

CRAWLER EXCAVATOR R80-7

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4. WEIGHT

1) R80-7

Item	kg	lb
Upperstructure assembly	3750	8270
Main frame weld assembly	820	1810
Engine assembly	290	640
Main pump assembly	50	110
Main control valve assembly	60	130
Swing motor assembly	80	170
Hydraulic oil tank assembly	120	260
Fuel tank assembly	80	170
Counterweight	540	1190
Cab assembly	310	680
Lower chassis assembly	2820	6220
Track frame weld assembly	980	2160
Swing bearing	140	310
Travel motor assembly	160	360
Turning joint	30	60
Track recoil spring	110	240
Idler	130	290
Carrier roller	20	40
Track roller	160	360
Track-chain assembly(450mm standard triple grouser shoe)	810	1790
Dozer blade assembly	330	730
Front attachment assembly(3.7m boom, 1.67m arm, 0.28m ³ SAE heaped bucket)	1230	2710
3.7m boom assembly	490	1080
1.67m arm assembly	200	440
0.28m ³ SAE heaped bucket	230	510
Boom cylinder assembly	120	260
Arm cylinder assembly	80	180
Bucket cylinder assembly	50	110
Dozer blade cylinder	50	110
Bucket control link assembly	60	130

- (14) When the motor has reached the operation speed, check the operation while applying the load to the actuator.
- (15) Check the monitoring or measuring instrument if installed.
- (16) Check the noise level.
- (17) Check the oil level in the tank. Supply the oil. If required.
- (18) Check the setting of the pressure control valve while applying the load to the actuator.
- (19) Check the parts for any leakage.
- (20) Stop the motor.
- (21) Retighten all the bolts and plugs even when they have proved to be free from Leakage.
(Be sure to remove the pressure from the circuit before retightening.)
- (22) Check the oil level in the tank.
- (23) Check if the pump and actuator function correctly.
- (24) Irregular operation of the actuator indicates that an air is left still in the circuit. When the air is bled completely from the circuit, all the parts operate smoothly without any irregular movement and there is no bubble in the oil of the tank.
- (25) Check the oil temperature.
- (26) Stop the motor.
- (27) Check the filter if the element is fouled.
- (28) If the element is heavily fouled, carry out flashing in the circuit.

※ To prevent damage to the pump, be sure to observe the following cautions during the operation which may allow entry of the actuator, hydraulic oil change, etc. :

- (1) After oil supply, fill the pump housing with the hydraulic oil.
- (2) Start the pump with the speed of 1000 rpm or less and take care not to allow the oil level to lower below the specified level of the oil level gauge.
- (3) When bleeding an air from the hydraulic circuit, keep the motor speed at 1000 rpm or less. Operate each actuator for three or more cycles and carry out idling for 5 minutes or more.

8. MAINTENANCE

The maintenance of this hydraulic pump is limited mainly to the tank, in particular, the hydraulic oil change.

Since the maintenance interval varies depending on respective operation and use conditions, the cautions described below for the users should be for reference only.

(1) Checking the filter

- ① Every day for the initial period after start up.
- ② Once a week when the operation becomes stable.
- ③ Once a month when the operation hours exceed about 100 hours.

※ When any part of the hydraulic system is changed (e.g., assembling of an additional part, change and repair of the piping), check the filter newly as in the case of startup.

(2) Changing the filter

- ① After startup
- ② After 500 hours of operation
- ③ Every 500 hours of operation after that, and each time the hydraulic oil is changed or the failure occurs. If any abnormal fouling of the filter is observed during daily check up to the first filter change after startup, find out the cause.

In this case, do not extend the check and filter change intervals to 500 hours.

※ The paper filter can not be cleaned. Change the filter as a whole.

③ Arm dump operation

With the arm dump operation, the pilot secondary pressure enters into the Pd50 port, and moves the spool for the arm operation. And with the movement of the spool, as the by-pass circuit is cut at the arm switching section, the oil received through the P2 port flows into the parallel circuit on the arm switching section.

With the movement of the spool, as the circuit from the passage leading to the arm lock valve section to the bridge passage is opened, the oil entered in the parallel circuit passes through the load check valve on the arm switching section and flows into the C5 port through the bridge passage and open the arm lock valve (free flow) and is fed into the arm cylinder rod side.

