO TRANSPARENT

★ Once the sealant has been applied, the new bush must be inserted within 10-15 minutes; if this time period elapses without inserting the bush, the sealant must be removed and fresh silicone applied.

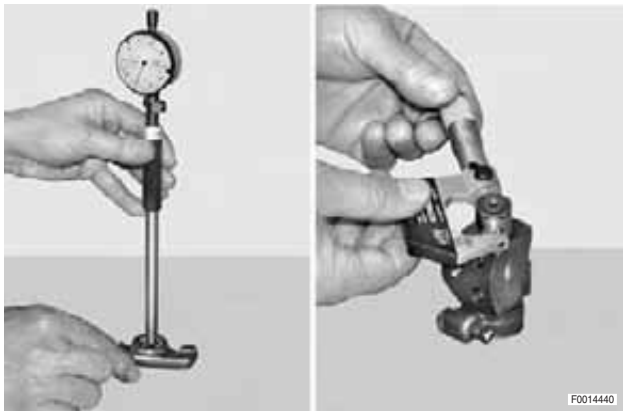
5 - Insert the bush in the bore in the cylinder head and press it fully home against seat "**D**".

6 - While maintaining the pressure, widen the bush to improve the axial seal to a depth "**A**" of 31 mm (1.22 in.) from the face.

7 - Calibrate the nozzle seat using a ball calibration tool Ø 9.5 mm (0.374 in.).

8 - Check the injector protrusion "**B**" is as indicated in «TECHNICAL DATA AND DIMENSIONS».

1.9 Inspecting the rocker arms and pivot posts



1 - Measure the inside diameters of the rocker bushes and the diameters of the pivot posts.
Use a dial bore gauge and a micrometer.
If the wear exceeds the tolerance limits indicated in «TECHNICAL DATA AND DIMENSIONS», renew the rocker bushes and the pivot posts.

★ When renewing rocker bushes, take great care that oil holes and grooves are correctly oriented (see «TECHNICAL DATA AND DIMENSIONS»).

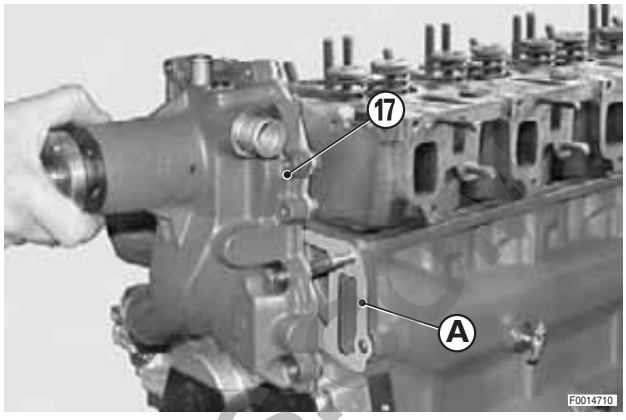
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10 - Position the new gasket "**A**" and install the coolant pump (17).

Nm Pump retaining bolts: 49 – 54 Nm (36 – 40 lb.ft.)

★ If a new pump is fitted, check the alignment between the crankshaft pulley and the pump pulley. (For details, se «Section 30 - TENSIONING AND RENEWAL OF THE ALTERNATOR DRIVEBELT»).

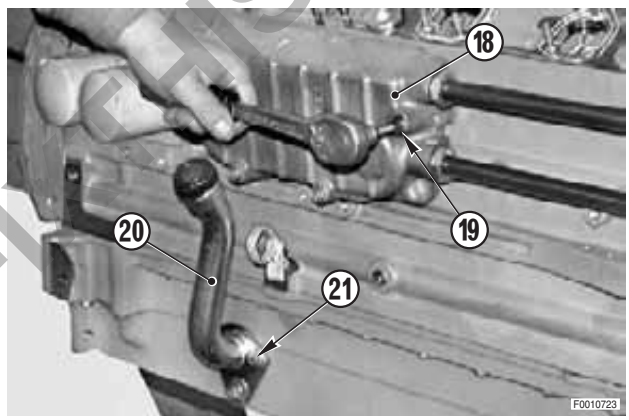


11 - Fit the O-rings to the oil cooler and fit the heat exchanger (18).
Tighten the retaining bolts (19).

