

DX340LC

Shop Manual

K1009684AE

Serial Number 5980 and Up

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This documentation may include attachments and optional equipment that is not available in your machine's package. Please call your distributor for additional items that you may require.

Illustrations used throughout this manual are used only as a representation of the actual piece of equipment, and may vary from the actual item.

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Clothing and Personal Protective Items

Contain long hair, and avoid loose clothing and jewelry. They can catch on controls or in protruding parts and cause serious injury or death.

Do not wear oily clothes. They are highly flammable.

Full eye protection, a hard hat, safety shoes and gloves may be required at the work site.

While working on the machine, never use inadequate tools. They could break or slip, causing injury, or they may not adequately perform intended functions.

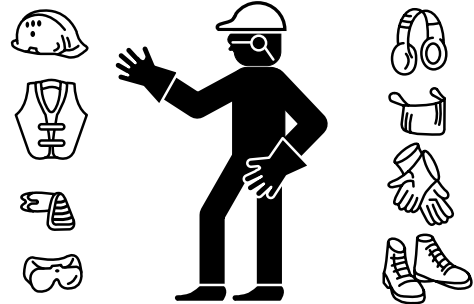


Figure 1

HAOA020L

Breathing Masks, Ear Protection May Be Required

Do not forget that some risks to your health may not be immediately apparent. Exhaust gases and noise pollution may not be visible, but these hazards can cause disabling or permanent injuries.

NOTE: *The equivalent continuous A-weighted sound pressure level at the workstation for this machine is given in the operation manual.*

Measurement is obtained on a dynamic machine following the procedures and cabin conditions as described in ISO 6396.

NOTE: *The guaranteed sound power level emitted by the machinery for this machine is given in the operation manual.*

Measurement is obtained on a dynamic machine with the procedures as described in 2000/14/EC.

Vibration Level Information

Hands/Arms: The weighted root mean square acceleration to which the hands/arms are subjected, is less than 2.5 m/s^2 .

Whole body: The weighted root mean square acceleration to which the whole body is subjected, is less than 0.5 m/s^2 .

Measurements are obtained on a representative machine, using measuring procedures as described in the following standard: ISO 2631/1, ISO 5349, and SAE J1166.

Before Operating Machine

If checks are not carried out properly after starting the engine, it may result in a delay in discovering abnormalities in the machine, and this may lead to personal injury or damage to the machine.

Carry out the checks in an open area where there are no obstructions. Do not let anyone near the machine when carrying out the checks.

- Check the operating condition of the equipment, and the actuation of the bucket, arm, boom, travel, and swing systems.
- Check the machine for any abnormal noise, vibration, heat, smell, or abnormality with the gauges. Check also for leakage of air, oil, and fuel.
- If any abnormality is found, repair the problem immediately. If the machine is used without repairing the problems, it may lead to unexpected injury or failure.
- Clear all personnel from directly around machine and from the area.
- Clear all obstacles from the machine's path. Beware of hazards.
- Be sure that all windows are clean. Secure the doors and the windows in the open position or in the shut position.
- Adjust the rear view mirrors for best visibility close to the machine. Make sure that the horn, the travel alarm (if equipped), and all other warning devices are working properly.
- Fasten the seat belt securely.
- Warm up the engine and hydraulic oil before operating machine.
- Before moving the machine, check the position of undercarriage. The normal travel position is with idler wheels to the front under the cabin and the drive sprockets to the rear. When the undercarriage is in the reversed position, the travel controls must be operated in opposite directions.

Burn Prevention

When checking the radiator coolant level, shut down engine, let the engine and radiator cool down, then check the coolant recovery tank. If the coolant level in the coolant recovery tank is near the upper limit, there is enough coolant in the radiator.

Loosen the radiator cap gradually to release the internal pressure before removing the radiator cap.

If the coolant level in the coolant recovery tank is below the lower limit, add coolant.

Cooling system conditioner contains alkali. Alkali can cause personal injury. Do not allow alkali to contact the skin, the eyes, or the mouth.

Allow cooling system components to cool before you drain the cooling system.

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact the skin.

Remove the hydraulic tank filter plug only after the engine has been stopped. Make sure that the hydraulic tank filter plug is cool before you remove it with your bare hand. Remove the hydraulic tank filter plug slowly to relieve pressure.

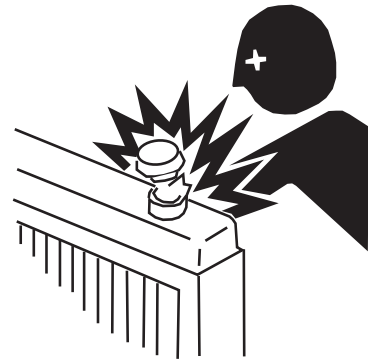
Relieve all pressure in the hydraulic oil system, in the fuel system, or in the cooling system before you disconnect any lines, fittings, or related items.

Batteries give off flammable fumes that can explode.

Do not smoke while you are checking the battery electrolyte levels.

Electrolyte is an acid. Electrolyte can cause personal injury. Do not allow electrolyte to contact the skin or the eyes.

Always wear protective glasses when you work on batteries.



HAAE1980

Figure 34

Welding Repairs



When you connect or disconnect connectors between ECU and Engine or connector between ECU and the machine, always disconnect the source power to protect damage of the ECU.

If you don't observe this procedure, the ECU would be damaged or the engine would operate abnormally.

When carrying out welding repairs, carry out the welding in a properly equipped place. The welding should be performed by a qualified worker. During welding operations, there is the danger of, generation of gas, fire, or electric shock, so never let an unqualified worker do welding.

Specifications

Reference Number	Description
1	Counterweight
2	Hood
3	Muffler
4	Hydraulic Oil Tank
5	Fuel Tank
6	Engine
7	Fuel Tank Fill Cap
8	Radiator and Oil Cooler
9	Control Valves
10	Swing Motor
11	Precleaner
12	Air Cleaner
13	Swing Bearing
14	Cabin
15	Seat
16	Boom Cylinder
17	Work Lever (Joystick) Controls
18	Arm Cylinder
19	Boom
20	Travel Lever

Reference Number	Description
21	Arm
22	Bucket Cylinder
23	Guide Link
24	Bucket
25	Push Link
26	Tooth Point
27	Side Cutter
28	Idler
29	Track Adjuster
30	Track Guide
31	Battery
32	Lower Roller
33	Center Joint
34	Upper Roller
35	Sprocket
36	Travel Motor
37	Track Link and Shoe
38	Suction Filter
39	Return Filter
40	Pumps

Material	Low Weight or Density 1,100 kg/m³ (1,850 lb/yd³), or Less	Medium Weight or Density 1,600 kg/m³ (2,700 lb/yd³), or Less	High Weight or Density 2,000 kg/m³ (3,370 lb/yd³), or Less
Earth, WET, muddy	-----	-----	1,762 kg/m ³ (2,970 lb/yd ³)
Gypsum, calcined, (heated, powder)	961 kg/m ³ (1,620 lb/yd ³)	-----	-----
Gypsum, crushed to 3 inch size	-----	1,522 kg/m ³ (2,565 lb/yd ³)	-----
Gravel, DRY, packed fragments	-----	-----	1,810 kg/m ³ (3,051 lb/yd ³)
Gravel, WET, packed fragments	-----	-----	1,922 kg/m ³ (3,240 lb/yd ³)
Limestone, graded above 2	-----	1,282 kg/m ³ (2,160 lb/yd ³)	-----
Limestone, graded 1-1/2 or 2	-----	1,362 kg/m ³ (2,295 lb/yd ³)	-----
Limestone, crushed	-----	1,522 kg/m ³ (2,565 lb/yd ³)	-----
Limestone, fine	-----	-----	1,602 kg/m ³ (2,705 lb/yd ³)
Phosphate, rock	-----	1,282 kg/m ³ (2,160 lb/yd ³)	-----
Salt	929 kg/m ³ (1,566 lb/yd ³)	-----	-----
Snow, light density	529 kg/m ³ (891 lb/yd ³)	-----	-----
Sand, DRY, loose	-----	1,522 kg/m ³ (2,565 lb/yd ³)	-----
Sand, WET, packed	-----	-----	1,922 kg/m ³ (3,240 lb/yd ³)
Shale, broken	-----	1,362 kg/m ³ (2,295 lb/yd ³)	-----
Sulphur, broken	529 kg/m ³ (1,620 lb/yd ³)	-----	-----

General Maintenance Procedures

Edition 1

Oil Leakage Precautions

Oil that is visibly seeping from joints or seals should always serve as a "red flag" alarm.

Leaks must alert the machine operator and maintenance crew that air, water and dirt have an open, free passageway through which to enter the circuit. Harsh, corrosive salt air, freezing and thawing condensation cycles and working environments that are full of fine dust are especially hazardous. Clogging of valve spools or external piping (especially pilot circuit piping) can gradually diminish or very suddenly put a complete stop to normal hydraulic function. You can prevent having to make these types of repairs by following recommended assembly procedures:

1. Use new O-rings and oil seals whenever hydraulic assemblies are rebuilt.
2. Prepare joint surfaces before assembly by checking alignment and flatness. Clean and repair corrosion or any other damage.
3. Follow bolt torque recommendations and all other assembly requirements.

NOTE: *Grease lip seals before assembly.*

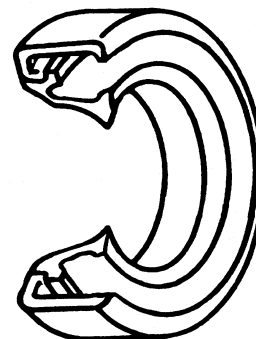


Figure 1

0565A

Standard Torques

Edition 1

TORQUE VALUES FOR SPLIT FLANGES

The following chart provides the tightening torques for split flange connections used in hydraulic systems. Split flanges and fitting shoulders should fit squarely. Install all bolts, finger tight and then torque evenly.

NOTE: *Over torquing bolts will damage the flanges and/or bolts, which may cause leakage.*

Flange Size (*)	Bolt Size	Bolt Torque	
		Kilogram Meter (kg•m)	Foot Pounds (ft lb)
1/2"	5/16"	2.1 - 2.5	15 - 18
3/4"	3/8"	3.0 - 3.7	22 - 27
1"	3/8"	3.7 - 4.8	27 - 35
1 - 1/4"	7/16"	4.8 - 6.2	35 - 45
1 - 1/2"	1/2"	6.4 - 8.0	46 - 58
2"	1/2"	7.6 - 9.0	55 - 65
2 - 1/2"	1/2"	10.9 - 12.6	79 - 91
3"	5/8"	19.1 - 20.7	138 - 150
3 - 1/2"	5/8"	16.2 - 18.4	117 - 133

(*) - Inside diameter of flange on end of hydraulic tube or hose fitting.

NOTE: *Values stated in chart are for Standard Pressure Series (Code 61) Split Flanges.*

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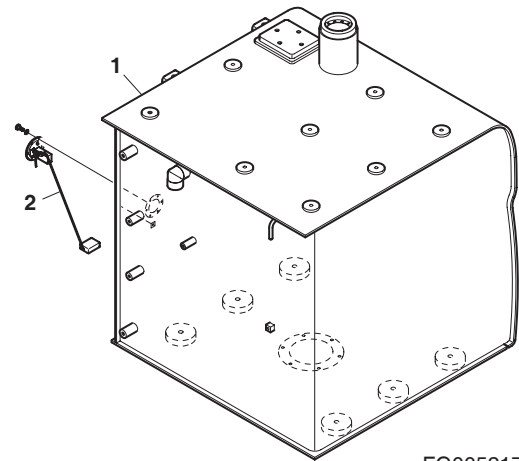
Counterweight

Edition 1

Fuel Tank

Edition 1

19. Tag and disconnect wires leading to fuel sender (2, Figure 11) on side of fuel tank (1).



FG005217

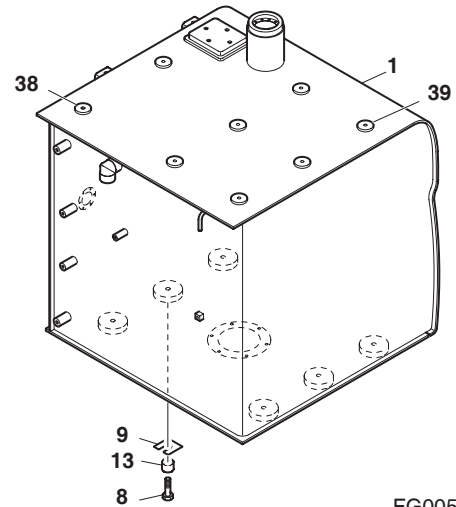
Figure 11

20. Install two 12 mm eyebolts in threaded holes (38 and 39, Figure 12). Using a suitable lifting device, sling eyebolts.
21. Remove six bolts (8) and spacers (13, Figure 12) holding tank (1) to frame. Lift tank 25 mm (1") and make sure it is balanced. Make sure that there are no other electrical wires or hoses connected to tank. Completely remove tank after inspection.

NOTE: *The clear level gauge on the side of the tank is easily damaged. Be careful of obstacles and wind gusts.*

22. Remove shims (9, Figure 12).

NOTE: *If tank is to be reused note position and amount of shims used for each mounting bolt location.*



FG005218

Figure 12

SAFETY PRECAUTIONS



CAUTION

Follow all safety recommendations and safe shop practices outlined in the front of this manual or those contained within this section.

Always use tools and equipment that are in good working order.

