

EN

4138511_14 - 24.01
Translation of Original instructions

NRB 0800-3000-HP

Technical manual



REVERSIBLE AIR/WATER HEAT PUMP

Cooling capacity 54.4 ÷ 178.1 ton

Heating capacity 629,881 ÷ 2,071,170 BTU/h

AERMEC

www.aermec.com

Dear Customer,

Thank you for wanting to learn about a product Aermec. This product is the result of many years of experience and in-depth engineering research, and it is built using top quality materials and advanced technologies.

The manual you are about to read is meant to present the product and help you select the unit that best meets the needs of your system.

WARNING: personnel who possess the necessary skills according to state, national and local regulations in force must choose and size the machine

Aermec, always attentive to the continuous changes in the market and its regulations, reserves the right to make all the changes deemed necessary for improving the product, including technical data.

Thank you again.

Aermec S.p.A.

CERTIFICATIONS



COMPANY CERTIFICATIONS



SAFETY CERTIFICATIONS



Intertek



This mark indicates that the disposal of this product must strictly follow the national and local laws in force.

TABLE OF CONTENTS

1	Product description	6			
	Acoustic efficiency	6			
	Maximum adaptability	6			
	Extended operating range	6			
	Control	6			
	Version with desuperheater	6			
	Dual-circuit unit	6			
	Electronic expansion valve	6			
2	Configurator	7			
3	Unit components description	8			
	Refrigerant circuit	8			
	Hydraulic circuit	8			
	Hydraulic circuit (versions with hydronic kit)	8			
	Structure and fans	8			
	Control and safety components	8			
	Electrical control and power panel	9			
4	Main hydraulic circuits	10			
	Without hydronic kit	10			
	With pumps	11			
	With pumps and storage tank	12			
	With desuperheater	13			
5	Main cooling refrigerant layouts	14			
	NRB H 0800 ÷ 1600 - valve ° - cooling mode	14			
	NRB H 0800 ÷ 1600 - valve ° - heating mode	15			
	NRB H 0800 ÷ 1600 - valve ° - cooling mode - desuperheater D	16			
	NRB H 0800 ÷ 1600 - optional valve X - cooling mode / NRB H 1800 ÷ 3000 - valve X - cooling mode	17			
	NRB H 0800 ÷ 1600 - optional valve X - heating mode / NRB H 1800 ÷ 3000 - valve X - heating mode	18			
	NRB H 0800 ÷ 1600 - optional valve X - cooling mode - desuperheater D / NRB H 1800 ÷ 3600 - valve X - cooling mode - desuperheater D	19			
6	Accessories	20			
	Factory fitted accessories	20			
	Accessories compatibility	20			
7	Performance specifications	21			
8	General technical data	23			
	Fans data	23			
	Electric data	24			
	Dimensions and weights	33			
	Minimum technical spaces	34			
	Single installation	34			
	Multiple installation	35			
9	Operating limits	36			
	Cooling mode	36			
	Heating mode range	36			
10	Pressure drops	37			
	Version A	37			
	Version E	38			
11	System water content	40			
	Minimum system water content	40			
	Maximum system water content	40			
	Expansion vessel setting	41			
12	Correction factors	42			
	Corrective factors for Average water temperatures different from nominal values	42			
	Fouling: deposit corrective factors [K ² m ²]/[W]	42			
13	Glycol	42			
	Ethylene glycol	42			
	Propylene glycol	42			
14	Sound data	43			

1 PRODUCT DESCRIPTION



The Selection and the sizing of the unit for each application must be approved by a person skilled in the field of the existing legislation

Reversible outdoor heat pumps for the production of chilled/heated water designed to satisfy the needs of residential and commercial buildings, or for industrial applications.

Outdoor units with scroll compressors, axial flow fans and plate heat exchangers. The base, the structure and the panels are made of galvanized steel treated with polyester paint RAL 9003.

ACOUSTIC EFFICIENCY

This product range does not consider the energy class as the only selection parameter. Chillers can be chosen between different noise levels that do not affect the energy class but maintain the best energy efficiency status.

The different versions have been designed to identify the unit according to the intended use of the system.

With the NRB-H versions, there are no compromises when making technological choices. Efficiency and silence can co-exist without any excluding restraints.

MAXIMUM ADAPTABILITY

To obtain a solution that allows you to save money and to facilitate installation. These units can be configured with an integrated hydronic system.

The kit contains the main hydraulic components, and is available in various configurations with a single pump or a standby pump and with various heads. (see configurator)

EXTENDED OPERATING RANGE

This range can work at full load with outdoor temperature up to 122.0 °F. This occurs in the high efficiency versions and also, for example, in versions with silent operation. Therefore, their natural location is in urban centres, where environmental requirements are strictly related to noise.

CONTROL

The controller with liquid crystal display is supplied as per standard with all the units. It has a multilingual user interface, which is available also in remote version (accessory) to be connected to the unit with serial connection.

The presence of an internal clock allows you to program the operation in time periods in order to improve the system efficiency and reduce consumption during periods of non-use.

This option (Night Mode) is perfect for night operation, since it guarantees greater acoustic comfort in the evenings, and a high efficiency in the time of greater load.

Night Mode for standard versions is mandatory "J" inverter fan.

Systems consisting of two chillers allow the unit to be adjusted via (Master/Slave), supplied as per standard. In case of several chillers through the Multichiller_EVO.

The supervision is possible thanks to different options, with proprietary devices or by integrating other systems via ModBus, Bacnet, LonWorks etc. protocols.

VERSION WITH DESUPERHEATER

Cooler complete with a desuperheater section.

In this configuration a coolant/water heat exchanger is added on the gas flow line. The exchanger is set i series before the condenser and is appropriately sized to guarantee the recovery of all or part of the heat produced, for the free production of hot water at a medium-high temperature for domestic or other uses.

Each exchanger is protected by an anti-freeze resistance.

DUAL-CIRCUIT UNIT

Unit with 2 refrigerant circuits designed to provide maximum efficiency at full load, ensuring high efficiency at partial loads also and ensuring continuity in case one of the circuits stops.

ELECTRONIC EXPANSION VALVE

The possibility to use electronic expansion valve, offers significant benefits, especially when the chiller is working with partial loads, increasing the energy efficiency of the unit.

It is standard in all sizes from 1800 to 3000.

2 CONFIGURATOR

Field	Description
1,2,3	NRB
	Size
4,5,6,7	0800, 0900, 1000, 1100, 1200, 1400, 1600, 1800, 2000, 2200, 2400, 2600, 2800, 3000
8	Operating field
	° Standard mechanic thermostatic valve (1)
	X Electronic thermostatic expansion valve (2)
9	Model
	H Heat pump
10	Heat recovery
	° Without heat recovery
	D With desuperheater (3)
11	Version
	A High efficiency
	E Silenced high efficiency
12	Coils
	° Aluminium microchannel
	O Coated aluminium microchannel
	R Copper-copper
	S Tinned copper
13	Fans
	° Standard (4)
	J Inverter
14	Power supply
	6 230V ±10% ~3 / 60Hz with thermomagnetic switches (5)
	7 460V ±10% ~3 / 60Hz with thermomagnetic switches
	8 575V ±10% ~3 / 60Hz with thermomagnetic switches
	9 208V ±10% ~3 / 60Hz with thermomagnetic switches (5)
15,16	Integrated hydronic kit
	00 Without hydronic kit
	Kit with n° 1 pump
	PA Pump A (6)
	PB Pump B (6)
	PC Pump C (6)
	PD Pump D (6)
	PE Pump E (6)
	PF Pump F (6)
	PG Pump G (6)
	PH Pump H (6)
	PI Pump I (6)
	PJ Pump J (6)

Field	Description
	Pump n° 1 pump + stand-by pump
	DA Pump A + stand-by pump (6)
	DB Pump B + stand-by pump (6)
	DC Pump C + stand-by pump (6)
	DD Pump D + stand-by pump (6)
	DE Pump E + stand-by pump (6)
	DF Pump F + stand-by pump (6)
	DG Pump G + stand-by pump (6)
	DH Pump H + stand-by pump (6)
	DI Pump I + stand-by pump (6)
	DJ Pump J + stand-by pump (6)
	Kit with storage tank and n° 1 pump
	AA Storage tank and pump A (6)
	AB Storage tank and pump B (6)
	AC Storage tank and pump C (6)
	AD Storage tank and pump D (6)
	AE Storage tank and pump E (6)
	AF Storage tank and pump F (6)
	AG Storage tank and pump G (6)
	AH Storage tank and pump H (6)
	AI Storage tank and pump I (6)
	AJ Storage tank and pump J (6)
	Kit with storage tank and n° 1 pump + stand-by pump
	BA Storage tank with pump A + stand-by pump (6)
	BB Storage tank with pump B + stand-by pump (6)
	BC Storage tank with pump C + stand-by pump (6)
	BD Storage tank with pump D + stand-by pump (6)
	BE Storage tank with pump E + stand-by pump (6)
	BF Storage tank with pump F + stand-by pump (6)
	BG Storage tank with pump G + stand-by pump (6)
	BH Storage tank with pump H + stand-by pump (6)
	BI Storage tank with pump I + stand-by pump (6)
	BJ Storage tank with pump J + stand-by pump (6)

(1) Water produced up to 39.2°F.

(2) Processed water temperature up to 39.2°F. The standard electronic expansion valve with a size from 2000 to 3000.

(3) During operation, a water temperature no lower than 95°F must always be guaranteed on the heat exchanger inlet. The option is not compatible with the TM fan.

(4) Not available for silenced versions.

(5) Available only with fans J for sizes from 0800 to 1200.

(6) For the availability of the pumps in the different configurations, refer to the Magellano selection program or the technical documentation.

3 UNIT COMPONENTS DESCRIPTION

REFRIGERANT CIRCUIT

Compressors

Crankcase heaters as standard, automatically activated when the unit stops, as long as power is maintained to the unit.

Source side heat exchanger

Finned coil heat exchanger with copper tubes and aluminium louvers adequately spaced to ensure high efficiencies.

System side heat exchanger

Brazed plate heat exchanger in stainless steel. It is externally insulated with closed cell neoprene anti-condensation material.

When the unit is not functioning, it's protected against the formation of ice by an electric heater.

Filter drier

Hermetic-mechanical made of hygroscopic material, able to withhold impurities and any traces of humidity present in the cooling circuit.

Mechanic thermostatic valve

The mechanical type valve, with external equaliser located at the evaporator outlet, modulates the flow of refrigerant into the evaporator based on the load and ensures the correct superheat of the suction gas.

Electronic thermostatic expansion valve

Compared with a mechanical thermostatic valve, the electronic one offers better overheating control so the evaporator is used more efficiently in all conditions, thereby boosting machine output.

Its use in comfort dedicated applications allows to make substantial benefits especially in the presence of varying loads, because it allows you to maintain the maximum efficiency with any external air temperature.

In industrial applications, where there is often a need to make temperature changes in a wide range of environmental conditions, the use of the electronic valve is ideal because it avoids the need for continuous calibration, adapting the system to different load conditions and hence making it independent.

■ *Electronic thermostatic valve X as standard from size 1800 ÷ 3000.*

Solenoid valves

The valves close when the compressor switches off, blocking the flow of refrigerant gas to the evaporator, recovery and the coil.

■ *Only with the mechanical thermostatic valve*

Sight glass

It is used to verify that the expansion system is powered correctly and the presence of humidity in the cooling circuit.

Liquid separator

Located in the intake line, it protects the compressor from any liquid returns.

One-way valve

Allows one-way flow of the refrigerant. Positioned on the compressor flow, it prevents inverse rotation of the rotors after stopping.

Reversing valve

4-way cycle inversion valve. Reverses the refrigerant fluid flow.

Liquid accumulator

Compensates for the difference in volume between the finned coil and the plate heat exchanger, retaining the excessive liquid.

HYDRAULIC CIRCUIT

Water filter

Equipped with steel filtering mesh, it prevents the heat-exchanger from clogging system side due to any impurity inside the circuit.

■ *Installed in versions with the hydronic kit, it is supplied for version 00.*

Recovery side heat exchanger (optional)

Brazed plate heat exchanger in stainless steel. It is externally insulated with closed cell neoprene anti-condensation material.

When the unit is not functioning, it's protected against the formation of ice by an electric heater.

■ *The desuperheater must be intercepted in heating mode. In cooling mode, a water temperature no lower than 95 °F must always be guaranteed on the heat exchanger inlet.*

HYDRAULIC CIRCUIT (VERSIONS WITH HYDRONIC KIT)

Pump

They provide useful static pressure to the system, excluding the unit pressure drops.

■ *The pumps are programmed in rotation with automatic exchange if the running pump fails*

Expansion vessel

Membrane type precharged with nitrogen.

Pressure relief valve

Calibrated at 85.3 psi and drain pipe, it activates by discharging overpressure if abnormal pressure occurs.

Air drain valve

Mounted at the highest level of the hydraulic system. The air vent is used for the release of any air pockets from the hydraulic circuit.

Drain valve

System buffer tank

In steel to reduce heat gain and avoid the formation of condensation.

Insulated with polyurethane material of adequate thickness.

It reduces the number of compressor starts and stabilises the water temperature delivered to the system.

It is equipped with antifreeze electrical resistances to ensure minimum temperature of stored water of 5.0 °C, with minimum outdoor temperature of 68.0 °F. The resistance is activated by a water temperature probe placed inside the unit's hydronic circuit.

STRUCTURE AND FANS

Structure

Supporting structure for outdoor installation, in hot-dipped galvanized sheet steel, with RAL 9003 polyester powder coating.

Designed to ensure the maximum access for service and maintenance.

Standard fan unit

Equipped with accident-prevention net, it consists of axial fans and 6-pole motor with external rotor and protection rating IP54.

Moreover, the motor is equipped with inner thermal protection with automatic reset.

Inverter fans

Continuous modulation of revolution speed according to the condensation pressure, highly efficient motor for low energy consumption.

CONTROL AND SAFETY COMPONENTS

High pressure switch

With fixed calibration, placed on the high pressure side of the cooling circuit, it inhibits the operation of the compressor if abnormal work pressure occurs.

■ *Manual reset*

Low pressure transducer

Placed on low pressure side of cooling circuit, it signals the work pressure to the control board, generating a pre-warning in case abnormal pressure occurs.

High pressure transducer

Placed on the high pressure side of the cooling circuit, signals the work pressure to control board, generating a pre-warning in case abnormal pressure occurs.

Condensation control temperature

Device for electronically controlling the condensation, for functioning even at low temperatures, which allows adjusting the air flow rate to actual system demand with resulting advantages in terms of consumption reduction.

■ *Standard in the silenced versions or with the desuperheater; an accessory for all other versions.*

ELECTRICAL CONTROL AND POWER PANEL

Complete with:

- door interlocked isolator
- Magnet circuit breakers and contactors for compressors and fans
- external electrical panel
- electronic controller
- All numbered cables

Door interlocked isolator

Access to the electrical panel is by operating the handle of the door interlocked isolator which removes power to the unit.

To avoid accidentally powering up the unit during maintenance the isolator is fitted with a locking mechanism.

Controller keypad

Allows complete control of the unit.

For further information refer to the user manual.

Electronic controller

The microprocessor controls features cutting edge functions and proprietary adjustments.

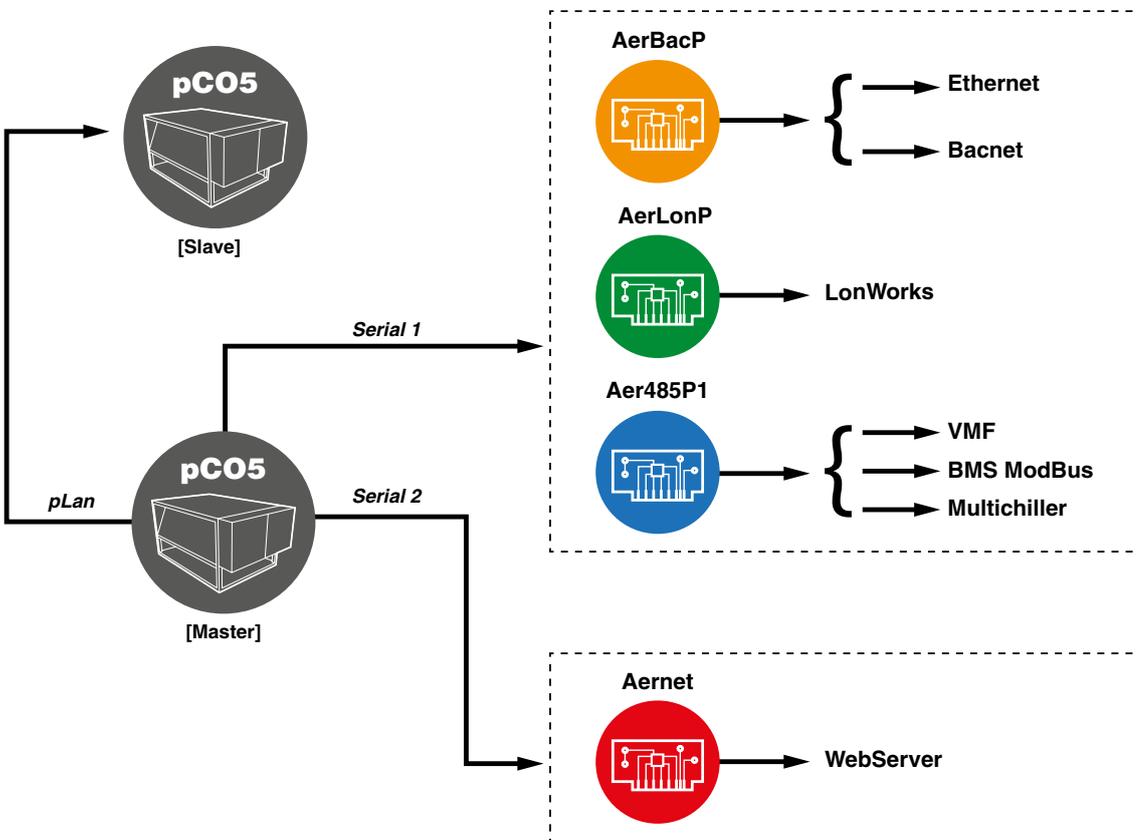
The control panel allows the user to consult and manage the unit operating parameters thanks to a purposely designed multi-language graphic interface.

The multi-level menu can be used to control:

- The system temperature for cooling the environments or industrial processes. The different temperatures are managed automatically according to the unit work conditions and requirements.
- Management and alarm log to have always a prompt diagnosis of the unit operation.
- Creation of operation time periods required for efficient programming
- A self-adaptive logic is used to defrost. This logic allows you to adjust the number of defrosts in order to increase efficiency.
- Systems consisting of two chillers allow the unit to be adjusted via (Master/ Slave), supplied as per standard. In case of several chillers through the Multichiller_EVO. The supervision is possible thanks to different options, with proprietary devices or by integrating other systems via ModBus, Bacnet, LonWorks etc. protocols.

