CRAWLER EXCAVATOR

# SERVICE MANUAL

## *R450LC-7*

HYUNDAI

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### 3) GEAR PUMP

| Item | Specification |
|---|---|
| Type | Fixed displacement gear pump single stage |
| Capacity | 15cc/rev |
| Maximum pressure | 35kgf/cm²(498psi) |
| Rated oil flow | 28.5 ℓ /min(7.5U.S. gpm/6.3U.K. gpm) |

### 4) MAIN CONTROL VALVE

| Item | Specification |
|---|---|
| Type | 9 spools |
| Operating method | Hydraulic pilot system |
| Main relief valve pressure | 330kgf/cm²(4690psi) [360kgf/cm²(5120psi)] |
| Overload relief valve pressure | 380kgf/cm²(5400psi) |

[ ]: Power boost

### 5) SWING MOTOR

| Item | Specification |
|---|---|
| Type | Fixed displacement axial piston motor |
| Capacity | 148.5cc/rev |
| Relief pressure | 285kgf/cm²(4050psi) |
| Braking system | Automatic, spring applied hydraulic released |
| Braking torque | 63kgf · m(456lbf · ft) |
| Brake release pressure | 23~50kgf/cm²(327~711psi) |
| Reduction gear type | 2 - stage planetary |
| Swing speed | 10.3rpm |

### 6) TRAVEL MOTOR

| Item | Specification |
|---|---|
| Type | Variable displacement axial piston motor |
| Relief pressure | 345kgf/cm²(4910psi) |
| Capacity(max / min) | 160/100cc/rev |
| Reduction gear type | 3-stage planetary |
| Braking system | Automatic, spring applied hydraulic released |
| Brake release pressure | 17~50kgf/cm²(242~711psi) |
| Braking torque | 103kgf · m(745lbf · ft) |



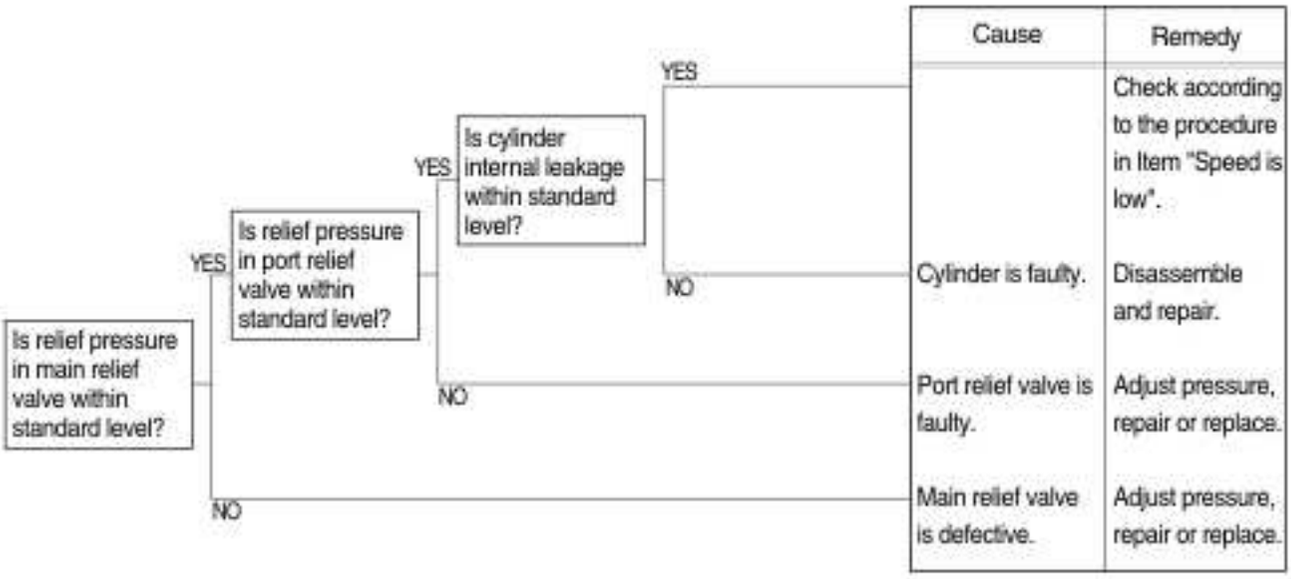
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# SECTION 4 ELECTRICAL SYSTEM


