SHOP MANUAL

WEBMWB7000

WB70A-1

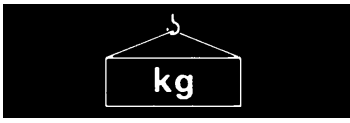
BACKHOE LOADER

SERIAL NUMBER

F10001 and up

KOMATSU

HOISTING INSTRUCTIONS



⚠ Heavy parts (25 kg or more) must be lifted with a hoist etc. In the **Disassembly and Assembly** section, every part weighing 25 kg or more is clearly indicated with the symbol kg

1. If a part cannot be smoothly removed from the machine by hoisting, the following checks should be made:
   - Check for removal of all bolts fastening the part to the relative parts.
   - Check for any part causing interference with the part to be removed.

2. Wire ropes

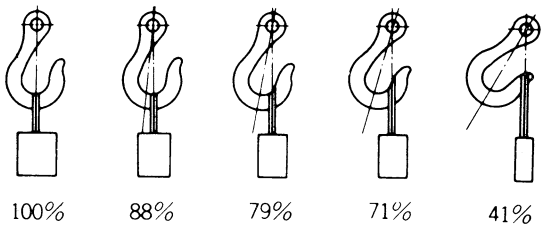
1) Use adequate ropes depending on the weight of parts to be hoisted, referring to the table below:

WIRE ROPES
(Standard «S» or «Z» twist ropes without galvanizing)

Rope diameter (mm)	Allowable load (tons)
10	1.0
11.2	1.4
12.5	1.6
14	2.2
16	2.8
18	3.6
20	4.4
22.4	5.6
30	10.0
40	18.0
50	28.0
60	40.0

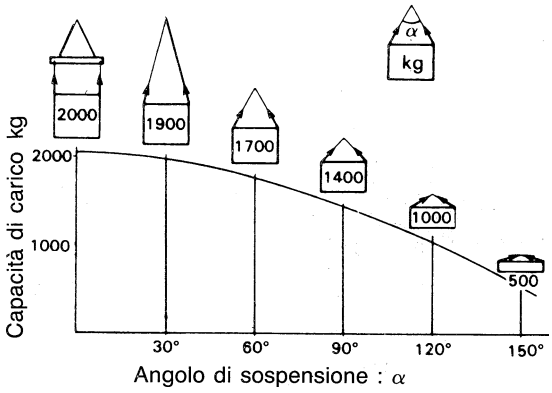
The allowable load value is estimated to be one-sixth or one-seventh of the breaking strength of the rope used.

2) Sling wire ropes from the middle portion of the hook. Slinging near the edge of the hook may cause the rope to slip off the hook during hoisting, and a serious accident can result.
Hooks have maximum strenght at the middle portion.



3) Do not sling a heavy load with one rope alone, but sling with two or more ropes symmetrically wound on to the load.
⚠ Slinging with one rope may cause turning of the load during hoisting, untwisting of the rope, or slipping of the rope from its original winding position on the load, which can cause dangerous accidents.

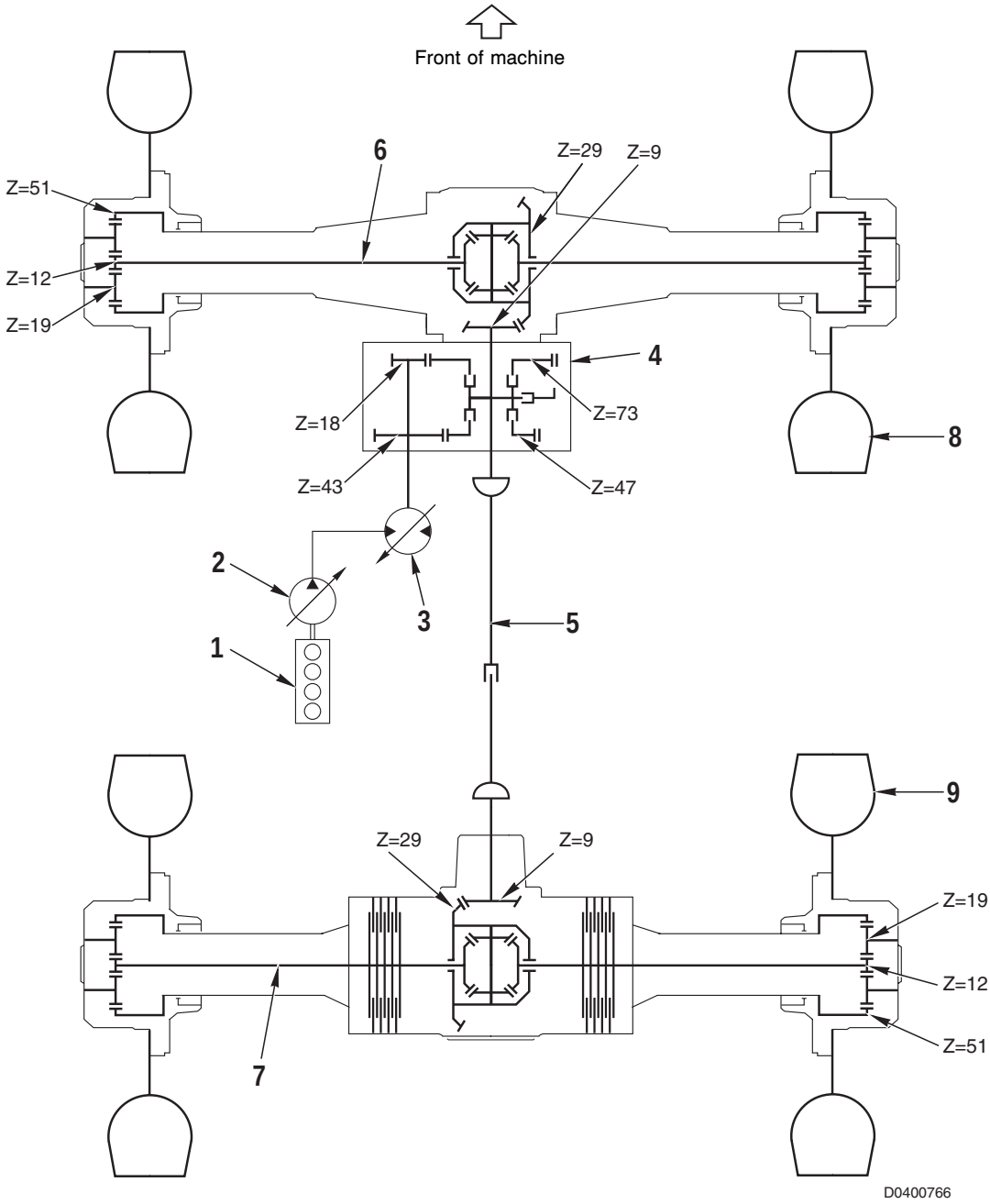
4) Do not sling a heavy load with ropes forming a wide hanging angle from the hook.
When hoisting a load with two or more ropes, the force subjected to each rope will increase with the hanging angles.
The table below shows the variation of allowable load (kg) when hoisting is made with two ropes, each of which is allowed to sling up to 1000 kg vertically, at various handing angles.
When two ropes sling a load vertically, up to 2000 kg of total weight can be suspended.
This weight becomes 1000 kg when two ropes make a 120° hanging angle.
On the other hand, two ropes are subjected to an excessive force as large as 4000 kg if they sling a 2000 kg load at a lifting angle of 150°.



POWER TRAIN

REDUCTION RATIO

	Reduction gear (Transmission)	Differential	Planetary	Total axle	Total
High speed	1.093	3.22	5.25	16.915	18.47
Low speed	4.06				68.6



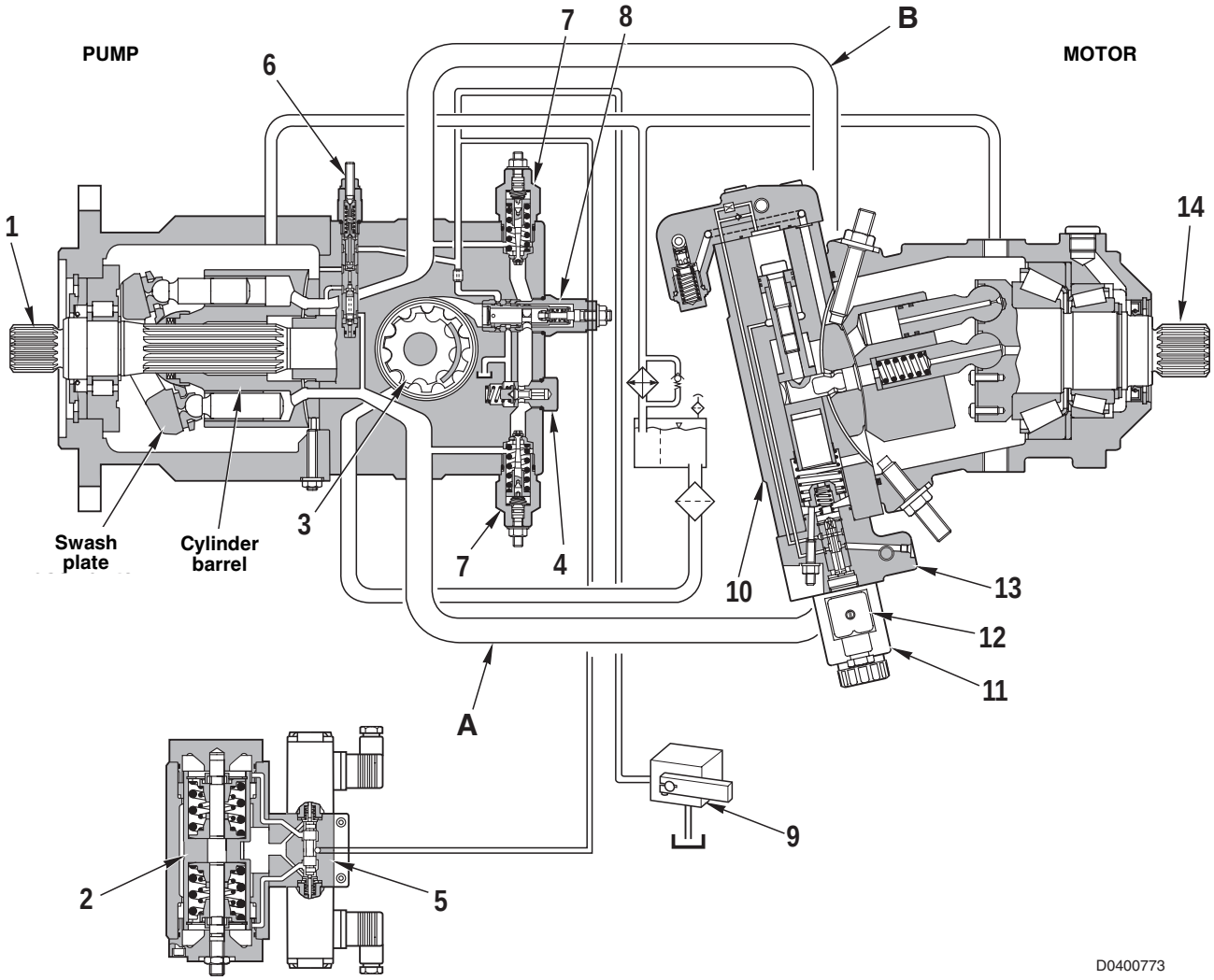
1. Engine (Diesel)
2. Hydraulic pump
3. Travel motor
4. Transmission
5. Drive shaft
6. Front axle
7. Rear axle
8. Front wheels
9. Rear wheels

HYDROSTATIC TRANSMISSION OPERATION

- Pump shaft (1), (which drags cylinder barrel) is rotates by the engine.
- Moving the positioning piston (2) the swash plate is shifted from neutral position; an angle is fixed between pistons and swash plate (on which pistons are constrained); this angle will create a volume difference in one side smaller and in the other side bigger. In this way it is created an oil pressure delivery area (hydraulic power) through hydraulic motor (pipe A on diagram) and a suction area from hydraulic motor (pipe B on diagram).
- The oil sent from pump to motor (pipe A), pressing on pistons, will move pistons and consequently the output shaft (14), transforming «hydraulic power» into «mechanical power».
- The oil transferring power is returned through pipe (B) to hydraulic pump's suction port to be reused.
- This is the «closed circuit» principle which, theoretically, utilises once again the same oil quantity.

NOTE - Moving the positioning piston in the other direction, it will create the reversal direction of engine rotation.

- Oil leakages between moving parts, cause, during machine's life, the emptying of closed circuit; this trouble is solved applying a gear pump (3) named boosting pump, which sucks oil from the hydraulic tank and introducing it into the closed circuit keeping inside constant pressure, checked by a fixed setting main relief valve (4).
- Part of pressurised oil of the boosting circuit is used for positioning piston (2) operation which allows the stepless variable inclination of the swash plate and therefore the hydraulic motor speed.
- All the system is protected from pressure peaks (and therefore from overloads) by safety valves (7).