A specific keyboard for wall-mounting installation (PGD1 accessory) allows the remote control of all the functions.

■ *Note: For further information, refer to the user manual.*



4 MAIN HYDRAULIC CIRCUITS

WITHOUT HYDRONIC KIT



Water filter: Installation in the immediate vicinity of the heat exchanger is mandatory.

Do not fill up the hydraulic system by glycol near the suction of the pump. High concentration of glycol could stuck the pump. Do not use the pump to mix water and glycol.

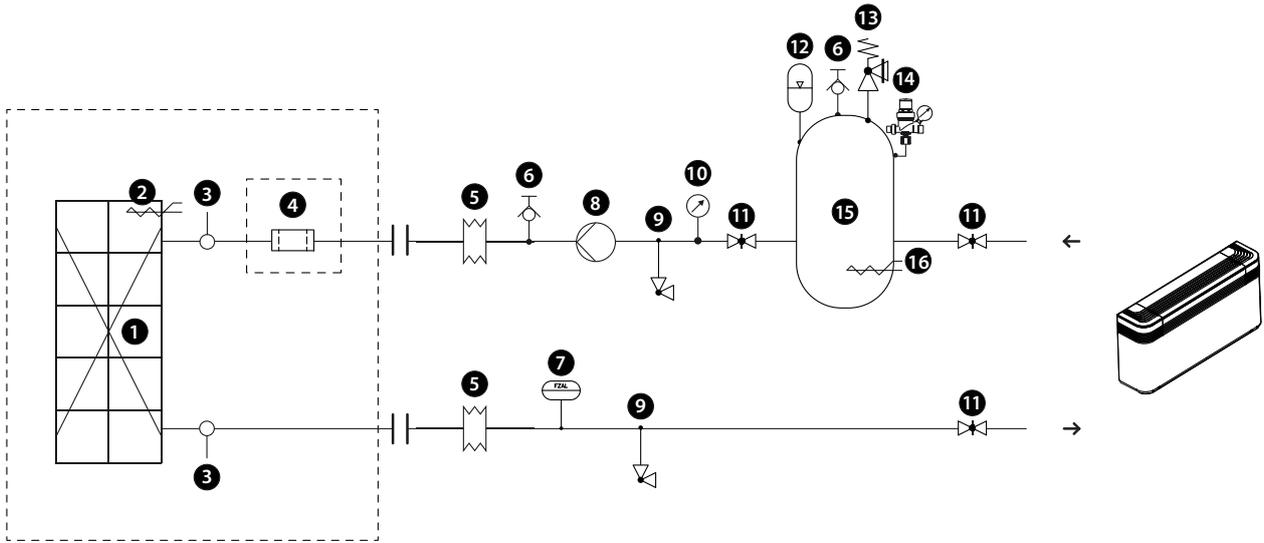


In the absence of glycol, the machine needs to be powered to ensure the heaters (if present) and the pumps (if present) are operating to

avoid glazing and, therefore, damaging the components in the hydraulic circuit.



Flushing the plant's hydraulic circuit (cleaning the hydraulic circuit) needs to be done by excluding the chiller's hydraulic circuit. Make sure, in any case, that the water has not entered the chiller by ensuring you open the chiller's hydraulic circuit drains. Any water accumulated in the chiller's hydraulic circuit can cause icing/damage to the components.



Components as standard

- 1 Plate heat exchanger
- 2 Antifreeze electric heater
- 3 Water temperature sensors (IN/OUT)
- 4 Water filter (as standard)

Components not provided and responsibility of the installer

- 5 Anti-vibration joints
- 6 Air drain valve
- 7 Flow switch (MANDATORY)
- 8 Pump
- 9 Drain valve

- 10 Pressure gauge
- 11 Flow shut-off valves
- 12 Expansion vessel
- 13 Pressure relief valve
- 14 Loading unit
- 15 Storage tank

Water characteristics

System: Chiller with plate heat exchanger

PH	7,5 - 9
Total hardness	4,5 - 8,5 °dH
Electric conductivity	10-500 µS /cm
Temperature	< 65 °C
Oxygen content	< 0,1 ppm
Max. glycol amount	50 %
Phosphates (PO ₄)	< 2ppm
Manganese (Mn)	< 0,05 ppm
Iron (Fe)	< 0,2 ppm
Alkalinity (HCO ₃)	70 - 300 ppm
Chloride ions (Cl ⁻)	< 50 ppm
Free chlorine	< 0,5 ppm
Sulphate ions (SO ₄)	< 50 ppm
Sulphide ion (S)	None
Ammonium ions (NH ₄)	None
Silica (SiO ₂)	< 30 ppm



WARNING under no circumstances does the unit have to be operated with water circulating on the heat exchanger whose characteristics are different from those indicated in the table WATER CHARACTERISTICS, under penalty of the warranty expiration. Aermec cannot be held responsible for any malfunction of the units which are operated with water whose characteristics are outside the limits in the table WATER CHARACTERISTICS and for their consequences.



It is of fundamental importance to keep the oxygen concentration in the water under control, especially in open vessel systems. This type of system, in fact, is very sensitive to the phenomenon of extra-oxygenation of the water (an event that can be encouraged by the incorrect positioning of some components). This phenomenon can trigger corrosion processes and subsequent drilling of the heat exchanger and pipes.

WITH PUMPS



Water filter: Installation in the immediate vicinity of the heat exchanger is mandatory.

Do not fill up the hydraulic system by glycol near the suction of the pump. High concentration of glycol could stuck the pump. Do not use the pump to mix water and glycol.

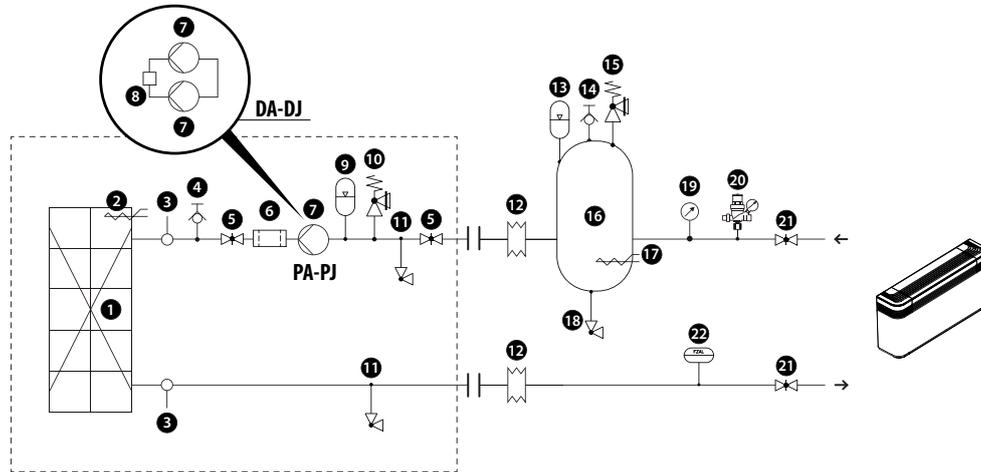


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Components as standard

- 1 Plate heat exchanger
- 2 Antifreeze electric heater
- 3 Water temperature sensors (IN/OUT)
- 4 Air drain valve
- 5 Flow shut-off valves
- 6 Water filter
- 7 Pump
- 8 Clapet valve

- 9 Expansion vessel
- 10 Pressure relief valve
- 11 Drain valve

Components not provided and responsibility of the installer

- 12 Anti-vibration joints
- 13 Expansion vessel
- 14 Air drain valve
- 15 Pressure relief valve

- 16 Storage tank
- 17 Antifreeze electric heater
- 18 Drain valve
- 19 Pressure gauge
- 20 Loading unit
- 21 Flow shut-off valves
- 22 Flow switch (MANDATORY)

Water characteristics

System: Chiller with plate heat exchanger

PH	7,5 - 9
Total hardness	4,5 - 8,5 °dH
Electric conductivity	10-500 µS /cm
Temperature	< 65 °C
Oxygen content	< 0,1 ppm
Max. glycol amount	50 %
Phosphates (PO ₄)	< 2ppm
Manganese (Mn)	< 0,05 ppm
Iron (Fe)	< 0,2 ppm
Alkalinity (HCO ₃)	70 - 300 ppm
Chloride ions (Cl ⁻)	< 50 ppm
Free chlorine	< 0,5 ppm
Sulphate ions (SO ₄)	< 50 ppm
Sulphide ion (S)	None
Ammonium ions (NH ₄)	None
Silica (SiO ₂)	< 30 ppm



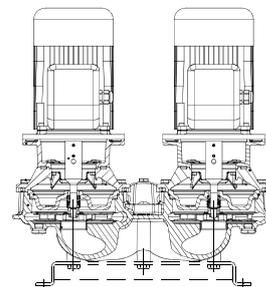
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It is of fundamental importance to keep the oxygen concentration in the water under control, especially in open vessel systems. This type of system, in fact, is very sensitive to the phenomenon of extra-oxygenation of the water (an event that can be encouraged by the incorrect positioning of some components). This phenomenon can trigger

corrosion processes and subsequent drilling of the heat exchanger and pipes.

Clapet valve



1 Clapet valve

The unit with double pump circuit does not have one-way valves. If you choose to install two units in parallel or in cascade, it is recommended to provide one-way valves for the correct operation of the unit.

WITH PUMPS AND STORAGE TANK



Water filter: Installation in the immediate vicinity of the heat exchanger is mandatory.

Do not fill up the hydraulic system by glycol near the suction of the pump. High concentration of glycol could stuck the pump. Do not use the pump to mix water and glycol.

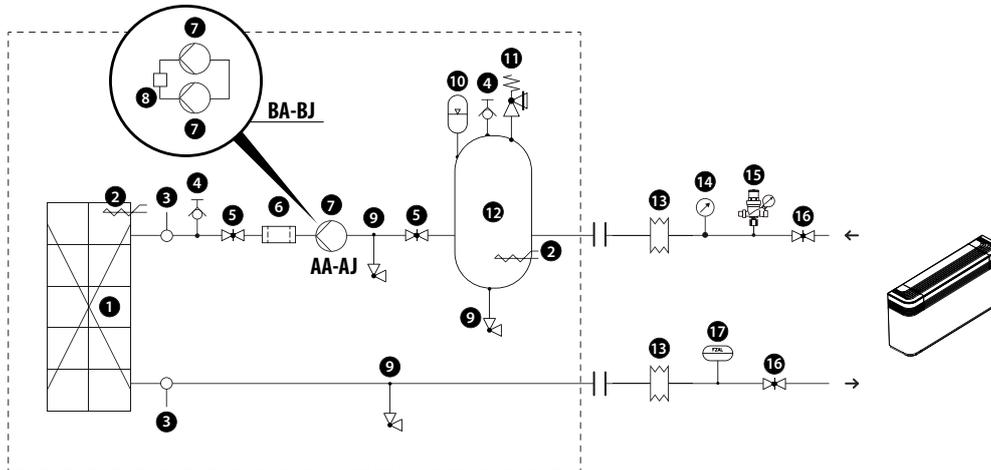


In the absence of glycol, the machine needs to be powered to ensure the heaters (if present) and the pumps (if present) are operating to

avoid glazing and, therefore, damaging the components in the hydraulic circuit.



Flushing the plant's hydraulic circuit (cleaning the hydraulic circuit) needs to be done by excluding the chiller's hydraulic circuit. Make sure, in any case, that the water has not entered the chiller by ensuring you open the chiller's hydraulic circuit drains. Any water accumulated in the chiller's hydraulic circuit can cause icing/damage to the components.



Components as standard

- 1 Plate heat exchanger
- 2 Antifreeze electric heater
- 3 Water temperature sensors (IN/OUT)
- 4 Air drain valve
- 5 Flow shut-off valves
- 6 Water filter

- 7 Pump
- 8 Clapet valve
- 9 Drain valve
- 10 Expansion vessel
- 11 Pressure relief valve
- 12 Storage tank

Components not provided and responsibility of the installer

- 13 Anti-vibration joints
- 14 Pressure gauge
- 15 Loading unit
- 16 Flow shut-off valves
- 17 Flow switch (MANDATORY)

Water characteristics

System: Chiller with plate heat exchanger

PH	7,5 - 9
Total hardness	4,5 - 8,5 °dH
Electric conductivity	10-500 µS /cm
Temperature	< 65 °C
Oxygen content	< 0,1 ppm
Max. glycol amount	50 %
Phosphates (PO ₄)	< 2ppm
Manganese (Mn)	< 0,05 ppm
Iron (Fe)	< 0,2 ppm
Alkalinity (HCO ₃)	70 - 300 ppm
Chloride ions (Cl ⁻)	< 50 ppm
Free chlorine	< 0,5 ppm
Sulphate ions (SO ₄)	< 50 ppm
Sulphide ion (S)	None
Ammonium ions (NH ₄)	None
Silica (SiO ₂)	< 30 ppm

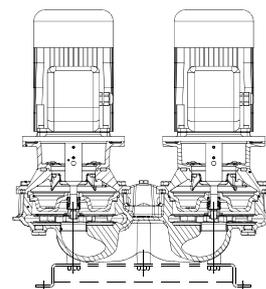


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Clapet valve



1 Clapet valve

The unit with double pump circuit does not have one-way valves. If you choose to install two units in parallel or in cascade, it is recommended to provide one-way valves for the correct operation of the unit.

WITH DESUPERHEATER



Water filter: Installation in the immediate vicinity of the heat exchanger is mandatory.

Do not fill up the hydraulic system by glycol near the suction of the pump. High concentration of glycol could stuck the pump. Do not use the pump to mix water and glycol.

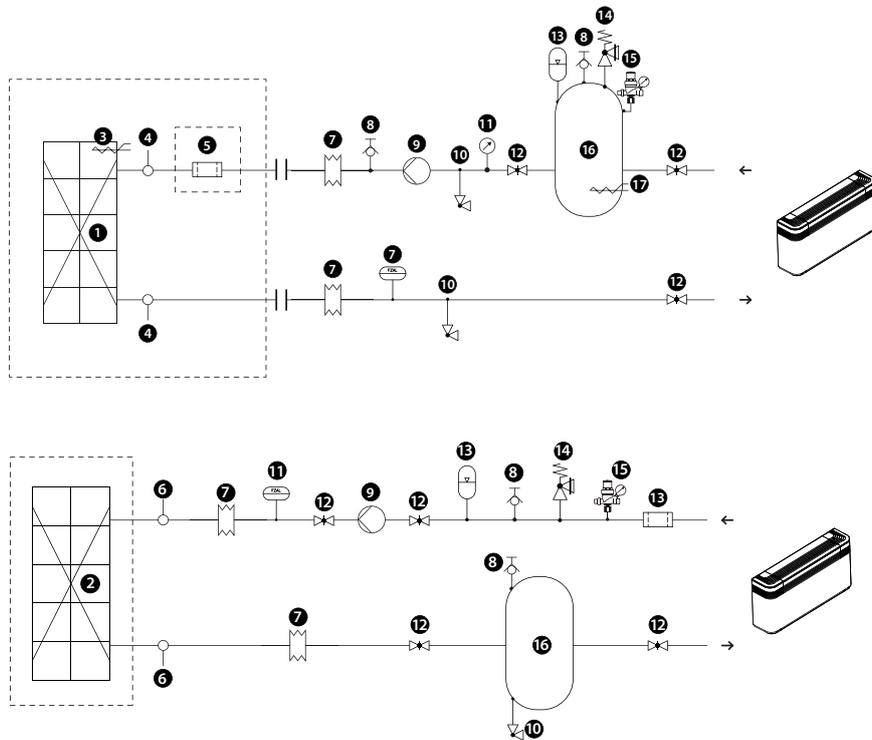


In the absence of glycol, the machine needs to be powered to ensure the heaters (if present) and the pumps (if present) are operating to

avoid glazing and, therefore, damaging the components in the hydraulic circuit.



Flushing the plant's hydraulic circuit (cleaning the hydraulic circuit) needs to be done by excluding the chiller's hydraulic circuit. Make sure, in any case, that the water has not entered the chiller by ensuring you open the chiller's hydraulic circuit drains. Any water accumulated in the chiller's hydraulic circuit can cause icing/damage to the components.



Components as standard

- 1 Plate heat exchanger
- 2 Plate heat exchanger (desuperheater)
- 3 Antifreeze electric heater
- 4 Water temperature sensors (IN/OUT)
- 5 Water filter (as standard)

Components not provided and responsibility of the installer

- 6 Water temperature sensors (IN/OUT)
- 7 Anti-vibration joints
- 8 Air drain valve
- 9 Pump
- 10 Drain valve

- 11 Pressure gauge
- 12 Flow shut-off valves
- 13 Expansion vessel
- 14 Pressure relief valve
- 15 Loading unit
- 16 Storage tank
- 17 Antifreeze electric heater



The desuperheater must be intercepted in heating mode. In cooling mode, a water temperature no lower than 35°C / 95°F must always be guaranteed on the heat exchanger inlet.

