ThermoKey®
Heat Exchange Solutions

New Industrial Dual Flow Unit Coolers

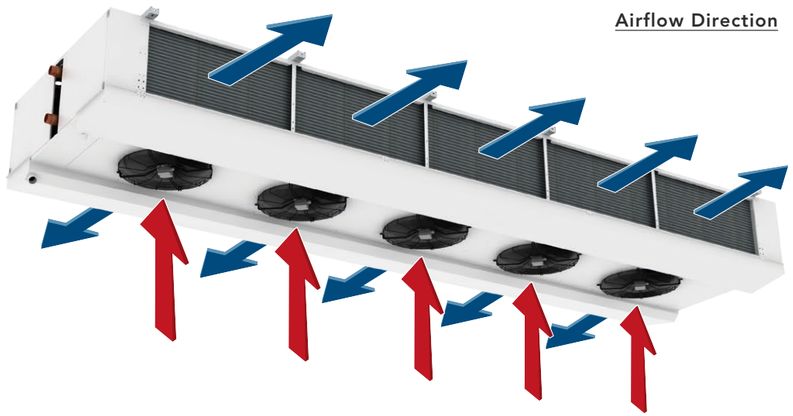
One single smart platform offering a wide range of solutions

Applications

Thanks to a considerable air flow and an optimal air distribution, the new Dual Flow Units have been designed in order to be installed in industrial refrigeration of food market, in medium and large cold rooms or refrigerated warehouses, for the preservation of fresh and frozen products and for the air conditioning of medium and large processing rooms.

All units are equipped with high efficiency fan motors.

The dual flow design allows the best air distribution also in limited height rooms and gives a good choice when air ducts can't be used or are not planned.



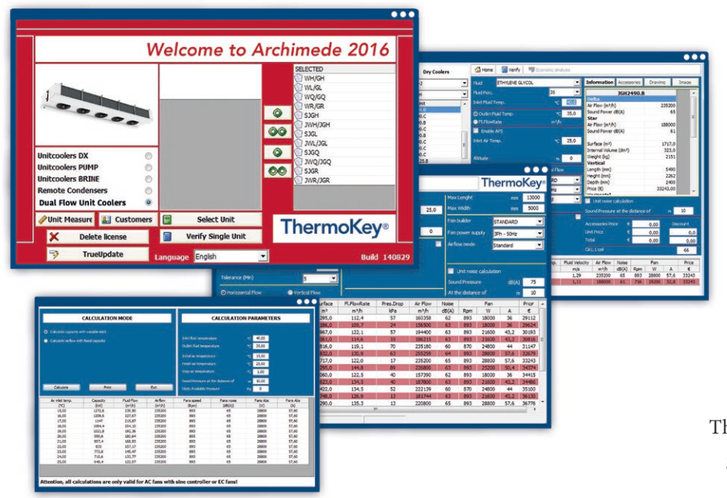
OPERATION TYPES AND PERFORMANCES

- **DFX evaporator for standard refrigerants (range from 7 kW to 105 kW) in standard condition**:
  R404A, Te= -8° C, T1= 0°C, RH= 85%
- **DFB standard Brine Unit Coolers (range from 10 kW to 130 kW) in standard condition**:
  GE 30%, Ti= -10° C, T1= 0°C, RH= 85%
- **DFN Ammonia Unit Cooler (range from 10 kW to 175 kW) in standard condition**:
  R717, Te= -8° C, Tr= 0°C, RH= 85%, 4 recirculations
- **DFC carbon dioxide evaporators (range from 6 kW to 108 kW) in standard condition**:
  R744, Te= -8° C, Tr= 0°C, RH= 85%

