

## TECHNICAL MANUAL MANUAL TÉCNICO

Air/water chillers and heat pumps and condensing units with scroll compressors

Enfriadoras y bombas de calor aire agua y motocondensadores con compresores scroll

# nra



# INSTRUCTIONS FOR THE SELECTION

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**Dear Customer,**

Thank you for choosing **AERMEC**. It is the fruit of many years of experience and special design studies and has been made of the highest grade materials and with cutting edge technology.

In addition, all our products bear the EC mark indicating that they meet the requirements of the European Machine Directive regarding safety. The standard of quality is permanently being monitored and **AERMEC** products are therefore a synonym for **Safety, Quality and Reliability**.

The data may undergo modifications considered necessary for the improvement of the product, at any time and without the obligation for any notice thereof.

Thank you again.  
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AERMEC S.p.A.  
I-37040 Bevilacqua (VR) Italia - Via Roma, 44  
Tel. [+39] 0442 633111  
Telefax 0442 93730 - [+39] 0442 93566  
www.aermec.com - info@aermec.com

# NRA NRA H

|               |  |
|---------------|--|
| MODEL:        |  |
| SERIAL NUMBER |  |

|                        |                                                                                                           |
|------------------------|-----------------------------------------------------------------------------------------------------------|
| COMPLIANCE DECLARATION | We, the undersigned, declare on our own exclusive responsibility that the object in question, so defined: |
| Product identification | AIR / WATER <b>chiller, HEAT PUMP NRA RANGE</b><br>is in compliance with:                                 |

|    |                                                                                                                                                                                                                                                                                                     |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | Directive 97/23/EC and has been subjected (with reference to Attachment II of the said directive) to the following compliance evaluation procedure:<br><b>module H</b><br>with checks made via inspections by the appointed body CEC via Pisacane 46 Legnano (MI)<br>- Italy, identity number 1131; |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                |                                                                                                                   |
|----------------|-------------------------------------------------------------------------------------------------------------------|
| 2.             | Designed, produced and marketed in observance of the following technical specifications:<br>Harmonised standards: |
| - EN 378:      | Refrigerating system and heat pumps - Safety and environmental requirements;                                      |
| - EN 12735:    | Copper and copper alloys - Seamless, round copper tubes for air conditioning and refrigeration;                   |
| - UNI 1285-68: | Calculation of the strength of metal pipes subject to internal pressure;                                          |

|            |                                                                               |
|------------|-------------------------------------------------------------------------------|
| 3.         | Designed, produced and marketed in observance of the following EC directives: |
| 98/37/EC:  | Machine Directive                                                             |
| 2006/95/CE | LVD                                                                           |

|            |            |  |
|------------|------------|--|
| Bevilacqua | 26/03/2007 |  |
|------------|------------|--|

Marketing Director  
Signature

# 1 GENERAL STANDARDS

- This manual, and the electrical layouts supplied with the unit, must be kept in a dry place for any future consultation, and for the lifespan of the machine.

This manual has been drawn up with the aim of supporting the correct installation of the unit and providing all the indications for the correct use and maintenance of the device. Before proceeding with the installation, please read all the information in the manual carefully, as well as the procedures necessary for the correct installation and use of the unit.

- Be careful to adhere to the instructions in this manual and observe the safety regulations currently in place.
- The device must be installed in compliance with the local legislation currently in force in the country of destination.
- Non-authorized tampering with the equipment, whether electrical or mechanical, will make **THE WARRANTY VOID and exclude any liability on the part of the company.**
- Check the electrical characteristics shown on the registration plate (fig.1) before making the electrical connections. Read the instructions in the specific section about electrical connections.

- If the unit needs to be repaired, in all cases contact a specialised AERMEC After Sales Service centre and only use OEM spare parts.

- The manufacturer furthermore declines any liability for injury to persons or damage to things resulting from the failure to comply with the information in this manual.

- Permitted uses: this series of chillers is suitable for producing cold water to use in hydronic systems designed for air conditioning. The units are not suitable for producing hot water for bathrooms.

Any use other than that permitted, or outside the operating limits mentioned in this manual, is forbidden unless previously agreed with the company.

The warranty does not include payment for damage due to wrong installation of the unit by the installer.

- The warranty does not include payment for damage due to the improper use of the unit by the user.
- The manufacturer is not to be considered liable for accidents to the user or the installer due to the incorrect installation or improper use of the unit.
- The device must be installed in such a way that maintenance and/or repair

operations can be carried out. The warranty of the device does not in any case cover costs incurred as a result of motorised ladders, scaffolding or any other lifting systems necessary to carry out the operations under warranty.

The warranty is not valid when:

- the services and repairs have been carried out by non-authorized personnel or companies;
- the unit has been repaired or modified in the past with non-OEM spare parts;
- the unit has not been adequately maintained;
- the instructions described in this manual have not been followed;
- non-authorized modifications have been made.

## N.B:

**The Manufacturer reserves the right at all times to make any modification for the improvement of its product, and is not obliged to add these modification to machines of previous manufacture that have already been delivered or are being built.**

**The warranty conditions are anyway subject to the general sales conditions at the moment the contract is finalised.**

## 1.1 Technical plate

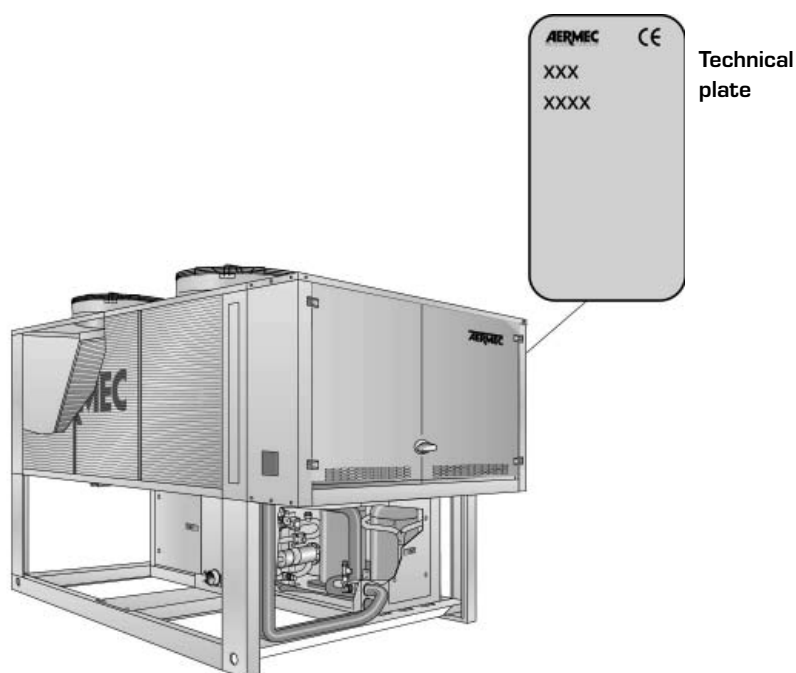


Fig. 1

## 2 DESCRIZIONE E SCELTA DELL'UNITÀ

The devices of the **NRA** range are units used to produce cold water for technological systems; the heat pump models also allow you to produce hot water for heating. They consist of two R407C refrigerating circuits and a single hydraulic circuit (which may or may not be fitted with an accumulation unit).

The presence of more than one scroll type compressor allows the NRA chillers various capacity controls of the cooling capacity.

The use of more than one scroll type compressor allows a high level of efficiency, even with partial loads. In these cases in fact, a variable number of scroll compressors are working, each at 100% (i.e. maximum efficiency) of the output power. By means of a microprocessor, the electronic regulation controls and manages all the components and working parameters of the unit; an internal memory registers the working conditions in the moment when an alarm condition arises, in order to visualise it on the display. The units have a protection rating of IP 24.

### 2.1 MODELS AVAILABLE

- "STANDARD COOLING ONLY (°)" maximum outside temperature allowed 42°C. Acoustic protection cover for the compressor, for quiet operation.
- "HEAT PUMP (H)" in cooling mode the operating limits arrive to a maximum outside air temperature of 46°C. NRAH do not envisage the following configurations:

- YH (with processed water lower than 4°C)
- HC (condensing heat pump)
- HA (heat pump in high temperature because the heat pump is, by its very nature, a machine for high temperatures)

### 2.2 VERSIONS AVAILABLE

- "STANDARD/BASE"  
Maximum outside temperature allowed 42°C, acoustic cover for the compressor, for quieter operation.

- "HIGH TEMPERATURE" **(available only for cold working versions)**  
via the expansion of the pack finned heat exchanger, it allows you to widen the operating limits, arriving at a maximum outside air temperature of 46°C.

- "SILENCED (L)" represents the models designed for particularly quiet operation. **All the sizes are fitted with a device for regulating the fan speed. When the temperature is lower than 35°C, the low noise version further reduces the number of fan rotations, thereby obtaining an even quieter operation than that in nominal conditions.**

- "SILENCED HEAT PUMPS (HL)" represents the models designed for particularly quiet operation. **All the sizes are fitted with a device for regulating the fan speed.**

- "HEAT RECOVERY"  
A unit with air condensation, complete

with section for partial heat recovery. The heat exchanger is specially scaled to guarantee heat recovery for the production of hot water for use in bathrooms or other purposes.

#### 1. Desuperheater (D)

The desuperheater is also available for heat pump versions, limitedly in the cooling function. It must be intercepted in the heating function.

#### 2. Total heat recovery (T)

In heat pumps total recovery is only available for the "OO versions without hydronic kit"

- "CONDENSING UNITS C"
- "SILENCED CONDENSING UNITS LC"

- "VERSION Y" is the version that allows you to produce chilled water below the standard value of +4°C, to a minimum of -6°C.

For lower values, contact the company headquarters.

**ONLY THE VERSION YA IS AVAILABLE.**

### WARNING

For the devices designed to work with a low air temperature, and also the heat pumps, before starting up the unit (or at the end of each period of prolonged disuse) it is extremely important for the oil of the compressor carter to be heated beforehand, via the power supply to the special heaters, for at least 8 hours.

The carter heater is automatically powered when the unit stops, provided that the unit is kept under tension.

#### 2.2.1 Standard equipment

| ALL THE VERSIONS COME WITH: |                                                                                            |
|-----------------------------|--------------------------------------------------------------------------------------------|
| 1.                          | Evaporator anti-freeze heater                                                              |
| 2.                          | Compressor carter heater                                                                   |
| 3.                          | Remote control panel                                                                       |
| 4.                          | Water filter (supplied with the versions without accumulation)                             |
| 5.                          | Flow switch only in the versions with accumulation                                         |
| HEAT PUMPS                  |                                                                                            |
| TP1                         | Trasduttore di bassa pressione                                                             |
| TP2                         | Trasduttore di alta pressione                                                              |
| DCPX                        | Dispositivo di regolazione della velocità dei ventilatori di serie per la sola versione HL |
| CHILLERS WITH ACCUMULATION  |                                                                                            |
| 1.                          | Evaporator anti-freeze heater                                                              |
| 2.                          | High or low pressure pumping unit                                                          |

| 3.                          | OPTION: There is also the possibility to have a reserve pump.<br><b>The stand-by pump that in NRA 800 - 900 - 1000 models is controlled by the electronic card which enables the alternate operation of the two pumps to optimize the working time. A switch on the NRA 1250 - 1400 - 1500 - 1650 - 1800 electric panel enables the pumps to be manually switched over.</b> |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.                          | For the heat pump versions, an accumulation (pre-set for the insertion of integrative heaters) <b>is available upon request.</b>                                                                                                                                                                                                                                            |
| CHILLERS WITH DESUPERHEATER |                                                                                                                                                                                                                                                                                                                                                                             |
| DCPX                        | Standard                                                                                                                                                                                                                                                                                                                                                                    |

## 2.3 SELECTION

| 1,2,3 | 4,5,6,7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15,16 |
|-------|---------|---|---|----|----|----|----|----|-------|
| NRA   | 1650    | ° | ° | D  | L  | °  | °  | °  | 00    |

fields 15 - 16

| HYDRONIC KIT |                                                                                         |
|--------------|-----------------------------------------------------------------------------------------|
| 00           | Without accumulation                                                                    |
| 01           | Accumulation and low pressure pump                                                      |
| 02           | Accumulation, low pressure pump and reserve pump                                        |
| 03           | Accumulation and high pressure pump                                                     |
| 04           | Accumulation, high pressure pump and reserve pump                                       |
| 05           | Accumulation with holes for integrative resistance, and low pressure pump               |
| 06           | Accumulation with holes for integrative resistance, low pressure pump and reserve pump  |
| 07           | Accumulation with holes for integrative resistance, high pressure pump                  |
| 08           | Accumulation with holes for integrative resistance, high pressure pump and reserve pump |
| P1           | Only low pressure pump                                                                  |
| P2           | Low pressure pump and reserve pump                                                      |
| P3           | Only high pressure pump                                                                 |
| P4           | High pressure pump and reserve pump                                                     |

fields 14

| Power supply |                                          |
|--------------|------------------------------------------|
| °            | 3~400V-50Hz with thermomagnetic switches |
| 4            | 3~230V-50Hz with thermomagnetic switches |
| 9            | 3~500V-50Hz with thermomagnetic switches |

fields 13

| Evaporator |                            |
|------------|----------------------------|
| °          | According to PED standards |
| C          | Condensing [without evap.] |

fields 12

| Coils |                              |
|-------|------------------------------|
| °     | - Aluminium                  |
| R     | - Copper                     |
| S     | - Tinned copper              |
| V     | - Varnished aluminium copper |

fields 11

| Version |                                |
|---------|--------------------------------|
| °       | Standard                       |
| A       | High temperature               |
| L       | Standard in Silenced operation |

fields 10

| Heat recoverers |                    |
|-----------------|--------------------|
| °               | Without recoverers |
| D               | Desuperheater      |
| T               | Total recovery     |

fields 9

| Model |              |
|-------|--------------|
| °     | Cooling only |
| H     | Heat pump    |

fields 8

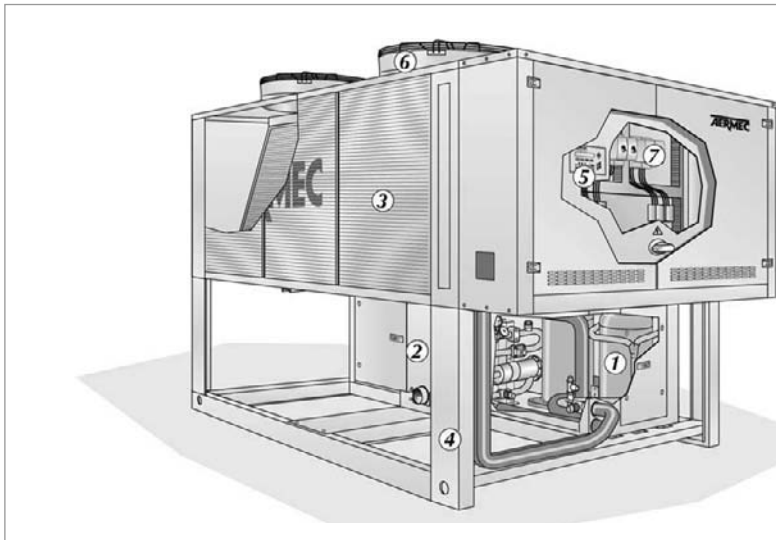
| Refrigerant |                                                              |
|-------------|--------------------------------------------------------------|
| °           | Standard                                                     |
| Y           | Version for low temperature of processed water; down to -6°C |

fields 4 - 5 - 6 - 7

|                                                       |
|-------------------------------------------------------|
| 0800 - 0900 - 1000 - 1250 - 1400 - 1500 - 1650 - 1800 |
|-------------------------------------------------------|

## 3 DESCRIPTION OF COMPONENTS

### Esempio NRA 1650 00



#### KEY

- 1 Compressor
- 2 Exchanger water side
- 3 Exchanger air side
- 4 Frame
- 5 Control keypad
- 6 Fans
- 7 Electric panel

### 3.1 REFRIGERATING CIRCUIT

#### Compressors

Hermetic scroll type compressors equipped, as standard, with anti-freeze heater.

The heater is automatically powered when the unit stops, provided that the unit is kept under tension. The compressor area is acoustically insulated. The use of more than one scroll type compressor allows a high level of efficiency with partial loads. In these cases in fact, a variable number of scroll compressors are working, each at its own 100% (i.e. maximum efficiency) of the output power.

#### Air side heat exchanger

It is made of copper pipes and aluminium fins locked into place through mechanical expansion of the pipes. Of the high efficiency type; furrowed tube and corrugated fins for heat pump, smooth tube and turbo fins for cooling only.

#### Water side heat exchanger

Of the plate type (AISI 316), externally insulated with closed cell material to reduce thermal dispersion. Fitted, as standard, with anti-freeze heater.

#### Liquid separator (heat pump only)

Suction from compressor, to protect from any liquid refrigerant return, flooded starts, working in the presence of liquid.

#### Filter drier

Of the mechanical type, made of ceramic and hygroscopic material, able to hold back any impurities and traces of humidity in the refrigerating circuit.

#### Sight glass

For checking the refrigerating gas load and any humidity in the refrigerating circuit.

#### Thermostatic valve

The mechanical valve, with outside equaliser on the evaporator outlet, modulates the gas flow to the evaporator on the basis of the thermal load, in such a way as to ensure the proper degree of overheating of the intake gas.

#### Liquid and force gas taps (cooling-only versions)

They allow the refrigerant to be cut off during extraordinary maintenance.

#### Solenoid valve

The valve closes when the compressor turns off, preventing the flow of refrigerant gas towards the evaporator.

#### Reverse cycle valve (heat pump only)

Inverts the flow of the refrigerant when there is a change of summer / winter operation and during the defrosting cycles.

#### One-way valve

This allows the refrigerant to flow in just one direction.

#### Desuperheater (only upon request)

Of the plate type (AISI 316), externally insulated with closed cell material to reduce thermal dispersion.

The desuperheater is also available for heat pump versions, limitedly in the cooling function. It must be intercepted in the heating function.

#### Total recovery (only upon request)

Of the plate type (AISI 316), externally insulated with closed cell material to reduce thermal dispersion.

#### NOTE

In heat pumps total recovery is only available for the "00 versions without hydronic kit"

#### Liquid accumulation only for heat pumps, or with total heat recovery.

It is used in the heat pump or total recovery versions. Used to keep the refrigerating gas in a liquid state if the machine, in that particular working point, has an excess of it.

### 3.2 FRAME AND FANS

#### Fan unit

Screw type, statically and dynamically balanced. The electric fans are protected electrically with thermomagnetic switches and mechanically with metal anti-intrusion grilles, in accordance with the standard CEI EN 60335-2-40.

#### Load-bearing structure

Made of hot-galvanised steel sheet of a suitable thickness, varnished with polyester powders able to resist atmospheric agents over time.

### 3.3 HYDRAULIC COMPONENTS

#### Circulation pump

Depending on the characteristics of the pump chosen, it offers an effective pressure to overcome the pressure drops in the system. There is also the possibility to have a reserve pump.

The stand-by pump that in NRA 800 - 900 - 1000 models is controlled by

the electronic card which enables the alternate operation of the two pumps to optimize the working time. A switch on the NRA 1250 - 1400 - 1500 - 1650 - 1800 electric panel enables the pumps to be manually switched over.

**Flow switch only in versions with accumulation feature and or pumps**

This checks that the water is circulating. If this is not the case, it shuts down the unit..

**NOTE**

In the versions without accumulation a flow switch must be introduced or the WARRANTY becomes void.

**Water filter Supplied with standard versions (Mounted in versions with accumulation and/or Pope)**

Allows you to block and eliminate any impurities in the hydraulic circuits. Inside, it has a filtering mesh with holes not greater than one millimetre. It is essential in order to avoid serious damage to the plate heat exchanger.

**Accumulation tank**

It is made of stainless steel, with a capacity of 700 litres. In order to reduce the thermal dispersion and eliminate the phenomenon of the formation of condensation, it is insulated with polyurethane material of a suitable thickness. It is fitted, as standard, with an anti-freeze heater (down to -20°C outside temperature, tank water temperature 5°C), commanded by the anti-freeze probe situated in the tank.

**Drain valve**

**(only in the versions with hydronic unit or pump(s))**

Of the manual type, it discharges any air pockets. It is intercepted by a stopcock so that it can be substituted if necessary.

**Filling unit**

**(only in the versions with accumulation or pump(s))**

This has a pressure gauge showing the pressure in the system.

**Two expansion tanks (of 25 litres)**

**(only in the versions with accumulation or pump(s))**

of the membrane type, with nitrogen pre-charge.

**Hydraulic circuit safety valve**

**(only in the versions with hydronic unit or pump(s))**

CALIBRATED AT 6 bar and with a discharge that can be channelled, it intervenes by discharging the overpressure in the event of anomalous pressures.

### 3.4 SAFETY AND CONTROL COMPONENTS

**Low pressure switch**

not present in the heat pump versions, as these functions are carried out directly by the board.

Of fixed calibration, located on the low pressure side of the refrigerating circuit, it stops the operation of the compressor in the event of anomalous work pressures.

**High pressure switch**

Of variable calibration, located on the high pressure side of the refrigerating circuit, it stops the operation of the compressor in the event of anomalous work pressures.

**Anti-freeze heater**

**(installed as standard)**

Its operation is commanded by the anti-freeze probe located in the plate evaporator. It is activated when the water temperature is +3°C, and deactivated when the water temperature is +5°C. The dedicated software in the regulation card manages the heater.

**Refrigerating circuit safety valve**

Calibrated at 30 Bar, it cuts in by letting off the overpressure in the case of anomalous pressures.

**Low pressure transducers TP1, standard in the heat pumps.**

accessory in the cooling only versions

**High pressure transducer TP2**

**standard on all the versions**

### 3.5 ELECTRICAL COMPONENTS

**Electrical panel**

Contains the power section and the management of the controls and safety devices. This conforms with standard CEI 60204-1, and Electromagnetic Compatibility Directives EMC 89/336/EEC and 92/31/EEC.

**Door lock sectioner**

IT IS POSSIBLE TO ACCESS THE ELECTRIC PANEL BY disconnecting the voltage, then using the opening lever of the panel itself. This lever can be blocked with one or more padlocks during maintenance, in order to prevent the machine being powered up accidentally.

**Control keypad**

Provides full control functions.

For a detailed description of the keypad refer to the user manual.

**Remote control panel**

This allows the chiller command operations to be given from a distance.

- **thermomagnetic compressor protection.**
- **thermomagnetic fan protection;**
- **thermomagnetic auxiliary protection.**
- **thermostat for discharge gas temperature control**

### 3.6 ELECTRONIC REGULATION

**Microprocessor card**

Consisting of a management/control card and a visualisation card. Functions carried out:

- regulation of evaporator water inlet temperature (also outlet can be selected), with thermostat action up to 12 levels and proportional/integral control of fan speed.
- delayed compressor start-up.
- operation as chiller; with possibility to integrate refrigerating capacity by means of "free-cooling".
- compressor sequence rotation.
- management of low temperature device (accessory).
- compressor operation hour count.
- start/stop.
- reset.
- permanent alarms memory.
- automatic start-up after drop in voltage.
- multi-lingual message service.
- operation with local or remote control.
- visualisation of machine status: ON/OFF compressors; alarms summary.
- alarms management: high pressure; flow switch; low pressure; anti-freeze; compressor overload; fan overload; pump overload.
- visualisation of the following parameters: water inlet temperature; evaporator water inlet temperature; water outlet temperature; delta T; high pressure; low pressure; waiting time for restart.
- alarms visualisation.
- settings:
  - a) without password: cooling set; total differential;
  - b) with password: anti-freeze set; low pressure exclusion time; display language; access code.

For further information, refer to the user manual.

## 4 ACCESSORIES

### AER485 Scheda per sistemi MODBUS

Questo accessorio consente il collegamento dell'unità con sistemi di supervisione BMS con standard elettrico RS 485 e protocollo di tipo MODBUS.

### AVX anti-vibration support

Spring-operated, anti-vibration supports.

### DCPX <sup>1</sup> device for low temperatures

It consists of an electronic regulation card that varies the number of fan rotations on the basis of the condensation pressure

### GP protection grille

Each kit has two grilles.

### PGS daily/weekly timer.

Card to be inserted in the electronic

card of the unit. Allows you to programme two time bands per day, and to have different programmings for each day of the week.

### TP1 <sup>2</sup> low pressure transducer

It makes it possible to show the value of the compressor's intake pressure (one per circuit) on the microprocessor card display. Placed on the low pressure side of the refrigerating circuit, it shuts down compressor operation in the case of abnormal operating pressure.

### DRE <sup>3</sup> Dispositivo riduzione corrente di spunto

Electronic peak current reducer. It must be factory-mounted.

### RIF <sup>3</sup> Current rephaser.

Parallel connection with the motor makes the reduction of input current possible. This can only

be installed when the machine is being made and must therefore be specified when the order is placed.

### ROMEO

Remote Overwatching Modem Enabling Operation (Remote Overwatching Modem Enabling Operation) is a device that enables a remote control of a chiller from an ordinary mobile phone with WAP browser. Furthermore it allows to send alarm or pre-alarm SMS up to 3 GSM mobile phones which may not be equipped with WAP browser

### KEY

- 1 Standard in models: NRA L/ NRA D
- 2 Standard in models: NRA H - HL
- 3 It must be factory-mounted

| MOD. | ROMEO | TP1 | DRE | AER485 | PGS | GP | DCPX | RIF | AVX |  |  |
|------|-------|-----|-----|--------|-----|----|------|-----|-----|--|--|
|------|-------|-----|-----|--------|-----|----|------|-----|-----|--|--|

| VERSION STANDARD (°) |   |        |                   |   |   |     |    |    | S.a | C.a | P1/P2/P3/P4         |
|----------------------|---|--------|-------------------|---|---|-----|----|----|-----|-----|---------------------|
| 0800                 | • | • (x2) | 25 (x4)           | • | • | 260 | 29 | 64 | 151 | 152 | 151                 |
| 0900                 | • | • (x2) | 25 (x2) - 30 (x2) | • | • | 260 | 29 | 74 | 151 | 152 | 151                 |
| 1000                 | • | • (x2) | 30 (x4)           | • | • | 260 | 29 | 84 | 151 | 152 | 151                 |
| 1250                 | • | • (x2) | 38 (x4)           | • | • | 350 | 30 | 84 | 153 | 154 | 153                 |
| 1400                 | • | • (x2) | 38 (x2) - 31 (x3) | • | • | 350 | 30 | 85 | 153 | 154 | 153                 |
| 1500                 | • | • (x2) | 30 (x6)           | • | • | 350 | 30 | 86 | 153 | 154 | 153                 |
| 1650                 | • | • (x2) | 38 (x3) - 31 (x3) | • | • | 500 | 30 | 86 | 601 | 602 | P1-P3=601/P2-P4=603 |
| 1800                 | • | • (x2) | 38 (x6)           | • | • | 500 | 30 | 86 | 604 | 602 | P1-P3=604/P2-P4=605 |

| NRA A |   |        |                   |   |   |     |    |    |     |     |                     |
|-------|---|--------|-------------------|---|---|-----|----|----|-----|-----|---------------------|
| 0800  | • | • (x2) | 25 (x4)           | • | • | 260 | 29 | 64 | 151 | 152 | 151                 |
| 0900  | • | • (x2) | 25 (x2) - 30 (x2) | • | • | 260 | 29 | 74 | 151 | 152 | 151                 |
| 1000  | • | • (x2) | 30 (x4)           | • | • | 260 | 29 | 84 | 151 | 152 | 151                 |
| 1250  | • | • (x2) | 38 (x4)           | • | • | 350 | 30 | 84 | 153 | 154 | 153                 |
| 1400  | • | • (x2) | 38 (x2) - 31 (x3) | • | • | 350 | 30 | 85 | 153 | 154 | 153                 |
| 1500  | • | • (x2) | 30 (x6)           | • | • | 350 | 30 | 86 | 153 | 154 | 153                 |
| 1650  | • | • (x2) | 38 (x3) - 31 (x3) | • | • | 500 | 30 | 86 | 604 | 602 | P1-P3=605/P2-P4=606 |
| 1800  | • | • (x2) | 38 (x6)           | • | • | 500 | 30 | 86 | 604 | 602 | P1-P3=605/P2-P4=606 |

| NRA L |   |        |                   |   |   |     |      |    |     |     |                     |
|-------|---|--------|-------------------|---|---|-----|------|----|-----|-----|---------------------|
| 0800  | • | • (x2) | 25 (x4)           | • | • | 260 | std. | 64 | 151 | 152 | 151                 |
| 0900  | • | • (x2) | 25 (x2) - 30 (x2) | • | • | 260 | std. | 74 | 151 | 152 | 151                 |
| 1000  | • | • (x2) | 30 (x4)           | • | • | 260 | std. | 84 | 151 | 152 | 151                 |
| 1250  | • | • (x2) | 38 (x4)           | • | • | 350 | std. | 84 | 153 | 154 | 153                 |
| 1400  | • | • (x2) | 38 (x2) - 31 (x3) | • | • | 350 | std. | 85 | 153 | 154 | 153                 |
| 1500  | • | • (x2) | 30 (x6)           | • | • | 350 | std. | 86 | 153 | 154 | 153                 |
| 1650  | • | • (x2) | 38 (x3) - 31 (x3) | • | • | 500 | std. | 86 | 604 | 602 | P1-P3=605/P2-P4=606 |
| 1800  | • | • (x2) | 38 (x6)           | • | • | 500 | std. | 86 | 604 | 602 | P1-P3=605/P2-P4=606 |

| NRA HEAT PUMP VERSION H |   |      |                   |   |   |     |    |    |     |     |                     |
|-------------------------|---|------|-------------------|---|---|-----|----|----|-----|-----|---------------------|
| 0800                    | • | std. | 25 (x4)           | • | • | 260 | 29 | 64 | 151 | 152 | 151                 |
| 0900                    | • | std. | 25 (x2) - 30 (x2) | • | • | 260 | 29 | 74 | 151 | 152 | 151                 |
| 1000                    | • | std. | 30 (x4)           | • | • | 260 | 29 | 84 | 151 | 152 | 151                 |
| 1250                    | • | std. | 38 (x4)           | • | • | 350 | 30 | 84 | 153 | 154 | 153                 |
| 1400                    | • | std. | 38 (x2) - 31 (x3) | • | • | 350 | 30 | 85 | 153 | 154 | 153                 |
| 1500                    | • | std. | 30 (x6)           | • | • | 350 | 30 | 86 | 153 | 154 | 153                 |
| 1650                    | • | std. | 38 (x3) - 31 (x3) | • | • | 500 | 30 | 86 | 604 | 602 | P1-P3=605/P2-P4=606 |
| 1800                    | • | std. | 38 (x6)           | • | • | 500 | 30 | 86 | 604 | 602 | P1-P3=605/P2-P4=606 |

| MOD. | ROMEO | TP1 | DRE | AER485 | PGS | GP | DCPX | RIF | AVX |  |  |
|------|-------|-----|-----|--------|-----|----|------|-----|-----|--|--|
|------|-------|-----|-----|--------|-----|----|------|-----|-----|--|--|

| NRA HL |   |      |                   |   |   |     |      |    | S.a | C.a | P1/P2/P3/P4         |
|--------|---|------|-------------------|---|---|-----|------|----|-----|-----|---------------------|
| 0800   | • | std. | 25 (x4)           | • | • | 260 | std. | 64 | 151 | 152 | 151                 |
| 0900   | • | std. | 25 (x2) - 30 (x2) | • | • | 260 | std. | 74 | 151 | 152 | 151                 |
| 1000   | • | std. | 30 (x4)           | • | • | 260 | std. | 84 | 151 | 152 | 151                 |
| 1250   | • | std. | 38 (x4)           | • | • | 350 | std. | 84 | 153 | 154 | 153                 |
| 1400   | • | std. | 38 (x2) - 31 (x3) | • | • | 350 | std. | 85 | 153 | 154 | 153                 |
| 1500   | • | std. | 30 (x6)           | • | • | 350 | std. | 86 | 153 | 154 | 153                 |
| 1650   | • | std. | 38 (x3) - 31 (x3) | • | • | 500 | std. | 86 | 604 | 602 | P1-P3=605/P2-P4=606 |
| 1800   | • | std. | 38 (x6)           | • | • | 500 | std. | 86 | 604 | 602 | P1-P3=605/P2-P4=606 |

| NRA C |   |        |                   |   |   |     |    |    |     |     |     |
|-------|---|--------|-------------------|---|---|-----|----|----|-----|-----|-----|
| 0800  | • | • (x2) | 25 (x4)           | • | • | 260 | 29 | 64 | 151 | 152 | 151 |
| 0900  | • | • (x2) | 25 (x2) - 30 (x2) | • | • | 260 | 29 | 74 | 151 | 152 | 151 |
| 1000  | • | • (x2) | 30 (x4)           | • | • | 260 | 29 | 84 | 151 | 152 | 151 |
| 1250  | • | • (x2) | 38 (x4)           | • | • | 350 | 30 | 84 | 153 | 154 | 153 |
| 1400  | • | • (x2) | 38 (x2) - 31 (x3) | • | • | 350 | 30 | 85 | 153 | 154 | 153 |
| 1500  | • | • (x2) | 30 (x6)           | • | • | 350 | 30 | 86 | 153 | 154 | 153 |
| 1650  | • | • (x2) | 38 (x3) - 31 (x3) | • | • | 500 | 30 | 86 |     |     |     |
| 1800  | • | • (x2) | 38 (x6)           | • | • | 500 | 30 | 86 |     |     |     |

| NRA LC |   |        |                   |   |   |     |      |    |     |     |     |
|--------|---|--------|-------------------|---|---|-----|------|----|-----|-----|-----|
| 0800   | • | • (x2) | 25 (x4)           | • | • | 260 | std. | 64 | 151 | 152 | 151 |
| 0900   | • | • (x2) | 25 (x2) - 30 (x2) | • | • | 260 | std. | 74 | 151 | 152 | 151 |
| 1000   | • | • (x2) | 30 (x4)           | • | • | 260 | std. | 84 | 151 | 152 | 151 |
| 1250   | • | • (x2) | 38 (x4)           | • | • | 350 | std. | 84 | 153 | 154 | 153 |
| 1400   | • | • (x2) | 38 (x2) - 31 (x3) | • | • | 350 | std. | 85 | 153 | 154 | 153 |
| 1500   | • | • (x2) | 30 (x6)           | • | • | 350 | std. | 86 | 153 | 154 | 153 |
| 1650   | • | • (x2) | 38 (x3) - 31 (x3) | • | • | 500 | std. | 86 |     |     |     |
| 1800   | • | • (x2) | 38 (x6)           | • | • | 500 | std. | 86 |     |     |     |

#### KEY

DRE - RIF It must be factory-mounted  
S.a = Without storage tank  
C.a With storage tank

#### NOTE

The numbers in parenthesis indicate the necessary quantity

## 5 TECHNICAL DATA

### 5.1 NOMINAL REFERENCE CONDITIONS

The technical data is calculated as follows

#### Cooling mode

- Temperature water inlet 12 °C
- Temperature of processed water 7 °C
- Ambient air temperature 35 °C
- Δt 5 °C

#### Heating mode

- Temperature of processed water 50 °C
- Ambient air temperature b.s. 7 °C  
b.u. 6 °C
- Δt 5 °C

#### Sound Power

Aermec determines the value of sound power on the basis of measurements performed in compliance with regulation 9614, in respect with that requested by Eurovent certification.

#### (1) Sound Pressure

Sound pressure in free field on a reflective surface (factor of directionality Q=2), at 10 metres from the external surface of the unit, using the parallel expansion method (box-method, ISO 3744)

#### NOTE

- The noise data refer to configuration without pump.
- For heat pumps the data refers to functioning in cooling mode

#### E.S.E.E.R.

There is a growing awareness in Europe as well that attention needs to be paid to the electricity consumed by air conditioning machines. For many years now in the United States talk has not just been about efficiency in the plan conditions, but an assessment index is used that takes account of the marginal operation of the unit under plan conditions and the greater use with partial loads with external air that is less than that planned and in conditions of compressor capacity control. In Europe the proposed EECCAC (Energy Efficiency

and Certification of Central Air Conditioner) has been adopted, the ESEER (European Seasonal Energy Efficiency Ratio), that has the purpose of being able to compare the chillers with each other.

After estimating the total energy required by the system during summer management (kW/h), the seasonal electrical energy consumption can be deduced with this formula:

$$\text{Input energy} = \frac{\text{Required energy}}{\text{Efficiency index}}$$

The actual energy calculation can be obtained, more accurately, by considering:

1. The load profile with external temperature
2. The climatic profile
3. The total number of hours

With this data, every consultant or designer will be able to his or her evaluations.

$$\text{ESEER} = \{3 \times \text{EER}100\% + 33 \times \text{EER}75\% + 41 \times \text{EER}50\% + 23 \times \text{EER}25\%\} / 100$$

|                          |       |       |       |       |
|--------------------------|-------|-------|-------|-------|
| Acqua uscita evaporatore | 7 °C  |       |       |       |
| ΔT a pieno carico        | 5 °C  |       |       |       |
| Carico                   | 100%  | 75%   | 50%   | 25%   |
| Temperatura aria esterna | 35 °C | 30 °C | 25 °C | 20 °C |

## 5.2 TECHNICAL DATA, STANDARD VERSIONS (°)

| NRA°                       |     | 800   | 900   | 1000  | 1250  | 1400  | 1500  | 1650  | 1800  |
|----------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Cooling capacity:          | kW  | 211,0 | 236,0 | 261,0 | 320,0 | 363,0 | 390,0 | 434   | 480   |
| Total input power          | kW  | 84,5  | 93,0  | 102,0 | 129,0 | 141,0 | 153,0 | 172   | 189   |
| Evaporator water flow rate | l/h | 36290 | 40590 | 44890 | 55040 | 62440 | 67080 | 74650 | 82560 |
| Evaporator pressure drop   | kPa | 34,4  | 29,3  | 33,9  | 34,5  | 30,6  | 35,1  | 38,0  | 40,3  |

| ENERGY INDICES |     |      |      |      |      |      |      |      |      |
|----------------|-----|------|------|------|------|------|------|------|------|
| EER            | W/W | 2,50 | 2,54 | 2,56 | 2,48 | 2,57 | 2,55 | 2,52 | 2,54 |
| ESEER          | W/W | 3,36 | 3,25 | 3,41 | 3,33 | 3,67 | 3,70 | 3,64 | 3,66 |

| ELECTRICAL DATA   |   |              |     |     |     |     |     |     |     |
|-------------------|---|--------------|-----|-----|-----|-----|-----|-----|-----|
| Fuel feed         | V | 3~400 V 50Hz |     |     |     |     |     |     |     |
| Total input power | A | 145          | 160 | 174 | 222 | 242 | 261 | 296 | 323 |
| Maximum current   | A | 200          | 219 | 237 | 285 | 322 | 355 | 395 | 423 |
| Peak current      | A | 343          | 383 | 423 | 487 | 470 | 519 | 569 | 584 |

| COMPRESSORS        |             |        |        |        |        |        |        |        |        |
|--------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Type               |             | scroll | scroll | scroll | scroll | scroll | scroll | scroll | scroll |
| Number             | n°          | 4      | 4      | 4      | 4      | 5      | 6      | 6      | 6      |
| Number per circuit | n°+n°+n°+n° | 2+2    | 2+2    | 2+2    | 2+2    | 2+3    | 3+3    | 3+3    | 3+3    |

| COMPRESSOR HEATER        |      |       |       |       |       |       |       |       |       |
|--------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Compressor carter heater | n°xW | 4x130 | 4x130 | 4x130 | 4x130 | 5x130 | 6x130 | 6x130 | 6x130 |

| FANS                           |      |       |       |       |        |        |        |        |        |
|--------------------------------|------|-------|-------|-------|--------|--------|--------|--------|--------|
| Type                           |      | Axial | Axial | Axial | Axial  | Axial  | Axial  | Axial  | Axial  |
| Number                         | n°   | 4     | 4     | 4     | 6      | 6      | 6      | 8      | 8      |
| Input current ventilation unit | A    | 16    | 16    | 16    | 24     | 24     | 24     | 32     | 32     |
| Input power ventilation unit   | kW   | 7,2   | 7,2   | 7,2   | 10,8   | 10,8   | 10,8   | 15,2   | 15,2   |
| Air flow rate                  | m3/h | 86000 | 83000 | 80000 | 126000 | 120500 | 115000 | 170000 | 168000 |

| EVAPORATORS |    |       |       |       |       |       |       |       |       |
|-------------|----|-------|-------|-------|-------|-------|-------|-------|-------|
| Type        |    | Plate | Plate | Plate | Plate | Plate | Plate | Plate | Plate |
| Number      | n° | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |

| HYDRAULIC CIRCUIT               |      |       |       |       |       |       |       |       |       |
|---------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Water accumulation              | lt   | 700   | 700   | 700   | 700   | 700   | 700   | 700   | 700   |
| Accumulation anti-freeze heater | n°xW | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 |

| PLUMBING CONNECTIONS STANDARD VERSIONS (hydraulic parallel not supplied) |           |    |    |    |    |    |    |    |    |
|--------------------------------------------------------------------------|-----------|----|----|----|----|----|----|----|----|
| Hydraulic connections                                                    | Victaulic | 3" | 3" | 3" | 4" | 4" | 4" | 4" | 4" |

| LOW PRESSURE PUMPING UNIT |     |      |      |      |      |      |     |     |     |
|---------------------------|-----|------|------|------|------|------|-----|-----|-----|
| Input power               | kW  | 3,8  | 3,8  | 3,8  | 4,8  | 4,8  | 6,5 | 6,5 | 6,5 |
| Input current             | A   | 6,22 | 6,22 | 6,22 | 8,14 | 8,14 | 11  | 11  | 11  |
| Useful pressure pumping   | kPa | 97   | 95   | 82   | 78   | 58   | 68  | 119 | 101 |

| HIGH PRESSURE PUMPING UNIT |     |     |     |     |      |      |      |      |      |
|----------------------------|-----|-----|-----|-----|------|------|------|------|------|
| Input power                | kW  | 6,5 | 6,5 | 6,5 | 8,6  | 8,6  | 8,6  | 12,5 | 12,3 |
| Input current              | A   | 11  | 11  | 11  | 14,6 | 14,6 | 14,6 | 21,2 | 21,2 |
| Useful pressure pumping    | kPa | 215 | 212 | 195 | 215  | 190  | 157  | 257  | 240  |

| SOUND DATA         |       |      |      |      |      |      |      |      |      |
|--------------------|-------|------|------|------|------|------|------|------|------|
| Sounud Power       | dB(A) | 88.5 | 88.5 | 88.5 | 91.5 | 91.0 | 90.5 | 92.0 | 94.0 |
| Sound pressure [1] | dB(A) | 56.5 | 56.5 | 56.5 | 59.5 | 59.0 | 58.5 | 60.0 | 62.0 |

| DIMENSIONS for all versions |    |      |      |      |      |      |      |      |      |
|-----------------------------|----|------|------|------|------|------|------|------|------|
| Height                      | mm | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 |
| Width                       | mm | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 |
| Length                      | mm | 3400 | 3400 | 3400 | 4250 | 4250 | 4250 | 5750 | 5750 |

| EMPTY WEIGHT versions without accumulation and pumps |    |      |      |      |      |      |      |      |      |
|------------------------------------------------------|----|------|------|------|------|------|------|------|------|
|                                                      | kg | 2350 | 2430 | 2465 | 3060 | 3150 | 3250 | 3640 | 3740 |

## 5.2 TECHNICAL DATA, HIGH EFFICIENCY VERSIONS A

| NRA A                      |     | 800   | 900   | 1000  | 1250  | 1400  | 1500  | 1650  | 1800  |
|----------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Cooling capacity:          | kW  | 217,0 | 243,0 | 268,0 | 330,0 | 374,0 | 400,0 | 450   | 495   |
| Total input power          | kW  | 80,0  | 88,0  | 96,0  | 124,0 | 134,0 | 144,0 | 166   | 184   |
| Evaporator water flow rate | l/h | 37320 | 41800 | 46100 | 56760 | 64330 | 68800 | 77400 | 85140 |
| Evaporator pressure drop   | kPa | 36,4  | 31,0  | 35,8  | 36,7  | 32,3  | 37,0  | 40,8  | 42,8  |

| ENERGY INDICES |     |      |      |      |      |      |      |      |      |
|----------------|-----|------|------|------|------|------|------|------|------|
| EER            | W/W | 2,71 | 2,76 | 2,79 | 2,66 | 2,79 | 2,78 | 2,71 | 2,69 |
| ESSER          | W/W | 3.64 | 3.71 | 3.75 | 3.58 | 4.02 | 4.00 | 3.91 | 3.88 |

| ELECTRICAL DATA   |   |              |     |     |     |     |     |     |     |
|-------------------|---|--------------|-----|-----|-----|-----|-----|-----|-----|
| Fuel feed         | V | 3~400 V 50Hz |     |     |     |     |     |     |     |
| Total input power | A | 140          | 154 | 168 | 213 | 233 | 253 | 287 | 315 |
| Maximum current   | A | 200          | 219 | 237 | 285 | 322 | 355 | 395 | 423 |
| Peak current      | A | 340          | 373 | 406 | 475 | 458 | 511 | 555 | 569 |

| COMPRESSORS        |             |        |        |        |        |        |        |        |        |
|--------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Type               |             | scroll | scroll | scroll | scroll | scroll | scroll | scroll | scroll |
| Number             | n°          | 4      | 4      | 4      | 4      | 5      | 6      | 6      | 6      |
| Number per circuit | n°+n°+n°+n° | 2+2    | 2+2    | 2+2    | 2+2    | 2+3    | 3+3    | 3+3    | 3+3    |

| COMPRESSOR HEATER        |      |       |       |       |       |       |       |       |       |
|--------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Compressor carter heater | n°xW | 4x130 | 4x130 | 4x130 | 4x130 | 5x130 | 6x130 | 6x130 | 6x130 |

| FANS                           |      |       |       |       |        |        |        |        |        |
|--------------------------------|------|-------|-------|-------|--------|--------|--------|--------|--------|
| Type                           |      | Axail | Axail | Axail | Axail  | Axail  | Axail  | Axail  | Axail  |
| Number                         | n°   | 4     | 4     | 4     | 6      | 6      | 6      | 8      | 8      |
| Input current ventilation unit | A    | 16    | 16    | 16    | 24     | 24     | 24     | 32     | 32     |
| Input power ventilation unit   | kW   | 7,2   | 7,2   | 7,2   | 10,8   | 10,8   | 10,8   | 15,2   | 15,2   |
| Air flow rate                  | m3/h | 80000 | 78000 | 76000 | 115000 | 111500 | 111000 | 162000 | 160000 |

| EVAPORATORS |    |       |       |       |       |       |       |       |       |
|-------------|----|-------|-------|-------|-------|-------|-------|-------|-------|
| Type        |    | Plate | Plate | Plate | Plate | Plate | Plate | Plate | Plate |
| Number      | n° | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |

| HYDRAULIC CIRCUIT               |      |       |       |       |       |       |       |       |       |
|---------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Water accumulation              | lt   | 700   | 700   | 700   | 700   | 700   | 700   | 700   | 700   |
| Accumulation anti-freeze heater | n°xW | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 |

| PLUMBING CONNECTIONS STANDARD VERSIONS (hydraulic parallel not supplied) |           |    |    |    |    |    |    |    |    |
|--------------------------------------------------------------------------|-----------|----|----|----|----|----|----|----|----|
| Hydraulic connections                                                    | Victaulic | 3" | 3" | 3" | 4" | 4" | 4" | 4" | 4" |

| LOW PRESSURE PUMPING UNIT |     |      |      |      |      |      |     |     |     |
|---------------------------|-----|------|------|------|------|------|-----|-----|-----|
| Input power               | kW  | 3,8  | 3,8  | 3,8  | 4,8  | 4,8  | 6,5 | 6,5 | 6,5 |
| Input current             | A   | 6,22 | 6,22 | 6,22 | 8,14 | 8,14 | 11  | 11  | 11  |
| Useful pressure pumping   | kPa | 95   | 90   | 75   | 70   | 45   | 50  | 114 | 95  |

| HIGH PRESSURE PUMPING UNIT |     |     |     |     |      |      |      |      |      |
|----------------------------|-----|-----|-----|-----|------|------|------|------|------|
| Input power                | kW  | 6,5 | 6,5 | 6,5 | 8,6  | 8,6  | 8,6  | 12,3 | 12,3 |
| Input current              | A   | 11  | 11  | 11  | 14,6 | 14,6 | 14,6 | 21,2 | 21,2 |
| Useful pressure pumping    | kPa | 210 | 207 | 185 | 203  | 180  | 142  | 252  | 234  |

| SOUND DATA         |       |      |      |      |      |      |      |      |      |
|--------------------|-------|------|------|------|------|------|------|------|------|
| Sounud Power       | dB(A) | 88.0 | 88.0 | 88.0 | 91.0 | 90.5 | 90.0 | 91.5 | 93.5 |
| Sound pressure [1] | dB(A) | 56.0 | 56.0 | 56.0 | 59.0 | 58.5 | 58.0 | 59.5 | 61.5 |

| DIMENSIONS for all versions |    |      |      |      |      |      |      |      |      |
|-----------------------------|----|------|------|------|------|------|------|------|------|
| Height                      | mm | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 |
| Width                       | mm | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 |
| Length                      | mm | 3400 | 3400 | 3400 | 4250 | 4250 | 4250 | 5750 | 5750 |

| EMPTY WEIGHT versions without accumulation and pumps |    |      |      |      |      |      |      |      |      |
|------------------------------------------------------|----|------|------|------|------|------|------|------|------|
|                                                      | kg | 2430 | 2520 | 2560 | 3170 | 3270 | 3370 | 3840 | 3950 |

### 5.3 TECHNICAL DATA, SILENCED VERSIONS

| NRA L                      |     | 800   | 900   | 1000  | 1250  | 1400  | 1500  | 1650  | 1800  |
|----------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Cooling capacity:          | kW  | 190,0 | 213,0 | 235,0 | 292,0 | 329,0 | 353,0 | 404   | 446   |
| Total input power          | kW  | 89,0  | 98,5  | 107,5 | 136,5 | 148,0 | 160,0 | 180   | 199   |
| Evaporator water flow rate | l/h | 32680 | 36640 | 40420 | 50220 | 56590 | 60720 | 69490 | 76710 |
| Evaporator pressure drop   | kPa | 27,8  | 23,8  | 27,6  | 28,9  | 24,8  | 28,5  | 32,7  | 34,7  |

| ENERGY INDICES |     |      |      |      |      |      |      |      |      |
|----------------|-----|------|------|------|------|------|------|------|------|
| EER            | W/W | 2,13 | 2,16 | 2,19 | 2,14 | 2,22 | 2,21 | 2,24 | 2,24 |
| ESSER          | W/W | 2.72 | 2.76 | 2.79 | 2.88 | 3.05 | 3.02 | 3.07 | 3.07 |

| ELECTRICAL DATA   |   |              |     |     |     |     |     |     |     |
|-------------------|---|--------------|-----|-----|-----|-----|-----|-----|-----|
| Fuel feed         | V | 3~400 V 50Hz |     |     |     |     |     |     |     |
| Total input power | A | 151          | 166 | 180 | 229 | 250 | 270 | 301 | 330 |
| Maximum current   | A | 188          | 207 | 225 | 269 | 304 | 340 | 373 | 400 |
| Peak current      | A | 342          | 382 | 422 | 486 | 469 | 522 | 568 | 582 |

| COMPRESSORS        |             |        |        |        |        |        |        |        |        |
|--------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Type               |             | scroll | scroll | scroll | scroll | scroll | scroll | scroll | scroll |
| Number             | n°          | 4      | 4      | 4      | 4      | 5      | 6      | 6      | 6      |
| Number per circuit | n°+n°+n°+n° | 2+2    | 2+2    | 2+2    | 2+2    | 2+3    | 3+3    | 3+3    | 3+3    |

| COMPRESSOR HEATER        |      |       |       |       |       |       |       |       |       |
|--------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Compressor carter heater | n°xW | 4x130 | 4x130 | 4x130 | 4x130 | 5x130 | 6x130 | 6x130 | 6x130 |

| FANS                           |      |       |       |       |       |       |       |        |        |
|--------------------------------|------|-------|-------|-------|-------|-------|-------|--------|--------|
| Type                           |      | Axial | Axial | Axial | Axial | Axial | Axial | Axial  | Axial  |
| Number                         | n°   | 4     | 4     | 4     | 6     | 6     | 6     | 8      | 8      |
| Input current ventilation unit | A    |       |       |       |       |       |       |        |        |
| Input power ventilation unit   | kW   | 2,9   | 3,0   | 3,1   | 4,0   | 4,5   | 5,0   | 6      | 6,2    |
| Air flow rate                  | m3/h | 44000 | 50000 | 56000 | 68000 | 76000 | 84000 | 100000 | 112000 |

| EVAPORATORS |    |       |       |       |       |       |       |       |       |
|-------------|----|-------|-------|-------|-------|-------|-------|-------|-------|
| Type        |    | Plate | Plate | Plate | Plate | Plate | Plate | Plate | Plate |
| Number      | n° | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |

| HYDRAULIC CIRCUIT               |      |       |       |       |       |       |       |       |       |
|---------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Water accumulation              | lt   | 700   | 700   | 700   | 700   | 700   | 700   | 700   | 700   |
| Accumulation anti-freeze heater | n°xW | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 |

| PLUMBING CONNECTIONS STANDARD VERSIONS (hydraulic parallel not supplied) |           |    |    |    |    |    |    |    |    |
|--------------------------------------------------------------------------|-----------|----|----|----|----|----|----|----|----|
| Hydraulic connections                                                    | Victaulic | 3" | 3" | 3" | 4" | 4" | 4" | 4" | 4" |

| LOW PRESSURE PUMPING UNIT |  |      |      |      |      |      |     |     |     |
|---------------------------|--|------|------|------|------|------|-----|-----|-----|
| Input power               |  | 3,8  | 3,8  | 3,8  | 4,8  | 4,8  | 6,5 | 6,5 | 6,5 |
| Input current             |  | 6,22 | 6,22 | 6,22 | 8,14 | 8,14 | 11  | 11  | 11  |
| Useful pressure pumping   |  | 120  | 116  | 102  | 110  | 90   | 122 | 130 | 113 |

| HIGH PRESSURE PUMPING UNIT |  |     |     |     |      |      |      |      |      |
|----------------------------|--|-----|-----|-----|------|------|------|------|------|
| Input power                |  | 6,5 | 6,5 | 6,5 | 8,6  | 8,6  | 8,6  | 12,5 | 12,3 |
| Input current              |  | 11  | 11  | 11  | 14,6 | 14,6 | 14,6 | 21,2 | 21,2 |
| Useful pressure pumping    |  | 232 | 235 | 216 | 245  | 230  | 200  | 267  | 251  |

| DATI SONORI        |       |      |      |      |      |      |      |      |      |
|--------------------|-------|------|------|------|------|------|------|------|------|
| Sounud Power       | dB(A) | 83.0 | 83.0 | 83.0 | 86.0 | 85.5 | 85.0 | 86.5 | 88.5 |
| Sound pressure [1] | dB(A) | 51.0 | 51.0 | 51.0 | 54.0 | 53.5 | 53.0 | 54.5 | 56.5 |

| DIMENSIONI per tutti gli allestimenti |    |      |      |      |      |      |      |      |      |
|---------------------------------------|----|------|------|------|------|------|------|------|------|
| Height                                | mm | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 |
| Width                                 | mm | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 |
| Length                                | mm | 3400 | 3400 | 3400 | 4250 | 4250 | 4250 | 5750 | 5750 |

| PESO a vuoto senza accumulo e pompe |    |      |      |      |      |      |      |      |      |
|-------------------------------------|----|------|------|------|------|------|------|------|------|
|                                     | kg | 2530 | 2570 | 2580 | 3310 | 3350 | 3390 | 3850 | 3950 |

## 5.4 TECHNICAL DATA, HEAT PUMP VERSIONS H

| COLD MODE                  |     | 800   | 900   | 1000  | 1250  | 1400  | 1500  | 1650  | 1800  |
|----------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Cooling capacity           | kW  | 196,0 | 220,0 | 242,0 | 312,0 | 345,0 | 365,0 | 420   | 470   |
| Total input power          | kW  | 81,0  | 89,0  | 97,0  | 123,0 | 134,0 | 146,0 | 166   | 182   |
| Evaporator water flow rate | l/h | 33710 | 37840 | 41620 | 53660 | 59340 | 62780 | 72240 | 80840 |
| Evaporator pressure drop   | kPa | 29,6  | 25,3  | 29,4  | 33,1  | 26,4  | 30,4  | 35,8  | 38,6  |

| ENERGY INDICES |     |      |      |      |      |      |      |      |      |
|----------------|-----|------|------|------|------|------|------|------|------|
| EER            | W/W | 2,42 | 2,47 | 2,49 | 2,54 | 2,57 | 2,50 | 2,53 | 2,58 |
| COP            | W/W | 2,57 | 2,61 | 2,64 | 2,58 | 2,64 | 2,64 | 2,57 | 2,59 |
| ESEER          |     | 3,25 | 3,32 | 3,35 | 3,41 | 3,67 | 3,60 | 3,65 | 3,72 |

| HOT MODE                   |     |       |       |       |       |       |       |       |       |
|----------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Cooling capacity           | kW  | 230,0 | 257,0 | 284,0 | 356,0 | 396,0 | 426,0 | 480   | 534   |
| Total input power          | kW  | 89,5  | 98,5  | 107,5 | 138,0 | 150,0 | 161,5 | 187   | 206   |
| Evaporator water flow rate | l/h | 39560 | 44200 | 48850 | 61230 | 68110 | 73270 | 82560 | 91850 |
| Evaporator pressure drop   | kPa | 43,7  | 40,6  | 43,4  | 42,6  | 42,1  | 44,7  | 66,7  | 71,3  |

| DATI ELETTRICI                    |   |              |     |     |     |     |     |     |     |
|-----------------------------------|---|--------------|-----|-----|-----|-----|-----|-----|-----|
| Fuel feed                         | V | 3~400 V 50Hz |     |     |     |     |     |     |     |
| Total input current only COOLING  | A | 142          | 157 | 171 | 212 | 235 | 257 | 288 | 314 |
| Corrente assorbite totale HEATING | A | 151          | 166 | 180 | 233 | 252 | 270 | 317 | 345 |
| Maximum current                   | A | 200          | 219 | 237 | 285 | 322 | 355 | 395 | 423 |
| Peak current                      | A | 340          | 380 | 420 | 491 | 484 | 515 | 586 | 611 |

| COMPRESSORS        |             |        |        |        |        |        |        |        |        |
|--------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Type               |             | scroll | scroll | scroll | scroll | scroll | scroll | scroll | scroll |
| Number             | n°          | 4      | 4      | 4      | 4      | 5      | 6      | 6      | 6      |
| Number per circuit | n°+n°+n°+n° | 2+2    | 2+2    | 2+2    | 2+2    | 2+3    | 3+3    | 3+3    | 3+3    |

| COMPRESSOR HEATER        |      |       |       |       |       |       |       |       |       |
|--------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Compressor carter heater | n°xW | 4x130 | 4x130 | 4x130 | 4x130 | 5x130 | 6x130 | 6x130 | 6x130 |

| FANS                           |      |       |       |       |        |        |        |        |        |
|--------------------------------|------|-------|-------|-------|--------|--------|--------|--------|--------|
| Type                           |      | Axial | Axial | Axial | Axial  | Axial  | Axial  | Axial  | Axial  |
| Number                         | n°   | 4     | 4     | 4     | 6      | 6      | 6      | 8      | 8      |
| Input current ventilation unit | A    | 16    | 16    | 16    | 24     | 24     | 24     | 32     | 32     |
| Input power ventilation unit   | kW   | 7,2   | 7,2   | 7,2   | 11,4   | 10,8   | 10,8   | 15,2   | 15,2   |
| Air flow rate                  | m3/h | 86000 | 83000 | 80000 | 129000 | 120500 | 115000 | 162000 | 160000 |

| EVAPORATORS |    |       |       |       |       |       |       |       |       |
|-------------|----|-------|-------|-------|-------|-------|-------|-------|-------|
| Type        |    | Plate | Plate | Plate | Plate | Plate | Plate | Plate | Plate |
| Number      | n° | 1     | 1     | 1     | 1     | 1     | 1     | 1     | 1     |

| HYDRAULIC CIRCUIT               |      |       |       |       |       |       |       |       |       |
|---------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Water accumulation              | lt   | 700   | 700   | 700   | 700   | 700   | 700   | 700   | 700   |
| Accumulation anti-freeze heater | n°xW | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 |

| PLUMBING CONNECTIONS STANDARD VERSIONS (hydraulic parallel not supplied) |           |    |    |    |    |    |    |    |    |
|--------------------------------------------------------------------------|-----------|----|----|----|----|----|----|----|----|
| Hydraulic connections                                                    | Victaulic | 3" | 3" | 3" | 4" | 4" | 4" | 4" | 4" |

| LOW PRESSURE PUMPING UNIT |     |      |      |      |      |      |     |     |     |
|---------------------------|-----|------|------|------|------|------|-----|-----|-----|
| Input power               | kW  | 3,8  | 3,8  | 3,8  | 4,8  | 4,8  | 6,5 | 6,5 | 6,5 |
| Input current             | A   | 6,22 | 6,22 | 6,22 | 8,14 | 8,14 | 11  | 11  | 11  |
| Useful pressure pumping   | kPa | 115  | 110  | 97   | 101  | 80   | 105 | 124 | 105 |

| HIGH PRESSURE PUMPING UNIT |     |     |     |     |      |      |      |      |      |
|----------------------------|-----|-----|-----|-----|------|------|------|------|------|
| Input power                | kW  | 6,5 | 6,5 | 6,5 | 8,6  | 8,6  | 8,6  | 12,5 | 12,3 |
| Input current              | A   | 11  | 11  | 11  | 14,6 | 14,6 | 14,6 | 21,2 | 21,2 |
| Useful pressure pumping    | kPa | 230 | 230 | 213 | 237  | 220  | 185  | 261  | 244  |

| SOUND DATA         |       |      |      |      |      |      |      |      |      |
|--------------------|-------|------|------|------|------|------|------|------|------|
| Sound Power        | dB(A) | 88.5 | 88.5 | 88.5 | 91.5 | 91.0 | 90.5 | 92.0 | 94.0 |
| Sound pressure (1) | dB(A) | 56.5 | 56.5 | 56.5 | 59.5 | 59.0 | 58.5 | 60.0 | 62.0 |

| DIMENSIONS for all versions |    |      |      |      |      |      |      |      |      |
|-----------------------------|----|------|------|------|------|------|------|------|------|
| Height                      | mm | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 |
| Width                       | mm | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 |
| Length                      | mm | 3400 | 3400 | 3400 | 4250 | 4250 | 4250 | 5750 | 5750 |

| EMPTY WEIGHT versions without accumulation and pumps |    |      |      |      |      |      |      |      |      |
|------------------------------------------------------|----|------|------|------|------|------|------|------|------|
|                                                      | kg | 2480 | 2580 | 2610 | 3360 | 3400 | 3440 | 3880 | 3960 |

