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ORIGINAL ERSATZTEILKATALOG  
CATALOGO DE PIEZAS LEGITIMAS  
CATALOGO RICAMBI ORIGINALI**

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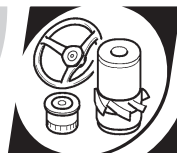
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- **GENERAL INSTRUCTIONS AND SAFETY NOTICE**
- **GENERAL CHARACTERISTICS AND SPECIFICATIONS**
- **GENERAL LOCATION**
- **GENERAL CONTROL AND ADJUSTMENT**

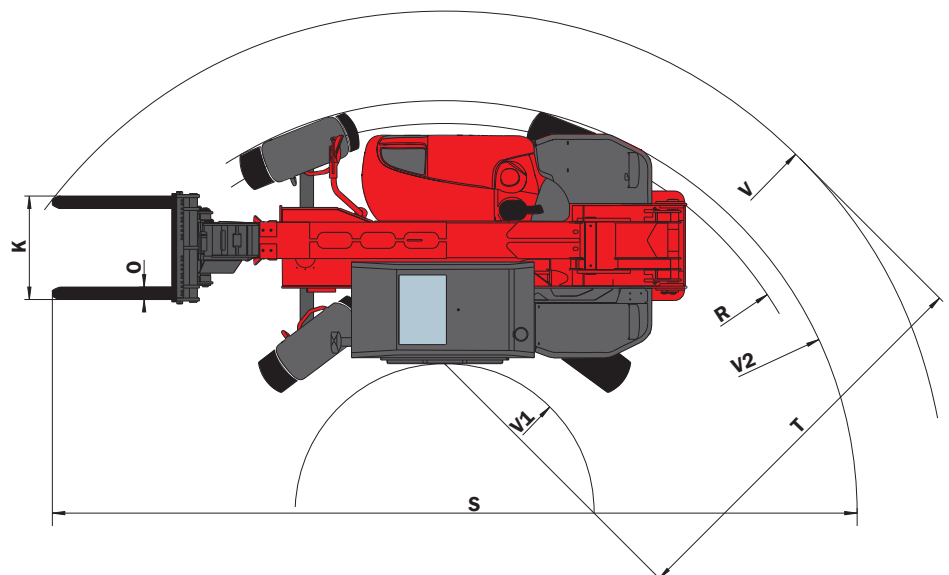
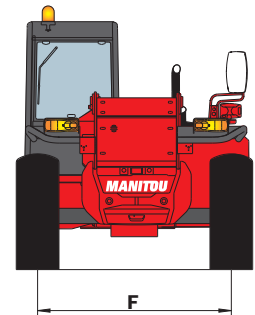
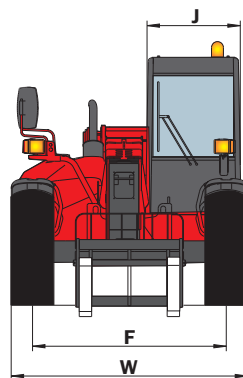
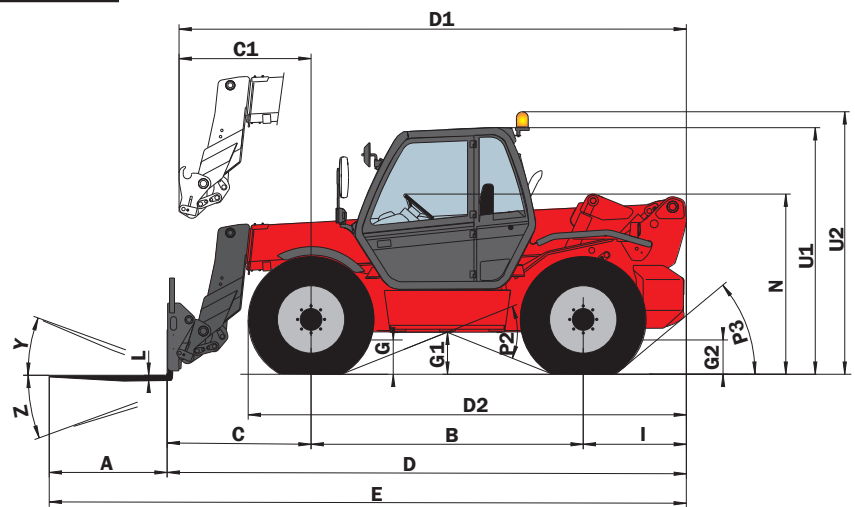
# MLT 120D LSU ST3B S1

## CHARACTERISTICS

Designation		Value
Truck weight with standard equipment (Forks)		9130 Kg
Ground distribution with standard equipment (Forks)	Front axle	4050 Kg
	Rear axle	5080 Kg
Overall width		2,46 m
Overall height		2,76 m
Overall length (without forks)		5,31 m
Ground clearance		0,45 m
Pulling force		6400 daN

## DIMENSIONS

	mm	in
A	mm	1200
B	mm	2770
C	mm	1394
C1	mm	1487
D	mm	5214
D1	mm	5307
D2	mm	4410
E	mm	6414
F	mm	1950
F1	mm	1950
G	mm	455
G1	mm	450
G2	mm	455
I	mm	1050
J	mm	950
K	mm	1040
L	mm	50
N	mm	1865 - 1915
O	mm	125
P2	°	43.5°
P3	°	40°
R	mm	4008
S	mm	8164
T	mm	3620
U1	mm	2580
U2	mm	2760
V	mm	5090
V1	mm	1470
V2	mm	4185
W	mm	2460
Y	°	12°
Z	°	130°



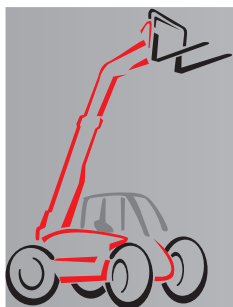
# ENGINE



- **ENGINE CHARACTERISTICS AND SPECIFICATIONS**
- **ENGINE CIRCUITS FLOW DIAGRAM**
- **ENGINE COMPONENTS LOCATION**
- **ENGINE CONTROL AND ADJUSTMENT**
- **ENGINE REMOVAL**

- **REMOVAL**
- **REFIT**
- **SPECIFIC TOOLING**

 **647461EN**  
**(ENGINE TCD 3.6 L4)**



## **ENGINE COMPONENTS LOCATION**

	pages
<b>ENGINE ELEMENTS .....</b>	<b>2</b>
<b>WATER AND AIR COOLING CIRCUIT.....</b>	<b>3</b>
<b>HYDRAULIC VENTILATION SYSTEM.....</b>	<b>4</b>
<b>DIESEL FUEL CIRCUIT.....</b>	<b>5</b>
<b>FUEL INJECTION CIRCUIT .....</b>	<b>6</b>
<b>EGR (EXHAUST GAS RECIRCULATION) CIRCUIT.....</b>	<b>7</b>

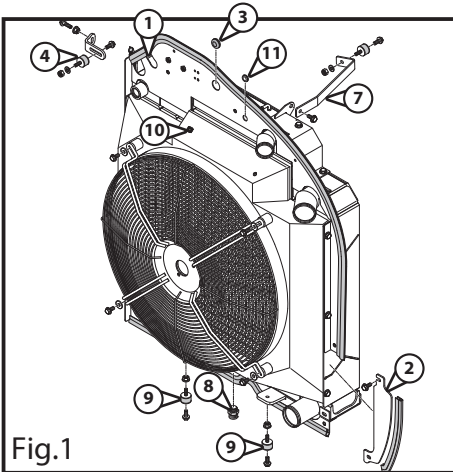


Fig.1

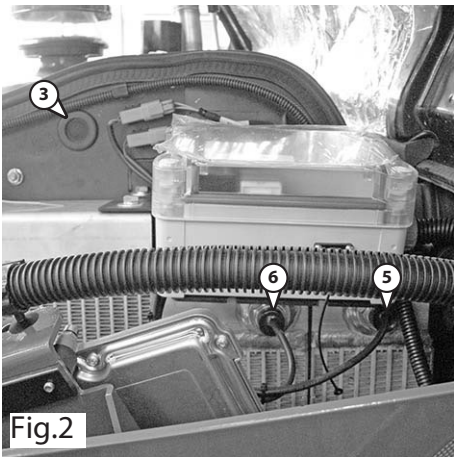


Fig.2

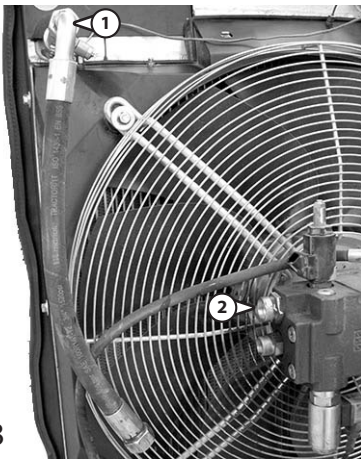


Fig.3

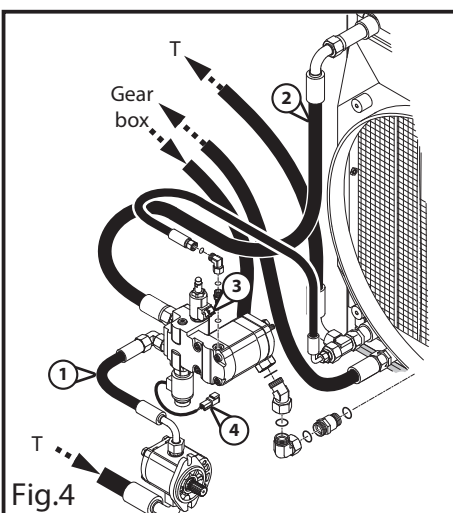


Fig.4

(24/11/2016)

Remove the fuse box support bracket.  
Disconnect the cable harnesses (Fig. 1, (Ref. 1)) and the computer.  
Remove the anti-recycling plate (Ref. 2).  
Remove the cap (Ref. 3) and lift the radiator.

**⚠ Beware of the cable harness beneath the radiator.**

## C – RADIATOR AND FAN MOTOR REFIT

⇒ Carry out the "BONNET REMOVAL" operation ◀ A

When carrying out a replacement, retain:

- the upper right hand silent block (Fig. 1, (Ref. 4)) and the two lower silent blocks (Fig. 1, (Ref. 9)).

**⚠ - the 2 (75°C) hydraulic temperature sensors (Ref. 5) and the (90°C) gear box temperature sensor (Ref. 6), (25 N.m ± 15%).**

- the turbo air temperature sensor (21 N.m ± 15%).

- the drain plug (Ref. 8), the anti-recycling plate (Ref. 2), the cap (Ref. 3), the grommet (Ref. 11) and the cage nut (Ref. 10) on the top of the radiator.

Attach the 3 silent blocs (Fig. 1, (Ref. 4) and (Ref. 9)), the tie (Fig. 1, (Ref. 7)) and the drain plug (Fig. 1, (Ref. 8)) to the radiator.

Attach the hydraulic hose to the radiator inlet (Fig. 3, (Ref. 1)).

Pass a sling through the hole at the cap (grommet) location (Fig. 1, (Ref. 3)), refit the cap after installation.

**⚠ Lower the radiator, being careful to avoid the turbo and the computer.**

Place the radiator and screw the silent blocks (Fig. 1, (Ref. 4) and (Ref. 7)).

Connect the hoses (Fig. 4, (Ref. 1) and (Ref. 2)) and the connectors (Fig. 4, (Ref. 3) and (Ref. 4)) to the fan motor.

Attach the motor fuse box, pass the 2 sensor cables underneath. Refit the cable harness grommet to the anti-recycling plate (Fig. 1, (Ref. 1)).

Connect the sensors to the harness.

Refit the hydraulic hoses.

Refit the tie and the bracket.

## BOSCH CP4.1 HIGH PRESSURE PUMP

Synchronized with idle gear / crankshaft.  
Approximately two strokes per crankshaft rotation.  
Max. working pressure 1600 bar.

The high pressure pump is lubricated by the fuel. Its reliability can therefore be affected by fuel quality. Excessive wear of the cam follower and of the bore with possible damage to the cam lobe is frequently due to a poor quality of fuel.

### Key:

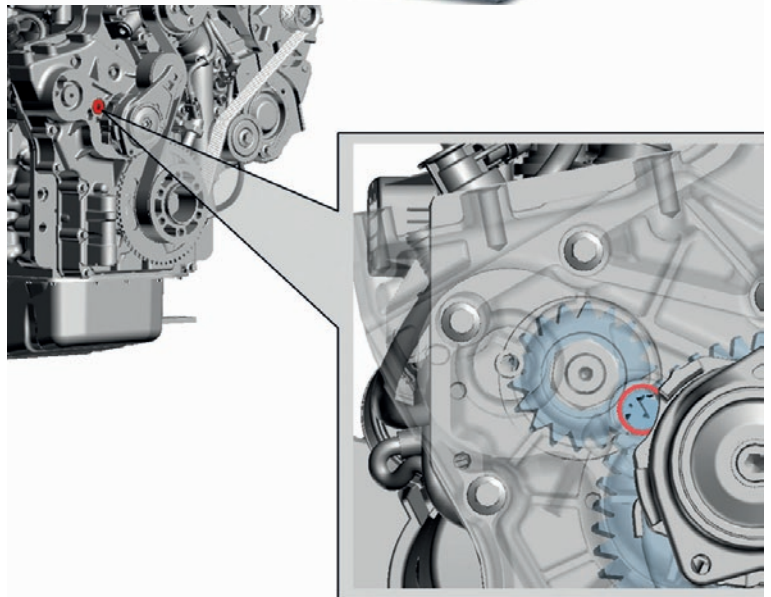
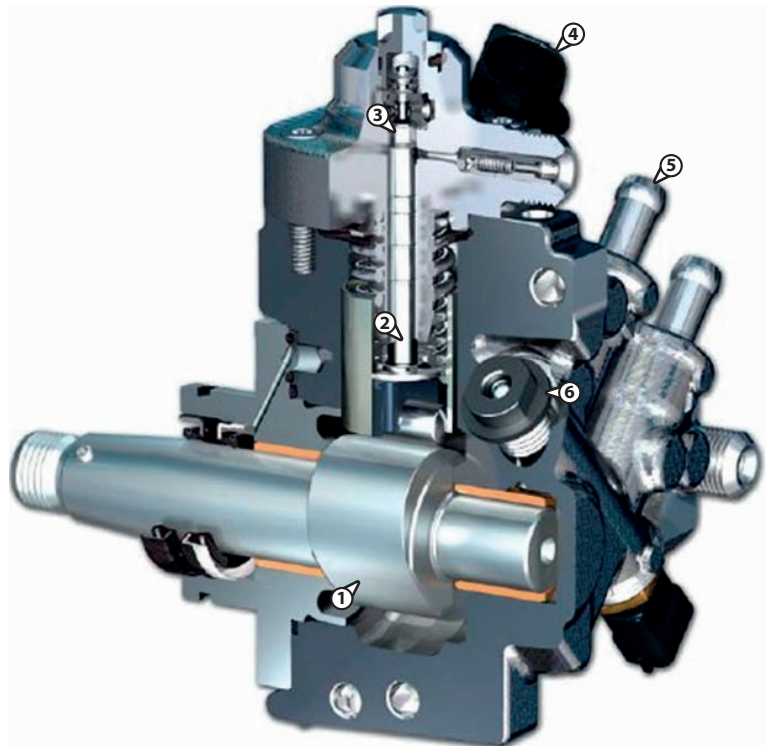
- 1 - 2 lobe camshaft
- 2 - Piston type pump
- 3 - High pressure outlet
- 4 - MPROP (magnetic proportional valve)
- 5 - Low pressure inlet
- 6 - Discharge valve

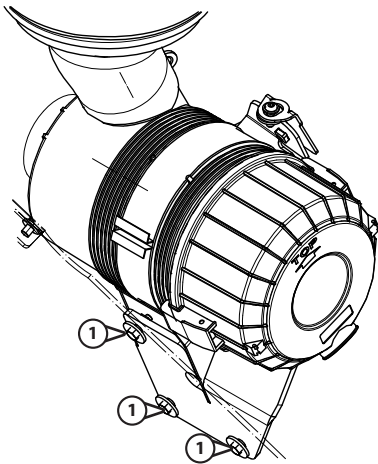
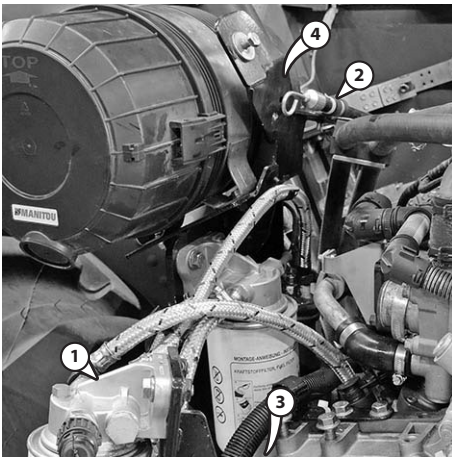
### High pressure pump maintenance

Before the pump is removed for maintenance, the engine must be turned over until the synchronization mark of the pump is aligned with that of the guide wheel. Removing the plug of the timing gear housing, as shown above will enable you to view the pump and the idle gears. Once the timing marks have been aligned, the pump fastening screw can be removed and the pump removed from the rear of the timing gear housing. The pressure of the spring inside the pump means that a stop pin is not needed to prevent rotation during installation.

It is not necessary to remove the timing gear housing for performing maintenance on the high pressure pump.

If the MPROP is de-energized, a spring pushes the fuel metering section upwards. The passage from the fuel delivery pump to the high pressure pump is completely open and a large volume of fuel is delivered to the high pressure pump.





## D – LOWER HOSES AND FILTER SUPPORT BRACKETS

Disconnect the engine water return hose, loosen the clamp and support clamp.

Remove the engine air outlet hose, loosen the clamp.

On the diesel filter support bracket, disconnect the engine supply hose, plug the opening on the filter, remove the 2 screws and tilt the diesel filter support bracket backwards (Ref. 1).

On the air filter support bracket, loosen the engine oil gage dipstick clamp (Ref. 2).

Disconnect the water presence connector X178 (Ref. 3) and clogging connector X166A and X166B (Ref. 4).

Remove the 3 screws (Ref. 1), hold the bracket in the backward position with a sling.

Disconnect the engine connector X277.

Disconnect the diesel return.

## E – ELECTRICITY

Disconnect the pre-heating cable harness (Ref. 1) X167.



Next to the starter, disconnect the starter relay connector X310 and the starter battery positive connector (Ref. 1).

Place the exhaust support half clamps towards the left to leave a clear passage to the flywheel.

## INJECTION CODE

 **Warning: the injector number in the error codes is equal to the firing order but different than the cylinder number**

## FAN DRIVE CHECK POINTS

There are two main cases:

- 1 - The fan runs continuously at maximum speed: this may be due to an electrical system control fault (degraded mode) or a sticking electrovalve;
- 2 - The fan does not reach the desired speed: this may be caused by a lack of hydraulic power (motor or pump) or a sticking electrovalve.

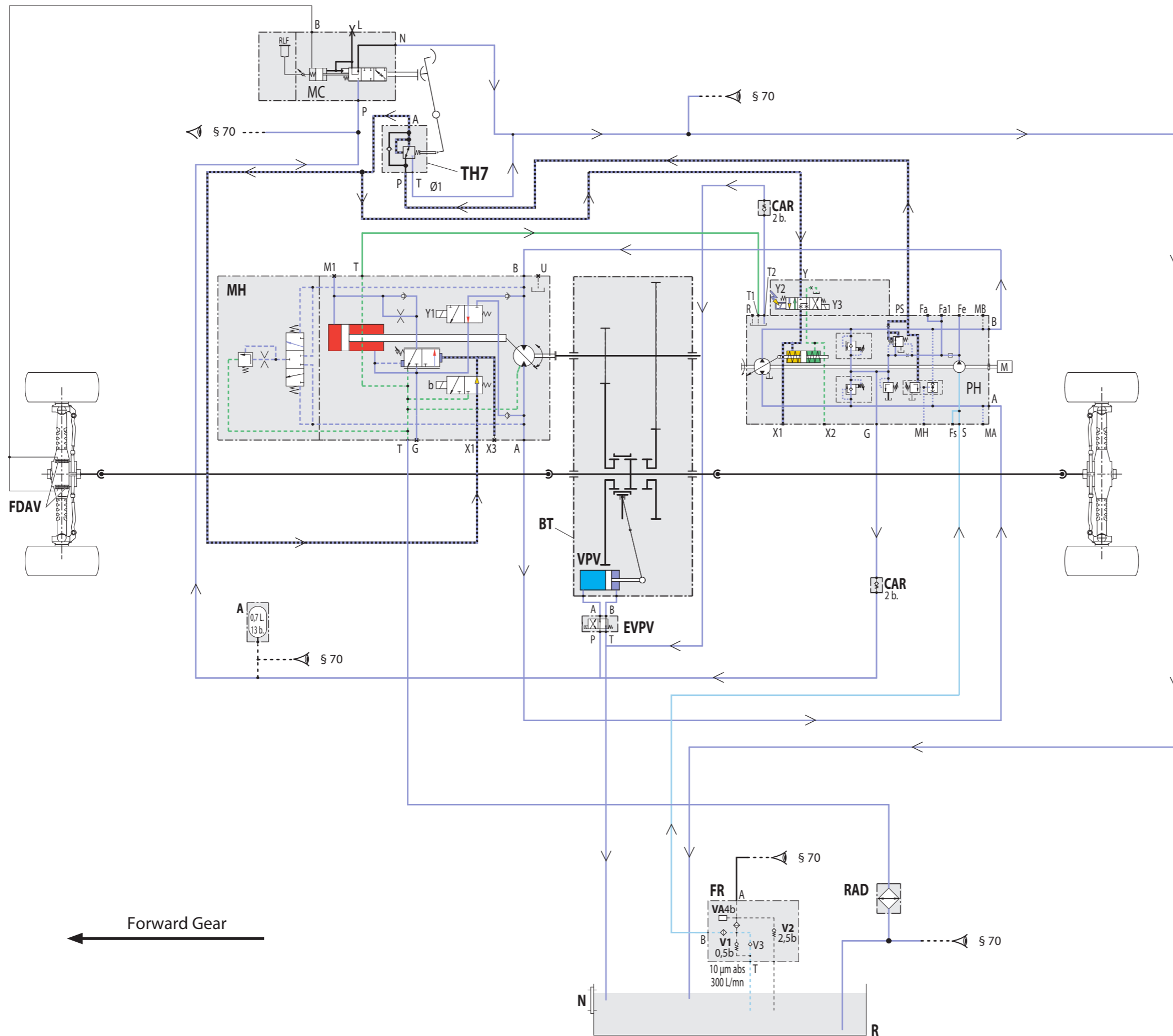
The following tests will help direct the repairs:

Test conditions	Check to be performed	Correct value	Probable cause of failure
<b>Test 0: Preliminary</b>			
Engine cold	Take engine water, air filter (+17°C) and boost air temperature sensor readings with a diagnostic tool.	Ambient temperature	Change the sensors, otherwise check harness continuity.
<b>Test 1: Validation of non degraded mode function.</b>			
Start-up cold engine, water, air, oil temperature sensor readings < 40°C	Place a tachometer in front of the fan.	Fan speed < 1000 rpm at all engine speeds.	Degraded mode: Check continuity of harness, sensors, electrovalves. Perform test 2.
<b>Test 2: Validation of hydraulic and transmission oil control + validation of hydraulic circuit power.</b>			
Cold engine at max. rpm	Place a tachometer in front of the fan. 1- Shunt connector X246 then X247. 2- Disconnect X252	Fan speed > 2000 rpm for each of the 3 connectors.	Check harness continuity between oil temperature sensors and SPU terminal X57-20. For X252 : <math>\leq 4</math> Hydraulic control
<b>Test 3: Validation of engine water control.</b>			
Hot engine (T>80 °C opening of thermostat), allow the engine to warm up at min rpm.	Place a tachometer in front of the fan. Accelerate to max. rpm	Fan speed > 1200 rpm Parameter readings: 1) 75 °C < water temperature < 85 °C 2) X252 driving current	Check continuity of harness and sensors.

Pressures in the system:

- ⇒ Fan at max. speed, engine at max. rpm, oil cold:  
200 b and 2300 rpm fan;
- ⇒ Reversal cycle:  
10 b minimum and approx. 110 b maximum during the blowing phase.

**SCHEMATIC DIAGRAM HYDROSTATIC TRANSMISSION IN FORWARD GEAR**



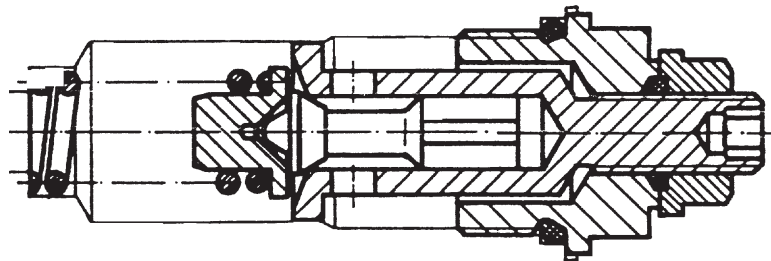
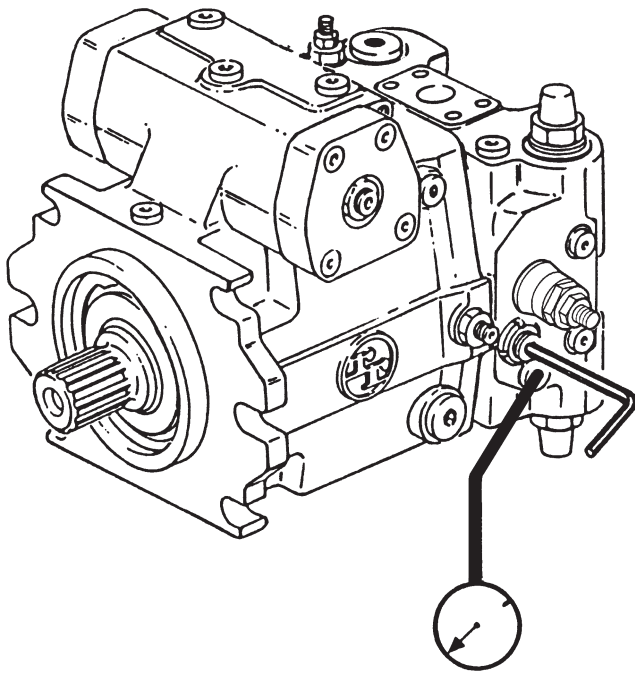
**Key:**

- Suction pressure
- Boost pressure
- High Pressure
- Low Pressure
- Control pressure
- Cooling pressure
- Drainage pressure
- Oil tank return
- § 70 See chapter "70 - hydraulics"
- A** Accumulator
- BT** Transfer box
- CAR** Non-return valve
- EVPV** Solenoid operated gear change valve
- FDav** Front brake
- FR** Return filter
- M** Turbo IC engine
- MC** Master cylinder
- MH** Hydrostatic motor
- N** Level
- PH** Hydrostatic pump
- R** Hydraulic tank
- RAD** Radiator
- TH7** TH7 valve
- VPV** Gear change cylinder
- Y1** Reverse gear electrovalve (MH)
- Y2** Forward gear electrovalve (PH)
- Y3** Reverse gear electrovalve (PH)
- Y4** Snail speed electrovalve (MH)

MLT845 100D H LSU ST3B S1

**BOOSTER PRESSURE SETTING AND MONITORING**

- A4VG 71 - 180 series pumps are fitted with an adjustable limiter. Tighten up screw to increase booster pressure.



