

## Components

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# Varian Flanges

- Superior Quality Construction
- High Reliability
- Immediate Delivery

## ConFlat Flanges

Varian's ConFlat Flanges have set the industry standard for vacuum flange performance. These flanges are available in rotatable and non-rotatable models, and in sizes from 1.33 in. to 13.25 in. OD.

Varian utilizes unique manufacturing processes and techniques to ensure leak-free performance in ConFlat Flanges. Our flanges are manufactured from type 304 ESR or 304L stainless steel. ESR stainless steel is manufactured using a process known as Electro Slag Remelting. This process is a further refinement of the stainless steel and results in higher purity, fewer inclusions, a more uniform grain structure, and generally improved properties. Electro Slag Remelting also markedly reduces nonmetallic inclusions, oxygen content, sulfur, and micro and macro segregations. 304 ESR flanges are recommended for electro-plating applications when the flanges are not masked-off.

Each lot of raw material is carefully evaluated for performance prior to use in manufacturing. Only upon acceptance will this material be used for ConFlat Flange production. Our unbending commitment to quality assures you of trouble-free vacuum performance of the Varian ConFlat Flange.

## ConFlat Flange Fittings

A large variety of fittings are immediately available for your vacuum application. Varian's ConFlat Flange vacuum fittings offer the same vacuum performance as our ConFlat Flange. Combined with our excellence in vacuum component fabrication, these fittings offer high reliability and performance for your application.



## Specifications

### Materials

**Flanges:** ConFlat Flange are available in 304L Stainless Steel and 304 Stainless Electro-Slag Remelt (ESR). Larger flanges may be made from open-die or cross-forged type 304 Stainless. Rotatable flanges in ESR may include receivers made from 304 bar or plate.

Other materials, such as 316LN SS, are also available.

**Gaskets:** Copper gaskets are made from electronic grade OFHC copper with a "Purity Total" of greater than 99.99%.

**Viton Gaskets:** Reusable gaskets for leak checking and use in unbaked applications are also available.

**Hardware:** Bolt options include 12-point high tensile strength, hexagonal head, or metric hexagonal head. Washers are not required with 1.33 in. (NW16 CF) and 2.75 in. (NW25 CF) OD flanges.

### Performance

**Vacuum Range:** Atmospheric to  $1 \times 10^{-13}$  Torr (mbar). No leak detectable on mass spectrometer leak detector with sensitivity of  $2 \times 10^{-10}$  std cc/sec.

**Temperature Range:** 304 ESR SS can be repeatedly cycled from  $-196^\circ\text{C}$  to  $+500^\circ\text{C}$ .

**Packaging:** All Varian components are cleaned via an ultrasonic aqueous base cleaning system using de-ionized water. Water soluble coolants and non-sulphur based compounds are used in our manufacturing processes. Our parts are free of visible particulates, debris, oils and greases, and are ready for use in vacuum systems.

# VacuumXpress

Your vacuum hardware order shipped in **24** hours or less!

## Ordering

- Flanges and fittings can be ordered by calling Varian directly, or through your local Varian Sales Engineer or Representative.
- Select flanges and fittings can also be ordered on-line through Varian's web-site.

## Delivery

- Hundreds of popular vacuum components in stock
- We ship from our Lexington, MA facility within 24 hours... or we will deliver your order at your convenience

## Quality

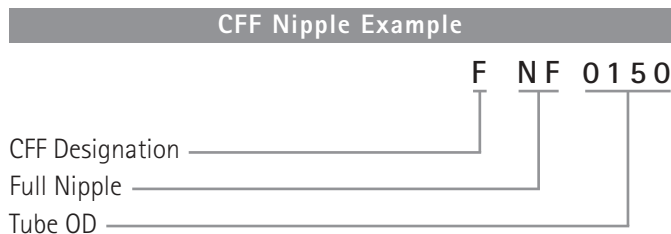
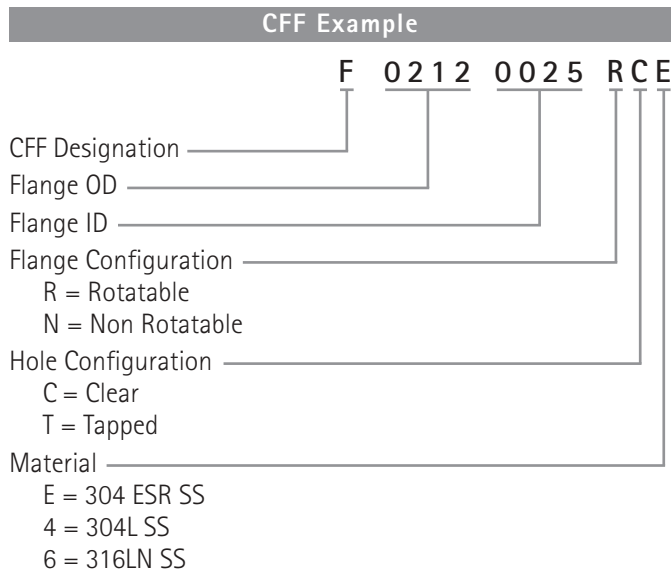
- High Quality ConFlat, ISO, and KF Flanges and Fittings
- Varian's State-of-the-Art Manufacturing and Distribution Facility
- Efficient, reliable, quality manufacturing processes and techniques including Statistical Process Control (SPC) and Process Capability Index (CpK)





Varian's introduction of its extensive offering in vacuum flanges and fittings features an intuitive part numbering format. These part numbering format allows the customer to identify the product by the characters contained within the part number.

Depending on the product, the number and format of the characters in the part number will vary. Please see the examples below:



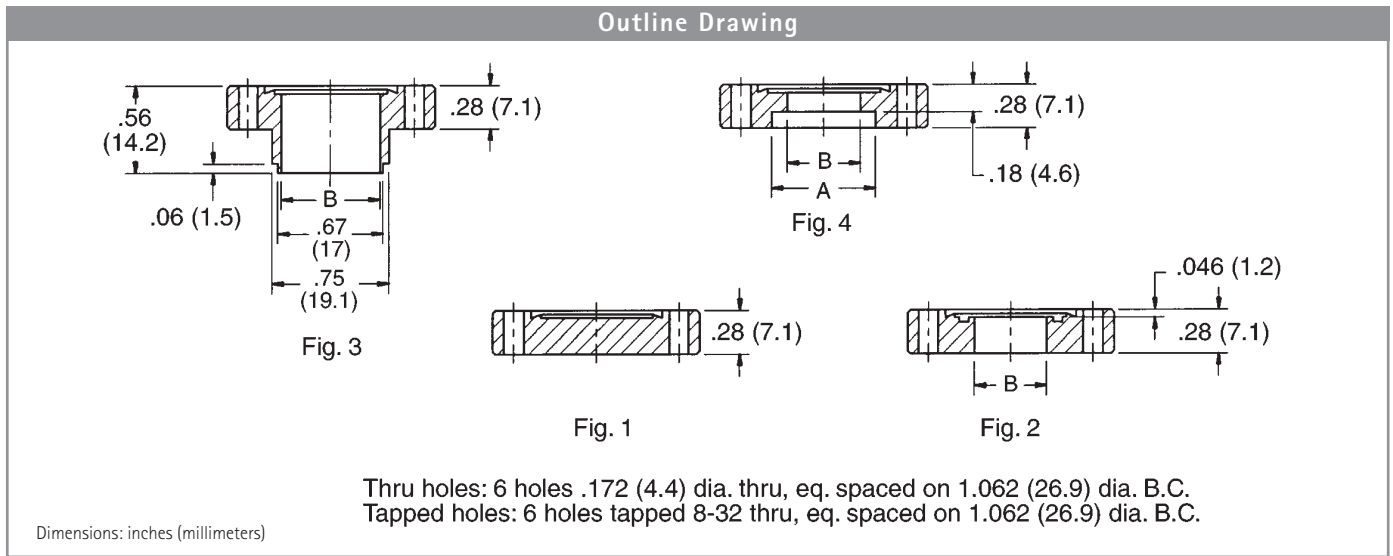
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# 1 1/3 in. (NW16CF) Non-Rotatable



## Ordering Information – 1 1/3 in. Non-Rotatable Flanges

Type	304L SS		304 ESR SS		Fig. Number	Dimensions		Weight lbs (kg)
	Part Number		Part Number			A in. (mm)	B in. (mm)	
Non-Rotatable	F01330000NC4		F01330000NCE		1	-	-	0.5 (0.2)
	F01330025NC4		F01330025NCE		2	-	0.26 (6.48)	0.5 (0.2)
	F01330038NC4		F01330038NCE		2	-	0.38 (9.70)	0.5 (0.2)
	F01330050NC4		F01330050NCE		2	-	0.51 (12.82)	0.5 (0.2)
	F01330075NC4W		F01330075NCEW		3	-	0.63 (16.00)	0.5 (0.2)
	F01330075NC4B		F01330075NCEB		4	0.76 (19.20)	0.63 (16.00)	0.5 (0.2)
Non-Rotatable Tapped	F01330000NT4		F01330000NTE		1	-	-	0.5 (0.2)
	F01330025NT4		F01330025NTE		2	-	0.26 (6.48)	0.5 (0.2)
	F01330038NT4		F01330038NTE		2	-	0.38 (9.70)	0.5 (0.2)
	F01330050NT4		F01330050NTE		2	-	0.51 (12.82)	0.5 (0.2)
	F01330075NT4W		F01330075NTEW		3	-	0.63 (16.00)	0.5 (0.2)
	F01330075NT4B		F01330075NTEB		4	0.76 (19.20)	0.63 (16.00)	0.5 (0.2)

## Accessories – 1 1/3 in. Flanges

Description	Copper Part Number	Silver Plated Copper Part Number	Viton Part Number	Qty/Pkg	Weight lbs (kg)
<b>Gaskets</b>					
10-pack, individually sealed	FG0133CI	FG0133CIS	N/A	10	1.0 (0.5)
Package set	N/A	N/A	FG0133VU	5	0.5 (0.2)
Gasket clip set	GC0275S	N/A	N/A	10	0.5 (0.2)

**NOTE** • 316LN SS material available on request

# 1 1/3 in. (NW16CF) Rotatable

## Outline Drawing

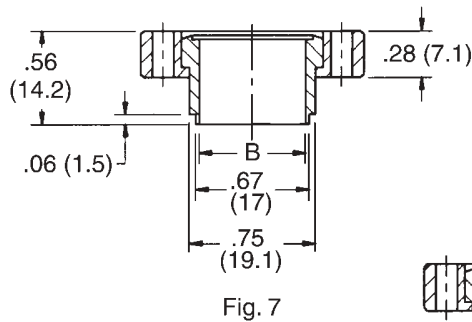


Fig. 7

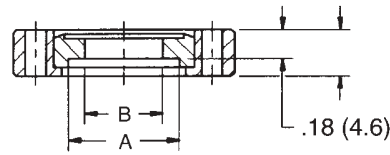


Fig. 8

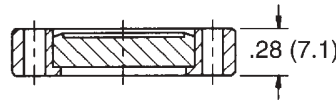


Fig. 5

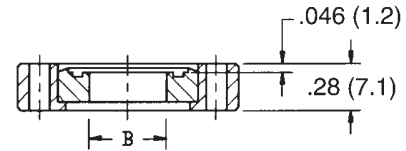


Fig. 6

Thru holes: 6 holes .172 (4.4) dia. thru, eq. spaced on 1.062 (26.9) dia. B.C.  
Tapped holes: 6 holes tapped 8-32 thru, eq. spaced on 1.062 (26.9) dia. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 1 1/3 in. Rotatable Flanges

Type	304L SS		304 ESR SS		Fig. Number	Dimensions		Weight lbs (kg)
	Part Number	UHV Ready	Part Number	UHV Ready		A in. (mm)	B in. (mm)	
Rotatable	F01330000RC4	UHV Ready	F01330000RCE	UHV Ready	5	-	-	0.5 (0.2)
	F01330025RC4		F01330025RCE		6	-	0.26 (6.48)	0.5 (0.2)
	F01330038RC4		F01330038RCE		6	-	0.38 (9.70)	0.5 (0.2)
	F01330050RC4		F01330050RCE		6	-	0.51 (12.82)	0.5 (0.2)
	F01330075RC4W		F01330075RCEW		7	-	0.63 (16.00)	0.5 (0.2)
	F01330075RC4B		F01330075RCEB		8	0.76 (19.20)	0.63 (16.00)	0.5 (0.2)
Rotatable	F01330000RT4	UHV Ready	F01330000RTE	UHV Ready	5	-	-	0.5 (0.2)
Tapped	F01330025RT4		F01330025RTE		6	-	0.26 (6.48)	0.5 (0.2)
	F01330038RT4		F01330038RTE		6	-	0.38 (9.70)	0.5 (0.2)
	F01330050RT4		F01330050RTE		6	-	0.51 (12.82)	0.5 (0.2)
	F01330075RT4W		F01330075RTEW		7	-	0.63 (16.00)	0.5 (0.2)
	F01330075RT4B		F01330075RTE		8	0.76 (19.20)	0.63 (16.00)	0.5 (0.2)

## Accessories – 1 1/3 in. Flanges

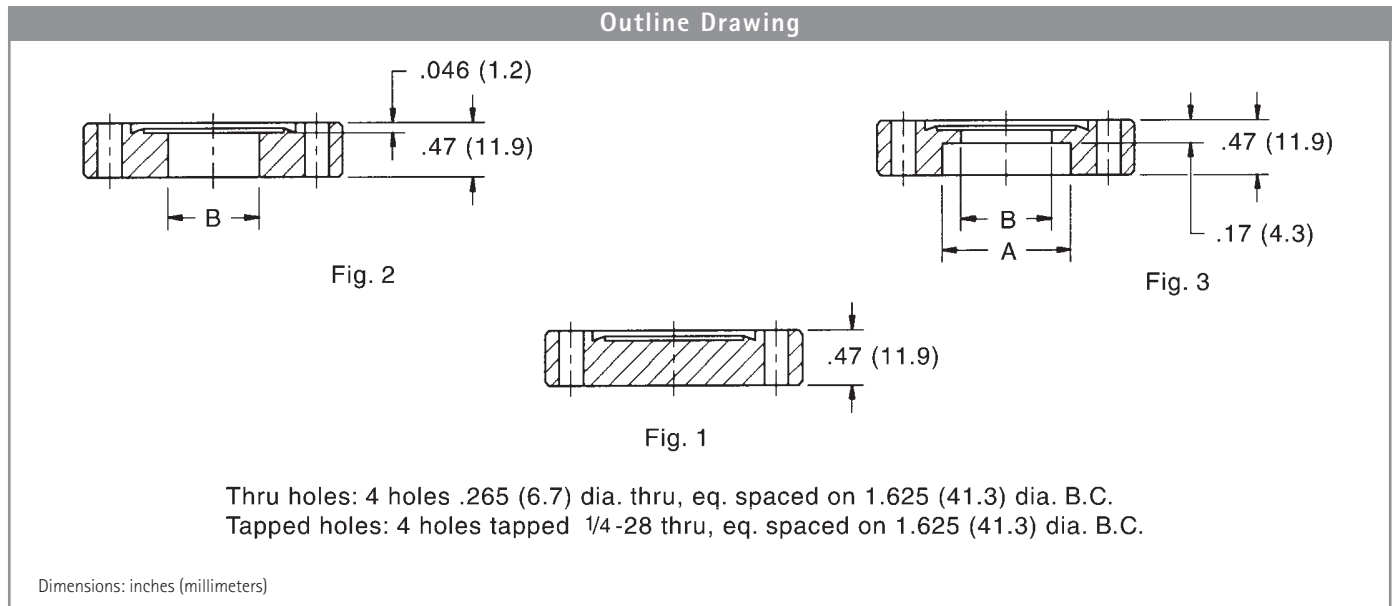
Description	Thread/Length	Socket Head Part Number	Silver Plated Socket Head Part Number	Qty/Pkg	Weight lbs (kg)
<b>Nut and Bolt Sets</b>					
Clear hole flanges*	8-32 x 3/4	FB0133C	FB0133CS	25	2.0 (0.9)
Tapped hole flanges**	8-32 x 1/2	FB0133T	FB0133TS	25	1.0 (0.5)
<b>Plate Nut Sets</b>					
12 plate nuts/24 bolts/washers		FP0133K	N/A	12/24	2.0 (0.9)
24 plate nuts only		FP0133N	N/A	24	1.0 (0.5)

\* Includes nuts, washers, and bolts

\*\* Includes washers and bolts only

NOTE • 316LN SS material available on request  
• Custom configurations available on request

## 2<sup>1</sup>/<sub>8</sub> in. (NW25CF) Non-Rotatable



### Ordering Information – 2<sup>1</sup>/<sub>8</sub> in. Non-Rotatable Flanges

Type	304L SS		304 ESR SS		Fig. Number	Dimensions		Weight lbs (kg)
	Part Number	(UHV Ready)	Part Number	(UHV Ready)		A in. (mm)	B in. (mm)	
Non-Rotatable	F02120000NC4	(UHV Ready)	F02120000NCE	(UHV Ready)	1	-	-	0.5 (0.2)
	F02120025NC4		F02120025NCE		2	-	0.26 (6.48)	0.5 (0.2)
	F02120050NC4		F02120050NCE		2	-	0.51 (12.83)	0.5 (0.2)
	F02120075NC4		F02120075NCE		3	0.76 (19.30)	0.63 (15.86)	0.5 (0.2)
	F02120100NC4		F02120100NCE		3	1.01 (25.65)	0.88 (22.23)	0.5 (0.2)
Non-Rotatable Tapped	F02120000NT4	(UHV Ready)	F02120000NTE	(UHV Ready)	1	-	-	0.5 (0.2)
	F02120025NT4		F02120025NTE		2	-	0.26 (6.48)	0.5 (0.2)
	F02120050NT4		F02120050NTE		2	-	0.51 (12.83)	0.5 (0.2)
	F02120075NT4		F02120075NTE		3	0.76 (19.30)	0.63 (15.86)	0.5 (0.2)
	F02120100NT4		F02120100NTE		3	1.01 (25.65)	0.88 (22.23)	0.5 (0.2)

### Accessories – 2<sup>1</sup>/<sub>8</sub> in. Flanges

Description	Copper Part Number	Silver Plated Copper Part Number	Viton Part Number	Qty/Pkg	Weight lbs (kg)
<b>Gaskets</b>					
10-pack, individually sealed	FG0212CI	FG0212CIS	N/A	10	1.0 (0.5)
Package Set	N/A	N/A	FG0212VU	5	0.5 (0.2)
Gasket clip set	GC0275S	N/A	N/A	10	0.5 (0.2)



## 2 1/8 in. (NW25CF) Rotatable

### Outline Drawing

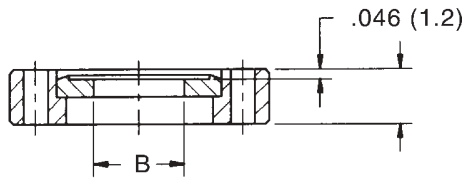


Fig. 5

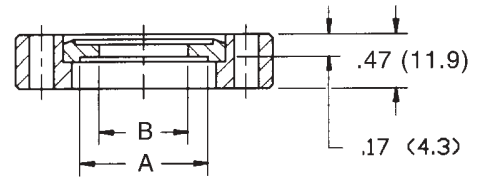


Fig. 6

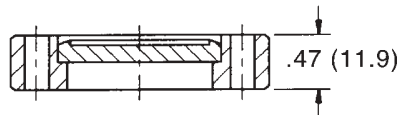


Fig. 4

Thru holes: 4 holes .265 (6.7) dia. thru, eq. spaced on 1.625 (41.3) dia. B.C.  
Tapped holes: 4 holes tapped 1/4-28 thru, eq. spaced on 1.625 (41.3) dia. B.C.

Dimensions: inches (millimeters)

### Ordering Information – 2 1/8 in. Rotatable Flanges

Type	304L SS		304 ESR SS		Fig. Number	Dimensions		Weight lbs (kg)
	Part Number	(UHV Ready)	Part Number	(UHV Ready)		A in. (mm)	B in. (mm)	
Rotatable	F02120000RC4	(UHV Ready)	F02120000RCE	(UHV Ready)	4	-	-	0.5 (0.2)
	F02120025RC4		F02120025RCE		5	-	0.26 (6.48)	0.5 (0.2)
	F02120050RC4		F02120050RCE		5	-	0.51 (12.83)	0.5 (0.2)
	F02120075RC4		F02120075RCE		6	0.76 (19.30)	0.63 (15.86)	0.5 (0.2)
	F02120100RC4		F02120100RCE		6	1.01 (25.65)	0.88 (22.23)	0.5 (0.2)
Rotatable Tapped	F02120000RT4	(UHV Ready)	F02120000RTE	(UHV Ready)	4	-	-	0.5 (0.2)
	F02120025RT4		F02120025RTE		5	-	0.26 (6.48)	0.5 (0.2)
	F02120050RT4		F02120050RTE		5	-	0.51 (12.83)	0.5 (0.2)
	F02120075RT4		F02120075RTE		6	0.76 (19.30)	0.63 (15.86)	0.5 (0.2)
	F02120100RT4		F02120100RTE		6	1.01 (25.65)	0.88 (22.23)	0.5 (0.2)

### Accessories – 2 1/8 in. Flanges

Description	Thread/Length	Hex Head Part Number	12-Point Bolt Part Number	Silver Plated 12-Point Bolt Part Number	Qty/Pkg	Weight lbs (kg)
<b>Nut and Bolt Sets</b>						
Clear hole flanges*	1/4-28 x 1 1/4	FB0275C06	FB0275C12	FB0275C12S	25	2.0 (0.9)
Tapped hole flanges**	1/4-28 x 7/8	FB0275T06	FB0275T12	FB0275T12S	25	1.0 (0.5)

\* Includes nuts, washers, and bolts

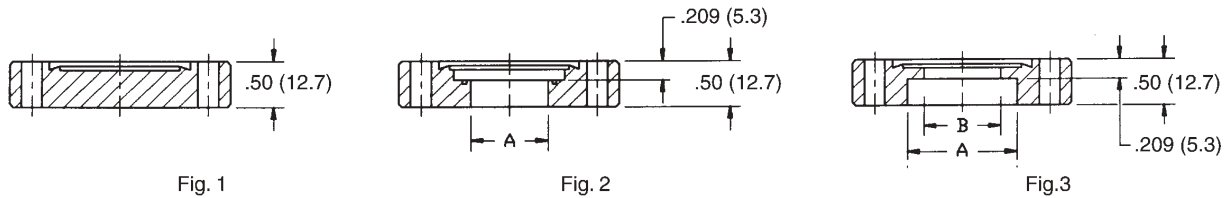
\*\* Includes washers and bolts only

**NOTE**

- 316LN SS material available on request
- Custom configurations available on request

## 2<sup>3</sup>/<sub>4</sub> in. (NW35CF) Non-Rotatable

### Outline Drawing



Thru holes: 6 holes .265 (6.7) dia. thru, eq. spaced on 2.312 (58.7) dia. B.C.  
Tapped holes: 6 holes tapped 1/4-28 thru, eq. spaced on 2.312 (58.7) dia. B.C.

