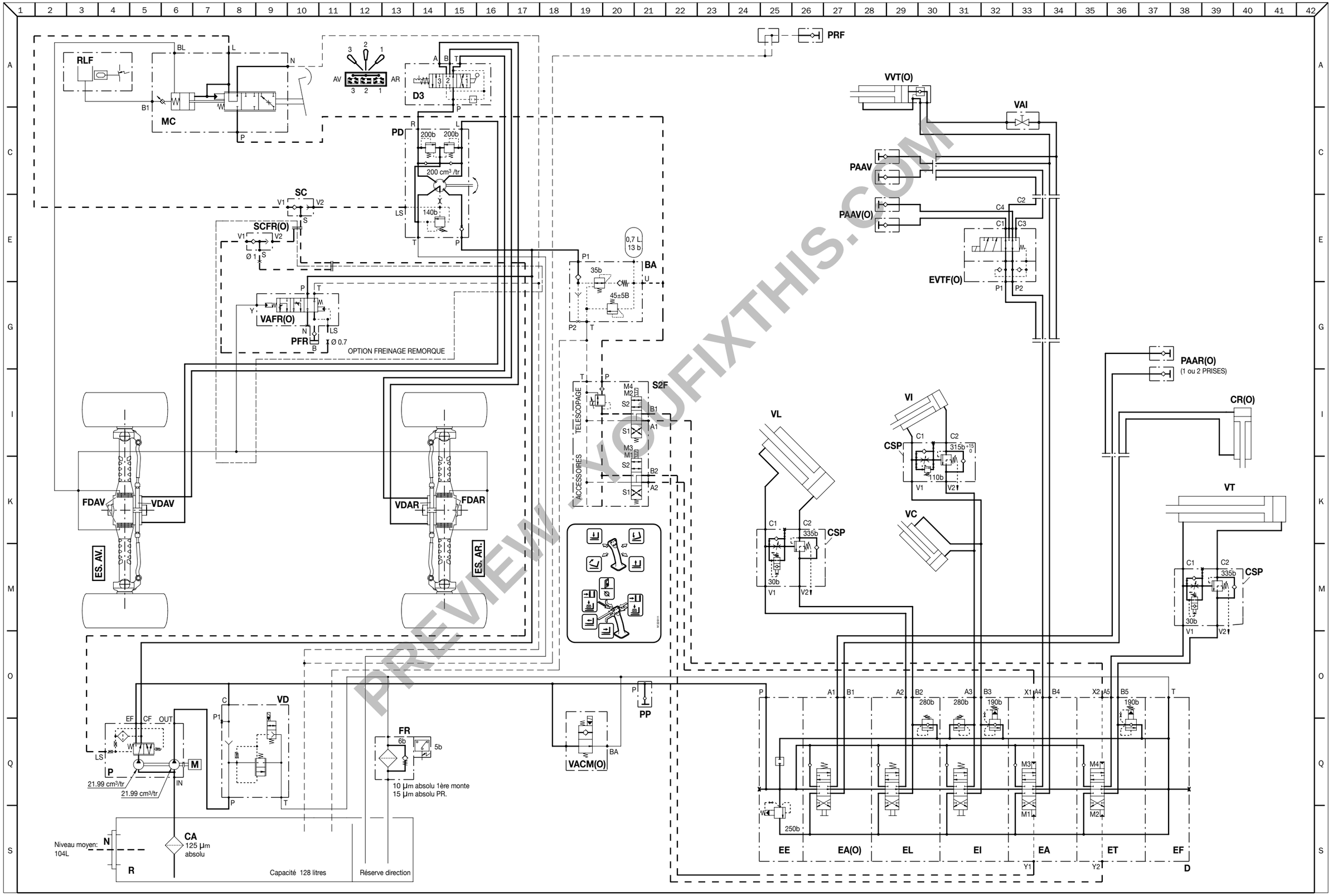
Components			
Item	**Type**	**Designation**	**Position on diagram**
F17	Fuse	Free (15A Max)	D29
F18	Fuse	Front working lights (option) (15A)	D31
F19	Fuse	Rear window defrosting (option) (15A Max)	D30
F20	Fuse	Pneumatic seat (10A)	D29
F21	Fuse	Front windscreen wiper/windscreen-washer (10A)	D37
F22	Fuse	Free (15A Max)	E13
F23	Fuse	Right hand side lights/dashboard (7,5A)	C33
F24	Fuse	Left-hand side lights (7,5A)	C34
F25	Fuse	Right-hand indicator light (7,5A)	C23
F26	Fuse	Left-hand indicator light (7,5A)	C24
F27	Fuse	Dipped lights (15A)	C34
F28	Fuse	Headlights (15A)	C36
F29	Fuse	Warning/ceiling light (15A)	D25
F30	Fuse	Stalk switch (25A)	D34
F31	Fuse	Starter (20A)	D2
F32	Fuse	Electro proportional modules (3A)	E15
F33	Fuse	Module ECU RC2-2 (1A)	D9
F40	Fuse	Equipment (40A)	C1
F41	Fuse	Equipment (40A)	C2
F42	Fuse	Pre-heating (80A)	C1
F43	Fuse	Alternator (80A)	C2
G1	G	Battery	B3
G2	G	Alternator	B4
H10	Indicator	Warning lamp	B25
H11	Indicator	Front wheel alignment light	C12
H14	Indicator	Rear wheel alignment light	C13
H15	Indicator	counter/rotations Light	B32
H16	Indicator	Cooland temperature light	B32
H17	Indicator	Diesel gauge light	B32
H19	Indicator	Fan light	B32
H20	Indicator	Clock light	B32
K0	Relay	Air conditioning relay (option)	B26/D26
K1	Relay	Joystick transmission cut-off reverse relay	B15/C18
K2	Relay	Transmission cut-off relay	D16/B18
K3	Relay	Reverse gear relay	B13/C16
K4	Relay	Forward gear relay	B13/C16/C8
K5	Relay	Machine fault alarm	D5
K6	Relay	Free	B36/C36
K7	Relay	Movement cut-off (option)	B20/D20
K8	Relay	Starter safety relay	B13/C2
K9	Relay	Flashing/Warning unit	B23
K10	Relay	Overload safety module	B19
K15	Relay	Proportional joystick power supply cut-off relay	B3/D15
K16	Relay	Preheater relay	B1/B2
K17	Relay	Module relay lights	B5
K18	Relay	Transmission cut-off module	D15

