TADANO

Publication No. TM-2000-1/S1(U)-1E

Service Manual

Service Manual

TADANO

01

Boom Truck

Model **TM-2000-1**

Applicable Serial No. EX0069～

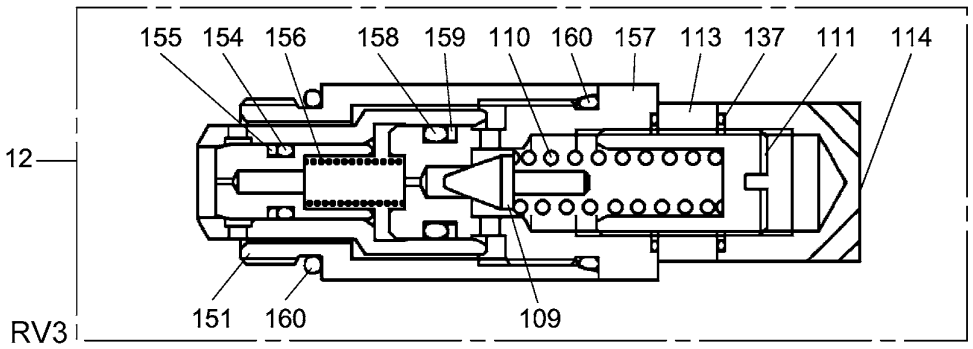
TADANO LTD.

TM-2000-1/S1(U)-1E

PRINTED IN JAPAN
0609 K

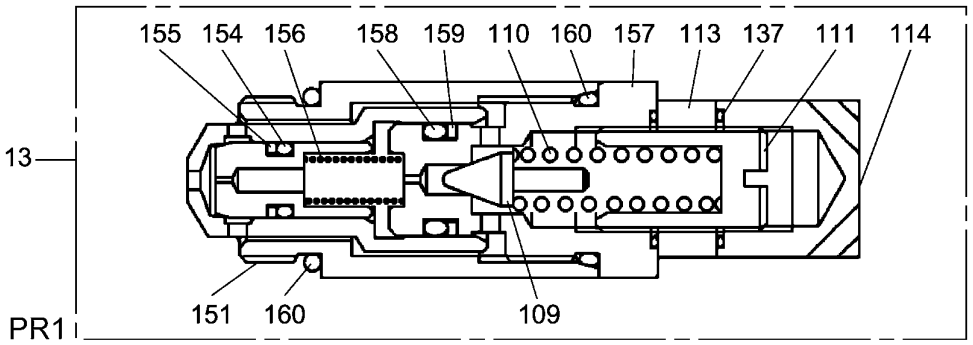
5. Contents

Relief valve (RV3)



IW113-0400E10

Relief valve (PR1)



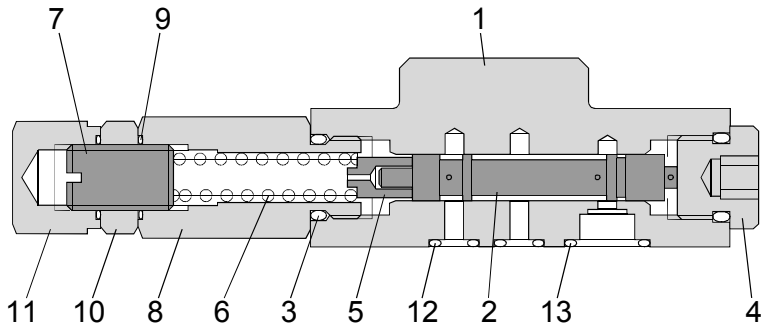
IW113-0400E11

12. Relief valve (RV3)	111.Screw	151.Body	157.Body
13. Relief valve (PR1)	113.Nut	154.O-ring	158.O-ring
109.Regulator valve	114.Cap nut	155.Backup ring	159.Backup ring
110.Spring	137.O-ring	156.Spring	160.O-ing

Sequence Valve (Pilot pressure)

Pressure reducing valve

(illustrated as 5 in the cross section along the line A-A)



IW122-011005

1.Body	5.Spring seat	9.O-ring	13.O-ring
2.Spool	6.Spring	10.Nut	
3.O-ring	7.Adjust screw	11.Cap nut	
4.Plug	8.Body	12.O-ring	

366-038-80000 ⚠0

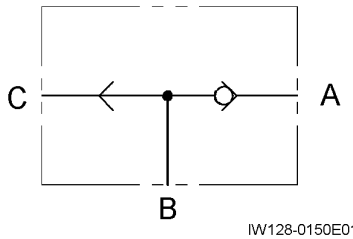
366-060-30000 ⚠0

B-12 Shuttle Valve

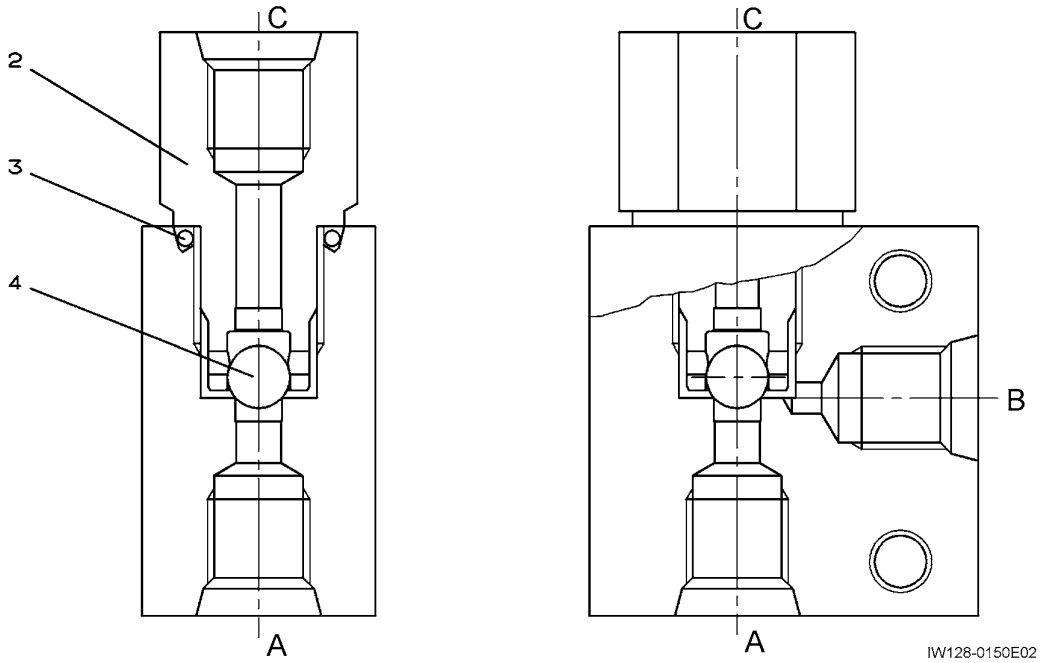
[NOTICE]