Use lifting and hoisting equipment capable of safely handling load.

Remember, that ultimately safety is your own personal responsibility.

APPLICABLE MODELS

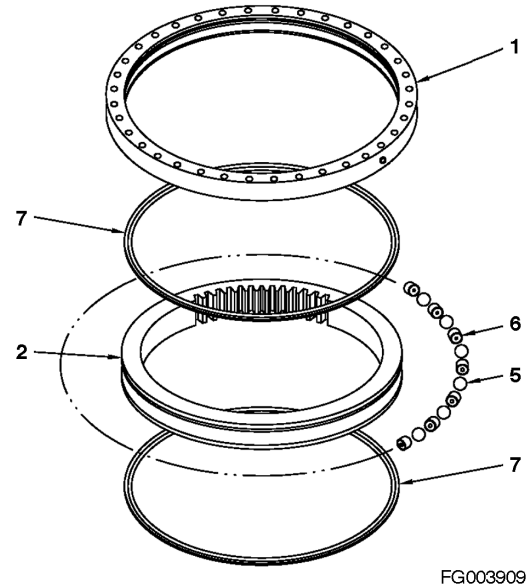
The contents of this section apply to the following models and serial number ranges.

MODEL	SERIAL NUMBER RANGE
DX300LC	7440 and Up
DX340LC	5980 and Up
DX350LC	5980 and Up
DX420LC	5327 and Up
DX480LC	5221 and Up
DX520LC	5117 and Up

Swing Bearing Basic Operation

The swing bearing, which connects the upper structure with the lower structure, consists of an inner ring, outer ring and ball bearings. During swing movement, power from the swing motor is transferred to the pinion by planetary gears connected to gears on the inner ring, which is fixed in the undercarriage. Ball bearings turn the outer ring.

Reference Number	Description
1	Outer Ring
2	Inner Ring
3	Tapered Pin
4	Plug
5	Ball
6	Retainer
7	Seal A

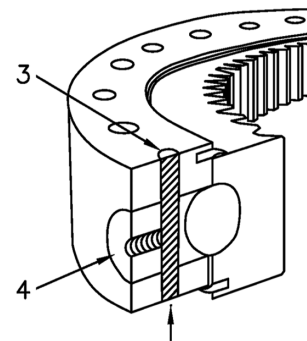


FG003909

Figure 2

Disassembly

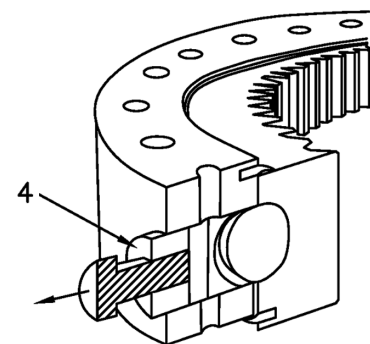
1. Remove tip of tapered pin (3, Figure 3) using grinder and tap lightly to remove debris.



FG003884

Figure 3

2. Remove plug (4, Figure 4) using a M10 x 1.5 bolt.



FG003885

Figure 4

GENERAL DESCRIPTION

Theory of Operation

The swing reduction gearbox is a two-step planetary gearbox with three planet gears, one sun gear and 2-step output reduction. The planetary gear engages with the ring gear. The pinion gear is connected with the output shaft and spline.

The gearbox reduces swing motor rpm to increase swing motor output torque. The available maximum swing speed provides a fast turning rate for efficient, rapid work cycling with more than adequate power for good acceleration.

ASSEMBLY

Shaft and S/R Bearing Shrinkage Fitting

1. Washing of the shaft
Remove liquid like anti-corrosion liquid on the shaft and then use an air gun to remove all of remaining foreign substance.
2. Insert the spacer in the prepared shaft as shown in the figure below and put and heat the bearing on the specified heater.



Figure 15



Figure 16

Assembly of Main Case

Washing of the Casing and Other Components

Use supersonic waves to wash out foreign substance remaining on the casing and other components mentioned in the Parts List after casting and processes.

- Cleaning fluid: PK6540 (alkali)
- Liquid density: 3 - 5%
- Liquid temperature: 60° - 70°C (140° - 158°F)

Assembly of the Shaft and the Pinion

1. Press fitting of the shaft subassembly

Put the washed casing as shown in the figure below and use a hoist to put shaft subassembly in the area to be inserted. Bearing kept horizontal, put the specific jig to insert it into the press table, and use a press to fit it into the casing.



Figure 45



Figure 46



Figure 47

2. Apply liquid gasket (Three Bond 1104) to the area where the ring gear of the casing is assembled.

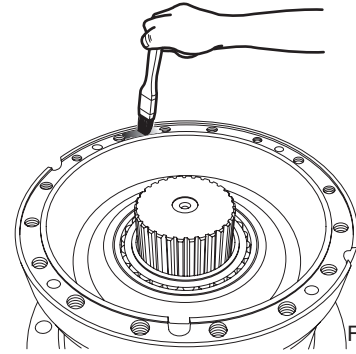


Figure 83

FG000938

3. Use a hoist to lift the prepared ring gear, wipe the assembled part with a cloth, put it on the hole considering its assembly direction, tighten specific bolts (M16 x 160), to which Loctite is not applied, in the symmetrical order, and be sure that the assembled parts are pressed each other completely.

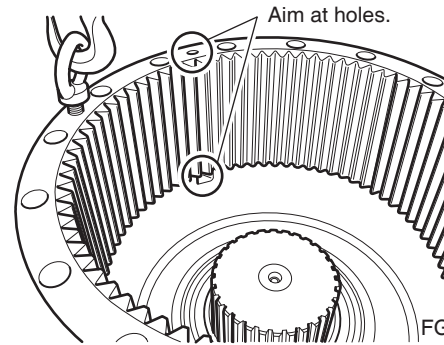


Figure 84

FG001353

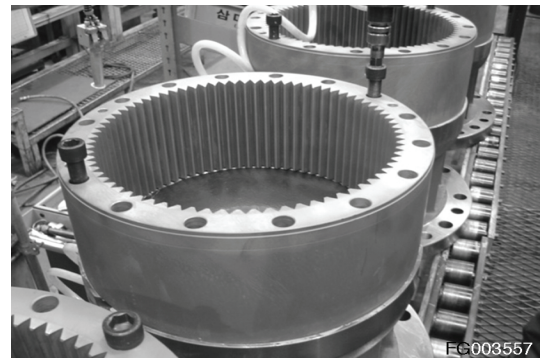


Figure 85

FC003557

- Engage bolts (M16x40, torque: 2,700 kgf•cm) applied Loctite using a L wrench, check the standard torque using a torque wrench, and mark using a paint marker.

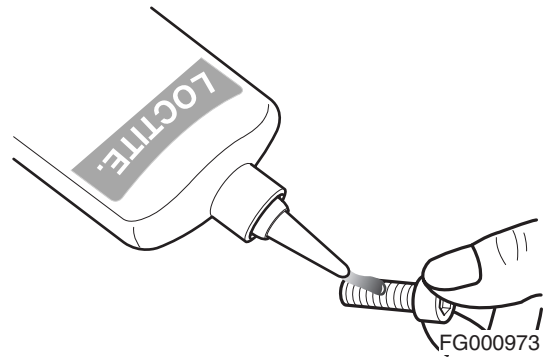


Figure 114



Figure 115



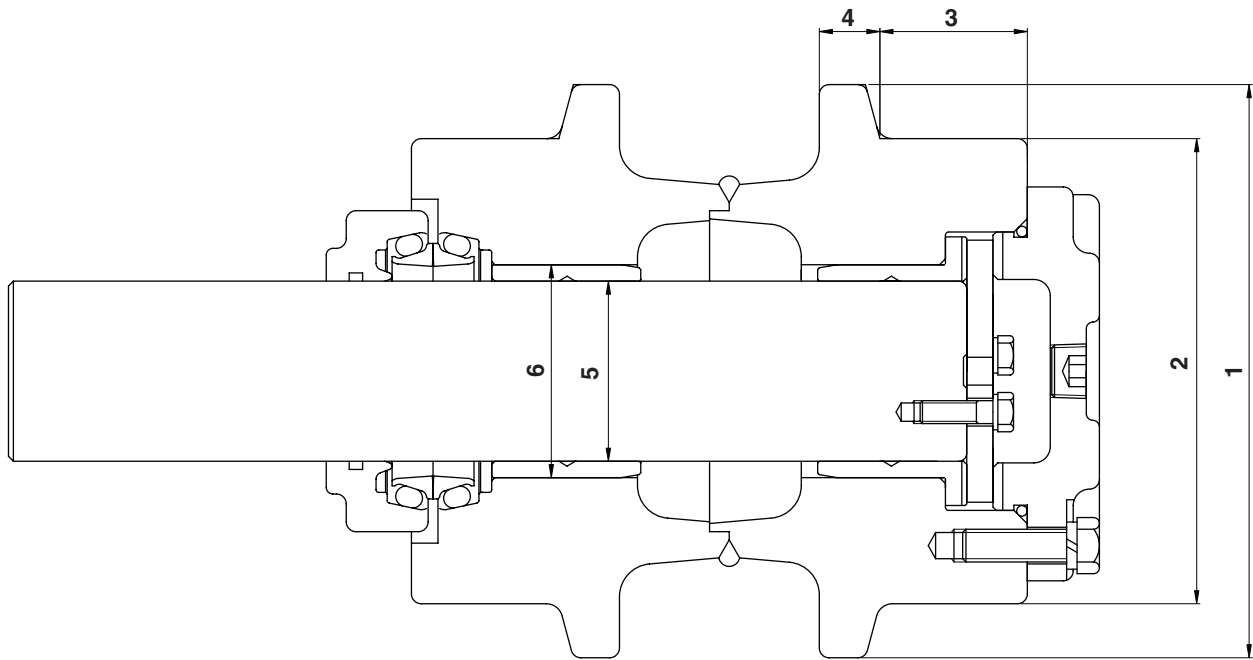
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Upper Roller



FG000509

Figure 6

No.	Check Item	Standard Dimension	Recommended Limit for Maintenance		Limit for Use (Repair - P or Replace - R)	
1	Outside Diameter of flange	175 mm (6.890")				
2	Outside Diameter of Tread	142 mm (5.591")	135 mm (5.315")		130 mm [P] (5.118")	
3	Width of Tread	45 mm (1.772")	52 mm (2.047")		54 mm [P] (2.126")	
4	Width of Flange	18.5 mm (0.728")				
5	Clearance between shaft and bushing	Standard Dimension	Tolerance		Standard Interference	Repair Limit
		55 mm (2.165")	Shaft -0.01 -0.03	Hole +0.37 +0.33	0.34 - 0.40	
6	Interference between roller and bushing	Standard Dimension	Tolerance		Standard Interference	Repair Limit
		65 mm (2.559")	+0.125 +0.090	+0.030 0.0	0.06 - 0.125	

Reference Number	Description
1	Roller
2	Collar
3	Shaft
4	Bushing

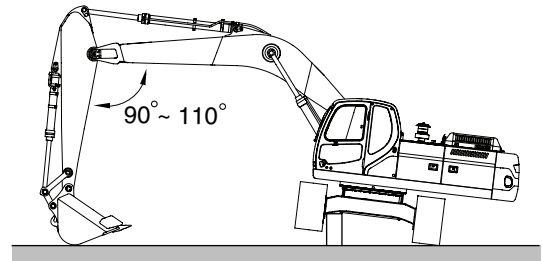
Reference Number	Description
5	Pin
6	Floating Seal
7	O-ring
8	Plug

Lower Roller Removal

1. Relieve track tension. Refer to "Track Tension" in this section for procedure.
2. Swing upper structure at 90° to frame.
3. Using bucket raise track off ground and place blocking under frame.
4. Remove four bolts and lower roller assembly from track frame. There is an alignment pin on each end of lower roller assembly.

NOTE: To gain access to some rollers the link guard may have to be removed. Remove four spring washers and bolts to remove guard.

NOTE: If additional track clearance is required, remove upper rollers before raising track.

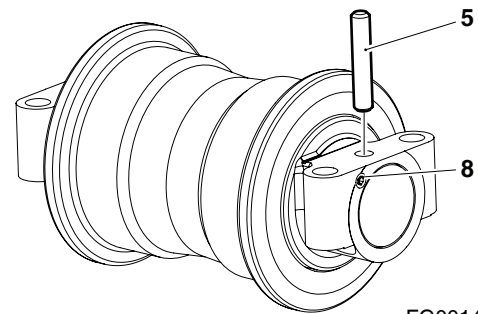


FG000345

Figure 25

Lower Roller Disassembly

1. Remove plug (8, Figure 26) from the collar and drain oil.
2. Pull the pin (5, Figure 26) from the collar.



FG001489

Figure 26

Drive Coupling (Main Pump)

Edition 1

Hydraulic System Troubleshooting, Testing and Adjustment

Edition 1

Bucket Operating Circuit

The bucket operating circuit includes the left main pump, the left half of the control valve and the bucket cylinder. 360 kg/cm² (5,112 psi) overload relief valves at BKT and BKTD 1 ports of the control valve protect the circuit and its components from being damaged.

Bucket Crowd Circuit

When the bucket control lever is placed in the crowd position, the bucket control valve spool on the left side of the control valve opens and oil from left main pump flows to the bucket cylinder.