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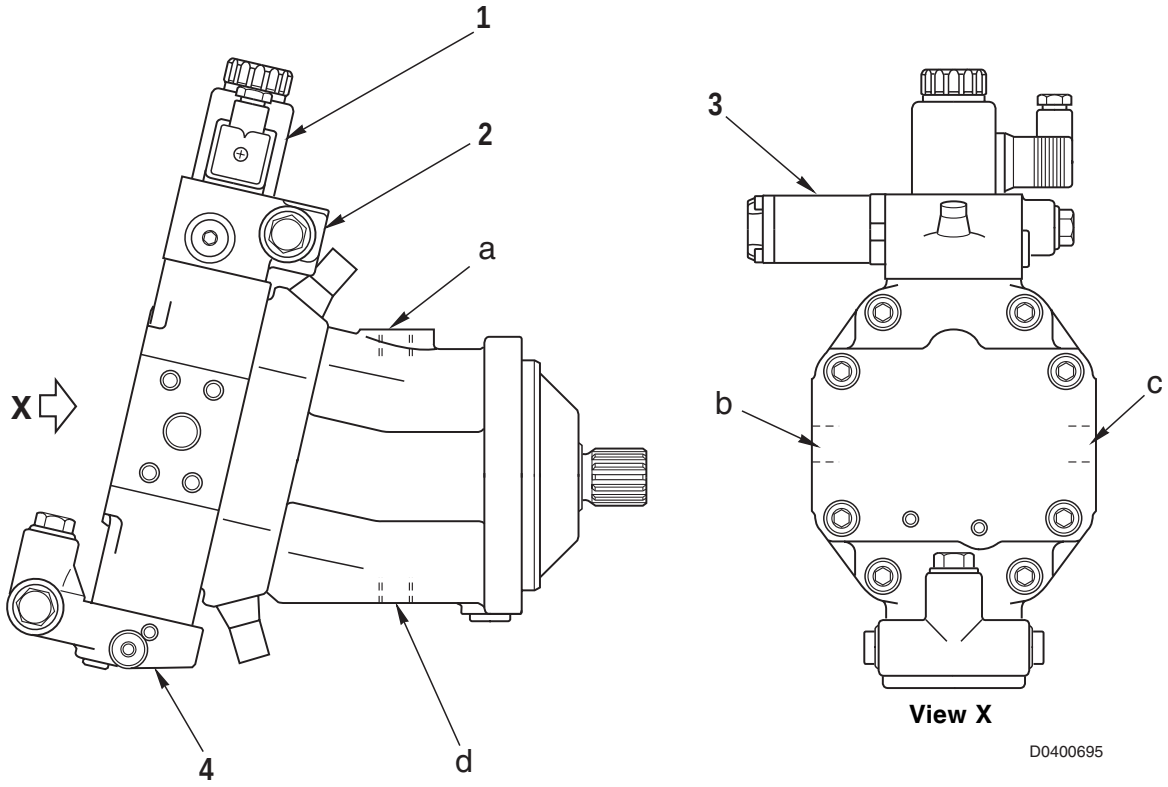
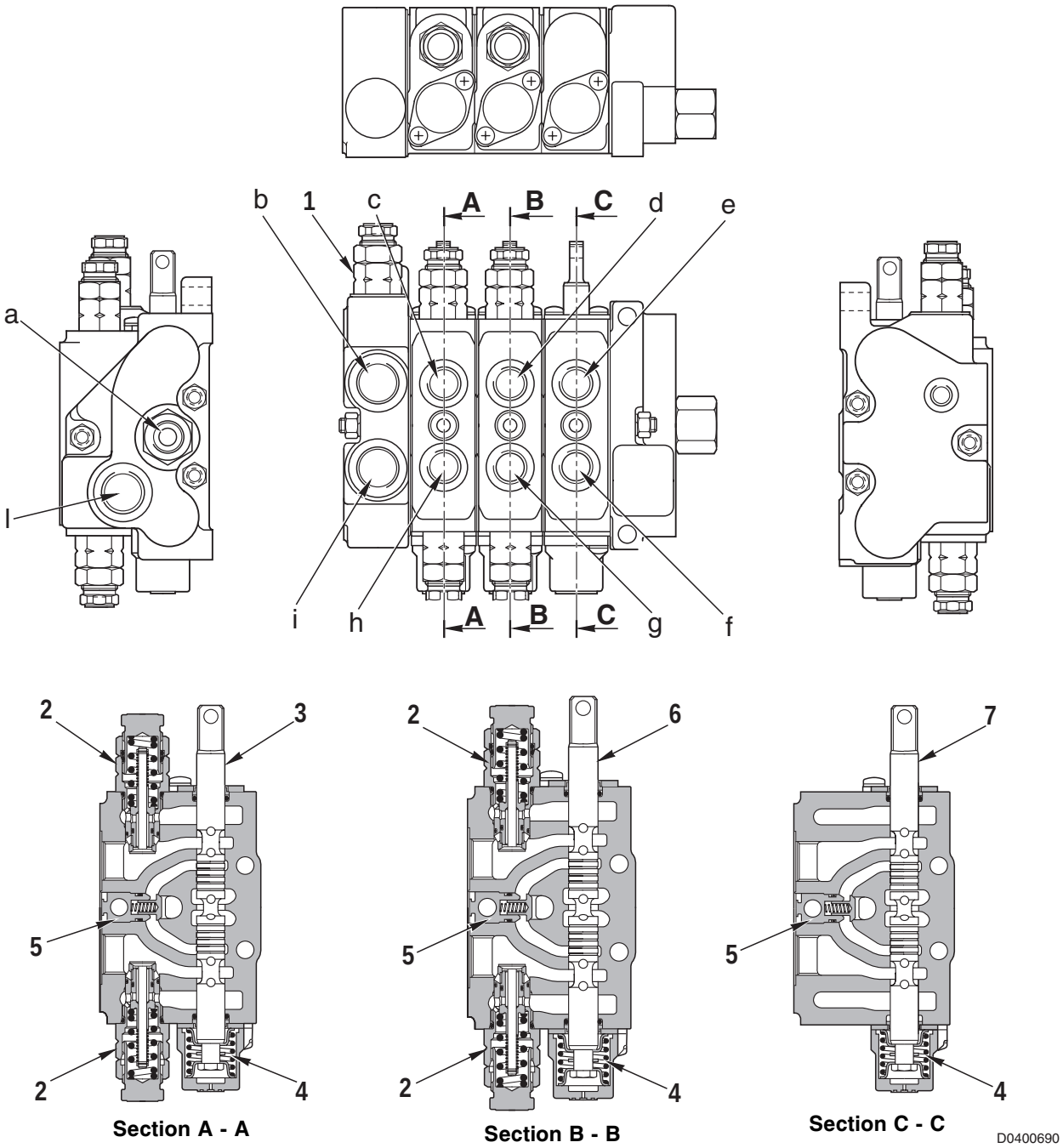
TRAVEL MOTOR



a. A Port - From hydrostatic transmission pump (B Port)
b. T1 Port - From hydrostatic transmission pump (T1 Port)
c. B Port - From hydrostatic transmission pump (A Port)
d. T Port - To oil radiator (C1 Port)

1. EV8 Additional piloting device
2. Automatic variable displacement device
3. EV9 Detection of travel direction device
4. Oil exchange valve

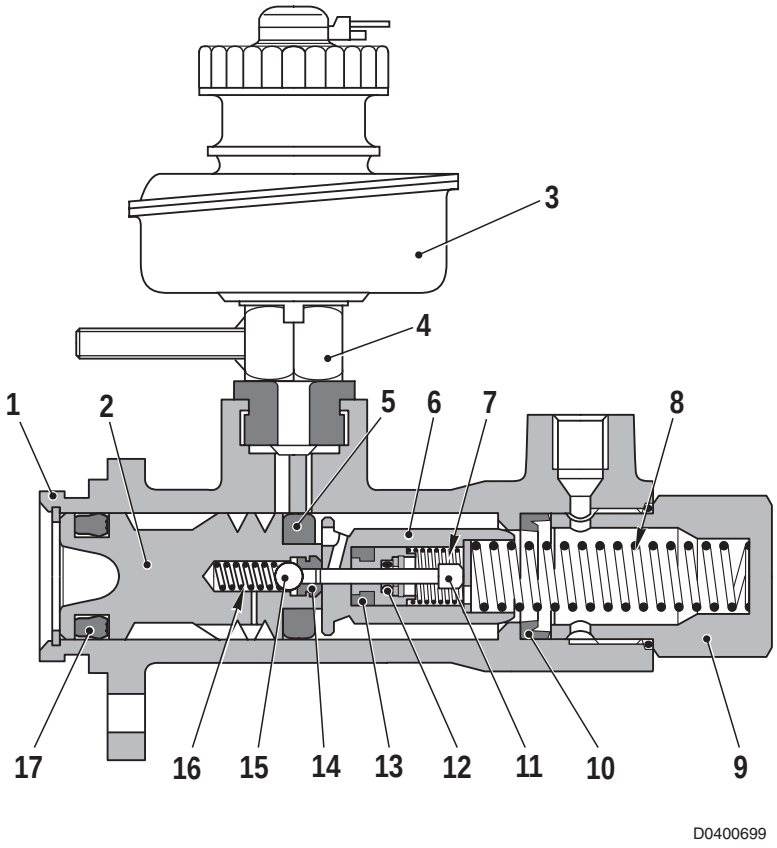
3-SPOOL CONTROL VALVE



a. T2 Port - From priority valve (EF Port) and from backhoe control valve (P Port)
b. P Port - From pump P3 (P Port)
c. B1 Port - To auxiliary attachments (L.H. side)
d. B2 Port - To dump cylinder (Bottom side)
e. B3 Port - To lift cylinder (Bottom side)
f. A3 Port - To lift cylinder (Head side)
g. A2 Port - To dump cylinder (Head side)
h. A1 Port - To auxiliary attachments (R.H. side)
i. T Port - To hydraulic oil tank
l. T1 Port - From oil radiator (C2 Port)

1. Main relief valve
2. Safety-suction valve
3. Spool (Optional attachments)
4. Spool return spring
5. Check valve
6. Spool (Bucket)
7. Spool (Lift arm)

BRAKE PUMP

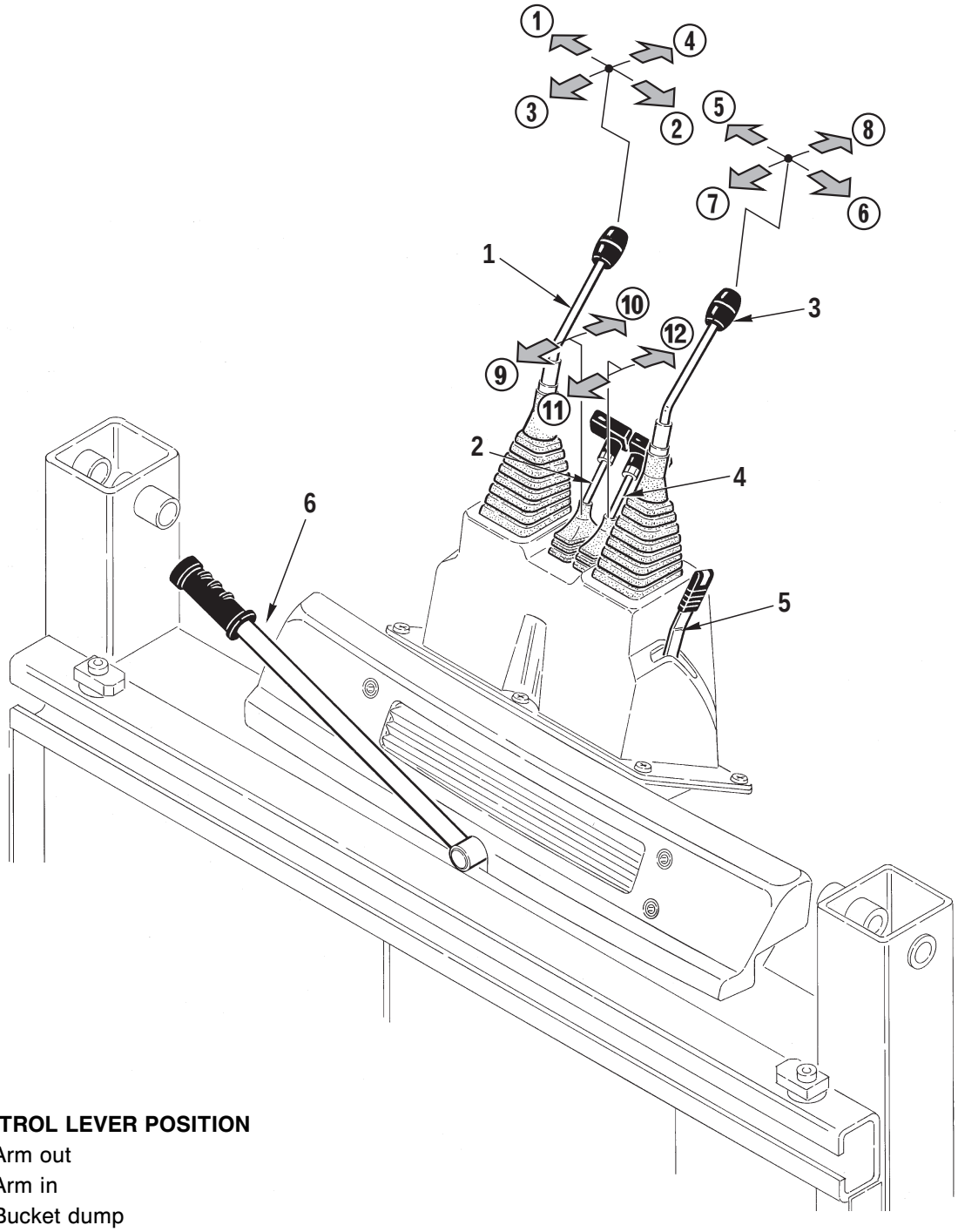


1. Pump body
2. Main piston
3. Oil brake tank
4. Union
5. Oil seal
6. Piston
7. Detaching valve spring
8. Pump spring
9. Plug
10. Seal
11. Pin
12. Seal
13. Seal
14. Seal
15. Ball
16. Spring
17. Seal

SPECIFICATIONS:

Stroke:	36 mm
Displacement:	15 cc
Max. pressure:	150 bar

BACKHOE CONTROL LEVER



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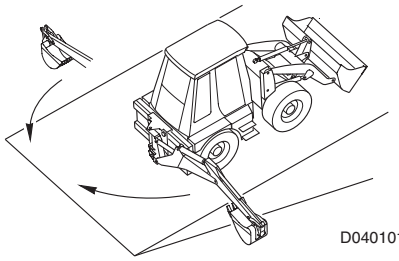
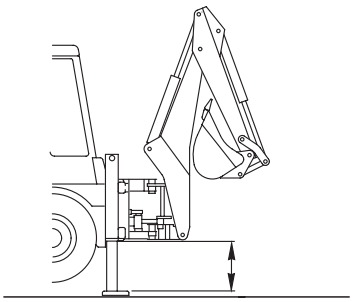
CONTROL LEVER POSITION

(1) Arm out
(2) Arm in
(3) Bucket dump
(4) Bucket curl
(5) Boom lower
(6) Boom raise
(7) Boom R.H. swing
(8) Boom L.H. swing
(9) R.H. outrigger lower
(10) R.H. outrigger raise
(11) L.H. outrigger lower
(12) L.H. outrigger raise

1 - R.H. work equipment control lever
2 - R.H. outrigger control lever
3 - L.H. work equipment control lever
4 - L.H. outrigger control lever
5 - Backframe locking lever
6 - Backhoe locking lever

• FOR MACHINE

Machine model					WB70A-1	
Classification		Check item	Test conditions	Unit	Standard value	Permissible value
Hydraulic drift working equipment	Backhoe	Boom swing	 D0401011 ● Oil temperature: 55 – 65°C ● Backhoe balanced on the guides, bucket in transport condition. ● Arm and bucket cylinder in. Put the bucket link pin at 1 meter from ground and swing at end of boom stroke in one of the two direction. ● Move the machine on a chute of 15° and apply the parking brake. ● Stop the engine and, after 1 minute, check the cylinder feed back opposite to the boom every 5 min. for a total of 15 minutes. ★ Make the test for each swing direction.	mm	Max. 15 (each side)	Max. 20
		Outriggers	 D0401012 ● Oil temperature: 55 – 65°C ● By pass the safety valves. ● Balanced backhoe. ● Boom and arm cylinders in, bucket cylinder out ● Outriggers at maximum extension. ● Engine stopped. ● Check the frame lowering for each side every 5 min. for a total of 15 minutes		Max. 20	Max. 30

ADJUSTING VALVE CLEARANCE

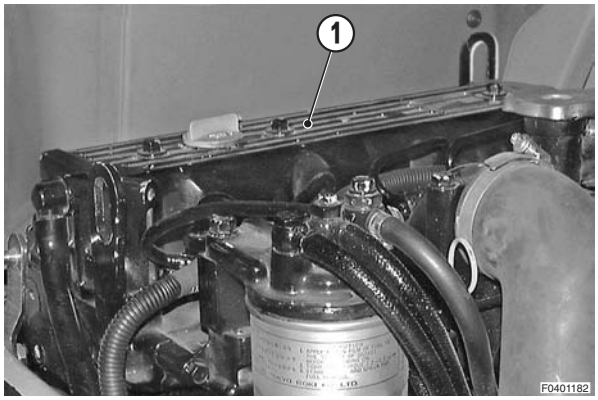
★ Adjust clearance between valves and rocker levers as follows:

Unit: mm

At cold engine	Intake valve	Exhaust valve
	0.20	0.20

★ Firing order: 1-3-4-2-1.....

