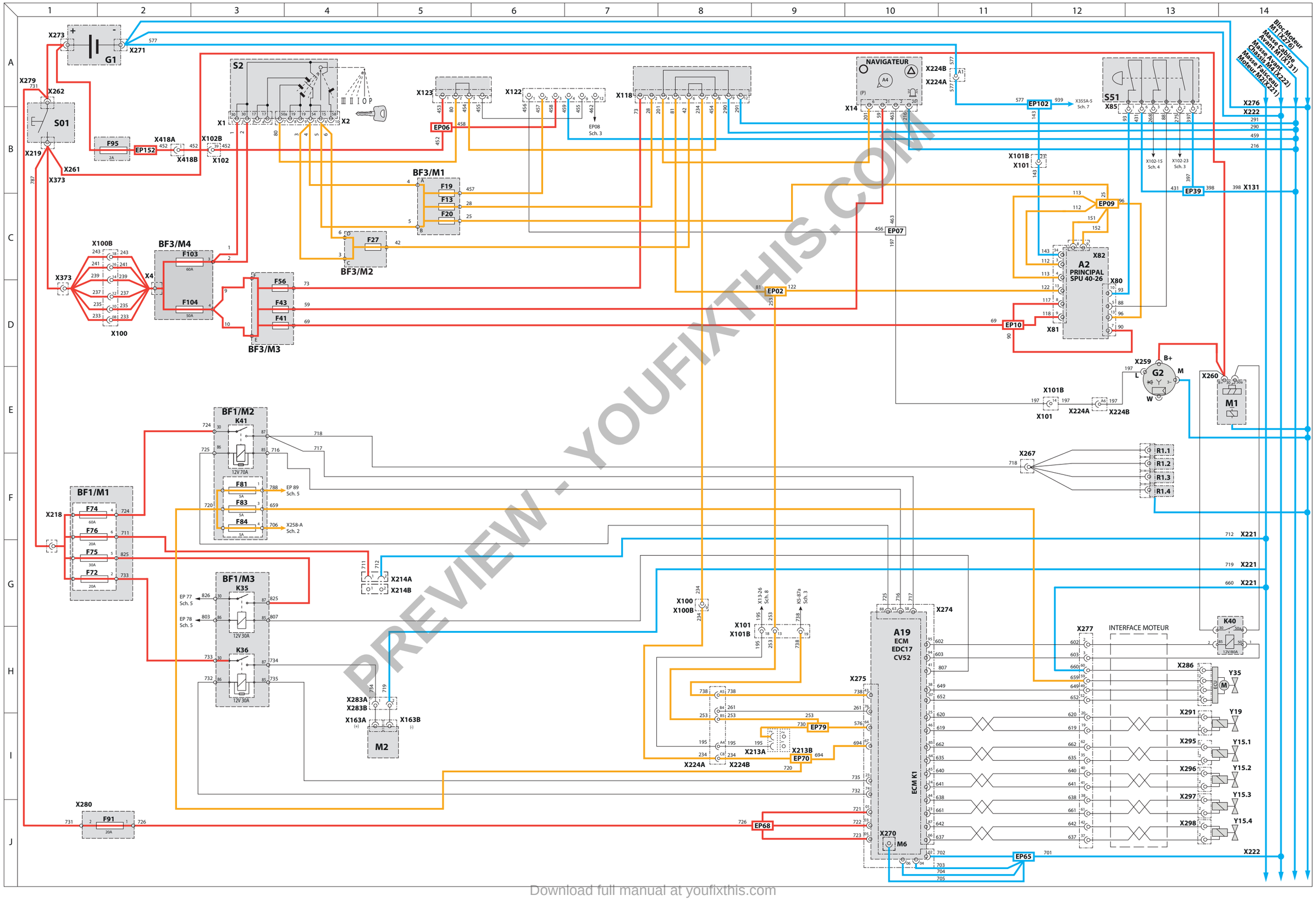
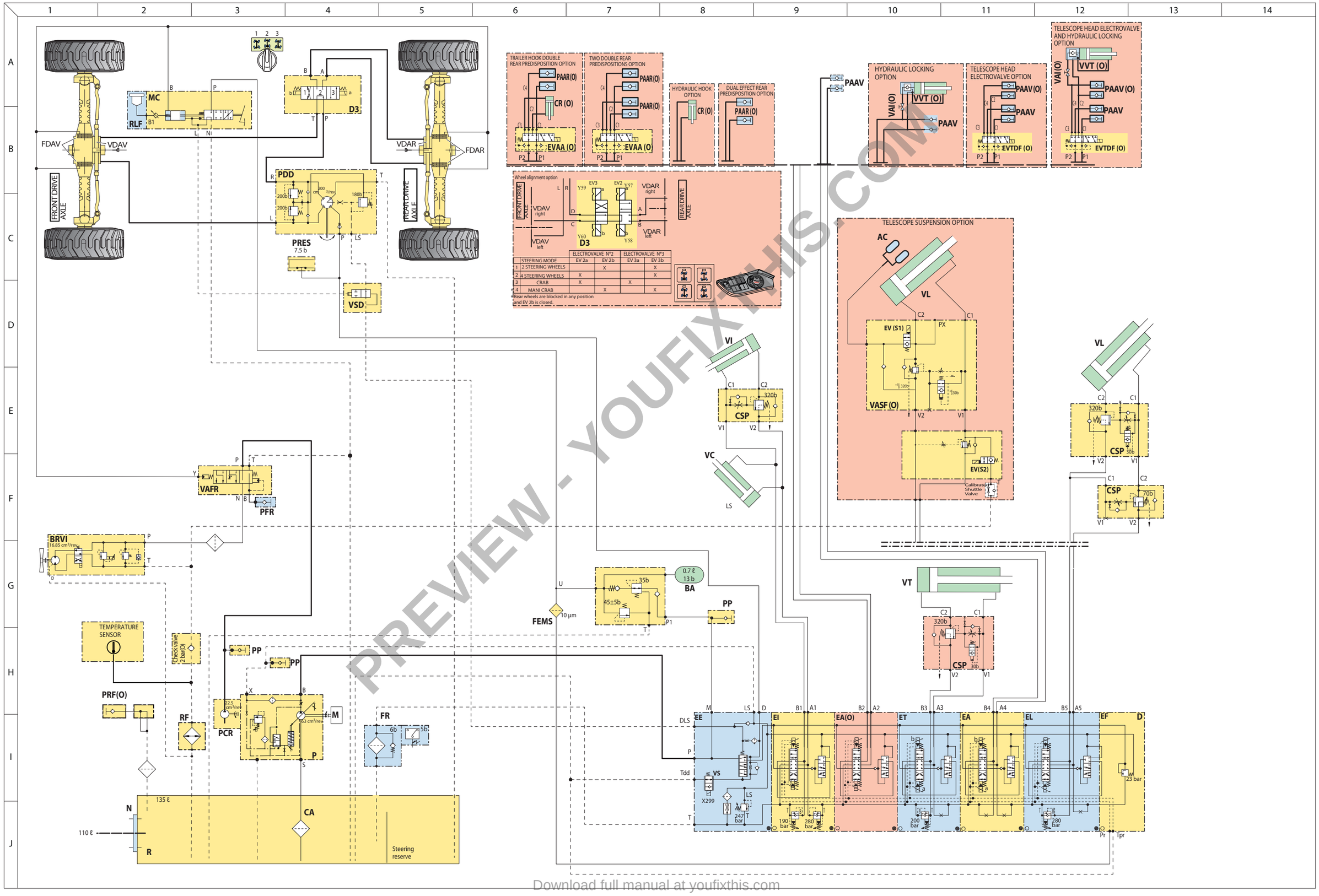
Diagram 1 - MLT 635/737 130 PS D ST4 S1



