SECTION 1 GENERAL

Group 1 Safety hints ····· 1-1
Group 2 Specifications ····· 1-9
Group 3 Maintenance ····· 1-15

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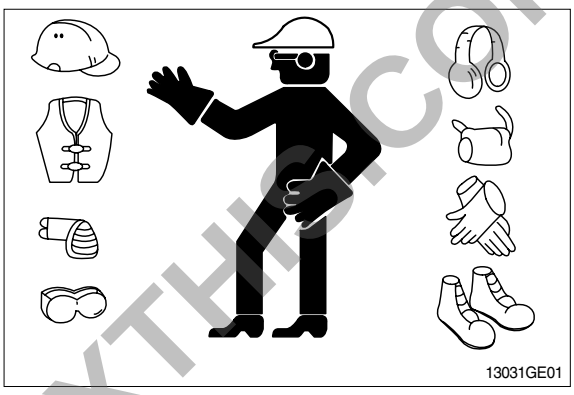
GROUP 1 SAFETY HINTS

FOLLOW SAFE PROCEDURE

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

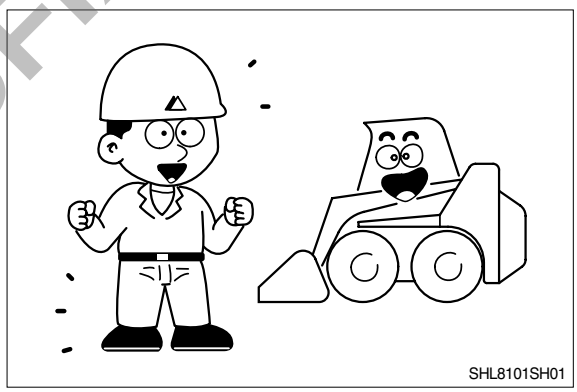
WEAR PROTECTIVE CLOTHING

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



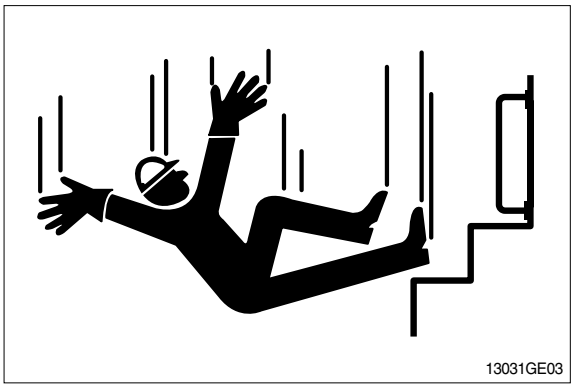
WARN OTHERS OF SERVICE WORK

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



USE HANDHOLDS AND STEPS

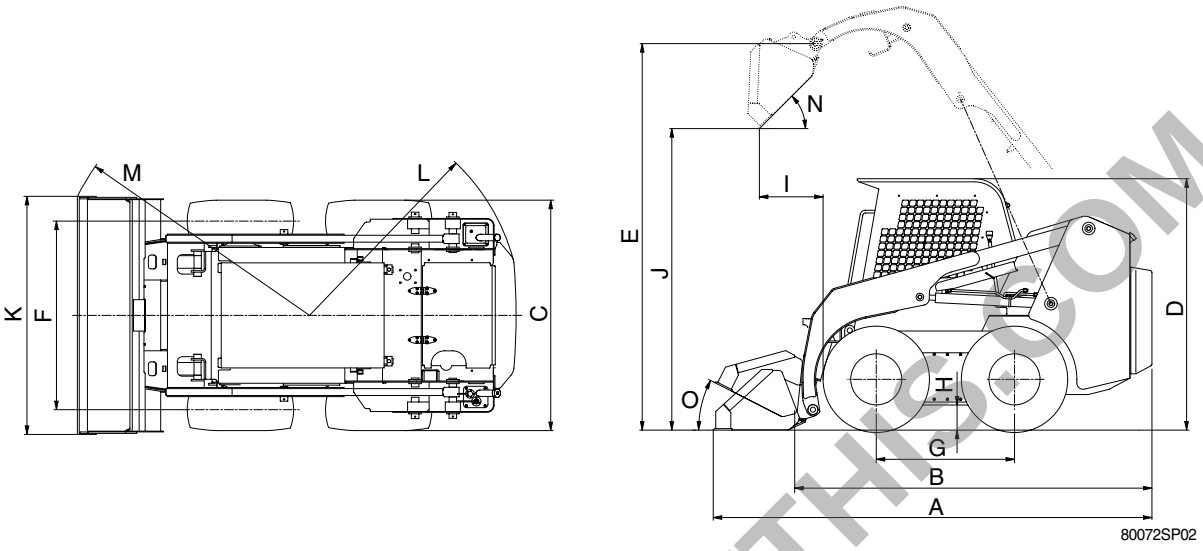
Falling is one of the major causes of personal injury.
When you get on and off the machine, always maintain a three point contact with the steps and handrails and face the machine. Do not use any controls as handholds.
Never jump on or off the machine. Never mount or dismount a moving machine.
Be careful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



