

Technical Specification of Semi automatic Co2 Welding Plant.

**1 MAJOR PARAMETERS**

1.1	<b>Power Source</b>	
1.1.1	Type	: Constant voltage Thyristor controlled power source with minimum 6-phase rectification.
1.1.2	MAG welding under CO2 or Argo 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 $\pm$ 10% 3 phase, 50 HZ $\pm$ 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)
1.1.9	Maximum weight	: 125 Kgs.Appx
1.2	<b>Wire feed unit</b>	
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 straightner device
1.2.4.	Maximum weight	: 8 Kgs.Appx (without wire spool)
1.3.	<b>Welding gun</b>	
1.3.1.	Type of cooling	: Forced Air cooled/Gas 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	:	Rubberised wheels.
2.1.8	Protection of Thyristors.	:	Fuses to be used.
2.1.9	Output terminals (+ve & -ve)	:	Knob type arrangement
2.1.10.	Remote control unit		
(i)	Dimension	:	100x100x50 (H)mm (max)
(ii)	Weight	:	1 kg. (maximum)
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)	:	0.8mm, 1.2mm, 1.6mm
2.2.2.	Wire feed speed control	:	Transistorized or thyristorised, stepless control with feedback system.
2.2.3.	Wheels of wire feed unit	:	Rubberised wheels.
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 Argo shield as shielding gas)
2.3.4.	Weight	:	4.5Kg (approximately)
2.3.5.	Cable construction	:	Co-axial type with Euro connections.
2.3.6	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.
2.3.7.	Swiveling facility	:	360 deg. Swiveling
3	<b>CONCOMITANT ACCESSORIES.</b>		Welding cable of nominal cross sectioned area of 50sqmm,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 multicored 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.
3.3			Nylon reinforced PVC hose of size 6.4mm ID 12.5mm Od , 20meter longduty connected to wire feed unit,

using worm drive clip and with quick release type nipple on the power source slide.

4 **Optional accessories.**

4.1 . Liner assembly for 1.2 mm and 1.6mm for soft wire.

4.2 Feed role V-groove for 1.2 & 1.6mm

5 **Spares**

6 **AMC Requirement** Annual Cost /per year should be quoted separately.

7 **Warranty Requirement** Two Year after commissioning

8 **Special Requirement.** (i)Operational &Maintenance manual with detailed Electrical circuitry Diagram as per Electrical & Electronics component provide with machines.

(ii) Linear & Roller made of Teflone or suitable for stainless plate welding

DY. CME ( Mod)



