## 1. STRUCTURE

This service manual has been prepared as an aid to improve the quality of repairs by giving the serviceman an accurate understanding of the product and by showing him the correct way to perform repairs and make judgements. Make sure you understand the contents of this manual and use it to full effect at every opportunity.
This service manual mainly contains the necessary technical information for operations performed in a service workshop.
For ease of understanding, the manual is divided into the following sections.

**SECTION 1 GENERAL**
This section explains the safety hints and gives the specification of the machine and major components.

**SECTION 2 STRUCTURE AND FUNCTION**
This section explains the structure and function of each component. It serves not only to give an understanding of the structure, but also serves as reference material for troubleshooting.

**SECTION 3 HYDRAULIC SYSTEM**
This section explains the hydraulic circuit, single and combined operation.

**SECTION 4 ELECTRICAL SYSTEM**
This section explains the electrical circuit, monitoring system and each component. It serves not only to give an understanding electrical system, but also serves as reference material for trouble shooting.

**SECTION 5 MECHATRONICS SYSTEM**
This section explains the computer aided power optimization system and each component.

**SECTION 6 TROUBLESHOOTING**
This section explains the troubleshooting charts correlating **problems** to **causes**.

**SECTION 7 MAINTENANCE STANDARD**
This section gives the judgement standards when inspecting disassembled parts.

**SECTION 8 DISASSEMBLY AND ASSEMBLY**
This section explains the order to be followed when removing, installing, disassembling or assembling each component, as well as precautions to be taken for these operations.

**SECTION 9 COMPONENT MOUNTING TORQUE**
This section shows bolt specifications and standard torque values needed when mounting components to the machine.

The specifications contained in this shop manual are subject to change at any time and without any advance notice. Contact your HYUNDAI distributor for the latest information.

PREVIEW - YOUFIXTHIS.COM


Download full manual at youfixthis.com

# CONTENTS


## SECTION 1 GENERAL

Group 1 Safety Hints ····· 1-1
Group 2 Specifications(R450LC-7A) ····· 1-9
Group 2 Specifications(R500LC-7A) ····· 1-29

## SECTION 2 STRUCTURE AND FUNCTION

Group 1 Pump Device ····· 2-1
Group 2 Main Control Valve ····· 2-22
Group 3 Swing Device ····· 2-47
Group 4 Travel Device ····· 2-58
Group 5 RCV Lever ····· 2-65
Group 6 RCV Pedal ····· 2-72

## SECTION 3 HYDRAULIC SYSTEM

Group 1 Hydraulic Circuit ····· 3-1
Group 2 Main Circuit ····· 3-2
Group 3 Pilot Circuit ····· 3-5
Group 4 Single Operation ····· 3-13
Group 5 Combined Operation ····· 3-23

## SECTION 4 ELECTRICAL SYSTEM

Group 1 Component Location ····· 4-1
Group 2 Electrical Circuit ····· 4-3
Group 3 Electrical Component Specification ····· 4-20
Group 4 Connectors ····· 4-28

## SECTION 5 MECHATRONICS SYSTEM

Group 1 Outline ····· 5-1
Group 2 Mode Selection System ····· 5-3
Group 3 Automatic Deceleration System ····· 5-6
Group 4 Power Boost System ····· 5-7
Group 5 Travel Speed Control System ····· 5-8
Group 6 Automatic Warming Up Function ····· 5-9
Group 7 Engine Overheat Prevention Function ····· 5-10
Group 8 Anti-Restart System ····· 5-11


PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

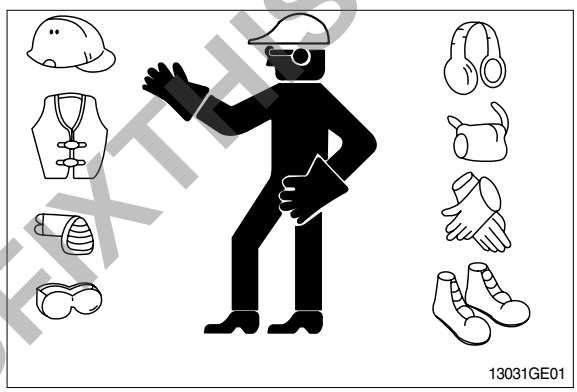
## GROUP 1 SAFETY

### FOLLOW SAFE PROCEDURE

Unsafe work practices are dangerous. Understand service procedure before doing work; Do not attempt shortcuts.

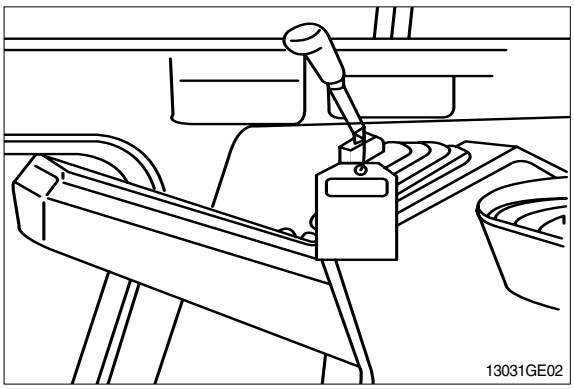
### WEAR PROTECTIVE CLOTHING

Wear close fitting clothing and safety equipment appropriate to the job.



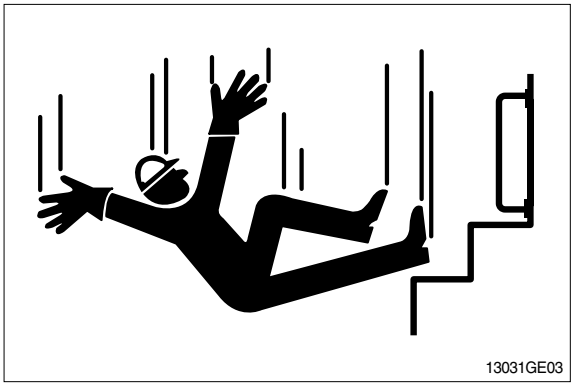

### WARN OTHERS OF SERVICE WORK

Unexpected machine movement can cause serious injury.
Before performing any work on the excavator, attach a 「**Do Not Operate**」 tag on the right side control lever.




### USE HANDHOLDS AND STEPS

Falling is one of the major causes of personal injury.
When you get on and off the machine, always maintain a three point contact with the steps and handrails and face the machine. Do not use any controls as handholds.
Never jump on or off the machine. Never mount or dismount a moving machine.
Be careful of slippery conditions on platforms, steps, and handrails when leaving the machine.

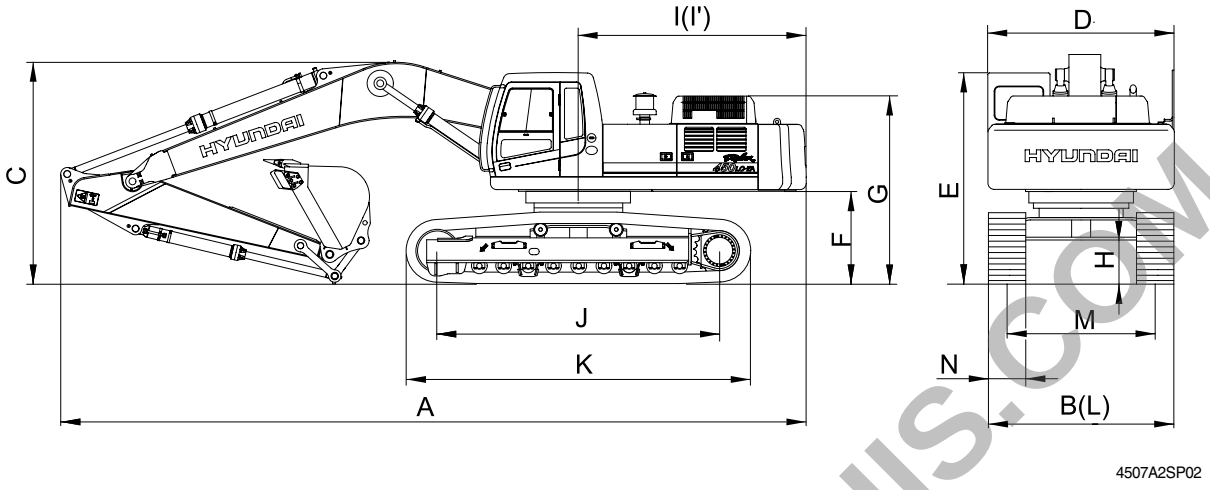





PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

## 2. SPECIFICATIONS

### 1) ROBEX 450LC-7A




4507A2SP02

| Description | | Unit | Specification |
|---|---|---|---|
| Operating weight | | kg(lb) | 45200(99650) |
| Bucket capacity(SAE heaped), standard | | $m^3(yd^3)$ | 2.15(2.81) |
| Overall length | A | mm(ft-in) | 12000(39' 4") |
| Overall width, with 600mm shoe | B | | 3340(10'11") |
| Overall height | C | | 3600(11'10") |
| Superstructure width | D | | 2980( 9' 9") |
| Overall height of cab | E | | 3250(10' 8") |
| Ground clearance of counterweight | F | | 1340( 4' 5") |
| Engine cover height | G | | 2792( 9' 2") |
| Minimum ground clearance | H | | 555( 1'10") |
| Rear-end distance | I | | 3665(12' 0") |
| Rear-end swing radius | I' | | 3720(12' 2") |
| Distance between tumblers | J | | 4470(14' 8") |
| Undercarriage length | K | | 5462(17'11") |
| Undercarriage width | L | | 3340(10'11") |
| Track gauge | M | | 2740( 8'12") |
| Track shoe width, standard | N | | 600(24") |
| Travel speed(Low/high) | | km/hr(mph) | 3.2/5.0(2.0/3.1) |
| Swing speed | | rpm | 9.0 |
| Gradeability | | Degree(%) | 35(70) |
| Ground pressure(600mm shoe) | | $kgf/cm^2(psi)$ | 0.78(11.09) |

