SECTION AND GROUP CONTENTS

WORKSHOP MANUAL

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SECTION 2 UPPERSTRUCTURE

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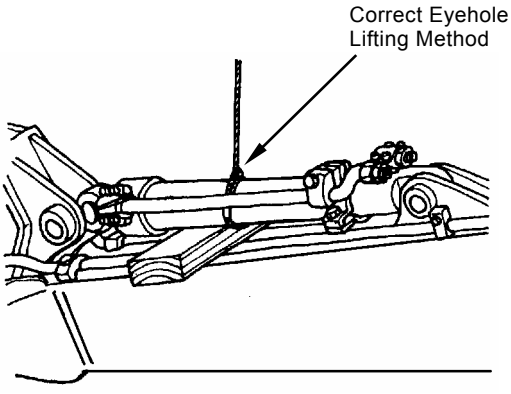
SECTION 4 FRONT ATTACHMENT

Precautions for Using Nylon Sling

1. Follow the precautions below to use nylon slings safely.

- Attach protectors (soft material) on the corners of the load so that the nylon sling does not directly contact the corners. This will prevent the nylon sling from being damaged and the lifted load from slipping.
- Lower the temperature of the lifted load to lower than 100 °C (212 °F). If unavoidably lifting a load with a temperature of 100 °C (212 °F) or more, reduce the load weight.
- Do not lift acid or alkali chemicals.
- Take care not to allow the sling to become wet. The load may slip.
- When required to use more than one sling, use slings with the same width and length to keep the lifted load balanced.
- When lifting a load using an eyehole, be sure to eliminate any gaps between the sling and load. (Refer to the right illustration.) Reduce the load weight so that it is less than 80 % of the sling breaking force.
- Avoid using twisted, bound, connected, or hitched slings.
- Do not place any object on twisted or bent slings. (Refer to the right illustration.)
- When removing the slings from under the load, take care not to damage the nylon slings. Avoid contact with protrusions.
- Avoid dragging slings on the ground, throwing slings or pushing slings with a metal object.
- When using with other types of slings (wire rope) or accessories (shackle), protect the joint so that the nylon sling is not damaged.
- Store the nylon slings indoors so they won't deteriorate with heat, sun light, or chemicals.



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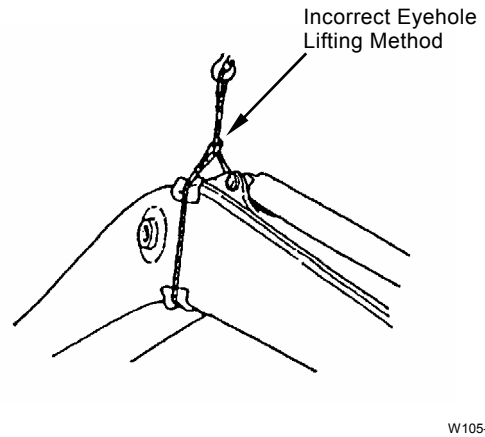

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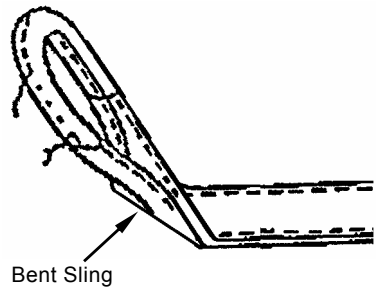

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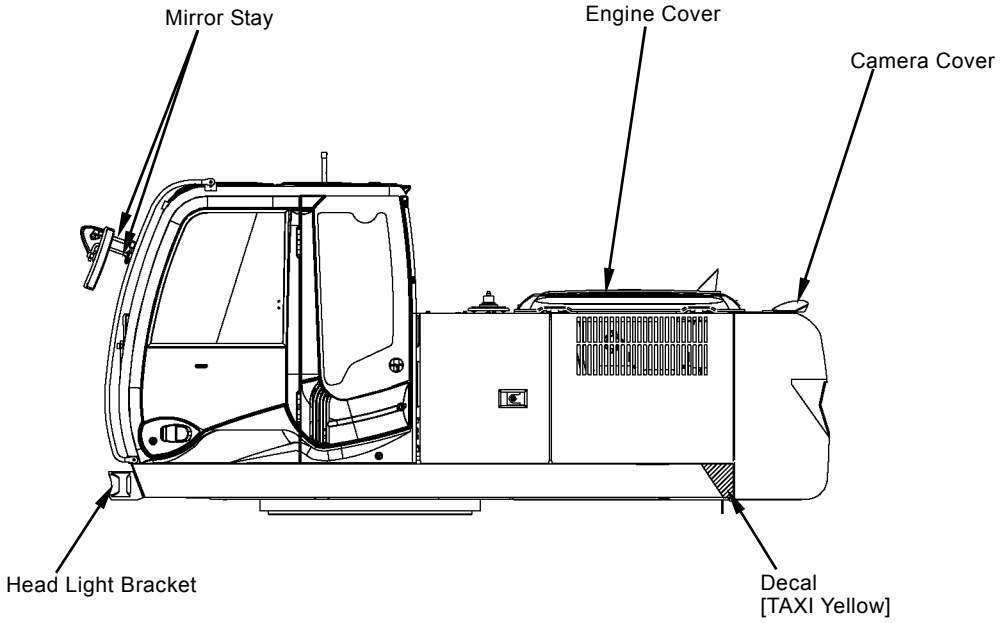
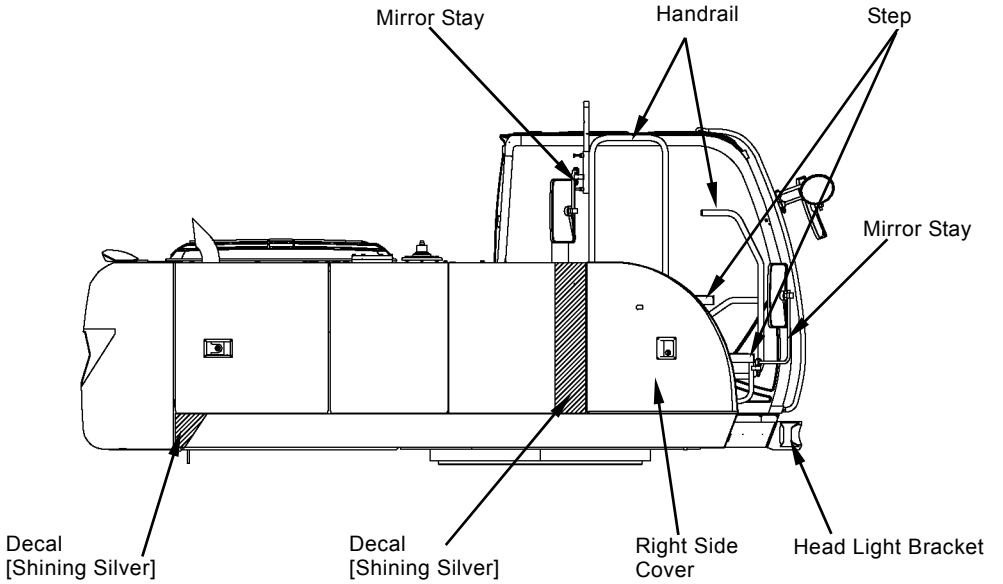

