GENERAL DIMENSIONS





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REMOVAL

CAUTION!

Avoid disassembling cabin if there are strong wind gusts, which could catch large surface area of cabin shell and push it sideways during lift.

1. Park on firm and level ground.
2. Lower front attachment (bucket) to ground.
3. Shut down engine.
4. Set safety lever on "RELEASED" position.
5. Turn starter switch to "I" (ON) position.

WARNING!

If engine must be run while performing maintenance, use extreme care. Always have one person in the cabin at all times. Never leave the cabin with the engine running.

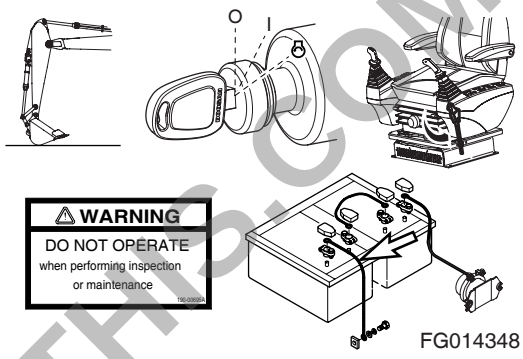


Figure 1

6. Fully stroke work levers (joysticks) in all directions to relieve pressure from accumulators.
7. Set safety lever on "LOCK" position.
8. Turn key to "O" (OFF) position and remove from starter switch.
9. Hang maintenance warning tag on controls.
10. Disconnect the battery cable from the negative (-) battery terminal.
11. Prepare cabin shell for removal by disconnecting wiring connectors for:
    A. Cabin interior lighting.
    B. External light wiring.
    C. Radio antenna and connections.
    D. Wiper/washer connections.

NOTE: *Control console wiring harnesses and hydraulic piping lines that pass through the floor of the cabin do not need to be disassembled.*

NOTE: *If unit is equipped with a cabin protective structure (for forestry, or hazardous working conditions), it must be removed.*

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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
DX225LCA	5167 and Up

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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	Air Cleaner
12	Swing Bearing
13	Cabin
14	Seat
15	Boom Cylinder
16	Work Lever (Joystick) Controls
17	Arm Cylinder
18	Boom
19	Travel Lever

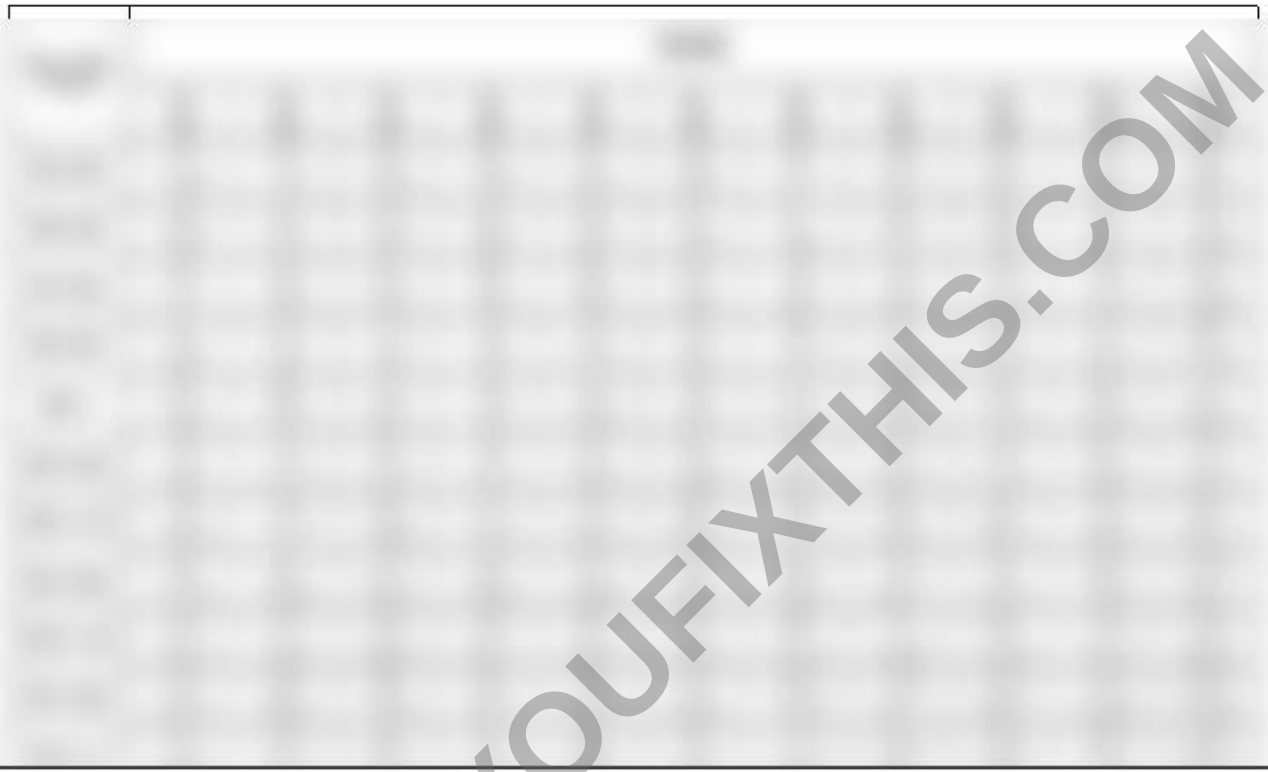
Reference Number	Description
20	Arm
21	Bucket Cylinder
22	Guide Link
23	Bucket
24	Push Link
25	Tooth Point
26	Side Cutter
27	Idler
28	Track Adjuster
29	Track Guide
30	Battery
31	Lower Roller
32	Center Joint
33	Upper Roller
34	Travel Motor
35	Track Link and Shoe
36	Suction Filter
37	Return Filter
38	Pumps