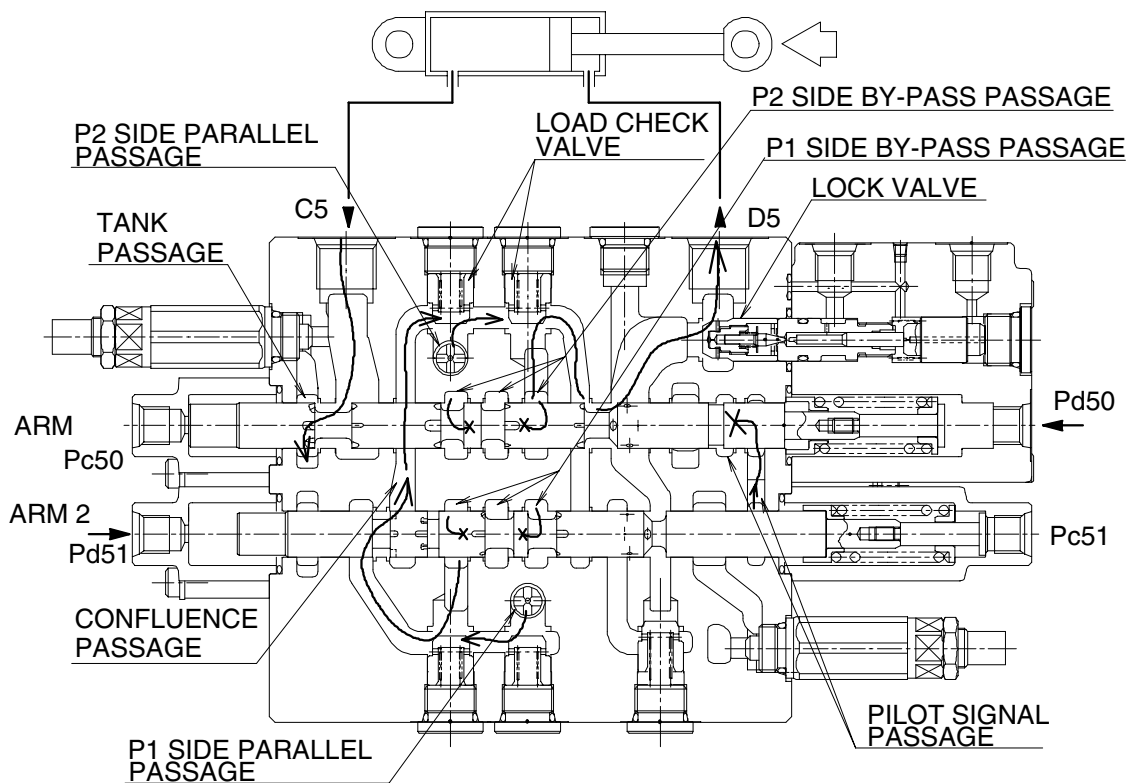
Moreover, secondary pilot pressure enters into Pd51 port of arm2 spool simultaneously, and moves arm2 spool. And with the movement of the arm2 spool, as the by-pass (P1) circuit is cut at the arm2 switching section, the oil received through the P1 port flows into the arm confluence passage through the check valve in the arm2 switching section. The oil which flowed into arm confluence passage in the arm2 section flows into the bridge passage of the arm section from the land of arm2 spool released by shift of arm2 spool. And P1 oil is fed into the arm cylinder rod side.

On the other hand, the return oil from the arm cylinder head side flows into the C5 port, and with the movement of the spool the oil flows out into the tank passage.

The oil from the port P0 flows to the pilot signal passage through the orifice.

So the oil in the pilot signal passage flows from the travel section to the tank passage, the pilot signal pressure becomes to equal to the tank pressure, therefore the travel straight spool is not switched.

Also about other switching sections (travel, swing, bucket, etc.), there is only no spool like a boom2 or an arm2, and an operation is the same.



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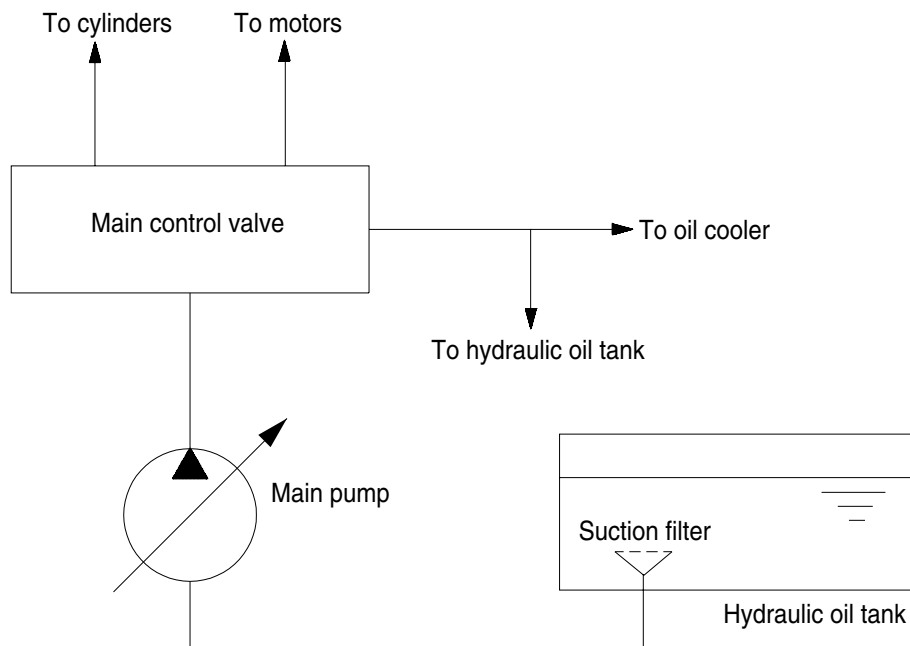
GROUP 2 MAIN CIRCUIT

The main hydraulic circuit consists of suction circuit, delivery circuit, return circuit and drain circuit.