◆There is a case that the appearance and so on differ from the parts for this machine. Although there is not so much difference in functions and disassembly procedures, make sure of the serial number of this machine and the part sales unit described in the parts catalog before starting disassembling operations.

1. Structure



IW128-0150E01



IW128-0150E02

2.Joint 3. O-ring 4. Steel ball

Thread size and tightening torque

Sign / Port	Thread size	Tightening torque	
		N-m	ft-lbf
A, B	G1/4	29.4	22

366-242-50000 0

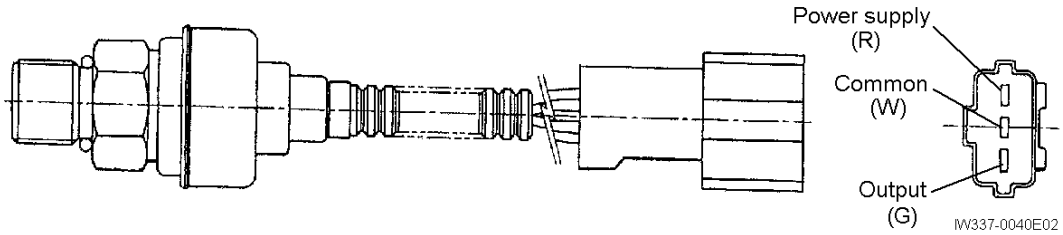
C-8 Pressure Sensor (Front stabilizer)

[NOTICE]

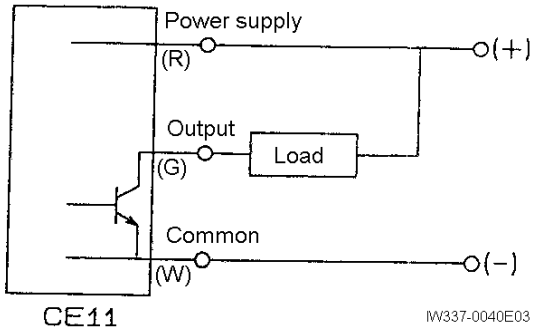
◆There is a case that the appearance and so on differ from the parts for this machine. Although there is not so much difference in functions and disassembly procedures, make sure of the serial number of this machine and the part sales unit described in the parts catalog before starting disassembling operations.

1. Structure

General View

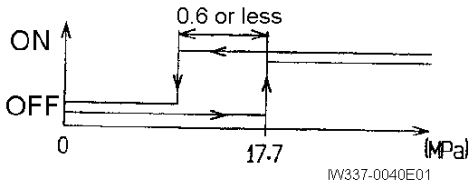


Use example



Specification

Setup value----------17.7MPa (180.5 kgf/cm2)



[NOTE]

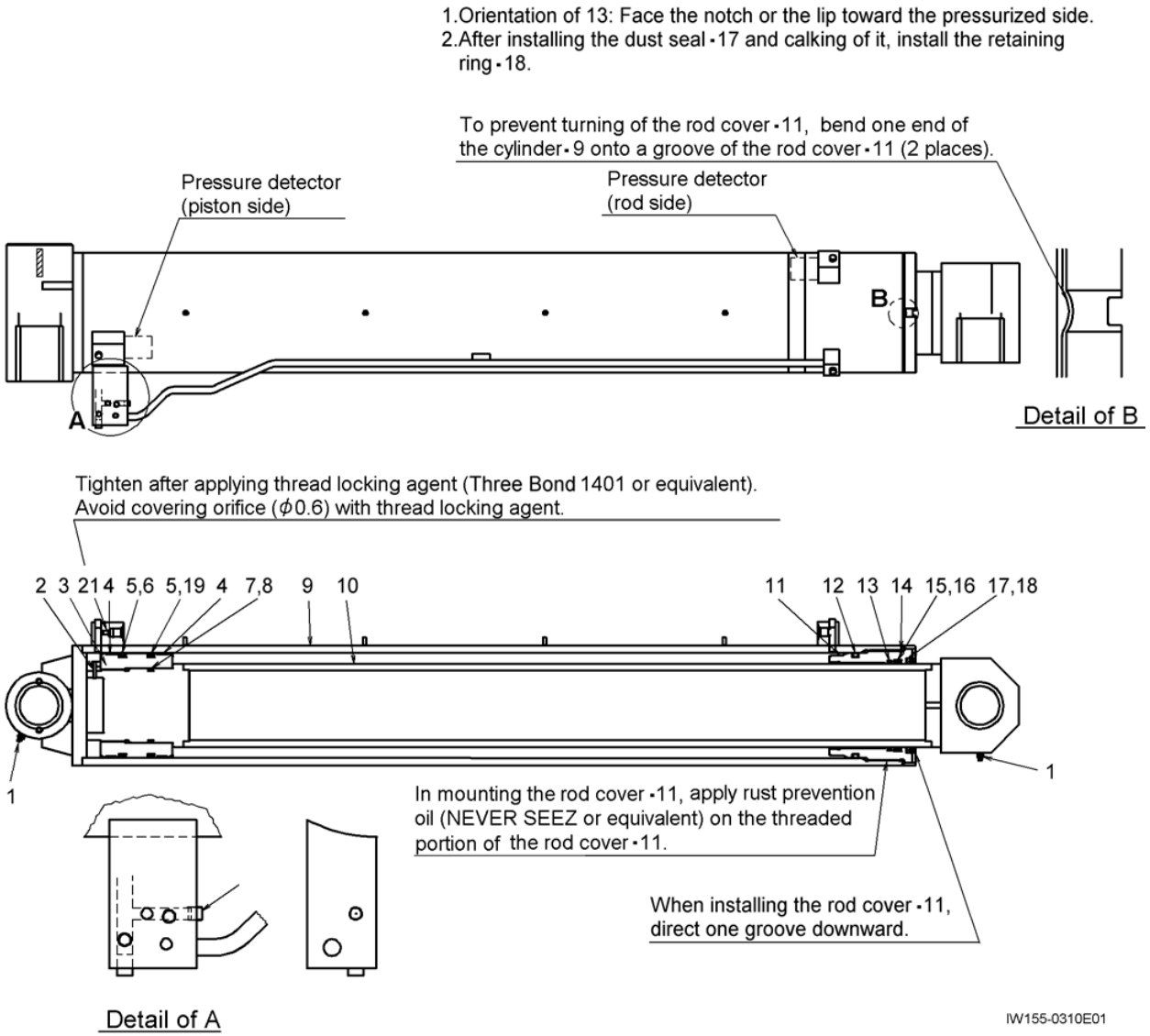
◆The adjustment of pressure detector is unnecessary.

