

## Installation Instruction

Transport | Installation | Operation | Maintenance



|                     |                              |
|---------------------|------------------------------|
| Product line:       | Commercial Air Coolers       |
| Series description: | Slim Compact Reach in Cooler |
| Series:             | C_C                          |

[guntner.com/us](https://guntner.com/us)

## Contents

---

|                                            |           |
|--------------------------------------------|-----------|
| <b>1. Warranty statement.....</b>          | <b>3</b>  |
| <b>2. General safety information .....</b> | <b>4</b>  |
| <b>3. Inspection .....</b>                 | <b>5</b>  |
| <b>4. Unloading .....</b>                  | <b>5</b>  |
| <b>5. Mounting .....</b>                   | <b>5</b>  |
| <b>6. Refrigerant piping.....</b>          | <b>8</b>  |
| <b>7. Expansion valve .....</b>            | <b>8</b>  |
| <b>8. Drain line .....</b>                 | <b>8</b>  |
| <b>9. Wiring .....</b>                     | <b>9</b>  |
| <b>10. Installation .....</b>              | <b>9</b>  |
| <b>11. Vacuum .....</b>                    | <b>9</b>  |
| <b>12. Start-up.....</b>                   | <b>9</b>  |
| <b>13. Maintenance and service.....</b>    | <b>9</b>  |
| 13.1 Fan and heaters .....                 | 9         |
| 13.2 Drain pan .....                       | 9         |
| 13.3 Inspection and maintenance.....       | 9         |
| <b>14. Electrical data .....</b>           | <b>13</b> |
| <b>15. Spare parts .....</b>               | <b>19</b> |
| <b>16. Troubleshooting .....</b>           | <b>20</b> |
| <b>17. Reference information .....</b>     | <b>23</b> |

## 1. Warranty Statement

The supplier warrants the product to be free from defects in workmanship and materials under normal usage for the period outlined below. The supplier further warrants against defects in workmanship and materials of the product for a period of 24 months from the date of purchase (the "Warranty Period"), provided that the product is correctly installed and operated within the recommended limits of the manufacturer's technical documentation.

The supplier at its option shall repair or replace, free of charge to the purchaser, all components of the product which are or become defective during the Warranty Period as a result of defects in design, workmanship or materials, ordinary wear and tear excluded, provided, however, that:

- The product is applied correctly
- All operating and installation instructions for the product are complied with
- System component and piping design is in accordance with good refrigeration practice
- Nitrogen or an inert gas is introduced into the piping during the brazing of the piping installation

This warranty shall not include ordinary maintenance or cleaning of the product, or defects in the installation of the product. This warranty also does not cover physical damage to the product during transit, after purchase of the product but before installation.

The purchaser must request repair or replacement of the defective component through a written notice to the supplier, and must provide the purchaser with the time and opportunity to make such repair or replacement. Otherwise, the supplier will be freed from liability for the defect.

Any transport and exchange costs for the repair or replacement shall be borne by the purchaser. The supplier shall also not be liable for costs incurred in dismantling or fitting replacement parts or for any independent inspection undertaken by the purchaser.

The purchaser shall return any allegedly defective goods, postage or freight paid, to the supplier at the address below. Upon receipt of the goods and inspection thereof the supplier shall repair or replace, at the supplier's discretion, the defective components and shall return the same to the purchaser, return postage and freight paid. This shall constitute full compliance of the supplier's warranty obligations hereunder.

The seller accepts no liability for the direct or indirect consequences of any modifications of or repairs to the product made out by the purchaser or by a third party without the prior consent of the supplier.

This warranty applies only to the repair or replacement of components of the product and expressly excludes responsibility for damage and consequential damages not occurring to the product itself.

This warranty is the purchaser's exclusive remedy. The supplier expressly acknowledges that it shall not be liable to the purchaser or any client of the purchaser for any direct or indirect damages, injury to persons or property or any consequential damage or loss of profits arising from defective goods or workmanship or from any other cause whatsoever.

To obtain warranty service or to ask any questions regarding the foregoing, please contact our office:

Güntner US LLC  
3601 Algonquin Road Suite 925  
Rolling Meadows, Illinois 60008  
847- 781-0900 Tel  
847-781-0901 Fax  
dg-us-service@guentner.com or [sales.us@Guntner.com](mailto:sales.us@Guntner.com)  
Online support: <https://www.guntner-solutions.us/contact>

## 2. General safety information

### WARNING

All installation and maintenance procedures must be performed by qualified personnel already familiarized with the equipment.

### WARNING

All field wiring should match the requirements of the equipment, as well as any local or national codes.

### WARNING

Coil edges and other sharp objects should be met with caution, as they can cause serious injury. Fan blades are especially sharp, and therefore should be handled only while wearing protective gloves.

### WARNING

All power sources should be disconnected before any type of service work is performed on the equipment. For cleaning the equipment, reinstall the drain pan after every cleaning session. Failure to follow these steps can result in damaged equipment or personal injury.

### WARNING

Inhalation of certain refrigerants can be harmful, or even fatal. Failure to implement proper detection devices, ventilation, and procedures can result in serious injury or death. Ventilation of all refrigerants should follow all related regulations, as certain refrigerants are harmful to the environment. For more information, refer to any local or national codes that may apply.

### WARNING

High temperatures can cause damage to the equipment. The expansion valve must be covered in heat absorbent material and the suction line sensor removed while brazing the refrigerant connections.

### NOTICE

Never use the refrigerant compressor to evacuate the equipment. Never start the refrigerant compressor if it is in vacuum.

### NOTICE

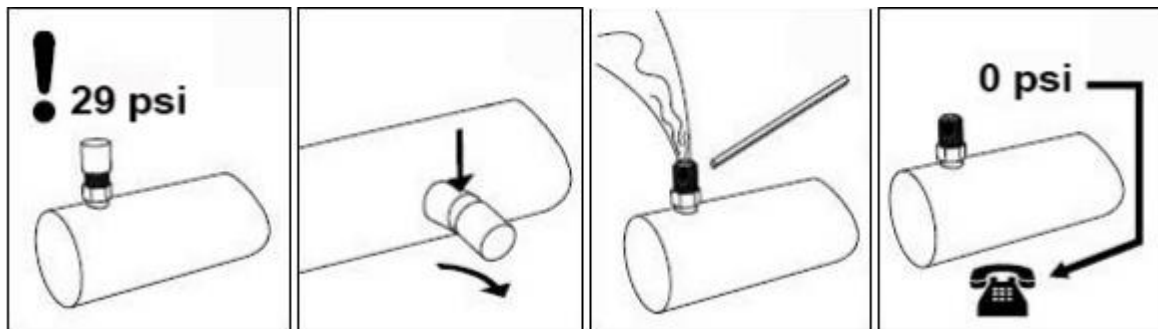
Fan motors are sealed and do not require lubrication.

### 3. Inspection

Each shipment should be carefully checked against the bill of lading at time of receipt. The shipping receipt should not be signed until all items listed on the bill of lading have been accounted for.

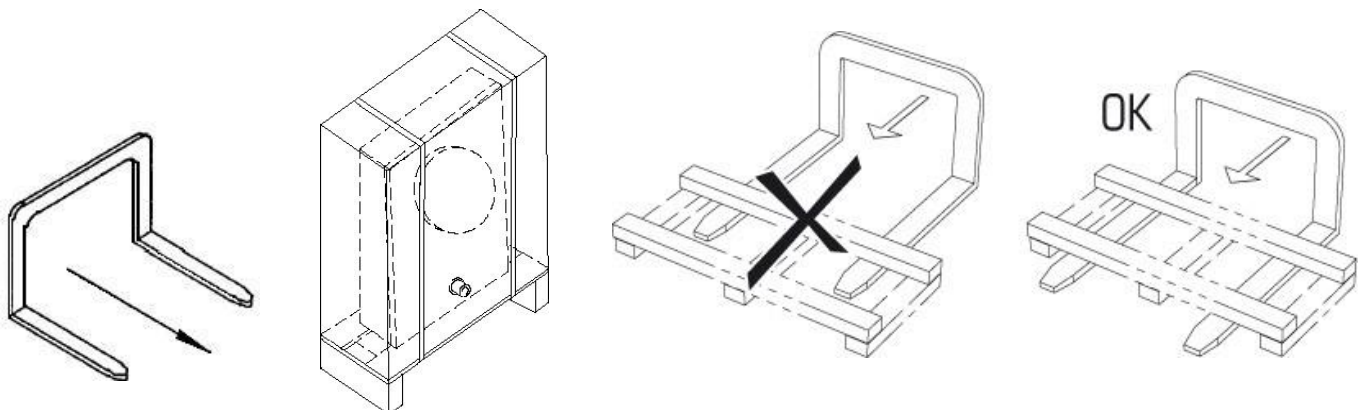
Check carefully for any damage. Any and all shortage or damages should be reported to the delivery carrier. Damaged equipment during shipment becomes the delivery agent's responsibility and should not be returned unless prior approval has been given.

