

GROUP 12 TURNING JOINT

1. REMOVAL AND INSTALL

1) REMOVAL

- (1) Lower the work equipment to the ground and stop the engine.
- (2) Operate the control levers and pedals several times to release the remaining pressure in the hydraulic piping.
- (3) Loosen the breather slowly to release the pressure inside the hydraulic tank.

▲ Escaping fluid under pressure can penetrate the skin causing serious injury.

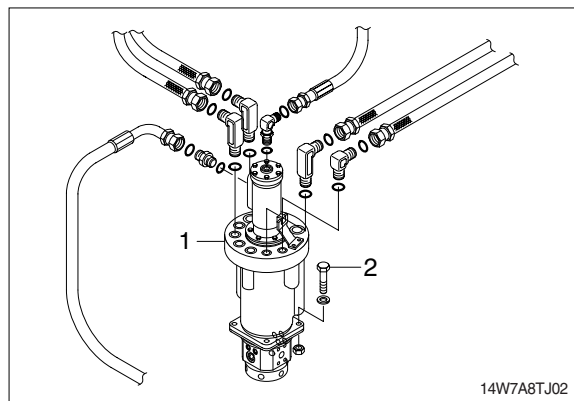
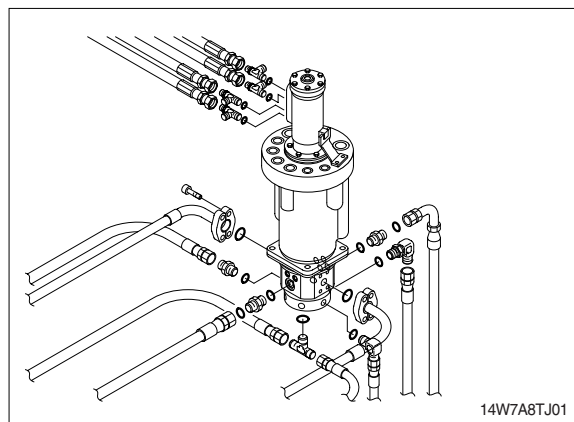
※ When pipes and hoses are disconnected, the oil inside the piping will flow out, so catch it in oil pan.

- (4) Disconnect all hoses.
- (5) Sling the turning joint assembly (1) and remove the mounting bolt (2).
 - Weight : 100kg (220lb)
 - Tightening torque : $12.2 \pm 1.3 \text{kgf} \cdot \text{m}$
($88.2 \pm 9.4 \text{lb} \cdot \text{ft}$)

- (6) Remove the turning joint assembly.
 - ※ When removing the turning joint, check that all the hoses have been disconnected.