E-1 Boom Elevating Cylinder

[NOTICE]

◆There is a case that the appearance and so on differ from the parts for this machine. Although there is not so much difference in functions and disassembly procedures, make sure of the serial number of this machine and the part sales unit described in the parts catalog before starting disassembling operations.

1. Structure

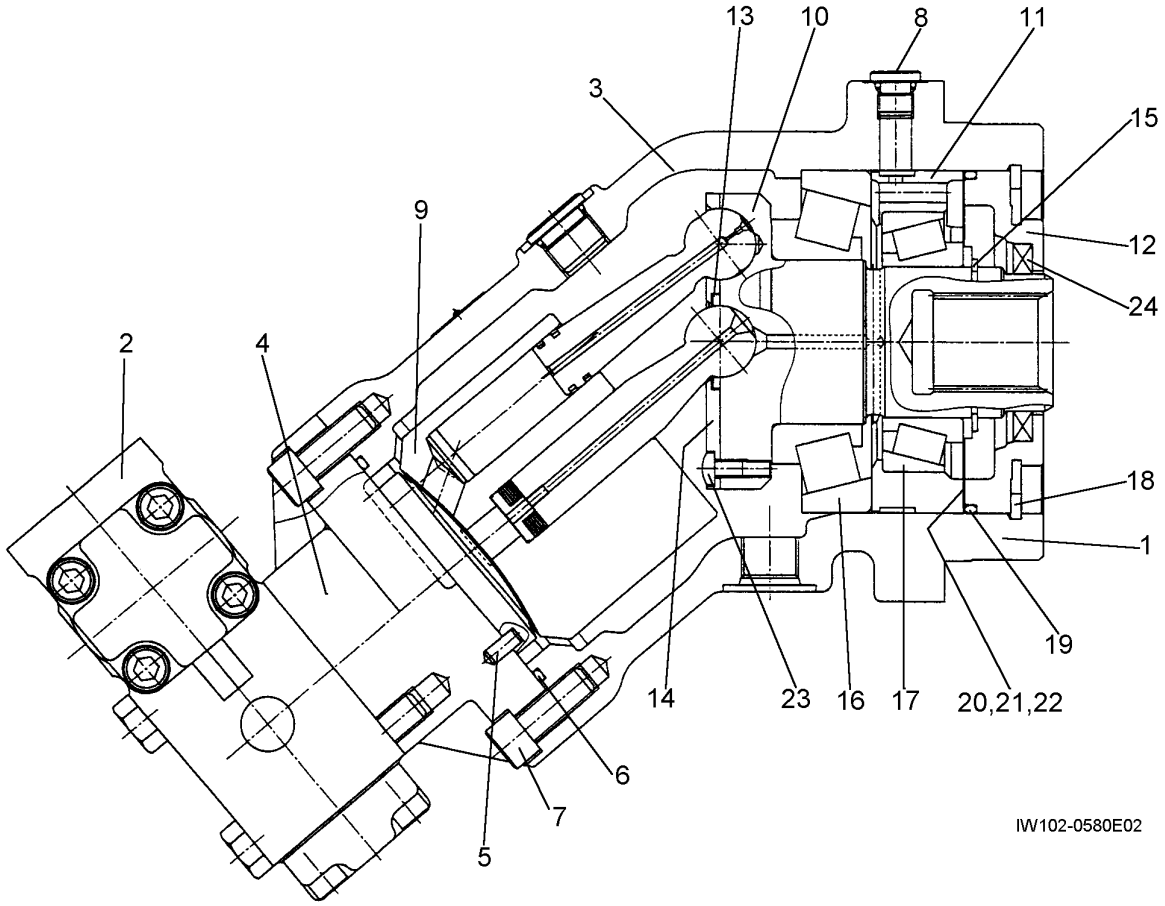


1. Grease nipple
2. Spring pin
3. Piston
4. Plain bearing
5. Packing
6. Backup ring
7. O-ring
8. Backup ring
9. Cylinder
10. Rod
11. Rod cover assy
12. O-ring
13. Damper ring
14. O-ring
15. Packing
16. Backup ring
17. Dust seal
18. Retaining ring
19. Backup ring
20. Plug
21. Orifice

3. Structure

[NOTICE]

◆There is a case that the appearance and so on differ from the parts for this machine. Although there is not so much difference in functions and disassembly procedures, make sure of the serial number of this machine and the part sales unit described in the parts catalog before starting disassembling operations.