## 5.5 TECHNICAL DATA, HEAT PUMP VERSIONS HL

### NOTE

Silenced functioning is only in cooling

| COLD MODE                  |     | 800   | 900   | 1000  | 1250  | 1400  | 1500  | 1650  | 1800  |
|----------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Cooling capacity           | kW  | 175,0 | 196,0 | 217,0 | 286,0 | 312,0 | 326,0 | 387   | 430   |
| Total input power          | kW  | 88,5  | 98,0  | 107,0 | 130,0 | 145,0 | 160,5 | 177   | 194   |
| Evaporator water flow rate | l/h | 30100 | 33710 | 37320 | 49190 | 53660 | 56070 | 66050 | 73960 |
| Evaporator pressure drop   | kPa | 23,6  | 20,2  | 23,5  | 27,9  | 21,1  | 24,3  | 29,8  | 32,5  |

| ENERGY INDICES |     |      |      |      |      |      |      |      |      |
|----------------|-----|------|------|------|------|------|------|------|------|
| EER            | W/W | 1,98 | 2,00 | 2,03 | 2,20 | 2,15 | 2,03 | 2,17 | 2,22 |
| COP            | W/W | 2,57 | 2,61 | 2,64 | 2,58 | 2,64 | 2,64 | 2,57 | 2,59 |
| ESEER          |     | 2,53 | 2,56 | 2,59 | 2,96 | 2,95 | 2,78 | 2,97 | 3,04 |

| HOT MODE                   |     |       |       |       |       |       |       |       |       |
|----------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Cooling capacity           | kW  | 230,0 | 257,0 | 284,0 | 356,0 | 396,0 | 426,0 | 480   | 534   |
| Total input power          | kW  | 89,5  | 98,5  | 107,5 | 0,0   | 0,0   | 161,5 | 0,0   | 0,0   |
| Evaporator water flow rate | l/h | 39560 | 44200 | 48850 | 61230 | 68110 | 73270 | 82560 | 91850 |
| Evaporator pressure drop   | kPa | 43,7  | 40,6  | 43,4  | 42,6  | 42,1  | 44,7  | 66,7  | 71,3  |

| DATI ELETTRICI                    |   |              |     |     |     |     |     |     |     |
|-----------------------------------|---|--------------|-----|-----|-----|-----|-----|-----|-----|
| Fuel feed                         | V | 3~400 V 50Hz |     |     |     |     |     |     |     |
| Total input current only COOLING  | A | 147          | 163 | 180 | 212 | 241 | 270 | 298 | 323 |
| Corrente assorbita totale HEATING | A | 151          | 166 | 180 | 233 | 252 | 270 | 301 | 329 |
| Maximum current                   | A | 200          | 219 | 237 | 285 | 322 | 355 | 395 | 423 |
| Peak current                      | A | 355          | 395 | 435 | 510 | 503 | 538 | 610 | 635 |

| COMPRESSORS        |             |        |        |        |        |        |        |        |        |
|--------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Type               |             | scroll | scroll | scroll | scroll | scroll | scroll | scroll | scroll |
| Number             | n°          | 4      | 4      | 4      | 4      | 5      | 6      | 6      | 6      |
| Number per circuit | n°+n°+n°+n° | 2+2    | 2+2    | 2+2    | 2+2    | 2+3    | 3+3    | 3+3    | 3+3    |

| COMPRESSOR HEATER        |      |       |       |       |       |       |       |       |       |
|--------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Compressor carter heater | n°xW | 4x130 | 4x130 | 4x130 | 4x130 | 5x130 | 6x130 | 6x130 | 6x130 |

| FANS                           |      |       |       |       |       |       |       |        |        |
|--------------------------------|------|-------|-------|-------|-------|-------|-------|--------|--------|
| Type                           |      | Axila | Axila | Axila | Axila | Axila | Axila | Axila  | Axila  |
| Number                         | n°   | 4     | 4     | 4     | 6     | 6     | 6     | 8      | 8      |
| Input current ventilation unit | A    |       |       |       |       |       |       |        |        |
| Input power ventilation unit   | kW   | 2,2   | 2,3   | 2,4   | 3,3   | 4,15  | 5     | 4,6    | 4,8    |
| Air flow rate                  | m3/h | 44000 | 50000 | 56000 | 68000 | 76000 | 84000 | 100000 | 112000 |

| EVAPORATORS |    |         |         |         |         |         |         |         |         |
|-------------|----|---------|---------|---------|---------|---------|---------|---------|---------|
| Type        |    | piastre | piastre | piastre | piastre | piastre | piastre | piastre | piastre |
| Number      | n° | 1       | 1       | 1       | 1       | 1       | 1       | 1       | 1       |

| HYDRAULIC CIRCUIT               |      |       |       |       |       |       |       |       |       |
|---------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Water accumulation              | lt   | 700   | 700   | 700   | 700   | 700   | 700   | 700   | 700   |
| Accumulation anti-freeze heater | n°xW | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 |

| PLUMBING CONNECTIONS STANDARD VERSIONS (hydraulic parallel not supplied) |           |    |    |    |    |    |    |    |    |
|--------------------------------------------------------------------------|-----------|----|----|----|----|----|----|----|----|
| Hydraulic connections                                                    | Victaulic | 3" | 3" | 3" | 4" | 4" | 4" | 4" | 4" |

| LOW PRESSURE PUMPING UNIT |     |      |      |      |      |      |     |     |     |
|---------------------------|-----|------|------|------|------|------|-----|-----|-----|
| Input power               | kW  | 3,8  | 3,8  | 3,8  | 4,8  | 4,8  | 6,5 | 6,5 | 6,5 |
| Input current             | A   | 6,22 | 6,22 | 6,22 | 8,14 | 8,14 | 11  | 11  | 11  |
| Useful pressure pumping   | kPa | 128  | 128  | 118  | 130  | 116  | 155 | 135 | 118 |

| HIGH PRESSURE PUMPING UNIT |     |     |     |     |      |      |      |      |      |
|----------------------------|-----|-----|-----|-----|------|------|------|------|------|
| Input power                | kW  | 6,5 | 6,5 | 6,5 | 8,6  | 8,6  | 8,6  | 12,5 | 12,3 |
| Input current              | A   | 11  | 11  | 11  | 14,6 | 14,6 | 14,6 | 21,2 | 21,2 |
| Useful pressure pumping    | kPa | 240 | 245 | 235 | 265  | 260  | 230  | 273  | 256  |

| SOUND DATA         |       |      |      |      |      |      |      |      |      |
|--------------------|-------|------|------|------|------|------|------|------|------|
| Sound Power        | dB(A) | 83,0 | 83,0 | 83,0 | 86,0 | 85,5 | 85,0 | 86,5 | 88,5 |
| Sound pressure (1) | dB(A) | 51,0 | 51,0 | 51,0 | 54,0 | 53,5 | 53,0 | 54,5 | 56,5 |

| DIMENSIONS for all versions |    |      |      |      |      |      |      |      |      |
|-----------------------------|----|------|------|------|------|------|------|------|------|
| Height                      | mm | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 |
| Width                       | mm | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 |
| Length                      | mm | 3400 | 3400 | 3400 | 4250 | 4250 | 4250 | 5750 | 5750 |

| EMPTY WEIGHT versions without accumulation and pumps |    |      |      |      |      |      |      |      |      |
|------------------------------------------------------|----|------|------|------|------|------|------|------|------|
|                                                      | kg | 2480 | 2580 | 2610 | 3360 | 3400 | 3440 | 3880 | 3960 |

## 6 SELECTION CRITERIA

The devices in their standard configurations are not suitable for installation in salty environments. The maximum and minimum limits for the water flow rate to the exchanger are indicated by the curves of the pressure drop diagrams. For the operating limits, refer to the diagrams

below, valid for  $\Delta t = 5^\circ\text{C}$ .

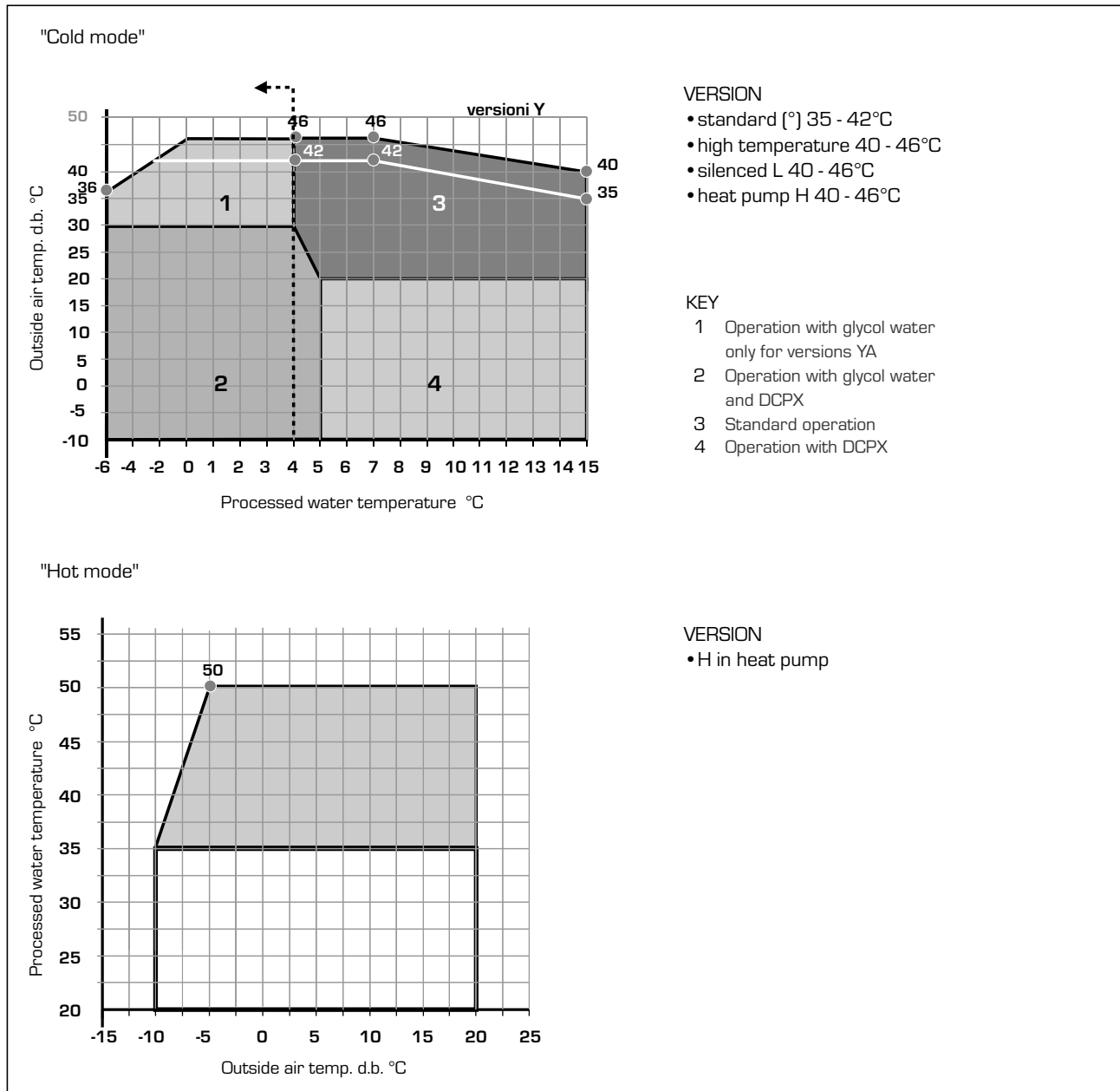
**WARNING:**

- operation with a processed water temperature of less than  $4^\circ\text{C}$  is only allowed for the versions specifically designed for this (version YA).
- if you want to operate the machine outside the limits indicated in

the diagram, please contact the AERMEC technical/commercial office.

- if the machine is positioned in particularly windy areas, it is necessary to install windbreak barriers to avoid the inconstant operation of the DCPX device.

### 6.1 OPERATING LIMITS



### 6.2 PROJECT DATA

(1) = only for heat pump versions

|                             |                  | High pressure side     | Low pressure side        |
|-----------------------------|------------------|------------------------|--------------------------|
| Maximum pressure allowed    | bar              | 30 / 28 <sup>(1)</sup> | 22                       |
| Maximum temperature allowed | $^\circ\text{C}$ | 120                    | 52                       |
| Minimum temperature allowed | $^\circ\text{C}$ | -10                    | -16 / -10 <sup>(1)</sup> |

## 7 CORRECTION COEFFICIENTS

### 7.1 COOLING AND INPUT CAPACITIES

- "STANDARD VERSIONS"
- "HEAT PUMP VERSIONS IN COLD MODE"
- "HIGH TEMPERATURE VERSIONS"

The refrigerating capacity yielded and the input electrical capacity in conditions other than rated conditions are obtained by multiplying the rated values ( $P_f$ ,  $P_a$ ) by the respective correction coefficients ( $C_f$ ,  $C_a$ ).

The following diagrams allow you to obtain the correction coefficients to be used for the various versions of the devices, in cold mode; next to each curve you can see the outside air temperature to which it refers.

KEY:

**Cf** = Cooling capacity correction coefficient

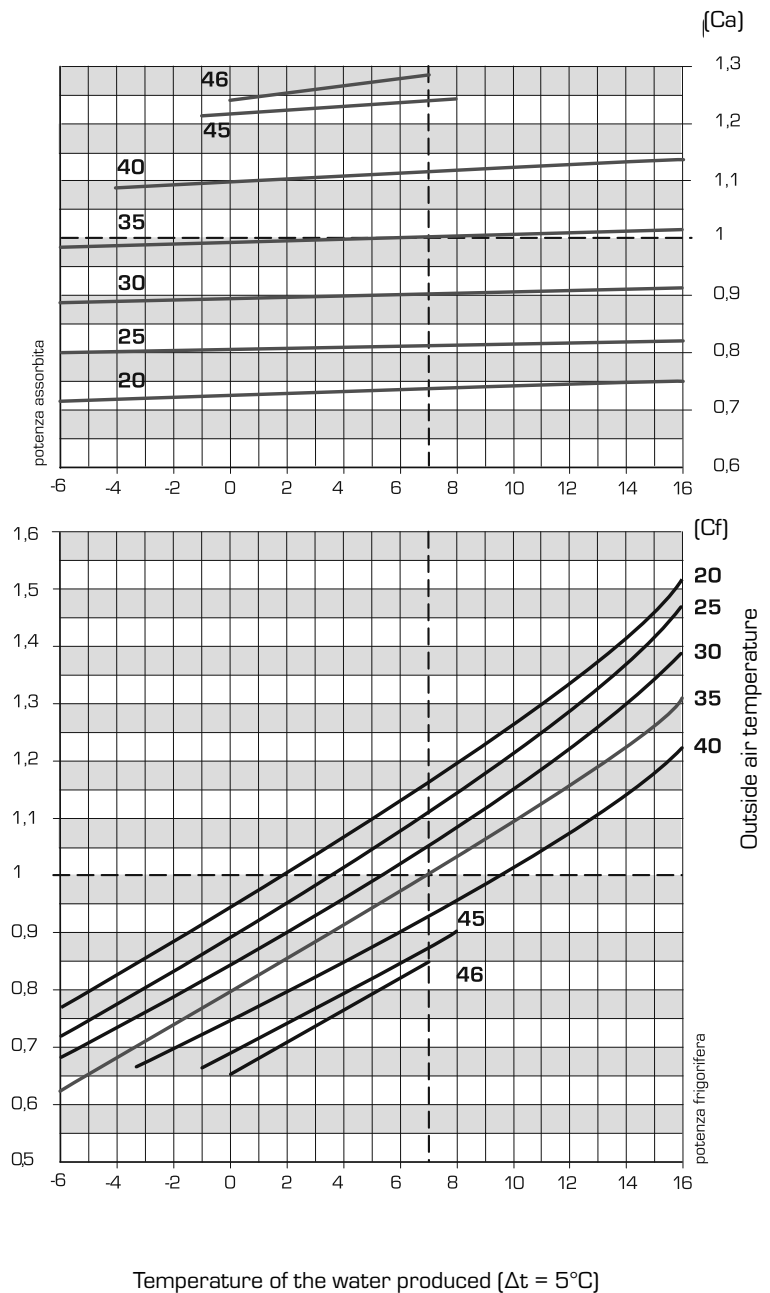
**Ca** = Input power correction coefficient

N.B.

FOR VERSIONS Y with temperatures lower than 4°C, contact the company headquarters

FOR  $\Delta T$  OTHER THAN 5°C

For the evaporator, the Tav.7.4 is used to obtain the correction factors of the cooling and input capacities. To take into account the dirtying of the exchangers, the relative dirtying factors are used

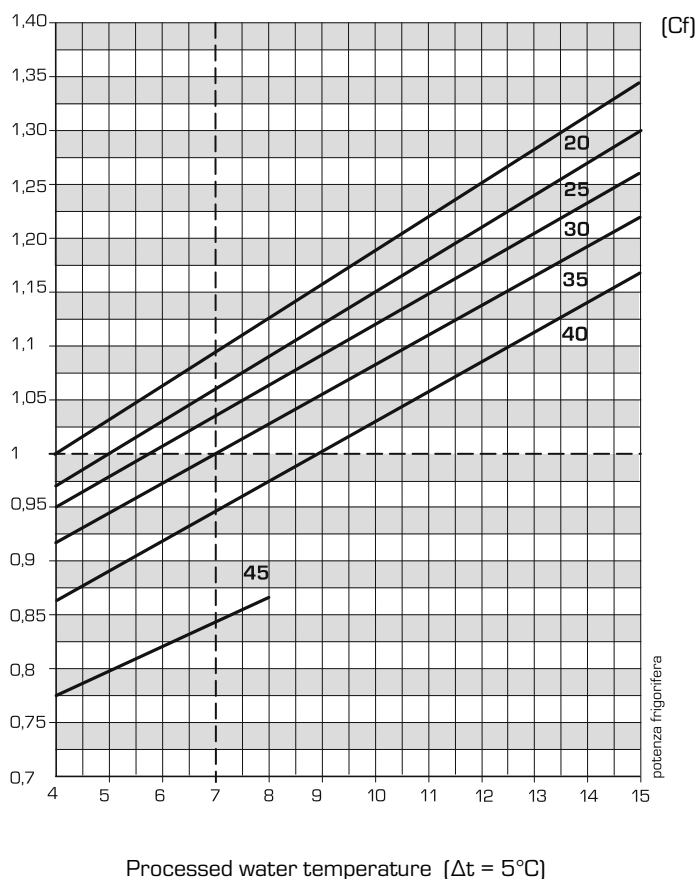
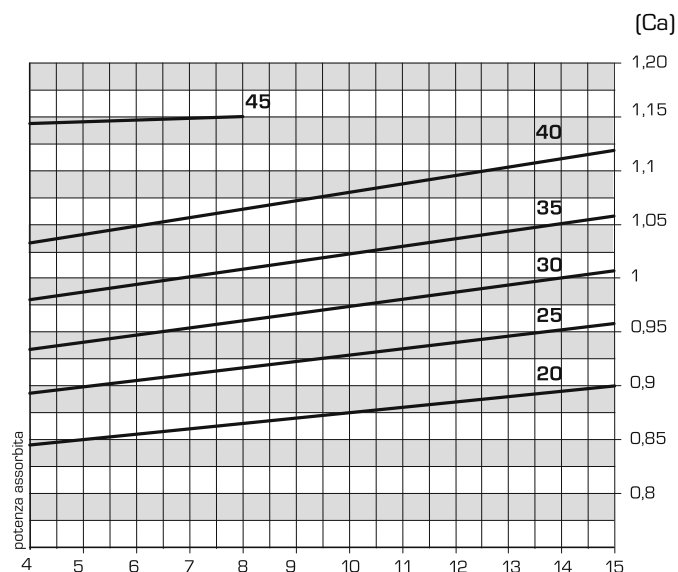


## 7.2 COOLING AND INPUT CAPACITIES

### - "SILENCED VERSIONS"

The cooling capacity yielded and the electrical input power in conditions other than rated conditions are obtained by multiplying the rated values ( $P_f$ ,  $P_a$ ) by the respective correction coefficients ( $C_f$ ,  $C_a$ ).

The following diagrams allow you to obtain the correction coefficients to be used for the various versions of the devices, in cold mode; next to each curve you can see the outside air temperature to which it refers.



KEY:

**$C_f$**  = Cooling capacity correction coefficient

**$C_a$**  = Input power correction coefficient

N.B.

- FOR THE VERSIONS Y with temperatures below  $4^\circ\text{C}$  contact company headquarters

### 7.3 HEATING AND INPUT CAPACITIES

#### - "HEAT PUMP VERSIONS"

The heating capacity yielded and the electrical input power in conditions other than rated conditions are obtained by multiplying the rated values [Pf, Pa] by the respective correction coefficients [Cft, Cpa].

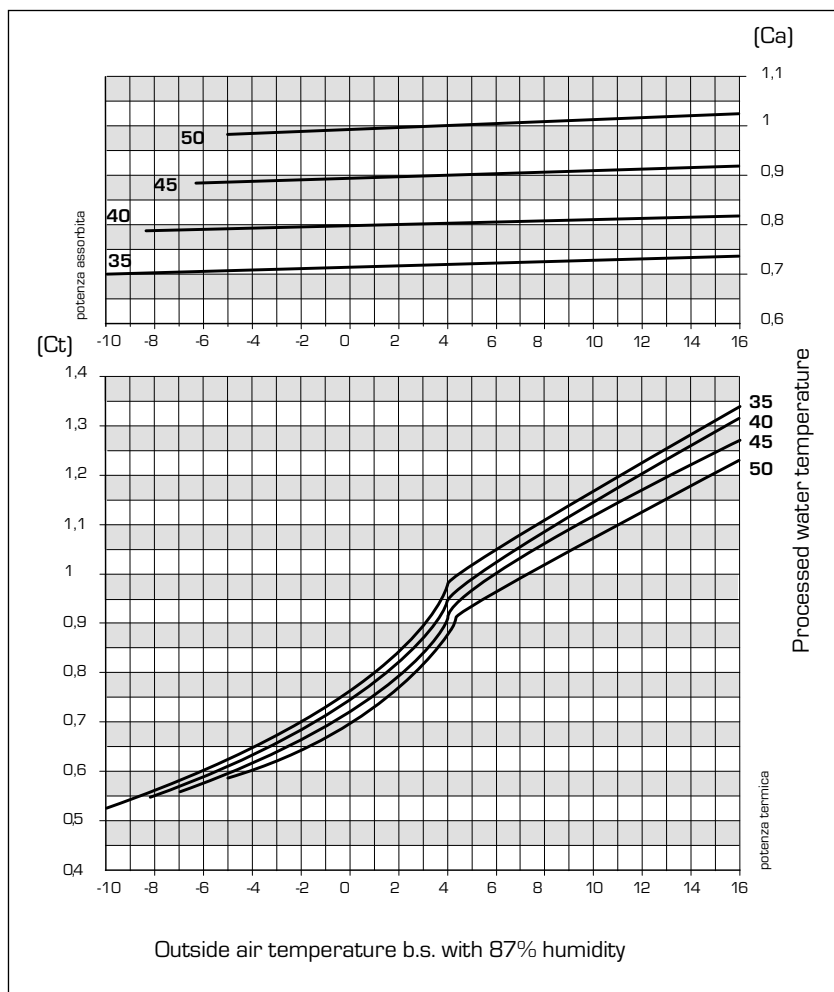
The following diagram makes it possible to obtain the correction coefficients; next to each curve, you can see the temperature of the hot processed water to which it refers, assuming a difference of water temperature between the inlet and outlet of the condenser equal to 5°C.

**The yields are intended as net of the defrosting cycles.**

KEY:

**Ct** = Heating capacity correction coefficient

**Ca** = Input power correction coefficient



### 7.4 FOR Δt OTHER THAN NOMINAL

For Δt other than 5°C, the Tav.1 is used on the evaporator to obtain the correction factors of the cooling and input capacities. To take into account the dirtying of the exchangers, the relative dirtying factors are used

### 7.5 FOULING FACTORS

The performance shown by the table refers to conditions with clean tubes, with a fouling factor = 1. For other fouling factor values, multiply the data of the performance tables by the coefficients given.

#### 7.4.1 Correction factors for Δt other than nominal, Chiller

|                                     | 3    | 5 | 8    | 10   |
|-------------------------------------|------|---|------|------|
| Cooling capacity correction factors | 0,99 | 1 | 1,02 | 1,03 |
| Cooling capacity correction factors | 0,99 | 1 | 1,01 | 1,02 |

#### 7.5.1 Fouling factors

|                                     | [K*m <sup>2</sup> ]/[W] | 0,00005 | 0,0001 | 0,0002 |
|-------------------------------------|-------------------------|---------|--------|--------|
| Cooling capacity correction factors |                         | 1       | 0,98   | 0,94   |
| Cooling capacity correction factors |                         | 1       | 0,98   | 0,95   |

## 8 ETHYLENE GLYCOL SOLUTION

The cooling capacity and input power correction factors make allowance for the presence of glycol and the different evaporation temperature.

The correction factors of the water flow rate and the pressure drops are applied directly to the data obtained for operation without glycols. The correction factor of the water flow rate is calculated so as to maintain the same  $\Delta t$  that would be used in the absence of glycols.

- The correction factor of the pressure drop already takes into account the different capacity deriving from the application of the water flow rate correction factor.
- The correction factors of the water flow rate and the pressure drops are applied directly to the data obtained for operation without glycols.
- The correction factors of the cooling and input capacities take into account the presence of glycols.

- The correction factors of the water flow rate and the pressure drops are applied directly to the data obtained for operation without glycols.
- The correction factor of the water flow rate is calculated so as to maintain the same  $\Delta t$  that would be used in the absence of glycols.
- The correction factor of the pressure drop already takes into account the different capacity deriving from the application of the water flow rate correction factor.

### NOTE

To make it easier to read the graph, an example is given on the next page.

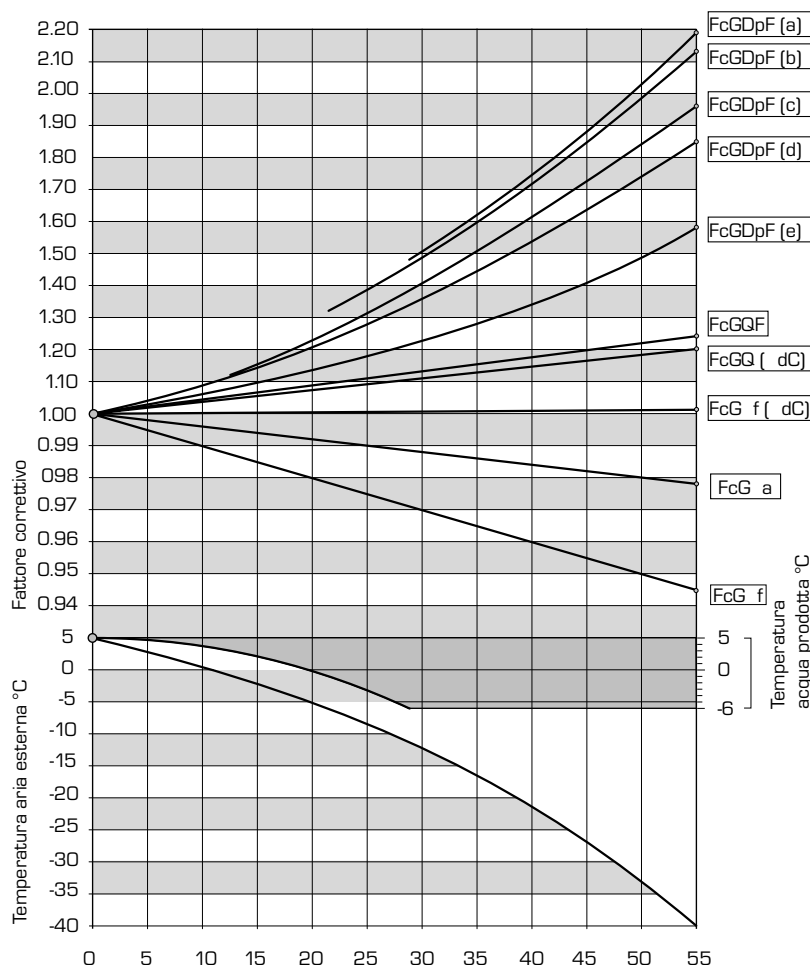
By using the diagram opposite it is possible to establish the percentage of glycol necessary; this percentage can be calculated taking into account one of the following factors:  
On the basis of the fluid considered (water or air), it will be necessary to enter the graph from the right or left side, from the intersection of the

outside air temperature or processed water temperature straight lines and the relative curves, a point is obtained through which the vertical line that will identify both the percentage of glycol and the relative correction coefficients will have to pass.

### 8.1 HOW TO READ THE GLYCOL CURVES

The curves shown in the figure summarise a notable quantity of data, each of which is represented by a specific curve. In order to use these curves correctly, it is necessary to make some initial considerations:

- If you want to calculate the percentage of glycol on the basis of the outside air temperature, you must enter from the left-hand axis and, once you have intersected the curve, trace a vertical line which, in turn, will intercept all the other curves; the points obtained from the upper curves represent



### KEY:

- FcGPF Correction factor of the cooling capacity
- FcGPa Correction factor of the input power
- FcGDpF (a) Correction factor of the pressure drops [evaporator] [average temp. = -3.5°C]
- FcGDpF (b) Correction factor of the pressure drops [average temp. = 0.5°C]
- FcGDpF (c) Correction factor of the pressure drops [average temp. = 5.5°C]
- FcGDpF (d) Correction factor of the pressure drops [average temp. = 9.5°C]
- FcGDpF (e) Correction factor of the pressure drops [average temp. = 47.5°C]
- FcGQF Correction factor of the outputs [evaporator] [average temp. = 9.5°C]
- FcGQC Correction factor of the outputs [condenser] [average temp. = 47.5°C]

### NOTE

Although the graph reaches outside air temperatures of -40°C, it is necessary to maintain the machine's operating limits as reference.

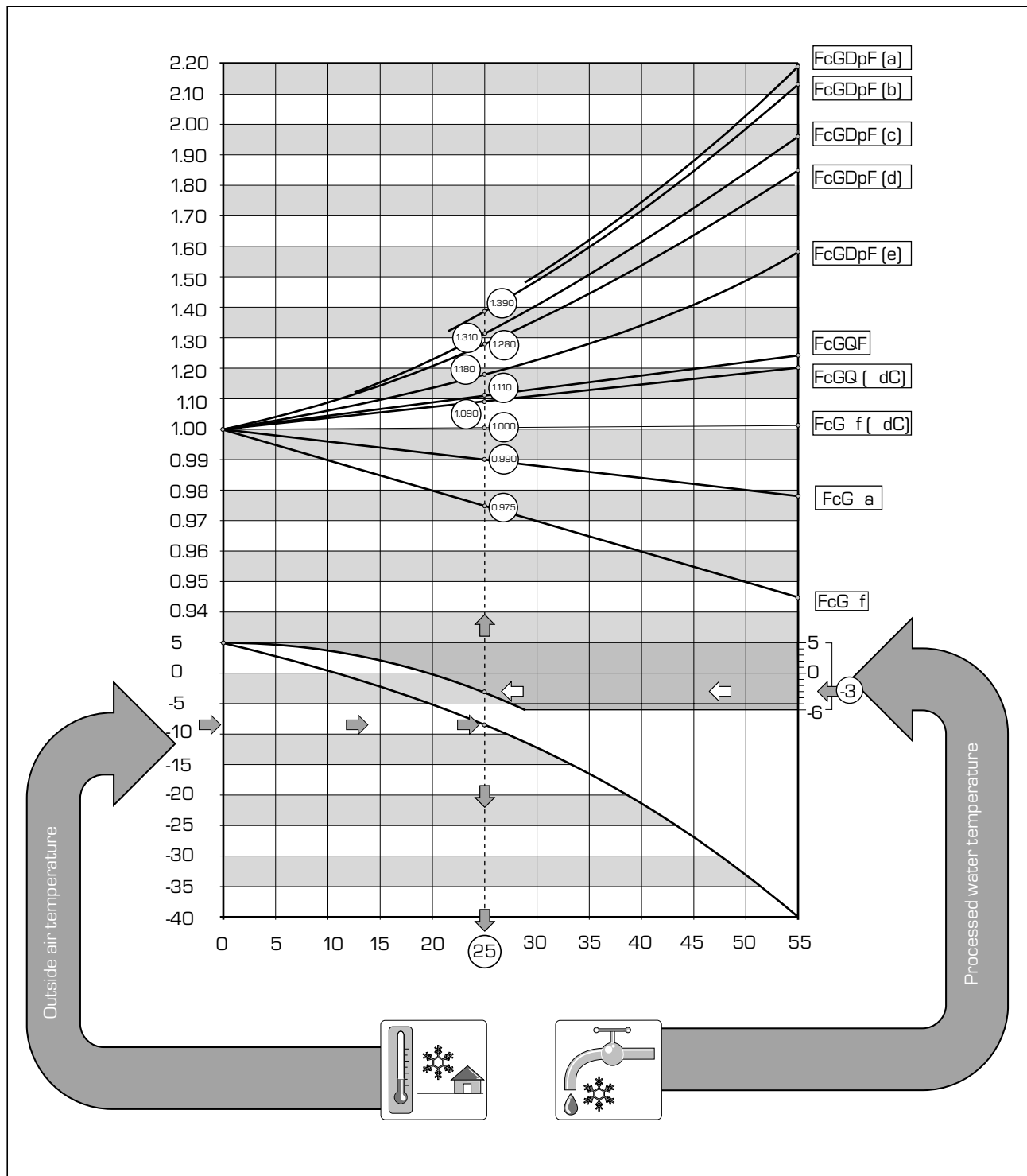
the coefficients for the correction of the cooling capacity and input power, for the flow rates and the pressure drops (remember that these coefficients must anyway be multiplied by the nominal value of the sizes examined); the lower axis advises the percentage of glycol necessary on the basis of the outside air temperature considered.

- If you want to calculate the percentage of glycol on the basis of the temperature of the

processed water, you must enter from the right-hand axis and, once you have intersected the curve, trace a vertical line which, in turn, will intercept all the other curves; the points obtained from the upper curves represent the coefficients for the cooling capacity and input power, for the flow rates and the pressure drops (remember that these coefficients must anyway be multiplied by the nominal value of the sizes examined); the lower axis

advises the percentage of glycol necessary to produce water at the required temperature.

**Remember that the initial sizes “OUTSIDE AIR TEMPERATURE” and “PROCESSED WATER TEMPERATURE”, are not directly linked to each other, so it is not possible to enter the curve of one of these sizes, and obtain the corresponding point on the other curve.**

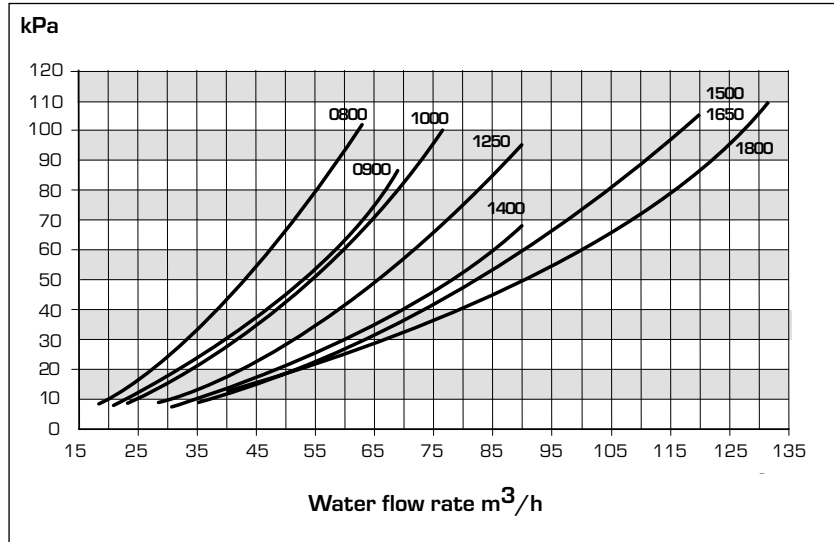


## 9 PRESSURE DROPS

### 9.1 PRESSURE DROPS, EVAPORATOR

The following diagrams show the values of the pressure drops in kPa, on the basis of the capacity in l/h. The operation field is defined by the minimum and maximum values of the curves, which indicate the limit of use of the water side heat exchangers (evaporators).

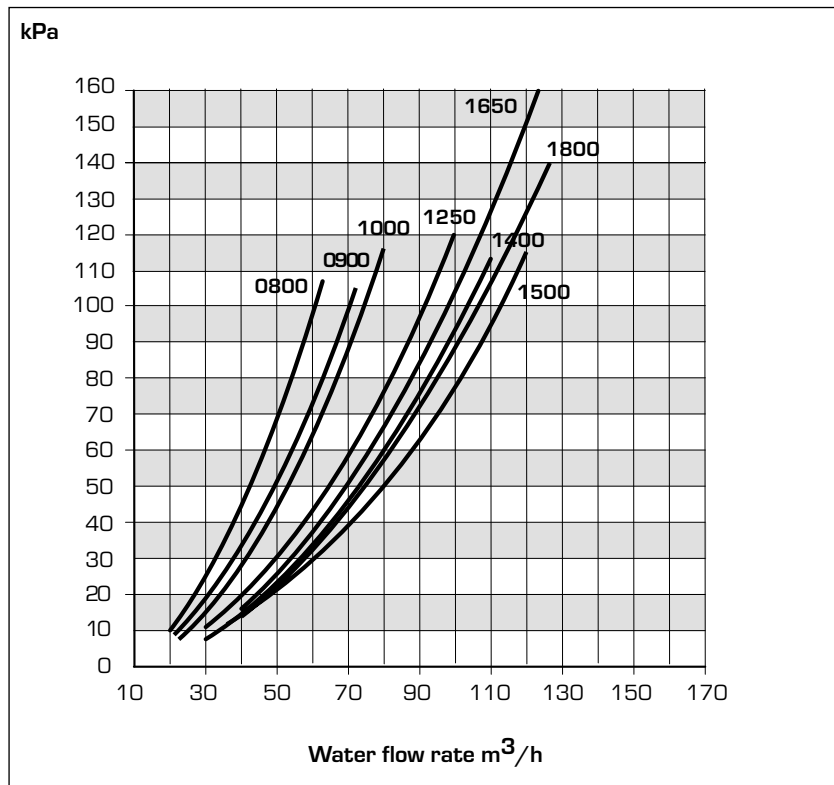
The pressure drops of the diagrams are relative to the average water temperature 10°C. The following table shows the correction to apply to the pressure drop when the average water temperature varies.



| Average water temperature °C | 5    | 10 | 15    | 20   | 30   | 40   | 50   |
|------------------------------|------|----|-------|------|------|------|------|
| Multiplicative coefficient   | 1,02 | 1  | 0,985 | 0,97 | 0,95 | 0,93 | 0,91 |

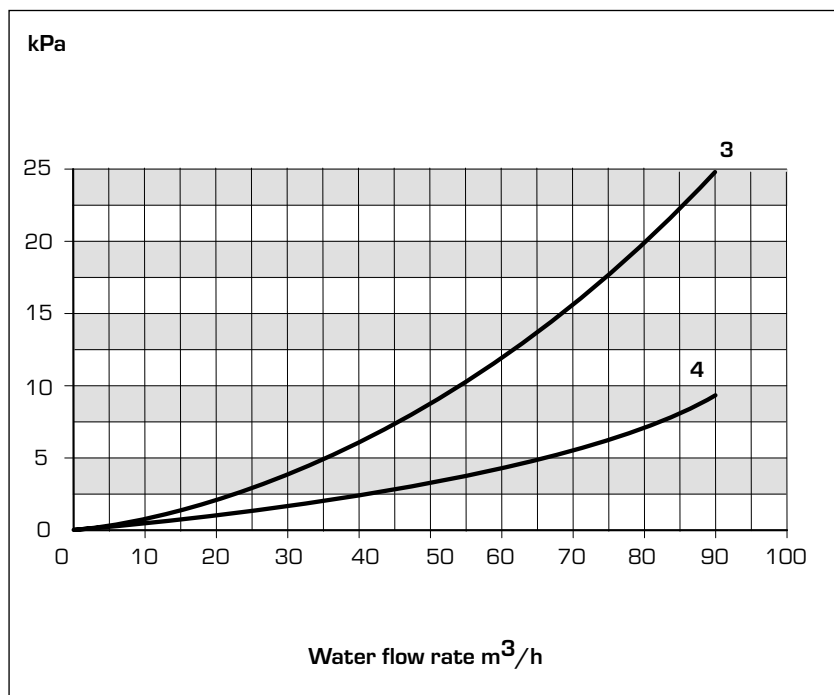
### 9.2 PRESSURE DROPS, CONDENSER

The pressure drops of the diagram are relative to an average water temperature of 50°C. The following table shows the correction to apply to the pressure drop when the average water temperature varies.



| Average water temperature °C | 5    | 10   | 15   | 20   | 30   | 40   | 50 |
|------------------------------|------|------|------|------|------|------|----|
| Multiplicative coefficient   | 1,22 | 1,10 | 1,08 | 1,06 | 1,04 | 1,02 | 1  |

### 9.3 PRESSURE DROPS, WATER FILTER



## 10 ACCUMULATION

The versions with accumulation offer different set-ups that vary on the basis of the effective pressure that you want to obtain, the characteristics of the pumping unit, and the presence or absence of holes for integrative resistance.

The following tables show the main characteristics of the components of the hydraulic circuit, while the graphs on these pages show the relative pressures.

The accumulation tanks with holes for heaters are equipped with plastic, temporary closing plugs.

#### WARNING

**Before start-up, the installer must assemble the heaters. If these heaters are not immediately necessary, the plastic plugs must be replaced with suitable metal plugs.**

#### 10.1 MAXIMUM WATER CONTENT in the system

The table below indicates the maximum water content, in litres, of the hydraulic system, compatible with the capacity of the expansion tank supplied as standard. The values shown in the table refer to three conditions of maximum and minimum

water temperature. If the effective water content of the hydraulic system (including the accumulation

tank) is greater than that shown in the operational conditions table, another, additional expansion tank

| Altezza idraulica                     | H m   | 30    | 25    | 20    | 15   | ≥ 12.25 |
|---------------------------------------|-------|-------|-------|-------|------|---------|
| Taratura del vaso di espansione       | bar   | 3.2   | 2.8   | 2.3   | 1.8  | 1.5     |
| Valore di riferimento contenuto acqua | l (1) | 2.174 | 2.646 | 3.118 | 3590 | 3852    |
| Valore di riferimento contenuto acqua | l (2) | 978   | 1190  | 1404  | 1616 | 1732    |
| Valore di riferimento contenuto acqua | l (3) | 510   | 622   | 732   | 844  | 904     |

| Acqua glicolata | Temp. acqua °C |      | Coefficiente di correzione | Condizione di riferimento |
|-----------------|----------------|------|----------------------------|---------------------------|
|                 | max.           | min. |                            |                           |
| 10%             | 40             | -2   | 0,507                      | (1)                       |
| 10%             | 60             | -2   | 0,686                      | (2)                       |
| 10%             | 85             | -2   | 0,809                      | (3)                       |
| 20%             | 40             | -6   | 0,434                      | (1)                       |
| 20%             | 60             | -6   | 0,604                      | (2)                       |
| 20%             | 85             | -6   | 0,729                      | (3)                       |
| 35%             | 40             | -6   | 0,393                      | (1)                       |
| 35%             | 60             | -6   | 0,555                      | (2)                       |
| 35%             | 85             | -6   | 0,677                      | (3)                       |

Working reference conditions:

(1) Cooling: max water temp. = 40°C, min water temp. = 4°C.

(2) Heating (heat pump): max water temp. = 60°C, min water temp. = 4°C.

(3) Heating (boiler): max water temp. = 85°C, min water temp. = 4°C.

must be installed, measured (using the common criteria) with reference to the additional volume of water.

From the following tables, it is possible to obtain the values of maximum system content, also for other operational conditions with glycol water.

The values are obtained by multiplying the reference value by the correction coefficient.

### 10.1.1 Calibration of expansion tank

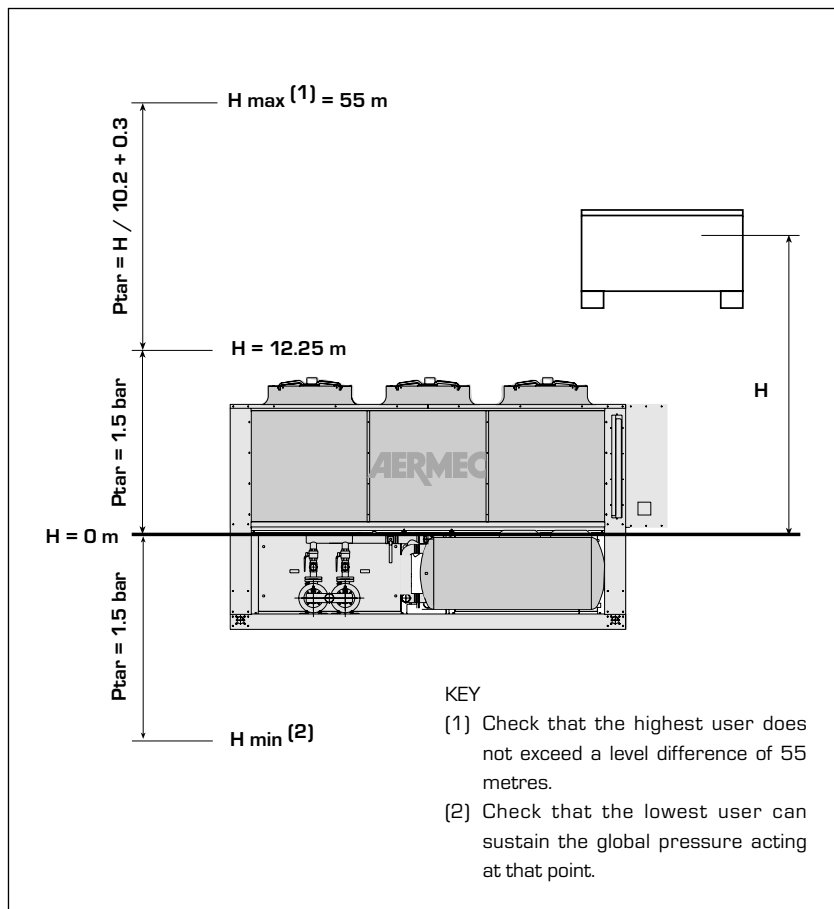
The standard value of pre-charge pressure of the two expansion tanks is 1.5 bar, while their volume is 24 litres, **maximum value 6 bar**.

The calibration of the tanks must be regulated on the basis of the maximum difference of level [H] of the user (see figure), according to the formula:

$$p \text{ [calibration] [bar]} = H \text{ [m]} / 10.2 + 0.3$$

For example, if the level difference H is 20m, the calibration value of the tank will be 2.3 bar.

If the calibration value obtained from the calculation is lower than 1.5 bar (i.e. for  $H < 12.25$ ), maintain the standard calibration.



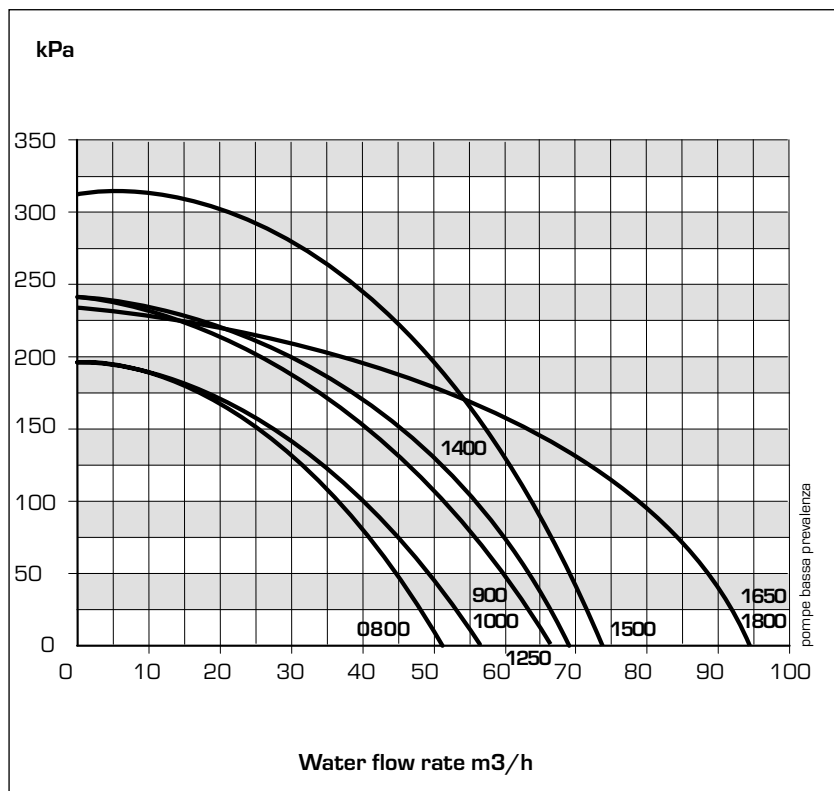
## 11 EFFECTIVE PRESSURE FOR THE SYSTEM

The pressures shown here are net of the pressure drops of the heat exchangers, filter, etc. They should therefore be considered useful for the system

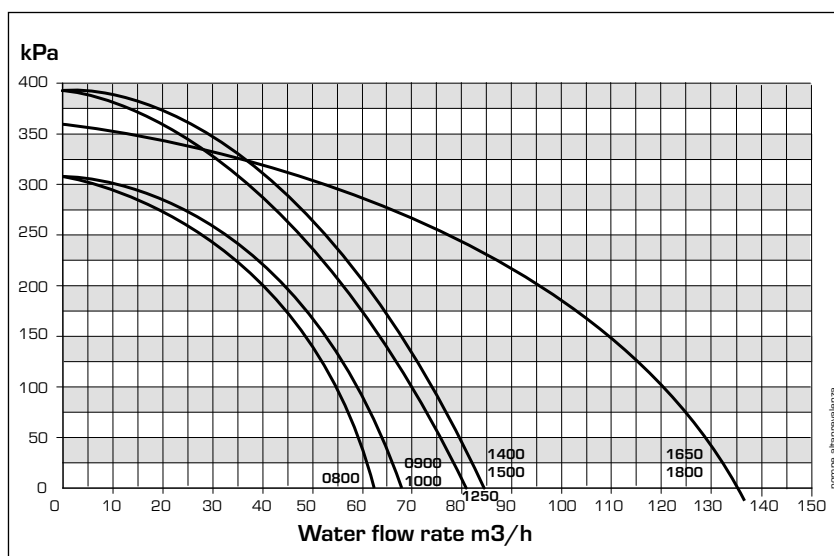
### WARNING

As in the configurator, the pumps can be high or low pressure, so we will give two distinct diagrams to avoid confusion in the selection.

### 11.1 LOW PRESSURE PUMPS



## 11.2 HIGH PRESSURE PUMPS



## 12 DESUPERHEATERS

The heating capacity that can be obtained from the desuperheater is calculated by multiplying the rated value (Pd), indicated in the table below the diagrams, by a suitable coefficient (Cd). The diagrams allow the correction coefficients to be used for the various versions of chiller to be calculated; the external air temperature referred to is indicated in correspondence with each curve. The pressure drops you see in the table do not include the filter drop, whose curve is indicated in table TAV 9.3.

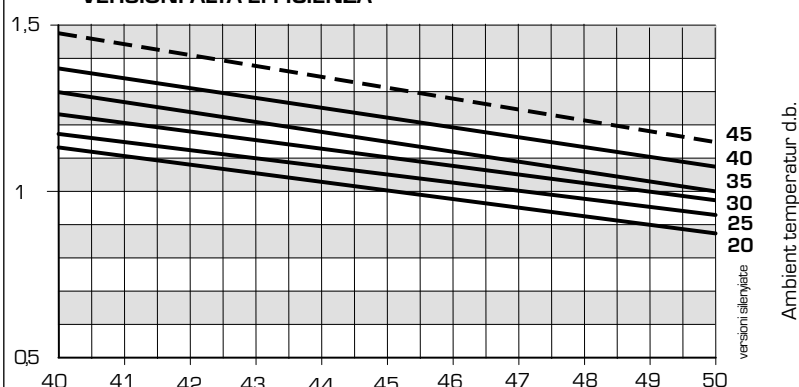
The nominal value refers to:  
 air temperature 35°C  
 produced water temperature 50°C.

### NOTE

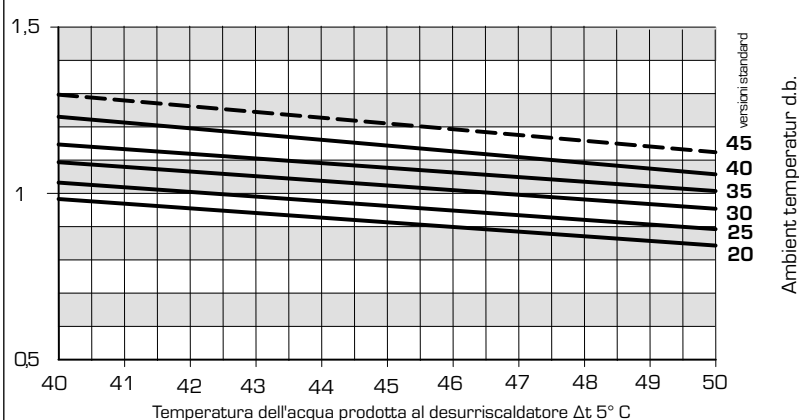
in the models with heat pump the desuperheater must be intercepted when the heat pump is operating, otherwise the guarantee will not be valid.

For chilled water production at temperatures other than 7°C or for evaporation temperatures other than 5°C, use the correction factors in the table provided, as well as the ones obtained from the graphs.

### 12.1 VERSIONI STANDARD VERSIONI ALTA EFFICIENZA



### 12.1.2 LOW NOISE VERSION



### 12.2.3 Values different from the nominal value

| Average water temperature °C | 5    | 7 | 9    | 11   | 13  | 15   |
|------------------------------|------|---|------|------|-----|------|
| Multiplicative coefficient   | 0.94 | 1 | 1.07 | 1.13 | 1.2 | 1.27 |

| Evaporation Temperature °C | 1    | 3    | 5 | 7    | 9    | 11  |
|----------------------------|------|------|---|------|------|-----|
| Multiplicative coefficient | 0.88 | 0.94 | 1 | 1.06 | 1.13 | 1.2 |

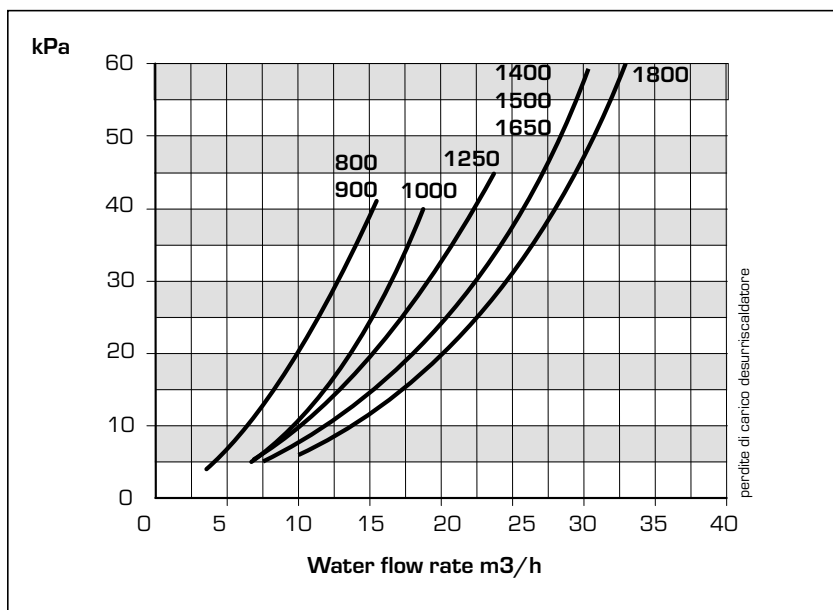
## 12.3 PRESSURE DROPS

All NRA models with desuperheater are equipped with two (desuperheaters in parallel).

### NOTE

The parallel water connections is to be made by the installer

Desuperheaters specifications and pressure drop curves are given below.



For temperatures of produced water other than 50 °C, multiply the result by the correction factor that can be determined from the table at the bottom of the page. 12.2.4.

### 12.2.4 Values different from the nominal value

| Average water temperature °C | 30   | 40   | 50 |
|------------------------------|------|------|----|
| Multiplicative coefficient   | 1.04 | 1.02 | 1  |

The heating capacity available to the total heat recovery is in rated conditions:

|                 |       |
|-----------------|-------|
| Air temperature | 35 °C |
| Water produced  | 50 °C |
| Δt              | 5 °C  |

| Taglie                     |      | 0800 | 0900  | 1000  | 1250  | 1400  | 1500  | 1650  | 1800  |
|----------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|
| Heating capacity available | kW   | 55   | 61    | 66    | 82    | 91    | 101   | 110   | 119   |
| Water flow rate            | m³/h | 9.46 | 10.43 | 11.36 | 14.02 | 15.72 | 17.34 | 18.92 | 20.46 |
| Water pressure drops       | kPa  | 16   | 19.5  | 14.5  | 16.5  | 16    | 19    | 22    | 22    |

## 13 TOTAL RECOVERY

When operating with the total heat recovery function, machine performance depends on the temperature of the hot water produced, not on that of external air; to calculate the absorbed electrical and heat recovery power values, multiply the values (Pa, Pr) specified at the bottom of the page by the relevant correction factors [Ca, Cr] derived from the diagrams below. The temperature of the relative hot water is given for each curve (a difference of 5°C between total heat recovery unit input and output is presumed). Calculate the cooling power (Pf) by measuring the difference between heat recovery power (Pr) and power absorbed (Pa).

### NOTA

In heat pumps total recovery is only available for the "00 versions without hydronic kit"

The heating capacity available to the total heat recovery is in rated conditions:

|                 |       |
|-----------------|-------|
| Air temperature | 35 °C |
| Water produced  | 50 °C |
| $\Delta t$      | 5 °C  |

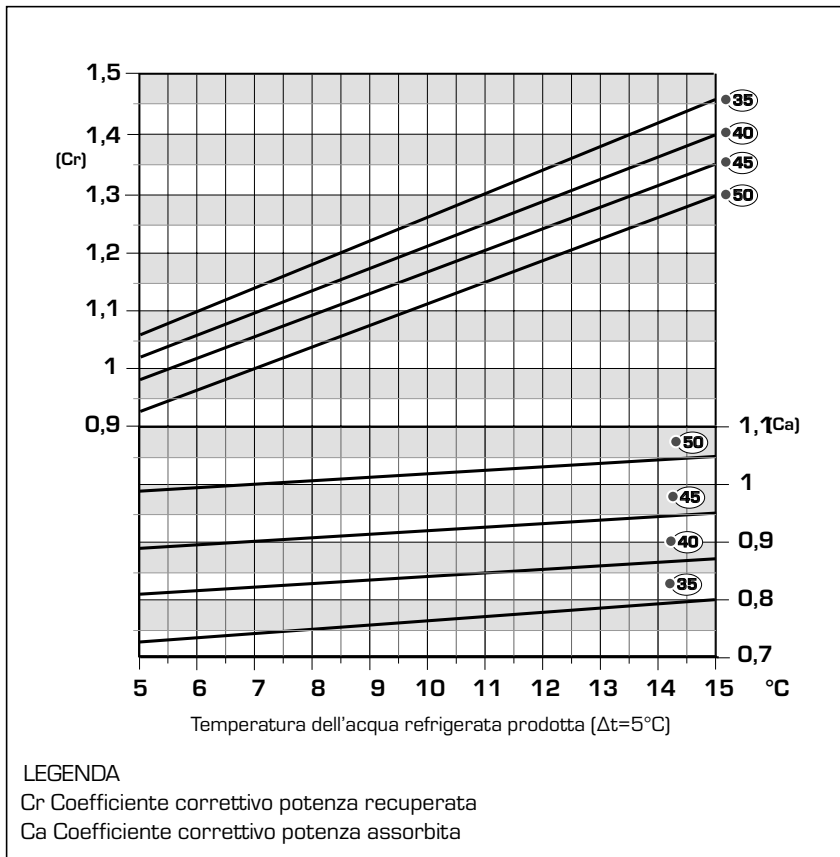
### 13.1 PRESSURE DROPS

All NRA models with total recovery are equipped with ONE recoveries. Heat recovery unit specifications and load loss curves are given below. The pressure drops you see in the table do not include the filter drop, whose curve is indicated.

