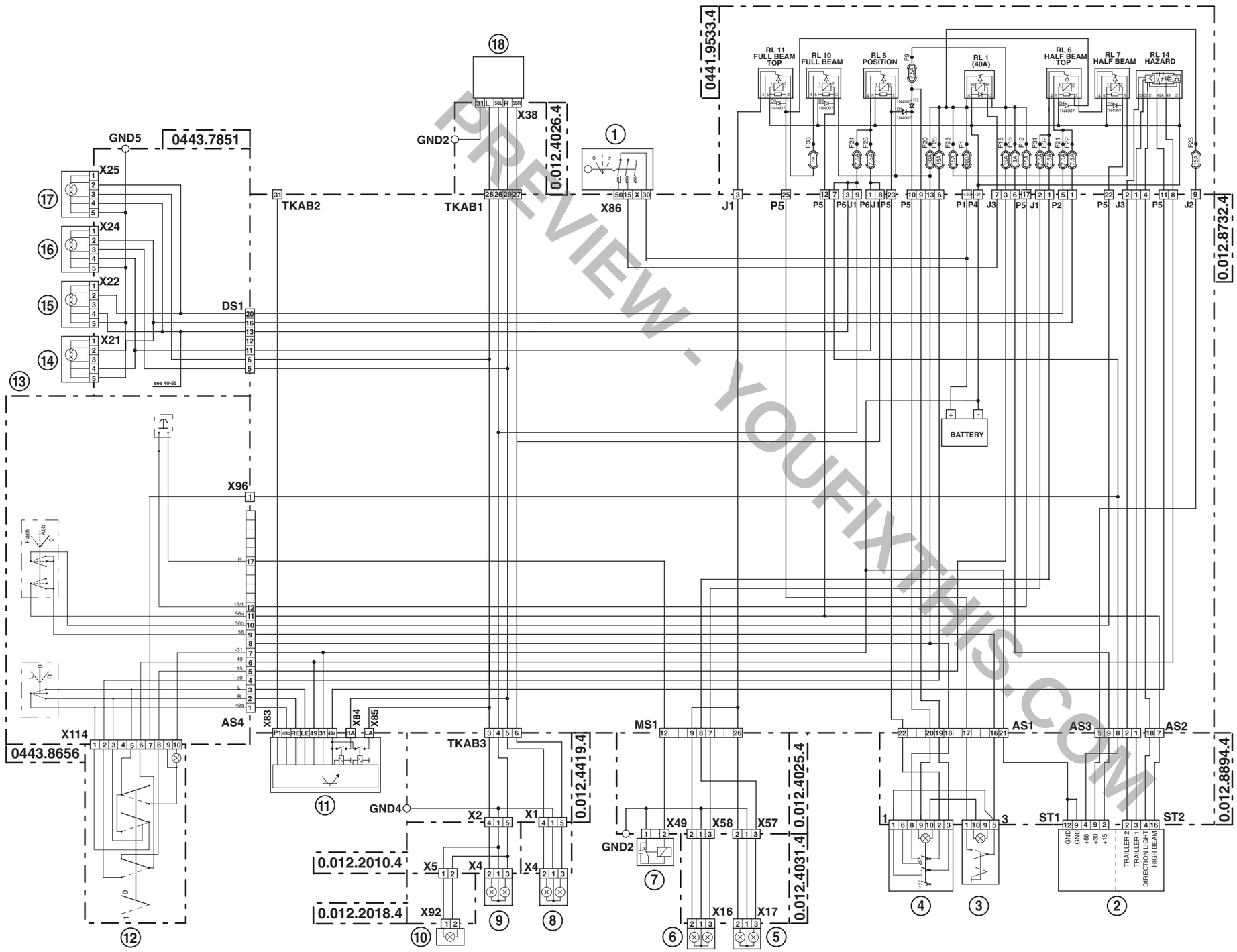
4.5 LIGHTS - STEERING COLUMN SWITCH UNIT



1 Starter switch
2 Infocenter
3 Cab roof worklights switch
4 Sidelights switch
5 Front left headlamp
6 Front right headlamp
7 Horn
8 Rear sidelights and direction indicators, right
9 Rear sidelights and direction indicators, left
10 Number plate light
11 Direction indicator electronic flasher unit
12 Hazard switch light
13 Light switch unit
14 Front right worklight
15 Front left worklight
16 Front right sidelight and direction indicator
17 Front left sidelight and direction indicator

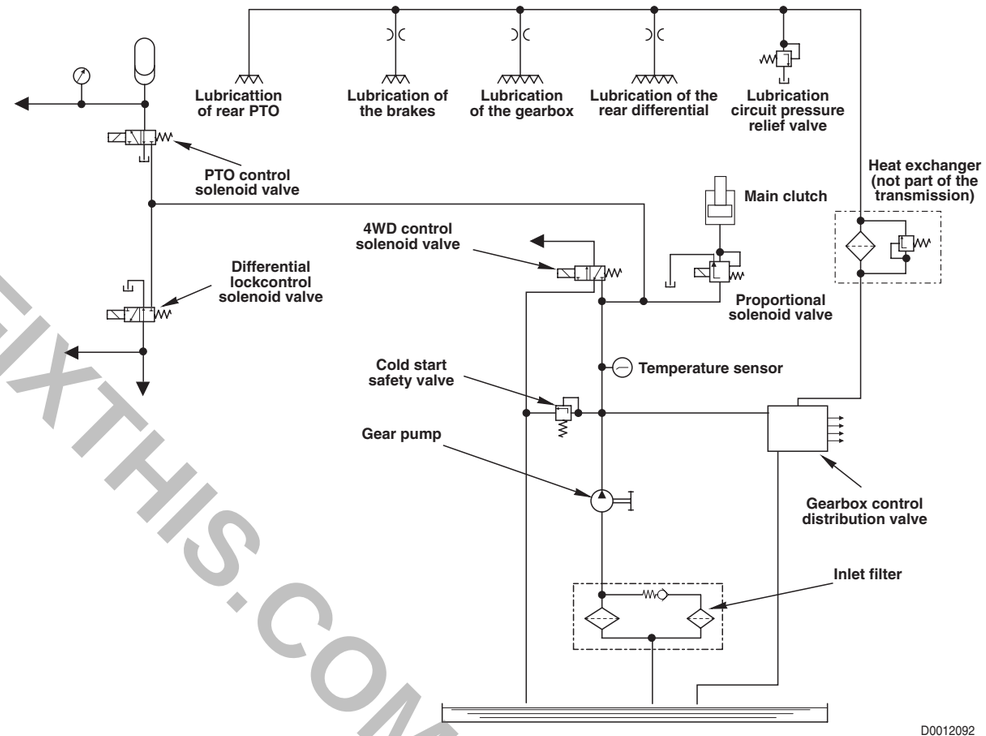
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1.2.2 TRANSMISSION HYDRAULIC SYSTEM

The transmission hydraulic system is supplied by a gear pump driven from a lateral power take-off.
The gear pump supplies pressurised fluid for the following uses:

- hydraulic gearbox control valve
- forward/reverse shuttle control valve
- proportional solenoid control valve for main clutch
- 4WD control solenoid valve
- rear PTO control solenoid valve
- differential lock control solenoid valve
- lubrication of the gearbox, rear differential and rear PTO clutch control shaft



