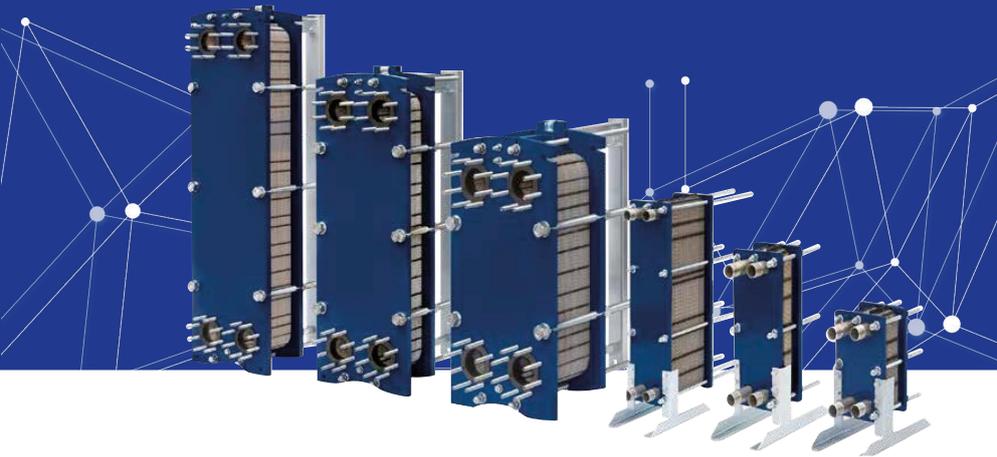


## GASKETED PLATE HEAT EXCHANGERS



Decoupling of the machines to the system

Cost efficient design

Qualified and reliable

High heat transfer coefficient

Close temperature approach

## 10TE

Large range capable to handle water flow rate up to 800m<sup>3</sup>/h

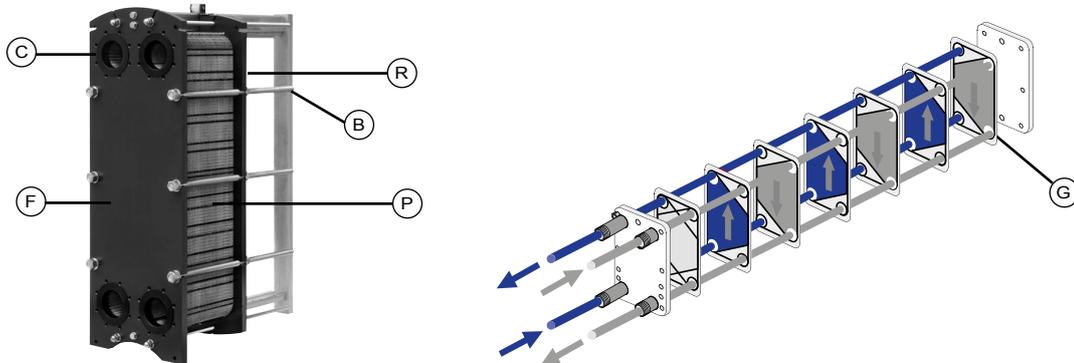
10TE gasketed plate heat exchangers are particularly well-suited for a wide range of applications:

- Heat pump installations
- Water cooled chillers
- Heat recovery
- Heating and cooling sub-stations
- Domestic water heating
- Swimming pool heating
- Recovery on corrosive waste
- Geothermal energy recovery
- Industrial processes

## DESCRIPTION

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Gasketed plate heat exchanger consists of a number of corrugated heat transfer plates (P) compressed by means of tightening bolts (B) between a front fixed frame plate (F) and a rear moveable frame plate (R). Specific rubber gaskets (G) fastened on each plates generates two alternating independent circuits where the heat transfer between the two fluids take place in parallel and countercurrent flow. The unit is connected with the pipe system by nozzles or flanged connections (C).



## SELECTION

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Due to the range's extreme modularity, the thermal selection must be optimised on the thermal requirements and the allowable pressure drops of each circuit. The importance of pressure drops must not be underestimated when selecting an heat exchanger, as it influences the choice of model and number of plates and thus the heat transfer area.

The heat transfer area is also influenced by other factors, such as the height to width ratio, the angle and depth of the chevron patterns.

