

- **Temperature Control Units**  
Water & Oil  
30° - 500°F

- **Portable Chillers**  
Air & Water-Cooled  
20° - 70°F

- **Central Chillers**  
Air & Water-Cooled  
Packages & Modules  
20° - 70°F

- **Pump Tank Stations**  
Chilled or Tower Water  
200 - 3600 gallons

- **Cooling Tower Cells**  
45 - 540 tons

- **Filters**

- **Heat Exchangers**

## MAXIMUM SERIES

- Air & Water-Cooled
- 1/4 to 40 Tons
- 20°F to 70°F



10 ton water-cooled model

10 ton air-cooled model

### WARRANTY

- **1 Year:**  
Covering parts and labor
- **2nd Year:**  
**FREE** preventative  
maintenance visit

### CUSTOM UNITS

If one of our standard Maximum portable chiller models does not meet your application needs, then we can custom build a unit that will! Call us at 317-887-0729 for more details.

Thermal Products, Inc.  
964 A Route 146  
Clifton Park, NY 12065  
(518) 877-0231  
[sales@thermalproducts.com](mailto:sales@thermalproducts.com)  
[www.thermalproducts.com](http://www.thermalproducts.com)

### YOUR PROCESS DEMANDS THE MOST DEPENDABLE CHILLER AVAILABLE.

Advantage Maximum Series portable chillers won't let you down. Every Advantage chiller is supported by application expertise, engineering know how, and un-surpassed service support from seasoned technicians.

*Since 1977 Advantage has been applying, designing and servicing the best chillers available.*



2 ton water-cooled model



1 ton air-cooled model

### APPLICATIONS

Maximum Series portable chillers can be used on a variety of process applications that require 20°F to 70°F chilled water.



Molds & Dies

Nozzles, Barrels & Tools

Heat Exchangers

Troughs & Tanks

Rolls

Radiators  
and Air Coils

Jacketed Vessels  
and Mixers

Lasers

# AIR-COOLED : 1/4 - 30 TONS



Advantage Maximum air-cooled chillers are designed for processes requiring liquid temperatures from 20°F to 70°F. Needing only a source of electrical power, coolant fluid and a process load to be cooled and controlled, the portable unit can be installed and operated easily.

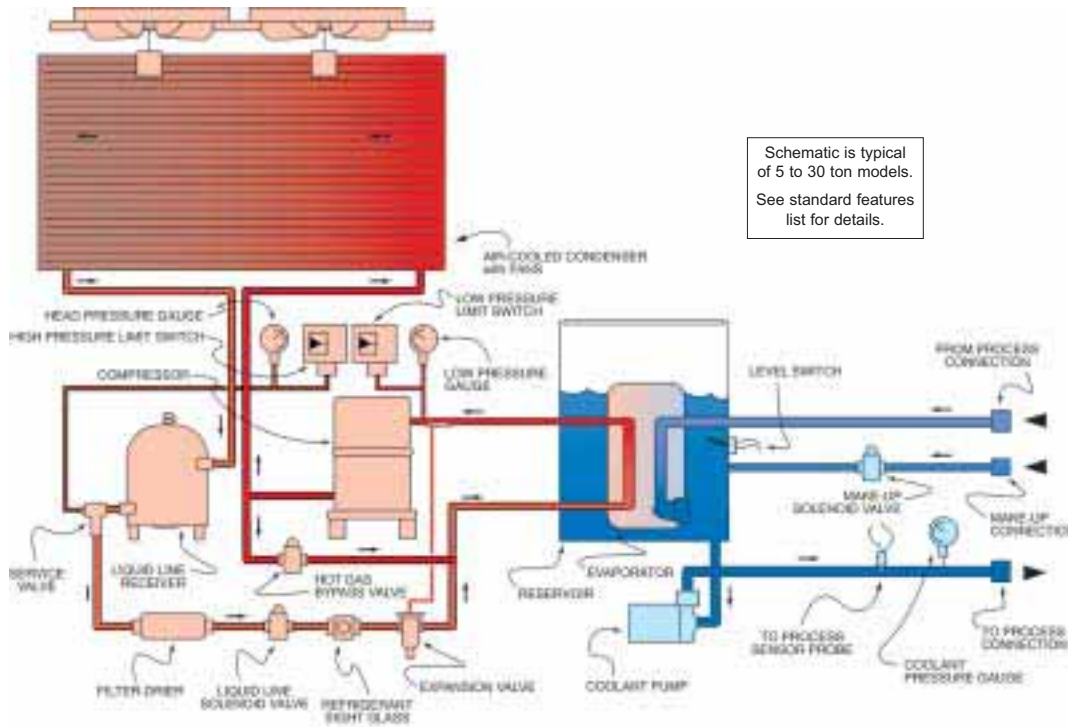
Features that are normally considered optional are built in as standard in an engineered package. The chiller is designed for applications involving a wide range of flow rates, fluctuating or intermittent loads, changing process conditions and maximum temperature control.

