70.2.2 DIAGRAMS

MC18-2 D K ST3A S1

MASTS: VL

Triple mast VERSION Free Lift (TLL)

Double mast VERSION with all-round vision (DVT)

TRIPLE MAST VERSION WITHOUT FREE LIFT (TSLL)

- FRONT AXLE -

- REAR AXLE -

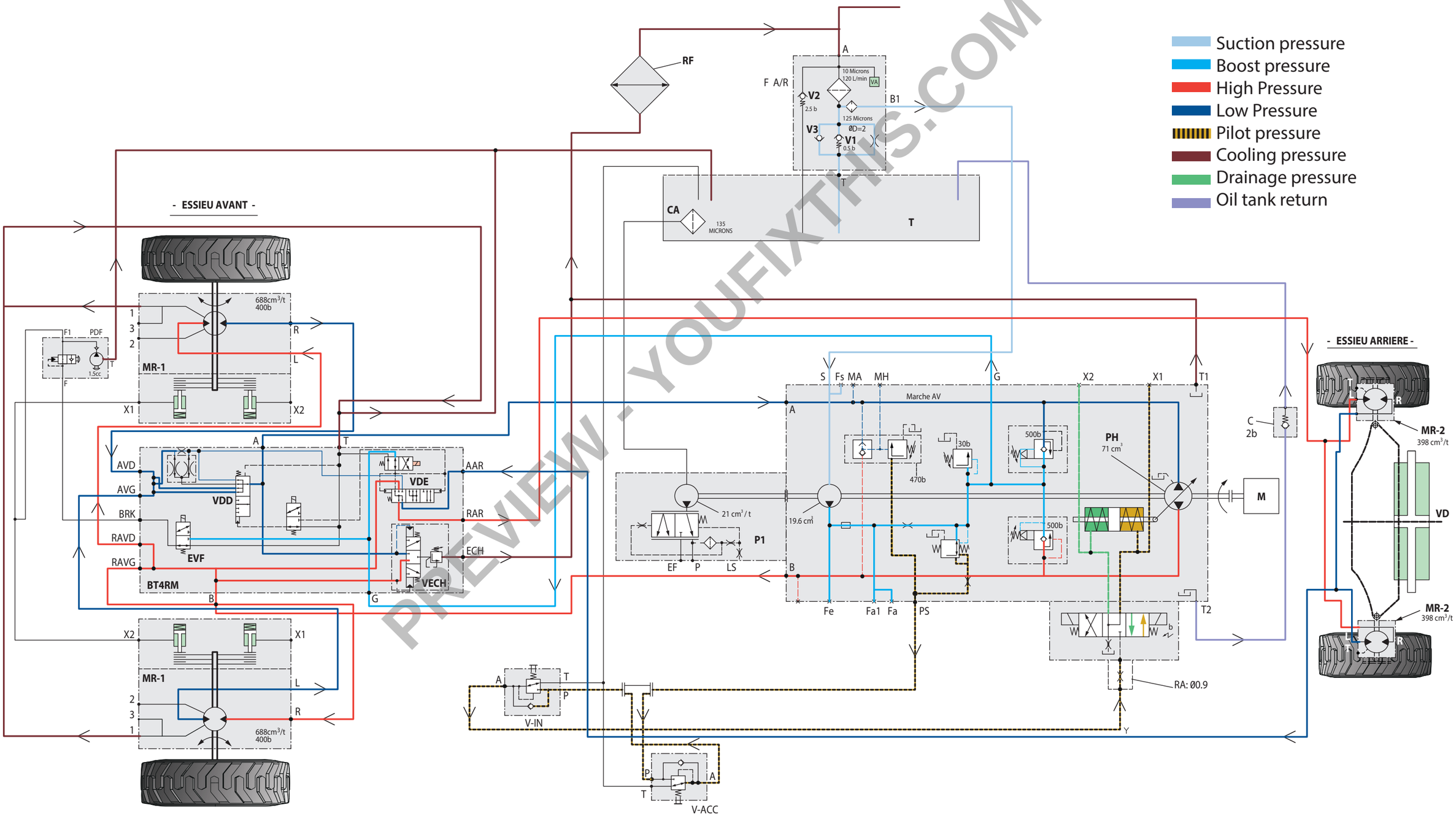
DVT & TSLL: 160 b
TLL: 180 b

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20.2 HYDROSTATIC TRANSMISSION SCHEMATIC DIAGRAM

20.2.1 FORWARD OPERATION FLUID DIRECTION - MC 18 - 25 - 30 IN 4 WHEEL DRIVE



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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 ASSEMBLY

