

Workshop Service Manual

MF 6600



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Electronics	
CAN switches key pad	On tractors with multifunction armrest, controls for: <ul style="list-style-type: none"> - main lighting - 4WD front axle, manual and automatic - manual and automatic differential lock - front axle suspension - cab suspension - Auto-Guide™ - TopDock aerial - SpeedSteer quick steering - headlights on hand rail
LIN switches key pad	On tractors without multifunction armrest, controls for: <ul style="list-style-type: none"> - main lighting - 4WD front axle, manual and automatic - manual and automatic differential lock - front axle suspension
AM50 unit	AgCommand™

Cab and fittings	
Type of cab suspension available	Fixed Mechanical, 2 points at rear Hydraulic semi-active, 2 points at rear (OptiRide Plus)
Type of rear-view mirror control available	Manual or electric
Type of air conditioning control available	Manual or automatic
Type and brand of air conditioning compressor	SANDEN with axial pistons
Compressor displacement	154.9 cm ³ /rev.
Refrigerant	R134a
Noise level in cab with doors closed	71 DBA
Roof type	Standard or with hatch or high visibility

Electric	
Battery brand	TAB
Battery specifications (1 battery)	12 V 105 A/H
Maximum current at start-up (IEC standard)	420 A
Starter type	12 V
Starter power	3.2 KW
Alternator type	1 x 175 A or 2 x 120 A
Current available on ISOBUS connector	50 A
Hazard warning light unit	HELLA
Interior light, left-hand door	2 x 5 W
Roof light	-
Type of bulb for side light indicators on hand rail	12 V 21 W / 12 V 10 W
Type of bulb for brake lights, side lights on fenders	12 V 21 W / 12 V 5 W
Type of bulb for main beams on lighting bar at front of bonnet	H4 - 12 V 60/55 W
Type of bulb for dipped beam lights and side lights on lighting bar at front of bonnet	H7 - 12 V 55 W + T4 - 12 V 4 W
Type of bulb for main beams on hand rail	H4 - 12 V 60/55 W
Type of bulb for main beams on hand rail, low position	H3 - 12 V 55 W
Type of bulb for work lights on hand rail	H3 - 12 V 55 W
Type of bulb for work lights on roof	H3 - 12 V 55 W
Type of bulb for work lights on step	-
Type of bulb for number plate lights on roof	H3 - 12 V 55 W
Type of bulb for reversing lights	12 V 21 W
Type of bulb for rotary beacon	H1 - 12 V 55 W

Electronics	
Function of each controller	
DCC3	Instrument panel
EXT Lite	Transmission
CAN levers and armrest	Controls for: <ul style="list-style-type: none"> - transmission (ranges, reverse shuttle, SV1/SV2, PTO) - linkage - hydraulic - Headland Management - Engine memory A - ...
AUTOTRONIC 5 DC	2 Autotronic 5 DC: <ul style="list-style-type: none"> - 1 for linkage/auxiliary hydraulic spool valves - 1 TECU for VIN code/suspended front axle/suspended cab
SB23 valves	Electrohydraulic spool valves
Lights module	User interface for lights
EEM4 (ECM Tier 4 AGCO Power)	Engine
NOx ECU	2 NOx ECU: converters of NOx sensor signals to EEM4 via CAN

7.2 Attachment points: Dyna-4/Dyna-6 models with front linkage

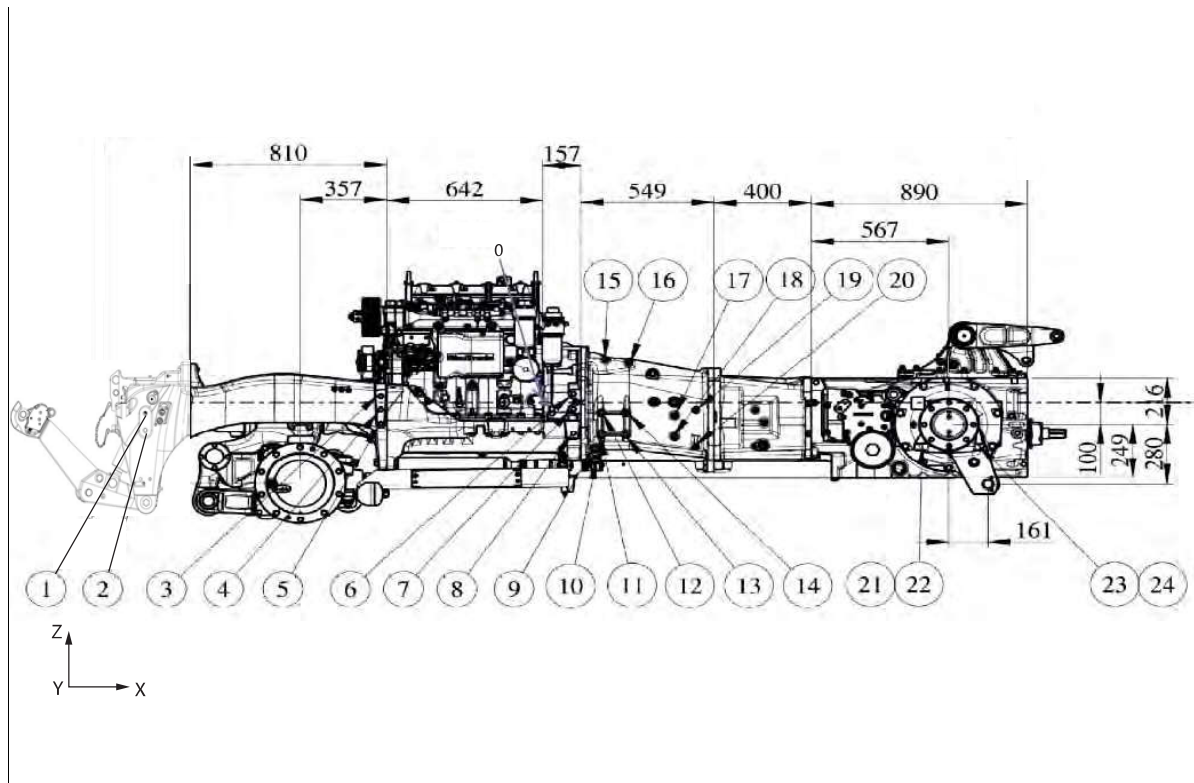


Fig. 8.

I041405

NOTE: Values x, y and z represent reference point 0 of the tractor.

Reference		X	Y	Z
1 ⁽¹⁾	M20	-1682 mm (-66.3 in)	-343 mm (-13.5 in)	-66 mm (-2.6 in)
2 ⁽¹⁾	M20	-1682 mm (-66.3 in)	-343 mm (-13.5 in)	-146 mm (-5.8 in)
3 ⁽¹⁾	M20	-667 mm (-26.3 in)	-280 mm (11.0 in)	27,5 mm (1.1 in)
4 ⁽¹⁾	M20	-667 mm (-26.3 in)	-280 mm (-11.0 in)	-37,5 mm (-1.5 in)
5	Ø16	-667 mm (-26.3 in)	-280 mm (-11.0 in)	-102,5 mm (-4.0 in)
6 ⁽¹⁾	M20	126,8 mm (5.0 in)	-280 mm (-11.0 in)	38 mm (1.5 in)
7 ⁽¹⁾	M20	126,8 mm (5.0 in)	-280 mm (-11.0 in)	-35 mm (-10.6 in)
8 ⁽¹⁾	M20	126,8 mm (5.0 in)	-280 mm (-11.0 in)	-149 mm (-5.9 in)
9	M20	216 mm (8.5 in)	-138 mm (-5.4 in)	-220 mm (-8.7 in)
10	M20	216 mm (8.5 in)	-138 mm (-5.4 in)	-277 mm (-10.9 in)
11	M16	241 mm (9.5 in)	-183 mm (-7.2 in)	-154,6 mm (-6.1 in)
12	M16	241 mm (9.5 in)	-223 mm (-8.8 in)	-53 mm (-2.1 in)
13	M16	343 mm (13.5 in)	-183 mm (-7.2 in)	-154,6 mm (-6.1 in)
14	M16	343 mm (13.5 in)	-223 mm (-8.8 in)	-53 mm (-2.1 in)
15	M14	260 mm (10.2 in)	-155 mm (-6.1 in)	196 mm (7.7 in)
16	M14	356 mm (14.0 in)	-138 mm (-5.4 in)	180 mm (7.1 in)
17	M16	543 mm (21.4 in)	-228 mm (-9.0 in)	-65 mm (-2.6 in)
18	M16	543 mm (21.4 in)	-180 mm (-7.1 in)	-165 mm (-6.5 in)
19	M12	631 mm (24.9 in)	-207 mm (-8.2 in)	-40 mm (-1.6 in)
20	M12	631 mm (24.9 in)	-179 mm (-7.1 in)	-210 mm (-8.3 in)

2.3 Dyna-VT transmission error codes

No.	Components concerned	Causes
T3101		Loss of CAN messages between the instrument panel and the transmission controller
T3102		Loss of CAN messages between the instrument panel and the transmission controller
T3103		Loss of CAN messages between the instrument panel and the transmission controller
T4101		Not used
T4102		Not used
T4104	X68 - Clutch pedal sensor	Signal error
T4105	X34 - Transmission oil high pressure sensor 2	Signal error - 8.5 V supply error
T4107	X9 - Transmission oil high pressure sensor 1	Signal error - 8.5 V supply error
T4108	X17 - High/low speed range (Hare/Tortoise) position sensor	Signal error - 8.5 V supply error
T4119	X71 - Throttle pedal sensor	Parameters lost
T4120		Not used
T4121		Not used
T4122	X71 - Throttle pedal sensor	Signal error
T4124	X72 - ParkLock switch on Power Control lever	Signal error
T4125		Not used
T4126		Not used
T4127	X10 - Collecting shaft speed sensor	Signal error
T4128	X18 - Transmission control module	Signal error
T412A	X8 - Bevel gear theoretical speed sensor	Signal error
T412C	X56 - Power Control lever	Signal error when in neutral position
T412D	X56 - Power Control lever	Signal error when reversing
T412E	X56 - Power Control lever	Signal error when increasing speed
T412F	X56 - Power Control lever	Signal error when reducing speed
T4130		Not used
T4131	X10 - Collecting shaft speed sensor	Direction of rotation signal error
T4132		Not used
T4133		Not used
T4134		Not used
T4135		Not used
T4136		Not used
T4137		Not used
T4138		Not used
T413A		Not used
T4140	X17 - High/low speed range (Hare/Tortoise) position sensor	The range is not correctly engaged
T4141		Not used
T4142	X10 - Collecting shaft speed sensor	Rotation speed signal error
T4144	X25 - Engine speed sensor	Signal error

Number	Amperage	Size	Protected function
F40	3 A	Small	Not used
F41	5 A	Small	+ APC ⁽²⁾ - AGCO Power EEM unit - Braking pressure sensor - Front linkage lifting and lowering external controls
F42	10 A	Small	Turbocharger outlet NOx sensor and exhaust outlet NOx sensor + APC ⁽²⁾
F43	10 A	Small	+ APC ⁽²⁾ - Instrument panel - Lighting module keypad - Membrane switches keypad
F44	5 A	Small	+ APC ⁽²⁾ - Auto-Guide™ - Supply for additional terminal (mitron unit)
F45	5 A	Small	Not used
F46	15 A	Small	K24 relay power circuit supplying the + APC ⁽²⁾ to the brake lights
F47	20 A	Average	Not used
F48	30 A	Average	Windscreen wiper and indicator control unit + BAT ⁽³⁾
F49	30 A	Average	Trailer connector (NA) + BAT ⁽³⁾
F50	25 A	Average	Front implement accessories connector + BAT ⁽³⁾
F51	30 A	Average	+ BAT ⁽³⁾ - Automatic air conditioning module - Roof light - Radio - Left-hand pillar 12 V socket
F52	15 A	Small	+ BAT ⁽³⁾ - Cigarette lighter and cab power socket control switch - Auto-Guide™ screen - Hazard warning lights switch and lighting module
F53	10 A	Small	Isobus connector + BAT ⁽³⁾
F54	3 A	Small	Coupler function solenoid valve + BAT ⁽³⁾
F55	7.5 A	Small	Horn supply in the engine compartment
F56	5 A	Small	Start switch supply
F57	15 A	Small	Transmission controller + APC ⁽²⁾
F58	10 A	Small	Implement socket without Isobus + APC ⁽²⁾
F59	10 A	Small	Front-end loader + APC ⁽²⁾



EFD00117_31 - Manual air conditioning for tractors with high-visibility roof and without multifunction armrest

EFD00118_7 - DOT Matrix

EFD00119_10 - Rear windscreen wiper

EFD00120_10 - Front windscreen wiper

EFD00121_9 - Dyna-VT parking brake

EFD00121_10 - Dyna-6 parking brake

EFD00121_11 - Dyna-4 parking brake

EFD00122_5 - Dyna-VT fuel gauge

EFD00122_6 - Dyna-6 and Dyna-4 fuel gauge

EFD00123_24 - Datatronic CCD

EFD00123_25 - Isobus

EFD00123_26 - Auto-Guide™

EFD00124_10 - Dyna-VT ParkLock

EFD00124_11 - Dyna-6 and Dyna-4 ParkLock

EFD00125_10 - Roof light

EFD00126_11 - Extreme cold weather heating with automatic air conditioning

EFD00126_12 - Extreme cold weather heating with manual air conditioning for tractors with standard roof

EFD00126_13 - Extreme cold weather heating with manual air conditioning for tractors with high-visibility roof

EFD00127_8 - Left-hand pillar 12 V socket

EFD00128_17 - EAME cab power socket

EFD00128_18 - NA cab power socket

EFD00129_9 - Diagnostics connector

EFD00130_5 - Dyna-VT radar

EFD00130_6 - Dyna-6 and Dyna-4 radar

EFD00131_25 - Dyna-VT CAN network

EFD00131_26 - Dyna-6 CAN network

EFD00131_27 - Dyna-4 CAN network

EFD00132_7 - Electric rear-view mirrors

EFD00133_7 - Pneumatic seat

EFD00135_11 - Ventilation for tractors with standard roof

EFD00135_12 - Ventilation for tractors with high-visibility roof

EFD00163_10 - Console lighting

EFD00183_2 - Implement connector without Isobus

EFD00184_3 - AgCommand™

Lighting function

EFD00136_37 - Indicators and hazard warning lights for tractors with standard roof and without linkage controls in the right-hand pillar — EAME

EFD00136_38 - Indicators and hazard warning lights for tractors with standard roof and without linkage controls in the right-hand pillar — NA

EFD00136_40 - Indicators and hazard warning lights for tractors with high-visibility roof and without linkage controls in the right-hand pillar — NA

EFD00136_42 - Indicators and hazard warning lights for tractors with high-visibility roof and without linkage controls in the right-hand pillar — EAME

EFD00136_43 - Indicators and hazard warning lights for tractors with standard roof and linkage controls in the right-hand pillar — EAME

EFD00136_44 - Indicators and hazard warning lights for tractors with standard roof and linkage controls in the right-hand pillar — NA

EFD00136_46 - Indicators and hazard warning lights for tractors with high-visibility roof and linkage controls in the right-hand pillar — EAME

EFD00136_47 - Indicators and hazard warning lights for tractors with high-visibility roof and linkage controls in the right-hand pillar — NA

EFD00137_20 - Number plate lighting for tractors without linkage controls in the right-hand pillar (except Italy)

EFD00137_21 - Number plate lighting for tractors without linkage controls in the right-hand pillar (Italy)

2.33 EFD00113_7 - Cigarette lighter

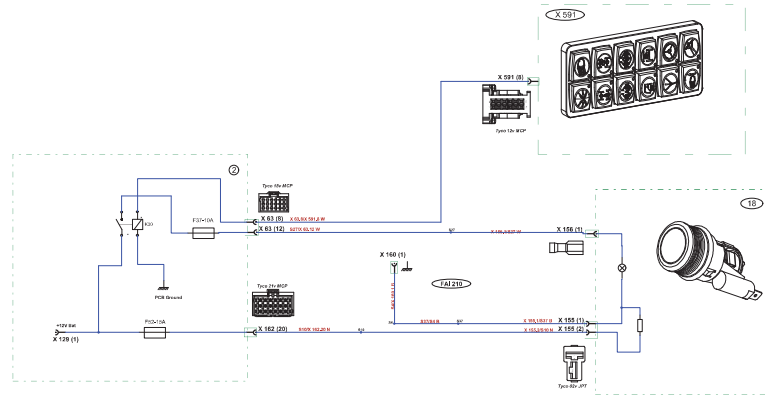


Fig. 40.

EFD00113_2

1032306

2.65 EFD00131_28 - Dyna-VT CAN network_2/4

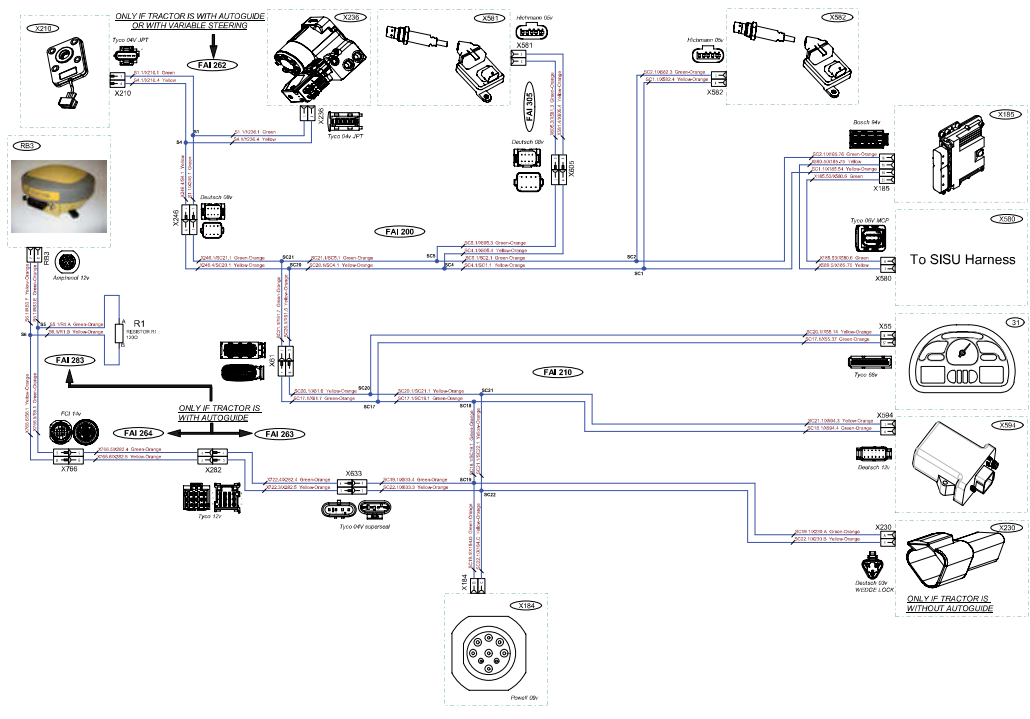


Fig. 72.

