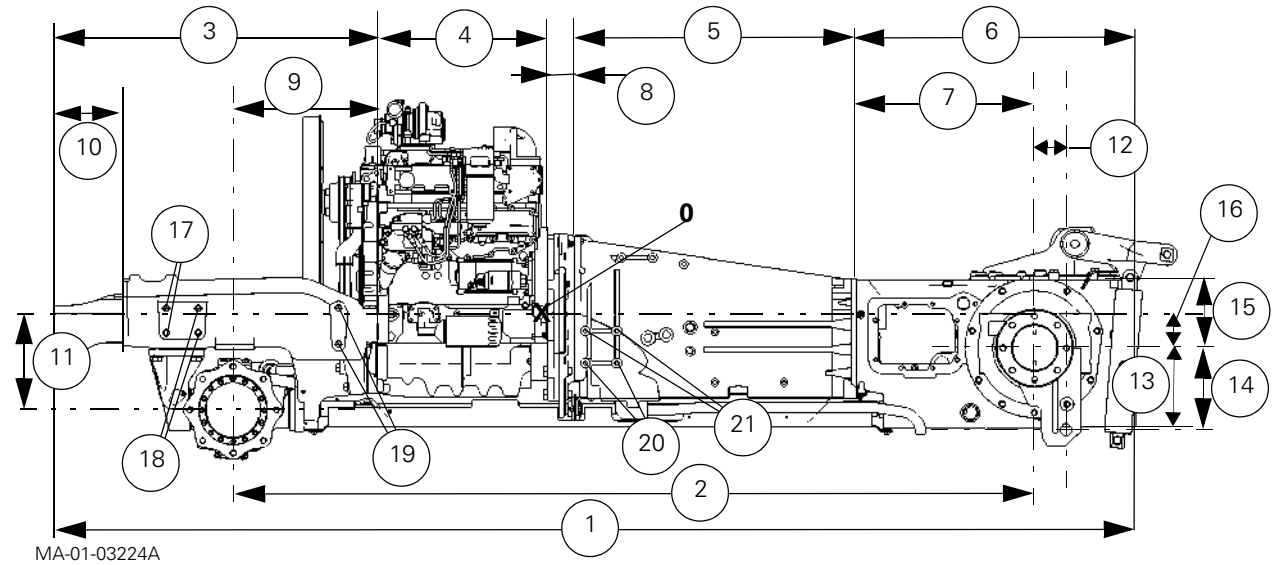
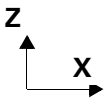
A . General specifications

Model 5425

Engine	
DIN power (hp)	65
DIN power (Kw)	49
Brand	PERKINS
Type	1104C-44
Number of cylinders/displacement (l)	4/4.4
Turbo	No
Intercooler	No
Injection pump	Bosch VE10
Fan	Viscostatic
Alternator	80 A / 120 A
Gearbox	
Gearbox model	GBA20/GBA25
Clutch/shuttle	Dry clutch/mechanical reverse shuttle Wet clutch/Power Shuttle
Number of discs	5 pads (mechanical reverse shuttle) 4 forward discs/3 reverse discs (GBA20 Power Shuttle) 6 forward discs/6 reverse discs (GBA25 Power Shuttle)
Type	Speedshift (GBA20)/Dyna 4 (GBA25)
Creeper unit 4/1	Options
Creeper unit 14/1	Options
Rear axle	
Axle model	GPA20
Final drives	ND
Axle shaft Ø	76 mm
Flanged shaft	Standard
Brake discs per trumpet housing	1
Hand brake discs	3
Differential lock	Dog clutch
Linkage	
Stabilisers	Telescopic / without
Multi-hole drawbar	Options
3-point linkage	Cat. 2, hook or ball type (*)
Clevis hitch	Standard or assisted
Automatic clevis hitch	Standard or assisted
Semi-mounted trailer hitch	Stud or auto-hitch (*)
Swinging drawbar	Standard
Roller type swinging drawbar	Options
Power take-off	
Type	Interchangeable / shiftable shaft
540/1000/eco	Optional (*)
Number of clutch discs	4
PTO brake	Hydraulics
Proportional PTO	Options
Front power take-off	Options
Front axle	
Model	DANA AG 85 (720/520)
Type	Fixed
Rotational direction	Clockwise
Clutch	Multidisc
Factor K	1.369 (GBA20)/1.363 (GBA25)
Swivelling mudguard (4WD)	Options
2WD	Optional (standard track width/wide track width)
Front linkage (optional)	2.5 T
Hydraulics	
Open Centre 57 l/min	Standard
Open Centre 100 l/min	Options
Orbitrol steering	100 cc
Brake master cylinder	Standard
Braking assistance	No
Trailer brake	Optional (*)
Auxiliary spool valves	0 - 4 mechanical
Joystick	Mechanical
Couplers	Decompression
Electronics	
Transmission control	AUTOTRONIC 5 (if Power Shuttle) Without (if mechanical reverse shuttle)
Linkage controller	EHRB/AUTOTRONIC 5
Draft sensors	1
Sensor capacity	4 T
Datatronic	Without
Fieldstar	Options
Cab	
Rear-view mirrors	Standard / Telescopic (optional)
Air conditioning	Manual (optional)
Windscreen	Standard / Opening (optional)
Standard bonnet	Standard
Sloping bonnet	Options
Standard roof	Standard
High-visibility roof	Options
Slimline roof	Options
Platform	Options
Reference (*): according to country	

5460 Speedshift





REFERENCE	DIMENSIONS (mm)				REFERENCE	DIMENSIONS (mm)			
0= Engine axis		x	y	z	0= Engine axis		x	y	z
1	3447	-	-	-	12	100	-	-	-
2	2553	-	-	-	13	249	-	-	-
3	1032	-	-	-	14	260	-	-	-
4	540	-	-	-	15	216	-	-	-
5	896	-	-	-	16	106	-	-	-
6	890	-	-	-	17	2xM20	-1215	+/-280	21/-59
7	567	-	-	-	18	2xM20	-1113	+/-280	21/-59
8	89	-	-	-	19	2xM20	-665	+/-275	21/-93
9	462	-	-	-	20	2xM16	120/222	+/-183	-155
10	222	-	-	-	21	2xM16	120/222	+/-223	-53
11	306	-	-	-					

Fig. 2

Refitting

29. Clean the tapped holes in the Speedshift cover plate and the thread of the screws (21) and (22).

30. Screw an M8 guide stud "G" of sufficient length into the top hole of the front cover plate in the position of screw (21) (Fig. 8).

