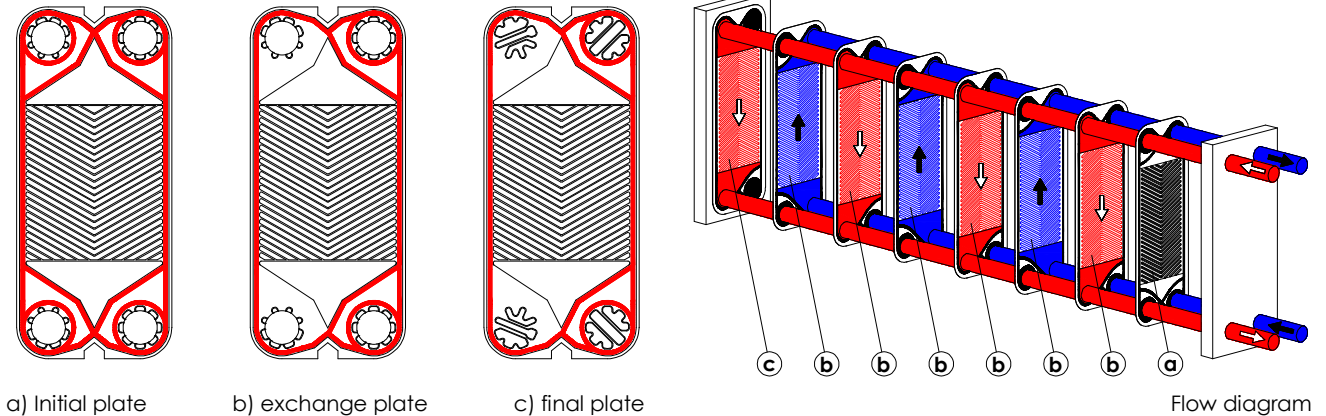


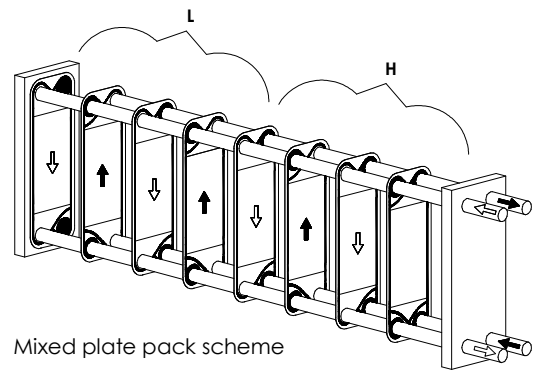
# HOW TO COMPOSE A CORRUGATED PLATE PACK

## COMPOSING A PLATE PACK

The plate pack of a Techno System heat exchanger is made of 1 **initial plate**, a certain number of **exchange plates** (depending on the thermal calculation), and 1 **final plate**.



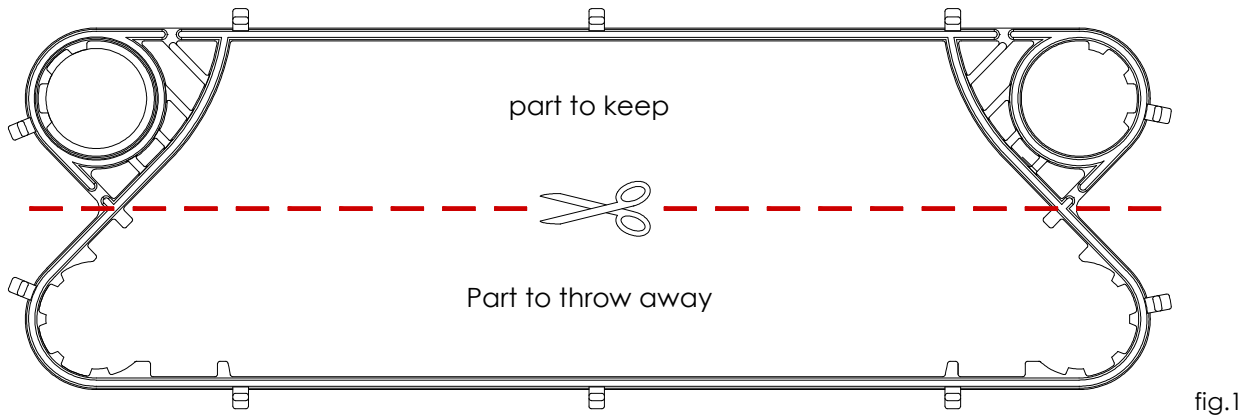
In presence of mixed plate pack (plates corrugated L and H) **plates L** must be placed as final and **H** as initials (close to connections)



