

## PORTABLE CHILLERS FOR EDM MACHINE COOLING

### Purpose Built Air-Cooled Portable Chillers for EDM Machine Cooling Applications provides these Features:

- Indoor Units • Air-Cooled Condenser • 20°F - 80°F Fluid Temperatures •
- Non Ozone Depleting Refrigerant •



M1-1.5A-CH & M1-1ARX-CH



MG-2A-CH & MG-2APT-CH



MG-3A-CH

### Control Instruments



#### MG Control Instrument: (MG-2A-CH, MG-2APT-CH & MG-3A-CH models)

- Graphic LCD display with intuitive navigation
- Digital refrigerant pressure display
- Digital water pressure display
- Plain language error message reporting
- Controls hot gas bypass or digital scroll compressor for capacity control
- Alarm output with audible signal
- Industry 4.0 ready - Modbus RTU or SPI communication included, Modbus TCP communication optional
- High water temperature shut down feature



#### M1 Control Instrument: (M1-1.5A-CH & M1-ARX-CH models)

- Accurate control
- Large & bright LED temperature display
- Digital setpoint selection with soft touch keys
- Illuminated chiller on / off switch
- Compressor on light
- Basic diagnostics with refrigeration fault light
- Capacity control light

# Standard Features

## FEATURES COMMON TO ALL UNITS

### Construction:

- Power coated, galvanized or stainless steel frame and enclosure panels depending on model
- Casters for portability
- Standard NPT process fittings (female)
- Designed for indoor installation

### Refrigerant Circuit:

- Compressors:
  - Hermetic reciprocating in 1 - 1 1/2 ton models
  - Hermetic scroll in 2 & 3 ton models
- Condenser:
  - Air-cooled
  - Finned tube
  - Fan generated air flow
  - Air inlet filter
- Hot gas by-pass capacity control valve
- Evaporators
  - Copper tube-in-tube (M1-1.5A-CH models)
  - Stainless steel brazed plate with copper brazing (MG-2A-CH, MG-2APT-CH & MG-3A-CH models)
  - Stainless steel brazed plate with nickel or stainless steel brazing materials (M1-1ARX-CH models)

- Filter-drier
- Refrigerant sight glass with moisture indicator
- Thermostatic expansion valve
- Crankcase pressure regulator valve (M1-1.5A-CH & M1-1ARX-CH models)

### Pressure Indication:

- (M1 Models : Analog MG Models : Digital)
- Refrigerant high pressure
- Refrigerant low pressure
- Coolant discharge pressure

### Limit Devices:

- High refrigerant pressure
- Low refrigerant pressure
- Instrument control circuit fuse

### Electrical:

- Compressor motor control
- Fused transformer
- 10' factory installed power cord with strain relief

### WARRANTY:

- 1 Year covering parts and labor
- Free preventative maintenance check in the 2nd year

## Features Specific to M1-1.5A-CH, MG-2A-CH & MG-3A-CH

- Coolant pump
  - Brass positive displacement pump (M1-1.5A-CH model)
  - High flow stainless steel centrifugal pump (MG-2A-CH & MG-3A-CH models)
- Insulated non-ferrous reservoir
- Reservoir level sight tube
- Phase indicator (MG-2A-CH & MG-3A-CH models)

## Features Specific to MG-2A-APT-CH

- No pump
- No reservoir
- Process flow provided by EDM machine
- Consent pressure switch for flow

## Features Specific to M1-1ARX-CH

- No reservoir
- Draws coolant from EDM machine reservoir
- Stainless steel positive displacement pump
- Stainless steel piping
- Stainless steel brazed plate evaporator with nickel or stainless brazing material

## Options

Options may not apply to all models

- 2 HP pump (MG-2A-CH & MG-3A-CH models)
- UL 508A enclosed electrical panel
- Electrical disconnect switch
- Emergency stop operator
- Electric water make-up
- Overhead piping kit for back flow prevention (discharge check & electric return line shut off valves)
- Process line shut off valves
- Line voltage and phase monitor
- Full flow filter
- Condenser screen guard
- Low ambient head pressure control
- Low level switch
- Alarm contacts
- Audible alarm or audible & visual alarm
- Modbus ethernet communication gateway (units with MG instrument only)

# Specifications

MODEL		M1-1ARX-CH	M1-1.5A-CH	MG-2A-CH	MG-2APT-CH	MG-3A-CH
COMPRESSOR	Capacity <sup>3</sup>	1	1.5	2	2	3
	HP each	1	1.5	2	2	C
	Type <sup>4</sup>	H	H	HS	HS	HS
PROCESS PUMP	HP	1/3	1/2	3/4	n/a	3/4
	GPM	2.9	3.6	5.0	n/a	8.0
	PSI	60	60	30	n/a	30
TANK CAPACITY	Gallons	n/a	4	7	n/a	7
PIPE SIZE (NPT - Inches)	Process (to & from)	1/2	1/2	3/4	1/2	1
FULL LOAD	208/230/1/60	17	23	24	19	34
AMPERAGE <sup>1, 2</sup>	208/230/3/60	n/a	n/a	18	15	24
	460/3/60	n/a	n/a	11	7	12
	575/3/60	n/a	n/a	11	7	10
REFRIGERANT	Type	R134A	R134A	R410A	R410A	R410A
DIMENSIONS (Inches)	Height	37	37	30	30	43
	Width	19	19	37	37	34
	Depth	28	28	24	24	48
WEIGHT (LBS)	Shipping	345	350	400	400	600

#### Notes:

1. No allowance for inrush. Service disconnect by owner. Full load amps must be used to size disconnects and supply conductors.
2. Consult factory for 50Hz operation.
3. Tons capacity at 12,000 Btu/hr/ton @ 50 F LWT and 115 F condensing for air-cooled units. Capacity may be +/- 5% as reserved by the compressor manufacturer.
4. HS = hermetic scroll compressor. H = hermetic reciprocating compressor.

# Cross Reference

New Model	Old Models
MG-2A-CH	M1-2A-CH, IK-2AY, SC-2AY
MG-2APT-CH	M1-2APT-CH, IK-2APT, SC-2APT
M1-1.5A	IK-1.5A