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

70.2.2 DIAGRAM MLT 635-737 130 PS D ST4 S1



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

00.4 GENERAL CONTROL AND ADJUSTMENT

00.4.1 STANDARD TIGHTENING TORQUES

Standard tightening torques to be used, unless otherwise indicated in the removal or refit operations :

SCREW / NUT ASSEMBLIES

- with hexagon head screws without flanges ou cylinder head hexagon socket screws.
- for dry-fitted zinc-plated fasteners and for torque tools having a ± 20 % class C tightening torque accuracy (equivalent to pneumatic screwdrivers).

1 - NF E 25-030-1 (N.m) :

Ø x "coarse" pitch	Grade 8.8	Grade 10.9	Ø x "fine" pitch	Grade 8.8	Grade 10.9
M6 x 1	8,2	12,1	-	-	-
M8 x 1,25	20	30	M8 x 1	22	32
M10 x 1,5	40	59	M10 x 1,25 (x 1)	43 (46)	63 (68)
M12 x 1,75	69	102	M12 x 1,5 (x 1.25)	74 (78)	108 (115)
M14 x 2	111	163	M14 x 1,5	123	181
M16 x 2	175	256	M16 x 1,5	190	279
M18 x 2,5	240	352	M18 x 1,5	279	410
M20 x 2,5	341	501	M20 x 1,5	391	574
M22 x 2,5	470	691	M22 x 1,5	531	780
M24 x 3	588	864	M24 x 2	659	967
M27 x 3	874	1284	M27 x 2	965	1418
M30 x 3,5	1181	1735	M30 x 2	1351	1984
M33 x 3,5	1614	2371	M33 x 2	1821	2674
M36 x 4	2068	3037	-	-	-

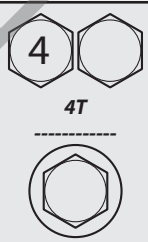
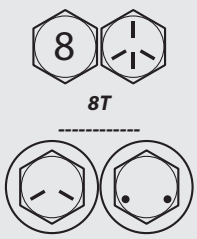
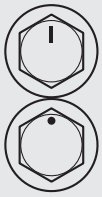
For hexagon screws with flanges (NF E 25-030-1) :
Apply an increased torque of +10%.



Where washers are used, the following coefficient is to be applied (FD E 25-502) :

-  ***Plate : +0%***
-  ***Smooth tapered washer (CL): +5%***
-  ***Spring (or Grower) washer without jaws (W) : +10%***
-  ***Conical, internal teeth (CDJ-JZC) : +15%.***

2 - With marking (N.m) :

Ø x Pitch	 (flange : 4.8T)		 (flange : 6.8T)		 (flange : 8.8T)	 (flange : 10.9T)	 (flange : 11.9T)
M6 x 1	**5.4** (5.5)	**6.5**	**7.8** (7.5)	**11**	**12** (12)	(15.5)	(17.5)
M8 x 1,25	**13** (13)	**16**	**19** (19)	**25**	**29** (29)	(38)	(42)
M10 x 1,25	**25** (27)	**32**	**39** (39)	**52**	**61** (61)	(80)	(89)
M12 x 1,25	**47** (50)	**59**	**72** (71)	**95**	**108** (110)	(145)	(160)
M14 x 1.5	**75** (78)	**91**	**108** (110)	**147**	**172** (175)	(230)	(260)
M16 x 1.5	**113** (120)	**137**	**172** (170)	**226**	**265** (270)	(360)	(400)

use the upper class where spring (or Grower) washers are used.

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

80.5 ELECTRICAL TROUBLESHOOTING

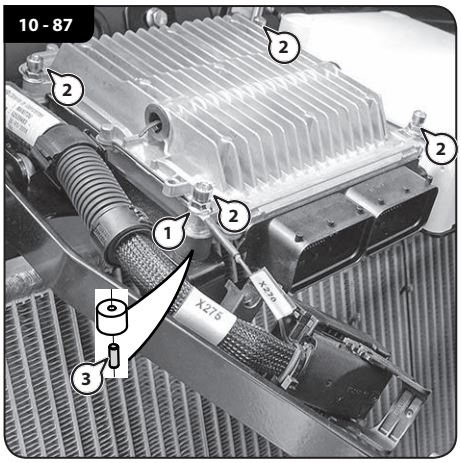
80.5.1 ERROR CODES (DTC)

To see the faults, open the Informations / Dépannage / Défauts (Information / Troubleshooting / Faults) menu