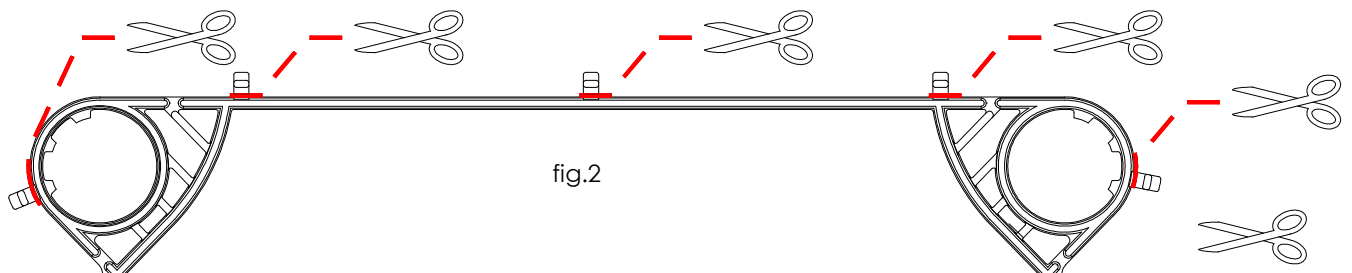
### A) INITIAL PLATE

The initial plate is made of 1 plate with open holes and 2 half - gaskets. To obtain this plate proceed as follows:

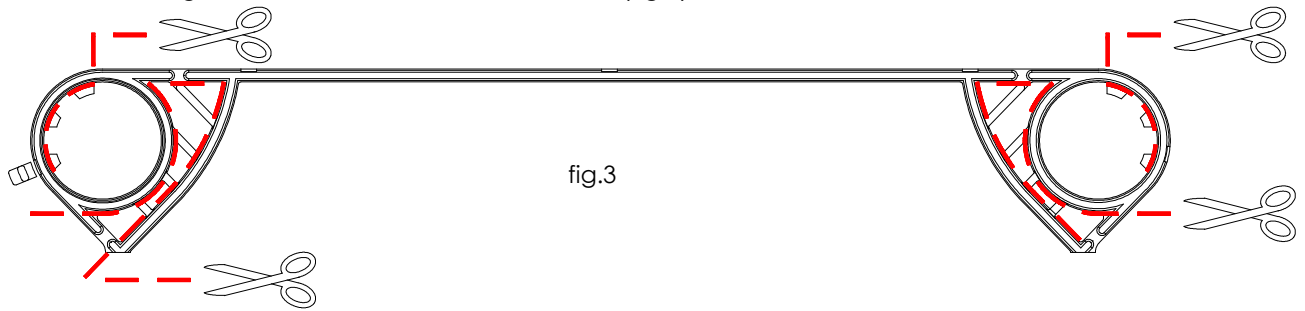
1. Take 2 gaskets and cut them on the red line shown, keeping only the half with closed holes (fig.1).



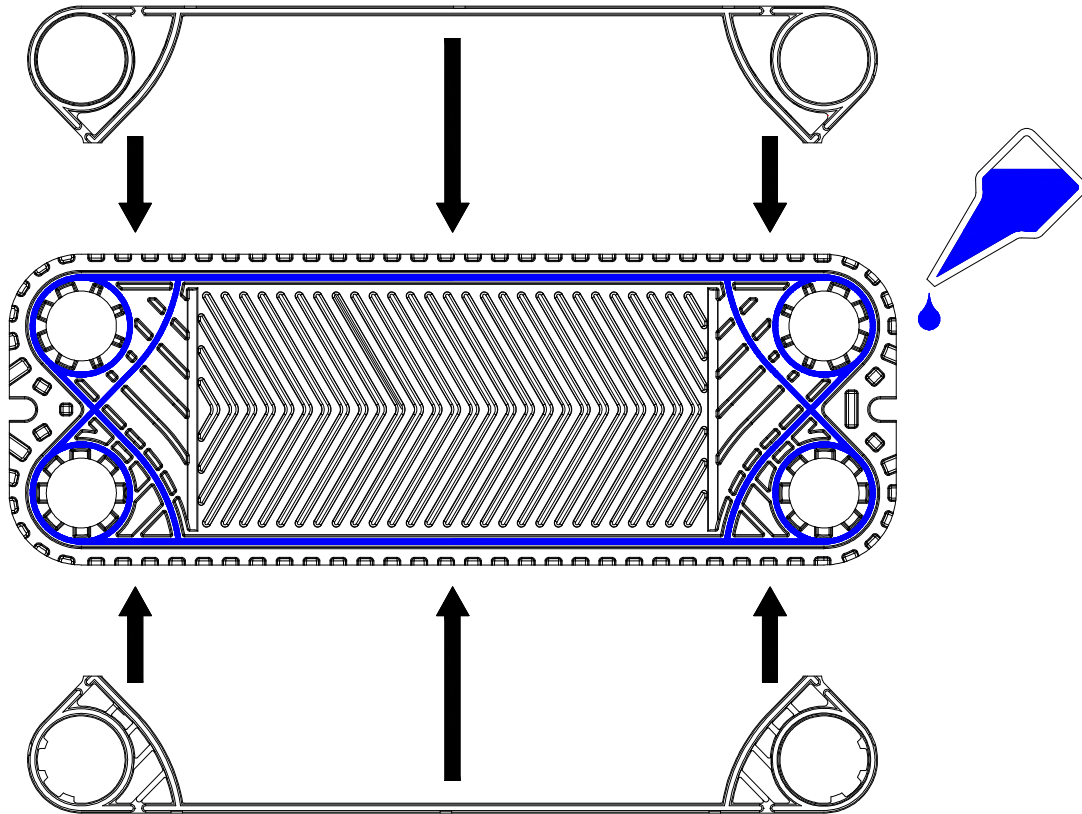
2. take 2 half - gaskets and cut away all the fixing clips (fig.2).