PREVIEW - YOUFIXTHIS.COM

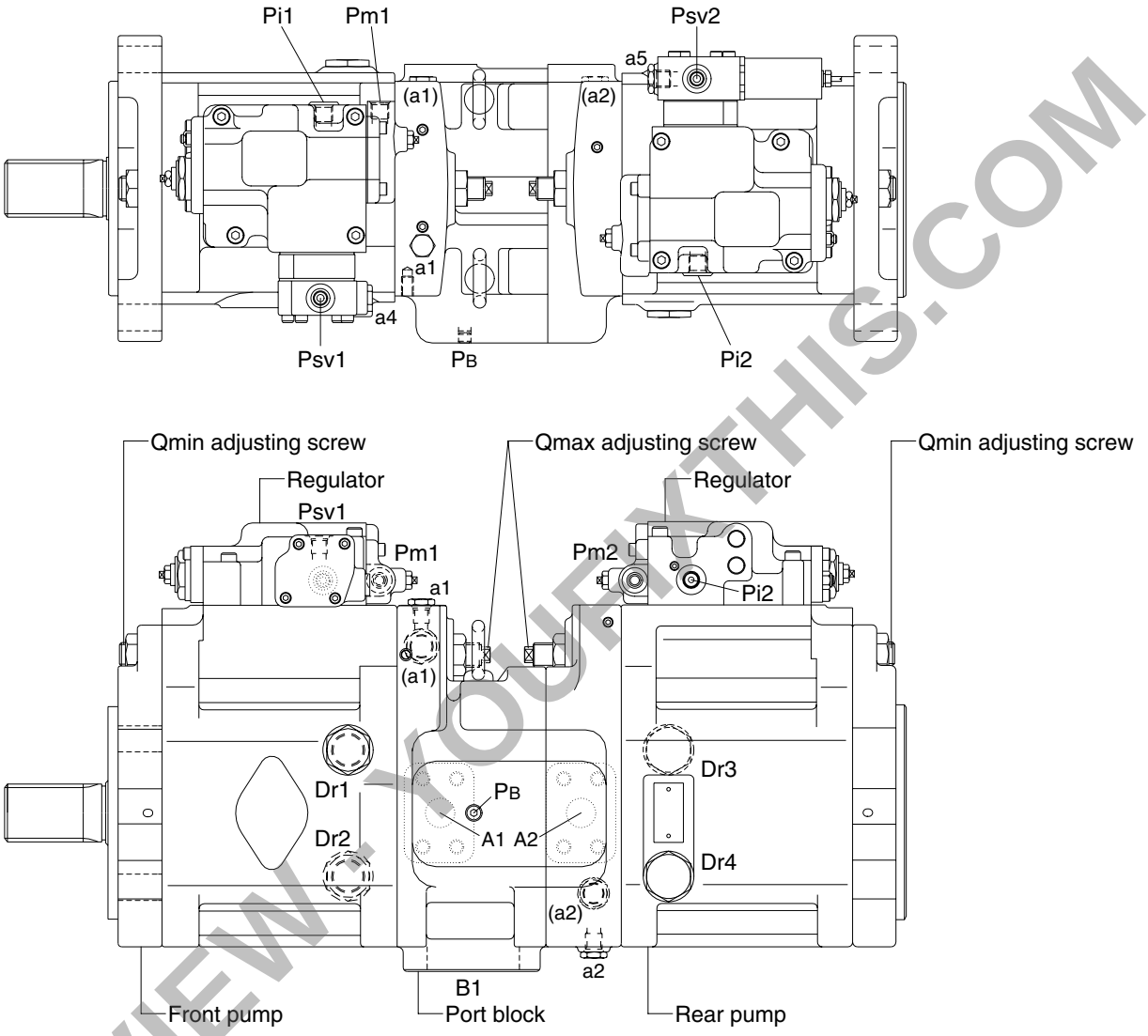


Download full manual at youfixthis.com

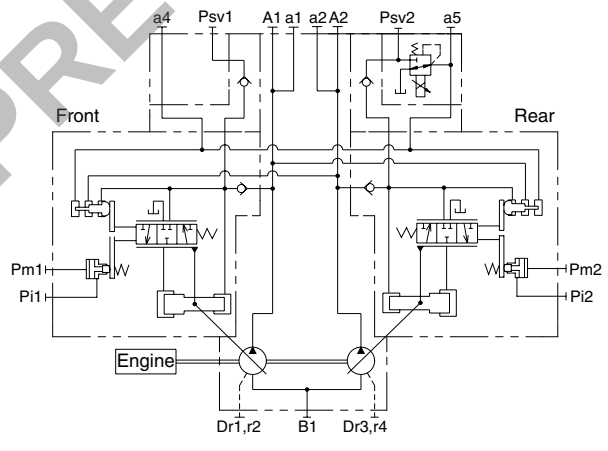
## GROUP 1 PUMP DEVICE

### 1. STRUCTURE

The pump device consists of main pump, regulator.




470072MP01




Hydraulic circuit

| Port | Port name | Port size |
|---|---|---|
| A1,A2 | Delivery port | SAE6000psi 1" |
| B1 | Suction port | SAE2500psi 3" |
| Dr1~Dr4 | Drain port | PF 3/4 - 23 |
| Pi1,Pi2 | Pilot port | PF 1/4 - 15 |
| Pm1,Pm2 | Qmax cut port | PF 1/4 - 15 |
| Psv1, Psv2 | Servo assist port | PF 1/4 - 15 |
| a1, a2, a4, a5 | Gauge port | PF 1/4 - 15 |
| Pb | Gauge port | RC 1/8 |



Download full manual at youfixthis.com

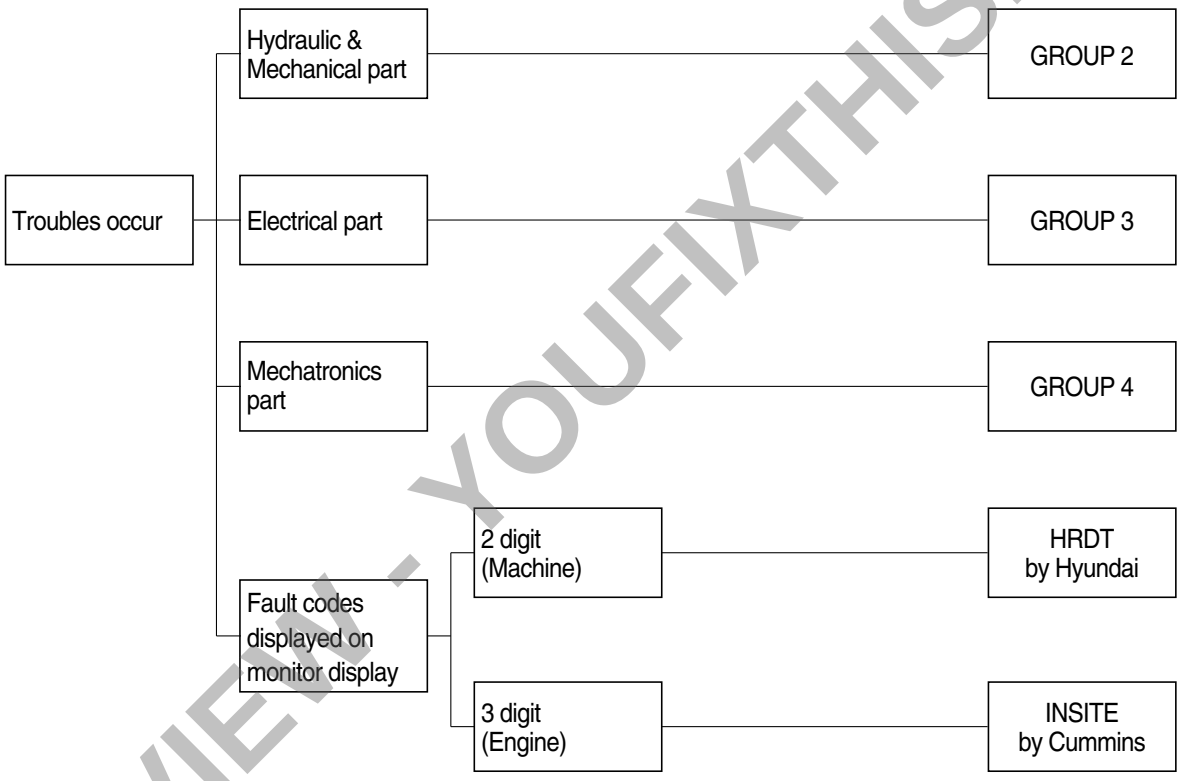
PREVIEW - YOUFIXTHIS.COM

## GROUP 1 BEFORE TROUBLESHOOTING

### 1. INTRODUCTION

When a trouble is occurred in the machine, this section will help an operator to maintain the machine with easy.

The trouble of machine is parted Hydraulic & Mechanical system, Electrical system and Mechatronics system. At each system part, an operator can check the machine according to the troubleshooting process diagram.




※ If fault codes (2 or 3 digits) are displayed on the monitor, please contact Hyundai or Cummins.

PREVIEW - YOUFIXTHIS.COM



Download full manual at youfixthis.com

## 1. REMOVAL AND INSTALL

### 1) REMOVAL

(1) Lower the work equipment to the ground and stop the engine.

(2) Loosen the breather slowly to release the pressure inside the hydraulic tank.

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

(3) Loosen the drain plug under the hydraulic tank and drain the oil from the hydraulic tank.

· Hydraulic tank quantity : 250 ℓ

(4) Remove socket bolts(5) and disconnect hose (1,2).

(5) Disconnect pilot line hoses(4, 5, 6, 7, 8, 9, 10, 11).

(6) Remove bolts(4) and disconnect pump suction tube (3).

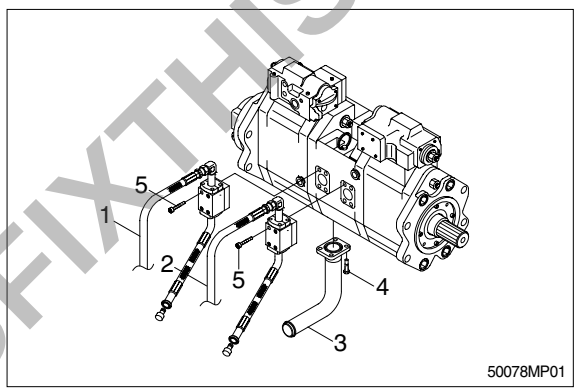
※ When pump suction tube is disconnected, the oil inside the piping will flow out, so catch it in oil pan.