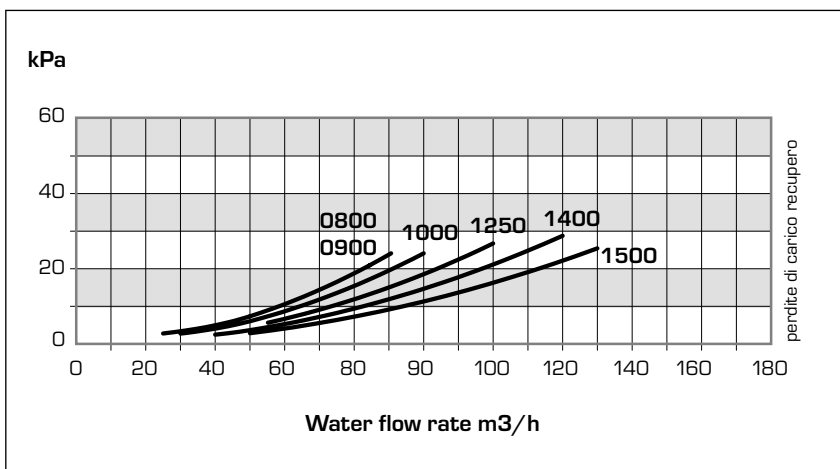
### NOTE

The parallel water connections is to be made by the installer

The pressure drops in the charts above refer to an average water temperature of 50 °C. The following table shows the corrections to apply to the pressure drops with a variation in average water temperature.



| Taglie            |                   | 0800 | 0900 | 1000 | 1250 | 1400 | 1500 | 1650 | 1800 |
|-------------------|-------------------|------|------|------|------|------|------|------|------|
| PTR               | kW                | 290  | 324  | 357  | 435  | 485  | 534  | 591  | 654  |
| Potenza assorbita | kW                | 73   | 81   | 89   | 109  | 121  | 133  | 157  | 174  |
| Portata acqua     | m <sup>3</sup> /h | 50   | 55.7 | 61.4 | 74.8 | 83.4 | 92.0 | 101  | 112  |
| Perdita di carico | kPa               | 7    | 9    | 9    | 10   | 10   | 9.6  | 13   | 18   |



### Values different from the nominal value

|                              |      |      |    |
|------------------------------|------|------|----|
| Average water temperature °C | 30   | 40   | 50 |
| Multiplicative coefficient   | 1.04 | 1.02 | 1  |

## 14 SOUND DATA

### Sound Power

Aermec determines the value of sound power on the basis of measurements performed in compliance with regulation 9614, in respect with that requested by Eurovent certification.

#### (1) Sound Pressure

Sound pressure in free field on a reflective surface (factor of directionality Q=2), at 10 metres from the external surface of the unit, using the parallel expansion method (box-method, ISO 3744)

#### KEY

Operating conditions:

Evaporator water (in/out) 12/7 °C

Condenser water 35 °C

#### NOTE

H and HL version sound data are referred to in cooling mode operation. For the heating mode operation refer to H version sound data

| [°]  | Total sound levels |               |           | Octave band[Hz]                               |      |      |      |      |      |      |
|------|--------------------|---------------|-----------|-----------------------------------------------|------|------|------|------|------|------|
|      | Pot.               | Press.        |           | 125                                           | 250  | 500  | 1000 | 2000 | 4000 | 8000 |
|      | dB(A)              | dB(A)<br>10 m | dB<br>1 m | Acoustic power by central band frequency [dB] |      |      |      |      |      |      |
| 0800 | 88.5               | 56.5          | 73        | 92                                            | 88,5 | 85   | 83,6 | 81,1 | 72,8 | 63,3 |
| 0900 | 88.5               | 56.5          | 73        | 92                                            | 88,5 | 85   | 83,6 | 81,1 | 72,8 | 63,3 |
| 1000 | 88.5               | 56.5          | 73        | 92                                            | 88,5 | 85   | 83,6 | 81,1 | 72,8 | 63,3 |
| 1250 | 91.5               | 59.5          | 74        | 95,5                                          | 88,2 | 88   | 85,9 | 82,4 | 73,5 | 64,1 |
| 1400 | 91.0               | 59            | 74        | 95,5                                          | 88,2 | 88   | 85,9 | 82,4 | 73,5 | 64,1 |
| 1500 | 90.5               | 58.5          | 74        | 95,5                                          | 88,2 | 88   | 85,9 | 82,4 | 73,5 | 64,1 |
| 1650 | 92                 | 60            | 76        | 96,7                                          | 90,6 | 89,4 | 86,4 | 84,6 | 83,1 | 80,4 |
| 1800 | 94                 | 62            | 78        | 96,7                                          | 90,6 | 89,4 | 88,2 | 86,9 | 88,0 | 85,9 |

| A    | Total sound levels |               |           | Octave band[Hz]                               |      |      |      |      |      |      |
|------|--------------------|---------------|-----------|-----------------------------------------------|------|------|------|------|------|------|
|      | Pot.               | Press.        |           | 125                                           | 250  | 500  | 1000 | 2000 | 4000 | 8000 |
|      | dB(A)              | dB(A)<br>10 m | dB<br>1 m | Acoustic power by central band frequency [dB] |      |      |      |      |      |      |
| 0800 | 88                 | 56            | 73        | 89,8                                          | 87,3 | 84,3 | 83,4 | 81,0 | 72,4 | 62,8 |
| 0900 | 88                 | 56            | 73        | 89,8                                          | 87,3 | 84,3 | 83,4 | 81,0 | 72,4 | 62,8 |
| 1000 | 88                 | 56            | 73        | 89,8                                          | 87,3 | 84,3 | 83,4 | 81,0 | 72,4 | 62,8 |
| 1250 | 91                 | 59            | 74        | 93,2                                          | 87,0 | 87,3 | 85,8 | 82,3 | 73,1 | 63,6 |
| 1400 | 90.5               | 58.5          | 74        | 93,2                                          | 87,0 | 87,3 | 85,8 | 82,3 | 73,1 | 63,6 |
| 1500 | 90                 | 58            | 74        | 93,2                                          | 87,0 | 87,3 | 85,8 | 82,3 | 73,1 | 63,6 |
| 1650 | 91.5               | 59.5          | 75        | 95,0                                          | 90,0 | 88,9 | 86,3 | 84,6 | 83,1 | 80,4 |
| 1800 | 93.5               | 61.5          | 78        | 95,1                                          | 90,0 | 88,9 | 88,1 | 86,9 | 88,0 | 85,9 |

| L    | Total sound levels |               |           | Octave band[Hz]                               |      |      |      |      |      |      |
|------|--------------------|---------------|-----------|-----------------------------------------------|------|------|------|------|------|------|
|      | Pot.               | Press.        |           | 125                                           | 250  | 500  | 1000 | 2000 | 4000 | 8000 |
|      | dB(A)              | dB(A)<br>10 m | dB<br>1 m | Acoustic power by central band frequency [dB] |      |      |      |      |      |      |
| 0800 | 83                 | 51            | 68        | 89,3                                          | 84,7 | 80,2 | 77,3 | 73,7 | 65,2 | 55,9 |
| 0900 | 83                 | 51            | 68        | 89,3                                          | 84,7 | 80,2 | 77,3 | 73,7 | 65,2 | 55,9 |
| 1000 | 83                 | 51            | 68        | 89,3                                          | 84,7 | 80,2 | 77,3 | 73,7 | 65,2 | 55,9 |
| 1250 | 86                 | 54            | 69        | 92,7                                          | 84,4 | 83,1 | 79,7 | 74,9 | 65,9 | 56,6 |
| 1400 | 85.5               | 53.5          | 69        | 92,7                                          | 84,4 | 83,1 | 79,7 | 74,9 | 65,9 | 56,6 |
| 1500 | 85                 | 53            | 69        | 92,7                                          | 84,4 | 83,1 | 79,7 | 74,9 | 65,9 | 56,6 |
| 1650 | 86.5               | 54.5          | 71,0      | 92,6                                          | 86,7 | 84,3 | 78,2 | 79,7 | 80,7 | 78,4 |
| 1800 | 88.5               | 56.5          | 73,0      | 91,4                                          | 85,5 | 83,1 | 82,2 | 82,0 | 84,4 | 82,0 |

| H    | Total sound levels |               |           | Octave band[Hz]                               |      |      |      |      |      |      |
|------|--------------------|---------------|-----------|-----------------------------------------------|------|------|------|------|------|------|
|      | Pot.               | Press.        |           | 125                                           | 250  | 500  | 1000 | 2000 | 4000 | 8000 |
|      | dB(A)              | dB(A)<br>10 m | dB<br>1 m | Acoustic power by central band frequency [dB] |      |      |      |      |      |      |
| 0800 | 88,5               | 56,5          | 73        | 92                                            | 88,5 | 85,0 | 83,6 | 81,1 | 72,8 | 63,3 |
| 0900 | 88,5               | 56,5          | 73        | 92                                            | 88,5 | 85,0 | 83,6 | 81,1 | 72,8 | 63,3 |
| 1000 | 88,5               | 56,5          | 73        | 92                                            | 88,5 | 85,0 | 83,6 | 81,1 | 72,8 | 63,3 |
| 1250 | 91,5               | 59,5          | 74        | 95,5                                          | 88,2 | 88,0 | 85,9 | 82,4 | 73,5 | 64,1 |
| 1400 | 91                 | 59            | 74        | 95,5                                          | 88,2 | 88,0 | 85,9 | 82,4 | 73,5 | 64,1 |
| 1500 | 90,5               | 58,5          | 74        | 95,5                                          | 88,2 | 88,0 | 85,9 | 82,4 | 73,5 | 64,1 |
| 1650 | 92                 | 60            | 76        | 96,7                                          | 90,6 | 89,4 | 86,4 | 84,6 | 83,1 | 80,4 |
| 1800 | 94                 | 62            | 78        | 96,7                                          | 90,6 | 89,4 | 88,2 | 86,9 | 88,0 | 85,9 |

| HL   | Total sound levels |               |           | Octave band[Hz]                               |      |      |      |      |      |      |
|------|--------------------|---------------|-----------|-----------------------------------------------|------|------|------|------|------|------|
|      | Pot.               | Press.        |           | 125                                           | 250  | 500  | 1000 | 2000 | 4000 | 8000 |
|      | dB(A)              | dB(A)<br>10 m | dB<br>1 m | Acoustic power by central band frequency [dB] |      |      |      |      |      |      |
| 0800 | 83                 | 51            | 68        | 89,3                                          | 84,7 | 80,2 | 77,3 | 73,7 | 65,2 | 55,9 |
| 0900 | 83                 | 51            | 68        | 89,3                                          | 84,7 | 80,2 | 77,3 | 73,7 | 65,2 | 55,9 |
| 1000 | 83                 | 51            | 68        | 89,3                                          | 84,7 | 80,2 | 77,3 | 73,7 | 65,2 | 55,9 |
| 1250 | 86                 | 54            | 69        | 92,7                                          | 84,4 | 83,1 | 79,7 | 74,9 | 65,9 | 56,6 |
| 1400 | 85.5               | 53.5          | 69        | 92,7                                          | 84,4 | 83,1 | 79,7 | 74,9 | 65,9 | 56,6 |
| 1500 | 85                 | 53            | 69        | 92,7                                          | 84,4 | 83,1 | 79,7 | 74,9 | 65,9 | 56,6 |
| 1650 | 86.5               | 54.5          | 73        | 94,7                                          | 88,8 | 86,5 | 81,3 | 81,7 | 82,7 | 80,3 |
| 1800 | 88.5               | 56.5          | 76        | 94,8                                          | 88,9 | 86,5 | 85,6 | 85,4 | 87,8 | 85,9 |

## 15 CAPACITY CONTROL

| * Cooling capacity % | Levels of power |    |    |     |    |     |
|----------------------|-----------------|----|----|-----|----|-----|
| Version              | 1°              | 2° | 3° | 4°  | 5° | 6°  |
| NRA 0800             | 30              | 60 | 80 | 100 |    |     |
| NRA 0900             | 30              | 60 | 80 | 100 |    |     |
| NRA 1000             | 30              | 60 | 80 | 100 |    |     |
| NRA 1250             | 18              | 36 | 52 | 70  | 85 | 100 |
| NRA 1400             | 18              | 36 | 52 | 70  | 85 | 100 |
| NRA 1500             | 18              | 36 | 52 | 70  | 85 | 100 |
| NRA 1650             | 18              | 36 | 52 | 70  | 85 | 100 |
| NRA 1800             | 18              | 36 | 52 | 70  | 85 | 100 |

| * Input power % | Levels of power |    |    |     |    |     |
|-----------------|-----------------|----|----|-----|----|-----|
| Version         | 1°              | 2° | 3° | 4°  | 5° | 6°  |
| NRA 0800        | 22              | 43 | 72 | 100 |    |     |
| NRA 0900        | 22              | 43 | 72 | 100 |    |     |
| NRA 1000        | 22              | 43 | 72 | 100 |    |     |
| NRA 1250        | 22              | 43 | 72 | 100 |    |     |
| NRA 1400        | 11              | 27 | 44 | 63  | 81 | 100 |
| NRA 1500        | 11              | 27 | 44 | 63  | 81 | 100 |
| NRA 1650        | 11              | 27 | 44 | 63  | 81 | 100 |
| NRA 1800        | 11              | 27 | 44 | 63  | 81 | 100 |

| * Heating capacity % | Levels of power |    |    |     |    |     |
|----------------------|-----------------|----|----|-----|----|-----|
| Version              | 1°              | 2° | 3° | 4°  | 5° | 6°  |
| NRA 0800 H           | 28              | 55 | 78 | 100 |    |     |
| NRA 0900 H           | 28              | 55 | 78 | 100 |    |     |
| NRA 1000 H           | 28              | 55 | 78 | 100 |    |     |
| NRA 1250 H           | 28              | 55 | 78 | 100 |    |     |
| NRA 1400 H           | 17              | 33 | 50 | 68  | 84 | 100 |
| NRA 1500 H           | 17              | 33 | 50 | 68  | 84 | 100 |
| NRA 1650 H           | 17              | 33 | 50 | 68  | 84 | 100 |
| NRA 1800 H           | 17              | 33 | 50 | 68  | 84 | 100 |

| * Input power % | Levels of power |    |    |     |    |     |
|-----------------|-----------------|----|----|-----|----|-----|
| Version         | 1°              | 2° | 3° | 4°  | 5° | 6°  |
| NRA 0800 H      | 22              | 43 | 72 | 100 |    |     |
| NRA 0900 H      | 22              | 43 | 72 | 100 |    |     |
| NRA 1000 H      | 22              | 43 | 72 | 100 |    |     |
| NRA 1250 H      | 11              | 27 | 44 | 63  | 81 | 100 |
| NRA 1400 H      | 11              | 27 | 44 | 63  | 81 | 100 |
| NRA 1500 H      | 11              | 27 | 44 | 63  | 81 | 100 |
| NRA 1650 H      | 11              | 27 | 44 | 63  | 81 | 100 |
| NRA 1800 H      | 11              | 27 | 44 | 63  | 81 | 100 |

### KEY

The performance refers to the following conditions:

- \* processed water temperature = 7°C; outside air temperature = 35°C.
- \* processed water temperature = 50°C; outside air temperature = 7°C B.S. - 6°C B.U.

### WARNING

As can be seen from the table, in choke mode the reduction of the input power is greater than the reduction of the output power; hence obtaining an E.E.R. greater than that in full load operation.

This is because, in capacity control mode, the machine has the heat exchangers "oversized" in relation to the respective

refrigerant capacities, thus allowing a greater energy efficiency.

For this reason, this series of devices is especially suitable for reducing energy consumption with variable load (typical of the comfort applications).

## 16 CALIBRATION OF CHECK AND SAFETY PARAMETERS

### CHECK PARAMETERS

NOTE

(1) = version Y

|                         |    | min.       | standard   | max. |
|-------------------------|----|------------|------------|------|
| Cooling set point       | °C | 4 / -6 (1) | 7 / -6 (1) | 14   |
| Heating set point       | °C | 35         | 48         | 50   |
| Antifreeze intervention | °C | -9         | 3          | 4    |
| Total differential      | °C | 3          | 5          | 10   |
| Autostart               |    | auto       |            |      |

### 16.1 THERMOMAGNETIC SWITCHES FANS

|                | 0800 | 0900 | 1000 | 1250 | 1400 | 1500 | 1650 | 1800 |
|----------------|------|------|------|------|------|------|------|------|
| n° Ventilatori |      |      |      |      |      |      |      |      |
| MTV 1          | 17 A | 17 A | 9 A  | 9 A  | 13 A | 13 A | 13 A | 17 A |
| MTV 2          | 17 A | 17 A | 9 A  | 9 A  | 13 A | 13 A | 13 A | 17 A |
| MTV 3          | /    | /    | 9 A  | 13 A | 13 A | 13 A | 13 A | 17 A |
| MTV 4          | /    | /    | 9 A  | 13 A | 13 A | 13 A | 13 A | 17 A |

### 16.2 THERMOMAGNETIC SWITCHES COMPRESSORS

|       | 0800 | 0900 | 1000 | 1250 | 1400 | 1500 | 1650 | 1800 |
|-------|------|------|------|------|------|------|------|------|
| MTC1  | 53 A | 57 A | 53 A | 53 A | 57 A | 57 A | 53 A | 53 A |
| MTC1A | 53 A | 57 A | 53 A | 53 A | 57 A | 57 A | 53 A | 53 A |
| MTC1B | 53 A | 57 A | /    | /    | /    | /    | 53 A | 53 A |
| MTC2  | 57 A | 57 A | 53 A | 53 A | 57 A | 53 A | 53 A | 57 A |
| MTC2A | 57 A | 57 A | 53 A | 53 A | 57 A | 53 A | 53 A | 57 A |
| MTC2B | 57 A | 57 A | /    | /    | /    | 53 A | 53 A | 57 A |
| MTC3  | /    | /    | 53 A | 57 A | 57 A | 57 A | 53 A | 53 A |
| MTC3A | /    | /    | 53 A | 57 A | 57 A | 57 A | 53 A | 53 A |
| MTC3B | /    | /    | /    | /    | /    | /    | 53 A | 53 A |
| MTC4  | /    | /    | 53 A | 57 A | 57 A | 53 A | 53 A | 57 A |
| MTC4A | /    | /    | 53 A | 57 A | 57 A | 53 A | 53 A | 57 A |
| MTC4B | /    | /    | /    | /    | /    | 53 A | 53 A | 57 A |

### 16.3 TRANSDUCERS PRESSURE SWITCHES

KEY

PA High pressure switch

PB Low pressure switch

TRA High pressure transducer

TRB Low pressure transducer

|         |    | 0800 | 0900 | 1000 | 1250 | 1400 | 1500 | 1650 | 1800 |
|---------|----|------|------|------|------|------|------|------|------|
| PA cold |    | 27   | 27   | 27   | 27   | 27   | 27   | 27   | 27   |
| PA hot  | H  | 27   | 27   | 27   | 27   | 27   | 27   | 27   | 27   |
| PB      | HL | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| TRA     |    | 27   | 27   | 27   | 27   | 27   | 27   | 27   | 27   |
| TRB     |    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |

All units are thoroughly tested in the factory before shipping. Nonetheless, it is always good practice to check all control and safety systems after a reasonable period of operation. All the control operations must be carried out by qualified personnel; the wrong settings on the above devices can cause serious damage to the unit.

#### 16.3.1 High pressure switch

The high pressure switch stops the compressor (generating the relative alarm) when the delivery pressure exceeds the set value.

The control of its correct working can be made by closing the air suction on the exchanger (in cold mode) and, keeping the high pressure gauge under control, checking it intervenes upon reaching the calibrated value.

#### WARNING

If the switch does not trip at the calibrated value, stop the compressor immediately and identify the cause. Reset is manual and only enabled once the pressure drops below the differential value. (For the set and differential values, see the technical manual).

#### 16.3.2 Low pressure switch

The low pressure switch stops the compressor (generating the relative alarm) when the suction pressure drops below the set value. The control of its correct working can be made (after about 5 minutes of operation) by slowly closing the tap on the liquid pipe and, keeping the low pressure gauge under control, checking it intervenes upon reaching the calibrated value.

#### WARNING

If the switch does not trip at the calibrated value, stop the compressor immediately and identify the cause. Reset is manual and only enabled once the pressure rises above the differential value. (For the set and differential values, see the technical manual).

#### 16.1.3 Anti-freeze control

The anti-freeze control, managed by electronic regulation and by the temperature probe at the evaporator outlet, has the job of preventing the formation of ice when the water flow rate is too low. The control of its correct working can be made by gradually increasing the anti-freeze set until it exceeds the

outlet water temperature and, keeping the water temperature under control with a precise

thermometer, checking that the unit switches off, generating the relative alarm. After this

operation, bring the anti-freeze set back to its original value..

## 17 DIMENSIONS

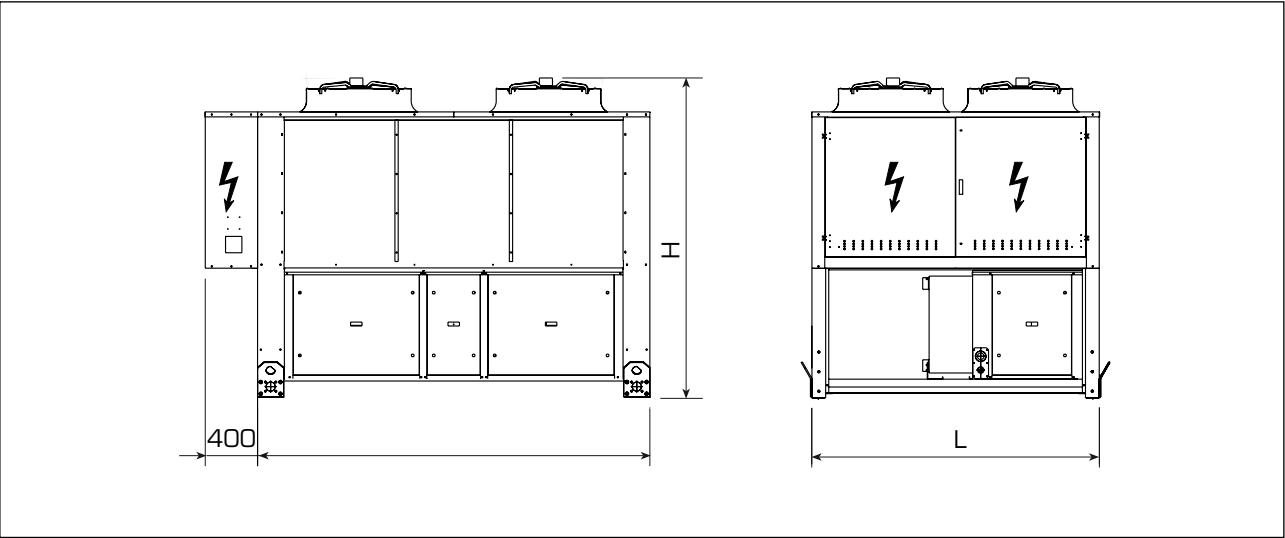
As can be seen from the technical data tables, the dimensions for the various sizes differ only in depth (P), while the height (H) and width (L) are the same for all the sizes.

**NOTE**

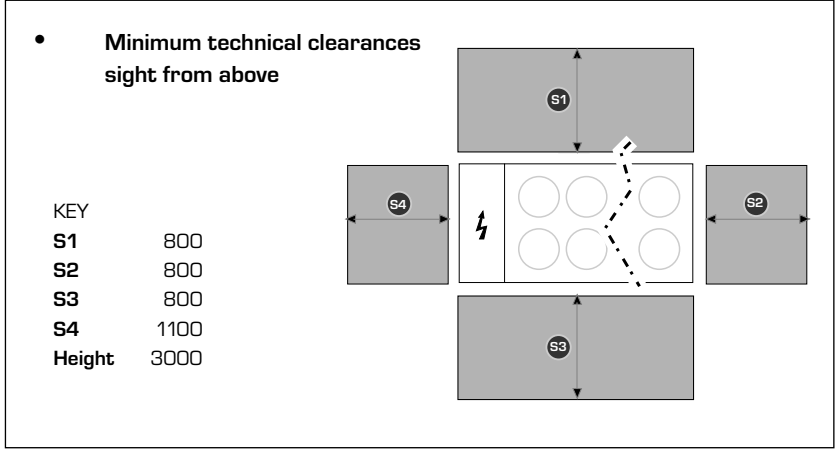
- The figure below contains an illustrative table for the effective dimensions and the number of fans, with reference to the table.

- For the position of the:  
“PLUMBING CONNECTIONS (in the various set-ups)”  
“ANTI-VIBRATION DEVICE POSITION”  
Refer to the installation manual.

### 17.1 DIMENTION TABLES

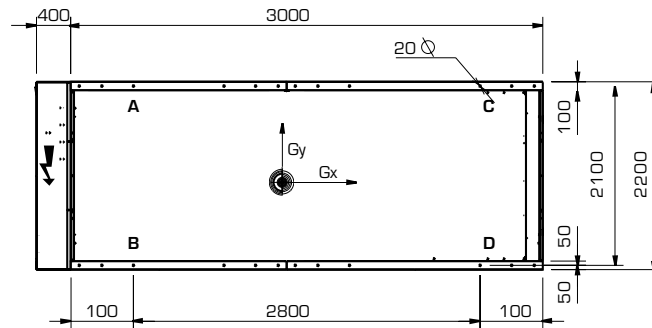


| NRA  | Dimensions in mm |      |      |         |
|------|------------------|------|------|---------|
|      | L                | H    | P    | n° fans |
| 0800 | 2200             | 2450 | 3400 | 4       |
| 0900 | 2200             | 2450 | 3400 | 4       |
| 1000 | 2200             | 2450 | 3400 | 4       |
| 1250 | 2200             | 2450 | 4250 | 6       |
| 1400 | 2200             | 2450 | 4250 | 6       |
| 1500 | 2200             | 2450 | 4250 | 6       |
| 1650 | 2200             | 2450 | 5750 | 8       |
| 1800 | 2200             | 2450 | 5750 | 8       |

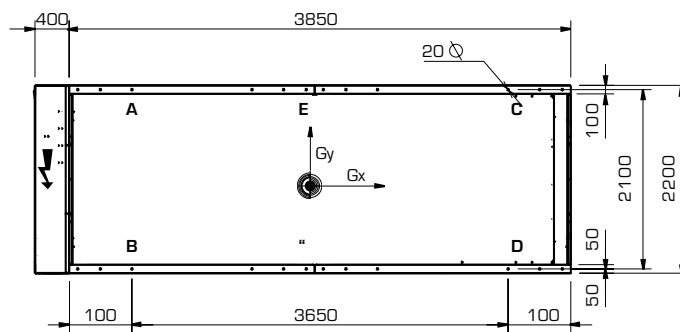


## 18 WEIGHTS AND CENTRES OF MASS

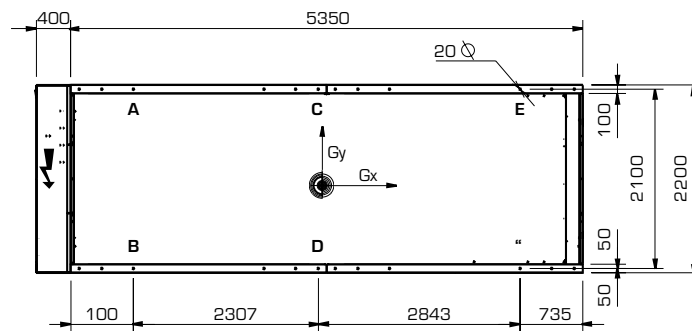
NRA "0800 - 0900 - 1000"



NRA "1250 - 1400 - 1500"



NRA "1650 - 1800"



**18.1 DISTRIBUTION WEIGHTS PERCENTAGE  
ON RESTS WITHOUT WATER**

| NRA | MOD. | VERS. | WEI-<br>GHT<br>kg. | CENTRE OF<br>MASS |      | DISTRIBUTION WEIGHTS PERCENTAGE ON RESTS |       |       |       |   |   |   |   |   |   | KIT<br>AVX |
|-----|------|-------|--------------------|-------------------|------|------------------------------------------|-------|-------|-------|---|---|---|---|---|---|------------|
|     |      |       |                    | Gx                | Gy   | A                                        | B     | C     | D     | E | F | H | I | J | K |            |
| 800 | °    | 00    | 2350               | 1745              | 837  | 21,0%                                    | 34,1% | 17,1% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | °    | 01    | 2557               | 1773              | 985  | 26,7%                                    | 27,5% | 22,6% | 23,2% |   |   |   |   |   |   | 152        |
| 800 | °    | 02    | 2620               | 1775              | 998  | 27,0%                                    | 27,1% | 22,9% | 23,0% |   |   |   |   |   |   | 152        |
| 800 | °    | 03    | 2577               | 1174              | 991  | 26,9%                                    | 27,3% | 22,7% | 23,1% |   |   |   |   |   |   | 152        |
| 800 | °    | 04    | 2669               | 1776              | 1009 | 27,3%                                    | 26,8% | 23,1% | 22,7% |   |   |   |   |   |   | 152        |
| 800 | °    | P1    | 2417               | 1773              | 985  | 21,2%                                    | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | °    | P2    | 2480               | 1775              | 998  | 21,2%                                    | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | °    | P3    | 2437               | 1774              | 991  | 21,2%                                    | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | °    | P4    | 2529               | 1776              | 1009 | 21,2%                                    | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | A    | 00    | 2430               | 1750              | 845  | 21,2%                                    | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | A    | 01    | 2644               | 1777              | 984  | 26,7%                                    | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 800 | A    | 02    | 2707               | 1778              | 997  | 27,0%                                    | 27,1% | 22,9% | 23,0% |   |   |   |   |   |   | 152        |
| 800 | A    | 03    | 2664               | 1777              | 990  | 26,8%                                    | 27,3% | 22,7% | 23,2% |   |   |   |   |   |   | 152        |
| 800 | A    | 04    | 2756               | 1779              | 1008 | 27,2%                                    | 26,8% | 23,1% | 22,8% |   |   |   |   |   |   | 152        |
| 800 | A    | P1    | 2504               | 1777              | 984  | 26,7%                                    | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | A    | P2    | 2567               | 1778              | 997  | 26,7%                                    | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | A    | P3    | 2524               | 1777              | 990  | 26,7%                                    | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | A    | P4    | 2666               | 1779              | 1008 | 26,7%                                    | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | L    | 00    | 2530               | 1749              | 853  | 21,4%                                    | 33,6% | 17,5% | 27,5% |   |   |   |   |   |   | 151        |
| 800 | L    | 01    | 2741               | 1775              | 984  | 26,7%                                    | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 800 | L    | 02    | 2804               | 1776              | 996  | 27,0%                                    | 27,0% | 22,9% | 23,0% |   |   |   |   |   |   | 152        |
| 800 | L    | 03    | 2761               | 1776              | 990  | 26,8%                                    | 27,3% | 22,7% | 23,1% |   |   |   |   |   |   | 152        |
| 800 | L    | 04    | 2853               | 1778              | 1007 | 27,2%                                    | 26,9% | 23,1% | 22,8% |   |   |   |   |   |   | 152        |
| 800 | L    | P1    | 2601               | 1775              | 984  | 26,7%                                    | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | L    | P2    | 2664               | 1776              | 996  | 26,7%                                    | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | L    | P3    | 2621               | 1776              | 990  | 26,7%                                    | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | L    | P4    | 2713               | 1778              | 1007 | 26,7%                                    | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | H    | 00    | 2480               | 1753              | 841  | 21,0%                                    | 33,9% | 17,3% | 27,8% |   |   |   |   |   |   | 151        |
| 800 | H    | 01    | 2696               | 1778              | 978  | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 152        |
| 800 | H    | 02    | 2759               | 1780              | 990  | 26,8%                                    | 27,2% | 22,8% | 23,2% |   |   |   |   |   |   | 152        |
| 800 | H    | 03    | 2716               | 1779              | 983  | 26,6%                                    | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 800 | H    | 04    | 2802               | 1781              | 1001 | 27,0%                                    | 27,0% | 23,0% | 23,0% |   |   |   |   |   |   | 152        |
| 800 | H    | P1    | 2556               | 1778              | 978  | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 800 | H    | P2    | 2619               | 1780              | 990  | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 800 | H    | P3    | 2576               | 1779              | 983  | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 800 | H    | P4    | 2668               | 1781              | 1001 | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900 | °    | 00    | 2430               | 1750              | 828  | 20,7%                                    | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | °    | 01    | 2643               | 1777              | 972  | 26,4%                                    | 27,8% | 22,4% | 23,5% |   |   |   |   |   |   | 152        |
| 900 | °    | 02    | 2703               | 1778              | 984  | 26,6%                                    | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 900 | °    | 03    | 2663               | 1777              | 978  | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 152        |
| 900 | °    | 04    | 2752               | 1779              | 995  | 26,9%                                    | 27,1% | 22,9% | 23,1% |   |   |   |   |   |   | 152        |
| 900 | °    | P1    | 2503               | 1777              | 972  | 20,7%                                    | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | °    | P2    | 2563               | 1778              | 984  | 20,7%                                    | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | °    | P3    | 2523               | 1777              | 978  | 20,7%                                    | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | °    | P4    | 2612               | 1779              | 995  | 20,7%                                    | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | A    | 00    | 2520               | 1756              | 836  | 20,9%                                    | 33,9% | 17,2% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | A    | 01    | 2734               | 1780              | 971  | 26,3%                                    | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 152        |
| 900 | A    | 02    | 2794               | 1781              | 983  | 26,6%                                    | 27,4% | 22,7% | 23,4% |   |   |   |   |   |   | 152        |
| 900 | A    | 03    | 2754               | 1780              | 977  | 26,4%                                    | 27,6% | 22,5% | 23,5% |   |   |   |   |   |   | 152        |
| 900 | A    | 04    | 2743               | 1782              | 994  | 26,8%                                    | 27,1% | 22,9% | 23,2% |   |   |   |   |   |   | 152        |
| 900 | A    | P1    | 2594               | 1780              | 971  | 26,3%                                    | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 151        |
| 900 | A    | P2    | 2654               | 1781              | 983  | 26,3%                                    | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 151        |
| 900 | A    | P3    | 2614               | 1780              | 977  | 26,3%                                    | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 151        |
| 900 | A    | P4    | 2703               | 1782              | 994  | 26,3%                                    | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 151        |
| 900 | L    | 00    | 2570               | 1753              | 852  | 21,3%                                    | 33,6% | 17,5% | 27,6% |   |   |   |   |   |   | 151        |
| 900 | L    | 01    | 2796               | 1777              | 979  | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 152        |
| 900 | L    | 02    | 2856               | 1778              | 990  | 26,8%                                    | 27,3% | 22,8% | 23,2% |   |   |   |   |   |   | 152        |
| 900 | L    | 03    | 2816               | 1778              | 984  | 26,7%                                    | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 900 | L    | 04    | 2905               | 1780              | 1001 | 27,0%                                    | 27,0% | 23,0% | 23,0% |   |   |   |   |   |   | 152        |
| 900 | L    | P1    | 2656               | 1777              | 979  | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900 | L    | P2    | 2716               | 1778              | 990  | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900 | L    | P3    | 2676               | 1778              | 984  | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900 | L    | P4    | 2765               | 17880             | 1001 | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |

| NRA  | MOD. | VERS. | WEI-<br>GHT<br>kg. | CENTRE OF<br>MASS |      | DISTRIBUTION WEIGHTS PERCENTAGE ON RESTS |       |       |       |   |   |   |   |   |   | KIT<br>AVX |
|------|------|-------|--------------------|-------------------|------|------------------------------------------|-------|-------|-------|---|---|---|---|---|---|------------|
|      |      |       |                    | Gx                | Gy   | A                                        | B     | C     | D     | E | F | H | I | J | K |            |
| 900  | H    | 00    | 2580               | 1759              | 831  | 20,7%                                    | 34,0% | 17,2% | 28,1% |   |   |   |   |   |   | 151        |
| 900  | H    | 01    | 2793               | 1782              | 964  | 26,1%                                    | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 152        |
| 900  | H    | 02    | 2853               | 1783              | 975  | 26,3%                                    | 27,5% | 22,5% | 23,6% |   |   |   |   |   |   | 152        |
| 900  | H    | 03    | 2713               | 1783              | 969  | 26,2%                                    | 27,7% | 22,4% | 23,7% |   |   |   |   |   |   | 152        |
| 900  | H    | 04    | 2902               | 1784              | 986  | 26,6%                                    | 27,3% | 22,8% | 23,4% |   |   |   |   |   |   | 152        |
| 900  | H    | P1    | 2653               | 1732              | 964  | 26,1%                                    | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 151        |
| 900  | H    | P2    | 2713               | 1783              | 975  | 26,1%                                    | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 151        |
| 900  | H    | P3    | 2673               | 1783              | 969  | 26,1%                                    | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 151        |
| 900  | H    | P4    | 2762               | 1784              | 986  | 26,1%                                    | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 151        |
| 1000 | °    | 00    | 2465               | 1753              | 846  | 21,2%                                    | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | °    | 01    | 2679               | 1778              | 983  | 26,6%                                    | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | °    | 02    | 2742               | 1779              | 995  | 26,9%                                    | 27,1% | 22,9% | 23,1% |   |   |   |   |   |   | 152        |
| 1000 | °    | 03    | 2699               | 1779              | 988  | 26,7%                                    | 27,3% | 22,7% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | °    | 04    | 2791               | 1781              | 1006 | 27,1%                                    | 26,8% | 23,1% | 22,9% |   |   |   |   |   |   | 152        |
| 1000 | °    | P1    | 2539               | 1778              | 983  | 21,2%                                    | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | °    | P2    | 2602               | 1779              | 995  | 21,2%                                    | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | °    | P3    | 2559               | 1779              | 988  | 21,2%                                    | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | °    | P4    | 2651               | 1781              | 1006 | 21,2%                                    | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | A    | 00    | 2560               | 1758              | 854  | 21,3%                                    | 33,5% | 17,6% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | A    | 01    | 2768               | 1781              | 982  | 26,5%                                    | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 152        |
| 1000 | A    | 02    | 2831               | 1782              | 994  | 26,8%                                    | 27,1% | 22,9% | 23,2% |   |   |   |   |   |   | 152        |
| 1000 | A    | 03    | 2788               | 1782              | 988  | 26,7%                                    | 27,3% | 22,8% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | A    | 04    | 2880               | 1783              | 1005 | 27,1%                                    | 26,8% | 23,2% | 23,0% |   |   |   |   |   |   | 152        |
| 1000 | A    | P1    | 2628               | 1781              | 982  | 26,5%                                    | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 151        |
| 1000 | A    | P2    | 2691               | 1782              | 994  | 26,5%                                    | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 151        |
| 1000 | A    | P3    | 2648               | 1782              | 988  | 26,5%                                    | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 151        |
| 1000 | A    | P4    | 2740               | 1783              | 1005 | 26,5%                                    | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 151        |
| 1000 | L    | 00    | 2580               | 1752              | 854  | 21,4%                                    | 33,6% | 17,5% | 27,5% |   |   |   |   |   |   | 151        |
| 1000 | L    | 01    | 2787               | 1777              | 981  | 26,6%                                    | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | L    | 02    | 2850               | 1778              | 993  | 26,9%                                    | 27,2% | 22,8% | 23,1% |   |   |   |   |   |   | 152        |
| 1000 | L    | 03    | 2807               | 1778              | 986  | 26,7%                                    | 27,4% | 22,7% | 23,2% |   |   |   |   |   |   | 152        |
| 1000 | L    | 04    | 2899               | 1779              | 1003 | 27,1%                                    | 26,9% | 23,1% | 22,9% |   |   |   |   |   |   | 152        |
| 1000 | L    | P1    | 2647               | 1777              | 981  | 26,6%                                    | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 151        |
| 1000 | L    | P2    | 2710               | 1778              | 993  | 26,6%                                    | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 151        |
| 1000 | L    | P3    | 2667               | 1778              | 986  | 26,6%                                    | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 151        |
| 1000 | L    | P4    | 2759               | 1779              | 1003 | 26,6%                                    | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 151        |
| 1000 | H    | 00    | 2610               | 1761              | 849  | 21,1%                                    | 33,5% | 17,6% | 27,8% |   |   |   |   |   |   | 151        |
| 1000 | H    | 01    | 2823               | 1783              | 975  | 26,3%                                    | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 152        |
| 1000 | H    | 02    | 2886               | 1784              | 987  | 26,6%                                    | 27,2% | 22,8% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | H    | 03    | 2843               | 1784              | 981  | 26,5%                                    | 27,4% | 22,7% | 23,5% |   |   |   |   |   |   | 152        |
| 1000 | H    | 04    | 2935               | 1785              | 998  | 26,9%                                    | 27,0% | 23,0% | 23,1% |   |   |   |   |   |   | 152        |
| 1000 | H    | P1    | 2683               | 1783              | 975  | 26,3%                                    | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 151        |
| 1000 | H    | P2    | 2746               | 1784              | 987  | 26,3%                                    | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 151        |
| 1000 | H    | P3    | 2703               | 1784              | 981  | 26,3%                                    | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 151        |
| 1000 | H    | P4    | 2795               | 1785              | 998  | 26,3%                                    | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 151        |
| 1250 | °    | 00    | 3060               | 2155              | 814  | 20,2%                                    | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | °    | 01    | 3294               | 2086              | 926  | 26,2%                                    | 30,0% | 20,4% | 23,4% |   |   |   |   |   |   | 154        |
| 1250 | °    | 02    | 3318               | 2085              | 931  | 26,3%                                    | 29,9% | 20,5% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | °    | 03    | 3312               | 2084              | 931  | 26,4%                                    | 29,9% | 20,5% | 23,2% |   |   |   |   |   |   | 154        |
| 1250 | °    | 04    | 3408               | 2079              | 948  | 26,9%                                    | 29,5% | 20,8% | 22,8% |   |   |   |   |   |   | 154        |
| 1250 | °    | P1    | 3154               | 2086              | 926  | 20,2%                                    | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | °    | P2    | 3178               | 2085              | 931  | 20,2%                                    | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | °    | P3    | 3172               | 2084              | 931  | 20,2%                                    | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | °    | P4    | 3268               | 2079              | 948  | 20,2%                                    | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | A    | 00    | 3170               | 2160              | 823  | 20,3%                                    | 33,9% | 17,1% | 28,6% |   |   |   |   |   |   | 153        |
| 1250 | A    | 01    | 3405               | 2093              | 927  | 26,2%                                    | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 154        |
| 1250 | A    | 02    | 3429               | 2091              | 931  | 26,3%                                    | 29,8% | 20,6% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | A    | 03    | 3426               | 2091              | 932  | 26,3%                                    | 29,8% | 20,6% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | A    | 04    | 3519               | 2085              | 948  | 26,8%                                    | 29,4% | 20,9% | 22,9% |   |   |   |   |   |   | 154        |
| 1250 | A    | P1    | 3265               | 2093              | 927  | 26,2%                                    | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | A    | P2    | 3289               | 2091              | 931  | 26,2%                                    | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | A    | P3    | 3283               | 2091              | 932  | 26,2%                                    | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | A    | P4    | 3379               | 2085              | 948  | 26,2%                                    | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 153        |

| NRA  | MOD. | VERS. | WEI-<br>GHT<br>kg. | CENTRE OF<br>MASS |     | DISTRIBUTION WEIGHTS PERCENTAGE ON RESTS |       |       |       |   |   |   |   |   |   | KIT<br>AVX |
|------|------|-------|--------------------|-------------------|-----|------------------------------------------|-------|-------|-------|---|---|---|---|---|---|------------|
|      |      |       |                    | Gx                | Gy  | A                                        | B     | C     | D     | E | F | H | I | J | K |            |
| 1250 | L    | 00    | 3310               | 2161              | 833 | 20,6%                                    | 33,7% | 17,4% | 28,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | 01    | 3545               | 2095              | 928 | 26,2%                                    | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 154        |
| 1250 | L    | 02    | 3569               | 2094              | 932 | 26,3%                                    | 27,9% | 20,6% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | L    | 03    | 3563               | 2094              | 933 | 26,3%                                    | 29,7% | 20,7% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | L    | 04    | 3659               | 2088              | 949 | 26,8%                                    | 29,4% | 20,9% | 22,9% |   |   |   |   |   |   | 154        |
| 1250 | L    | P1    | 3405               | 2095              | 928 | 26,2%                                    | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | P2    | 3429               | 2094              | 932 | 26,2%                                    | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | P3    | 3423               | 2094              | 933 | 26,2%                                    | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | P4    | 3514               | 2088              | 949 | 26,2%                                    | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | H    | 00    | 3360               | 2170              | 829 | 20,4%                                    | 33,6% | 17,4% | 28,6% |   |   |   |   |   |   | 153        |
| 1250 | H    | 01    | 3592               | 2103              | 923 | 25,9%                                    | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 154        |
| 1250 | H    | 02    | 3616               | 2101              | 927 | 26,1%                                    | 29,8% | 20,6% | 23,6% |   |   |   |   |   |   | 154        |
| 1250 | H    | 03    | 3610               | 2101              | 928 | 26,1%                                    | 29,7% | 20,6% | 23,5% |   |   |   |   |   |   | 154        |
| 1250 | H    | 04    | 3706               | 2096              | 943 | 26,5%                                    | 29,4% | 20,9% | 23,2% |   |   |   |   |   |   | 154        |
| 1250 | H    | P1    | 3452               | 2103              | 923 | 25,9%                                    | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1250 | H    | P2    | 3476               | 2101              | 927 | 25,9%                                    | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1250 | H    | P3    | 3470               | 2101              | 928 | 25,9%                                    | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1250 | H    | P4    | 3566               | 2096              | 943 | 25,9%                                    | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | °    | 00    | 3150               | 2160              | 808 | 20,0%                                    | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | °    | 01    | 3383               | 2092              | 917 | 25,9%                                    | 30,2% | 20,3% | 23,6% |   |   |   |   |   |   | 154        |
| 1400 | °    | 02    | 3407               | 2090              | 921 | 26,0%                                    | 30,1% | 20,4% | 23,5% |   |   |   |   |   |   | 154        |
| 1400 | °    | 03    | 3401               | 2090              | 922 | 26,1%                                    | 30,0% | 20,4% | 23,5% |   |   |   |   |   |   | 154        |
| 1400 | °    | 04    | 3497               | 2084              | 938 | 26,5%                                    | 29,7% | 20,6% | 23,1% |   |   |   |   |   |   | 154        |
| 1400 | °    | P1    | 3243               | 2092              | 917 | 20,0%                                    | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | °    | P2    | 3267               | 2090              | 921 | 20,0%                                    | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | °    | P3    | 3261               | 2090              | 922 | 20,0%                                    | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | °    | P4    | 3357               | 2084              | 938 | 20,0%                                    | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | A    | 00    | 3270               | 2166              | 815 | 20,1%                                    | 34,0% | 17,0% | 28,8% |   |   |   |   |   |   | 153        |
| 1400 | A    | 01    | 3505               | 2098              | 916 | 25,8%                                    | 30,1% | 20,4% | 23,7% |   |   |   |   |   |   | 154        |
| 1400 | A    | 02    | 3529               | 2097              | 920 | 25,9%                                    | 30,0% | 20,4% | 23,6% |   |   |   |   |   |   | 154        |
| 1400 | A    | 03    | 3523               | 2097              | 921 | 26,0%                                    | 30,0% | 20,4% | 23,6% |   |   |   |   |   |   | 154        |
| 1400 | A    | 04    | 3619               | 2091              | 937 | 26,4%                                    | 29,6% | 20,7% | 23,2% |   |   |   |   |   |   | 154        |
| 1400 | A    | P1    | 3365               | 2098              | 916 | 25,8%                                    | 30,1% | 20,4% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | A    | P2    | 3389               | 2097              | 920 | 25,8%                                    | 30,1% | 20,4% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | A    | P3    | 3383               | 2097              | 921 | 25,8%                                    | 30,1% | 20,4% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | A    | P4    | 3479               | 2091              | 937 | 25,8%                                    | 30,1% | 20,4% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | L    | 00    | 3350               | 2163              | 834 | 20,6%                                    | 33,6% | 17,4% | 28,4% |   |   |   |   |   |   | 153        |
| 1400 | L    | 01    | 3587               | 2098              | 927 | 26,1%                                    | 29,8% | 20,6% | 23,5% |   |   |   |   |   |   | 154        |
| 1400 | L    | 02    | 3611               | 2096              | 931 | 26,2%                                    | 29,7% | 20,7% | 23,4% |   |   |   |   |   |   | 154        |
| 1400 | L    | 03    | 3605               | 2096              | 932 | 26,2%                                    | 29,7% | 20,7% | 23,4% |   |   |   |   |   |   | 154        |
| 1400 | L    | 04    | 3701               | 2091              | 948 | 26,7%                                    | 29,4% | 20,9% | 23,0% |   |   |   |   |   |   | 154        |
| 1400 | L    | P1    | 3447               | 2098              | 927 | 26,1%                                    | 29,8% | 20,6% | 23,5% |   |   |   |   |   |   | 153        |
| 1400 | L    | P2    | 3471               | 2096              | 931 | 26,1%                                    | 29,8% | 20,6% | 23,5% |   |   |   |   |   |   | 153        |
| 1400 | L    | P3    | 3465               | 2096              | 932 | 26,1%                                    | 29,8% | 20,6% | 23,5% |   |   |   |   |   |   | 153        |
| 1400 | L    | P4    | 3561               | 2091              | 948 | 26,1%                                    | 29,8% | 20,6% | 23,5% |   |   |   |   |   |   | 153        |
| 1400 | H    | 00    | 3400               | 2172              | 830 | 20,4%                                    | 33,6% | 17,4% | 28,6% |   |   |   |   |   |   | 153        |
| 1400 | H    | 01    | 3635               | 2105              | 922 | 25,9%                                    | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 154        |
| 1400 | H    | 02    | 3569               | 2104              | 926 | 26,0%                                    | 29,7% | 20,6% | 23,6% |   |   |   |   |   |   | 154        |
| 1400 | H    | 03    | 3653               | 2104              | 927 | 26,0%                                    | 29,7% | 20,6% | 23,6% |   |   |   |   |   |   | 154        |
| 1400 | H    | 04    | 3749               | 2098              | 942 | 26,5%                                    | 29,4% | 20,9% | 23,2% |   |   |   |   |   |   | 154        |
| 1400 | H    | P1    | 3495               | 2105              | 922 | 25,9%                                    | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | H    | P2    | 3519               | 2104              | 926 | 25,9%                                    | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | H    | P3    | 3513               | 2104              | 927 | 25,9%                                    | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | H    | P4    | 3609               | 2098              | 942 | 25,9%                                    | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1500 | °    | 00    | 3250               | 2164              | 826 | 20,4%                                    | 33,8% | 17,2% | 28,6% |   |   |   |   |   |   | 153        |
| 1500 | °    | 01    | 3489               | 2095              | 930 | 26,2%                                    | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 154        |
| 1500 | °    | 02    | 3513               | 2094              | 934 | 26,3%                                    | 29,7% | 20,7% | 23,3% |   |   |   |   |   |   | 154        |
| 1500 | °    | 03    | 3484               | 2095              | 931 | 26,2%                                    | 29,7% | 20,6% | 23,4% |   |   |   |   |   |   | 154        |
| 1500 | °    | 04    | 3580               | 2089              | 947 | 26,7%                                    | 29,4% | 20,9% | 23,0% |   |   |   |   |   |   | 154        |
| 1500 | °    | P1    | 3349               | 2095              | 930 | 20,4%                                    | 33,8% | 17,2% | 28,6% |   |   |   |   |   |   | 153        |
| 1500 | °    | P2    | 3373               | 2094              | 934 | 20,4%                                    | 33,8% | 17,2% | 28,6% |   |   |   |   |   |   | 153        |
| 1500 | °    | P3    | 3344               | 2095              | 931 | 20,4%                                    | 33,8% | 17,2% | 28,6% |   |   |   |   |   |   | 153        |
| 1500 | °    | P4    | 3440               | 2089              | 947 | 20,4%                                    | 33,8% | 17,2% | 28,6% |   |   |   |   |   |   | 153        |

| NRA  | MOD. | VERS. | WEI-<br>GHT<br>kg. | CENTRE OF<br>MASS |     | DISTRIBUTION WEIGHTS PERCENTAGE ON RESTS |       |       |       |      |       |   |   |   |   | KIT<br>AVX |
|------|------|-------|--------------------|-------------------|-----|------------------------------------------|-------|-------|-------|------|-------|---|---|---|---|------------|
|      |      |       |                    | Gx                | Gy  | A                                        | B     | C     | D     | E    | F     | H | I | J | K |            |
| 1500 | A    | 00    | 3370               | 2170              | 835 | 20,5%                                    | 33,5% | 17,5% | 28,5% |      |       |   |   |   |   | 153        |
| 1500 | A    | 01    | 3623               | 2102              | 931 | 26,1%                                    | 29,6% | 20,7% | 23,5% |      |       |   |   |   |   | 154        |
| 1500 | A    | 02    | 3647               | 2101              | 935 | 26,3%                                    | 29,6% | 20,8% | 23,4% |      |       |   |   |   |   | 154        |
| 1500 | A    | 03    | 3618               | 2102              | 932 | 26,2%                                    | 29,6% | 20,7% | 23,5% |      |       |   |   |   |   | 154        |
| 1500 | A    | 04    | 3714               | 2097              | 947 | 26,6%                                    | 29,3% | 21,0% | 23,1% |      |       |   |   |   |   | 154        |
| 1500 | A    | P1    | 3483               | 2102              | 931 | 26,1%                                    | 29,6% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | A    | P2    | 3507               | 2101              | 935 | 26,1%                                    | 29,6% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | A    | P3    | 3478               | 2102              | 932 | 26,1%                                    | 29,6% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | A    | P4    | 3574               | 2097              | 947 | 26,1%                                    | 29,6% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | L    | 00    | 3390               | 2165              | 835 | 20,6%                                    | 33,6% | 17,4% | 28,4% |      |       |   |   |   |   | 153        |
| 1500 | L    | 01    | 3646               | 2099              | 930 | 26,2%                                    | 29,7% | 20,7% | 23,5% |      |       |   |   |   |   | 154        |
| 1500 | L    | 02    | 3670               | 2097              | 934 | 26,3%                                    | 29,6% | 20,7% | 23,4% |      |       |   |   |   |   | 154        |
| 1500 | L    | 03    | 3641               | 2098              | 931 | 26,2%                                    | 29,7% | 20,7% | 23,4% |      |       |   |   |   |   | 154        |
| 1500 | L    | 04    | 3737               | 2093              | 946 | 26,6%                                    | 29,4% | 20,9% | 23,1% |      |       |   |   |   |   | 154        |
| 1500 | L    | P1    | 3506               | 2099              | 930 | 26,2%                                    | 29,7% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | L    | P2    | 3530               | 2097              | 934 | 26,2%                                    | 29,7% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | L    | P3    | 3501               | 2098              | 931 | 26,2%                                    | 29,7% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | L    | P4    | 3597               | 2093              | 946 | 26,2%                                    | 29,7% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | H    | 00    | 3440               | 2174              | 931 | 20,4%                                    | 33,5% | 17,4% | 28,6% |      |       |   |   |   |   | 153        |
| 1500 | H    | 01    | 3695               | 2106              | 925 | 25,9%                                    | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 154        |
| 1500 | H    | 02    | 3719               | 2105              | 929 | 26,1%                                    | 29,7% | 20,7% | 23,6% |      |       |   |   |   |   | 154        |
| 1500 | H    | 03    | 3690               | 2106              | 925 | 26,0%                                    | 29,7% | 20,6% | 23,7% |      |       |   |   |   |   | 154        |
| 1500 | H    | 04    | 3786               | 2100              | 941 | 26,4%                                    | 29,4% | 20,9% | 23,3% |      |       |   |   |   |   | 154        |
| 1500 | H    | P1    | 3555               | 2106              | 925 | 25,9%                                    | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1500 | H    | P2    | 3579               | 2105              | 929 | 25,9%                                    | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1500 | H    | P3    | 3550               | 2106              | 925 | 25,9%                                    | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1500 | H    | P4    | 3646               | 2100              | 941 | 25,9%                                    | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1650 | °    | 00    | 3660               | 2467              | 915 | 7,0%                                     | 9,8%  | 27,1% | 38,0% | 7,5% | 10,5% |   |   |   |   | 601        |
| 1650 | °    | 01    | 3980               | 2496              | 939 | 6,8%                                     | 9,2%  | 28,0% | 37,6% | 7,9% | 10,6% |   |   |   |   | 602        |
| 1650 | °    | 02    | 4090               | 2526              | 963 | 6,6%                                     | 8,5%  | 28,9% | 37,2% | 8,3% | 10,6% |   |   |   |   | 602        |
| 1650 | °    | 03    | 4010               | 2504              | 945 | 6,7%                                     | 9,0%  | 28,2% | 37,5% | 8,0% | 10,6% |   |   |   |   | 602        |
| 1650 | °    | 04    | 4150               | 2541              | 975 | 6,5%                                     | 8,1%  | 29,4% | 36,9% | 8,5% | 10,6% |   |   |   |   | 602        |
| 1650 | °    | P1    | 3766               | 2496              | 939 | 6,8%                                     | 9,2%  | 28,0% | 37,6% | 7,9% | 10,6% |   |   |   |   | 601        |
| 1650 | °    | P2    | 3876               | 2526              | 963 | 6,6%                                     | 8,5%  | 28,9% | 37,2% | 8,3% | 10,6% |   |   |   |   | 603        |
| 1650 | °    | P3    | 3796               | 2504              | 945 | 6,7%                                     | 9,0%  | 28,2% | 37,5% | 8,0% | 10,6% |   |   |   |   | 601        |
| 1650 | °    | P4    | 3936               | 2541              | 975 | 6,5%                                     | 8,1%  | 29,4% | 36,9% | 8,5% | 10,6% |   |   |   |   | 603        |
| 1650 | A    | 00    | 3840               | 2477              | 926 | 6,7%                                     | 9,2%  | 28,0% | 38,5% | 7,4% | 10,2% |   |   |   |   | 604        |
| 1650 | A    | 01    | 4160               | 2504              | 948 | 6,5%                                     | 8,6%  | 28,8% | 38,1% | 7,8% | 10,3% |   |   |   |   | 602        |
| 1650 | A    | 02    | 4270               | 2532              | 971 | 6,3%                                     | 7,9%  | 29,7% | 37,6% | 8,2% | 10,4% |   |   |   |   | 602        |
| 1650 | A    | 03    | 4190               | 2512              | 954 | 6,4%                                     | 8,4%  | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 602        |
| 1650 | A    | 04    | 4330               | 2547              | 982 | 6,1%                                     | 7,6%  | 30,1% | 37,4% | 8,4% | 10,4% |   |   |   |   | 602        |
| 1650 | A    | P1    | 3980               | 2504              | 948 | 6,5%                                     | 8,6%  | 28,8% | 38,1% | 7,8% | 10,3% |   |   |   |   | 605        |
| 1650 | A    | P2    | 4090               | 2532              | 971 | 6,3%                                     | 7,9%  | 29,7% | 37,6% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1650 | A    | P3    | 4010               | 2512              | 954 | 6,4%                                     | 8,4%  | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 605        |
| 1650 | A    | P4    | 4150               | 2547              | 982 | 6,1%                                     | 7,6%  | 30,1% | 37,4% | 8,4% | 10,4% |   |   |   |   | 606        |
| 1650 | L    | 00    | 3850               | 2504              | 948 | 6,5%                                     | 8,6%  | 28,8% | 38,1% | 7,8% | 10,3% |   |   |   |   | 604        |
| 1650 | L    | 01    | 4160               | 2504              | 948 | 6,5%                                     | 8,6%  | 28,8% | 38,1% | 7,8% | 10,3% |   |   |   |   | 602        |
| 1650 | L    | 02    | 4270               | 2532              | 971 | 6,3%                                     | 7,9%  | 29,7% | 37,6% | 8,2% | 10,4% |   |   |   |   | 602        |
| 1650 | L    | 03    | 4190               | 2512              | 954 | 6,4%                                     | 8,4%  | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 602        |
| 1650 | L    | 04    | 4330               | 2547              | 982 | 6,1%                                     | 7,6%  | 30,1% | 37,4% | 8,4% | 10,4% |   |   |   |   | 602        |
| 1650 | L    | P1    | 3946               | 2504              | 948 | 6,5%                                     | 8,6%  | 28,8% | 38,1% | 7,8% | 10,3% |   |   |   |   | 605        |
| 1650 | L    | P2    | 4056               | 2532              | 971 | 6,3%                                     | 7,9%  | 29,7% | 37,6% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1650 | L    | P3    | 3976               | 2512              | 954 | 6,4%                                     | 8,4%  | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 605        |
| 1650 | L    | P4    | 4116               | 2547              | 982 | 6,1%                                     | 7,6%  | 30,1% | 37,4% | 8,4% | 10,4% |   |   |   |   | 606        |
| 1650 | H    | 00    | 3860               | 2478              | 927 | 6,7%                                     | 9,2%  | 28,0% | 38,4% | 7,5% | 10,3% |   |   |   |   | 604        |
| 1650 | H    | 01    | 4180               | 2505              | 949 | 6,5%                                     | 8,6%  | 28,8% | 38,0% | 7,8% | 10,3% |   |   |   |   | 602        |
| 1650 | H    | 02    | 4290               | 2533              | 971 | 6,3%                                     | 7,9%  | 29,7% | 37,5% | 8,2% | 10,4% |   |   |   |   | 602        |
| 1650 | H    | 03    | 4210               | 2513              | 955 | 6,4%                                     | 8,4%  | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 602        |
| 1650 | H    | 04    | 4350               | 2547              | 983 | 6,2%                                     | 7,6%  | 30,1% | 37,3% | 8,4% | 10,4% |   |   |   |   | 602        |
| 1650 | H    | P1    | 3966               | 2505              | 949 | 6,5%                                     | 8,6%  | 28,8% | 38,0% | 7,8% | 10,3% |   |   |   |   | 605        |
| 1650 | H    | P2    | 4076               | 2533              | 971 | 6,3%                                     | 7,9%  | 29,7% | 37,5% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1650 | H    | P3    | 3996               | 2513              | 955 | 6,4%                                     | 8,4%  | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 605        |
| 1650 | H    | P4    | 4136               | 2547              | 983 | 6,2%                                     | 7,6%  | 30,1% | 37,3% | 8,4% | 10,4% |   |   |   |   | 606        |

| NRA  | MOD. | VERS. | WEI-<br>GHT<br>kg. | CENTRE OF<br>MASS |     | DISTRIBUTION WEIGHTS PERCENTAGE ON RESTS |      |       |       |      |       |   |   |   |   | KIT<br>AVX |
|------|------|-------|--------------------|-------------------|-----|------------------------------------------|------|-------|-------|------|-------|---|---|---|---|------------|
|      |      |       |                    | Gx                | Gy  | A                                        | B    | C     | D     | E    | F     | H | I | J | K |            |
| 1800 | °    | 00    | 3740               | 2472              | 905 | 6,7%                                     | 9,6% | 27,1% | 38,8% | 7,3% | 10,5% |   |   |   |   | 604        |
| 1800 | °    | 01    | 4070               | 2500              | 928 | 6,5%                                     | 8,9% | 28,0% | 38,4% | 7,7% | 10,5% |   |   |   |   | 602        |
| 1800 | °    | 02    | 4180               | 2529              | 952 | 6,3%                                     | 8,2% | 28,9% | 37,9% | 8,1% | 10,6% |   |   |   |   | 602        |
| 1800 | °    | 03    | 4100               | 2508              | 934 | 6,4%                                     | 8,7% | 28,2% | 38,3% | 7,8% | 10,5% |   |   |   |   | 602        |
| 1800 | °    | 04    | 4240               | 2544              | 964 | 6,2%                                     | 7,9% | 29,4% | 37,7% | 8,3% | 10,6% |   |   |   |   | 602        |
| 1800 | °    | P1    | 3852               | 2500              | 928 | 6,5%                                     | 8,9% | 28,0% | 38,4% | 7,7% | 10,5% |   |   |   |   | 604        |
| 1800 | °    | P2    | 3962               | 2529              | 952 | 6,3%                                     | 8,2% | 28,9% | 37,9% | 8,1% | 10,6% |   |   |   |   | 605        |
| 1800 | °    | P3    | 3882               | 2508              | 934 | 6,4%                                     | 8,7% | 28,2% | 38,3% | 7,8% | 10,5% |   |   |   |   | 604        |
| 1800 | °    | P4    | 4022               | 2544              | 964 | 6,2%                                     | 7,9% | 29,4% | 37,7% | 8,3% | 10,6% |   |   |   |   | 605        |
| 1800 | A    | 00    | 3950               | 2483              | 915 | 6,4%                                     | 8,9% | 28,0% | 39,2% | 7,3% | 10,2% |   |   |   |   | 604        |
| 1800 | A    | 01    | 4280               | 2509              | 937 | 6,2%                                     | 8,3% | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 602        |
| 1800 | A    | 02    | 4390               | 2536              | 959 | 6,0%                                     | 7,7% | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 602        |
| 1800 | A    | 03    | 4310               | 2517              | 943 | 6,1%                                     | 8,2% | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 602        |
| 1800 | A    | 04    | 4450               | 2550              | 971 | 5,9%                                     | 7,4% | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 602        |
| 1800 | A    | P1    | 4062               | 2509              | 937 | 6,2%                                     | 8,3% | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 605        |
| 1800 | A    | P2    | 4172               | 2536              | 959 | 6,0%                                     | 7,7% | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 606        |
| 1800 | A    | P3    | 4092               | 2517              | 943 | 6,1%                                     | 8,2% | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 605        |
| 1800 | A    | P4    | 4232               | 2550              | 971 | 5,9%                                     | 7,4% | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1800 | L    | 00    | 3950               | 2483              | 915 | 6,4%                                     | 8,9% | 28,0% | 39,2% | 7,3% | 10,2% |   |   |   |   | 604        |
| 1800 | L    | 01    | 4280               | 2509              | 937 | 6,2%                                     | 8,3% | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 602        |
| 1800 | L    | 02    | 4390               | 2536              | 959 | 6,0%                                     | 7,7% | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 602        |
| 1800 | L    | 03    | 4310               | 2517              | 943 | 6,1%                                     | 8,2% | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 602        |
| 1800 | L    | 04    | 4450               | 2550              | 971 | 5,9%                                     | 7,4% | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 602        |
| 1800 | L    | P1    | 4062               | 2509              | 937 | 6,2%                                     | 8,3% | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 605        |
| 1800 | L    | P2    | 4172               | 2536              | 959 | 6,0%                                     | 7,7% | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 606        |
| 1800 | L    | P3    | 4092               | 2517              | 943 | 6,1%                                     | 8,2% | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 605        |
| 1800 | L    | P4    | 4232               | 2550              | 971 | 5,9%                                     | 7,4% | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1800 | H    | 00    | 3960               | 2483              | 915 | 6,4%                                     | 8,9% | 28,0% | 39,2% | 7,3% | 10,2% |   |   |   |   | 604        |
| 1800 | H    | 01    | 4280               | 2509              | 937 | 6,2%                                     | 8,3% | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 602        |
| 1800 | H    | 02    | 4390               | 2536              | 959 | 6,0%                                     | 7,7% | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 602        |
| 1800 | H    | 03    | 4310               | 2517              | 943 | 6,1%                                     | 8,2% | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 602        |
| 1800 | H    | 04    | 4450               | 2550              | 971 | 5,9%                                     | 7,4% | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 602        |
| 1800 | H    | P1    | 4062               | 2509              | 937 | 6,2%                                     | 8,3% | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 605        |
| 1800 | H    | P2    | 4172               | 2536              | 959 | 6,0%                                     | 7,7% | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 606        |
| 1800 | H    | P3    | 4092               | 2517              | 943 | 6,1%                                     | 8,2% | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 605        |
| 1800 | H    | P4    | 4232               | 2550              | 971 | 5,9%                                     | 7,4% | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 606        |

#### 18.2.1 ADDITIONAL WEIGHT VERSIONS FOR VERSIONS WITH DESUPERHEATER AND TOTAL RECOVERY

|      | DESUPERHEATER | TOTAL RECOVERY |
|------|---------------|----------------|
| 0800 | 50            | 125            |
| 0900 | 53            | 138            |
| 1000 | 56            | 145            |
| 1250 | 60            | 145            |
| 1400 | 63            | 187            |
| 1500 | 66            | 200            |
| 1650 | 70            | 200            |
| 1800 | 73            | 200            |

#### KEY

° Standard  
A High temperature  
L Silenced  
H Heat pump  
HL<sup>1</sup> Silenced heat pump

00 Without hydronic kit  
01 Accumulation with low pressure pump  
02 Accumulation with low pressure pump

03 pressure pump and reserve pump  
04 Accumulation with high pressure pump  
P1 Accumulation with high pressure pump and reserve pump  
P2 Only low pressure pump  
P3 Low pressure pump and reserve pump  
P4 High pressure pump

P4 High pressure pump and reserve pump

#### NOTE

<sup>1</sup> The versions HL, compared with the versions H, have a different weight and therefore a slightly different centre of mass and weight distribution on the rests; refer therefore to the corresponding versions H.