The hydraulic system consists of one main pump, one control valve, one swing motor, four cylinders and two travel motors.

The swash plate type variable displacement axial piston pump is used as the main pump and is driven by the engine at ratio 1.0 of engine speed.

1. SUCTION AND DELIVERY CIRCUIT



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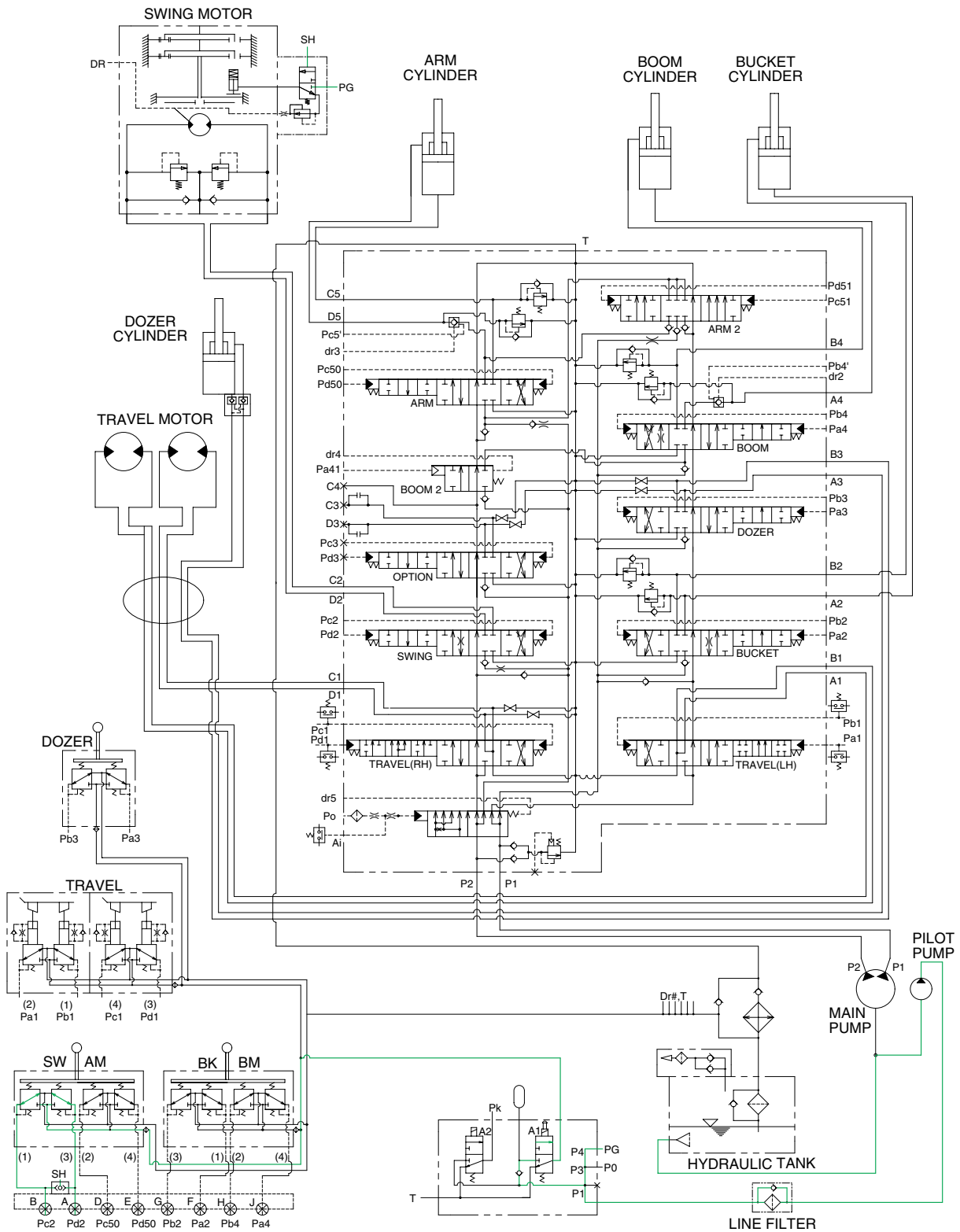
The pumps receive oil from the hydraulic tank through a suction filter. The discharged oil from the pump flows into the control valve and goes out the tank ports.