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TORQUE VALUES FOR STANDARD METRIC FASTENERS

NOTE: *The units for the torque values are kg•m (ft lb).*



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Swing Bearing SP000022

Swing Reduction Gear SP001618

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Cylinders SP000914
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Travel Motor SP001621
Gear Pump SP000931
Main Control Valve SP001024
Axial Piston Pump SP000932
PTO Server SP000933
Remote Control Valve (Work Lever / Joystick) SP001646
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Electrical System

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Reference Number	Description
1	Fuel Tank
2	O-ring
3	Cover
4	Bolt
5	Spring Washer
6	Drain Valve
7	Bolt
8	Shim
9	Shim

Reference Number	Description
10	Fuel Strainer
11	Cap
12	Level Gauge
13	Spacer
14	Bolt
15	Clip
16	Fuel Sender
17	Bolt
18	Spring Washer

Specifications

Fuel tank capacity is 400 liters (105 U.S. gal).

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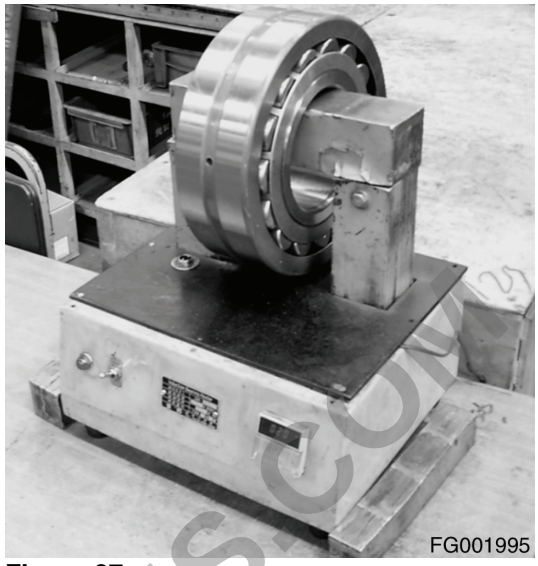


Figure 27

3. Stop heating when bearing temperature is between 90° - 100°C (194° - 212°F) and insert it on shaft, holding it with both hands to keep it level. Insert it slowly first by 4 - 5 mm (0.16 - 0.29 in) for bearing to seat itself and then push it hard that it contacts to spacer assembled in shaft completely.
4. After bearing assembly is completed, leave it air cool for 1 - 2 hours.