MAIN ECU (X80 - X81 - X82 - SPU 40-26)

Code	Designation
21-7F503.00	JSM power supply fault. Loss of rollers and switches.
21-7F503.01	JSM grounding fault. Loss of rollers and switches.
21-7F101.02	JSM roller 1 fault. Inconsistency between analog channel and roller 1 logic.
21-7F101.10	JSM roller 1 fault. Roller 1 out-of-range, analog channel voltage greater than 95% VBatt.
21-7F101.12	JSM roller 1 fault. Roller 1 out-of-range, analog channel voltage less than 5% VBatt.
21-7F102.02	JSM roller 2 fault. Inconsistency between analog channel and roller 2 logic.
21-7F102.10	JSM roller 2 fault. Roller 2 out-of-range, analog channel voltage greater than 95% VBatt.
21-7F102.12	JSM roller 2 fault. Roller 2 out-of-range, analog channel voltage less than 5% VBatt.
21-7F504.00	Electro-proportional manipulator block power supply or grounding fault. The 4 analog channels of the electro-proportional manipulator block are less than 0,1V or greater than 4,85V
21-7F103.02	Raise/Lower electro-proportional manipulator block fault. Inconsistency between analog channels (Difference > 250 mV).
21-7F103.10	Raise/Lower electro-proportional manipulator block fault. Channel 1 out-of-range, analog channel voltage less than 0,25V or greater than 4,75V.
21-7F103.12	Raise/Lower electro-proportional manipulator block fault. Channel 2 out-of-range, analog channel voltage less than 0,25V or greater than 4,75V.
21-7F104.02	Tilting electro-proportional manipulator block fault. Inconsistency between analog channels (Difference > 250 mV).
21-7F104.10	Tilting electro-proportional manipulator block fault. Channel 1 out-of-range, analog channel voltage less than 0,25V or greater than 4,75V.
21-7F104.12	Tilting electro-proportional manipulator block fault. Channel 2 out-of-range, analog channel voltage less than 0,25V or greater than 4,75V.
21-7F105.02	Fnr switch fault (Pin A25 and B15). Contacts F and R simultaneously active.
21-7F106.02	Inconsistent pushbutton Bp1 state (Pin A08). Button in short to Batt+ or button pressed when switching to APC.
21-7F107.02	Inconsistent JSM + pushbutton state (Pin A18). Button in short to batt+ or button pressed when switching to APC.
21-7F108.02	Inconsistent JSM - pushbutton state (Pin 124). Button in short to batt+ or button pressed when switching to APC.
21-7F505.00	Boom angle sensor fault (Pin A12, C11). Sensor disconnected or loss of power supply (Channel 1 and Channel 2 less than 0.2 V).
21-7F505.01	Boom angle sensor fault (Pin A12, C11). Loss of ground connection (Channel 1 and Channel 2 less than 4.8 V).
21-7F109.07	Boom angle sensor fault (Pin A12, C11). Link rod no longer in the correct zone (Channels at 0.4 V and 4.6 V).
21-7F109.03	Boom angle sensor fault (Pin A12, C11). Inconsistency between the 2 channels, difference greater than 5° (approx. 0.3V).
21-7F109.10	Boom angle sensor fault (Pin A12, C11). Channel 1 out-of-range, not connected or short circuited (voltage less than 0,5V or greater than 4,5V).
21-7F109.12	Boom angle sensor fault (Pin A12, C11). Channel 2 out-of-range, not connected or short circuited (voltage less than 0,5V or greater than 4,5V).
21-7F10A.02	Telescope retracted sensor fault (Pin A22 and B31). The 2 contacts are inconsistent.
21-7F50A.05	Sensor common ground fault, Bmap and Rollers connected to SPU (Pin A20). Open circuit detected.
21-7F10B.09	CAN strain gauge fault. Loss of frame 0x0CFF0EEB end frame 0x0CFF0FEC. Check the electrical connection
21-7F10B.0B	CAN strain gauge fault. Faulty gauge (channel 1): loss of frame 0x0CFF0EEB or inconsistent value (no change of signal)
21-7F10B.0A	Strain gauge fault. Faulty gauge (channel 2): loss of frame 0x0CFF0FEC or inconsistent value (no change of signal)
21-7F10B.0C	CAN strain gauge fault. Inconsistency between the 2 channels, difference greater than 20%.
21-7F10B.0D	CAN strain gauge fault. Inconsistent signal variation, one rising the other descending.
21-7F10B.10	CAN strain gauge fault. Out-of-range, channel 1 greater than 65045 or less than 485 (0x01E5).
21-7F10B.12	CAN strain gauge fault. Out-of-range, channel 2 greater than 65045 or less than 485 (0x01E5).
21-7F10E.02	Seat sensor fault (Pin B16 and C10). The 2 contacts are inconsistent.
21-7F10C.03	Brake pedal sensor fault (Pin A17). Short to Batt+ detected.
21-7F10C.04	Brake pedal sensor fault (Pin A17). Short to ground or open circuit detected.
21-7F10D.03	Manual accelerator sensor fault (Pin A01). Short to Batt+ detected.
21-7F10D.04	Manual accelerator sensor fault (Pin A01). Short to ground or open circuit detected.
21-7F201.04	Boom lifting valve fault (Pin C05). Short to ground detected.
21-7F201.03	Boom lifting valve fault (Pin C05). Short to Batt+ detected.
21-7F201.05	Boom lifting valve fault (Pin C05). Open circuit detected.
21-7F201.01	Boom lifting valve fault (Pin C05). SPU power supply problem (VBatD: Pin B03 and B04).
21-7F202.04	Boom lowering valve fault (Pin C04). Short to ground detected.
21-7F202.03	Boom lowering valve fault (Pin C04). Short to Batt+ detected.
21-7F202.05	Boom lowering valve fault (Pin C04). Open circuit detected.
21-7F202.01	Boom lifting control fault (Pin C04). SPU power supply problem (VBatC: Pin B08 and B09).
21-7F203.04	Tilt-up valve fault (Pin C03). Short to ground detected.
21-7F203.03	Tilt-up valve fault (Pin C03). Short to Batt+ detected.
21-7F203.05	Tilt-up valve fault (Pin C03). Open circuit detected.
21-7F203.01	Tilt-up control fault (Pin C03). SPU power supply problem (VBatE: Pin C08 and C09).