The oil discharged from the main pump flows to the actuators through the control valve.

The control valve controls the hydraulic functions.

The return oil from the actuators flows to the hydraulic tank through the control valve and the oil cooler.

4. SWING PARKING BRAKE RELEASE



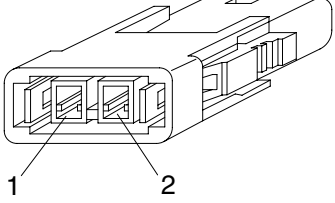
7073HC07

When the swing control lever is tilted, the pilot oil flow into SH port of shuttle valve, this pressure move spool so, discharged oil from pilot valve flow into PG port.

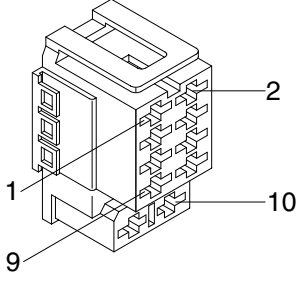
This pressure is applied to swing motor disc, thus the brake is released.

When the swing control lever is set in the neutral position, oil in the swing motor disc cylinder is drained, thus the brake is applied.

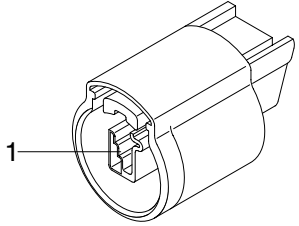
14) MOLEX 2CKTS CONNECTOR

No. of pin	Receptacle connector(Female)	Plug connector(Male)
2	 <p data-bbox="705 676 837 705">35215-0200</p>	

15) ITT SWF CONNECTOR

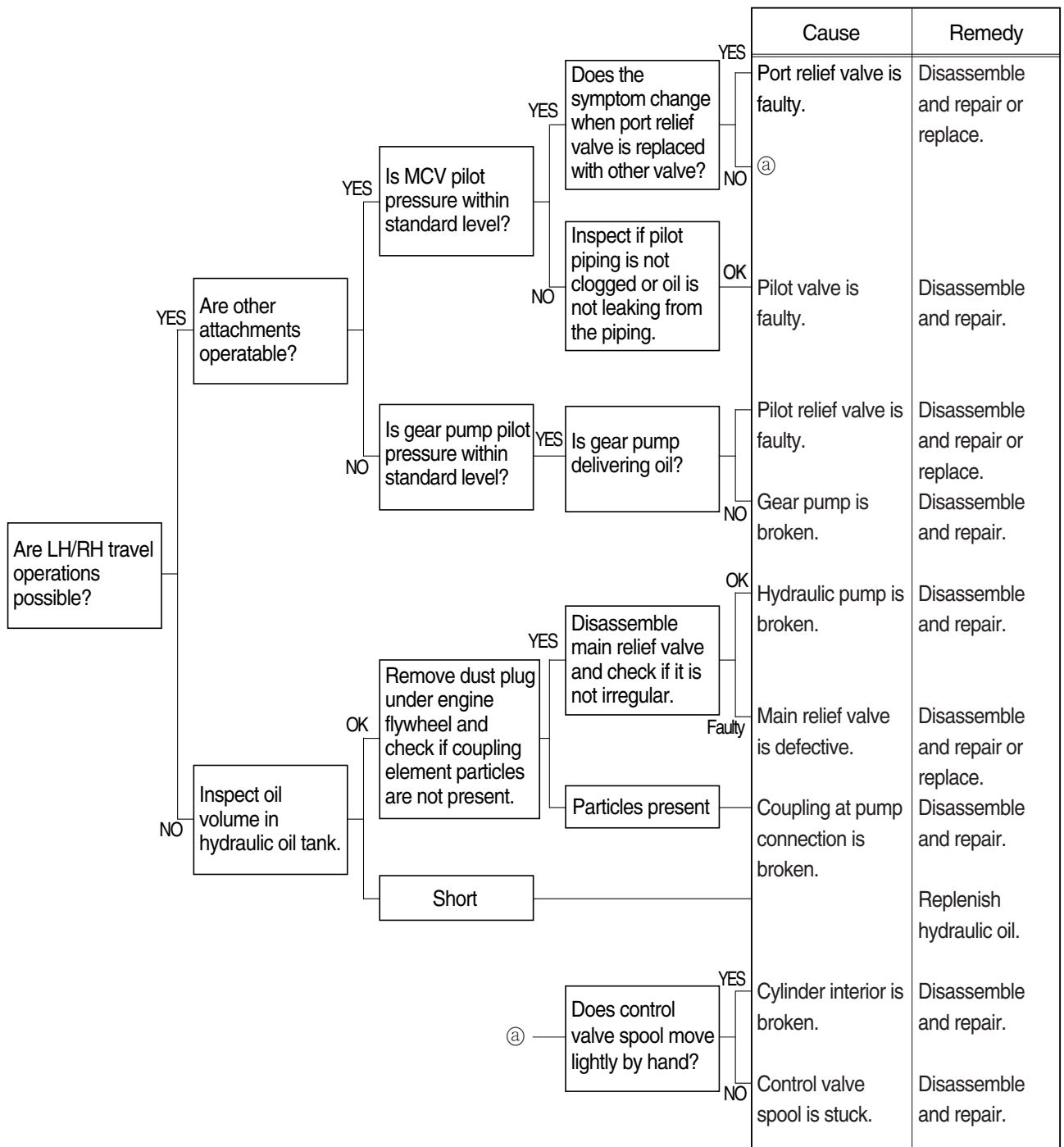
No. of pin	Receptacle connector(Female)	Plug connector(Male)
10	 <p data-bbox="699 1265 837 1294">SWF593757</p>	