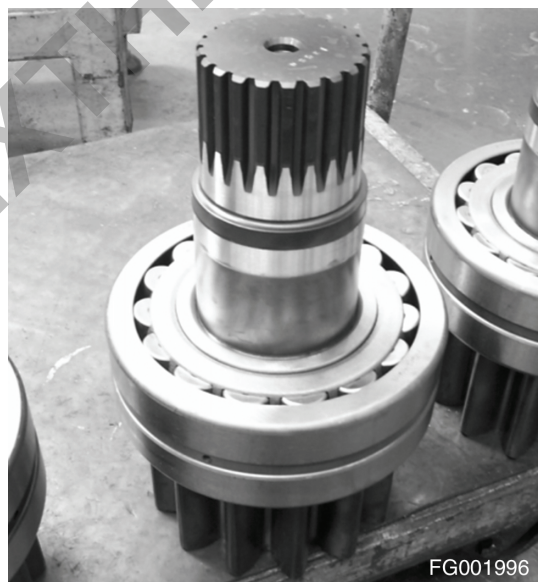


Figure 28

Assembly of Carrier Subassemblies

Cleaning Carrier

Put carrier, to whose corners grinding was made to remove all foreign substances like burr, on steam washer if there remain any foreign substance and put it on assembly die.

Cleaning Planet Gear

Check if planet gears are washed cleanly and got imprinted and put it on assembly die.

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Front Idler Roller Reassembly

1. Degrease, clean and dry all parts before reassembly. Insert bushing (5, Figure 20) into the idler (2).
2. Grease O-ring (8, Figure 21) and insert it into the axle.
3. Align the bearing (3, Figure 21) and axle (4) holes and pin (6) them together.

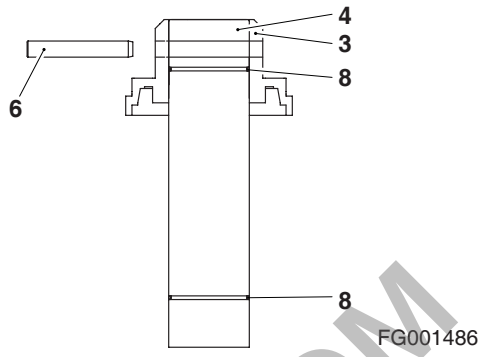


Figure 21

4. Install floating seal (7, Figure 22) inside the idler (2) and bearing (3).

   NOTE: *Apply clean engine oil to the joint side of the floating seal. Apply grease to the floating seal O-ring.*

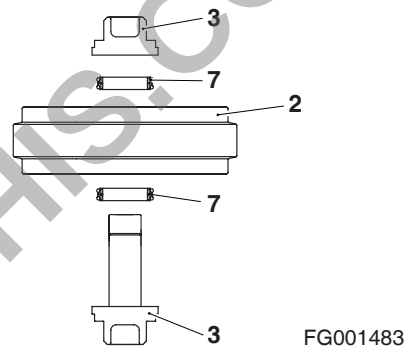


Figure 22

5. Install idler (2, Figure 23) on the axle.
6. Install bearing (3, Figure 23) and pin (6) to the axle.

   NOTE: *Fill the idler assembly with new engine oil with approximately 320 cc (10.8 oz).*