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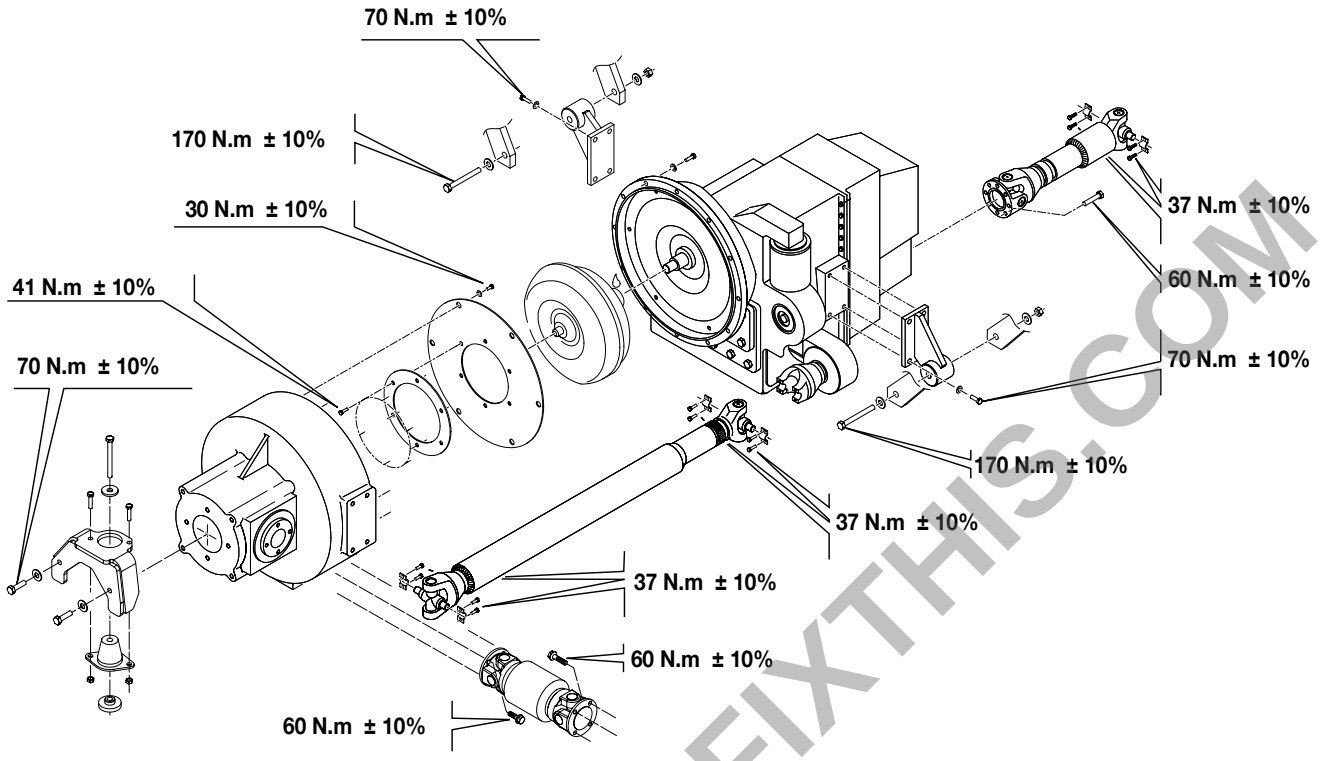
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TRANSMISSION TIGHTENING TORQUE



Standard torque settings to be used when no specific mention is made in dismantling and re-assembly.

Torque expressed in N.m (*)					
Thread diameter	**Class 5.6**	**Class 5.8**	**Class 8.8**	**Class 10.9**	**Class 12.9**
M3	0,54	0,76	1,16	1,7	2
M4	1,24	1,74	2,66	3,91	4,57
M5	2,47	3,46	5,2	7,7	9
M6	4,29	6	9,1	13,4	15,7
M8	10,4	14,6	22	32	38
M10	20	28	44	64	75
M12	35	49	76	111	130
M14	57	79	121	178	209
M16	88	124	189	278	325
M18	122	171	261	384	449
M20	173	243	370	544	637
M22	238	334	509	748	875
M24	298	418	637	936	1095
M27	442	619	944	1386	1622
M30	600	840	1280	1880	2200

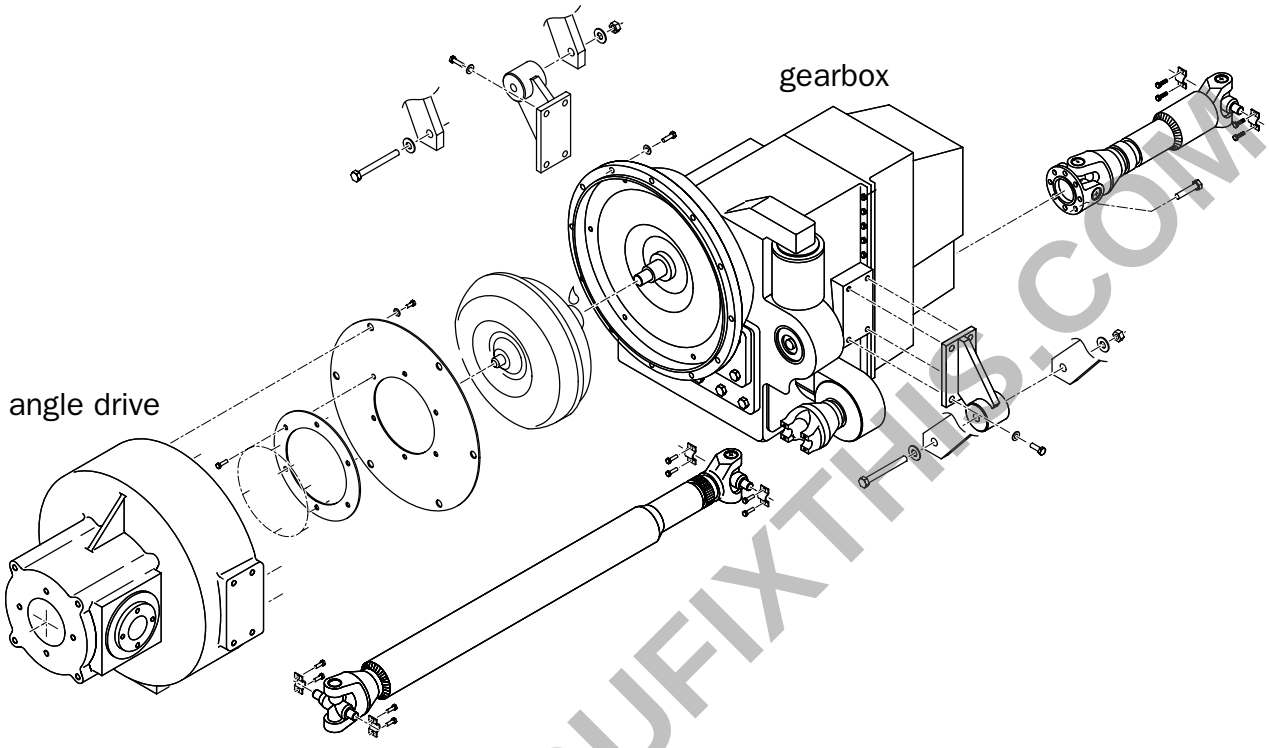
(*) - Tightening torques are given for black or zinc-plated fasteners with light lubrication.
- Tightening torques are given for automatic slip and reset torque wrenches and direct read dial torque wrenches.
- For more information consult French Standard NF E25-030.

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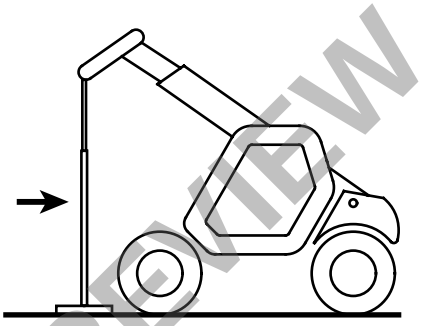
MLT 634/731/735/741/1035 T + LSU + 120 LSU

GEARBOX AND ANGLE DRIVE ASSEMBLY



REMOVAL OF GEARBOX, LEAVING ANGLE DRIVE IN PLACE

NOTE: The angle drive cannot be removed on its own.