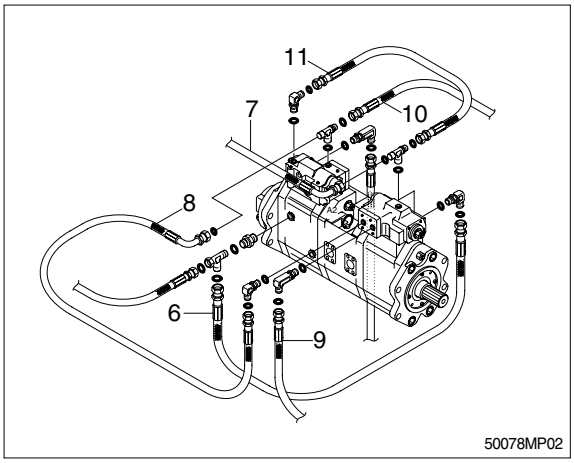
(7) Sling the pump assembly and remove the pump mounting bolts.

· Weight : 180kg(400lb)

※ Pull out the pump assembly from housing. When removing the pump assembly, check that all the hoses have been disconnected.




PREVIEW - YOUFIXTHIS.COM



Download full manual at youfixthis.com

## GROUP 2 TIGHTENING TORQUE

### 1. MAJOR COMPONENTS

| No. | Descriptions | | Bolt size | Torque | |
|---|---|---|---|---|---|
| | | | | kgf · m | lbf · ft |
| 1 | Engine | Engine mounting bolt, nut | M20 × 2.5 | 46.4 ± 4.6 | 336 ± 33 |
| 2 | | Radiator mounting bolt | M16 × 2.0 | 29.7 ± 4.5 | 215 ± 32.5 |
| 3 | | Coupling mounting socket bolt | M20 × 2.5 | 46 ± 2.0 | 333 ± 14.5 |
| 4 | | Main pump housing mounting bolt | M10 × 1.5 | 4.8 ± 0.3 | 35 ± 2.2 |
| 5 | Hydraulic system | Main pump mounting bolt | M20 × 2.5 | 44 ± 0.6 | 318 ± 47.7 |
| 6 | | Main control valve mounting nut | M12 × 1.75 | 12.2 ± 1.3 | 88.2 ± 9.4 |
| 7 | | Fuel tank mounting bolt | M20 × 2.5 | 45 ± 5.1 | 325 ± 36.8 |
| 8 | | Hydraulic oil tank mounting bolt | M20 × 2.5 | 45 ± 5.1 | 325 ± 36.8 |
| 9 | | Turning joint mounting bolt, nut | M16 × 2.5 | 29.7 ± 4.5 | 215 ± 32.5 |
| 10 | Power train system | Swing motor mounting bolt | M20 × 2.5 | 58.4 ± 6.4 | 422 ± 46.2 |
| 11 | | Swing bearing upper part mounting bolt | M24 × 3.0 | 94.5 ± 10.5 | 683 ± 75.9 |
| 12 | | Swing bearing lower part mounting bolt | M24 × 3.0 | 94.5 ± 10.5 | 683 ± 75.9 |
| 13 | | Travel motor mounting bolt | M20 × 2.5 | 57.9 ± 8.7 | 419 ± 62.9 |
| 14 | | Sprocket mounting bolt | M20 × 2.5 | 57.9 ± 8.7 | 419 ± 62.9 |
| 15 | Under carriage | Carrier roller mounting bolt, nut | M16 × 1.5 | 31.3 ± 4.7 | 226 ± 33.9 |
| 16 | | Track roller mounting bolt | M22 × 2.5 | 81.9 ± 16.1 | 592 ± 116 |
| 17 | | Track tension cylinder mounting bolt | M22 × 1.5 | 87.2 ± 12.5 | 602 ± 90 |
| 18 | | Track shoe mounting bolt, nut (R450LC-7A, -#0066) | M22 × 1.5 | 105 ± 5.0 | 760 ± 36 |
| 19 | | Track shoe mounting bolt, nut (R450LC-7A, #0067-) | M24 × 1.5 | 140 ± 5.0 | 1012 ± 36 |
| 20 | | Track shoe mounting bolt, nut (R500LC-7A, -#0031) | M22 × 1.5 | 105 ± 5.0 | 760 ± 36 |
| 21 | | Track shoe mounting bolt, nut (R500LC-7A, #0032-) | M24 × 1.5 | 140 ± 5.0 | 1012 ± 36 |
| 22 | Others | Counter weight mounting bolt | M42 × 4.5 | 390 ± 40 | 2821 ± 289 |
| 23 | | Center frame support & lower track mounting bolt (R500LC-7A) | M33 × 3.5 | 220 ± 20 | 1591 ± 145 |
| 24 | | Cab mounting bolt | M12 × 1.75 | 12.2 ± 1.3 | 88.2 ± 9.4 |
| 25 | | Operator's seat mounting bolt | M 8 × 1.25 | 2.5 ± 0.5 | 18.1 ± 3.6 |

※ For tightening torque of engine and hydraulic components, see engine maintenance guide and service manual.

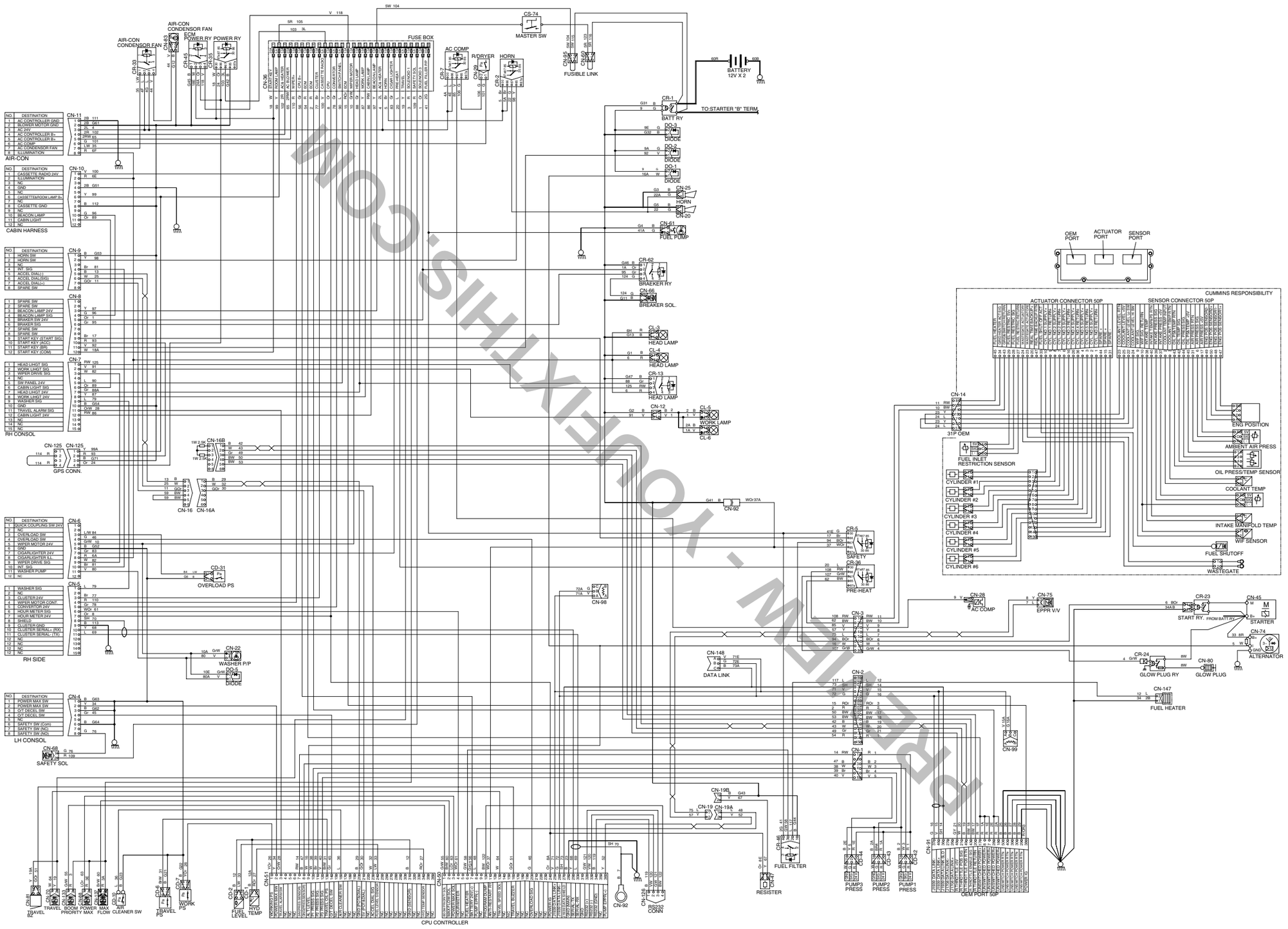
PREVIEW - YOUFIXTHIS.COM



Download full manual at youfixthis.com

## GROUP 2 ELECTRICAL CIRCUIT

• ELECTRICAL CIRCUIT(1/2)