7. Install plug (9, Figure 28) on the bearing.

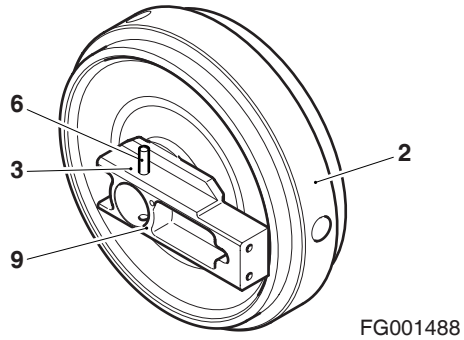
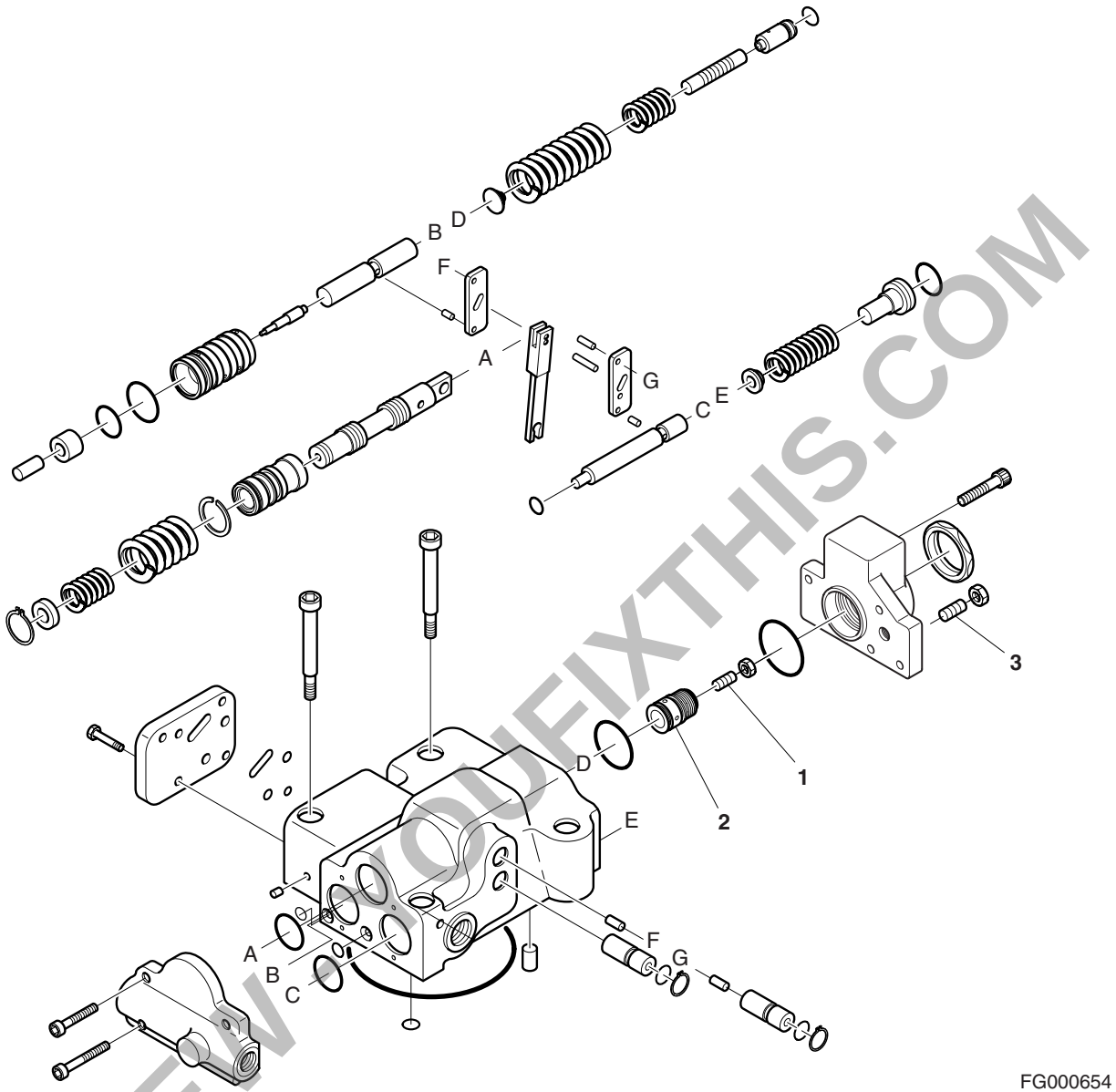


Figure 23

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FG000654

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.*

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MODEL	CYLINDER	øA	øB	C	D	MODEL (CYLINDER)
DX225LC	BOOM	145.0 mm (5.71 in)	105.0 mm (4.13 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	
	ARM	145.0 mm (5.71 in)	105.0 mm (4.13 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	
	BUCKET	130.0 mm (5.11 in)	89.0 mm (3.50 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	
DX225NLC	BOOM	145.0 mm (5.71 in)	105.0 mm (4.13 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	
	ARM	145.0 mm (5.71 in)	105.0 mm (4.13 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	
	BUCKET	130.0 mm (5.11 in)	89.0 mm (3.50 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	
DX225LCA	BOOM	145.0 mm (5.71 in)	105.0 mm (4.13 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	
	ARM	145.0 mm (5.71 in)	105.0 mm (4.13 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	
	BUCKET	130.0 mm (5.11 in)	89.0 mm (3.50 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	
DX300LC	BOOM	142.0 mm (5.59 in)	102.0 mm (4.02 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	
	ARM	147.0 mm (5.79 in)	107.0 mm (4.21 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	S/ARM
	BUCKET	140.0 mm (5.52 in)	98.0 mm (3.86 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	S/BUCKET
DX340LC	BOOM	145.0 mm (5.71 in)	105.0 mm (4.13 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	OPT BOOM
	ARM	147.0 mm (5.79 in)	107.0 mm (4.21 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	OPT ARM
	BUCKET	145.0 mm (5.71 in)	105.0 mm (4.13 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	OPT BUCKET
DX420LC	BOOM	147.0 mm (5.79 in)	107.0 mm (4.21 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	
	ARM	147.0 mm (5.79 in)	107.0 mm (4.21 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	
	BUCKET	155.0 mm (6.10 in)	115.0 mm (4.53 in)	12.0 mm (0.47 in)	5.0 mm (0.20 in)	