**18.2 DISTRIBUTION WEIGHTS PERCENTAGE  
ON RESTS WITH WATER**

| NRA  | MOD. | VERS. | WEI-<br>GHT<br>kg. | CENTRE OF<br>MASS |      | DISTRIBUTION WEIGHTS PERCENTAGE ON RESTS |       |       |       |   |   |   |   |   |   | KIT<br>AVX |
|------|------|-------|--------------------|-------------------|------|------------------------------------------|-------|-------|-------|---|---|---|---|---|---|------------|
|      |      |       |                    | Gx                | Gy   | A                                        | B     | C     | D     | E | F | H | I | J | K |            |
| 800  | °    | 00    | 2363               | 1745              | 839  | 21,0%                                    | 34,1% | 17,1% | 27,7% |   |   |   |   |   |   | 151        |
| 800  | °    | 01    | 3237               | 1773              | 1085 | 26,7%                                    | 27,5% | 22,6% | 23,2% |   |   |   |   |   |   | 152        |
| 800  | °    | 02    | 3300               | 1775              | 1098 | 27,0%                                    | 27,1% | 22,9% | 23,0% |   |   |   |   |   |   | 152        |
| 800  | °    | 03    | 3266               | 1774              | 1091 | 26,9%                                    | 27,3% | 22,7% | 23,1% |   |   |   |   |   |   | 152        |
| 800  | °    | 04    | 3358               | 1776              | 1109 | 27,3%                                    | 26,8% | 23,1% | 22,7% |   |   |   |   |   |   | 152        |
| 800  | °    | P1    | 2433               | 1750              | 847  | 21,2%                                    | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800  | °    | P2    | 2503               | 1750              | 847  | 21,2%                                    | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800  | °    | P3    | 2433               | 1750              | 847  | 21,2%                                    | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800  | °    | P4    | 2503               | 1750              | 847  | 21,2%                                    | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800  | A    | 00    | 2450               | 1750              | 847  | 21,2%                                    | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800  | A    | 01    | 3324               | 1777              | 1084 | 26,7%                                    | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 800  | A    | 02    | 3387               | 1778              | 1097 | 27,0%                                    | 27,1% | 22,9% | 23,0% |   |   |   |   |   |   | 152        |
| 800  | A    | 03    | 3353               | 1777              | 1090 | 26,8%                                    | 27,3% | 22,7% | 23,2% |   |   |   |   |   |   | 152        |
| 800  | A    | 04    | 3445               | 1779              | 1108 | 27,2%                                    | 26,8% | 23,1% | 22,8% |   |   |   |   |   |   | 152        |
| 800  | A    | P1    | 3394               | 1777              | 1084 | 26,7%                                    | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800  | A    | P2    | 3464               | 1777              | 1084 | 26,7%                                    | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800  | A    | P3    | 3394               | 1777              | 1084 | 26,7%                                    | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800  | A    | P4    | 3464               | 1777              | 1084 | 26,7%                                    | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800  | L    | 00    | 2547               | 1749              | 855  | 21,4%                                    | 33,6% | 17,5% | 27,5% |   |   |   |   |   |   | 151        |
| 800  | L    | 01    | 3421               | 1775              | 1084 | 26,7%                                    | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 800  | L    | 02    | 3484               | 1776              | 1096 | 27,0%                                    | 27,0% | 22,9% | 23,0% |   |   |   |   |   |   | 152        |
| 800  | L    | 03    | 3450               | 1776              | 1090 | 26,8%                                    | 27,3% | 22,7% | 23,1% |   |   |   |   |   |   | 152        |
| 800  | L    | 04    | 3542               | 1778              | 1107 | 27,2%                                    | 26,9% | 23,1% | 22,8% |   |   |   |   |   |   | 152        |
| 800  | L    | P1    | 3491               | 1775              | 1084 | 26,7%                                    | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800  | L    | P2    | 3561               | 1775              | 1084 | 26,7%                                    | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800  | L    | P3    | 3491               | 1775              | 1084 | 26,7%                                    | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800  | L    | P4    | 3561               | 1775              | 1084 | 26,7%                                    | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800  | H    | 00    | 2502               | 1753              | 843  | 21,0%                                    | 33,9% | 17,3% | 27,8% |   |   |   |   |   |   | 151        |
| 800  | H    | 01    | 3376               | 1778              | 1078 | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 152        |
| 800  | H    | 02    | 3439               | 1780              | 1090 | 26,8%                                    | 27,2% | 22,8% | 23,2% |   |   |   |   |   |   | 152        |
| 800  | H    | 03    | 3405               | 1779              | 1083 | 26,6%                                    | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 800  | H    | 04    | 3497               | 1781              | 1101 | 27,0%                                    | 27,0% | 23,0% | 23,0% |   |   |   |   |   |   | 152        |
| 800  | H    | P1    | 3446               | 1778              | 1078 | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 800  | H    | P2    | 3516               | 1778              | 1078 | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 800  | H    | P3    | 3446               | 1778              | 1078 | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 800  | H    | P4    | 3516               | 1778              | 1078 | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900  | °    | 00    | 2460               | 1750              | 830  | 20,7%                                    | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900  | °    | 01    | 3326               | 1777              | 1072 | 26,4%                                    | 27,8% | 22,4% | 23,5% |   |   |   |   |   |   | 152        |
| 900  | °    | 02    | 3386               | 1778              | 1084 | 26,6%                                    | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 900  | °    | 03    | 3355               | 1777              | 1078 | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 152        |
| 900  | °    | 04    | 3444               | 1779              | 1095 | 26,9%                                    | 27,1% | 22,9% | 23,1% |   |   |   |   |   |   | 152        |
| 900  | °    | P1    | 2522               | 1750              | 830  | 20,7%                                    | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900  | °    | P2    | 2592               | 1750              | 830  | 20,7%                                    | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900  | °    | P3    | 2592               | 1750              | 830  | 20,7%                                    | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900  | °    | P4    | 2592               | 1750              | 830  | 20,7%                                    | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900  | A    | 00    | 2543               | 1756              | 838  | 20,9%                                    | 33,9% | 17,2% | 28,0% |   |   |   |   |   |   | 151        |
| 900  | A    | 01    | 3417               | 1780              | 1071 | 26,3%                                    | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 152        |
| 900  | A    | 02    | 3477               | 1781              | 1083 | 26,6%                                    | 27,4% | 22,7% | 23,4% |   |   |   |   |   |   | 152        |
| 900  | A    | 03    | 3446               | 1780              | 1077 | 26,4%                                    | 27,6% | 22,5% | 23,5% |   |   |   |   |   |   | 152        |
| 900  | A    | 04    | 3535               | 1782              | 1094 | 26,8%                                    | 27,1% | 22,9% | 23,2% |   |   |   |   |   |   | 152        |
| 900  | A    | P1    | 3487               | 1780              | 1071 | 26,3%                                    | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 151        |
| 900  | A    | P2    | 3557               | 1780              | 1071 | 26,3%                                    | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 151        |
| 900  | A    | P3    | 3487               | 1780              | 1071 | 26,3%                                    | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 151        |
| 900  | A    | P4    | 3557               | 1780              | 1071 | 26,3%                                    | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 151        |
| 900  | L    | 00    | 2605               | 1753              | 854  | 21,3%                                    | 33,6% | 17,5% | 27,6% |   |   |   |   |   |   | 151        |
| 900  | L    | 01    | 3479               | 1777              | 1079 | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 152        |
| 900  | L    | 02    | 3539               | 1778              | 1090 | 26,8%                                    | 27,3% | 22,8% | 23,2% |   |   |   |   |   |   | 152        |
| 900  | L    | 03    | 3508               | 1778              | 1084 | 26,7%                                    | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 900  | L    | 04    | 3597               | 1780              | 1101 | 27,0%                                    | 27,0% | 23,0% | 23,0% |   |   |   |   |   |   | 152        |
| 900  | L    | P1    | 3549               | 1777              | 1079 | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900  | L    | P2    | 3619               | 1777              | 1079 | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900  | L    | P3    | 3549               | 1777              | 1079 | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900  | L    | P4    | 3619               | 1777              | 1079 | 26,5%                                    | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900  | H    | 00    | 2602               | 1759              | 833  | 20,7%                                    | 34,0% | 17,2% | 28,1% |   |   |   |   |   |   | 151        |
| 900  | H    | 01    | 3476               | 1782              | 1064 | 26,1%                                    | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 152        |
| 900  | H    | 02    | 3536               | 1783              | 1075 | 26,3%                                    | 27,5% | 22,5% | 23,6% |   |   |   |   |   |   | 152        |
| 900  | H    | 03    | 3505               | 1783              | 1069 | 26,2%                                    | 27,7% | 22,4% | 23,7% |   |   |   |   |   |   | 152        |
| 900  | H    | 04    | 3594               | 1784              | 1086 | 26,6%                                    | 27,3% | 22,8% | 23,4% |   |   |   |   |   |   | 152        |
| 900  | H    | P1    | 3549               | 1777              | 1079 | 26,1%                                    | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 151        |
| 900  | H    | P2    | 3616               | 1783              | 1064 | 26,1%                                    | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 151        |
| 900  | H    | P3    | 3549               | 1777              | 1079 | 26,1%                                    | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 151        |
| 900  | H    | P4    | 3616               | 1783              | 1064 | 26,1%                                    | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 151        |
| 1000 | °    | 00    | 2490               | 1753              | 848  | 21,2%                                    | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | °    | 01    | 3364               | 1778              | 1083 | 26,6%                                    | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | °    | 02    | 3427               | 1779              | 1095 | 26,9%                                    | 27,1% | 22,9% | 23,1% |   |   |   |   |   |   | 152        |
| 1000 | °    | 03    | 3393               | 1779              | 2084 | 26,7%                                    | 27,3% | 22,7% | 23,3% |   |   |   |   |   |   | 152        |

| NRA  | MOD. | VERS. | WEI-<br>GHT<br>kg. | CENTRE OF<br>MASS |      | DISTRIBUTION WEIGHTS PERCENTAGE ON RESTS |       |       |       |   |   |   |   |   |   | KIT<br>AVX |
|------|------|-------|--------------------|-------------------|------|------------------------------------------|-------|-------|-------|---|---|---|---|---|---|------------|
|      |      |       |                    | Gx                | Gy   | A                                        | B     | C     | D     | E | F | H | I | J | K |            |
| 1000 | °    | 04    | 3485               | 1781              | 1106 | 27,1%                                    | 26,8% | 23,1% | 22,9% |   |   |   |   |   |   | 152        |
| 1000 | °    | P1    | 2560               | 1753              | 848  | 21,2%                                    | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | °    | P2    | 2630               | 1753              | 848  | 21,2%                                    | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | °    | P3    | 2560               | 1753              | 848  | 21,2%                                    | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | °    | P4    | 2630               | 1753              | 848  | 21,2%                                    | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | A    | 00    | 2579               | 1758              | 856  | 21,3%                                    | 33,5% | 17,6% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | A    | 01    | 3453               | 1781              | 1082 | 26,5%                                    | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 152        |
| 1000 | A    | 02    | 3516               | 1782              | 1094 | 26,8%                                    | 27,1% | 22,9% | 23,2% |   |   |   |   |   |   | 152        |
| 1000 | A    | 03    | 3482               | 1782              | 1088 | 26,7%                                    | 27,3% | 22,8% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | A    | 04    | 3574               | 1783              | 1105 | 27,1%                                    | 26,8% | 23,2% | 23,0% |   |   |   |   |   |   | 152        |
| 1000 | A    | P1    | 3523               | 1781              | 1082 | 26,5%                                    | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 151        |
| 1000 | A    | P2    | 3593               | 1781              | 1082 | 26,5%                                    | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 151        |
| 1000 | A    | P3    | 3523               | 1781              | 1082 | 26,5%                                    | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 151        |
| 1000 | A    | P4    | 3593               | 1781              | 1082 | 26,5%                                    | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 151        |
| 1000 | L    | 00    | 2598               | 1752              | 856  | 21,4%                                    | 33,6% | 17,5% | 27,5% |   |   |   |   |   |   | 151        |
| 1000 | L    | 01    | 3472               | 1777              | 1081 | 26,6%                                    | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | L    | 02    | 3535               | 1778              | 1093 | 26,9%                                    | 27,2% | 22,8% | 23,1% |   |   |   |   |   |   | 152        |
| 1000 | L    | 03    | 3501               | 1778              | 1086 | 26,7%                                    | 27,4% | 22,7% | 23,2% |   |   |   |   |   |   | 152        |
| 1000 | L    | 04    | 3593               | 1779              | 1103 | 27,1%                                    | 26,9% | 23,1% | 22,9% |   |   |   |   |   |   | 152        |
| 1000 | L    | P1    | 3542               | 1777              | 1081 | 26,6%                                    | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 151        |
| 1000 | L    | P2    | 3612               | 1777              | 1081 | 26,6%                                    | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 151        |
| 1000 | L    | P3    | 3542               | 1777              | 1081 | 26,6%                                    | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 151        |
| 1000 | L    | P4    | 3612               | 1777              | 1081 | 26,6%                                    | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 151        |
| 1000 | H    | 00    | 2634               | 1761              | 851  | 21,1%                                    | 33,5% | 17,6% | 27,8% |   |   |   |   |   |   | 151        |
| 1000 | H    | 01    | 3508               | 1783              | 1075 | 26,3%                                    | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 152        |
| 1000 | H    | 02    | 3571               | 1784              | 1087 | 26,6%                                    | 27,2% | 22,8% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | H    | 03    | 3537               | 1784              | 1081 | 26,5%                                    | 27,4% | 22,7% | 23,5% |   |   |   |   |   |   | 152        |
| 1000 | H    | 04    | 3629               | 1785              | 1098 | 26,9%                                    | 27,0% | 23,0% | 23,1% |   |   |   |   |   |   | 152        |
| 1000 | H    | P1    | 3578               | 1783              | 1075 | 26,3%                                    | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 151        |
| 1000 | H    | P2    | 3648               | 1783              | 1075 | 26,3%                                    | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 151        |
| 1000 | H    | P3    | 3578               | 1783              | 1075 | 26,3%                                    | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 151        |
| 1000 | H    | P4    | 3648               | 1783              | 1075 | 26,3%                                    | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 151        |
| 1250 | °    | 00    | 3088               | 2155              | 816  | 20,2%                                    | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | °    | 01    | 3984               | 2086              | 1026 | 26,2%                                    | 30,0% | 20,4% | 23,4% |   |   |   |   |   |   | 154        |
| 1250 | °    | 02    | 4008               | 2085              | 1031 | 26,3%                                    | 29,9% | 20,5% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | °    | 03    | 4011               | 2084              | 1031 | 26,4%                                    | 29,9% | 20,5% | 23,2% |   |   |   |   |   |   | 154        |
| 1250 | °    | 04    | 4107               | 2079              | 1048 | 26,9%                                    | 29,5% | 20,8% | 22,8% |   |   |   |   |   |   | 154        |
| 1250 | °    | P1    | 3158               | 3303              | 2155 | 20,2%                                    | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | °    | P2    | 3228               | 3373              | 2155 | 20,2%                                    | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | °    | P3    | 3158               | 3303              | 2155 | 20,2%                                    | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | °    | P4    | 3228               | 3373              | 2155 | 20,2%                                    | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | A    | 00    | 3199               | 2160              | 825  | 20,3%                                    | 33,9% | 17,1% | 28,6% |   |   |   |   |   |   | 153        |
| 1250 | A    | 01    | 4095               | 2093              | 1027 | 26,2%                                    | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 154        |
| 1250 | A    | 02    | 4119               | 2091              | 1031 | 26,3%                                    | 29,8% | 20,6% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | A    | 03    | 4122               | 2091              | 1032 | 26,3%                                    | 29,8% | 20,6% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | A    | 04    | 4218               | 2085              | 1048 | 26,8%                                    | 29,4% | 20,9% | 22,9% |   |   |   |   |   |   | 154        |
| 1250 | A    | P1    | 4165               | 2093              | 1027 | 26,2%                                    | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | A    | P2    | 4235               | 2093              | 1027 | 26,2%                                    | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | A    | P3    | 4165               | 2093              | 1027 | 26,2%                                    | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | A    | P4    | 4235               | 2093              | 1027 | 26,2%                                    | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | 00    | 3339               | 2161              | 835  | 20,6%                                    | 33,7% | 17,4% | 28,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | 01    | 4235               | 2095              | 1028 | 26,2%                                    | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 154        |
| 1250 | L    | 02    | 4259               | 2094              | 1032 | 26,3%                                    | 27,9% | 20,6% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | L    | 03    | 4262               | 2094              | 1033 | 26,3%                                    | 29,7% | 20,7% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | L    | 04    | 4358               | 2088              | 1049 | 26,8%                                    | 29,4% | 20,9% | 22,9% |   |   |   |   |   |   | 154        |
| 1250 | L    | P1    | 4305               | 2095              | 1028 | 26,2%                                    | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | P2    | 4375               | 2095              | 1028 | 26,2%                                    | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | P3    | 4305               | 2095              | 1028 | 26,2%                                    | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | P4    | 4375               | 2095              | 1028 | 26,2%                                    | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | H    | 00    | 3386               | 2170              | 831  | 20,4%                                    | 33,6% | 17,4% | 28,6% |   |   |   |   |   |   | 153        |
| 1250 | H    | 01    | 4282               | 2103              | 1023 | 25,9%                                    | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 154        |
| 1250 | H    | 02    | 4306               | 2101              | 1027 | 26,1%                                    | 29,8% | 20,6% | 23,6% |   |   |   |   |   |   | 154        |
| 1250 | H    | 03    | 4309               | 2101              | 1028 | 26,1%                                    | 29,7% | 20,6% | 23,5% |   |   |   |   |   |   | 154        |
| 1250 | H    | 04    | 4405               | 2096              | 1043 | 26,5%                                    | 29,4% | 20,9% | 23,2% |   |   |   |   |   |   | 154        |
| 1250 | H    | P1    | 4352               | 2103              | 1023 | 25,9%                                    | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1250 | H    | P2    | 4422               | 2103              | 1023 | 25,9%                                    | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1250 | H    | P3    | 4352               | 2103              | 1023 | 25,9%                                    | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1250 | H    | P4    | 4422               | 2103              | 1023 | 25,9%                                    | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | °    | 00    | 3182               | 2160              | 810  | 20,0%                                    | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | °    | 01    | 4078               | 2092              | 1017 | 25,9%                                    | 30,2% | 20,3% | 23,6% |   |   |   |   |   |   | 154        |
| 1400 | °    | 02    | 4102               | 2090              | 1021 | 26,0%                                    | 30,1% | 20,4% | 23,5% |   |   |   |   |   |   | 154        |
| 1400 | °    | 03    | 4105               | 2090              | 1022 | 26,1%                                    | 30,0% | 20,4% | 23,5% |   |   |   |   |   |   | 154        |
| 1400 | °    | 04    | 4201               | 2084              | 1038 | 26,5%                                    | 29,7% | 20,6% | 23,1% |   |   |   |   |   |   | 154        |
| 1400 | °    | P1    | 3252               | 2160              | 810  | 20,0%                                    | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | °    | P2    | 3322               | 2160              | 810  | 20,0%                                    | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | °    | P3    | 3252               | 2160              | 810  | 20,0%                                    | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |

| NRA  | MOD. | VERS. | WEI-<br>GHT<br>kg. | CENTRE OF<br>MASS |      | DISTRIBUTION WEIGHTS PERCENTAGE ON RESTS |       |       |       |      |       |   |   |   |   | KIT<br>AVX |
|------|------|-------|--------------------|-------------------|------|------------------------------------------|-------|-------|-------|------|-------|---|---|---|---|------------|
|      |      |       |                    | Gx                | Gy   | A                                        | B     | C     | D     | E    | F     | H | I | J | K |            |
| 1400 | °    | P4    | 3322               | 2160              | 810  | 20,0%                                    | 34,3% | 16,8% | 28,9% |      |       |   |   |   |   | 153        |
| 1400 | A    | 00    | 3404               | 2170              | 837  | 20,1%                                    | 34,0% | 17,0% | 28,8% |      |       |   |   |   |   | 153        |
| 1400 | A    | 01    | 4323               | 2102              | 1031 | 25,8%                                    | 30,1% | 20,4% | 23,7% |      |       |   |   |   |   | 154        |
| 1400 | A    | 02    | 4224               | 2097              | 1020 | 25,9%                                    | 30,0% | 20,4% | 23,6% |      |       |   |   |   |   | 154        |
| 1400 | A    | 03    | 4227               | 2097              | 1021 | 26,0%                                    | 30,0% | 20,4% | 23,6% |      |       |   |   |   |   | 154        |
| 1400 | A    | 04    | 4323               | 2091              | 1037 | 26,4%                                    | 29,6% | 20,7% | 23,2% |      |       |   |   |   |   | 154        |
| 1400 | A    | P1    | 4270               | 2098              | 1016 | 25,8%                                    | 30,1% | 20,4% | 23,7% |      |       |   |   |   |   | 153        |
| 1400 | A    | P2    | 4340               | 2098              | 1016 | 25,8%                                    | 30,1% | 20,4% | 23,7% |      |       |   |   |   |   | 153        |
| 1400 | A    | P3    | 4270               | 2098              | 1016 | 25,8%                                    | 30,1% | 20,4% | 23,7% |      |       |   |   |   |   | 153        |
| 1400 | A    | P4    | 4340               | 2098              | 1016 | 25,8%                                    | 30,1% | 20,4% | 23,7% |      |       |   |   |   |   | 153        |
| 1400 | L    | 00    | 3386               | 2163              | 836  | 20,6%                                    | 33,6% | 17,4% | 28,4% |      |       |   |   |   |   | 153        |
| 1400 | L    | 01    | 4282               | 2098              | 1027 | 26,1%                                    | 29,8% | 20,6% | 23,5% |      |       |   |   |   |   | 154        |
| 1400 | L    | 02    | 4306               | 2096              | 1031 | 26,2%                                    | 29,7% | 20,7% | 23,4% |      |       |   |   |   |   | 154        |
| 1400 | L    | 03    | 4309               | 2096              | 1032 | 26,2%                                    | 29,7% | 20,7% | 23,4% |      |       |   |   |   |   | 154        |
| 1400 | L    | 04    | 4405               | 2091              | 1048 | 26,7%                                    | 29,4% | 20,9% | 23,0% |      |       |   |   |   |   | 154        |
| 1400 | L    | P1    | 4352               | 2098              | 1027 | 26,1%                                    | 29,8% | 20,6% | 23,5% |      |       |   |   |   |   | 153        |
| 1400 | L    | P2    | 4422               | 2096              | 1027 | 26,1%                                    | 29,8% | 20,6% | 23,5% |      |       |   |   |   |   | 153        |
| 1400 | L    | P3    | 4352               | 2098              | 1027 | 26,1%                                    | 29,8% | 20,6% | 23,5% |      |       |   |   |   |   | 153        |
| 1400 | L    | P4    | 4422               | 2096              | 1027 | 26,1%                                    | 29,8% | 20,6% | 23,5% |      |       |   |   |   |   | 153        |
| 1400 | H    | 00    | 3434               | 2172              | 832  | 20,4%                                    | 33,6% | 17,4% | 28,6% |      |       |   |   |   |   | 153        |
| 1400 | H    | 01    | 4330               | 2105              | 1022 | 25,9%                                    | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 154        |
| 1400 | H    | 02    | 4354               | 2104              | 1026 | 26,0%                                    | 29,7% | 20,6% | 23,6% |      |       |   |   |   |   | 154        |
| 1400 | H    | 03    | 4357               | 2104              | 1027 | 26,0%                                    | 29,7% | 20,6% | 23,6% |      |       |   |   |   |   | 154        |
| 1400 | H    | 04    | 4453               | 2098              | 1042 | 26,5%                                    | 29,4% | 20,9% | 23,2% |      |       |   |   |   |   | 154        |
| 1400 | H    | P1    | 4400               | 2105              | 1022 | 25,9%                                    | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1400 | H    | P2    | 4470               | 2105              | 1022 | 25,9%                                    | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1400 | H    | P3    | 4400               | 2105              | 1022 | 25,9%                                    | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1400 | H    | P4    | 4470               | 2105              | 1022 | 25,9%                                    | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1500 | °    | 00    | 3270               | 2164              | 828  | 20,4%                                    | 33,8% | 17,2% | 28,6% |      |       |   |   |   |   | 153        |
| 1500 | °    | 01    | 4189               | 2095              | 1030 | 26,2%                                    | 29,8% | 20,6% | 23,4% |      |       |   |   |   |   | 154        |
| 1500 | °    | 02    | 4213               | 2094              | 1034 | 26,3%                                    | 29,7% | 20,7% | 23,3% |      |       |   |   |   |   | 154        |
| 1500 | °    | 03    | 4193               | 2095              | 1031 | 26,2%                                    | 29,7% | 20,6% | 23,4% |      |       |   |   |   |   | 154        |
| 1500 | °    | 04    | 4289               | 2089              | 1047 | 26,7%                                    | 29,4% | 20,9% | 23,0% |      |       |   |   |   |   | 154        |
| 1500 | °    | P1    | 3340               | 2164              | 828  | 20,4%                                    | 33,8% | 17,2% | 28,6% |      |       |   |   |   |   | 153        |
| 1500 | °    | P2    | 3410               | 2164              | 828  | 20,4%                                    | 33,8% | 17,2% | 28,6% |      |       |   |   |   |   | 153        |
| 1500 | °    | P3    | 3340               | 2164              | 828  | 20,4%                                    | 33,8% | 17,2% | 28,6% |      |       |   |   |   |   | 153        |
| 1500 | °    | P4    | 3410               | 2164              | 828  | 20,4%                                    | 33,8% | 17,2% | 28,6% |      |       |   |   |   |   | 153        |
| 1500 | A    | 00    | 3404               | 2170              | 837  | 20,5%                                    | 33,5% | 17,5% | 28,5% |      |       |   |   |   |   | 153        |
| 1500 | A    | 01    | 4189               | 2095              | 1030 | 26,1%                                    | 29,6% | 20,7% | 23,5% |      |       |   |   |   |   | 154        |
| 1500 | A    | 02    | 4347               | 2101              | 1035 | 26,3%                                    | 29,6% | 20,8% | 23,4% |      |       |   |   |   |   | 154        |
| 1500 | A    | 03    | 4327               | 2102              | 1032 | 26,2%                                    | 29,6% | 20,7% | 23,5% |      |       |   |   |   |   | 154        |
| 1500 | A    | 04    | 4423               | 2097              | 1047 | 26,6%                                    | 29,3% | 21,0% | 23,1% |      |       |   |   |   |   | 154        |
| 1500 | A    | P1    | 4393               | 2102              | 1031 | 26,1%                                    | 29,6% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | A    | P2    | 4463               | 2102              | 1031 | 26,1%                                    | 29,6% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | A    | P3    | 4393               | 2102              | 1031 | 26,1%                                    | 29,6% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | A    | P4    | 4463               | 2102              | 1031 | 26,1%                                    | 29,6% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | L    | 00    | 3427               | 2165              | 837  | 20,6%                                    | 33,6% | 17,4% | 28,4% |      |       |   |   |   |   | 153        |
| 1500 | L    | 01    | 4346               | 2099              | 1030 | 26,2%                                    | 29,7% | 20,7% | 23,5% |      |       |   |   |   |   | 154        |
| 1500 | L    | 02    | 4370               | 2097              | 1034 | 26,3%                                    | 29,6% | 20,7% | 23,4% |      |       |   |   |   |   | 154        |
| 1500 | L    | 03    | 4350               | 2098              | 1031 | 26,2%                                    | 29,7% | 20,7% | 23,4% |      |       |   |   |   |   | 154        |
| 1500 | L    | 04    | 4446               | 2093              | 1046 | 26,6%                                    | 29,4% | 20,9% | 23,1% |      |       |   |   |   |   | 154        |
| 1500 | L    | P1    | 4416               | 2099              | 1030 | 26,2%                                    | 29,7% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | L    | P2    | 4486               | 2099              | 1030 | 26,2%                                    | 29,7% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | L    | P3    | 4416               | 2099              | 1030 | 26,2%                                    | 29,7% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | L    | P4    | 4486               | 2099              | 1030 | 26,2%                                    | 29,7% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | H    | 00    | 3476               | 2174              | 833  | 20,4%                                    | 33,5% | 17,4% | 28,6% |      |       |   |   |   |   | 153        |
| 1500 | H    | 01    | 4395               | 2106              | 1025 | 25,9%                                    | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 154        |
| 1500 | H    | 02    | 4419               | 2105              | 1029 | 26,1%                                    | 29,7% | 20,7% | 23,6% |      |       |   |   |   |   | 154        |
| 1500 | H    | 03    | 4399               | 2106              | 1025 | 26,0%                                    | 29,7% | 20,6% | 23,7% |      |       |   |   |   |   | 154        |
| 1500 | H    | 04    | 4495               | 2100              | 1041 | 26,4%                                    | 29,4% | 20,9% | 23,3% |      |       |   |   |   |   | 154        |
| 1500 | H    | P1    | 4465               | 2106              | 1025 | 25,9%                                    | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1500 | H    | P2    | 4535               | 2106              | 1025 | 25,9%                                    | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1500 | H    | P3    | 4465               | 2106              | 1025 | 25,9%                                    | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1500 | H    | P4    | 4535               | 2106              | 1025 | 25,9%                                    | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1650 | °    | 00    | 3690               | 2467              | 915  | 7,0%                                     | 9,8%  | 27,1% | 38,0% | 7,5% | 10,5% |   |   |   |   | 601        |
| 1650 | °    | 01    | 4680               | 2309              | 1091 | 9,6%                                     | 9,7%  | 33,1% | 33,7% | 6,9% | 7,0%  |   |   |   |   | 602        |
| 1650 | °    | 02    | 4790               | 2338              | 1107 | 9,3%                                     | 9,2%  | 33,8% | 33,4% | 7,2% | 7,1%  |   |   |   |   | 602        |
| 1650 | °    | 03    | 4710               | 2317              | 1095 | 9,5%                                     | 9,6%  | 33,3% | 33,6% | 7,0% | 7,0%  |   |   |   |   | 602        |
| 1650 | °    | 04    | 4850               | 2352              | 1115 | 9,1%                                     | 8,9%  | 34,2% | 33,2% | 7,4% | 7,2%  |   |   |   |   | 602        |
| 1650 | °    | P1    | 3800               | 2496              | 939  | 6,8%                                     | 9,2%  | 28,0% | 37,6% | 7,9% | 10,6% |   |   |   |   | 601        |
| 1650 | °    | P2    | 3910               | 2526              | 963  | 6,6%                                     | 8,5%  | 28,9% | 37,2% | 8,3% | 10,6% |   |   |   |   | 603        |
| 1650 | °    | P3    | 3830               | 2504              | 945  | 6,7%                                     | 9,0%  | 28,2% | 37,5% | 8,0% | 10,6% |   |   |   |   | 601        |
| 1650 | °    | P4    | 3970               | 2541              | 975  | 6,5%                                     | 8,1%  | 29,4% | 36,9% | 8,5% | 10,6% |   |   |   |   | 603        |
| 1650 | A    | 00    | 3870               | 2477              | 926  | 6,7%                                     | 9,2%  | 28,0% | 38,5% | 7,4% | 10,2% |   |   |   |   | 604        |
| 1650 | A    | 01    | 4860               | 2322              | 1093 | 9,2%                                     | 9,3%  | 33,7% | 34,1% | 6,8% | 6,9%  |   |   |   |   | 602        |
| 1650 | A    | 02    | 4970               | 2350              | 1108 | 8,9%                                     | 8,8%  | 34,3% | 33,8% | 7,2% | 7,0%  |   |   |   |   | 602        |

| NRA  | MOD. | VERS. | WEI-<br>GHT<br>kg. | CENTRE OF<br>MASS |      | DISTRIBUTION WEIGHTS PERCENTAGE ON RESTS |      |       |       |      |       |   |   |   |   | KIT<br>AVX |
|------|------|-------|--------------------|-------------------|------|------------------------------------------|------|-------|-------|------|-------|---|---|---|---|------------|
|      |      |       |                    | Gx                | Gy   | A                                        | B    | C     | D     | E    | F     | H | I | J | K |            |
| 1650 | A    | 03    | 4890               | 2330              | 1097 | 9,1%                                     | 9,1% | 33,9% | 34,0% | 6,9% | 7,0%  |   |   |   |   | 602        |
| 1650 | A    | 04    | 5030               | 2364              | 1116 | 8,8%                                     | 8,5% | 34,7% | 33,7% | 7,3% | 7,1%  |   |   |   |   | 602        |
| 1650 | A    | P1    | 3980               | 2504              | 948  | 6,5%                                     | 8,6% | 28,8% | 38,1% | 7,8% | 10,3% |   |   |   |   | 605        |
| 1650 | A    | P2    | 4090               | 2532              | 971  | 6,3%                                     | 7,9% | 29,7% | 37,6% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1650 | A    | P3    | 4010               | 2512              | 954  | 6,4%                                     | 8,4% | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 605        |
| 1650 | A    | P4    | 4150               | 2547              | 982  | 6,1%                                     | 7,6% | 30,1% | 37,4% | 8,4% | 10,4% |   |   |   |   | 606        |
| 1650 | L    | 00    | 3870               | 2477              | 926  | 6,7%                                     | 9,2% | 28,0% | 38,5% | 7,4% | 10,2% |   |   |   |   | 604        |
| 1650 | L    | 01    | 4860               | 2322              | 1093 | 9,2%                                     | 9,3% | 33,7% | 34,1% | 6,8% | 6,9%  |   |   |   |   | 602        |
| 1650 | L    | 02    | 4970               | 2350              | 1108 | 8,9%                                     | 8,8% | 34,3% | 33,8% | 7,2% | 7,0%  |   |   |   |   | 602        |
| 1650 | L    | 03    | 4890               | 2330              | 1097 | 9,1%                                     | 9,1% | 33,9% | 34,0% | 6,9% | 7,0%  |   |   |   |   | 602        |
| 1650 | L    | 04    | 5030               | 2364              | 1116 | 8,8%                                     | 8,5% | 34,7% | 33,7% | 7,3% | 7,1%  |   |   |   |   | 602        |
| 1650 | L    | P1    | 3980               | 2504              | 948  | 6,5%                                     | 8,6% | 28,8% | 38,1% | 7,8% | 10,3% |   |   |   |   | 605        |
| 1650 | L    | P2    | 4090               | 2532              | 971  | 6,3%                                     | 7,9% | 29,7% | 37,6% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1650 | L    | P3    | 4010               | 2512              | 954  | 6,4%                                     | 8,4% | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 605        |
| 1650 | L    | P4    | 4150               | 2547              | 982  | 6,1%                                     | 7,6% | 30,1% | 37,4% | 8,4% | 10,4% |   |   |   |   | 606        |
| 1650 | H    | 00    | 3890               | 2478              | 927  | 6,7%                                     | 9,2% | 28,0% | 38,4% | 7,5% | 10,3% |   |   |   |   | 604        |
| 1650 | H    | 01    | 4880               | 2324              | 1093 | 9,2%                                     | 9,3% | 33,7% | 34,1% | 6,9% | 6,9%  |   |   |   |   | 602        |
| 1650 | H    | 02    | 4990               | 2351              | 1108 | 8,9%                                     | 8,8% | 34,3% | 33,8% | 7,2% | 7,1%  |   |   |   |   | 602        |
| 1650 | H    | 03    | 4910               | 2331              | 1097 | 9,1%                                     | 9,1% | 33,8% | 34,0% | 6,9% | 7,0%  |   |   |   |   | 602        |
| 1650 | H    | 04    | 5050               | 2365              | 1116 | 8,8%                                     | 8,5% | 34,6% | 33,6% | 7,4% | 7,1%  |   |   |   |   | 602        |
| 1650 | H    | P1    | 4000               | 2505              | 949  | 6,5%                                     | 8,6% | 28,8% | 38,0% | 7,8% | 10,3% |   |   |   |   | 605        |
| 1650 | H    | P2    | 4110               | 2533              | 971  | 6,3%                                     | 7,9% | 29,7% | 37,5% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1650 | H    | P3    | 4030               | 2513              | 955  | 6,4%                                     | 8,4% | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 605        |
| 1650 | H    | P4    | 4170               | 2547              | 983  | 6,2%                                     | 7,6% | 30,1% | 37,3% | 8,4% | 10,4% |   |   |   |   | 606        |
| 1800 | °    | 00    | 3780               | 2472              | 905  | 6,7%                                     | 9,6% | 27,1% | 38,8% | 7,3% | 10,5% |   |   |   |   | 604        |
| 1800 | °    | 01    | 4770               | 2316              | 1080 | 9,2%                                     | 9,6% | 33,1% | 34,3% | 6,8% | 7,0%  |   |   |   |   | 602        |
| 1800 | °    | 02    | 4880               | 2344              | 1096 | 9,0%                                     | 9,0% | 33,8% | 34,0% | 7,1% | 7,1%  |   |   |   |   | 602        |
| 1800 | °    | 03    | 4800               | 2323              | 1084 | 9,2%                                     | 9,4% | 33,3% | 34,3% | 6,8% | 7,0%  |   |   |   |   | 602        |
| 1800 | °    | 04    | 4940               | 2358              | 1104 | 8,8%                                     | 8,8% | 34,1% | 33,9% | 7,3% | 7,2%  |   |   |   |   | 602        |
| 1800 | °    | P1    | 3890               | 2500              | 928  | 6,5%                                     | 8,9% | 28,0% | 38,4% | 7,7% | 10,5% |   |   |   |   | 604        |
| 1800 | °    | P2    | 4000               | 2529              | 952  | 6,3%                                     | 8,2% | 28,9% | 37,9% | 8,1% | 10,6% |   |   |   |   | 605        |
| 1800 | °    | P3    | 3920               | 2508              | 934  | 6,4%                                     | 8,7% | 28,2% | 38,3% | 7,8% | 10,5% |   |   |   |   | 604        |
| 1800 | °    | P4    | 4060               | 2544              | 964  | 6,2%                                     | 7,9% | 29,4% | 37,7% | 8,3% | 10,6% |   |   |   |   | 605        |
| 1800 | A    | 00    | 3990               | 2483              | 915  | 6,4%                                     | 8,9% | 28,0% | 39,2% | 7,3% | 10,2% |   |   |   |   | 604        |
| 1800 | A    | 01    | 4980               | 2331              | 1080 | 8,8%                                     | 9,1% | 33,6% | 34,8% | 6,7% | 7,0%  |   |   |   |   | 602        |
| 1800 | A    | 02    | 5090               | 2358              | 1096 | 8,6%                                     | 8,6% | 34,2% | 34,5% | 7,0% | 7,1%  |   |   |   |   | 602        |
| 1800 | A    | 03    | 5010               | 2338              | 1085 | 8,7%                                     | 9,0% | 33,8% | 34,7% | 6,8% | 7,0%  |   |   |   |   | 602        |
| 1800 | A    | 04    | 5150               | 2371              | 1104 | 8,4%                                     | 8,4% | 34,5% | 34,3% | 7,2% | 7,2%  |   |   |   |   | 602        |
| 1800 | A    | P1    | 4100               | 2509              | 937  | 6,2%                                     | 8,3% | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 605        |
| 1800 | A    | P2    | 4210               | 2536              | 959  | 6,0%                                     | 7,7% | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 606        |
| 1800 | A    | P3    | 4130               | 2517              | 943  | 6,1%                                     | 8,2% | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 605        |
| 1800 | A    | P4    | 4270               | 2550              | 971  | 5,9%                                     | 7,4% | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1800 | L    | 00    | 3990               | 2483              | 915  | 6,4%                                     | 8,9% | 28,0% | 39,2% | 7,3% | 10,2% |   |   |   |   | 604        |
| 1800 | L    | 01    | 4980               | 2331              | 1080 | 8,8%                                     | 9,1% | 33,6% | 34,8% | 6,7% | 7,0%  |   |   |   |   | 602        |
| 1800 | L    | 02    | 5090               | 2358              | 1096 | 8,6%                                     | 8,6% | 34,2% | 34,5% | 7,0% | 7,1%  |   |   |   |   | 602        |
| 1800 | L    | 03    | 5010               | 2338              | 1085 | 8,7%                                     | 9,0% | 33,8% | 34,7% | 6,8% | 7,0%  |   |   |   |   | 602        |
| 1800 | L    | 04    | 5150               | 2371              | 1104 | 8,4%                                     | 8,4% | 34,5% | 34,3% | 7,2% | 7,2%  |   |   |   |   | 602        |
| 1800 | L    | P1    | 4100               | 2509              | 937  | 6,2%                                     | 8,3% | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 605        |
| 1800 | L    | P2    | 4210               | 2536              | 959  | 6,0%                                     | 7,7% | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 606        |
| 1800 | L    | P3    | 4130               | 2517              | 943  | 6,1%                                     | 8,2% | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 605        |
| 1800 | L    | P4    | 4270               | 2550              | 971  | 5,9%                                     | 7,4% | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1800 | H    | 00    | 3990               | 2483              | 915  | 6,4%                                     | 8,9% | 28,0% | 39,2% | 7,3% | 10,2% |   |   |   |   | 604        |
| 1800 | H    | 01    | 4980               | 2331              | 1080 | 8,8%                                     | 9,1% | 33,6% | 34,8% | 6,7% | 7,0%  |   |   |   |   | 602        |
| 1800 | H    | 02    | 5090               | 2358              | 1096 | 8,6%                                     | 8,6% | 34,2% | 34,5% | 7,0% | 7,1%  |   |   |   |   | 602        |
| 1800 | H    | 03    | 5010               | 2338              | 1085 | 8,7%                                     | 9,0% | 33,8% | 34,7% | 6,8% | 7,0%  |   |   |   |   | 602        |
| 1800 | H    | 04    | 5150               | 2371              | 1104 | 8,4%                                     | 8,4% | 34,5% | 34,3% | 7,2% | 7,2%  |   |   |   |   | 602        |
| 1800 | H    | P1    | 4100               | 2509              | 937  | 6,2%                                     | 8,3% | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 605        |
| 1800 | H    | P2    | 4210               | 2536              | 959  | 6,0%                                     | 7,7% | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 606        |
| 1800 | H    | P3    | 4130               | 2517              | 943  | 6,1%                                     | 8,2% | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 605        |
| 1800 | H    | P4    | 4270               | 2550              | 971  | 5,9%                                     | 7,4% | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 606        |

#### 18.2.1 ADDITIONAL WEIGHT VERSIONS FOR VERSIONS WITH DESUPERHEATER AND TOTAL RECOVERY

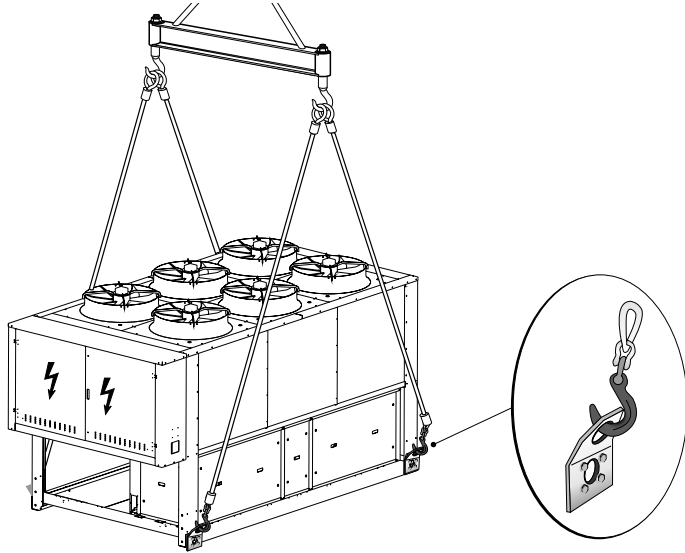
|      | DESUPERHEATER | TOTAL RECOVERY |
|------|---------------|----------------|
| 0800 | 50            | 125            |
| 0900 | 53            | 138            |
| 1000 | 56            | 145            |
| 1250 | 60            | 145            |
| 1400 | 63            | 187            |
| 1500 | 66            | 200            |
| 1650 | 70            | 200            |
| 1800 | 73            | 200            |

### 18.2.2 INSTRUCTIONS FOR LIFTING

- Before moving the unit make sure that all the panels are solidly fixed.
- Use all and only the lifting points indicated.
- Use ropes of equal lengths and suitable for lifting

the weight of the unit.

- Move the unit with caution, without jerky movements and do not remain under the unit.
- Movement must be performed by qualified people with the relative means in compliance with safety standards.



### NOTE

for the position of the points of implantation of the AVX to make reference the installation handbook .





# INSTRUCCIONES PARA LA SELECCIÓN

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Estimado cliente,

Le agradecemos su elección por un producto AERMEC. Este producto es el resultado de varios años de experiencia y de estudios de proyectación minuciosos, y ha sido construido con materiales de primera calidad y tecnología de vanguardia.

Además, la marca CE garantiza que los aparatos cumplan los requisitos de la Directiva Europea Máquinas por lo que se refiere a la seguridad. Nuestro nivel de calidad está sometido a una vigilancia constante, por lo que los productos AERMEC son sinónimo de Seguridad, Calidad y Fiabilidad.

Los datos pueden experimentar modificaciones que se consideren necesarias en cualquier momento y sin la obligación de aviso previo para la mejora del producto.

Gracias de nuevo.  
AERMEC S.p.A

# NRA

# NRA H

|                 |  |
|-----------------|--|
| MODELO:         |  |
| NÚMERO DE SERIE |  |

|                             |                                                                                                                                   |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| DECLARACIÓN DE CONFORMIDAD  | Los que suscriben la presente declaran bajo la propia y exclusiva responsabilidad que el conjunto en objeto, definido como sigue: |
| Identificación del producto | <b>ENFRIADORA AIRE/ AGUA, BOMBAS DE CALOR SERIE NRA</b><br>es conforme a:                                                         |

|    |                                                                                                                                                                                                                                                                                                                                 |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | Conforme a la Directiva 97/23/CE y ha sido sometido, de acuerdo con el anexo II de la misma directiva, al siguiente procedimiento de valoración de conformidad:<br><b>modulo H</b><br>Con controles efectuados mediante inspecciones del notificado organismo CEC via Pisacane 46 Legnano (MI) - Italy - distintivo número 1131 |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                |                                                                                                                    |
|----------------|--------------------------------------------------------------------------------------------------------------------|
| 2.             | Proyectado, producido y comercializado respetando las siguientes especificaciones técnicas:<br>Normas armonizadas: |
| - EN 378:      | Enfriador y bombas de calor: requisitos ambientales y de seguridad;                                                |
| - EN 12735:    | Copper and copper alloys - Seamless, round copper tubes for air conditioning and refrigeration;                    |
| - UNI 1285-68: | Cálculo de resistencia de los tubos metálicos sometidos a presión interna;                                         |

|            |                                                                                               |
|------------|-----------------------------------------------------------------------------------------------|
| 3.         | Proyectado, producido y comercializado de acuerdo con las siguientes directivas comunitarias: |
| 98/37/CE:  | Directiva máquinas                                                                            |
| 2006/95/CE | LVD                                                                                           |

|            |            |  |
|------------|------------|--|
| Bevilacqua | 26/03/2007 |  |
|------------|------------|--|

Director Comercial  
Firma



# 1 NORMAS GENERALES

- Este manual y los esquemas eléctricos proporcionados junto con la unidad deben conservarse en un lugar seco para posibles consultas futuras y durante toda la duración de la máquina.
- El presente manual de instrucciones ha sido confeccionado con el objetivo de facilitar la correcta instalación de la unidad y proveer las indicaciones necesarias para un uso y mantenimiento correcto del aparato. Antes de proceder con la instalación, le sugerimos que lea con **ATENCIÓN** toda la información contenida en el manual en el que se ilustran los procedimientos necesarios para la instalación y uso correcto de la unidad.
- Atégase meticulosamente a las instrucciones contenidas en el presente manual y observe las normas vigentes de seguridad.
- La instalación del aparato deberá realizarse de acuerdo con la legislación nacional vigente en el país de destino.
- Manipulaciones no autorizadas del aparato, tanto eléctricas como mecánicas **ANULAN POR COMPLETO LA GARANTÍA y eximen a la empresa de posibles responsabilidades.**
- Compruebe las características eléctricas indicadas en la etiqueta de matrícula (fig.1) antes de realizar las conexiones eléctricas. Lea las instrucciones de la sección relativa a las conexiones eléctricas.

- En caso de necesitar la reparación de la unidad, diríjase exclusivamente a un centro de asistencia especializado AERMEC y utilice siempre piezas de recambio originales.
  - El fabricante declina además cualquier responsabilidad derivada de los daños personales o materiales causados por el no seguimiento del contenido de este manual.
  - Usos permitidos: la serie de enfriadoras en cuestión es idónea para producir agua fría a utilizar en instalaciones hidráulicas con finalidad de acondicionamiento. Las unidades no son adecuadas para producir agua caliente sanitaria. Queda prohibido cualquier uso distinto del permitido o fuera de los límites de funcionamiento citados en el manual, si antes no ha sido acordado con la empresa.
- La garantía no cubre el pago de los daños causados por una instalación defectuosa por parte del instalador.
- La garantía no incluye el pago de daños derivados de un uso inapropiado de la unidad por parte del usuario.
  - La casa fabricante no se considera responsable de accidentes que afecten al instalador o al usuario y que deriven de una instalación o un uso indebido de la unidad.
  - La instalación del aparato deberá realizarse de manera que sean posibles la reparación y/o el mantenimiento del

mismo. La garantía del aparato no cubrirá en ningún caso los costes derivados del uso de escaleras automáticas, andamios o cualquier otro sistema de elevación necesario para realizar las operaciones cubiertas por la garantía.

La garantía no es válida en los siguientes casos:

- si los servicios y reparaciones han sido efectuados por personal y empresas no autorizados;
- si la unidad ha sido reparada o modificada anteriormente con piezas de repuesto no originales;
- si no se ha realizado un mantenimiento adecuado de la unidad;
- si no se han seguido las instrucciones incluidas en el presente manual;
- si se han realizado modificaciones no autorizadas.

## NOTA:

**El fabricante se reserva el derecho, en todo momento, de efectuar cualquier modificación con el fin de mejorar el producto, y no está obligado a añadir dichas modificaciones a máquinas fabricadas con antelación y ya entregadas o en fase de construcción.**

**En cualquier modo, las condiciones de garantía están sujetas a las condiciones generales de venta previstas en el momento de la estipulación del contrato.**

## 1.1 Placa técnica

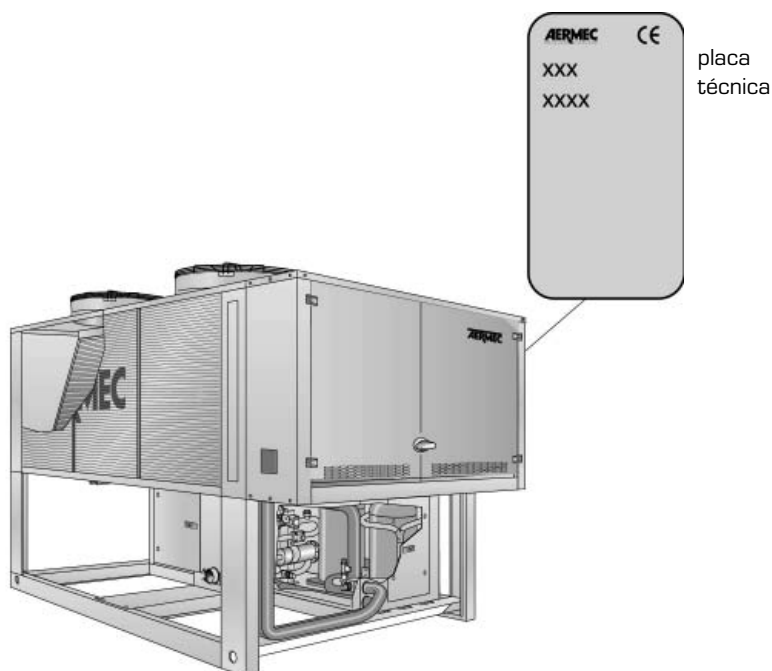


Fig. 1

## 2 DESCRIPCIÓN Y ELECCIÓN DE LA UNIDAD

Los aparatos de la serie **NRA** son unidades empleadas para la producción de agua fría para instalaciones tecnológicas, los modelos de bomba de calor permiten producir también agua caliente para calefacción. Están compuestos por dos circuitos frigoríficos de R407C y por un único circuito hidráulico, el cual puede o no estar provisto de grupo de acumulación.

La presencia de varios compresores de tipo scroll, permite a los enfriadores NRA diversas parcializaciones de la potencia de refrigeración.