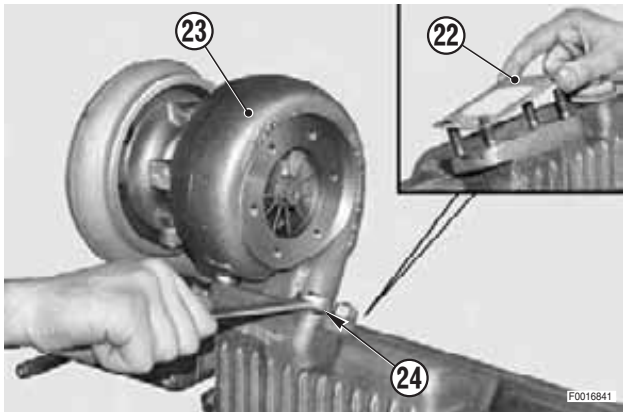
Nm Bolts: 30 ± 5 Nm (22.1 ± 3.7 lb.ft.)

12 - Connect the pipes to the coolant pump and tighten the fittings and hose clamps .

13 - Fit the O-ring to the oil filler pipe (20); fit the oil filler pipe using the bolts (21) and washers.

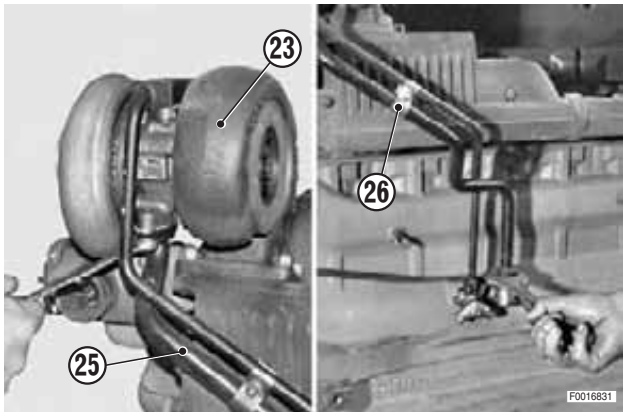


14 - Position the gasket (22) and fit the turbocharger (23), securing it with the washers and nuts (24).



15 - Position the new gasket and connect the lower oil drain pipe (25) to the turbocharger (23); connect the pipe to the fitting on the engine block.

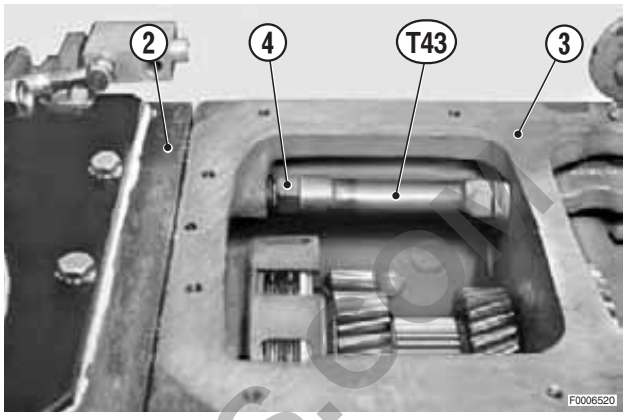
★ Slightly tighten clamp (26).



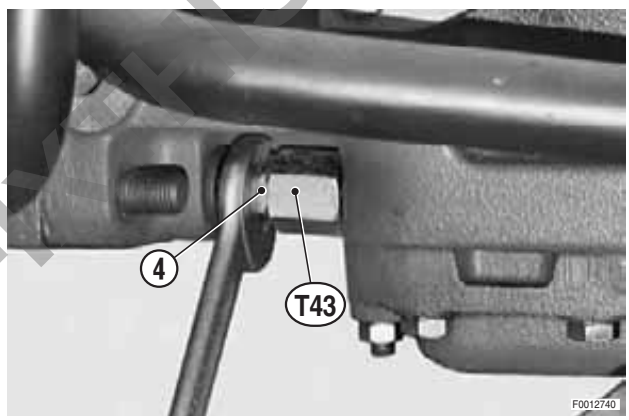
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11 - Fit long tool **T43** (code 5.9030.856.0) on the top left internal stud and unscrew the nut (4) to force the transmission (3) apart from the rear gearbox (2).

