

Installation Instruction

Transport | Installation | Operation | Maintenance



Product line:	Commercial Air Coolers
Series description:	Cubic Compact High-Profile Evaporator
Series:	C_H

guntner.com/us

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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
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.

NOTICE

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.

DANGER

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.

CAUTION

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

CAUTION

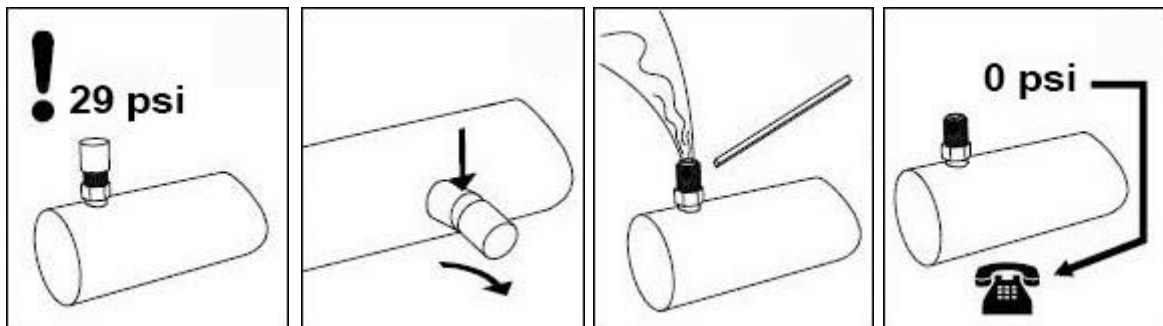
Fan motors are sealed and do not require lubrication.

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@guntnerus.com).

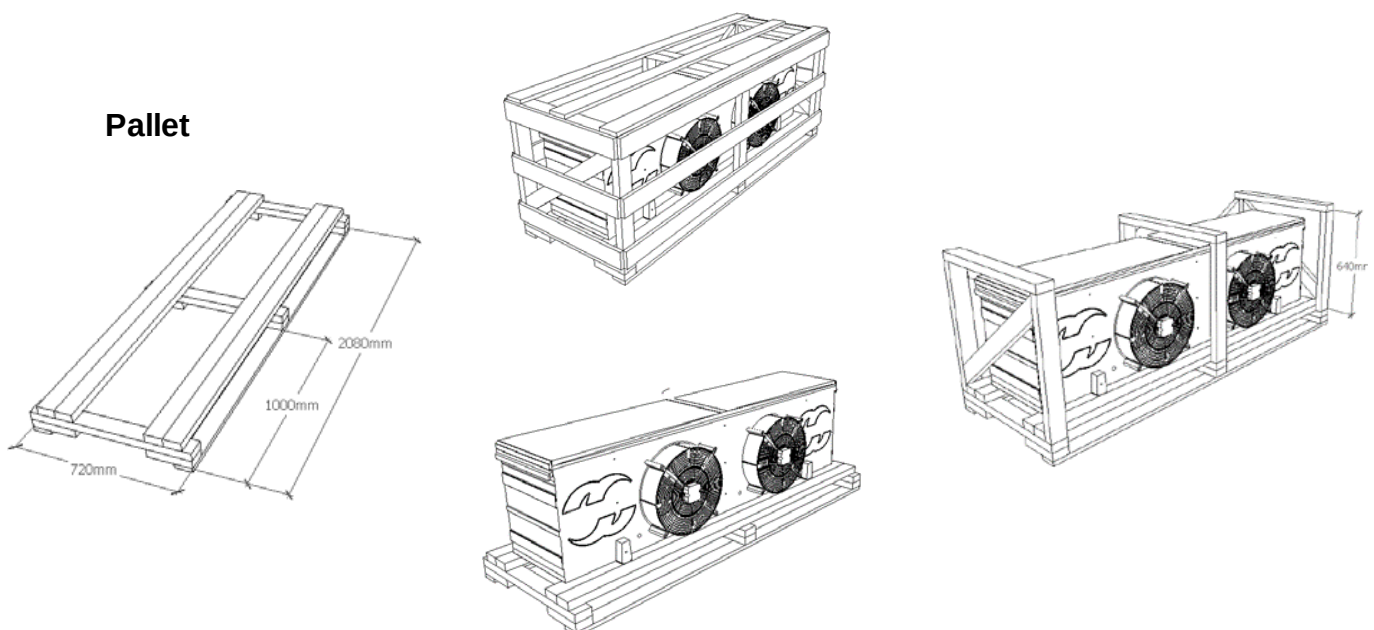
For special requirement please contact our factory.



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 the unit is positioned as shown in the picture below.

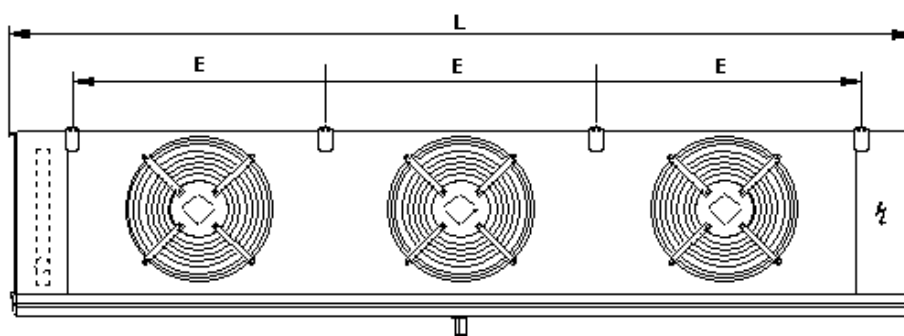
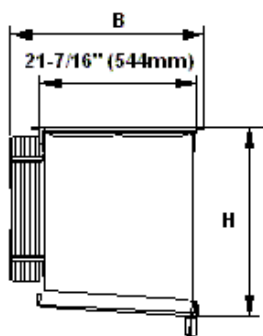


5.Mounting

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. The drain pan should be fitted only after the installation of the equipment.