- Place the telehandler on horizontal ground, with the handbrake off and in neutral.
- Chock the lift truck.
- Raise the boom and support it with a prop.



Required equipment
- 1 Lifting bracket Ref.: 227820
- 1 Hex-head bolt, M12x25 Ref.: 44807
- 1 Hex-head bolt M12x35 Ref.: 58546
- 2 Washers M12 Ref.: 61676

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PG 115 TRANSMISSION - 5-SPEED + JSM (DIAGNOSTIC MODE)

DESCRIPTION



ECU MONITORING

As soon as the ignition is switched on the ECU checks the output wiring (ECU to solenoid valves) and input wiring (from shuttle control to ECU) in order to detect short circuits or breakages in the wiring loom.

The ECU first checks the output wiring and only checks the input wiring if the output wiring passes testing.

ECU output wiring harness

When the ignition is switched on, if no problems are detected in the wiring looms the display shows the letter “n”, corresponding to the neutral position on the shuttle control.

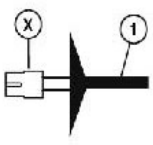
If there is a fault in the output wiring, the display shows the letter “E” (Error) for 2 seconds then reverts to showing “n”.

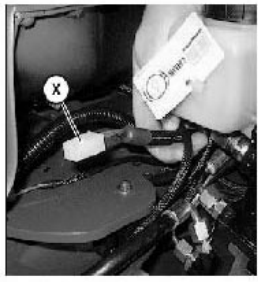
It is possible to identify the defective harness by holding down the Kick Down button, then switching the ignition off, then on again. The display will then show the letter “E” followed by a number indicating which harness is faulty.

DIAGNOSTIC MODE

To enter diagnostic mode:

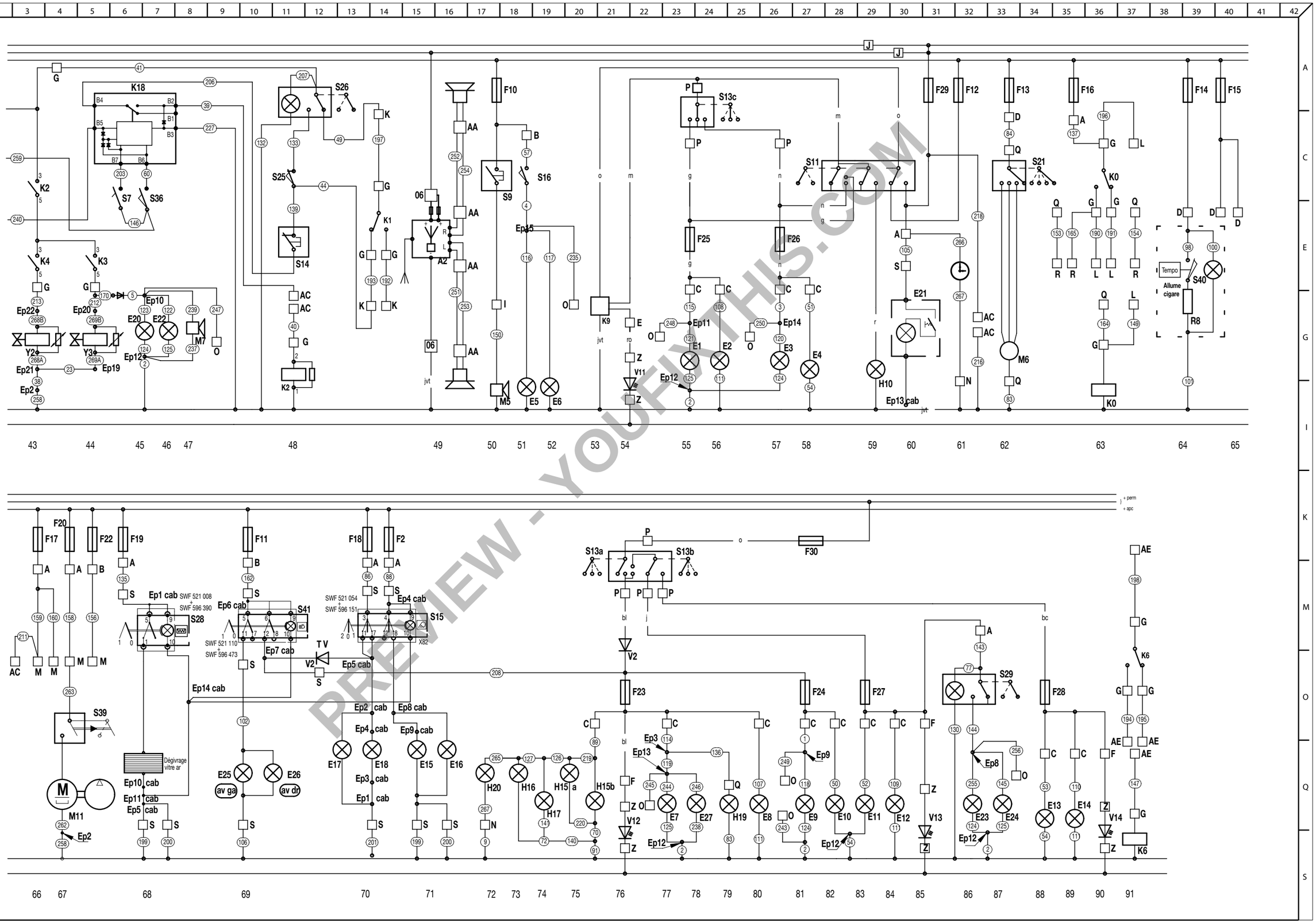
- Locate the empty connector next to the brake fluid reservoir.
- Put a jumper across the two connections of this connector.
  This jumper has the same effect as the Kick Down button, just for entering diagnostic mode.





