



TADANO

HYDRAULIC CRANE SERVICE MANUAL MODEL TR-300E

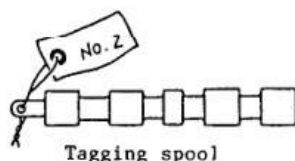
INFORMATION No. TR-300E (U) -1/R-01
APPLICABLE SERIAL No. 560009~

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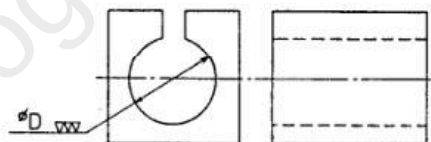
TADANO LTD.

GENERAL CAUTIONS

- 3) To extract the spool, pull it straight along the axis. The oil seal case on the pulling side should recommendably be removed in advance to avoid damage to the oil seal lip by the spool edges. If the spool does not come out smoothly, do not pull unduly, but move back and forth until it comes out smoothly. Never apply blows to it. Be sure to tag the removed spools to indicate their positions in the valve body. When the spools are reassembled in the wrong bores, the clearance may become incorrect, and seizure or leakage may take place.
- 4) When clamping a spool in a vise, be sure to use an aluminum fixture shown below to prevent damage and deformation.



Tagging spool



Aluminum fixture

- 5) When identical check valves or relief valves are used, be sure to tag them to facilitate their correct reassembly.
- 6) Remove the seals or the like using a brass or copper tool, and never use a screwdriver. When no suitable tool but a screwdriver is available, at least round its sharp tip, and take extreme care not to damage the housing.
- 7) Where special tools are specified for use, try to use them as far as possible.
- 8) Take care not to damage the machined surfaces of the parts.
- 9) Do not unduly pry to remove various covers, and never apply undue blows to parts.

HYDRAULIC PUMP

5. Oil the bores of bearings ② and the gear-contact surface of side plate ⑤, then install drive gear ④ and driven gear ⑥. (Fig. 15)



Fig. 14



Fig. 15

NOTE

- ☆ After installation, if the distance from the bearing end to the body surface is more than 1 mm (0.04 in.), this indicates side seal ⑥ is protruding from the normal position. Disassemble and correct.
6. Insert side plate ⑤ in body ① until slightly inward of the body surface. Push in rear cover-side bearings ③ together, thus pushing in the side plate further.