MODEL DIMENSIONS

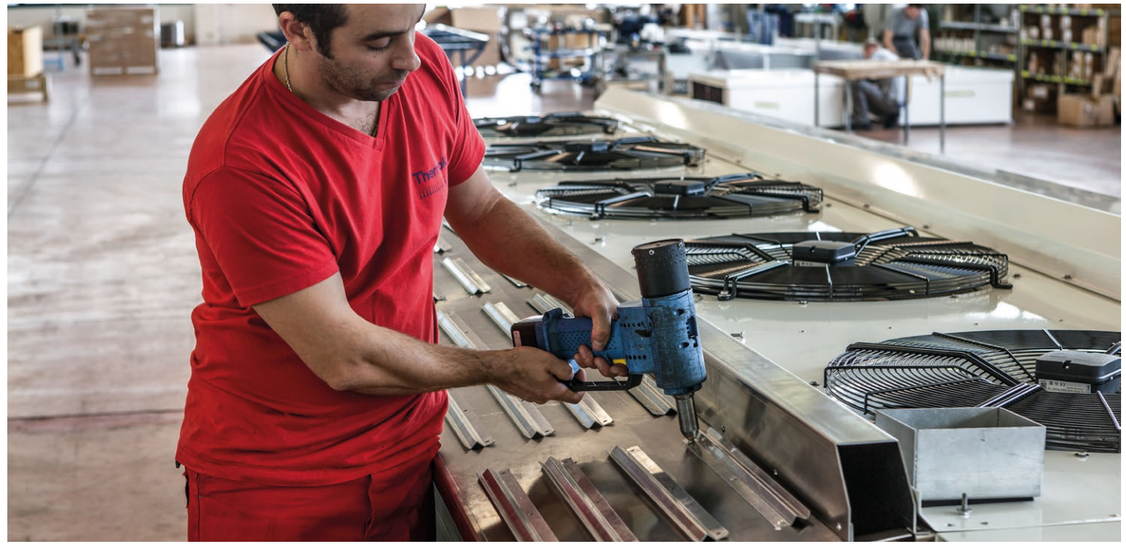
- Models with **500 mm** fan diameter, from 1 to 4 fan motors,
  finned pack module **1000 mm**, 8 tubes and 4-6-8 rows heat exchanger.
- Models with **560 mm** fan diameter, from 1 to 4 fan motors,
  finned pack module **1000 mm**, 12 tubes and 4-6-8 rows heat exchanger.
- Models with **630 mm** fan diameter, from 1 to 4 fan motors for the evaporators, up to 5 fan motors for brine coolers, finned pack module **1200 mm**, 12 tubes and 4-6-8 rows heat exchanger.

More than 800 models Dual Flow Unit Coolers can be selected



ARCHIMEDE SOFTWARE

ThermoKey's Archimede software guides you in selecting the most suitable air heat exchangers and automatically elaborates a technical data sheet.



Product features

FINNED PACK

- Standard finned pack made of aluminium fins and copper or stainless steel tubes.
  - groveed copper tubes for DFX models
  - smooth cooper tubes for DFB models
  - smooth stainless steel tubes for DFN models
  - smooth copper tubes for DFC models
- Aluminium endplates to avoid copper tubes damage.
- Standard fin spacing: 4,5 mm for high temperature applications, 7 mm and 10 mm for low temperature applications.

FANS

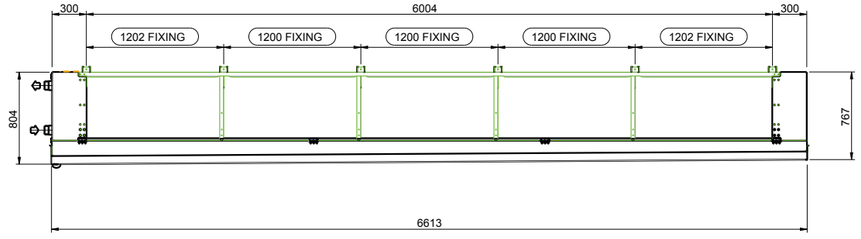
- Blow through high efficiency fan motors, ErP2015 compliant, Ziehl-Abegg or EBM brand, IP54 grade
- Fan motor full bell mouth, ErP2015 compliant, design made of galvanized steel, epoxy-polyester powder coated RAL 9010, environmental resitance class C3
- Standard dual speed fan motors 4+4 poles, supply 400V/3/50Hz
- Delta connection for high speed, star connection for low speed