- 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 :

Ø x "coarse" pitch	Grade 8.8		Grade 10.9		Ø x "fine" pitch	Grade 8.8		Grade 10.9	
	N.m	lb-in	N.m	lb-in		N.m	lb-in	N.m	lb-in
M6 x 1	8.2	72.57	12.1	107	-	-		-	
M8 x 1.25	20	177	30	265	M8 x 1	22	195	32	283
M10 x 1.5	40	354	59	522	M10 x 1.25 (x 1)	43 (46)	380 (407)	63 (68)	558 (602)
M12 x 1.75	69	611	102	903	M12 x 1.5 (x 1.25)	74 (78)	655 (690)	108 (115)	956
M14 x 2	111	982	163	1443	M14 x 1.5	123	1088	181	1602
M16 x 2	175	1549	256	2266	M16 x 1.5	190	168	279	2470
M18 x 2.5	240	2124	352	3115	M18 x 1.5	279	2469	410	3629
M20 x 2.5	341	3018	501	4434	M20 x 1.5	391	3460	574	5080
M22 x 2.5	470	4160	691	6116	M22 x 1.5	531	4700	780	6903
M24 x 3	588	5204	864	7647	M24 x 2	659	5833	967	8559
M27 x 3	874	7735	1284	11364	M27 x 2	965	8541	1418	12550
M30 x 3.5	1181	10453	1735	15356	M30 x 2	1351	11957	1984	17560
M33 x 3.5	1614	14285	2371	20985	M33 x 2	1821	16117	2674	23667
M36 x 4	2068	18303	3037	26880	-	-	-	-	-

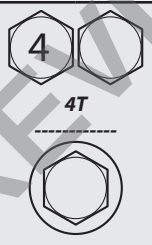
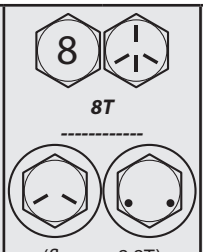
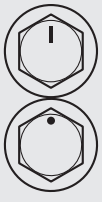
For hexagon screws with flanges (NF E 25-030-1) :
Apply an increased torque of +10%.



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

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

2 - With marking :

Ø x Pitch	 (flange : 4.8T)				 (flange : 6.8T)				 (flange : 8.8T)		 (flange : 10.9T)		 (flange : 11.9T)	
	N.m	lb-in	N.m	lb-in	N.m	lb-in	N.m	lb-in	N.m	lb-in	N.m	lb-in	N.m	lb-in
M6 x 1	**5.4** (5.5)	**48** (49)	**6.5**	**57.5**	**7.8** (7.5)	**69** (66)	**11**	**97**	**12** (12)	**106** (106)	(15.5)	(137.2)	(17.5)	(155)
M8 x 1.25	**13** (13)	**115** (115)	**16**	**142**	**19** (19)	**168** (168)	**25**	**221**	**29** (29)	**257** (257)	(38)	(336)	(42)	(372)
M10 x 1.25	**25** (27)	**221** (239)	**32**	**283**	**39** (39)	**345** (345)	**52**	**460**	**61** (61)	**540** (540)	(80)	(708)	(89)	(788)
M12 x 1.25	**47** (50)	**416** (443)	**59**	**522**	**72** (71)	**637** (628)	**95**	**841**	**108** (110)	**956** (974)	(145)	(1283)	(160)	(1416)
M14 x 1.5	**75** (78)	**664** (690)	**91**	**805**	**108** (110)	**956** (974)	**147**	**1301**	**172** (175)	**1522** (1549)	(230)	(2036)	(260)	(2301)
M16 x 1.5	**113** (120)	**1000** (1062)	**137**	**1213**	**172** (170)	**1522** (1504)	**226**	**2000**	**265** (270)	**2345** (2390)	(360)	(3186)	(400)	(3540)