## ADVANTAGES

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- Excellent heat transfer coefficient
- Very low pinch point temperatures possible
- High corrosion resistance
- Compact footprint
- Easy to install and to maintain
- Low-capacity circuits and fluid retention volume
- Possibility of heat transfer area extension
- Maximum differential pressure equal to maximum operating pressure

## PRECAUTIONS

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- Do not damage the exchanger gaskets:
  - Avoid water hammering, overpressure/temperature and limit on/off cycles.
  - Do not use 1/4-turn valves.
  - Use with steam between 0 and 3 bar (effective).
  - Provide a control system adapted to the requirements and which takes the low capacity of the circuits into account.
- Ensure the plates are kept clean so they maintain their thermal efficiency:
  - Filter fluids containing suspended particles.
  - Ensure the fluids are constantly circulating in the exchanger to prevent any build-up or scale.
  - Install nozzles on the pipes for cleaning in place.

## RANGE

	10TEE020+	10TEE040+	10TEE080+	10TEE070+	10TEE160+	10TEE260+	10TEE110+	10TEE210+	10TEE410+
Width mm	145			245			320		
Height mm	305	455	740	527	857	1202	584	848	1375
Connections diameter	DN32 1"1/4			DN50 2"			DN65 2"1/2		
Corrugation angle	H/L			H/L			H/L		
Max. water flowrate m <sup>3</sup> /h	19			63			80		
PS=> Max working pressure bar	10 16 25	10 16 25	10 16 25	10 16 25	10 16 25	10 16 25	10 16 25	10 16 25	10 16 25

	10TEE270+	10TEE300+	10TEE450+	10TEE700+	10TEE400+	10TEE600+	10TEE900+	10TEE650+	10TEE990+
Width mm	320	425			500			678	668
Height mm	1071	877	1322	1767	1055	1503	1951	1340	1825
Connections diameter	DN80 3"	DN100 4"			DN150 6"			DN200 8"	
Corrugation angle	H/L	H/L			H/L			H/L	
Max. water flowrate m <sup>3</sup> /h	110	240			380			800	730
PS=> Max working pressure bar	10 16 25	10 16 25	10 16 25	10 16	10 16	10 16	10 16	10 16	10 16

- Plate thickness : 0,4mm - 0,5mm - 0,6mm - 0,7mm - availability according to model, material, pressure
- Plate material : 304 stainless steel - 316L stainless steel - 254 SMO (except 10TEE990+) - Titanium
- Gasket material : NBR - EPDM Prx - FPM
- Frame material : Carbon steel - Stainless steel

## OPTIONS

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### Double wall plates section

10TEE040+ 10TEE080+ 10TEE160+

#### Description

Double-wall plates consist of two identical heat transfer plates embossed together and then joined by laser welding around the inlet and outlet portholes. Such kind of coupling generates a thin air gap between the two plates that, in case of welding or plate's failure, prevents fluids intermixing and brings to an external leakage visually detectable. Suitable for all the heat transfer processes where cross contamination is to avoid, the double-wall plates are the right solution for all those HVAC applications where a higher level of safety is recommendable and/or required by local rules.

#### Benefits

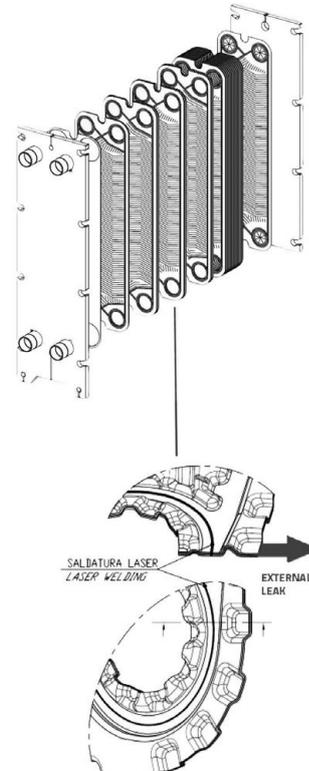
Minimize the risk of fluids intermixing.

Allow visual detection from the outside of any internal leak.  
Offer all the advantages of Gasketed Plate Heat Exchanger technology: maximum heat transfer, compact design and easy maintenance.