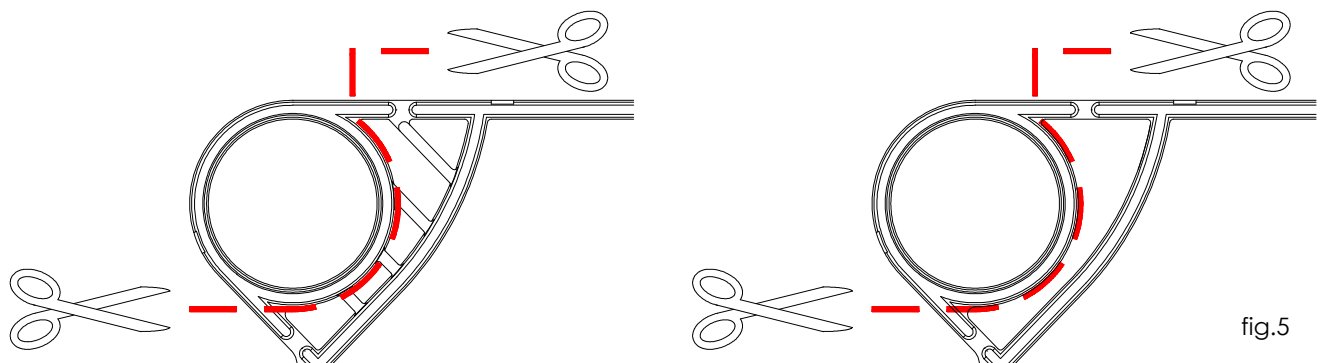
3. take 1 half gasket and cut all the reinforcements (fig.3).



4. take 1 plate with 4 open holes and glue the 2 half-gaskets on it as shown. Take care that the gasket is perfectly seated on the plate.



NOTE: In case of heat exchanger with rubber-lined connections, proceed as per below image to seal the initial plate (see fig.5).

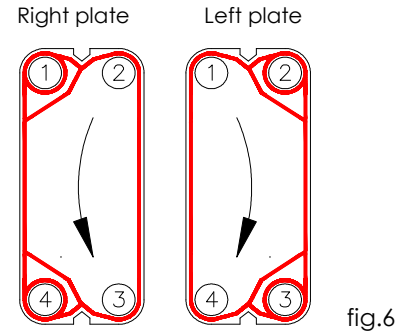


## B) EXCHANGE PLATE

The exchange plate is made of a plate with 4 open holes and 1 gasket. TECHNO SYSTEM plates are designed to be used as "right" or "left" plates, simply by rotating them by 180°.

Right and left plates are defined as follows:

- On the right plates the fluid flows from the connection 2 to 3, or from 3 to 2 (fig.6).
- On the left plates the fluid flows from the connection 1 to 4, or from 4 to 1 (fig.6).

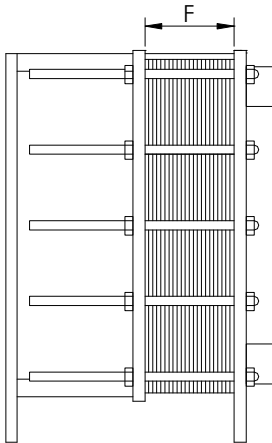


## C) FINAL PLATE

The final plate is made of 1 plate without holes and 1 gasket.

## TIGHTENING OF THE PLATE PACK

For the correct tightening of the exchanger, please refer to pages 1 and 2 of the installation, operation and maintenance manual of the plate heat exchanger.



On the manual find the table reporting the different values for S1 and S2, which are the minimum and maximum unitary tightening dimension for the plate.

The tightening dimension F is given by the number of plates x the appropriate value for S (between S1 and S2), plus the overdimension Z (depending on the models).