Temperature control is achieved by using a sophisticated microprocessor control instrument designed and manufactured exclusively for the Advantage chiller. The control instrument maintains precise temperature control while protecting the system components.

Air-Cooled chillers utilize plant ambient air to extract heat from the refrigeration circuit. Fan or blowers move the plant air across generously sized finned condenser coils to permit full rated capacity at design conditions.

All gauges and control instrument information is conveniently located permitting instant diagnosis of performance.

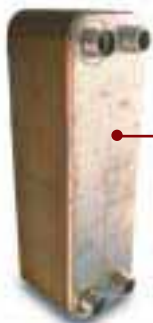
The Advantage Maximum air-cooled liquid chiller is delivered fully charged, tested and ready to run right out of the box.



## COMPONENTS

Phone: 317-887-0729

Web: [www.AdvantageEngineering.com](http://www.AdvantageEngineering.com)



**HIGHLY EFFICIENT EVAPORATORS...**  
High efficiency stainless steel brazed plate evaporators are used in 2 - 40 ton models. Copper tube-in-tube evaporators are used in 1/4 to 1-1/2 ton models. Non-ferrous construction prevents rusting.

**HIGH PERFORMANCE COOLANT PUMPS...**

Brass positive displacement pumps are used in 1/4 - 1-1/2 ton models. Centrifugal pumps are used in 2 - 40 ton models. All pumps are selected to provide turbulent flow to promote heat transfer.



**AIR-COOLED CONDENSER...**

Finned tube condensers are used in all models. Propeller fans in 1/4 - 15 ton models generate airflow. Centrifugal fans that allow air ducting are standard in 20 - 30 ton models and optional in 5 - 15 tons models

# WATER-COOLED : 2 - 40 TONS

Advantage Maximum water-cooled chillers are designed for processes requiring liquid temperatures from 20°F to 70°F. Needing a source of electrical power, coolant fluid, secondary condensing water and a process load to be cooled and controlled, the portable unit can be installed and operated easily.

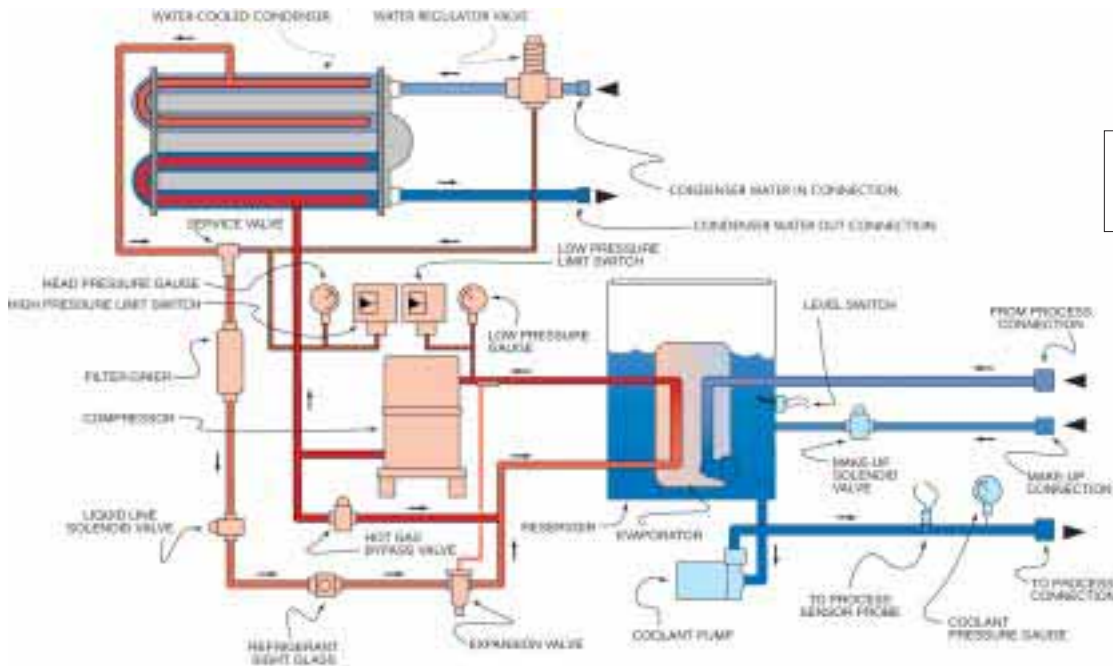
Features that are normally considered optional are built in as standard in an engineered package. The chiller is designed for applications involving a wide range of flow rates, fluctuating or intermittent loads, changing process conditions and maximum temperature control.