Water characteristics

System: Chiller with plate heat exchanger

PH	7,5 - 9
Total hardness	4,5 - 8,5 °dH
Electric conductivity	10-500 µS /cm
Temperature	< 65 °C
Oxygen content	< 0,1 ppm
Max. glycol amount	50 %
Phosphates (PO ₄)	< 2ppm
Manganese (Mn)	< 0,05 ppm
Iron (Fe)	< 0,2 ppm
Alkalinity (HCO ₃)	70 - 300 ppm
Chloride ions (Cl ⁻)	< 50 ppm
Free chlorine	< 0,5 ppm
Sulphate ions (SO ₄)	< 50 ppm
Sulphide ion (S)	None
Ammonium ions (NH ₄)	None
Silica (SiO ₂)	< 30 ppm



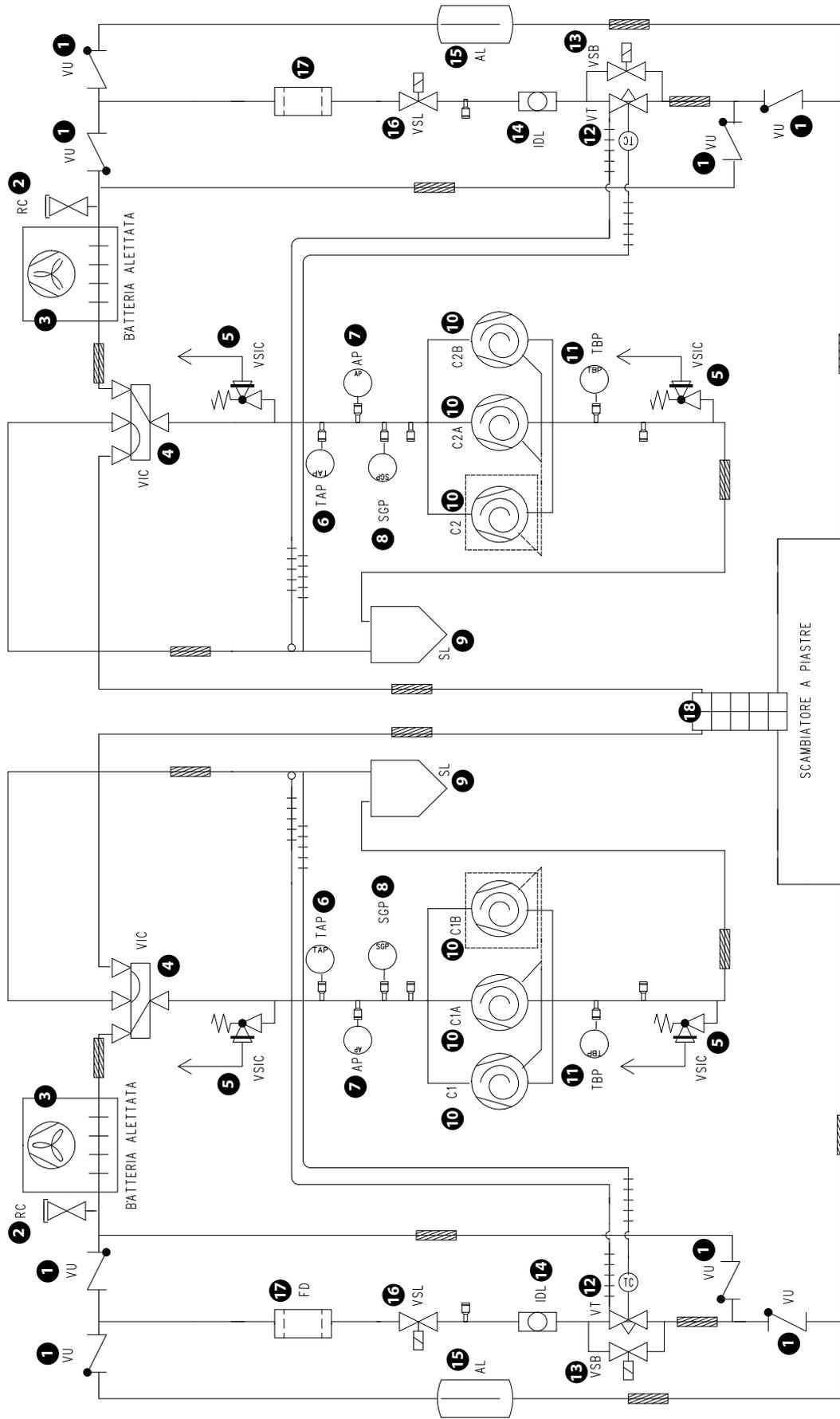
It is of fundamental importance to keep the oxygen concentration in the water under control, especially in open vessel systems. This type of system, in fact, is very sensitive to the phenomenon of extra-oxygenation of the water (an event that can be encouraged by the incorrect positioning of some components). This phenomenon can trigger corrosion processes and subsequent drilling of the heat exchanger and pipes.



WARNING under no circumstances does the unit have to be operated with water circulating on the heat exchanger whose characteristics are different from those indicated in the table WATER CHARACTERISTICS, under penalty of the warranty expiration. Aermec cannot be held responsible for any malfunction of the units which are operated with water whose characteristics are outside the limits in the table WATER CHARACTERISTICS and for their consequences.

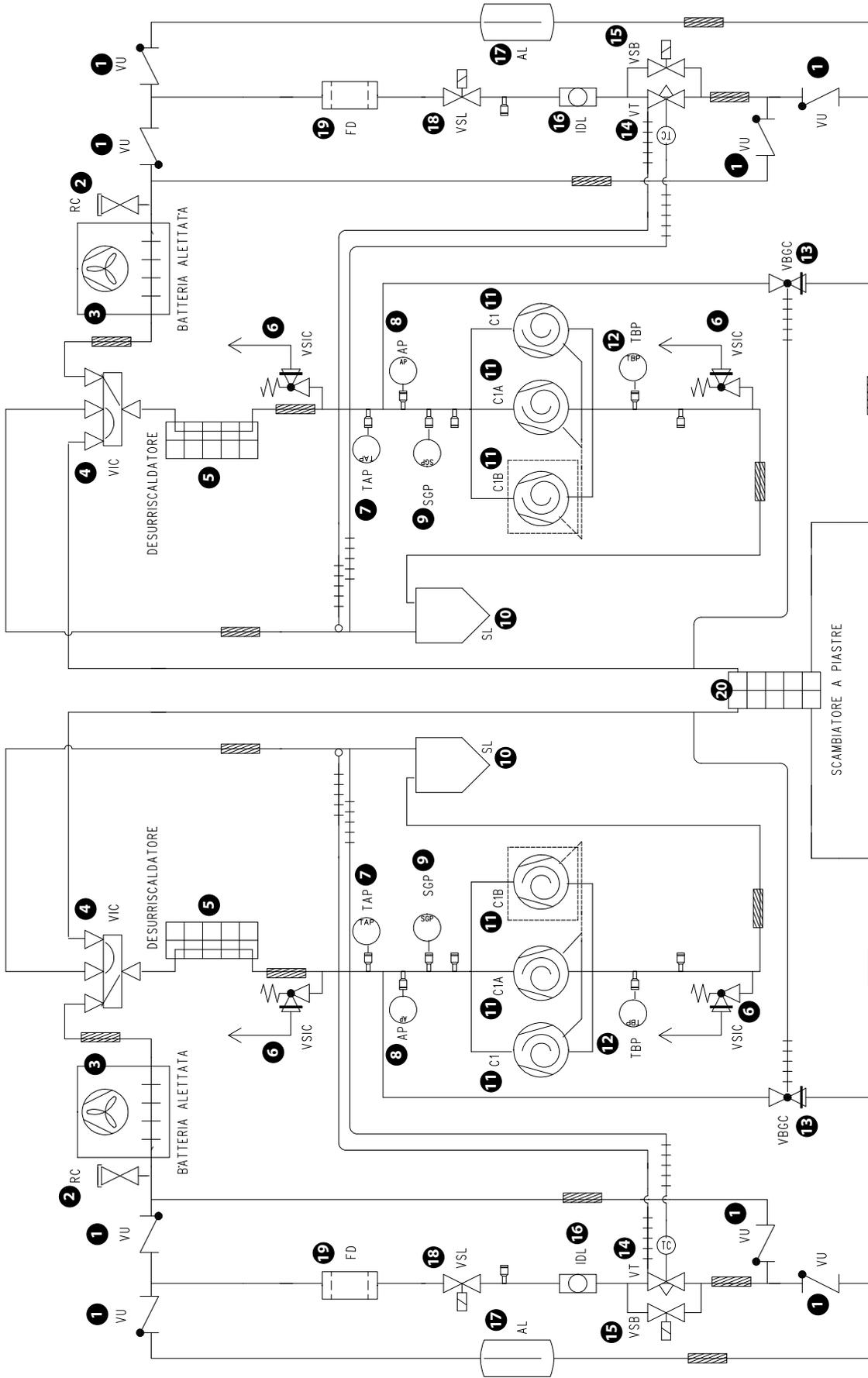
5 MAIN COOLING REFRIGERANT LAYOUTS

NRB H 0800 ÷ 1600 - VALVE ° - COOLING MODE



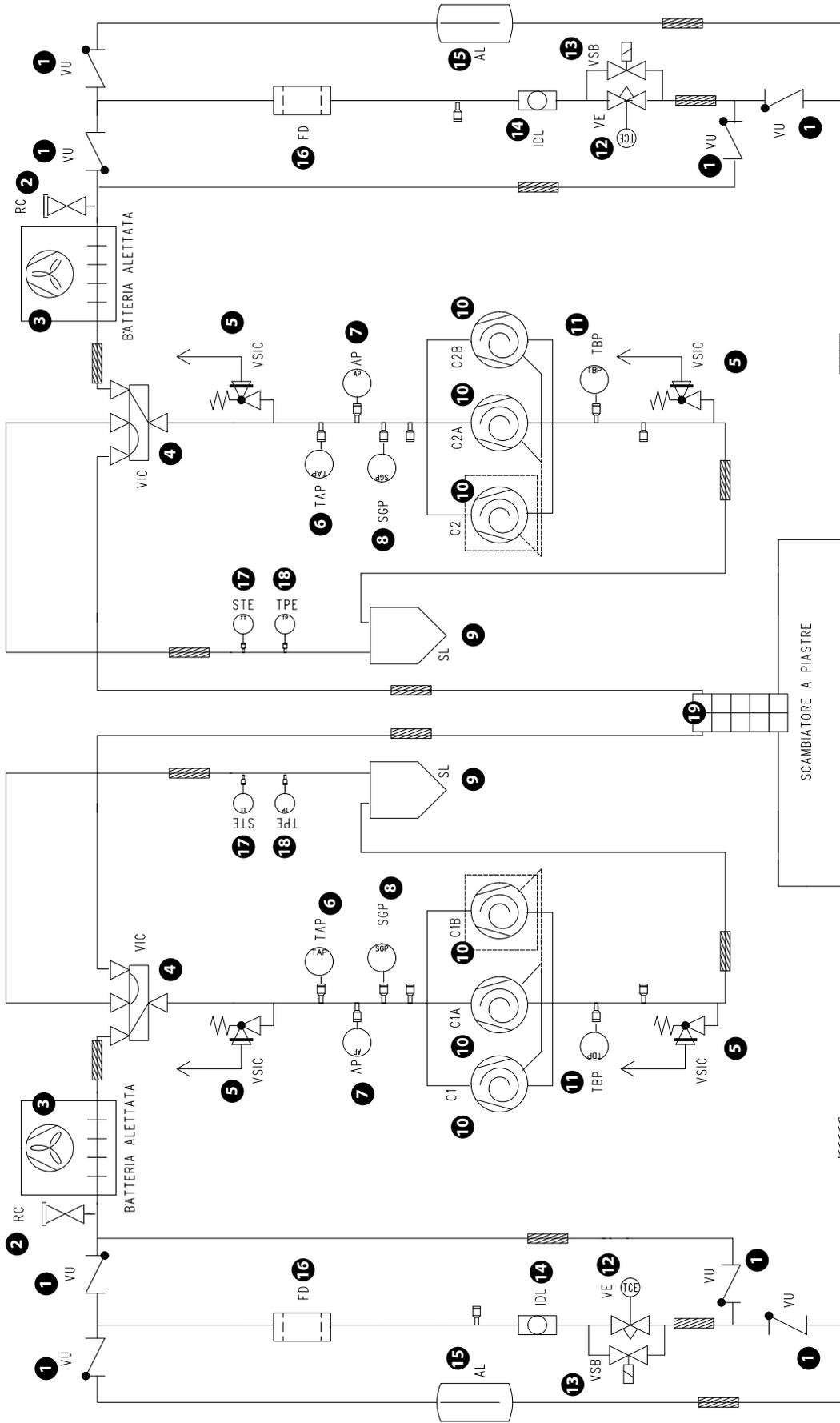
- | | | | |
|----|---------------------------------|----|------------------------|
| 1 | One-way valve | 13 | Solenoid by-pass valve |
| 2 | Charging connection | 14 | Sight glass |
| 3 | Finned coil | 15 | Liquid accumulator |
| 4 | 4-way cycle inversion valve | 16 | Solenoid valve |
| 5 | Pressure relief valve | 17 | Filter drier |
| 6 | High pressure transducer | 18 | Plate heat exchanger |
| 7 | High pressure switch | | |
| 8 | Discharge gas temperature probe | | |
| 9 | Liquid separator | | |
| 10 | Compressor | | |
| 11 | Low pressure transducer | | |
| 12 | Mechanic thermostatic valve | | |

NRB H 0800 ÷ 1600 - VALVE ° - COOLING MODE - DESUPERHEATER D



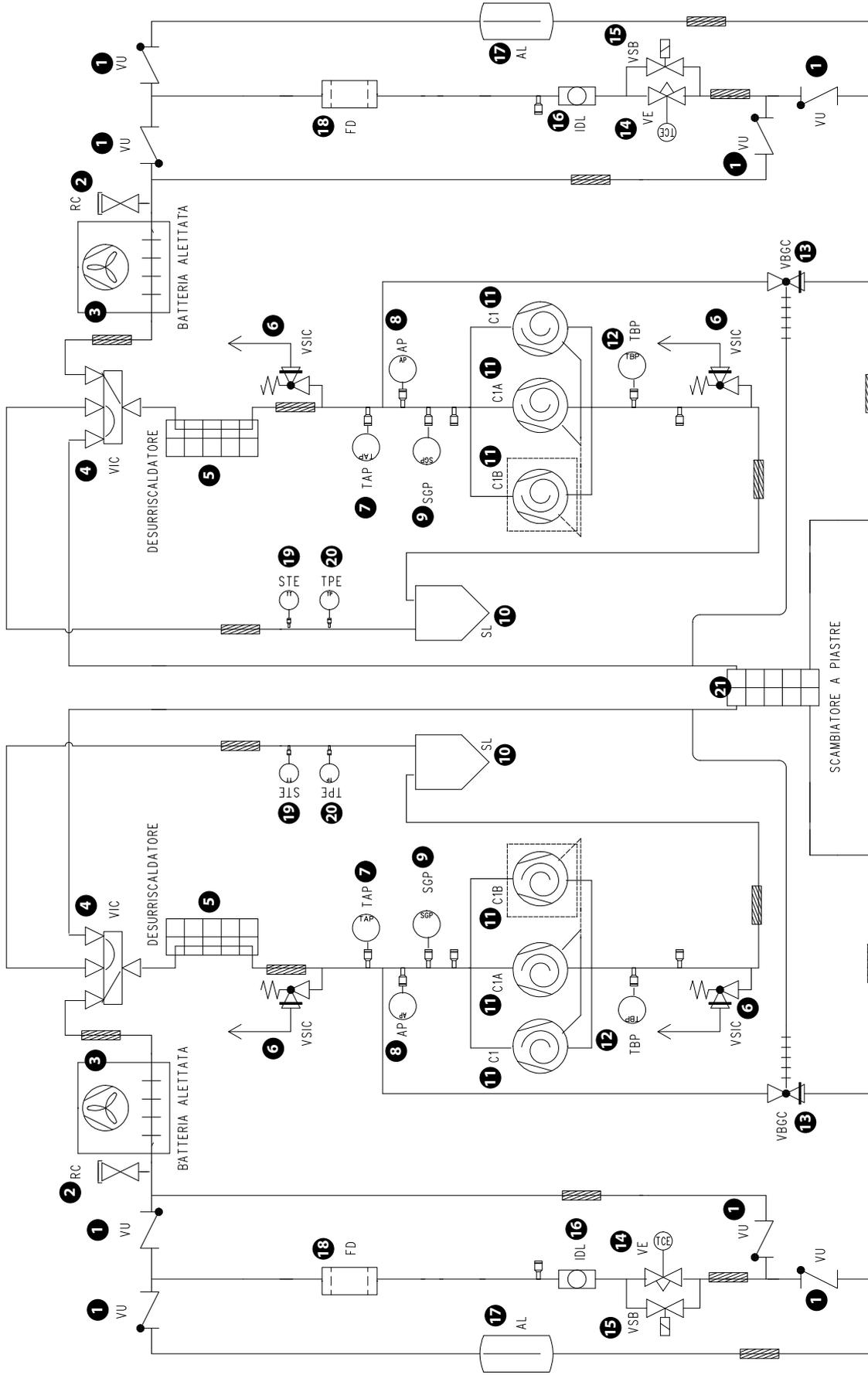
- | | | | |
|----|---------------------------------|----|------------------------|
| 1 | One-way valve | 15 | Solenoid by-pass valve |
| 2 | Charging connection | 16 | Sight glass |
| 3 | Finned coil | 17 | Liquid accumulator |
| 4 | 4-way cycle inversion valve | 18 | Solenoid valve |
| 5 | Desuperheater | 19 | Filter drier |
| 6 | Pressure relief valve | 20 | Plate heat exchanger |
| 7 | High pressure transducer | | |
| 8 | High pressure switch | | |
| 9 | Discharge gas temperature probe | | |
| 10 | Liquid separator | | |
| 11 | Compressor | | |
| 12 | Low pressure transducer | | |
| 13 | Hot gas injection valve | | |
| 14 | Mechanic thermostatic valve | | |

NRB H 0800 ÷ 1600 - OPTIONAL VALVE X - COOLING MODE / NRB H 1800 ÷ 3000 - VALVE X - COOLING MODE



- | | | | |
|----|---|----|--|
| 1 | One-way valve | 15 | Liquid accumulator |
| 2 | Charging connection | 16 | Filter drier |
| 3 | Finned coil | 17 | Electronic expansion valve temperature probe |
| 4 | 4-way cycle inversion valve | 18 | Electronic expansion valve pressure transducer |
| 5 | Pressure relief valve | 19 | Plate heat exchanger |
| 6 | High pressure transducer | | |
| 7 | High pressure switch | | |
| 8 | Discharge gas temperature probe | | |
| 9 | Liquid separator | | |
| 10 | Compressor | | |
| 11 | Low pressure transducer | | |
| 12 | Electronic thermostatic expansion valve | | |
| 13 | Solenoid by-pass valve | | |
| 14 | Sight glass | | |

NRB H 0800 ÷ 1600 - OPTIONAL VALVE X - COOLING MODE - DESUPERHEATER D / NRB H 1800 ÷ 3600 - VALVE X - COOLING MODE - DESUPERHEATER D



- | | | | |
|----|---|----|--|
| 1 | One-way valve | 15 | Solenoid by-pass valve |
| 2 | Charging connection | 16 | Sight glass |
| 3 | Finned coil | 17 | Liquid accumulator |
| 4 | 4-way cycle inversion valve | 18 | Filter drier |
| 5 | Desuperheater | 19 | Electronic expansion valve temperature probe |
| 6 | Pressure relief valve | 20 | Electronic expansion valve pressure transducer |
| 7 | High pressure transducer | 21 | Plate heat exchanger |
| 8 | High pressure switch | | |
| 9 | Discharge gas temperature probe | | |
| 10 | Liquid separator | | |
| 11 | Compressor | | |
| 12 | Low pressure transducer | | |
| 13 | Hot gas injection valve | | |
| 14 | Electronic thermostatic expansion valve | | |

6 ACCESSORIES

AER485P1: RS-485 interface for supervision systems with MODBUS protocol.

AERNET: The device allows the control, the management and the remote monitoring of a Chiller with a PC, smartphone or tablet using Cloud connection. AERNET works as Master while every unit connected is configured as Slave (max. 6 unit); also, with a simple click is possible to save a log file with all the connected unit datas in the personal terminal for post analysis.

FL-UL: Flow switch.

