

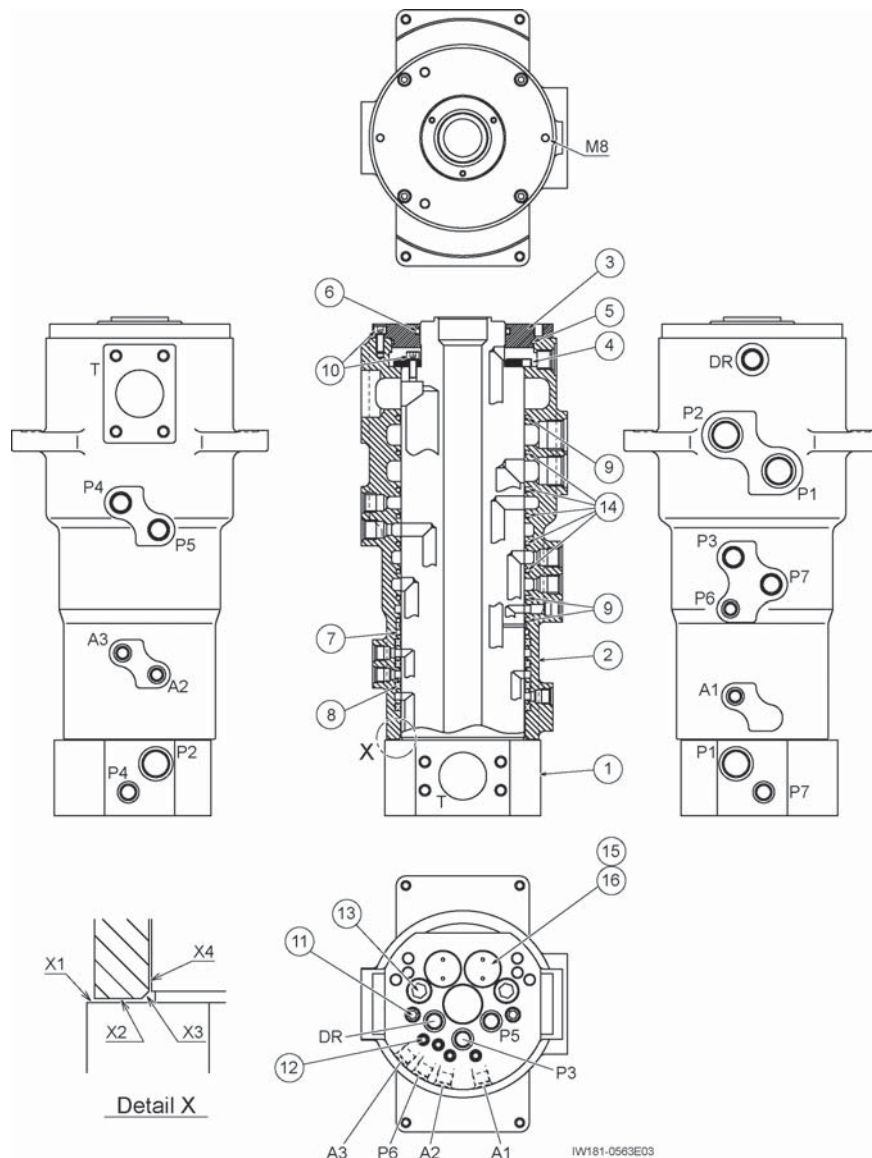
Service Manual

Rough Terrain Crane **GR-1600XL**

Model: GR-1600XL-2
Serial No.: FE5001-

Center Joint

1.3 Swivel joint (hydraulics and pneumatics)



[NOTICE]

- ◆ Before seal parts are installed in seal grooves of the body [2], remove oils and fats from seal grooves completely. (To prevent the seal parts from turning with the core [1])
- ◆ Before apply the silicon grease (NOK UNISILKON L 205) on faces X2, X3 and X4 of the body [2] and on side X1 of the core [1] shown in view X, remove oils and fats from seal grooves completely.

1.Core	5.O-ring	9.Seal ring	13.Plug
2.Body	6.O-ring	10.Hexagon socket head bolt	14.Seal ring
3.Cover	7.O-ring	11.Plug	15.Plug
4.Plate	8.Seal ring	12.Plug	16.O-ring

Thread size and tightening torque

Sign / port	Thread size	Tightening torque		
		N-m	kgf-m	ft-lbf
10 ⁻¹	M8	30 - 34	3.1 - 3.5	22 - 25
15 ⁻²	M39	49	5	36

*1: Apply LOCTITE242 to threaded sections.
*2: Apply LOCTITE638 to threaded sections.

