GENERAL SPECIFICATIONS

Shipping Weight	21.5 metric tons (47,399 lb), includes fuel 10%, boom, 5,700 mm (18' 8"), arm 2,900 mm (9' 6"), standard bucket and standard shoes
Operating Weight	Add weight of full fuel tank and operator.
Shipping Weights with Optional Track Shoe	Add 285 kg (628 lb) for 700 mm (28") shoes
	Add 560 kg (1,235 lb) for 800 mm (32") shoes
	Add 850 kg (1,874 lb) for 900 mm (35") shoes
Major Component Weight	Standard Boom 5,700 mm (18' 8") 1,445 kg (3,186 lb)
	5,200 mm (17' 1") Boom 1,333 kg (2,939 lb)
	2,000 mm (6' 7") Arm 579 kg (1,276 lb)
	2,400 mm (7' 10") Arm 595 kg (1,312 lb)
	2,900 mm (9' 6") Arm 679 kg (1,497 lb)
	3,500 mm (11' 6") Arm 815 kg (1,797 lb)
	Boom Cylinders 178 kg (392 lb) each
	Arm Cylinder 266 kg (586 lb)
	Bucket Cylinder 152 kg (355 lb)
	Counterweight 4,100 kg (9,039 lb)
	Upper Turntable 5,753 kg (12,639 lb) (Excluding Counterweight and Front)
	Lower - 7,635 kg (16,832 lb) (Including Swing Bearing)
Digging Forces (At Power Boost):	
Bucket Cylinder	13,300 kg (29,321 lb) - (with either 3,500 mm [11' 6"] or 2,400 mm [7' 10"] arm)
Arm Cylinder	10,500 kg (23,149 lb) with 2,900 mm (9' 6") arm
Fuel Tank Capacity	400 liters (105.7 U.S. gal)
Hydraulic System Capacity	240 liters (63.4 U.S. gal)
Hydraulic Reservoir Capacity	140 liters (37 U.S. gal)
Bucket Heaped Capacity Range	PCSA 0.4 - 1.28 m^3 (0.5 - 1.67 yd^3)
	IMPORTANT: Refer to the Load Weight, Bucket and Arm Length Compatibility Table for information on which bucket sizes may be used safely with which arm length, for load material weights.
Shoe Type	Triple Grouser
Shoe Width and Optional Sizes	600 mm (24") - standard
	700 mm (28") - optional
	800 mm (32") - optional
	900 mm (35") - optional
Ground Pressure Ratings:	
Standard 600 mm (24") shoe	0.45 kg/cm^2 (6.4 psi)
Optional 700 mm (28") shoe	0.39 kg/cm^2 (5.55 psi)
Optional 800 mm (32") shoe	0.34 kg/cm^2 (4.84 psi)
Optional 900 mm (35") shoe	0.30 kg/cm^2 (4.27 psi)
Transport Dimensions	
Overall Shipping Length (standard boom and arm)	9,485 mm (31' 1")