El uso de más compresores scroll permite también una elevada eficacia en cargas parciales. De hecho, en estos casos están en funcionamiento un número variable de compresores scroll, cada uno de ellos al 100% (por tanto con una máxima eficacia) de la potencia suministrada. La regulación electrónica con microprocesador controla y gestiona todos los componentes y los parámetros de funcionamiento de la unidad; en el momento en el que surge una condición de alarma, una memoria interna registra las condiciones de funcionamiento para luego visualizarlas en el display. El grado de protección de las unidades es de IP 24.

### 2.1 MODELOS DISPONIBLES

- "ESTÁNDAR SÓLO FRÍO (°)" máxima temperatura externa admitida 42°C. Cobertura de protección acústica del compresor para un funcionamiento silencioso.
- "BOMBA DE CALOR (H)" en enfriamiento los límites operativos llegan a una temperatura externa máxima de 46 °C. NRAH no contemplan las siguientes configuraciones:
  - YH (con agua producida inferior a 4 °C)

- HC (bomba de calor motocondensadora)
- HA (bomba de calor de alta temperatura porque la bomba de calor es de serie una máquina para alta temperatura)

### 2.2 VERSIONES DISPONIBLES

- "ESTÁNDAR/BASE"  
Máxima temperatura externa admitida 42°C, cobertura acústica del compresor para un funcionamiento silencioso.
- "ALTA TEMPERATURA" **(disponible solamente para las versiones en frío)** permite, a través de la potenciación del intercambiador de paquete aleteado, ampliar los límites operativos llegando hasta una temperatura externa máxima de 46°C.

**SILENCIADAS (L)** representa los modelos configurados para un funcionamiento especialmente silencioso. **Todas las dimensiones están dotadas con dispositivos de regulación de la velocidad de los ventiladores.** La versión silenciada, cuando la temperatura es inferior a los 35 °C, reduce ulteriormente el número de revoluciones del ventilador obteniendo así un funcionamiento aun más silencioso que aquel en condiciones normales.

- "BOMBAS DE CALOR SILENCIADAS (HL)"  
Representa los modelos configurados para un funcionamiento especialmente silencioso. **Todos los tamaños están dotados con dispositivos de regulación de la velocidad de los ventiladores.**
- "RECUPERACIÓN DE CALOR"

Unidad, con condensación por aire, completa de sección de recuperación parcial de calor. El intercambiador, se dimensiona oportunamente para garantizar la recuperación de calor para la producción de agua caliente, para uso sanitario u otros.

#### 1. Desrecalentador (D)

El desrecalentador está disponible también para las versiones con bomba de calor, limitadamente al funcionamiento durante el enfriamiento. Debe ser obligatoriamente interceptado durante el funcionamiento en calentamiento.

#### 2. Recuperación de calor total (T)

En las bombas de calor el sistema de recuperación total está disponible sólo en las versiones "OO sin kit hidráulico".

- "MOTOCONDENSADORAS C"
- "MOTOCONDENSADORAS SILENCIADAS LC"
- "VERSIONE Y" è la versione che consente di produrre acqua refrigerata al di sotto del valore standard di +4 °C fino ad un minimo di -6 °C. Per valori inferiori contattare sede.

È disponibile la sola versione YA.

### ATENCIÓN

Para los aparatos destinados a funcionar a bajas temperaturas y también las bombas de calor, antes de cualquier puesta en funcionamiento de la unidad (o al finalizar cada periodo prolongado de pausa) es extremadamente importante que el aceite del cárter compresor se haya calentado preventivamente, mediante la alimentación de las correspondientes resistencias eléctricas, durante al menos 8 horas. La resistencia cárter se alimenta automáticamente cuando la unidad se detiene, siempre que la unidad se mantenga bajo tensión.

### 2.2.1 Dotazioni di serie

| TODAS LAS VERSIONES ESTÁN EQUIPADAS CON: |                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.                                       | Resistencia eléctrica antihielo evaporador                                                                                                                                                                                                                                                                                                                         |
| 2.                                       | Resistencia cárter compresor                                                                                                                                                                                                                                                                                                                                       |
| 3.                                       | Tablero mando a distancia                                                                                                                                                                                                                                                                                                                                          |
| 4.                                       | Filtro de agua (incluido en las versiones sin acumulador)                                                                                                                                                                                                                                                                                                          |
| 5.                                       | Flujostato: sólo en las versiones con acumulador                                                                                                                                                                                                                                                                                                                   |
| BOMBAS DE CALOR                          |                                                                                                                                                                                                                                                                                                                                                                    |
| TP1                                      | Transductor de baja presión                                                                                                                                                                                                                                                                                                                                        |
| TP2                                      | Transductor de alta presión                                                                                                                                                                                                                                                                                                                                        |
| DCPX                                     | Dispositivo de regulación de la velocidad de los ventiladores de serie únicamente para la versión HL                                                                                                                                                                                                                                                               |
| ENFRIADORES con ACUMULACIÓN              |                                                                                                                                                                                                                                                                                                                                                                    |
| 1.                                       | Resistencia eléctrica antihielo evaporador                                                                                                                                                                                                                                                                                                                         |
| 2.                                       | Grupo de bombeo alta o baja prevalencia                                                                                                                                                                                                                                                                                                                            |
| 3.                                       | OPCIÓN Bomba alta o baja prevalencia de reserva, controlada en los modelos 800 - 900 - 1000 mediante tarjeta electrónica, alterna periódicamente las bombas presentes para optimizar sus horas de funcionamiento. Dicha conmutación se realiza manualmente mediante el conmutador ubicado en el tablero eléctrico, en los modelos 1250 - 1400 - 1500 - 1650 - 1800 |
| 4.                                       | Para las versiones de bomba de calor está <b>disponible bajo pedido</b> un acumulador preparado para la introducción de resistencias eléctricas complementarias.                                                                                                                                                                                                   |
| ENFRIADORAS CON DESRECALENTADOR          |                                                                                                                                                                                                                                                                                                                                                                    |
| DCPX                                     | de serie                                                                                                                                                                                                                                                                                                                                                           |

## 2.3 CONFIGURADOR

| 1,2,3 | 4,5,6,7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15,16 |
|-------|---------|---|---|----|----|----|----|----|-------|
|-------|---------|---|---|----|----|----|----|----|-------|

NRA 1650 ° ° D L ° ° ° 00  
campo 15 - 16

| KIT HIDRÓNICO |                                                                                                      |
|---------------|------------------------------------------------------------------------------------------------------|
| 00            | Sin Acumulación                                                                                      |
| 01            | Acumulador y bomba baja prevalencia                                                                  |
| 02            | Acumulador bomba baja prevalencia + bomba de reserva                                                 |
| 03            | Acumulador y bomba alta prevalencia                                                                  |
| 04            | Acumulador bomba alta prevalencia y bomba de reserva                                                 |
| 05            | Acumulador con orificios para resistencia complementaria y bomba baja prevalencia                    |
| 06            | Acumulador con orificios para resistencia complementaria, bomba baja prevalencia y bomba de reserva. |
| 07            | Acumulador con orificios para resistencia complementaria, bomba alta prevalencia                     |
| 08            | Acumulador con orificios para resistencia complementaria, bomba alta prevalencia y bomba de reserva  |
| P1            | Solo bomba baja prevalencia                                                                          |
| P2            | Bomba baja prevalencia y bomba de reserva                                                            |
| P3            | Solo bomba alta prevalencia                                                                          |
| P4            | Bomba alta prevalencia y bomba de reserva                                                            |

campo 14

| Alimentación |                                 |
|--------------|---------------------------------|
| °            | 3~400V-50Hz con magnetotérmicos |
| 4            | 3~230V-50Hz con magnetotérmicos |
| 9            | 3~500V-50Hz con magnetotérmicos |

campo 13

| Evaporador |                              |
|------------|------------------------------|
| °          | Conforme PED                 |
| C          | Motocondensadora (sin evap.) |

campo 12

| Baterías |                       |
|----------|-----------------------|
| °        | De aluminio           |
| R        | de cobre              |
| S        | Cobre estañado        |
| V        | cobre aluminio lacado |

campo 11

| Versión |                                  |
|---------|----------------------------------|
| °       | estándar                         |
| A       | Alta temperatura                 |
| L       | Estándar en ejecución Silenciada |

campo 10

| Recuperadores de calor |                    |
|------------------------|--------------------|
| °                      | Sin recuperadores  |
| D                      | Desrecalentador    |
| T                      | Recuperación total |

campo 9

| Modelo |                |
|--------|----------------|
| °      | Sólo frío      |
| H      | Bomba de calor |

campo 8

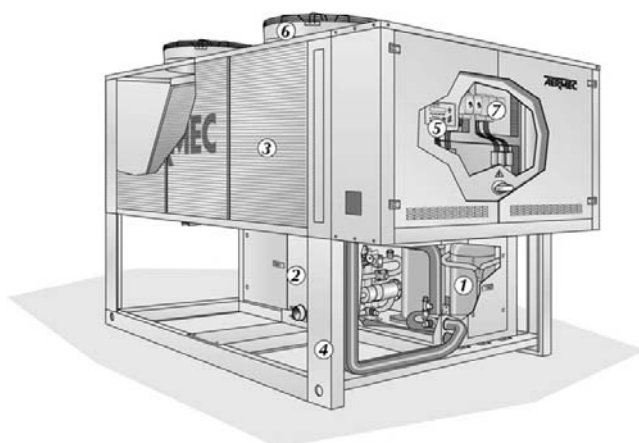
| Refrigerante |                                                                  |
|--------------|------------------------------------------------------------------|
| °            | Estándar                                                         |
| Y            | Versión para baja temperatura del agua producida hasta los -6 °C |

campo 4 - 5 - 6 - 7

|                                                |
|------------------------------------------------|
| 0800 - 0900 - 1000 - 1250 - 1400 - 1650 - 1800 |
|------------------------------------------------|

## 3 DESCRIPCIÓN DE LOS COMPONENTES

### Ejemplo NRA 1650 00



#### LEYENDA

- 1 Compresores scroll
- 2 Evaporador de placas
- 3 Baterías de intercambio aire
- 4 Estructura portante
- 5 Teclado de mando
- 6 Grupo de ventilación
- 7 Paneles cierre caja eléctrica

### 3.1 CIRCUITO DE REFRIGERACIÓN

#### Compresores

Compresores herméticos de tipo scroll provistos, de serie, de la resistencia eléctrica anticongelante.

La resistencia se alimenta automáticamente cuando la unidad se detiene, siempre que la unidad se mantenga bajo tensión.

El espacio de los compresores se encuentra acústicamente aislado. El uso de más compresores scroll permite también una elevada eficacia en cargas parciales. De hecho, en estos casos están en funcionamiento un número variable de compresores scroll, cada uno de ellos al 100% (por tanto con una máxima eficacia) de la potencia suministrada.

#### Intercambiador lado aire

Está realizado con tubos de cobre y aletas en aluminio bloqueadas mediante expansión mecánica de los tubos. Es del tipo de elevada eficiencia; tubo rayado y aletas arrugadas para bomba de calor; tubo liso y aletas turbo para solo frío.

#### Intercambiador lado agua

Del tipo con placas (AISI 316), se encuentra aislado mediante material con cámaras cerradas, para reducir las dispersiones térmicas. Provisto, de serie, de la resistencia eléctrica anticongelante.

#### Separador de líquido

##### (sólo para bomba de calor)

Colocado en aspiración al compresor, para la protección de posibles retornos de refrigerante líquido, comienzos inundados y funcionamiento con existencia de líquido.

#### Filtro deshidratador

De tipo mecánico, realizado en cerámica y material higroscópico, capaz de retener las impurezas y las posibles huellas

de humedad existentes en el circuito de refrigeración.

#### Indicador del líquido

Sirve para verificar la carga de gas refrigerante y la posible existencia de humedad en el circuito de refrigeración.

#### Válvula termostática

La válvula de tipo mecánico, con ecualizador externo situado a la salida del evaporador, regula el flujo de gas al evaporador en función de la carga térmica para asegurar un grado correcto de sobrecalentamiento al gas en aspiración.

#### Grifos del líquido y del prensador (versiones sólo frío)

Permiten interceptar el refrigerante en caso de mantenimiento extraordinario.

#### válvula solenoide

La válvula se cierra cuando se apaga el compresor impidiendo el flujo de gas refrigerante hacia el evaporador.

#### Válvula de inversión del ciclo (sólo para bomba de calor)

Invierte el flujo de refrigerante al cambiar el funcionamiento verano / invierno y durante los ciclos de descongelación.

#### Válvula unidireccional

Permite el paso del refrigerante en una sola dirección.

#### Desrecalentador (sólo mediante petición)

Del tipo con placas (AISI 316), se encuentra aislado mediante material con cámaras cerradas, para reducir la dispersión térmica. El desrecalentador está disponible también en las versiones con bomba de calor; limitadamente al funcionamiento durante el enfriamiento. Debe ser obligatoriamente interceptado durante el funcionamiento en

calentamiento.

#### Recuperación total (sólo bajo pedido)

Del tipo con placas (AISI 316), se encuentra aislado mediante material con cámaras cerradas, para reducir la dispersión térmica.

#### NOTA

En las bombas de calor el sistema de recuperación total está disponible sólo en las versiones "00 sin kit hidráulico".

#### Acumulación del líquido sólo para bombas de calor o con recuperación total.

Se emplea en los modelos con bomba de calor o con recuperación total. Sirve para detener el gas refrigerante en estado líquido, en caso de que durante su funcionamiento la máquina en objeto lo presente de forma abundante.

### 3.2 BASTIDOR Y VENTILADORES

#### Grupo de ventilación

De tipo helicoidal y equilibrado estática y dinámicamente. Los electroventiladores están protegidos eléctricamente con interruptores magnetotérmicos y mecánicamente con rejillas metálicas anti-intrusión según las normativas CEI EN 60335-2-40.

#### Estructura portante

De lámina de acero galvanizada en calor de espesor adecuado, está lacada con polvos de poliéster capaz de resistir los agentes atmosféricos a lo largo del tiempo.

### 3.3 COMPONENTES HIDRÁULICOS

#### Bomba de circulación

Ofrece, en función de las características de la bomba elegida, una prevalencia útil para vencer las pérdidas de carga de la instalación. Se contempla además la posibilidad

de una bomba de reserva. En los modelos 800 - 900 - 1000 es controlada mediante tarjeta electrónica, alterna periódicamente las bombas presentes para optimizar sus horas de funcionamiento. Dicha conmutación se realiza manualmente mediante el conmutador ubicado en el tablero eléctrico, en los modelos 1250 - 1800

**Flujostato: sólo en las versiones con acumulador**

**Cumple la función de controlar que exista circulación de agua, en caso contrario, bloquea la unidad.**

#### NOTA

En las versiones sin acumulador es necesario instalar el flujostato. En caso contrario decae la GARANTÍA.

Filtro de agua en dotación (montado sólo en las versiones con acumulador o sólo bomba).

Permite bloquear y eliminar eventuales impurezas existentes en los circuitos hidráulicos. En su interior presenta una malla filtrante con orificios que no superan el milímetro. Es indispensable para evitar graves daños al intercambiador con placas.

#### Depósito de acumulación

Es de acero y con una capacidad de 700 litros. Con el objeto de reducir las dispersiones térmicas y eliminar el fenómeno de la formación de condensación, se aísla mediante material poliuretánico de idóneo espesor. Monta, de serie, una resistencia eléctrica anticongelante (hasta -20 °C de temperatura externa - temperatura del agua del tanque de 5 °C) accionada por la sonda anticongelante insertada en el tanque.

#### Válvula de ventilación

**(sólo en las versiones con grupo hidráulico o con bomba/s)**

De tipo manual, descarga posibles bolsas de agua presentes. Se encuentra interceptada por un grifo para facilitar su posible sustitución.

#### Grupo de llenado

**(sólo en las versiones con acumulador o con bomba/s)**

Está dotado de manómetro para la visualización de la presión de la instalación.

#### Dos vasos de expansión (de 25 litros)

**(sólo en las versiones con acumulador o con bomba/s)**

del tipo de membrana con precarga de nitrógeno.

#### Válvula de seguridad circuito hidráulico

**(sólo en las versiones con grupo hidráulico o con bomba/s)**

Calibrada a 6 bar y con la descarga canali-

zable interviene descargando la sobrepresión en caso de presiones anómalas.

### 3.4 COMPONENTES DE SEGURIDAD Y DE CONTROL

#### Presostato de baja presión

**no lo hay en las versiones de bomba de calor, en cuántos tales funciones se realizan directamente de la tarjeta**

Con calibrado fijo, se encuentra en el lado de baja presión del circuito frigorífico y detiene el funcionamiento del compresor en caso de presiones de funcionamiento anómalas.

#### Presostato de alta presión

Con calibrado variable, situado en el lado de alta presión del circuito de refrigeración, detiene el funcionamiento del compresor en el caso de presiones anómalas de trabajo.

#### Resistencia eléctrica antihielo

Su funcionamiento es accionado por la sonda anticongelante colocada en el evaporador con placas. La activación tiene lugar cuando la temperatura del agua es +3°C mientras su desactivación se verifica con temperatura del agua de +5°C. El software dedicado, residente en la tarjeta de regulación, controla la resistencia eléctrica.

#### Válvulas de seguridad circuito de refrigeración

Calibrada a 30 Bar, interviene descargando la sobrepresión en caso de presiones anómalas.

#### Transductores de baja presión TP1 de serie en las bombas de calor.

accesorio en las versiones sólo frío

#### Transductor de alta presión TP2

de serie en todas las versiones.

### 3.5 COMPONENTES ELÉCTRICOS

#### Cuadro eléctrico

Contiene la sección de potencia y la gestión de los controles y seguridades. Está de acuerdo con las normas CEI 60204-1, y con las Directivas respecto a la compatibilidad electromagnética EMC 89/336/CEE y 92/31/CEE.

#### Seccionador su jetapuerta

Se puede acceder al cuadro eléctrico si se quita tensión mediante la palanca de apertura del propio cuadro. Durante las intervenciones de mantenimiento es posible bloquear dicha palanca con uno o más candados, para impedir una indeseada puesta en funcionamiento de la máquina.

#### Teclado de mando

Permite el completo control del equipo.

Para una descripción más detallada, haga referencia al manual de uso.

#### Tablero mandos a distancia

Permite efectuar, a distancia, las operaciones de mando del refrigerador:

- magnetotérmico protección compresores.
- magnetotérmico protección ventiladores;
- magnetotérmico protección auxiliar.
- Termostato control temperatura gas de descarga

### 3.6 REGULACIÓN ELECTRÓNICA

#### tarjeta de microprocesador

Compuesta de tarjeta de gestión y control y de tarjeta de visualización. Funciones que lleva a cabo:

- regulación temperatura agua entrada evaporador; o también en salida seleccionable, con termostatación de hasta 12 niveles y control proporcional - integral sobre la velocidad de los ventiladores.
- retraso de puesta en marcha compresores.
- funcionamiento como refrigerador con posibilidad de integración de la capacidad de refrigeración mediante "free-cooling".
- rotación secuencia compresores.
- control dispositivo de baja temperatura (accesorio).
- cálculo horas de funcionamiento compresores.
- start/stop.
- reset.
- memoria permanente de las alarmas.
- autostart después de una caída de la tensión.
- mensajería multilingüe.
- funcionamiento con control local o remoto.
- visualización estado de la máquina: ON/OFF compresores; resumen alarmas.
- control alarmas: alta presión; flujostato; baja presión; anticongelante; sobrecarga compresores; sobrecarga ventiladores; sobrecarga bombas.
- visualización de los siguientes parámetros: temperatura entrada agua; temperatura entrada agua evaporador; temperatura salida agua; delta T; alta presión; baja presión; tiempo espera de rearranque.
- visualización de alarmas.
- configuraciones set:
  - a) sin contraseña: set frío; diferencial total;
  - b) con contraseña: set anticongelante; tiempo exclusión baja presión; lenguaje display; código de acceso.

## 4 ACCESORIOS

### AER485 Tarjeta para sistema MODBUS

Este accesorio permite la conexión de la unidad con sistemas de supervisión BMS con estándar eléctrico RS 485 y protocolo de tipo MODBUS.

### AVX Soporte antivibración

Soportes antivibración de muelle.

### DCPX <sup>1</sup> Dispositivo para bajas temperaturas

Está constituido por una tarjeta electrónica de regulación que varía el número de revoluciones de los ventiladores según la presión de condensación

### GP Rejilla de protección

Cada kit incluye dos rejillas.

### PGS Programador diario / semanal.

Pequeña ficha a insertar en la tarjeta

electrónica de la unidad. Permite programar dos franjas horarias al día y tener programaciones diferenciadas para cada día de la semana.

### TP1 <sup>2</sup> Transductor baja presión

Permite visualizar en el display de la tarjeta con microprocesador al valor de la presión de aspiración del compresor (uno por circuito). Colocado en el lado de baja presión del circuito frigorífico, detiene el funcionamiento del compresor en caso de presiones de trabajo anómalas

### DRE <sup>3</sup> Dispositivo de reducción corriente de arranque

Permite la reducción de la corriente de arranque necesaria durante la puesta en marcha de la máquina.

### RIF <sup>3</sup> Correctores de desfase

Corrector de desfase de corriente: conectado en paralelo al motor;

permite una reducción de la corriente absorbida.

Debe solicitarse en el pedido.

### ROMEO

El dispositivo ROMEO (Remote Overwaching Modem Enabling Operation) permite el control remoto de la enfriadora desde un común teléfono móvil dotado de programa de navegación WAP, así como el envío de SMS de alarma o pre-alarma a 3 teléfonos móviles GSM, incluso si no están dotados de programa de navegación WAP. En el kit está incluido el AER485. A este kit debe agregarle el accesorio AER485P2.

### NOTA

1 De serie en los modelos: NRA L/ NRA D

2 De serie en los modelos: NRA H - HL

3 Aplicable sólo en fábrica

| MOD. | ROMEO | TP1 | DRE | AER485 | PGS | GP | DCPX | RIF | AVX |  |  |
|------|-------|-----|-----|--------|-----|----|------|-----|-----|--|--|
|------|-------|-----|-----|--------|-----|----|------|-----|-----|--|--|

| VERSIONI STANDARD (*) |   |        |                   |   |   |     |    |    | S.a | C.a | P1/P2/P3/P4         |
|-----------------------|---|--------|-------------------|---|---|-----|----|----|-----|-----|---------------------|
| 0800                  | • | • (x2) | 25 (x4)           | • | • | 260 | 29 | 64 | 151 | 152 | 151                 |
| 0900                  | • | • (x2) | 25 (x2) - 30 (x2) | • | • | 260 | 29 | 74 | 151 | 152 | 151                 |
| 1000                  | • | • (x2) | 30 (x4)           | • | • | 260 | 29 | 84 | 151 | 152 | 151                 |
| 1250                  | • | • (x2) | 38 (x4)           | • | • | 350 | 30 | 84 | 153 | 154 | 153                 |
| 1400                  | • | • (x2) | 38 (x2) - 31 (x3) | • | • | 350 | 30 | 85 | 153 | 154 | 153                 |
| 1500                  | • | • (x2) | 30 (x6)           | • | • | 350 | 30 | 86 | 153 | 154 | 153                 |
| 1650                  | • | • (x2) | 38 (x3) - 31 (x3) | • | • | 500 | 30 | 86 | 601 | 602 | P1-P3=601/P2-P4=603 |
| 1800                  | • | • (x2) | 38 (x6)           | • | • | 500 | 30 | 86 | 604 | 602 | P1-P3=604/P2-P4=605 |

| NRA A |   |        |                   |   |   |     |    |    |     |     |                     |
|-------|---|--------|-------------------|---|---|-----|----|----|-----|-----|---------------------|
| 0800  | • | • (x2) | 25 (x4)           | • | • | 260 | 29 | 64 | 151 | 152 | 151                 |
| 0900  | • | • (x2) | 25 (x2) - 30 (x2) | • | • | 260 | 29 | 74 | 151 | 152 | 151                 |
| 1000  | • | • (x2) | 30 (x4)           | • | • | 260 | 29 | 84 | 151 | 152 | 151                 |
| 1250  | • | • (x2) | 38 (x4)           | • | • | 350 | 30 | 84 | 153 | 154 | 153                 |
| 1400  | • | • (x2) | 38 (x2) - 31 (x3) | • | • | 350 | 30 | 85 | 153 | 154 | 153                 |
| 1500  | • | • (x2) | 30 (x6)           | • | • | 350 | 30 | 86 | 153 | 154 | 153                 |
| 1650  | • | • (x2) | 38 (x3) - 31 (x3) | • | • | 500 | 30 | 86 | 604 | 602 | P1-P3=605/P2-P4=606 |
| 1800  | • | • (x2) | 38 (x6)           | • | • | 500 | 30 | 86 | 604 | 602 | P1-P3=605/P2-P4=606 |

| NRA L |   |        |                   |   |   |     |          |    |     |     |                     |
|-------|---|--------|-------------------|---|---|-----|----------|----|-----|-----|---------------------|
| 0800  | • | • (x2) | 25 (x4)           | • | • | 260 | de serie | 64 | 151 | 152 | 151                 |
| 0900  | • | • (x2) | 25 (x2) - 30 (x2) | • | • | 260 | de serie | 74 | 151 | 152 | 151                 |
| 1000  | • | • (x2) | 30 (x4)           | • | • | 260 | de serie | 84 | 151 | 152 | 151                 |
| 1250  | • | • (x2) | 38 (x4)           | • | • | 350 | de serie | 84 | 153 | 154 | 153                 |
| 1400  | • | • (x2) | 38 (x2) - 31 (x3) | • | • | 350 | de serie | 85 | 153 | 154 | 153                 |
| 1500  | • | • (x2) | 30 (x6)           | • | • | 350 | de serie | 86 | 153 | 154 | 153                 |
| 1650  | • | • (x2) | 38 (x3) - 31 (x3) | • | • | 500 | de serie | 86 | 604 | 602 | P1-P3=605/P2-P4=606 |
| 1800  | • | • (x2) | 38 (x6)           | • | • | 500 | de serie | 86 | 604 | 602 | P1-P3=605/P2-P4=606 |

| NRA POMPA DI CALORE H |   |          |                   |   |   |     |    |    |     |     |                     |
|-----------------------|---|----------|-------------------|---|---|-----|----|----|-----|-----|---------------------|
| 0800                  | • | de serie | 25 (x4)           | • | • | 260 | 29 | 64 | 151 | 152 | 151                 |
| 0900                  | • | de serie | 25 (x2) - 30 (x2) | • | • | 260 | 29 | 74 | 151 | 152 | 151                 |
| 1000                  | • | de serie | 30 (x4)           | • | • | 260 | 29 | 84 | 151 | 152 | 151                 |
| 1250                  | • | de serie | 38 (x4)           | • | • | 350 | 30 | 84 | 153 | 154 | 153                 |
| 1400                  | • | de serie | 38 (x2) - 31 (x3) | • | • | 350 | 30 | 85 | 153 | 154 | 153                 |
| 1500                  | • | de serie | 30 (x6)           | • | • | 350 | 30 | 86 | 153 | 154 | 153                 |
| 1650                  | • | de serie | 38 (x3) - 31 (x3) | • | • | 500 | 30 | 86 | 604 | 602 | P1-P3=605/P2-P4=606 |
| 1800                  | • | de serie | 38 (x6)           | • | • | 500 | 30 | 86 | 604 | 602 | P1-P3=605/P2-P4=606 |

| MOD. | ROMEO | TP1 | DRE | AER485 | PGS | GP | DCPX | RIF | AVX |  |  |
|------|-------|-----|-----|--------|-----|----|------|-----|-----|--|--|
|------|-------|-----|-----|--------|-----|----|------|-----|-----|--|--|

| NRA HL |   |          |                   |   |   |     |          |    | S.a | C.a. | P1/P2/P3/P4         |
|--------|---|----------|-------------------|---|---|-----|----------|----|-----|------|---------------------|
| 0800   | • | de serie | 25 (x4)           | • | • | 260 | de serie | 64 | 151 | 152  | 151                 |
| 0900   | • | de serie | 25 (x2) - 30 (x2) | • | • | 260 | de serie | 74 | 151 | 152  | 151                 |
| 1000   | • | de serie | 30 (x4)           | • | • | 260 | de serie | 84 | 151 | 152  | 151                 |
| 1250   | • | de serie | 38 (x4)           | • | • | 350 | de serie | 84 | 153 | 154  | 153                 |
| 1400   | • | de serie | 38 (x2) - 31 (x3) | • | • | 350 | de serie | 85 | 153 | 154  | 153                 |
| 1500   | • | de serie | 30 (x6)           | • | • | 350 | de serie | 86 | 153 | 154  | 153                 |
| 1650   | • | de serie | 38 (x3) - 31 (x3) | • | • | 500 | de serie | 86 | 604 | 602  | P1-P3=605/P2-P4=606 |
| 1800   | • | de serie | 38 (x6)           | • | • | 500 | de serie | 86 | 604 | 602  | P1-P3=605/P2-P4=606 |

| NRA C |   |        |                   |   |   |     |    |    |     |     |     |
|-------|---|--------|-------------------|---|---|-----|----|----|-----|-----|-----|
| 0800  | • | • (x2) | 25 (x4)           | • | • | 260 | 29 | 64 | 151 | 152 | 151 |
| 0900  | • | • (x2) | 25 (x2) - 30 (x2) | • | • | 260 | 29 | 74 | 151 | 152 | 151 |
| 1000  | • | • (x2) | 30 (x4)           | • | • | 260 | 29 | 84 | 151 | 152 | 151 |
| 1250  | • | • (x2) | 38 (x4)           | • | • | 350 | 30 | 84 | 153 | 154 | 153 |
| 1400  | • | • (x2) | 38 (x2) - 31 (x3) | • | • | 350 | 30 | 85 | 153 | 154 | 153 |
| 1500  | • | • (x2) | 30 (x6)           | • | • | 350 | 30 | 86 | 153 | 154 | 153 |
| 1650  | • | • (x2) | 38 (x3) - 31 (x3) | • | • | 500 | 30 | 86 |     |     |     |
| 1800  | • | • (x2) | 38 (x6)           | • | • | 500 | 30 | 86 |     |     |     |

| NRA LC |   |        |                   |   |   |     |          |    |     |     |     |
|--------|---|--------|-------------------|---|---|-----|----------|----|-----|-----|-----|
| 0800   | • | • (x2) | 25 (x4)           | • | • | 260 | de serie | 64 | 151 | 152 | 151 |
| 0900   | • | • (x2) | 25 (x2) - 30 (x2) | • | • | 260 | de serie | 74 | 151 | 152 | 151 |
| 1000   | • | • (x2) | 30 (x4)           | • | • | 260 | de serie | 84 | 151 | 152 | 151 |
| 1250   | • | • (x2) | 38 (x4)           | • | • | 350 | de serie | 84 | 153 | 154 | 153 |
| 1400   | • | • (x2) | 38 (x2) - 31 (x3) | • | • | 350 | de serie | 85 | 153 | 154 | 153 |
| 1500   | • | • (x2) | 30 (x6)           | • | • | 350 | de serie | 86 | 153 | 154 | 153 |
| 1650   | • | • (x2) | 38 (x3) - 31 (x3) | • | • | 500 | de serie | 86 |     |     |     |
| 1800   | • | • (x2) | 38 (x6)           | • | • | 500 | de serie | 86 |     |     |     |

#### LEYENDA

DRE - RIF Aplicables sólo en fábrica

S.a: Sin acumulador

C.a: Con acumulador

#### NOTA

Los números entre paréntesis indican la cantidad necesaria

## 5 DATOS TÉCNICOS

### 5.1 CONDICIONES NOMINALES DE REFERENCIA

Los datos técnicos se calculan:

#### Durante el enfriamiento

|                               |       |
|-------------------------------|-------|
| - Temperatura agua en entrada | 12 °C |
| - Temperatura agua en salida  | 7 °C  |
| - Temperatura aire externo    | 35 °C |
| - Δt                          | 5°C   |

#### Durante el calentamiento

|                              |           |
|------------------------------|-----------|
| - Temperatura agua en salida | 50 °C     |
| - Temperatura aire externo   | b.s. 7 °C |
|                              | b.u. 6 °C |
| - Δt                         | 5°C       |

#### Potencia sonora

Aermec determina el valor de la potencia sonora en base a las medidas efectuadas de acuerdo con la normativa 9614, en conformidad con lo requerido por la certificación Eurovent.

(1) Presión sonora

Presión sonora en campo libre sobre plano reflectante (factor de direccionalidad Q=2), a 10 m de distancia de la superficie externa de la unidad, con el método del paralelo expandido

(box-method, ISO 3744)

#### NOTA

- Los datos del ruido se refieren a la configuración sin bomba.
- Para las bombas de calor el dato se refiere al funcionamiento durante el enfriamiento.

#### E.S.E.E.R.

La atención hacia los consumos eléctricos de las máquinas para el acondicionamiento es cada vez más importante también en Europa. En Estados Unidos, desde hace muchos años, no se hace referencia a la sola eficiencia en condiciones de proyecto, sino que se utiliza un índice de evaluación que toma en cuenta el marginal funcionamiento de la unidad en condiciones de proyecto y el mayor uso con cargas parciales, con aire externo inferior al de proyecto y en condiciones de parcialización de los compresores.

En Europa se ha adoptado la propuesta.

EECCAC (Energy Efficiency and Certification of Central Air Conditioner) y ESEER (European Seasonal Energy Efficiency Ratio), para poder comparar las enfriadoras entre sí. Después de haber calculado la energía total requerida por la instalación durante la gestión estival (kWh), se pueden deducir los consumos de energía eléctrica de la temporada con esta fórmula:

Energía absorbida = Energía requerida

Índice de eficiencia  
El cálculo energético real puede obtenerse más correctamente considerando:

1. perfil de carga con temperatura externa
2. perfil climático
3. Total de horas

Con estos datos cada asesor o proyectista puede realizar sus propias evaluaciones.

$$ESEER = (3 \times EER_{100\%} + 33 \times EER_{75\%} + 41 \times EER_{50\%} + 23 \times EER_{25\%}) / 100$$

|                                |       |       |       |       |
|--------------------------------|-------|-------|-------|-------|
| Evaporador salida del agua     | 7 °C  |       |       |       |
| ΔT cargado completamente       | 5 °C  |       |       |       |
| Cargo                          | 100%  | 75%   | 50%   | 25%   |
| Aire externo de la temperatura | 35 °C | 30 °C | 25 °C | 20 °C |

## 5.2 DATOS TÉCNICOS VERSIONES ESTÁNDAR (°)

| NRA°                      |     | 800   | 900   | 1000  | 1250  | 1400  | 1500  | 1650  | 1800  |
|---------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Potencia de refrigeración | kW  | 211,0 | 236,0 | 261,0 | 320,0 | 363,0 | 390,0 | 434   | 480   |
| Potencia absorbida total  | kW  | 84,5  | 93,0  | 102,0 | 129,0 | 141,0 | 153,0 | 172   | 189   |
| Caudal agua evaporador    | l/h | 36290 | 40590 | 44890 | 55040 | 62440 | 67080 | 74650 | 82560 |
| Pérdida carga evaporador  | kPa | 34,4  | 29,3  | 33,9  | 34,5  | 30,6  | 35,1  | 38,0  | 40,3  |

| INDICES ENERGÉTICOS |     |      |      |      |      |      |      |      |      |
|---------------------|-----|------|------|------|------|------|------|------|------|
| EER                 | W/W | 2,50 | 2,54 | 2,56 | 2,48 | 2,57 | 2,55 | 2,52 | 2,54 |
| ESEER               | W/W | 3,36 | 3,25 | 3,41 | 3,33 | 3,67 | 3,70 | 3,64 | 3,66 |

| DATOS ELÉCTRICOS          |   |              |     |     |     |     |     |     |     |
|---------------------------|---|--------------|-----|-----|-----|-----|-----|-----|-----|
| Alimentación              | V | 3~400 V 50Hz |     |     |     |     |     |     |     |
| Corriente absorbida total | A | 145          | 160 | 174 | 222 | 242 | 261 | 296 | 323 |
| Corriente máxima          | A | 200          | 219 | 237 | 285 | 322 | 355 | 395 | 423 |
| Corriente de arranque     | A | 343          | 383 | 423 | 487 | 470 | 519 | 569 | 584 |

| COMPRESORES         |             |        |        |        |        |        |        |        |        |
|---------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Tipo                |             | scroll | scroll | scroll | scroll | scroll | scroll | scroll | scroll |
| Número              | n°          | 4      | 4      | 4      | 4      | 5      | 6      | 6      | 6      |
| Número por circuito | n°+n°+n°+n° | 2+2    | 2+2    | 2+2    | 2+2    | 2+3    | 3+3    | 3+3    | 3+3    |

| RESISTENCIA COMPRESORES        |      |       |       |       |       |       |       |       |       |
|--------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Resistencia cárter compresores | n°xW | 4x130 | 4x130 | 4x130 | 4x130 | 5x130 | 6x130 | 6x130 | 6x130 |

| VENTILADORES                        |      |       |       |       |        |        |        |        |        |
|-------------------------------------|------|-------|-------|-------|--------|--------|--------|--------|--------|
| Tipo                                |      | axial | axial | axial | axial  | axial  | axial  | axial  | axial  |
| Número                              | n°   | 4     | 4     | 4     | 6      | 6      | 6      | 8      | 8      |
| Corriente absorbida gr. ventilación | A    | 16    | 16    | 16    | 24     | 24     | 24     | 32     | 32     |
| Potencia absorbida gr. ventilación  | kW   | 7,2   | 7,2   | 7,2   | 10,8   | 10,8   | 10,8   | 15,2   | 15,2   |
| Caudal aire                         | m3/h | 86000 | 83000 | 80000 | 126000 | 120500 | 115000 | 170000 | 168000 |

| EVAPORADORES |    |        |        |        |        |        |        |        |        |
|--------------|----|--------|--------|--------|--------|--------|--------|--------|--------|
| Tipo         |    | placas | placas | placas | placas | placas | placas | placas | placas |
| Número       | n° | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      |

| CIRCUITO HIDRÁULICO              |      |       |       |       |       |       |       |       |       |
|----------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Acumulador de agua               | lt   | 700   | 700   | 700   | 700   | 700   | 700   | 700   | 700   |
| Resistencia antihielo acumulador | n°xW | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 |

| CONEXIONES HIDRÁULICAS (paralelo no incluido) |           |    |    |    |    |    |    |    |    |
|-----------------------------------------------|-----------|----|----|----|----|----|----|----|----|
| Conexiones versioni standard                  | Victaulic | 3" | 3" | 3" | 4" | 4" | 4" | 4" | 4" |

| GRUPO BOMBEO BAJA PREVALENCIA |     |      |      |      |      |      |     |     |     |
|-------------------------------|-----|------|------|------|------|------|-----|-----|-----|
| Potencia absorbida            | kW  | 3,8  | 3,8  | 3,8  | 4,8  | 4,8  | 6,5 | 6,5 | 6,5 |
| Corriente absorbida           | A   | 6,22 | 6,22 | 6,22 | 8,14 | 8,14 | 11  | 11  | 11  |
| Presión útil                  | kPa | 97   | 95   | 82   | 78   | 58   | 68  | 119 | 101 |

| GRUPO BOMBEO ALTA PREVALENCIA |     |     |     |     |      |      |      |      |      |
|-------------------------------|-----|-----|-----|-----|------|------|------|------|------|
| Potencia absorbida            | kW  | 6,5 | 6,5 | 6,5 | 8,6  | 8,6  | 8,6  | 12,5 | 12,3 |
| Corriente absorbida           | A   | 11  | 11  | 11  | 14,6 | 14,6 | 14,6 | 21,2 | 21,2 |
| Presión útil                  | kPa | 215 | 212 | 195 | 215  | 190  | 157  | 257  | 240  |

| DATOS SONOROS      |       |      |      |      |      |      |      |      |      |
|--------------------|-------|------|------|------|------|------|------|------|------|
| Potencia sonora    | dB(A) | 88.5 | 88.5 | 88.5 | 91.5 | 91.0 | 90.5 | 92.0 | 94.0 |
| Presión sonora (1) | dB(A) | 56.5 | 56.5 | 56.5 | 59.5 | 59.0 | 58.5 | 60.0 | 62.0 |

| DIMENSIONES para todos los equipamientos |    |      |      |      |      |      |      |      |      |
|------------------------------------------|----|------|------|------|------|------|------|------|------|
| Altura                                   | mm | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 |
| Longitud                                 | mm | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 |
| Longitud                                 | mm | 3400 | 3400 | 3400 | 4250 | 4250 | 4250 | 5750 | 5750 |

| PESO en vacío versiones sin acumulador ni bombas |    |      |      |      |      |      |      |      |      |
|--------------------------------------------------|----|------|------|------|------|------|------|------|------|
|                                                  | kg | 2350 | 2430 | 2465 | 3060 | 3150 | 3250 | 3640 | 3740 |

## 5.2 DATOS TÉCNICOS VERSIONES ALTA EFICACIA A

| NRA A                     |     | 800   | 900   | 1000  | 1250  | 1400  | 1500  | 1650  | 1800  |
|---------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Potencia de refrigeración | kW  | 217,0 | 243,0 | 268,0 | 330,0 | 374,0 | 400,0 | 450   | 495   |
| Potencia absorbida total  | kW  | 80,0  | 88,0  | 96,0  | 124,0 | 134,0 | 144,0 | 166   | 184   |
| Caudal agua evaporador    | l/h | 37320 | 41800 | 46100 | 56760 | 64330 | 68800 | 77400 | 85140 |
| Pérdida carga evaporador  | kPa | 36,4  | 31,0  | 35,8  | 36,7  | 32,3  | 37,0  | 40,8  | 42,8  |

| INDICES ENERGÉTICOS |     |      |      |      |      |      |      |      |      |
|---------------------|-----|------|------|------|------|------|------|------|------|
| EER                 | W/W | 2,71 | 2,76 | 2,79 | 2,66 | 2,79 | 2,78 | 2,71 | 2,69 |
| ESSER               | W/W | 3.64 | 3.71 | 3.75 | 3.58 | 4.02 | 4.00 | 3.91 | 3.88 |

| DATOS ELÉCTRICOS          |   |              |     |     |     |     |     |     |     |
|---------------------------|---|--------------|-----|-----|-----|-----|-----|-----|-----|
| Alimentación              | V | 3~400 V 50Hz |     |     |     |     |     |     |     |
| Corriente absorbida total | A | 140          | 154 | 168 | 213 | 233 | 253 | 287 | 315 |
| Corriente máxima          | A | 200          | 219 | 237 | 285 | 322 | 355 | 395 | 423 |
| Corriente de arranque     | A | 340          | 373 | 406 | 475 | 458 | 511 | 555 | 569 |

| COMPRESORES         |             |        |        |        |        |        |        |        |        |
|---------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Tipo                |             | scroll | scroll | scroll | scroll | scroll | scroll | scroll | scroll |
| Número              | n°          | 4      | 4      | 4      | 4      | 5      | 6      | 6      | 6      |
| Número por circuito | n°+n°+n°+n° | 2+2    | 2+2    | 2+2    | 2+2    | 2+3    | 3+3    | 3+3    | 3+3    |

| RESISTENCIA COMPRESORES        |      |       |       |       |       |       |       |       |       |
|--------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Resistencia cárter compresores | n°xW | 4x130 | 4x130 | 4x130 | 4x130 | 5x130 | 6x130 | 6x130 | 6x130 |

| VENTILADORES                        |      |       |       |       |        |        |        |        |        |
|-------------------------------------|------|-------|-------|-------|--------|--------|--------|--------|--------|
| Tipo                                |      | axial | axial | axial | axial  | axial  | axial  | axial  | axial  |
| Número                              | n°   | 4     | 4     | 4     | 6      | 6      | 6      | 8      | 8      |
| Corriente absorbida gr. ventilación | A    | 16    | 16    | 16    | 24     | 24     | 24     | 32     | 32     |
| Potencia absorbida gr. ventilación  | kW   | 7,2   | 7,2   | 7,2   | 10,8   | 10,8   | 10,8   | 15,2   | 15,2   |
| Caudal aire                         | m3/h | 80000 | 78000 | 76000 | 115000 | 111500 | 111000 | 162000 | 160000 |

| EVAPORADORES |    |        |        |        |        |        |        |        |        |
|--------------|----|--------|--------|--------|--------|--------|--------|--------|--------|
| Tipo         |    | placas | placas | placas | placas | placas | placas | placas | placas |
| Número       | n° | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      |

| CIRCUITO HIDRÁULICO              |      |       |       |       |       |       |       |       |       |
|----------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Acumulador de agua               | lt   | 700   | 700   | 700   | 700   | 700   | 700   | 700   | 700   |
| Resistencia antihielo acumulador | n°xW | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 |

| CONEXIONES HIDRÁULICAS (paralelo no incluido) |           |    |    |    |    |    |    |    |    |
|-----------------------------------------------|-----------|----|----|----|----|----|----|----|----|
| Conexiones versioni standard                  | Victaulic | 3" | 3" | 3" | 4" | 4" | 4" | 4" | 4" |

| GRUPO BOMBEO BAJA PREVALENCIA |     |      |      |      |      |      |     |     |     |
|-------------------------------|-----|------|------|------|------|------|-----|-----|-----|
| Potencia absorbida            | kW  | 3,8  | 3,8  | 3,8  | 4,8  | 4,8  | 6,5 | 6,5 | 6,5 |
| Corriente absorbida           | A   | 6,22 | 6,22 | 6,22 | 8,14 | 8,14 | 11  | 11  | 11  |
| Presión útil                  | kPa | 95   | 90   | 75   | 70   | 45   | 50  | 114 | 95  |

| GRUPO BOMBEO ALTA PREVALENCIA |     |     |     |     |      |      |      |      |      |
|-------------------------------|-----|-----|-----|-----|------|------|------|------|------|
| Potencia absorbida            | kW  | 6,5 | 6,5 | 6,5 | 8,6  | 8,6  | 8,6  | 12,3 | 12,3 |
| Corriente absorbida           | A   | 11  | 11  | 11  | 14,6 | 14,6 | 14,6 | 21,2 | 21,2 |
| Presión útil                  | kPa | 210 | 207 | 185 | 203  | 180  | 142  | 252  | 234  |

| DATOS SONOROS      |       |      |      |      |      |      |      |      |      |
|--------------------|-------|------|------|------|------|------|------|------|------|
| Potencia sonora    | dB(A) | 88.0 | 88.0 | 88.0 | 91.0 | 90.5 | 90.0 | 91.5 | 93.5 |
| Presión sonora [1] | dB(A) | 56.0 | 56.0 | 56.0 | 59.0 | 58.5 | 58.0 | 59.5 | 61.5 |

| DIMENSIONES para todos los equipamientos |    |      |      |      |      |      |      |      |      |
|------------------------------------------|----|------|------|------|------|------|------|------|------|
| Altura                                   | mm | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 |
| Longitud                                 | mm | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 |
| Longitud                                 | mm | 3400 | 3400 | 3400 | 4250 | 4250 | 4250 | 5750 | 5750 |

| PESO en vacío versiones sin acumulador ni bombas |    |      |      |      |      |      |      |      |      |
|--------------------------------------------------|----|------|------|------|------|------|------|------|------|
|                                                  | kg | 2430 | 2520 | 2560 | 3170 | 3270 | 3370 | 3840 | 3950 |

### 5.3 DATOS TÉCNICOS VERSIONES SILENCIADAS

| NRA L                     |     | 800   | 900   | 1000  | 1250  | 1400  | 1500  | 1650  | 1800  |
|---------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Potencia de refrigeración | kW  | 190,0 | 213,0 | 235,0 | 292,0 | 329,0 | 353,0 | 404   | 446   |
| Potencia absorbida total  | kW  | 89,0  | 98,5  | 107,5 | 136,5 | 148,0 | 160,0 | 180   | 199   |
| Caudal agua evaporador    | l/h | 32680 | 36640 | 40420 | 50220 | 56590 | 60720 | 69490 | 76710 |
| Pérdida carga evaporador  | kPa | 27,8  | 23,8  | 27,6  | 28,9  | 24,8  | 28,5  | 32,7  | 34,7  |

| INDICES ENERGÉTICOS |     |      |      |      |      |      |      |      |      |
|---------------------|-----|------|------|------|------|------|------|------|------|
| EER                 | W/W | 2,13 | 2,16 | 2,19 | 2,14 | 2,22 | 2,21 | 2,24 | 2,24 |
| ESSER               | W/W | 2.72 | 2.76 | 2.79 | 2.88 | 3.05 | 3.02 | 3.07 | 3.07 |

| DATOS ELÉCTRICOS          |   |              |     |     |     |     |     |     |     |
|---------------------------|---|--------------|-----|-----|-----|-----|-----|-----|-----|
| Alimentación              | V | 3~400 V 50Hz |     |     |     |     |     |     |     |
| Corriente absorbida total | A | 151          | 166 | 180 | 229 | 250 | 270 | 301 | 330 |
| Corriente máxima          | A | 188          | 207 | 225 | 269 | 304 | 340 | 373 | 400 |
| Corriente de arranque     | A | 342          | 382 | 422 | 486 | 469 | 522 | 568 | 582 |

| COMPRESORES         |             |        |        |        |        |        |        |        |        |
|---------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Tipo                |             | scroll | scroll | scroll | scroll | scroll | scroll | scroll | scroll |
| Número              | n°          | 4      | 4      | 4      | 4      | 5      | 6      | 6      | 6      |
| Número por circuito | n°+n°+n°+n° | 2+2    | 2+2    | 2+2    | 2+2    | 2+3    | 3+3    | 3+3    | 3+3    |

| RESISTENCIA COMPRESORES        |      |       |       |       |       |       |       |       |       |
|--------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Resistencia cárter compresores | n°xW | 4x130 | 4x130 | 4x130 | 4x130 | 5x130 | 6x130 | 6x130 | 6x130 |

| VENTILADORES                        |      |       |       |       |       |       |       |        |        |
|-------------------------------------|------|-------|-------|-------|-------|-------|-------|--------|--------|
| Tipo                                |      | axial | axial | axial | axial | axial | axial | axial  | axial  |
| Número                              | n°   | 4     | 4     | 4     | 6     | 6     | 6     | 8      | 8      |
| Corriente absorbida gr. ventilación | A    |       |       |       |       |       |       |        |        |
| Potencia absorbida gr. ventilación  | kW   | 2,9   | 3,0   | 3,1   | 4,0   | 4,5   | 5,0   | 6      | 6,2    |
| Caudal aire                         | m3/h | 44000 | 50000 | 56000 | 68000 | 76000 | 84000 | 100000 | 112000 |

| EVAPORADORES |    |        |        |        |        |        |        |        |        |
|--------------|----|--------|--------|--------|--------|--------|--------|--------|--------|
| Tipo         |    | placas | placas | placas | placas | placas | placas | placas | placas |
| Número       | n° | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      |

| CIRCUITO HIDRÁULICO              |      |       |       |       |       |       |       |       |       |
|----------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Acumulador de agua               | lt   | 700   | 700   | 700   | 700   | 700   | 700   | 700   | 700   |
| Resistencia antihielo acumulador | n°xW | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 |

| CONEXIONES HIDRÁULICAS (paralelo no incluido) |           |    |    |    |    |    |    |    |    |
|-----------------------------------------------|-----------|----|----|----|----|----|----|----|----|
| Conexiones versioni standard                  | Victaulic | 3" | 3" | 3" | 4" | 4" | 4" | 4" | 4" |

| GRUPO BOMBEO BAJA PREVALENCIA |  |      |      |      |      |      |     |     |     |
|-------------------------------|--|------|------|------|------|------|-----|-----|-----|
| Potencia absorbida            |  | 3,8  | 3,8  | 3,8  | 4,8  | 4,8  | 6,5 | 6,5 | 6,5 |
| Corriente absorbida           |  | 6,22 | 6,22 | 6,22 | 8,14 | 8,14 | 11  | 11  | 11  |
| Presión útil                  |  | 120  | 116  | 102  | 110  | 90   | 122 | 130 | 113 |

| GRUPO BOMBEO ALTA PREVALENCIA |  |     |     |     |      |      |      |      |      |
|-------------------------------|--|-----|-----|-----|------|------|------|------|------|
| Potencia absorbida            |  | 6,5 | 6,5 | 6,5 | 8,6  | 8,6  | 8,6  | 12,5 | 12,3 |
| Corriente absorbida           |  | 11  | 11  | 11  | 14,6 | 14,6 | 14,6 | 21,2 | 21,2 |
| Presión útil                  |  | 232 | 235 | 216 | 245  | 230  | 200  | 267  | 251  |

| DATOS SONOROS      |       |      |      |      |      |      |      |      |      |
|--------------------|-------|------|------|------|------|------|------|------|------|
| Potencia sonora    | dB(A) | 83.0 | 83.0 | 83.0 | 86.0 | 85.5 | 85.0 | 86.5 | 88.5 |
| Presión sonora (1) | dB(A) | 51.0 | 51.0 | 51.0 | 54.0 | 53.5 | 53.0 | 54.5 | 56.5 |

| DIMENSIONES para todos los equipamientos |    |      |      |      |      |      |      |      |      |
|------------------------------------------|----|------|------|------|------|------|------|------|------|
| Altura                                   | mm | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 |
| Longitud                                 | mm | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 |
| Longitud                                 | mm | 3400 | 3400 | 3400 | 4250 | 4250 | 4250 | 5750 | 5750 |

| PESO en vacío versiones sin acumulador ni bombas |    |      |      |      |      |      |      |      |      |
|--------------------------------------------------|----|------|------|------|------|------|------|------|------|
|                                                  | kg | 2530 | 2570 | 2580 | 3310 | 3350 | 3390 | 3850 | 3950 |

## 5.4 DATOS TÉCNICOS VERSIONES BOMBA DE CALOR H

| FUNCIONAMIENTO EN FRÍO    |     | 800   | 900   | 1000  | 1250  | 1400  | 1500  | 1650  | 1800  |
|---------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Potencia de refrigeración | kW  | 196,0 | 220,0 | 242,0 | 312,0 | 345,0 | 365,0 | 420   | 470   |
| Potencia absorbida total  | kW  | 81,0  | 89,0  | 97,0  | 123,0 | 134,0 | 146,0 | 166   | 182   |
| Caudal agua evaporador    | l/h | 33710 | 37840 | 41620 | 53660 | 59340 | 62780 | 72240 | 80840 |
| Pérdida carga evaporador  | kPa | 29,6  | 25,3  | 29,4  | 33,1  | 26,4  | 30,4  | 35,8  | 38,6  |

| INDICES ENERGÉTICOS |     |      |      |      |      |      |      |      |      |
|---------------------|-----|------|------|------|------|------|------|------|------|
| EER                 | W/W | 2,42 | 2,47 | 2,49 | 2,54 | 2,57 | 2,50 | 2,53 | 2,58 |
| COP                 | W/W | 2,57 | 2,61 | 2,64 | 2,58 | 2,64 | 2,64 | 2,57 | 2,59 |
| ESEER               |     | 3,25 | 3,32 | 3,35 | 3,41 | 3,67 | 3,60 | 3,65 | 3,72 |

| FUNCIONAMIENTO EN CALOR   |     |       |       |       |       |       |       |       |       |
|---------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Potencia de refrigeración | kW  | 230,0 | 257,0 | 284,0 | 356,0 | 396,0 | 426,0 | 480   | 534   |
| Potencia absorbida total  | kW  | 89,5  | 98,5  | 107,5 | 138,0 | 150,0 | 161,5 | 187   | 206   |
| Caudal agua evaporador    | l/h | 39560 | 44200 | 48850 | 61230 | 68110 | 73270 | 82560 | 91850 |
| Pérdida carga evaporador  | kPa | 43,7  | 40,6  | 43,4  | 42,6  | 42,1  | 44,7  | 66,7  | 71,3  |

| DATOS ELÉCTRICOS                |   |              |     |     |     |     |     |     |     |
|---------------------------------|---|--------------|-----|-----|-----|-----|-----|-----|-----|
| Alimentación                    | V | 3~400 V 50Hz |     |     |     |     |     |     |     |
| Corriente absorbida total S.F   | A | 142          | 157 | 171 | 212 | 235 | 257 | 288 | 314 |
| Corriente absorbida total P.d.C | A | 151          | 166 | 180 | 233 | 252 | 270 | 317 | 345 |
| Corriente máxima                | A | 200          | 219 | 237 | 285 | 322 | 355 | 395 | 423 |
| Corriente de arranque           | A | 340          | 380 | 420 | 491 | 484 | 515 | 586 | 611 |

| COMPRESORES         |             |        |        |        |        |        |        |        |        |
|---------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Tipo                |             | scroll | scroll | scroll | scroll | scroll | scroll | scroll | scroll |
| Número              | n°          | 4      | 4      | 4      | 4      | 5      | 6      | 6      | 6      |
| Número por circuito | n°+n°+n°+n° | 2+2    | 2+2    | 2+2    | 2+2    | 2+3    | 3+3    | 3+3    | 3+3    |

| RESISTENCIA COMPRESORES        |      |       |       |       |       |       |       |       |       |
|--------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Resistencia cárter compresores | n°xW | 4x130 | 4x130 | 4x130 | 4x130 | 5x130 | 6x130 | 6x130 | 6x130 |

| VENTILADORES                        |      |       |       |       |        |        |        |        |        |
|-------------------------------------|------|-------|-------|-------|--------|--------|--------|--------|--------|
| Tipo                                |      | axial | axial | axial | axial  | axial  | axial  | axial  | axial  |
| Número                              | n°   | 4     | 4     | 4     | 6      | 6      | 6      | 8      | 8      |
| Corriente absorbida gr. ventilación | A    | 16    | 16    | 16    | 24     | 24     | 24     | 32     | 32     |
| Potencia absorbida gr. ventilación  | kW   | 7,2   | 7,2   | 7,2   | 11,4   | 10,8   | 10,8   | 15,2   | 15,2   |
| Caudal aire                         | m3/h | 86000 | 83000 | 80000 | 129000 | 120500 | 115000 | 162000 | 160000 |

| EVAPORADORES |    |        |        |        |        |        |        |        |        |
|--------------|----|--------|--------|--------|--------|--------|--------|--------|--------|
| Tipo         |    | placas | placas | placas | placas | placas | placas | placas | placas |
| Número       | n° | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      |

| CIRCUITO HIDRÁULICO              |      |       |       |       |       |       |       |       |       |
|----------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Acumulador de agua               | lt   | 700   | 700   | 700   | 700   | 700   | 700   | 700   | 700   |
| Resistencia antihielo acumulador | n°xW | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 |

| CONEXIONES HIDRÁULICAS (paralelo no incluido) |           |    |    |    |    |    |    |    |    |
|-----------------------------------------------|-----------|----|----|----|----|----|----|----|----|
| Conexiones version estandard                  | Victaulic | 3" | 3" | 3" | 4" | 4" | 4" | 4" | 4" |

| GRUPO BOMBEO BAJA PREVALENCIA |     |      |      |      |      |      |     |     |     |
|-------------------------------|-----|------|------|------|------|------|-----|-----|-----|
| Potencia absorbida            | kW  | 3,8  | 3,8  | 3,8  | 4,8  | 4,8  | 6,5 | 6,5 | 6,5 |
| Corriente absorbida           | A   | 6,22 | 6,22 | 6,22 | 8,14 | 8,14 | 11  | 11  | 11  |
| Presión útil                  | kPa | 115  | 110  | 97   | 101  | 80   | 105 | 124 | 105 |

| GRUPO BOMBEO ALTA PREVALENCIA |     |     |     |     |      |      |      |      |      |
|-------------------------------|-----|-----|-----|-----|------|------|------|------|------|
| Potencia absorbida            | kW  | 6,5 | 6,5 | 6,5 | 8,6  | 8,6  | 8,6  | 12,5 | 12,3 |
| Corriente absorbida           | A   | 11  | 11  | 11  | 14,6 | 14,6 | 14,6 | 21,2 | 21,2 |
| Presión útil                  | kPa | 230 | 230 | 213 | 237  | 220  | 185  | 261  | 244  |

| DATOS SONOROS      |       |      |      |      |      |      |      |      |      |
|--------------------|-------|------|------|------|------|------|------|------|------|
| Potencia sonora    | dB(A) | 88,5 | 88,5 | 88,5 | 91,5 | 91,0 | 90,5 | 92,0 | 94,0 |
| Presión sonora [1] | dB(A) | 56,5 | 56,5 | 56,5 | 59,5 | 59,0 | 58,5 | 60,0 | 62,0 |

| DIMENSIONES para todos los equipamientos |    |      |      |      |      |      |      |      |      |
|------------------------------------------|----|------|------|------|------|------|------|------|------|
| Altura                                   | mm | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 |
| Longitud                                 | mm | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 |
| Longitud                                 | mm | 3400 | 3400 | 3400 | 4250 | 4250 | 4250 | 5750 | 5750 |

| PESO en vacío versiones sin acumulador ni bombas |    |      |      |      |      |      |      |      |      |
|--------------------------------------------------|----|------|------|------|------|------|------|------|------|
|                                                  | kg | 2480 | 2580 | 2610 | 3360 | 3400 | 3440 | 3880 | 3960 |

## 5.5 DATOS TÉCNICOS VERSIONES BOMBA DE CALOR HL

### NOTA

Il funzionamento silenziato è solo in raffreddamento

| FUNCIONAMIENTO EN FRÍO    |     | 800   | 900   | 1000  | 1250  | 1400  | 1500  | 1650  | 1800  |
|---------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Potencia de refrigeración | kW  | 175,0 | 196,0 | 217,0 | 286,0 | 312,0 | 326,0 | 387   | 430   |
| Potencia absorbida total  | kW  | 88,5  | 98,0  | 107,0 | 130,0 | 145,0 | 160,5 | 177   | 194   |
| Caudal agua evaporador    | l/h | 30100 | 33710 | 37320 | 49190 | 53660 | 56070 | 66050 | 73960 |
| Pérdida carga evaporador  | kPa | 23,6  | 20,2  | 23,5  | 27,9  | 21,1  | 24,3  | 29,8  | 32,5  |

| INDICES ENERGÉTICOS |     |      |      |      |      |      |      |      |      |
|---------------------|-----|------|------|------|------|------|------|------|------|
| EER                 | W/W | 1,98 | 2,00 | 2,03 | 2,20 | 2,15 | 2,03 | 2,17 | 2,22 |
| COP                 | W/W | 2,57 | 2,61 | 2,64 | 2,58 | 2,64 | 2,64 | 2,57 | 2,59 |
| ESEER               |     | 2,53 | 2,56 | 2,59 | 2,96 | 2,95 | 2,78 | 2,97 | 3,04 |

| FUNCIONAMIENTO EN CALOR   |     |       |       |       |       |       |       |       |       |
|---------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| Potencia de refrigeración | kW  | 230,0 | 257,0 | 284,0 | 356,0 | 396,0 | 426,0 | 480   | 534   |
| Potencia absorbida total  | kW  | 89,5  | 98,5  | 107,5 | 0,0   | 0,0   | 161,5 | 0,0   | 0,0   |
| Caudal agua evaporador    | l/h | 39560 | 44200 | 48850 | 61230 | 68110 | 73270 | 82560 | 91850 |
| Pérdida carga evaporador  | kPa | 43,7  | 40,6  | 43,4  | 42,6  | 42,1  | 44,7  | 66,7  | 71,3  |

| DATOS ELÉCTRICOS                |   |              |     |     |     |     |     |     |     |
|---------------------------------|---|--------------|-----|-----|-----|-----|-----|-----|-----|
| Alimentación                    | V | 3~400 V 50Hz |     |     |     |     |     |     |     |
| Corriente absorbida total S.F   | A | 147          | 163 | 180 | 212 | 241 | 270 | 298 | 323 |
| Corriente absorbida total P.d.C | A | 151          | 166 | 180 | 233 | 252 | 270 | 301 | 329 |
| Corriente máxima                | A | 200          | 219 | 237 | 285 | 322 | 355 | 395 | 423 |
| Corriente de arranque           | A | 355          | 395 | 435 | 510 | 503 | 538 | 610 | 635 |

| COMPRESORES         |             |        |        |        |        |        |        |        |        |
|---------------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Tipo                |             | scroll | scroll | scroll | scroll | scroll | scroll | scroll | scroll |
| Número              | n°          | 4      | 4      | 4      | 4      | 5      | 6      | 6      | 6      |
| Número por circuito | n°+n°+n°+n° | 2+2    | 2+2    | 2+2    | 2+2    | 2+3    | 3+3    | 3+3    | 3+3    |

| RESISTENCIA COMPRESORES        |      |       |       |       |       |       |       |       |       |
|--------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Resistencia cárter compresores | n°xW | 4x130 | 4x130 | 4x130 | 4x130 | 5x130 | 6x130 | 6x130 | 6x130 |

| VENTILADORES                        |      |       |       |       |       |       |       |        |        |
|-------------------------------------|------|-------|-------|-------|-------|-------|-------|--------|--------|
| Tipo                                |      | axial | axial | axial | axial | axial | axial | axial  | axial  |
| Número                              | n°   | 4     | 4     | 4     | 6     | 6     | 6     | 8      | 8      |
| Corriente absorbida gr. ventilación | A    |       |       |       |       |       |       |        |        |
| Potencia absorbida gr. ventilación  | kW   | 2,2   | 2,3   | 2,4   | 3,3   | 4,15  | 5     | 4,6    | 4,8    |
| Caudal aire                         | m3/h | 44000 | 50000 | 56000 | 68000 | 76000 | 84000 | 100000 | 112000 |

| EVAPORADORES |    |        |        |        |        |        |        |        |        |
|--------------|----|--------|--------|--------|--------|--------|--------|--------|--------|
| Tipo         |    | placas | placas | placas | placas | placas | placas | placas | placas |
| Número       | n° | 1      | 1      | 1      | 1      | 1      | 1      | 1      | 1      |

| CIRCUITO HIDRÁULICO              |      |       |       |       |       |       |       |       |       |
|----------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Acumulador de agua               | lt   | 700   | 700   | 700   | 700   | 700   | 700   | 700   | 700   |
| Resistencia antihielo acumulador | n°xW | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 | 2x300 |

| CONEXIONES HIDRÁULICAS (paralelo no incluido) |           |    |    |    |    |    |    |    |    |
|-----------------------------------------------|-----------|----|----|----|----|----|----|----|----|
| Conexiones version estandar                   | Victaulic | 3" | 3" | 3" | 4" | 4" | 4" | 4" | 4" |

| GRUPO BOMBEO BAJA PREVALENCIA |     |      |      |      |      |      |     |     |     |
|-------------------------------|-----|------|------|------|------|------|-----|-----|-----|
| Potencia absorbida            | kW  | 3,8  | 3,8  | 3,8  | 4,8  | 4,8  | 6,5 | 6,5 | 6,5 |
| Corriente absorbida           | A   | 6,22 | 6,22 | 6,22 | 8,14 | 8,14 | 11  | 11  | 11  |
| Presión útil                  | kPa | 128  | 128  | 118  | 130  | 116  | 155 | 135 | 118 |

| GRUPO BOMBEO ALTA PREVALENCIA |     |     |     |     |      |      |      |      |      |
|-------------------------------|-----|-----|-----|-----|------|------|------|------|------|
| Potencia absorbida            | kW  | 6,5 | 6,5 | 6,5 | 8,6  | 8,6  | 8,6  | 12,5 | 12,3 |
| Corriente absorbida           | A   | 11  | 11  | 11  | 14,6 | 14,6 | 14,6 | 21,2 | 21,2 |
| Presión útil                  | kPa | 240 | 245 | 235 | 265  | 260  | 230  | 273  | 256  |

| DATOS SONOROS      |       |      |      |      |      |      |      |      |      |
|--------------------|-------|------|------|------|------|------|------|------|------|
| Potencia sonora    | dB(A) | 83,0 | 83,0 | 83,0 | 86,0 | 85,5 | 85,0 | 86,5 | 88,5 |
| Presión sonora [1] | dB(A) | 51,0 | 51,0 | 51,0 | 54,0 | 53,5 | 53,0 | 54,5 | 56,5 |

| DIMENSIONES para todos los equipamientos |    |      |      |      |      |      |      |      |      |
|------------------------------------------|----|------|------|------|------|------|------|------|------|
| Altura                                   | mm | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 | 2450 |
| Longitud                                 | mm | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 | 2200 |
| Longitud                                 | mm | 3400 | 3400 | 3400 | 4250 | 4250 | 4250 | 5750 | 5750 |

| PESO en vacío versiones sin acumulador ni bombas |    |      |      |      |      |      |      |      |      |
|--------------------------------------------------|----|------|------|------|------|------|------|------|------|
|                                                  | kg | 2480 | 2580 | 2610 | 3360 | 3400 | 3440 | 3880 | 3960 |

## 6 CRITERIOS DE ELECCIÓN

En su configuración estándar, los aparatos no son adecuados para una instalación en ambiente salino. Los límites máximos y mínimos para los flujos de agua en el intercambiador se encuentran indicados por las curvas de los diagramas de las pérdidas de carga. Para los límites de funcionamiento, consulte los diagramas de abajo, válidos para  $\Delta t = 5^\circ\text{C}$ .