Dimensions: inches (millimeters)

### Ordering Information – 2<sup>3</sup>/<sub>4</sub> in. Non-Rotatable Flanges

Type	304L SS		304 ESR SS		Fig. Number	Dimensions		Weight lbs (kg)
	Part Number		Part Number			A in. (mm)	B in. (mm)	
Non-Rotatable	F02750000NC4		F02750000NCE		1	–	–	0.8 (0.4)
	F02750025NC4W		F02750025NCEW		2	0.26 (6.48)	–	0.8 (0.4)
	F02750050NC4W		F02750050NCEW		2	0.51 (12.83)	–	0.8 (0.4)
	F02750075NC4B		F02750075NCEB		3	0.76 (19.30)	0.69 (17.53)	0.8 (0.4)
	F02750075NC4W		F02750075NCEW		2	0.76 (19.30)	–	0.8 (0.4)
	F02750100NC4B		F02750075NCEB		3	1.01 (25.65)	0.88 (22.23)	0.5 (0.2)
	F02750100NC4W		F02750100NCEW		2	1.01 (25.65)	–	0.8 (0.4)
	F02750125NC4		F02750125NCE		3	1.26 (32.00)	1.13 (28.56)	0.5 (0.2)
	F02750150NC4		F02750150NCE		3	1.51 (38.35)	1.38 (34.93)	0.5 (0.2)
	F02750162NC4		F02750162NCE		3	1.64 (41.53)	1.50 (38.10)	0.5 (0.2)
	F02750175NC4		F02750175NCE		3	1.76 (44.70)	1.63 (41.28)	0.5 (0.2)
	Non-Rotatable Tapped	F02750000NT4		F02750000NTE		1	–	–
F02750025NT4W			F02750025NTEW		2	0.26 (6.48)	–	0.8 (0.4)
F02750050NT4W			F02750050NTEW		2	0.51 (12.83)	–	0.8 (0.4)
F02750075NT4B			F02750075NTEB		3	0.76 (19.30)	0.69 (17.53)	0.8 (0.4)
F02750075NT4W			F02750075NTEW		2	0.76 (19.30)	–	0.8 (0.4)
F02750100NT4B			F02750100NTEB		3	1.01 (25.65)	0.88 (22.23)	0.5 (0.2)
F02750100NT4W			F02750100NTEW		2	1.01 (25.65)	–	0.8 (0.4)
F02750125NT4			F02750125NTE		3	1.26 (32.00)	1.13 (28.56)	0.5 (0.2)
F02750150NT4			F02750150NTE		3	1.51 (38.35)	1.38 (34.93)	0.5 (0.2)
F02750162NT4			F02750162NTE		3	1.64 (41.53)	1.50 (38.10)	0.5 (0.2)
F02750175NT4			F02750175NTE		3	1.76 (44.70)	1.63 (41.28)	0.5 (0.2)

### Accessories – 2<sup>3</sup>/<sub>4</sub> in. Flanges

Description	Copper Part Number	Silver Plated Copper Part Number	Viton Part Number	Qty/Pkg	Weight lbs (kg)
<b>Gaskets</b>					
10-pack, individually sealed	FG0275CI	FG0275CIS	N/A	10	0.5 (0.2)
10-pack, solid blank-off	FG0275CUB	N/A	N/A	10	1.0 (0.5)
Package set	N/A	N/A	FG0275VU	5	0.5 (0.2)
Gasket clip set	GC0275S	N/A	N/A	10	0.5 (0.2)

# 2<sup>3</sup>/<sub>4</sub> in. (NW35CF) Rotatable

## Outline Drawing

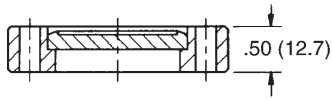


Fig. 4

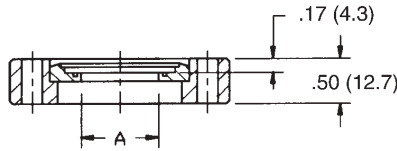


Fig. 5

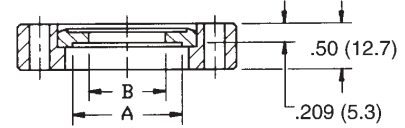


Fig. 6

Thru holes: 6 holes .265 (6.7) dia. thru, eq. spaced on 2.312 (58.7) dia. B.C.  
Tapped holes: 6 holes tapped 1/4-28 thru, eq. spaced on 2.312 (58.7) dia. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 2<sup>3</sup>/<sub>4</sub> in. Rotatable Flanges

Type	304L SS Part Number	304 ESR SS Part Number	Fig. Number	Dimensions		Weight
				A in. (mm)	B in. (mm)	lbs (kg)
Rotatable	F0275000RC4	F0275000RCE	4	-	-	0.8 (0.4)
	F02750025RC4	F02750025RCEW	5	.26 (6.48)	-	0.8 (0.4)
	F02750050RC4	F02750050RCEW	5	.51 (12.83)	-	0.8 (0.4)
	F02750075RC4	F02750075RCEB	6	.76 (19.30)	.69 (17.53)	0.8 (0.4)
	N/A	F02750075RCEW	5	.76 (19.30)	-	0.8 (0.4)
	F02750100RC4	F02750100RCEB	6	1.01 (25.65)	.88 (22.23)	0.5 (0.2)
	N/A	F02750100RCEW	5	1.01 (25.65)	-	0.8 (0.4)
	F02750125RC4	F02750125RCE	6	1.26 (32.00)	1.13 (28.56)	0.5 (0.2)
	F02750150RC4	F02750150RCE	6	1.51 (38.35)	1.38 (34.93)	0.5 (0.2)
	F02750162RC4	F02750162RCE	6	1.65 (41.53)	1.50 (38.10)	0.5 (0.2)
	F02750175RC4	F02750175RCE	6	1.76 (44.70)	1.63 (41.28)	0.5 (0.2)
	Rotatable Tapped	F02750000RT4	F02750000RTE	4	-	-
F02750025RT4		F02750025RTEW	5	.26 (6.48)	-	0.8 (0.4)
F02750050RT4		F02750050RTEW	5	.51 (12.83)	-	0.8 (0.4)
F02750075RT4		F02750075RTEB	6	.76 (19.30)	.69 (17.53)	0.8 (0.4)
N/A		F02750075RTEW	5	.76 (19.30)	-	0.8 (0.4)
F02750100RT4		F02750100RTEB	6	1.01 (25.65)	.88 (22.23)	0.5 (0.2)
N/A		F02750100RTEW	5	1.01 (25.65)	-	0.8 (0.4)
F02750125RT4		F02750125RTE	6	1.26 (32.00)	1.13 (28.56)	0.5 (0.2)
F02750150RT4		F02750150RTE	6	1.51 (38.35)	1.38 (34.93)	0.5 (0.2)
F02750162RT4		F02750162RTE	6	1.64 (41.53)	1.50 (38.10)	0.5 (0.2)
F02750175RT4		F02750175RTE	6	1.76 (44.70)	1.63 (41.28)	0.5 (0.2)

**NOTE** • 316LN SS material available on request  
• Custom configurations available on request

See page 360 for Accessories Ordering Information

## Accessories – 2<sup>3</sup>/<sub>4</sub> in. Flanges

Description	Thread/Length	Hex Head Part Number	12-Point Bolt Part Number	Silver Plated 12-Point Bolt Part Number	Qty/Pkg	Weight lbs (kg)
<b>Nut and Bolt Sets</b>						
Clear hole flanges*	1/4-28 x 1 1/4	FB0275C06	FB0275C12	FB0275C12S	25	1.0 (0.5)
Tapped hole flanges**	1/4-28 x 7/8	FB0275T06	FB0275T12	FB0275T12S	25	0.5 (0.2)
<b>Plate Nut Sets</b>						
12 plate nuts/24 bolts/24 washers		FP0275K06	FP0275K12	N/A	12/24	2.0 (0.9)
24 plate nuts only		FP0275N	N/A	N/A	12/24	2.0 (0.9)

\* Includes nuts, washers, and bolts  
\*\* Includes washers and bolts only

**NOTE** • 316LN SS material available on request  
• Custom configurations available on request

# 3<sup>3</sup>/<sub>8</sub> in. (NW50CF) Non-Rotatable

## Outline Drawing

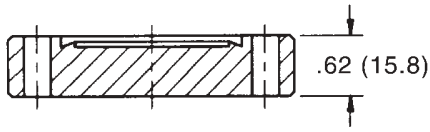


Fig. 1

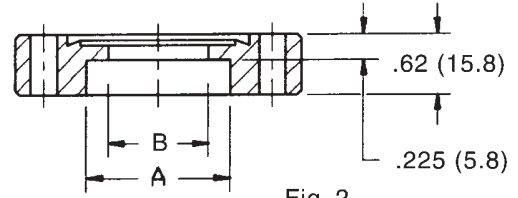


Fig. 2

Thru holes: 8 holes .332 (8.4) dia. thru, eq. spaced on 2.850 (72.4) dia. B.C.  
 Tapped holes: 8 holes tapped 5/16-24 thru, eq. spaced on 2.850 (72.4) dia. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 3<sup>3</sup>/<sub>8</sub> in. Non-Rotatable Flanges

Type	304L SS Part Number	304 ESR SS Part Number	Fig. Number	Dimensions		Weight lbs (kg)
				A in. (mm)	B in. (mm)	
Non-Rotatable	F03380000NC4 <small>(UHV Ready)</small>	F03380000NCE <small>(UHV Ready)</small>	1	-	-	2.0 (0.9)
	F03380150NC4	F03380150NCE	2	1.51 (38.35)	1.38 (34.93)	1.5 (0.7)
	F03380200NC4	F03380200NCE	2	2.01 (51.18)	1.88 (47.63)	1.5 (0.7)
Non-Rotatable Tapped	F03380000NT4 <small>(UHV Ready)</small>	F03380000NTE <small>(UHV Ready)</small>	1	-	-	2.0 (0.9)
	F03380150NT4	F03380150NTE	2	1.51 (38.35)	1.38 (34.93)	1.5 (0.7)
	F03380200NT4	F03380200NTE	2	2.01 (51.18)	1.88 (47.63)	1.5 (0.7)

# 3<sup>3</sup>/<sub>8</sub> in. (NW50CF) Rotatable

## Outline Drawing

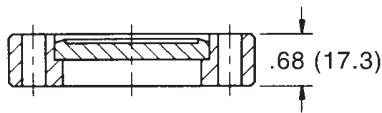


Fig. 3

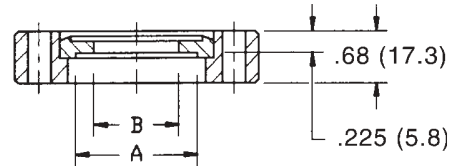


Fig. 4

Thru holes: 8 holes .332 (8.4) dia. thru, eq. spaced on 2.850 (72.4) dia. B.C.  
Tapped holes: 8 holes tapped 5/16-24 thru, eq. spaced on 2.850 (72.4) dia. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 3<sup>3</sup>/<sub>8</sub> in. Rotatable Flanges

Type	304L SS		304 ESR SS		Fig. Number	Dimensions		Weight lbs (kg)
	Part Number	(UHV Ready)	Part Number	(UHV Ready)		A in. (mm)	B in. (mm)	
Rotatable	F03380000RC4	(UHV Ready)	F03380000RCE	(UHV Ready)	3	-	-	2.0 (0.9)
	F03380150RC4		F03380150RCE		4	1.51 (38.35)	1.38 (34.93)	1.5 (0.7)
	F03380200RC4		F03380200RCE		4	2.02 (51.18)	1.88 (47.63)	1.5 (0.7)
Rotatable Tapped	F03380000RT4	(UHV Ready)	F03380000RTE	(UHV Ready)	3	-	-	2.9 (0.9)
	F03380150RT4		F03380150RTE		4	1.51 (38.35)	1.38 (34.93)	1.5 (0.7)
	F03380200RT4		F03380200RTE		4	2.02 (51.18)	1.88 (47.63)	1.5 (0.7)

## Accessories – 3<sup>3</sup>/<sub>8</sub> in. Flanges

Description	Copper Part Number	Silver Plated Copper Part Number	Viton Part Number	Qty/Pkg	Weight lbs (kg)
<b>Gaskets</b>					
10-pack, individually sealed	FG0338CI	FG0338CIS	N/A	10	1.0 (0.5)
1-pack	N/A	N/A	FG0338VU	1	0.5 (0.2)
Gasket clip set	GC0275S	N/A	N/A	10	0.5 (0.2)

Description	Thread/Length	Hex Head Part Number	12-Point Bolt Part Number	Silver Plated 12-Point Bolt Part Number	Qty/Pkg	Weight lbs (kg)
<b>Nut and Bolt Sets</b>						
Clear hole flanges*	5/16-24 x 1 3/4	FB0338C06	FB0338C12	FB0338C12S	25	2.0 (0.9)
Tapped hole flanges**	5/16-24 x 1 1/4	FB0450T06	FB0450T12	FB0450T12S	25	2.0 (0.9)

<b>Plate Nut Sets</b>						
16 plate nuts/32 bolts/32 washers		FP0338K06	FP0338K12	N/A	16/32	2.0 (0.9)
24 plate nuts only		FP0338N	N/A	N/A	24	1.0 (0.5)

\* Includes nuts, washers, and bolts

\*\* Includes washers and bolts only

**NOTE** • 316LN SS material available on request  
• Custom configurations available on request.

# 4 1/2 in. (NW63CF) Non-Rotatable

## Outline Drawing

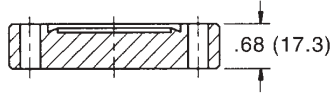


Fig. 1

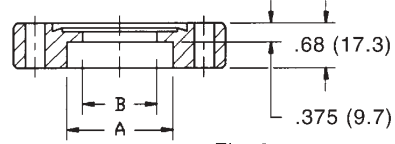






Fig. 2

Thru holes: 8 holes .332 (8.4) dia. thru, eq. spaced on 3.628 (92.2) dia. B.C.  
 Tapped holes: 8 holes tapped 5/16-24 thru eq. spaced on 3.628 (92.2) dia. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 4 1/2 in. Non-Rotatable Flanges

Type	304L SS Part Number	304 ESR SS Part Number	Fig. Number	Dimensions		Weight lbs (kg)
				A in. (mm)	B in. (mm)	
Non-Rotatable	F04500000NC4 	F04500000NCE 	1	–	–	3.0 (1.4)
	F04500150NC4	F04500150NCE	2	1.51 (38.35)	1.38 (34.93)	2.5 (1.1)
	F04500200NC4	F04500200NCE	2	2.01 (51.05)	1.88 (47.63)	2.5 (1.1)
	F04500250NC4	F04500250NCE	2	2.51 (63.75)	2.38 (60.33)	2.5 (1.1)
Non-Rotatable Tapped	F04500000NT4 	F04500000NTE 	1	–	–	3.0 (1.4)
	F04500150NT4	F04500150NTE	2	1.51 (38.35)	1.38 (34.93)	2.5 (1.1)
	F04500200NT4	F04500200NTE	2	2.01 (51.05)	1.88 (47.63)	2.5 (1.1)
	F04500250NT4	F04500250NTE	2	2.51 (63.75)	2.38 (60.33)	2.5 (1.1)

# 4 1/2 in. (NW63CF) Rotatable

## Outline Drawing

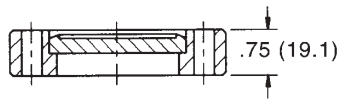


Fig. 3

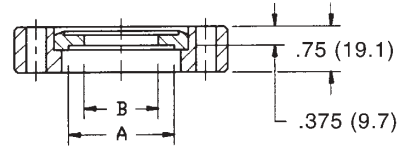


Fig. 4

Thru holes: 8 holes .332 (8.4) dia. thru, eq. spaced on 3.628 (92.2) dia. B.C.  
Tapped holes: 8 holes tapped 5/16-24 thru eq. spaced on 3.628 (92.2) dia. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 4 1/2 in. Rotatable Flanges

Type	304L SS		304 ESR SS		Fig. Number	Dimensions		Weight lbs (kg)
	Part Number		Part Number			A in. (mm)	B in. (mm)	
Rotatable	F0450000RC4		F0450000RCE		3	-	-	3.0 (1.4)
	F04500150RC4		F04500150RCE		4	1.51 (38.35)	1.38 (34.93)	2.5 (1.1)
	F04500200RC4		F04500200RCE		4	2.01 (51.05)	1.88 (47.63)	2.5 (1.1)
	F04500250RC4		F04500250RCE		4	2.51 (63.75)	2.38 (60.33)	2.5 (1.1)
Rotatable Tapped	F0450000RT4		-		3	-	-	3.0 (1.4)
	F04500150RT4		F04500150RTE		4	1.51 (38.35)	1.38 (34.93)	2.5 (1.1)
	F04500200RT4		F04500200RTE		4	2.01 (51.05)	1.88 (47.63)	2.5 (1.1)
	F04500250RT4		F04500250RTE		4	2.51 (63.75)	2.38 (60.33)	2.5 (1.1)

## Accessories – 4 1/2 in. Flanges

Description	Copper Part Number	Silver Plated Copper Part Number	Viton Part Number	Qty/Pkg	Weight lbs (kg)
<b>Gaskets</b>					
10-pack, individually sealed	FG0450CI	FG0450CIS	N/A	10	2.0 (0.9)
1-pack	N/A	N/A	FG0450VU	1	0.5 (0.2)
Gasket clip set	GC0275S	N/A	N/A	10	0.5 (0.2)

Description	Thread/Length	Hex Head Part Number	12-Point Bolt Part Number	Silver Plated 12-Point Bolt Part Number	Qty/Pkg	Weight lbs (kg)
<b>Nut and Bolt Sets</b>						
Clear hole flanges*	5/16-24 x 2	FB0450C06	FB0450C12	FB0450C12S	25	1.5 (0.7)
Tapped hole flanges**	5/16-24 x 1 1/4	FB0450T06	FB0450T12	FB0450T12S	25	1.5 (0.7)
<b>Plate Nut Sets</b>						
16 plate nuts/32 bolts/32 washers		FP0450K06	FP0450K12	N/A	16/32	2.0 (0.9)
24 plate nuts only		FP0450N	N/A	N/A	24	1.0 (0.5)

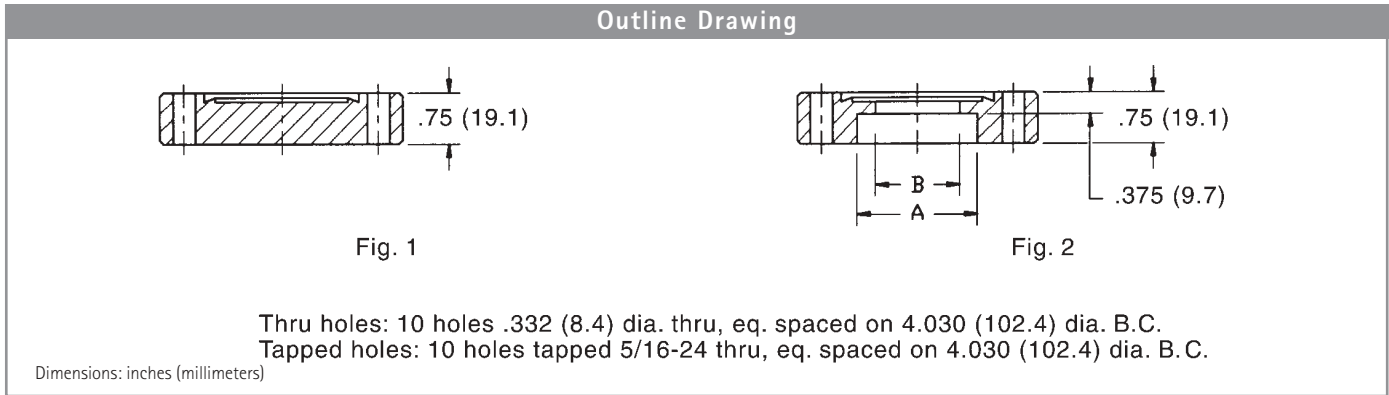
\* Includes nuts, washers, and bolts

\*\* Includes washers and bolts only

**NOTE**

- 316LN SS material available on request
- Custom configurations available on request.

