

**Technical Specification of Semi automatic Co2 Welding Plant.**

Indent No 92757014 Date : 8-4-2010

**1 MAJOR PARAMETERS****1.1 Power Source**

- 1.1.1 Type : Constant voltage Thyristor controlled power source with minimum 6-phase rectification.
- 1.1.2 MAG welding under CO2 or Argon shield gas or Mixed gas : For welding of sheet steel
- 1.1.3 KVA rating @ 60% duty cycle : Not more than 22 KVA
- 1.1.4 Input power supply : 415V± 10% 3 phase, 50 HZ ± 3% 3-phase 4 wire system (with neutral solidly earthed the source) and input current not to exceed 40 Amp.
- 1.1.5 Current rating (at 10 minutes cycle time) : Up to 400 amps. At 60% duty cycle & 310 amps. At 100% duty cycle.
- 1.1.6 Type of winding : Edge Type
- 1.1.7 Class of insulation : "H"
- 1.1.8 Standard of enclosures : IP-23 (minimum)

**1.2 Wire feed unit**

- 1.2.1 Type of drive : 2 point – roll drive, quick change over
- 1.2.2 Wire feed speed range : 1.0 to 16 mm/min or wider range.
- 1.2.3 Drive system : Servo control motor with printed circuit armature with build in wire straighter device

**1.3. Welding gun**

- 1.3.1 Type of cooling : Forced Air cooled
- 1.3.2 The torch design : Leak proof type.
- 1.3.3 Torch nozzle type : Threaded fastening type.

Note: No deviation in Major Parameters will be accepted.


**2. MINOR PARAMETER**

- 2.1.1 Welding current range : 40-400 amps (infinitely variable)
- 2.1.2 Open circuit voltage : 55 V (maximum at 415 V input Voltage)
- 2.1.3 Ratio of change in output voltage to change in output current : 3.0 volts/100 amps or better.
- 2.1.4 Max. ambient temperature to which rating apply : 50 degree C.
- 2.1.5 Desired Power factor (without use of power capacitor) : 0.85 lagging or better, while delivering welding power corresponding to 100% duty cycle. If required use of power factor improvement capacitor is acceptable and shall be connected to the downstream of the main contactor.
- 2.1.6 Efficiency : The overall efficiency, while delivering welding power corresponding to 100% duty cycle shall not be less than 75% with pre-heater connected and cooling fan (if provided) working.
- 2.1.7 Wheels of the power source : Rubberized wheels

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- 2.1.8 Protection of Thyristors. : Fuses to be used.
- 2.1.9 Output terminals (+ve & -ve) : Knob type arrangement
- 2.1.10 Weight : 120-140 Kg Approx
- 2.1.11 Remote control unit
  - i. Weight : 1 Kg Approx
- 2.1.11 Equipment shall be protected against spikes.
- 2.1.12 The equipment shall not get automatically switched "ON" when power supply resumption after an interruption.
- 2.1.13 Indicating Meters for voltage and current measurement in the output circuit to be provided.
- 2.2. Wire feed unit
  - 2.2.1. Wire diameters sizes (H/W) : 1.2 mm, 1.6 mm
  - 2.2.2. Wire feed speed control : Transistorized or thyristorised, stepless control with feedback system.
- 2.3. Welding gun
  - 2.3.1. Current rating (at 10 minute cycle time) : 400 Amp (60% duty cycle) and 350 Amp. (100% duty cycle) respectively with CO<sup>2</sup> and Argon shield as shielding gas)
  - 2.3.2. Cable construction : Co-axial type with Euro connections.
  - 2.3.3 Type of torch neck : Swan neck with 50 deg. Bend with rotation facility over 360 deg. and for fixing in a particular position, however, shall not rotate more than one rotation.
  - 2.3.4. Swiveling facility : 360 deg. swiveling
- 3 Concomitant Accessories : Welding cable of nominal cross sectioned area of 50 sqmm, 20meter long with tinned annealed high conductive copper wires and with HOFR covering to IS 9857 ( latest) with socket of appropriate dimension crimped on both both the end.
  - 3.1 : PVC insulated and sheared multicore flexible cord 20 meter long with high conductivity copper wires confirming to IS : 694 ( latest) connected on wire feed unit and provided with plug on the power source slide.
  - 3.2 : Nylon reinforced PVC hose of size 6.4mm ID 12.5mm OD , 20meter long duly connected to wire feed unit, using worm drive clip and with quick release type nipple on the power source slide.
- 4 Optional accessories. NO
- 5 Spares NO
- 6 AMC Requirement NO
- 7 Warranty Requirement As per IRS condition
- 8 Special Requirement.
  - (i) Operational & Maintenance manual with detailed Electrical circuitry diagram as per electrical & electronics component provide with machines.
  - (ii) Linear & Roller made up of Teflon or of suitable material for stainless steel plate welding.

  
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