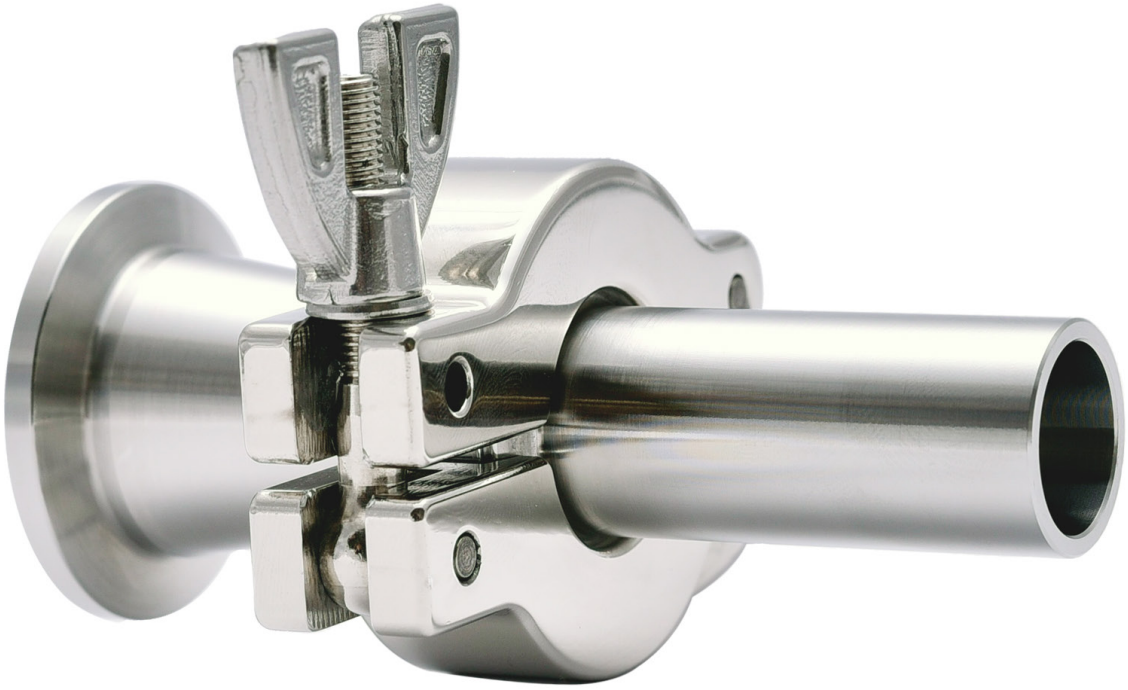

iVAC

INTELLIGENT VACUUM COMPONENTS

Product Catalog

ISO-KF SYSTEM

INTELLIGENT VACUUM COMPONENTS

Our customers are our business partners. By working with them to create value and mutual benefits, we aim to become a leader in the vacuum and fitting components sector.

We are looking forward to starting our partnership through this IVAC product catalog.

Get in touch today.

Mahmutbey Mahallesi,
Ağaoğlu My Office 212, Kat:19 No:320
34200, Bağcılar / İstanbul

+90 545 216 48 22
info@ivaccomp.com
www.ivaccomp.com

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iVAC
INTELLIGENT VACUUM COMPONENTS

Future of Vacuum Components

Let's grow together!

IVAC continues to grow with its 50 employees, 1600 m² work space, CNC lathe, CNC milling machines and up-to-date technologies, international collaborations and strong references.

ISO 9001:2015 CERTIFIED

Who We Are

IVAC products are created with 50 years of craftsmanship, experience in the trade, machining experience, family tradition and artisanship. This special collection of products has been developed and tested since 2009.

IVAC meets customer needs with modern production techniques, quality and product improvement practices. By meeting engineering and quality material needs, and customer requests in an economical way that is also in conformity with international quality standards, we aim to provide our valuable customers with solutions in the vacuum and semiconductor industries. The products you will see in these pages have been developed with the aim of providing cost effective, highly durable, easy to use quality materials and good customer service/customer support. Which has been established after extensively researching internationally sold products.

In additions to its products, IVAC is also a practical, fast and reliable solution partner that meets its customers expectations by finding solutions tailored to its customers specific requests, by being able to work on an order-based manner and by answering its customers needs and requests as quickly as possible.

What We Do

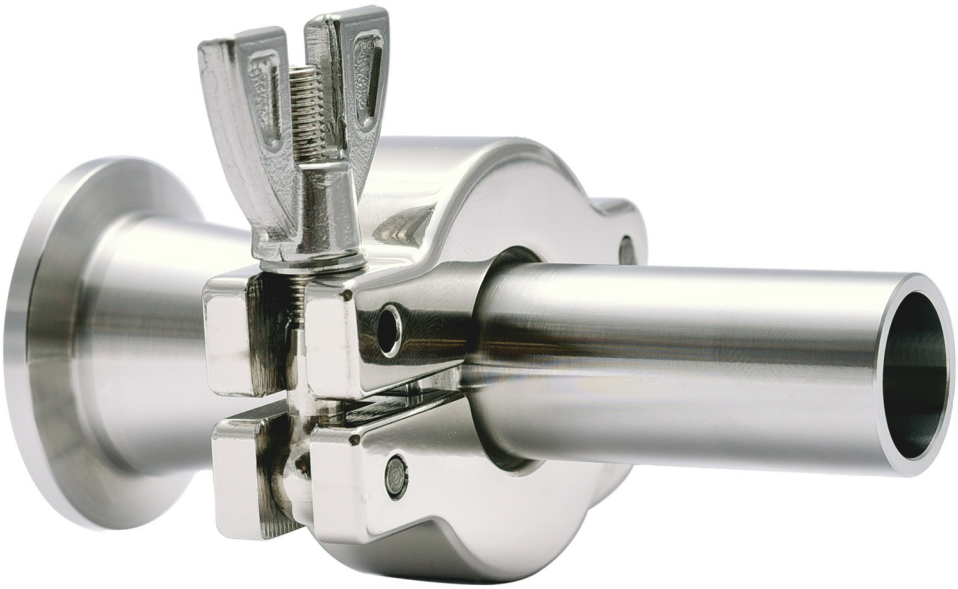
We are thrilled to introduce you to IVAC, a company that constantly improves itself through customer surveys, international collaborations, ever-improving production experience, high quality production lines, highly trained professionals and impeccable customer service principles.

We design products for vacuum and semiconductor industry. IVAC products are special selection of 304 or 316 Stainles Steel and Aluminium EN AW 6082 vacuum and fitting components flanges, seals, O-rings and clamps. Our vacuum and fitting components can be customized for your specific needs.*

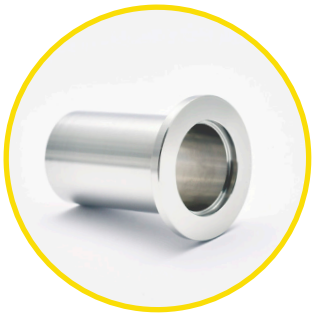
Get maximum efficiency!

We guarantee you that you will get maximum efficiency when original IVAC products are used with the correct assembly.

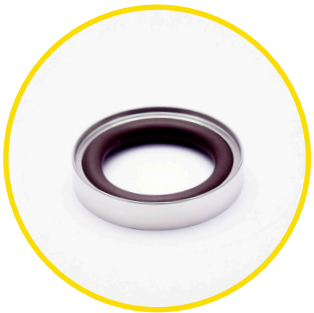
** This catalog contain only ISO-KF and ISO-KF Large System products.*



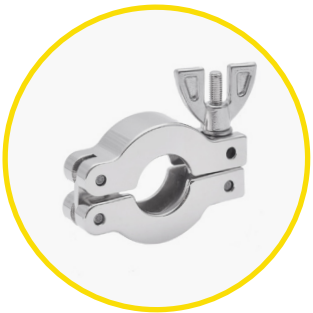
Intelligent Vacuum Components



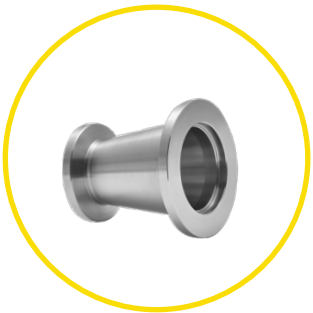
Flanges



Seals

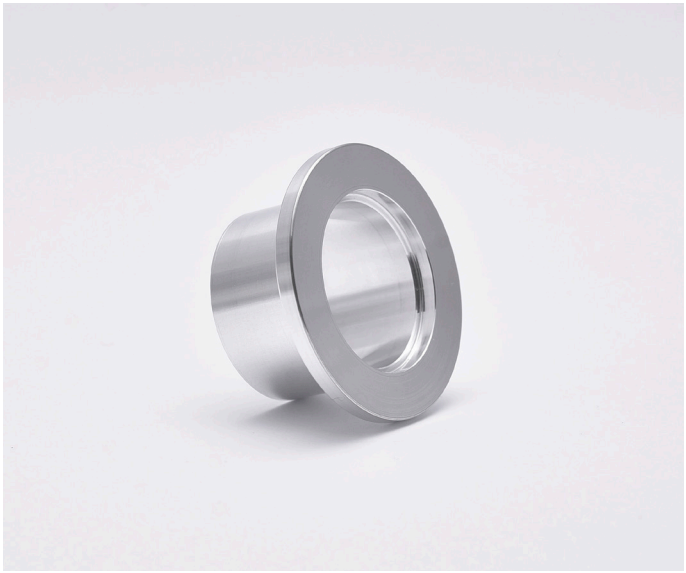


Clamps



Fittings

Our Products



Flanges

KF Flanges are often welded on to a custom vacuum system or instrument by a customer with in-house welding capabilities. They are used to create a weld free straight connection within a vacuum system. Some types are also used as adapters between different tubing sizes or flange types. These fittings are mostly used to close unused connections or they are altered by customers with their own custom machining capability for a special use.

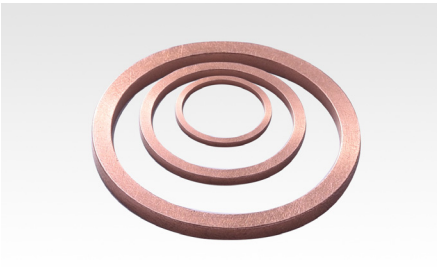
Seals*

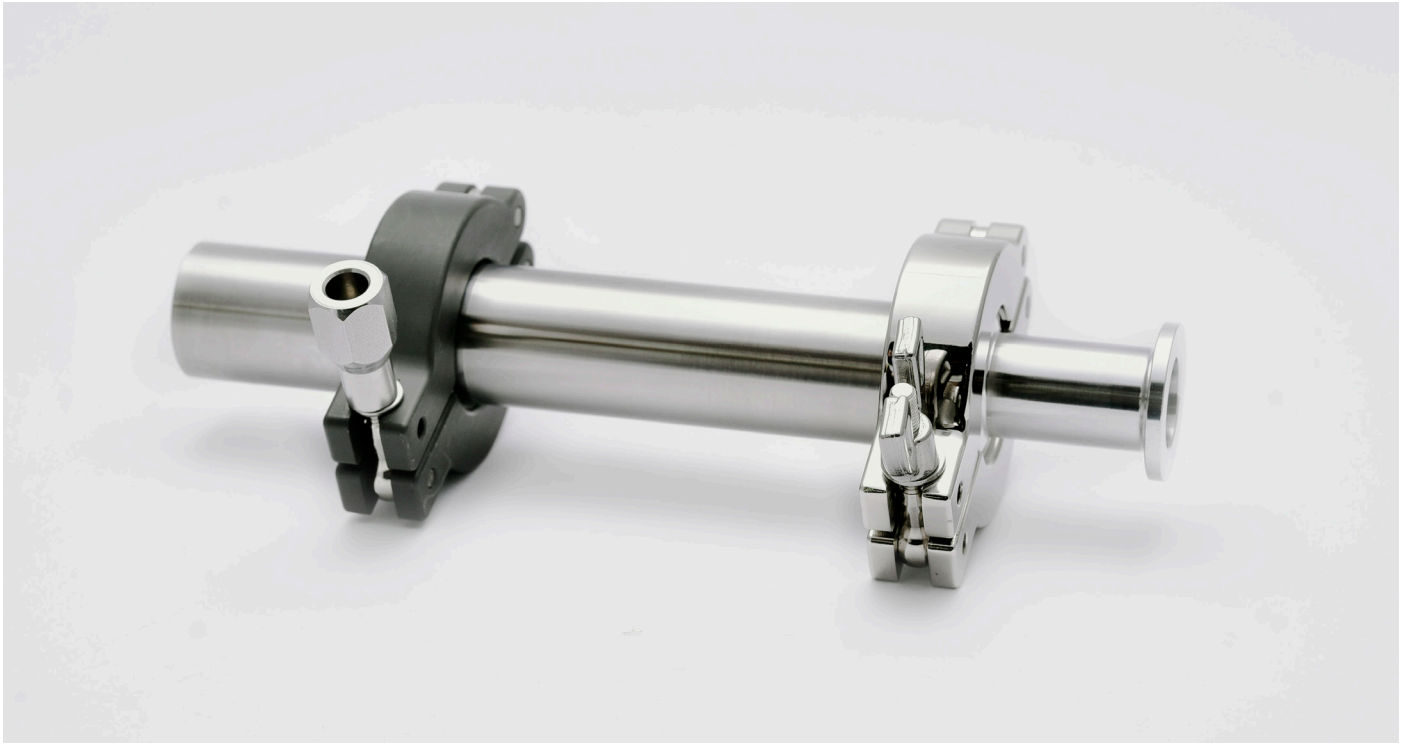
Ivac provides high vacuum seals and sealing assemblies for all standard ISO KF sizes.Various different elastomers are available for the sealing ring.There are 5 different types of O-rings, FKM, FEP, NBR, EPDM and Silicone.

Metal seals stocks a complete line of chain clamps and aluminum metal seals for converting elastomer seal KF and ISO flanges to UHV metal seals.They provide a number of benefits over elastomer seals: reduced out-gassing, no permeation, no hydrocarbons, resistance to radiation and short half-life.

**On request we can produce Copper and Nickel seals. These seals are highly preferred in cryogenic processes and radio resistant processes. (Temperature range: Copper up to 300 °C, Nickel up to 450 °C) (Size range: NW16 to NW250)*

You can contact us with sufficient demand.





Clamps

Machined clamps and cast clamps are used (in conjunction with a elastomer seal and metal seal) for mating KF flanges. ISO-KF vacuum flange clamps provide the sealing force to fully compress the O-ring for a vacuum seal, and mechanical force to hold the two flange faces together.

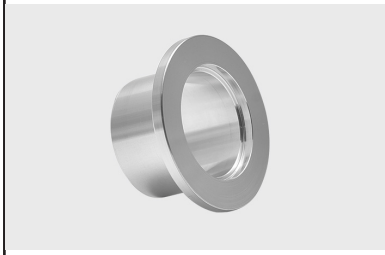
Fittings

KF fittings are ideal for high vacuum environments. KF Components, KF Fittings and KF Adapters are available in a variety of configurations. Our flanges and fittings are ready to use as received. Reducers are characteristically used to transition between flange sizes of the same range and may be zero length or non-zero length. Adapters provide a method to join two different styles of seal.

PRODUCT TABLE

The descriptions in this section contain data on general information about the products.

You can quickly browse products.



ISO-KF Short Half Flange

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV)

•EN AW-6082/3.2315: -196 to 200 °C •SS304/1.4301: -196 to 300 °C

•SS316L/1.4404: -196 to 350 °C

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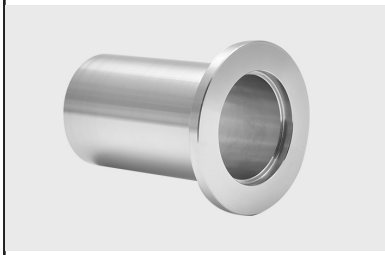

ISO-KF Long Half Flange

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV)

•EN AW-6082/3.2315: -196 to 200 °C •SS304/1.4301: -196 to 300 °C

•SS316L/1.4404: -196 to 350 °C

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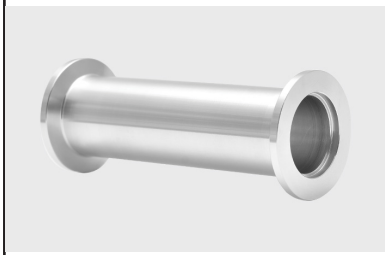

ISO-KF Full Flange

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV)

•EN AW-6082/3.2315: -196 to 200 °C •SS304/1.4301: -196 to 300 °C

•SS316L/1.4404: -196 to 350 °C

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ISO-KF Blanking Flange

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV)

•EN AW-6082/3.2315: -196 to 200 °C •SS304/1.4301: -196 to 300 °C

•SS316L/1.4404: -196 to 350 °C

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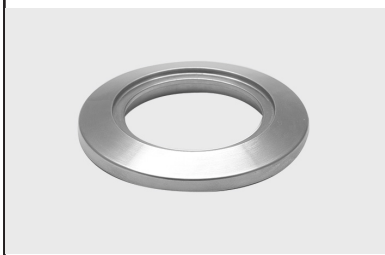

ISO-KF Weld Ring Flange

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV)

•SS304/1.4301: -196 to 300 °C

•SS316L/1.4404: -196 to 350 °C

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ISO-KF Flange Caps

•Nominal diameters 10 to 50 mm •Packing unit 10 pieces.