The equipment is pressurized with 29 psi (2 Bar) dry air during manufacturing. If the unit lost pressure during transportation, contact the Sales Department ([sales.us@Guntner.com](mailto:sales.us@Guntner.com)). For special requirement please contact our factory.



### 4. Unloading

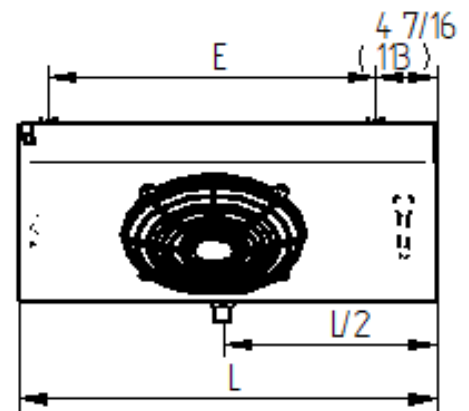
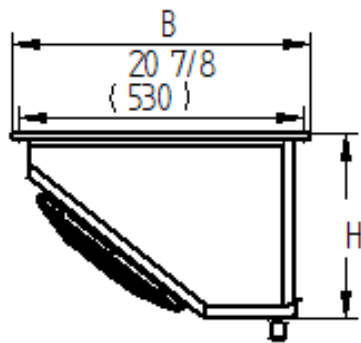
Special care should be taken while unpacking and uncrating equipment so that damage and injury can be prevented. Heavy equipment should be kept on the original pallet until ready for final installation. While using lifting belts, ensure that a spreader bar is used, and that the belts do not compress the sheet metal construction. When using a truck lift, ensure that unit is positioned as shown below.



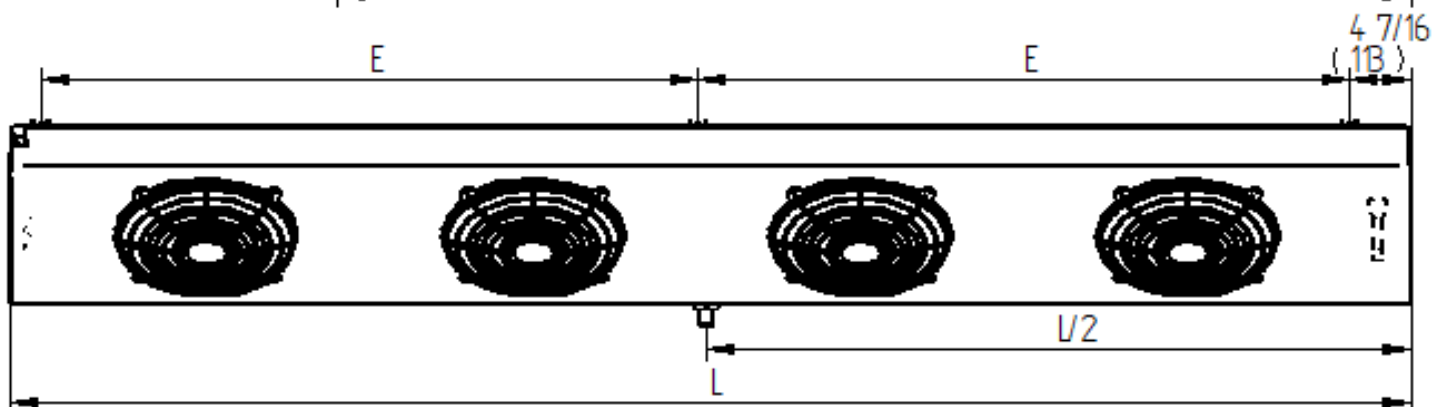
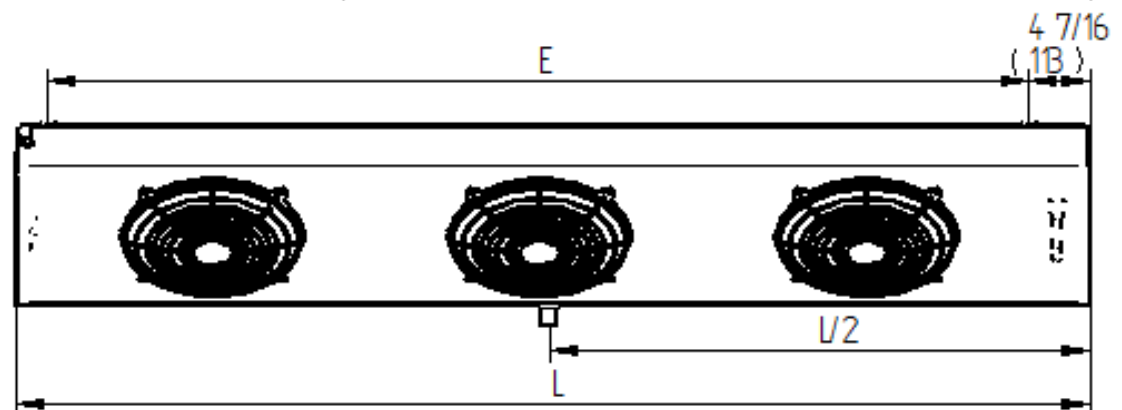
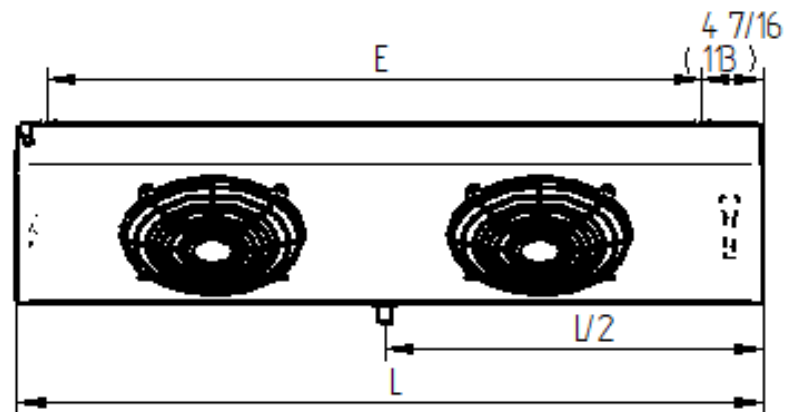
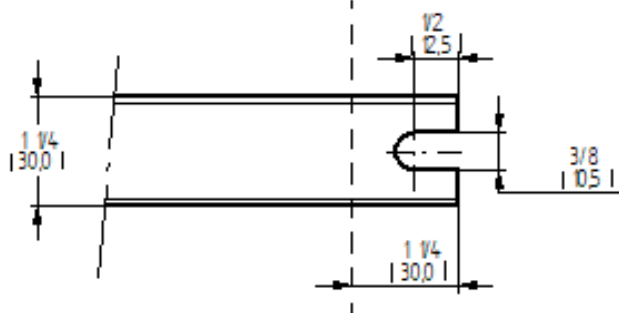
### 5. Mounting

The equipment can be mounted using rod hangers, lag screws and/or bolts. Units should be hung with no degree of inclination so that the condensate drainage can be properly maintained. Proper airflow through the unit is essential for efficient performance and maintenance of design storage temperatures. Never install an evaporator over a doorway.

### Dimensions CAC - CEC – CDC standard



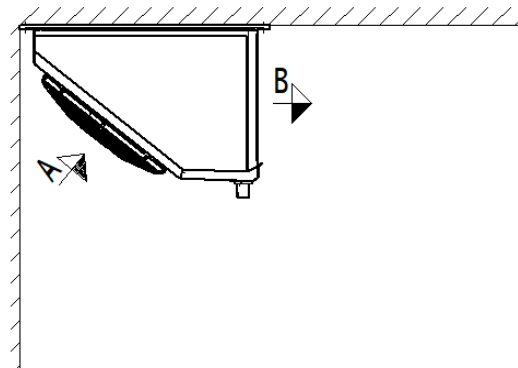
#### Detalle del soporte



## CAC-CEC-CDC Mounting reference

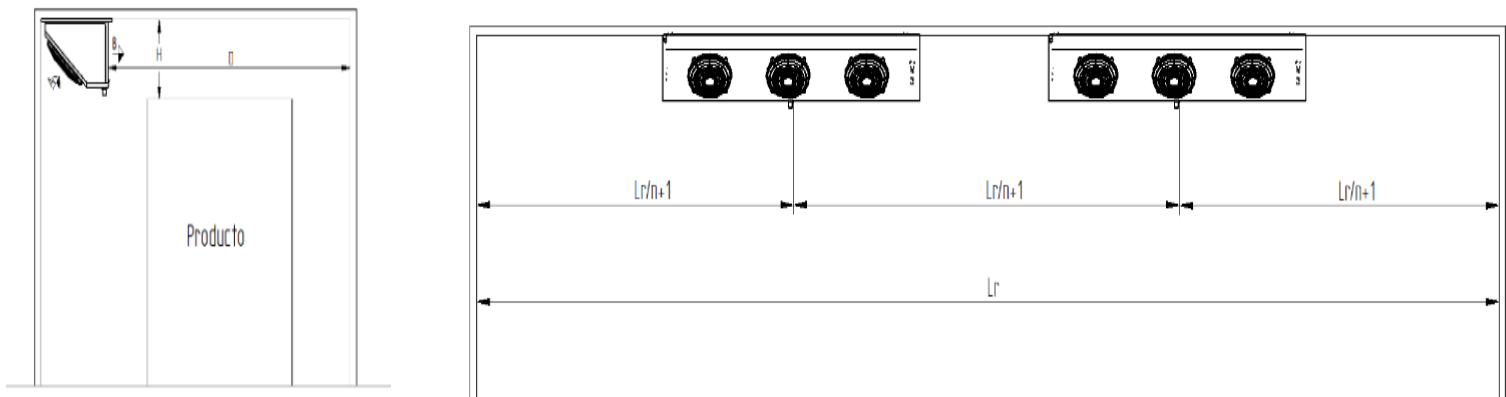
### NOTICE

1. It's not required a minimum distance between the wall and cooler air inlet side (side A).
2. It's important to leave the air discharge free of obstructions (side B) to a minimum distance of 2 meters.
3. The product cannot be at the same height of the air discharge; it can block the air throw.