MLT845 120D LSU ST3B S1

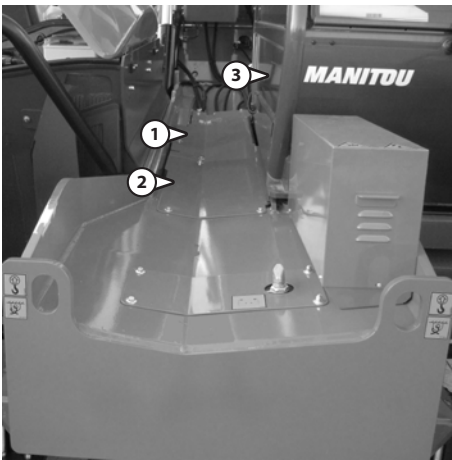


## ANGLE GEAR BOX (NOT H)

### SECURING THE MACHINE

Attach a sling (Ref. 1) to the anchoring points on the boom.  
Lift it so that the sling is above the angle gear box.  
Install a pulley (Ref. 2) on the sling.

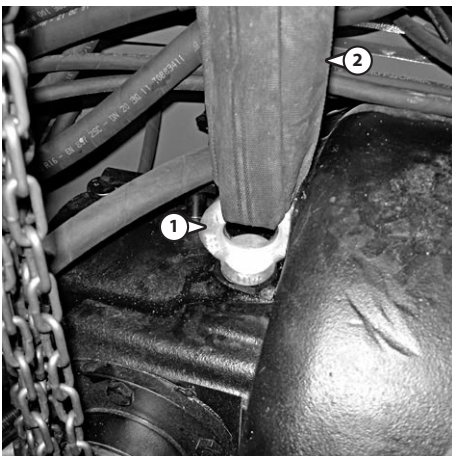
Place the two safety systems (Ref. 3) on the compensation cylinders and operate the battery cut-out.



Remove the three pad cover plates (Ref. 1, 2 and 3) in the boom shaft.



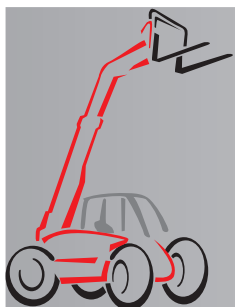
Remove the cap (Ref. 1).



Install a lifting ring (Ref. 1) on the angle gear box.

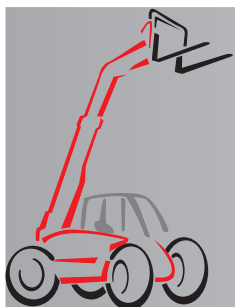
Install a sling (Ref. 2) on the angle gear box.

Secure the angle gear box with the pulley.



## **TRANSMISSION REFIT**

	pages
<b>MECHANICAL TRANSMISSION REFIT .....</b>	<b>2</b>
– GENERAL INFORMATION .....	2
– PREPARATION AND SAFETY INSTRUCTIONS.....	2
– ANGLE GEAR BOX (NOT H) .....	3
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<b>HYDRAULIC TRANSMISSION REFIT.....</b>	<b>9</b>
– PUMPS REFIT (H).....	2
– GEARBOX AND HYDROSTATIC MOTOR REMOVAL.....	2



## **SPECIFIC TRANSMISSION TOOLING**

	pages
<b>BASIC BOX .....</b>	<b>2</b>

# BRAKE

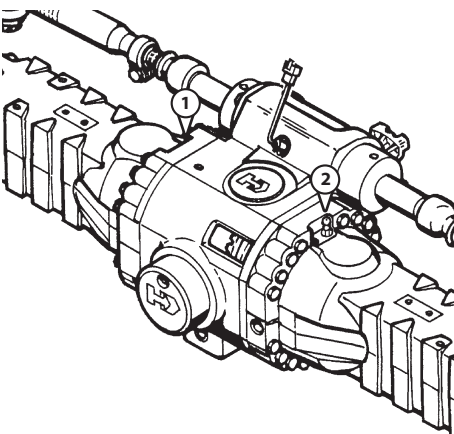
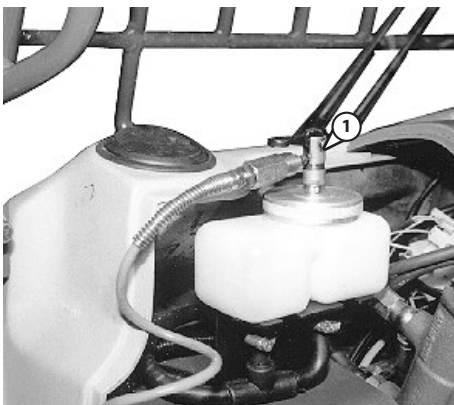
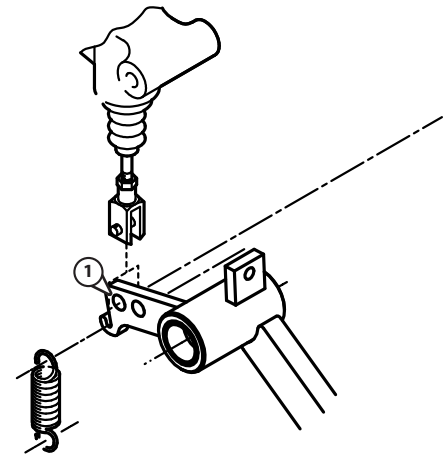
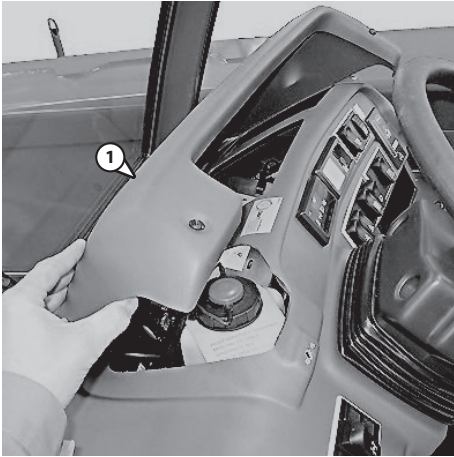
- BRAKE CHARACTERISTICS AND SPECIFICATIONS
- BRAKE COMPONENTS LOCATION
- BRAKE CONTROL AND ADJUSTEMENT
- SPECIFIC BRAKE TOOLS

70 - HYDRAULICS



## SERVICE BRAKE

### BLEEDING THE CIRCUIT



REQUIRED TOOLS: 1 brake bleeder (pressure 1 to 1,2 bar)

Raise the boom.

Remove the upper hand dashboard casing (Ref. 1).

Remove the upper dashboard casing

To the rear of the brake pedal, position the clevis on the hole (Ref. 1) at the end of the shaft, in the "Long" brake circuit bleeding position.

Remove the brake fluid tank plug and fit the brake bleeder adapter (Ref. 1).

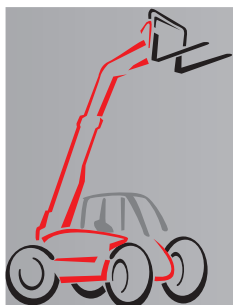
Operate the bleeder.

Place a transparent hose on the left hand bleed screw (Ref. 1) of the rear drive axle.

Loosen the bleed screw, then re-tighten it once the brake fluid is flowing without air bubbles.

Repeat the operation on the right hand bleed screw (Ref. 2) of the rear drive axle.

As a general rule, when bleeding the brake circuit start with the most distant bleed screw and work towards the nearest.



## **BOOM CONTROL AND ADJUSTMENT**

	pages
<b>DUPLEX BOOM COMPONENT DISMANTLING .....</b>	<b>2</b>
– PREPARATION AND SAFETY INSTRUCTIONS.....	2
– T2 TELESCOPE REMOVAL .....	3
– TELESCOPE CYLINDER REMOVAL .....	6
<b>DUPLEX BOOM COMPONENTS REFIT .....</b>	<b>8</b>
– RECOMMENDATIONS FOR WEDGE ASSEMBLY AND GREASING AREAS .....	8

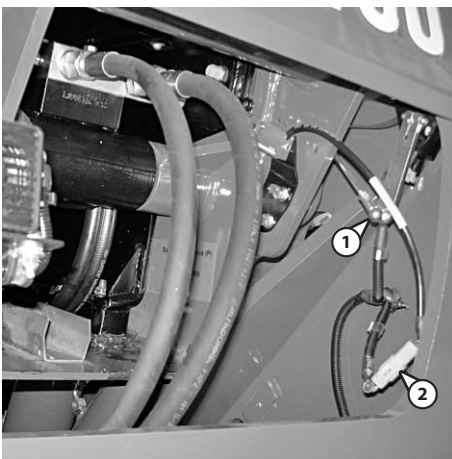


## BOOM REMOVAL

Position the boom on an axle stand (Ref. 1).

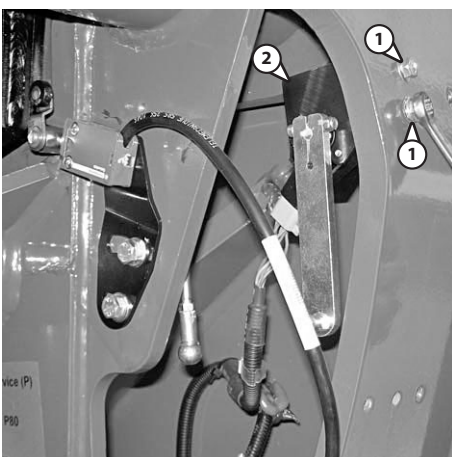


Unscrew and remove the two rear covers (Ref. 1 and 2) attached to frame (eight screws) using a 5 mm hexagonal spanner.



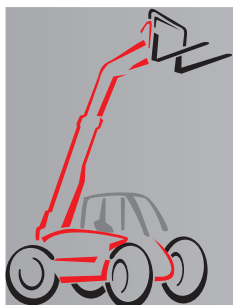
Remove the rod swivel joint (Ref. 1).

Disconnect the connector X134 (Ref. 2).



Remove the two screws (Ref. 1) from the angle sensor (Ref. 2) fastened to the frame using the 10 mm spanner.

Disconnect the connector X100 from the angle sensor.



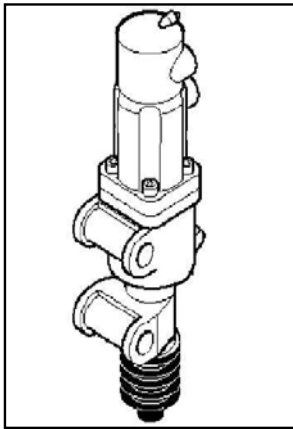
## **HYDRAULIC CHARACTERISTICS AND SPECIFICATIONS**

### **HYDRAULIC COMPONENT SHEETS**

- STEERING PUMP/DIRECTIONAL BLOCK OSPC 200 LS
- COUNTER BALANCE VALVE
- BOOM SUSPENSION ELECTROVALVE (OPTION)
- ACCUMULATOR BLOCK
- MASTER CYLINDER WITH ASSISTANCE
- SX 14 S DISTRIBUTOR (INLET)
- SX 14 S DISTRIBUTOR (TILT)
- SX 14 S DISTRIBUTOR (TELESCOPING - ACCESSORY)
- SX 14 S DISTRIBUTOR (ELEVATION)
- SX 14 S DISTRIBUTOR (CLOSING)
- TILT CUT-OFF VALVE (VCI)
- STEERING SELECTOR
- CASAPPA MVP 60 PUMP
- HYDRAULIC PUMP A10VO EK1

**MASTER CYLINDER WITH ASSISTANCE**

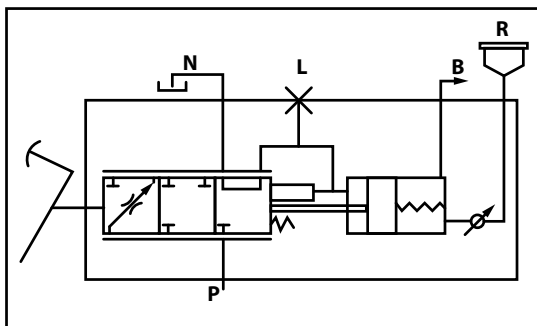
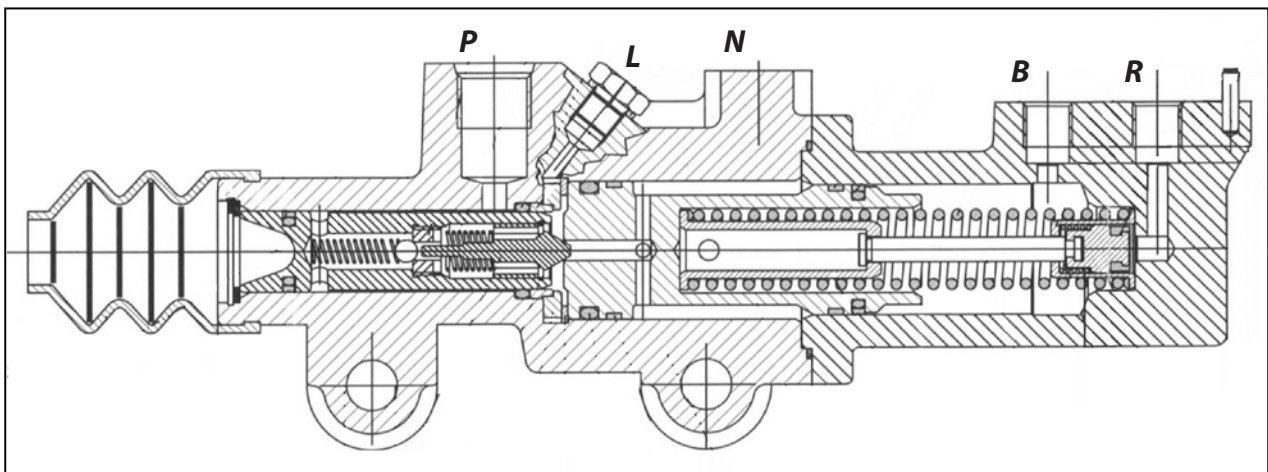
*Values for information purposes only.*



**1 - Part:**

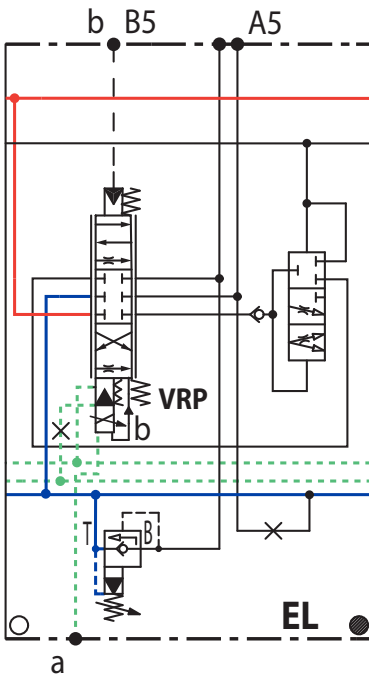
- To send the pressure fluid in order to push the brake piston that will stop the wheels.
- To add the mechanical force (pedal) and the hydraulic force in order to help the driver.

**2 - Description:**



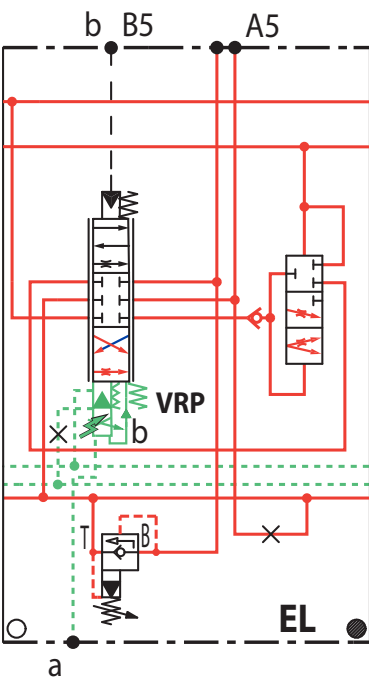
- P - Assistance pressure
- L - Pilot pressure (LS line)
- N - Return to the tank line
- B - Brake pressure
- R - LHM tank

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**Electro-hydraulic controller**  
**(“Rest” state)**

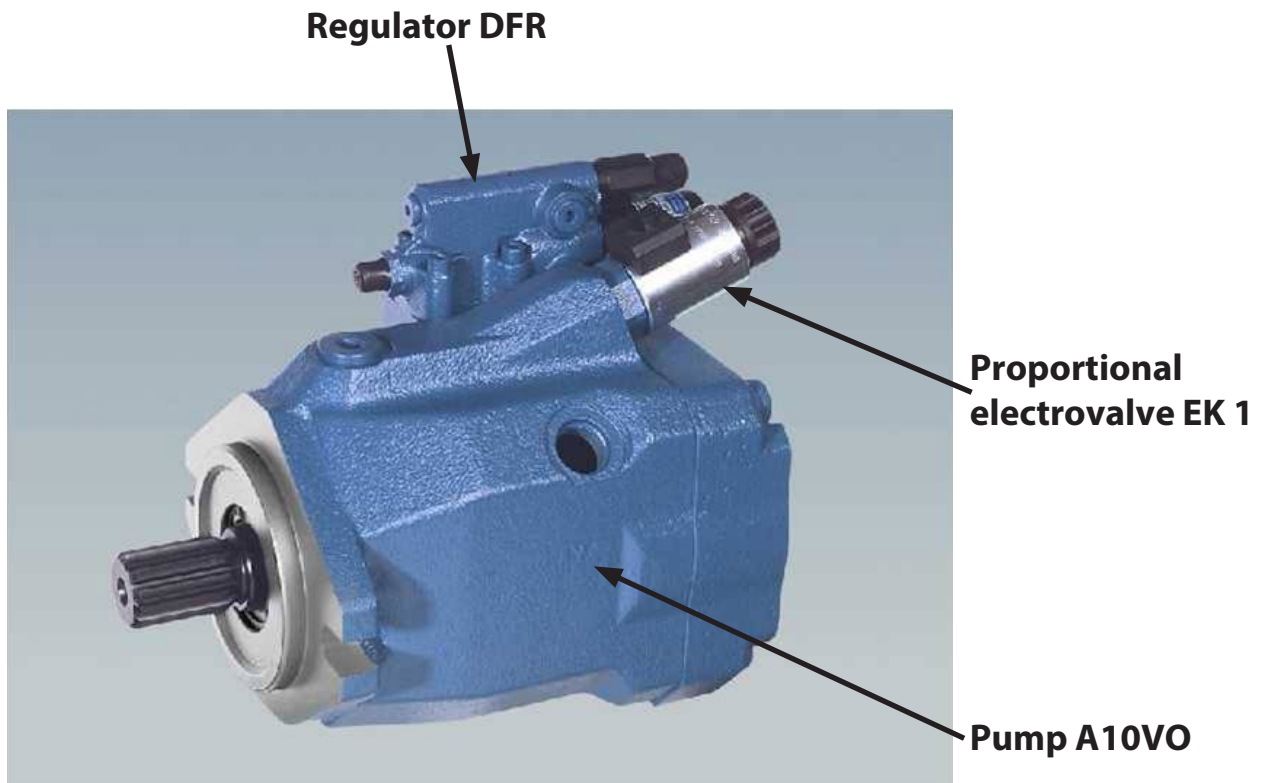
- The hydraulic pressure arrives at the entry module with pump stand-by pressure.
- The Pressure balance ensures communication between the main pressure line through the valveblock to the receiver feed.
- It takes the receiver pressure and communicates it to the pump.
- There is a priority between the receiver feed and pressure information transmission to avoid any rapid pressure increase as a result of a delay in slide opening relative to pump control.



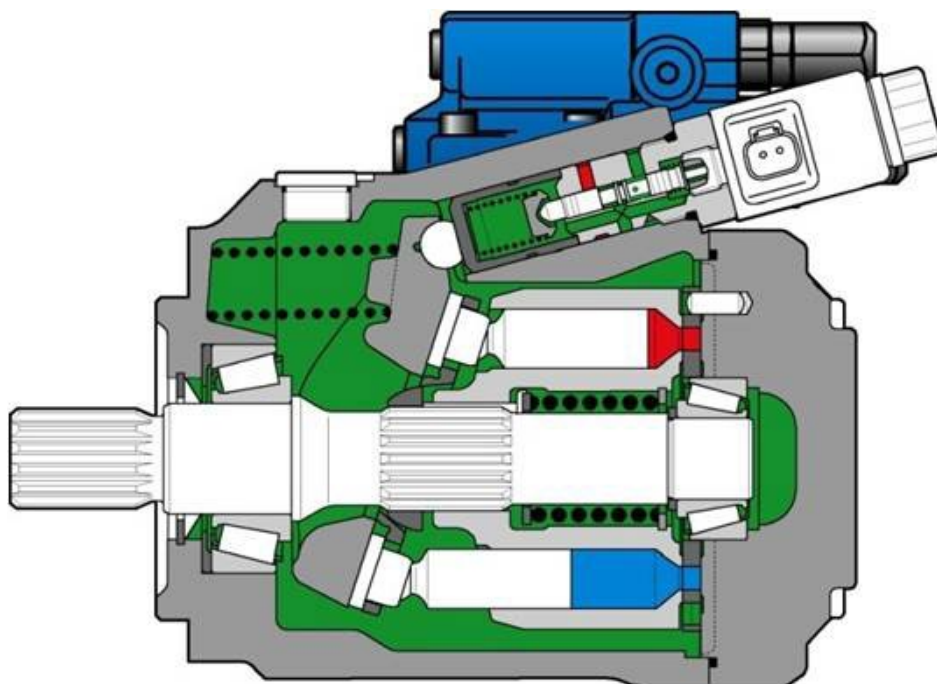
**Electro-hydraulic controller**  
**(Setting “b”)**

**HYDRAULIC PUMP A10VO EK1**

*Values indicative only*



**CROSS-SECTION OF PROPORTIONAL ELECTROVALVE EK 1 AND PUMP A10VO**

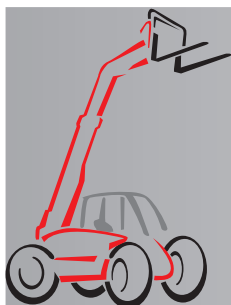


Notes: \_\_\_\_\_

**MLT845 120D LSU ST3B S1****KEY**

HYDRAULIC DIAGRAM KEY			
Item	Designation	Position on diagram	Characteristics (Options)
CA	Suction strainer	O31 / O36	
CSP	Counterbalance valve	C12 / C25 / C34 / C39	
D3	3 position steering distributor	G7	
D	Distributor	E29	
EA	Attachment component	I24	
EE	Inlet component	I14	
EF	Closing component	I29	
EI	Tilting component	I18	
EL	Lifting component	I27	
ET	Telescoping component	I22	
EVT(O)	Boom head electrovalve (option)	A34	
FR	Exhaust filter	M37 / M40	
FDAR	Rear axle disk brakes	S23 / S24	
FDAV	Front axle disk brakes	S2 / S3	
GEARBOX	Gearbox	O6 / O7	
MA	Manipulator	G33	
MC	Master cylinder	K5	
M	Diesel engine	M30	
MER(O)	Engine fanreversible (fan drive)	A8	
PD	Steering pump	E9	
P	Hydraulic pump	O31	
PAAV(O)	Front attachment plug (option)	A34	
PAAV	Quick couplings	A26	
PCR	Cooling circuit pump fan	M36	
PRF(O)	Leakage return plug (option)	A40	
PRES	Pressure switch	E40 / G36	
R3V(O)	3 - way valve (option)	A29	
RFV(O)	Fan cooler (option)	G5	
RLF	Brake fluid tank	I3	
VC	Compensation cylinder	A21 / C21	
VI	Tilting cylinder	A13	
VL	Lifting cylinder	A35 / A38	
VS	Safety valve	G15	
VT	Extension cylinder	A24	
VAFM	Hand brake valve	O3	
VCI	Tilting control cut-off valve	G40	
VDAR	Rear steering cylinder	S25	
VDAV	Front steering cylinder	S4	
VIT-VC	Compensation cylinder head insulation valve	A17	
VIP-VC	Compensation cylinder base insulation valve	C16	
VVT(O)	Carriage locking cylinder (option)	A26	

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 1 000 rpm.  
 3- The pressure relief valves should be adjusted at an oil temperature of 50°C.

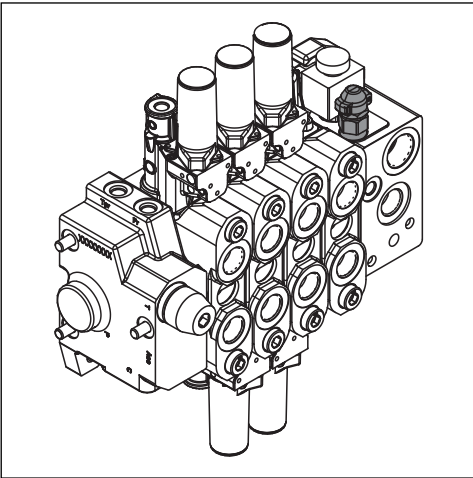


## HYDRAULIC CONTROL AND ADJUSTMENT

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## 5 – SX 14 S unit REPAIR PROCEDURES

### 5.1 CHANGING THE LS LIMITER



NOTE: It is not necessary to remove the distribution unit from the machine to change the limiter.