31. Lightly smear the thread of the screws (21) and (22) with Loctite 242 or equivalent.

32. Turn the spacer (5). Position it against the Speedshift front cover plate.

Manually hold the pistons of the hydraulic slave device assembly in place. Slide the hydraulic slave device assembly (4) onto the guide stud "G" (Fig. 8). Position the hydraulic slave device assembly up against the spacer.

33. Fit the screws (21) (L = 95 mm) and (22) (L = 75 mm), respecting their length depending on their positioning on the hydraulic slave device assembly. Take out the guide stud. Tighten the screws to a torque of 25-35 Nm.

If removed, refit the thrust bearing carrier (2) in the hydraulic slave device assembly (4).

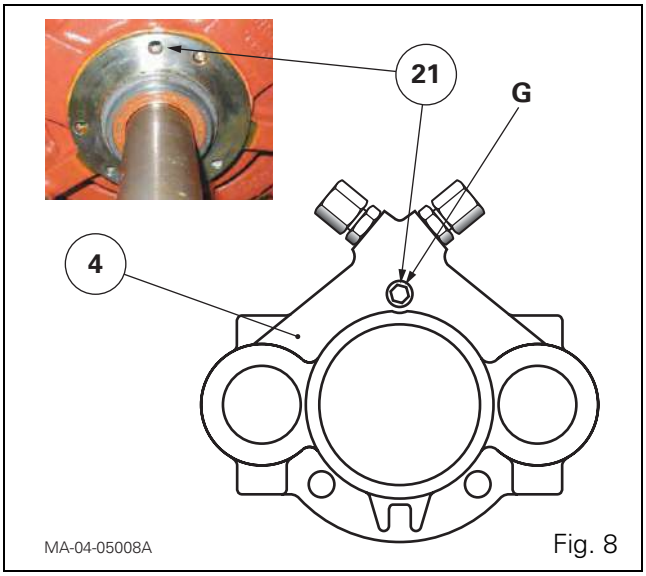


Fig. 8

Final steps

34. Reconnect the tractor between the engine and the gearbox (see chapter 2).

35. Ensure the hydraulic pipes (17) and (20) (Fig. 7) do not leak through the cover located under the front of the gearbox.

View of the assembly

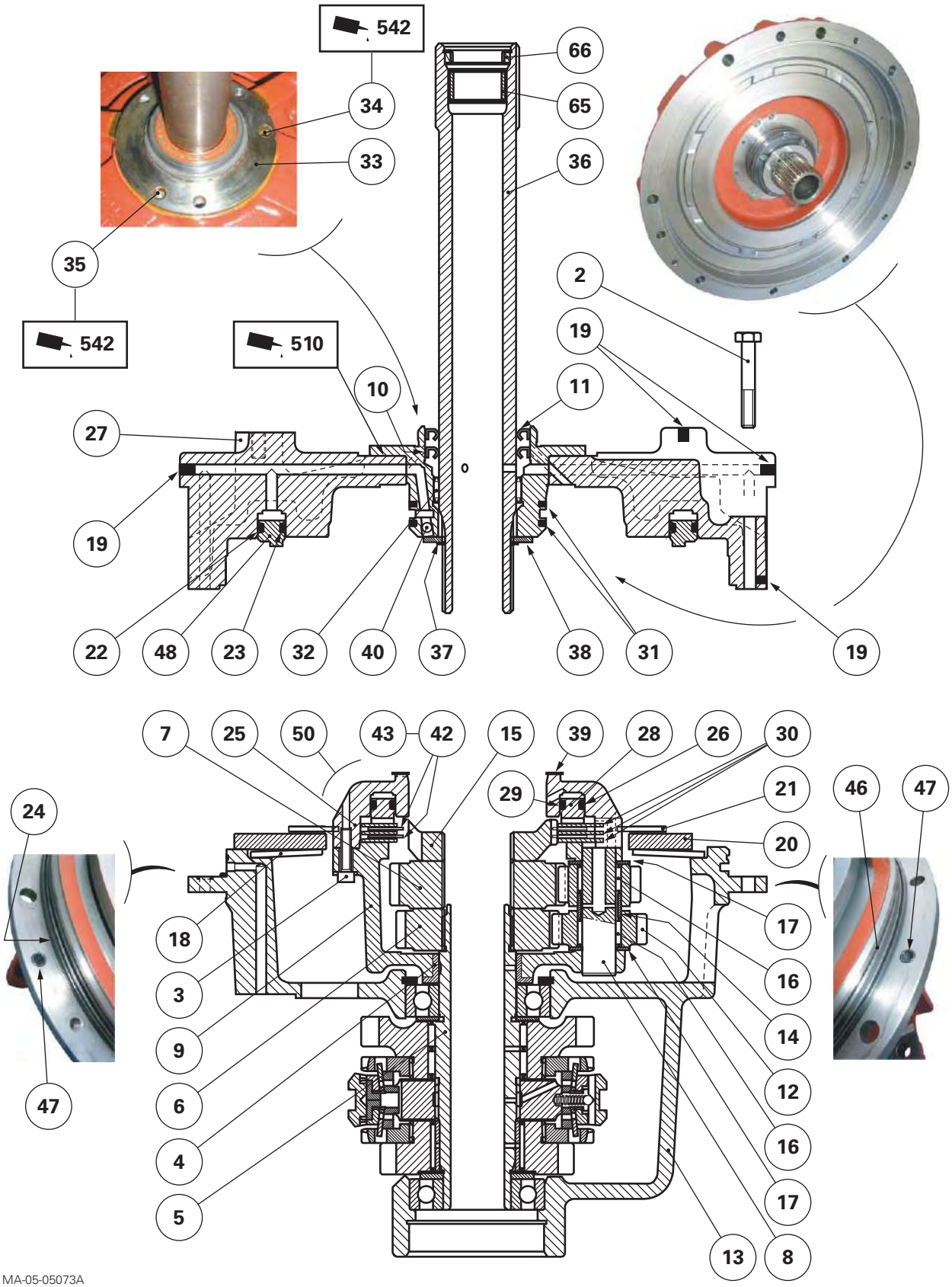


Fig. 2

G . Reassembling the planet carrier

29. Clean and check all components. Replace those that are defective.

30. Lubricate the needle roller bearings (16).

31. Make sure that the radial holes and axial channel for the lubrication of pins (8) are not blocked.

REMINDER

Tractor speed can be between 30 and 40 kph.

