

## ISO KF &amp; LF FLANGES



ISO-KF (Klein Flange) and LF (Large Flange) flanges are part of the same family of ISO standard elastomer sealed vacuum components. LewVac ISO flanges and fittings are manufactured in accordance with ISO (International Standard Organization) 2861 standards and tolerances. These flanges are an economical, convenient and simplified means of constructing custom vacuum systems.

ISO flanges provide a complete range of fittings to mount with tubing sized 12.7mm (1/2") up to 508mm (20") diameter. The flange system consists of two sexless, 360° rotatable flanges, a centring ring for alignment and support of the sealing ring and a fastener to compress the seal between the two flanges. ISO-KF and LF sealing components are similar, however their fastening methods differ. LewVac offers a broad range of flanges, fittings, valves, traps and accessories with ISO connections that can be used to create a complete vacuum system or pumping line.

#### Specifications

- Vacuum rated to  $1 \times 10^{-8}$  Torr.
- Leak rating  $< 1 \times 10^{-9}$  std. cc/s helium.
- Temperature range:  $-20^{\circ}\text{C}$  to  $150^{\circ}\text{C}$  (\* $200^{\circ}\text{C}$ )
- Standard materials: Flanges and fittings: 304L stainless steel, 6061 T6 aluminium. Seals: Viton®, nitrile & silicone.
- Other materials available.

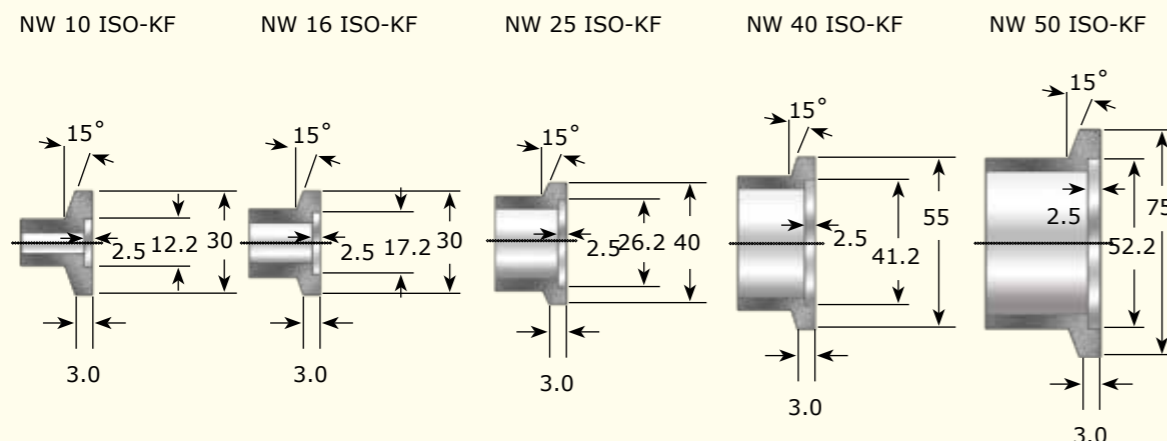
\* - Increased upper limit for intermittent use.

#### Features

- Quickly connect & disconnect.
- Reusable flanges.
- 360° rotatable.
- Sexless flanges.
- Adapters to other flange systems available.
- Compatible with metric and U.S. (imperial) measurements.

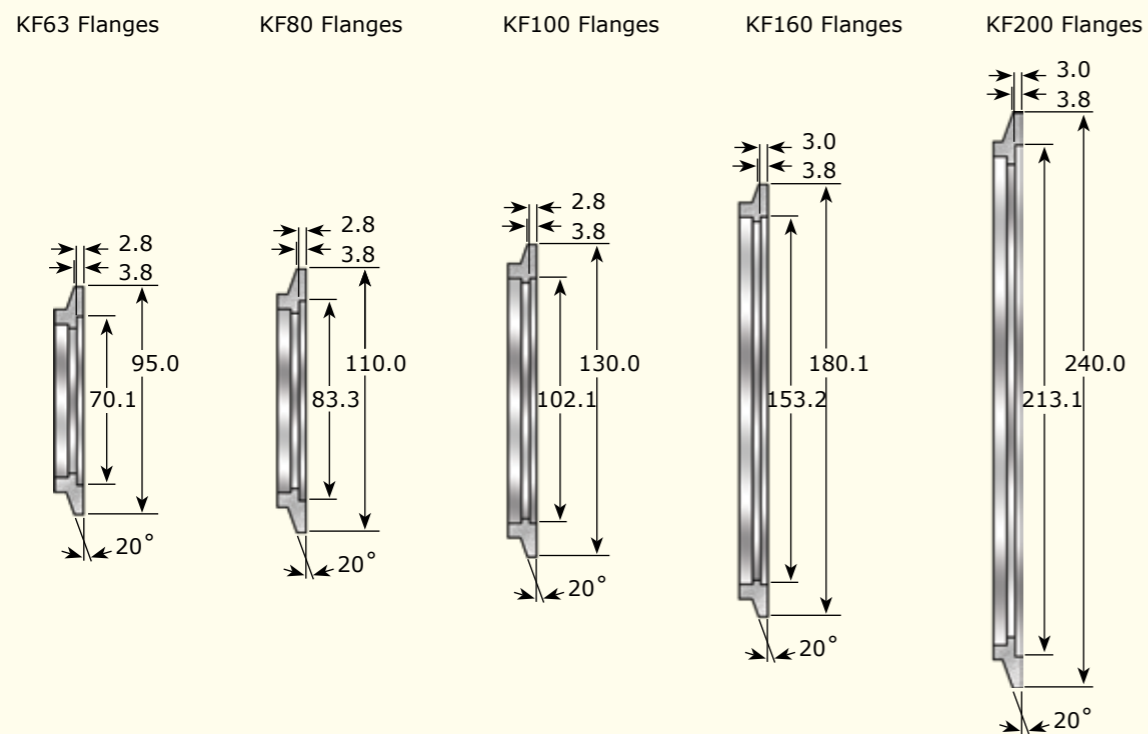
ISO KF & LF Flange Dimensions

Standard ISO KF Flange Dimensions



The ISO standard flange interface dimensions are shown on these two pages and are not repeated throughout the catalogue. Fittings (tees, crosses, elbows, etc.) and adapters, however, have no universal standards. These dimensions are shown throughout the catalogue.

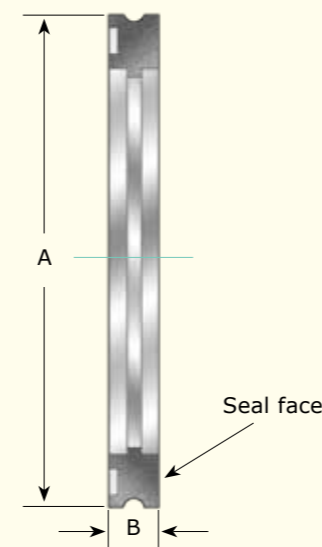
Large Size ISO KF Flange Dimensions



In addition to the standard range (top) of KF flanges, LewVac can now offer KF flanges up to size KF200 (8" / 203.2mm tube outer diameter). ISO standards only apply to KF flanges up to size NW50 (2" / 50.8mm tubing outer diameter). The sizes listed above were developed by vacuum component manufacturers within the United States. KF clamps for these flanges are available in a variety of materials and designs. Adaptive fasteners are also available to allow users to seal directly from an LF or LFB style ISO flange to these more convenient large KF style flanges.

All dimensions are nominal in millimetres unless otherwise specified

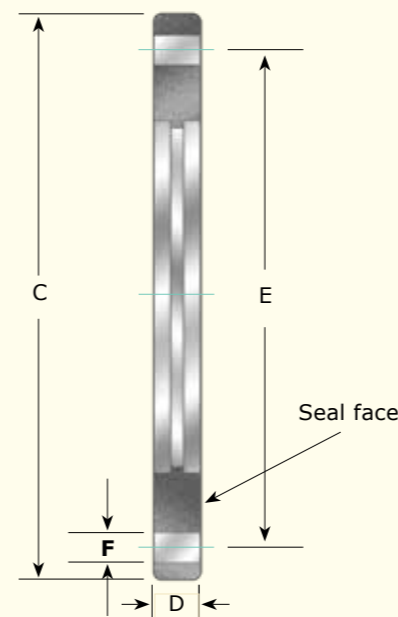
ISO Claw Clamp Flange



ISO LF Flange Dimensions  
Clamp style (ISO-K)

Flange size	Compatible tube OD	A	B	No. clamps required
LF63	63.5	95	12	3 - 4
LF80	76.2	110	12	4 - 8
LF100	101.6	130	12	4 - 8
LF160	152.4	180	12	4 - 8
LF200	203.2	240	12	6 - 12
LF250	254	290	12	6 - 12
LF320	304.8 / 323.9	370	17	8 - 12
LF400	406.4	450	17	8 - 16
LF500	508	550	17	12 - 16

ISO Bolted Flange



ISO LFB Flange Dimensions  
Bolt style (ISO-F)

Flange size	Compatible tube OD	C	D	E	F	No. of holes
LFB63	63.5	130	12	110	9	4
LFB80	76.2	145	12	125	9	8
LFB100	101.6	165	12	145	9	8
LFB160	152.4	225	16	200	11	8
LFB200	203.2	285	16	260	11	12
LFB250	254	335	16	310	11	12
LFB320	304.8 / 323.9	425	20	395	14	12
LFB400	406.4	510	20	480	14	16
LFB500	508	610	20	580	14	16

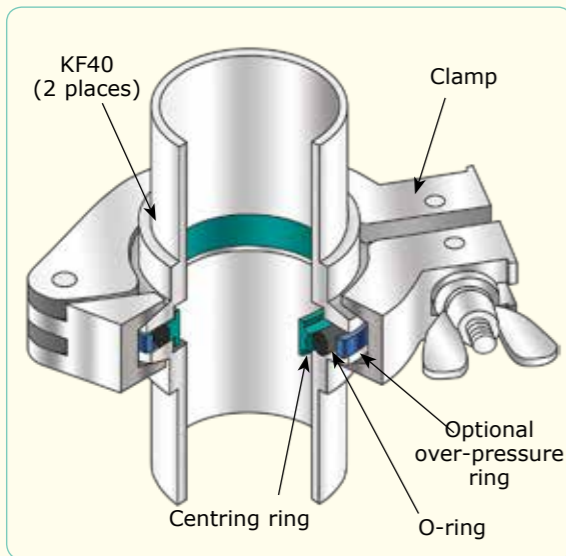
All dimensions are nominal in millimetres unless otherwise specified

## ISO Standard Sealing Assemblies

An ISO seal assembly consists of 3 types of sub-component, two sexless, 360° rotatable flanges, a centring ring for alignment and support of the sealing ring and a fastener to compress the seal between the two flanges. ISO-KF and LF sealing components are similar, however their fastening methods differ. Because of this there are some differences in flange appearance depending on which fastening method you employ. See the illustrations below and on the following pages for quick reference.

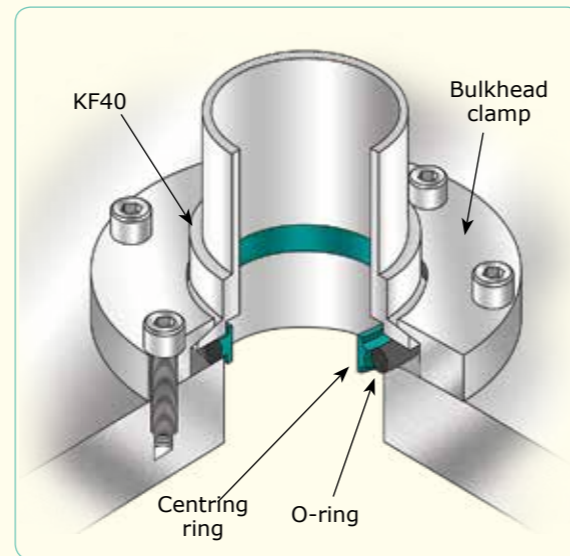
## ISO-KF Quick Clamp Assembly

This is the commonly preferred method for fastening ISO flange connections due to the fact that the KF Clamp offers the fastest and easiest fastening method for creating a reliable ISO vacuum seal. Traditionally these clamps have been limited to use with ISO flanges KF10 to KF50 but LewVac now offers KF clamps and compatible flanges up to size KF200. KF clamps are available in a variety of materials and designs.



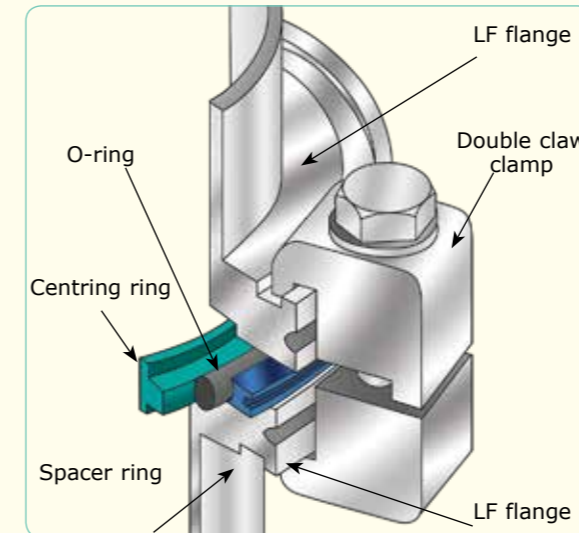
## ISO-KF Bulkhead Clamp Assembly

Bulkhead clamps are used to fasten ISO-KF style flanges directly to valves, chamber walls or baseplates. The object to which the flange is sealing must have a compatible bolt hole pattern and sealing groove machined into the sealing surface.



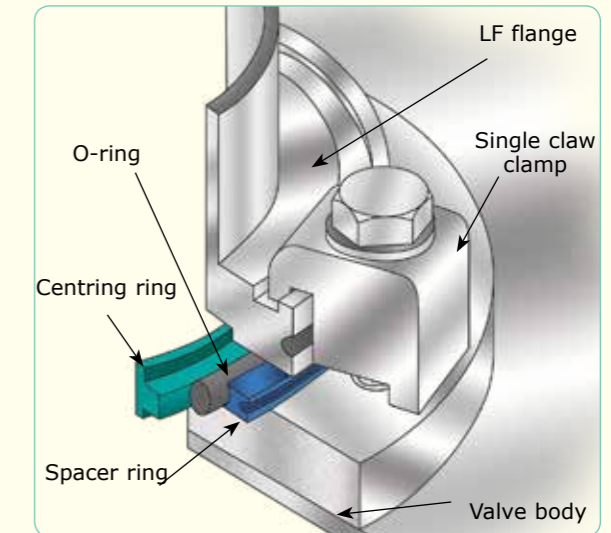
## ISO-LF Double Claw Clamp Assembly

This is traditionally the most popular clamp fastening system for ISO sizes LF63 and larger. This fastening system requires the use of more than one clamp per flange connection. They require more work per seal assembly but they offer greater strength than the quick clamp if the seal assembly must bear a lateral load.



## ISO-LF Single Claw Clamp Assembly

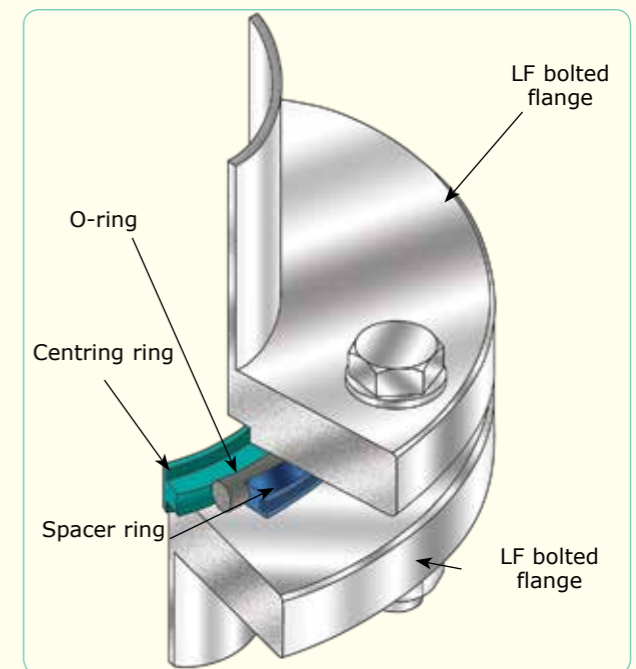
Single claw clamps are used to fasten ISO-LF style clamps directly to LFB flanges with tapped bolt holes, valves, chamber walls or baseplates. The object to which the flange is sealing must have a compatible bolt hole pattern and sealing groove machined into the sealing surface.



## ISO-LFB Assembly

The original means of fastening ISO flange connections offers good lateral load strength like the claw clamp but also requires more than one bolt set per flange connection like the claw clamp. One great disadvantage to using this fastening system is that the user loses the ability to have infinitely rotatable flanges. Great care must be taken to achieve bolt-hole alignment through careful design and installation or the use of rotatable and non-rotatable flanges within your system.

Note: To create a rotatable LFB flange a rotatable bolt ring is added to a standard LF style flange.



All dimensions are nominal in millimetres unless otherwise specified

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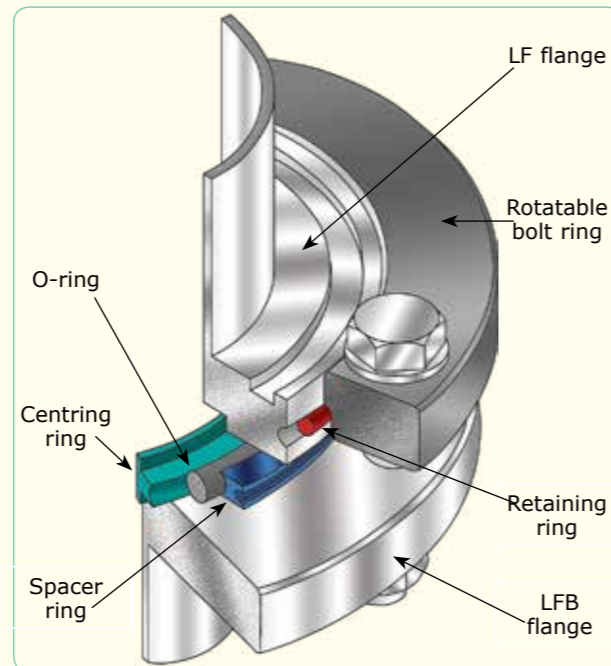


## ISO Adaptive Sealing Assemblies

The ISO vacuum flange system accommodates the need to connect different styles of ISO flanges and fasteners through adaptive subcomponents. These adaptive components fit around the outer diameter of the flange and allow the direct connection of two different types of ISO flange.

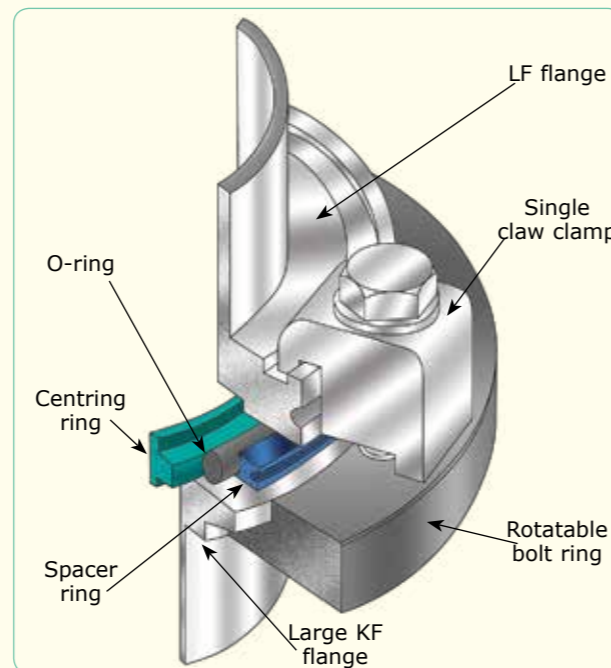
## ISO-LF to ISO-LFB Adaptive Assembly

This fastener sub-component fits around the outer diameter of a claw clamp style LF flange. This allows the flange to behave as a rotatable bolted style LFB flange to ease bolt-hole alignment issues when assembling the vacuum system. This assembly also has the advantage of having a low profile as compared to claw clamp fasteners. After the rotatable bolt ring is mounted to the LF flange a bolt kit is used to fasten the two flanges together.



## ISO-LF to ISO-KF Adaptive Assembly

Adaptive fasteners allow vacuum users to convert directly from one style of ISO fastening flanges to another without the purchase of an adaptive nipple fitting. This saves money and reduces the space needed to accomplish the flange adaptation within your system. The LewVac adaptive ISO fastener can convert a bolted or claw clamp style flange directly to a KF flange for the same tubing diameter.



All dimensions are nominal in millimetres unless otherwise specified

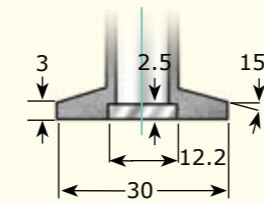
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## International &amp; US Sizes &amp; Dimensions

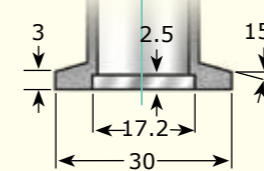
## ISO KF10

- Mates with ISO KF16



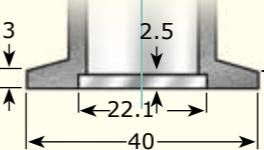
## ISO KF16

- Standard LewVac KF Flange



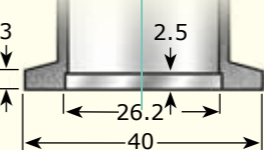
## ISO KF20

- Mates with ISO KF25



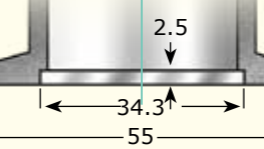
## ISO KF25

- Standard LewVac KF Flange



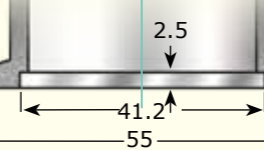
## ISO KF32

- Mates with ISO KF40



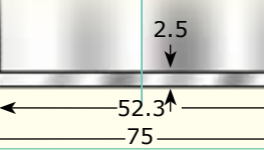
## ISO KF40

- Standard LewVac KF Flange



## ISO KF50

- Standard LewVac KF Flange



All manufacturers of ISO components machine these flanges to measurements determined by the ISO standards referenced on the first page of this introduction, and as such, are interchangeable. It is worth noting that two of the flange sizes detailed on this page, namely the KF20 and KF32 are rarely used by modern vacuum equipment manufacturers and as such are not kept in stock by LewVac. These can be manufactured upon request, but a better option is to use our adaptive centring ring. With our adaptive centring ring, you can adapt directly from a KF10 to a KF16, KF20 to KF25 or KF32 to KF40. The connections can then be fastened with a standard clamp that corresponds with the larger of the two sizes.