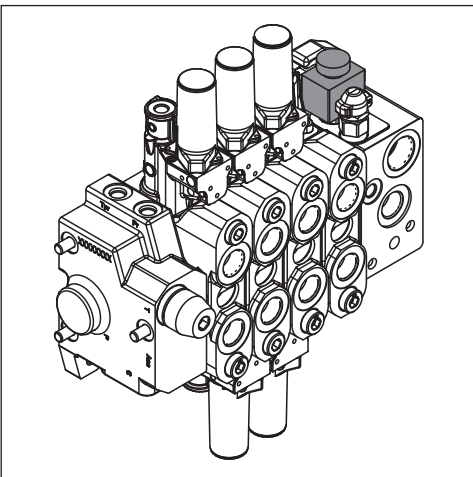
- With the machine stopped:**
- Put all the machine's receivers connected to the distribution unit in their rest positions.
  - With the machine stopped, release all stored pressure by moving the distribution slides.

NOTE: Catch any leaked oil in an appropriate container.

On the inlet, unbolt the LS limiter (17 mm spanner).

Refitting: tightening torque: cf. § 6.

### 5.2 CHANGING THE FLOW REGULATOR



NOTE: It is not necessary to remove the distribution unit from the machine to change the limiter.



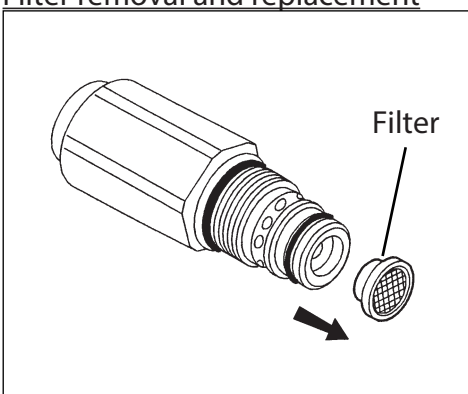
- With the machine stopped:**
- Put all the machine's receivers connected to the distribution unit in their rest positions.
  - With the machine stopped, release all stored pressure by moving the distribution slides.

NOTE: Catch any leaked oil in an appropriate container.

On the inlet, unbolt the LS limiter (22 mm spanner).

Refitting: tightening torque: cf. § 6.

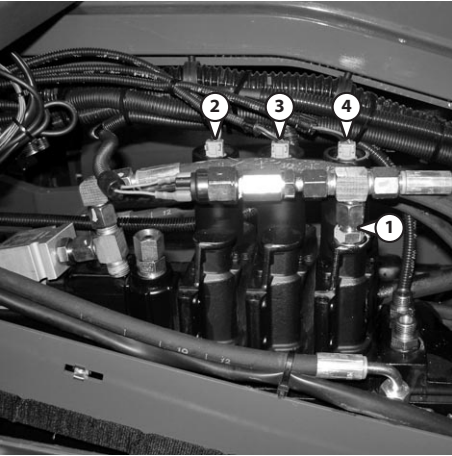
### Filter removal and replacement



Using flat-nosed pliers, remove the filter from the regulator.

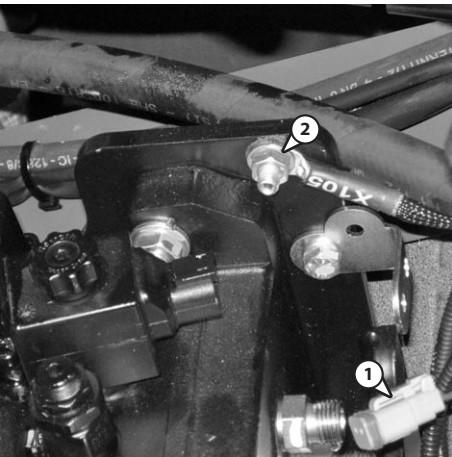


**Take care not to damage the O-ring at the end of the regulator.**

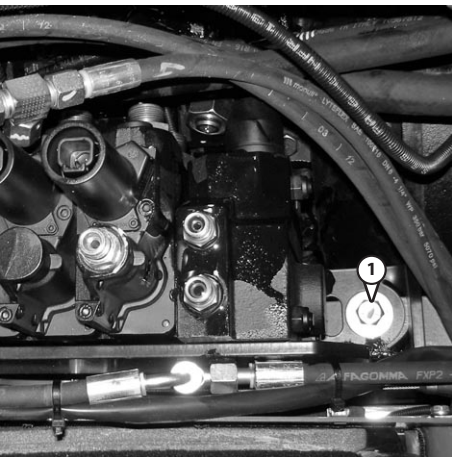


Remove the hose (Ref. 1) using a 19 mm spanner, mark it to make refitting it easier.

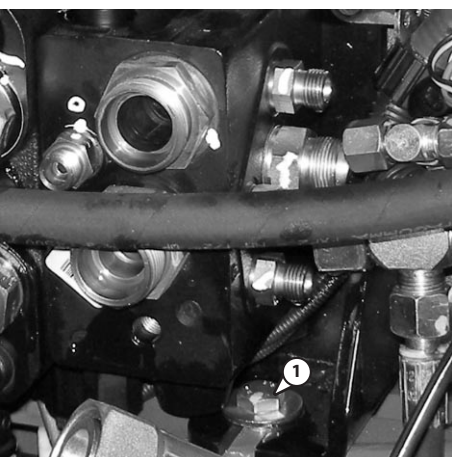
Disconnect the three connectors X28 (Ref. 2), X34 (Ref. 3) and X92 (Ref. 4), mark them to make refitting them easier.



Disconnect the connector X23 (Ref. 1) and the ground M1 (Ref. 2).



Remove the retaining screw (Ref. 1) from the distributor support bracket using a 19 mm spanner.



Remove the retaining screw (Ref. 1) from the distributor support bracket using a 19 mm spanner.

## DIGITAL MANOMETER BOX



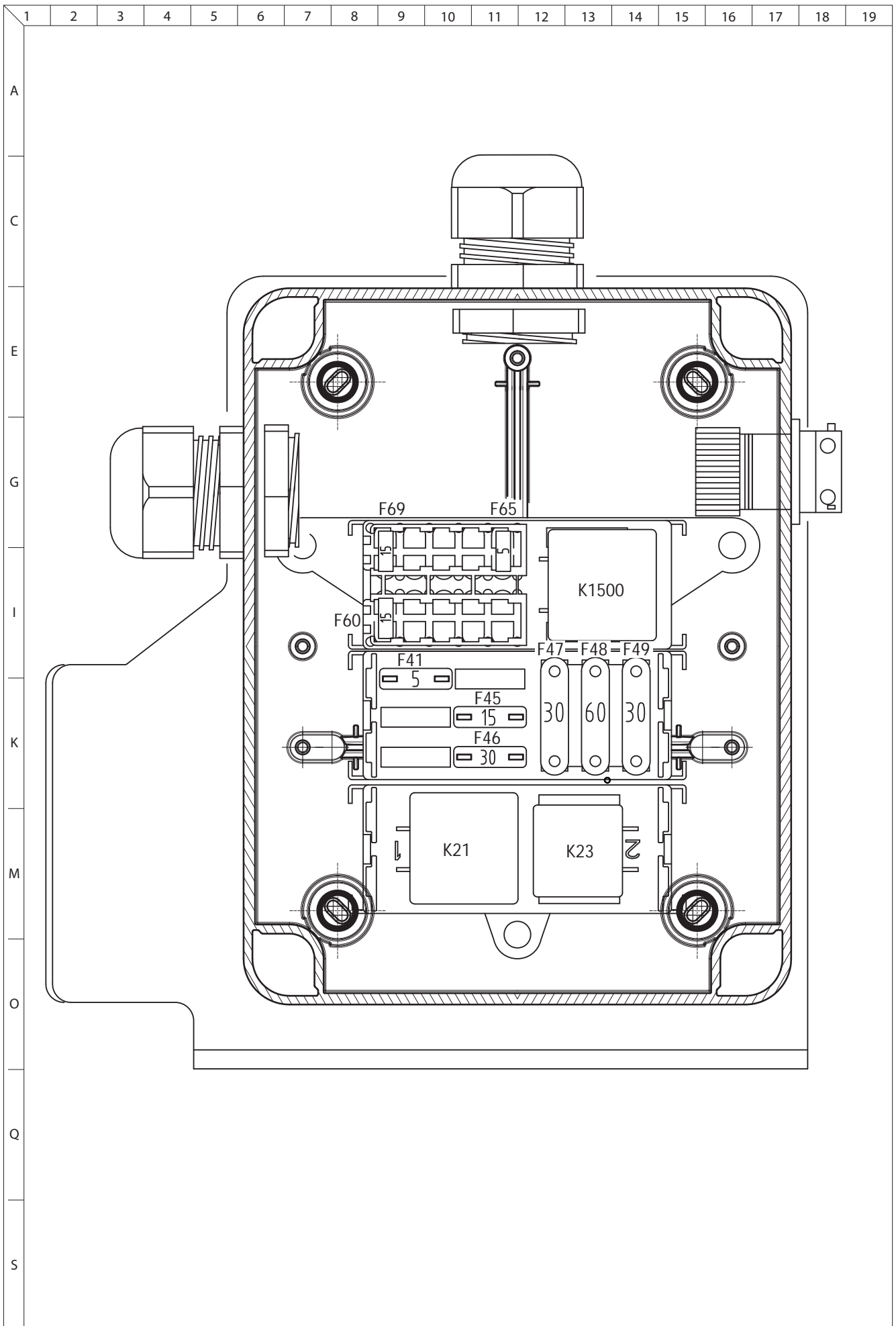
### FUNCTIONS:

- **Manometer functions:** the screen can display all the following items:
  - Temperature upstream to +/- 2°C
  - Upstream pressure P1 showing minimum and maximum (700 bar class 0.1)
  - Downstream pressure P2 showing minimum and maximum (700 bar class 0.1)
  - Differential pressure  $dP=P1-P$
- **Hold Function:** the operator is able to freeze the display to take notes at will
- **Unit Function:** the operator can change the measurement unit at will (bar, psi, kPa, mCe).
- **Tare Function:** enables taring
- **Leakage Test Function:** enables pressure variations to be measured over a set time period
- **Recording Function:** a max. of 16000 values may be recorded. The sampling period can be configured.
- **Zero Function:** zero is carried out on 2 sensors

**Digital Manometer box.....662187**

Consisting of:

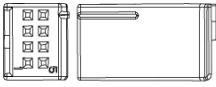
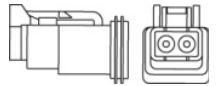
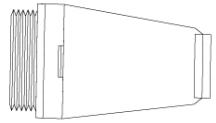
1. 1 dP HP 700 bar Mano digital manometer
2. 1 measurement hose DN2 1215/1620, L = 1,5 m, 630 bar
3. 2 measurement hoses DN2 1620/1620, L = 1,5 m, 630 bar
4. 2 1620 Manometer adaptors



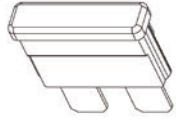
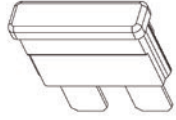
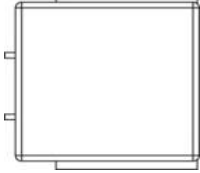
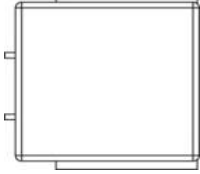
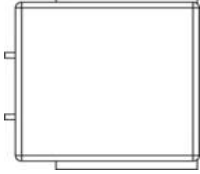
**MLT845-100D H LSU**

Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img
<b>SW501</b>	1	G#24		X56	24	
	5	RN#7		X308	2	
	9	N-G		X58	12	
				X57	30	
	10	N		GND		
<b>XOP</b>	1	R#5	4	X58	3	
	2	N	4	GND		
	3	RN#3	4	X58	4	
	4	N	4	GND		
<b>XPR1</b>	1	R#7		X04	1	
				X320	1	
	2	Z#1		XPR2	1	
<b>XPR2</b>	1	Z#1		XPR1	2	
	2	Z#2		XVC2	1	
				XVC1	1	
<b>XR3</b>	1	S#73		X89	5	
				X121A	C1	
	2	N		GND		
<b>XVC1</b>	1	Z#2		XVC2	1	
				XPR2	2	
	2	N		GND		
<b>XVC2</b>	1	Z#2		XVC1	1	
				XPR2	2	
	2	N		GND		
<b>X02</b>	1	G#10		X56	1	
				X56	7	
				F76	OUT	
	2	B-L		X56	17	
<b>X04</b>	1	R#7	2,5	X320	1	
				XPR1	1	
	2	V-N	2,5	SW7	3	
	3	M	2,5	SW7	9	
				SW7	4	
	4	Z-V		SW19	5	
				SW19	9	
	5	R	4	SW21	9	
				SW21	3	
	6	S#1	2,5	X26	2	
				SW32	2	
SW32				7		
			SW32	9		
7	Z-G		X26	10		

**MLT845-100D H LSU**

Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img
<b>X89</b>	1	R		X308	11	
				X68	1	
	2	N		GND		
	5	V		X121A	C1	
				XR3	1	
	6	L-R		X39	5	
X68				5		
<b>X97</b>	1	RG#2		F75	OUT	
	2	R#16		X56	3	
<b>X99</b>	1	N 0,5	SCH			
	2	H	0,75	X56	21	
				X508	2	
	3	N	0,75	X57	31	
				X100	1	
				X100	4	
				X112	1	
				X112	4	
				X113	B	
				X36	1	
	4	M	0,75	X58	23	
				X508	3	
				X121A	B4	
				X57	1	
				X115	3	
				X115	6	
				X109	40	
	5	L	0,75	X118A	A	
				X58	24	
				X121A	C5	
				X508	4	
X57				2		
X115				11		
X115				14		
X109				39		



**MLT845-100D H LSU**

Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img
<b>F65</b>	IN	RN		F41	IN	
				F45	IN	
				F69	IN	
				K1500	87	
	OUT	BV		X58	19	
<b>F69</b>	IN	RN	4	F41	IN	
				F45	IN	
				F65	IN	
				K1500	87	
	OUT	RN#3	4	X58	4	
<b>K1500</b>	30	R	6	F46	IN	
				F47	IN	
				F48	IN	
				F49	IN	
				F60	30	
				X159		
	87	RN	6	F41	IN	
				F45	IN	
				F65	IN	
				F69	IN	
86	RN		X58	20		
85	N		X201			
<b>K21</b>	30	R	10	F48	OUT	
	87	M	10	X167		
	85	H-N	0,5	X174	35	
	86	H	0,5	X174	45	
<b>K23</b>	30	C	1,5	F45	OUT	
	87	C#1	1,5	X283.S	1	
	85	B-N	0,5	X175	26	
	86	G-H	0,5	X175	90	

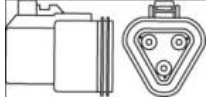
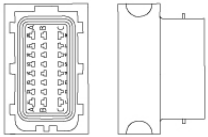
CHASSIS/CAB LINE MLT845-120D LSU

Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img
F70	IN	RN		X55	6	
	OUT	RN#3		X114	2	
F71	IN	HL	1,5	X55	7	
	OUT	HL#1	1,5	X308	4	
F72	IN	RN		F74	IN	
				F75	IN	
				F79	IN	
				F77	IN	
				X45	4	
				X45	3	
				X45	2	
	OUT	RN#3		X109A	1	
F73	IN	R#1		X115	1	
	OUT	R#2		X308	5	
F74	IN	RN	2,5	F72	IN	
				F75	IN	
				F79	IN	
				F77	IN	
				X45	4	
				X45	3	
				X45	2	
	OUT	G#1	2,5	X330	1	
F75	IN	RN	1,5	F72	IN	
				F74	IN	
				F79	IN	
				F77	IN	
				X45	4	
				X45	3	
				X45	2	
	OUT	RG#2		X97	1	
F76	IN	R	1,5	X45	1	
				F78	IN	
				K700	30	
	OUT	G#10	1,5	X56	1	
	X56			7		
			X02	1		


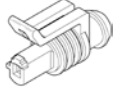
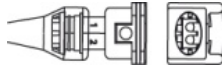



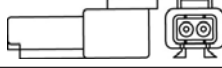
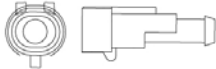
MLT845-120D LSU

Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img
X39	1	LR		X74	4	
	2	LV		X19	5	
				X17	2	
	3	LB		X13	4	
	4	ZL		X19	8	
				X16	2	
	5	L#1		X89	6	
				X68	5	
	6	HV		X74	5	
	7	NG		X19	1	
				X17	4	
	8	GZ		X74	2	
	9	GH		X13	2	
10	HB		X13	5		
11	HG		X19	4		
			X16	4		
12	B#1		X74	3		
13	B#2		X13	3		
X41	1	GM		K18	86	
	2	R#4		X100	5	
				X134	3	
				X134	4	
	3	R#14		X113	A	
				SW20	5	
				SW20	9	
				SW6	9	
	3	R#14		SW26	9	
	4	SN		X09	1	
	6	BS		X14	1	
	7	AH		K19	87	
	8	S#10	2,5	X19	3	
				X336	1	
				X10	1	
	9	LS		X58	9	
	10	ZG		X58	18	
	11	R#51		K01	86	
	12	MH		X98	1	
	13	H#2		X118	2	
14	SG		X08	1		
16	CM		X41	20		
17	H#9		X41	21		
			X118	9		
19	C#2		X355M			
20	CM		X41	16		
21	H#9		X41	17		
			X118	9		

MLT845-120D LSU

Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img
X118A	A	M	0,5	X58	23	
				X508	3	
				X121A	B4	
				X57	1	
				X115	3	
				X115	6	
				X109A	7	
				X99	4	
	B	B	0,5	X58	24	
				X121A	C5	
				X508	4	
				X57	2	
				X115	11	
				X115	14	
				X109A	6	
X99	5					
C	N	SCH				
X121A	A1	GZ#10		X121A	A8	
				X121A	B5	
				F79	OUT	
	A4	CV		X58	14	
	A8	GZ#10		X121A	A1	
				X121A	B5	
				F79	OUT	
	B4	M	0,5	X58	24	
				X115	16	
				X508	4	
				X57	2	
				X115	11	
				X115	14	
				X118A	A	
				X99	5	
	B5	GZ#10		X121A	A1	
				X121A	B5	
				F79	OUT	
	B6	H#1		X58	17	
	B7	N	1,5	GND		
	C1	S#73		X89	5	
				XR3	1	
	C5	B	0,5	X58	24	
				X118	B	
				X508	4	
				X57	2	
				X115	11	
X115				14		
X109A				6		
X99				5		
C6	GM#1		K19	86		
C7	CV#1		X335	1		

**MLT845-120D LSU**

Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img
<b>X201</b>				K1500	85	
				X252	2	
				X168	2	
				X253	2	
				X158	B	
				X283.S	2	
				X166	1	
<b>X207</b>	1	V		X255.P	1	
<b>X245</b>	1	H#1		X58	13	
	2	NB		X58	17	
<b>X246</b>	1	B#20		X247	1	
				X58	11	
	2	MV		X247	2	
				X175	88	
				X58	16	
<b>X247</b>	1	B#20		X246	1	
				X58	11	
	2	MV		X246	2	
				X175	88	
				X58	16	
<b>X252</b>	1	CG		X58	10	
	2	N		X201		
<b>X253</b>	1	NG		X58	12	
	2	N		X201		
<b>X255.P</b>	1	V		X207	1	

Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img	
F2	2			X308	5		
				X308	10		
	1				F15		1
					F1		1
					F16		1
					F17		1
					F3		1
					F12		1
					F13		1
					X45		4
F3	1			F15	1		
				F2	1		
				F16	1		
				F17	1		
				F1	1		
				F12	1		
				F13	1		
	X45	4					
2				X308	3		
F4	1			X45	4		
				F14	1		
	2			X308	2		
F5	1			X39	6		
				X39	7		
	2				X188F		9
				X187	3		
F6	1			X39	3		
				X39	4		
				X39	5		
	2				F7		2
					Y6		K
F7	1			X39	1		
				X39	2		
	2				F6		2
					Y6		K
F8	1			F9	1		
				F10	1		
				F11	1		
				X45	2		
	2				X04		4
F9	1			F8	1		
				F10	1		
				F11	1		
				X45	2		
	2				X04		3

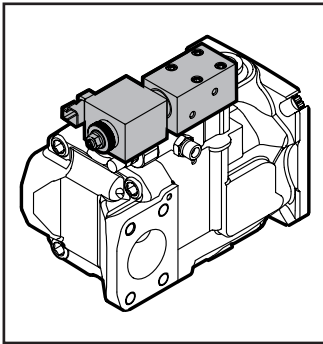
Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img
X318				K2	85	
				K4	86	
				K5	85	
				K1	85	
				K3	85	
X319	1			K21A	30	
X320	1			X240F	1	
				K21A	86	
X322	1			X311	5	
X324	1			X152	2	
X330	1			X152	9	
Y4	1			X242M	1	
	2			X242M	2	
Y5	1			X243M	1	
	2			X243M	2	
Y6	A			X188F	2	
	K			X155	1	
				F7	2	
				F6	2	

**TECHNICAL SHEETS FOR ELECTRICAL COMPONENTS**

pages

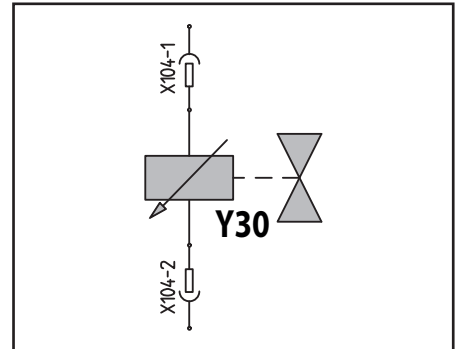
<b>TECHNICAL SHEETS FOR ELECTRICAL COMPONENTS</b> .....	<b>C2</b>
<b>KEY KEY OPERATED STARTER SWITCH</b> .....	<b>C3</b>
<b>S4 BRAKE FLUID LEVEL CONTACT</b> .....	<b>C4</b>
<b>S5 AIR FILTER SWITCH</b> .....	<b>C4</b>
<b>S12 TRANSMISSION OIL THERMOSWITCH</b> .....	<b>C5</b>
<b>S16+S37 STOP PRESSURE SWITCH</b> .....	<b>C5</b>
<b>S17 RANSMISSION OIL THERMOSWITCH (NO H)</b> .....	<b>C6</b>
<b>S52 EMERGENCY STOP</b> .....	<b>C6</b>
<b>Y1+Y4 REVERSE+SLOW SPEED ELECTROVALVE (H)</b> .....	<b>C7</b>
<b>Y1+Y4 REVERSE+SLOW SPEED ELECTROVALVE (H)</b> .....	<b>C7</b>
<b>Y6+Y7+Y8+Y9 PROPORTIONAL SOLENOID VALVE BOOM/ACCESSORY</b> .....	<b>C8</b>
<b>Y14 HYD CUT-OFF VALVE/VS</b> .....	<b>C8</b>
<b>Y15 PROPORTIONAL SOLENOID VALVE, BOOM DESCENT VRP</b> .....	<b>C9</b>
<b>Y16 VCI TILT CUT-OFF</b> .....	<b>C9</b>
<b>Y18 SOLENOID VALVE</b> .....	<b>C10</b>
<b>Y30 PEC (PRESSURE ELECTRONIC CONTROL) ON CASAPPA PUMP</b> .....	<b>C11</b>
<b>XTP ACCELERATOR POTENTIOMETER</b> .....	<b>C12</b>
<b>X14 HORN</b> .....	<b>C13</b>
<b>X15+X21 WHEEL ALIGNMENT SENSOR</b> .....	<b>C13</b>
<b>X36 JSM JOYSTICK</b> .....	<b>C14</b>
<b>INDICATOR LIGHT PANEL</b> .....	<b>C15</b>
<b>X68 FUEL LEVEL AND HOUR METER</b> .....	<b>C15</b>
<b>X77 FRONT WINDSCREEN WIPER MOTOR</b> .....	<b>C16</b>
<b>X89 WATER TEMPERATURE INDICATOR</b> .....	<b>C16</b>
<b>X99 STRAIN GAUGE</b> .....	<b>C17</b>
<b>X100 BOOM ANGLE ANGULAR SENSOR</b> .....	<b>C17</b>
<b>X134 RETRACTED BOOM SWITCH</b> .....	<b>C18</b>
<b>X165 FUEL GAUGE</b> .....	<b>C18</b>
<b>X188 LIGHTING STALK SWITCH</b> .....	<b>C19</b>
<b>X503 TRANSMISSION OIL TEMPERATURE SENSOR (NO H)</b> .....	<b>C20</b>
<b>X504 HYDRAULIC OIL TEMPERATURE SENSOR</b> .....	<b>C20</b>
<b>B18 ENGINE COOLANT TEMPERATURE SENSOR</b> .....	<b>C21</b>
<b>B19 ENGINE AIR TEMPERATURE SENSOR</b> .....	<b>C22</b>