MULTICHILLER_EVO: Control, switch-on and switch-off system of the single chillers where multiple units are installed in parallel, always ensuring constant flow rate to the evaporators.

PGD1: Allows you to control the unit at a distance.

AVX: Spring anti-vibration supports.

FACTORY FITTED ACCESSORIES

DRE: Electronic device for peak current reduction.

RIF: Power factor correction. Connected in parallel to the motor allowing about 10% reduction of input current.

GP_: Anti-intrusion grid kit

ACCESSORIES COMPATIBILITY

Model	Ver	0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
AER485P1	A,E	*	*	*	*	*	*	*	*	*	*	*	*	*	*
AERNET	A,E	*	*	*	*	*	*	*	*	*	*	*	*	*	*
FL-UL (1)	A,E	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MULTICHILLER_EVO	A,E	*	*	*	*	*	*	*	*	*	*	*	*	*	*
PGD1	A,E	*	*	*	*	*	*	*	*	*	*	*	*	*	*

(1) Compliant with UL regulation

Anti-intrusion grid

Ver	0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
A,E	GP3VN	GP4VN	GP4VN	GP4VN	GP4VN	GP5VN	GP6V	GP7V	GP7V	GP8V	GP8V	-	-	-

The accessory cannot be fitted on the configurations indicated with -

A grey background indicates the accessory must be assembled in the factory

Antivibration

Ver	0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
A,E	AVX1080	AVX1072	AVX1072	AVX1072	AVX1072	AVX1086	AVX1084	AVX1094	AVX1094	AVX1088	AVX1088	-	-	-

The accessory cannot be fitted on the configurations indicated with -

230V and 208V power supplies: Available only with fans J for sizes from 0800 to 1200.

7 PERFORMANCE SPECIFICATIONS

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
FANS: °																
Cooling performance 54.01 °F / 44.01 °F (1)																
Cooling capacity	A	ton	57.00	66.11	74.29	82,27	90.62	105.3	121.0	136.0	149.8	165.5	179.4	189.0	204.6	220.4
	E	ton														
Input power	A	kW	64.57	75.22	84.55	95.29	106.6	122.4	138.6	157.6	176.5	192.3	208.0	233.2	252.5	272.1
	E	kW														
Cooling total input current	A	A	93.0	99.0	108.0	123.0	139.0	157.0	176.0	198.0	224.0	244.0	267.0	356.0	382.0	412.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EER	A	BTU/(Wh)	10.59	10.55	10.54	10.36	10.20	10.32	10.47	10.36	10.19	10.33	10.35	9.726	9.724	9.718
	E	BTU/(Wh)														
IPLV	A	BTU/(Wh)	14.16	14.13	14.13	13.89	13.68	13.85	14.09	13.92	13.72	13.72	13.89	13.07	13.03	13.03
	E	BTU/(Wh)														
Water flow rate system side	A	gpm	136.4	158.2	177.7	196.8	216.8	251.8	289.4	325.4	358.4	395.8	429.2	452.2	489.5	527.2
	E	gpm	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pressure drop system side	A	ftH ₂ O	5.7	8.4	8.4	9.4	8.7	12.0	9.0	11.4	11.7	14.7	11.7	10.0	12.0	12.4
	E	ftH ₂ O	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(1) Reference conditions: AHRI std 550/590 I-P; Service side water 54.01°F / 44.01°F; Outside air 95°F

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
FANS: J																
Cooling performance 54.01 °F / 44.01 °F (1)																
Cooling capacity	A	ton	56.62	65.83	74.22	82.43	92.09	105.5	120.6	135.6	152.2	164.2	178.1	189.5	201.3	215.7
	E	ton	54.40	63.42	70.93	78.19	85.67	100.0	115.2	129.8	142.1	152.2	164.4	178.9	190	202.9
Input power	A	kW	65.15	76.04	85.34	96.03	107.3	123.3	139.7	159.0	177.8	193.8	209.3	231.3	250.4	269.9
	E	kW	59.38	67.09	77.17	89.15	101.9	115.2	129	145.5	166	180	195	216.6	238.1	254.3
Cooling total input current	A	A	109.0	121.0	129.0	145.0	161.0	184.0	208.0	236.0	262.0	287.0	311.0	342.0	368.0	397.0
	E	A	98.0	105.0	115.0	131.0	149.0	168.0	188.0	211.0	240.0	261.0	287.0	314.0	344.0	367.0
EER	A	BTU/(Wh)	10.43	10.39	10.44	10.36	10.30	10.27	10.36	10.24	10.27	10.17	10.21	9.833	9.644	9.589
	E	BTU/(Wh)	11.00	11.34	11.03	10.52	10.08	10.42	10.72	10.70	10.27	10.15	10.11	9.911	9.577	9.575
IPLV	A	BTU/(Wh)	16.17	16.14	16.21	16.04	16.04	16.00	16.17	15.97	16.04	16.62	16.17	15.56	15.25	15.18
	E	BTU/(Wh)	17.06	17.61	17.13	16.38	15.70	16.24	16.72	16.69	16.04	16.58	16.00	15.70	15.15	15.15
Water flow rate system side	A	gpm	135.4	157.5	177.6	197.2	220.3	252.3	288.6	324.5	364.1	392.9	426.1	453.4	481.5	516.0
	E	gpm	130.2	151.7	169.7	187.1	204.9	239.3	275.7	310.5	340.0	364.2	393.2	427.9	454.6	485.5
Pressure drop system side	A	ftH ₂ O	5.7	8.0	8.4	9.7	9.0	12.0	8.7	11.0	12.0	14.4	11.4	10.4	11.4	11.7
	E	ftH ₂ O	5.0	7.0	6.7	8.0	8.0	10.7	8.0	10.0	10.7	12.7	10.0	9.0	10.0	10.4

(1) Reference conditions: AHRI std 550/590 I-P; Service side water 54.01°F / 44.01°F; Outside air 95°F

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
FANS: °																
Heating performance 104 °F / 113 °F (1)																
Heating capacity	A	BTU/h	658,127	766,125	851,087	947,951	1,052,512	1,228,040	1,406,601	1,591,177	1,729,085	1,907,486	2,071,016	2,334,236	2,496,572	2,684,079
	E	BTU/h	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Input power	A	kW	71.8	85.5	93.2	103.5	108.6	127.9	145.1	166.9	188.5	207.8	213.1	244.6	262.3	281.9
	E	kW	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heating total input current	A	A	100.0	110.0	116.0	131.0	139.0	161.0	180.0	205.0	235.0	259.0	269.0	372.0	397.0	427.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COP	A	kW/kW	2.69	2.63	2.68	2.68	2.84	2.81	2.84	2.79	2.69	2.69	2.85	2.80	2.79	2.79
	E	kW/kW	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water flow rate system side	A	gpm	147.6	171.8	190.9	212.6	236.0	275.4	315.4	356.8	387.8	427.8	464.4	523.5	559.9	601.9
	E	gpm	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pressure drop system side	A	ftH ₂ O	6.7	9.7	9.4	11.0	10.4	14.4	10.7	13.4	13.7	17.1	13.7	13.7	15.7	16.1
	E	ftH ₂ O	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(1) Data: System side water heat exchanger 104 °F / 113 °F; External air 44.6 °F

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
FANS: J																
Heating performance 104 °F / 113 °F (1)																
Heating capacity	A	BTU/h	658,127	766,125	851,087	947,951	1,052,512	1,228,040	1,406,601	1,591,177	1,729,085	1,907,486	2,071,016	2,334,236	2,496,572	2,684,079
	E	BTU/h	629,796	736,050	816,327	903,166	997,362	1,167,218	1,338,136	1,515,891	1,643,120	1,816,112	1,962,333	2,158,619	2,291,884	2,478,525
Input power	A	kW	71.8	85.5	93.2	103.5	108.6	127.9	145.1	166.9	188.5	207.8	213.1	244.6	262.3	281.9
	E	kW	61.7	72.0	79.4	89.9	94.8	110.7	124.7	142.9	164.6	180.9	185.6	209.8	226.9	242.7
Heating total input current	A	A	117.0	133.0	140.0	154.0	162.0	190.0	215.0	246.0	276.0	305.0	315.0	360.0	385.0	413.0
	E	A	101.0	112.0	118.0	133.0	140.0	163.0	182.0	208.0	238.0	262.0	272.0	306.0	330.0	353.0
COP	A	kW/kW	2.69	2.63	2.68	2.68	2.84	2.81	2.84	2.79	2.69	2.69	2.85	2.80	2.79	2.79
	E	kW/kW	2.99	2.99	3.01	2.94	3.08	3.09	3.15	3.11	2.93	2.94	3.10	3.02	2.96	2.99
Water flow rate system side	A	gpm	147.6	171.8	190.9	212.6	236.0	275.4	315.4	356.8	387.8	427.8	464.4	523.5	559.9	601.9
	E	gpm	141.2	165.1	183.1	202.5	223.7	261.8	300.1	340.0	368.5	407.3	440.1	484.1	514.0	555.8
Pressure drop system side	A	ftH ₂ O	6.7	9.7	9.4	11.0	10.4	14.4	10.7	13.4	13.7	17.1	13.7	13.7	15.7	16.1
	E	ftH ₂ O	6.0	8.0	7.7	9.4	9.4	13.0	9.4	12.0	12.4	15.7	12.4	11.4	12.7	13.7

(1) Data: System side water heat exchanger 104 °F / 113 °F; External air 44.6 °F

DESUPERHEATER

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
FANS: °																
Cooling performances with desuperheater (1)																
Recovered heating power	A	BTU/h	299,856	350,007	392,806	442,002	493,870	567,391	643,083	731,717	818,197	891,838	963,551	1,064,523	1,152,775	1,242,340
	E	BTU/h	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Desuperheater water flow rate	A	gpm	67.2	78.5	88.1	99.1	110.8	127.2	144.2	164.1	183.5	200.0	216.1	238.7	258.5	278.6
	E	gpm	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pressure drop desuperheater	A	ftH ₂ O	8.0	11.0	12.4	14.7	11.0	13.0	16.7	21.4	20.4	24.8	28.8	28.8	26.8	31.1
	E	ftH ₂ O	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(1) Desuperheater water 104 °F/113 °F; External air 95 °F

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
FANS: J																
Cooling performances with desuperheater (1)																
Recovered heating power	A	BTU/h	299,856	350,007	392,806	442,002	493,870	567,391	643,083	731,717	818,197	891,838	963,551	1,064,523	1,152,775	1,242,340
	E	BTU/h	273,299	308,819	355,211	410,351	469,217	530,185	593,996	669,820	764,200	828,482	897,560	996,891	1,095,860	1,170,590
Desuperheater water flow rate	A	gpm	67.2	78.5	88.1	99.1	110.8	127.2	144.2	164.1	183.5	200.0	216.1	238.7	258.5	278.6
	E	gpm	61.3	69.3	79.7	92.0	105.2	118.9	133.2	150.2	171.4	185.8	201.3	223.6	245.8	262.5
Pressure drop desuperheater	A	ftH ₂ O	8.0	11.0	12.4	14.7	11.0	13.0	16.7	21.4	20.4	24.8	28.8	28.8	26.8	31.1
	E	ftH ₂ O	6.7	8.4	10.0	12.7	10.0	11.4	14.4	18.1	17.7	21.4	25.1	25.4	24.1	27.8

(1) Desuperheater water 104 °F/113 °F; External air 95 °F

■ The option with the desuperheater "D" is available only with "J" fans.

8 GENERAL TECHNICAL DATA

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	
Compressor																	
Type	A,E	type											Scroll				
Compressor regulation	A,E	Type											On-Off				
Number	A,E	no.	4	4	4	4	4	4	4	4	4	5	6	6	6	6	
Circuits	A,E	no.	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Refrigerant	A,E	type	R410A														
Refrigerant load circuit 2 (1)	A,E	lbs	63.9	86.0	88.2	88.2	90.4	103.6	123.5	149.9	158.7	167.6	172.0	213.8	213.8	220.5	
Refrigerant load circuit 1 (1)	A,E	lbs	63.9	86.0	88.2	88.2	90.4	103.6	123.5	149.9	158.7	167.6	172.0	213.8	213.8	220.5	
Oil charge circuit 1	A,E	gal	2.2	2.2	3.0	3.6	4.1	4.0	3.9	3.9	3.9	3.9	5.8	5.8	5.8	5.8	
Oil charge circuit 2	A,E	gal	2.2	3.0	3.0	3.6	4.1	4.0	3.9	3.9	3.9	5.8	5.8	5.8	5.8	5.8	
System side heat exchanger																	
Type	A,E	type	Brazen plate														
Number	A,E	no.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Hydraulic connections without hydronic kit																	
Connections (in/out)	A,E	Type	Grooved joints														
Sizes (in/out)	A,E	Ø	3"	3"	3"	3"	3"	3"	3"	4"	4"	4"	4"	4"	5"	5"	5"
Minimum water flow rate	A	gpm	75.6	87.7	98.5	109.1	120.2	139.6	160.5	180.4	198.7	212.3	230.3	227.1	241.2	258.4	
	E	gpm	72.4	84.4	94.3	104.0	114.0	133.1	153.3	172.6	189.0	202.5	218.6	214.3	227.7	243.2	
Maximum water flow rate	A	gpm	252.0	292.2	328.5	363.8	400.8	465.4	534.9	601.4	662.5	707.8	767.5	757.0	804.0	861.5	
	E	gpm	241.2	281.2	314.5	346.7	379.8	443.5	511.0	575.4	630.1	674.9	728.8	714.5	759.0	810.6	
Hydraulic connections with hydronic kit																	
Connections (in/out)	A,E	Type	Grooved joints														
Sizes (in/out)	A,E	Ø	3"	3"	3"	3"	3"	3"	3"	4"	4"	4"	4"	5"	5"	5"	
Minimum water flow rate	A	gpm	75.6	87.7	98.5	109.1	120.2	139.6	160.5	180.4	198.7	212.3	230.3	227.1	241.2	258.4	
	E	gpm	72.4	84.4	94.3	104.0	114.0	133.1	153.3	172.6	189.0	202.5	218.6	214.3	227.7	243.2	
Maximum water flow rate	A	gpm	252.0	292.2	328.5	363.8	400.8	465.4	534.9	601.4	662.5	707.8	767.5	757.0	804.0	861.5	
	E	gpm	241.2	281.2	314.5	346.7	379.8	443.5	511.0	575.4	630.1	674.9	728.8	714.5	759.0	810.6	
Sound data calculated in cooling mode (2)																	
Sound power level	A	dB(A)	89	91	93	94	95	95	94	96	98	97	96	97	98	99	
	E	dB(A)	84	89	91	92	94	93	93	95	97	95	94	96	97	98	
Fan																	
Number	A,E	no.	6	8	8	8	8	10	12	14	14	16	16	18	18	20	

(1) The load indicated in the table is an estimated and preliminary value. The final value of the refrigerant load is indicated on the unit's technical label. For further information contact the office.

(2) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2. Sound pressure (cold functioning) measured in free field, 10 m / 33 ft away from the unit external surface (in compliance with UNI EN ISO 3744).

FANS DATA

	Version	Fans	Power supply	0800	0900	1000	1100	1200	1400	1600
Type	A	°/J	6/7/8/9	type	axials	axials	axials	axials	axials	axials
	E	°/J	6/7/8/9	type	axials	axials	axials	axials	axials	axials
Number	A	°	6/9	no.	-	-	-	-	-	-
	A	°/J	7/8	no.	6	8	8	8	8	10
	A	J	6/9	no.	6	8	8	8	8	-
	E	°	6/7/8/9	no.	-	-	-	-	-	-
	E	J	6/9	no.	6	8	8	8	8	-
	E	J	7/8	no.	6	8	8	8	8	10
Air flow rate cooling mode	A	°	6/9	cfm	-	-	-	-	-	-
	A	°	7/8	cfm	76,896	102,528	102,528	102,528	102,528	128,160
	A	J	6/9	cfm	78,964	105,285	105,285	105,285	105,285	-
	A	J	7/8	cfm	78,964	105,285	105,285	105,285	105,285	131,606
	E	°	6/7/8/9	cfm	-	-	-	-	-	-
	E	J	6/9	cfm	47,654	63,538	63,538	63,538	63,538	-
Air flow rate heating mode	E	J	7/8	cfm	47,654	63,538	63,538	63,538	63,538	79,423
	A	°	6/9	cfm	-	-	-	-	-	-
	A	°	7/8	cfm	71,588	95,450	95,450	95,450	95,450	119,313
	A	J	6/9	cfm	73,034	97,378	97,378	97,378	97,378	-
	A	J	7/8	cfm	73,034	97,378	97,378	97,378	97,378	121,723
	E	°	6/7/8/9	cfm	-	-	-	-	-	-
Total fan input power	E	J	6/9	cfm	43,907	58,556	58,556	58,559	58,556	-
	E	J	7/8	cfm	43,907	58,556	58,556	58,559	58,556	73,196
	A	°	6/9	kW	-	-	-	-	-	-
	A	°	7	kW	13,8	18,4	18,4	18,4	18,4	23,0
	A	°	8	kW	11,5	15,4	15,4	15,4	15,4	19,2
	A	J	6/9	kW	14,4	19,2	19,2	19,2	19,2	-
Total fan input power	A	J	7/8	kW	13,2	17,6	17,6	17,6	17,6	22,0
	E	°	6/7/8/9	kW	-	-	-	-	-	-
	E	J	6/9	kW	14,4	19,2	19,2	19,2	19,2	-
	E	J	7/8	kW	13,2	17,6	17,6	17,6	17,6	22,0

	Version	Fans	Power supply		0800	0900	1000	1100	1200	1400	1600
Total fan input current	A	°	6/9	A	-	-	-	-	-	-	-
	A	°	7	A	23.7	31.6	31.6	31.6	31.6	39.5	47.4
	A	°	8	A	17.2	22.9	22.9	22.9	22.9	28.6	34.3
	A	J	6/9	A	45.0	60.0	60.0	60.0	60.0	-	-
	A	J	7	A	20.4	27.2	27.2	27.2	27.2	34.0	40.8
	A	J	8	A	16.2	21.6	21.6	21.6	21.6	27.0	32.4
	E	°	6/7/8/9	A	-	-	-	-	-	-	-
	E	J	6/9	A	45.0	60.0	60.0	60.0	60.0	-	-
	E	J	7	A	20.4	27.2	27.2	27.2	27.2	34.0	40.8
	E	J	8	A	16.2	21.6	21.6	21.6	21.6	27.0	32.4