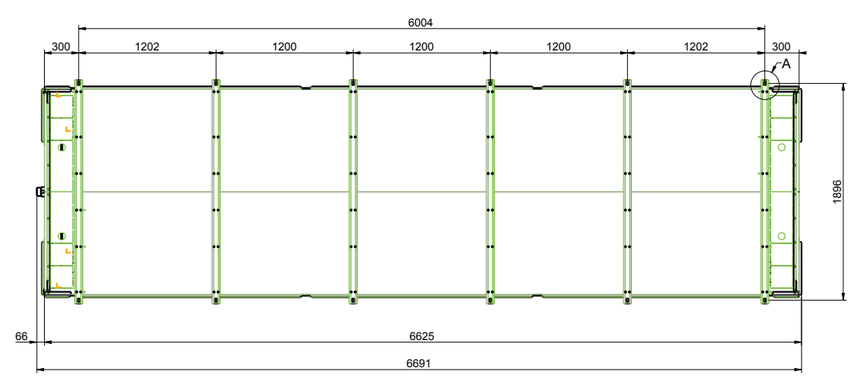
STRUCTURAL CHARACTERISTIC

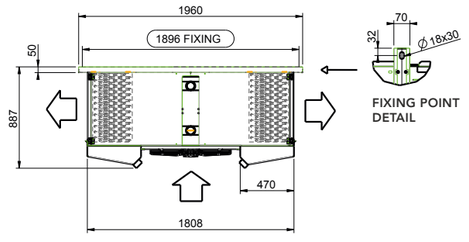
- All panels are made of AlMg3 magnesium aluminium alloy (Peraluman 5754) to ensure the maximun combination of lightness, mechanical strength and corrosion resistance.
- External panels are 80 micron RAL 9010 powder coated for a best easy cleaning and hygienic maintenance.
- Ceiling fixing brackets are made of stainless steel AISI 304 ensuring more structural safety over time.
- Stainless steel bolts A2-70
- Stainless steel structural rivets

Fan motor casing dimensions

5X630 FAN MOTOR CASING DIMENSIONS



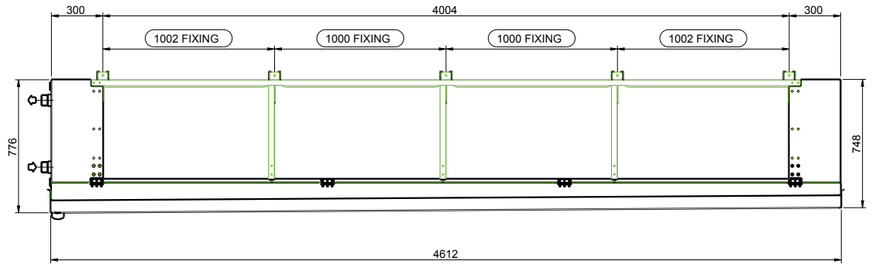


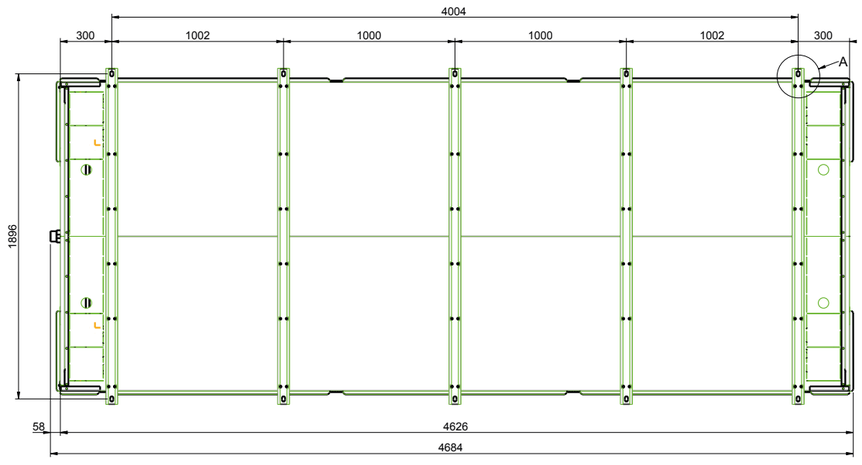


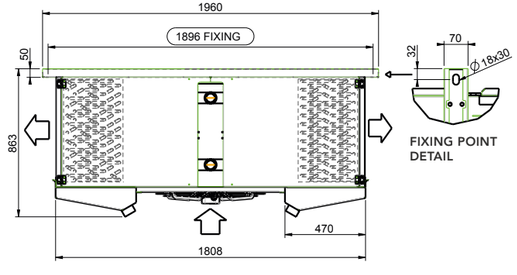
MODELS WITH 630 MM FAN DIAMETER

- **from 1 to 4 fans**
- **up to 5 fans for Brine Unit Coolers**
- **finned pack module 1200 mm**
- **12 tubes and 4-6-8 rows heat exchanger**

