

# RING-TYPE-JOINT-GASKETS.

## [RTJ].

### DESCRIPTION

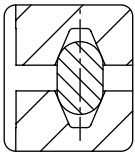
RTJ-gaskets are fully metallic, milled gasket constructions, which are mainly used for applications with high pressures and/or temperatures. Typical applications are in refineries in the petrochemical industry. With regards to surface quality, that the flange and the gaskets have to have an accurately treated surface without scratches and damage.

IDT-RTJ-gaskets are manufactured following ASME B16.20 [DIN EN 12560-5] and API 6A for flanges according to API 6B and ASME/ANSI B16.5 and ASME/ANSI B 16.47. Every gasket is allocated an identification number [R, BX, RX] which is described in the standard with regards to its dimensions using the ring number. A roughness of 1.6 Ra [6.4 Rz] should not be exceeded for the contact surfaces of the types R and RX; type BX requires a roughness of max. 0.8 Ra [3.2 Rz].

### GASKET & PROFILE STYLES

Ring-Type-Joint-Gaskets are commonly distinguished according to two design:

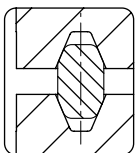
- Oval
- Octagonal



RTJ-GASKETS WITH OSCULATING RADIUS

Oval  
Style R | Profile RJ01

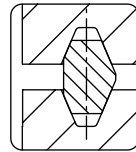
The oval form can also be used in flange connections with RTJ-groove [flank angles 23°] according to the above mentioned norm. The spherical surface of the gasket is pressed against the cone surface of the flange when clamping it, which creates a linear contact between flange and gasket. The metal ring is deformed further with increasing assembly force and the contact surface is widened. The size of the sealing surface therefore depends on the applied assembly force; the oval shape is preferred if the bolt forces are low and the radial elongations/offsets vary.



RTJ-GASKETS WITH RAISED SEALING SURFACE

Octagonal  
Style R | Profile RJ10

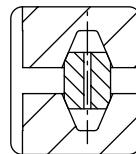
The octagonal design can also be used in flange connections with RTJ-groove [flank angles 23°] according to the above mentioned norm. Different to the oval form, an extensive stress is created right from the start on the contact surface gasket/flange. The sealing surface size is therefore independent from the assembly force; the octagonal type is the preferred design.



RTJ-GASKETS WITH RAISED SEALING SURFACE

Octagonal  
Style RX | Profile RJ20

The type RX is an optimised design of style R: octagonal. The gasket type fits the same groove flange as described for the R style and can also be easily used or replaced in this application. The RX style was optimised in such a way that the overall sealing force is increased via the internal pressure, and which in turn influences the gasket properties positively. This design can be fitted with an additional pressure balancing hole.



RTJ-GASKETS WITH RAISED SEALING SURFACE

Octagonal  
Style BX | Profile RJ30

The BX style is also a pressure optimised design; BX style can, however, not be exchanged with other styles and has been developed specifically for the API 6BX flange. This design can be fitted with an additional pressure balancing hole.

### PROPERTIES

- High tightness, considered technically tight
- Complies with TA Luft 2002 [VDI 2440/2200] leakage requirements
- Chemical/mechanical/thermal resistance depending on the material
- Very good handling during transport, installation and dismantling, mechanically stable

### APPLICATIONS

- Gaskets for pipeline flanges, device and container flanges, pipeline construction and device construction
- Established gasket system in the chemical and petrochemical industry, in conventional power stations and nuclear power plants
- In device construction; specifically where high temperatures and pressures have to be managed safely
- For high internal pressures and/or high temperatures
- For vacuum

## PRODUCT RANGE

- Dimensions following norm specification of ASME B16.20 [DIN EN 12560-5] and API 6A, flanges according to API 6B and ASME/ANSI B16.5 and ASME/ANSI B 16.47
- Style R  
Dimensions following ASME B 16.20, API Std 6 A for flanges as per ASME B16.5 and ASME B16.47 series A as per DIN EN 12560-5
- Style RX  
Dimensions following ASME B 16.20 or API Std 6 A for API 6B-flanges
- Style BX  
Dimensions following API Std 6 A for API 6BX-flanges

Additionally: IDT Profile Overview | RJ Series

## MATERIALS

Because RTJ-gaskets are used in extreme operating conditions, it is of utmost importance to select the most suitable, metallic material. In addition to pressure and temperature, the resistance towards the conveyed media has to be considered. The hardness of the gaskets should usually be lower than that of the flange material in order to prevent mechanical damage to the flange.

The maximum values for the hardness are specified for the different materials as per ASME B 16.20 / API 6A.

MATERIAL	DIN/EN	AISI/ASTM	IDENTIFICATION	MAX. HARDNESS HB [BRINELL]
X5CrNiMo17-12-2	1.4401	316	S316	160
X6CrNiNb18-10	1.4550	347	S347	160
X6CrNiMoTH 7-12-2	1.4571	316Ti	S316Ti	160
X2CrNiMo17-12-2	1.4404	316L	S316L	160
12CrMo195	1.7362	A182	F5	130
Soft iron	1.1003	Soft iron	D	90

Additional materials on request

## MARKING

The marking is done on the outer surface of each gasket.

- Manufacturer name and symbol
- Identification number with prefixed letters for the design
- Material abbreviations
- Manufacturer's specification