# 4<sup>5</sup>/<sub>8</sub> in. (NW75CF) Non-Rotatable



## Ordering Information – 4<sup>5</sup>/<sub>8</sub> in. Non-Rotatable Flanges

Type	304L SS		304 ESR SS		Fig. Number	Dimensions		Weight lbs (kg)
	Part Number		Part Number			A in. (mm)	B in. (mm)	
Non-Rotatable	F04620000NC4		F04620000NCE		1	-	-	3.5 (1.6)
	F04620250NC4		F04620250NCE		2	2.51 (63.75)	2.38 (60.33)	2.5 (1.1)
	F04620300NC4		F04620300NCE		2	3.01 (76.45)	2.88 (73.01)	2.5 (1.1)
Non-Rotatable Tapped	F04620000NT4		F04620000NTE		1	-	-	3.5 (1.6)
	F04620250NT4		F04620250NTE		2	2.51 (63.75)	2.38 (60.33)	2.5 (1.1)
	F04620300NT4		F04620300NTE		2	3.01 (76.45)	2.88 (73.01)	2.5 (1.1)



# 4<sup>5</sup>/<sub>8</sub> in. (NW75CF) Rotatable

## Outline Drawing

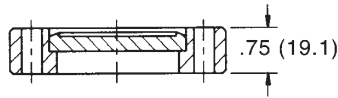


Fig. 3

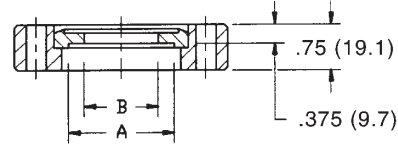


Fig. 4

Thru holes: 8 holes .332 (8.4) dia. thru, eq. spaced on 3.628 (92.2) dia. B.C.  
Tapped holes: 8 holes tapped 5/16-24 thru eq. spaced on 3.628 (92.2) dia. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 4<sup>5</sup>/<sub>8</sub> in. Rotatable Flanges

Type	304L SS		304 ESR SS		Fig. Number	Dimensions		Weight lbs (kg)
	Part Number	UHV Ready	Part Number	UHV Ready		A in. (mm)	B in. (mm)	
Rotatable	F04620000RC4	UHV Ready	F04620000RCE	UHV Ready	3	-	-	3.5 (1.6)
	F04620250RC4		F04620250RCE		4	2.51 (63.75)	2.38 (60.33)	2.5 (1.1)
	F04620300RC4		F04620300RCE		4	3.01 (76.45)	2.88 (73.01)	2.5 (1.1)
Rotatable	F04620000RT4	UHV Ready	F04620000RTE	UHV Ready	3	-	-	3.5 (1.6)
Tapped	F04620250RT4		F04620250RTE		4	2.51 (63.75)	2.38 (60.33)	2.5 (1.1)
	F04620300RT4		F04620300RTE		4	3.01 (76.45)	2.88 (73.01)	2.5 (1.1)

## Accessories – 4<sup>5</sup>/<sub>8</sub> in. Flanges

Description	Copper Part Number	Silver Plated Copper Part Number	Viton Part Number	Qty/Pkg	Weight lbs (kg)
<b>Gaskets</b>					
10-pack, individually sealed	FG0462CI	FG0462CIS	N/A	10	2.0 (0.9)
1-pack	N/A	N/A	FG0462VU	1	1.0 (0.5)
Gasket clip set	GC0275S	N/A	N/A	10	0.5 (0.2)

Description	Thread/Length	Hex Head Part Number	12-Point Bolt Part Number	Silver Plated 12-Point Bolt Part Number	Qty/Pkg	Weight lbs (kg)
<b>Nut and Bolt Sets</b>						
Clear hole flanges						
Non-rotatable*	5/16-24 x 2	FB0450C06	FB0450C12	FB0450C12S	25	1.5 (0.7)
Clear hole flanges						
Rotatable*	5/16-24 x 2 1/4	FB0600C06	FB0600C12	FB0600C12S	25	1.5 (0.7)
Tapped hole flanges**	5/16-24 x 1 1/4	FB0450T06	FB0450T12	FB0450T12S	25	1.5 (0.7)

\* Includes nuts, washers, and bolts

\*\* Includes washers and bolts only

**NOTE**

- 316LN SS material available on request
- Custom configurations available on request

# 6 in. (NW100CF) Non-Rotatable

## Outline Drawing

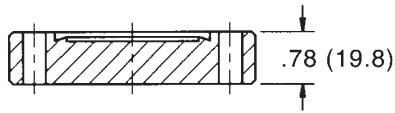


Fig. 1

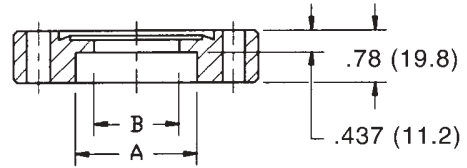












Fig. 2

Thru holes: 16 holes .332 (8.4) dia. thru, eq. spaced on 5.128 (130.3) dia. B.C.  
 Tapped holes: 16 holes tapped 5/16-24 thru, eq. spaced on 5.128 (130.3) dia. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 6 in. Non-Rotatable Flanges

Type	304L SS		304 ESR SS		Fig. Number	Dimensions		Weight lbs (kg)
	Part Number		Part Number			A in. (mm)	B in. (mm)	
Non-Rotatable	F06000000NC4		F06000000NCE		1	-	-	6.5 (2.9)
	F06000400NC4		F06000400NCE		2	4.01 (101.85)	3.81 (96.77)	4.5 (2.0)
Non-Rotatable	F06000000NT4		F06000000NTE		1	-	-	6.5 (2.9)
	Tapped	F06000400NT4		F06000400NTE		2	4.01 (101.85)	3.81 (96.77)

# 6 in. (NW100CF) Rotatable

## Outline Drawing

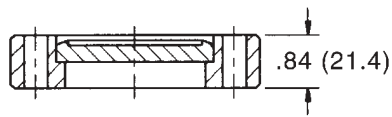


Fig. 3

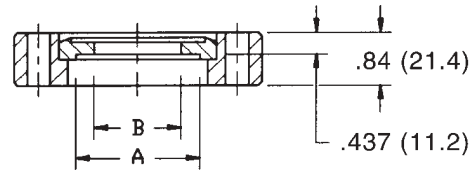


Fig. 4

Thru holes: 16 holes .332 (8.4) dia. thru, eq. spaced on 5.128 (130.3) dia. B.C.  
Tapped holes: 16 holes tapped 5/16-24 thru, eq. spaced on 5.128 (130.3) dia. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 6 in. Rotatable Flanges

Type	Material		Fig. Number	Dimensions		Weight lbs (kg)
	304L SS Part Number	304 ESR SS Part Number		A in. (mm)	B in. (mm)	
Rotatable	F06000000RC4	F06000000RCE	3	-	-	6.5 (2.9)
	F06000400RC4	F06000400RCE	4	4.01 (101.85)	3.81 (96.77)	4.5 (2.0)
Rotatable	F06000000RT4	F06000000RTE	3	-	-	6.5 (2.9)
	F06000400RT4	F06000400RTE	4	4.01 (101.85)	3.81 (96.77)	4.5 (2.0)

NOTE • 316LN SS material available on request.  
• Custom configurations available on request

## Accessories – 6 in. Flanges

Description	Copper Part Number	Silver Plated Copper Part Number	Viton Part Number	Qty/Pkg	Weight lbs (kg)
<b>Gaskets</b>					
10-pack, individually sealed	FG0600CI	FG0600CIS	N/A	10	1.5 (0.7)
1-pack	N/A	N/A	FG0600VU	1	1.0 (0.5)
Gasket clip set	GC0275S	N/A	N/A	10	.5 (0.2)

Description	Thread/Length	Hex Head Part Number	12-Point Bolt Part Number	Silver Plated 12-Point Bolt Part Number	Qty/Pkg	Weight lbs (kg)
<b>Nut and Bolt Sets</b>						
Clear hole flanges						
Non-rotatable*	5/16-24 x 2	FB0450C06	FB0450C12	FB0450C12S	25	2.0 (0.9)
Clear hole flanges						
Rotatable*	5/16-24 x 2 1/4	FB0600C06	FB0600C12	FB0600C12S	25	2.0 (0.9)
Tapped hole flanges**	5/16-24 x 1 1/4	FB0450T06	FB0450T12	FB0450T12S	25	1.5 (0.7)
Plate Nut Sets						
16 plate nuts/32 bolts/32 washers						
Non-rotatable		FPO600K06	FPO600K12	N/A	16/32	2.0 (0.9)
16 plate nuts/32 bolts/32 washers						
Rotatable		FPO600K06R	FPO600K12R	N/A	16/32	2.0 (0.9)
24 plate nuts only		FPO600N	N/A	N/A	24	1.0 (0.5)

\* Includes nuts, washers, and bolts  
\*\* Includes washers and bolts only

NOTE • 316LN SS material available on request  
• Custom configurations available on request.

# 6<sup>3</sup>/<sub>4</sub> in. (NW130CF) Non-Rotatable

## Outline Drawing

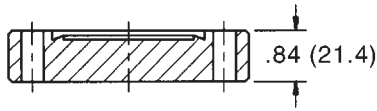


Fig. 1

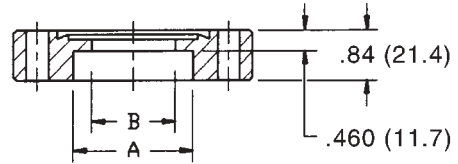






Fig. 2

Thru holes: 18 holes .332 (8.4) dia. thru, eq. spaced on 5.969 (151.6) dia. B.C.

Tapped holes: 18 holes tapped 5/16-24 thru, eq. spaced on 5.969 (151.6) dia. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 6<sup>3</sup>/<sub>4</sub> in. Non-Rotatable Flanges

Type	304L SS Part Number	304 ESR SS Part Number	Fig. Number	Dimensions		Weight lbs (kg)
				A in. (mm)	B in. (mm)	
Non-Rotatable	F06750000NC4 	F06750000NCE 	1	-	-	8.0 (3.6)
	F06750400NC4	F06750400NCE	2	4.01 (101.85)	3.81 (96.77)	5.0 (2.3)
	F06750500NC4	F06750500NCE	2	5.01 (127.25)	4.87 (123.70)	3.5 (1.6)
Non-Rotatable Tapped	F06750000NT4 	F06750000NTE 	1	-	-	8.0 (3.6)
	F06750400NT4	F06750400NTE	2	4.01 (101.85)	3.81 (96.77)	5.0 (2.3)
	F06750500NT4	F06750500NTE	2	5.01 (127.25)	4.87 (123.70)	3.5 (1.6)

# 6<sup>3</sup>/<sub>4</sub> in. (NW130CF) Rotatable

## Outline Drawing

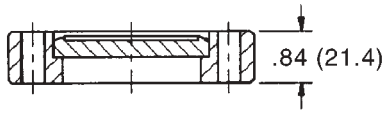


Fig. 3

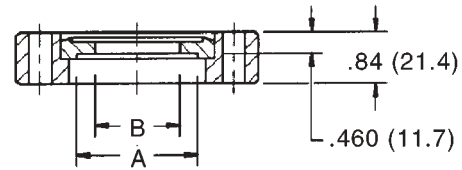


Fig. 4

Thru holes: 18 holes .332 (8.4) dia. thru, eq. spaced on 5.969 (151.6) dia. B.C.  
Tapped holes: 18 holes tapped 5/16-24 thru, eq. spaced on 5.969 (151.6) dia. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 6<sup>3</sup>/<sub>4</sub> in. Rotatable Flanges

Type	304L SS Part Number	304 ESR SS Part Number	Fig. Number	Dimensions		Weight
				A in. (mm)	B in. (mm)	lbs (kg)
Rotatable	F06750000RC4 <small>UHV Ready</small>	F06750000RCE <small>UHV Ready</small>	3	-	-	8.0 (3.6)
	F06750400RC4	F06750400RCE	4	4.01 (101.85)	3.81 (96.77)	5.0 (2.3)
	F06750500RC4	F06750500RCE	4	5.01 (127.25)	4.87 (123.70)	3.5 (1.6)
Rotatable Tapped	F06750000RT4 <small>UHV Ready</small>	F06750000RTE <small>UHV Ready</small>	3	-	-	8.0 (3.6)
	F06750400RT4	F06750400RTE	4	4.01 (101.85)	3.81 (96.77)	5.0 (2.3)
	F06750500RT4	F06750500RTE	4	5.01 (127.25)	4.87 (123.70)	3.5 (1.6)

## Accessories – 6<sup>3</sup>/<sub>4</sub> in. Flanges

Description	Copper Part Number	Silver Plated Copper Part Number	Viton Part Number	Qty/Pkg	Weight lbs (kg)
<b>Gaskets</b>					
10-Pack, individually sealed	FG0675CI	FG0675CIS	N/A	10	2.0 (0.9)
1-pack	N/A	N/A	FG0675VU	1	1.0 (0.5)
Gasket clip set	GC0275S	N/A	N/A	10	0.5 (0.2)

Description	Thread/Length	Hex Head Part Number	12-Point Bolt Part Number	Silver Plated 12-Point Bolt Part Number	Qty/Pkg	Weight lbs (kg)
<b>Nut and Bolt Sets</b>						
Clear hole flanges*	5/16-24 x 2 1/4	FB0600C06	FB0600C12	FB0600C12S	25	2.0 (0.9)
Tapped hole flanges**	5/16-24 x 1 3/4	FB0800T06	FB0800T12	FB0800T12S	25	2.0 (0.9)

\* Includes nuts, washers, and bolts

\*\* Includes washers and bolts only

**NOTE**

- 316LN SS material available on request
- Custom configurations available on request.

# 8 in. (NW150CF) Non-Rotatable

## Outline Drawing

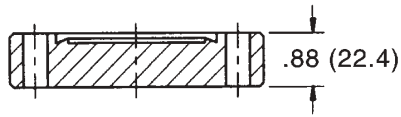


Fig. 1

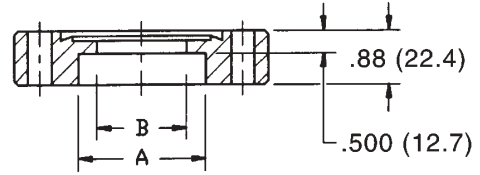


Fig. 2

Thru holes: 20 holes .332 (8.4) dia. thru, eq. spaced on 7.128 (181.1) dia. B.C.  
 Tapped holes: 20 holes tapped 5/16-24 thru, eq. spaced on 7.128 (181.1) dia. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 8 in. Non-Rotatable Flanges

Type	Material		Fig. Number	Dimensions		Weight lbs (kg)
	304L SS Part Number	304 ESR SS Part Number		A in. (mm)	B in. (mm)	
Non-Rotatable	F08000000NC4	F08000000NCE	1	-	-	12.5 (5.6)
	F08000600NC4	F08000600NCE	2	6.02 (152.91)	5.81 (147.57)	5.8 (2.6)
Non-Rotatable Tapped	F08000000NT4	F08000000NTE	1	-	-	12.5 (5.6)
	F08000600NT4	F08000600NTE	2	6.02 (152.91)	5.81 (147.57)	5.8 (2.6)

# 8 in. (NW150CF) Rotatable

## Outline Drawing

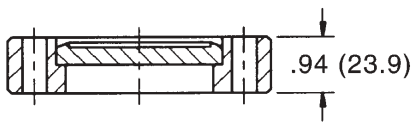


Fig. 3

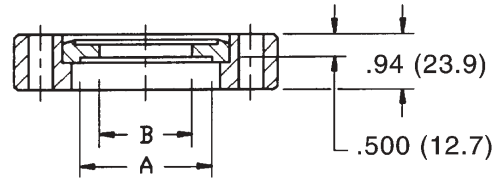


Fig. 4

Thru holes: 20 holes .332 (8.4) dia. thru, eq. spaced on 7.128 (181.1) dia. B.C.  
Tapped holes: 20 holes tapped 5/16-24 thru, eq. spaced on 7.128 (181.1) dia. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 8 in. Rotatable Flanges

Type	Material		Fig. Number	Dimensions		Weight lbs (kg)
	304L SS Part Number	304 ESR SS Part Number		A in. (mm)	B in. (mm)	
Rotatable	F08000000RC4 <small>(UHV Ready)</small>	F08000000RCE <small>(UHV Ready)</small>	3	-	-	10.0 (4.5)
	F08000600RC4	F08000600RCE	4	6.02 (152.91)	5.81 (147.57)	7.0 (3.2)
Rotatable	F08000000RT4 <small>(UHV Ready)</small>	F08000000RTE <small>(UHV Ready)</small>	3	-	-	10.0 (4.5)
Tapped	F08000600RT4	F08000600RTE	4	6.02 (152.91)	5.81 (147.57)	7.0 (3.2)

**NOTE**

- 316LN SS material available on request
- Custom configurations available on request

## Accessories – 8 in. Flanges

Description	Copper Part Number	Silver Plated Copper Part Number	Viton Part Number	Qty/Pkg	Weight lbs (kg)
<b>Gaskets</b>					
10-pack, individually sealed	FG0800CI	FG0800CIS	N/A	10	2.5 (1.1)
1-pack	N/A	N/A	FG0800VU	1	1.0 (0.5)
Gasket clip set	GC0275S	N/A	N/A	10	0.5 (0.2)

Description	Thread/Length	Hex Head Part Number	12-Point Bolt Part Number	Silver Plated 12-Point Bolt Part Number	Qty/Pkg	Weight lbs (kg)
<b>Nut and Bolt Sets</b>						
Clear hole flanges*	5/16-24 x 2 1/4	FB0600C06	FB0600C12	FB0600C12S	25	2.0 (0.9)
<b>Plate Nut Sets</b>						
20 plate nuts/40 bolts/40 washers		FP0800K06	FP0800K12	N/A	20/40	2.0 (0.9)
24 plate nuts only		FP0800N	N/A	N/A	24	1.0 (0.5)

\* Includes nuts, washers, and bolts  
\*\* Includes washers and bolts only

**NOTE**

- 316LN SS material available on request
- Custom configurations available on request

# 10 in. (NW200CF) Non-Rotatable

## Outline Drawing

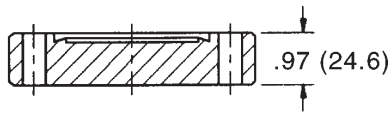


Fig. 1

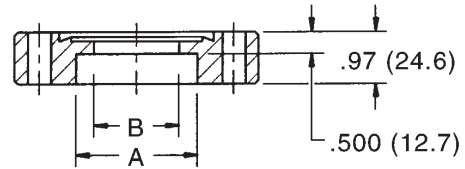


Fig. 2

Thru holes: 24 holes .332 (8.4) dia. thru, eq. spaced on 9.128 (231.9) dia. B.C.  
 Tapped holes: 24 holes tapped 5/16-24 thru, eq. spaced on 9.128 (231.9) dia. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 10 in. Non-Rotatable Flanges

Type	Material		Fig. Number	Dimensions		Weight lbs (kg)
	304L SS Part Number	304 ESR SS Part Number		A in. (mm)	B in. (mm)	
Non-Rotatable	F10000000NC4 <small>(HV Ready)</small>	F10000000NCE <small>(HV Ready)</small>	1	-	-	21.0 (9.5)
	F10000800NC4	F10000800NCE	2	8.02 (203.71)	7.81 (198.37)	8.0 (3.6)
Non-Rotatable	F10000000NT4 <small>(HV Ready)</small>	F10000000NTE <small>(HV Ready)</small>	1	-	-	21.0 (9.5)
Tapped	F10000800NT4	F10000800NTE	2	8.02 (203.71)	7.81 (198.37)	8.0 (3.6)



# 10 in. (NW200CF) Rotatable

## Outline Drawing

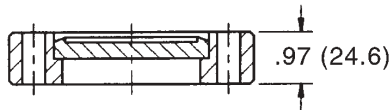


Fig. 3

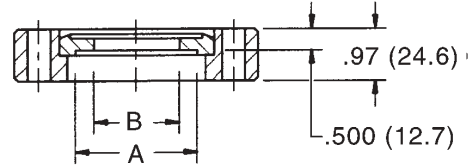


Fig. 4

Thru holes: 24 holes .332 (8.4) dia. thru, eq. spaced on 9.128 (231.9) dia. B.C.  
Tapped holes: 24 holes tapped 5/16-24 thru, eq. spaced on 9.128 (231.9) dia. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 10 in. Rotatable Flanges

Type	304L SS		304 ESR SS		Fig. Number	Dimensions		Weight lbs (kg)
	Part Number		Part Number			A in. (mm)	B in. (mm)	
Rotatable	F10000000RC4		F10000000RCE		3	-	-	15.0 (6.8)
	F10000800RC4		F10000800RCE		4	8.02 (203.71)	7.81 (198.37)	12.0 (5.4)
Rotatable	F10000000RT4		F10000000RTE		3	-	-	15.0 (6.8)
Tapped	F10000800RT4		F10000800RTE		4	8.02 (203.71)	7.81 (198.37)	12.0 (5.4)

**NOTE**

- 316LN SS material available on request
- Custom configurations available on request

## Accessories – 10 in. Flanges

Description	Copper Part Number	Silver Plated Copper Part Number	Viton Part Number	Qty/Pkg	Weight lbs (kg)
<b>Gaskets</b>					
10-pack, individually sealed	FG1000CI	FG1000CIS	N/A	10	3.0 (1.3)
1-pack	N/A	N/A	FG1000VU	1	1.0 (0.5)
Gasket clip set	GC0275S	N/A	N/A	10	0.5 (0.2)

Description	Thread/Length	Hex Head Part Number	12-Point Bolt Part Number	Silver Plated 12-Point Bolt Part Number	Qty/Pkg	Weight lbs (kg)
<b>Nut and Bolt Sets</b>						
Clear hole flanges*	5/16-24 x 2 1/2	FB1000C06	FB1000C12	FB1000C12S	25	2.0 (0.9)
Tapped hole flanges**	5/16-24 x 1 3/4	FB0800T06	FB0800T12	FB0800T12S	25	1.5 (0.7)
<b>Plate Nut Sets</b>						
24 plate nuts/48 bolts/48 washers		FP1000K06	FP1000K12	N/A	24/48	3.0 (1.4)
24 plate nuts only		FP1000N	N/A	N/A	24	1.0 (0.5)

\* Includes nuts, washers, and bolts  
\*\* Includes washers and bolts only

**NOTE**

- 316LN SS material available on request
- Custom configurations available on request

# 12 in. (NW250CF) Non-Rotatable

## Outline Drawing

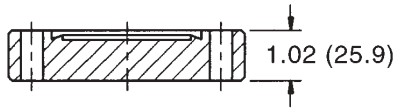


Fig. 1

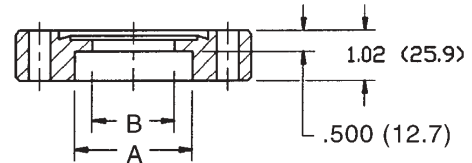


Fig. 2

Thru holes: 32 holes .332 (8.4) dia. thru, eq. spaced on 11.180 (284.0) dia. B.C.  
 Tapped holes: 32 holes tapped 5/16-24 thru, eq. spaced on 11.180 (284.0) dia. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 12 in. Non-Rotatable Flanges

Type	Material		Fig. Number	Dimensions		Weight lbs (kg)
	304L SS Part Number	304 ESR SS Part Number		A in. (mm)	B in. (mm)	
Non-Rotatable	F12000000NC4	F12000000NCE	1	-	-	19.0 (8.6)
	F12001000NC4	F12001000NCE	2	10.02 (254.51)	9.86 (250.44)	14.0 (6.3)
Non-Rotatable	F12000000NT4	F12000000NTE	1	-	-	19.0 (8.6)
Tapped	F12001000NT4	F12001000NTE	2	10.02 (254.51)	9.86 (250.44)	14.0 (6.3)

# 12 in. (NW250CF) Rotatable

## Outline Drawing

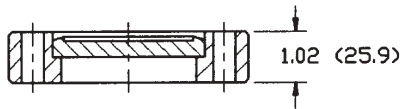


Fig. 3

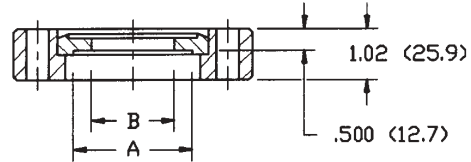


Fig. 4

Thru holes: 32 holes .332 (8.4) dia. thru, eq. spaced on 11.180 (284.0) dia. B.C.  
Tapped holes: 32 holes tapped 5/16-24 thru, eq. spaced on 11.180 (284.0) dia. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 12 in. Rotatable Flanges