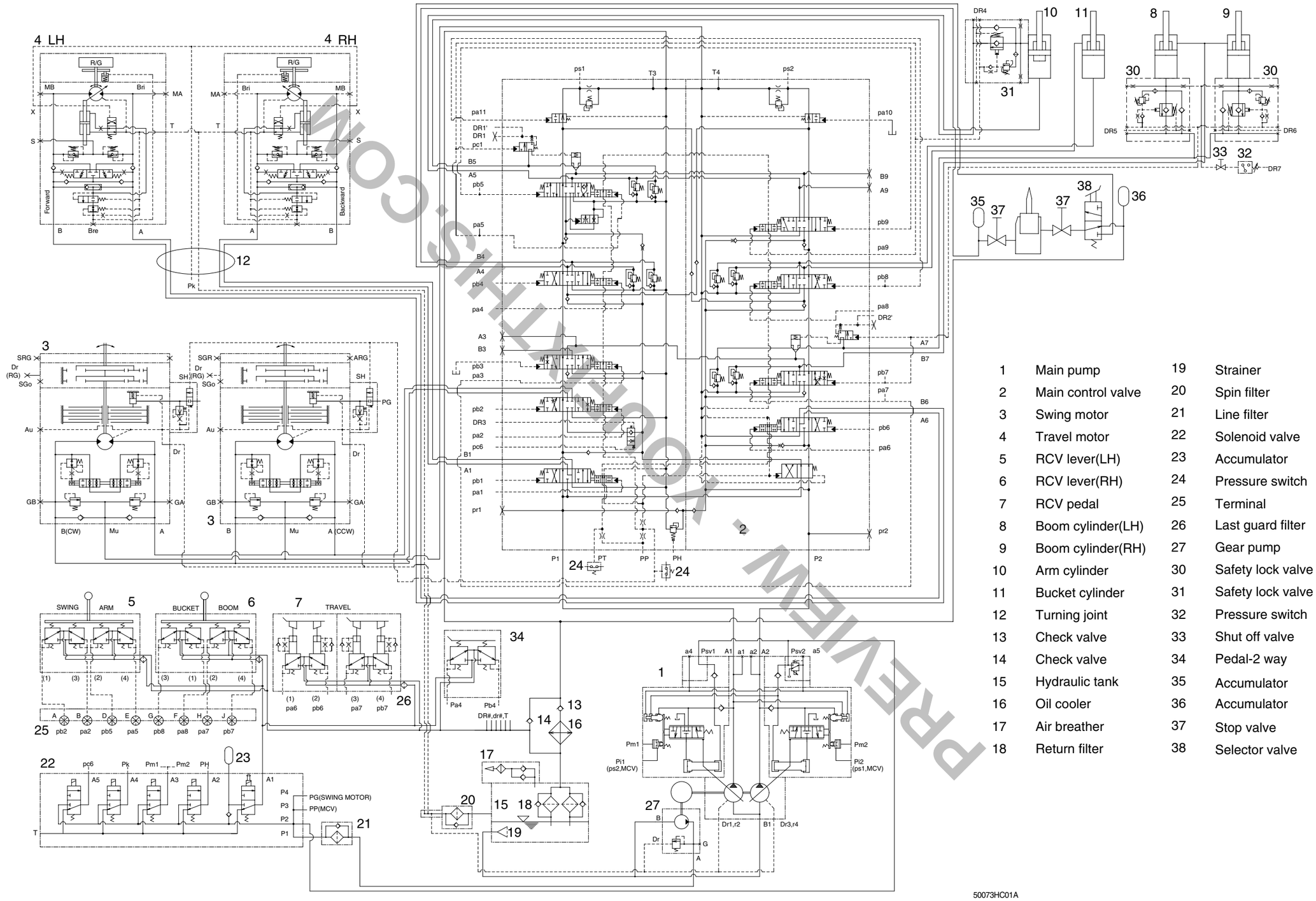



4507A4EL03



Download full manual at youfixthis.com

## GROUP 1 HYDRAULIC CIRCUIT




| | | | |
|---|---|---|---|
| 1 | Main pump | 19 | Strainer |
| 2 | Main control valve | 20 | Spin filter |
| 3 | Swing motor | 21 | Line filter |
| 4 | Travel motor | 22 | Solenoid valve |
| 5 | RCV lever(LH) | 23 | Accumulator |
| 6 | RCV lever(RH) | 24 | Pressure switch |
| 7 | RCV pedal | 25 | Terminal |
| 8 | Boom cylinder(LH) | 26 | Last guard filter |
| 9 | Boom cylinder(RH) | 27 | Gear pump |
| 10 | Arm cylinder | 30 | Safety lock valve |
| 11 | Bucket cylinder | 31 | Safety lock valve |
| 12 | Turning joint | 32 | Pressure switch |
| 13 | Check valve | 33 | Shut off valve |
| 14 | Check valve | 34 | Pedal-2 way |
| 15 | Hydraulic tank | 35 | Accumulator |
| 16 | Oil cooler | 36 | Accumulator |
| 17 | Air breather | 37 | Stop valve |
| 18 | Return filter | 38 | Selector valve |

50073HC01A

PREVIEW - Box - WOC-SHLX-1809
Download full manual at youfixthis.com

Millimeters to inches

1mm = 0.03937in

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | 0.039 | 0.079 | 0.118 | 0.157 | 0.197 | 0.236 | 0.276 | 0.315 | 0.354 |
| 10 | 0.394 | 0.433 | 0.472 | 0.512 | 0.551 | 0.591 | 0.630 | 0.669 | 0.709 | 0.748 |
| 20 | 0.787 | 0.827 | 0.866 | 0.906 | 0.945 | 0.984 | 1.024 | 1.063 | 1.102 | 1.142 |
| 30 | 1.181 | 1.220 | 1.260 | 1.299 | 1.339 | 1.378 | 1.417 | 1.457 | 1.496 | 1.536 |
| 40 | 1.575 | 1.614 | 1.654 | 1.693 | 1.732 | 1.772 | 1.811 | 1.850 | 1.890 | 1.929 |
| 50 | 1.969 | 2.008 | 2.047 | 2.087 | 2.126 | 2.165 | 2.205 | 2.244 | 2.283 | 2.323 |
| 60 | 2.362 | 2.402 | 2.441 | 2.480 | 2.520 | 2.559 | 2.598 | 2.638 | 2.677 | 2.717 |
| 70 | 2.756 | 2.795 | 2.835 | 2.874 | 2.913 | 2.953 | 2.992 | 3.032 | 3.071 | 3.110 |
| 80 | 3.150 | 3.189 | 3.228 | 3.268 | 3.307 | 3.346 | 3.386 | 3.425 | 3.465 | 3.504 |
| 90 | 3.543 | 3.583 | 3.622 | 3.661 | 3.701 | 3.740 | 3.780 | 3.819 | 3.858 | 3.898 |

Kilogram to Pound

1kg = 2.2046lb

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | 2.20 | 4.41 | 6.61 | 8.82 | 11.02 | 13.23 | 15.43 | 17.64 | 19.84 |
| 10 | 22.05 | 24.25 | 26.46 | 28.66 | 30.86 | 33.07 | 35.27 | 37.48 | 39.68 | 41.89 |
| 20 | 44.09 | 46.30 | 48.50 | 50.71 | 51.91 | 55.12 | 57.32 | 59.5. | 61.73 | 63.93 |
| 30 | 66.14 | 68.34 | 70.55 | 72.75 | 74.96 | 77.16 | 79.37 | 81.57 | 83.78 | 85.98 |
| 40 | 88.18 | 90.39 | 92.59 | 94.80 | 97.00 | 99.21 | 101.41 | 103.62 | 105.82 | 108.03 |
| 50 | 110.23 | 112.44 | 114.64 | 116.85 | 119.05 | 121.25 | 123.46 | 125.66 | 127.87 | 130.07 |
| 60 | 132.28 | 134.48 | 136.69 | 138.89 | 141.10 | 143.30 | 145.51 | 147.71 | 149.91 | 152.12 |
| 70 | 154.32 | 156.53 | 158.73 | 160.94 | 163.14 | 165.35 | 167.55 | 169.76 | 171.96 | 174.17 |
| 80 | 176.37 | 178.57 | 180.78 | 182.98 | 185.19 | 187.39 | 189.60 | 191.80 | 194.01 | 196.21 |
| 90 | 198.42 | 200.62 | 202.83 | 205.03 | 207.24 | 209.44 | 211.64 | 213.85 | 216.05 | 218.26 |

PREVIEW - YOUFIXTHIS.COM



Download full manual at youfixthis.com

### 10) BUCKET

| Item | | Capacity | | Tooth quantity | Width | |
|---|---|---|---|---|---|---|
| | | PCSA heaped | CECE heaped | | Without side cutter | With side cutter |
| R450-7A<br>R450LC-7A | Standard | 2.15m³(2.81yd³) | 1.85m³(2.40yd³) | 5 | 1610mm(63.4") | 1760mm(69.3") |
| | Option | 1.38m³(1.80yd³) | 1.20m³(1.57yd³) | 4 | 1100mm(43.3") | 1250mm(49.2") |
| | | 1.65m³(2.16yd³) | 1.44m³(1.88yd³) | 5 | 1350mm(55.9") | 1500mm(59.1") |
| | | ⊙1.80m³(2.35yd³) | 1.50m³(1.96yd³) | 5 | 1560mm(61.4") | - |
| | | 1.84m³(2.41yd³) | 1.60m³(2.09yd³) | 5 | 1420mm(55.9") | 1570mm(61.8") |
| | | ◈2.20m³(2.88yd³) | 1.80m³(2.35yd³) | 5 | 1840mm(72.4") | - |
| | | ⊙2.20m³(2.88yd³) | 1.80m³(2.35yd³) | 5 | 1810mm(71.3") | - |
| | | ⊙2.43m³(3.18yd³) | 2.10m³(2.75yd³) | 5 | 1860mm(73.2") | - |
| | | 2.56m³(3.35yd³) | 2.20m³(2.90yd³) | 6 | 1870mm(73.6") | 2020mm(79.5") |
| | | 2.79m³(3.65yd³) | 2.40m³(3.14yd³) | 7 | 2020mm(79.5") | 2170mm(85.4") |
| | | 3.03m³(3.96yd³) | 2.60m³(3.40yd³) | 7 | 2170mm(85.4") | 2320mm(91.3") |
| | | ⊙3.20m³(4.19yd³) | 2.80m³(3.66yd³) | 5 | 2080mm(81.9") | - |