EFD00131_L28

B042595

2.99 EFD00142_9 - Dyna-4 brake lights

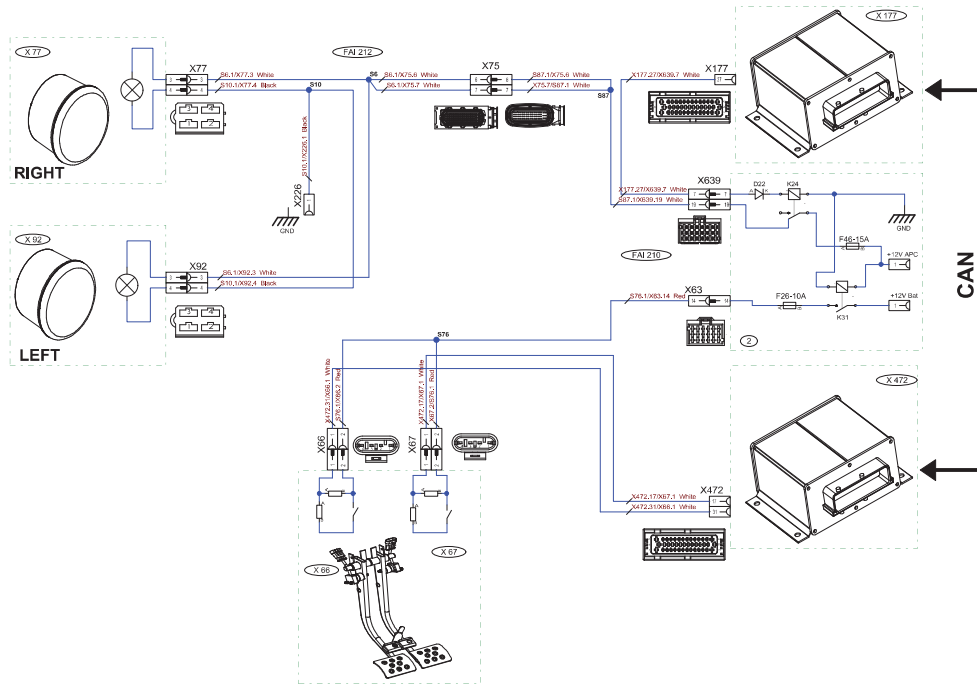


Fig. 106.

EFD00142_9

B036353

2.134 EFD00169_15 - Dyna-6 controller power supply_1/4

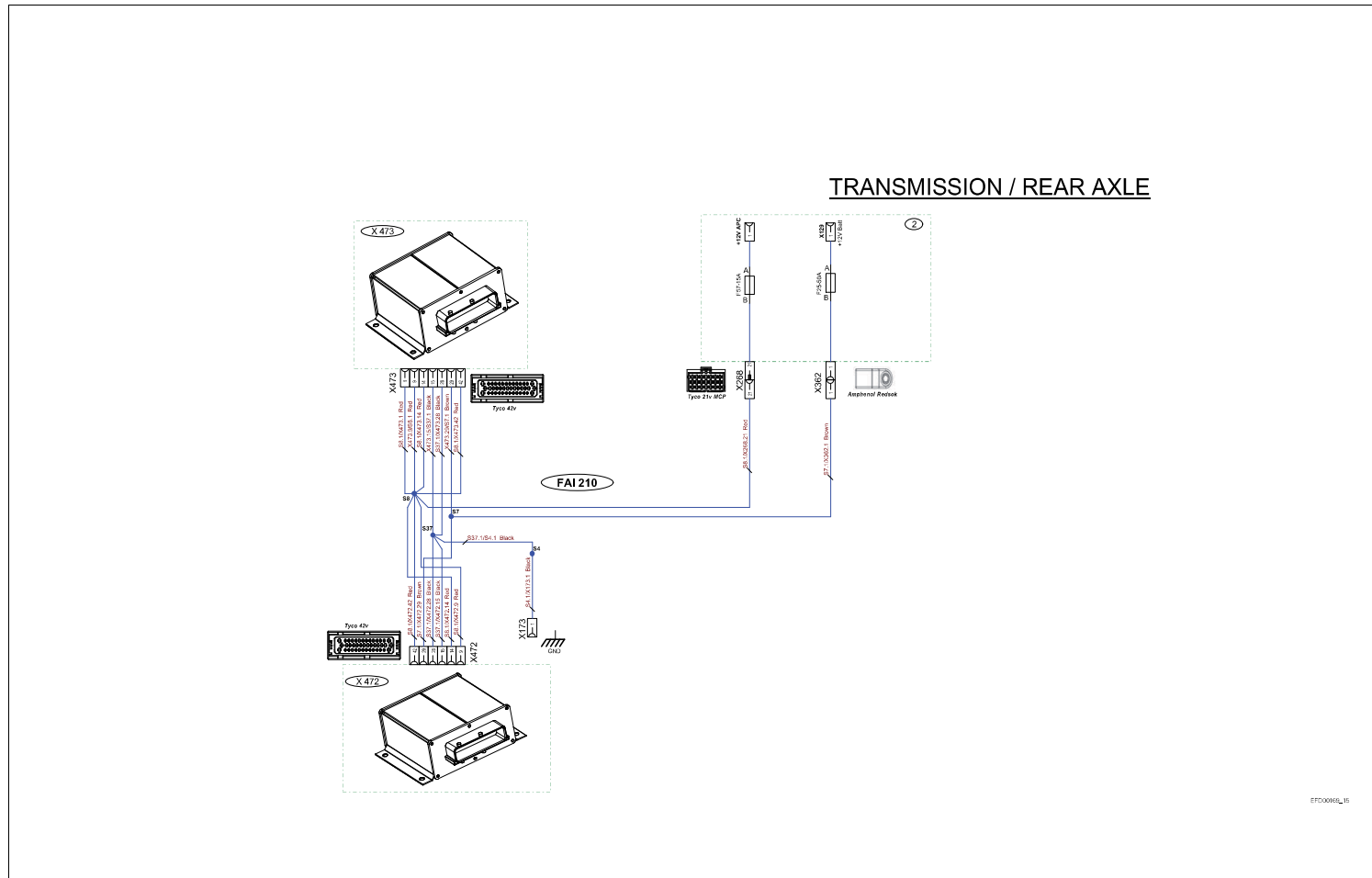


Fig. 141.

EF00069_15

1042616

3.12 FAI202 - Suspended front axle harness - 4352994_2/3

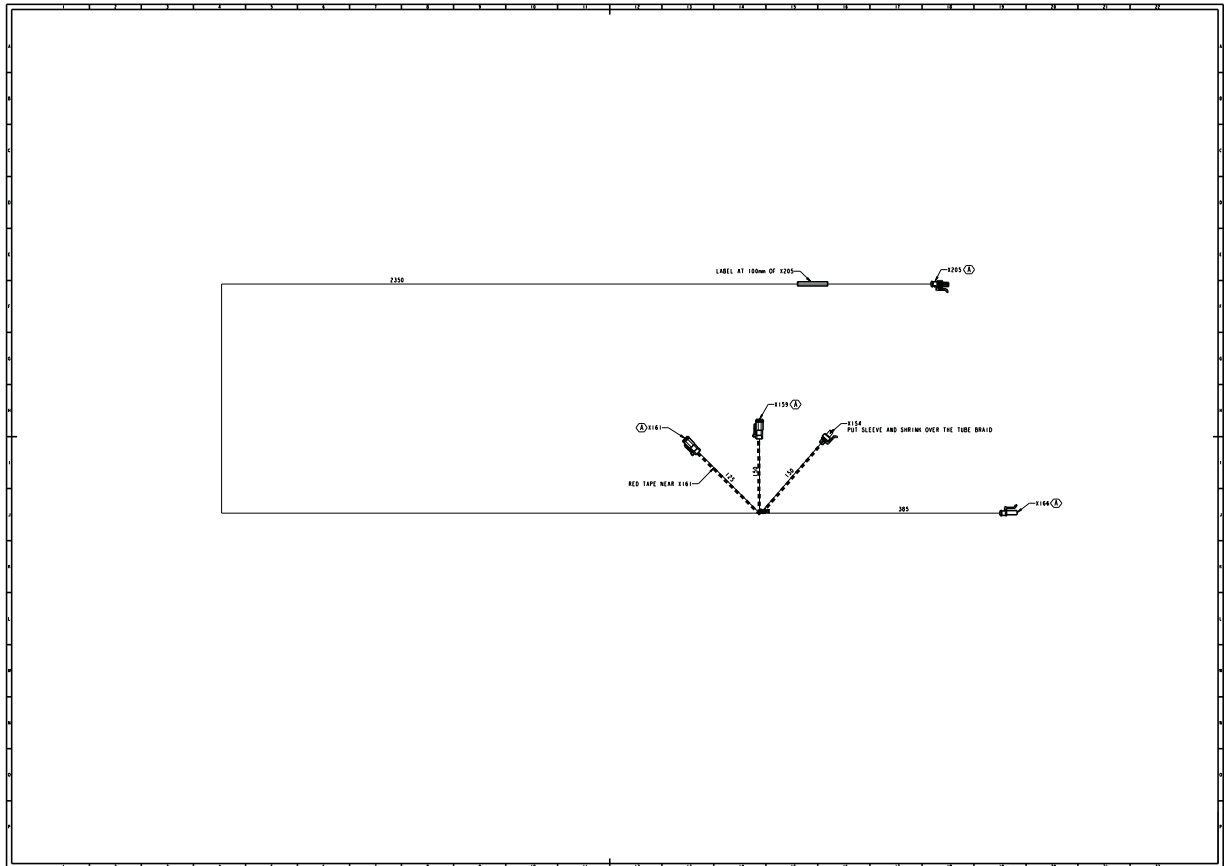


Fig. 172.

FAI202 - 4352994_2/3

0033335

3.48 FAI210 - Cab transmission harness Dyna-6 without multi-function armrest - 4374075_2/8

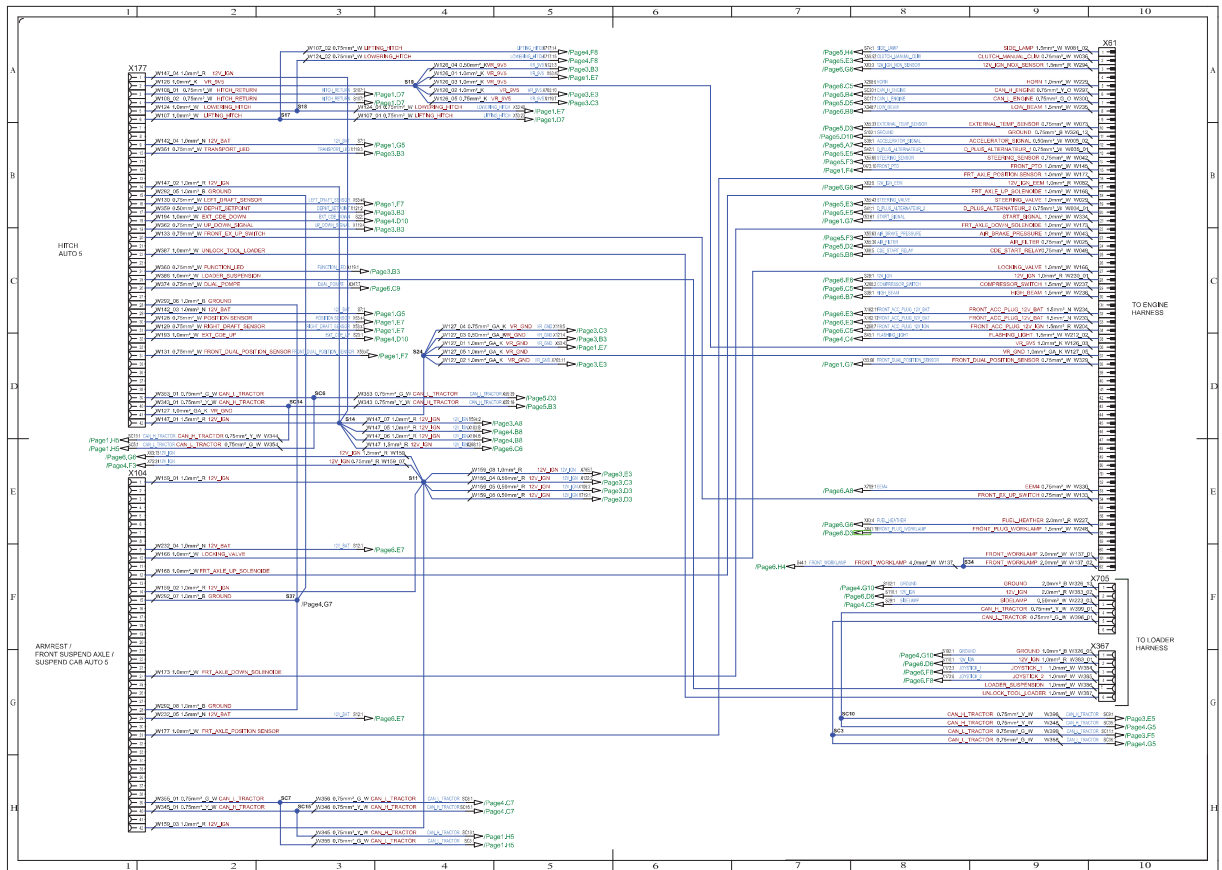


Fig. 208.

1036/20

3.84 FAI223 - Roof harness high visibility - 4375395_4/4

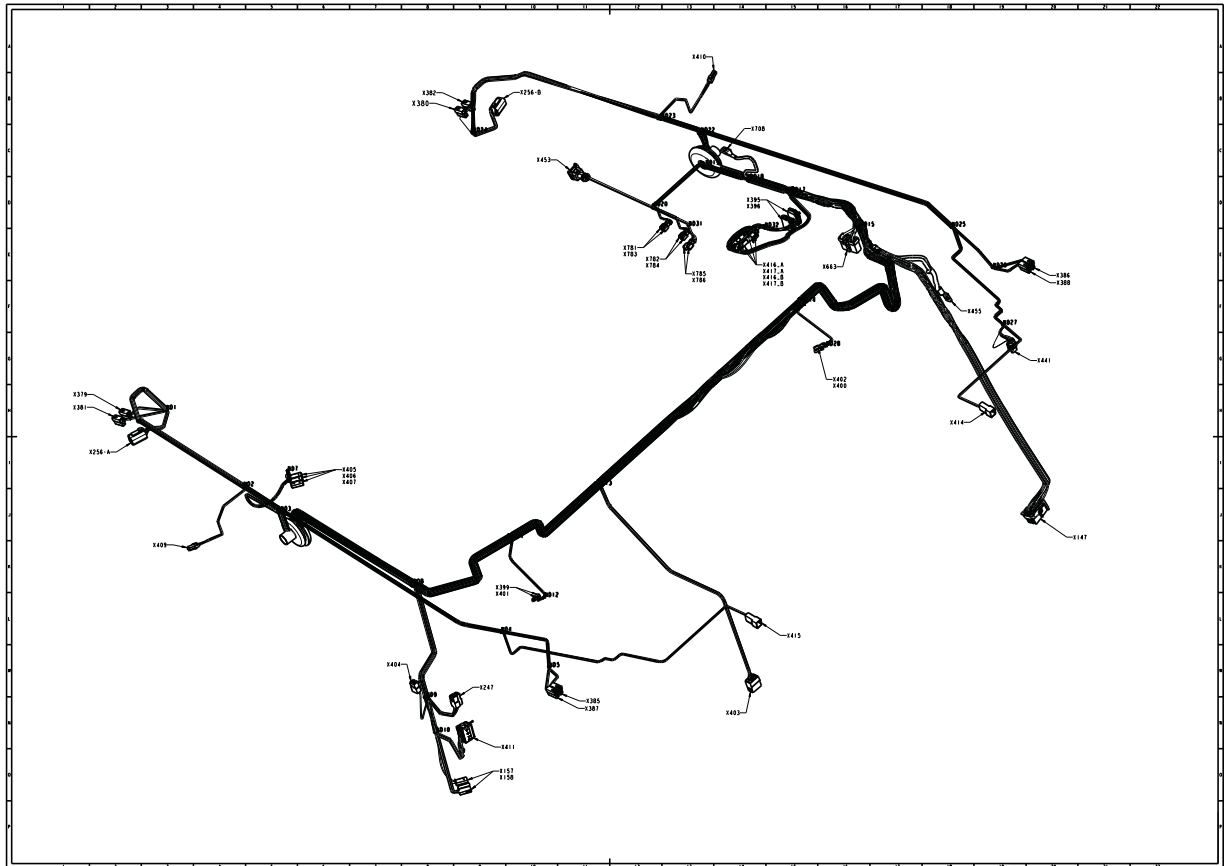
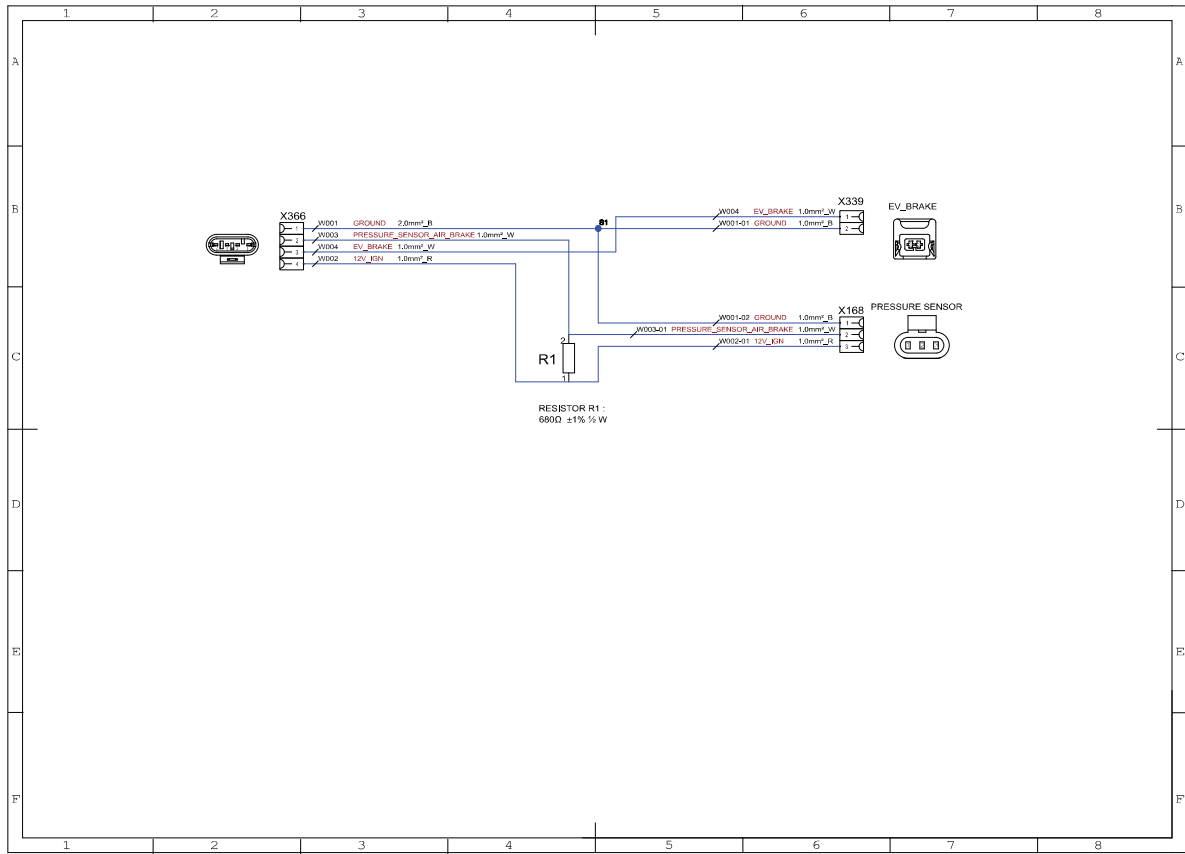


Fig. 244.