•For all flange connections. To provide dust and scratch protection.

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ISO-KF Elastomer Seals Outer Centered

•Nominal diameters 10 to 50 mm •For High Vacuum (HV)

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ISO-KF Elastomer Seals Inner Centered

•Nominal diameters 10 to 50 mm
•For High Vacuum (HV)

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ISO-KF Elastomer Seals Inner Centered without O-ring

•Nominal diameters 10 to 50 mm •For High Vacuum (HV)
•EN AW-6082/3.2315: -196 to 200 °C •SS304/1.4301: -196 to 300 °C
•SS316L/1.4404: -196 to 350 °C

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ISO-KF Elastomer Seals Reducer Inner Centered

•Nominal diameters 10 to 50 mm
•For High Vacuum (HV)

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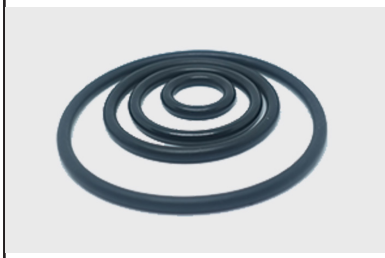

ISO-KF O-ring

•Nominal diameters 10 to 50 mm
•For High Vacuum Applications (HV)

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ISO-KF Alu Edge Seal Outer

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV)
•EN AW-1050/3.0255: -196 to 150 °C

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ISO-KF Alu Edge Seal One-Side Outer Centered

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV)
•EN AW-1050/3.0255: -196 to 150 °C

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ISO-KF Alu Edge Seal Inner Centered

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV)
•EN AW-1050/3.0255: -196 to 150 °C

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ISO-KF Alu Edge Seal One-Side Inner Centered

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV)

•EN AW-1050/3.0255: -196 to 150 °C

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ISO-KF Wingnut CNC Machined Clamp

•Nominal diameters 10 to 50 mm •For High Vacuum (HV)

•EN AW-6082/3.2315: -196 to 200 °C

Page 47

ISO-KF Hexnut CNC Machined Clamp

•Nominal diameters 10 to 50 mm •For High Vacuum (HV)

•EN AW-6082/3.2315: -196 to 200 °C

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ISO-KF Wingnut Casting Al Clamp

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) •Aluminium

Aluminium: -196 to 150 °C

Page 49

ISO-KF Hexnut Casting Al Clamp

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) •Aluminium

Aluminium: -196 to 150 °C

Page 50

ISO-KF Wingnut Casting SS Clamp

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV)

•SS304/1.4301: -196 to 300 °C

•SS316L/1.4404: -196 to 350 °C

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ISO-KF Hexnut Casting SS Clamp

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV)

•SS304/1.4301: -196 to 300 °C

•SS316L/1.4404: -196 to 350 °C

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ISO-KF Claw (Wall) Clamp

•Nominal diameters 10 to 50 mm •For High Vacuum (HV)

•EN AW-6082/3.2315: -196 to 200 °C •SS304/1.4301: -196 to 300 °C

•SS316L/1.4404: -196 to 350 °C

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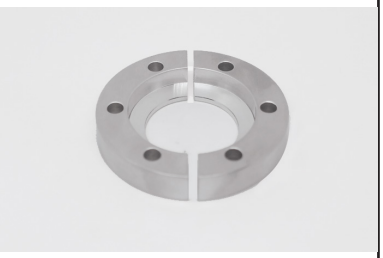

ISO-KF Bulkhead Clamp

•Nominal diameters 10 to 50 mm •For High Vacuum (HV)

•EN AW-6082/3.2315: -196 to 200 °C

Page 54

ISO-KF Straight Reducer

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV)

•EN AW-6082/3.2315: -196 to 200 °C •SS304/1.4301: -196 to 300 °C

•SS316L/1.4404: -196 to 350 °C

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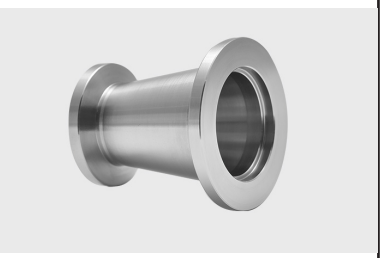

ISO-KF Conical Reducer

•Nominal diameters 10 to 50 mm •For High Vacuum (HV)

•SS304/1.4301: -196 to 300 °C

•SS316L/1.4404: -196 to 350 °C

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ISO-KF Hose Nozzles

•Nominal diameters 10 to 50 mm •For High Vacuum (HV)

•EN AW-6082/3.2315: -196 to 200 °C •SS304/1.4301: -196 to 300 °C

•SS316L/1.4404: -196 to 350 °C

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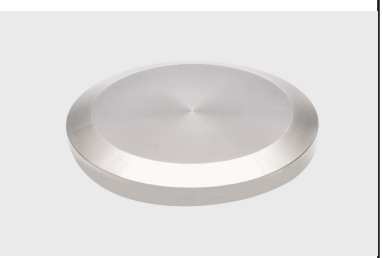
ISO-KF Large Welding Flange NW63-250

•Nominal diameters 63 to 250 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV)

•SS304/1.4301: -196 to 300 °C

•SS316L/1.4404: -196 to 350 °C

Page 60



ISO-KF Large Blanking Flange NW63-250

•Nominal diameters 63 to 250 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV) •EN AW-6082/3.2315: -196 to 200 °C •SS304/1.4301: -196 to 300 °C

•SS316L/1.4404: -196 to 350 °C

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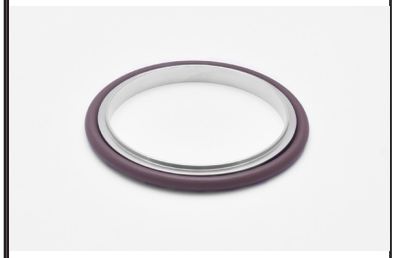
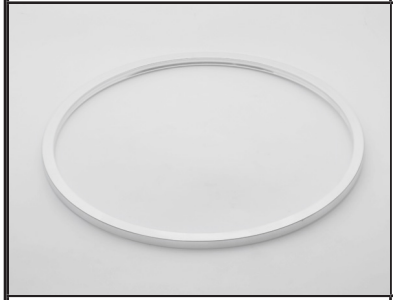


ISO-KF Large Elastomer Seals Inner Centered Without Outer Ring

•Nominal diameters 63 to 250 mm

•For High Vacuum (HV)

Page 62



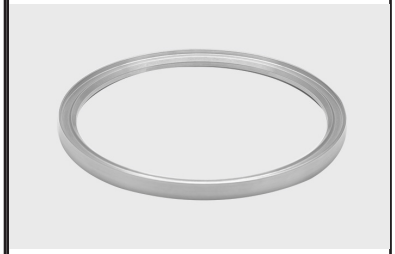
ISO-KF Large Outer Ring

•Nominal diameters 63 to 250 mm •For High Vacuum (HV)

•EN AW-6082/3.2315: -196 to 200 °C •SS304/1.4301: -196 to 300 °C

•SS316L/1.4404: -196 to 350 °C

Page 63



ISO-KF Large Alu Edge Seal Outer Centered

•Nominal diameters 63 to 250 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV)

•EN AW-1050/3.0255: -196 to 150 °C

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ISO-KF Large Alu Edge Seal Inner Centered

•Nominal diameters 63 to 250 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV)

•EN AW-1050/3.0255: -196 to 150 °C

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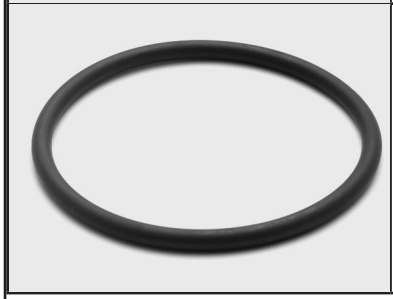

ISO-KF LARGE O-Ring

•Nominal diameters 63 to 250 mm

•For High Vacuum Applications

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ISO-KF SYSTEM

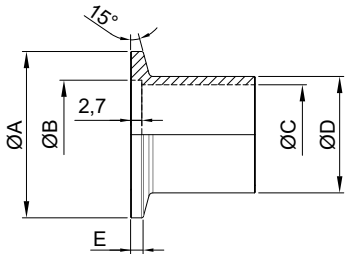
ISO-KF vacuum components are directly compatible with all ISO-KF, NW or QF vacuum flange hardware connections.

The standard sizes offered are NW10 (adapts to NW16), NW16, NW25, NW40 and NW50.

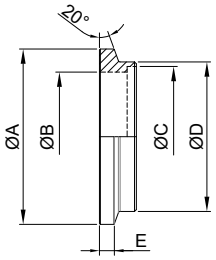
Most components are offered in stainless steel. However, for adapters vacuum grade aluminium alloys are sometimes preferred. The standard KF vacuum component is generally used to connect vacuum instruments and can be found on vacuum coating systems, electron microscopes, vacuum ovens, vacuum pumps, vacuum equipment, vacuum gauges etc.

Major Dimensions of ISO-KF Components

ISO-KF (10-50)



ISO-KF Large (63-250)



ISO-KF (10-50)

Size (DN)	KF10	KF16	KF20	KF25	KF32	KF40	KF50
Outside Dimeter A (mm)	30	30	40	40	55	55	75
Outside Diameter A (inch)	1,18	1,18	1,57	1,57	2,17	2,17	2,95
Centering ring nose B (mm)	12,2	17,2	22,2	26,2	34,2	41,2	52,2
Typical inside dimension C (mm)	10	16	20	24	34	40	50
Typical outside dimension D (mm)	14	20	25	28	38	44,5	57
Dimension E (mm)	3	3	3	3	3	3	3

ISO-KF Large (63-250)

Size (DN)	KF63	KF80	KF100	KF125	KF160	KF200	KF250
Outside Daimeter A (mm)	95	114	134	161	190	252	301
Outside Daimeter A (inch)	3,74	4,48	5,28	6,34	7,48	9,92	11,85
Centering ring nose B (mm)	70	83	102	127	153	213	261
Typical inside dimension C (mm)	76	89	108	133	159	219	273
Typical outside dimension D (mm)	81	97	117	144	168	230	279
Dimension E (mm)	7,96	7,96	7,96	7,96	8,14	8,14	8,14

Please consider the following in planning and designing your vacuum system:

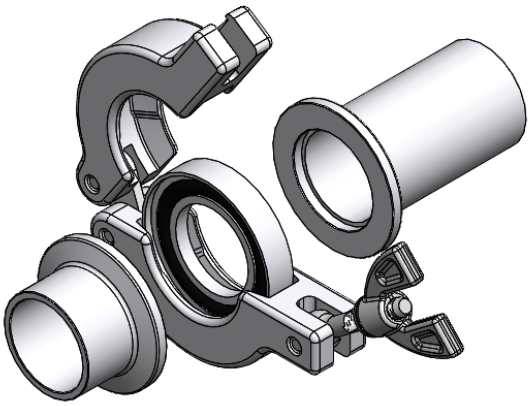
-The pressures indicated below in connection with the product descriptions are absolute pressures, at an ambient pressure of 1000 mbar.

-The minimum achievable ultimate pressure in the entire system will depend upon numerous factors, especially upon the pump system, the desorption rates of the interior surfaces and the pump-down time. The minimum pressures indicated in connection with the product descriptions are based upon experience, showing what can be achieved in a well designed vacuum system. They could be higher or lower in individual cases. If elastomer seals are being employed, it will be necessary to take their gas permeability (permeation) into consideration. It will be a function of the material, temperature and type of gas in question. You will find typical ultimate pressures for elastomers in the chapter entitled “Materials.”

-The highest and lowest permissible temperatures in the entire system will be governed by the lowest high temperature and highest low temperature of the components involved.

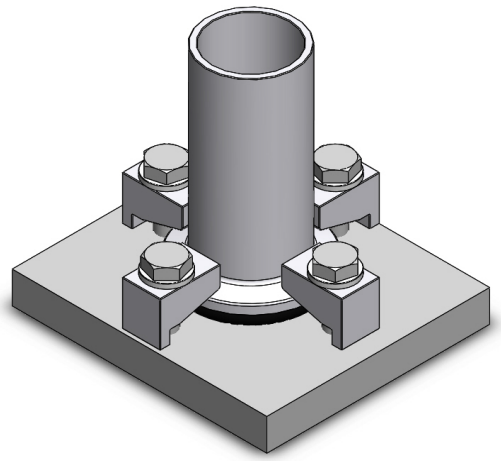
-The flange connections and components have been developed in order to achieve vacuum-tight connections. They can only assume mechanical loads to a limited extent. In designing a vacuum system, it will therefore be necessary to review whether it will be necessary for static or dynamic loads to be assumed by additional elements, e.g. holders.

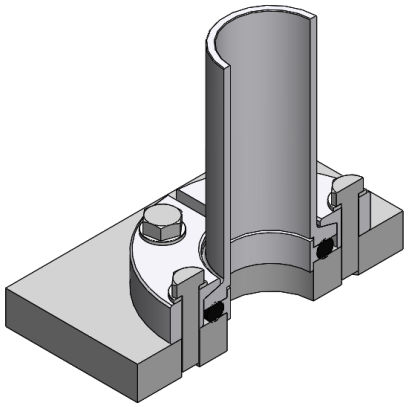
ISO-KF Fasteners and Components



ISO-KF components from IVAC are manufactured according to DIN 28403 and ISO 2861 in standard sizes NW 10 to NW 50 and are compatible with products from other prominent manufacturers. All components are helium leak-tested and have leakage rates of better than 10-9 mbar × l/s.

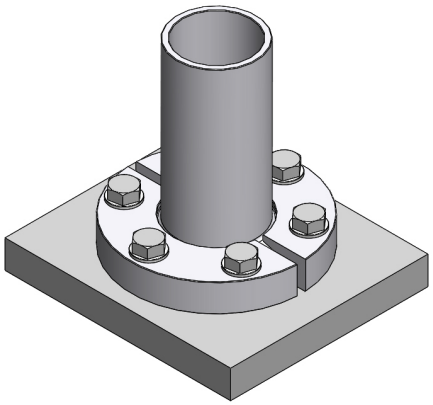
ISO-KF connections are convenient for pressures of up to 10-7 mbar and can also be operete for overpressures of up to 1.5 bar. The pressure range can be increased to 10-9 mbar by means of metallic seals. The significantly higher contact pressures that this requires are generated with special bulkhead clamps. The maximum possible application temperature will essentially be governed by the seal material in question. You will find information about this subject in the product descriptions and in the chapter entitled “Materials.”

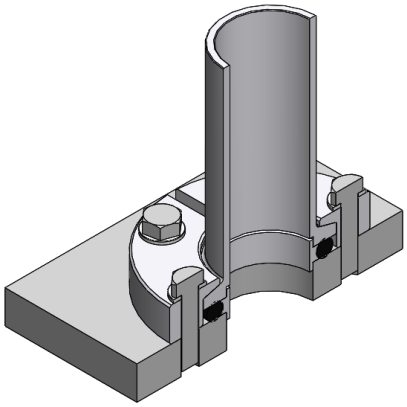




The majority of ISO-KF components take place stainless steel. Aluminum can alternatively be employed. You will find information about our stainless steels and other alternative materials for vacuum components in the chapter entitled “Materials.”