16) MWP NMWP CONNECTOR

No. of pin	Receptacle connector(Female)	Plug connector(Male)
1	 <p data-bbox="689 1854 837 1883">NMWP01F-B</p>	

6. ATTACHMENT SYSTEM

1) BOOM OR ARM ACTION IS IMPOSSIBLE AT ALL



SECTION 7 MAINTENANCE STANDARD

GROUP 1 OPERATIONAL PERFORMANCE TEST

1. PURPOSE

Performance tests are used to check:

1) OPERATIONAL PERFORMANCE OF A NEW MACHINE

Whenever a new machine is delivered in parts and reassembled at a customer's site, it must be tested to confirm that the operational performance of the machine meets **Hyundai spec**.

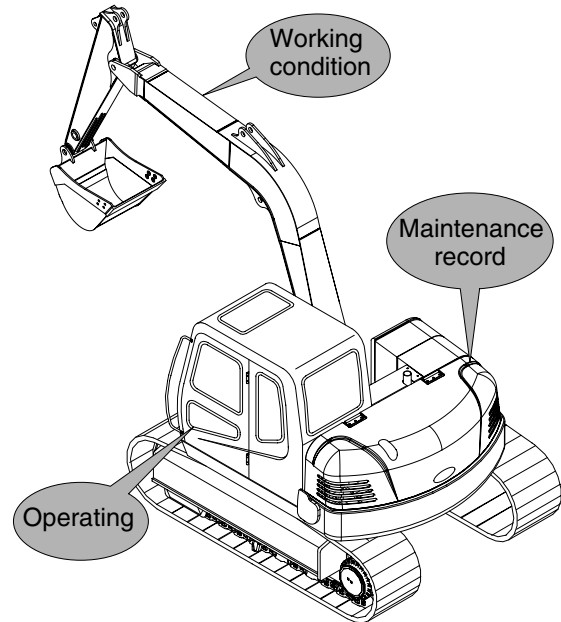
2) OPERATIONAL PERFORMANCE OF A WORKING MACHINE

With the passage of time, the machine's operational performance deteriorates, so that the machine needs to be serviced periodically to restore it to its original performance level.

Before servicing the machine, conduct performance tests to check the extent of deterioration, and to decide what kind of service needs to be done (by referring to the "Service Limits" in this manual).

3) OPERATIONAL PERFORMANCE OF A REPAIRED MACHINE

After the machine is repaired or serviced, it must be tested to confirm that its operational performance was restored by the repair and/or service work done.



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GROUP 4 MAIN CONTROL VALVE

1. REMOVAL AND INSTALL OF MOTOR

1) REMOVAL

- (1) Lower the work equipment to the ground and stop the engine.
- (2) Operate the control levers and pedals several times to release the remaining pressure in the hydraulic piping.
- (3) Loosen the breather slowly to release the pressure inside the hydraulic tank.