The ISO standard flange interface dimensions are shown on pages 3.60 & 3.61 and are not repeated throughout the catalogue. Fittings (tees, crosses, elbows, etc.) and adapters, however, have no universal standards. These dimensions are shown throughout the catalogue.

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## ISO KF &amp; LF Clamps &amp; Fasteners



The ISO flange system has 3 traditional choices with which to fasten together your flanges and create a seal. These are the hinged or band clamp connection, claw clamp connection and bolt kits. In addition to these fasteners there are adaptation bolt rings and bulk head fasteners for special applications. All of these fasteners have advantages for different applications and are described in detail below.

**KF Clamps**

This is the commonly preferred method for fastening ISO flange connections due to the fact that they offer the fastest and easiest fastening method for creating a reliable ISO vacuum seal. Traditionally these clamps have been limited to use with ISO flange sizes KF10 to KF50 but LewVac now offers KF clamps and compatible flanges up to size KF200. KF clamps are available in a variety of materials and designs, see later pages for details.

**Bulkhead Clamps**

Bulkhead clamps are used to fasten ISO-KF style flanges and components directly to valves, chamber walls, baseplates or bulkheads. The object to which the flange is sealing must have a compatible bolt hole pattern and sealing groove machined into the sealing surface.

**Wall Clamps**

Wall clamps are used to fasten ISO-KF style flanges and components directly to valves, chamber walls, baseplates or bulkheads, where space around the fitting is limited. The object to which the flange is sealing must have suitable bolt holes, although these can be positioned at the users discretion to best suit the particular application and location of the joint.

**Claw Clamps**

These clamps require the use of more than one clamp per flange connection. These are traditionally the most popular clamps for ISO sizes LF63 and larger. These clamps are the only clamps capable of sealing sizes LF250 to LF500. Aluminium and stainless steel versions are available

**Bolt Kits**

The original means of fastening ISO flange connections offers good lateral load strength like the claw clamp but also requires more than one bolt set per flange connection like the claw clamp. One great disadvantage to using this fastening system is that the user loses the ability to have infinitely rotatable flanges. Great care must be taken to achieve bolt-hole alignment through careful design and installation or the use of rotatable and non-rotatable flanges within your system.

**Rotatable Bolt Ring & Adaptive Bolt Ring**

Rotatable bolt rings are a sub-component that fits around the outer diameter of a claw clamp style LF flange. This allows the flange to behave as a rotatable bolted style LFB flange to ease bolt-hole alignment issues when assembling the vacuum system. This assembly also has the advantage of having a low profile as compared to claw clamp fasteners. After the rotatable bolt ring is mounted to the LF flange a bolt kit is used to fasten the two flanges together.

Adaptive bolt rings allow vacuum users to convert directly from one style of ISO fastening flanges to another without the purchase of an adaptive nipple fitting. This saves money and reduces the space needed to accomplish the flange adaptation within your system. The LewVac adaptive ISO fastener can convert a bolted or claw clamp style flange directly to a KF clamp flange for the same tubing diameter.

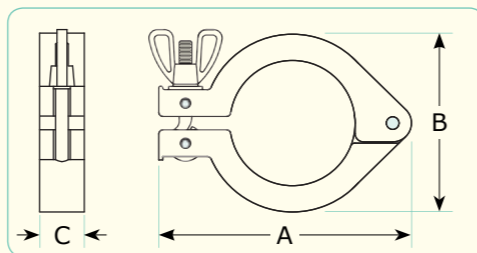
## KF Flange Clamps

## Hinged Clamps - Aluminium



## Features:

- Quick assembly and removal.
- Aluminium clamp.
- Carbon steel bolt
- Ni plated Zn alloy wing nut.



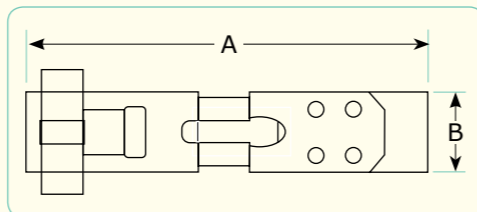
Use With Flange Size	A	B	C	Part Code	Price £	Price €
DN10KF	61	45	16	FL-C16KF		
DN16KF	61	45	16	FL-C16KF		
DN25KF	72	55	16	FL-C25KF		
DN40KF	90	70	16	FL-C40KF		
DN50KF	113	90	20	FL-C50KF		

## Band Clamps - Stainless Steel



## Features:

- Quick assembly and removal.
- Stainless steel construction.



Use With Flange Size	A	B	Part Code	Price £	Price €
DN63KF	99	24	FL-BC63KF		
DN80KF	121	24	FL-BC80KF		
DN100KF	137	24	FL-BC100KF		
DN160KF	184	24	FL-BC160KF		
DN200KF	243	24	FL-BC200KF		

For use with large KF flanges as shown on page 3.82.  
Call sales office for more details.

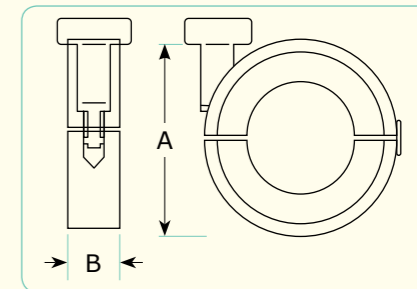
PLEASE NOTE :- Minimum order quantities may apply.

## CNC Clamps - Aluminium



## Features:

- Quick assembly and removal.
- Machined aluminium clamp for increased strength.
- Stainless steel bolt & "T" nut.



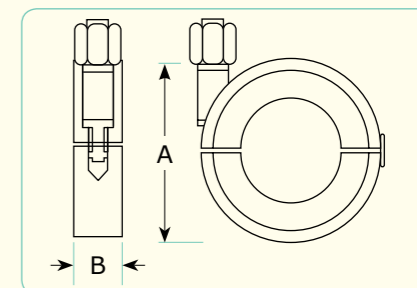
Use With Flange Size	A	B	Part Code	Price £	Price €
DN10KF	49	16	FL-CNC16KF		
DN16KF	49	16	FL-CNC16KF		
DN25KF	62	16	FL-CNC25KF		
DN40KF	75	16	FL-CNC40KF		
DN50KF	100	16	FL-CNC50KF		

## CNC Clamps - Stainless Steel



## Features:

- Quick assembly and removal.
- Machined stainless steel clamp for increased strength.
- Stainless steel bolt & hex nut.



Use With Flange Size	A	B	Part Code	Price £	Price €
DN10KF	49	16	FL-CNCS16KF		
DN16KF	49	16	FL-CNCS16KF		
DN25KF	62	16	FL-CNCS25KF		
DN40KF	75	16	FL-CNCS40KF		
DN50KF	100	16	FL-CNCS50KF		

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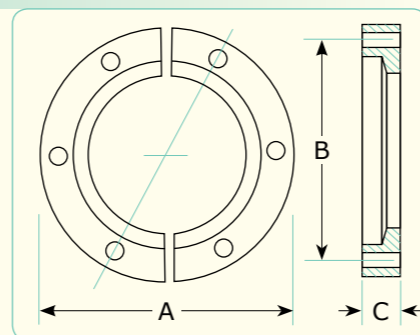
## KF Flange Clamps

## Bulkhead Clamps - Aluminium



## Features:

- Aluminium clamp.
- Stainless steel bolts.
- Supplied with bolts & washers.



Use With Flange Size	No. Of Bolts	Bolt Size	A	B	C	Part Code	Price £	Price €
DN10KF	6	M5x20	51	38.1	9	FL-BC16KF		
DN16KF	6	M5x20	51	38.1	9	FL-BC16KF		
DN25KF	6	M5x20	60	48.0	10	FL-BC25KF		
DN40KF	6	M5x20	75	62.0	10	FL-BC40KF		
DN50KF	8	M5x20	95	82.5	10	FL-BC50KF		

## Wall Clamps - Aluminium



## Features:

- Aluminium clamp.
- Supplied without bolts & washers.

Use With Flange Size	Hole Dia.	Pack Qty.	Part Code	Price £	Price €
All KF	6.4	1	FL-WALLKF		

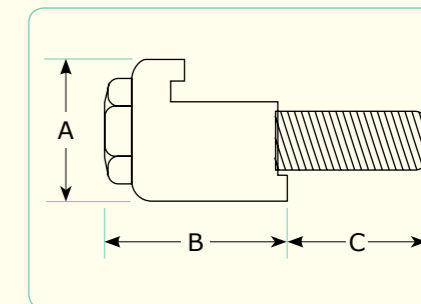
## LF Flange Clamps

## Single Claw Clamps - Aluminium



## Features:

- Aluminium body, stainless steel bolt.



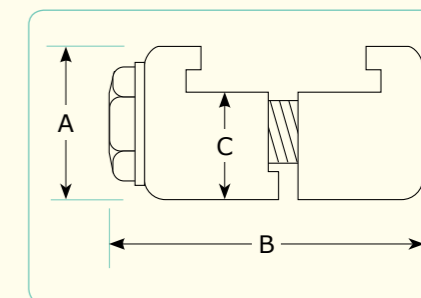
Use With Flange Size	Bolt size	A	B	C	Part Code	Price £	Price €
DN63 - 100LF	M8	25	30	10	FL-SCC63-100LF		
DN160 - 250LF	M10	28	32	8	FL-SCC160-250LF		
DN320 - 500LF	M12	35	39	16	FL-SCC320-500LF		

## Double Claw Clamps - Aluminium



## Features:

- Aluminium body, stainless steel bolt.



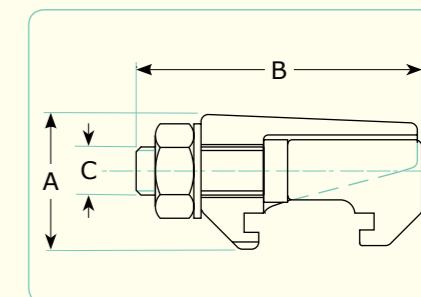
Use With Flange Size	Bolt size	A	B	C	Part Code	Price £	Price €
DN63 - 100LF	M8	25	50	17	FL-DCC63-100LF		
DN160 - 250LF	M10	28	51	21	FL-DCC160-250LF		
DN320 - 500LF	M12	35	67	27	FL-DCC320-500LF		

## Double Sliding Claw Clamps - Stainless Steel



## Features:

- Stainless steel construction.
- Zinc plated mild steel also available.



Use With Flange Size	A	B	C	Part Code	Price £	Price €
DN63 - 250LF	28	62	M10	FL-DCC63-250SS		
DN320 - 500LF	30	76	M12	FL-DCC320-500SS		

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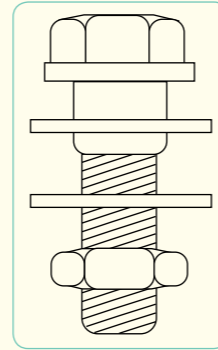
## LF Flange Bolts

## Double Flange Bolts



## Features:

- Stainless steel.
- Includes nuts & washers.



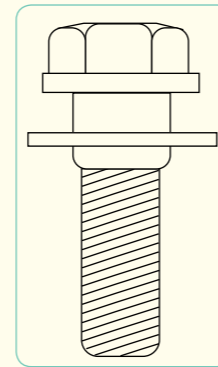
Use With Flange Size	Bolt Size	Pack Qty.	Part Code	Price £	Price €
LF63 - 100	M8x40	25	M8-40		
LF160 - 250	M10x50	25	M10-50		
LF320 - 500	M12x60	25	M12-60		

## Tapped Flange Bolts



## Features:

- Stainless steel.
- Includes washers.



Use With Flange Size	Bolt Size	Pack Qty.	Part Code	Price £	Price €
LF63 - 100	M8x20	25	M8-20		
LF160 - 250	M10x30	25	M10-30		
LF320 - 500	M12x40	25	M12-40		

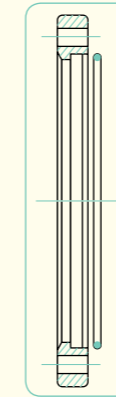
## LF Rotatable Bolt Rings

## Rotatable Bolt Ring



## Features:

- Stainless steel.
- Supplied with split retainer ring.
- Aluminium also available.



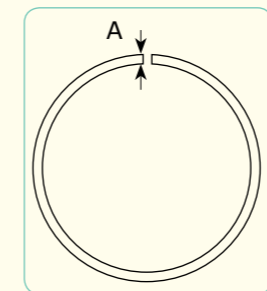
Use With Flange Size	Material	OD	Part Code	Price £	Price €
DN63LF	St.St.	130	FL-RBR63LF		
DN80LF	St.St.	145	FL-RBR80LF		
DN100LF	St.St.	165	FL-RBR100LF		
DN160LF	St.St.	225	FL-RBR160LF		
DN200LF	St.St.	285	FL-RBR200LF		
DN250LF	St.St.	335	FL-RBR250LF		
DN320LF	St.St.	425	FL-RBR320LF		
DN400LF	St.St.	510	FL-RBR400LF		
DN500LF	St.St.	610	FL-RBR500LF		

## Split Retainer Ring



## Features:

- Stainless steel.



Use With Flange Size	Material	A	Part Code	Price £	Price €
DN63LF	St.St.	3	FL-SRR63LF		
DN80LF	St.St.	3	FL-SRR80LF		
DN100LF	St.St.	3	FL-SRR100LF		
DN160LF	St.St.	5	FL-SRR160LF		
DN200LF	St.St.	5	FL-SRR200LF		
DN250LF	St.St.	5	FL-SRR250LF		
DN320LF	St.St.	5	FL-SRR320LF		
DN400LF	St.St.	8	FL-SRR400LF		
DN500LF	St.St.	8	FL-SRR500LF		

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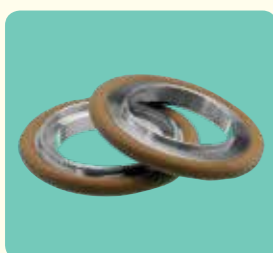
## ISO KF &amp; LF Seals &amp; Centring Rings



LewVac provides high vacuum seals and sealing assemblies for all standard ISO KF & LF sizes. Various different elastomers are available for the sealing ring. Viton® and nitrile are standard, with other materials being available upon request.

**Centring Ring Assemblies**

The basic seal for the ISO flange system includes a supportive inner metallic ring and an elastomer outer ring (o-ring) which is compressed between the ISO flanges to create a vacuum tight seal. LewVac offer a choice of stainless steel or aluminium for the supporting ring and various different elastomers for the sealing ring. Viton® and nitrile are available as standard, with other materials being available upon request.

**Adaptive Centring Ring Assemblies**

These sealing assemblies allow you to adapt directly from the rarely used ISO-KF sizes (KF10, KF20 and KF32) to commonly available ISO-KF sizes (KF16, KF25 and KF40). The adapter assembly can then be fastened with a standard clamp that corresponds with the larger of the two sizes.

**Screen Mesh Centring Ring Assemblies**

These sealing assemblies are useful in many situations in which a vacuum system or instrument needs to be protected from contamination by particulate generated from outside the system, or from within. These seal assemblies are made of the same sub-components as the standard centring ring assemblies. The difference being that the supportive metallic ring for these seals has a screen mesh insert covering the inner aperture.

**Replacement O Rings**

The elastomer sealing rings (o-ring) for the ISO seal assembly must be used in conjunction with a metallic supportive ring. The elastomer component of this sealing assembly is a consumable item. When the o-ring no longer provides consistent vacuum tight seals, replacement elastomer o-rings can be purchased separately from the supportive metallic ring to decrease cost of system maintenance. LewVac offer various different elastomers for the sealing ring. Viton® and nitrile are available as standard, with other materials being available upon request.

**Over Pressure Rings**

This centring ring accessory creates a barrier on the outer diameter of the elastomer sealing ring to prevent "blow out" due to the presence of pressures greater than 1 standard atmosphere within a system. A centring ring assembly with over pressure ring can withstand up to 100psi of pressure, depending on the size of the flange you are using. LewVac CNC machined clamps have a built-in over-pressure ring design. With the use of these clamps there is no need for the added expense of an over pressure ring in addition to the centring ring assembly.

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ISO KF & LF Stainless Steel Centring Rings



**Specifications:**

**Material**

Centring ring 304 St.St. or aluminium  
 Spacer ring (LF only) aluminium

**Temperature Range**

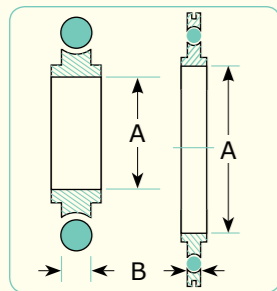
Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

\* - Increased upper limit for intermittent use.

KF centring rings with outer trap ring are available, please contact sales office for details.

**Stainless Steel With Viton® O-Ring**



Use With Flange Size	A	B	Part Code	Price £	Price €
DN10KF	10	3.9	FL-CRSV10KF		
DN16KF	16	3.9	FL-CRSV16KF		
DN25KF	25	3.9	FL-CRSV25KF		
DN40KF	40	3.9	FL-CRSV40KF		
DN50KF	50	3.9	FL-CRSV50KF		
DN63LF	67	3.9	FL-CRSV63LF		
DN80LF	80	3.9	FL-CRSV80LF		
DN100LF	100	3.9	FL-CRSV100LF		
DN160LF	150	3.9	FL-CRSV160LF		
DN200LF	210	3.9	FL-CRSV200LF		
DN250LF	257.5	3.9	FL-CRSV250LF		
DN320LF	312	5.6	FL-CRSV320LF		
DN400LF	394	5.6	FL-CRSV400LF		
DN500LF	494	5.6	FL-CRSV500LF		

**Stainless Steel With Nitrile O-Ring**

Use With Flange Size	A	B	Part Code	Price £	Price €
DN10KF	10	3.9	FL-CRSN10KF		
DN16KF	16	3.9	FL-CRSN16KF		
DN25KF	25	3.9	FL-CRSN25KF		
DN40KF	40	3.9	FL-CRSN40KF		
DN50KF	50	3.9	FL-CRSN50KF		
DN63LF	67	3.9	FL-CRSN63LF		
DN80LF	80	3.9	FL-CRSN80LF		
DN100LF	100	3.9	FL-CRSN100LF		
DN160LF	150	3.9	FL-CRSN160LF		
DN200LF	210	3.9	FL-CRSN200LF		
DN250LF	257.5	3.9	FL-CRSN250LF		
DN320LF	312	5.6	FL-CRSN320LF		
DN400LF	394	5.6	FL-CRSN400LF		
DN500LF	494	5.6	FL-CRSN500LF		

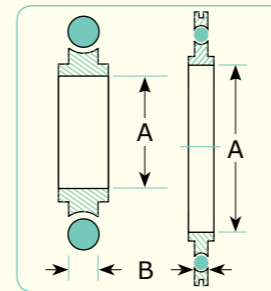
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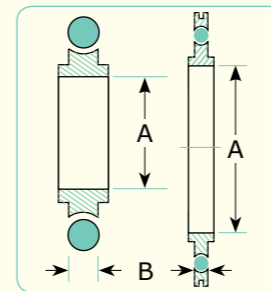
ISO KF & LF Aluminium Centring Rings

**Aluminium With Viton® O-Ring**



Use With Flange Size	A	B	Part Code	Price £	Price €
DN10KF	10	3.9	FL-CRAV10KF		
DN16KF	16	3.9	FL-CRAV16KF		
DN25KF	25	3.9	FL-CRAV25KF		
DN40KF	40	3.9	FL-CRAV40KF		
DN50KF	50	3.9	FL-CRAV50KF		
DN63LF	67	3.9	FL-CRAV63LF		
DN80LF	80	3.9	FL-CRAV80LF		
DN100LF	100	3.9	FL-CRAV100LF		
DN160LF	150	3.9	FL-CRAV160LF		
DN200LF	210	3.9	FL-CRAV200LF		
DN250LF	257.5	3.9	FL-CRAV250LF		
DN320LF	312	5.6	FL-CRAV320LF		
DN400LF	394	5.6	FL-CRAV400LF		
DN500LF	494	5.6	FL-CRAV500LF		

**Aluminium With Nitrile O-Ring**



Use With Flange Size	A	B	Part Code	Price £	Price €
DN10KF	10	3.9	FL-CRAN10KF		
DN16KF	16	3.9	FL-CRAN16KF		
DN25KF	25	3.9	FL-CRAN25KF		
DN40KF	40	3.9	FL-CRAN40KF		
DN50KF	50	3.9	FL-CRAN50KF		
DN63LF	67	3.9	FL-CRAN63LF		
DN80LF	80	3.9	FL-CRAN80LF		
DN100LF	100	3.9	FL-CRAN100LF		
DN160LF	150	3.9	FL-CRAN160LF		
DN200LF	210	3.9	FL-CRAN200LF		
DN250LF	257.5	3.9	FL-CRAN250LF		
DN320LF	312	5.6	FL-CRAN320LF		
DN400LF	394	5.6	FL-CRAN400LF		
DN500LF	494	5.6	FL-CRAN500LF		

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## ISO KF Adaptive Centring Rings



With our adaptive centring ring you can adapt directly from KF10 to KF16, KF20 to KF25 and KF32 to KF40 flanges. The connections can then be fastened with a standard clamp that corresponds with the larger of the two sizes. Adaptation to these standard sizes will greatly expand the number of components that have standard dimensions compatible with your vacuum system. This may ease your system assembly, decrease product delivery time and reduce cost.

**Specifications:****Material**

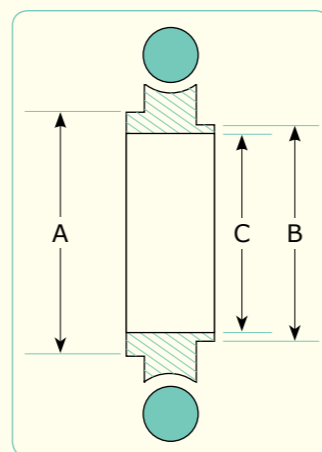
Centring ring 304 St.St. or aluminium

**Temperature Range**

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

\* - Increased upper limit for intermittent use.