#### Technical data

Material of plates: AISI 316L

Design standard: PED 2014/68/EU up to risk cat. IV Pressure design / test (g): up to 16 / 26 bar



## ACCESSORIES

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### TF insulation (DN 32, DN 50 and DN 65 models)

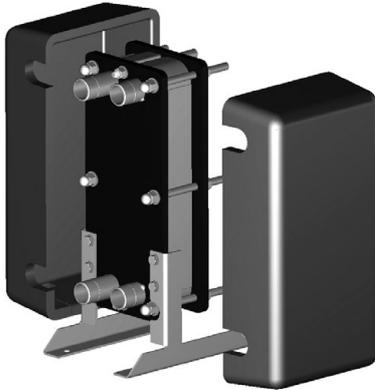
#### Description

TF is the thermal insulation specifically designed for HVAC applications of our small size plate heat exchangers.

TF is a thermoformed and semi-rigid prefabricated case easy to install and to adjust to the specific configuration of the heat exchanger and to eventual particular customer needs.

The special "double-layered" structure, comprising two different expanded elastomers (thickness up to 30 mm), makes it suitable for heating and cooling applications.

Supplied as a kit, it can be easily and quickly assembled with no need for special tools (only a cutter is required) supported by the assembly instruction sheet and the templates pre-marked on each case.



#### Advantages

- Heat exchanger completely contained inside the insulation: minimized energy losses and condensation, higher level of safety and comfort for those who work around the heat exchanger.
- Easy to adapt on site to all product's configurations (single or multi-pass, with or without mounting brackets, with or without drip tray, etc.) and to adjust to different customer's needs (specific installation supports or devices, non-standard position of connections, etc.).
- Low installation costs.
- Lightweight and resilient.

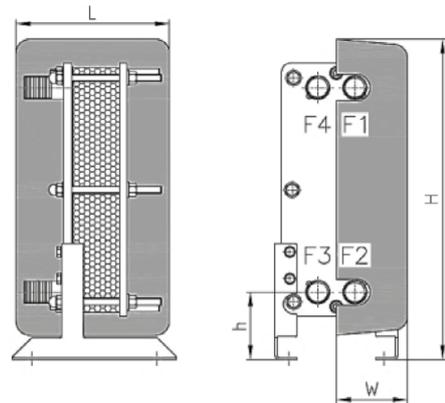
#### Technical specifications

- Exterior finish: semi-rigid high density dark greys foam.
- Insulating materials: cross-linked, closed-cell, polyolefin (PO) foam with a density of 84 kg/m<sup>3</sup> (outer layer) and cross-linked, closed-cell, polyolefin (PO) foam with a density of 35 kg/m<sup>3</sup> (inner layer).
- Thermal conductivity coefficient ( $\lambda$ -value) of the insulating materials at 40°C: 0,0372 W/mk (outer layer) and 0,038 W/mk (inner layer).
- Operating temperature limits: -10°C / + 130°C.
- Classification of fire resistance of the insulating materials: conform to the FMVSS 302 standard of flame containment at less than 100 mm/min

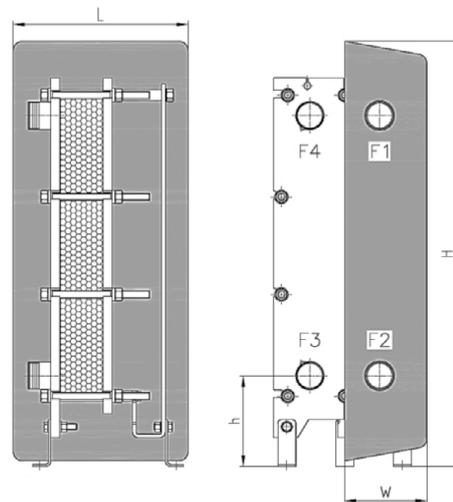
# ACCESSORIES

## Dimensions

DN 32				
10TEE020+	L	H	W	h
Max. 29 p.	280	450	130	125
Max. 49 p.	380	450	130	125
Max. 75 p.	580	450	130	125
10TEE040+	L	H	W	h
Max. 29 p.	280	595	130	125
Max. 49 p.	380	595	130	125
Max. 75 p.	580	595	130	125
10TEE080+	L	H	W	h
Max. 29 p.	280	865	130	125
Max. 49 p.	380	865	130	125
Max. 75 p.	580	865	130	125
Max. 101 p.	580	865	130	125