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

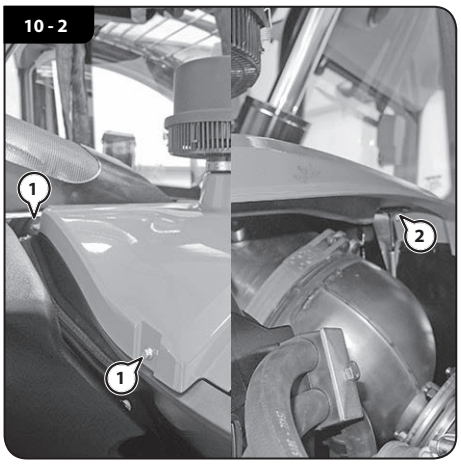


Loosen the lock nuts then unscrew the screws (2, 10 - 87). Disconnect the ground lug (1, 10 - 87).

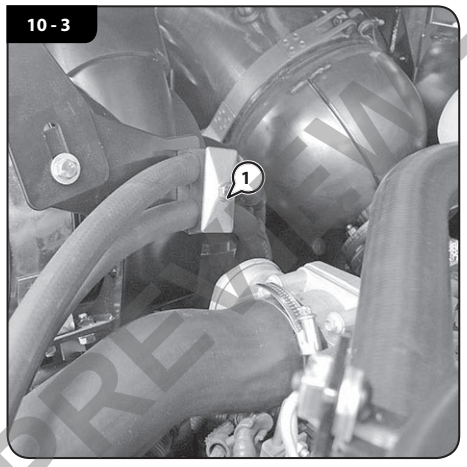
REFIT

Fully tighten the AHC screws 3, 10 - 87) into the silent block then screw the assembly onto the engine housing by hand. Screw the lock nut onto the screw (2, 10 - 87) as far as it will go, position the ECU on the silent blocks and screw the assembly as tightly as possible, tighten the lock nuts. Connect the ground lug (1, 10 - 87).

10.5.2 AIR FILTER ASSEMBLY REMOVAL



Unscrew the la protection plate (1, 10 - 2) & (2, 10 - 2).



Undo the heating hose clamp. (1, 10 - 3).



Remove the air hose (1, 10 - 4).

PREVIEW YOUFIXTHIS.COM

Download full manual at youfixthis.com

00.2 GENERAL CHARACTERISTICS AND SPECIFICATIONS

00.2.1 CHARACTERISTICS AND FLUIDS

Data obtained from Instruction Manuals: ◁ 647599 of 28/10/2016

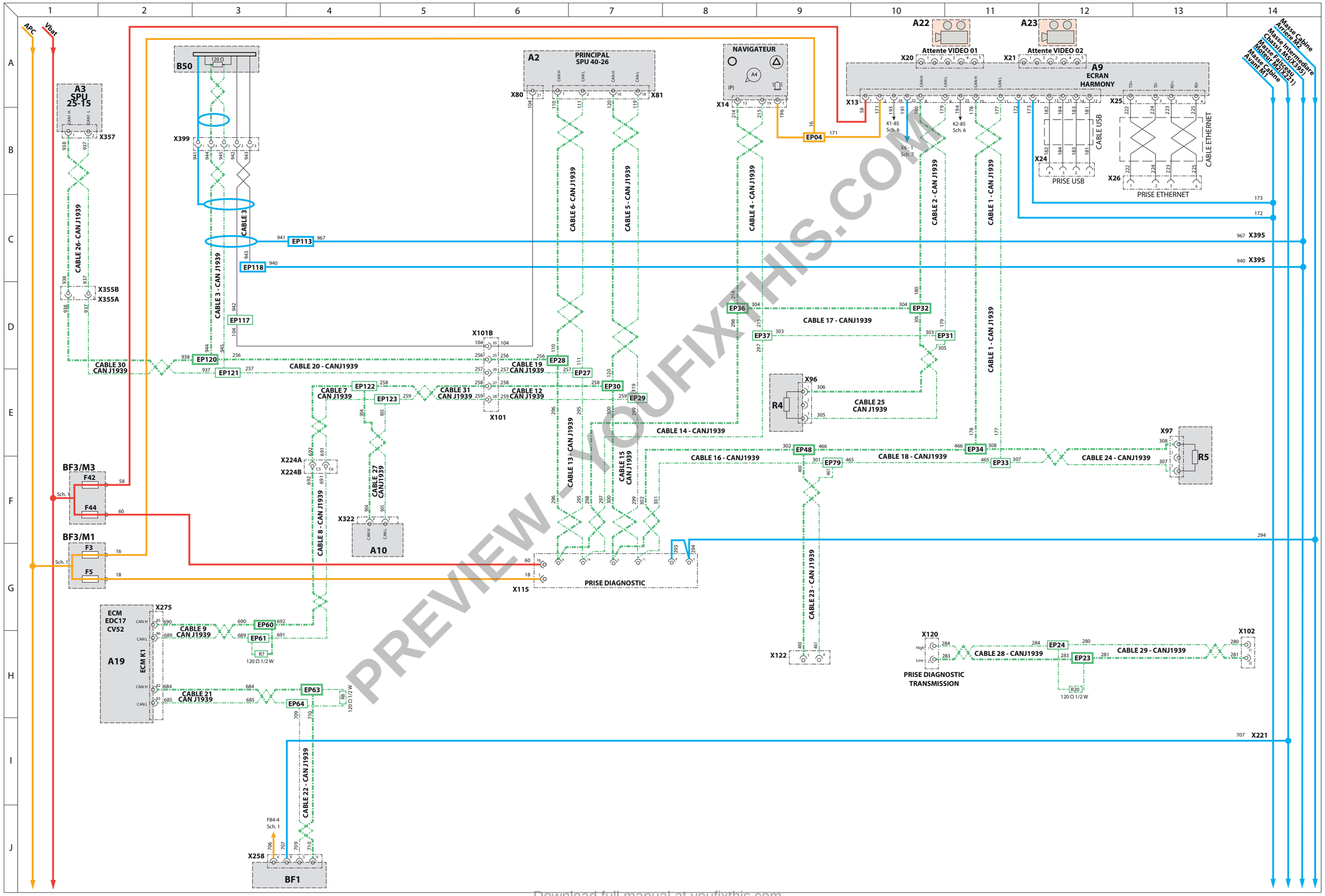
Designation		Value
Truck weight with forks		7405 kg MLT 635 7700 kg MLT 737 7015 kg MLT 733
Boom weight		1260 kg MLT 635 1400 kg MLT 733/737
Ground distribution per axle with forks	Front	3225 kg MLT 635 3620 kg MLT 737 3375 kg MLT 733
	Rear	4180 kg MLT 635 4080 kg MLT 737 3640 kg MLT 733
Pulling force		5830 daN MLT 635 5330 daN MLT 733 5300 daN MLT 737