**Y30 PEC (PRESSURE ELECTRONIC CONTROL) ON CASAPPA PUMP**



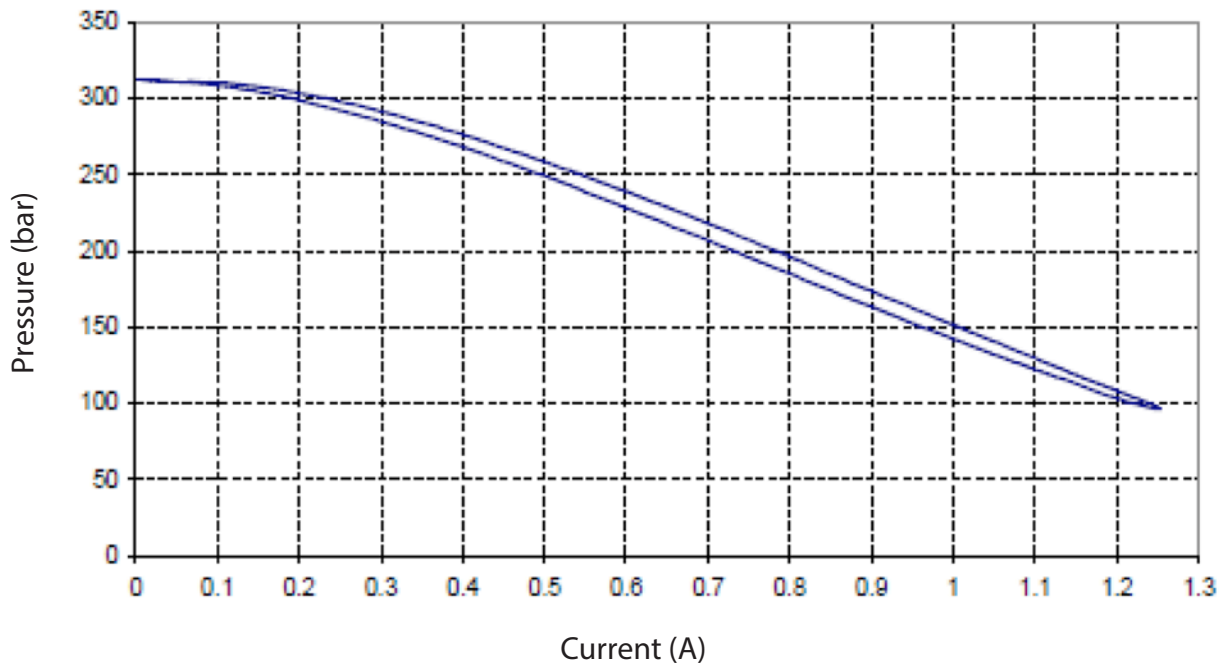
PIN	Function
1	PWM-OUT+
2	PWM-OUT-

Corresponding connector



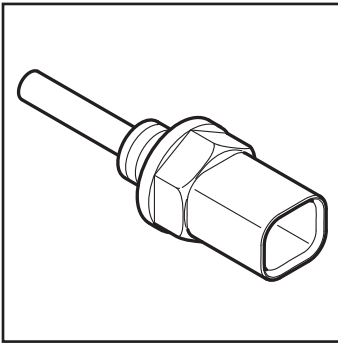
Diagram

	PIN	Minimum	Typical	Maximum
<b>Voltage</b>			12 V (±10%)	
<b>Resistance</b>			6,2 Ω (±7%)	
<b>Courant</b>				1,25 A
<b>Power</b>				15 W



Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**B18 ENGINE COOLANT TEMPERATURE SENSOR**



	<i>PIN</i>	<i>Function</i>
	1	Temperature info
	2	Engine Ground

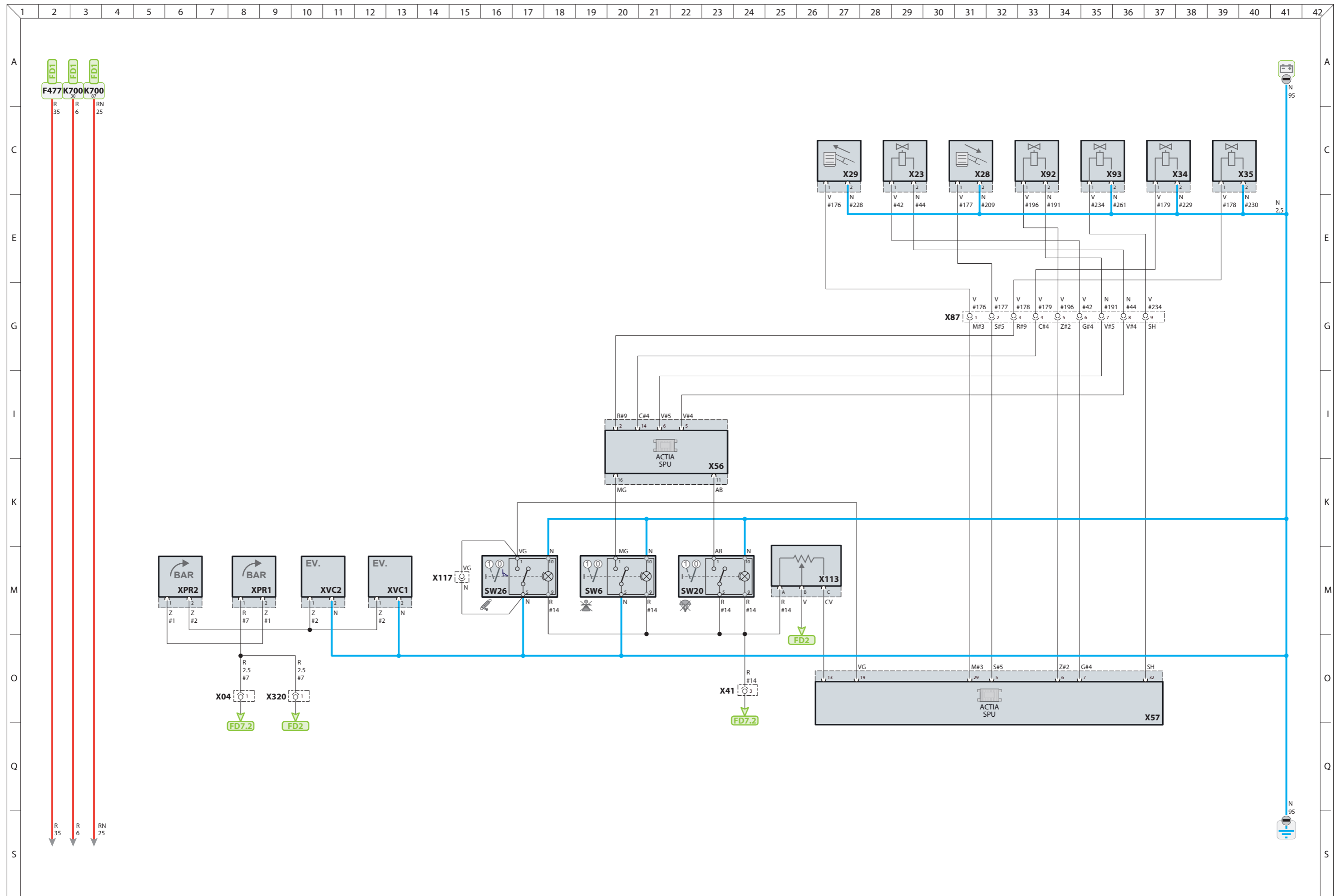
	<i>PIN</i>	<i>Minimum</i>	<i>Typical</i>	<i>Maximum</i>
<b>Supply voltage</b>		/	24 V	/
<b>Temperature range</b>		0 °C	/	120 °C
<b>Resistance at 70 °C</b>		/		/
<b>Resistance at 73 °C</b>		/		/
<b>Resistance at 75 °C</b>		/		/
<b>Resistance at 80 °C</b>		/		/
<b>Resistance at 85 °C</b>		/		/
<b>Resistance at 90 °C</b>		/		/
<b>Resistance at 95 °C</b>		/		/
<b>Resistance at 100 °C</b>		/		/

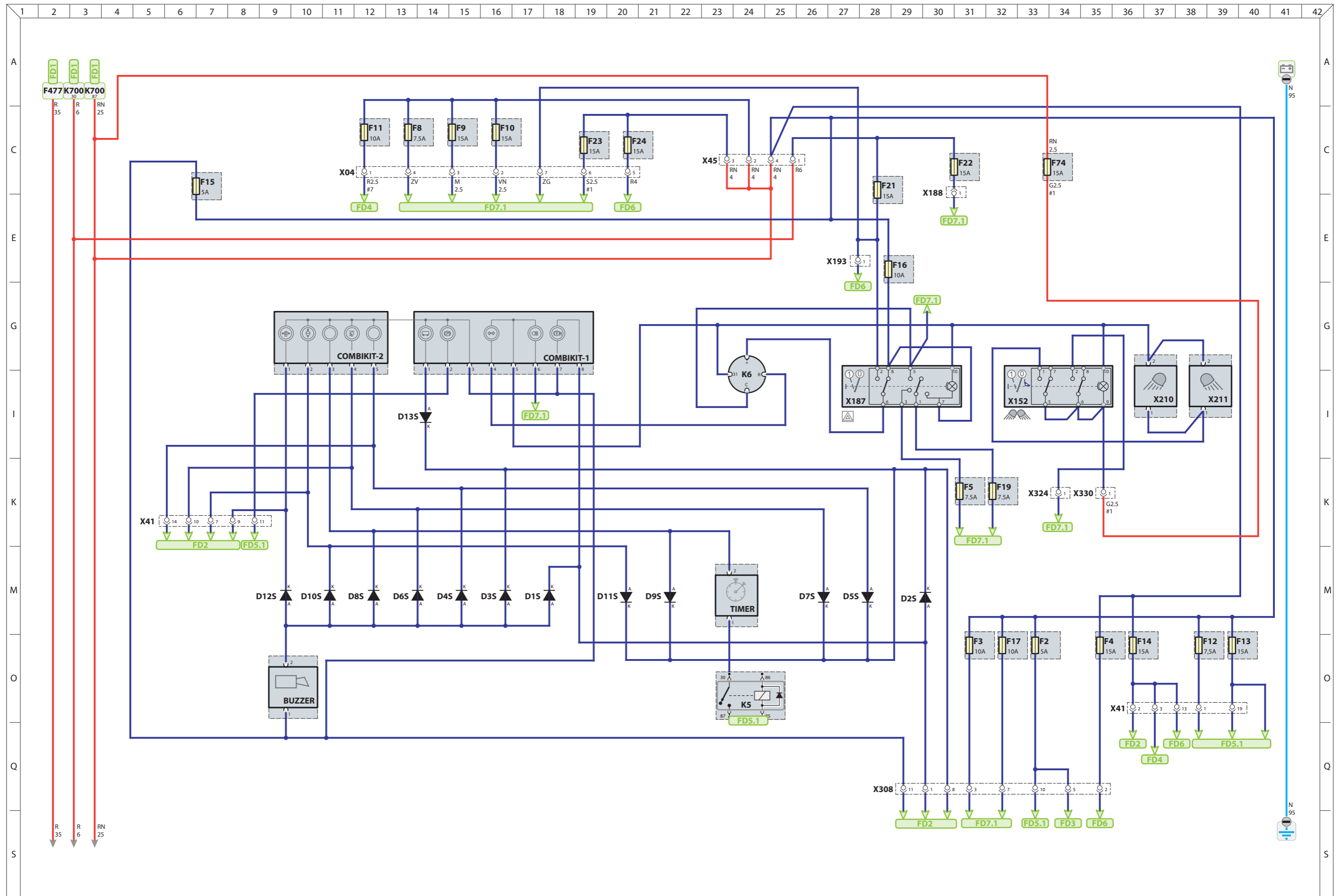
Comments:

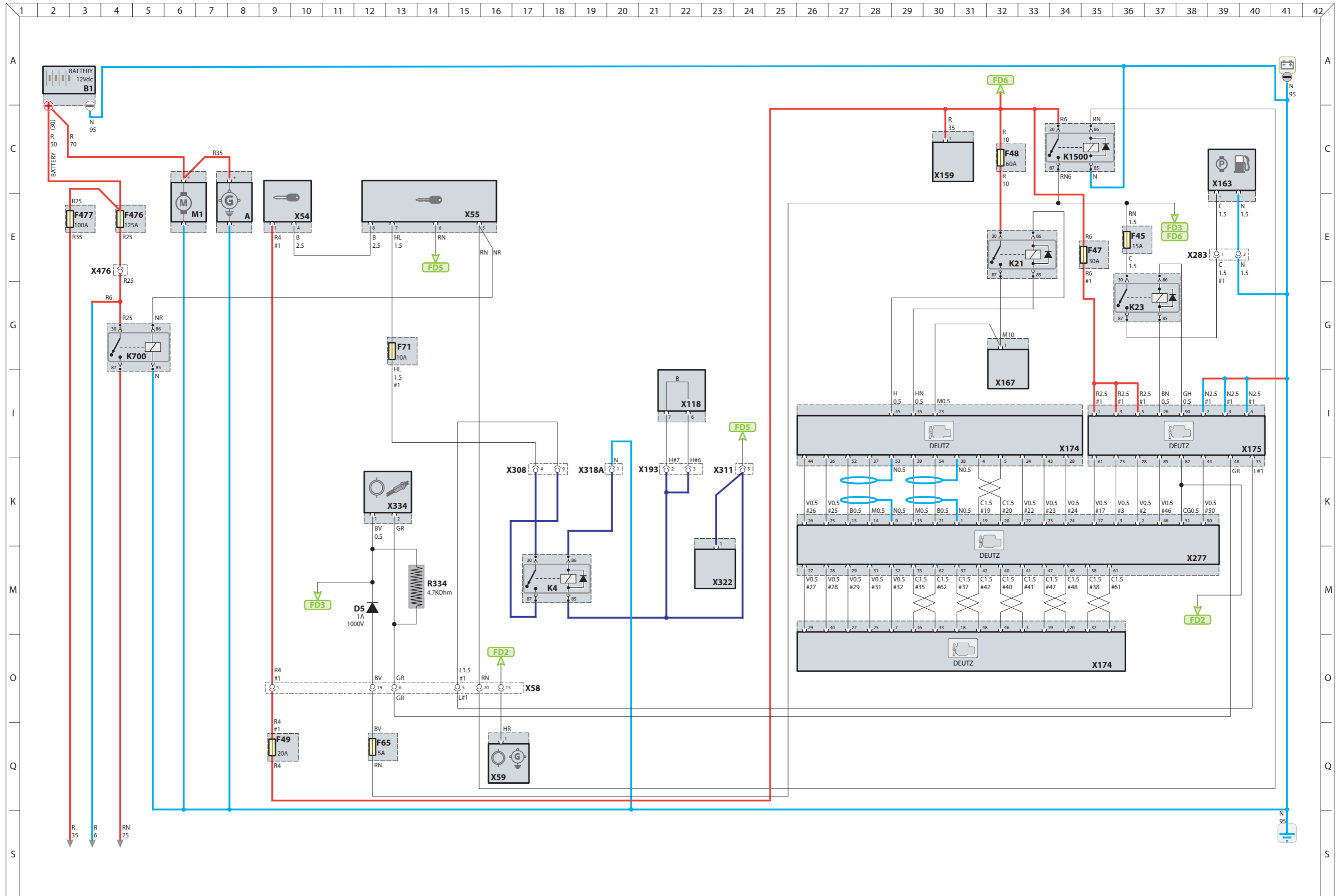
The sensor's current is variable, whereas the voltage is constant. There is a law relating current and temperature. This law defines the curve  $A = f(T °C)$ . The responsiveness and precision of the sensor (usually  $\pm 3,5 °C$ ) have to be known.

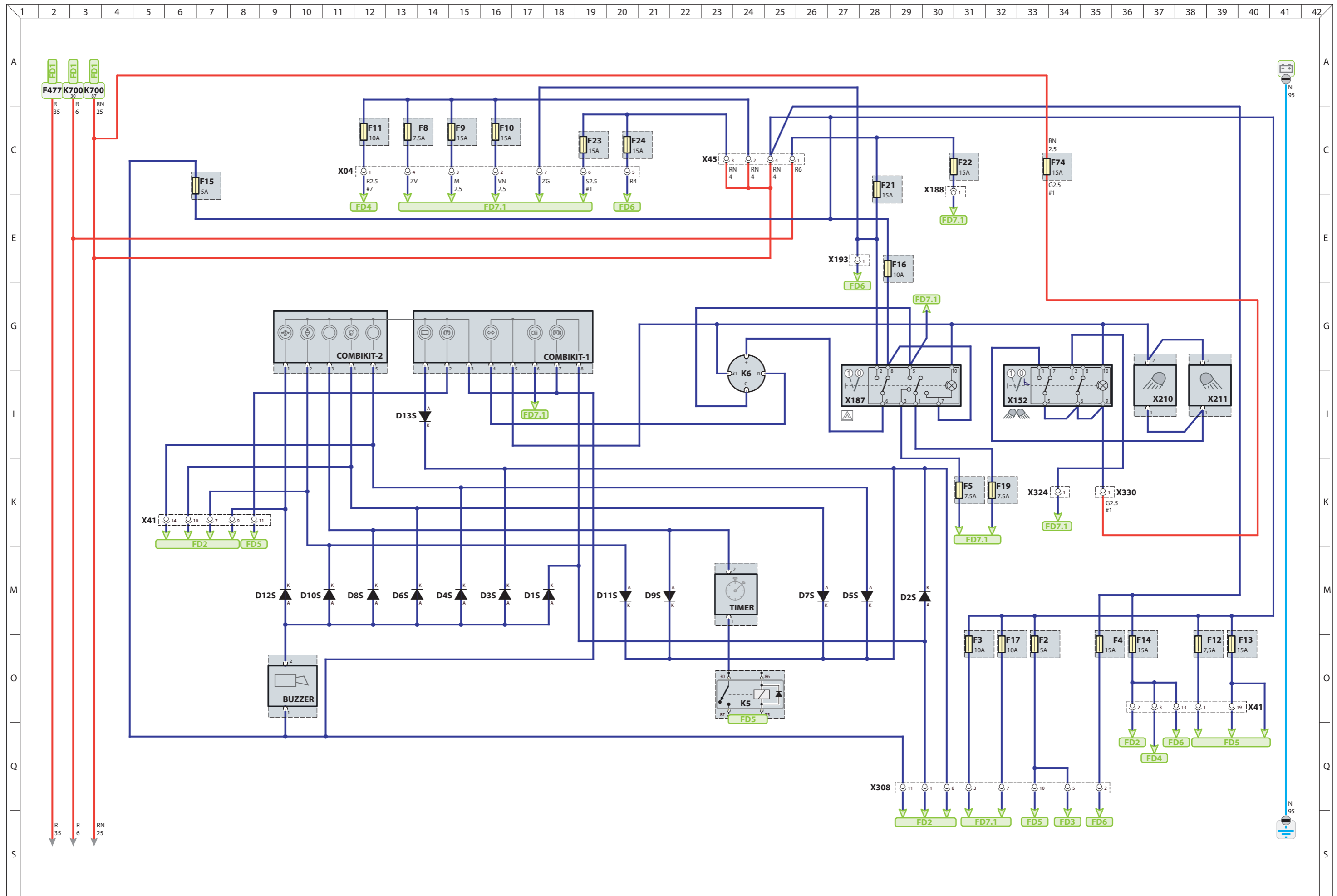
Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Connectors	Diag. 1	Diag. 2	Diag. 3	Diag. 4	Diag. 5	Diag. 6	Diag. 7	Diag. 8	Diag. 9
X57		√	√	√	√		√		
X58	√	√	√		√		√		
X59	√								
X68		√							
X70								√	
X71						√			
X72		√							
X73								√	
X74								√	
X77								√	
X89		√							
X92				√					
X93				√					
X97							√		
X99		√	√						
X100		√							
X104					√				
X109			√		√				
X112							√		
X113		√		√					
X114					√				
X115			√						
X116							√		
X117				√					
X118A			√						
X118	√				√		√		
X121A		√	√						
X134		√							
X152									√
X154								√	
X155								√	
X158			√						
X159	√						√		
X163	√								
X164		√							
X165		√							
X166		√							
X167	√								
X168		√							
X174	√								
X175	√	√	√		√				
X178		√							
X187								√	√
X188								√	√
X193	√						√		√
X201					√				
X207							√		
X210									√
X211									√
X238		√							
X240		√							
X241		√							









Item	Designation	Position on harness diagram					Comments
		Harness assembly	Electric plate	Distributor	Main	Engine	
X324	"H11"	C39			M20 / M21		
X327	Y18 ev. Freno park neg.	M32			A24 / A25		
X330	Connection relay board	C41			S38		
X331	Conn. pneumatic seat	A37			S37		
X332	Light indicator led h16 - engine stop	C35			M26 / M27		
X333	Light indicator led h10 - emergenza	E35			M25 / M26		
X334	Light indicator led h15 - candelette	C35			M25 / M26		
X335	Light indicator led h101 - level water radiator	E35			K13 / M26		
X336	Reverse gear connection	K26			K14 / M6		
X337	Conn. M / f signal diode	K26			K6 / K7		
X355	Conn. M/f sw60	E39					
X356	Conn. M/f sw60	E39					
X508	Mod. A12 tilt viewing	E40 / E41			K6 / K7		
X700	R120 j1939	O25			E38	G27	
X701	R120 diagn. Deutz	O25				G28 / G29	
X702	R120 diagnostic	O23 / O24 / Q23 / Q24				C21 / E21	

## GROUNDS

Item	DESIGNATION	Position on harness diagram					Comments
		Harness assembly	Electric plate	Distributor	Main	Engine	
M1	Motorino avviamento motore	O17		E14	I5 / I6		
M2	Cable Ground				O15		
M3	Cable Ground	M31			C24 / C25		
M4	Cable Ground	I15			G4 / G5		
M5	Cable Ground	K24			G28		
X102	Cable Ground	O25				G30	
X105	Cable Ground	K24 / K25		E14			
X170	Cable Ground	O25 / O26				G38	

**RECORDING MINIMUM GAUGE STRAIN:**

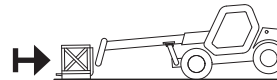
- Activate the «PARACHUTE» switch to enable hydraulic movements.

STAGE  
5

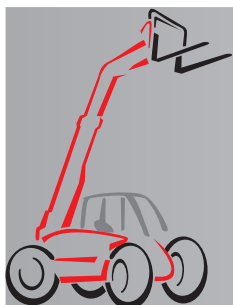
 ***The boom must be below 4°.***

- Extend the boom until the rear wheels leave the ground.  
Wait several seconds for the machine to stabilize.

- Press the «TEST» button (short press) to record stage 5.



 ***After this calibration, check that movement cut-offs work correctly.***



## **ELECTRICAL TROUBLESHOOTING**

	pages
<b>SPU 25-15 - A3 ERROR CODES LIST .....</b>	<b>2</b>
<b>ENGINE ECU ERROR CODES LIST (DTC) .....</b>	<b>4</b>
<b>HYDRAULIC PUMP ERROR CODES LIST .....</b>	<b>8</b>
<b>LONGITUDINAL STABILITY INDICATOR (LLMI) ERROR CODE LIST .....</b>	<b>8</b>
<b>GEAR BOX ERROR CODE LIST .....</b>	<b>8</b>

**DIAGNOSTIC CASE: ENGINE ST3B**



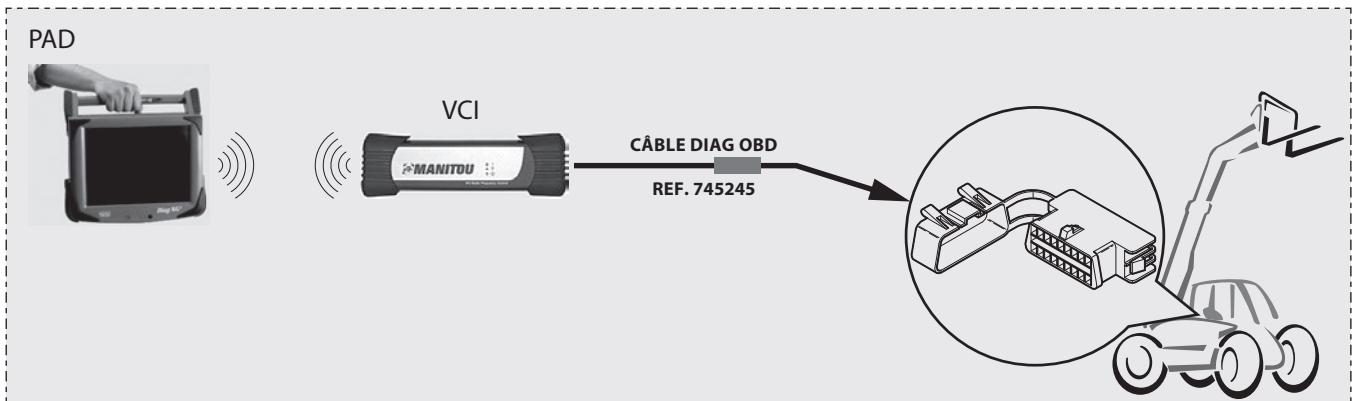
**Box fitness for engines st3b.....894942**

Consisting of:

- 1 - Communication box EDL .....894937
- 2 - Electric Cable OBD .....894940
- 3 - Electric Cable USB .....894938

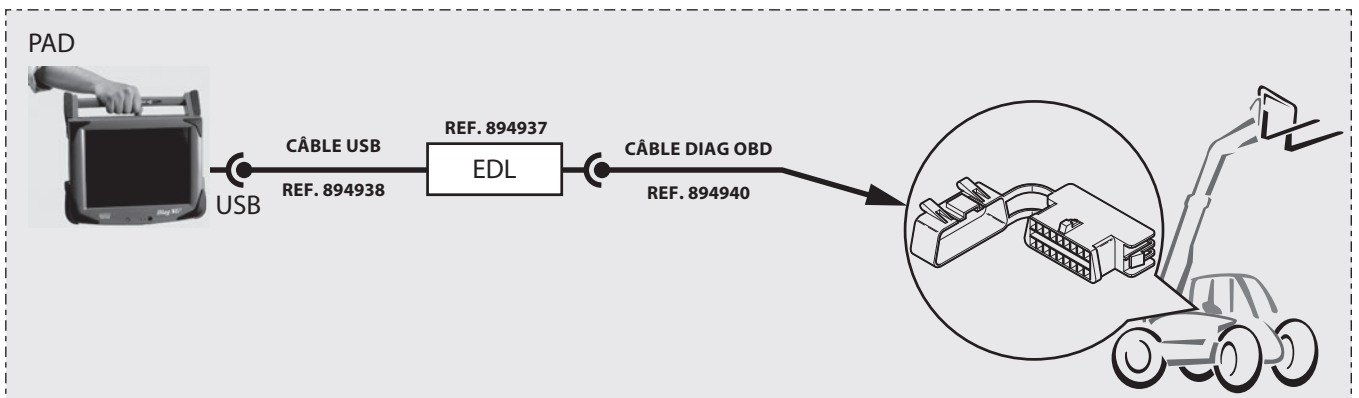
**CONNECTION TO TRUCK**

**CASE 1**



*Note: The cable Ref. 745245 can diagnose the entire machine except the engine.*

**CASE 2**



*Note: The case Ref. 894 942 is used to diagnose the engine.*

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- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

## DESCRIPTION OF OPERATION

The air conditioning system aims to reduce the atmospheric pressure in the cab interior by extracting and dispersing the heat to the exterior.

