

The enterprise has passed certification of ISO9001

Quality Management System

Operating Instruction
For
Electrical Heating CO₂ Gas Pressure Regulator



Before using the product, please read carefully (The inlet pressure is not allowed to be more than the maximum inlet pressure required by the product; otherwise, it will cause danger to life), and well reserve it for reference.

Instructions for Safe Use

Features:

The gas regulator has reasonable and compact structure, and has gas pressure and flow indicator. The safety valve can secure the personal safety of operator, which has stable performance and is solid and durable. The gas regulator is applicable to liquid CO₂ gas and mixed gas (CO₂+ argon).

I. Precautions for Safe Use

Please read carefully before use.

The instructions aim at reminding user of correct and safe use of the gas regulator to avoid personal injury and property loss to the user and others.

Incorrect operation and use may cause severe personal accident. Therefore, please strictly abide by the operation instructions.

1. Working environment

- a. The working place must be ventilating to prevent anoxia to the user caused by working gas.
 - b. Do not pile up flammable materials in case of fire.
 - c. Put fire extinguisher at appropriate distance and regularly check its function and be familiar with the use method.
 - d. As per the design requirement, the working environment temperature scope of the gas regulator is -10℃~40℃.
 - e. The normal working pressure of the gas regulator is 1 standard atmospheric pressure.
2. The gas regulator is only applicable to liquid CO₂ gas and mixed gas (CO₂+ argon). It is not allowed to use it for other gases; otherwise, it may cause explosion or other undefined major personal safety accident.
3. The product is not applicable to hydrocone gas cylinder.
4. Before use, please check the specifications and working conditions of the product:
- a. Inlet pressure (primary pressure) CO₂ ≤ 11.8 Mpa, mixed gas ≤ 14.7Mpa
 - b. Pressure gage (except for GH 2503 for detecting inlet pressure)
 - c. Thread models and shapes of gas inlet joint (inlet extension rod, inlet nut)
 - d. Thread models and shapes of gas outlet joint (outlet extension rod, outlet nut)
 - e. Gas flow of welding and that supplied by the gas regulator
 - f. Voltage and socket of the power

If the specification of the gas regulator does not conform to your requirement, please do not use it as it may cause injury, further gas leakage, explosion, or severe personal injury.

5. Avoid pollution from oil, fat, dust or corrosive gas:

- a. If water, oil, dust or corrosive gas erode the gas regulator or enter it, it may erode the product, cause gas leakage or destroy its pressure regulation function, and further be unable to regulate pressure, gas leakage, exhausting of safety valve. If the said cases occur, for your personal safety, please close the gas valve of the cylinder immediately, replace with good product or contact the Maintenance Department of our company to repair it before use.
- b. The gas regulator does not need to be maintained with lubrication; otherwise the product may be destroyed.

6. Working conditions of the safety valve

- a. To avoid personal safety accident caused by damage of gas regulator and rise of regulation pressure from abnormal gas regulator, the product is equipped with safety valve.
- b. The normal working pressure of the safety valve: 0.65-0.8 Mpa
- c. The pressure of the safety valve has been set before delivery. Please do not regulate or disassemble without authorization. Otherwise, it may lose protection function under setting condition and cause potential safety hazard
- d. If there is gas leakage for the safety valve, it indicates that the gas regulator has already lost its function. Then for your personal safety, please close the gas valve of the cylinder immediately, replace good product or contact the Maintenance Department of our company to repair it before use.