DN 50				
10TEE070+	L	H	W	h
Max. 41 p.	472	858	185	250
Max. 71 p.	612	858	185	250
Max. 101 p.	752	858	185	250
Max. 151 p.	982	858	185	250
10TEE160+	L	H	W	h
Max. 41 p.	472	1188	185	250
Max. 71 p.	612	1188	185	250
Max. 101 p.	752	1188	185	250
Max. 151 p.	982	1188	185	250
Max. 251 p.	1442	1188	185	250
10TEE260+	L	H	W	h
Max. 41 p.	472	1533	185	250
Max. 71 p.	612	1533	185	250
Max. 101 p.	752	1533	185	250
Max. 151 p.	982	1533	185	250
Max. 251 p.	1442	1533	185	250



DN 65				
10TEE110+	L	H	W	h
Max. 41 p.	490	900	233	251
Max. 71 p.	630	900	233	251
Max. 101 p.	770	900	233	251
Max. 151 p.	1000	900	233	251
10TEE210+	L	H	W	h
Max. 41 p.	490	1160	233	251
Max. 71 p.	630	1160	233	251
Max. 101 p.	770	1160	233	251
Max. 151 p.	1000	1160	233	251

All dimensions are given in mm. The dimensional tolerance is compatible with the accuracy permitted by the thermoforming process.

## ACCESSORIES

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### PB insulation (DN 65, DN 80, DN 100, DN 150 and DN 200 models)

#### Description

PB is the thermal insulation specifically designed for HVAC applications of our larger size plate heat exchangers.

PB is a self-supporting modular structure made with insulating panels (thickness 45 mm) anchored together by means of locking hooks and coupled in such a way as to minimize the thermal bridges.

The particular sandwich structure of the insulating panels, obtained by coupling two Aluminum foils to the polyurethane foam, ensures to the case high thermal insulation, good structural rigidity and appropriate surface finish.

Supplied as a kit, it is easily and quickly assembled without the use of special tools.



#### Advantages

- Heat exchanger completely contained inside the insulation: minimized energy losses and condensation, higher level of safety and comfort for those who work around the heat exchanger.
- Low installation costs.
- Quick and easy access to the heat exchanger for inspection.

#### Technical specifications

- Exterior finish of the panels: smooth sheet of pre-painted Aluminum RAL 2306 (thickness 0,5 mm).
- Insulating material: rigid foam of polyurethane with a high percentage of closed cells (above 95%) and a density of 48 kg/m<sup>3</sup>.
- Initial thermal conductivity coefficient ( $\lambda$ -value) of the insulating material: 0,024 W/m °C (measured at an average temperature of 10°C according to ISO 8302).
- Operating temperature: -10°C / + 130°C.
- Classification of fire resistance of the insulating material: B - 2s, d0 (according to EN 13501-1: 2007).

# ACCESSORIES

## Dimensions

DN 65				
10TEE410+	L	H	W	h
Max. 41 p.	842	1637	554	171
Max. 71 p.	842	1637	554	171
Max. 101 p.	982	1637	554	171
Max. 151 p.	1212	1637	554	171
Max. 251 p.	1701	1637	554	171

DN 80				
10TEE270+	L	H	W	h
Max. 41 p.	842	1357	554	198
Max. 71 p.	842	1357	554	198
Max. 101 p.	982	1357	554	198
Max. 151 p.	1212	1357	554	198
Max. 251 p.	1701	1357	554	198

DN 100				
10TEE300+	L	H	W	h
Max. 101 p.	1074	1180	678	198
Max. 201 p.	1574	1180	678	198
Max. 301 p.	2074	1180	678	198
Max. 401 p.	2574	1180	678	198

10TEE450+	L	H	W	h
Max. 101 p.	1074	1625	678	198
Max. 201 p.	1574	1625	678	198
Max. 301 p.	2074	1625	678	198
Max. 401 p.	2574	1625	678	198

10TEE700+	L	H	W	h
Max. 101 p.	1074	2070	678	198
Max. 201 p.	1574	2070	678	198
Max. 301 p.	2074	2070	678	198
Max. 401 p.	2574	2070	678	198

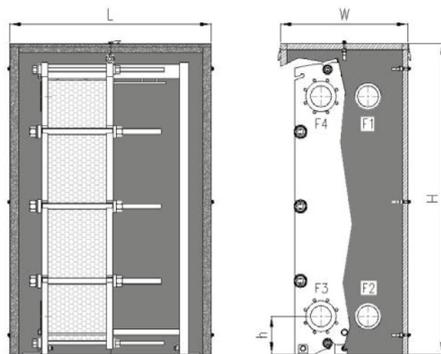
DN 150				
10TEE400+	L	H	W	h
Max. 101 p.	1074	1433	757	256
Max. 201 p.	1574	1433	757	256
Max. 301 p.	2074	1433	757	256
Max. 401 p.	2574	1433	757	256
Max. 551 p.	3374	1433	757	256