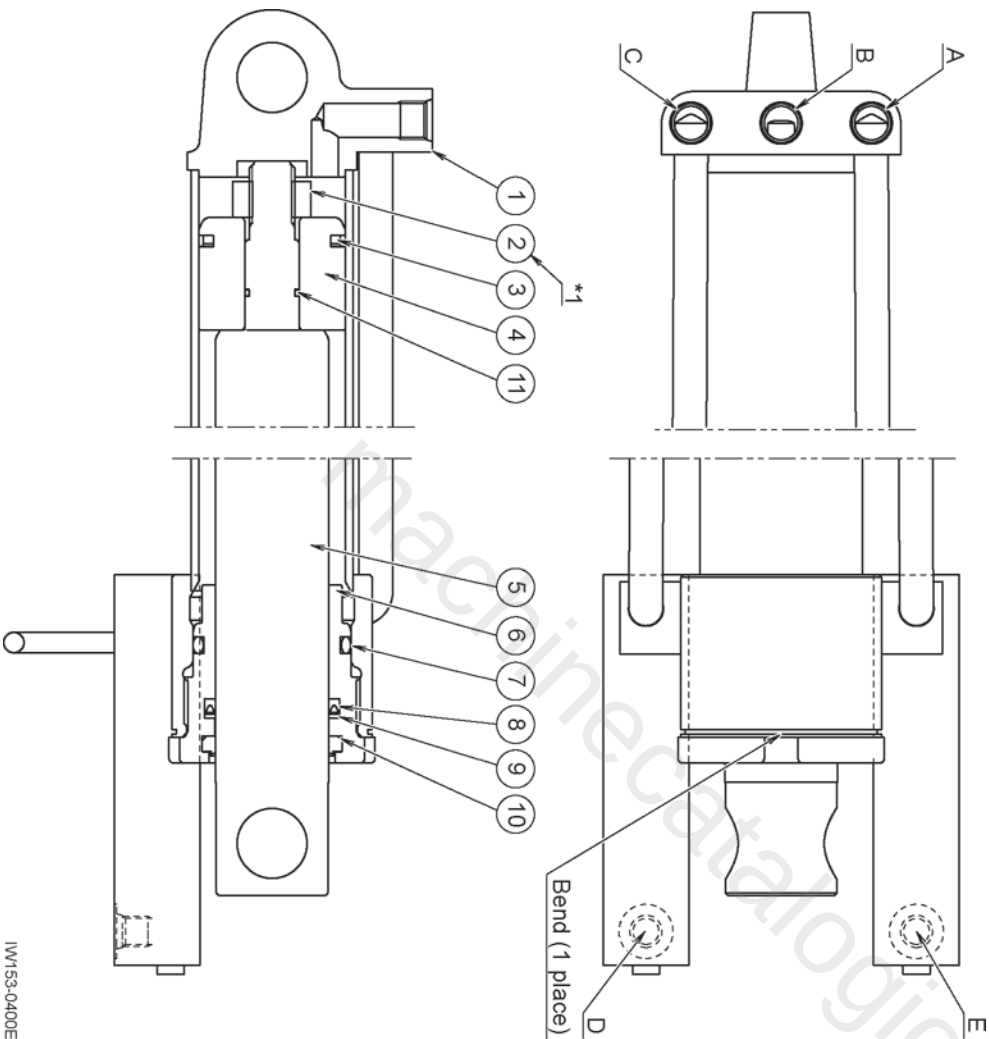
Extension Cylinder

C-7 Extension 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. Cylinder
- 2. Nut
- 3. Seal ring
- 4. Piston
- 5. Rod
- 6. Rod cover
- 7. O-ring
- 8. Packing
- 9. Backup ring
- 10. Dust seal
- 11. O-ring

*1 : Apply adhesive (Locite 638) to the 3rd - 5th threads of the rod [5] beyond the tip of the piston [4].

Thread size and tightening torque

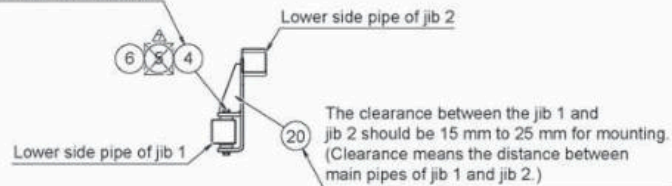
Sign / port	Thread size	Tightening torque		
		N-m	kgf-m	ft-lbf
A, B, C	G3/8	49.0 ± 5	5.0 ± 0.5	36.1 ± 3.7
D, E	G1/4	29.4 ± 3	3.0 ± 0.3	21.7 ± 2.2
2	M20	176 - 196	18 - 20	130 - 145

Jib

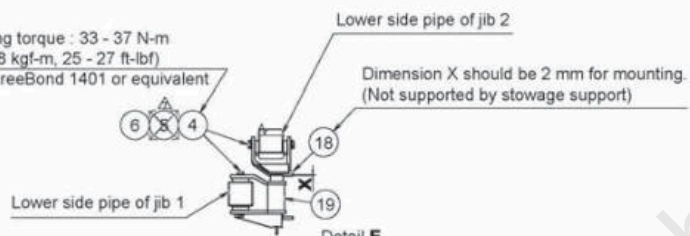
Applicable serial No. Δ : FE5020 --

Detail B, C, D, E

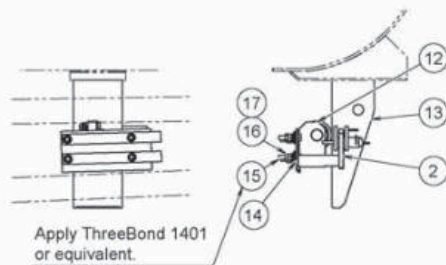
Apply ThreeBond 1401 or equivalent.



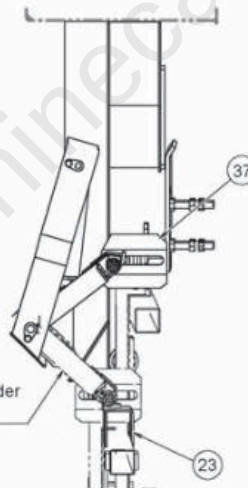
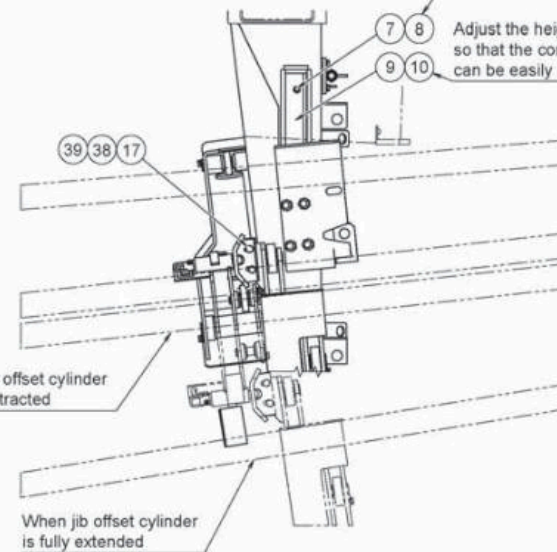
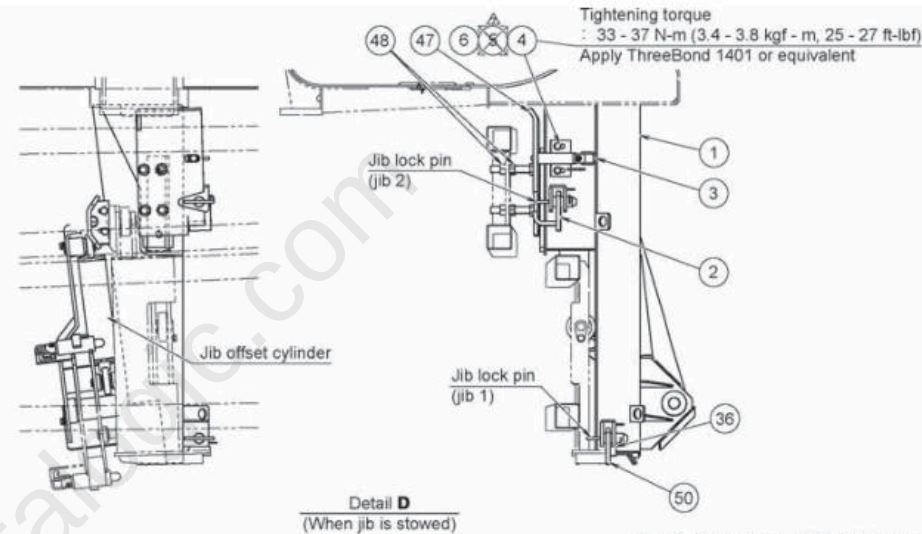
Detail C

Tightening torque : 33 - 37 N-m
(3.4 - 3.8 kgf-m, 25 - 27 ft-lbf)
Apply ThreeBond 1401 or equivalent

Detail E



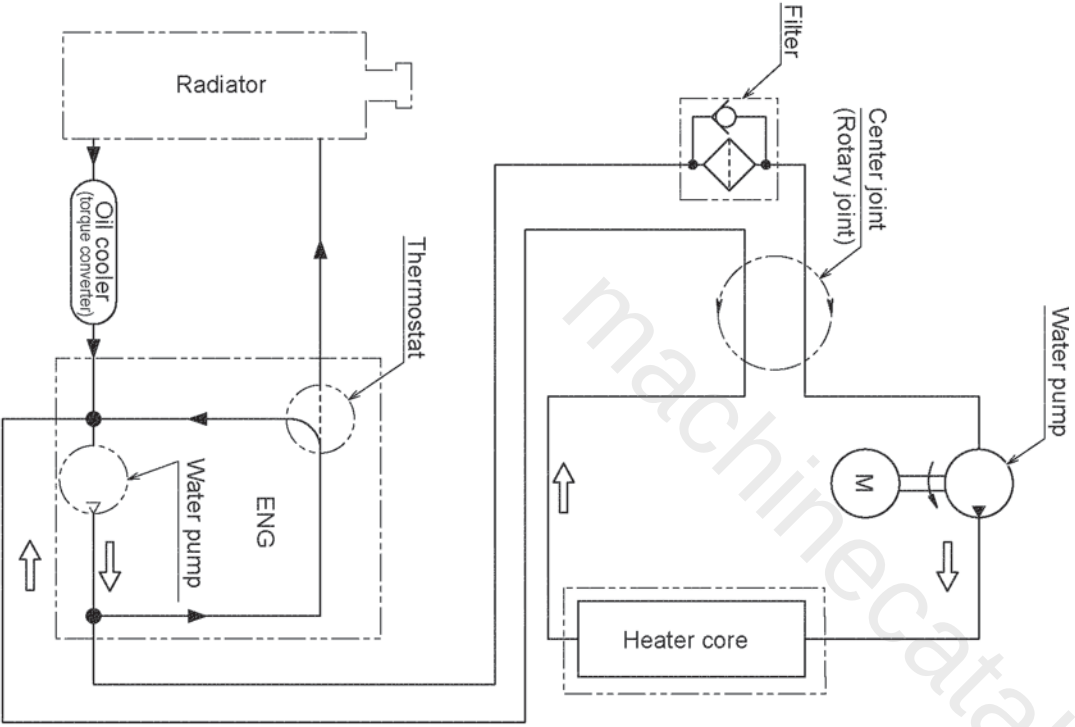
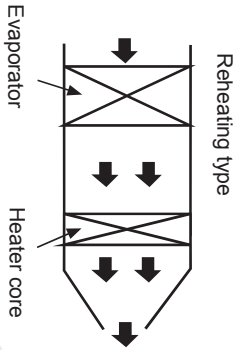
Detail B

When jib offset cylinder
is fully extendedWhen jib offset cylinder
is fully retractedWhen jib offset cylinder
is fully extendedDetail D
(When jib is being set)Detail D
(When jib is stowed)After tightening the bolt [8] lightly, loosen for a 1/4 turn.
Apply ThreeBond 1401 or equivalent.Adjust the height of the slide plate with the shim [10]
so that the connecting pin for the jib 1 to 2
can be easily removed (Area O).

Air Conditioner

3.7 Reheat method

1. The air which cools (or heats) the cab is taken in from outside (or inside) by a blower motor, and then passes through the cooler unit and heater unit before being blown out from each of the ducts. The temperature control type at this time is the reheat method.

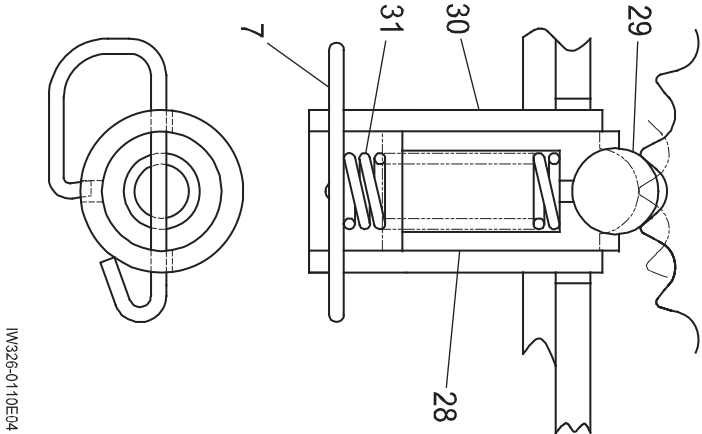


Air conditioning system (hot water circuit diagram)

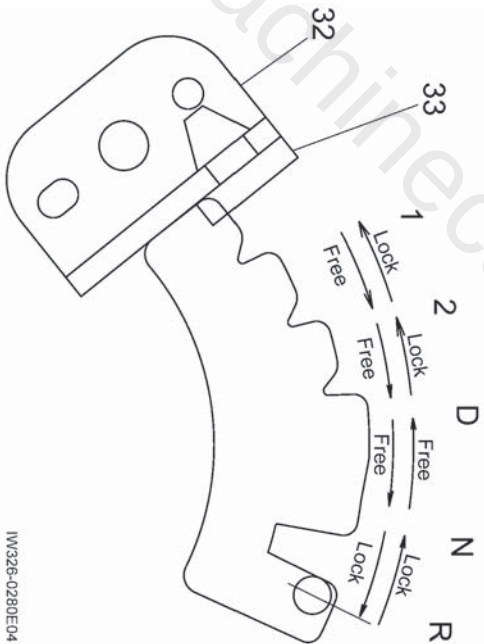
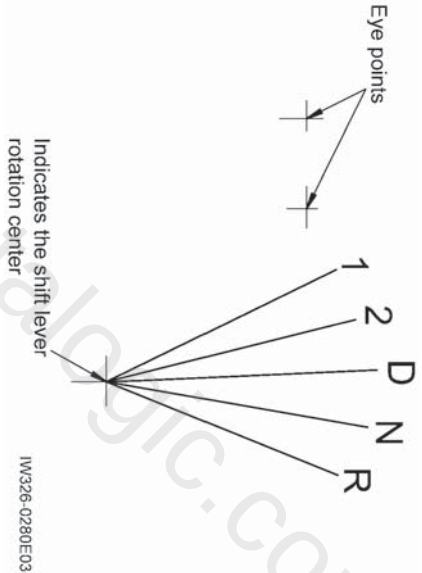
IW701-0330E01a

Shift Switch

Detail of A



Shift position



Thread size and tightening torque

Sign/Port	Thread size	Tightening torque		
		N-m	kgf-cm	ft-lbf
5	—	1.8 - 2.5	18 - 26	1.3 - 1.8
17, 35, 36	—	1.4 - 2.0	14 - 20	1.0 - 1.5
19	—	9.8 - 15.7	100 - 160	7.2 - 11.6
23	—	4.1 - 5.5	42 - 56	3.0 - 4.1
24	—	1.5 - 2.5	15 - 25	1.1 - 1.8
26	—	2.4 - 3.0	24 - 31	1.8 - 2.2

Signal Transmitter (STM-E)

Type (0, 1, 0)

Data name	
1	Fuel consumption
2	Engine coolant temperature
3	Error code
Transmission data	1 Diagnostic code request

Type (0, 1, 1)

Data name	
1	Fuel consumption
2	Engine coolant temperature
3	Intake air temperature
4	Error code

Type (1, 0, 1)

Data name	
1	Fuel consumption
2	Engine coolant temperature
3	Intake air temperature
4	Error code
5	DPF lamp information
	PM filter status
	Exhaust temperature warning lamp
Transmission data	1 DPF deactivation switch status

Type (1, 0, 0)

Data name	
1	Engine coolant temperature
1	Vehicle speed
	Vehicle deceleration
2	Engine type ID
	Presence/absence of information for vehicle speed limitation function
	Check of vehicle speed limitation function
	Vehicle speed echo back of vehicle speed limitation
	Fuel consumption
	Vehicle control integrated ECU monitoring signal
3	Recognized vehicle speed for vehicle control
4	DPF lamp information
	Regeneration status No.
5	PM accumulation level No.
	Echo back of engine type ID
1	Vehicle speed filtering cut-off frequency
	Echo back of vehicle control integrated ECU monitoring signal
	Vehicle speed override priority
	Vehicle speed limitation control indication
	Check of vehicle speed limitation function
	Proportional gain for vehicle speed limitation
	Integral gain or vehicle speed limitation
	Vehicle speed for vehicle speed limitation
	Integral upper limit for vehicle speed limitation
	Integral lower limit for vehicle speed limitation

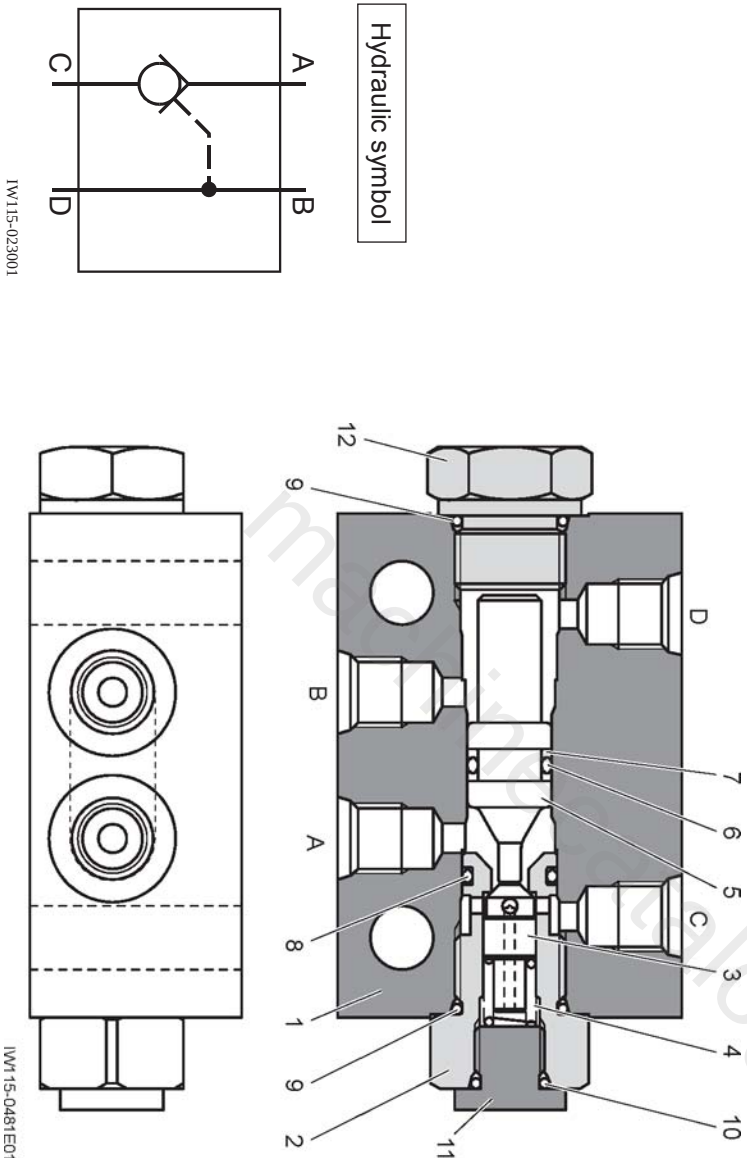
Pilot check valve (Suspension)

U-3 Pilot check valve (Suspension)

[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.
- ◆ This hydraulic part is listed as part No.76 in "Z-1, 1. Comparison table of hydraulic parts (part No., part name, coordinate and location)" in the chapter Z. For its location in the hydraulic circuit diagram, refer to the coordinate of the part No.76 in the table.

1. Structure



- | | | | |
|----------|----------|---------------|-----------|
| 1.Body | 4.Spring | 7.Backup ring | 10.O-ring |
| 2.Sleeve | 5.Piston | 8.O-ring | 11.Plug |
| 3.Poppet | 6.O-ring | 9.O-ring | 12.Plug |

Thread size and tightening torque

Sign / Port	Thread size	Tightening torque		
		N·m	kgf·m	ft·lbf
A, B, C, D	G1/4	29.4 ± 3	3.0 ± 0.3	21.7 ± 2.2
Mounting bolt	M10	25 ± 2	2.5 ± 0.15	18.4 ± 1.5

Full Version Available

Tadano GR-1600XL-2 Rough Terrain Crane Service Manual

Tadano GR-1600XL-2 rough terrain crane service manual with hydraulic repair procedures, disassembly and maintenance standards. Instant PDF download.

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