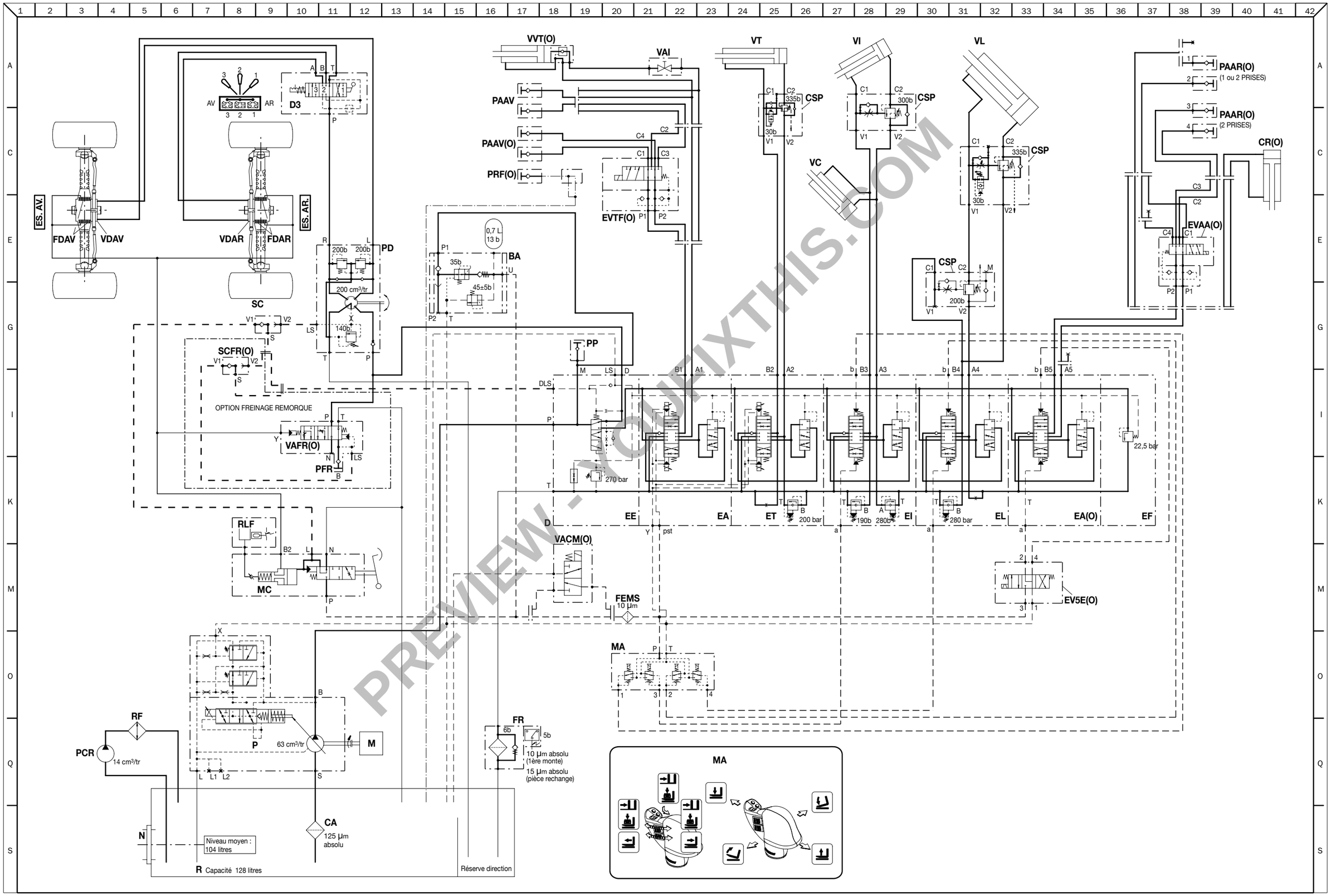
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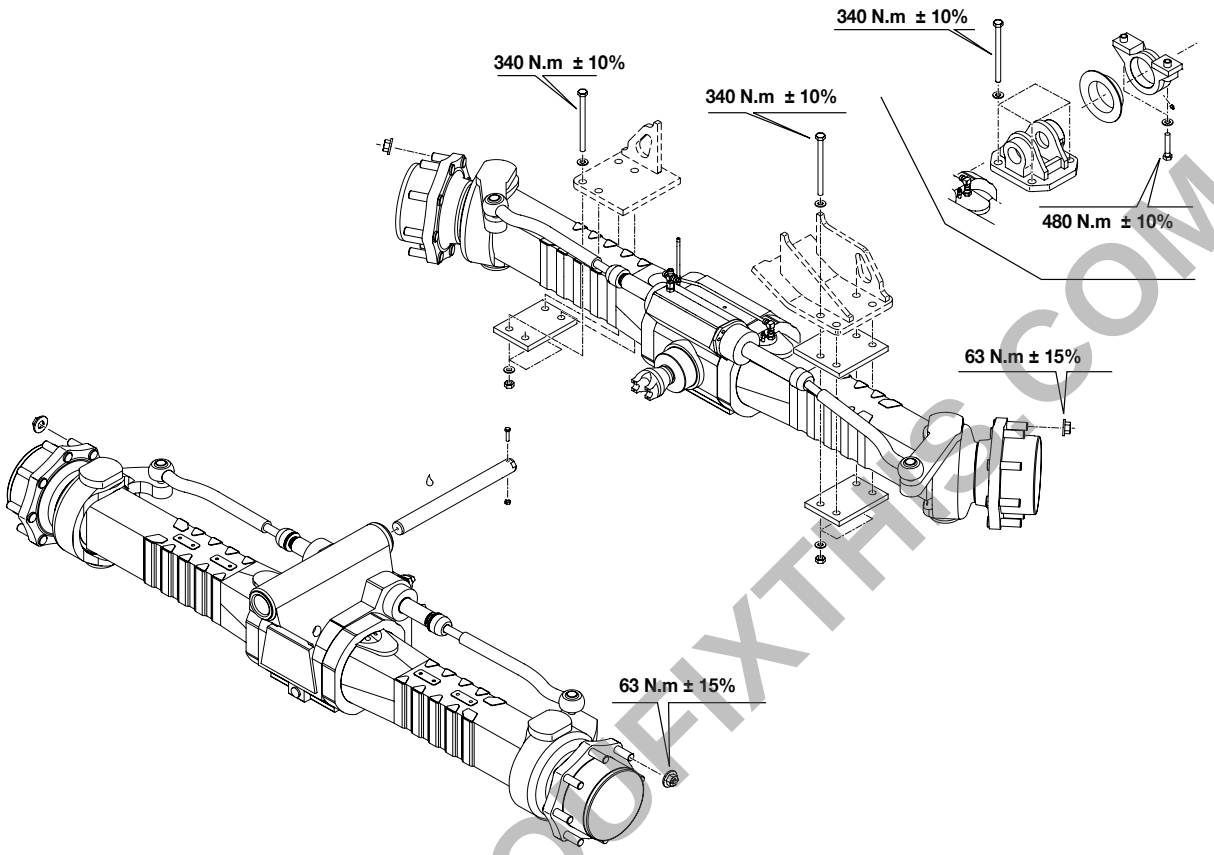


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AXLE TIGHTENING TORQUES

MLT 1035 LT LSU

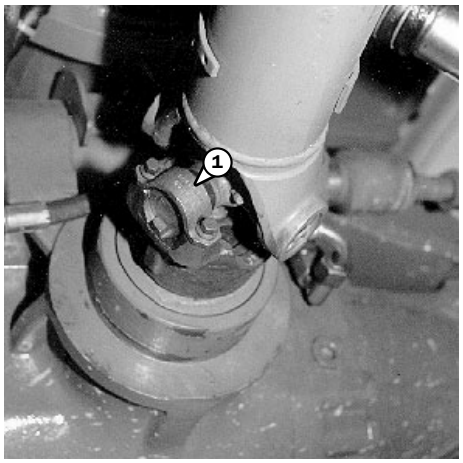


Standard torque settings to be used when no specific mention is made in dismantling and re-assembly.