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2. SPECIFICATIONS

· WITH STANDARD BUCKET AND CANOPY



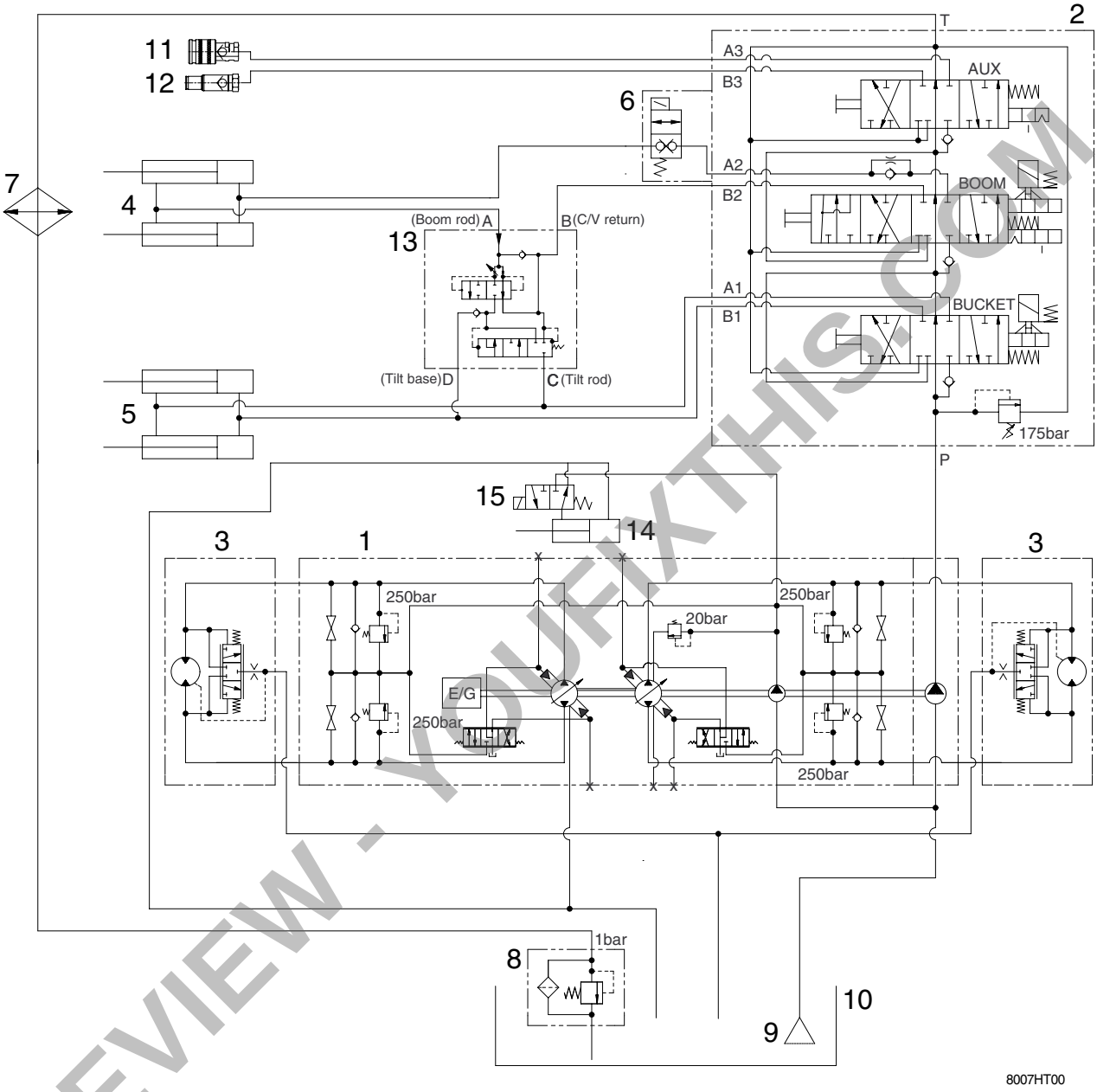
Description		Unit	Specification
Operating weight		kg(lb)	3290(7250)
Bucket capacity	Struck	$m^3(yd^3)$	0.29(0.38)
	Heaped		0.37(0.48)
Overall length	A	mm(ft-in)	3470(11' 5")
Overall length(Less bucket)	B		2840(9 ' 4")
Overall width(Except bucket)	C		1830(6' 0")
Overall height	D		2000(6' 7")
Overall height(To hinge pin)	E		3080(10' 1")
Tread	F		1500(4' 11")
Wheelbase	G		1100(3' 7")
Ground clearance	H		205(8.1 ")
Dump reach	I		510(1' 10")
Dump height	J		2410(7' 11")
Width bucket	K		1894(6' 3")
Clearance circle(Rear)	L		1660(5' 5")
Clearance circle(Front / bucket)	M		2055(6' 9")
Dump angle	N	Degree(°)	45
Roll back angle(Carry position)	O		27
Cycle time — Boom	Up	sec	4.1
	Down		2.5
Cycle time — Tilt	Dump		2.8
	Roll back		2.0
Maximum travel speed		km/hr(mph)	11.6(7.2)
Minimum turning radius(Without bucket)		mm(ft-in)	1350(4' 5")
Gradeability		Degree(°)	20

