AERO BOOM®

HIGH FORCE HYDRAULIC
TOOLS & SOLUTIONS

TORQUE WRENCH PUMP

OPERATION MANUAL

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I、 Warning

1. All operators should be away from the hydraulic oil outlets, to avoid any injury or hurt. And the pump should be away from fire.
2. The hose and quick couplers should be installed before working.
3. The maximum working pressure of this pump is 70MPa, it has been set to 70MPa before delivery, and it's not allowed to adjust it to a higher pressure than 70MPa.
4. If this pump is used for other equipment, the working pressure of that equipment should be less than 70MPa, and adjust the pressure to match it, otherwise the equipment may be damaged.
5. Please cut off the power before repair.
6. Shut down the switch button before power on, the pressure will increase if the button is ON.
7. Make sure it's grounded.
8. It's not allowed to modify the pump. If the modification is necessary please contact our company first. Any modification without our written agreement will not be granted with any warranty.
9. Do not put hydraulic oil more than the usable capacity, otherwise the pressure will increase or oil will leak, and oil tank may be damaged.
10. Do not rotate any bolts of the hydraulic hose.
11. Make sure the quick couplers be fastened very well, otherwise it may not work normally.
12. If the indicator light on electrical box is ON, it shows there is problem for the electrical circuit. The light will be off when normal working. Please repair if any problem.
13. Please wash the eyes for 15 minutes if any oil splash into eyes, and go to hospital if necessary.

II、 Descriptions:

1. Pump

1.1 TWP304 is electric pump specially for hydraulic wrench, it's made of oil pump, control valves, oil tank, motor, cooler, gauge etc, with many features like small size, light weight, simple structure, easy operation, high pressure etc. The high and low pressure pump supply oil at same time, so it can achieve high output. In high pressure, the low pressure pump returns oil with empty load automatically through relief valve, to reduce power consumption. And the pressure of (A) port can be adjusted from 70-700bar.

1.2 Hydraulic oil: The tank must be put with enough clean hydraulic oil which is 46# in summer or 32# in winter. It need to be filtered when putting into tank. And change the oil every 6 months.

1.3 The working temperature is -10 ~ 60 degree

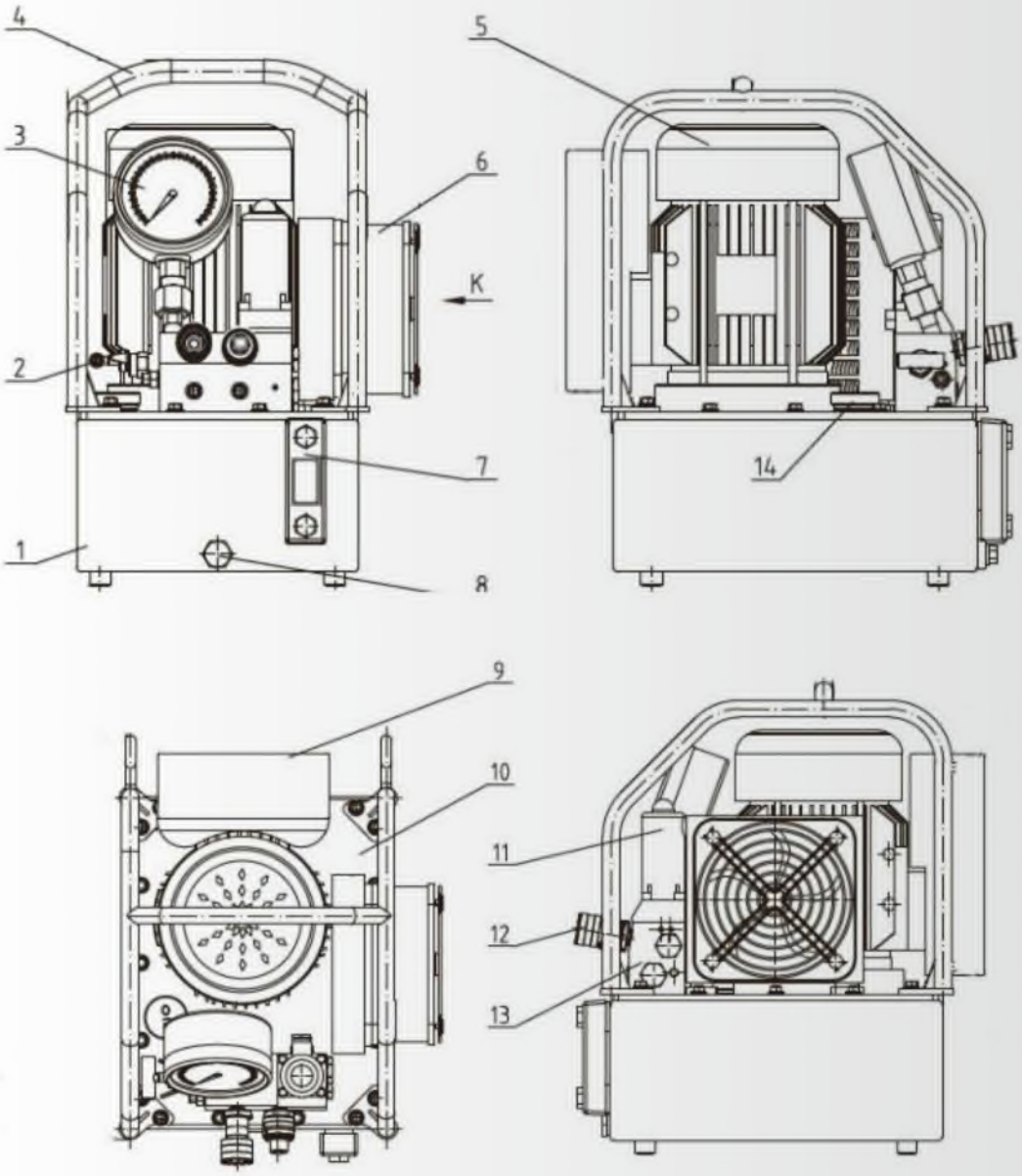
1.4 Please use standard hydraulic hoses and quick couplers.