Temperature control is achieved by using a sophisticated microprocessor control instrument designed and manufactured exclusively for the Advantage chiller. The control instrument maintains precise temperature control while protecting the system components.

Water-Cooled chillers utilize a secondary plant water source such as cooling tower or city water to extract heat from the refrigeration circuit. These units operate independently of plant ambient air temperature to provide full rated capacity even during the hottest weather. And, water-cooled chillers won't add extra heat to your building.

All gauges and control instrument information is conveniently located permitting instant diagnosis of performance.

The Advantage Maximum water-cooled liquid chiller is delivered fully charged, tested and ready to run right out of the box.



Schematic is typical of 5 to 40 ton models. See standard features list for details.

Phone: 317-887-0729

Web: [www.AdvantageEngineering.com](http://www.AdvantageEngineering.com)

**WATER-COOLED CONDENSER...** Shell and tube condensers with water regulator valves are used in 15 - 40 ton water-cooled models. 1 - 10 ton models use tube-in-tube condensers.



**LIFETIME WATER RESERVOIR...** All Maximum chillers include a non-rusting vented water reservoir sized to support the flow rate of the chillers. The reservoir helps provide a stable water temperature under varying load conditions.



**RUGGED COMPRESSORS...** Reliable Copeland scroll and reciprocating compressors provide long life and energy efficient operation.



**REFRIGERANT COMPONENTS...**

All refrigerant components used in Advantage Maximum chillers are selected for historic reliability and performance. Components include high & low pressure limit switches, freestat, expansion valve, relief valve, filter dryer and sight glass/moisture indicator.

# STANDARD FEATURES & OPTIONS

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## CONSTRUCTION:

- 1/4 to 2 ton Air-Cooled Models  
& 1 to 3 ton Water-Cooled Models
  - Stainless steel frame and enclosure panels
- 3 to 30 ton Air-Cooled models  
& 5 to 40 ton Water-Cooled models
  - Powder coated steel upright frame member
  - Galvanized steel cross frame members
  - Powder coated lift-off enclosure panels
  - Lift-off molded front panel
- All Models:
  - Casters for portability

## REFRIGERANT CIRCUIT:

- Compressors:
  - Hermetic reciprocating in 1/4 to 2 tons models
  - Hermetic scroll in 3 to 30 ton models
  - 20 to 30 ton models use tandem compressors
  - Accessible hermetic discus in 40 ton models
- Air-Cooled Condensers
  - Finned tube
  - Fan generated air flow in 1/4 to 15 ton models
  - Blower generated air flow in 20 to 30 ton models
- Water-Cooled Condensers
  - Tube in tube in 1 to 10 ton models
  - Shell and tube in 15 to 40 ton models
  - Water regulating valve in 5 to 40 ton models
- Filter-drier
- Liquid line solenoid valve
- Refrigerant sight glass with moisture indicator
- Thermostatic expansion valve
- Microprocessor controlled hot gas by-pass capacity control system in 2 to 40 ton models
- Evaporators
  - Copper tube-in-tube in 1/4 to 1-1/2 ton models
  - Stainless steel brazed plate in 2 to 40 ton models

## PRESSURE GAUGES (2-40 ton models):

- Refrigerant high pressure
- Refrigerant low pressure
- Coolant pressure gauge

## COOLANT CIRCUIT:

- Coolant pump
  - Brass positive displacement pump in 1/4 to 1-1/2 ton models
  - High flow stainless steel centrifugal pump in 2 to 30 tons models (up to 5 HP)
  - High flow cast iron centrifugal pump on the 40 ton model (above 5 HP)
- Large capacity insulated non-ferrous reservoir
- Reservoir level sight tube
- Automatic water make-up system in 5 to 40 ton models
- Standard NPT process fittings

## LIMIT DEVICES:

- High refrigerant pressure
- Low refrigerant pressure
- Refrigerant pressure relief valve
- Process pump motor overload
- Instrument control circuit fuse