Each speed is obtained by turning the planet gears and sun gears of the Speedshift epicyclic gear train (Fig. 1).

The sun gears have different numbers of teeth:

- *sun gear (6): 36 teeth*
- *sun gear (7): 39 teeth*

NOTE: *The text and figures in this section concern the reassembly of a planet carrier for a forward speed of* ***40 kph****.*

32. Put the output sun gear (6) in the unit (9), turning the sun gear lubricating grooves towards face "F" of the unit (Fig. 13).

33. Install the needle roller bearings (16), separated by a spacer (14) in a planet gear (12).

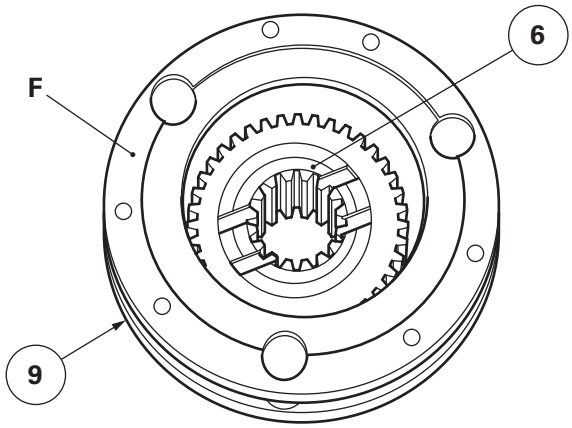
34. Put an "assembled" planet gear in the unit, the 18-tooth gear turned as in Fig. 1.

NOTE: *Each double planet gear is identified with one, two or three punchmarks on one of its faces which is not necessarily the 18-tooth gear. In this case, make the same marks on the aforementioned gear using an appropriate pen. A punchmark corresponds to the alignment of two teeth.*

35. Position the washers (**17**).

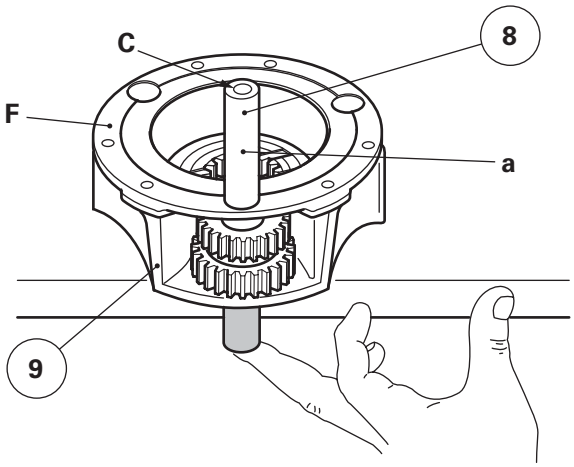
36. Centre the planet gear and washers with a guide pin Ø 16 mm, L = 80 mm (Fig. 14).

37. Insert the pin (8) into the free bore on face "F" of the unit (9) (Fig. 14) Fit it partially set back (Fig. 15), with the radial lubricating hole "a" turned outwards and the end of central channel "C" turned towards face "F" (Fig. 14).