**Stainless Steel With Viton® O-Ring**

Use With Flange Size	A	B	C	Part Code	Price £	Price €
DN10/16KF	17	12	10	FL-CRSV10-16KF		
DN20/25KF	26	22	20	FL-CRSV25-20KF		
DN32/40KF	41	34	32	FL-CRSV40-32KF		

**Aluminium With Viton® O-Ring**

Use With Flange Size	A	B	C	Part Code	Price £	Price €
DN10/16KF	17	12	10	FL-CRAV10-16KF		
DN20/25KF	26	22	20	FL-CRAV25-20KF		
DN32/40KF	41	34	32	FL-CRAV40-32KF		

**Stainless Steel With Nitrile O-Ring**

Use With Flange Size	A	B	C	Part Code	Price £	Price €
DN10/16KF	17	12	10	FL-CRSN10-16KF		
DN20/25KF	26	22	20	FL-CRSN25-20KF		
DN32/40KF	41	34	32	FL-CRSN40-32KF		

**Aluminium With Nitrile O-Ring**

Use With Flange Size	A	B	C	Part Code	Price £	Price €
DN10/16KF	17	12	10	FL-CRAN10-16KF		
DN20/25KF	26	22	20	FL-CRAN25-20KF		
DN32/40KF	41	34	32	FL-CRAN40-32KF		

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## ISO KF &amp; LF Centring Rings With Screen

**Specifications:****Material**

Centring ring 304 St.St.

Mesh 304 St.St.

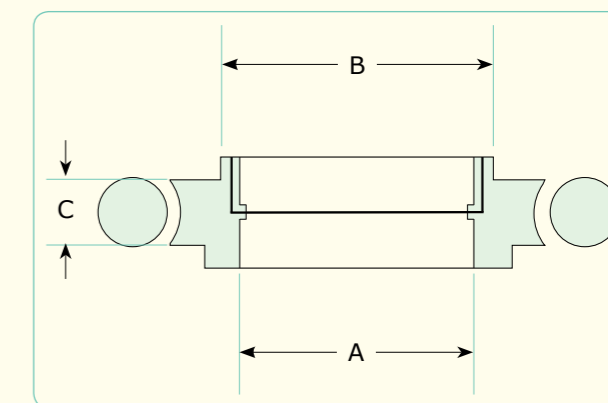
Spacer ring (LF only) Aluminium

**Temperature Range**

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

\* - Increased upper limit for intermittent use.



Screen mesh centring ring assemblies are useful in many situations in which a vacuum system or instrument needs to be protected from contamination by particulate generated from outside the system or from within. The supportive metallic ring for these seals has a screen mesh insert covering the inner aperture. LewVac supplies assemblies as standard with a stainless steel 30 mesh screen. Other mesh sizes (24, 48 & 72) are available on request.

**Stainless Steel With Viton® O-Ring**

Use With Flange Size	A	B	C	Part Code	Price £	Price €
DN16KF	12.0	17	3.9	FL-CRSVM16KF		
DN25KF	20.5	26	3.9	FL-CRSVM25KF		
DN40KF	35.8	41	3.9	FL-CRSVM40KF		
DN50KF	46.3	52	3.9	FL-CRSVM50KF		
DN63LF	60.5	69.6	3.9	FL-CRSVM63LF		
DN80LF	73.6	82.6	3.9	FL-CRSVM80LF		
DN100LF	91.8	101.6	3.9	FL-CRSVM100LF		
DN160LF	143.5	152.6	3.9	FL-CRSVM160LF		

**Stainless Steel With Nitrile O-Ring**

Use With Flange Size	A	B	C	Part Code	Price £	Price €
DN16KF	12.0	17	3.9	FL-CRSNM16KF		
DN25KF	20.5	26	3.9	FL-CRSNM25KF		
DN40KF	35.8	41	3.9	FL-CRSNM40KF		
DN50KF	46.3	52	3.9	FL-CRSNM50KF		
DN63LF	60.5	69.6	3.9	FL-CRSNM63LF		
DN80LF	73.6	82.6	3.9	FL-CRSNM80LF		
DN100LF	91.8	101.6	3.9	FL-CRSNM100LF		
DN160LF	143.5	152.6	3.9	FL-CRSNM160LF		

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ISO KF Over-Pressure Rings



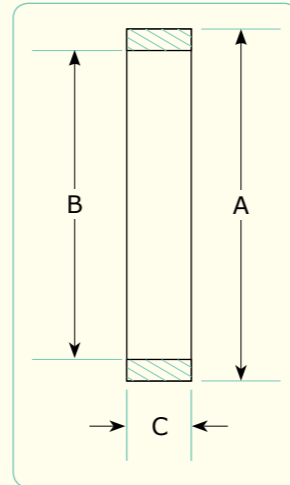
Specifications:

Material

Ring 304 St.St.

Temperature Range

As per o-ring used within assembly



Over-pressure rings create a barrier on the outer diameter of the elastomer sealing ring to prevent "blow out" due to the presence of pressures greater than 1 standard atmosphere within a system. A centring ring assembly with an over-pressure ring can withstand up to 100psi of pressure depending on the size of the flange you are using.

LewVac CNC machined clamps have a built-in over-pressure ring design. With the use of these clamps there is no need for the added expense of an over pressure ring addition to the centring ring assembly.

Over-Pressure Ring

Use With Flange Size	A	B	C	Part Code	Price £	Price €
DN10KF	28.0	23.5	3.7	FL-OPR10KF		
DN16KF	31.8	30.1	3.7	FL-OPR16KF		
DN25KF	40.4	38.9	3.7	FL-OPR25KF		
DN40KF	57.2	54.0	3.7	FL-OPR40KF		
DN50KF	69.9	66.6	3.7	FL-OPR50KF		

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ISO KF & LF Replacement O-Rings

Specifications:

Material

Viton® or nitrile

Temperature Range

Viton® -20°C to 150°C (200°C\*)

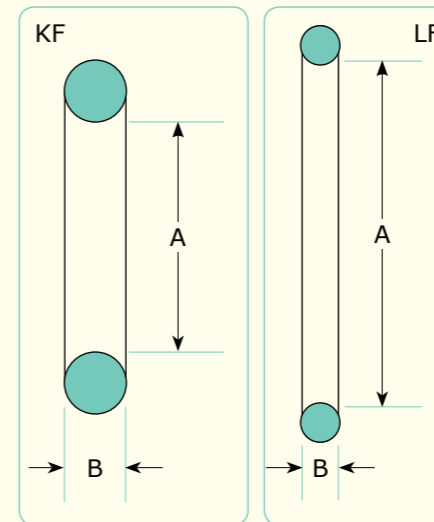
Nitrile -20°C to 80°C (100°C\*)

\* - Increased upper limit for intermittent use.

Other materials available upon request.

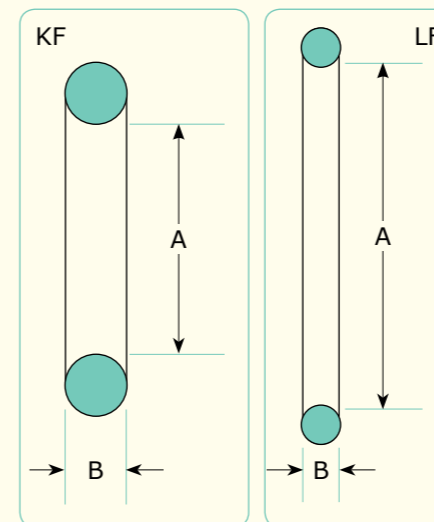


Replacement Viton® O-Ring



Use With Flange Size	A	B	Part Code	Price £	Price €
DN10KF	13.6	5.3	FL-10KF-OV		
DN16KF	18.4	5.3	FL-16KF-OV		
DN25KF	27.9	5.3	FL-25KF-OV		
DN40KF	40.7	5.3	FL-40KF-OV		
DN50KF	53.3	5.3	FL-50KF-OV		
DN63LF	75.6	5.3	FL-63LF-OV		
DN80LF	88.3	5.3	FL-80LF-OV		
DN100LF	107.3	5.3	FL-100LF-OV		
DN160LF	158.1	5.3	FL-160LF-OV		
DN200LF	215.3	5.3	FL-200LF-OV		
DN250LF	266.1	5.3	FL-250LF-OV		
DN320LF	316.9	7.0	FL-320LF-OV		
DN400LF	405.3	7.0	FL-400LF-OV		
DN500LF	506.9	7.0	FL-500LF-OV		

Replacement Nitrile O-Ring



Use With Flange Size	A	B	Part Code	Price £	Price €
DN10KF	13.6	5.3	FL-10KF-ON		
DN16KF	18.4	5.3	FL-16KF-ON		
DN25KF	27.9	5.3	FL-25KF-ON		
DN40KF	40.7	5.3	FL-40KF-ON		
DN50KF	53.3	5.3	FL-50KF-ON		
DN63LF	75.6	5.3	FL-63LF-ON		
DN80LF	88.3	5.3	FL-80LF-ON		
DN100LF	107.3	5.3	FL-100LF-ON		
DN160LF	158.1	5.3	FL-160LF-ON		
DN200LF	215.3	5.3	FL-200LF-ON		
DN250LF	266.1	5.3	FL-250LF-ON		
DN320LF	316.9	7.0	FL-320LF-ON		
DN400LF	405.3	7.0	FL-400LF-ON		
DN500LF	506.9	7.0	FL-500LF-ON		

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## ISO KF &amp; LF Flanges

**Specifications:****Material**

Flanges & fittings 304 St.St.

**Temperature Range**

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

\* - Increased upper limit for intermittent use.

**Features:**

- Reusable flanges.
- 304 stainless steel or aluminium as standard.
- Other materials also available on request.
- Sexless flanges.
- Infinitely rotatable.
- Quick sealing and disassembly.
- Easy installation.
- Variety of fastening options.
- Self centring supportive ring.

**Blank Flanges**

These flanges are manufactured with no weld prep or tubing bore. They are commonly used to close unused ports or they are altered by customers with their own custom machining capability for a special use. LewVac offers blank flanges in 304 stainless steel or aluminium as standard. Other materials are available to special order, please contact our sales office for further details.

**Unbored Stub Flanges**

These flanges are manufactured with no weld prep or tubing bore. They are commonly altered by customers with their own custom machining capability for a special use. LewVac offers unbored stub flanges in 304 stainless steel or aluminium as standard. Other materials are available to special order, please contact sales office for further details.

**Weld Flanges**

These flanges are manufactured with a weld prep and tubing bore for immediate installation on to your system with no additional alteration. LewVac offers weld flanges in 304 stainless steel or aluminium as standard. Other materials are available to special order, please contact our sales office for further details.

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DN10KF Flanges



Specifications:

Material

Flanges 304 St.St. or aluminium

Seals Viton® or nitrile

Temperature Range

Using Viton® o-rings -20°C to 150°C (200°C\*)

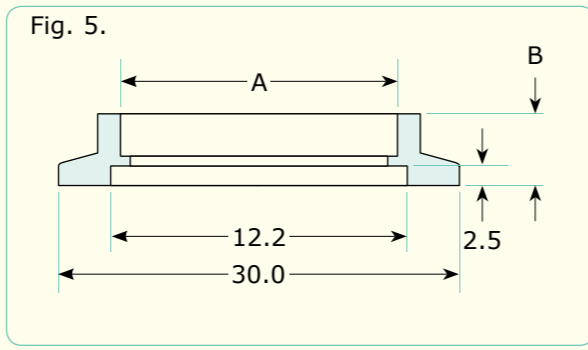
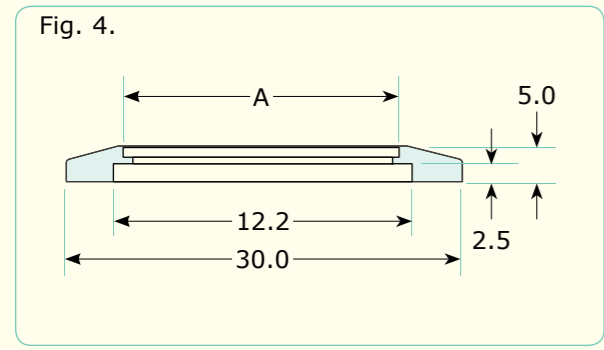
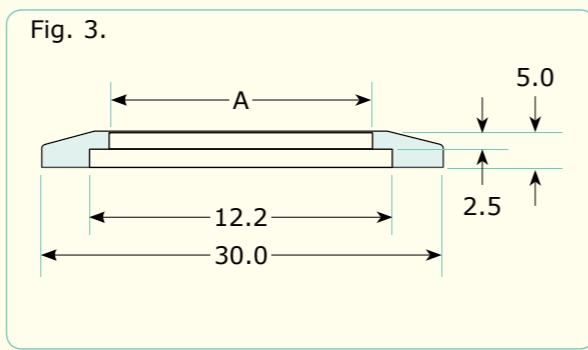
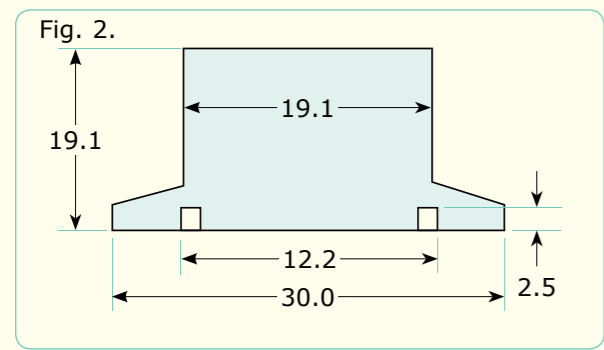
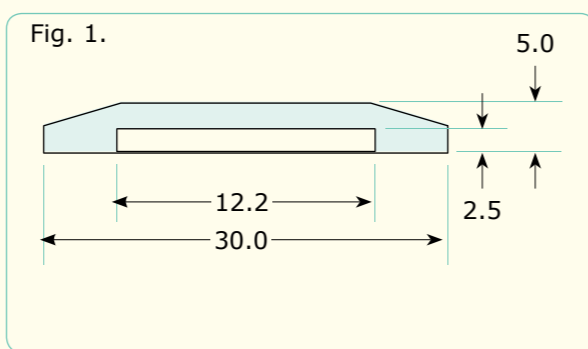
Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below 1 x 10<sup>-8</sup> Torr

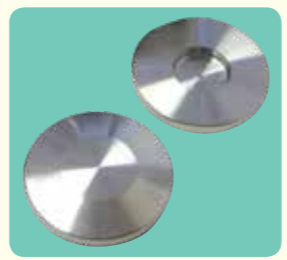
\* - Increased upper limit for intermittent use.

Features:

- 304 stainless steel or aluminium flanges as standard.
- Viton® or nitrile seals as standard.
- Other materials available on request.
- Clamp fastening.



DN10KF Blank Flanges



Material	Fig.	Part Code	Price £	Price €
St.St.	1	FL-10KF		
Aluminium	1	FL-A10KF		

DN10KF Unbored Stub Flanges



Material	Fig.	Part Code	Price £	Price €
St.St.	2	FL-10KFUS		
Aluminium	2	FL-A10KFUS		

DN10KF Bored Flanges



Material	Fig.	A	Part Code	Price £	Price €
St.St.	3	6.4	FL-10KF-6W		
St.St.	3	9.7	FL-10KF-10W		
St.St.	4	12.9	FL-10KF-12W		

DN10KF Socket Weld Flanges



Material	Fig.	A	Part Code	Price £	Price €
St.St.	5	12.9	FL-10KF-12SW		

For Longer tubulations, see page 3.137

DN10KF Accessories



Description	Part Code	Price £	Price €
DN10KF St.St. centring ring Viton® O-ring	FL-CRSV10KF		
DN10KF aluminium centring ring Viton® O-ring	FL-CRAV10KF		
DN10KF St.St. centring ring nitrile O-ring	FL-CRSN10KF		
DN10KF aluminium centring ring nitrile O-ring	FL-CRAN10KF		
DN10-16KF hinged clamp	FL-C16KF		
DN10-16KF bulkhead clamp	FL-BC16KF		
DN10-16KF plastic flange cap	FL-CP16KF		

All dimensions are nominal in millimetres unless otherwise specified

All dimensions are nominal in millimetres unless otherwise specified



DN16KF Flanges



Features:

- 304 stainless steel or aluminium flanges as standard.
- Viton® or nitrile seals as standard.
- Other materials available on request.
- Clamp fastening.

Specifications:

Material

Flanges 304 St.St. or aluminium

Seals Viton® or nitrile

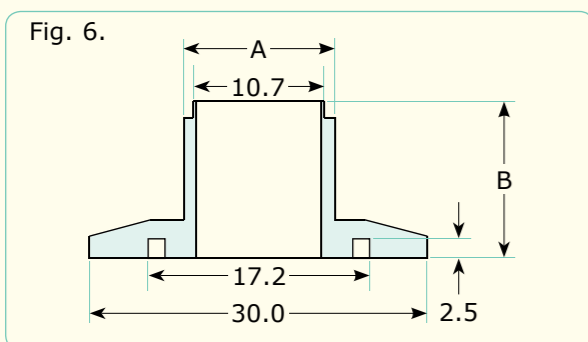
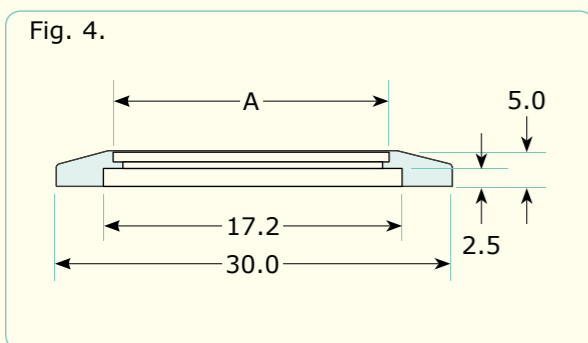
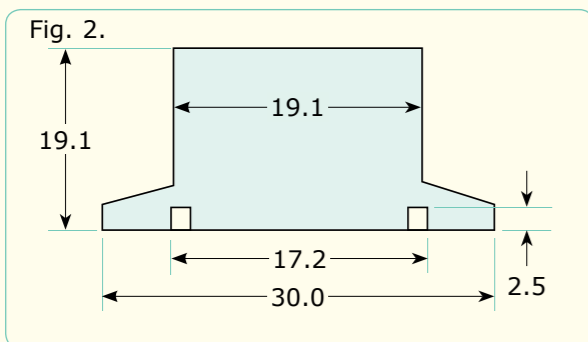
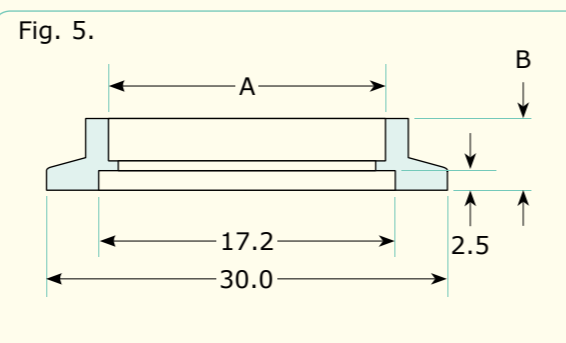
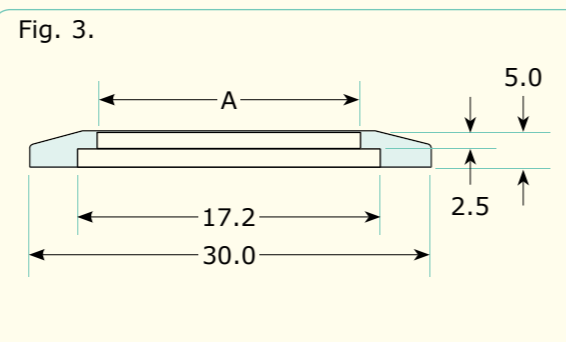
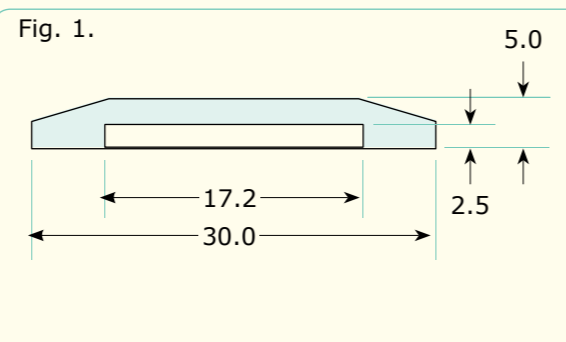
Temperature Range

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below 1 x 10<sup>-8</sup> Torr

\* - Increased upper limit for intermittent use.