Mirror Stay
Engine Cover
Camera Cover
Head Light Bracket
Decal
[TAXI Yellow]
WCJB-01-03-002

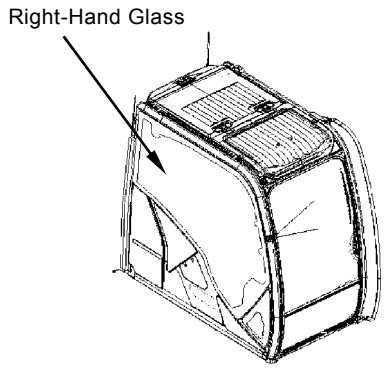

Mirror Stay
Handrail
Step
Mirror Stay
Decal
[Shining Silver]
Decal
[Shining Silver]
Right Side
Cover
Head Light Bracket
WCJB-01-03-001

Installation of Cab Glass

Procedures to Install Right-Hand Glass, Rear Left-Hand Glass, Lower Door Glass and Rear Glass

1. Cut off residual adhesive at the cab side to make 1 to 2 mm (0.04 to 0.08 in) deep all around by using a cutter knife or similar.

NOTE: Do not damage the cab paint.



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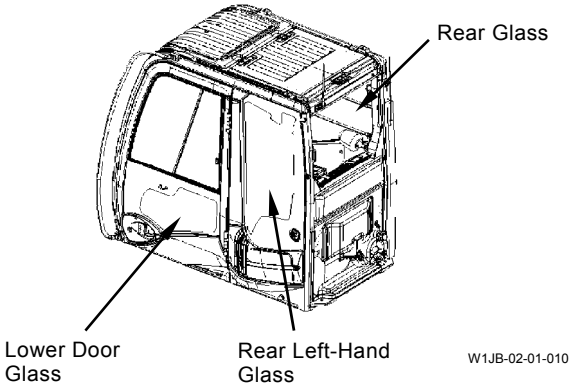
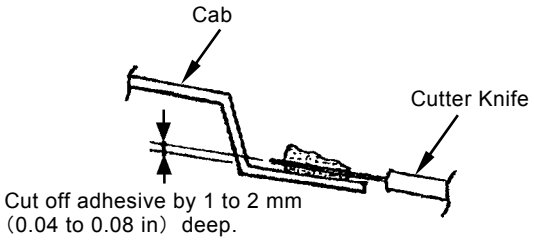


W1JB-02-01-010

2. Clean the cutting edge of adhesive at cab side by using white spirit.

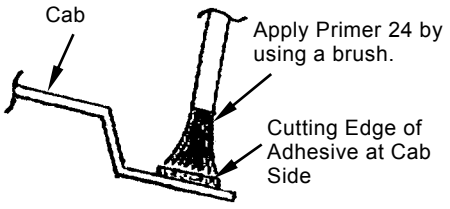


W1SE-02-01-036

IMPORTANT: Primer should be shaken for about 1 minute and mix thoroughly before opening the cap.
After opening Primer, apply Primer as quickly as possible and replace the cap immediately after using.
After opening Primer, all the contents should be used within 180 days (or 2 hours with the cap off).

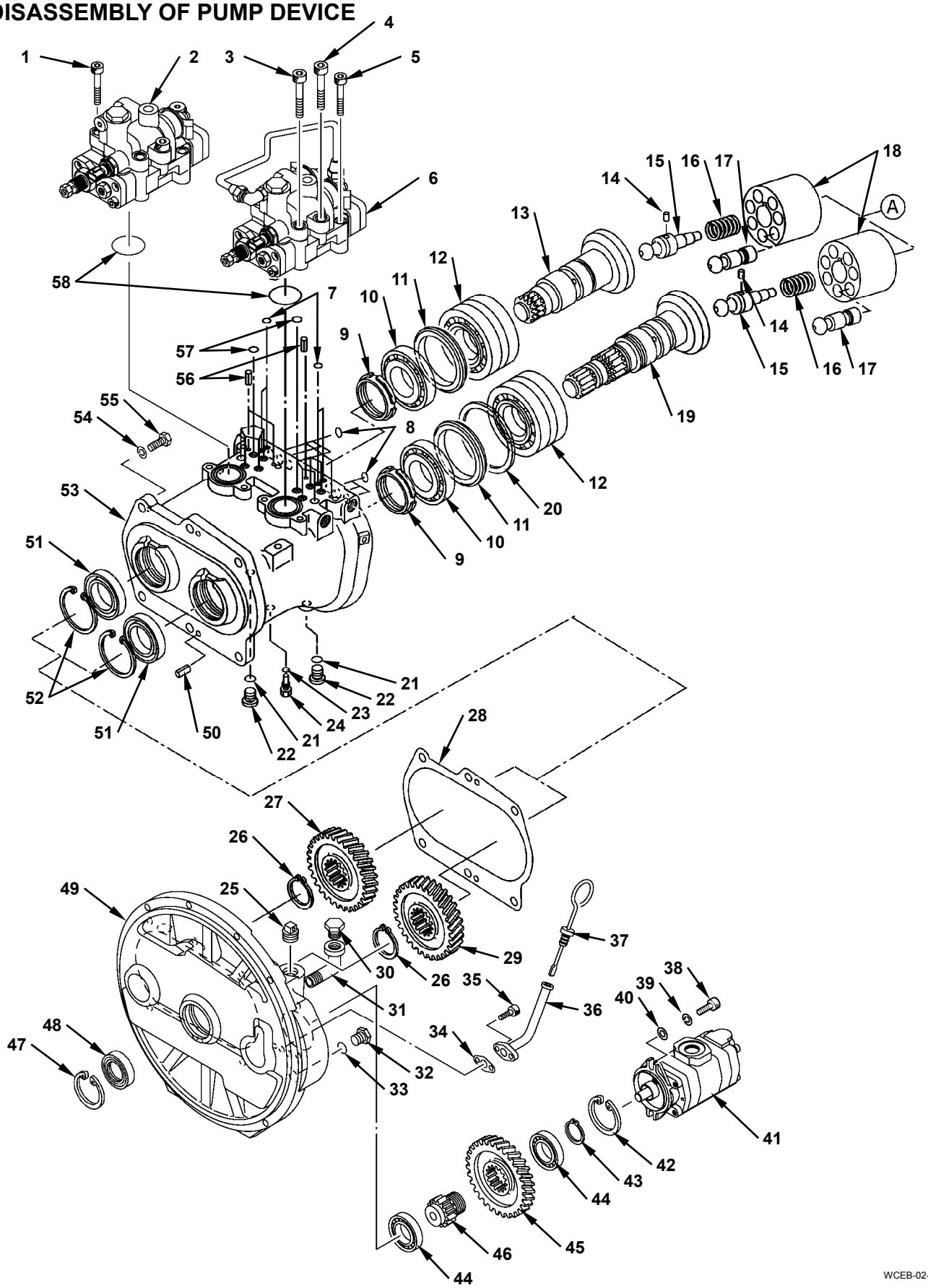
3. Apply Primer for paint (Sika Aktivator DM-1) to the cutting edge of adhesive at cab side by using a brush. Wait for about 15 minutes in order to let it dry by itself.

