



TADANO

Publication No. TT-300XL-1/S1(U)-1E

Service Manual

01

Truck Crane

Model TT-300XL-1

Applicable Serial No. 291030--

TADANO LTD.

Hydraulic Pump

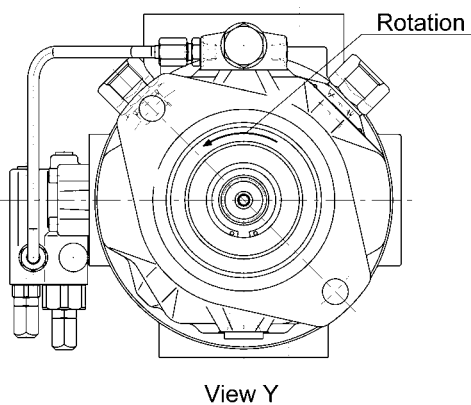
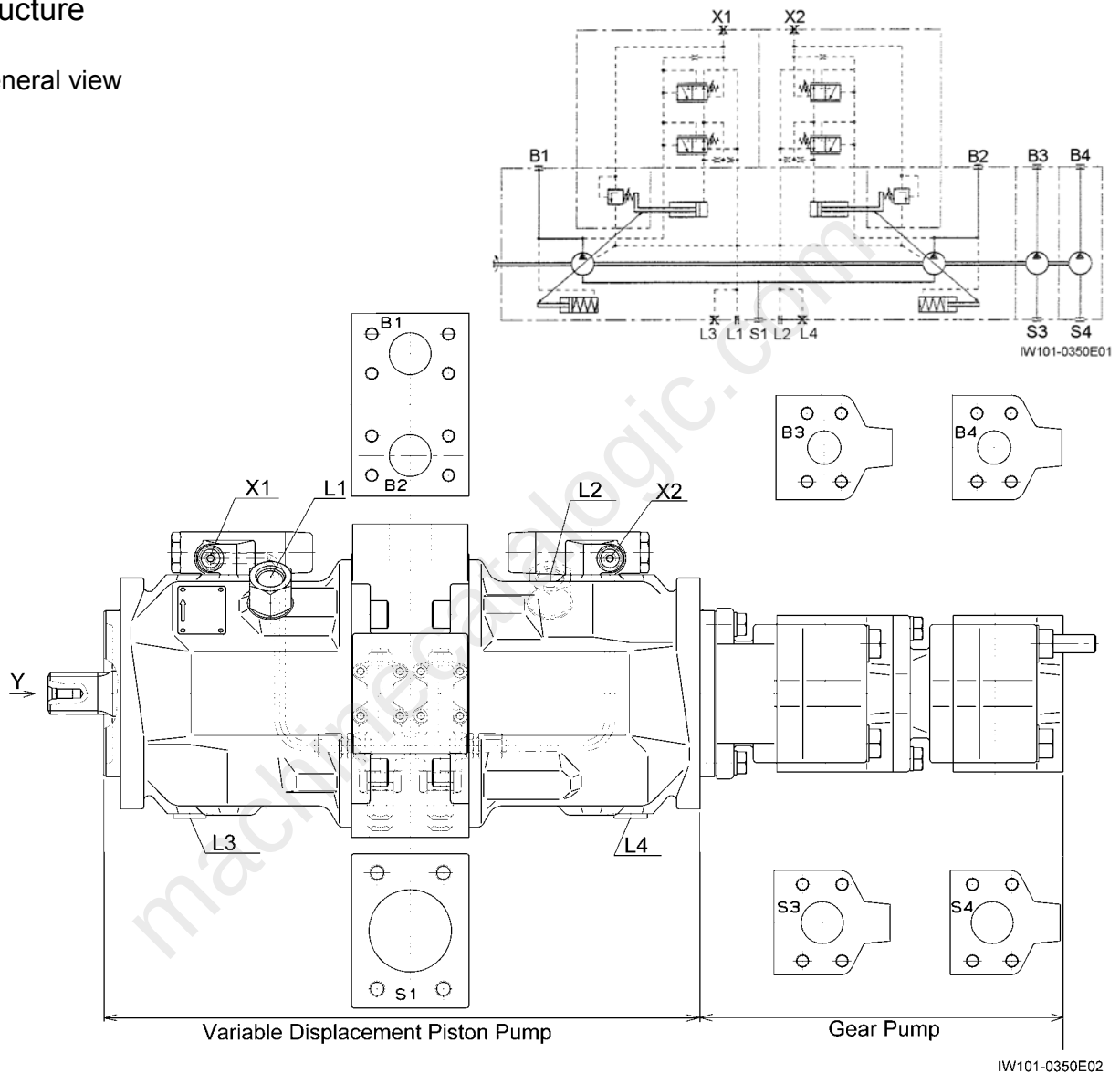
B-2 Hydraulic Pump