★ Normal rotation sense: counterclockwise from flywheel



- **Adjusting procedure**

1 - Remove valves cover (1).

2 - Rotate crankshaft in normal direction as long as cylinder piston to be checked is at compression Top Dead Center. (PMS).

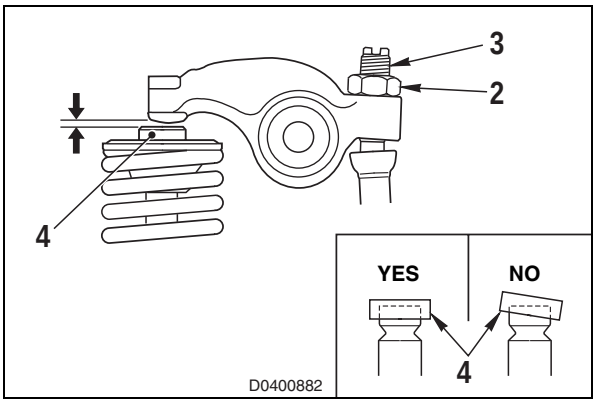
★ In this position intake and exhaust valves are closed.

3 - Loose lock nut (2) and unscrew tappet (3) of about 1 turn.

★ Check that valve insert (4) is laying flat on valve stem and that it is not worn askew.

1 - If valve inserts (4) are damaged, replaced them with new ones.

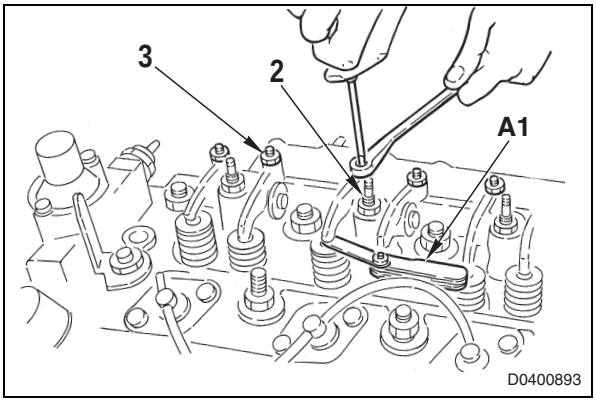
2 - Make sure that inserts feet and lay flat on valve stem.



4 - Connect **A1** feeler gauge between insert and rocker lever to adjust; rotate the tappet (3) until touching **A1** feeler gauge.
Tight tappet (3) with lock nut (2).

★ After tightening the lock nut, check the clearance again.

5 - Adjust with same procedures second cylinder valve and repeat same operation for the other cylinders, according to the firing order.

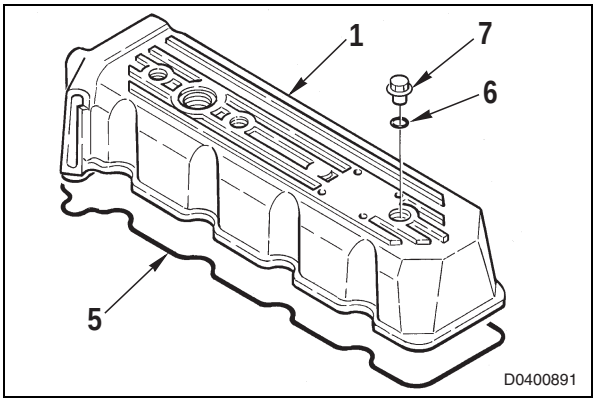


- **Cover valves installation**

1 - Check condition of cover valves (1), gasket (5), O-Rings (6) and lock nuts (7); clean carefully contact surface on cylinder head.

2 - Install valves cover (1), fit O-Rings (6) and lock nuts (7).

Nm Cover lock nut: 25±3 Nm



6. Releasing residual pressure from the circuits

1 - Put work attachments on level ground, stop the engine and remove tank plug.

2 - Move all control levers in all directions to release completely cylinders and main circuit remain pressure.

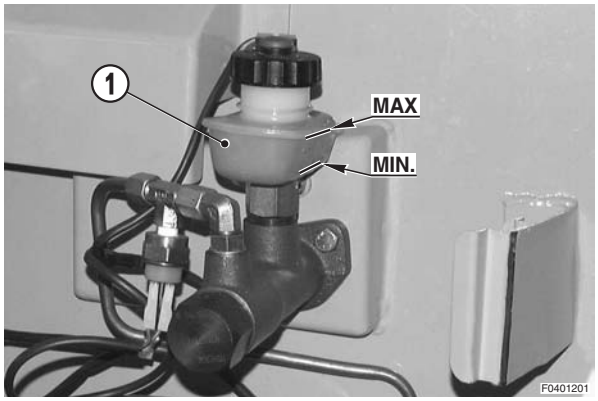
3 - Loosen slowly oil filler tank to remove remain pressure.

7. Air bleeding from braking circuit

★ Above operation is to be carried out every time maintenance is made on braking circuit to remove or replace a component, or when air entered into the circuit.

★ Machine must be stopped with attachments on level ground.

1 - Make sure that oil in brake system tank (1) is at maximum level.



2 - Remove safety plugs and applied to bleeding screws (2) a vinyl hose (3) to catch oil.

3 - Push brake pedal to bottom and, keeping it pushed, loosen bleeding screw (2) of one of two braking units until the pedal reaches end of its stroke.

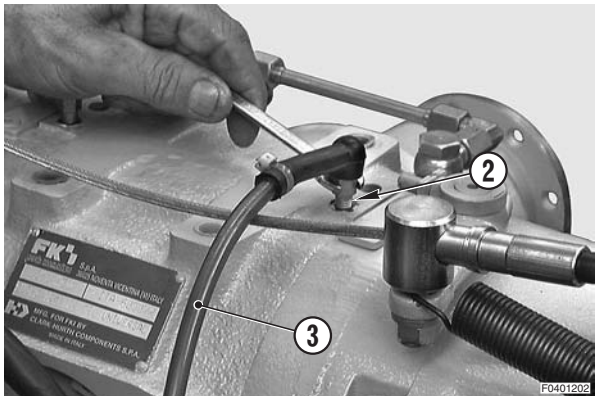
4 - Keeping pedal at the end stroke, tighten bleeding screw (2).

5 - Release braking unit pedal during air bleeding, wait for few seconds and repeat above operations until from bleeding screw, oil flows out without air bubbles.

6 - Repeat same operations for the other braking unit.

★ Check frequently the oil level in the tank and carry out filling every time level approaches to minimum.

★ After air bleeding apply on screws (2) safety plugs.

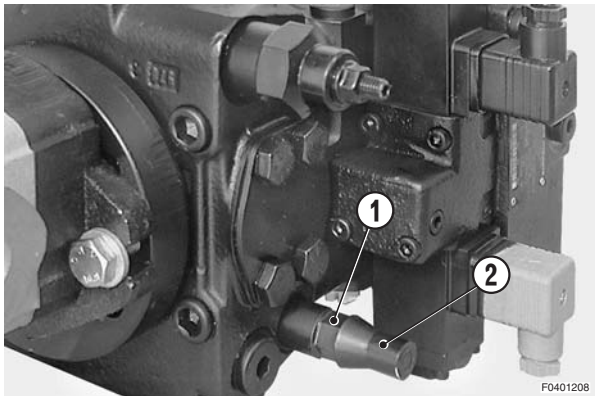


4. Testing and setting of valve pressure cut (1)

1 - Remove port plugs (MA - MB) and connect two gauges **E1** (600 bar).

2 - Start the engine and select 2nd forward speed.

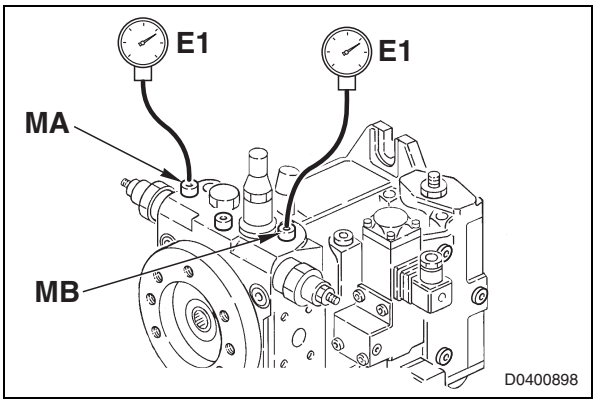
3 - Brake firmly the wheels using brake pedal and, keeping the brake pedal pushed accelerate gradually until reaching high idling speed.



4 - Check on gauge (MB) that pressure reaches normal value.

★ Cutting pressure: 440 $^{0}_{+10}$ bar

★ If pressure is not within tolerance limit, set valve pressure cut (1).



Setting

1 - Remove safety plug (2).

2 - Loosen nut (3).

3 - Adjust pressure by adjusting screw (4).

- To INCREASE pressure, rotate in CLOCKWISE direction.
- To DECREASE pressure, rotate in COUNTER-CLOCKWISE direction.

4 - Lock the position with nut (3).

Nm Nut: 22 Nm

5 - Return engine at low idling speed, apply reverse speed and check also the second port.

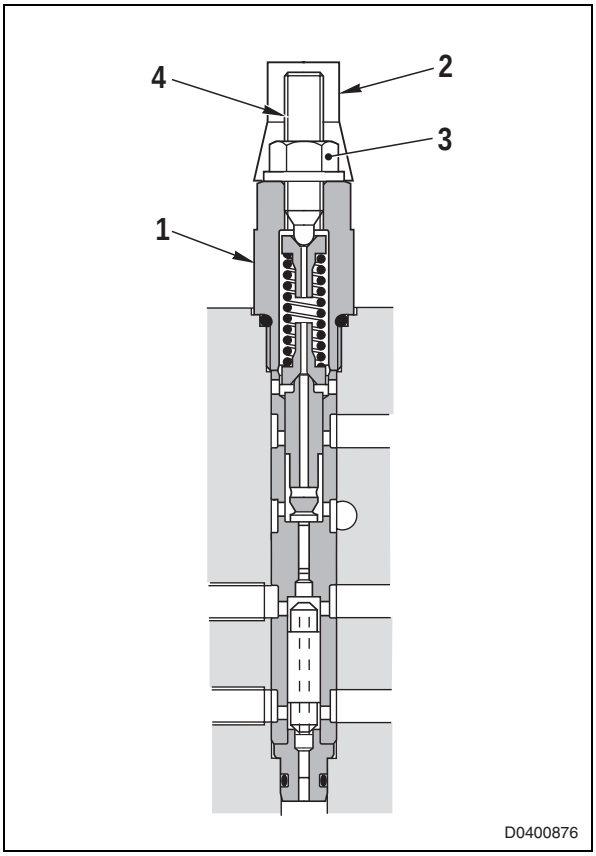
6 - Apply safety plug (2) against not authorised tamperings.

★ If in spite of valve cut pressure adjusting, pressure does not reach normal value in both ports:

1 - Check boosting pressure setting (see paragraph 2).

2 - Check pump setting starting point adjustment (see paragraph 3).

3 - Remove the port safety valve where failure is relieved and proceed to overhaul at bench or to replacement.



3 - Connect tool **H1** between brake pump hose (1) and eye union (5) of one of the two brake units.

4 - Connect to tool **H1** pressure port a gauge **E3** (250 bar) and open the exclusion valve (6).

5 - Operate brake pump to feed pressure into the circuit to maximum pressure of 150±10 bar.

6 - Keeping pressure, close valve (6) to keep in pressure the brake unit to test.

7 - Release the brake pedal and check for 2 minutes the pressure indicated by gauge **E3**.

★ If pressure value has a negative change, it means that at least one of steering piston is defective.

★ If pressure value keeps steady, defect concerns the other steering unit.

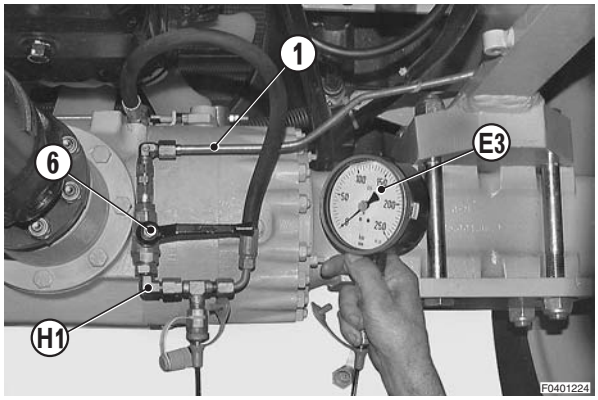
⚠ 1 - A further confirmation about leak of one or more steering pistons, can be also shown by oil level increase in the axle central housing.