1.5 Do not adjust relief pressure if not necessary.

2. Parts

2.1 Oil tank
2.2 Relief valve
2.3 Pressure gauge
2.4 Protection frame
2.5 Motor
2.6 Cooler
2.7 Level gauge: Add 46# or 32# hydraulic oil when it's 1/3 lower than the level.
2.8 Unloading hole: G1/4 port
2.9 Electrical box
2.10 Tank cap
2.11 Reversing valve
2.12 Quick couplers
2.13 Valves
2.14 Oil feeding hole

III、 Schematic diagram



No.	Part name	No.	Part name
1	Oil tank	8	Unloading hole
2	Relief valve	9	Electrical box
3	Pressure gauge	10	Tank cap
4	Protection frame	11	Reversing valve
5	Motor	12	Quick couplers
6	Cooler	13	Valves
7	Level gauge	14	Oil hole

Features

1. This is 3 stage pump, the 3 stage flows and pressures switch automatically, high flow output when low pressure, low flow output when high pressure.
2. The pump head use several radial plunger pump with symmetric distribution, which makes it compact and stable when running, so the service life is greatly increased.
3. All valves are integrated cartridge valves, which increase the efficiency of production, assembly and repair.
4. The electrical box uses self developed integrated PCB board. Together with other parts they can achieve:
    a) Stop automatically if no movements within 30seconds.
    b) The pressure will be released automatically when connecting power and stopping working.
    c) Overload protection and alarm circuit

IV、 Maintenance

1. Before operation

1.1 Check if the power is connected well.
1.2 Check if the hydraulic oil is enough.
1.3 Check if the reversing valve is normal when feeding pressure.
1.4 Check if there is any leakage for hoses.

2. In operation check the following things, if any abnormal conditions please stop immediately.

2.1 If any abnormal condition when feeding pressure.
2.2 If any leakage of hose and equipment.
2.3 If any abnormal noise, shock or smell when motor is working.
2.4 If the oil temperature is too high.

3. After operation

3.1 Cut off power
3.2 Check if any leakage
3.3 Clean after use

4. The hydraulic oil should be changed twice a year normally. Please change immediately if these conditions happen:

4.1 If any dust comes.
4.2 If any abnormal smell.
4.3 If the oil becomes milk white when water comes in.
4.4 If the oil becomes black brown because of degradation.