FAI223-4375395-4-4

0036540

3.120 FAI265 - Pneumatic brake harness Dyna-VT - 4354038_1/3

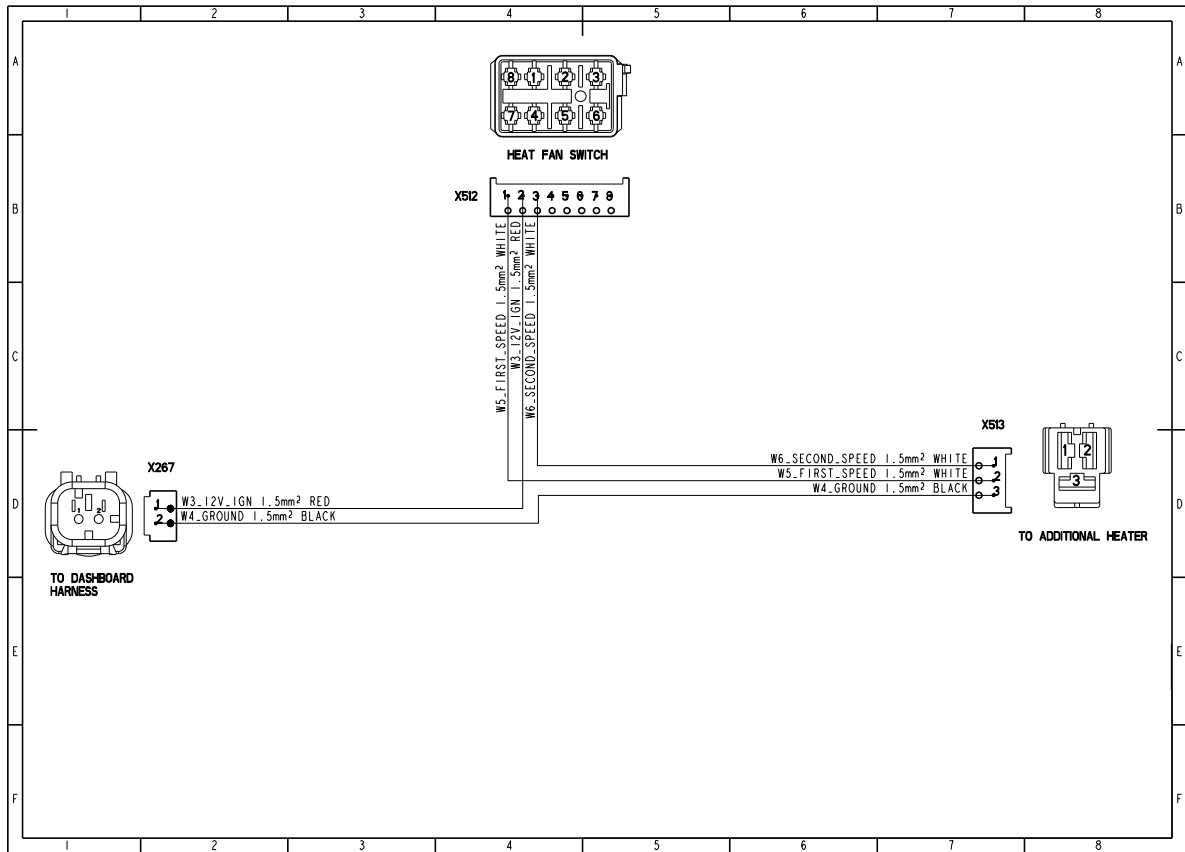


FAI265 - 4354038/1-02_1/3

Fig. 280.

B033244

3.156 FAI294 - Additional heater harness - 4299327_1/3

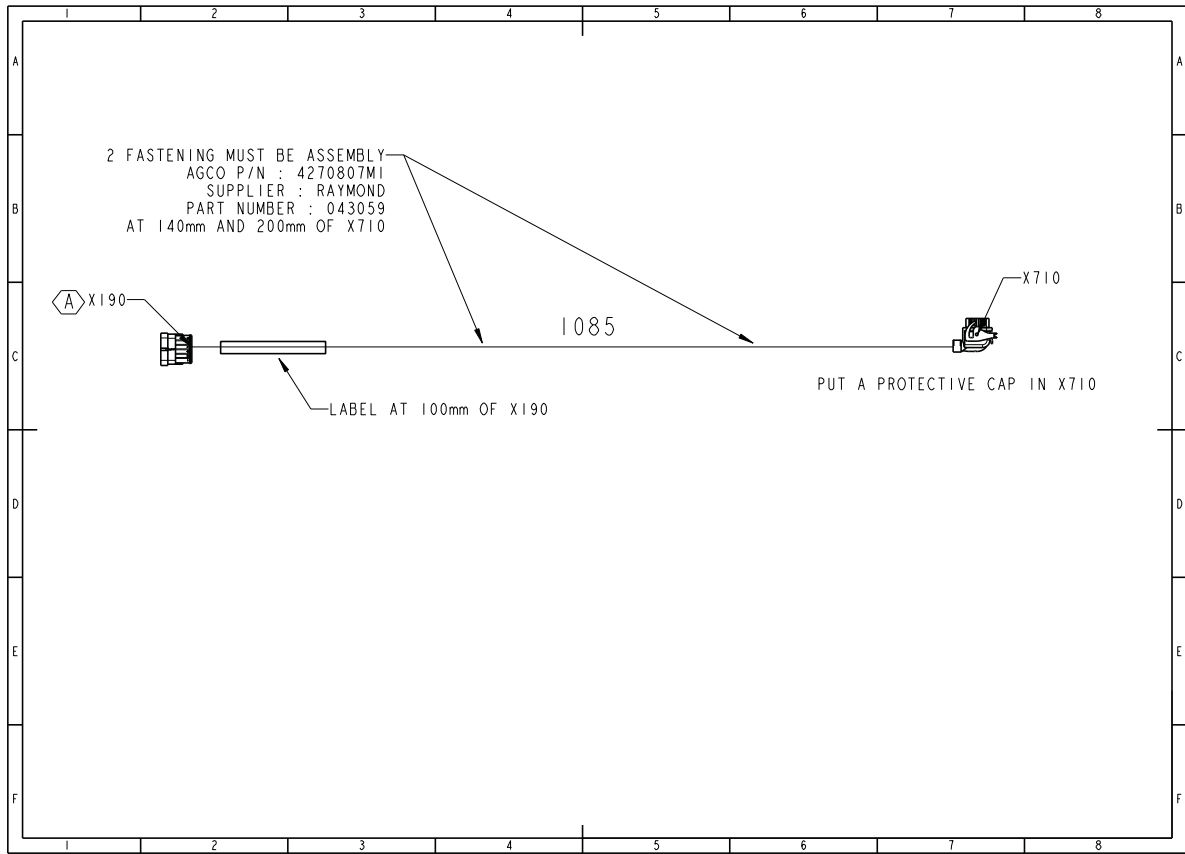


FAI294 - 4299327_1/3_1/3

Fig. 316.

003250

3.192 FAI317 - Vistronic harness - 4374489_2/3



FAI317 - 4374489_2/3_2/3

Fig. 362.

1033390

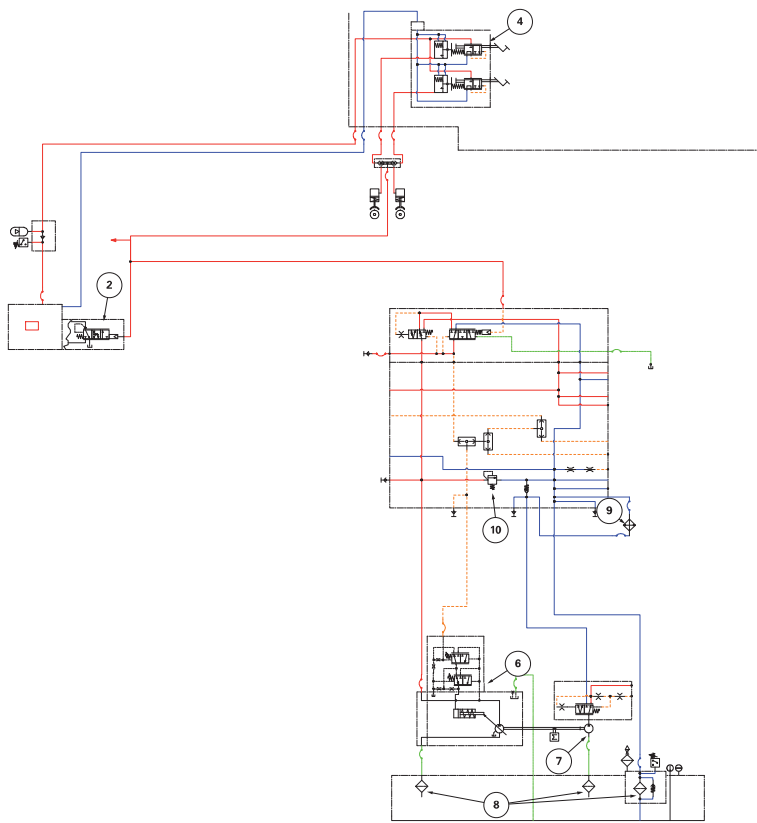


Fig. 378.

1032155

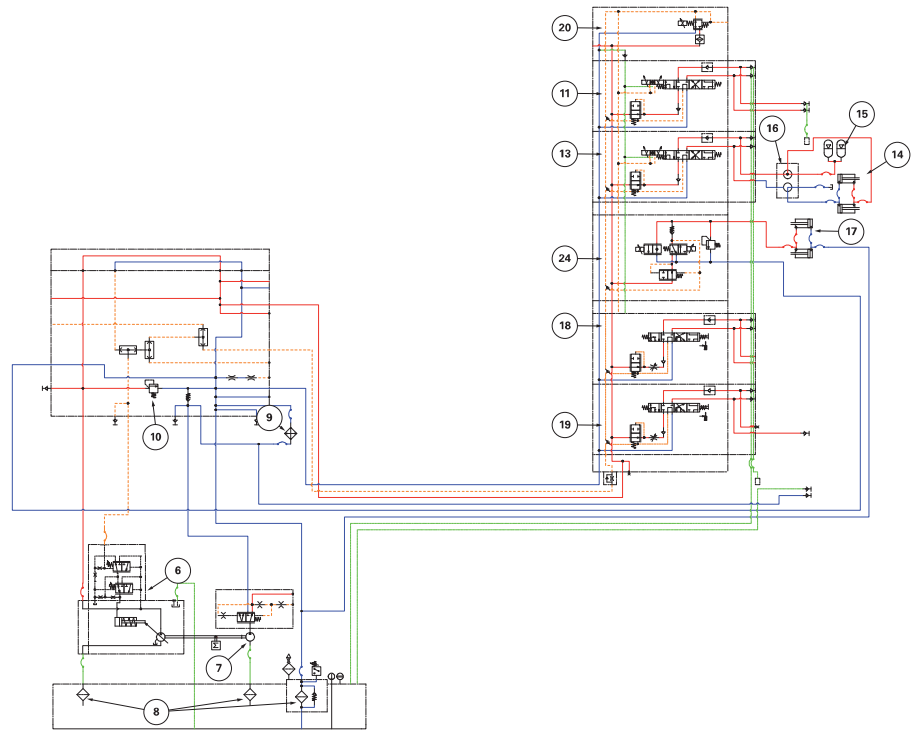


Fig. 396.

1032198

3 Bleeding the brakes - High-pressure braking

3.1 Location of the bleed screws on GPA20 and GPA40 version

Main brakes

- (5) Left-hand brake bleed screw on GPA20 version, located on the left-hand side of the linkage cover plate

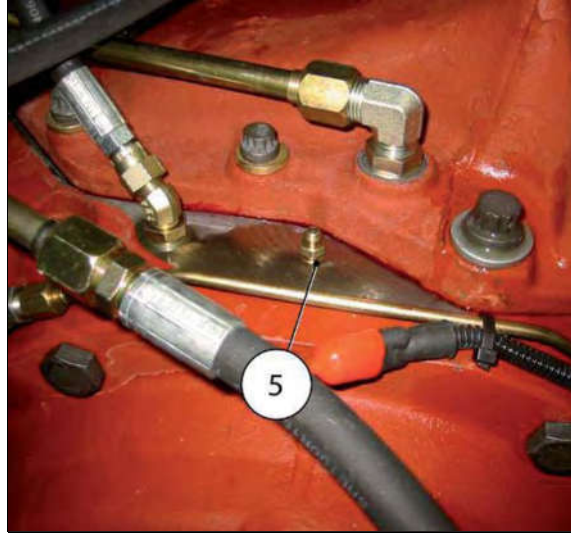


Fig. 20.

I032469

- (6) Right-hand brake bleed screw on GPA20 version, located on the right-hand side of the linkage cover plate

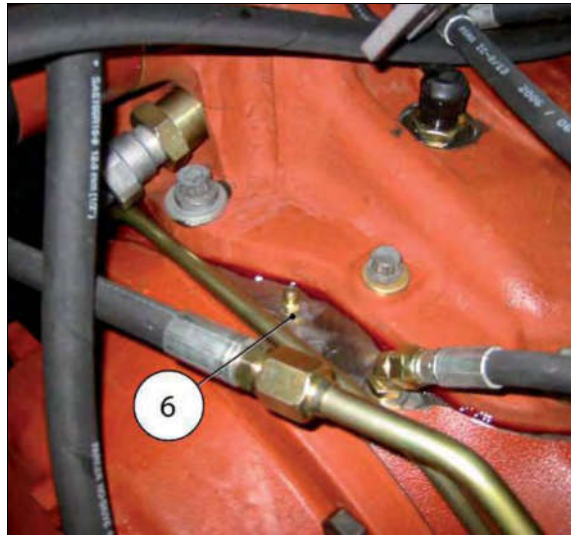


Fig. 21.

I032470

1 Removing and refitting the front linkage

Removal

1. Open the bonnet.
2. Remove the air filter (1).

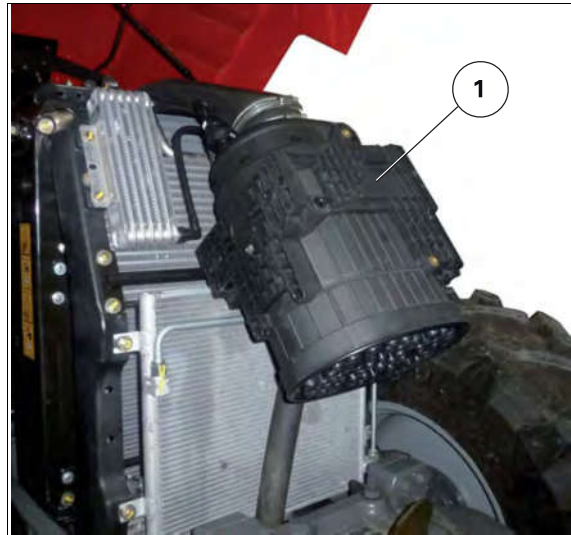


Fig. 1.

I043101

3. Remove the top link.
4. Mark and remove the electrical connector (1).

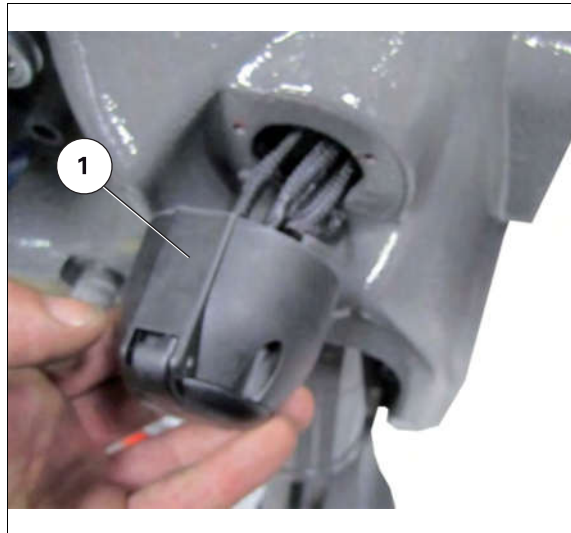


Fig. 2.

I043094

1 Removing and refitting the gearbox with the cab on the rear axle

Removal

1. Drain the air conditioning system.
2. Remove the rear wheels (tightening torque: 450 Nm (332 lbf ft)).
3. Position the axle stands under the rear final drive units.

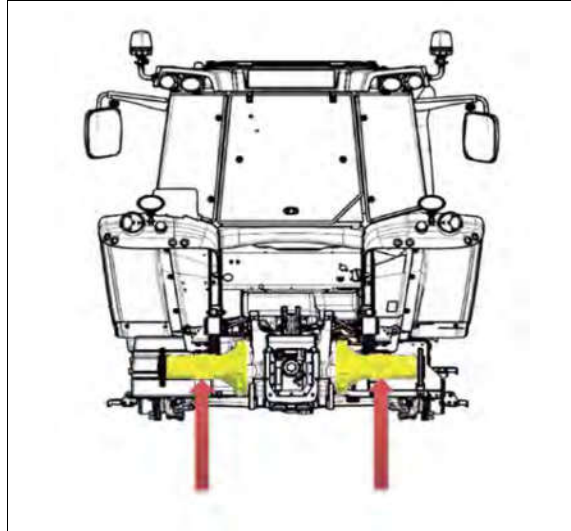


Fig. 1.

1038839

4. Remove the fuel tank.
5. Remove the right-hand step, battery and additional tank.
6. Disconnect the cab hoses.
7. Unscrew the thermostatic valve unions.

Reassembly

1. To refit the assembly, carry out the previous steps in reverse order.
2. Top up the oils and bleed the systems.
3. Check the operation of the transmission and the front and rear hydraulic systems.

3A12 - Sisu Tier 4i engine - Electrical and hydraulics diagrams

1	See chapter 1	9
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1 General

Service tools can be ordered from the AGCO spare parts department or from the Beauvais tooling division via AGCOnet with bulletin Trac 60/07.



1 See chapter 1

see chapter 1

1 Calibrations

1.1 See chapter 1

[see chapter 1](#)

Ref.	X899.980.210.000
Description	Device to lift the front axle clutch and universal joint shaft brake
Order	Parts Division

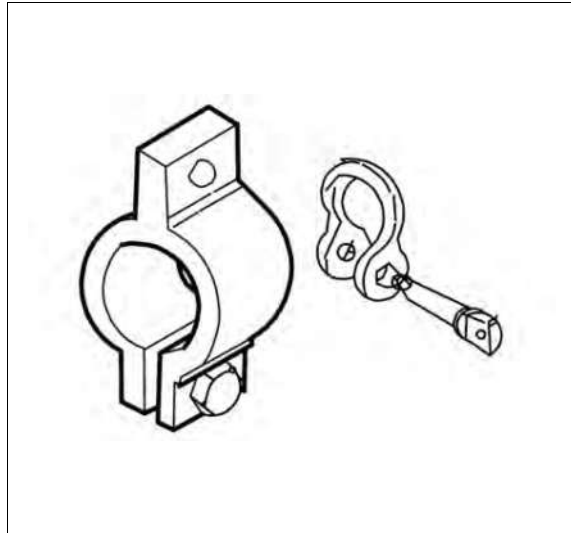


Fig. 16.

I017299

Ref.	X899.980.211.000
Description	Socket to fit front axle shaft seals
Order	Parts Division

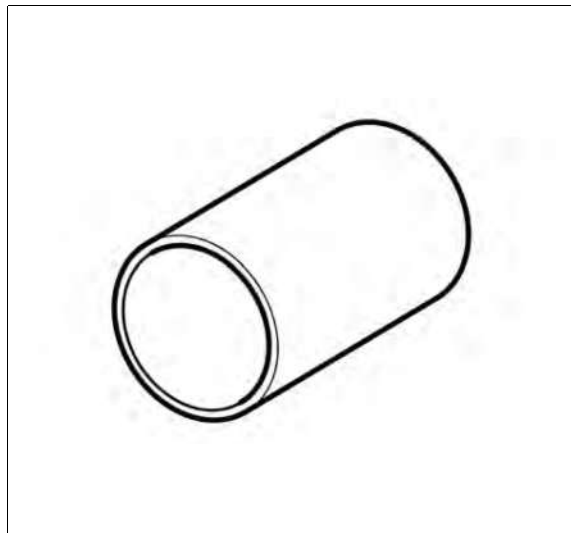


Fig. 17.