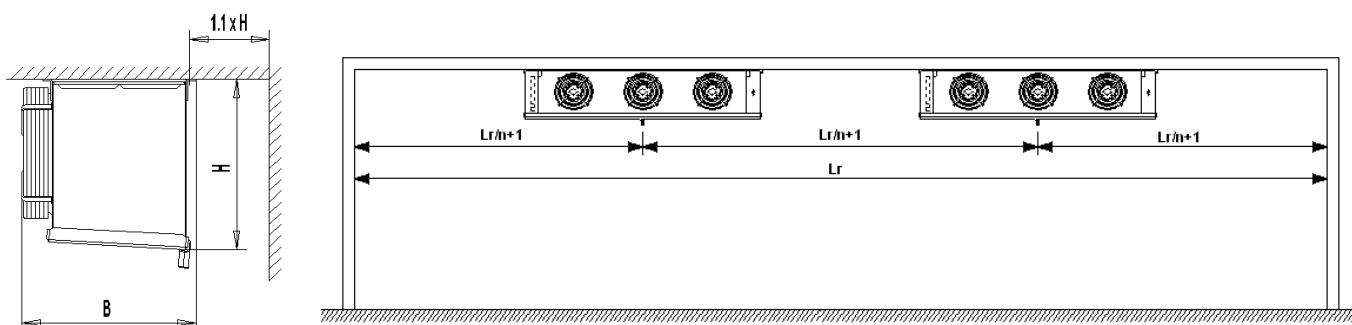
DIMENSIONS CAH – CEH - CDH



Model	Fan	Dimensions								Weight		Connections					
		L		H		B		E				Liquid		Suction		Drain	
		in	mm	in	mm	in	mm	in	mm	lbs	kg	in	mm	in	mm	in	mm
Physical Information CAH (Air Defrost) 6 FPI																	
0350.2	1	59 9/16	1,513	29 3/8	747	27 1/4	693	39 3/8	1,000	158	72	5/8	16	1 1/8	28	1 1/4	32
0470.2	1	59 9/16	1,513	29 3/8	747	27 1/4	693	39 3/8	1,000	186	85	7/8	22	1 3/8	35	1 1/4	32
0700.2	2	98 15/16	2,513	29 3/8	747	27 1/4	693	39 3/8	1,000	287	130	7/8	22	1 5/8	42	1 1/4	32
0930.2	2	98 15/16	2,513	29 3/8	747	27 1/4	693	39 3/8	1,000	344	156	1 1/8	28	1 5/8	42	1 1/4	32
1050.2	3	138 5/16	3,513	29 3/8	747	27 1/4	693	39 3/8	1,000	418	190	7/8	22	2 1/8	54	1 1/4	32
1410.2	3	138 5/16	3,513	29 3/8	747	27 1/4	693	39 3/8	1,000	499	227	1 1/8	28	2 1/8	54	1 1/4	32
1400.2	4	177 11/16	4,513	29 3/8	747	27 1/4	695	39 3/8	1,000	545	247	1 1/8	28	2 1/8	54	1 1/4	32
1900.2	4	177 11/16	4,513	29 3/8	747	27 1/4	695	39 3/8	1,000	653	296	1 3/8	35	2 1/8	54	1 1/4	32
Physical Information CEH (Electric Defrost) 6 FPI																	
0300.2	1	59 9/16	1,513	29 3/8	747	27 1/4	693	39 3/8	1,000	158	72	7/8	22	1 1/8	28	1 1/4	32
0370.2	1	59 9/16	1,513	29 3/8	747	27 1/4	693	39 3/8	1,000	186	85	7/8	22	1 3/8	35	1 1/4	32
0600.2	2	98 15/16	2,513	29 3/8	747	27 1/4	693	39 3/8	1,000	287	130	1 1/8	28	1 5/8	42	1 1/4	32
0780.2	2	98 15/16	2,513	29 3/8	747	27 1/4	693	39 3/8	1,000	344	156	1 1/8	28	1 5/8	42	1 1/4	32
0900.2	3	138 5/16	3,513	29 3/8	747	27 1/4	693	39 3/8	1,000	418	190	1 1/8	28	2 1/8	54	1 1/4	32
1200.2	3	138 5/16	3,513	29 3/8	747	27 1/4	693	39 3/8	1,000	499	227	1 3/8	35	2 1/8	54	1 1/4	32
1060.2	4	177 11/16	4,513	29 3/8	747	27 1/4	695	39 3/8	1,000	545	247	1 1/8	28	2 1/8	54	1 1/4	32
1400.2	4	177 11/16	4,513	29 3/8	747	27 1/4	695	39 3/8	1,000	653	296	1 3/8	35	2 1/8	54	1 1/4	32
Physical Information CDH (Electric Defrost) 4 FPI																	
0280.2	1	59 9/16	1,513	29 3/8	747	27 1/4	693	39 3/8	1,000	173	79	7/8	22	1 3/8	35	1 1/4	32
0360.2	1	59 9/16	1,513	29 3/8	747	27 1/4	693	39 3/8	1,000	184	84	7/8	22	1 3/8	35	1 1/4	32
0400.2	2	98 15/16	2,513	29 3/8	747	27 1/4	693	39 3/8	1,000	280	127	7/8	22	1 5/8	42	1 1/4	32
0550.2	2	98 15/16	2,513	29 3/8	747	27 1/4	693	39 3/8	1,000	315	143	1 1/8	28	1 5/8	42	1 1/4	32
0740.2	2	98 15/16	2,513	29 3/8	747	27 1/4	693	39 3/8	1,000	337	153	1 1/8	28	2 1/8	54	1 1/4	32
0890.2	3	138 5/16	3,513	29 3/8	747	27 1/4	693	39 3/8	1,000	460	209	1 3/8	35	2 1/8	54	1 1/4	32
0980.2	3	138 5/16	3,513	29 3/8	747	27 1/4	693	39 3/8	1,000	486	221	1 1/8	28	2 1/8	54	1 1/4	32
1100.2	4	177 11/16	4,513	29 3/8	747	27 1/4	695	39 3/8	1,000	595	270	1 3/8	35	2 1/8	54	1 1/4	32
1080.2	4	177 11/16	4,513	29 3/8	747	27 1/4	695	39 3/8	1,000	635	288	1 1/8	28	2 1/8	54	1 1/4	32

Model	Fan	Dimensions								Weight		Connections					
		L		H		B		E				Liquid		Suction		Drain	
		in	mm	in	mm	in	mm	in	mm	lbs	kg	in	mm	in	mm	in	mm
Physical Information CDH (Electric Defrost) 4 LPP																	
0340.2	1	59 9/16	1,513	29 3/8	747	27 1/4	693	39 3/8	1,000	173	79	7/8	22	1 3/8	35	1 1/4	32
0420.2	1	59 9/16	1,513	29 3/8	747	27 1/4	693	39 3/8	1,000	184	84	7/8	22	1 3/8	35	1 1/4	32
0530.2	2	98 15/16	2,513	29 3/8	747	27 1/4	693	39 3/8	1,000	280	127	7/8	22	1 5/8	42	1 1/4	32
0650.2	2	98 15/16	2,513	29 3/8	747	27 1/4	693	39 3/8	1,000	315	143	1 1/8	28	1 5/8	42	1 1/4	32
0880.2	2	98 15/16	2,513	29 3/8	747	27 1/4	693	39 3/8	1,000	337	153	1 1/8	28	2 1/8	54	1 1/4	32
1060.2	3	138 5/16	3,513	29 3/8	747	27 1/4	693	39 3/8	1,000	460	209	1 3/8	35	2 1/8	54	1 1/4	32
1130.2	3	138 5/16	3,513	29 3/8	747	27 1/4	693	39 3/8	1,000	486	221	1 1/8	28	2 1/8	54	1 1/4	32
1290.2	4	177 11/16	4,513	29 3/8	747	27 1/4	695	39 3/8	1,000	595	270	1 3/8	35	2 1/8	54	1 1/4	32
1610.2	4	177 11/16	4,513	29 3/8	747	27 1/4	695	39 3/8	1,000	635	288	1 1/8	28	2 1/8	54	1 1/4	32

