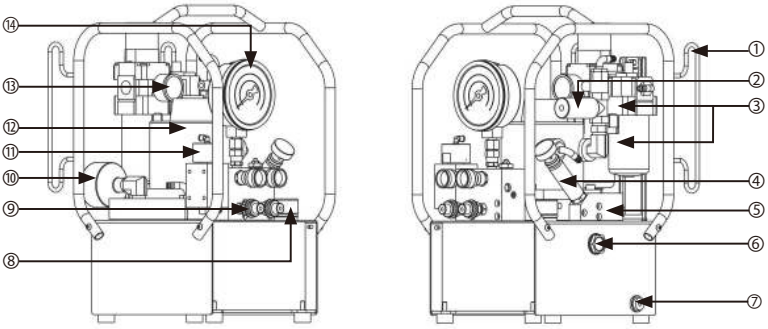
HA5TW Product Components:



NO	Name
1	Wire winder
2	Pneumatic switch
3	Triplet
4	Relief Valve
5	Pilot Relief Valve Block
6	Oil Level Gauge
7	Oil Outlet
8	Refueling And Exhaust Outlet
9	Quick Interface
10	Suppressor
11	Air controlled directional valve
12	Air Motor
13	Barometer
14	Manometer

Component Function Introduction:

Hand Shank

The start and stop of the motor and the action of the directional control valve are controlled by the control handle. The motor start and stop switch is a holding switch. When the switch is turned to position 1, the motor starts; when the switch is turned to position 0, the motor stops. The directional control valve switch button is a self-resetting button to control the opening and closing of the directional control valve.

Overflow Pressure Regulating Valve

Before use, adjust the system pressure through the relief pressure regulator before connecting the tool to prevent damage from excessive pressure. When adjusting, first loosen the locking nut of the relief valve and turn the handle of the relief pressure regulator counterclockwise to release it. Connect the power supply and press the button on the handle to start the motor; at this point, the pressure gauge will display the pressure at port R. Next, press the solenoid valve switch button to establish pressure at port A. Continue pressing this button while turning the relief pressure regulator clockwise to reach the target pressure, then tighten the locking nut.

Air-Controlled Directional Valve

The air-controlled directional valve adjusts the oil supply to port A or port R.

When the pneumatic control valve is not energized, R port is supplied with oil, R port is connected to the mother joint, R port is the low pressure oil port, and the maximum pressure is 12MPa;

When the pneumatic control valve is energized, oil is supplied at port A, which is connected to the male joint and is the high-pressure oil port with a maximum oil supply pressure of 70MPa.

Barometer

The pressure gauge on the pneumatic hydraulic wrench is used to monitor the input pressure of the air source in real time (it must be 7Bar) to ensure the normal operation of the pneumatic motor. If the air pressure is insufficient or the supply volume is below 140M3/h, faults can be quickly identified, and it also prevents equipment performance degradation or damage due to abnormal air pressure; the oil port pressure is monitored separately by a hydraulic pressure gauge, with clear functional distinctions between the two.

▶R Limiting Pressure Valve

Before use, adjust the system pressure through the relief pressure regulator before connecting the tool to prevent damage from excessive pressure. When adjusting, first loosen the locking nut of the relief valve and turn the handle of the relief pressure regulator counterclockwise to release it. Connect the power supply and press the button on the handle to start the motor; at this point, the pressure gauge will display the pressure at port R. Next, press the solenoid valve switch button to establish pressure at port A. Continue pressing this button while turning the relief pressure regulator clockwise to reach the target pressure, then tighten the locking nut.

▶ Oil Level Indicator

The air-controlled directional valve adjusts the oil supply to port A or port R.

When the pneumatic control valve is not energized, R port is supplied with oil, R port is connected to the mother joint, R port is the low pressure oil port, and the maximum pressure is 12MPa;

When the pneumatic control valve is energized, oil is supplied at port A, which is connected to the male joint and is the high-pressure oil port with a maximum oil supply pressure of 70MPa.

▶ Product Usage Steps:

1.Preparation Before Use

-Check that all parts (frame, pneumatic motor, pressure gauge, etc.) are undamaged, the feet are stable, and all connections are not loose.