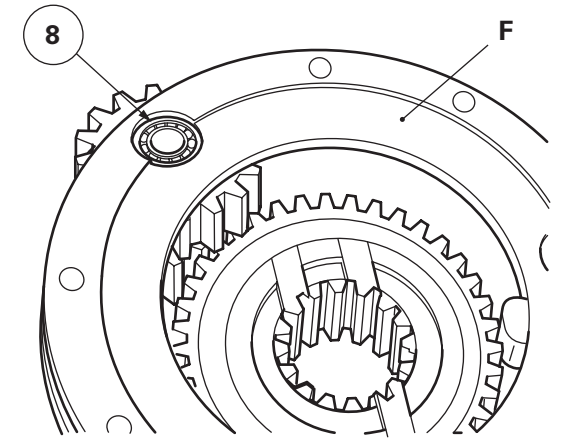
MA-05-00368A

Fig. 13



MA-05-00369A

Fig. 14



MA-05-00370A

Fig. 15

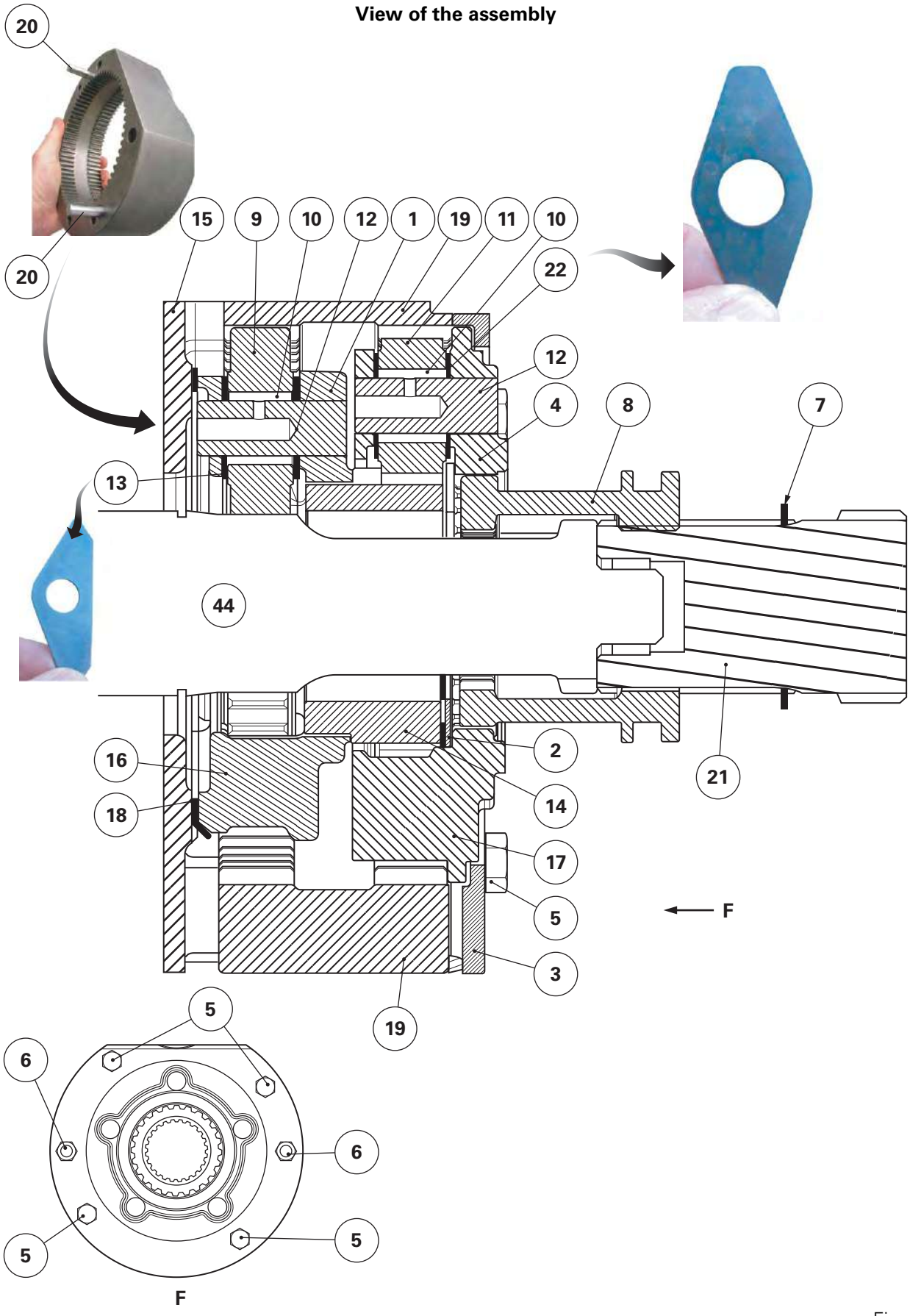

View of the assembly
20
20
15
9
10
12
1
19
11
10
22
12
4
8
7
13
44
16
18
2
14
17
5
3
19
21
F
5
6
6
5
5
F
MA-05-05093A

Fig. 3

60. Replace or clean the plug (24) and its mating face on the housing.

61. Smear the corner of the plug housing with Loctite 542 and then fit the plug.

62. Place the sliding gear (10) on the shaft (18).

NOTE: *Turn the small shoulder E towards the shaft (18) (Fig. 12).*

63. Fit circlips (6) (9) on shaft (8).

64. Using a suitable fixture, fit the bearing (5) using a press onto the shaft (8), in contact with the circlip (6).

65. Check for the presence of circlip (7).

66. Fit the assembled shaft (8) in the housing (Fig. 13).

67. Fit the circlip (4).

68. Fit the gear (3).

69. Fit the circlip (2) (Fig. 14).

70. Check the movement of the sliding gear (10) through the opening of the cover plate (12).

71. Replace or clean the plug (1) and its mating face on the housing.

72. Smear the plug with Loctite 542, then fit it slightly set back from the face of the housing.

73. Fit the rod (7) (fitted with a new "O" ring (5)) by placing the pad (1) in the groove of the sliding gear (10) (Fig. 5).

74. Clean and degrease the mating faces (cover plate and housing).

75. Smear the mating face of the cover plate with a sealing product (Master joint 510 or equivalent).

76. Screw two opposing guide studs into the housing.

77. Fit the retainer pipe (4), the control rod and the detent plunger (2) and the spring (3) (Fig. 5).

78. Refit the cover plate (12) and the lubrication pipe for the engine clutch or the Power Shuttle (depending on version).

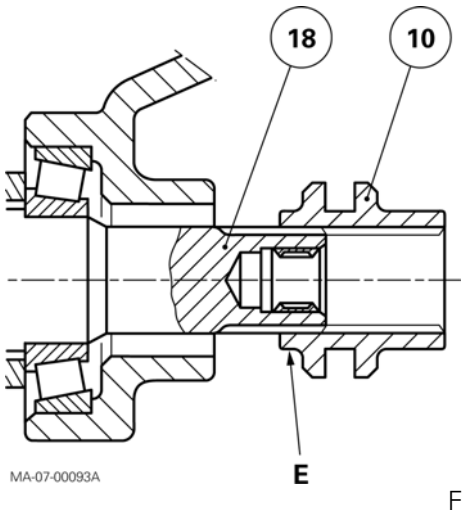


Fig. 12

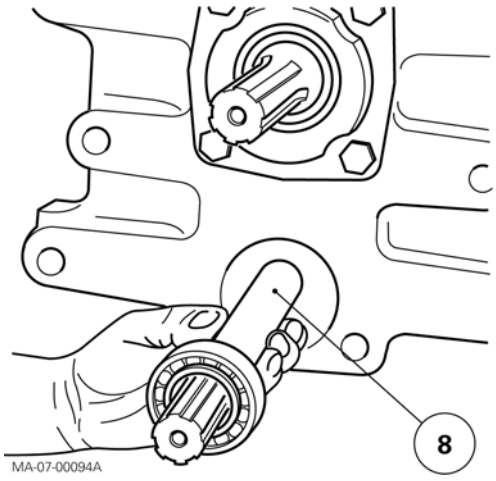


Fig. 13

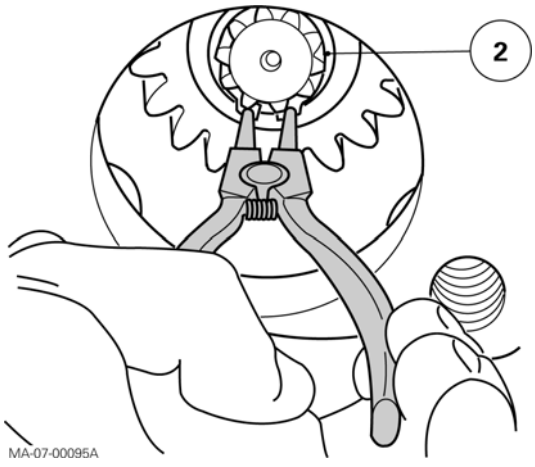


Fig. 14

B . Removing and refitting the bearings

1. Chock the rear wheels and apply the hand brake.
2. Disconnect the differential lock hose. Take it off the guard (6).
3. Remove the guard. Separate the sleeves (2) from the drive pinion carrier and the 4WD unit. Remove the transmission shaft.
4. Raise the tractor using a trolley jack of sufficient lifting capacity positioned under the centreline of the axle housing.