A= Air in  
B = Air out

| Model                                                             | Fans       | Connections |            |           | Approximate weight | Dimensions (inch-mm) |          |       |         |     |         |     |           |       |
|-------------------------------------------------------------------|------------|-------------|------------|-----------|--------------------|----------------------|----------|-------|---------|-----|---------|-----|-----------|-------|
|                                                                   |            | Liquid OD   | Suction OD | Drain NPT |                    | L                    | B        | H     | E       |     |         |     |           |       |
|                                                                   |            |             |            |           |                    |                      |          |       |         |     |         |     |           |       |
| Physical information CAC 6.3 FPI (Air defrost)                    |            |             |            |           |                    |                      |          |       |         |     |         |     |           |       |
| CAC 0057.0                                                        | 1          | 1/2"        | 1/2"       | 3/4"      | 27.6               | 12.5                 | 31-1/2"  | 800   | 21-7/8" | 555 | 9-1/2"  | 241 | 24-13/16" | 630   |
| CAC 0081.0                                                        | 1          | 5/8"        | 3/4"       | 3/4"      | 35.3               | 16.0                 | 31-1/2"  | 800   | 21-7/8" | 555 | 13-1/2" | 344 | 24-13/16" | 630   |
| CAC 0116.0                                                        | 2          | 5/8"        | 3/4"       | 3/4"      | 48.5               | 22.0                 | 55-1/8"  | 1,400 | 21-7/8" | 555 | 9-1/2"  | 241 | 31-1/4"   | 1,230 |
| CAC 0165.0                                                        | 2          | 5/8"        | 7/8"       | 3/4"      | 61.7               | 28.0                 | 55-1/8"  | 1,400 | 21-7/8" | 555 | 13-1/2" | 344 | 31-1/4"   | 1,230 |
| CAC 0173.0                                                        | 3          | 5/8"        | 3/4"       | 3/4"      | 69.4               | 31.5                 | 78-3/4"  | 2,000 | 21-7/8" | 555 | 9-1/2"  | 241 | 72-1/16"  | 1,830 |
| CAC 0250.0                                                        | 3          | 5/8"        | 1-1/8"     | 3/4"      | 88.2               | 40.0                 | 78-3/4"  | 2,000 | 21-7/8" | 555 | 13-1/2" | 344 | 71-1/16"  | 1,830 |
| CAC 0330.0                                                        | 4          | 5/8"        | 1-1/8"     | 3/4"      | 114.6              | 52.0                 | 102-3/8" | 2,600 | 21-7/8" | 555 | 13-1/2" | 344 | 47-13/16" | 1,215 |
| Physical information CEC 6.3 FPI / CDC 3.6 FPI (Electric defrost) |            |             |            |           |                    |                      |          |       |         |     |         |     |           |       |
| CEC 0034.0                                                        | CDC 0024.0 | 1           | 1/2"       | 1/2"      | 24.3               | 11.0                 | 31-1/2"  | 800   | 21-7/8" | 555 | 9-1/2"  | 241 | 24-13/16" | 630   |
| CEC 0045.0                                                        | CDC 0036.0 | 1           | 1/2"       | 1/2"      | 26.5               | 12.0                 | 31-1/2"  | 800   | 21-7/8" | 555 | 13-1/2" | 241 | 24-13/16" | 630   |
| CEC 0070.0                                                        | CDC 0051.0 | 1           | 5/8"       | 3/4"      | 35.3               | 16.0                 | 31-1/2"  | 800   | 21-7/8" | 555 | 13-1/2" | 344 | 24-13/16" | 630   |
| CEC 0092.0                                                        | CDC 0072.0 | 2           | 5/8"       | 3/4"      | 48.5               | 22.0                 | 55-1/8"  | 1,400 | 21-7/8" | 555 | 9-1/2"  | 241 | 31-1/4"   | 1,230 |
| CEC 0130.0                                                        | CDC 0100.0 | 2           | 5/8"       | 7/8"      | 61.7               | 28.0                 | 55-1/8"  | 1,400 | 21-7/8" | 555 | 13-1/2" | 344 | 31-1/4"   | 1,230 |
| CEC 0213.0                                                        | CDC 0155.0 | 3           | 5/8"       | 1-1/8"    | 88.2               | 40.0                 | 78-3/4"  | 2,000 | 21-7/8" | 555 | 13-1/2" | 344 | 71-1/16"  | 1,830 |
| CEC 0265.0                                                        | CDC 0200.0 | 4           | 5/8"       | 1-1/8"    | 114.6              | 52.0                 | 102-3/8" | 2,600 | 21-7/8" | 555 | 13-1/2" | 344 | 47-13/16" | 1,215 |



A = Air entrance side  
 B = Air discharge side  
 D = Distance for air discharge (2 meters minimum)  
 H = Unit height to installation  
 n = Number of units inside the cooling chamber  
 Lr = Cooling chamber length

### IMPORTANT CONSIDERATIONS FOR UNIT INSTALLATION:

- 1.- Do not install the unit above or next to an access door to the cooling chamber.
- 2.- Do not put products in front of the cooler. Never obstruct the air throw discharge of the cooler.
- 3.- Do not install coolers in front of each other in distances less than the air throw from the unit, consult the manufacturer.
- 4.- In the case of electric defrost units; make sure to leave a free space of at least the length of the unit on the electric connection side to remove the heaters in case of failure.
- 5.- For units with air defrost, the minimum distance between units must be 1 meter.
- 6.- The air cooler must have a free distance of discharge of 2 meters at minimum.

## 6. Refrigerant piping

Type, size and installation of all piping must be in accordance with the recommended and accepted practices for Freon refrigeration applications. All low temperature piping should also be insulated in accordance with standards published by ASHRAE. Suction traps should be used when and if the suction line rises above the unit cooler.

## 7. Expansion valve

For direct expansion units, select an expansion valve in accordance with capacity data and as required by expansion valve manufacturer. Expansion valves with external equalizers should be used. After the temperature has reached design conditions, adjust the expansion valve to obtain 8 to 10° F superheat at the suction line.

Expansion valves are to be installed in accordance with the specific manufacturer's recommendations. Units that require an external equalized expansion valve must have that line connected. Proper location of the bulb is extremely important to the performance of the coil. Good thermal contact to the suction line is also essential.

On solder type valves, a wet cloth wrapped around the valve during installation will protect it from overheating and damage. On multiple evaporator systems, the piping should be arranged such that the flow from any valve cannot affect the bulb of another.

## 8. Drain line

The drain line must be pitched to effectively drain condensate. All drain lines subject to freezing temperatures must have drain line heaters and be insulated. Drain line traps must also be heated to prevent freezing up of the drain line and trap.

## 9. Wiring

All wiring must be done in strict accordance with local and national electrical codes. Fan motor(s), local isolators, electrical heater elements and controllers must be wired in accordance with the electrical wiring diagrams provided.

Use copper conductors of appropriate size only. All electrical installations should only be performed by qualified and authorized personnel.

### CAUTION

For thermal motor protection, the installed thermal contacts must be used and wired according to the circuit diagram attached to the unit

### CAUTION

Use wires as specified to 600V, normally terminations are:

60°C (140°F) for nominal terminals lower than 100 amperes

75°C (167°F) for nominal terminals of 100 amperes or higher

Use only an adequate size copper conductor.

The unit should be adequately connected to physical ground.

Wiring on field should meet local and domestic standards

## 10. Installation

The installation and maintenance of this equipment should be performed only by qualified professional personnel who are familiar with this type of equipment. The equipment is pressurized with dry air at 29 psig approximately. All equipment must be evacuated before charging the system with refrigerant.

All field wiring should be checked and be in strict conformity with the equipment requirements, as well as all national and local codes. Use the name plate electrical data for conductor and fuse sizing. Avoid contact with any sharp edges or sharp coil surfaces. These can be a potential injury hazard. Make sure that all power sources are disconnected before any service work is done on equipment.

### CAUTION

Before starting up unit make sure all accessible electrical parts are secured!