Designation	Type	Residual
Fuel tank	NRD HP: EN590 / ASTM D975	120 ℓ
Engine oil	MANITOU EVOLOGY OIL 10W40 API CJ4	9 ℓ
Cooling system	Cooling liquid (protection -35°)	20.5 ℓ
Gear box	MANITOU Automatic transmission oil	16.6 ℓ
Hydraulic tank	MANITOU ISO VG 46 Hydraulic oil	110 ℓ
Brake system	MANITOU Mineral brake fluid	1 ℓ
Air-conditioning system	R134A gas	1500 g ±50
Axle differential	Special MANITOU oil for immersed brakes	8.1 ℓ
Wheel reduction gear	MANITOU SAE 80W90 Mechanical transmission oil	0.8 ℓ
DEF (Diesel Exhaust Fluid)	Aqueous urea solution at 32.5 % (ISO22241)	10 ℓ

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

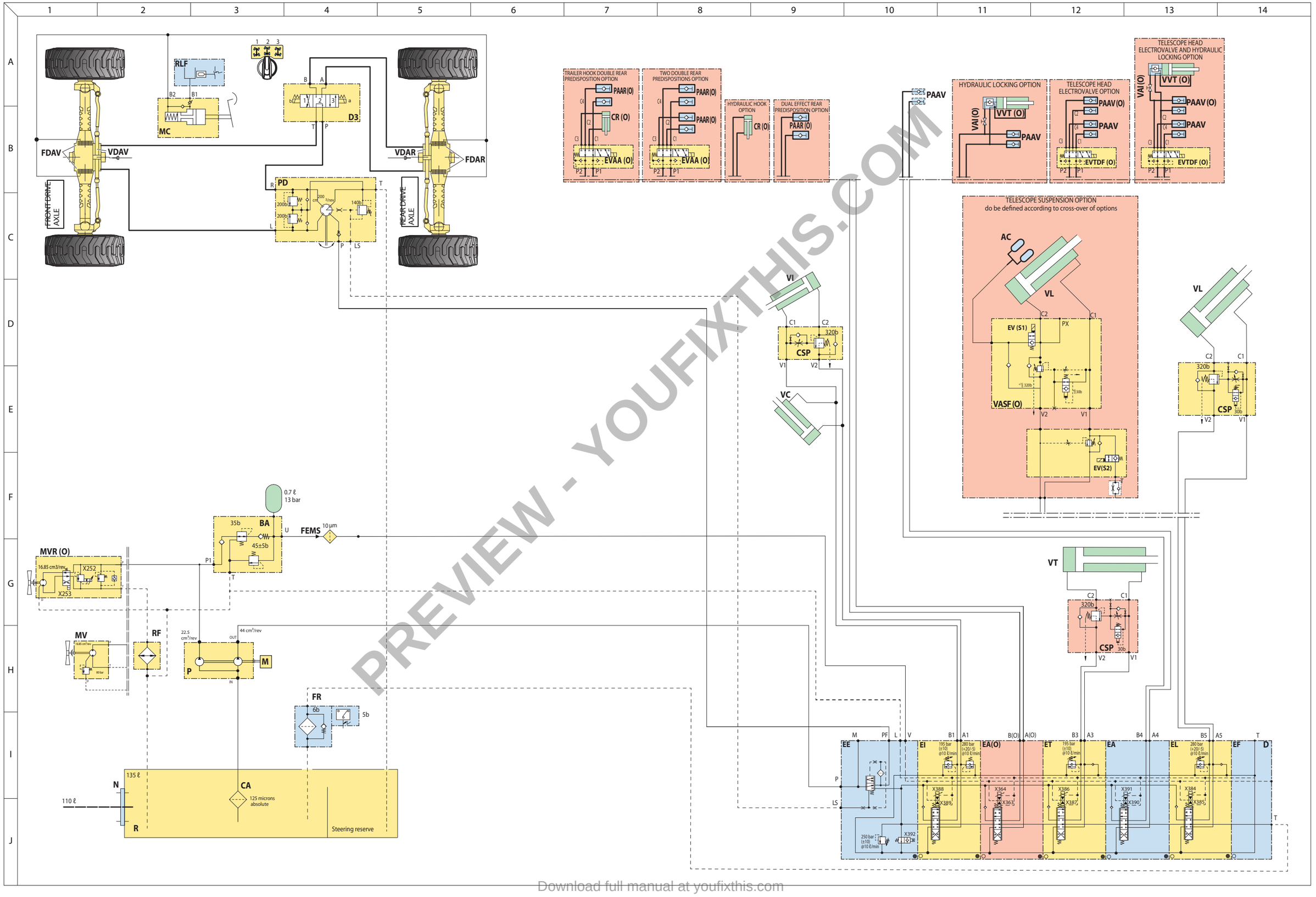
Diagram 2 - MLT 635/737 130 PS D ST4 S1



PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

70.2.3 DIAGRAM MLT 733 105 D ST4 S1



PREVIEW - YOUFIXTHIS.COM

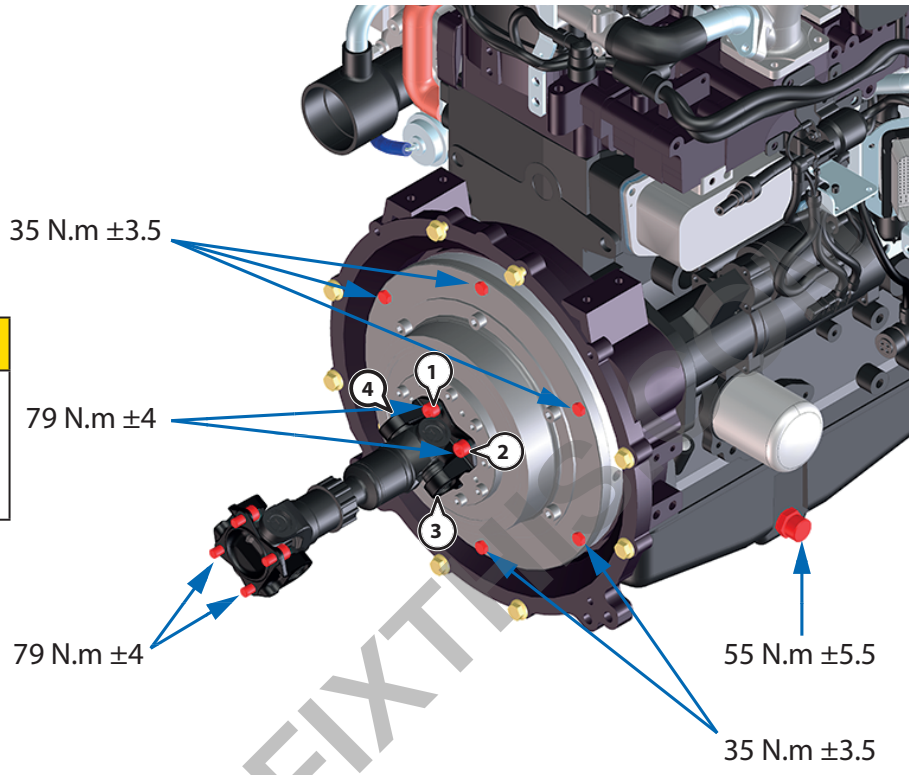
Download full manual at youfixthis.com

10

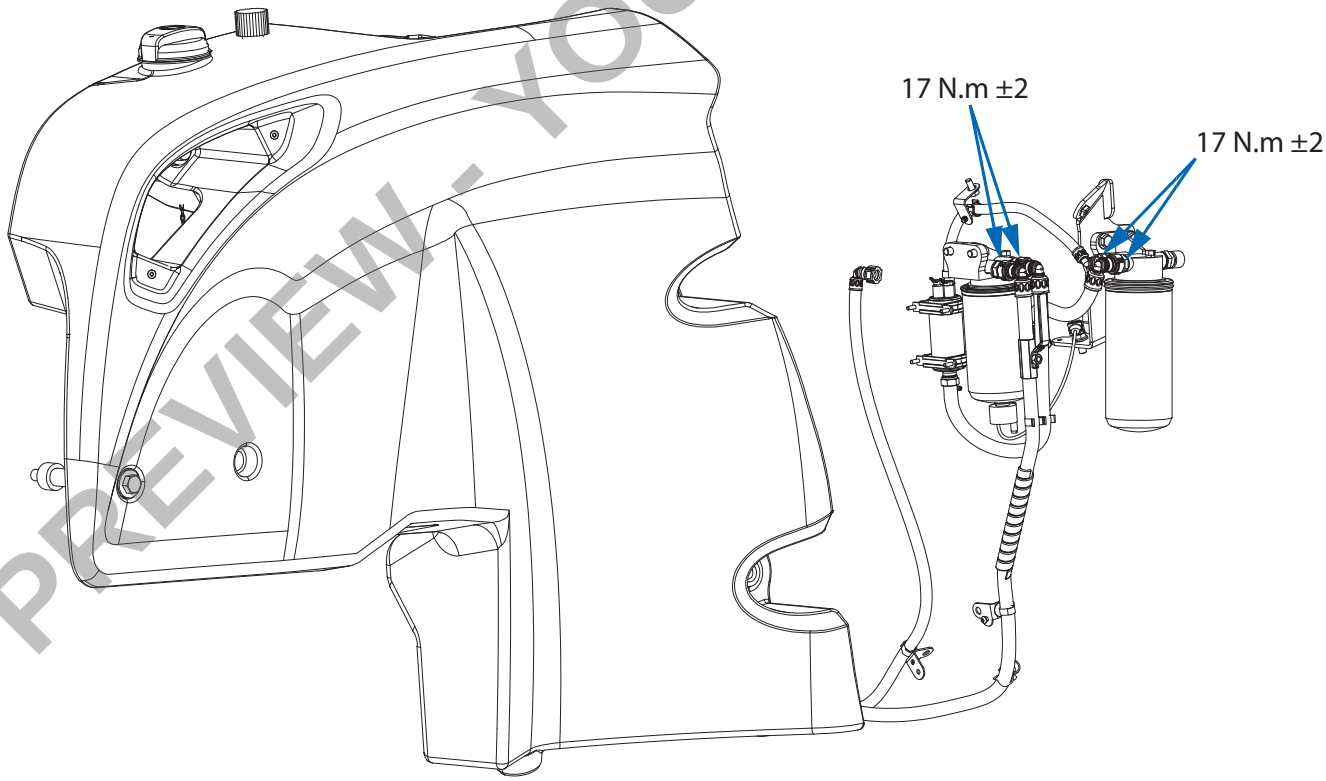
10.4.5 ENGINE TIGHTENING TORQUES

CAUTION

Initially tighten the universal joint in a cross-wise pattern in the order shown, (1, 3, 4, 2). Finish tightening to the recommended torque to apply a uniform pressure.