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SECTION 2 HYDRAULIC SYSTEM

GROUP 1 HYDRAULIC CIRCUIT



1	Main pump	6	Solenoid valve	11	Quick coupler(Female)
2	Main control valve	7	Oil cooler	12	Quick coupler(Male)
3	Travel motor	8	Return filter	13	Self level valve(option)
4	Boom cylinder	9	Suction strainer	14	Parking cylinder(option)
5	Bucket cylinder	10	Hydraulic oil tank	15	Solenoid valve(option)

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GROUP 4 AUXILIARY PUMP

1. REMOVAL AND INSTALL

1) REMOVAL

⚠ If engine is running or full up pressure into hydraulic system, absolutely does not repair or tighten hose, fitting. As hydraulic line explode, dangerous accident may occur.

(1) Lowered the bucket on the ground.

(2) Shut off engine and raise the seat bar.

(3) Raise canopy and remove the front cover.

※ **For Raising and lowering of the canopy, refer to page 4-15 of the operator's manual.**

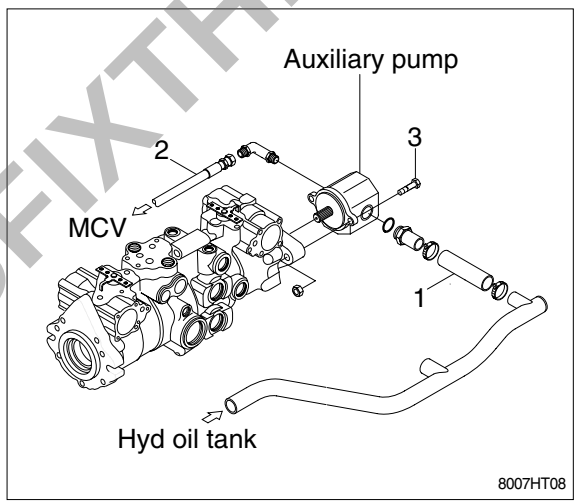
(4) Disassemble inlet hose(1) of auxiliary pump and oil tank.

(5) Disassemble outlet hose(2) of auxiliary pump.

(6) Loose two bolts(3) joined main pump and gear pump.

(7) Disassemble gear pump from main pump.





