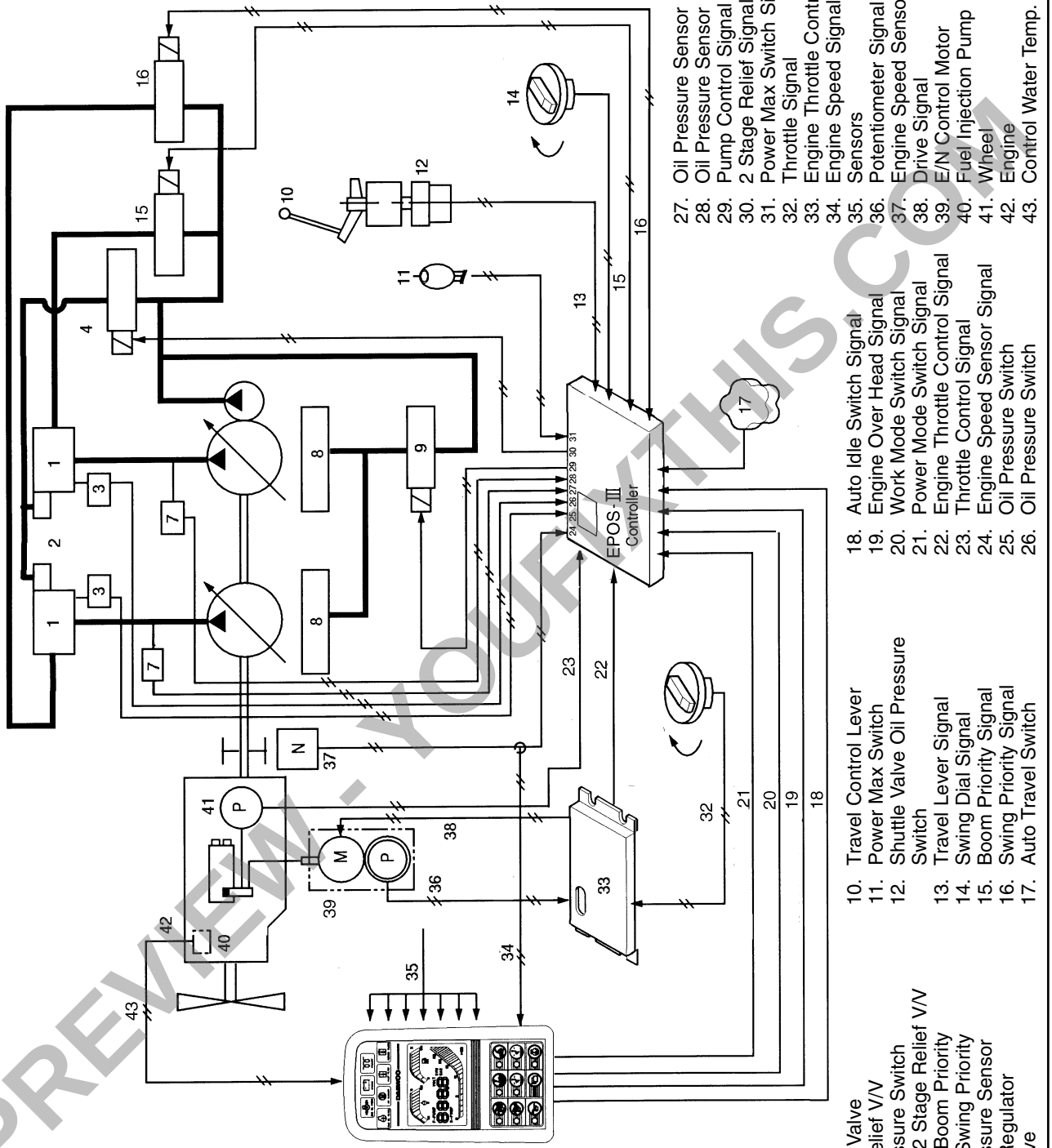
EPOS SYSTEM ELECTRICAL MAP



1. Control Valve
2. Main Relief V/V
3. Oil Pressure Switch
4. S/V for 2 Stage Relief V/V
5. P/V for Boom Priority
6. PN for Swing Priority
7. Oil Pressure Sensor
8. Pump Regulator
9. Ppr Valve
10. Travel Control Lever
11. Power Max Switch
12. Shuttle Valve Oil Pressure Switch
13. Travel Lever Signal
14. Swing Dial Signal
15. Boom Priority Signal
16. Swing Priority Signal
17. Auto Travel Switch
18. Auto Idle Switch Signal
19. Engine Over Head Signal
20. Work Mode Switch Signal
21. Power Mode Switch Signal
22. Engine Throttle Control Signal
23. Throttle Control Signal
24. Engine Speed Sensor Signal
25. Oil Pressure Switch
26. Oil Pressure Switch
27. Oil Pressure Sensor
28. Oil Pressure Sensor
29. Pump Control Signal
30. 2 Stage Relief Signal
31. Power Max Switch Signal
32. Throttle Signal
33. Engine Throttle Controller
34. Engine Speed Signal
35. Sensors
36. Potentiometer Signal
37. Engine Speed Sensor
38. Drive Signal
39. E/N Control Motor
40. Fuel Injection Pump
41. Wheel
42. Engine
43. Control Water Temp. Signal

2200

FIGURE 5-18

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Hydraulic System Schematic

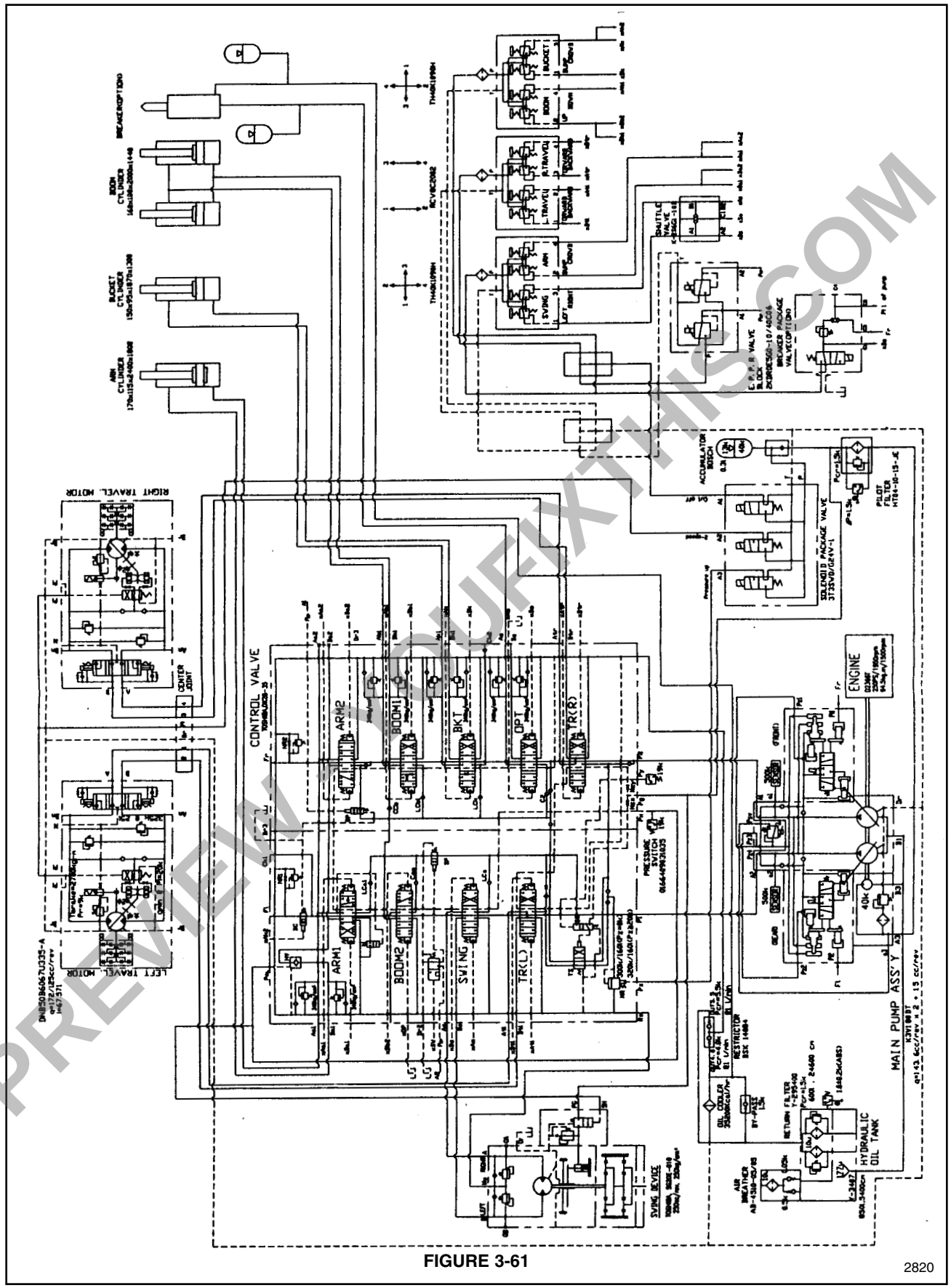


FIGURE 3-61

2820

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Attachment Cylinder Components

Two essentially similar types of hydraulic cylinders are used on the excavator. The cylinder that is used to operate the excavator bucket is equipped with a rod stopper, which acts as a cushion only when the cylinder rod is fully retracted (and the bucket is pulled close to the arm). This type of cylinder is shown in the lower drawing.

Boom and arm cylinders have a cushion or stopper for operation in both directions. This type of cylinder is shown in the upper drawing.

The following parts list is a partial listing only; for full and complete parts list information, refer to the Hydraulic Equipment Component Parts List.

Part Number	Name
1	Cylinder Tube
2	Piston Rod
3	Piston
4	O-ring
5	Backup Ring
6	Slipper Seal
7	Wear Ring
8	Ring (SLYD)
9	Piston Nut
10	Stop Ring
11	Cushion Ring
12	Lock Ring
13	Rod Cover
14	Rod Bushing
15	Retaining Ring
16	O-ring
17	Backup Ring
18	Step Seal
19	O-ring
20	U-packing
21	Backup Ring
22	Dust Wiper
23	Retaining Ring
24	Bolt
25	Pin Bushing
26	Cushion Plunger
27	Stop Ring
28	Check Valve
29	Spring Support
30	Spring
31	Plug

The upper cross section in Figure 3-11 shows an arm or bucket-type cylinder.

The lower cross section in Figure 3-11 shows a bucket-type cylinder.

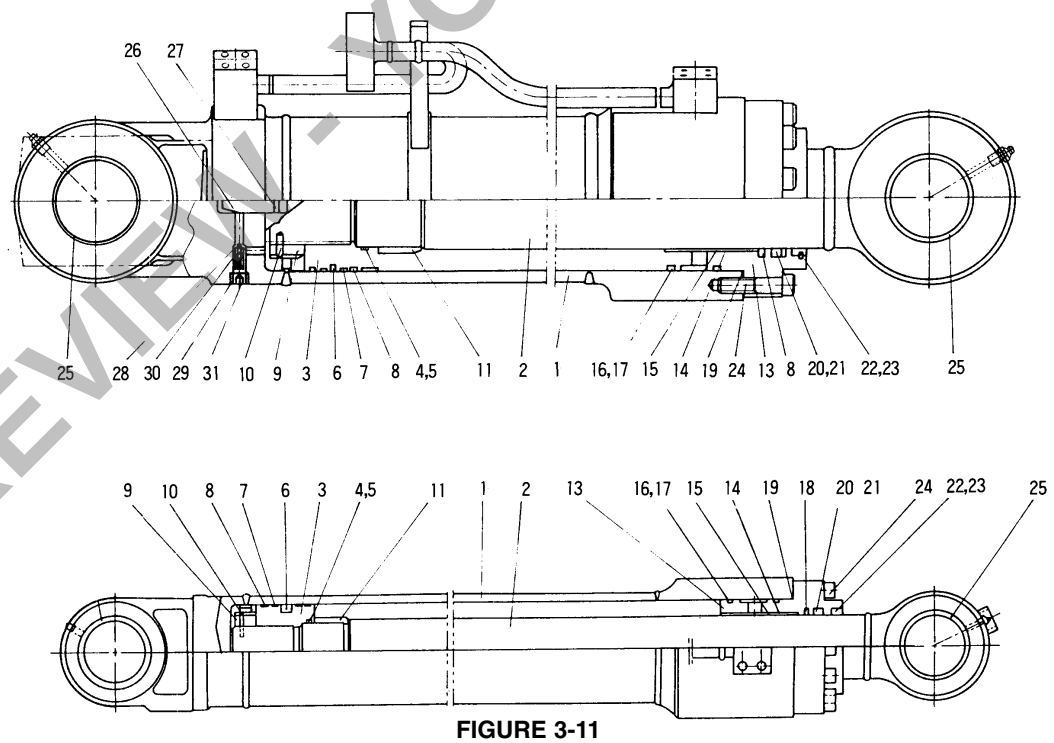


FIGURE 3-11

0323

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Torque Specifications

Standard Bolt Torque Table

NOTE

Torques are shown in kg m (ft lb).

Grade Dia x Pitch (mm)	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	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 1.5	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 (665.43)
M24 x 1.5	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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II. Self-diagnostic fault codes:

Fault area	Symptom	Display	Action	Note
Proportional Valve (Pump control)	short circuit	01	P/V(A) current cut off (0mA)	Proportional Valve resistance below 7 ohms
Proportional Valve (Swing control)	short circuit	02	P/V(B) current cut off (0mA)	Proportional Valve resistance below 7 ohms
Proportional Valve (Boom control)	short circuit	03	P/V(C) current cut off (0mA)	Proportional Valve resistance below 7 ohms
Solenoid Valve (Pressure up)	short circuit	04	Output current cut off (0mA)	Detected current over 1.65 + 0.2A
Solenoid Valve (High speed)	short circuit	06	Output current cut off (0mA)	Detected current over 1.2 + 0.2A
Solenoid Valve (Pressure up)	open circuit	14		Detected current under 0.26 + 0.1A
Solenoid Valve (High speed)	open circuit	16		Detected current under 0.26 + 0.1A
Control dial (Engine speed)	output voltage over 4.6 + 0.2V or under 0.4 + 0.2V	21		
Control dial (Swing speed)	output voltage over 4.6 + 0.2V or under 0.4 + 0.2V	22		
Throttle piston sensor	output voltage over 4.6 + 0.2V or under 0.4 + 0.2V	23		
Pressure (A) sensor	output voltage over 4.6 + 0.2V or under 0.4 + 0.2V	24		
Pressure (B) sensor	output voltage over 4.6 + 0.2V or under 0.4 + 0.2V	25		
Mode selection signal input	terminal CN1-12 and CN1-13 are at high voltage (12 volts)	26		

NOTE

Engine Throttle Controller fault diagnosis is outlined on Page 8-8.

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Operator's Cab Removal Procedure

An assist crane is required for this procedure. The cab top has four lift points. See Figure 3-1.

Before setting up the assist crane, prepare the cab shell for removal by disconnecting wiring connectors for:

- Cab interior lighting
- External light wiring
- Radio antenna and connections
- Wiper/washer connections

NOTE

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

1. Rigging connections to the assist crane should be the responsibility of the lift crane crew, who must make sure that sling loads are equalized and will allow a straight, balanced, vertical lift; free of twist or side loads.

⚠CAUTION!!!

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

2. Lift the load hook to tighten slings and create very slight tension, before unbolting the 10 fasteners around the perimeter of the cab shell:
   (4) 16 mm x 2.0 mm hex bolts at each corner of the cab,
   (3) 10 mm x 1.5 mm hex bolts on the door side of the cab,
   (3) 10 mm x 1.5 mm allen head bolts, 2 on the right side of the cab and 1 under the front window.
3. Unbolt corner fasteners first and work inward, leaving the two 10 mm right side allen head bolts and the center left side 10 mm bolt till last.
4. To verify a straight lift, stop lifting an inch or two above deck height, after all fastener connections have been unbolted.
5. Continue lifting with the assist crane to remove the cab shell. Lower the shell to a pre-prepared safe blocking support.
6. Reinstallation requires reversing disassembly steps.

Window and Gasket Replacement

The cab removal drawing also shows replacement glass and mating window gaskets and rubber trim pieces. Individual part numbers are included in the "Cab" section of the Parts Book.

When replacing glass or weatherstrip gaskets, always:

- Make sure the window frame and rubber trim section are both clean.
- Use soap and water to lubricate both the rubber and glass for assembly.
- A sharp, curving metal hook and/or a straight, pointed awl can be helpful in easing window glass into position. Start from the bottom of the frame and work up.

NOTE

Refer to Figure 3-1 on the next page for both "Operator's Cab Removal" and "Window and Gasket Replacement."

IMPORTANT

When replacing window glass or making any type of structural repair to any part of the operator's cab, consider the cause of the damage and evaluate the potential for other threats or hazards in the operating environment. Refer to Page 3-3 (Falling Object Protective Structures) and make an evaluation to determine the need for additional protection for the operator.

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Troubleshooting – Engine Problems

Problem	Possible Causes	Remedies
Starter Circuit; electrical or mechanical fault:		
Nothing happens when starter key turned	Loose, broken wire connection	Tighten, clean
	Key switch defective	Replace
	Starter relay defective	Replace
	Starter controller defective	Replace
	Solenoid plunger sticking or plunger linkage binding	Hammer solenoid housing; replace
	Solenoid coil burned out	Replace solenoid
	Starter pinion gear sticking	Repair or replace
Starter clicks but pinion does not engage	Armature shaft bearings defective	Rebuild or replace
	Pinion or flywheel gear teeth	Replace
	Battery not charged	Charge or replace
	Pinion shaft binding	Clean, replace
Pinion engages but motor does not turn	Pinion clutch slipping	Replace
	Armature coil burned out	Replace
	Brush/commutator contact bad	Repair or replace
	Battery charge condition low	Charge or replace
	Starter circuit badly grounded	Clean, tighten
Engine does not start; fuel system at fault:		
Fuel from feed pump not being supplied	Air in fuel line; other clog	Bleed air or clean
	Feed pump valves defective	Replace
	Feed pump piston or pushrod binding or worn	Repair or replace
	Feed pump filter clogged	Clean, replace
No fuel delivery from injection pump	Fuel filter element restricted	Replace
	Fuel filter overflow valve open	Replace valve
	Air in pump or piping line	Bleed air
	Plungers or valves sticking	Repair or replace
Fuel injection timing no longer correct	Pump mounting bracket loose	Realign, tighten
	Timing gears worn or defective	Realign, replace
	Cams on pump camshaft worn	Replace

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Specifications

Operating Weight	31,800 Kg (31.8T)
Engine Weight (Dry)	924 Kg (2,037 lb)
Fuel Tank Capacity	520 l (137gal)
Hydraulic Tank Capacity	360 l (95 gal)
Bucket Capacities (CECE heaped)	1.3 m^3 (1.7 yd^3) Standard, 0.8m^3 (1.0yd^3) 1.1 m^3 (1.4 yd^3), 1.6m^3 (2.0yd^3) 1.7 m^3 (2.2 yd^3) 2.0m^3 (2.6yd^3)
Shoe Widths	Std. 600 mm (23.6"), 702 mm (27.5") 750 mm (29.5") 800 mm (31.5")
Excavator Ground Pressure For Various Shoe Widths	600 mm (23.6") : 0.61 kg/cm^2 (8.68 psi) 700 mm (27.5") : 0.53 kg/cm^2 (7.54 psi) 800 mm (32") : 0.47 kg/cm^2 (6.68 psi) 850 mm (31.5") : 0.44 kg/cm^2 (6.26 psi)
Transport Dimensions	Overall Shipping Length 11.105 mm (36' 4") (standard mono boom and 3,205 mm (10' 6") arm) Overall Shipping Width 3,280 mm (10' 9") (standard shoes) Overall Shipping Height 3,380 mm (11' 1") (to top of cylinder hose) Track Shipping Length 4,939 mm (16' 3")
Loading Ramp Allowable Slope	Maximum of 15°

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Maintenance Intervals

Daily or Every 10 Operating Hours

- Check fuel level (Page 7-4).
- Drain water and sediment from fuel tank (Page 7-4).
- Check hydraulic oil level and refill as required (Page 7-4).
- Check engine oil and refill as required (Page 7-5).
- Check the cooling system and refill as required (Page 7-5).
- Check for leaks in the hydraulic system (Page 7-5).
- Check for leaks in the fuel system (Page 7-5).
- Inspect for any loose or missing nuts and bolts (Page 7-5).
- Inspect the bucket teeth and side cutters for signs of wear (Page 7-6).
- Check the operation of all switches (Page 7-6).
- Check the operation of all exterior lights, horn and control console indicator lights (Page 7-6).
- Check the operation of all control console monitors (Page 7-6).
- Start engine and check starting ability, exhaust color at start and at normal operating temperature. Listen for any abnormal sounds (Page 7-6).
- Check operation of all controls (Page 7-6).
- Inspect the track assemblies for proper tension and loose, worn or damaged parts (links, shoes, rollers, idlers) (Page 7-6).
- Inspect structure for cracks or faulty welds (Page 7-6).
- Check and fill swing motor fluid (Page 7-6).

Weekly or Every 50 Operating Hours

- Perform all daily service checks.
- Grease fittings (Page 7-7).
- Grease the swing bearing (Page 7-9).
- Drain and refill the engine oil and replace engine oil filters* (Page 7-9).

  Use the appropriate oil for operating conditions; refer to the Table of Recommended Lubricants on Page 7-2 of this manual for further information and recommendations.
- Clean air filter element (Page 7-9).
- Check engine fan belt for cracks, wear and correct tension* (Page 7-10).
- Clean radiator and oil cooler† (Page 7-10).

150 Operating Hours

- Perform all daily and 50 operating hour service checks.
- Check engine fan belt for cracks, wear and correct tension (Page 7-10).

Monthly or Every 250 Operating Hours

- Perform all daily, 50 and 150 operating hour service checks.
- Inspect pins and bushings of front end attachments for wear (Page 7-10).
- Check fluid level and charge level in batteries (Page 7-10).
- Change engine oil and oil filter (Page 7-10).
- Change fuel filter element (Page 7-10).
- Drain water and sediment from hydraulic oil reservoir (Page 7-11).
- Replace hydraulic fuel flow oil filters (Page 7-11).
- Change the pilot system filter (Page 7-12).
- Drain and fill swing motor fluid* (Page 7-12).
- Check travel motor fluid level (Page 7-12).
- Drain and refill travel motor fluid* (Page 7-13).

Three Months or Every 500 Operating Hours

- Perform all daily, 50, 150 and 250 operating hour service checks.
- Clean radiator and oil cooler (Page 7-13).
- Replace air filter (Page 7-13).
- Grease swing pinion gear (Page 7-13).
- Grease the center joint (Page 7-14).

Six Months or Every 1,000 Operating Hours

- Perform all daily, 50, 150, 250 and 500 operating hour service checks.
- Drain and refill hydraulic oil and replace full flow filters (Page 7-14).
- Drain and fill travel motor fluid (Page 7-15).
- Drain and fill swing motor fluid (Page 7-15).
- Drain and fill engine coolant (Page 7-15).
- Clean fuel tank suction strainer (Page 7-15).
- Check alternator and starter** (Page 7-15).
- Check all rubber anti-vibration shock mounts (Page 7-15).
- Perform and record the results of the cycle time tests (Page 7-15).
- Inspect machine for cracked or broken welds or other structural damage (Page 7-15).

* New machine break-in cycle only.

** These checks need to be completed by an authorized Daewoo dealer.

Dusty conditions.

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To the Operator of a Daewoo Excavator

⚠ DANGER!!!

Unsafe use of the excavator could lead to serious injury of death. Operating procedures, maintenance and equipment practices or traveling or shipping methods that do not follow the safety guidelines on the following pages could cause serious, potentially fatal injuries or extensive damage to the machine or nearby property.

Please respect the importance of taking responsibility for your own safety, and that of other people who may be affected by your actions.

The safety information on the following pages is organized into nine topic sections:

I. **General Safety Essentials**
II. **Location of Safety Labels**
III. **Summary of Safety Precautions for Lifting in Leveling Mode I**
IV. **Work-site Precautions**
V. **Operation**
VI. **Equipment**
VII. **Maintenance**
VIII. **Shipping and Transportation**
IX. **Excavator Rated Lift Capacity Tables**

General Safety Essentials

Accessory Applications

The excavator has been primarily designed for moving earth with a bucket. For use as a grapple or for other object handling, contact Daewoo. Lifting work applications (unless restricted or prohibited by local regulations) are permitted in approved lift configuration, to rated capacity only, with no sideloading. DO NOT use the machine for activities for which it was not intended. DO NOT use the bucket for lifting work, unless lift slings are used in the approved configuration.

Use of an accessory hydraulic hammer (breaker), work in rough terrain, demolition applications or other hazardous operation may require installation of additional protective structures to safeguard the operator.

Refer to Section 3 for additional information on Falling Object Protective Structures (F.O.P.S.) and other reinforcement systems.

Lifting Capacity Rating Configuration

Lifting-capacity ratings that are printed at the end of this safety section are based on the machine being level, on a firm supporting surface, with hooks and slings attached in approved configuration. Loads must be balanced and supported evenly. Use taglines to keep the load steady if wind conditions and a large surface area are a problem. Work crew hand signals, individual tasks, and safe procedures, should all be universally understood before the lift is made.

IMPORTANT

Before using the excavator to make lifts check municipal and regional regulations or statutes that could apply. Governing ordinances may require that all heavy lifting be done with single purpose equipment specifically designed for making lifts, or other local restrictions may apply. Making heavy lifts with a general purpose excavator that can be used for digging, loading, grading or other work may be expressly forbidden by a regional injunction or other legal prohibition. Always follow all of the other instructions, guidelines and restrictions for Safe Lifting in the Operation and Maintenance and Shop Manuals.

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TABLE OF CONTENTS

SAFETY

To the Operator of a Daewoo Excavator 1-1
General Safety Essentials 1-1
Locations of Safety Labels 1-2
Summary of Safety Precautions for Lifting in Leveling Mode I 1-5
Work-site Precautions 1-6
Operation 1-7
Equipment 1-10
Maintenance 1-11
Shipping and Transportation 1-12
Excavator Rated Lift Capacity Tables 1-13

SPECIFICATIONS

Excavator Machinery Plan 2-1
Excavator Engine Specifications 2-2
Engine Performance Curves (Per KS-R1004 Standard) 2-3
Hydraulic System Component Specifications 2-4
Hydraulic Pump Performance Characteristics 2-5
Specifications 2-6
General Dimensions 2-7
Working Range Dimensions 2-9
Reference Table – Approximate Weight of Workload Materials 2-11
Excavator Rated Lift Capacity Tables 2-13
Performance Standards 2-34
Performance Tests 2-35

UPPER STRUCTURE

Operator's Cab Removal Procedure 3-1
Falling Object Protective Structures (F.O.P.S.) 3-3
Front Attachment Pin Specifications 3-4
Bucket Tooth Inspection and Replacement 3-5
Shimming Bucket Linkage 3-6
Bucket Attachment, Removal and Reversal 3-7
Removal and Installation of Front Attachment 3-8
Operation of Hydraulic Cylinders 3-10
Attachment Cylinder Components 3-11
Cylinder Assembly and Disassembly 3-12
Cylinder Reassembly 3-16
Welding Precautions and Guidelines 3-18
Accumulator 3-19
Engine Components and Accessories 3-21
Fuel Tank Removal and Installation 3-22
Engine Cooling System: Radiator/Oil Cooler 3-23
Counterweight Removal and Installation 3-25
Swing Bearing Maintenance 3-27
Swing Bearing Rebuild 3-28
Center Joint (Swivel) Overhaul/Repair 3-30
Hydraulic System General Notes 3-34
Hydraulic System Schematic 3-35

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INSPECTION, MAINTENANCE AND ADJUSTMENT

Periodic Inspection and Maintenance 7-1
Table of Recommended Lubricants 7-2
Inspection and Maintenance 7-4
Daily or Every 10 Operating Hours 7-4
Weekly or Every 50 Operating Hours 7-7
150 Operating Hours 7-10
Monthly or Every 250 Operating Hours 7-10
Three Months or Every 500 Operating Hours 7-13
Six Months or Every 1,000 Operating Hours 7-14
General Maintenance Procedures 7-16
Engine Speed Control Adjustment 7-17
Torque Specifications 7-18
Torque Wrench Extension Tools 7-19
Flange and Thread Sealant Assembly Compounds 7-21
Welding Maintenance Procedures 7-23
Hydraulic System Cleanliness and Oil Leaks 7-24
Reference Notes for Electrical Schematic 7-25

TESTING, TROUBLESHOOTING AND ADJUSTING

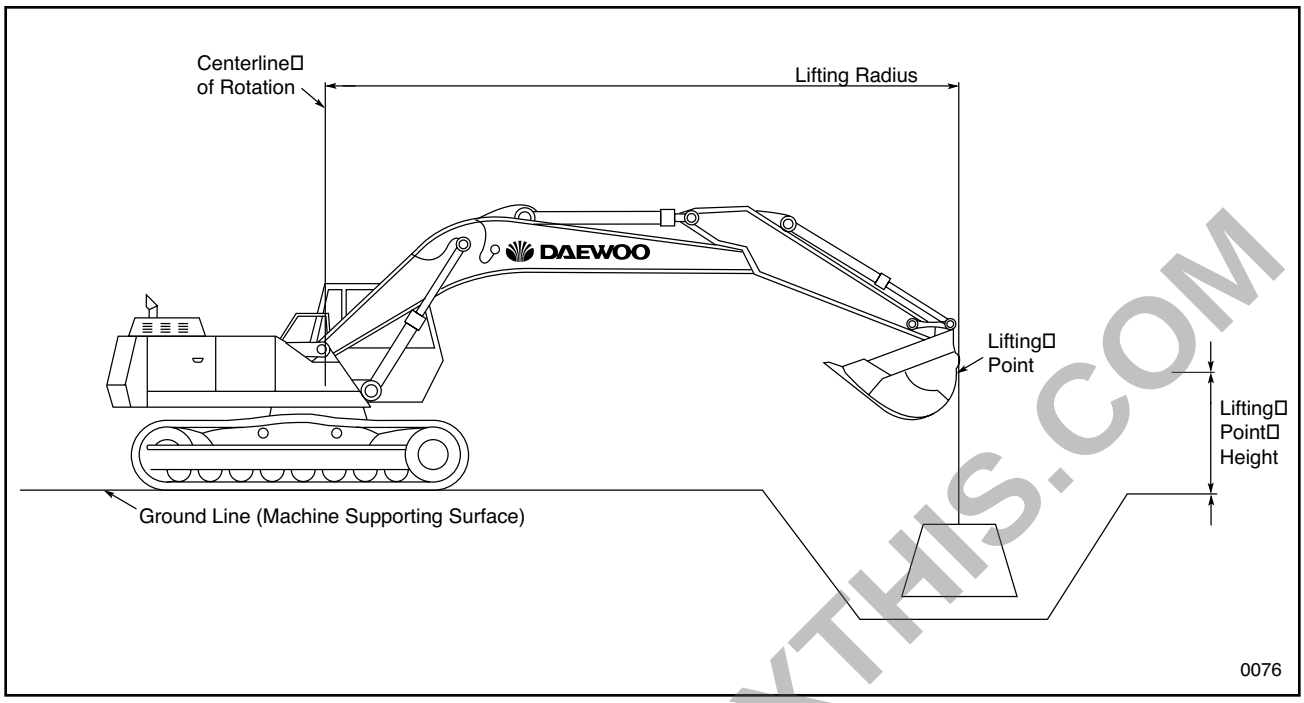
Troubleshooting Recommendations 8-1
Troubleshooting – Engine Problems 8-2
Engine Throttle Controller 8-28
Troubleshooting – Electrical System 8-10
Flow Meter and Flow Meter Kit Installation and Testing 8-11
Pilot Pressure 8-12
Negacon, Negative Control 8-13
Power Mode Valve 8-14
Boom/Swing Priority 8-15
Pressure Up Valve 8-16
Pump Input Power Control 8-17
Swing System Troubleshooting 8-19
Troubleshooting – Hydraulic Problems 8-21
Troubleshooting – Control Valve 8-23
Troubleshooting – Travel Control Valve 8-25
Troubleshooting – Joystick Control Valve 8-26
Troubleshooting – Swing System 8-27
Troubleshooting – Swing Gearbox 8-28

INDEX 9-1

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Excavator Rated Lift Capacity Tables (Continued)



The following weight loads are in compliance with SAE (J1097) and ISO applicable, recommended standards for hydraulic excavators performing lifting operation on a firm supporting surface. An asterisk (*) next to the lift rating indicates rated load does not exceed 87% of hydraulic capacity. All other ratings have been determined not to exceed 75% of tipping capacity.

DO NOT attempt to lift or hold any load that exceeds rated load capacity at the specified distances (from the machine's rotation centerline and height – see "lift radius" and "lift height" in the reference drawing).

The weight of slings and any auxiliary lifting device (and/or the weight difference of any attachment heavier than standard configuration) must be deducted from the rated lift capacity to determine allowable net lifting load. The lift point should be located on the back of the bucket, as shown in the reference drawing on this page.

IMPORTANT

Press the "Leveling Mode I" switch on the Instrument Panel before using the excavator for lifting work. Engine and hydraulic oil should both be fully warmed up to operating temperature before starting a lift.

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Main Pump Assembly Description

The main pump assembly contains two variable displacement axial piston pumps connected in series, driven through a flexible coupling off the back of the engine. A regulator mounted on each pump controls the flow output of that pump. A gear-type pilot pump is mounted on the second main pump (farther away from the engine) and supplies oil to the two regulators and the control valve. See Figures 3-78 – 3-81.

The axial piston pumps in the main pump assembly are units that incorporate 3 main functional subassemblies:

- The rotary group includes a drive shaft, cylinder block, piston, shoe, push plate, and spherical bush.

  The rotary group drive shaft is driven directly off the engine and turns at the same rate as engine RPM. The cylinder block and pistons revolve around the drive shaft, producing oil flow through the pump whenever the angle of the swash plate is tilted past the 0 degree (vertical) angle. Whenever the pump swash plate angle is at 0 degrees, piston stroke length is reduced to 0, and there is no output from the pump.

- The swash plate group includes the shoe plate, swash plate support, and servo pistons.

  The pump regulator controls the tilt angle of the swash plate. Increasing the swash plate tilt angle increases the length of piston stroke, boosting both the output flow and output pressure of the pump.

- The valve group consists of the valve block, valve plate and plate pin, providing intake and exhaust port assemblies for the pump.

  The pump cylinder block slides into the valve plate whenever piston stroke is tilted past the “0” swash plate angle, to allow flow of supply oil (input) and positive discharge (output) through the pump.

Main Pump Output: 143.6 cc (8.76 in^3)/rev (1 pump)

Gear (Pilot) Pump Output: 15 cc (0.92 in^3)/rev

Pilot Pump Relief Valve: Relief pressure set at 40 kg/cm^2 (569 psi)

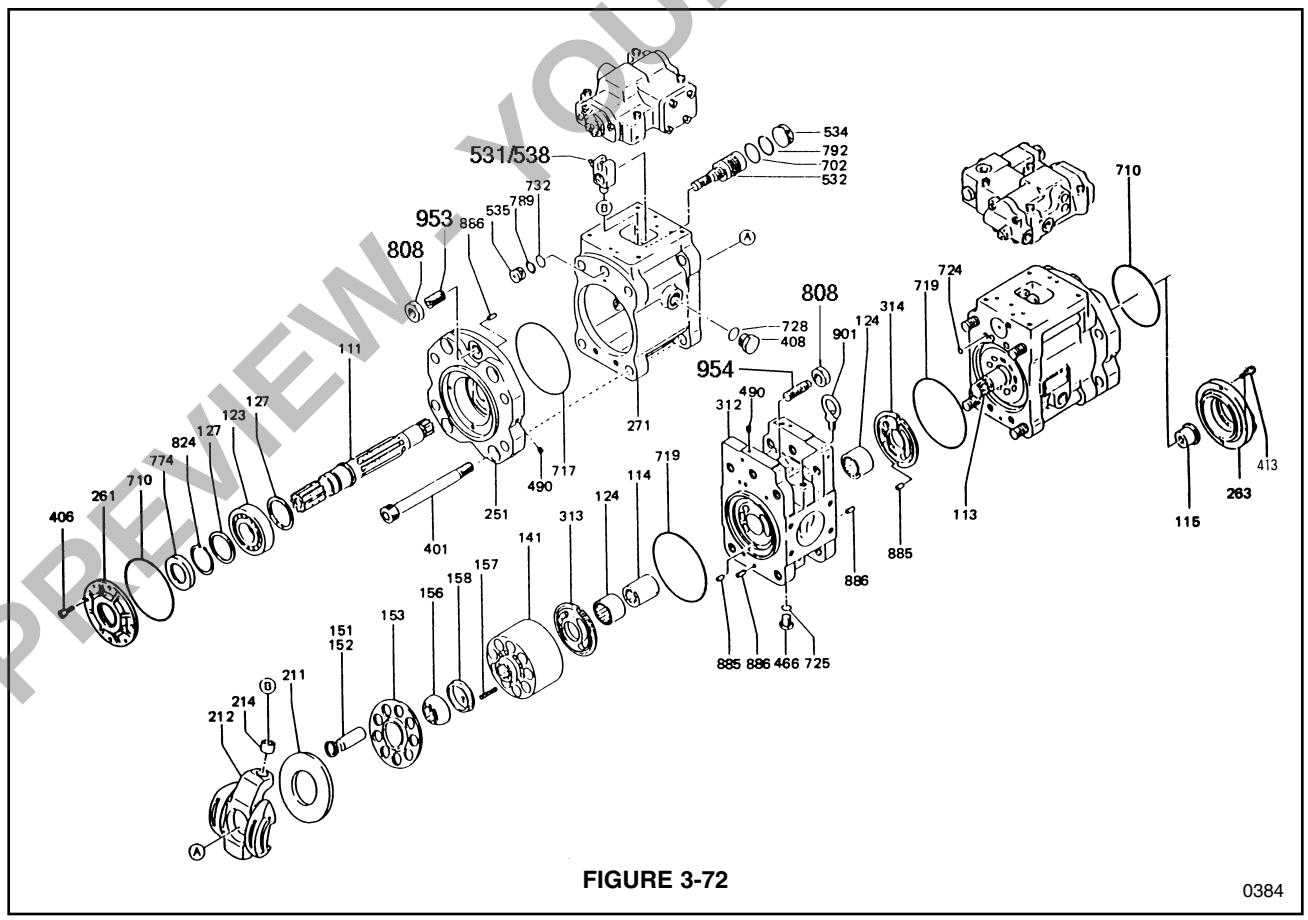


FIGURE 3-72

0384

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3. Clean parts and place plunger in spool holder, secure with vise, and detach plunger cap. See Figure 3-206.

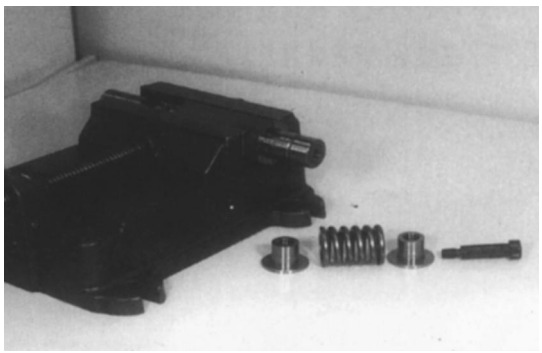


FIGURE 3-206 2101

4. Detach cap, from Arm-1 only, and remove spring and check valve. See Figure 3-207.

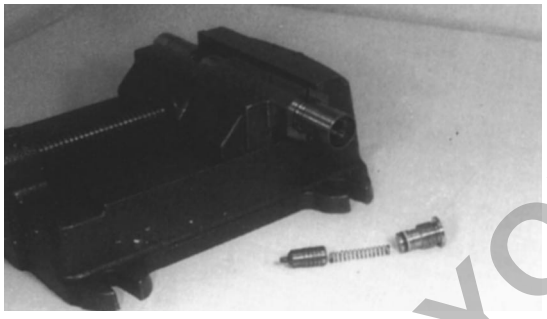


FIGURE 3-207 2102

Main Relief Valve

1. Loosen cap and remove valve as an assembly. See Figure 3-208.

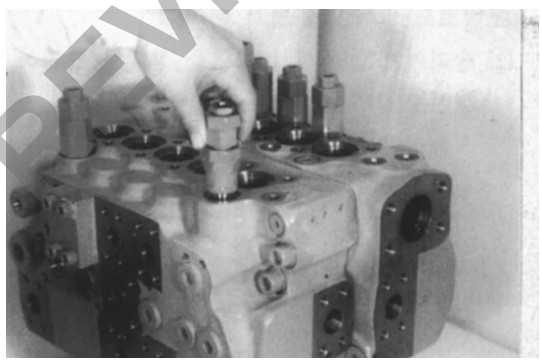


FIGURE 3-208 2103

2. Loosen two lock nuts, remove pressure adjusting screw, and remove the piston spring and pilot poppet. See Figure 3-209.

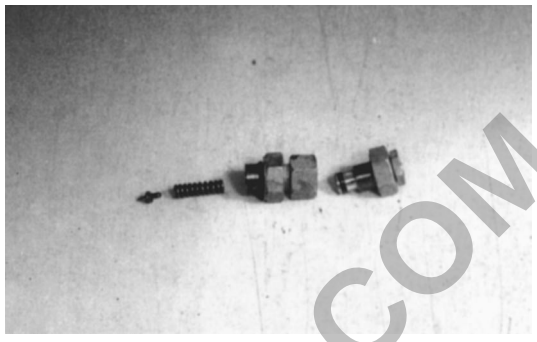


FIGURE 3-209 2104

3. Remove sleeve. Remove orifice spring and main poppet. See Figure 3-210.

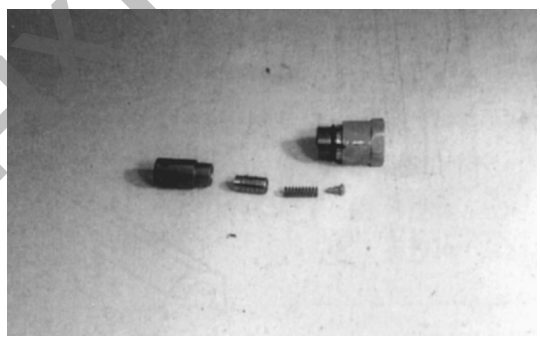


FIGURE 3-210 2105

NOTE

Pilot seat is installed with a press fit – do not disassemble. See Figure 3-211.

1. (Left) Cap
2. (Right) Pilot Seat

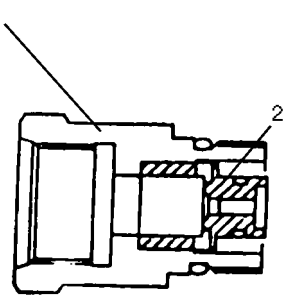


FIGURE 3-211 2106

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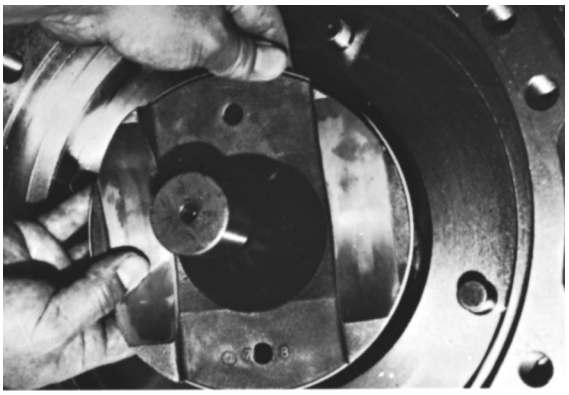


FIGURE 4-22 0149

8. Remove the swash plate (201).
9. After threading 12 mm bolts into the swash plate support (202), separate the swash plate support.

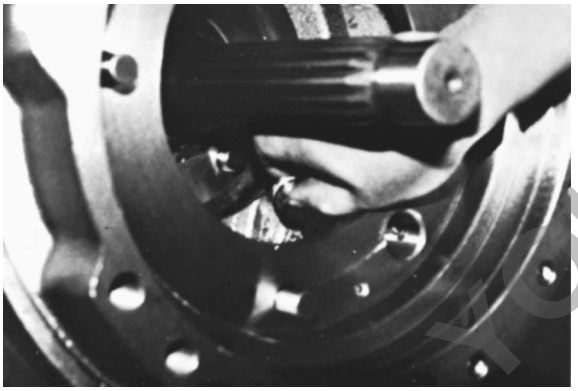


FIGURE 4-23 0150

10. Pull out the tilting piston (502) and stopper (S, 504).

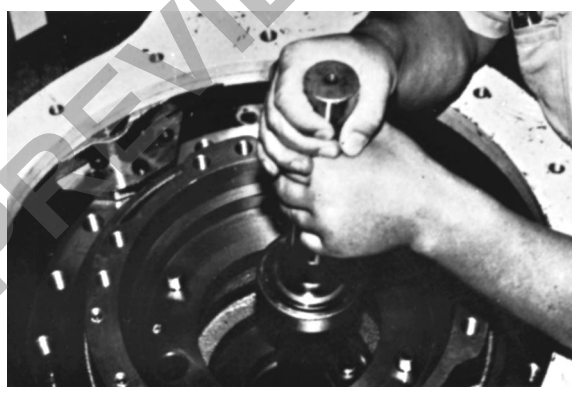


FIGURE 4-24 0151

11. **WARNING:** Be careful to avoid causing damage to the roller bearing when the plastic or wooden hammer is used in helping to separate the front shaft of the drive shaft (101) from the casing (272).

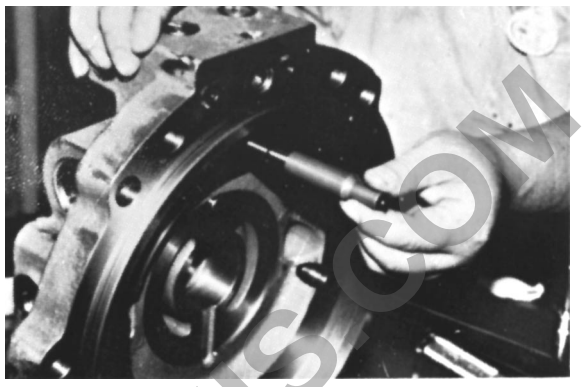


FIGURE 4-25 0152

12. Valve casing disassembly should begin with removal of the tilting rod (505), tilting spring (533) and tilting spool (531).

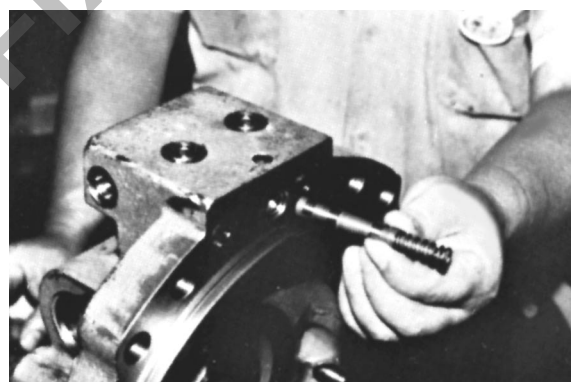


FIGURE 4-26 0153

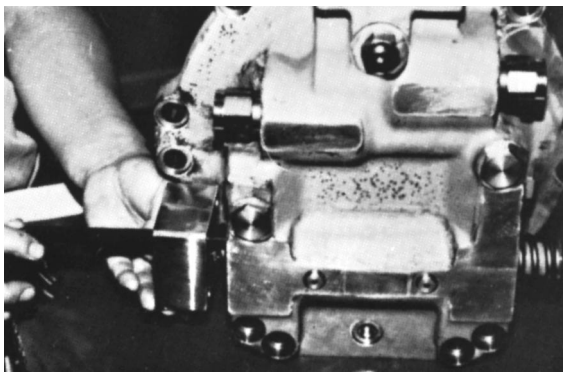


FIGURE 4-27 0154

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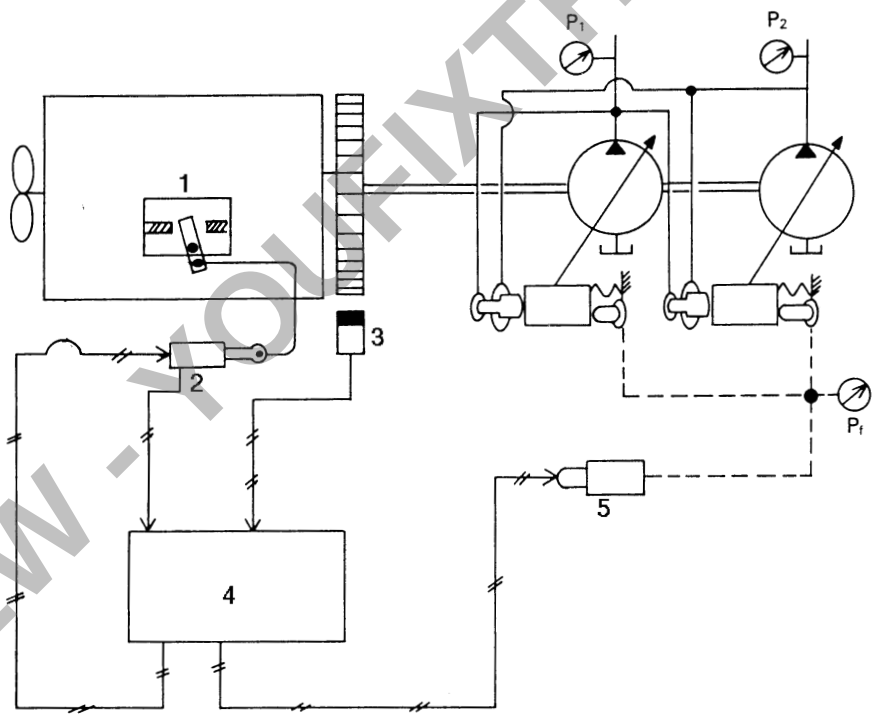
Power Mode System Operating Components

Mechatropia™

The diagram on this page shows the main components that are used in making available 3 distinct operating “Power Modes.” See Figure 5-12. The excavator’s two variable input main pumps can be operated through several ranges of power output. An electrically operated proportional control valve is used to change the angle of the main pump swash plates, to vary available output. A DC electric motor operates the diesel fuel direct injection pump lever. A separate sensor monitors the operating angle of the fuel lever and a magnetic pickup off the engine flywheel accurately measures engine RPM speed.

Depending upon the work mode selected, the EPOS system may be used to maintain pump swash plates at a lower output working angle, and the fuel injection pump lever at reduced throttle (for better fuel economy), or the system may be used to coordinate engine and pump output to obtain the highest possible horsepower/flow yield.

1. Fuel Lever
2. D.C. Motor (Includes fuel level angle sensor)
3. Magnetic Flywheel RPM Sensor
4. EPOS Controller
5. Proportional Control Valve



NOTE

The controller changes the working angle of the pump swash plate and the angle of the engine fuel pump lever to optimize power output three ways — for improved operating economy, more available power, or the best combination of both.

FIGURE 5-12

3210

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Check Engine Fan Belt for Cracks, Wear and Correct Tension*

1. With the engine shut off, check the tension of the fan belt by pressing downward on the belt, midway between the fan pulley and alternator pulley. The belt should flex approximately 10 mm (1/2"). See Figure 7-21. To adjust the belt, loosen the alternator adjustment plate bolts, adjust the belt tension and retighten the bolts.
2. Inspect all engine belts for worn, cracked or frayed edges. Replace any belts that show signs of wear.

* New machine break-in.

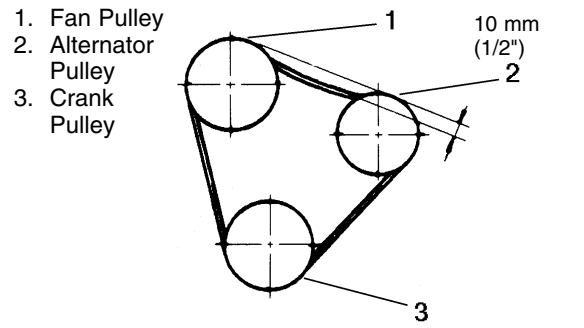


FIGURE 7-21

0111

Clean Radiator and Oil Cooler†

Dusty conditions.

See 500 hour service.

150 Operating Hours

Perform All Daily and 50 Operating Hour Service Checks

Check Engine Fan Belt for Cracks, Wear and Correct Tension

See 50 hour break-in service.

Monthly or Every 250 Operating Hours

Perform All Daily, 50 and 150 Operating Hour Service Checks

Inspect Pins and Bushings of Front End Attachments for Wear

Check Fluid Level and Charge Level in Batteries

Change Engine Oil and Oil Filter

See 50 hour break-in service.

Change Fuel Filter Element

1. Locate the filter assembly inside the engine compartment. See Figure 7-22. The filter is a canister and element assembly.

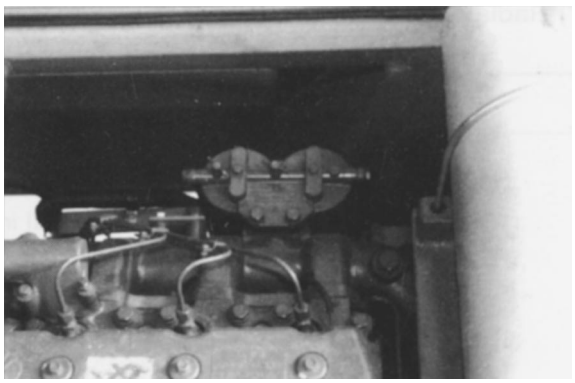


FIGURE 7-22

1540

2. Position a small container under the filter assembly. Drain the canister by removing the drain plug.
3. Unscrew the filter assembly and remove the filter element and O-ring. Wipe out the filter canister to remove any sediment and reinstall the drain plug.

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