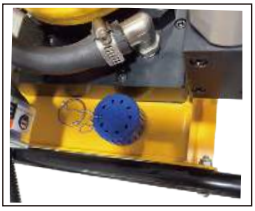
-Check the hydraulic oil level of the pump. The oil level should be above 2/3 of the upper oil gauge. If the hydraulic oil is insufficient, open the filling port and inject the same type of anti-wear hydraulic oil as the original pump (it is recommended to use hydraulic oil grade ISO VG46). The maximum filling amount is the top of the oil gauge.

Check the electronic control box to determine the rated.

Check the pump nameplate to confirm that the marked voltage is 220V/50HZ

-Install the exhaust plug, align the exhaust plug with the fuel filling exhaust port, and then rotate it slowly in the clockwise direction until it is tightened to the appropriate degree. Ensure that the fuel tank is ventilated; replace the exhaust plug during handling or transportat- ion, and reinstall the sealing plug to ensure that the seal prevents oil leakage.

Hydraulic oil level gauge



If the oil level is lower than 2/3, please rotate and remove the plug of this out- let, and then carry out the refueling operation.

♦If the exhaust plug is not installed to discharge air, it will seriously affect the normal operation of the equipment. The internal air in the oil tank will cause pressure fluctuation and flow deviation, cause wear and failure of components, and reduce the stability and accuracy of operation.

2. Start And Set The Pressure

-Connect the power supply, press the motor switch button of the handle, touch the generator to run, check whether the motor runs normally, and observe the pressure gauge to check whether the initial reading of the pressure gauge is zero.

After connecting the air source, turn the switch to position 1 and start the pneumatic motor.

Under no-load condition of the system, confirm that the initial reading of the pressure gauge is zero.

♦If the initial reading of the pressure gauge is not zero or the motor runs abnormally, stop the machine immediately to troubleshoot the fault.

-Set The Working Pressure

Preparation: Before pressure adjustment, make sure that the pump is not connected to tools or other hydraulic equipment to avoid damage caused by misoperation.

Initial adjustment: rotate the locking nut on the relief valve counterclockwise to release.

Start and observe: After connecting the power supply, press the motor start button on the control handle. The motor starts and pressure begins to be established. At this time, the pressure gauge shows the pressure of port R.

Switching and Pressure Adjustment: Press the solenoid valve switch button on the control handle to start establishing pressure at port A. At this point, closely monitor the pressure gauge reading for port A. Continue pressing the solenoid valve switch button while slowly rotating the overflow pressure regulator clockwise, gradually increasing the pressure to the target value. During the adjustment process, pay attention to the rate of pressure increase to avoid rapid pressure regulation.

♦ When the pressure is close to the target pressure, the overflow pressure regulating valve should be adjusted more slowly to ensure that the pressure reaches the target value accurately. After reaching the target pressure, immediately lock the overflow pressure regulating valve locking nut to fix the pressure setting.

Loosen the lock nut on the relief valve and slowly turn the relief regulator clockwise so that port A reaches the target pressure.

The return pressure is regulated by the R-port pressure limiting valve.

-Return Pressure Regulation Method

1. Loosen the upper locking nut of the R port pressure limiting valve.
2. Move the button of the control handle to position 1. At this time, the pressure gauge shows the pressure at port R. Rotate the top adjusting bolt with a hex socket wrench. The pressure increases clockwise and decreases counterclockwise.
3. After the pressure is expressed as the target pressure, the electric pump is closed.
4. Tighten the locking nut to complete the R port pressure adjustment.

♦ The factory pressure of the R orifice pressure valve has been set and can only be adjusted when special requirements are met.

-Connect the hydraulic wrench. The standard outlet of the HA5TW electric pump is equipped with two male and two female quick connectors, and the outlet thread is NPT3/8. The standard plug is provided, and the rated pressure of the electric pump is 700Bar.

Move the control handle to position 0, keep the hydraulic oil pipe axially aligned after the pneumatic motor stops running, and fully push it into the outlet port base. Rotate the sealing joint, rotate the outer lock ring clockwise to the limit mark, and then tighten it.

The oil pipe is fully pushed into the outlet by axial alignment

Secure the outer lock ring.

♦ The HA5TW electric hydraulic wrench pump must be connected to a matching joint or hose with equal or higher pressure when in use. Connecting a joint or hose with lower pressure grade may cause the joint to fly out or the oil pipe to burst, thus causing personal injury to the user.