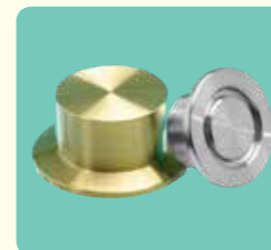
All dimensions are nominal in millimetres unless otherwise specified

DN16KF Blank Flanges



Material	Fig.	Part Code	Price £	Price €
St.St.	1	FL-16KF		
Aluminium	1	FL-A16KF		

DN16KF Unbored Stub Flanges



Material	Fig.	Part Code	Price £	Price €
St.St.	2	FL-16KFUS		
Aluminium	2	FL-A16KFUS		

DN16KF Bored Flanges



Material	Fig.	A	Part Code	Price £	Price €
St.St.	3	9.7	FL-16KF-10W		
St.St.	3	12.9	FL-16KF-12W		
St.St.	4	19.3	FL-16KF-19W		

DN16KF Stub/Socket Weld Flanges



Material	Fig.	A	B	Part Code	Price £	Price €
St.St.	5	12.7	12.7	FL-16KF-12SW		
St.St.	6	12.7	14.2	FL-16KF-12STW		
St.St.	5	19.3	12.7	FL-16KF-19SW		

For Longer tubulations, see page 3.137

DN16KF Accessories



Description	Part Code	Price £	Price €
DN16KF St.St. centring ring Viton® O-ring	FL-CRSV16KF		
DN16KF aluminium centring ring Viton® O-ring	FL-CRAV16KF		
DN16KF St.St. centring ring nitrile O-ring	FL-CRSN16KF		
DN16KF aluminium centring ring nitrile O-ring	FL-CRAN16KF		
DN10-16KF hinged clamp	FL-C16KF		
DN10-16KF bulkhead clamp	FL-BC16KF		
DN10-16KF plastic flange cap	FL-CP16KF		

All dimensions are nominal in millimetres unless otherwise specified

DN25KF Flanges



Specifications:

Material

Flanges 304 St.St. or aluminium

Seals Viton® or nitrile

Temperature Range

Using Viton® o-rings -20°C to 150°C (200°C\*)

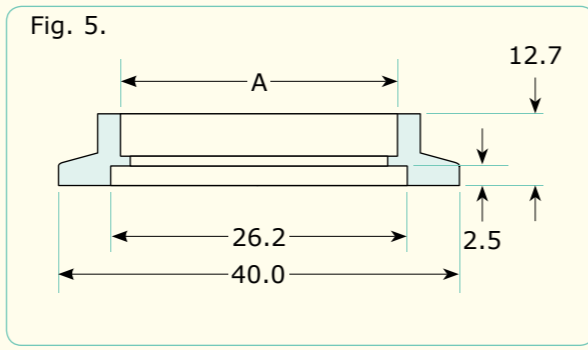
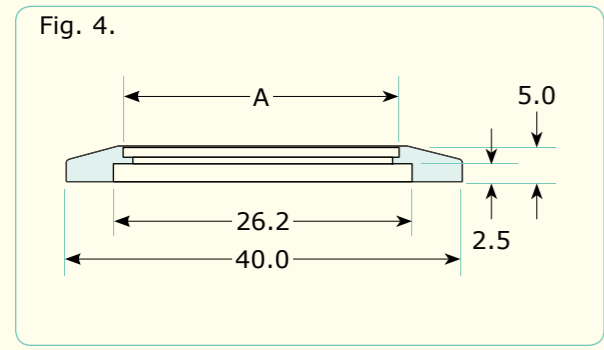
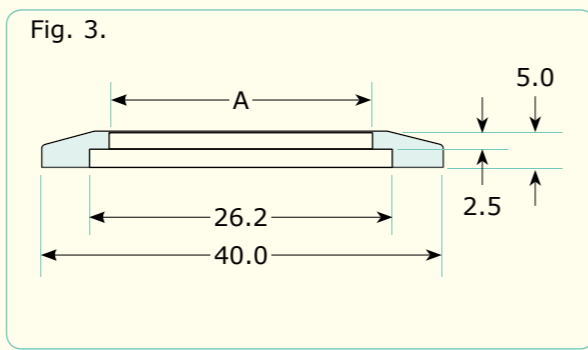
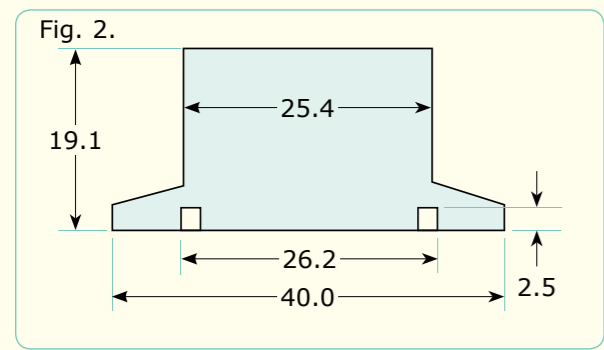
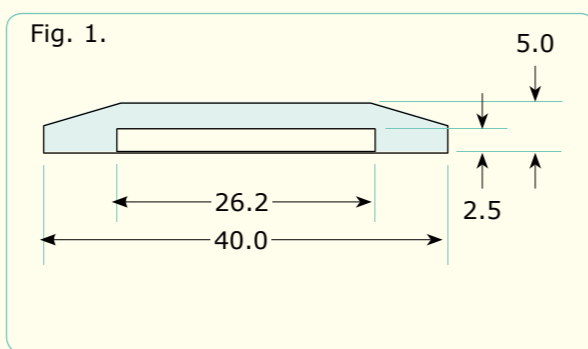
Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below 1 x 10<sup>-8</sup> Torr

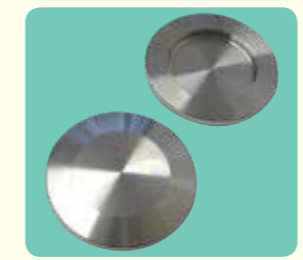
\* - Increased upper limit for intermittent use.

Features:

- 304 stainless steel or aluminium flanges as standard.
- Viton® or nitrile seals as standard.
- Other materials available on request.
- Clamp fastening.



DN25KF Blank Flanges



Material	Fig.	Part Code	Price £	Price €
St.St.	1	FL-25KF		
Aluminium	1	FL-A25KF		

DN25KF Unbored Stub Flanges



Material	Fig.	Part Code	Price £	Price €
St.St.	2	FL-25KFUS		
Aluminium	2	FL-A25KFUS		

DN25KF Bored Flanges



Material	Fig.	A	Part Code	Price £	Price €
St.St.	3	9.7	FL-25KF-10W		
St.St.	4	12.9	FL-25KF-12W		
St.St.	4	19.3	FL-25KF-19W		
St.St.	4	25.7	FL-25KF-25W		

DN25KF Socket Weld Flanges



Material	Fig.	A	Part Code	Price £	Price €
St.St.	5	25.7	FL-25KF-25SW		

For Longer tubulations, see page 3.137

DN25KF Accessories



Description	Part Code	Price £	Price €
DN25KF St.St. centring ring Viton® O-ring	FL-CRSV25KF		
DN25KF aluminium centring ring Viton® O-ring	FL-CRAV25KF		
DN25KF St.St. centring ring nitrile O-ring	FL-CRSN25KF		
DN25KF aluminium centring ring nitrile O-ring	FL-CRAN25KF		
DN25KF hinged clamp	FL-C25KF		
DN25KF bulkhead clamp	FL-BC25KF		
DN25KF plastic flange cap	FL-CP25KF		

All dimensions are nominal in millimetres unless otherwise specified

All dimensions are nominal in millimetres unless otherwise specified

## DN40KF Flanges

**Specifications:****Material**

Flanges 304 St.St. or aluminium

Seals Viton® or nitrile

**Temperature Range**

Using Viton® o-rings -20°C to 150°C (200°C\*)

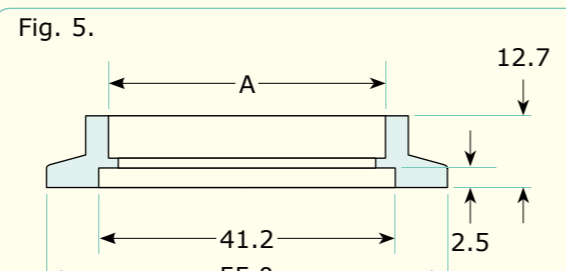
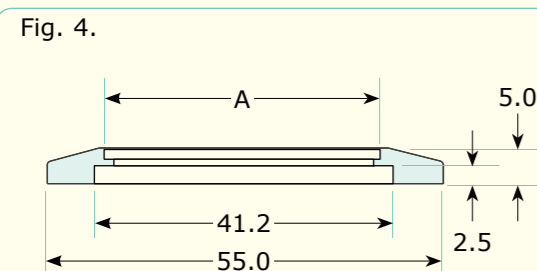
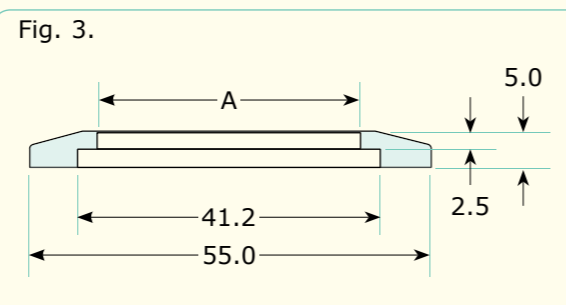
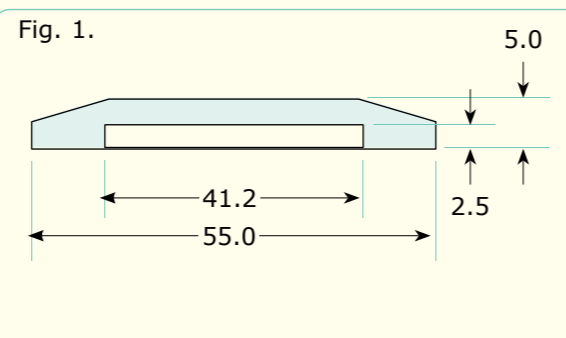
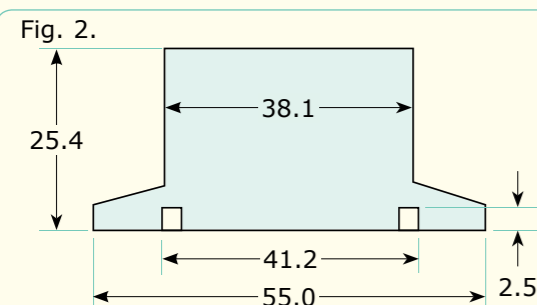
Using nitrile o-rings -20°C to 80°C (100°C\*)

**Vacuum Range** To below  $1 \times 10^{-8}$  Torr

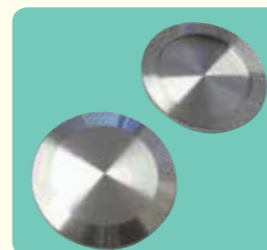
\* - Increased upper limit for intermittent use.

**Features:**

- 304 stainless steel or aluminium flanges as standard.
- Viton® or nitrile seals as standard.
- Other materials available on request.
- Clamp fastening.



All dimensions are nominal in millimetres unless otherwise specified

**DN40KF Blank Flanges**

Material	Fig.	Part Code	Price £	Price €
St.St.	1	FL-40KF		
Aluminium	1	FL-A40KF		

**DN40KF Unbored Stub Flanges**

Material	Fig.	Part Code	Price £	Price €
St.St.	2	FL-40KFUS		
Aluminium	2	FL-A40KFUS		

**DN40KF Bored Flanges**

Material	Fig.	A	Part Code	Price £	Price €
St.St.	3	9.7	FL-40KF-10W		
St.St.	4	12.9	FL-40KF-12W		
St.St.	4	19.3	FL-40KF-19W		
St.St.	4	25.7	FL-40KF-25W		
St.St.	4	38.4	FL-40KF-38W		

**DN40KF Socket Weld Flanges**

Material	Fig.	A	Part Code	Price £	Price €
St.St.	5	38.4	FL-40KF-38SW		

For Longer tubulations, see page 3.137

**DN40KF Accessories**

Description	Part Code	Price £	Price €
DN40KF St.St. centring ring Viton® O-ring	FL-CRSV40KF		
DN40KF aluminium centring ring Viton® O-ring	FL-CRAV40KF		
DN40KF St.St. centring ring nitrile O-ring	FL-CRSN40KF		
DN40KF aluminium centring ring nitrile O-ring	FL-CRAN40KF		
DN40KF hinged clamp	FL-C40KF		
DN40KF bulkhead clamp	FL-BC40KF		
DN40KF plastic flange cap	FL-CP40KF		

All dimensions are nominal in millimetres unless otherwise specified

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DN50KF Flanges



**Specifications:**

**Material**

Flanges 304 St.St. or aluminium  
Seals Viton® or nitrile

**Temperature Range**

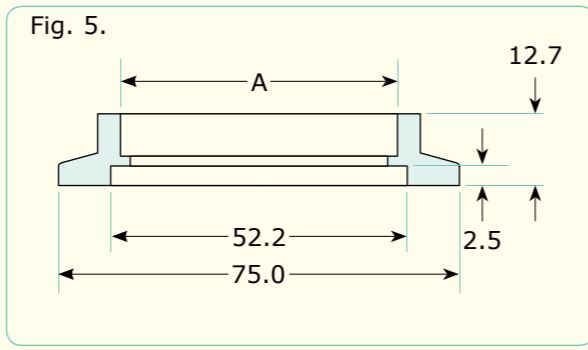
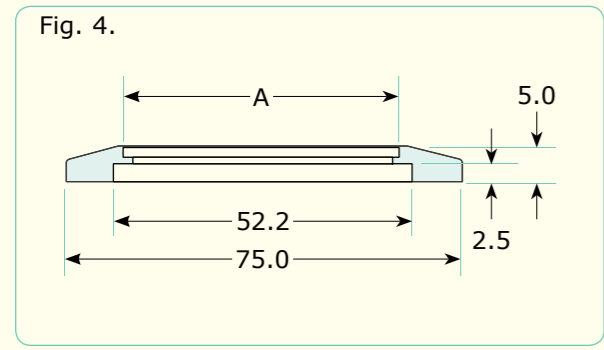
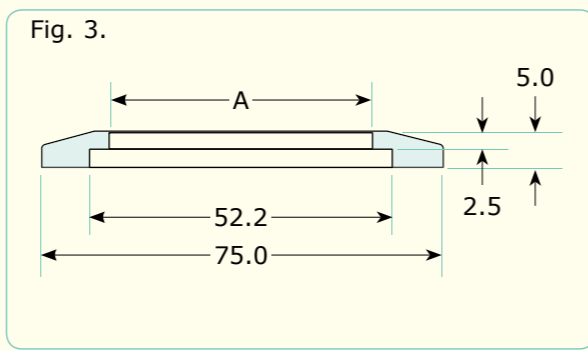
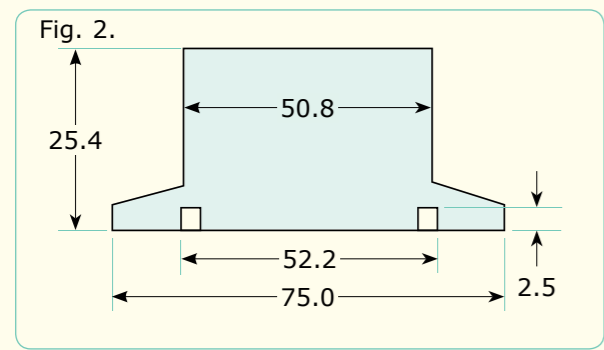
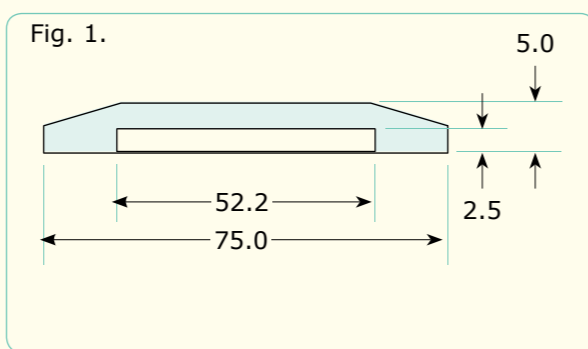
Using Viton® o-rings -20°C to 150°C (200°C\*)  
Using nitrile o-rings -20°C to 80°C (100°C\*)

**Vacuum Range**

To below 1 x 10<sup>-8</sup> Torr  
\* - Increased upper limit for intermittent use.

**Features:**

- 304 stainless steel or aluminium flanges as standard.
- Viton® or nitrile seals as standard.
- Other materials available on request.
- Clamp fastening.



**DN50KF Blank Flanges**



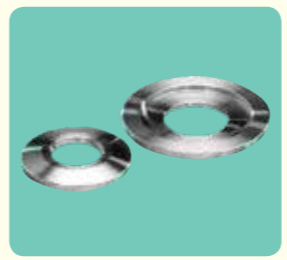
Material	Fig.	Part Code	Price £	Price €
St.St.	1	FL-50KF		
Aluminium	1	FL-A50KF		

**DN50KF Unbored Stub Flanges**



Material	Fig.	Part Code	Price £	Price €
St.St.	2	FL-50KFUS		
Aluminium	2	FL-A50KFUS		

**DN50KF Bored Flanges**



Material	Fig.	A	Part Code	Price £	Price €
St.St.	3	9.7	FL-50KF-10W		
St.St.	4	12.9	FL-50KF-12W		
St.St.	4	19.3	FL-50KF-19W		
St.St.	4	25.7	FL-50KF-25W		
St.St.	4	38.4	FL-50KF-38W		
St.St.	4	51	FL-50KF-51W		

**DN50KF Socket Weld Flanges**



Material	Fig.	A	Part Code	Price £	Price €
St.St.	5	51	FL-50KF-51SW		

For Longer tubulations, see page 3.137

**DN50KF Accessories**



Description	Part Code	Price £	Price €
DN50KF St.St. centring ring Viton® O-ring	FL-CRSV50KF		
DN50KF aluminium centring ring Viton® O-ring	FL-CRAV50KF		
DN50KF St.St. centring ring nitrile O-ring	FL-CRSN50KF		
DN50KF aluminium centring ring nitrile O-ring	FL-CRAN50KF		
DN50KF hinged clamp	FL-C50KF		
DN50KF bulkhead clamp	FL-BC50KF		
DN50KF plastic flange cap	FL-CP50KF		

All dimensions are nominal in millimetres unless otherwise specified

All dimensions are nominal in millimetres unless otherwise specified



DN63LF Flanges



**Specifications:**

**Material**

Flanges 304 St.St. or aluminium

Seals Viton® or nitrile

**Temperature Range**

Using Viton® o-rings -20°C to 150°C (200°C\*)

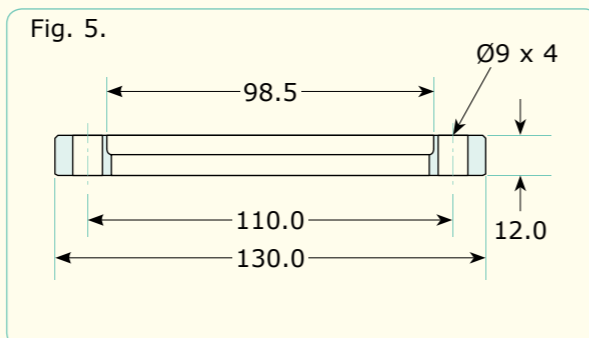
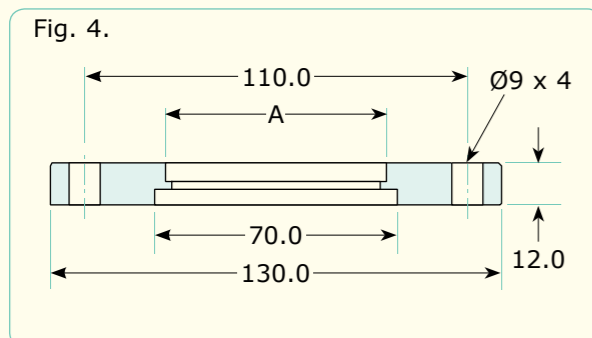
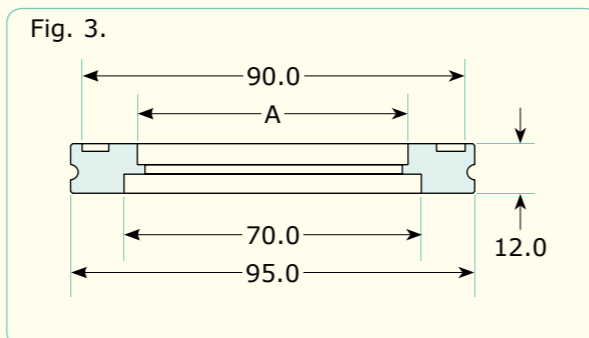
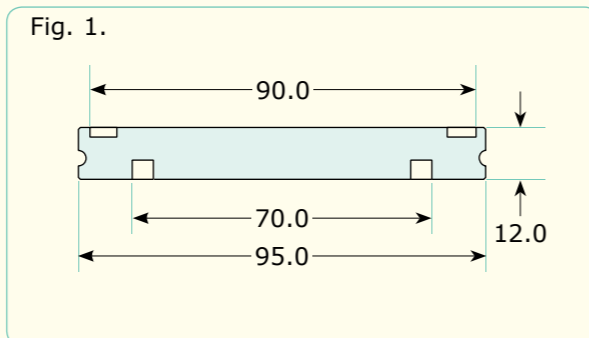
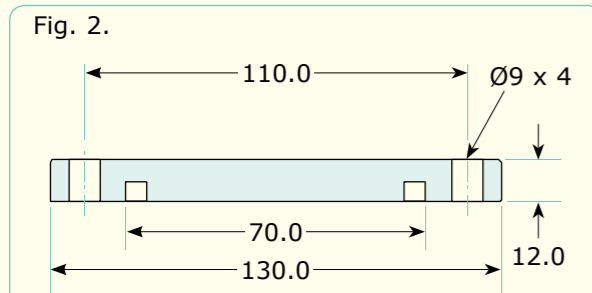
Using nitrile o-rings -20°C to 80°C (100°C\*)

**Vacuum Range** To below 1 x 10<sup>-8</sup> Torr

\* - Increased upper limit for intermittent use.

**Features:**

- 304 stainless steel or aluminium flanges as standard.
- Viton® or nitrile seals as standard.
- Other materials available on request.
- Clamp or bolt fastening.



All dimensions are nominal in millimetres unless otherwise specified

**DN63LF Blank Flanges**



Material	Fastening	Fig.	Part Code	Price £	Price €
St.St.	Claw clamp	1	FL-63LF		
Aluminium	Claw camp	1	FL-A63LF		
St.St.	Bolt	2	FL-63LFB		
Aluminium	Bolt	2	FL-A63LFB		

**DN63LF Bored Flanges**



Material	Fastening	Fig.	A	Part Code	Price £	Price €
St.St.	Claw clamp	3	63.7	FL-63LF-W		
St.St.	Claw clamp	3	76.4	FL-63LF-W76		
St.St.	Bolt	4	63.7	FL-63LFB-W		
St.St.	Bolt	4	76.4	FL-63LFB-W76		

**DN63LF Accessories**



Description	Part Code	Price £	Price €
DN63LF St.St. centring ring Viton® O-ring	FL-CRSV63LF		
DN63LF aluminium centring ring Viton® O-ring	FL-CRAV63LF		
DN63LF St.St. centring ring nitrile O-ring	FL-CRSN63KF		
DN63LF aluminium centring ring nitrile O-ring	FL-CRAN63LF		
DN63-100LF single claw clamp	FL-SCC63-100LF		
DN63-100LF double claw clamp	FL-DCC63-100LF		
DN63-250LF double claw clamp sliding type	FL-DCC63-250SS		
DN63LF bolt ring assy with retaining ring (Fig. 5.)	FL-RBR63LF		
Replacement split ring for DN63LF bolt ring assy	FL-SRR63LF		
DN63LF plastic flange cap	FL-CP63LF		

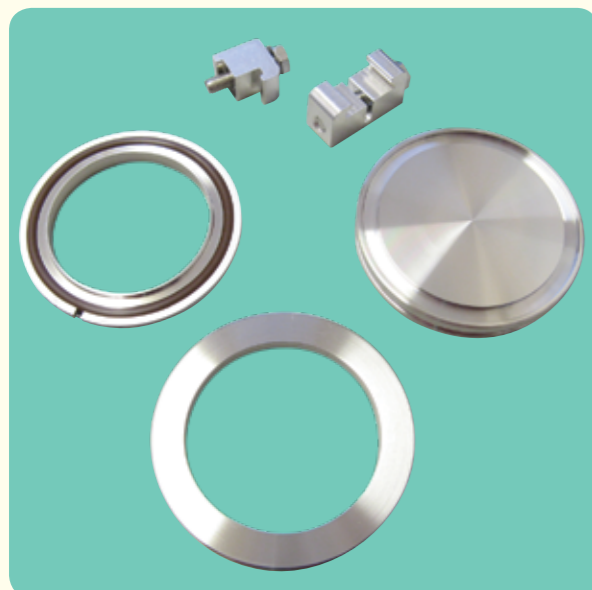
The bolt ring assembly allows the addition of bolt holes to a standard claw clamp flange. Bolt rings are supplied complete with a split retaining ring, which fits into the groove around the claw clamp flange and hold the bolt ring in position. Replacement retaining rings can be purchased separately.