### ATENCIÓN:

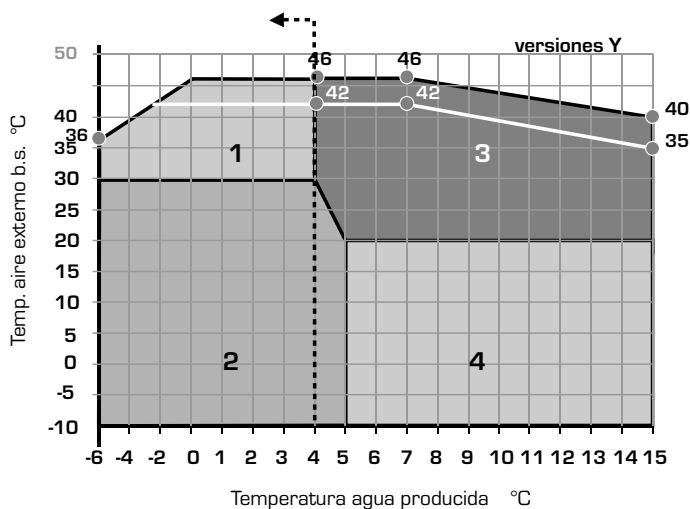
- El funcionamiento con temperatura del agua producida inferior a  $4^\circ\text{C}$  está permitido sólo para las versiones específicamente previstas (versión YA).
- Si se desea que la máquina funcione fuera de los límites indicados en el diagrama, contacte la oficina técnica

comercial AERMEC.

- Si la máquina se instala en zonas con mucho viento hay que preparar cortavientos para evitar un funcionamiento inestable del dispositivo DCPX.

### 6.1 Límites de funcionamiento

"Funcionamiento en frío"



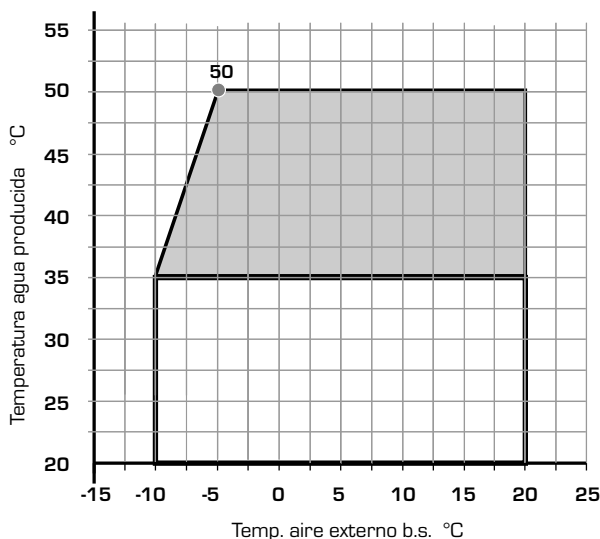
#### VERSIÓN

- estándar (°)  $35 - 42^\circ\text{C}$
- alta temperatura  $40 - 46^\circ\text{C}$
- silenciada L  $40 - 46^\circ\text{C}$
- Bomba de calor H  $40 - 46^\circ\text{C}$

#### LEYENDA

- 1 Funcionamiento con agua glicolada sólo para versiones YA
- 2 Funcionamiento con agua glicolada y DCPX
- 3 Funcionamiento Estándar
- 4 Funcionamiento con DCPX

"Funcionamiento en calor"



#### VERSIÓN

- H en bomba de calor

### 6.2 DATOS DE PROYECTO

(1) = Sólo para las versiones de bomba de calor

|                              |                  | Lado alta presión      | Lado baja presión        |
|------------------------------|------------------|------------------------|--------------------------|
| Presión máxima admisible     | bar              | 30 / 28 <sup>(1)</sup> | 22                       |
| Temperatura máxima admisible | $^\circ\text{C}$ | 120                    | 52                       |
| Temperatura mínima admisible | $^\circ\text{C}$ | -10                    | -16 / -10 <sup>(1)</sup> |

## 7 COEFICIENTES CORRECTIVOS

### 7.1 POTENCIA DE REFRIGERACIÓN Y ABSORBIDA

- "VERSIONES ESTÁNDAR"
- "VERSIONES BOMBA DE CALOR EN FUNCIONAMIENTO EN FRÍO"
- "VERSIONES ALTA TEMPERATURA"

La potencia de refrigeración creada y la potencia absorbida en condiciones distintas de las nominales se obtienen multiplicando los valores nominales ( $P_f$ ,  $P_a$ ) por los respectivos coeficientes correctivos ( $C_f$ ,  $C_a$ ).

Los siguientes diagramas permiten obtener los coeficientes correctivos a utilizar para los aparatos, en los varios modelos, durante el funcionamiento en frío; con cada curva se encuentra correspondientemente indicada la temperatura del aire externo a la cual se refiere.

#### LEYENDA:

**Cf** = Coeficiente correctivo de la potencia de refrigeración

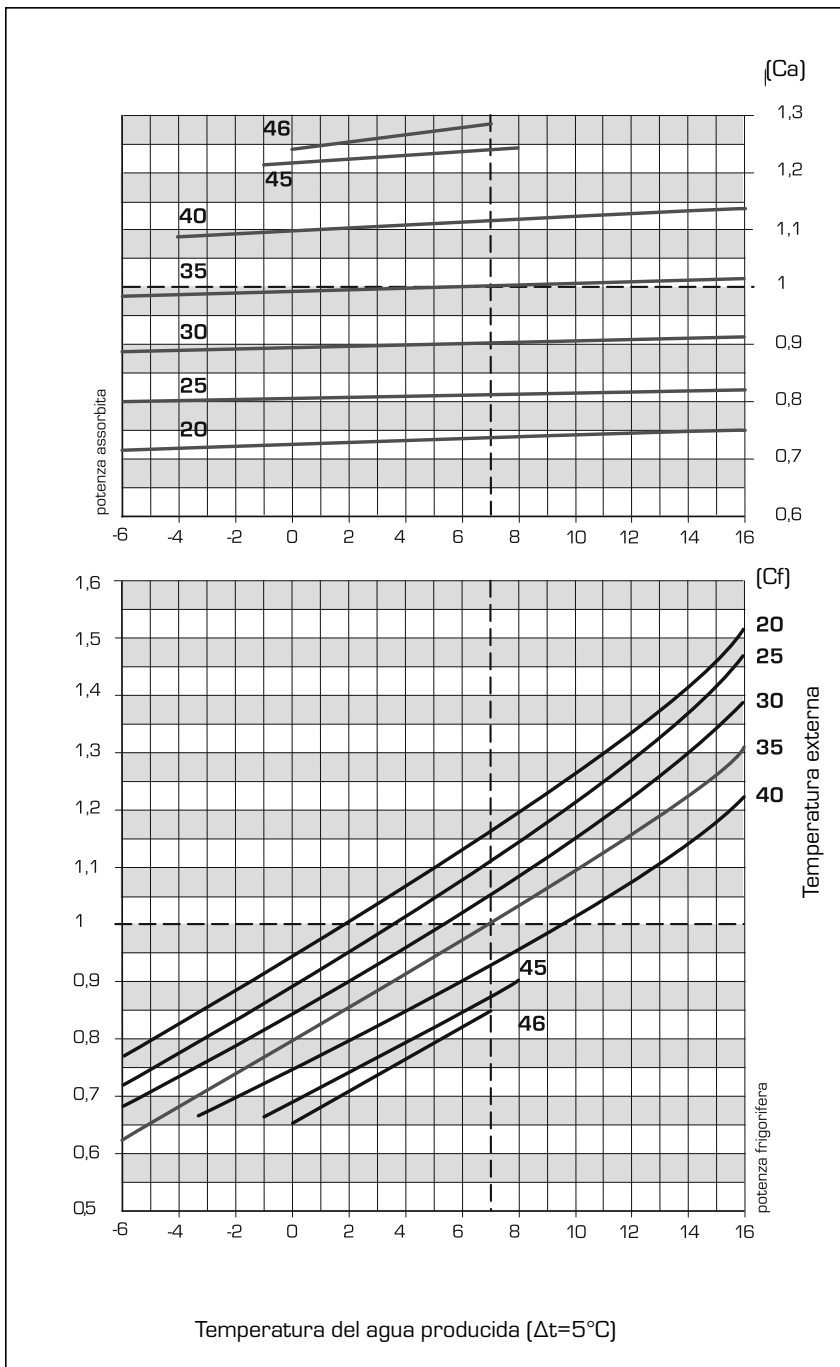
**Ca** = Coeficiente correctivo de la potencia absorbida

#### NOTA:

PARA LAS VERSIONES Y Con temperaturas inferiores a los 4 °C contacte la sede

#### PARA $\Delta T$ DIFERENTES DE 5°C

Use en el evaporador la Tab.7.4 para obtener los factores correctivos de la potencia de refrigeración y absorbida. Para controlar el ensuciamiento de los intercambiadores se utilizan los correspondientes factores de ensuciamiento



## 7.2 POTENCIA DE REFRIGERACIÓN Y ABSORBIDA

### - "VERSIONES SILENCIADAS"

La potencia de refrigeración creada y la potencia absorbida en condiciones distintas de las nominales se obtienen multiplicando los valores nominales ( $P_f$ ,  $P_a$ ) por los respectivos coeficientes correctivos ( $C_f$ ,  $C_a$ ).

Los siguientes diagramas permiten obtener los coeficientes correctivos a utilizar para los aparatos, en los varios modelos, durante el funcionamiento en frío; con cada curva se encuentra correspondientemente indicada la temperatura del aire externo a la cual se refiere.

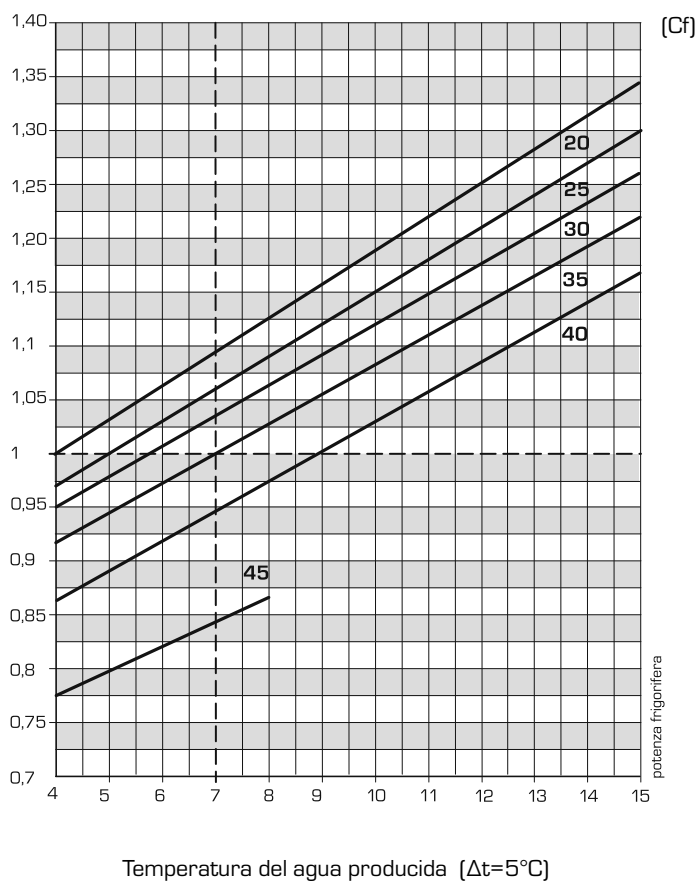
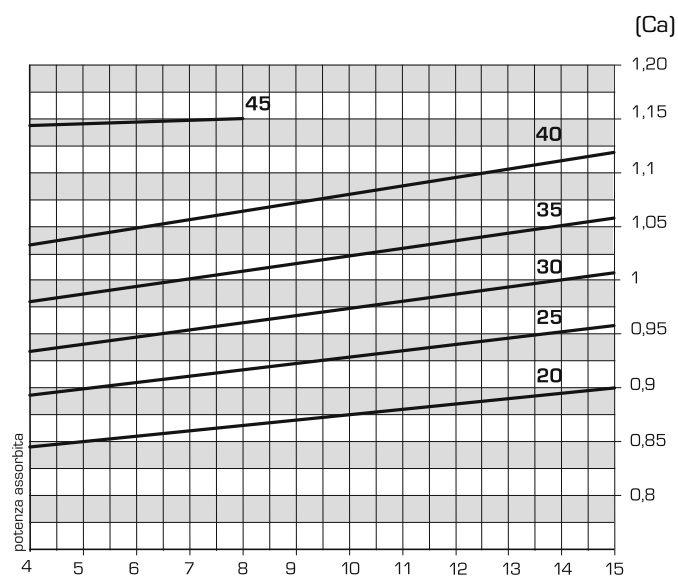
#### LEYENDA:

**$C_f$**  = Coeficiente correctivo de la potencia de refrigeración

**$C_a$**  = Coeficiente correctivo de la potencia absorbida

#### NOTA:

- PARA LAS VERSIONES Y con temperaturas inferiores a los 4 °C póngase en contacto con la sede



### 7.3 POTENCIA TÉRMICA Y ABSORBIDA

#### - "VERSIONES BOMBA DE CALOR"

La potencia térmica producida y la potencia eléctrica absorbida en condiciones diversas de las nominales se obtienen multiplicando los valores nominales ( $P_f$ ,  $P_a$ ) que aparecen al pie de la página por los respectivos coeficientes correctivos ( $C_f$ ,  $C_a$ ). El siguiente diagrama permite obtener los coeficientes correctivos; en relación con cada curva se indica la temperatura del agua caliente producida a la que se hace referencia, asumiendo una diferencia de temperatura del agua entre entrada y salida del condensador igual a  $5^{\circ}\text{C}$ .

Los rendimientos son en neto de los ciclos de descongelación.

#### LEYENDA:

**Ct** = Coeficiente correctivo de la potencia térmica

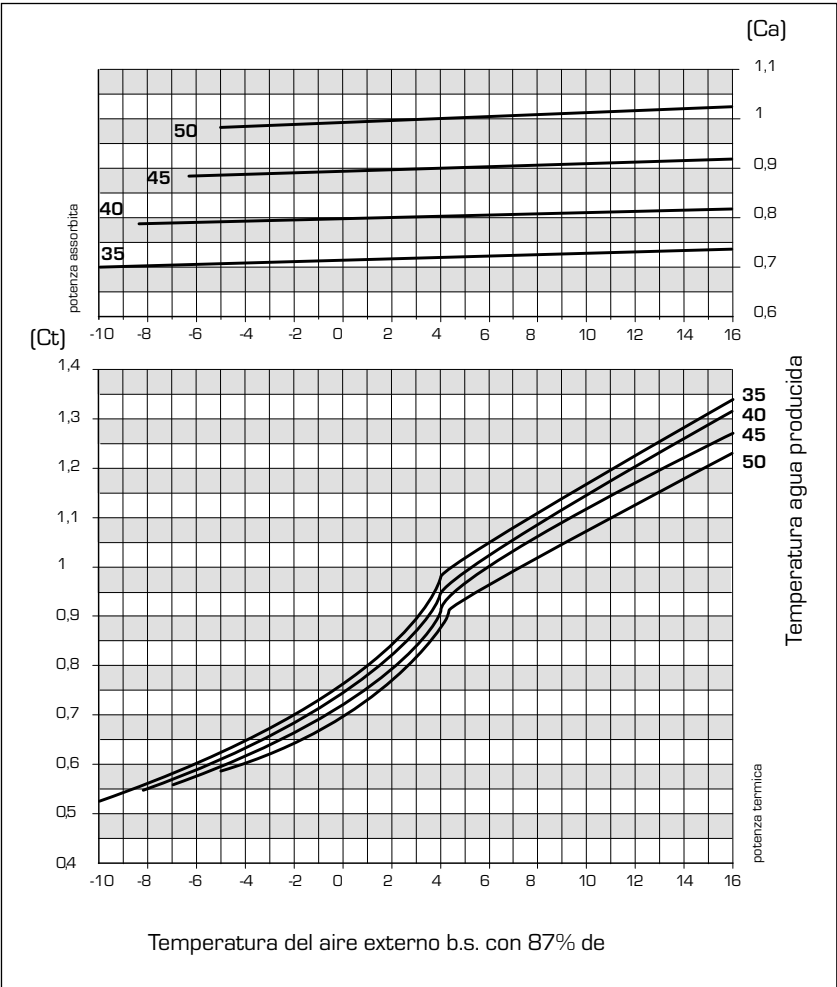
**Ca** = Coeficiente correctivo de la potencia absorbida

### 7.4 PARA $\Delta T$ DIFERENTES DEL NOMINAL

Para  $\Delta t$  diferentes de  $5^{\circ}\text{C}$  en el evaporador, use la Tab.1 para obtener los factores correctivos de la potencia de refrigeración y absorbida. Para controlar el ensuciamiento de los intercambiadores se utilizan los correspondientes factores de ensuciamiento

### 7.5 FACTORES DE INCRUSTACIÓN

Las prestaciones indicadas en la tabla se refieren a las condiciones de tubos limpios con factor de incrustación = 1. Para valores diferentes del factor de incrustación multiplique los datos de las tablas de prestaciones por los coeficientes indicados..



#### 7.4.1 Factores correctivos para $\Delta t$ diferentes del nominal Chiller

|                                                  | 3    | 5 | 8    | 10   |
|--------------------------------------------------|------|---|------|------|
| Factores de corrección potencia de refrigeración | 0,99 | 1 | 1,02 | 1,03 |
| Factores de corrección potencia absorbida        | 0,99 | 1 | 1,01 | 1,02 |

#### 7.5.1 Factores de incrustación

|                                           | $[\text{K} \cdot \text{m}^2]/[\text{W}]$ | 0,00005 | 0,0001 | 0,0002 |
|-------------------------------------------|------------------------------------------|---------|--------|--------|
| Factor de cor. potencia de refrigeración  |                                          | 1       | 0,98   | 0,94   |
| Factores de corrección potencia absorbida |                                          | 1       | 0,98   | 0,95   |

## 8 SOLUCIÓN DE GLICOL ETILÉNICO

Los factores de corrección de potencia de refrigeración y absorbida tienen en cuenta la presencia de glicol y la diferente temperatura de evaporación.

Los factores de corrección del caudal del agua y de las pérdidas de carga deben aplicarse directamente a los datos obtenidos para el funcionamiento sin glicol. El factor de corrección del caudal del agua se calcula con el objetivo de mantener el mismo  $\Delta t$  que se tendría sin glicol.

- El factor de corrección de la pérdida de carga ya tiene en cuenta el diferente caudal que se deriva de la aplicación del factor de corrección del caudal del agua.

- Los factores de corrección del caudal del agua y de las pérdidas de carga deben aplicarse directamente a los datos obtenidos para el funcionamiento sin glicol.

- Los factores de corrección de la potencia de refrigeración y absorbida

tienen en cuenta la presencia de glicol.

- Los factores de corrección del caudal del agua y de las pérdidas de carga deben aplicarse directamente a los datos obtenidos para el funcionamiento sin glicol.
- El factor de corrección del caudal del agua se calcula con el objetivo de mantener el mismo  $\Delta t$  que se tendría sin glicol.
- El factor de corrección de la pérdida de carga ya tiene en cuenta el diferente caudal que se deriva de la aplicación del factor de corrección del caudal del agua.

### Notas

Para facilitar la lectura del gráfico, en la página siguiente se muestra un ejemplo.

Utilizando el siguiente diagrama es posible establecer el porcentaje de glicol necesario; dicho porcentaje es calculable tomando en consideración uno de los siguientes factores:

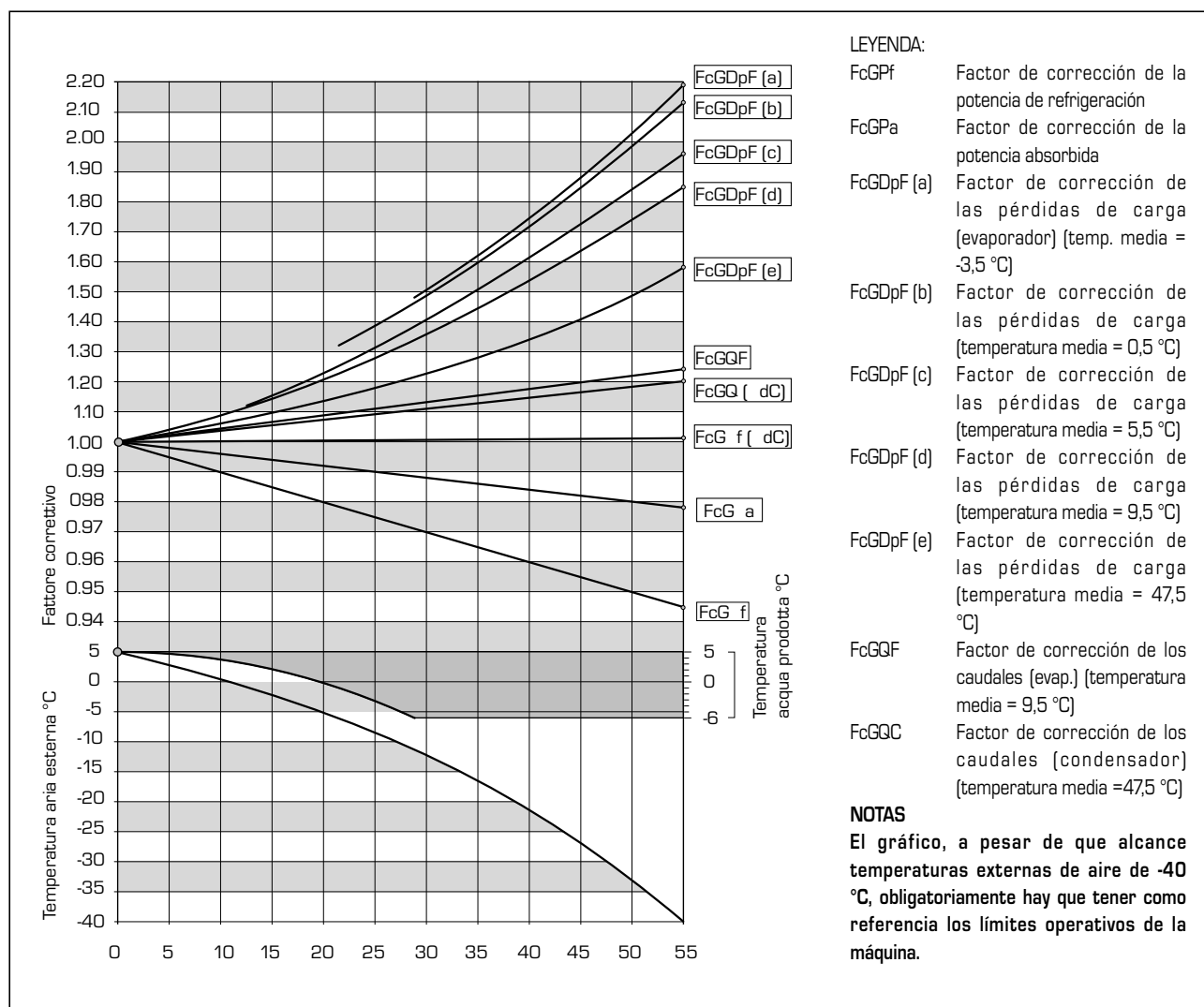
En función al fluido considerado (agua o aire), se debe acceder al gráfico por

la parte derecha o izquierda, por la intersección de las redes temperatura externa o temperatura agua producida y las curvas correspondientes, se obtiene un punto a través del cual debe pasar la línea vertical que representa tanto el porcentaje de glicol como los coeficientes correctivos correspondientes.

### 8.1 CÓMO LEER LAS CURVAS DEL GLICOL

Las curvas presentadas en la figura resumen una notable cantidad de datos, cada uno de los cuales está representado por una específica curva, para poder utilizar de forma correcta estas curvas es necesario hacer algunas consideraciones iniciales:

- Si se desea calcular el porcentaje de glicol en base a la temperatura exterior, se deberá entrar desde el eje izquierdo y una vez intersecada la curva debe trazarse una línea vertical que interceptará a su vez las otras curvas; Los puntos obtenidos de las



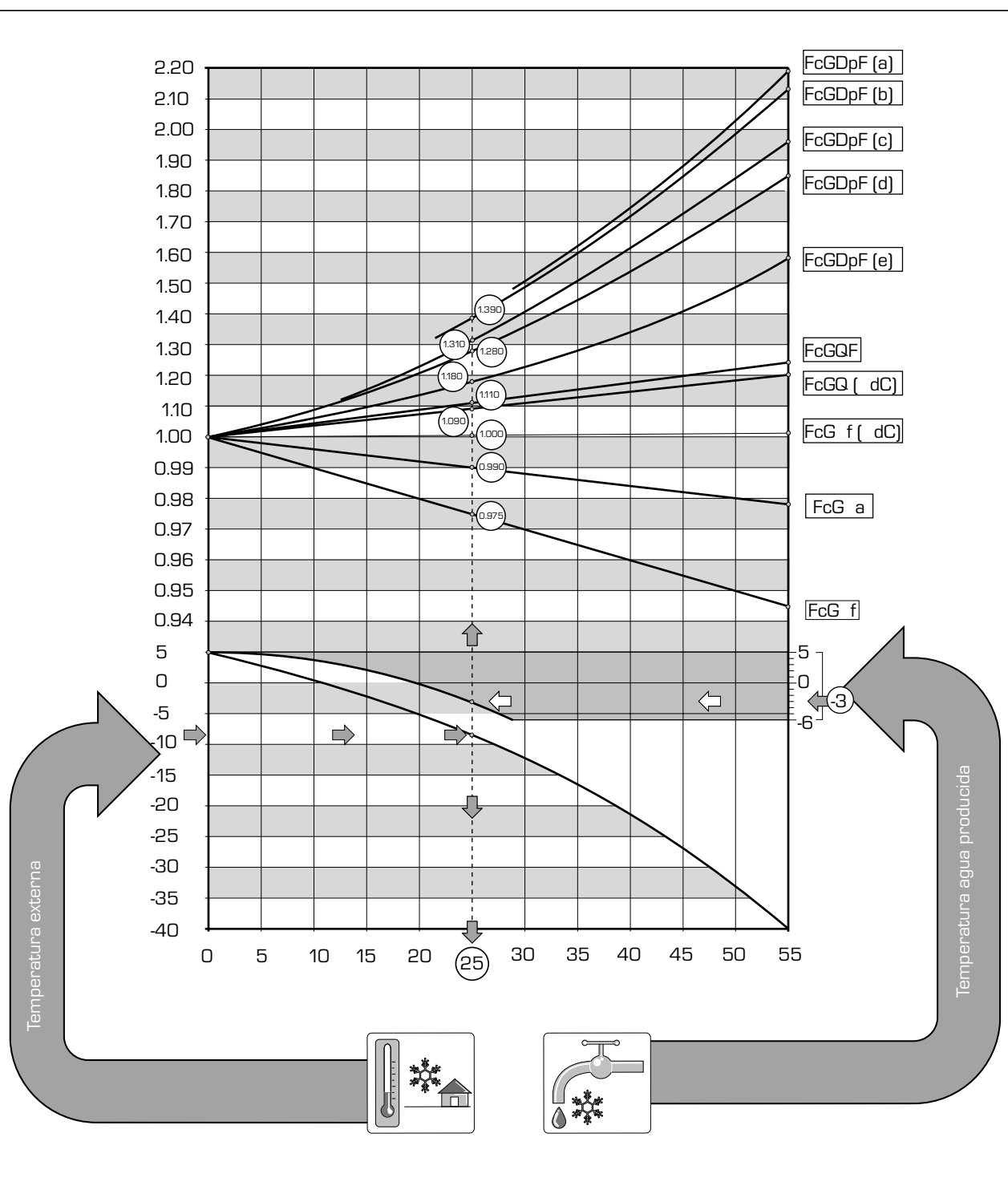
curvas superiores representan los coeficientes para la corrección de la potencia de refrigeración y absorbida, para los envíos y las pérdidas de carga (se recuerda que dichos coeficientes se deben multiplicar por el valor nominal del tamaño en consideración); mientras que el eje inferior aconseja el valor porcentual de glicol necesario en función a la temperatura del aire externo considerado.

- Si se desea calcular el porcentaje de glicol en base a la temperatura del

agua producida, se deberá entrar desde el eje derecho y una vez intersecada la curva debe trazarse una línea vertical que interceptará a su vez las otras curvas; Los puntos obtenidos de las curvas superiores representan los coeficientes para la potencia de refrigeración y absorbida, para los envíos y las pérdidas de carga (se recuerda que dichos coeficientes se deben multiplicar por el valor nominal del tamaño en consideración); mientras que el eje inferior aconseja

el valor porcentual de glicol necesario para producir agua a la temperatura deseada.

**Recordamos que los tamaños iniciales "TEMPERATURAS EXTERIORES" y "TEMPERATURA AGUA PRODUCIDA", no están directamente relacionados entre sí, así que no es posible entrar en la curva de uno de estos tamaños y obtener el correspondiente punto en otra curva.**

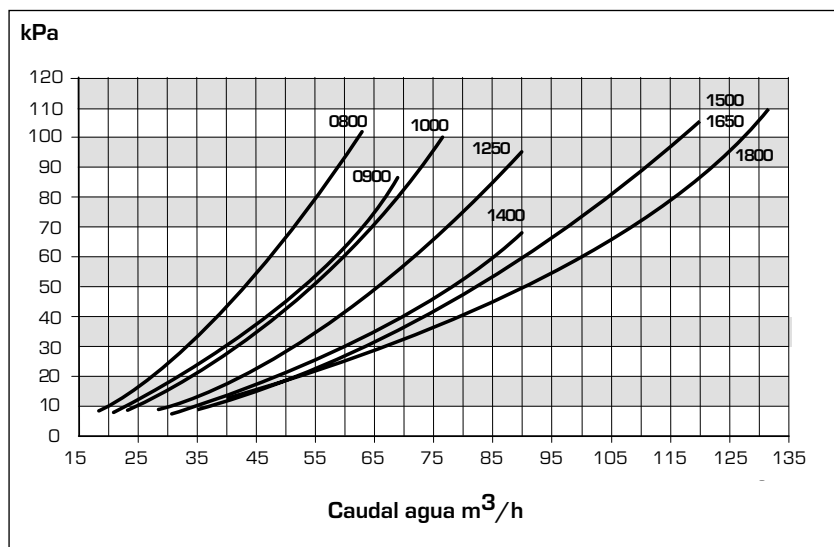


## 9 PÉRDIDAS DE CARGA

### 9.1 PÉRDIDAS DE CARGA EVAPORADOR

Los gráficos siguientes ilustran los valores de las pérdidas de carga en kPa en función del caudal en l/h. El campo de funcionamiento está delimitado por el valor mínimo y máximo de las curvas, que indican los límites de uso de los intercambiadores lado agua (evaporadores).

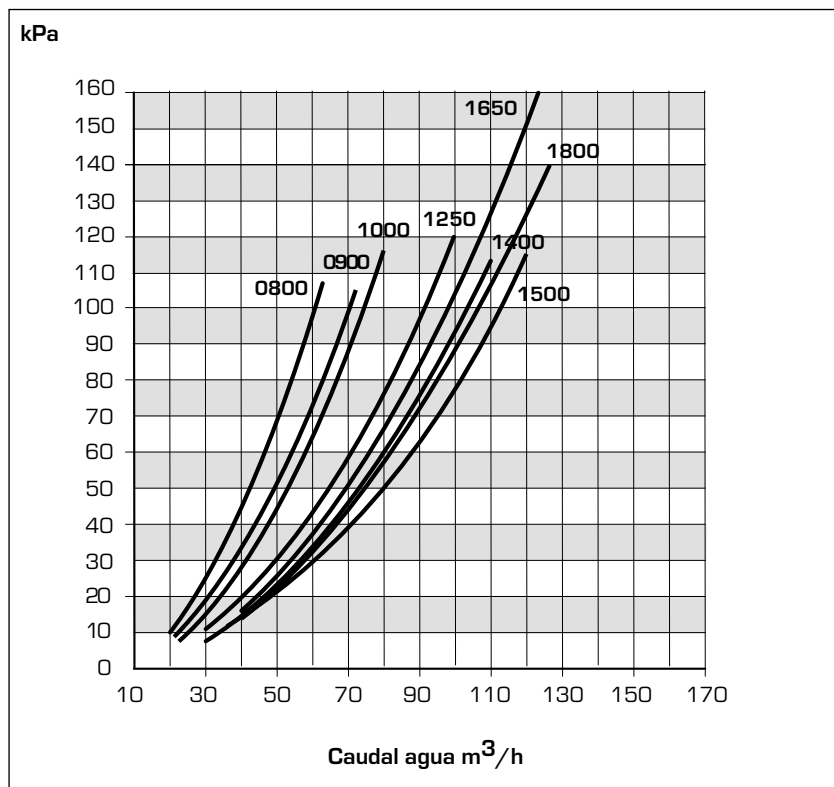
Las pérdidas de carga de los diagramas se refieren a una temperatura media del agua de 10 °C. La siguiente tabla presenta la corrección que se debe aplicar a las pérdidas de carga a medida que cambia la temperatura media del agua



| Temperatura media agua °C   | 5    | 10 | 15    | 20   | 30   | 40   | 50   |
|-----------------------------|------|----|-------|------|------|------|------|
| Coefficiente multiplicativo | 1,02 | 1  | 0,985 | 0,97 | 0,95 | 0,93 | 0,91 |

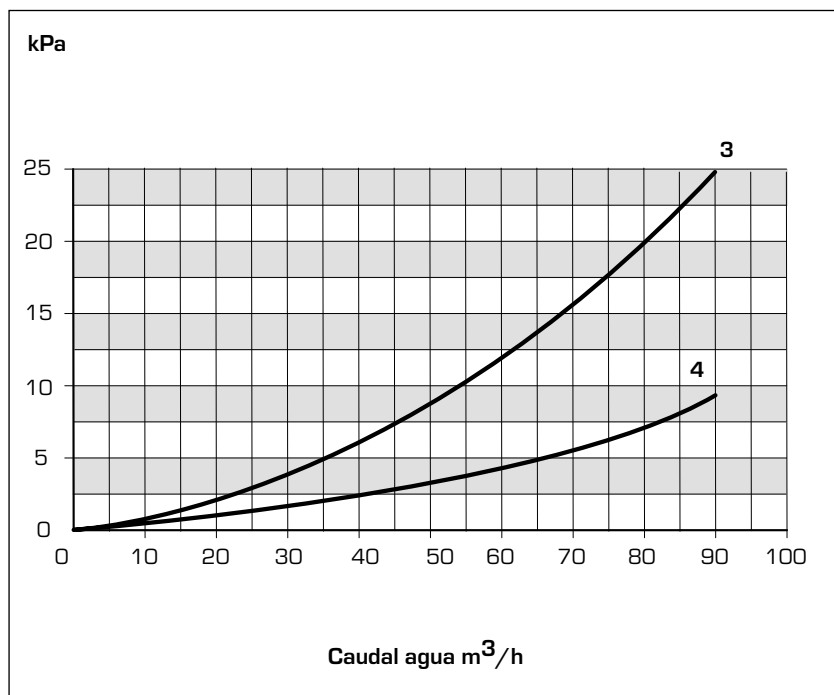
### 9.2 PÉRDIDAS DE CARGA CONDENSADOR

Las pérdidas de carga del diagrama precedente se refieren a una temperatura media del agua de 50°C. La siguiente tabla presenta la corrección que se debe aplicar a las pérdidas de carga a medida que cambia la temperatura media del agua.



| Temperatura media agua °C   | 5    | 10   | 15   | 20   | 30   | 40   | 50 |
|-----------------------------|------|------|------|------|------|------|----|
| Coefficiente multiplicativo | 1,22 | 1,10 | 1,08 | 1,06 | 1,04 | 1,02 | 1  |

### 9.3 PÉRDIDAS DE CARGA FILTRO AGUA



## 10 ACUMULACIÓN

Los modelos con acumulación prevén diversas preparaciones que varían en base altura útil de descarga que se desea obtener, con las características del grupo de bombeo y la existencia o no de orificios para resistencia integrativa.

En las siguientes tablas se evidencian las características principales de los componentes del circuito hidráulico, mientras que los gráficos de estas páginas indican las correspondientes prevalencias. Los tanques de acumulación con orificios para resistencia eléctrica se encuentran provistos de tapones de plástico de cierre provisorio.

#### ATENCIÓN

Antes de la puesta en marcha el encargado de la instalación deberá proceder al montaje de las resistencias eléctricas. Si tales resistencias no fueran necesarias de inmediato, los tapones en plástico deberán ser sustituidos con oportunos tapones de metal.

#### 10.1 CONTENIDO MÁXIMO de agua de la instalación

En la tabla que sigue se encuentra indicado el contenido máximo en litros de agua de la instalación hidráulica, compatible con la capacidad del recipiente de expansión suministrado de serie. Los valores que

aparecen en la tabla se refieren a tres condiciones de temperatura máxima y mínima del agua. Si el contenido de

agua efectivo de la instalación hidráulica (incluso el tanque de acumulación) es superior al que resulta en la tabla con las

| Altura hidráulica                  | H m   | 30    | 25    | 20    | 15   | ≥ 12.25 |
|------------------------------------|-------|-------|-------|-------|------|---------|
| Calibrado del vaso de expansión    | bar   | 3.2   | 2.8   | 2.3   | 1.8  | 1.5     |
| Valor de referencia contenido agua | l (1) | 2.174 | 2.646 | 3.118 | 3590 | 3852    |
| Valor de referencia contenido agua | l (2) | 978   | 1190  | 1404  | 1616 | 1732    |
| Valor de referencia contenido agua | l (3) | 510   | 622   | 732   | 844  | 904     |

| Acqua glicolata | Temp. acqua °C |      | Coefficiente di correzione | Condizione di riferimento |
|-----------------|----------------|------|----------------------------|---------------------------|
|                 | max.           | min. |                            |                           |
| 10%             | 40             | -2   | 0,507                      | (1)                       |
| 10%             | 60             | -2   | 0,686                      | (2)                       |
| 10%             | 85             | -2   | 0,809                      | (3)                       |
| 20%             | 40             | -6   | 0,434                      | (1)                       |
| 20%             | 60             | -6   | 0,604                      | (2)                       |
| 20%             | 85             | -6   | 0,729                      | (3)                       |
| 35%             | 40             | -6   | 0,393                      | (1)                       |
| 35%             | 60             | -6   | 0,555                      | (2)                       |
| 35%             | 85             | -6   | 0,677                      | (3)                       |

Condiciones operativas de referencia:

(1) frío: Temp. agua máx. = 40 °C, Temp. mín. agua = 4 °C.

(2) Calor (bomba de calor): Temp. agua máx. = 60 °C, Temp. mín. agua = 4 °C.

(3) Calor (caldera): Temp. agua máx. = 85 °C, Temp. mín. agua = 4 °C.

condiciones operativas, se deberá instalar un ulterior vaso de expansión adicional, dimensionado, utilizando los habituales criterios relacionados con el volumen de agua adicional.

Mediante las siguientes tablas se pueden obtener los valores de contenido máximo de la instalación, también para otras condiciones de funcionamiento con agua glicolada.

Los valores se obtienen multiplicando el valor de referencia por el coeficiente de corrección.

### 10.1.1 Calibrado vaso de expansión

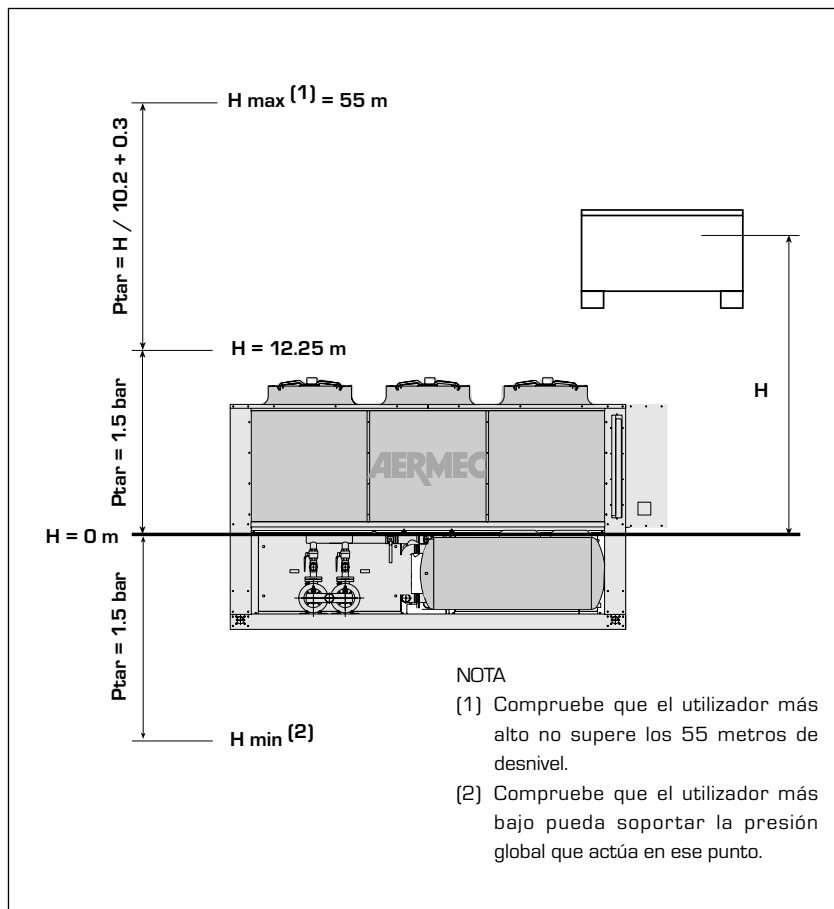
El valor estándar de presión de precarga de los dos vasos de expansión es igual a 1,5 bar, mientras que su volumen es de 24 litros, **valor máximo 6 bar**.

El calibrado del depósito se debe regular de acuerdo con el desnivel máximo (H) de la unidad (véase figura) según la fórmula:

$$p \text{ (calibrado) [bar]} = H \text{ [m]} / 10,2 + 0,3.$$

Por ejemplo, si el valor del desnivel H es igual a 20 m, el valor del calibrado del depósito será de 2,3 bar.

Si el valor del ajuste obtenido por el cálculo resultase inferior a 1,5 bar (es decir, para  $H < 12,25$ ), mantener el ajuste estándar.



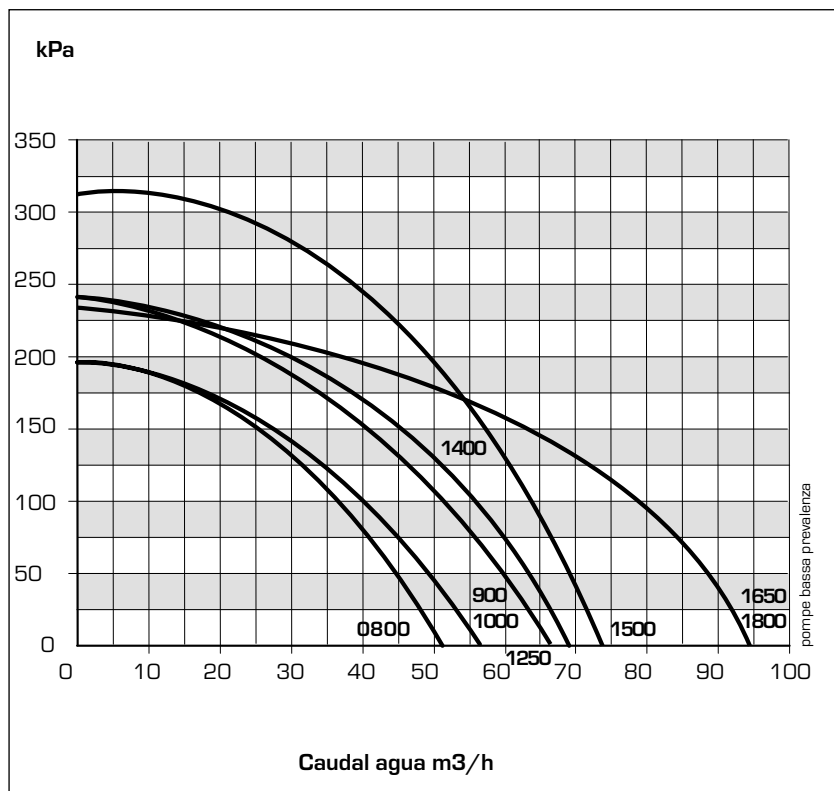
## 11 PREVALENCIAS ÚTILES PARA LA INSTALACIÓN

Las prevalencias aquí indicadas son al neto de las pérdidas de carga de los intercambiadores, filtro, por tanto, deben considerarse útiles para la instalación

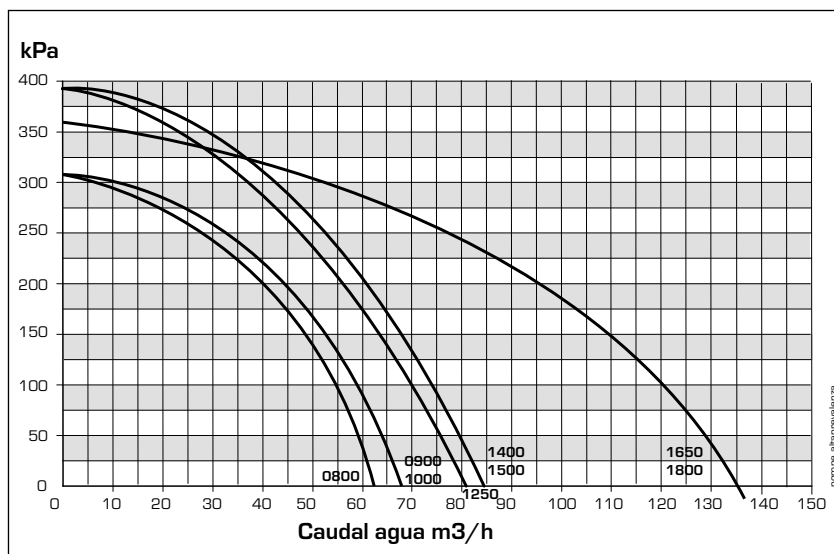
### ATENCIÓN

Ya que las bombas pueden ser de alta o baja prevalencia, presentamos aquí dos gráficos distintos para no causar incompreensión en la selección.

### 11.1 BOMBAS BAJA PREVALENCIA



## 11.2 BOMBAS ALTA PREVALENCIA



## 12 DESSURRISCALDATORI

La potenza termica ottenibile dal desurriscaldatore si ottiene moltiplicando il valore nominale (Pd) riportato nella tabella sottostante i diagrammi, per un opportuno coefficiente (Cd).

I diagrammi consentono di ricavare i coefficienti correttivi da utilizzare per i refrigeratori nelle varie versioni; in corrispondenza di ciascuna curva è riportata la temperatura dell'aria esterna alla quale si riferisce.

Le perdite di carico riportate in tabella non considerano le perdite del filtro, la cui curva caratteristica è riportata in TAV 9.3.

Il valore nominale è riferito a:

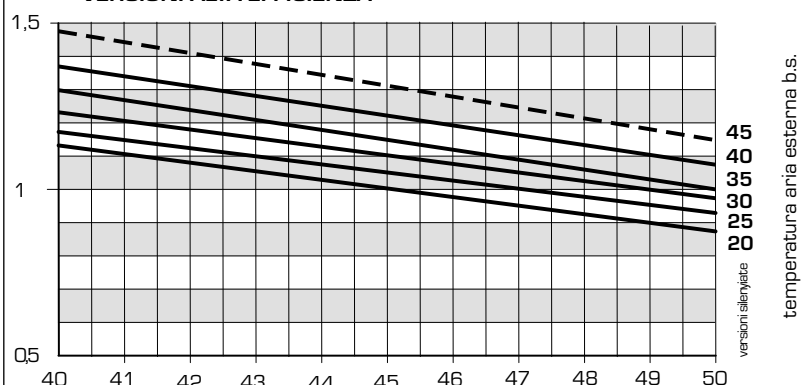
temperatura aria 35°C  
acqua prodotta 50°C.

### NOTA

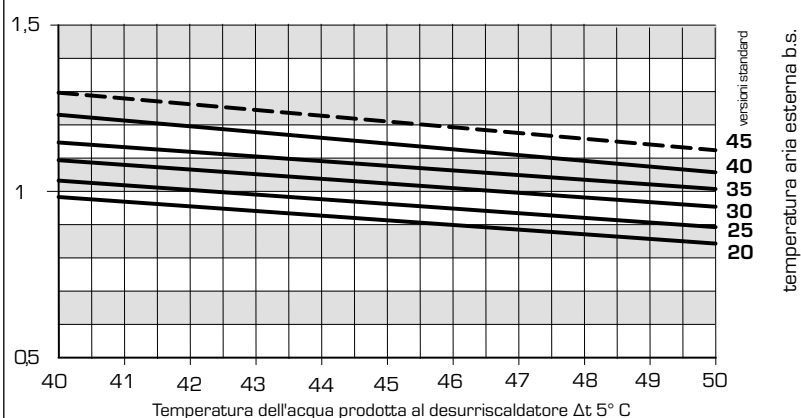
nei modelli a pompa di calore il desurriscaldatore deve essere intercettato nel funzionamento in pompa di calore, pena il decadimento della garanzia.

Per valori della temperatura dell'acqua refrigerata prodotta diversi da 7°C o per temperature di evaporazione diverse da 5°C, utilizzare i fattori correttivi della apposita tabella, oltre a quelli ricavati dai grafici.

### 12.1 VERSIONI STANDARD VERSIONI ALTA EFFICIENZA



#### 12.1.2 VERSIONI SILENZIATE



#### 12.2.3 valori diversi dal nominale

| Temperatura media acqua °C  | 5    | 7 | 9    | 11   | 13  | 15   |
|-----------------------------|------|---|------|------|-----|------|
| Coefficiente moltiplicativo | 0.94 | 1 | 1.07 | 1.13 | 1.2 | 1.27 |

| Temperatura di evaporazione °C | 1    | 3    | 5 | 7    | 9    | 11  |
|--------------------------------|------|------|---|------|------|-----|
| Coefficiente moltiplicativo    | 0.88 | 0.94 | 1 | 1.06 | 1.13 | 1.2 |

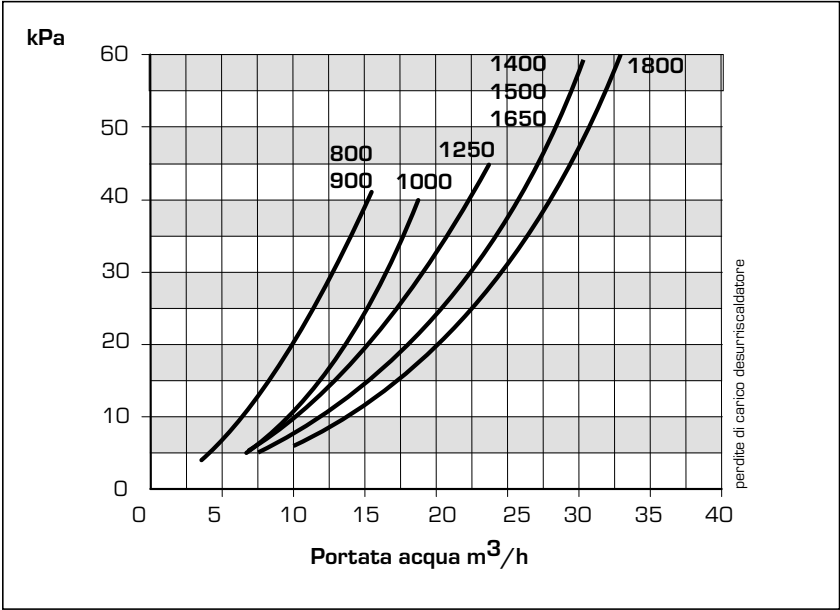
12.3 PERDITE DI CARICO

I modelli NRA con desurriscaldatore hanno , per tutte le grandezza, 2 desurriscaldatori (disposti in parallelo).

NOTA

Il parallelo idraulico è a cura dell'installatore.

Le caratteristiche dei desurriscaldatori e le curve delle perdite di carico sono riportate di seguito.



Per valori di temperatura dell'acqua prodotta diversi da 50 °C, si moltiplichi il risultato ottenuto per il fattore di correzione ottenibile dalla tabella 12.2.4.