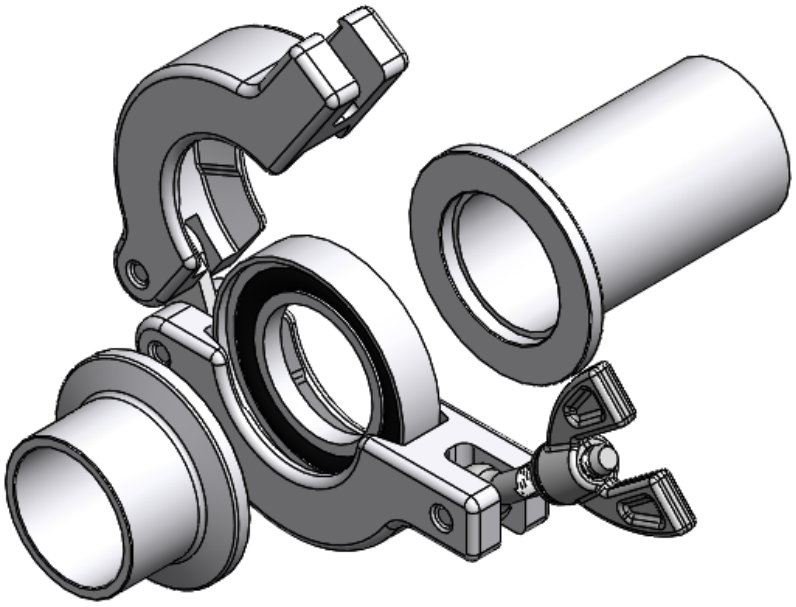
Welded components are glass beadblasted or chemically etched. We can offer you alternative surface treatments such as grinding, electropolishing or annealing upon request.





Introduction & Functional Principle

The KF standard (DIN 28403 & ISO 2861) is the standard connection for vacuum pipes up to the nominal diameter of DN50 used in low, fine and high vacuum. The connection between two flanges is shown in the figure.

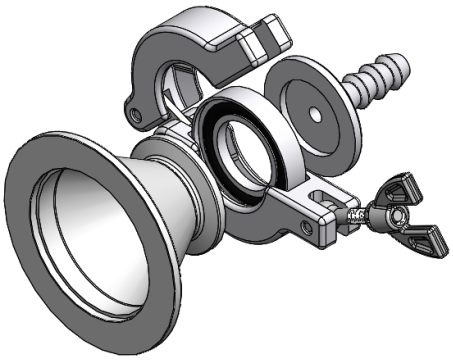


Principal Rule

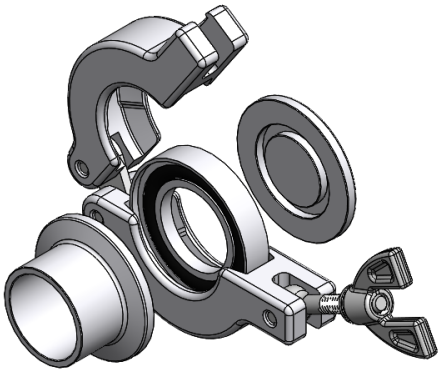
A seal is positioned between the two flanges. The seal consists of a centering ring and the O Ring extend upon. The flanges are held together by a clamp. The clamp has an inclined interior surface adequate to the conical outer surface of the flanges.

Typically centering rings and standard clamps are used with wing and hex nuts. They enable a quick and easy assembly without any tools. Trapped centering rings and special clamps or clamp chains are offered for special applications. Claw clamps or so-called bulkhead clamps are available for wall mounting.

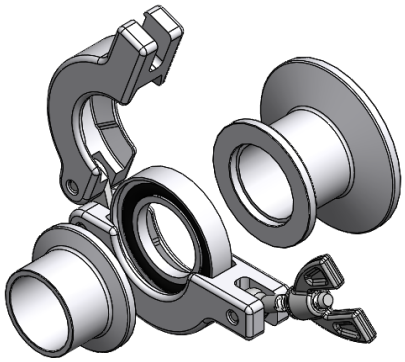
Connection Types



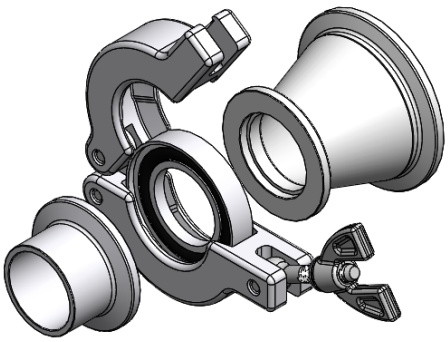
Conical Reducer to Hose Nozzle



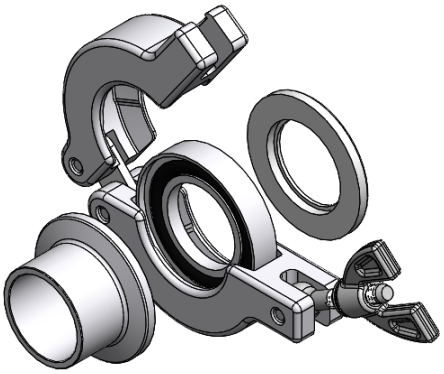
Flange to Blanking Flange



Flange to Straight Reducer



Flange to Conical Reducer



Flange to Weld Ring Flange

Materials

Components Elements Properties

Material number (AISI No.)	Material abbreviation	Cr(%)	Ni(%)	Mo (%)	C (%)	Si (%)	Mn (%)	P (%)	S (%)	Other additives / Comments
1.4301 (304)	X5CrNi 18 10	15-20	8-19	*	0,1	1	2	0,05	0,015	* MO permissible
1.4303 (305)	X4CrNi 18 12	15-20	8-19	*	0,1	1	2	0,05	0,015	* MO permissible
1.4305 (303)	X8CrNiS 18 9	16-19	5-10	max. 0.7	0,12	1	6,5	0,2	0.15-0.35	Cu, sulphur can be substituted with selenium
1.4306 (304L)	X2CrNi 19 11	18-20	10-12	-	0,03	1	2	0,045	0,015	
1.4307 (304L)	X2CrNi 18 9	17.5-19.5	8-10.5	-	0,03	1	2	0,045	0,015	
1.4310 (301)	X10CrNi 18 10	16-18	6-9.5	max. 0.8	0.05-0.15	2	2	0,045	0,015	
1.4401 (316)	X5CrNiMo 17-12-2	16-18.5	10-15	2-3	0,08	1	2	0,045	0,03	
1.4404 (316L)	X2CrNiMo 17-13-2	16-18.5	10-13	2-2.5	0,03	1	2	0,045	0,015	
1.4429 (316LN)	X2CrNiMo 17-13-3	16.5-18.5	11-14	2.5-3	0,03	1	2	0,045	0,015	
1.4435 (316L)	X2CrNiMo 18-14-3	17-19	12.5-15	2.5-3	0,03	1	2	0,045	0,015	
1.4541 (321)	X6CrNiTi 18-10	17-19	9-12	-	0,08	1	2	0,045	0,015	Mo permissible, must contain Ti or Nb or Ta for stability
1.4571 (316Ti)	X6CrNiMoTi 17 12 2	16.5-18	10.5-13.5	2-2.5	0,08	1	2	0,045	0,015	

Materials

Table of Properties High-Grade Steels

Material number (AISI No.)	0.2% yield point at 20 °C in N/mm2	0.2% yield point at 300 °C in N/mm2	Tensile strength in N/mm2	Coefficient of linear expansion in 10−6 K−1 bet. 20 °C and 300 °C	Max. operation tempe- rature of air	Structure	Magnet ability
1.4301 (304)	210-250	110	520-720	17	300	Austenitic steel with small ferrite content	possible
1.4306 (304L)	220-250	100	520-670	17	350	Austenitic steel with small ferrite content	possible
1,431	220-240	100	520-670	17	350	Austenitic steel with small ferrite content	possible
1.4401 (316)	220-250	128	530-680	17	300	Austenitic steel with small ferrite content	less possible
1.4404 (316L)	220-260	118	530-680	17	400	Austenitic steel with small ferrite content	less possible
1.4429 (316LN)	280-310	155	580-770	17	400	Austenitic steel	not possible
1.4435 (316L)	220-260	118	540-700	17	400	Austenitic steel	not possible
1.4541 (321)	200-250	135	520-710	17	400	Austenitic steel with small ferrite content	possible
1.4571 (316Ti)	220-260	145	540-690	18	400	Austenitic steel with small ferrite content	possible

Properties of Elastomer Materials

Designation	Base Elastomer	Customary Trade Name	Temperature Range [°C]	Properties *3 *4
FKM, FPM	Fluoro rubber	Viton®	-15 to 200	> Extremely resistant to petroleum-based oils, aliphatic and aromatic hydrocarbons as well as chlorinated hydrocarbons, concentrated and diluted acids and weak bases > Outstanding temperature resistance > High mechanical values > Superb aging resistance > Typically achievable ultimate pressure: 10^{-7} mbar
NBR	Acrylonitrile butadiene rubber, nitrite rubber	Perbunan®	-25 to 120	> Resistant to petroleum-based oils, hydraulic oils, lubricants, gasoline as well as other aliphatic hydrocarbons, diluted acids and bases > High wear resistance and stability > Very good helium-tightness > Typically achievable ultimate pressure: 10^{-6} mbar
EPDM	Etylene propylene rubber	Dutral®	-50 to 130	> High resistance to hot water and steam > Very good resistance to aging and ozone > Good temperature stability > Very good resistance to oxidizing agents > No resistance to aliphatic and aromatic hydrocarbons and petroleum products > Typically achievable ultimate pressure: 10^{-6} mbar
VMQ	Silicon rubber	Silopren® Silikon	-55 to 200	> Superb temperature resistance, however not in the case of hot water or steam > Typically achievable ultimate pressure: 10^{-5} mbar
FEP, PFA	Fluorinated ethylene propylene	FEP-O-SEAL®	-60°C up to +250°C (depending on the core material)	> Low friction and low 'stick-slip' effect > Far better elasticity than solid PTFE > Common within pharmaceutical and processing industries
FFKM	Perfluoroelasto-mer	Kalrez®, Tecnoflon®	-25°C ~ +330°C	>Higher mechanical properties than FKM >Excellent thermal and chemical resistance >Low permeability & Low swell in acids

**3 Information relating to resistance should be used only as a guideline, as it is provided solely for the purpose of general information. Although this information is intended to simplify selection of the elastomer, it can by no means be deemed to represent a warranty, as it cannot readily be applied to real-world operating conditions. Service life might have to be determined on the basis of trial and error.*

**4 The indicated ultimate pressures are based upon experience showing what can be achieved in a well designed vacuum system. They could be higher or lower in individual cases.*

Materials

Metallic seals

Metallic seals require high contact pressures. They are plastically deformed when assembled and can therefore be used only once. Their hardness has to be lower than that of the flanges, thus allowing them to adapt to the microstructure and produce a metallic ultra high vacuum-tight connection.

Aluminum

Aluminum seals with aluminum edged seal rings are employed for ISO-KF and ISO-K flanges. What are used are soft-annealable aluminum-silicon alloys that require a contact pressure of around 100 N/mm2. The differing thermal expansion will limit the maximum permissible working temperature in connection with the combination of aluminum seal and stainless steel flanges to around 150°C. Following exposure to excessive temperatures, the sealing effect will often deteriorate after cool-down.

Copper

Copper has around the same thermal expansion as austenitic stainless steel. Copper seals are used as gaskets (CF flanges) or wire seals (COF flanges). The copper must be of low-oxygen design, i.e. OF (Oxygen Free) or OFHC (Oxygen Free High Conductivity) must be employed. The presence of oxygen will lead to what is called “hydrogen disease”; i.e. when heat treated, the hydrogen will react with oxygen and the water that is thus produced will burst the structure.

Copper seals require a contact pressure of at least 200 N/mm2. Their maximum permissible working temperature in air is 200°C; silver coating increases this to a maximum of 450°C. Soft-annealed copper seals require less contact pressure. They should be used in connection with viewports, in particular, in order to keep assembly related stresses as low as possible.

Materials

Description of individual high-grade steel types

1.4301 (304):
Suitable for vacuum applications. Austenitic stainless steel. Very high cold formability. Easily weldable. High corrosion resistance.

1.4305 (303):
Lower corrosion resistance than 1.4301. Easy to machine. Not weldable.

1.4306 1.4307 (304L):
Suitable for vacuum applications. Low-carbon variant of 1.4301 with similar properties. Easily weldable.

1.4401 (316):
Suitable for vacuum applications. Very high cold formability. Easily weldable. Due to molybdenum additive, more resistant than 1.4301 to non- oxidising acids and chlorine substance.

1.4404 (316L):
Suitable for vacuum applications. Significantly less carbon than 1.4401 but with similar properties. Easily weldable.

1.4429 (304LN):
Suitable for vacuum applications. Higher strength than 1.4435.

1.4435 (316LMo):
Suitable for vacuum applications. Similar properties to 1.4404. The increased content of molybdenum makes 1.4435 more resistant to non-oxidising acids.

1.4541 (321):
Suitable for vacuum applications. Similar properties to 1.4301 but not polishable. Titan-stabilised, which makes is highly weldable in all dimensions without being susceptible to intergranular corrosion.

1.4571 (316Ti):
Suitable for vacuum applications. Similar properties to 1.4401. Titan-stabilised, which makes is highly weldable in all dimensions without being susceptible to intergranular corrosion.

1.4429 (316LN-ESR):
Suitable for vacuum applications. Very high homogeneity including purity combined with a high hardness level. Very low magnetic permeability. Other properties correspond to 1.4429.

Sealing materials

Elastomer seals are permeable to gas and also emit gases. The gas permeability, or permeation, depends on the material, the type of gas and ambient conditions – mainly the temperature. After an adequate evacuation time, the outward gas stream decreases considerably, which means that a relatively constant permeation gas stream materialises.

Storage conditions of elastomer seals:

To ensure that their properties are retained as long as possible, we recommend the following ambient conditions during storage:

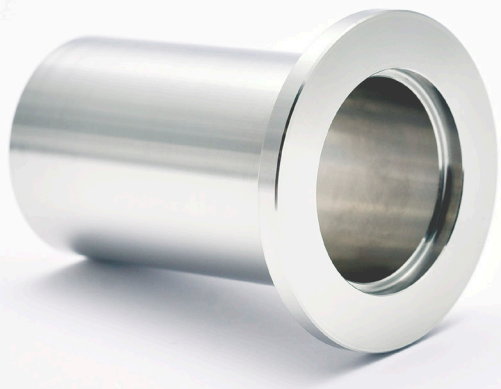
- an area with little temperature variation
- an area where the temperature is between 10-25 degC
- o-rings should be stored in lightproof boxes

Metal seals made of aluminium:

high purity, which in turn allows to be used combination with Aluminium as well as stainless steel flanges. Temperature range: –196 °C to 150 °C. One time use only.

ISO-KF FLANGES

This part consists of KF flanges products.
Check out this section for products NW10-NW50.