All dimensions are nominal in millimetres unless otherwise specified

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DN80LF Flanges



Specifications:

Material

Flanges 304 St.St. or aluminium

Seals Viton® or nitrile

Temperature Range

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below 1 x 10<sup>-8</sup> Torr

\* - Increased upper limit for intermittent use.

Features:

- 304 stainless steel or aluminium flanges as standard.
- Viton® or nitrile seals as standard.
- Other materials available on request.
- Clamp or bolt fastening.

Fig. 2.

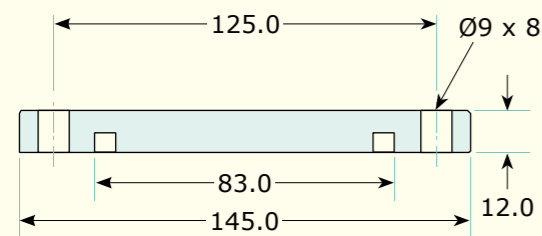


Fig. 4.

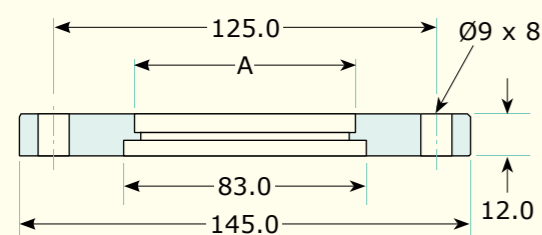


Fig. 1.

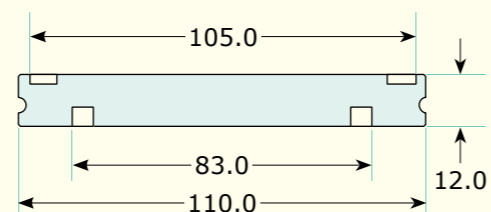


Fig. 3.

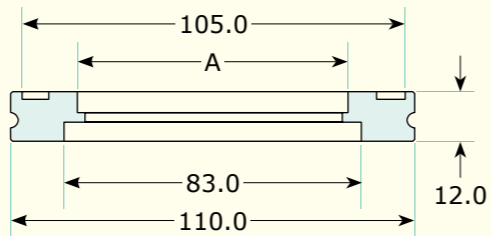
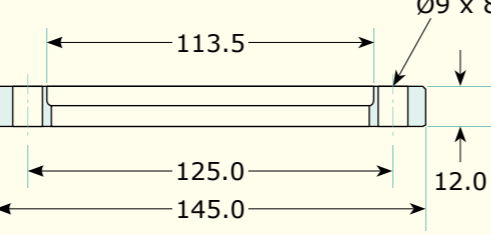


Fig. 5.



DN80LF Blank Flanges



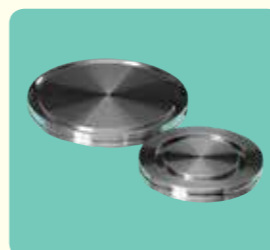
Material	Fastening	Fig.	Part Code	Price £	Price €
St.St.	Claw clamp	1	FL-80LF		
Aluminium	Claw camp	1	FL-A80LF		
St.St.	Bolt	2	FL-80LFB		
Aluminium	Bolt	2	FL-A80LFB		

DN80LF Bored Flanges



Material	Fastening	Fig.	A	Part Code	Price £	Price €
St.St.	Claw clamp	3	76.4	FL-80LF-W		
St.St.	Bolt	4	76.4	FL-80LFB-W		

DN80LF Accessories



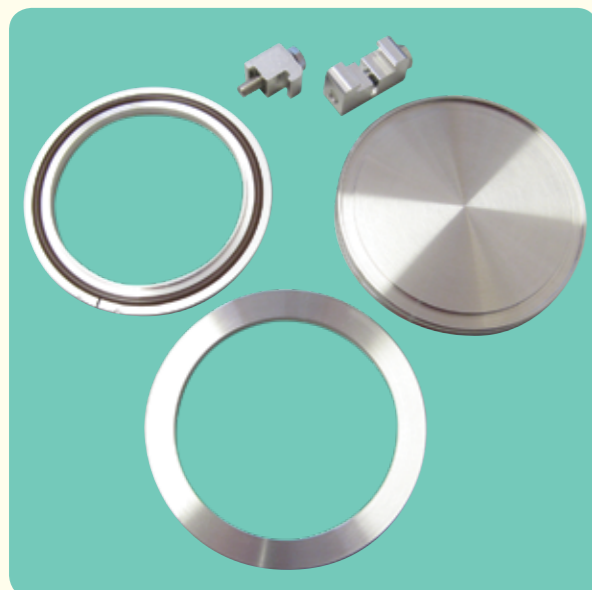
Description	Part Code	Price £	Price €
DN80LF St.St. centring ring Viton® O-ring	FL-CRSV80LF		
DN80LF aluminium centring ring Viton® O-ring	FL-CRAV80LF		
DN80LF St.St. centring ring nitrile O-ring	FL-CRSN80KF		
DN80LF aluminium centring ring nitrile O-ring	FL-CRAN80LF		
DN63-100LF single claw clamp	FL-SCC63-100LF		
DN63-100LF double claw clamp	FL-DCC63-100LF		
DN63-250LF double claw clamp sliding type	FL-DCC63-250SS		
DN80LF bolt ring assy with retaining ring (Fig. 5.)	FL-RBR80LF		
Replacement split ring for DN80LF bolt ring assy	FL-SRR80LF		
DN80LF plastic flange cap	FL-CP80LF		

The bolt ring assembly allows the addition of bolt holes to a standard claw clamp flange. Bolt rings are supplied complete with a split retaining ring, which fits into the groove around the claw clamp flange and hold the bolt ring in position. Replacement retaining rings can be purchased separately.

All dimensions are nominal in millimetres unless otherwise specified

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DN100LF Flanges



Specifications:

Material

Flanges 304 St.St. or aluminium

Seals Viton® or nitrile

Temperature Range

Using Viton® o-rings -20°C to 150°C (200°C\*)

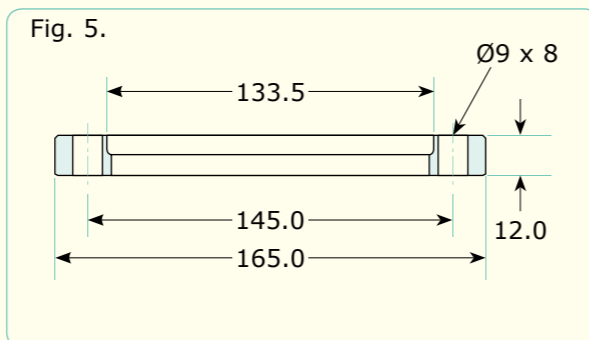
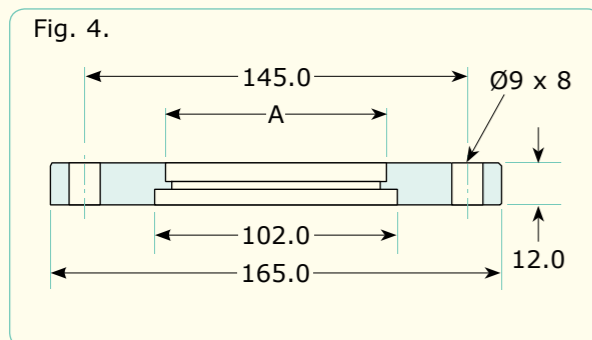
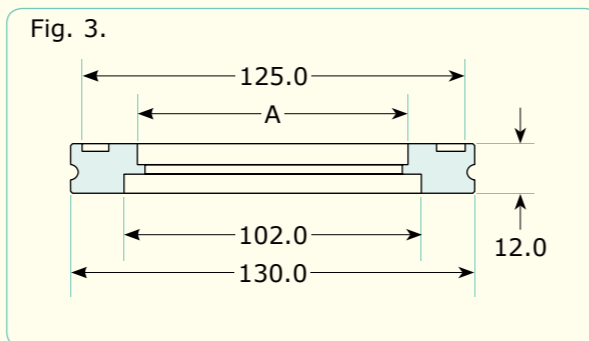
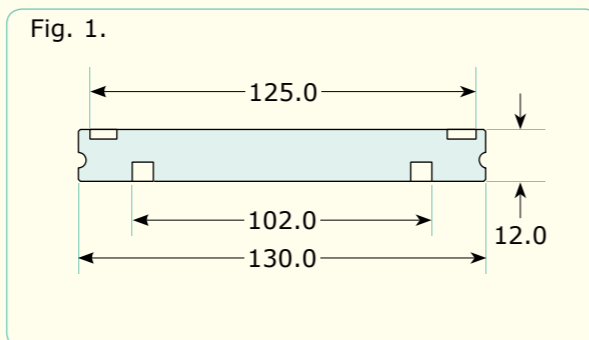
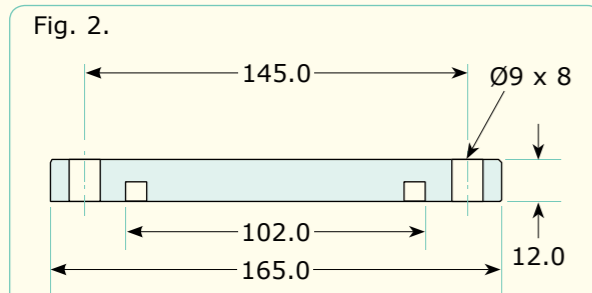
Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below 1 x 10<sup>-8</sup> Torr

\* - Increased upper limit for intermittent use.

Features:

- 304 stainless steel or aluminium flanges as standard.
- Viton® or nitrile seals as standard.
- Other materials available on request.
- Clamp or bolt fastening.



DN100LF Blank Flanges



Material	Fastening	Fig.	Part Code	Price £	Price €
St.St.	Claw clamp	1	FL-100LF		
Aluminium	Claw camp	1	FL-A100LF		
St.St.	Bolt	2	FL-100LFB		
Aluminium	Bolt	2	FL-A100LFB		

DN100LF Bored Flanges



Material	Fastening	Fig.	A	Part Code	Price £	Price €
St.St.	Claw clamp	3	102.0	FL-100LF-W		
St.St.	Claw clamp	3	108.4	FL-100LF-W108		
St.St.	Bolt	4	102.0	FL-100LFB-W		
St.St.	Bolt	4	108.4	FL-100LFB-W108		

DN100LF Accessories



Description	Part Code	Price £	Price €
DN100LF St.St. centring ring Viton® O-ring	FL-CRSV100LF		
DN100LF aluminium centring ring Viton® O-ring	FL-CRAV100LF		
DN100LF St.St. centring ring nitrile O-ring	FL-CRSN100KF		
DN100LF aluminium centring ring nitrile O-ring	FL-CRAN100LF		
DN63-100LF single claw clamp	FL-SCC63-100LF		
DN63-100LF double claw clamp	FL-DCC63-100LF		
DN63-250LF double claw clamp sliding type	FL-DCC63-250SS		
DN100LF bolt ring assy with retaining ring (Fig. 5.)	FL-RBR100LF		
Replacement split ring for DN100LF bolt ring assy	FL-SRR100LF		
DN100LF plastic flange cap	FL-CP100LF		

The bolt ring assembly allows the addition of bolt holes to a standard claw clamp flange. Bolt rings are supplied complete with a split retaining ring, which fits into the groove around the claw clamp flange and hold the bolt ring in position. Replacement retaining rings can be purchased separately.

All dimensions are nominal in millimetres unless otherwise specified

All dimensions are nominal in millimetres unless otherwise specified



## DN160LF Flanges



## Specifications:

## Material

Flanges 304 St.St. or aluminium

Seals Viton® or nitrile

## Temperature Range

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below  $1 \times 10^{-8}$  Torr

\* - Increased upper limit for intermittent use.

## Features:

- 304 stainless steel or aluminium flanges as standard.
- Viton® or nitrile seals as standard.
- Other materials available on request.
- Clamp or bolt fastening.

Fig. 2.

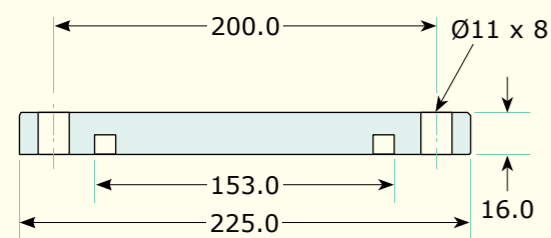


Fig. 4.

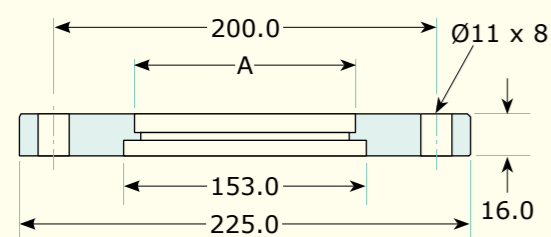


Fig. 1.

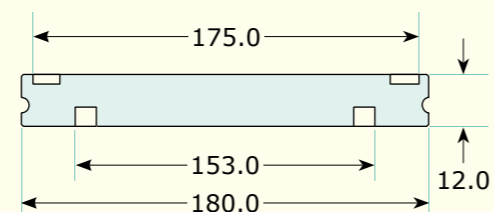


Fig. 3.

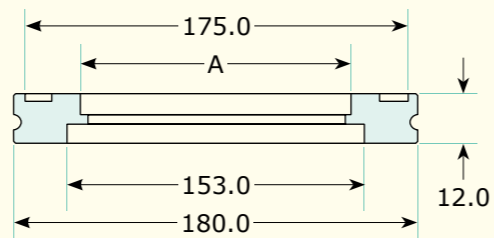
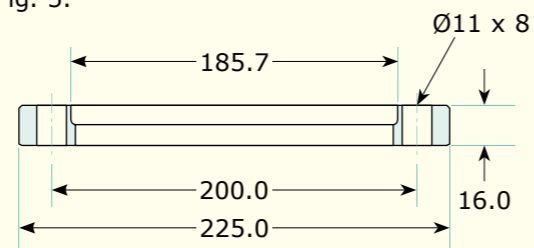


Fig. 5.



## DN160LF Blank Flanges



Material	Fastening	Fig.	Part Code	Price £	Price €
St.St.	Claw clamp	1	FL-160LF		
Aluminium	Claw camp	1	FL-A160LF		
St.St.	Bolt	2	FL-160LFB		
Aluminium	Bolt	2	FL-A160LFB		

## DN160LF Bored Flanges



Material	Fastening	Fig.	A	Part Code	Price £	Price €
St.St.	Claw clamp	3	153.0	FL-160LF-W		
St.St.	Claw clamp	3	160.0	FL-160LF-W159		
St.St.	Bolt	4	153.0	FL-160LFB-W		
St.St.	Bolt	4	160.0	FL-160LFB-W159		

## DN160LF Accessories



Description	Part Code	Price £	Price €
DN160LF St.St. centring ring Viton® O-ring	FL-CRSV160LF		
DN160LF aluminium centring ring Viton® O-ring	FL-CRAV160LF		
DN160LF St.St. centring ring nitrile O-ring	FL-CRSN160KF		
DN160LF aluminium centring ring nitrile O-ring	FL-CRAN160LF		
DN160-250LF single claw clamp	FL-SCC160-250LF		
DN160-250LF double claw clamp	FL-DCC160-250LF		
DN63-250LF double claw clamp sliding type	FL-DCC63-250SS		
DN160LF bolt ring assy with retaining ring (Fig. 5.)	FL-RBR160LF		
Replacement split ring for DN160LF bolt ring assy	FL-SRR160LF		
DN160LF plastic flange cap	FL-CP160LF		

The bolt ring assembly allows the addition of bolt holes to a standard claw clamp flange. Bolt rings are supplied complete with a split retaining ring, which fits into the groove around the claw clamp flange and hold the bolt ring in position. Replacement retaining rings can be purchased separately.

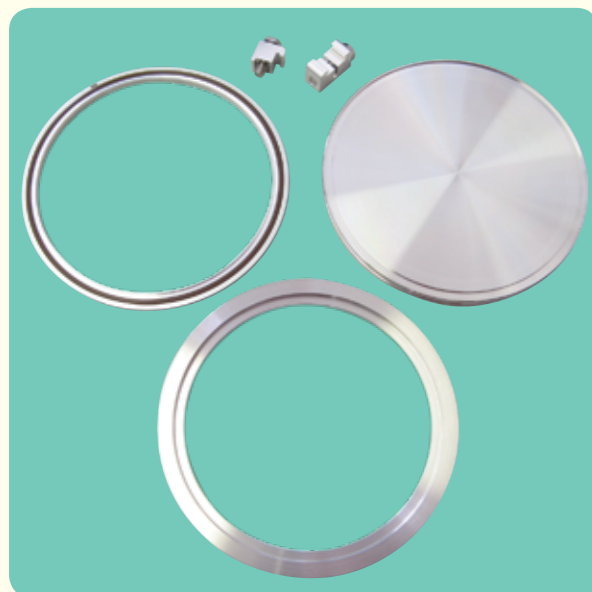
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## DN200LF Flanges



## Specifications:

## Material

Flanges 304 St.St. or aluminium

Seals Viton® or nitrile

## Temperature Range

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below  $1 \times 10^{-8}$  Torr

\* - Increased upper limit for intermittent use.

## Features:

- 304 stainless steel or aluminium flanges as standard.
- Viton® or nitrile seals as standard.
- Other materials available on request.
- Clamp or bolt fastening.

Fig. 2.

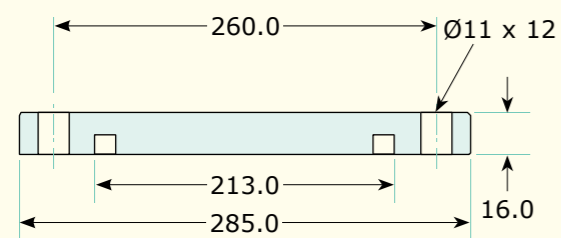


Fig. 4.

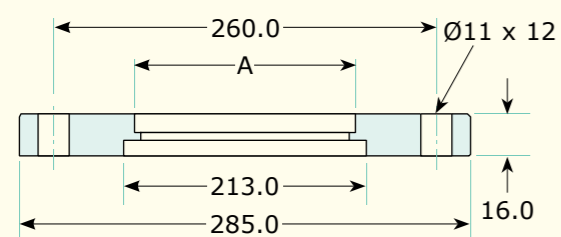


Fig. 1.

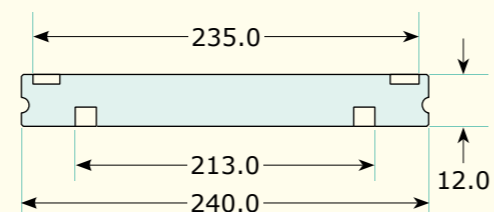


Fig. 3.

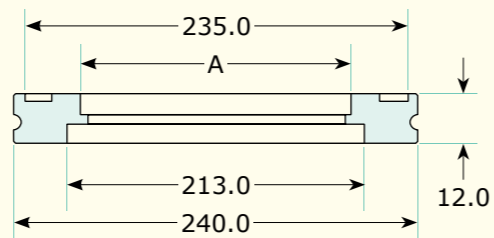
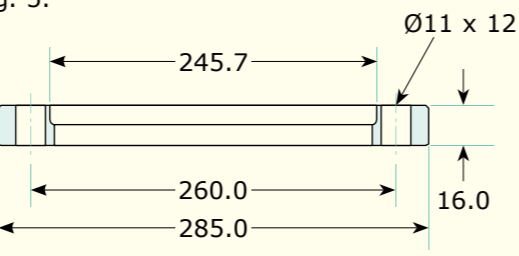


Fig. 5.



## DN200LF Blank Flanges



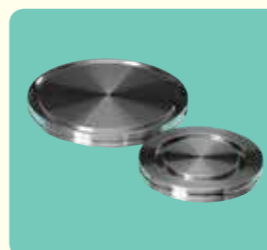
Material	Fastening	Fig.	Part Code	Price £	Price €
St.St.	Claw clamp	1	FL-200LF		
Aluminium	Claw camp	1	FL-A200LF		
St.St.	Bolt	2	FL-200LFB		
Aluminium	Bolt	2	FL-A200LFB		

## DN200LF Bored Flanges



Material	Fastening	Fig.	A	Part Code	Price £	Price €
St.St.	Claw clamp	3	204.0	FL-200LF-W		
St.St.	Claw clamp	3	220.0	FL-200LF-W219		
St.St.	Bolt	4	204.0	FL-200LFB-W		
St.St.	Bolt	4	220.0	FL-200LFB-W219		

## DN200LF Accessories



Description	Part Code	Price £	Price €
DN200LF St.St. centring ring Viton® O-ring	FL-CRSV200LF		
DN200LF aluminium centring ring Viton® O-ring	FL-CRAV200LF		
DN200LF St.St. centring ring nitrile O-ring	FL-CRSN200KF		
DN200LF aluminium centring ring nitrile O-ring	FL-CRAN200LF		
DN160-250LF single claw clamp	FL-SCC160-250LF		
DN160-250LF double claw clamp	FL-DCC160-250LF		
DN63-250LF double claw clamp sliding type	FL-DCC63-250SS		
DN200LF bolt ring assy with retaining ring (Fig. 5.)	FL-RBR200LF		
Replacement split ring for DN200LF bolt ring assy	FL-SRR200LF		
DN200LF plastic flange cap	FL-CP200LF		

The bolt ring assembly allows the addition of bolt holes to a standard claw clamp flange. Bolt rings are supplied complete with a split retaining ring, which fits into the groove around the claw clamp flange and hold the bolt ring in position. Replacement retaining rings can be purchased separately.