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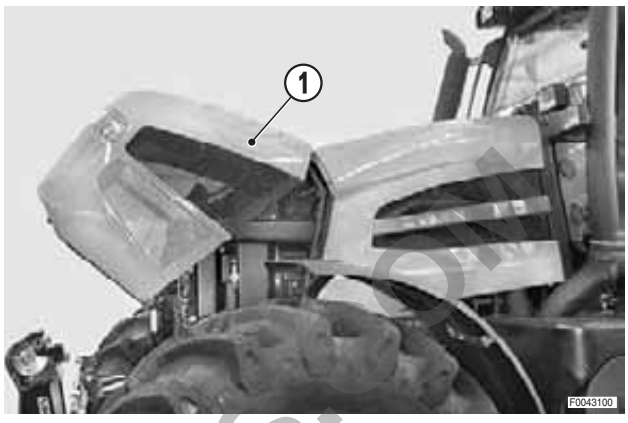
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REMOVAL OF THE ENGINE HOOD AND SIDE PANELS - ADJUSTMENTS

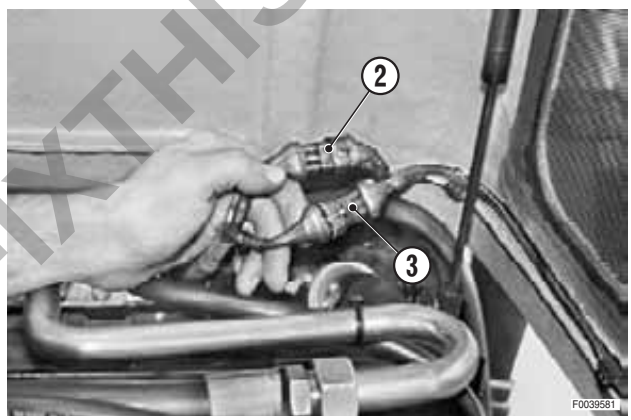
⚠ Remove the key from the ignition and apply the parking brake.

1. Front hood

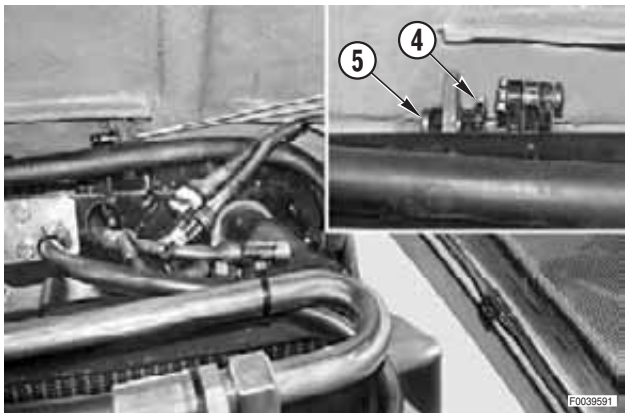
1 - Pull the ring on the hood release cable and raise the hood (1).



2 - Unplug the connectors (2), (3) of the road and work lights.



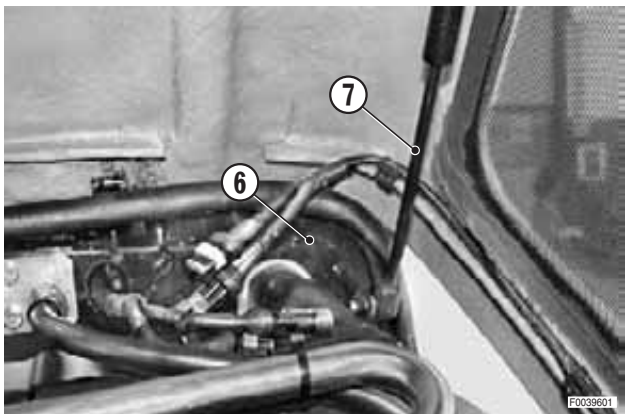
3 - Remove the plates (4) securing the hinge pins (5).
★ Leave the hinge pins (5) in position for now.



4 - Detach the gas springs (7) from the radiator support (6).

5 - Support the hood and withdraw the hinge pins.

6 - Remove the hood.



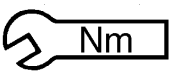
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3.5 ERROR CODE LIST WITH DESCRIPTION

Code	Error location/error cause	System reaction	possible remedy	Remarks
11	EEPROM end-of-line data invalid (contact pressure)	Operation mode NORMAL Default contact pressure	Carry out/repeat HK adjustment	• Generally upon ”new” electronic system • Self-preservation • Reserve value • Checks or plausibility invalid • Both EEPROM blocks defective no automatic restoration possible
12	Temperature sensor LU, K+	Default value: cold (HK pedal holding time, splitter holding time, slip times) No change of operation mode	Check cabling Check temperature sensor Check sensor supply Check vehicle electr. system voltage	• Possible sequence error from: • K+ HK sensor • K+ sensor supply AU1
13	Temperature sensor KM	Default value: cold (HK pedal holding time, splitter holding time, slip times) No change of operation mode	Check cabling Check temperature sensor Check sensor supply Check vehicle electr. system voltage	• Possible sequence error from: • K+ HK sensor • K+ sensor supply AU1
14	Synchronous neutral switch plausibility (Start interlock switch)	No change of operation mode	Check cabling Check neutral switch (Start interlock switch) Check speed sensor/cabling Nab, Nhk	• Self-preservation • Plausibility circuit • Nhk-SyncN-Nab
15	Warning light LU (Oil pressure/HK overspeed)	No change of operation mode	Check cabling Check lamp in disconnected state	• Diagnosis only if configured LU can only be diagnosed
16	Warning light KM (Oil pressure/HK overspeed)	No change of operation mode	Check cabling Check supply warning light	• Diagnosis only if configured • KM can only be diagnosed in disconnected state
17	Warning light K+ (Oil pressure/HK overspeed)	No change of operation mode	Check cabling Check supply warning light	•Diagnosis only if configured • KM can only bediagnosed in connected state

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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%.

