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**Safety specifications of line regulator used in welding, cutting
and allied processes**

焊接、切割及类似工艺用管路减压器安全规范

(English Translation)

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Foreword

All the technical contents of this standard is mandatory.

This standard is based on the national standard GB/T 25473-2010 "welding, cutting and allied processes pipe reducer" in terms of safety to it is prepared.

The Standard Appendix A, Appendix B is an informative annex.

The standard proposed by China Machinery Industry Federation.

This standard by the national industrial process measurement and control Standardization Technical Committee (SAC/TC124) centralized.

1 Scope

This standard specifies the welding, cutting and allied processes pipe reducer (hereinafter referred to as regulator) guarantees safety materials, technology Mandatory Requirements, test methods and inspection rules and other aspects.

This standard applies to the compressed gas cylinders or methyl acetylene - a mixture of propadiene (MPS), the bus to the high pressure acetylene gas manifold Body adjusted to the desired output pressure single-stage and two-stage pipeline pressure reducer.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 25112-2010 welding, cutting and allied processes gauges (ISO 5171:1995, MOD)

GB/T 25473-2010 welding, cutting and allied processes pipe reducer (ISO 7271:1999, MOD)

3 Symbol

Table 1 shows the symbols used.

The symbols used in Table 1
 Symbol Description Unit of Measure
 p_1 rated (maximum) inlet pressure MPa
 p_2 rated (maximum) outlet pressure MPa
 p_3 type test. $p_3 = 2p_2$
 0.1MPa MPa
 p_{RV} safety valve opening pressure $1.5p_2 \leq p_{RV} \leq 2p_2$ MPa
 Q_{RV} traffic safety valve $Q_{RV} \geq 0.5Q_1$ m³/h

4.1.1 Acetylene or metallic material having similar chemical properties of the gas contact

With acetylene or a metallic material having similar chemical properties of the gas contact, the copper content of the material may not exceed 70%.

Retardant material metal pieces (including sintered metal parts) application does not contain copper processing.

When using silver brazing copper alloy, silver content not exceeding 46% of the copper content shall not exceed 37%.

4.1.2 Contact with oxygen in the metal material

Various elements can not be in contact with oxygen-containing oil. Springs and other moving parts should be in contact with oxygen oxidation-resistant material and may not be to be coated.

4.2.1 Solvent resistance

Non-metallic materials in contact with acetylene (e.g., as a sealing member and lubricant material) should be resistant to acetone and dimethylformamide (DMF) solvent properties. Solvent resistance requirements in Appendix A.

4.2.2 N-pentane-resistant performance

Propane, butane and methyl acetylene - propadiene mixture of non-metallic material of the contact (e.g., as a sealing member and lubricant material) should be a Adequate resistance properties of n-pentane. Pentane-resistant performance requirements in Appendix A.

4.2.3 Oxygen-resistant performance

All components in contact with oxygen should not contain may react violently with oxygen substances such as hydrocarbon solvents and oils.

Can be used in maximum working pressure and temperature, the lubricant can be used in oxygen.

5.1.1 Structural Strength

Design and manufacture of pressure reducer should be applied to ensure that the pressure specified in Table 2 in the high and low pressure chamber after not lead to permanent deformation.

Table 2 Test pressure

Regulator type high-pressure chamber pressure chamber Oxygen and other compressed gases, p2 1MPa 1.2 x 1.5 x p1 3MPa 6MPa

5.1.2 Security

Design and manufacture of pressure reducer shall ensure that the intermediate chamber pressure chamber or two-stage pressure reducer with full gas bottle in direct communication, the pressure reducer valve Paul Held in the open position and the closed outlet connection (such as with additional shut-off valve or blind plug closing), high-pressure gas can be safely cut-off or discharge.

5.2.1 General

In addition to all of those pressure regulator for acetylene, it should provide a safety valve for discharging pressure over the outlet pressure.

When the outlet pressure is less than or equal to 1.5 times the rated outlet pressure, safety valve should be sealed; when the amount is greater than the outlet pressure of 1.5 to 2 times when the set outlet pressure, exhaust valve should open. Traffic safety valve should $Q_{RV} \geq 0.5Q_1$ acetylene gas pressure reducer in any case are pRV shall be equal to 0.3MPa.

After the safety valve opening, the outlet pressure drops greater than p_2 should be closed. For users, the safety valve is not adjustable.

5.2.2 Valve installation position

General safety valve and pressure reducer directly connected to a low pressure chamber.

5.3 Pressure regulating means

The design of this device should ensure that the regulator can be used safely, it is recommended in Appendix B of the structure.

When using the regulator set pressure relief valve should always be kept sealed.

5.4 Oxygen Regulator

Oxygen Regulator design, fabrication and assembly should be done inside the blasting does not occur. All parts and accessories should be thoroughly cleaned before assembly Degreasing. After the assembly should be able to withstand 20 times the inlet pressure of oxygen continuous impact shock, fire and may not appear charred internal damage.

5.5.1 Flag

Measuring oxygen gauge dial shall be marked in red the word "oil" or, as no oil flags shown.

1 oil ban flag

5.5.2 Energy release

When the spring tube rupture, leakage of gas pressure gauge should enable positive direction away from the discharge pressure gauge, pressure gauge glass should be no damage.