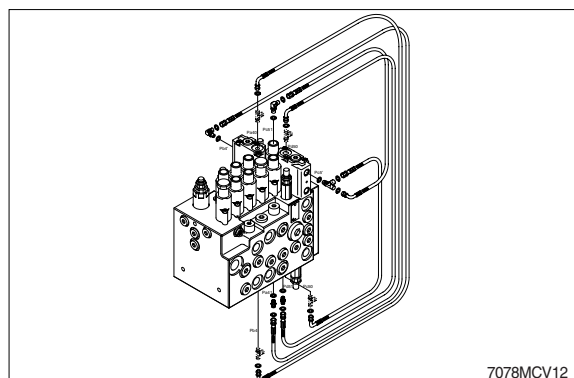
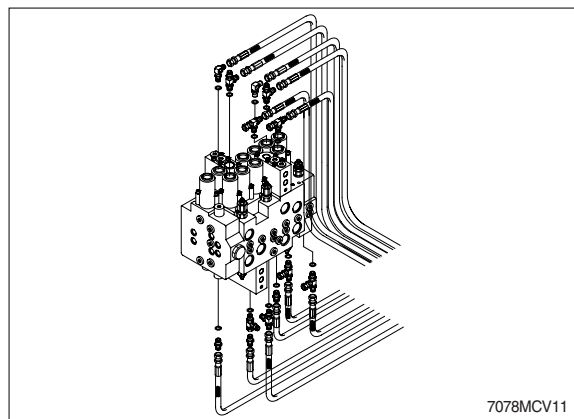
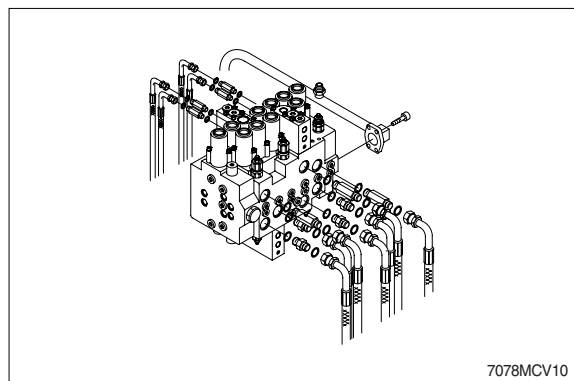
▲ Escaping fluid under pressure can penetrate the skin causing serious injury.

※ When pipes and hoses are disconnected, the oil inside the piping will flow out, so catch it in oil pan.

- (4) Remove bolts and disconnect pipe.
- (5) Disconnect pilot line hoses.
- (6) Disconnect pilot piping.
- (7) Sling the control valve assembly and remove the control valve mounting bolt.
· Weight : 60kg(130lb)
- (8) Remove the control valve assembly.
When removing the control valve assembly, check that all the piping have been disconnected.

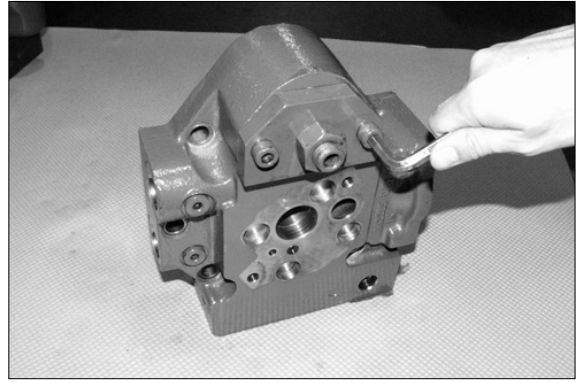
2) INSTALL

- (1) Carry out installation in the reverse order to removal.
- (2) Bleed the air from below items.
 - ① Cylinder(Boom, arm, bucket)
 - ② Swing motor
 - ③ Travel motor※ See each item removal and install.
- (3) Confirm the hydraulic oil level and recheck the hydraulic oil leak or not.



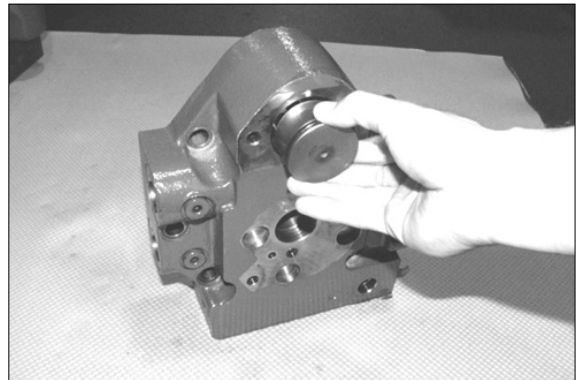
(5) Removing the cover

- ① Remove the hexagon socket head cap screws. (M10×30, 2 pieces)
L-wrench(8)



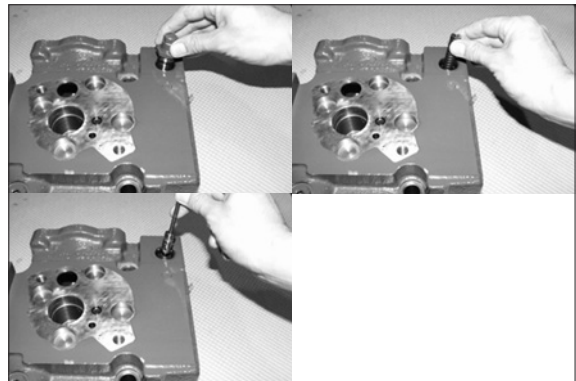
7078MP15

- ② Remove the spring seat.