Torque expressed in N.m (*)					
Thread diameter	**Class 5.6**	**Class 5.8**	**Class 8.8**	**Class 10.9**	**Class 12.9**
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M12	35	49	76	111	130
M14	57	79	121	178	209
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M20	173	243	370	544	637
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M24	298	418	637	936	1095
M27	442	619	944	1386	1622
M30	600	840	1280	1880	2200

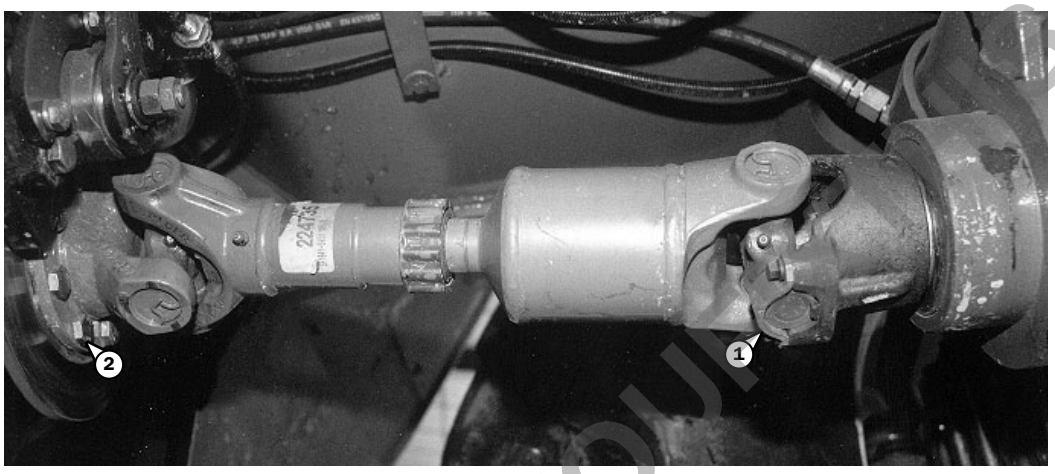
(*) - Tightening torques are given for black or zinc-plated fasteners with light lubrication.
- Tightening torques are given for automatic slip and reset torque wrenches and direct read dial torque wrenches.
- For more information, refer to Standard NF E25-030.

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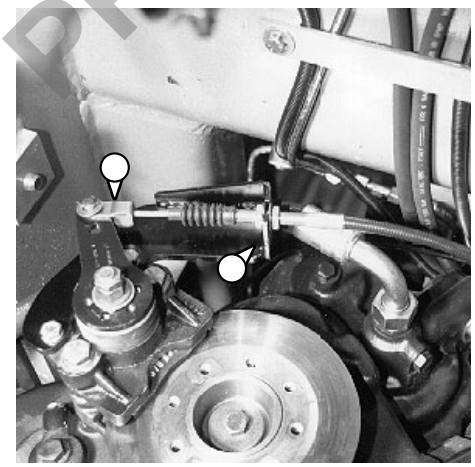
Remove the rear axle drive shaft
- Remove the two clamps 1, one each side of the drive shaft.

Remove the front axle drive shaft
- Remove the two clamps 1 at the front axle end.
- Remove the fixing bolts 2 at the gearbox end.





- Remove the protection plate 1 above the transmission and its bracket 2.



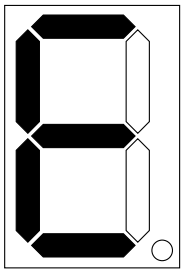
- Remove the parking brake cable and unfasten it at the telehandler end.

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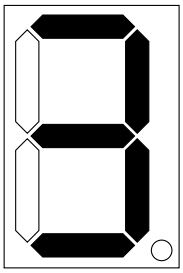
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OUTPUT MONITORING

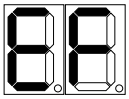
Example:



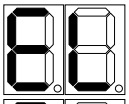
then:



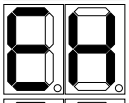
Error codes:



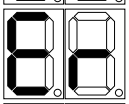
ECU memory fault



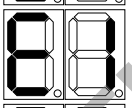
Low speed forward solenoid valve fault FL



High speed forward solenoid valve fault FH



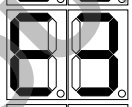
Reverse gear solenoid valve fault



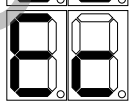
No. 1 solenoid valve fault



No. 2 solenoid valve fault



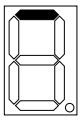
No. 3 solenoid valve fault



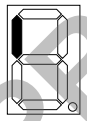
Crawler speed solenoid valve fault

INPUT MONITORING

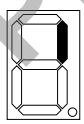
Input diagnostic codes:



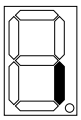
Transmission cut-off switch



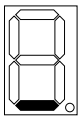
Shuttle control reverse gear switch



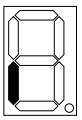
Shuttle control forward gear switch



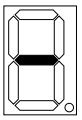
Shuttle control 1st gear switch



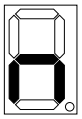
Shuttle control 2nd gear switch



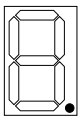
Shuttle control 3rd gear switch



Shuttle control 4th gear switch



Shuttle control neutral switch



Shuttle control 5th gear lock-out switch

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ELECTRICITY
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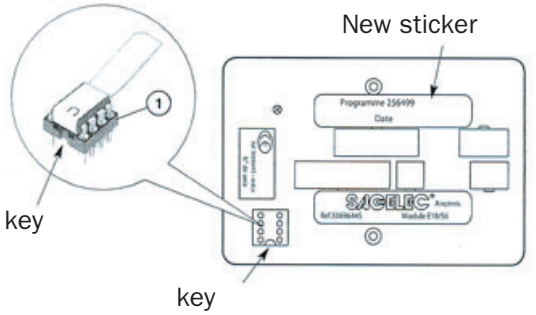
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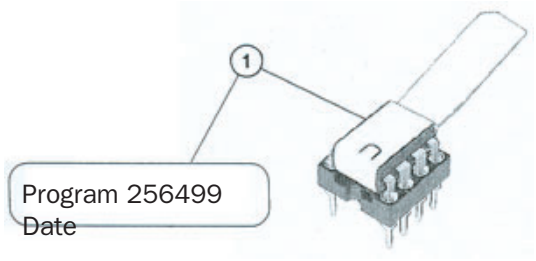
- GENERAL INSTRUCTIONS AND SAFETY NOTICE

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LOADING THE PROGRAM





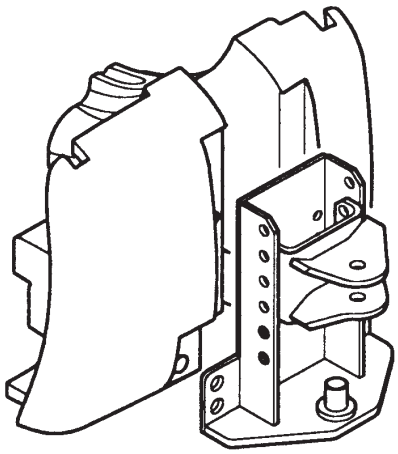
- Ensure the module is not powered.
- Locate the microprocessor 1 in its socket with the key facing outwards.
- Switch on the ignition.
- Loading is automatic (indicated by a lit red LED).
- When loading is complete the LED will flash once a second. Switch off the ignition at this point.
- Remove the microprocessor.
- Affix the new sticker.
- Check for correct operation.