I017300

Ref.	X899.980.212.000
Description	D+R compression socket for front axle clutch
Order	Parts Division

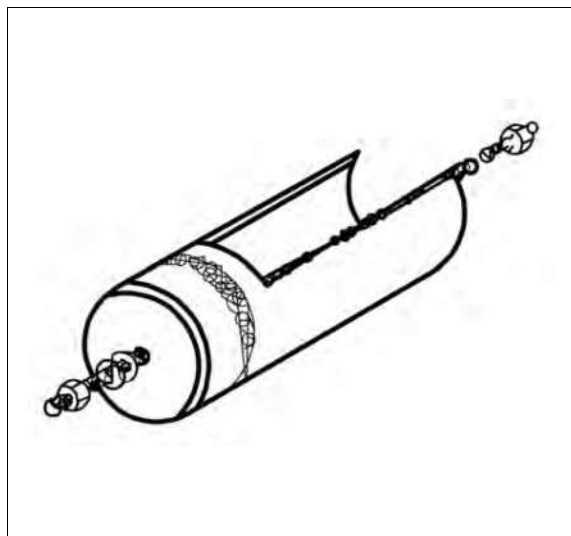


Fig. 18.

I017301

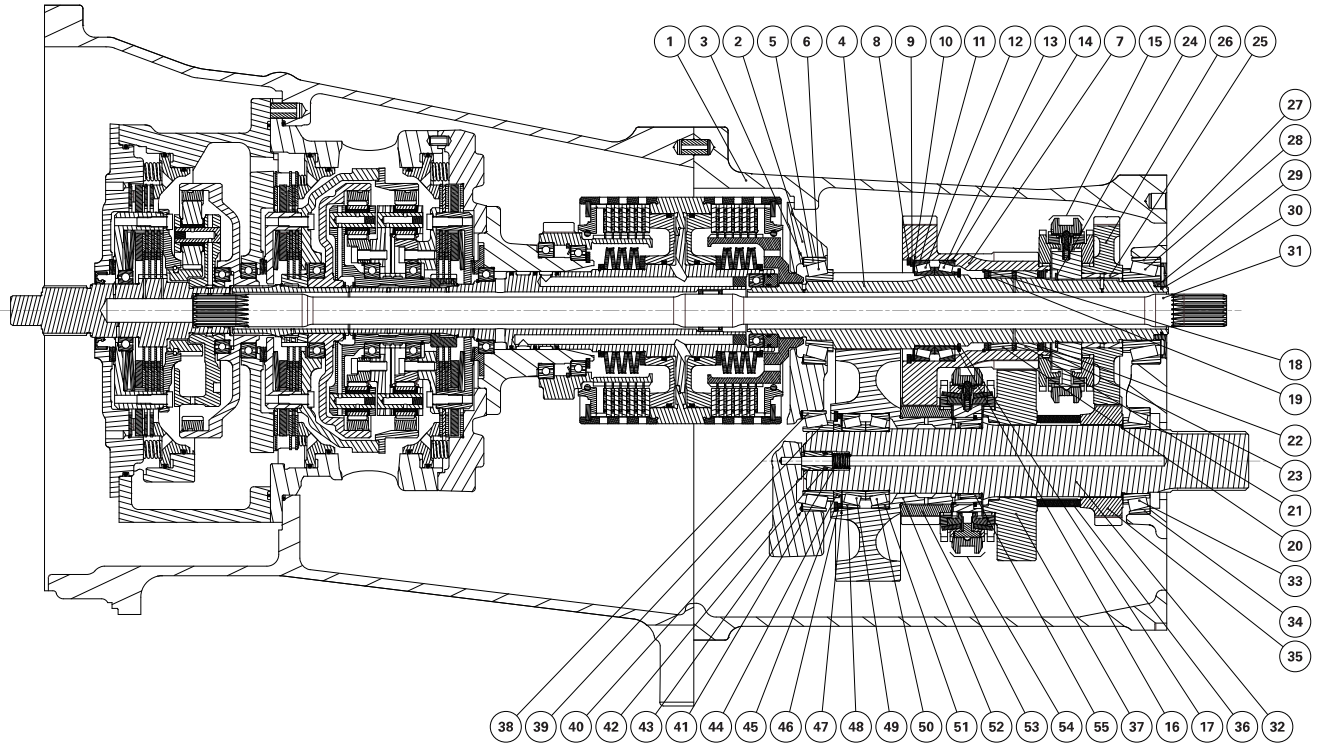


Fig. 3.

1019823

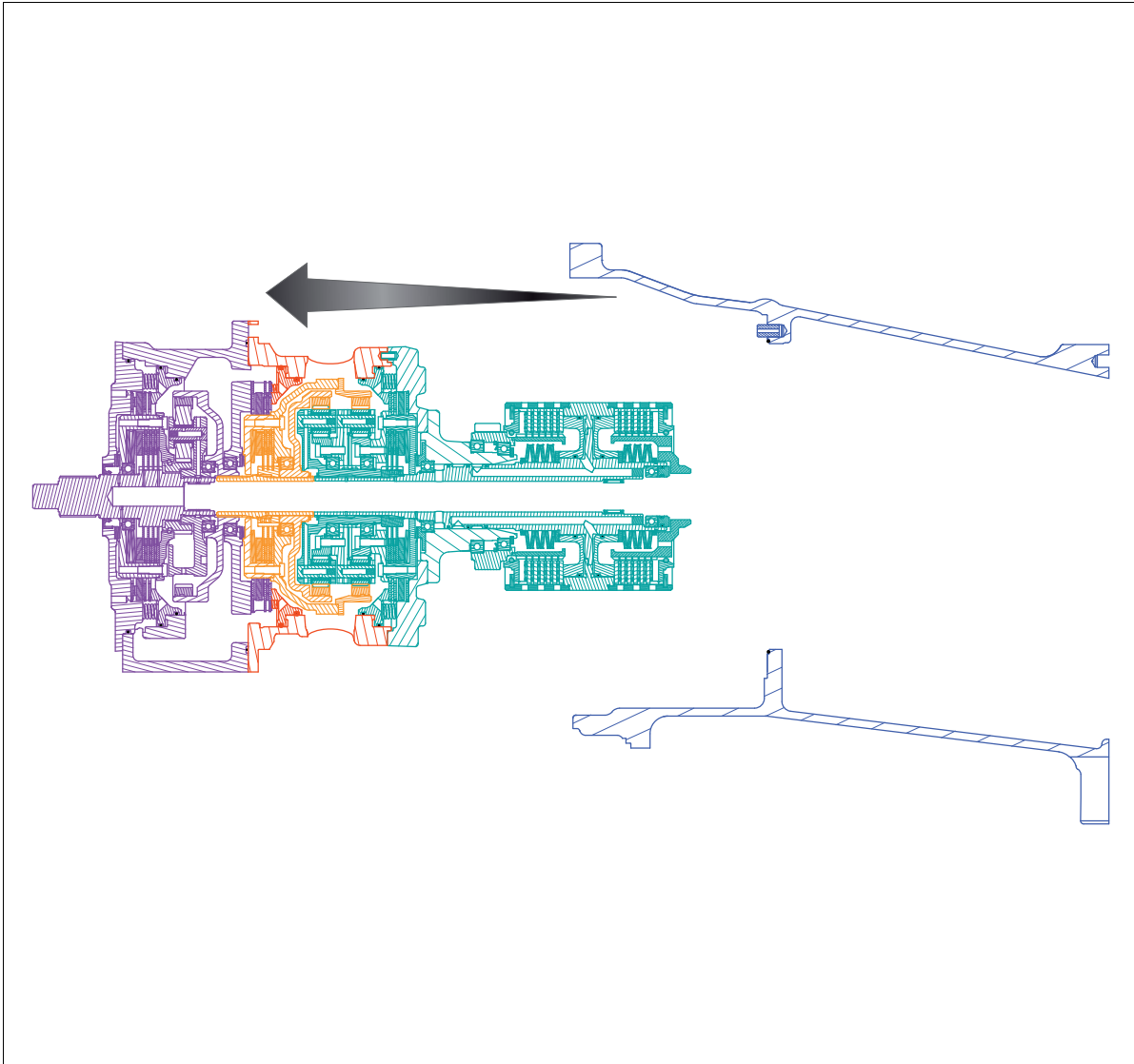


Fig. 17.

I019841

5. Remove the multiplier module, Dynashift module and PowerShuttle assembly.

2.3 Refitting the PowerShuttle

1. Place the Power Shuttle on a support positioned on the forward clutch [fig. 12](#).
2. Fit the cover plate (26) on the bearing (57). Check that the snap ring (2) is present on the shaft (1).
3. Fit the cover plate (26) screws, after smearing them with Loctite 242 or equivalent. Tighten to a torque of 29 Nm (21 lbf ft) - 37 Nm (27 lbf ft).
4. Fit the friction washer (H), smeared with oil, on the clutch unit (G).
5. Refit the brake and clutch assembly (G) on the cover plate (26).

NOTE: If the brake discs and clutch discs have been replaced, they must be soaked for approximately one hour in a transmission oil bath.
6. Refit the double planet carrier (F).
7. Refit the circlip (E) on the shaft.

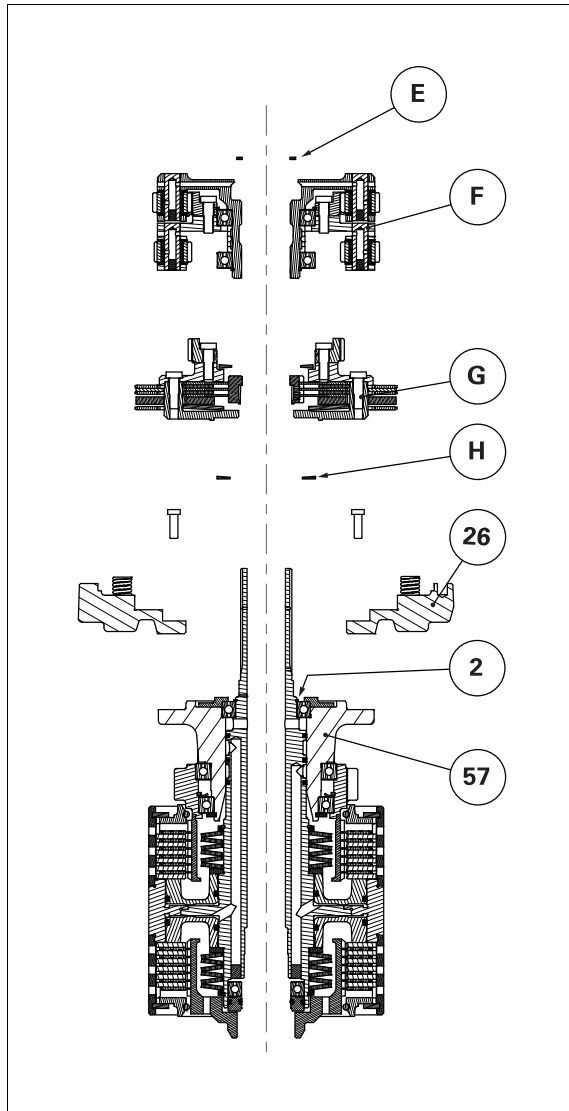


Fig. 14.

I019871

8. Align the lubrication hole (arrow) with a tooth on each planet gear.
9. Sling the Dynashift module as in step 4 ([see 5C27, §2.2, page 196](#)).
10. Check that the return springs (S) are present in the cover plate (26).



Fig. 15.

I019872

5C33 - GBA25/Powershift module - Layout of components

1	View of the Dyna-4 assembly . . . . .	.238
2	View of Dyna-6 assembly . . . . .	.240
3	Blown-up view Dyna-4 . . . . .	.242
4	Dyna-6 blown-up view . . . . .	.244



9. Using a sling, raise and separate the front section of the unit (D) (multiplier module, Dynashift module) [fig. 44](#).

NOTE: During this operation, the rear brake, reverse clutch and double epicyclic gear train stay on the Power Shuttle.

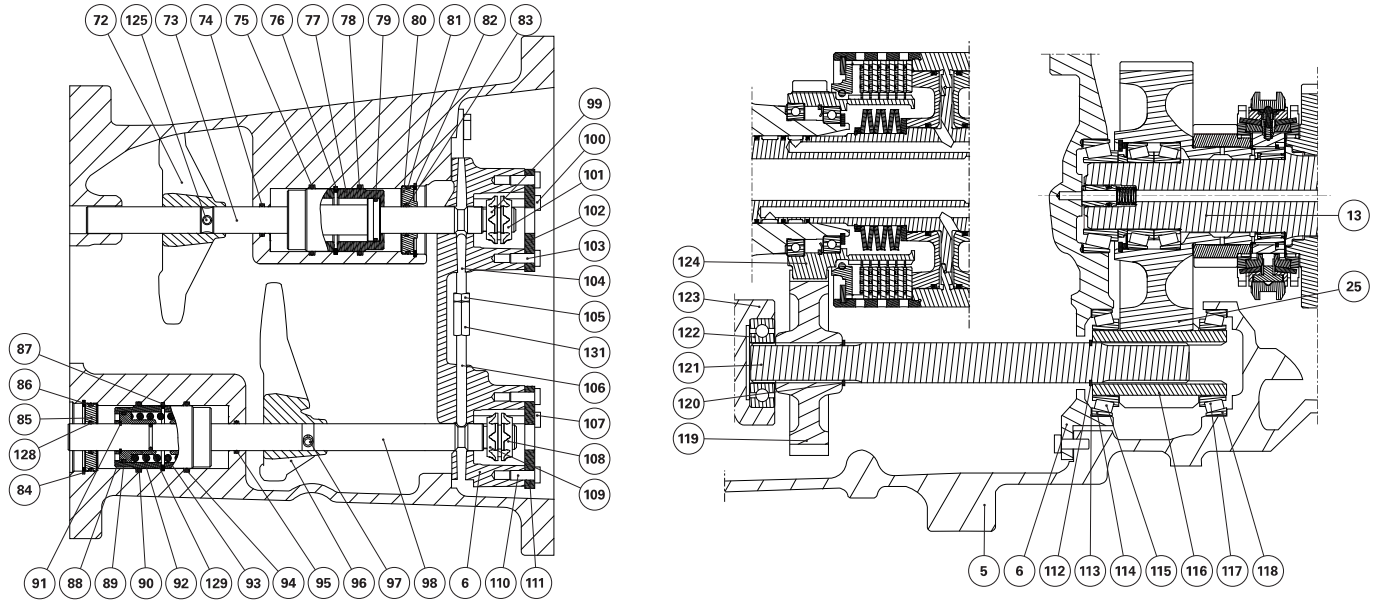


Fig. 2.

R019990



1 General

Service tools can be ordered from the AGCO spare parts department or from the Beauvais tooling division via AGCOnet with bulletin Trac 60/07.

2 Disassembling the input planet carrier

1. Position the input planet carrier (1) under a press and on top of a plate pierced with a hole to allow removal of the pins (12).
2. Drive out a pin using the press and a makeshift drift (\varnothing 12 mm (0.5 in)) in the direction of the arrows.

NOTE: The pin is force fitted into part E of the planet carrier.

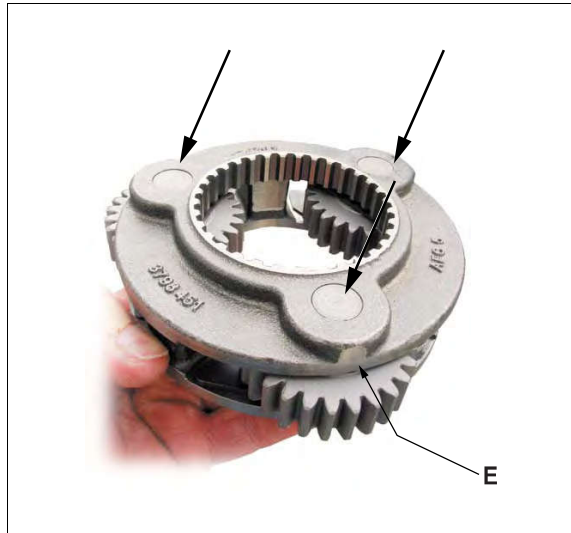


Fig. 3.

1020166

3. Remove the planet gear (9) and plates (13) from the planet carrier. Recover the needle rollers (10).
4. Repeat steps 2 and 3 to disassemble the other two planet gears.

3 Blown-up view of the differential

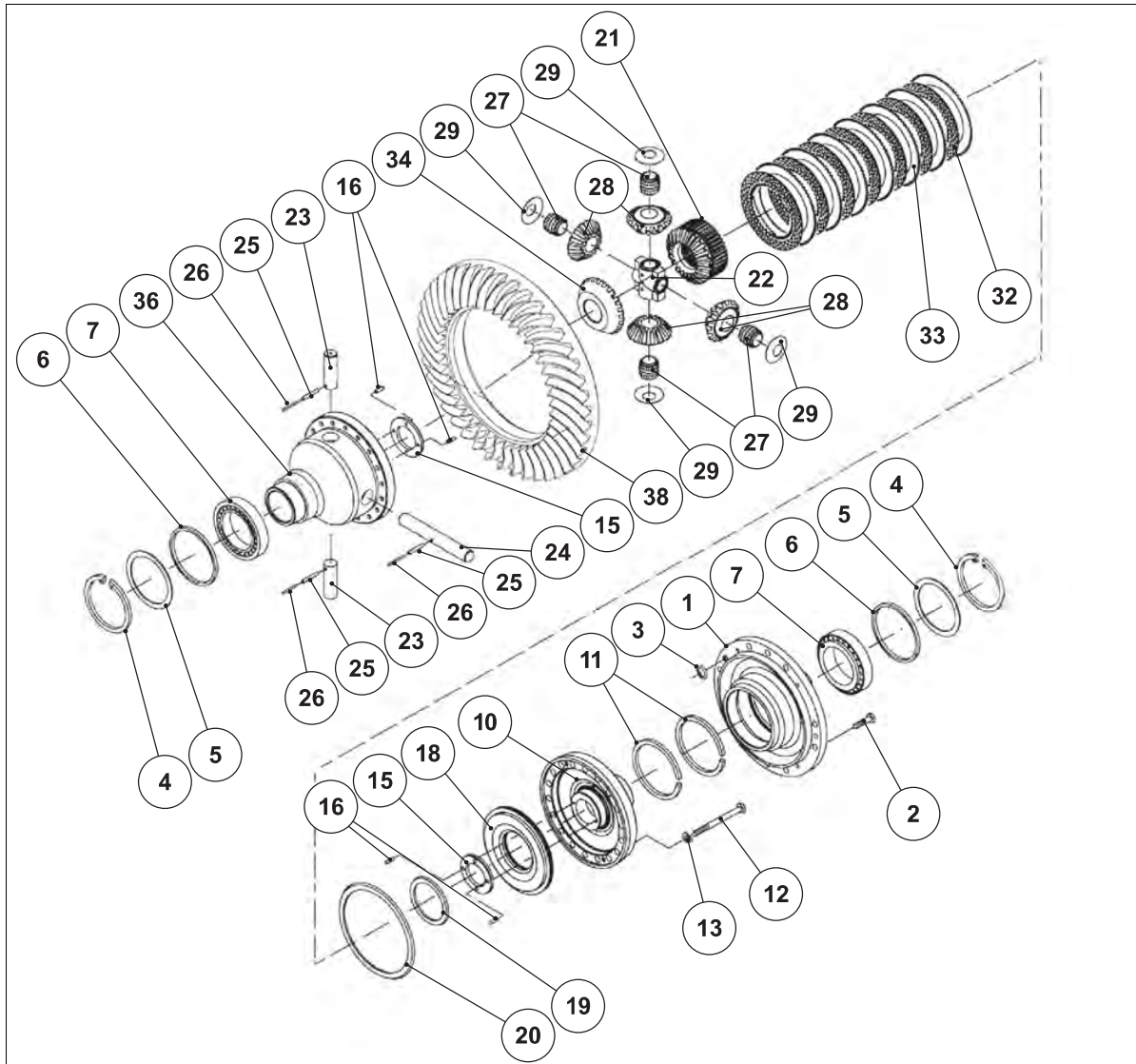


Fig. 3.