## 11. Vacuum

Proper vacuum is essential prior to charging the refrigerant for the system. This avoids many problems that can arise due to lack of detail within this step. The system should be checked through all cycles to ensure proper operation.

## 12. Start-up

At start-up, the following items should be checked:

- Check all screwed connections.
- Check tube connections, make sure that brackets are in place and connection screws are secured.
- Check electrical connections of motors, heater elements and any additional components, if applicable.
- Run the fans and check the direction of rotation. Make sure that there is no transport damage.
- During the test run observe the equipment and take notice of the following:
  - o Verify silent operation of the fans (bearings, contacts, balance)
  - o Check Power requirements of electrical motors

- o Check for leaks
- o Adjust the expansion valve for correct overheating

- After 24 hours of operation re-check the equipment, especially all rotating parts.

## 13. Maintenance and service

### WARNING

Disconnect all power before service!

### 13.1 Fans and heaters

The only electrical components vulnerable to potential malfunction are the fans, motors, and electrical defrost heaters. In the event of motor or heater failure, the affected motor should be removed from the unit and tested separately. If the motor and/or heaters continue to malfunction, then they will need to be replaced.

### 13.2 Drain pan

Periodic inspection of the drain pan is recommended. Accumulated dirt and dust should be cleaned out with soap and warm water. If a sign of improper drainage is apparent then the drain line pitch, drain line heater (if applicable) and drain trap should be checked for proper operation. Unit can be cleaned using warm water and soap. Special care should be taken when cleaning the unit around the electrical areas including motor, wiring and junction boxes. Water could potentially damage the electrical motor.

### 13.3 Inspection and maintenance

Verify the following points when visually inspecting the equipment:

- Secured screw connections
- Leakages
- Silent operation of the fans
- General state of the unit such as cleanliness and corrosion

The cleaning of the finned heat exchanger is of the utmost importance to ensure smooth operation and long life of the equipment.

#### NOTICE

- There is no general rule how often it should be cleaned. Frequency and method of cleaning depend on the customer and must be determined by the customer's operating personnel.

#### NOTICE

- If need be, ice must be defrosted with water at room temperature of 15°C to 25 °C approximately.  
Never remove the ice mechanically or with metal or sharp objects.

- The equipment is always supplied in a clean condition. If, during installation and/or first operation hours, contamination reaches a state where capacity can be affected, it is necessary that the unit is cleaned before operation.

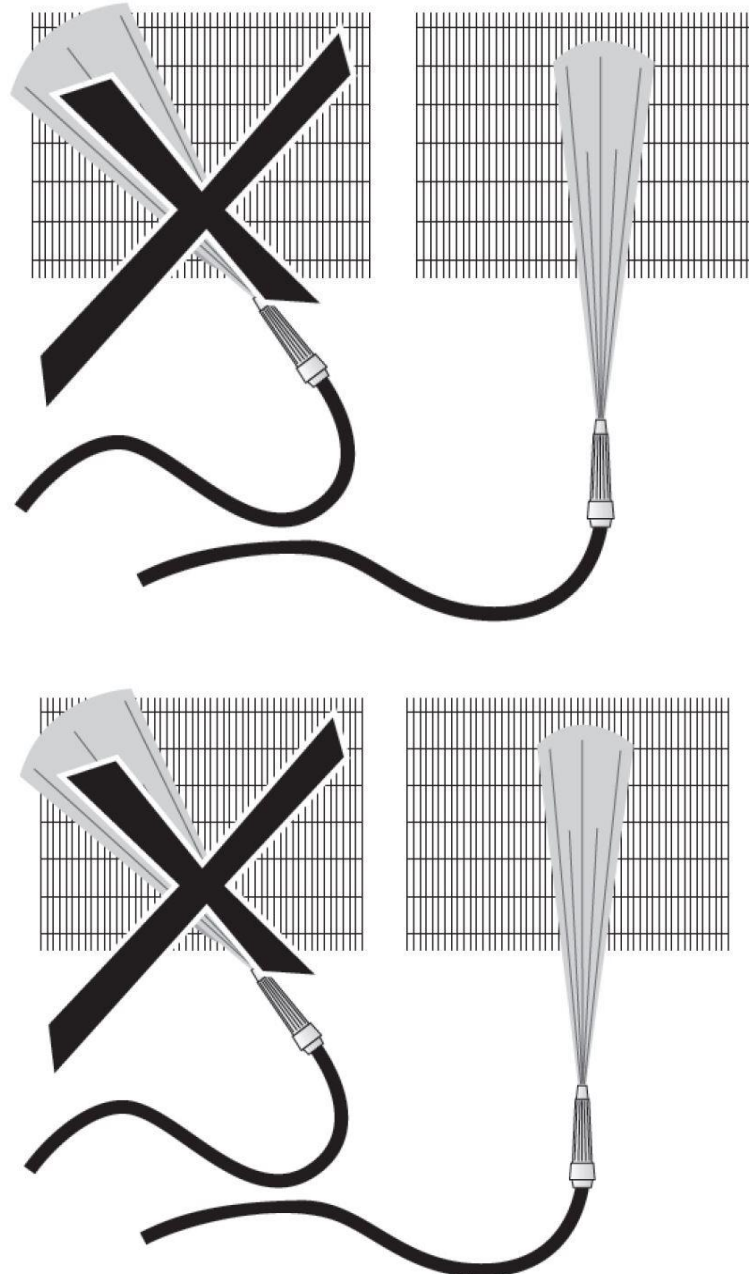
### WARNING

When cleaning the unit, it must be out of operation and all electrical power disconnected!

### Hydraulic Cleaning of the Heat Exchanger:

- For oil containing deposits, it is acceptable to add detergent to the water.
- Make sure not to deform the fins.
- When using chemical substances, make sure they do not corrode the heat exchanger material and casing.

- Rinse the heat exchanger and casing after treatment.
- When cleaning with liquid or compressed air, the fans must be switched off. Do not spray them directly.
- Clean the coil from top to bottom to allow the contamination to drain downwards.
- Cleaning must be continued until all contamination has been removed.
- **Always clean/spray in the direction of the fins. Never clean at 90° to the fins!**
- Maximum allowed vapor pressure is 6 bar.
- Maximum allowed water pressure before the outlet is 80 to 100 bar.



| Preventive maintenance for commercial evaporators                                                                                                                               | Como se requiera | Cada mes | Cada 3 meses | Cada 6 meses | Cada año |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------|--------------|--------------|----------|
| CLEAN using a brush, pressurized water or mild detergent. Make sure the product being used is appropriate for this particular application. <b>NEVER USE ACID-BASED CLEANER.</b> | X                |          |              |              |          |
| CHECK that fans rotate freely and quietly.                                                                                                                                      |                  | X        |              |              |          |
| REPLACE any motor if it vibrates or makes unusual noise.                                                                                                                        | X                |          |              |              |          |
| INSPECT the unit for unusual vibrations in fans or housing. Identify the fan that is causing vibration.                                                                         |                  | X        |              |              |          |
| INSPECT the drain pan to make sure the drain is free from obstructions, including ice buildup.                                                                                  |                  | X        |              |              |          |
| INSPECT for ice buildup on the coil.                                                                                                                                            |                  | X        |              |              |          |
| CHECK defrost controller calibration.                                                                                                                                           | X                |          | X            |              |          |
| CHECK that heaters are working properly during defrost, including the heater of drain piping.                                                                                   |                  |          | X            |              |          |
| VERIFY heater power consumption by comparing it to the data in the electrical diagram                                                                                           |                  |          |              | X            |          |
| CHECK that the drain line is working properly.                                                                                                                                  |                  | X        |              |              |          |
| CHECK that all fan screws are tight. Tighten them if necessary.                                                                                                                 |                  |          |              | X            |          |
| CHECK that there is no corrosion in fins, pan, housing, soldered joints or copper pipes.                                                                                        |                  |          |              |              | X        |
| CHECK that there are no grease stains in coil headers, return bends or fins.                                                                                                    |                  |          |              |              | X        |
| VERIFY there are no possible leaks.                                                                                                                                             |                  |          |              |              | X        |
| CHECK that wiring is in good conditions and protected. Replace protection if necessary.                                                                                         |                  |          |              |              | X        |

