CLAAS

A0
INJECTION SHEET CHECKING PROCEDURE

A1
INJECTION FEED

A2
ENGINE TIER II

	Chapter A
Atles 906	**60 05 030 504 – 07.2006 publication**

Test procedure

15. Hydraulic pressure

Check hydraulic pressure by referring to the appendix. Make sure that no hydraulic application is running. If hydraulic pressure is not within the specifications, the PTO power test results will be affected. See "measurement and check points" sheet.

16. Check the maximum no-load rpm

Atles 926/936: 2 275 ± 25.

17. Engage the PTO in the position shown on the injector instruction sheet.

18. Accelerate the engine to maximum rpm for 1 min.

19. Measure the power (see injector instruction sheet).

20. After measurement, check temperatures.

Engine: 90°C.

Transmission: 60-65°C (measure the temperature via the gauge recess using thermocouple probe n° 60 05 006 708).

Ambiant temperature: 25°C.

21. Leave the engine running at between 1 500 and 1 600 rpm for 3 to 5 minutes, then idle before switching off.

If the results do not match the manufacturer's data following these operations, a flowmeter will need to be installed and the values compared to the injection sheets.

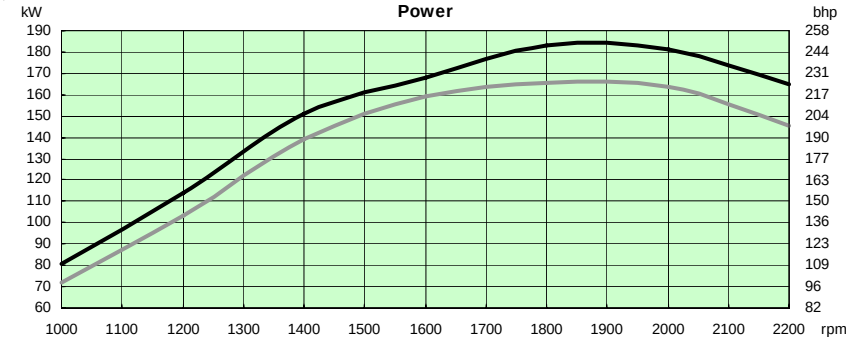
22. Remove the viscous fan coupling locking tabs and refit the 4 lock nuts.

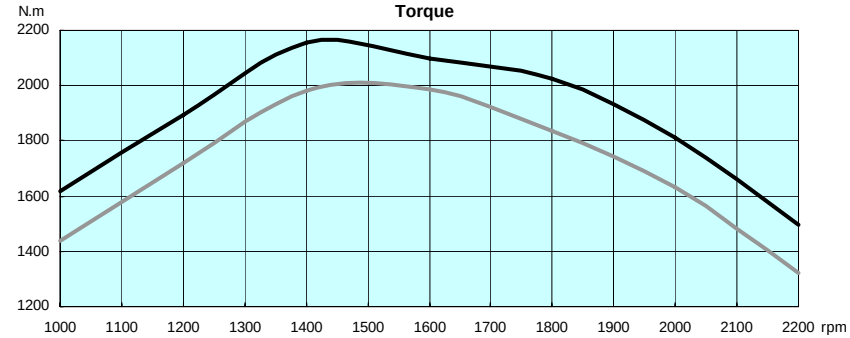
Only for Atles 926 and 936.

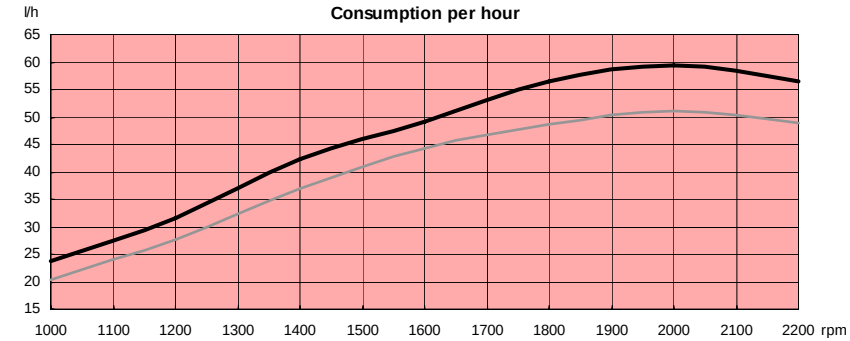
ENGINE TESTS AT PTO

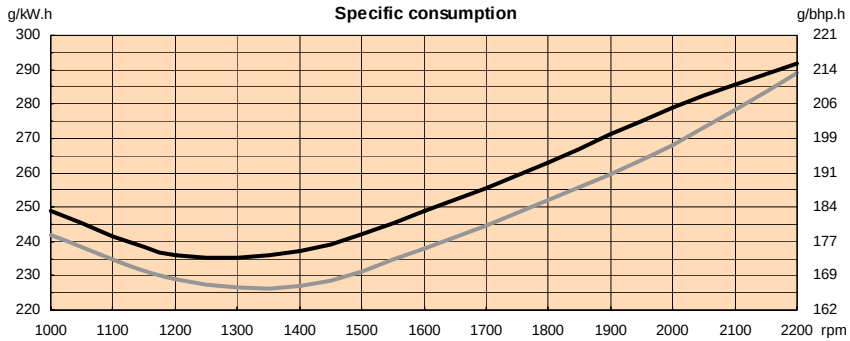
Position 1 000 rpm

ATLES 946 – H 4552









Reference values – Power Take-off position 1 000 rpm

Speed	Engine	rpm	**1000**	**1200**	**1400**	**1600**	**1800**	**2000**	**2200**
	Power take-off		**478**	**574**	**670**	**765**	**861**	**957**	**1052**
Power*	**Minimum**	kW	**72.0**	**103.5**	**139.1**	**159.3**	**165.7**	**163.6**	**145.4**
		bhp	97.9	140.7	189.1	216.6	225.3	222.4	197.7
Torque** (power take-off output)	**Minimum**	N.m	**1439**	**1719**	**1982**	**1988**	**1836**	**1633**	**1319**
Consumption per hour	**Minimum**	l/h	**20.3**	**27.6**	**37.0**	**44.4**	**48.7**	**51.1**	**49.0**
	Maximum		**23.7**	**31.6**	**42.2**	**49.1**	**56.5**	**59.4**	**56.6**
Specific consumption***	**Maximum**	g/kW.h	**249**	**236**	**237**	**249**	**263**	**279**	**292**
		g/bhp.h	183	174	174	183	193	205	215

Engine tests at power take-off

Engine	Gearbox	Rear axle	Power Take-off (total reduction)			
			Position 540	Position 540 eco	Position 1000	Position 1000 eco
BF6M 1013FC	**AG250**	**GPA 36**		**2.60**	**2.09**	

Rotation rate (rpm)		Idle		Nominal		Max no load	
		Engine	Power take-off	Engine	Power take-off	Engine	Power take-off
Power take-off position	**540**						
	540 eco	**816 → 884**	**314 → 340**	**2200**	**846**	**2250 → 2300**	**865 → 885**
	1000	**816 → 884**	**390 → 423**	**2200**	**1052**	**2250 → 2300**	**1076 → 1100**
	1000 eco						

* Power (W) = torque (N.m) x speed (rad/s)

** Equivalent engine torque (N.m) = $\frac{\text{Torque at Power take-off outlet (N.m)}}{\text{Power take-off reduction}}$

Injector flow (mm³/shot) = $\frac{\text{Hourly consumption (l/h)} \times 1000\,000}{\text{Number of engine cylinders} \times \text{engine speed(rpm)} \times 30}$

*** Specific consumption (g/kW.h or g/bhp.h) = $\frac{\text{Hourly consumption (l/h)} \times \text{diesel fuel density}}{\text{Power (kW or bhp)}}$

Torque feedback (%) = $\frac{\text{maximum torque} - \text{nominal speed torque}}{\text{nominal speed torque}} \times 100$

1bhp = 0.7355 kW
1rpm = 0.1047 rad/s
1kW = 1.3596 bhp
1rad/s = 9.5510 rpm
Diesel fuel density = 850 mg/cm³ at 15 °C

Removal/refitting

Removing the single-point injection pump

EK (mm)	Code EP	EK (mm)	Code EP	EK (mm)	Code EP	EK (mm)	Code EP
145,35 145,375	335 336						
145,4 145,425 145,45 145,475	337 338 339 340	146 146,025 146,05 146,075	361 362 363 364	146,6 146,625 146,65 146,675	385 386 387 388	147,2 147,225 147,25 147,275	409 410 411 412
145,5 145,525 145,55 145,575	341 342 343 344	146,1 146,125 146,15 146,175	365 366 367 368	146,7 146,725 146,75 146,775	389 390 391 392	147,3 147,325 147,35 147,375	413 414 415 416
145,6 146,625 145,65 145,675	345 346 347 348	146,2 146,225 146,25 146,275	369 370 371 372	146,8 146,825 146,85 146,875	393 394 395 396	147,4 147,425 147,45	417 418 419
145,7 145,725 145,75 145,775	349 350 351 352	146,3 146,325 146,35 146,375	373 374 375 376	146,9 146,925 146,95 146,975	397 398 399 400		
145,8 145,825 145,85 145,875	353 354 355 356	146,4 146,425 146,45 146,475	377 378 379 380	147 147,025 147,05 147,075	401 402 403 404		
145,9 145,925 145,95 146,975	357 358 359 360	146,5 146,525 146,55 146,575	381 382 383 384	147,1 147,125 147,15 147,175	405 406 407 408		

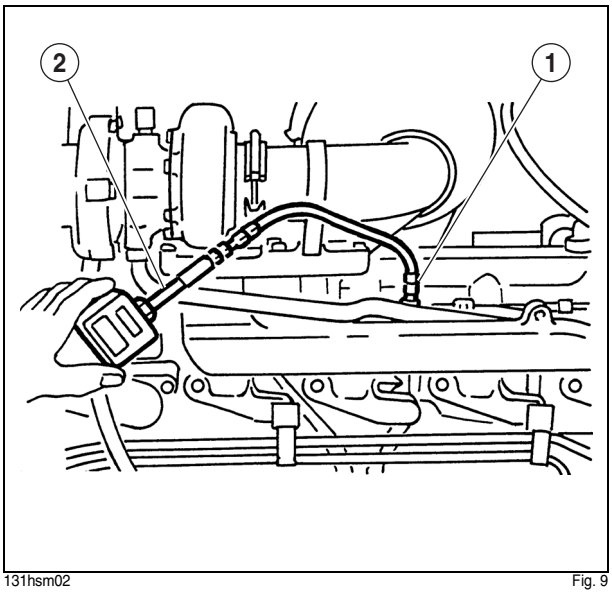
Theoretical thickness CT (mm)	Shim thickness (mm)	Theoretical thickness CT (mm)	Shim thickness (mm)	Theoretical thickness CT (mm)	Shim thickness (mm)	Theoretical thickness CT (mm)	Shim thickness (mm)
0,95 - 1,049	1	1,65 - 1,749	1,7	2,35 - 2,449	2,4	3,05 - 3,149	3,1
1,05 - 1,149	1,1	1,75 - 1,849	1,8	2,45 - 2,549	2,5	3,15 - 3,249	3,2
1,15 - 1,249	1,2	1,85 - 1,949	1,9	2,55 - 2,649	2,6	3,25 - 3,349	3,3
1,25 - 1,349	1,3	1,95 - 2,049	2	2,65 - 2,749	2,7	3,35 - 3,449	3,4
1,35 - 1,449	1,4	2,05 - 2,149	2,1	2,75 - 2,849	2,8	3,45 - 3,549	3,5
1,45 - 1,549	1,5	2,15 - 2,249	2,2	2,85 - 2,949	2,9	3,55 - 3,649	3,6
1,55 - 1,649	1,6	2,25 - 2,349	2,3	2,95 - 3,049	3	3,65 - 3,749	3,7

Checks/Adjustments

Checking compression

N.B.: before starting the test, make sure that the battery is fully charged and that the injector area is perfectly clean.

– Start the engine and run it at idle speed during 10 to 15 minutes.
– Remove the injectors using special tool n° 60 05 005 590 mounted on an extractor.
– Fit tool n° 60 05 005 586 with the seal on a compression tester (Fig. 10).
– Unplug the electrical connector from the engine speed sensor (see chapter "A1").
– Turn the engine using the starter motor during a few seconds. Compression must be between 30 and 38 bar. The difference in compression between each cylinder must be less than 5 bar. Check at crankshaft minimal speed at 150 rpm when cold or 200 rpm when hot.



131hsm02 Fig. 9

Check of engine oil pressure

Before checking the pressure, run the engine.

– Connect pressure gauge n° 77 01 388 204 to the engine block (Fig. 11).

Engine lubrication pressure when cold:

850 rpm = 2,1 bar.

1 000 rpm = 2,6 bar.

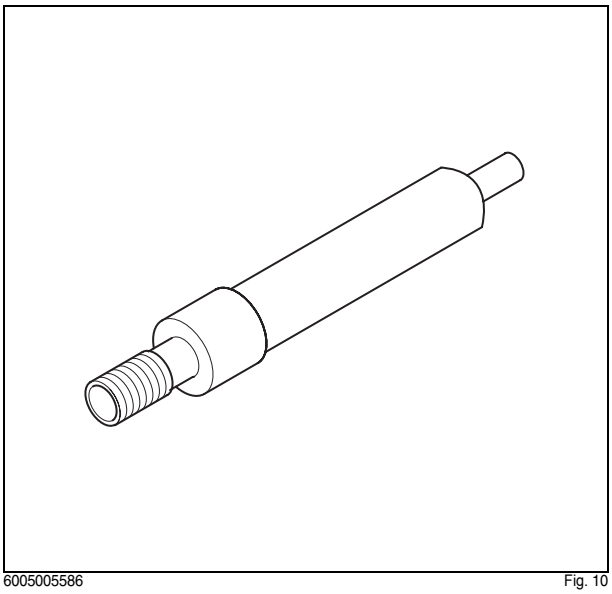
2 000 rpm = 3,8 bar.

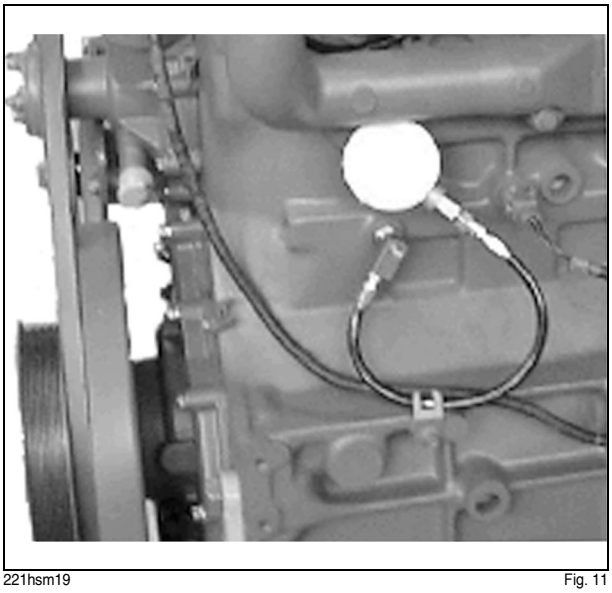
Engine lubrication pressure at service temperature (125°):

850 rpm = 0,9 bar.

1 000 rpm = 1,2 bar.

2 000 rpm = 2,0 bar.


6005005586 Fig. 10


221hsm19 Fig. 11

37. Measure the connecting rod bearings at points "1" and "2" on axes "a" and "b" (Fig. 33).

– Measure the diameter of the connecting rod bearing:

$68{,}036\ ^{+\ 0{,}04}_{-\ 0}$ mm.

Bearing clearance wear limit: 0,12 mm.

Replace the connecting rod bearings if necessary. Refer to the "Dimensional specifications" at the beginning of this chapter for the other dimensions.

Position the connecting rod cap correctly according to the identification number.

N.B.: Make sure that the circlips are fitted.

38. Put together the connecting rod-piston assembly.

N.B.: Make sure that the "flywheel" symbols are on the same side and the circlip gaps are facing towards the piston top.

Checking the ring grooves

39. Measure the dimensions with a set of feeler gauges (Fig. 37). Compare with the following wear limit values:

– Ring (1): 0,8 mm.

– Ring (2): 2,5 mm.

– Ring (3): 1,15 mm.

Replace the rings if necessary.

40. Check the positioning of the rings on refitting.

– Keystone ring (1).

– "Top" bevelled ring facing the combusion chamber (2).

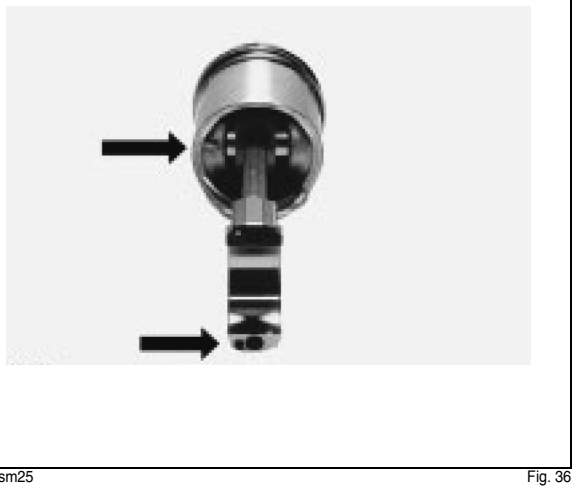
– Double-chamfer oil ring (3).

N.B.: Observe the ring spacing.

Checking the piston pin/connecting rod diameter

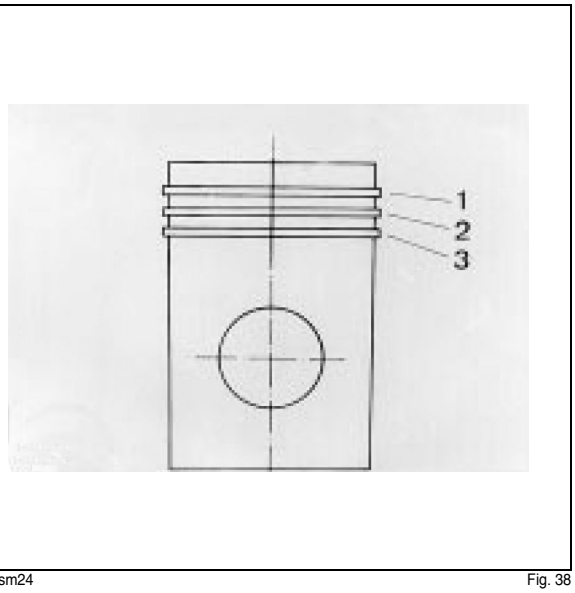
41. Check piston pin wear.

Piston pin diameter: 42 mm.



131hsm25 Fig. 36

121hsm35 Fig. 37

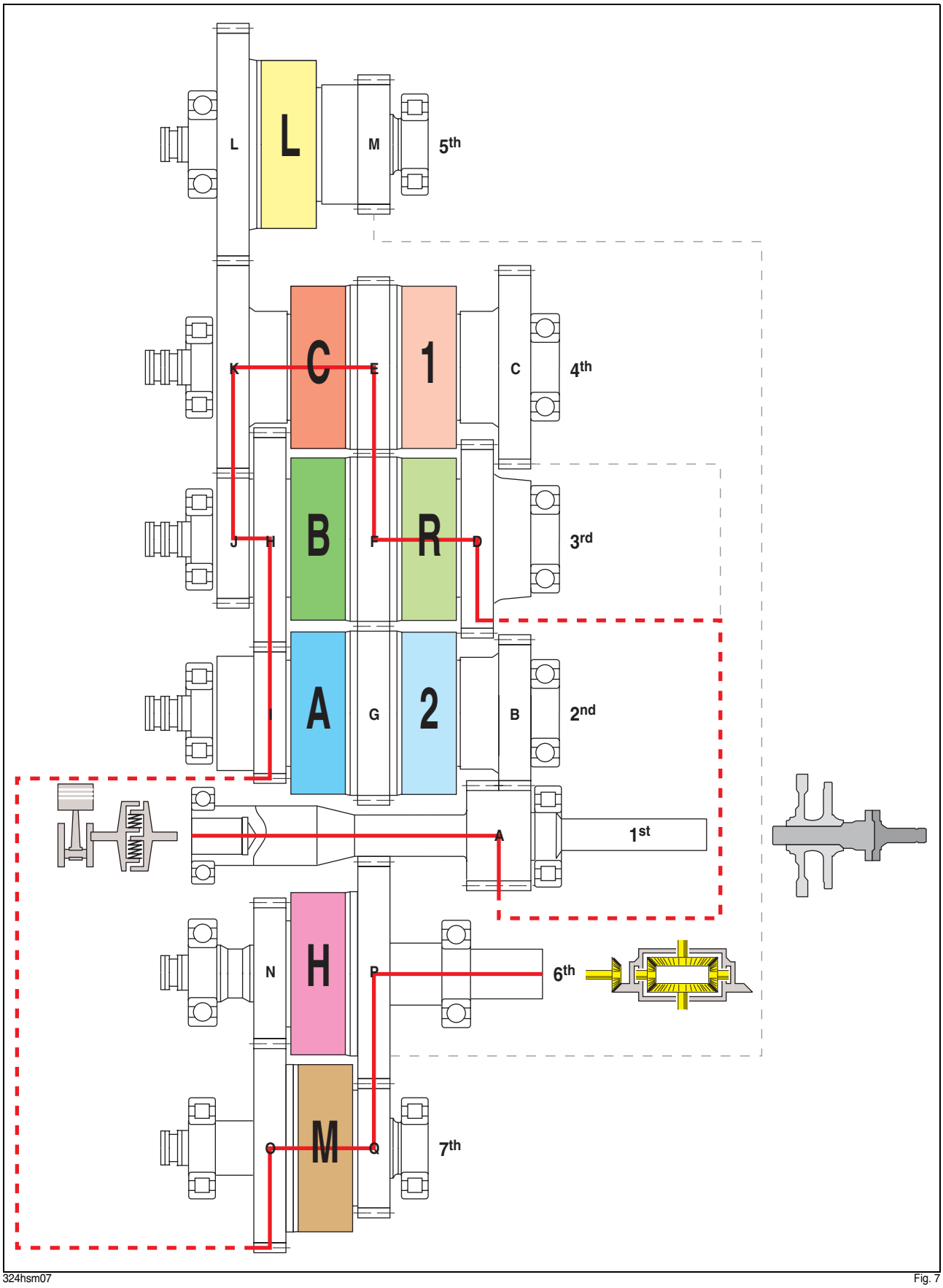


131hsm24 Fig. 38

Notes

B1
GBA 32 FULL POWERSHIFT GEARBOX

Power transmission path in gear R7 (7th reverse gear)

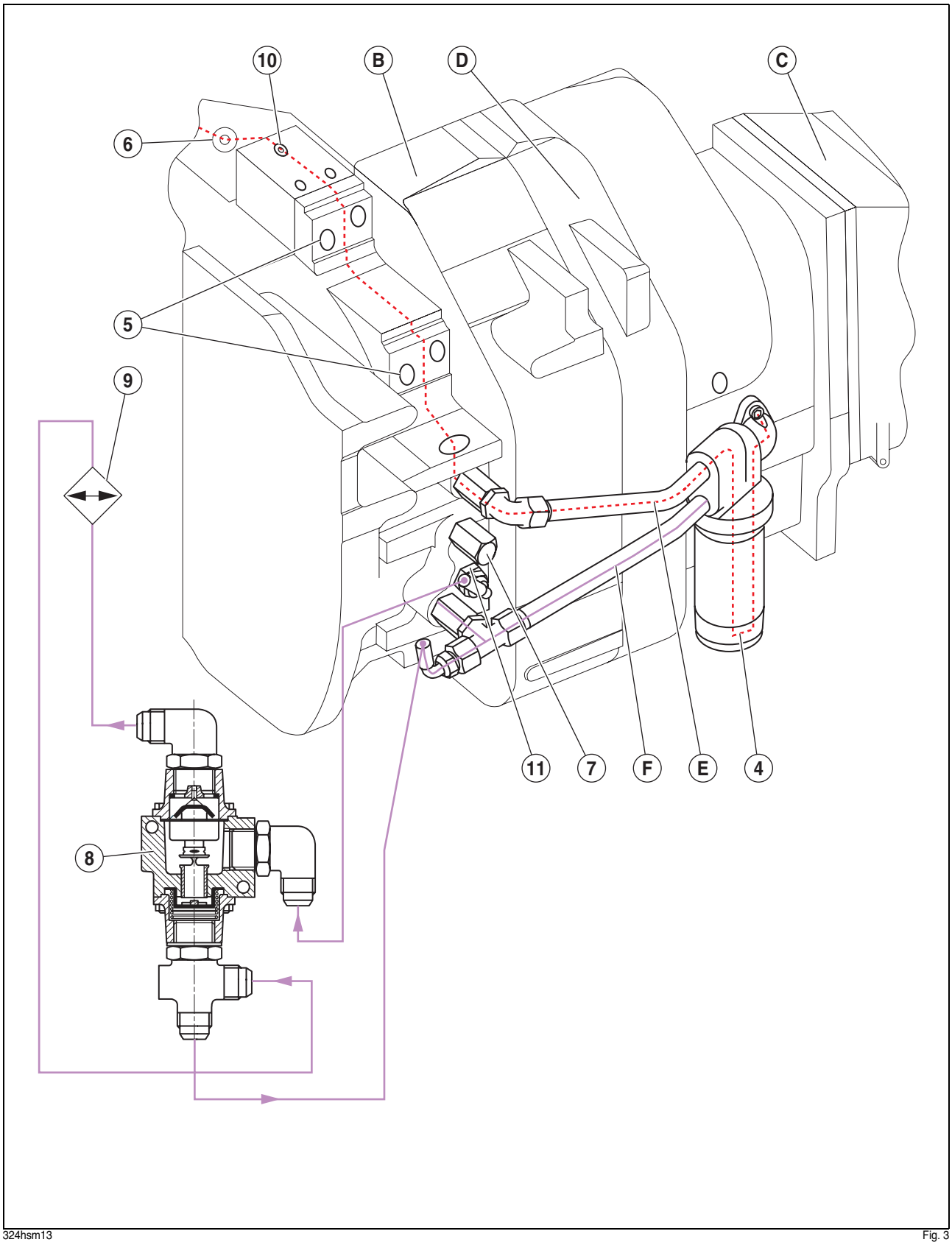


324hsm07

Fig. 7

Introduction to the GBA 32

Left side



324hsm13

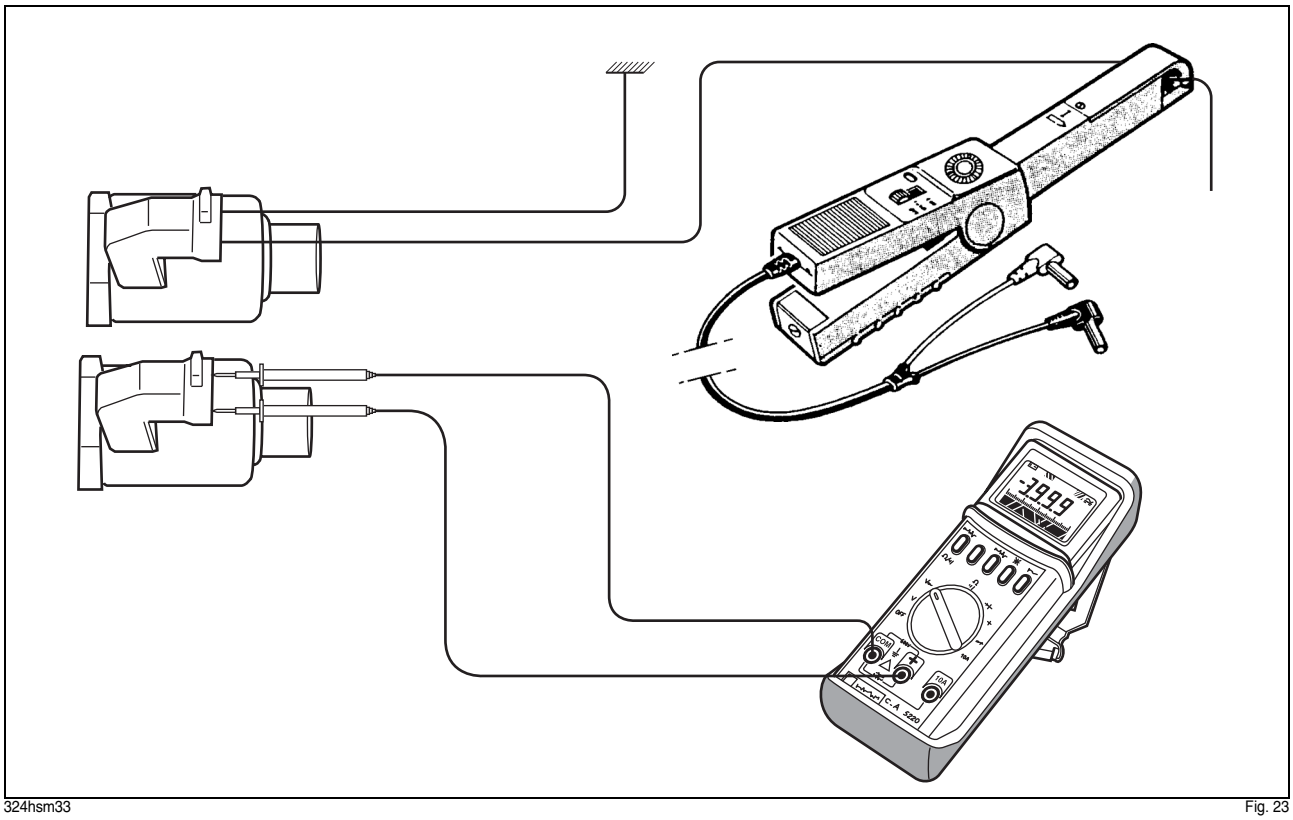
Fig. 3

GBA 32 measurement and checking points

Electrical check on the solenoids

If the pressure is incorrect on a clutch, check the power supply and resistance of the solenoid valve:

– With the solenoid valve live, connect clamp-on ammeter n° 60 05 006 707 with multimeter n° 60 05 006 744 (ammeter function) to the solenoid valve supply cable.
– Put into gear - the current should be 0,66 A*.
– With the power off, connect a multimeter (ohmmeter function) between the 2 solenoid valve terminals.
– The resistance should be 10 ohms.
– If the solenoid power and resistance values are correct, replace the solenoid valve (mechanical failure).