4X560 FAN MOTOR CASING DIMENSIONS



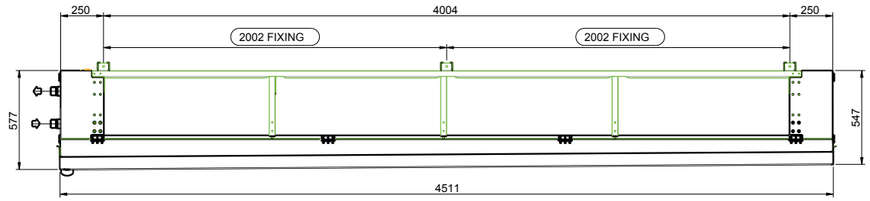


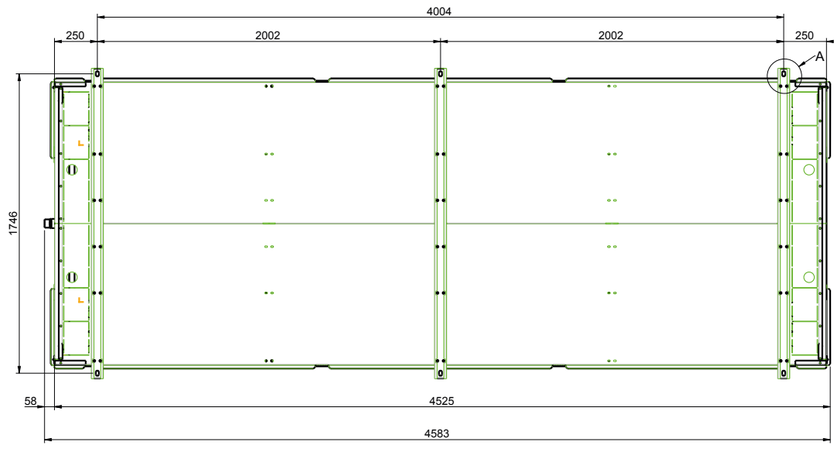


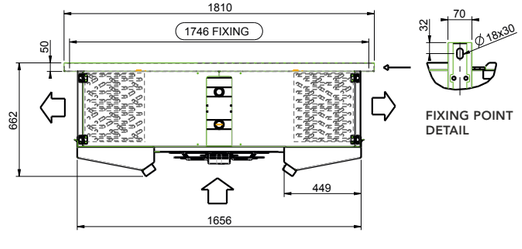
MODELS WITH 560 MM FAN DIAMETER

- from 1 to 4 fans
- finned pack module 1000 mm
- 12 tubes and 4-6-8 rows heat exchanger