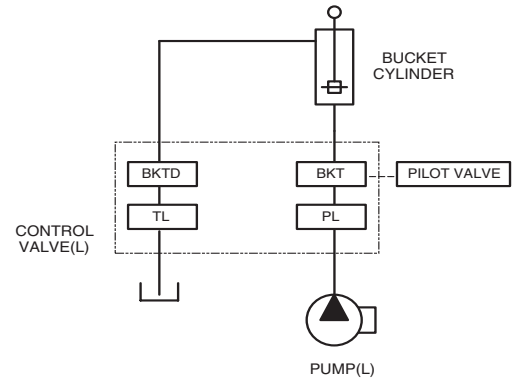


Figure 6

Bucket Dump Circuit

When the bucket control lever is put in the dump mode, the bucket control valve spool in the left half of the control valve opens to supply oil from the left main pump to the cylinder.

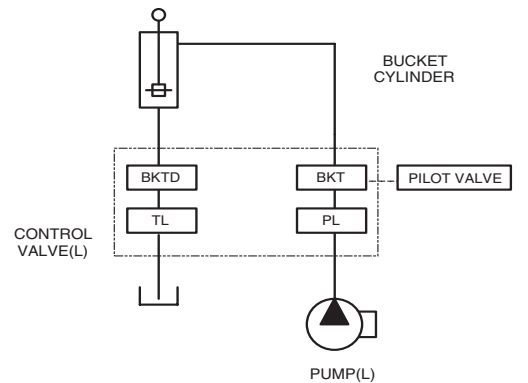


Figure 7

Swing Operating Circuit

The swing operating circuit consists of the right main pump in the pump assembly, the right half of the control valve and the swing motor. To keep the upper works from coasting when the swing control is in neutral, an electrical sensor in the control circuit activates a valve to automatically engage a mechanical brake.

To check pump imbalance without a flow meter, travel the excavator forward on flat, level terrain. If the machine veers off despite neutral control input and even, balanced track adjustment, the pump which supplies output to the track frame toward which the excavator is veering is weak.

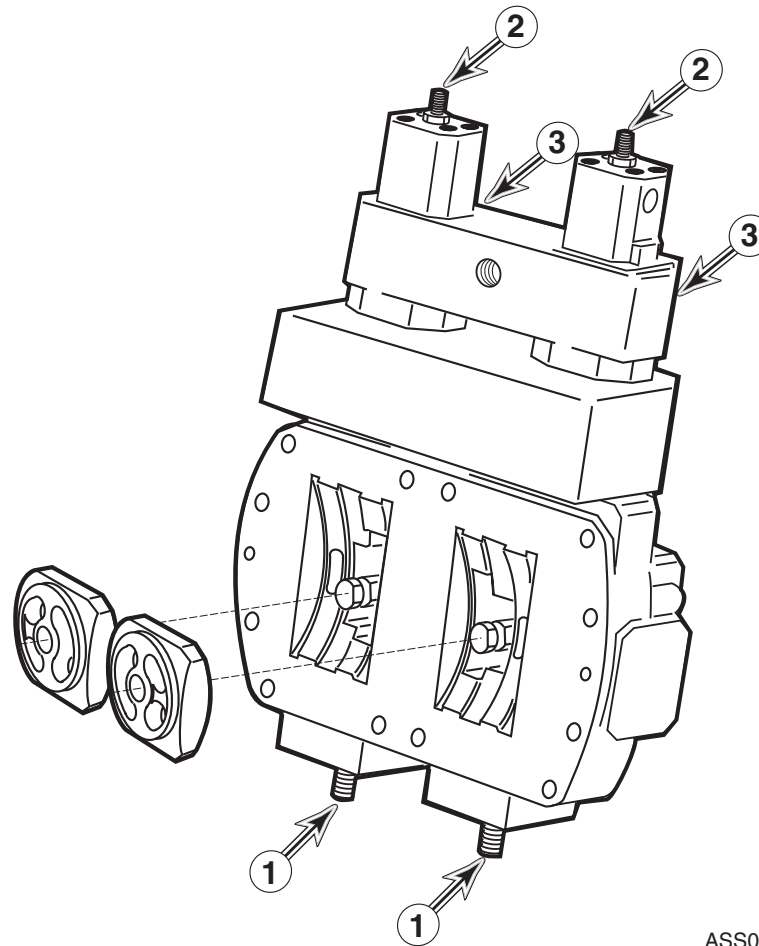


Figure 12

Refer to the illustration of the pump regulator control valve (Figure 12) for the location of adjustment screws (1, 2 and 3). There are two different adjustments, along with the Negacon, negative control, adjustment screw (3, directly below 1 and 2). Each one of the adjustment procedures could affect the setting of the others.

Check and record the arm dump speed performance test before and after input power adjustment, whether or not a flow meter is used.

NOTE: *Regulator adjustments affect total cumulative horsepower, since each regulator compensates for the output of the other. It is not necessary to adjust both regulators at the same time, but after checking or adjusting one of them, the remaining unit should also be checked.*

TROUBLESHOOTING – CONTROL VALVE

Check control valve problems only after other hydraulic circuit operational tests have been made. Refer to the "Troubleshooting Baseline Recommendations" procedure. Pump flow, pilot pressure, Negacon pressure, main relief pressure, and port relief pressure should all be checked before starting to work on the control valve. Make sure the hydraulic system is topped up to the required level and free of oil leaks or air in the system that could cause cavitation problems.

Problem	Possible Cause	Remedy
Main relief valve.	Particulate contamination.	Disassemble, clean main poppet.
	Broken or damaged spring.	Replace.
	Adjusting screw loose.	Readjust.
	Main poppet sticking.	Repair/replace.
	Clogged orifice in pilot passage to control valve.	Clean/replace.
Cylinder goes down in spool neutral.	Excessive clearance between casing and spool.	Replace spool or casing.
	Spool does not return to neutral/sticking spool.	Check secondary pilot pressure.
	Spool does not return to neutral because of dirt or other contaminants.	Clean.
	Broken or damaged spring.	Replace.
	Main relief or port relief not operating properly.	See above.
	Impurities in pilot circuit.	Clean.
Cylinder drops before start at boom up operation.	Rod check valve damaged or clogged.	Clean/replace.
	Poppet sticking.	Clean/replace.
	Broken or damaged spring.	Replace.
Slow operation or response.	Excessive clearance between spool or casing.	Check pilot pressure and/or replace spool or casing.
	Sticking spool.	Clean/replace.
	Broken or damaged spring.	Replace.
	Main or port relief valve damaged.	Check pressure/replace.
Boom and arm cylinders do not perform normally in combined operation.	Priority valve faulty or spool sticking.	Check pilot pressure.
	Broken or deformed spring.	Replace.
	Excess clearance between right and left casing and valve spool.	Clean/replace.
	Clogged spool passage.	Clean/replace, replace filter.
Relief valve malfunctions:		
Pressure does not increase at all.	Main poppet or pilot poppet stuck open.	Clean/replace.
Irregular or uneven pressure.	Poppet seat damaged or pilot piston sticking to main poppet.	Clean/replace.
	Loose lock nut and adjusting screw.	Readjust.
	Components worn out, past wear limits.	Replace.

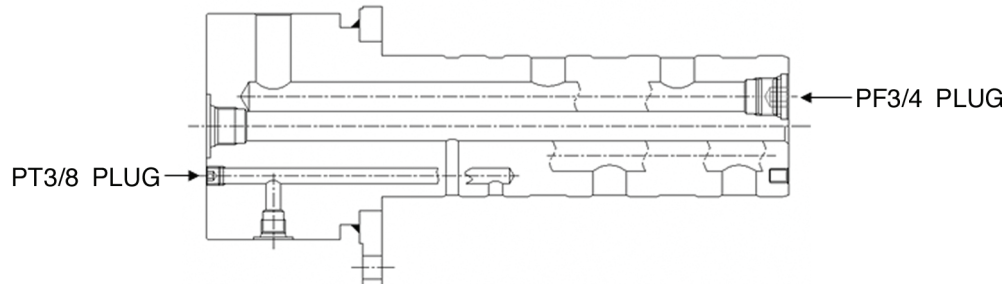
Center Joint (Swivel)

Edition 1

REASSEMBLY

CAUTION

Apply active oil to every functional (moving) part before assembly to reduce any assembly friction as much as possible.



FG004462

Figure 7

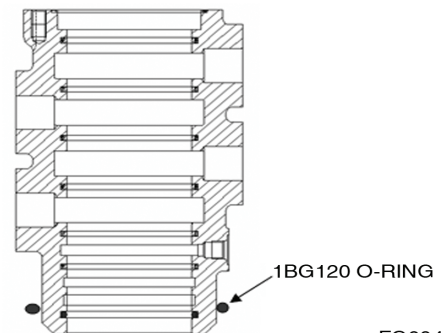
1. Wrap the Teflon tape around the PT3/8 about 6 times.
2. Assemble the PT and PF plugs into the washed shaft.

Internal sealing PF3/4: 12 mm wrench	External sealing PT3/8: 8 mm wrench
Engagement torque: 15 ± 1.09 Kg m	Engagement torque: 4.5 ~ 9.5 kg m

3. Assemble the sliper seal, the wear ring, and the O-ring into the body.
4. Assemble the 1AP - 120 O-ring the outside of the body.

CAUTION

After assembling the sliper seal, a manual test should be performed to ensure that every part is assembled for its position properly.



FG004458

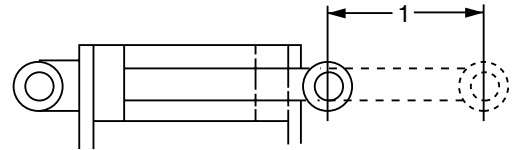
Figure 8

Because the volume of oil needed to lengthen the cylinder rod (Q1) is greater than the volume of oil required to retract the cylinder rod, it takes more time to extend a cylinder than it does to retract it.

$$Q_1 = S \times \frac{\pi(D^2)}{4}$$

$$Q_2 = S \times \frac{\pi(D^2 - R^2)}{4}$$

$$Q_1 > Q_2$$



FG001459

Figure 3

MODEL	CYLINDER	$\phi A_{-0.3}^{-0.2}$	$\phi B_{-0.3}^{-0.2}$	$C_{-0.1}^0$	D	MODEL (CYLINDER)
DX300LC	BOOM	95.0 mm (3.74 in)	109.0 mm (4.29 in)	6.0 mm (0.24 in)	7.0 mm (2.28 in)	
	ARM	105.0 mm (4.13 in)	121.0 mm (4.76 in)	6.0 mm (0.24 in)	7.0 mm (2.28 in)	S/ARM
	BUCKET	90.0 mm (3.54 in)	104.0 mm (4.10 in)	6.0 mm (0.24 in)	7.0 mm (2.28 in)	S/BUCKET
DX340LC/ DX350LC	BOOM	100.0 mm (3.94 in)	114.0 mm (4.49 in)	6.0 mm (0.24 in)	7.0 mm (2.28 in)	OPT BOOM
	ARM	115.0 mm (4.53 in)	131.0 mm (5.16 in)	6.0 mm (0.24 in)	7.0 mm (2.28 in)	OPT ARM
	BUCKET	100.0 mm (3.94 in)	114.0 mm (4.49 in)	6.0 mm (0.24 in)	7.0 mm (2.28 in)	OPT BUCKET
DX420LC	BOOM	115.0 mm (4.53 in)	131.0 mm (5.16 in)	6.0 mm (0.24 in)	7.0 mm (2.28 in)	
	ARM	120.0 mm (4.72 in)	136.0 mm (5.35 in)	6.0 mm (0.24 in)	7.0 mm (2.28 in)	
	BUCKET	110.0 mm (4.33 in)	126.0 mm (4.96 in)	6.0 mm (0.24 in)	7.0 mm (2.28 in)	

REASSEMBLY

IMPORTANT

Replace any part that shows evidence of damage or excessive wear. Replacement of all O-rings and flexible seals is strongly recommended. Before starting the cylinder reassembly procedure, all parts should be thoroughly cleaned and dried, and/or prelubricated with clean hydraulic fluid. Prepare the work area beforehand to maintain cleanliness during the reassembly procedure.

NOTE: Reassemble the subassemblies of the cylinder in the following order:

1. Body of the cylinder.
2. Piston rod.
3. Piston assembly.
4. Cylinder head assembly.

1. Reassemble pin bushing (1) to piston rod (13) and body of cylinder (14).
2. Following reassembly of rod cover components, install the dust wiper (2) and rod bushing (6) to the rod cover (9). Insert retaining rings (3 and 8).