## ELECTRICAL:

- Process pump motor starter
- Compressor motor
- Fused transformer
- Power entry terminal block

## WARRANTY:

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

# OPTIONS

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## REFRIGERANT CIRCUIT:

- Compressor CCPR valve for setpoints above 70°F
- Centrifugal blower generated air flow for air-cooled condensers in 5 to 10 ton models
- Low temperature models to 0°F LFT

## COOLANT CIRCUIT:

- Overhead piping - factory or field installation
- No tank for gravity return applications
- Low flow bypass circuit - manual or automatic
- Process line shut-off valves
- Larger process pump

## ALARMS:

- Audible alarm
- Visual / audible alarm beacon

## WARRANTIES:

- Extended compressor warranty

## ELECTRICAL:

- Branch circuit fusing
- UL rated electrical enclosures

# CUSTOM MACHINE DESIGNS

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We have over 40 standard models that cover 1/4 to 40 tons of cooling capacity. If one of these standard models does not match your application requirements, then we can design a model that will. Our Engineering Department is staffed with experienced machine designers to provide you with a refined machine built to your exact specifications.

**Factory Phone: 317-887-0729**

# CONTROL INSTRUMENTS

**MAXIMUM portable chillers** are supplied with tailor made microprocessor control instruments that control and monitor all aspects of the chiller operation to assure accurate control and dependable operation. The controls are designed to support the specific and unique requirements of process cooling in an industrial environment.

All **ADVANTAGE** tailor made microprocessor control instruments include a **4 year warranty**. After the warranty period we'll repair your board for an economical fee should it require repair.

## For chillers from 1/4 to 1-1/2 tons

The standard chiller control for 1/4 to 1-1/2 ton Maximum chillers provides basic temperature and machine status monitoring.



### FEATURES:

- Accurate control
- Large & Bright LED temperature display
- Digital Setpoint selection with soft touch keys
- Illuminated Chiller On / Off switch
- Compressor On light
- Basic chiller diagnostics with Refrigeration Fault light
- Capacity control light

## For chillers from 2 to 40 tons

The standard chiller control for 2 to 40 ton Maximum chillers provides basic temperature and machine status monitoring.

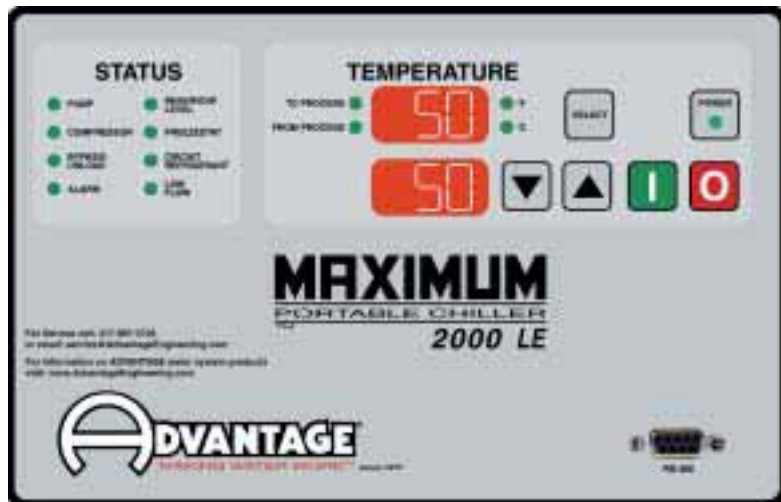


### FEATURES

- Accurate control
- Large & Bright LED temperature display
- Digital Setpoint selection with soft touch keys
- Illuminated Chiller On / Off switch
- Compressor On light
- Basic chiller diagnostics with Refrigeration Fault light
- Capacity control light

## Optional Control Instrument For chillers from 5 to 40 tons

The "LE" Control offers advanced temperature monitoring and machine status and diagnostic lights with network communications capability. Processors who desire additional diagnostics and temperature display will find the "LE" Series control the perfect choice.