NOTE: The painting primer should be applied evenly in order to leave no blemishes.



W1SE-02-01-038

DISASSEMBLY OF PUMP DEVICE



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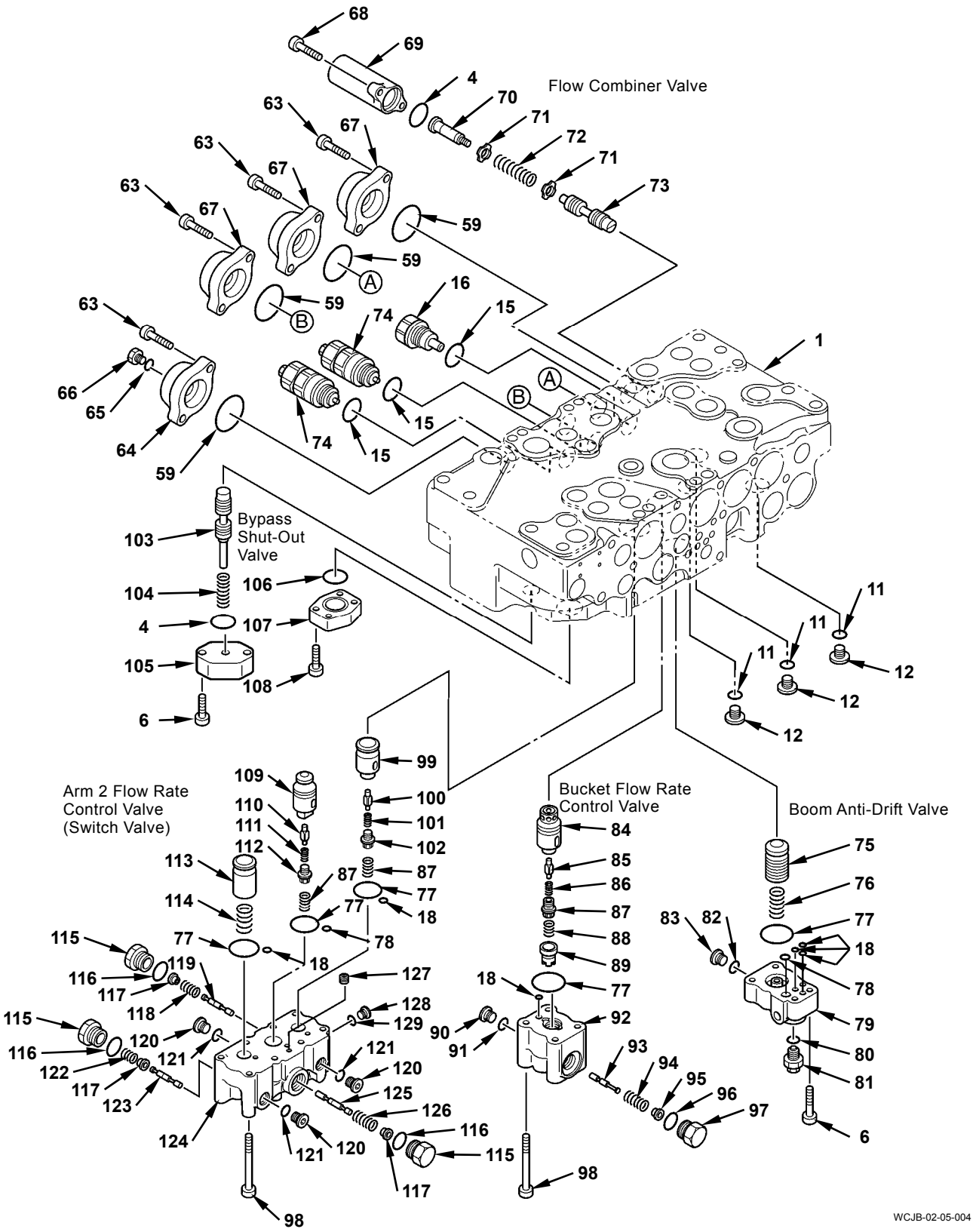
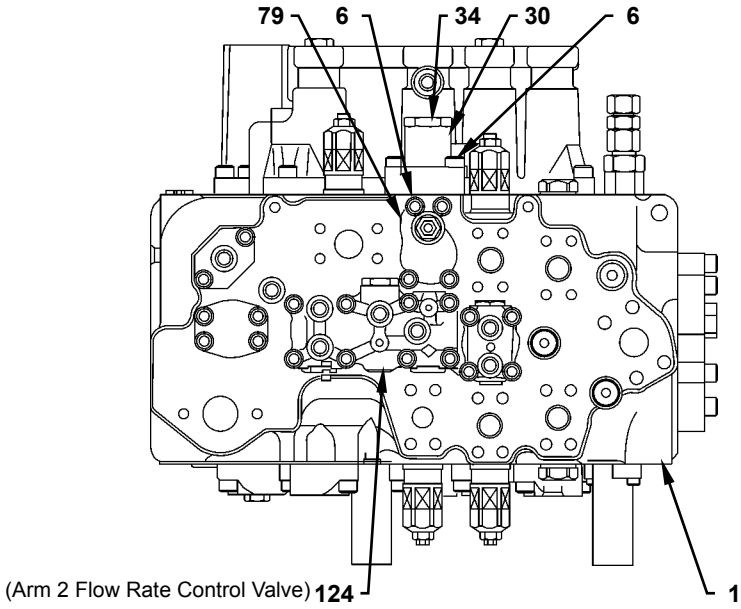
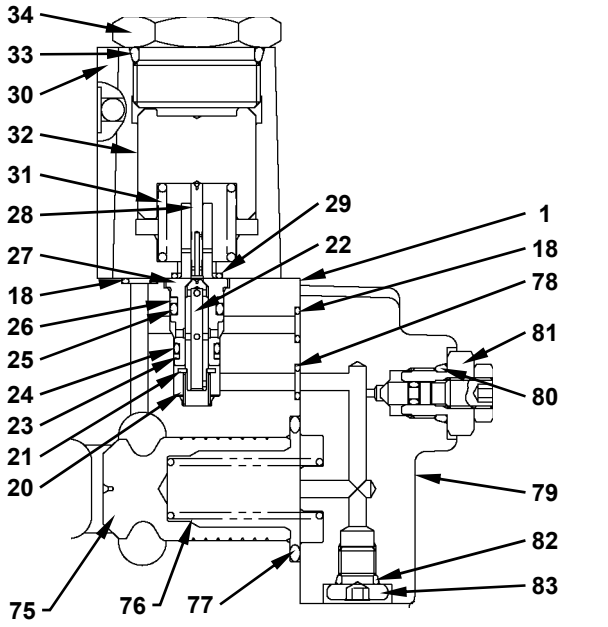
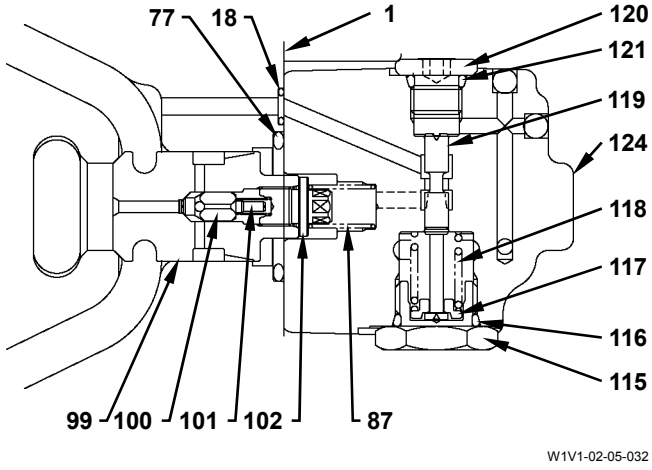