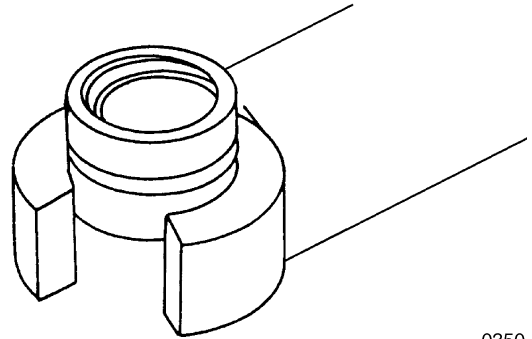


Figure 29

0350

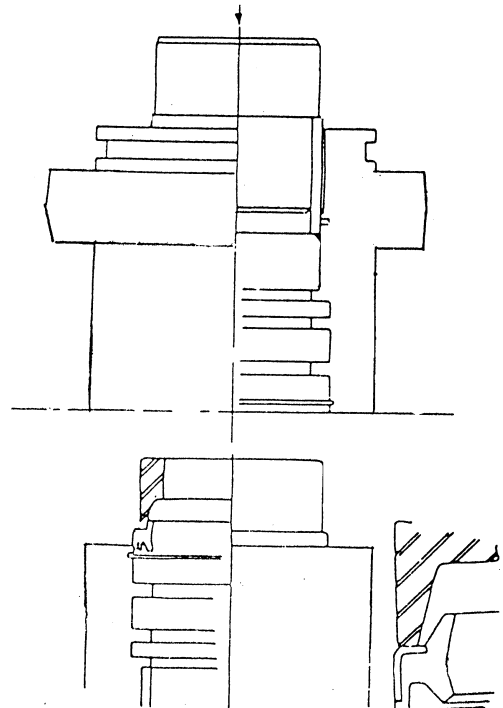


Figure 30

HAOF440S

Generation of Rotary Power

High-pressure oil from hydraulic pump flows into the cylinder (9) through the valve casing (1) and the valve plate (20). The motor is designed to only let high-pressure oil to flow into one side with relationship to Y-Y axis (the centerline of top and bottom dead centers of piston (14)).

As shown in the Figure 2, the high-pressure oil acts on the piston to generate $F1 = P \cdot A$ (P: supply pressure, A: hydraulic area). F1 is divided into a N1 thrust component and a W1 radial component in relationship to the swash plate with slope of ϕ . W1 generates a torque $T = W1 \cdot R1$ in relationship to Y-Y, the centerline of top and bottom dead centers of the piston. This torque generates the rotary power through a resultant force ($\Sigma W1 \cdot R1$) occurring at (4-5) hydraulic pistons by the high-pressure oil. Rotary power and torque, is transferred through the pistons and cylinder (9) via spline to the drive shaft.

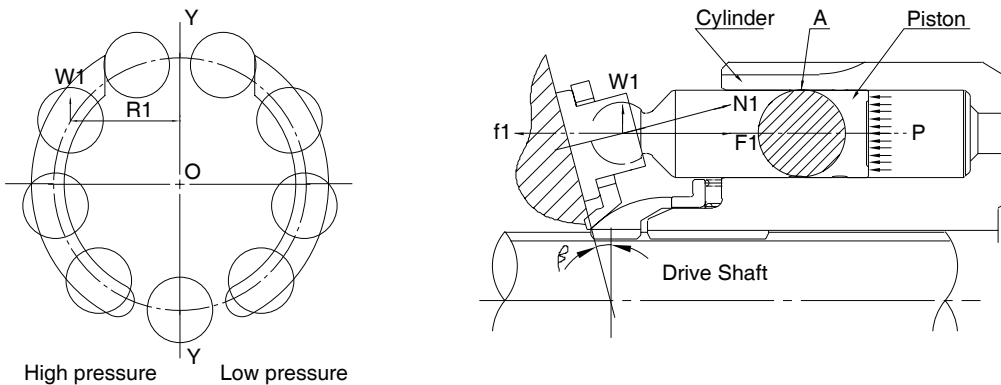


Figure 2

FG005170

2. Use a hexagonal wrench to remove the wrench bolts (24, 25) and disassemble the rear cover (23) assembly from the body (1).

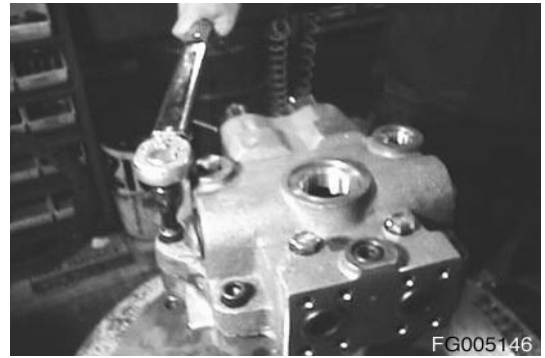


Figure 12

3. Disassemble the spring (19) to remove the break piston (17) and disassemble it from the body (1) using a jig.

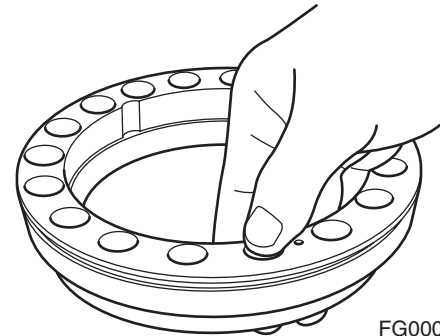


Figure 13

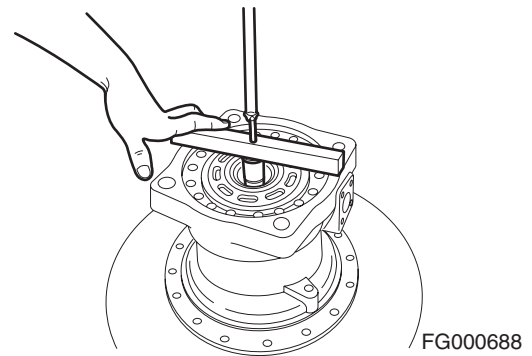


Figure 14

4. Remove cylinder block assembly, friction plate (15), and plate (16) from body (1).

NOTE: Pay attention to order of plates and friction plates.

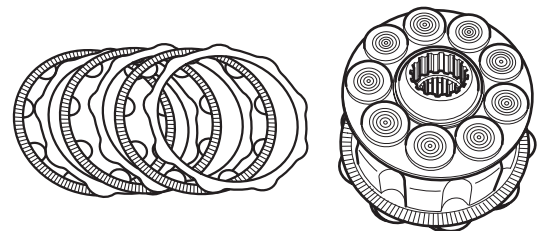


Figure 15

8. Insert ball guide seat (11) and ball guide (12) in cylinder block (9).

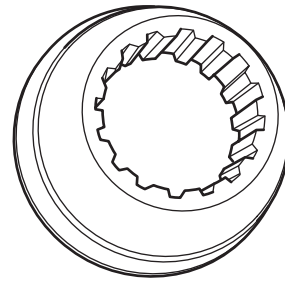


Figure 48

FG000728

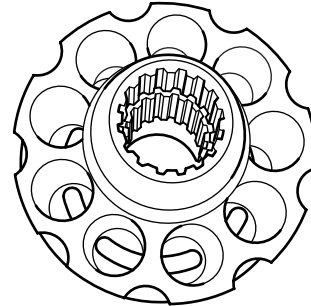


Figure 49

FG000729

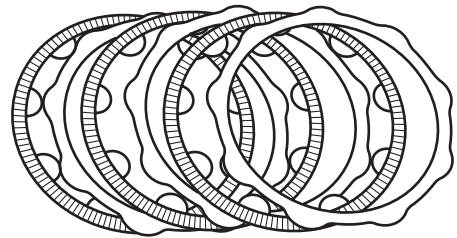


Figure 50

FG000759

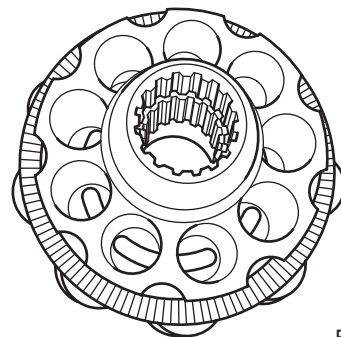


Figure 51

FG000730

Travel Motor

Edition 1

CLICK HERE TO **DOWNLOAD** THE COMPLETE MANUAL

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Reduction Gear Part

Tool name	B Dimension	Applying part name
Hex L-wrench	4 mm	Socket Screw (054)
	84 mm	Socket Bolt (030)
	10 mm	Plug (032)
	14 mm	Socket Bolt (029)
Pliers (For shaft)		Snap Ring (044, 037)
Eye Bolt (M8)		Ring Gear (001)
Eye Bolt (M10)		No. 2 Carrier (006)
Eye Bolt (M16)		Housing (002)
Eye Bolt (M20)		Shaft Casing (272)
Hammer, Plastic hammer		Also wood hammer is possible
Driver (-)		Jig for assembling of floating seal
Press (1 ton)		Angular Bearing (033)
Depth Gauge (100 mm in depth)		For adjusting washer (053)
Punch		Spring Pin, set screw caulking
Torque Wrench		
Tap (M16)		For removing LOCTITE from threaded part
Oilstone		Finish
Loctite (Three Bond 1373B)		Set Screw (054)
Loctite		Socket Bolt (029)
Jig for Assembling Nut Rings		Nut ring (047)

12. Remove side plate (020), No. 3 planetary gear (014), needle cage (023), and floating bush (025) from shaft casing (272).



Figure 24

13. Remove set screw (054) from nut ring (047). Remove nut ring (047) from shaft casing (272).



Figure 25

NOTE: After disconnecting nut ring from set screw, blow set screw assembly part to remove foreign materials and then disassemble nut ring by using jig for disassembling it.



Figure 26

14. Remove housing (002), angular bearing (033), and floating seal (034) from shaft casing (272).

NOTE: Attach two M16 eyebolts and use a crane to lift it.



Figure 27

REASSEMBLY

General Caution Matters

1. Clean each part with clean oil and then dry it with compressed air. Do not use an oil cloth, but if it is necessary to use one, be sure to use a clean one and use care that dust or dirt does not collect on it.
2. Use a torque wrench when tightening each bolt and plug. Apply tightening torque as shown in "Tightening Torque Chart" on page 1-22.
3. If it is necessary to use a hammer, etc., use a plastic hammer to gently tap work piece into position.
4. Numbers in () behind part name indicate part indication No. on assembly cross section diagram.

Hydraulic Motor Part

Reassembling of Drive Shaft Subassembly

1. Press roller bearing (102) onto drive shaft (101). Install snap ring (107).

NOTE: *Heat-fit roller bearing.*

NOTE: *Do not damage sliding part of oil seal of drive shaft. Use care that snap ring is properly seated into groove.*



Figure 54

Assembly of Valve Casing Subassembly

1. Tighten plugs (461, 564) to valve casing (303) to specified torque.

NOTE: *Tightening torque*

Plug (461) : 90kgf•cm

Plug (564) : 220kgf•cm



Figure 55

8. Install thrust ring (027) on shaft casing (272).

NOTE: Use care to assembly direction for thrust ring (Guide groove should face up.).



Figure 91

9. Install needle cage (023) inside No. 3 planetary gear (014) and assemble side plate (020) on both sides, then insert gear assembly into shaft casing.

NOTE: Align pin hole of shaft casing with center of planetary gear.



Figure 92

10. Insert No. 3 pin (017) into shaft casing. Install snap ring (037).



Figure 93

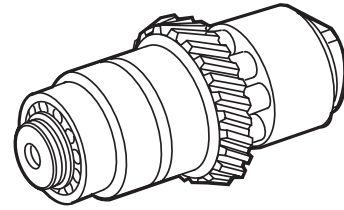


Figure 94

Main Pump

Edition 1

- Rotary group 2, ready to install.

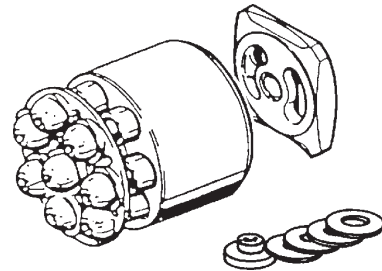


ASS0100L

Figure 11

- Rotary group, hydraulic component (order rotary groups 1 and 2 separately).

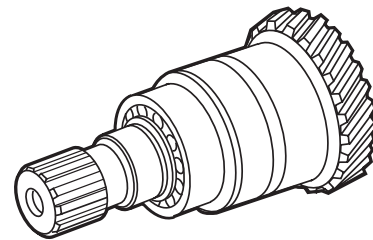
NOTE: *Adjustment is necessary. Pay attention to direction of rotation.*



ASS0110L

Figure 12

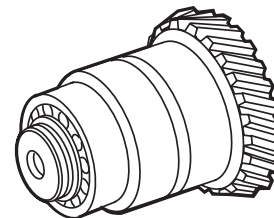
- Rotary group 1, mechanical section, ready to install.



ASS0120L

Figure 13

- Rotary group 2, mechanical section, ready to install.



ASS0130L

Figure 14

NOTE: Before carrying out setting or disassembly of regulator, measure distance "X" of adjustment screw and record value.

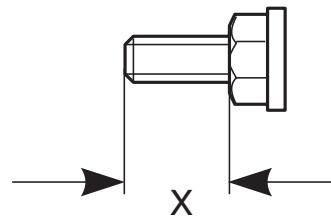
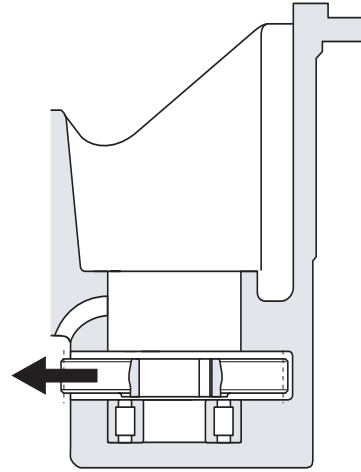


Figure 34

ASS0330L

3. Remove gear wheel through side drive opening.

I

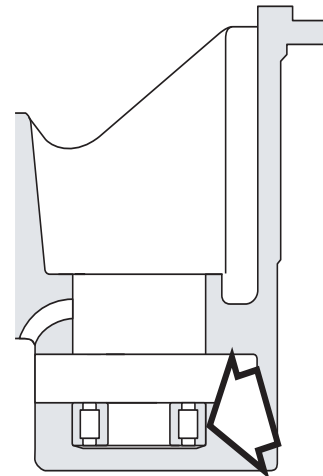


ASS0540L

Figure 55

4. Remove bearing with extraction device.

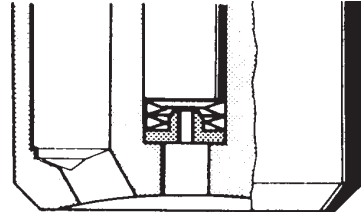
I



ASS0550L

Figure 56

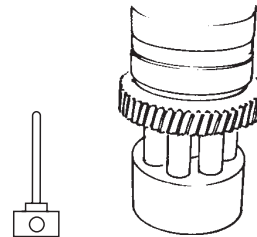
4. Ensure that all parts are assembled in correct order and orientation.