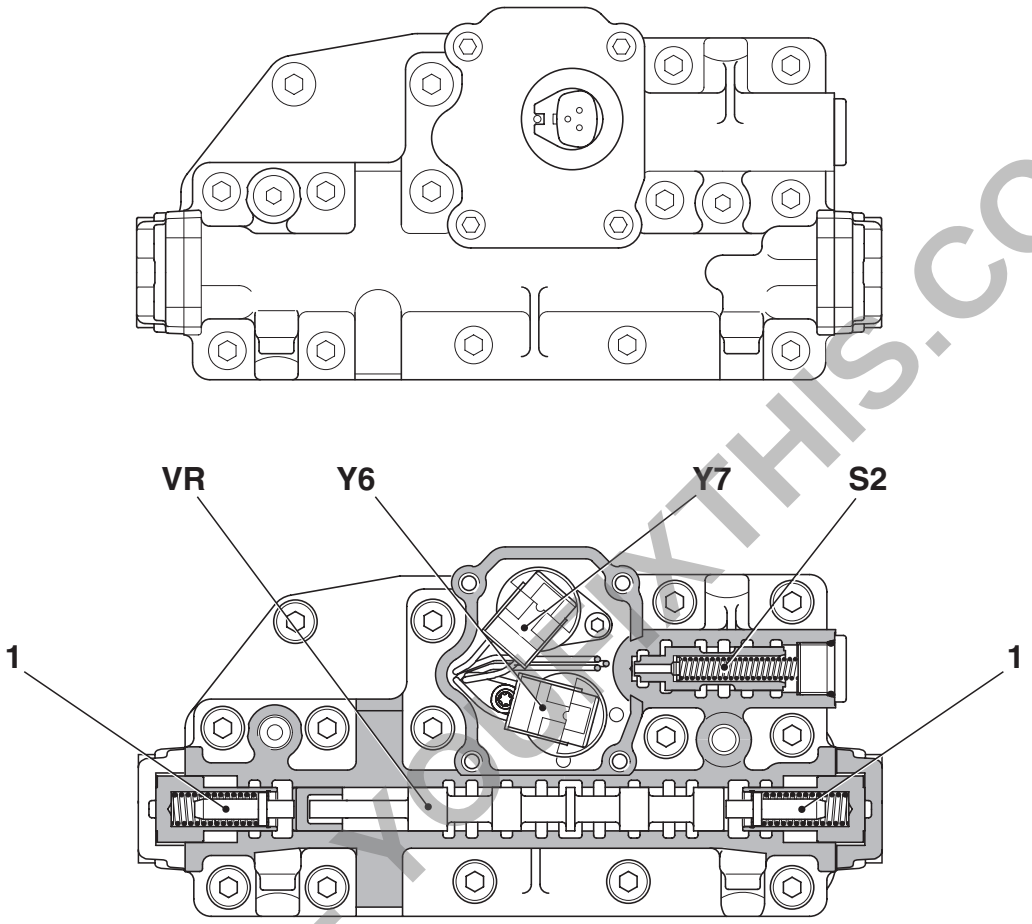
BOLT SIZE		BOLT CLASS					
		8.8		10.9		12.9	
		Nm	lb.ft.	Nm	lb.ft.	Nm	lb.ft.
COARSE THREAD	M6x1	8.0–8.8	5.9–6.5	11.8 – 13.0	8.7–9.6	13.8 – 15.2	10.2–11.2
	M8x1.25	19.4–21.4	14.3–15.8	28.5 – 31.5	21.0 – 23.2	33.3 – 36.9	24.5 – 27.2
	M10x1.5	38.4 – 42.4	28.3 – 31.2	56.4 – 62.4	41.6 – 46.0	67.4 – 74.4	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
	M24x2	602 – 666	443.7 – 490.8	884 – 978	651.5 – 720.8	1035 – 1143	762.8 – 842.4

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B. SHUTTLE CONTROL VALVE

MAIN COMPONENTS



D0011980

Y6 Pilot solenoid valve for FORWARD gear
Y7 Pilot solenoid valve for REVERSE gear
VR FORWARD/REVERSE control spool valve
S2 Relief valve
1 Neutral return device

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5. HYDRAULIC SYSTEM

DESCRIPTION

The AGROTON MK3 230-260 series is equipped with an LS hydraulic system with a variable displacement pump which supplies the hydraulic services (auxiliary service control valves, hydraulic trailer braking, etc.) and for the steering system.

The LS hydraulic circuit utilizes a variable displacement piston pump that supplies a quantity of oil that varies according to the demand from the services.

This means that when the engine is running at top speed and no hydraulic services are in operation, any oil circulated by the pump is in effect only the residual flow from internal leakage occurring in the devices connected to the system (just a few litres per minute), thereby saving energy (and reducing fuel consumption.

In addition, the displacement of the variable piston pump is greater than the potential demand of any single service, so that there will always be sufficient flow to satisfy several services simultaneously.

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SERDIA (LEVEL III)

MK 3	TTG	Parameter	Unit	Min.	Max.	typ Wert	Description
Page 38: CAN: (7740)SwitchoverRelease: Governor, speed droop, limiting curve, preset engine speed							
		Shift mask: setpoint speed		0	63	8	
		Shift mask: limiting curve		0	7	0	
		Shift mask: speed droop		0	7	0	
		Shift mask: governor mode		0	7	0	
Page 39: CAN: (7662)EMR-fault message via OiagTelegr. ***(on/off)***							
		Setpoint generator 1		0	1	1	
		Setpoint generator 2		0	1	1	
		Boost pressure sensor		0	1	1	
		Coolant temperature sensor		0	1	1	
		Oil pressure sensor		0	1	1	
		Electronics temperature		0	1	1	
		Eng Speed Sensorl Eng Run		0	1	1	
		Eng Speed Sensor 2 Eng Run		0	1	1	
		Rack Travel Sensor not vibr.		0	1	1	
		Oversp. only during shutd.		0	1	1	
		Actuator deviation excessive		0	1	1	
		Coolant Temp. high (alarm)		0	1	1	
		Coolant Temp. high (shutdown)		0	1	1	
		Oil pressure low (alarm)		0	1	1	
		Oil pressure low (shutdown)		0	1	1	
		PWM Input 2		0	1	1	
		PWM Input 1		0	1	1	
		Fault data set		0	1	1	
		Fault hardware parameters		0	1	1	
		Fault CAN		0	1	1	
		Fault CAN, voltage too low		0	1	1	
		Fault shutdown solenoid		0	1	1	
		Fault EDC Auto Regulation		0	1	1	

∗ See also system description EMR, Chapter 3 System functions.

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EDS (Electronic Diagnosis System)

Code	Error location/error cause	System reaction	possible remedy	Remarks
31	Retaining valve 2 KM	Operation mode STAND-BY STRATEGY (Powershift blocked)	Check cabling Check valve Check valve supply (VPS2)	• Only for T7200 • Possibly sequence error from LU VPS2 • KM can only be diagnosed in disconnected state • Self preservation
32	Retaining valve 2 K+	Operation mode STAND-BY STRATEGY (Powershift blocked)	Check cabling Check valve Check valve supply (VPS2)	• Only for T7200 • Possibly sequence error from LU VPS2 • Self preservation • Can also lead to error "VPS2-Plausi" (Int. EC:47) • K+ can only be diagnosed in connected state
33	Retaining valve 1 LU	Operation mode STAND-BY STRATEGY (Powershift blocked)	Check cabling Check valve Check valve supply (VPS2)	• Only for T7200 • Possibly sequence error from LU VPS2 • LU can only be diagnosed in disconnected state
34	Retaining valve 1 KM	Operation mode STAND-BY STRATEGY (Powershift blocked)	Check cabling Check valve Check valve supply (VPS2)	• Only for T7200 • Possibly sequence error from LU VPS2 • KM can only be diagnosed in disconnected state • Self preservation
35	Retaining valve 1 K+	Operation mode STAND-BY STRATEGY (Powershift blocked)	Check cabling Check valve Check valve supply (VPS2)	• Only for T7200 • Possibly sequence error from LU VPS2 • Self preservation • Can also lead to error "VPS2- Plausi" (Int. EC:47) • K+ can only be diagnosed in connected state