Example:

**TSC 1410 P13 HH (EPDM) connections STD** means an exchanger mod. 1410 with 13 plates, EPDM gaskets and STD connections (Z1).

From the table in the manual we obtain:

**13 plates x 3,50 mm + 2 = 47,5 mm**  
**SUGGESTED TIGHTENING DIMENSION**  
**(WITH NEW GASKETS)**

**13 plates x 3,40 mm + 2 = 46,2 mm**  
**MAXIMUM TIGHTENING DIMENSION**  
**(WITH AGED GASKETS)**

$$F = np \times S \quad (S1 \text{ o } S2) + Z$$

$$F = (np \times S) + Z$$

Model	Plate	Z				PN6 Gaskets NBR/EPDM/FKM		PN10 Gaskets NBR/EPDM/FKM		PN16 Gaskets NBR/EPDM/FKM	
		Z1	Z2	Z3	Z4	S1 (mm)	S2 (mm)	S1 (mm)	S2 (mm)	S1 (mm)	S2 (mm)
TSC 510/511	Stainless steel	2	8	0	-	2,65	2,55	2,65	2,55	2,55	2,45
	Titanium	2	8	0	-	2,55	2,45	2,55	2,45	2,45	2,35
TSC 910/911	Stainless steel	2	8	0	-	2,65	2,55	2,65	2,55	2,55	2,45
	Titanium	2	8	0	-	2,55	2,45	2,55	2,45	2,45	2,35
TSC 1410/1411	Stainless steel	2	8	0	2	3,50	3,40	3,50	3,40	3,40	3,30
	Titanium	2	8	0	2	3,50	3,40	3,50	3,40	3,60	3,50
TSC 1420/1421	Stainless steel	2	8	0	2	2,95	2,85	2,95	2,85	2,85	2,75
	Titanium	2	8	0	2	2,85	2,75	2,85	2,75	2,95	2,85
TSC 2610/2611	Stainless steel	2	8	0	2	2,95	2,85	2,95	2,85	2,85	2,75
	Titanium	2	8	0	2	2,85	2,75	2,85	2,75	2,95	2,85
TSC 2410/2411	Stainless steel	0	-	-	2	3,10	3,00	3,10	3,00	3/3,10	2,90/3,00
	Titanium	0	-	-	2	3,00	2,90	3,00	2,90	3,10	3,00
TSC 4810	Stainless steel	0	-	-	2	3,10	3,00	3,10	3,00	3/3,10	2,90/3,00
	Titanium	0	-	-	2	-	-	3,00	2,90	3,10	3,00
TSC 4510	Stainless steel	0	-	-	2	3,10	3,00	3,10	3,00	3/3,10	2,90/3,00
	Titanium	0	-	-	2	-	-	3,00	2,90	3,10	3,00
TSC 8110	Stainless steel	0	-	-	2	3,10	3,00	3,10	3,00	3/3,10	2,90/3,00
	Titanium	0	-	-	2	-	-	3,00	2,90	3,10	3,00
TSC 4410	Stainless steel	0	-	-	2	3,10	3,00	3,10	3,00	3/3,10	2,90/3,00
	Titanium	0	-	-	2	-	-	3,00	2,90	3,10	3,00
TSC 7110	Stainless steel	0	-	-	2	3,10	3,00	3,10	3,00	3/3,10	2,90/3,00
	Titanium	0	-	-	2	-	-	3,00	2,90	3,10	3,00
TSC 9910	Stainless steel	0	-	-	2	3,10	3,00	3,10	3,00	3/3,10	2,90/3,00
	Titanium	0	-	-	2	-	-	3,00	2,90	3,10	3,00

- F** = Tightening dimension
- S1** = First tightening dimension
- S2** = Maximum
- np** = Number of plates
- Z** = Superior thickness

- Z1** = Plate heat exchangers with STD connection
- Z2** = Plate heat exchangers with polypropilene connection
- Z3** = Plate heat exchangers with flange or welding connection
- Z4** = Plate heat exchangers with coated stainless steel flange connection



ATTENTION: Higher tightening could damage gaskets and cause breaking clamping bolts and hurting workers.

### INSTALLATION CLEARANCES

The head exchanger must be installed with clearance on both sides , for example:

Model	Distance (mm)			
	a	b	c	d
TSC 510	300	500	300	500
TSC 910	300	500	300	500
TSC 1410	900	900	900	900
TSC 1420	900	900	900	900
TSC 2610	900	900	900	900
TSC 2410	1500	1500	1500	1500
TSC 4810	1500	1500	1500	1500
TSC 4510	1500	1500	1500	1500
TSC 8110	1500	1500	1500	1500
TSC 4410	1500	1500	1500	1500
TSC 7110	1500	1500	1500	1500
TSC 9910	1500	1500	1500	1500

