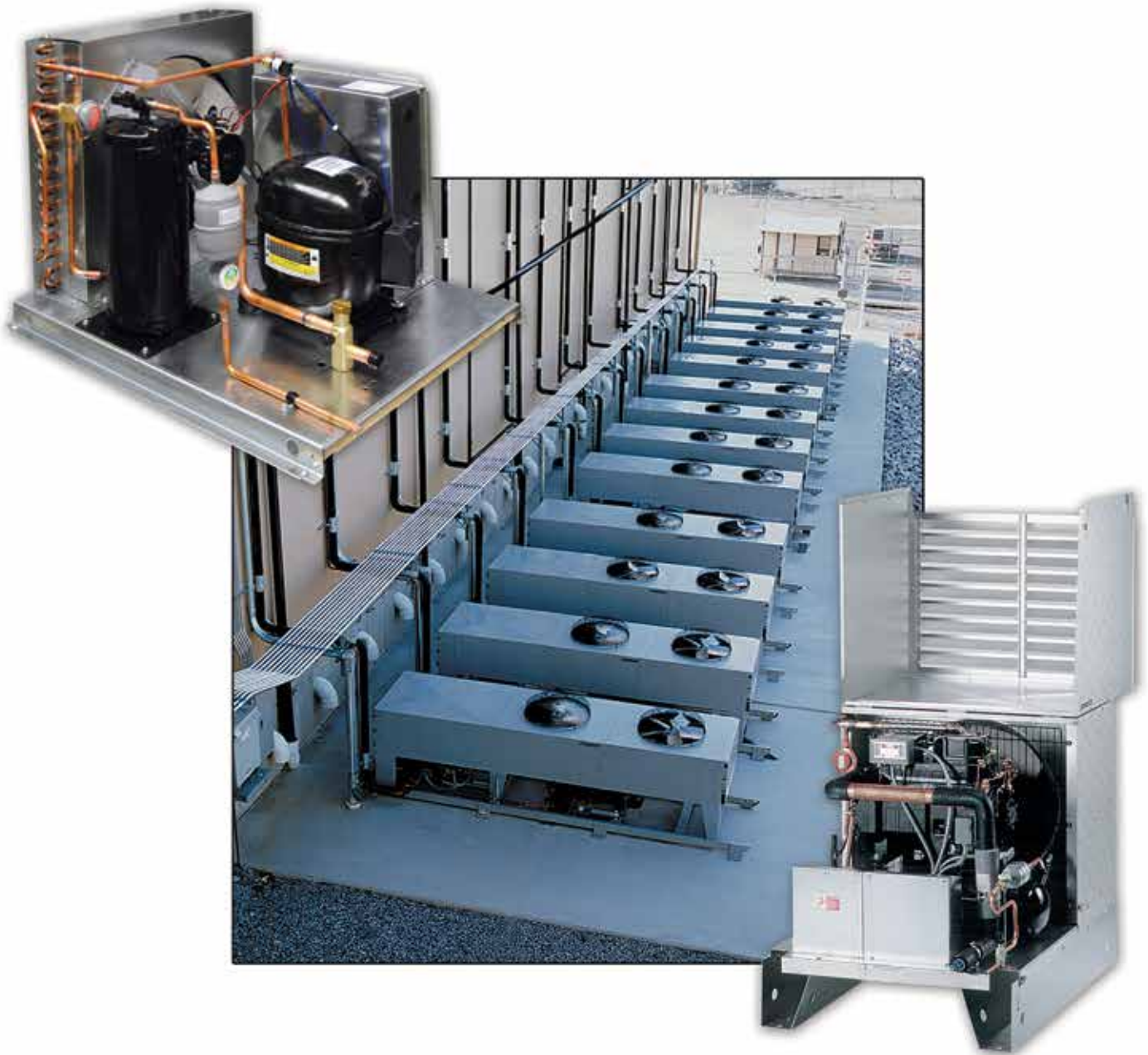




**MB MASTER-BILT<sup>®</sup>**  
™ Refrigeration Solutions



B-SERIES & M-SERIES  
REMOTE  
REFRIGERATION SYSTEMS



# B-Series Built-up Remote Condensing Units

Master-Bilt offers one of the most complete condensing units in the built-up B-Series. These units are completely factory assembled on a galvanized steel base. Accessories are pre-wired and mounted, resulting in minimal field installa-

tion time. All that is required is electrical hookup, piping, connection, evacuation, leak testing and charging to become operational. Master-Bilt's B-Series systems, available with compliant scroll or Discus™ compressors, range from 7 H.P. to 40 H.P.