5. The change method of oil

5.1 Open the tank cap
5.2 Take down the bolt on tank side to make the oil flow.
5.3 Clean inside tank and filter net
5.4 Install the bolt and put oil into tank.

Operation instructions

1. Fill the tank with 46# enough clean hydraulic oil

2. Check the hoses, if all connections are good.

3. Check if the power voltage and frequency match the pump.

4. When connecting power, the valve will work 1second to release the pressure inside, so it's easy to install the equipment.

5. Remote handle instructions:

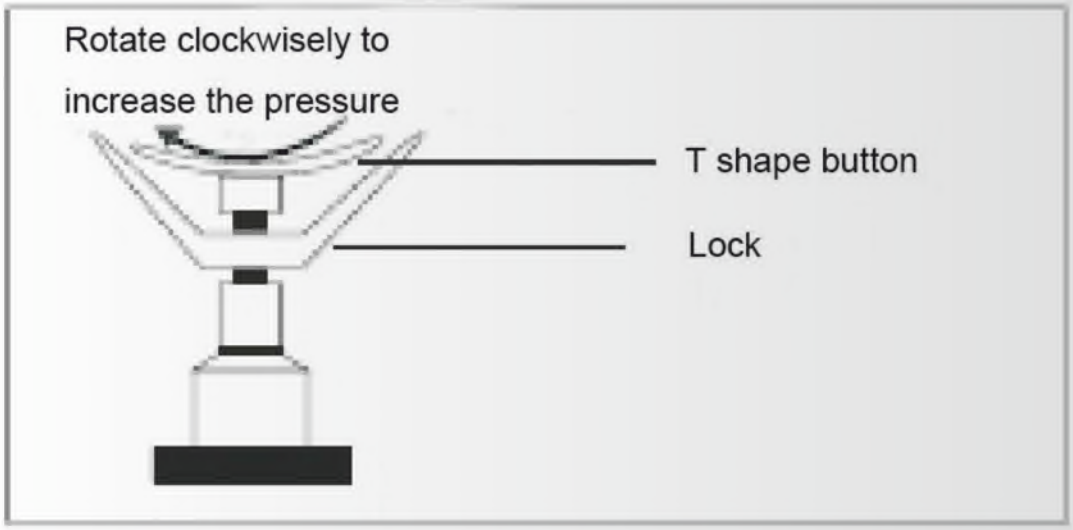
There are two buttons on the handle, ON/OFF button and control button

a) When the power is connected and pump doesn't work, press ON/OFF, then motor will work, the valves are in oil return condition. The pump only outputs B port low pressure oil at this time.

b) When the power is connected and pump is working, press ON/OFF, then it stops working immediately. After 1 second, it will release the pressure inside.

c) When the power is connected, press ON/OFF for the first time, the pump starts working immediately. Press control button, the pump will output A port high pressure oil until the button is released.