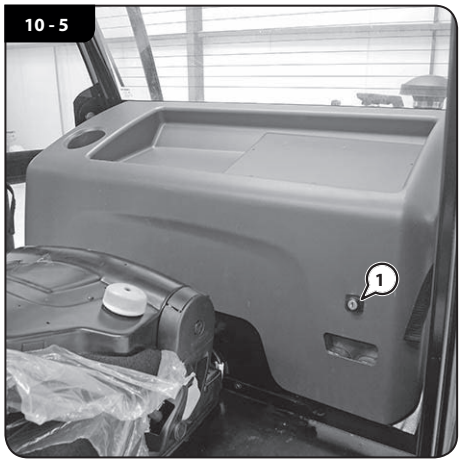
use the upper class where spring (or Grower) washers are used.

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10

10.4 26 KW ENGINE REMOVAL - REFITTING (MC 18)

10 - 5



10.4.1 REMOVING THE ALTERNATOR

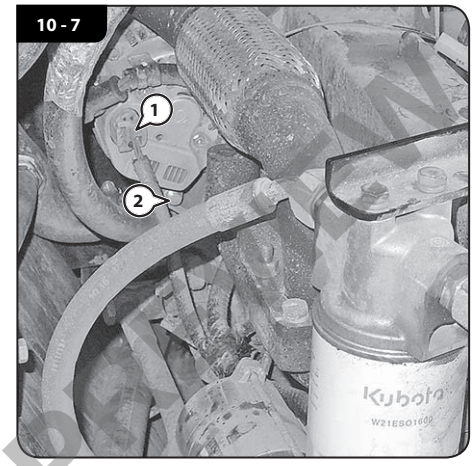
1 - Lift the cover behind the seat (1).

10 - 6



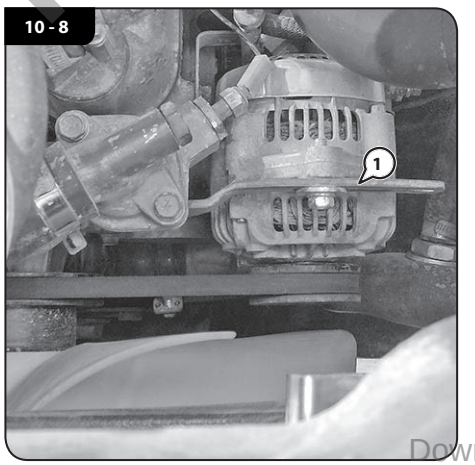
2 - Take off the casing (1).

10 - 7



3 - Disconnect the connectors (1).

10 - 8



4 - Remove the belt tensioner (1).

5 - Remove the fasteners (2, 📷 ***10 - 7***).

6 - Remove the alternator.

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FMI Failure Mode Identifier: identifies the type of fault:
0 – The data is valid but the data is above the normal operational range.
1 – The data is valid but the data is below the normal operational range.
2 – The data is erratic, intermittent, or incorrect.
3 – The voltage is above normal or the voltage is shorted high.
4 – The voltage is below normal or the voltage is shorted low.
5 – The current is below normal or the circuit is open.
6 – The current is above normal or the circuit is grounded.
7 – The mechanical system is not responding properly.
8 – There is an abnormal frequency, an abnormal pulse width, or an abnormal time period.
9 – There has been an abnormal update.
10 – There is an abnormal rate of change.
11 – The failure mode is not identifiable.
12 – The device or the component is damaged.
13 – The device requires calibration.
14 – There is a special instruction for the device.
15 – The signal from the device is high (least severe).
16 – The signal from the device is high (moderate severity).
17 – The signal from the device is low (least severe).
18 – The signal from the device is low (moderate severity).
19 – There is an error in the data from the device.
20 – There is an error in the data from the device (high).
21 – There is an error in the data from the device (low).
31 – The device has failed and the engine has shut down.

gr. Greek: signifies a word of Greek origin.

h hours: unit of measurement for time derived from the second (1 h = 3600 s).