ISO-KF Short Half Flange

Applications and features:

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications •Weldable •For inner outer center rings •Custom lengths available upon request (Please observe limits for seal materials and fastening elements)

Material

Aluminium
(EN AW-6082/3.2315)

Stainless Steel
(AISI 304/1.4301, AISI 316L/1.4404)

Temperature Range

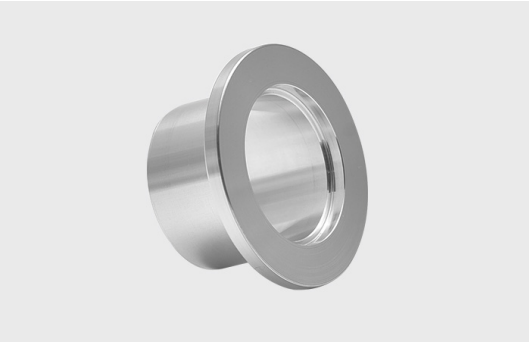
EN AW-6082/3.2315: -196 to 200 °C
SS304/1.4301: -196 to 300 °C
SS316L/1.4404: -196 to 350 °C

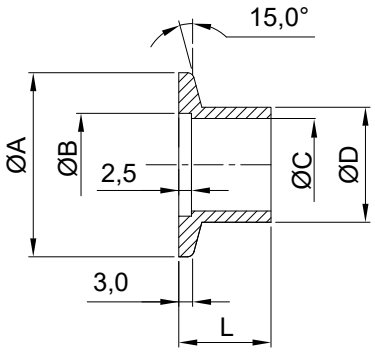
Pressure Range*

Elastomer seal:
10^{-7} mbar to 2.5 bar

Metal seal:
10^{-11} mbar to 2.5 bar

**Consider sealing materials and fasteners*





Size (DN)	A (mm)	B (mm)	C (mm)	D (mm)	L (mm)	Order No. (AL-6082 T6)	Order No. (AISI 304)	Order No. (AISI 316L)
10	30	12,20	10	14	10	100.01.A10.010.010	100.01.S20.010.010	100.01.S30.010.010
16	30	17,20	16	20	10	100.01.A10.016.010	100.01.S20.016.010	100.01.S30.016.010
20	40	22,20	20	25	10	100.01.A10.020.010	100.01.S20.020.010	100.01.S30.020.010
25	40	26,20	24	28	10	100.01.A10.025.010	100.01.S20.025.010	100.01.S30.025.010
32	55	34,20	34	38	10	100.01.A10.032.010	100.01.S20.032.010	100.01.S30.032.010
40	55	41,20	40	44.5	10	100.01.A10.040.010	100.01.S20.040.010	100.01.S30.040.010
50	75	52,20	50	57	10	100.01.A10.050.010	100.01.S20.050.010	100.01.S30.050.010
Size (DN)	**A (mm)**	**B (mm)**	**C (mm)**	**D (mm)**	**L (mm)**	**Order No. (AL-6082 T6)**	**Order No. (AISI 304)**	**Order No. (AISI 316L)**
10	30	12,20	10	14	20	100.01.A10.010.020	100.01.S20.010.020	100.01.S30.010.020
16	30	17,20	16	20	20	100.01.A10.016.020	100.01.S20.016.020	100.01.S30.016.020
20	40	22,20	20	25	20	100.01.A10.020.020	100.01.S20.020.020	100.01.S30.020.020
25	40	26,20	24	28	20	100.01.A10.025.020	100.01.S20.025.020	100.01.S30.025.020
32	55	34,20	34	38	20	100.01.A10.032.020	100.01.S20.032.020	100.01.S30.032.020
40	55	41,20	40	44.5	20	100.01.A10.040.020	100.01.S20.040.020	100.01.S30.040.020
50	75	52,20	50	57	20	100.01.A10.050.020	100.01.S20.050.020	100.01.S30.050.020
Size (DN)	**A (mm)**	**B (mm)**	**C (mm)**	**D (mm)**	**L (mm)**	**Order No. (AL-6082 T6)**	**Order No. (AISI 304)**	**Order No. (AISI 316L)**
10	30	12,20	10	14	30	100.01.A10.010.030	100.01.S20.010.030	100.01.S30.010.030
16	30	17,20	16	20	30	100.01.A10.016.030	100.01.S20.016.030	100.01.S30.016.030
20	40	22,20	20	25	30	100.01.A10.020.030	100.01.S20.020.030	100.01.S30.020.030
25	40	26,20	24	28	30	100.01.A10.025.030	100.01.S20.025.030	100.01.S30.025.030
32	55	34,20	34	38	30	100.01.A10.032.030	100.01.S20.032.030	100.01.S30.032.030
40	55	41,20	40	44.5	30	100.01.A10.040.030	100.01.S20.040.030	100.01.S30.040.030
50	75	52,20	50	57	30	100.01.A10.050.030	100.01.S20.050.030	100.01.S30.050.030

ISO-KF Long Half Flange

Applications and features:

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications •Weldable •For inner and outer center rings •Custom lengths available upon request* (Please observe limits for seal materials and fastening elements)

Material

Aluminium
(EN AW-6082/3.2315)

Stainless Steel
(AISI 304/1.4301, AISI 316L/1.4404)

Temperature Range

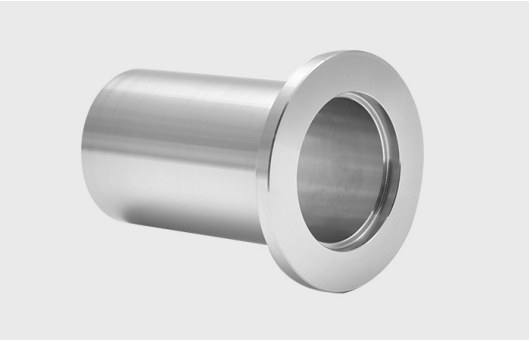
EN AW-6082/3.2315: -196 to 200 °C
SS304/1.4301: -196 to 300 °C
SS316L/1.4404: -196 to 350 °C

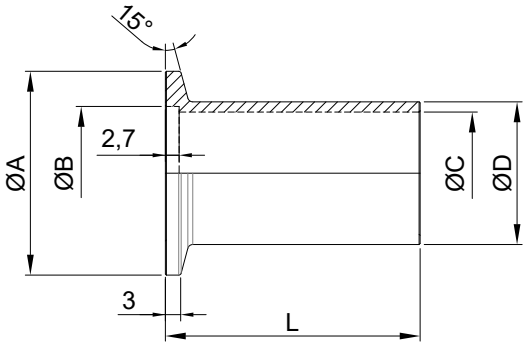
Pressure Range*

Elastomer seal:
10^{-7} mbar to 2.5 bar

Metal seal:
10^{-11} mbar to 2.5 bar

**Consider sealing materials and fasteners*





Size (DN)	A (mm)	B (mm)	C (mm)	D (mm)	L (mm)	Order No. (AL-6082 T6)	Order No. (AISI 304)	Order No. (AISI 316L)
10	30	12,20	10	14	40	101.01.A10.010.040	101.01.S20.010.040	101.01.S30.010.040
16	30	17,20	16	20	40	101.01.A10.016.040	101.01.S20.016.040	101.01.S30.016.040
20	40	22,20	20	25	40	101.01.A10.020.040	101.01.S20.020.040	101.01.S30.020.040
25	40	26,20	24	28	40	101.01.A10.025.040	101.01.S20.025.040	101.01.S30.025.040
32	55	34,20	34	38	40	101.01.A10.032.040	101.01.S20.032.040	101.01.S30.032.040
40	55	41,20	40	44.5	40	101.01.A10.040.040	101.01.S20.040.040	101.01.S30.040.040
50	75	52,20	50	57	40	101.01.A10.050.040	101.01.S20.050.040	101.01.S30.050.040
Size (DN)	**A (mm)**	**B (mm)**	**C (mm)**	**D (mm)**	**L (mm)**	**Order No. (AL-6082 T6)**	**Order No. (AISI 304)**	**Order No. (AISI 316L)**
10	30	12,20	10	14	50	101.01.A10.010.050	101.01.S20.010.050	101.01.S30.010.050
16	30	17,20	16	20	50	101.01.A10.016.050	101.01.S20.016.050	101.01.S30.016.050
20	40	22,20	20	25	50	101.01.A10.020.050	101.01.S20.020.050	101.01.S30.020.050
25	40	26,20	24	28	50	101.01.A10.025.050	101.01.S20.025.050	101.01.S30.025.050
32	55	34,20	34	38	50	101.01.A10.032.050	101.01.S20.032.050	101.01.S30.032.050
40	55	41,20	40	44.5	50	101.01.A10.040.050	101.01.S20.040.050	101.01.S30.040.050
50	75	52,20	50	57	50	101.01.A10.050.050	101.01.S20.050.050	101.01.S30.050.050
Size (DN)	**A (mm)**	**B (mm)**	**C (mm)**	**D (mm)**	**L (mm)**	**Order No. (AL-6082 T6)**	**Order No. (AISI 304)**	**Order No. (AISI 316L)**
10	30	12,20	10	14	60	101.01.A10.010.060	101.01.S20.010.060	101.01.S30.010.060
16	30	17,20	16	20	60	101.01.A10.016.060	101.01.S20.016.060	101.01.S30.016.060
20	40	22,20	20	25	60	101.01.A10.020.060	101.01.S20.020.060	101.01.S30.020.060
25	40	26,20	24	28	60	101.01.A10.025.060	101.01.S20.025.060	101.01.S30.025.060
32	55	34,20	34	38	60	101.01.A10.032.060	101.01.S20.032.060	101.01.S30.032.060
40	55	41,20	40	44.5	60	101.01.A10.040.060	101.01.S20.040.060	101.01.S30.040.060
50	75	52,20	50	57	60	101.01.A10.050.060	101.01.S20.050.060	101.01.S30.050.060

ISO-KF Full Flange

Applications and features:

•Same flanges on both connections •Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV) •For inner and outer center rings •Full penetration vacuum welds •Custom lengths available upon request (Please observe limits for seal materials and fastening elements)

Material

Aluminium
(EN AW-6082/3.2315)

Stainless Steel
(AISI 304/1.4301, AISI 316L/1.4404)

Temperature Range

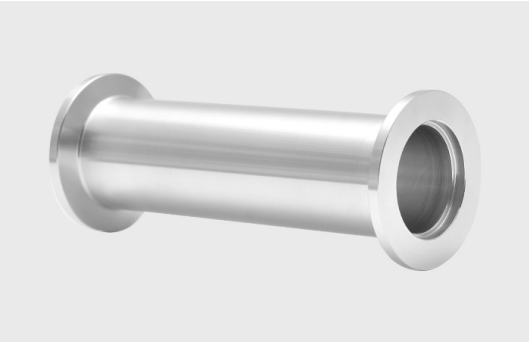
EN AW-6082/3.2315: -196 to 200 °C
SS304/1.4301: -196 to 300 °C
SS316L/1.4404: -196 to 350 °C

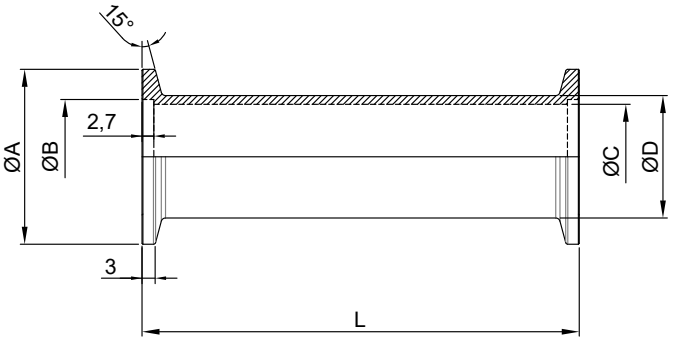
Pressure Range*

Elastomer seal:
10^{-7} mbar to 2.5 bar

Metal seal:
10^{-11} mbar to 2.5 bar

**Consider sealing materials and fasteners*





Size (DN)	A (mm)	B (mm)	C (mm)	D (mm)	L (mm)	Order No (AL-6082 T6)	Order No (AISI 304)	Order No (AISI 316L)
10	30	12,20	10	14	60	102.01.A10.010.060	102.01.S20.010.060	102.01.S30.010.060
16	30	17,20	16	20	80	102.01.A10.016.080	102.01.S20.016.080	102.01.S30.016.080
20	40	22,20	20	25	100	102.01.A10.020.100	102.01.S20.020.100	102.01.S30.020.100
25	40	26,20	24	28	100	102.01.A10.025.100	102.01.S20.025.100	102.01.S30.025.100
32	55	34,20	34	38	130	102.01.A10.032.130	102.01.S20.032.130	102.01.S30.032.130
40	55	41,20	40	44.5	130	102.01.A10.040.130	102.01.S20.040.130	102.01.S30.040.130
50	75	52,20	50	57	140	102.01.A10.050.140	102.01.S20.050.140	102.01.S30.050.140

ISO-KF Blanking Flange

Applications and features:

•Use as To Close Off Unused Ports •Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications •Convenient for aluminium edge type seals •For inner and outer center rings •Can be machined and welded •Custom lengths available upon request (Please observe limits for seal materials and fastening elements)

Material

Aluminium
(EN AW-6082/3.2315)

Stainless Steel
(AISI 304/1.4301, AISI 316L/1.4404)

Temperature Range

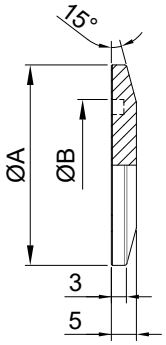
EN AW-6082/3.2315: -196 to 200 °C
SS304/1.4301: -196 to 300 °C
SS316L/1.4404: -196 to 350 °C

Pressure Range*

Elastomer seal:
10^{-7} mbar to 2.5 bar

Metal seal:
10^{-11} mbar to 2.5 bar

**Consider sealing materials and fasteners*



Size (DN)	A (mm)	B (mm)	Order No (AL-6082 T6)	Order No (AISI 304)	Order No (AISI 316L)
10	30	12.2	103.01.A10.010.000	103.01.S20.010.000	103.01.S30.010.000
16	30	17.2	103.01.A10.016.000	103.01.S20.016.000	103.01.S30.016.000
20	40	22,2	103.01.A10.020.000	103.01.S20.020.000	103.01.S30.020.000
25	40	26.2	103.01.A10.025.000	103.01.S20.025.000	103.01.S30.025.000
32	55	34,2	103.01.A10.032.000	103.01.S20.032.000	103.01.S30.032.000
40	55	41.2	103.01.A10.040.000	103.01.S20.040.000	103.01.S30.040.000
50	75	52.2	103.01.A10.050.000	103.01.S20.050.000	103.01.S30.050.000

ISO-KF Weld Ring Flange

Applications and features:

•Self-aligning •Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications •Convenient for aluminium edge type seals •For inner and outer center rings •Extreme surface sensitive and flatness even under high bending. •Standard tube weld preparation •Accepts standard tubing

Material

Stainless Steel
(AISI 304/1.4301, AISI 316L/1.4404)

Temperature Range

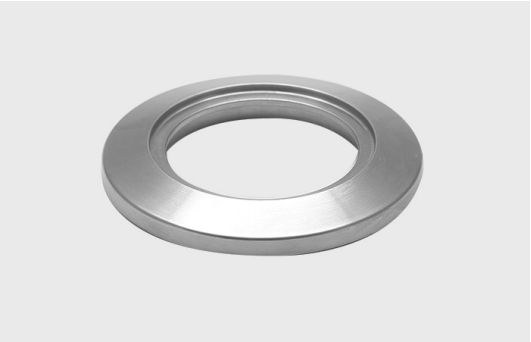
SS304/1.4301: -196 to 300 °C
SS316L/1.4404: -196 to 350 °C

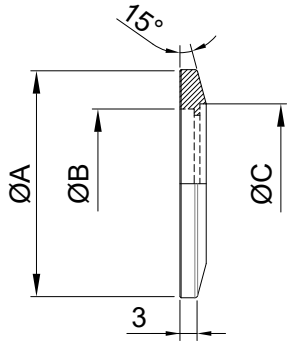
Pressure Range*

Elastomer seal:
10^{-7} mbar to 2.5 bar

Metal seal:
10^{-11} mbar to 2.5 bar

**Consider sealing materials and fasteners*





Size (DN)	A (mm)	B (mm)	C (mm)	Order No (AISI 304)	Order No (AISI 316L)
10	30	12,2	14	104.01.S20.010.000	104.01.S30.010.000
16	30	17,2	20	104.01.S20.016.000	104.01.S30.016.000
20	40	22,2	25	104.01.S20.020.000	104.01.S30.020.000
25	40	26,2	28	104.01.S20.025.000	104.01.S30.025.000
32	55	34,2	38	104.01.S20.032.000	104.01.S30.032.000
40	55	41,2	44,5	104.01.S20.040.000	104.01.S30.040.000
50	75	52,2	57	104.01.S20.050.000	104.01.S30.050.000

ISO-KF Flange Caps

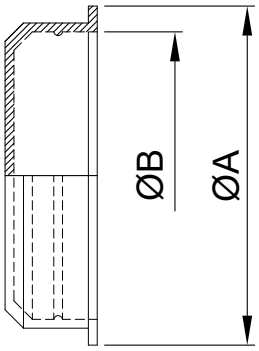
Applications and features:

•Packing unit 10 pieces.

•For all flange connections. To provide dust and scratch protection.