[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

1.1 General view



Symbol	Name	Size
B1, B2	Delivery port	SAE1 1/4 (Standard type)
S1	Suction port	SAE2 1/2 (Standard type)
L1, L2	Drain port	G1/2
L3,L4	Drain port	7/8-14 UNF-2B (Plug)
X1, X2	Pilot port	7/16-20 UNF-2B (Plug)
B3,B4	Delivery port	SAE 1(Standard type)
S3,S4	Suction port	SAE 1 1/4(Standard type)

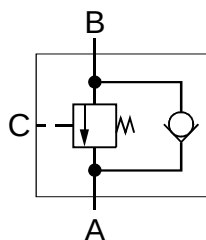
Counterbalance Valve (Elevating)

E-3 Counterbalance Valve (Telescoping)

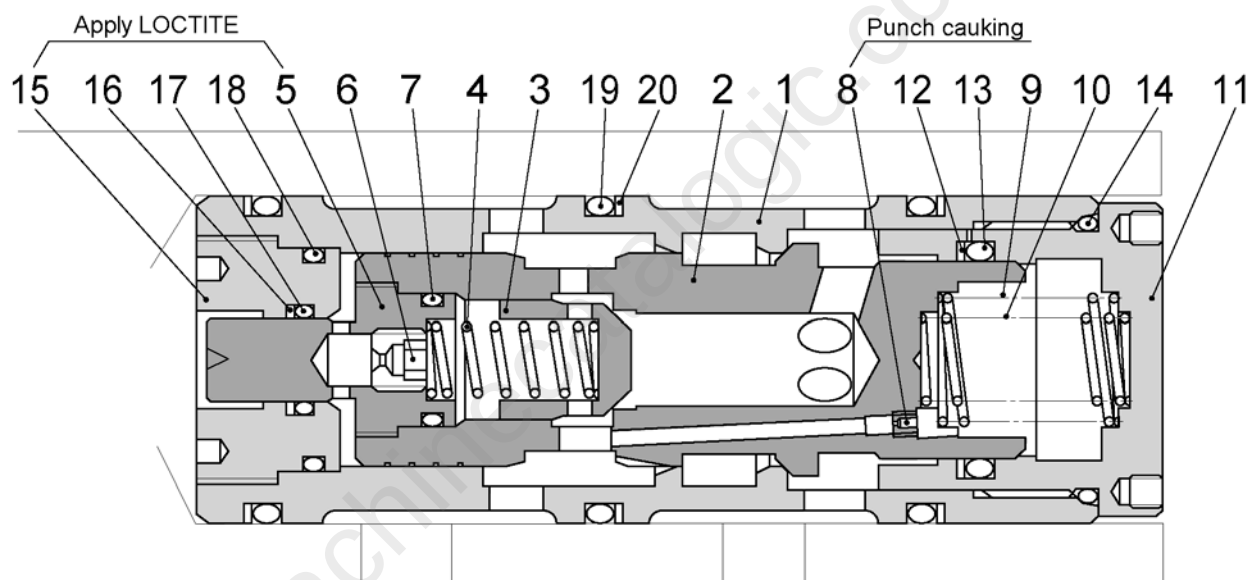
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1. Structure