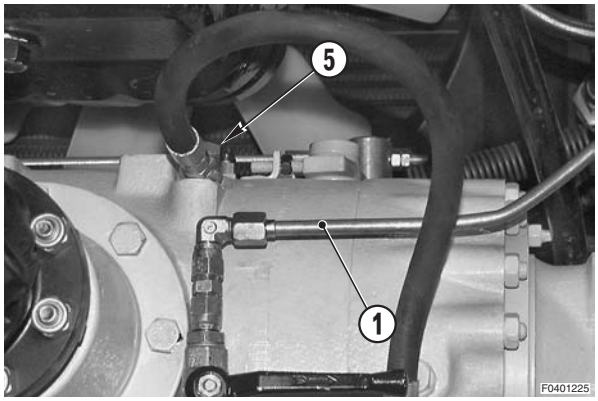
2 - If there are level increases, and therefore oil mixing due to steering piston leaks, replace all seals among axle section and replace lubricant completely.

8 - Repeat, as confirmation, test for the other brake unit using the same procedure.

9 - Reset brake circuit with disassembled parts.

⚠ After testing and possible repairs, bleed air from brake units (see «AIR BLEEDING OF BRAKE CIRCUIT»).





30 DISASSEMBLY AND ASSEMBLY

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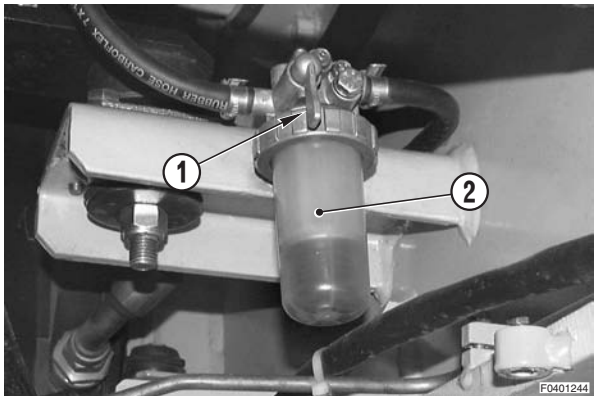
REMOVAL OF INJECTION PUMP

⚠ Disconnect the cable from accumulator negative terminal (–).

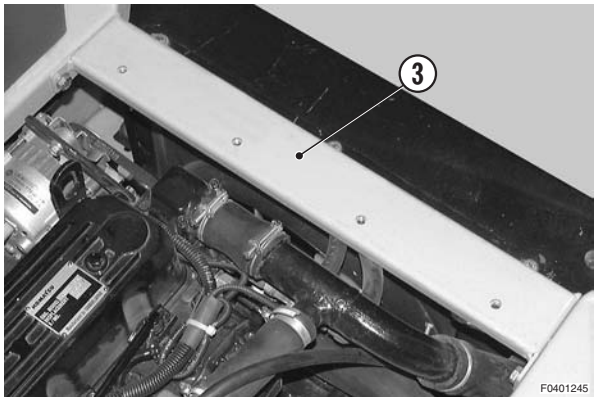
★ Close the cock (1) of separator (2) to prevent fuel leakage.

★ Plug removed or disconnected pipes to avoid impurity entry.



1 - Remove seat and engine hood. (For details, see «REMOVAL OF SEAT AND ENGINE HOOD»).

2 - Remove frame rear cross-bar (3).

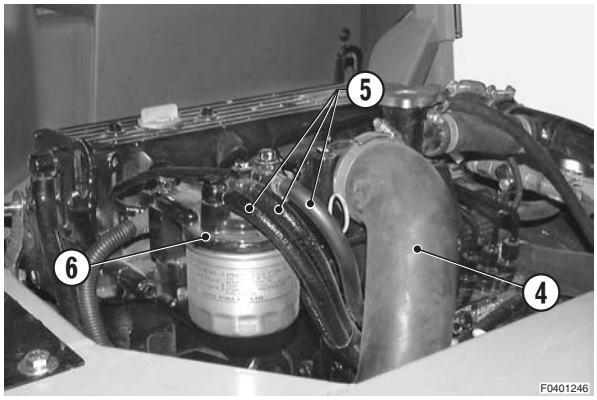


3 - Disconnect and remove air-inlet pipe (4).

4 - Disconnect pipes (5) from fuel filter (6) and plug them (No. 5 pipes).

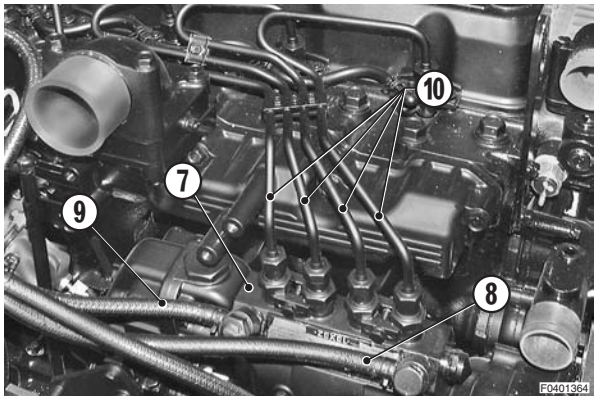
★ Mark the pipes to avoid exchanges during installation.

5 - Remove the fuel filter unit (6).



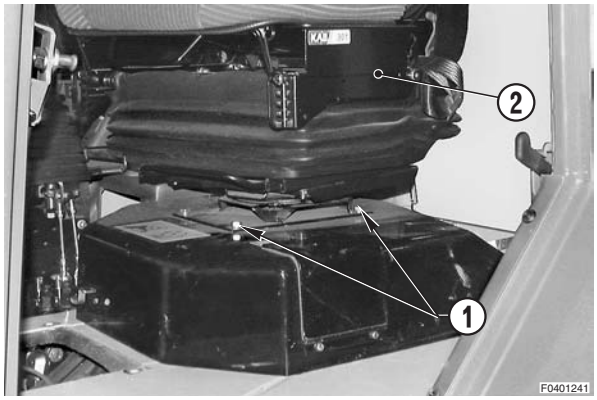
6 - Disconnect from injection pump (7) fuel feeding pipes (8) and return pipes (9). ※1

7 - Disconnect high pressure pipes (10) from injection pump. ※2



REMOVAL OF SEAT AND ENGINE HOOD

⚠ Lower work attachment until leaning on level ground and stop the engine.



Seat

1 - Remove seat mounting bolts (1) (No. 4).

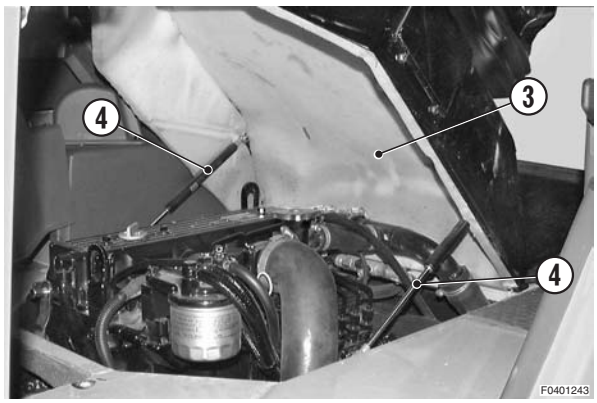
2 - Remove the seat (2).

kg Seat: .....

Engine hood

1 - Open engine hood (3) and remove gas cylinder (4).

⚠ During the gas cylinder removal, keep engine hood raised using safety stiffeners.

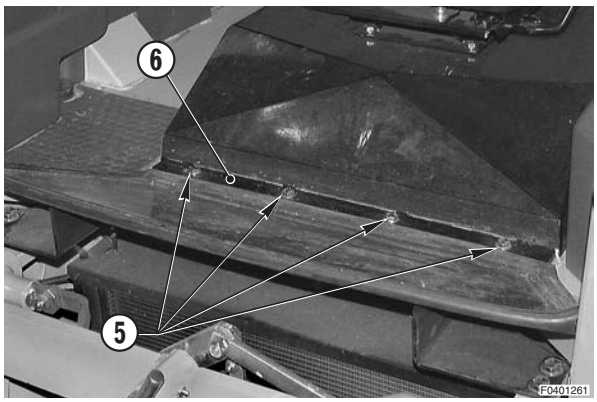


2 - Lower the engine hood (3).

3 - Loosen and remove bolts (5) fixing the hinge (6).

4 - Remove engine hood (3).

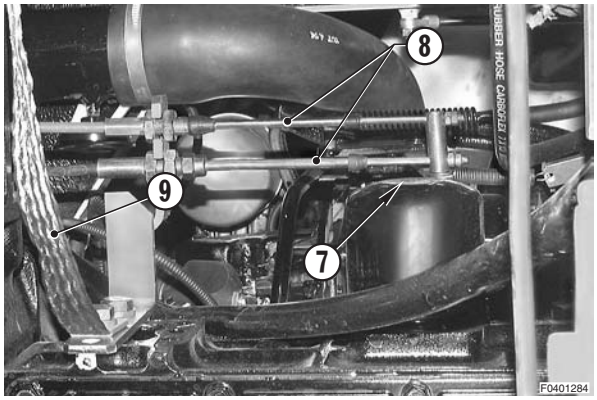
kg Engine hood: .....



INSTALLATION OF SEAT AND ENGINE HOOD

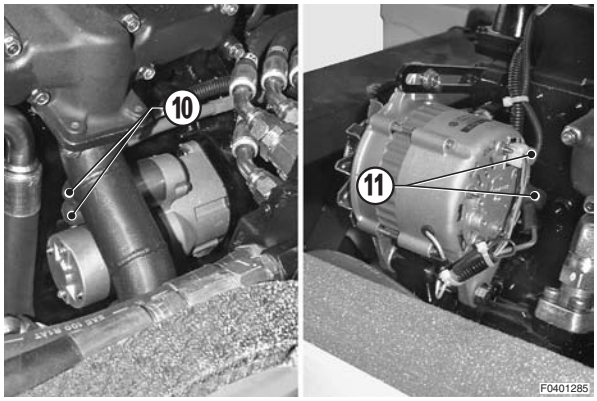
- To install, reverse the removal procedure.

8 - Disconnect accelerator cables (8) from lever (7); disconnect engine ground cable (9).

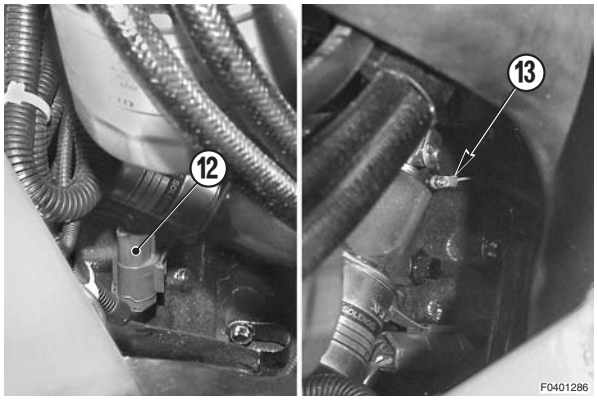


9 - Disconnect starting motor cables (10).

10 - Disconnect alternator cables (11).

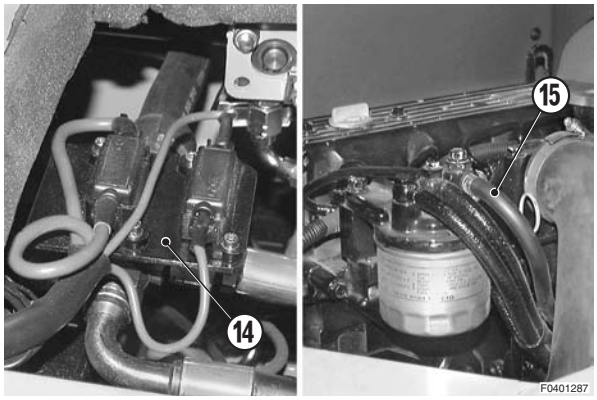


11 - Disconnect the engine stop solenoid (12) cable and the engine oil pressure sensor (13).



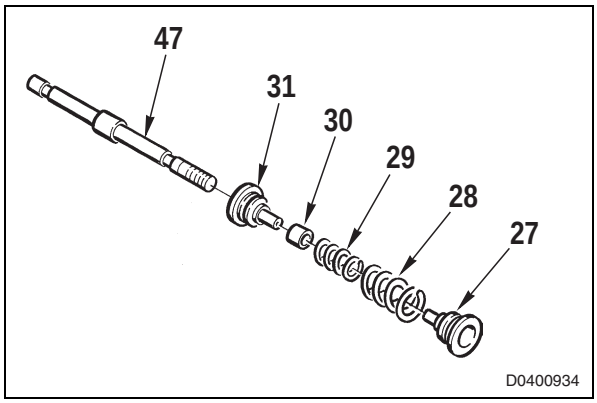
12 - Disconnect the main fuses bracket (14).

13 - Disconnect fuel return pipe (15) from fuel filter and plug it.

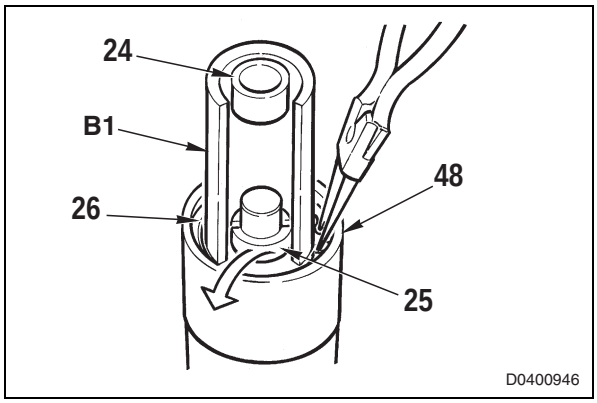


ASSEMBLY OF PISTON PUMP

1 - Install on positioning rod (47) in the following order the disc (31), spacer (30), spring (29) and (28), and disc (27).

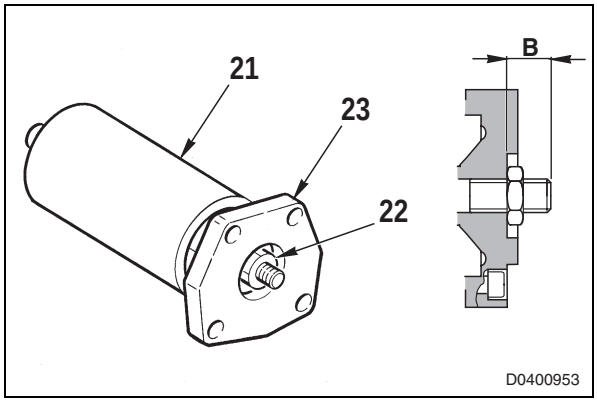


2 - Insert the unit into positioning cylinder (48) and using a press and the push tool **B1**, fit half rings (25), retaining ring (24) and circlip (26).
Repeat operations 1 and 2 for the other side of positioning cylinder.



