REMOTE REFRIGERATION SYSTEMS

M-SERIES CONDENSING UNITS & E-SERIES EVAPORATOR COILS
Master-Bilt’s M-Series models are specially designed to function in high temperature environments. Components are pre-wired and factory mounted. Package options on the basic standard remote unit include a factory pre-charged system with quick-connect liquid and suction line sets up to 50 ft. M-Series units are available in hermetic and compliant scroll compressor models, with or without matching evaporator coils. They are factory assembled on a galvanized steel angle leg base and range from 1/4 to 15 HP. For needs above 15 HP, please consult factory for the best option, including high efficiency rack systems.

Generously-sized condenser for dependable performance.

Head pressure control valve ensures proper operation in low ambient conditions.

Standard weather hood for protection against the elements.

Compliant, energy efficient scroll compressors featured exclusively in low temp units for added reliability.

For the full list of features and options click or tap here

Dedicated medium temp outdoor condensing units meet the DOE requirement of a minimum AWEF rating of 7.61 (Btu/W-h).

Components may vary depending on horsepower and application. Consult factory for verification of standard and optional supplied components.
M-series condensing units can be provided with a matching evaporator coil for a complete remote refrigeration system.

E-Series evaporator coils are ready to mount in position and are available with air (off cycle) defrost, electric defrost or optional reverse cycle defrost when equipped with the Master Controller Reverse Cycle Defrost system. Each is also furnished standard with a properly sized expansion valve and room thermostat. Energy efficient EC motors are standard on single phase coils.

Electric defrost models feature defrost termination/fan delay controls and drain line heaters.

A pre-mounted solenoid at the evaporator is available as an option.

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**BUILT WITH THE INSTALLER IN MIND**

Master-Bilt systems are designed for simple, efficient installation. Tubing connections and electrical wiring, for example, can be easily traced through the circuitry. Following these clear pathways, an installer can have a system operational very quickly, saving the customer time and money.

Master-Bilt systems are also designed to be easily serviced should the need arise. Each component is chosen based on its ability to interchange and its availability for installers and service technicians. Individual components are conveniently located on the condensing unit base for easy access.

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Electrical wiring in Master-Bilt condensing units is easily traceable for the installer.
Master Controller Option

The Master Controller Reverse Cycle Defrost (MCRCD) system is an electronic controller for Master-Bilt walk-in cooler and freezer refrigeration systems. It is designed to increase food safety while reducing energy and installation costs.

**ENERGY SAVINGS**

- Patented design saves up to 27% more energy than an all-mechanical system.
- Reverse cycle technology reduces defrost energy usage by up to 80% over traditional electric heaters.
- Demand Defrost technology initiates reverse cycle defrosts only as needed, allowing further energy savings.
- Defrost time, when initiated, is also greatly shortened. The average defrost time for a freezer with electric heaters is 20-30 minutes. Reverse cycle can perform a defrost in as little as 3-5 minutes in a freezer or 1½-2 minutes in a cooler. Shorter defrost times also help protect food integrity.
- Save 2-4% more energy with the fan cycle option which saves electricity by cycling the evaporator fans during the compressor’s off cycle.

**CONNECTIVITY**

- Web2Walk-In software loaded on each controller allows remote monitoring and programming using any device with a wireless internet or cabled (cat 5) connection.
- No need for a service tech to climb onto a roof or enter the walk-in to monitor or adjust the refrigeration system.
- Constant access to data allows users to improve refrigeration system performance and avoid service issues.

**FOOD SAFETY**

- The reverse cycle defrost function helps prevent food spoilage because it completely and rapidly removes the ice build-up in evaporator coils that lowers performance. Reverse cycle works from the inside of the coil outward compared to less efficient methods that work from the outside in.
- Should there be an issue with the refrigeration system, operators will know instantly through error codes and data provided through online Web2Walk-In software.

**INSTALLATION SAVINGS**

- No wiring is required between evaporator coils and condensing units (two pairs of low voltage wires, typically thermostat cables, are required to operate the Reverse Cycle Defrost valve and the compressor relay at the condensing unit).
- A system with MCRCD uses less refrigerant with no winter charge necessary.
- In some cases, the savings on wiring installation alone covers the cost of the MCRCD.
## Model Number Guide

### Condensing Units

#### Equipment Variation
- **A**: Standard Unit
- **H**: Heated & Insulated Receiver
- **E**: Electronic Defrost
- **M**: Master Controller
- **R**: Master Controller

#### Voltage
- **A**: 115/60/1
- **B**: 208-230/60/1
- **C**: 208-230/60/3
- **D**: 460/60/1
- **E**: 460/60/3
- **F**: 200-220/50/3
- **G**: 380-420/50/3
- **J**: 380/50/1
- **K**: 200-220/50/1

#### Controller Type
- **M**: Master Controller
- **S**: Super Controller
- **T**: Thermostat

### Refrigerant
- **D**: R448A/R449A
- **V**: R407A
- **Z**: R404A

### Horsepower
- 002 = 1/4 HP
- 003 = 1/3 HP
- 005 = 1/2 HP
- 007 = 3/4 HP
- 010 = 1 HP
- 012 = 1-1/4 HP

### Optional Items
- **S**: Pre-Assembled With TXV & Temp Control Mounted
- **L**: TXV Mounted, Temp Control & Solenoid Mounted & Wired
- **D**: Slave Evaporator (Master Controller Only)
- **Q**: Quick Connect

### Evaporator Coils

#### Type Variation
- **E1**: Low Profile, 6FPI, 10°TD
- **E2**: Medium Profile, 6 FPI, 10°TD
- **E3**: High Profile, 6 FPI, 10°TD
- **E4**: All Profile, 4 FPI, 10°TD
- **L1**: Dual Flow, 6 FPI, 10°TD
- **L2**: Low Velocity, 6 FPI, 10°TD
- **L3**: Ultra-Low Profile, 10°TD

#### Refrigerant
- **D**: R448A/R449A
- **V**: R407A
- **Z**: R404A

### Temperature Range/TXV Type
- **M**: Medium Temp, +5° to +55°F
- **L**: Low Temp, 0° to -30°F
- **X**: Extra-Low Temp, <-30°F

### Capacity in Hundreds
(Assumed 10° TD)

<table>
<thead>
<tr>
<th>Capacity Correction Factors (Multiplier)</th>
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<tbody>
<tr>
<td>Room</td>
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<tr>
<td>0°F Room</td>
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<tr>
<td>10°F Room</td>
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<td>20°F Room</td>
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### Defrost Scheme
- **A**: Air Defrost
- **E**: Electric Defrost
- **R**: Reverse Cycle
- **G**: Reverse Cycle With Hot Gas Drain Pan Loop (Rack Applications Only)

### Factory Pre-Assembly of Components
- **1**: Pre-Assembled With TXV & Temp Control Mounted
- **2**: TXV Mounted, Temp Control & Solenoid Mounted & Wired
- **3**: Slave Evaporator (Master Controller Only)
- **Q**: Quick Connect