4X500 FAN MOTOR CASING DIMENSIONS



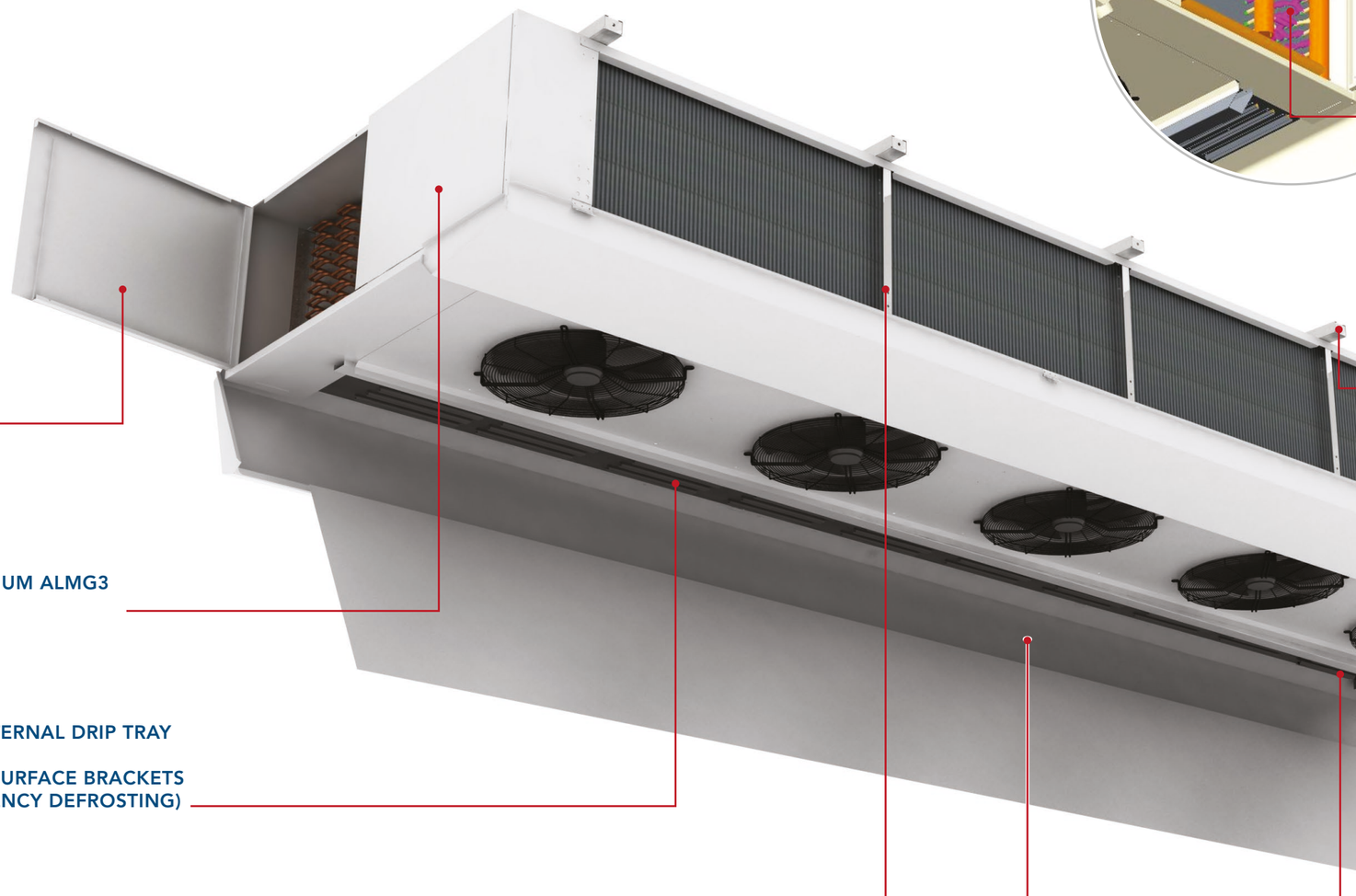




MODELS WITH 500 MM FAN DIAMETER

- from 1 to 4 fans
- finned pack module 1000 mm
- 8 tubes and 4-6-8 rows heat exchanger

Structural features

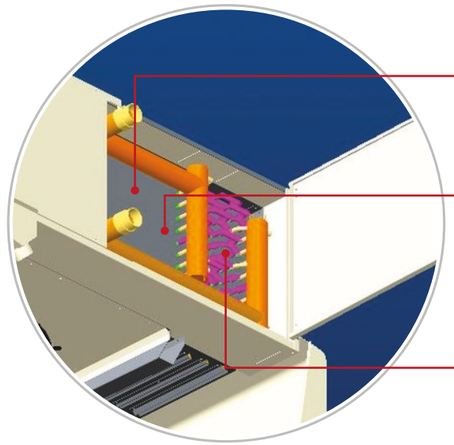


HINGED PANEL

PAINTED ALUMINIUM ALMG3 ALLOY CASING

BRACKETS OF INTERNAL DRIP TRAY HEATERS (HIGH CONTACT SURFACE BRACKETS FOR HIGH EFFICIENCY DEFROSTING)