10TEE600+	L	H	W	h
Max. 101 p.	1074	1881	757	256
Max. 201 p.	1574	1881	757	256
Max. 301 p.	2074	1881	757	256
Max. 401 p.	2574	1881	757	256
Max. 551 p.	3374	1881	757	256

10TEE900+	L	H	W	h
Max. 101 p.	1074	2374	757	256
Max. 201 p.	1574	2374	757	256
Max. 301 p.	2074	2374	757	256
Max. 401 p.	2574	2374	757	256
Max. 551 p.	3374	2374	757	256
Max. 701 p.	4204	2374	757	256

DN 200				
10TEE650+	L	H	W	h
Max. 151 p.	1504	1764	957	285
Max. 251 p.	2104	1764	957	285
Max. 351 p.	2504	1764	957	285
Max. 551 p.	3404	1764	957	285

10TEE990+	L	H	W	h
Max. 151 p.	1504	2263	957	285
Max. 251 p.	2104	2263	957	285
Max. 351 p.	2504	2263	957	285
Max. 551 p.	3404	2263	957	285



All dimensions are given in mm. The dimensional tolerance is compatible with the accuracy permitted by the thermoforming process. The dimensions shown do not include the dimensions of the locking hooks. Total size:  $W + 30 \text{ mm} / 30 \text{ mm } L + / H + 15 \text{ mm}$ .

## ACCESSORIES

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### Drip tray (all models)

#### Description

The drip tray is a safeguard device specifically designed to collect water or other fluids in case of unexpected fluid leakage or when the heat exchanger is open for maintenance.

Strongly recommended in case of hazardous media and when further protection for the outside environment is required, it is also used in cooling applications to collect condensate formed on the outside of the heat exchanger.

Designed to be positioned under the heat exchanger and fixed by fastening bolts on the anchor brackets, the drip tray is dimensioned to hold the entire plate pack and the two frame plates. In this way all eventual fluids coming from the heat exchanger can be collected in the drip tray and drained by mean of the apposite draining pipe.

#### Advantages

- Reduced risk of flooding in case of condensate, unexpected fluid leakage or when the heat exchanger is open for maintenance.
- Possibility to adjust tilt to facilitate drainage.
- Low installation costs.

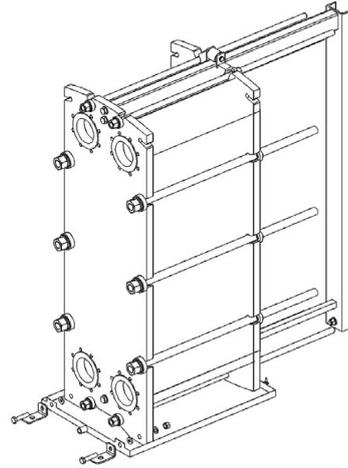
#### Technical specifications

Material of construction: Stainless steel AISI 304 (thickness 1mm).

Draining pipe: 3/4" sleeve internally threaded

#### Main dimensions

The drip trays are available in various sizes to be fitted to all models of the standard range of gasketed plate heat exchangers.



## ACCESSORIES

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### Plate pack protection

#### All models

##### Description

The Plate Pack Protection is a safeguard device specifically designed to protect personnel in case of unexpected leakage. Strongly recommended in case of hazardous services, it should be always used when temperatures are over 60°C also when handling uncritical media.

The Plate Pack Protection consists of two or more metal sheets shaped to cover the plate pack and to fit the plate heat exchangers. On smaller units the sheets cover the plate pack enveloping the frame plates. On larger units the sheets are fitted between the tightening bolts and the plate pack.

Supplied as a kit, it is easily and quickly assembled without the use of tools nor screws or bolts.

##### Benefits

Higher level of safety for those who work around the heat exchanger.

Protection of the plate pack in case of aggressive or polluted environment.

Quick and easy access to the heat exchanger for inspection.  
Low installation costs.

##### Technical data

Material of construction: Stainless steel AISI 304 (thickness 1 mm).

##### Main dimensions

Each Plate Pack Protection is factory-tailor-made to fit to the specific plate heat exchanger.

