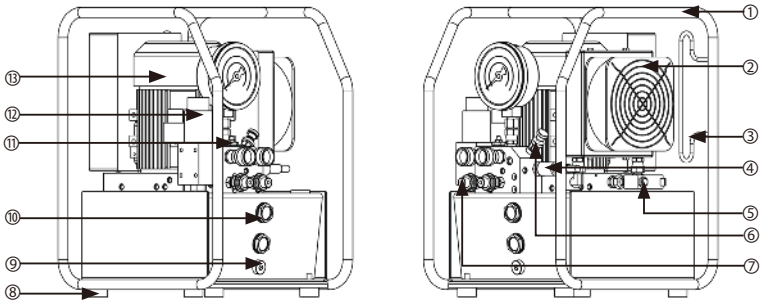
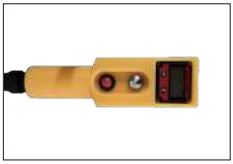
HGTW Product Components:



No	Name
1	Protected Framework
2	Heat Exchanger
3	Cable Collector
4	Pressure Transducer
5	Solenoid Exhaust Valve
6	Relief Valve
7	Couplers
8	Base Foot
9	Oil Drain
10	Sight Glass
11	R Port Pressure Limiting Valve
12	Solenoid Directional Valve
13	Electric Box

Component Function Introduction:

Hand Shank



The HGTW is equipped with a dual - button handle, and both buttons are self - resetting buttons. Among them, the red button is used to control the on - off operation of the motor (for pressurization), and the silver button is used to control the opening and closing of the electromagnetic unloading valve. The equipped LCD display can accurately and real - time display the system pressure value.

Relief Valve

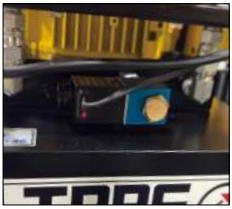
Before use, adjust the system pressure through the relief pressure regulator before connecting the tool to prevent damage from excessive pressure. When adjusting, first loosen the locking nut of the relief valve and turn the handle of the relief pressure regulator counterclockwise to release it. Connect 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.

Solenoid Directional Valve

The electromagnetic reversing valve regulates the oil supply to port A or port R. When the solenoid valve is not energized, oil is supplied to port R. Port R is connected to the female connector. Port R is the low pressure oil port with a maximum pressure of 12MPa;

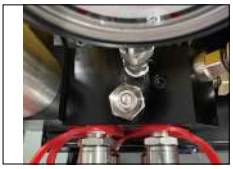
When the solenoid valve is energized, oil is supplied to port A, which is connected to the male connector. Port A is a high-pressure oil outlet with a maximum supply pressure of 70MPa.

Pressure Transducer



When the system is energized, the solenoid exhaust valve can open the exhaust passage through its unique solenoid - drive design, enabling the system to exhaust automatically. This effectively prevents abnormal system pressure caused by gas accumulation, enhances the stability of system operation, and

▶ R Port Pressure Limiting Valve



The function of the pressure limiting valve is to limit the pressure in port R of the hydraulic pump. When the pressure reaches the set value, the pressure limiting valve opens overflow and makes the pressure no longer rise, so as to protect the components related to this branch from damage due to high pressure.

▶ Pressure Transducer

A Pressure Transducer can convert pressure signals into electrical signals, enabling real - time monitoring of the system pressure. It then transmits the pressure data to the LCD display of the control handle via the bus in real - time, facilitating dynamic monitoring of the hydraulic system.

Regarding control operation, it can send feedback signals to the control system, adjust the output parameters of the pump, and also work in conjunction to achieve automatic start - stop functionality.

▶ Oil Level Gauge

Before starting, check the pump's oil level; it should be above 2/3 of the upper oil gauge. If the oil level is too low, prolonged operation without oil can affect the pump's lifespan and normal use, potentially damaging the motor. When hydraulic oil is insufficient, open the oil filler port and inject the same type of wear-resistant hydraulic oil as the original pump (it is recommended to use ISO VG46 grade hydraulic oil).

▶ Product Usage Steps:

1.Preparation Before Use

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

-Check the rated voltage (HGTW electric ultra high pressure pump has two standard voltages of(220V/115V).

Check the electronicbox to determine the rated.

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

♦After confirming that the voltage is consistent, use a power socket in accordance with specifications to connect reliably. If the voltage is not consistent, do not force the adapter connection to avoid burning out the motor or causing short circuit

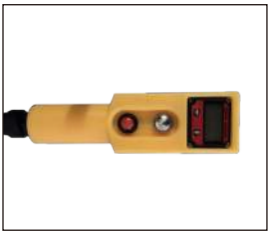
-Check the hydraulic oil level of the pump. The oil level should be above 2/3 of the upper oil gauge. When the hydraulic oil is insufficient, open the filling port and inject the wear-resistant hydraulic oil of the same model as the original pump (it is recommended to use the hydraulic oil grade ISO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

Sight Glass

If the oil level is lower than two - thirds, remove the plug and then carry out the oil - filling 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.



Press the motor start button to start the 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.Press the pump switch button, at this time the pressure gauge shows the pressure of port R, use a hexagonal wrench to rotate the top adjustment bolt, clockwise pressure increases, counterclockwise rotation pressure decreases.

3.Press the pressure indicator to target the pressure and then turn off the electric pump.

4.Tighten the locking nut to complete the pressure adjustment of port R.