DANGER: Place an axle stand under the engine lower housing.

5. Remove the front wheels.
6. Disconnect the steering ram hoses, marking their positions.
7. Sling the front axle using suitable straps (Fig. 4).
8. Remove the grease nipple (16) and screws (14) (Fig. 5). Remove the front bearing (18), washers (10) and seal (11).
9. Remove the front axle, washer (12) and seal (13).

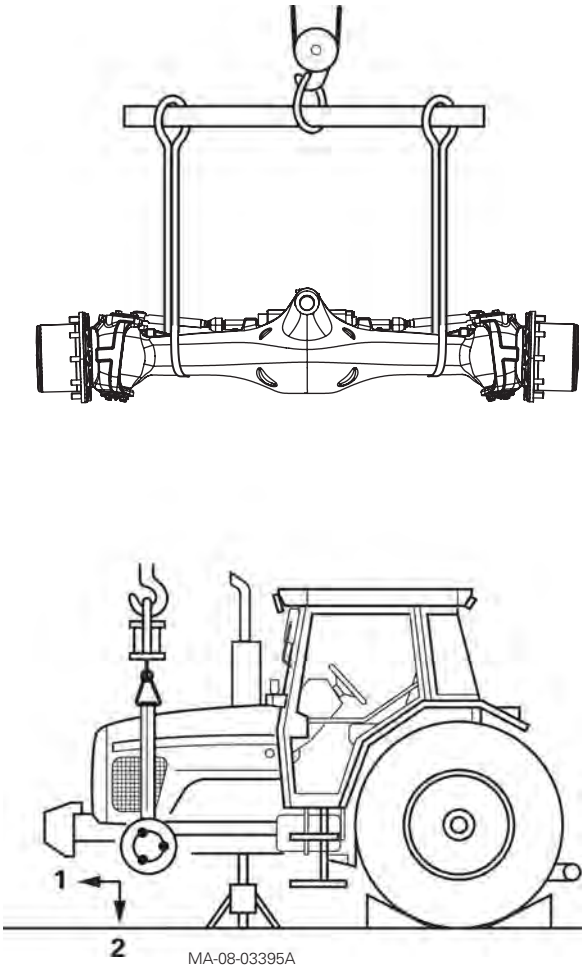


Fig. 4

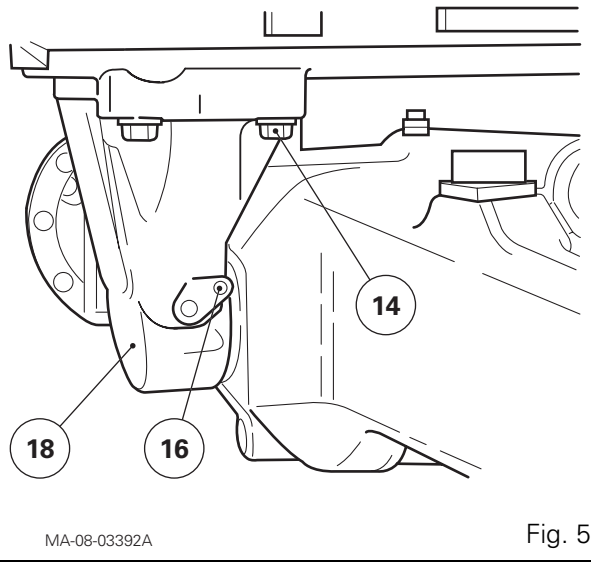


Fig. 5

Checking the dry clutch pressure

CAUTION: The pressure can reach 30 bar when the pedal is pressed down; it is therefore necessary to connect the pressure gauge after starting the engine.

- Connect a pressure gauge with a capacity of 30 bar fitted with a coupler ref. 3582045M1 to the diagnostics connector (1) located on the right-hand side of the gearbox (Fig. 11).
- Run the engine at 1000 rpm.
- Measure the pressure:

  P13 = 1.5 bar maximum clutch engaged

  P13 = 13-15 bar clutch disengaged: new disc

  P13 = 18-20 bar clutch disengaged: worn disc

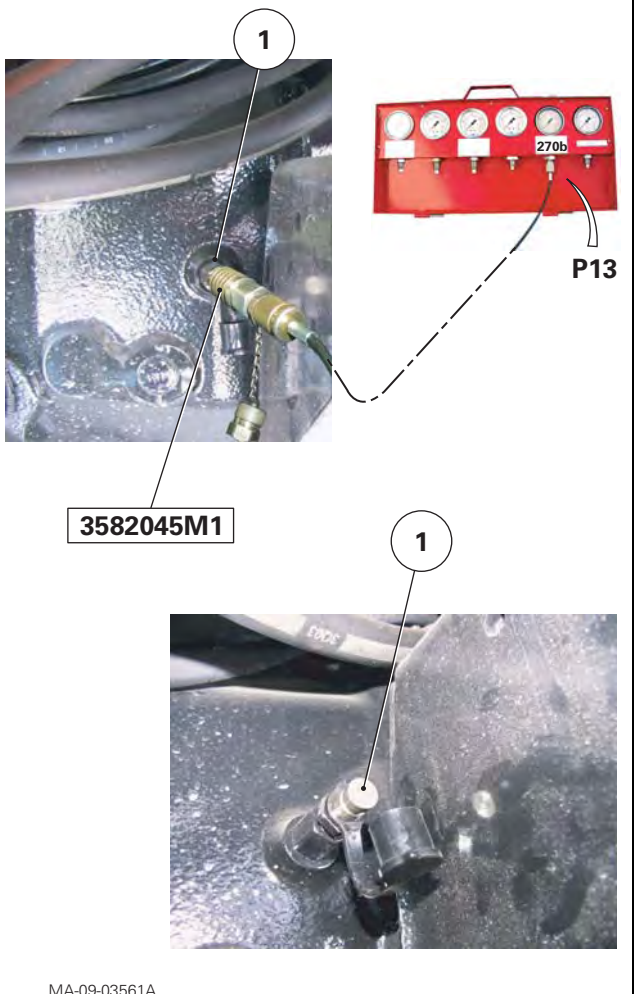


Fig. 11

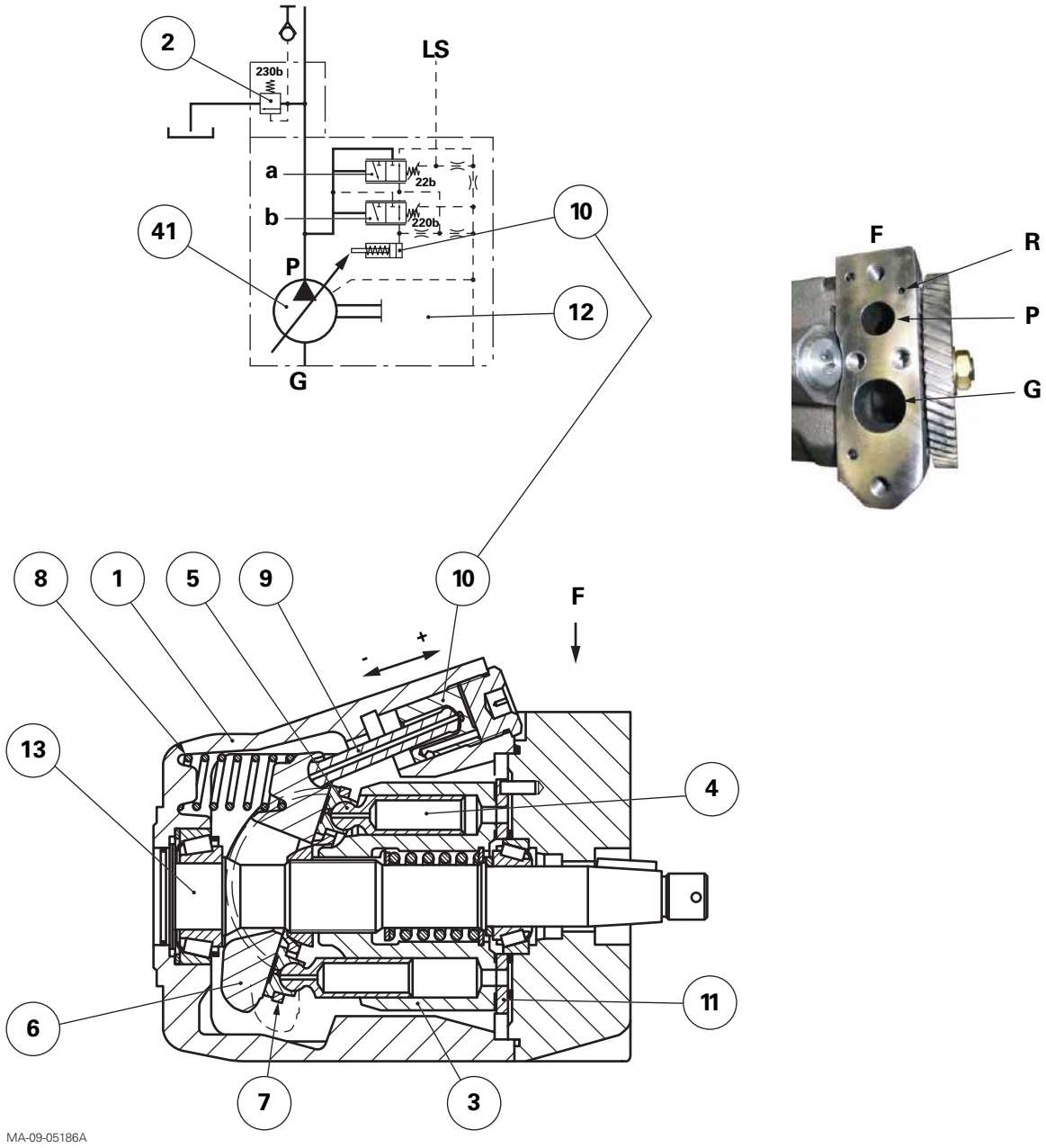

2
230b
LS
a
22b
b
220b
41
10
P
12
G
F
R
P
G
8
1
5
9
10
F
13
4
6
11
7
3
MA-09-05186A

Fig. 13

E . Replacing the pump seals

Preliminary step

35. Remove the cover plate (see § C) and the charge pump (see § D).

Disassembly

36. Moderately tighten the pump in a vice fitted with plastic jaws.

37. Remove the screws (1) and the cover plate (7) (Fig. 10).

38. Remove (Fig. 11, Fig. 12):

- the circlip (3);
- the seal (4);
- the "O" rings (5) (6) on the cover plate (7).