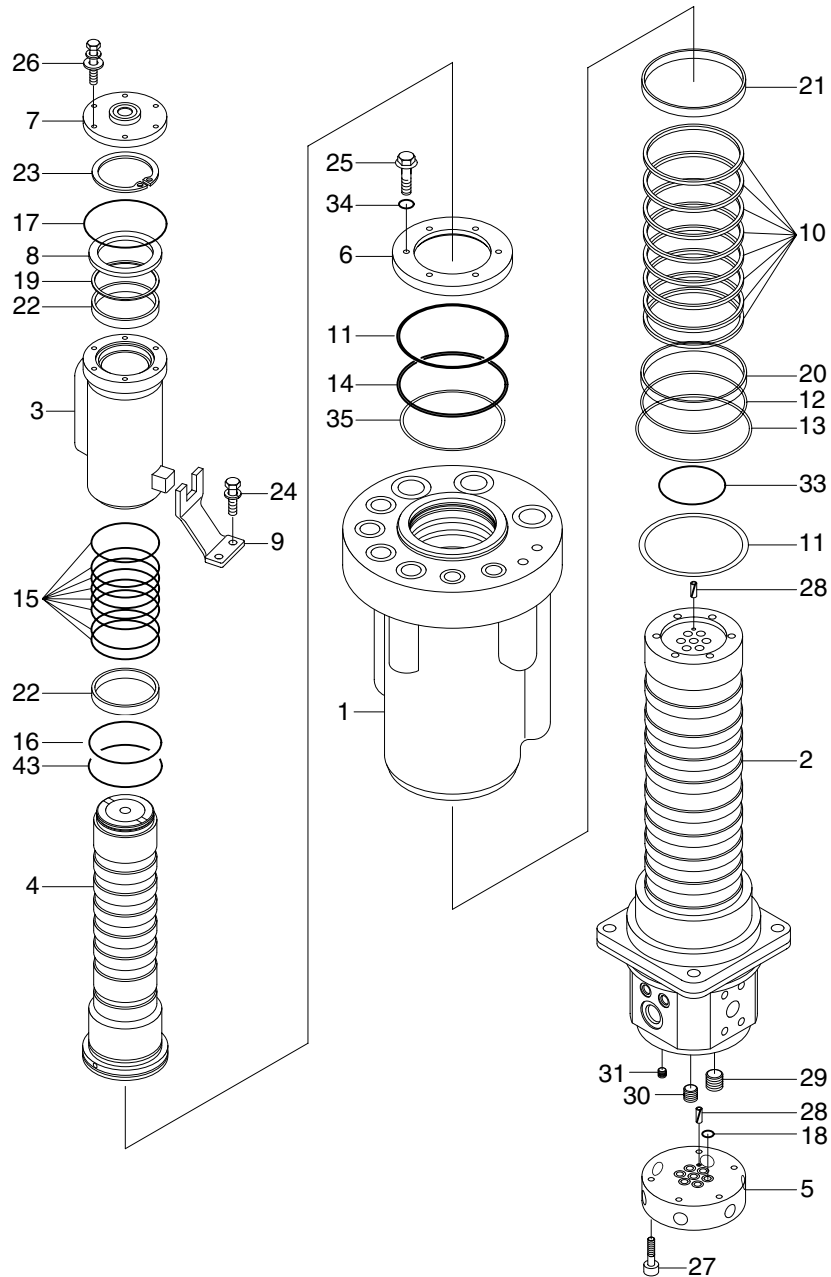
2) INSTALL

- (1) Carry out installation in the reverse order to removal.
 - ※ Take care of turning joint direction.
 - ※ Assemble hoses to their original positions.
 - ※ Confirm the hydraulic oil level and check the hydraulic oil leak or not.



2. DISASSEMBLY AND ASSEMBLY

1) STRUCTURE



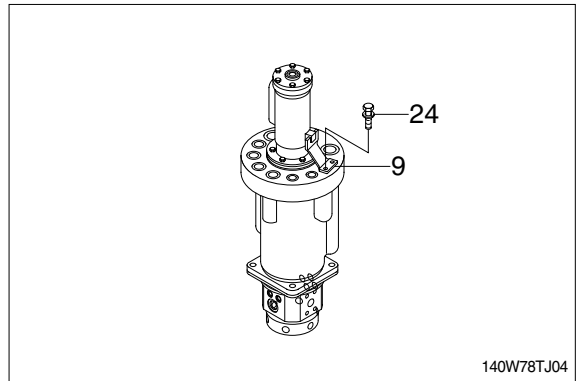
- | | | | | | |
|----|--------------|----|---------------|----|---------------|
| 1 | Main hub | 13 | O-ring | 25 | Hex bolt |
| 2 | Main shaft | 14 | O-ring | 26 | Bolt-w/washer |
| 3 | Top hub | 15 | O-ring | 27 | Socket bolt |
| 4 | Top shaft | 16 | O-ring | 28 | Spring pin |
| 5 | Adapter | 17 | O-ring | 29 | Plug |
| 6 | Main cover | 18 | O-ring | 30 | Plug |
| 7 | Top cover | 19 | Back up ring | 31 | Plug |
| 8 | Spacer | 20 | Wear ring | 33 | O-ring |
| 9 | Bracket | 21 | Wear ring | 34 | O-ring |
| 10 | Slipper seal | 22 | Wear ring | 35 | Back up ring |
| 11 | Shim | 23 | Retainer ring | 43 | O-ring |
| 12 | O-ring | 24 | Bolt-w/washer | | |

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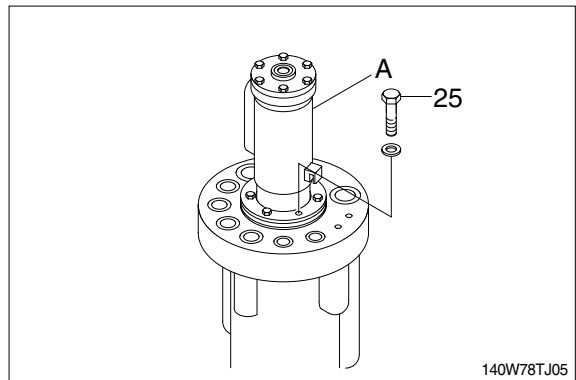
2) DISASSEMBLY

※ Before the disassembly, clean the turning joint.