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TORQUE VALUES FOR STANDARD METRIC FASTENERS

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

Dia. x Pitch (mm)	Grade										
	3.6 (4A)	4.6 (4D)	4.8 (4S)	5.6 (5D)	5.8 (5S)	6.6 (6D)	6.8 (6S)	6.9 (6G)	8.8 (8G)	10.9 (10K)	12.9 (12K)
M5 x Std.	0.15 (1.08)	0.16 (1.15)	0.25 (1.80)	0.22 (1.59)	0.31 (2.24)	0.28 (2.02)	0.43 (3.11)	0.48 (3.47)	0.50 (3.61)	0.75 (5.42)	0.90 (6.50)
M6 x Std.	0.28 (2.02)	0.30 (2.16)	0.45 (3.25)	0.40 (2.89)	0.55 (3.97)	0.47 (3.39)	0.77 (5.56)	0.85 (6.14)	0.90 (6.50)	1.25 (9.04)	1.50 (10.84)
M7 x Std.	0.43 (3.11)	0.46 (3.32)	0.70 (5.06)	0.63 (4.55)	0.83 (6.00)	0.78 (5.64)	1.20 (8.67)	1.30 (9.40)	1.40 (10.12)	1.95 (14.10)	2.35 (16.99)
M8 x Std.	0.70 (5.06)	0.75 (5.42)	1.10 (7.95)	1.00 (7.23)	1.40 (10.12)	1.25 (9.04)	1.90 (13.74)	2.10 (15.18)	2.20 (15.91)	3.10 (22.42)	3.80 (27.48)
M8 x 1	0.73 (5.28)	0.80 (5.78)	1.20 (8.67)	1.00 (7.23)	1.50 (10.84)	1.35 (9.76)	2.10 (15.18)	2.30 (16.63)	2.40 (17.35)	3.35 (24.23)	4.10 (29.65)
M10 x Std.	1.35 (9.76)	1.40 (10.12)	2.20 (15.91)	1.90 (13.74)	2.70 (19.52)	2.35 (19.99)	3.70 (26.76)	4.20 (30.37)	4.40 (31.18)	6.20 (44.84)	7.20 (52.07)
M10 x 1.25	1.50 (10.84)	1.60 (11.57)	2.50 (18.08)	2.10 (15.18)	3.10 (22.42)	2.80 (20.25)	4.30 (31.10)	4.90 (35.44)	5.00 (36.16)	7.00 (50.63)	8.40 (60.75)
M12 x Std.	2.40 (17.35)	2.50 (18.08)	3.70 (26.76)	3.30 (23.86)	4.70 (33.99)	4.20 (30.37)	6.30 (45.56)	7.20 (52.07)	7.50 (54.24)	10.50 (75.94)	12.50 (90.41)
M12 x 1.25	2.55 (18.44)	2.70 (19.52)	4.00 (28.93)	3.50 (25.31)	5.00 (36.16)	4.50 (32.54)	6.80 (49.18)	7.70 (55.69)	8.00 (57.86)	11.20 (81.00)	13.40 (96.92)
M14 x Std.	3.70 (26.76)	3.90 (28.20)	6.00 (13.23)	5.20 (37.61)	7.50 (54.24)	7.00 (50.63)	10.00 (72.33)	11.50 (83.17)	12.00 (86.79)	17.00 (122.96)	20.00 (144.66)
M14 x 1.5	4.10 (29.65)	4.30 (31.10)	6.60 (47.73)	5.70 (41.22)	8.30 (60.03)	7.50 (54.24)	11.10 (80.28)	12.50 (90.41)	13.00 (94.02)	18.50 (11.26)	22.00 (158.12)
M16 x Std.	5.60 (40.50)	6.00 (43.39)	9.00 (65.09)	8.00 (57.86)	11.50 (83.17)	10.50 (75.94)	15.50 (112.11)	17.90 (129.47)	18.50 (133.81)	26.00 (188.05)	31.00 (224.22)
M16 x 1.5	6.20 (44.84)	6.50 (47.01)	9.70 (70.16)	8.60 (62.20)	12.50 (90.41)	11.30 (81.73)	17.00 (122.96)	19.50 (141.04)	20.00 (144.66)	28.00 (202.52)	35.50 (256.77)
M18 x Std.	7.80 (56.41)	8.30 (60.03)	12.50 (90.41)	11.00 (79.56)	16.00 (115.72)	14.50 (104.87)	21.00 (151.89)	27.50 (198.90)	28.50 (206.14)	41.00 (296.55)	43.00 (311.01)
M18 x 1.5	9.10 (65.82)	9.50 (68.71)	14.40 (104.15)	12.50 (90.41)	18.50 (133.81)	16.70 (120.79)	24.50 (177.20)	27.50 (198.90)	28.50 (206.14)	41.00 (296.55)	49.00 (354.41)
M20 x Std.	11.50 (83.17)	12.00 (86.79)	18.00 (130.19)	16.00 (115.72)	22.00 (159.12)	19.00 (137.42)	31.50 (227.83)	35.00 (253.15)	36.00 (260.38)	51.00 (368.88)	60.00 (433.98)
M20 x 1.5	12.80 (92.58)	13.50 (97.64)	20.50 (148.27)	18.00 (130.19)	25.00 (180.82)	22.50 (162.74)	35.00 (253.15)	39.50 (285.70)	41.00 (296.55)	58.00 (419.51)	68.00 (491.84)
M22 x Std.	15.50 (112.11)	16.00 (115.72)	24.50 (177.20)	21.00 (151.89)	30.00 (216.99)	26.00 (188.05)	42.00 (303.78)	46.00 (332.71)	49.00 (354.41)	67.00 (484.61)	75.00 (542.47)
M22 x 1.5	17.00 (122.96)	18.50 (133.81)	28.00 (202.52)	24.00 (173.59)	34.00 (245.92)	29.00 (209.75)	47.00 (339.95)	52.00 (44.76)	56.00 (405.04)	75.00 (542.47)	85.00 (614.80)
M24 x Std.	20.50 (148.27)	21.50 (155.50)	33.00 (238.68)	27.00 (195.29)	40.00 (289.32)	34.00 (245.92)	55.00 (397.81)	58.00 (419.51)	63.00 (455.67)	82.00 (593.10)	92.00 (655.43)
M24 x 2.0	23.00 (166.35)	35.00 (253.15)	37.00 (267.62)	31.00 (224.22)	45.00 (325.48)	38.00 (202.52)	61.00 (441.21)	67.00 (484.61)	74.00 (535.24)	93.00 (672.66)	103.00 (744.99)

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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.

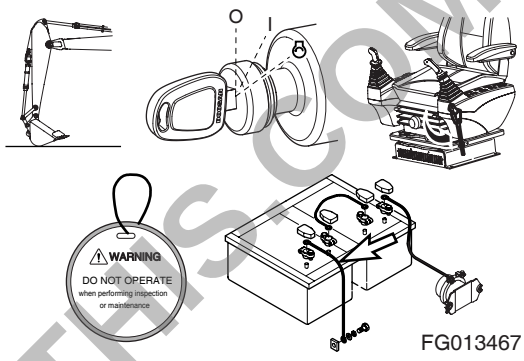


Figure 1

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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DX225LC

OPTION	APPLIED PART
LOCK VALVE	(23)
ONE-WAY ; JOYSTICK BOTTON	(24) (28)
ONE/TWO-WAY	(24) (26) (27) (28) (29) (30) (45)
ROTATING	(31) (32) (33) (34) (44)
QUICK COUPLER	(36)
ARTIC. BOOM	(35) (39) (40) (41) (42) (43)
PATTERN CHANGE VALVE (ISO↔BHL)	(46)
SWING ALARM	(09)