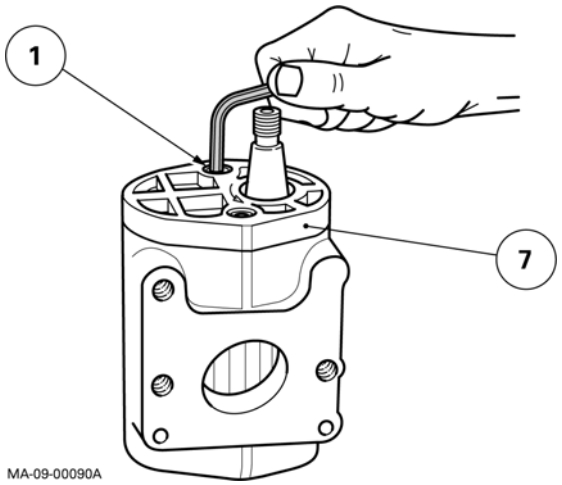


Fig. 10

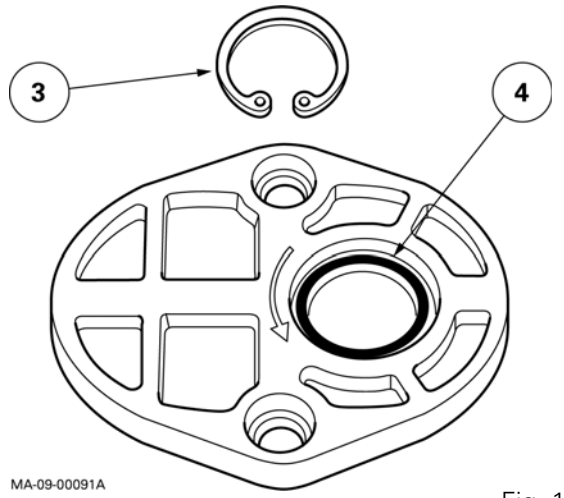


Fig. 11

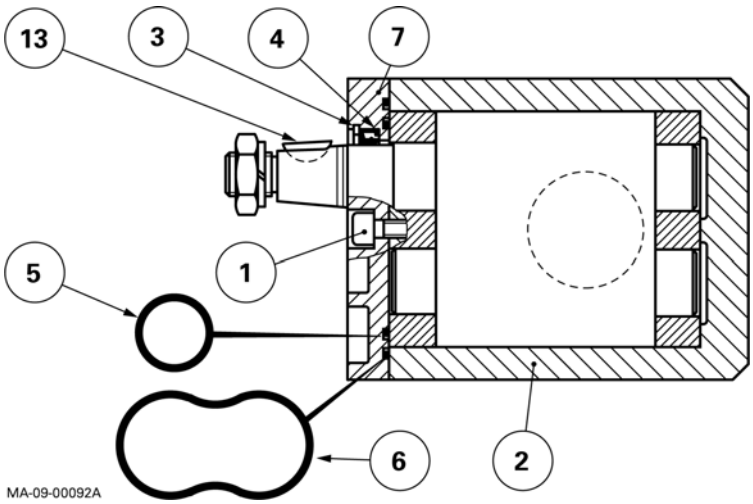


Fig. 12

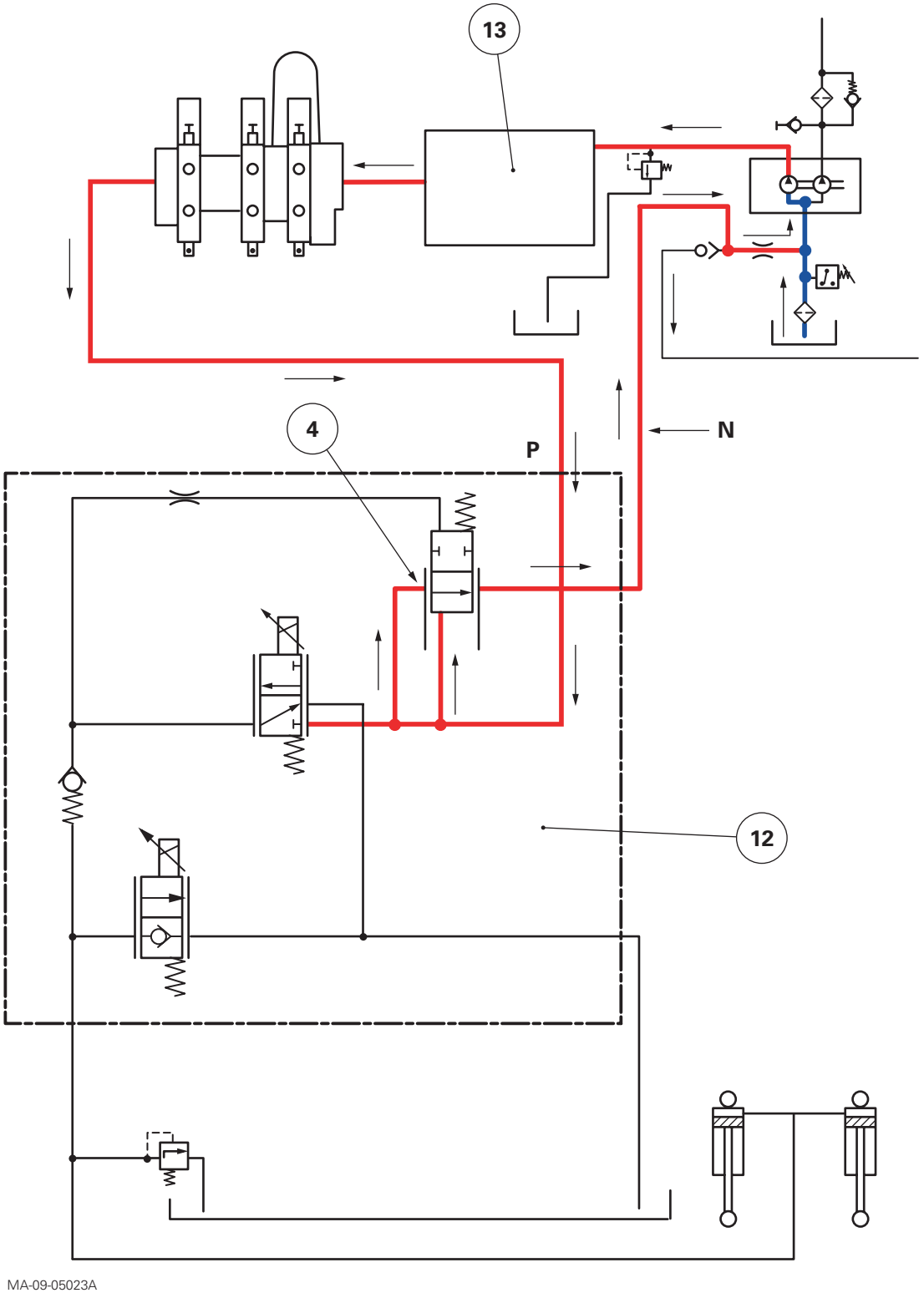


Fig. 5

C . Electrical diagrams for tractors with DCC2

Tractors with 70-pin EEM connector (Fig. 5)

Tractors with 31-pin EEM connector (Fig. 6)