3.Operation And Adjustment Of The Work

-Start the electric pump, confirm that the pressure has been set and the load equipment connection is correct, press the motor start button on the control handle to start the electric pump.

-HC4TW Configure a three-position four-way electromagnetic directional valve, which can achieve dual oil outlet. The middle position can be H-shaped or Y-shaped.

-Control the hydraulic directional valve by operating the electromagnetic valve switch button on the handle to adjust the flow of oil in the system.

When the solenoid valve is not energized, R port is supplied with oil, which is suitable for low pressure working scenarios;

When the solenoid valve is energized, port A is supplied with oil, which is suitable for high pressure working scenarios.

The pneumatic control valve on the handle is used to control the flow direction of the system oil accurately.

◆During the operation, smooth switching should be made to avoid excessive pressure fluctuation caused by frequent and rapid switching.

4. Monitoring during operation

-Pressure monitoring: pay real-time attention to the pressure gauge value, and adjust the overflow pressure regulating valve through fine adjustment to maintain the working pressure of the system at the target value, so as to ensure that the pressure fluctuation is controlled within the range of ±0.5MPa

-Oil level monitoring: continuously observe the oil level of the oil gauge. If the oil level is lower than 1/3, stop the machine immediately and wait for the equipment to cool down. Then slowly inject an appropriate amount of ISO VG46 hydraulic oil through the oil filling exhaust port to restore the oil level to the normal range. During the oil filling process, pay attention to avoid impurities mixed into the hydraulic oil.

5.Release Pressure And Shut Down

-Complete the work: press the air valve switch button after the work is completed, return oil from port A, establish pressure from port R, and start the tool back. Close the pneumatic motor when the tool is completely back.

-Close the pneumatic motor: Move the control handle button to position 0, stop the input of air source, and then cut off the air source to ensure that there is no air source input in the pump.

-Cut off the oil circuit: Press the air control valve switch button to cut off the oil circuit connection between port A (oil inlet) and port R (oil outlet), effectively prevent the circulation of pressure oil between the two ports, and realize the system pressure relief.

-Remove the oil lines: After the system pressure has completely dropped to 0, carefully pull out the hydraulic oil lines from ports A and R. When removing the oil lines, be cautious to prevent any residual hydraulic fluid from splashing out, which could cause injury or contaminate the work environment. After removing the oil lines, properly organize and store them for future use.

Troubleshooting:

Troubleshooting Guide		
Issue	Possible causes.	Solution
1. The pump does not start	No gas source is connected.	Check whether the circuit is connected normally and restart.
	The air pressure is too low.	Check whether the circuit is connected normally and restart.
	The gamepad buttons are damaged.	Check the voltage and turn off other electrical loads.
	The pump assembly is damaged.	Replace the high-power socket strip
2. The motor stops during pressurization	The air pressure is too low.	Check the air pressure and adjust the air source pressure.
	Gas supply is insufficient oil is insufficient.	Check the compressor air su- pply and replace it with a larger compressor
3. The pump is not pressurized or the upper pressure is too low	Insufficient amount of oil.	Check the oil level and inject new hydraulic oil.
	Leakage from the outside of the pump.	Observe leaks and carry out repairs or replacement of accessories.
	The hydraulic oil is too dirty and blocking the suction port.	Change the hydraulic oil and clean the suction port.
	Leakage inside the pump.	Contact the manufacturer for repair.
	System leaks.	Check for system leaks and repair them.
4. The system establishes pressure, and the tool does not move	Overloaded.	Check and select the right load.
	System congestion.	Check if the system is clogged and unblock the system.
	The quick connector is not fully screwed in.	Push the quick connector all the way in and tighten it.
5. The flow is too small	The hydraulic oil is too dirty and blocking the suction port.	Change the hydraulic oil and clean the suction port.
	System congestion.	Check if the system is clogged and unblock the system.
6. The tool cannot be returned normally	The tool backstroke has a large damping	Check and remove the large damping term.
	The system has a return throttle valve.	Check the system and adjust the throttle valve.
7. Severe fever	The system throttle valve adjustment is smaller.	Check the circuit and readjust the flow valve.
	Pneumatic motor failure.	Contact the manufacturer for maintenance.