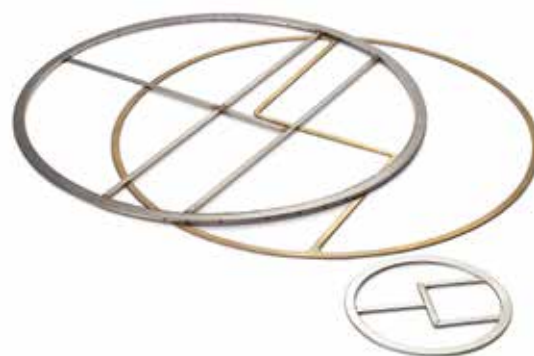


PROPERTIES AND APPLICATIONS

Heat exchanger gasket is a term that has been given to gaskets used in heat exchangers. The structure of the gasket or its type varies according to the operating conditions of the exchangers. The heat exchanger gaskets come in a wide spectrum of types including single or double-jacketed, corrugated, plain metal, soft and many others. A large selection of different materials allows heat exchangers to operate at temperatures beyond the capabilities of most soft gasket materials.



METAL-JACKETED GASKETS FOR HEAT EXC.

ADVANTAGES

- Available in wide range of materials, since they are all custom made. There are few limitations regarding size and shape.
- The metal jacket provides mechanical strength to contain the filler and improves chemical resistance.
- Unique construction provides stability and ensures trouble-free handling and installation.

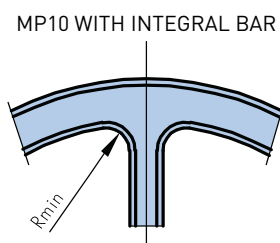
SHAPE AND CONSTRUCTION

These gaskets are used in shell and tube type heat exchangers. They can be manufactured in very different sizes, shapes, with or without bars. The primary seal is at the inner diameter of the gasket, the outer gasket diameter acts as a secondary seal. The bars seal between the heat exchangers passages.

The heat exchanger gaskets are produced in several types to meet the most demanding applications. Gaskets for heat exchangers can be manufactured in metal or alloy with a thickness 0.4 mm featuring a soft core inside a metallic jacket.

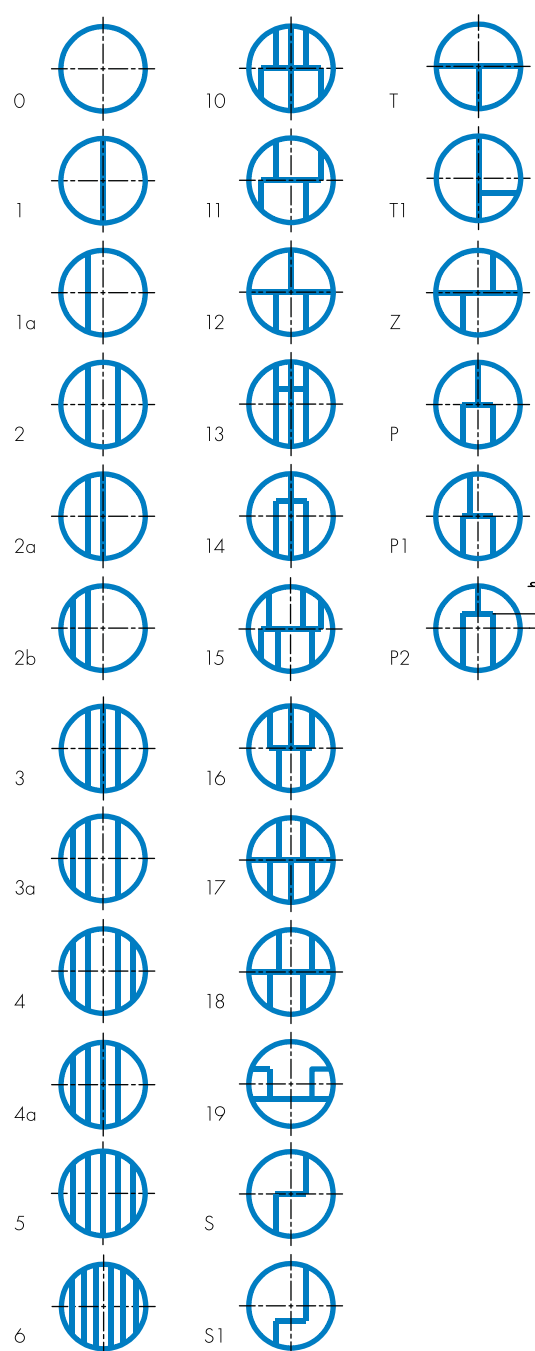
Gaskets with integrated bars

Traditionally double-jacketed gaskets for heat exchangers are manufactured with integrated bars. There is a radius between the bars and an internal diameter of the gaskets.