Flow Combiner Valve
Bypass Shut-Out Valve
Arm 2 Flow Rate Control Valve (Switch Valve)
Bucket Flow Rate Control Valve
Boom Anti-Drift Valve
WCJB-02-05-004



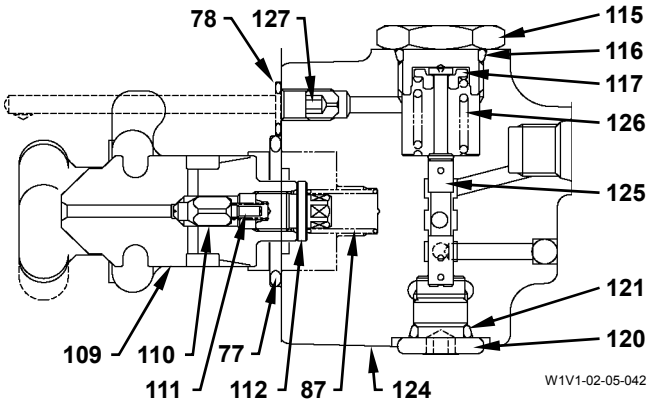
Control Valve (Side)



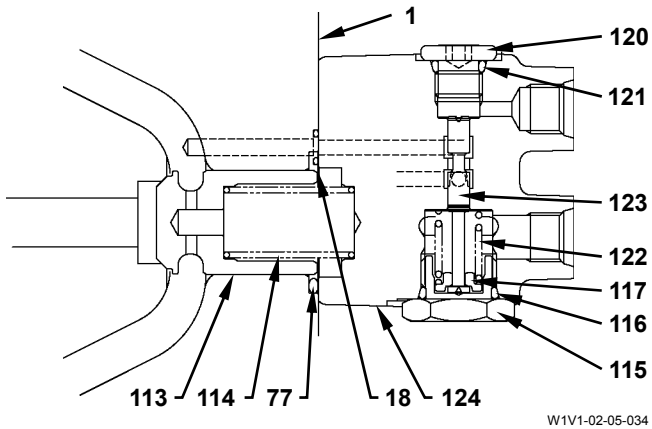
Boom Anti-Drift Valve (Detail C)



Arm 2 Flow Rate Control Valve (Detail D)



Arm 2 Flow Rate Control Valve (Detail E)



Arm 2 Flow Rate Control Valve (Detail F)

19. Remove socket bolts (53) (10 used) from caps (99) (4 used) and cap (100). Remove caps (99) (4 used), cap (100) and O-rings (52) (5 used) from housing (1).
    : 8 mm

- Disassembly of Digging Regenerative Valve and Auxiliary Flow Combiner Valve

20. Remove socket bolts (92) (4 used) from caps (93) (2 used). Remove caps (93) (2 used), O-rings (6) (2 used), spring seats (94) (2 used), springs (95, 97) and spools (96, 98) from housing (1).
    : 5 mm

- Disassembly of Overload Relief Valve (101)

IMPORTANT: Do not disassemble overload relief valve (101). When disassembling the overload relief valve, pressure must be adjusted. (Refer to TROUBLESHOOTING / Operational Performance Test in the separated volume, T/M.)