ASS0810L

Figure 82

5. Insert pistons into cylinder. Using a soft surface as a support to prevent sliding surfaces from being damaged. Pre-assemble both rotary groups in this manor.



ASS0820L

Figure 83

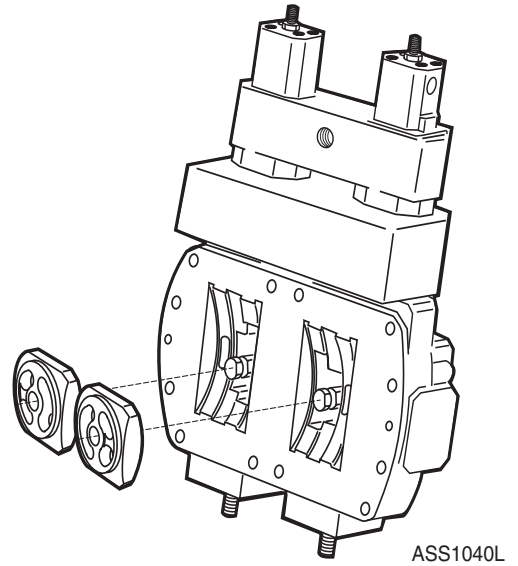


Figure 105

- 5. Install seal and controller.

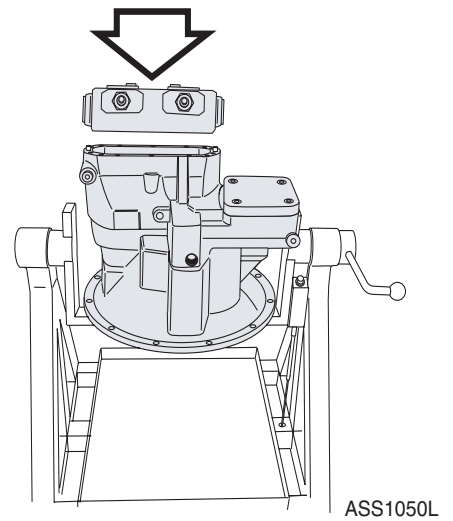


Figure 106

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Main Control Valve

Edition 1

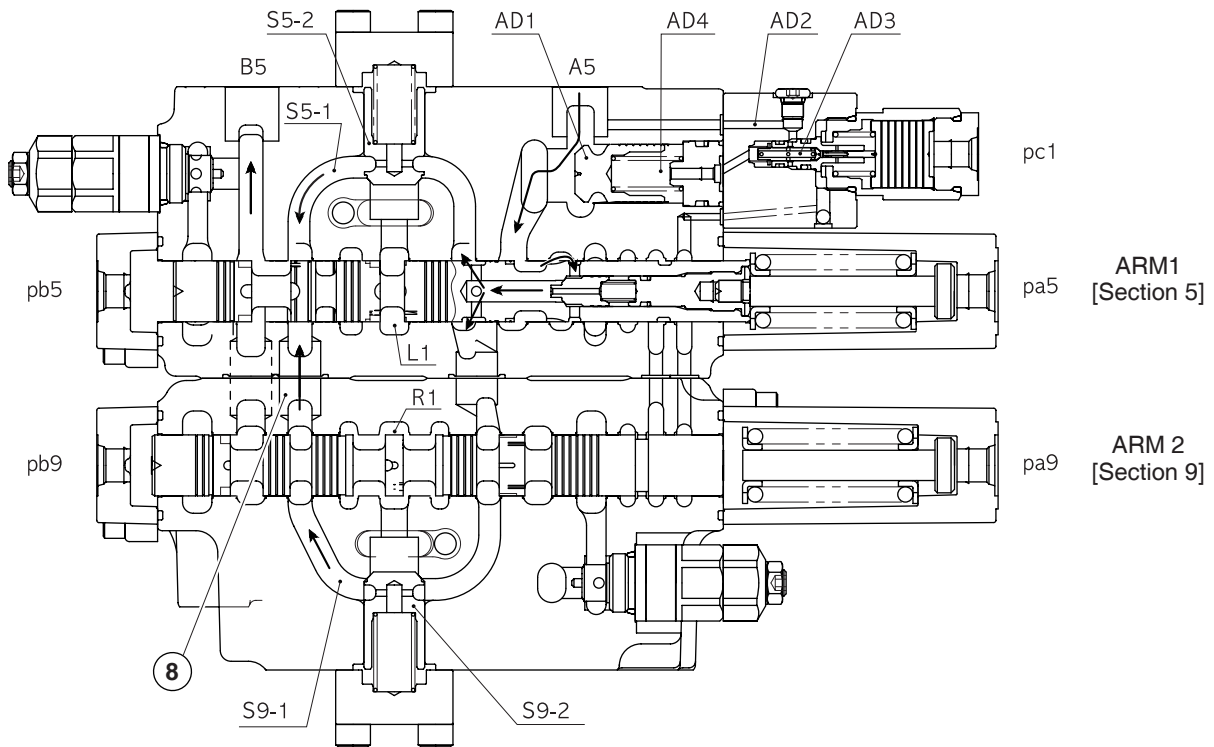
2. Arm in

A. 2-pump confluence

When arm 1 spool is shifted by increasing pressure of arm 1 (Section 5) pilot port (Pb5), oil supplied to port (P1) flows through neutral passage (L1), load check valve (S5-2), passage (S5-1) and spool into port (B5).

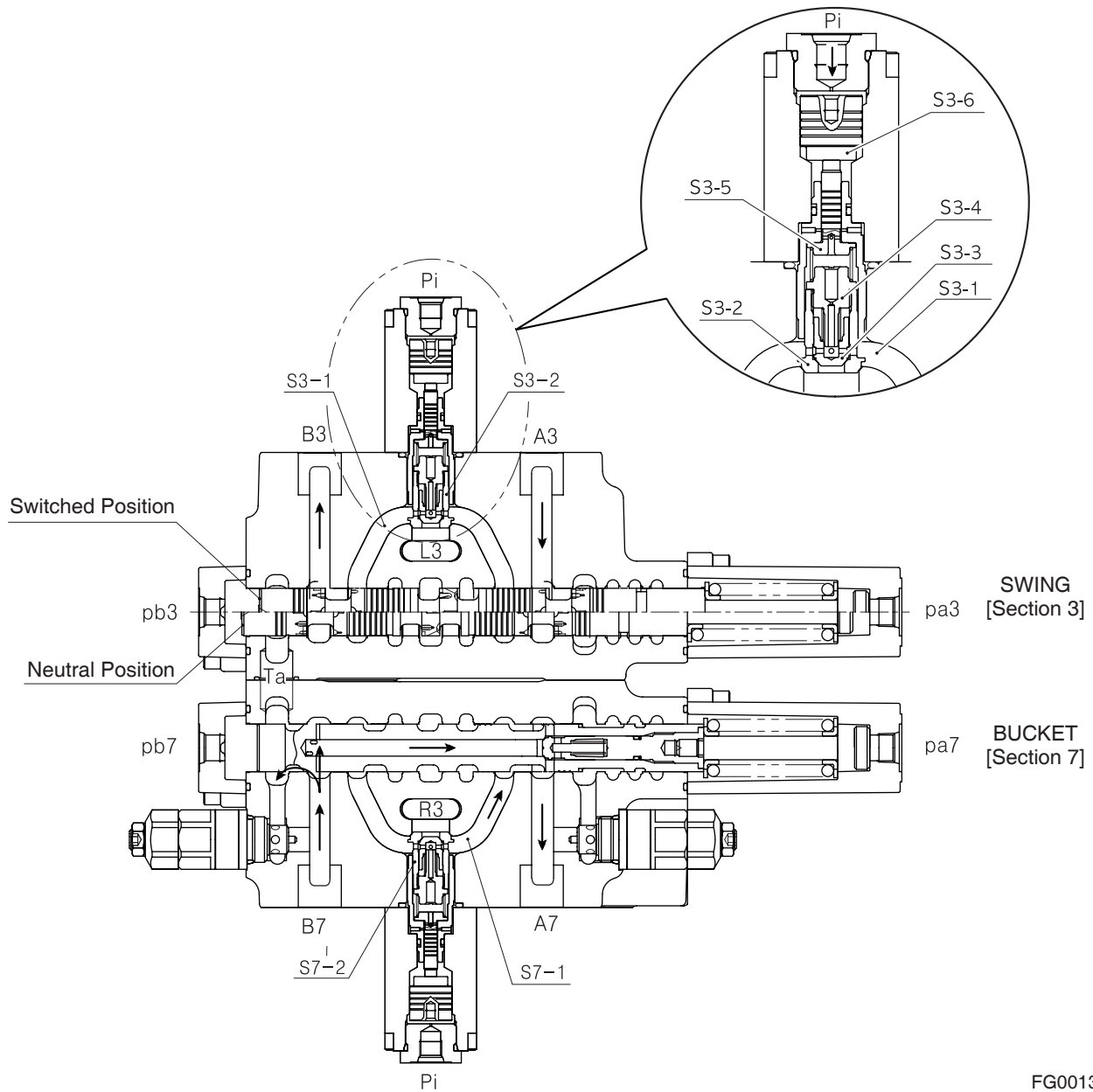
When arm 2 spool is shifted by increasing pressure of arm 2 (Section 9) pilot port (pb9), oil supplied to port (P2) flows through neutral passage (R1), load check valve (S9-1), passage (S9-2), and spool to passage (8) and joins at port (B5).

The return oil from port (B5) flows through regeneration check valve in spool, and then flows to port B to regenerate, and some oil returns through variable regeneration release valve to tank (Ta). (Refer to section 2-2)



FG001306

Figure 12



FG001312

Figure 19

Reference Number	Description
1	Housing Valve
2	Arm Spool Assembly 2
3	Boom Spool Assembly 1
4	Bucket Spool Assembly
5	Travel Spool Assembly
6	T/S Spool Assembly
7	O-ring
8	Cap
12	Cap
13	Housing Valve
14	Arm Spool Assembly 1
15	Boom Spool Assembly 2

Reference Number	Description
16	Swing Spool Assembly
17	Option Spool Assembly
50	Plug
62	O-ring
63	Orifice Plug
65	O-ring
66	O-ring
70	Foot Relief Valve
72	Plug Assembly
74	Socket Bolt (M10x28L)
91	Plug
105	Plug Assembly

Disassembly of Antidrift Valve Part

NOTE: *The part including the assembly is shown (assembly number-part number).*

CAUTION

Removing antidrift valve seat, when pressure is not fully released, or bucket is not lowered to ground, is very dangerous. A part in the valve may spring out and drop the bucket at the same time. Always lower bucket to ground and fully release pressure before disassembling.

1. Remove socket head bolt assembly (76, four places per section, width across flats: 8 mm) and antidrift valve assembly (67, two places).
 2. Remove O-ring (41 and 42) from valve housing. Remove O-ring (40-4) from spacer assembly.
 3. Screw socket head bolt (78, M6*1) into spacer, and remove spacer assembly (40) from valve housing.
 4. Remove O-ring (40-2) and backup ring (40-3).
 5. Remove spring (39) and poppet (38) from valve housing.
 6. Disassembly of antidrift valve assembly
-

CAUTION

Removing inner parts of antidrift valve, when pressure is not fully released, or bucket is not lowered to ground, is very dangerous. A part in the valve may spring out and drop the bucket at the same time. Always lower bucket to ground and fully release pressure before disassembling.

Slowly loosen plug assembly (67-14) and plug (67-3), check if there is a resistance by remaining pressure and remove.

- A. Remove plug assembly (67-14, width across flats: 38 mm) and O-ring.
- B. Remove piston (67-4), spool (67-5), and spring (67-7).
- C. Remove plug (67-3, width across flats: 38 mm) and O-ring (67-13).
- D. Remove sleeve (67-6) and poppet (67-2) from body. Remove O-ring (67-9 and 10) and backup ring (67-11 and 12) from outside diameter of sleeve.
- E. Pull spring seat (67-16) and spring (67-8) out of inside hole.
- F. Remove plug assembly (67-15) if necessary.

NOTE: *Do not remove steel ball (67-14) because it is pressed in body.*

Assembly of Relief Valve

1. Install main relief valve (68). Tightening torque: Tightening torque: 7.95 - 8.97 kg•m (58 - 65 ft lb).
2. Install overload relief valve (69, six places) in each section. Tightening torque: 7.95 - 8.97 kg•m (58 - 65 ft lb).
3. Install spring seat (67-16) on small diameter of poppet. Then insert spring (67-8) and them with sleeve to body (67-1). Tightening torque: 11 - 12 kg•m (76 - 83 ft lb).