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3. (This procedure is necessary when the ball bearing was separated from the driving shaft.)

   Install the ball bearing (303) in the driving shaft (201) by shrinkage fitting.



Figure 29

4. Insert the driving shaft (101) with the ball bearing (303) in the casing (301) with its output shaft facing upward and use a hammer to tap the surface of the ball bearing into the casing. At this point, apply grease to the lip of the oil seal light and then insert it carefully that it may not be damaged.

   (Wrap a tape around the spline of the driving shaft to prevent the damage of the spline due to the lip. Tap the surface of the external circumference evenly until it reaches the end completely.)

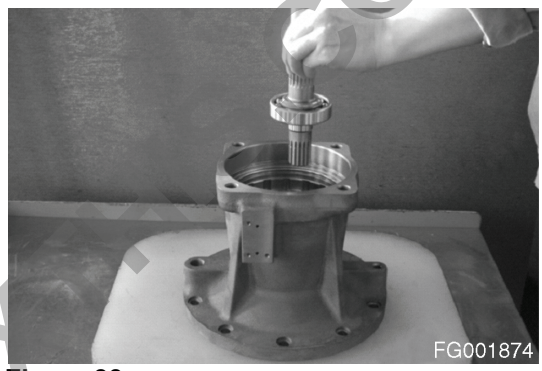


Figure 30

5. (This procedure is necessary when the parallel pin was removed from the casing.)

   Insert the parallel pin (304) in the casing(301).

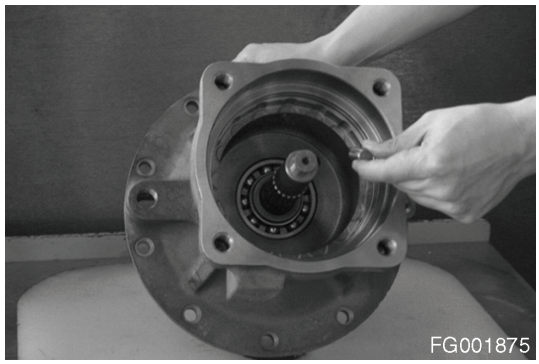


Figure 31

6. Assemble the swash plate (202) in the casing (301). (It is easy to assembly when the casing is put horizontally.)

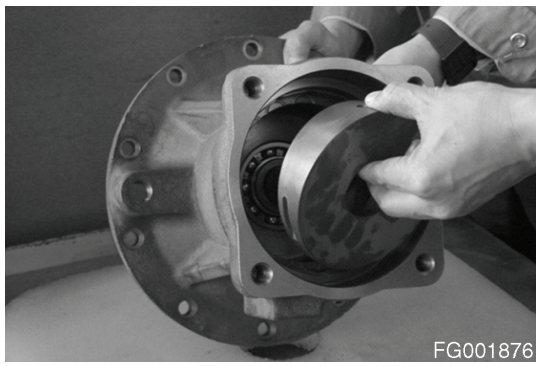


Figure 32

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6. Reassemble the cylinder block kit