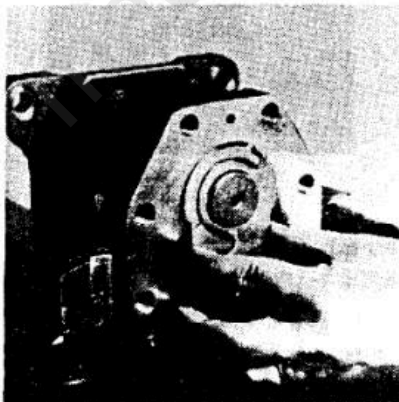


Fig. 16



Fig. 17

7. Install rear cover ⑧ with hexagon socket head bolts ⑨.
Tightening torque: 7 kg.m
(50.6 ft-lb)

COUNTERBALANCE VALVE

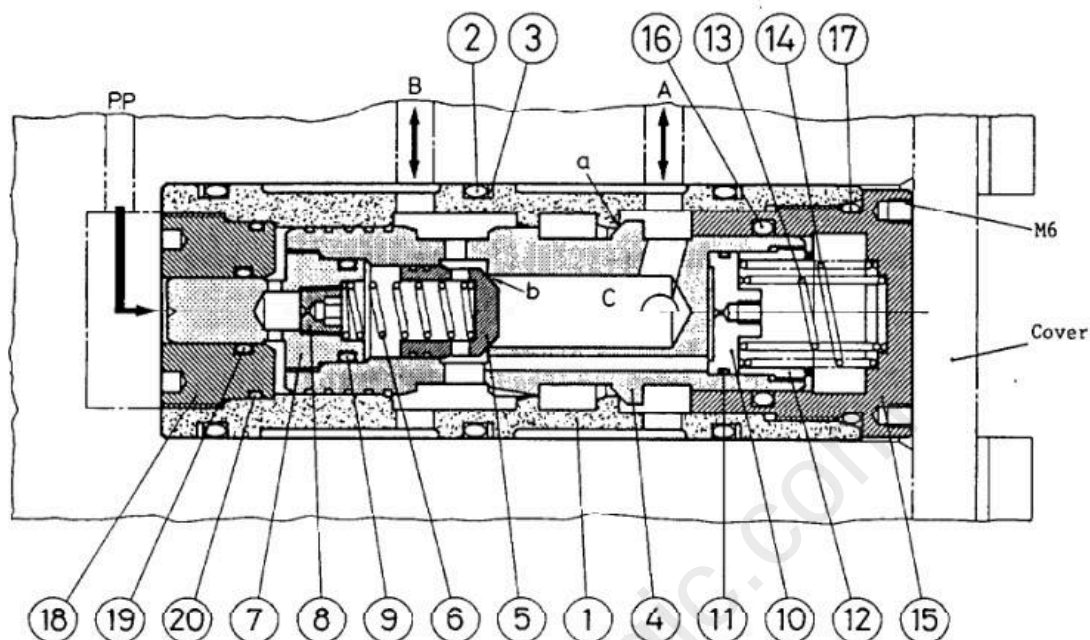


Fig. 1

- | | |
|----------------|------------------|
| 1. Valve body | 11. O-ring |
| 2. O-ring | 12. Spring guide |
| 3. Backup ring | 13. Spring (A) |
| 4. Main spool | 14. Spring (B) |
| 5. Check valve | 15. Plug |
| 6. Spring | 16. O-ring |
| 7. Pilot spool | 17. O-ring |
| 8. Orifice | 18. Plug |
| 9. O-ring | 19. O-ring |
| 10. Orifice | 20. O-ring |

● DISMOUNTING AND REMOUNTING

WARNING

☆ IF THE COVER IS REMOVED WHILE PRESSURE IS STILL BUILT UP IN PORT PP, THE VALVE MAY BE SHOT OFF. TO PREVENT THIS, VENT THE BUILT UP PRESSURE BY MOVING THE CONTROL LEVER SEVERAL TIMES WITH THE ENGINE STOPPED, BEFORE REMOVING THE COVER.

NOTE

☆ After remounting, bleed the circuit and the units, and test the operation to make sure of the absence of faulty conditions.

WINCH

17. Ball bearing	29. Spring washer
18. Ball bearing	30. Bolt
19. Ball bearing	31. Spring washer
20. Ball bearing	32. Bolt
21. Ball bearing	33. Single tongued washer
22. Oil seal	34. Plug (breatjer)
23. Nut	35. Plug
24. Washer	36. Cap
25. Nut	38. Spacer
26. Washer	39. O-ring
27. Snap ring	40. Dowel pin
28. Bolt	

● DISMOUNTING

1. Remove the wire rope from the winch drum.
2. Disconnect all the hoses from the winch motor and cap the hose ends and the connections on the motor.
3. Screw in a bolt (M12×50, 8T) as shown to compress the spring; then loosen the adjusting bolt to open the brake band.

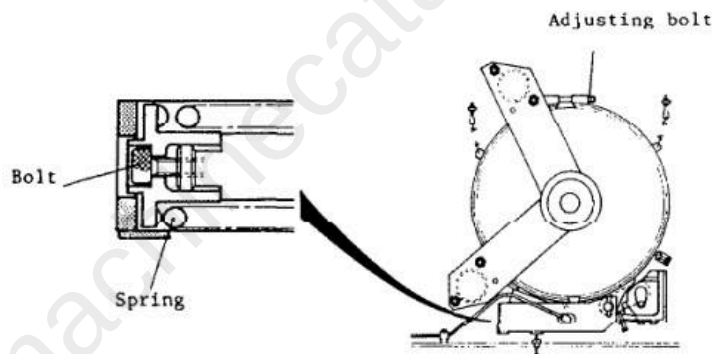


Fig. 2

4. Extract the support side pins, and then, remove the support by unscrewing the support mounting bolts. (Fig. 3)
5. Extract the winch side pin, and after applying wire ropes to the gear case and the winch drum as shown, unscrew the winch mounting bolts. (Fig. 3)