1.Piston motor	7.Hexagon socket head bolt	13.Shim	19.O-ring
2.Counterbalance valve	8.Plug	14.Plate	20.Shim
3.Housing	9.Cylinder block	15.Retaining ring	21.Shim
4.Cover	10.Shaft	16.Bearing	22.Shim
5.Parallel pin	11.Case	17. Bearing	23.Screw
6.O-ring	12.Seal case	18.Retaining ring	24.Oil seal

Thread size and tightening torque

Sign / Port	Thread size	Tightening torque	
		N-m	ft-lbf
7	M12	98-123	72-91
8	G1/4	19-23	14-17

366-630-10000 ⚠

Boom (Five-section boom)

[NOTICE]

◆There is a case that the appearance and so on differ from the parts for this machine. Although there is not so much difference in functions and disassembly procedures, make sure of the serial number of this machine and the part sales unit described in the parts catalog before starting disassembling operations.

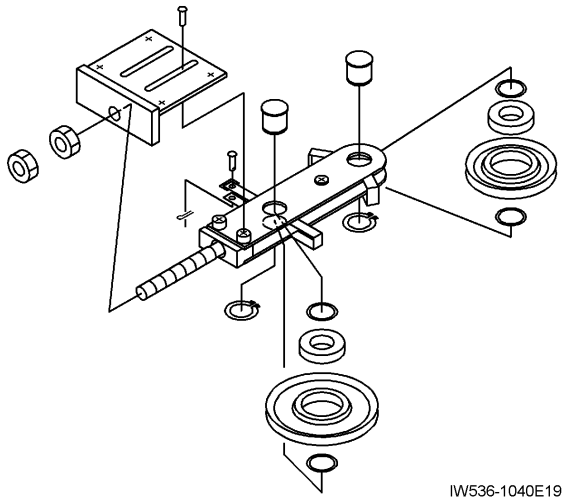
1. ---------
2. ---------
3. ---------
4. ---------
5. ---------
6. Pin
7. Snap pin
8. Pin
9. Plate
10. Sheave assembly
11. Spacer
12. Spacer
13. Pin
14. Plate
15. Sheave assembly
16. Spacer
17. Wire rope
18. Nut
19. Wire rope
20. Nut
21. Nut
22. Wire rope
23. Wire rope
24. Wire rope
25. Hexagon socket head bolt
26. Support
27. Plug
28. Nameplate
29. Tapping screw
30. Cap
31. Grease nipple
32. Grease nipple
33. Pin
34. Plate
35. Cover
36. Pin
37. Support
38. Sheave assembly
39. Spacer
40. Pin
41. Spacer
42. Guide
43. Plate
44. Roller assembly
45. Roller assembly
46. Pin
47. Pin
48. Spacer
49. Pin
50. Snap pin
51. Sheave assembly
52. Pin
53. Retaining ring
54. Lock washer
55. Nut
56. Sheave assembly
57. Pin
58. Bolt
59. Support
60. Bolt
61. Sheave assembly
62. Spacer
63. Spacer
64. Button bolt
65. Pin
66. Plate
67. Slide plate
68. Machine screw
69. Plain bearing
70. Plate
71. Retainer
72. Retainer
73. Slide plate
74. Retainer
75. Retainer
76. Slide plate
77. Slide plate
78. Support
79. Slide plate
80. Plate
81. Plate
82. Slide plate
83. Shim
84. Shim
85. Slide plate
86. Plate
87. Plate
88. Slide plate
89. Plate
90. Support assembly
91. Hexagon socket head bolt
92. Slide plate
93. Slide plate
94. Shim
95. Shim
96. Bolt
97. Plain washer
98. Support
99. Hexagon socket head bolt
100. Bolt
101. Spring washer
102. Bolt
103. Bolt
104. Bolt
105. Bolt
106. Bolt
107. Bolt
108. Bolt
109. Bolt
110. Bolt
111. Spring washer
112. Hexagon socket head bolt
113. Hexagon socket head bolt
114. Bolt
115. Spring washer
116. Pin
117. Spacer
118. ---------
119. Sheave assembly
120. Pin
121. Retaining ring
122. Pin
123. Retaining ring
124. Adjuster assembly
125. Bolt
126. Spring washer
127. Bolt
128. Plain washer
129. Sheave assembly
130. Pin
131. Retaining ring
132. Support
133. Bolt
134. Shim
135. Pin
136. Bolt
137. Spring washer
138. Support
139. Bolt
140. Bolt
141. Pin
142. Retaining ring
143. Slide plate
144. Slide plate
145. Nut
146. Bolt
147. Plate
148. Plate
149. Plate
150. Plate
151. Slide plate
152. ---------
153. ---------
154. ---------
155. ---------
156. Shim
157. Shim
158. Plate
159. Plate
160. Bolt
161. Bolt
162. Set screw
163. Cover

5. Structure of the adjuster assy

[NOTICE]

◆There is a case that the appearance and so on differ from the parts for this machine. Although there is not so much difference in functions and disassembly procedures, make sure of the serial number of this machine and the part sales unit described in the parts catalog before starting disassembling operations.

Use the illustration below for a reference when disassembling the adjuster assy.

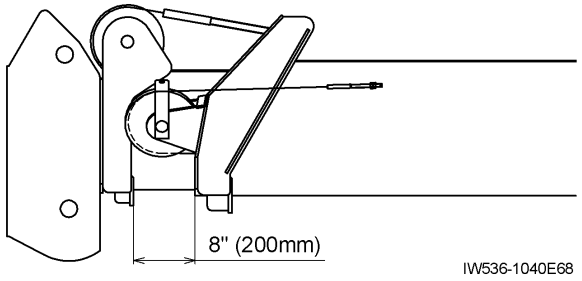


IW536-1040E19

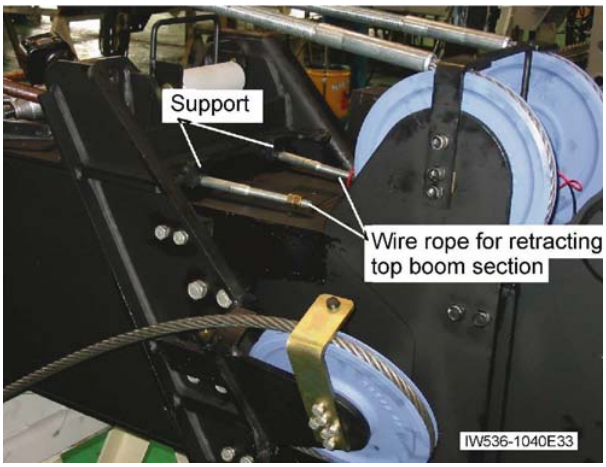
7. Retract the 4th boom section to the point about 200 mm (8 in) before full retraction.