◈ : Heavy duty bucket

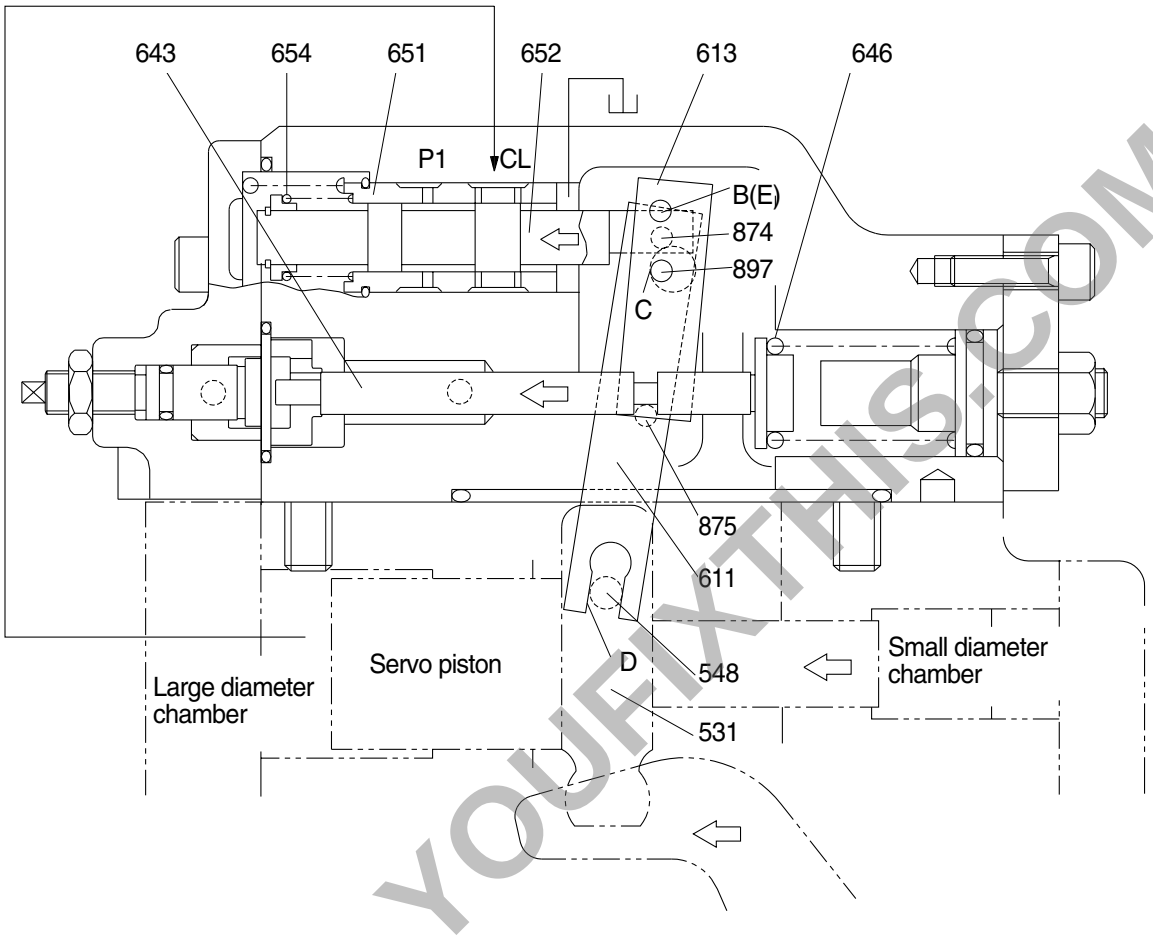
⊙ : Rock bucket(Esco type)

PREVIEW - YOUFIXTHIS.COM



Download full manual at youfixthis.com

② Flow increasing function




2-11

As the pilot pressure Pi decreases, the pilot piston(643) moves to the left by the action of the pilot spring(646) and causes lever 2(613) to rotate around the fulcrum of point B. Since the pin(897) is pressed against the large hole section(C) of lever 2 by the action of the return spring(654) via the spool(652), pin(874), and feedback lever(611), the feedback lever rotates around the fulcrum of point D as lever 2 rotates, and shifts the spool to the left. Port CL opens a way to the tank port as the spool moves. This deprives the large diameter section of the servo piston of pressure, and shifts the servo piston to the left by the discharge pressure P1 in the small diameter section, resulting in an increase in the flow rate.

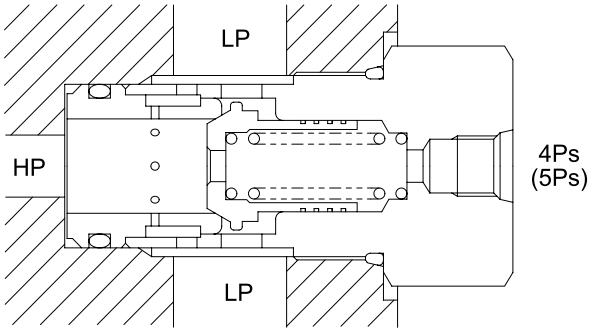
As the servo piston moves, point D also moves to the left, the feedback lever rotates around the fulcrum of point C, and the spool moves to the right till the opening between the spool and sleeve is closed.



PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

### 3) LOW PRESSURE RELIEF VALVE

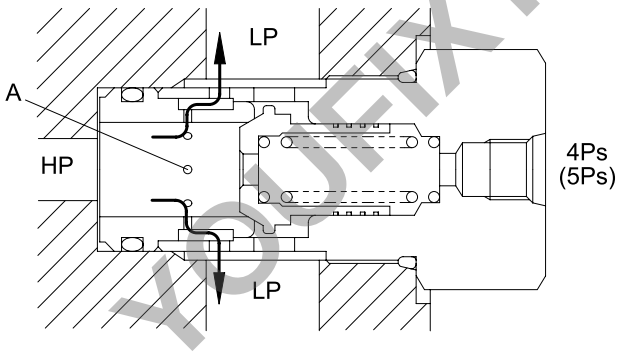
#### (1) When pump does not operational




45071MC19

#### (2) When spool neutral

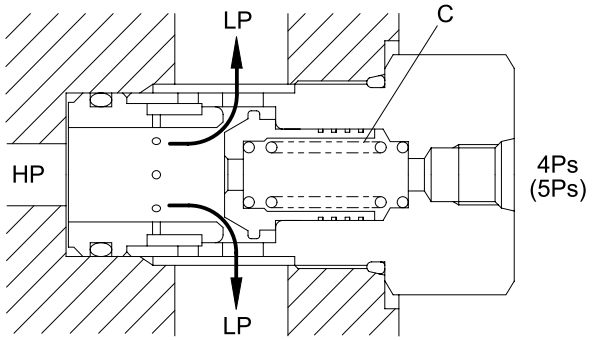
The neutral passage(HP) oil flows into the low pressure passage(LP) via signal orifice(S).
The signal port 4Ps(5Ps) pressure is raise by negative control orifice(A).




45071MC19-1

#### (3) Operation of low pressure relief

When the oil pressure neutral passage(HP) reaches the setting force of spring, the poppet is pushes open; the oil directly flows through passage(HP) to passage(LP) in order to prevent abnormal pressure.