   A. Install spring (214) (9ea) to the cylinder block (204).

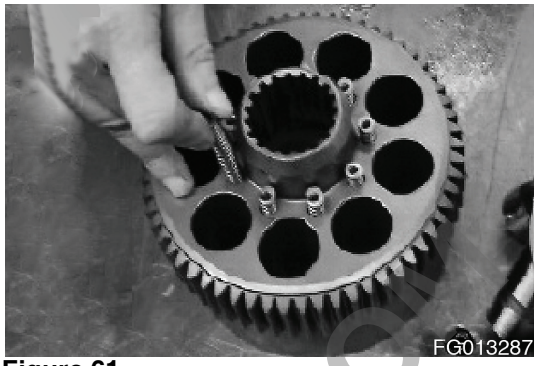


Figure 61

   B. Install thrust ball (208) to the cylinder block (204).

   C. Insert piston assembly (piston (205), shoe (206)) into retainer plate (207).

      NOTE: *After mounting, immerse the entire them in a working fluid.*

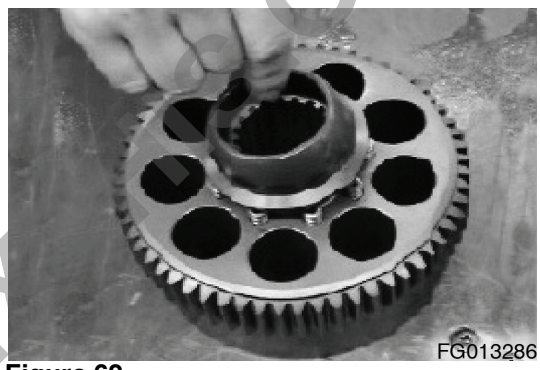


Figure 62

   D. Mount the piston assembly in the cylinder block (204).

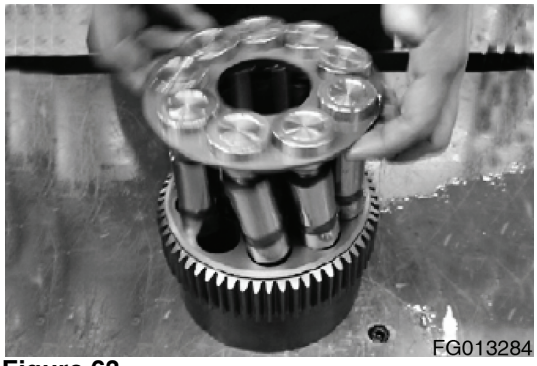


Figure 63

7. Install cylinder block (204) assembly to the shaft (202).

   NOTE: *After fitting splines of both cylinder block (204) and shaft (202), assemble them.*

   After installing the cylinder (204), confirm whether it revolves or not by turning using both hands.

   Motor is malfunction when it isn't revolve.

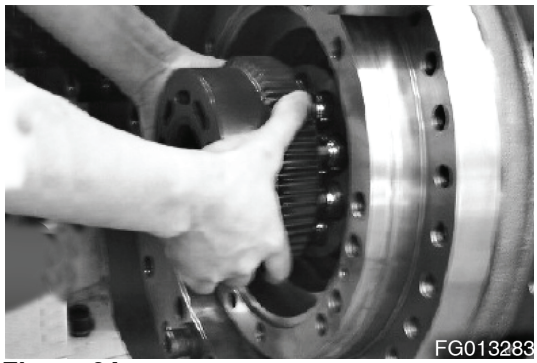


Figure 64

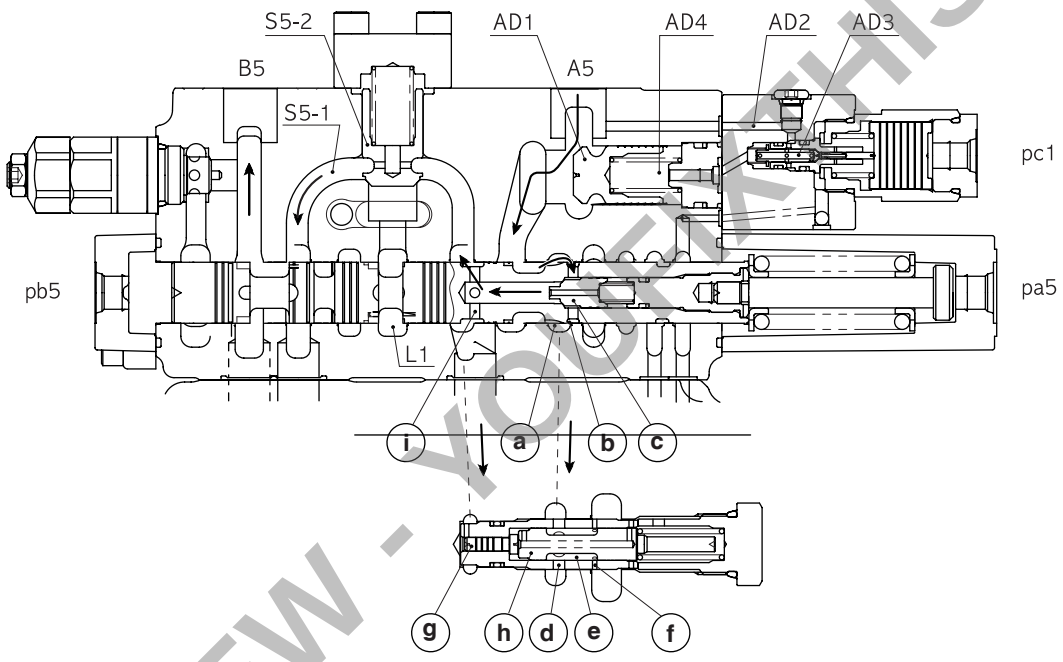
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B. Variable regeneration