10.4.6 DIESEL FUEL CIRCUIT TIGHTENING TORQUES



PREVIEW - YOUFIXTHIS
Download full manual at youfixthis.com

Code	Designation
21-7F204.04	Tilt-down valve fault (Pin C02). Short to ground detected.
21-7F204.03	Tilt-down valve fault (Pin C02). Short to Batt+ detected.
21-7F204.05	Tilt-down valve fault (Pin C02). Open circuit detected.
21-7F204.01	Tilt-down control fault (Pin C02). SPU power supply problem (VBatE: Pin C08 and C09).
21-7F205.04	Telescope extension valve fault (Pin C05). Short to ground detected.
21-7F205.03	Telescope extension valve fault (Pin C05). Short to Batt+ detected.
21-7F205.05	Telescope extension valve fault (Pin C05). Open circuit detected.
21-7F205.01	Telescope extension control fault (Pin C05). SPU power supply problem (VBatC: Pin B08 and B09).
21-7F206.04	Telescope retraction valve fault (Pin B17). Short to ground detected.
21-7F206.03	Telescope retraction valve fault (Pin B17). Short to Batt+ detected.
21-7F206.05	Telescope retraction valve fault (Pin B17). Open circuit detected.
21-7F206.01	Telescope retraction control fault (Pin B17). SPU power supply problem (VBatD: Pin B03 and B04).
21-7F207.04	Front attachment direction A valve fault (Pin B29). Short to ground detected.
21-7F207.03	Front attachment direction A valve fault (Pin B29). Short to Batt+ detected.
21-7F207.05	Front attachment direction A valve fault (Pin B29). Open circuit detected.
21-7F207.01	Front attachment direction A control fault (Pin B29). SPU power supply problem (VBatE: Pin C08 and C09).
21-7F208.04	Front attachment direction B valve fault (Pin A14). Short to ground detected.
21-7F208.03	Front attachment direction B valve fault (Pin A14). Short to Batt+ detected.
21-7F208.05	Front attachment direction B valve fault (Pin A14). Open circuit detected.
21-7F208.01	Front attachment direction B control fault (Pin A14). SPU power supply problem (VBatE: Pin C08 and C09).
21-7F209.04	Rear attachment direction A valve fault (Pin B32). Short to ground detected.
21-7F209.03	Rear attachment direction A valve fault (Pin B32). Short to Batt+ detected.
21-7F209.05	Rear attachment direction A valve fault (Pin B32). Open circuit detected.
21-7F209.01	Rear attachment direction A control fault (Pin B32). SPU power supply problem (VBatD: Pin B03 and B04).
21-7F20A.04	Rear attachment direction B valve fault (Pin B25). Short to ground detected.
21-7F20A.03	Rear attachment direction B valve fault (Pin B25). Short to Batt+ detected.
21-7F20A.05	Rear attachment direction B valve fault (Pin B25). Open circuit detected.
21-7F20A.01	Rear attachment direction B control fault (Pin B25). SPU power supply problem (VBatC: Pin B08 and B09).
21-7F20B.04	Lsu valve fault (Pin B06). Short to ground detected.
21-7F20B.03	Lsu valve fault (Pin B06). Short to Batt+ detected.
21-7F20B.05	Lsu valve fault (Pin B06). Open circuit detected.
21-7F20B.01	Lsu control fault (Pin B06). SPU power supply problem (VBatD: Pin B03 and B04).
21-7F20C.04	FanDrive proportional valve fault (Pin A02). Short to ground detected.
21-7F20C.03	FanDrive proportional valve fault (Pin A02). Short to Batt+ detected.
21-7F20C.05	FanDrive proportional valve fault (Pin A02). Open circuit detected.
21-7F20C.01	FanDrive proportional control fault (Pin A02). SPU power supply problem (VBatC: Pin B08 and B09).
21-7F211.04	Transmission neutral relay fault (Pin C21). Short to ground detected.
21-7F211.03	Transmission neutral relay fault (Pin C21). Short to Batt+ detected.
21-7F211.01	Transmission neutral relay control fault (Pin C21). SPU power supply problem (VBatE: Pin C08 and C09).
21-7F212.04	Compensating isolating valve 1 fault (Pin A04). Short to ground detected.
21-7F212.03	Compensating isolating valve 1 fault (Pin A04). Short to Batt+ detected.
21-7F212.05	Compensating isolating valve 1 fault (Pin A04). Open circuit detected.
21-7F212.01	Compensating isolating valve 1 control fault (Pin A04). Short to Batt+ detected.
21-7F215.04	Rear deflector valve fault (Pin C23). Short to ground detected.
21-7F215.03	Rear deflector valve fault (Pin C23). Short to Batt+ detected.
21-7F215.05	Rear deflector valve fault (Pin C23). Open circuit detected.
21-7F215.01	Rear deflector valve control fault (Pin C23). SPU power supply problem (VBatE: Pin C08 and C09).
21-7F216.04	FanDrive On-Off valve fault (Pin A04). Short to ground detected.
21-7F216.03	FanDrive On-Off valve fault (Pin A04). Short to Batt+ detected.
21-7F216.05	FanDrive On-Off valve fault (Pin A04). Open circuit detected.
21-7F216.01	FanDrive On-Off valve control fault (Pin A04). SPU power supply problem (Ground).
21-7F217.04	Telescope head valve fault (Pin A03). Short to ground detected.
21-7F217.03	Telescope head valve fault (Pin A03). Short to Batt+ detected.
21-7F217.05	Telescope head valve fault (Pin A03). Open circuit detected.
21-7F217.01	Telescope head valve control fault (Pin A03). SPU power supply problem (Ground).
21-7F218.04	Radiator ByPass valve fault (Pin C21). Short to ground detected.
21-7F218.03	Radiator ByPass valve fault (Pin C21). +Battt short circuit detected.
21-7F218.05	Radiator ByPass valve fault (Pin C21). Open circuit detected.
21-7F218.01	Radiator ByPass valve control fault (Pin C21). SPU power supply problem (VBatE: Pin C08 and C09).
21-7F213.04	Boom Suspension On-Off valve No. 1 fault (Pin B30). Short to ground detected.
21-7F213.03	Boom Suspension On-Off valve No. 1 fault (Pin B30). Short to Batt+ detected.
21-7F213.05	Boom Suspension On-Off valve No. 1 fault (Pin B30). Open circuit detected.
21-7F213.01	Boom Suspension On-Off valve No. 1 fault (Pin B30). SPU power supply problem (VBatD: Pin B03 and B04).