HC Hydrocarbon: organic compound consisting exclusively of carbon (C) and hydrogen (H) atoms.

Hz Hertz: One hertz is equivalent to one event per second (s^{-1} or 1/s).

HS High Side: power side power supply.

HVAC Heating, Ventilation and Air-Conditioning: in-cab heating, ventilation and air-conditioning block.

HMI Human-Machine Interface: dashboard screens.

i.V. Interactive View: 2nd generation MANITOU machine diagnostics software.

JSM Joystick Switch & Move: Control handle serving to perform all telescope movements, as well as to control machine forward and reverse movements with one hand.

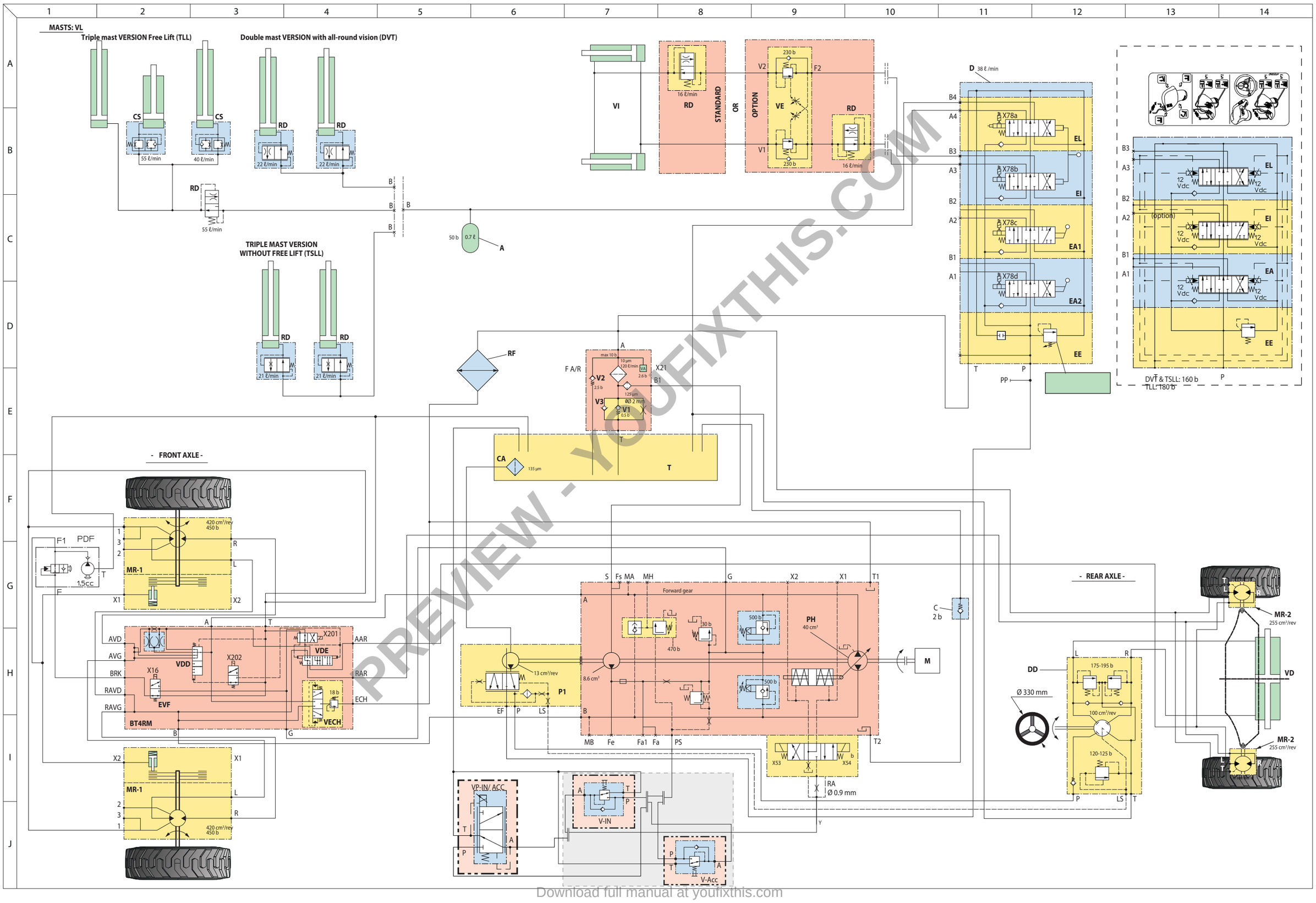
lat. Latin: signifies a word of Latin origin.