Type	304L SS		304 ESR SS		Fig. Number	Dimensions		Weight lbs (kg)
	Part Number		Part Number			A in. (mm)	B in. (mm)	
Rotatable	F12000000RC4		F12000000RCE		3	-	-	19.0 (8.6)
	F12001000RC4		F12001000RCE		4	10.02 (254.51)	9.86 (250.44)	14.0 (6.3)
Rotatable Tapped	F12000000RT4		F12000000RTE		3	-	-	19.0 (8.6)
	F12001000RT4		F12001000RTE		4	10.02 (254.51)	9.86 (250.44)	14.0 (6.3)

NOTE • Custom configurations available on request

## Accessories – 12 in. Flanges

Description	Copper Part Number	Silver Plated Copper Part Number	Viton Part Number	Qty/Pkg	Weight lbs (kg)
<b>Gaskets</b>					
1-pack, individually sealed	FG1200CI	FG1200CIS	N/A	1	2.0 (0.9)
1-pack	N/A	N/A	FG1200VU	1	1.0 (0.5)
Gasket clip set	GC0275S	N/A	N/A	10	0.5 (0.2)

Description	Thread/Length	Hex Head Part Number	12-Point Bolt Part Number	Silver Plated 12-Point Bolt Part Number	Qty/Pkg	Weight lbs (kg)
<b>Nut and Bolt Sets</b>						
Clear hole flanges*	5/16-24 x 2 1/2	FB1200C06	FB1200C12	FB1200C12S	32	2.0 (0.9)
Tapped hole flanges**	5/16-24 x 1 3/4	FB1200T06	FB1200T12	FB1200T12S	32	2.0 (0.9)

\* Includes nuts, washers, and bolts

\*\* Includes washers and bolts only

# 13<sup>1</sup>/<sub>4</sub> in. (NW275CF) Non-Rotatable

## Outline Drawing

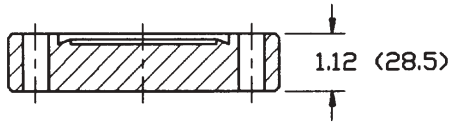


FIG. 1

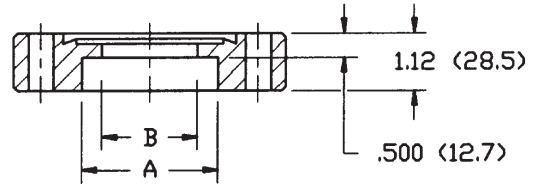


FIG. 2

THRU HOLES: 30 HOLES .390 (9.9) DIA. THRU, EQ. SPACED ON 12.060 (306.3) DIA. B.C.  
 TAPPED HOLES: 30 HOLES TAPPED 3/8-24 THRU, EQ. SPACED ON 12.060 (306.3) DIA. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 13<sup>1</sup>/<sub>4</sub> in. Non-Rotatable Flanges

Type	304L SS Part Number	304 ESR SS Part Number	Fig. Number	Dimensions		Weight lbs (kg)
				A in. (mm)	B in. (mm)	
Non-Rotatable	F13250000NC4 <small>UHV Ready</small>	F13250000NCE <small>UHV Ready</small>	1	-	-	41.0 (18.6)
	F13251000NC4	F13251000NCE	2	10.02 (254.51)	9.86 (250.44)	18.0 (8.2)
	F13251075NC4	F13251075NCE	2	10.77 (273.43)	10.63 (270.00)	14.0 (6.4)
Non-Rotatable Tapped	F13250000NT4 <small>UHV Ready</small>	F13250000NTE <small>UHV Ready</small>	1	-	-	41.0 (18.6)
	F13251000NT4	F13251000NTE	2	10.02 (254.51)	9.86 (250.44)	18.0 (8.2)
	F13251075NT4	F13251075NTE	2	10.77 (273.43)	10.63 (270.00)	14.0 (6.4)

# 13<sup>1</sup>/<sub>4</sub> in. (NW275CF) Rotatable

## Outline Drawing

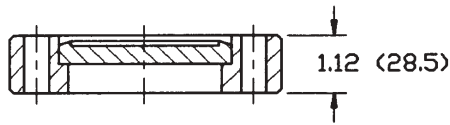


FIG. 3

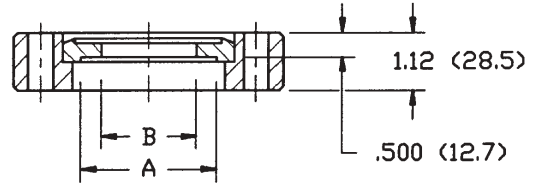


FIG. 4

THRU HOLES: 30 HOLES .390 (9.9) DIA. THRU, EQ. SPACED ON 12.060 (306.3) DIA. B.C.  
TAPPED HOLES: 30 HOLES TAPPED 3/8-24 THRU, EQ. SPACED ON 12.060 (306.3) DIA. B.C.

Dimensions: inches (millimeters)

## Ordering Information – 13<sup>1</sup>/<sub>4</sub> in. Rotatable Flanges

Type	Material		Fig. Number	Dimensions		Weight lbs (kg)
	304L SS Part Number	304 ESR SS Part Number		A in. (mm)	B in. (mm)	
Rotatable	F13250000RC4 <small>(UHV Ready)</small>	F13250000RCE <small>(UHV Ready)</small>	3	-	-	41.0 (18.6)
	F13251000RC4	F13251000RCE	4	10.02 (254.51)	9.86 (250.44)	18.0 (8.2)
	F13251075RC4	F13251075RCE	4	10.77 (273.43)	10.63 (270.00)	14.0 (6.4)
Rotatable Tapped	F13250000RT4 <small>(UHV Ready)</small>	F13250000RTE <small>(UHV Ready)</small>	3	-	-	41.0 (18.6)
	F13251000RT4	F13251000RTE	4	10.02 (254.51)	9.86 (250.44)	18.0 (8.2)
	F13251075RT4	F13251075RTE	4	10.77 (273.43)	10.63 (270.00)	14.0 (6.4)

NOTE • Custom configurations available on request

## Accessories – 13<sup>1</sup>/<sub>4</sub> in. Flanges

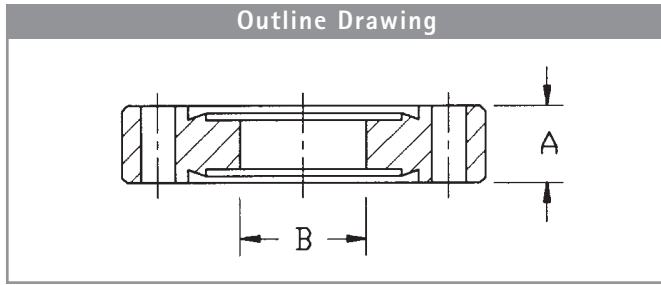
Description	Copper Part Number	Viton Part Number	Qty/Pkg	Weight lbs (kg)
<b>Gaskets</b>				
1-pack, individually sealed	FG1325CI	N/A	1	0.5 (0.2)
1-pack	N/A	FG1325VU	1	0.5 (0.2)
Gasket clip set	GC0275S	N/A	10	0.5 (0.2)

Description	Thread/Length	Hex Head Part Number	12-Point Bolt Part Number	Qty/Pkg	Weight lbs (kg)
<b>Nut and Bolt Sets</b>					
Clear hole flanges*	<sup>3</sup> / <sub>8</sub> -24 x 3	FB1325C06	N/A	30	2.0 (0.9)
Tapped hole flanges**	<sup>3</sup> / <sub>8</sub> -24 x 2	FB1325T06	N/A	30	2.0 (0.9)

\* Includes nuts, washers, and bolts

\*\* Includes washers and bolts only

# 1 1/3 in. – 13 1/4 in. Double-Sided



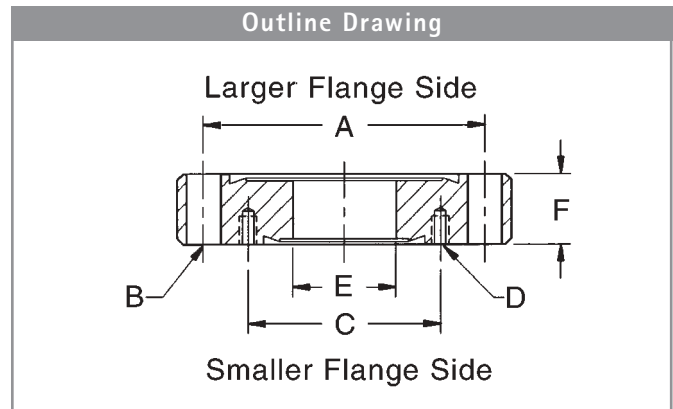
## Ordering Information

Size	304L SS Part Number	304 ESR SS Part Number	
1 1/3 in.	N/A	FD01330000E	
	N/A	FD01330025E	
	N/A	FD01330038E	
	N/A	FD01330050E	
2 1/8 in.	N/A	FD02120000E	
	N/A	FD02120075E	
	N/A	FD02120100E	
2 3/4 in.	N/A	FD02750000E	
	N/A	FD02750025E	
	N/A	FD02750050E	
	N/A	FD02750075E	
	N/A	FD02750100E	
	N/A	FD02750125E	
	N/A	FD02750150E	
	N/A	FD02750150E75	
3 3/8 in.	N/A	FD02750150E1	
	N/A	FD03380000E	
	N/A	FD03380150E	
	N/A	FD03380200E	
4 1/2 in.	N/A	FD04500000E	
	N/A	FD04500150E	
	N/A	FD04500200E	
	N/A	FD04500250E	
4 5/8 in.	N/A	FD04620000E	
	N/A	FD04620250E	
	N/A	FD04620300E	
6 in.	FD060000004	FD06000000E	
	FD060004004	FD06000400E	
6 3/4 in.	FD067500004	FD06750000E	
	FD067504004	FD06750400E	
	FD067505004	FD06750500E	
8 in.	FD080000004	FD08000000E	
	FD080006004	FD08000600E	
10 in.	FD100000004	FD10000000E	
	FD100008004	FD10000800E	
12 in.	FD120000004	FD12000000E	
	FD120010004	FD12001000E	
13 1/4 in.	FD132500004	FD13250000E	
	FD132510004	FD13251000E	
	FD132510754	FD13251075E	

Double-Sided Flanges

A in. (mm)	Dimensions		Bolt Circle in. (mm)	Bolt Holes	Hole Diam. in. (mm)	Shipping Weight lbs (kg)
	B in. (mm)					
0.28 (7.11)	Blank		1.06 (26.92)	6	0.17 (4.32)	0.5 (0.2)
0.28 (7.11)	0.25 (6.35)		1.06 (26.92)	6	0.17 (4.32)	0.5 (0.2)
0.28 (7.11)	0.38 (9.65)		1.06 (26.92)	6	0.17 (4.32)	0.5 (0.2)
0.28 (7.11)	0.50 (12.70)		1.06 (26.92)	6	0.17 (4.32)	0.5 (0.2)
0.47 (11.94)	Blank		1.63 (41.40)	4	0.27 (6.86)	0.8 (0.4)
0.47 (11.94)	0.75 (19.05)		1.63 (41.40)	4	0.27 (6.86)	0.8 (0.4)
0.47 (11.94)	1.00 (25.40)		1.63 (41.40)	4	0.27 (6.86)	0.8 (0.4)
0.50 (12.70)	Blank		2.31 (58.67)	6	0.27 (6.86)	0.8 (0.4)
0.50 (12.70)	0.25 (6.35)		2.31 (58.67)	6	0.27 (6.86)	0.8 (0.4)
0.50 (12.70)	0.50 (12.70)		2.31 (58.67)	6	0.27 (6.86)	0.8 (0.4)
0.50 (12.70)	0.75 (19.05)		2.31 (58.67)	6	0.27 (6.86)	0.8 (0.4)
0.50 (12.70)	1.00 (25.40)		2.31 (58.67)	6	0.27 (6.86)	0.8 (0.4)
0.50 (12.70)	1.25 (31.75)		2.31 (58.67)	6	0.27 (6.86)	0.8 (0.4)
0.50 (12.70)	1.50 (38.10)		2.31 (58.67)	6	0.27 (6.86)	0.8 (0.4)
0.75 (19.05)	1.50 (38.10)		2.31 (58.67)	6	0.27 (6.86)	0.8 (0.4)
1.00 (25.40)	1.50 (38.10)		2.31 (58.67)	6	0.27 (6.86)	0.8 (0.4)
0.62 (15.75)	Blank		2.85 (72.39)	8	0.33 (8.38)	2.0 (0.9)
0.62 (15.75)	1.50 (38.10)		2.85 (72.39)	8	0.33 (8.38)	2.0 (0.9)
0.62 (15.75)	2.00 (50.80)		2.85 (72.39)	8	0.33 (8.38)	2.0 (0.9)
0.69 (17.53)	Blank		3.63 (92.20)	8	0.33 (8.38)	3.0 (1.4)
0.69 (17.53)	1.50 (38.10)		3.63 (92.20)	8	0.33 (8.38)	3.0 (1.4)
0.69 (17.53)	2.00 (50.80)		3.63 (92.20)	8	0.33 (8.38)	3.0 (1.4)
0.69 (17.53)	2.50 (63.50)		3.63 (92.20)	8	0.33 (8.38)	3.0 (1.4)
0.75 (19.05)	Blank		4.03 (102.36)	10	0.33 (8.38)	3.5 (1.6)
0.75 (19.05)	2.50 (63.50)		4.03 (102.36)	10	0.33 (8.38)	3.5 (1.6)
0.75 (19.05)	3.00 (76.20)		4.03 (102.36)	10	0.33 (8.38)	3.5 (1.6)
0.78 (19.81)	Blank		5.12 (130.05)	16	0.33 (8.38)	5.5 (2.5)
0.78 (19.81)	4.00 (101.60)		5.12 (130.05)	16	0.33 (8.38)	4.0 (1.8)
0.84 (21.34)	Blank		5.96 (151.38)	18	0.33 (8.38)	8.0 (3.6)
0.84 (21.34)	4.00 (101.60)		5.96 (151.38)	18	0.33 (8.38)	5.0 (2.3)
0.84 (21.34)	5.00 (127.00)		5.96 (151.38)	18	0.33 (8.38)	3.5 (1.6)
0.88 (22.35)	Blank		7.12 (180.85)	20	0.33 (8.38)	12.0 (5.4)
0.88 (22.35)	6.00 (152.40)		7.12 (180.85)	20	0.33 (8.38)	6.0 (2.7)
0.97 (24.64)	Blank		9.12 (231.65)	24	0.33 (8.38)	20.0 (9.0)
0.97 (24.64)	8.00 (203.20)		9.12 (231.65)	24	0.33 (8.38)	12.0 (5.4)
1.02 (25.91)	Blank		11.18 (283.97)	32	0.33 (8.38)	19.0 (8.6)
1.02 (25.91)	10.00 (254.00)		11.18 (283.97)	32	0.33 (8.38)	14.0 (6.3)
1.12 (28.45)	Blank		12.06 (306.32)	30	0.39 (9.91)	41.0 (18.5)
1.12 (28.45)	10.00 (254.00)		12.06 (306.32)	30	0.39 (9.91)	18.0 (8.1)
1.12 (28.45)	10.75 (273.05)		12.06 (306.32)	30	0.39 (9.91)	14.5 (6.5)

# 2<sup>1</sup>/<sub>8</sub> in. – 8 in. Reducing



## Ordering Information

Size	304L SS Part Number	304 ESR SS Part Number	316LN SS Part Number	Larger Flange Dimensions		
				Bolt Circle A in. (mm)	# of Holes	Hole Diam. B or Thread
2 <sup>1</sup> / <sub>8</sub> in.	N/A	FR02120133ET*		1.63 (41.28)	4	( <sup>1</sup> / <sub>4</sub> -28)
2 <sup>3</sup> / <sub>4</sub> in.	N/A	FR02750133E	FR027501336	2.31 (58.72)	6	0.27 (6.73)
	N/A	FR02750212ET*		2.31 (58.73)	6	( <sup>1</sup> / <sub>4</sub> -28)
3 <sup>3</sup> / <sub>8</sub> in.	N/A	FR03380133E		2.85 (72.39)	8	0.33 (8.43)
	N/A	FR03380212E		2.85 (72.39)	8	0.33 (8.43)
	N/A	FR03380275ET*		2.85 (72.39)	8	( <sup>5</sup> / <sub>16</sub> -24)
4 <sup>1</sup> / <sub>2</sub> in.	N/A	FR04500133E		3.63 (92.15)	8	0.33 (8.43)
	N/A	FR04500212E		3.63 (92.15)	8	0.33 (8.43)
	N/A	FR04500275E	FR045002756	3.63 (92.15)	8	0.33 (8.43)
	N/A	FR04500338ET*		3.63 (92.15)	8	( <sup>5</sup> / <sub>16</sub> -24)
4 <sup>5</sup> / <sub>8</sub> in.	N/A	FR04620133E		4.03 (102.36)	10	0.33 (8.43)
	N/A	FR04620212E		4.03 (102.36)	10	0.33 (8.43)
	N/A	FR04620275E		4.03 (102.36)	10	0.33 (8.43)
	N/A	FR04620338E		4.03 (102.36)	10	0.33 (8.43)
6 in.	FR060001334	FR06000133E		5.13 (130.25)	16	0.33 (8.43)
	FR060002124	FR06000212E		5.13 (130.25)	16	0.33 (8.43)
	FR060002754	FR06000275E	FR060002756	5.13 (130.25)	16	0.33 (8.43)
	FR060003384	FR06000338E		5.13 (130.25)	16	0.33 (8.43)
	FR060004504	FR06000450E	FR060004506	5.13 (130.25)	16	0.33 (8.43)
	FR060004624T*	FR06000462ET*		5.13 (130.25)	16	( <sup>5</sup> / <sub>16</sub> -24)
6 <sup>3</sup> / <sub>4</sub> in.	FR067501334	FR06750133E		5.97 (151.61)	18	0.33 (8.43)
	FR067502124	FR06750212E		5.97 (151.61)	18	0.33 (8.43)
	FR067502754	FR06750275E		5.97 (151.61)	18	0.33 (8.43)
	FR067503384	FR06750338E		5.97 (151.61)	18	0.33 (8.43)
	FR067504504	FR06750450E		5.97 (151.61)	18	0.33 (8.43)
	FR067504624	FR06750462E		5.97 (151.61)	18	0.33 (8.43)
	FR067506004T*	FR06750600ET*		5.97 (151.61)	18	( <sup>5</sup> / <sub>16</sub> -24)
8 in.	FR080001334	FR08000133E		7.13 (181.05)	20	0.33 (8.43)
	FR080002124	FR08000212E		7.13 (181.05)	20	0.33 (8.43)
	FR080002754	FR08000275E	FR080002756	7.13 (181.05)	20	0.33 (8.43)
	FR080003384	FR08000338E		7.13 (181.05)	20	0.33 (8.43)
	FR080004504	FR08000450E	FR080004506	7.13 (181.05)	20	0.33 (8.43)
	FR080004624	FR08000462E		7.13 (181.05)	20	0.33 (8.43)
	FR080006004	FR08000600E	FR080006006	7.13 (181.05)	20	0.33 (8.43)
	FR080006754T*	FR08000675ET*		7.13 (181.05)	20	( <sup>5</sup> / <sub>16</sub> -24)

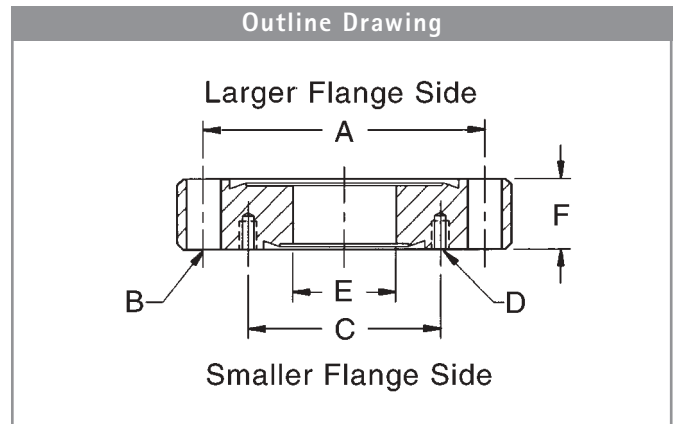
\* Both sets of bolt holes are tapped.