12.2.4 valori diversi dal nominale

| Temperatura media acqua °C  | 30   | 40   | 50 |
|-----------------------------|------|------|----|
| Coefficiente moltiplicativo | 1.04 | 1.02 | 1  |

La potenza termica disponibile ai desurriscaldatori è alle condizioni nominali:

|                  |       |
|------------------|-------|
| Temperatura aria | 35 °C |
| Acqua prodotta   | 50 °C |
| Δt               | 5 °C  |

| Taglie                      |      | 0800 | 0900  | 1000  | 1250  | 1400  | 1500  | 1650  | 1800  |
|-----------------------------|------|------|-------|-------|-------|-------|-------|-------|-------|
| Potenza termica disponibile | kW   | 55   | 61    | 66    | 82    | 91    | 101   | 110   | 119   |
| Portata acqua               | m³/h | 9.46 | 10.43 | 11.36 | 14.02 | 15.72 | 17.34 | 18.92 | 20.46 |
| Perdita di carico           | kPa  | 16   | 19.5  | 14.5  | 16.5  | 16    | 19    | 22    | 22    |

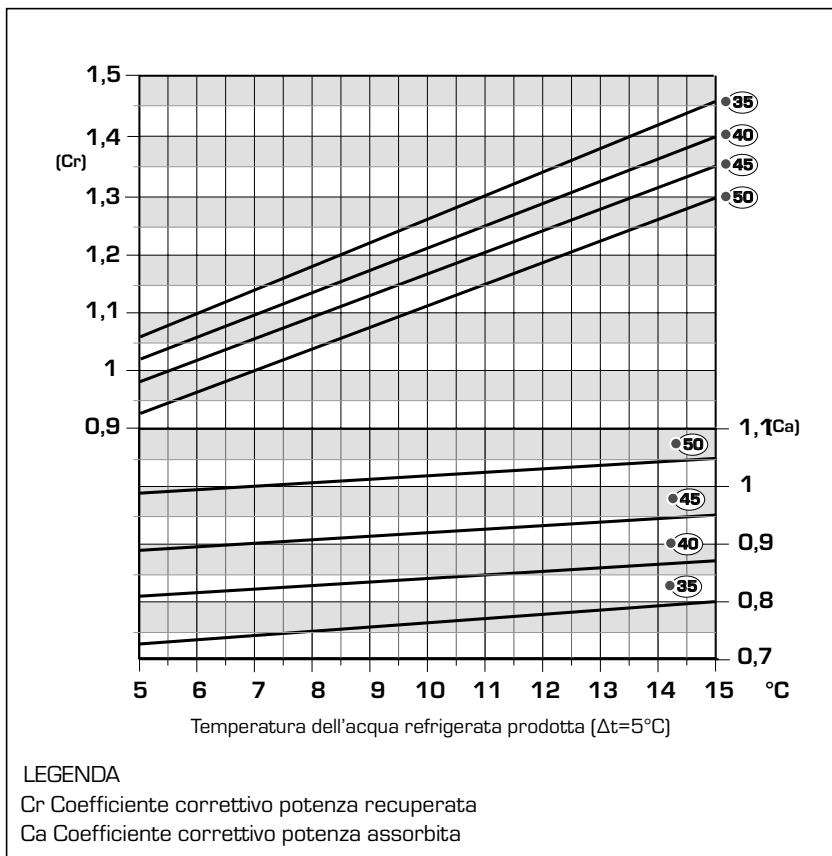
## 13 RECUPERO TOTALE

In caso di funzionamento con recupero totale di calore, le prestazioni della macchina non dipendono dalla temperatura dell'aria esterna, bensì da quella dell'acqua calda prodotta: la potenza elettrica assorbita e la potenza termica di recupero si ottengono moltiplicando i valori ( $P_a$ ,  $P_r$ ) riportati a fondo pagina per i rispettivi coefficienti correttivi ( $C_a$ ,  $C_r$ ), deducibili dai diagrammi seguenti. In corrispondenza di ciascuna curva è riportata la temperatura dell'acqua calda prodotta alla quale si riferisce, assumendo una differenza di 5°C tra ingresso e uscita dal recuperatore totale.

La potenza frigorifera ( $P_f$ ) si ottiene dalla differenza tra potenza termica di recupero ( $P_r$ ) e potenza assorbita ( $P_a$ ).

### NOTA

En las bombas de calor, la recuperación total está disponible sólo para las versiones "00 sin kit hidráulico".



La potenza termica disponibile ai recuperatori è alle condizioni nominali:

|                  |       |
|------------------|-------|
| Temperatura aria | 35 °C |
| Acqua prodotta   | 50 °C |
| Δt               | 5 °C  |

| Taglie            |                   | 0800 | 0900 | 1000 | 1250 | 1400 | 1500 | 1650 | 1800 |
|-------------------|-------------------|------|------|------|------|------|------|------|------|
| PTR               | kW                | 290  | 324  | 357  | 435  | 485  | 534  | 591  | 654  |
| Potenza assorbita | kW                | 73   | 81   | 89   | 109  | 121  | 133  | 157  | 174  |
| Portata acqua     | m <sup>3</sup> /h | 50   | 55.7 | 61.4 | 74.8 | 83.4 | 92.0 | 101  | 112  |
| Perdita di carico | kPa               | 7    | 9    | 9    | 10   | 10   | 9.6  | 13   | 18   |

### 13.1 PERDITE DI CARICO

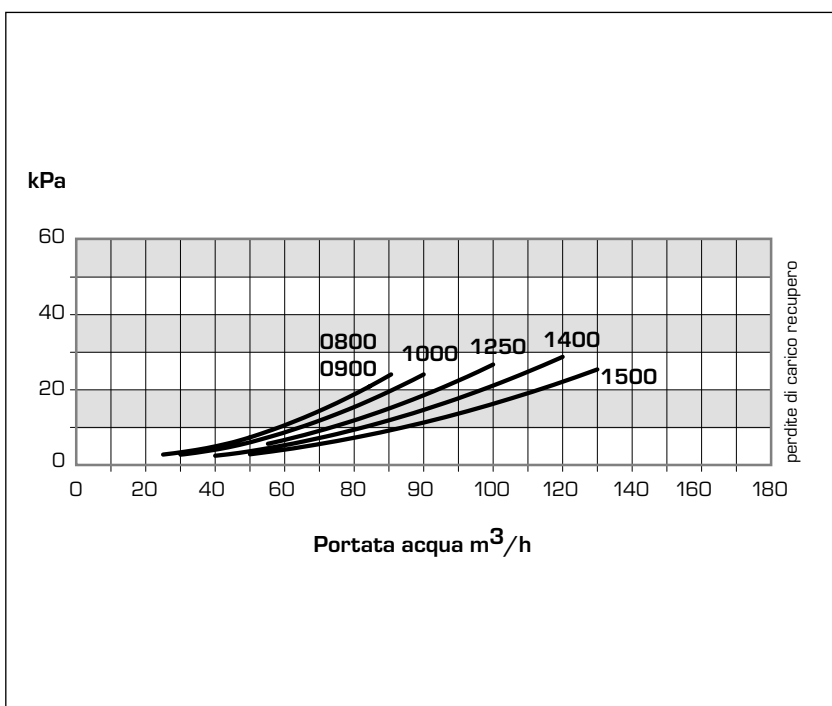
I modelli NRA con recupero totale hanno sempre due recuperatori (disposti in parallelo). Le caratteristiche dei recuperatori e le curve delle perdite di carico sono riportate di seguito, non sono considerate le perdite del filtro.

Per valori di temperatura dell'acqua prodotta diversi da 50 °C, si moltiplichino il risultato ottenuto per il fattore di correzione ottenibile dalla tabella 13.1.1

### NOTA

Il parallelo idraulico è a cura dell'installatore.

Le perdite di carico del diagramma sono relative ad una temperatura media dell'acqua di 50 °C. la tabella 13.1.1 riporta la correzione da applicare alle perdite di carico al variare della temperatura media dell'acqua.



## 14 DATOS SONOROS

### Potencia sonora

Aermec determina el valor de la potencia sonora en base a las medidas efectuadas de acuerdo con la normativa 9614, en conformidad con lo requerido por la certificación Eurovent.

#### (1) Presión sonora

Presión sonora en campo libre sobre plano reflectante (factor de direccionalidad  $Q=2$ ), a 10 m de distancia de la superficie externa de la unidad, con el método del paralelo expandido (box-method, ISO 3744)

#### NOTA

Condiciones de funcionamiento:

Agua evaporador (in/out) 12/7 °C

Aire condensador 35 °C

#### NOTA

Los datos de las versiones H/HL se calculan en frío, para el funcionamiento en caliente tome como referencia la versión H.

| [°]  | Niveles sonoros totales |            |     | Banda de octava [Hz]                                  |      |      |      |      |      |      |
|------|-------------------------|------------|-----|-------------------------------------------------------|------|------|------|------|------|------|
|      | Pot.                    | Pressione. |     | 125                                                   | 250  | 500  | 1000 | 2000 | 4000 | 8000 |
|      | dB(A)                   | dB(A)      | dB  | Potencia sonora para frecuencia central de banda [dB] |      |      |      |      |      |      |
|      |                         | 10 m       | 1 m |                                                       |      |      |      |      |      |      |
| 0800 | 88.5                    | 56.5       | 73  | 92                                                    | 88,5 | 85   | 83,6 | 81,1 | 72,8 | 63,3 |
| 0900 | 88.5                    | 56.5       | 73  | 92                                                    | 88,5 | 85   | 83,6 | 81,1 | 72,8 | 63,3 |
| 1000 | 88.5                    | 56.5       | 73  | 92                                                    | 88,5 | 85   | 83,6 | 81,1 | 72,8 | 63,3 |
| 1250 | 91.5                    | 59.5       | 74  | 95,5                                                  | 88,2 | 88   | 85,9 | 82,4 | 73,5 | 64,1 |
| 1400 | 91.0                    | 59         | 74  | 95,5                                                  | 88,2 | 88   | 85,9 | 82,4 | 73,5 | 64,1 |
| 1500 | 90.5                    | 58.5       | 74  | 95,5                                                  | 88,2 | 88   | 85,9 | 82,4 | 73,5 | 64,1 |
| 1650 | 92                      | 60         | 76  | 96,7                                                  | 90,6 | 89,4 | 86,4 | 84,6 | 83,1 | 80,4 |
| 1800 | 94                      | 62         | 78  | 96,7                                                  | 90,6 | 89,4 | 88,2 | 86,9 | 88,0 | 85,9 |

| A    | Niveles sonoros totales |            |     | Banda de octava [Hz]                                  |      |      |      |      |      |      |
|------|-------------------------|------------|-----|-------------------------------------------------------|------|------|------|------|------|------|
|      | Pot.                    | Pressione. |     | 125                                                   | 250  | 500  | 1000 | 2000 | 4000 | 8000 |
|      | dB(A)                   | dB(A)      | dB  | Potencia sonora para frecuencia central de banda [dB] |      |      |      |      |      |      |
|      |                         | 10 m       | 1 m |                                                       |      |      |      |      |      |      |
| 0800 | 88                      | 56         | 73  | 89,8                                                  | 87,3 | 84,3 | 83,4 | 81,0 | 72,4 | 62,8 |
| 0900 | 88                      | 56         | 73  | 89,8                                                  | 87,3 | 84,3 | 83,4 | 81,0 | 72,4 | 62,8 |
| 1000 | 88                      | 56         | 73  | 89,8                                                  | 87,3 | 84,3 | 83,4 | 81,0 | 72,4 | 62,8 |
| 1250 | 91                      | 59         | 74  | 93,2                                                  | 87,0 | 87,3 | 85,8 | 82,3 | 73,1 | 63,6 |
| 1400 | 90.5                    | 58.5       | 74  | 93,2                                                  | 87,0 | 87,3 | 85,8 | 82,3 | 73,1 | 63,6 |
| 1500 | 90                      | 58         | 74  | 93,2                                                  | 87,0 | 87,3 | 85,8 | 82,3 | 73,1 | 63,6 |
| 1650 | 91.5                    | 59.5       | 75  | 95,0                                                  | 90,0 | 88,9 | 86,3 | 84,6 | 83,1 | 80,4 |
| 1800 | 93.5                    | 61.5       | 78  | 95,1                                                  | 90,0 | 88,9 | 88,1 | 86,9 | 88,0 | 85,9 |

| L    | Niveles sonoros totales |            |      | Banda de octava [Hz]                                  |      |      |      |      |      |      |
|------|-------------------------|------------|------|-------------------------------------------------------|------|------|------|------|------|------|
|      | Pot.                    | Pressione. |      | 125                                                   | 250  | 500  | 1000 | 2000 | 4000 | 8000 |
|      | dB(A)                   | dB(A)      | dB   | Potencia sonora para frecuencia central de banda [dB] |      |      |      |      |      |      |
|      |                         | 10 m       | 1 m  |                                                       |      |      |      |      |      |      |
| 0800 | 83                      | 51         | 68   | 89,3                                                  | 84,7 | 80,2 | 77,3 | 73,7 | 65,2 | 55,9 |
| 0900 | 83                      | 51         | 68   | 89,3                                                  | 84,7 | 80,2 | 77,3 | 73,7 | 65,2 | 55,9 |
| 1000 | 83                      | 51         | 68   | 89,3                                                  | 84,7 | 80,2 | 77,3 | 73,7 | 65,2 | 55,9 |
| 1250 | 86                      | 54         | 69   | 92,7                                                  | 84,4 | 83,1 | 79,7 | 74,9 | 65,9 | 56,6 |
| 1400 | 85.5                    | 53.5       | 69   | 92,7                                                  | 84,4 | 83,1 | 79,7 | 74,9 | 65,9 | 56,6 |
| 1500 | 85                      | 53         | 69   | 92,7                                                  | 84,4 | 83,1 | 79,7 | 74,9 | 65,9 | 56,6 |
| 1650 | 86.5                    | 54.5       | 71,0 | 92,6                                                  | 86,7 | 84,3 | 78,2 | 79,7 | 80,7 | 78,4 |
| 1800 | 88.5                    | 56.5       | 73,0 | 91,4                                                  | 85,5 | 83,1 | 82,2 | 82,0 | 84,4 | 82,0 |

| H    | Niveles sonoros totales |            |     | Banda de octava [Hz]                                  |      |      |      |      |      |      |
|------|-------------------------|------------|-----|-------------------------------------------------------|------|------|------|------|------|------|
|      | Pot.                    | Pressione. |     | 125                                                   | 250  | 500  | 1000 | 2000 | 4000 | 8000 |
|      | dB(A)                   | dB(A)      | dB  | Potencia sonora para frecuencia central de banda [dB] |      |      |      |      |      |      |
|      |                         | 10 m       | 1 m |                                                       |      |      |      |      |      |      |
| 0800 | 88,5                    | 56,5       | 73  | 92                                                    | 88,5 | 85,0 | 83,6 | 81,1 | 72,8 | 63,3 |
| 0900 | 88,5                    | 56,5       | 73  | 92                                                    | 88,5 | 85,0 | 83,6 | 81,1 | 72,8 | 63,3 |
| 1000 | 88,5                    | 56,5       | 73  | 92                                                    | 88,5 | 85,0 | 83,6 | 81,1 | 72,8 | 63,3 |
| 1250 | 91,5                    | 59,5       | 74  | 95,5                                                  | 88,2 | 88,0 | 85,9 | 82,4 | 73,5 | 64,1 |
| 1400 | 91                      | 59         | 74  | 95,5                                                  | 88,2 | 88,0 | 85,9 | 82,4 | 73,5 | 64,1 |
| 1500 | 90,5                    | 58,5       | 74  | 95,5                                                  | 88,2 | 88,0 | 85,9 | 82,4 | 73,5 | 64,1 |
| 1650 | 92                      | 60         | 76  | 96,7                                                  | 90,6 | 89,4 | 86,4 | 84,6 | 83,1 | 80,4 |
| 1800 | 94                      | 62         | 78  | 96,7                                                  | 90,6 | 89,4 | 88,2 | 86,9 | 88,0 | 85,9 |

| HL   | Niveles sonoros totales |            |     | Banda de octava [Hz]                                  |      |      |      |      |      |      |
|------|-------------------------|------------|-----|-------------------------------------------------------|------|------|------|------|------|------|
|      | Pot.                    | Pressione. |     | 125                                                   | 250  | 500  | 1000 | 2000 | 4000 | 8000 |
|      | dB(A)                   | dB(A)      | dB  | Potencia sonora para frecuencia central de banda [dB] |      |      |      |      |      |      |
|      |                         | 10 m       | 1 m |                                                       |      |      |      |      |      |      |
| 0800 | 83                      | 51         | 68  | 89,3                                                  | 84,7 | 80,2 | 77,3 | 73,7 | 65,2 | 55,9 |
| 0900 | 83                      | 51         | 68  | 89,3                                                  | 84,7 | 80,2 | 77,3 | 73,7 | 65,2 | 55,9 |
| 1000 | 83                      | 51         | 68  | 89,3                                                  | 84,7 | 80,2 | 77,3 | 73,7 | 65,2 | 55,9 |
| 1250 | 86                      | 54         | 69  | 92,7                                                  | 84,4 | 83,1 | 79,7 | 74,9 | 65,9 | 56,6 |
| 1400 | 85.5                    | 53.5       | 69  | 92,7                                                  | 84,4 | 83,1 | 79,7 | 74,9 | 65,9 | 56,6 |
| 1500 | 85                      | 53         | 69  | 92,7                                                  | 84,4 | 83,1 | 79,7 | 74,9 | 65,9 | 56,6 |
| 1650 | 86.5                    | 54.5       | 73  | 94,7                                                  | 88,8 | 86,5 | 81,3 | 81,7 | 82,7 | 80,3 |
| 1800 | 88.5                    | 56.5       | 76  | 94,8                                                  | 88,9 | 86,5 | 85,6 | 85,4 | 87,8 | 85,9 |

## 15 PARCIALIZACIONES

| * Potencia de refrigeración % | Niveles de potencia |    |    |     |    |     |
|-------------------------------|---------------------|----|----|-----|----|-----|
| Versiones                     | 1°                  | 2° | 3° | 4°  | 5° | 6°  |
| NRA 0800                      | 30                  | 60 | 80 | 100 |    |     |
| NRA 0900                      | 30                  | 60 | 80 | 100 |    |     |
| NRA 1000                      | 30                  | 60 | 80 | 100 |    |     |
| NRA 1250                      | 18                  | 36 | 52 | 70  | 85 | 100 |
| NRA 1400                      | 18                  | 36 | 52 | 70  | 85 | 100 |
| NRA 1500                      | 18                  | 36 | 52 | 70  | 85 | 100 |
| NRA 1650                      | 18                  | 36 | 52 | 70  | 85 | 100 |
| NRA 1800                      | 18                  | 36 | 52 | 70  | 85 | 100 |

| * Potencia absorbida % | Niveles de potencia |    |    |     |    |     |
|------------------------|---------------------|----|----|-----|----|-----|
| Versiones              | 1°                  | 2° | 3° | 4°  | 5° | 6°  |
| NRA 0800               | 22                  | 43 | 72 | 100 |    |     |
| NRA 0900               | 22                  | 43 | 72 | 100 |    |     |
| NRA 1000               | 22                  | 43 | 72 | 100 |    |     |
| NRA 1250               | 22                  | 43 | 72 | 100 |    |     |
| NRA 1400               | 11                  | 27 | 44 | 63  | 81 | 100 |
| NRA 1500               | 11                  | 27 | 44 | 63  | 81 | 100 |
| NRA 1650               | 11                  | 27 | 44 | 63  | 81 | 100 |
| NRA 1800               | 11                  | 27 | 44 | 63  | 81 | 100 |

| * Potencia térmica % | Niveles de potencia |    |    |     |    |     |
|----------------------|---------------------|----|----|-----|----|-----|
| Versiones            | 1°                  | 2° | 3° | 4°  | 5° | 6°  |
| NRA 0800 H           | 28                  | 55 | 78 | 100 |    |     |
| NRA 0900 H           | 28                  | 55 | 78 | 100 |    |     |
| NRA 1000 H           | 28                  | 55 | 78 | 100 |    |     |
| NRA 1250 H           | 28                  | 55 | 78 | 100 |    |     |
| NRA 1400 H           | 17                  | 33 | 50 | 68  | 84 | 100 |
| NRA 1500 H           | 17                  | 33 | 50 | 68  | 84 | 100 |
| NRA 1650 H           | 17                  | 33 | 50 | 68  | 84 | 100 |
| NRA 1800 H           | 17                  | 33 | 50 | 68  | 84 | 100 |

| * Potencia absorbida % | Niveles de potencia |    |    |     |    |     |
|------------------------|---------------------|----|----|-----|----|-----|
| Versiones              | 1°                  | 2° | 3° | 4°  | 5° | 6°  |
| NRA 0800 H             | 22                  | 43 | 72 | 100 |    |     |
| NRA 0900 H             | 22                  | 43 | 72 | 100 |    |     |
| NRA 1000 H             | 22                  | 43 | 72 | 100 |    |     |
| NRA 1250 H             | 11                  | 27 | 44 | 63  | 81 | 100 |
| NRA 1400 H             | 11                  | 27 | 44 | 63  | 81 | 100 |
| NRA 1500 H             | 11                  | 27 | 44 | 63  | 81 | 100 |
| NRA 1650 H             | 11                  | 27 | 44 | 63  | 81 | 100 |
| NRA 1800 H             | 11                  | 27 | 44 | 63  | 81 | 100 |

### Nota

Los rendimientos se refieren a las siguientes condiciones:

- \* temperatura del agua producida = 7 °C; temperatura de aire externo = 35 °C.
- \* temperatura del agua producida = 50 °C; temperatura del aire externo = 7 °C B.S. - 6 °C B.U.

### ATENCIÓN

Como se deduce de la tabla, parcialmente la reducción de la potencia absorbida es superior a la reducción de la potencia de rendimiento, obteniendo de este modo un E.E.R. superior al que está en funcionamiento en plena carga. Esto porque en parcialización la máquina se encuentra con intercambiadores

"sobredimensionados" respecto a las correspondientes capacidades refrigerantes, permitiendo así una mayor eficacia energética.

Por tal motivo esta serie de aparatos está particularmente indicada para reducir los consumos energético con carga variable (típico de las aplicaciones de confort).

## 16 CALIBRADO PARÁMETROS DE CONTROL Y DE SEGURIDAD

### PARÁMETROS DE CONTROL

Notas

[1] = Versión Y

|                         |    | min.       | standard   | max. |
|-------------------------|----|------------|------------|------|
| Set point enfriamiento  | °C | 4 / -6 [1] | 7 / -6 [1] | 14   |
| Set point calentamiento | °C | 35         | 48         | 50   |
| Intervención antihielo  | °C | -9         | 3          | 4    |
| Diferencial total       | °C | 3          | 5          | 10   |
| Autostart               |    | auto       |            |      |

### 16.1 MAGENTOTÉRMICOS VENTILADORES

|                 | 0800 | 0900 | 1000 | 1250 | 1400 | 1500 | 1650 | 1800 |
|-----------------|------|------|------|------|------|------|------|------|
| n° ventiladores |      |      |      |      |      |      |      |      |
| MTV 1           | 17 A | 17 A | 9 A  | 9 A  | 13 A | 13 A | 13 A | 17 A |
| MTV 2           | 17 A | 17 A | 9 A  | 9 A  | 13 A | 13 A | 13 A | 17 A |
| MTV 3           | /    | /    | 9 A  | 13 A | 13 A | 13 A | 13 A | 17 A |
| MTV 4           | /    | /    | 9 A  | 13 A | 13 A | 13 A | 13 A | 17 A |

### 16.2 MAGENTOTÉRMICOS COMPRESORES

|       | 0800 | 0900 | 1000 | 1250 | 1400 | 1500 | 1650 | 1800 |
|-------|------|------|------|------|------|------|------|------|
| MTC1  | 53 A | 57 A | 53 A | 53 A | 57 A | 57 A | 53 A | 53 A |
| MTC1A | 53 A | 57 A | 53 A | 53 A | 57 A | 57 A | 53 A | 53 A |
| MTC1B | 53 A | 57 A | /    | /    | /    | /    | 53 A | 53 A |
| MTC2  | 57 A | 57 A | 53 A | 53 A | 57 A | 53 A | 53 A | 57 A |
| MTC2A | 57 A | 57 A | 53 A | 53 A | 57 A | 53 A | 53 A | 57 A |
| MTC2B | 57 A | 57 A | /    | /    | /    | 53 A | 53 A | 57 A |
| MTC3  | /    | /    | 53 A | 57 A | 57 A | 57 A | 53 A | 53 A |
| MTC3A | /    | /    | 53 A | 57 A | 57 A | 57 A | 53 A | 53 A |
| MTC3B | /    | /    | /    | /    | /    | /    | 53 A | 53 A |
| MTC4  | /    | /    | 53 A | 57 A | 57 A | 53 A | 53 A | 57 A |
| MTC4A | /    | /    | 53 A | 57 A | 57 A | 53 A | 53 A | 57 A |
| MTC4B | /    | /    | /    | /    | /    | 53 A | 53 A | 57 A |

### 16.3 TRANSDUCTORES PRESOSTATOS

Nota

PA Presostato de alta presión

PB Presostato de baja presión

TRA Transductor de alta presión

TRB Transductor de baja presión

|             |    | 0800 | 0900 | 1000 | 1250 | 1400 | 1500 | 1650 | 1800 |
|-------------|----|------|------|------|------|------|------|------|------|
| PA en frío  |    | 27   | 27   | 27   | 27   | 27   | 27   | 27   | 27   |
| PA en calor | H  | 27   | 27   | 27   | 27   | 27   | 27   | 27   | 27   |
| PB          | HL | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| TRA         |    | 27   | 27   | 27   | 27   | 27   | 27   | 27   | 27   |
| TRB         |    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    |

Todas las unidades están sometidas a test rigurosos en la fábrica antes de su envío. En cualquier caso es buena costumbre comprobar todos los dispositivos de control y de seguridad después de un periodo razonable de funcionamiento.

Todas las operaciones de control deben ser realizadas por personal cualificado, los ajustes erróneos de tales dispositivos pueden causar serios daños a la unidad.

#### 16.3.1 Presostato de alta presión

El presostato de alta presión detiene el compresor, generando la alarma correspondiente cuando la presión de envío supera el valor del set.

El control de su correcto funcionamiento puede realizarse cerrando la aspiración de aire del intercambiador (en funcionamiento en frío), y manteniendo

bajo control el manómetro de alta presión, compruebe la intervención en correspondencia del valor de calibrado.

#### ATENCIÓN

en el caso de una falta de intervención en el valor de ajuste, detener inmediatamente el compresor y comprobar las causas. El reset es manual y sólo se puede realizar cuando la temperatura desciende por debajo del valor diferencial. (Para los valores de configuración y diferencial consultar el manual técnico).

#### 16.3.2 Presostato de baja presión

El presostato de baja presión detiene el compresor, generando la alarma correspondiente cuando la presión de envío supera el valor de la configuración. El control de su correcto funcionamiento

puede realizarse después de unos 5 minutos de funcionamiento, cerrando lentamente el grifo en la tubería del líquido y manteniendo bajo control el manómetro de baja presión, compruebe la intervención en correspondencia del valor de calibrado.

#### ATENCIÓN

en el caso de una falta de intervención en el valor de ajuste, detener inmediatamente el compresor y comprobar las causas. El reset es manual y sólo se puede realizar cuando la presión sube por encima del valor diferencial. (Para los valores de configuración y diferencial consultar el manual técnico).

#### 16.1.3 Control antihielo

El control antihielo gestionado por la

regulación electrónica y por la sonda de temperatura situada a la salida del evaporador tiene la función de prevenir la formación de hielo cuando el caudal de agua es demasiado bajo. El control de su

correcto funcionamiento puede hacerse aumentando progresivamente el set antihielo hasta superar la temperatura de salida del agua y manteniendo controlada la temperatura del agua

con un termómetro de buena precisión, compruebe que la unidad esté apagada generando la correspondiente alarma. Después de esta operación vuelva a llevar el set antihielo a su valor original.

## 17 DIMENSIONES

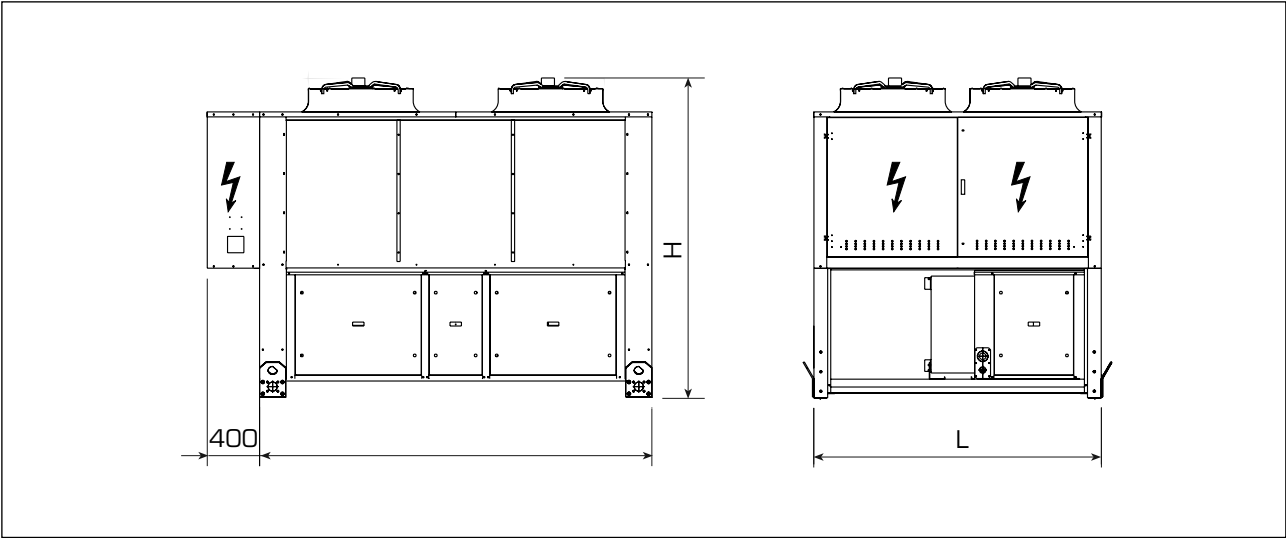
Como puede verse en las tablas de los datos técnicos, las dimensiones para las diferentes tallas varían sólo en la profundidad (P), mientras que la altura (H) y la anchura (L) son las mismas para todas las tallas.

Notas

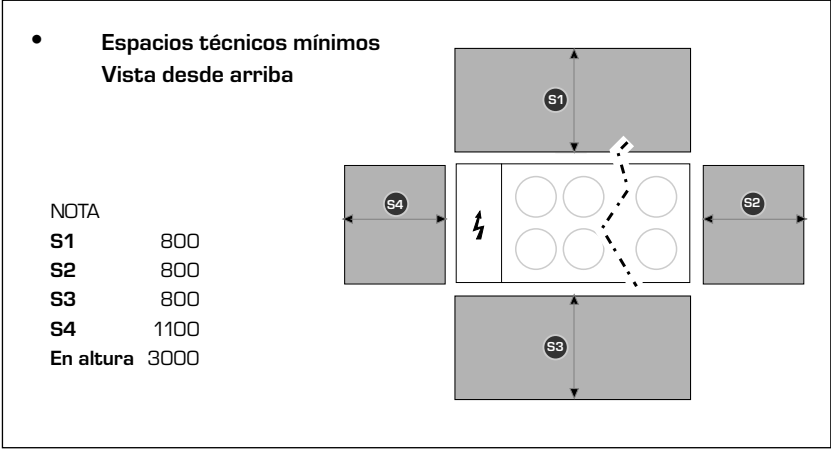
- En la figura de abajo se representa sólo una tabla ejemplificativa para las dimensiones efectivas y para el número de ventiladores de referencia en la tabla.

- Para la posición de: “CONEXIONES HIDRÁULICAS (en las diferentes configuraciones)” “POSICIÓN ANTIVIBRADORES” Consúltase el manual de instalación.

### 17.1 TABLAS DIMENSIONALES

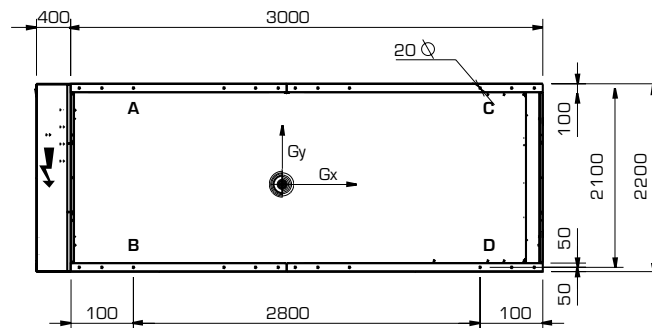


| NRA  | Dimensiones expresadas en (mm) |      |      |               |
|------|--------------------------------|------|------|---------------|
|      | L                              | H    | P    | n° ventilador |
| 0800 | 2200                           | 2450 | 3400 | 4             |
| 0900 | 2200                           | 2450 | 3400 | 4             |
| 1000 | 2200                           | 2450 | 3400 | 4             |
| 1250 | 2200                           | 2450 | 4250 | 6             |
| 1400 | 2200                           | 2450 | 4250 | 6             |
| 1500 | 2200                           | 2450 | 4250 | 6             |
| 1650 | 2200                           | 2450 | 5750 | 8             |
| 1800 | 2200                           | 2450 | 5750 | 8             |

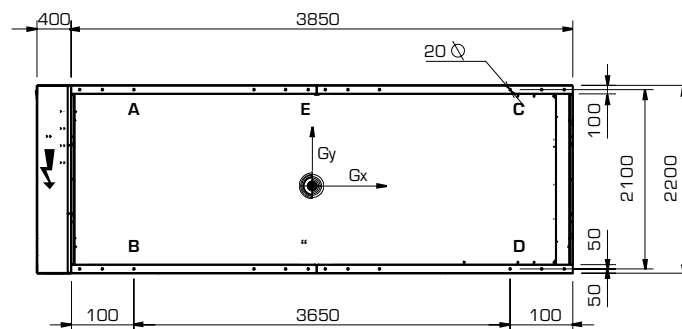


## 18 PESOS Y BARICENTROS

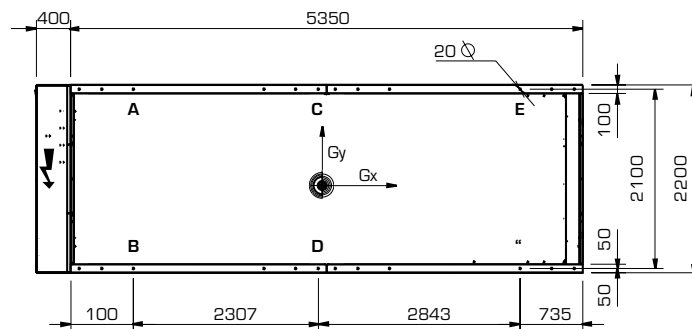
NRA "0800 - 0900 - 1000"



NRA "1250 - 1400 - 1500"



NRA "1650 - 1800"



**18.1 DISTRIBUCIÓN PESOS PORCENTAJE  
SOBRE APOYOS SIN AGUA**

| NRA | Mod. | Vers. | Peso | BARICENTRO |      | DISTRIBUCIÓN PESOS PORCENTAJE SOBRE LOS APOYOS |       |       |       |   |   |   |   |   |   | KIT<br>AVX |
|-----|------|-------|------|------------|------|------------------------------------------------|-------|-------|-------|---|---|---|---|---|---|------------|
|     |      |       |      | Gx         | Gy   | A                                              | B     | C     | D     | E | F | h | i | j | K |            |
| 800 | °    | 00    | 2350 | 1745       | 837  | 21,0%                                          | 34,1% | 17,1% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | °    | 01    | 2557 | 1773       | 985  | 26,7%                                          | 27,5% | 22,6% | 23,2% |   |   |   |   |   |   | 152        |
| 800 | °    | 02    | 2620 | 1775       | 998  | 27,0%                                          | 27,1% | 22,9% | 23,0% |   |   |   |   |   |   | 152        |
| 800 | °    | 03    | 2577 | 1174       | 991  | 26,9%                                          | 27,3% | 22,7% | 23,1% |   |   |   |   |   |   | 152        |
| 800 | °    | 04    | 2669 | 1776       | 1009 | 27,3%                                          | 26,8% | 23,1% | 22,7% |   |   |   |   |   |   | 152        |
| 800 | °    | P1    | 2417 | 1773       | 985  | 21,2%                                          | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | °    | P2    | 2480 | 1775       | 998  | 21,2%                                          | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | °    | P3    | 2437 | 1774       | 991  | 21,2%                                          | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | °    | P4    | 2529 | 1776       | 1009 | 21,2%                                          | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | A    | 00    | 2430 | 1750       | 845  | 21,2%                                          | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | A    | 01    | 2644 | 1777       | 984  | 26,7%                                          | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 800 | A    | 02    | 2707 | 1778       | 997  | 27,0%                                          | 27,1% | 22,9% | 23,0% |   |   |   |   |   |   | 152        |
| 800 | A    | 03    | 2664 | 1777       | 990  | 26,8%                                          | 27,3% | 22,7% | 23,2% |   |   |   |   |   |   | 152        |
| 800 | A    | 04    | 2756 | 1779       | 1008 | 27,2%                                          | 26,8% | 23,1% | 22,8% |   |   |   |   |   |   | 152        |
| 800 | A    | P1    | 2504 | 1777       | 984  | 26,7%                                          | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | A    | P2    | 2567 | 1778       | 997  | 26,7%                                          | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | A    | P3    | 2524 | 1777       | 990  | 26,7%                                          | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | A    | P4    | 2666 | 1779       | 1008 | 26,7%                                          | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | L    | 00    | 2530 | 1749       | 853  | 21,4%                                          | 33,6% | 17,5% | 27,5% |   |   |   |   |   |   | 151        |
| 800 | L    | 01    | 2741 | 1775       | 984  | 26,7%                                          | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 800 | L    | 02    | 2804 | 1776       | 996  | 27,0%                                          | 27,0% | 22,9% | 23,0% |   |   |   |   |   |   | 152        |
| 800 | L    | 03    | 2761 | 1776       | 990  | 26,8%                                          | 27,3% | 22,7% | 23,1% |   |   |   |   |   |   | 152        |
| 800 | L    | 04    | 2853 | 1778       | 1007 | 27,2%                                          | 26,9% | 23,1% | 22,8% |   |   |   |   |   |   | 152        |
| 800 | L    | P1    | 2601 | 1775       | 984  | 26,7%                                          | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | L    | P2    | 2664 | 1776       | 996  | 26,7%                                          | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | L    | P3    | 2621 | 1776       | 990  | 26,7%                                          | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | L    | P4    | 2713 | 1778       | 1007 | 26,7%                                          | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | H    | 00    | 2480 | 1753       | 841  | 21,0%                                          | 33,9% | 17,3% | 27,8% |   |   |   |   |   |   | 151        |
| 800 | H    | 01    | 2696 | 1778       | 978  | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 152        |
| 800 | H    | 02    | 2759 | 1780       | 990  | 26,8%                                          | 27,2% | 22,8% | 23,2% |   |   |   |   |   |   | 152        |
| 800 | H    | 03    | 2716 | 1779       | 983  | 26,6%                                          | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 800 | H    | 04    | 2802 | 1781       | 1001 | 27,0%                                          | 27,0% | 23,0% | 23,0% |   |   |   |   |   |   | 152        |
| 800 | H    | P1    | 2556 | 1778       | 978  | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 800 | H    | P2    | 2619 | 1780       | 990  | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 800 | H    | P3    | 2576 | 1779       | 983  | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 800 | H    | P4    | 2668 | 1781       | 1001 | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900 | °    | 00    | 2430 | 1750       | 828  | 20,7%                                          | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | °    | 01    | 2643 | 1777       | 972  | 26,4%                                          | 27,8% | 22,4% | 23,5% |   |   |   |   |   |   | 152        |
| 900 | °    | 02    | 2703 | 1778       | 984  | 26,6%                                          | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 900 | °    | 03    | 2663 | 1777       | 978  | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 152        |
| 900 | °    | 04    | 2752 | 1779       | 995  | 26,9%                                          | 27,1% | 22,9% | 23,1% |   |   |   |   |   |   | 152        |
| 900 | °    | P1    | 2503 | 1777       | 972  | 20,7%                                          | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | °    | P2    | 2563 | 1778       | 984  | 20,7%                                          | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | °    | P3    | 2523 | 1777       | 978  | 20,7%                                          | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | °    | P4    | 2612 | 1779       | 995  | 20,7%                                          | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | A    | 00    | 2520 | 1756       | 836  | 20,9%                                          | 33,9% | 17,2% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | A    | 01    | 2734 | 1780       | 971  | 26,3%                                          | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 152        |
| 900 | A    | 02    | 2794 | 1781       | 983  | 26,6%                                          | 27,4% | 22,7% | 23,4% |   |   |   |   |   |   | 152        |
| 900 | A    | 03    | 2754 | 1780       | 977  | 26,4%                                          | 27,6% | 22,5% | 23,5% |   |   |   |   |   |   | 152        |
| 900 | A    | 04    | 2743 | 1782       | 994  | 26,8%                                          | 27,1% | 22,9% | 23,2% |   |   |   |   |   |   | 152        |
| 900 | A    | P1    | 2594 | 1780       | 971  | 26,3%                                          | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 151        |
| 900 | A    | P2    | 2654 | 1781       | 983  | 26,3%                                          | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 151        |
| 900 | A    | P3    | 2614 | 1780       | 977  | 26,3%                                          | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 151        |
| 900 | A    | P4    | 2703 | 1782       | 994  | 26,3%                                          | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 151        |
| 900 | L    | 00    | 2570 | 1753       | 852  | 21,3%                                          | 33,6% | 17,5% | 27,6% |   |   |   |   |   |   | 151        |
| 900 | L    | 01    | 2796 | 1777       | 979  | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 152        |
| 900 | L    | 02    | 2856 | 1778       | 990  | 26,8%                                          | 27,3% | 22,8% | 23,2% |   |   |   |   |   |   | 152        |
| 900 | L    | 03    | 2816 | 1778       | 984  | 26,7%                                          | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 900 | L    | 04    | 2905 | 1780       | 1001 | 27,0%                                          | 27,0% | 23,0% | 23,0% |   |   |   |   |   |   | 152        |
| 900 | L    | P1    | 2656 | 1777       | 979  | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900 | L    | P2    | 2716 | 1778       | 990  | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900 | L    | P3    | 2676 | 1778       | 984  | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900 | L    | P4    | 2765 | 17880      | 1001 | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900 | H    | 00    | 2580 | 1759       | 831  | 20,7%                                          | 34,0% | 17,2% | 28,1% |   |   |   |   |   |   | 151        |

| NRA  | Mod. | Vers. | Peso | BARICENTRO |      | DISTRIBUCIÓN PESOS PORCENTAJE SOBRE LOS APOYOS |       |       |       |   |   |   |   |   |   | KIT<br>AVX |
|------|------|-------|------|------------|------|------------------------------------------------|-------|-------|-------|---|---|---|---|---|---|------------|
|      |      |       |      | Gx         | Gy   | A                                              | B     | C     | D     | E | F | h | i | j | K |            |
| 900  | H    | 01    | 2793 | 1782       | 964  | 26,1%                                          | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 152        |
| 900  | H    | 02    | 2853 | 1783       | 975  | 26,3%                                          | 27,5% | 22,5% | 23,6% |   |   |   |   |   |   | 152        |
| 900  | H    | 03    | 2713 | 1783       | 969  | 26,2%                                          | 27,7% | 22,4% | 23,7% |   |   |   |   |   |   | 152        |
| 900  | H    | 04    | 2902 | 1784       | 986  | 26,6%                                          | 27,3% | 22,8% | 23,4% |   |   |   |   |   |   | 152        |
| 900  | H    | P1    | 2653 | 1732       | 964  | 26,1%                                          | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 151        |
| 900  | H    | P2    | 2713 | 1783       | 975  | 26,1%                                          | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 151        |
| 900  | H    | P3    | 2673 | 1783       | 969  | 26,1%                                          | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 151        |
| 900  | H    | P4    | 2762 | 1784       | 986  | 26,1%                                          | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 151        |
| 1000 | °    | 00    | 2465 | 1753       | 846  | 21,2%                                          | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | °    | 01    | 2679 | 1778       | 983  | 26,6%                                          | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | °    | 02    | 2742 | 1779       | 995  | 26,9%                                          | 27,1% | 22,9% | 23,1% |   |   |   |   |   |   | 152        |
| 1000 | °    | 03    | 2699 | 1779       | 988  | 26,7%                                          | 27,3% | 22,7% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | °    | 04    | 2791 | 1781       | 1006 | 27,1%                                          | 26,8% | 23,1% | 22,9% |   |   |   |   |   |   | 152        |
| 1000 | °    | P1    | 2539 | 1778       | 983  | 21,2%                                          | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | °    | P2    | 2602 | 1779       | 995  | 21,2%                                          | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | °    | P3    | 2559 | 1779       | 988  | 21,2%                                          | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | °    | P4    | 2651 | 1781       | 1006 | 21,2%                                          | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | A    | 00    | 2560 | 1758       | 854  | 21,3%                                          | 33,5% | 17,6% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | A    | 01    | 2768 | 1781       | 982  | 26,5%                                          | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 152        |
| 1000 | A    | 02    | 2831 | 1782       | 994  | 26,8%                                          | 27,1% | 22,9% | 23,2% |   |   |   |   |   |   | 152        |
| 1000 | A    | 03    | 2788 | 1782       | 988  | 26,7%                                          | 27,3% | 22,8% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | A    | 04    | 2880 | 1783       | 1005 | 27,1%                                          | 26,8% | 23,2% | 23,0% |   |   |   |   |   |   | 152        |
| 1000 | A    | P1    | 2628 | 1781       | 982  | 26,5%                                          | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 151        |
| 1000 | A    | P2    | 2691 | 1782       | 994  | 26,5%                                          | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 151        |
| 1000 | A    | P3    | 2648 | 1782       | 988  | 26,5%                                          | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 151        |
| 1000 | A    | P4    | 2740 | 1783       | 1005 | 26,5%                                          | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 151        |
| 1000 | L    | 00    | 2580 | 1752       | 854  | 21,4%                                          | 33,6% | 17,5% | 27,5% |   |   |   |   |   |   | 151        |
| 1000 | L    | 01    | 2787 | 1777       | 981  | 26,6%                                          | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | L    | 02    | 2850 | 1778       | 993  | 26,9%                                          | 27,2% | 22,8% | 23,1% |   |   |   |   |   |   | 152        |
| 1000 | L    | 03    | 2807 | 1778       | 986  | 26,7%                                          | 27,4% | 22,7% | 23,2% |   |   |   |   |   |   | 152        |
| 1000 | L    | 04    | 2899 | 1779       | 1003 | 27,1%                                          | 26,9% | 23,1% | 22,9% |   |   |   |   |   |   | 152        |
| 1000 | L    | P1    | 2647 | 1777       | 981  | 26,6%                                          | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 151        |
| 1000 | L    | P2    | 2710 | 1778       | 993  | 26,6%                                          | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 151        |
| 1000 | L    | P3    | 2667 | 1778       | 986  | 26,6%                                          | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 151        |
| 1000 | L    | P4    | 2759 | 1779       | 1003 | 26,6%                                          | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 151        |
| 1000 | H    | 00    | 2610 | 1761       | 849  | 21,1%                                          | 33,5% | 17,6% | 27,8% |   |   |   |   |   |   | 151        |
| 1000 | H    | 01    | 2823 | 1783       | 975  | 26,3%                                          | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 152        |
| 1000 | H    | 02    | 2886 | 1784       | 987  | 26,6%                                          | 27,2% | 22,8% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | H    | 03    | 2843 | 1784       | 981  | 26,5%                                          | 27,4% | 22,7% | 23,5% |   |   |   |   |   |   | 152        |
| 1000 | H    | 04    | 2935 | 1785       | 998  | 26,9%                                          | 27,0% | 23,0% | 23,1% |   |   |   |   |   |   | 152        |
| 1000 | H    | P1    | 2683 | 1783       | 975  | 26,3%                                          | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 151        |
| 1000 | H    | P2    | 2746 | 1784       | 987  | 26,3%                                          | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 151        |
| 1000 | H    | P3    | 2703 | 1784       | 981  | 26,3%                                          | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 151        |
| 1000 | H    | P4    | 2795 | 1785       | 998  | 26,3%                                          | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 151        |
| 1250 | °    | 00    | 3060 | 2155       | 814  | 20,2%                                          | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | °    | 01    | 3294 | 2086       | 926  | 26,2%                                          | 30,0% | 20,4% | 23,4% |   |   |   |   |   |   | 154        |
| 1250 | °    | 02    | 3318 | 2085       | 931  | 26,3%                                          | 29,9% | 20,5% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | °    | 03    | 3312 | 2084       | 931  | 26,4%                                          | 29,9% | 20,5% | 23,2% |   |   |   |   |   |   | 154        |
| 1250 | °    | 04    | 3408 | 2079       | 948  | 26,9%                                          | 29,5% | 20,8% | 22,8% |   |   |   |   |   |   | 154        |
| 1250 | °    | P1    | 3154 | 2086       | 926  | 20,2%                                          | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | °    | P2    | 3178 | 2085       | 931  | 20,2%                                          | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | °    | P3    | 3172 | 2084       | 931  | 20,2%                                          | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | °    | P4    | 3268 | 2079       | 948  | 20,2%                                          | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | A    | 00    | 3170 | 2160       | 823  | 20,3%                                          | 33,9% | 17,1% | 28,6% |   |   |   |   |   |   | 153        |
| 1250 | A    | 01    | 3405 | 2093       | 927  | 26,2%                                          | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 154        |
| 1250 | A    | 02    | 3429 | 2091       | 931  | 26,3%                                          | 29,8% | 20,6% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | A    | 03    | 3426 | 2091       | 932  | 26,3%                                          | 29,8% | 20,6% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | A    | 04    | 3519 | 2085       | 948  | 26,8%                                          | 29,4% | 20,9% | 22,9% |   |   |   |   |   |   | 154        |
| 1250 | A    | P1    | 3265 | 2093       | 927  | 26,2%                                          | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | A    | P2    | 3289 | 2091       | 931  | 26,2%                                          | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | A    | P3    | 3283 | 2091       | 932  | 26,2%                                          | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | A    | P4    | 3379 | 2085       | 948  | 26,2%                                          | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | 00    | 3310 | 2161       | 833  | 20,6%                                          | 33,7% | 17,4% | 28,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | 01    | 3545 | 2095       | 928  | 26,2%                                          | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 154        |

| NRA  | Mod. | Vers. | Peso | BARICENTRO |     | DISTRIBUCIÓN PESOS PORCENTAJE SOBRE LOS APOYOS |       |       |       |   |   |   |   |   |   | KIT<br>AVX |
|------|------|-------|------|------------|-----|------------------------------------------------|-------|-------|-------|---|---|---|---|---|---|------------|
|      |      |       |      | Gx         | Gy  | A                                              | B     | C     | D     | E | F | h | i | j | K |            |
| 1250 | L    | 02    | 3569 | 2094       | 932 | 26,3%                                          | 27,9% | 20,6% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | L    | 03    | 3563 | 2094       | 933 | 26,3%                                          | 29,7% | 20,7% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | L    | 04    | 3659 | 2088       | 949 | 26,8%                                          | 29,4% | 20,9% | 22,9% |   |   |   |   |   |   | 154        |
| 1250 | L    | P1    | 3405 | 2095       | 928 | 26,2%                                          | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | P2    | 3429 | 2094       | 932 | 26,2%                                          | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | P3    | 3423 | 2094       | 933 | 26,2%                                          | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | P4    | 3514 | 2088       | 949 | 26,2%                                          | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | H    | 00    | 3360 | 2170       | 829 | 20,4%                                          | 33,6% | 17,4% | 28,6% |   |   |   |   |   |   | 153        |
| 1250 | H    | 01    | 3592 | 2103       | 923 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 154        |
| 1250 | H    | 02    | 3616 | 2101       | 927 | 26,1%                                          | 29,8% | 20,6% | 23,6% |   |   |   |   |   |   | 154        |
| 1250 | H    | 03    | 3610 | 2101       | 928 | 26,1%                                          | 29,7% | 20,6% | 23,5% |   |   |   |   |   |   | 154        |
| 1250 | H    | 04    | 3706 | 2096       | 943 | 26,5%                                          | 29,4% | 20,9% | 23,2% |   |   |   |   |   |   | 154        |
| 1250 | H    | P1    | 3452 | 2103       | 923 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1250 | H    | P2    | 3476 | 2101       | 927 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1250 | H    | P3    | 3470 | 2101       | 928 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1250 | H    | P4    | 3566 | 2096       | 943 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | °    | 00    | 3150 | 2160       | 808 | 20,0%                                          | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | °    | 01    | 3383 | 2092       | 917 | 25,9%                                          | 30,2% | 20,3% | 23,6% |   |   |   |   |   |   | 154        |
| 1400 | °    | 02    | 3407 | 2090       | 921 | 26,0%                                          | 30,1% | 20,4% | 23,5% |   |   |   |   |   |   | 154        |
| 1400 | °    | 03    | 3401 | 2090       | 922 | 26,1%                                          | 30,0% | 20,4% | 23,5% |   |   |   |   |   |   | 154        |
| 1400 | °    | 04    | 3497 | 2084       | 938 | 26,5%                                          | 29,7% | 20,6% | 23,1% |   |   |   |   |   |   | 154        |
| 1400 | °    | P1    | 3243 | 2092       | 917 | 20,0%                                          | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | °    | P2    | 3267 | 2090       | 921 | 20,0%                                          | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | °    | P3    | 3261 | 2090       | 922 | 20,0%                                          | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | °    | P4    | 3357 | 2084       | 938 | 20,0%                                          | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | A    | 00    | 3270 | 2166       | 815 | 20,1%                                          | 34,0% | 17,0% | 28,8% |   |   |   |   |   |   | 153        |
| 1400 | A    | 01    | 3505 | 2098       | 916 | 25,8%                                          | 30,1% | 20,4% | 23,7% |   |   |   |   |   |   | 154        |
| 1400 | A    | 02    | 3529 | 2097       | 920 | 25,9%                                          | 30,0% | 20,4% | 23,6% |   |   |   |   |   |   | 154        |
| 1400 | A    | 03    | 3523 | 2097       | 921 | 26,0%                                          | 30,0% | 20,4% | 23,6% |   |   |   |   |   |   | 154        |
| 1400 | A    | 04    | 3619 | 2091       | 937 | 26,4%                                          | 29,6% | 20,7% | 23,2% |   |   |   |   |   |   | 154        |
| 1400 | A    | P1    | 3365 | 2098       | 916 | 25,8%                                          | 30,1% | 20,4% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | A    | P2    | 3389 | 2097       | 920 | 25,8%                                          | 30,1% | 20,4% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | A    | P3    | 3383 | 2097       | 921 | 25,8%                                          | 30,1% | 20,4% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | A    | P4    | 3479 | 2091       | 937 | 25,8%                                          | 30,1% | 20,4% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | L    | 00    | 3350 | 2163       | 834 | 20,6%                                          | 33,6% | 17,4% | 28,4% |   |   |   |   |   |   | 153        |
| 1400 | L    | 01    | 3587 | 2098       | 927 | 26,1%                                          | 29,8% | 20,6% | 23,5% |   |   |   |   |   |   | 154        |
| 1400 | L    | 02    | 3611 | 2096       | 931 | 26,2%                                          | 29,7% | 20,7% | 23,4% |   |   |   |   |   |   | 154        |
| 1400 | L    | 03    | 3605 | 2096       | 932 | 26,2%                                          | 29,7% | 20,7% | 23,4% |   |   |   |   |   |   | 154        |
| 1400 | L    | 04    | 3701 | 2091       | 948 | 26,7%                                          | 29,4% | 20,9% | 23,0% |   |   |   |   |   |   | 154        |
| 1400 | L    | P1    | 3447 | 2098       | 927 | 26,1%                                          | 29,8% | 20,6% | 23,5% |   |   |   |   |   |   | 153        |
| 1400 | L    | P2    | 3471 | 2096       | 931 | 26,1%                                          | 29,8% | 20,6% | 23,5% |   |   |   |   |   |   | 153        |
| 1400 | L    | P3    | 3465 | 2096       | 932 | 26,1%                                          | 29,8% | 20,6% | 23,5% |   |   |   |   |   |   | 153        |
| 1400 | L    | P4    | 3561 | 2091       | 948 | 26,1%                                          | 29,8% | 20,6% | 23,5% |   |   |   |   |   |   | 153        |
| 1400 | H    | 00    | 3400 | 2172       | 830 | 20,4%                                          | 33,6% | 17,4% | 28,6% |   |   |   |   |   |   | 153        |
| 1400 | H    | 01    | 3635 | 2105       | 922 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 154        |
| 1400 | H    | 02    | 3569 | 2104       | 926 | 26,0%                                          | 29,7% | 20,6% | 23,6% |   |   |   |   |   |   | 154        |
| 1400 | H    | 03    | 3653 | 2104       | 927 | 26,0%                                          | 29,7% | 20,6% | 23,6% |   |   |   |   |   |   | 154        |
| 1400 | H    | 04    | 3749 | 2098       | 942 | 26,5%                                          | 29,4% | 20,9% | 23,2% |   |   |   |   |   |   | 154        |
| 1400 | H    | P1    | 3495 | 2105       | 922 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | H    | P2    | 3519 | 2104       | 926 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | H    | P3    | 3513 | 2104       | 927 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | H    | P4    | 3609 | 2098       | 942 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1500 | °    | 00    | 3250 | 2164       | 826 | 20,4%                                          | 33,8% | 17,2% | 28,6% |   |   |   |   |   |   | 153        |
| 1500 | °    | 01    | 3489 | 2095       | 930 | 26,2%                                          | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 154        |
| 1500 | °    | 02    | 3513 | 2094       | 934 | 26,3%                                          | 29,7% | 20,7% | 23,3% |   |   |   |   |   |   | 154        |
| 1500 | °    | 03    | 3484 | 2095       | 931 | 26,2%                                          | 29,7% | 20,6% | 23,4% |   |   |   |   |   |   | 154        |
| 1500 | °    | 04    | 3580 | 2089       | 947 | 26,7%                                          | 29,4% | 20,9% | 23,0% |   |   |   |   |   |   | 154        |
| 1500 | °    | P1    | 3349 | 2095       | 930 | 20,4%                                          | 33,8% | 17,2% | 28,6% |   |   |   |   |   |   | 153        |
| 1500 | °    | P2    | 3373 | 2094       | 934 | 20,4%                                          | 33,8% | 17,2% | 28,6% |   |   |   |   |   |   | 153        |
| 1500 | °    | P3    | 3344 | 2095       | 931 | 20,4%                                          | 33,8% | 17,2% | 28,6% |   |   |   |   |   |   | 153        |
| 1500 | °    | P4    | 3440 | 2089       | 947 | 20,4%                                          | 33,8% | 17,2% | 28,6% |   |   |   |   |   |   | 153        |
| 1500 | A    | 00    | 3370 | 2170       | 835 | 20,5%                                          | 33,5% | 17,5% | 28,5% |   |   |   |   |   |   | 153        |
| 1500 | A    | 01    | 3623 | 2102       | 931 | 26,1%                                          | 29,6% | 20,7% | 23,5% |   |   |   |   |   |   | 154        |
| 1500 | A    | 02    | 3647 | 2101       | 935 | 26,3%                                          | 29,6% | 20,8% | 23,4% |   |   |   |   |   |   | 154        |

