

**“EQUIPMENT INSTALLATION AND SERVICING”
Sodick Wire EDM**

Specific items to review with customer prior to sale and/or before shipment of equipment.

1. Recommended location and environmental requirements (IDEAL):

- A. Separate room-isolated from general shop area and other fine chip and dust generating equipment, oily fumes and machining fluid mists.
- B. Air conditioned area, temperature 70 degrees F. (± 2 degrees). If general parts manufactured by customer are large in size and/or require dimensional tolerances less than 0.0005", temperature control is necessary to minimize the affect of:

- 1) Part material-temperature coefficient of expansion.
- 2) Stabilization of EDM equipment to ambient temperature, 4 hours.

C. No direct sunlight from outside windows.

D. No direct heating or cooling air blowing on machine or controls.

E. Vibration free area:

Locate machine away from high vibration or shock producing equipment. (i.e. forging hammers, punch presses, frequently used railroad tracks)

It is the customers responsibility to spot and level equipment, have power to the machine, water or oil available for dielectric system.

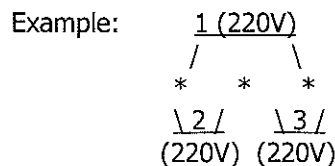
2. Power Requirements:

A. Specific requirements:

- 1) Check and record for the input line voltage variations.

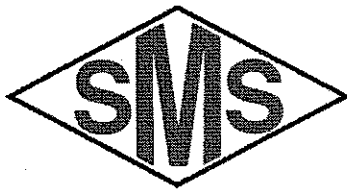
POWER REQUIREMENTS:

220 VAC (+5% /-5%) / 3 Phase; Note: See pages 3-6 for KVA Rating
Power at the wall from Fuse Breaker



Please Measure all there (3) Legs Phase to Phase.

(1)_____ (2)_____ (3)_____



- 2) Avoid any "in-house" high current drawing machines or equipment on the same buss line. (i.e. press, electrical furnace, welding etc.)
- 3) Can separate line be installed for machine.
- 4) Installation of individual fusible disconnect for each machine.
- 5) Provide separate earth ground isolated from building electrical ground.
- 6) Do you require Phase Converter (YES) or (NO)

Recommend copper or brass rod 3/4 inch diameter by 6 feet long driven into suitable moist soil. Locate ground rod close to input transformer.

B. Line voltage variation:

If line to line voltage variation at input to machine transformer exceeds +/- 5%, we recommend that an automatic voltage regulator be considered.

C. Affects of line voltage variation:

- 1) Voltage increase
- 2) D.C. gap voltage – increase
- 3) Machining speed Bascon 1 – increase.
- 4) Overcut – decrease.
- 5) May result in plating in workpiece gap, causing poor flushing and electrode breakage.

3. Dielectric Fluid Requirements:

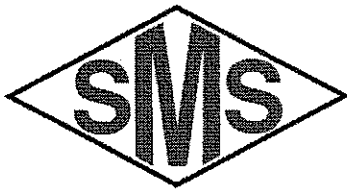
A. Start up: Use distilled or deionized water 5-10 gallons. Add tap water as required to bring conductivity control reading within desired limits. Or, if preferred, use Jems 180 as the dielectric fluid.

4. Airline Requirements:

* Need 90-100 PSI With Air Dryer / Regulator at the Machine

5. Consumables:

Have you ordered?	YES	NO
FILTERS:		
WASHABLE	___	___
THROW AWAY	___	___
RESIN:	___	___
WIRE:	___	___
GUIDES: (SIZE)	___	___
FREOX (RUST PREVENTATIVE):	___	___
HAND HELD CONDUCTIVITY METER:	___	___
WATER: DISTILLED/DEIONIZED	___	___
RS232 PORT	___	___
TRANSFORMER:	___	___



Wire Machines

LN1 and Mark 30 Control

Machine Model	Power (KVA)	Thermal (BTU)	Main Breaker Required For Your Wall Box	
			Your Power of 200 to 220 Volts	Your Power of 440 to 480 Volts
AQ325L	18	35,000	50 amp	30 amp
AQ535L	18	35,000	50 amp	30 amp
AQ550L	18	35,000	50 amp	30 amp
AQ600L	18	35,000	50 amp	30 amp