### FEATURES

- Accurate control
- Large & Bright LED displays for To Process, From Process and Setpoint temperatures
- Digital Setpoint selection with soft touch keys
- Power On indication light
- Machine status and diagnostic lights
- Network ready RS-485 communications port
- Soft touch keys for Setpoint selection and chiller On / Off control
- Additional functions provided for display and alarm capability

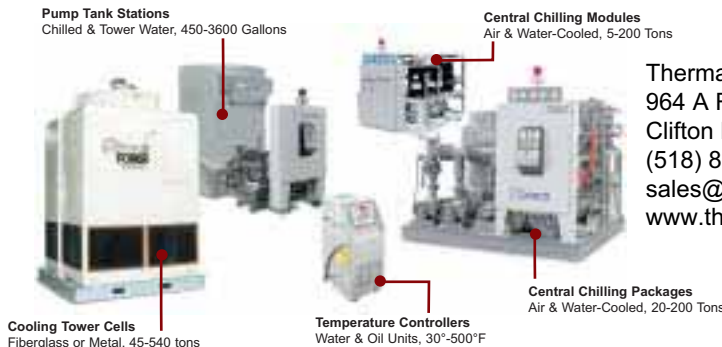
# SPECIFICATIONS

## SPECIFICATIONS<sup>1</sup>

		AIR-COOLED UNITS															WATER-COOLED UNITS												
		.25A	.33A	.5A	.75A	1A	1.5A	2A	3A	4A	5A	7.5A	10A	15A	15A	20A	25A	30A	1W	2W	3W	5W	7.5W	10W	15W	20W	25W	30W	40W
CAPACITY	Tons <sup>2</sup>	.25	.32	.41	.70	.98	1.35	2	3	4	5	7 1/2	10	15	15	20	25	30	1	2	3	5.1	8.2	10.9	15	21	26	30	40
	KW <sup>2</sup>	.89	1.12	1.44	2.46	3.44	4.73	7.0	10.5	14.0	17.5	26.3	35.1	52.6	52.6	70.2	87.7	105.3	3.5	7.0	10.5	17.9	28.8	38.2	52.6	73.7	91.2	105.3	140.4
COMPRESSOR	HP	.25	.33	.50	.75	1	1.5	2	3	4	5	7 1/2	10	15	15	20(2)	13(2)	15(2)	1	2	3	5	7 1/2	10	15	10(2)	13(2)	15(2)	40
	Type <sup>3</sup>	r	r	r	r	r	r	r	sc	sc	sc	sc	sc	sc	sc	sc	sc	sc	r	r	r	sc	sc	sc	sc	sc	sc	sc	d
PROCESS PUMP	HP	1/4	1/4	1/2	1/2	1/2	1/2	3/4	3/4	3/4	2	2	2	3	3	3	5	5	1/2	3/4	3/4	2	2	2	3	3	5	5	7 1/2
	GPM	.6	.8	.9	1.7	2.4	3.6	4.8	7.2	9.6	12	18	24	36	36	48	60	72	2.4	4.8	7.2	12	19	26	36	48	60	72	92
	PSI	60	60	60	60	60	60	32	30	38	52	50	48	55	55	50	59	57	60	32	30	52	48	47	55	50	59	57	61
	Type <sup>4</sup>	p	p	p	p	p	p	c	c	c	c	c	c	c	c	c	c	c	p	c	c	c	c	c	c	c	c	c	s
	Construction <sup>5</sup>	b	b	b	b	b	b	ss	ss	ss	ss	ss	ss	ss	ss	ss	ss	b	ss	ss	ss	ss	ss	ss	ss	ss	ss	c	
CONNECTION SIZES	Process (to/from)	1/2	1/2	1/2	1/2	1/2	1/2	3/4	1	1 1/4	1 1/4	1 1/4	1 1/4	2	2	2	2	2	1/2	3/4	3/4	1 1/4	1 1/4	1 1/4	2	2	2	2	2 1/2
	Condenser	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1/2	1/2	3/4	3/4	3/4	1	1 1/4	1 1/4	1 1/2	1 1/2	2 1/2
	Make-Up	--	--	--	--	--	--	--	--	--	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	--	--	--	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
AIR-COOLED	Type <sup>6</sup>	f	f	f	f	f	f	f	f	f	f	f	f	f	b	b	b	b	--	--	--	--	--	--	--	--	--	--	--
CONDENSER	CFM x 1000	.24	.25	.53	.77	.71	1.1	2	2.5	5	5	10	10	15	15	20	20	30	--	--	--	--	--	--	--	--	--	--	--
	S.P. <sup>7</sup>	--	--	--	--	--	--	--	--	--	--	--	--	--	1.35	1.35	1.35	1.35	--	--	--	--	--	--	--	--	--	--	--
	Ambient <sup>8</sup>	90	90	90	90	90	90	95	95	95	95	95	95	95	95	95	95	95	--	--	--	--	--	--	--	--	--	--	--
WATER-COOLED	City <sup>9</sup>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.5	3	6	8	14	17	23	32	39	45	60
CONDENSER	Tower <sup>9</sup>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3	6	9	15	28	43	45	63	78	90	120
FULL LOAD <sup>10</sup>	115/1/60	12	15	16	22	24	--	--	--	--	--	--	--	--	--	--	--	--	22	--	--	--	--	--	--	--	--	--	--
AMPERAGE	230/1/60	--	--	8	11	12	13	--	--	--	--	--	--	--	--	--	--	--	11	--	--	--	--	--	--	--	--	--	--
	230 volt	--	--	--	--	--	--	13	31	25	38	48	55	74	85	120	158	178	--	12	18	32	40	48	68	88	116	124	166
	460 volt	--	--	--	--	--	--	7	16	12	19	24	27	37	42	60	79	89	--	6	9	16	20	24	34	44	59	62	83
	575 volt	--	--	--	--	--	--	--	--	--	12	19	22	30	36	48	64	72	--	--	--	13	16	20	28	36	46	50	66
TANK CAPACITY (gallons)	Holding	4	4	4	4	4	4	7 1/2	7 1/2	25	25	25	25	65	65	65	65	65	4	7 1/2	7 1/2	25	25	25	65	65	65	65	65
	Tank Lid <sup>11</sup>	s	s	s	s	s	s	o	o	s	s	s	s	s	s	s	s	s	s	o	o	s	s	s	s	s	s	s	s
	Auto Water Make Up <sup>11</sup>	o	o	o	o	o	o	o	o	o	s	s	s	s	s	s	s	s	o	o	o	s	s	s	s	s	s	s	s
DIMENSIONS (inches)	Height	33	33	33	33	33	37	30	43	60	60	60	60	96	96	96	96	96	33	30	30	40	40	40	57	57	57	57	57
	Width	18	18	18	18	18	19	37	34	34	34	34	34	58	58	58	58	58	18	37	37	32	32	32	34	34	34	34	34
	Depth	24	24	24	24	24	25	24	40	40	40	56	56	70	70	70	70	70	24	24	24	40	40	40	80	80	80	80	80
WEIGHTS (pounds)	Shipping <sup>12</sup>	185	185	205	240	245	255	415	845	855	700	1250	1300	2300	2300	2600	2800	2900	245	445	470	550	600	625	1500	1900	2100	2200	2500