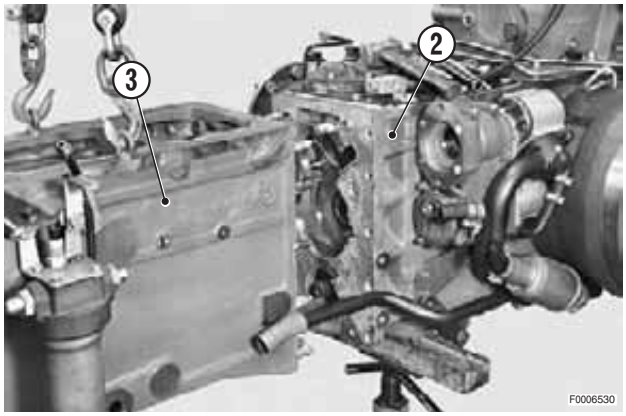


12 - Apply the two short struts **T43** (code 5.9030.856.0) to the lower side studs and unscrew nuts (4) to help separate the two casings.



13 - Unscrew the nuts gradually and evenly until the transmission (3) is separated from the rear gearbox (2).

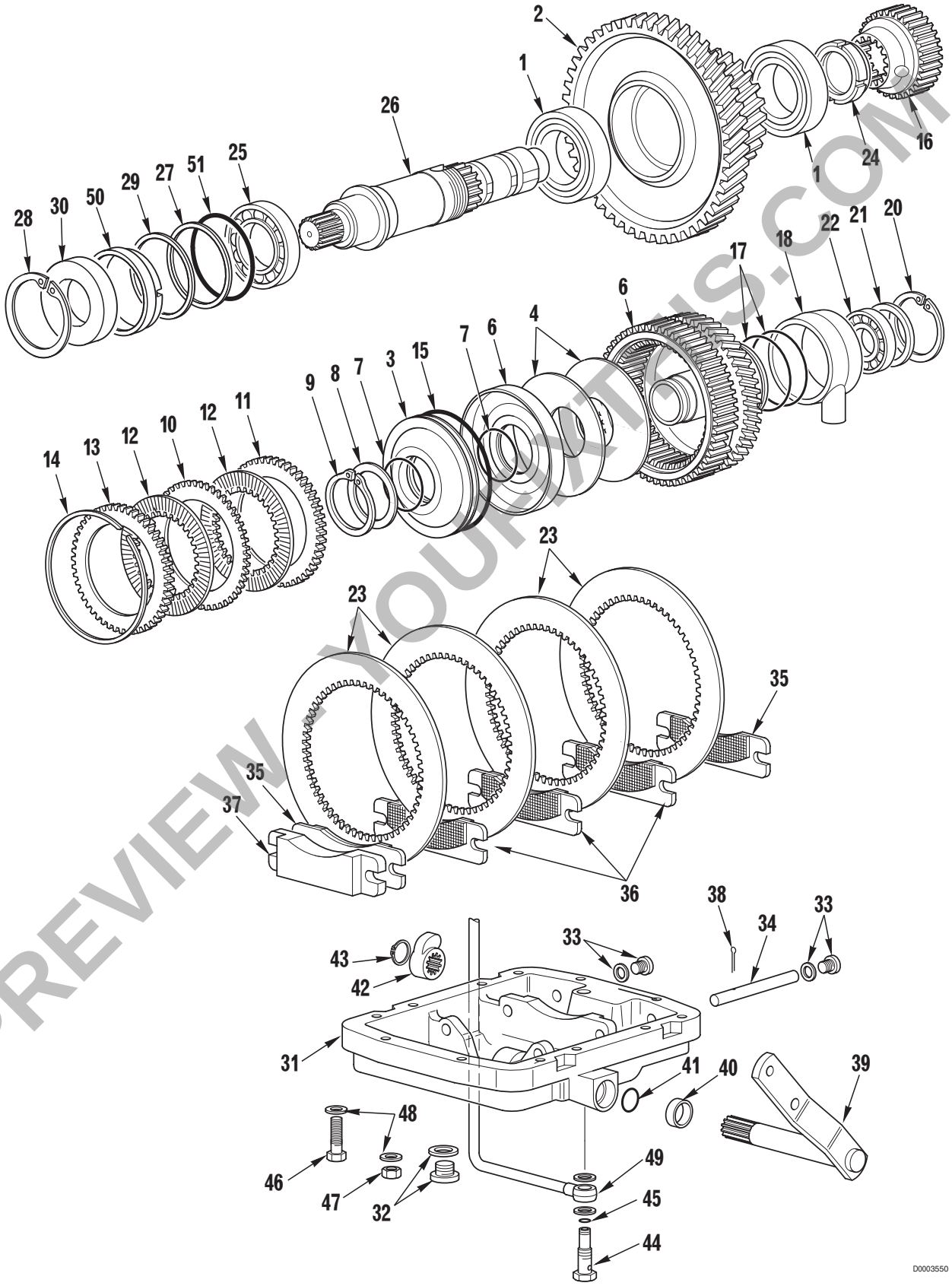
2 3



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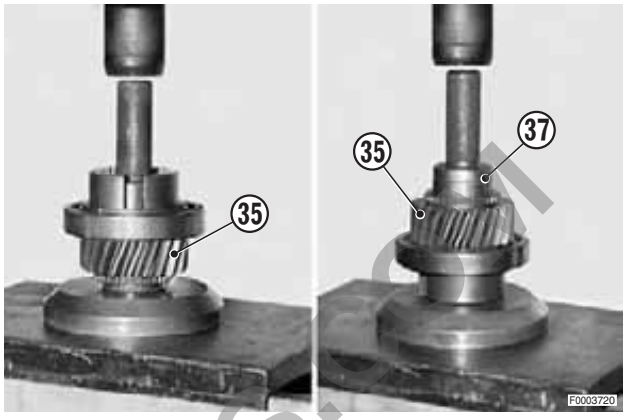
5. DISMANTLING THE PARKING BRAKE AND 4WD UNIT



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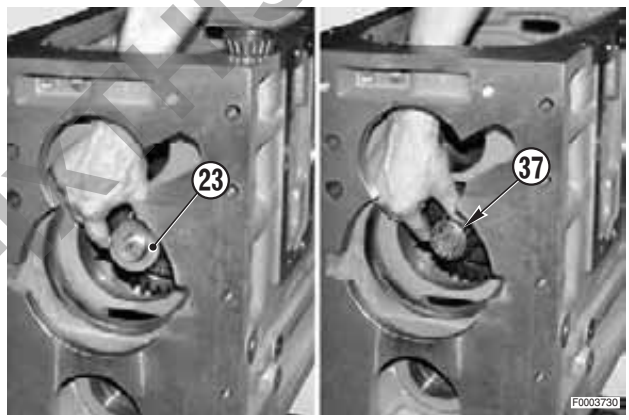
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17 - Using a press and suitable drifts, fit the outer races of the tapered roller bearings (37) to gear (35).
★ Check that the bearing races are installed the right way round.