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- ③ Removing the relief valve.
Removing the hexagon nut.
Since the pressure has been set, this assembly must be made only when necessary.
Spanner (24)



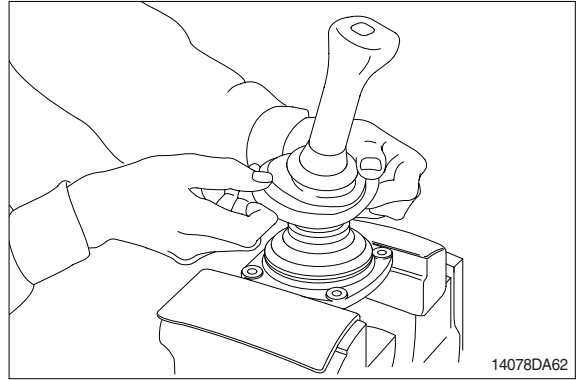
7078MP17-17B

- ④ Remove the adjusting screw.
Be careful because the shim is inserted.
Spanner (14)

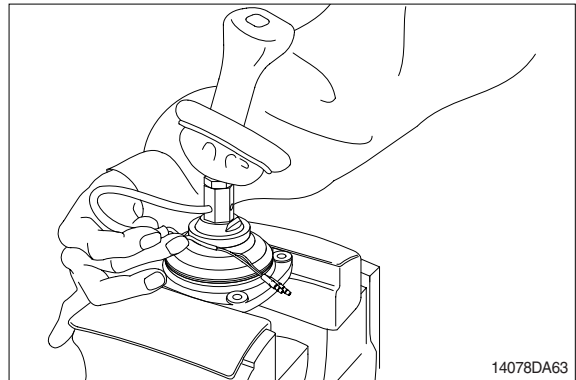
- ⑤ Remove the spring and spool.

3) DISASSEMBLY

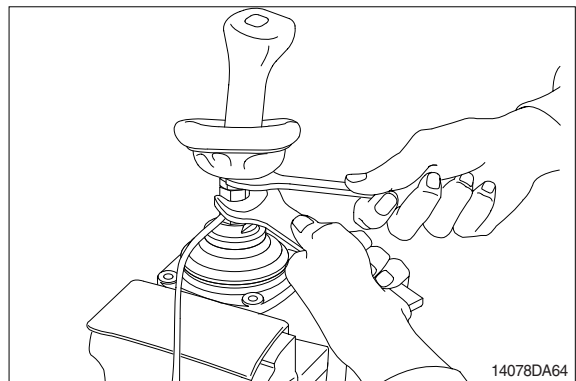
- (1) Clean pilot valve with kerosene.
 - ※ Put blind plugs into all ports
- (2) Fix pilot valve in a vise with copper(or lead) sheets.
- (3) Remove end of boot(26) from case(1) and take it out upwards.



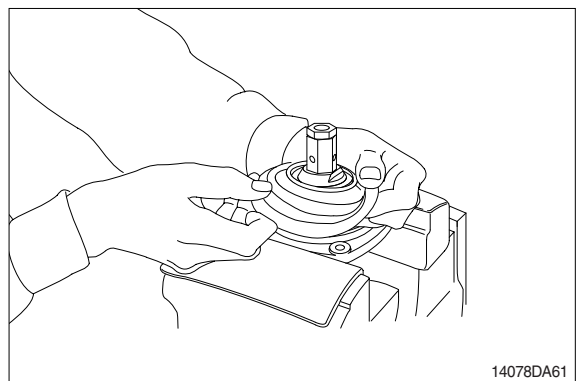
- ※ For valve with switch, remove cord also through hole of casing.



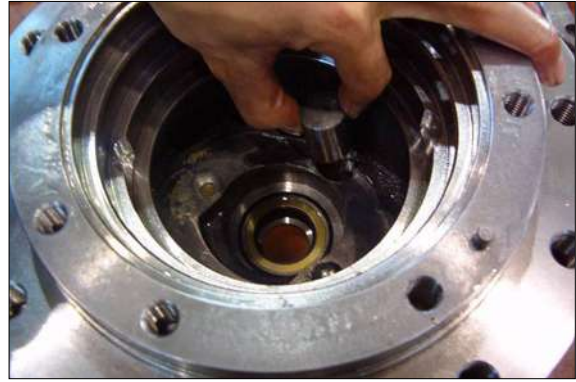
- (4) Loosen lock nut(21) and adjusting nut(20) with spanners on them respectively, and take out handle section as one body.



- (5) Remove the boot(40)



- ④ Assemble swash piston(5) to the shaft casing(1).



7078TM54

- ⑤ Heat pressing bearing to the shaft(3).



7078TM55

- ⑥ Assemble bearing and heat pressed shaft(3) to the shaft casing(1).