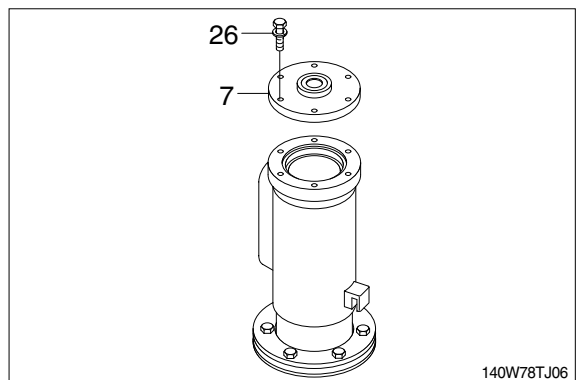
- (1) Loosen the bolt (24) and remove the bracket (9).



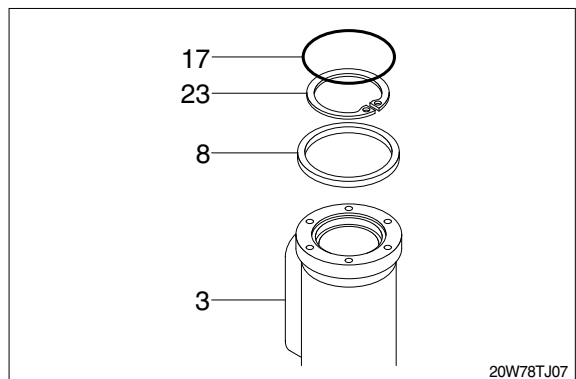
- (2) Loosen the bolt (25) and remove the upside (A) of turning joint. Remove O-ring (14)



- (3) Loosen the bolt (26) and remove top cover (7).

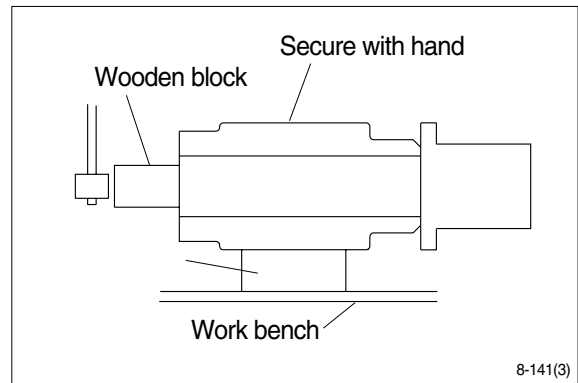


- (4) Remove O-ring (17), retainer ring (23) and spacer (8).

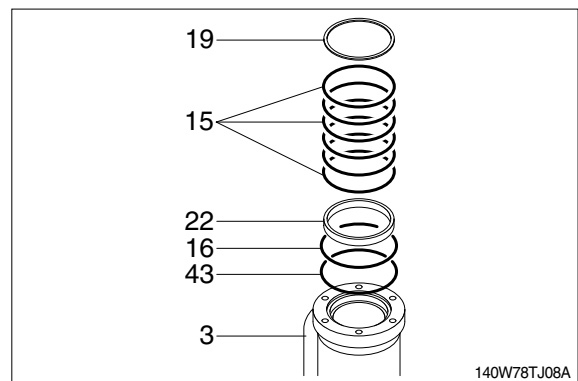


(5) Place hub (3) on a V-block and by using a wood buffer at the shaft end, hit out shaft (4) to about 1/2 from the hub with a hammer.

- ※ Take care not to damage the shaft (4) when remove hub (3) or rest it sideways.
- ※ Put a fitting mark on hub (3) and shaft (4).

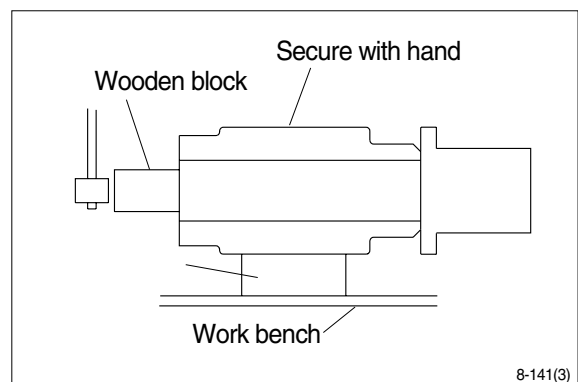


(6) Remove eight O-rings (15), back up ring (19), O-rings (16, 43) and wear ring (22) from hub (3).