IW119-022001



IW119-0510E01

- | | | | |
|----------------|---------------------------|-----------------|-----------------|
| 1. Body | 6. Orifice ($\phi 0.7$) | 11. Plug | 16. Backup ring |
| 2. Main spool | 7. O-ring | 12. Backup ring | 17. O-ring |
| 3. Check valve | 8. Orifice ($\phi 0.5$) | 13. O-ring | 18. O-ring |
| 4. Spring | 9. Spring | 14. O-ring | 19. O-ring |
| 5. Pilot spool | 10. Spring | 15. Plug | 20. Backup ring |

Thread size and tightening torque

Sign / Port	Thread size	Tightening torque	
		N-m	ft-lbf
6	-	9 - 10	6.5 - 7
8	-	1 - 1.2	0.7 - 0.9
11	-	78 - 98	58 - 72
15	-	29 - 49	22 - 36

Telescoping System

3. Boom telescoping mechanism

Balance of force : $F_3 = 4 \times \frac{W_T}{2} = 2W_T$

3.1 Extension

Equation of workload : $W_T \times E_4 = F_3 \times E_3$

1. 2nd boom section

Extended by No.1 cylinder

(L_1 : No.1 cylinder stroke)

2nd boom section travel (E_2)= L_1

2. 3rd boom section

Extended by No.2 cylinder

(L_2 : No.2 cylinder stroke)

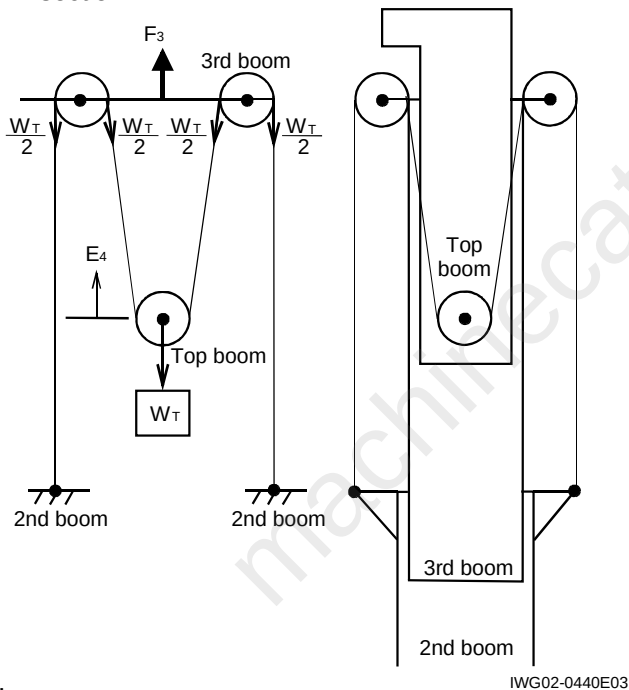
3rd boom section travel (E_3)= L_2

$$\begin{aligned} \therefore E_4 &= F_3 \times \frac{E_3}{W_T} \\ &= 2W_T \times \frac{E_3}{W_T} \\ &= 2E_3 \end{aligned}$$

Top boom section travel (E_4) = $2L_2$

3. Top boom section

Extended by the wire rope mechanism that synchronizes with the extension of 3rd boom section