CAH-CEH-CDH Mounting reference



n = number of units to install
Lr = length of room

NOTES

- Do not place the cooler directly over or next to a door.
- Do not place agricultural products directly in front of the cooler.
- Do not place coolers in front of each other at a distance less than their air throw indicated in the technical specification sheet.
- 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.
- The minimum distance between units must be 1 meter for hot gas and air defrost units.
- If you have reduced space or special room construction, please contact your local sales office to receive the correct advice on unit mounting.
- The air cooler should have an air discharge clearance for air throw.

6.Refrigerant piping

Type, sizing and installation of all piping must be in accordance with the recommended and accepted practices for refrigeration applications. All low temperature piping should also be insulated in accordance with standards 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

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. The Drain line should have a slope level and look for the nearest exit to the outside.

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 maximum 29 psig.

Remove the internal pressure of the equipment prior to unit connection system. 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

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

11.Vaccum

Proper vacuum is essential prior charging refrigerant into the system. This prevents many problems that might arise due to lack of care in this step. The system must be verified in all cycles to ensure proper operation.

12.Start - up

At start-up the following items should be checked:

- Verify all threaded connections.
- Verify 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 observe the equipment and take notice of the following:
- Silent operation of fans (bearings, contacts, balance)
- Electrical motor power requirements
- Verify there are no leaks
- Adjust the expansion valve for correct overheating.
- After 24 hours of operation verify equipment, especially rotating parts.

13.Maintenance and service

⚠ WARNING

Disconnect all power sources prior to servicing!

13.1 Fan motors and heaters

The only electrical components that are prone to malfunctioning are fans, motors, and electrical heaters. In case of motor or heater failure, the affected part should be removed from the unit and be replaced.

13.2 Drain pan

Periodic inspection of the drain pan is recommended. Accumulated dirt and dust should be cleaned out with 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. 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:

- Secure threaded connections
- Leaks
- Silent fan operation.
- General unit conditions, such as cleanliness and corrosion.

The cleaning of the finned heat exchanger is extremely important to ensure proper equipment operation and long service life.

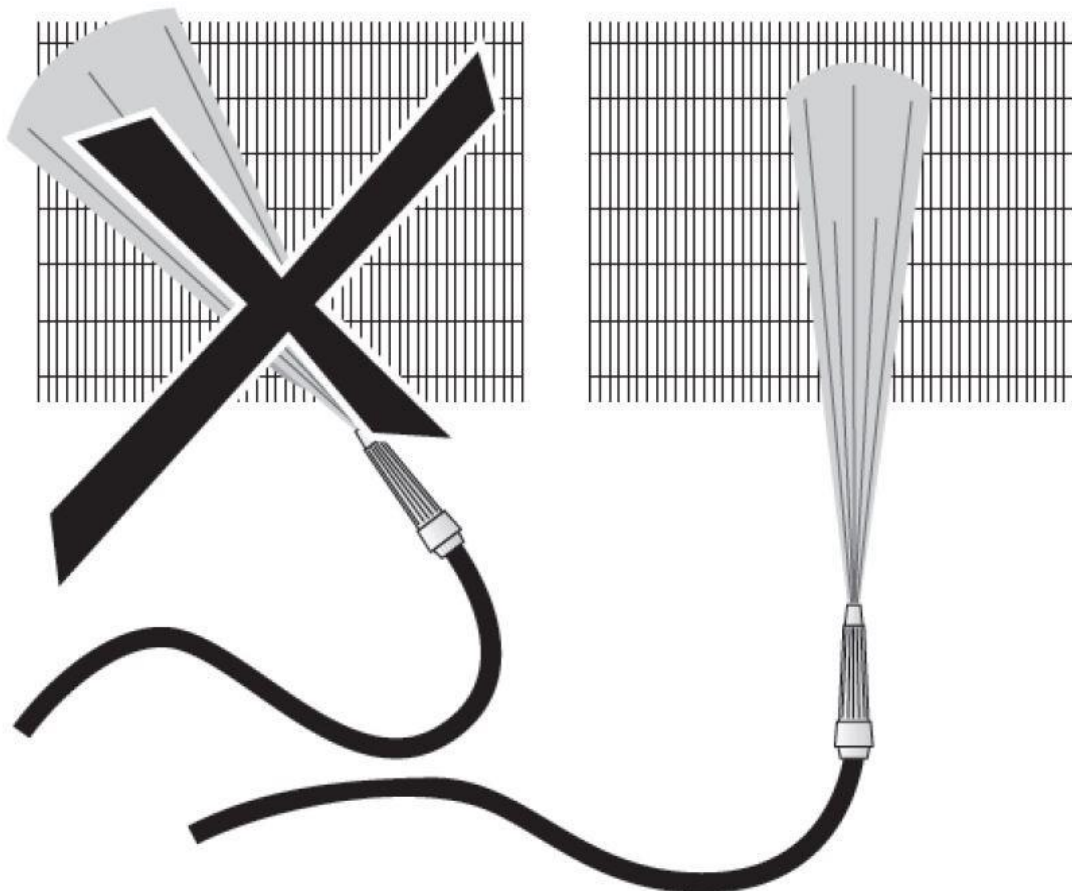
- There is no rule of thumb on how often cleaning must be performed. Cleaning frequency and method depend on the client and must be determined by client's operating personnel. If necessary, ice must be defrosted using hot water at 15° - 25° Celsius degrees temperature. Never remove ice mechanically with metallic or pointed objects.
- The equipment is always delivered clean. If, during installation and/or during the first hours of operations dirt builds up to such an extent that it might affect equipment capacity, the unit must be cleaned before starting operation.

In order to clean the unit, **it must be turned off and all power sources must be disconnected.**

Hydraulic cleaning of heat exchanger

When cleaning with liquid or compressed air, fans must be turned off. Do not spray directly.