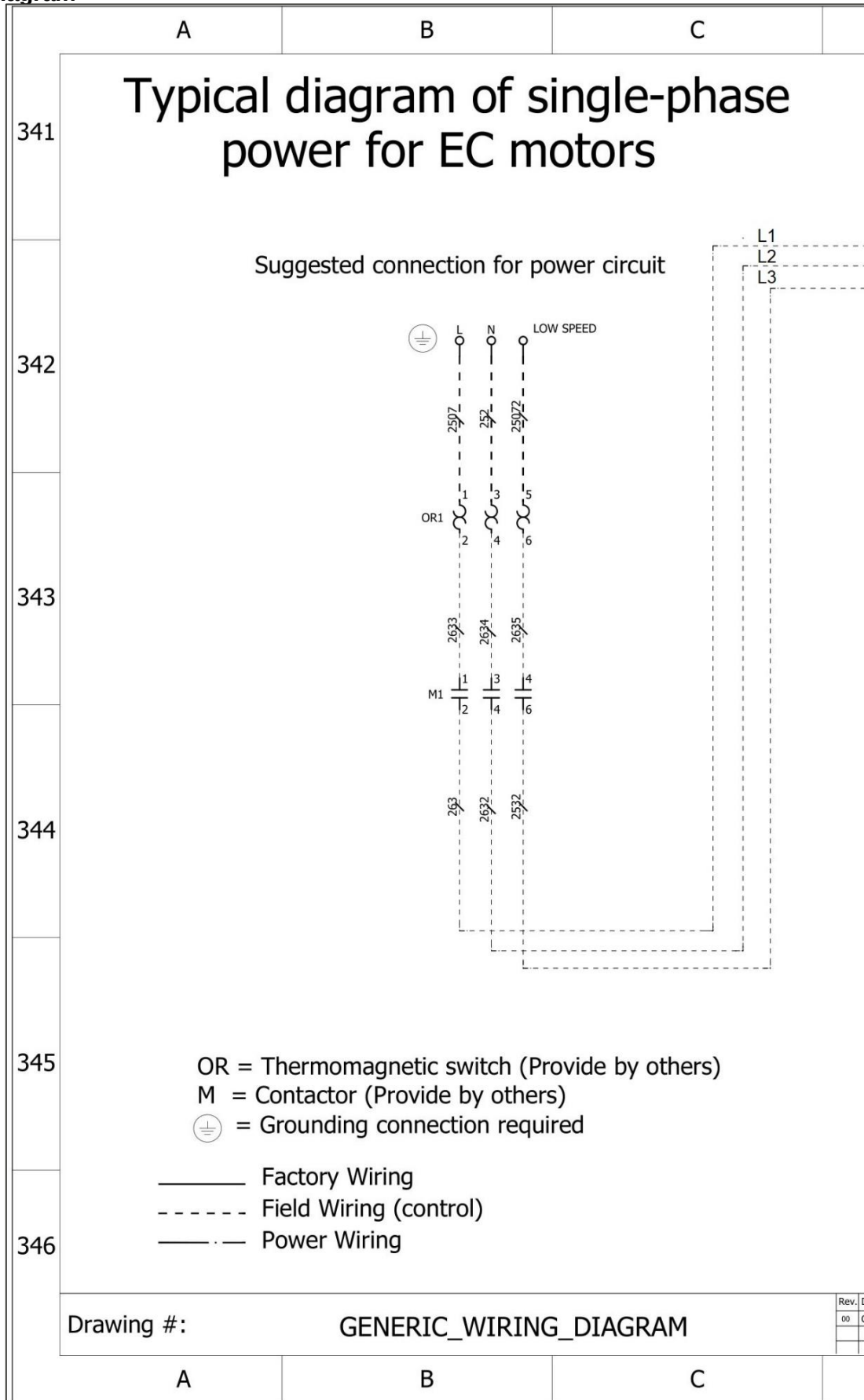
## 14. Electrical data

| Model                   | Fans | Motor EC                |      |            |                         |      |            |
|-------------------------|------|-------------------------|------|------------|-------------------------|------|------------|
|                         |      | 230 V / 1 Ph / 50-60 Hz |      |            | 115 V / 1 Ph / 50-60 Hz |      |            |
|                         |      | Watts                   | Amps | Total Amps | Watts                   | Amps | Total Amps |
| CAC (Air Defrost) 6 FPI |      |                         |      |            |                         |      |            |
| CAC 0057.0              | 1    | 35                      | 0.27 | 0.27       | 35                      | 0.56 | 0.56       |
| CAC 0081.0              | 1    | 35                      | 0.27 | 0.27       | 35                      | 0.56 | 0.56       |
| CAC 0116.0              | 2    | 70                      | 0.27 | 0.54       | 70                      | 0.56 | 1.12       |
| CAC 0165.0              | 2    | 70                      | 0.27 | 0.54       | 70                      | 0.56 | 1.12       |
| CAC 0173.0              | 3    | 105                     | 0.27 | 0.81       | 105                     | 0.56 | 1.68       |
| CAC 0250.0              | 3    | 105                     | 0.27 | 0.81       | 105                     | 0.56 | 1.68       |
| CAC 0330.0              | 4    | 140                     | 0.27 | 1.08       | 140                     | 0.56 | 2.24       |

| Model                          | Fans | Electrical Data                     |      |            |                         |       |
|--------------------------------|------|-------------------------------------|------|------------|-------------------------|-------|
|                                |      | Motor EC<br>230 V / 1 Ph / 50-60 Hz |      |            | Heaters<br>230 V / 1 Ph |       |
|                                |      | Watts                               | Amps | Total Amps | Watts                   | Amps  |
| CEC (Electrical defrost) 6 FPI |      |                                     |      |            |                         |       |
| CEC 0034.0                     | 1    | 35                                  | 0.27 | 0.27       | 600                     | 2.61  |
| CEC 0045.0                     | 1    | 35                                  | 0.27 | 0.27       | 870                     | 3.78  |
| CEC 0070.0                     | 1    | 35                                  | 0.27 | 0.27       | 1,150                   | 5.00  |
| CEC 0092.0                     | 2    | 70                                  | 0.27 | 0.54       | 1,300                   | 5.65  |
| CEC 0130.0                     | 2    | 70                                  | 0.27 | 0.54       | 2,100                   | 9.13  |
| CEC 0213.0                     | 3    | 105                                 | 0.27 | 0.81       | 3,150                   | 13.70 |
| CEC 0265.0                     | 4    | 140                                 | 0.27 | 1.08       | 3,800                   | 16.52 |

| Model                          | Fans | Electrical Data                     |      |            |                         |       |
|--------------------------------|------|-------------------------------------|------|------------|-------------------------|-------|
|                                |      | Motor EC<br>230 V / 1 Ph / 50-60 Hz |      |            | Heaters<br>230 V / 1 Ph |       |
|                                |      | Watts                               | Amps | Total Amps | Watts                   | Amps  |
| CDC (Electrical defrost) 4 FPI |      |                                     |      |            |                         |       |
| CDC 0024.0                     | 1    | 35                                  | 0.27 | 0.27       | 600                     | 2.61  |
| CDC 0036.0                     | 1    | 35                                  | 0.27 | 0.27       | 870                     | 3.78  |
| CDC 0051.0                     | 1    | 35                                  | 0.27 | 0.27       | 1,150                   | 5.00  |
| CDC 0072.0                     | 2    | 70                                  | 0.27 | 0.54       | 1,300                   | 5.65  |
| CDC 0100.0                     | 2    | 70                                  | 0.27 | 0.54       | 2,100                   | 9.13  |
| CDC 0155.0                     | 3    | 105                                 | 0.27 | 0.81       | 3,150                   | 13.70 |
| CDC 0200.0                     | 4    | 140                                 | 0.27 | 1.08       | 3,800                   | 16.52 |

## Electrical diagram



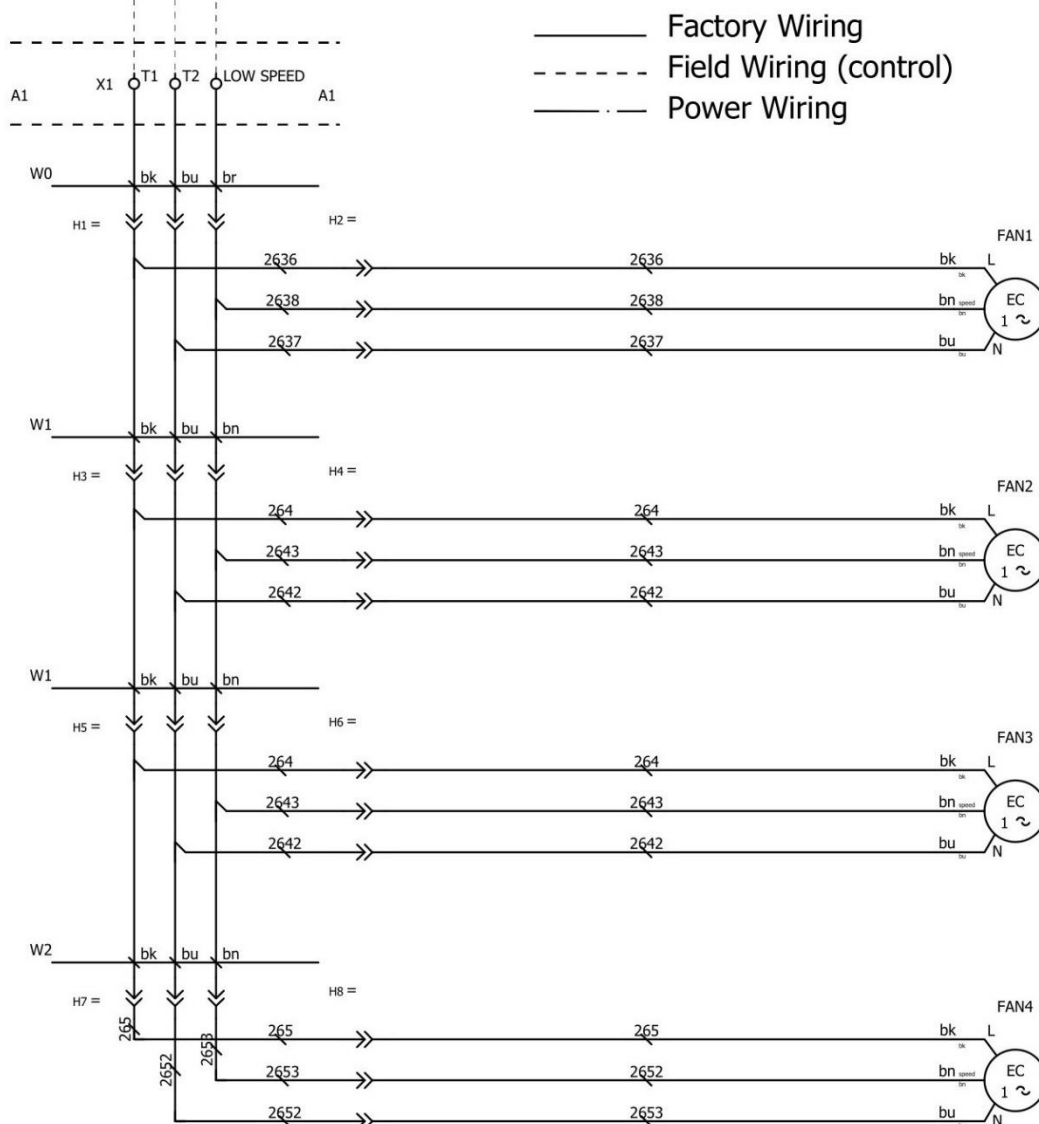
# Typical diagram of single-phase power for EC motors (Continued)