- not available

	Version	Fans	Power supply		1800	2000	2200	2400	2600	2800	3000
Type	A	°/J	6/7/8/9	type	axials						
	E	°/J	6/7/8/9	type	axials						
Number	A	°/J	6/9	no.	-	-	-	-	-	-	-
	A	°/J	7/8	no.	14	14	16	16	18	18	20
	E	°	6/7/8/9	no.	-	-	-	-	-	-	-
	E	J	6/9	no.	-	-	-	-	-	-	-
	E	J	7/8	no.	14	14	16	16	18	18	20
Air flow rate cooling mode	A	°/J	6/9	cfm	-	-	-	-	-	-	-
	A	°	7/8	cfm	179,424	179,424	205,056	205,056	232,478	232,478	258,309
	A	J	7/8	cfm	184,249	184,248	210,570	210,570	240,303	240,303	267,004
	E	°	6/7/8/9	cfm	-	-	-	-	-	-	-
	E	J	6/9	cfm	-	-	-	-	-	-	-
Air flow rate heating mode	E	J	7/8	cfm	111,192	111,192	127,076	127,076	136,352	136,352	151,502
	A	°/J	6/9	cfm	-	-	-	-	-	-	-
	A	°	7/8	cfm	167,036	167,089	190,900	190,895	223,940	223,940	248,822
	A	J	7/8	cfm	170,410	170,406	194,749	194,749	223,940	223,940	248,822
	E	°	6/7/8/9	cfm	-	-	-	-	-	-	-
Total fan input power	E	J	6/9	cfm	-	-	-	-	-	-	-
	E	J	7/8	cfm	102,247	102,246	117,113	117,118	126,255	126,255	140,284
	A	°/J	6/9	kW	-	-	-	-	-	-	-
	A	°	7	kW	32.2	32.2	36.8	36.8	41.4	41.4	46.0
	A	°	8	kW	26.9	26.9	30.7	30.7	30.7	30.7	30.7
Total fan input current	A	J	7	kW	30.8	30.8	35.2	35.2	39.6	39.6	44.0
	A	J	8	kW	30.8	30.8	35.2	35.2	39.6	39.6	57.0
	E	°	6/7/8/9	kW	-	-	-	-	-	-	-
	E	J	6/9	kW	-	-	-	-	-	-	-
	E	J	7	kW	30.8	30.8	35.2	35.2	39.6	39.6	44.0
Total fan input current	E	J	8	kW	30.8	30.8	35.2	35.2	39.6	39.6	57.0
	A	°/J	6/9	A	-	-	-	-	-	-	-
	A	°	7	A	55.3	55.3	63.2	63.2	71.1	71.1	79.0
	A	°	8	A	40.0	40.0	45.8	45.8	45.8	45.8	45.8
	A	J	7	A	47.6	47.6	54.4	54.4	61.2	61.2	68.0
Total fan input current	A	J	8	A	37.8	37.8	43.2	43.2	48.6	48.6	66.0
	E	°	6/7/8/9	A	-	-	-	-	-	-	-
	E	J	6/9	A	-	-	-	-	-	-	-
	E	J	7	A	47.6	47.6	54.4	54.4	61.2	61.2	68.0
	E	J	8	A	37.8	37.8	43.2	43.2	48.6	48.6	66.0

- not available

ELECTRIC DATA



Add up the weight of the pumps to the weight of the standard version without hydronic kit. For more details refer to the selection program.

Fan ° Power supply 460V

■ - = Configuration not possible

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: 00																
Power supply: 460V																
Peak current (LRA)	A	A	310.8	370.4	382.4	437.9	454.9	517.4	558.8	681.6	716.0	756.3	706.5	829.3	863.7	905.7
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	150.0	175.0	175.0	200.0	225.0	250.0	300.0	350.0	400.0	400.0	450.0	500.0	500.0	600.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	150.0	175.0	175.0	225.0	250.0	300.0	300.0	400.0	400.0	450.0	450.0	500.0	500.0	600.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AA, BA, DA, PA																
Power supply: 460V																
Peak current (LRA)	A	A	316.2	375.8	387.8	443.3	460.3	-	-	-	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
Minimum circuit amperage (MCA)	A	A	150.0	175.0	175.0	200.0	225.0	-	-	-	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	150.0	175.0	200.0	225.0	250.0	-	-	-	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AB, BB, DB, PB																
Power supply: 460V																
Peak current (LRA)	A	A	317.5	377.1	389.1	444.6	461.6	524.1	-	-	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	150.0	175.0	175.0	200.0	225.0	300.0	-	-	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	150.0	175.0	200.0	225.0	250.0	300.0	-	-	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AC, BC, DC, PC																
Power supply: 460V																
Peak current (LRA)	A	A	319.7	379.3	391.3	446.8	463.8	526.3	567.7	690.5	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	150.0	175.0	175.0	200.0	225.0	300.0	300.0	350.0	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	175.0	175.0	200.0	225.0	250.0	300.0	300.0	400.0	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AD, BD, DD, PD																
Power supply: 460V																
Peak current (LRA)	A	A	323.0	382.6	394.6	450.1	467.1	529.6	571.0	693.8	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	175.0	175.0	200.0	225.0	225.0	300.0	300.0	350.0	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	175.0	200.0	200.0	225.0	250.0	300.0	350.0	400.0	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AE, BE, DE, PE																
Power supply: 460V																
Peak current (LRA)	A	A	323.0	382.6	394.6	450.1	467.1	529.6	571.0	693.8	728.2	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	175.0	175.0	200.0	225.0	225.0	300.0	300.0	350.0	400.0	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	175.0	200.0	200.0	225.0	250.0	300.0	350.0	400.0	450.0	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AF, BF, DF, PF																
Power supply: 460V																
Peak current (LRA)	A	A	325.9	385.5	397.5	453.0	470.0	532.5	573.9	696.7	731.1	771.4	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	175.0	175.0	200.0	225.0	250.0	300.0	300.0	350.0	400.0	450.0	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	175.0	200.0	200.0	250.0	250.0	300.0	350.0	400.0	450.0	450.0	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AG, BG, DG, PG																
Power supply: 460V																
Peak current (LRA)	A	A	328.2	387.8	399.8	455.3	472.3	534.8	576.2	699.0	733.4	773.7	723.9	846.7	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	175.0	175.0	200.0	225.0	250.0	300.0	300.0	350.0	400.0	450.0	450.0	500.0	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	175.0	200.0	200.0	250.0	250.0	300.0	350.0	400.0	450.0	450.0	450.0	500.0	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AH, BH, DH, PH																
Power supply: 460V																
Peak current (LRA)	A	A	333.6	393.2	405.2	460.7	477.7	540.2	581.6	704.4	738.8	779.1	729.3	852.1	886.5	928.5
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	175.0	200.0	200.0	225.0	250.0	300.0	350.0	400.0	400.0	450.0	450.0	500.0	600.0	600.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	175.0	200.0	200.0	250.0	250.0	300.0	350.0	400.0	450.0	450.0	450.0	500.0	600.0	600.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AI, BI, DI, PI																
Power supply: 460V																
Peak current (LRA)	A	A	-	-	-	465.9	482.9	545.4	586.8	709.6	744.0	784.3	734.5	857.3	891.7	933.7
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	-	-	-	225.0	250.0	300.0	350.0	400.0	400.0	450.0	450.0	500.0	600.0	600.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	-	-	-	250.0	250.0	300.0	350.0	400.0	450.0	450.0	450.0	500.0	600.0	600.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AJ, BJ, DJ, PJ																
Power supply: 460V																
Peak current (LRA)	A	A	-	407.2	419.2	474.7	491.7	554.2	595.6	718.4	752.8	793.1	743.3	866.1	900.5	942.5
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	-	200.0	225.0	250.0	250.0	300.0	350.0	400.0	450.0	450.0	450.0	500.0	600.0	600.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	-	225.0	225.0	250.0	250.0	300.0	350.0	400.0	450.0	500.0	500.0	500.0	600.0	600.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Fan ° Power supply 575V

■ - = Configuration not possible

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: 00																
Power supply: 575V																
Peak current (LRA)	A	A	238.5	298.1	308.1	372.9	386.5	408.1	442.5	596.4	619.0	657.2	562.6	716.5	739.1	768.4
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	125.0	150.0	150.0	175.0	200.0	225.0	300.0	300.0	300.0	350.0	400.0	400.0	400.0	400.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	150.0	150.0	150.0	175.0	200.0	250.0	300.0	300.0	300.0	350.0	400.0	400.0	400.0	400.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AA, BA, DA, PA																
Power supply: 575V																
Peak current (LRA)	A	A	242.8	302.5	312.5	377.3	390.9	-	-	-	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	150.0	150.0	150.0	175.0	200.0	-	-	-	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	150.0	150.0	150.0	175.0	200.0	-	-	-	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AB, BB, DB, PB																
Power supply: 575V																
Peak current (LRA)	A	A	243.7	303.4	313.4	378.2	391.8	413.3	-	-	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	150.0	150.0	150.0	175.0	200.0	225.0	-	-	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	150.0	150.0	150.0	200.0	200.0	250.0	-	-	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AC, BC, DC, PC																
Power supply: 575V																
Peak current (LRA)	A	A	245.7	305.3	315.3	380.1	393.7	415.3	449.7	603.6	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	150.0	150.0	150.0	175.0	200.0	225.0	300.0	300.0	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	150.0	150.0	150.0	200.0	200.0	250.0	300.0	300.0	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AD, BD, DD, PD																
Power supply: 575V																
Peak current (LRA)	A	A	248.5	308.1	318.1	382.9	396.5	418.1	452.5	606.4	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	150.0	150.0	150.0	175.0	200.0	250.0	300.0	300.0	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	150.0	150.0	150.0	200.0	225.0	250.0	300.0	300.0	-	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AE, BE, DE, PE																
Power supply: 575V																
Peak current (LRA)	A	A	248.5	308.1	318.1	382.9	396.5	418.1	452.5	606.4	629.0	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
Minimum circuit amperage (MCA)	A	A	150.0	150.0	150.0	175.0	200.0	250.0	300.0	300.0	300.0	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	150.0	150.0	150.0	200.0	225.0	250.0	300.0	300.0	300.0	-	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AF, BF, DF, PF																
Power supply: 575V																
Peak current (LRA)	A	A	250.6	310.2	320.2	385.0	398.6	420.2	454.6	608.5	631.1	669.3	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	150.0	150.0	150.0	175.0	200.0	250.0	300.0	300.0	300.0	350.0	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	150.0	150.0	150.0	200.0	225.0	250.0	300.0	300.0	300.0	350.0	-	-	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AG, BG, DG, PG																
Power supply: 575V																
Peak current (LRA)	A	A	252.5	312.1	322.1	386.9	400.5	422.1	456.5	610.4	633.0	671.2	576.6	730.5	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	150.0	150.0	150.0	175.0	200.0	250.0	300.0	300.0	300.0	350.0	400.0	400.0	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	150.0	150.0	175.0	200.0	225.0	250.0	300.0	300.0	300.0	350.0	400.0	400.0	-	-
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AH, BH, DH, PH																
Power supply: 575V																
Peak current (LRA)	A	A	257.5	317.1	327.1	391.9	405.5	427.1	461.5	615.4	638.0	676.2	581.6	735.5	758.1	787.4
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	150.0	175.0	175.0	200.0	200.0	250.0	300.0	300.0	300.0	350.0	400.0	400.0	400.0	400.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	150.0	175.0	175.0	200.0	225.0	250.0	300.0	300.0	300.0	350.0	400.0	400.0	400.0	400.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AI, BI, DI, PI																
Power supply: 575V																
Peak current (LRA)	A	A	-	-	-	395.9	409.5	431.1	465.5	619.4	642.0	680.2	585.6	739.5	762.1	791.4
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	-	-	-	200.0	200.0	250.0	300.0	300.0	300.0	350.0	400.0	400.0	400.0	400.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	-	-	-	200.0	225.0	250.0	300.0	300.0	300.0	350.0	400.0	400.0	400.0	450.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AJ, BJ, DJ, PJ																
Power supply: 575V																
Peak current (LRA)	A	A	-	326.1	336.1	400.9	414.5	436.1	470.5	624.4	647.0	685.2	590.6	744.5	767.1	796.4
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A	A	-	175.0	175.0	200.0	225.0	250.0	300.0	300.0	300.0	350.0	400.0	400.0	400.0	450.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A	A	-	175.0	175.0	200.0	225.0	250.0	300.0	300.0	350.0	350.0	400.0	400.0	400.0	450.0
	E	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Fan J Power supply 208V

■ - = Configuration not possible

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: 00																
Power supply: 208V																
Peak current (LRA)	A,E	A	617.6	812.0	844.0	964.6	1,005.8	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	300.0	350.0	400.0	450.0	450.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	300.0	400.0	450.0	450.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AA, BA, DA, PA																
Power supply: 208V																
Peak current (LRA)	A,E	A	628.9	823.3	855.3	975.9	1,017.1	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	300.0	400.0	400.0	450.0	450.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	350.0	400.0	450.0	500.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AB, BB, DB, PB																
Power supply: 208V																
Peak current (LRA)	A,E	A	631.7	826.1	858.1	978.7	1,019.9	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
Minimum circuit amperage (MCA)	A,E	A	350.0	400.0	400.0	450.0	450.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	350.0	400.0	450.0	500.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AC, BC, DC, PC																

Power supply: 208V																
Peak current (LRA)	A,E	A	636.3	830.7	862.7	983.3	1,024.5	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	350.0	400.0	400.0	450.0	450.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	350.0	400.0	450.0	500.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AD, AE, BD, BE, DD, DE, PD, PE																

Power supply: 208V																
Peak current (LRA)	A,E	A	643.6	838.0	870.0	990.6	1,031.8	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	350.0	400.0	450.0	450.0	500.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	350.0	400.0	450.0	500.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AF, BF, DF, PF																

Power supply: 208V																
Peak current (LRA)	A,E	A	649.3	843.7	875.7	996.3	1,037.5	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	350.0	400.0	450.0	450.0	500.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	350.0	450.0	450.0	500.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AG, BG, DG, PG																

Power supply: 208V																
Peak current (LRA)	A,E	A	654.7	849.1	881.1	1,001.7	1,042.9	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	350.0	400.0	450.0	450.0	500.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	350.0	450.0	450.0	500.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AH, BH, DH, PH																

Power supply: 208V																
Peak current (LRA)	A,E	A	667.6	862.0	894.0	1,014.6	1,055.8	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	350.0	400.0	450.0	500.0	500.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	350.0	450.0	500.0	500.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AI, BI, DI, PI																

Power supply: 208V																
Peak current (LRA)	A,E	A	-	-	-	1,025.6	1,066.8	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	-	-	-	500.0	500.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	-	-	-	500.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AJ, BJ, DJ, PJ																

Power supply: 208V																
Peak current (LRA)	A,E	A	-	886.8	918.8	1,039.4	1,080.6	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	-	450.0	500.0	500.0	600.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	-	450.0	500.0	500.0	600.0	-	-	-	-	-	-	-	-	-

Fan J Power supply 230V

■ - = Configuration not possible

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: 00																

Power supply: 230V																
Peak current (LRA)	A,E	A	602.2	796.6	828.6	949.2	990.4	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	300.0	350.0	400.0	400.0	450.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	300.0	400.0	400.0	450.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AA, BA, DA, PA																

Power supply: 230V																
Peak current (LRA)	A,E	A	613.1	807.5	839.5	960.1	1,001.3	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	300.0	350.0	400.0	400.0	450.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	300.0	400.0	450.0	450.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AB, BB, DB, PB																
Power supply: 230V																
Peak current (LRA)	A,E	A	615.6	810.0	842.0	962.6	1,003.8	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	300.0	350.0	400.0	450.0	450.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	300.0	400.0	450.0	450.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AC, BC, DC, PC																
Power supply: 230V																
Peak current (LRA)	A,E	A	620.0	814.4	846.4	967.0	1,008.2	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	300.0	350.0	400.0	450.0	450.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	350.0	400.0	450.0	450.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AD, AE, BD, BE, DD, DE, PD, PE																
Power supply: 230V																
Peak current (LRA)	A,E	A	626.7	821.1	853.1	973.7	1,014.9	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	300.0	400.0	400.0	450.0	450.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	350.0	400.0	450.0	500.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AF, BF, DF, PF																
Power supply: 230V																
Peak current (LRA)	A,E	A	632.5	826.9	858.9	979.5	1,020.7	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	350.0	400.0	400.0	450.0	450.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	350.0	400.0	450.0	500.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AG, BG, DG, PG																
Power supply: 230V																
Peak current (LRA)	A,E	A	637.2	831.6	863.6	984.2	1,025.4	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	350.0	400.0	400.0	450.0	450.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	350.0	400.0	450.0	500.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AH, BH, DH, PH																
Power supply: 230V																
Peak current (LRA)	A,E	A	648.7	843.1	875.1	995.7	1,036.9	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	350.0	400.0	450.0	450.0	500.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	350.0	450.0	450.0	500.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AI, BI, DI, PI																
Power supply: 230V																
Peak current (LRA)	A,E	A	-	-	-	1,006.1	1,047.3	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	-	-	-	450.0	500.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	-	-	-	500.0	500.0	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AJ, BJ, DJ, PJ																
Power supply: 230V																
Peak current (LRA)	A,E	A	-	869.6	901.6	1,022.2	1,063.4	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	-	400.0	450.0	500.0	500.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	-	450.0	500.0	500.0	500.0	-	-	-	-	-	-	-	-	-

Fan J Power supply 460V

■ - = Configuration not possible

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: 00																
Power supply: 460V																
Peak current (LRA)	A,E	A	311.4	371.2	383.2	438.7	455.7	518.4	560.0	683.0	717.4	757.9	708.1	831.1	865.5	907.7
Minimum circuit amperage (MCA)	A,E	A	150.0	175.0	175.0	200.0	225.0	250.0	300.0	350.0	400.0	400.0	450.0	500.0	500.0	600.0
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	150.0	175.0	175.0	225.0	250.0	300.0	300.0	400.0	400.0	450.0	450.0	500.0	500.0	600.0

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AA, BA, DA, PA																
Power supply: 460V																
Peak current (LRA)	A,E	A	316.8	376.6	388.6	444.1	461.1	-	-	-	-	-	-	-	-	-