- Clean the coil from top to bottom so dirt flows downwards. Cleaning must continue until all dirt has been removed.
- **Always clean/spray towards the fins.**
- **Never clean at 90° to the fins!**



Preventive Maintenance for commercial evaporators	As required	Every month	Every 3 months	Every 6 months	Every year
CLEAN using a brush, pressurized water or mild detergent. Make sure the product being used is appropriate for this particular application. NEVER USE ACID-BASED CLEANER.	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 for ice buildup on the coil.		X			
CHECK defrost controller calibration.	X		X		
CHECK that heaters are working properly during defrost.			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
CHECK that all ground connections are tight.					X

14. Electrical data

Model	Fan Data			Motor SPM									Motor EC		
	Fans	Air Volume		230 V / 3 Ph / 60 Hz			400 V / 3 Ph / 50 Hz			460 V / 3 Ph / 60 Hz			380 - 460 V / 3 Ph / 50-60 Hz		
		CFM	m3/h	Watts	Amps	Total Amps	Watts	Amps	Total Amps	Watts	Amps	Total Amps	Watts	Amps	Total Amps
CAH 0350.2	1	3,938	6,690	750	2.8	2.8	480	1	1	800	1.25	1.25	600	1	1
CAH 0470.2	1	3,767	6,400	750	2.8	2.8	480	1	1	800	1.25	1.25	600	1	1
CAH 0700.2	2	7,875	13,380	1500	2.8	5.6	960	1	2	1600	1.25	2.5	1200	1	2
CAH 0930.2	2	7,534	12,800	1500	2.8	5.6	960	1	2	1600	1.25	2.5	1200	1	2
CAH 1050.2	3	11,813	20,070	2250	2.8	8.4	1440	1	3	2400	1.25	3.75	1800	1	3
CAH 1410.2	3	11,301	19,201	2250	2.8	8.4	1440	1	3	2400	1.25	3.75	1800	1	3
CAH 1400.2	4	15,750	26,760	3000	2.8	11.2	1920	1	4	3200	1.25	5	2400	1	4
CAH 1900.2	4	15,068	25,600	3000	2.8	11.2	1920	1	4	3200	1.25	5	2400	1	4

Model	Fan Data			Motor SPM									Motor EC		
	Fans	Air Volume		230 V / 3 Ph / 60 Hz			400 V / 3 Ph / 50 Hz			460 V / 3 Ph / 60 Hz			380 - 460 V / 3 Ph / 50-60 Hz		
		CFM	m3/h	Watts	Amps	Total Amps	Watts	Amps	Total Amps	Watts	Amps	Total Amps	Watts	Amps	Total Amps
CEH 0300.2	1	3,938	6,690	750	2.8	2.8	480	1	1	800	1.25	1.25	600	1	1
CEH 0370.2	1	3,767	6,400	750	2.8	2.8	480	1	1	800	1.25	1.25	600	1	1
CEH 0600.2	2	7,875	13,380	1500	2.8	5.6	960	1	2	1600	1.25	2.5	1200	1	2
CEH 0780.2	2	7,534	12,800	1500	2.8	5.6	960	1	2	1600	1.25	2.5	1200	1	2
CEH 0900.2	3	11,813	20,070	2250	2.8	8.4	1440	1	3	2400	1.25	3.75	1800	1	3
CEH 1200.2	3	11,301	19,201	2250	2.8	8.4	1440	1	3	2400	1.25	3.75	1800	1	3
CEH 1060.2	4	15,750	26,760	3000	2.8	11.2	1920	1	4	3200	1.25	5	2400	1	4
CEH 1400.2	4	15,068	25,600	3000	2.8	11.2	1920	1	4	3200	1.25	5	2400	1	4

Model	Motor SPM						Motor EC	
	Heaters 230V 3Ph		Heaters 400 V 3Ph		Heaters 460 V 3Ph		Heaters 380 - 460 V 3Ph	
	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps
CEH 0300.2	8000	20.74	8000	20.74	8000	11.3	8000	11.3
CEH 0370.2	9000	22.6	9000	22.6	9000	11.3	9000	11.3
CEH 0600.2	15000	38.41	15000	38.41	15000	19.22	15000	19.22
CEH 0780.2	16800	42.93	16800	42.93	16800	21.48	16800	21.48
CEH 0900.2	21600	54.23	21600	54.23	21600	27.12	21600	27.12
CEH 1200.2	26400	67.83	26400	67.83	26400	36.15	26400	31.74
CEH 1060.2	27000	67.78	27000	67.78	27000	33.89	27000	33.89
CEH 1400.2	36000	90.37	36000	90.37	36000	45.19	36000	45.19