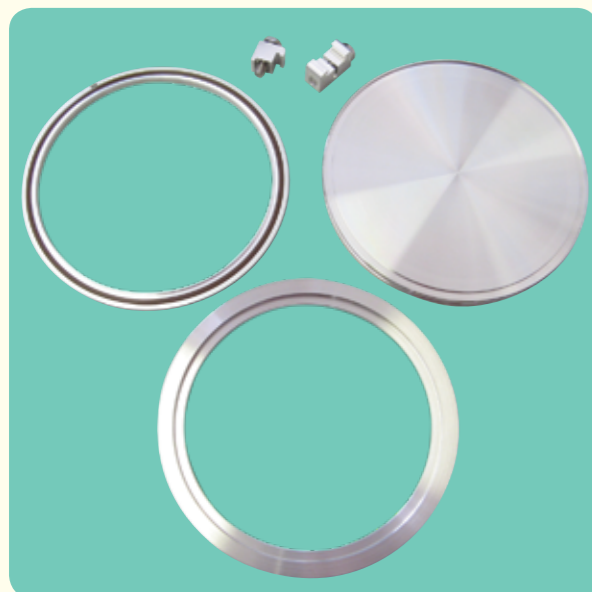
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## DN250LF Flanges



## Features:

- 304 stainless steel or aluminium flanges as standard.
- Viton® or nitrile seals as standard.
- Other materials available on request.
- Clamp or bolt fastening.

## Specifications:

## Material

Flanges 304 St.St. or aluminium

Seals Viton® or nitrile

## Temperature Range

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below  $1 \times 10^{-8}$  Torr

\* - Increased upper limit for intermittent use.

Fig. 1.

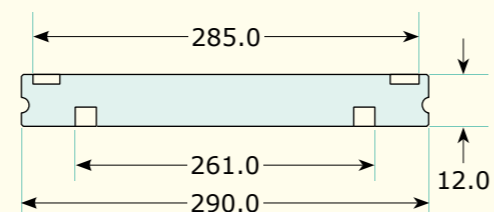


Fig. 3.

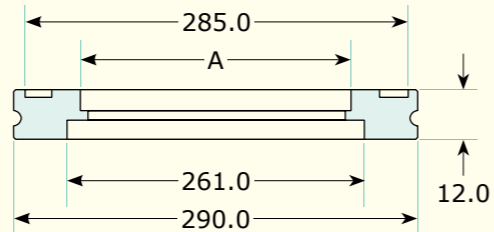


Fig. 5.

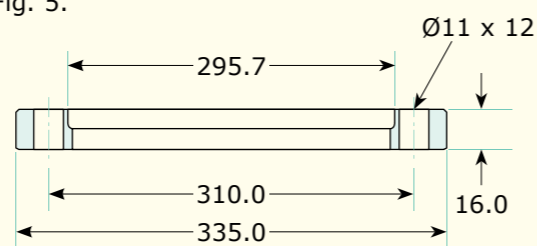


Fig. 2.

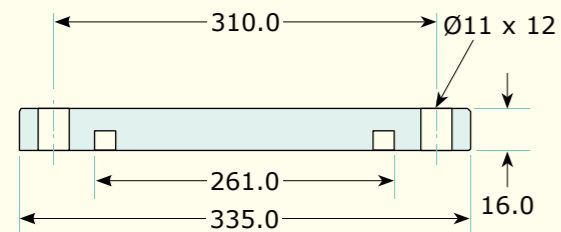
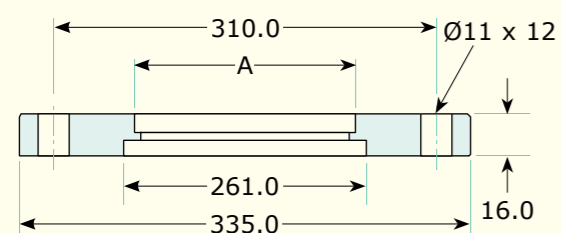


Fig. 4.



## DN250LF Blank Flanges



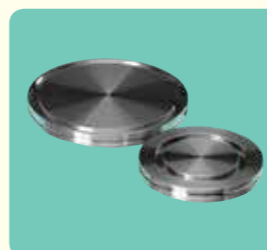
Material	Fastening	Fig.	Part Code	Price £	Price €
St.St.	Claw clamp	1	FL-250LF		
Aluminium	Claw camp	1	FL-A250LF		
St.St.	Bolt	2	FL-250LFB		
Aluminium	Bolt	2	FL-A250LFB		

## DN250LF Bored Flanges



Material	Fastening	Fig.	A	Part Code	Price £	Price €
St.St.	Claw clamp	3	255.0	FL-250LF-W		
St.St.	Claw clamp	3	268.0	FL-250LF-W267		
St.St.	Bolt	4	255.0	FL-250LFB-W		
St.St.	Bolt	4	268.0	FL-250LFB-W267		

## DN250LF Accessories



Description	Part Code	Price £	Price €
DN250LF St.St. centring ring Viton® O-ring	FL-CRSV250LF		
DN250LF aluminium centring ring Viton® O-ring	FL-CRAV250LF		
DN250LF St.St. centring ring nitrile O-ring	FL-CRSN250KF		
DN250LF aluminium centring ring nitrile O-ring	FL-CRAN250LF		
DN160-250LF single claw clamp	FL-SCC160-250LF		
DN160-250LF double claw clamp	FL-DCC160-250LF		
DN63-250LF double claw clamp sliding type	FL-DCC63-250SS		
DN250LF bolt ring assy with retaining ring (Fig. 5.)	FL-RBR250LF		
Replacement split ring for DN250LF bolt ring assy	FL-SRR250LF		

The bolt ring assembly allows the addition of bolt holes to a standard claw clamp flange. Bolt rings are supplied complete with a split retaining ring, which fits into the groove around the claw clamp flange and hold the bolt ring in position. Replacement retaining rings can be purchased separately.

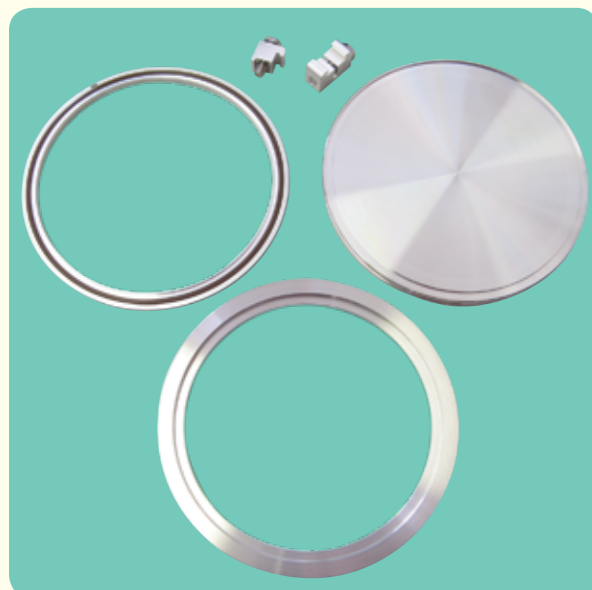
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DN320LF Flanges



Specifications:

Material

Flanges 304 St.St. or aluminium

Seals Viton® or nitrile

Temperature Range

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below 1 x 10<sup>-8</sup> Torr

\* - Increased upper limit for intermittent use.

Features:

- 304 stainless steel or aluminium flanges as standard.
- Viton® or nitrile seals as standard.
- Other materials available on request.
- Clamp or bolt fastening.

Fig. 2.

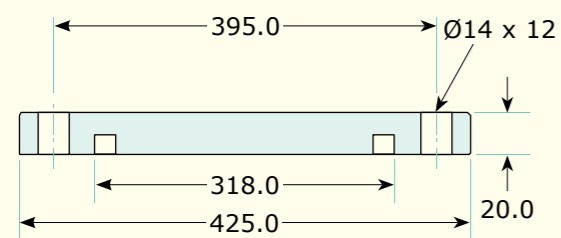


Fig. 4.

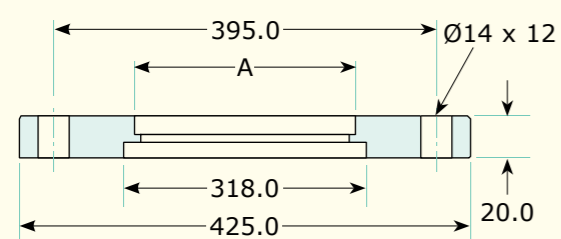


Fig. 1.

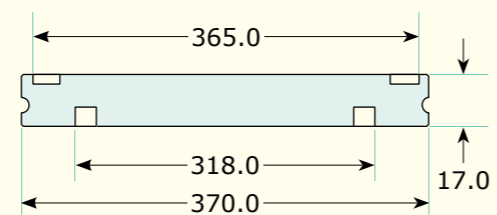


Fig. 3.

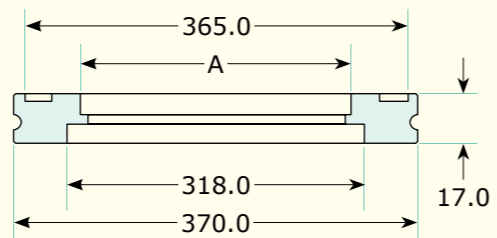
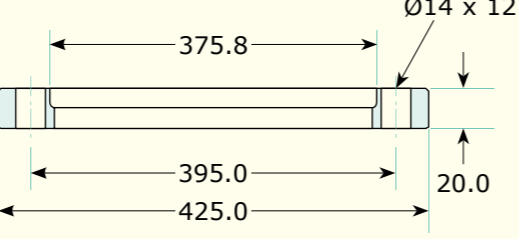


Fig. 5.



DN320LF Blank Flanges



Material	Fastening	Fig.	Part Code	Price £	Price €
St.St.	Claw clamp	1	FL-320LF		
Aluminium	Claw camp	1	FL-A320LF		
St.St.	Bolt	2	FL-320LFB		
Aluminium	Bolt	2	FL-A320LFB		

DN320LF Bored Flanges



Material	Fastening	Fig.	A	Part Code	Price £	Price €
St.St.	Claw clamp	3	305.0	FL-320LF-W		
St.St.	Claw clamp	3	325.0	FL-320LF-W324		
St.St.	Bolt	4	305.0	FL-320LFB-W		

DN320LF Accessories



Description	Part Code	Price £	Price €
DN320LF St.St. centring ring Viton® O-ring	FL-CRSV320LF		
DN320LF aluminium centring ring Viton® O-ring	FL-CRAV320LF		
DN320LF St.St. centring ring nitrile O-ring	FL-CRSN320KF		
DN320LF aluminium centring ring nitrile O-ring	FL-CRAN320LF		
DN320-500LF single claw clamp	FL-SCC320-500LF		
DN320-500LF double claw clamp	FL-DCC320-500LF		
DN320-500LF double claw clamp sliding type	FL-DCC320-500SS		
DN320LF bolt ring assy with retaining ring (Fig. 5.)	FL-RBR320LF		
Replacement split ring for DN320LF bolt ring assy	FL-SRR320LF		

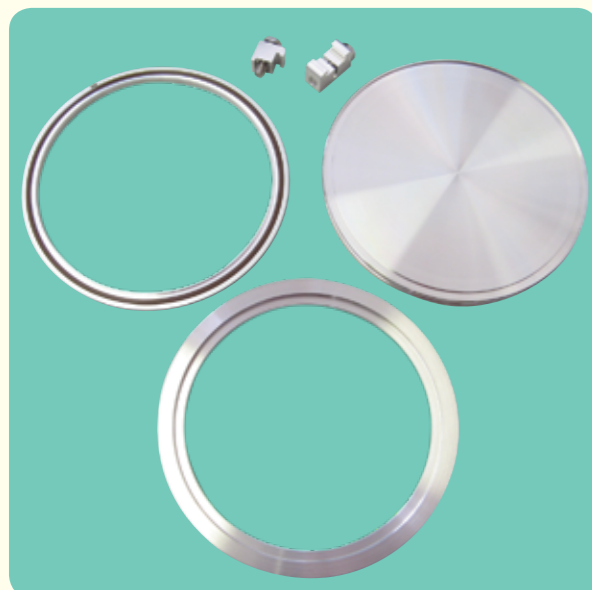
The bolt ring assembly allows the addition of bolt holes to a standard claw clamp flange. Bolt rings are supplied complete with a split retaining ring, which fits into the groove around the claw clamp flange and hold the bolt ring in position. Replacement retaining rings can be purchased separately.

All dimensions are nominal in millimetres unless otherwise specified

All dimensions are nominal in millimetres unless otherwise specified



DN400LF Flanges



Specifications:

Material

Flanges 304 St.St. or aluminium

Seals Viton® or nitrile

Temperature Range

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below 1 x 10<sup>-8</sup> Torr

\* - Increased upper limit for intermittent use.

Features:

- 304 stainless steel or aluminium flanges as standard.
- Viton® or nitrile seals as standard.
- Other materials available on request.
- Clamp or bolt fastening.

Fig. 2.

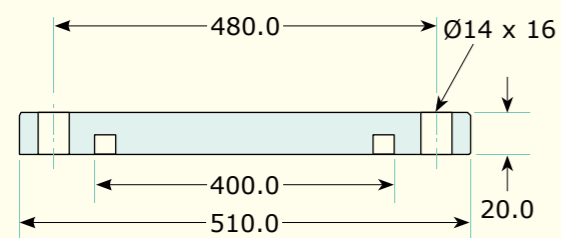


Fig. 4.

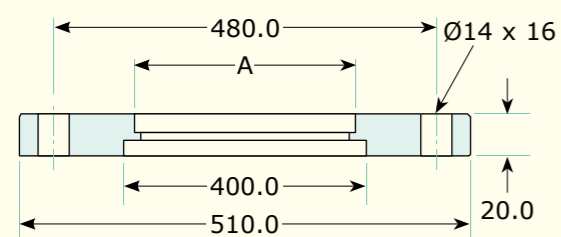


Fig. 1.

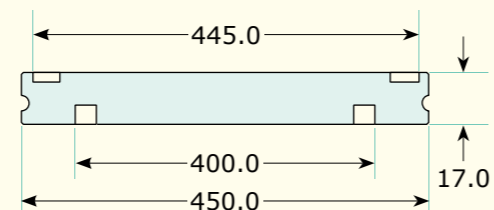


Fig. 3.

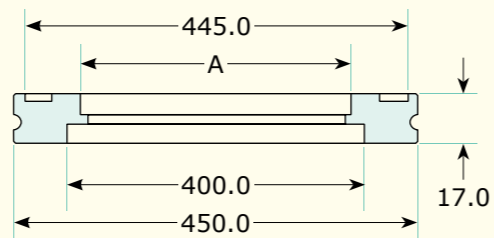
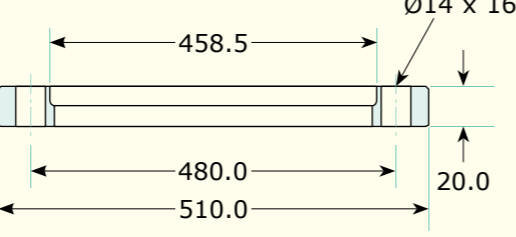


Fig. 5.



DN400LF Blank Flanges



Material	Fastening	Fig.	Part Code	Price £	Price €
St.St.	Claw clamp	1	FL-400LF		
Aluminium	Claw camp	1	FL-A400LF		
St.St.	Bolt	2	FL-400LFB		
Aluminium	Bolt	2	FL-A400LFB		

DN400LF Bored Flanges



Material	Fastening	Fig.	A	Part Code	Price £	Price €
St.St.	Claw clamp	3	407.0	FL-400LF-W		
St.St.	Bolt	4	407.0	FL-400LFB-W		

DN400LF Accessories



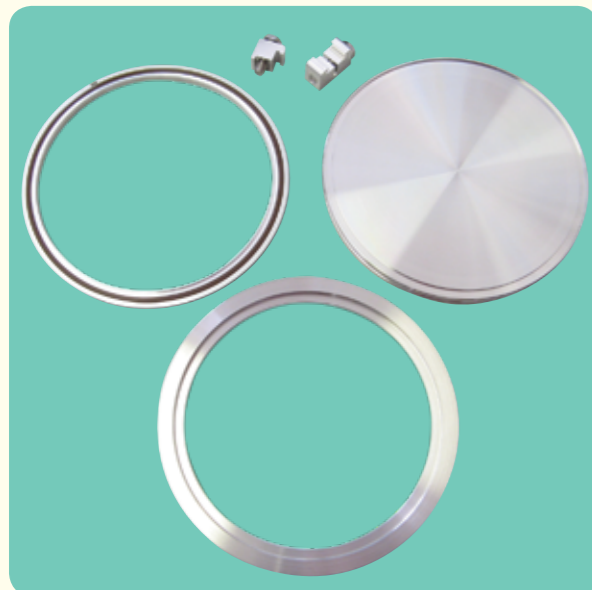
Description	Part Code	Price £	Price €
DN400LF St.St. centring ring Viton® O-ring	FL-CRSV400LF		
DN400LF aluminium centring ring Viton® O-ring	FL-CRAV400LF		
DN400LF St.St. centring ring nitrile O-ring	FL-CRSN400KF		
DN400LF aluminium centring ring nitrile O-ring	FL-CRAN400LF		
DN320-500LF single claw clamp	FL-SCC320-500LF		
DN320-500LF double claw clamp	FL-DCC320-500LF		
DN320-500LF double claw clamp sliding type	FL-DCC320-500SS		
DN400LF bolt ring assy with retaining ring (Fig. 5.)	FL-RBR400LF		
Replacement split ring for DN400LF bolt ring assy	FL-SRR400LF		

The bolt ring assembly allows the addition of bolt holes to a standard claw clamp flange. Bolt rings are supplied complete with a split retaining ring, which fits into the groove around the claw clamp flange and hold the bolt ring in position. Replacement retaining rings can be purchased separately.

All dimensions are nominal in millimetres unless otherwise specified

All dimensions are nominal in millimetres unless otherwise specified

## DN500LF Flanges



## Specifications:

## Material

Flanges 304 St.St. or aluminium

Seals Viton® or nitrile

## Temperature Range

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below  $1 \times 10^{-8}$  Torr

\* - Increased upper limit for intermittent use.

## Features:

- 304 stainless steel or aluminium flanges as standard.
- Viton® or nitrile seals as standard.
- Other materials available on request.
- Clamp or bolt fastening.

Fig. 2.

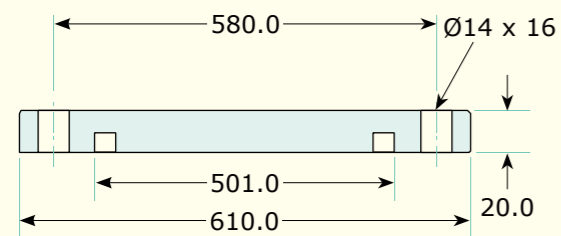


Fig. 4.

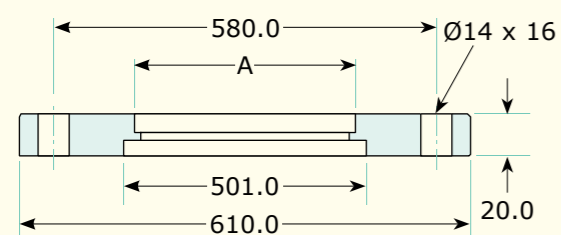


Fig. 1.

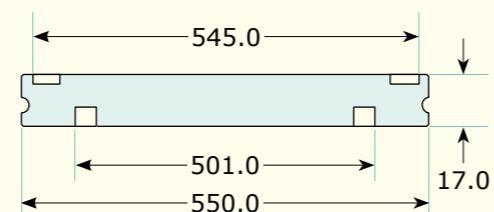


Fig. 3.

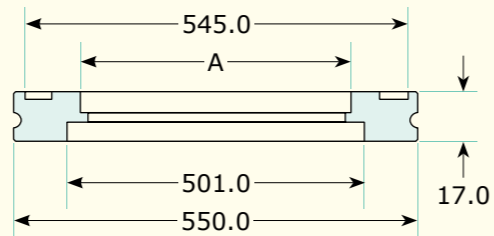
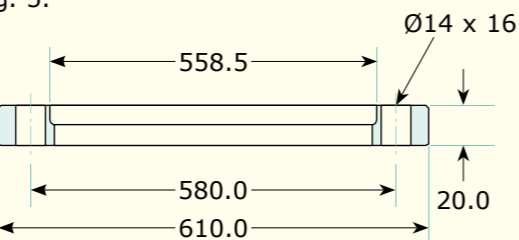


Fig. 5.



## DN500LF Blank Flanges



Material	Fastening	Fig.	Part Code	Price £	Price €
St.St.	Claw clamp	1	FL-500LF		
Aluminium	Claw camp	1	FL-A500LF		
St.St.	Bolt	2	FL-500LFB		
Aluminium	Bolt	2	FL-A500LFB		

## DN500LF Bored Flanges



Material	Fastening	Fig.	A	Part Code	Price £	Price €
St.St.	Claw clamp	3	509.0	FL-500LF-W		
St.St.	Bolt	4	509.0	FL-500LFB-W		

## DN500LF Accessories



Description	Part Code	Price £	Price €
DN500LF St.St. centring ring Viton® O-ring	FL-CRSV500LF		
DN500LF aluminium centring ring Viton® O-ring	FL-CRAV500LF		
DN500LF St.St. centring ring nitrile O-ring	FL-CRSN500KF		
DN500LF aluminium centring ring nitrile O-ring	FL-CRAN500LF		
DN320-500LF single claw clamp	FL-SCC320-500LF		
DN320-500LF double claw clamp	FL-DCC320-500LF		
DN320-500LF double claw clamp sliding type	FL-DCC320-500SS		
DN500LF bolt ring assy with retaining ring (Fig. 5.)	FL-RBR500LF		
Replacement split ring for DN500LF bolt ring assy	FL-SRR500LF		

The bolt ring assembly allows the addition of bolt holes to a standard claw clamp flange. Bolt rings are supplied complete with a split retaining ring, which fits into the groove around the claw clamp flange and hold the bolt ring in position. Replacement retaining rings can be purchased separately.

All dimensions are nominal in millimetres unless otherwise specified

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ISO KF & LF Fittings



**Specifications:**

**Material**

Flanges & fittings 304 St.St. or aluminium

**Temperature Range**

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

**Vacuum Range** To below 1 x 10<sup>-8</sup> Torr

\* - Increased upper limit for intermittent use.