324hsm33 Fig. 23

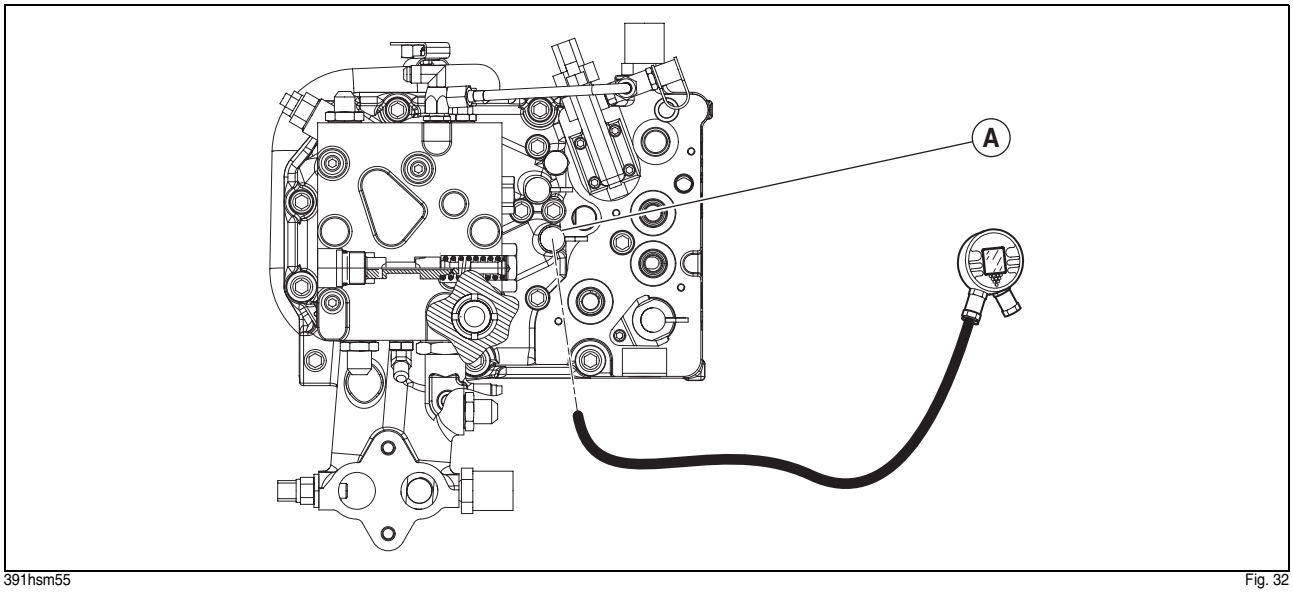
** Important: Even in neutral, the solenoid valve receives a current of 0,10 A.*

LS 110 l/min measurement and checking points

Test conditions.
- Engine at nominal speed.
- Oil temperature at 60°C.

Lubrication pressure check

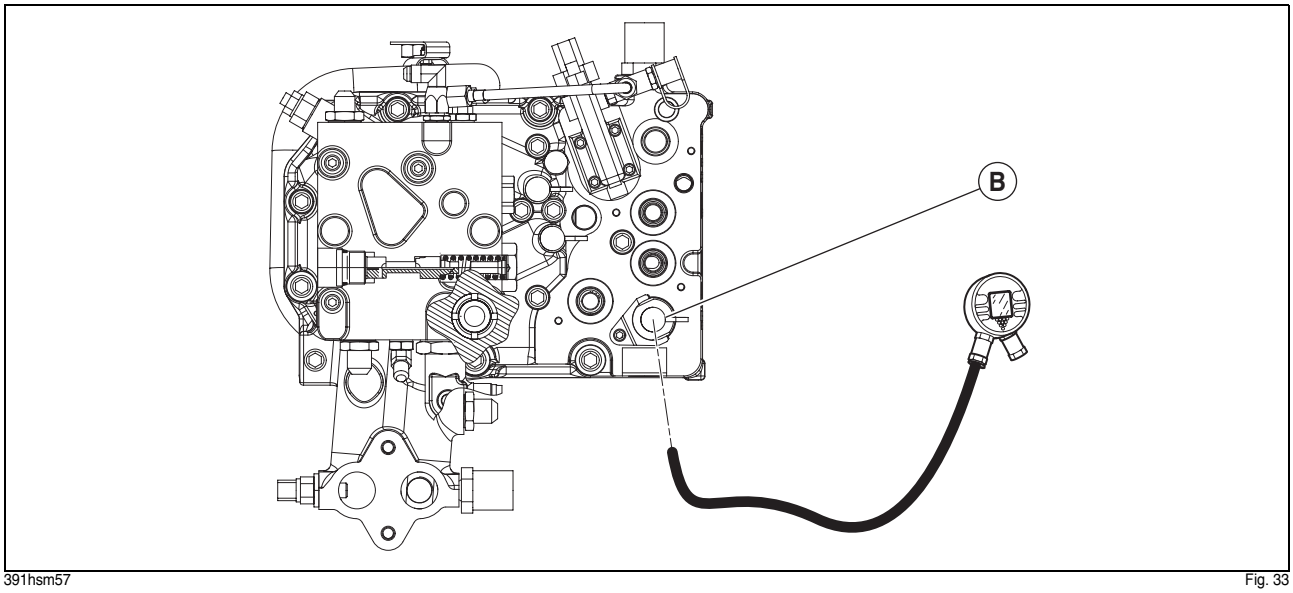
- Connect tester n° 60 05 705 076 to pressure coupling (A) on the right-hand cover.
- The pressure should be 6,3 ± 1 bar (5,2 ± 1 bar at 1 000 rpm).



391hsm55 Fig. 32

Checking the control pressure

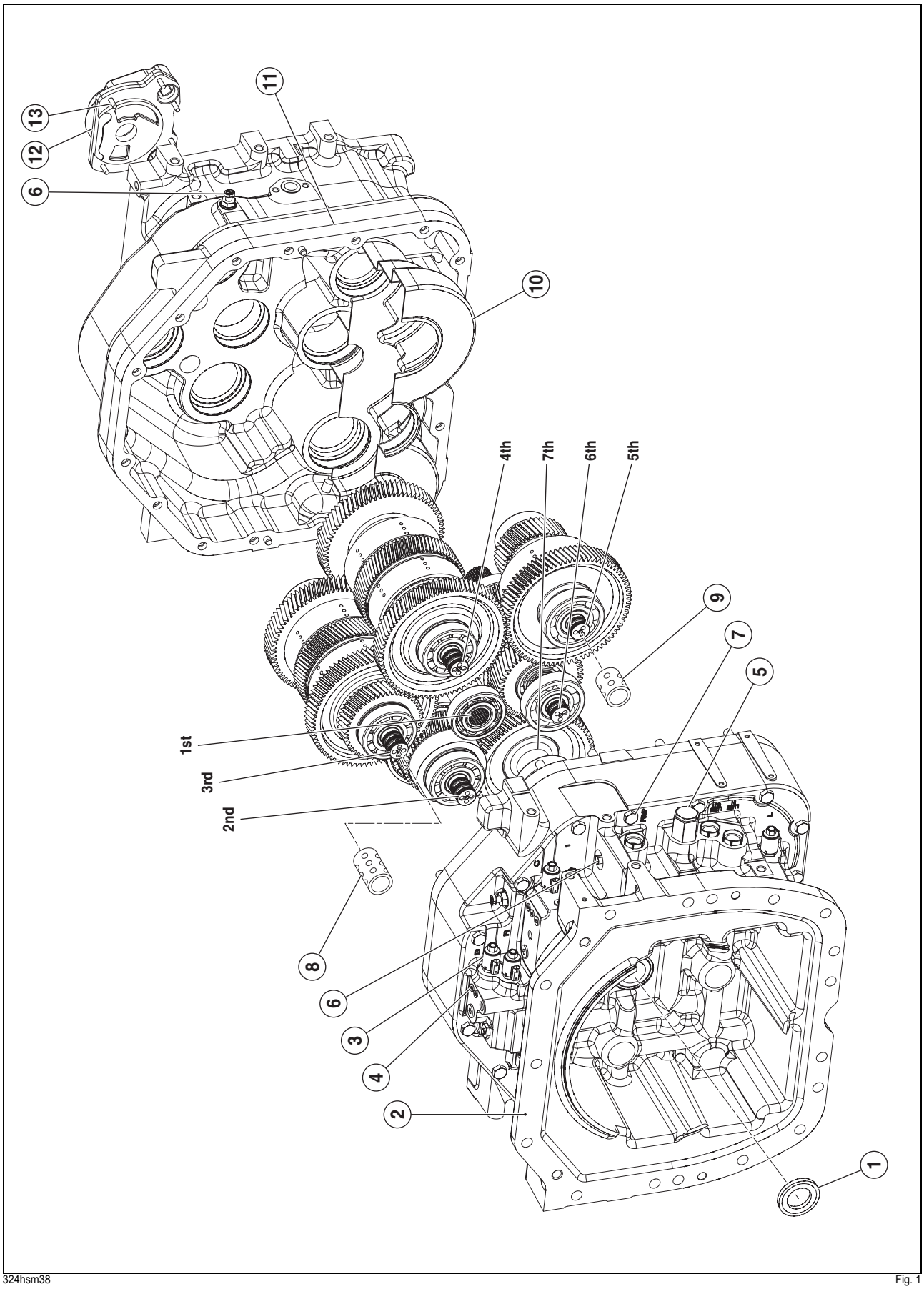
- Connect tester n° 60 05 705 076 to pressure coupling (B) on the right-hand cover.
- The pressure should be 17 bar.



391hsm57 Fig. 33

Reconditioning: Gearbox (AG 250)

Casing separators



324hsm38

Fig. 1

Reconditioning: Gearbox (AG 250)

Replacing the bearings

– Position an inner extractor on the ring concerned.

– Remove the ring.

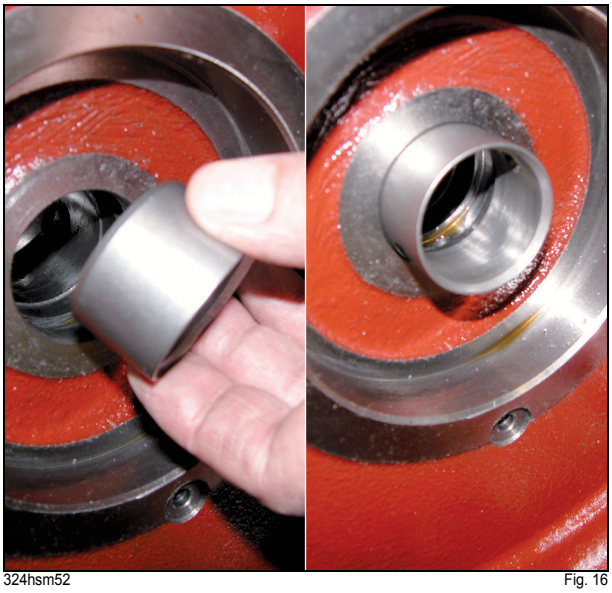
324hsm51 Fig. 15

– Respect the direction of assembly of the ring.

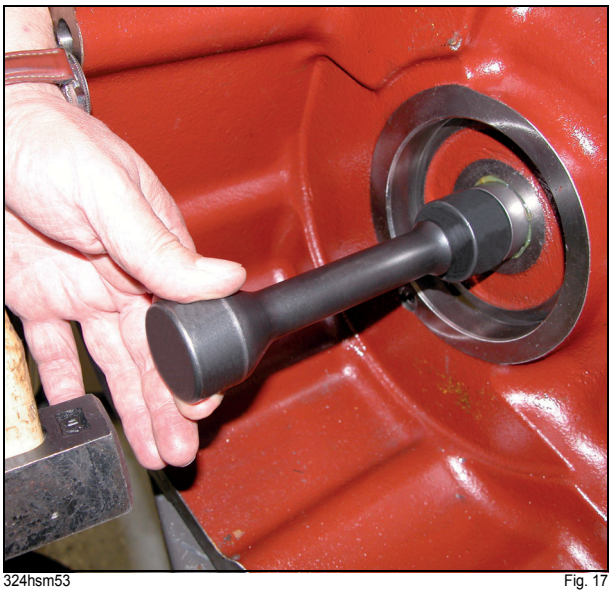
– Lubricate the ring.

– Press home the ring by tapping lightly on a tool suited to the inner and outer diameter of the ring.

Important: Take care to line up the holes in the ring with the housing oil holes.



324hsm52 Fig. 16



324hsm53 Fig. 17

Reconditioning: Gearbox (AG 250)

Important: To remove pinions use kit 00 11 327 080 in order to not start cracking their teeth.

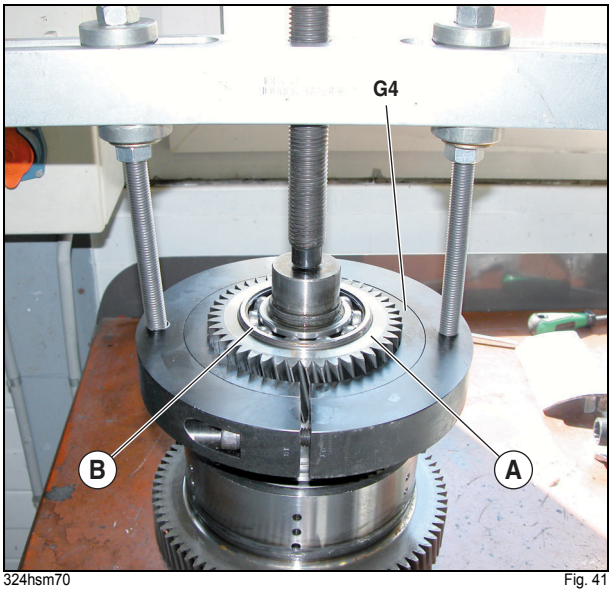
– Position tool "G4" of kit 00 11 327 080 on the pinion (A) of clutch "L".

– Assemble and tighten tool "G1" on tool "G4".

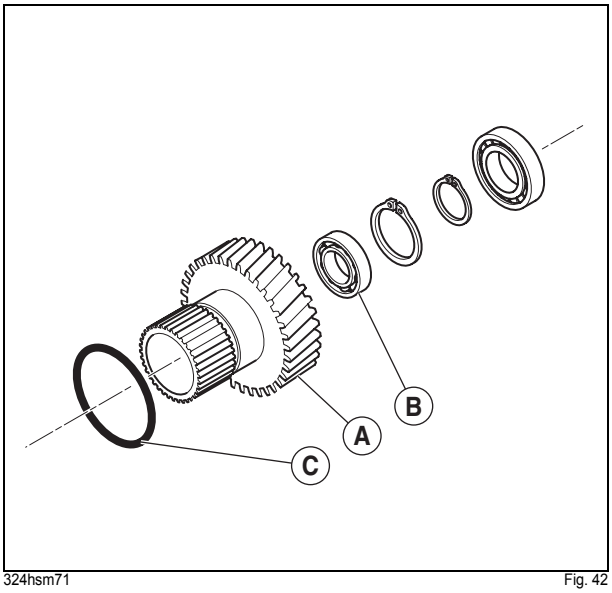
– Position a bearing-puller with 2 threaded rods with a diameter of 14 x 200.

– Remove the pinion (A) with the bearing (B).

– Check for the presence of the o-ring (C) on the pinion.



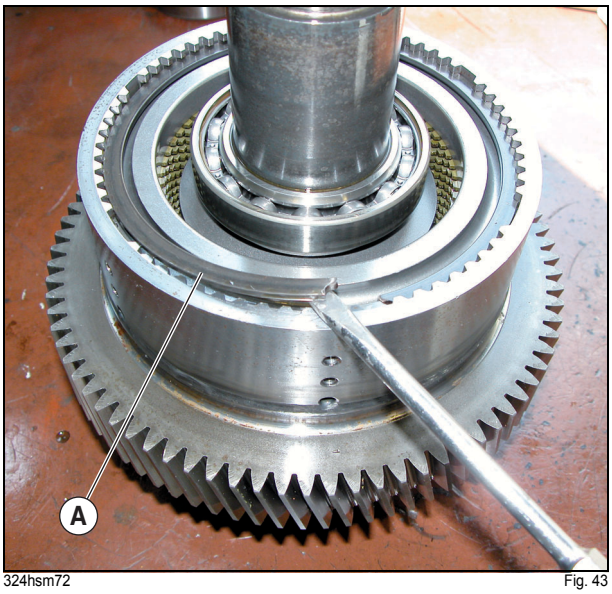
324hsm70 Fig. 41



324hsm71 Fig. 42

– Withdraw the locking ring (A).

– Recover the closing plate, the discs, and the backing plates.



324hsm72 Fig. 43

CLAAS

C1 – GPA 30 REAR AXLE

C2 – SERVICE BRAKE AND HANDBRAKE

C3 – PARK LOCK

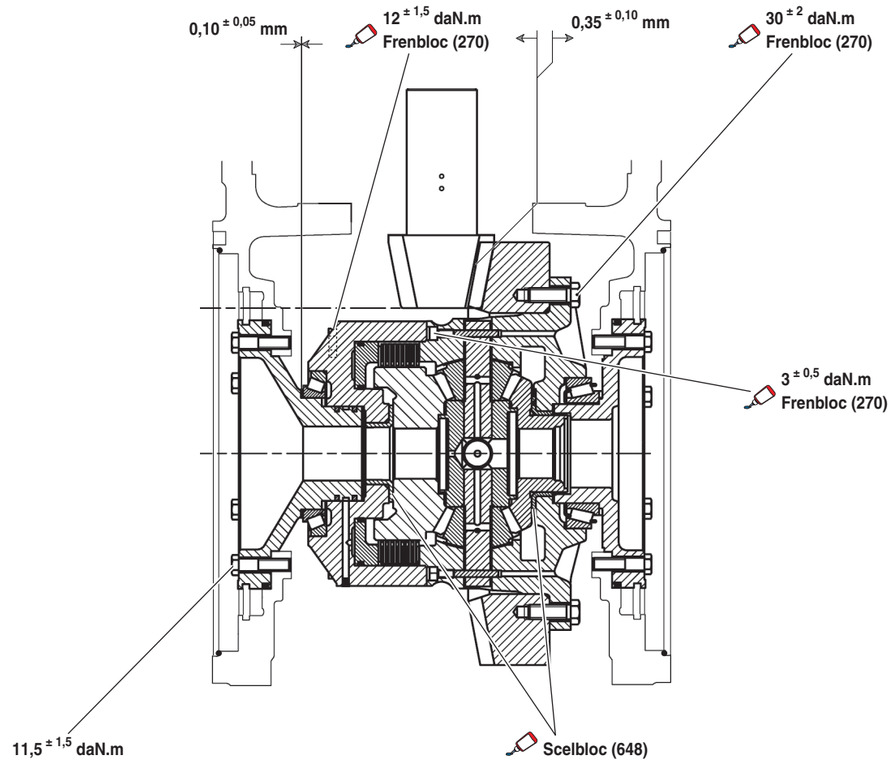
Chapter C

Atles 906

60 05 030 504 – 09.2004 publication

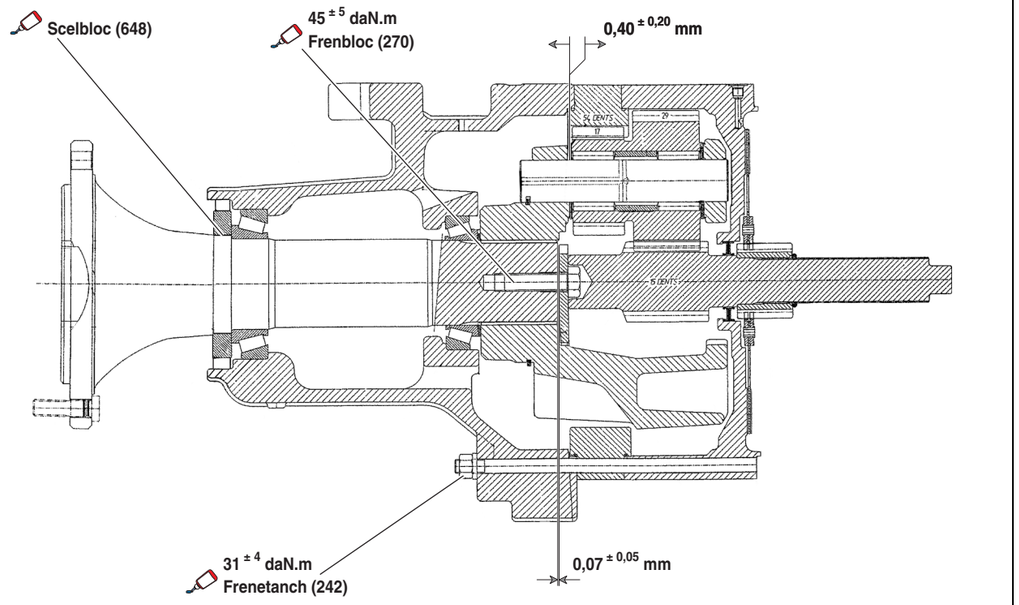
Tightening torques and main adjustments

7" differential



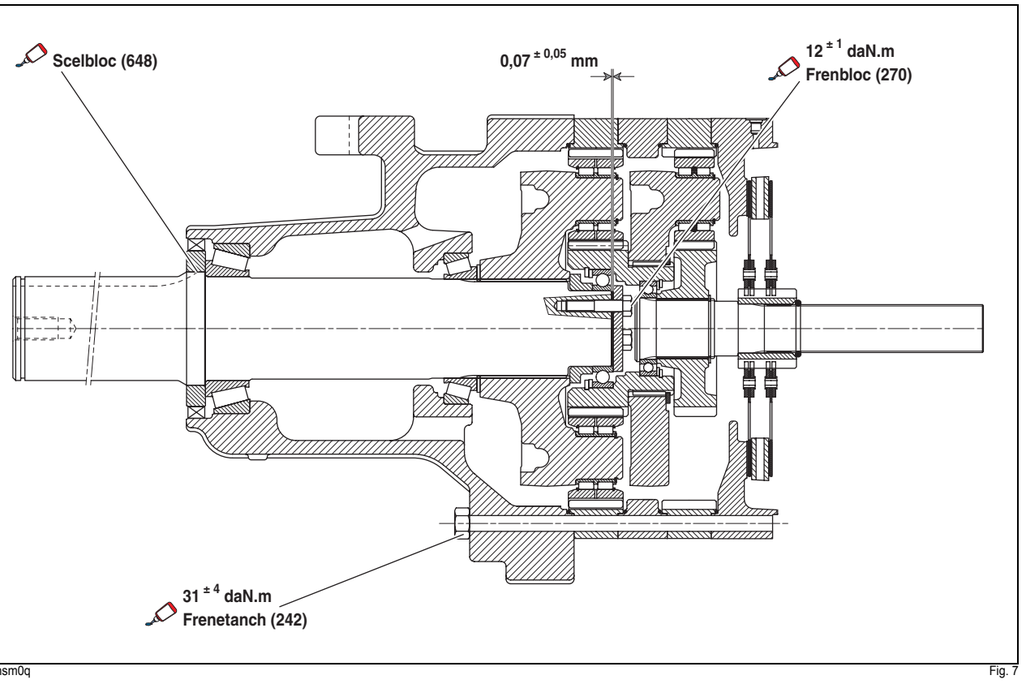
342hsm0o Fig. 5

Composite axle tubes



342hsm0p Fig. 6

Double reduction axle tubes



342hsm0q Fig. 7

7" differential

General

The ring gear is screwed onto the differential case. The differential assembly rotates on 2 tapered bearings held by 2 side supports and screwed onto the housing. The differential assembly consists of a case containing 4 planet gears and 2 sun gears. The differential assembly is preloaded by means of shims (31) placed between the cone (30) and the left-hand bearing (35). The backlash between the drive pinion and the ring gear is obtained by means of shims (7) inserted between the cup (6) and the differential case (9).

Differential lock

The multidisc locking device located on the left-hand side of the case (9) comprises.

– A casing (27) containing the discs (22) and the backplates (23).
– A hub (20) connected to the sun gear of the LH axle tube.
– A piston (25) fitted in the casing (27).

The piston chamber housed in the casing (27) communicates with a duct in the bearing (35), enabling low pressure (17 bar) to act on the piston. The duct is sealed by two rings (33).

Clutched position

When the differential locking solenoid valve is activated, oil flows into the piston chamber. The piston compresses the intermediate plates (23) and the discs (22) connected to the hub (20) and case (27) respectively. In this clutched position, the input sun gear of the RH and LH axle tubes rotate at the same speed.

Declutched position

When power is turned off, the piston withdraws and the discs and intermediate plates are decompressed, enabling the sun gears and planets gears to fulfil their differential function.

Nomenclature

1 Screw.
2 RH bearing.
3 O-ring.
4 Centring pin.
5 Bearing cone.
6 Bearing cup.
7 Shims.
8 Screw.
9 Differential housing.
10 Friction ring.
11 Ring gear.
12 Drive pinion.
13 Sun gear.
14 Friction washer.
15 Planet gear.
16 Locking needle.
17 Screw.
18 Planet gear pin.
19 Differential joint.
20 Sun gear/hub.
21 Friction ring.
22 Differential locking disc.
23 Differential locking backplate.
24 O-ring.
25 Piston.
26 O-ring.
27 Differential locking case.
28 Screw.
29 Bearing cup.
30 Bearing cone.
31 Shims.
32 O-ring.
33 Sealing piston ring.
34 Centring pin.
35 LH bearing.
36 Screw.
37 O-ring.
38 Supply tube.
39 Seal.
40 Coupling.

7" differential

Measuring "X"

Using a suitable depth gauge, measure "C" and determine dimension "X" between the bearing cone (30) and the contact surface of the bearing on the housing (Fig. 40 and 41):

X = C – 10 mm

(10 mm is the thickness of measuring tool n° 60 05 006 309).

Thickness "E" of shims (31)

Determine "E" according to "X" and "Y" plus a preload P1 = 0,10 ± 0,05 mm.