3 - Install on positioning cylinder assembly (21), the cover (23) and the nut (22).

★ Check that the dimension «B» is 16 mm.

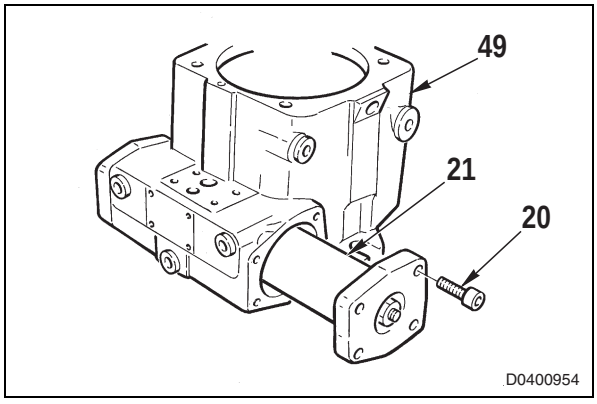


4 - Put positioning cylinder assembly (21) into pump body (49) and tighten the bolts (20).

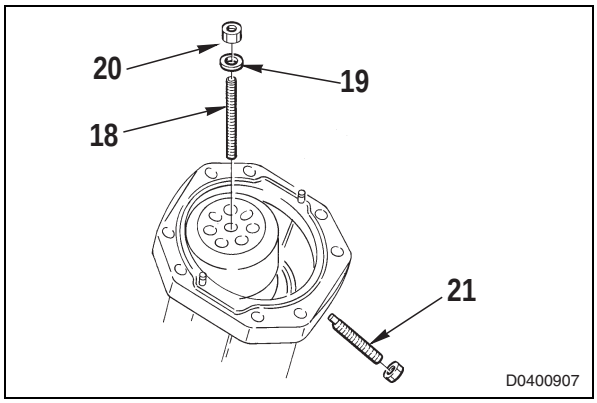
★ Be careful to notch position at the centre of positioning cylinder.

★ Lubricate on positioning piston.

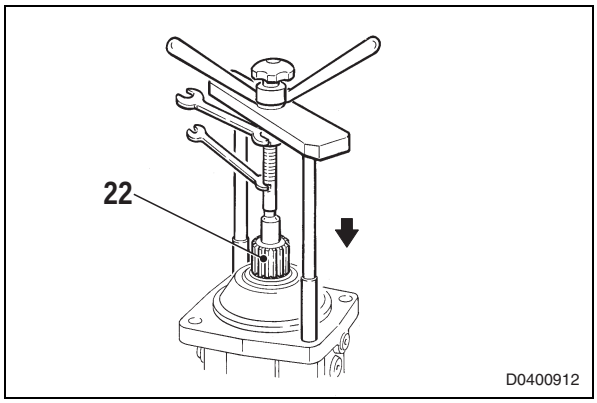
Positioning piston: hydraulic oil



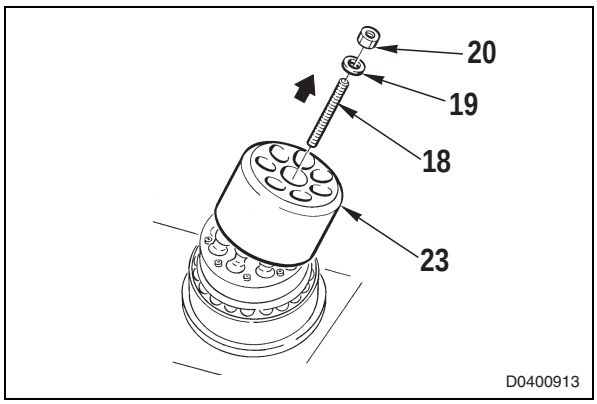
9 - Stop with threaded pin (18) a washer (19) and a nut (20) the cylinder barrel in zero position.
Remove maximum displacement adjusting screw (21).
★ Threaded pin: M5x71



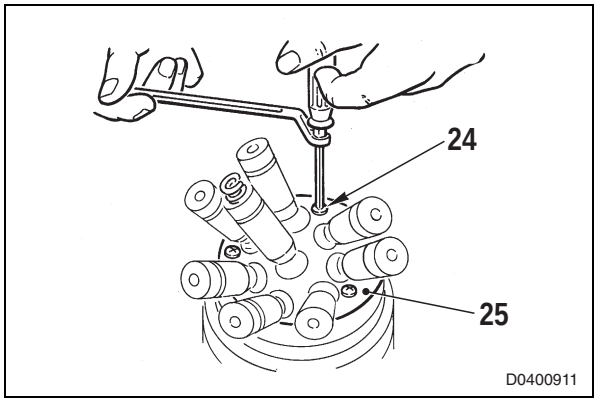
10 - Using a puller, remove the complete swing unit (22).



11 - Tighten the complete swing unit into a vice and remove nut (20), washer (19) and threaded pin (18).
Remove cylinder barrel (23).
★ Use a vice provided with soft jaws.



12 - Loosen mounting bolts (24) of valve plate (25).



ASSEMBLY OF STEERING GEAR PUMP

★ Clean perfectly all parts and, before movable parts assembly, lubricate them lightly.

1 - Assemble on flange - cover (1) the output shaft seal (2).

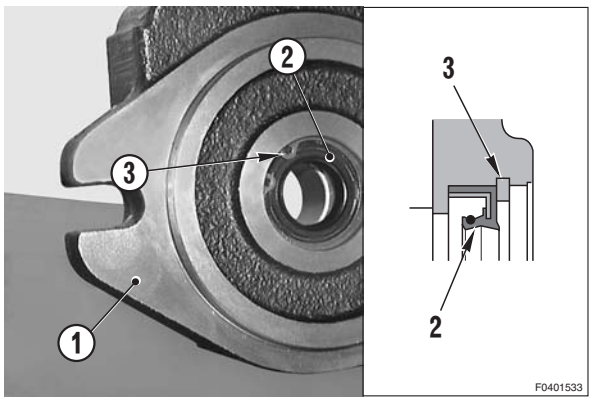
★ Use a press and a push tool.

★ Grease the ring external surface.

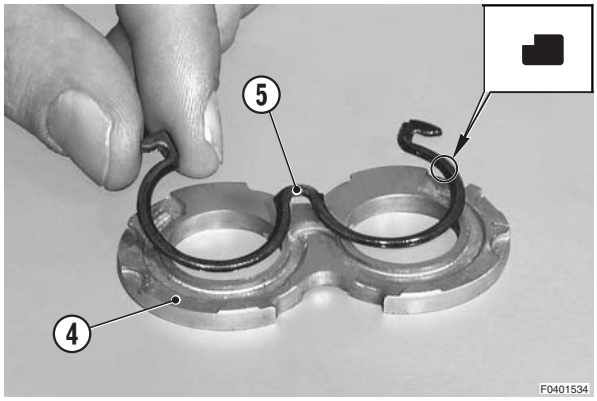
Ring: ASL800050

★ Check carefully seal assembly orientation.

2 - Assemble retainer (3).

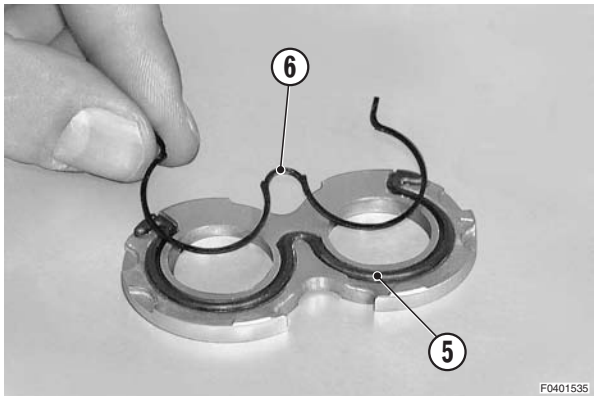


3 - Assemble into the thrust bearing (4) the gasket (5) checking that the extrusion profile seat is turned towards outside.



4 - Assemble the extrusion profile (6) into the gasket seat (5).

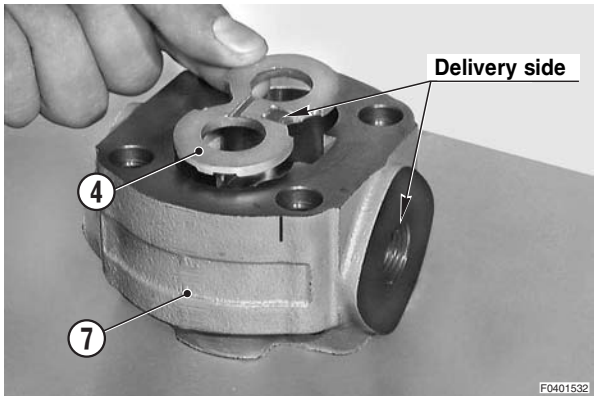
★ Make sure that profile is fully inserted.



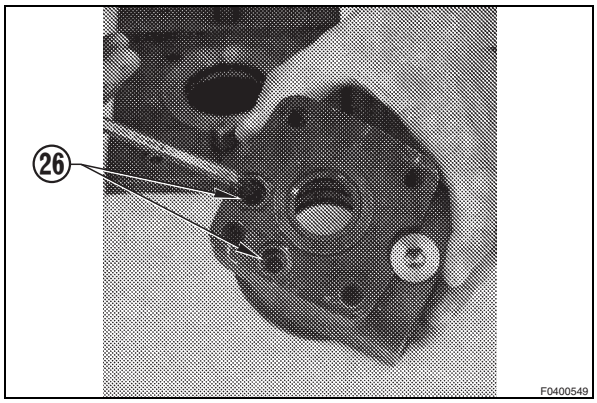
5 - Spread with grease gaskets side and assemble the lower thrust bearing (4) into the pump case (7).

★ Check carefully exhaust orientation.

Thrust bearing: ASL800050

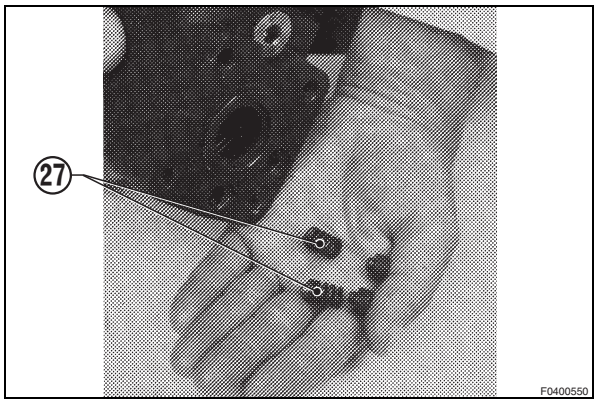


17 - Remove the setting screws (26) (6 mm hexagonal wrench).

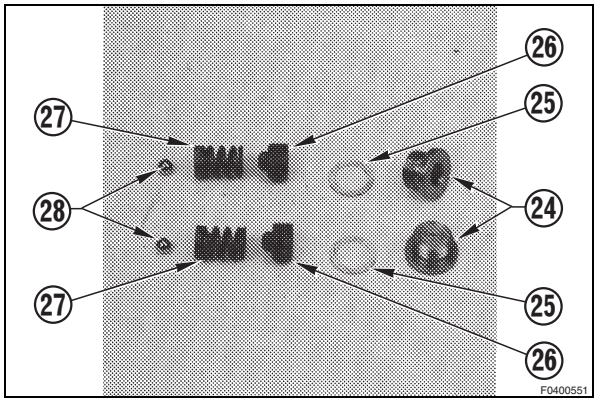


18 - Take out the springs (27) and the two balls (28).

★ Valve seats are blocked into the steering unit case and it is impossible to remove them.

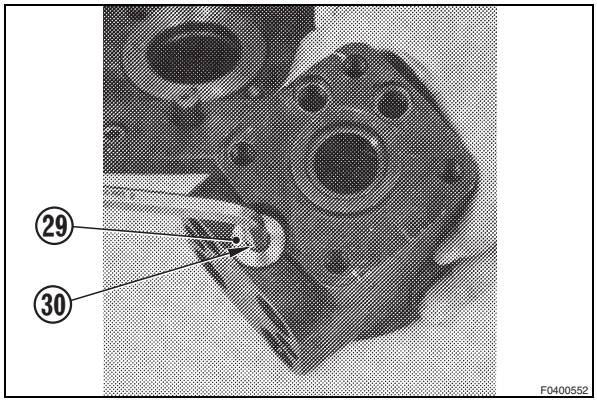


19 - Check that disassembly is the one shown in the illustration.

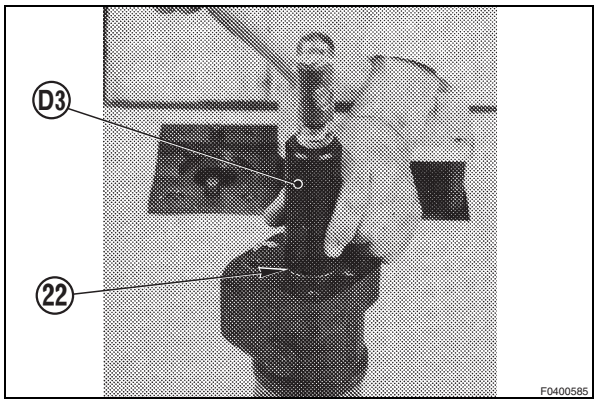


Safety valve removal

20 - Remove the plug (29) and relative gasket (30) (8 mm hexagonal wrench).

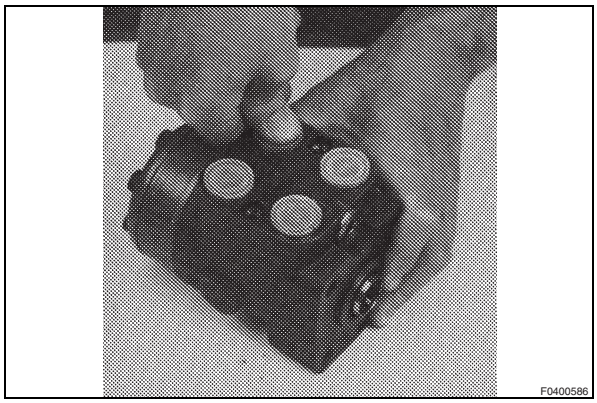


33 - Press the dust seal (22) into the steering unit case using tool **D3** and a plastic hammer.