1016728

- | | |
|------------------------------------|-------------------------|
| (1) Bearing flange | (21) Sun gear |
| (2) M12x35 screw | (22) Spider |
| (3) "O" ring | (23) Pin |
| (4) Circlip | (24) Pin |
| (5) Set of washers | (25) Pin |
| (6) Ring | (26) Pin |
| (7) Ball bearing | (27) Needle roller cage |
| (10) Housing flange | (28) Planet gears |
| (11) Ring with rectangular section | (29) Thrust washer |
| (12) M12x90 screw | (32) Disc |
| (13) Lock washer | (33) Backing plates |
| (15) Ring | (34) Sun gear |
| (16) Dowel pin | (38) Ring gear |
| (18) Piston | |
| (19) Lip seal | |

9. Remove the sun gear.



Fig. 59.

I016668

10. Extract the tapered roller bearing.



Fig. 60.

I016669

11. Remove the ring.



Fig. 61.

I016670

11. Fit the seal ring (8) and fill the lips with grease.



Fig. 11.

I016504

12. Position the "O" ring (19) and grease it.

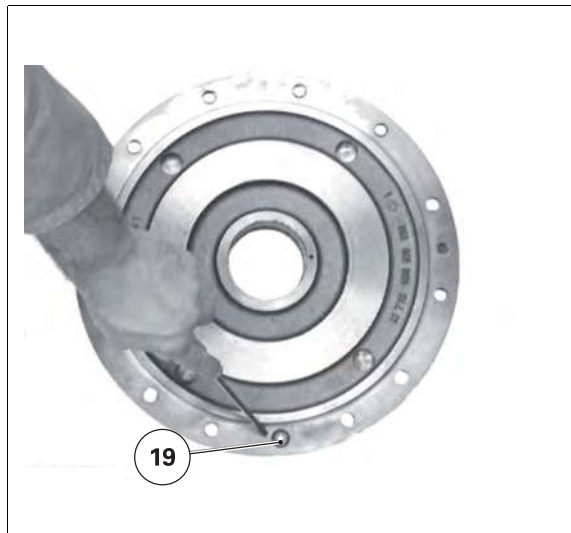


Fig. 12.

I016507

13. Clean the contact face and smear with sealing product.

14. Insert the brake plate (16).

NOTE: *Observe the position of the oil flow.*

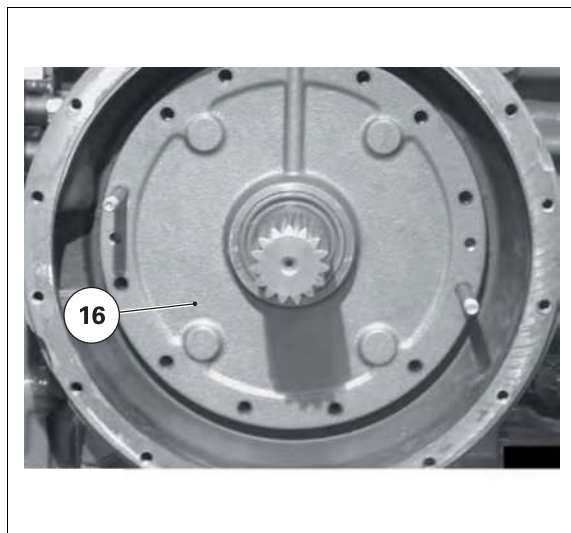


Fig. 13.

I016509

1 Testing the air system

These test values are used to check whether the pressure is correct. This also makes it possible to detect any leakage in the system.

- For 10 minutes after stopping the engine, the pneumatic pressure must not drop below 0.15 bar(2 psi).
- Check the operation of the automatic bleed.

System type	Brake pedals or hand brake not in use Pressure value	Brake pedals or hand brake in use Pressure value	Coupler colour
Standard	6.5 bar (94 psi) - 7.3 bar (106 psi)	6.5 bar (94 psi) - 7.3 bar (106 psi)	Red



Fig. 1.

I032792

System type	Brake pedals or hand brake not in use Pressure value	Brake pedals or hand brake in use Pressure value	Coupler colour
Standard	0 bar (0 psi)	6.5 bar (94 psi) - 7.3 bar (106 psi)	Yellow



Fig. 2.

I032793

Example of a coupling head for the pressure connector [fig. 3](#)



Fig. 3.

I018757

**6C23 - GPA20/Trumpet housings - Layout of components**

- | | |
|---|--|
| (1) Wheel stud | (18) Snap rings |
| (2) Axle shaft | (19) Planet gear pin |
| (3) Reinforced sealing ring (if fitted) | (20) Washer |
| (4) Seal ring | (21) Planet gear |
| (5) Bearing cone | (22) Spacer |
| (6) Bearing cup | (23) Needle rollers |
| (7) Metal ring | (24) Planet carrier |
| (8) Threaded plug | (25) Shim |
| (9) Trumpet housing | (26) Tripod washer |
| (10) Seal ring | (27) Lock washer |
| (11) Bearing cup | (28) M20 screw |
| (12) Bearing cone | (29) Sun gear |
| (13) Guide pin | (30) M16 screws |
| (14) Centring pin | (JT) Seal (between the trumpet and the centre housing) |
| (15) Ring gear | (F) Brake assembly |
| (16) M12 screw | |
| (17) Tab washer | |

4. Reduce the shim (20) thickness according to value $J + (0.02 \text{ to } 0.12)$ to obtain a preload $P1 = 0,02 \text{ mm (0.0008 in) to } 0,12 \text{ mm (0.005 in)}$.

NOTE: *If possible, shim to the maximum tolerance.*

5. Definitely fit the tripod washer (25).
6. Tighten the M20 screw (27) to a torque of 485 Nm (358 lbf ft). From the three possible lock washers, select the lock washer (26) that will be permanently fitted (see Reassembling the planet carrier).

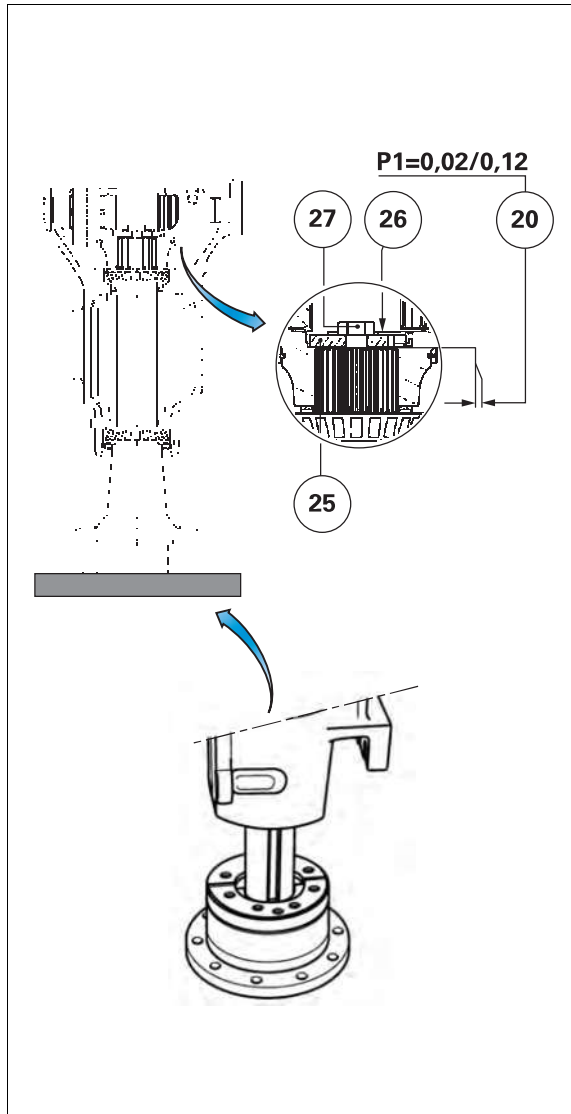


Fig. 37.

1023790

2. Pull very hard on the gear through the front of the centre housing while turning it alternately to the right and left in order to correctly seat the cones in the bearing cups.
3. With the assistance of an operator, set the dial gauge to zero.
4. Repeat step 2, this time pushing.
5. Depending on the measured clearance (J), select a definitive thickness (E) of shims in order to obtain the following preload:
 $P1 = 0,03 \text{ mm (0.001 in) to } 0,09 \text{ mm (0.004 in)}$
 Example of calculating shim thickness
 - With placement of a 1 mm (0.04 in) shim thickness. The measured clearance is 0,22 mm (0.009 in).
 - $E = (1-J)-P1$
 - $E = (1-0.22)-0.06$
 - $E = 0,72 \text{ mm (0.03 in)}$
 - 0,06 mm (0.002 in) corresponds to the desired clearance between 0,03 mm (0.001 in) and 0,09 mm (0.004 in)

NOTE: If possible, shim to the maximum tolerance.

6. Take out the two diametrically opposed screws (32) and replace them with two guide studs. Remove the other two screws and the thrust plate (35).
7. Place the shims selected during step 5 and refit the thrust plate.
8. Fit the screws (32) lightly smeared with Loctite 270 or equivalent and tighten to a torque of 90 Nm (66 lbf ft) - 120 Nm (89 lbf ft), having first removed the guide studs.



Fig. 25.

1030929

Shimming - 2nd method

The principle consists of removing or adding shims (36) to obtain a rotational torque of 0,50 Nm (0.4 lbf ft) to 2,5 Nm (2 lbf ft), measured using a dial-type torque wrench, with the gear turning at approximately 1 to 5 rpm.

If possible, shim to obtain the maximum rotational torque.

During the final reassembly phase, the screws (32) are also smeared with Loctite 270 or equivalent and tightened to a torque of 90 Nm (66 lbf ft) - 120 Nm (89 lbf ft).

Final steps

1. Fit the oil receiver (41) in the housing with its external diameter very lightly smeared with Loctite 648 or equivalent.

NOTE: The receiver must be inserted flush with face "F", with the notch facing upwards so as to not interrupt the hydraulic flow. Remove any traces of Loctite after assembly and then tighten and lock the nut (51) used to hold the pipe (47).

3 High-pressure braking

3.1 Layout of components and designation of hydraulic ports in the high-pressure braking unit



2. Follow steps [1](#) to [10](#) in reverse order to refit.
3. Bleed the brake system [see 1A16, §2.6, page 673](#)
4. Check that there are no leaks.

6C63 - GPA20/Hydraulic trailer braking - Layout of components

1	Open Centre . . . . .	.353
1.1	Identification of pipes, hoses and ports . . . . .	.353
1.2	Identification of channels . . . . .	.356
2	Load Sensing . . . . .	.359
2.1	Identification of the 110 l/min (29.1 gal/min (US)) Load Sensing ports . . . . .	.359

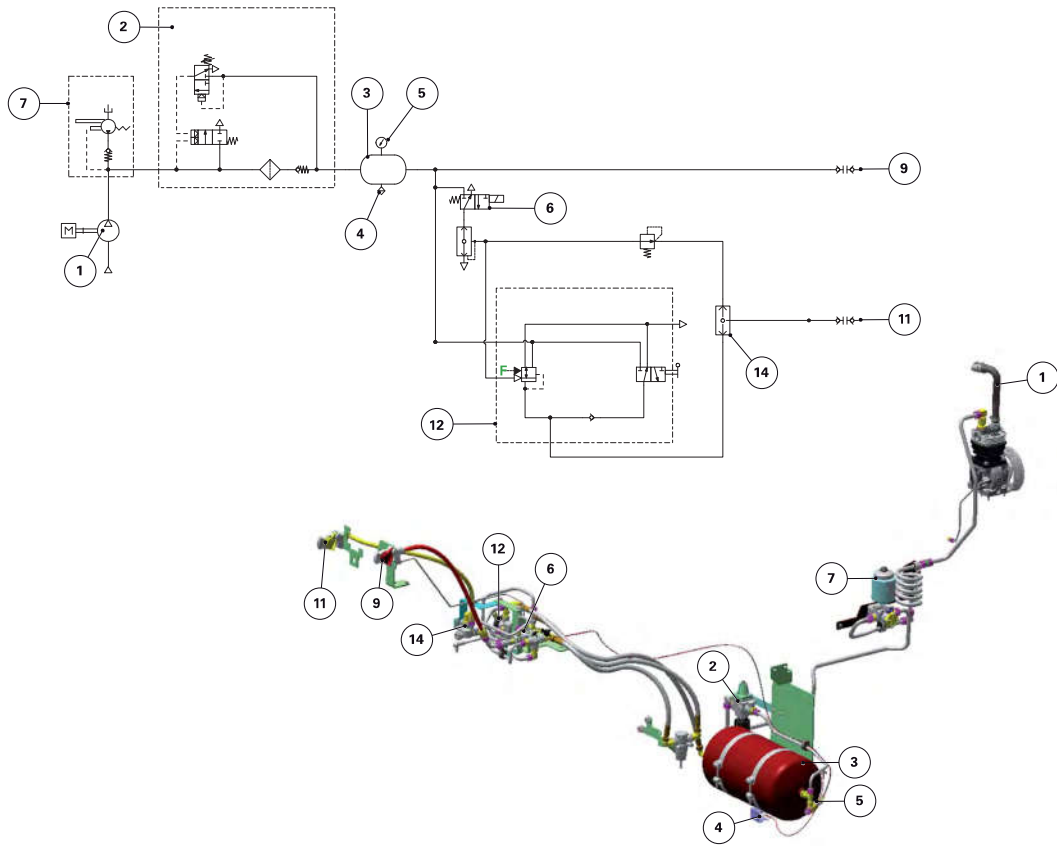


Fig. 1.

1034/10

6C83 - GPA20/Hitch/Linkage - Layout of components

1	View of the assembly	426
2	Blown-up view	429

6C97 - GPA20/Auto-hitch - Disassembly and reassembly

1	Refitting the auto-hitch	461
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2. Place the "O" ring (45) in the groove of the hydraulic port O of the rear differential lock.

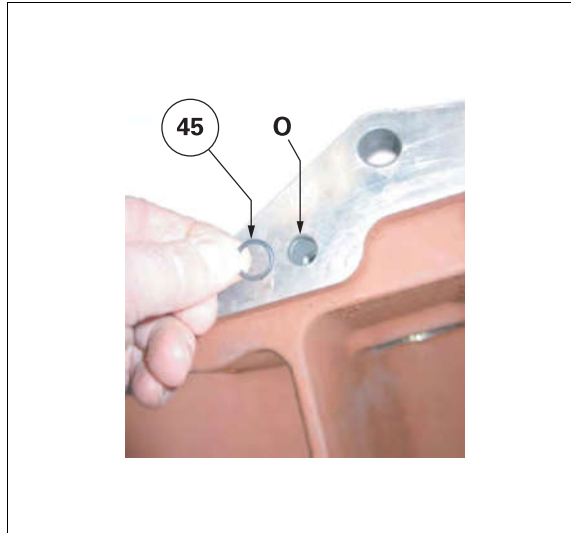


Fig. 11.

1024707

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8 Blown-up view of shaft II

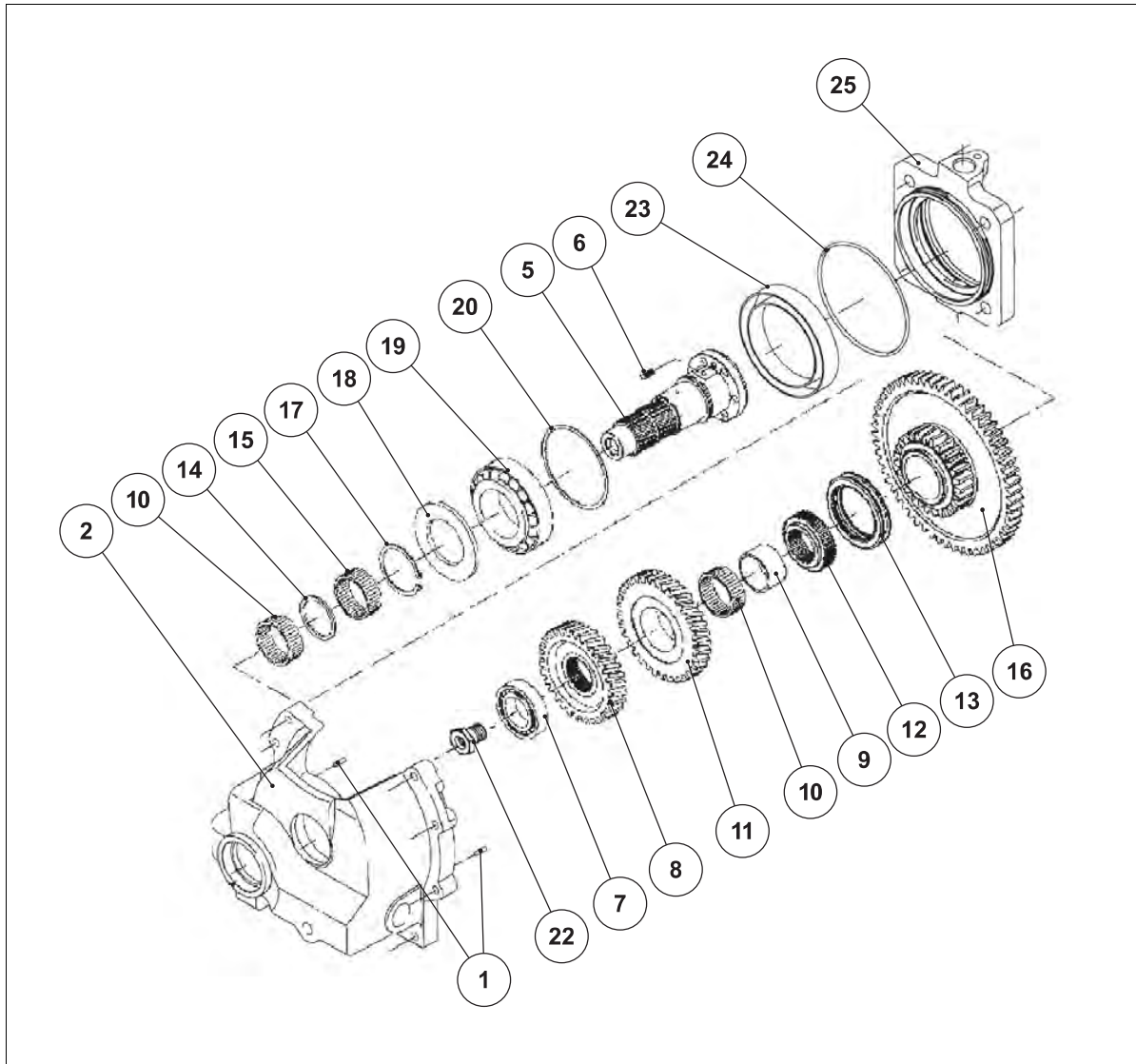


Fig. 9.

1017050

- | | |
|-------------------------|-------------------------|
| (1) Dowel pin | (15) Needle roller cage |
| (2) Actuator plate | (16) Planet gear |
| (5) Output shaft | (17) Circlip |
| (6) Grub screw | (18) Thrust washer |
| (7) Bearing | (19) Bearing |
| (8) Planet gear | (20) Set of washers |
| (9) Internal ring | (22) Socket |
| (10) Needle roller cage | (23) Gasket |
| (11) Planet gear | (24) "O" ring |
| (12) Guide sleeve | (25) Flange |
| (13) Engaging sleeve | |
| (14) Spacer | |

1. Heat the roller bearing (19) to a temperature of approximately 90 °C (194 °F), and fit it onto the shaft (5).



Fig. 77.

I017025

2. Fit the ring (18).
3. Fit the circlip (17).

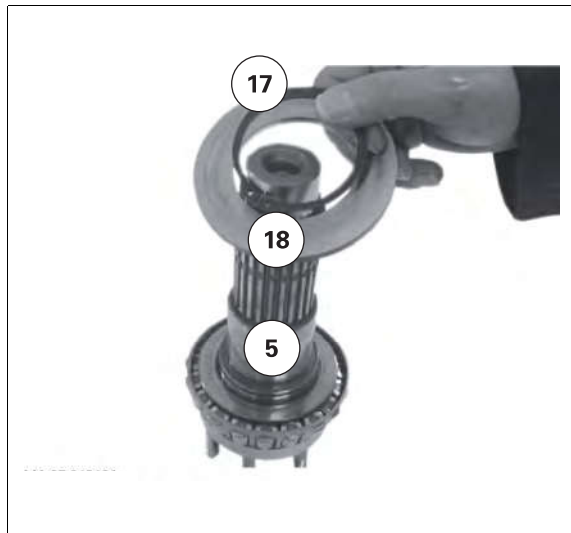


Fig. 78.