[NOTICE]

◆If the 4th boom section is fully retracted, it becomes impossible to install the boom telescoping cylinder.



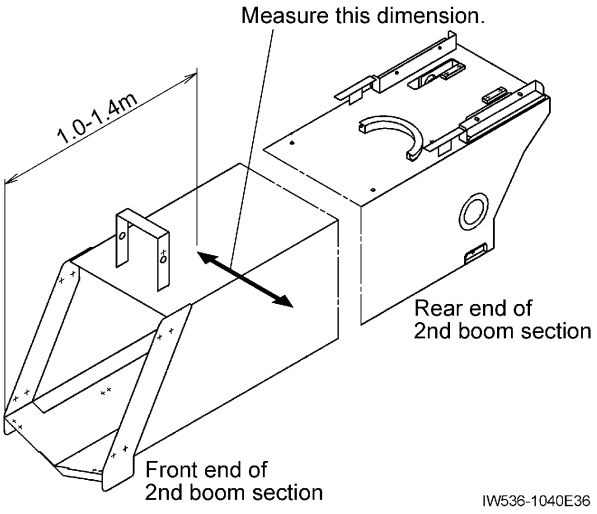
8. Release the wire ropes for retracting the top boom section and pass them through the supports at the front end of the 3rd boom section.



9. Measure the following internal widthwise dimension of the 2nd boom section.
   - At 1.0 to 1.4 m (3.3 to 4.5 ft) from the front end

[NOTICE]

◆The measured dimension will be used when the clearances are adjusted at step 12.

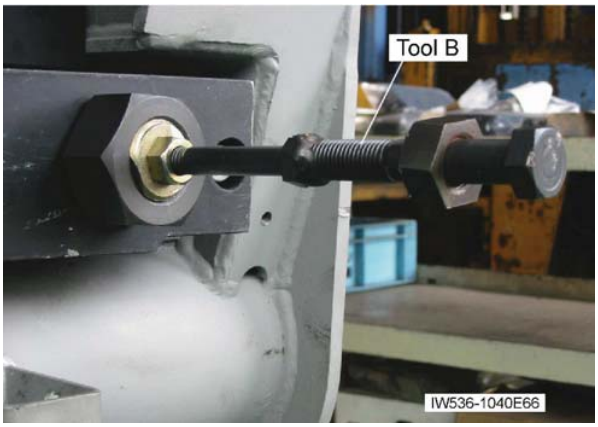


10. Apply grease to the surfaces inside the 2nd boom section on which the slide plates of the 3rd boom section slide.

11. Install the slide plates at the rear end of the 3rd boom section.

12. Screw a nut on the wire rope for extending the 3rd boom section.
Then screw the tool B on the wire rope end.

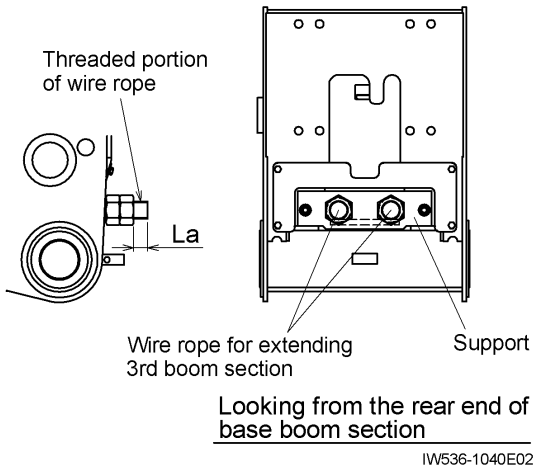
[NOTICE]
◆The figure below is reference only.



13. While fixing the tool B with a wrench, tighten the nut.

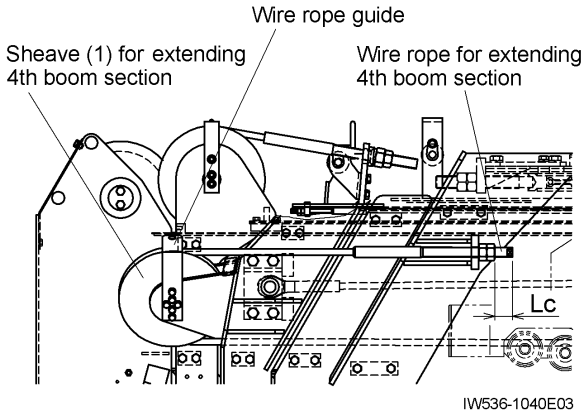
14. Remove the tool B.
Screw a locknut to lock the wire rope for extending the 3rd boom section.

[NOTICE]
◆The dimension La that was measured during disassembly can be used as the reference target when screwing nuts.



15. Fix the wire ropes for extending the 4th boom section to the front end of the base boom section.

[NOTICE]
◆The dimension Lc that was measured during disassembly can be used as the reference target when screwing nuts.



4. AMA adjustment

AMA stores capacity data for plural models of cranes. After mounting of a crane is completed, you must select the capacity data that correspond to the actual model and confirm accuracy of the data.