Notes 1. Since product innovation and improvement is our constant goal, all features and specifications are subject to change without notice or liability. Selection of certain optional features may change listed specifications. 2. Tons or Kilowatts capacity at 12,000 Btu/hr/ton @ 50°F LWT and 115°F condensing for air-cooled and 105°F condensing for water-cooled models. Capacity multipliers are 50°F - 1.00; 40°F - .80; 30°F - .60; 20°F - .40. The minimum recommended operating temperature when no glycol is used is 48°F. 3. r = hermetic reciprocating, sc = hermetic scroll, d = semi-hermetic discus. 4. p = positive displacement, c = centrifugal. 5. b = brass, ss = stainless steel, c = cast iron. 6. f = fan, b = blower. 7. Static pressure in inches of water. 8. Design ambient conditions. Loss of capacity and/or difficulty operating will occur at higher ambient. 9. City water requirements based on 60°F water supply at 20 PSI differential with a clean condenser. Tower water requirements based on 85°F water supply at 20 PSI differential with a clean condenser. 10. Full load amps are higher than run load amps and must be used for sizing disconnects and supply wiring. 11. s = standard, o = optional. 12. Approximate unit weight crated for shipment.

## OTHER PRODUCTS



Thermal Products, Inc.  
964 A Route 146  
Clifton Park, NY 12065  
(518) 877-0231  
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www.thermalproducts.com

## Model Designator for Maximum Portable Chillers

**M1 - 10A**

Maximum Series with M1 Control

Condenser Type  
A: Air-Cooled  
W: Water-Cooled

Tons of Capacity



Phone: 317-887-0729 Web: www.AdvantageEngineering.com

ADVANTAGE PRODUCTS: TEMPERATURE CONTROLLERS • PORTABLE CHILLERS • CENTRAL CHILLERS • PUMP TANK STATIONS • TOWER SYSTEMS • FILTERS

ADVANTAGE ENGINEERING, INC. 525 East Stop 18 Road Greenwood, IN 46142 phone: 317-887-0729 fax: 317-881-1277  
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