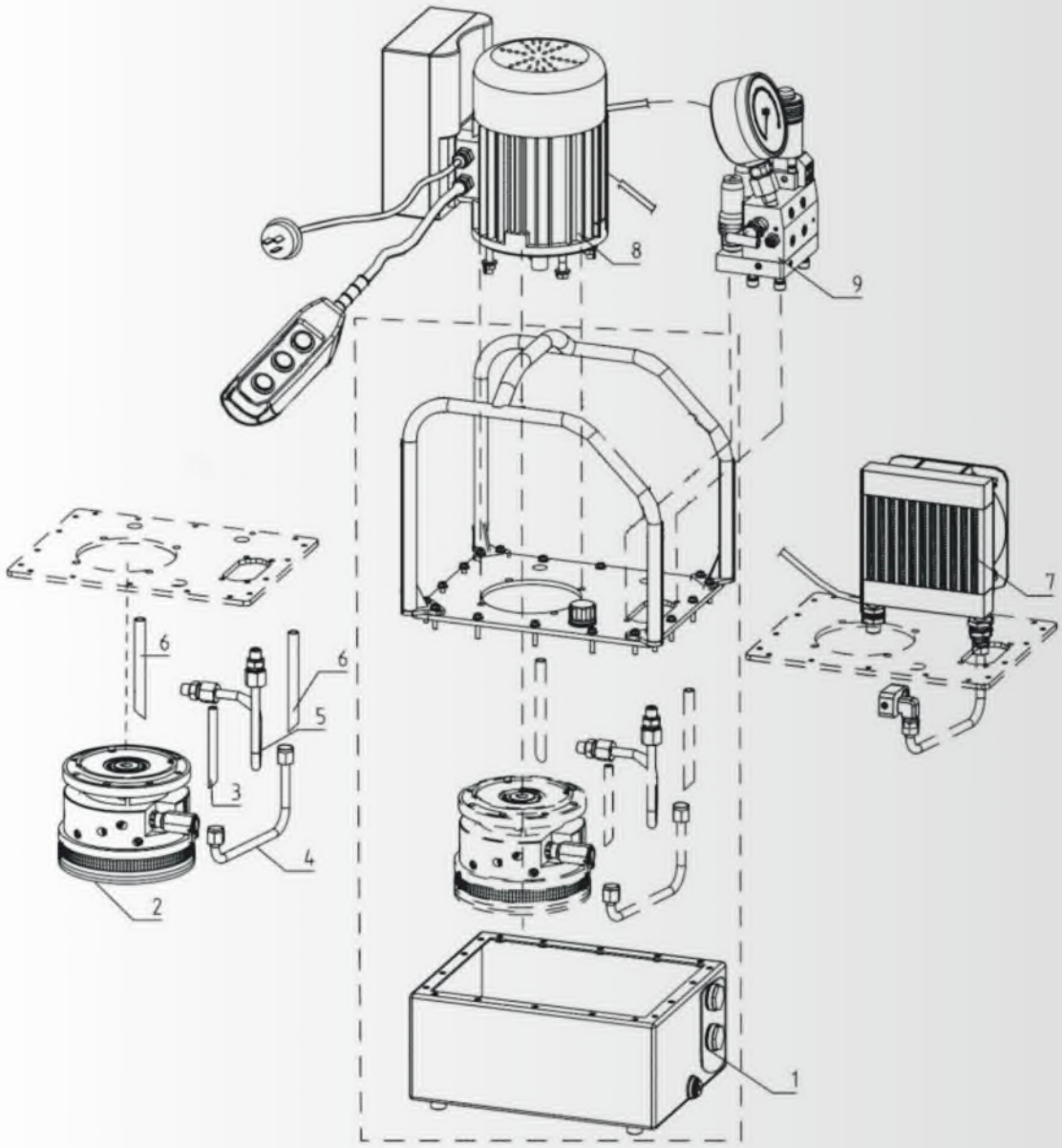
1. Watch if the pressure gauge is going up when pressing control button. If not going up it shows the pressure is abnormal, please check and repair.
2. Press control button, adjust the relief valve to the set pressure then lock it, continue next operation.