E = X – Y + P1

For example, if A = 39,65, B = 103,45 and C = 74,5

Y = 103,45 – 39,65 = 63,8

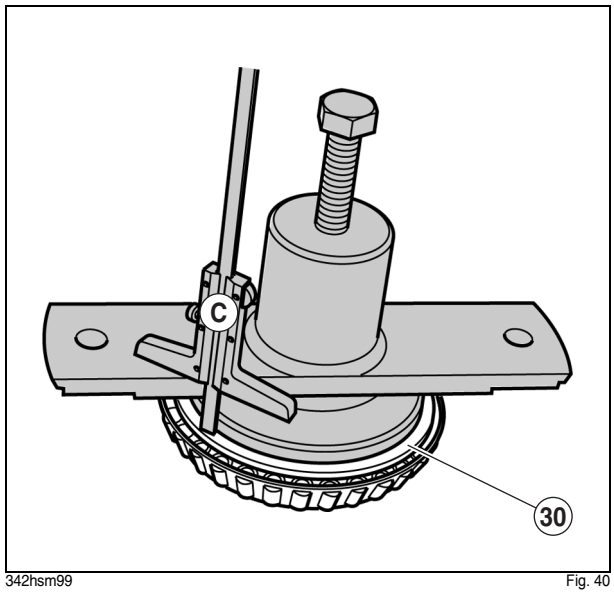
X = 74,5 – 10 = 64,5

E (minimum) = 64,5 – 63,8 + 0,05 = 0,75

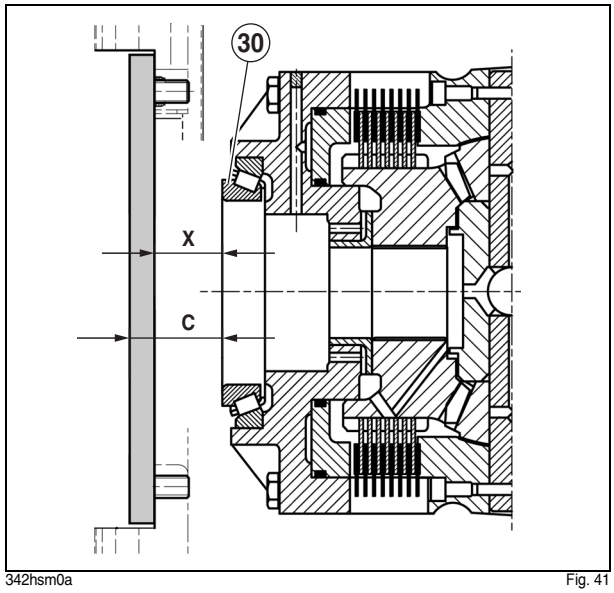
E (maximum) = 64,5 – 63,8 + 0,15 = 0,85

According to the example, the shim thickness must be between 0,75 and 0,85 mm.

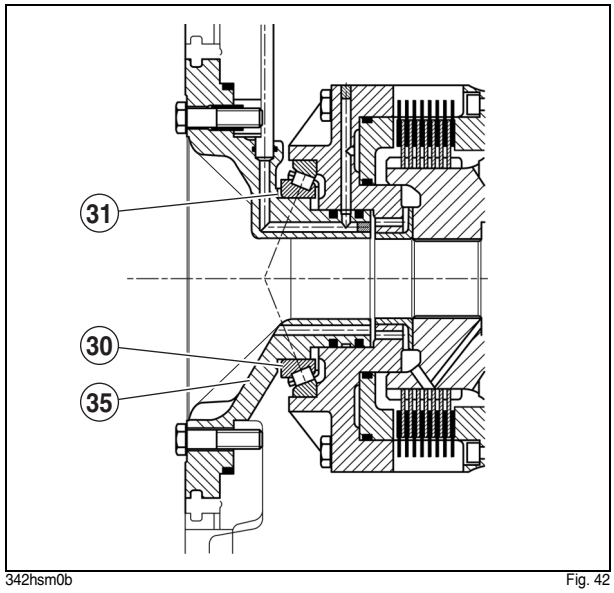
– Remove the tool and the bearing cone (30). Place shims (31) to a thickness "E" on the bearing (35).
– Fit the RH bearing (35) (see paragraph concerned).
– Refit the assembly as described in the procedures on the pages concerned.



342hsm99 Fig. 40



342hsm0a Fig. 41

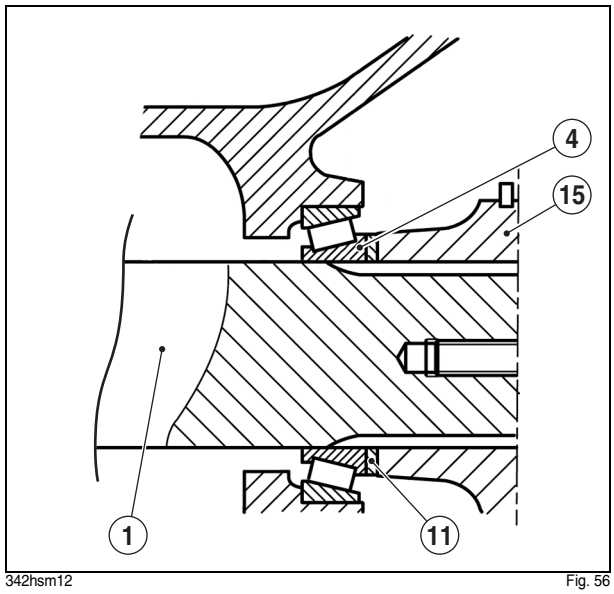


342hsm0b Fig. 42

Composite axle tubes

Removing the roller bearings and seals

– Remove the axle tube from the rear axle housing.
– Remove the planet carrier (15).
– Remove:
  • The tab washer (11)
  • The cone (4) on the planet carrier side (free on the shaft).
– Extract the shaft (1) from the axle tube.
– Extract the wheel-side cone (4).
– Drive out the lip seal (3).
– Use an extractor to remove the bearing cups.



342hsm12 Fig. 56

Refitting the roller bearings and seals

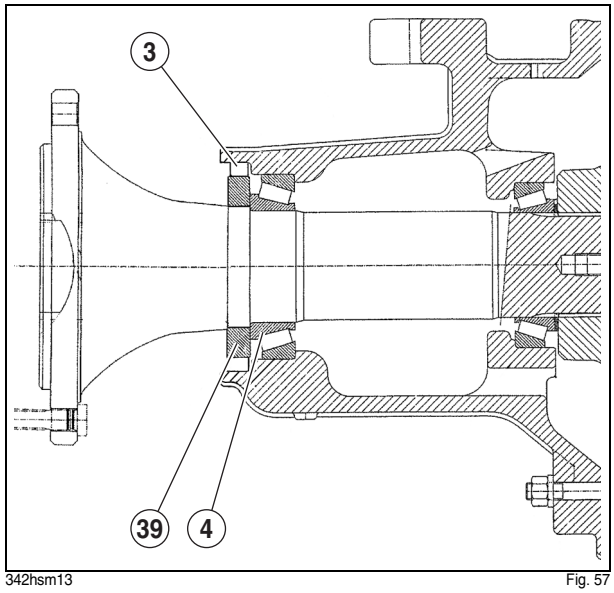
– Clean the seal bearing faces. The seal bearing faces, the cups and cones should be free from burrs and impacts.

N.B.: Fit the seals the right way round.

– Lubricate and fit the bearing cups.
– Lubricate the shaft (1) and fit the wheel-side cone (4).
– Fit the bushing (39), coated with Scelbloc (648), on the bearing cone.
– Using a suitable jig, fit the lip seal (3) into the axle tube.

N.B.: Coat the outer diameter of the seal with Scelbloc (648) and position it such that the inner face is tight on the bushing (39).

– Grease the cone and the lips of the seal moderately.
– Protect the splines of the shaft (1) and insert it in the axle tube.
– Shim as described in the procedure below.
– Refit the axle tube.



342hsm13 Fig. 57

Double reduction axle tubes

Shimming the wheel shaft bearings

– Position the axle tube vertically.
– Remove the six planet gears from the secondary planet carrier (15).
– Remove the screws (32), the washer (31) and the shims.
– Seat the cones in their cups by rotating the axle tube on its pin.
– Measure the distance (A) between the inner bush of the bearing (28) and the shim contact face.
– Measure at 3 points and take the average.
– Fit shims with a thickness corresponding to distance (A) minus a preload of 0,07 ± 0,05 mm.

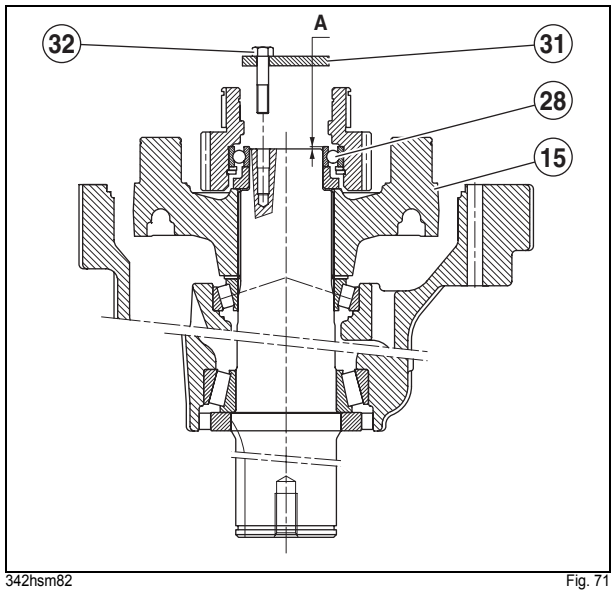
For example, if the distance measured is 0,90 mm

0,90 – 0,02 = 0,88 mm.

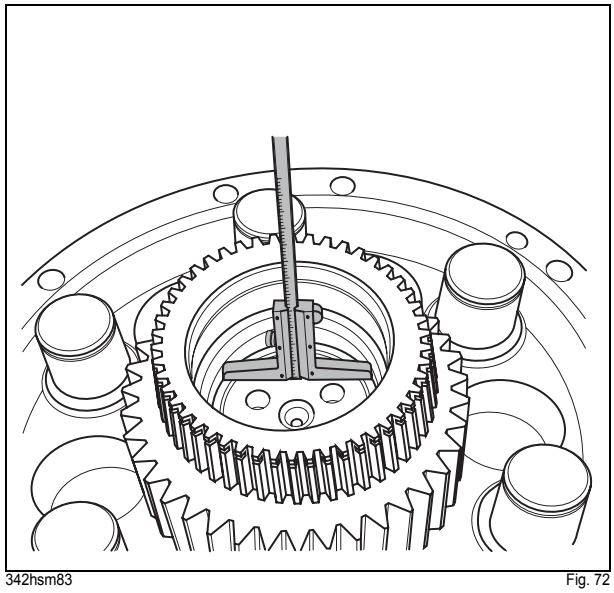
0,90 – 0,12 = 0,78 mm.

The shims to be fitted should have a thickness of 0,78 to 0,88 mm.

– Refit the washer (31).
– Tighten the screws (32), coated with Frenbloc (270), to 12 ± 1 daN.m.



342hsm82 Fig. 71


342hsm83 Fig. 72

Replacing the wheel stud

– Extract the faulty stud using a bronze drift and a hammer.
– Clean the serrations left by the stud in the stub axle flange.
– Coat the serrations of the new stud with Frenbloc (270).
– Position the new stud in the serrations formed by the old stud.
– After having made sure that the splines are correctly lined up, drive the stud head against the inside of the stub axle flange using a copper hammer.

GPA 30 power take-off lower shaft

General

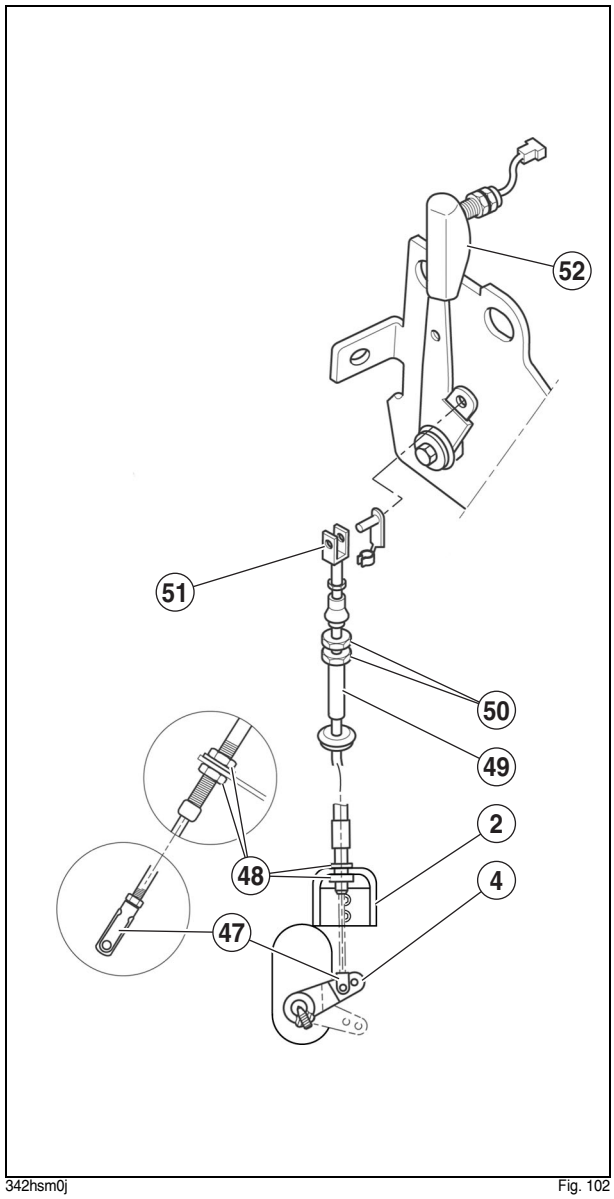
The driven gears are mounted on the lower shaft of the rear PTO housing. These gears are constantly engaged with the drive gears entrained by the upper shaft line. The lower shaft is supported at the front by a roller bearing fitted in the rear axle housing and at the rear by 2 tapered bearings mounted in the PTO rear housing bearing. The dog hub is connected to the lower shaft by splines. The gears drive the shaft when the dog (10) is displaced either forward (540 rpm) or rearward (1 000 rpm). When one of the drive gears transfers movement to the lower shaft, the other gear is passive and rotates freely around its shaft. A fork enables the required speed to be selected (540 or 1 000 rpm) via the external control located on the right-hand side of the housing. The rear bearing is fitted with a lip seal and an O-ring. The tapered bearings are adjusted by shims placed between the rear PTO housing and the bearing block. A notched washer transmits the information required for sensor operation and also acts as a spacer for the tapered bearing cones. Lubrication is provided by the transmission oil. The oil kept in the deflector lubricates the roller bearing and the tapered bearings via the shaft containing an axial duct and radial holes.

Nomenclature

1 Deflector.
2 Roller bearing.
3 Retaining ring.
4 Splined washer.
5 540 rpm gear.
6 Retaining ring.
7 Hub.
8 Sliding sleeve.
9 O-ring.
10 Pads.
11 Fork.
12 Needle screw.
13 Control shaft.
14 Control link.
15 Bush.
16 Screw.
17 Spring.
18 Lock.
19 Retaining ring.
20 1 000 rpm gear.
21 Rear PTO housing.
22 Retaining ring.
23 Bearing cup.
24 Bearing cone.
25 Notched washer.
26 Lip seal.
27 Shims.
28 O-ring.
29 Bearing.
30 Screw.
31 Shaft.
32 Guide pin.

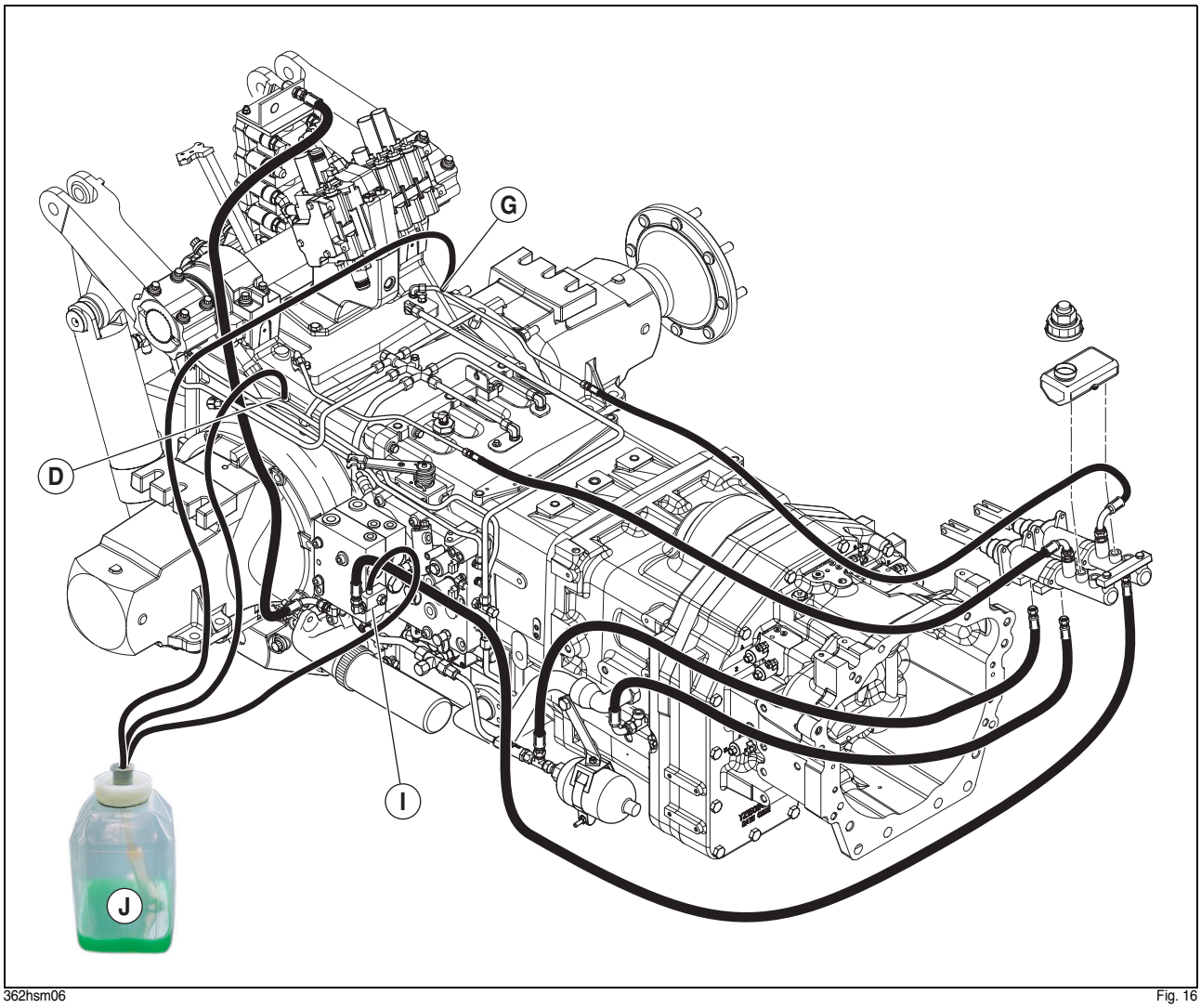
Setting the controls

– Put the rocker bar (4) in the "crawler" position.
– Put the range lever (52) in the cab in the "crawler" position.
– Screw the yoke (51) onto the control cable (50) and tighten the check nut.
– Mount the yoke (51) on the cab range lever.
– Mount the yoke (47) in the same way on the rocker bar (4).
– Adjust the sheath stops with the nuts (48) and (50) while checking that the cable (49) is not strained.
– Check operation and locking in both positions.
– Finely adjust the setting with nuts (48) and (50) if necessary.



342hsm0j Fig. 102

Bleeding the brake circuit



362hsm06 Fig. 16

Park Lock

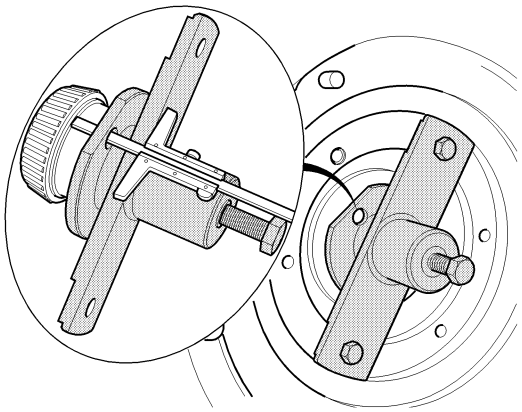
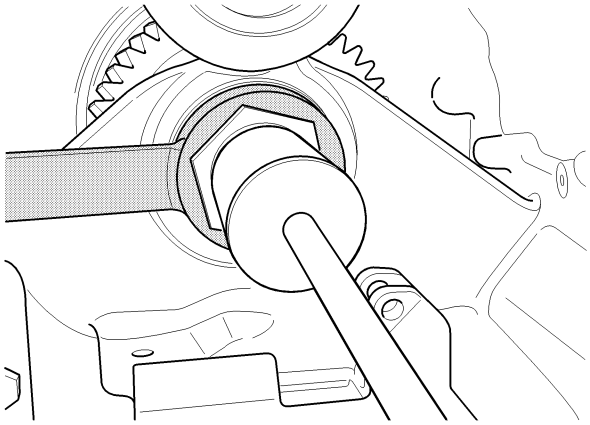
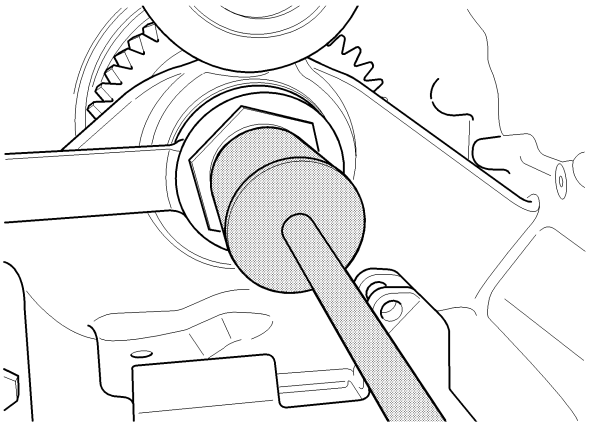
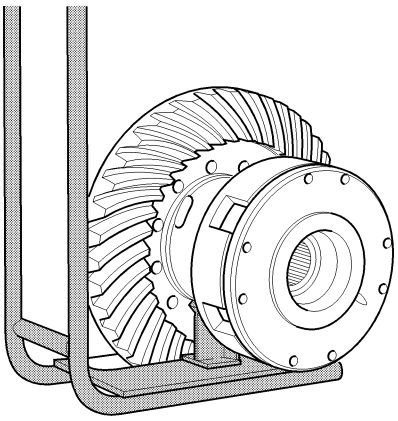
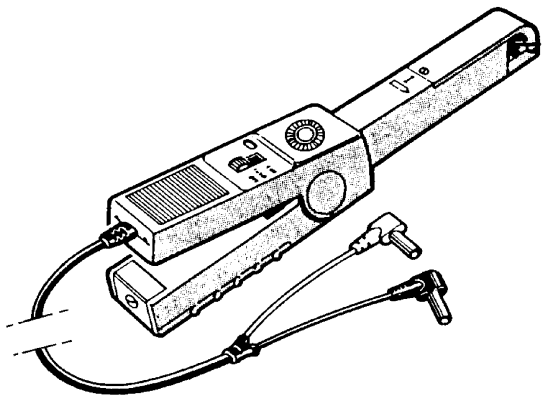
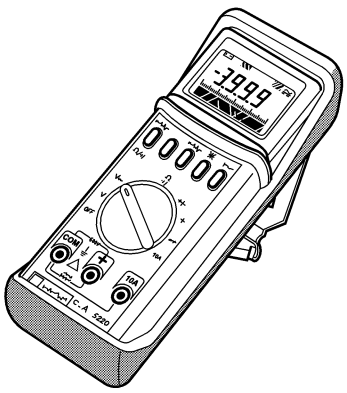
General

The Park Lock device, mounted in the intermediate housing, consists of a ratchet (17) and a toothed sleeve (15), connected by splines to the drive pinion and the lower shaft linked to the gearbox. A box (3) mounted on the right-hand side of the housing and a spring-loaded control rod activate this device. The Park Lock is only fitted on transmission systems equipped with a Full Powershift gearbox.

Remark

The special screw (6) (Fig. 1) is used to release the system in the event of hydraulic or electronic circuit failure. Remove the nut (9). Turn the screw clockwise until resistance is felt; in this position, the rear face of the piston (1) is in contact with the shoulder of the housing. In normal use, this screw must be loosened completely and held in place with lock nut (9) (Fig. 1).

GPA 30 rear axle tools – Service brake and handbrake – Park Lock

60 05 006 309	60 05 006 310
	
Shimming tool (dimension measurement)	**Allen key**
60 05 006 311	60 05 006 314
	
Splined socket	**Differential unit stand**
60 05 006 707	60 05 006 744
	
Clamp-on ammeter	**Multimeter**

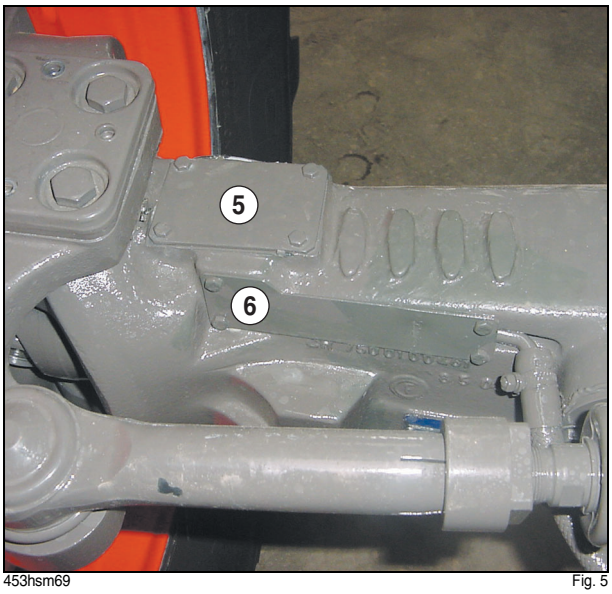
Disassembly prior to front axle operations

Preliminary operations

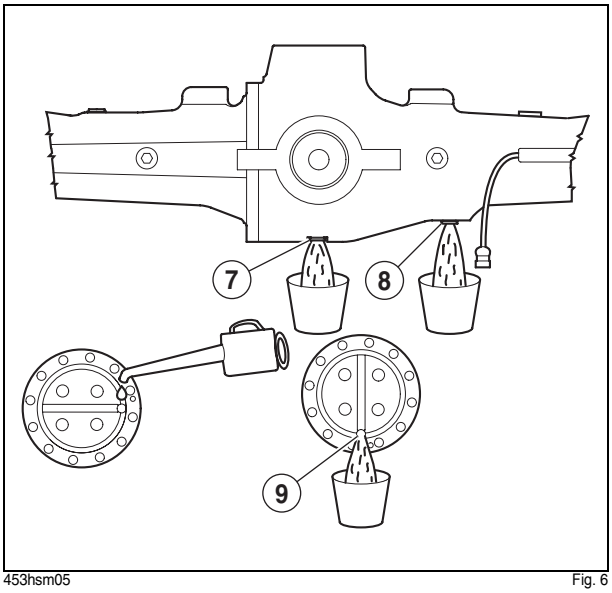
The front axle must be raised on stands at the same time as the rear axle if the current operation requires the engine to be started up as the front axle remains engaged when off. There is therefore a risk of the tractor moving forward.

The tractor must be immobilised on flat, level ground.

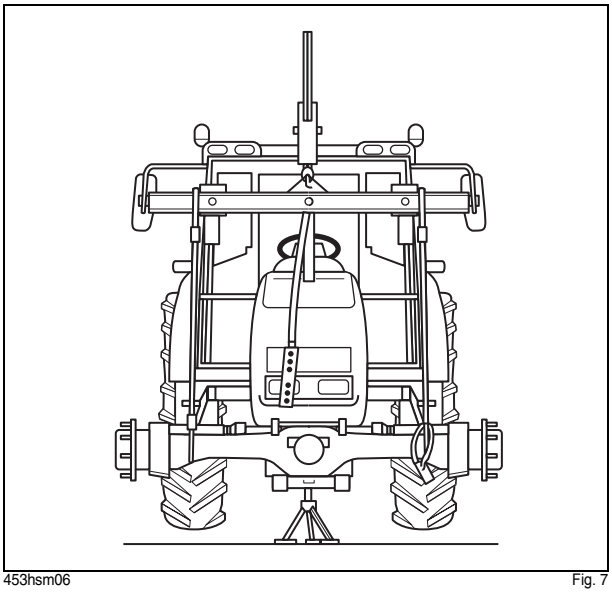
- Apply the handbrake.
- Disconnect the battery.
- Chock the rear wheels.
- Remove the housing and drive shaft.
- Disconnect the angle sensor after removing the 2 flaps (5) and (6).
- Drain the axle casing at (7), (8) and the wheel hubs at (9).
- Chock the tractor under the crankcase with stands.
- Remove the front wheels.
- Disconnect the hose couplings from the steering cylinder. To make the operation easier, take the weight off the axle.
- Remove the supply line coupling of the differential lock hydraulic control.
- Using a hoist, lifting bar n° 77 01 388 906 and 2 slings, lower the front axle then extract it after removing the 4 screws holding the 2 bearings.