L1 Continued  
L2 Continued  
L3 Continued

OR = Thermomagnetic switch (Provide by others)

M = Contactor (Provide by others)

⏏ = Grounding connection required

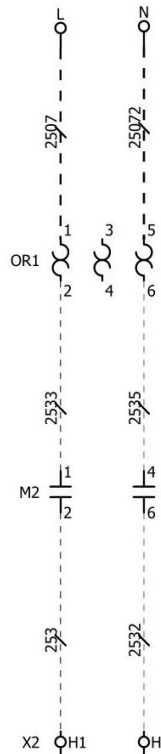


| Name: | Date: | Stored: | Checked: | Date: | Rev. | Description | Name: | Date: | Stored: | Checked: | Date: | Loads    | Previous page:  | Page: |
|-------|-------|---------|----------|-------|------|-------------|-------|-------|---------|----------|-------|----------|-----------------|-------|
|       |       |         |          |       |      |             |       |       |         |          |       |          | Next page: 35   | 34    |
|       |       |         |          |       |      |             |       |       |         |          |       | Doc-Nr.: | Total Pages: 12 |       |
|       |       |         |          |       |      |             |       |       |         |          |       | Index:   |                 |       |

# Typical diagram of single-phase power for electrical resistors

Power Supply

Suggested connection for power circuit



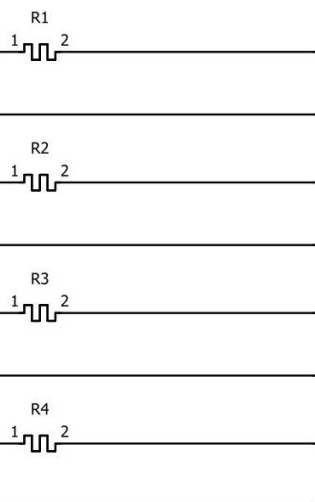
\_\_\_\_\_ Factory Wiring  
 - - - - - Field Wiring (control)  
 — — — — — Power Wiring

OR = Thermomagnetic switch (Provide by others)

M = Contactor (Provide by others)

 = Grounding connection required

X2 = Terminal board

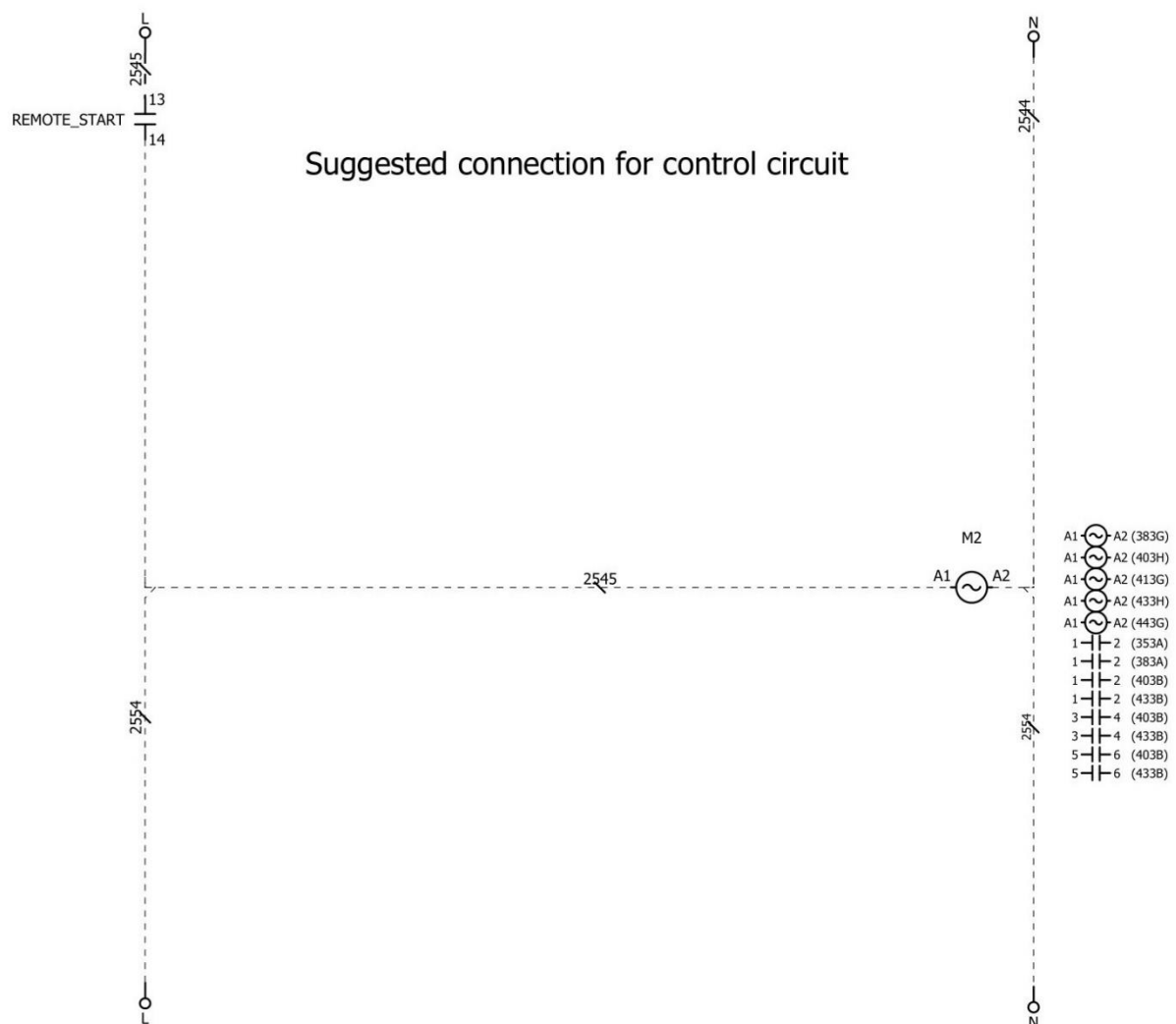


Electrical resistors

Drawing #: GENERIC\_WIRING\_DIAGRAM

| Rev. | Description | Name |
|------|-------------|------|
| 00   | Created     |      |
|      |             |      |
|      |             |      |