ALUMINIUM ALMG3 ALLOY ENDPLATES



ENDPLATE WITH WINDOWS FOR PLENUM INSPECTION

(INTERNALLY) DISTRIBUTOR FIXED ON ENDPLATE (ONLY FOR DX MODE)

HEATER WITH SCREW FIXING PLATE TO AVOID HEATER MIGRATION

STAINLESS STEEL FIXING BRACKETS

ALUMINIUM DRAIN CONNECTIONS:
- SLOPE WELDED
- 2" GAS INTERNALLY THREADED

EXTERNAL HINGED DRIP TRAY

DUAL INTERNAL DRIP TRAY

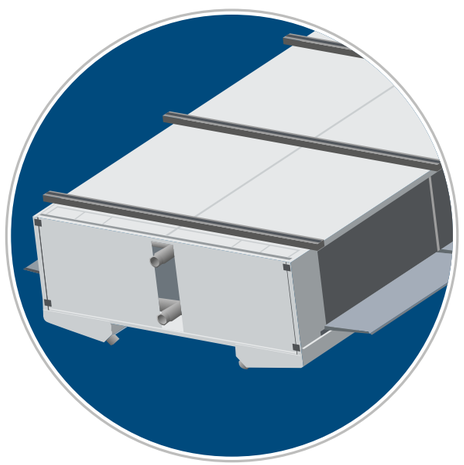
Codification

DFX * 5 * 63 * 70 * 8 (Y) S

- **CONFIGURATION**
  - **DFX** **DIRECT EXPANSION** unit cooler for standard refrigerants
  - **DFB** **BRINE** standard brine unit cooler
  - **DFN** **AMMONIA** ammonia unit cooler
  - **DFC** **CO2** carbon dioxide unit cooler
- **NUMBER OF FAN**
  - 1, 2, 3, 4, 5
- **FAN DIAMETERS**
  - 50=500mm, 56=560mm, 63=630mm
- **FIN SPACING**
  - 45= 4.5 mm, 70=7 mm, 10=10 mm
- **ROW NUMBER**
  - 04, 06, 08
- **FAN MOTOR CONNECTION**
  - **(Y)** Star
  - **(D)** Delta
- **S+4 NUMBERS - COMBINATION OF STANDARD OR SPECIAL OPTIONS**

* Features always present in the codification

Available options



- Defrosting systems
  - Standard electric defrost
  - HOT GAS defrost
  - Mixed HOT GAS and electric defrost
  - Internal drip tray electric defrost
  - Fan motor full bell mouth defrost
- EC fan motors
- Aluminium prepainted heat exchanger fins
- Electric coated heat exchanger
- Double coated heat exchanger
- Double Insulated external drip tray
- Upward connected heat exchanger
- External drip tray to prevent drop projections for high umidity enviroments
- Flexible drain heater
- Fan motor full bell mouth heater
- Upward connection Kit