453hsm69 Fig. 5



453hsm05 Fig. 6



453hsm06 Fig. 7

Adjusting the wheel pivot bearing preload

– Measure "H" (distance between the two knuckle holder planes).
– Fit the pivots (11), (22) plus (39) and (40) temporarily without the shims (20).
– Measure "L" (distance between the bearing surfaces of the knuckle holder).
– Fit shims (20) so that "L = H".
– Add 0,7 mm of preload shims.

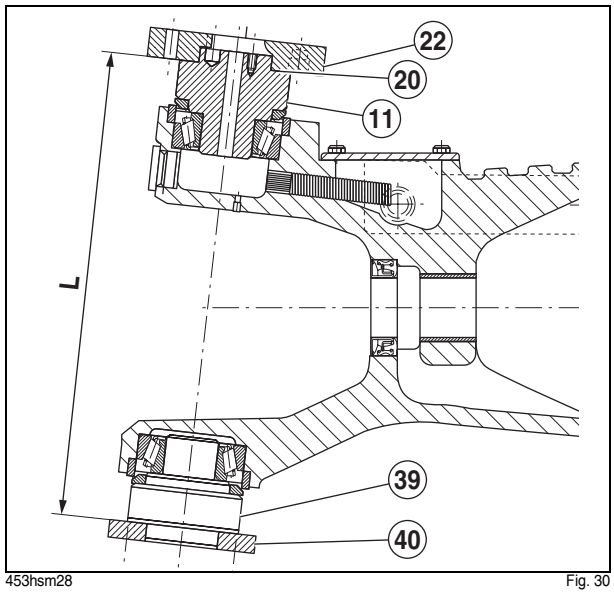
Example:

L = 314,1 mm

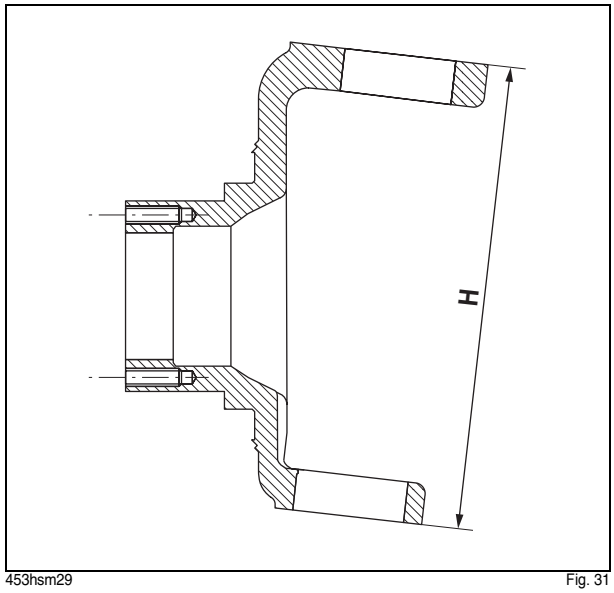
H = 315,5 mm

1,4 mm of shims therefore need to be used. Then add 0,7 mm of preload shims.

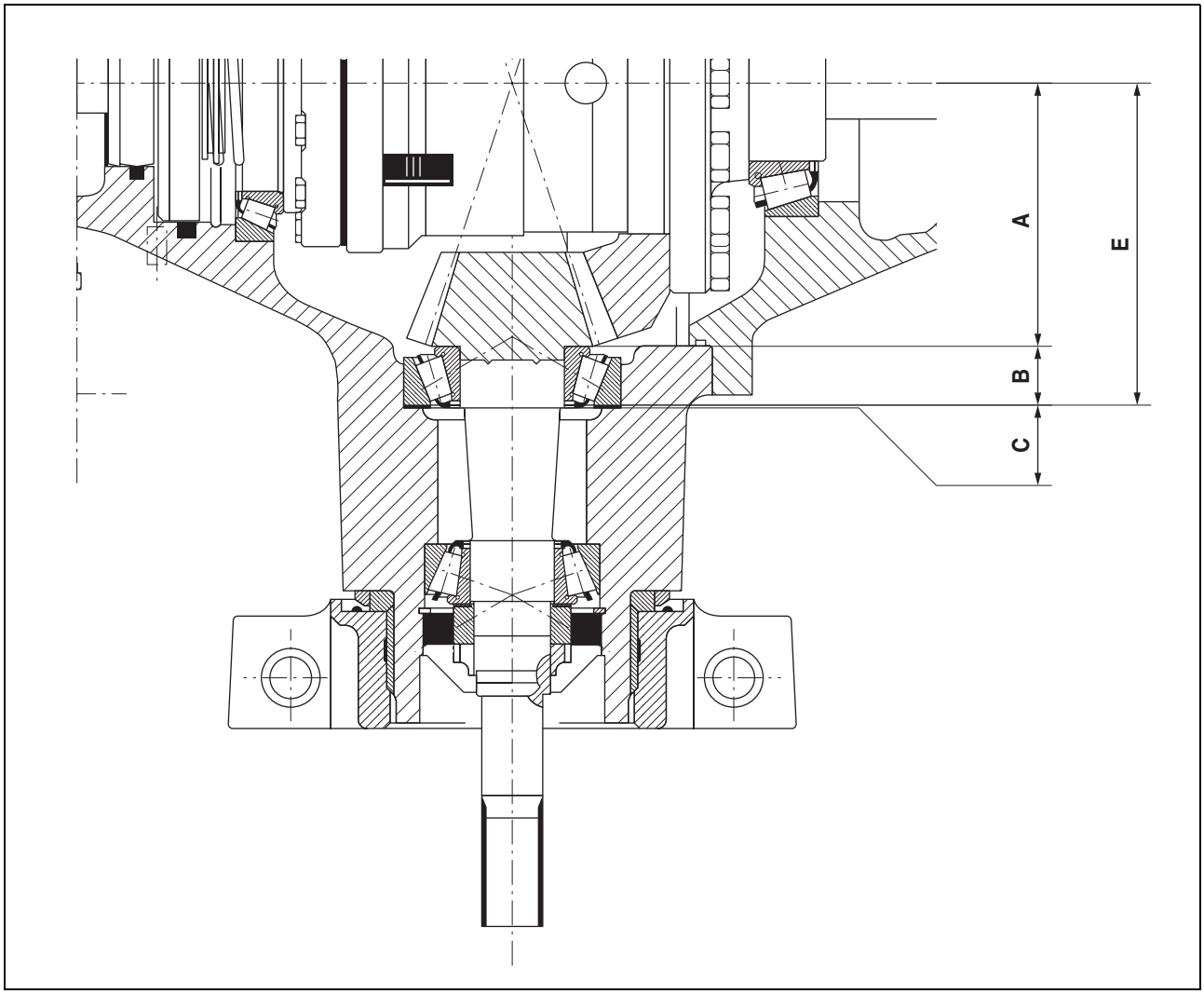
– Grease the lips of the seals before fitting them inside the knuckle holders.
– Fit the universal shaft and the wheel pivot.
– Tighten the screws (38) of the lower pivot support in a cross sequence to 8 daN.m.
– Tighten the screws (10), (37) of the lower and upper pivot support in a cross sequence to 19 daN.m (Fig. 21).



453hsm28 Fig. 30



453hsm29 Fig. 31

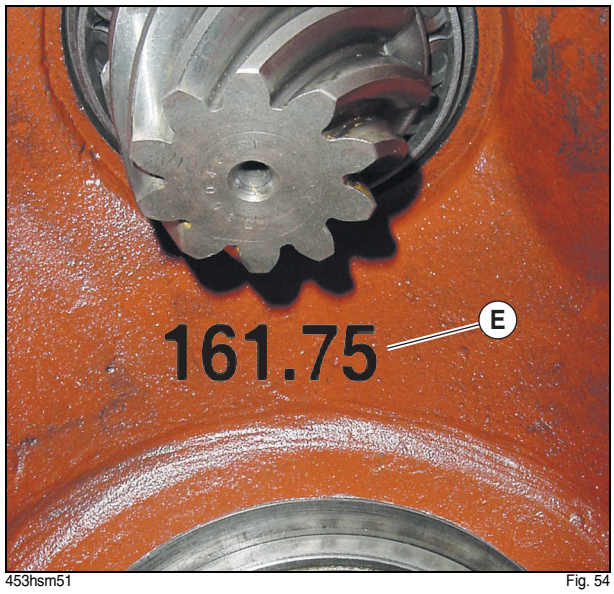


453hsm50 Fig. 53

A. Distance marked on the bevel gear.
B. Bearing height.
C. Shim thickness.
E. Gear protrusion distance marked in the housing.

Adjusting the gear protrusion distance

– Note the distance "E" indicated inside the housing near the gear.



453hsm51 Fig. 54

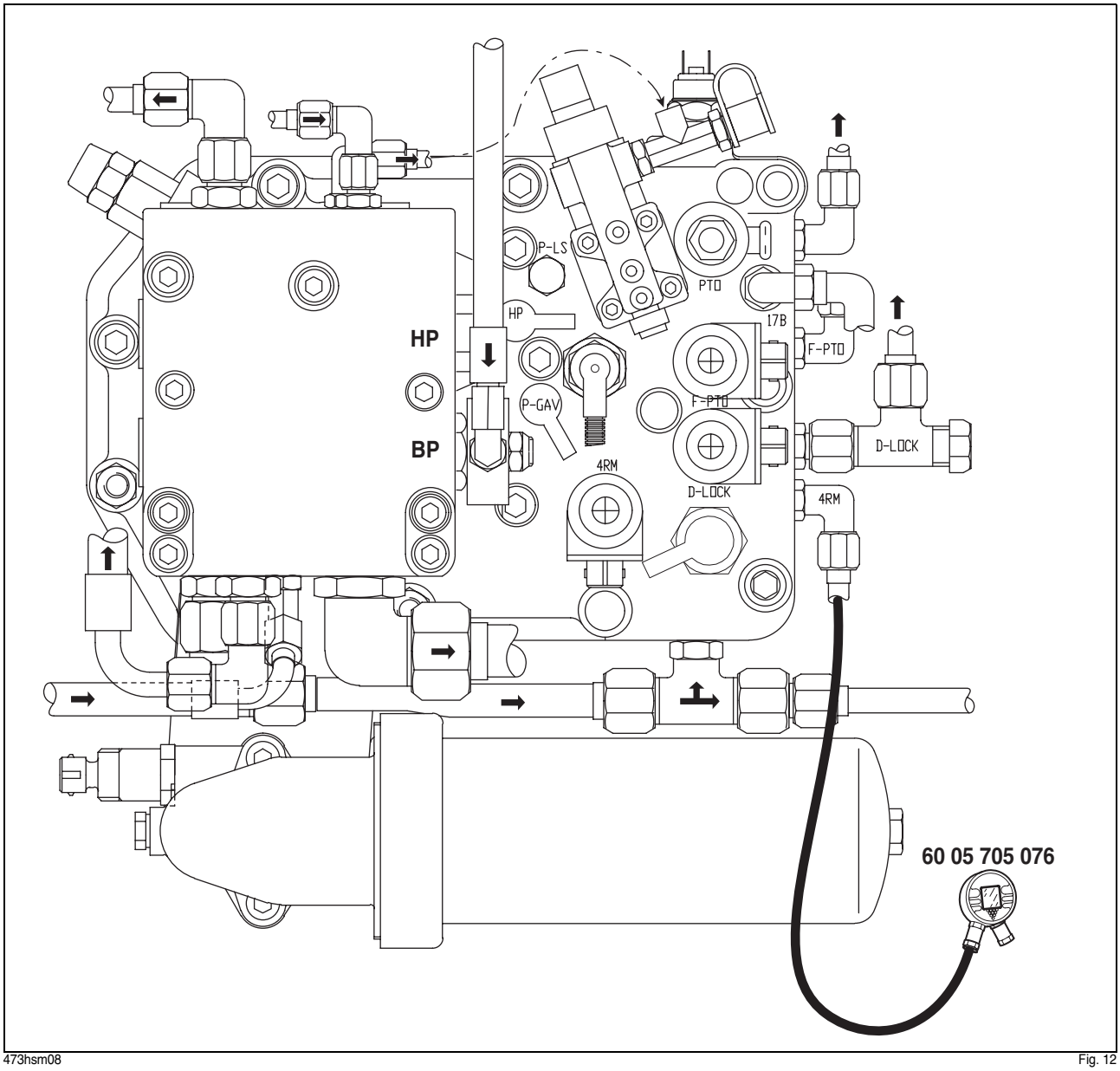
D2 – GPA 30 4-WHEEL DRIVE POWER TAKE-OFF HOUSING

Hydraulic measurement and checking point

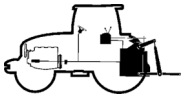
Test conditions:
- Engine idling.
- Transmission oil temperature: 60°C.

Checking the front axle engagement pressure

- Remove the 4-wheel drive housing supply pipe and fit a hydraulic hose in its place.
- Connect pressure gauge n° 60 05 705 076 to the hose.
- Activate the front axle engagement switch.
- Measure the pressure which must be 17 bar.



473hsm08 Fig. 12



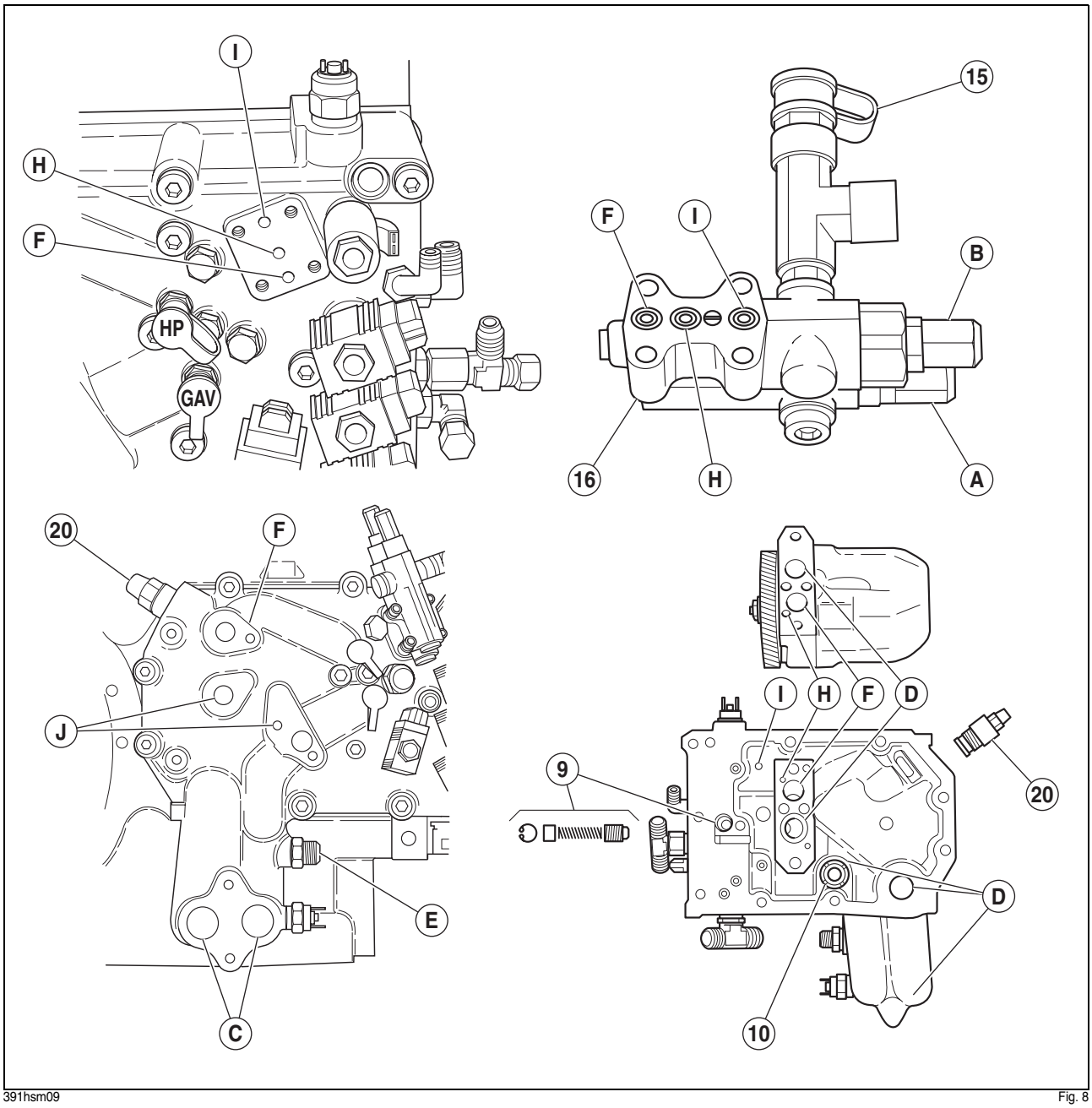
Description

Characteristics

Type of circuit	Closed centre/Load sensing	
Pumps		
Number	2	
Type	Gear, variable displacement	
Location	In the rear axle	
Circuit	Boost	Principal
Pump displacement (cm³/rev)	60	0 to 45
Flow rate at rated engine speed (l/min)	160	100
Flow rate at max. engine speed (l/min)	—	110
Calibration pressure (bar)	5	200
Filters		
Suction strainer - filtration threshold	150 microns	
Filter (flow reversal) - filtration threshold	15 microns	
Blockage indicator	Yes	
Cooler		
Priority unit		
Spool valves		
Type	SB 23 "Load Sensing" (mechanical control) SB 23 EHS (electro-hydraulic control)	
Type of pressure take off points	Break away	
Flow rate control range	5 to 90 l/min	
Maximum number	5	
Steering unit		
Type	OSPD 100/260 "Load Sensing"	
Calibration pressure (bar)	170 to 175	
Steering cylinder (position)	Integrated into rear of front axle	
Linkage		
Type	EHR 23 "Load Sensing"	
Electronic lift	TCE – 15 – 15 T – 25	
Number of external cylinders	2 (single action)	
Lift capacities at the swivel joints (kg)		
Maximum	12 300	
Over the whole stroke	6 420 to 8 520	
Trailer brake valve		
Type of control	Control synchronised hydraulically with the tractor brakes.	
Type of pressure take off points	External pressure take-off point at the rear on base plate.	

Nomenclature					
	High-pressure circuit.		Return circuit.		Lubrication system.
	Charge circuit.		Control circuit.		Suction circuit.

Identification of ports and lines



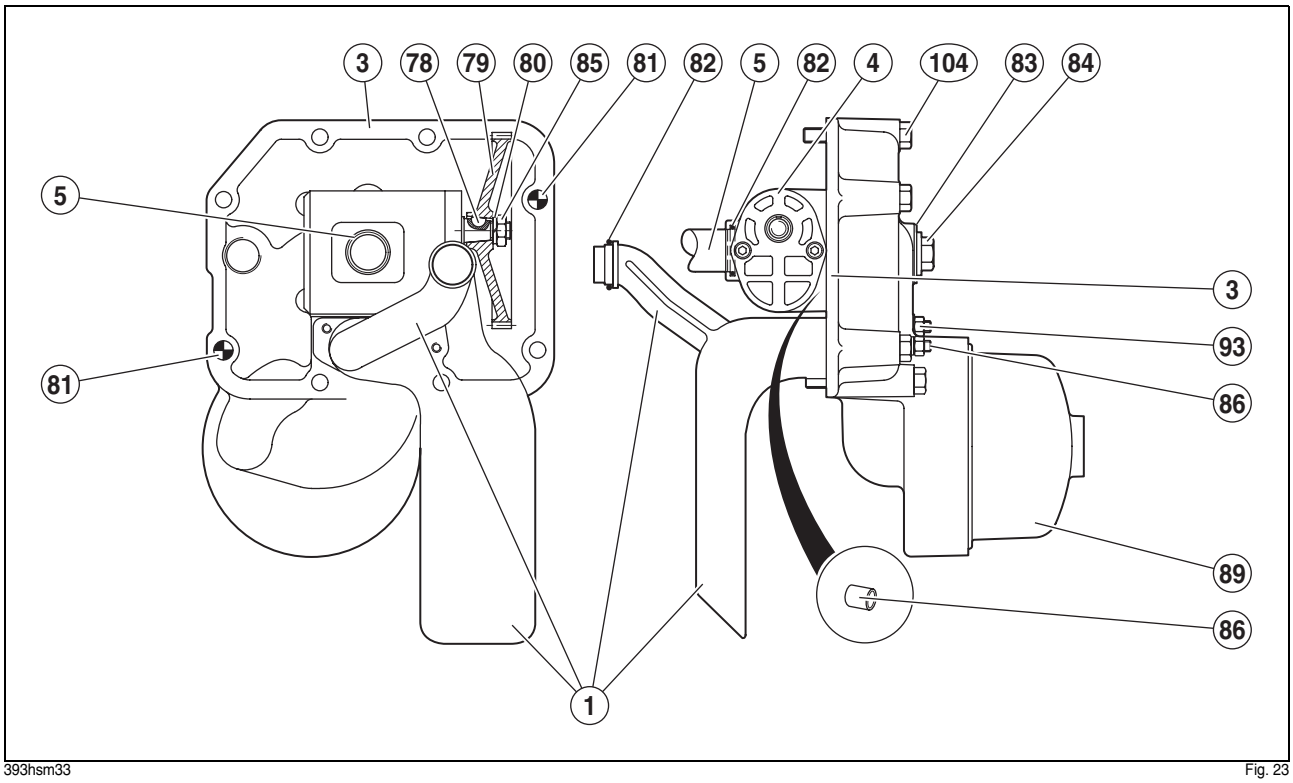
391hsm09 Fig. 8

Nomenclature (Fig. 8 and 9)

A Adjustment screw, 22 bar.
B Adjustment screw, 200 bar.
C Main filter, 15 micron.
D Boost.
E Rear axle lubrication only.
F High pressure from variable displacement pump.
G High pressure outlet of variable displacement pump.
H To variable displacement pump control piston.
I Regulator return.
J Return from priority unit(s) (depending on version).
XLS Load sensing signal.

N.B.: Screws (A) and (B) are factory set. Do not change these settings.

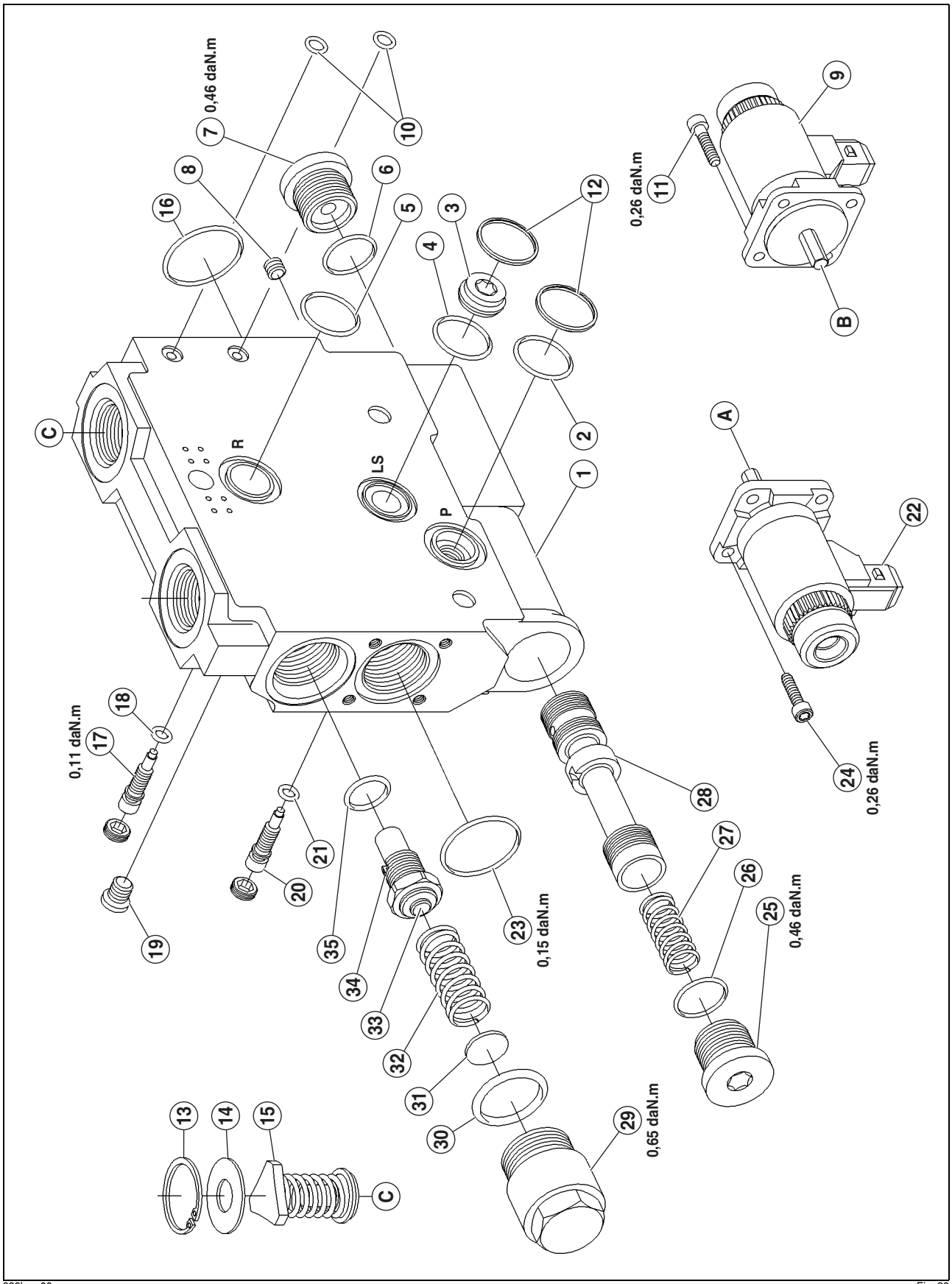
Internal view of the left-hand cover



393hsm33 Fig. 23

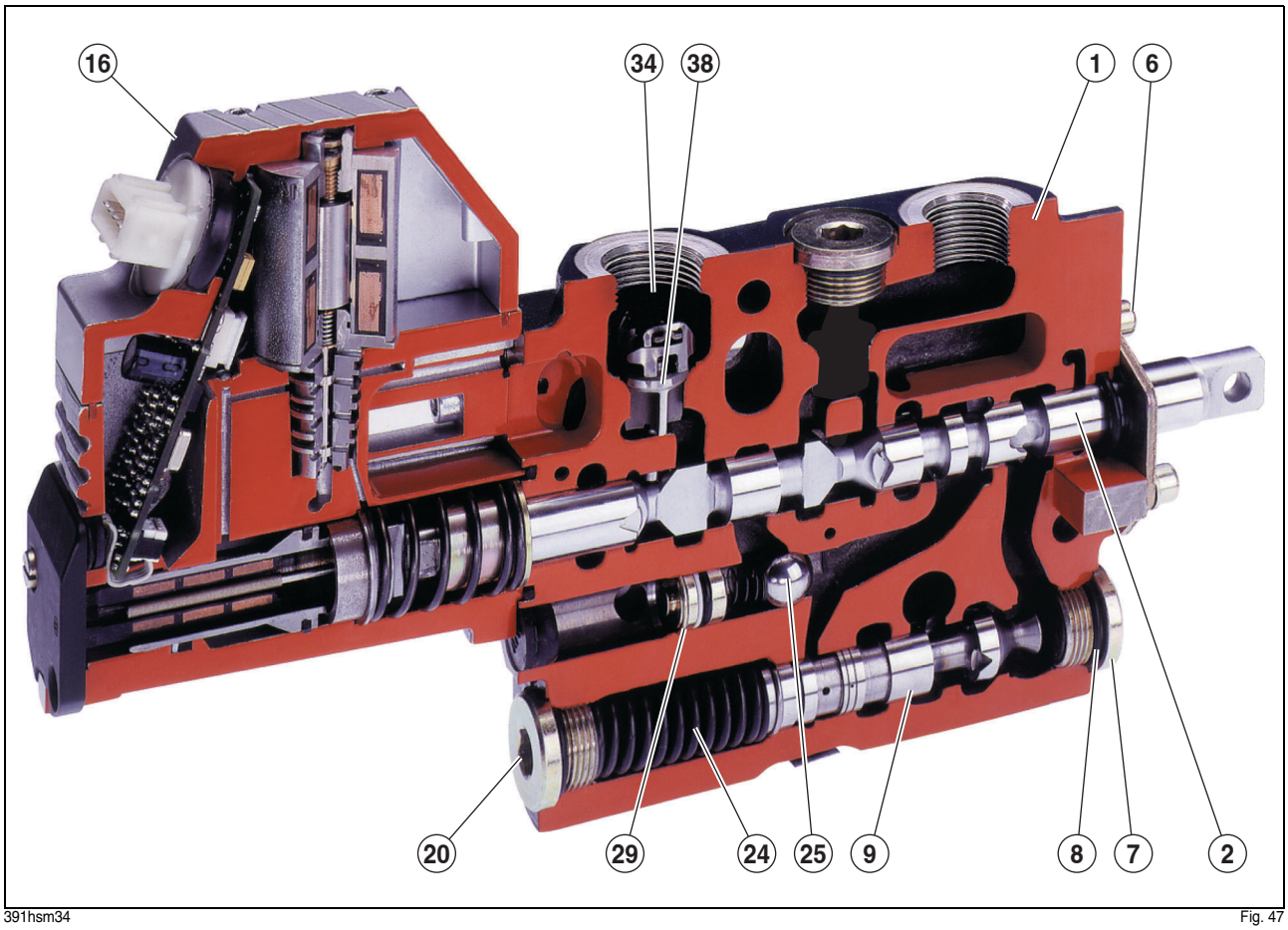
Removing/refitting the components

Linkage spool valve

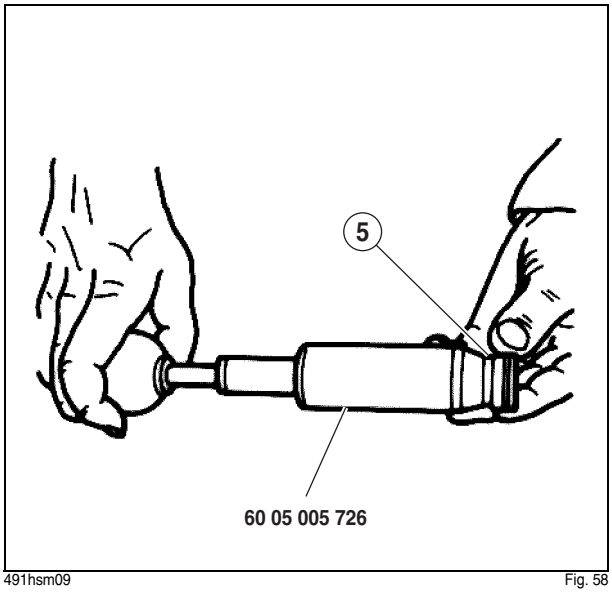


393hsm00 Fig. 39

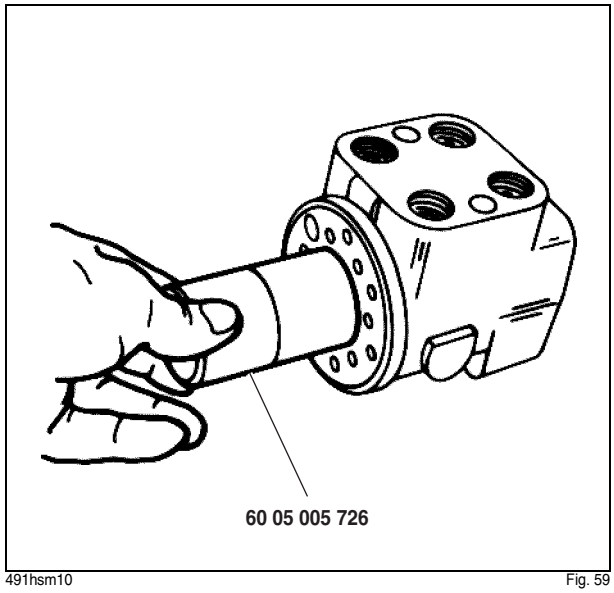
Auxiliary spool valve with electrohydraulic controls



391hsm34 Fig. 47



491hsm09 Fig. 58



491hsm10 Fig. 59

Specific points relating to removal/refitting

Always change all seals and gaskets whenever the unit is removed.

