

Section-0 General**Serial No.**

Equipment Layout -----	ES00-03-0032.0R0	1001-
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Front And Rear Drum Shaft Disassembly And Reassembly -----	ES01-10-6032.0R0	1001-
Third Drum Shaft Structure And Outline -----	ES01-12-0032.0R0	1001-
Third Drum Shaft Maintenance Chart -----	ES01-12-2032.0R0	1001-
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Boom Hoist Drum Disassembly And Reassembly -----	ES01-15-6032.0R0	1001-
Clutch Structure And Outline -----	ES01-17-0027.1R0	1016-
Clutch Structure And Outline (2-Cylinder Type) -----	ES01-17-0032.0R0	1001-1015
Clutch Maintenance Chart (2-Cylinder Type,Front And Rear Drum) -----	ES01-17-2009.1R0	1001-1015
Clutch Maintenance Chart (2-Cylinder Type,Third Drum) -----	ES01-17-2025.1R0	1001-1015
Clutch Maintenance Chart -----	ES01-17-2073.0R0	1016-
Clutch Troubleshooting (2-Cylinder Type) -----	ES01-17-4009.0R0	1001-1015
Clutch Troubleshooting (1-Cylinder Type) -----	ES01-17-4023.0R0	1016-
Clutch Disassembly And Reassembly (1-Cylinder Type) -----	ES01-17-6025.0R0	1016-1032
Clutch Disassembly And Reassembly (1-Cylinder Type) -----	ES01-17-6025.1R0	1033-1139
Clutch Disassembly And Reassembly (1-Cylinder Type) -----	ES01-17-6025.2R0	1140-
Clutch Disassembly And Reassembly (2-Cylinder Type) -----	ES01-17-6032.0R0	1001-1015
Turntable Bearing Maintenance Chart -----	ES01-30-2030.0R0	1001-
Turntable Bearing Disassembly And Reassembly -----	ES01-30-6032.0R0	1001-
Power Divider (Pump Splitter) Maintenance Chart -----	ES01-40-2032.0R0	1001-
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Lower General Explanation -----	ES02-01-0032.0R0	1001-
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Take-Up Idler Maintenance Chart -----	ES02-07-2032.0R0	1001-
Take-Up Idler Inspection And Adjustment -----	ES02-07-5032.0R0	1001-
Take-Up Idler Disassembly And Reassembly -----	ES02-07-6032.0R0	1001-
Carrier Roller Maintenance Chart -----	ES02-08-2032.0R0	1001-
Carrier Roller Disassembly And Reassembly -----	ES02-08-6032.0R0	1001-
Track Roller Maintenance Chart -----	ES02-09-2032.0R0	1001-
Track Roller Disassembly And Reassembly -----	ES02-09-6032.0R0	1001-
Track Shoe Maintenance Chart -----	ES02-10-2032.0R0	1001-

Track Shoe Inspection And Adjustment -----	ES02-10-5032.0R0	1001-
Track Shoe Disassembly And Reassembly -----	ES02-10-6032.0R0	1001-
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Travel Reduction Gear And Gear Case Oil Inspection And Replacement -----	ES02-21-5032.0R0	1001-
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Front And Rear Drum Brakes Control Maintenance Chart -----	ES03-05-2032.0R0	1001-
Front And Rear Drum Brakes Control Disassembly And Reassembly -----	ES03-05-6032.0R0	1001-
Third Drum Brake Control Maintenance Chart -----	ES03-07-2032.0R0	1001-
Third Drum Brake Control Inspection And Adjustment -----	ES03-07-5032.0R0	1001-
Third Drum Brake Control Disassembly And Reassembly -----	ES03-07-6032.0R0	1001-

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Hydraulic Circuit Outline -----	ES04-01-0032.1R0	1155-
Hydraulic Circuit Pressure Adjustment -----	ES04-01-5032.0R0	1001-1154
Hydraulic Circuit Pressure Adjustment -----	ES04-01-5032.1R0	1155-

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Variable Delivery Pump Outline And Structure -----	ES05-02-0032.0R0	1001-1154
Variable Delivery Pump Outline And Structure -----	ES05-02-0051.0R0	1155-
Variable Delivery Pump Maintenance Chart -----	ES05-02-2032.0R0	1001-1154
Variable Delivery Pump Maintenance Chart -----	ES05-02-2050.0R0	1155-
Variable Delivery Pump Troubleshooting -----	ES05-02-4009.0R0	1001-
Variable Delivery Pump Disassembly And Reassembly -----	ES05-02-6032.0R0	1001-
Gear Pump Disassembly And Reassembly -----	ES05-03-6032.0R0	1001-1154
Gear Pump Disassembly And Reassembly -----	ES05-03-6032.1R0	1155-
Accumulator Structure And Working -----	ES05-05-0009.1R0	1001-1154
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Accumulator Inspection And Adjustment -----	ES05-05-5009.1R0	1001-
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Remote Control Valve Structure And Operation -----	ES05-17-0009.0R0	1001-1154
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Remote Control Valve Disassembly And Reassembly -----	ES05-17-6009.0R0	1001-1154
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Clutch Cylinder Disassembly And Reassembly (2-Cylinder Type, R.H.) -----	ES05-18-6003.1R0	1001-1015
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Clutch Cylinder Disassembly And Reassembly (1-Cylinder Type) -----	ES05-18-6032.0R0	1016-1032
Clutch Cylinder Disassembly And Reassembly (1-Cylinder Type) -----	ES05-18-6032.1R0	1033-1139
Clutch Cylinder Disassembly And Reassembly (1-Cylinder Type) -----	ES05-18-6073.0R0	1140-
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Line Filter Inspection -----	ES05-30-5011.0R0	1001-
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Control Valve (2-Series) Structure And Outline -----	ES05-36-0032.0R0	1001-
Check Block Structure And Outline -----	ES05-49-0011.0R0	1001-
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Section-6 Gantry

Gantry Maintenance Chart -----	ES06-01-2032.0R0	1001-
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Gantry Bail Disassembly And Reassembly -----	ES06-03-6032.0R0	1001-

Section-7 Crane attachment

Boom Foot Pin Maintenance Chart -----	ES07-08-2032.0R0	1001-
Sheave Maintenance Chart -----	ES07-09-2032.0R0	1001-

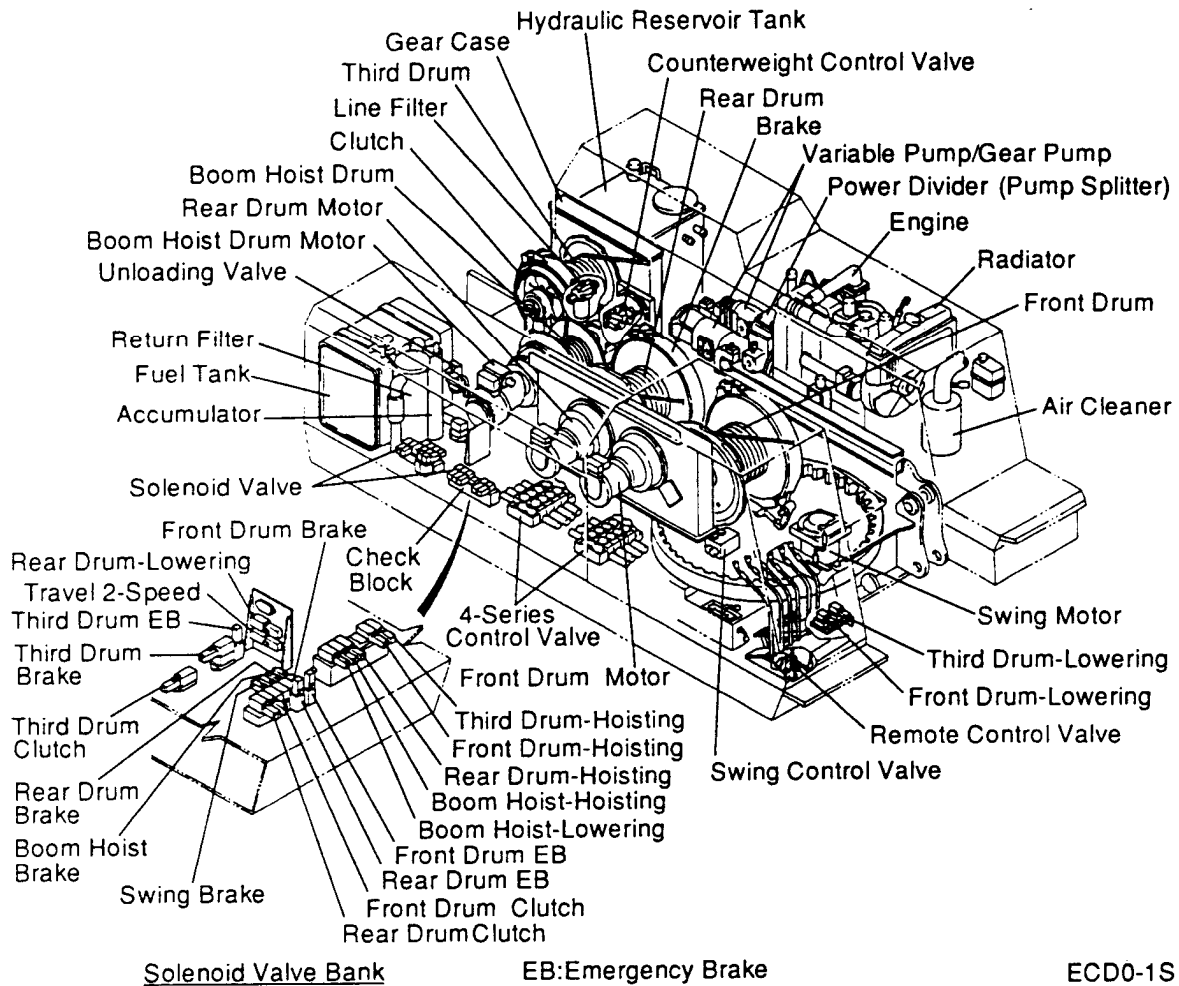
Section-13 Electrical System

Electrical Diagram -----	ES13-01-0032.0R0	1001-1154
Electrical Diagram -----	ES13-01-0032.1R0	1155-
Electrical System Standardization -----	ES13-01-9032.0R0	1001-
Storage Battery Servicing And Installation -----	ES13-04-5003.0R0	1001-

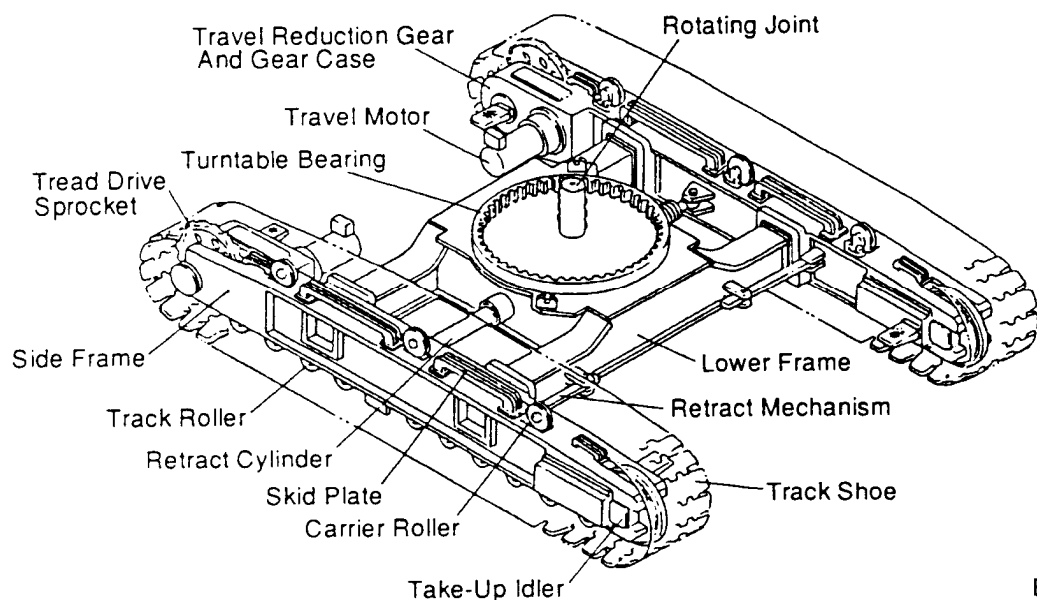
Section-14 Tightening Torque Table

General Purpose Tightening Torques -----	ES14-02-0001.0R1	1001-
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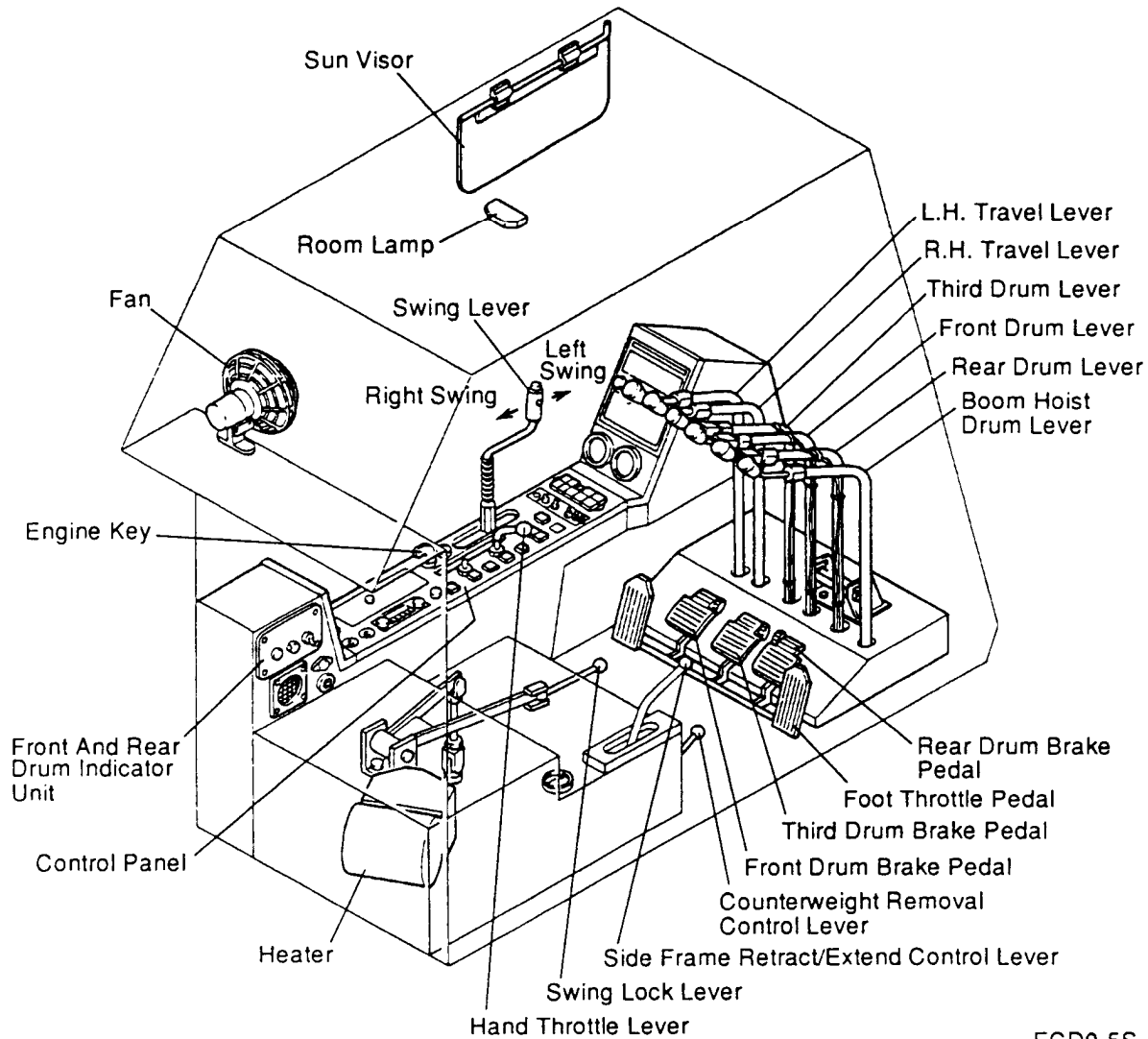
1 Upper Machinery



2 Lower Machinery

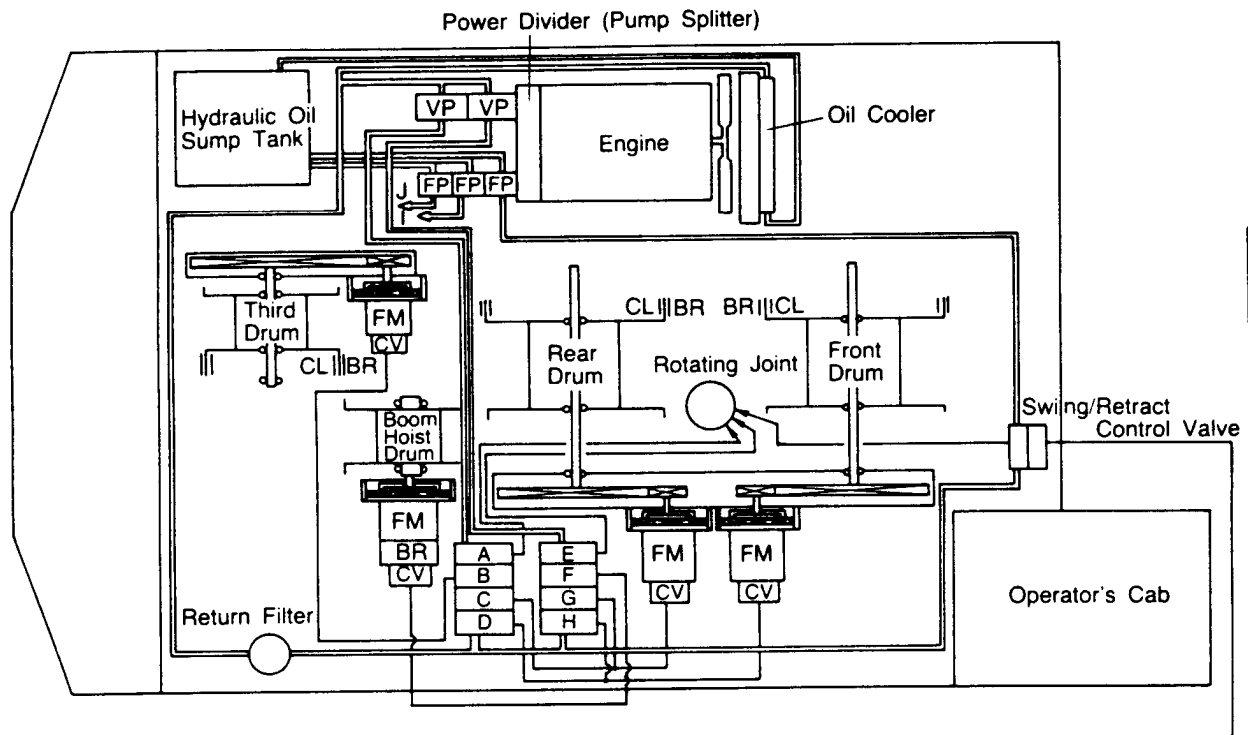


3 Components In Operator's Cab

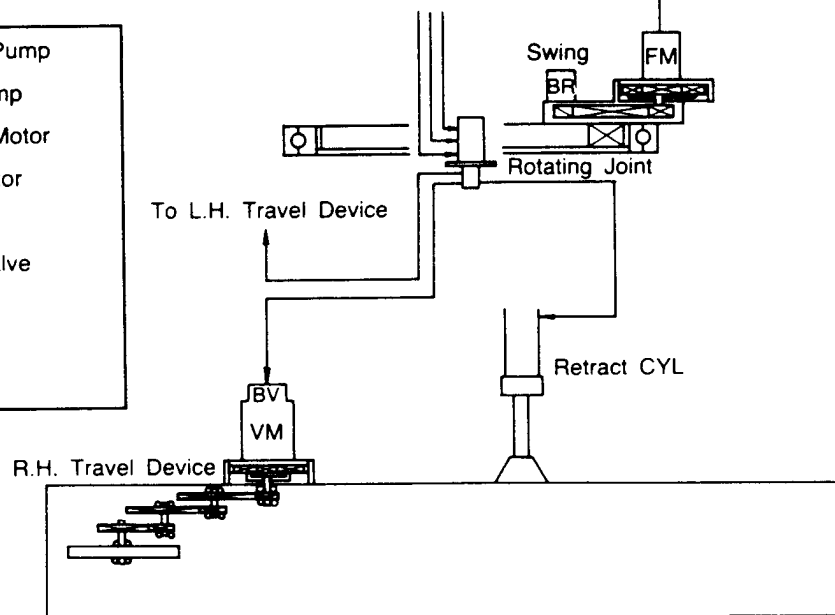


Note: For more details of operating levers, pedals and switches on the panel, refer to the operator's manual.

Power from the engine is separated by the power divider (pump splitter) to drive hydraulic pumps. The rotating energy of engine power is also converted into fluid energy (the flow of high pressure hydraulic oil) which is directed by the control valves, through pipelines, to various actuators.



VP	Variable-Capacity Pump
FP	Fixed-Capacity Pump
VM	Variable-Capacity Motor
FM	Fixed-Capacity Motor
BV	Brake Valve
CV	Counterbalance Valve
CL	Clutch
BR	Brake
CYL	Cylinder



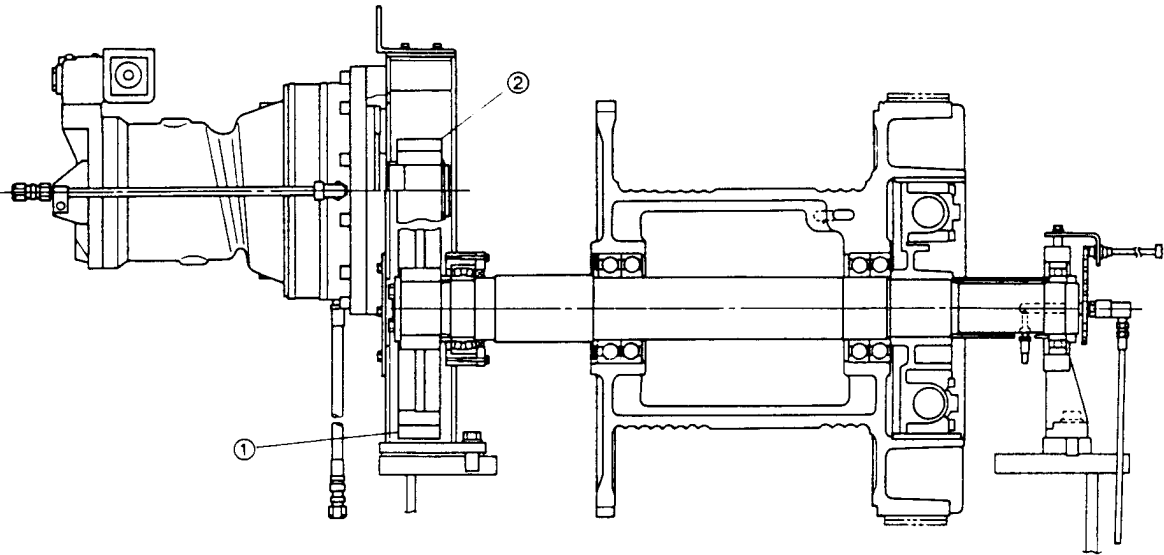
A : L.H. Travel
B : Third Drum
C : Rear High 2-Speed
D : Front Low 1-Speed
E : R.H. Travel
F : Boom Hoist
G : Rear Low 1-Speed
H : Front High 2-Speed
I : To Control Device And
Counterweight Removal Device
J : To Tagline

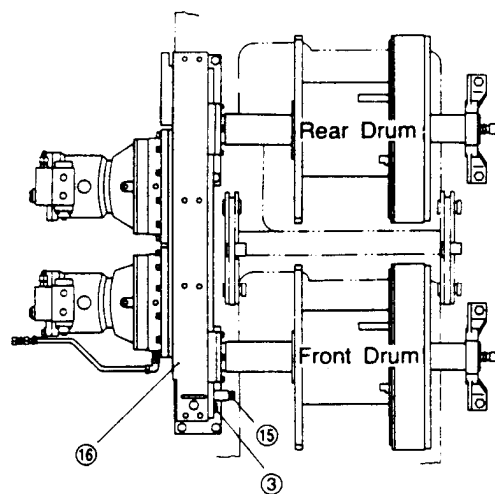
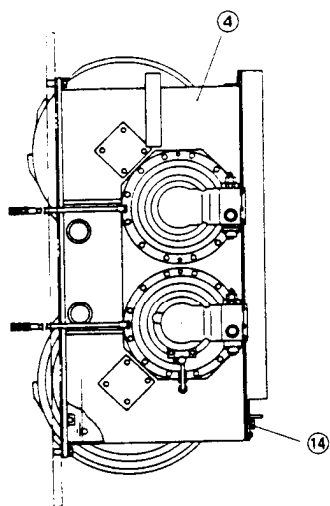
ECD1-135S

Unit: inches (mm)

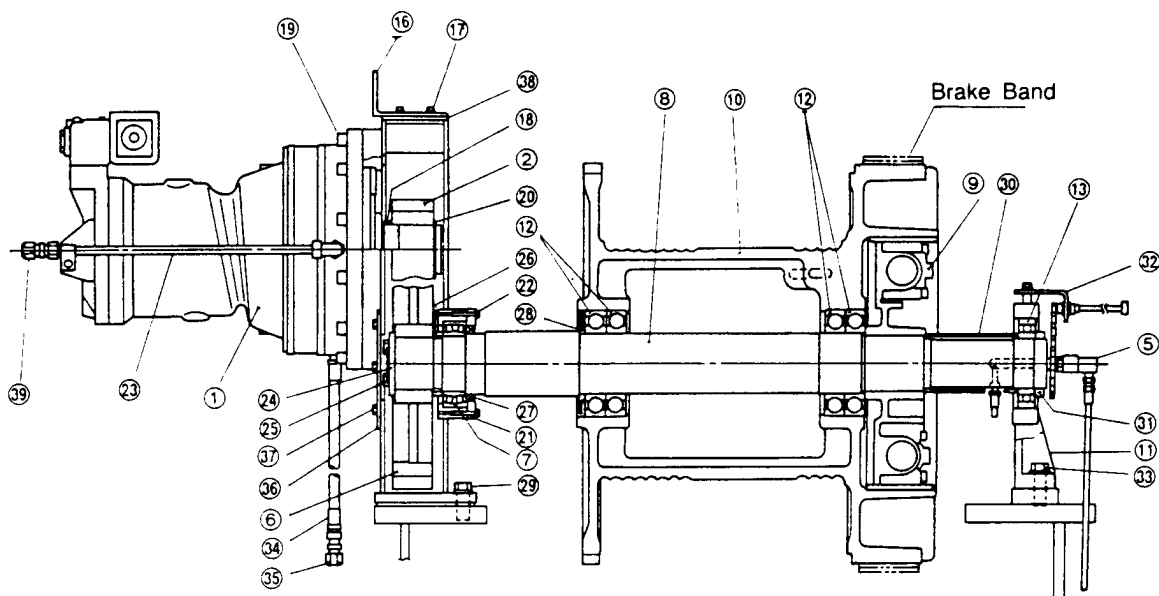
Item	Part Name	Number Of Teeth	*1	Allowable Backlash	Treatment
1	Spur gear	6	7.98" (202.7)	.09" (2.2)	Replacement
2	Spur gear	3	3.689" (93.7)		

*1 Allowable Displacement Over A Given Number Of Teeth.





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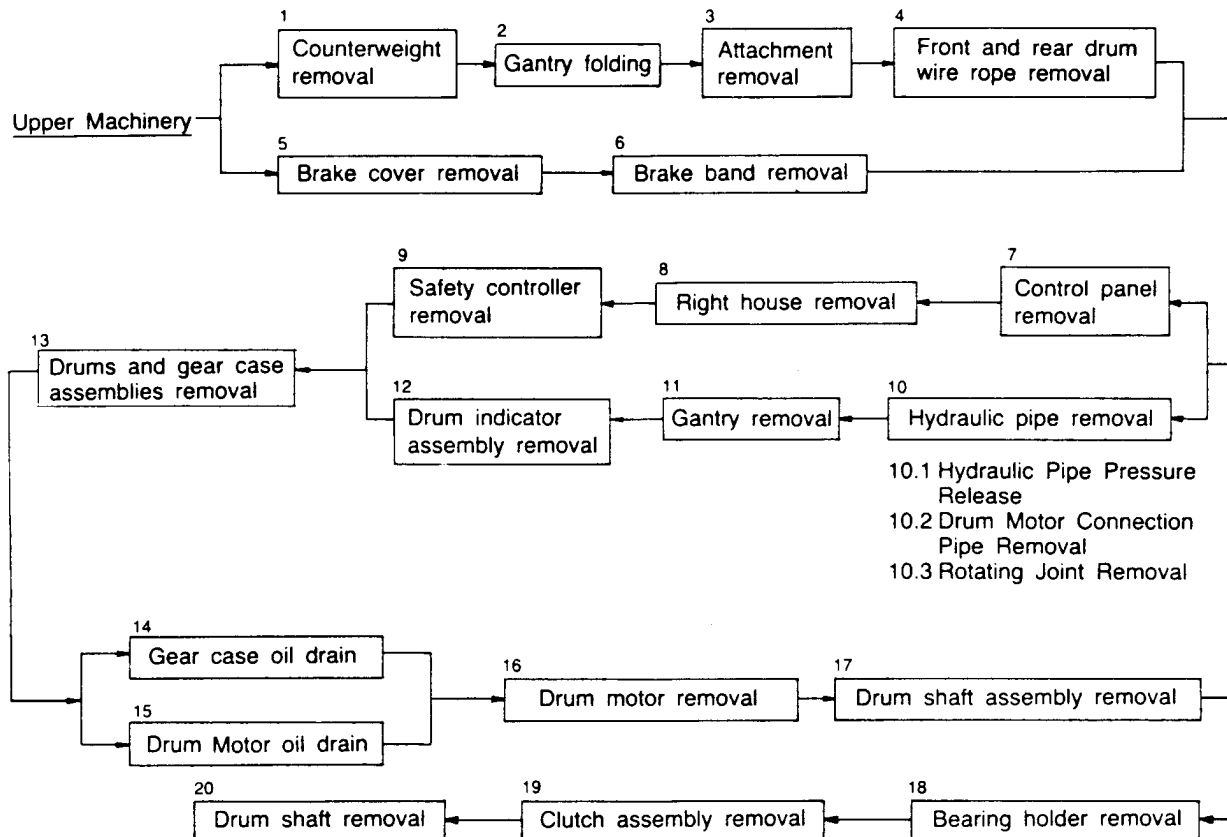


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- | | | | |
|---------------------------|------------------|----------------------------|-------------------|
| ① Motor | ⑪ Bearing Holder | ②② Bolt | ③③ Bolt |
| ② Pinion | ⑫ Ball Bearing | ②③ Hose | ②④ Hose |
| ③ Plug
(With Dipstick) | ⑬ Ball Bearing | ②④ End Plate | ②⑤ Drain Cap |
| ④ Gear Case | ⑭ Oil Filler Cap | ②⑤ Bolt | ②⑥ Cover |
| ⑤ Rotating Joint | ⑮ Drain Plug | ②⑥ Spacer | ②⑦ Bolt |
| ⑥ Gear | ⑯ Check Cover | ②⑦ Oil Seal | ②⑧ Sponge Packing |
| ⑦ Roller Bearing | ⑰ Bolt | ②⑧ Seal Collar | ②⑨ Oil Check Cap |
| ⑧ Drum Shaft | ⑱ Spacer | ②⑨ Bolt | |
| ⑨ Clutch Assembly | ⑲ Bolt | ③① Spacer | |
| ⑩ Hoist Drum | ⑳ Snap Ring | ③① Bearing Nut, Washer | |
| | ㉑ Seal Retainer | ③② Drum Indicator Assembly | |

Disassembly

Disassembly Procedure



Work Preparation

Main body support

- 1) Park the machine on level and stable ground.
- 2) Extend the side frames.
 For side frame extension, refer to the operator's manual.

⚠ WARNING

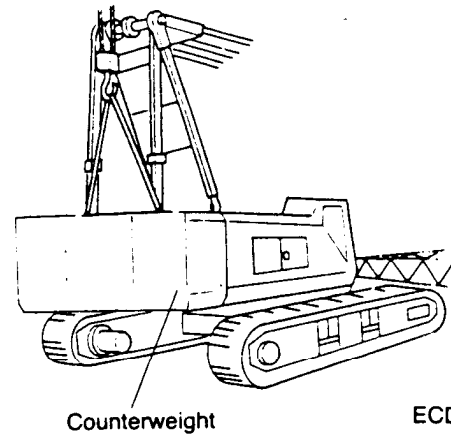
Since The Component Parts Related To This Procedure Are Heavy, Handle Them Carefully Or Accidents May Result. Use A Hoist To Handle Them Efficiently. Check That The Hoist Capacity Is Sufficient.

⚠ CAUTION

Take The Surroundings Into Consideration, Select A Place Where Safe Operation Is Possible And Take Precautions Against Dangers. Particularly Avoid Slopes.

1 Counterweight Removal

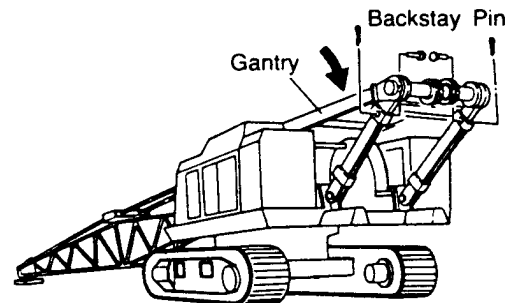
- 1) To remove the counterweight with the gantry in the high position, refer to the operator's manual.



ECD2-70S

2 Gantry Folding

- 1) To position the gantry from high to low, refer to the operator's manual.



ECB2-34

3 Attachment Removal

- 1) To remove the attachment from the upper section, refer to the operator's manual.

4 Front And Rear Drum Wire Rope Removal

CAUTION

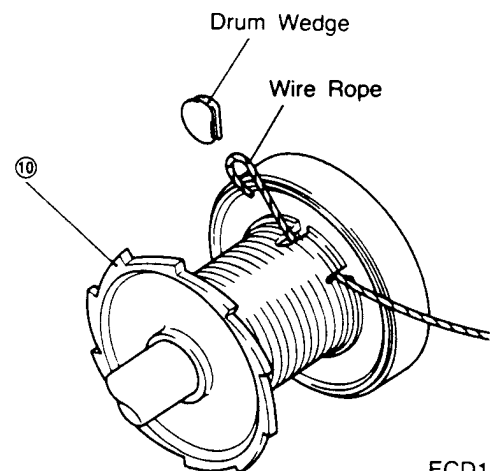
Avoid Injury To Yourself.
Replace Or Rearrange Rope Carefully To
Avoid An Accident. Rope Wrapped Around
Sheaves May Become Twisted.
When Released, The Rope Can Spin As The
Dead End Pins Or Sockets Are Removed.

- 1) Pull out wire ropes from the front and rear drums, and wind them with the winder.

CAUTION

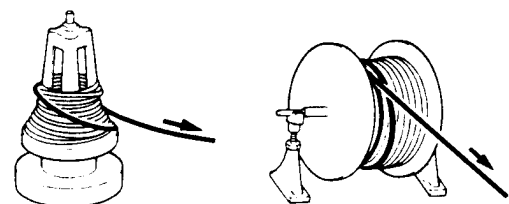
Properly Release The Hoist Drum Brake Dur-
ing Removal Of Wire Rope Or Rope May
Become Kinked Or Twisted, Resulting In
Excessive Deformation, Shortening Wire Rope
Life.

- 2) Remove the drum wedge, and remove the wire rope from the hoist drum.



ECD1-4S

Winder Types

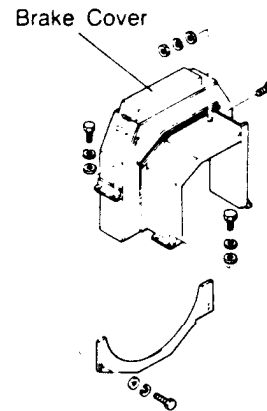


Proper Wire Rope Releasing

EAM81

5 Brake Cover Removal

- 1) Open the upper cover of the brake cover.
- 2) Loosen the locknut and remove the adjusting nut. The hanging bolt and spring can not be separated from the band.
- 3) Remove the bolt and brake cover.



ECD1-29S

6 Brake Band Removal

- 1) For brake band removal, refer to "front and rear drum brake control disassembly and reassembly" ES3-5-6000 in this manual.

7 Control Panel Removal

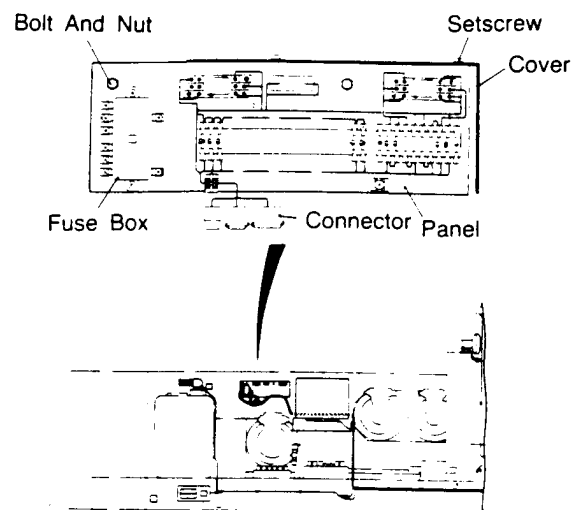
Note: Disconnect the battery to prevent electrical shock and damage to components.

- 1) Remove the setscrew and the cover.
- 2) Disconnect the electrical cables connected to the panel, from the connector and fuse box.

Note: When disconnecting electrical cables, label the cable and mating side to prevent errors during reassembly.

- 3) Remove nuts, bolts, and the control panel.

Note: Place the removed control panel where disassembly and reassembly are not hindered.



ECD1-5S

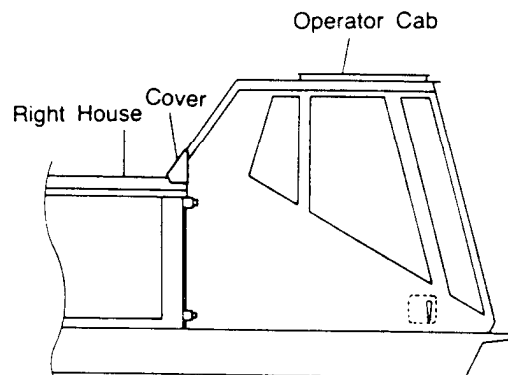
8 Right House Removal

WARNING

Do Not Place Your Body Under The Suspended House. When Separating The House From The Main Body, Do Not Put Your Body Between The House And Main Body.

- 1) Remove bolts and the right house connecting cover on the rear part of the operator cab.
- 2) Remove bolts, and suspend and remove the right house.

Right house weight: 507.1lbs (230kg)



ECD1-6S

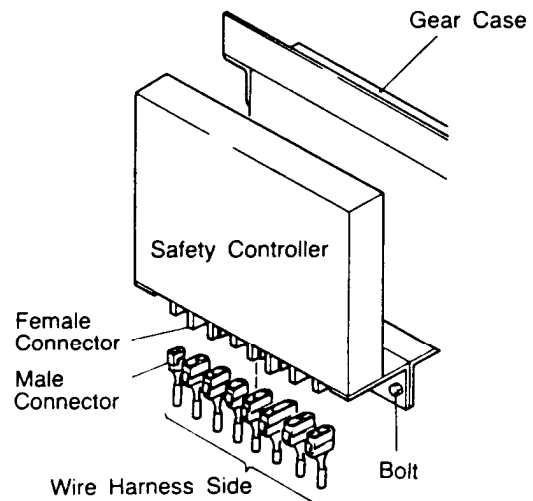
9 Safety Control Removal

- 1) Disconnect the electrical cables connected to the safety controller from the connector.

Note: When disconnecting electrical cables, label the cable and mating sides to prevent errors during reassembly

- 2) Remove cables and the safety controller from the gear case.

Note: Place the removed safety controller where disassembly and reassembly are not hindered.



ECD1-7S

10 Hydraulic Pipe Removal

10.1 Hydraulic pipe pressure release

WARNING

All Trapped Hydraulic Pressure Must Be Exhausted From The System Before Removing Any Line Or Component. A Sudden Release Of Hot Oil Could Cause Burns Or Other Serious Injury.

- 1) Operate the control lever back and forth several tiems to release any hydraulic pressure trapped in the lines.

Note: Even if pressure is completely released, oil remains. Before disconnecting a pipe or valve, position a container to collect the oil.

10.2 Drum motor connection pipe removal

- 1) Remove all pipes (except hoses ②③ and ③④) which are connected to the motor.
- 2) Attach blank plugs, blank flanges, caps, etc. to the pipe ports of the motor and the ports of the removed pipes to prevent oil from flowing out and foreign materials from entering.

Note: Place the removed pipes where disassembly and reassembly are not hindered. Label pipes, hoses, fittings, and other parts to prevent errors during reassembly.