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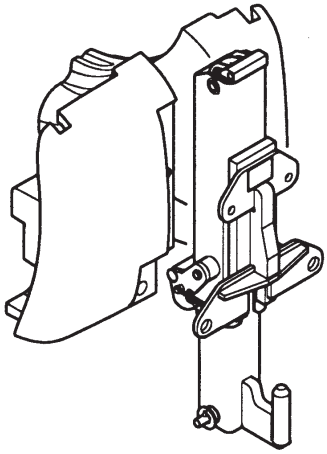
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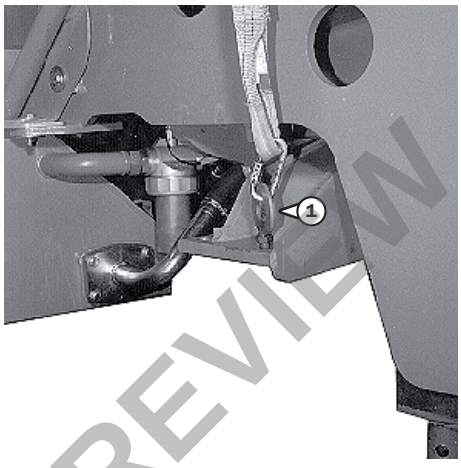
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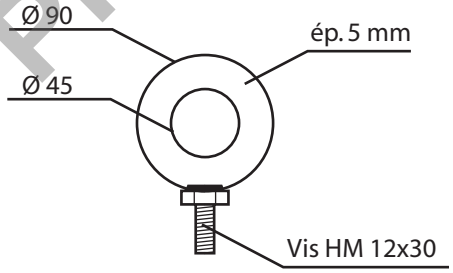
- For other models remove only the hook fitted to the telehandler and leave the counter-weight in place.
  - Coupling ladder



- Hydraulic hitch



- Remove the greasing pipes from the swivel point of the rear axle rocker beam.
- Secure a lifting eye 1 at each end of the rocker beam.
- Fit a sling to each lifting eye.



- Lifting eye diagram.

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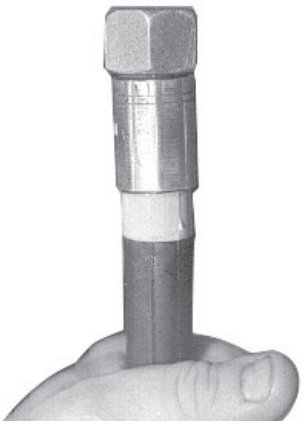
RECOMMENDATIONS

BLEEDING AND FILLING BOOM EXTENSION CYLINDERS

- This operation is to be carried out when one of the boom extension cylinders has been removed or disconnected from its hydraulic oil supply.
- Start the engine and completely retract the boom while maintaining pressure on the control block lever in order to fill the cylinders. Then slightly extend the boom, then retract it again.

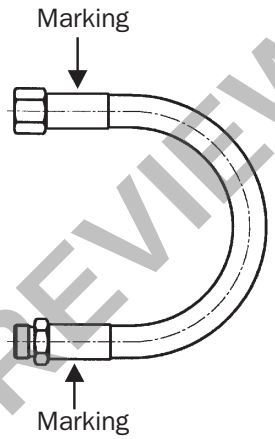
NOTE: To ensure correct simultaneous extension, you must regularly completely retract the boom.

HOSE MOUNTING INSTRUCTIONS



- When you re-fit or replace a hose, you must always allow it to follow its natural coiling direction. Connections must be made without twisting or strain, so that the hose uncoils inside the boom without excessive twisting.

NOTE: The markings stamped on the hose ends must be positioned to the outside of the coiling direction

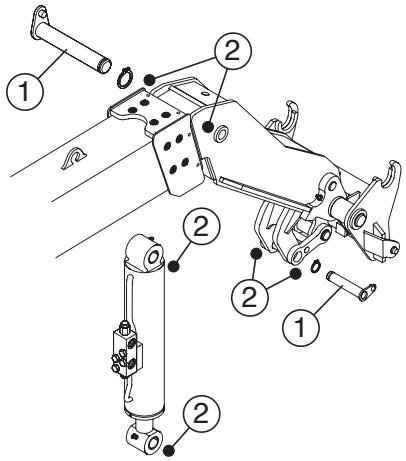


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CROWD CYLINDER RE-FITTING

- Re-fitting is by carrying out the operations described in the chapter “Crowd cylinder removal” in reverse order, paying attention to the following points:



- Test the crowd cylinder for correct operation.

- Before re-fitting pivot and clevis pins 1, clean them and apply a thin coat of grease.
  See chapter: “Telehandler characteristics” in section “0 - General Points”.

- Also clean and grease the pivots 2 with the same grease.

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HYDRAULIC DIAGRAM KEY			
Item	**Designation**	**Position on diagram**	**Characteristics (Options)**
BA	Feed block + accumulator	G20	
CA	Suction strainer	S6	
CSP	Counterbalance valve	M22/I25/M41	
CR(O)	Trailer hook (option)	I38	
D	4 or 5 component valve (option)	S35	
EE	Inlet section	S22	
EA(O)	Attachment component (option)	S24	
EL	Lifting component	S26	
EI	Tilt component	S28	
EA	Optional equipment component	S30	
ET	Telescoping component	S33	
EF	Closing component	S35	
D3	3 position steering valve	C13	
	Position 1: short steering		
	Position 2: front wheel steering		
	Position 3: crab position		
EVTF(O)	Boom head electrovalve (option)	E27	
FDAV	Front disc brake	K3	
FDAR	Rear disc brake	K15	
FR	Return filter	O13	
M	Turbo i.c. engine	Q6	1104d-44ta
	Idle speed		930 rpm
	Nominal loaded speed		2200 rpm
	Full speed unladen		2400 rpm
MC	Master cylinder	C5	
N	Level	S3	
P	Pump equipment	Q3	
PAAV	Front attachment plug	C25	
PAAV(O)	Front attachment plug (option)	C24	
PAAR(O)	Rear attachment plug (option)	G36	
PD	Steering pump	C12	
PP	Pressure port	O21	
PFR(O)	Trailer brake plug integrated in the vafr (option)	I9	
PRF(O)	Leakage return plug (option)	A23	
R	Hydraulic tank	S4	
RLF	Brake fluid tank	A3	
SC	Circuit selector n°1	E9	
SCFR(O)	Circuit selector n°2 (trailer brake option)	G8	
VC	Compensation cylinder DE	K26	110x55 c310
VI	Tilt cylinder DE	I26	140x70 c388
VD	Discharge valve	O9	
VDAV	Front steering cylinder DE	K5	90x45 c80x2
VDAR	Rear steering cylinder DE	K13	90x45 c80x2
VL	Lifting cylinder DE	I23	150x70 c716
VT	DE telescoping cylinder	K40	75x55 c2700

HYDRAULIC DIAGRAM KEY			
Item	**Designation**	**Position on diagram**	**Characteristics (Options)**
VAFR(O)	Trailer brake valve (option)	I8	
VVT(O)	Ts locking cylinder DE (option)	A26	60x45 c183
VAI	Insulation valve	A30	
VACM(O)	Movement cut-off valve (option)	O18	

NOTE: 1- The calibration pressures of the main relief valves, on the inlet sections, are given for maximum engine speed.
2- The calibration pressures of the secondary relief valves are at an engine speed of 1000 rpm.
3- The pressure relief valves should be adjusted at an oil temperature of 50°C.