2) INSTALL

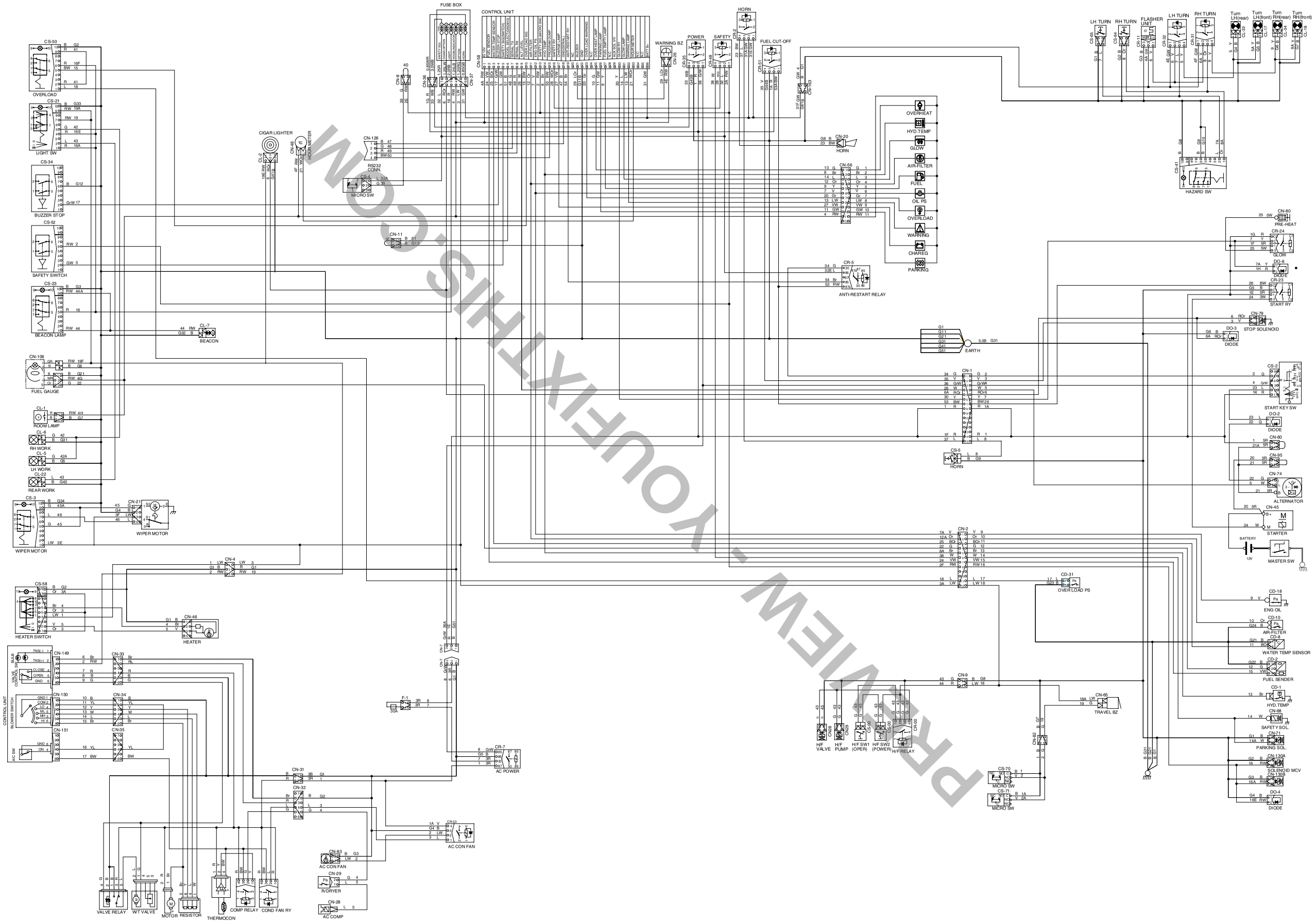
(1) Join gear pump to main pump, tighten with bolts(3).
- Tightening torque : 3.7~4.2kgf · m

(2) Assemble hose inlet hose(1) and outlet hose(2).