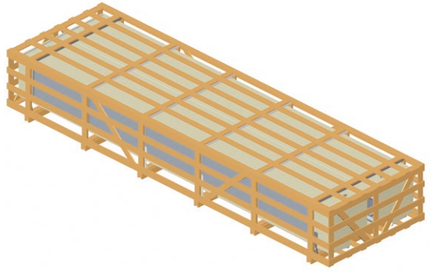
Options and accessory chart

Standard option
Special option

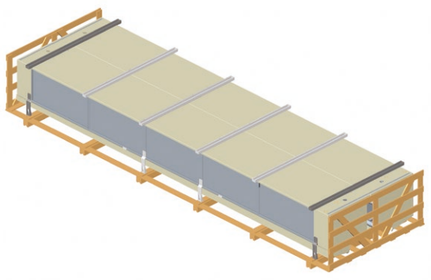
		DFX	DFB	DFN	DFC
PV	Prepainted fins	■	■	■	■
CTF	Cataphoresis coil painting	■	■	■	■
D	Double layer painting	■	■	■	■
C	Copper fins	■	■	■	■
SSF	Stainless steel fins	■	■	■	■
SST	Stainless steel tubes	■	■		
SSC	Stainless steel coil	■	■		
FS x x	Specific fin space	■	■	■	■
C x x x	Optimised coil circuits (evaporators/condensers)	■			■
W x x x	Water coil circuits		■		
N x x	Flooded coil circuits	■			■
P x x	Pump circuits	■			■
G x x x x	Specific geometry	■	■		
SP x x	Fin thickness	■	■	■	■
CD	Right outlet headers (standard left)	■	■	■	■
CT	Top outlet headers		■		
FI	Inverted fluid direction model	■	■	■	■
DU	Coil with heating rows	■	■	■	■
TF	Top fan motor intake	■	■	■	■
MA	Openable fan panel	■	■	■	■
ID	Double - insulated drip tray	■	■	■	■
SSD	Stainless steel drip tray	■	■	■	■
SSF	Stainless steel casing	■	■	■	■
AN	Neutral model	■	■	■	■
M	Single-phase motors (Standard three-phase)	■	■	■	■
6P	6 Poles motors (Standard 4 POLES)	■	■	■	■
60Hz	60Hz motors (Standard 50Hz)	■	■	■	■
T3	230/3/60Hz motors	■	■	■	■
UL	UL/CSA fan motors	■	■	■	■
EC	Electronic commutated fan motors	■	■	■	■
E	Standard electric defrost (Coil / internal drip tray)	■	■	■	■
ER	Reduced electric defrost (Coil / internal drip tray)	■	■	■	■
H	Standard hot gas defrost (Coil / serpentine under internal drip tray)	■	■	■	■
G	Mixed hot gas defrost (Coil / electric under internal drip tray)	■	■	■	■
ES	Electric internal drip tray defrost only	■	■	■	■
EB	Full bell mouth fan motor electric defrost	■	■	■	■
WW	Warm glycol defrost (Tubes in coil / serpentine under internal drip tray)	■	■		■
WE	Warm glycol defrost (Tubes in coil / electric under internal drip tray)	■	■		■
R	Drain flexible heater	■	■	■	■
DEF	Deflectors	■	■	■	■

Packaging

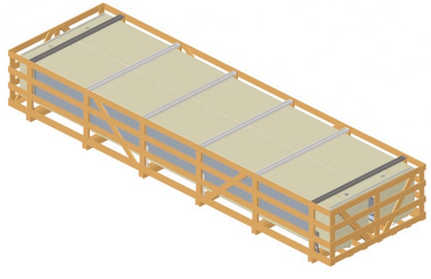
Package disassembly sequence



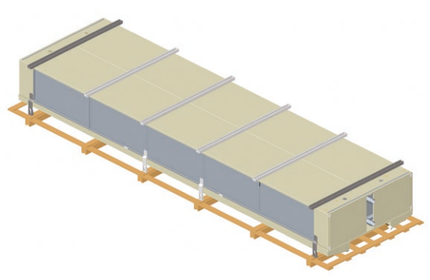
MOVE TO INSTALLATION SITE



REMOVE SIDE PANELS



REMOVE COVER



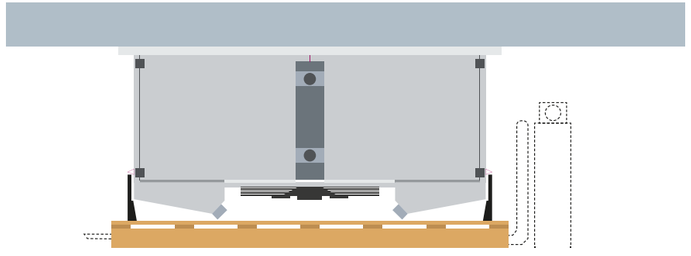
READY FOR INSTALLATION

PACKAGING DETAILS

- Wooden crate suitable for easy installation
- High temperature treated wood

Model positioning

LIFT, POSITION AND FIX THE UNIT COOLER



Direction
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ThermoKey®

Heat Exchange Solutions

ThermoKey Spa
via dell'Industria, 1 - 33061
Rivarotta di Rivignano Teor (UD) - Italy

T. +39 0432 772300
F. +39 0432 779734
info@thermokey.com
www.thermokey.com