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2 - STEERING CIRCUIT

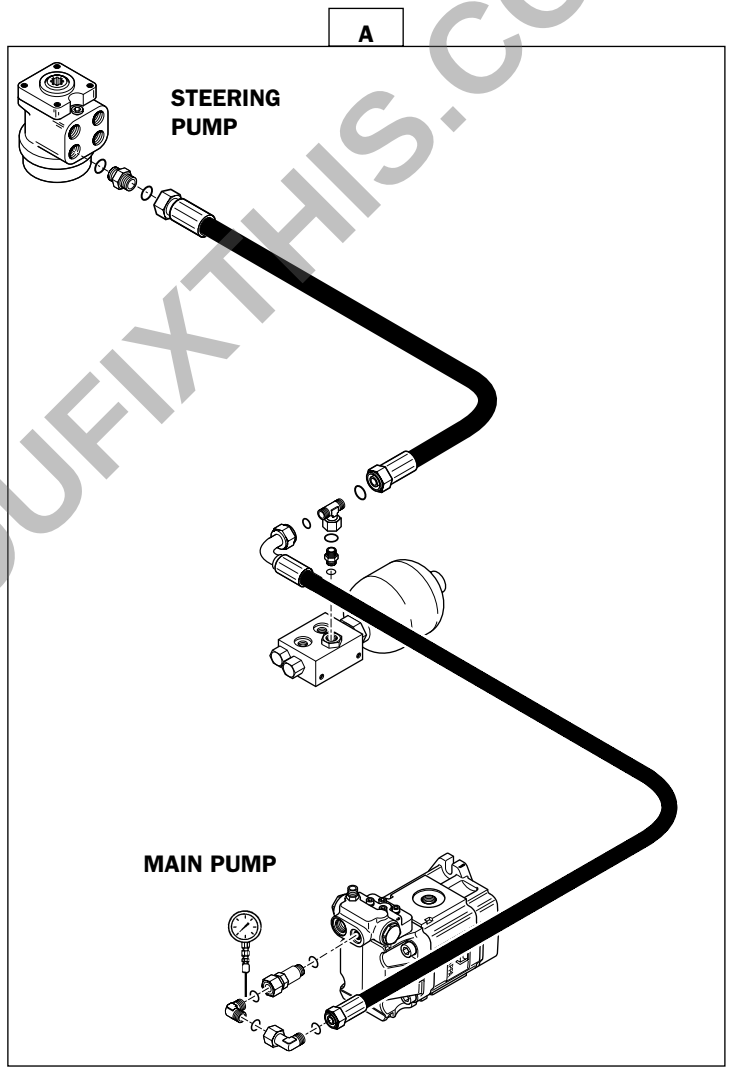
Parts required

- 1 Manometer 0/400 bar 549 885
  or 1 digital manometer (0-600 bar) 554 118
- 1 test hose 549 888
- 1 connector 173 567
- 1 test point 58 181

Procedure

- Using a T connector connect the pressure gauge to the pressure out pipe on the main pump (port P).

- With the engine operating at maximum revolutions, move the steering on to full lock and, holding that position, read the pressure on the pressure gauge.
- Steering pressure: 140 bar



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2 - TROUBLESHOOTING

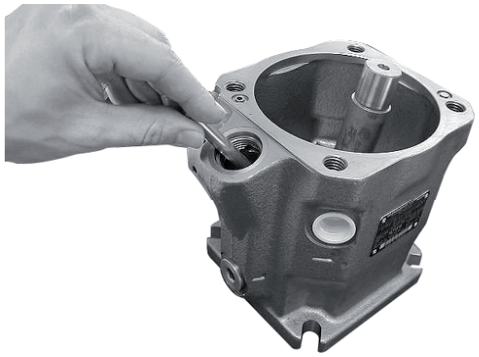
Before working through any of these troubleshooting steps or removing the control block, carry out a prior inspection of the telehandler's hydraulic circuit in order to eliminate all possible malfunctions arising from causes external to the SX14 control block.

Abnormal operation of the actuators connected to the control block.

Malfunction observed	Probable cause	Additional checks	Solutions
Lack of power at all actuators	- LS pressure relief valve defective - LS pressure relief valve out of adjustment	Take a pressure measurement (see chapter 70 - 02)	- Replace the LS pressure relief valve (cf. § 5.1) - Adjust the LS pressure relief valve
Lack of power on one actuator only	- Secondary pressure relief or anticavitation valve out of adjustment - Secondary pressure relief valve jammed "open" (return to tank)		- Re-set to nominal pressure (see chapter 70 - 02) - Replace the secondary pressure relief valve (cf. § 5.5)
Lack of speed in the performance of one or all movements	Spool piloting fault	Check control pressure	Remedy (see chapter 70 - 02)
Lack of speed in just one movement	- Spool stroke incorrect or spool not moving freely - Individual compensator pressure blocked	Check piston movement	If movement is incorrect, change housing and piston assembly (cf. § 5.7 and 5.6). Change housing and pressure compensator (cf. § 5.7)
Steering abnormally hard	Flow divider adjustment problem	- Adjusting piston sliding freely - Adjusting piston jammed	- Replace control sub-system (cf. § 5.3) - Replace housing and control sub-system (cf. § 5.7 and 5.3)
Simultaneous movement malfunction	- Individual compensator orifice blocked - Individual compensator pressure blocked - LS line leakage		- Remove and clean individual compensator (cf. § 5.7) - Replace housing and pressure compensator assembly - Replace LS flow regulator (cf. § 5.2)

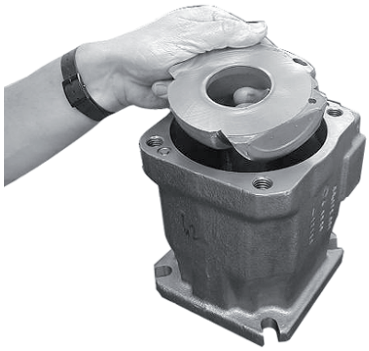
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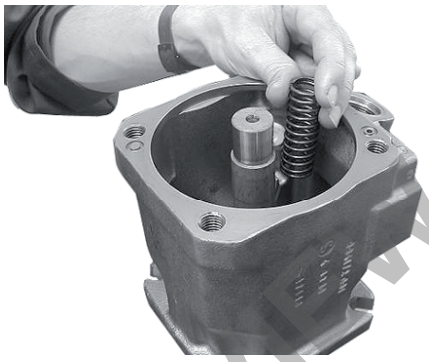


- Remove the control piston rod.

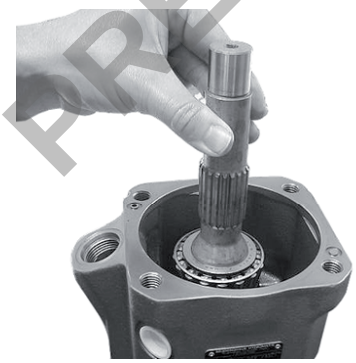
NOTE: As the head of the rod has a particular shape, it may be necessary to manoeuver the swashplate to remove the rod.



- Remove the swashplate.



