# Pass partition definition for heat exchangers

Pass partition definition and calculation in the channels of an heat exchanger and their effect on adjacent flanges.

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Starting from the 2020 version of the program, the pass partitions can be defined as physical components connected to the exchanger channels. The thickness can also be verified according to TEMA RCB if a TEMA category has been defined for the exchanger.

## Method 1: Automatic using the heat exchanger wizard

The insertion takes place automatically when using the exchanger wizard, in this case it is essential to first set the number of passes correctly in the geometric properties of the item, as shown in the figure. In fact, the number of passes influences the possible configurations for the pass partitions.

Heat exchanger properties	
Heat exchanger J Operating conditions	
Vertical item	
Distance from reference line	0 🚖 mm
Number of passes	2
Front end TEMA Type	B - Bonnet (integral cover)
Shell TEMA Type	E - One pass shell
Rear end TEMA Type	M - Fixed tubesheet

🚰 General	Geometry	資 Tests	Location	Nulation	🍬 Wind	🌇 Seism	💐 Loads	🕐 TEMA	Reporting
									🗶 Open HTRI file

Once the number of passes has been set, the wizard can run, note that there will be a new "Pass partition" tab for each channel. The values selectable in the first row depend, as explained above, on the number of passes set.

Enter here the geometric properties and the material of the pass partition.

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Heat Exchanger Wizard			×
	Front End End Shell and Tubesheets	ar End 🛛 📳 Operating conditions	< + ₹
	Pass partition arrangement	2a	$\checkmark$
	Maximum pressure drop across plate	0.1 🗭 MPa	
	Pass partition material	SA-516 70	Database
	Net thickness tp	9,5 🖨 mm	
	🛱 Geometry 🔏 Materials 💭 Gasket 🔂 Pa	sss partition	< > ₹
Design or checking: Design 🗸	🗶 Import HTRI file	📔 🔛 🎦 Add condition	Ok Cancel

Once the wizard has run, the required exchanger will be generated, note the presence of the pass partition as a selectable component in the 3D view and in the list of components.



It is therefore possible to double click on the pass partition to define further properties such as the gasket coefficients, or to modify the geometric values calculated automatically.

### Metodo 2: Manual addition

It is also possible to manually add the pass partition to the channel of an existing exchanger, to do this

select the channel and then enable the "Desktop View" mode.

The icon of the exchanger components menu will appear, from which the "Pass partition" type can be selected. The usual component form will appear in which all the properties can be inserted.



### Metodo 3: Gasket properties only

If you do not want to create the pass partitions as components of the exchanger, it is also possible to add to the channel flanges the additional bolt loads to seat the pass partition gasket. This method corresponds to the management of pass partitions in versions prior to 2020.

To define the additional load it is necessary to activate the property shown in the figure, a new "Pass partition" tab will appear in which it will be possible to insert the gasket data.

1	洛 Welding neck flange "Left ch	annel tubesheet flange"				
	🚖 Essentials	Bolts material		SA-193 B7 - Bolting (≤64)		
	🚰 General	Nominal size / Description		1/2"		
	Design conditions	Bolt circle	с	1072		
	🔁 Geometry	Number of bolts		104		
	🗞 Bolts	Bolt diameter		12,7	mm	
	Gasket	Use stud bolts				
	Pass partition	Screw clamp, hinged bolt or other closing device (see help)				
	D Standard flange	Bolt load of the opposite flange (operating)		0	N	
	∫ External loads	Bolt load of the opposite flange (gasket seating)		0	N	
	leight 🌢 Weight	Additional bolt load - operating		0	N	
	Reporting	Additional bolt load - seating		0	N	
		Additional bolt load - test		0	N	
		Custom pass partition properties (overrides automatic calculation)				
		Bolt spacing correction factor				