STD

1. PUMP
2. PILOT FILTER
3. SOLENOID VALVE (CUT OFF)
4. ACCUMULATOR
5. SOLENOID VALVE(PACKAGE)
6. JOYSTICK VALVE(L)
7. JOYSTICK VALVE(R)
8. PEDAL VALVE
10. CONTROL VALVE
11. BOOM CYLINDER
12. ARM CYLINDER
13. BUCKET CYLINDER
14. SWING DEVICE
15. TRAVEL DEVICE
16. CENTER JOINT
17. RESTRICTION VALVE
18. RESTRICTION VALVE
19. OIL COOLER
20. FULL FLOW FILTER
21. AIR BREATHER
22. HYDRAULIC TANK

OPT

9. SHUTTLE VALVE for SWING ALARM
23. LOCK VALVE
24. PROPORTIONAL VALVE
25. HIGH PRESS. RETURN FILTER
26. ONE/TWO-WAY SELECT V/V 1
27. ONE/TWO-WAY SELECT V/V 2
28. STOP VALVE
29. OPT. PEDAL VALVE 1
30. SHUTTLE VALVE for OPT.
31. PTO
32. ADDITIONAL GEAR PUMP
33. SOL. V/V for ROTATING
34. ROTATING VALVE
35. OPT. PEDAL VALVE 3
36. QUICK CLAMP VALVE
39. ARTI. BOOM CYLINDER
40. OPT. SHUTTLE VALVE
41. ARTI. BOOM LOCK V/V
42. ARTI. VALVE
43. SOL. V/V for ARTI.
44. OPT. PEDAL VALVE 2
45. SOL. V/V for E3C
46. PATTERN CHANGE VALVE

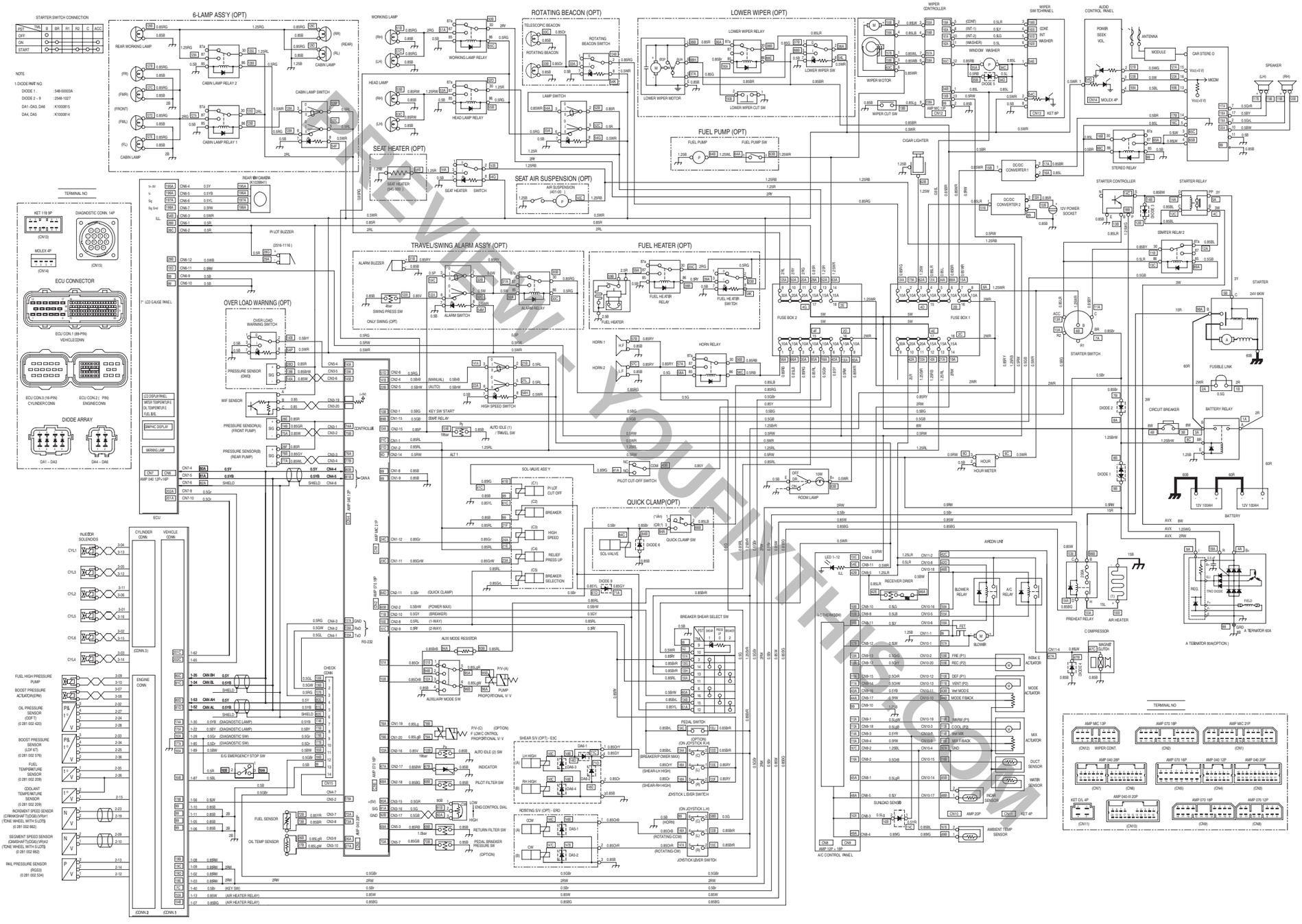
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FG013899

Figure 1

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DX225LC



FG013900

Figure 1

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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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Track Excavator Safety

Edition 1

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TOWING

Precautions When Towing

If any mistake is made in the method of selecting or inspecting the towing wire or in the method of towing, it may lead to serious personal injury. Always do the following:

- Always use the method of towing given in this Operation and Maintenance Manual. Do not use any other method.
- Use leather gloves when handling the wire rope.
- When carrying out the preparation work for towing with two or more workers, determine the signals to use and follow these signals correctly.
- Always fit the towing rope to the left and right hooks and secure in position.
- If the engine on the problem machine will not start or there is a failure in the brake system. always contact your *DOOSAN* distributor.
- Never go between the towing machine and the towed machine during the towing operation.
- It is dangerous to carry out towing on slopes, so select a place where the slope is gradual. If there is no place where the slope is gradual, carry out operations to reduce the angle of the slope before starting the towing operation.
- When towing a problem machine, always use a wire rope with a sufficient towing capacity.
- Do not use a frayed, kinked rope or a rope with any loss of diameter.
- Do not use the lightweight towing hook for towing another machine.

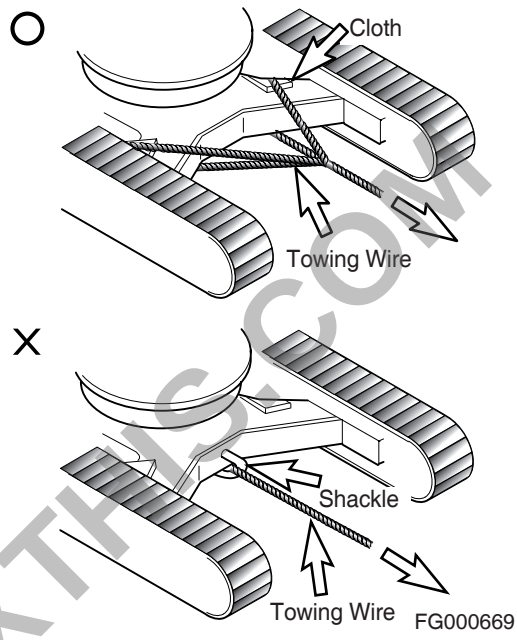


Figure 46

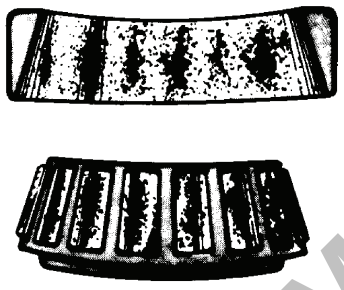
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Fatigue Spalling

Flaking of surface metal resulting from fatigue.

Replace bearing - clean all related parts.



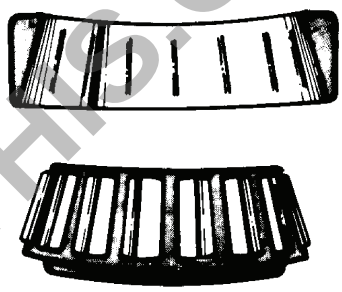
HASA530S

Figure 10

Brinelling

Surface indentations in raceway caused by rollers either under impact loading or vibration while the bearing is not rotating.

Replace bearing if rough or noisy.



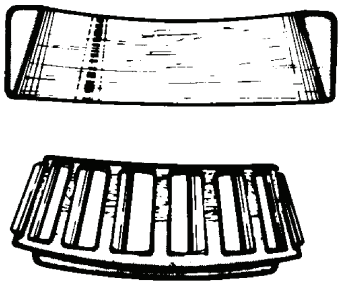
HASA540S

Figure 11

Cage Wear

Wear around outside diameter of cage and roller pockets caused by abrasive material and inefficient lubrication.

Replace bearings - check seals.



HASA550S

Figure 12

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DISASSEMBLY

IMPORTANT

Select a clean place.

Spread a rubber mat or cloth on top of the overhaul workbench to prevent parts from being damaged.

1. Remove bolts and motor from swing reduction case.

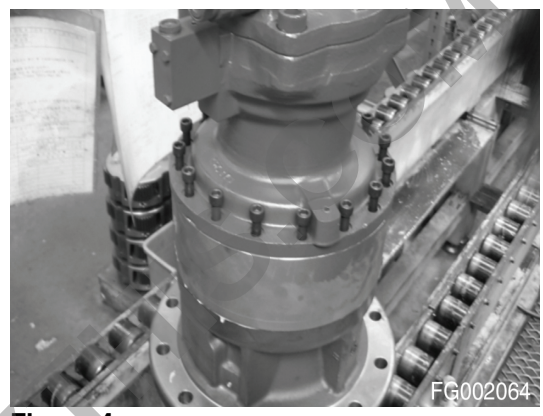


Figure 4

CAUTION!

The motor should be separated without damage or any foreign substance.

CAUTION!

Care should be taken not to damage mounting surface of motor. Carefully remove all gasket material from mounting surfaces.

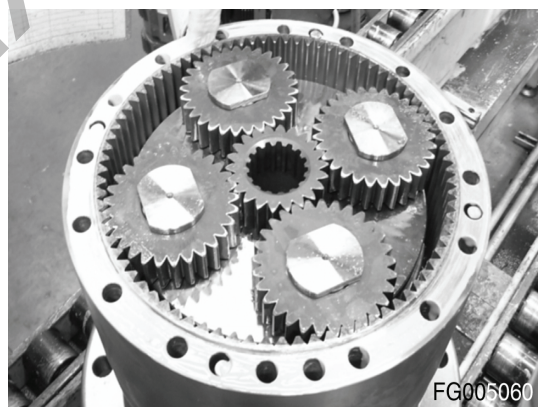


Figure 5

2. Remove No. 1 sun gear from No. 1 carrier.

CAUTION!