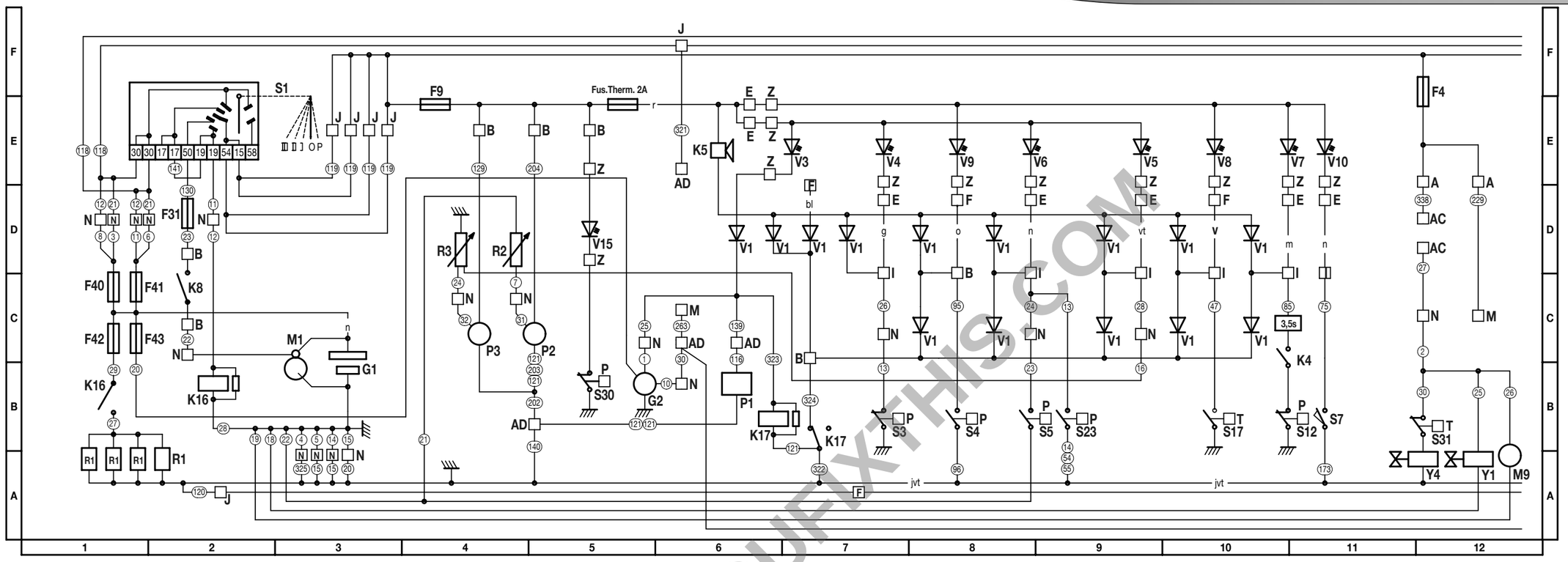
- Remove the swashplate return spring.

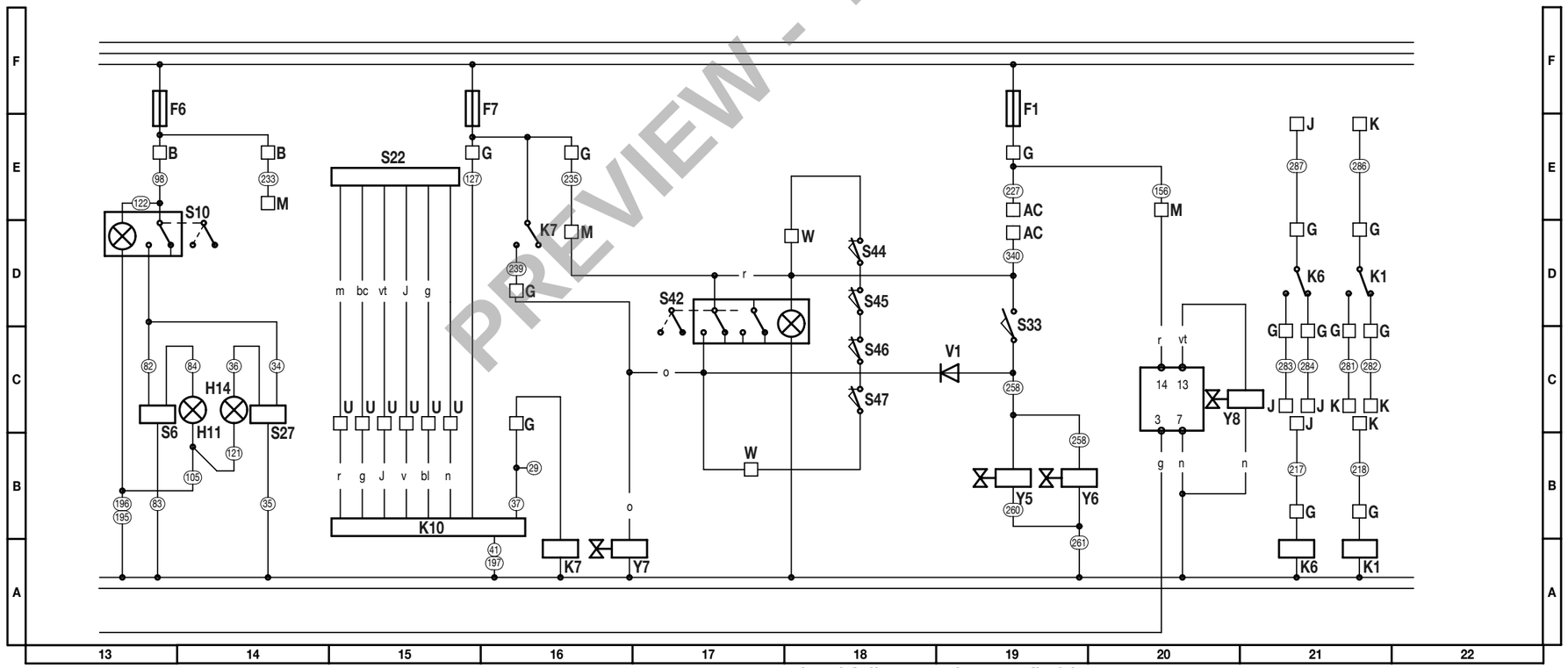


- Remove the gear shaft and lower bearing assembly.

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COMPONENT LOCATIONS 2D AND 3D VIEWS

Pages

– Series 5 et Series E
Location 2D D2
Location 3D D14

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OPERATION AND MAINTENANCE

Indicator LED

All standard models have a green CAN LED. A flashing CAN LED indicates that CANdrive is powered, but is not receiving any J1939 data. A constantly lit CAN LED indicates power on with good CANbus connection and J1939 activity. (Note: J1939 activity can originate from any device on the CANbus network, and may not necessarily be valid data from the engine ECU).

Maintenance

CANdrive has no user serviceable parts.
Maintenance is therefore limited to the following preventative checks:

Check that electrical connections are secure.

Check the CANdrive is correctly installed and protected against liquids and an excessive build-up of dust or dirt.
The front label and casing can be wiped with a clean, damp cloth. Do not use cleaning solvents.

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