LIQUID LINE VIBRATION ABSORBER  
(SEMI-HERMETIC ONLY)



ADJUSTABLE  
DUAL PRESSURE CONTROL



HEAD PRESSURE CONTROL  
(FLOODING VALVE)



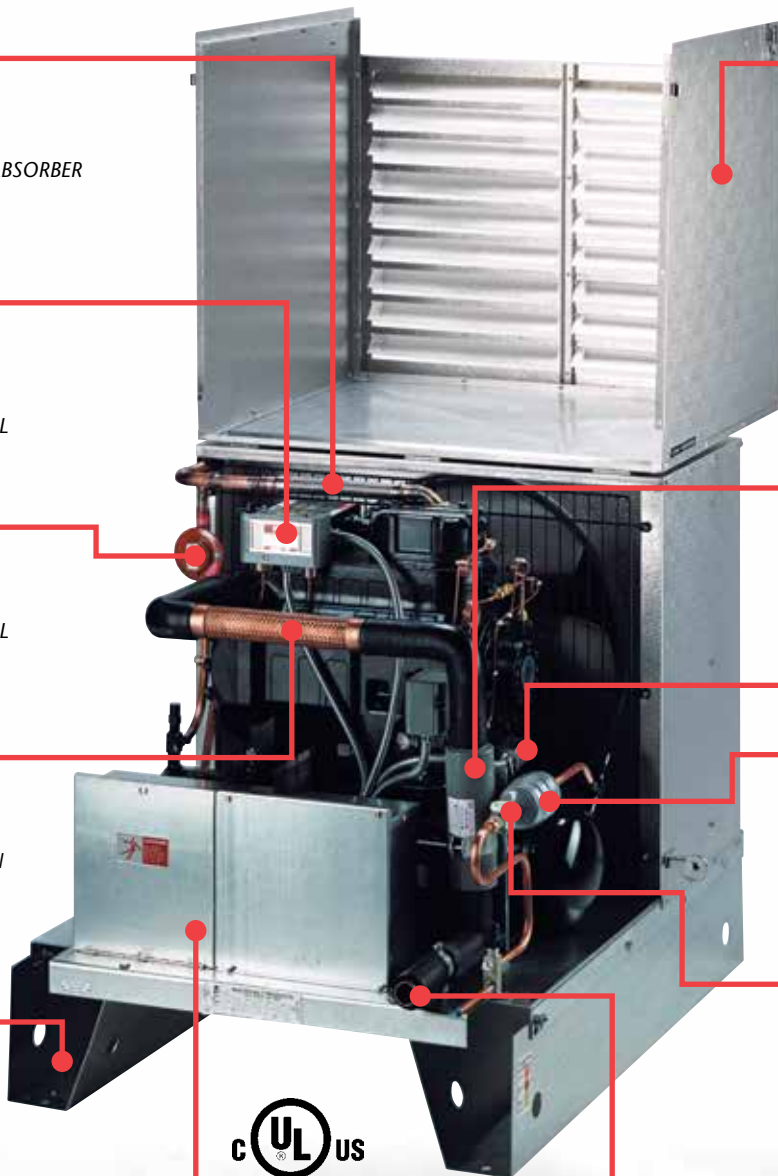
SUCTION LINE VIBRATION  
ABSORBER  
(SEMI-HERMETIC ONLY)



HEAVY-DUTY CHANNEL  
LEG BASE WITH  
LOCKABLE HOOD



PRE-WIRED ELECTRICAL  
CONTROL PANEL WITH  
TIMER AND CIRCUIT  
BREAKER OR FUSE BLOCK



SNAP-DOWN  
HINGED WEATHER HOOD



SUCTION LINE FILTER



CRANKCASE HEATER



LIQUID LINE  
FILTER/DRIER



SIGHT GLASS



LIQUID & SUCTION LINE KIT  
WITH SERVICE VALVE

Components pictured are typical with the model BCLZ0300C condensing unit. Components may vary depending on horsepower and application. Consult factory for verification of standard and optional supplied components.