Material

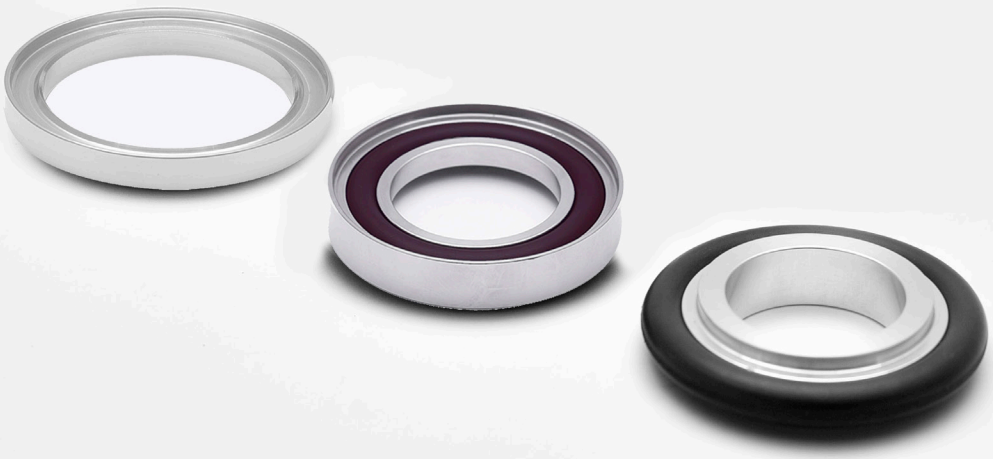
Polyethylene (PE)



Size (DN)	A (mm)	B (mm)	Order No.
10/16	30	37	105.01.P10.016
20/25	40	47	105.01.P10.025
32/40	55	62	105.01.P10.040
50	75	82	105.01.P10.050
63	87	94	105.01.P10.063

ISO-KF SEALS

This part consists of KF seals products.
Check out this section for products NW10-NW50.



ISO-KF Elastomer Seals Outer Centered

Applications and features:

•Nominal diameters 10 to 50 mm •Replaceable o-ring •For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications •Inner support ring for UHV applications •Inner and outer center ring with intrinsic torque deactivate •It is recommended to use the outer center ring in high pressure condition

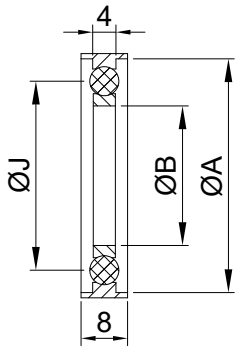
Material
Rings: Aluminium (EN AW-6082/3.2315) Stainless Steel (AISI 304/1.4301, AISI 316L/1.4404)

Elastomers: EPDM, FKM, Silicon, NBR, FEP
(For more information see o-ring pages)

Temperature Range
(Consider the temperature range of the O-Ring)
For more information, please see page 40.

Pressure Range*
Elastomer seal:
10^{-7} mbar to 2.5 bar

**Consider sealing materials and fasteners*



Size (DN)	A (mm)	B (mm)	J (mm)	O-Ring	Order No (6082 T6)	Order No (SS304)	Order No (SS316L)
10/16	30	16	23	FKM	200.01.A10.016.001	200.01.S20.016.001	200.01.S30.016.001
20/25	40	24	33	FKM	200.01.A10.025.001	200.01.S20.025.001	200.01.S30.025.001
32/40	55	40	48	FKM	200.01.A10.040.001	200.01.S20.040.001	200.01.S30.040.001
50	75	50	59	FKM	200.01.A10.050.001	200.01.S20.050.001	200.01.S30.050.001
10/16	30	16	23	FEP	200.01.A10.016.002	200.01.S20.016.002	200.01.S30.016.002
20/25	40	24	33	FEP	200.01.A10.025.002	200.01.S20.025.002	200.01.S30.025.002
32/40	55	40	48	FEP	200.01.A10.040.002	200.01.S20.040.002	200.01.S30.040.002
50	75	50	59	FEP	200.01.A10.050.002	200.01.S20.050.002	200.01.S30.050.002
10/16	30	16	23	NBR	200.01.A10.016.003	200.01.S20.016.003	200.01.S30.016.003
20/25	40	24	33	NBR	200.01.A10.025.003	200.01.S20.025.003	200.01.S30.025.003
32/40	55	40	48	NBR	200.01.A10.040.003	200.01.S20.040.003	200.01.S30.040.003
50	75	50	59	NBR	200.01.A10.050.003	200.01.S20.050.003	200.01.S30.050.003

Size (DN)	A (mm)	B (mm)	J (mm)	O-Ring	Order No (6082 T6)	Order No (SS304)	Order No (SS316L)
10/16	30	16	23	EPDM	200.01.A10.016.004	200.01.S20.016.004	200.01.S30.016.004
20/25	40	24	33	EPDM	200.01.A10.025.004	200.01.S20.025.004	200.01.S30.025.004
32/40	55	40	48	EPDM	200.01.A10.040.004	200.01.S20.040.004	200.01.S30.040.004
50	75	50	59	EPDM	200.01.A10.050.004	200.01.S20.050.004	200.01.S30.050.004
10/16	30	16	23	KALREZ	200.01.A10.016.005	200.01.S20.016.005	200.01.S30.016.005
20/25	40	24	33	KALREZ	200.01.A10.025.005	200.01.S20.025.005	200.01.S30.025.005
32/40	55	40	48	KALREZ	200.01.A10.040.005	200.01.S20.040.005	200.01.S30.040.005
50	75	50	59	KALREZ	200.01.A10.050.005	200.01.S20.050.005	200.01.S30.050.005
10/16	30	16	23	SILICON	200.01.A10.016.006	200.01.S20.016.006	200.01.S30.016.006
20/25	40	24	33	SILICON	200.01.A10.025.006	200.01.S20.025.006	200.01.S30.025.006
32/40	55	40	48	SILICON	200.01.A10.040.006	200.01.S20.040.006	200.01.S30.040.006
50	75	50	59	SILICON	200.01.A10.050.006	200.01.S20.050.006	200.01.S30.050.006

ISO-KF Elastomer Seals Inner Centered

Applications and features:

•Nominal diameters 10 to 50 mm •Replaceable o-ring •For High Vacuum (HV) Applications •Inner centered ring intrinsic torque deactivate

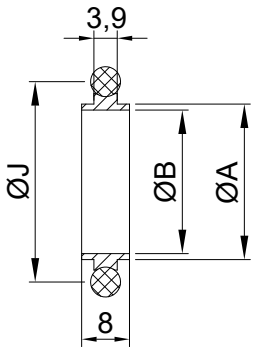
Material
Rings: Aluminium (EN AW-6082/3.2315) Stainless Steel (AISI 304/1.4301, AISI 316L/1.4404)

Elastomers: EPDM, FKM, Silicon, NBR, FEP
(For more information see o-ring pages)

Temperature Range
(Consider the temperature range of the O-Ring)
For more information, please see page 40.

Pressure Range*
Elastomer seal:
10^{-7} mbar to 2.5 bar

**Consider sealing materials and fasteners*



Size (DN)	A (mm)	B (mm)	J (mm)	O-Ring	Order No (6082 T6)	Order No (SS304)	Order No (SS316L)
10	12	10	20	FKM	201.01.A10.010.001	201.01.S20.010.001	201.01.S30.010.001
16	17	16	23	FKM	201.01.A10.016.001	201.01.S20.016.001	201.01.S30.016.001
20	22	20	30	FKM	201.01.A10.020.001	201.01.S20.020.001	201.01.S30.020.001
25	26	24	33	FKM	201.01.A10.025.001	201.01.S20.025.001	201.01.S30.025.001
32	34	32	40	FKM	201.01.A10.032.001	201.01.S20.032.001	201.01.S30.032.001
40	41	40	48	FKM	201.01.A10.040.001	201.01.S20.040.001	201.01.S30.040.001
50	52	50	60,5	FKM	201.01.A10.050.001	201.01.S20.050.001	201.01.S30.050.001
10	12	10	20	FEP	201.01.A10.010.002	201.01.S20.010.002	201.01.S30.010.002
16	17	16	23	FEP	201.01.A10.016.002	201.01.S20.016.002	201.01.S30.016.002
20	22	20	30	FEP	201.01.A10.020.002	201.01.S20.020.002	201.01.S30.020.002
25	26	24	33	FEP	201.01.A10.025.002	201.01.S20.025.002	201.01.S30.025.002
32	34	32	40	FEP	201.01.A10.032.002	201.01.S20.032.002	201.01.S30.032.002
40	41	40	48	FEP	201.01.A10.040.002	201.01.S20.040.002	201.01.S30.040.002
50	52	50	60,5	FEP	201.01.A10.050.002	201.01.S20.050.002	201.01.S30.050.002
10	12	10	20	NBR	201.01.A10.010.003	201.01.S20.010.003	201.01.S30.010.003
16	17	16	23	NBR	201.01.A10.016.003	201.01.S20.016.003	201.01.S30.016.003
20	22	20	30	NBR	201.01.A10.020.003	201.01.S20.020.003	201.01.S30.020.003
25	26	24	33	NBR	201.01.A10.025.003	201.01.S20.025.003	201.01.S30.025.003
32	34	32	40	NBR	201.01.A10.032.003	201.01.S20.032.003	201.01.S30.032.003
40	41	40	48	NBR	201.01.A10.040.003	201.01.S20.040.003	201.01.S30.040.003
50	52	50	60,5	NBR	201.01.A10.050.003	201.01.S20.050.003	201.01.S30.050.003

Size (DN)	A (mm)	B (mm)	J (mm)	O-Ring	Order No (6082 T6)	Order No (SS304)	Order No (SS316L)
10	12	10	20	EPDM	201.01.A10.010.004	201.01.S20.010.004	201.01.S30.010.004
16	17	16	23	EPDM	201.01.A10.016.004	201.01.S20.016.004	201.01.S30.016.004
20	22	20	30	EPDM	201.01.A10.020.004	201.01.S20.020.004	201.01.S30.020.004
25	26	24	33	EPDM	201.01.A10.025.004	201.01.S20.025.004	201.01.S30.025.004
32	34	32	40	EPDM	201.01.A10.032.004	201.01.S20.032.004	201.01.S30.032.004
40	41	40	48	EPDM	201.01.A10.040.004	201.01.S20.040.004	201.01.S30.040.004
50	52	50	60,5	EPDM	201.01.A10.050.004	201.01.S20.050.004	201.01.S30.050.004
10	12	10	20	KALREZ	201.01.A10.010.005	201.01.S20.010.005	201.01.S30.010.005
16	17	16	23	KALREZ	201.01.A10.016.005	201.01.S20.016.005	201.01.S30.016.005
20	22	20	30	KALREZ	201.01.A10.020.005	201.01.S20.020.005	201.01.S30.020.005
25	26	24	33	KALREZ	201.01.A10.025.005	201.01.S20.025.005	201.01.S30.025.005
32	34	32	40	KALREZ	201.01.A10.032.005	201.01.S20.032.005	201.01.S30.032.005
40	41	40	48	KALREZ	201.01.A10.040.005	201.01.S20.040.005	201.01.S30.040.005
50	52	50	60,5	KALREZ	201.01.A10.050.005	201.01.S20.050.005	201.01.S30.050.005
10	12	10	20	SILICON	201.01.A10.010.006	201.01.S20.010.006	201.01.S30.010.006
16	17	16	23	SILICON	201.01.A10.016.006	201.01.S20.016.006	201.01.S30.016.006
20	22	20	30	SILICON	201.01.A10.020.006	201.01.S20.020.006	201.01.S30.020.006
25	26	24	33	SILICON	201.01.A10.025.006	201.01.S20.025.006	201.01.S30.025.006
32	34	32	40	SILICON	201.01.A10.032.006	201.01.S20.032.006	201.01.S30.032.006
40	41	40	48	SILICON	201.01.A10.040.006	201.01.S20.040.006	201.01.S30.040.006
50	52	50	60,5	SILICON	201.01.A10.050.006	201.01.S20.050.006	201.01.S30.050.006

ISO-KF Elastomer Seals Inner Centered without o-ring

Applications and features:

•Nominal diameters 10 to 50 mm

•For High Vacuum (HV) Applications

Material

Rings:
Aluminium (EN AW-6082/3.2315)
Stainless Steel (AISI 304/1.4301, AISI 316L/1.4404)

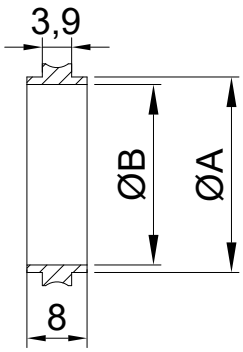
Temperature Range

EN AW-6082/3.2315: -196 to 200 °C
SS304/1.4301: -196 to 300 °C
SS316L/1.4404: -196 to 350 °C

Pressure Range*

Elastomer seal:
10^{-7} mbar to 2.5 bar

**Consider sealing materials and fasteners*



Size (DN)	A (mm)	B (mm)	Order No.(6082 T6)	Order No.(SS304)	Order No.(SS316L)
10	12	10	298.01.A10.010.003	298.01.S20.010.003	298.01.S30.010.003
16	17	16	298.01.A10.016.003	298.01.S20.016.003	298.01.S30.016.003
20	22	20	298.01.A10.020.003	298.01.S20.020.003	298.01.S30.020.003
25	26	24	298.01.A10.025.003	298.01.S20.025.003	298.01.S30.025.003
32	34	32	298.01.A10.032.003	298.01.S20.032.003	298.01.S30.032.003
40	41	40	298.01.A10.040.003	298.01.S20.040.003	298.01.S30.040.003
50	52	50	298.01.A10.050.003	298.01.S20.050.003	298.01.S30.050.003

ISO-KF Elastomer Seals Reducer Inner Centered

Applications and features:

•Nominal diameters 10 to 50 mm •Replaceable o-ring •For High Vacuum (HV) Applications

•For Obsolete Bore Sizes

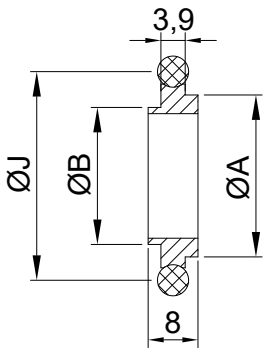
Material
Rings: Aluminium (EN AW-6082/3.2315) Stainless Steel (AISI 304/1.4301, AISI 316L/1.4404)

Elastomers: EPDM, FKM, Silicon, CR, NBR, FEP (For more information see o-ring pages)

Temperature Range
(Consider the temperature range of the O-Ring)
For more information, please see page 40.

Pressure Range*
Elastomer seal:
10^{-7} mbar to 2.5 bar

**Consider sealing materials and fasteners*



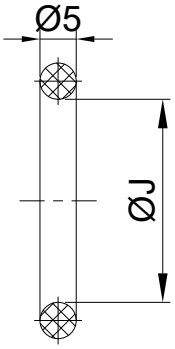
Size (DN)	A (mm)	B (mm)	J (mm)	O-Ring	Order No (6082 T6)	Order No (SS304)	Order No (SS316L)
10/16	17	12	23	FKM	202.01.A10.016.001	202.01.S20.016.001	202.01.S30.016.001
20/25	26	22	33	FKM	202.01.A10.025.001	202.01.S20.025.001	202.01.S30.025.001
32/40	41	34	48	FKM	202.01.A10.040.001	202.01.S20.040.001	202.01.S30.040.001
10/16	17	12	23	FEP	202.01.A10.016.002	202.01.S20.016.002	202.01.S30.016.002
20/25	26	22	33	FEP	202.01.A10.025.002	202.01.S20.025.002	202.01.S30.025.002
32/40	41	34	48	FEP	202.01.A10.040.002	202.01.S20.040.002	202.01.S30.040.002
10/16	17	12	23	NBR	202.01.A10.016.003	202.01.S20.016.003	202.01.S30.016.003
20/25	26	22	33	NBR	202.01.A10.025.003	202.01.S20.025.003	202.01.S30.025.003
32/40	41	34	48	NBR	202.01.A10.040.003	202.01.S20.040.003	202.01.S30.040.003
10/16	17	12	23	EPDM	202.01.A10.016.004	202.01.S20.016.004	202.01.S30.016.004
20/25	26	22	33	EPDM	202.01.A10.025.004	202.01.S20.025.004	202.01.S30.025.004
32/40	41	34	48	EPDM	202.01.A10.040.004	202.01.S20.040.004	202.01.S30.040.004
10/16	17	12	23	KALREZ	202.01.A10.016.005	202.01.S20.016.005	202.01.S30.016.005
20/25	26	22	33	KALREZ	202.01.A10.025.005	202.01.S20.025.005	202.01.S30.025.005
32/40	41	34	48	KALREZ	202.01.A10.040.005	202.01.S20.040.005	202.01.S30.040.005
10/16	17	12	23	SILICON	202.01.A10.016.006	202.01.S20.016.006	202.01.S30.016.006
20/25	26	22	33	SILICON	202.01.A10.025.006	202.01.S20.025.006	202.01.S30.025.006
32/40	41	34	48	SILICON	202.01.A10.040.006	202.01.S20.040.006	202.01.S30.040.006

