

INFRASTRUCTURE ENGINEERING

ELECTRICAL DEPARTMENT SPECIFICATION

Specification For Acetylene gas welding unit

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1. General Requirements

- 1.1. This specification outlines the requirements of a mobile portable acetylene gas welding unit.
- 1.2. The gas welding unit shall be ergonomically designed for maximum operator productivity and safety.

2. Operating Conditions

- 2.1 The portable acetylene gas welding unit will be operated in all weather conditions at altitudes varying from sea level to 1850m above sea level, relative humidity 10% to 90% and atmospheric conditions which vary from heavily saline to dry and dusty.
- 2.2 Ambient air temperatures ranging from -5° C to 45° C.

3. Qualifications

- 3.1 The design of the portable gas welding set is to be that of the manufacturer, but must be of robust construction in order to meet sustained heavy duty demands, yet it must be light and easy handled manoeuvred by one operator.
- 3.2 Unit will be acceptable in standard factory production finish and colour. Details to be furnished.

4. Performance

- 4.1. The actual design and service life of the acetylene gas welding pack is to be stated.
- 4.2. The unit is to be easily and economically maintained for with standard workshop tools and equipment. Details of gas suppliers available locally are to be supplied at the time of tendering.

5. Technical Requirements

5.1 General Description

- 5.1.1 A heavy duty mobile portable acetylene gas welding equipment suitable for oxy-ace welding is required. The unit shall be supplied complete with all the accessories including but not limited to pressure gauges, welding torch, oxy-acetylene hoses, cutting torch etc.

5.2 Operational requirements

- 5.2.1 The unit shall have the capacity to perform a welding for at least 4 hours continuous operation.

5.2.2 The unit shall have the capacity to perform cutting for at least 30 minutes continuous operation.

5.3 Gauges

5.3.1 The pressure gauges shall be provided for each bottle on the unit.

5.4 Gas supply hoses

5.4.1 Suitable hoses for use on oxy-acetylene shall be supplied.

5.4.2 Hoses shall be 10m in length.

5.4.3 The hoses for the oxygen and acetylene supply line shall have different colours, Red is preferred for acetylene supplying line and blue is preferred oxygen supply line.

5.5 Oxy-Ace Gas welding Unit Mobility

5.5.1 The unit must be fitted with 2 wheels to allow for manoeuvrability by one person.

5.5.2 A handle of a non-slip surface for aiding manoeuvrability.

5.6 Preferred mass and frame

5.6.1 The mass of the unit shall not exceed 30 kg

5.6.2 The frame shall be of robust construction to sustain heavy duty demands under the service conditions as stated in clause 2 of this specification.

5.6.3 The frame shall be such that the unit is supported sturdy with two gas cylinders secured in an upright position.

5.7 Additional requirements

5.7.1 An operator's handbook, calibration chart and spare parts list must be supplied with each machine in order to ensure that the machine is operated in accordance to the manufacturer's instructions.

5.7.2 Sufficient training must be given to all operators of these machines.

5.7.3 Gas welding unit must be supplied complete with essential tools and consumable items as necessary. Details to be furnished for any tools required.

6. Data Plate

- 6.1 The unit must come with a data plate.
- 6.2 The brand and model number of the unit must be clearly shown.
- 6.3 The actual weight in kilograms (Kg) of the unit must be shown on the machine
- 6.4 The actual dimensions of the unit must be indicated in millimetres (mm).

7. Quality Control

- 7.1 All units must be manufactured in an environment that complies to the latest ISO 9000 to ISO 9004 or similar quality control standards. Details must be furnished.
- 7.2 Units will be subject to a technical evaluation and the final decision will, amongst others, be based on these findings.

8. Legal and Operational

- 8.1 All equipment to comply with the requirements of the SANS standards and all the regulations of gas welding equipment and safety in force on the day of the request for supply of these equipment.
- 8.2 The information as requested by the various clauses in this specification is to be supplied in form of technical data, pamphlets and/or drawings. If this is not complied to, offers may be overlooked.
- 8.3 The welding gas equipment is to be guaranteed for a minimum period of 12 months against faulty material and workmanship - fair wear and tear of consumables excluded. Full details of guarantee are to be submitted.
- 8.4 Gas welding equipment spares/parts/consumables for this type of equipment shall be available locally. Full details of suppliers are to be submitted.