This heat exchange is possible thanks to the use of a refrigerant fluid, R134a whose properties are to obtain very low temperature at low pressures by dilating it and inversely high temperatures at average pressure by compressing it.

The use of the properties of this fluid is done following the closed circuit cycle whose principle is:

### Phase 1: compression

The R134a enters the compressor as a low pressure gas, where it is compressed. The compressor sends the resulting high pressure, high temperature gas to the condenser.

### Phase 2: condensation

The gas enters the condenser where, assisted by the fan, it transmits its heat to the outside air.

As it passes through the condenser it condenses back to a liquid state, maintaining high pressure and heat. It is then filtered in a drier.

### Phase 3: reducing

The R134a then enters the expansion valve, where it considerably loses pressure and temperature, while remaining in a liquid state.

### Phase 4: evaporation

The liquid R134a then passes through the evaporator where it absorbs heat from the cab and vaporizes, maintaining low temperature and pressure.

As such, the cab interior air propelled by the fan motor cools down and loses its humidity when in contact with the evaporator. The condensation of the air is then drained and evacuated to the outside of the vehicle.

Both high and low pressure sections of the circuit are monitored by high pressure and low pressure Pressostats mounted directly to the receiver dryer.

Its security operations are as follows:

- ⇒ Complete stop of the air conditioning if the pressure is lower than 2 bars or greater than 27 bars.

**MLT 845 100D H LSU ST3B S1**

**MLT 845 120D LSU ST3B S1**



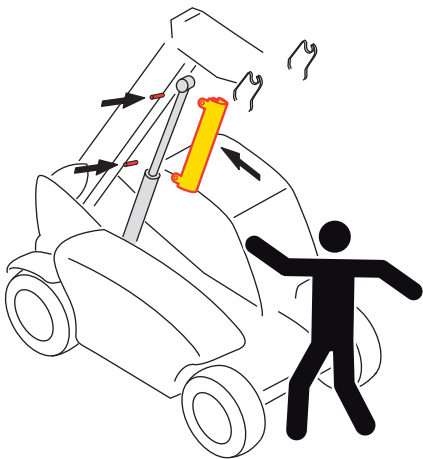


Never step on a part of the machine that has not been designed for it.



Never wear clothes, jewelry or objects that could get caught during work and cause accidents.

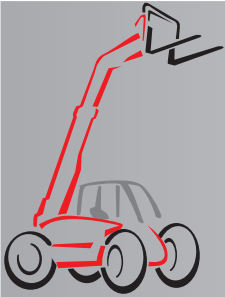
Always wear protection glasses, gloves, safety shoes as well as any other protection required for the work to be carried out.



When carrying out maintenance operations near a mobile object, make sure it is securitized.



When changing, or draining oils or fuel, or any other operation with liquids, solids, gases that are harmful to the environment, make sure the necessary precautions are taken to avoid contaminating the environment.



## **GENERAL CONTROL AND ADJUSTMENT**

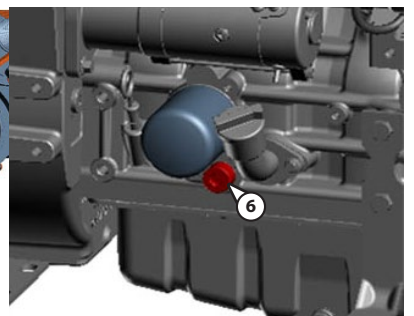
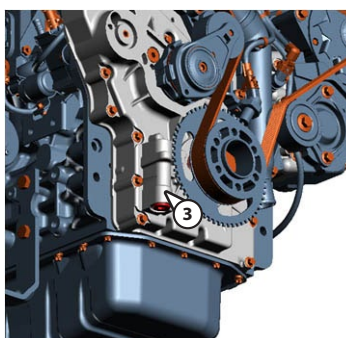
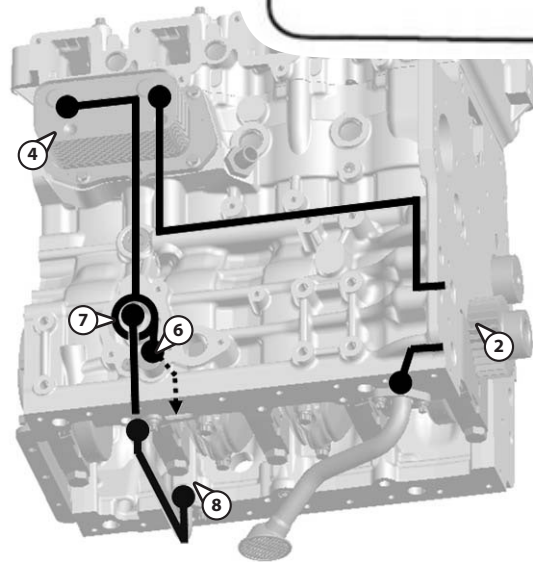
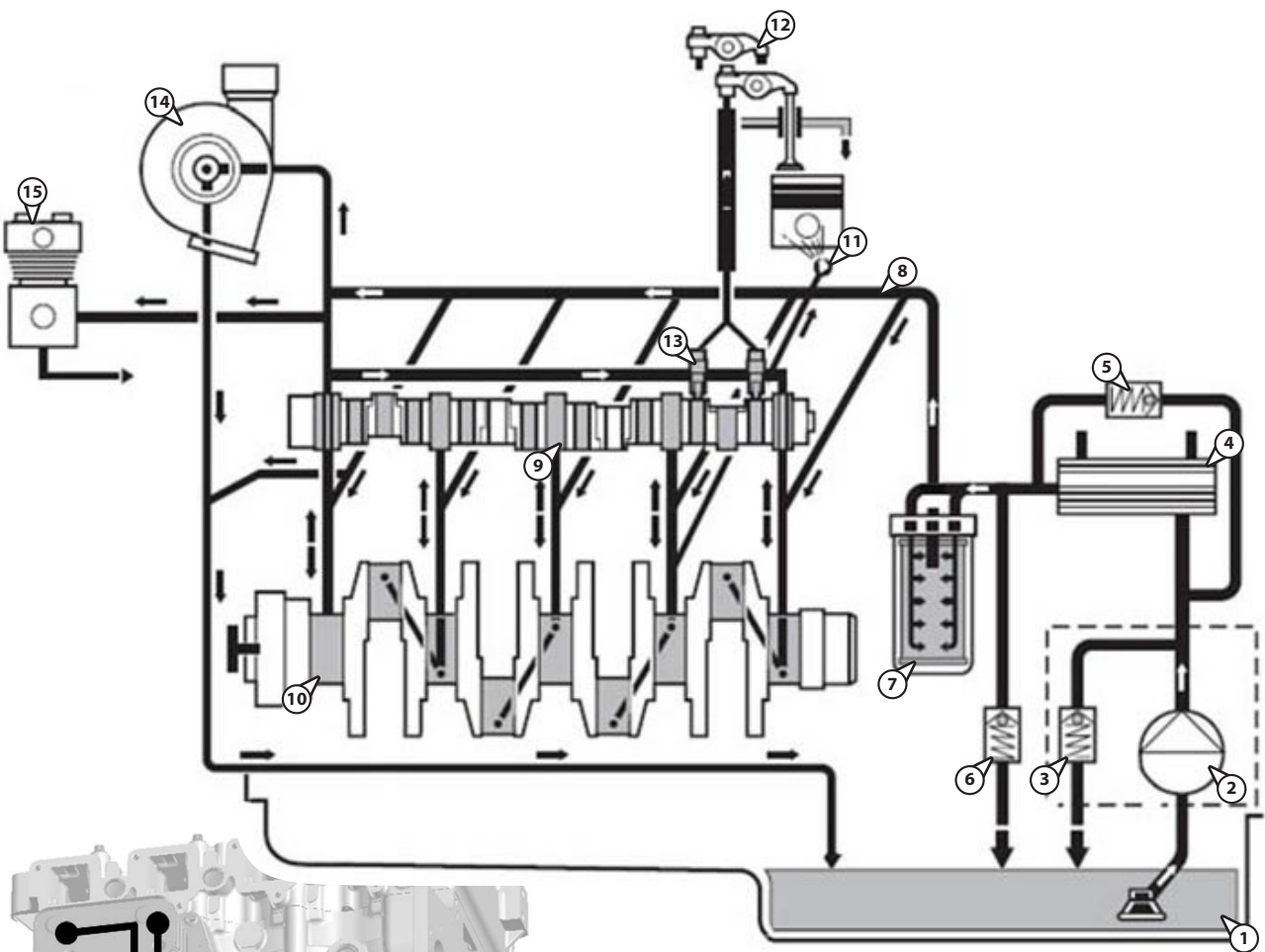
	pages
<b>STANDARD TIGHTENING TORQUES .....</b>	<b>2</b>
<b>LUBRICANTS AND FUEL .....</b>	<b>3</b>

### LUBRICATION CIRCUIT

The oil pressure and volume flow rate ensure lubrication of the engine and also, to a large extent, engine cooling. The pressure relief valve opens at 9 bar and the maximum oil temperature in the sump is 125°C.

Key:

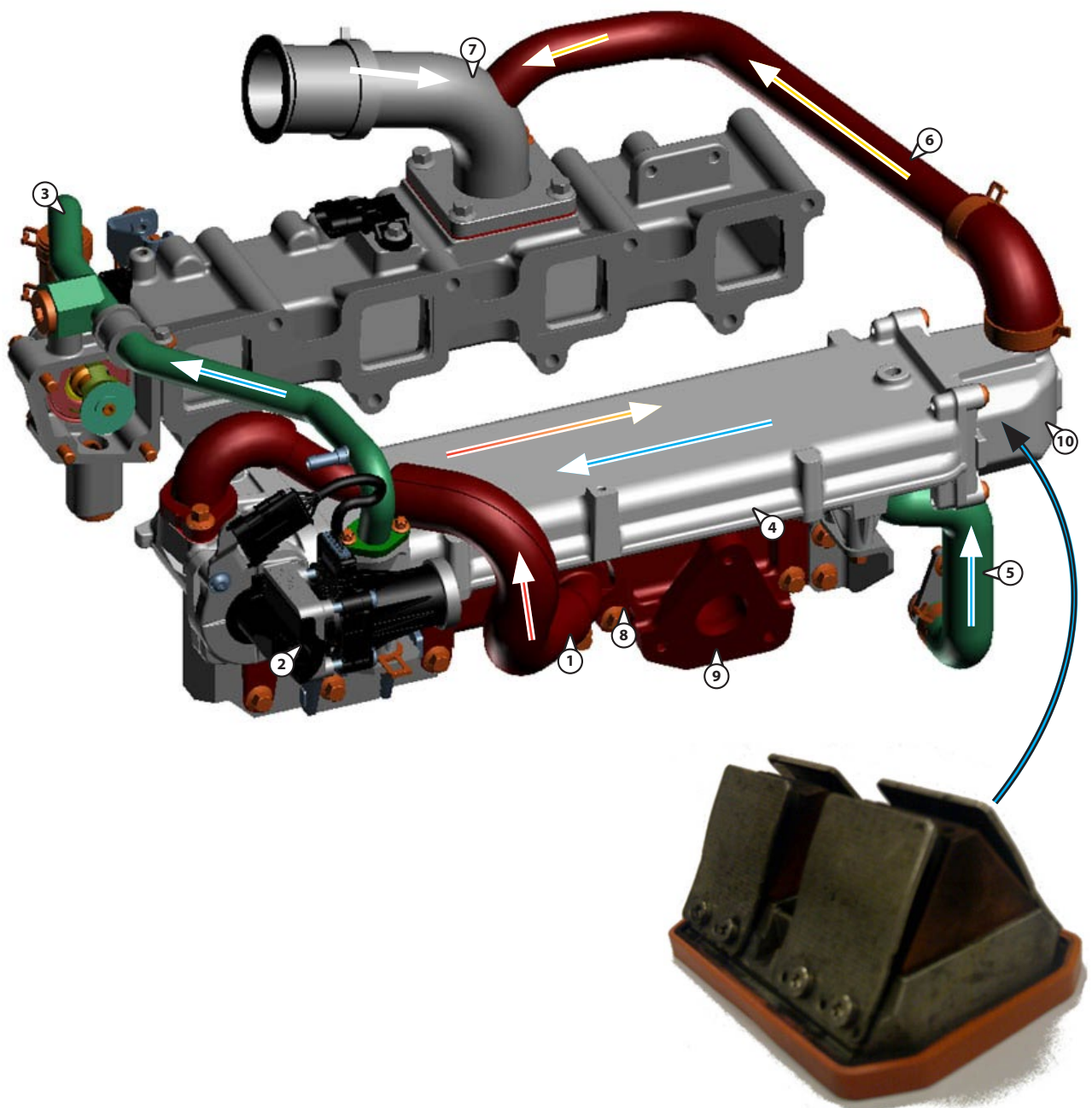
- 1 - Oil sump
- 2 - Oil pump
- 3 - Pressure relief valve
- 4 - Oil cooler
- 5 - By-pass valve
- 6 - Pressure control valve
- 7 - Oil filter
- 8 - Main oil gallery
- 9 - Camshaft bearing
- 10 - Crankshaft bearing
- 11 - Piston cooling nozzle
- 12 - Rocker arm
- 13 - Hydraulic tappets
- 14 - Turbocharger
- 15 - Air compressor (optional)



## EGR (Exhaust Gas Recirculation) CIRCUIT

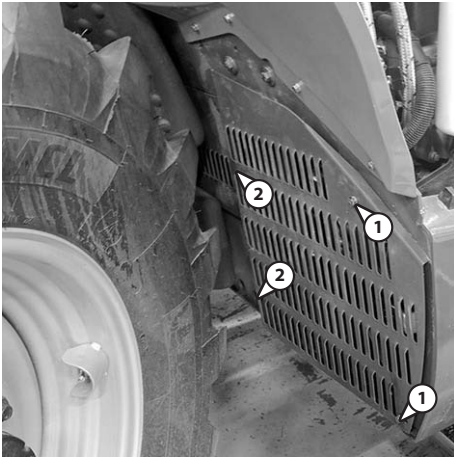
### Key:

- |   |                                       |
|---|---------------------------------------|
| 1 - Partial exhaust gas flow (not cooled)     | 6 - Partial exhaust gas flow (cooled) |
| 2 - EGR valve, controller (electrical action) | 7 - Intake                            |
| 3 - Cooling liquid return                     | 8 - Exhaust manifold                  |
| 4 - Exhaust gas return radiator (EGR)         | 9 - Turbo attachment                  |
| 5 - EGR radiator coolant supply line          | 10 - One-way valves                   |



## M – AIR-CONDITIONING COMPRESSOR REMOVAL

⇒ Carry out the "AIR-CONDITIONING BELT REMOVAL (option)" operation ◀ J



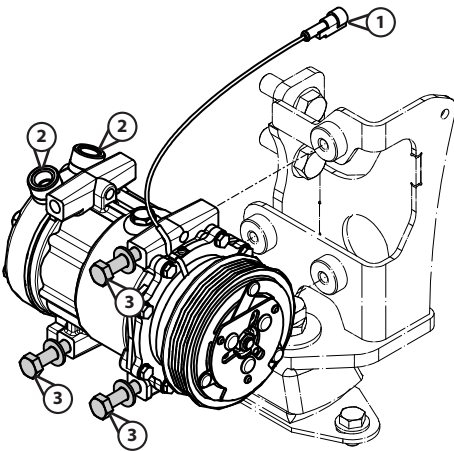
Take off the rear grill, remove the 2 large screws on the right (Ref. 1) and the two small screws on the left (Ref. 2).

Discharge the air-conditioning system (◀ air-conditioning training course).

Disconnect connector X207 (Ref. 1).

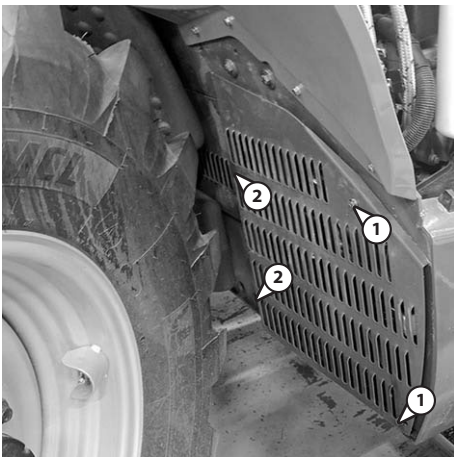
Unscrew the 2 hoses (Ref. 2).

Remove the 3 screws (Ref. 3).

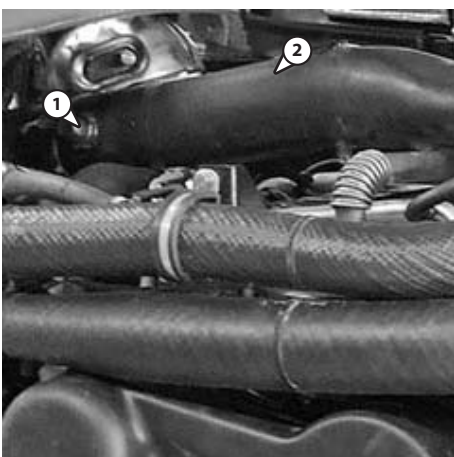


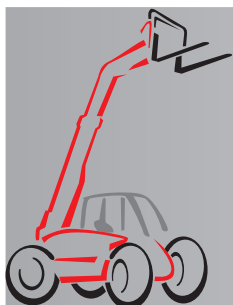
## N – STARTER MOTOR REMOVAL

Take off the rear grill, remove the 2 large screws on the right (Ref. 1) and the two small screws on the left (Ref. 2).



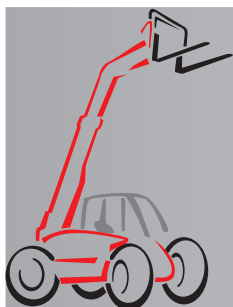
Disconnect the X164 air inlet temperature sensor (Ref. 1). Remove the hose from the air filter to the turbo (Ref. 2), unscrew the 2 clamps, plug the engine ports.





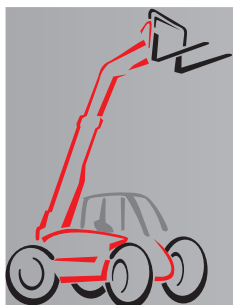
# REMOVING THE ENGINE

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<b>GENERAL INFORMATION .....</b>	<b>2</b>
<b>PREPARATION AND SAFETY INSTRUCTIONS.....</b>	<b>2</b>
<b>ENGINE HOUSING REMOVAL (H) .....</b>	<b>3</b>
<b>ENGINE REMOVAL.....</b>	<b>4</b>
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- B – AIR AND WATER HOSES .....	4
- C – HEATING CIRCUIT.....	4
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- F – VENTILATION PUMP AND EXHAUST HOSES.....	6
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## ENGINE TROUBLESHOOTING

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<b>START-UP CONDITIONS</b> .....	<b>4</b>
<b>LACK OF POWER</b> .....	<b>4</b>
<b>INJECTION CODE</b> .....	<b>5</b>
<b>FAN DRIVE CHECK POINTS</b> .....	<b>5</b>



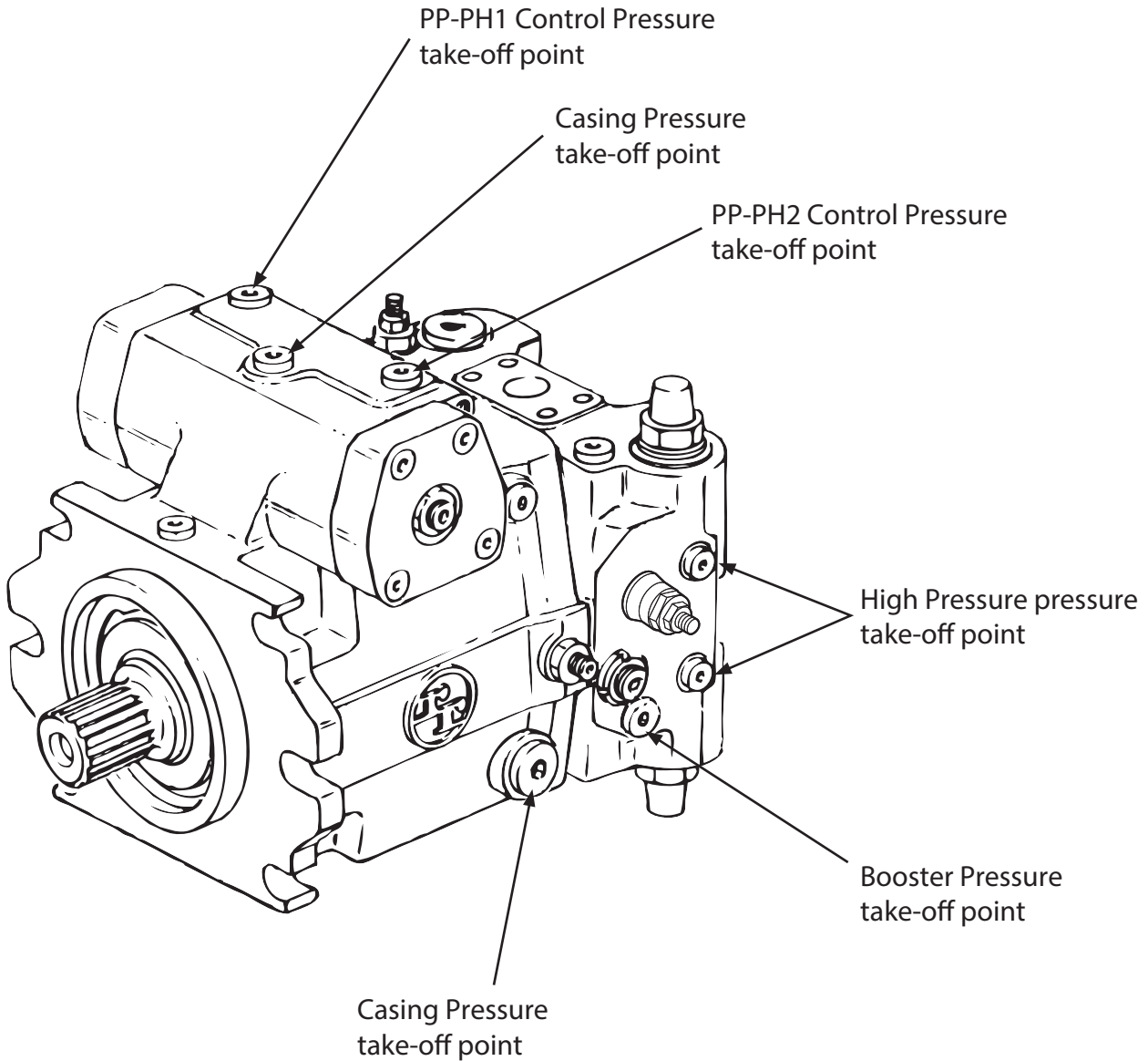
## **TRANSMISSION SCHEMATIC DIAGRAMS**

	pages
<b>POWER FLOW DIAGRAM/GEAR RATIOS - MECHANICAL TRANSMISSION .....</b>	<b>3</b>
<b>POWER FLOW DIAGRAM/GEAR RATIOS - HYDROSTATIC TRANSMISSION .....</b>	<b>4</b>
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<b>SCHEMATIC DIAGRAM HYDROSTATIC TRANSMISSION IN REVERSE GEAR .....</b>	<b>6</b>

## PRESSURE TAKE-OFF POINTS

### A4VG 71 DA PUMP PRESSURE MEASURING POINT

Refer to "Manometer Box" catalogue Ref. 547037 for pressure take-off point connection and hosing kits.



**B. MONITORING REGULATION START:**

- When the machine reaches maximum speed, apply the brakes gradually so as to raise the HP (the TH7 shut-down valve should be previously by-passed).
- Make note of the two pressure readings. When HP reaches 200-250 bar, switching pressure drops and HP continues to increase to a DR valve rated value (switching pressures are specified for the type of equipment concerned in the Service Note).
- The 320/18 bar regulating starting point should be adjusted by the regulating screw.  
Switching: 280 bars  
Control pressure: 25 bar

**C. MAXIMUM CAPACITY: (MAXIMUM TRACTION FORCE)**

To carry out this setting procedure the machine should be in calibration mode (brakes locked).

Monitoring is done at IC engine maximum speed in forward motion.

Switching pressure (control cylinder large section end) should be around zero bars.

Set regulation screw as needed (tighten to increase switching pressure, unscrew to reduce switching pressure).

Monitoring the traction force (at tow hook) should then be done (see Service Note for values).

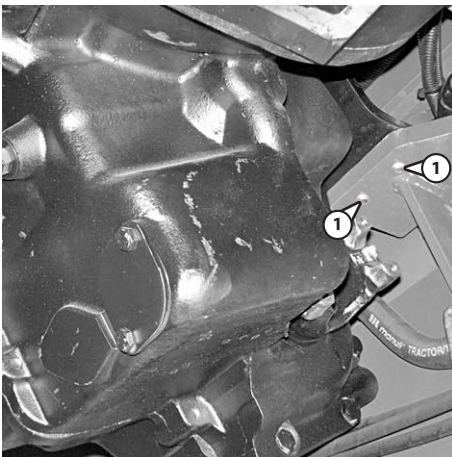
MLT845 120D LSU ST3B S1



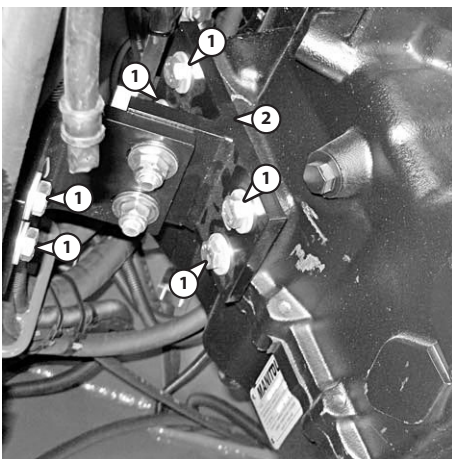
Install a sling (Ref. 1) on the gear box.

Install a pulley (Ref. 2) above the gear box.

Secure the gear box with the pulley.