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
Minimum circuit amperage (MCA)	A,E	A	150.0	175.0	175.0	200.0	225.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	150.0	175.0	200.0	225.0	250.0	-	-	-	-	-	-	-	-	-
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AB, BB, DB, PB																
Power supply: 460V																
Peak current (LRA)	A,E	A	318.1	377.9	389.9	445.4	462.4	525.1	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	150.0	175.0	175.0	200.0	225.0	300.0	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	175.0	175.0	200.0	225.0	250.0	300.0	-	-	-	-	-	-	-	-
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AC, BC, DC, PC																
Power supply: 460V																
Peak current (LRA)	A,E	A	320.3	380.1	392.1	447.6	464.6	527.3	568.9	691.9	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	150.0	175.0	175.0	200.0	225.0	300.0	300.0	350.0	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	175.0	175.0	200.0	225.0	250.0	300.0	300.0	400.0	-	-	-	-	-	-
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AD, BD, DD, PD																
Power supply: 460V																
Peak current (LRA)	A,E	A	323.6	383.4	395.4	450.9	467.9	530.6	572.2	695.2	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	175.0	175.0	200.0	225.0	250.0	300.0	300.0	350.0	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	175.0	200.0	200.0	225.0	250.0	300.0	350.0	400.0	-	-	-	-	-	-
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AE, BE, DE, PE																
Power supply: 460V																
Peak current (LRA)	A,E	A	323.6	383.4	395.4	450.9	467.9	530.6	572.2	695.2	729.6	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	175.0	175.0	200.0	225.0	250.0	300.0	300.0	350.0	400.0	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	175.0	200.0	200.0	225.0	250.0	300.0	350.0	400.0	450.0	-	-	-	-	-
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AF, BF, DF, PF																
Power supply: 460V																
Peak current (LRA)	A,E	A	326.5	386.3	398.3	453.8	470.8	533.5	575.1	698.1	732.5	773.0	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	175.0	175.0	200.0	225.0	250.0	300.0	300.0	350.0	400.0	450.0	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	175.0	200.0	200.0	250.0	250.0	300.0	350.0	400.0	450.0	450.0	-	-	-	-
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AG, BG, DG, PG																
Power supply: 460V																
Peak current (LRA)	A,E	A	328.8	388.6	400.6	456.1	473.1	535.8	577.4	700.4	734.8	775.3	725.5	848.5	-	-
Minimum circuit amperage (MCA)	A,E	A	175.0	175.0	200.0	225.0	250.0	300.0	300.0	350.0	400.0	450.0	450.0	500.0	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	175.0	200.0	200.0	250.0	250.0	300.0	350.0	400.0	450.0	450.0	450.0	500.0	-	-
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AH, BH, DH, PH																
Power supply: 460V																
Peak current (LRA)	A,E	A	334.2	394.0	406.0	461.5	478.5	541.2	582.8	705.8	740.2	780.7	730.9	853.9	888.3	930.5
Minimum circuit amperage (MCA)	A,E	A	175.0	200.0	200.0	225.0	250.0	300.0	350.0	400.0	400.0	450.0	450.0	500.0	600.0	600.0
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	175.0	200.0	200.0	250.0	250.0	300.0	350.0	400.0	450.0	450.0	450.0	500.0	600.0	600.0
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AI, BI, DI, PI																
Power supply: 460V																
Peak current (LRA)	A,E	A	-	-	-	466.7	483.7	546.4	588.0	711.0	745.4	785.9	736.1	859.1	893.5	935.7
Minimum circuit amperage (MCA)	A,E	A	-	-	-	225.0	250.0	300.0	350.0	400.0	400.0	450.0	450.0	500.0	600.0	600.0
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	-	-	-	250.0	250.0	300.0	350.0	400.0	450.0	450.0	450.0	500.0	600.0	600.0
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AJ, BJ, DJ, PJ																
Power supply: 460V																
Peak current (LRA)	A,E	A	-	408.0	420.0	475.5	492.5	555.2	596.8	719.8	754.2	794.7	744.9	867.9	902.3	944.5
Minimum circuit amperage (MCA)	A,E	A	-	200.0	200.0	250.0	250.0	300.0	350.0	400.0	450.0	450.0	450.0	500.0	600.0	600.0
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	-	225.0	225.0	250.0	250.0	300.0	350.0	400.0	450.0	500.0	500.0	500.0	600.0	600.0

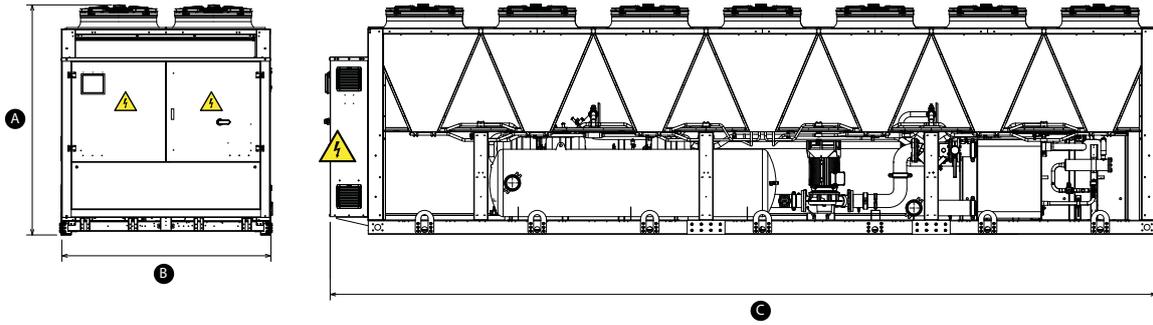
Fan J Power supply 575V

■ - = Configuration not possible

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: 00																
Power supply: 575V																
Peak current (LRA)	A,E	A	237.3	296.5	306.5	371.3	384.9	406.1	440.1	593.6	616.2	654.0	559.4	712.9	735.5	764.4
Minimum circuit amperage (MCA)	A,E	A	125.0	150.0	150.0	175.0	175.0	225.0	250.0	300.0	300.0	350.0	400.0	400.0	400.0	400.0
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	125.0	150.0	150.0	175.0	200.0	250.0	300.0	300.0	300.0	350.0	400.0	400.0	400.0	400.0
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AA, BA, DA, PA																
Power supply: 575V																
Peak current (LRA)	A,E	A	241.6	300.9	310.9	375.7	389.3	-	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	150.0	150.0	150.0	175.0	200.0	-	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	150.0	150.0	150.0	175.0	200.0	-	-	-	-	-	-	-	-	-
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AB, BB, DB, PB																
Power supply: 575V																
Peak current (LRA)	A,E	A	242.5	301.8	311.8	376.6	390.2	411.3	-	-	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	150.0	150.0	150.0	175.0	200.0	225.0	-	-	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	150.0	150.0	150.0	175.0	200.0	250.0	-	-	-	-	-	-	-	-
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AC, BC, DC, PC																
Power supply: 575V																
Peak current (LRA)	A,E	A	244.5	303.7	313.7	378.5	392.1	413.3	447.3	600.8	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	150.0	150.0	150.0	175.0	200.0	225.0	300.0	300.0	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	150.0	150.0	150.0	200.0	200.0	250.0	300.0	300.0	-	-	-	-	-	-
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AD, BD, DD, PD																
Power supply: 575V																
Peak current (LRA)	A,E	A	247.3	306.5	316.5	381.3	394.9	416.1	450.1	603.6	-	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	150.0	150.0	150.0	175.0	200.0	250.0	300.0	300.0	-	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	150.0	150.0	150.0	200.0	200.0	250.0	300.0	300.0	-	-	-	-	-	-
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AE, BE, DE, PE																
Power supply: 575V																
Peak current (LRA)	A,E	A	247.3	306.5	316.5	381.3	394.9	416.1	450.1	603.6	626.2	-	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	150.0	150.0	150.0	175.0	200.0	250.0	300.0	300.0	300.0	-	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	150.0	150.0	150.0	200.0	200.0	250.0	300.0	300.0	300.0	-	-	-	-	-
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AF, BF, DF, PF																
Power supply: 575V																
Peak current (LRA)	A,E	A	249.4	308.6	318.6	383.4	397.0	418.2	452.2	605.7	628.3	666.1	-	-	-	-
Minimum circuit amperage (MCA)	A,E	A	150.0	150.0	150.0	175.0	200.0	250.0	300.0	300.0	300.0	350.0	-	-	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	150.0	150.0	150.0	200.0	225.0	250.0	300.0	300.0	300.0	350.0	-	-	-	-
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AG, BG, DG, PG																
Power supply: 575V																
Peak current (LRA)	A,E	A	251.3	310.5	320.5	385.3	398.9	420.1	454.1	607.6	630.2	668.0	573.4	726.9	-	-
Minimum circuit amperage (MCA)	A,E	A	150.0	150.0	150.0	175.0	200.0	250.0	300.0	300.0	300.0	350.0	400.0	400.0	-	-
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	150.0	150.0	150.0	200.0	225.0	250.0	300.0	300.0	300.0	350.0	400.0	400.0	-	-
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AH, BH, DH, PH																
Power supply: 575V																
Peak current (LRA)	A,E	A	256.3	315.5	325.5	390.3	403.9	425.1	459.1	612.6	635.2	673.0	578.4	731.9	754.5	783.4
Minimum circuit amperage (MCA)	A,E	A	150.0	150.0	175.0	175.0	200.0	250.0	300.0	300.0	300.0	350.0	400.0	400.0	400.0	400.0
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	150.0	175.0	175.0	200.0	225.0	250.0	300.0	300.0	300.0	350.0	400.0	400.0	400.0	400.0
Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AI, BI, DI, PI																
Power supply: 575V																
Peak current (LRA)	A,E	A	-	-	-	394.3	407.9	429.1	463.1	616.6	639.2	677.0	582.4	735.9	758.5	787.4
Minimum circuit amperage (MCA)	A,E	A	-	-	-	200.0	200.0	250.0	300.0	300.0	300.0	350.0	400.0	400.0	400.0	400.0
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	-	-	-	200.0	225.0	250.0	300.0	300.0	300.0	350.0	400.0	400.0	400.0	400.0

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AJ, BJ, DJ, PJ																
Power supply: 575V																
Peak current (LRA)	A,E	A	-	324.5	334.5	399.3	412.9	434.1	468.1	621.6	644.2	682.0	587.4	740.9	763.5	792.4
Minimum circuit amperage (MCA)	A,E	A	-	175.0	175.0	200.0	225.0	250.0	300.0	300.0	300.0	350.0	400.0	400.0	400.0	450.0
Maximum overcurrent permitted by the protection device (MOP)	A,E	A	-	175.0	175.0	200.0	225.0	250.0	300.0	300.0	350.0	350.0	400.0	400.0	400.0	450.0

DIMENSIONS AND WEIGHTS



Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: 00																
Dimensions and weights																
A	A,E	in	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5
B	A,E	in	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6	86.6
C	A,E	in	156.3	203.1	203.1	203.1	203.1	250.0	296.9	343.7	343.7	390.6	390.6	437.4	437.4	468.5
INTEGRATED HYDRONIC KIT: 00																
Weights																
Empty weight	A,E	lbs	6,768	8,466	8,885	9,105	9,392	10,472	11,817	13,558	13,845	16,138	16,954	18,056	18,166	19,886
Weight functioning	A,E	lbs	6,834	8,532	8,973	9,193	9,502	10,582	11,949	13,691	14,021	16,314	17,218	18,320	18,431	20,194
INTEGRATED HYDRONIC KIT: AA, AB, AC, AD, AE, AF, AG, BA, BB, BC																
Weights																
Empty weight	A,E	lbs	7,650	9,348	9,789	10,031	10,318	11,420	12,963	14,815	15,102	17,394	18,210	19,312	19,423	21,186
Weight functioning	A,E	lbs	9,061	10,759	11,222	11,508	11,817	12,941	15,829	17,725	18,034	20,327	21,231	22,355	22,465	24,317
INTEGRATED HYDRONIC KIT: AH, BD, BE, BF, BG																
Weights																
Empty weight	A,E	lbs	7,981	9,678	10,119	10,362	10,648	11,751	13,294	15,146	15,432	17,747	18,541	19,643	19,753	21,517
Weight functioning	A,E	lbs	9,392	11,089	11,552	11,839	12,147	13,272	16,160	18,056	18,365	20,679	21,561	22,686	22,796	24,648
INTEGRATED HYDRONIC KIT: AI, AJ, BI, BJ, DI, DJ, PI, PJ																
Weights																
Empty weight	A,E	lbs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weight functioning	A,E	lbs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
INTEGRATED HYDRONIC KIT: BH																
Weights																
Empty weight	A,E	lbs	8,069	9,789	10,207	10,450	10,737	11,839	13,382	15,256	15,521	17,835	18,629	19,753	19,864	21,605
Weight functioning	A,E	lbs	9,480	11,199	11,640	11,927	12,236	13,360	16,248	18,166	18,453	20,768	21,649	22,796	22,906	24,736
INTEGRATED HYDRONIC KIT: DA, DB, DC, PA, PB, PC, PD, PE, PF, PG																
Weights																
Empty weight	A,E	lbs	7,319	9,017	9,436	9,700	9,987	11,089	12,412	14,286	14,551	16,865	17,681	18,783	18,894	20,657
Weight functioning	A,E	lbs	7,408	9,105	9,546	9,855	10,163	11,288	12,632	14,551	14,837	17,152	18,056	19,180	19,290	21,142
INTEGRATED HYDRONIC KIT: DD, DE, DF, DG, PH																
Weights																
Empty weight	A,E	lbs	7,650	9,348	9,789	10,031	10,318	11,420	12,743	14,617	14,881	17,196	18,012	19,114	19,224	20,988
Weight functioning	A,E	lbs	7,738	9,436	9,899	10,185	10,494	11,618	12,963	14,881	15,168	17,483	18,387	19,511	19,621	21,473
INTEGRATED HYDRONIC KIT: DH																
Weights																
Empty weight	A,E	lbs	7,738	9,458	9,877	10,119	10,406	11,508	12,853	14,705	14,991	17,306	18,100	19,202	19,312	21,076
Weight functioning	A,E	lbs	7,826	9,546	9,987	10,274	10,582	11,707	13,073	14,969	15,278	17,593	18,475	19,599	19,709	21,561

MINIMUM TECHNICAL SPACES

For all units, it is fundamental to respect the minimum distances in order to guarantee optimal ventilation to the finned heat exchanger coils to avoid the following:

- The generation of hazardous atmospheres in the case of refrigerant gas leaks;
- Return of hot air;
- Insufficient air flow to the finned heat exchanger coils.



Each side of the unit must have space to allow all routine and extraordinary maintenance to be performed.



The air suction inlet and the vertical air exhaust must not be obstructed.

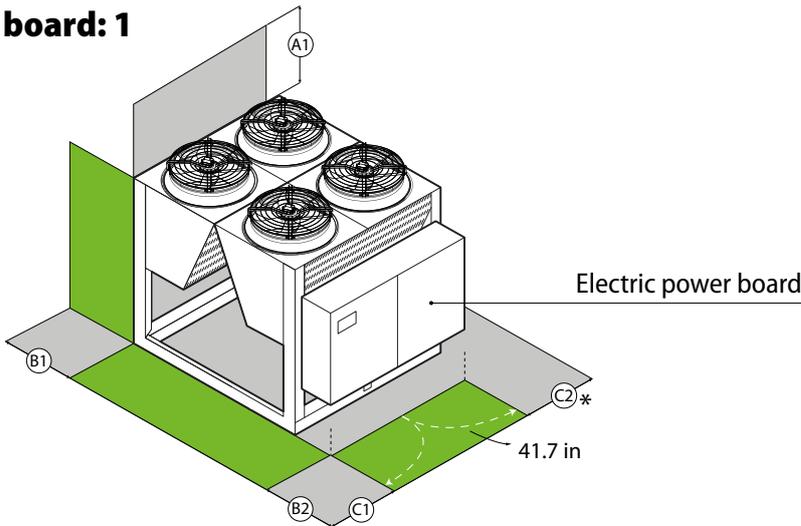
The following images indicate the minimum required space:

SINGLE INSTALLATION

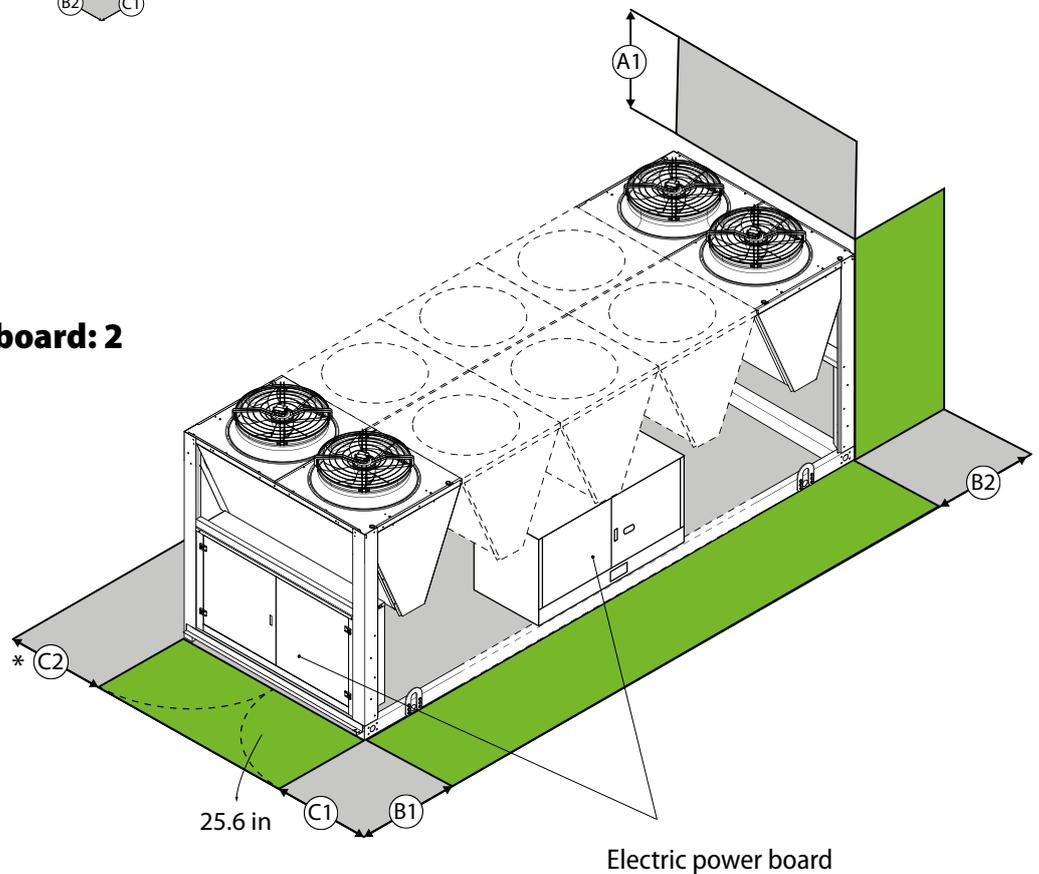
*** Minimum technical space, to be ensured in order for the chiller to work properly and for possible maintenance.**

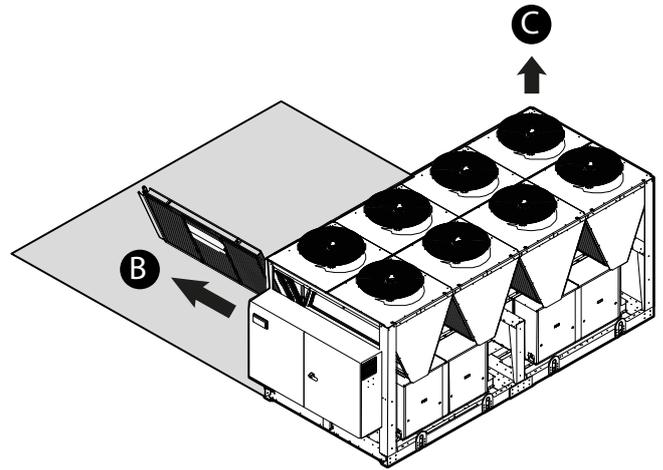
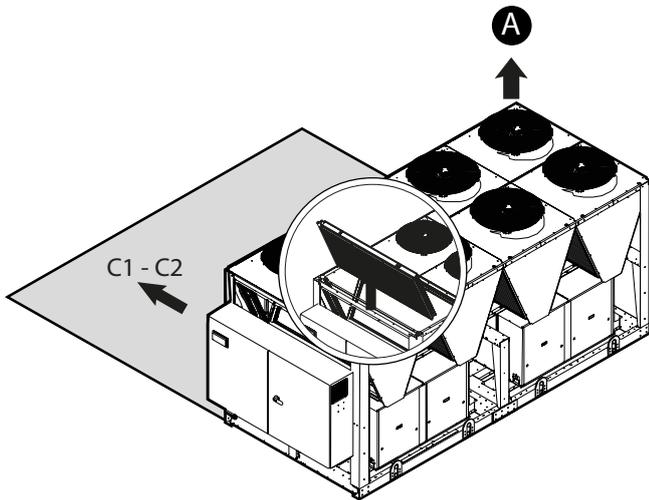
ATTENTION with this space, the condenser coil can only be pulled out from above; to pull it out from the side you must leave at least 90.5 in.