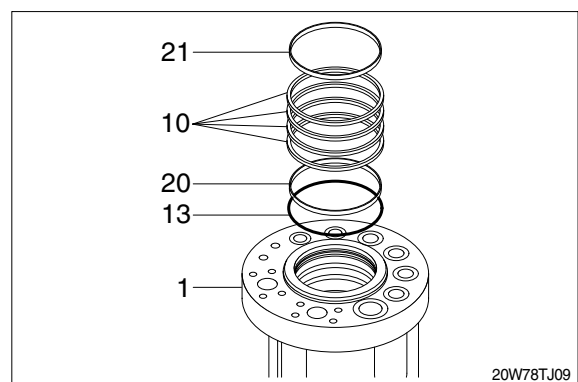


(7) Place main hub (1) on a V-block and by using a wood buffer at the shaft end, hit out main shaft (2) to about 1/2 from the main hub with a hammer.

- ※ Take care not to damage the main shaft (2) when remove main hub (1) or rest it sideways.
- ※ Put a fitting mark on main hub (1) and main shaft (2).



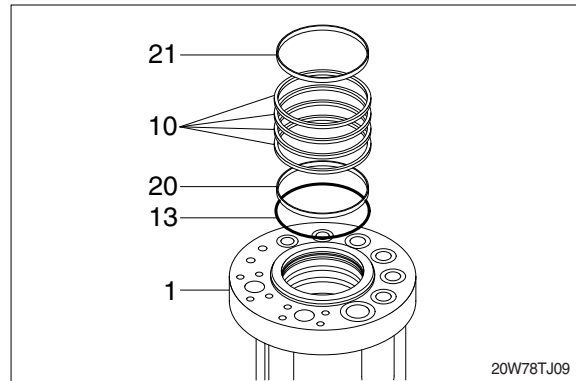
(8) Remove wear ring (21), eight slipper seal (10), O-ring (13) and wear ring (20) from main hub (1).



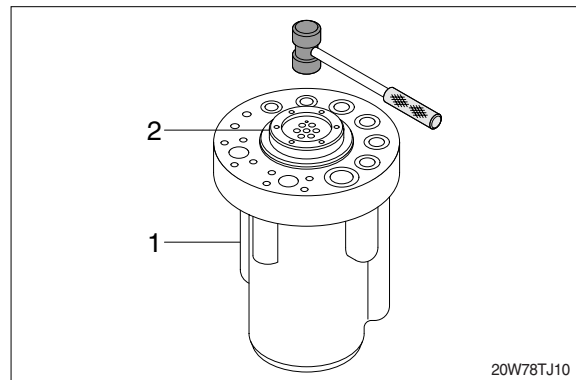
3) ASSEMBLY

- ※ Clean all parts.
- ※ As a general rule, replace oil seals and O-ring.
- ※ Coat the sliding surfaces of all parts with engine oil or grease before installing.

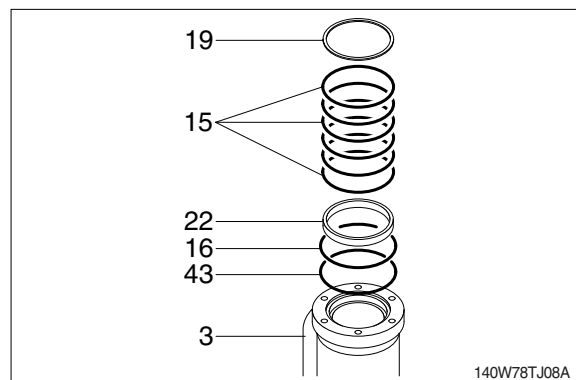
- (1) Fit wear ring (21), eight slipper seal (10), O-ring (13) and wear ring (20).
- (2) Fit O-ring (13) to main shaft (2)



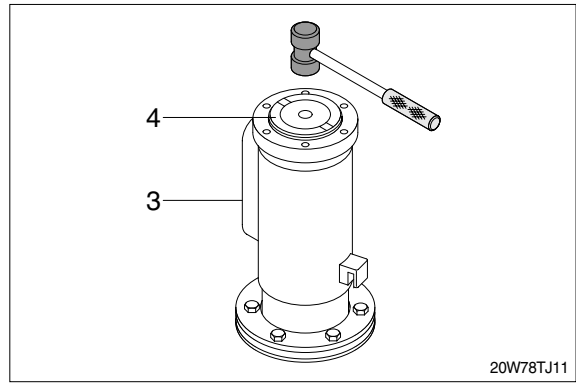
- (3) Set main shaft (2) on block, tap main hub (1) with a plastic hammer to install.