Reducing Flanges

Bolt Circle C in. (mm)	Smaller Flange Dimensions		Thread D 316LN SS	ID E in. (mm)	Thickness F in. (mm)	Weight lbs (kg)
	# of Holes	Thread D				
1.06 (26.98)	6	8-32		0.62 (15.75)	0.47 (11.94)	0.5 (0.2)
1.06 (27.00)	6	8-32	M4 x .7	0.62 (15.75)	0.50 (12.70)	0.8 (0.3)
1.63 (41.40)	4	1/4-28		1.00 (25.40)	0.50 (12.70)	0.5 (0.2)
1.06 (26.98)	6	8-32		0.62 (15.75)	0.62 (15.75)	1.5 (0.7)
1.63 (41.40)	4	1/4-28		1.00 (25.40)	0.62 (15.75)	1.5 (0.7)
2.31 (58.73)	6	1/4-28		1.50 (38.10)	0.62 (15.75)	1.0 (0.5)
1.06 (26.98)	6	8-32		0.62 (15.75)	0.68 (17.27)	3.0 (1.4)
1.63 (41.40)	4	1/4-28		1.00 (25.40)	0.68 (17.27)	3.0 (1.4)
2.31 (58.73)	6	1/4-28	M6 x 1	1.50 (38.10)	0.68 (17.27)	2.5 (1.1)
2.85 (72.39)	8	5/16-24		2.00 (50.80)	0.68 (17.27)	2.5 (1.1)
1.06 (26.98)	6	8-32		0.62 (15.75)	0.75 (19.05)	3.5 (1.6)
1.63 (41.40)	4	1/4-28		1.00 (25.40)	0.75 (19.05)	3.0 (1.4)
2.31 (58.73)	6	1/4-28		1.50 (38.10)	0.75 (19.05)	3.0 (1.4)
2.85 (72.39)	8	5/16-24		2.00 (50.80)	0.75 (19.05)	2.5 (1.1)
1.06 (26.98)	6	8-32		0.62 (15.75)	0.78 (19.81)	6.0 (2.7)
1.63 (41.40)	4	1/4-28		1.00 (25.40)	0.78 (19.81)	5.5 (2.5)
2.31 (58.73)	6	1/4-28	M6 x 1	1.50 (38.10)	0.78 (19.81)	5.5 (2.5)
2.85 (72.39)	8	5/16-24		2.00 (50.80)	0.78 (19.81)	5.0 (2.3)
3.63 (92.15)	8	5/16-24	M8 x 1.25	2.50 (63.50)	0.78 (19.81)	4.5 (2.0)
4.03 (102.36)	10	5/16-24		3.00 (76.20)	0.78 (19.81)	4.0 (1.8)
1.06 (26.98)	6	8-32		0.62 (15.75)	0.84 (21.34)	8.0 (3.6)
1.63 (41.40)	4	1/4-28		1.00 (25.40)	0.84 (21.34)	8.0 (3.6)
2.31 (58.73)	6	1/4-28		1.50 (38.10)	0.84 (21.34)	7.5 (3.4)
2.85 (72.39)	8	5/16-24		2.00 (50.80)	0.84 (21.34)	7.5 (3.4)
3.63 (92.15)	8	5/16-24		2.50 (63.50)	0.84 (21.34)	7.0 (3.2)
4.03 (102.36)	10	5/16-24		3.00 (76.20)	0.84 (21.34)	7.0 (3.2)
5.13 (130.25)	16	5/16-24		4.00 (101.60)	0.84 (21.34)	6.0 (2.7)
1.06 (26.98)	6	8-32		0.62 (15.75)	0.88 (22.35)	12.0 (5.4)
1.63 (41.40)	4	1/4-28		1.00 (25.40)	0.88 (22.35)	12.0 (5.4)
2.31 (58.73)	6	1/4-28	M6 x 1	1.50 (38.10)	0.88 (22.35)	12.0 (5.4)
2.85 (72.39)	8	5/16-24		2.00 (50.80)	0.88 (22.35)	11.0 (5.0)
3.63 (92.15)	8	5/16-24	M8 x 1.25	2.50 (63.50)	0.88 (22.35)	11.0 (5.0)
4.03 (102.36)	10	5/16-24		3.00 (76.20)	0.88 (22.35)	10.0 (4.5)
5.13 (130.25)	16	5/16-24	M8 x 1.25	4.00 (101.60)	0.88 (22.35)	10.0 (4.5)
5.97 (151.61)	18	5/16-24		5.00 (127.00)	0.88 (22.35)	10.0 (4.5)

# 10 in. – 13<sup>1</sup>/<sub>4</sub> in. Reducing



## Ordering Information

Size	304L SS Part Number	304 ESR SS Part Number	Bolt Circle A in. (mm)	Larger Flange Dimensions	
				# of Holes	Hole Diam. B in. (mm)
10 in.	FR100001334	FR10000133E	9.13 (231.85)	24	0.33 (8.43)
	FR100002124	FR10000212E	9.13 (231.85)	24	0.33 (8.43)
	FR100002754	FR10000275E	9.13 (231.85)	24	0.33 (8.43)
	FR100003384	FR10000338E	9.13 (231.85)	24	0.33 (8.43)
	FR100004504	FR10000450E	9.13 (231.85)	24	0.33 (8.43)
	FR100004624	FR10000462E	9.13 (231.85)	24	0.33 (8.43)
	FR100006004	FR10000600E	9.13 (231.85)	24	0.33 (8.43)
	FR100006754	FR10000675E	9.13 (231.85)	24	0.33 (8.43)
	FR100008004	FR10000800E	9.13 (231.85)	24	0.33 (8.43)
12 in.	–	FR12000133E	11.18 (283.97)	32	0.33 (8.43)
	FR120002124	FR12000212E	11.18 (283.97)	32	0.33 (8.43)
	FR120002754	FR12000275E	11.18 (283.97)	32	0.33 (8.43)
	FR120003384	FR12000338E	11.18 (283.97)	32	0.33 (8.43)
	FR120004504	FR12000450E	11.18 (283.97)	32	0.33 (8.43)
	FR120004624	FR12000462E	11.18 (283.97)	32	0.33 (8.43)
	FR120006004	FR12000600E	11.18 (283.97)	32	0.33 (8.43)
	FR120006754	FR12000675E	11.18 (283.97)	32	0.33 (8.43)
	FR120008004	FR12000800E	11.18 (283.97)	32	0.33 (8.43)
	FR120010004T	FR12001000ET	11.18 (283.97)	32	0.33 (8.43)
13 <sup>1</sup> / <sub>4</sub> in.	FR132501334	FR13250133E	12.06 (306.32)	30	0.39 (9.91)
	FR132502124	FR13250212E	12.06 (306.32)	30	0.39 (9.91)
	FR132502754	FR13250275E	12.06 (306.32)	30	0.39 (9.91)
	FR132503384	FR13250338E	12.06 (306.32)	30	0.39 (9.91)
	FR132504504	FR13250450E	12.06 (306.32)	30	0.39 (9.91)
	FR132504624	FR13250462E	12.06 (306.32)	30	0.39 (9.91)
	FR132506004	FR13250600E	12.06 (306.32)	30	0.39 (9.91)
	FR132506754	FR13250675E	12.06 (306.32)	30	0.39 (9.91)
	FR132508004	FR13250800E	12.06 (306.32)	30	0.39 (9.91)
	FR132510004	FR13251000E	12.06 (306.32)	30	0.39 (9.91)
	FR132512004T*	FR13251200ET*	12.06 (306.32)	30	<sup>3</sup> / <sub>8</sub> -24

\* Both sets of bolt holes are tapped.

Reducing Flanges

Bolt Circle C in. (mm)	Smaller Flange Size # of Holes	Thread D	ID E in. (mm)	Thickness F in. (mm)	Shipping Weight lbs (kg)
1.06 (26.98)	6	8-32	0.62 (15.75)	0.97 (24.64)	20.0 (9.0)
1.63 (41.40)	4	1/4-28	1.00 (25.40)	0.97 (24.64)	20.0 (9.0)
2.31 (58.73)	6	1/4-28	1.50 (38.10)	0.97 (24.64)	20.0 (9.0)
2.85 (72.40)	8	5/16-24	2.00 (50.80)	0.97 (24.64)	20.0 (9.0)
3.63 (92.11)	8	5/16-24	2.50 (63.50)	0.97 (24.64)	20.0 (9.0)
4.03 (102.36)	10	5/16-24	3.00 (76.20)	0.97 (24.64)	17.0 (7.7)
5.13 (130.25)	16	5/16-24	4.00 (101.60)	0.97 (24.64)	17.0 (7.7)
5.97 (151.61)	18	5/16-24	5.00 (127.00)	0.97 (24.64)	17.0 (7.7)
7.13 (181.05)	20	5/16-24	6.00 (152.40)	0.97 (24.64)	17.0 (7.7)
1.06 (26.99)	6	8-32	0.62 (15.75)	1.02 (25.91)	20.0 (9.0)
1.63 (41.40)	4	1/4-28	1.00 (25.40)	1.02 (25.91)	20.0 (9.0)
2.31 (58.73)	6	1/4-28	1.50 (38.10)	1.02 (25.91)	20.0 (9.0)
2.85 (72.39)	8	5/16-24	2.00 (50.80)	1.02 (25.91)	20.0 (9.0)
3.63 (92.15)	8	5/16-24	2.50 (63.50)	1.02 (25.91)	20.0 (9.0)
4.03 (102.36)	10	5/16-24	3.00 (76.20)	1.02 (25.91)	20.0 (9.0)
5.13 (130.25)	16	5/16-24	4.00 (101.60)	1.02 (25.91)	20.0 (9.0)
5.97 (151.61)	18	5/16-24	5.00 (127.00)	1.02 (25.91)	20.0 (9.0)
7.13 (181.05)	20	5/16-24	6.00 (152.40)	1.02 (25.91)	17.0 (7.7)
9.13 (231.85)	24	5/16-24	8.00 (203.20)	1.02 (25.91)	17.0 (7.7)
1.06 (26.98)	6	8-32	0.62 (15.75)	1.12 (28.45)	17.0 (7.7)
1.63 (41.40)	4	1/4-28	1.00 (25.40)	1.12 (28.45)	41.0 (18.5)
2.31 (58.73)	6	1/4-28	1.50 (38.10)	1.12 (28.45)	41.0 (18.5)
2.85 (72.39)	8	5/16-24	2.00 (50.80)	1.12 (28.45)	41.0 (18.5)
3.63 (92.15)	8	5/16-24	2.50 (63.50)	1.12 (28.45)	41.0 (18.5)
4.03 (102.36)	10	5/16-24	3.00 (76.20)	1.12 (28.45)	41.0 (18.5)
5.13 (130.25)	16	5/16-24	4.00 (101.60)	1.12 (28.45)	41.0 (18.5)
5.97 (151.61)	18	5/16-24	5.00 (127.00)	1.12 (28.45)	41.0 (18.5)
7.13 (181.05)	20	5/16-24	6.00 (152.40)	1.12 (28.45)	41.0 (18.5)
9.13 (231.85)	24	5/16-24	8.00 (203.20)	1.12 (28.45)	37.0 (16.7)
11.18 (283.97)	32	5/16-24	10.00 (254.00)	1.12 (28.45)	37.0 (16.7)

## Accessories

### Accessories – Gaskets

Size	Gasket Material	Description	Part Number	Qty/Pkg	Weight lbs (kg)
1 <sup>1</sup> / <sub>3</sub> in.	Copper	Individually sealed	FG0133CI	10	1.0 (0.5)
	Viton	Packaged together	FG0133VU	5	0.5 (0.2)
2 <sup>1</sup> / <sub>8</sub> in.	Copper	Individually sealed	FG0212CI	10	1.0 (0.5)
	Viton	Packaged together	FG0212VU	5	0.5 (0.2)
2 <sup>3</sup> / <sub>4</sub> in.	Copper	Individually sealed	FG0275CI	10	1.0 (0.5)
	Viton	Packaged together	FG0275VU	5	0.5 (0.2)
3 <sup>3</sup> / <sub>8</sub> in.	Copper	Individually sealed	FG0338CI	10	1.0 (0.5)
	Viton	Individually sealed	FG0338VU	1	0.5 (0.2)
4 <sup>1</sup> / <sub>2</sub> in.	Copper	Individually sealed	FG0450CI	10	1.0 (0.5)
	Viton	Individually sealed	FG0450VU	1	0.5 (0.2)
4 <sup>5</sup> / <sub>8</sub> in.	Copper	Individually sealed	FG0462CI	10	1.0 (0.5)
	Viton	Individually sealed	FG0462VU	1	0.5 (0.2)
6 in.	Copper	Individually sealed	FG0600CI	10	2.0 (0.9)
	Viton	Individually sealed	FG0600VU	1	0.5 (0.2)
6 <sup>3</sup> / <sub>4</sub> in.	Copper	Individually sealed	FG0675CI	10	2.0 (0.9)
	Viton	Individually sealed	FG0675VU	1	0.5 (0.2)
8 in.	Copper	Individually sealed	FG0800CI	10	2.0 (0.9)
	Viton	Individually sealed	FG0800VU	1	0.5 (0.2)
10 in.	Copper	Individually sealed	FG1000CI	10	2.5 (1.1)
	Viton	Individually sealed	FG1000VU	1	0.5 (0.2)
12 in.	Copper	Individually sealed	FG1200CI	1	2.5 (1.1)
	Viton	Individually sealed	FG1200VU	1	0.5 (0.2)
13 <sup>1</sup> / <sub>4</sub> in.	Copper	Individually sealed	FG1325CI	1	3.5 (1.6)
	Viton	Individually sealed	FG1325VU	1	0.5 (0.2)

### Accessories – Bolt Sets for Double-Sided Flanges

Size	Nut and Bolt Sets	Thread/Length	Hex Head Part Number	12-Point Bolt Part Number	Qty/Pkg	Shipping Weight lbs (kg)
1 <sup>1</sup> / <sub>3</sub> in.	Clear hole flanges*	8-32 x 1 <sup>1</sup> / <sub>4</sub>	N/A	FB0133CD**	6	0.5 (0.2)
2 <sup>3</sup> / <sub>4</sub> in.	Clear hole flanges*	1 <sup>1</sup> / <sub>4</sub> -28 x 2 <sup>1</sup> / <sub>4</sub>	FB0275CD06	FB0275CD12	6	1.0 (0.5)
3 <sup>3</sup> / <sub>8</sub> in.	Clear hole flanges*	5 <sup>1</sup> / <sub>16</sub> -24 x 2 <sup>1</sup> / <sub>4</sub>	FB0338CD06	-	8	2.0 (0.9)
4 <sup>1</sup> / <sub>2</sub> in.	Clear hole flanges*	5 <sup>1</sup> / <sub>16</sub> -24 x 2 <sup>1</sup> / <sub>2</sub>	FB0450CD06	FB0450CD12	10	1.0 (0.5)
4 <sup>5</sup> / <sub>8</sub> in.	Clear hole flanges*	5 <sup>1</sup> / <sub>16</sub> -24 x 2 <sup>3</sup> / <sub>4</sub>	FB0462CD06	N/A	10	2.0 (0.9)
6 in.	Clear hole flanges*	5 <sup>1</sup> / <sub>16</sub> -24 x 2 <sup>3</sup> / <sub>4</sub>	FB0600CD06	N/A	16	2.0 (0.9)
6 <sup>3</sup> / <sub>4</sub> in.	Clear hole flanges*	5 <sup>1</sup> / <sub>16</sub> -24 x 3	FB0675CD06	FB0675CD12	18	2.5 (1.1)
8 in.	Clear hole flanges*	5 <sup>1</sup> / <sub>16</sub> -24 x 3 <sup>1</sup> / <sub>4</sub>	FB0800CD06	N/A	20	3.0 (1.4)
10 in.	Clear hole flanges*	5 <sup>1</sup> / <sub>16</sub> -24 x 3 <sup>1</sup> / <sub>2</sub>	FB1000CD06	N/A	24	3.5 (1.6)
12 in.	Clear hole flanges*	5 <sup>1</sup> / <sub>16</sub> -24 x 3 <sup>1</sup> / <sub>2</sub>	FB1200CD06	N/A	32	3.5 (1.6)
13 <sup>1</sup> / <sub>4</sub> in.	Clear hole flanges*	3 <sup>1</sup> / <sub>8</sub> -24 x 4	FB1325CD06	N/A	30	4.0 (1.8)

\*Includes nuts, washers, and bolts

\*\*Only available in socket head

Accessories – Bolt Sets for CF to KF Adapters

Size	Nut and Bolt Sets	Hex Head Part Number	12-Point Bolt Part Number	Qty/Pkg	Shipping Weight lbs (kg)
1 <sup>1</sup> / <sub>3</sub> in.	Clear hole flanges	N/A	FB0133C**	25	0.5 (0.2)
	Tapped hole flanges	N/A	FB0133T**	25	0.5 (0.2)
2 <sup>1</sup> / <sub>8</sub> in.	Clear hole flanges	FB0275C06	FB0275C12	25	1.0 (0.5)
	Tapped hole flanges	FB0275T06	FB0275T12	25	1.0 (0.5)
2 <sup>3</sup> / <sub>4</sub> in.	Clear hole flanges	FB0275C06	FB0275C12	25	1.0 (0.5)
	Tapped hole flanges	FB0275T06	FB0275T12	25	1.0 (0.5)
3 <sup>3</sup> / <sub>8</sub> in.	Clear hole flanges	FB0338C06	FB0338C12	25	2.0 (0.9)
	Tapped hole flanges	FB0450T06	FB0450T12	25	2.0 (0.9)
4 <sup>1</sup> / <sub>2</sub> in.	Clear hole flanges	FB0450C06	FB0450C12	25	2.0 (0.9)
	Tapped hole flanges	FB0450T06	FB0450T12	25	2.0 (0.9)

\*Includes nuts, washers, and bolts

\*\*Only available in socket head

Accessories – Bolt Sets for Reducing Flanges

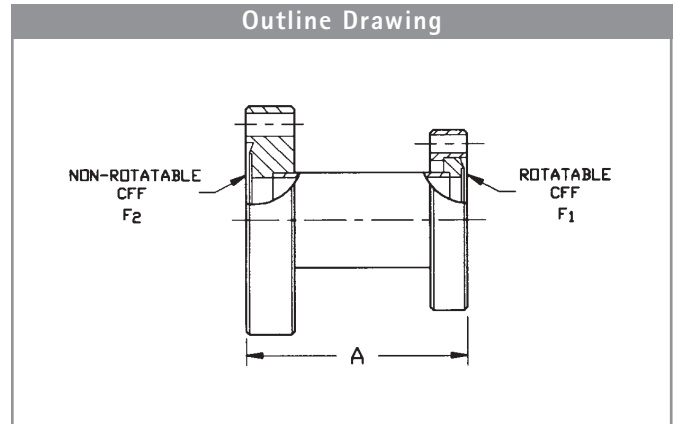
Reducer Flange Size	Bolt Set Part Number	Quantity Per Package		Shipping Weight lbs (kg)
		Small Flange	Large Flange	
2 <sup>3</sup> / <sub>4</sub> in. to 2 <sup>1</sup> / <sub>8</sub> in.	FB02750212CR12	4 bolts/washers	6 bolts/washers/nuts	2.0 (0.9)
3 <sup>3</sup> / <sub>8</sub> in. to 1 <sup>1</sup> / <sub>3</sub> in.	FB03380133CR12	6 bolts/washers	8 bolts/washers/nuts	3.0 (1.4)
3 <sup>3</sup> / <sub>8</sub> in. to 2 <sup>1</sup> / <sub>8</sub> in.	FB03380212CR12	4 bolts/washers	8 bolts/washers/nuts	3.0 (1.4)
3 <sup>3</sup> / <sub>8</sub> in. to 2 <sup>3</sup> / <sub>4</sub> in.	FB03380275CR12	6 bolts	8 bolts	3.0 (1.4)
4 <sup>1</sup> / <sub>2</sub> in. to 2 <sup>1</sup> / <sub>2</sub> in.	FB04500212CR12	4 bolts/washers	8 bolts/washers/nuts	3.0 (1.4)
4 <sup>1</sup> / <sub>2</sub> in. to 2 <sup>3</sup> / <sub>4</sub> in.	FB04500275CR12	6 bolts/washers	8 bolts/washers/nuts	3.0 (1.4)
4 <sup>1</sup> / <sub>2</sub> in. to 3 <sup>3</sup> / <sub>8</sub> in.	FB04500338CR12	8 bolts	8 bolts	3.0 (1.4)
6 in. to 2 <sup>3</sup> / <sub>4</sub> in.	FB06000275CR12	6 bolts/washers	16 bolts/washers/nuts	4.0 (1.8)
6 in. to 3 <sup>3</sup> / <sub>8</sub> in.	FB06000338CR12	8 bolts/washers	16 bolts/washers/nuts	4.0 (1.8)
6 in. to 4 <sup>1</sup> / <sub>2</sub> in.	FB06000450CR12	8 bolts/washers	16 bolts/washers/nuts	4.0 (1.8)
8 in. to 2 <sup>3</sup> / <sub>4</sub> in.	FB08000275CR12	6 bolts/washers	20 bolts/washers/nuts	4.0 (1.8)
8 in. to 4 <sup>1</sup> / <sub>2</sub> in.	FB08000450CR12	8 bolts/washers	20 bolts/washers/nuts	4.0 (1.8)
8 in. to 6 in.	FB08000600CR12	16 bolts/washers	20 bolts/washers/nuts	4.0 (1.8)
10 in. to 2 <sup>3</sup> / <sub>4</sub> in.	FB10000275CR12	6 bolts/washers	24 bolts/washers/nuts	5.0 (2.3)
10 in. to 6 in.	FB10000600CR12	16 bolts/washers	24 bolts/washers/nuts	5.0 (2.3)
10 in. to 8 in.	FB10000800CR12	20 bolts/washers	24 bolts/washers/nuts	5.0 (2.3)
12 in. to 10 in.	FB12001000CR12	24 bolts/washers	32 bolts/washers/nuts	5.0 (2.3)

NOTE • Reducing flange bolt sets include sockets, 6 point and 12 point bolts dependent on size:  
1.33 bolts are socket keyed (SH), 6.75 in. and 13.25 in. bolts are hex head.  
All other sizes are 12 point heads.

