

# PHASE CONTROLLED A.C./D.C. ARC WELDERS

Feedback controlled

MPCWLD-

series

**Introduction:**

MPCWLD series of load compatible phase controlled A.C./D.C. welders machines are available in more than 100 different models (50 -50,000 ampere/ 50-60/400 ). Virtually offering all welding solutions to ferrous and non-ferrous metal. This welding machine is used for hermetic sealing in a number of industries, automobiles,structures,boilers,presure wessles,pipes,space missions, sheet metal,chassis mfr., home appliances,heavy electrical engineering, aerospace,

**Operating Principle:**

These phase controlled machines are self adjusting output impedance machine to ensure uniform/consistent heat profile across weld to make up with 3-10 time varying weld impedance which is the main requirement for RIGHT ALLOY joint's which minimize /eliminates, weld-metal expulsion, thereby eliminating PIND failures. Further high transient control response low output impedance improves energy efficiency by more than 25 percent/low reactive power apart from saving welding material, ultra low time constant ensure meeting fast varying weld current demand. In this welding machine, heat is generated by passing high current at moving high resistance weld point. Amount of heat generated is the function of weld current, weld resistance, contact pressure, welds area etc. Effectively a good weld joint is achieved when optimal melt of weld is fused at a specific rate under external applied pressure.

$$I_{melt} = Kx A x L x V^{0.8} (f, d, T)^{0.8} x d^{1.62} \quad f = \text{frequency, } D = \text{density } A = \text{Arc area, } L = \text{arc length, } V_{melt} = \text{max. arc voltage}$$



MPCWLD-0060040



MPCWLD-0160100



MPCWLD-0350200



MPCWLD-2000500

**Specifications OF HIGH FREQUENCY PROJECTION WELDING MACHINE**

Duty cycle:50 Power range<500.0 K.Watts

**A.C Arc welding machine specification:**

**D.C Arc welding machine specification:**

Model	Power V.A.	Current Amps	Output Voltage (no-load/load)	Input voltage/ duty cycle/weight (kg)	Cooling /application	Model	Power V.A.	Current Amps	O/p Voltage (no-load/load)	Input voltage/ duty cycle/weight (kg)	Cooling/ application
MPCWLA-0150015	07,500.0	000150.0	80/050	220/ 0.5/15	Air/M.S./S.S./	MPCWLA-0150015	0090,00.0	000150.0	80/060	220/0.5/18	Air/M.S./S.S./
MPCWLA-0150030	01,5000.0	000300.0	80/050	220/ 0.5/28	Air/M.S./S.S./	MPCWLA-0150030	018,000.0	000300.0	80/060	220/ 0.5/32	Air/M.S./S.S./
MPCWLA-0150060	030,000.0	000600.0	80/050	220/ 0.5/45	Air/M.S./S.S./	MPCWLA-0150036	036,000.0	000600.0	80/060	220/ 0.5/70	Air/M.S./S.S./
MPCWLA-0250010	050,000.0	001000.0	80/050	220/ 0.5/60	Air/M.S./S.S./	MPCWLA-0250010	060,000.0	001000.0	80/060	220/ 0.5/130	Air/M.S./S.S./
MPCWLA-0030020	100,000.0	002000.0	80/050	220/ 0.5/110	Air/M.S./S.S./	MPCWLA-0030120	120,000.0	002000.0	80/060	220/ 0.5/195	Air/M.S./S.S./
MPCWLA-0060040	200,000.0	004000.0	80/050	220/ 0.5/170	Air/M.S./S.S./	MPCWLA-0060240	240,000.0	004000.0	80/060	220/ 0.5/300	Air/M.S./S.S./
MPCWLA-0100060	400,000.0	006000.0	80/050	220/ 0.5/270	Air/M.S./S.S./	MPCWLA-0100360	360,000.0	006000.0	80/060	220/ 0.5/360	Air/M.S./S.S./

Three numerals x 100 after MPCWLD indicates voltage of power supply and last three digit Indicates current.All dimensions are in inches/Efficiency of welding machine raises as current increases. Welding equipment above 200 amps are water cooled.

**PHASE CONTROLLED A.C./D.C. ARC WELDERS SPECIFICATIONS:**

- Operating voltage 80 volts, 1/3 phase, 40-60 Hz
- Output current/voltage 0-80 volts/10000 volts(max)
- Drop rate : 170 % change in voltage per 100% change in current-
- Voltage/current ripple 0.1 VOLT/0.1 AMP
- Output impedance: 1/1000 of loadVoltage
- current control accuracy 99.9% of set point
- Resolution 0.1 volts/amps D.C.
- Repeatability 100 percent
- Response time 10-100 micro-seconds
- Interface Signal 0.0-12.0 volts D.C. [proportional to weld current]
- Current control range 0-100%
- Space mark ratio 1:3 to 1:9(option)
- Weld density: 1.0-1.2 mm/10,000 amps
- Control options 1.cascade feedback control with soft start  
2. Constant voltage/current with external adjustment./pulse mode/
- Display Voltage/current/ampere-sec/joule 3½ red glow LED display
- Protection over voltage/short ckt. Interface:RS-232
- Additional: facility to operate on battery/solay energy etc



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