34 - Close the hydraulic connection holes with plastic plugs to avoid impurity entry.

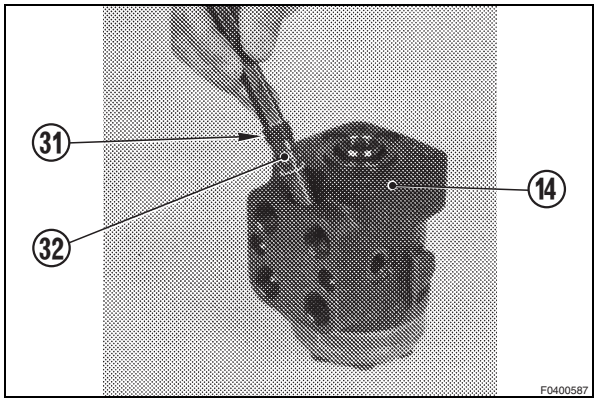
★ Push plugs by hand without to use the hammer.



Main relief valve assembly

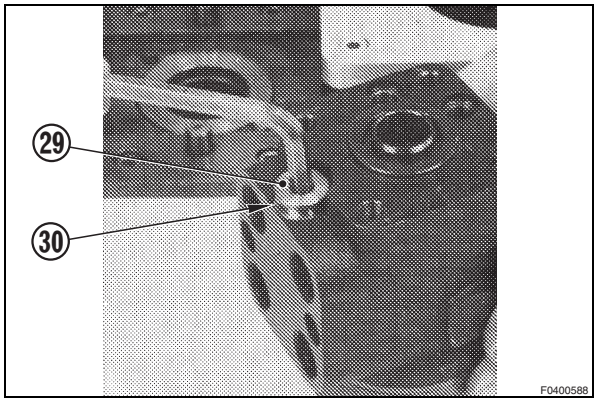
35 - Assemble the gasket (32) on main relief valve (31) and tighten the cartridge into the steering unit case (14) using an hexagonal spanner of 12 mm.

Nm Cartridge: 50±1 Nm

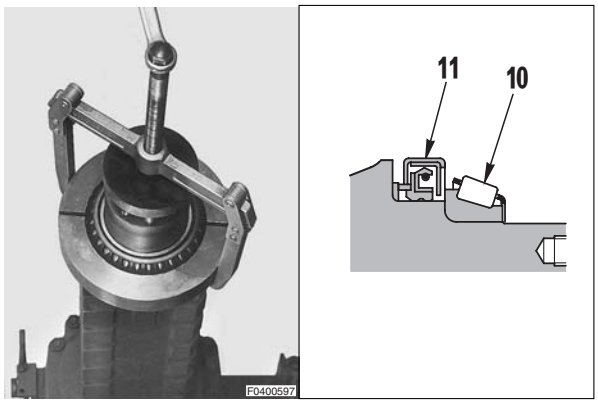


36 - Tighten the plug (29) complete with gasket (30) using an hexagonal spanner of 8 mm.

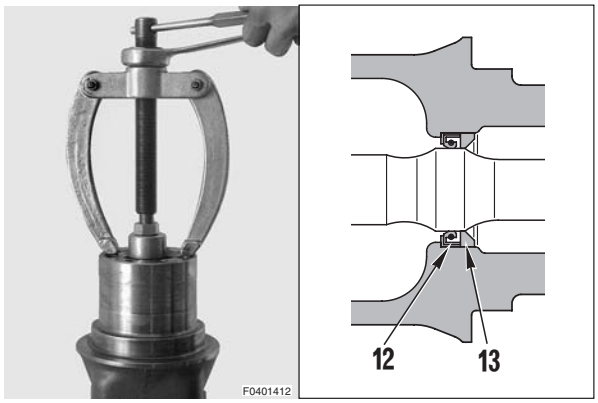
Nm Plug: 50±1 Nm



5 - Remove the bearing (10) with a puller. Remove seal (11).

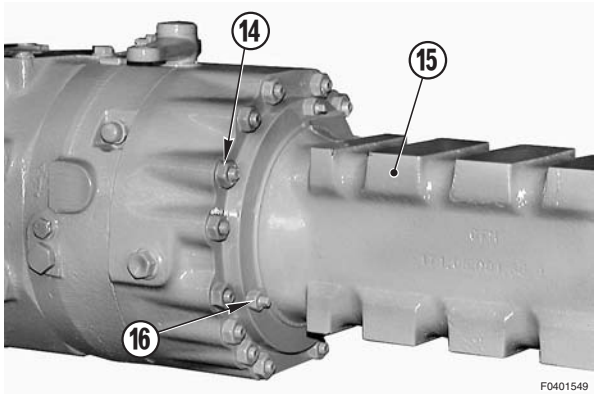


6 - Using a puller, remove from shaft the seal (12) and ring (13).

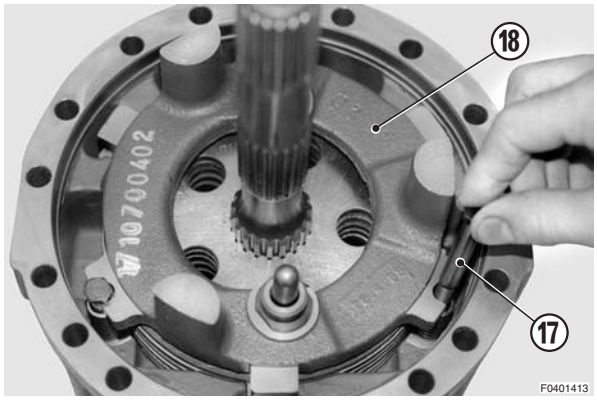


2. Brakes (only for rear axle)

1 - Loosen the nuts (14) (No. 16) of each side and remove axle housing assembly (15).
Loosen the nuts (16) (No. 3) of each side.



2 - Remove the adjusting bolts (17) (No. 3).
Remove the thrust plate (18).

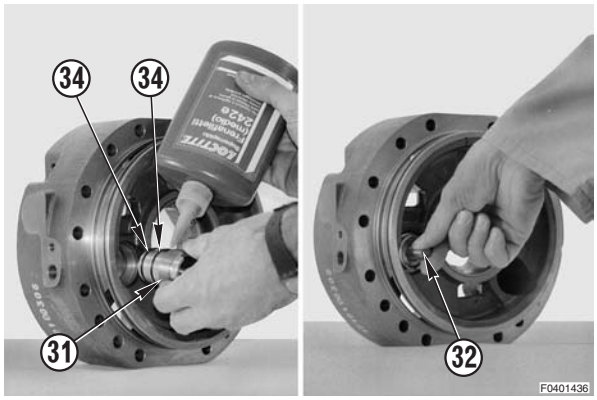


4. Differential locking (Only for rear axle)

1 - Assemble the cylinder (31) complete with O-rings (34) into the right intermediate cover (21).

Cylinder: Loctite 242

Assemble the piston (32) complete with O-rings (33) into the cylinder (31).

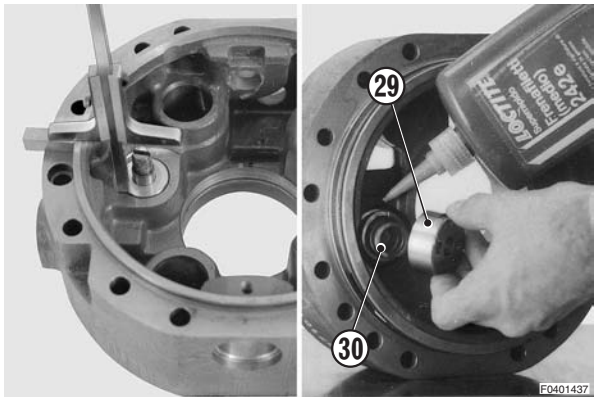


2 - Check that measure «D» is correct.
Assemble the spring (30) and ring nut (29).

★ Measure «D» corresponds to distance between cylinder upper side (30) and axle housing surface.

★ Measure «D»: 41.5 – 42 mm

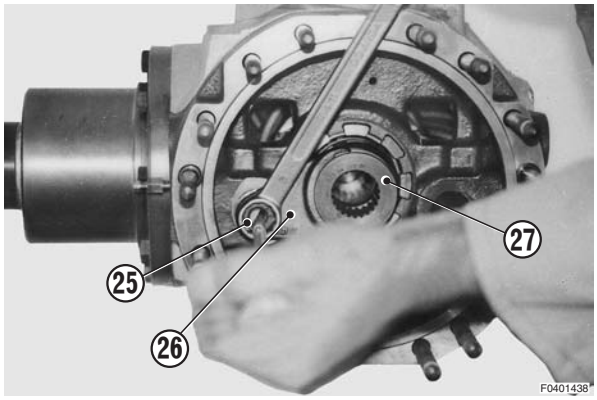
Ring nut: Loctite 242



3 - Assemble cap (27), fork (26) and tight the nut (25).

Nut: Loctite 242

Nm Nut: 90 – 93 Nm

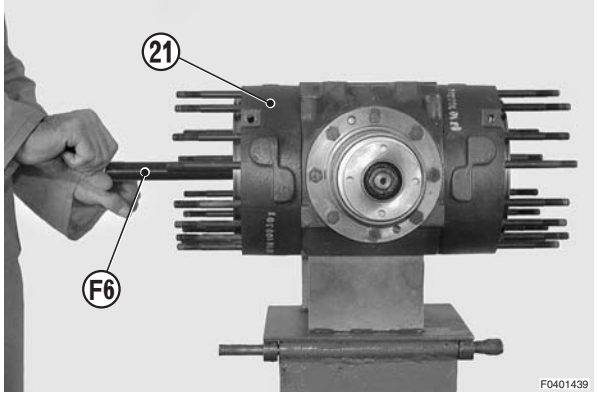


5. Bevel gear torque adjustment (Only for rear axle)

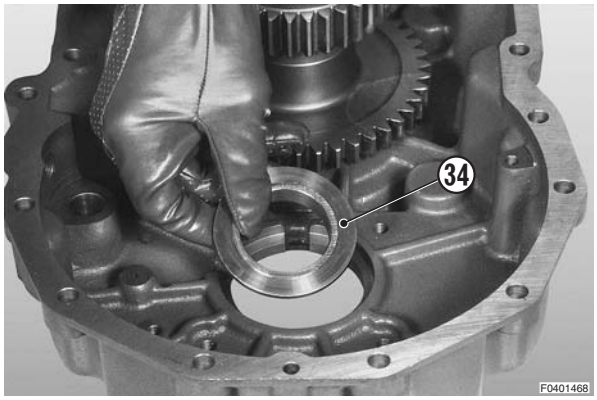
1 - Assemble intermediate cover (21) of opposite side to gear and lock the studs (28) (No. 2 horizontal and opposite).
Remove from intermediate covers the safety plates (63) and remove the ring nuts (64) using tool **F6**.

★ Be careful not to damage the surface of O-ring.

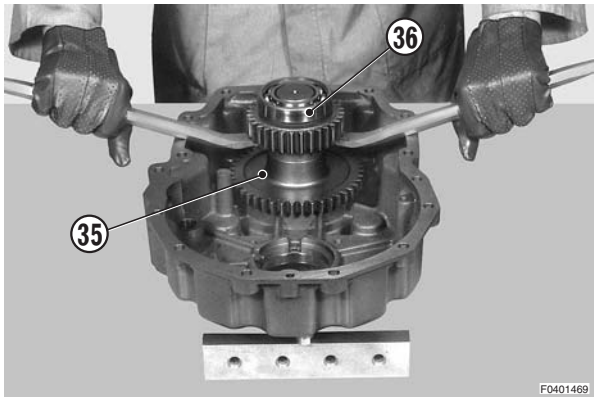
★ Clean very well the ring nuts.



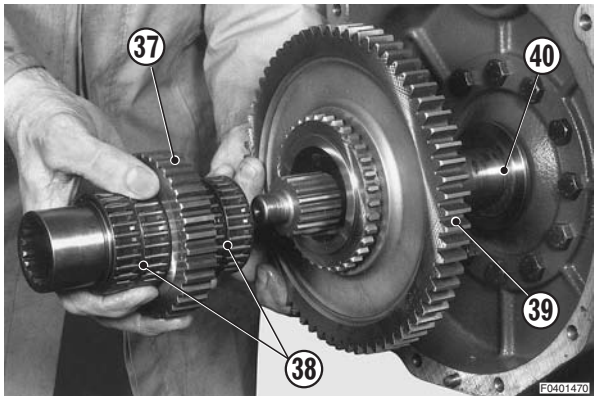
18 - Remove the spacer (34).



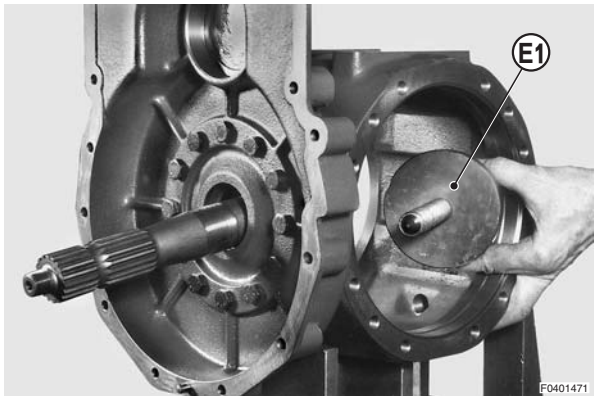
19 - Using two levers, remove the inlet shaft (35) complete with bearing (36).



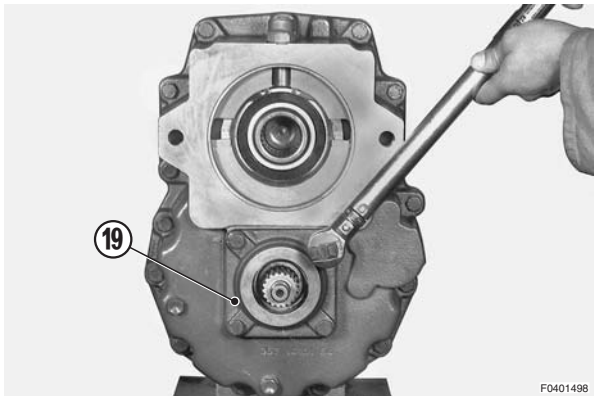
20 - Take out from bevel pinion (15) the fixed hub (37) with needle bearings (38), gear (39) and spacer (40).