ISO-KF O-RING

Applications and features:

•Nominal diameters 10 to 50 mm

•For High Vacuum (HV) Applications



Elastomer	Low (°F)	High (°F)	Low (°C)	High (°C)
Buna-N (Nitrile)	-40	250	-40	120
Ethylene Propylene (EPDM)	-60	260	-50	125
Fluorocarbon (Viton®)	-25	400	-30	200
Natural Rubber / Isoprene	-55	210	-45	100
Silicone	-100	450	-70	230
Kalrez	-13	626	-25	330

Size (DN)	J (mm)	Order No (FKM)	Order No (FEP)	Order No (NBR)
10	15	299.01.E10.010.000	299.01.E20.010.000	299.01.E30.010.000
16	18	299.01.E10.016.000	299.01.E20.016.000	299.01.E30.016.000
20	24	299.01.E10.020.000	299.01.E20.020.000	299.01.E30.020.000
25	28	299.01.E10.025.000	299.01.E20.025.000	299.01.E30.025.000
32	35	299.01.E10.032.000	299.01.E20.032.000	299.01.E30.032.000
40	42	299.01.E10.040.000	299.01.E20.040.000	299.01.E30.040.000
50	55	299.01.E10.050.000	299.01.E20.050.000	299.01.E30.050.000

Size (DN)	J (mm)	Order No (EPDM)	Order No (KALREZ)	Order No (SİLİCON)
10	15	299.01.E40.010.000	299.01.E50.010.000	299.01.E60.010.000
16	18	299.01.E40.016.000	299.01.E50.016.000	299.01.E60.016.000
20	24	299.01.E40.020.000	299.01.E50.020.000	299.01.E60.020.000
25	28	299.01.E40.025.000	299.01.E50.025.000	299.01.E60.025.000
32	35	299.01.E40.032.000	299.01.E50.032.000	299.01.E60.032.000
40	42	299.01.E40.040.000	299.01.E50.040.000	299.01.E60.040.000
50	55	299.01.E40.050.000	299.01.E50.050.000	299.01.E60.050.000

ISO-KF Alu Edge Seal Outer Centered

Applications and features:

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications •Cryo Application •Radiation tolerant and nuclear applications •No gas permeation •Cleanroom application compatible

Material

Aluminium
(EN-AW 1050, Soft-annealed)

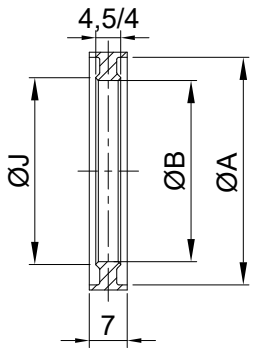
Temperature Range

EN-AW 1050: -196 to 150 °C

Pressure Range*

Metal seal:
10^{-11} mbar to 20 bar

**Consider sealing materials and fasteners*



Size (DN)	A (mm)	B (mm)	J (mm)	Order No (EN-AW 1050)
10/16	30	20	23	203.01.A20.016.000
20/25	40	32	33	203.01.A20.025.000
32/40	55	45	48	203.01.A20.040.000
50	75	65	68	203.01.A20.050.000

- For single use only

ISO-KF Alu Edge Seal One-Side Outer Centered

Applications and features:

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications •Cryo Application •Radiation tolerant and nuclear applications •No gas permeation •Cleanroom application compatible

Material

Aluminium
(EN-AW 1050, Soft-annealed)

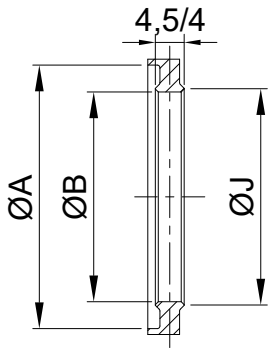
Temperature Range

EN-AW 1050: -196 to 150 °C

Pressure Range*

Metal seal:
10^{-11} mbar to 20 bar

**Consider sealing materials and fasteners*



Size (DN)	A (mm)	B (mm)	J (mm)	Order No (EN-AW 1050)
10/16	30	20	23	204.01.A20.016.000
20/25	40	32	33	204.01.A20.025.000
32/40	55	45	48	204.01.A20.040.000
50	75	65	68	204.01.A20.050.000

• For single use only

ISO-KF Alu Edge Seal Inner Centered

Applications and features:

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications •Cryo Application •Radiation tolerant and nuclear applications •No gas permeation •Cleanroom application compatible

Material

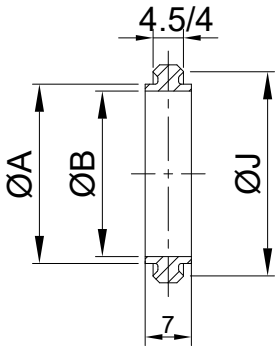
Aluminium
(EN-AW 1050, Soft-annealed)

Temperature Range

EN-AW 1050: -196 to 150 °C

Pressure Range*

Metal seal:
10^{-11} mbar to 20 bar



Size (DN)	A (mm)	B (mm)	J (mm)	Order No (EN-AW 1050)
10	12	10	18	205.01.A20.010.000
16	17	15	21	205.01.A20.016.000
20	22	20	27	205.01.A20.020.000
25	26	24	30	205.01.A20.025.000
32	34	32	38	205.01.A20.032.000
40	41	39	47	205.01.A20.040.000
50	52	50	59	205.01.A20.050.000

• For single use only

ISO-KF Alu Edge Seal One-Side Inner Centered

Applications and features:

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications •Cryo Application •Radiation tolerant and nuclear applications •No gas permeation •Cleanroom application compatible

Material

Aluminium
(EN-AW 1050, Soft-annealed)

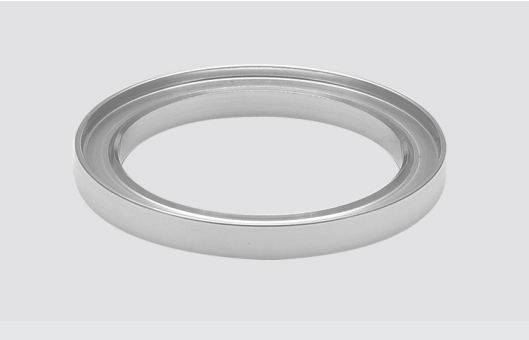
Temperature Range

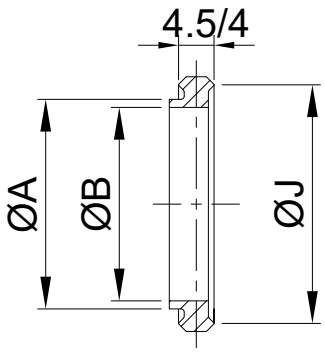
EN-AW 1050: -196 to 150 °C

Pressure Range*

Metal seal:
10^{-11} mbar to 20 bar

**Consider sealing materials and fasteners*





Size (DN)	A (mm)	B (mm)	J (mm)	Order No (EN-AW 1050)
10	12	10	18	206.01.A20.010.000
16	17	15	21	206.01.A20.016.000
20	22	20	27	206.01.A20.020.000
25	26	24	30	206.01.A20.025.000
32	34	32	38	206.01.A20.032.000
40	41	39	47	206.01.A20.040.000
50	52	50	59	206.01.A20.050.000

• For single use only

ISO-KF CLAMPS

This part consists of KF clamps products.
Check out this section for products NW10-NW50.

ISO-KF Wingnut CNC Machined Clamp

Applications and features:

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) Applications •For inner and outer center rings •Hinged, two-part device •Cnc machined clamp •For extra rigid strenghth and durable •Quick assembly and removal. •Stainless steel bolt and wing nut.

Material

Aluminium
(EN AW-6082 T6/3.2315)

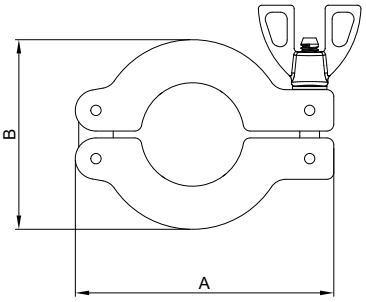
Temperature Range

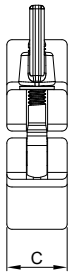
EN AW-6082/3.2315: -196 to 200 °C

Pressure Range*

Elastomer seal:
10^{-7} mbar to 1.5 bar

**Consider sealing materials and fasteners*





Size (DN)	A (mm)	B (mm)	C (mm)	Order No. (Uncoated)	Order No. (Natural Anodized)	Order No. (PTFE Plated)	Order No. (Nickel Plated)
10/16	65	45	17,5	300.01.A10.016.001	300.01.A11.016.001	300.01.A12.016.001	300.01.A13.016.001
20/25	75	55	17,5	300.01.A10.025.001	300.01.A11.025.001	300.01.A12.025.001	300.01.A13.025.001
32/40	95	72	17,5	300.01.A10.040.001	300.01.A11.040.001	300.01.A12.040.001	300.01.A13.040.001
50	115	95	22	300.01.A10.050.001	300.01.A11.050.001	300.01.A12.050.001	300.01.A13.050.001

Uncoated

For general use

PTFE Plated

Used with aluminium KF vacuum equipment
Low surface friction
High corrosion resistance
Non stick
Advanced release feature
High resistance to chemicals
Dielecttric property

Natural Anodized

For frequently opened and closed connections
Low surface friction
High corrosion resistance
High wear resistance
Dielecttric property

Nickel Plated

High corrosion resistance
High wear resistance
View of a glossy surface

ISO-KF Hexnut CNC Machined Clamp

Applications and features:

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) Applications •For inner and outer center rings •Hinged, two-part device •Cnc machined clamp •For extra rigid strenghth and durable •Quick assembly and removal. •Stainless steel bolt and hex nut.

Material

Aluminium
(EN AW-6082 T6/3.2315)

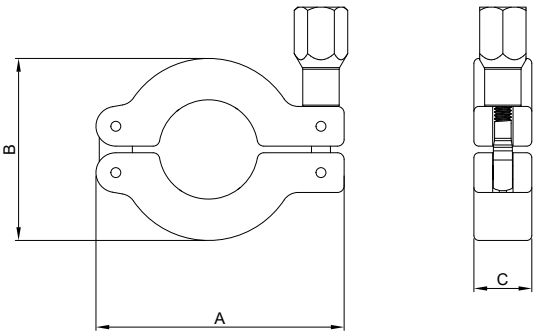
Temperature Range

EN AW-6082/3.2315: -196 to 200 °C

Pressure Range*

Elastomer seal:
10^{-7} mbar to 1.5 bar

**Consider sealing materials and fasteners*



Size (DN)	A (mm)	B (mm)	C (mm)	Order No. (Uncoated)	Order No. (Natural Anodized)	Order No. (PTFE Plated)	Order No. (Nickel Plated)
10/16	65	45	17,5	300.01.A10.016.002	300.01.A11.016.002	300.01.A12.016.002	300.01.A13.016.002
20/25	75	55	17,5	300.01.A10.025.002	300.01.A11.025.002	300.01.A12.025.002	300.01.A13.025.002
32/40	95	72	17,5	300.01.A10.040.002	300.01.A11.040.002	300.01.A12.040.002	300.01.A13.040.002
50	115	95	22	300.01.A10.050.002	300.01.A11.050.002	300.01.A12.050.002	300.01.A13.050.002

Uncoated

For general use

PTFE Plated

Used with aluminium KF vacuum equipment
Low surface friction
High corrosion resistance
Non stick
Advanced release feature
High resistance to chemicals
Dielecttric property

Natural Anodized

For frequently opened and closed connections
Low surface friction
High corrosion resistance
High wear resistance
Dielecttric property

Nickel Plated

High corrosion resistance
High wear resistance
View of a glossy surface

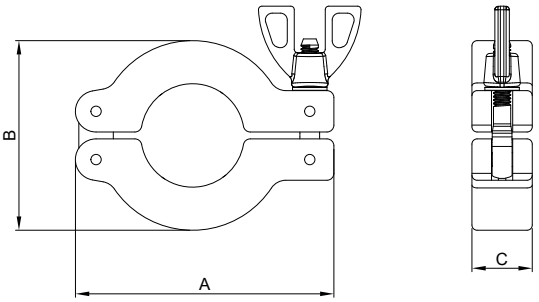
ISO-KF Wingnut Casting Al Clamp

Applications and features:

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) Applications •For inner and outer center rings •Die casting aluminium clamp •Hinged, two-part device •Quick assembly and removal. •Stainless steel bolt and wig nut.

Material	Temperature Range	Pressure Range*
Aluminium	Aluminium: -196 to 150 °C	**Elastomer seal:** 10^{-7} mbar to 1.5 bar

**Consider sealing materials and fasteners*



Size (DN)	A (mm)	B (mm)	C (mm)	Order No (Uncoated)
10/16	62	45	17	301.01.A30.016.001
20/25	72	55	17	301.01.A30.025.001
32/40	92	70	17	301.01.A30.040.001
50	112	90	22	301.01.A30.050.001

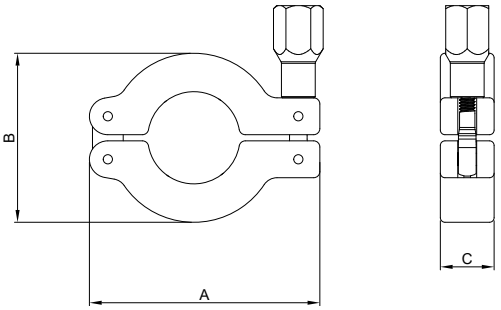
ISO-KF Hexnut Casting Al Clamp

Applications and features:

•Nominal diameters 10 to 50 mm •For High Vacuum (UHV) Applications •For inner and outer center rings •Die casting aluminium clamp •Hinged, two-part device •Quick assembly and removal. •Stainless steel bolt and hex nut.

Material	Temperature Range	Pressure Range*
Aluminium	Aluminium: -196 to 150 °C	**Elastomer seal:** 10^{-7} mbar to 1.5 bar

**Consider sealing materials and fasteners*



Size (DN)	A (mm)	B (mm)	C (mm)	Order No (Uncoated)
10/16	62	45	17	301.01.A30.016.002
20/25	72	55	17	301.01.A30.025.002
32/40	92	70	17	301.01.A30.040.002
50	112	90	22	301.01.A30.050.002

ISO-KF Wingnut Casting SS Clamp

Applications and features:

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications •For inner and outer center rings •Die casting aluminium clamp •Hinged, two-part device •Quick assembly and removal. •Stainless steel bolt and wig nut.

Material

Stainless Steel
(AISI 304/1.4301, AISI 316L/1.4404)

Temperature Range

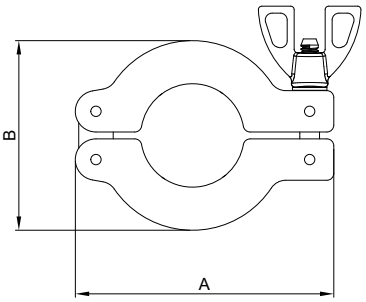
SS304/1.4301: -196 to 300 °C
SS316L/1.4404: -196 to 350 °C

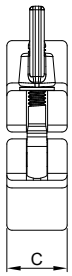
Pressure Range*

Elastomer seal:
10^{-7} mbar to 2.5 bar

Metal seal:
10^{-9} mbar to 2.5 bar

**Consider sealing materials and fasteners*





Size (DN)	A (mm)	B (mm)	C (mm)	Order No (SS304)	Order No (SS316)
10/16	60	42	16	302.01.S20.016.001	302.01.S30.016.001
20/25	70	50	16	302.01.S20.025.001	302.01.S30.025.001
32/40	90	66,5	16	302.01.S20.040.001	302.01.S30.040.001
50	115	90	19	302.01.S20.050.001	302.01.S30.050.001

ISO-KF Hexnut Casting SS Clamp

Applications and features:

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications •For inner and outer center rings •Die casting aluminium clamp •Hinged, two-part device •For extra rigid strenghth and durable •Quick assembly and removal. •Stainless steel bolt and hex nut.