7078TM56

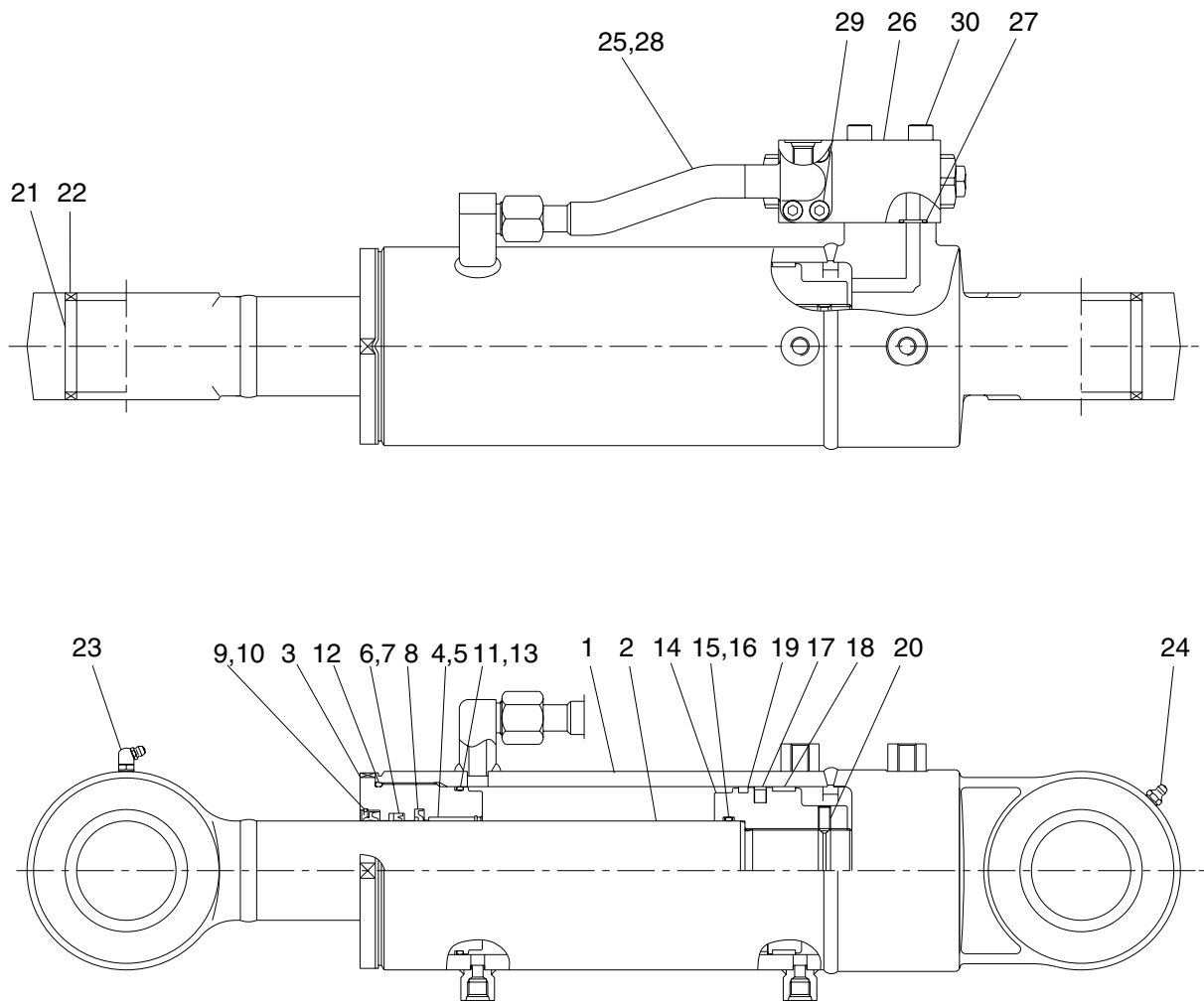
(2) Cylinder block sub assembly

- ① Assemble piston assembly(14) to the set plate(12, 9 set).



7078TM57

(4) Dozer cylinder



7078CY04

- | | | | | | |
|----|---------------|----|--------------|----|--------------------------|
| 1 | Tube assembly | 11 | O-ring | 21 | Pin bush |
| 2 | Rod assembly | 12 | O-ring | 22 | Dust seal |
| 3 | Gland | 13 | Buck-up ring | 23 | Grease nipple |
| 4 | Du bushing | 14 | Piston | 24 | Grease nipple |
| 5 | Snap ring | 15 | O-ring | 25 | Pipe assy-R |
| 6 | Rod seal | 16 | Back up ring | 26 | Double check valve |
| 7 | Buck-up ring | 17 | Piston seal | 27 | O-ring |
| 8 | Buffer ring | 18 | Wear ring | 28 | O-ring |
| 9 | Dust wiper | 19 | Dust ring | 29 | Hexagon socket head bolt |
| 10 | Snap ring | 20 | Screw | 30 | Hexagon socket head bolt |