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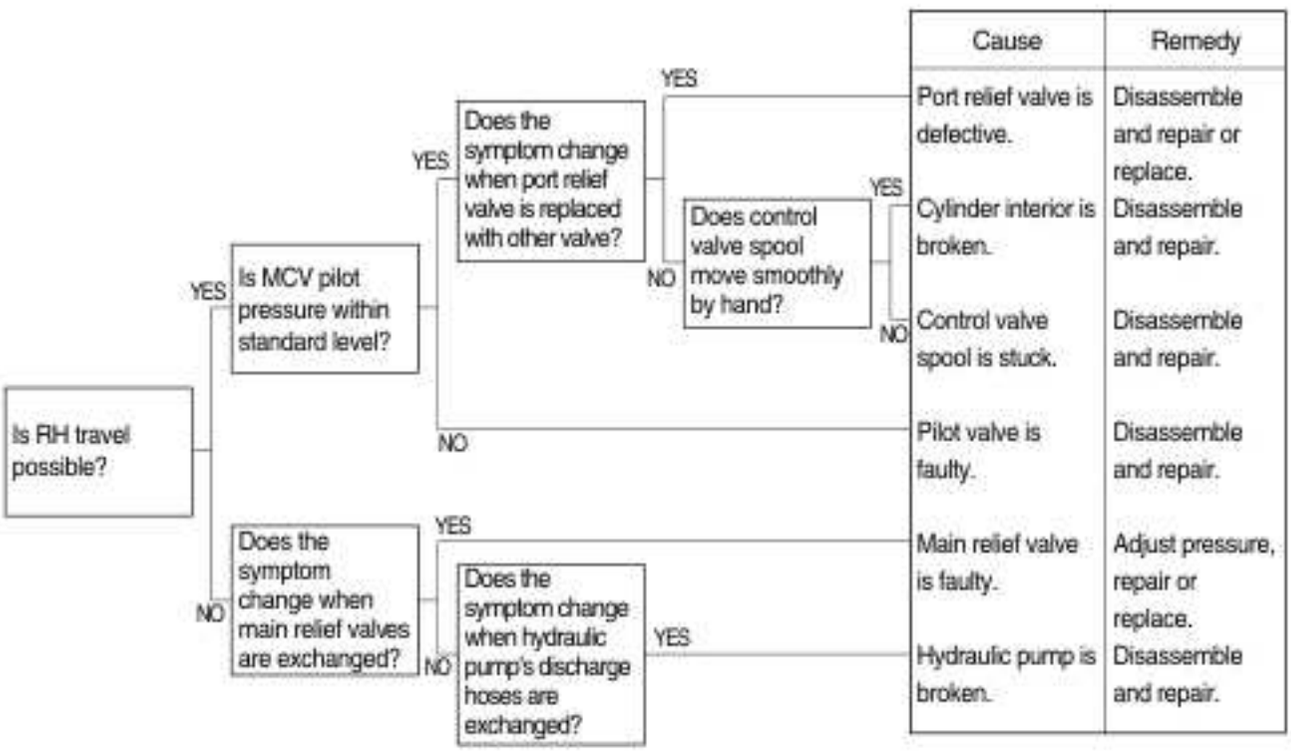

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## 4) BOOM, ARM OR BUCKET POWER IS WEAK




| Cause | Remedy |
|---|---|
| | Check according to the procedure in Item "Speed is low". |
| Cylinder is faulty. | Disassemble and repair. |
| Port relief valve is faulty. | Adjust pressure, repair or replace. |
| Main relief valve is defective. | Adjust pressure, repair or replace. |

## 5) ONLY BUCKET OPERATION IS TOTALLY IMPOSSIBLE




| Cause | Remedy |
|---|---|
| Port relief valve is defective. | Disassemble and repair or replace. |
| Cylinder interior is broken. | Disassemble and repair. |
| Control valve spool is stuck. | Disassemble and repair. |
| Pilot valve is faulty. | Disassemble and repair. |
| Main relief valve is faulty. | Adjust pressure, repair or replace. |
| Hydraulic pump is broken. | Disassemble and repair. |



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(3) Fit swash plates(251) to pump casing (271) and fix them with hexagon socket head cap screws(405).

- There are O-rings(724) on the matching surface in contact with pump casing(271).
- Fix them with grease so they do not come off.
- Positioning pin(888) is placed on the pump casing(271) side. Adjust it so it enters the groove of swash plate support(251) and fix it.
- Fit swash plate support(251) so it enters straight, while tapping it lightly.
- Apply adhesive(No.1305N of three bond make) to hexagon socket head cap screws.


45078MP11


45078MP12

(4) To pump casing(271), fit drive shaft(111) set and driven shaft(113) set with roller bearing(123), bearing spacer(128), and snap rings(824, 825). Then fix them with snap rings(828).

- Direct the sharp edge side of snap rings(824, 825) to the outside.
- Do not tap shafts with hammer or so on.
- Assemble them into pump casing tapping outer race of bearing lightly with plastic hammer. Fit them fully using steel bar or so on.
- Both side of snap rings(828) are burnished.


45078MP13

(5) Fit drive gear(191), driven gear(192), and bearing spacers(126, 127) to drive shaft(111) and driven shaft(113). Then fix them with snap rings(823, 825).

- Confirm the attaching direction of drive gear before fitting.
- Direct the sharp edge of snap rings(823, 825) to the outside.


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④ Spool sub assy(5).