– Check the surface conditions of the parts (slide, sleeve, bores in the body, etc.).

Fitting the ring seal

– Fit the ring seal (5) onto the end of tool n° 60 05 005 726.

– Oil the seal.

– Place the fitting sheath of tool n° 60 05 005 726 on the body (Fig. 58).

– Insert the seal holder into the sheath (Fig. 59).

– Push fully in.

– Remove the sheath and the fitting tool (the end stays in place).

Ensure that the roller thrust bearing (4) is fitted the right way round.

– Position the inner thrust washer (4b) with the chamfer facing the sleeve (1) (Fig. 61).

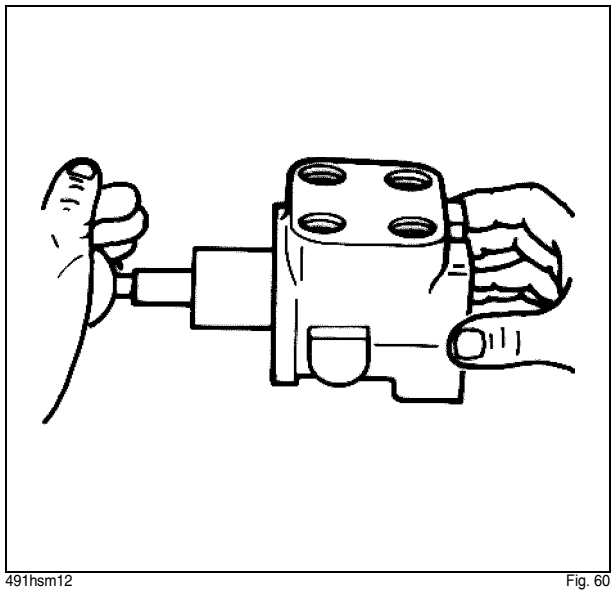
4. Roller bearing.

4b. Inner thrust washer.

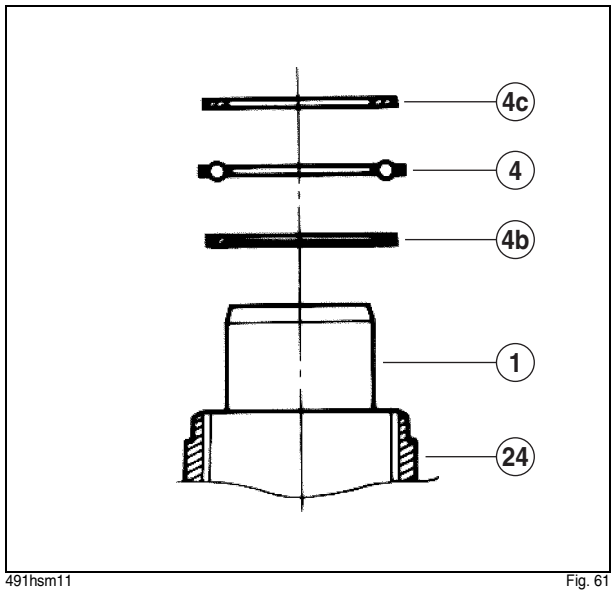
4c. Outer thrust washer.

1. Distribution sleeve.

24. Rotary slide.



491hsm12 Fig. 60



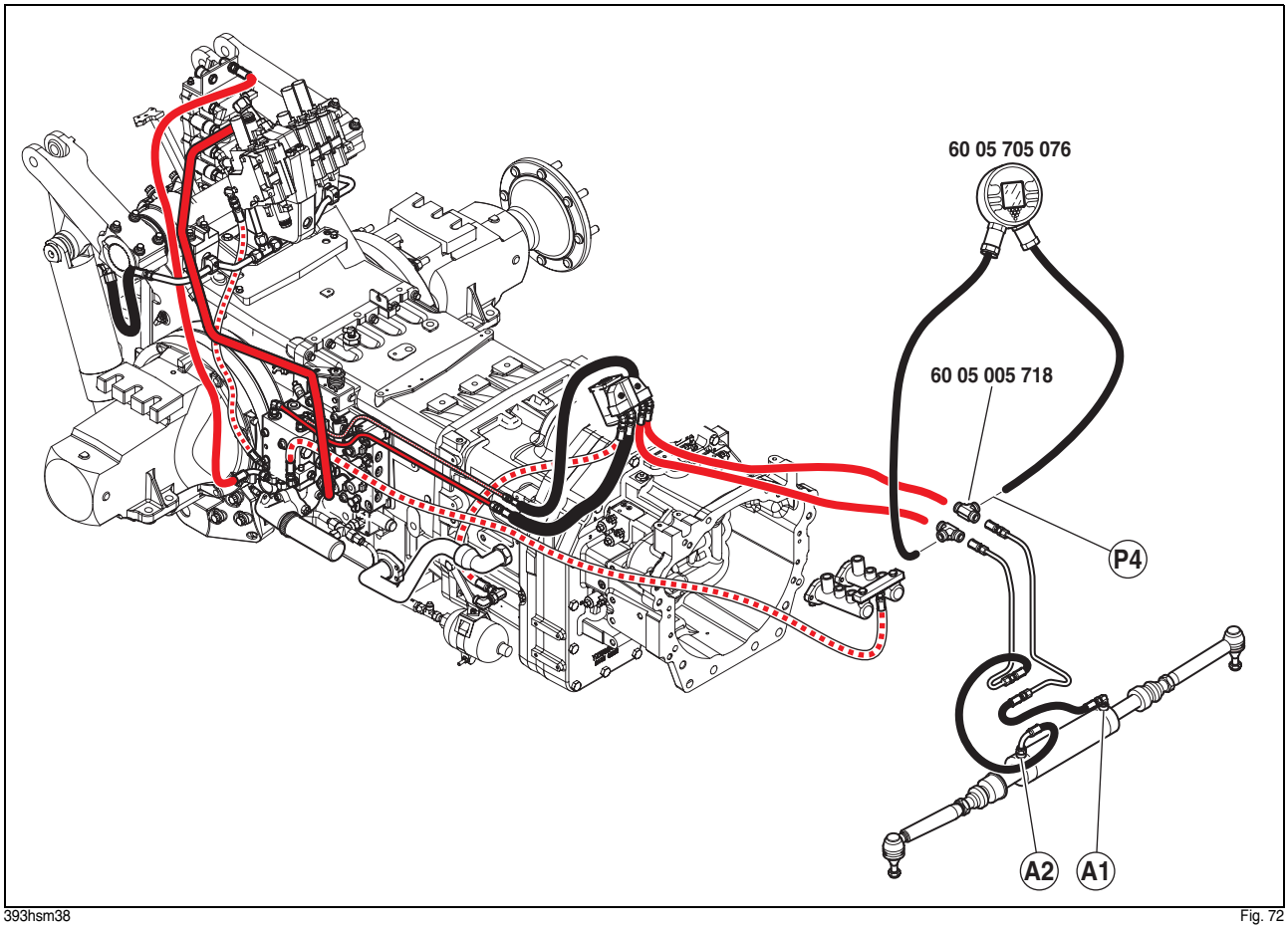
491hsm11 Fig. 61

Hydraulic measurement and checking points

Test conditions:
– Engine at 1 000 rpm.
– Oil temperature at 60°C.

Maximum steering cylinder pressure check

– Use and connect the tools as shown in the illustration.
– Connect tester n° 60 05 705 076 and coupling n° 60 05 005 718 to the two steering cylinder supplies.
– Turn the wheels to supply chamber A1.
– Measure the pressure in chamber A1 and the pressure in chamber A2.
– The service pressure should be A1-A2.
– Turn the front wheels in one direction and then the other and measure the wheel pressure at full lock.
– Pressure (P4) must be between 170 and 175 bar. If this is not the case, adjust the steering unit pressure limiter.

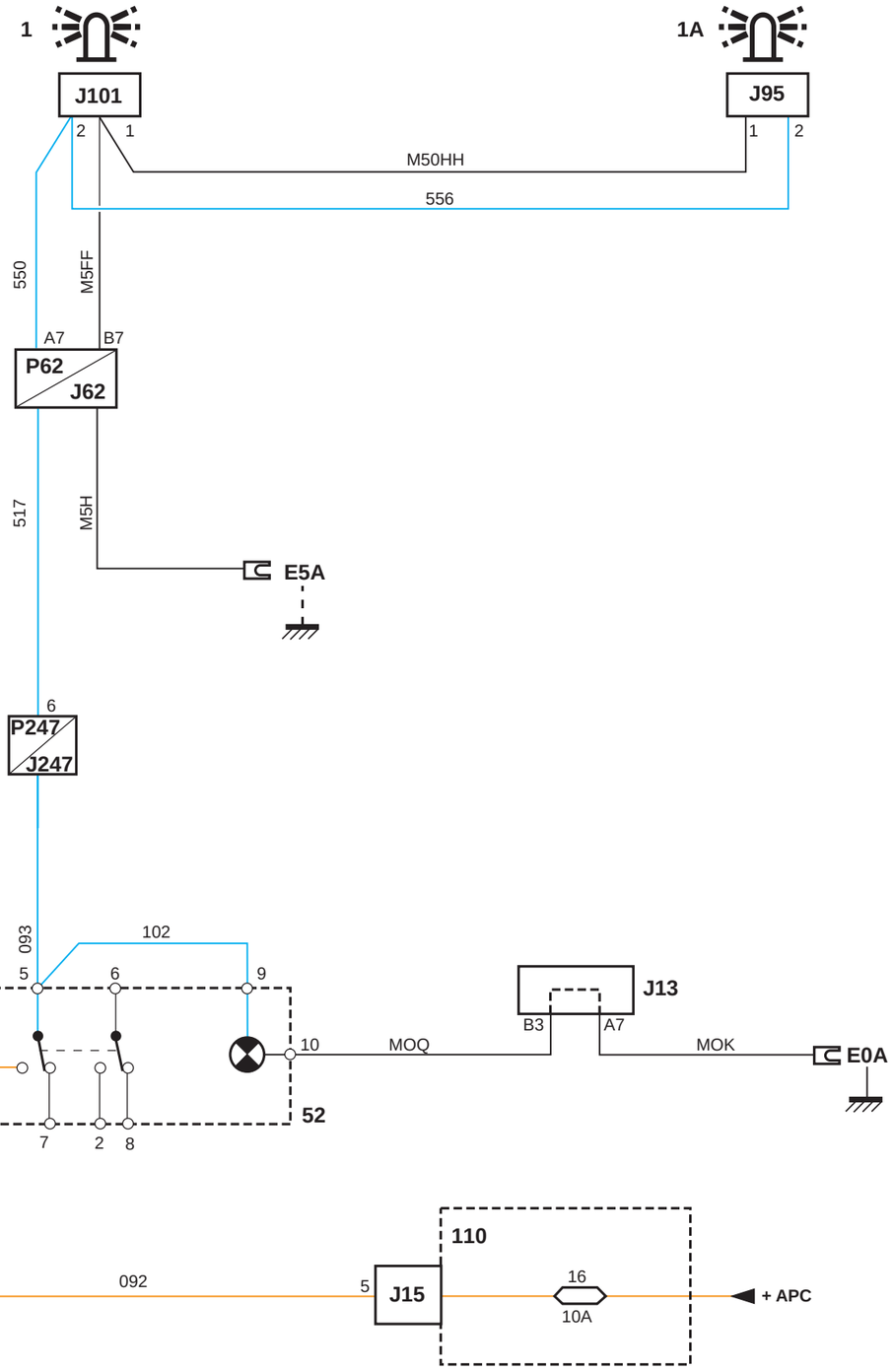


393hsm38 Fig. 72

Notes

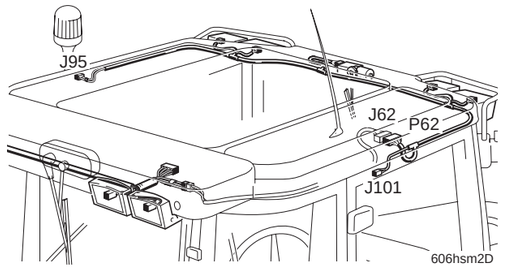
Notes

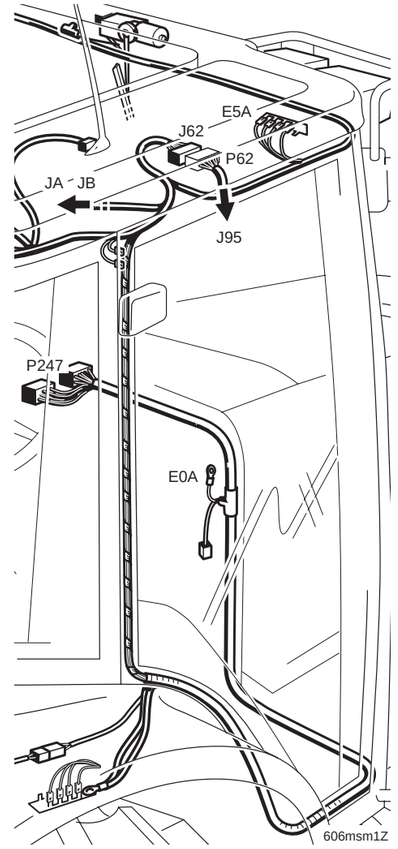
Rotating beacons

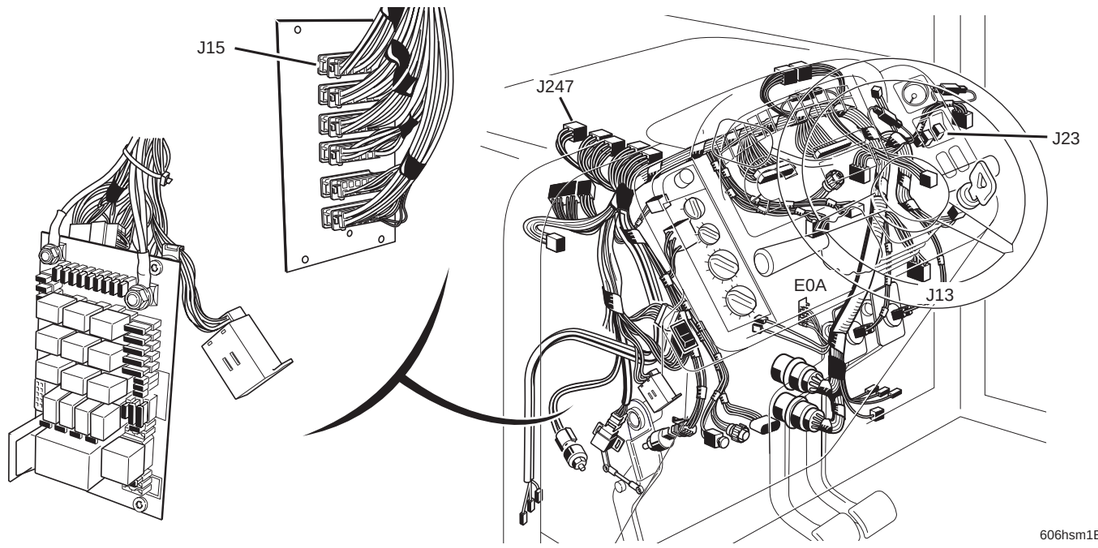


605hsm05

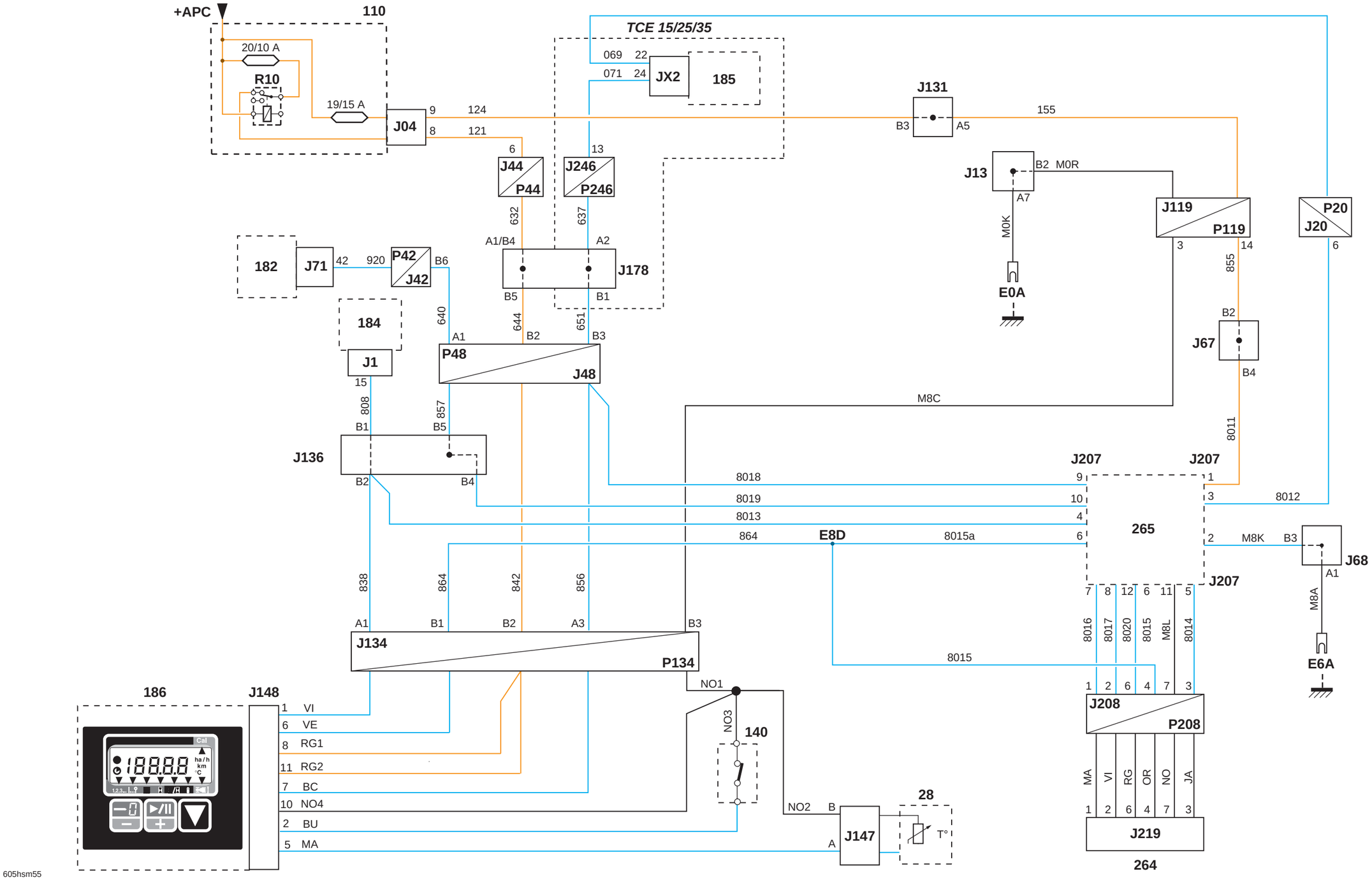
Ref	Item
1	RH rotating beacon
1a	LH rotating beacon
52	Rotating beacon switch
110	Fuse box



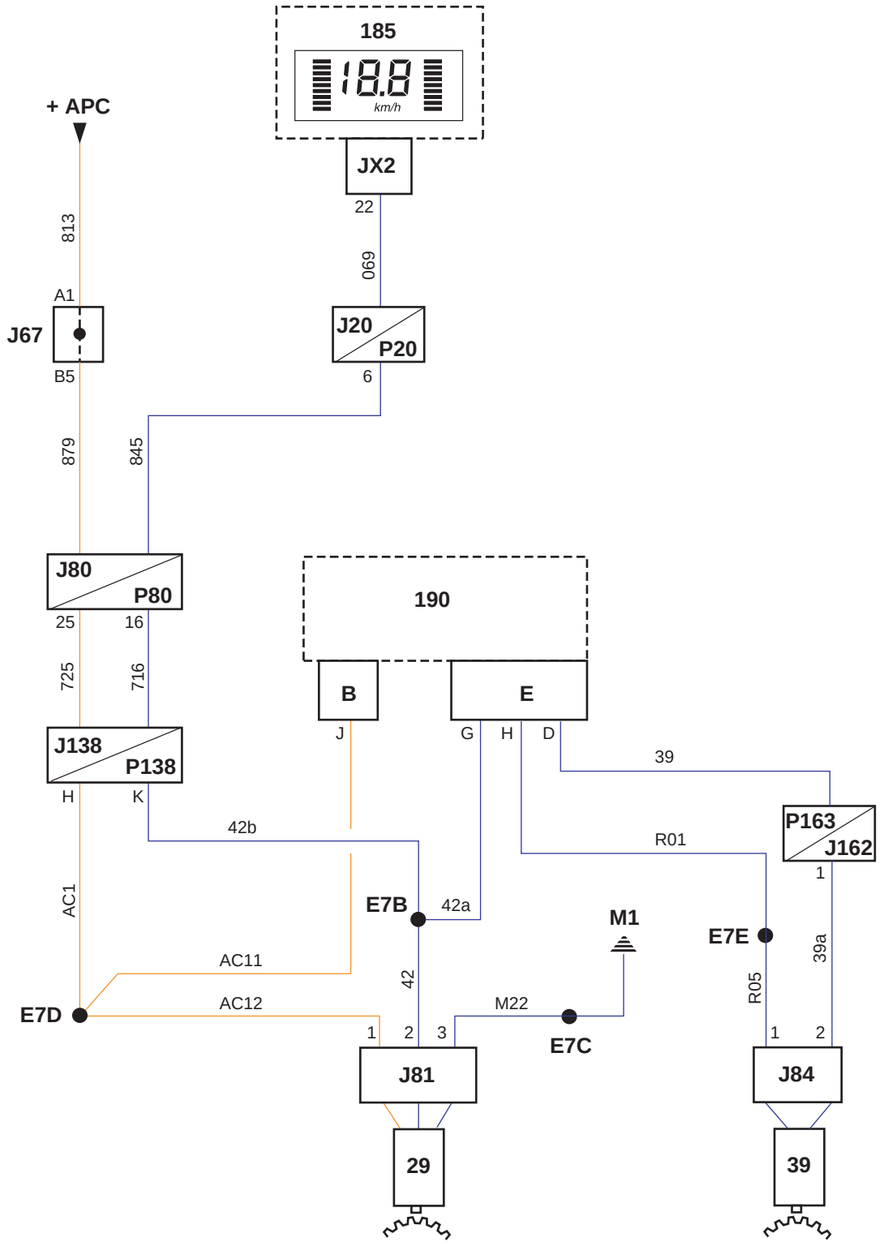




INFOTRAC on-board computer / ISO socket



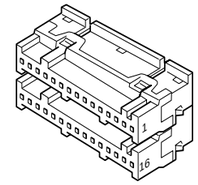
Instrument panel - Rear power take-off speed



605hsm62

Ref	Item
29	Rear power take-off speed sensor (instrument panel)
39	Rear power take-off speed sensor
185	Instrument panel
190	Transmission control ECU

	Wire markers	2	JX2	Ending	
22	069	0,35	Rear power take-off speed	J20	6

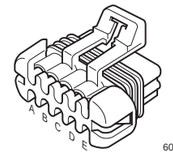


604msm02

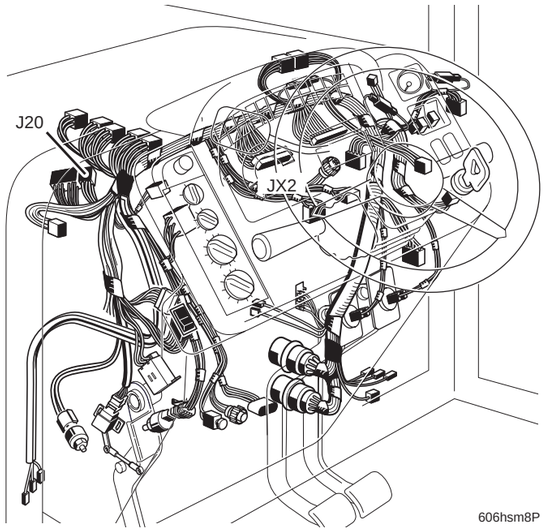
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
	042	083	043	019	044			105	104	059	113		M0T	M0A
M0M	075	074		022	072	071	070	069	109	091	107	054	110	060
30	29	28	27	26	25	24	23	22	21	20	19	18	17	16