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

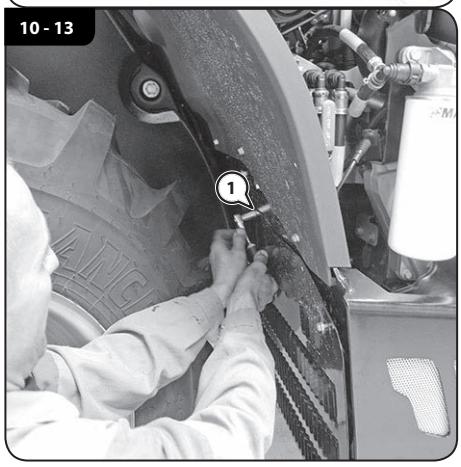
10

10.5.3 STARTER REMOVAL

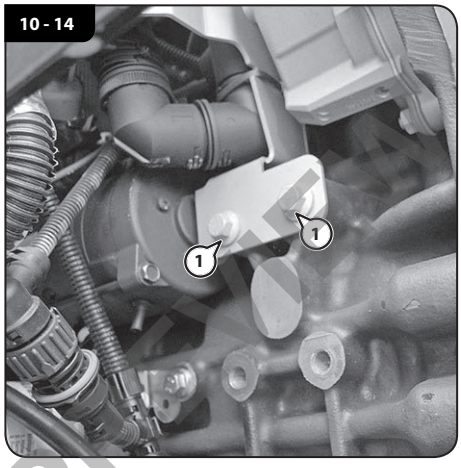


Turn the wheels towards the inside (1, 📷 ***10 - 12***).

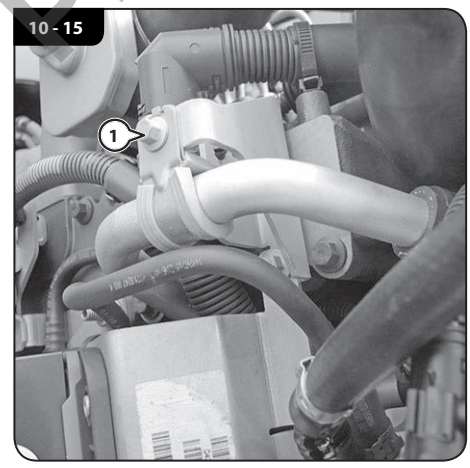
Remove the air filter (◁ ***10.5.2 AIR FILTER ASSEMBLY REMOVAL,*** 📄 ***47***).



Unscrew the front protection plate (1, 📷 ***10 - 13***).



Unscrew the connection support lugs; 2 lower screws (1, 📷 ***10 - 14***).



Loosen the upper screw (1, 📷 ***10 - 15***).

PRINTED-YOUFIXTHIS.COM

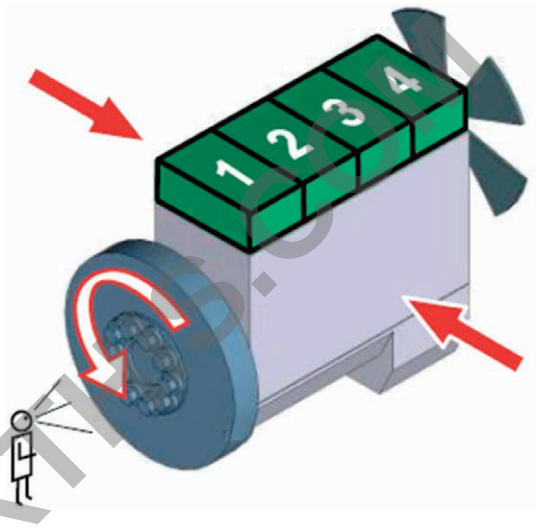
Download full manual at youfixthis.com

ENGINE

10.1 ENGINE CHARACTERISTICS AND SPECIFICATION

10.1.1 CHARACTERISTICS

⇒ 4 cylinders in line
⇒ Firing order from flywheel: 1, 3, 4, 2
⇒ Anti-clockwise (viewed from flywheel)
⇒ 3.6ℓ cubic capacity
⇒ Electronic management
⇒ Direct injection
⇒ Turbo with cooler
⇒ Compression ratio: 17.2
⇒ Power rating 90 kW (120 hp)
⇒ Maximum torque: 480 N.m (at 1600 rpm)
⇒ Engine speeds: - Min rpm: 930 rpm
- nominal laden: 2200 rpm
- max. unladen: 2360 rpm



10.1.2 DIESEL EXHAUST FLUID (DEF).

CHARACTERISTICS

– Composed of 32.5 % DEF and 67.5 % distilled water
– Storage at between -5°C and +25°C up to 1 year.
– Operation between -5°C and + 50°C
– Crystallisation as from -11°C (Product heating required)
– Breaks down into ammonia at a temperature > 200°C and a chemical reaction begins as from +50°C (Product cooling required).

⚠ CAUTION

Quickly replace the circuit components to avoid crystallistation of the DEF when exposed to air. If the circuit or some of its components are obstructed: rinse with hot water.

LEVELS

DEF is corrosive, protect the bodywork, the steering cylinder and the axle.
Wear personal protective equipment (gloves and goggles)

If the diesel exhaust fluid level is below:

– 15%, the indicator lamp will light.
– 10%, indicator lamps + will flash and an audible beep will sound.
– 5%, and for more than 20 minutes, indicator lamps + will flash and a beep will sound. The engine will switch to degraded mode, reduced torque + limitation of engine speed.

WINTERING

After completely shutting down the machine, the SCR system can remain shut down for 4 months by filling the tank to the maximum level in order to limit the evaporation of the water present in the DEF, and maintaining an ambient temperature between –40°C and 25°C (if less than 2 months: maintain an ambient temperature of between –40°C and 40°C).

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 12 of 300 pages

The full manual includes:

- All 300 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Manitou MLT 635 130 PS D ST4 S1, MLT 733 105 D ST4 S1, MLT 733 105 D ST4 S1 TRACT, MLT 737 130 PS D ST4 S1 Repair Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual