

Service Manual

01

Rough Terrain Crane

GR-800XL-1

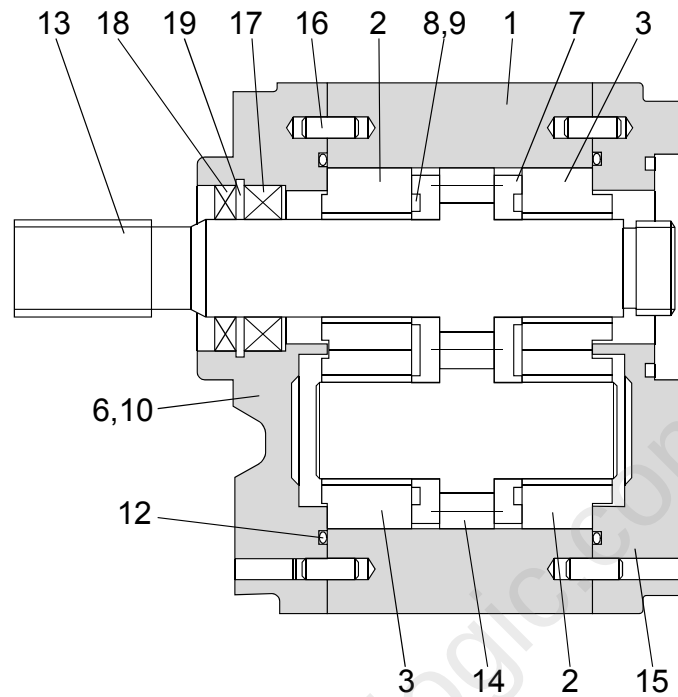
Model

TR-800XXL-4

Applicable Serial No. 545870 --

Hydraulic Pump (Double Gear Pump)

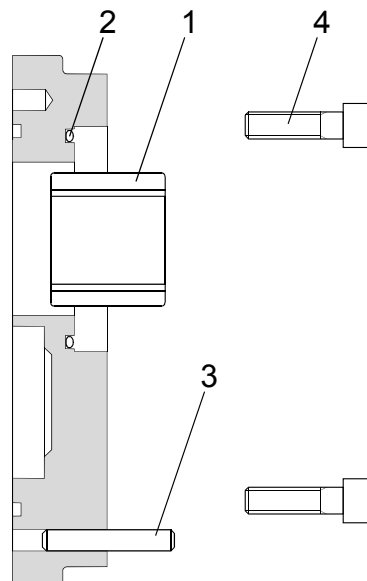
Gear pump assy-1



IW101-013002

- | | | | |
|---------------|-----------------------------|----------------|-------------------|
| 1.Body | 7.Side plate | 12.O-ring | 16.Dowel pin |
| 2.Bearing box | 8.Backup ring | 13.Drive gear | 17.Oil seal |
| 3.Bearing box | 9.Rubber string | 14.Driven gear | 18.Oil seal |
| 6.Front cover | 10.Hexagon socket head bolt | 15.Rear cover | 19.Retaining ring |

Connecting section-2



IW101-013004

- | | | | |
|------------|----------|-------------|----------------------------|
| 1.Coupling | 2.O-ring | 3.Dowel pin | 4.Hexagon socket head bolt |
|------------|----------|-------------|----------------------------|

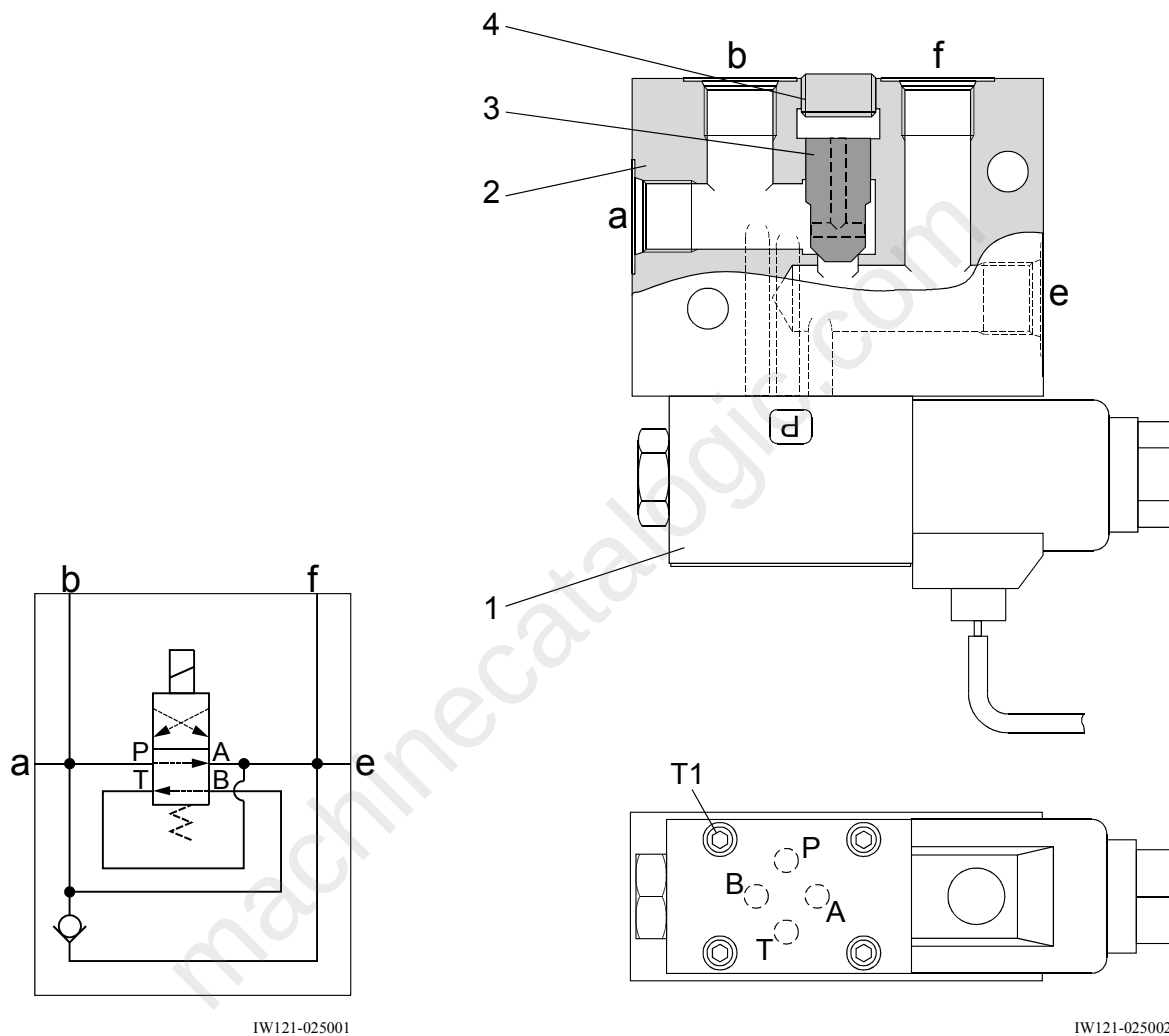
Solenoid Valve (Oil Cooler)

B-16 Solenoid Valve (Oil Cooler)

[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.Solenoid valve assy

2.Body

3.Valve

4.Plug

Thread size and tightening torque

Sign / port	Thread size	Tightening torque		
		N-m	kgf-m	ft-lbf
a, b, e, f	G1/2	98	10	72
T1	M5	6.9 - 8.9	0.7 - 0.9	5.1 - 6.5

Counterbalance Valve (Winch)

101.Casing	201.Cover	272.Square spring washer	355.Orifice
151.Plug	202.Cover	273.Hexagon socket head bolt	361.O-ring
152.Plug	203.Spacer	274.Square spring washer	362.O-ring
161.O-ring	204.Spacer	301.Spool	511.Plunger
162.O-ring	252.Air bleeder screw seat	302.Pilot piston	514.Seat
163.O-ring	253.Plug	312.Steel ball	521.Spring
164.O-ring	256.Air bleeder screw	321.Spring	551.Plug
165.O-ring	261.O-ring	322.Spring	562.O-ring
171.Hexagon socket head bolt	262.O-ring	351.Orifice	563.Backup ring
172.Square spring washer	271.Hexagon socket head bolt	354.Orifice	600.Relief valve

Thread size and tightening torque

Sign / port	Thread size	Tightening torque		
		N-m	kgf-m	ft-lbf
151, 152	G3/8	69 - 79	7 - 8	51 - 58
171	M12	64 - 74	6.5 - 7.5	47 - 54
252	G1/4	34 - 38	3.5 - 3.9	25 - 28
253	G1/4	34 - 38	3.5 - 3.9	25 - 28
256	M10	14 - 18	1.4 - 1.8	10 - 13
271, 273	M12	88 - 108	9 - 11	65 - 80
551	M33	181 - 211	18.5 - 21.5	134 - 156
600	M33	166 - 186	17 - 19	123 - 137

2. Function

2.1 Balancing and holding functions

1. During hoisting down, this valve selectively opens and closes the motor outlet passage in accordance with the pressure level of the motor inlet pressure to control the speed of the load and to prevent the load from falling under weight faster than the hydraulic motor driving speed.
2. When the inlet pressure is below a certain level, this valve closes the return passage to hold the load at a desired position.

2.2 Overload relief function

When the circuit pressure rises above the preset overload relief level, this valve vents it to protect the circuit.

Air Conditioner

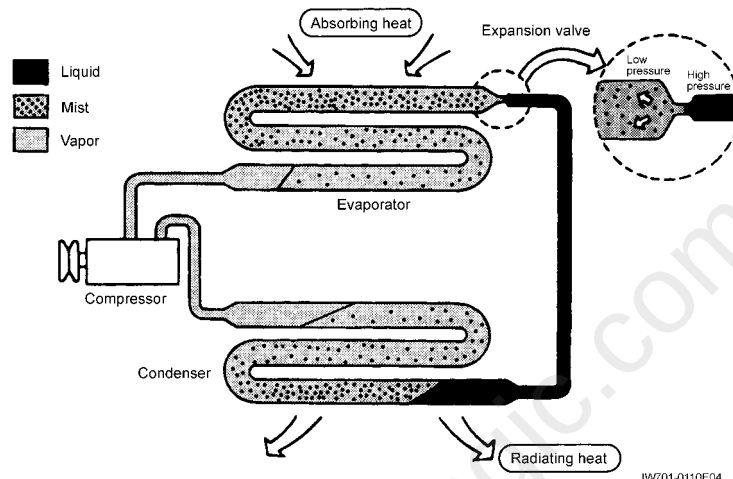
3.2 Conditions for air conditioning equipment

The conditions required for a high-performance air conditioner are the following.

Refrigerant vaporizes at the lowest temperature possible.

Refrigerant liquefies easily.

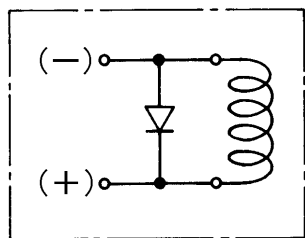
The largest possible quantity of refrigerant vaporizes in the evaporator.



1. When we look at the conditions of the refrigerant within the refrigeration cycle, we find that the refrigerant which was compressed by the compressor becomes a high-temperature high-pressure gas.
2. The refrigerant next enters the condenser, where it is cooled and changed from gas to liquid form as it passes through. All of the refrigerant must be changed to liquid form when it reaches the condenser outlet. If the condenser cooling is insufficient, some refrigerant remains in gas form, and will result in degraded cooling performance.
3. When the liquid refrigerant passes through the expansion valve, it is atomized.
The expansion valve is also known as a throttle valve. It sprays the high-pressure liquid through a small nozzle to create a refrigerant mist. This allows the refrigerant to vaporize easily.
4. In the evaporator, the refrigerant mist absorbs heat from the cab and vaporizes rapidly. By the time it reaches the evaporator outlet, the refrigerant has been completely transformed to a vapor.
5. If the amount of refrigerant is insufficient, it completely evaporates in the middle as it passes through the evaporator. This results in degraded performance of the evaporator.
6. On the other hand, if there is too much refrigerant, it cannot vaporize in the evaporator, and some remains in liquid form when it enters the compressor. If this occurs, there is the possibility that compressing liquid instead of vapor will damage the compressor.
7. For these reasons, the amount of refrigerant must be adjusted according to meet a variety of conditions.
8. The purpose of the air conditioner is to provide a comfortable environment not only by lowering the cab temperature, but also by reducing the humidity. This is accomplished by cooling the hot air in the cab, and condensing the moisture in it when it passes the evaporator.
9. In this way, the moisture in the air is removed, reducing the humidity. The water droplets that adhere to the fins are led to the outside of the vehicle through a hose.

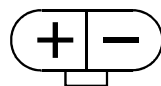
Solenoid Valve (Air Conditioner) (Option) (--546165)

Solenoid valve assy



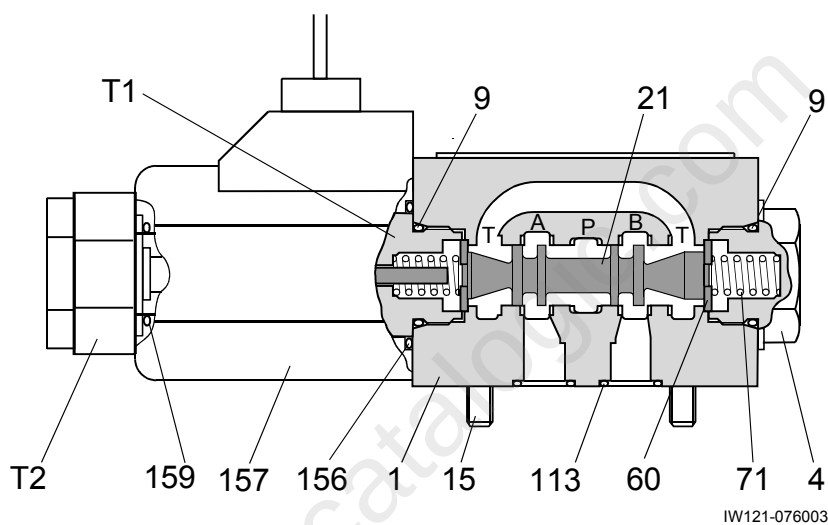
IW121-023002

Connector



(+): Red
(-): Blue

IW121-0542E01



- | | | | |
|----------|--------------------------|-----------------|----------------------|
| 1.Body | 15.Hex. socket head bolt | 71.Spring | 157.Solenoid (DC24V) |
| 4.Plug | 21.Spool | 113.Square ring | 159.O-ring |
| 9.O-ring | 60.Spring seat | 156.O-ring | |

Thread size and tightening torque

Sign / Port	Thread size	Tightening torque		
		N-m	kgf-m	ft-lbf
4	-	44 - 49	4.5 - 5	32 - 36
15	M5	6.9 - 8.9	0.7 - 0.9	5.1 - 6.5
T1	-	38.3 - 41.2	3.9 - 4.2	28.3 - 30.4
T2	-	3.9 - 4.9	0.4 - 0.5	2.9 - 3.6

Brake Valve

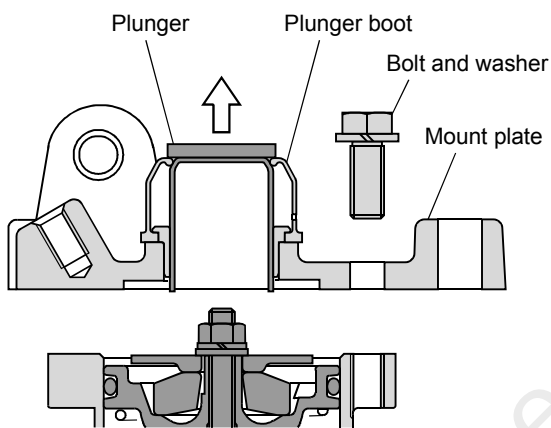
4. Disassembly

[NOTICE]

- ◆ When disassembling, remove mud, dust, water etc. from the outside surface to avoid their entry into the interior.
- ◆ Prior to disassembly, mark the joints to facilitate correct reassembly.
- ◆ Place the disassembled parts in neat order to facilitate reassembly.