Assembly of Load Check Valve

1. Install O-ring (36) on arm (1 and 2, section D-D), boom (1 and 2, section E-E) and swing section (Section F-F). Install poppet (34) and spring (35). Mount flange (37) and install socket head bolt (75). Tightening torque: 5.91 - 6.53 kg•m (43 - 47 ft lb).
2. Install O-ring (36) on travel section (Section H-H). Install poppet (51) and spring (35). Mount flange (37) and install socket head bolt (75). Tightening torque: 6 - 6.5 kg•m (43 - 47 ft lb).
3. Install O-ring (36) on travel straight section (Section H-H). Mount flange (37) and install socket head bolt (75). Tightening torque: 5.91 - 6.53 kg•m (43 - 47 ft lb).
4. Install poppet (51) and spring (35) in common (Section I-I). Insert spacer (53) with O-ring (54) and backup ring (55). Tightening torque: 3.98 - 4.49 kg•m (29 - 32 ft lb).



CAUTION

Be careful of installation position of O-ring and backup ring.

If they are reversed, the O-ring will be damaged and an oil leak can occur.

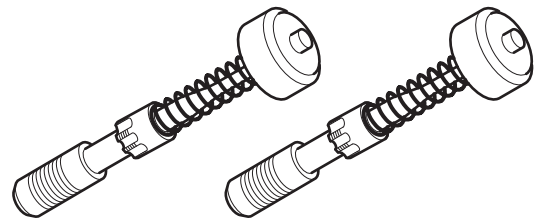
5. Install O-ring (36) on option section (Section G-G). Install poppet (44) and spring (45). Mount flange (43) and install socket head bolt (96). Tightening torque: 6 - 6.5 kg•m (43 - 47 ft lb).
6. Tighten flange assembly (92) with O-ring. Tightening torque: 21 - 23 kg•m (151 - 167 ft lb).
7. Insert poppet (49) and spring (48) in travel section (Section G-G). Install plug (46) with O-ring (47). Tightening torque: 10.91 - 11.93 kg•m (79 - 86 ft lb).
8. Bucket section (Section F-F)
 - A. Insert piston (95) and O-ring (102) on plug (94) and install in body (96). Tightening torque: 11 - 12 kg•m (76 - 83 ft lb).

Table of Contents

Remote Control Valve (Work Lever / Joystick)

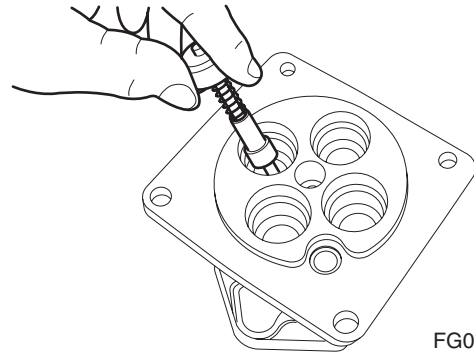
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7. Remove four spool kit assemblies from case (1).



FG000812

Figure 11



FG000813

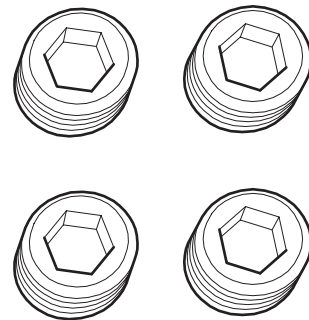
Figure 12

8. The bushing (3) and plug cannot be removed from case (1).



FG000814

Figure 13



FG000815

Figure 14

Travel Control Valve (With Damper)

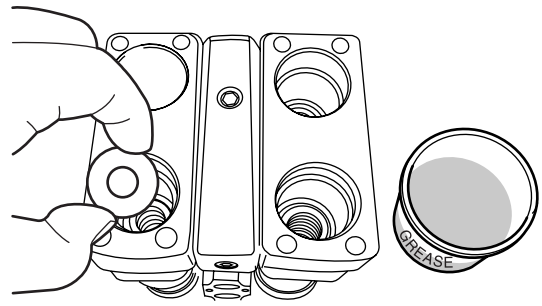
Edition 1

CAUSES OF FAULTS AND MEASURES

At times it may be difficult to pinpoint the source of the problem. The following table lists some of the possible problems, possible causes and remedies. Refer to this table for possible causes and remedies to assist in correcting the sometimes difficult problems.

The table only lists some general problems, possible causes and their remedies. In many cases the problem is not caused by the failure of a single part but, may be the result of a combination of problems from related parts and their components. Possible problems other than the ones list are not being specified but that is not to say that these are the only possible problems that can occur. The technician must diagnose the problem, considering all possible causes and repair the source of the malfunction.

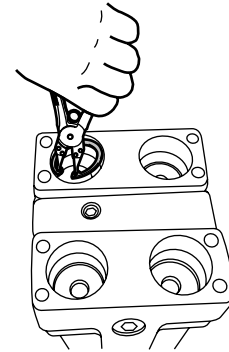
Problem	Possible Cause	Remedy
Secondary pressure will not increase.	Low primary pressure.	Adjust primary pressure.
	Defective secondary pressure select spring.	Replace with new spring.
	Gap between damper spool and casing is abnormally large.	Replace damper spool casing assembly.
	Defective operating parts and components.	Disassemble/reassemble and replace defective parts.
Unstable secondary pressure.	Jamming of interconnected parts.	Repair/replace cause of jamming.
	Unstable tank line pressure.	Install direct line to hydraulic tank.
	Air in hydraulic lines.	Vent air from system.
Abnormally high secondary pressure.	High tank line pressure.	Install direct line to hydraulic tank.
	Jamming of interconnected parts.	Repair/replace cause of jamming.
No dampening.	Air in piston chamber.	Vent air from system.
	Jamming of interconnected parts.	Repair/replace cause of jamming.
	Worn damper springs.	Replace with new parts.
	Worn damper spool and housing.	Replace damper spool and housing assembly.
	Defective/damaged check valve.	Disassemble and examine check valve.
	Worn damper spool orifice.	Replace damper spool.
Damper spool feels heavy.	Defective interconnected components.	Repair/replace defective parts.
	Restricted movement of damper spool.	Repair/replace damaged piston.



FG000993

Figure 31

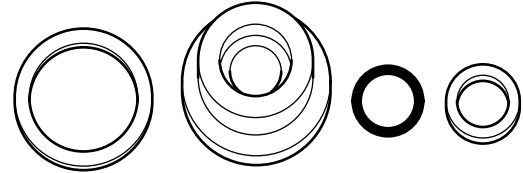
6. Install retaining ring (13). Make sure that it is properly seated.



FG000991

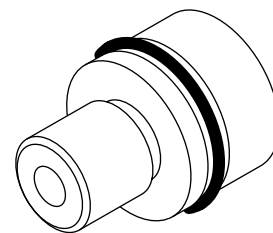
Figure 32

7. Assemble rod seal (23), dust seal (24), and O-ring (22) into plug (21).



FG001001

Figure 33



FG001002

Figure 34

SAFETY PRECAUTIONS



CAUTION

Follow all safety recommendations and safe shop practices outlined in the front of this manual or those contained within this section.

Always use tools and equipment that are in good working order.

Use lifting and hoisting equipment capable of safely handling load.

Remember, that ultimately safety is your own personal responsibility.

APPLICABLE MODELS

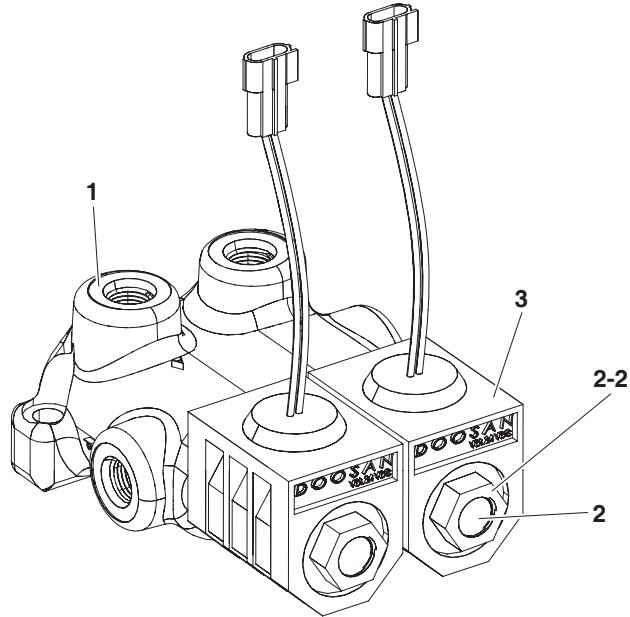
The contents of this section apply to the following models and serial number ranges.

MODEL	SERIAL NUMBER RANGE
DX300LC	7440 and Up
DX340LC	5980 and Up
DX420LC	5327 and Up
DX480LC	5221 and Up
DX520LC	5117 and Up

Assembly Diagram and Tools Required

The assembly torque of each part in the solenoid valve is described in the table below.

Observe the specified torque values using the right tool.



FG013249

Figure 5

Reference Number	Description	Sizes	Torques (kg•cm)	Tools
2	Solenoid Valve	UNF7/8-14"	200 ±25 kg•cm (170 ±20 in lb)	Torque wrench/1" hex. socket
2-1	Coil Locknut	UNF1/2-20"	200 ±25 kg•cm (170 ±20 in lb)	Torque wrench/ 19 mm hex. socket

FUNCTIONS AND OPERATION

The proportional reducing valve shall be adjusted that its reduced pressure is proportional to the current of the solenoid.

The proportional solenoid shall be changed with pressure proportional to the electrical input signal. Flow increases corresponding to the force of the solenoid. As the solenoid (1) receives pressure, the spool (4) opens and oil flows from P to A. Pressure of the port A influences the top surface of the pin (5). When it reaches the valve set of the solenoid, the spool starts to move and oil flow from P to A decreases.

CAUTIONS FOR OPERATION

1. Wiring of the solenoid
 - The solenoid has no polarity.
2. Input electricity
 - Do not supply electric current more than 0.7A to the solenoid coil.
3. Adjustment screw
 - It was adjusted to the standard.
 - The pressure of the port A increases when turning the adjustment screw clockwise.
4. Symptoms and Solutions of Problems

Symptoms	Causes	Solutions
Pressure does not increase nor change	Poor wiring	Fix wiring
	Solenoid damaged	Replace the solenoid
	Piston or spool stucked	Fix, or clean and grind
	Amplifier damaged	Repair or replace the amplifier
Unnatural pressure change	Poor opening space Too wide Too narrow	Readjust
	Piston or spool stucked	Fix, or clean and grind
Unnatural pressure	Poor opening space Too wide Too narrow	Readjust
Slow reaction	Low pressure supplied	Readjust

SAFETY PRECAUTIONS



CAUTION

Follow all safety recommendations and safe shop practices outlined in the front of this manual or those contained within this section.

Always use tools and equipment that are in good working order.

Use lifting and hoisting equipment capable of safely handling load.

Remember, that ultimately safety is your own personal responsibility.

APPLICABLE MODELS

The contents of this section apply to the following models and serial number ranges.

MODEL	SERIAL NUMBER RANGE
DX340LC	5980 and Up

SAFETY PRECAUTIONS



CAUTION!

Follow all safety recommendations and safe shop practices outlined in the front of this manual or those contained within this section.

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The contents of this section apply to the following models and serial number ranges.

MODEL	SERIAL NUMBER RANGE
DX340LC	5980 and Up

ENGINE STOP

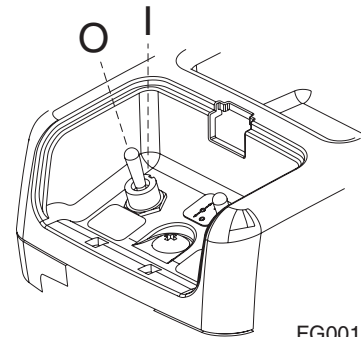
When starter switch (5) is turned "ON" the engine controller (8) is activated. The engine controller monitors and controls the engine including the injector solenoid (9). It controls the fuel deliver rate and the injection timing for each cylinder.

NOTE: *There is an individual injector solenoid (9) for each of the six cylinders. Only one soleniod is shown in Figure 7.*

When starter switch (5) is turned "OFF," the engine controller stops suppling power to the injector solenoid (9). This stops fuel from being injexted into the engine cylinder, thus stopping the engine.

In the event that the engine can be shut down using the starter switch (5), an emergency stop switch (10) is provided to shut down engine. To activate the emergancy stop switch, move it to the "I" (EMERGENCY STOP) position.

The emergency stop switch (10) is in its "O" (OFF) position during normal operation. The switch must be moved and held in the "I" (EMERGENCY STOP) position until the engine stops. When released it will automatically move back to the "O" (OFF) position.