I017026

4. Degrease and fit the socket (22) smeared with Loctite X903.050.084 or equivalent in the shaft (5).
5. Tighten to a torque of 40 Nm (30 lbf ft).



Fig. 79.

I017027

8. Remove:
 - The nut (25) and the locking screw (24) of the fork (26)
 - The set screw (22)
9. Carefully take the pin (23) out through the rear of the double gear assembly in order to disengage the fork (26).
10. Remove the friction washers (16) (21) without letting them fall into the rear axle housing.
11. Remove the double gear assembly (18).

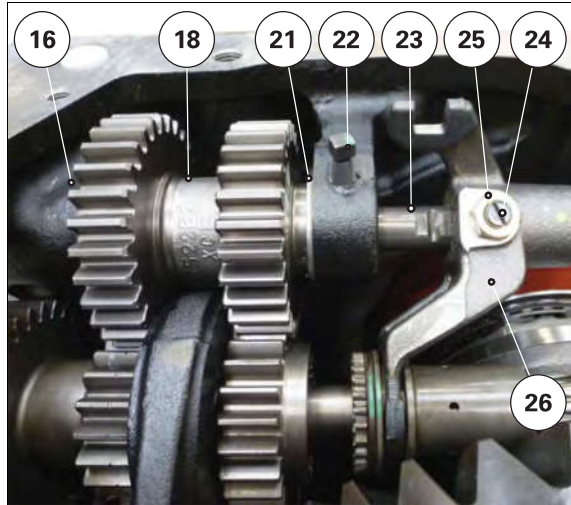


Fig. 9.

I042542

12. Remove:
 - The needle roller bearings (17) (20)
 - The spacer (19) of the double gear (18)

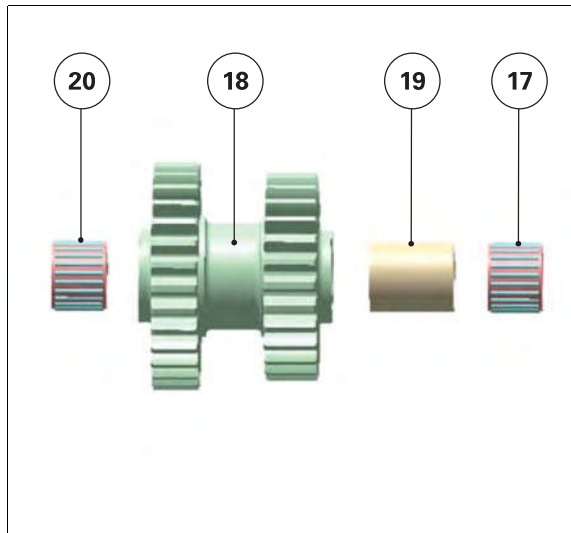


Fig. 10.

I042545

1 General

The driven gears (5) (6) are fitted on the PTO shaft located on the rear lower section of the axle housing. These gears are constantly meshed with the double driving gear driven by the upper shaftline whose drive is transmitted by the power take-off clutch.

The PTO shaft (10) at the front is fitted on a roller bearing (1) force-fitted in the axle housing and at the rear is fitted on a hub (9) rotating on a roller bearing (15).

The 540 rpm version has 6 splines, and the 1000 rpm version has 21 splines.

In the 540 rpm configuration, the shaft (10) is splined in rotation with the gear (5). The gear (6) and ring (4) assembly rotate idle on the shaft (10).

In the 1000 rpm configuration, the shaft is splined to the gear (6). The gear (5) and ring (3) assembly rotate idle on the shaft (10).

The snap ring (20) holds the shaft in place.

Sealing is provided by the ring (14) and the "O" rings (11) (19).

7C67 - GPA20/Shiftable PTO shaft - Disassembly and reassembly

1	Removing/refitting the rear bearing	167
2	Removing/refitting the rear bearing	169
3	Removing/refitting the 540 and 1000 rpm gears and the front bearing	170
4	Shaft with reinforced sealing	172

1 General

Service tools can be ordered from the AGCO spare parts department or from the Beauvais tooling division via AGCONet with bulletin Trac 60/07.

7E13 - Zuidberg front power take-off - Layout of components

1	Plans.....	.239
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1 General

1.1 General

The tractors are fitted with new reinforced front axles of the suspended or non-suspended type. The bevel gear assembly is adapted to the transmission type. The suspension system is electronically controlled by a controller.

8B12 - HA130/4WD clutch - Electrical and hydraulics diagrams

1	See chapter 1	43
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10. Disassemble the shim (16) and the spring washers (15).

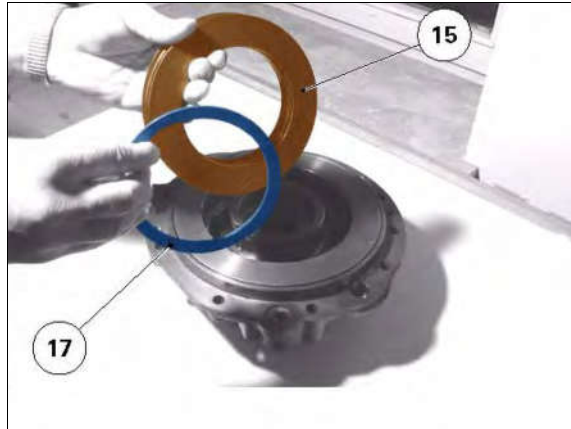


Fig. 7.

1032227

11. Disassemble the piston (11) and the valve piston (14). The valve piston allows the discs (21) to cool.

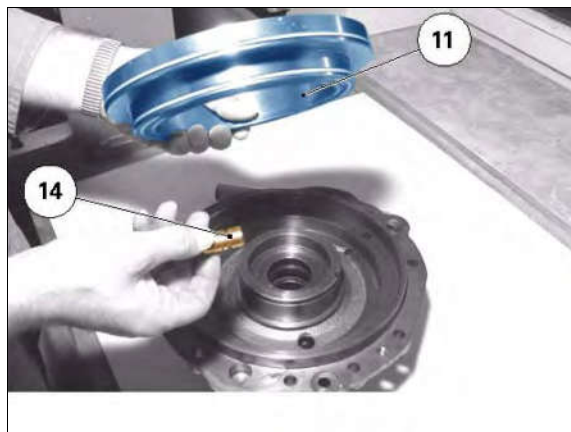


Fig. 8.

1032228

12. Disassemble the adjusting washers (41).

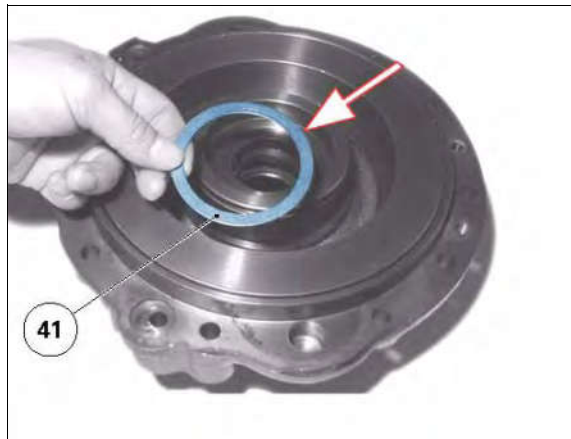


Fig. 9.

1032229

1 General

The front axle clutch assembly is fitted in the lower section of the rear axle. A cover fitted underneath the centre housing provides access to the 4WD clutch.

NOTE: It is necessary to disconnect the tractor between the gearbox and the rear axle to remove the 4WD clutch. Disconnecting the tractor provides access to the circlip (8) and the shaft (34).

The 4WD clutch mechanism consists of:

- A shaft (34) rotating on two tapered roller bearings (12), (13) and (16), (17) fitted in the centre housing bore
- A hydraulic clutch assembly (7) attached to the rotating shaft (34)
- A bell gear (6), which drives the clutch discs (28) This gear is centred on the shaft (34) by a friction ring (15).

Construction

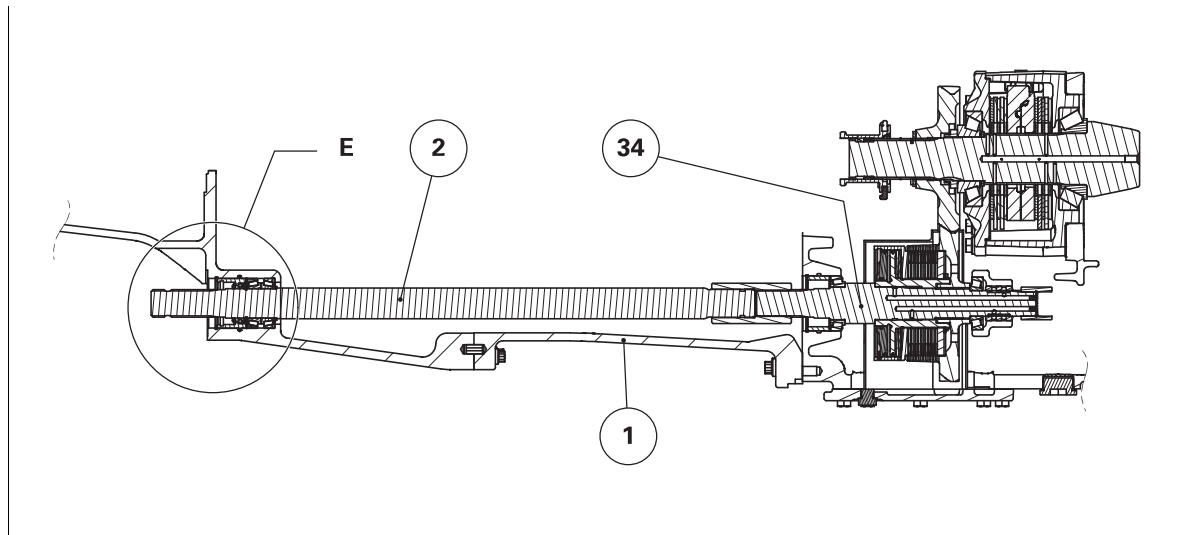


Fig. 1.

I033157

The helical bell gear (6) is constantly meshed with the driving gear (5), which is splined to the pinion (2). The clutch assembly (7) is shimmed in clutch disengaged position (compressed Belleville washers) to obtain a clearance J1 of 0,9 mm (0.04 in) to 1,1 mm (0.04 in) between the circlip (32) and the shim(s) (31). The clutch assembly is in 2WD mode when it is hydraulically engaged (21 bar (305 psi)) via its solenoid valve: The discs (28) and intermediate plates (29) are therefore released by value J1 (0,9 mm (0.04 in) to 1,1 mm (0.04 in)). The clutch assembly is in 4WD mode when the hydraulic pressure (21 bar (305 psi)) is cut and when the Belleville washers are released at the limit of J1 (0,9 mm (0.04 in) to 1,1 mm (0.04 in)), locking the rotation of the discs (28) and the intermediate plates (29) on the shaft (34). The shaft (34) is shimmed to obtain a clearance of 0 to 0,10 mm (0.004 in) using shim(s) (14) positioned between the seal holder (10) and the cup (12). The shaft (34) is sealed by a lip seal (11) and by a dust seal (35). The housing is sealed by an "O" ring (9).

NOTE: The front end of the shaft (34) opens into the gearbox housing (1). As a result, the shaft is not sealed between the centre housing and the gearbox. Sealing E of the 4WD line is provided on the front end of the connecting shaft (2).

Operation

Clutch disengaged position

The 4WD solenoid valve fitted on the right-hand hydraulic cover is controlled by the tractor's electronic system. The valve supplies 21 bar (305 psi) of pressure to the interior of the shaft (34) via channels A or A1. The piston (22) moves on the hub (20) and pulls the bell (26), which compresses the Belleville washers (27) and releases the discs (28). The bell gear (6) then turns idle on the shaft (34).

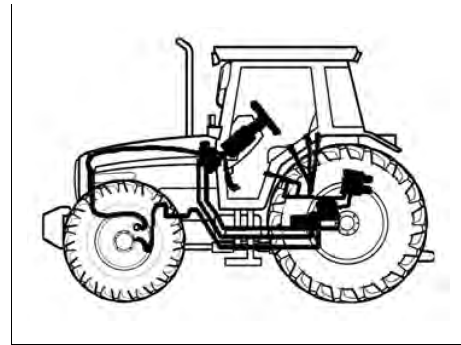
Clutch engaged position

When the pressure is cut, the Belleville washers (27) decompress and push back the bell (26) to compress the discs (28) and the intermediate plates (29). The bell gear (6) then becomes attached to the bell (26), allowing the shaft (34) to rotate.

Oil from the lubrication system arrives via axial gallery B and lubricates the discs and intermediate plates.

8E17 - GPA20/Steering unit/Closed Centre - Disassembly and reassembly

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2	Steering column	155



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9A17 - HA130/LS hydraulic system - Disassembly and reassembly

1 CEJN WEO quick connectors39

9A28 - HA130/LS hydraulic system/Hydraulic pumps - Service tools

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9A41 - HA130/LS hydraulic system/Rear linkage - Error codes

1 See chapter 1111

9A54 - HA130/LS hydraulic system/Front linkage - Tests and diagnostics

1 Chapter intentionally left blank147



5 Rear axle lubrication system

Rear axle GPA20

1 General

The right-hand cover is fitted on the centre housing. The LS right-hand cover supports numerous components. It incorporates the various channels for the charge system, the lubrication system and the low flow rate and high flow rate systems of the 110 l/min (29.1 gal/min (US)) load sensing circuit.

On its internal face, the cover contains:

- The variable displacement pump (41) with a capacity of 45 cm³/revolution
- Its drive gear (39) fitted to the variable displacement pump
- The safety valve (45) of the low pressure system set to 24 bar (348 psi)
- The safety valve (44) of the charge system and lubrication system set to 5 bar (73 psi). This safety valve is different depending on the load sensing hydraulic equipment fitted to the tractor (110 l/min (29.1 gal/min (US)) or 150 l/min (39.6 gal/min (US))).

On its external face, the cover contains:

- The 15 µ main filter (27)
 - One or two priority blocks serving different functions of the low and high flow rate systems
- NOTE:** For the 40 km/h (25 mile/h) version with trailer braking, the tractors are fitted with a hydraulic unit with two priority blocks.

NOTE: For the 50 km/h (31 mile/h) version with or without trailer braking, the tractors are always fitted with a hydraulic unit with two priority blocks. These priority blocks can be distinguished from the priority blocks on the 40 km/h (25 mile/h) version with trailer braking by a higher number of hydraulic ports. These additional hydraulic ports are used by the high pressure braking unit.

- The pressure relief valve (2)
- The variable displacement pump hydraulic regulator (12)
- The three or four flanged solenoid valves (2 or 4WD) that control the low pressure functions (21 bar (305 psi))
- The diagnostics connectors for high and low pressure (11) (20), the lubrication charge (29) and LS (9). Depending on the tractor hydraulic update level, the low pressure diagnostics connector (20) might be located at the top right on the LS right-hand cover plate and it might have a hose to provide low pressure supply (LP - 21 bar (305 psi)) for the electrohydraulic control unit(s) of the rear auxiliary spool valves (if fitted).
- The low pressure (14) and charge (42) switches as well as the main filter blockage indicator (34).

1 Removing and refitting the hydraulic cover plate

Removal

1. Immobilise the tractor. Chock the left rear wheel.
2. If the tractor is not fitted with a ParkLock device, engage the hand brake.
3. Chock between the frame and the front axle (optional).
4. Partially drain the centre housing.
5. Remove the rear right-hand wheel. Place a safety stand under the trumpet housing.
6. Mark and disconnect the pipes or hoses, the solenoid valve harnesses (depending on version), the switches and the engine speed sensor (if fitted) connected to the hydraulic cover plate (8).
7. Remove the 60 μ filter element (49).
8. Unscrew:
 - The screws (32). Remove the main filter assembly (27)
 - The screws (4). Remove the single priority block or the hydraulic unit with two priority blocks (depending on version).

NOTE: In order to avoid draining the trailer brake system on tractors fitted with a two-priority block hydraulic unit, it is recommended to remove the complete unit from the hydraulic cover plate without disconnecting the control hose (22) from the brake master cylinders (40 km/h (25 mile/h) tractors) or from the block/valve assembly (tractors fitted with high-pressure braking).

9. Unscrew the screws (1). Detach and remove the hydraulic cover plate.
10. Remove the seal. Discard this seal.



2 Removing and refitting the charge pump

Preliminary step

1. Remove the cover plate ([see 9B37, §1, page 285](#)).

1 Mechanical auxiliary spool valves

1.1 General

The proportional auxiliary spool valves, of the Bosch/Rexroth SB23 LS type, are fitted to the high flow rate high pressure system. They are fed by the oil coming from the priority block(s).

When no functions are activated, the entire flow rate is directed towards the spool valves. If certain priority functions are being supplied, the remaining flow is then available for the auxiliary spool valves.

Each spool valve has a flow regulating system controlled by a black, red, green or yellow button located directly on the each spool valve regulating valve stem.

The main spool of the valve is controlled by a cable linked to a lever in the cab. The spool directs oil towards either outlet port. Each outlet port is linked to the LS pilot line of the variable displacement pump regulating valve via the priority block(s).

The auxiliary spool valves are made up of elements themselves comprising spools and valves.

Some elements cannot be identified as spare parts.

Different spool valve block component types

A spool valve block can consist of three, four or five of the following components. It can combine components of similar or different types.

Component b

4-position component with flow rate regulation, double acting and automatic return to neutral.

Component c

4-position component with flow rate regulation, double acting, zero leak and automatic return to neutral.

Couplers

Quick couplings are located on the spool valve support. They are sealed by covers of different colours (red, green and black) corresponding respectively to hydraulic ports A and B of auxiliary spool valves.

The dirty oil coming from the separation of hydraulic couplers flows into a transparent flexible tank that is fixed at the back of the left trumpet housing.

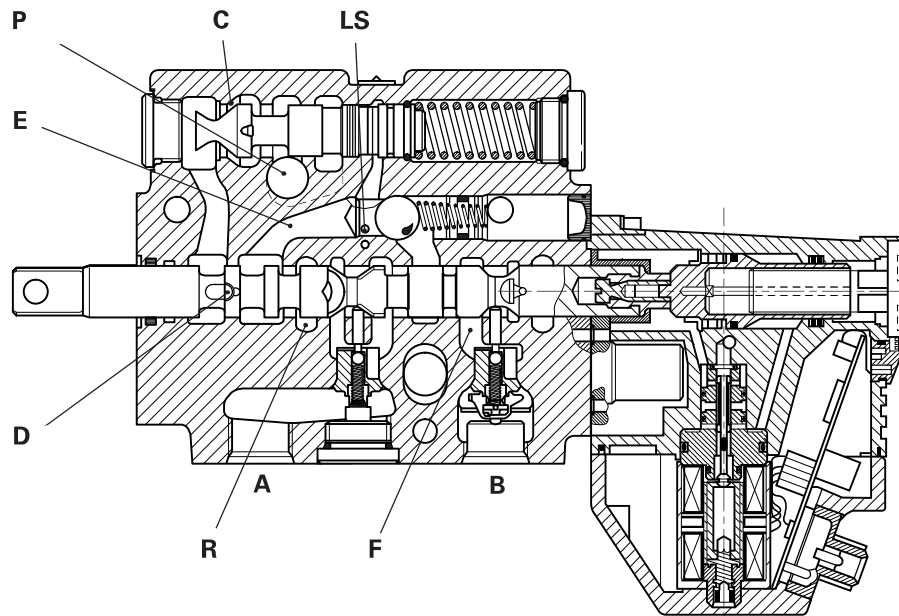


Fig. 16.