V、Trouble shooting

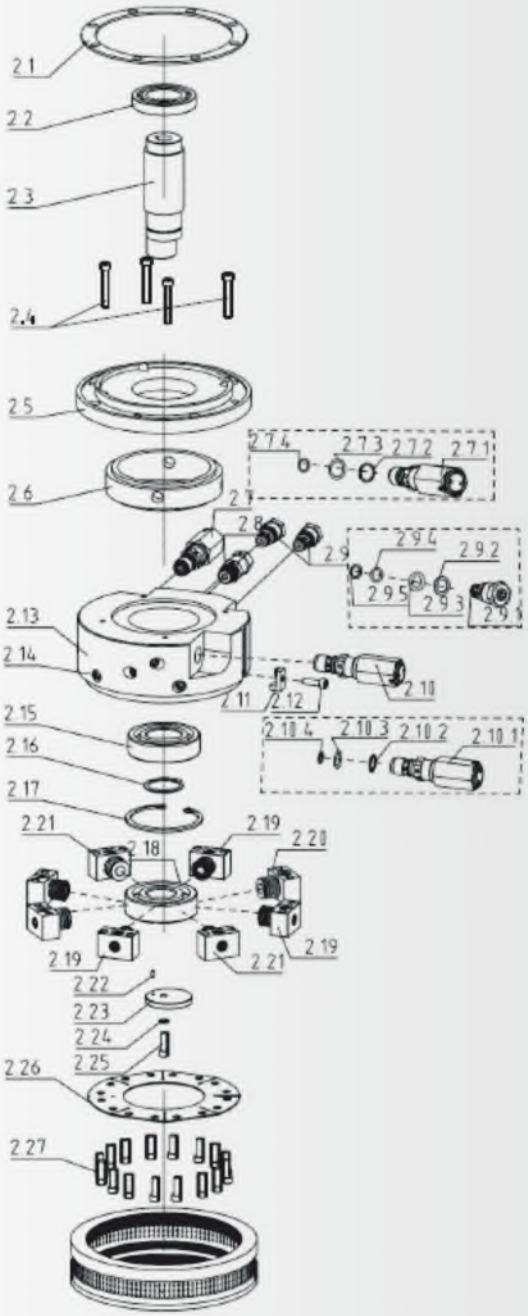
Trouble	Reason	Solution
The pump cannot be started	The power voltage is wrong	Please check if the power voltage is right.
	The power is not connected	Please check the power and all connections, then connect power
System pressure	Quick couplers are not connected well.	Disconnect then install again.
	No oil in the tank	Feed enough oil
	No enough oil	Feed enough oil
	If system has throttle valve or manual check valve, check if they are opened.	Open throttle valve and manual check valve.
No pressure after re-installing couplers	The couplers cannot be fixed in correct position, cause there is pressure inside system	Disconnect couplers, press steel ball to check if there is elasticity, if hard to press, hit the ball with hammer to let the oil flow out.
Oil leakage in couplers	O ring and check ring damage	Change couplers
The pressure cannot reach rated pressure	Too low pressure of relief valve	Adjust the relief valve to rated data
	Mixture of water and oil	Change oil
	No enough oil	Feed enough oil
	Air comes inside	Run the system idly several times to let air out
	Not lock the throttle valve and manual check valve well	Lock the valves tightly
	Not in correct position of throttle and manual valve	Adjust to the correct position
	Damage of throttle and manual valve	Change valves
	There is impurity in the oil	Clean valves and change oil
Pressure goes down in static pressure	Seals damage	Change seals

VI、 Electric pump explosive view



No.	Description	No.	Description
1	Oil tank module	7	Cooler module
2	Pump module	8	Electrical control valves
3	Oil return pipe (1)	9	Hydraulic control valves
4	Oil feed pipe (1)		
5	Oil feed pipe (2)		
6	Oil return pipe (2)		