WARNING

☆ WHEN RE-APPLYING THE WIRE ROPE ON THE WINCH DRUM SIDE, MAKE ABSOLUTELY SURE THAT THE WINCH ASS'Y IS POSITIVELY SUPPORTED BY THE WIRE ROPES ON THE GEAR CASE SIDE AND BY THE SWING FRAME.

GENERAL

● FUNCTION OF UNITS

1. Working condition indicator

1) Pressure converter

The pressure converters convert, by means of strain gauges, the bottom side pressure and the head side pressure in the elevation cylinder into electric signals, which are transmitted to the conditioner.

2) Conditioner

The conditioner processes the signals from the two pressure converters and transmits the resultant electric signal (corresponding to the elevation cylinder supporting force) to the working condition indicator main body.

3) Boom length detector

The boom length detector is installed on the boom side, and converts, by means of a potentiometer, the extended length of the boom into an electric signal, which is transmitted to the working condition indicator main body.

4) Angle detector

The angle detector is installed on the boom side, and converts, by means of a potentiometer driven by a pendulum, the angle of the boom relative to the ground into an electric signal, which is transmitted to the working condition indicator body.

5) Other detectors

The selected setting of the boom, single top, jib, outriggers, etc., and the boom direction are input to the working condition indicator main body in the form of electric signals generated by switches either operated automatically or set manually.

RELAY VALVE

- | | |
|------------------|-------------------|
| 1. Body | 10. Diaphragm |
| 2. Valve | 11. Washer |
| 3. O-ring | 12. C-ring |
| 4. Spring | 13. Cover |
| 5. Packing | 14. Bolt |
| 6. Cap | 15. Spring washer |
| 6. Exhaust valve | 16. Plug |
| 8. Shim | 17. Filter |
| 9. Washer | |

● DISMOUNTING

WARNING

- ☆ IMMOBILIZE THE VEHICLE, AND DISCHARGE THE COMPRESSED AIR IN THE RESERVOIR BY OPENING THE DRAIN COCK, BEFORE DISMOUNTING THE RELAY VALVE.