The values of the corresponding radius for the most commonly used metals and alloys are shown in the following table. If a radius is less than R_{min} , the material can crack, reducing the sealing properties of the gaskets.

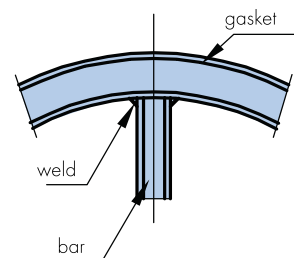
GASKET MATERIALS and R_{min}	
Gasket material	R_{min}
Copper	8 mm
Soft iron	8 mm
Carbon steel	8 mm
Brass, Monel	10 mm
Stainless steel	10 mm



Gaskets with welded bars

Gaskets with welded bars have eliminated one of the greatest problems of conventional gaskets, namely cracks in the radius area. Metal or alloys are commercially available in sheets or rolls of 1000 mm width.

The primary and secondary seals are continuous all around the gasket. The gasket has excellent sealability, reducing leaks to the environment. The bars which seal between the heat exchangers passages are plasma or TIG welded with spot welds at each end. These welds should be soft and small to avoid areas of increased resistance to seating.



MP10 WITH WELDED BAR

Materials for heat exchanger gaskets

The selection of the jacket material depends on operating conditions. The standard filler is flexible graphite.

Metallic jacket

MATERIAL	ASTM	EN Material No.
Low carbon steel	CS	1.0038 (DC04 St14)
Stainless steel	AISI 304	1.4301
Stainless steel	AISI 309	1.4828
Stainless steel	AISI 316, AISI 316L	1.4401, 1.4404
Stainless steel	AISI 316Ti	1.4571
Stainless steel	AISI 321	1.4541
Monel (NiCu30Fe)	Alloy 400	2.4360
Copper	Copper	2.0090
Brass	Brass Ms 63	2.0321
Titanium	Titanium GR2	1.4462

Other alloys available on request.

Filler

Flexible graphite, ceramic, calandered sealing materials.

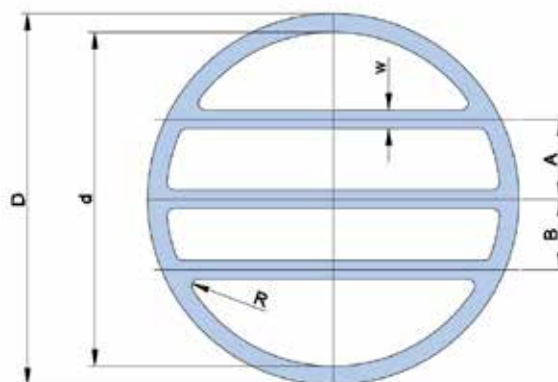
SIZES

STANDARD DIMENSIONS	
Gasket thickness	3.2 mm
Gasket width	10, 13 and 16 mm
Bar width	8, 10 and 13 mm

Gaskets with outer diameter to 1000 mm are normally made with integrated bars. Gaskets with an outer diameter greater than 1000 mm are normally made with welded bars. According to the heat exchangers shapes and sizes other dimensions can be manufactured on request.

GASKET ORDERING EXAMPLE

Gasket type (MP10, MP14), shape drawing dimensions: outer diameter D, inner diameter d, gasket thickness s, bar width w, radius R and distance between bars (A, B).
Material for metal jacket, material for filler.



