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

Portable Chillers
- Air & Water-Cooled
  - 20° - 80°F

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

Pump Tank Stations
- Chilled or Tower Water
  - 20° - 3600 gallons

Cooling Tower Cells
- 45 - 540 tons

Fluid Coolers
- Hybrid
- Dry

Filters

Heat Exchangers

Heat Recovery Units

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.

MAXIMUM SERIES
- Air & Water-Cooled
- 1/4 to 40 Tons
- 20°F to 80°F
- Using Non-Ozone Depleting Refrigerants

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

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

APPLICATIONS
Maximum Series portable chillers can be used on a variety of process applications that require 20°F to 80°F chilled water.
Air-Cooled and Water-Cooled units can be installed and operated easily. All Maximum Series portable liquid chillers are delivered fully charged, tested and ready to run right out of the box. Temperature control is achieved by using a “tailor made” microprocessor control instrument designed and manufactured exclusively for the Advantage chiller. The control instrument maintains precise temperature control while protecting the system components. All gauges and control instrument information is conveniently located permitting instant diagnosis of performance.

**COMPONENTS**

**AIR-COOLED**

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.

**WATER-COOLED**

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.

Hot gas bypass valve is excluded on units with Digital Scroll compressor.

Schematic is typical of 5 to 40 ton models. See standard features list for details.
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 ... models designated as “M1”.
The standard chiller control for 2 to 40 ton Maximum chillers equipped with hot gas bypass capacity control, providing 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 with Digital Scroll Compressors ... models designated as “M1D”. 5, 10 and 15 tons models.
The “M1D” Control is provided on chillers using the Copeland Scroll Digital™ compressor.

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
• Custom control software included to operate digital capacity control feature
• Provides energy efficient capacity modulation from 20 - 100%.

Phone: 317-887-0729        Web: 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 scroll, digital 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, freezestat, expansion valve, relief valve, filter dryer and sight glass/moisture indicator.
**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 1 1/2 ton models
  - Hermetic scroll in 2 to 40 ton models
- Air-Cooled Condensers
  - Finned tube
  - Fan generated air flow in 1/4 to 20 ton models
  - Blower generated air flow in 25 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 all models
- Refrigerant sight glass with moisture indicator
- Thermostatic expansion valve
- Microprocessor controlled 50% hot gas by-pass capacity control system in 2, 3, 4, 7.5, 20, 25, 30 & 40 ton models
- Microprocessor controlled 20-100% energy saving capacity modulation with Digital Scroll compressor on 5, 10 & 15 ton standard models.
- Evaporators
  - Copper tube-in-tube in 1/4 to 1 1/2 ton models
  - Stainless Steel Brazed Plate in 2 - 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
- 5 kA RMS SSCR

**WARRANTY:**
- 1 Year covering parts and labor
- Free preventative maintenance check in the 2nd year
- 4 Years on the control instrument

**CONTROL INSTRUMENT:**
- Accurate
- LED displays
- Digital Setpoint selection
- Power On light
- Machine status and diagnostic lights
- Soft touch keys for Setpoint selection and chiller On / Off control
- RS-485 with SPI communications protocol port
- Additional functions provided for display and alarm capability
- Not compatible with digital scroll compressors

**REFRIGERANT CIRCUIT:**
- Centrifugal blower generated air flow for air-cooled condensers (5 to 20 tons)
- Low temperature models to 0°F LFT
- Tandem scroll compressors

**COOLANT CIRCUIT:**
- Overhead piping kit - prevents tank overflow when overhead piping is used
- 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

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**CUSTOM MACHINE DESIGNS**

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.
### SPECIFICATIONS

#### Maximum Air-Cooled Portable Chillers .25 - 30 Tons

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Notes:
1. M1 = units with fixed displacement scroll compressors. M1D = models with digital scroll compressors.
2. Tons or Kilowatts capacity at 12,000 Btu/hr/ton @ 50°F LWT, 95°F ambient and 115°F condensing. Operating at temperatures below 50°F will reduce chiller capacity.
3. The minimum recommended operating temperature when no glycol is used is 48°F.
4. R = hermetic reciprocating. SC = hermetic scroll. DSC = Copeland Digital Scroll.<sup>TM</sup>
5. P = positive displacement. C = centrifugal.
8. Static pressure in inches of water.
9. Design ambient conditions. Loss of capacity and/or difficulty operating will occur at higher ambient.
10. Full load amps are higher than run load amps and must be used for sizing disconnects and supply wiring.
12. Approximate unit weight for shipment.
13. 575 volt, 5 ton digital compressors are not available. A fixed displacement compressor is included.

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.

---

Model Designator for Maximum Portable Chillers

### M1D-10A

- **Maximum Series Digital Scroll Compressor** Included on select models. Models not so equipped will not show "D" in the model #.
- **Condenser Type** A: Air-Cooled W: Water-Cooled
- **Tons of Capacity** 10

---

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

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

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### SPECIFICATIONS

**Maximum Water-Cooled Portable Chillers 5 - 40 Tons**

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<th>MODEL</th>
<th>M1 / M1D</th>
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<th>2W</th>
<th>3W</th>
<th>5W</th>
<th>7.5W</th>
<th>10W</th>
<th>15W</th>
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<td>2,100</td>
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</table>

**Notes**

1. M1 = units with fixed displacement scroll compressors. M1D = models with digital scroll compressors.
2. Tons or Kilowatts capacity at 12,000 Btu/hr/ton @ 50°F LWT, 85°F condensing water and 105°F condensing. Operating at temperatures below 50°F will reduce chiller capacity. The minimum recommended operating temperature when no glycol is used is 48°F.
4. P = positive displacement. C = centrifugal.
6. City water requirements in gallons per minute (GPM) based on 60°F water supply at 20 PSI differential with a clean condenser.
7. Tower water requirements gallons per minute (GPM) based on 85°F water supply at 20 PSI differential with a clean condenser.
8. Full load amps are higher than run load amps and must be used for sizing disconnects and supply wiring.
10. Approximate unit weight quoted for shipment.
11. 575 volt, 5 ton digital compressors are not available. A fixed displacement compressor is included.

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---

**Model Designator for Maximum Portable Chillers**

<table>
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<tr>
<th>T</th>
<th>Condenser Type</th>
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<td>Air-Cooled</td>
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<tr>
<td>D</td>
<td>Digital Scroll Compressor</td>
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</table>

Maximum Series

Digital Scroll Compressor

Included on select models

Models not so equipped will not show ‘D’ in the model #.

---

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

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