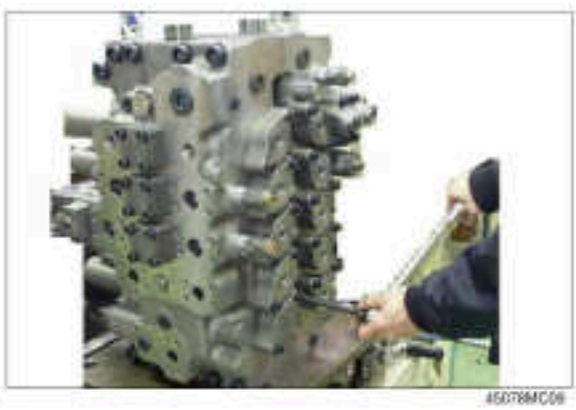
⑤ Spool sub assy(8).

※ When disassemble the spool assembly, fix the spool with vise. On this occasion attach wood between vise blades to prevent the spool from damaging.

※ Heat the outer race of spool with industrial drier and then loosen easily . (Temperature : 200~250℃)



⑤ Loosen the socket head bolt(63) and remove the short cap(13, 81).
Pull out O-ring(14) from valve housing.



**(3) Center bypass cut spool assy(24)**

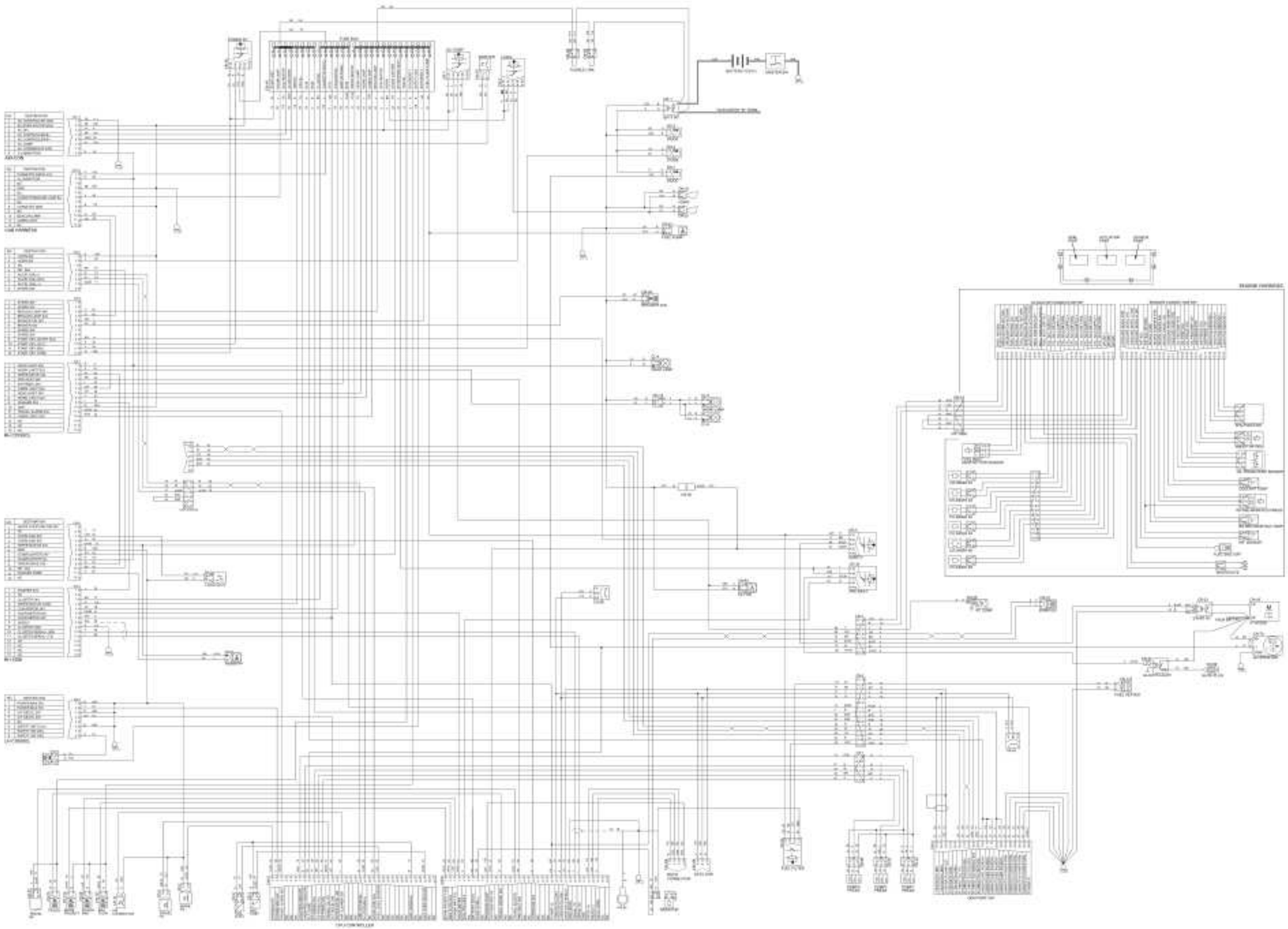
① Loosen the plug(27) and remove spring(25), spring seat(21) and the spool(24).





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- ELECTRICAL CIRCUIT(2/2)





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