LIN Local Interconnect Network.

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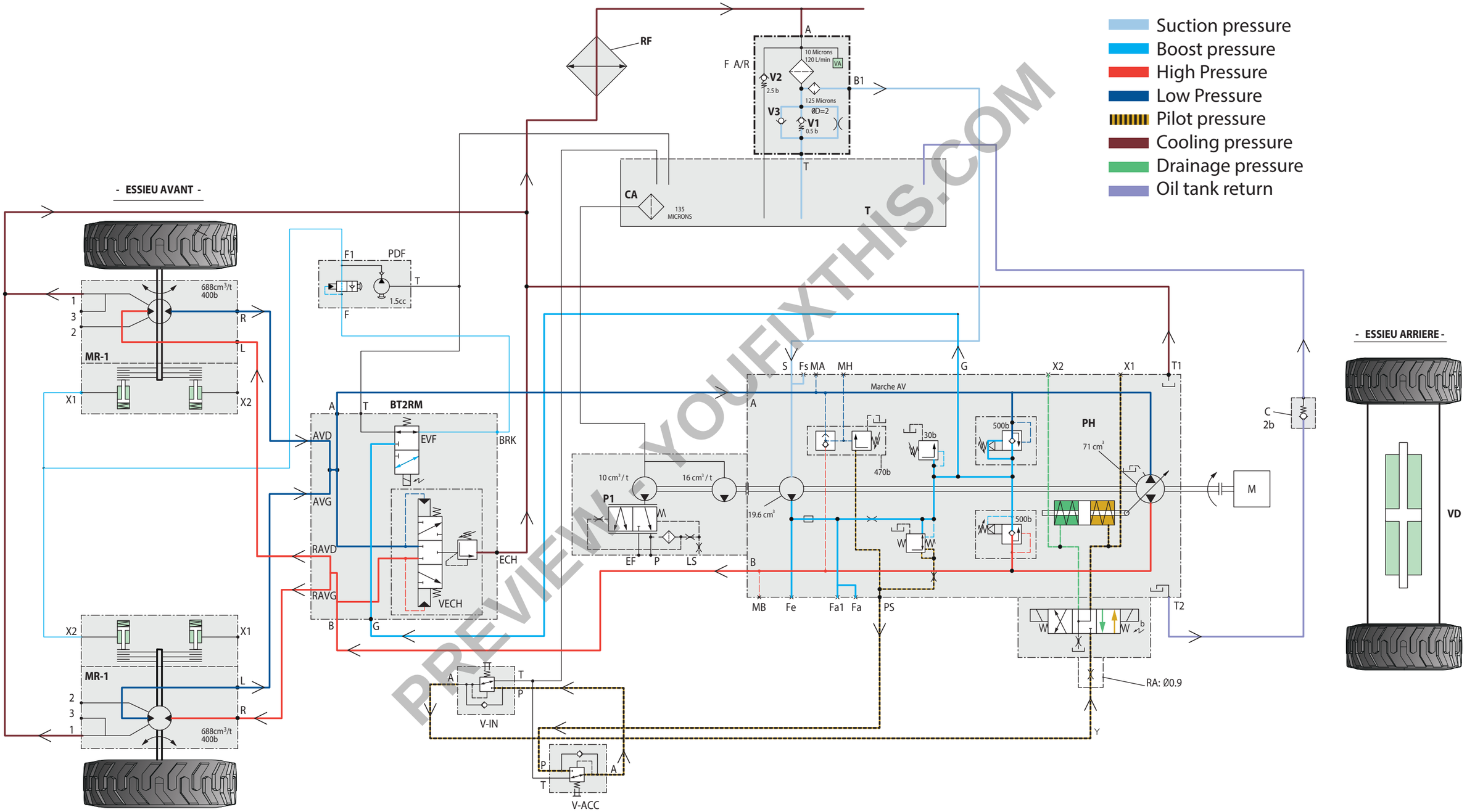
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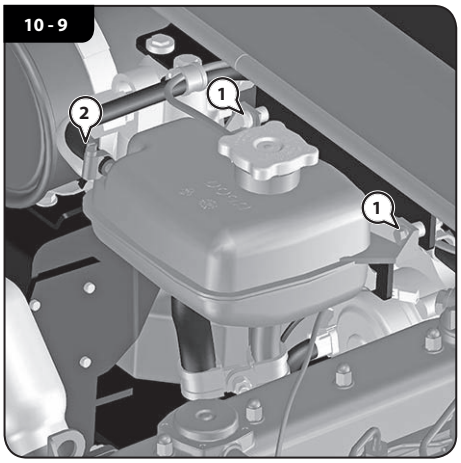
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20.2.2 FORWARD OPERATION FLUID DIRECTION - MSI 25-30-35