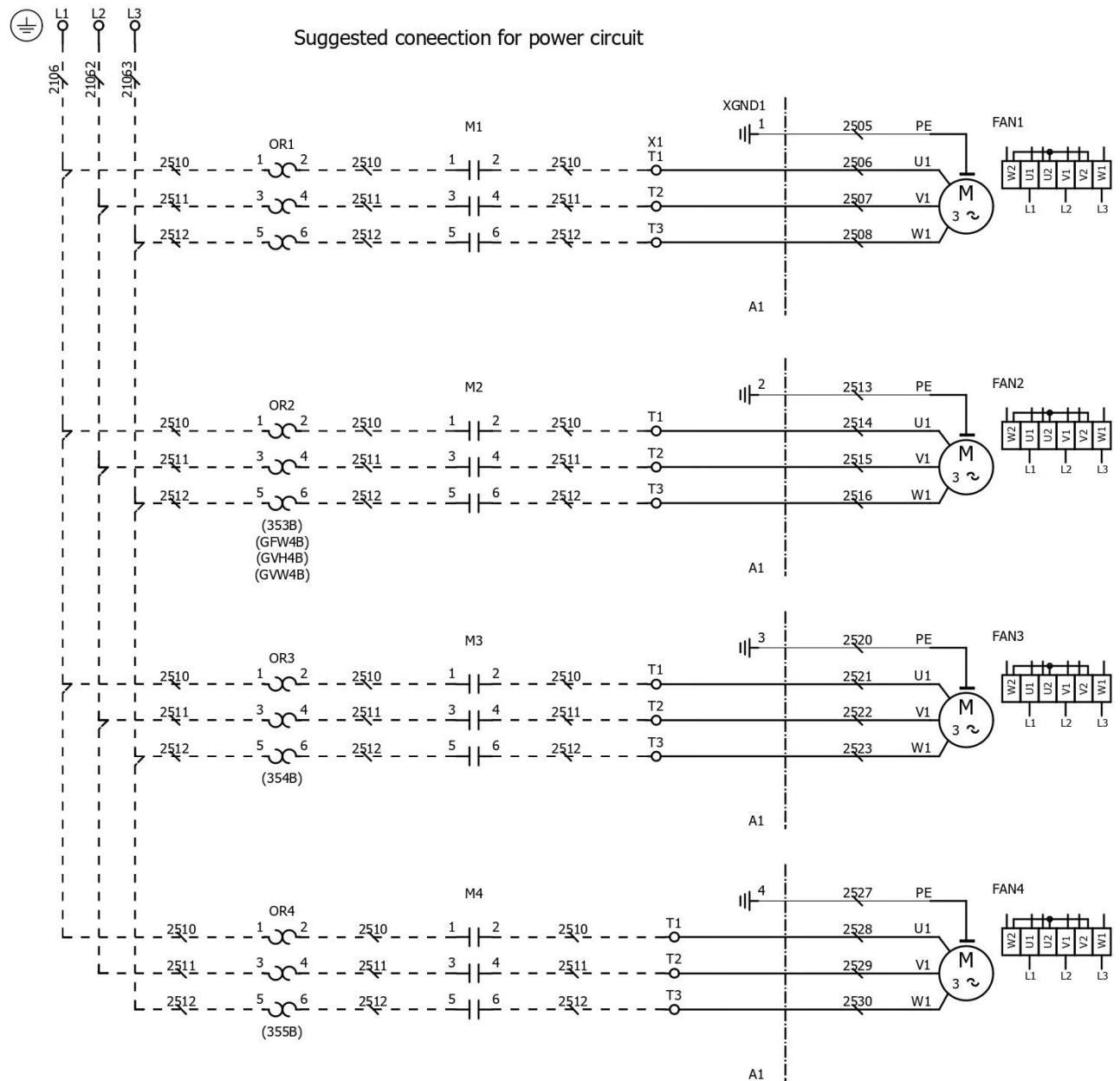
Model	Fan Data			Motor SPM									Motor EC		
	Fans	Air Volume		230 V / 3 Ph / 60 Hz			400 V / 3 Ph / 50 Hz			460 V / 3 Ph / 60 Hz			380 - 460 V / 3 Ph / 50-60 Hz		
		CFM	m3/h	Watts	Amps	Total Amps	Watts	Amps	Total Amps	Watts	Amps	Total Amps	Watts	Amps	Total Amps
CDH 0280.2	1	3,972	6,750	750	2.8	2.8	480	1	1	800	1.25	1.25	600	1	1
CDH 0360.2	1	3,872	6,580	750	2.8	2.8	480	1	1	800	1.25	1.25	600	1	1
CDH 0400.2	2	8,171	13,883	1500	2.8	5.6	960	1	2	1600	1.25	2.5	600	1	2
CDH 0550.2	2	7,945	13,500	1500	2.8	5.6	960	1	2	1600	1.25	2.5	600	1	2
CDH 0740.2	2	7,745	13,160	1500	2.8	5.6	960	1	2	1600	1.25	2.5	600	1	2
CDH 0890.2	3	11,918	20,250	2250	2.8	8.4	1440	1	3	2400	1.25	3.75	600	1	3
CDH 0980.2	3	11,618	19,740	2250	2.8	8.4	1440	1	3	2400	1.25	3.75	600	1	3
CDH 1100.2	4	15,891	27,000	3000	2.8	11.2	1920	1	4	3200	1.25	5	600	1	4
CDH 1080.2	4	15,491	26,320	3000	2.8	11.2	1920	1	4	3200	1.25	5	600	1	4
CDH 0340.2	1	4,990	8,479	1250	3.8	3.8	800	1.85	1.85	1300	2.1	2.1	1000	1.65	1.65
CDH 0420.2	1	4,847	8,236	1250	3.8	3.8	800	1.85	1.85	1300	2.1	2.1	1000	1.65	1.65
CDH 0530.2	2	10,267	17,445	2500	3.8	7.6	1600	1.85	3.7	2600	2.1	4.2	2000	1.65	3.3
CDH 0650.2	2	9,981	16,959	2500	3.8	7.6	1600	1.85	3.7	2600	2.1	4.2	2000	1.65	3.3
CDH 0880.2	2	9,695	16,473	2500	3.8	7.6	1600	1.85	3.7	2600	2.1	4.2	2000	1.65	3.3
CDH 1060.2	3	14,972	25,438	3750	3.8	11.4	2400	1.85	5.55	3900	2.1	6.3	3000	1.65	4.95
CDH 1130.2	3	14,543	24,709	3750	3.8	11.4	2400	1.85	5.55	3900	2.1	6.3	3000	1.65	4.95
CDH 1290.2	4	19,963	33,918	5000	3.8	15.2	3200	1.85	7.4	5200	2.1	8.4	4000	1.65	6.6
CDH 1610.2	4	19,391	32,946	5000	3.8	15.2	3200	1.85	7.4	5200	2.1	8.4	4000	1.65	6.6

Model	Motor SPM						Motor EC	
	Heaters 230V 3Ph		Heaters 400 V 3Ph		Heaters 460 V 3Ph		Heaters 380 - 460 V 3Ph	
	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps
CDH 0280.2	8000	20.74	8000	20.74	8000	11.30	8000	11.30
CDH 0360.2	9000	22.60	9000	22.60	9000	11.30	9000	11.30
CDH 0400.2	12000	30.51	12000	30.51	12000	15.82	12000	15.82
CDH 0550.2	14400	33.89	14400	33.89	14400	20.34	14400	20.34
CDH 0740.2	16200	40.67	16200	40.67	16200	20.34	16200	20.34
CDH 0890.2	21600	54.23	21600	54.23	21600	27.12	21600	27.12
CDH 0980.2	24000	63.26	24000	63.26	24000	31.74	24000	31.74
CDH 1100.2	27000	67.78	27000	67.78	27000	33.89	27000	33.89
CDH 1080.2	33000	84.79	33000	84.79	33000	45.19	33000	45.19
CDH 0340.2	8000	20.74	8000	20.74	8000	11.30	8000	11.30
CDH 0420.2	9000	22.60	9000	22.60	9000	11.30	9000	11.30
CDH 0530.2	12000	30.51	12000	30.51	12000	15.82	12000	15.82
CDH 0650.2	14400	33.89	14400	33.89	14400	20.34	14400	20.34
CDH 0880.2	16200	40.67	16200	40.67	16200	20.34	16200	20.34
CDH 1060.2	21600	54.23	21600	54.23	21600	27.12	21600	27.12
CDH 1130.2	24000	63.26	24000	63.26	24000	31.74	24000	31.74
CDH 1290.2	27000	67.78	27000	67.78	27000	33.89	27000	33.89
CDH 1610.2	33000	84.79	33000	84.79	33000	45.19	33000	45.19