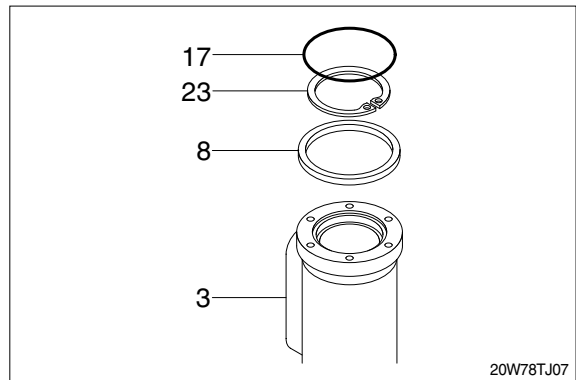
- (4) Fit eight O-ring(15), back up ring(19), O-ring(16, 43) and wear ring (22) to hub (3) of turning joint upside.



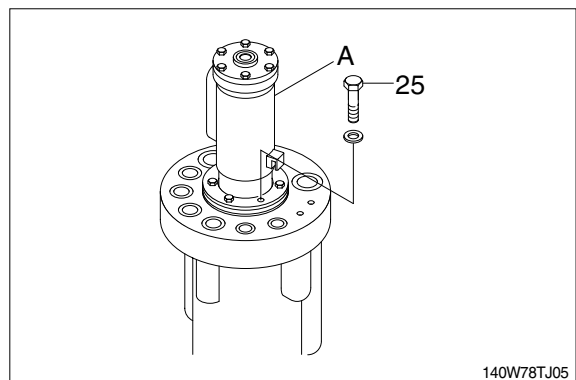
- (5) Set shaft (4) of turning joint upside on block, tap hub (3) with a plastic hammer to install.



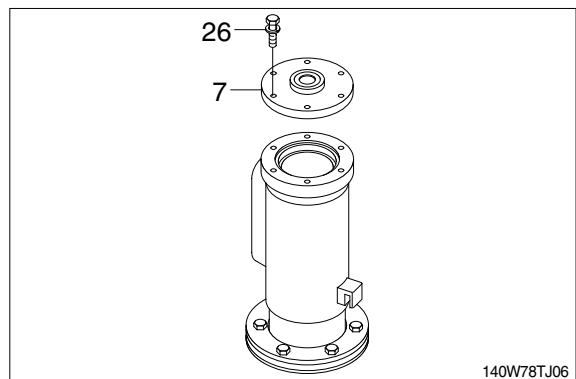
- (6) Fit spacer (8) and retainer ring (23) to shaft (4).
 (7) Fit O-ring (17) to hub (3).



- (8) Set turning joint upside (A) on downside, tighten bolts (25).
 · Torque : $3.5 \pm 0.4 \text{ kgf} \cdot \text{m}$ ($25.3 \pm 2.9 \text{ lbf} \cdot \text{ft}$)

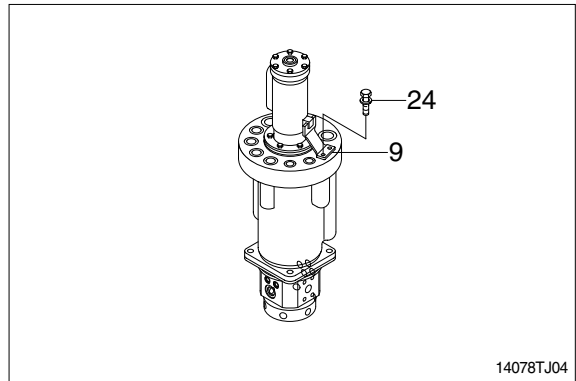


- (9) Fit O-ring (17) to hub (3).
 (10) Install cover (7) to hub and tighten bolts (26).
 · Torque : $2.35 \pm 0.35 \text{ kgf} \cdot \text{m}$
 ($17.0 \pm 2.5 \text{ lbf} \cdot \text{ft}$)



- (11) Install bracket (9) to hub and tighten bolts (24).
- Torque : $5.5 \pm 0.6 \text{kgf} \cdot \text{m}$ ($39.8 \pm 4.3 \text{lb} \cdot \text{ft}$)

This completes assembling



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