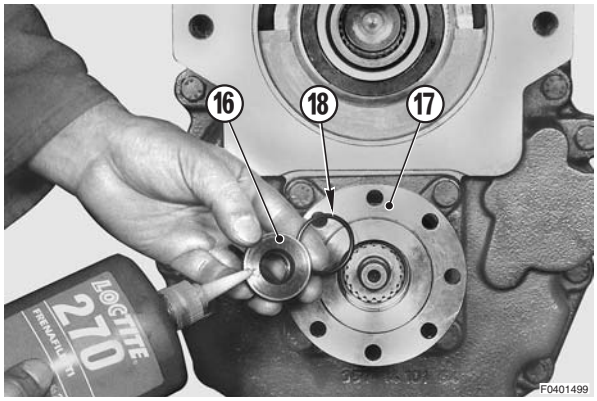
21 - Remove the tool **E1**.



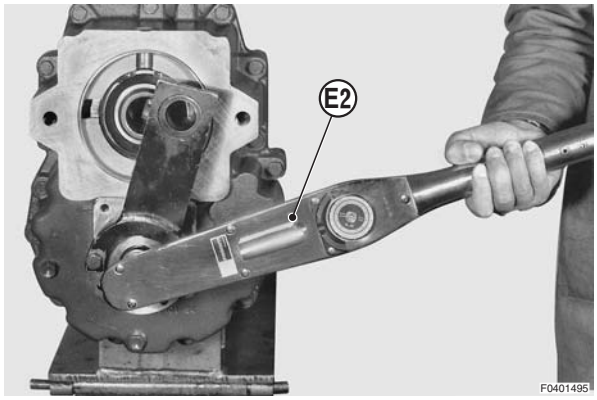
28 - Assemble the cover (19) on transmission and lock it with the bolts.
- Bolts: Loctite 510
- Nm Bolts: 49 – 51 Nm



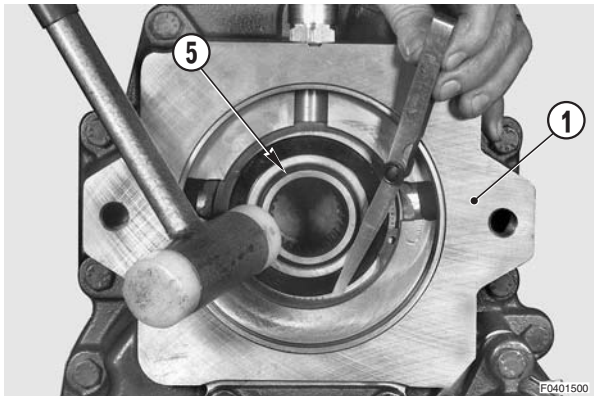
29 - Assemble the flange (17), ring (18) and nut (16).
- Nut: Loctite 270



30 - Lock the nut (16).
- Nm Nut: 260 – 300 Nm

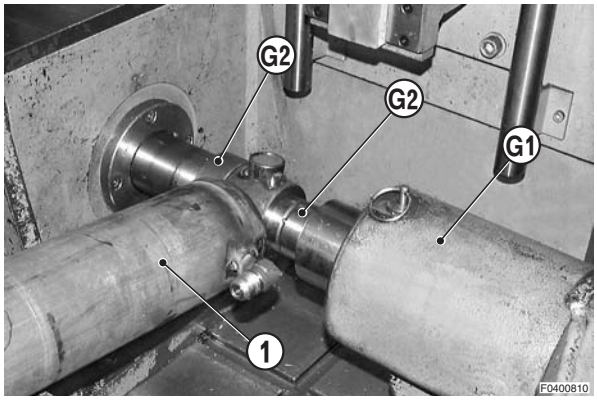


31 - Assemble the thrust rings (5) into the flange (1).
Assemble temporarily the flange on transmission and lock it.
Check clearance between bearing and flange and if necessary change the thrust rings.
- ★ Standard clearance: 0.25 – 0.35 mm



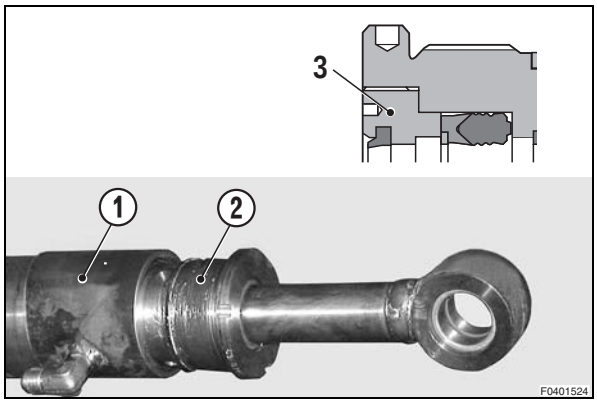
DISASSEMBLY OF MACHINE CYLINDERS

1 - Settle the cylinder (1) on tool **G1**; engage cylinder eye into the tools **G2** usable for the bushing diameter.



2 - Using appropriate spanner **G3**, unscrew the head (2) and extract it from cylinder (1) completely.

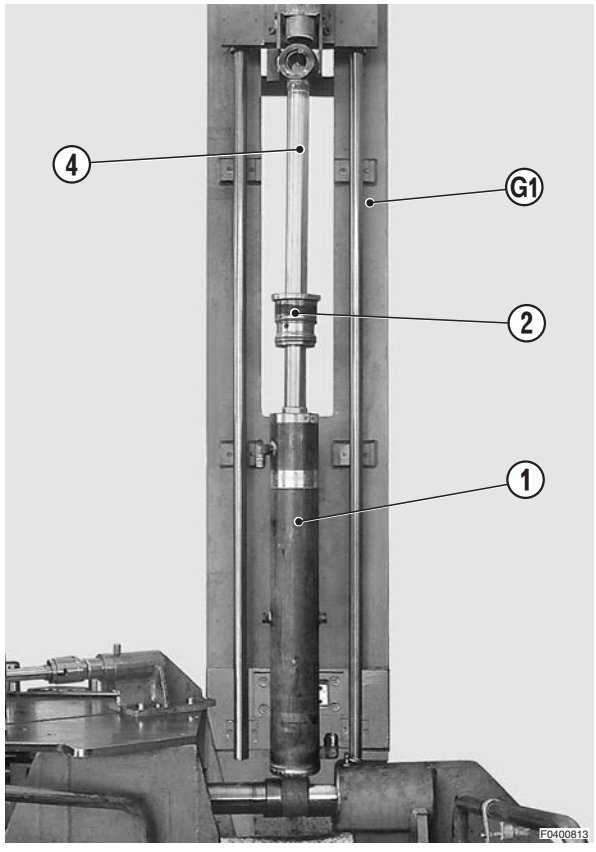
⚠ For bucket control cylinder, remove first the rod gasket ring nut (3) using the wrench **G4**.



3 - Raise the cylinder (1) and hook the piston eye to attachment **G1** movable unit.

4 - Extract the rod unit (4) from cylinder (1).

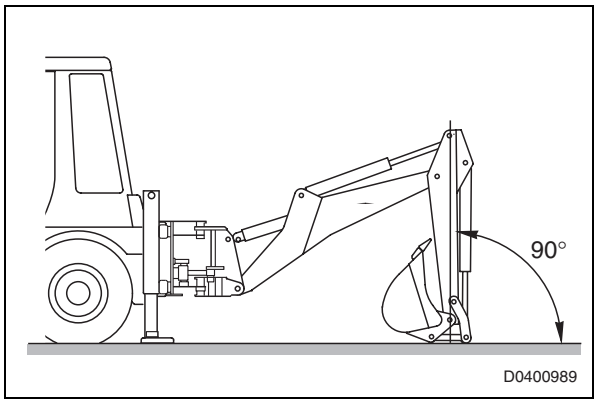
5 - Remove the cylinder (1) and rod unit.



REMOVAL OF BACKHOE CONTROL VALVE

1 - Set the backhoe centred with the machine.

2 - Rest the outriggers to level ground, crowd the bucket completely and make it lean to the ground keeping the arm perpendicular to ground.

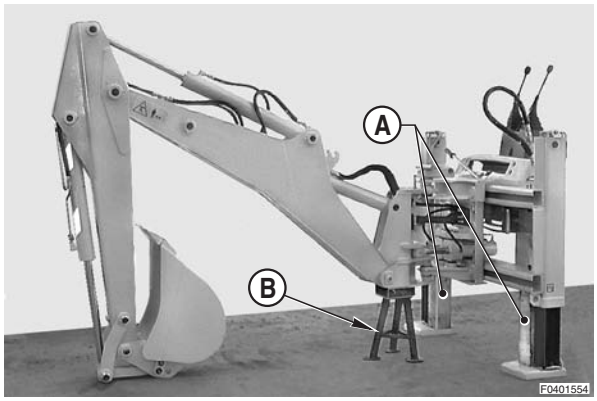


3 - Set the blocks (A) high about 45 cm between backhoe frame and the outriggers.
Set a block (B) high about 55 cm under the boom swing bracket.

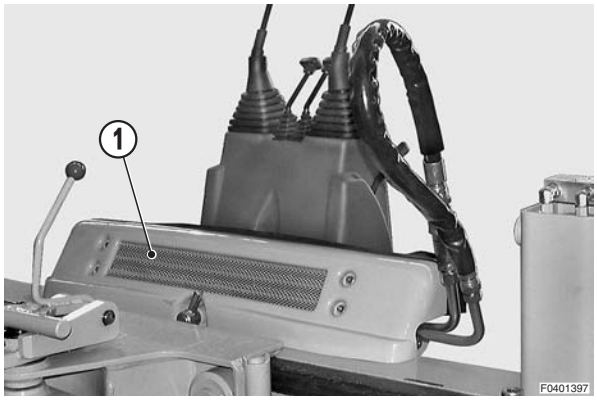
4 - Retract the outriggers slowly until to engage simultaneously the blocks (A) and (B).

5 - Stop the engine, release the residual pressures moving the control levers in all directions and disconnect the backhoe delivery and exhaust pipes.

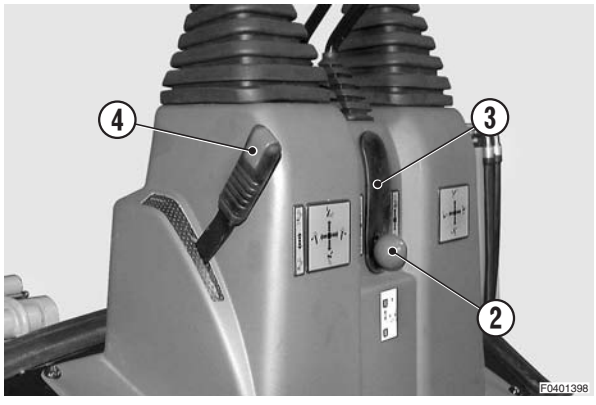
6 - Disconnect the delivery and exhaust pipes from the unions fitted on machine; start the engine again and send off the machine.



7 - Remove the quick attachment device guard (1).



8 - Remove control levers locking knob (2), the rubber guard (3) and the sliding plate lock lever knob (4).



6 - Lock the piston rod unit (6) on attachment **L1**.

7 - **For side digging boom cylinder only**: remove the dowel pin (10).

8 - **For boom cylinder piston rod only**: remove the screw (7).

9 - Apply on piston (11) hexagon the proper tube wrench **L4** and unscrew the piston.

★ Tube wrench measure:

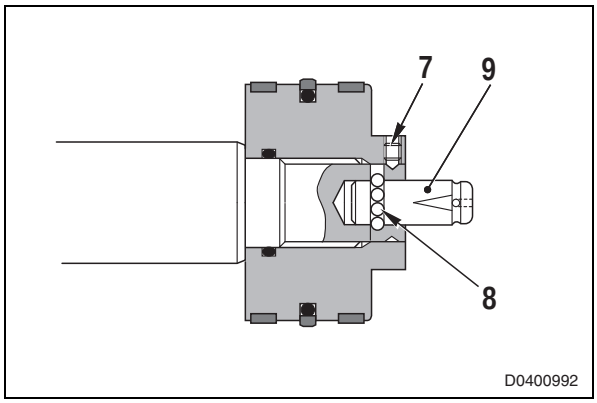
boom:	65 mm
arm:	65 mm
bucket:	65 mm
outrigger:	46 mm
jig arm:	46 mm
side digging boom:	46 mm

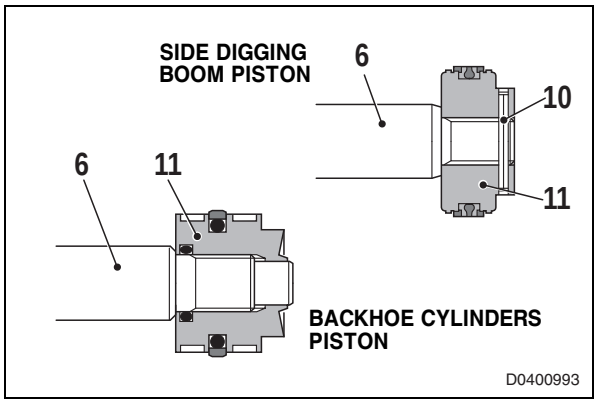
10 - **For boom cylinder piston rod only**: remove the balls (8) and braking pin (9).

11 - Disassembly all units removing all gaskets, dust seals and guide rings.

⚠ Gaskets, dust seals and guide rings cannot be used again.

⚠ Check carefully the pistons (11); if both safety calking areas have been used, pistons must be replaced.



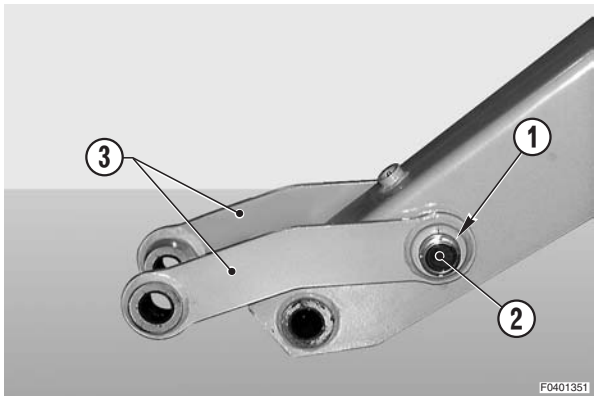


REMOVAL OF ARM

1 - Remove the bucket. (For details, see «REMOVAL OF BUCKET CYLINDER»).

2 - Remove the bucket cylinder. (For details, see «REMOVAL OF BUCKET CYLINDER»).

3 - Remove the ring nut (1), the washer and remove the pin (2) and the links (3). ※1 ※2



4 - Start the engine, bring the arm in vertical position and lower it at level ground.