Care should be taken not to damage teeth of No. 1 sun gear.

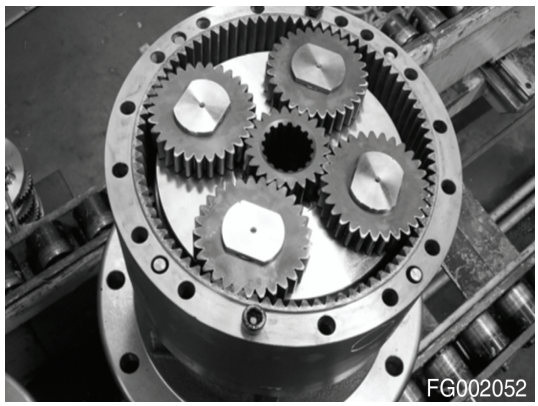


Figure 6

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No.	Check Item	Standard Dimension	Recommended Limit for Maintenance	Limit for Use (Repair - P or Replace - R)
1	Link Pitch	190 mm (7.48")	193 mm (7.598")	194.5 mm [R] (3.72")
2	Bushing Outside Diameter	59 mm (2.323")	57 mm (2.244")	54.0 mm [R] (2.126")
3	Link Height	105 mm (4.134")	100 mm (3.937")	96 mm [P] (3.78")
4	Length at Tip	21 mm (0.827")		
5	Length at Tip	14 mm (0.551")		
6	Height	26 mm (1.023")	20 mm (0.787")	20 mm (0.787")

No.	Check Item	Standard Dimension	Tolerance		Standard Interference	Repair Limit
			Shaft	Hole		
7	Interference between Bushing and Link	59 mm (2.323")	+0.434 +0.394	+0.074 0.0	0.32 - 0.434	
8	Interference between Regular Pin and Link	38 mm (1.496")	+0.222 +0.162	+0.062 0	0.1 - 0.222	
9	Clearance between Regular Pin and Bushing	38 mm (1.496")	+0.222 +0.162	+0.902 +0.402	0.18 - 0.74	
10	Interference between Master Pin and Bushing	37.7 mm (1.489")	+0.04 0	+0.062 0	0.04 - 0.062	
11	Clearance between Master Pin and Bushing	37.7 mm (1.489")	+0.04 0	+0.902 +0.402	0.362 - 0.902	

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Arm Operating Circuit

The arm operating circuit includes both the right and left hydraulic main pumps, the right and left halves of the control valve, a slow return orifice, and the arm cylinder. The circuit can be operated in the two-stage speed control mode which works through both halves of the control valve and doubles the volume of oil flowing to the cylinder.

Overload relief valves set at 360 kg/cm^2 (5,112 psi) have been installed at the AM 1 and AMD 1 ports on the left side of the control valve to protect the circuit and system components from possible damage caused by shocks and/or overload pressure. Additional protection - to prevent cavitation of the cylinder - is provided by a makeup valve and reservoir return circuit, which ensures that the volume of oil going to the cylinder will not exceed the volume of oil coming out.

Arm Crowd Circuit

When the arm control lever is put in the crowd mode, the left side pilot valve generates secondary pressure that is transmitted to the AM1 and AM2 spools of the control valve simultaneously.

When secondary pilot pressure reaches 7 - 9 kg/cm^2 (100 - 130 psi), the arm control valve spools AM1 and AM2 open. Output flow from both halves of the pump assembly is directed to the arm cylinder.

When working in the arm crowd mode, under certain conditions, oil in the arm cylinder could suddenly be forced out by the weight of the arm and bucket. Insufficient oil flow to the cylinder could lead to cavitation in the cylinder and/or surging or irregular movement. This is prevented by a regeneration valve attached to the control valve which maintains the balance between oil flowing into the cylinder and oil flowing out.

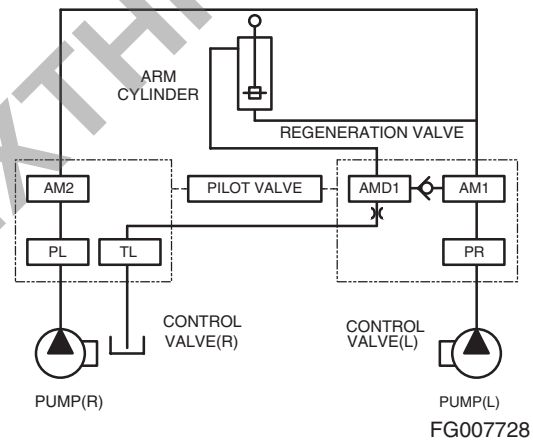


Figure 4

Arm Dump Circuit

When the arm control lever is put in "dump" mode, the left side pilot valve generates secondary pilot pressure that goes to both spools AM1 and AM2 of the control valve simultaneously.

When pilot pressure reaches 7 - 9 kg/cm^2 (100 - 130 psi), the control spools open, allowing oil from PUMP (L) and PUMP (R) to flow to the arm cylinder.