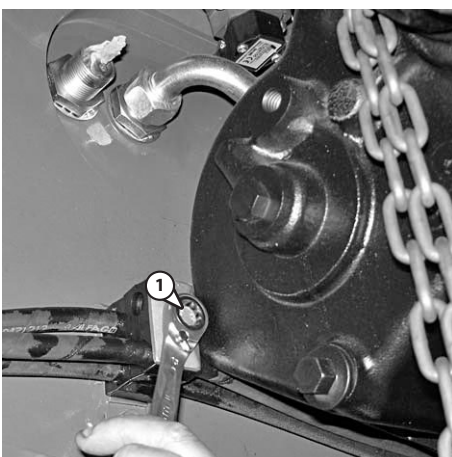


Remove the two screws (Ref. 1) from the speed box support bracket on the rated engine frame using a 19 mm spanner.



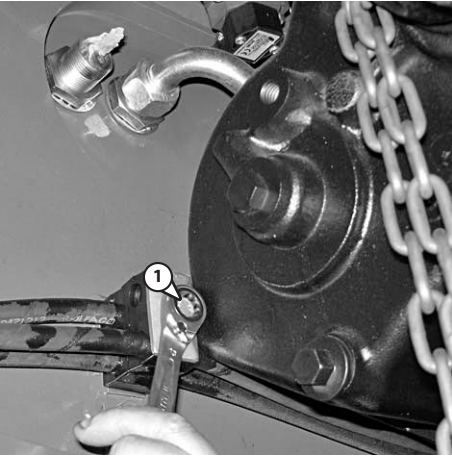
Remove the six retaining screws (Ref. 1) from the support bracket (Ref. 2) on the rated cab gear box using a 19 mm spanner

Remove the support bracket (Ref. 2).



Remove the flange (Ref. 1) using the 13 mm spanner.

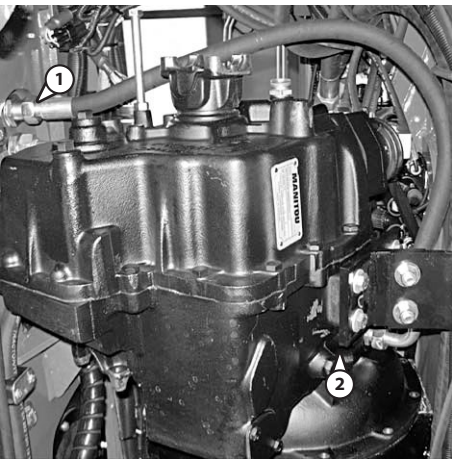
MLT845 120D LSU ST3B S1



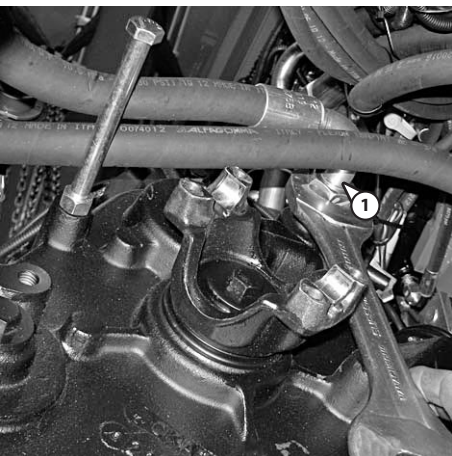
Reposition the flange (Ref. 1) using the 13 mm spanner.



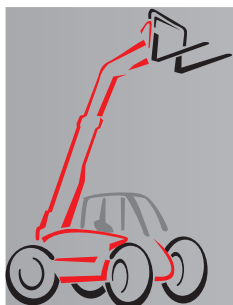
Remove the tie rods and the pulley (Ref. 1) from the gear box.



Fasten the hose (Ref. 1 and 2) using the 36 mm spanner.

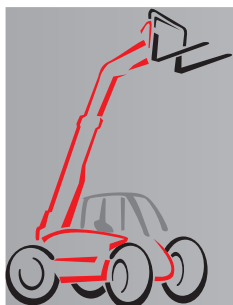


Fasten the hose (Ref. 1) using the 36 mm spanner.



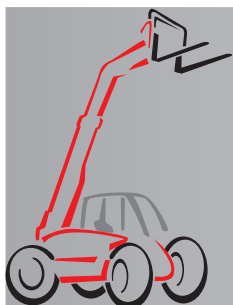
## **AXLE CONTROL AND ADJUSTMENT**

	pages
<b>BUMP STOPS ADJUSTMENT</b> .....	<b>2</b>
– WHEEL ALIGNMENT GREEN INDICATOR LIGHTS.....	2
<b>TIGHTENING TORQUE</b> .....	<b>4</b>
– AXLE .....	4



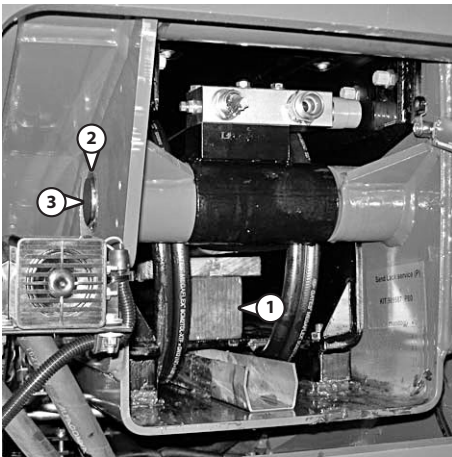
## **BRAKE CONTROL AND ADJUSTMENT**

	pages
<b>MLT 845 SERVICE BRAKE</b> .....	<b>2</b>
– SETTING BRAKE PEDAL HEIGHT .....	2
<b>MLT 845 H SERVICE BRAKE</b> .....	<b>3</b>
– SETTING BRAKE PEDAL HEIGHT .....	3
<b>PARKING BRAKE (CABLE OPERATED BRAKE)</b> .....	<b>4</b>
– HAND BRAKE CABLE ADJUSTMENT .....	4
<b>SERVICE BRAKE</b> .....	<b>5</b>
– BLEEDING THE CIRCUIT .....	5



## **BOOM CHARACTERISTICS AND SPECIFICATIONS**

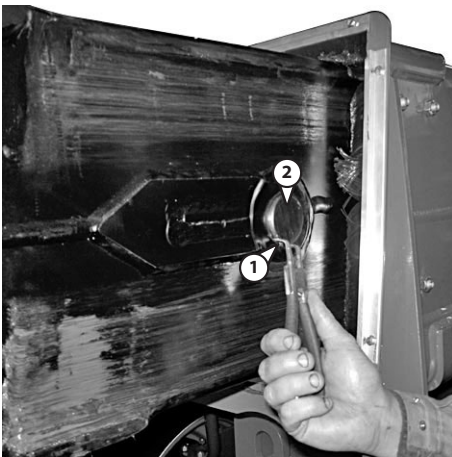
	pages
<b>DUPLEX (MLT 8 METERS): .....</b>	<b>2</b>



Place a wedge (Ref. 1) under the telescope cylinder.

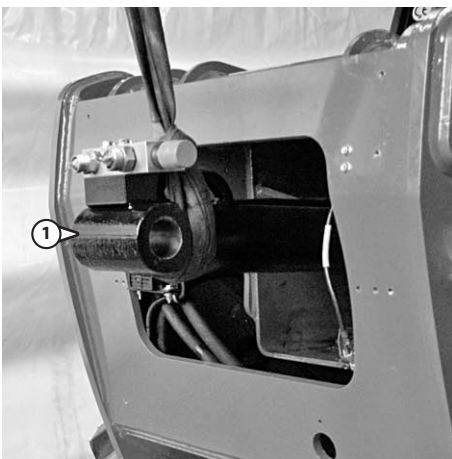
Remove the circlips (Ref. 2) from the telescope cylinder.

Remove the telescope cylinder pin (Ref. 3).

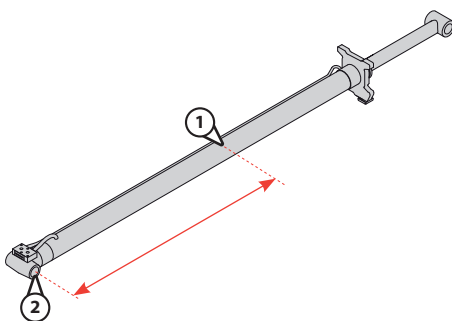


Remove the circlips (Ref. 1) from the telescope cylinder.

Remove the telescope cylinder pin (Ref. 2).

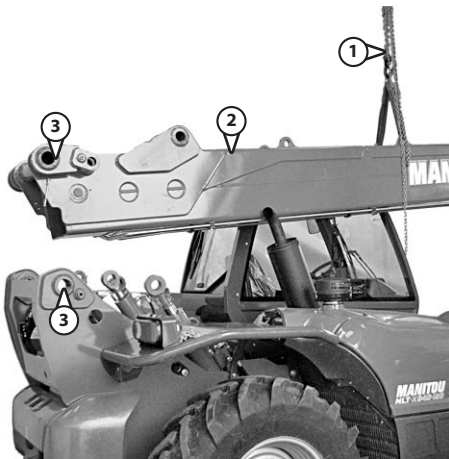


Strap and remove the cylinder by approximately two metres (Ref. 1).



Hold/secure the cylinder at the centre of gravity (Ref. 1) using a strap and a lifting system (pulley).

**⚠ The cylinder's centre of gravity (Ref. 1) is approximately 2 m from the cylinder's pin (Ref. 2). Move the strap forwards/backwards until the cylinder is balanced.**



## BOOM REFIT

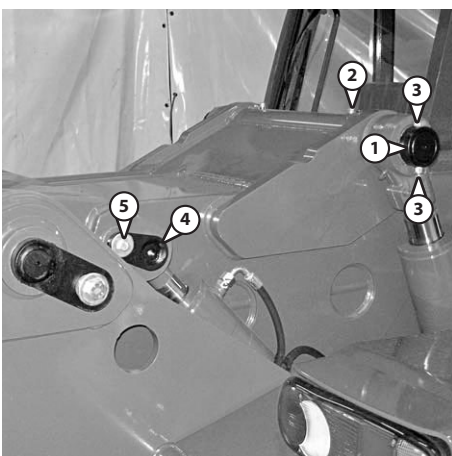
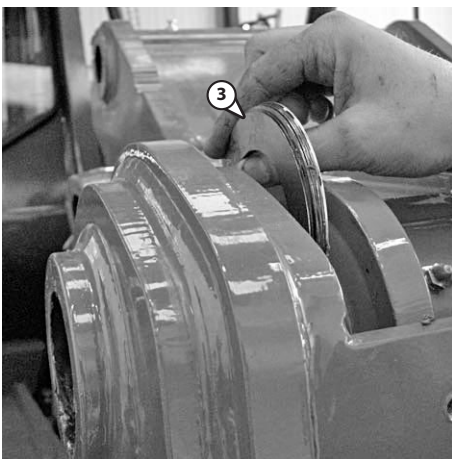
Using a lifting system (pulley) (Ref. 1), position the boom (Ref. 2) on the carriage by aligning the boom base pivot pin (Ref. 3).

### Greasing recommendations before pivot pin assembly:

- Fill the cells or pivot pin ring holes.
- Apply a fine film of grease on the pin surface.

Insert the pin (Ref. 1) and the washers (Ref. 3) in the boom base.

Attach the pin to the boom base by tightening the screw (Ref. 2) using a 27 mm spanner.



### Greasing recommendations before pivot pin assembly:

- Fill the cells or pivot pin ring holes.
- Apply a fine film of grease on the pin surface.

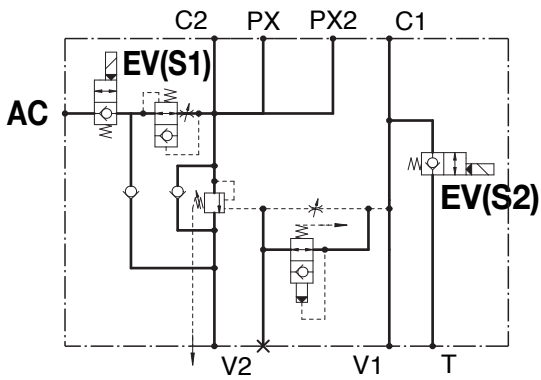
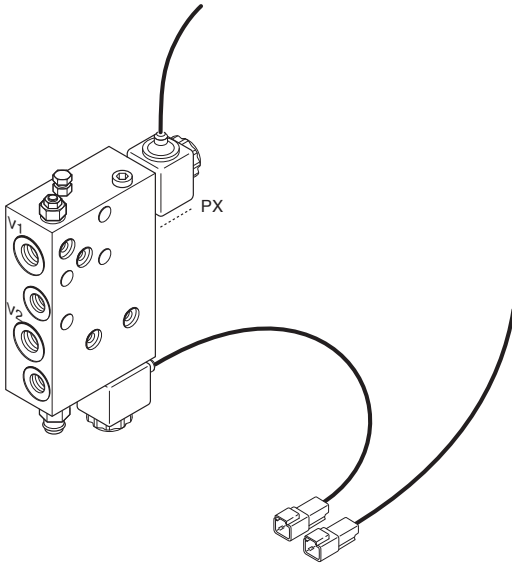
Insert the pins (Ref. 1) on the lifting cylinder heads on each side of the machine.

Insert the pins (Ref. 2) then screw them using a 13 mm spanner. Fasten the pins (Ref. 1) with the screws/nuts (Ref. 3) using a 13 mm spanner.

Insert the pins (Ref. 4) in the compensation cylinder heads, then fasten them by tightening the screws (Ref. 5) using a 27 mm spanner.

**BOOM SUSPENSION ELECTROVALVE (OPTION)**

*Values for information purposes only.*



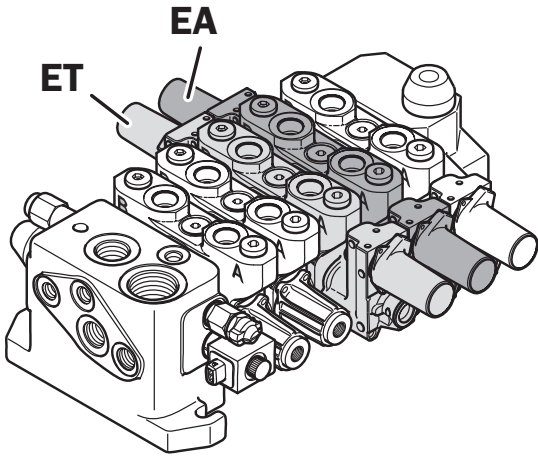
70

Maximum pressure (bar)	
Maximum flowrate (L/min)	150

**Nota :** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

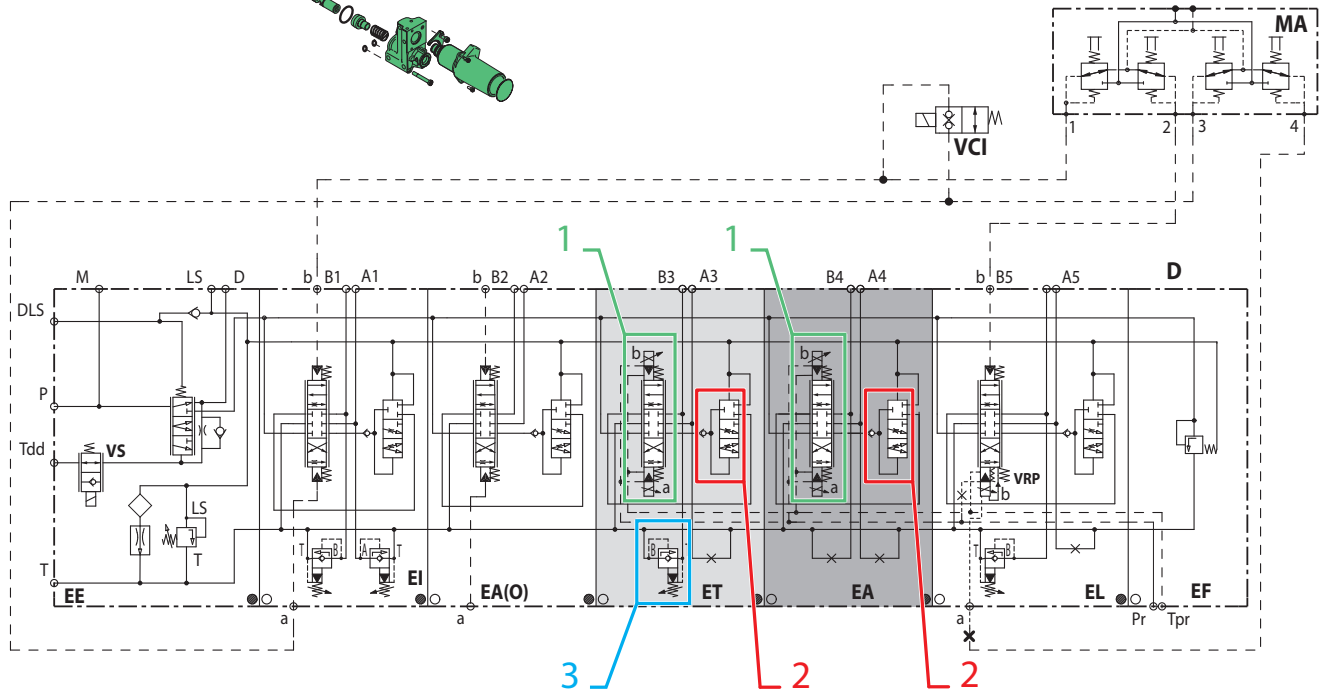
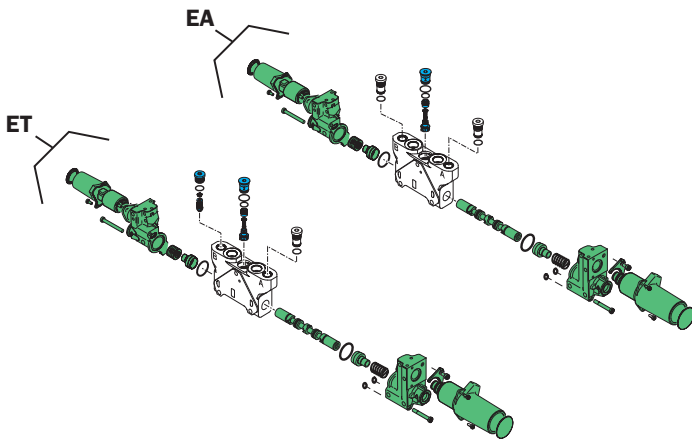
**SX 14 S DISTRIBUTOR (TELESCOPING - ACCESSORY)**

*Values for information purposes only.*



Function:

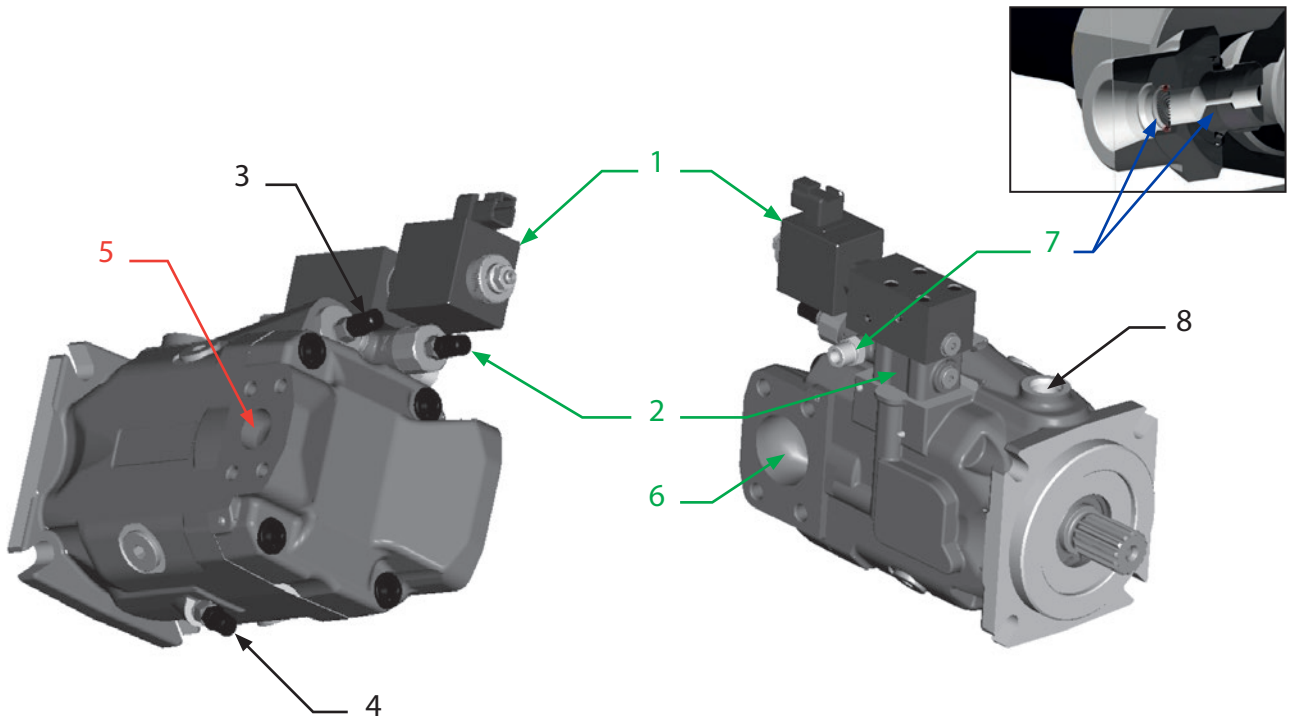
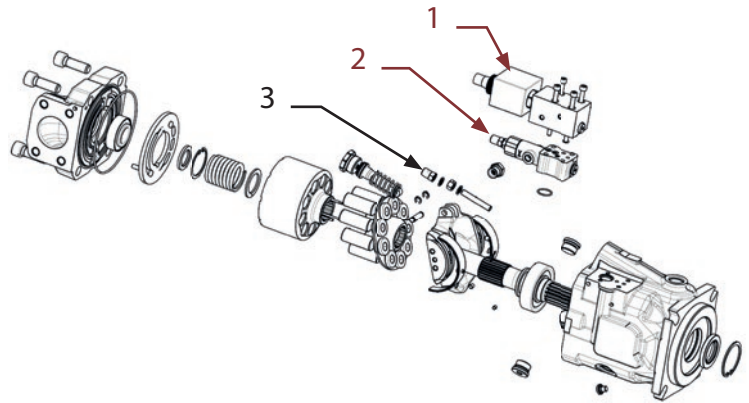
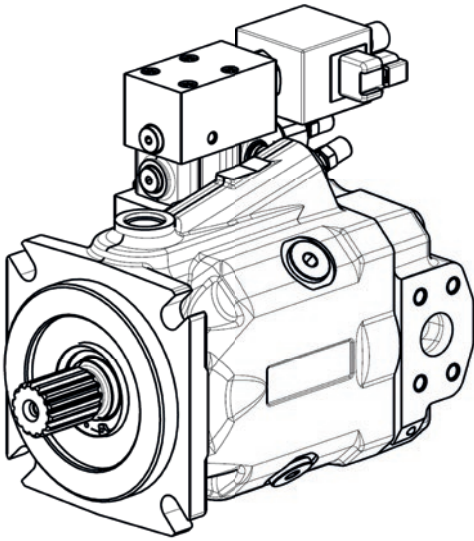
- Direct the hydraulic flow to the receiver.
- Limit impact pressure.
- Enables all movement to be stopped.



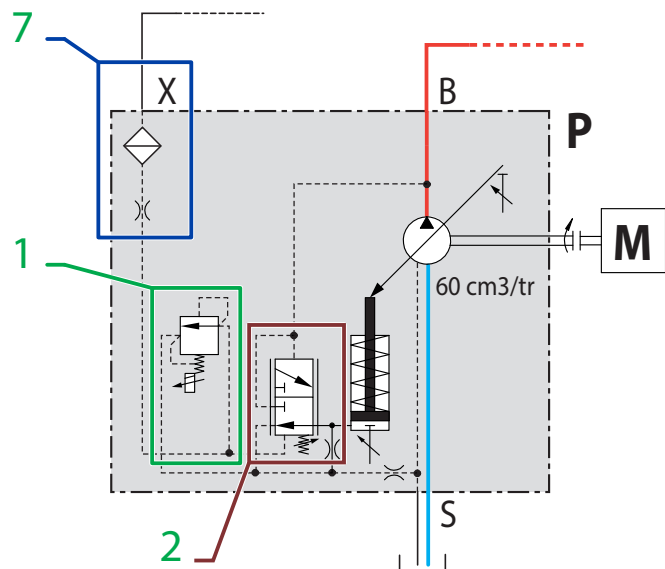
- 1 - Valve slide.
- 2 - Pressure balance.
- 3 - Pressure spike relief valve.

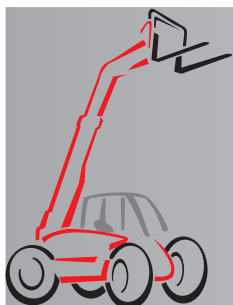
Notes: \_\_\_\_\_

CASAPPA MVP 60 PUMP



- 1. PEC (Pressure Electronic Control).
- 2. Hydraulic flow regulator.
- 3. Maximum displacement regulator.
- 4. Minimum displacement regulator.
- 5. High Pressure (B).
- 6. Suction pressure (S).
- 7. LS (X) line coupling. Includes filter and flow limiter.
- 8. Oil tank return.