E_4 : top boom section travel

E_3 : 3rd boom section travel

F_3 : 3rd boom section force

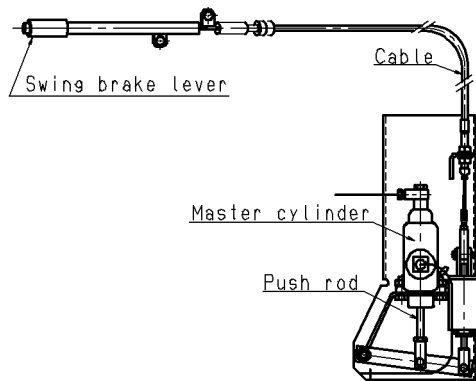
W_T : Top boom section weight

Adjustment and checks

Y-4 Adjustment and checks

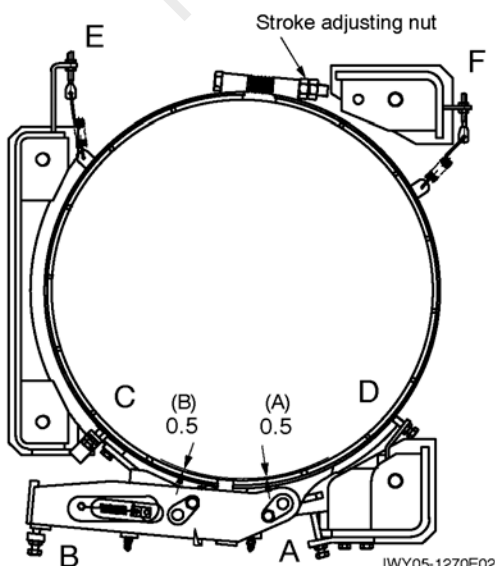
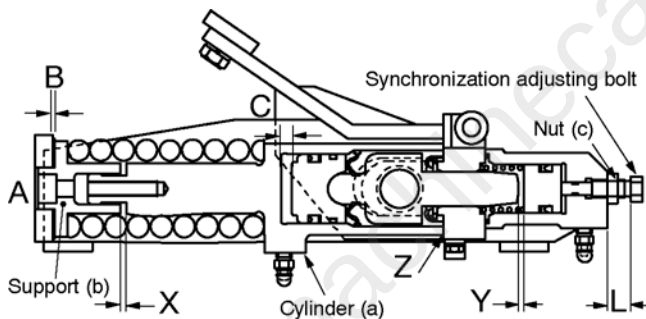
1. Swing brake

Adjust the control cable so that there exists no play in the cable when the swing brake lever is released. (Check that the master cylinder push rod is not being pushed.)



IWY05-1270E01

2. Winch brake



IWY05-1270E02

2.1 Adjustment of shim

1. Screw the hexagon socket head bolt (fully threaded M10×50 bolt) into section A until dimension X becomes zero.
2. Push support (b) to the right until dimension C becomes zero.
3. Measure dimension B. Determine the shim stock thickness using the following formula and select and install shim (s) corresponding to the obtained thickness. Shim thickness = $(B-10) \pm 0.3\text{mm}$ [$(B-0.4) \pm 0.01\text{in}$]
4. Remove the hexagon socket head bolt.

2.2 Adjustment of stroke

[NOTICE]

◆ Adjust the stroke after adjusting by shims.

1. Adjust the synchronization adjusting bolt so that distance L is 18mm. (0.7in)
2. Supply hydraulic pressure to the cylinder (a) to move it until dimension X becomes zero. Make sure that the hydraulic pressure is 20.6 MPa (2987psi) or less.

[NOTICE]

◆ Be careful not to screw the bolt in too far. A gap will be produced at portion Z.

3. Screw in the synchronization adjusting bolt until dimension Y becomes zero and lock it with lock nut (c).
4. Measure distance L. Check that it is within the range $15 \pm 2 \text{ mm}$. ($0.6 \pm 0.08\text{in}$)
5. Loosen the stroke adjustment nut.
6. Adjust the stroke adjustment nut so that $X = 2.5$ to 3mm ($X=0.1$ to 0.12in)
7. Supply hydraulic pressure to the cylinder (a) (the brake is release.)
8. Adjust bolt A so that the clearance at part (A) is 0.5 mm (0.02in).

Full Version Available

Tadano TT-300XL-1 Truck Crane Service Manual

Tadano TT-300XL-1 truck crane service manual with repair procedures, adjustments and system diagrams for the main systems. 176-page PDF.

VIEW THE FULL MANUAL

<https://machinecatalogic.com/tadano-tt-300xl-1-truck-crane-service-manual/>

Book No: TT-300XL-1-S1(U)-1E · File Pages: 176 · File Count: 1 · File Language: English