	Wire markers	2	E	Ending	
D	39	0,6	Calibration connector	P163	1
G	42a	0,6	Rear PTO speed (IP)	**E7B**	
H	R0	0,6	Sensor return	**E7E**	

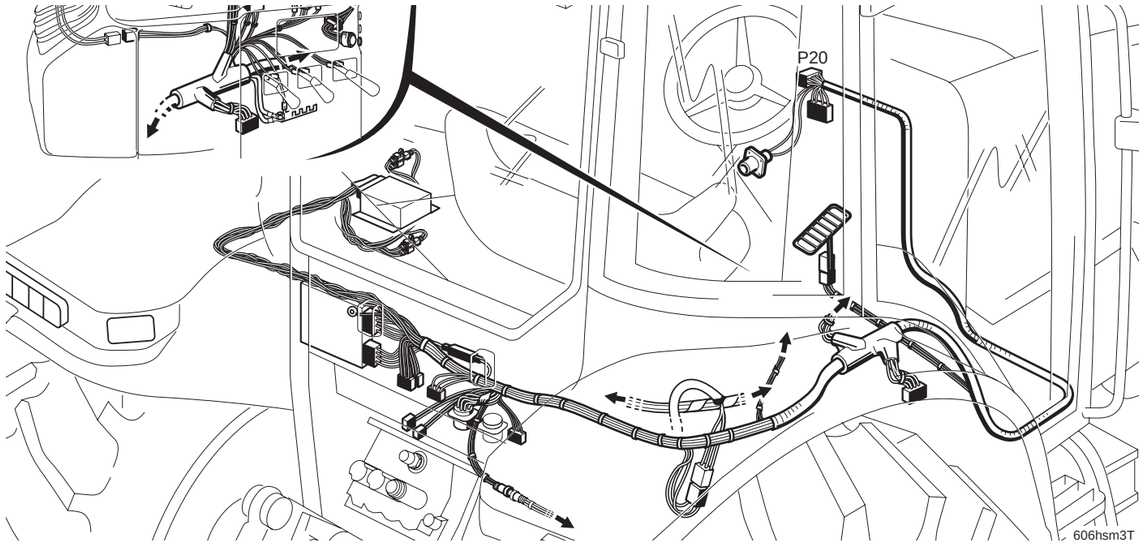
K	J	H	G	F
44	43	R01	42a	41
37	38	45	39	40
A	B	C	D	E



604hsm3l

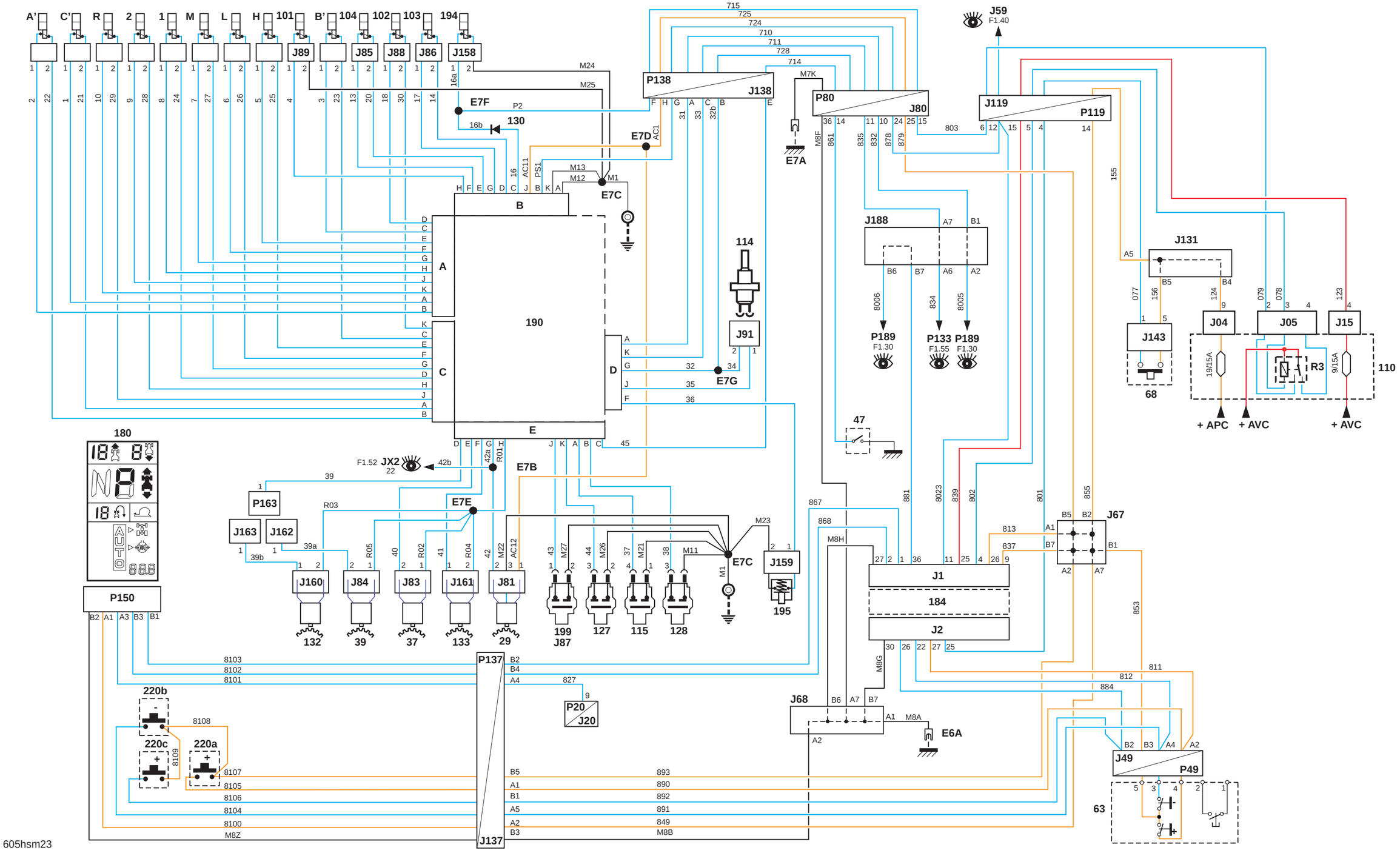


606hsm8P



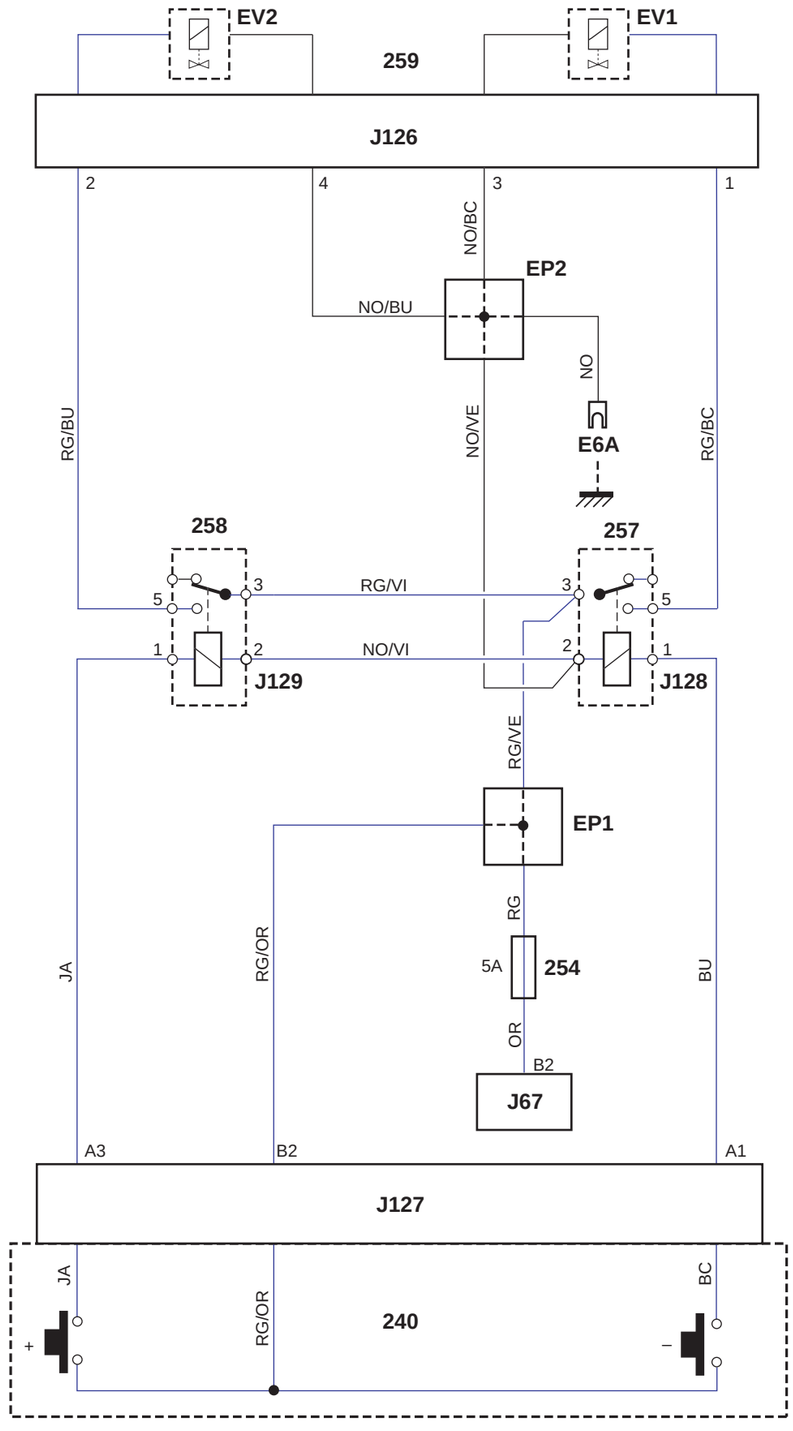
606hsm3T

Gearbox control



605hsm23

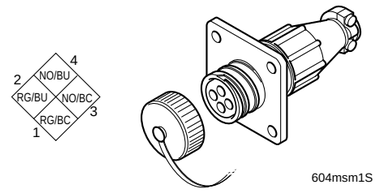
Cross control



605hsm45

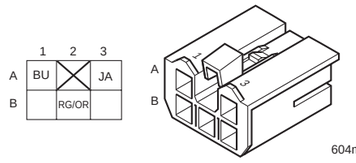
Ref	Item
240	Cross control
254	Front lift fuse (5)
257	Front lift relay
258	Front lift relay
259	Front loader socket

	Wire markers	2	J126	Ending	
1	RD/WH	1	+ Solenoid valve A	J128	5
2	RD/BL	1	+ Solenoid valve B	J129	5
3	BK/WH	1	- A solenoid valve	**EP2**	
4	BK/BL	1	- B solenoid valve	**EP2**	



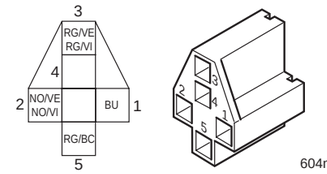
604msm1S

	Wire markers	2	J127	Ending	
A1	BL	1	A relay control	J128	1
A3	YL	1	B relay control	J129	1
B2	RD/OR	1	+APC cross control	**EP1**	



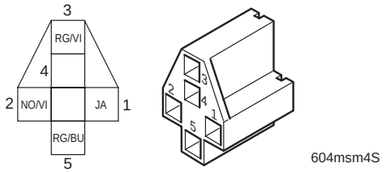
604msm2S

	Wire markers	2	J128	Ending	
1	BL	1	A relay control	J127	A1
2	BK/GN	1	A relay earth	**EP2**	
2	BK/VI	1	B relay earth	J129	2
3	RD/VI	1	+APC	J129	3
3	RD/GN	1	+APC	**EP1**	
5	RD/WH	1	+ Solenoid valve A	J126	1

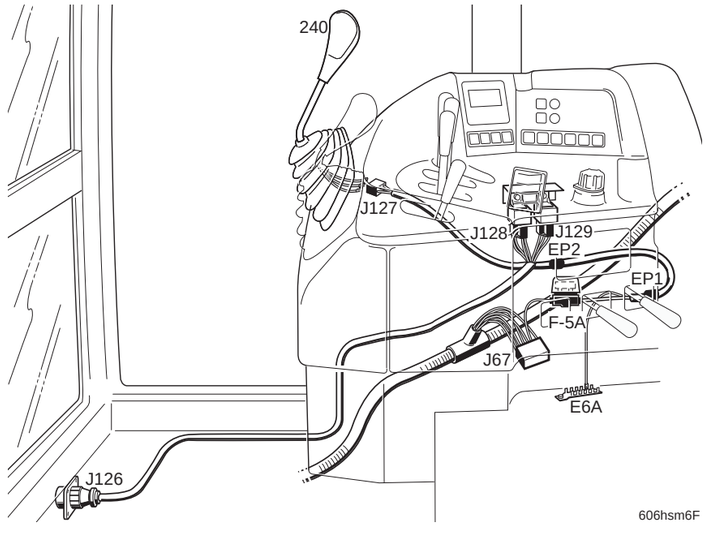


604msm3S

	Wire markers	2	J129	Ending	
1	YL	1	B relay control	J127	A3
2	BK/VI	1	B relay earth	J128	2
3	RD/VI	1	+APC	J128	3
5	RD/BL	1	+ Solenoid valve B	J126	2



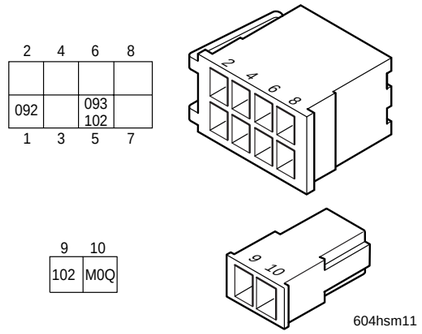
604msm4S



606hsm6F

1 - Instrument panel harness

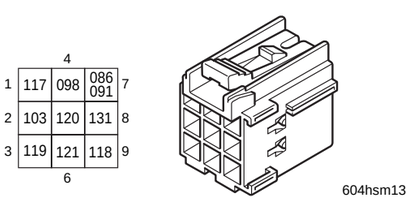
	Wire markers	2	J23	Ending	
1	092	1,4	+ APC rotating beacon	J15	5
2	—	—	—		
3	—	—	—		
4	—	—	—		
5	093	1,4	Rotating beacon control	J247	6
5	102	0,6	Rotating beacon indicator	J23	9
6	—	—	—		
7	—	—	—		
8	—	—	—		
9	102	0,6	Rotating beacon indicator	J23	5
10	M0Q	0,6	Rotating beacon indicator	J13	B3



604hsm11

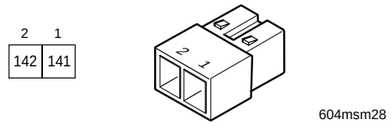
	Wire markers	2	J25	Ending	
1	001	7	+ AVC general	P01	S
2	—	—	—		
3	—	—	—		
4	004	3	Starter control	J03	11
5	005	1	Electric stop	J02	A
6	006	7	+ APC panel	**110**	
7	—	—	—		
8	—	—	—		
9	—	—	—		
10	010	1,4	+ Parking	J05	6

	Wire markers	2	J44	Ending	
1	117	3	+ AVC socket 25 A	J04	1
2	103	2	+ AVC TCE 30 A/B	J15	8
3	119	3	+ AVC socket 25 A	J04	2
4	098	0,6	+ APC TCE 30 A/B	J04	12
5	120	1	+ APC seat	J15	9
6	121	1,4	+APC TCE (RH+ relayed)	J04	8
7	086	1	PDF front controls	J02	U
7	091	0,35	Engaged FR PTO indicator	JX2	20
8	131	1	+ APC front power take-off	J15	11
9	118	1,4	+ Parking, cigar lighter	J03	1



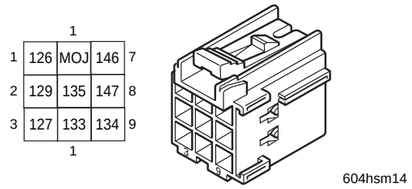
604hsm13

	Wire markers	2	J50	Ending	
1	141	0,6	Temperature potent. cursor	J247	8
2	142	0,6	Temperature potentiometer	J247	12



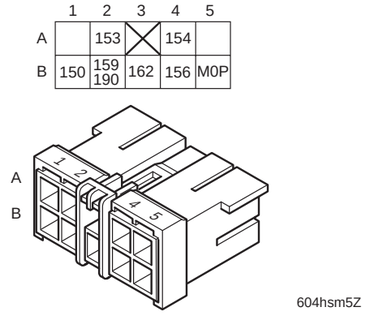
604msm28

	Wire markers	2	J52	Ending	
1	126	3	+ AVC outside front work lights	J05	5
2	129	1	+ AVC cab top inside	J15	10
3	127	3	+ AVC outside rear work lights	J248	1
4	MOJ	2	Cab top inside	**EOA**	
5	135	1	+APC windscreen wiper park pos.	J03	10
6	133	3	+ AVC inside front work lights	J05	1
7	146	3	+ AVC RH cab top ventilation	J03	2
8	147	3	+ AVC LH cab top ventilation	J03	12
9	134	3	+ AVC inside rear work lights	J248	3



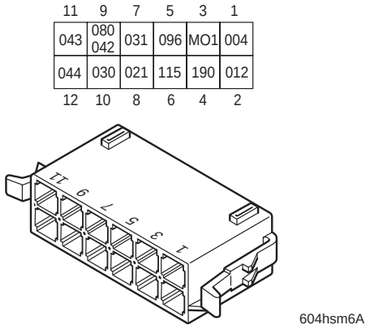
604hsm14

	Wire markers	2	J59	Ending	
A1	—	—	—		
A2	153	0,6	Forward drive control	J20	8
A3	—	—	—		
A4	154	0,6	Reverse drive control	J20	7
A5	—	—	—		
B1	150	1,4	+APC solenoid valve supply	J130	1
B2	158	0,6	Neutral control	J20	1
B3	162	0,6	+APC Forward/reverse control	J131	A7
B4	157	1,4	+APC solenoid valve supply	J119	12
B5	M0P	0,6	ISC controls	J13	B4



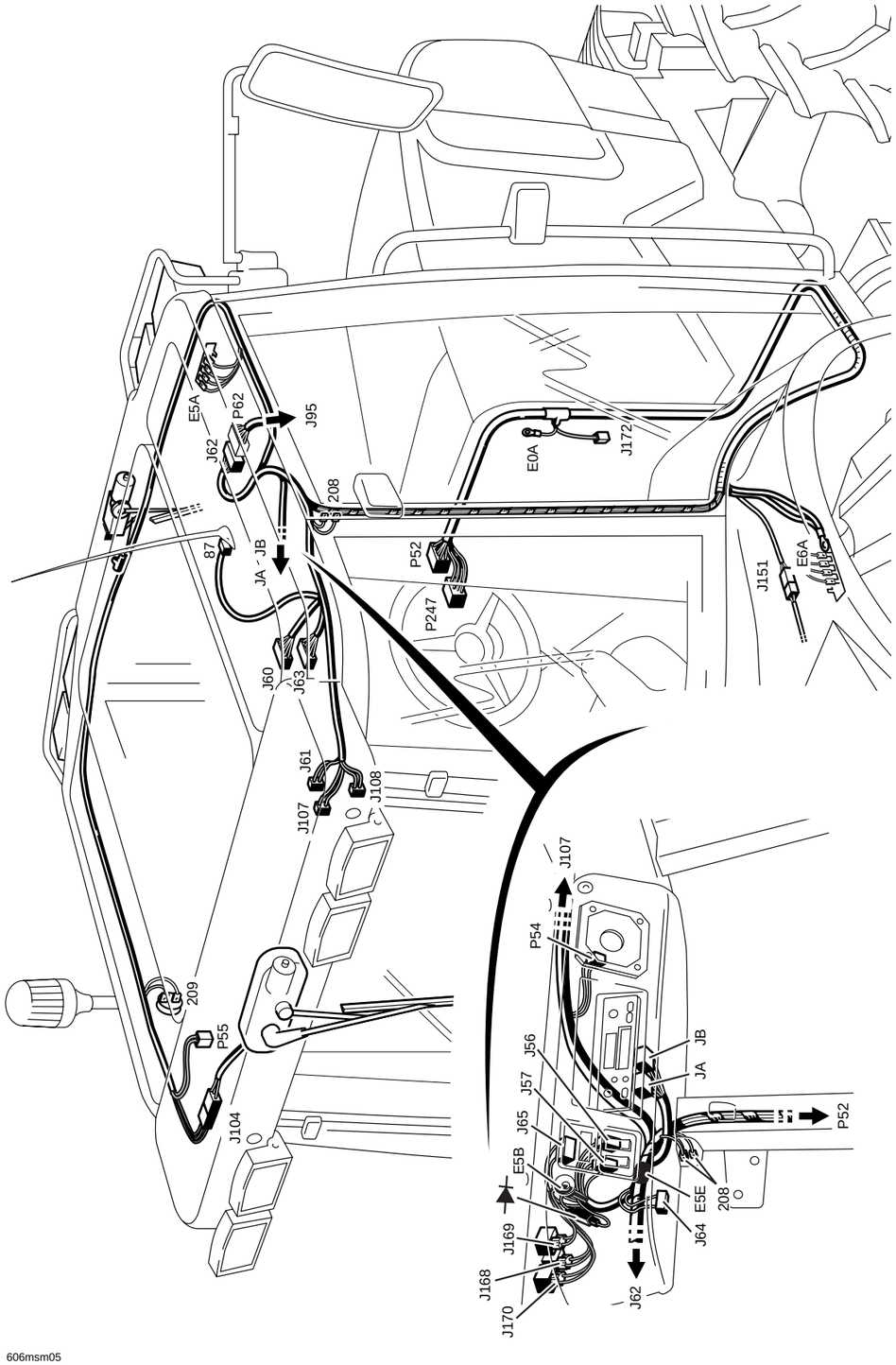
604hsm5Z

	Wire markers	2	J114	Ending	
1	—	—	—		
2	—	—	—		
3	M0I	1,4	Panel	**E0A**	
4	—	—	—		
5	096	1	Instrument panel lighting	J09	B4
6	115	1,4	LH rear light	J246	21
7	031	1,4	Flashing unit	J10	A1
8	021	1	LH front light	**5**	
9	042	0,35	Tractor steering	JX2	14
9	172	0,6	Buzzer	J246	9
10	030	1,4	Hazard warning signal ctrl	J21	6
11	043	0,35	Trailer 1 steering	JX2	12
12	044	0,35	Trailer 2 steering	JX2	10



604hsm6A

5 - Instrument panel / cab top harness



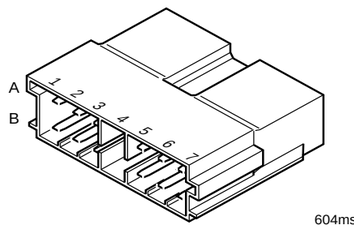
606msm05

Connectors	Designation
JA	Car-radio
JB	Car-radio
J56	Rear work light switch
J57	Front work light switch
J60	Shunt receptacle (brown)
J61	Cab top / rear light harness connection
J62	Cab top / front light harness connection
J63	Shunt receptacle (white)
J64	Roof lamp
J65	Clock
J104	Rear screen wiper
J107	Cab top / air conditioning + rear light harness connection
J108	Cab top / air conditioning + rear light harness connection
J151	Rear harness connection
J168	Rear work lights switch (wings)
J169	Rear work lights relay (wings)
J170	Front work lights relay
J172	Instrument panel harness connection
P52	Instrument panel harness connection
P54	RH loudspeaker
P55	LH loudspeaker
P247	Superstructure harness

5c - Front and rear light harness

	Wire markers	2	P62	Ending	
A1	551	2	Exterior front working lights	J100	2
A2	559	1	Front windscreen wiper ctrl	J98	5
A3	557	1	Front windscreen wiper, self-parking	J98	2
A4	—	—	—		
A5	553	2	RH inside FR work lights	J99	2
A6	M5EE	2	RH inside FR work lights	J99	1
A7	550	1,4	RH rotating beacon	J101	2
B1	M5AA	2	RH outside FR work lights	J100	1
B2	M5PP	1	Front screen wiper	J98	4
B3	558	1	+APC windscreen wiper park pos.	J98	1
B4	—	—	—		
B5	—	—	—		
B6	—	—	—		
B7	M5HH	1,4	RH rotating beacon	J101	1

	1	2	3	4	5	6	7
A	551	559	557	X	553	M5 EE	550
B	M5 AA	M5 PP	558				M5 HH

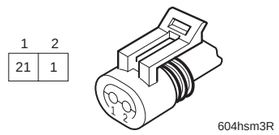


604msm6B

Notes

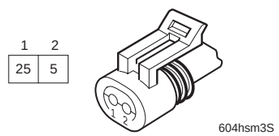
7b - GTA 303 transmission harness

	Wire markers	2	C’	Ending	
1	21	1	TC "C" pin "A"	C	A
2	1	1	TC "A" pin "A"	A	A



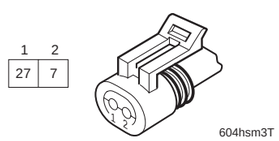
604hsm3R

	Wire markers	2	H	Ending	
1	25	1	TC "C" pin "E"	C	E
2	5	2	TC "C" pin "E"	A	E



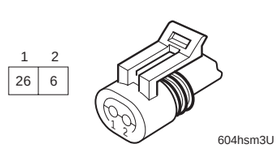
604hsm3S

	Wire markers	2	M	Ending	
1	27	1	TC "C" pin "G"	C	G
2	7	2	TC "A" pin "G"	A	G



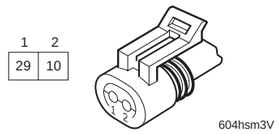
604hsm3T

	Wire markers	2	L	Ending	
1	26	1	TC "C" pin "F"	C	F
2	6	1	TC "A" pin "F"	A	F



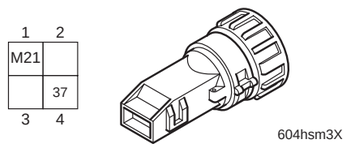
604hsm3U

	Wire markers	2	R	Ending	
1	29	1	TC "C" pin "J"	C	J
2	10	1	TC "A" pin "K"	A	K



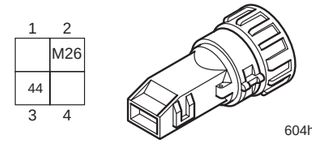
604hsm3V

	Wire markers	2	115	Ending	
1	M21	1	Oil pressure switch earth	E7C	
2	—	—	—		
3	—	—	—		
4	37	1	Oil pressure switch	E	A



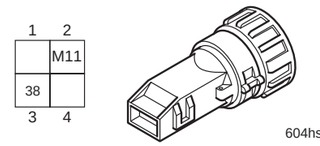
604hsm3X

	Wire markers	2	127	Ending	
1	—	—	—		
2	M26	1	Greasing pressure switch earth	E7C	
3	44	1	Greasing pressure switch	E	K
4	—	—	—		



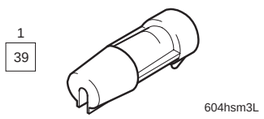
604hsm3Y

	Wire markers	2	128	Ending	
1	—	—	—		
2	M11	0,6	Gearbox pressure sensor earth	E7C	
3	38	0,6	Gearbox oil pressure sensor	E	B
4	—	—	—		



604hsm3Z

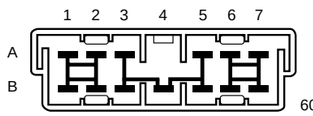
	Wire markers	2	P163	Ending	
1	39	1	Calibration connector	E	D



604hsm3L

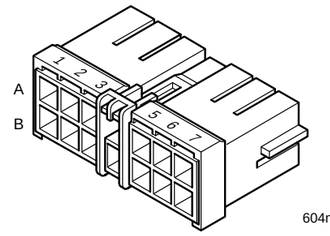
9a - TCE 15/25/35 Control harness

	Wire markers	2	J87	Ending	
A1	946	0,6	CAN-high transmission control	J189	2
A2	947	0,6	CAN-High RH DEH	J69	33
A3	925	1	+APC radar - DEH	J70	B7
A4	—	—	—		
A5	955	0,6	+APC radar	J69	16
A6	951	0,6	CAN-Low RH DEH	J69	32
A7	950	0,6	CAN-low transmission control	J189	1
B1	949	0,6	CAN-high DEH control	J190	2
B2	948	0,6	CAN-high LH DEH	J69	28
B3	—	—	—		
B4	957	1	+APC DEH control	J191	2
B5	956	1	+APC RH and LH DEH	J69	29
B6	952	0,6	CAN-Low LH DEH	J69	27
B7	953	0,6	CAN-low DEH control	J190	1