18 - Fit thrust washer (23) to the pinion shaft.
★ The oil discharge groove of the thrust washer must be oriented towards the synchro unit (22).

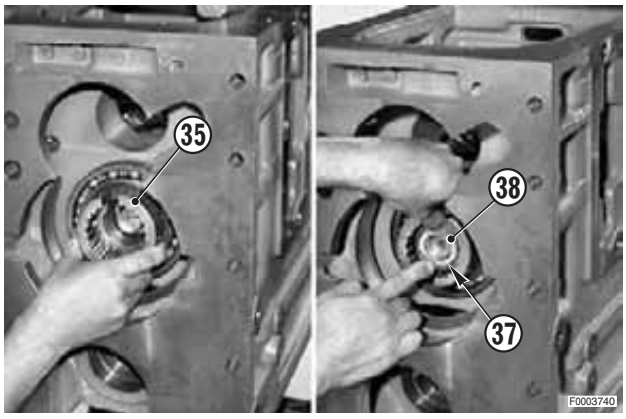
19 - Fit the inner race of the first bearing (37).



20 - Fit the gear (35).
★ Ensure that the teeth of the gear mesh with the synchro ring (22).

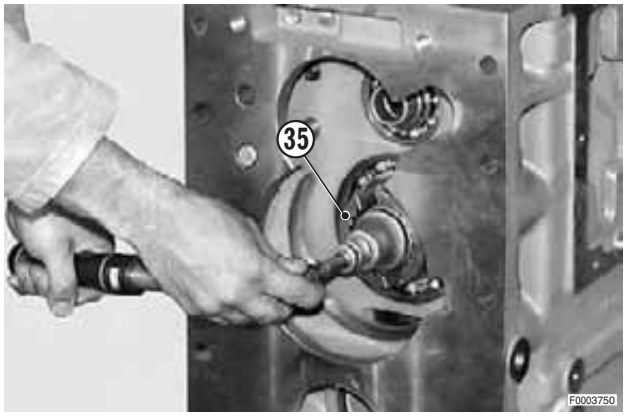
21 - Fit the inner race of the second bearing (37) and ring nut (38).

Ring nut: Loctite 270



22 - While holding the pinion against rotation, tighten ring nut (38) in a number of stages, rotating gear (35) in both directions in between each stage.
★ This operation helps to ensure the bearings (37) are correctly seated.

Ring nut: 14.7 Nm (10.8 lb.ft.)



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