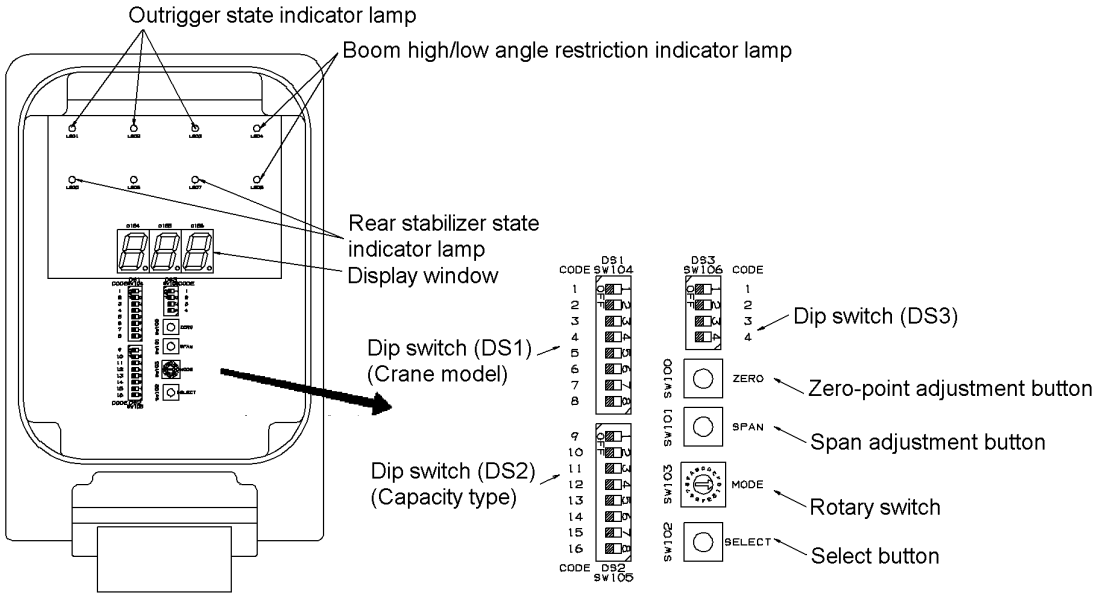
4.1 Attention for adjustment work

1. Set the machine level on a firm level ground with the outriggers extended as specified. (See the Table 1.on the next page.)
2. Remove the cover from the AMA main unit and select the crane model and the capacity data before confirming accuracy.
3. Run the engine at an idling speed when performing adjustment.
4. Shift the Dip switches and the Rotary switch using an extra thin screwdriver.
5. Do not let water enter inside of the AMA during adjustment.
6. Keep off the buttons other than the specified switches.

[NOTE]

◆For more information, refer to the next page.

4.2 AMA components



AMA main unit with the cover removed

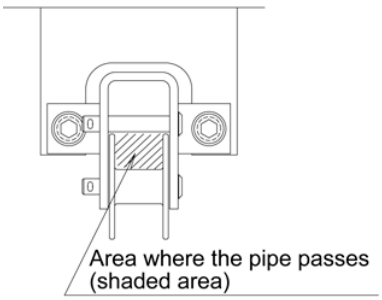
IW301-0320E01

361-930-14000 ⚠

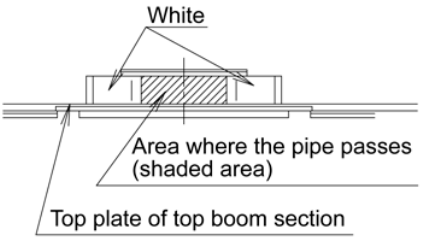
2) Passing a pipe from the boom rear end

1. Pass a pipe from the rear end of the base boom section to the rear end of the top boom section.

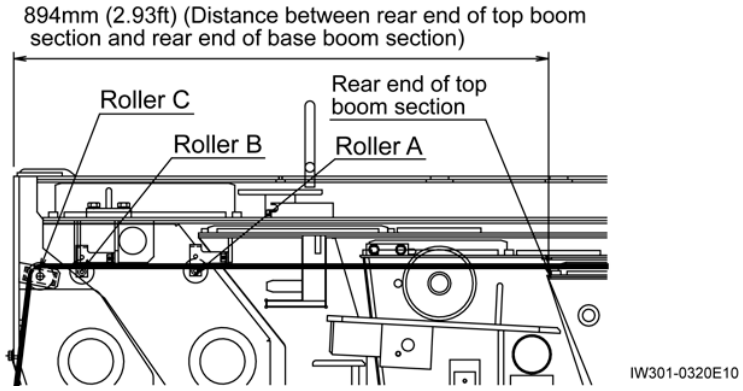
   Pass the pipe from the rear end of the base boom section, via the roller C and the shaded areas of the rollers B and A, to the support at the rear end of the top boom section. It may be difficult to do this as the inside of the boom is dark.
   As the support at the rear end of the top boom section is painted in white, use it as a guide for this operation.



Detail of roller A



Rear end of top boom section
(looking from rear)



3) Passing a wire from the rear end of the base boom section

Pass a wire through the pipe from the rear end of the boom section to the front end of the top boom section. Try to pass the wire as straight as possible, or it may be caught within the boom.

4) Removing the pipe

Remove only the pipe from the boom rear end while leaving the wire in the boom.