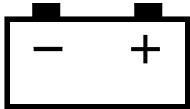

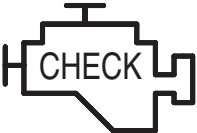




FG001344

Figure 6 ENGINE EMERGENCY STOP SWITCH

WARNING AND INDICATOR LIGHTS

Indication of Warning Lights

Description	Symbol	Input Terminal	Operation	Remarks
Charge	 <small>HAOA610L</small>	CN2 - 14	This symbol appears in case of no charge [voltage of "R(l)" terminal is below $12 \pm 1V$] or overcharge [voltage of "R(l)" terminal is above 33(V)].	Normally, it lights when starting engine and is out after engine starts.
Engine Oil Pressure	 <small>HAOA620L</small>	ECU-CAN Communication	This symbol appears when engine oil pressure is below the reference.	After starting engine, if engine oil pressure is insufficient after 8 seconds, a warning buzzer will sound.
Engine Check	 <small>FG000045</small>	ECU-CAN Communication	This symbol appears in case of failure in engine system.	
Coolant Temperature	 <small>HAOD350L</small>	ECU-CAN Communication	This symbol appears when engine coolant temperature sensor resistant is below about 128 ohms.	
Preheating	 <small>HAOA639L</small>	CN5-2	This symbol appears during preheating ("CN5-2" terminal voltage is below 2V) and disappears after completion of preheating.	Preheating period depends on coolant temperature. No preheating at above 10°C 10 sec preheating at 5°C 20 sec preheating at below 0°C

SPECIAL MENU

In this menu, many types of operating conditions and functions can be accessed and displayed, including the e-EPOS controller. This menu is mainly used for machine testing and failure diagnostics.

The special menu offers three sub-menus:

1. Machine status.
2. Failure information.
3. Information on machine operation.

Entering/Accessing and Exiting/Escaping Menus

Entering/Accessing Menus

When normal mode screen is displayed, if the enter button (↵, 3) and escape button (ESC, 4) are pressed simultaneously for more than 3 seconds, normal mode screen (Figure 26) will be changed to special menu screen (Figure 27).

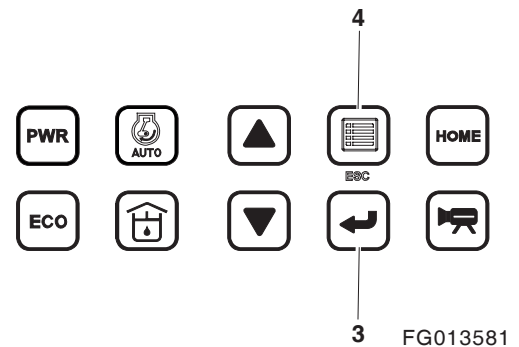


Figure 25

Normal Mode Screen

NOTE: Normal mode screen can display many kinds of display mode by selecting, for example, engine speed (RPM), battery voltage (VOLT), front pump pressure (BAR), rear pump pressure (BAR) and so on by selecting.

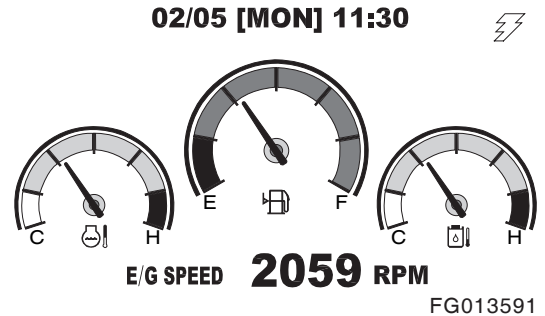
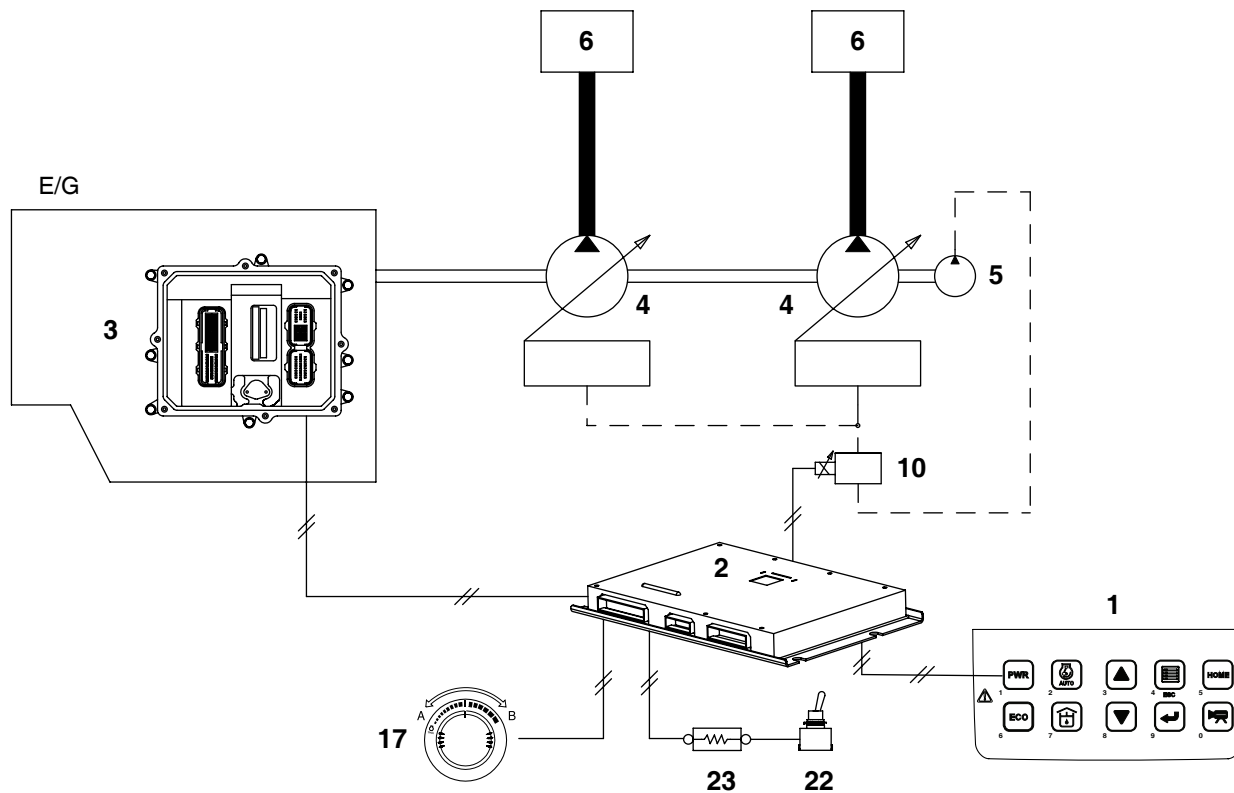


Figure 26

Failure Information Code at Engine Side

Code	Failure Component	Measuring Points	Current Value		Remarks
			Active	Passive	
E011	Coolant temperature sensor	2-15 2-26	-	R=186 ± 5 Ω (100°C (212°F))	
E012	Fuel temperature sensor	2-35 2-26	-	R=186 ± 5 Ω (100°C (212°F))	
E013	Boost air temperature sensor	2-36 2-25	-	R=186 ± 5 Ω (100°C (212°F))	
E014	Boost air pressure sensor	2-34 2-33	V = 1,071±58mV (at 23°C (73°F) and absolute pressure 1bar)	-	It has to be measured in engine running state.
E017	E/G oil temperature sensor	2-28 2-24	-	R=186 ± 5 Ω (100°C (212°F))	
E018	E/G oil pressure sensor	2-27 2-32	V = 2,318±80mV (at 23°C (73°F) and absolute pressure 3bar)	-	It has to be measured in engine running state.
E021	Battery voltage	1-03 1-06	V = V_volt (Note 4.)	-	
E022	Fuel pressure sensor	2-14 2-12	V = 1,833±28mV (at 23°C (73°F) and absolute pressure 300bar)	-	It has to be measured in engine running state.
E032	Fuel pressure monitoring MPROP	3-09 3-10	-	R=2.60 ± 3.15 Ω (20°C (68°F))	
E037	CAN - B Line	1-35 1-34	-	R=60 ± 5 Ω (20°C (68°F))	It is a composite resistance of CAN line. This value has to be measured by connected condition of CAN line.
E038	Engine overspeed		-	-	
E039	Main relay SCG (ECU)		-	-	Engine ECU fail.
E041	Redundant shutoff path		-	-	Abnormal engine stop.
E042	E/G speed (Crankshaft)	2-23 2-19	-	R=860 ± 6 Ω (20°C (68°F))	

POWER MODE CONTROL



FG013631

Figure 52

Reference Number	Description
1	Instrument Panel (Power Mode Selector Switch)
2	e-EPOS Controller
3	Engine Controller (ECU)
4	Main Pump
5	Aux Pump
6	Control Valve

Reference Number	Description
10	Electromagnetic Proportional Pressure Reducing Valve (Mode Control)
17	Engine Control Dial
22	Aux Mode Switch
23	Aux Mode Resistor

ENGINE CONTROL CIRCUIT DIAGRAM

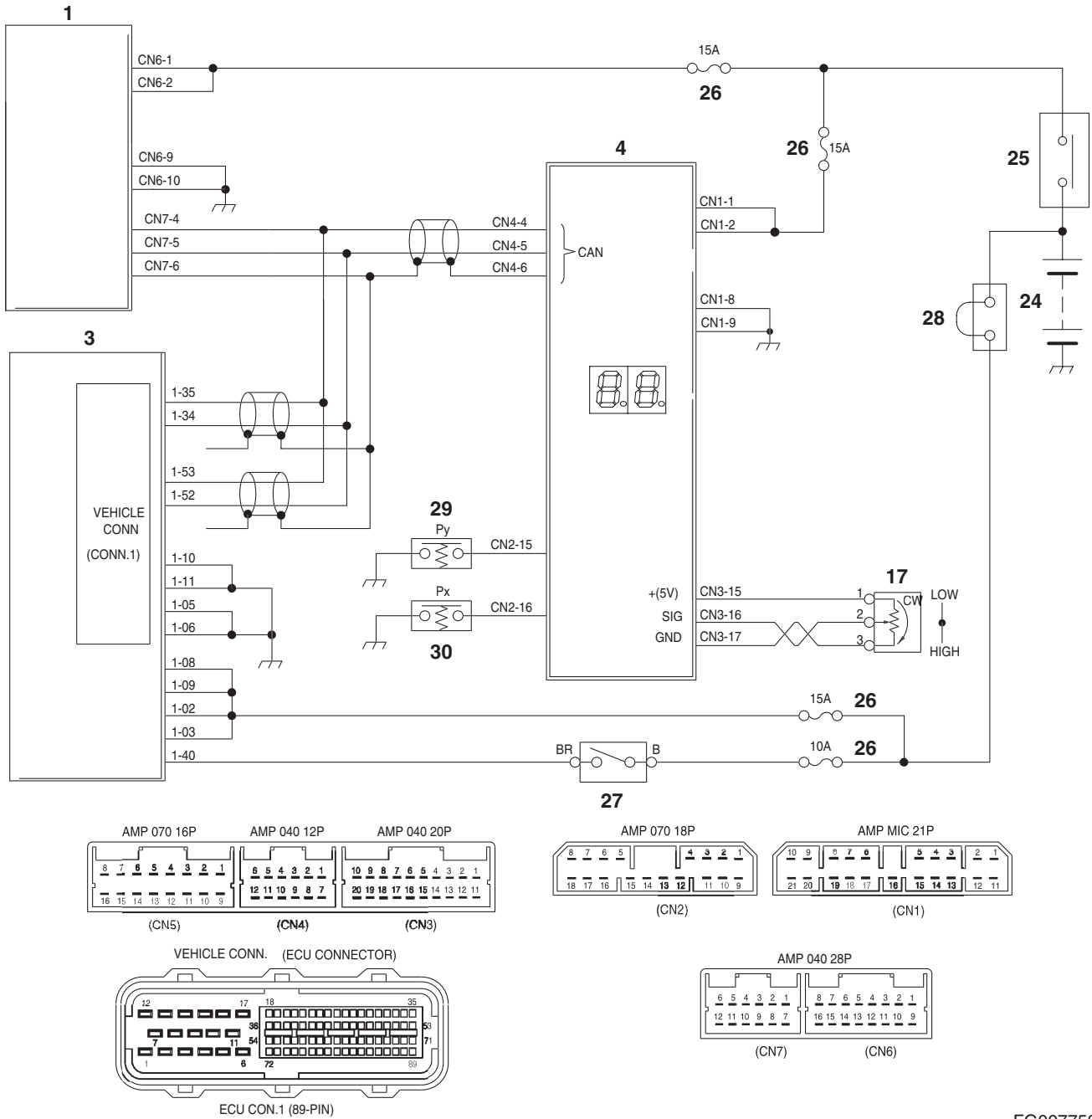
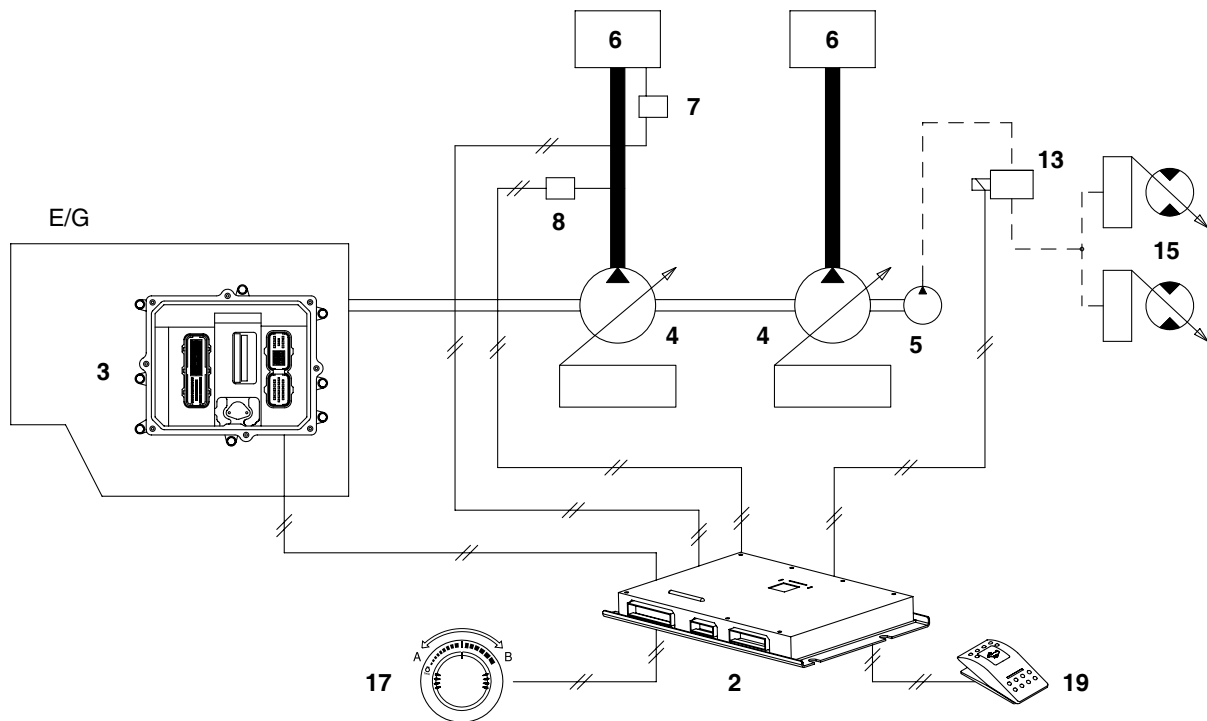