| NRA  | Mod. | Vers. | Peso | BARICENTRO |     | DISTRIBUCIÓN PESOS PORCENTAJE SOBRE LOS APOYOS |       |       |       |      |       |   |   |   |   | KIT<br>AVX |
|------|------|-------|------|------------|-----|------------------------------------------------|-------|-------|-------|------|-------|---|---|---|---|------------|
|      |      |       |      | Gx         | Gy  | A                                              | B     | C     | D     | E    | F     | h | i | j | K |            |
| 1500 | A    | 03    | 3618 | 2102       | 932 | 26,2%                                          | 29,6% | 20,7% | 23,5% |      |       |   |   |   |   | 154        |
| 1500 | A    | 04    | 3714 | 2097       | 947 | 26,6%                                          | 29,3% | 21,0% | 23,1% |      |       |   |   |   |   | 154        |
| 1500 | A    | P1    | 3483 | 2102       | 931 | 26,1%                                          | 29,6% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | A    | P2    | 3507 | 2101       | 935 | 26,1%                                          | 29,6% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | A    | P3    | 3478 | 2102       | 932 | 26,1%                                          | 29,6% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | A    | P4    | 3574 | 2097       | 947 | 26,1%                                          | 29,6% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | L    | 00    | 3390 | 2165       | 835 | 20,6%                                          | 33,6% | 17,4% | 28,4% |      |       |   |   |   |   | 153        |
| 1500 | L    | 01    | 3646 | 2099       | 930 | 26,2%                                          | 29,7% | 20,7% | 23,5% |      |       |   |   |   |   | 154        |
| 1500 | L    | 02    | 3670 | 2097       | 934 | 26,3%                                          | 29,6% | 20,7% | 23,4% |      |       |   |   |   |   | 154        |
| 1500 | L    | 03    | 3641 | 2098       | 931 | 26,2%                                          | 29,7% | 20,7% | 23,4% |      |       |   |   |   |   | 154        |
| 1500 | L    | 04    | 3737 | 2093       | 946 | 26,6%                                          | 29,4% | 20,9% | 23,1% |      |       |   |   |   |   | 154        |
| 1500 | L    | P1    | 3506 | 2099       | 930 | 26,2%                                          | 29,7% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | L    | P2    | 3530 | 2097       | 934 | 26,2%                                          | 29,7% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | L    | P3    | 3501 | 2098       | 931 | 26,2%                                          | 29,7% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | L    | P4    | 3597 | 2093       | 946 | 26,2%                                          | 29,7% | 20,7% | 23,5% |      |       |   |   |   |   | 153        |
| 1500 | H    | 00    | 3440 | 2174       | 931 | 20,4%                                          | 33,5% | 17,4% | 28,6% |      |       |   |   |   |   | 153        |
| 1500 | H    | 01    | 3695 | 2106       | 925 | 25,9%                                          | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 154        |
| 1500 | H    | 02    | 3719 | 2105       | 929 | 26,1%                                          | 29,7% | 20,7% | 23,6% |      |       |   |   |   |   | 154        |
| 1500 | H    | 03    | 3690 | 2106       | 925 | 26,0%                                          | 29,7% | 20,6% | 23,7% |      |       |   |   |   |   | 154        |
| 1500 | H    | 04    | 3786 | 2100       | 941 | 26,4%                                          | 29,4% | 20,9% | 23,3% |      |       |   |   |   |   | 154        |
| 1500 | H    | P1    | 3555 | 2106       | 925 | 25,9%                                          | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1500 | H    | P2    | 3579 | 2105       | 929 | 25,9%                                          | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1500 | H    | P3    | 3550 | 2106       | 925 | 25,9%                                          | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1500 | H    | P4    | 3646 | 2100       | 941 | 25,9%                                          | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1650 | °    | 00    | 3660 | 2467       | 915 | 7,0%                                           | 9,8%  | 27,1% | 38,0% | 7,5% | 10,5% |   |   |   |   | 601        |
| 1650 | °    | 01    | 3980 | 2496       | 939 | 6,8%                                           | 9,2%  | 28,0% | 37,6% | 7,9% | 10,6% |   |   |   |   | 602        |
| 1650 | °    | 02    | 4090 | 2526       | 963 | 6,6%                                           | 8,5%  | 28,9% | 37,2% | 8,3% | 10,6% |   |   |   |   | 602        |
| 1650 | °    | 03    | 4010 | 2504       | 945 | 6,7%                                           | 9,0%  | 28,2% | 37,5% | 8,0% | 10,6% |   |   |   |   | 602        |
| 1650 | °    | 04    | 4150 | 2541       | 975 | 6,5%                                           | 8,1%  | 29,4% | 36,9% | 8,5% | 10,6% |   |   |   |   | 602        |
| 1650 | °    | P1    | 3766 | 2496       | 939 | 6,8%                                           | 9,2%  | 28,0% | 37,6% | 7,9% | 10,6% |   |   |   |   | 601        |
| 1650 | °    | P2    | 3876 | 2526       | 963 | 6,6%                                           | 8,5%  | 28,9% | 37,2% | 8,3% | 10,6% |   |   |   |   | 603        |
| 1650 | °    | P3    | 3796 | 2504       | 945 | 6,7%                                           | 9,0%  | 28,2% | 37,5% | 8,0% | 10,6% |   |   |   |   | 601        |
| 1650 | °    | P4    | 3936 | 2541       | 975 | 6,5%                                           | 8,1%  | 29,4% | 36,9% | 8,5% | 10,6% |   |   |   |   | 603        |
| 1650 | A    | 00    | 3840 | 2477       | 926 | 6,7%                                           | 9,2%  | 28,0% | 38,5% | 7,4% | 10,2% |   |   |   |   | 604        |
| 1650 | A    | 01    | 4160 | 2504       | 948 | 6,5%                                           | 8,6%  | 28,8% | 38,1% | 7,8% | 10,3% |   |   |   |   | 602        |
| 1650 | A    | 02    | 4270 | 2532       | 971 | 6,3%                                           | 7,9%  | 29,7% | 37,6% | 8,2% | 10,4% |   |   |   |   | 602        |
| 1650 | A    | 03    | 4190 | 2512       | 954 | 6,4%                                           | 8,4%  | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 602        |
| 1650 | A    | 04    | 4330 | 2547       | 982 | 6,1%                                           | 7,6%  | 30,1% | 37,4% | 8,4% | 10,4% |   |   |   |   | 602        |
| 1650 | A    | P1    | 3980 | 2504       | 948 | 6,5%                                           | 8,6%  | 28,8% | 38,1% | 7,8% | 10,3% |   |   |   |   | 605        |
| 1650 | A    | P2    | 4090 | 2532       | 971 | 6,3%                                           | 7,9%  | 29,7% | 37,6% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1650 | A    | P3    | 4010 | 2512       | 954 | 6,4%                                           | 8,4%  | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 605        |
| 1650 | A    | P4    | 4150 | 2547       | 982 | 6,1%                                           | 7,6%  | 30,1% | 37,4% | 8,4% | 10,4% |   |   |   |   | 606        |
| 1650 | L    | 00    | 3850 | 2504       | 948 | 6,5%                                           | 8,6%  | 28,8% | 38,1% | 7,8% | 10,3% |   |   |   |   | 604        |
| 1650 | L    | 01    | 4160 | 2504       | 948 | 6,5%                                           | 8,6%  | 28,8% | 38,1% | 7,8% | 10,3% |   |   |   |   | 602        |
| 1650 | L    | 02    | 4270 | 2532       | 971 | 6,3%                                           | 7,9%  | 29,7% | 37,6% | 8,2% | 10,4% |   |   |   |   | 602        |
| 1650 | L    | 03    | 4190 | 2512       | 954 | 6,4%                                           | 8,4%  | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 602        |
| 1650 | L    | 04    | 4330 | 2547       | 982 | 6,1%                                           | 7,6%  | 30,1% | 37,4% | 8,4% | 10,4% |   |   |   |   | 602        |
| 1650 | L    | P1    | 3946 | 2504       | 948 | 6,5%                                           | 8,6%  | 28,8% | 38,1% | 7,8% | 10,3% |   |   |   |   | 605        |
| 1650 | L    | P2    | 4056 | 2532       | 971 | 6,3%                                           | 7,9%  | 29,7% | 37,6% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1650 | L    | P3    | 3976 | 2512       | 954 | 6,4%                                           | 8,4%  | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 605        |
| 1650 | L    | P4    | 4116 | 2547       | 982 | 6,1%                                           | 7,6%  | 30,1% | 37,4% | 8,4% | 10,4% |   |   |   |   | 606        |
| 1650 | H    | 00    | 3860 | 2478       | 927 | 6,7%                                           | 9,2%  | 28,0% | 38,4% | 7,5% | 10,3% |   |   |   |   | 604        |
| 1650 | H    | 01    | 4180 | 2505       | 949 | 6,5%                                           | 8,6%  | 28,8% | 38,0% | 7,8% | 10,3% |   |   |   |   | 602        |
| 1650 | H    | 02    | 4290 | 2533       | 971 | 6,3%                                           | 7,9%  | 29,7% | 37,5% | 8,2% | 10,4% |   |   |   |   | 602        |
| 1650 | H    | 03    | 4210 | 2513       | 955 | 6,4%                                           | 8,4%  | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 602        |
| 1650 | H    | 04    | 4350 | 2547       | 983 | 6,2%                                           | 7,6%  | 30,1% | 37,3% | 8,4% | 10,4% |   |   |   |   | 602        |
| 1650 | H    | P1    | 3966 | 2505       | 949 | 6,5%                                           | 8,6%  | 28,8% | 38,0% | 7,8% | 10,3% |   |   |   |   | 605        |
| 1650 | H    | P2    | 4076 | 2533       | 971 | 6,3%                                           | 7,9%  | 29,7% | 37,5% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1650 | H    | P3    | 3996 | 2513       | 955 | 6,4%                                           | 8,4%  | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 605        |
| 1650 | H    | P4    | 4136 | 2547       | 983 | 6,2%                                           | 7,6%  | 30,1% | 37,3% | 8,4% | 10,4% |   |   |   |   | 606        |
| 1800 | °    | 00    | 3740 | 2472       | 905 | 6,7%                                           | 9,6%  | 27,1% | 38,8% | 7,3% | 10,5% |   |   |   |   | 604        |
| 1800 | °    | 01    | 4070 | 2500       | 928 | 6,5%                                           | 8,9%  | 28,0% | 38,4% | 7,7% | 10,5% |   |   |   |   | 602        |
| 1800 | °    | 02    | 4180 | 2529       | 952 | 6,3%                                           | 8,2%  | 28,9% | 37,9% | 8,1% | 10,6% |   |   |   |   | 602        |
| 1800 | °    | 03    | 4100 | 2508       | 934 | 6,4%                                           | 8,7%  | 28,2% | 38,3% | 7,8% | 10,5% |   |   |   |   | 602        |

| NRA  | Mod. | Vers. | Peso | BARICENTRO |     | DISTRIBUCIÓN PESOS PORCENTAJE SOBRE LOS APOYOS |      |       |       |      |       |   |   |   |   | KIT<br>AVX |
|------|------|-------|------|------------|-----|------------------------------------------------|------|-------|-------|------|-------|---|---|---|---|------------|
|      |      |       |      | Gx         | Gy  | A                                              | B    | C     | D     | E    | F     | h | i | j | K |            |
| 1800 | °    | 04    | 4240 | 2544       | 964 | 6,2%                                           | 7,9% | 29,4% | 37,7% | 8,3% | 10,6% |   |   |   |   | 602        |
| 1800 | °    | P1    | 3852 | 2500       | 928 | 6,5%                                           | 8,9% | 28,0% | 38,4% | 7,7% | 10,5% |   |   |   |   | 604        |
| 1800 | °    | P2    | 3962 | 2529       | 952 | 6,3%                                           | 8,2% | 28,9% | 37,9% | 8,1% | 10,6% |   |   |   |   | 605        |
| 1800 | °    | P3    | 3882 | 2508       | 934 | 6,4%                                           | 8,7% | 28,2% | 38,3% | 7,8% | 10,5% |   |   |   |   | 604        |
| 1800 | °    | P4    | 4022 | 2544       | 964 | 6,2%                                           | 7,9% | 29,4% | 37,7% | 8,3% | 10,6% |   |   |   |   | 605        |
| 1800 | A    | 00    | 3950 | 2483       | 915 | 6,4%                                           | 8,9% | 28,0% | 39,2% | 7,3% | 10,2% |   |   |   |   | 604        |
| 1800 | A    | 01    | 4280 | 2509       | 937 | 6,2%                                           | 8,3% | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 602        |
| 1800 | A    | 02    | 4390 | 2536       | 959 | 6,0%                                           | 7,7% | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 602        |
| 1800 | A    | 03    | 4310 | 2517       | 943 | 6,1%                                           | 8,2% | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 602        |
| 1800 | A    | 04    | 4450 | 2550       | 971 | 5,9%                                           | 7,4% | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 602        |
| 1800 | A    | P1    | 4062 | 2509       | 937 | 6,2%                                           | 8,3% | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 605        |
| 1800 | A    | P2    | 4172 | 2536       | 959 | 6,0%                                           | 7,7% | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 606        |
| 1800 | A    | P3    | 4092 | 2517       | 943 | 6,1%                                           | 8,2% | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 605        |
| 1800 | A    | P4    | 4232 | 2550       | 971 | 5,9%                                           | 7,4% | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1800 | L    | 00    | 3950 | 2483       | 915 | 6,4%                                           | 8,9% | 28,0% | 39,2% | 7,3% | 10,2% |   |   |   |   | 604        |
| 1800 | L    | 01    | 4280 | 2509       | 937 | 6,2%                                           | 8,3% | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 602        |
| 1800 | L    | 02    | 4390 | 2536       | 959 | 6,0%                                           | 7,7% | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 602        |
| 1800 | L    | 03    | 4310 | 2517       | 943 | 6,1%                                           | 8,2% | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 602        |
| 1800 | L    | 04    | 4450 | 2550       | 971 | 5,9%                                           | 7,4% | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 602        |
| 1800 | L    | P1    | 4062 | 2509       | 937 | 6,2%                                           | 8,3% | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 605        |
| 1800 | L    | P2    | 4172 | 2536       | 959 | 6,0%                                           | 7,7% | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 606        |
| 1800 | L    | P3    | 4092 | 2517       | 943 | 6,1%                                           | 8,2% | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 605        |
| 1800 | L    | P4    | 4232 | 2550       | 971 | 5,9%                                           | 7,4% | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1800 | H    | 00    | 3960 | 2483       | 915 | 6,4%                                           | 8,9% | 28,0% | 39,2% | 7,3% | 10,2% |   |   |   |   | 604        |
| 1800 | H    | 01    | 4280 | 2509       | 937 | 6,2%                                           | 8,3% | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 602        |
| 1800 | H    | 02    | 4390 | 2536       | 959 | 6,0%                                           | 7,7% | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 602        |
| 1800 | H    | 03    | 4310 | 2517       | 943 | 6,1%                                           | 8,2% | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 602        |
| 1800 | H    | 04    | 4450 | 2550       | 971 | 5,9%                                           | 7,4% | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 602        |
| 1800 | H    | P1    | 4062 | 2509       | 937 | 6,2%                                           | 8,3% | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 605        |
| 1800 | H    | P2    | 4172 | 2536       | 959 | 6,0%                                           | 7,7% | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 606        |
| 1800 | H    | P3    | 4092 | 2517       | 943 | 6,1%                                           | 8,2% | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 605        |
| 1800 | H    | P4    | 4232 | 2550       | 971 | 5,9%                                           | 7,4% | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 606        |

### 18.2.1 PESOS AGREGADOS VERSIÓN POR VERSIÓN CON DESRECALENTADOR Y RECUPERACIÓN TOTAL

|      | DESURRISCALDATORE | RECUPERO TOTALE |
|------|-------------------|-----------------|
| 0800 | 50                | 125             |
| 0900 | 53                | 138             |
| 1000 | 56                | 145             |
| 1250 | 60                | 145             |
| 1400 | 63                | 187             |
| 1500 | 66                | 200             |
| 1650 | 70                | 200             |
| 1800 | 73                | 200             |

#### NOTA

° estándar

A Alta temperatura

L Con silenciador

H Bomba de calor

HL<sup>1</sup> Bomba de calor silenciada

00 Sin Kit hidráulico

01 Acumulador con bomba baja prevalencia

02 Acumulador con bomba

03

Acumulador con bomba alta

prevalencia

04 Acumulador con bomba alta prevalencia y bomba de reserva

P1 Sólo bomba baja prevalencia

P2 Bomba baja prevalencia y bomba de reserva

P3 Bomba alta prevalencia

P4 Bomba alta prevalencia y bomba de reserva

#### Notas

<sup>1</sup> Las versiones HL presentan respecto a las versiones H una diferencia de peso y, por tanto, de baricentro y distribución de pesos sobre los apoyos, consúltense las correspondientes versiones H.

**18.2 DISTRIBUCIÓN PESOS PORCENTAJE  
SOBRE LOS APOYOS CON AGUA**

| NRA | Mod. | Vers. | Peso | BARICENTRO |      | DISTRIBUCIÓN PESOS PORCENTAJE SOBRE LOS APOYOS |       |       |       |   |   |   |   |   |   | KIT<br>AVX |
|-----|------|-------|------|------------|------|------------------------------------------------|-------|-------|-------|---|---|---|---|---|---|------------|
|     |      |       |      | Gx         | Gy   | A                                              | B     | C     | D     | E | F | h | i | j | K |            |
| 800 | °    | 00    | 2363 | 1745       | 839  | 21,0%                                          | 34,1% | 17,1% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | °    | 01    | 3237 | 1773       | 1085 | 26,7%                                          | 27,5% | 22,6% | 23,2% |   |   |   |   |   |   | 152        |
| 800 | °    | 02    | 3300 | 1775       | 1098 | 27,0%                                          | 27,1% | 22,9% | 23,0% |   |   |   |   |   |   | 152        |
| 800 | °    | 03    | 3266 | 1774       | 1091 | 26,9%                                          | 27,3% | 22,7% | 23,1% |   |   |   |   |   |   | 152        |
| 800 | °    | 04    | 3358 | 1776       | 1109 | 27,3%                                          | 26,8% | 23,1% | 22,7% |   |   |   |   |   |   | 152        |
| 800 | °    | P1    | 2433 | 1750       | 847  | 21,2%                                          | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | °    | P2    | 2503 | 1750       | 847  | 21,2%                                          | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | °    | P3    | 2433 | 1750       | 847  | 21,2%                                          | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | °    | P4    | 2503 | 1750       | 847  | 21,2%                                          | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | A    | 00    | 2450 | 1750       | 847  | 21,2%                                          | 33,8% | 17,3% | 27,7% |   |   |   |   |   |   | 151        |
| 800 | A    | 01    | 3324 | 1777       | 1084 | 26,7%                                          | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 800 | A    | 02    | 3387 | 1778       | 1097 | 27,0%                                          | 27,1% | 22,9% | 23,0% |   |   |   |   |   |   | 152        |
| 800 | A    | 03    | 3353 | 1777       | 1090 | 26,8%                                          | 27,3% | 22,7% | 23,2% |   |   |   |   |   |   | 152        |
| 800 | A    | 04    | 3445 | 1779       | 1108 | 27,2%                                          | 26,8% | 23,1% | 22,8% |   |   |   |   |   |   | 152        |
| 800 | A    | P1    | 3394 | 1777       | 1084 | 26,7%                                          | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | A    | P2    | 3464 | 1777       | 1084 | 26,7%                                          | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | A    | P3    | 3394 | 1777       | 1084 | 26,7%                                          | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | A    | P4    | 3464 | 1777       | 1084 | 26,7%                                          | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | L    | 00    | 2547 | 1749       | 855  | 21,4%                                          | 33,6% | 17,5% | 27,5% |   |   |   |   |   |   | 151        |
| 800 | L    | 01    | 3421 | 1775       | 1084 | 26,7%                                          | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 800 | L    | 02    | 3484 | 1776       | 1096 | 27,0%                                          | 27,0% | 22,9% | 23,0% |   |   |   |   |   |   | 152        |
| 800 | L    | 03    | 3450 | 1776       | 1090 | 26,8%                                          | 27,3% | 22,7% | 23,1% |   |   |   |   |   |   | 152        |
| 800 | L    | 04    | 3542 | 1778       | 1107 | 27,2%                                          | 26,9% | 23,1% | 22,8% |   |   |   |   |   |   | 152        |
| 800 | L    | P1    | 3491 | 1775       | 1084 | 26,7%                                          | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | L    | P2    | 3561 | 1775       | 1084 | 26,7%                                          | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | L    | P3    | 3491 | 1775       | 1084 | 26,7%                                          | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | L    | P4    | 3561 | 1775       | 1084 | 26,7%                                          | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 151        |
| 800 | H    | 00    | 2502 | 1753       | 843  | 21,0%                                          | 33,9% | 17,3% | 27,8% |   |   |   |   |   |   | 151        |
| 800 | H    | 01    | 3376 | 1778       | 1078 | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 152        |
| 800 | H    | 02    | 3439 | 1780       | 1090 | 26,8%                                          | 27,2% | 22,8% | 23,2% |   |   |   |   |   |   | 152        |
| 800 | H    | 03    | 3405 | 1779       | 1083 | 26,6%                                          | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 800 | H    | 04    | 3497 | 1781       | 1101 | 27,0%                                          | 27,0% | 23,0% | 23,0% |   |   |   |   |   |   | 152        |
| 800 | H    | P1    | 3446 | 1778       | 1078 | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 800 | H    | P2    | 3516 | 1778       | 1078 | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 800 | H    | P3    | 3446 | 1778       | 1078 | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 800 | H    | P4    | 3516 | 1778       | 1078 | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900 | °    | 00    | 2460 | 1750       | 830  | 20,7%                                          | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | °    | 01    | 3326 | 1777       | 1072 | 26,4%                                          | 27,8% | 22,4% | 23,5% |   |   |   |   |   |   | 152        |
| 900 | °    | 02    | 3386 | 1778       | 1084 | 26,6%                                          | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 900 | °    | 03    | 3355 | 1777       | 1078 | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 152        |
| 900 | °    | 04    | 3444 | 1779       | 1095 | 26,9%                                          | 27,1% | 22,9% | 23,1% |   |   |   |   |   |   | 152        |
| 900 | °    | P1    | 2522 | 1750       | 830  | 20,7%                                          | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | °    | P2    | 2592 | 1750       | 830  | 20,7%                                          | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | °    | P3    | 2592 | 1750       | 830  | 20,7%                                          | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | °    | P4    | 2592 | 1750       | 830  | 20,7%                                          | 34,2% | 17,0% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | A    | 00    | 2543 | 1756       | 838  | 20,9%                                          | 33,9% | 17,2% | 28,0% |   |   |   |   |   |   | 151        |
| 900 | A    | 01    | 3417 | 1780       | 1071 | 26,3%                                          | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 152        |
| 900 | A    | 02    | 3477 | 1781       | 1083 | 26,6%                                          | 27,4% | 22,7% | 23,4% |   |   |   |   |   |   | 152        |
| 900 | A    | 03    | 3446 | 1780       | 1077 | 26,4%                                          | 27,6% | 22,5% | 23,5% |   |   |   |   |   |   | 152        |
| 900 | A    | 04    | 3535 | 1782       | 1094 | 26,8%                                          | 27,1% | 22,9% | 23,2% |   |   |   |   |   |   | 152        |
| 900 | A    | P1    | 3487 | 1780       | 1071 | 26,3%                                          | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 151        |
| 900 | A    | P2    | 3557 | 1780       | 1071 | 26,3%                                          | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 151        |
| 900 | A    | P3    | 3487 | 1780       | 1071 | 26,3%                                          | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 151        |
| 900 | A    | P4    | 3557 | 1780       | 1071 | 26,3%                                          | 27,7% | 22,4% | 23,6% |   |   |   |   |   |   | 151        |
| 900 | L    | 00    | 2605 | 1753       | 854  | 21,3%                                          | 33,6% | 17,5% | 27,6% |   |   |   |   |   |   | 151        |
| 900 | L    | 01    | 3479 | 1777       | 1079 | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 152        |
| 900 | L    | 02    | 3539 | 1778       | 1090 | 26,8%                                          | 27,3% | 22,8% | 23,2% |   |   |   |   |   |   | 152        |
| 900 | L    | 03    | 3508 | 1778       | 1084 | 26,7%                                          | 27,4% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 900 | L    | 04    | 3597 | 1780       | 1101 | 27,0%                                          | 27,0% | 23,0% | 23,0% |   |   |   |   |   |   | 152        |
| 900 | L    | P1    | 3549 | 1777       | 1079 | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900 | L    | P2    | 3619 | 1777       | 1079 | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900 | L    | P3    | 3549 | 1777       | 1079 | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900 | L    | P4    | 3619 | 1777       | 1079 | 26,5%                                          | 27,6% | 22,5% | 23,4% |   |   |   |   |   |   | 151        |
| 900 | H    | 00    | 2602 | 1759       | 833  | 20,7%                                          | 34,0% | 17,2% | 28,1% |   |   |   |   |   |   | 151        |
| 900 | H    | 01    | 3476 | 1782       | 1064 | 26,1%                                          | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 152        |
| 900 | H    | 02    | 3536 | 1783       | 1075 | 26,3%                                          | 27,5% | 22,5% | 23,6% |   |   |   |   |   |   | 152        |
| 900 | H    | 03    | 3505 | 1783       | 1069 | 26,2%                                          | 27,7% | 22,4% | 23,7% |   |   |   |   |   |   | 152        |
| 900 | H    | 04    | 3594 | 1784       | 1086 | 26,6%                                          | 27,3% | 22,8% | 23,4% |   |   |   |   |   |   | 152        |
| 900 | H    | P1    | 3549 | 1777       | 1079 | 26,1%                                          | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 151        |
| 900 | H    | P2    | 3616 | 1783       | 1064 | 26,1%                                          | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 151        |

| NRA  | Mod. | Vers. | Peso | BARICENTRO |      | DISTRIBUCIÓN PESOS PORCENTAJE SOBRE LOS APOYOS |       |       |       |   |   |   |   |   |   | KIT<br>AVX |
|------|------|-------|------|------------|------|------------------------------------------------|-------|-------|-------|---|---|---|---|---|---|------------|
|      |      |       |      | Gx         | Gy   | A                                              | B     | C     | D     | E | F | h | i | j | K |            |
| 900  | H    | P3    | 3549 | 1777       | 1079 | 26,1%                                          | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 151        |
| 900  | H    | P4    | 3616 | 1783       | 1064 | 26,1%                                          | 27,9% | 22,3% | 23,8% |   |   |   |   |   |   | 151        |
| 1000 | °    | 00    | 2490 | 1753       | 848  | 21,2%                                          | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | °    | 01    | 3364 | 1778       | 1083 | 26,6%                                          | 27,5% | 22,6% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | °    | 02    | 3427 | 1779       | 1095 | 26,9%                                          | 27,1% | 22,9% | 23,1% |   |   |   |   |   |   | 152        |
| 1000 | °    | 03    | 3393 | 1779       | 2084 | 26,7%                                          | 27,3% | 22,7% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | °    | 04    | 3485 | 1781       | 1106 | 27,1%                                          | 26,8% | 23,1% | 22,9% |   |   |   |   |   |   | 152        |
| 1000 | °    | P1    | 2560 | 1753       | 848  | 21,2%                                          | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | °    | P2    | 2630 | 1753       | 848  | 21,2%                                          | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | °    | P3    | 2560 | 1753       | 848  | 21,2%                                          | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | °    | P4    | 2630 | 1753       | 848  | 21,2%                                          | 33,7% | 17,4% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | A    | 00    | 2579 | 1758       | 856  | 21,3%                                          | 33,5% | 17,6% | 27,7% |   |   |   |   |   |   | 151        |
| 1000 | A    | 01    | 3453 | 1781       | 1082 | 26,5%                                          | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 152        |
| 1000 | A    | 02    | 3516 | 1782       | 1094 | 26,8%                                          | 27,1% | 22,9% | 23,2% |   |   |   |   |   |   | 152        |
| 1000 | A    | 03    | 3482 | 1782       | 1088 | 26,7%                                          | 27,3% | 22,8% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | A    | 04    | 3574 | 1783       | 1105 | 27,1%                                          | 26,8% | 23,2% | 23,0% |   |   |   |   |   |   | 152        |
| 1000 | A    | P1    | 3523 | 1781       | 1082 | 26,5%                                          | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 151        |
| 1000 | A    | P2    | 3593 | 1781       | 1082 | 26,5%                                          | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 151        |
| 1000 | A    | P3    | 3523 | 1781       | 1082 | 26,5%                                          | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 151        |
| 1000 | A    | P4    | 3593 | 1781       | 1082 | 26,5%                                          | 27,4% | 22,6% | 23,4% |   |   |   |   |   |   | 151        |
| 1000 | L    | 00    | 2598 | 1752       | 856  | 21,4%                                          | 33,6% | 17,5% | 27,5% |   |   |   |   |   |   | 151        |
| 1000 | L    | 01    | 3472 | 1777       | 1081 | 26,6%                                          | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | L    | 02    | 3535 | 1778       | 1093 | 26,9%                                          | 27,2% | 22,8% | 23,1% |   |   |   |   |   |   | 152        |
| 1000 | L    | 03    | 3501 | 1778       | 1086 | 26,7%                                          | 27,4% | 22,7% | 23,2% |   |   |   |   |   |   | 152        |
| 1000 | L    | 04    | 3593 | 1779       | 1103 | 27,1%                                          | 26,9% | 23,1% | 22,9% |   |   |   |   |   |   | 152        |
| 1000 | L    | P1    | 3542 | 1777       | 1081 | 26,6%                                          | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 151        |
| 1000 | L    | P2    | 3612 | 1777       | 1081 | 26,6%                                          | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 151        |
| 1000 | L    | P3    | 3542 | 1777       | 1081 | 26,6%                                          | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 151        |
| 1000 | L    | P4    | 3612 | 1777       | 1081 | 26,6%                                          | 27,5% | 22,5% | 23,3% |   |   |   |   |   |   | 151        |
| 1000 | H    | 00    | 2634 | 1761       | 851  | 21,1%                                          | 33,5% | 17,6% | 27,8% |   |   |   |   |   |   | 151        |
| 1000 | H    | 01    | 3508 | 1783       | 1075 | 26,3%                                          | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 152        |
| 1000 | H    | 02    | 3571 | 1784       | 1087 | 26,6%                                          | 27,2% | 22,8% | 23,3% |   |   |   |   |   |   | 152        |
| 1000 | H    | 03    | 3537 | 1784       | 1081 | 26,5%                                          | 27,4% | 22,7% | 23,5% |   |   |   |   |   |   | 152        |
| 1000 | H    | 04    | 3629 | 1785       | 1098 | 26,9%                                          | 27,0% | 23,0% | 23,1% |   |   |   |   |   |   | 152        |
| 1000 | H    | P1    | 3578 | 1783       | 1075 | 26,3%                                          | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 151        |
| 1000 | H    | P2    | 3648 | 1783       | 1075 | 26,3%                                          | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 151        |
| 1000 | H    | P3    | 3578 | 1783       | 1075 | 26,3%                                          | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 151        |
| 1000 | H    | P4    | 3648 | 1783       | 1075 | 26,3%                                          | 27,6% | 22,5% | 23,6% |   |   |   |   |   |   | 151        |
| 1250 | °    | 00    | 3088 | 2155       | 816  | 20,2%                                          | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | °    | 01    | 3984 | 2086       | 1026 | 26,2%                                          | 30,0% | 20,4% | 23,4% |   |   |   |   |   |   | 154        |
| 1250 | °    | 02    | 4008 | 2085       | 1031 | 26,3%                                          | 29,9% | 20,5% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | °    | 03    | 4011 | 2084       | 1031 | 26,4%                                          | 29,9% | 20,5% | 23,2% |   |   |   |   |   |   | 154        |
| 1250 | °    | 04    | 4107 | 2079       | 1048 | 26,9%                                          | 29,5% | 20,8% | 22,8% |   |   |   |   |   |   | 154        |
| 1250 | °    | P1    | 3158 | 3303       | 2155 | 20,2%                                          | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | °    | P2    | 3228 | 3373       | 2155 | 20,2%                                          | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | °    | P3    | 3158 | 3303       | 2155 | 20,2%                                          | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | °    | P4    | 3228 | 3373       | 2155 | 20,2%                                          | 34,2% | 16,9% | 28,7% |   |   |   |   |   |   | 153        |
| 1250 | A    | 00    | 3199 | 2160       | 825  | 20,3%                                          | 33,9% | 17,1% | 28,6% |   |   |   |   |   |   | 153        |
| 1250 | A    | 01    | 4095 | 2093       | 1027 | 26,2%                                          | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 154        |
| 1250 | A    | 02    | 4119 | 2091       | 1031 | 26,3%                                          | 29,8% | 20,6% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | A    | 03    | 4122 | 2091       | 1032 | 26,3%                                          | 29,8% | 20,6% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | A    | 04    | 4218 | 2085       | 1048 | 26,8%                                          | 29,4% | 20,9% | 22,9% |   |   |   |   |   |   | 154        |
| 1250 | A    | P1    | 4165 | 2093       | 1027 | 26,2%                                          | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | A    | P2    | 4235 | 2093       | 1027 | 26,2%                                          | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | A    | P3    | 4165 | 2093       | 1027 | 26,2%                                          | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | A    | P4    | 4235 | 2093       | 1027 | 26,2%                                          | 29,9% | 20,5% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | 00    | 3339 | 2161       | 835  | 20,6%                                          | 33,7% | 17,4% | 28,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | 01    | 4235 | 2095       | 1028 | 26,2%                                          | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 154        |
| 1250 | L    | 02    | 4259 | 2094       | 1032 | 26,3%                                          | 27,9% | 20,6% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | L    | 03    | 4262 | 2094       | 1033 | 26,3%                                          | 29,7% | 20,7% | 23,3% |   |   |   |   |   |   | 154        |
| 1250 | L    | 04    | 4358 | 2088       | 1049 | 26,8%                                          | 29,4% | 20,9% | 22,9% |   |   |   |   |   |   | 154        |
| 1250 | L    | P1    | 4305 | 2095       | 1028 | 26,2%                                          | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | P2    | 4375 | 2095       | 1028 | 26,2%                                          | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | P3    | 4305 | 2095       | 1028 | 26,2%                                          | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | L    | P4    | 4375 | 2095       | 1028 | 26,2%                                          | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 153        |
| 1250 | H    | 00    | 3386 | 2170       | 831  | 20,4%                                          | 33,6% | 17,4% | 28,6% |   |   |   |   |   |   | 153        |
| 1250 | H    | 01    | 4282 | 2103       | 1023 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 154        |
| 1250 | H    | 02    | 4306 | 2101       | 1027 | 26,1%                                          | 29,8% | 20,6% | 23,6% |   |   |   |   |   |   | 154        |
| 1250 | H    | 03    | 4309 | 2101       | 1028 | 26,1%                                          | 29,7% | 20,6% | 23,5% |   |   |   |   |   |   | 154        |
| 1250 | H    | 04    | 4405 | 2096       | 1043 | 26,5%                                          | 29,4% | 20,9% | 23,2% |   |   |   |   |   |   | 154        |

| NRA  | Mod. | Vers. | Peso | BARICENTRO |      | DISTRIBUCIÓN PESOS PORCENTAJE SOBRE LOS APOYOS |       |       |       |   |   |   |   |   |   | KIT<br>AVX |
|------|------|-------|------|------------|------|------------------------------------------------|-------|-------|-------|---|---|---|---|---|---|------------|
|      |      |       |      | Gx         | Gy   | A                                              | B     | C     | D     | E | F | h | i | j | K |            |
| 1250 | H    | P1    | 4352 | 2103       | 1023 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1250 | H    | P2    | 4422 | 2103       | 1023 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1250 | H    | P3    | 4352 | 2103       | 1023 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1250 | H    | P4    | 4422 | 2103       | 1023 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | °    | 00    | 3182 | 2160       | 810  | 20,0%                                          | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | °    | 01    | 4078 | 2092       | 1017 | 25,9%                                          | 30,2% | 20,3% | 23,6% |   |   |   |   |   |   | 154        |
| 1400 | °    | 02    | 4102 | 2090       | 1021 | 26,0%                                          | 30,1% | 20,4% | 23,5% |   |   |   |   |   |   | 154        |
| 1400 | °    | 03    | 4105 | 2090       | 1022 | 26,1%                                          | 30,0% | 20,4% | 23,5% |   |   |   |   |   |   | 154        |
| 1400 | °    | 04    | 4201 | 2084       | 1038 | 26,5%                                          | 29,7% | 20,6% | 23,1% |   |   |   |   |   |   | 154        |
| 1400 | °    | P1    | 3252 | 2160       | 810  | 20,0%                                          | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | °    | P2    | 3322 | 2160       | 810  | 20,0%                                          | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | °    | P3    | 3252 | 2160       | 810  | 20,0%                                          | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | °    | P4    | 3322 | 2160       | 810  | 20,0%                                          | 34,3% | 16,8% | 28,9% |   |   |   |   |   |   | 153        |
| 1400 | A    | 00    | 3404 | 2170       | 837  | 20,1%                                          | 34,0% | 17,0% | 28,8% |   |   |   |   |   |   | 153        |
| 1400 | A    | 01    | 4323 | 2102       | 1031 | 25,8%                                          | 30,1% | 20,4% | 23,7% |   |   |   |   |   |   | 154        |
| 1400 | A    | 02    | 4224 | 2097       | 1020 | 25,9%                                          | 30,0% | 20,4% | 23,6% |   |   |   |   |   |   | 154        |
| 1400 | A    | 03    | 4227 | 2097       | 1021 | 26,0%                                          | 30,0% | 20,4% | 23,6% |   |   |   |   |   |   | 154        |
| 1400 | A    | 04    | 4323 | 2091       | 1037 | 26,4%                                          | 29,6% | 20,7% | 23,2% |   |   |   |   |   |   | 154        |
| 1400 | A    | P1    | 4270 | 2098       | 1016 | 25,8%                                          | 30,1% | 20,4% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | A    | P2    | 4340 | 2098       | 1016 | 25,8%                                          | 30,1% | 20,4% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | A    | P3    | 4270 | 2098       | 1016 | 25,8%                                          | 30,1% | 20,4% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | A    | P4    | 4340 | 2098       | 1016 | 25,8%                                          | 30,1% | 20,4% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | L    | 00    | 3386 | 2163       | 836  | 20,6%                                          | 33,6% | 17,4% | 28,4% |   |   |   |   |   |   | 153        |
| 1400 | L    | 01    | 4282 | 2098       | 1027 | 26,1%                                          | 29,8% | 20,6% | 23,5% |   |   |   |   |   |   | 154        |
| 1400 | L    | 02    | 4306 | 2096       | 1031 | 26,2%                                          | 29,7% | 20,7% | 23,4% |   |   |   |   |   |   | 154        |
| 1400 | L    | 03    | 4309 | 2096       | 1032 | 26,2%                                          | 29,7% | 20,7% | 23,4% |   |   |   |   |   |   | 154        |
| 1400 | L    | 04    | 4405 | 2091       | 1048 | 26,7%                                          | 29,4% | 20,9% | 23,0% |   |   |   |   |   |   | 154        |
| 1400 | L    | P1    | 4352 | 2098       | 1027 | 26,1%                                          | 29,8% | 20,6% | 23,5% |   |   |   |   |   |   | 153        |
| 1400 | L    | P2    | 4422 | 2096       | 1027 | 26,1%                                          | 29,8% | 20,6% | 23,5% |   |   |   |   |   |   | 153        |
| 1400 | L    | P3    | 4352 | 2098       | 1027 | 26,1%                                          | 29,8% | 20,6% | 23,5% |   |   |   |   |   |   | 153        |
| 1400 | L    | P4    | 4422 | 2096       | 1027 | 26,1%                                          | 29,8% | 20,6% | 23,5% |   |   |   |   |   |   | 153        |
| 1400 | H    | 00    | 3434 | 2172       | 832  | 20,4%                                          | 33,6% | 17,4% | 28,6% |   |   |   |   |   |   | 153        |
| 1400 | H    | 01    | 4330 | 2105       | 1022 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 154        |
| 1400 | H    | 02    | 4354 | 2104       | 1026 | 26,0%                                          | 29,7% | 20,6% | 23,6% |   |   |   |   |   |   | 154        |
| 1400 | H    | 03    | 4357 | 2104       | 1027 | 26,0%                                          | 29,7% | 20,6% | 23,6% |   |   |   |   |   |   | 154        |
| 1400 | H    | 04    | 4453 | 2098       | 1042 | 26,5%                                          | 29,4% | 20,9% | 23,2% |   |   |   |   |   |   | 154        |
| 1400 | H    | P1    | 4400 | 2105       | 1022 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | H    | P2    | 4470 | 2105       | 1022 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | H    | P3    | 4400 | 2105       | 1022 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1400 | H    | P4    | 4470 | 2105       | 1022 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 153        |
| 1500 | °    | 00    | 3270 | 2164       | 828  | 20,4%                                          | 33,8% | 17,2% | 28,6% |   |   |   |   |   |   | 153        |
| 1500 | °    | 01    | 4189 | 2095       | 1030 | 26,2%                                          | 29,8% | 20,6% | 23,4% |   |   |   |   |   |   | 154        |
| 1500 | °    | 02    | 4213 | 2094       | 1034 | 26,3%                                          | 29,7% | 20,7% | 23,3% |   |   |   |   |   |   | 154        |
| 1500 | °    | 03    | 4193 | 2095       | 1031 | 26,2%                                          | 29,7% | 20,6% | 23,4% |   |   |   |   |   |   | 154        |
| 1500 | °    | 04    | 4289 | 2089       | 1047 | 26,7%                                          | 29,4% | 20,9% | 23,0% |   |   |   |   |   |   | 154        |
| 1500 | °    | P1    | 3340 | 2164       | 828  | 20,4%                                          | 33,8% | 17,2% | 28,6% |   |   |   |   |   |   | 153        |
| 1500 | °    | P2    | 3410 | 2164       | 828  | 20,4%                                          | 33,8% | 17,2% | 28,6% |   |   |   |   |   |   | 153        |
| 1500 | °    | P3    | 3340 | 2164       | 828  | 20,4%                                          | 33,8% | 17,2% | 28,6% |   |   |   |   |   |   | 153        |
| 1500 | °    | P4    | 3410 | 2164       | 828  | 20,4%                                          | 33,8% | 17,2% | 28,6% |   |   |   |   |   |   | 153        |
| 1500 | A    | 00    | 3404 | 2170       | 837  | 20,5%                                          | 33,5% | 17,5% | 28,5% |   |   |   |   |   |   | 153        |
| 1500 | A    | 01    | 4189 | 2095       | 1030 | 26,1%                                          | 29,6% | 20,7% | 23,5% |   |   |   |   |   |   | 154        |
| 1500 | A    | 02    | 4347 | 2101       | 1035 | 26,3%                                          | 29,6% | 20,8% | 23,4% |   |   |   |   |   |   | 154        |
| 1500 | A    | 03    | 4327 | 2102       | 1032 | 26,2%                                          | 29,6% | 20,7% | 23,5% |   |   |   |   |   |   | 154        |
| 1500 | A    | 04    | 4423 | 2097       | 1047 | 26,6%                                          | 29,3% | 21,0% | 23,1% |   |   |   |   |   |   | 154        |
| 1500 | A    | P1    | 4393 | 2102       | 1031 | 26,1%                                          | 29,6% | 20,7% | 23,5% |   |   |   |   |   |   | 153        |
| 1500 | A    | P2    | 4463 | 2102       | 1031 | 26,1%                                          | 29,6% | 20,7% | 23,5% |   |   |   |   |   |   | 153        |
| 1500 | A    | P3    | 4393 | 2102       | 1031 | 26,1%                                          | 29,6% | 20,7% | 23,5% |   |   |   |   |   |   | 153        |
| 1500 | A    | P4    | 4463 | 2102       | 1031 | 26,1%                                          | 29,6% | 20,7% | 23,5% |   |   |   |   |   |   | 153        |
| 1500 | L    | 00    | 3427 | 2165       | 837  | 20,6%                                          | 33,6% | 17,4% | 28,4% |   |   |   |   |   |   | 153        |
| 1500 | L    | 01    | 4346 | 2099       | 1030 | 26,2%                                          | 29,7% | 20,7% | 23,5% |   |   |   |   |   |   | 154        |
| 1500 | L    | 02    | 4370 | 2097       | 1034 | 26,3%                                          | 29,6% | 20,7% | 23,4% |   |   |   |   |   |   | 154        |
| 1500 | L    | 03    | 4350 | 2098       | 1031 | 26,2%                                          | 29,7% | 20,7% | 23,4% |   |   |   |   |   |   | 154        |
| 1500 | L    | 04    | 4446 | 2093       | 1046 | 26,6%                                          | 29,4% | 20,9% | 23,1% |   |   |   |   |   |   | 154        |
| 1500 | L    | P1    | 4416 | 2099       | 1030 | 26,2%                                          | 29,7% | 20,7% | 23,5% |   |   |   |   |   |   | 153        |
| 1500 | L    | P2    | 4486 | 2099       | 1030 | 26,2%                                          | 29,7% | 20,7% | 23,5% |   |   |   |   |   |   | 153        |
| 1500 | L    | P3    | 4416 | 2099       | 1030 | 26,2%                                          | 29,7% | 20,7% | 23,5% |   |   |   |   |   |   | 153        |
| 1500 | L    | P4    | 4486 | 2099       | 1030 | 26,2%                                          | 29,7% | 20,7% | 23,5% |   |   |   |   |   |   | 153        |
| 1500 | H    | 00    | 3476 | 2174       | 833  | 20,4%                                          | 33,5% | 17,4% | 28,6% |   |   |   |   |   |   | 153        |
| 1500 | H    | 01    | 4395 | 2106       | 1025 | 25,9%                                          | 29,8% | 20,6% | 23,7% |   |   |   |   |   |   | 154        |
| 1500 | H    | 02    | 4419 | 2105       | 1029 | 26,1%                                          | 29,7% | 20,7% | 23,6% |   |   |   |   |   |   | 154        |

| NRA  | Mod. | Vers. | Peso | BARICENTRO |      | DISTRIBUCIÓN PESOS PORCENTAJE SOBRE LOS APOYOS |       |       |       |      |       |   |   |   |   | KIT<br>AVX |
|------|------|-------|------|------------|------|------------------------------------------------|-------|-------|-------|------|-------|---|---|---|---|------------|
|      |      |       |      | Gx         | Gy   | A                                              | B     | C     | D     | E    | F     | h | i | j | K |            |
| 1500 | H    | 03    | 4399 | 2106       | 1025 | 26,0%                                          | 29,7% | 20,6% | 23,7% |      |       |   |   |   |   | 154        |
| 1500 | H    | 04    | 4495 | 2100       | 1041 | 26,4%                                          | 29,4% | 20,9% | 23,3% |      |       |   |   |   |   | 154        |
| 1500 | H    | P1    | 4465 | 2106       | 1025 | 25,9%                                          | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1500 | H    | P2    | 4535 | 2106       | 1025 | 25,9%                                          | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1500 | H    | P3    | 4465 | 2106       | 1025 | 25,9%                                          | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1500 | H    | P4    | 4535 | 2106       | 1025 | 25,9%                                          | 29,8% | 20,6% | 23,7% |      |       |   |   |   |   | 153        |
| 1650 | °    | 00    | 3690 | 2467       | 915  | 7,0%                                           | 9,8%  | 27,1% | 38,0% | 7,5% | 10,5% |   |   |   |   | 601        |
| 1650 | °    | 01    | 4680 | 2309       | 1091 | 9,6%                                           | 9,7%  | 33,1% | 33,7% | 6,9% | 7,0%  |   |   |   |   | 602        |
| 1650 | °    | 02    | 4790 | 2338       | 1107 | 9,3%                                           | 9,2%  | 33,8% | 33,4% | 7,2% | 7,1%  |   |   |   |   | 602        |
| 1650 | °    | 03    | 4710 | 2317       | 1095 | 9,5%                                           | 9,6%  | 33,3% | 33,6% | 7,0% | 7,0%  |   |   |   |   | 602        |
| 1650 | °    | 04    | 4850 | 2352       | 1115 | 9,1%                                           | 8,9%  | 34,2% | 33,2% | 7,4% | 7,2%  |   |   |   |   | 602        |
| 1650 | °    | P1    | 3800 | 2496       | 939  | 6,8%                                           | 9,2%  | 28,0% | 37,6% | 7,9% | 10,6% |   |   |   |   | 601        |
| 1650 | °    | P2    | 3910 | 2526       | 963  | 6,6%                                           | 8,5%  | 28,9% | 37,2% | 8,3% | 10,6% |   |   |   |   | 603        |
| 1650 | °    | P3    | 3830 | 2504       | 945  | 6,7%                                           | 9,0%  | 28,2% | 37,5% | 8,0% | 10,6% |   |   |   |   | 601        |
| 1650 | °    | P4    | 3970 | 2541       | 975  | 6,5%                                           | 8,1%  | 29,4% | 36,9% | 8,5% | 10,6% |   |   |   |   | 603        |
| 1650 | A    | 00    | 3870 | 2477       | 926  | 6,7%                                           | 9,2%  | 28,0% | 38,5% | 7,4% | 10,2% |   |   |   |   | 604        |
| 1650 | A    | 01    | 4860 | 2322       | 1093 | 9,2%                                           | 9,3%  | 33,7% | 34,1% | 6,8% | 6,9%  |   |   |   |   | 602        |
| 1650 | A    | 02    | 4970 | 2350       | 1108 | 8,9%                                           | 8,8%  | 34,3% | 33,8% | 7,2% | 7,0%  |   |   |   |   | 602        |
| 1650 | A    | 03    | 4890 | 2330       | 1097 | 9,1%                                           | 9,1%  | 33,9% | 34,0% | 6,9% | 7,0%  |   |   |   |   | 602        |
| 1650 | A    | 04    | 5030 | 2364       | 1116 | 8,8%                                           | 8,5%  | 34,7% | 33,7% | 7,3% | 7,1%  |   |   |   |   | 602        |
| 1650 | A    | P1    | 3980 | 2504       | 948  | 6,5%                                           | 8,6%  | 28,8% | 38,1% | 7,8% | 10,3% |   |   |   |   | 605        |
| 1650 | A    | P2    | 4090 | 2532       | 971  | 6,3%                                           | 7,9%  | 29,7% | 37,6% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1650 | A    | P3    | 4010 | 2512       | 954  | 6,4%                                           | 8,4%  | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 605        |
| 1650 | A    | P4    | 4150 | 2547       | 982  | 6,1%                                           | 7,6%  | 30,1% | 37,4% | 8,4% | 10,4% |   |   |   |   | 606        |
| 1650 | L    | 00    | 3870 | 2477       | 926  | 6,7%                                           | 9,2%  | 28,0% | 38,5% | 7,4% | 10,2% |   |   |   |   | 604        |
| 1650 | L    | 01    | 4860 | 2322       | 1093 | 9,2%                                           | 9,3%  | 33,7% | 34,1% | 6,8% | 6,9%  |   |   |   |   | 602        |
| 1650 | L    | 02    | 4970 | 2350       | 1108 | 8,9%                                           | 8,8%  | 34,3% | 33,8% | 7,2% | 7,0%  |   |   |   |   | 602        |
| 1650 | L    | 03    | 4890 | 2330       | 1097 | 9,1%                                           | 9,1%  | 33,9% | 34,0% | 6,9% | 7,0%  |   |   |   |   | 602        |
| 1650 | L    | 04    | 5030 | 2364       | 1116 | 8,8%                                           | 8,5%  | 34,7% | 33,7% | 7,3% | 7,1%  |   |   |   |   | 602        |
| 1650 | L    | P1    | 3980 | 2504       | 948  | 6,5%                                           | 8,6%  | 28,8% | 38,1% | 7,8% | 10,3% |   |   |   |   | 605        |
| 1650 | L    | P2    | 4090 | 2532       | 971  | 6,3%                                           | 7,9%  | 29,7% | 37,6% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1650 | L    | P3    | 4010 | 2512       | 954  | 6,4%                                           | 8,4%  | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 605        |
| 1650 | L    | P4    | 4150 | 2547       | 982  | 6,1%                                           | 7,6%  | 30,1% | 37,4% | 8,4% | 10,4% |   |   |   |   | 606        |
| 1650 | H    | 00    | 3890 | 2478       | 927  | 6,7%                                           | 9,2%  | 28,0% | 38,4% | 7,5% | 10,3% |   |   |   |   | 604        |
| 1650 | H    | 01    | 4880 | 2324       | 1093 | 9,2%                                           | 9,3%  | 33,7% | 34,1% | 6,9% | 6,9%  |   |   |   |   | 602        |
| 1650 | H    | 02    | 4990 | 2351       | 1108 | 8,9%                                           | 8,8%  | 34,3% | 33,8% | 7,2% | 7,1%  |   |   |   |   | 602        |
| 1650 | H    | 03    | 4910 | 2331       | 1097 | 9,1%                                           | 9,1%  | 33,8% | 34,0% | 6,9% | 7,0%  |   |   |   |   | 602        |
| 1650 | H    | 04    | 5050 | 2365       | 1116 | 8,8%                                           | 8,5%  | 34,6% | 33,6% | 7,4% | 7,1%  |   |   |   |   | 602        |
| 1650 | H    | P1    | 4000 | 2505       | 949  | 6,5%                                           | 8,6%  | 28,8% | 38,0% | 7,8% | 10,3% |   |   |   |   | 605        |
| 1650 | H    | P2    | 4110 | 2533       | 971  | 6,3%                                           | 7,9%  | 29,7% | 37,5% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1650 | H    | P3    | 4030 | 2513       | 955  | 6,4%                                           | 8,4%  | 29,0% | 37,9% | 7,9% | 10,3% |   |   |   |   | 605        |
| 1650 | H    | P4    | 4170 | 2547       | 983  | 6,2%                                           | 7,6%  | 30,1% | 37,3% | 8,4% | 10,4% |   |   |   |   | 606        |
| 1800 | °    | 00    | 3780 | 2472       | 905  | 6,7%                                           | 9,6%  | 27,1% | 38,8% | 7,3% | 10,5% |   |   |   |   | 604        |
| 1800 | °    | 01    | 4770 | 2316       | 1080 | 9,2%                                           | 9,6%  | 33,1% | 34,3% | 6,8% | 7,0%  |   |   |   |   | 602        |
| 1800 | °    | 02    | 4880 | 2344       | 1096 | 9,0%                                           | 9,0%  | 33,8% | 34,0% | 7,1% | 7,1%  |   |   |   |   | 602        |
| 1800 | °    | 03    | 4800 | 2323       | 1084 | 9,2%                                           | 9,4%  | 33,3% | 34,3% | 6,8% | 7,0%  |   |   |   |   | 602        |
| 1800 | °    | 04    | 4940 | 2358       | 1104 | 8,8%                                           | 8,8%  | 34,1% | 33,9% | 7,3% | 7,2%  |   |   |   |   | 602        |
| 1800 | °    | P1    | 3890 | 2500       | 928  | 6,5%                                           | 8,9%  | 28,0% | 38,4% | 7,7% | 10,5% |   |   |   |   | 604        |
| 1800 | °    | P2    | 4000 | 2529       | 952  | 6,3%                                           | 8,2%  | 28,9% | 37,9% | 8,1% | 10,6% |   |   |   |   | 605        |
| 1800 | °    | P3    | 3920 | 2508       | 934  | 6,4%                                           | 8,7%  | 28,2% | 38,3% | 7,8% | 10,5% |   |   |   |   | 604        |
| 1800 | °    | P4    | 4060 | 2544       | 964  | 6,2%                                           | 7,9%  | 29,4% | 37,7% | 8,3% | 10,6% |   |   |   |   | 605        |
| 1800 | A    | 00    | 3990 | 2483       | 915  | 6,4%                                           | 8,9%  | 28,0% | 39,2% | 7,3% | 10,2% |   |   |   |   | 604        |
| 1800 | A    | 01    | 4980 | 2331       | 1080 | 8,8%                                           | 9,1%  | 33,6% | 34,8% | 6,7% | 7,0%  |   |   |   |   | 602        |
| 1800 | A    | 02    | 5090 | 2358       | 1096 | 8,6%                                           | 8,6%  | 34,2% | 34,5% | 7,0% | 7,1%  |   |   |   |   | 602        |
| 1800 | A    | 03    | 5010 | 2338       | 1085 | 8,7%                                           | 9,0%  | 33,8% | 34,7% | 6,8% | 7,0%  |   |   |   |   | 602        |
| 1800 | A    | 04    | 5150 | 2371       | 1104 | 8,4%                                           | 8,4%  | 34,5% | 34,3% | 7,2% | 7,2%  |   |   |   |   | 602        |
| 1800 | A    | P1    | 4100 | 2509       | 937  | 6,2%                                           | 8,3%  | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 605        |
| 1800 | A    | P2    | 4210 | 2536       | 959  | 6,0%                                           | 7,7%  | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 606        |
| 1800 | A    | P3    | 4130 | 2517       | 943  | 6,1%                                           | 8,2%  | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 605        |
| 1800 | A    | P4    | 4270 | 2550       | 971  | 5,9%                                           | 7,4%  | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1800 | L    | 00    | 3990 | 2483       | 915  | 6,4%                                           | 8,9%  | 28,0% | 39,2% | 7,3% | 10,2% |   |   |   |   | 604        |
| 1800 | L    | 01    | 4980 | 2331       | 1080 | 8,8%                                           | 9,1%  | 33,6% | 34,8% | 6,7% | 7,0%  |   |   |   |   | 602        |
| 1800 | L    | 02    | 5090 | 2358       | 1096 | 8,6%                                           | 8,6%  | 34,2% | 34,5% | 7,0% | 7,1%  |   |   |   |   | 602        |
| 1800 | L    | 03    | 5010 | 2338       | 1085 | 8,7%                                           | 9,0%  | 33,8% | 34,7% | 6,8% | 7,0%  |   |   |   |   | 602        |
| 1800 | L    | 04    | 5150 | 2371       | 1104 | 8,4%                                           | 8,4%  | 34,5% | 34,3% | 7,2% | 7,2%  |   |   |   |   | 602        |
| 1800 | L    | P1    | 4100 | 2509       | 937  | 6,2%                                           | 8,3%  | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 605        |
| 1800 | L    | P2    | 4210 | 2536       | 959  | 6,0%                                           | 7,7%  | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 606        |
| 1800 | L    | P3    | 4130 | 2517       | 943  | 6,1%                                           | 8,2%  | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 605        |
| 1800 | L    | P4    | 4270 | 2550       | 971  | 5,9%                                           | 7,4%  | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 606        |
| 1800 | H    | 00    | 3990 | 2483       | 915  | 6,4%                                           | 8,9%  | 28,0% | 39,2% | 7,3% | 10,2% |   |   |   |   | 604        |

| NRA  | Mod. | Vers. | Peso | BARICENTRO |      | DISTRIBUCIÓN PESOS PORCENTAJE SOBRE LOS APOYOS |      |       |       |      |       |   |   |   |   | KIT<br>AVX |
|------|------|-------|------|------------|------|------------------------------------------------|------|-------|-------|------|-------|---|---|---|---|------------|
|      |      |       |      | Gx         | Gy   | A                                              | B    | C     | D     | E    | F     | h | i | j | K |            |
| 1800 | H    | 01    | 4980 | 2331       | 1080 | 8,8%                                           | 9,1% | 33,6% | 34,8% | 6,7% | 7,0%  |   |   |   |   | 602        |
| 1800 | H    | 02    | 5090 | 2358       | 1096 | 8,6%                                           | 8,6% | 34,2% | 34,5% | 7,0% | 7,1%  |   |   |   |   | 602        |
| 1800 | H    | 03    | 5010 | 2338       | 1085 | 8,7%                                           | 9,0% | 33,8% | 34,7% | 6,8% | 7,0%  |   |   |   |   | 602        |
| 1800 | H    | 04    | 5150 | 2371       | 1104 | 8,4%                                           | 8,4% | 34,5% | 34,3% | 7,2% | 7,2%  |   |   |   |   | 602        |
| 1800 | H    | P1    | 4100 | 2509       | 937  | 6,2%                                           | 8,3% | 28,8% | 38,8% | 7,6% | 10,3% |   |   |   |   | 605        |
| 1800 | H    | P2    | 4210 | 2536       | 959  | 6,0%                                           | 7,7% | 29,6% | 38,3% | 8,0% | 10,3% |   |   |   |   | 606        |
| 1800 | H    | P3    | 4130 | 2517       | 943  | 6,1%                                           | 8,2% | 29,0% | 38,7% | 7,7% | 10,3% |   |   |   |   | 605        |
| 1800 | H    | P4    | 4270 | 2550       | 971  | 5,9%                                           | 7,4% | 30,1% | 38,1% | 8,2% | 10,4% |   |   |   |   | 606        |

### 18.2.1 PESOS AGREGADOS VERSIÓN POR VERSIÓN CON DESRECALENTADOR Y RECUPERACIÓN TOTAL

|      | DESURRISCALDATORE | RECUPERO TOTALE |
|------|-------------------|-----------------|
| 0800 | 50                | 125             |
| 0900 | 53                | 138             |
| 1000 | 56                | 145             |
| 1250 | 60                | 145             |
| 1400 | 63                | 187             |
| 1500 | 66                | 200             |
| 1650 | 70                | 200             |
| 1800 | 73                | 200             |

#### NOTA

|                 |                                       |
|-----------------|---------------------------------------|
| °               | estándar                              |
| A               | Alta temperatura                      |
| L               | Con silenciador                       |
| H               | Bomba de calor                        |
| HL <sup>1</sup> | Bomba de calor silenciada             |
| 00              | Sin Kit hidráulico                    |
| 01              | Acumulador con bomba baja prevalencia |
| 02              | Acumulador con bomba baja             |

|    |                                                                         |
|----|-------------------------------------------------------------------------|
| 03 | prevalencia y bomba de reserva<br>Acumulador con bomba alta prevalencia |
| 04 | Acumulador con bomba alta prevalencia y bomba de reserva                |
| P1 | Sólo bomba baja prevalencia                                             |
| P2 | Bomba baja prevalencia y bomba de reserva                               |
| P3 | Bomba alta prevalencia                                                  |
| P4 | Bomba alta prevalencia y bomba de reserva                               |

#### NOTAS

1 Las versiones HL presentan respecto a las versiones H una diferencia de peso y, por tanto, de baricentro y distribución de pesos sobre los apoyos, consúltense las correspondientes versiones H.

### 18.2.2 INSTRUCCIONES PARA EL LEVANTAMIENTO

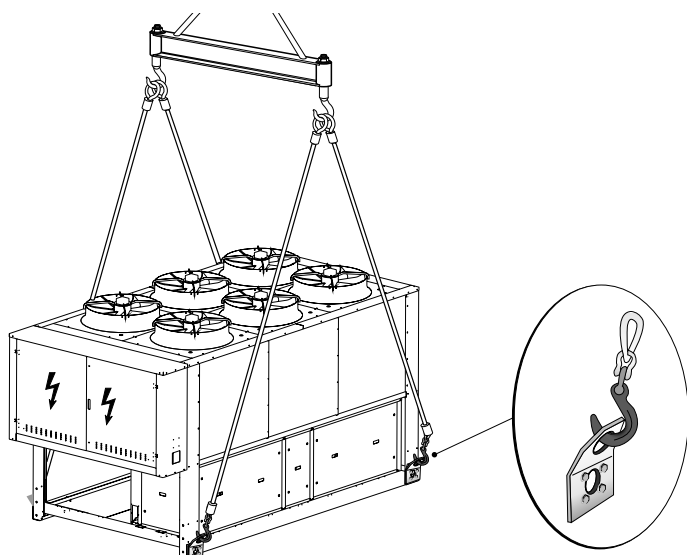
- Verifique que todos los paneles estén fuertemente fijados antes de mover la unidad.
- Utilice todos y solamente los puntos de elevación indicados.

- Utilice cuerdas de la misma longitud e idóneas para levantar el peso de la unidad.
- Desplace la unidad con cautela, sin movimientos bruscos y verifique que nadie permanezca debajo de la unidad.
- El desplazamiento debe ser realizado por personal calificado y equipado con

los medios a norma de seguridad.

#### NOTA

Para conocer la posición de los puntos de fijación de los AVX tome como referencia el manual de instalación.







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recycled paper  
papier recyclé  
recycled paper

# **AERMEC S.p.A.**

37040 Bevilacqua (VR) - Italien  
Via Roma, 44 - Tel. (+39) 0442 633111  
Telefax (+39) 0442 93730 - (+39) 0442 93566  
[www.aermec.com](http://www.aermec.com)

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