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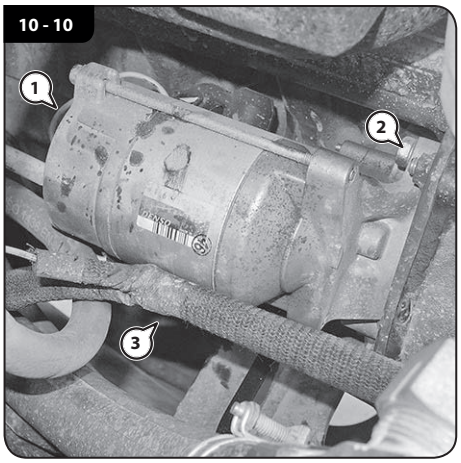
10.4.2 REMOVING THE COOLANT RADIATOR

1 - Lift the cover behind the seat (1, 📷 ***10 - 5***).

2 - Remove the fasteners (1).

3 - Disconnect the hoses (2).

4 - Remove the tank.



10.4.3 REMOVING THE STARTER MOTOR

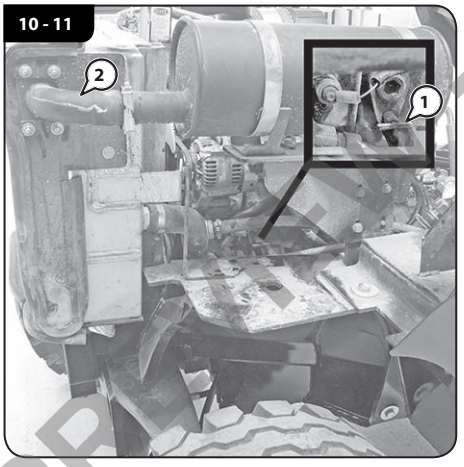
1 - Lift the cover behind the seat (1, 📷 ***10 - 5***).

2 - Take off the casing (1, 📷 ***10 - 6***).

3 - Disconnect the harnesses (1).

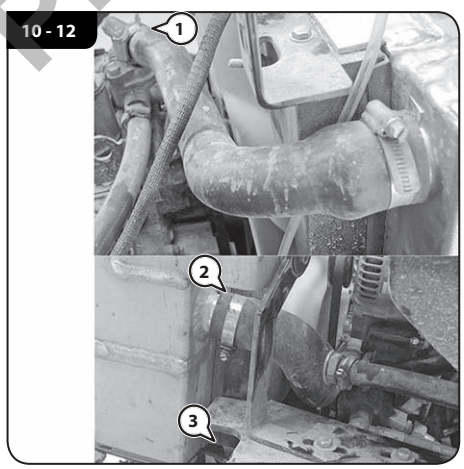
4 - Remove the fasteners (2).