Calculation Method: If your input voltage is other than the above, you can calculate the breaker size with the following formula.

$$\text{Breaker Amps} = \frac{\text{KVA}}{(\text{voltage}) \times .001732}$$

Vertical Machines

LN1 and Mark30 Control

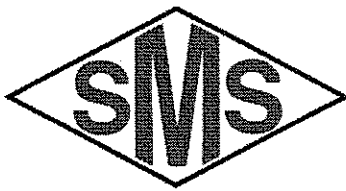
Machine Model	Power (KVA)	Thermal (BTU)	Main Breaker Required For Your Wall box	
			Your Power of 200 –220 Volts	Your Power of 440-480 Volts
AM35L	17	34,000	50 AMP	30 AMP
AQ25L	17	34,000	50 AMP	30 AMP
AQ35L	17	34,000	50 AMP	30 AMP
AQ55L	17	34,000	50 AMP	30 AMP

Note: Above KVA includes the 1.5 Kw dielectric chiller, and linear motor cooling unit.

Vertical Booster Options:

If equipped with the following optional boosters, the supplied transformer (20Kva) is only large enough to power the machine tool. A separate (or larger main) transformer is required to be purchased to power the booster.

Machine Model	Power (KVA)	The Wall Breaker Size Needs To Be	
		Your Power of 200 –220 Volts	Your Power of 440-480 Volts
40 AMP Booster	5	15 AMP	7 AMP
80 AMP Booster	6.5	19 AMP	9 AMP
160 AMP Booster	14	40 AMP	19 AMP
240 AMP Booster	19.5	56 AMP	26 AMP
320 AMP Booster	25	73 AMP	33 AMP



K1C and K1CN Machines

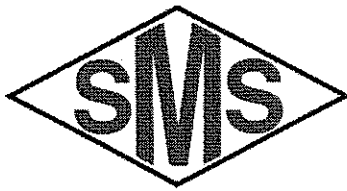
Machine Model	Power (KVA)	Your Power of 200 Volts	Main Breaker Required For Your Wall Box	
			Your Power of 220 Volts	Your Power of 440-480 Volts
K1C	5	15 AMP	13 AMP	7 AMP
K1CN	11	35 AMP	30 AMP	15 AMP

ATTACHMENT SHEET 1. LIST OF CAPACITIES FOR EDM MACHINES

Power Supply → Machine Model	Mark 20		Mark 21		Mark 22	
	Capacity (KVA)	Main breaker (A)	Capacity (KVA)	Main breaker (A)	Capacity (KVA)	Main breaker (A)
A300	10	60 (40)	15	60 (55)		
A350	10	60 (40)	15	60 (55)	19	75 (65)
A350W	13	60 (50)	18	60	22	75
A500	10	60 (40)	15	60 (55)	19	75 (65)
A500W	13	60 (50)	18	60	22	75
A500P	10	60 (40)	15	60 (55)	19	75 (65)
A500WP	13	60 (50)	18	60	22	75
A600	10	60 (40)	15	60 (55)	19	75 (65)
A600W	13	60 (50)	18	60	22	75
A600P	10	60 (40)	15	60 (55)	19	75 (65)
A600WP	13	60 (50)	18	60	22	75
A750	10	60 (40)	15	60 (55)	19	75 (65)
A750W	13	60 (50)	18	60	22	75
A750WH	13	60 (50)	18	60	22	75
A1000W	28	(90)	33	(110)	38	(120)
AP200	10	60 (40)				
AP330	13	60 (50)	18	60		
AP450	13	60 (50)	18	60		
AP550	13	60 (50)	18	60		
A530D			16	60 (55)		
PGW3	10	60 (40)				
PGW200	10	60 (40)				

MARK 25 POWER SUPPLY

Machine	Capacity (KVA)	Main Breaker (A)
A350W	13	50
A500W	13	50
A600W	13	50
A320D	13	50
A325	13	50
A530D	13	50