Type of board: 1



Type of board: 2





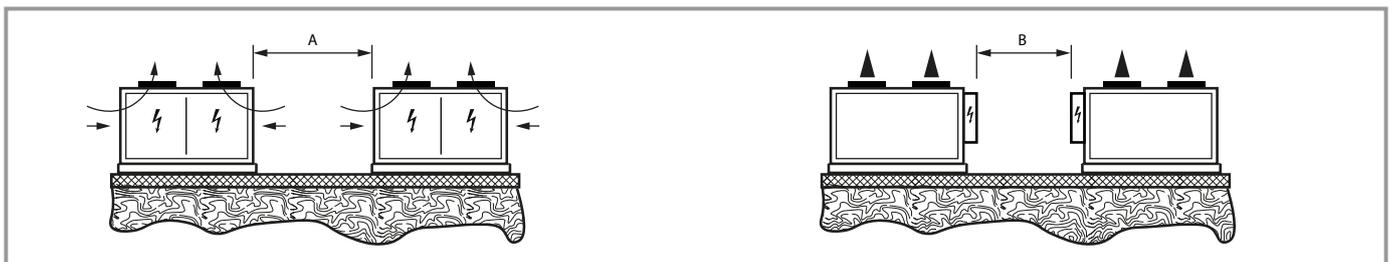
Key:
 A 118.1 in
 B 90.5 in
 C 118.1 in

■ The drawings are provided solely as examples.

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
Minimum technical spaces																
Type of board	A,E		1	1	1	1	1	1	1	1	1	1	1	1	1	2
Fan																
Number	A,E	no.	6	8	8	8	8	10	12	14	14	16	16	18	18	20
V-block	A,E	no.	3	4	4	4	4	5	6	7	7	8	8	9	9	10
Minimum technical spaces																
A1	A,E	in	118.1	118.1	118.1	118.1	118.1	118.1	118.1	118.1	118.1	118.1	118.1	118.1	118.1	118.1
B1	A,E	in	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	45.3
B2	A,E	in	43.3	43.3	43.3	43.3	43.3	43.3	43.3	43.3	43.3	43.3	43.3	43.3	43.3	31.5
C1	A,E	in	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	58.3
C2	A,E	in	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4

MULTIPLE INSTALLATION

The minimum distances indicated above guarantee unit operation in the majority of applications. There are however specific situations that involve the installation of multiple units:



A 91 in

B 59 in

9 OPERATING LIMITS

In their standard configuration, the units are not suitable for installation in salty environments.

The values indicated in the table refer to the min. and max. limits of the unit.

If the unit operates beyond the operational limits, we recommend you first contact our technical-sales service.

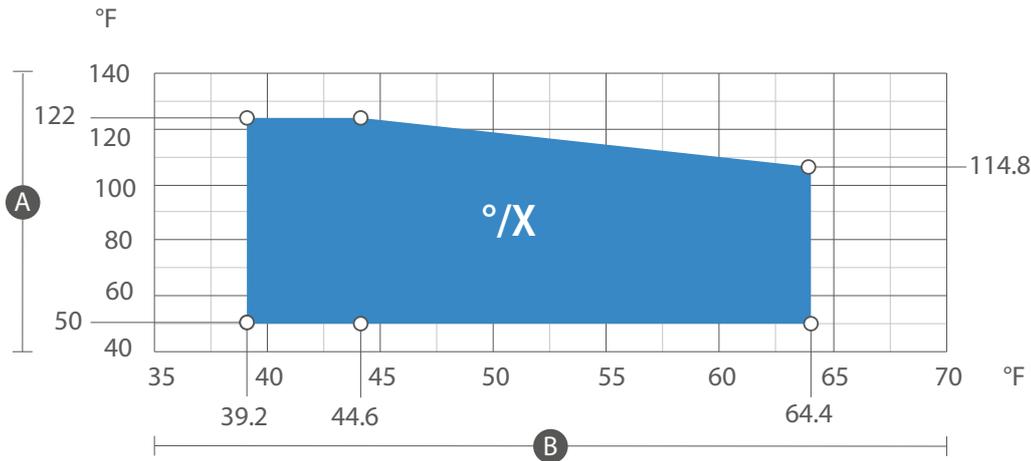
■ If the unit is installed in particularly windy locations the provision of wind barriers may be necessary to avoid malfunctions. It should be installed if wind speed is above 4.9 knot.

WARNING: Under no circumstances does the unit have to be operated outside the operating limit under penalty of the warranty expiration. Aermec S.p.A. cannot be held responsible for any malfunction of the units which are operated outside the established limits and for their consequences.

COOLING MODE

Key

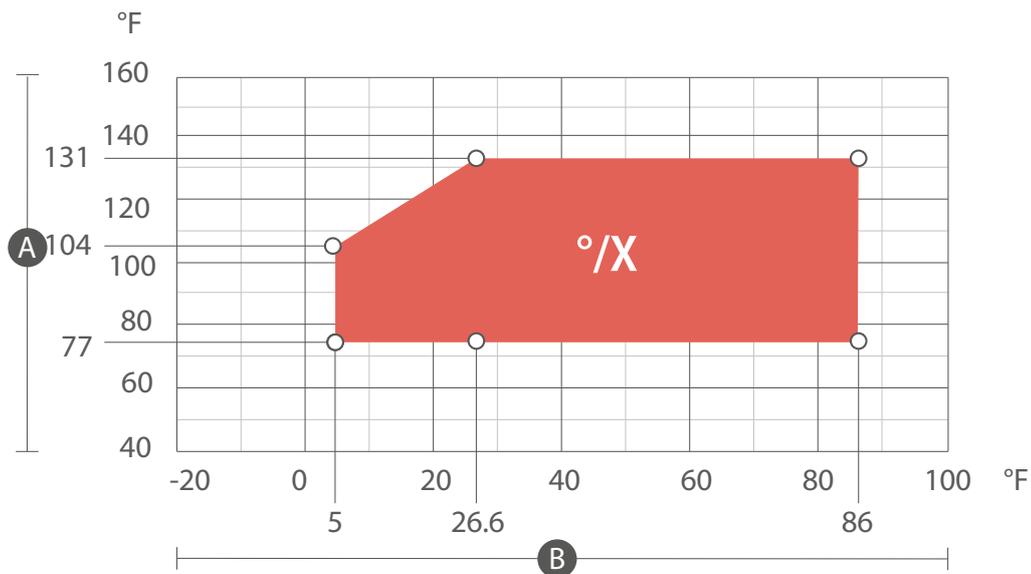
- A External air temperature (°F)
- B Water produced temperature (°F)



HEATING MODE RANGE

Key

- A. Water produced temperature (°F)
- B. External air temperature (°F)

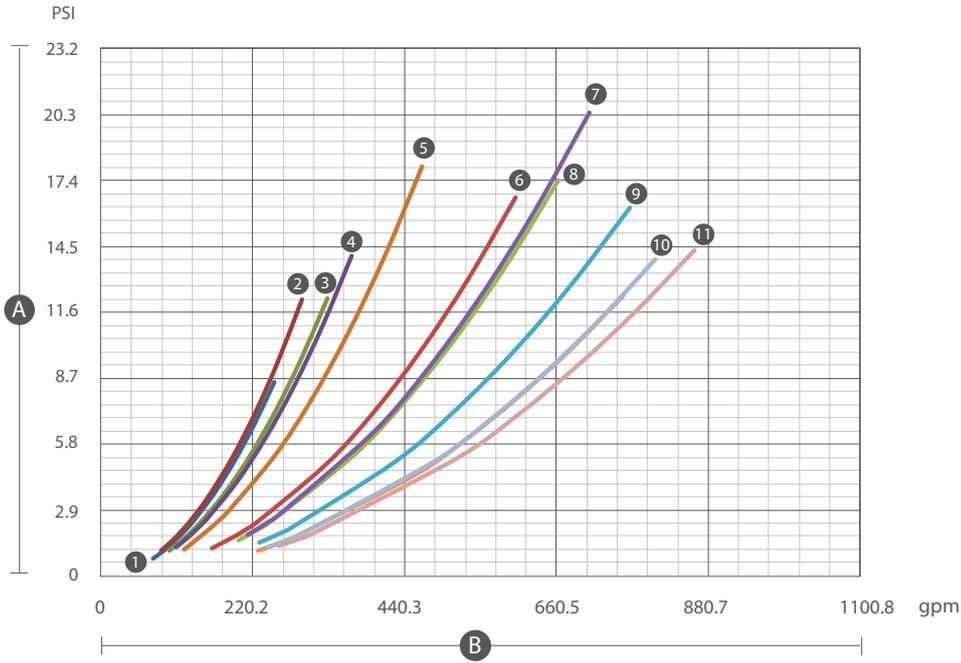


10 PRESSURE DROPS

ATTENTION: For average water temperature different than 50.0 °F refer to the chapter "Corrective factors for average water temperatures different from nominal values"

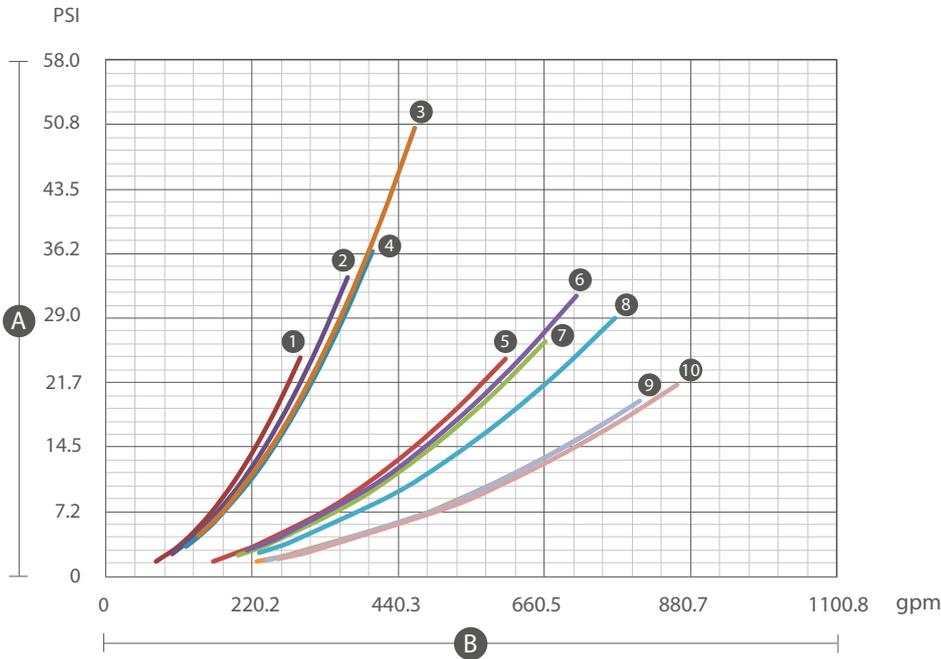
VERSION A

NRB-HA-00



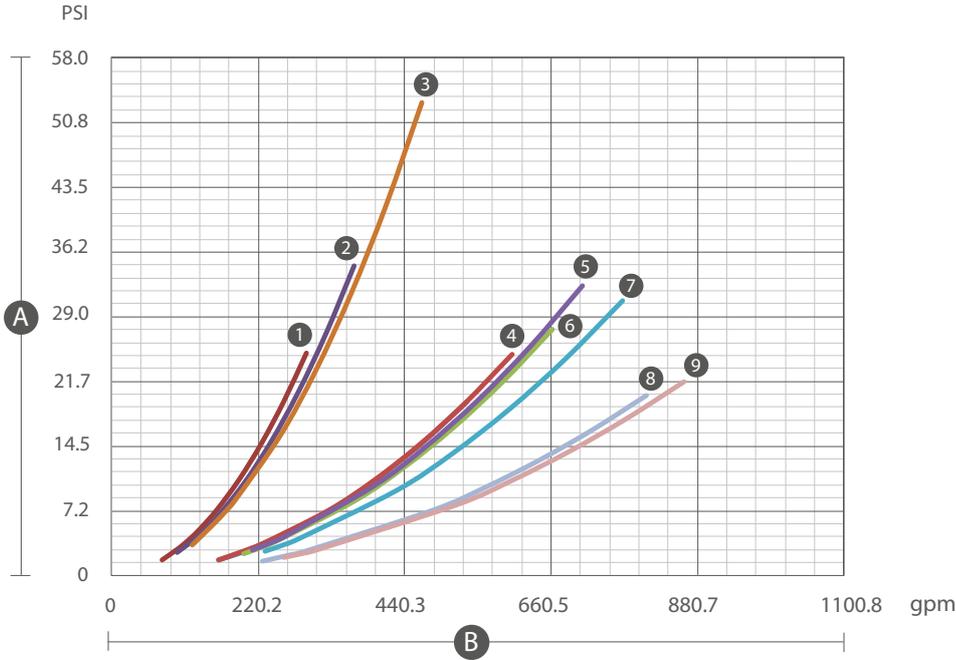
- A **Pressure drops (psi)**
- B **Water flow rate (gpm)**
- 1 0800
- 2 0900
- 3 1000
- 4 1100
- 5 1200-1400
- 6 1600-1800
- 7 2200
- 8 2000
- 9 2400
- 10 2800
- 11 3000

NRB-HA (AA-AB-AC-AD-AE-AF-AG-AH-BA-BB-BC-BD-BE-BF-BG-BH)



- A **Pressure drops (psi)**
- B **Water flow rate (gpm)**
- 1 0800-0900
- 2 1000-1100
- 3 1400
- 4 1200
- 5 1600-1800
- 6 2200
- 7 2000
- 8 2400
- 9 2800
- 10 3000

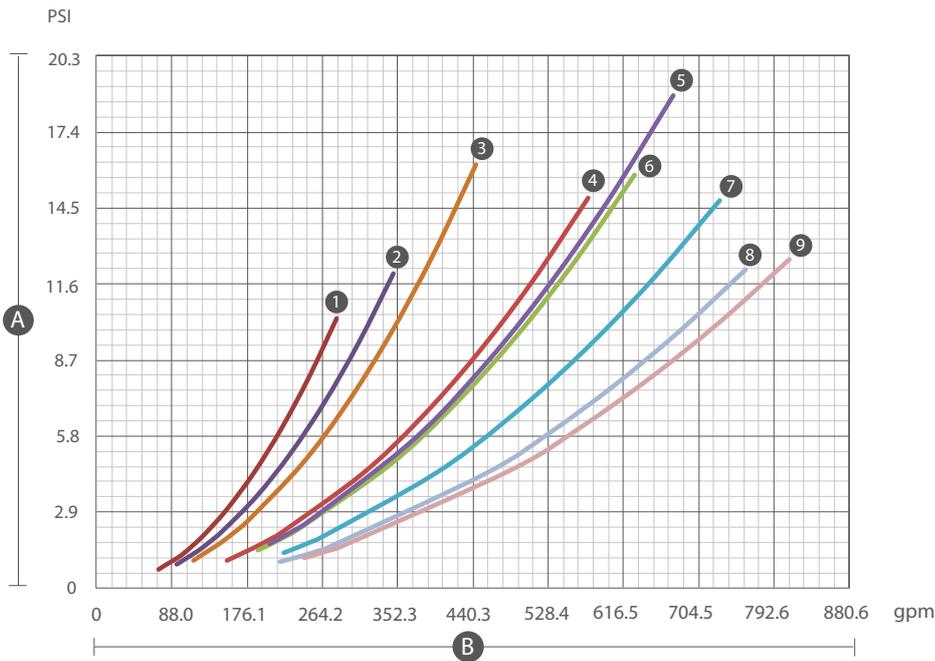
NRB-HA (PA-PB-PC-PD-PE-PF-PG-PH-DA-DB-DC-DD-DE-DF-DG-DH)



- A **Pressure drops (psi)**
- B **Water flow rate (gpm)**
- 1 0800-0900
- 2 1000-1100
- 3 1200-1400
- 4 1600-1800
- 5 2200
- 6 2000
- 7 2400
- 8 2600-2800
- 9 3000

VERSION E

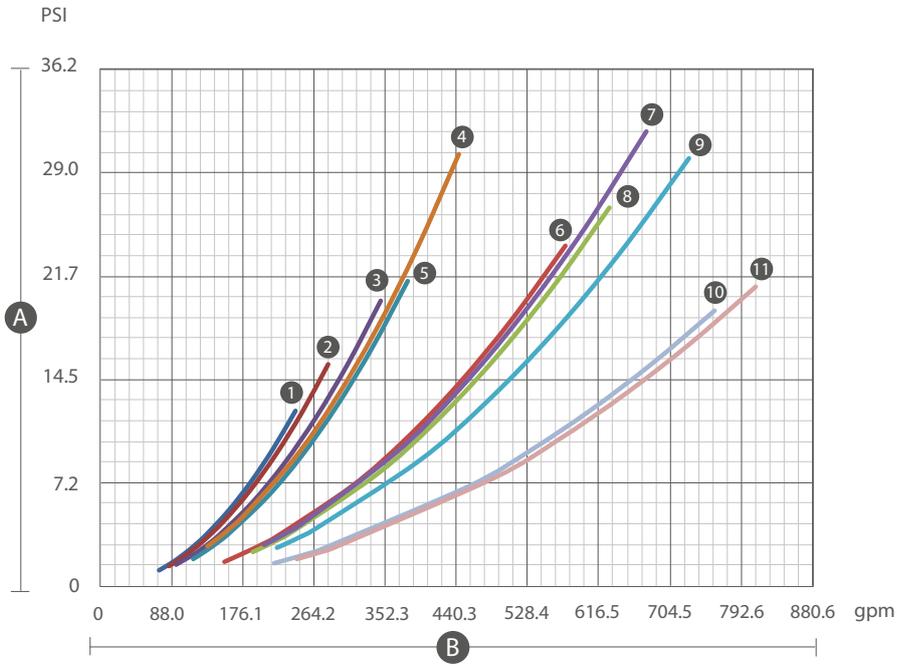
NRB-HE-00



- A **Pressure drops (psi)**
- B **Water flow rate (gpm)**
- 1 0800-0900
- 2 1000-1000
- 3 1200-1400
- 4 1600-1800
- 5 2200
- 6 2000
- 7 2400
- 8 2600-2800
- 9 3000