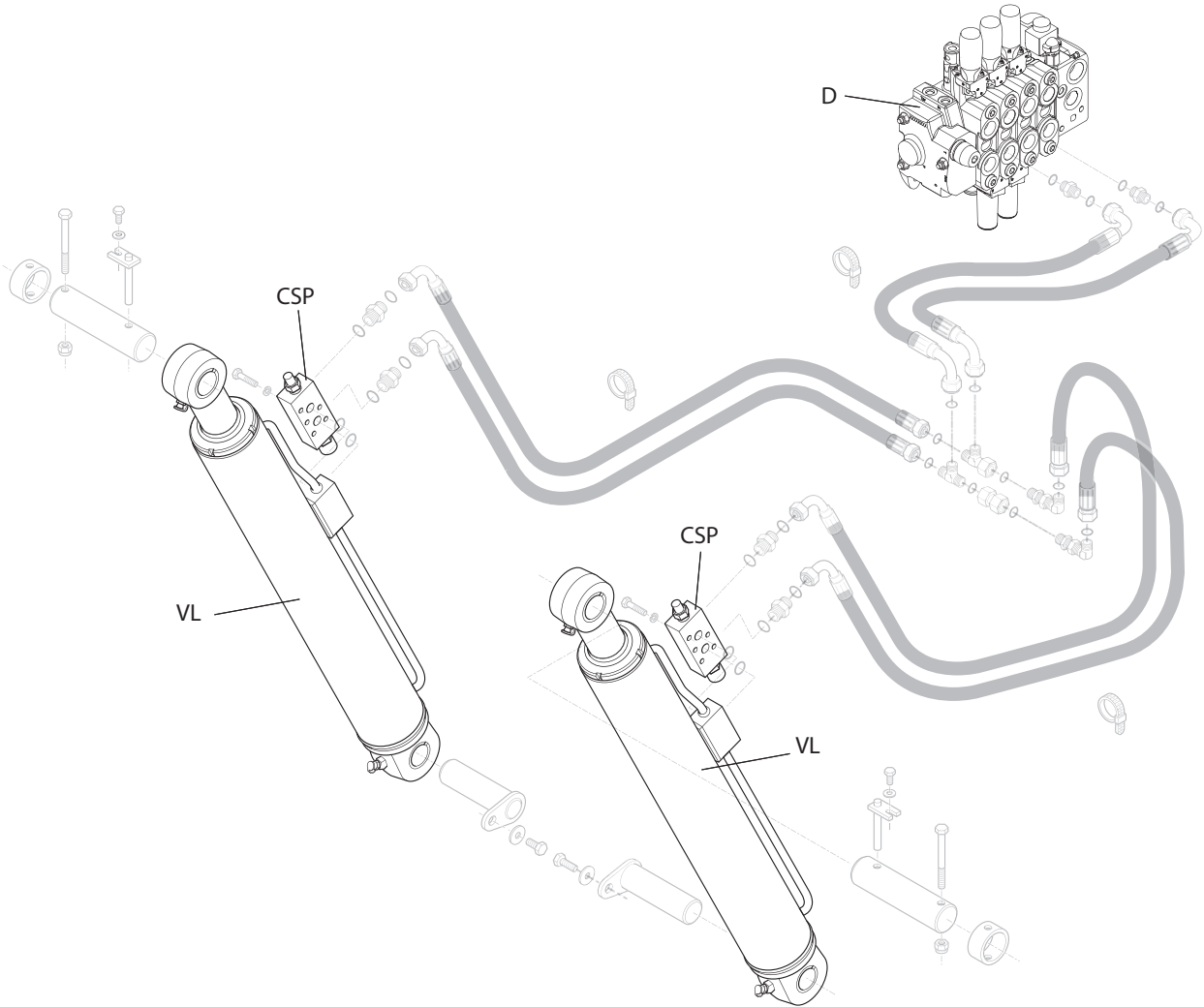
## HYDRAULIC SCHEMATIC DIAGRAMS

	pages
<b>MLT845 100D H LSU ST3B S1</b> .....	<b>3</b>
– KEY .....	3
– HYDRAULIC DIAGRAM .....	4
<b>MLT845 120D LSU ST3B S1</b> .....	<b>5</b>
– KEY .....	5
– HYDRAULIC DIAGRAM .....	6

**2 - HYDRAULIC LIFTING CIRCUIT**


MLT845 100D H LSU ST3B S1

MLT845 120D LSU ST3B S1



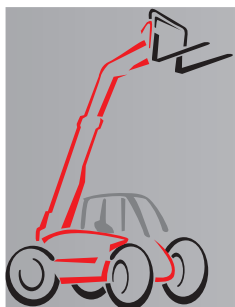
70

## 2 – TROUBLESHOOTING

 **Before carrying out any of the fault-finding procedures to detect the cause of the breakdown or before removing the distribution unit, it is essential to first carry out an examination of the machine's hydraulic circuit in order to eliminate any breakdown resulting from causes external to the SX 14 S distributor unit.**

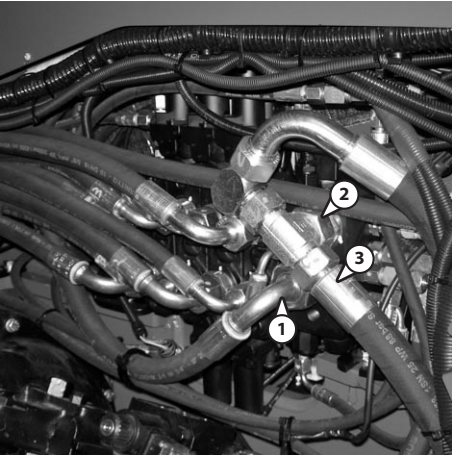
**Faults arising from malfunction of receivers linked to the distribution unit.**

<i>Results noted</i>	<i>Probable causes</i>	<i>Additional checks</i>	<i>Solutions</i>
Lack of power at all receivers	<ul style="list-style-type: none"> <li>- LS Limiter defective</li> <li>- LS limiter out of adjustment</li> </ul>	Measure pressure (see unit specifications)	<ul style="list-style-type: none"> <li>- Change the LS limiter (cf. § 5.1)</li> <li>- Adjust</li> </ul>
Lack of power at just one receiver	<ul style="list-style-type: none"> <li>- Secondary suppression limiter out of adjustment</li> <li>- Secondary limiter stuck open (return to tank)</li> </ul>		<ul style="list-style-type: none"> <li>- Reset to design pressure (see unit specifications)</li> <li>- Change the secondary limiter (cf. § 5.5)</li> </ul>
Lack of speed in one or all movements	For SX 14 S fitted with "open center" inlet: "Open center" piston stuck in position P towards T		Change the body + piston assembly
Lack of speed in one movement	<ul style="list-style-type: none"> <li>- Incorrect slide movement</li> <li>- Adjustable hydraulic control stop out of adjustment</li> <li>- Individual pressure balance stuck</li> </ul>	Manual control: measure slide movement. Direct electrical control: check the coil resistance (R: 2.5 Ohm at 25°C)	<ul style="list-style-type: none"> <li>- If movement is incorrect, change the body + slide assembly. If the resistance is incorrect change the coil.</li> <li>- Adjust</li> <li>- Change the body + pressure balance assembly</li> </ul>
Failure to maintain pressure	<ul style="list-style-type: none"> <li>- Load hold check valve faulty</li> <li>- Excessive play between the body and the slide</li> </ul>		<ul style="list-style-type: none"> <li>- Change the body + valve assembly</li> <li>- Change the body + slide assembly</li> </ul>
Steering abnormally hard	Flow divider poorly adjusted	<ul style="list-style-type: none"> <li>- Regulating piston sliding freely</li> <li>- Regulating piston stuck</li> </ul>	<ul style="list-style-type: none"> <li>- Change regulation sub-assembly (cf. § 5.3)</li> <li>- Change body + regulation assembly (cf. § 5.7 et 5.3)</li> </ul>
Excessive delay in response to steering	Flow Divider regulation piston filter clogged		Change the filter



## HYDRAULIC COMPONENTS REMOVAL

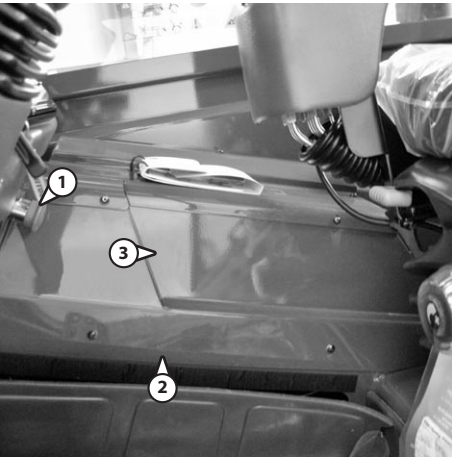
	pages
<b>DISTRIBUTOR .....</b>	<b>2</b>
– PREPARATION AND SAFETY INSTRUCTIONS.....	2
– DISTRIBUTOR REMOVAL .....	3



Fasten the hose (Ref. 1) using a 46 mm spanner.

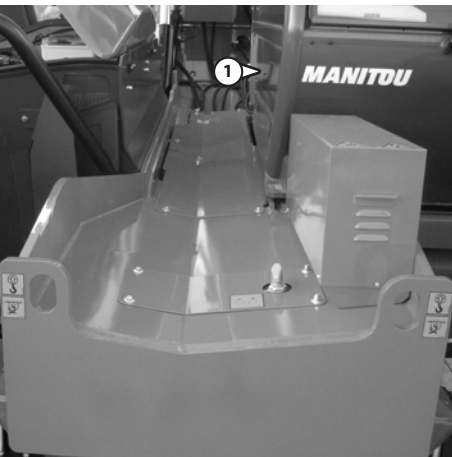
Fasten the T+hose (Ref. 2) using a 46 mm spanner.

Fasten the hose (Ref. 3) to the T (Ref. 2) using a 41 mm spanner.



In the cab, connect the emergency stop connector (Ref. 1).

Position and fasten the two cover plates (Ref. 2 and 3) (six screws) using a 4 mm hexagonal spanner.



Position and fasten the cover plate (Ref. 1) to the cab.



Remove the two safety systems (Ref. 1).

Turn the current back on by means of the battery cut-out.

Top up with hydraulic oil.

**ELECTRICAL AND ELECTRONIC SYSTEM OVERVIEW**

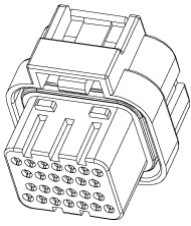
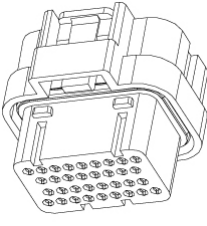
pages

<b>FUSES AND RELAYS IN THE CAB</b> .....	<b>A2</b>
<b>FUSES AND RELAYS UNDER THE ENGINE BONNET</b> .....	<b>A4</b>
<b>ELECTRICAL CONNECTORS</b> .....	<b>A6</b>
– CHASSIS/CAB LINE MLT845-100D H LSU .....	A6
– ENGINE LINE MLT845-100D H LSU .....	A34
– HARNESS ROOF CABIN - SEAT MLT845-100D H LSU .....	A43
– CHASSIS/CAB LINE MLT845-120D LSU .....	A45
– ENGINE LINE MLT845-120D LSU .....	A69
– HARNESS ROOF CABIN - SEAT MLT845-120D LSU .....	A78
– HARNESS DISTRIBUTOR .....	A80
– ELECTRIC FUSE PLATE AND RELAYS.....	A81

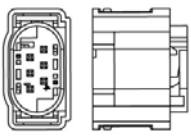




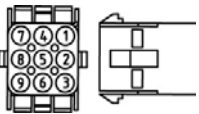
**MLT845-100D H LSU**

Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img
<b>K700</b>	87-3	RN4+RN4+RN4+RN2,5+RN1,5+RN1,5+RN+RN		F72	IN	
				F75	IN	
				F79	IN	
				F77	IN	
				X45	4	
				X45	3	
				X45	2	
	F74	IN				
	30-4	R	25	X476.P		
	30-4	R	6		X45	
F76					IN	
85-1	N			GND		
86-2	N-R			X55	5	
<b>R332 4,7K</b>		BV	0,5	X332	1	
		R-L		X332	2	
<b>R333 4,7K</b>		BV	0,5	X333	1	
		L-G		X333	2	
<b>R334 4,7K</b>		BV	0,5	X334	1	
		G-R		X334	2	
<b>SCH</b>	SCHERMATURA			X115	5	
				X58	27	
				X57	28	
				X99	1	
				X118A	C	
<b>SW5</b>	1	M-B		X312	1	
	5	S-N		X09	1	
				X41	4	
	9	S-M		X04	4	
				SW10	9	
				SW43	9	
				SW19	9	
				SW10	5	
10	N			GND		
<b>SW6</b>	1	M-G		X56	16	
	5	N		GND		
	9	R#14		SW26	9	
				SW20	9	
				SW20	5	
				X41	3	
				X113	A	
10	N			GND		

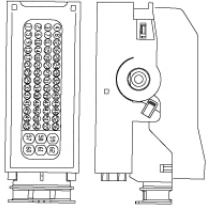

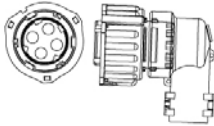
**MLT845-100D H LSU**

Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img	
<b>X56</b>	1	G#10		F76	OUT		
				X56	7		
				X02	1		
	2	R#9			X87		3
	3	R#16			X97		2
	5	V#4			X87		8
	6	V#5			X87		7
	7	G#10			F76		OUT
					X56		1
					X02		1
	8	C-L			X100		3
	10	BV#1			X116		1
	11	A-B			SW20		1
	12	R#7			X36		2
					X36		3
	13	C-G			X114		3
					X57		3
					X57		4
					X118		9
	14	C#4			X87		4
	15	G-R			X118		4
	16	M-G			SW6		1
	17	B-L			X02		2
	18	G#3			X36		6
	20	N			GND		
	21	H			X99		2
X508					2		
22	R-V			X112	2		
23	R#5			K18	30		
				KD1	87a		
				SW60	2		
				SW60	9		
24	G#24			SW501	1		
25	A-G			X100	6		
26	N			GND			
<b>X57</b>	1	M	0,5	X58	23		
				X508	3		
				X121A	B4		
				X118A	A		
				X115	3		
				X115	6		
				X109	40		
				X99	4		
	2	B	0,5	X58	24		
				X121A	C5		
				X508	4		
				X118A	B4		
				X115	11		
				X115	14		
			X109	39			
			X99	5			

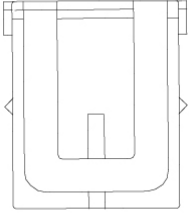
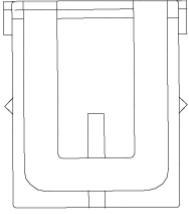
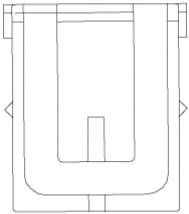
**MLT845-100D H LSU**

Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img		
<b>X201</b>	1	A-H	0,5	X201	6			
				X58	21			
	2	A	0,5	X201	5			
				X58	22			
	3	H-B	0,5	X58	26			
	4	A-G	0,5	X58	25			
	5	A	0,5	X201	2			
				X58	22			
	6	A-H	0,5	X201	1			
				X58	21			
	<b>X306</b>	1	M-R		K13		87a	
		2	N		GND			
<b>X307</b>	1	C-H		SW43	1			
				X314	1			
				K13	86			
				K12	87a			
	2	N		GND				
<b>X308</b>	1	R-B#11		X72	2			
		R-B#11		X319	1			
	2	RN#7		SW501	5			
	3	V-N		X73	1			
	4	HL#1	1,5	F71	OUT			
	5	R#2		F73	OUT			
	6	A-V		X331	1			
	7	S	2,5	SW8	2			
				SW8	9			
				X77	1			
	8	H-R		X68	4			
				X58	15			
	9	L#1	1,5	X58	5			
	10	S-M		SW10	5			
				SW10	9			
				SW43	9			
				SW5	9			
11	R-H		X89	1				
			X68	1				
<b>X310</b>	1	N-B		K14	86			
<b>X311</b>	5	G#1		K8	87a			
				X58	29			
	7	RG		K8	30			
				X36	8			
	8	S#3		KD1	85			
				X36	11			
	9	A-N		X57	22			
				KD1	30			
X36				12				
				X57	14			

**MLT845-100D H LSU**

Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img
<b>X277</b>	1	N 0,5	SCH	X277	9	
				X174	38	
				X174	53	
				X58	27	
	2	V#2	0,5	X175	28	
	3	V#3	0,5	X175	73	
	9	N 0,5	SCH	X277	1	
				X174	38	
				X174	53	
				X58	27	
	13	B	0,5	X174	52	
	14	M	0,5	X174	37	
	15	M	0,5	X174	39	
	17	V#17	0,5	X174	61	
	19	C#19	1,5	X174	4	
	20	C#20	1,5	X174	5	
	21	B	0,5	X174	54	
	22	V#22	0,5	X174	24	
	23	V#23	0,5	X174	43	
	24	V#24	0,5	X174	28	
	25	V#25	0,5	X174	26	
	26	V#26	0,5	X174	44	
	27	V#27	0,5	X174	29	
	28	V#28	0,5	X174	40	
	29	V#29	0,5	X174	27	
	31	V#31	0,5	X174	25	
	32	V#32	0,5	X174	7	
	35	C#35	1,5	X174	16	
	37	C#37	1,5	X174	18	
	38	C#38	1,5	X174	32	
	40	C#40	1,5	X174	46	
	41	C#41	1,5	X174	3	
42	C#42	1,5	X174	48		
46	V#46	0,5	X175	85		
47	C#47	1,5	X174	19		
48	C#48	1,5	X174	20		
50	V#50	0,5	X175	44		
51	C-G	0,5	X175	82		
			X164	2		
61	C#61	1,5	X174	2		
62	C#62	1,5	X174	33		
<b>X281</b>	1	H#5	0,5	X282	1	
	2	H#7	0,5	X282	2	
	4	H#8	0,5	X282	4	
<b>X282</b>	1	H#5	0,5	X281	1	
	2	H#7	0,5	X281	2	
	4	H#8	0,5	X281	4	

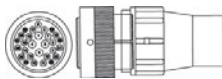


MLT845-120D LSU

Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img
SW26	1	VG+VG		X57	19	
				X117M		
	5	N+N		X117F		
				GND		
	9	R#14		SW20	5	
				SW20	9	
				SW6	9	
X41				3		
10	N		X113	A		
SW32	2	S#1	2,5	X26	3	
				X04	6	
				SW32	7	
				SW32	9	
	3	VN		X26	1	
	4	CR		X26	9	
	5	LG		X26	2	
	6	VR		X26	8	
	7	S#1	2,5	X26	3	
				X04	6	
				SW32	2	
				SW32	9	
	9	S		X26	3	
				X04	6	
SW32				7		
SW32				2		
10	N		GND			
SW60	1	GM		X41	1	
				K18	86	
				X327	1	
				SW60	10	
	2	R#5		KD1	87a	
				X56	23	
				K18	30	
				SW60	9	
	5	C#2		X355F		
	6	N		GND		
	7	M#1		X356M		
	8	VG		X327	2	
	9	R#5		KD1	87a	
				X56	23	
				K18	30	
				SW60	2	
10	GM		X41	1		
			K18	86		
			X327	1		
			SW60	1		


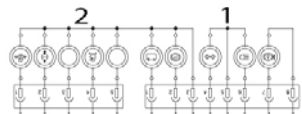
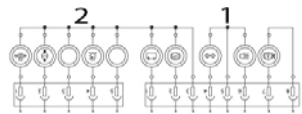
**MLT845-120D LSU**


Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img
<b>X87</b>	1	M#3		X57	29	
	2	S#5		X57	5	
	3	R#9		X56	2	
	4	C#4		X56	14	
	5	Z#2		X57	6	
	6	G#4		X57	7	
	7	V#5		X56	6	
	8	V#4		X56	5	
	9	SH		X57	32	
<b>X89</b>	1	R		X308	11	
				X68	1	
	2	N		GND		
	5	V		X121A	C1	
				XR3	1	
	6	LR		X39	5	
X68				5		
<b>X97</b>	1	RG#2		F75	OUT	
	2	R#16		X56	3	
<b>X98</b>	1	MH		X41	12	
<b>X99</b>	1	N0,5	SCH			
	2	H	0,75	X56	21	
				X508	2	
	3	N	0,75	X57	31	
				X100	1	
				X100	4	
				X112	1	
				X112	4	
				X113	B	
				X36	1	
	4	M	0,75	X58	23	
				X508	3	
				X121A	B4	
				X57	1	
				X115	3	
				X115	6	
				X109A	7	
	X118A	A				
	5	L	0,75	X58	24	
				X121A	C5	
				X508	4	
				X57	2	
				X115	11	
X115				14		
X118A				B		
X99	5					

**MLT845-120D LSU**

Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img
<b>X58</b>	1	R#1	4	F49	OUT	
	2	R#2	6	F46	OUT	
	3	R#5	4	F60	OUT	
	4	RN#3		F69	OUT	
	5	L#1		X175	35	
	6	GR		X175	48	
	7	LG		X175	71	
	8	RL		X175	93	
	9	LS		X175	27	
	10	CG		X252	1	
	11	B#20		X247	1	
				X246	1	
	12	NG		X253	1	
	13	NB		X245	2	
	14	CV		X168	1	
	15	HR		X159		
	16	MV		X246	2	
				X247	2	
				X175	88	
	17	H#1		X245	1	
	18	ZG		X166	1	
	19	BV		F65	OUT	
	20	RN		K1500	86	
	21	AH		X175	46	
	22	A		X175	62	
	23	M	0,5	X158	M	
				X700	1	
				X175	64	
	24	B	0,5	X158	F	
X700				2		
X175				76		
25	AG		X175	63		
26	HB		X175	16		
27	N0,5	SCH	X277	9		
			X174	38		
			X174	53		
			X277	1		
29	BS		X175	15		
<b>X59</b>		HR		X58	15	
<b>X102</b>	1	N	10	X170		
				X175	2	
				X175	4	
				X175	6	

ELECTRIC FUSE PLATE AND RELAYS

Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img	
BUZZER	1			COMBIKIT-1	3		
				COMBIKIT-1	7		
				F15	2		
				X308	11		
	2				D15		A
					D35		A
					D45		A
					D65		A
					D85		A
					D105		A
				D125	A		
COMBIKIT-1	1			D135	A		
	2			X41	11		
	3				BUZZER		1
					COMBIKIT-1		7
					F15		2
					X308		11
	4				K6		R
	5				X210		2
					X152		10
					X187		10
	6				K6		31
					X39		12
					X39		13
	7				F18		1
					COMBIKIT-1		3
					BUZZER		1
					F15		2
	8				X308		11
					X308		1
					D15		K
D25					A		
COMBIKIT-2	1			D125	K		
				X41	9		
	2				D105		K
					D115		A
					D41		7
	3				TIMER		2
					D85		K
					D95		A
	4				X41		10
					D65		K
					D75		A
	5				X41		14
					D45		K
					D55		A

Ref.	Pin	Col/N.	Cross-Section	Direction	Pin	Img	
<b>X41</b>	1			F12	2		
				X41	3		
	2				X41		13
					F14		2
	3				X41		2
					X41		13
					F14		2
	4			K2	87		
	5				X41		16
					K2		30
					K3		30
					K1		87
	6			X188F	6		
	7				COMBIKIT-2		2
					D10S		K
					D11S		A
	8			K3	87		
	9				D12S		K
					COMBIKIT-2		1
	10				D6S		K
					D7S		A
				COMBIKIT-2	4		
11			COMBIKIT-1	2			
12			K5	87			
13				X41	3		
				X41	2		
				F14	2		
14				D4S	K		
				D5S	A		
				COMBIKIT-2	5		
15			K1	86			
16				X41	5		
				K2	30		
				K3	30		
				K1	87		
17			X311	7			
18				K0	87		
				F12	2		
19				K1	30		
				K0	86		
20				K0	87a		
21				K0	30		

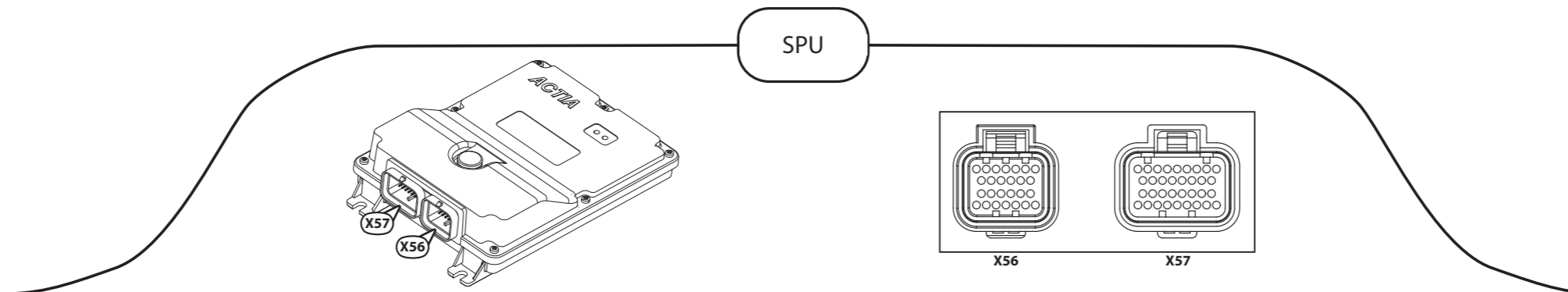
## SPU INPUTS/OUTPUTS

## SPU 25-15 (LSU)

## Key:

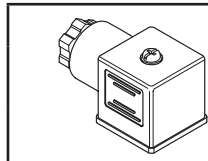
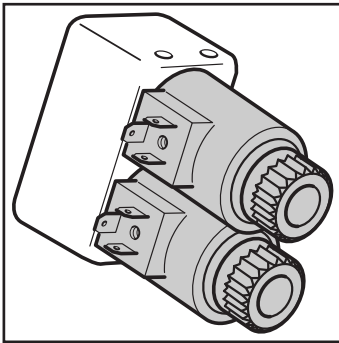
SPU: Signal Processing Unit