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GROUP 2 WIRING DIAGRAM



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GROUP 1 TRAVEL HYDRAULICS

1. TRAVEL HYDRAULICS

Trouble	Probable cause	Remedy
Loss of drive power on one side - both directions	· Reservoir low on oil	· Check for leaks. Fill reservoir
	· Disconnected steering control linkage	· Reconnect and adjust steering control linkage
	· Bolts sheared on pump neutral bracket	· Replace. Check neutral bracket for loose bolt or excessive play.
	· High pressure line failure	· Replace line. Check travel motor and control pump mounting bolts.
	· Drive chain failure	· Inspect chain and connection links. Replace damaged parts.
	· Travel motor shaft failure	· Inspect and repair defective parts. Check motor mounting bolts.
	· Main pump failure. Drive may initially appear to be lost on one side only, but after a few moments, drive will be lost on both sides	· Inspect and repair defective parts.
	· Excessive internal leakage or damage in control pumps and/or travel motor	· Inspect and repair defective unit. Flush all lines and reservoir. Replace filter, check on type of fluid used and engine rpm.
Loss of drive power on one side-one direction only	· Defective valve block relief valves	· Replace relief valves.
	· Damaged or seized travel motor shuttle valve	· Inspect and replace defective parts.
Loss of drive power-both side(No hydraulic power)	· Reservoir low on oil	· Check for leaks. Fill reservoir.
	· Universal joint between engine and pump failure	· Inspect and replace damaged parts. Check for misalignment.
	· Main pump not functioning	· Inspect and replace damaged parts.
Loss of drive power-both sides(No hydraulic power)	· Loader control pump shaft failure	· Inspect and replace damaged parts.
	· Spline coupling between front and rear control pump failure	· Inspect and replace damaged parts.

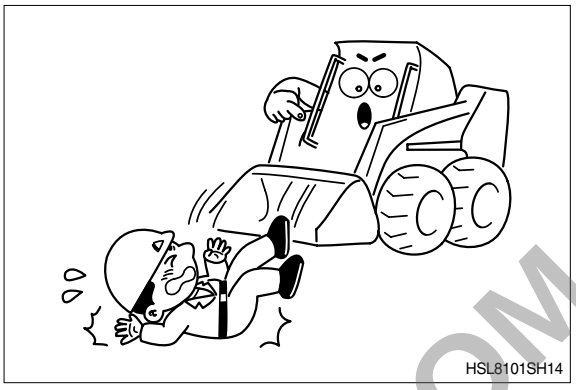
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KEEP RIDERS OFF MACHINE

Only allow the operator on the machine. Keep riders off.

Riders on machine are subject to injury such as being struck by foreign objects and being thrown off the machine. Riders also obstruct the operator's view resulting in the machine being operated in an unsafe manner.

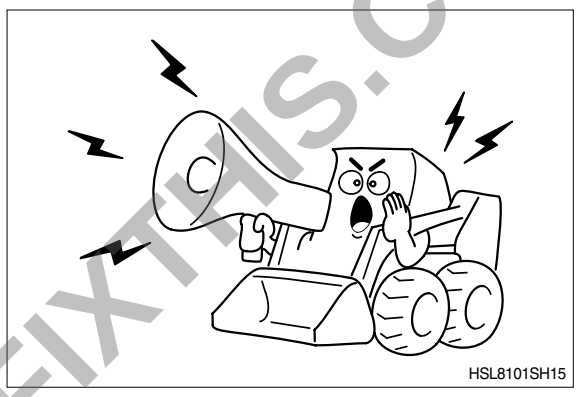

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MOVE AND OPERATE MACHINE SAFELY

Bystanders can be run over. Know the location of bystanders before moving, steering, or operating the machine.

Always keep the travel alarm in working condition. It warns people when the machine starts to move.

Use a signal person when moving, turning, or operating the machine in congested areas. Coordinate hand signals before starting the machine.


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OPERATE ONLY ON OPERATOR'S SEAT

Avoid possible injury and machine damage. Do not start engine by shorting across starter terminals.

NEVER start engine while standing on ground. Start engine only on operator's seat.