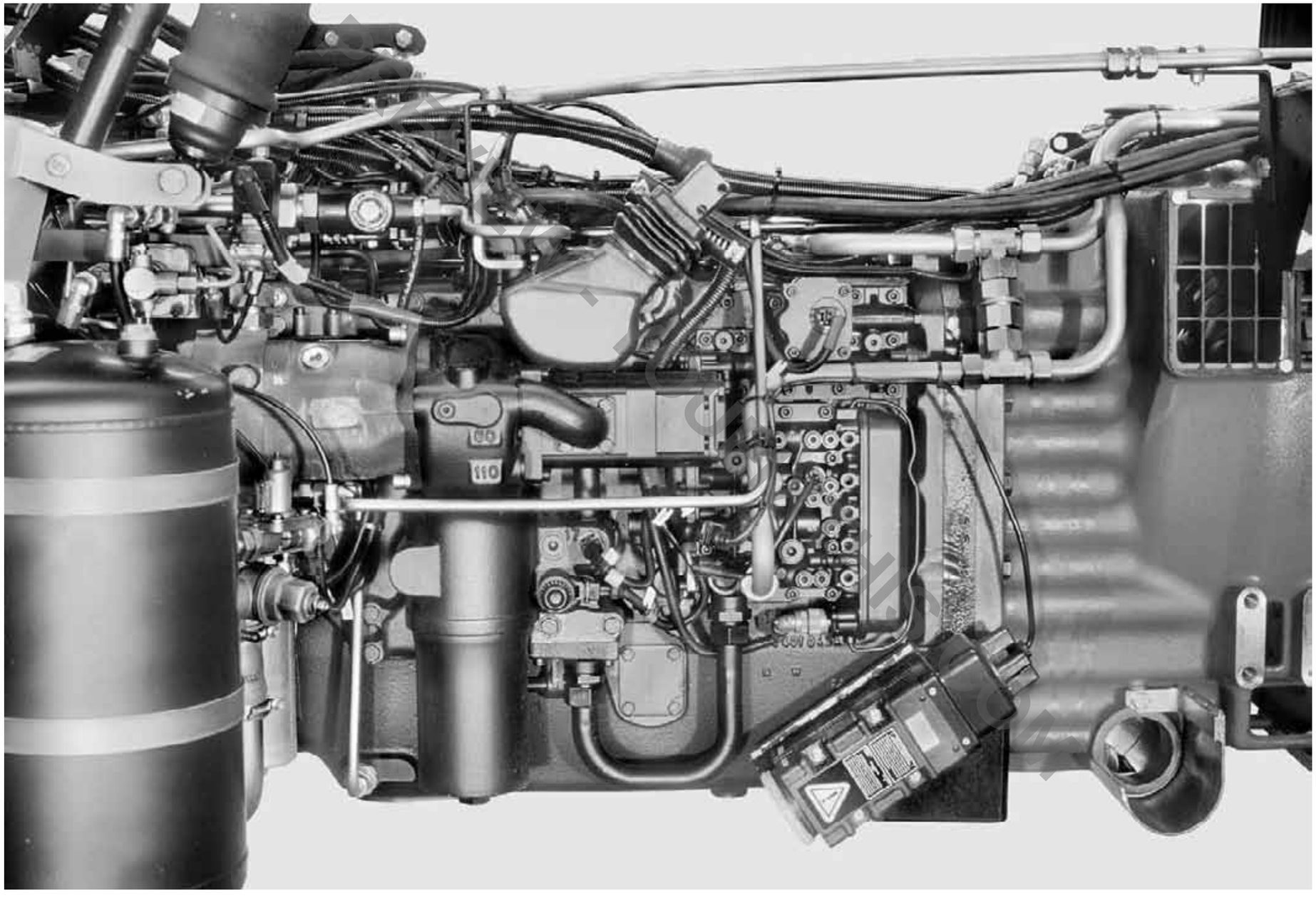
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Table 2: Values of constant K8

Value of constant K8	Language	Speed display	Radar sensor existing?	Flashing light - beep
75	danish	km/h	NO	ON
107	danish	km/h	SI	ON
11	danish	km/h	NO	OFF
43	danish	km/h	SI	OFF
65	german	km/h	NO	ON
97	german	km/h	SI	ON
1	german	km/h	NO	OFF
33	german	km/h	SI	OFF
66	english	km/h	NO	ON
67	english	km/h	NO	ON
98	english	km/h	YES	ON
99	english	km/h	YES	ON
2	english	km/h	NO	OFF
3	english	km/h	NO	OFF
34	english	km/h	YES	OFF
35	english	km/h	YES	OFF
69	french	km/h	NO	ON
101	french	km/h	YES	ON
5	french	km/h	NO	OFF
37	french	km/h	YES	OFF
77	italian	km/h	NO	ON
109	italian	km/h	YES	ON
13	italian	km/h	NO	OFF
45	italian	km/h	YES	OFF
79	dutch	km/h	NO	ON
111	dutch	km/h	YES	ON
15	dutch	km/h	NO	OFF
47	dutch	km/h	YES	OFF
73	portugese	km/h	NO	ON
105	portugese	km/h	YES	ON
10	portugese	km/h	NO	OFF
41	portugese	km/h	YES	OFF
71	spanish	km/h	NO	ON
103	spanish	km/h	YES	ON
7	spanish	km/h	NO	OFF
39	spanish	km/h	YES	OFF

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DETAIL OF PUMP END ON RIGHT-HAND SIDE



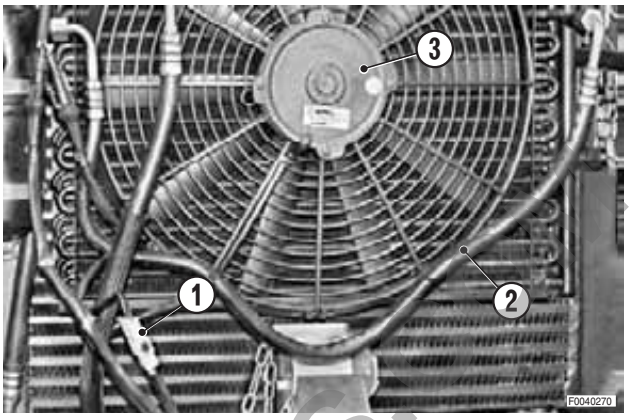
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REMOVAL OF THE CONDENSER FAN

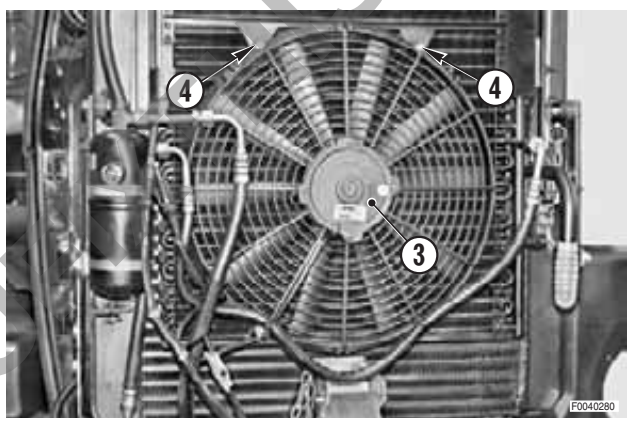
⚠ Remove the key from the ignition.

1 - Disconnect the connector (1).

2 - Release the pipe (2) fixed to the outer ring of the fan (3) from the retaining clips.



3 - Remove the bolts (4) and remove the fan (3).



REFITTING THE COOLING FAN

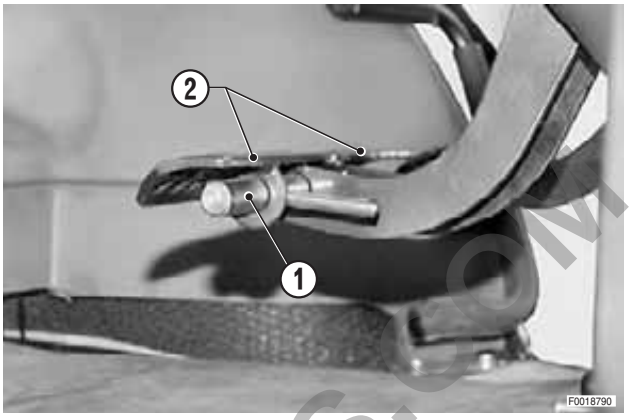
- Refitting is the reverse of removal.

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ADJUSTMENT OF THE BRAKE LIGHT SWITCHES

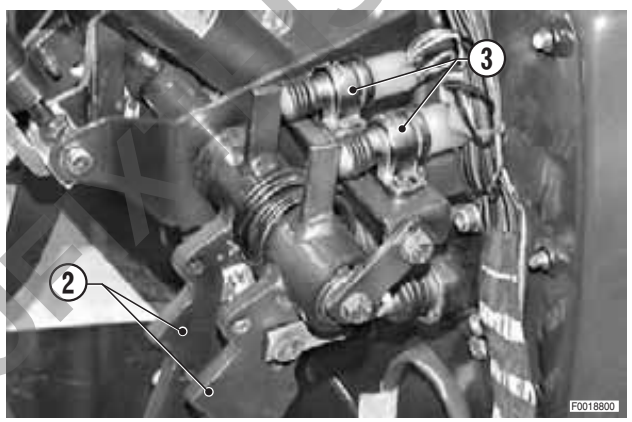
★ The switch for each pedal is adjusted separately.

1 - Check that the pedal latch pin (1) slides freely to connect and disconnect the two pedals (2).

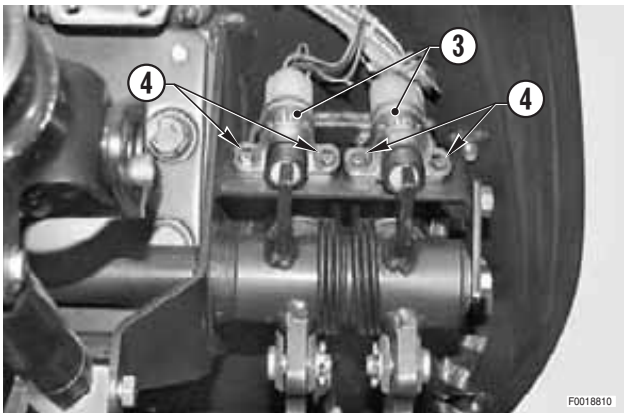


2 - Force the pedals (2) upwards and check that the brake light switches (3) have an extra opening travel of 1±0.2 mm (0.04±0.008 in.).

★ This extra travel protects the switches from impacts at the end of travel caused by sudden release of the pedals.



3 - If the switches (3) do not have this extra travel, loosen the screws (4) so that they just grip the switch; move the switch towards the front of the tractor and tighten down the screws (4) to fix it in position.



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REFITTING THE FRONT SUSPENSION CYLINDERS

- Refitting is the reverse of removal.

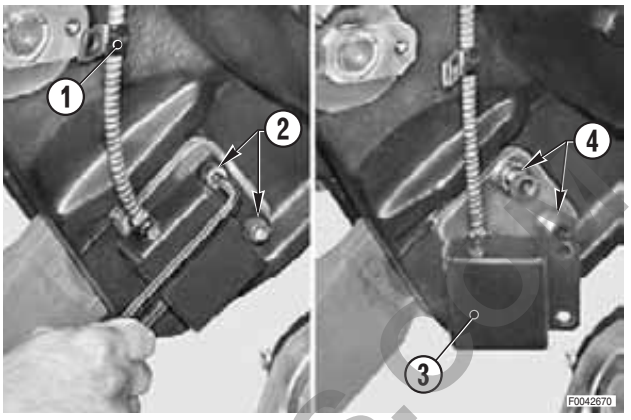
1 - Start the engine and raise and lower the suspension several times to bleed the system and check for leaks.

2 - Stop the engine, check the gearbox oil level and top up if necessary.

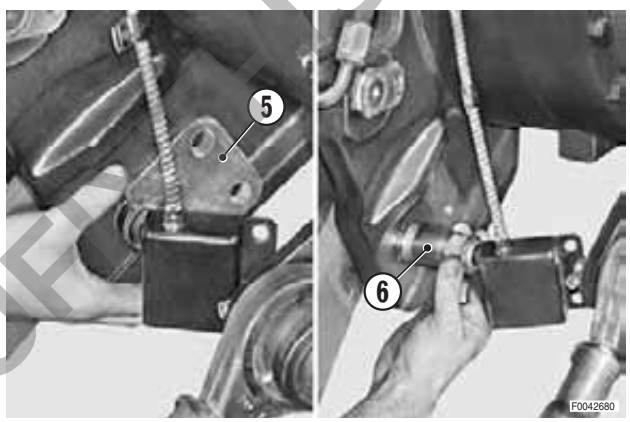
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REMOVAL OF THE LIFT DRAFT SENSOR

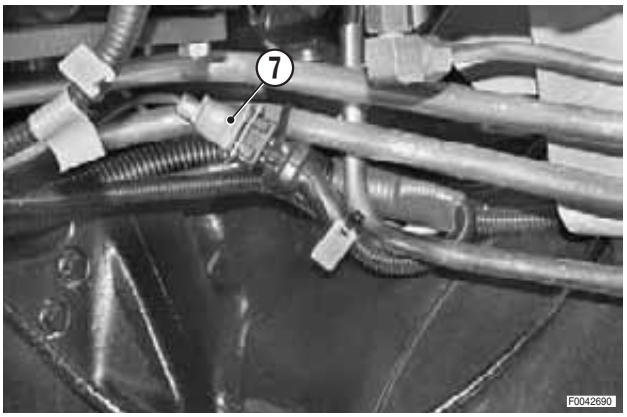
1 - Disconnect the clamp (1); remove the screws (2) and remove the cover (3) and the spacers (4).



2 - Support the lever and remove the bracket (5) and then the sensor (6).



3 - Release the wiring from the retaining straps and unplug the sensor connector (7).



REFITTING THE LIFT DRAFT SENSOR

- Refitting is the reverse of removal.

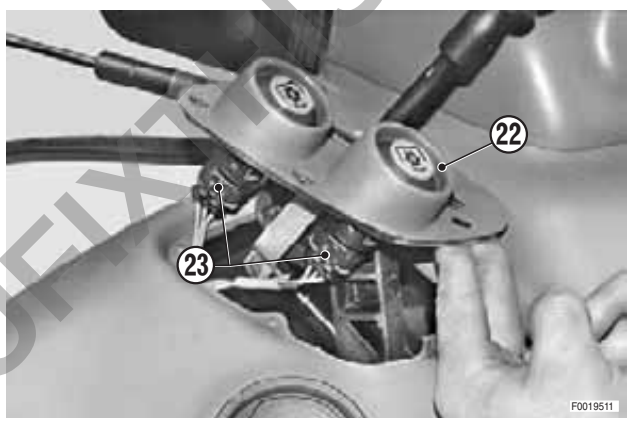
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5. Removal of the PTO control panel

1 - Unscrew and remove the bolts (21).



2 - Lift the panel (22) and unplug the connectors (23).

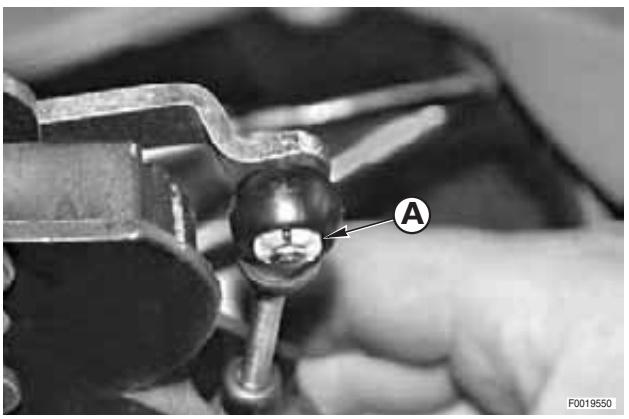


REFITTING THE AUXILIARY SERVICES CONTROL PANELS AND LEVERS

- Refitting is the reverse of removal.