5 - Disconnect the power supply (3).



10.4.4 REMOVING THE RADIATOR

1 - Carry out the operation (◅ ***85.2.1 RAISE THE CAB,*** 🗐 ***224***).
2 - Carry out the operation (◅ ***90.2.1 REMOVE THE COUNTERWEIGHT (MC18),*** 🗐 ***233***).
3 - Drain the cooling system with the valve (1).
4 - Carry out the operation (◅ ***10.4.2 REMOVING THE COOLANT RADIATOR,*** 🗐 ***31***).
5 - Remove the exhaust nozzle (2).



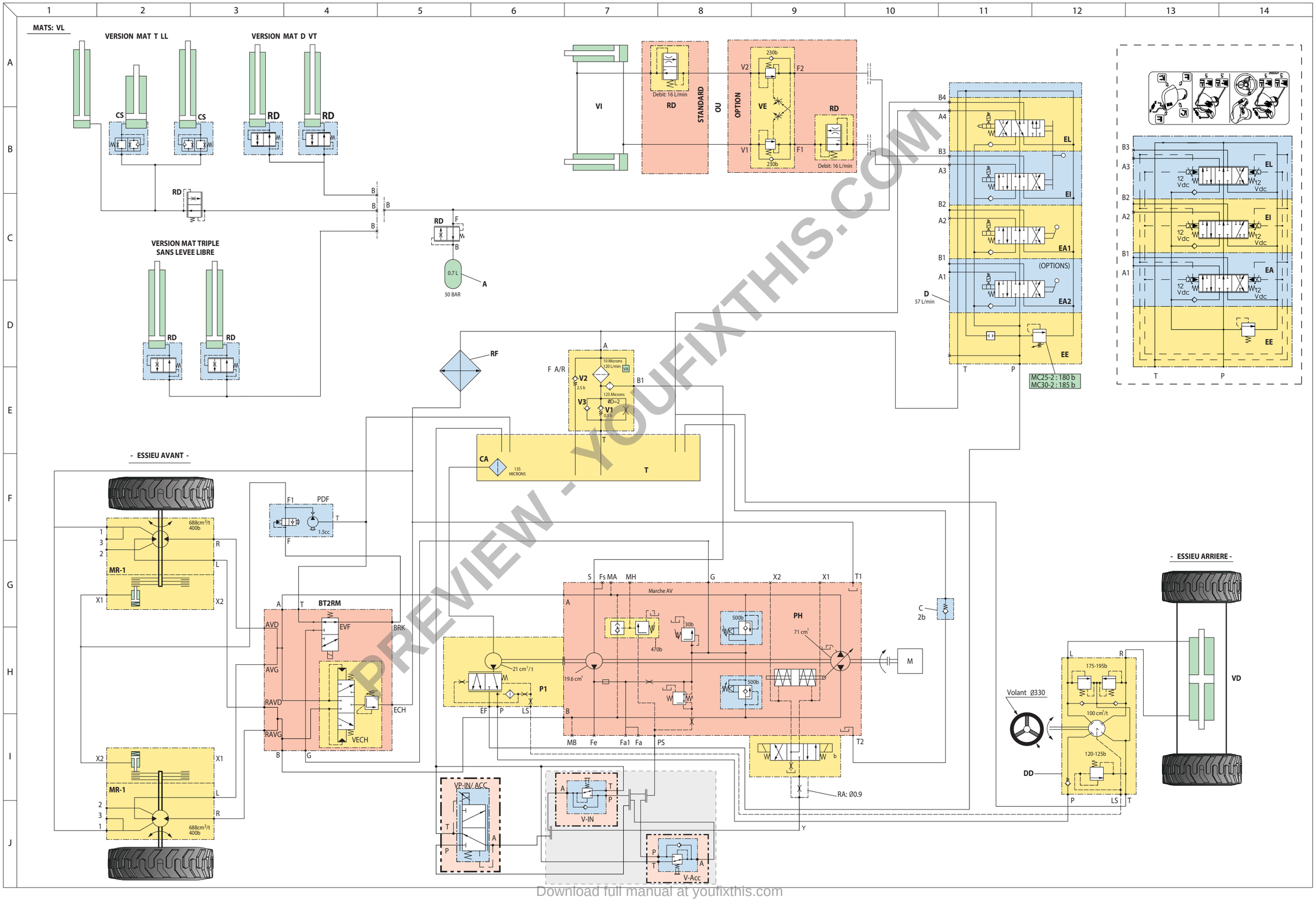
6 - Disconnect the upper (1) and lower (2) water hoses.