PARK MACHINE SAFELY

Before working on the machine:

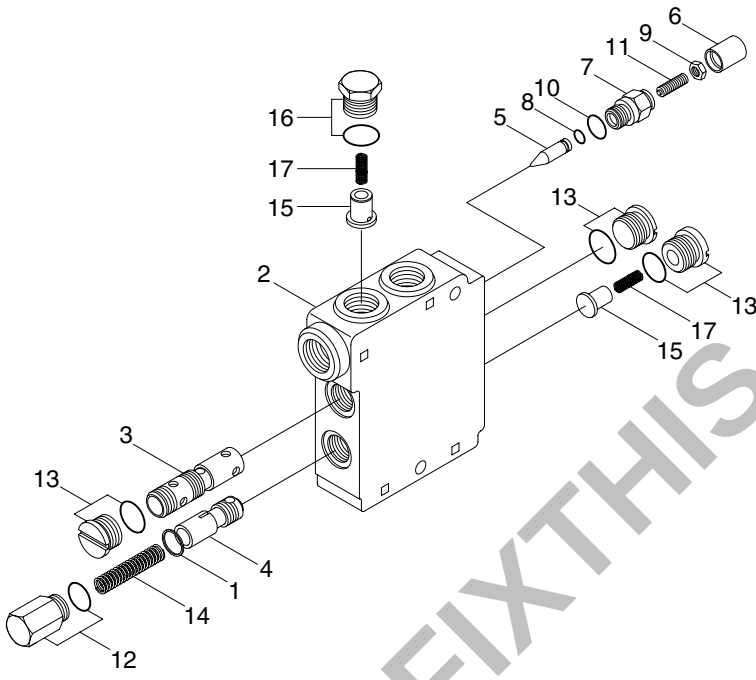
- Park machine on a level surface.
- Lower bucket to the ground.
- Run engine at 1/2 speed without load for 2 minutes.
- Turn key switch to OFF to stop engine. Remove key from switch.
- Allow engine to cool.
- Raise seat bar and chock the wheels.
- Put jackstands under the rear frame.

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GROUP 3 SELF LEVEL VALVE(OPTION)

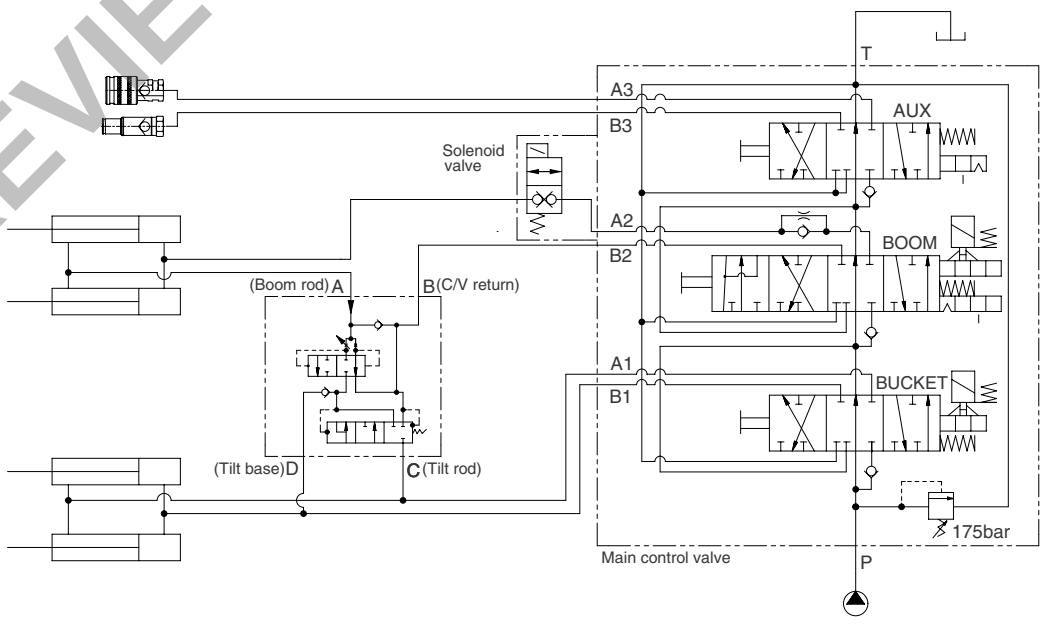
1. STRUCTURE



8007HT06

1	Retaining ring	7	Adjust cap	13	Plug
2	Body	8	O-ring	14	Spring
3	Spool	9	Jam nut	15	Load check plunger
4	Spool	10	O-ring	16	Plug
5	Pin	11	Set screw	17	Spring
6	Cover	12	Plug		

2. HYDRAULIC CIRCUIT



8007HT07

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6. START UP AND MAINTENANCE

1) START UP PROCEDURE

(1) The following start up procedure should always be followed when starting up a new main pump installation or when restarting an installation in which either the pump or motor had been removed from the system.