Typical diagram of three-phase power for motors with thermal protection TOP

Power supply

Suggested connection for power circuit

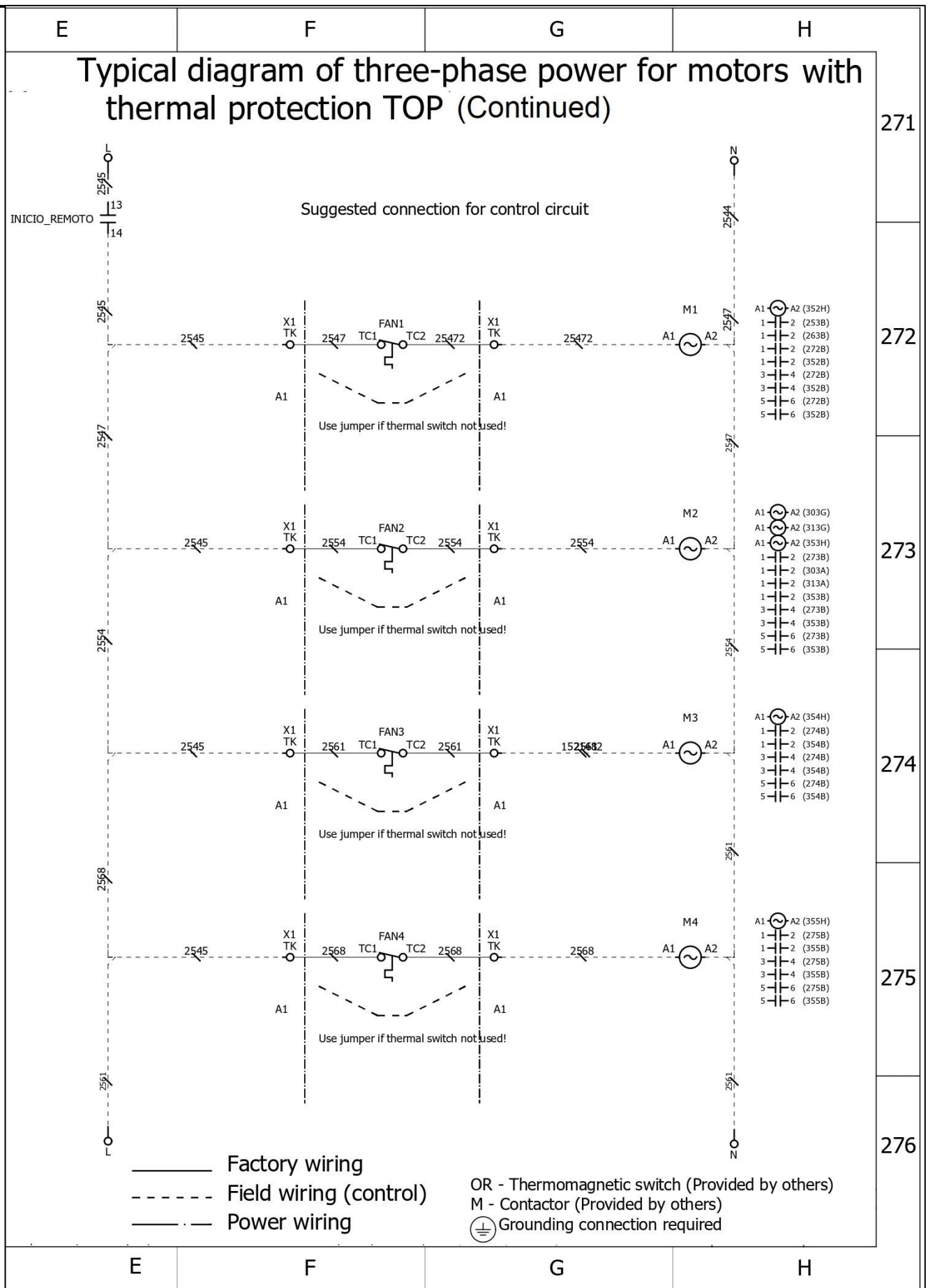


——— Factory wiring
 - - - - - Field wiring (control)
 - · - · - Power wiring

OR - Thermomagnetic switch (Provided by others)
 M - Contactor (Provided by others)
 (⏏) Grounding connection required

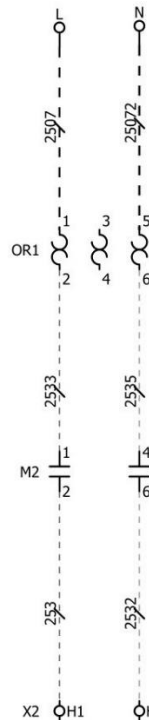
Drawing #: GENERIC_WIRING_DIAGRAM2

Rev.	Description	Name:	Ds
00	Created		



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)

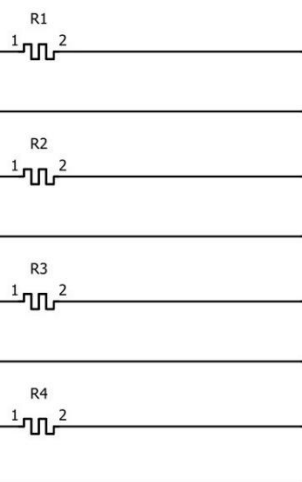
M = Contactor (Provide by others)

⊕ = Grounding connection required

X2 OH1

X2 OH2

X2 = Terminal board



Electrical resistors

Drawing #:

GENERIC_WIRING_DIAGRAM

Rev.	Description	Name
00	Created	

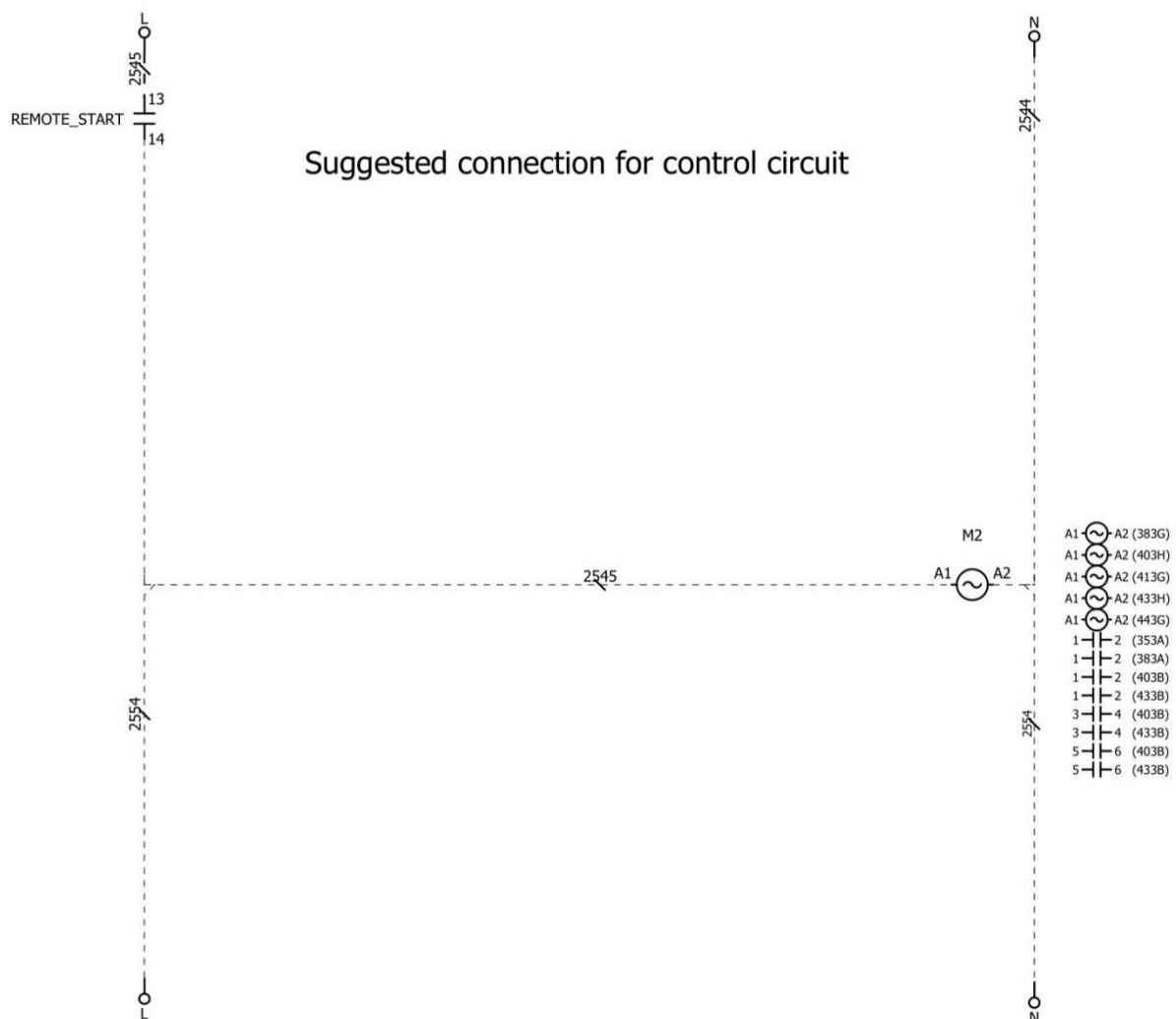
A

B

C

D

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

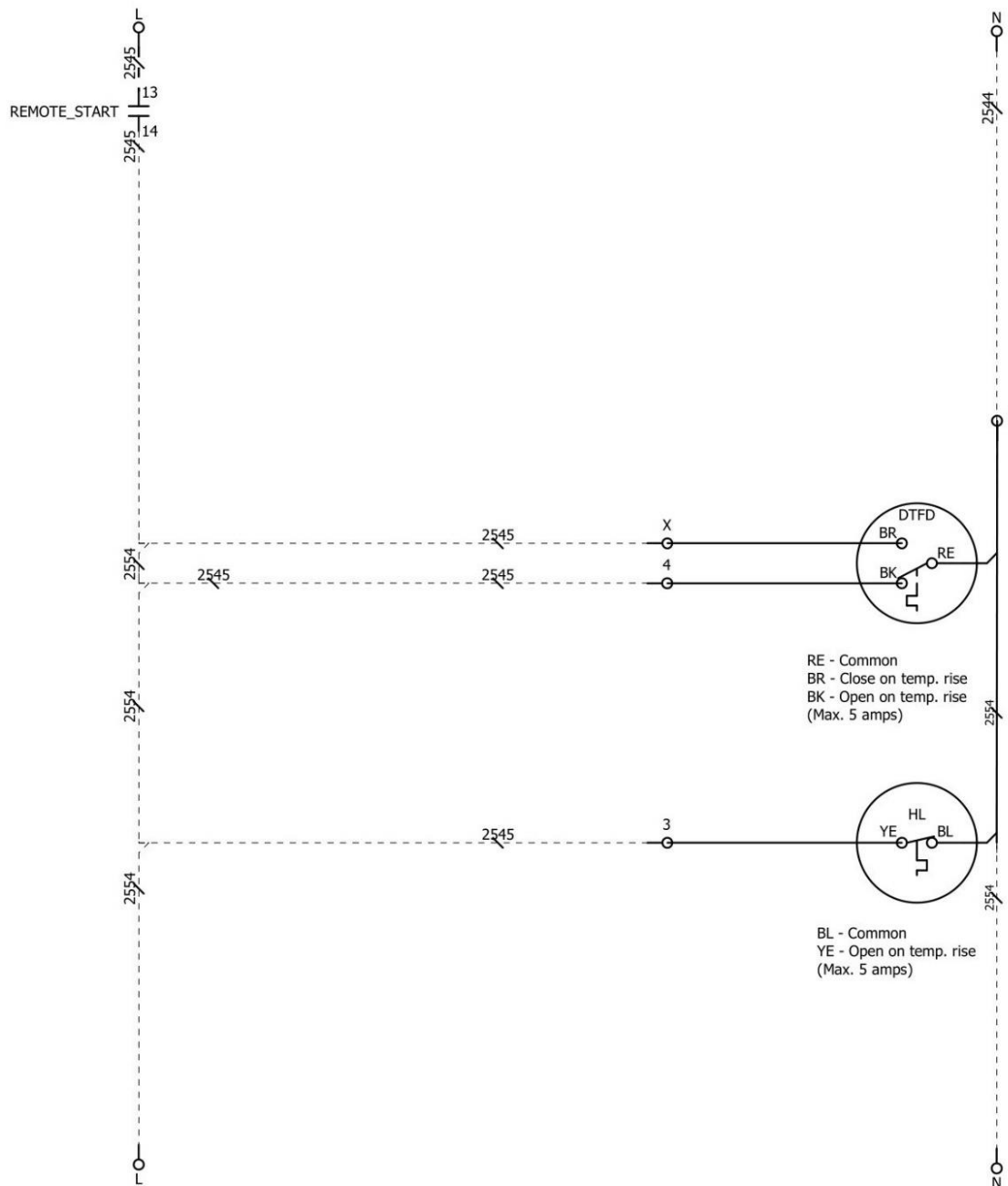


_____ Factory Wiring
 - - - - - Field Wiring (control)
 _____ Power Wiring

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: 35	
												Doc-Nr.:	Next page:		36
												Index:	Total Pages:		12