Recommended Torque Specifications for Tightening ConFlat Bolts

Flange Size	Size/Thread	Torque – inch lbs
For ConFlats 1 <sup>1</sup> / <sub>3</sub> in.	(8-32)	51
For ConFlats 2 <sup>1</sup> / <sub>8</sub> in. and 2 <sup>3</sup> / <sub>4</sub> in.	( <sup>1</sup> / <sub>4</sub> -28)	96
For ConFlats 3 <sup>3</sup> / <sub>8</sub> in. to 12 in.	( <sup>5</sup> / <sub>16</sub> -24)	192
For ConFlats 13 <sup>1</sup> / <sub>4</sub> in.	( <sup>3</sup> / <sub>8</sub> -24)	345

# Reducing Nipples – 304 Stainless Steel













## Ordering Information – Reducing Nipples

Flange Size	Part Number		Length A in. (mm)	Non-Rotatable F2	Rotatable F1	Shipping Weight lbs (kg)
2 <sup>1</sup> / <sub>8</sub> in.	FA02120133		2.50 (63.50)	2 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>3</sub>	1.5 (0.7)
2 <sup>3</sup> / <sub>4</sub> in.	FA02750133		2.50 (63.50)	2 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>3</sub>	1.5 (0.7)
	FA02750212		2.75 (69.85)	2 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>8</sub>	1.5 (0.7)
3 <sup>3</sup> / <sub>8</sub> in.	FA03380133		2.50 (63.50)	3 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>3</sub>	3.0 (1.4)
	FA03380212		3.00 (76.20)	3 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	3.0 (1.4)
	FA03380275		2.50 (63.50)	3 <sup>3</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	3.0 (1.4)
	FA03380275L		3.00 (76.20)	3 <sup>3</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	3.0 (1.4)
4 <sup>1</sup> / <sub>2</sub> in.	FA04500133		2.50 (63.50)	4 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>3</sub>	4.0 (1.8)
	FA04500212		3.00 (76.20)	4 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>8</sub>	4.0 (1.8)
	FA04500275		2.50 (63.50)	4 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>4</sub>	4.0 (1.8)
	FA04500275L		3.00 (76.20)	4 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>4</sub>	4.0 (1.8)
	FA04500338		3.75 (95.25)	4 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>8</sub>	5.0 (2.3)
4 <sup>5</sup> / <sub>8</sub> in.	FA04620133		2.50 (63.50)	4 <sup>5</sup> / <sub>8</sub>	1.35	5.0 (2.3)
	FA04620212		3.00 (76.20)	4 <sup>5</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	5.0 (2.3)
	FA04620275		3.00 (76.20)	4 <sup>5</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>4</sub>	6.0 (2.7)
	FA04620338		3.75 (95.25)	4 <sup>5</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	7.0 (3.2)
	FA04620450		4.00 (101.60)	4 <sup>5</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>2</sub>	8.0 (3.6)
	6 in.	FA06000133		2.50 (63.50)	6	1 <sup>1</sup> / <sub>3</sub>
FA06000212			3.25 (82.55)	6	2 <sup>1</sup> / <sub>8</sub>	8.0 (3.6)
FA06000275			3.25 (82.55)	6	2 <sup>3</sup> / <sub>4</sub>	8.0 (3.6)
FA06000338			4.00 (101.60)	6	3 <sup>3</sup> / <sub>8</sub>	10.0 (4.5)
FA06000450			2.50 (63.50)	6	4 <sup>1</sup> / <sub>2</sub>	10.0 (4.5)
FA06000450L			4.25 (107.95)	6	4 <sup>1</sup> / <sub>2</sub>	12.0 (5.4)
FA06000462			4.50 (114.30)	6	4 <sup>5</sup> / <sub>8</sub>	12.0 (5.4)
6 <sup>3</sup> / <sub>4</sub> in.		FA06750133		2.50 (63.50)	6 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>3</sub>
	FA06750212		3.25 (82.55)	6 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>8</sub>	10.0 (4.5)
	FA06750275		3.25 (82.55)	6 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>	10.0 (4.5)
	FA06750338		4.00 (101.60)	6 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>8</sub>	12.0 (5.4)
	FA06750450		4.25 (107.95)	6 <sup>3</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>2</sub>	12.0 (5.4)
	FA06750462		4.50 (114.30)	6 <sup>3</sup> / <sub>4</sub>	4 <sup>5</sup> / <sub>8</sub>	12.0 (5.4)
	FA06750600		4.50 (114.30)	6 <sup>3</sup> / <sub>4</sub>	6	14.0 (6.3)

\* Custom lengths/configurations available on request

Ordering Information – Reducing Nipples

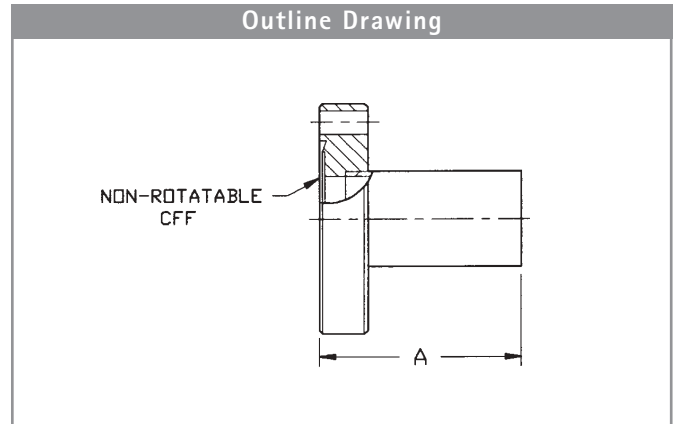
Flange Size	Part Number	A in. (mm)	Non-Rotatable F2	Rotatable F1	Shipping Weight lbs (kg)
8 in.	FA08000133	2.50 (63.50)	8	1 <sup>1</sup> / <sub>3</sub>	14.0 (6.3)
	FA08000212	3.25 (82.55)	8	2 <sup>1</sup> / <sub>8</sub>	14.0 (6.3)
	FA08000275 	2.50 (63.50)	8	2 <sup>3</sup> / <sub>4</sub>	14.0 (6.3)
	FA08000275L 	4.00 (101.60)	8	2 <sup>3</sup> / <sub>4</sub>	14.0 (6.3)
	FA08000338	4.00 (101.60)	8	3 <sup>3</sup> / <sub>8</sub>	15.0 (6.8)
	FA08000450 	2.50 (63.50)	8	4 <sup>1</sup> / <sub>2</sub>	16.0 (7.2)
	FA08000450L	4.50 (114.30)	8	4 <sup>1</sup> / <sub>2</sub>	16.0 (7.2)
	FA08000462 	4.50 (114.30)	8	4 <sup>5</sup> / <sub>8</sub>	16.0 (7.2)
	FA08000600 	2.50 (63.50)	8	6	18.0 (8.1)
	FA08000600L 	4.50 (114.30)	8	6	16.0 (7.2)
	FA08000675	4.50 (114.30)	8	6 <sup>3</sup> / <sub>4</sub>	16.0 (7.2)
	10 in.	FA10000133	2.50 (63.50)	10	1 <sup>1</sup> / <sub>3</sub>
FA10000212		3.50 (88.90)	10	2 <sup>1</sup> / <sub>8</sub>	25.0 (11.3)
FA10000275 		3.50 (88.90)	10	2 <sup>3</sup> / <sub>4</sub>	25.0 (11.3)
FA10000338		4.00 (101.60)	10	3 <sup>3</sup> / <sub>8</sub>	26.0 (11.7)
FA10000450 		4.50 (114.30)	10	4 <sup>1</sup> / <sub>2</sub>	28.0 (12.6)
FA10000462		4.75 (120.65)	10	4 <sup>5</sup> / <sub>8</sub>	28.0 (12.6)
FA10000600 		4.75 (120.65)	10	6	26.0 (11.7)
FA10000675		4.75 (120.65)	10	6 <sup>3</sup> / <sub>4</sub>	26.0 (11.7)
FA10000800 		4.75 (120.65)	10	8	20.0 (9.0)

Reducing Nipples – 316LN SS



















Ordering Information – Adapters 316LN SS

Flange Size	Part Number	A in. (mm)	Non-Rotatable F2	Rotatable F1	Shipping Weight lbs (kg)
2 <sup>3</sup> / <sub>4</sub> in.	FA027501336	1.77 (44.96)	2 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>3</sub>	1.5 (0.7)
4 <sup>1</sup> / <sub>2</sub> in.	FA045002756	2.95 (74.93)	4 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>4</sub>	2.6 (1.2)
6 in.	FA060002756	2.95 (74.93)	6	2 <sup>3</sup> / <sub>4</sub>	6.6 (3.0)
	FA060004506	3.74 (95.00)	6	4 <sup>1</sup> / <sub>2</sub>	8.3 (3.8)
8 in.	FA080002756	2.95 (74.93)	8	2 <sup>3</sup> / <sub>4</sub>	9.9 (4.5)
	FA080006006	4.12 (104.65)	8	6	13.0 (6.0)






# Half Nipples



## Ordering Information – Half Nipples, Standard Tube Size

Tube Size	Part Number	Flange OD	Overall Length A in. (mm)	Tube OD in. (mm)	Tube ID in. (mm)	Shipping Weight lbs (kg)
3/4 in.	FNH0075 	1 1/3	1.50 (38.10)	0.75 (19.05)	0.68 (17.27)	0.8 (0.3)
1 in.	FNH0100 	2 1/8	2.04 (51.82)	1.00 (25.40)	0.87 (19.81)	1.0 (0.5)
	FNH0100L 	2 1/8	2.05 (52.07)	1.00 (25.40)	0.87 (19.81)	1.0 (0.5)
	FNH01000275 	2 3/4	2.46 (62.48)	1.00 (25.40)	0.87 (19.81)	1.0 (0.5)
1 1/2 in.	FNH0150S 	2 3/4	2.46 (62.48)	1.50 (38.10)	1.37 (34.80)	1.0 (0.5)
	FNH0150 	2 3/4	4.71 (119.63)	1.50 (38.10)	1.37 (34.80)	1.0 (0.5)
2 in.	FNH0200 	3 3/8	3.21 (81.53)	2.00 (50.80)	1.87 (47.50)	2.0 (0.9)
2 1/2 in.	FNH0250S 	4 1/2	3.38 (85.85)	2.50 (63.50)	2.37 (60.20)	6.0 (2.7)
	FNH0250 	4 1/2	4.12 (104.65)	2.50 (63.50)	2.37 (60.20)	6.0 (2.7)
3 in.	FNH0300S 	4 5/8	3.53 (89.66)	3.00 (76.20)	2.87 (72.90)	7.0 (3.2)
	FNH0300 	4 5/8	4.93 (125.22)	3.00 (76.20)	2.87 (72.90)	7.0 (3.2)
4 in.	FNH0400S 	6	4.32 (109.73)	4.00 (101.60)	3.83 (97.28)	11.0 (4.9)
	FNH0400 	6	5.31 (134.87)	4.00 (101.60)	3.83 (97.28)	11.0 (4.9)
5 in.	FNH0500 	6 3/4	4.93 (125.22)	5.00 (127.00)	4.83 (122.68)	12.0 (5.4)
6 in.	FNH0600S 	8	5.50 (139.70)	6.00 (152.40)	5.83 (148.08)	19.0 (8.6)
	FNH0600 	8	6.56 (166.62)	6.00 (152.40)	5.83 (148.08)	19.0 (8.6)
8 in.	FNH0800S 	10	7.50 (190.50)	8.00 (203.20)	7.83 (198.88)	26.0 (11.8)
	FNH0800 	10	8.00 (203.20)	8.00 (203.20)	7.83 (198.88)	26.0 (11.8)

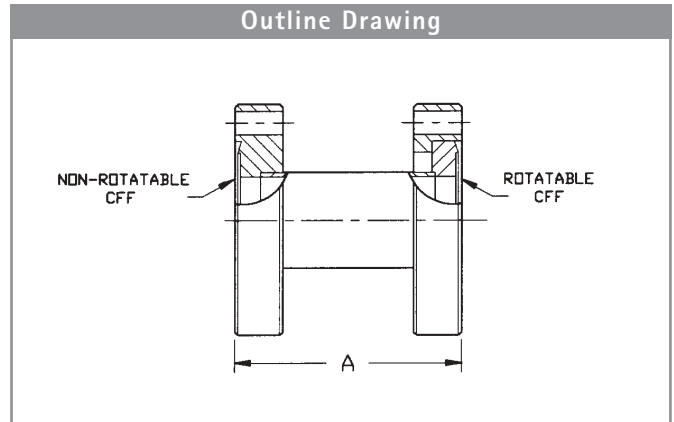
## Ordering Information – Half Nipples, Rotatable Flanges

Tube Size	Part Number	Flange OD	Overall Length A in. (mm)	Tube OD in. (mm)	Tube ID in. (mm)	Shipping Weight lbs (kg)
3/4 in.	FNH0075R 	1 1/3	1.50 (38.10)	0.75 (19.05)	0.68 (17.27)	0.8 (0.3)
1 1/2 in.	FNH0150R 	2 3/4	2.36 (60.00)	1.50 (38.10)	1.37 (34.80)	1.0 (0.5)
2 1/2 in.	FNH0250R 	4 1/2	3.15 (80.01)	2.50 (63.50)	2.33 (59.18)	6.0 (2.7)
4 in.	FNH0400R 	6	3.54 (89.92)	4.00 (101.60)	3.83 (97.28)	11.0 (4.9)
6 in.	FNH0600R 	8	3.94 (100.08)	6.00 (152.40)	5.83 (148.08)	19.0 (8.6)
















NOTE \* Custom configurations available on request



# Nipples



## Ordering Information – Nipples

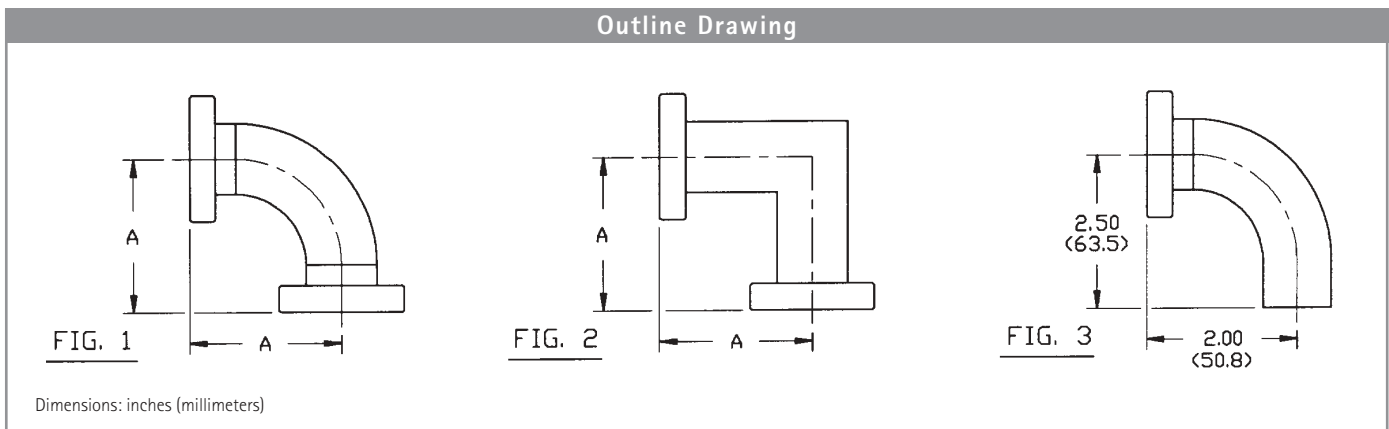
Tube Size	Part Number	Flange OD	Overall Length A in. (mm)	Tube OD in. (mm)	Tube ID in. (mm)	Shipping Weight lbs (kg)
3/4 in.	FNF0075 	1 1/3	3.00 (76.20)	0.75 (19.05)	0.62 (17.27)	1.5 (0.7)
1 in.	FNF0100 	2 1/8	4.08 (103.63)	1.00 (25.40)	0.87 (19.81)	2.0 (0.9)
	FNF0100L 	2 1/8	4.10 (104.14)	1.00 (25.40)	0.87 (19.81)	2.0 (0.9)
1 1/2 in.	FNF0150 	2 3/4	4.93 (125.22)	1.50 (38.10)	1.37 (34.80)	2.0 (0.9)
2 in.	FNF0200 	3 3/8	6.43 (163.32)	2.00 (50.80)	1.87 (47.50)	4.0 (1.8)
2 1/2 in.	FNF0250 	4 1/2	8.25 (209.55)	2.50 (63.50)	2.37 (60.20)	8.0 (3.6)
	FNF0250S 	4 1/2	6.76 (171.70)	2.50 (63.50)	2.37 (60.20)	8.0 (3.6)
3 in.	FNF0300 	4 5/8	7.06 (179.32)	3.00 (76.20)	2.87 (72.90)	9.0 (4.1)
4 in.	FNF0400 	6	10.63 (270.00)	4.00 (101.60)	3.83 (97.28)	15.0 (6.8)
	FNF0400S 	6	8.64 (219.46)	4.00 (101.60)	3.83 (97.28)	13.0 (5.9)
5 in.	FNF0500 	6 3/4	9.87 (250.70)	5.00 (127.00)	4.83 (122.68)	15.0 (6.8)
6 in.	FNF0600 	8	13.13 (333.50)	6.00 (152.40)	5.83 (148.08)	24.0 (10.8)
	FNF0600S 	8	11.00 (279.40)	6.00 (152.40)	5.83 (148.08)	24.0 (10.8)
8 in.	FNF0800 	10	16.00 (406.40)	8.00 (203.20)	7.83 (198.88)	30.0 (13.5)
	FNF0800S 	10	15.00 (381.00)	8.00 (203.20)	7.83 (198.88)	30.0 (13.5)

NOTE • Custom configurations available on request












# Elbows (90°)



## Outline Drawing



## Ordering Information – Elbows

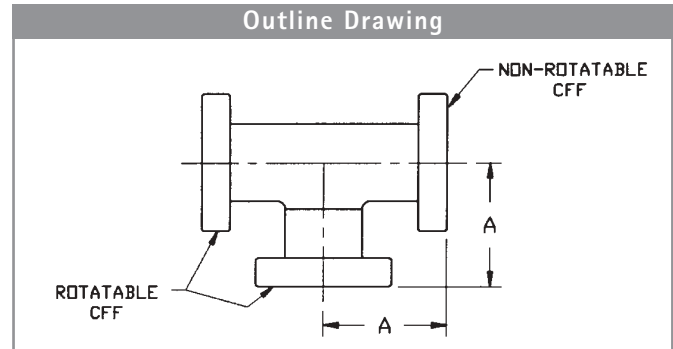
Nominal Tube Size	Part Number	Flange Size	Fig. Number	Dimension A in. (mm)	Shipping Weight lbs (kg)
3/4 in.	FE0075 	1 1/3	1	1.50 (38.10)	1.5 (0.7)
1 in.	FE0100 	2 1/8	1	2.04 (51.82)	2.0 (0.9)
	FE0100SF 	2 3/4	3	*	1.0 (0.5)
1 1/2 in.	FE0150 	2 3/4	1	2.46 (62.48)	2.0 (0.9)
2 in.	FE0200 	3 3/8	2	3.21 (81.53)	4.0 (1.8)
2 1/2 in.	FE0250 	4 1/2	2	4.13 (104.90)	8.0 (3.6)
3 in.	FE0300 	4 5/8	2	3.53 (89.66)	9.0 (4.1)
4 in.	FE0400 	6	2	5.31 (134.87)	15.0 (6.8)
5 in.	FE0500 	6 3/4	2	4.93 (125.22)	16.0 (7.2)
6 in.	FE0600 	8	2	6.56 (166.62)	24.0 (10.8)
8 in.	FE0800 	10	2	8.00 (203.20)	35.0 (15.8)

\* Has one 2 3/4 ConFlat Flange – see Figure 3 for dimensions

**NOTE**

- Custom configurations available on request
- All flanges are rotatable

# Tees

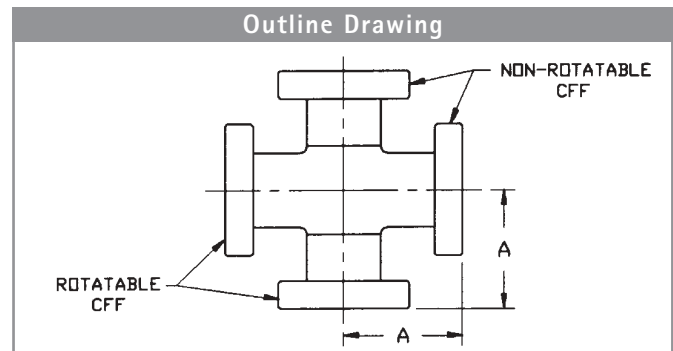


## Ordering Information – Tees

Nominal Tube Size	Part Number	Flange Size	Dimension A in. (mm)	Shipping Weight lbs (kg)
3/4 in.	FT0075 <small>(UHV Ready)</small>	1 1/3	1.50 (38.10)	2.0 (0.9)
1 in.	FT0100 <small>(UHV Ready)</small>	2 1/8	2.04 (51.82)	2.0 (0.9)
1 1/2 in.	FT0150 <small>(UHV Ready)</small>	2 3/4	2.46 (62.50)	4.0 (1.8)
2 in.	FT0200 <small>(UHV Ready)</small>	3 3/8	3.21 (81.53)	8.0 (3.6)
2 1/2 in.	FT0250 <small>(UHV Ready)</small>	4 1/2	4.13 (104.90)	11.0 (4.9)
3 in.	FT0300 <small>(UHV Ready)</small>	4 5/8	3.53 (89.66)	17.0 (7.7)
4 in.	FT0400 <small>(UHV Ready)</small>	6	5.31 (134.87)	21.0 (9.5)
5 in.	FT0500 <small>(UHV Ready)</small>	6 3/4	4.93 (125.22)	30.0 (13.5)
6 in.	FT0600 <small>(UHV Ready)</small>	8	6.56 (166.62)	34.0 (15.4)
8 in.	FT0800 <small>(UHV Ready)</small>	10	8.00 (203.20)	40.0 (18.0)

NOTE • Custom configurations available on request

# Crosses (4-Way)

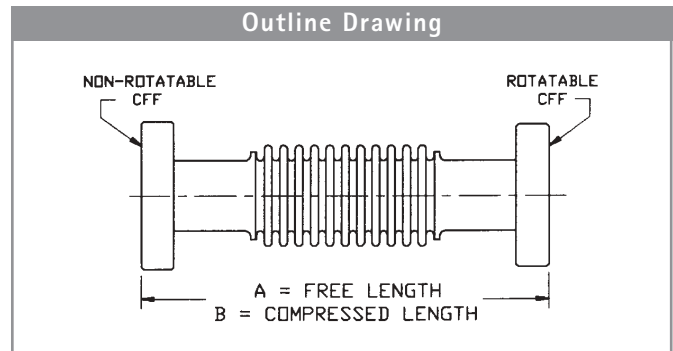
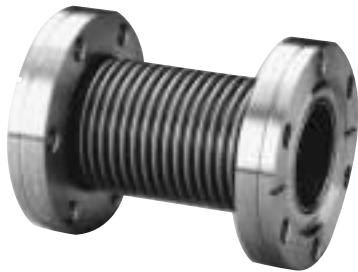


## Ordering Information – Crosses

Nominal Tube Size	Part Number	Flange Size	Dimension A in. (mm)	Shipping Weight lbs (kg)
3/4 in.	FC0075 <small>(UHV Ready)</small>	1 1/3	1.50 (38.10)	2.3 (1.0)
1 in.	FC0100 <small>(UHV Ready)</small>	2 1/8	2.04 (51.82)	3.0 (1.4)
1 1/2 in.	FC0150 <small>(UHV Ready)</small>	2 3/4	2.46 (62.50)	4.0 (1.8)
2 in.	FC0200 <small>(UHV Ready)</small>	3 3/8	3.21 (81.53)	9.0 (4.1)
2 1/2 in.	FC0250 <small>(UHV Ready)</small>	4 1/2	4.13 (104.90)	14.0 (6.3)
3 in.	FC0300 <small>(UHV Ready)</small>	4 5/8	3.53 (89.66)	20.0 (9.0)
4 in.	FC0400 <small>(UHV Ready)</small>	6	5.31 (134.87)	26.0 (11.8)
5 in.	FC0500 <small>(UHV Ready)</small>	6 3/4	4.93 (125.22)	35.0 (15.8)
6 in.	FC0600 <small>(UHV Ready)</small>	8	6.56 (166.62)	44.0 (19.9)
8 in.	FC0800 <small>(UHV Ready)</small>	10	8.00 (203.20)	50.0 (22.5)

NOTE • Custom configurations available on request

# Flexible Couplings (Non-Braided)



## Specifications

- Vacuum-compatible stainless steel
- Sizes 3/4 in. – 6 in.
- Full penetration vacuum welds