NC: Not Cabled



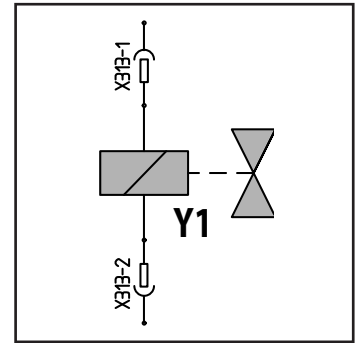
SPU 25-15 LSU						
Designation 18	ECU TYPE	CONNECTOR	PIN N°	WIRE	Function on carriage	Comments
12 V T APC POWER SUPPLY	12VB	X56	01	Red	12V + POST CONTACT (APC)	+ APC
PWM 8 OUTPUT	HSD-08	X56	02	Red	+ DIRECTION SELECTOR ATTACHMENT	
LOW SIDE 2 OUTPUT	LSD-02	X56	03	Red	BOOM HEAD ELECTROVALVE GROUND	
LOW SIDE 2 OUTPUT	LSD-02	X56	04		NOT USED	
LOW SIDE 1 OUTPUT	LSD-01	X56	05	Green	SAFETY ELECTROVALVE (VS) GROUND	
LOW SIDE 1 OUTPUT	LSD-01	X56	06	Green	PROPORTIONAL ELECTROVALVE GROUND (Lowering)	
12 V BATTERY POWER SUPPLY	12VP	X56	07	Yellow	12V BATTERY MICROSWITCH POWER SUPPLY	
ANALOGUE INLET 2	UN-09	X56	08	Orange/Blue	SENSOR 2 BOOM ANGLE ANALOGUE SIGNAL INPUT	1 FROM 0,5V TO 4,5V
LOGIC INPUT 19	FQ-04	X56	09		NOT USED	
LOGIC INPUT 13	FQ-02	X56	10	White/Green	EASY CONNECT SYSTEM	GROUND INFO
LOGIC INPUT 04	UN-06	X56	11	Light blue/White	12V INPUT CUT-OFF (OVERRIDE)	SWITCH HELD AT 60° MAX
LOGIC INPUT 14	UN-03	X56	12	Red	12 V INPUT DIRECTION INFO ROLLER 1 JSM	ROLLER 1 IS OUTSIDE OF THE NEUTRAL ZONE
ECU WAKE-UP INFO	WUI	X56	13	Orange/Yellow	ECU WAKE-UP INFO +12V apc	THIS SUPPLY CAN BE CUT-OFF BY THE EMERGENCY STOP
PWM 7 OUTPUT	HSD-07	X56	14	Orange	DIRECTION 2 PROPORTIONAL ATTACHMENT CONTROL	
LOGIC INPUT 10	FQ-03	X56	15	Brown/Green Yellow/Red	TRANSMISSION CUT-OFF INPUT (ON ACCELERATOR) TRANSMISSION CUT-OFF INPUT (ON GEAR LEVER)	Brown/Green for MLT 845-120 H Yellow/Red for MLT 845-120
LOGIC INPUT 12	FQ-01	X56	16	Brown/Yellow	HYDRAULIC MOVEMENT NEUTRALISATION GROUND INPUT	
LOGIC INPUT 01	UN-05	X56	17	White/Blue	12V SEAT INPUT SENSOR NO.	DRIVER PRESENCE
ANALOGUE INLET 03	UN-02	X56	18	Yellow	ROLLER 1 JSM ANALOGUE INPUT	FROM 0,5V TO 4,5V TELESCOPIC BOOM
STABILISED 5V REF. OUTPUT	U 5V INPUT	X56	19		NOT USED	
GROUND	GROUND	X56	20	Black	ECU GROUND	
STABILISED 200mA 10V REF OUTPUT	SENSOR	X56	21	Grey	ATTACHMENT CONTROL SELECTOR CONTROL / STRAIN GAUGE +12Vdc	4 POSITIONS : 25% - 50% - 75% - 100%
LOGIC INPUT 03	UN-08	X56	22	Red/Green	FORCED OPERATION CONTROL	
LOGIC INPUT	UN-07	X56	23	Red	HAND BRAKE INFO	
LOGIC INPUT 17	UN-04	X56	24	Yellow	FAN SIGNAL INVERSION	
ANALOGUE INLET 01	UN-01	X56	25	Light blue/Yellow	SENSOR 1 BOOM ANGLE ANALOGUE SIGNAL INPUT	FROM 0,5V TO 4,5V
GROUND	GROUND	X56	26	Black	ECU GROUND	

**Y1+Y4 REVERSE+SLOW SPEED ELECTROVALVE (H)**



Corresponding connector

PIN	Function
1	Power supply
2	Ground



Diagram

	PIN	Minimum	Typical	Maximum
Supply voltage			12 V	
Consummation				

Note:

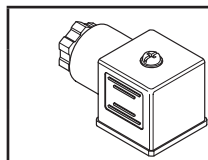
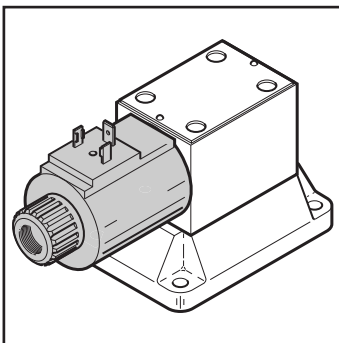
- X313 - Y1 : Reverse solenoid valve
- X312 - Y4 : Slow speed solenoid valve

Notes: \_\_\_\_\_

\_\_\_\_\_

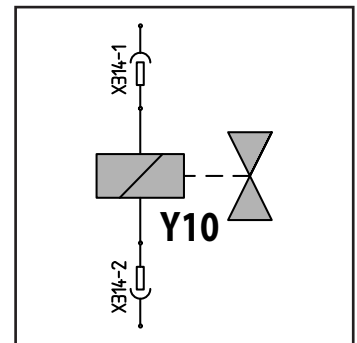
\_\_\_\_\_

**Y10 HIGH SPEED ELECTROVALVE (H)**



Corresponding connector

PIN	Function
1	Power supply
2	Ground



Diagram

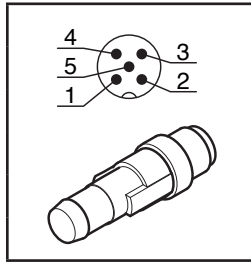
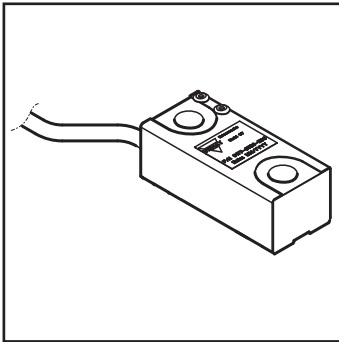
	PIN	Minimum	Typical	Maximum
Supply voltage			12 V	
Consummation				

Notes: \_\_\_\_\_

\_\_\_\_\_

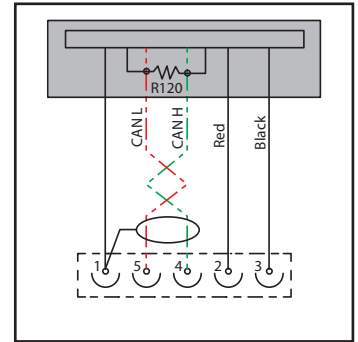
\_\_\_\_\_

**X99 STRAIN GAUGE**



Corresponding connector

PIN	Function
1	Shielding
2	Power supply
3	Ground
4	CAN_H
5	CAN_L



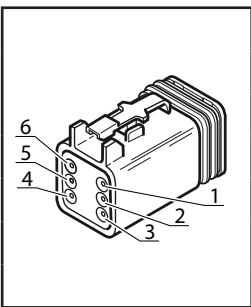
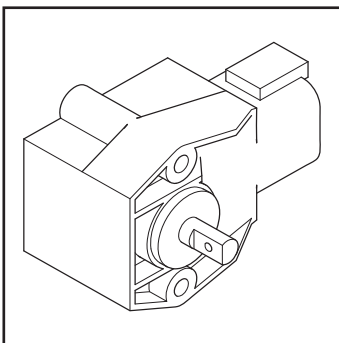
Diagram

	PIN	Minimum	Typical	Maximum
<b>Supply voltage</b>		9 V	10 V	16 V
<b>Consumption</b>			150 mA	

Note:  
- CAN integrated terminal resistance 120 Ω.

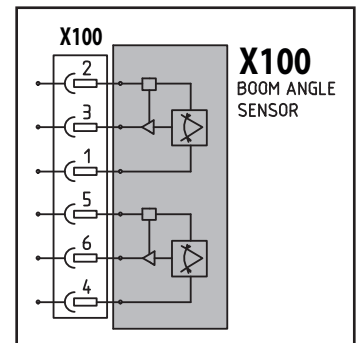
Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**X100 BOOM ANGLE ANGULAR SENSOR**



Corresponding connector

PIN	Function
1	Common Ground
2	Common 5 V power supply
3	Track 1 angle signal
4	Common Ground
5	Common 5 V power supply
6	Track 2 angle signal



Diagram

	PIN	Minimum	Typical	Maximum
<b>Supply voltage</b>		/	5 V	/
<b>Direct current</b>		/	8 mA	/
<b>Outlet voltage</b>		0,5 V	2,5 V	4,5 V
<b>Load resistance</b>		20 000 Ω	/	/
<b>Angular range</b>		0°	/	90°

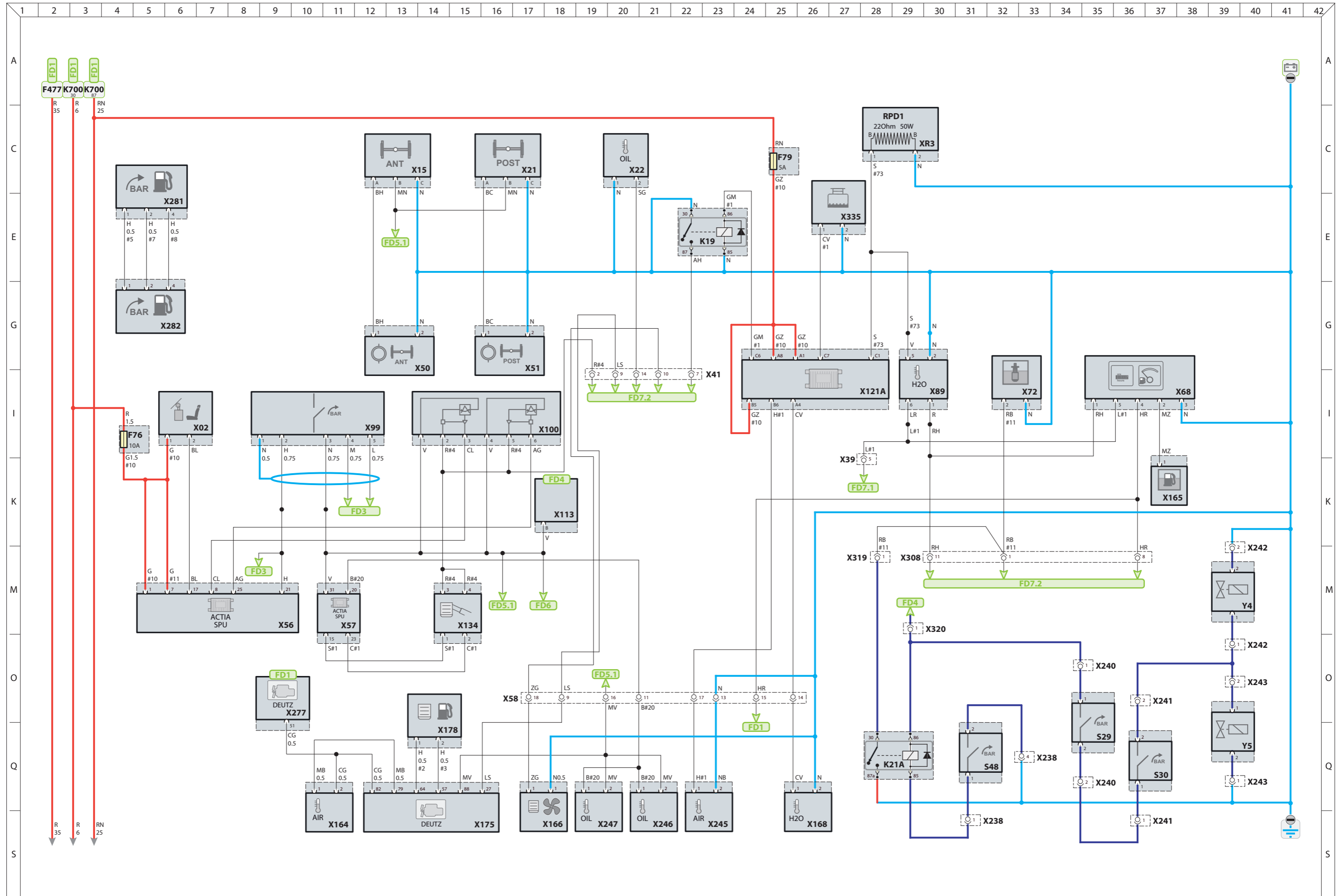
Comment: Plan for min/max angle calibration on each machine at 0 km.

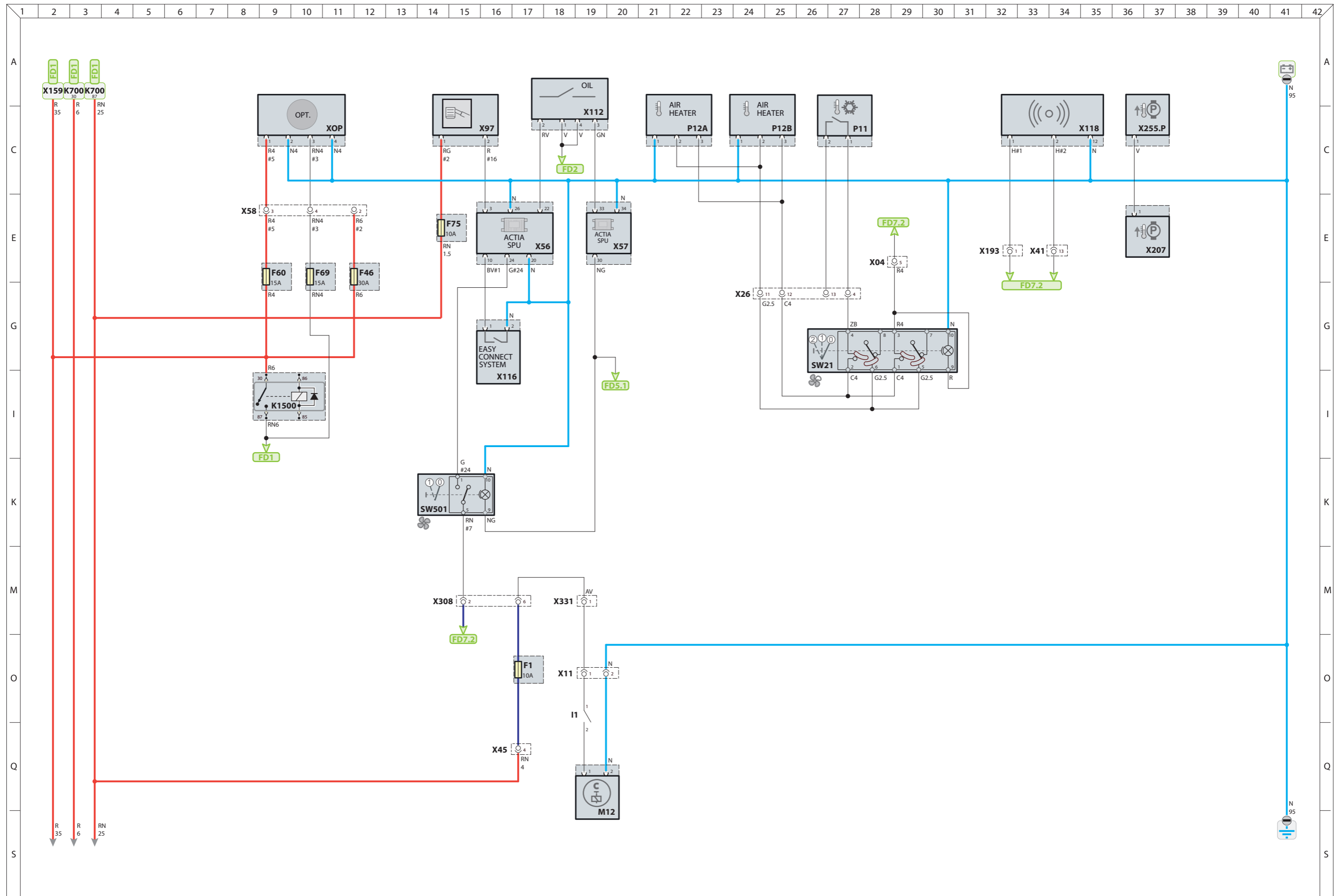
Notes: \_\_\_\_\_  
\_\_\_\_\_

**MLT845 100D H LSU ST3B S1**

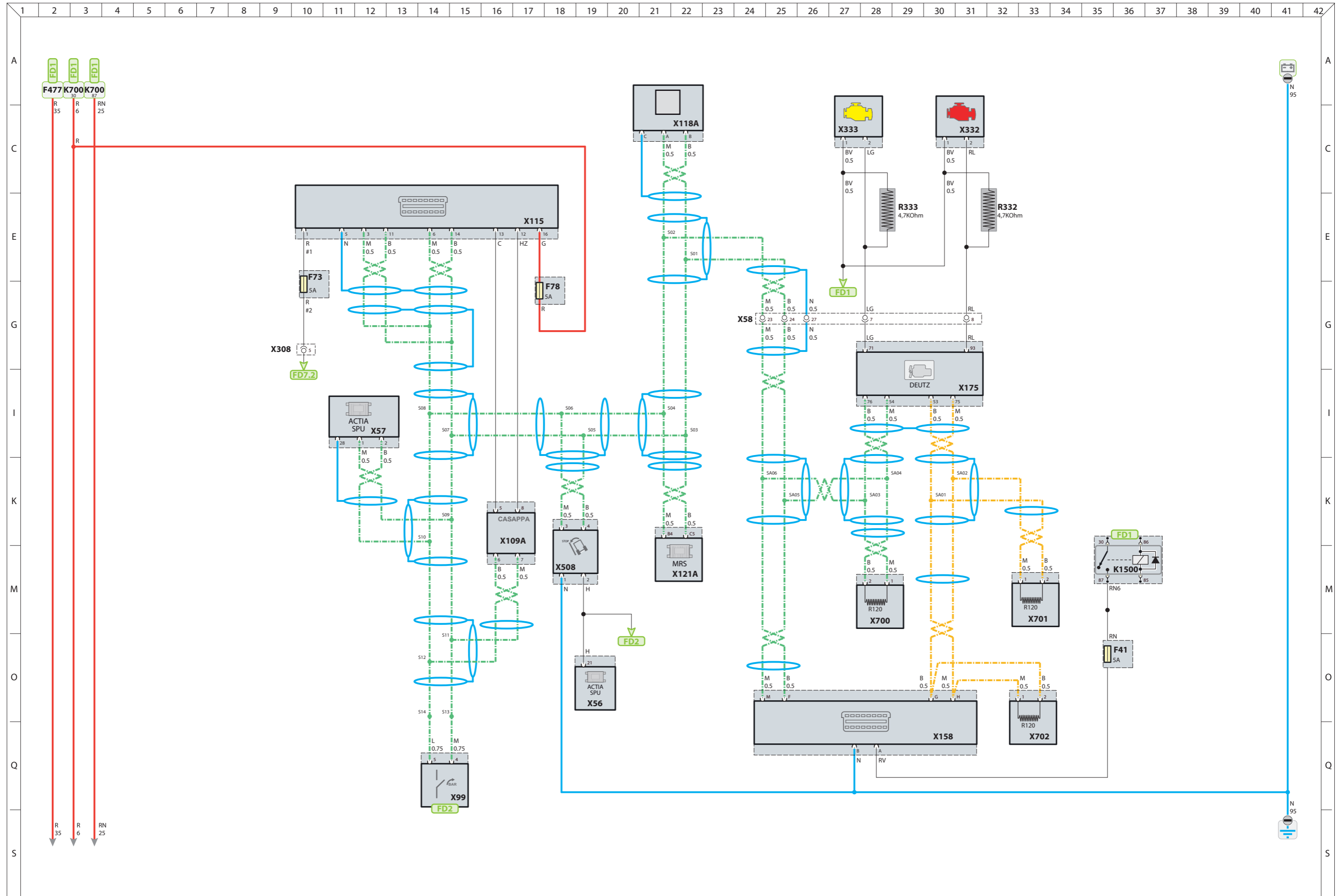
pages

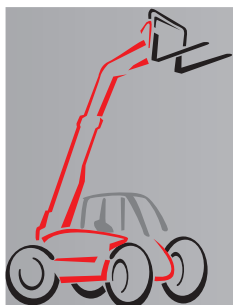
<b>POSITION OF CONNECTORS ON DIAGRAMS .....</b>	<b>A2</b>
<b>ELECTRICAL DIAGRAMS .....</b>	<b>A7</b>
– 1 – START-UP .....	A7
– 2 – SENSORS .....	A10
– 3 – CAN BUS .....	A12
– 4 – HYDRAULIC MOVEMENTS .....	A14
– 5 – TRASMISSION .....	A16
– 6 – TRASMISSION .....	A18
– 7 – OPTIONS .....	A20
– 8 – LIGHTS AND CAB SERVICES .....	A22
– 9 – LIGHTS AND CAB SERVICES .....	A24





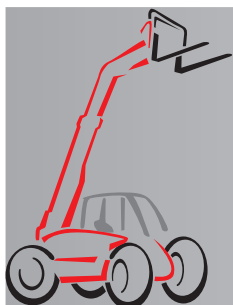
Connectors	Diag. 1	Diag. 2	Diag. 3	Diag. 4	Diag. 5	Diag. 6	Diag. 7	Diag. 8
X72			√					
X73					√			
X74					√			
X77					√			
X87							√	
X89			√					
X92							√	
X93							√	
X97								√
X98		√						
X99			√	√				
X100			√					
X104A		√						
X109A		√		√				
X109B		√						
X112			√					√
X113			√				√	
X114		√						
X115				√				
X116								√
X117							√	
X118A				√				
X118	√	√						√
X121A			√	√				
X134			√					
X152						√		
X154					√			
X155					√			
X158				√				
X159	√							√
X163	√							
X164			√					
X165			√					
X166			√					
X167	√							
X168			√					
X174	√							
X175	√	√	√	√				
X178			√					
X187					√	√		
X188					√	√		
X193	√					√		√
X201		√						
X207								√
X210						√		
X211						√		
X238			√					
X240			√					
X241			√					
X242			√					
X243			√					





## **ELECTRICAL COMPONENTS LOCATION**

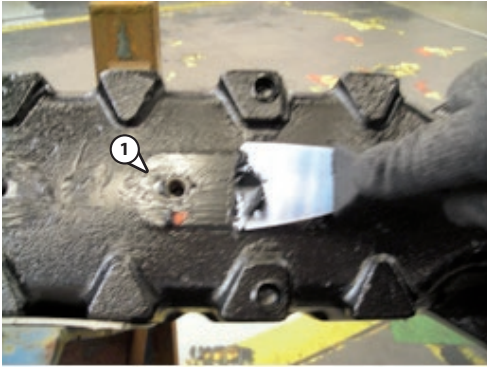
	pages
<b>KEY</b> .....	<b>2</b>
– CONNECTORS .....	2
– GROUNDS .....	5
<b>2D LOCATION</b> .....	<b>6</b>
– HARNESS ASSEMBLY .....	6
– DISTRIBUTOR .....	7
– MAIN HARNESS .....	9
– ENGINE HARNESS .....	10



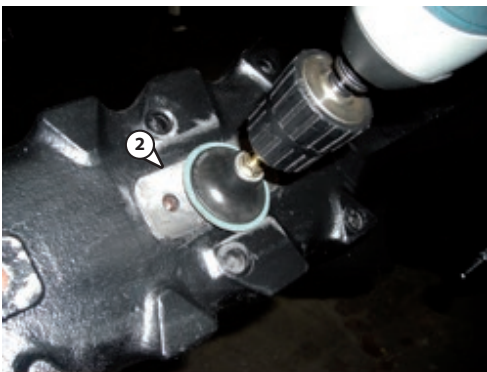
## **ELECTRICAL CONTROL AND ADJUSTMENT**

	pages
<b>LONGITUDINAL STABILITY INDICATOR (LLMI) .....</b>	<b>2</b>
– ERROR CODES .....	2
– TESTING THE LONGITUDINAL STABILITY LIMITER AND WARNING DEVICE .....	3
– CALIBRATION OF THE STRAIN GAUGE AND THE ANGLE SENSOR (DEALER PROCEDURE) .....	4
– RECALIBRATION OF STRAIN GAUGE (OWNER PROCEDURE) .....	6
– GENERIC REGULATION LAW EN15000 .....	7
– LED ILLUMINATION AS A FUNCTION OF THE CHANGING GAUGE SIGNAL .....	8

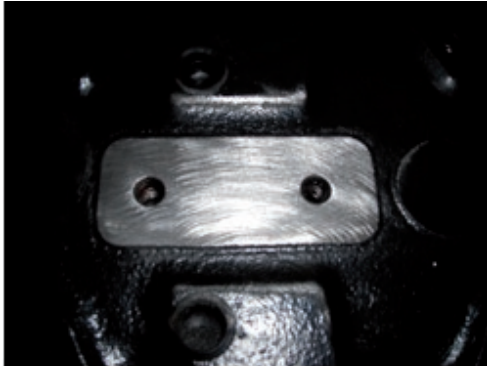
### CHARACTERISTICS OF THE AXLE SURFACE IN CONTACT WITH THE STRAIN GAUGE



The area in contact with the strain gauge (Ref. 1) has a protective painted coating. Scrape this surface with a filling knife in order to remove the paint film to the best extent possible. To remove and remaining traces of adhesive use the Soft Surface Cleaner Degreaser (aerosol).



Abrade the area to be stuck to provide a key for the glue (Ref. 2).



### CHARACTERISTICS OF PRODUCTS USED

ACROBOND PU 284/30 (two-part polyurethane structural glue): Part No 273504.

Handling time before start of polymerization and hardening phase is 30 minutes approx.



***If the product stays inside the mixer for more than 30 min., change the mixer.***

<b>ECU Moteur</b>					
<b>Code sur PAD ou écran machine</b>		<b>Code sur écran machine</b>		<b>COMPOSANT</b>	<b>PROBLÈMES</b>
<b>Hexadécimal</b>		<b>Décimal</b>			
<b>Code erreur</b>	<b>Type défaut</b>	<b>Code erreur</b>	<b>Type défaut</b>		
015C3	0E	5571	14	Capteur pression collecteur gazoil	Instruction spéciale
015C3	10	5571	16	Capteur pression collecteur gazoil	Données valides mais supérieures à la normale, niveau modérément grave
016C2	0F	5826	15	Défaut moteur - Puissance réduite	Données valides mais supérieures à la normale, niveau le moins sévère
016C2	10	5826	16	Défaut moteur - Puissance réduite	Données valides mais supérieures à la normale, niveau modérément grave

# OPTIONS - ATTACHMENTS

## *- AIR CONDITIONING OPTIONS*



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