**Features:**

- Reusable flanges.
- 304 stainless steel as standard.
- Other materials also available on request.
- Sexless flanges.
- Infinitely rotatable.
- Quick sealing and disassembly.
- Easy installation.
- Variety of fastening options.
- Self centring supportive ring.

**Half Nipples (Tubulated Flanges)**



These fittings are manufactured with a flange on one end and plain tubing on the other. Half nipples are often welded onto a custom vacuum system or instrument by a customer with in-house welding capabilities. These fittings can also be used with quick disconnect compression fittings to make a vacuum tight connection without welding. LewVac supplies vacuum half nipples in 304 stainless steel as standard with other materials available on request.

**Full Nipples (Straight / Conical Connectors)**



These fittings are manufactured with an ISO flange on each end of a straight section of tubing. Nipples are used to create a weld free straight connection within a vacuum system. Nipples are also used as adapters between different tubing sizes or flange types. These fittings are available with straight or conical tubes in all ISO sizes and flange types. LewVac supplies vacuum nipples in 304 stainless steel as standard with other materials available on request.

**Elbows**



These fittings are manufactured with a flange on each end of a curved section of tubing. Elbows accommodate turns or alignment considerations for vacuum system design. Elbows are offered in 5 designs; 45° radius elbow, 90° radius elbow, 90° mitred elbow, 90° tangent radius elbow and 180° radius elbow to accommodate a wide variety of system configurations. LewVac supplies vacuum elbows in 304 stainless steel as standard with other materials available on request.

**Tees**



These fittings are manufactured with a flange on each end of a "T" shaped section of tubing. Tees accommodate junctions or alignment considerations for vacuum system design. Tees are also used as junction adapters between different tubing sizes or flange types. These fittings are available in all ISO sizes and flange types. LewVac supplies vacuum tees in 304 stainless steel as standard with other materials available on request.

**Crosses**



These fittings are manufactured with a flange on each end of an "X" shaped section of tubing. Crosses accommodate junctions or alignment considerations for vacuum system design. Crosses are also used as junction adapters between different tubing sizes or flange types. These fittings are available in all ISO sizes and flange types. LewVac supplies vacuum crosses in 304 stainless steel as standard with other materials available on request.

**5-Way Crosses, 6-Way Crosses & Cubes**



These fittings are manufactured with a flange on each end of a 5 or 6 sided tubing junction. These crosses accommodate complex junctions or alignment considerations for vacuum system design. Larger sizes are sometimes used as the starting point of a simple vacuum chamber design. LewVac supplies 5 and 6-way vacuum crosses in 304 stainless steel as standard with other materials available on request.

All dimensions are nominal in millimetres unless otherwise specified

All dimensions are nominal in millimetres unless otherwise specified

## KF Half Nipples (Tubulated Flanges)

**Specifications:****Material**

Flanges 304 St.St. or aluminium

Seals Viton® or nitrile

**Temperature Range**

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

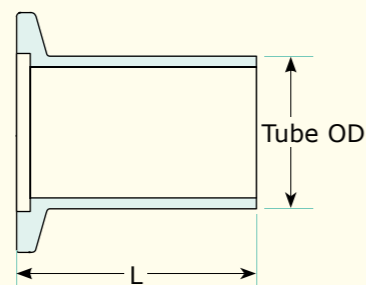
**Vacuum Range** To below 1 x 10<sup>-8</sup> Torr

\* - Increased upper limit for intermittent use.

**Features:**

- 304 stainless steel as standard.
- Other materials available on request.
- Custom lengths available upon request.

Fig. 1.

**KF Half Nipple - Short**

Flange	Material	Fig.	Tube OD	L	Part Code	Price £	Price €
DN10KF	St.St.	1	12.7	12.7	FL-SHN10KF-13		
DN10KF	St.St.	1	14.0	30.0	FL-SHN10KF-14		
DN16KF	St.St.	1	12.7	40.0	FL-SHN16KF-13		
DN16KF	St.St.	1	19.1	12.7	FL-SHN16KF-19		
DN16KF	St.St.	1	20.0	30.0	FL-SHN16KF-20		
DN25KF	St.St.	1	25.4	12.7	FL-SHN25KF-25		
DN25KF	St.St.	1	28.0	30.0	FL-SHN25KF-28		
DN40KF	St.St.	1	38.1	19.1	FL-SHN40KF-38		
DN40KF	St.St.	1	45.0	30.0	FL-SHN40KF-45		
DN50KF	St.St.	1	50.8	19.1	FL-SHN50KF-51		
DN50KF	St.St.	1	57.0	30.0	FL-SHN50KF-57		

**KF Half Nipple - Long**

Flange	Material	Fig.	Tube OD	L	Part Code	Price £	Price €
DN10KF	St.St.	1	12.7	40.0	FL-LHN10KF-13		
DN10KF	St.St.	1	14.0	70.0	FL-LHN10KF-14		
DN10KF	Aluminium	1	12.7	40.0	FL-ALHN10KF-13		
DN16KF	St.St.	1	19.1	40.0	FL-LHN16KF-19		
DN16KF	St.St.	1	20.0	70.0	FL-LHN16KF-20		
DN16KF	Aluminium	1	19.1	40.0	FL-ALHN16KF-19		
DN25KF	St.St.	1	25.4	40.0	FL-LHN25KF-25		
DN25KF	St.St.	1	28.0	70.0	FL-LHN25KF-28		
DN25KF	Aluminium	1	25.4	40.0	FL-ALHN25KF-25		
DN40KF	St.St.	1	38.1	40.0	FL-LHN40KF-38		
DN40KF	St.St.	1	45.0	70.0	FL-LHN40KF-45		
DN40KF	Aluminium	1	38.1	40.0	FL-ALHN40KF-38		
DN50KF	St.St.	1	50.8	40.0	FL-LHN50KF-51		
DN50KF	St.St.	1	57.0	70.0	FL-LHN50KF-57		
DN50KF	Aluminium	1	50.8	40.0	FL-ALHN50KF-51		

All dimensions are nominal in millimetres unless otherwise specified

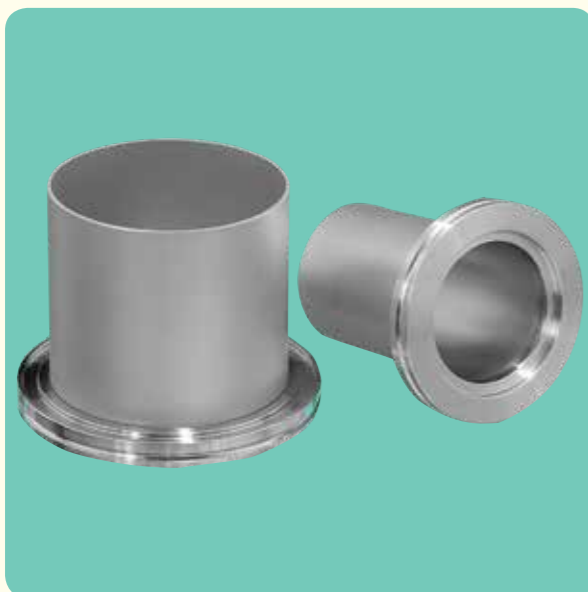
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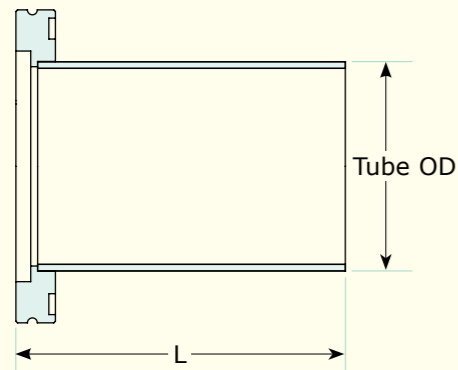
## LF Half Nipples (Tubulated Flanges)



## Features:

- 304 stainless steel as standard.
- Other materials available on request.
- Custom lengths available upon request.

Fig. 1.



## Specifications:

## Material

Flanges 304 St.St.

Seals Viton® or nitrile

## Temperature Range

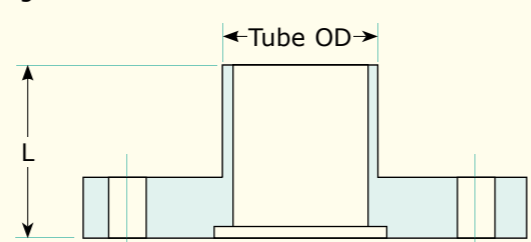
Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below  $1 \times 10^{-8}$  Torr

\* - Increased upper limit for intermittent use.

Fig. 2.



## LF Half Nipple - Claw Clamp



Flange	Material	Fig.	Tube OD	L	Part Code	Price £	Price €
DN63LF	St.St.	1	63.5	100	FL-HN63LF		
DN80LF	St.St.	1	76.2	100	FL-HN80LF		
DN100LF	St.St.	1	101.6	100	FL-HN100LF		
DN160LF	St.St.	1	152.4	100	FL-HN160LF		
DN200LF	St.St.	1	203.2	100	FL-HN200LF		
DN250LF	St.St.	1	254.0	100	FL-HN250LF		
DN320LF	St.St.	1	304.8	100	FL-HN320LF		
DN400LF	St.St.	1	406.8	100	FL-HN400LF		
DN500LF	St.St.	1	508.0	100	FL-HN500LF		

## LF Half Nipple - Bolt



Flange	Material	Fig.	Tube OD	L	Part Code	Price £	Price €
DN63LFB	St.St.	2	63.5	100	FL-HN63LFB		
DN80LFB	St.St.	2	76.5	100	FL-HN80LFB		
DN100LFB	St.St.	2	101.6	100	FL-HN100LFB		
DN160LFB	St.St.	2	152.4	100	FL-HN160LFB		
DN200LFB	St.St.	2	203.2	100	FL-HN200LFB		
DN250LFB	St.St.	2	254.0	100	FL-HN250LFB		
DN320LFB	St.St.	2	304.8	100	FL-HN320LFB		
DN400LFB	St.St.	2	406.4	100	FL-HN400LFB		
DN500LFB	St.St.	2	508.0	100	FL-HN500LFB		

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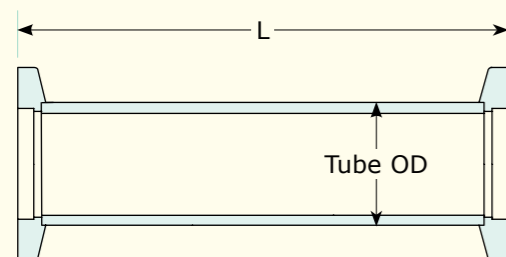
## Nipples (Straight Connectors)



## Features:

- 304 stainless steel as standard.
- Other materials available on request.
- Custom lengths available upon request.

Fig. 1.



## Specifications:

## Material

Flanges 304 St.St.

Seals Viton® or nitrile

## Temperature Range

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below  $1 \times 10^{-8}$  Torr

\* - Increased upper limit for intermittent use.

Fig. 2.

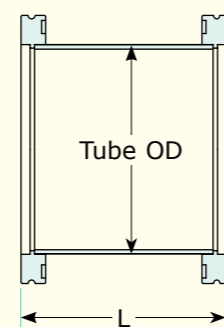


Fig. 3.

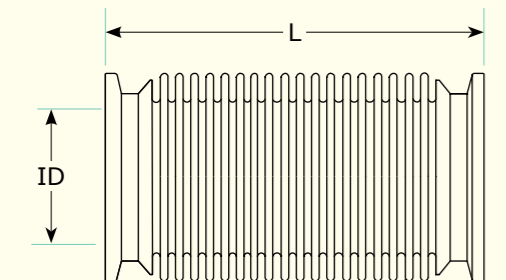
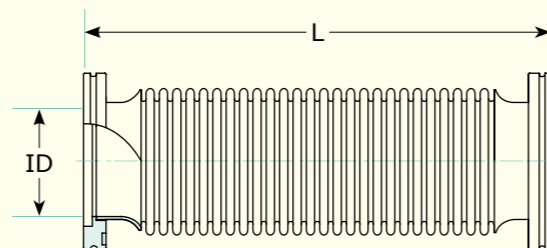


Fig. 4.



## KF Nipple



Flange	Fig.	Tube OD	L	Part Code	Price £	Price €
DN16KF	1	19.1	80.0	FL-SC16KF		
DN16KF	1	19.1	320.0	FL-SCL16KF		
DN25KF	1	25.4	100.0	FL-SC25KF		
DN25KF	1	25.4	320.0	FL-SCL25KF		
DN40KF	1	38.1	130.0	FL-SC40KF		
DN40KF	1	38.1	320.0	FL-SCL40KF		
DN50KF	1	50.8	140.0	FL-SC50KF		
DN50KF	1	50.8	320.0	FL-SCL50KF		

## LF Nipple



Flange	Fig.	Tube OD	L	Part Code	Price £	Price €
DN63LF	2	63.5	100	FL-SC63LF		
DN80LF	2	76.2	100	FL-SC80LF		
DN100LF	2	101.6	100	FL-SC100LF		
DN160LF	2	152.4	100	FL-SC160LF		
DN200LF	2	203.2	100	FL-SC200LF		
DN250LF	2	254.0	100	FL-SC250LF		
DN320LF	2	304.8	200	FL-SC320LF		
DN400LF	2	406.4	200	FL-SC400LF		
DN500LF	2	508.0	200	FL-SC500LF		

## KF Flexible Nipple



Flange	Fig.	ID	L	Part Code	Price £	Price €
DN16KF	3	16.0	100	FL-H100-16KF		
DN25KF	3	25.0	100	FL-H100-25KF		
DN40KF	3	40.0	100	FL-H100-40KF		
DN50KF	3	50.0	100	FL-H100-50KF		

## LF Flexible Nipple



Flange	Fig.	ID	L	Part Code	Price £	Price €
DN63LF	4	60.5	150	FL-H150-63LF		
DN80LF	4	73.2	150	FL-H150-80LF		
DN100LF	4	101.0	150	FL-H150-100LF		
DN160LF	4	148.0	150	FL-H150-160LF		

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## Straight Reducing Nipples



## Specifications:

## Material

Flanges 304 St.St.

Seals Viton® or nitrile

## Temperature Range

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below 1 x 10<sup>-8</sup> Torr

\* - Increased upper limit for intermittent use.

## Features:

- 304 stainless steel as standard.
- Other materials available on request.
- Custom lengths available upon request.

Fig. 1.

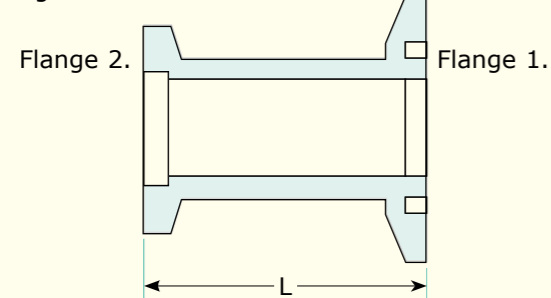


Fig. 2.

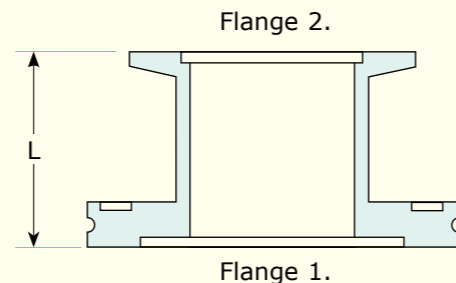
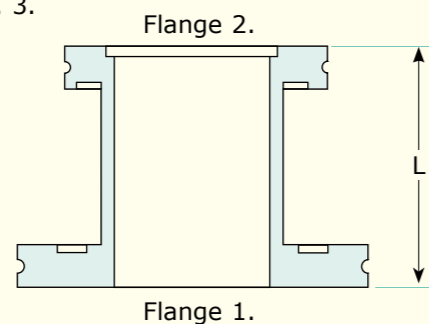


Fig. 3.



## KF to KF Straight Reducing Nipples



Flange 1	Flange 2	Fig.	L	Part Code	Price £	Price €
DN16KF	DN10KF	1	28.0	FL-SR16-10KF		
DN25KF	DN10KF	1	28.0	FL-SR25-10KF		
DN25KF	DN16KF	1	28.0	FL-SR25-16KF		
DN40KF	DN10KF	1	28.0	FL-SR40-10KF		
DN40KF	DN16KF	1	28.0	FL-SR40-16KF		
DN40KF	DN25KF	1	28.0	FL-SR40-25KF		
DN50KF	DN16KF	1	28.0	FL-SR50-16KF		
DN50KF	DN25KF	1	28.0	FL-SR50-25KF		
DN50KF	DN40KF	1	28.0	FL-SR50-40KF		

## LF to KF Straight Reducing Nipples



Flange 1	Flange 2	Fig.	L	Part Code	Price £	Price €
DN63LF	DN16KF	2	50.0	FL-SR63LF-16KF		
DN63LF	DN25KF	2	42.0	FL-SR63LF-25KF		
DN63LF	DN40KF	2	42.0	FL-SR63LF-40KF		
DN63LF	DN50KF	2	42.0	FL-SR63LF-50KF		
DN80LF	DN40KF	2	42.0	FL-SR80LF-40KF		
DN80LF	DN50KF	2	42.0	FL-SR80LF-50KF		
DN100LF	DN25KF	2	42.0	FL-SR100LF-25KF		
DN100LF	DN40KF	2	42.0	FL-SR100LF-40KF		
DN100LF	DN50KF	2	42.0	FL-SR100LF-50KF		
DN160LF	DN40KF	2	42.0	FL-SR160LF-40KF		

## LF to LF Straight Reducing Nipples



Flange 1	Flange 2	Fig.	L	Part Code	Price £	Price €
DN80LF	DN63LF	3	75.0	FL-SR80-63LF		
DN100LF	DN63LF	3	75.0	FL-SR100-63LF		
DN160LF	DN63LF	3	75.0	FL-SR160-63LF		
DN160LF	DN100LF	3	75.0	FL-SR160-100LF		
DN200LF	DN160LF	3	75.0	FL-SR200-160LF		
DN250LF	DN200LF	3	75.0	FL-SR250-200LF		

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Conical Reducing Nipples



Specifications:

Material

Flanges 304 St.St.

Seals Viton® or nitrile

Temperature Range

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below 1 x 10<sup>-8</sup> Torr

\* - Increased upper limit for intermittent use.

Features:

- 304 stainless steel as standard.
- Other materials available on request.
- Custom lengths available upon request.

Fig. 1.

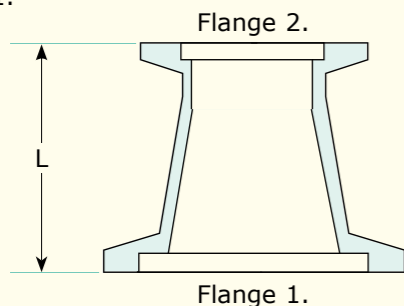


Fig. 2.

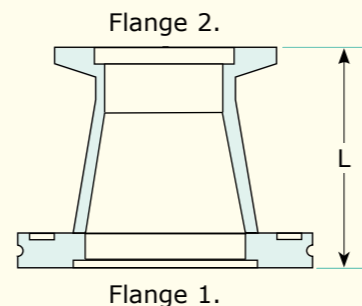
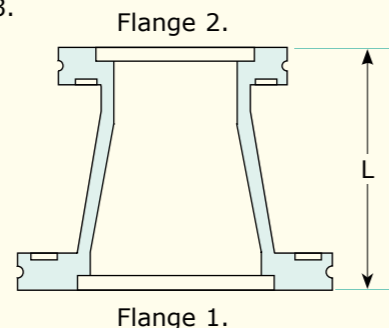


Fig. 3.



KF to KF Conical Reducing Nipples



Flange 1	Flange 2	Fig.	L	Part Code	Price £	Price €
DN25KF	DN16KF	1	40.0	FL-CR25-16KF		
DN40KF	DN16KF	1	40.0	FL-CR40-16KF		
DN40KF	DN25KF	1	40.0	FL-CR40-25KF		
DN50KF	DN16KF	1	40.0	FL-CR50-16KF		
DN50KF	DN25KF	1	40.0	FL-CR50-25KF		
DN50KF	DN40KF	1	40.0	FL-CR50-40KF		

LF to KF Conical Reducing Nipples



Flange 1	Flange 2	Fig.	L	Part Code	Price £	Price €
DN63LF	DN25KF	2	63.0	FL-CR63LF-25KF		
DN63LF	DN40KF	2	63.0	FL-CR63LF-40KF		
DN63LF	DN50KF	2	63.0	FL-CR63LF-50KF		
DN80LF	DN40KF	2	63.0	FL-CR80LF-40KF		
DN80LF	DN50KF	2	63.0	FL-CR80LF-50KF		
DN100LF	DN40KF	2	63.0	FL-CR100LF-40KF		
DN100LF	DN50KF	2	63.0	FL-CR100LF-50KF		

LF to LF Conical Reducing Nipples



Flange 1	Flange 2	Fig.	L	Part Code	Price £	Price €
DN80LF	DN63LF	3	63.0	FL-CR80-63LF		
DN100LF	DN63LF	3	63.0	FL-CR100-63LF		
DN100LF	DN80LF	3	63.0	FL-CR100-80LF		
DN160LF	DN63LF	3	63.0	FL-CR160-63LF		
DN160LF	DN100LF	3	63.0	FL-CR160-100LF		

All dimensions are nominal in millimetres unless otherwise specified

All dimensions are nominal in millimetres unless otherwise specified



Elbows



**Specifications:**

**Material**

Flanges 304 St.St.

Seals Viton® or nitrile

**Temperature Range**

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

**Vacuum Range** To below 1 x 10<sup>-8</sup> Torr

\* - Increased upper limit for intermittent use.

**Features:**

- 304 stainless steel as standard.
- Other materials available on request.
- Custom lengths / sizes available upon request.

Fig. 1.

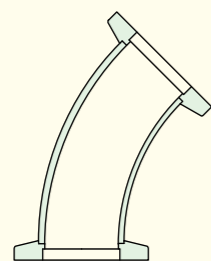


Fig. 2.

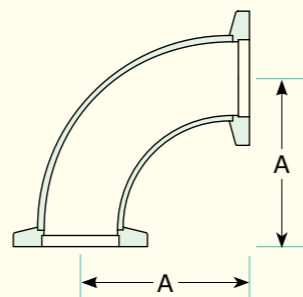


Fig. 3.