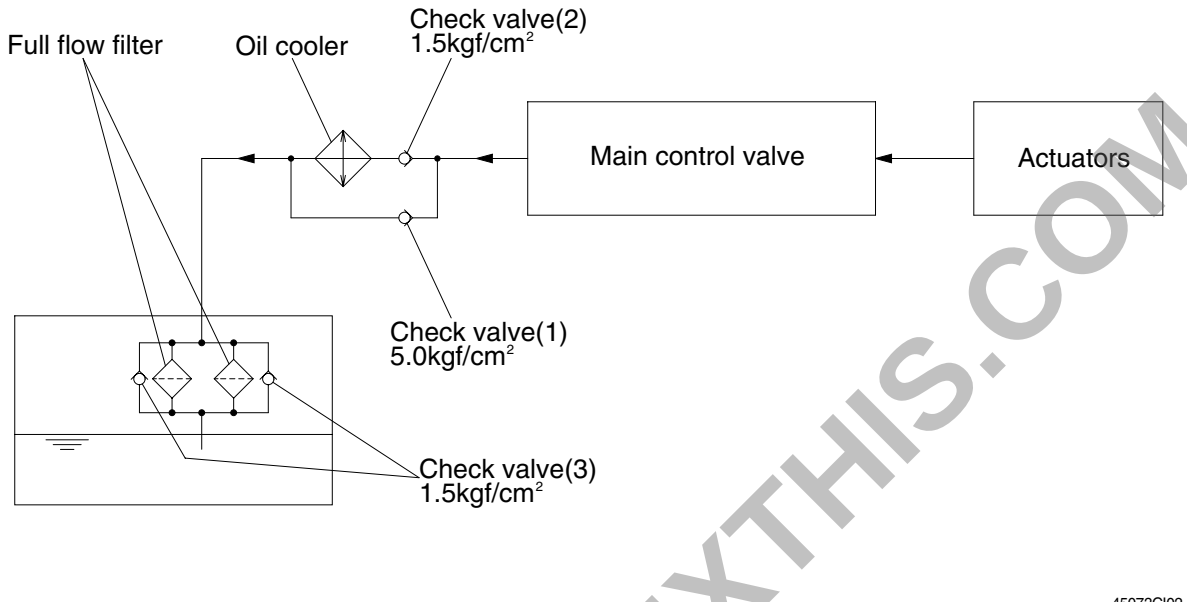

45071MC19-2

PREVIEW - YOUFIXTHIS.COM



Download full manual at youfixthis.com

## 2. RETURN CIRCUIT

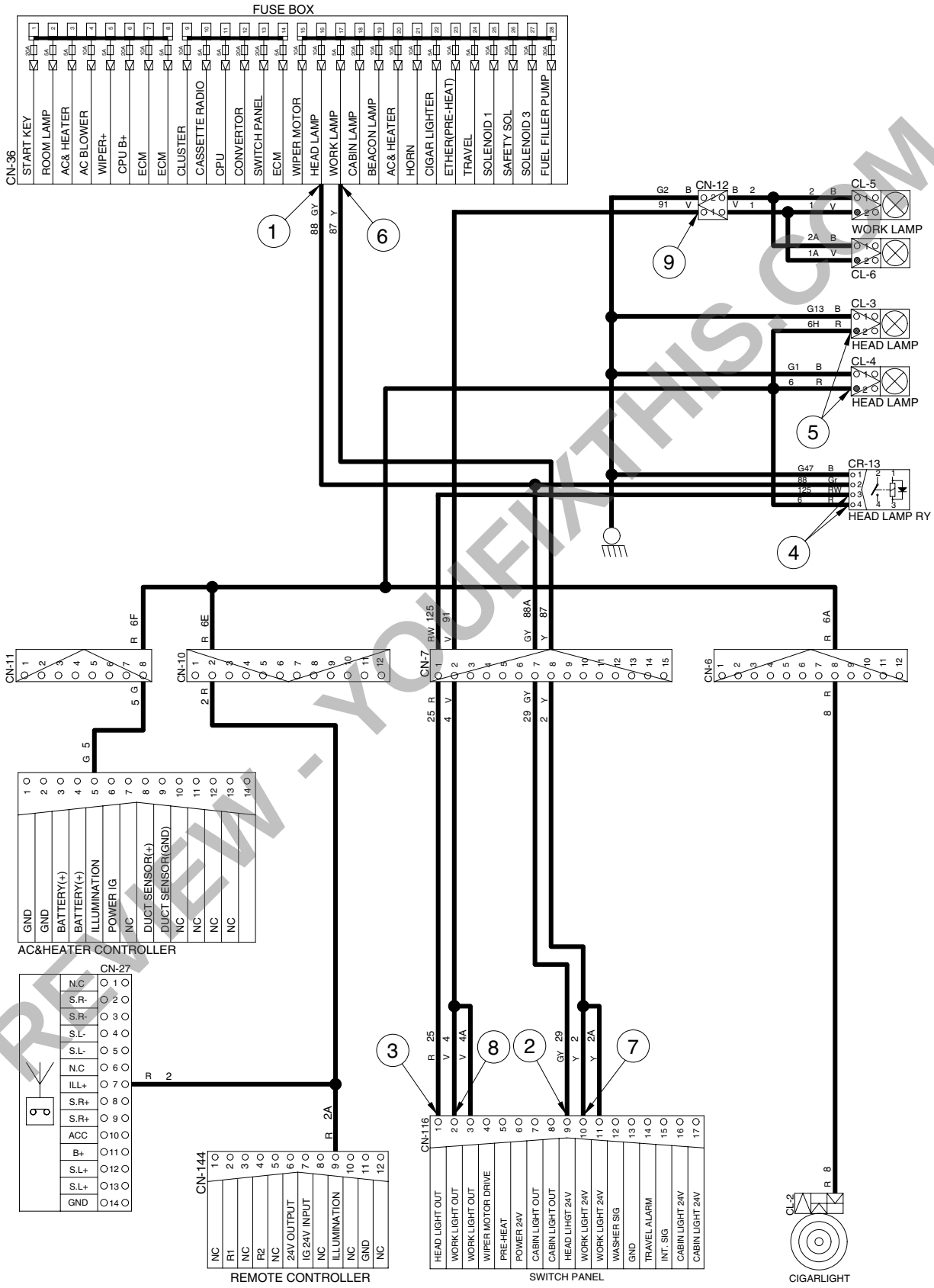



All oil from each actuator returns to the hydraulic tank through the control valve.
The bypass check valves are provided in the return circuit.
The setting pressure of bypass check valves are 1.5kgf/cm²(21psi) and 5.0kgf/cm²(71psi). Usually, oil returns to the hydraulic tank from the left side of control valve through oil cooler.
When oil temperature is low, viscosity becomes higher and flow resistance increases when passing through the oil cooler. The oil pressure exceeds 5.0kgf/cm²(71psi), the oil returns directly to the hydraulic tank, resulting in the oil temperature being raised quickly at an appropriate level.
When the oil cooler is clogged, the oil returns directly to the hydraulic tank through bypass check valve(1).
The full-flow filter and bypass relief valve are provided in the hydraulic tank.
The oil from right and left side of control valve is combined and filtered by the return filter. A bypass relief valve is provided in the full-flow filter.
When the filter element is clogged, the bypass relief valve opens at 1.5kgf/cm²(21psi) differential pressure.

PREVIEW - YOUFIXTHIS.COM


Download full manual at youfixthis.com

# HEAD AND WORK LIGHT CIRCUIT

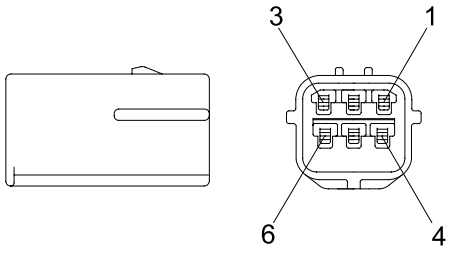
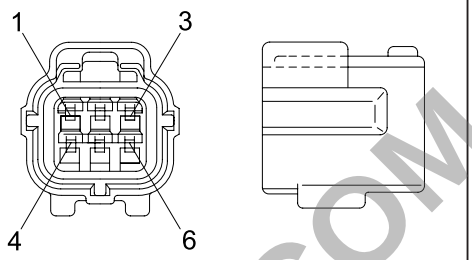
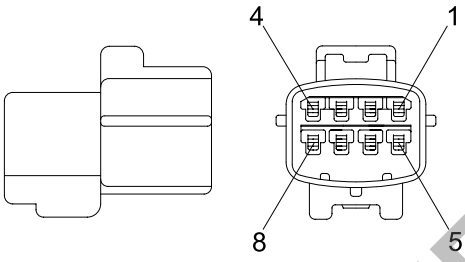
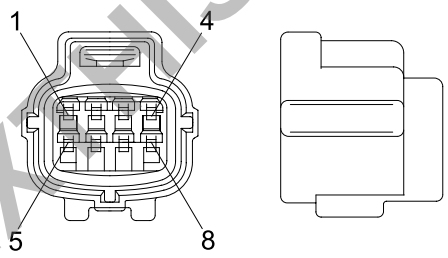
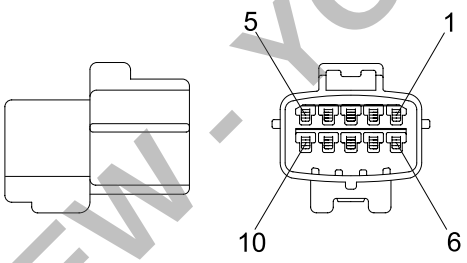
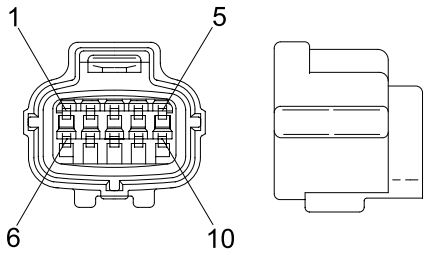
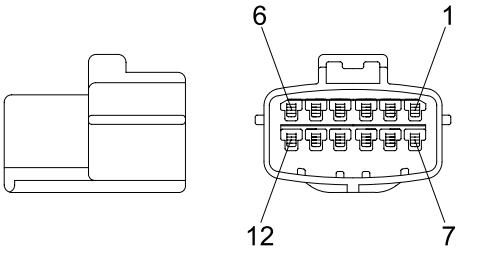
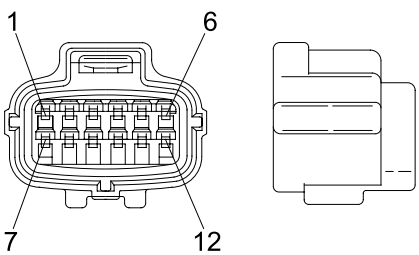



4507A4EL08

PREVIEW - YOUFIXTHIS.COM



Download full manual at youfixthis.com

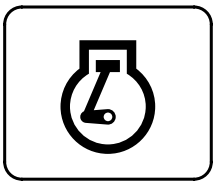
| No. of pin | Receptacle connector(Female) | Plug connector(Male) |
|---|---|---|
| 6 |  S816-006002 |  S816-106002 |
| 8 |  S816-008002 |  S816-108002 |
| 10 |  S816-010002 |  S816-110002 |
| 12 |  S816-012002 |  S816-112002 |

PREVIEW - YOUFIXTHIS.COM



Download full manual at youfixthis.com

### 15) Decel pilot lamp

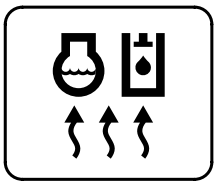


21073CD17

(1) Operating auto decel or one touch decel makes the lamp ON.

(2) The lamp will be ON when pushing one touch decel switch on the LH RCV lever.

### 16) Warming up pilot lamp

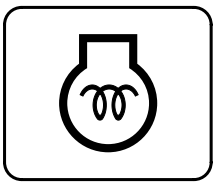


21073CD18

(1) This lamp is turned ON when the coolant temperature is below 30°C(86°F).

(2) The automatic warming up is cancelled when the engine coolant temperature is above 30°C, or when 10 minutes have passed since starting.

### 17) Preheat pilot lamp

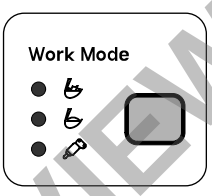


21073CD12

(1) This lamp is turned ON when the preheating function is actuated in cold weather.

(2) Start the engine as this lamp is OFF.

### 18) Work mode switch



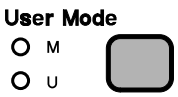

21073CD20

(1) This switch is to select the machine operation mode, which shifts from general operation mode to heavy operation mode and breaker mode in a raw by pressing the switch.

- : Heavy duty work mode
- : General work mode
- : Breaker operation mode

※ **Refer to the page 5-4 for details.**

### 19) User mode switch




300075MS20

(1) This switch is to select the maximum power or user mode.

- M : Maximum power
- U : Memorizing operators preferable power setting.