※1

★ The slotted bush "A" securing the cable must be oriented towards the outer end of the fixing pin.



1 - Adjust the length of the control cables.
(For details, see «RENEWAL OF THE AUXILIARY VALVE CONTROL CABLES»)

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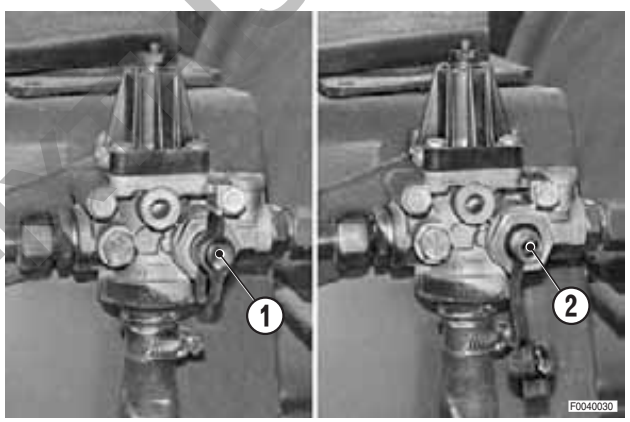
RENEWAL OF THE CAB AIR SPRINGS AND HYDRAULIC DAMPERS

NOTE This procedure refers to repairs to be undertaken following perforation or an air leak from the collar of an air spring, damage to the compressed air fitting or a malfunction of the hydraulic dampers.

⚠ Remove the key from the ignition and apply the parking brake.

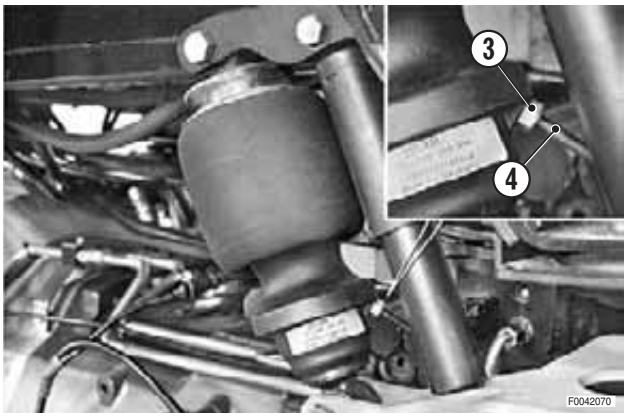
1 - Remove the rear wheel on the appropriate side. (For details, see "REMOVAL OF REAR WHEELS").

2 - Remove the cover (1) and discharge all compressed air from the pneumatic circuit by pressing the push-button (2) on the pressure control valve.

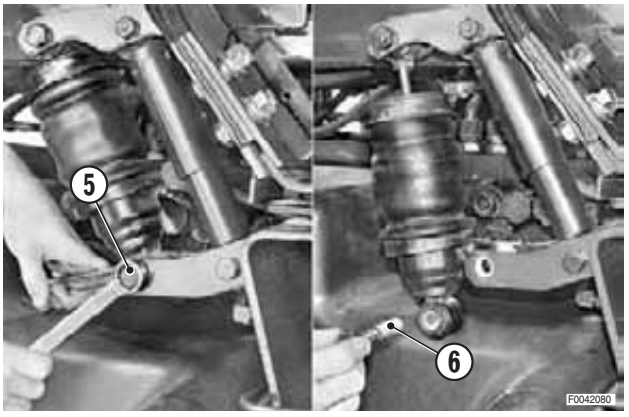


1. Remove the cab air spring

1 - Loosen the fitting (3) and disconnect the delivery pipe (4). ※1



2 - Unscrew and remove the self-locking nut (5) and the lower bolt (6).



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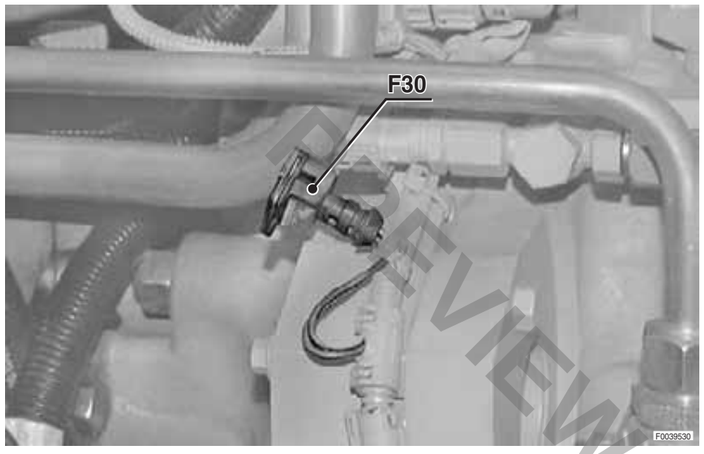
Description	Code	Technical (para. 3.2.xx)	Connector	System (para. 4.xx)	Notes
Supplementary power (in cab)			X80	10	
Thermostarter	0425.5241	3	X63	3	
Trailer braking air pressure sensor pressure sensor	0.011.9428.0	1	X8	14	
Trailer braking low pressure switch			X10	14	
Trailer socket (lights and auxiliary power)	0442.4116		X38	2-10-13	
Transmission display	0442.2054		X93	16	
Transmission ECU	0443.8083/10		ECU PS	16	
Transmission oil temperature sensor	0441.6649	10	TEMP	16	
Transmission speed sensor	0443.8438		NHK	16	
Windscreen wiper motor	0441.3192		X26	8	

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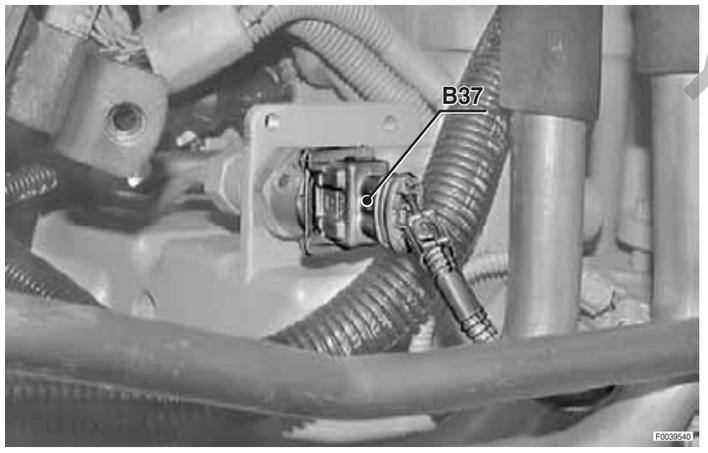
Pin	Volts.	Abbreviation	Description
17		HYDRA	Hydraulic system oil filter clogged
18			Not utilised
19		VORGL	Glowplugs test
20		RPTO	Rear PTO rpm
21		GROUND	Input, actual ground speed (radar)
22		WHEEL	Input, theoretical vehicle speed
23		TRAILER	Input, trailer braking indicator light (Italy)
24			Not utilised
25		EMR	Input, engine indicator light
26			Not utilised