● DISASSEMBLY

1. Remove cap ⑥, and take out spring ④ and valve ②.
2. Unscrew bolts ⑭ and remove cover ⑬ from body ①.

CAUTION

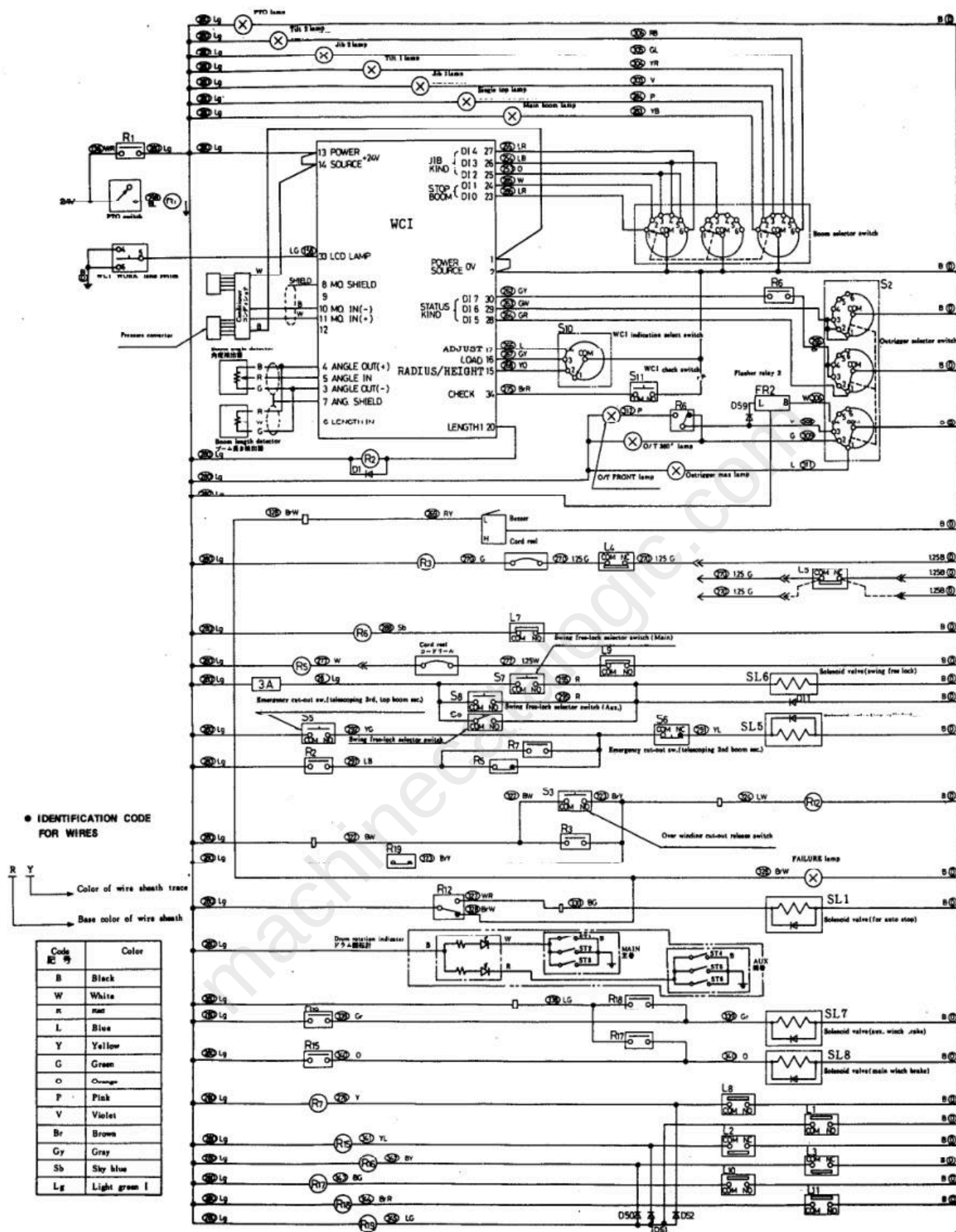
- ☆ TAKE CARE NOT TO DAMAGE THE SEAT SURFACES OF EXHAUST VALVE ⑦ WHEN REMOVING IT.

3. Take out the diaphragm-exhaust valve ass'y by pushing out from the mounting side cap ⑥.
4. Disassemble the diaphragm ass'y by removing C-ring ⑫, and by taking out washer ⑩, diaphragm ⑪, washer ⑨, and exhaust valve ⑦ in this sequence.
5. Remove filter ⑰ with long nose pliers, or the like.

● CHECK

1) Diaphragm

Replace if aging and damage are noticed even very slightly.
Otherwise, replace it once a year.



L1	Boom lowering detector switch
L2	Main winch winding detector switch
L3	Aux. winch winding detector switch
L4	Over-winding cut-out switch (boom)
L5	Over-winding cut-out switch (jib, single top)
L7	Over-front position detector switch
L8	Boom extension detector switch
L9	3rd and top boom full retraction detector switch
L10	Main winch unwinding detector switch
L11	Aux. winch unwinding detector switch

Full Version Available

Tadano TR-300E Rough Terrain Crane Service Manual

Tadano TR-300E rough terrain crane service manual with repair procedures, adjustments and troubleshooting for the main systems. Instant PDF download.

VIEW THE FULL MANUAL

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