7. Cylinder

Since the cylinder contains high pressure gas, it shall be reserved and used as per regulations on high pressure gas management and other stipulations. Incorrect operation may lead to gas leakage or damage of gas regulator and cause severe accident. Therefore, please note the following:

- a. If the cylinder falls down, it may cause severe accident;
- b. When using the cylinder please put vertically and ensure it is fixed. Do not tilt or level it.
- c. The gas pressure in the cylinder will change with the temperature. Thus, the cylinder in storage and use shall avoid direct sunlight or near heat source. Otherwise it may cause personal injury.
- d. Liquid gas has been put into the cylinder; please do not touch in delivery.
- e. When opening the valve of the cylinder, the operator is not allowed to stand in front of the gas regulator (directly towards the gas pressure gage). Otherwise it may cause personal injury. Please stand at the side of the gas regulator and slowly open the valve to avoid instant huge impact of the gas and personal injury caused by regulator.
- f. Please close the valve of the cylinder when it is not used. After the residual gas is discharged from the gas regulator, disassemble and reserve the gas regulator.
- g. Please do not hang the welding gun on the cylinder, and avoid touch between the electrode and the cylinder.

8. Outer tube of the flow meter

The outer tube of the flow meter of the gas regulator is made of panlite. Its working temperature is -10~80℃. Please observe the following regulations in using:

- a. External force or impact may destroy or damage the outer tube of the flow meter
- b. Do not use solvent, synthetic oil or any solution sold in the market to test leakage as it may affect the panlite and cause flaw, breakage or reduce its hardness. If you want to test the leakage or clean, please use household neutral detergent.

II. Connection between the Gas Regulator and Cylinder

1. Install the gas regulator on the cylinder

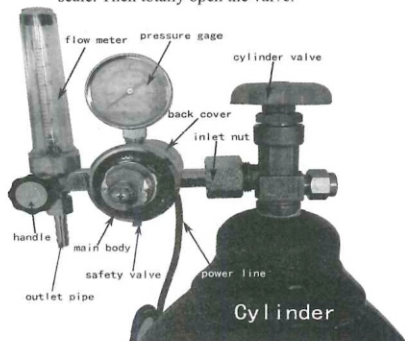
- a. Check the cylinder is vertically and reliably fixed

- b. Fasten the nut with proper wrench reliably to avoid gas leakage. The flow meter installed shall be vertical to the ground; otherwise the float ball indicating flow will not work normally and the flow will be inaccurate.
2. Thoroughly clean the oil, water and dust between the connection of the cylinder and gas regulator. IF dust enters the regulator, it may lead to block, gas leakage of the regulator and it may be unable to regulate pressure and even explode.
3. If the thread on the cylinder transforms, and the gas regulator cannot be smoothly installed, please do not connect with force; otherwise, the thread on the cylinder and regulator may be destroyed and cause severe accident.
4. When using CO₂ gas and mixed gas (CO₂+ argon), please plug the heater power in the required socket to avoid frozen equipment and effectively use the gas and save energy for the heated gas.

III. Correct Operation

1. Gas supply

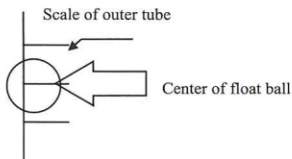
- a. The gas regulator is electric heating, and must use correct voltage; otherwise the equipment may be burned.
- b. Please preheat it for 5-10minutes before use.
- c. The regulator is not allowed to be used on cylinder with maximum inlet pressure exceeding the requirement.
- d. Confirm that the control knob of the flow meter is on the position of OFF (clockwise)
- e. Slowly open the valve of the cylinder (speed of about 5° / second). Then you can see that the indicator of the pressure gage slowly lifts and stops on certain scale. Then totally open the valve.



Note: When opening the valve on the cylinder, please do not stand in front or at the back of the regulator (the front and the back of the pressure gage) to avoid incorrect operation as the huge impact of regulator by sudden open of the cylinder valve may lead to explosion of regulator and pressure gage and hurt people.

2. When observing the float ball of the gas regulator, slowly regulate the flow control knob anticlockwise to the demanded flow and start work to finish

regulation. As shown in the right figure:



Note: The current flow value shall be subject to the value of the center of float ball.

IV. Treatment of Gas Regulator after Completing Work

1. Close the valve of the cylinder
2. Open the valve of the equipment and discharge the residual gas from the regulator
3. Close the valve of the flow meter on the regulator (regulate the knob clockwise), and turn the regulation knob for the regulation regulator anticlockwise to emit the pressure of the regulating spring in the regulator.
4. Several minutes later, check whether the indicator on the pressure gage of the regulator returns to zero and the valve on the cylinder has been totally closed
5. Disassemble the pressure regulator and reserve it well for future use.