## Typical diagram of single-phase power for electrical resistors (Continued)

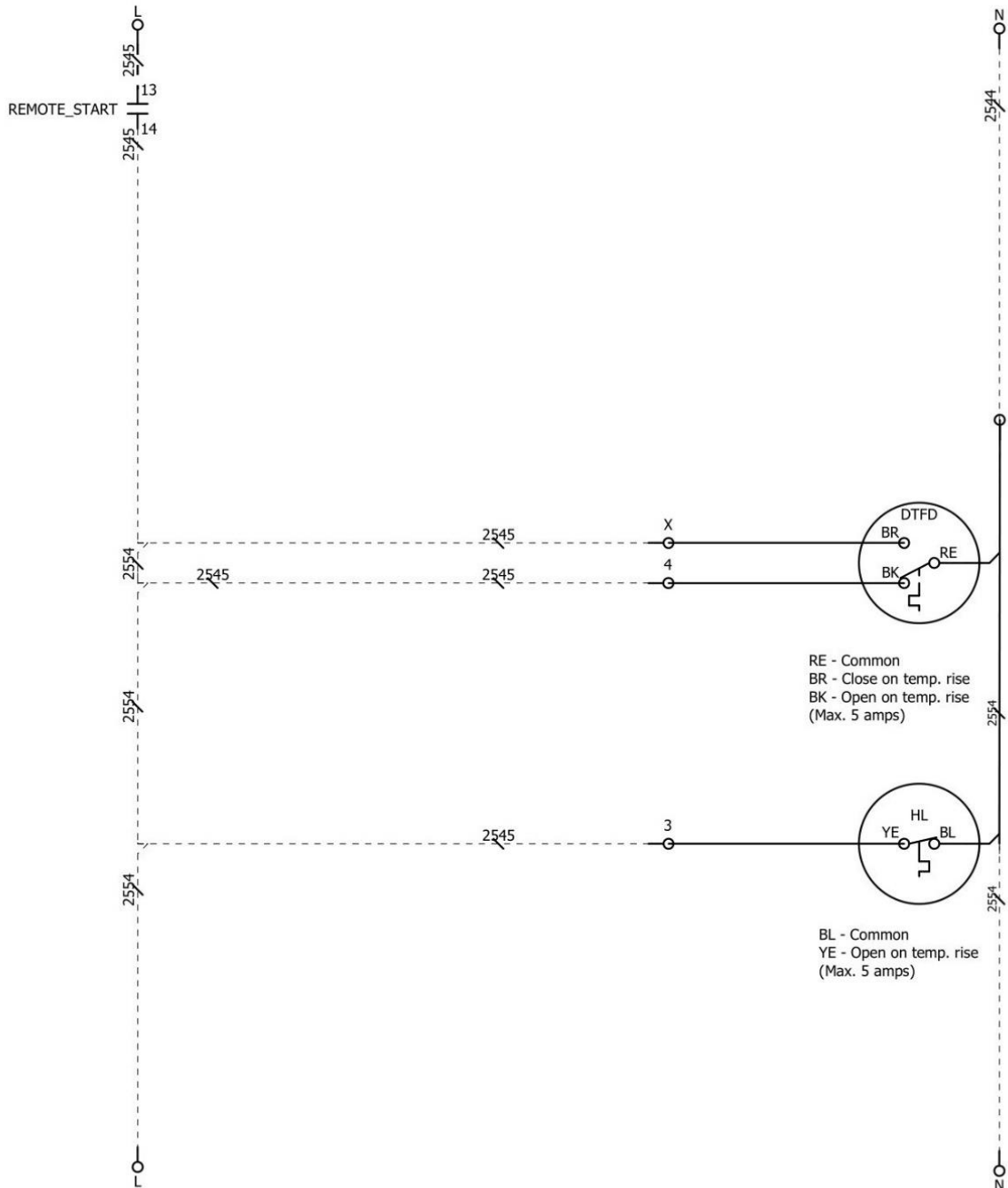


\_\_\_\_\_ Factory Wiring  
 - - - - - Field Wiring (control)  
 \_\_\_\_\_ Power Wiring

OR = Thermomagnetic switch (Provide by others)  
M = Contactor (Provide by others)  
 = Grounding connection required

|   |      |         |          |       |      |             |       |      |         |          |       |       |                |              |                 |    |
|---|------|---------|----------|-------|------|-------------|-------|------|---------|----------|-------|-------|----------------|--------------|-----------------|----|
| : | Date | Stored: | Checked: | Date: | Rev. | Description | Name: | Date | Stored: | Checked: | Date: | Loads | Previous page: | 34           | Page:<br><br>35 |    |
|   |      |         |          |       |      |             |       |      |         |          |       |       |                | Next page:   |                 | 36 |
|   |      |         |          |       |      |             |       |      |         |          |       |       | Doc-Nr.:       | Total Pages: |                 | 12 |
|   |      |         |          |       |      |             |       |      |         |          |       |       | Index:         |              |                 |    |

## Suggested connection for Thermostats



\_\_\_\_\_ Factory Wiring  
 - - - - - Field Wiring (control)  
 \_\_\_\_\_ Power Wiring

M.1 = Contactor per fan (Provide by others)  
M.2 = Contactor per electrical heating circuit (Provide by others)  
C1 = Other electric devices provided by tohers (e.g.. electronic valve, compresor relay)  
HL = Heat Limit  
DTFD =Defrost termination fan delay

## 15. Spare parts

| Model      | Motor                   |                         |
|------------|-------------------------|-------------------------|
|            | 230 V / 1 Ph / 50-60 Hz | 115 V / 1 Ph / 50-60 Hz |
|            | Model                   | Model                   |
| CAC 0057.0 | VT03034U                | VT03193U                |
| CAC 0081.0 | VT03034U                | VT03193U                |
| CAC 0116.0 | VT03034U                | VT03193U                |
| CAC 0165.0 | VT03034U                | VT03193U                |
| CAC 0173.0 | VT03034U                | VT03193U                |
| CAC 0250.0 | VT03034U                | VT03193U                |
| CAC 0330.0 | VT03034U                | VT03193U                |

| Model      | Motor                   | Heaters                         |                  |                                 |                  |
|------------|-------------------------|---------------------------------|------------------|---------------------------------|------------------|
|            | 230 V / 1 Ph / 50-60 Hz | Coil<br>230 V / 1 Ph / 50-60 Hz |                  | Tray<br>230 V / 1 Ph / 50-60 Hz |                  |
|            | Model                   | Quantity                        | Model            | Quantity                        | Model            |
| CEC 0034.0 | VT03034U                | N / A                           | N / A            | 1                               | U01AA07000600230 |
| CEC 0045.0 | VT03034U                | N / A                           | N / A            | 1                               | U01BA07000870230 |
| CEC 0070.0 | VT03034U                | 1                               | U12EE07000700230 | 1                               | U01BA07000450230 |
| CEC 0092.0 | VT03034U                | N / A                           | N / A            | 1                               | U01BA13001300230 |
| CEC 0130.0 | VT03034U                | 1                               | U12EE13001300230 | 1                               | U01BB13000800230 |
| CEC 0213.0 | VT03034U                | 1                               | U12EE19001950230 | 1                               | U01BB19001200230 |
| CEC 0265.0 | VT03034U                | 1                               | U12EE25002200230 | 1                               | U01BB25001600230 |

| Model      | Motor                   | Heaters                         |                  |                                 |                  |
|------------|-------------------------|---------------------------------|------------------|---------------------------------|------------------|
|            | 230 V / 1 Ph / 50-60 Hz | Coil<br>230 V / 1 Ph / 50-60 Hz |                  | Tray<br>230 V / 1 Ph / 50-60 Hz |                  |
|            | Model                   | Quantity                        | Model            | Quantity                        | Model            |
| CDC 0024.0 | VT03034U                | N / A                           | N / A            | 1                               | U01AA07000600230 |
| CDC 0036.0 | VT03034U                | N / A                           | N / A            | 1                               | U01BA07000870230 |
| CDC 0051.0 | VT03034U                | 1                               | U12EE07000700230 | 1                               | U01BA07000450230 |
| CDC 0072.0 | VT03034U                | N / A                           | N / A            | 1                               | U01BA13001300230 |
| CDC 0100.0 | VT03034U                | 1                               | U12EE13001300230 | 1                               | U01BB13000800230 |
| CDC 0155.0 | VT03034U                | 1                               | U12EE19001950230 | 1                               | U01BB19001200230 |
| CDC 0200.0 | VT03034U                | 1                               | U12EE25002200230 | 1                               | U01BB25001600230 |