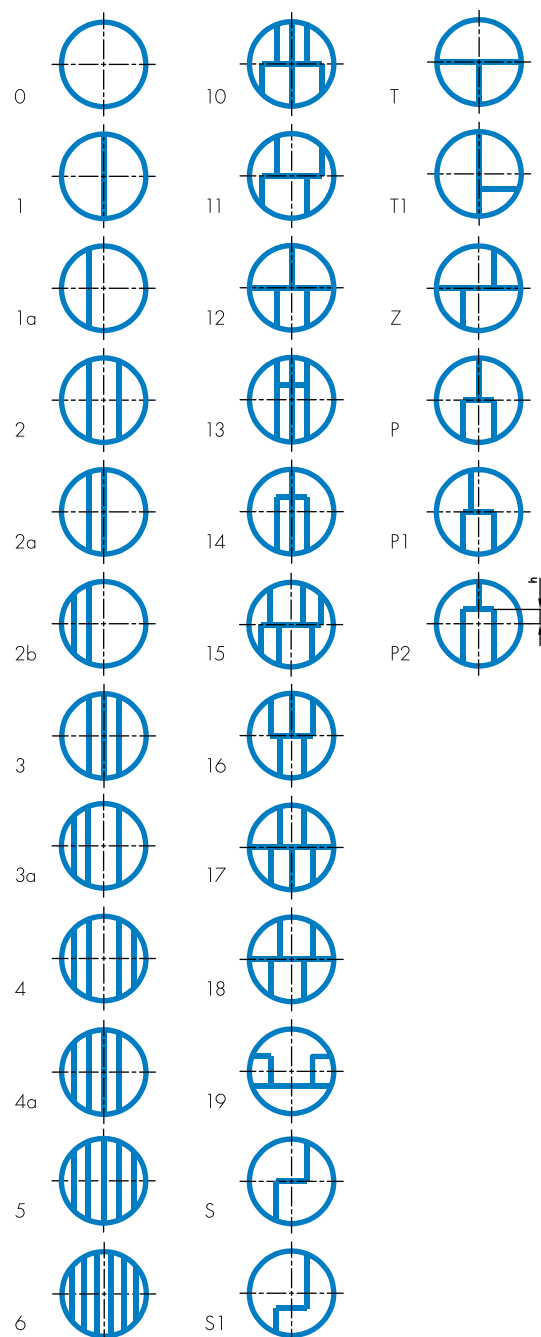
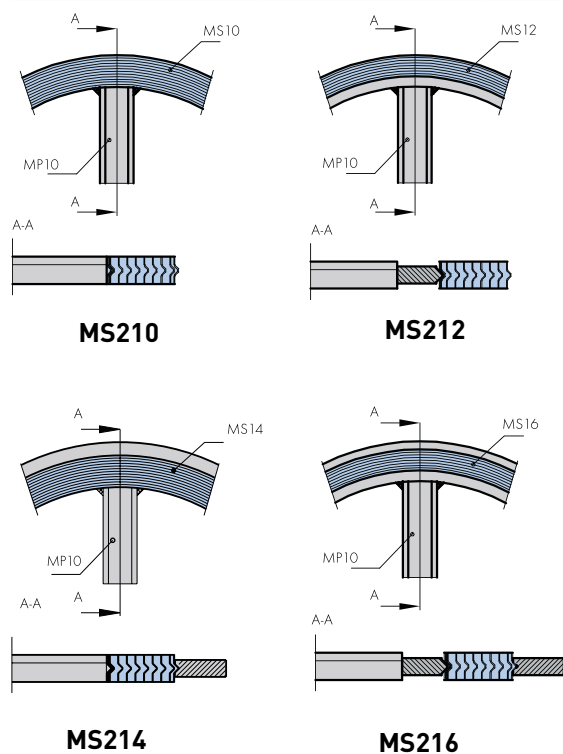
MP10

SPIRAL WOUND GASKETS FOR HEAT EXCHANGERS

The spiral wound gaskets of MS10, MS12, MS14 or MS16 type can be manufactured with one or more metal-jacketed bars (profile MP10) in different shape shown in drawing. Metal-jacketed bars are welded and made of the same material as the spiral windings. The standard thicknesses are 3.2 mm, 4.5 mm, 6.5 mm and 7.2 mm.

MAX. DIMENSIONS	
Thickness s (mm)	Max. diameter d ₃ (mm)
3.2	750
4.5	1500
6.5	2300
7.2	2300

METALLIC MATERIALS		
Material	ASTM	EN Material No.
Stainless steel	AISI 304	1.4301
Stainless steel	AISI 309	1.4828
Stainless steel	AISI 316, 316L	1.4401, 1.4404
Stainless steel	AISI 316Ti	1.4571
Stainless steel	AISI 321	1.4541
Monel (NiCu30Fe)	Alloy 400	2.4360



GASKET ORDERING EXAMPLE

SWG, type MS212,
metal-jacketed profile (MP10),
material: AISI 316L/flexible graphite,
shape drawing with dimensions