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, compressor relay)
HL = Heat Limit
DTFD =Defrost termination fan delay

15.Spare parts

Model	Fan					Main Junction Box	Drain
	V.T. Num.				Motor EC		
	230V-3Ph-60Hz	400V-3Ph-50Hz	400V-3Ph-60Hz	460V-3Ph-60Hz	380/460V-3Ph-50/60 Hz	230V-1Ph-50/60Hz	
CAH 0350.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	PC 1111-7m UL	BGAB114K
CAH 0470.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	PC 1111-7m UL	BGAB114K
CAH 0700.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	PC 1313-7m UL	BGAB114K
CAH 0930.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	PC 1313-7m UL	BGAB114K
CAH 0575.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	PC 1313-7m UL	BGAB114K
CAH 1050.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	PC 1811-9m UL	BGAB114K
CAH 1410.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	PC 1811-9m UL	BGAB114K
CAH 0840.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	PC 1811-9m UL	BGAB114K
CAH 1400.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	PC 1811-9m UL	BGAB114K
CAH 1900.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	PC 1811-9m UL	BGAB114K
CAH 1140.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	PC 1811-9m UL	BGAB114K
CAH 1630.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	PC 1811-9m UL	BGAB114K

Model	Fan					Coil Heater	Tray Heater	Drain
	V.T. Num.				Motor EC			
	230V-3Ph-60Hz	400V-3Ph-50Hz	400V-3Ph-60Hz	460V-3Ph-60Hz	380/460V-3Ph-50/60 Hz	230V-3Ph-60Hz		
CEH/CGH 0300.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	U20GD13000500230	U20GD13000500230	BGAB114K
CEH/CGH 0370.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	U20GD13000500230	U20GD13000500230	BGAB114K
CEH/CGH 0600.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	U20GD23600900230	U20GD23600600230	BGAB114K
CEH/CGH 0780.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	U20GD23600900230	U20GD23600600230	BGAB114K
CEH/CGH 0900.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	U20GD33001200230	U20GD33001200230	BGAB114K
CEH/CGH 1200.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	U20GD33001200230	U20GD33001200230	BGAB114K
CEH/CGH 1060.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	U20GD43001500230	U20GD43001500230	BGAB114K
CEH/CGH 1400.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	U20GD43001500230	U20GD43001500230	BGAB114K

Model	Fan					Coil Heater	Tray Heater	Drain
	V.T. Num.				Motor EC			
	230V-3Ph-60Hz	400V-3Ph-50Hz	400V-3Ph-60Hz	460V-3Ph-60Hz	380/460V-3Ph-50/60 Hz	230V-3Ph-60Hz		
CDH/CKH 0280.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	U20GD13000500230	U20GD13000500230	BGAB114K
CDH/CKH 0360.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	U20GD13000500230	U20GD13000500230	BGAB114K
CDH/CKH 0400.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	U20GD23600600230	U20GD23600900230	BGAB114K
CDH/CKH 0550.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	U20GD23600900230	U20GD23600900230	BGAB114K
CDH/CKH 0740.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	U20GD23600900230	U20GD23600900230	BGAB114K
CDH/CKH 0890.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	U20GD33001200230	U20GD33001200230	BGAB114K
CDH/CKH 0980.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	U20GD33001200230	U20GD33001200230	BGAB114K
CDH/CKH 1100.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	U20GD43001500230	U20GD43001500230	BGAB114K
CDH/CKH 1080.2	VT01186U	VT01283U	VT01283U	VT01283U	VT03091U.1	U20GD43001500230	U20GD43001500230	BGAB114K
CDH/CKH 0340.2	VT01278U	VT01278U	VT01278U	VT01278U	VT03091U.1	U20GD13000500230	U20GD13000500230	BGAB114K
CDH/CKH 0420.2	VT01278U	VT01278U	VT01278U	VT01278U	VT03091U.1	U20GD13000500230	U20GD13000500230	BGAB114K
CDH/CKH 0530.2	VT01278U	VT01278U	VT01278U	VT01278U	VT03091U.1	U20GD23600600230	U20GD23600900230	BGAB114K
CDH/CKH 0650.2	VT01278U	VT01278U	VT01278U	VT01278U	VT03091U.1	U20GD23600900230	U20GD23600900230	BGAB114K
CDH/CKH 0880.2	VT01278U	VT01278U	VT01278U	VT01278U	VT03091U.1	U20GD23600900230	U20GD23600900230	BGAB114K
CDH/CKH 1060.2	VT01278U	VT01278U	VT01278U	VT01278U	VT03091U.1	U20GD33001200230	U20GD33001200230	BGAB114K
CDH/CKH 1130.2	VT01278U	VT01278U	VT01278U	VT01278U	VT03091U.1	U20GD33001200230	U20GD33001200230	BGAB114K
CDH/CKH 1290.2	VT01278U	VT01278U	VT01278U	VT01278U	VT03091U.1	U20GD43001500230	U20GD43001500230	BGAB114K
CDH/CKH 1610.2	VT01278U	VT01278U	VT01278U	VT01278U	VT03091U.1	U20GD43001500230	U20GD43001500230	BGAB114K

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 blow.	1.2.1 Check for short circuit or overloads. Replace damaged fuses.
	1.3 Damaged timer or defrost 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
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 on the system	2.3.1 Check for leaks and charge system with additional refrigerant.
	2.4 Ice formation on the 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.
	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. 2.10.2 See possible cause 1.7 2.10.3 See symptom 4 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.

Symptom	Possible causes	Possible corrective actions
2. Room temperature is too high	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.
	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. 2.15.2 Clean solenoid valve and its filter. 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 3.3
	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.

Symptom	Possible causes	Possible corrective actions
5. Uneven coil freezing during refrigeration cycle.	5.4 Incorrect or missing distributor nozzle.	5.4.1 Add or substitute the nozzle with and 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. 6.1.2 Change drain line heater.
	6.2 Tray heater does not work.	6.2.1 Check heater power supply. 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. 6.4.2 Insulate drain line properly (if clogged with ice)
	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 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 data

SERVICE RECORD CAH – CEH – CDH

A data sheet for each installation and each unit cooler must be filled out, with one copy to the owner, one copy to the installing contractor and the original for Güntner. If another firm is to handle service and maintenance, additional copies should be prepared as necessary.

Güntner

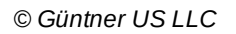
System reference data

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

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 _____
Ambient 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 ☐



This image shows a full page of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for handwriting practice or general writing. There are no margins, text, or other markings on the page.