21. Remove overload relief valves (101) (2 used) from housing (1). Remove O-rings (102) (2 used) from overload relief valves (101) (2 used).
    : 32 mm

- Disassembly of Check Valve

22. Remove socket bolts (8) (2 used) from flange (7). Remove flange (7), O-ring (6), spring (5) and poppet (85) from housing (1).
    : 8 mm

- Disassembly of Arm Anti-Drift Valve

23. Remove socket bolts (8) (4 used) from flange (74). Remove flange (74), O-rings (20) (3 used), O-ring (9), spring (75) and poppet (76) from housing (1).
    : 8 mm

- Disassembly of Arm 1 Flow Rate Control Valve and Auxiliary Flow Rate Control Valve

24. Loosen plugs (58, 65) (2 used for each) from bodies (60) (2 used).

25. Remove socket bolts (57) (8 used) from body (60) (2 used). Remove O-rings (20, 9) (2 used for each) from housing (1).
    : 8 mm

26. Remove plugs (65) (2 used), spring seats (63) (2 used), springs (63, 80) and spools (61, 79) from bodies (60) (2 used). Remove plugs (58) (2 used) from bodies (60) (2 used).

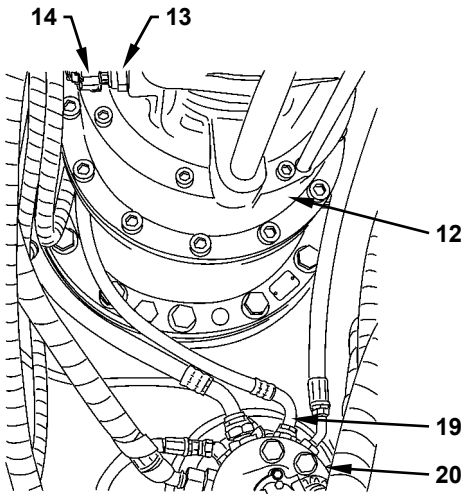
27. Remove O-rings (59, 64) (2 used for each) from plugs (58, 65) (2 used for each).

28. Remove sleeves (66) (2 used), springs (67) (2 used), plugs (68, 81), springs (69, 82) and poppets (70, 71, 83, 84) from housing (1).

2. Connect hose (19) to center joint (20).
   : 27 mm
   : 78 N·m (8 kgf·m, 58 lbf·ft)

3. Install pressure switch (13) to swing motor (12).
   : 24 mm
   : 16 N·m (1.6 kgf·m, 12 lbf·ft)

4. Connect connector (14) to pressure switch (13).

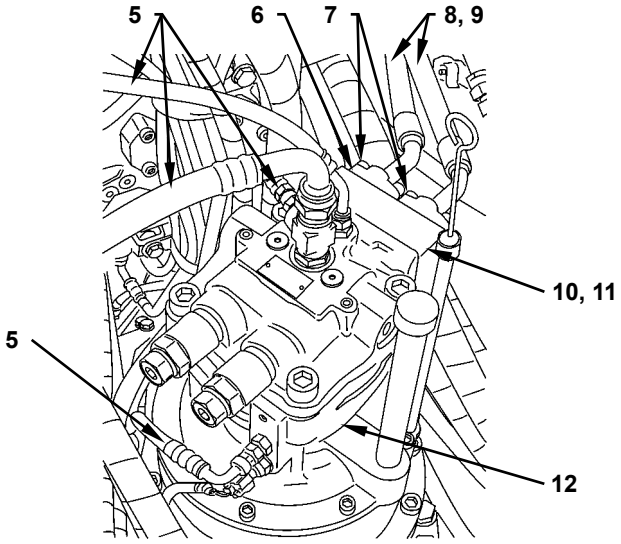


WCJB-02-06-006

5. Connect hoses (5) (4 used) to swing motor (12).
   : 19 mm
   : 29.5 N·m (3 kgf·m, 22 lbf·ft)
   : 36 mm
   : 175 N·m (18 kgf·m, 129 lbf·ft)

6. Apply grease onto O-rings (9, 11). Install O-rings (9, 11) to hoses (8) (2 used) and swing dampener valve (10).

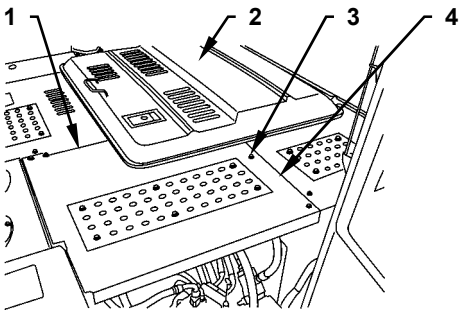
7. Install swing dampener valve (10) and hoses (8) (2 used) to swing motor (12) with split flanges (6) (4 used) and socket bolts (7) (8 used).
   : 8 mm
   : 50 N·m (5 kgf·m, 37 lbf·ft)



WCJB-02-06-005

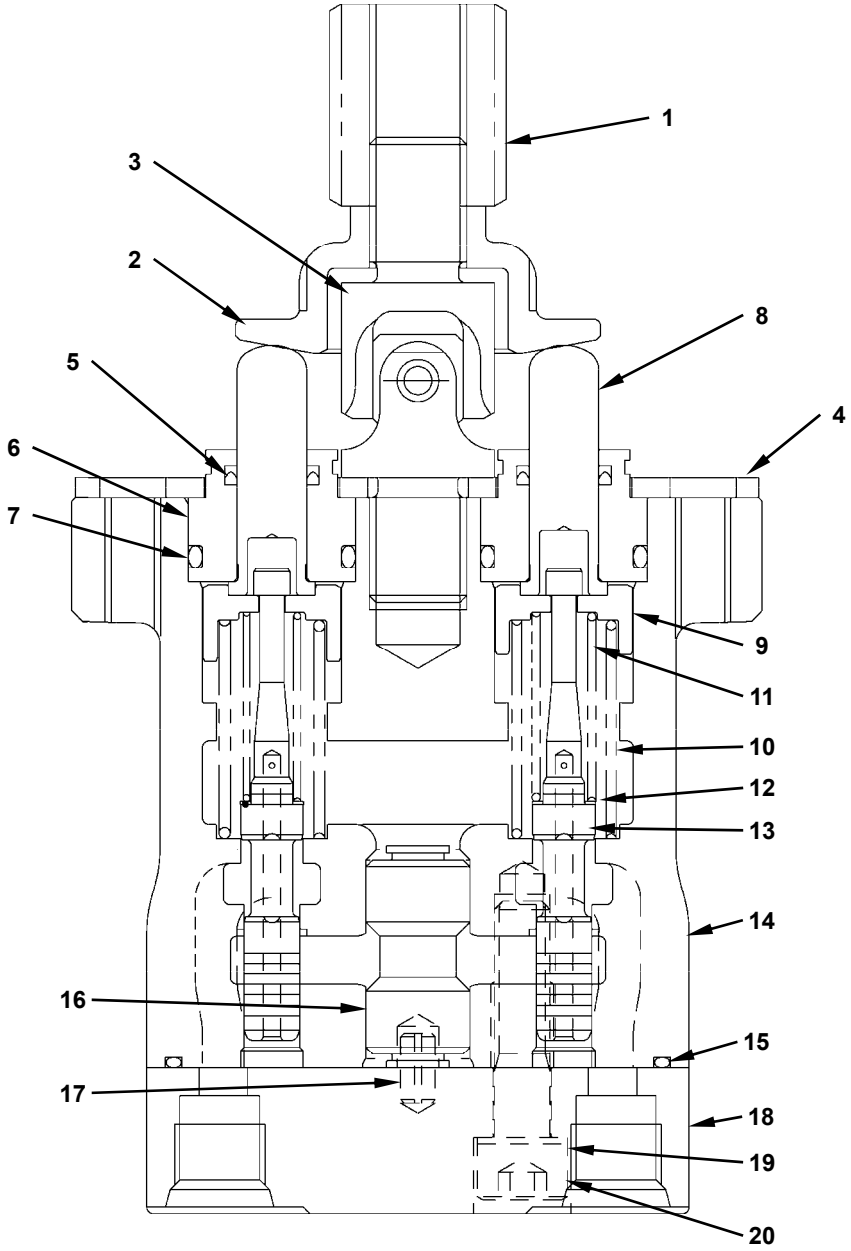
8. Install cover (1) to stay (4) with sems bolts (3) (4 used). Shut cover (2).
   : 17 mm
   : 50 N·m (5 kgf·m, 37 lbf·ft)

IMPORTANT: After completing the work, fill the swing motor with hydraulic oil. Check the hydraulic oil level. Start the engine and check for any oil leaks.



WCJB-02-01-002

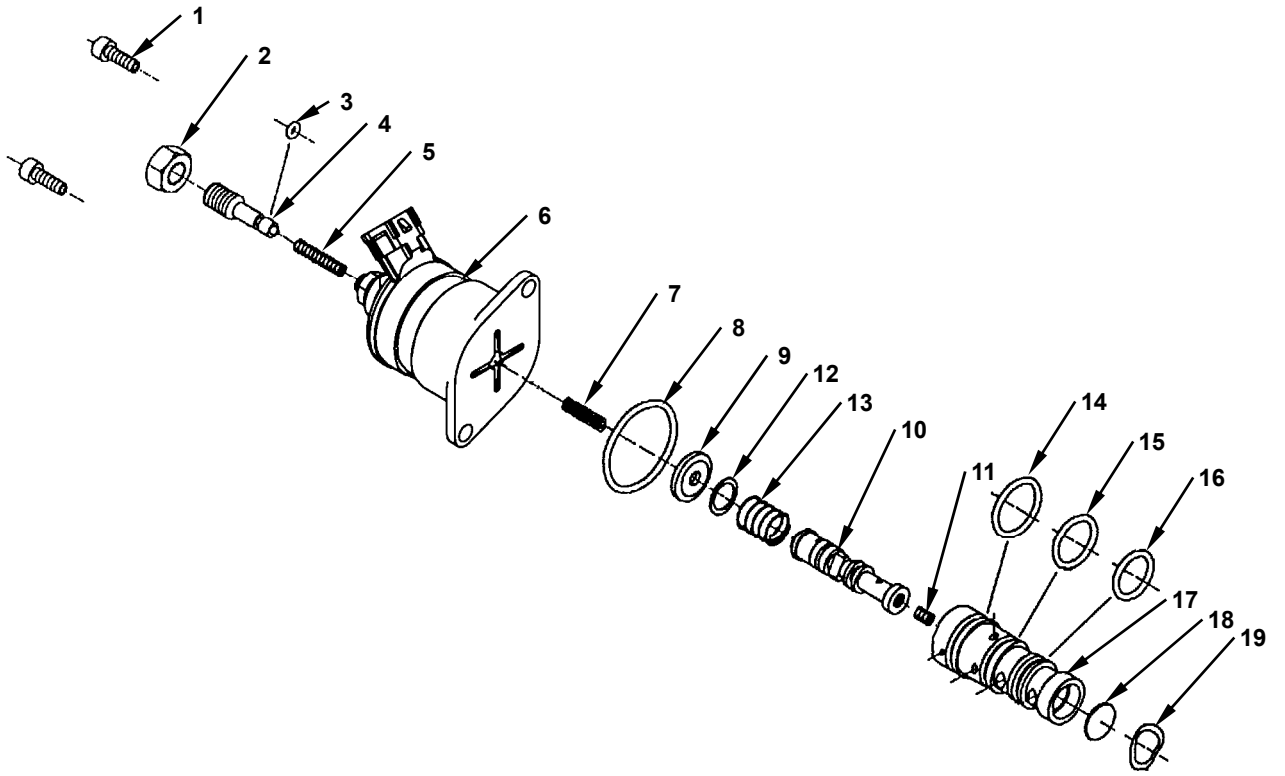
ASSEMBLY OF FRONT/SWING PILOT VALVES



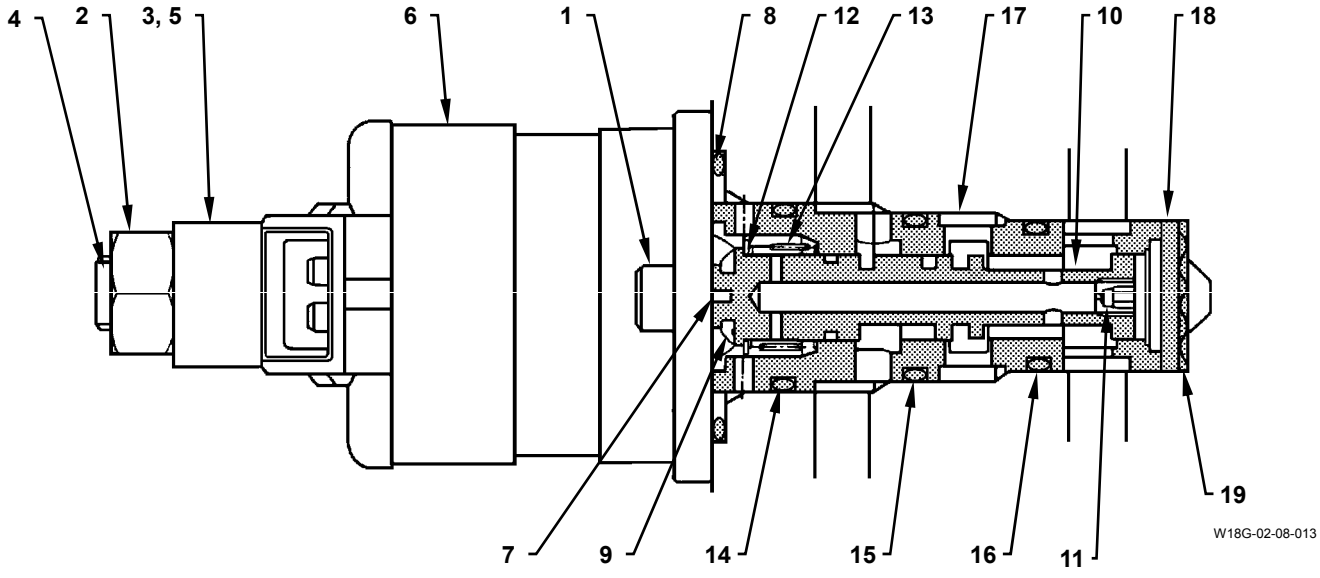
W1F3-02-07-002

1 - Screw Joint
2 - Cam
3 - Universal Joint
4 - Plate
5 - Oil Seal (4 Used)
6 - Bushing (4 Used)
7 - O-Ring (4 Used)
8 - Pusher (4 Used)
9 - Spring Seat (4 Used)
10 - Spring (4 Used)
11 - Spring (4 Used)
12 - Washer (4 Used)
13 - Spool (4 Used)
14 - Casing
15 - O-Ring
16 - Bushing
17 - Spring Pin
18 - Port Plate
19 - Sealing Washer (2 Used)
20 - Socket Bolt (2 Used)

DISASSEMBLY AND ASSEMBLY OF 4-SPOOL SOLENOID VALVE UNIT



W18G-02-08-012



W18G-02-08-013

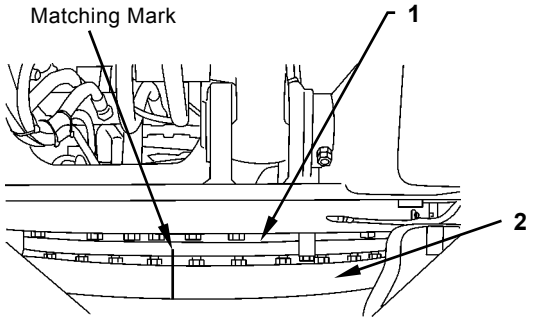
1 - Socket Bolt (4 Used)
2 - Lock Nut
3 - O-Ring
4 - Adjusting Bolt
5 - Spring
6 - Solenoid
7 - Spring
8 - O-Ring
9 - Diaphragm
10 - Spool
11 - Orifice
12 - Washer
13 - Spring
14 - O-Ring
15 - O-Ring
16 - O-Ring
17 - Sleeve
18 - Plate
19 - Wave Spring

REMOVAL AND INSTALLATION OF SWING BEARING

Before removing and installing the swing bearing, the upperstructure must be removed first. For removal and installation of the upperstructure, refer to the REMOVAL AND INSTALLATION OF MAIN FRAME on W2-3-1.
The procedure starts on the premise that the upperstructure has already been removed.

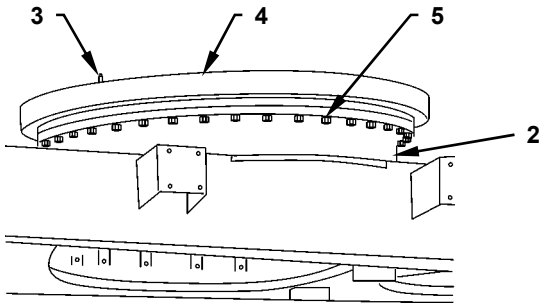
Removal

1. Put the matching marks on inner race (1) of the swing bearing and track frame (2).



WCJB-02-03-003

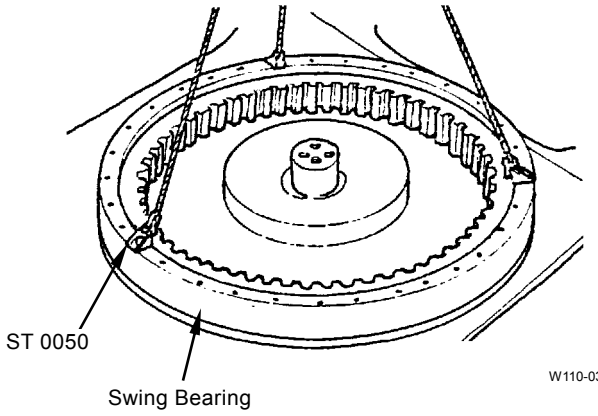
2. Remove knock pin (3) from outer race (4) of the swing bearing.
3. Remove bolts (5) (36 used) from track frame (2).
   : 30 mm



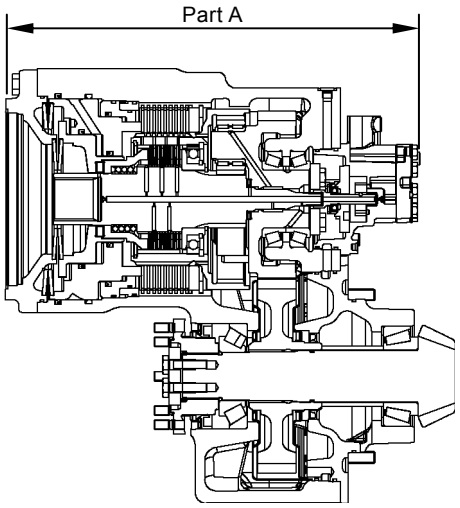
WCJB-03-01-003

CAUTION: Swing bearing weight: 230 kg (510 lb)

4. Install special tools (ST 0050) (3 used) to swing bearing. Attach a wire rope onto special tool. Hoist and remove swing bearing from track frame (2).



W110-03-01-004



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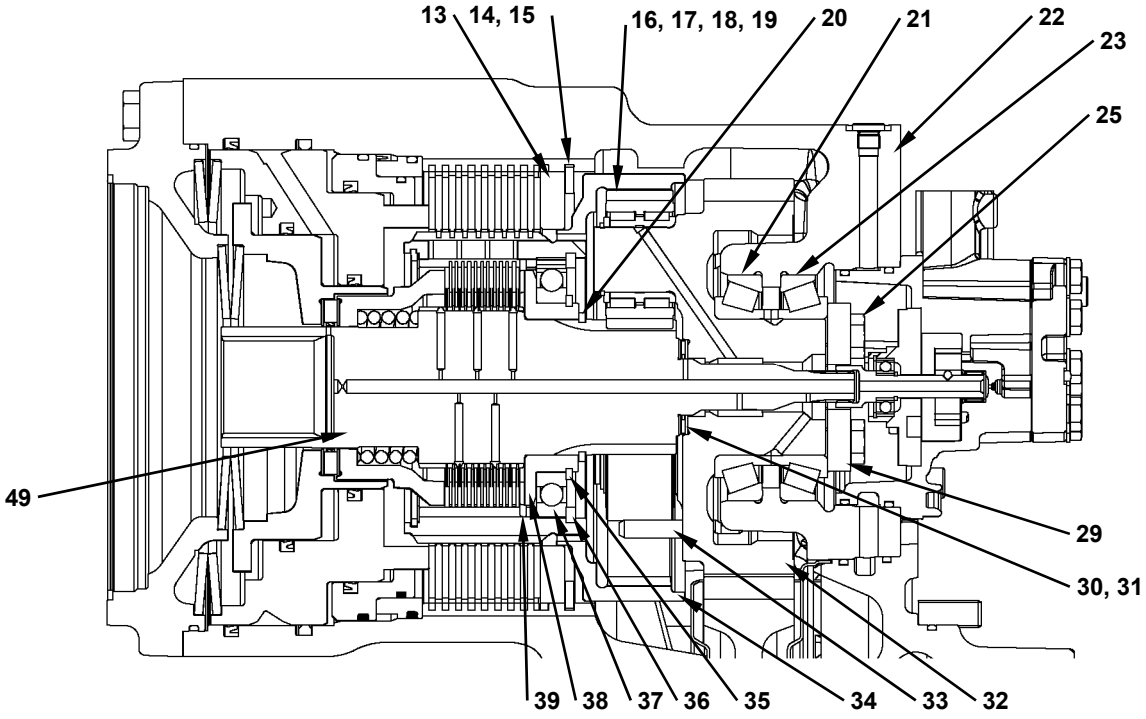
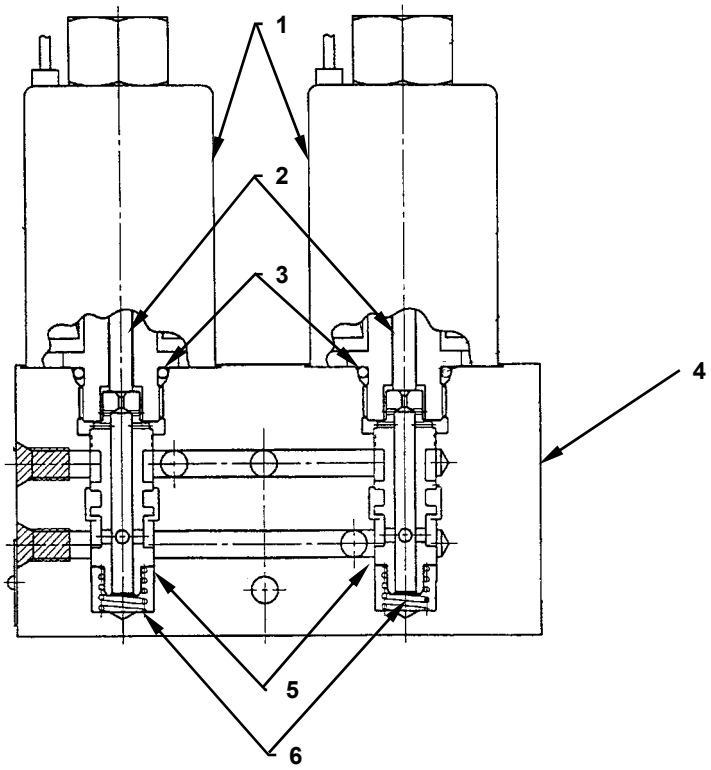
Part A



WCGB-03-04-002

1 - Axle Casing
2 - O-Ring
3 - Shim
4 - Roller Bearing
5 - Drive Housing
6 - Washer (14 Used)
7 - Bolt (14 Used)
8 - Axle Shaft
9 - Plug
10 - O-Ring
11 - Washer (16 Used)
12 - Bolt (16 Used)
13 - O-Ring
14 - Knuckle
15 - Bearing Nut
16 - Washer
17 - Socket Bolt
18 - Sun Gear Shaft
19 - O-Ring
20 - Shaft Seal
21 - Bearing
22 - Hub Carrier
23 - Bushing
24 - Bearing
25 - O-Ring
26 - Friction Plate (6 Used)
27 - Plate (5 Used)
28 - Disc Plate
29 - Planetary Carrier
30 - Plug
31 - O-Ring
32 - Socket Bolt (2 Used)
33 - Retaining Ring (3 Used)
34 - Planetary Gear (3 Used)
35 - Washer (3 Used)
36 - Roller Bearing (3 Used)
37 - Washer (3 Used)
38 - Retaining Ring (3 Used)
39 - Retaining Ring (3 Used)
40 - Washer
41 - O-Ring
42 - Ring Gear
43 - Knock Pin (4 Used)
44 - Backup Ring
45 - U-Ring
46 - U-Ring
47 - Backup Ring
48 - Piston
49 - Spring (8 Used)
50 - Spring (8 Used)
51 - Spring Seat (8 Used)
52 - Bolt (8 Used)
53 - Disc Carrier
54 - O-Ring

STRUCTURE OF SOLENOID VALVE UNIT



T1F3-03-08-001

No.	Part Name	Q'ty	Wrench Size (mm)	Tightening Torque			Remarks
				N·m	(kgf·m)	(lbf·ft)	
1	Solenoid	2					
2	Piston	2					
3	O-Ring	2					1B P14
4	Body	1					
5	Spool	2					
6	Spring	2					