Material

Stainless Steel
(AISI 304/1.4301, AISI 316L/1.4404)

Temperature Range

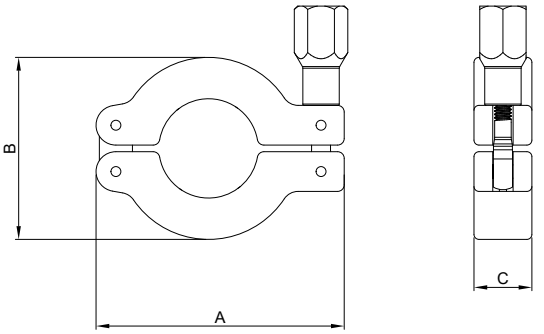
SS304/1.4301: -196 to 300 °C
SS316L/1.4404: -196 to 350 °C

Pressure Range*

Elastomer seal:
10^{-7} mbar to 2.5 bar

Metal seal:
10^{-9} mbar to 2.5 bar

**Consider sealing materials and fasteners*



Size (DN)	A (mm)	B (mm)	C (mm)	Order No (SS304)	Order No (SS316)
10/16	60	42	16	302.01.S20.016.002	302.01.S30.016.002
20/25	70	50	16	302.01.S20.025.002	302.01.S30.025.002
32/40	90	66,5	16	302.01.S20.040.002	302.01.S30.040.002
50	115	90	19	302.01.S20.050.002	302.01.S30.050.002

ISO-KF Claw (Wall) Clamp

Applications and features:

•For High Vacuum (HV) Applications •Nominal diameters 10 to 50 mm •Suitable for use with elastomer seals •For installing on a base plate with KF centering ring •Aluminium body, stainless steel bolt. •Cast steel •Short and long versions available •Spring loaded lock-washers, single Claw Clamp for bolting KF flanges to bulkheads •Can be used instead of bulkhead clamps •Wide range optimised for many applications •Holes: Needed number of tapped holes in base plate: 4x90° (Thread: M6, depth: min. 6 mm)

Material

Aluminium
(EN AW-6082 T6/3.2315)

Bolt: A2-70 stainless steel
(Hexagon Head, M6 x 20 mm)

Temprature Range

EN AW-6082/3.2315: -196 to 200 °C
SS304/1.4301: -196 to 300 °C
SS316L/1.4404: -196 to 350 °C

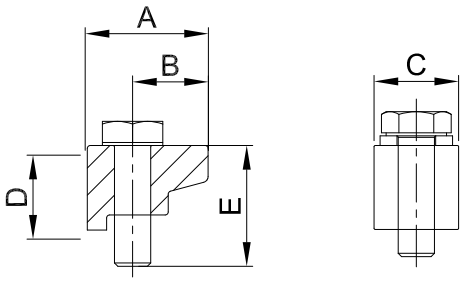
Pressure Range*

Elastomer seal:
10^{-7} mbar to 2.5 bar

Torque

Max 8 Nm

**Consider sealing materials and fasteners*



Size (DN)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	Material	Order No
10/50	20	12,5	14	14	20	**AL-6082 T6**	303.01.A10.000.001
10/50	20	12,5	14	14	20	**AISI 304**	303.01.S20.000.001
10/50	20	12,5	14	14	20	**AISI 316L**	303.01.S30.000.001

ISO-KF Bulkhead Clamp

Applications and features:

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) Applications •For installing on a base plate with KF centering ring •Holes: Needed number of tapped holes in base plate: 4x90° (Thread: M5, depth: min. 6 mm) •Provides simple and secure baseplate connection •Stainless Steel bolts and washers included • Suitable for use with elastomer seals •For mounting on a base plate with KF centered ring

Material

Aluminium
(EN AW-6082 T6/3.2315)

Bolt: A2-70 stainless steel DIN933 (Hexagon Head, M5 x 20 mm, Silver Plated)

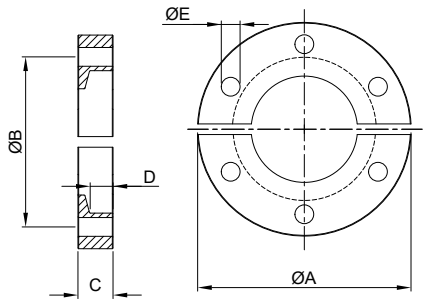
Temprature Range

EN AW-6082/3.2315: -196 to 200 °C

Pressure Range*

Elastomer seal:
10^{-7} mbar to 2.5 bar

**Consider sealing materials and fasteners*



Size (DN)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	Order No
10/16	50,8	38,1	9,2	6,5	5,3	304.01.A10.016.001
20/25	60,3	48	9,9	6,5	5,3	304.01.A10.025.001
32/40	74,6	62	9,3	65	5,3	304.01.A10.040.001
50	94,9	82,6	10,4	6,5	5,3	304.01.A10.050.001

ISO-KF FITTINGS

This part consists of KF fittings products.
Check out this section for products NW10-NW50.

ISO-KF Straight Reducer

Applications and features:

•For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications •For inner and outer center rings •Suitable for use with elastomer seals •Straight through •Flange to Flange Straight Reducer •Symmetric, nonrotatable geometries •Single piece and welded construction

Material

Aluminium
(EN AW-6082/3.2315)

Stainless Steel
(AISI 304/1.4301, AISI 316L/1.4404)

Temperature Range

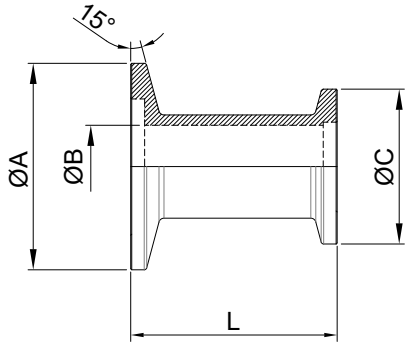
EN AW-6082/3.2315: -196 to 200 °C
SS304/1.4301: -196 to 300 °C
SS316L/1.4404: -196 to 350 °C

Pressure Range*

Elastomer seal:
10^{-7} mbar to 2.5 bar

Metal seal:
10^{-11} mbar to 2.5 bar

**Consider sealing materials and fasteners*



Flang Size (DN)	Reducer Flange Size (DN)	A (mm)	B (mm)	C (mm)	L	Order No (AL-6082 T6)	Order No (AISI 304)	Order No (AISI 316L)
25	10	40	10	30	28		400.01.S20.210.028	400.01.S30.210.028
25	10	40	10	30	30	400.01.A10.210.030		
25	10	40	10	30	40		400.01.S20.210.040	400.01.S30.210.040
25	16	40	16	30	28	400.01.A10.216.028	400.01.S20.216.028	400.01.S30.216.028
25	16	40	16	30	30	400.01.A10.216.030		
25	16	40	16	30	40	400.01.A10.216.040	400.01.S20.216.040	400.01.S30.216.040
40	10	55	10	30	28	400.01.A10.410.028	400.01.S20.410.028	400.01.S30.410.028
40	10	55	10	30	30	400.01.A10.410.030		
40	10	55	10	30	40		400.01.S20.410.040	400.01.S30.410.040
40	16	55	16	30	28	400.01.A10.416.028	400.01.S20.416.028	400.01.S30.416.028
40	16	55	16	30	30	400.01.A10.416.030		
40	16	55	16	30	40	400.01.A10.416.040	400.01.S20.416.040	400.01.S30.416.040
40	25	55	24	40	28	400.01.A10.425.028	400.01.S20.425.028	400.01.S30.425.028
40	25	55	24	40	30	400.01.A10.425.030		
40	25	55	24	40	40	400.01.A10.425.040	400.01.S20.425.040	400.01.S30.425.040
50	16	75	16	30	28		400.01.S20.516.028	400.01.S30.516.028
50	16	75	16	30	30	400.01.A10.516.030		
50	16	75	16	30	40		400.01.S20.516.040	400.01.S30.516.040
50	25	75	24	40	28	400.01.A10.525.028	400.01.S20.525.028	400.01.S30.525.028
50	25	75	24	40	30	400.01.A10.525.030		
50	25	75	24	40	40	400.01.A10.525.040	400.01.S20.525.040	400.01.S30.525.040
50	40	75	40	55	28	400.01.A10.540.028	400.01.S20.540.028	400.01.S30.540.028
50	40	75	40	55	30	400.01.A10.540.030		
50	40	75	40	55	40	400.01.A10.540.040	400.01.S20.540.040	400.01.S30.540.040

ISO-KF Conical Reducer

Applications and features:

•For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications •For inner and outer center rings •Suitable for use with elastomer seals •Straight through •Flange to Flange Straight Reducer •Symmetric, nonrotatable geometries •Single piece and welded construction

Material

Stainless Steel
(AISI 304/1.4301, AISI 316L/1.4404)

Temperature Range

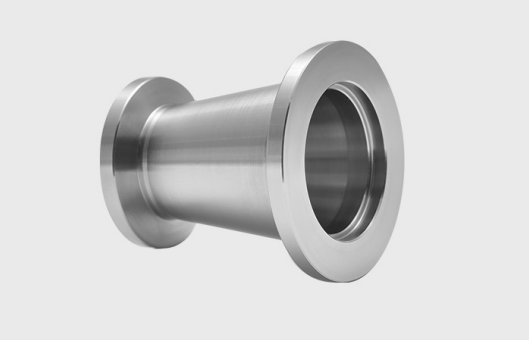
SS304/1.4301: -196 to 300 °C
SS316L/1.4404: -196 to 350 °C

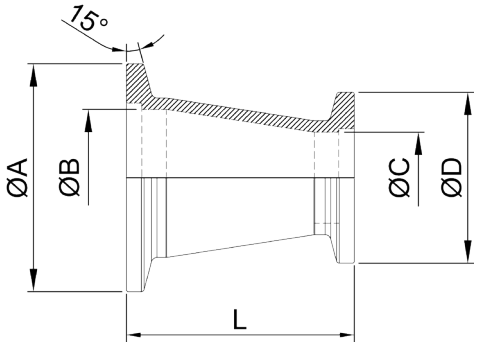
Pressure Range*

Elastomer seal:
10^{-7} mbar to 2.5 bar

Metal seal:
10^{-11} mbar to 2.5 bar

**Consider sealing materials and fasteners*





Flange Size (DN)	Reducer Flange Size (DN)	A (mm)	B (mm)	C (mm)	D (mm)	L (mm)	Order No (AISI 304)	Order No (AISI 316L)
25	16	40	24	16	30	28		401.01.S30.216.028
25	16	40	24	16	30	40	401.01.S20.216.040	
40	16	55	24	16	30	28		401.01.S30.416.028
40	16	55	24	16	30	40	401.01.S20.416.040	
40	25	55	40	24	40	28		401.01.S30.425.028
40	25	55	40	24	40	40	401.01.S20.425.040	
50	16	75	50	16	30	40	401.01.S20.516.040	
50	25	75	50	24	40	28		401.01.S30.525.028
50	25	75	50	24	28	40	401.01.S20.525.040	
50	40	75	50	40	55	28		401.01.S30.540.028
50	40	75	50	40	55	40	401.01.S20.540.040	401.01.S30.540.040

ISO-KF Hose Nozzles

Applications and features:

•Nominal diameters 10 to 50 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications
•Fastener See “Hose Clamp”

Material

Aluminium
(EN AW-6082/3.2315)

Stainless Steel
(AISI 304/1.4301, AISI 316L/1.4404)

Temperature Range

Aluminum
-196 to 150°C

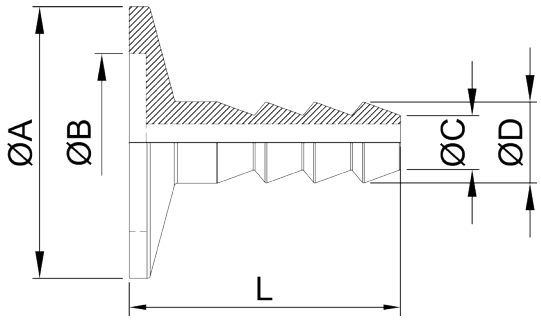
Stainless Steel
-196 to 300 °C (304/1.4301),
-196 to 350 °C (316L/1.4404)*

Pressure Range*

Elastomer seal:
10^{-7} mbar to 2.5 bar

Metal seal:
10^{-11} mbar to 2.5 bar

**Consider sealing materials and fasteners*



Size (DN)	A (mm)	B (mm)	C (mm)	D (mm)	L (mm)	Order No (6082 T6)	Order No (AISI 304)	Order No (AISI 316L)
10	30	12,2	4	8	40	402.01.A10.010.001	402.01.S20.010.001	402.01.S30.010.001
10	30	12,2	8	12	40	402.01.A10.010.002	402.01.S20.010.002	402.01.S30.010.002
16	30	17,2	4	8	40	402.01.A10.016.001	402.01.S20.016.001	402.01.S30.016.001
16	30	17,2	8	12	40	402.01.A10.016.002	402.01.S20.016.002	402.01.S30.016.002
25	40	26,2	4	8	40	402.01.A10.025.001	402.01.S20.025.001	402.01.S30.025.001
25	40	26,2	8	12	40	402.01.A10.025.002	402.01.S20.025.002	402.01.S30.025.002
25	40	26,2	12	16	40		402.01.S20.025.003	402.01.S30.025.003
25	40	26,2	16	20	40		402.01.S20.025.004	402.01.S30.025.004
40	55	41,2	4	8	40	402.01.A10.040.001	402.01.S20.040.001	402.01.S30.040.001
40	55	41,2	8	12	40	402.01.A10.040.002	402.01.S20.040.002	402.01.S30.040.002
40	55	41,2	12	16	40		402.01.S20.040.003	402.01.S30.040.003
40	55	41,2	16	20	40		402.01.S20.040.004	402.01.S30.040.004
40	55	41,2	20	25	40		402.01.S20.040.005	402.01.S30.040.005
50	75	52,2	4	8	40	402.01.A10.050.001	402.01.S20.050.001	402.01.S30.050.001
50	75	52,2	8	12	40	402.01.A10.050.002	402.01.S20.050.002	402.01.S30.050.002
50	75	52,2	12	16	40	402.01.A10.050.003	402.01.S20.050.003	402.01.S30.050.003
50	75	52,2	16	20	40	402.01.A10.050.004	402.01.S20.050.004	402.01.S30.050.004
50	75	52,2	20	25	40	402.01.A10.050.005	402.01.S20.050.005	402.01.S30.050.005

ISO-KF
LARGE

This part consists of Large KF Flanges and Seals.
Check out this section for products NW63-NW250

ISO-KF Large Welding Flange NW63-250

Applications and features:

•Self-aligning •Nominal diameters 63 to 250 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications •Convenient for aluminium edge type seals •For inner and outer center rings •Extreme surface sensitive and flatness even under high bending. •Standard tube weld preparation •Accepts standard tubing

Material

Stainless Steel
(AISI 304/1.4301, AISI 316L/1.4404)

Temperature Range

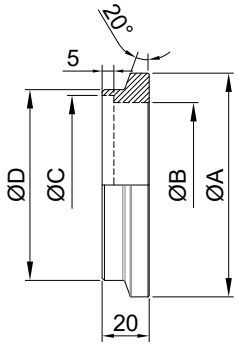
SS304/1.4301: -196 to 300 °C
SS316L/1.4404: -196 to 350 °C

Pressure Range*

Elastomer seal:
10^{-7} mbar to 2.5 bar

Metal seal:
10^{-11} mbar to 2.5 bar

**Consider sealing materials and fasteners*



Size (DN)	A (mm)	B (mm)	C (mm)	D (mm)	Order No (AISI 304)	Order No (AISI 316L)
63	95	70	76	81	100.02.S20.063.020	100.02.S30.063.020
80	114	83	89	97	100.02.S20.080.020	100.02.S30.080.020
100	134	102	108	117	100.02.S20.100.020	100.02.S30.100.020
125	161	127	133	144	100.02.S20.125.020	100.02.S30.125.020
160	190	153	159	168	100.02.S20.160.020	100.02.S30.160.020
200	252	213	219	230	100.02.S20.200.020	100.02.S30.200.020
250	301	261	173	279	100.02.S20.250.020	100.02.S30.250.020

ISO-KF Large Blanking Flange NW63-250

Applications and features:

•Use as To Close Off Unused Ports •Nominal diameters 63 to 250 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications •Convenient for aluminium edge type seals •For inner and outer center rings •Can be machined and welded •Custom lengths available upon request (Please observe limits for seal materials and fastening elements)

Material

Aluminium
(EN AW-6082/3.2315)

Stainless Steel
(AISI 304/1.4301, AISI 316L/1.4404)