## 16. Troubleshooting

| Symptom                          | Possible causes                                                         | Possible corrective actions                                                                                                                                                            |
|----------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Fan does not work             | 1.1 Main switch open.                                                   | 1.1.1 Close switch.                                                                                                                                                                    |
|                                  | 1.2 Fuses blown.                                                        | 1.2.1 Check for short circuit or overloads. Replace damaged fuses.                                                                                                                     |
|                                  | 1.3 Damaged timer or thermostat.                                        | 1.3.1 Replace controller.                                                                                                                                                              |
|                                  | 1.4 Unit is in defrost cycle.                                           | 1.4.1 Wait for end of a cycle.                                                                                                                                                         |
|                                  | 1.5 Coil does not cool down enough to reset thermostat.                 | 1.5.1 Increase fan waiting time after defrost cycle.                                                                                                                                   |
|                                  | 1.6 Motor is burnt.                                                     | 1.6.1 Verify there is no over-voltage and replace motor.                                                                                                                               |
|                                  | 1.7 Fan does not start.                                                 | 1.7.1 Check for obstructions (ice, waste, etc.) and remove them.<br>1.7.2 Check for short circuits exist in fan junction box and repair.                                               |
| 2. Room temperature is too high. | 2.1 Room thermostat setting is too high.                                | 2.1.1 Lower thermostat setting                                                                                                                                                         |
|                                  | 2.2 Overheating is too high.                                            | 2.2.1 Verify whether expansion valve is feeding properly and clean strainer mesh.                                                                                                      |
|                                  |                                                                         | 2.2.2 Verify that bulb is located at right position and adjust if necessary.                                                                                                           |
|                                  |                                                                         | 2.2.3 Adjust overheating at expansion valve.                                                                                                                                           |
|                                  |                                                                         | 2.2.4 Verify that refrigerant charge is not too low.                                                                                                                                   |
|                                  | 2.3 Low refrigerant in the system.                                      | 2.3.1 Check for leaks and charge system with additional refrigerant.                                                                                                                   |
|                                  | 2.4 Ice formation on coil.                                              | 2.4.1 Perform manual defrost of coil. Check defrost system.                                                                                                                            |
|                                  | 2.5 Cooling unit is too close to a door.                                | 2.5.1 Relocate unit or add strip/air curtains on door.                                                                                                                                 |
|                                  | 2.6 Excess air infiltration due to open doors.                          | 2.6.1 Check doors seals and replace if necessary.<br>2.6.2 Keep doors closed as much as possible.                                                                                      |
|                                  | 2.7 Product has just been added to cold room.                           | 2.7.1 Wait for product temperature to come down.                                                                                                                                       |
|                                  | 2.8 The system is off.                                                  | 2.8.1 Turn on the refrigeration system.                                                                                                                                                |
|                                  | 2.9 Power surge in system fails.                                        | 2.9.1 Restore power surge.                                                                                                                                                             |
|                                  | 2.10 Air flow in room is difficult.                                     | 2.10.1 Verify that all fans spinning in the right direction.<br>2.10.2 See possible cause <b>1.7</b><br>2.10.3 See symptom <b>4</b> .<br>2.10.4 Go over unit location recommendations. |
|                                  | 2.11 Pressure drop across evaporator is too high.                       | 2.11.1 Replace expansion valve with valve, maintain external pressure equalization, adjust superheat on valve.                                                                         |
|                                  | 2.12 Lack of subcooling in the system                                   | 2.12.1 Establish subcooling in the system.                                                                                                                                             |
|                                  | 2.13 Pressure drop in the valve is higher than valve's design pressure. | 2.13.1 Select a new valve with the desired pressure drop.                                                                                                                              |

| Symptom                                                                                         | Possible causes                                                                         | Possible corrective actions                                                                                                                 |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 2. Room temperature is too high.                                                                | 2.14 The expansion valve becomes blocked with ice due to moisture in the system.        | 2.14.1 Change the dryer filter and clean the ice from the valve.                                                                            |
|                                                                                                 | 2.15 Expansion valve is blocked with wax or other impurities.                           | 2.15.1 Clean valve port and strainer.<br>2.15.2 Clean solenoid valve and its filter.<br>2.15.3 Replace the oil in the refrigeration system. |
|                                                                                                 | 2.16 The expansion valve is too small.                                                  | 2.16.1 Select and replace the valve one of greater capacity or port.                                                                        |
|                                                                                                 | 2.17 Expansion valve bulb charge was lost.                                              | 2.17.1 Replace the valve (or the powerhead if possible).                                                                                    |
|                                                                                                 | 2.18 Wrong selection of expansion valve powerhead.                                      | 2.18.1 Select powerhead according to application.                                                                                           |
|                                                                                                 | 2.19 Expansion valve bulb does not make good contact with suction line.                 | 2.19.1 Fasten bulb to suction line adequately.                                                                                              |
|                                                                                                 | 2.20 Expansion valve bulb is not insulated.                                             | 2.20.1 Place insulation all over the bulb.                                                                                                  |
|                                                                                                 | 2.21 Expansion valve bulb is too close to large valves, flanges, headers or riser pipe. | 2.21.1 Replace expansion valve with a valve with external pressure equalization, adjust superheat at valve.                                 |
| 3. Ice buildup in ceiling around evaporator and / or in orifices or fan nozzles, blades or grid | 3.1 Defrost cycle is too long.                                                          | 3.1.1 Shorten defrost cycle.                                                                                                                |
|                                                                                                 | 3.2 Fan delay does not work after defrost cycle.                                        | 3.2.1 Adjust defrost thermostat properly, or see <b>3.3</b>                                                                                 |
|                                                                                                 | 3.3 Defective defrost thermostat or timer                                               | 3.3.1 Replace defective component.                                                                                                          |
|                                                                                                 | 3.4 Too many defrost cycles.                                                            | 3.4.1 Reduce the number of defrost cycles per day.                                                                                          |
| 4. Coil is not cleared of ice after the defrost cycle.                                          | 4.1 Heater does not work.                                                               | 4.1.1 Make sure all heaters are working.                                                                                                    |
|                                                                                                 | 4.2 Hot gas supply is not enough.                                                       | 4.2.1 Make sure there is enough volume of hot gas to defrost the unit.                                                                      |
|                                                                                                 | 4.3 There are not enough defrost cycles per day.                                        | 4.3.1 Increase the number of defrost cycles per day.                                                                                        |
|                                                                                                 | 4.4 Defrost cycle is too short.                                                         | 4.4.1 Increase time in the defrost thermostat or timer for longer cycle.                                                                    |
|                                                                                                 | 4.5 Defrost thermostat or timer does not work.                                          | 4.5.1 Replace the component.                                                                                                                |
| 5. Uneven coil freezing during refrigeration cycle.                                             | 5.1 Distributor is in horizontal position.                                              | 5.1.1 Change distributor to vertical position.                                                                                              |
|                                                                                                 | 5.2 Distributor or capillaries are blocked.                                             | 5.2.1 Replace distributor with capillaries.                                                                                                 |
|                                                                                                 | 5.3 After defrost, dripping time is too short.                                          | 5.3.1 Increase dripping time.                                                                                                               |
|                                                                                                 | 5.4 Incorrect or missing distributor nozzle.                                            | 5.4.1 Add or substitute the nozzle with an adequately sized orifice for conditions.                                                         |
|                                                                                                 | 5.5 Located too close to a door opening.                                                | 5.5.1 Relocate the evaporator.                                                                                                              |
| 6. Ice buildup in drain pan.                                                                    | 6.1 Drain line heater does not work.                                                    | 6.1.1 Check heater power supply.<br>6.1.2 Change drain line heater.                                                                         |
|                                                                                                 | 6.2 Tray heater does not work.                                                          | 6.2.1 Check heater power supply.<br>6.2.2 Change tray heater.                                                                               |
|                                                                                                 | 6.3 Unit is improperly tilted.                                                          | 6.3.1 Level unit to horizontal position.                                                                                                    |
|                                                                                                 | 6.4 Drain line is clogged.                                                              | 6.4.1 Clean drain line.<br>6.4.2 Insulate drain line properly (if clogged with ice).                                                        |

| Symptom                                                          | Possible causes                                                     | Possible corrective actions                                             |
|------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------|
| 6. Ice buildup in drain pan.                                     | 6.5 Thermostat is not working.                                      | 6.5.1 Replace defective component.                                      |
|                                                                  | 6.6 Drain line has no water trap.                                   | 6.6.1 Install a water trap in the drain line outside the cold room.     |
|                                                                  | 6.7 Drain pan was not correctly replaced on unit after maintenance. | 6.7.1 Verify that drain pan is close to heaters or to the hot gas coil. |
| 7. Water buildup in drain pan or water distributed outside unit. | 7.1 The drain line clogged.                                         | 7.1.1 Clean drain line.                                                 |
|                                                                  | 7.2 Drain pan was not correctly replaced on unit after maintenance. | 7.2.1 Make sure the drainage pan is levelled backwards.                 |
|                                                                  | 7.3 The unit is improperly tilted.                                  | 7.3.1 Level unit back to horizontal position.                           |



## 17. Reference information

### SERVICE LOG CAC/CEC/CDC

One data sheet must be completed for each installation and each cooler, with a copy for the owner, a copy for the installer and the original for Güntner. If another company is to provide the service and maintenance, additional copies should be prepared as necessary.

### Güntner

#### System reference data

The refrigeration installation contractor must complete and sign the information below:

Date of installation of system \_\_\_\_\_

Installer name and address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

#### Evaporator(s)

Evaporator Model No. \_\_\_\_\_

Evaporator Serial Number \_\_\_\_\_

Electrical System \_\_\_\_\_ Volts \_\_\_\_\_ Phases \_\_\_\_\_

Expansion valve brand and model \_\_\_\_\_

Environment at startup \_\_\_\_\_ °F

Box design temperature \_\_\_\_\_ °F

Box operating temperature \_\_\_\_\_ °F

Thermostat setting \_\_\_\_\_ °F

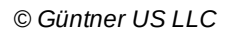
Defrost setting / day \_\_\_\_\_ minutes fail proof \_\_\_\_\_ / day \_\_\_\_\_ minutes fail proof

Evaporator suction line temperature \_\_\_\_\_ °F

Superheat at evaporator \_\_\_\_\_ °F

Discharge \_\_\_\_\_ No. of times \_\_\_\_\_ Final microns \_\_\_\_\_ No. of times \_\_\_\_\_ Final microns \_\_\_\_\_

Evaporator drain line with trap external to box Yes ☐ No ☐

[illegible]