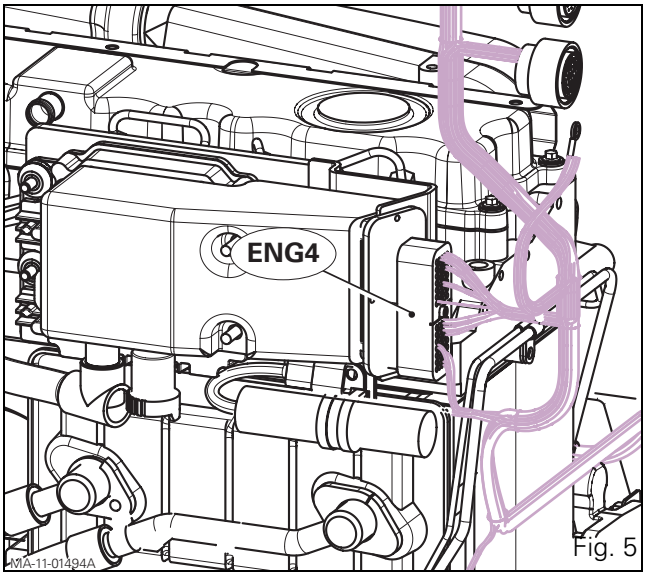


Fig. 5

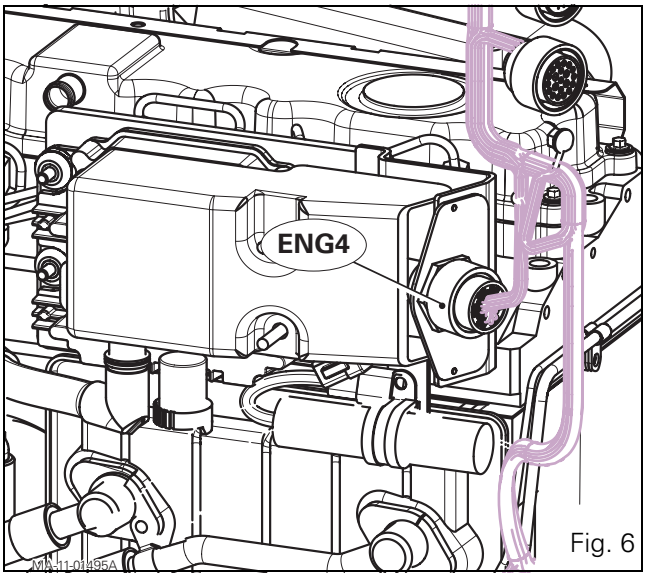


Fig. 6

CDX3 and CDX6 : Lift external control switches

Description

Location: at the rear of the fenders.

- Pin 1 : Signal output (9.5 V)
- Pin 2 : 9.5 V reference voltage input
- Pin 3 : Not used

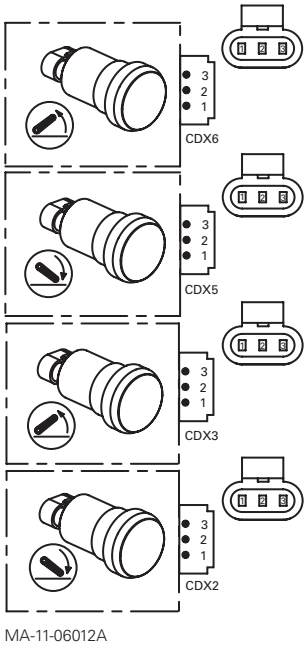
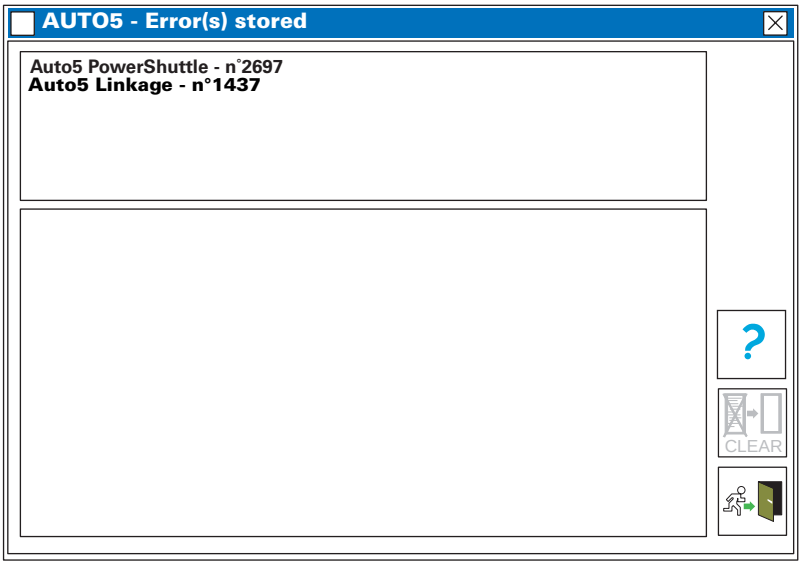


Fig. 7

Possible error code

Error	Components concerned	Description	System reaction	Action
1 - 4	Lift external control switches	Short circuit or open circuit or switch disconnected	Cuts power to lift control valve solenoids No lift arm movements authorised	Stop the engine. Correct the fault. Restart the engine. Reset the system

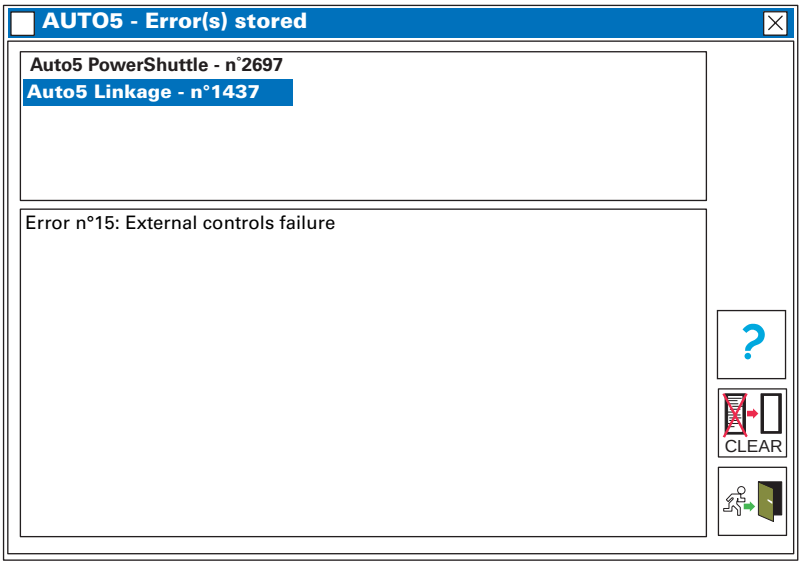
The following screen is displayed:



MA-11-01316A

- Click on the line of the calculator whose errors you wish to display.

The following screen is displayed:



MA-11-01342A

Only errors stored when the ignition key is switched on appear.

The most recent errors are displayed at the top of the list.

Autotronic 5 Linkage stores a maximum of 10 errors.

- If you click on "CLEAR", all error codes will be erased from the selected Autotronic 5 memory.