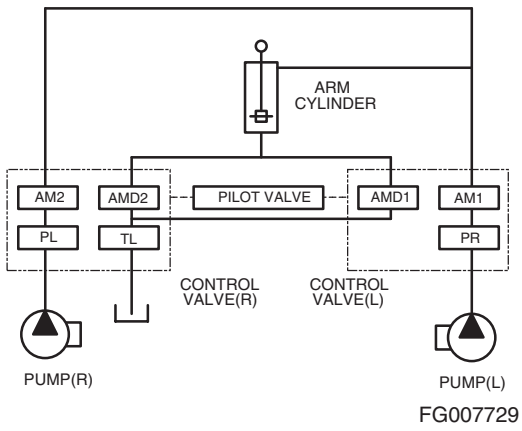


Figure 5

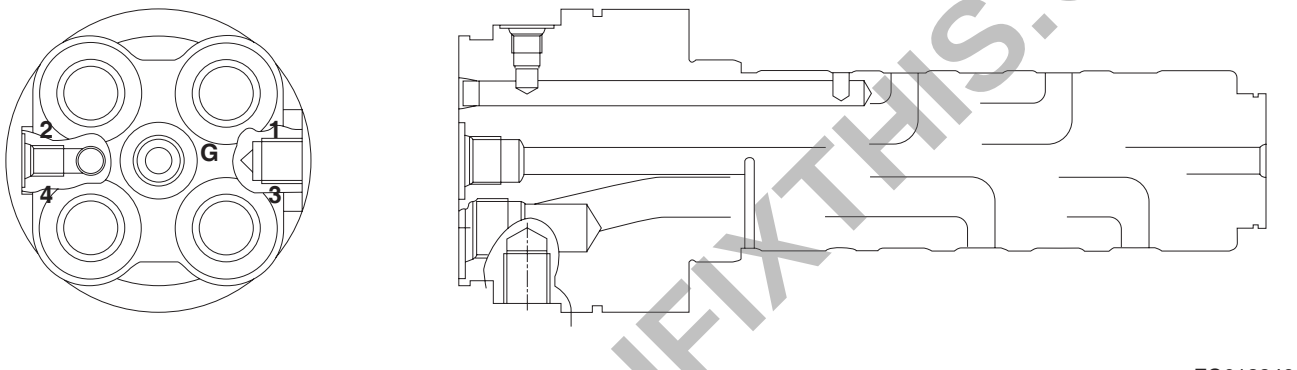
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REASSEMBLY

⚠ CAUTION!

Apply a very light film of white grease or petroleum jelly to the lower rim of the stem and inner surface of the center swivel body. Apply slow, even-handed pressure, using both hands, to slowly push the stem into the body. Seals may be damaged if the stem is pushed in too quickly.



FG013240

Figure 8

1. Wrap the teflon tape around the PT plug about 6~10 times.
2. Assemble the PT plug into the washed shaft.

PT 1/4 : 6mm wrench
Engagement torque: 3~4 kg•m

3. Assemble the sliper seal and the O-ring into the Hub.
4. Assemble the Wear ring (ø80xø85x10) into the Hub.

⚠ CAUTION!

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

⚠ CAUTION!

For any sliper seal which is protruded, press it with finger to seat it in its position. Care should be taken when using a driver or a metal tool, which may cause damage to it.

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3. Reactionless Valve Subassembly

Pressure oil starts to flow to the port A (or B) of the pressure oil motor as the direction switching valve of the swing motor switches and the poppet of the reactionless valve moves to the right side to stop the bypass channel and to drive the swing body.

Then, the direction switching valve returns to the middle position, both ports of the hydraulic motor are blocked but the swing body stops its revolving movement soon due to its inertia whose force is transferred to the hydraulic motor via the reducer, that the port B (or A) generates the brake pressure to stop the swing body and then to try to revolve it in the reverse direction.

That brake pressure stops the swing motor and then makes it revolve in the reverse direction and the pressure at the port B would make the poppet switched to the left, which will be delayed by the orifice of the port A. In this case a bypass channel is generated between ports A and B, and pressure oil of the port B flows to port A through the bypass channel.

And, the poppet at the port B moves to the left until it stops the bypass channel. [Fig. 5-(3)]. As such, the reaction is prevented and the swing motor stops immediately by bypassing pressure oil to port A when reverse pressure is generated at the port B.

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TM40VD MAINTENANCE INSTRUCTIONS

⚠ CAUTION!

Please read these instructions carefully before the disassembly and reassembly.

Precautions

1. The overhaul of this machine should be performed in accordance with instructions stated in this manual.
2. Use tools stated in these instructions for the disassembly and reassembly of the machine.
3. Use parts we produce or recommend for expendables and parts to be replaced.
4. Types and Meanings of Warning Words

   Four types of warnings are used in these instructions to indicate the severity (degrees of fault).

   Be aware of those warnings and follow their instructions.

Warnings	Descriptions
Emergency	Very danger. Failure of following order or instructions may cause serious injury or even death.
Alert	Subject to danger. Failure of following order or instructions may cause serious injury or even death.
Caution	Subject to danger. Failure of following order or instructions may cause injury or damage to machine or device.
⚠	Indicates information requiring special attention or to be emphasized.

There are no Emergency or Alert items in these instructions, however.

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18. Grip body (96) in vise. Remove plug (94), piston (95) and O-ring (102).

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.