I031445

- | | |
|--|---|
| <ul style="list-style-type: none"> A Coupler outlet B Coupler outlet C Restrictor D Grooves E Channel F Chamber P High-pressure supply from the variable displacement pump via the priority block(s) (depending on version) | <ul style="list-style-type: none"> R Return from auxiliary spool valves (beneath the oil level) LS LS signal to the variable displacement pump regulator via the priority block(s) (depending on model) |
|--|---|

3. **IMPORTANT:** The adhesive discs (p') absorb the expansion effect due to the operating temperature of the auxiliary spool valves. They help prevent seizure of the main spools.

If necessary, replace the adhesive discs (p') if they are damaged. They must be adhered close to the tapped holes (T) on the left-hand face of the central oil manifold (14) at the dimensions shown in fig. 32.

NOTE: A steel template can be improvised to help position them correctly.

4. Fit the new rings and seals, placing them in the recessed ports (LS), (P), (p1), (R) and (r1) of the central oil manifold (14).
5. If necessary:
- Refit and screw the restrictor (R) into the (LS) port of the central oil manifold, first checking that it is not obstructed. Torque tighten the restrictor (R) to 15 Nm (11 lbf ft) - 20 Nm (15 lbf ft)
 - Screw the new studs (G) onto the central oil manifold (14)

NOTE: The studs are of different lengths depending on the option: Two, three or four auxiliary spool valves.

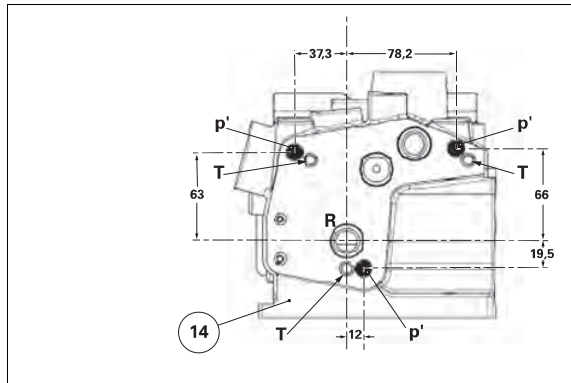
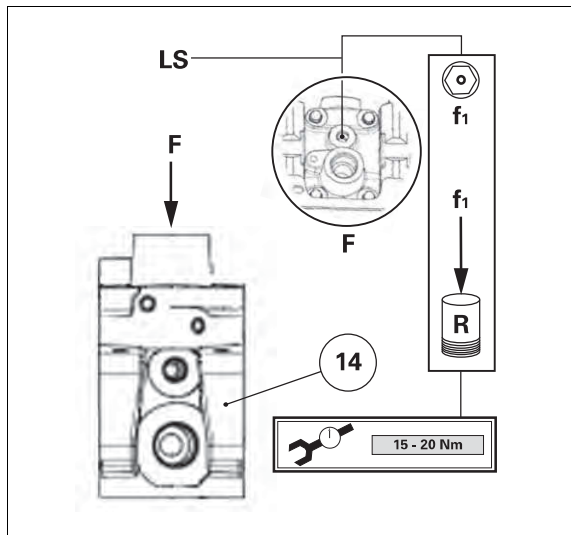


Fig. 32.

I031476



I031477

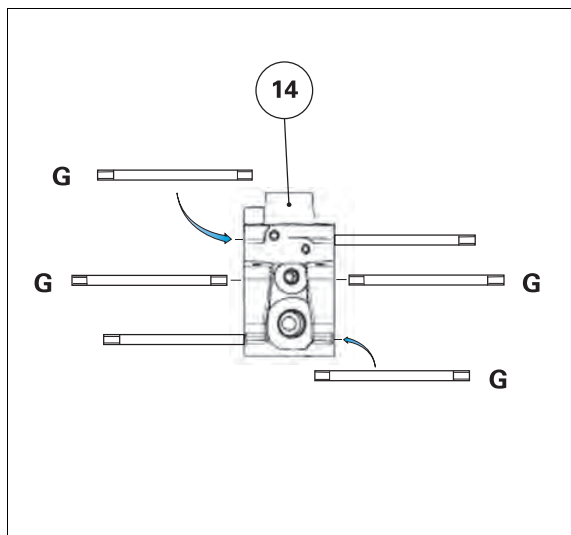


Fig. 33.

I031478

6. Refit: (see 9B57, §3.2, page 385):
- The SB23LS auxiliary spool valves located on the left-hand side of the central oil manifold
 - The SB23LS auxiliary spool valves located on the right-hand side of the central oil manifold.
7. Refit the complete SB23LS auxiliary spool valve unit to the tractor (see 9B57, §3.1, page 381).

9C23 - Open Centre/Right-hand cover plate - Layout of components

1	View of external assembly . . . . .	.436
2	View of internal assembly. . . . .	.439
3	Blown-up view . . . . .	.442

1 General

The Open Centre hydraulic system comprises two separate systems.

These two systems are supplied by a two-stage gear pump (1) which is fitted on the internal face of the right-hand hydraulic cover plate. The pump sucks transmission oil from the common tank formed by the centre housing and the gearbox through a 150 micron filter (1) (*fig. 2*), also fitted on the cover plate.

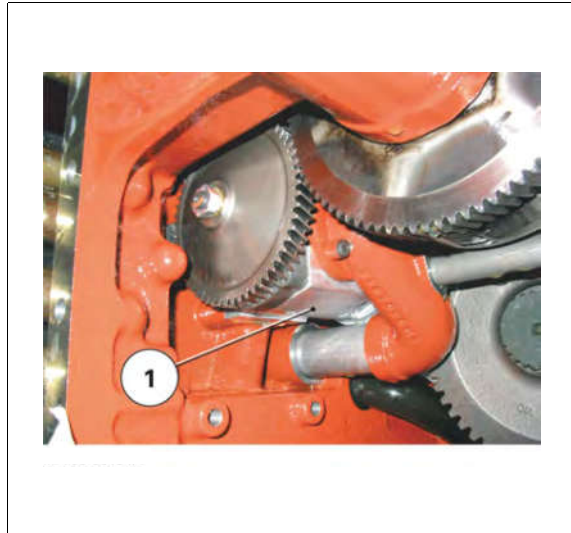


Fig. 1.

1029166

One or two 15 micron main filter(s) (39) (depending on option) and a clogging indicator (40) are fitted to the low flow rate system upstream of the Orbitrol steering spool valve. The hydraulic pump is driven by the ring gear of the PTO clutch unit (*fig. 1*).

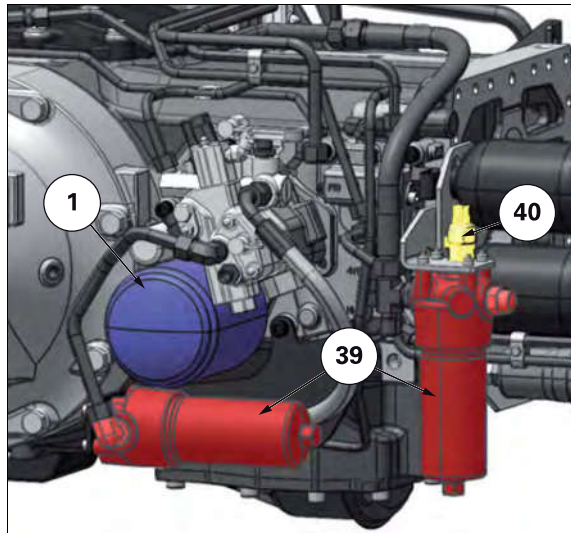


Fig. 2.

1029167

9D23 - 100 l/min Open Centre/Right-hand cover plate - Layout of components

1	View of external assembly . . . . .	.508
2	View of internal assembly. . . . .	.511
3	Blown-up view . . . . .	.514

1 General

The BOSCH ELC (EHR5) linkage spool valve is fitted to tractors equipped with an Open Centre hydraulic system.

It is fitted to the left-hand hydraulic cover plate of the centre housing.

It regulates the flow rate of oil to and from the lift rams, according to the signals that it receives from the electronic system's controller.

It comprises a series of spools and valves, most of which cannot be repaired as separate parts.



Fig. 1.

1035533

Security valve

Location: The security valve (5) is located at the front base of the left-hand hydraulic cover plate.

Function: It directs oil from the rams to the return in case of over-pressure in the system.

Example: Hitch bounces when transporting an implement.

Specifications: The security valve is set to 200 bar (2901 psi) to 210 bar (3046 psi).

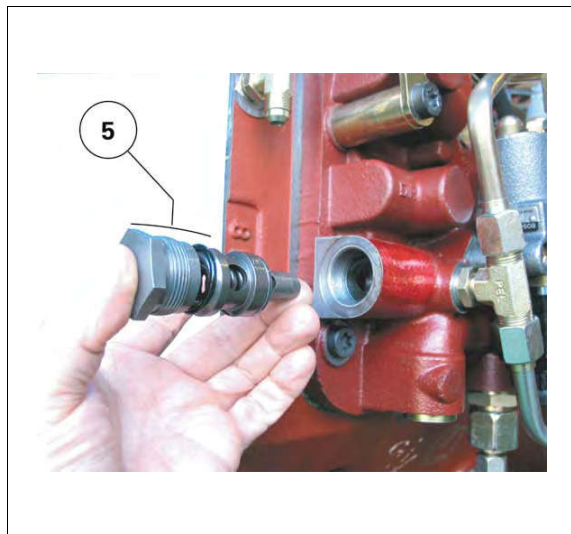


Fig. 2.

1030772

**9E20 - Open Centre/Auxiliary spool valves - General**

(1)	Inlet unit with flow regulator	(N)	Oil connection to linkage valve
(3)	Excess flow rate pipe	(P)	Pressure (HP)
(6)	Spool valves (all versions)	(QX)	Outlet port for excess flow rate
(7)	Intermediate block (excess flow rate)	(R)	Return
(9)	Intermediate block	(X)	Regulated flow to 1 st spool valve
(11)	End plate (continuity to linkage)	(Vr)	Outlet port to linkage valve
(A-B)	Outlets or returns going to or coming from hydraulic slave device		

1 Removing/refitting and disassembling/reassembling the 21 bar (305 psi) valve

Removal

NOTE: It is not necessary to remove the left-hand hydraulic cover plate to carry out work on the valve.

1. Remove any parts around the valve that may obstruct work.
2. Remove and separate the valve (2) from the left-hand hydraulic cover plate.

Refitting

1. Check the condition of the "O" ring (10) and replace it if necessary.
2. Screw the valve back onto the cover plate and tighten it to a torque of 40 Nm (30 lbf ft) - 55 Nm (41 lbf ft).

Disassembly

NOTE: The valve comprises several hydraulic parts (spool, springs and ball) which cannot be replaced separately.

1. Remove the "O" ring (10).
2. Tighten the hexagonal head of the valve in a vice fitted with protective jaws.
3. Gradually unscrew the plug (12) and discard the "O" ring (11).
4. Recover:
 - The spring (9)
 - The shim(s) (8)
5. Gradually unscrew the plug (4) and discard the "O" ring (3).
6. Recover:
 - The spring (5)
 - The ball (6)
7. Remove the spool (7) by carefully tapping the sleeve (13) against a wooden block.

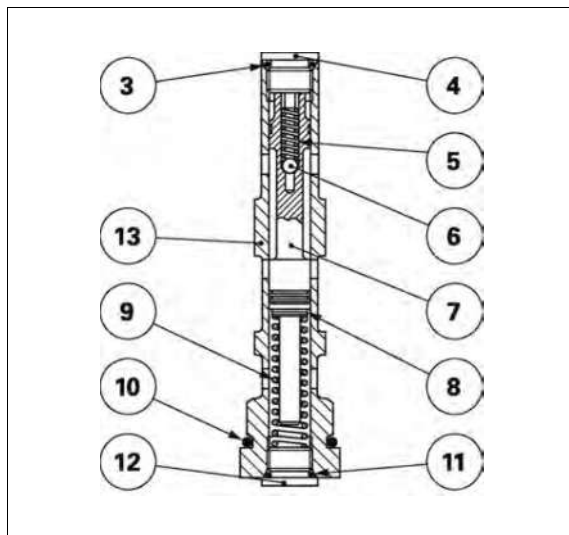


Fig. 1.

1031363

Reassembly

NOTE: The hydraulic parts of the valve must be reassembled on a clean work surface clear of filings and dirt.

1. Check:
 - The condition of the springs and "O" rings
 - That there are no scratches or seizure on the functional parts of the valve
 - The sliding of the spool in its sleeve
 - the cleanliness of the ports.

Conclusion

If the valve is defective, replace it. If not, reassemble it by carrying out the disassembly operations in reverse order.

10D14 - Starter - Tests and diagnostics

1	Starter diagnostics	37
---	---------------------------	----

2.2 List of auxiliary hydraulic oil temperature sensors

see 11A10, §2.1, page 16

4. Check the continuity of the solenoid valve coil.

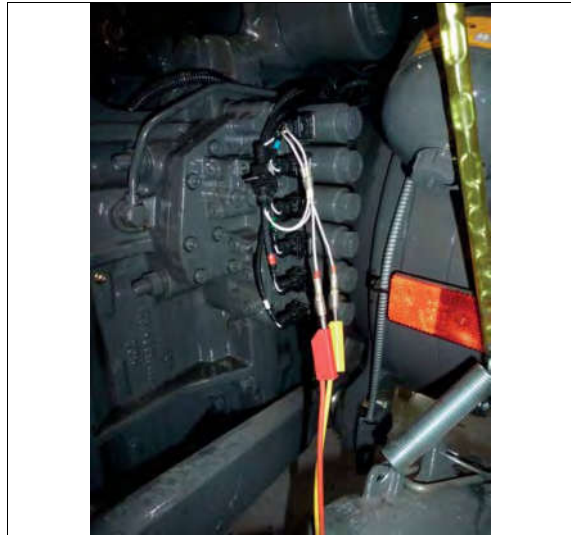


Fig. 48.

I035854

Check	Wire	Specified value:	Condition
Signal	1	7.5 Ohms	Ignition key in the stop position
Earth	2		

17 PTO shaft speed sensors

17.1 Lists of PTO shaft speed sensors

see 11A10, §17.2, page 92

27.2 X28 - Rear linkage lowering solenoid valve

Location

On the rear axle

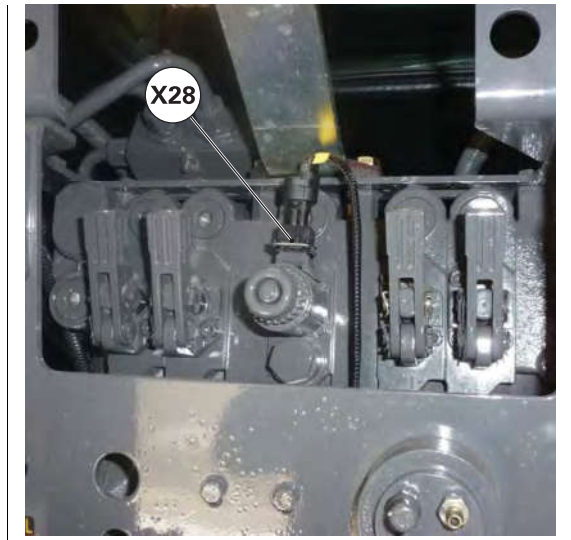


Fig. 130.

1039398

Function

1. Activating the lowering of the rear linkage

Type

Proportional solenoid valve

Illustration and pins of the component

Description of the pins

Pin	Description
1	Supply signal
2	Earth

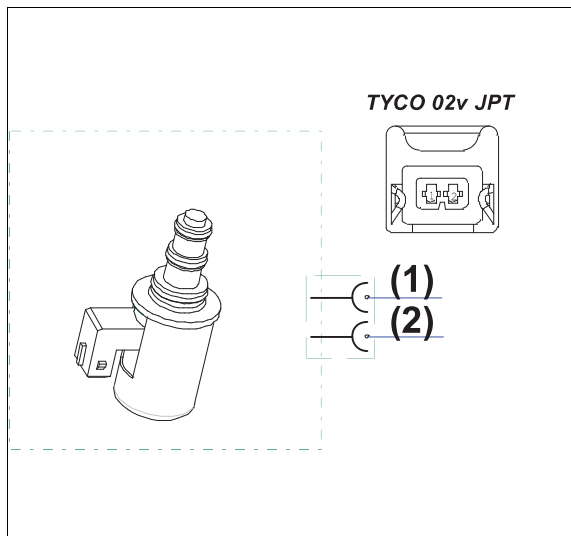


Fig. 131.

1034087

Description of the pins

Pin	Description
1	Angular sensor power supply
2	Angular sensor signal
3	Angular sensor earth
4	Proportional solenoid valve earth
5	Proportional solenoid valve signal
6	Not used

Principles of operation

Signals: Angular sensor

- (1) Sensor angle in degrees
- (2) Voltage in volts

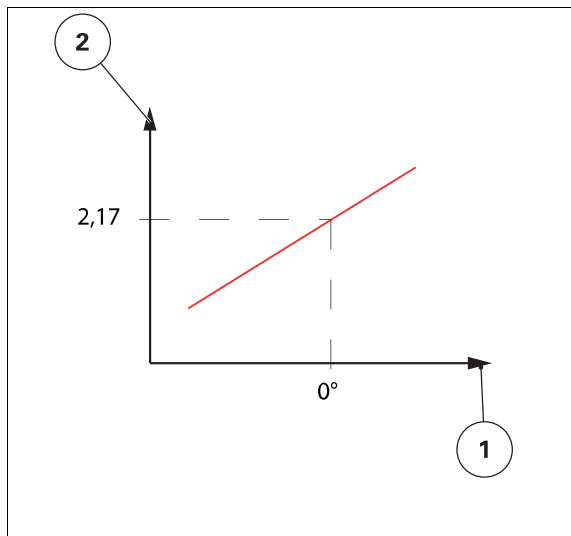


Fig. 175.

I031883

Signals: proportional solenoid valve

- Resistance: 5 Ohms
- Solenoid valve OFF: 0 V
- Solenoid valve ON: 12 V

Tests

1. Remove the rubber guard (1).

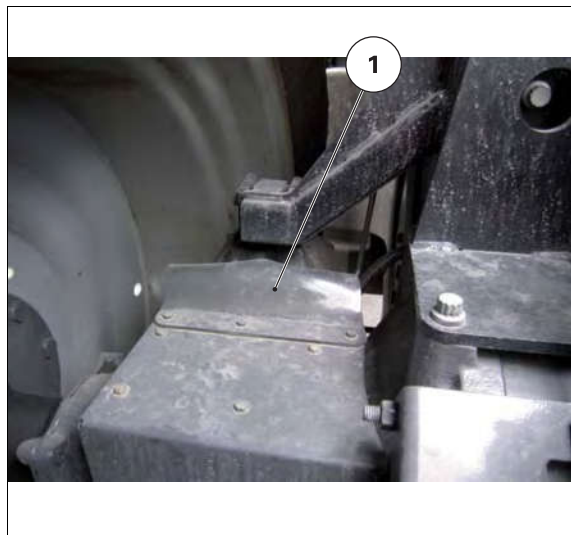


Fig. 176.

I031891

Tests

1. Remove the steering console trim.



Fig. 205.

I031507

2. Disconnect connector X68.



X68



Fig. 206.

I031509

59.2 X104 - Autotronic 5 TECU

Location

Bottom right-hand side of operator's seat in cab



Fig. 237.