7 - Disconnect the hydraulic oil hoses (3).

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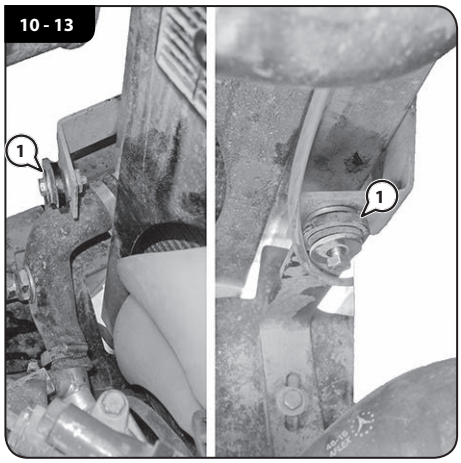
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10 - 13



8 - Remove the fasteners (1).

9 - Disconnect the harness on radiator.

10 - Lift and remove the cooler.

10.4.5 REMOVING THE ENGINE

1 - Carry out the operation (◅ ***85.2.1 RAISE THE CAB,*** 🗍 ***224***).

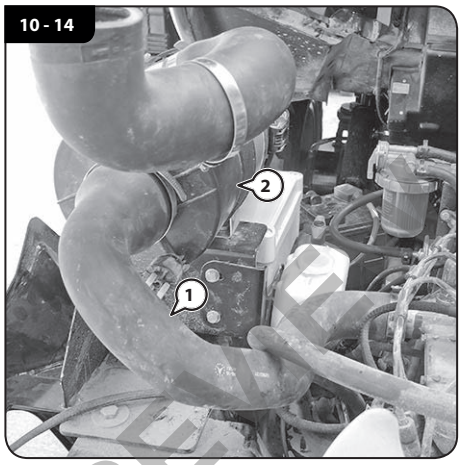
2 - Carry out the operation (◅ ***90.2.1 REMOVE THE COUNTERWEIGHT (MC18),*** 🗍 ***233***)***157***.

3 - Drain the cooling system with the valve (1, 📷 ***10 - 11***).

4 - Carry out the operation (◅ ***10.4.2 REMOVING THE COOLANT RADIATOR***, 🗍 ***31***).

5 - Carry out the operation (◅ ***10.4.4 REMOVING THE RADIATOR***, 🗍 ***31***).

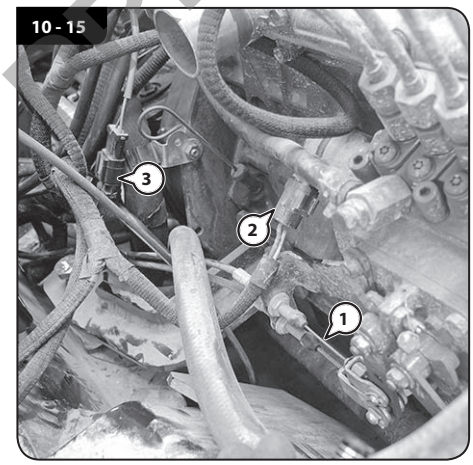
10 - 14



6 - Remove the hose (1).

7 - Remove the air filter (2).

10 - 15



8 - Disconnect the throttle cable (1), the engine stop electrovalve (2) and the electric pump (3).

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