Temperature Range

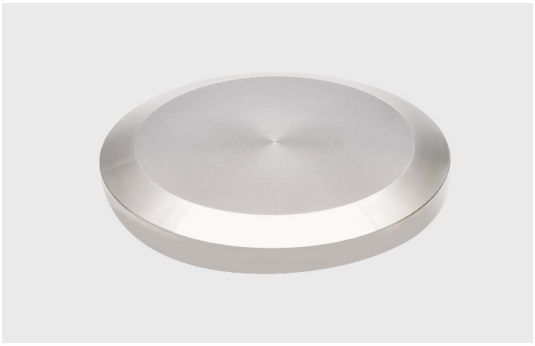
EN AW-6082/3.2315: -196 to 200 °C
SS304/1.4301: -196 to 300 °C
SS316L/1.4404: -196 to 350 °C

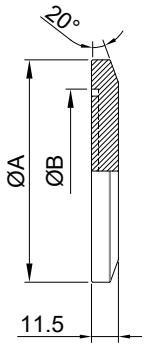
Pressure Range*

Elastomer seal:
10^{-7} mbar to 2.5 bar

Metal seal:
10^{-11} mbar to 2.5 bar

**Consider sealing materials and fasteners*





Size (DN)	A (mm)	B (mm)	Order No (AL-6082 T6)	Order No (AISI 304)	Order No (AISI 316L)
63	95	70	101.02.A10.063.000	101.02.S20.063.000	101.02.S30.063.000
80	114	83	101.02.A10.080.000	101.02.S20.080.000	101.02.S30.080.000
100	134	102	101.02.A10.100.000	101.02.S20.100.000	101.02.S30.100.000
125	161	127	101.02.A10.125.000	101.02.S20.125.000	101.02.S30.125.000
160	190	153	101.02.A10.160.000	101.02.S20.160.000	101.02.S30.160.000
200	252	213	101.02.A10.200.000	101.02.S20.200.000	101.02.S30.200.000
250	301	261	101.02.A10.250.000	101.02.S20.250.000	101.02.S30.250.000

ISO-KF Large Elastomer Seals Inner Centered Without Outer Ring

Applications and features:

•Nominal diameters 63 to 250 mm

•For High Vacuum (HV) Applications

Material

Rings:
Aluminium
EN AW-6082/3.2315

Stainless Steel (AISI 304/1.4301, AISI 316L/1.4404)

Temperature Range

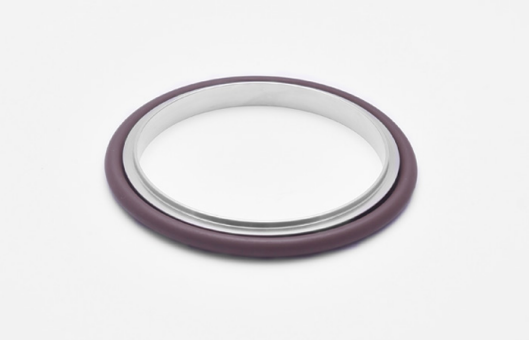
(Consider the temperature range of the O-Ring)

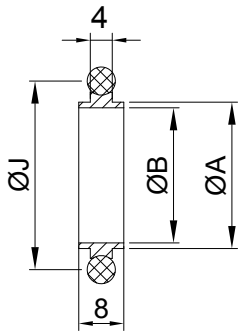
EN AW-6082/3.2315: -196 to 200 °C
SS304/1.4301: -196 to 300 °C
SS316L/1.4404: -196 to 350 °C

Pressure Range*

Elastomer seal:
10^{-7} mbar to 2.5 bar

**Consider sealing materials and fasteners*





Size (DN)	A (mm)	B (mm)	J (mm)	O-Ring	Order No (6082 T6)	Order No (SS304)	Order No (SS316L)
63	70	68	81	FKM	201.02.A10.063.001	201.02.S20.063.001	201.02.S30.063.001
80	83	81	93	FKM	201.02.A10.080.001	201.02.S20.080.001	201.02.S30.080.001
100	102	100	115	FKM	201.02.A10.100.001	201.02.S20.100.001	201.02.S30.100.001
125	127	125	140	FKM	201.02.A10.125.001	201.02.S20.125.001	201.02.S30.125.001
160	153	151	160	FKM	201.02.A10.160.001	201.02.S20.160.001	201.02.S30.160.001
200	213	211	220	FKM	201.02.A10.200.001	201.02.S20.200.001	201.02.S30.200.001
250	261	259	265	FKM	201.02.A10.250.001	201.02.S20.250.001	201.02.S30.250.001
63	70	68	81	FEP	201.02.A10.063.002	201.02.S20.063.002	201.02.S30.063.002
80	83	81	93	FEP	201.02.A10.080.002	201.02.S20.080.002	201.02.S30.080.002
100	102	100	115	FEP	201.02.A10.100.002	201.02.S20.100.002	201.02.S30.100.002
125	127	125	140	FEP	201.02.A10.125.002	201.02.S20.125.002	201.02.S30.125.002
160	153	151	160	FEP	201.02.A10.160.002	201.02.S20.160.002	201.02.S30.160.002
200	213	211	220	FEP	201.02.A10.200.002	201.02.S20.200.002	201.02.S30.200.002
250	261	259	265	FEP	201.02.A10.250.002	201.02.S20.250.002	201.02.S30.250.002
63	70	68	81	NBR	201.02.A10.063.003	201.02.S20.063.003	201.02.S30.063.003
80	83	81	93	NBR	201.02.A10.080.003	201.02.S20.080.003	201.02.S30.080.003
100	102	100	115	NBR	201.02.A10.100.003	201.02.S20.100.003	201.02.S30.100.003
125	127	125	140	NBR	201.02.A10.125.003	201.02.S20.125.003	201.02.S30.125.003
160	153	151	160	NBR	201.02.A10.160.003	201.02.S20.160.003	201.02.S30.160.003
200	213	211	220	NBR	201.02.A10.200.003	201.02.S20.200.003	201.02.S30.200.003
250	261	259	265	NBR	201.02.A10.250.003	201.02.S20.250.003	201.02.S30.250.003

Size (DN)	A (mm)	B (mm)	J (mm)	O-Ring	Order No (6082 T6)	Order No (SS304)	Order No (SS316L)
63	70	68	81	EPDM	201.02.A10.063.004	201.02.S20.063.004	201.02.S30.063.004
80	83	81	93	EPDM	201.02.A10.080.004	201.02.S20.080.004	201.02.S30.080.004
100	102	100	115	EPDM	201.02.A10.100.004	201.02.S20.100.004	201.02.S30.100.004
125	127	125	140	EPDM	201.02.A10.125.004	201.02.S20.125.004	201.02.S30.125.004
160	153	151	160	EPDM	201.02.A10.160.004	201.02.S20.160.004	201.02.S30.160.004
200	213	211	220	EPDM	201.02.A10.200.004	201.02.S20.200.004	201.02.S30.200.004
250	261	259	265	EPDM	201.02.A10.250.004	201.02.S20.250.004	201.02.S30.250.004
63	70	68	81	KALREZ	201.02.A10.063.005	201.02.S20.063.005	201.02.S30.063.005
80	83	81	93	KALREZ	201.02.A10.080.005	201.02.S20.080.005	201.02.S30.080.005
100	102	100	115	KALREZ	201.02.A10.100.005	201.02.S20.100.005	201.02.S30.100.005
125	127	125	140	KALREZ	201.02.A10.125.005	201.02.S20.125.005	201.02.S30.125.005
160	153	151	160	KALREZ	201.02.A10.160.005	201.02.S20.160.005	201.02.S30.160.005
200	213	211	220	KALREZ	201.02.A10.200.005	201.02.S20.200.005	201.02.S30.200.005
250	261	259	265	KALREZ	201.02.A10.250.005	201.02.S20.250.005	201.02.S30.250.005
63	70	68	81	SILICON	201.02.A10.063.006	201.02.S20.063.006	201.02.S30.063.006
80	83	81	93	SILICON	201.02.A10.080.006	201.02.S20.080.006	201.02.S30.080.006
100	102	100	115	SILICON	201.02.A10.100.006	201.02.S20.100.006	201.02.S30.100.006
125	127	125	140	SILICON	201.02.A10.125.006	201.02.S20.125.006	201.02.S30.125.006
160	153	151	160	SILICON	201.02.A10.160.006	201.02.S20.160.006	201.02.S30.160.006
200	213	211	220	SILICON	201.02.A10.200.006	201.02.S20.200.006	201.02.S30.200.006
250	261	259	265	SILICON	201.02.A10.250.006	201.02.S20.250.006	201.02.S30.250.006

ISO-KF Large Elastomer Seals Inner Centered Outer Ring

Applications and features:

•Nominal diameters 63 to 250 mm

•For High Vacuum Applications (HV)

Material

Rings:
Aluminium
EN AW-6082/3.2315

Stainless Steel (AISI 304/1.4301, AISI 316L/1.4404)

Temperature Range

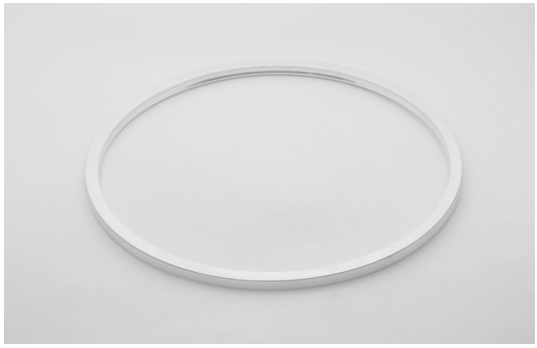
(Consider the temperature range of the O-Ring)

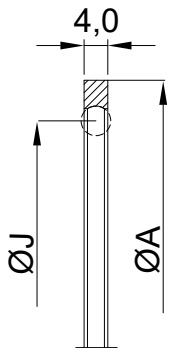
EN AW-6082/3.2315: -196 to 200 °C
SS304/1.4301: -196 to 300 °C
SS316L/1.4404: -196 to 350 °C

Pressure Range*

Elastomer seal:
10^{-7} mbar to 2.5 bar

**Consider sealing materials and fasteners*





Size (DN)	A (mm)	J (mm)	Order No (6082 T6)	Order No (SS304)	Order No (SS3016L)
63	93	80	298.02.A10.063.002	298.02.S20.063.002	298.02.S30.063.002
80	112	98	298.02.A10.080.002	298.02.S20.080.002	298.02.S30.080.002
100	132	118	298.02.A10.100.002	298.02.S20.100.002	298.02.S30.100.002
125	157	144	298.02.A10.125.002	298.02.S20.125.002	298.02.S30.125.002
160	182	167	298.02.A10.160.002	298.02.S20.160.002	298.02.S30.160.002
200	250	227	298.02.A10.200.002	298.02.S20.200.002	298.02.S30.200.002
250	299	275	298.02.A10.250.002	298.02.S20.250.002	298.02.S30.250.002

ISO-KF Large Alu Edge Seal Outer Centered

Applications and features:

•Nominal diameters 63 to 250 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications •Cryo Application •Radiation tolerant and nuclear applications •No gas permeation •Cleanroom application compatible

Material

Aluminium
(EN-AW 1050, Soft-annealed)

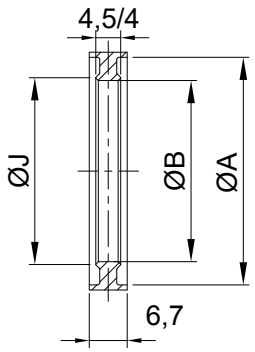
Temperature Range

EN-AW 1050: -196 to 150 °C

Pressure Range*

Metal seal:
10^{-11} mbar to 20 bar

** Consider sealing materials and fasteners*



Size (DN)	A (mm)	B (mm)	J (mm)	Order No (EN-AW 1050)
63	95	85	88	202.02.A20.063.000
80	114	104	107	202.02.A20.080.000
100	134	124	127	202.02.A20.100.000
125	161	151	154	202.02.A20.125.000
160	190	180	183	202.02.A20.160.000
200	252	242	245	202.02.A20.200.000
250	301	191	294	202.02.A20.250.000

• For single use only

We can produce up to ø 1250 mm.

ISO-KF Large Alu Edge Seal Inner Centered

Applications and features:

•Nominal diameters 63 to 250 mm •For High Vacuum (HV) and Ultra-High Vacuum (UHV) Applications •Cryo Application •Radiation tolerant and nuclear applications •No gas permeation •Cleanroom application compatible

Material

Aluminium
(EN-AW 1050, Soft-annealed)

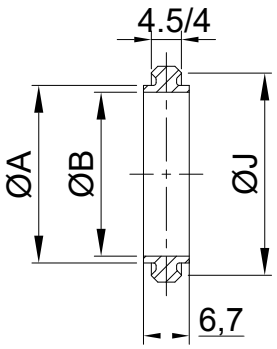
Temperature Range

EN-AW 1050: -196 to 150 °C

Pressure Range*

Metal seal:
10^{-11} mbar to 20 bar

**Consider sealing materials and fasteners*



Size (DN)	A (mm)	B (mm)	J (mm)	Order No (EN-AW 1050)
63	70	68	77	203.02.A20.063.000
80	83	81	90	203.02.A20.080.000
100	102	100	109	203.02.A20.100.000
125	127	125	134	203.02.A20.125.000
160	153	151	160	203.02.A20.160.000
200	213	211	220	203.02.A20.200.000
250	261	259	268	203.02.A20.250.000

• For single use only

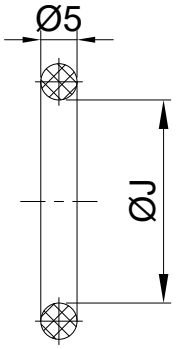
We can produce up to ø 1250 mm.

ISO-KF LARGE O-RING

Applications and features:

•Nominal diameters 63 to 250 mm

•For High Vacuum Applications (HV)



Elastomer	Low (°F)	High (°F)	Low (°C)	High (°C)
Buna-N (Nitrile)	-40	250	-40	120
Ethylene Propylene (EPDM)	-60	260	-50	125
Fluorocarbon (Viton®)	-25	400	-30	200
Natural Rubber / Isoprene	-55	210	-45	100
Silicone	-100	450	-70	230
Kalrez	-13	626	-25	330

Size (DN)	A (mm)	Order No (FKM)	Order No (FEP)	Order No (NBR)
63	76	299.02.E10.063.000	299.02.E20.063.000	299.02.E30.063.000
80	88	299.02.E10.080.000	299.02.E20.080.000	299.02.E30.080.000
100	110	299.02.E10.100.000	299.02.E20.100.000	299.02.E30.100.000
125	135	299.02.E10.125.000	299.02.E20.125.000	299.02.E30.125.000
160	155	299.02.E10.160.000	299.02.E20.160.000	299.02.E30.160.000
200	215	299.02.E10.200.000	299.02.E20.200.000	299.02.E30.200.000
250	260	299.02.E10.250.000	299.02.E20.250.000	299.02.E30.250.000

Size (DN)	A (mm)	Order No (EPDM)	Order No (KALREZ)	Order No (SILICON)
63	76	299.02.E40.063.000	299.02.E50.063.000	299.02.E60.063.000
80	88	299.02.E40.080.000	299.02.E50.080.000	299.02.E60.080.000
100	110	299.02.E40.100.000	299.02.E50.100.000	299.02.E60.100.000
125	135	299.02.E40.125.000	299.02.E50.125.000	299.02.E60.125.000
160	155	299.02.E40.160.000	299.02.E50.160.000	299.02.E60.160.000
200	215	299.02.E40.200.000	299.02.E50.200.000	299.02.E60.200.000
250	260	299.02.E40.250.000	299.02.E50.250.000	299.02.E60.250.000

Future of Vacuum Components

IVAC products are created with 50 years of craftsmanship, experience in the trade, machining experience, family tradition and artisanship. This special collection of products has been developed and tested since 2009.

Let's grow together!

IVAC continues to grow with its 50 employees, 1600 m2 work space, CNC lathe, CNC milling machines and up-to-date technologies, international collaborations and strong references.

WHY IVAC?

- Highest quality and durability
- Most economical! Highest benefit-cost ratio in the market
- Ability to produce for all needs and in any amount
- Tested and approved products
- High reliability
- Long product life
- Fastest production and delivery at all times
- Highly trained and solution-focused personnel
- Constant after-sales customer support
- Unconditional warranty policies for all products

iVAC

INTELLIGENT VACUUM COMPONENTS

Contact Us

We are looking forward to starting our partnership through this IVAC product catalog.

Get in touch today.

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