4.1 Disassembly of the mount plate

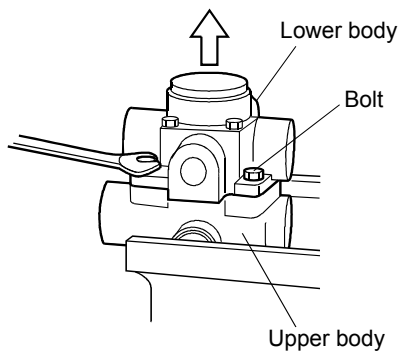
1. Remove three bolts and washers, and remove mount plate, plunger, and plunger boot.



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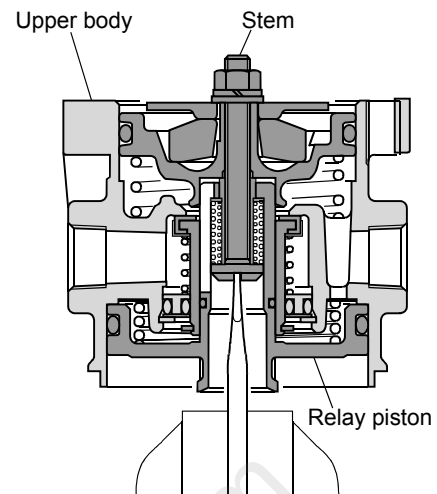
4.2 Disassembly of the body

1. Clamp the body in a vise, with lower body facing upward; unscrew four bolts, and remove the lower body assembly from upper body.



IW202-0010E10

2. Clamp a screwdriver in a vise, pass it through the discharge passage of relay piston and place the blade in the slit in the stem.

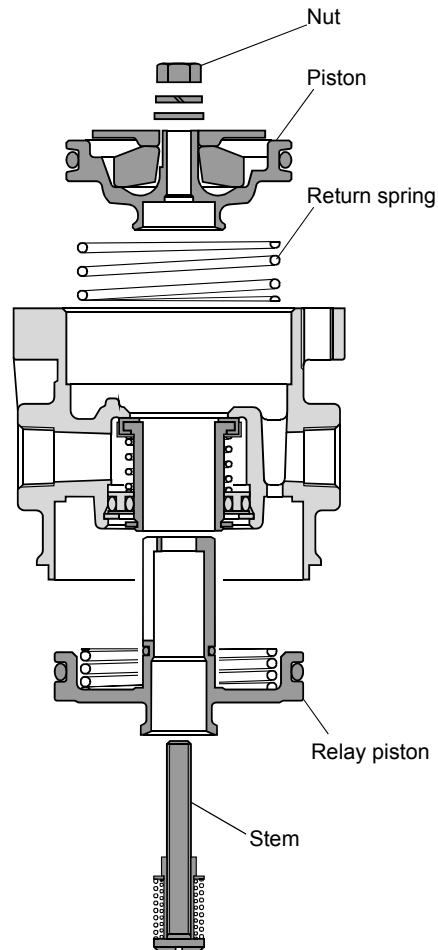


IW202-0010E11

3. Unscrew nut at the top of piston, and remove piston, return spring, relay piston, spring, and stem.

[NOTICE]

- ◆ At this time, hold the piston to prevent it from being popped out by the return spring.