※ **The following procedure may require the machine to be disabled(Wheels raised off the ground, work function disconnected, etc.) while performing the procedure in order to prevent injury to the technician and bystanders. Take necessary safety precautions before moving the machine.**

(2) Prior to installing the pump and/or motor, inspect the units for damage incurred during shipping and handling. Make certain all system components(Reservoir, hoses, valves, fittings, heat exchanger, etc.) are clean prior to filling with fluid.

(3) Fill the reservoir with recommended hydraulic fluid, which should be passed through a 10 micron(Normal, no bypass) filter prior to entering the reservoir. The use of contaminated fluid will cause damage to the components, which may result in unexpected machine movement.

(4) The inlet line leading from the reservoir to the pump should be filled prior to start up. Check inlet line for properly tightened fittings and make sure it is free of restrictions and air leaks.

(5) Be certain to fill the pump and/or motor housing with clean hydraulic fluid prior to start up. Fill the housing by pouring filtered oil into the upper case drain port.

(6) Install a 0 to 500psi(35bar) pressure gauge in the charge pressure gauge port to monitor the charge pressure during start up.

(7) It is recommended that the external control input signal be disconnected at the pump control until after initial start up. This will allow the pump to remain in its neutral position.

(8) Jog or slowly rotate prime mover until charge pressure starts to rise. Start the prime mover and run at the lowest possible rpm until charge pressure has been established. Excess air may be bled from the high pressure lines through the high pressure gauge ports.

※ **Do not start prime mover unless pump is in neutral position(0 swashplate angle). Take precautions to prevent machine movement in case pump is actuated during initial start up.**

(9) Onec charge pressure has been established, increase speed to normal operating rpm. Charge pressure should be approximately 290psi(20bar) minimum. If charge pressure is incorrect, shut down and determine cause for improper pressure.

※ **Inadequate charge pressure will affect the operator's ability to control the machine.**

(10) Shut down prime mover and connect external control input signal. Start prime mover, checking to be certain pump remains in neutral. With prime mover at normal operating speed, slowly check for forward and reverse machine operation.