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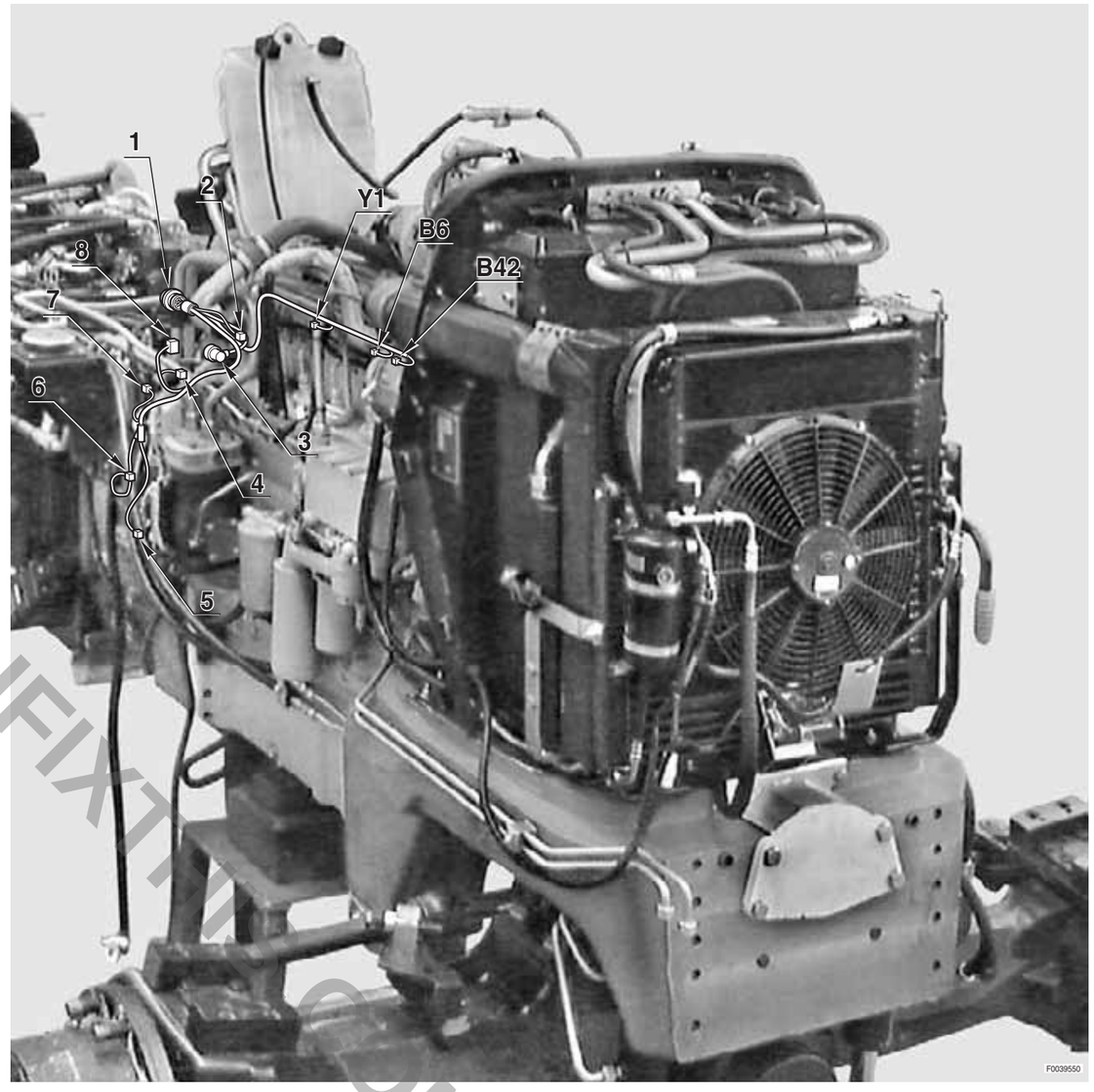
7



8



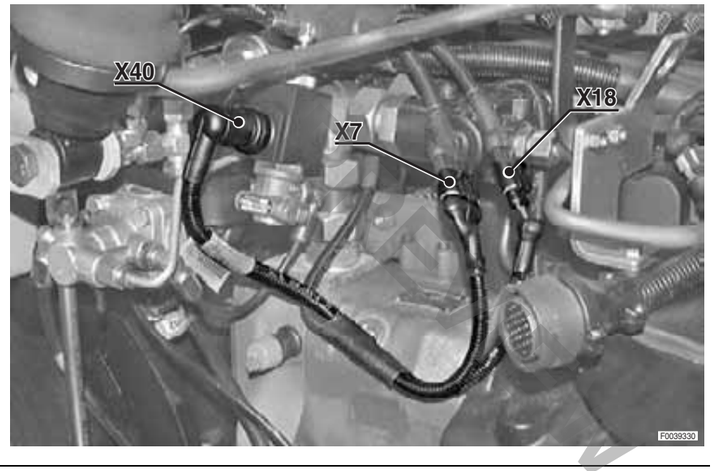
ENGINE WIRING (KHD)



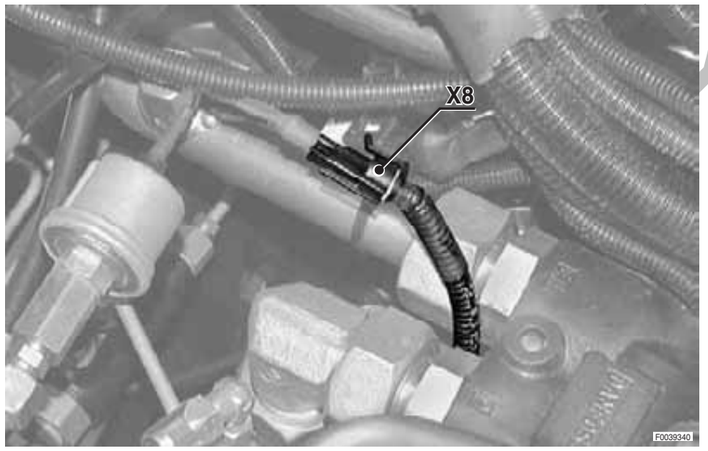
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CONNECTORS LOCATION