IW202-0010E12

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3.2 Pump displacement.....	38
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4.1 Pump speed	38
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5.1 Pump speed	38
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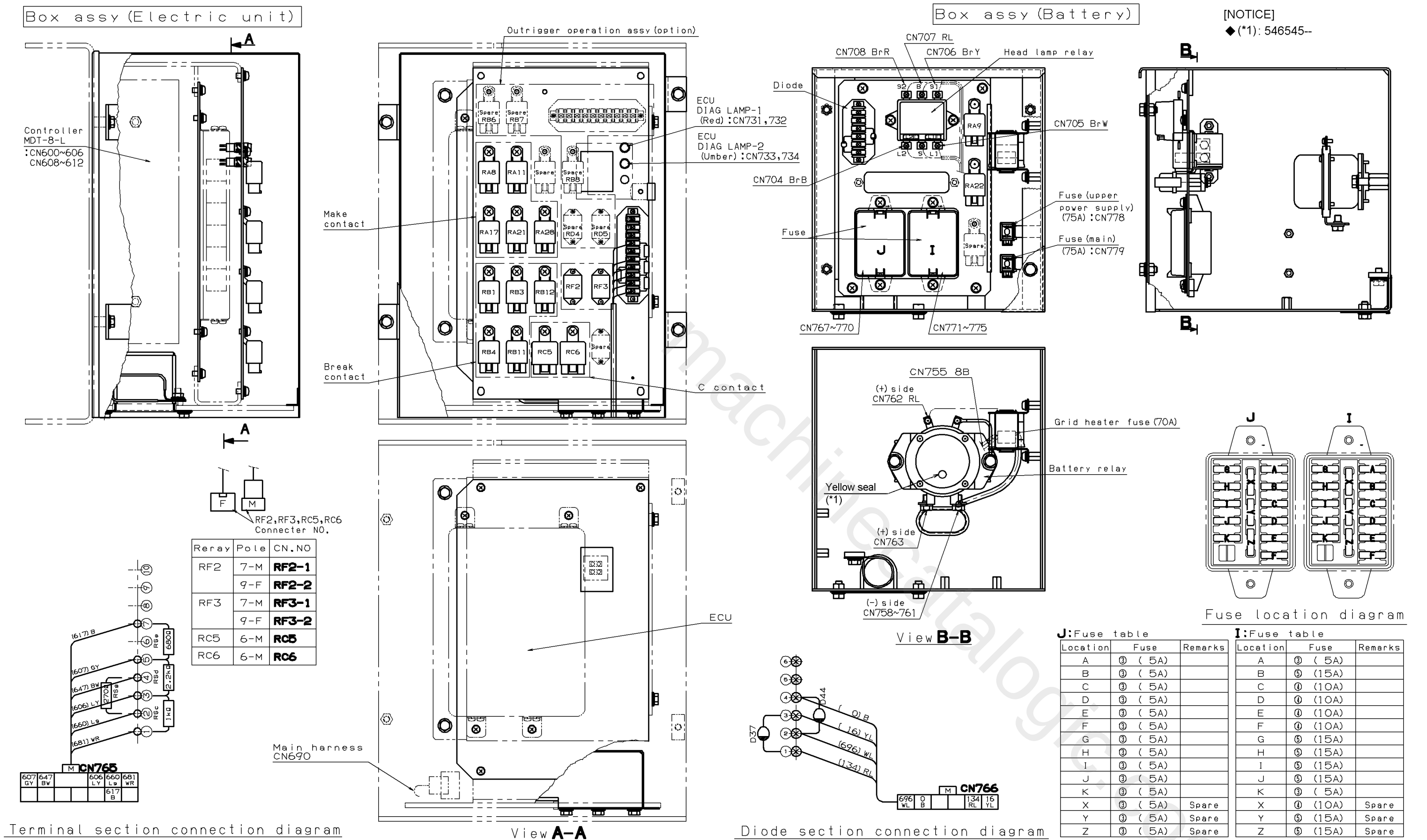
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Location of Electric Parts (Box Assembly / Lower)

Z-15 Location of Electric Parts (Box Assembly / Lower)



Full Version Available

Tadano GR-800XL-1 Rough Terrain Crane Service Manual

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