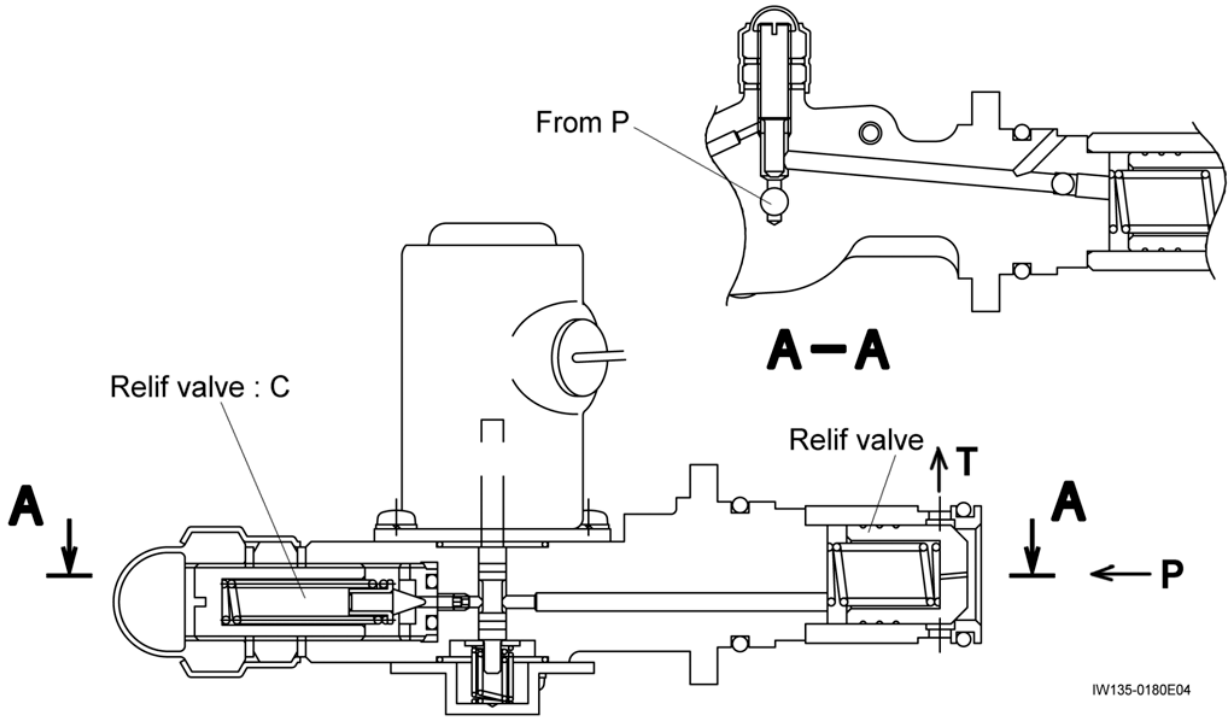
V

Remote Control System

Contents

V

1.5 Unloading valve



Relif valve :C 19.61- 20.10 Mpa (2843.45- 2914.45 psi) at 60L/min

Relif valve :F 2.06 - 2.65 Mpa (298.70 - 384.30 psi) at 1.5L/min

Reducing valve :E 1.86 - 1.96 Mpa (270 - 284.5 psi) P : at 5L/min

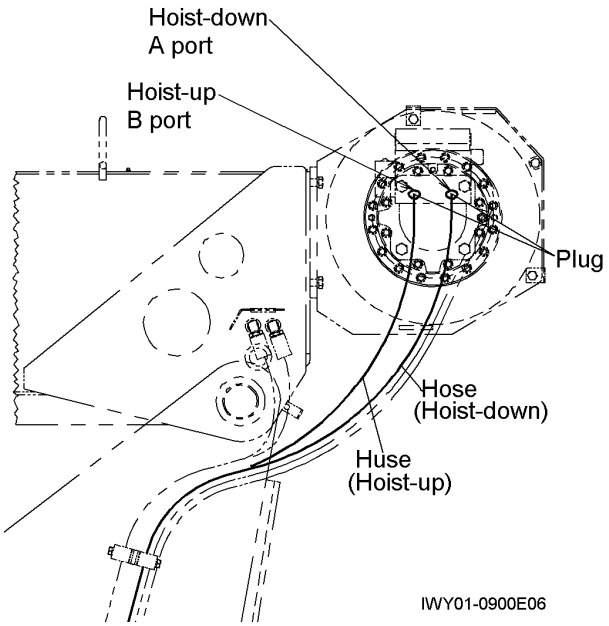
Pilot : at 0.4L/min

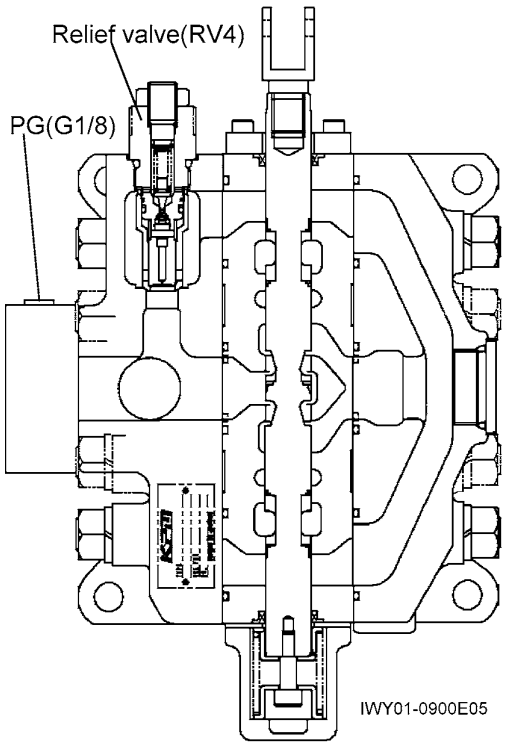
1.3 Manual Control Valve(Winch)

[NOTE]