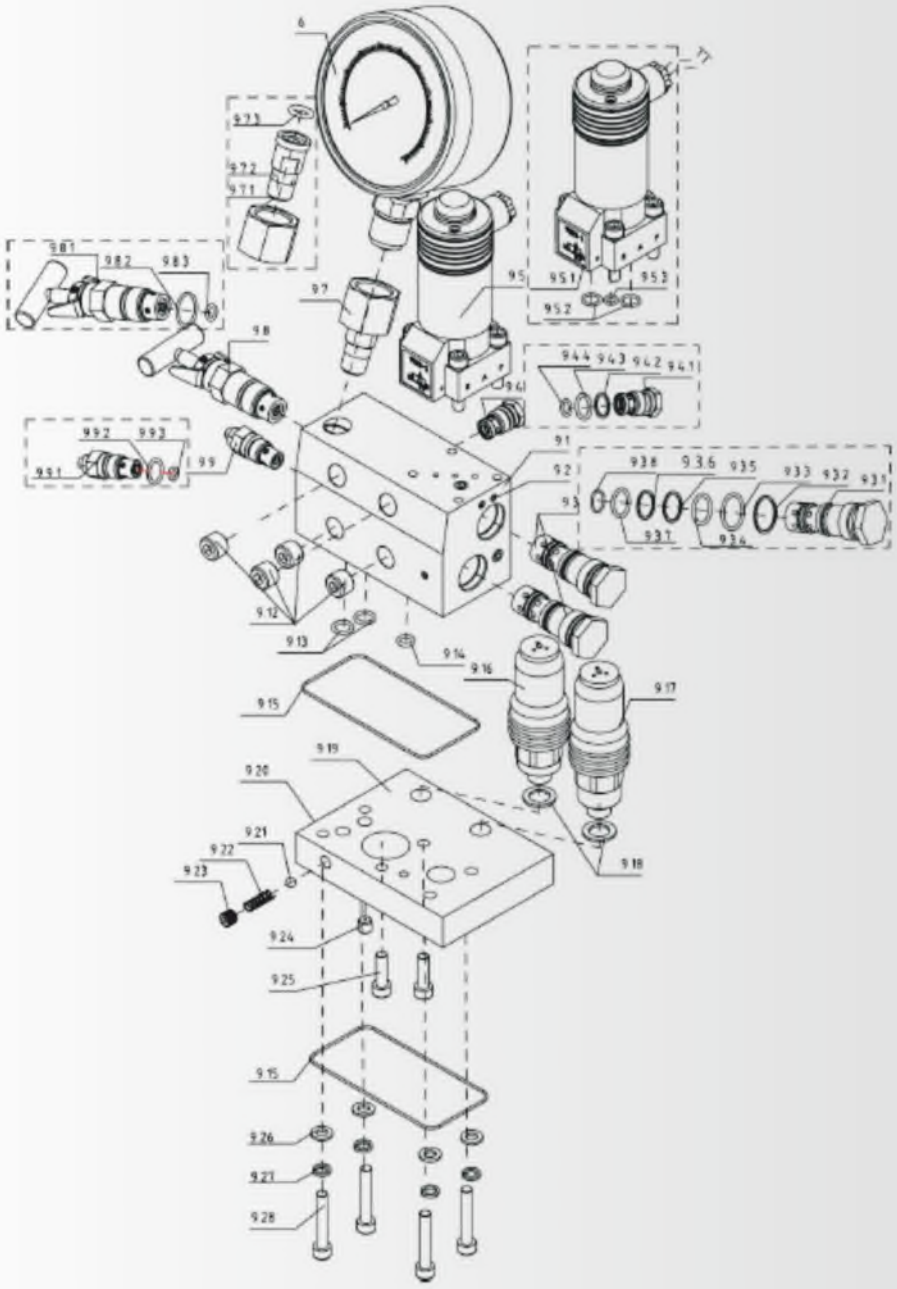
VII、 Pump module explosive view



No.	Name	Quantity
2.1	Seals	1
2.2	Deep groove ball bearing	1
2.3	Pump shaft	1
2.4	bolt	4
2.5	Pump flange	1
2.6	Pump bushing	1
2.7	Unloading valve(1)	1

2.7.1	Unloading valve body	1/1
2.7.2	Check ring	1/1
2.7.3	O ring	1/1
2.7.4	O ring	1/1
2.8	Overpressure valve	1
2.9	One-way valve	2
2.9.1	One-way valve body	1/1
2.9.2	Check ring	1/1
2.9.3	O ring	1/1
2.9.4	O ring	1/1
2.9.5	Check ring	1/1
2.10	Unloading valve(2)	1
2.10.1	Unloading valve body	1/1
2.10.2	Check ring	1/1
2.10.3	O ring	1/1
2.10.4	O ring	1/1
2.11	Filter baffle	1
2.12	Bolt	1
2.13	Separate pump body	1
2.14	Cap	10
2.15	Deep groove ball bearing	1
2.16	Circlip for shaft	1
2.17	Circlip for hole	1
2.18	Deep groove ball bearing	1
2.19	Plunger pair1	4
2.20	Plunger pair2	2
2.21	Plunger pair3	2
2.22	Pin	1
2.23	Bearing end plate	1
2.24	Spring washer	1
2.25	Bolt	1
2.26	Connecting sheet	1
2.27	Bolt	16
2.28	Filter	1

VIII、 Valves module explosive view



No.	Name	Qty.	No.	Name	Qty.	No.	Name	Qty.
9.1	Connecting plate	1	9.5.2	O ring	2/1	9.13	O ring	2
9.2	Cap	12	9.5.3	O ring	1/1	9.14	O ring	1
9.3	Pilot reversing valve	2	9.6	Pressure gauge 100MPa	1	9.15	Seals	2
9.3.1	Reversing	1/1	9.7	Pressure	1	9.16	Pressure	1

AERO BOOM®

WORLDWIDE HYDRAULIC SOLUTIONS

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