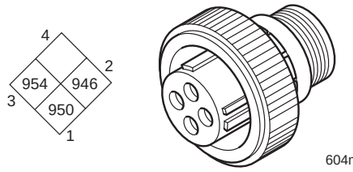
604msm2A

	1	2	3	4	5	6	7
A	946	947	925		955	951	950
B	949	948		957	956	952	953



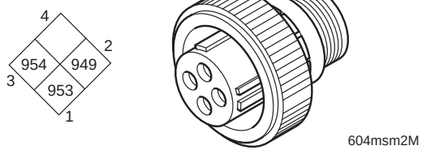
604msm0M

	Wire markers	2	J189	Ending	
1	950	0,6	CAN-low transmission control	J87	A7
2	946	0,6	CAN-high transmission control	J87	A1
3	954	0,6	CAN -	J190	3
4	—	—	—		



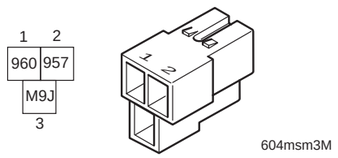
604msm1M

	Wire markers	2	J190	Ending	
1	953	0,6	CAN-low DEH control	J87	B7
2	949	0,6	CAN-high DEH control	J87	B1
3	954	0,6	CAN -	J189	3
4	—	—	—		



604msm2M

	Wire markers	2	J191	Ending	
1	960	1	Safety solenoid valve ctrl	J69	31
2	957	1	+APC DEH control	J87	B4
3	M9J	1	DEH control earth	**E9A**	



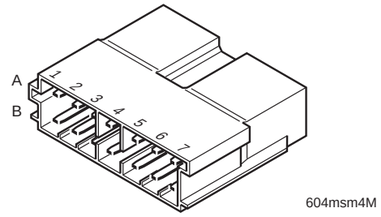
604msm3M

	Wire markers	2	P42	Ending	
A1	902	1	+APC TCE (RH+ relayed)	J70	A6
A2	900	0,6	Ext. TCE up control	J71	38
A3	901	0,6	Ext. TCE down control	J71	37
A4	—	—	—		
A5	921	0,6	CAN-High return	J71	12
A5	959	0,6	CAN-High TCE programming	P192	2
A6	916	0,6	+APC REH	J70	B4
A7	—	—	—		
B1	917	2	+AVC REH	J70	B1
B2	918	0,6	CAN-High network	J71	40
B3	924	0,6	Radar signal	J69	17
B4	919	0,6	CAN-Low network	J71	41
B5	922	0,6	CAN-Low return	J71	13
B5	958	0,6	CAN-Low TCE programming	P192	1
B6	920	0,6	TCE lift high position	J71	42
B7	—	—	—		

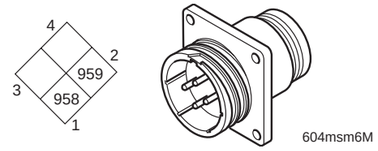
* TCE 35 version with electrohydraulic spool valves (DEH) only

	Wire markers	2	P192	Ending	
1	958	0,6	CAN-Low TCE programming	P42	B5
2	959	0,6	CAN-High TCE programming	P42	A5
3	—	—	—		
4	—	—	—		

	1	2	3	4	5	6	7
A	902	900	901		921 959	916	
B	917	918	924	919	922 958	920	



604msm4M



604msm6M

CLAAS

G1 – INSTRUMENT PANEL

G2 – TCE 25 ELECTRONIC LINKAGE

G3 – TRANSMISSION/AXLE CONTROL

G4 – ENGINE MANAGEMENT

G5 – INFOTRAC AND ISO SOCKET

G6 – ELECTROPILOT

G7 – WIN METADIAG© MANUAL ATLES 906

	Chapter G
Atles 906	**60 05 030 504 – 07.2006 publication**

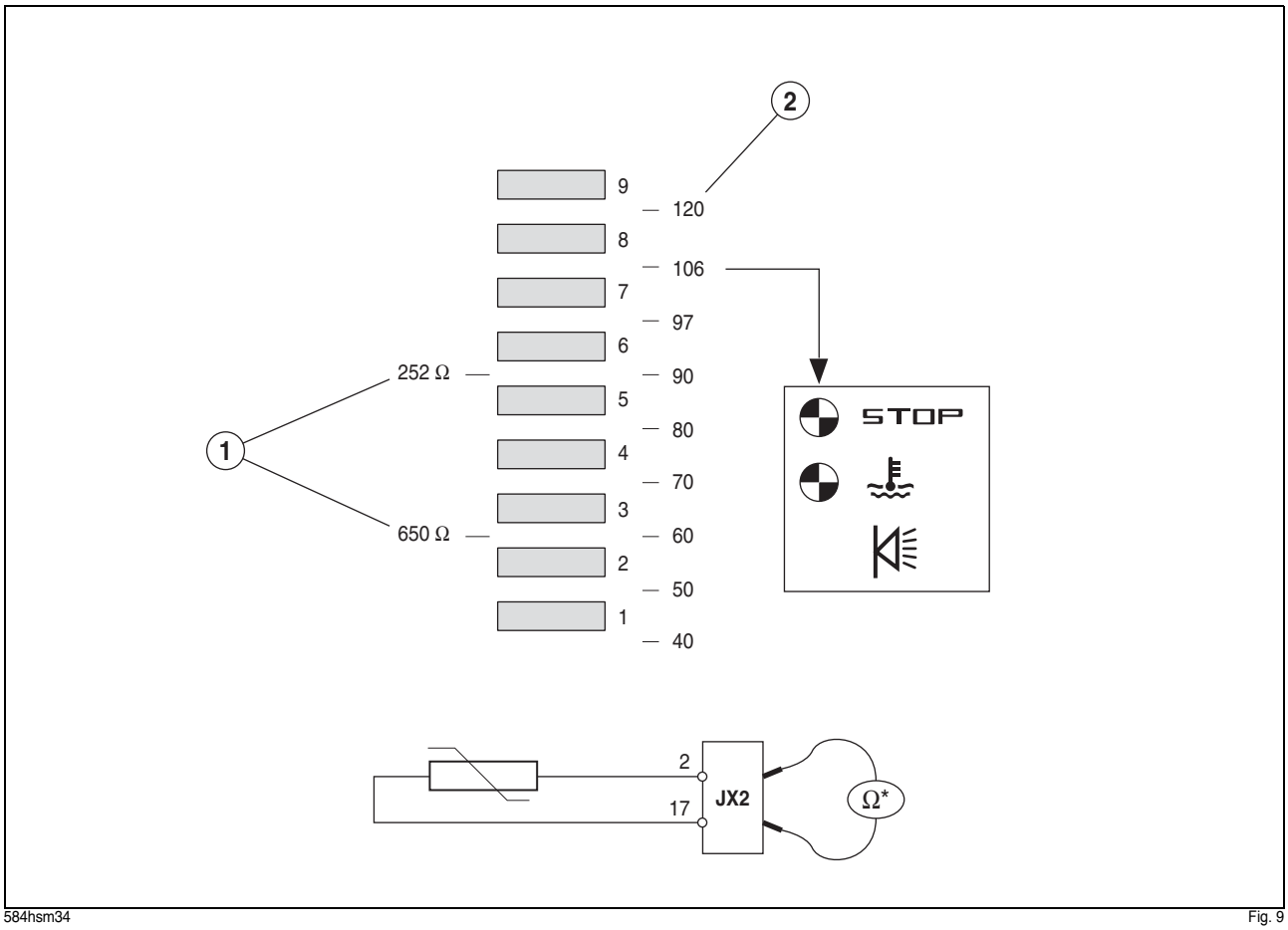
Characteristics

Engine temperature

A thermistor (a temperature-sensitive resistor) sends a variable DC voltage to the ECU.

Liquid crystal segments appear from the bottom up according to the engine coolant temperature.

– 9 segments for a scale of 40 to 120°C.
– 106°C is the alarm threshold.



584hsm34 Fig. 9

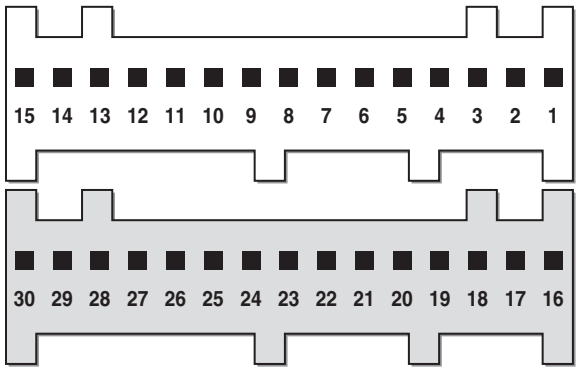
Nomenclature

1 Resistance is ohms measured on the probe.

2 Temperature corresponding to the segments.

** Measure with an ohmmeter with the ignition switched off.*

Connection and functions of the wires of the double connector "JX2"



584hsm26 Fig. 20

Checks and adjustments

Connections to TCE 25 unit

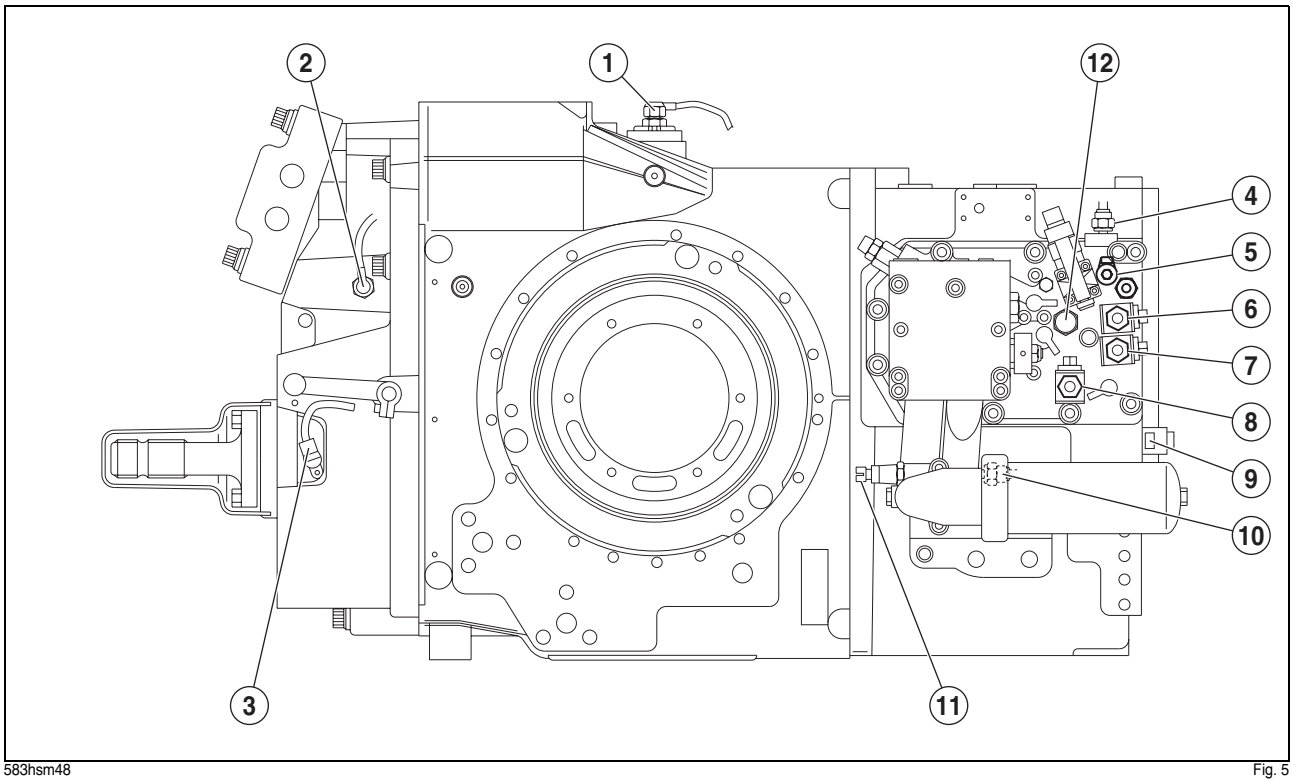
54-pin connector (J71)

1	Not used
2	Down valve value
3	TCE earth
4	TCE earth
5	Up valve return
6	Down valve return
7	+APC
8	Not used
9	Not used
10	Not used
11	Not used
12	CAN-High return
13	CAN-Low return
14	Not used
15	+ Rear position reference value
16	+ LH draft reference value
17	+ RH draft reference value
18	Not used
19	Value "–" rear position
20	Value "–" LH draft
21	Value "–" RH draft
22	Not used
23	Position signal
24	RH draft signal
25	Not used
26	Not used
27	Not used
28	Not used
29	Value "+" up valve
30	+AVC TCE
31	+AVC TCE
32	Not used
33	Not used
34	+APC TCE
35	Not used
36	Not used
37	External down control
38	External up control
39	Not used
40	CAN-High network
41	CAN-Low network
42	High position to "Drivetronic"
43	Not used
44	Not used
45	Not used
46	Not used
47	+APC TCE (D + relayed)
48	Not used
49	Not used
50	Not used
51	LH draft signal
52	Not used
53	Not used
54	Not used

382hsm05 Fig. 3

Full Powershift

Layout on the rear axle

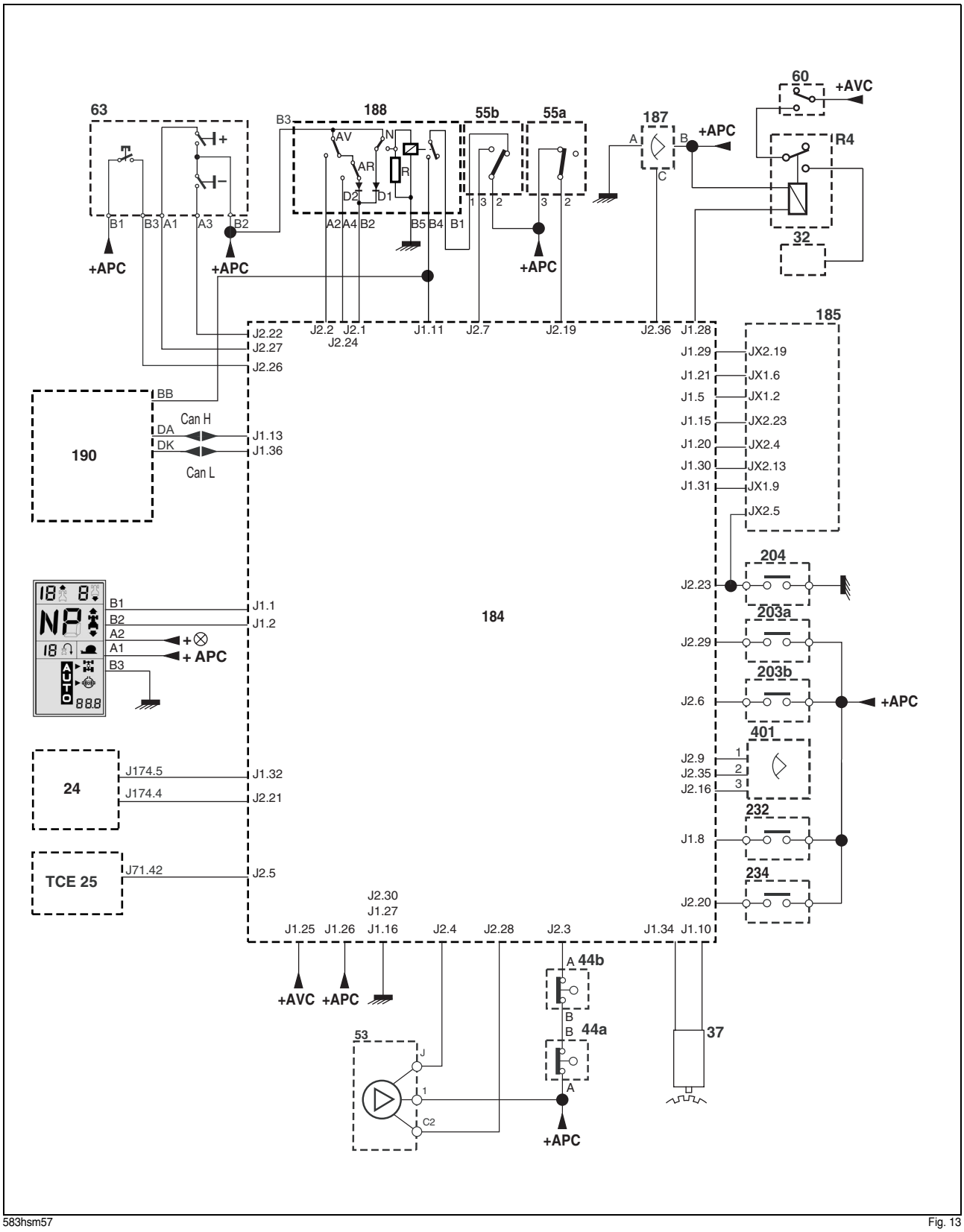


583hsm48 Fig. 5

Nomenclature

1 Theoretical displacement speed sensor.
2 Rear power take off speed sensor (clutch output).
3 Rear power take off shaft speed sensor (instrument panel).
4 Rear axle low pressure circuit pressure switch (9 bar).
5 Rear power take off clutch proportional solenoid valve.
6 Rear power take off brake control solenoid valve.
7 Front/rear differential lock control solenoid valve.
8 Front axle control solenoid valve.
9 Park lock control solenoid valve.
10 Rear axle lubrication circuit pressure switch (3 bar).
11 Blocked filter indicator (differential pressure: 2,4 bar).
12 Engine speed sensor.

Schematic diagram of TC/RCC (190, 184)



583hsm57 Fig. 13

N.B.: The Park lock function is illustrated on the TC schematic diagram (190).

Engine management

Coolant temperature sensor

Resistance between "1" and "2" at 21°C: 2,3 kΩ

Resistance between "1" and "2" at 80°C: 0,4 kΩ.

CTN type sensor (the resistance reduces in proportion to the increase in temperature).

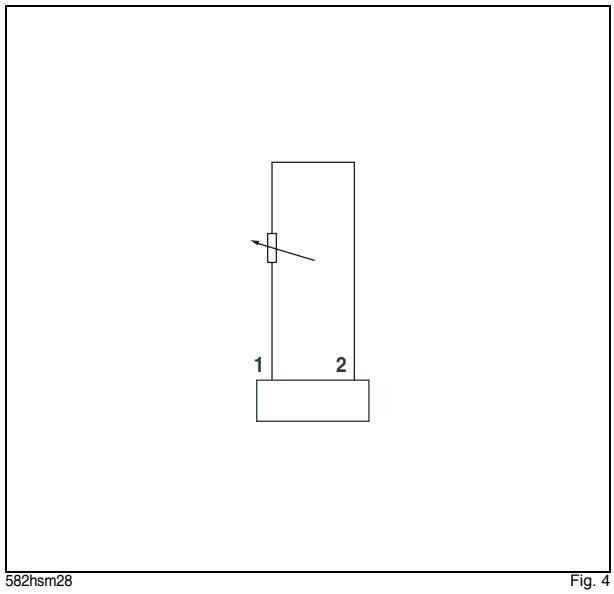
Engine speed sensor (Fig. 5)

Resistance between "1" and "2": 355 Ω

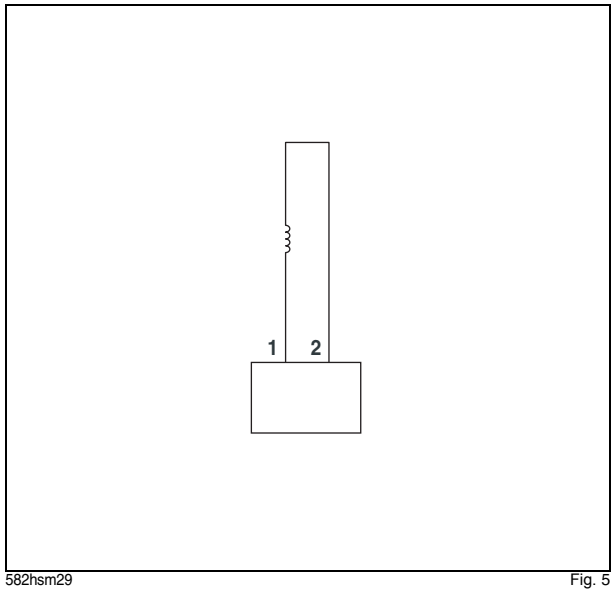
No-load engine speed (rpm)	Frequency (Hz)
820	660
1 000	810
2 000	1 600

Actuator

Refer to chapter "G7", "Rack test".



582hsm28 Fig. 4



582hsm29 Fig. 5

Description

Button (A)

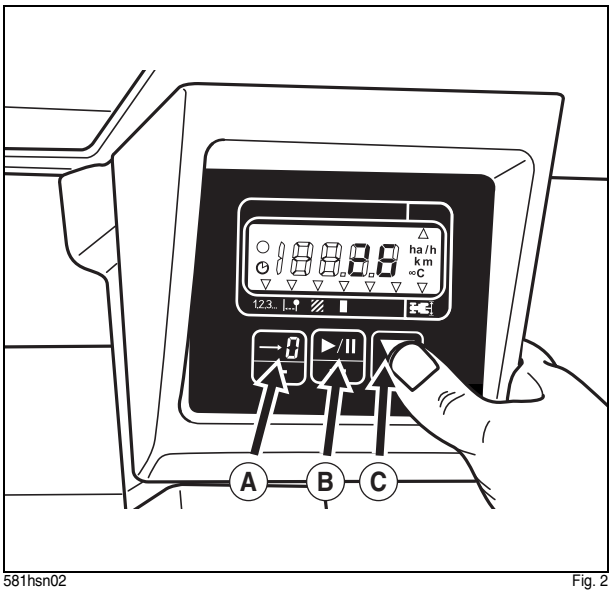
Counter resetting.
Key "–" programming implement width.

Button (B)

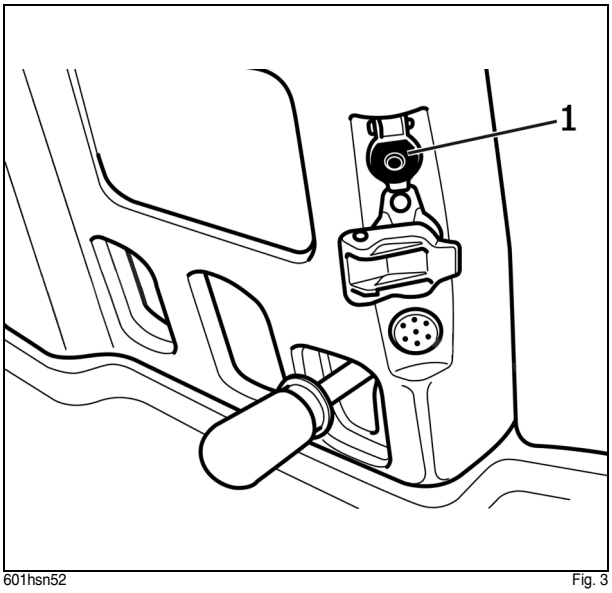
Counter "on/off" key.
"+" button for implement width programming.

Button (C)

Display mode selection and function scroll key: Total or partial.



581hsn02 Fig. 2



601hsn52 Fig. 3

Location of the connections to the event counter tools

Event counter connector

This connector (1) is located beside the right console, close to plug 25 A.

Use

Refer to the user manual.

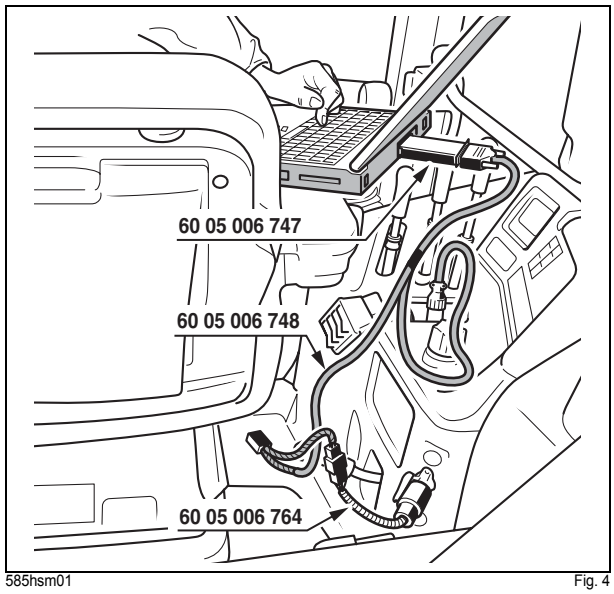
Notes

Notes

Connecting Win Métadiag©

TCE 25 application (Fig. 4)

Remove the contactor panel (front axle switch and front and rear axle differential locking switch).

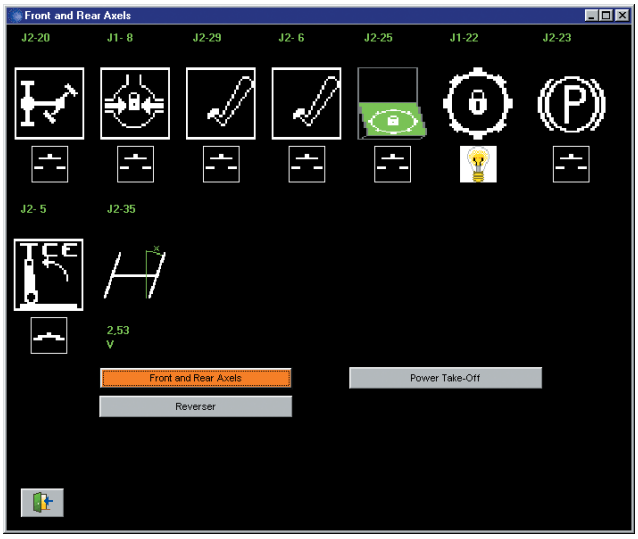


585hsm01 Fig. 4

Transmission Application

Electric tests on "RCC" (Renault Cabin Controler)

Front axle and differential



586hsm25 Fig. 17

N.B.: For example, "J2-20" means connector "J2" channel "20".

Nomenclature

J2 – 20 Front axle switch.
J1 – 8 Front/rear differential locking switch.
J2 – 29 LH brake pedal switch.
J2 – 6 RH brake pedal switch.
J2 – 25 Park Lock switch.
J2 – 22 "Park Lock" indicator.
J2 – 23 Handbrake switch.
J2 – 5 Raised position "TCE" information (contact closed = raised position).
J2 – 35 Steering angle sensor signal.

Reverser

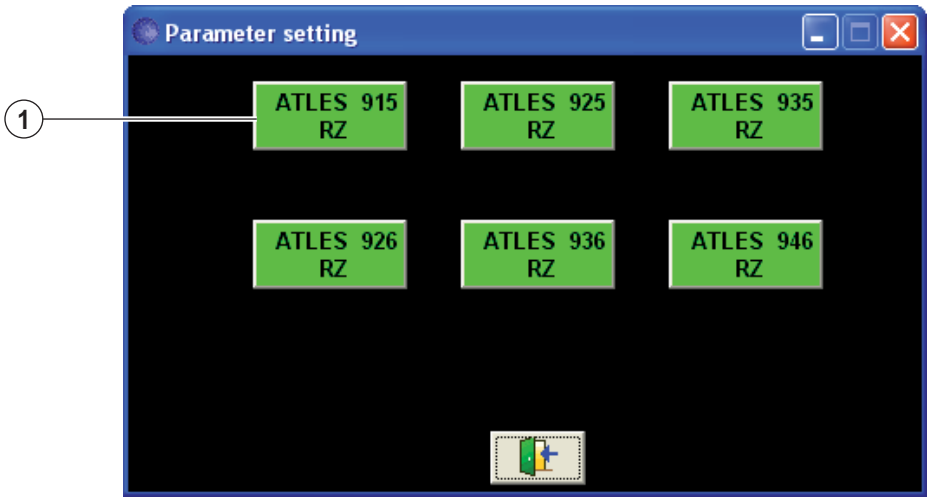
586hsm69 Fig. 18

Nomenclature

J2 – 19 Pedal top switch information (TOC).
J2 – 36 Approach pedal potentiometer.
J2 – 7 Pedal bottom switch information (BOC).
J2 – 26 Manoeuvring gear switch.
J2 – 27 Speed gear switch (accelerate).
J2 – 22 Speed gear switch (decelerate).
J2 – 2 "Forward position" shuttle reverser switch.
J2 – 1 "Neutral position" shuttle reverser switch.
J2 – 24 "Reverse position" shuttle reverser switch.

