

SHIELDING GAS REGULATORS AND ACCESSORIES

TERMINOLOGY

Sniffting: - The practice of opening and closing cylinder valves quickly to remove debris before fitting regulators.

Flow Meter: - A piece of equipment that facilitates the mixing and control of the gases to perform a welding or cutting operation

Regulator: - A device fitted to the cylinder outlet to reduce the cylinder pressure to that required by the blowpipe.

Hose Assemblies: - Used to connect the regulator to welding equipment.

Pressure Relief Valve: - Vents excess pressure from the regulator when the system pressure exceeds a predetermined level.

SAFETY

- Trained personnel should only use pressure regulators and cylinders.
- Always ensure Gas cylinders are safely secured.
- Ensure hoses are kept tidy on the floor to reduce the risk of tripping on the hoses.
- Ensure the working area is well ventilated to ensure there is no risk of asphyxiation.
- Ensure the working area is clear of flammable materials as sparks from the process can travel long distances.
- Wear protective clothing, gauntlets and eye protection.
- Keep fire extinguishers nearby.
- Do not cut or weld containers or vessels that have used for storage of combustible materials.
- The site safety officer should control work in dirty or greasy environments.
- Ensure no oil or grease is present on any of the parts used in the system.
- Do not snift Hydrogen cylinders.

Connection of the system

- Check the cylinder valves are clean and the threads are in good condition. Snift the valve to remove debris from the valve seat (Never Snift Hydrogen cylinders).
- Connect the pressure regulator to the cylinder; ensure the regulator is the correct type for the gas and cylinder pressure.
- Ensure the regulator knob is fully unscrewed
- Connect the gas hose to the regulator or flow meter and ensure all down stream control valves are closed.

Starting up

- Slowly open the cylinder and adjust the regulator to the correct operating pressure for the operation (turn clockwise to increase pressure). **Never stand in front of the regulator when opening the cylinder valve**
- Check the system for leaks using a suitable leak detection fluid. Recheck the pressures with the gas flowing.
- Purge each hose to ensure the hoses and welding equipment is primed with gas. Ensure this is conducted in a well-ventilated place. Purging should be carried out after each period of non-use.

Shutting down

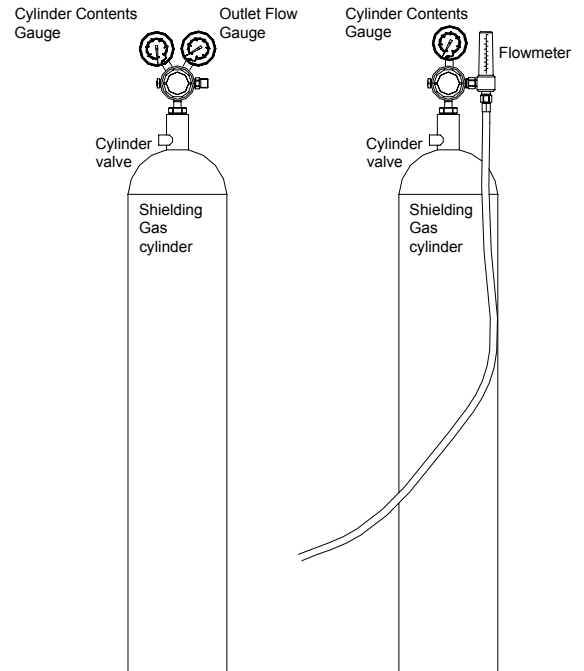
- Close the gas control valve on the welding equipment.
- Close the cylinder valve.
- Reopen the control valves on the welding equipment to vent the gas in the system.
- Unscrew the pressure-adjusting knob on the regulator and when the system is fully relieved of pressure close the gas control valve on the welding equipment.

PROCEDURE FOR USE OF FLOW METER

- Ensure the flow meter is connected to the outlet of the regulator so the sight tube is in a vertical position.
- Never exceed 50psi (3.5Bar) inlet pressure to the flow meter.
- Never clean the sight tube with solvents.

Starting up

- Ensure the regulator knob is unscrewed and the flow meter knob screwed fully in.
- Slowly open the cylinder valve and adjust the regulator to the correct operating pressure for the operation (turn clockwise to increase pressure). **Never stand in front of the regulator when opening the cylinder valve.**
- Open the control valve on the welding equipment and using the flow meter valve adjust the gas flow to the desired level.
- Recheck the pressures with the gas flowing.
- Close the control valve on the welding equipment and check the system for leaks using a suitable leak detection fluid.
- Purge each hose to ensure the hoses and welding equipment is primed with gas. Ensure this is conducted in a well-ventilated place. Purging should be carried out after each period of non-use.



SHUTTING DOWN

- Close the gas control valve on the welding equipment.
- Close the cylinder valve.
- Reopen the control valves on the welding equipment to vent the gas in the system.
- Unscrew the pressure-adjusting knob on the regulator and when the system is fully relieved of pressure close the gas control valve on the flow meter and the welding equipment.

TROUBLE SHOOTING

Weld porosity

- A- Ensure hoses are purged correctly
- B- Check all connections and hoses for leaks
- C- Check torch for leaks
- D- Increase gas flow
- E- Check correct gas is in use

Regulator freezes

- A- Reduce gas flow
- B- Consider use of higher capacity regulator
- C- Fit gas heater

MAINTENANCE

Daily- check the condition of all equipment checking for damage especially hoses and gauges

Weekly- pressure test the system and check the system for leaks using a 0.5% Teepol detergent solution in water (or other oil free leak detection fluid)

Every Five Years- Ensure the product is removed from service and replaced or refurbished by a qualified person (refer to the date stamp on the equipment)

FURTHER INFORMATION

For further information on the Safe operation of Gas Welding and Cutting Systems Refer to the British Compressed Gas Association Code of Practice CP 7. The HSE publication "Safety in Gas Welding Cutting and Similar Processes"

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