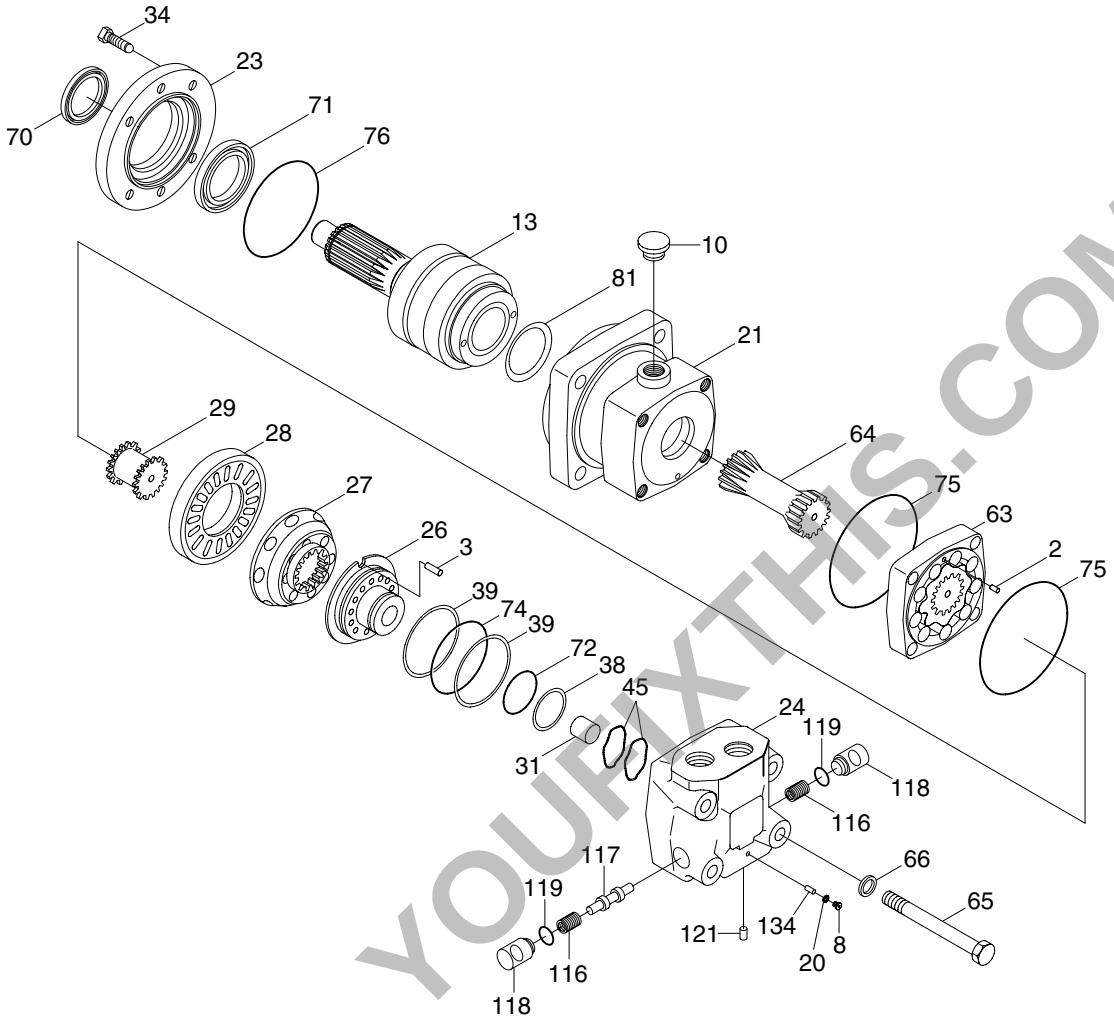
(11) Charge pressure should remain at 290psi(20bar) minimum during forward or reverse operation. Continue to cycle slowly between forward and reverse for at least 5 minutes.

(12) Shut down prime mover, remove gauges, and plug ports. Check reservoir level and add fluid if necessary.

(13) The transmission is now ready for operation.

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8007HT33

9) Hold fingers under the gearwheel set(63) to prevent parts from dropping out. Hole(6㎜) to be aligned with hole in the bearing housing(21). Mark the gearwheel set(63) rotor at the point where the tip of a spline tooth is opposite the bottom of a tooth in the external rotor teeth(Right fig).

10) Mark the bottom of a spline tooth on the valve drive(29). Line up mark on rotor and valve drive (29).

11) Grease with vaseline to O-ring(75) and mount in channel plate(28) groove.

12) Assemble gearwheel set(63) and channel plate(28) with guide pin(2).
Align mark on valve drive(29) with a hole in the outer rim(**A** on drawing previous page). Turn disc valve(27) counter clockwise until splines in the two parts engage.

13) Place 2 spring washer(45) into valve housing(24).

14) Fit the two O-rings(Greased with vaseline, 72, 74) and 2 back up ring(30) in the balance plate(26) grooves.

15) Mount guide pin(3) in valve housing(24).

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5. PREHEATING CIRCUIT

When the start switch is set to the ON position, the control unit starts counting the specified time and the indicator is lit. After 5~20 seconds, the control unit turns OFF the indicator to indicate that preheating is completed.

1) OPERATING FLOW

※ **Start switch : ON position**

→ Control unit [CN-58(30)] → I/conn [CN-1(6)] → Glow relay [CR-24(C1)→(2)] → Preheating [CN-80]

→ Control unit [CN-58(31)] → I/conn [CN-56(3)] → Glow(preheater) lamp ON

2) CHECK POINT

Engine	Start switch	Disconnect switch	Check point	Voltage
Stop	ON	ON	① - GND(Fusible link) ② - GND(Fusible link) ③ - GND(Start switch) ④ - GND(Glow relay) ⑤ - GND(preheater)	DC 10~13V

※ GND : Ground

※ The disconnect switch (Master switch) is assembled as an option.

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