## Ordering Information – Flexible Couplings, Non-Braided

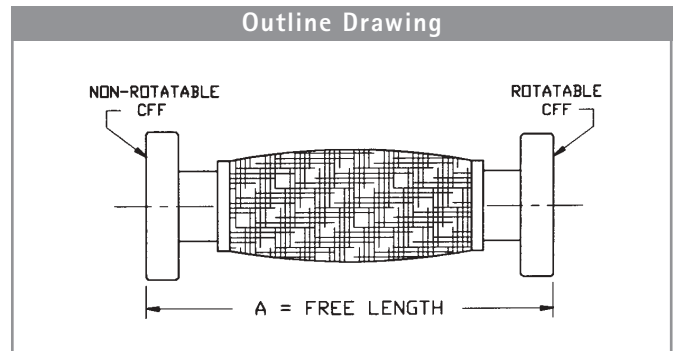
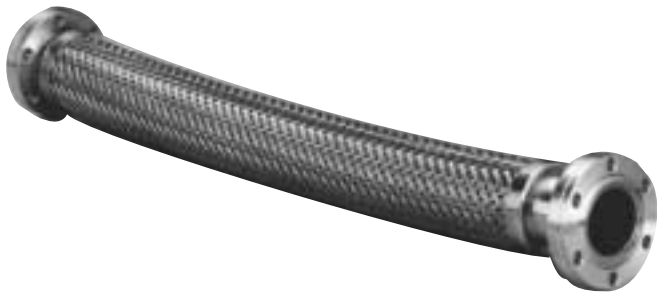
Nominal O.D.	Part Number	Free A in. (mm)	Compressed B in. (mm)	Nominal Flange Size	Shipping Weight lbs (kg)
3/4 in.	FL00750300	3.00 (76.20)	2.65 (67.3)	1 1/3	1.5 (0.7)
	FL00750600	6.00 (152.40)	5.30 (134.6)	1 1/3	1.5 (0.7)
	FL00751000	10.00 (254.00)	9.00 (228.6)	1 1/3	2.0 (0.9)
	FL00751200	12.00 (304.80)	10.90 (276.9)	1 1/3	2.0 (0.9)
	FL00751800	18.00 (457.20)	–	1 1/3	3.0 (1.4)
	FL00752000	20.00 (508.00)	–	1 1/3	4.0 (1.8)
	FL00752400	24.00 (609.60)	–	1 1/3	4.0 (1.8)
	FL00753600	36.00 (914.40)	–	1 1/3	5.0 (2.3)
	FL00754800	48.00 (1219.20)	–	1 1/3	5.0 (2.3)
1 in.	FL01000400	4.00 (101.60)	3.57 (90.7)	2 1/8	1.5 (0.7)
	FL01001200	12.00 (304.80)	–	2 1/8	2.5 (1.1)
	FL01001800	18.00 (457.20)	–	2 1/8	2.5 (1.1)
	FL01002400	24.00 (609.60)	–	2 1/8	3.0 (1.4)
	FL01003600	36.00 (914.40)	–	2 1/8	3.0 (1.4)
	FL01004800	48.00 (1219.20)	–	2 1/8	4.0 (1.8)
1 1/2 in.	FL01500334	3.34 (84.84)	2.90 (73.7)	2 3/4	2.0 (0.9)
	FL01500400	4.00 (101.60)	3.57 (90.7)	2 3/4	2.0 (0.9)
	FL01501200	12.00 (304.80)	–	2 3/4	3.0 (1.4)
	FL01501800	18.00 (457.20)	–	2 3/4	4.0 (1.8)
	FL01502000	20.00 (508.00)	–	2 3/4	4.0 (1.8)
	FL01502400	24.00 (609.60)	–	2 3/4	5.0 (2.3)
	FL01503600	36.00 (914.40)	–	2 3/4	6.0 (2.7)
	FL01504800	48.00 (1219.20)	–	2 3/4	6.0 (2.7)

Ordering Information – Flexible Couplings – Non-Braided

Nominal O.D.	Part Number	Free A in. (mm)	Compressed B in. (mm)	Nominal Flange Size	Shipping Weight lbs (kg)
2 in.	FL02000600	6.00 (152.40)	5.30 (134.6)	3 <sup>3</sup> / <sub>8</sub>	2.0 (0.9)
	FL02001200	12.00 (304.80)	-	3 <sup>3</sup> / <sub>8</sub>	5.0 (2.3)
	FL02001800	18.00 (457.20)	-	3 <sup>3</sup> / <sub>8</sub>	6.0 (2.7)
	FL02002400	24.00 (609.60)	-	3 <sup>3</sup> / <sub>8</sub>	7.0 (3.1)
	FL02003600	36.00 (914.40)	-	3 <sup>3</sup> / <sub>8</sub>	8.0 (3.6)
	FL02004800	48.00 (1219.20)	-	3 <sup>3</sup> / <sub>8</sub>	8.0 (3.6)
2½ in.	FL02500625	6.25 (158.75)	5.57 (141.5)	4½	7.0 (3.1)
	FL02501200	12.00 (304.80)	-	4½	8.0 (3.6)
	FL02501800	18.00 (457.20)	-	4½	9.0 (4.1)
	FL02502000	20.00 (508.00)	-	4½	9.0 (4.1)
	FL02502400	24.00 (609.60)	-	4½	9.0 (4.1)
	FL02503600	36.00 (914.40)	-	4½	10.0 (4.5)
	FL02504800	48.00 (1219.20)	-	4½	10.0 (4.5)
3 in.	FL03000800	8.00 (203.20)	7.06 (179.3)	4 <sup>5</sup> / <sub>8</sub>	7.0 (3.1)
	FL03001200	12.00 (304.80)	-	4 <sup>5</sup> / <sub>8</sub>	8.0 (3.6)
4 in.	FL04000763	7.63 (193.80)	6.65 (168.9)	6	14.0 (6.3)
	FL04001200	12.00 (304.80)	-	6	16.0 (7.2)
	FL04001800	18.00 (457.20)	-	6	17.0 (7.7)
	FL04002400	24.00 (609.60)	-	6	18.0 (8.1)
5 in.	FL05000800	8.00 (203.20)	6.98 (177.3)	6 <sup>3</sup> / <sub>4</sub>	18.0 (8.1)
6 in.	FL06000813	8.13 (206.50)	7.20 (182.9)	8	18.0 (8.1)
	FL06001000	10.00 (254.00)	-	8	18.0 (8.1)

NOTE • Custom configurations available on request

# Flexible Couplings (Braided)



## Specifications

- Vacuum-compatible stainless steel
- Sizes 3/4 in. – 6 in.
- Full penetration vacuum welds
- Custom lengths available

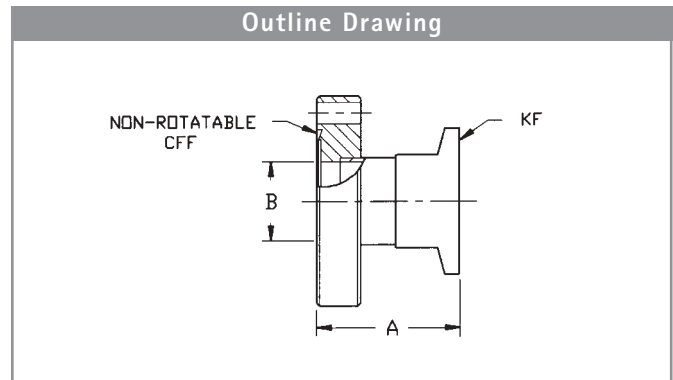
## Ordering Information – Flexible Couplings – Braided

Nominal O.D.	Part Number	Free A in. (mm)	Nominal Flange Size	Shipping Weight lbs (kg)
3/4 in.	FLB00750600	6.00 (152.40)	1 <sup>1</sup> / <sub>3</sub>	1.5 (0.7)
	FLB00751200	12.00 (304.80)	1 <sup>1</sup> / <sub>3</sub>	2.0 (0.9)
	FLB00751800	18.00 (457.20)	1 <sup>1</sup> / <sub>3</sub>	3.0 (1.4)
	FLB00752000	20.00 (508.00)	1 <sup>1</sup> / <sub>3</sub>	4.0 (1.8)
	FLB00752400	24.00 (609.60)	1 <sup>1</sup> / <sub>3</sub>	4.0 (1.8)
	FLB00753600	36.00 (914.40)	1 <sup>1</sup> / <sub>3</sub>	5.0 (2.3)
	FLB00754800	48.00 (1219.20)	1 <sup>1</sup> / <sub>3</sub>	5.0 (2.3)
1 in.	FLB01000600	6.00 (152.40)	2 <sup>1</sup> / <sub>8</sub>	1.5 (0.7)
	FLB01001200	12.00 (304.80)	2 <sup>1</sup> / <sub>8</sub>	2.5 (1.1)
	FLB01001800	18.00 (457.20)	2 <sup>1</sup> / <sub>8</sub>	2.5 (1.1)
	FLB01002400	24.00 (609.60)	2 <sup>1</sup> / <sub>8</sub>	3.0 (1.4)
	FLB01003600	36.00 (914.40)	2 <sup>1</sup> / <sub>8</sub>	3.0 (1.4)
	FLB01004800	48.00 (1219.20)	2 <sup>1</sup> / <sub>8</sub>	4.0 (1.8)
	1 1/2 in.	FLB01500600	6.00 (152.40)	2 <sup>3</sup> / <sub>4</sub>
FLB01501200		12.00 (304.80)	2 <sup>3</sup> / <sub>4</sub>	3.0 (1.4)
FLB01501875		18.75 (476.25)	2 <sup>3</sup> / <sub>4</sub>	4.0 (1.8)
FLB01502000		20.00 (508.00)	2 <sup>3</sup> / <sub>4</sub>	4.0 (1.8)
FLB01502400		24.00 (609.60)	2 <sup>3</sup> / <sub>4</sub>	5.0 (2.3)
FLB01503600		36.00 (914.40)	2 <sup>3</sup> / <sub>4</sub>	6.0 (2.7)
FLB01504800		48.00 (1219.20)	2 <sup>3</sup> / <sub>4</sub>	6.0 (2.7)
2 in.		FLB02000600	6.00 (152.40)	3 <sup>3</sup> / <sub>8</sub>
	FLB02001200	12.00 (304.80)	3 <sup>3</sup> / <sub>8</sub>	5.0 (2.3)
	FLB02001800	18.00 (457.20)	3 <sup>3</sup> / <sub>8</sub>	6.0 (2.7)
	FLB02002400	24.00 (609.60)	3 <sup>3</sup> / <sub>8</sub>	7.0 (3.1)
	FLB02003600	36.00 (914.40)	3 <sup>3</sup> / <sub>8</sub>	8.0 (3.6)
	FLB02004800	48.00 (1219.20)	3 <sup>3</sup> / <sub>8</sub>	8.0 (3.6)

Ordering Information – Flexible Couplings – Braided

Nominal O.D.	Part Number	Free A in. (mm)	Nominal Flange Size	Shipping Weight lbs (kg)
2 1/2 in.	FLB02500600	6.00 (152.40)	4 1/2	7.0 (3.1)
	FLB02501200	12.00 (304.80)	4 1/2	8.0 (3.6)
	FLB02501800	18.00 (457.20)	4 1/2	9.0 (4.1)
	FLB02502000	20.00 (508.00)	4 1/2	9.0 (4.1)
	FLB02502400	24.00 (609.60)	4 1/2	9.0 (4.1)
	FLB02503600	36.00 (914.40)	4 1/2	10.0 (4.5)
	FLB02504800	48.00 (1219.20)	4 1/2	10.0 (4.5)
3 in.	FLB03000800	8.00 (203.20)	4 5/8	7.0 (3.1)
	FLB03001200	12.00 (304.80)	4 5/8	8.0 (3.6)
4 in.	FLB04000800	8.00 (203.20)	6	13.0 (5.9)
	FLB04001200	12.00 (304.80)	6	16.0 (7.2)
	FLB04001800	18.00 (457.20)	6	17.0 (7.7)
	FLB04002400	24.00 (609.60)	6	18.0 (8.1)
5 in.	FLB05000800	8.00 (304.80)	6 3/4	18.0 (8.1)
6 in.	FLB06001000	10.00 (254.00)	8	18.0 (8.1)

# CFF to KF Adapters



## Ordering Information – CFF to KF Adapters

CFF Size	Part Number	CFF OD	KF Flange NW	Size OD	Overall Length A in. (mm)	Tube ID B in. (mm)	Weight lbs (kg)
1 1/8 in.	FA0133NW16S	1.33	NW16	1.18	1.57 (39.88)	0.68 (17.27)	1.0 (0.5)
	FA0133NW16	1.33	NW16	1.18	2.00 (50.80)	0.68 (17.27)	1.0 (0.5)
	FA0133NW16L	1.33	NW16	1.18	2.07 (52.70)	0.68 (17.27)	1.0 (0.5)
	FA0133NW25	1.33	NW25	1.57	2.00 (50.80)	0.68 (17.27)	1.5 (0.7)
	FA0133NW40	1.33	NW40	2.16	1.57 (39.88)	0.68 (17.27)	1.5 (0.7)
	FA0133NW50	1.33	NW50	2.95	2.00 (50.80)	0.68 (17.27)	1.5 (0.7)
2 1/8 in.	FA0212NW25	2.11	NW25	1.57	2.00 (50.80)	0.87 (22.10)	1.5 (0.7)
2 3/4 in.	FA0275NW16S	2.73	NW16	1.18	1.78 (45.21)	0.68 (17.27)	1.5 (0.7)
	FA0275NW16	2.73	NW16	1.18	2.00 (50.80)	0.68 (17.27)	1.5 (0.7)
	FA0275NW16L	2.73	NW16	1.18	2.36 (59.94)	0.68 (17.27)	1.5 (0.7)
	FA0275NW25S	2.73	NW25	1.57	1.78 (45.21)	0.87 (22.10)	1.5 (0.7)
	FA0275NW25	2.73	NW25	1.57	2.00 (50.80)	0.87 (22.10)	1.5 (0.7)
	FA0275NW25L	2.73	NW25	1.57	2.36 (59.94)	0.87 (22.10)	1.5 (0.7)
	FA0275NW40S	2.73	NW40	2.16	1.78 (45.21)	1.37 (34.80)	2.0 (0.9)
	FA0275NW40	2.73	NW40	2.16	2.00 (50.80)	1.37 (34.80)	2.0 (0.9)
	FA0275NW40L	2.73	NW40	2.16	2.55 (64.77)	1.37 (34.80)	2.0 (0.9)
3 3/8 in.	FA0338NW40	3.38	NW40	2.16	2.00 (50.80)	1.37 (34.80)	3.0 (1.4)
	FA0338NW50	3.38	NW50	2.95	2.00 (50.80)	1.87 (47.50)	3.0 (1.4)
4 1/2 in.	FA0450NW40	4.47	NW40	2.16	2.00 (50.80)	1.37 (34.80)	3.0 (1.4)
	FA0450NW50L	4.47	NW50	2.95	2.00 (50.80)	1.87 (47.50)	3.0 (1.4)
	FA0450NW50	4.47	NW50	2.95	1.95 (49.53)	1.87 (34.80)	3.0 (1.4)

## Accessories – CF to KF Adapters

Size	Description	Part Number	Qty/Pkg	Shipping Weight lbs (kg)
NW16	Viton centering ring	KC16SV	1	0.5 (0.2)
NW25	Viton centering ring	KC25SV	1	0.5 (0.2)
NW40	Viton centering ring	KC40SV	1	0.5 (0.2)
NW50	Viton centering ring	KC50SV	1	0.5 (0.2)
NW16	KF clamp	KQ16AR	1	0.5 (0.2)
NW25	KF clamp	KQ25AR	1	0.5 (0.2)
NW40	KF clamp	KQ40AR	1	1.0 (0.5)
NW50	KF clamp	KQ50AR	1	1.0 (0.5)

NOTE • Custom adapters available on request



## Adapters: ConFlat to Swagelok



### Ordering Information

Flange Size	Tube Size	Part Number	Length in. (mm)	Shipping Weight lbs (kg)
1 1/3 in.	1/4 in.	FASW0250133	1.37 (34.8)	0.5 (0.22)
2 1/8 in.	1/4 in.	FASW0250212	1.37 (34.8)	0.5 (0.22)
2 3/4 in.	1/4 in.	FASW0250275	1.53 (38.9)	1.0 (0.45)
1 1/3 in.	3/8 in.	FASW0375133	1.66 (42.2)	0.5 (0.22)
2 1/8 in.	3/8 in.	FASW0375212	1.58 (40.1)	0.5 (0.22)
2 3/4 in.	3/8 in.	FASW0375275	1.69 (42.9)	1.0 (0.45)
2 1/8 in.	1/2 in.	FASW0500212	1.82 (46.2)	0.5 (0.22)
2 3/4 in.	1/2 in.	FASW0500275	1.83 (46.5)	1.0 (0.45)
2 3/4 in.	3/4 in.	FASW0750275	2.20 (55.9)	1.0 (0.45)
2 3/4 in.	1 in.	FASW1000275	2.67 (67.8)	1.0 (0.45)

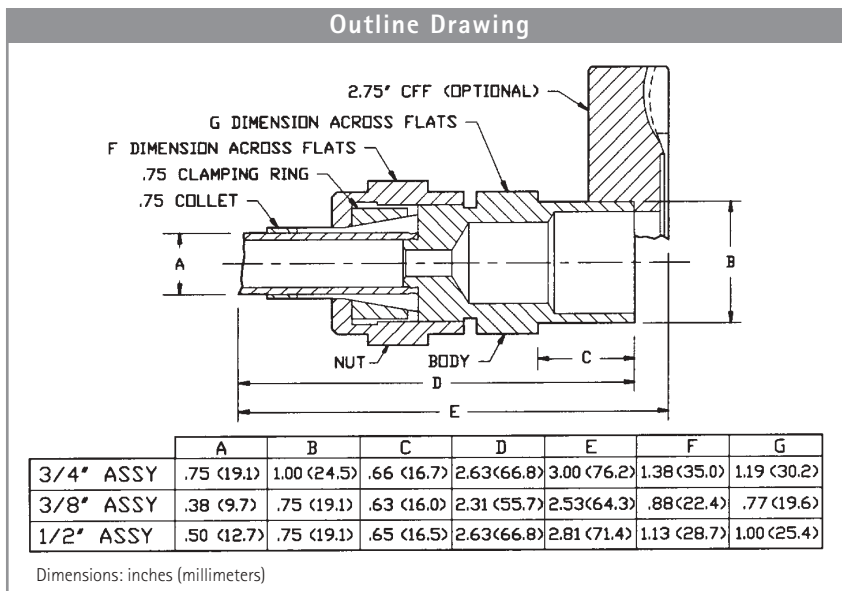
## Adapters: ConFlat to VCR – Male & Female



### Ordering Information

Flange Size	Tube Size	Part Number	Length in. (mm)	Shipping Weight lbs (kg)
<b>Male</b>				
1 <sup>1</sup> / <sub>3</sub> in.	1/4 in.	FAVM0250133	1.36 (34.5)	0.5 (0.22)
2 <sup>1</sup> / <sub>8</sub> in.	1/4 in.	FAVM0250212	1.41 (35.8)	0.5 (0.22)
2 <sup>3</sup> / <sub>4</sub> in.	1/4 in.	FAVM0250275	1.52 (38.6)	1.0 (0.45)
1 <sup>1</sup> / <sub>3</sub> in.	3/8 in.	FAVM0375133	1.55 (39.4)	0.5 (0.22)
2 <sup>1</sup> / <sub>8</sub> in.	3/8 in.	FAVM0375212	1.60 (40.6)	0.5 (0.22)
2 <sup>3</sup> / <sub>4</sub> in.	3/8 in.	FAVM0375275	1.71 (43.4)	1.0 (0.45)
1 <sup>1</sup> / <sub>3</sub> in.	1/2 in.	FAVM0500133	1.55 (39.4)	0.5 (0.22)
2 <sup>1</sup> / <sub>8</sub> in.	1/2 in.	FAVM0500212	1.60 (40.6)	0.5 (0.22)
2 <sup>3</sup> / <sub>4</sub> in.	1/2 in.	FAVM0500275	1.71 (43.4)	1.0 (0.45)
2 <sup>1</sup> / <sub>8</sub> in.	3/4 in.	FAVM0750212	2.17 (55.1)	0.5 (0.22)
2 <sup>3</sup> / <sub>4</sub> in.	3/4 in.	FAVM0750275	2.21 (56.1)	1.0 (0.45)
2 <sup>1</sup> / <sub>8</sub> in.	1 in.	FAVM1000212	2.39 (60.7)	0.5 (0.22)
2 <sup>3</sup> / <sub>4</sub> in.	1 in.	FAVM1000275	2.43 (61.7)	1.0 (0.45)
<b>Female</b>				
1 <sup>1</sup> / <sub>3</sub> in.	1/4 in.	FAVF0250133	1.36 (34.5)	0.5 (0.22)
2 <sup>1</sup> / <sub>8</sub> in.	1/4 in.	FAVF0250212	1.41 (35.8)	0.5 (0.22)
2 <sup>3</sup> / <sub>4</sub> in.	1/4 in.	FAVF0250275	1.52 (38.6)	1.0 (0.45)
1 <sup>1</sup> / <sub>3</sub> in.	3/8 in.	FAVF0375133	1.55 (39.4)	0.5 (0.22)
2 <sup>1</sup> / <sub>8</sub> in.	3/8 in.	FAVF0375212	1.60 (40.6)	0.5 (0.22)
2 <sup>3</sup> / <sub>4</sub> in.	3/8 in.	FAVF0375275	1.71 (43.4)	1.0 (0.45)
1 <sup>1</sup> / <sub>3</sub> in.	1/2 in.	FAVF0500133	1.55 (39.4)	0.5 (0.22)
2 <sup>1</sup> / <sub>8</sub> in.	1/2 in.	FAVF0500212	1.60 (40.6)	0.5 (0.22)
2 <sup>3</sup> / <sub>4</sub> in.	1/2 in.	FAVF0500275	1.71 (43.4)	1.0 (0.45)
2 <sup>1</sup> / <sub>8</sub> in.	3/4 in.	FAVF0750212	2.17 (55.1)	0.5 (0.22)
2 <sup>3</sup> / <sub>4</sub> in.	3/4 in.	FAVF0750275	2.21 (56.1)	1.0 (0.45)
2 <sup>1</sup> / <sub>8</sub> in.	1 in.	FAVF1000212	2.39 (60.7)	0.5 (0.22)
2 <sup>3</sup> / <sub>4</sub> in.	1 in.	FAVF1000275	2.43 (61.7)	1.0 (0.45)