Transmission Application

Parameter setting

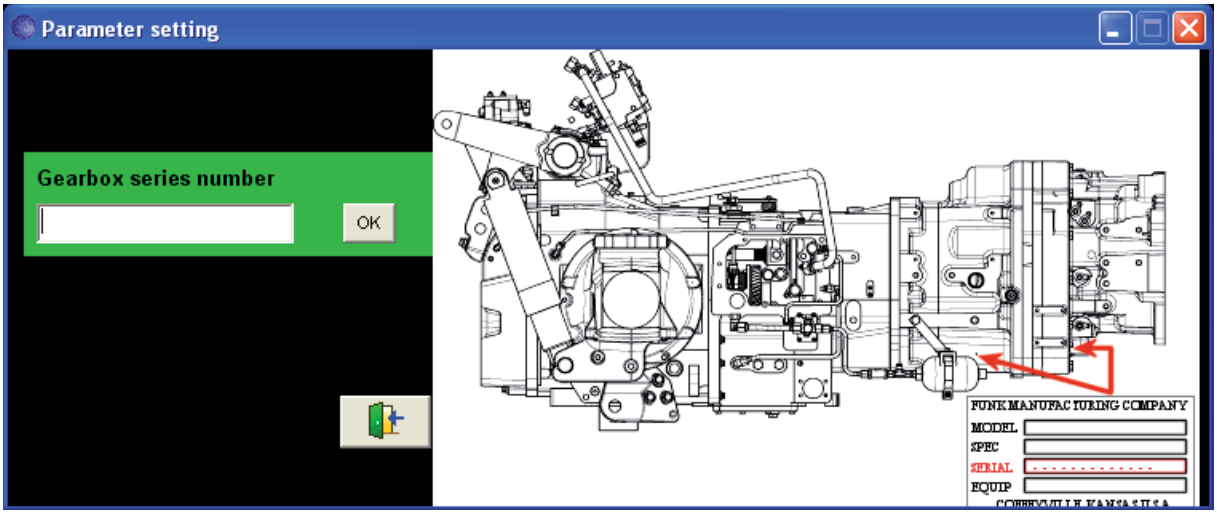


586hsm81 Fig. 27

Nomenclature

1 Choice of tractor.

Serial number



586hsm88 Fig. 28

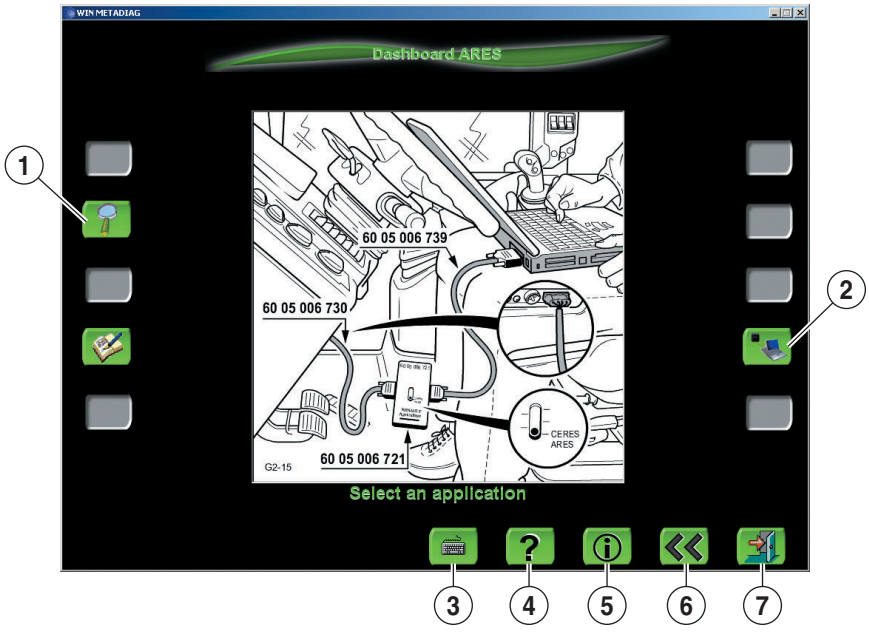
Enter the serial number of the gearbox.

Dashboard application

586hsm78 Fig. 40

Nomenclature

1 Choice of language.
2 Choice of type of tractor.
3 Keyboard shortcut.
4 Help.
5 Version.
6 Exit.



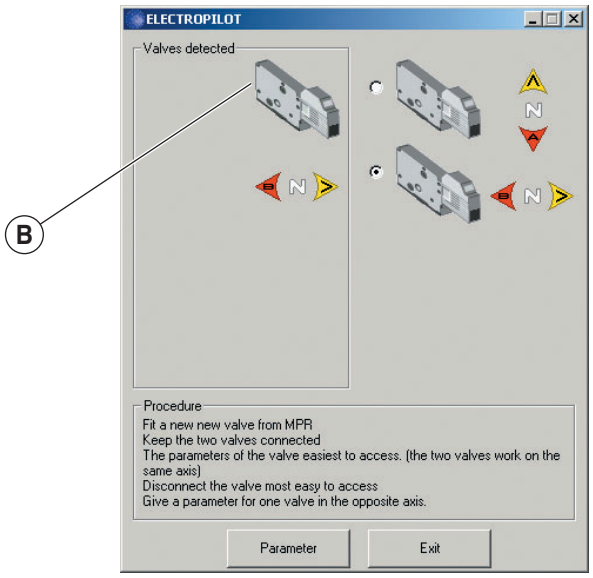
586hsm79 Fig. 41

Nomenclature

1 Overview.
2 History of faults.
3 Parameter setting.
4 Keyboard shortcut.
5 Help.
6 Version.
7 Return to previous mask.
8 Exit.

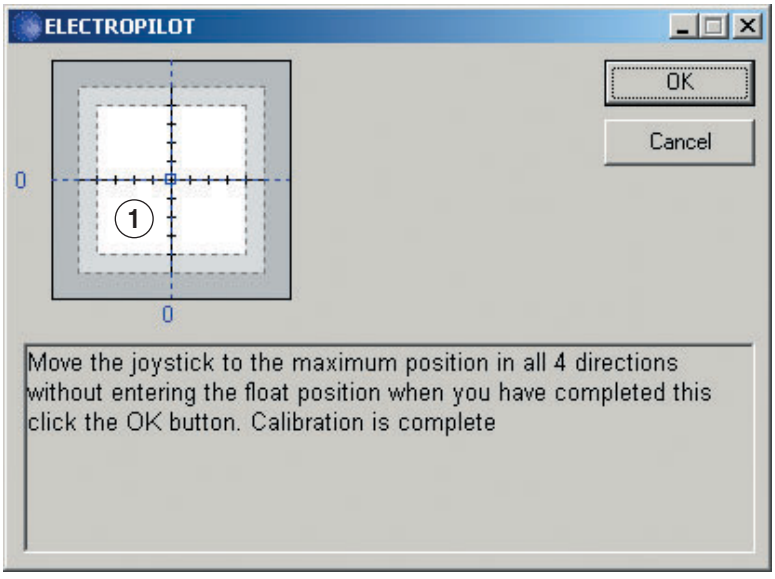
Electropilot application

Disconnect spool valve (A). Set the parameters for spool valve (B).



586hsm67 Fig. 54

Calibration



586hsm59 Fig. 55

The procedure consists of sweeping the chequered zone (1) along both axes without going as far as the floating position. Press OK to validate.

N.B.: Moving the hard spot during calibration eliminates the floating position.

Removal/refitting

Operation n° 1

– Remove the rear wheels.
– Place the tractor on stands.

Placing on axle stands. Carry out this operation on a smooth horizontal and sufficiently firm surface. Check the axle stands are suitable for the load. 4-wheel-drive tractor: If the rear axle is on stands, do not start the engine (risk of moving the tractor). If the engine has to be started, it is essential to place the front axle up on axle stands too.

Operation n° 2

– Disconnect the battery (Fig. 6).


841hsm71 Fig. 6

Operation n° 3

– Identify and disconnect the plugs, transmission harness, lift spool valve supply, position sensor and load sensor on the same harness (Fig. 7).

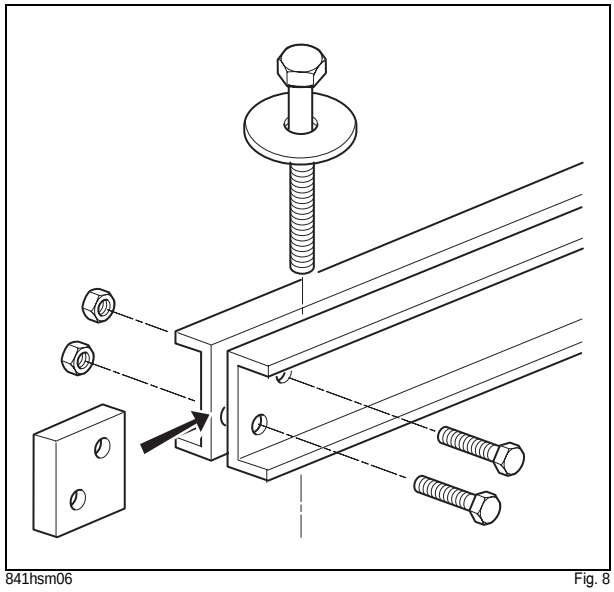
841hsm69 Fig. 7

Operation n° 4

Preparing the lifting bar

– Use lifting bar reference n° 77 01 388 907 (Fig. 8).
– Equip the lifting bar as follows:

a. Remove the trucks.
b. Fit the spacers, screws and washers from kit reference n° 77 11 132 317.


841hsm06 Fig. 8

Removing/refitting the roof

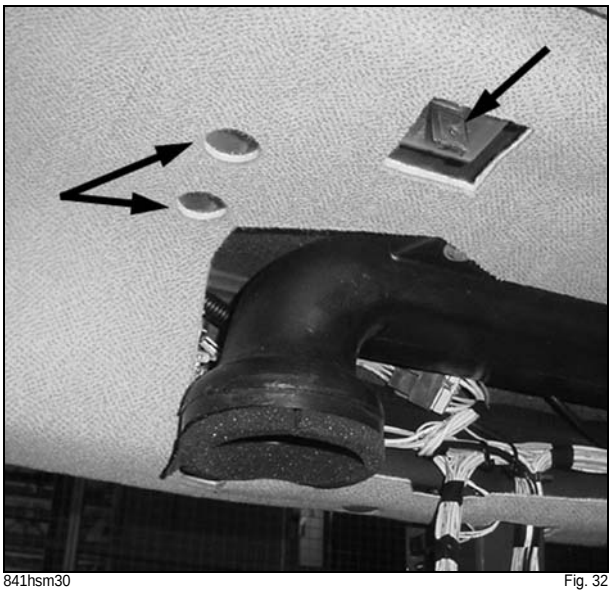
Full removal with the air conditioning fans

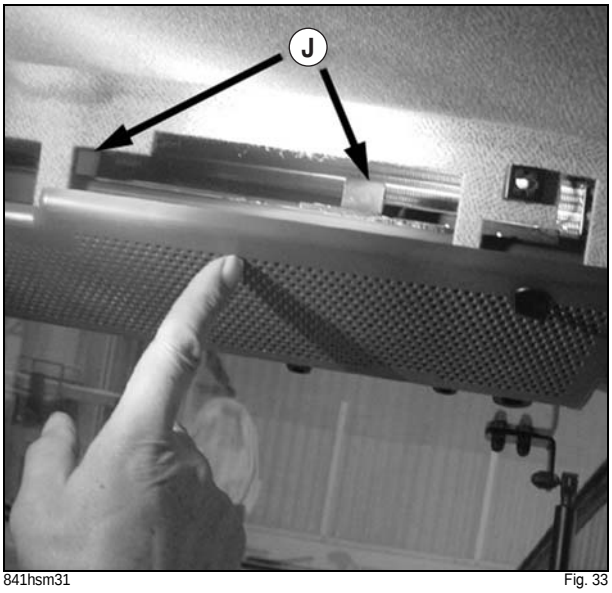
Cab interior

– Remove the right and left-hand brackets to access the roof mounting screws (Fig. 32).
– Open the trap door and turn the two roof attachment lugs (J) after unscrewing their attachment screw.

Cab exterior

– Remove the mounting screws above the roof.
– Remove the roof with the air conditioning lines by sliding it from the front to the rear of the tractor.


841hsm30 Fig. 32



841hsm31 Fig. 33

Refitting

Proceed in reverse order to the removal operations.

Removal/refitting

Evaporator

– Remove the filter/fan assembly.
– Remove the evaporator retaining screws.
– Cut the worklight cable ties.

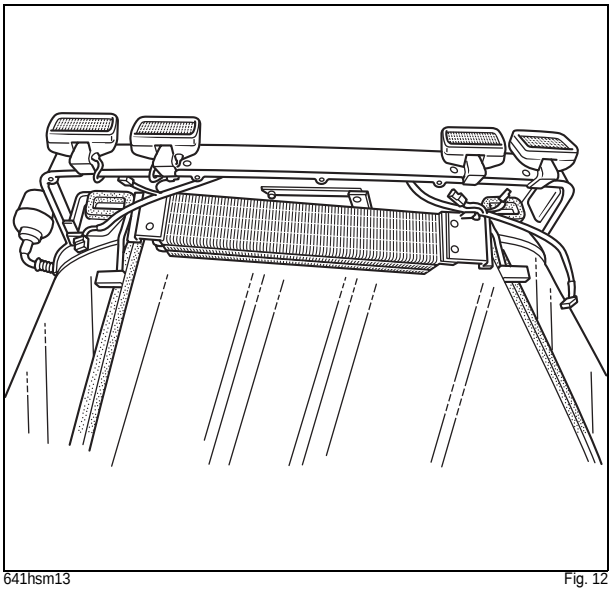
Fig. 13

12. Evaporator.
13. Expansion valve.
14. Return piping.
15. Intake piping.
16. Electronic thermostat.
17. Probe (to be inserted between the blades).

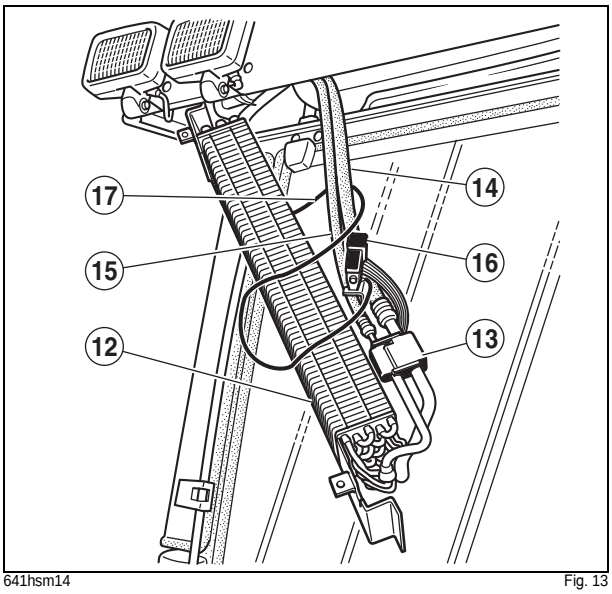
Note: On refitting the evaporator, beware not to bend the blades (place a sheet of cardboard between the evaporator and your hand).

Cleaning

– Clean the fins paying attention to the thermostat probe.
– If necessary, restore the fins with a fin comb.



641hsm13 Fig. 12



641hsm14 Fig. 13

Removal/refitting

Warning!

The bonded glass forms an integral part of the safety structure.

For a fast, quality maintenance action, we recommend using BETA SEAL x 2 500 two-pack sealant for the windscreen.

This technique minimises the bonding time which is largely unaffected by temperature and air moisture constraints (unlike one-pack sealants).

It complies with original equipment specifications and CEE and OECD safety approval tests.

All equipment has been selected to meet the quality, safety and service requirements currently in force in the principal countries.

WE STRONGLY RECOMMEND THESE INVESTMENTS.

The following products block the adhesive polymerisation process.

AVOID ALL CONTACT WITH THESE PRODUCTS:

THINNERS

GREASES

OILS

SPIRITS (windscreen washer)

CHLORINATED PRODUCTS

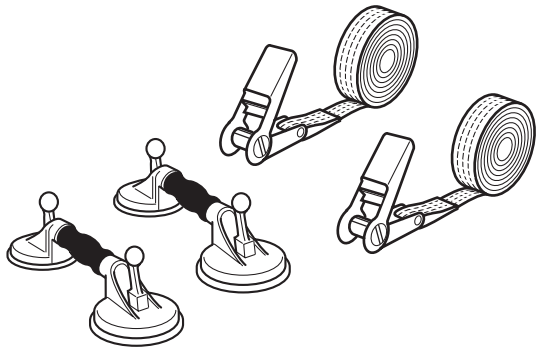
WASH PRIMER (rustproofing)

SILICONES

SOAP OR SOAPY WATER

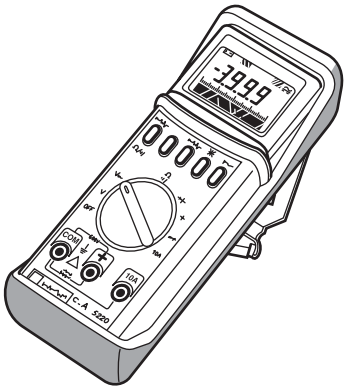
Cab lifting - Heating/air conditioning - Glass bonding equipment

60 05 005 731



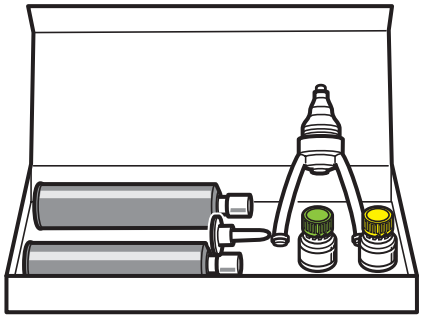
Suction cups with 2 x 5-metre straps

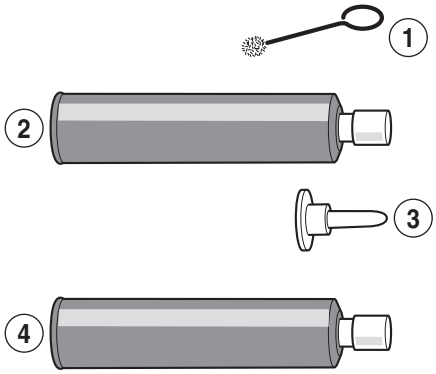
60 05 006 744

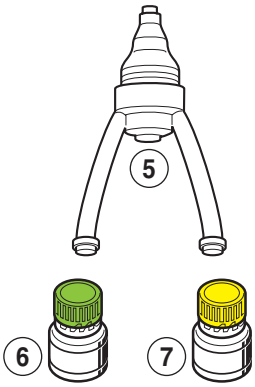


Multimeter

60 05 020 189
Two-pack windscreen sealant kit (450 ml)

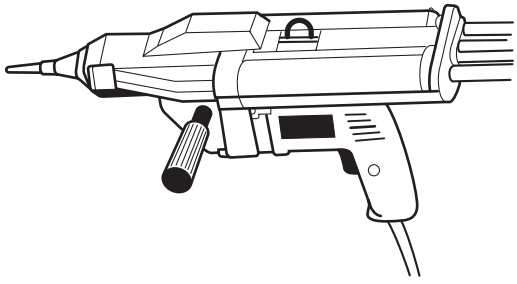






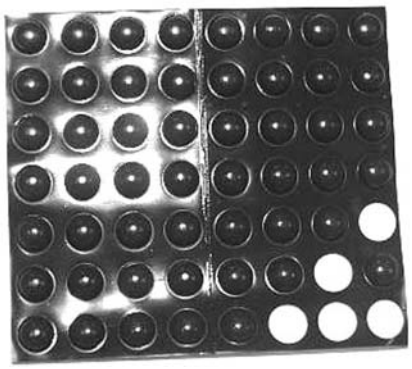
1 Round brush.
2 Component "A" cartridge.
3 Nozzle to be cut.
4 Component "B" cartridge.
5 Mixer.
6 Bottle of degreasing agent (yellow cap).
7 Bottle of primer (green cap).

60 05 020 192



Betagun sealant gun

60 05 020 197



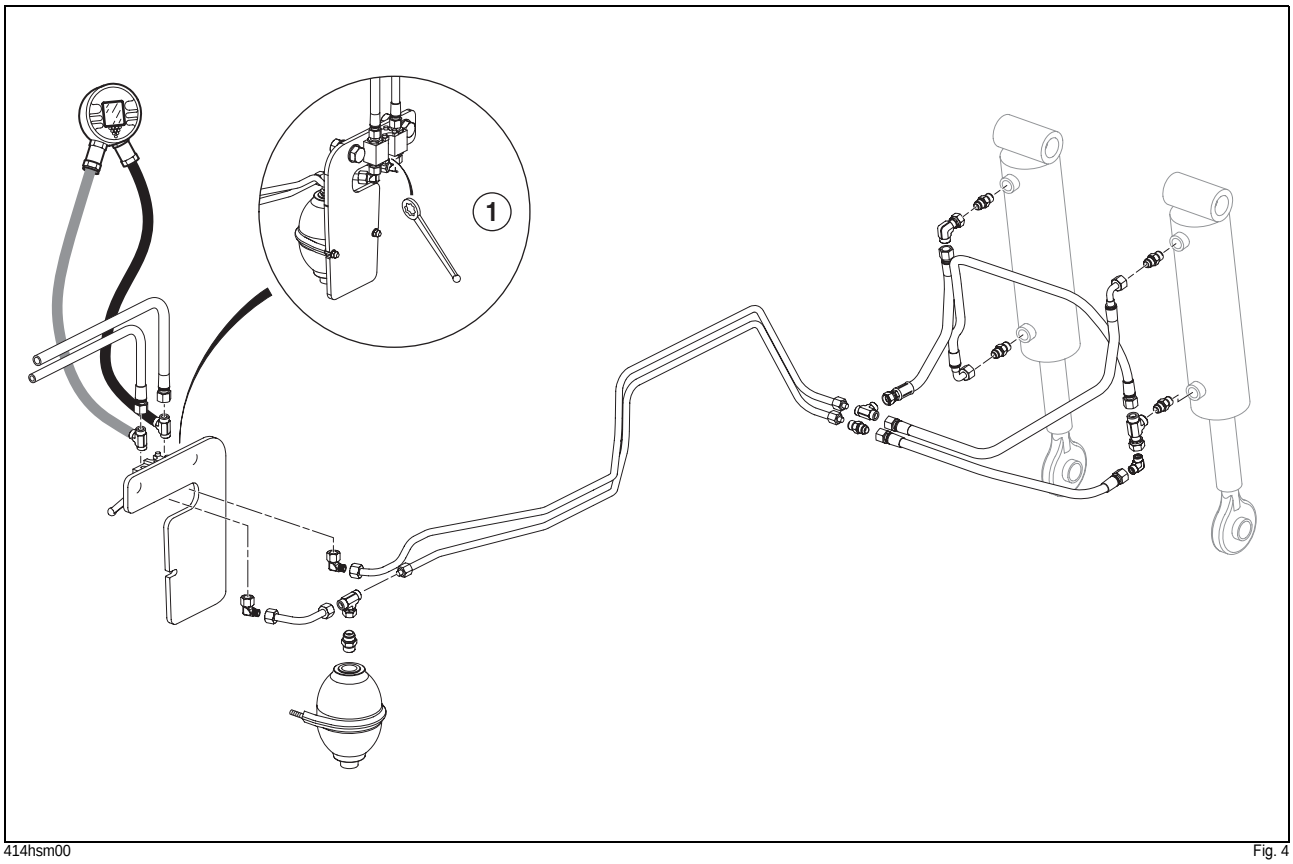
56 cushion pads

Measurement and checking points

Test conditions:
- Engine at nominal speed.
- Oil temperature at 60°C.

Checking the cylinder pressure

- Connect tester n° 60 05 705 076 at the level of the isolation valve (1).
- Place the front lift at the high or low end stop position and measure the pressure.
- The measured pressure must be 200 bar.



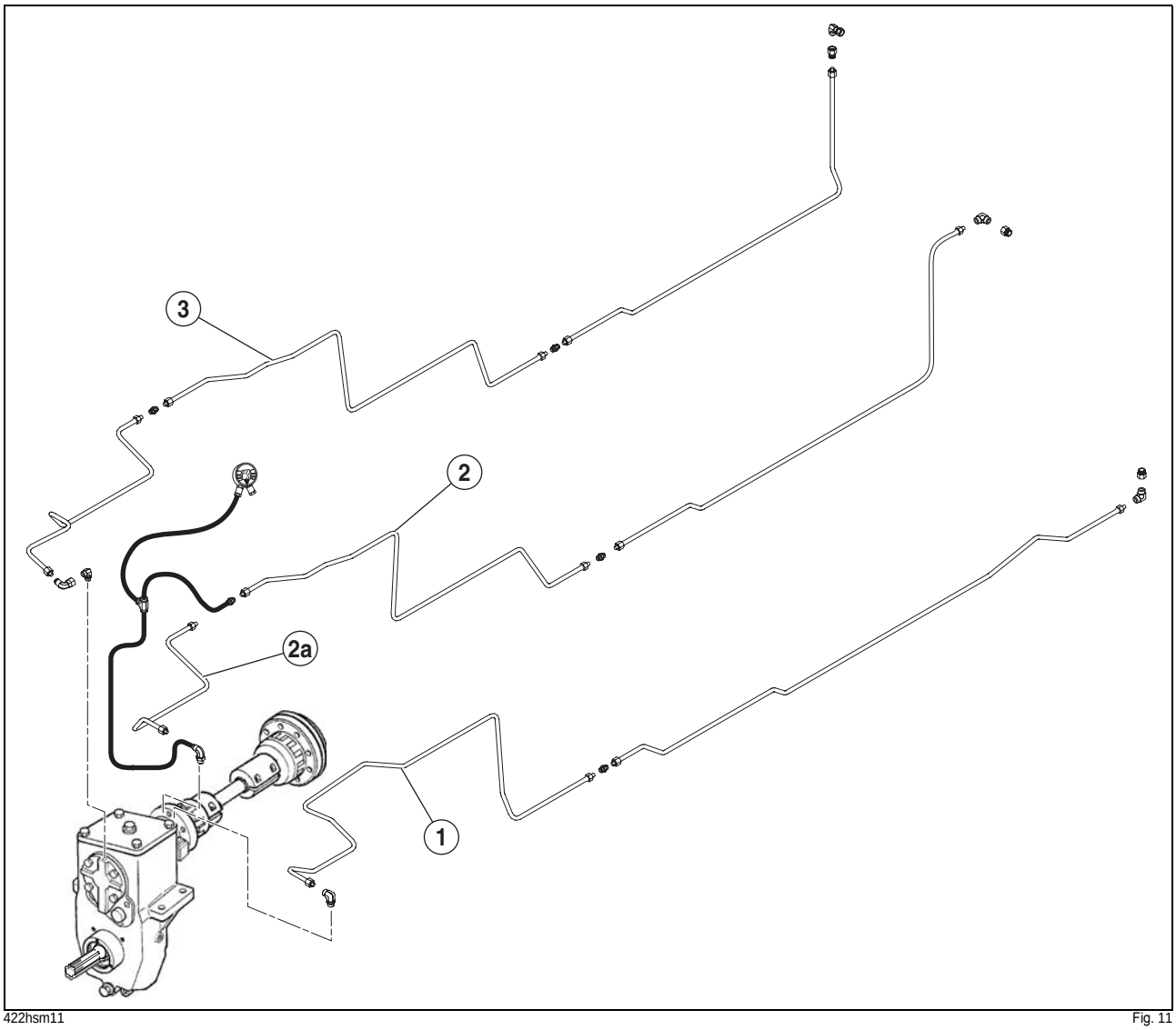
414hsm00 Fig. 4

Measurement and checking points

Test conditions:
- Engine at nominal speed.
- Oil temperature at 60°C.

Checking the clutch feed pressure

- Connect tester n° 60 05 705 076 in place of the pipe (2a).
- Apply the front power take-off clutch.
- The measured pressure must be 17 bar.



422hsm11 Fig. 11

Nomenclature

1 Unit lubrication supply.
2 17 bar supply.
3 Unit lubrication return.

Pneumatic circuit