When crowding arm, after return oil from port (A5) flows through notch (a), one portion of the oil returns through fixed orifice (d), passage (e) and variable orifice (f) and to tank passage (Ta). The other portion of the oil flows through fixed orifice (b), regeneration check (c), and fixed orifice (i) in arm 1 spool, and joins in bridge passage (S5-1).

From there, if load pressure of port (B) is increased, it flows through regeneration release valve piston (g) and pushes regeneration release spool (h), as a result area of variable orifice (f) is increased, and oil returning to tank (Ta) is increased, and some oil to regenerate in port (B5) is decreased.



FG001307

Figure 13

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15. Install lead wire terminal into connector terminal pressing them together.

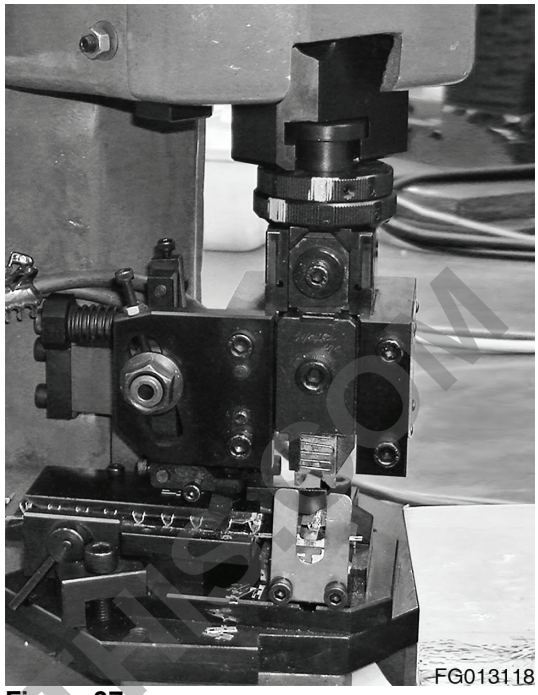


Figure 37

16. Assemble connector assembly (30), and connect it to lead wire terminal, and properly route wiring.



Figure 38



Figure 39

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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
DX140W	5001 and Up
DX160W	5001 and Up
DX210W	5001 and Up
DX225LC	5001 and Up
DX225NLC	5001 and Up
DX225LCA	5167 and Up
DX255LC	5001 and Up
DX300LC	5001 and Up
DX340LC	5001 and Up
DX420LC	5001 and Up
DX480LC	5001 and Up
DX520LC	5001 and Up

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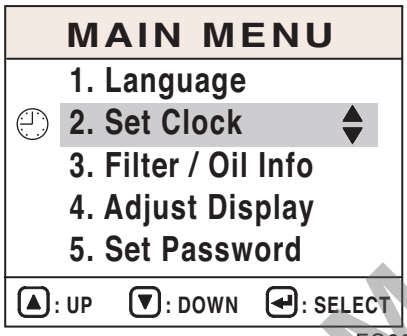
Set Clock

It is used to adjust time of the digital clock.

Pressing the Enter Button (↵, 3 on Figure 11) in the Main Menu after putting cursor on Set Clock brings Set Clock display.