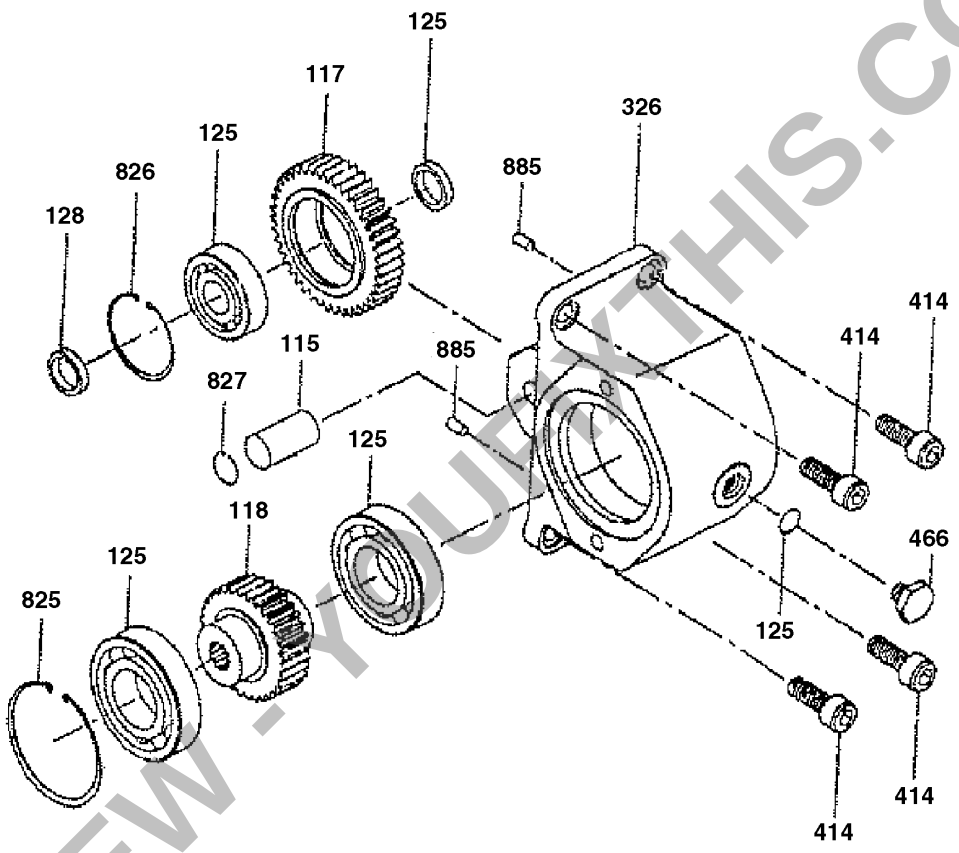
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MAINTENANCE STANDARDS OF PUMP BODY

1. Standards to Replace Worn Parts

   Replace gears 2 (117) and 3 (118) whose teeth have pitting (the size of 1 ft is the same and below 1 mm or is more than 5% of the area). Any parts whose appearance is severly damaged should be replaced also.



FG002120

Figure 4

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INSTALLATION

1. Position pedal valve (1, Figure 36) on cabin floor plate and install four bolts and washers (2).

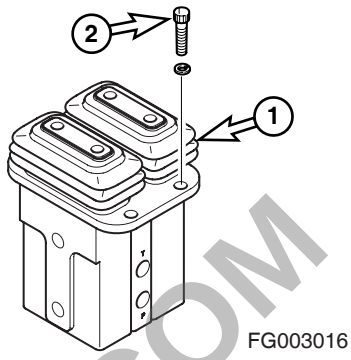


Figure 36

2. Install pedal brackets (3) and levers (4, Figure 37) on pedal valve and install four bolts and washers (2).
3. Install rubber boots (1, Figure 37).

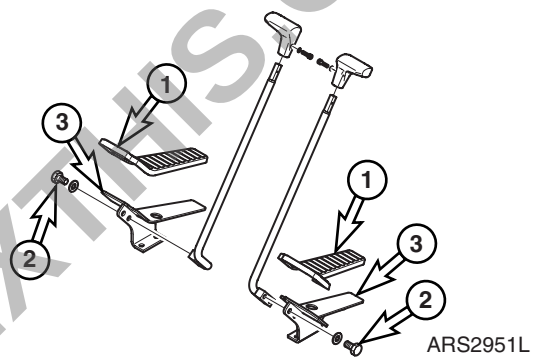


Figure 37

4. Connect hoses as tagged during removal to pedal valve (1, Figure 38).
5. Install cabin under cover by tightening bolts.

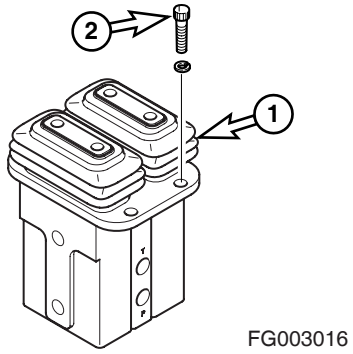


Figure 38

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INTRODUCTION

The electrical system for this equipment is DC 24 volts. The rated voltage for all electric components is 24 volts with the exception of the stereo and the air-conditioning control actuator. The system contains two 12 volt batteries connected in series and a three phase AC generator with a rectifier. The electric wiring used in the system is easily identifiable by the insulator color. The color symbols used in the electrical system are listed in the following chart.