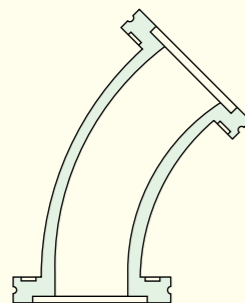


Fig. 4.

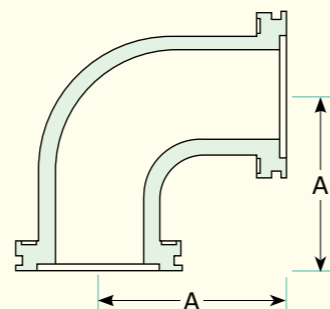
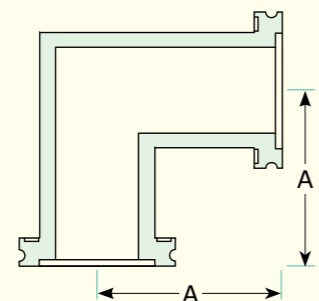


Fig. 5.



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**KF 45° Elbow**



Flange	Fig.	Part Code	Price £	Price €
DN16KF	1	FL-EL45-16KF		
DN25KF	1	FL-EL45-25KF		
DN40KF	1	FL-EL45-40KF		
DN50KF	1	FL-EL45-50KF		

**KF 90° Elbow**



Flange	Fig.	A	Part Code	Price £	Price €
DN10KF	2	29.5	FL-E10KF-29		
DN16KF	2	40.0	FL-E16KF-40		
DN25KF	2	50.0	FL-E25KF-50		
DN40KF	2	65.0	FL-E40KF-65		
DN50KF	2	80.0	FL-E50KF-80		

**LF 45° Elbow**



Flange	Fig.	Part Code	Price £	Price €
DN63LF	3	FL-E45-63LF		
DN80LF	3	FL-E45-80LF		
DN100LF	3	FL-E45-100LF		
DN160LF	3	FL-E45-160LF		

**LF 90° Elbow**



Flange	Fig.	A	Part Code	Price £	Price €
DN63LF	4	138.4	FL-E63LF-138		
DN63LF	4	101.6	FL-E63LF-101		
DN80LF	4	141.5	FL-E80LF-142		
DN100LF	4	158.8	FL-E100LF-158		
DN100LF	4	108.0	FL-E100LF-108		
DN160LF	4	235.2	FL-E160LF-235		
DN160LF	4	200.0	FL-E160LF-200		
DN200LF	4	311.2	FL-E200LF-311		
DN250LF	4	387.4	FL-E250LF-387		

**LF 90° Elbow - Mitred**



Flange	Fig.	A	Part Code	Price £	Price €
DN63LF	5	87.9	FL-EM63LF-88		
DN80LF	5	98.0	FL-EM80LF-98		
DN100LF	5	104.9	FL-EM100LF-105		
DN160LF	5	137.9	FL-EM160LF-138		
DN200LF	5	167.9	FL-EM200LF-168		
DN250LF	5	208.0	FL-EM250LF-208		

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Tees



Specifications:

Material

Flanges 304 St.St.

Seals Viton® or nitrile

Temperature Range

Using Viton® o-rings -20°C to 150°C (200°C\*)

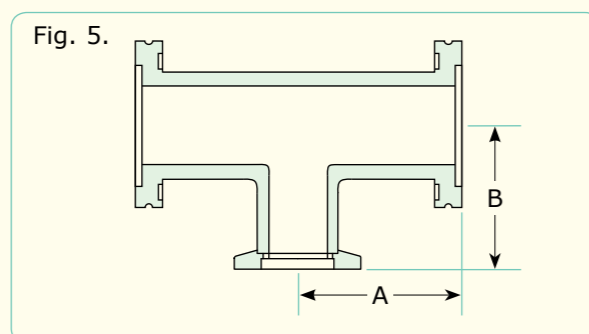
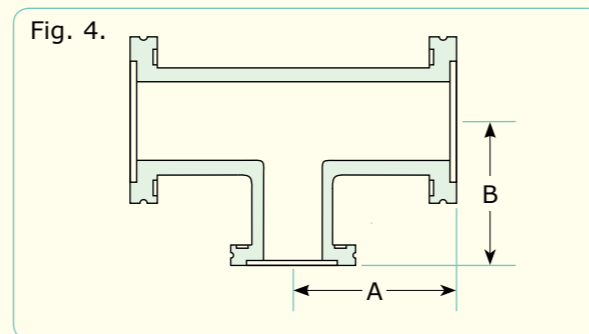
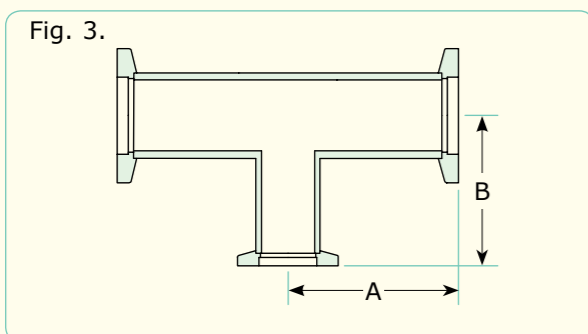
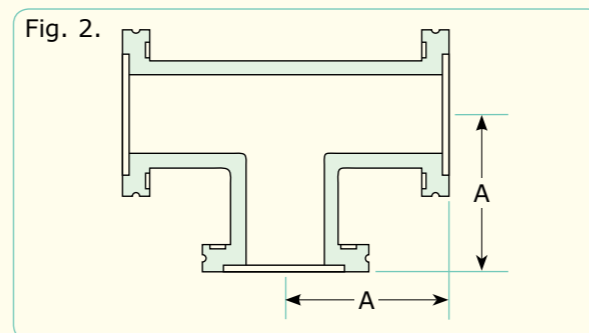
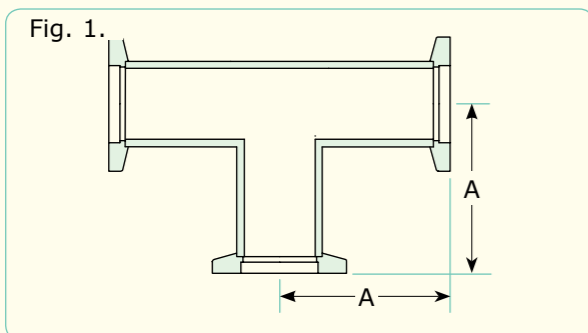
Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below 1 x 10<sup>-8</sup> Torr

\* - Increased upper limit for intermittent use.

Features:

- 304 stainless steel as standard.
- Other materials available on request.
- Custom lengths available upon request.



KF Tee



Flange	Fig.	Tube OD	A	Part Code	Price £	Price €
DN10KF	1	12.7	80.0	FL-T10KF		
DN16KF	1	19.1	38.3	FL-T16KF		
DN16KF	1	19.1	40.0	FL-T16KF40		
DN25KF	1	25.4	51.4	FL-T25KF		
DN25KF	1	25.4	50.0	FL-T25KF50		
DN40KF	1	38.1	61	FL-T40KF		
DN40KF	1	38.1	65.0	FL-T40KF65		
DN50KF	1	50.8	80	FL-T50KF		
DN50KF	1	50.8	70.0	FL-T50KF70		

LF Tee



Flange	Fig.	Tube OD	A	Part Code	Price £	Price €
DN63LF	2	63.5	82.8	FL-T63LF		
DN80LF	2	88.9	89.2	FL-T80LF		
DN100LF	2	104.9	108.0	FL-T100LF		
DN160LF	2	152.4	133.4	FL-T160LF		
DN200LF	2	254.0	184.2	FL-T200LF		
DN250LF	2	304.8	247.7	FL-T250LF		

KF Reducing Tee



Flange 1 & 2	Tube OD	Flange 3	Tube OD	Fig.	A	B	Part Code	Price £	Price €
DN25KF	25.4	DN10KF	12.7	3	52.0	37.5	FL-RT25-10KF		
DN25KF	25.4	DN16KF	19.1	3	52.0	37.5	FL-RT25-16KF		
DN40KF	38.1	DN16KF	19.1	3	61.0	52.0	FL-RT40-16KF		
DN40KF	38.1	DN25KF	25.4	3	61.0	57.8	FL-RT40-25KF		
DN50KF	50.8	DN16KF	19.1	3	80.0	58.2	FL-RT50-16KF		
DN50KF	50.8	DN25KF	25.4	3	80.0	64.1	FL-RT50-25KF		
DN50KF	50.8	DN40KF	38.1	3	80.0	67.3	FL-RT50-40KF		

LF Reducing Tee



Flange 1 & 2	Tube OD	Flange 3	Tube OD	Fig.	A	B	Part Code	Price £	Price €
DN80LF	76.2	DN63LF	63.5	4	88.9	88.9	FL-RT80-63LF		
DN100LF	101.6	DN63LF	63.5	4	104.9	101.6	FL-RT100-63LF		
DN100LF	101.6	DN80LF	76.2	4	104.9	101.6	FL-RT100-80LF		
DN160LF	152.4	DN63LF	63.5	4	133.4	127.0	FL-RT160-63LF		
DN160LF	152.4	DN80LF	76.2	4	133.4	127.0	FL-RT160-80LF		
DN160LF	152.4	DN100LF	101.6	4	133.4	130.3	FL-RT160-100LF		
DN200LF	203.2	DN160LF	152.4	4	184.2	158.8	FL-RT200-160LF		

LF To KF Reducing Tee



Flange 1 & 2	Tube OD	Flange 3	Tube OD	Fig.	A	B	Part Code	Price £	Price €
DN63LF	63.5	DN40KF	38.1	5	82.6	73.7	FL-RT63LF-40KF		
DN63LF	63.5	DN50KF	50.8	5	82.6	86.4	FL-RT63LF-50KF		
DN80LF	76.2	DN40KF	38.1	5	88.9	80.0	FL-RT80LF-40KF		
DN80LF	76.2	DN50KF	50.8	5	88.9	92.7	FL-RT80LF-50KF		
DN100LF	101.6	DN40KF	38.1	5	104.9	92.7	FL-RT100LF-40KF		
DN100LF	101.6	DN50KF	50.8	5	104.9	105.4	FL-RT100LF-50KF		

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4-Way Crosses



Specifications:

Material

Flanges 304 St.St.

Seals Viton® or nitrile

Temperature Range

Using Viton® o-rings -20°C to 150°C (200°C\*)

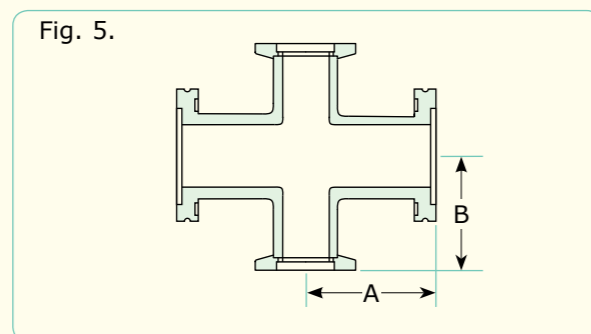
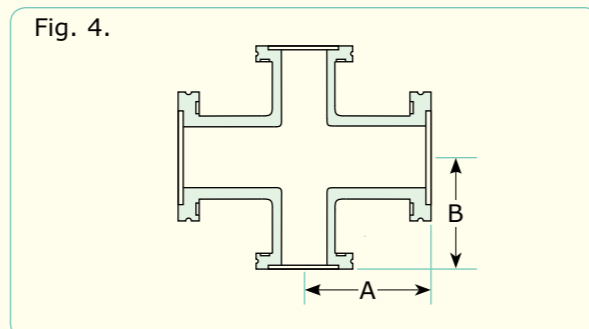
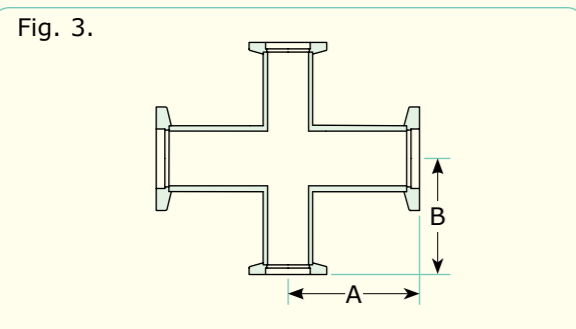
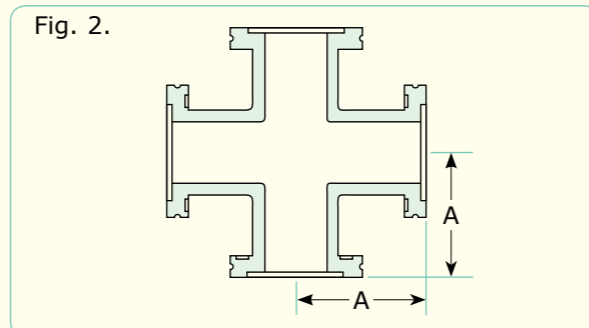
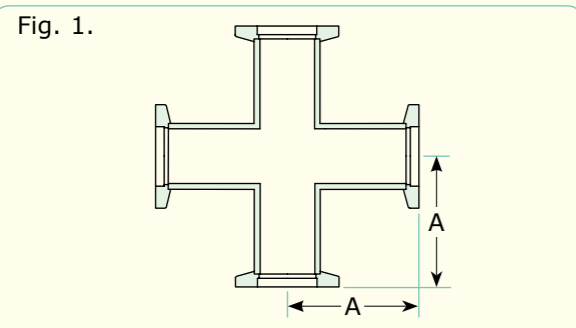
Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below 1 x 10<sup>-8</sup> Torr

\* - Increased upper limit for intermittent use.

Features:

- 304 stainless steel as standard.
- Other materials available on request.
- Custom lengths available upon request.



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KF 4-Way Cross



Flange	Tube OD	Fig.	A	Part Code	Price £	Price €
DN10KF	12.7	1	30.0	FL-4X10KF		
DN16KF	19.1	1	40.0	FL-4X16KF		
DN25KF	25.4	1	50.0	FL-4X25KF		
DN40KF	38.1	1	65.0	FL-4X40KF		
DN50KF	50.8	1	70.0	FL-4X50KF		

LF 4-Way Cross



Flange	Tube OD	Fig.	A	Part Code	Price £	Price €
DN63LF	63.5	2	82.8	FL-4X63LF		
DN80LF	76.2	2	89.2	FL-4X80LF		
DN100LF	101.6	2	105.0	FL-4X100LF		
DN160LF	152.4	2	133.6	FL-4X160LF		
DN200LF	203.2	2	TBA	FL-4X200LF		
DN250LF	254.0	2	TBA	FL-4X250LF		

KF 4-Way Reducing Cross



Flange 1 & 2	Tube OD	Flange 3 & 4	Tube OD	Fig.	A	B	Part Code	Price £	Price €
DN25KF	25.4	DN10KF	12.7	3	52	31.5	FL-R4X25-10KF		
DN25KF	25.4	DN16KF	19.1	3	50	43.2	FL-R4X25-16KF		
DN40KF	38.1	DN16KF	19.1	3	61	52.0	FL-R4X40-16KF		
DN40KF	38.1	DN25KF	25.4	3	61	57.8	FL-R4X40-25KF		
DN50KF	50.8	DN16KF	19.1	3	70	55.9	FL-R4X50-16KF		
DN50KF	50.8	DN25KF	25.4	3	70	50.0	FL-R4X50-25KF		
DN50KF	50.8	DN40KF	38.1	3	80	67.3	FL-R4X50-40KF		

LF 4-Way Reducing Cross



Flange 1 & 2	Tube OD	Flange 3 & 4	Tube OD	Fig.	A	B	Part Code	Price £	Price €
DN80LF	76.2	DN63LF	63.5	4	88.9	88.9	FL-R4X80-63LF		
DN100LF	101.6	DN63LF	63.5	4	104.9	101.6	FL-R4X100-63LF		
DN100LF	101.6	DN80LF	76.2	4	104.9	101.6	FL-R4X100-80LF		
DN160LF	152.4	DN63LF	63.5	4	136.7	127.0	FL-R4X160-63LF		
DN160LF	152.4	DN80LF	76.2	4	136.7	127.0	FL-R4X160-80LF		
DN160LF	152.4	DN100LF	101.6	4	133.6	130.4	FL-R4X160-100LF		
DN200LF	203.2	DN160LF	152.4	4	187.5	162.1	FL-R4X200-160LF		

LF To KF 4-Way Reducing Cross



Flange 1 & 2	Tube OD	Flange 3 & 4	Tube OD	Fig.	A	B	Part Code	Price £	Price €
DN63LF	63.5	DN40KF	38.1	5	82.6	73.7	FL-R4X63LF-40KF		
DN63LF	63.5	DN50KF	50.8	5	82.6	86.4	FL-R4X63LF-50KF		
DN80LF	76.2	DN40KF	38.1	5	88.9	80.0	FL-R4X80LF-40KF		
DN80LF	76.2	DN50KF	50.8	5	88.9	92.7	FL-R4X80LF-50KF		
DN100LF	101.6	DN40KF	38.1	5	104.9	92.7	FL-R4X100LF-40KF		
DN100LF	101.6	DN50KF	50.8	5	104.9	105.4	FL-R4X100LF-50KF		

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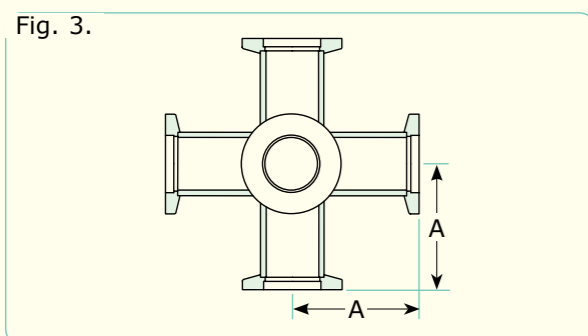
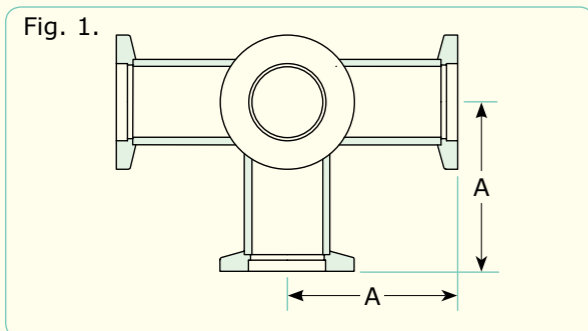
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## 5-Way &amp; 6-Way Crosses



## Features:

- 304 stainless steel as standard.
- Other materials available on request.
- Custom lengths available upon request.



## Specifications:

## Material

Flanges 304 St.St.

Seals Viton® or nitrile

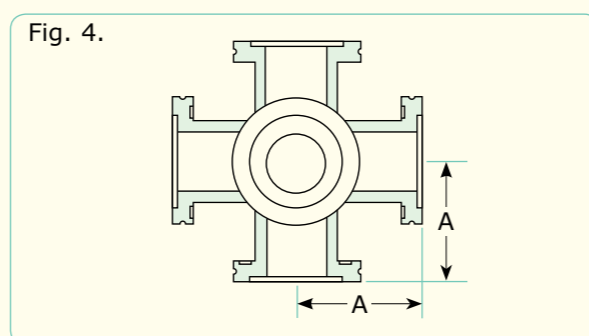
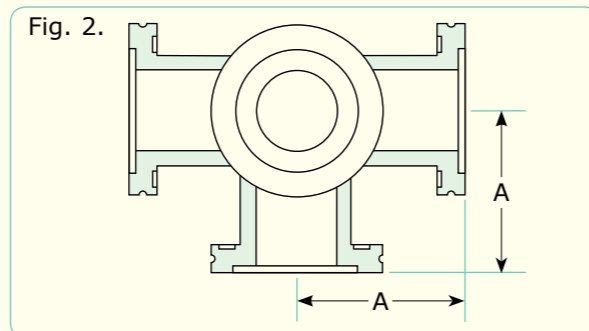
## Temperature Range

Using Viton® o-rings -20°C to 150°C (200°C\*)

Using nitrile o-rings -20°C to 80°C (100°C\*)

Vacuum Range To below  $1 \times 10^{-8}$  Torr

\* - Increased upper limit for intermittent use.



## KF 5-Way Cross



Flange	Tube OD	Fig.	A	Part Code	Price £	Price €
DN16KF	19.1	1	38.3	FL-5X16KF		
DN25KF	25.4	1	51.4	FL-5X25KF		
DN40KF	38.1	1	60.1	FL-5X40KF		
DN50KF	50.8	1	80.0	FL-5X50KF		

## LF 5-Way Cross



Flange	Tube OD	Fig.	A	Part Code	Price £	Price €
DN63LF	63.5	2	82.8	FL-5X63LF		
DN80LF	76.2	2	89.2	FL-5X80LF		
DN100LF	101.6	2	105.0	FL-5X100LF		
DN160LF	152.4	2	133.6	FL-5X160LF		
DN200LF	203.2	2	184.2	FL-5X200LF		
DN250LF	254.0	2	247.7	FL-5X250LF		

## KF 6-Way Cross



Flange	Tube OD	Fig.	A	Part Code	Price £	Price €
DN16KF	19.1	3	39.9	FL-6X16KF		
DN25KF	25.4	3	51.4	FL-6X25KF		
DN40KF	38.1	3	60.1	FL-6X40KF		
DN50KF	50.8	3	80.0	FL-6X50KF		

## LF 6-Way Cross



Flange	Tube OD	Fig.	A	Part Code	Price £	Price €
DN63LF	63.5	4	82.8	FL-6X63LF		
DN80LF	76.2	4	89.29	FL-6X80LF		
DN100LF	101.6	4	105.0	FL-6X100LF		
DN160LF	152.4	4	133.6	FL-6X160LF		
DN200LF	203.2	4	184.2	FL-6X200LF		
DN250LF	254.0	4	247.7	FL-6X-250LF		
DN250LF	254.0	4	208.0	FL-6X250LF-208		

All dimensions are nominal in millimetres unless otherwise specified

Contact VacPro :- Email : [info@vacpro.dk](mailto:info@vacpro.dk) - Tel : +45 70 26 88 05 - Website : [www.vacpro.dk](http://www.vacpro.dk)Email : [sales@lewwac.co.uk](mailto:sales@lewwac.co.uk) - Tel : +44 (0)1444 233372 - Fax : +44 (0)1444 233392 - Website : [www.lewwac.co.uk](http://www.lewwac.co.uk)

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