V. Daily Check

1. When there is no gas in the gas regulator, please check whether the indicator of the pressure gage has turned to zero.
2. When testing the leakage, please use solution made by suns or household neutral detergent with 10~20 times of water to check leakage in all connection between the thread and parts.
3. After supplying gas, check that it can continuously regulate the gas flow to guarantee welding quality
4. After supplying gas, check there is no gas leaking from safety valve. If there is leakage, please treat as per the safety valve working condition in Item 6 of Article 1.

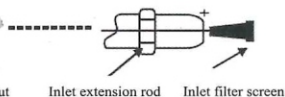
VI. Clean Inlet Pipe and Filter Screen

1. Instructions for cleaning filter screen:

Since CO₂ and argon is not pure or mixed with impurity, it may block the filter screen of the inlet pipe to cause insufficient flow of flow meter and even total block. Therefore, if the filter screen is blocked, it must contact the producer to replace the filter screen before normal use.



If one of the following cases occurs, please do not treat it without authorization, but immediately contact our company or the dealer:



VII. Maintenance and Replacement

1. When there is gas in the gas regulator, the gas leaks from all threads and the connections.
2. When there is no gas in the gas regulator, the indicator of the pressure gage does not turn to zero.
3. After supplying gas, the indicator of the pressure gage does not lift.
4. After supplying gas, the flow cannot continuously regulate.
5. After supplying gas, the gas overflows from the safety valve.
6. The pressure gage is destroyed.
7. The flow meter is destroyed.
8. In case of any abnormal phenomenon or difficult operation when operating, please stop immediately and continue after solving the problems.

VIII. Specifications and Parameters

Specifications and Parameters of Electric Heating CO₂ Gas Regulator

Product specifications	GH-257,GH-2501,GH357,GH359,GH100,GH120,GH-258.GH2503	
Voltage of heating pipe	Voltage: 36V,110V,220V,240V	
Power of heating pipe	Power: 120W,150W,210W,190W	
Applicable gas	Liquid CO ₂ gas for welding	Mixed gas for welding MAG (Ar+ CO ₂)
Input pressure	$\leq 11.8\text{Mpa}(120\text{kgf/cm}^2)$	$\leq 14.7\text{Mpa}(150\text{kgf/cm}^2)$
Output pressure	$0.35 \pm 0.05\text{Mpa}(3.5 \pm 0.5\text{kgf/cm}^2)$	
Inlet thread	G 5/8-14,0.86-14 Others	
Outlet thread	M12×1,M16×1.5 Others	
Gas flow	0~25 L/min, 0~30 L/min	
Rated load persistency rate	100%	
Plug of heating pipe cable	Two-pin plug, three-pin plug, others	
Operation pressure of safety valve	0.65-0.8Mpa (i.e. 6.5-8kgf/cm ²)	

Warranty Card

User name		Product name		Delivery date	
User address			Product model		
Tel		P.C.		Used gas	
Undesirable effects:					
Suggestions:					

Note: (The following content is filled in by the user)

We will improve our product according to your precious opinions and suggestions.
Thank you for choosing our product.

Instructions for warranty	Cases beyond the free maintenance scope
Please take care of the warranty card as certificate of free warranty;	Incorrect installation, use and operation of the product;
The warranty card takes effect as of the purchasing date ;	Other people instead of that designated by our company has maintained, disassembled, changed, refit or replaced other components and parts;
During the warranty period, under normal use and maintenance, if there is any failure for the product quality, process or technical problems, our company will replace, maintain and provide other expenses if it is checked as authentic.	Destroy for drop, inflow or other abnormal use;
	Damage caused by incorrect operation rather than as per the instructions;
	Damage caused by natural disaster or accident;
	Beyond warranty period.

Product exceeding warranty period or scope will be charged for parts and maintenance expense according to the situation.