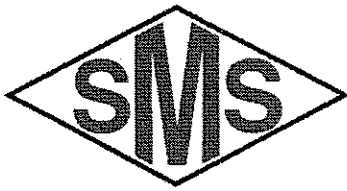
(2) NF Series

Machine Model	Power Supply	Capacity (KVA)	With PIKA10 (KVA)
A2, A3 (R) A30 (R), A35 (R), MMS, AM35	NF25	6.0	7.3
	NF40	10.5	11.8
	NF80	18.0	19.3
A4 (R)	NF25	6.0	8.0
	NF40	7.05	12.5
	NF80	18.0	20.0
A5 (R), MM5	NF25	6.0	
	NF40	10.5	
	NF80	6.5	
A50 (R), A65 ®	NF25	6.5	8.5
	NF40	11.0	13.0
	NF80	18.5	20.5

(3) Option

Oil Cooler	Capacity (KVA)
0.75KW	2.0
1.5KW	3.0
2.0KW	5.5
3.8KW	6.0
Booster	Capacity (KVA)
80B	6.5
160B	14.0
240B	19.5
320B	25.0
Cemented Carbide Booster	11.5
Other	Capacity (KVA)
MS-1 AT	4.0
MS-1	3.0
MS-2	1.0
Rich Filter	1.0
Exhauster (with duct fan)	1.0 (0.75kw)

Note 1: Oil Cooler capacity is included only for AP1 and AP3 (R)



MARK30 POWER SUPPLY

Machine	Capacity (KVA)	Main Breaker (A)
AQ600	15	50
AP200	10	50
AP330	15	50
AP450	15	50

Note 1: The figure in the "Main Breaker" column shows the current for the breaker mounted on the power supply as standard. That in parentheses indicated the minimum current requirements.

Note 2: Output P (VA)= 3 (square root) *200 (V) * I (A)

** Calculation for calorific value

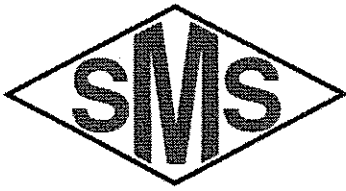
$$\text{Calorific value (Kcal/h)} = \text{input power (KVA)} * \text{power factor (0.8)} * 860 \text{ (cal/VA*h)}$$

Values in the "Capacity" column should be substituted.

3) List of Electric Capacity (Machine Model + Power Supply)

(1) Mark 20C Series

Machine Model	Power Supply	Capacity (KVA)	With PIKA10 (KVA)
AP1	MARK 20C	6.5 (W/OIL COOLER)	
AP3 (R)	MARK 20C	7.5 (W/OIL COOLER)	8.8
	MARK 21C	9.5 (W/OIL COOLER)	10.8
	MARK 22C	13.0 (W/OIL COOLER)	14.3
A2, A3 (R), A30 (R), A35 (R), MM3, AM35	MARK 20C	5.5	6.8
	MARK 21C	7.5	8.8
	MARK 22C	11.0	12.3
A4 (R)	MARK 20C	5.5	7.5
	MARK 21C	7.5	9.5
	MARK 22C	11.0	13.0
A5 (R), MM5	MARK 20C	5.5	
	MARK 21C	7.5	
	MARK 22C	11.0	
A50 (R) A65 (R)	MARK 20C	6.0	8.0
	MARK 21C	8.0	10.0
	MARK 22C	11.5	13.5
A85 (R)	MARK 22C	14.0	
A10NEW	MARK 22C	14.0	



McWilliams Sales & Service, Inc.

Note 2: For other models, add the oil cooler capacity if oil cooler is optionally selected.

Note 3: If an optional equipment/function is selected, it is necessary to add the capacity of the selected equipment/function.

Small Hole
K1C 5.3kva @ 210 Volts 15A
K1CN AEF/3 7kva @ 210 Volts 20A
K1CN 4 7kva @210 Volts 20A
K1CN5 11kva @ 210 Volts 30A

*Note: All recommended voltages have some additional amps added so no problems occur.