Figure 61

FG007752

AUTOMATIC TRAVEL SPEED CONTROL



FG000799

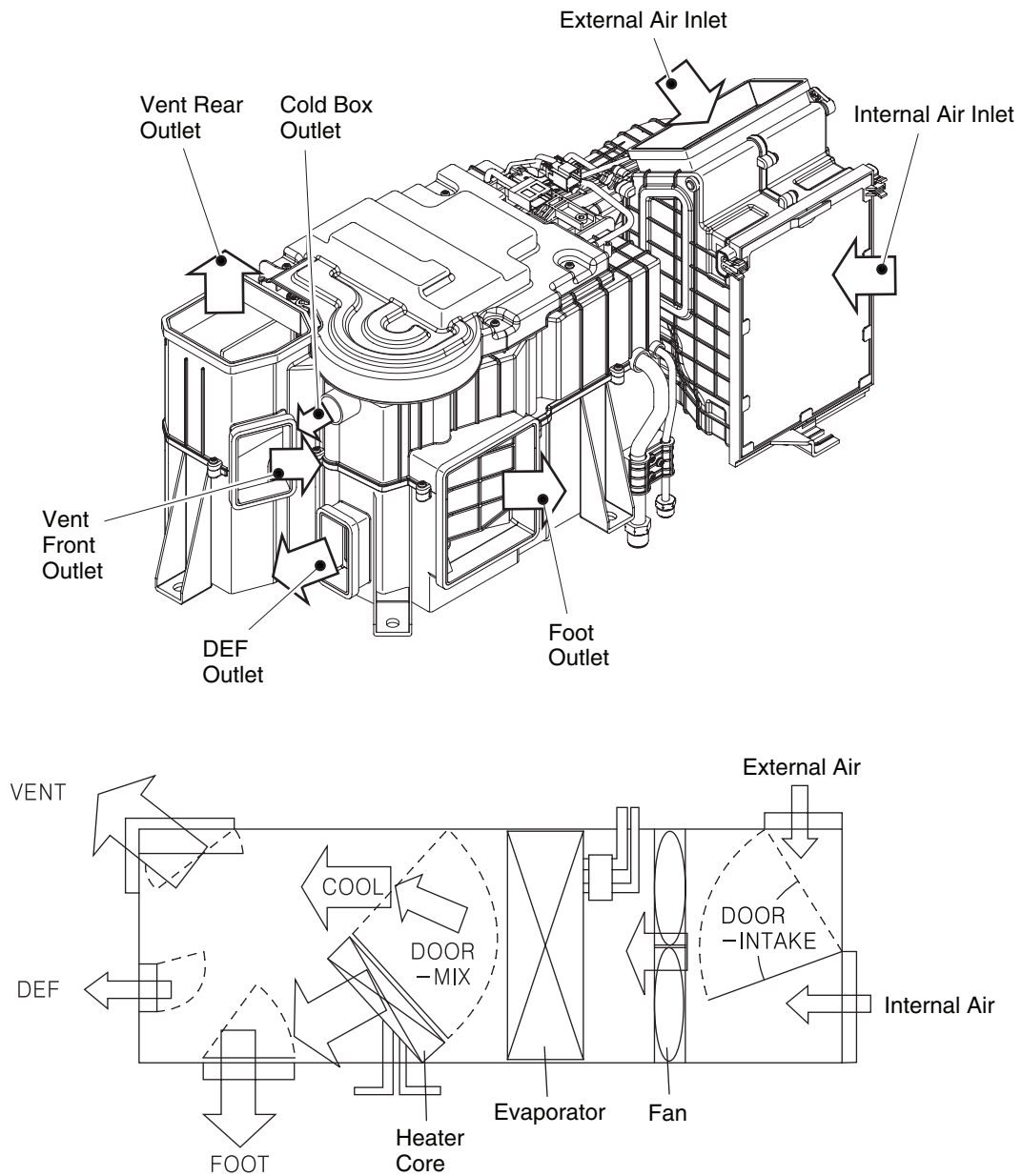
Figure 66

Reference Number	Description
2	e-EPOS Controller
3	Engine Controller
4	Main Pump
5	Aux Pump
6	Control Valve
7	Pressure Switch (Py Port)

Reference Number	Description
8	Pump Pressure Sensor
13	Solenoid Valve (High speed)
15	Travel Motor
17	Engine Control Dial
19	Selector Switch For Automatic Travel

Air Conditioner/heater Unit

Air Flow Diagram



FG001359

Figure 76

Categories	Inputs	System Operation
Starting control of heating (2)	Water temperature sensor Ambient air temperature sensor Internal air temperature sensor Auto mode	<ol style="list-style-type: none"> 1. Entry condition (AND condition) <ol style="list-style-type: none"> (1) Auto Mode (2) Ambient air temperature < 5°C and difference between ambient and internal air temperature ≤ 5°C (3) Failure of water temperature sensor 2. Only one time of engine OFF → engine run 3. Starting control of heating is before max heating. 4. Operation release (OR condition) <ol style="list-style-type: none"> (1) Air flow: Manual selection (2) When handling the wind direction mode switch, only wind direction is released but the air flow control is performed only for the remaining period of the starting control of heater. (3) Difference between internal and ambient air temperature > 15°C (4) When Max Cooling (17°C) is selected. 5. Exceptional case <p>Starting control of heating is performed only once during the remaining period if the entry condition is satisfied within the starting control period that is the accumulation of initial start times.</p> <p>(Inclusive of Auto mode "ON" case within the period of starting control of heater.)</p> <p>* Air flow should be reduced slowly for up to 12 seconds in case of exceptional entry case.</p>

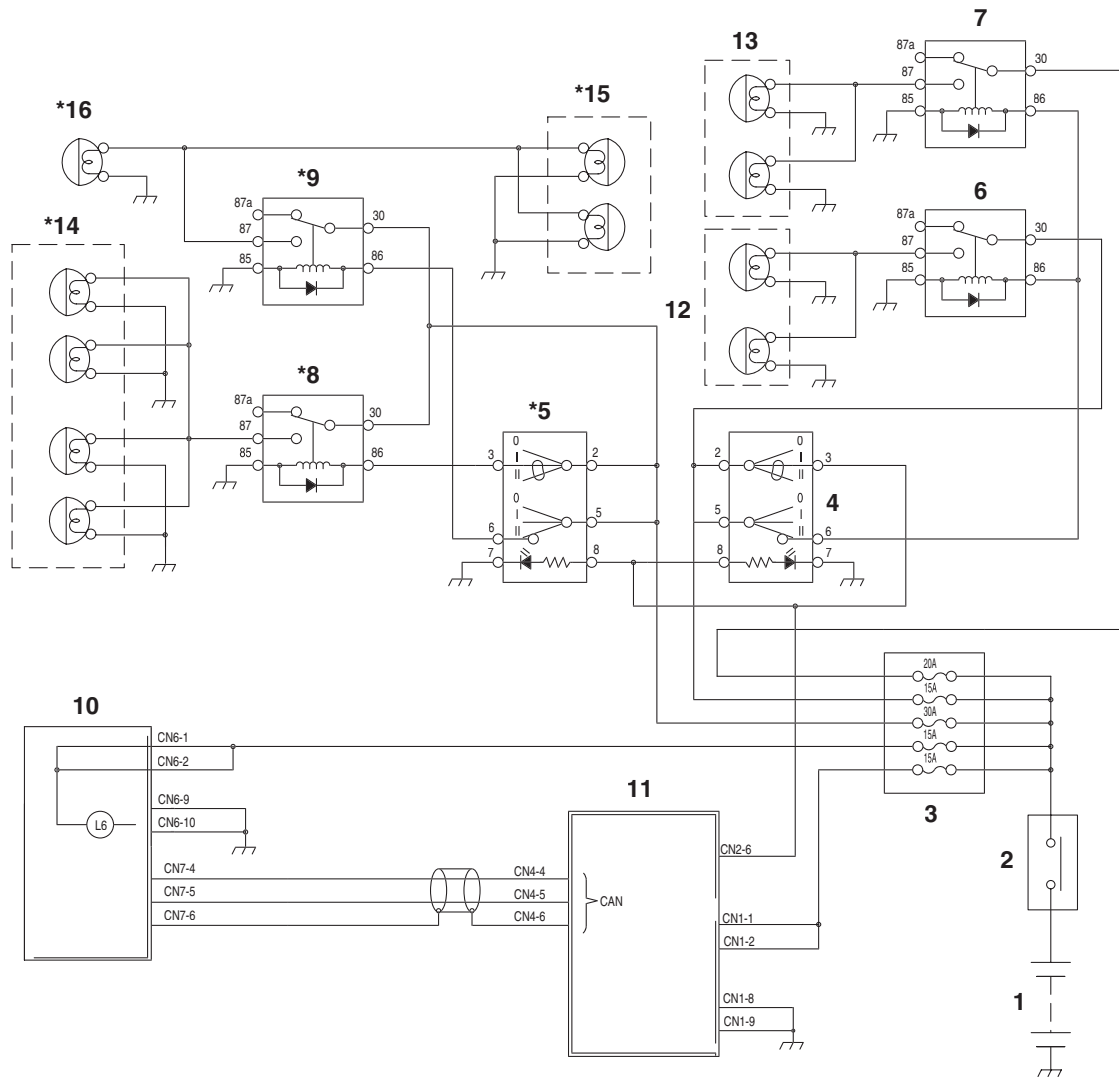
Repair and Replacement Procedure

1. Work Procedure
 - A. Before repairing or replacing any refrigerant components first, return all refrigerant oil to the compressor and perform recovery procedures.
2. Operating Condition
 - A. Run engine at maximum engine speed.
 - B. Select 'HI' blower fan speed and select A/C switch to 'ON'.
 - C. Set the temperature control switch for maximum cooling and leave running for approximately 20 minutes.

NOTE: *The manifold gauge dial pointer can vary depending on the outdoor temperatures.*

LIGHTING SYSTEM

Lighting System Circuit Diagram



FG000590

Figure 105

DX300LC

Mark	Measuring Part	Criteria					Remedy
		Standard Size	Tolerance		Standard Clearance	Clearance Limit	
			Pin	Hole			
A	Boom Foot	105 mm (4.134")	-0.10 -0.15	+0.18 +0.03	0.13 ~ 0.33	1.5	Replace
B	Boom Cylinder Head	90 mm (3.543")	-0.10 -0.15	+0.18 +0.03	0.13 ~ 0.33	1.5	
C	Boom Center	90 mm (3.543")	-0.10 -0.15	+0.18 +0.03	0.13 ~ 0.33	1.5	
D	Boom End	100 mm (3.937")	-0.10 -0.15	+0.18 +0.03	0.13 ~ 0.33	1.5	
E	Arm Cylinder Head	90 mm (3.543")	-0.10 -0.15	+0.18 +0.03	0.13 ~ 0.33	1.5	
F	Arm Cylinder Rod	90 mm (3.543")	-0.10 -0.15	+0.18 +0.03	0.13 ~ 0.33	1.5	
G	Bucket Cylinder Head	80 mm (3.150")	-0.10 -0.15	+0.18 +0.03	0.13 ~ 0.33	1.5	
H	Arm Link	80 mm (3.150")	-0.06 -0.11	+0.18 +0.03	0.09 ~ 0.29	2.0	
I	Arm End	90 mm (3.543")	-0.10 -0.15	+0.18 +0.03	0.13 ~ 0.33	2.0	
J	Bucket Cylinder Rod	90 mm (3.543")	-0.10 -0.15	+0.18 +0.03	0.13 ~ 0.33	2.0	
K	Push Link to Bucket	90 mm (3.543")	-0.10 -0.15	+0.18 +0.03	0.13 ~ 0.33	2.0	

Bucket

Edition 1

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