1033971

Function

Controlling the armrest controls

Fuses

Fusibles

73.2 X124 - Pedal/Lever mode switch

Location

On the multifunction armrest at the right-hand side of the cab

Function

Changing from lever mode to pedal mode (and vice versa)

Type

2-position pulse switch: ON/OFF

Diagram

Description of the pins

- 1 Signal (armrest Autotronic 5)
- 2 Earth
- 3

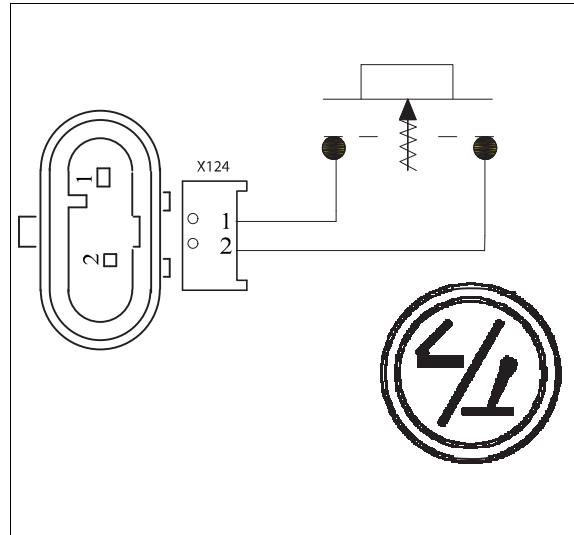


Fig. 266.

1009717

Principles of operation

The switch is closed between 1 and 2 when pressed down.

The switch transmits information to the armrest Autotronic 5.



89 Start switches

89.1 List of start switches

see 11A10, §89.2, page 308

101.3 X177 - Linkage controller without multifunction armrest

Location

(1) Linkage controller

Bottom right-hand side of operator's seat in cab

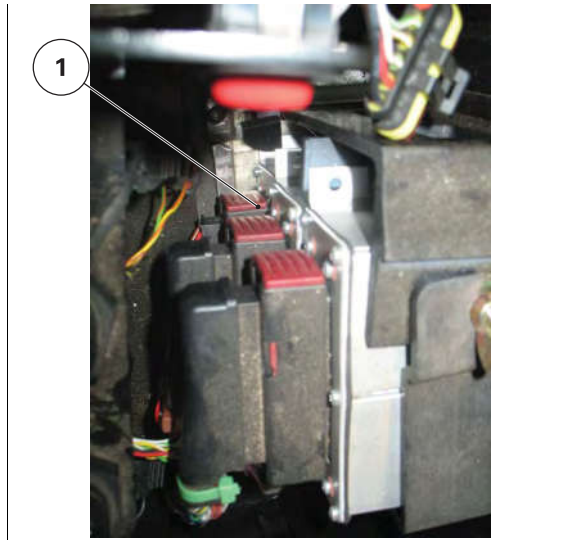


Fig. 325.

1033973

Function

Controlling the rear linkage

Fuses

Fusibles

Diagram

For Dyna-6 transmission

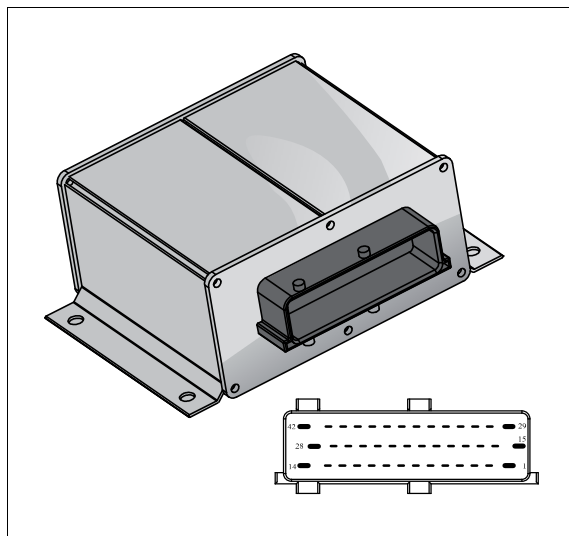


Fig. 326.

1010177

Pin	Description	Type of signal
1	Controller power supply Ignition On	
2	10-V power supply (sensors and potentiometers)	
3	X27 - Rear linkage lifting solenoid valve	Resistance
4	X28 - Rear linkage lowering solenoid valve	Resistance
5	X28 - Rear linkage lowering solenoid valve	4 A PWM output
6	X27 - Rear linkage lifting solenoid valve	4 A PWM output
9	+12 V battery supply	
10	X145 - PTO/linkage console diagnostic LED	2 A output

117.2 X215 - Trailer connector (right-hand side light and number plate lights) ; X220 - Trailer connector (left-hand side light) ; X221 - Trailer connector (right-hand indicator) ; X222 - Trailer connector (left-hand indicator) ; X223 - Trailer connector (brake lights) ; X224 - Trailer connector (earth) ; X225 - Trailer connector (reversing light) ----- SAE -----

Location

At the rear of the tractor

Function

Illuminating the trailer lights

Type

Diagram

Description of the pins

- 1 Earth (X224)
- 2 Brake lights (X223)
- 3 Left-hand direction indicator (X222)
- 4 Left-hand side light (X220)
- 5 Right-hand direction indicator (X221)
- 6 Right-hand side light and number plate lights (X215)
- 7 Reversing light (X225)

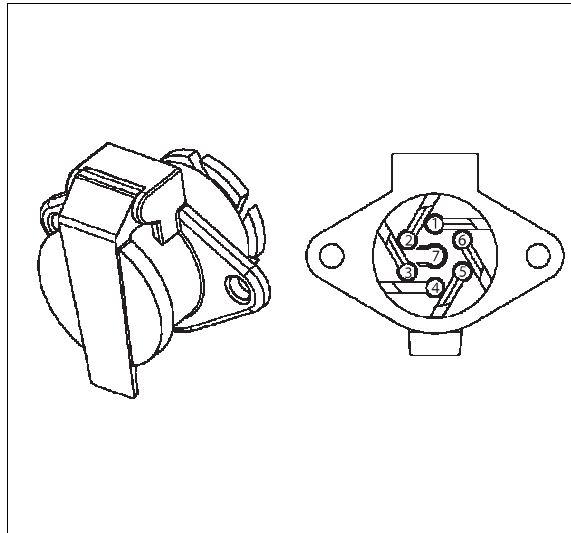


Fig. 346.

1009890

Principles of operation

130.2 X257 - Side light and indicator on hand rail (right and left)

Location

On the right-hand and left-hand sides of the hand rail

Function

Warning and lighting

Type

Diagram

Description of the pins

- 2 Lighting module supply signal (X305)
- 3 Earth (X421)

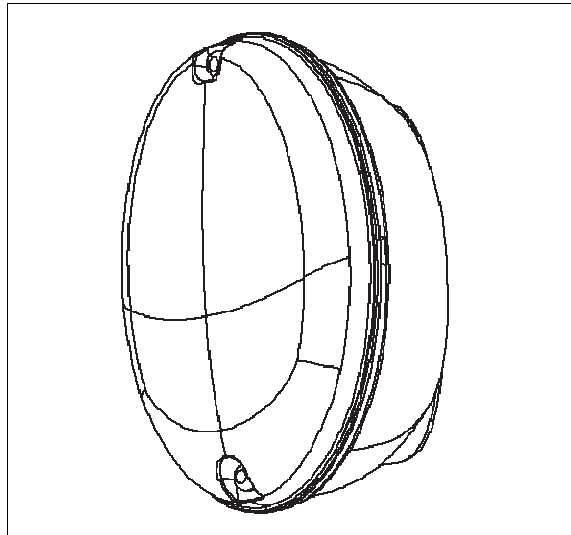


Fig. 371.

1009993

Principles of operation

The side lights and directional indicators on the hand rails receive information from the lighting module (X305).

Signals

—

143 Active suspended cab controllers

143.1 List of active suspended cab controllers

see 11A10, §143.2, page 452

Test

1. Disconnect connector X491.



Fig. 457.

1034852

2. Connect adapter harness (1) ref: X899.980.246.204.

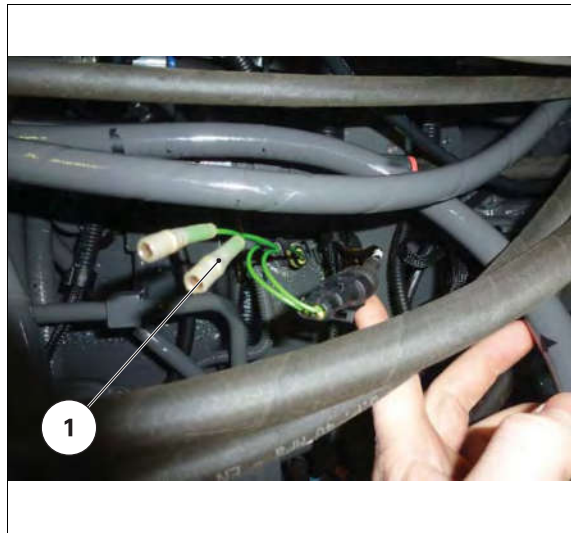


Fig. 458.

1034853

3. Check the switch voltage.

Check	Wire	Specified value:	Condition
Power supply	1	12 V	The tractor must be moving with range 4 engaged
Signal	2		

NOTE: For connection of the multimeter, see [fig. 459](#).

Replace the component if the measured value is incorrect.

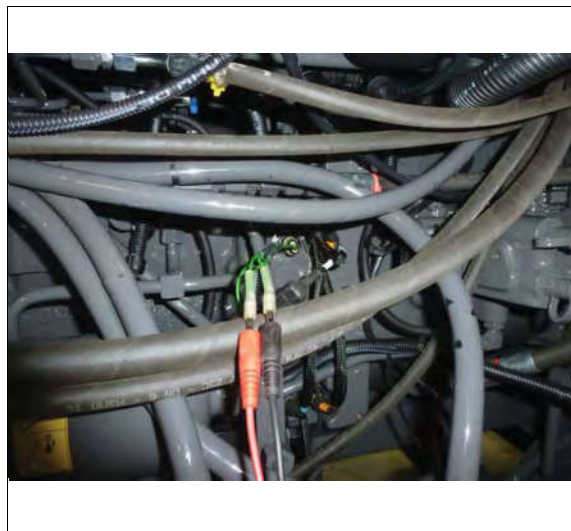


Fig. 459.

1034854

2 Principles of operation

Temperature controls

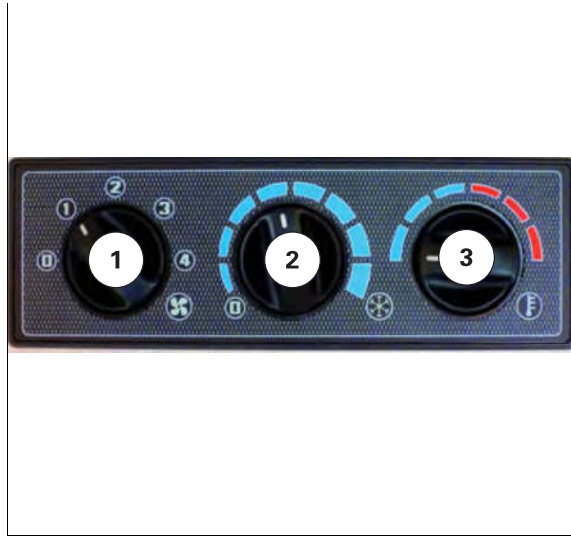


Fig. 2.

I006283

Electronic thermostat:

It controls the compressor electromagnetic clutch according to the cooling required at the evaporator. A temperature sensor informs the electronic thermostat of the temperature at the evaporator. The thermostat is adjusted by a potentiometer (2) on the air conditioning control panel. The compressor is activated depending on the sensor reading and thermostat adjustment.

Electromagnetic clutch:

It transmits the engagement of the air conditioning compressor. The electronic thermostat controls its level of engagement by a relay.

A 50 Amp fuse protects the air conditioning system. A high/low pressure switch disengages the compressor clutch if the pressure drops or rises unexpectedly in the high-pressure part of the refrigeration system.

The compressor cannot be engaged if no fan speed has been selected to ensure heat exchange at the evaporator.

Heating valve:

It adjusts the flow rate of hot water in the radiator. It is controlled by the user from the control panel in the cab via a rotary knob (3). The valve and compressor are controlled separately. For this reason, with the heating switched on, it is possible to activate the compressor to dehumidify the air.

This knob is used to select either heating or the entry of air at outside temperature.

Ventilation control

Fan:

The fan is controlled by turning the fan control knob (1). There are four different fan speeds. The cab is fitted with five adjustable air vents and four air outlets to defrost the windows.

Air recycling:

Air recycling is controlled manually from the cab. A grille with a handle fitted to the top left-hand side in the cab is used to select outside or inside (recycled) air.

The air recycling system should not be used for long periods. After 25 minutes, it is advised to stop it and renew the cab air to ensure the air in the cab is clean.

Air recycling has several advantages:

- it prevents air from entering from outside, for example to prevent unpleasant smells from entering
- it saves energy cooling the cab. The air conditioning system is more efficient if the air source is cold. When the outside air temperature is very high, it is recommended to use the recycling system as it uses the cooler air in the cab, which avoids cooling the hot air outside the cab. In this way the compressor workload is reduced.

7. Remove and disconnect the number plate lighting (12).
8. Remove the roof hatch screws (13). Disconnect the radio aerial. Remove the hatch.
9. Remove the roof trim screws (14). Remove the trim.

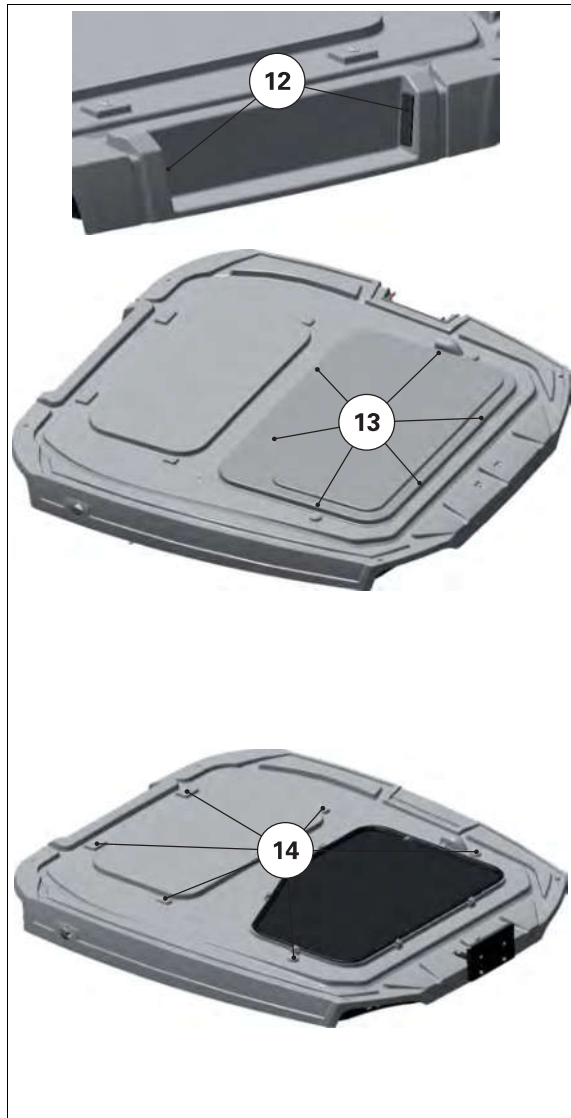


Fig. 5.

1033727

Refitting the roof trim

1. Refit the roof trim by following the steps in reverse order to removal.

1 Safety instructions

It is very important to work in a clean environment to prevent dirty particles from entering the system. Carefully clean the unions, then lightly oil with compressor oil before connecting them. Do not use compressed air to clean the pipes, for example to drive out particles that may have entered: only use refrigerant in this case. Only remove the pipe protectors at the last minute. Cut hose pipes with a knife; never with a saw. Carefully block pipes when they are in storage. The oil in the air conditioning system is a cooling oil. This oil is miscible with the refrigerant.

Precautions

The air conditioning system can be dangerous. It can be compared with a pressurised steam boiler. If a pipe bursts, the refrigerant evaporates or boils very quickly.

It can be very dangerous after expansion. The air conditioning engineer must always take precautions when working to prevent unstoppable refrigerant leaks. R134a refrigerant is non-combustible, non-toxic (except upon contact with fire) and non-corrosive (except upon contact with water).

Great care must be taken when handling R134a. Direct contact can freeze the skin or eyes.

On contact with fire or at high temperatures, it decomposes into phosgene gas, which is highly toxic.

Never handle refrigerant without wearing protective goggles and gloves.

Never try to drain the system by loosening a union. Slow, safe draining is only possible using draining / filling apparatus designed for R134a refrigerant. Do not drain the system in the same room as a naked flame. The same precautions must be taken for leak detection.

When it is necessary to retighten a union, use two wrenches to avoid bending the pipe, which can cause leaks.

Never weld or steam-clean near a system containing refrigerant. This can cause excessive pressure and leakage.

Do not store R134a refrigerant in direct sunlight, near a heat source or in a damp place. Always replace the bottle protection plugs when it is not being used. Also ensure it is not knocked. Do not transport the bottle in the passenger compartment of a vehicle.

In case of spillage of R134a

If R134 comes into contact with your eyes, wash with cold water and seek medical advice immediately.

NOTE: *Areas frozen by liquid refrigerant can be treated by gradually warming the affected area with cold water, and then applying cold cream. Seek medical advice immediately.*

Recommendation

All operations described in this section must be carried out using servicing and repair equipment (draining / filling apparatus, refrigerant recovery apparatus, leak detector etc.) designed for R134a refrigerant.

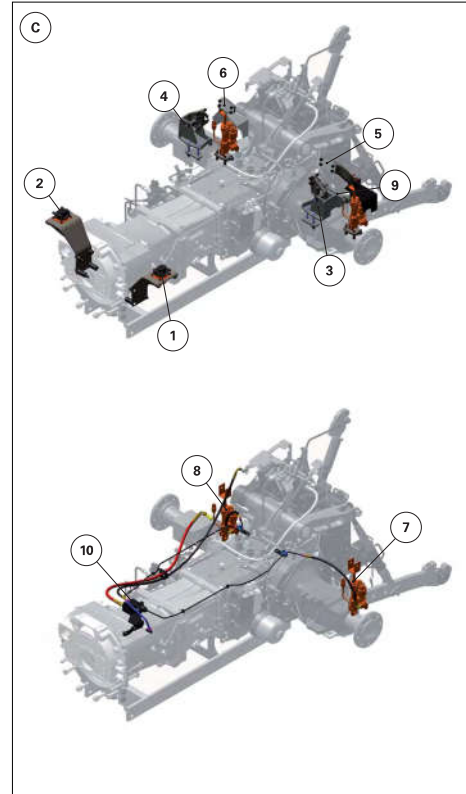
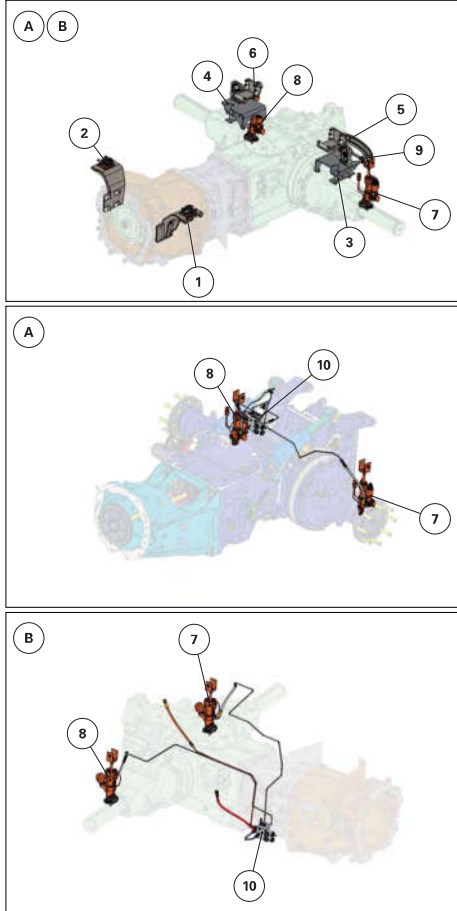


Fig. 2.

1030876

14A01 - General

1	General	5
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