Electric Wire Color

Symbol	Color
W	White
G	Green
Or	Orange
B	Black
L	Blue
Lg	Light green
R	Red
Gr	Gray
P	Pink
Y	Yellow
Br	Brown
V	Violet

NOTE: *RW: Red wire with White stripe*

R - Base Color, W - Stripe Color

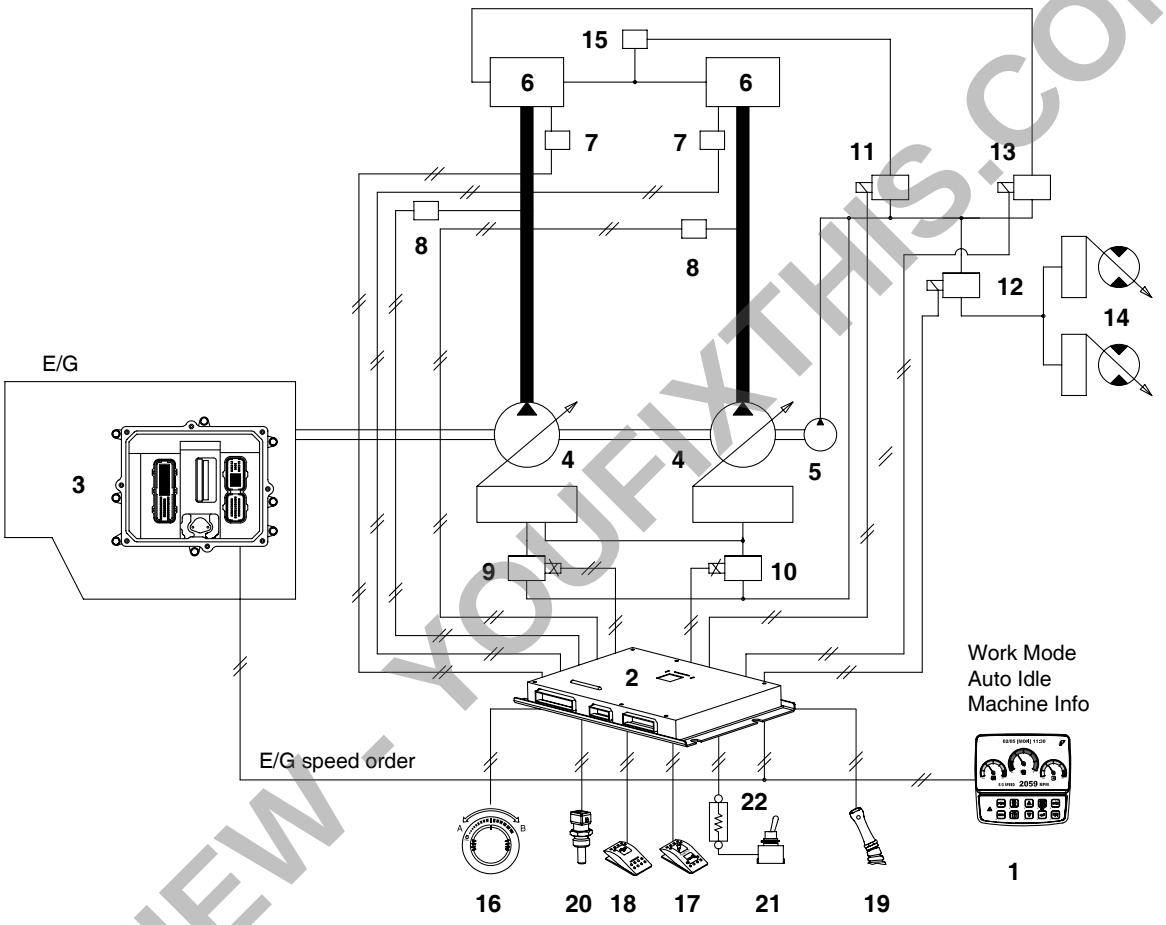
NOTE: *0.85G: Nominal sectional area of wire core less insulator = 0.85 mm^2*

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ELECTRONIC HYDRAULIC CONTROL SYSTEM (e-EPOS)

Control System Schematic



FG013630

Figure 51

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4	**High-pressure: Over 6 kg/cm^2 (85 psi)** **Low-pressure: Approximately 760 mmHg (Negative Pressure)**		
Possible Cause: Refrigerant does not circulate			
Step	**Inspection Item**		**Remedy**
1	1. Connect manifold gauge and start engine. 2. Turn on air conditioner. 3. Set blower switch to HIGH position. 4. Turn air conditioner OFF and wait 10 minutes. 5. Recheck high / low-pressure readings. High-pressure: 13.0 - 19.0 kg/cm^2 (185 - 270 psi) Low-pressure: 1.5 - 3.3 kg/cm^2 (21.3 - 46.9 psi)	Yes	Moisture in system, replace receiver dryer.
		No	Contaminated system, replace expansion valve. (Replace evaporator core assembly.)

5	**High-pressure: Over 6 - 18 kg/cm^2 (85 - 256 psi)** **Low-pressure: 500 mmHg (Negative Pressure) - Dial indicator needle unstable.**
Possible Cause: Moisture in system has iced up the expansion valve.	
NOTE: *When the absorbed moisture freezes the pressure readings may look normal. Careful readings should be made to determine whether pressure is in normal range.*	
1. Recover any remaining refrigerant. 2. Vacuum out system. 3. Recharge system. **NOTE:** *If the system has been exposed to the air for a long period of time, replace the receiver dryer.*	

6	**High-pressure: Over 22.0 - 23 kg/cm^2 (313 - 327 psi)** **Low-pressure: 2.5 kg/cm^2 (36 psi)**		
Possible Cause: Refrigerant pressure problem due to defective expansion valve or temperature sensor.			
Step	**Inspection Item**		**Remedy**
1	Inspect whether the temperature sensor is installed properly.	Yes	Replace expansion valve.
		No	Exchange duct sensor.

7	**High-pressure: Over 7.0 - 11.0 kg/cm^2 (100 - 156 psi)** **Low-pressure: 4.0 - 6.0 kg/cm^2 (57 - 85 psi)**
Possible Cause: Low refrigerant pressure due to poor compressor compression.	
Inspect and replace compressor if necessary.	

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