1

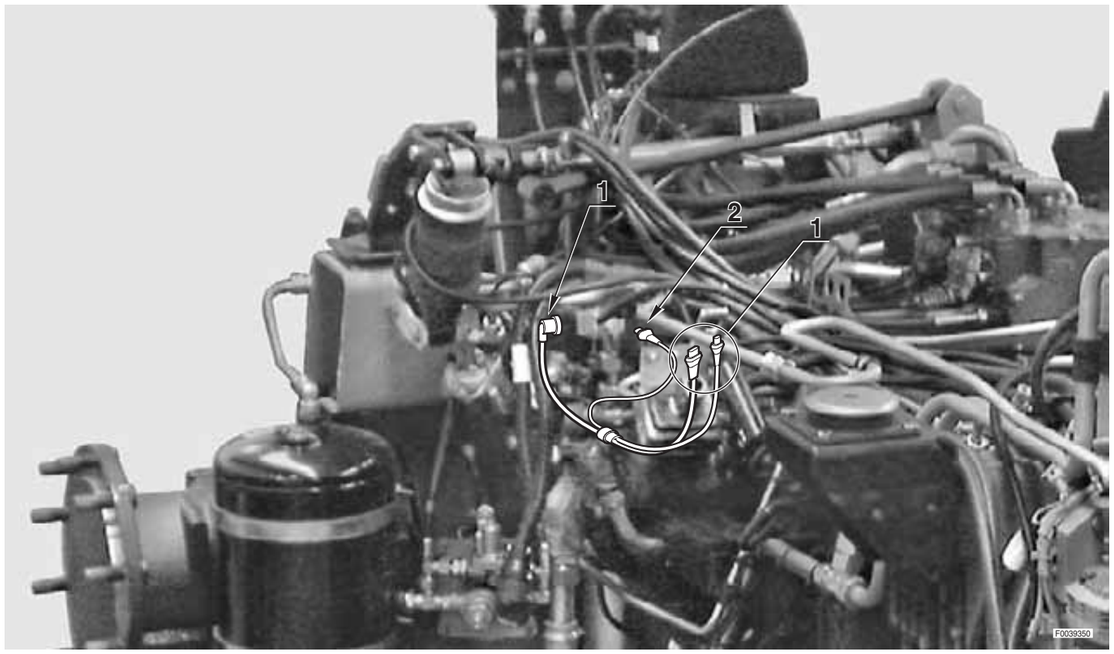


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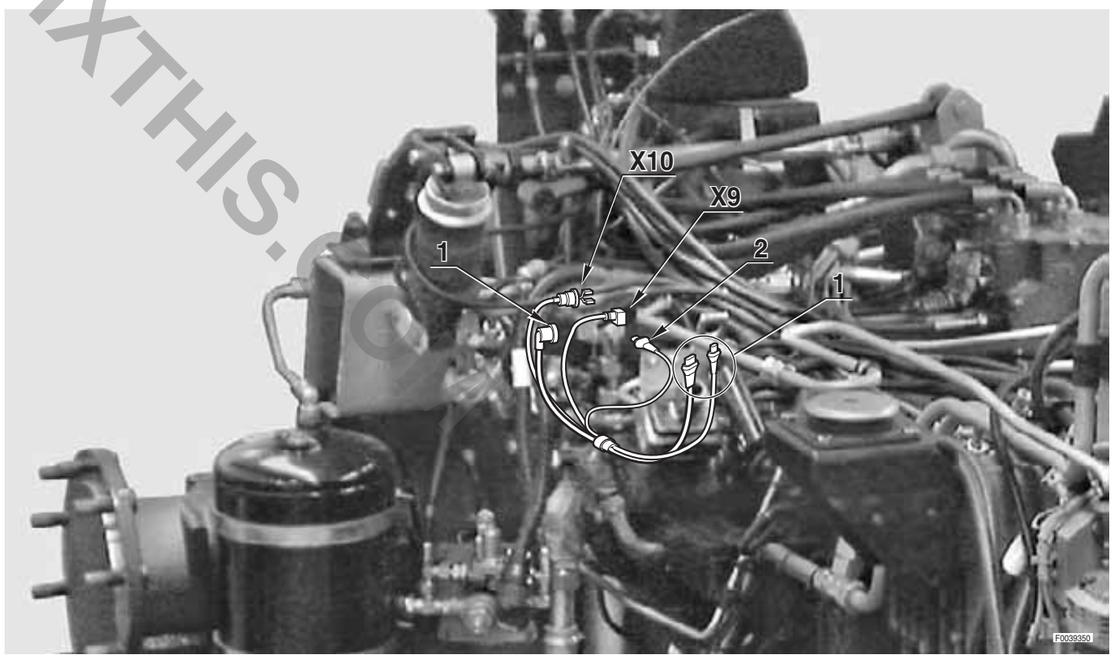


TRAILER BRAKING WIRING

ITALY



EXPORT



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SIDE CONSOLE WIRING (3/3)

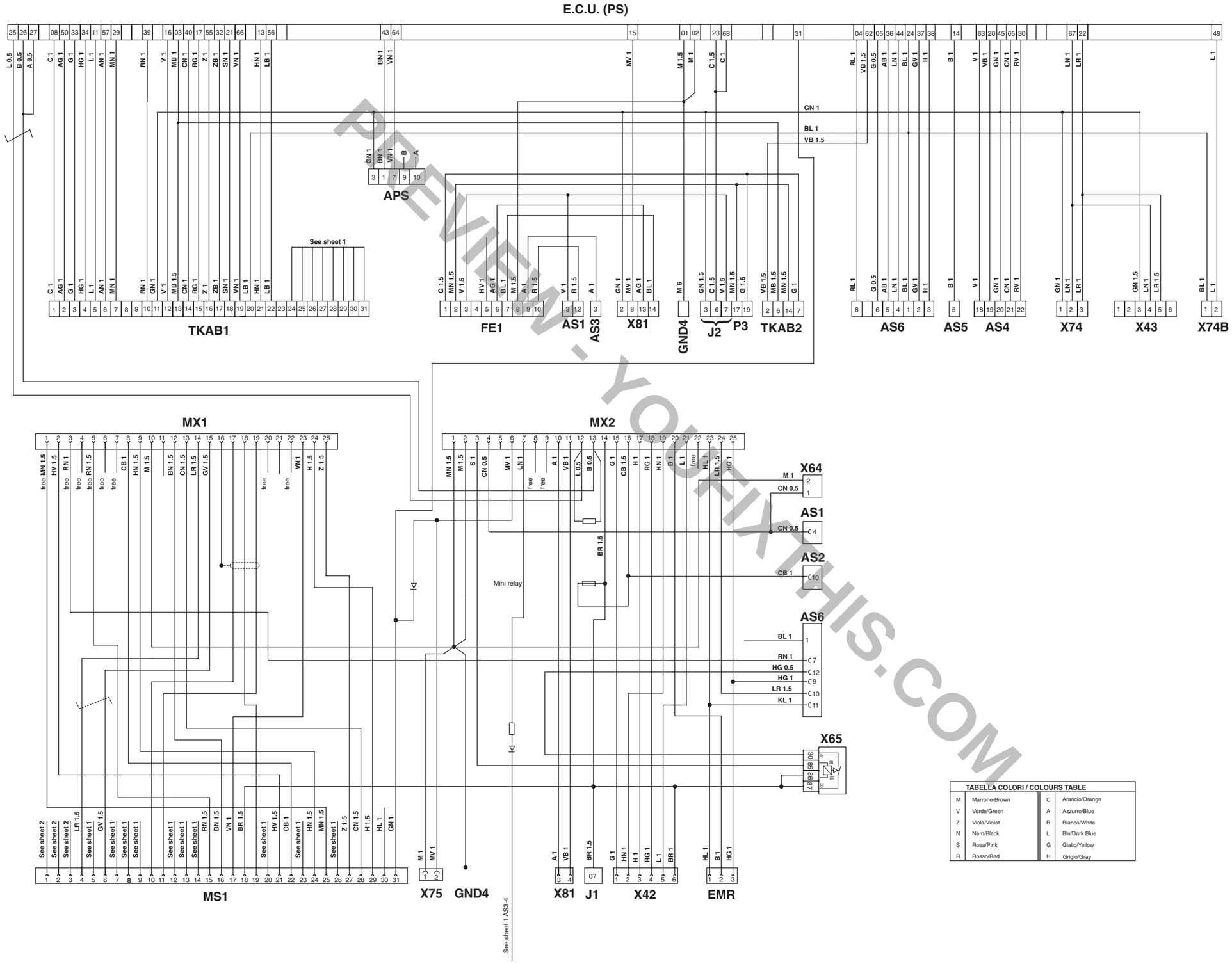


TABELLA COLORI / COLOURS TABLE			
M	Marrone/Brown	C	Arancio/Orange
V	Verde/Green	A	Azzurro/Blue
Z	Viola/Violet	B	Bianco/White
N	Nero/Black	L	Blu/Dark Blue
S	Rosa/Pink	G	Giallo/Yellow
R	Rosso/Red	H	Grigio/Gray

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