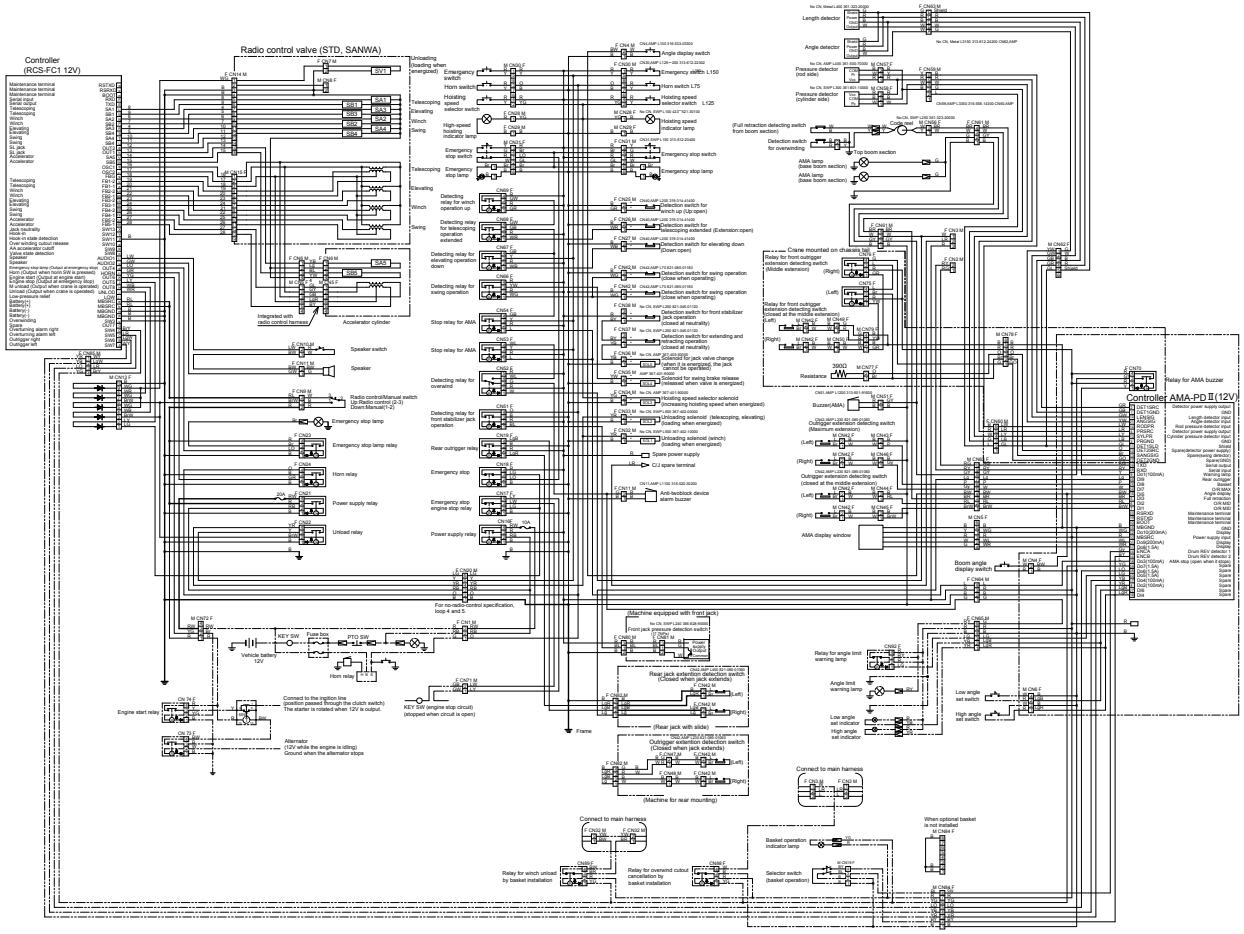
◆Oil temperature: 45 - 55°C (113 - 131°F) (TADANO Hydraulic oil LL)
◆Connect a pressure gauge to the PG port.

Item	Set pressure		Engine speed (min^{-1})	Note
	MPa	psi		
Relief valve (RV4) at 216L / min	20.1-20.6	2915-2987	1960	1.Plug the hoses connected to the hoist-up and hoist-down ports. 2.Connect a pressure gauge to the PG port. 3.Turn the PTO switch ON. 4.Push on the winch high-speed switch continuously. 5.Operate the winch lever toward the hoist-up position until the lever reaches the full stroke. 6.Check the pressure at engine speed 1960 rpm.





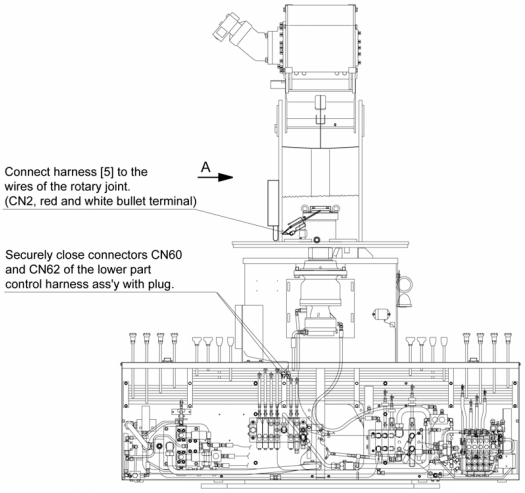
2. Applicable serial No. EX0310--

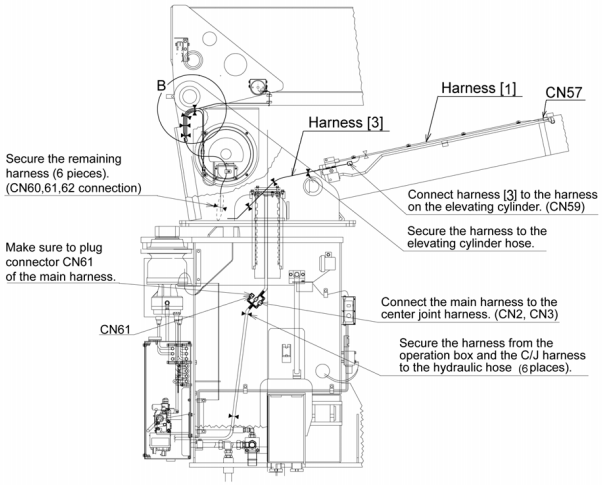


IWZ03-3441E01

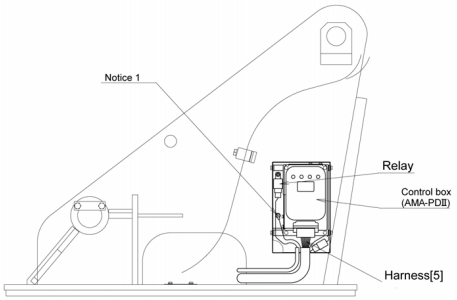
Location of Electrical Parts

2.2 Continuous rotation spec.

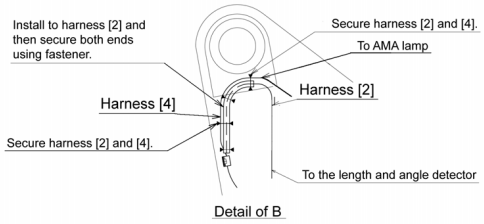




Notice
1.Secure the ground terminal of harness [5] to the stud bolt.



View from A



IWZ02-3270E03

316-558-04000 ⚠