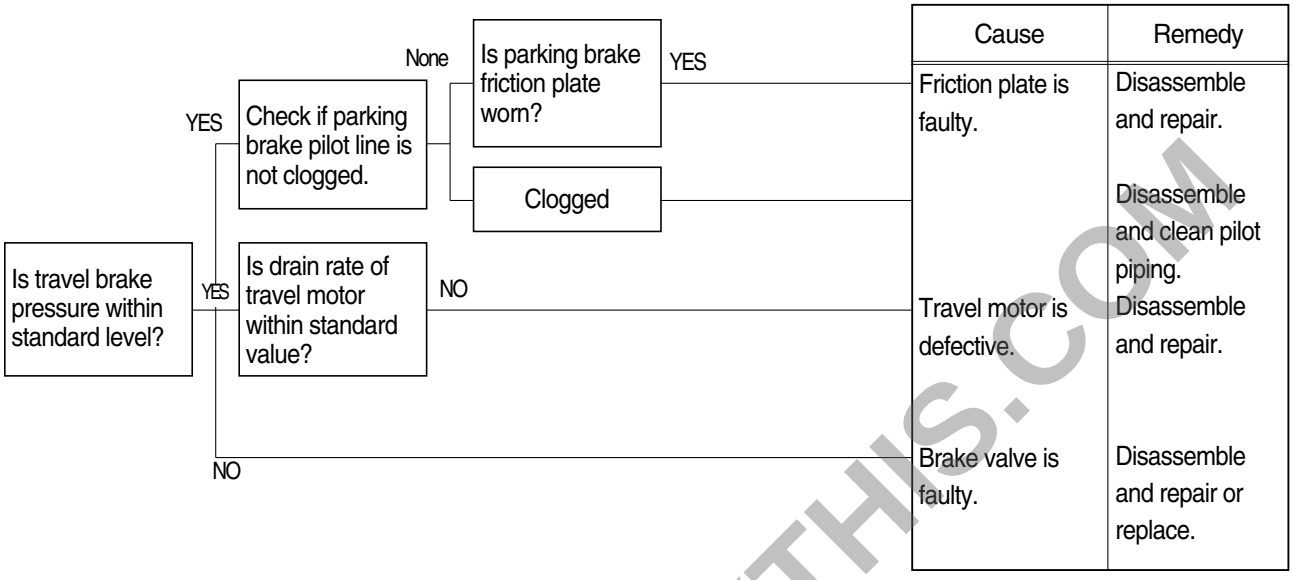
PREVIEW - YOUFIXTHIS.COM



Download full manual at youfixthis.com

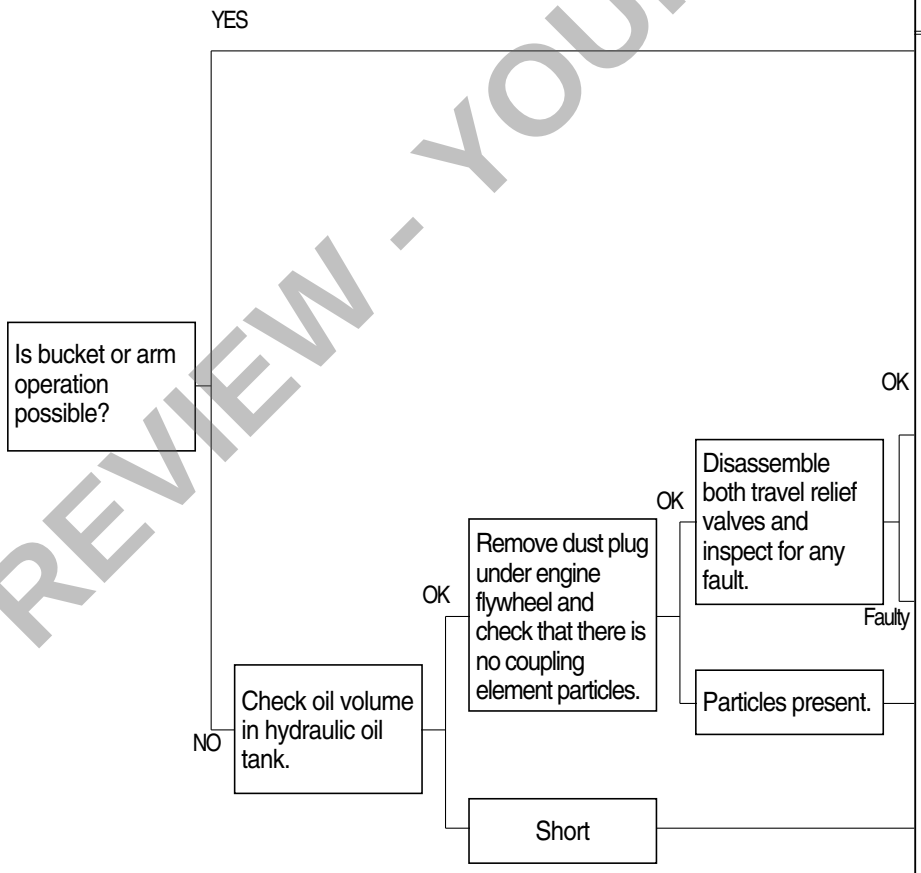
### 3) MACHINE DOES NOT STOP ON A SLOPE

**Machine is pulled forward as sprocket rotates during digging operation.**




| Cause | Remedy |
|---|---|
| Friction plate is faulty. | Disassemble and repair. |
| Clogged | Disassemble and clean pilot piping. |
| Travel motor is defective. | Disassemble and repair. |
| Brake valve is faulty. | Disassemble and repair or replace. |

### 4) LH AND RH TRAVEL MOTIONS ARE IMPOSSIBLE




| Cause | Remedy |
|---|---|
| | Inspect according to the procedure "Travel does not function at all on one side." However, a case where both LH and RH travel motions are disabled is extremelyseldom statistically. |
| Hydraulic pump is faulty. | Disassemble and repair. |
| Travel relief valve is faulty. | Disassemble and repair or replace. |
| Coupling at pump connection is broken. | Disassemble and repair. |
| | Replenish hydraulic oil. |

PREVIEW - YOUFIXTHIS.COM



Download full manual at youfixthis.com

# SECTION 7 MAINTENANCE STANDARD

Group 1 Operational Performance Test ····· 7-1
Group 2 Major Components ····· 7-21
Group 3 Track and Work Equipment ····· 7-28

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

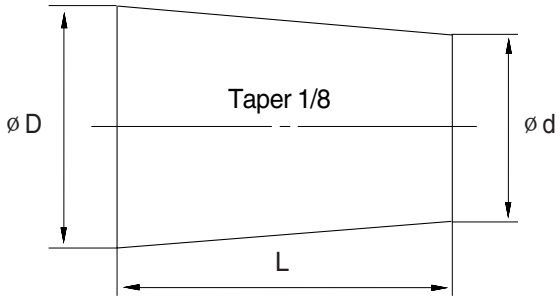
# SECTION 8 DISASSEMBLY AND ASSEMBLY

## GROUP 1 PRECAUTIONS

### 1. REMOVAL WORK

1) Lower the work equipment completely to the ground.
   If the coolant contains antifreeze, dispose of it correctly.
2) After disconnecting hoses or tubes, cover them or fit blind plugs to prevent dirt or dust from entering.
3) When draining oil, prepare a container of adequate size to catch the oil.
4) Confirm the match marks showing the installation position, and make match marks in the necessary places before removal to prevent any mistake when assembling.
5) To prevent any excessive force from being applied to the wiring, always hold the connectors when disconnecting the connectors.
6) Fit wires and hoses with tags to show their installation position to prevent any mistake when installing.
7) Check the number and thickness of the shims, and keep in a safe place.
8) When raising components, be sure to use lifting equipment of ample strength.
9) When using forcing screws to remove any components, tighten the forcing screws alternately.
10) Before removing any unit, clean the surrounding area and fit a cover to prevent any dust or dirt from entering after removal.
11) When removing hydraulic equipment, first release the remaining pressure inside the hydraulic tank and the hydraulic piping.
12) If the part is not under hydraulic pressure, the following corks can be used.

| Nominal number | Dimensions | | |
|---|---|---|---|
| | D | d | L |
| 06 | 6 | 5 | 8 |
| 08 | 8 | 6.5 | 11 |
| 10 | 10 | 8.5 | 12 |
| 12 | 12 | 10 | 15 |
| 14 | 14 | 11.5 | 18 |
| 16 | 16 | 13.5 | 20 |
| 18 | 18 | 15 | 22 |
| 20 | 20 | 17 | 25 |
| 22 | 22 | 18.5 | 28 |
| 24 | 24 | 20 | 30 |
| 27 | 27 | 22.5 | 34 |



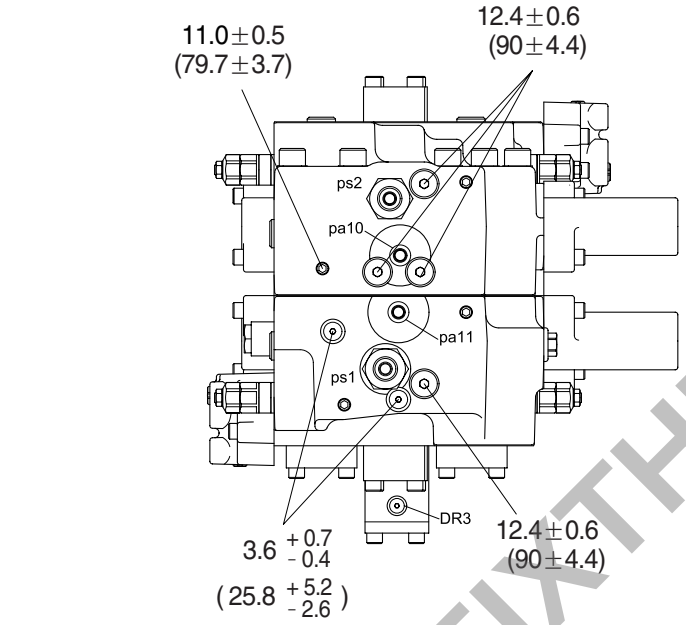

PREVIEW - YOUFIXTHIS.COM

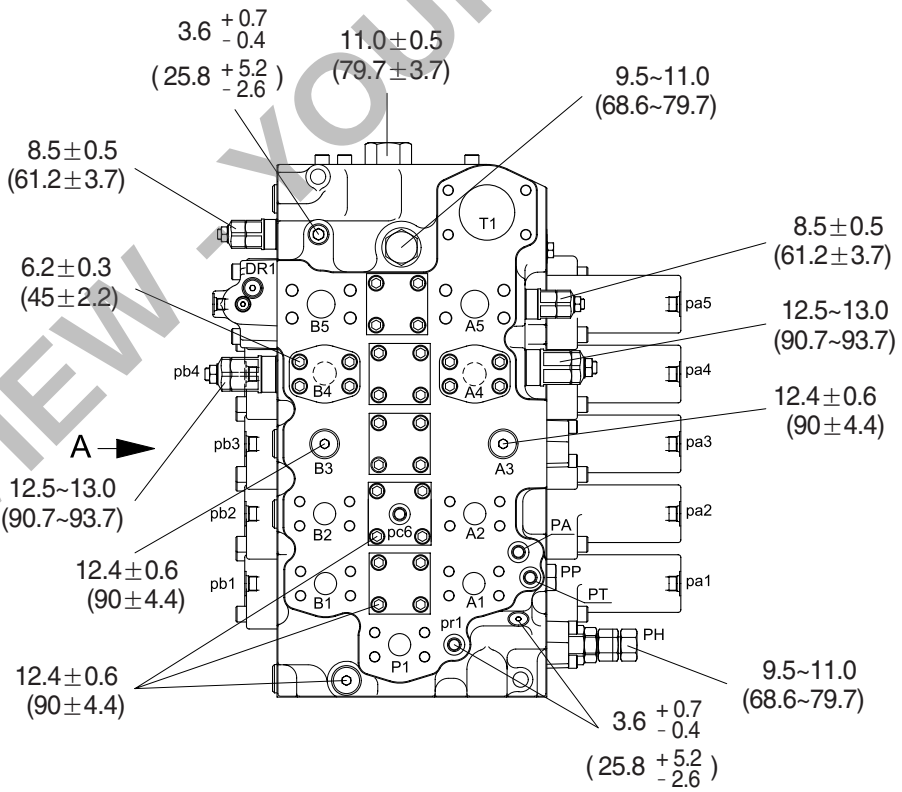


Download full manual at youfixthis.com

## 3. TIGHTENING TORQUE(1/2)

※ Unit : kgf · m (lbf · ft)