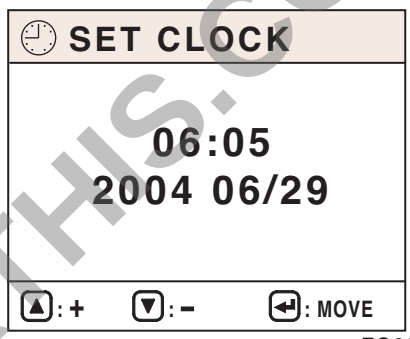
Without pressing a button more than 20 seconds, the default view appears.

Please refer to the Operation Manual for detailed information on Time Setting.



FG000075

Figure 15



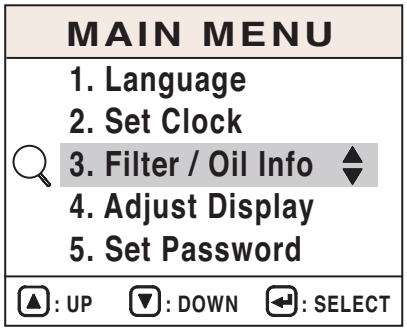
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Figure 16

Filter/Oil Info

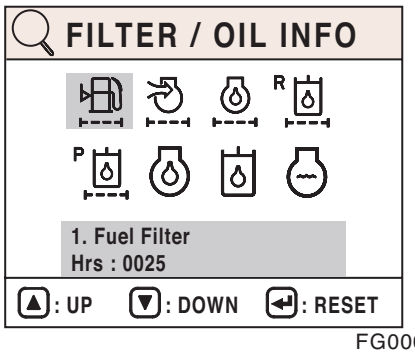
This mode displays total operating hours of filters and oils.

After changing the filter and oil, reset the operating hour and then the operating hours until the next service interval can be easily checked.



FG000077

Figure 17



FG000078

Figure 18

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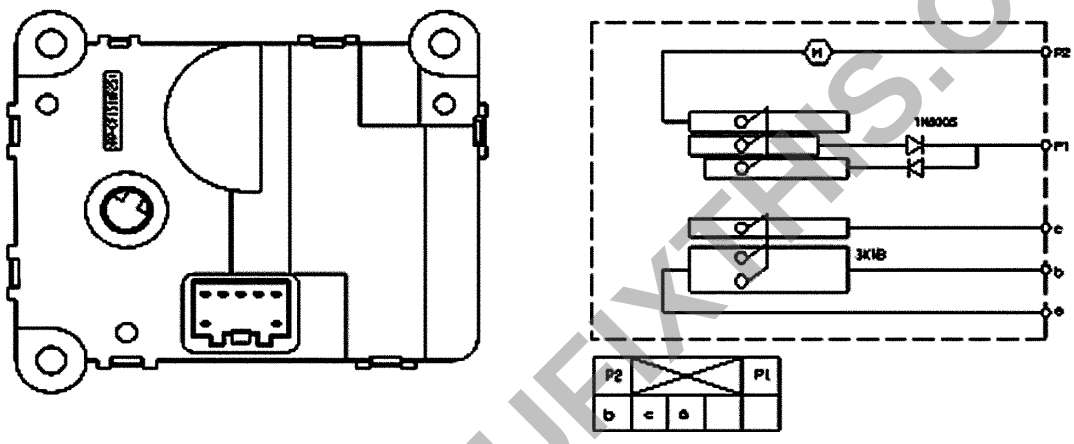
Actuator - Wind Direction Control

Change of discharged air flow according to selected wind direction mode

Change of wind direction: Direction changes in the order of VENT→ BI-LEVEL → FOOT → FOOT/DEF → VENT.

Actuator - Temperature Control

Change of discharged air temperature by controlling the position of temperature control door.



FG001361

Figure 79

Actuator - Wind Direction Control

Wind Direction Mode	Output Terminal	Voltage
Vent	c(+): CN10-10 b(-): CN10-4	0.5 ±0.2V
Bi-level		1.3 ±0.2V
Foot		2.45 ±0.2V
Foot/def		3.5 ±0.2V
Def		4.5 ±0.2V

Actuator - Temperature Control

Set Temperature	Output Terminal	Voltage
Max cooling	c(+): CN10-9 b(-): CN10-4	Below 0.4V
Max heating		Above 4.5V

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