## ADDITIONAL STANDARD COMPONENTS

(Pre-wired and mounted except as noted)

- Liquid line solenoid valve (shipped loose)
- Timer
- Generously-sized condenser (for 105° to 110°F ambient)
- Large liquid receiver (for maximum 250 ft. line run)
- Defrost heater contactor (when required)
- PSC condenser fan motors
- Compressor contactor
- One year limited compressor warranty

## OPTIONALLY AVAILABLE

- Water-cooled units
- Special voltages
- Oil separator
- Insulated and heated receiver (thermostatically controlled)
- Suction accumulator (shipped loose)
- Coated condenser coils
- Phase loss/low voltage monitor
- Factory pre-assembled evaporator coil (includes factory pre-mounting of temperature control and expansion valve)
- Pre-mounted solenoid at evaporator
- Master Controller Reverse Cycle Defrost electronic control system
- Extended four year limited compressor warranty

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

## Built With The Installer In Mind

Over the years we have found that ease of installation is the secret to selling Master-Bilt® refrigeration systems. Our tubing connections and electrical wiring, for example, can be easily traced through the circuitry. Following these clear pathways, the installer can have a system operational very quickly, saving the customer time and money.

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



*Electrical wiring in Master-Bilt® condensing units is easily traceable for the installer.*

# M-Series Remote Condensing Units

Master-Bilt®'s M-Series is very similar to the B-Series in components and options. However, M-Series models are specially designed to function in high temperature environments.

As with the B-Series, 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.

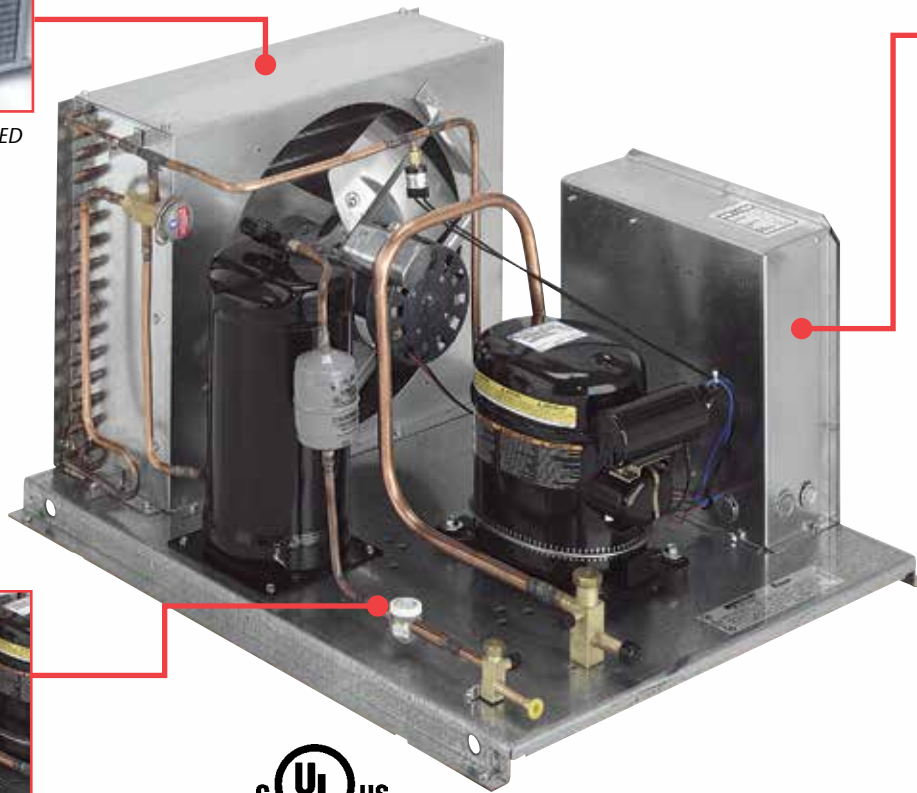
M-Series units are available in hermetic and compliant scroll compressor models, with or without matching evaporator coils. They are factory assembled on a galvanized steel angle leg base and range from 1/2 to 6 H.P.