45078MC00

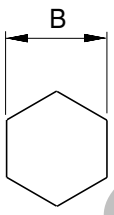
PREVIEW - YOUFIXTHIS.COM



Download full manual at youfixthis.com

## 2) TOOLS AND TIGHTENING TORQUE

### (1) Tools

| Tool name | Remark | |
|---|---|---|
| Allen wrench | 2.5 |   |
| | 4 | |
| | 6 | |
| | 8 | |
| | 10 | |
| | 14 | |
| Socket for socket wrench, spanner | 19 | |
| Torque wrench | Capable of tightening with the specified torques. | |
| Pliers | - | |
| ( - ) Driver | 150mm | |
| Plastic and iron hammer | Wooden hammer allowed. Nominal 1 or so | |
| Steel rod approx | 7×7×200mm | |
| Monkey wrench | - | |
| Oil seal inserting jig | - | |
| Bearing pliers | - | |
| Seal tape | - | |
| Press (0.5ton) | - | |
| Oil stone | - | |
| Bearing assembling jig | - | |
| Liquid packing | Loctite #577 | |
| Screw lock | Loctite #243 | |

### (2) Tightening torque

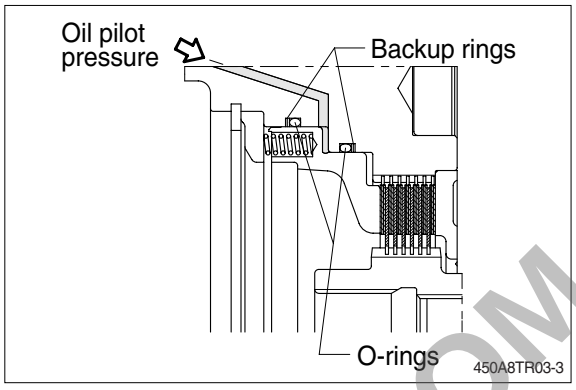
| Part name | Item | Size | Torque | |
|---|---|---|---|---|
| | | | kgf · m | lbf · ft |
| Locking screw | 11 | M6×20 | 1.0 | 7.4 |
| Locking screw | 13 | M26×1.5 | 7.0 | 50.9 |
| Locking nut | 18 | M12 | 7.0 | 50.9 |
| Socket head screw | 20, 21 | M16×90 | - | - |
| Socket head screw | 22 | M16×120 | - | - |
| Locking screw | 24 | M14×1.5 | 3.0 | 22 |
| Locking screw | 25 | M10×1 | 1.0 | 7 |
| Locking screw | 30 | M27×2.0 | 9.1 | 66 |
| Locking screw | 32 | M16×1.5 | 7.0 | 50.9 |

PREVIEW - YOUFIXTHIS.COM

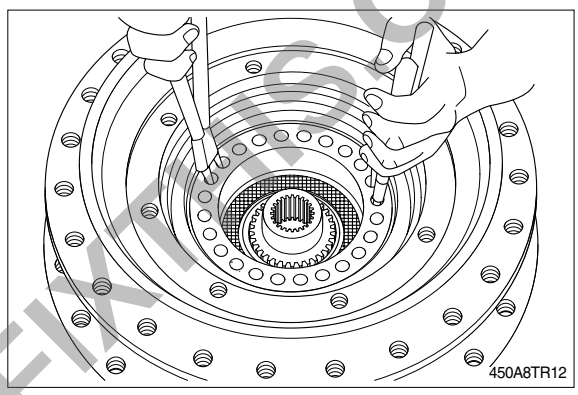


Download full manual at youfixthis.com

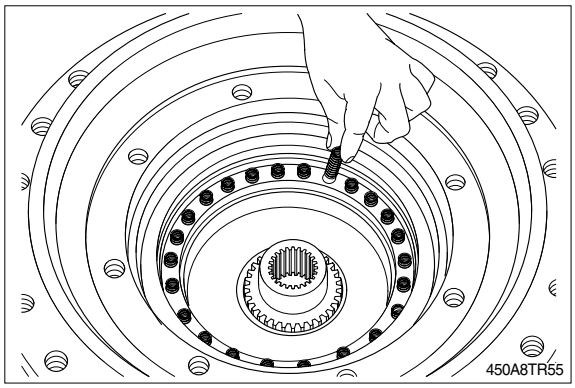
※ An O-ring and a backup ring must be fitted in the grove paying attention that the backup ring must always be beyond the O-ring against the oil flow.



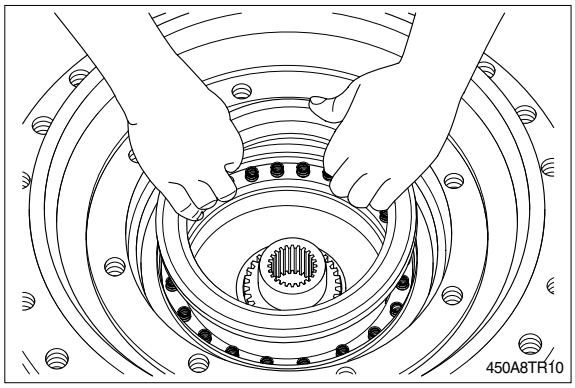

(29) Insert the brake piston(27) inside the flanged hub(17), paying attention not to damage the seals already fitted.




(30) Insert the springs(28) into the groves in the brake piston(27).




(31) Insert the retainer disc(29).




PREVIEW - YOUFIXTHIS.COM



Download full manual at youfixthis.com

### 3) DISASSEMBLY

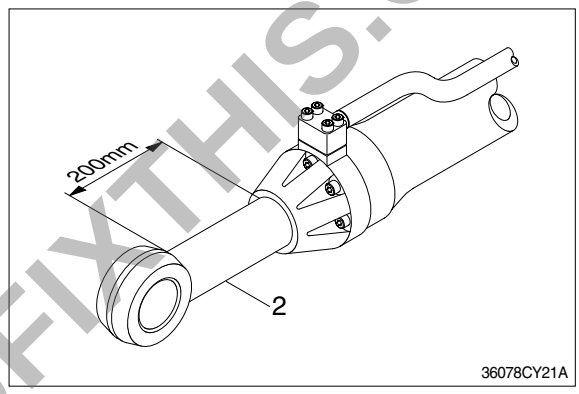
#### (1) Remove cylinder head and piston rod

※ Procedures are based on the bucket cylinder.

① Hold the clevis section of the tube in a vise.

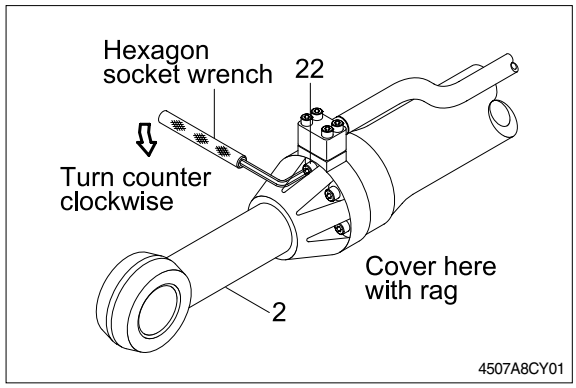
※ Use mouth pieces so as not to damage the machined surface of the cylinder tube. Do not make use of the outside piping as a locking means.

② Pull out rod assembly(2) about 200㎜ (7.1in). Because the rod assembly is rather heavy, finish extending it with air pressure after the oil draining operation.



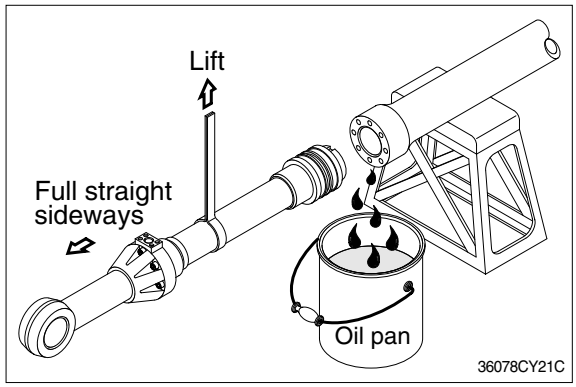

③ Loosen and remove socket bolts(22) of the gland in sequence.

※ Cover the extracted rod assembly(2) with rag to prevent it from being accidentally damaged during operation.




④ Draw out cylinder head and rod assembly together from tube assembly(1).

※ Since the rod assembly is heavy in this case, lift the tip of the rod assembly(2) with a crane or some means and draw it out. However, when rod assembly(2) has been drawn out to approximately two thirds of its length, lift it in its center to draw it completely.




PREVIEW - YOUFIXTHIS.COM



Download full manual at youfixthis.com

# PREVIEW ONLY

You're viewing 25 of 526 pages

## The full manual includes:

- All 526 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

**Hyundai R450LC-7A, R500LC-7A Service Manual**

**Scan or click anywhere**
**youfixthis.com**

*Click anywhere on this page to get the full manual*