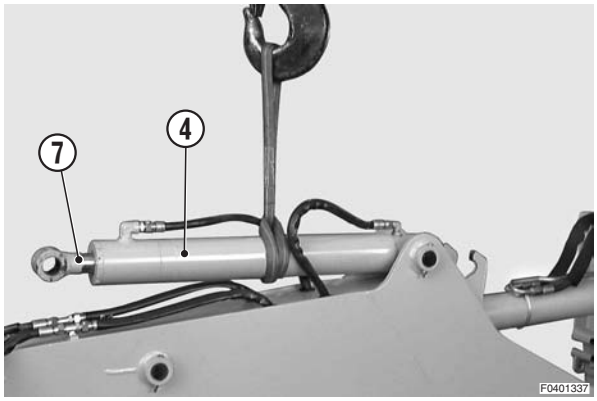
5 - Stop the engine and release the cylinder residual pressures.

6 - Sling the arm cylinder (4), remove the bolt (5) and the pin (6). ※1 ※2

7 - Start the engine and retract the piston (7) completely.

※3

★ Secure the total return position fastening the piston rod eye with iron wire.



8 - Lean the cylinder (4) on a block (A).

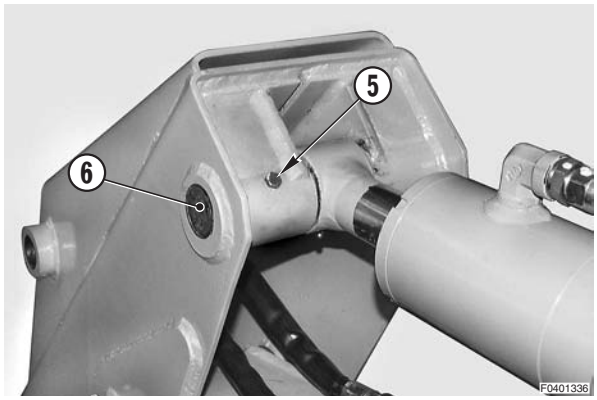
9 - Stop the engine.

10 - Link the arm (8) to lifting device and tension the rope lightly.

11 - Remove the bolt and the pin (9). ※1 ※2

12 - Remove the arm (8).

kg Arm: .....



INSTALLATION OF ARM

- To install, reverse the removal procedure.

※1

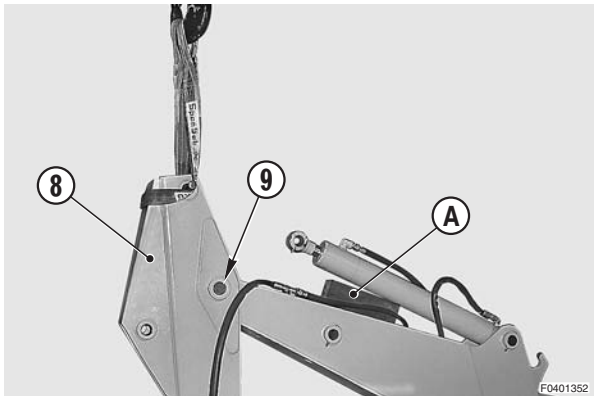
⚠ When aligning the positions between hole and pin, do not introduce hand fingers in the holes to check the alignment.

※2

Bushings inside: ASL800050

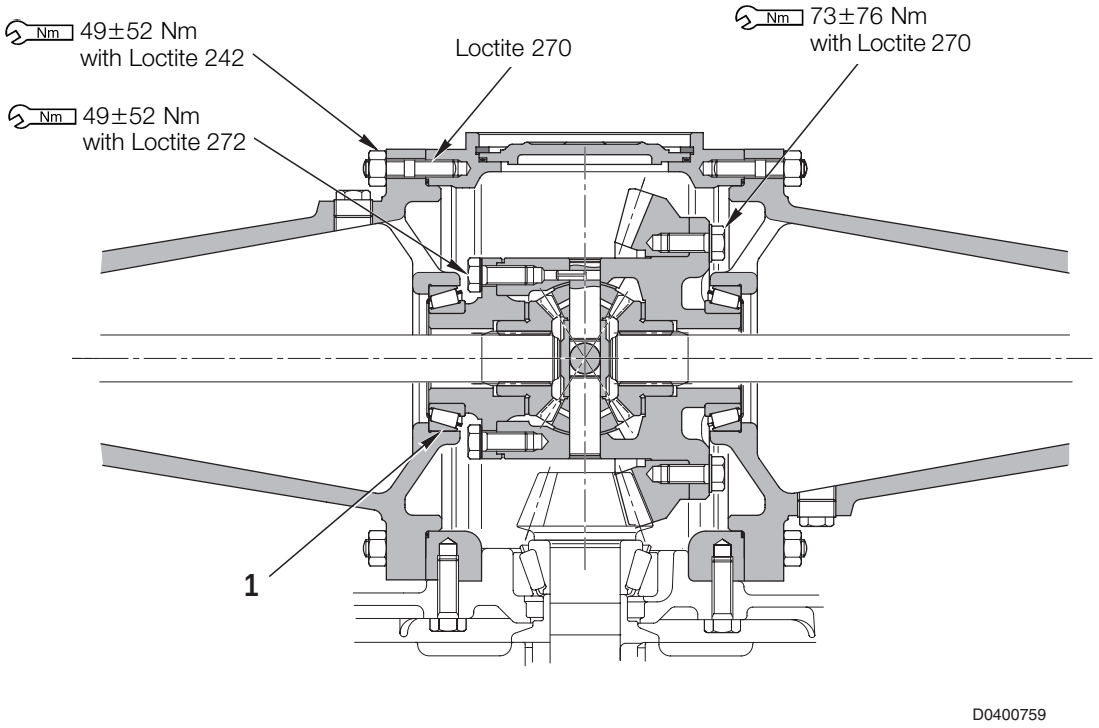
※3

⚠ When aligning the positions between hole and pin, run the engine at idling.
Do not introduce hand fingers in the holes to check the alignment.



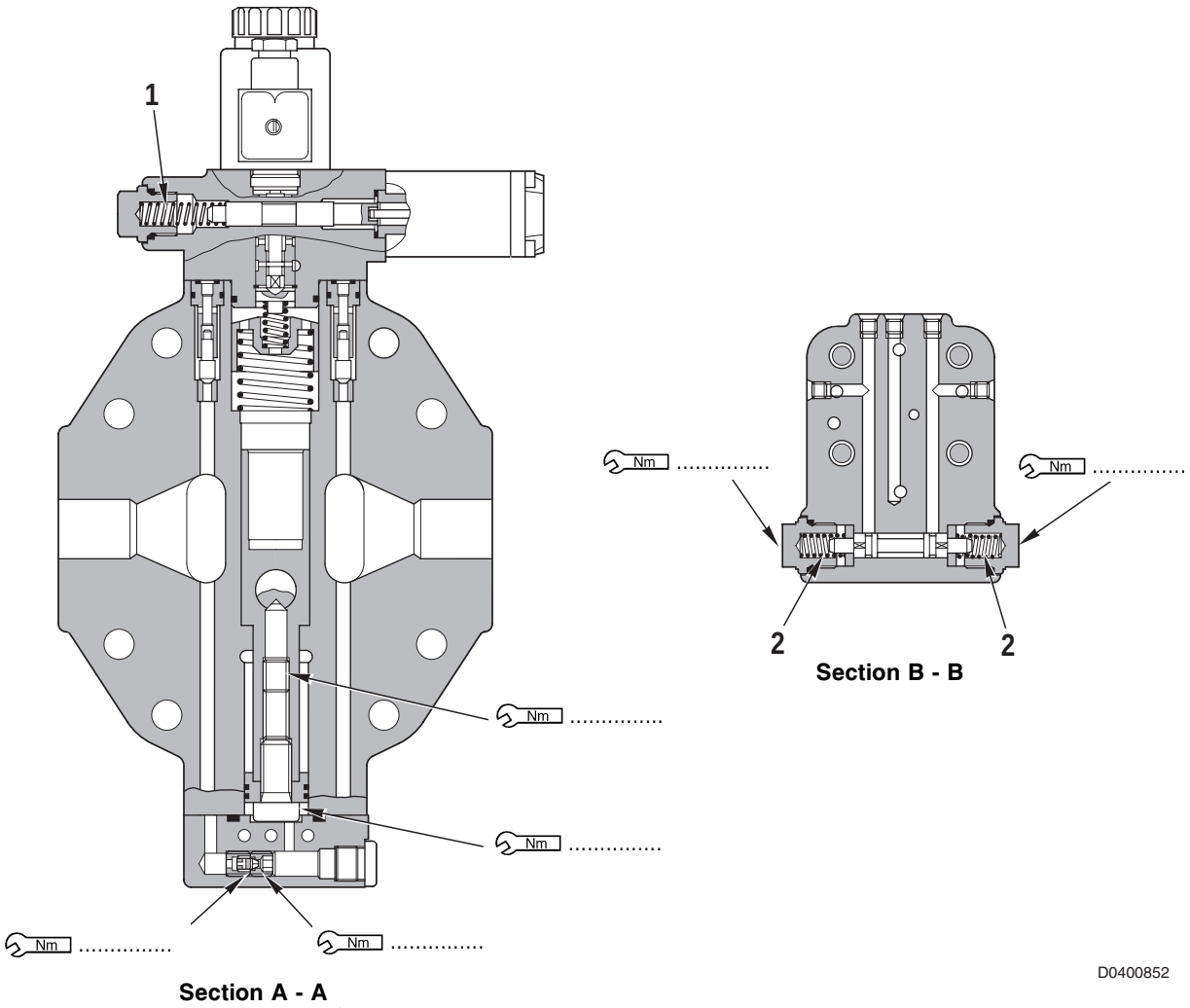
AXLES

FRONT DIFFERENTIAL



Unit: mm

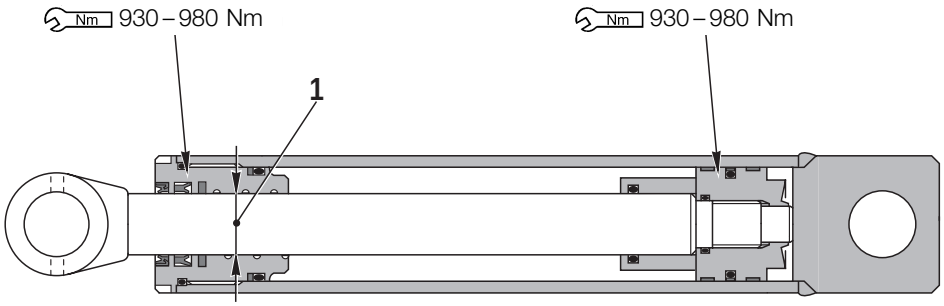
No.	Check item	Criteria		Remedy
1	Bearing axial clearance	Standard clearance	Clearance limit	Adjust
		0	0.05	



Unit: mm

No.	Check item	Criteria					Remedy
		Standard size			Repair limit		
1	Solenoid spool returning spring	Free length	Installed length	Installed load	Free length	Installed load	Replace if dannaged or deformed
		—	—	—	—	—	
2	Exchange valve spring	—	—	—	—	—	

OUTRIGGER CYLINDER



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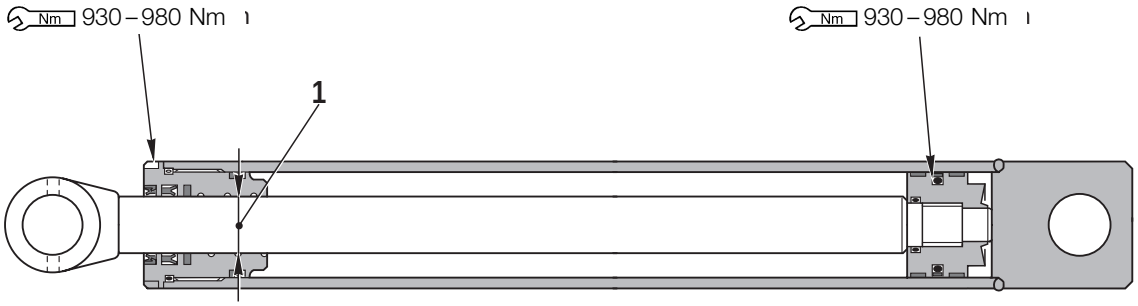
JIG ARM CYLINDER



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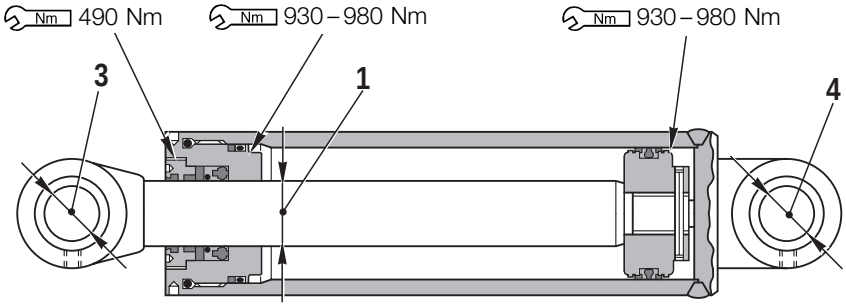
SIDE DIGGING BOOM CYLINDER



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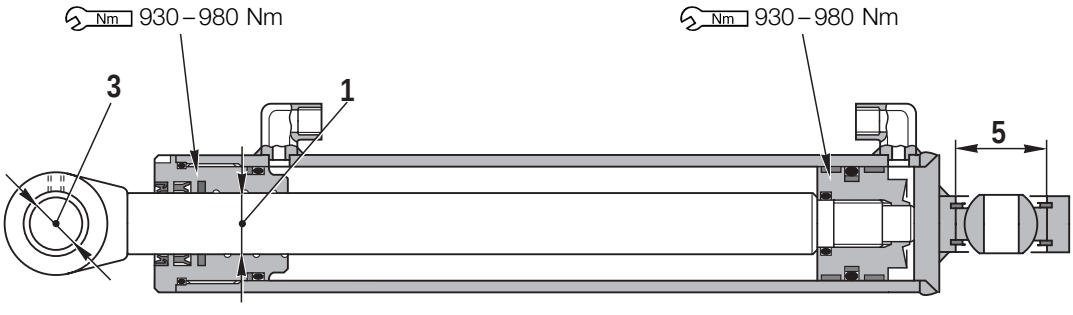
ARM CYLINDER SIDE DIGGING BOOM



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