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

Press the motor switch button on the handle, and after the motor stops running, keep the hydraulic oil pipe axially aligned and fully push it into the outlet interface base. Rotate the sealing joint and rotate the outer lock ring clockwise to the limit mark and tighten it.

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

Secure the outer lock ring.

◆ HGTW electric hydraulic wrench pump must be connected with the same pressure or higher pressure and matching joints or hoses when used, connecting the joints or hoses with lower pressure grades may cause the joints to fly out or the tubing to break, 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.

-HGTW 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.

Through the solenoid valve control button on the handle, the system oil flow direction is accurately controlled.

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

-When the pressure exceeds the target range, open the unloading valve for unloading operation. After the pressure drops to 0, readjust the target pressure according to the method of setting pressure.

♦ A check valve is installed between the pressure regulating valve and the oil outlet. The pressure can only be adjusted in ascending order and cannot be adjusted in the reverse direction.

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.

-Overload Protection Monitoring: Assuming the electrical control box is equipped with an overload protection device, when the system is overloaded, the safety plug will automatically pop out to trigger emergency stop protection. Operators should first check the cause of the overload in the power-off state, resolve the fault, and reset the safety plug before restarting the equipment. It is strictly prohibited to forcibly reset and start the equipment without resolving the overload fault, as this can cause severe damage to the equipment.

Overload protector

5.Release Pressure And Shut Down

-Complete the work: After completing the action, release the electromagnetic valve switch button, return oil from port A, establish pressure in port R, and start the tool to return. Close the motor after the tool is completely returned.

-Turn off the motor: First press the motor stop button on the control handle to turn off the motor, then cut off the power supply, pull out the power plug, and ensure that the equipment is completely powered off.

-Cut off the oil circuit: Prezsss the stop button of the solenoid valve on the control handle to cut off the oil circuit connection between port A (oil inlet) and port R (oil outlet), effectively prevent the circulation flow of pressure oil between the two ports, and realize the unloading of the system.

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

Primary User Settings

1.Primary user Settings

Simultaneously press and hold the key to enter the password input state. Short press the key to move the cursor, and short press the [key icon] key to change the value at the cursor position. Enter the password "00036" and simultaneously short press the key to confirm. The meter enters the primary user setting state. The setting state is divided into menu item viewing and menu item modification states. In the menu item viewing state, the meter will alternately display the menu item name and menu item value. Short press the key to enter the next menu item, short press the key to enter the previous menu item, and simultaneously short press the key to enter the menu item modification state. In the menu item modification state, the meter will flash to display the value of the menu item. Simultaneously short press the key to confirm the modification and return to the menu item viewing state.

Description of menu items for primary users:

Menu item name	designator	explain
Display decimal point		In the modification mode, briefly pressing the key or the [key icon] key can modify the value of this menu item, and at the same time, briefly pressing the key can confirm the modification and return to the menu item to view the status.
Unit		In the modification mode, briefly pressing the key or the key can modify the value of this menu item, and at the same time, briefly pressing the key can confirm the modification and return to the menu item to view the status. 0: Empty, do not display the unit, 1: Pa, 2: kPa—, 3: MPa, 4: bar, 5: psi, 6: mm, 7: M, 8: kg/cm², 9: kg, 10: atm, 11: °C, 12: mA
Zero position display value		In the modification mode, the cursor position starts to blink. Briefly pressing the key moves the cursor. Briefly pressing the key changes the value of the cursor position. At the same time, briefly pressing the key can confirm the modification and return to the menu item to view the status.
Full display value		In the modification mode, the cursor position starts to blink. Briefly pressing the key moves the cursor. Briefly pressing the key changes the value of the cursor position. At the same time, briefly pressing the key can confirm the modification and return to the menu item to view the status.

Filter coefficients		In the modification mode, briefly pressing the key or the key can modify the value of this menu item. At the same time, briefly pressing the key can confirm the modification and return to the menu item viewing state. The larger the value, the better the filtering effect, but the speed will slow down.
Finish	SAVE	Briefly press the key to switch to the previous menu, briefly press the key to change YES or NO. When it is YES, simultaneously briefly press the key to save the modification and exit the setting state. When it is NO, simultaneously briefly press the key to not save the modification and directly exit the setting state.

Troubleshooting:

Troubleshooting Guide		
Issue	Possible causes.	Solution
1. The pump does not start	Not connected to a power source.	Check whether the circuit is connected normally and restart.
	The electrical circuit of the pump is short-circuited or tripped.	Check whether the circuit is connected normally and restart.
	The voltage is too low.	Check the voltage and turn off other electrical loads.
	The socket cord is too long and too thin	Replace the high-power socket strip
	The handle button is damaged.	Contact the manufacturer for repair.
	Pump components are damaged.	Contact the manufacturer for repair.
2. The motor stops during pressurization	The voltage is too low.	Check the voltage and turn off other electrical loads. Replace the strip and check the input voltage.
	Current overload	Check the system for large damping terms that are causing overpressure.
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.
	The electromagnetic unloading valve opens.	Check the energization of the unloading valve.
	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.

Troubleshooting Guide		
Issue	Possible causes.	Solution
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.
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.
	There is a throttle valve in the system	Adjust the throttle flow.
	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.
	The system throttle valve adjustment is smaller.	Check the circuit and readjust the flow valve.
	Motor failure.	Contact the manufacturer for repair.
7. Severe fever	The system throttle valve adjustment is smaller.	Check the circuit and readjust the flow valve.
	Motor failure.	Contact the manufacturer for repair.