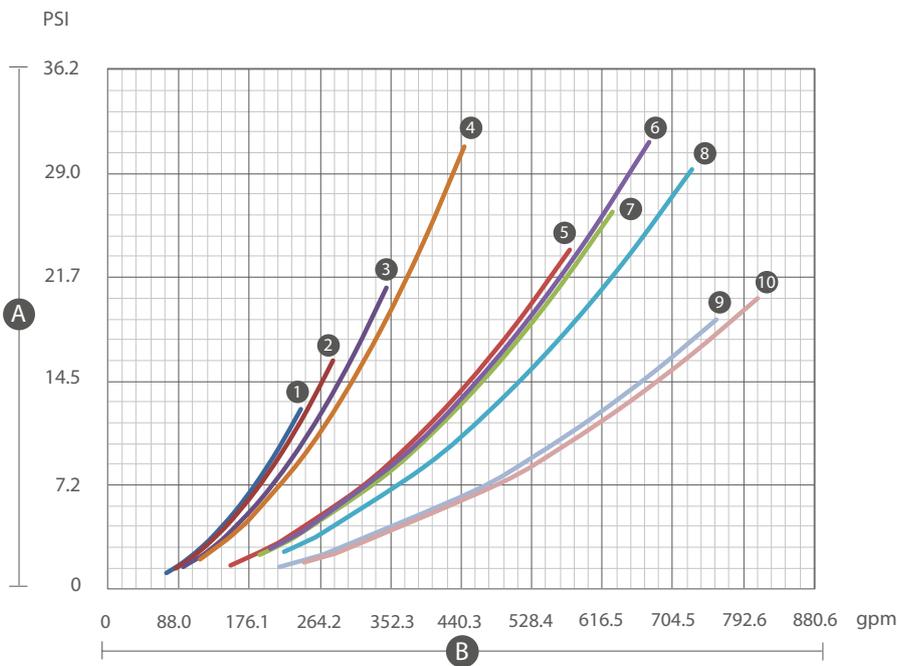
Inlet water temperature 54.0 °F
 Outlet water temperature 44.0 °F
 External air temperature 95.0 °F
 Average water temperature 50.0 °F

NRB-HE (AA-AB-AC-AD-AE-AF-AG-AH-BA-BB-BC-BD-BE-BF-BG-BH)



- A **Pressure drops (psi)**
- B **Water flow rate (gpm)**
- 1 0800
- 2 0900
- 3 1000-1100
- 4 1400
- 5 1200
- 6 1600-1800
- 7 2200
- 8 2000
- 9 2400
- 10 2600-2800
- 11 3000

NRB-HE (PA-PB-PC-PD-PE-PF-PG-PH-DA-DB-DC-DD-DE-DF-DG-DH)



- A **Pressure drops (psi)**
- B **Water flow rate (gpm)**
- 1 0800
- 2 0900
- 3 1000-1100
- 4 1200-1400
- 5 1600-1800
- 6 2200
- 7 2000
- 8 2400
- 9 2600-2800
- 10 3000

Inlet water temperature 54.0 °F
 Outlet water temperature 44.0 °F
 External air temperature 95.0 °F
 Average water temperature 50.0 °F

11 SYSTEM WATER CONTENT

MINIMUM SYSTEM WATER CONTENT

For correct unit operation, there must be a suitable amount of water in the system. A sufficient quantity of water not only ensures machine stability, but also helps avoid a high number of hourly compressor start-ups.

To calculate it, use the formula: Unit rated cooling capacity (ton) x table value (gal/ton) = Minimum system content (gal).

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
Minimum system water content																
Minimum water content for air conditioning	A,E	gal/ton	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Minimum water content for processes	A,E	gal/ton	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4

Note: the water content referred to in the tables corresponds to the amount of water effectively useful for inertial purposes; this value does not necessarily coincide with the entire system water content, and must be calculated on the basis of the system layout and operating modes.

A example is given below, but it does not cover a possible situation.

Example: for a chiller/heat pump equipped with a primary and a secondary circuit, and in which the zone pumps of the secondary circuit could (even occasionally) be turned off, only the water content of the primary circuit has value of useful water content for the counting purposes.

If you are in any doubt, please refer to the relevant technical documentation or contact the AERMEC Technical-Commercial Service.

 **NOTICE:** Under no circumstances does the unit have to be operated when water flow rate on the heat exchanger is below the minimum water flow rate or above the maximum water flow rate, under penalty of the warranty expiration. Aermec cannot be held responsible for any malfunction of the units which are operated outside the established limits of water flow rate and for their consequences

 **NOTICE:** Under no circumstances does the unit have to be operated in a system in which the content of the water circulating is below the MINIMUM SYSTEM WATER CONTENT, under penalty of the warranty expiration. Aermec cannot be held responsible for any malfunction of the units which are operated in a system in which the content of the water circulating is below the MINIMUM SYSTEM WATER CONTENT and for their consequences

 **NOTICE:** in the case of several units connected in parallel, the designer must ensure that the configuration of the system and the management logic adopted do not cause too frequent START/STOP cycles and / or sudden changes in the water flow rate of the groups in operation

 **ATTENTION** It is recommended to design systems with high water content (minimum recommended values shown in tab), in order to limit:

- Number of peaks made by the compressors
- The reduction of water temperature during defrosting cycles in the winter period for heat pumps.

MAXIMUM SYSTEM WATER CONTENT

Units with the hydronic kit mounted come standard with the expansion vessel set at 21.8 psi, the pressure relief valve and the water filter mounted.

The maximum system water content depends on the capacity of the expansion vessel and on the calibration of the pressure relief valve.

Maximum system water content

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: 00																
Hydronic kit																
Expansion vessel number	A,E	no.								/						
Expansion vessel capacity	A,E	gal	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Storage tank number	A,E	no.								/						
Storage tank capacity	A,E	gal	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Pressure relief valve	A,E	n°/psi								/						

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AA, AB, AC, AD, AE, AF, AG, AH, AI, BA, BB, BC, BD, BE, BF, BG, BH, BI																
Hydronic kit																
Expansion vessel number	A,E	no.	2	2	2	2	2	2	2	2	2	2	2	3	3	3
Expansion vessel capacity	A,E	gal	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Storage tank number	A,E	no.								1						
Storage tank capacity	A	gal	158.5	158.5	158.5	158.5	158.5	158.5	158.5	158.5	158.5	158.5	317.0	317.0	317.0	317.0
	E	gal	158.5	158.5	158.5	158.5	158.5	158.5	158.5	317.0	317.0	317.0	317.0	317.0	317.0	317.0
Pressure relief valve	A,E	n°/psi								1 / 85.2						

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: AJ, BJ																
Hydronic kit																
Expansion vessel number	A,E	no.								- (1)						
Expansion vessel capacity	A,E	gal	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)
Storage tank number	A,E	no.								- (1)						
Storage tank capacity	A,E	gal	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)	- (1)
Pressure relief valve	A,E	n°/psi								- (1)						

(1) Contact the factory

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: DA, DB, DC, DD, DE, DF, DG, DH, DI, PA, PB, PC, PD, PE, PF, PG, PH, PI																
Hydronic kit																
Expansion vessel number	A,E	no.	2													
Expansion vessel capacity	A,E	gal	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Storage tank number	A,E	no.	/													
Storage tank capacity	A,E	gal	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Pressure relief valve	A,E	n°/psi	1/85.2													

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
INTEGRATED HYDRONIC KIT: DJ, PJ																
Hydronic kit																
Expansion vessel number	A,E	no.	- (1)													
Expansion vessel capacity	A,E	gal	-(1)	-(1)	-(1)	-(1)	-(1)	-(1)	-(1)	-(1)	-(1)	-(1)	-(1)	-(1)	-(1)	-(1)
Storage tank number	A,E	no.	/													
Storage tank capacity	A,E	gal	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Pressure relief valve	A,E	n°/psi	-(1)													

(1) Contact the factory

The table gives an example of the maximum water content calculated at the indicated operating conditions and only to protect the unit.
If the volume of water in the system is higher, add another expansion vessel of the correct size.

System water temperature max/min	°F	104/39.2															
Hydraulic height	Ft	98.4	82.0										65.6	49.2	≤40.19		
Expansion vessel pre-load	psi	46.4	40.6										33.4	26.1	21.8		
Water content maximum	gal	574.3	699.0										823.7	948.4	1,017.6		
System water temperature max/min	°F	140/39.2															
Expansion vessel pre-load	psi	46.4	40.6										33.4	26.1	21.8		
Water content maximum	gal	258.4	314.4										370.9	426.9	457.5		

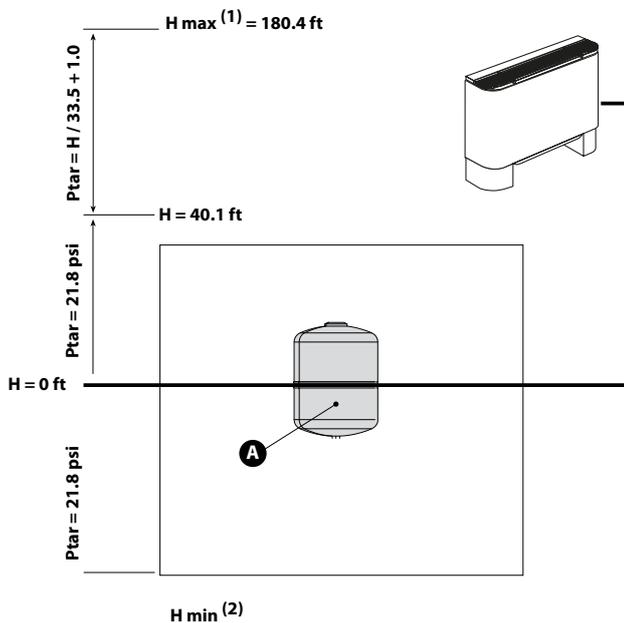
The data in the table refer to units with a 6.3 gal. expansion vessel.

EXPANSION VESSEL SETTING

The expansion tank volume is 6.3 gal. The standard value of the expansion tank pre-charge pressure is 21.8 psi, but this can be calibrated up to a maximum of 87.0 psi.
The expansion tank pressure setting has to be adjusted based on the difference in height (H) of the installation (see figure) according to the formula: $p \text{ (rating) [psi]} = H \text{ [ft]} / 33.5 + 1.0$.

For example: if level difference H is equal to 65.6 ft, the calibration value of the vessel will be 33.4 psi.

If the calibration value obtained from the formula is less than 21.8 psi (i.e. for $H < 40.2$), use the standard calibration.



Key

- A Expansion vessel
- 1 Check that highest utility is not higher than 180.4 ft
- 2 Ensure that lowest utility can withstand global pressure in that position

12 CORRECTION FACTORS

CORRECTIVE FACTORS FOR AVERAGE WATER TEMPERATURES DIFFERENT FROM NOMINAL VALUES

The pressure drops are calculated with an average water temperature of 50.0 °F (Cooling mode), 109.4 °F (Heating or recovery mode)

		System side heat exchanger														
		Cooling mode							Heating mode or recovery							
Average water temperatures	°F	41.0	50.0	59.0	68.0	86.0	104.0	122.0	73.4	82.4	91.4	100.4	109.4	118.4	127.4	134.4
Correction factor		1.02	1.00	0.98	0.97	0.95	0.93	0.91	1.04	1.03	1.02	1.01	1.00	0.99	0.98	0.97

FOULING: DEPOSIT CORRECTIVE FACTORS [K*M²]/[W]

	0,0	0,00005	0,0001	0,0002
Corrective factor of cooling capacity	1,0	1	0.98	0.94
Corrective factor of input power	1,0	1	0.98	0.95

13 GLYCOL

ETHYLENE GLYCOL

Cooling mode

CORRECTION FACTOR WITH ETHYLENE GLYCOL - COOLING MODE												
Freezing Point	°F	0	25.47	21.02	15.93	10.20	3.67	-3.89	-12.62	-22.79	-34.78	
Percent ethylene glycol	%	0	10	15	20	25	30	35	40	45	50	
Q _{wc}	-	1.000	1.033	1.040	1.049	1.060	1.072	1.086	1.102	1.120	1.141	
P _c	-	1.000	0.990	0.985	0.980	0.975	0.970	0.965	0.960	0.955	0.950	
P _a	-	1.000	0.996	0.994	0.992	0.990	0.988	0.986	0.984	0.982	0.980	
Δp	-	1.000	1.109	1.157	1.209	1.268	1.336	1.414	1.505	1.609	1.728	

Heating mode range

CORRECTION FACTOR WITH ETHYLENE GLYCOL - HEATING MODE												
Freezing Point	°F	0	25.47	21.02	15.93	10.20	3.67	-3.89	-12.62	-22.79	-34.78	
Percent ethylene glycol	%	0	10	15	20	25	30	35	40	45	50	
Q _{wh}	-	1.000	1.027	1.038	1.050	1.063	1.078	1.095	1.114	1.135	1.158	
P _h	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
P _a	-	1.000	1.002	1.003	1.004	1.005	1.007	1.008	1.010	1.012	1.015	
Δp	-	1.000	1.087	1.128	1.175	1.227	1.286	1.353	1.428	1.514	1.610	

PROPYLENE GLYCOL

Cooling mode

CORRECTION FACTOR WITH PROPYLENE GLYCOL - COOLING MODE												
Freezing Point	°F	0	25.83	22.46	18.61	14.04	8.46	1.65	-6.65	-16.67	-28.70	
Percent propylene glycol	%	0	10	15	20	25	30	35	40	45	50	
Q _{wc}	-	1.000	1.007	1.006	1.007	1.010	1.015	1.022	1.032	1.044	1.058	
P _c	-	1.000	0.985	0.978	0.970	0.963	0.955	0.947	0.939	0.932	0.924	
P _a	-	1.000	0.996	0.994	0.992	0.990	0.988	0.986	0.984	0.982	0.980	
Δp	-	1.000	1.082	1.102	1.143	1.201	1.271	1.351	1.435	1.520	1.602	

Heating mode range

CORRECTION FACTOR WITH PROPYLENE GLYCOL - HEATING MODE												
Freezing Point	°F	0	25.83	22.46	18.61	14.04	8.46	1.65	-6.65	-16.67	-28.70	
Percent propylene glycol	%	0	10	15	20	25	30	35	40	45	50	
Q _{wh}	-	1.000	1.008	1.014	1.021	1.030	1.042	1.055	1.071	1.090	1.112	
P _h	-	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
P _a	-	1.000	1.003	1.004	1.005	1.007	1.009	1.011	1.014	1.018	1.023	
Δp	-	1.000	1.050	1.077	1.111	1.153	1.202	1.258	1.321	1.390	1.467	

■ Attention: Avoid adding the glycol in the hydraulic circuit near the pump intake. A high concentration of glycol and additives above the permissible limits can block the pump: do not use the pump as a mixer.

14 SOUND DATA

COOLING

Size			0800	0900	1000	1100	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
Sound data calculated in cooling mode (1)																
Sound power level	A	dB(A)	89	91	93	94	95	95	94	96	98	97	96	97	98	99
	E	dB(A)	84	89	91	92	94	93	93	95	97	95	94	96	97	98
Sound power by centre octave band dB(A)																
125 Hz	A	dB(A)	79,1	80,3	80,3	80,3	80,3	81,3	82,1	82,8	82,8	83,3	83,3	83,8	83,8	84,3
	E	dB(A)	65,5	66,8	67,0	66,9	66,8	67,7	68,5	69,2	69,2	69,8	69,7	70,3	70,3	70,8
250 Hz	A	dB(A)	76,3	78,4	79,1	78,8	78,5	79,5	80,3	81,5	82,1	82,1	81,6	82,5	82,9	83,6
	E	dB(A)	65,4	72,3	74,7	73,8	72,8	73,9	74,8	77,1	78,6	77,5	76,1	77,9	78,8	79,9
500 Hz	A	dB(A)	79,7	81,9	82,9	82,7	82,4	83,4	84,1	84,8	85,1	85,4	85,4	85,9	86,1	86,5
	E	dB(A)	74,7	78,6	80,5	80,1	79,5	80,5	81,3	81,9	82,4	82,5	82,6	83,1	83,4	83,8
1000 Hz	A	dB(A)	83,9	86,1	87,0	89,0	90,3	90,0	89,6	92,0	93,4	92,4	90,9	92,8	93,7	94,8
	E	dB(A)	77,8	82,0	84,1	87,3	89,2	88,3	87,3	90,6	92,5	91,0	88,6	91,3	92,5	93,8
2000 Hz	A	dB(A)	83,4	87,0	88,7	89,8	90,7	90,6	90,5	92,4	93,7	92,9	91,8	93,3	94,1	95,1
	E	dB(A)	80,9	85,6	87,9	89,2	90,2	89,9	89,7	91,8	93,3	92,3	91,0	92,7	93,6	94,6
4000 Hz	A	dB(A)	76,4	80,2	82,1	83,6	84,7	84,1	83,6	85,1	86,3	85,6	84,9	86,1	86,8	87,6
	E	dB(A)	74,8	79,4	81,6	83,2	84,4	83,8	83,0	84,7	85,9	85,2	84,3	85,7	86,4	87,3
8000 Hz	A	dB(A)	67,9	68,8	69,3	72,3	74,0	72,8	71,0	72,3	73,3	72,9	72,3	73,3	73,9	74,6
	E	dB(A)	66,7	67,5	68,1	71,7	73,7	72,2	69,8	71,4	72,5	71,9	71,1	72,3	73,0	73,8

(1) Sound power calculated on the basis of measurements made in accordance with UNI EN ISO 9614-2. Sound pressure (cold functioning) measured in free field, 10 m / 33 ft away from the unit external surface (in compliance with UNI EN ISO 3744).

System water temperature 54/44 °F (in/out)

External air temperature 95 °F

Standard fans

Note

For operating conditions different to those declared refer to the selection program Magellano, available on www.aermec.com



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