GENEROUSLY-SIZED  
CONDENSER



STANDARD  
PRE-WIRING KIT



STANDARD  
PRE-PIPING KIT



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.*

## ADDITIONAL STANDARD COMPONENTS

(Pre-wired and mounted except as noted)

- Liquid line and suction line vibration absorbers (eliminators) for semi-hermetic units only
- Preset non-adjustable high and low pressure control (High pressure control and low pressure control are non-adjustable in medium temp units. The low pressure control is adjustable in low temp units.)
- Crankcase heater
- Head pressure control (flooding valve)
- Suction service valve
- Heavy-duty angle leg base
- Liquid line filter/drier
- Pre-wired electrical control panel
- Timer
- Sight glass
- Liquid and suction line kit with service valve
- Compressor contactor
- Defrost heater contactor (when required)
- Rifled tubes in condenser add efficiency
- PSC condenser fan motors
- Large liquid receiver (for max. 100 ft. line run)
- Liquid line shut-off valve for easy change of filter
- One year limited compressor warranty

## OPTIONALLY AVAILABLE

- Special voltages
- Insulated and heated receiver (thermostatically controlled)
- Suction accumulator (shipped loose)
- Coated condenser coils
- Oil separator
- Phase loss/low voltage monitor
- Factory pre-assembled evaporator coil (includes factory pre-mounting of thermostatic air control and expansion valve)
- Factory pre-charged system with quick connect liquid and suction line sets up to 50 ft. (specify length when ordering)
- Adjustable low pressure control for medium and high temp units
- Dual pressure control (adjustable)
- Circuit breaker
- Suction filter
- Fan cycling switch
- Pre-mounted solenoid at evaporator
- Liquid line solenoid valve (shipped loose)
- Timer for medium temp units
- Heavy-duty rack base
- Master Controller Reverse Cycle Defrost electronic control system
- Extended four year limited compressor warranty

## Diverse Options To Suit Your Needs

Versatility is an important aspect of Master-Bilt® refrigeration. Our systems range from 1/2 to 40 H.P. with numerous options and accessories to enhance convenience in installation and operation.

B-Series condensing units feature highly efficient scroll or Discus™ compressors while M-Series models are equipped with either scroll or hermetic.



Master-Bilt has a refrigeration system for every need from reach-ins to walk-ins to refrigerated warehouses.





# E-Series Evaporator Coils

**B**oth B- and 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.



*Evaporator coil with the optional Master Controller Reverse Cycle Defrost System installed.*

# Master Controller Reverse Cycle Defrost Option

The Master Controller Reverse Cycle Defrost (MCRCD) system is an electronic controller for Master-Bilt® walk-in cooler and freezer refrigeration systems.

**Its patented design saves up to 27% more energy than an all-mechanical system.**

The MCRCD system is highly efficient since it regulates an electric expansion valve in response to evaporator superheat and

return air temperature. Additionally, integrated Reverse Cycle Defrost completely removes frost build-up in coils and works much faster than electric defrost heaters (see sidebar below). Standard Demand Defrost technology initiates reverse cycle defrosts only as needed, allowing further energy savings.

The MCRCD system is also designed to reduce installation labor and material costs:



Master-Bilt®'s Web2Walk-In software gives users constant access to refrigeration system performance data. Web2Walk-In can be accessed from any device with an internet connection, including PC, Mac, smartphone, or tablet.



The Master Controller Reverse Cycle Defrost interface is mounted to an evaporator coil.

- All electrical components are factory pre-wired and tested
- No line voltage is required between evaporator coils and condensing units (two pairs of low voltage wires, typically thermostat cables, are re-quired to operate the Reverse Cycle Defrost valve and the compressor relay at the condensing unit)
- The walk-in doesn't have to be at operating temperature to confirm or set superheat (pre-programmed)
- No need to install a thermostat and solenoid or set a defrost schedule
- In some cases, the savings on wiring installation alone covers the cost of the MCRCD.

## Reverse Cycle Defrost: Energy-Saving Innovation

Increase defrost efficiency with Master-Bilt's patented\* Reverse Cycle Defrost method. When the Master Controller's Demand Defrost determines a defrost is necessary, a reverse cycle valve installed on the refrigeration system's condensing unit is activated and high temperature refrigerant flow is reversed. The refrigerant flows back through the evaporator coil heating it along its entire length, completely eliminating frost build-up.

Reverse cycle technology **reduces defrost energy usage by up to 80% over traditional electric heaters.**

Defrost time is also greatly shortened. The average defrost time for a freezer with electric heaters is 20 to 30 minutes. Reverse cycle can perform a completely "clean" defrost in as little as 3 to 5 minutes in a freezer or 1 1/2 to 2 minutes in a cooler.

Because the defrost is so rapid, there's no noticeable increase in freezer temperature and product temperature rise is also significantly less.

(\*U.S. patent no. 7,073,344)



For the latest product information and specifications go to [www.master-bilt.com/products/products.htm](http://www.master-bilt.com/products/products.htm).



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Due to continuous product enhancements, we reserve the right to change specifications without notice.

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