# UHV Compression Ports



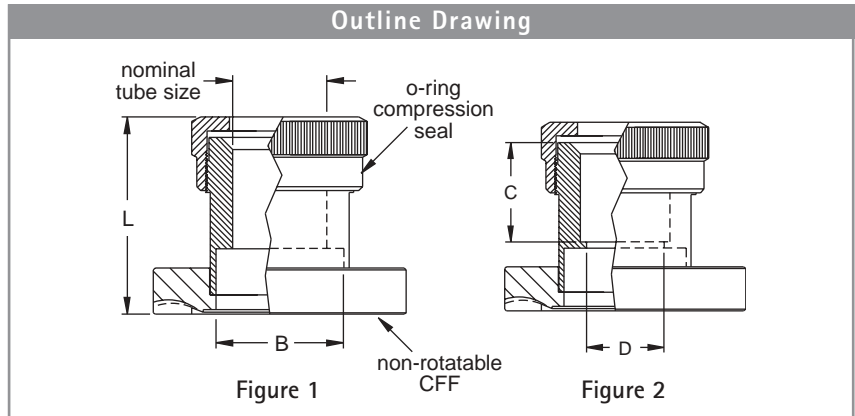
## Specifications

- Vacuum range: 10<sup>-11</sup> Torr (mbar)
- Bakeout Temperature: 500° C

## Ordering Information – UHV Compression Ports

Description	Part Number	Shipping Weight lbs (kg)
<b>Compression Port with Felpro Lubricant</b>		
3/8 in. (9.9 mm) port	CP0038UHV	2.0 (0.9)
3/8 in. (9.9 mm) port on 2.75 (NW35) ConFlat	FCP0038UHV	3.0 (1.3)
1/2 in. (12.7 mm) port	CP0050UHV	2.0 (0.9)
1/2 in. (12.7 mm) port on 2.75 (NW35) ConFlat	FCP0050UHV	3.0 (1.3)
3/4 in. (19 mm) port	CP0075UHV	2.0 (0.9)
3/4 in. (19 mm) port on 2.75 (NW35) ConFlat	FCP0075UHV	3.0 (1.3)
<b>Combination Compression Port Body and Nut</b>		
Will accept 3/4 in. (19 mm) tubulation	CP0075UHVC	0.8 (0.4)
<b>3/4 in. (19 mm) Assembly</b>		
Includes collet, clamping ring, and Felpro lubricant	CP0075UHVA	1.0 (0.5)
<b>Compression Port Rebuild Kits</b>		
3/8 in. (9.9 mm) ports	CP0038RK	1.0 (0.5)
1/2 in. (12.7 mm) ports	CP0050RK	1.0 (0.5)
3/4 in. (19 mm) ports	CP0075RK	1.0 (0.5)
<b>OFHC Copper Tubulations 6 in. (152.4 mm) Long</b>		
3/8 in. (9.9 mm) OD, .032 wall thickness	CP0038CT	1.0 (0.5)
1/2 in. (12.7 mm) OD, .035 wall thickness	CP0050CT	1.0 (0.5)
3/4 in. (19 mm) OD, .035 wall thickness	CP0075CT	2.0 (0.9)
<b>OFHC Copper Adapters</b>		
3/8 in. (9.9 mm) port adapter with 1.33 (NW16) ConFlat gasket/package of 4	CP00380133CA	1.5 (0.7)
3/8 in. (9.9 mm) port adapter with 2.75 (NW35) ConFlat gasket/package of 4	CP00380275CA	1.5 (0.7)

# ConFlat to Compression Port Adapters



## Specifications

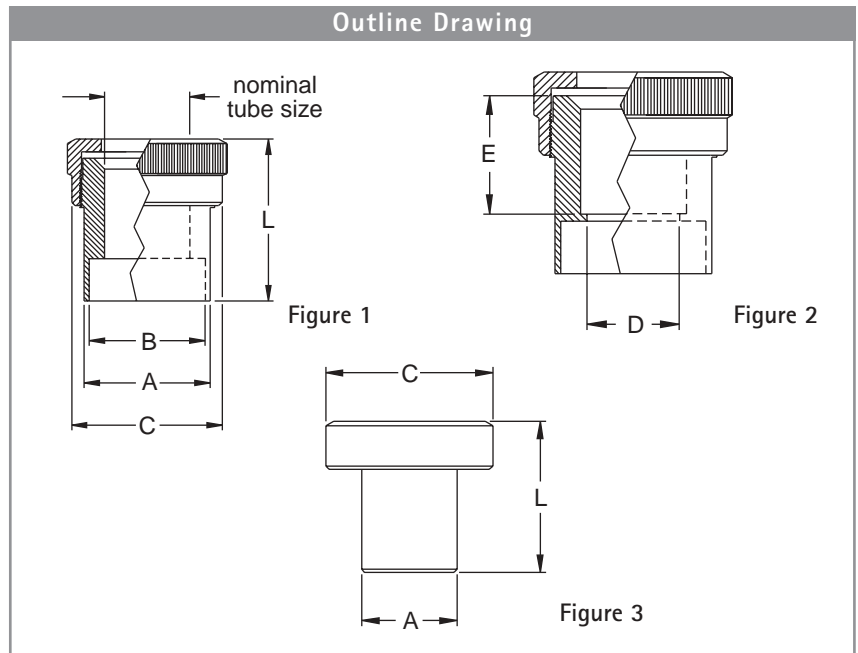
- Stainless steel
- Viton o-ring
- Use with glass gauges or standard metal tubing
- Hand-tightened compression fitting

## Ordering Information – ConFlat to Compression Port Adapters

Nominal Tube Size	Part Number	Bore ID B in. (mm)	Length L in. (mm)	Flange Size	ID C in. (mm)	Tube Stop D in. (mm)	Fig. Number	Weight lbs (kg)
1/16 in.	FCP00600133	0.63 (16.00)	1.67 (42.67)	1.33	-	-	1	2.0 (0.9)
	FCP00600212	0.63 (16.00)	1.67 (42.67)	2.12	-	-	1	2.0 (0.9)
	FCP00600275	0.63 (16.00)	1.71 (43.43)	2.75	-	-	1	2.0 (0.9)
1/8 in.	FCP01250133	0.63 (16.00)	1.67 (42.67)	1.33	-	-	1	2.0 (0.9)
	FCP01250212	0.63 (16.00)	1.67 (42.67)	2.12	-	-	1	2.0 (0.9)
	FCP01250275	0.63 (16.00)	1.71 (43.43)	2.75	-	-	1	2.0 (0.9)
3/16 in.	FCP01900133	0.63 (16.00)	1.67 (42.67)	1.33	-	-	1	2.0 (0.9)
	FCP01900212	0.63 (16.00)	1.67 (42.67)	2.12	-	-	1	2.0 (0.9)
	FCP01900275	0.63 (16.00)	1.71 (43.43)	2.75	-	-	1	2.0 (0.9)
1/4 in.	FCP02500133	0.63 (16.00)	1.67 (42.67)	1.33	-	-	1	2.0 (0.9)
	FCP02500212	0.63 (16.00)	1.67 (42.67)	2.12	-	-	1	2.0 (0.9)
	FCP02500275	0.63 (16.00)	1.71 (43.43)	2.75	-	-	1	2.0 (0.9)
5/16 in.	FCP03120133	0.63 (16.00)	1.67 (42.67)	1.33	-	-	1	2.0 (0.9)
	FCP03120212	0.63 (16.00)	1.67 (42.67)	2.12	-	-	1	2.0 (0.9)
	FCP03120275	0.63 (16.00)	1.71 (43.43)	2.75	-	-	1	2.0 (0.9)
3/8 in.	FCP03750133	0.63 (16.00)	1.67 (42.67)	1.33	-	-	1	2.0 (0.9)
	FCP03750212	0.63 (16.00)	1.67 (42.67)	2.12	-	-	1	2.0 (0.9)
	FCP03750275	0.63 (16.00)	1.71 (43.43)	2.75	-	-	1	2.0 (0.9)
1/2 in.	FCP05000133	0.63 (16.00)	1.67 (42.67)	1.33	-	-	1	2.0 (0.9)
	FCP05000212	0.63 (16.00)	1.67 (42.67)	2.12	-	-	1	2.0 (0.9)
	FCP05000275	0.63 (16.00)	1.71 (43.43)	2.75	-	-	1	2.0 (0.9)
5/8 in.	FCP06250133	0.63 (16.00)	1.67 (42.67)	1.33	-	-	1	2.0 (0.9)
	FCP06250212	0.63 (16.00)	1.67 (42.67)	2.12	-	-	1	2.0 (0.9)
	FCP06250275	0.63 (16.00)	1.71 (43.43)	2.75	-	-	1	2.0 (0.9)
3/4 in.	FCP07500275	1.38 (35.05)	2.02 (51.31)	2.75	0.63 (16.00)	1.13 (28.70)	2	2.0 (0.9)
7/8 in.	FCP08750275	1.38 (35.05)	2.02 (51.31)	2.75	-	-	1	2.0 (0.9)
1 in.	FCP10000275	1.38 (35.05)	2.08 (52.83)	2.75	0.88 (22.35)	1.13 (28.70)	2	2.0 (0.9)
1 1/8 in.	FCP11250275	1.38 (35.05)	2.08 (52.83)	2.75	-	-	1	2.0 (0.9)
1 1/4 in.	FCP12500275	1.38 (35.05)	2.08 (52.83)	2.75	-	-	1	2.0 (0.9)
1 3/8 in.	FCP13750275	1.63 (41.40)	2.50 (63.50)	2.75	-	-	1	2.0 (0.9)
1 1/2 in.	FCP15000275	1.63 (41.40)	2.50 (63.50)	2.75	-	-	1	2.0 (0.9)

NOTE • Custom configurations available on request

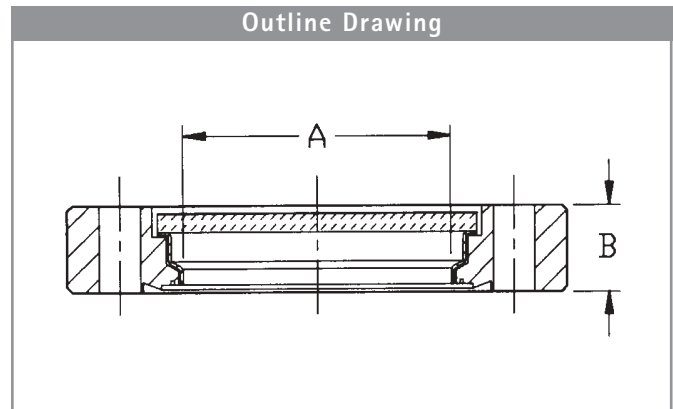
# O-Ring Sealed Vacuum Compression Ports and Blank-offs



## Ordering Information – O-Ring Sealed Vacuum Compression Ports and Blank-offs

Nominal Tube Size	Part Number	Fig. Number	Body OD A in. (mm)	Bore ID B in. (mm)	OD C in. (mm)	Length L in. (mm)	I.D. D in. (mm)	Tube Stop E in. (mm)	Weight lbs (kg)
1/16 in.	CP0060S	1	0.75 (19.05)	0.63 (16.00)	1.14 (28.96)	1.50 (38.10)	-	-	1.0 (0.5)
	CP0060SB	3	0.63 (1.60)	-	1.14 (28.96)	1.25 (31.75)	-	-	1.0 (0.5)
1/8 in.	CP0125S	1	0.75 (19.05)	0.63 (16.00)	1.14 (28.96)	1.50 (38.10)	-	-	1.0 (0.5)
	CP0125SB	3	0.13 (3.30)	-	1.14 (28.96)	1.25 (31.75)	-	-	1.0 (0.5)
3/16 in.	CP0190S	1	0.75 (19.05)	0.63 (16.00)	1.14 (28.96)	1.50 (38.10)	-	-	1.0 (0.5)
	CP0190SB	3	0.19 (4.83)	-	1.14 (28.96)	1.25 (31.75)	-	-	1.0 (0.5)
1/4 in.	CP0250S	1	0.75 (19.05)	0.63 (16.00)	1.14 (28.96)	1.50 (38.10)	-	-	1.0 (0.5)
	CP0250SB	3	0.25 (6.35)	-	1.14 (28.96)	1.25 (31.75)	-	-	1.0 (0.5)
5/16 in.	CP0312S	1	0.75 (19.05)	0.63 (16.00)	1.14 (28.96)	1.50 (38.10)	-	-	1.0 (0.5)
	CP0312SB	3	0.31 (7.87)	-	1.14 (28.96)	1.25 (31.75)	-	-	1.0 (0.5)
3/8 in.	CP0375S	1	0.75 (19.05)	0.63 (16.00)	1.14 (28.96)	1.50 (38.10)	-	-	1.0 (0.5)
	CP0375SB	3	0.38 (9.65)	-	1.14 (28.96)	1.25 (31.75)	-	-	1.0 (0.5)
1/2 in.	CP0500S	1	0.75 (19.05)	0.63 (16.00)	1.14 (28.96)	1.50 (38.10)	-	-	1.0 (0.5)
	CP0500SB	3	0.50 (12.70)	-	1.14 (28.96)	1.25 (31.75)	-	-	1.0 (0.5)
5/8 in.	CP0625S	1	0.75 (19.05)	0.63 (16.00)	1.14 (28.96)	1.50 (38.10)	-	-	1.0 (0.5)
	CP0625SB	3	0.63 (16.00)	-	1.14 (28.96)	1.25 (31.75)	-	-	1.0 (0.5)
3/4 in.	CP0750S	1	1.50 (38.10)	1.38 (35.05)	1.89 (48.01)	1.88 (47.75)	-	-	1.0 (0.5)
	CP0750SB	3	0.75 (19.05)	-	1.89 (48.01)	1.25 (31.75)	-	-	1.0 (0.5)
7/8 in.	CP0875S	1	1.50 (38.10)	1.38 (35.05)	1.89 (48.01)	1.88 (47.75)	-	-	1.0 (0.5)
	CP0875SB	3	0.88 (22.35)	-	1.89 (48.01)	1.25 (31.75)	-	-	1.0 (0.5)
1 in.	CP1000S	2	1.50 (38.10)	1.38 (35.05)	1.89 (48.01)	1.88 (47.75)	0.88 (22.35)	1.13 (28.70)	1.0 (0.5)
	CP1000SB	3	1.00 (25.40)	-	1.89 (48.01)	1.25 (31.75)	-	-	1.0 (0.5)
1 1/8 in.	CP1125S	1	1.50 (38.10)	1.38 (35.05)	1.89 (48.01)	1.88 (47.75)	-	-	1.0 (0.5)
	CP1125SB	3	1.13 (28.70)	-	1.89 (48.01)	1.25 (31.75)	-	-	1.0 (0.5)
1 1/4 in.	CP1250S	1	1.50 (38.10)	1.38 (35.05)	1.89 (48.01)	1.88 (47.75)	-	-	1.0 (0.5)
	CP1250SB	3	1.25 (31.75)	-	1.89 (48.01)	1.25 (31.75)	-	-	1.0 (0.5)
1 3/8 in.	CP1375S	1	1.75 (44.45)	1.63 (41.40)	2.26 (57.40)	2.25 (57.15)	-	-	1.0 (0.5)
	CP1375SB	3	1.38 (35.05)	-	2.26 (57.40)	1.25 (31.75)	-	-	1.0 (0.5)
1 1/2 in.	CP1500S	1	1.75 (44.45)	1.63 (41.40)	2.26 (57.40)	2.25 (57.15)	-	-	1.0 (0.5)
	CP1500SB	3	1.50 (38.10)	-	2.26 (57.40)	1.25 (31.75)	-	-	1.0 (0.5)

# Zero-Length Glass Viewports



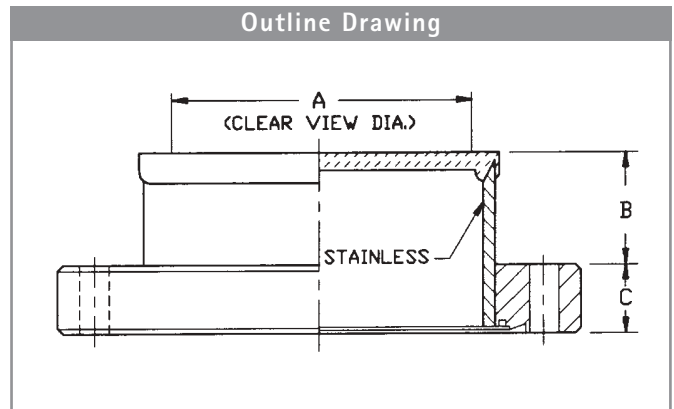
## Specifications

- Transmission Range: 0.32 to 2.7 microns (approx.)
- Vacuum Range: To below  $10^{-11}$  Torr (mbar)
- Viewport Type: 7056 Glass
- Bakeout Temperature: 400° C

## Ordering Information – Zero-Length Glass Viewports

Description	ConFlat Size	Part Number	Nominal Port Diameter in. (mm)	A in. (mm)	B in. (mm)	Weight lbs (kg)
<b>3/4 in. (14 mm) Viewport</b>	1.33 in. (NW16)	FVG0075	0.75 (19.05)	0.63 (16)	0.50 (12.70)	1.0 (0.5)
<b>1 1/2 in. (36 mm) Viewport</b>	2.75 in. (NW35)	FVG0150	1.50 (38.10)	1.50 (38)	0.50 (12.70)	2.0 (0.9)
<b>2 1/2 in. (63.5 mm) Viewport</b>	4.50 in. (NW63)	FVG0250	2.50 (63.50)	2.48 (63)	0.68 (17.40)	5.0 (2.3)
<b>4 in. (98 mm) Viewport</b>	6 in. (NW100)	FVG0400	4.00 (101.60)	3.50 (89)	0.78 (19.90)	6.0 (2.7)
<b>6 in. (137 mm) Viewport</b>	8 in. (NW150)	FVG0600	6.00 (152.40)	5.35 (136)	0.92 (23.37)	9.0 (4.0)

# Non-Magnetic Glass Viewports



## Specifications

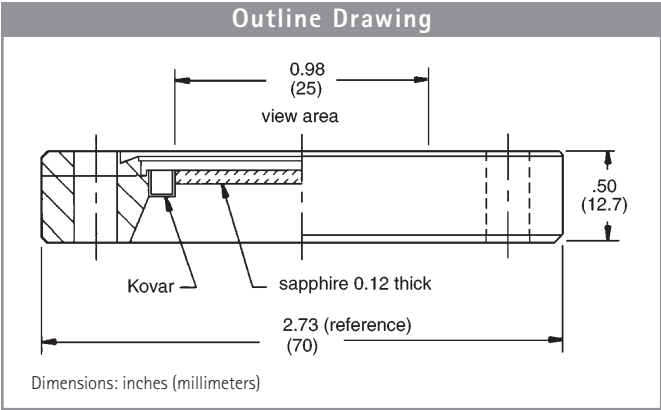
- Transmission Range: 0.32 to 2.7 microns (approx.)
- Vacuum Range: To below  $10^{-11}$  Torr (mbar)
- Bakeout Temperature: 400° C
- Viewport Type: 7056 glass

## Ordering Information – Non-Magnetic Glass Viewports

Description	ConFlat Size	Part Number	A in. (mm)	B in. (mm)	C in. (mm)	Weight lbs (kg)
<b>1½ in. (35 mm) Non-Magnetic Viewport</b>	2.75 in. (NW35)	FVNG0150	1.25 (31.75)	1.50 (38.10)	0.50 (12.70)	2.0 (0.9)
<b>2½ in. (63 mm) Non-Magnetic Viewport</b>	4.5 in. (NW63)	FVNG0250	2.00 (50.80)	1.44 (36.58)	0.68 (17.27)	4.0 (1.8)
<b>4 in. (100 mm) Non-Magnetic Viewport</b>	6 in. (NW100)	FVNG0400	3.50 (88.90)	1.34 (34.03)	0.78 (19.81)	7.0 (3.2)

NOTE • Custom viewports available on request

# Sapphire Viewports – Zero Length



### Specifications

- Transmission Range: 0.25 to 5.5 microns (approx.)
- Vacuum Range: To below  $10^{-11}$  Torr (mbar)
- Bakeout Temperature: 450° C

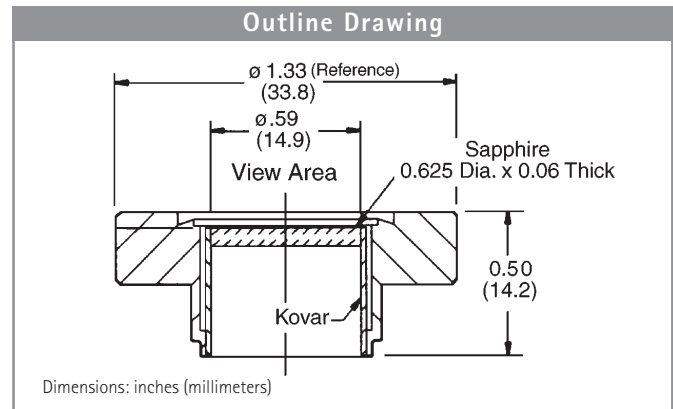
### Ordering Information – Sapphire Viewports – Zero Length

Description	Part Number	Weight lbs (kg)
1 in. (25.4 mm) Zero Length Sapphire/Kovar Viewport on 2.75 (NW35) ConFlat flange	FVS0100	2.0 (0.9)

NOTE • Custom viewports available on request



## Sapphire Viewports – Standard Length



### Specifications

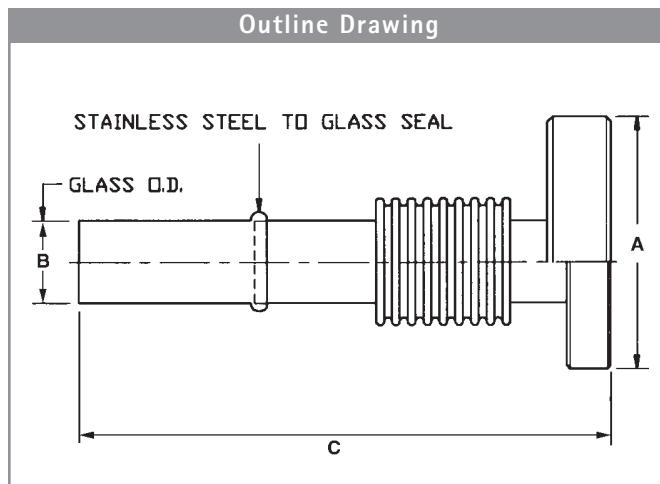
- Transmission Range: .25 to 5.5 microns (approx.)
- Vacuum Range: To below  $10^{-11}$  Torr (mbar)
- Bakeout Temperature: 450° C

### Ordering Information – Sapphire Viewports – Standard Length

Description	Part Number	Shipping Weight lbs (kg)
$\frac{5}{8}$ in. (15.8 mm) Standard Length Sapphire/Kovar Viewport on 1.33 (NW13) ConFlat flange	FVS0062	1.0 (0.5)

**NOTE** • Custom viewports available on request

# Glass Adapters with Bellows



## Specifications

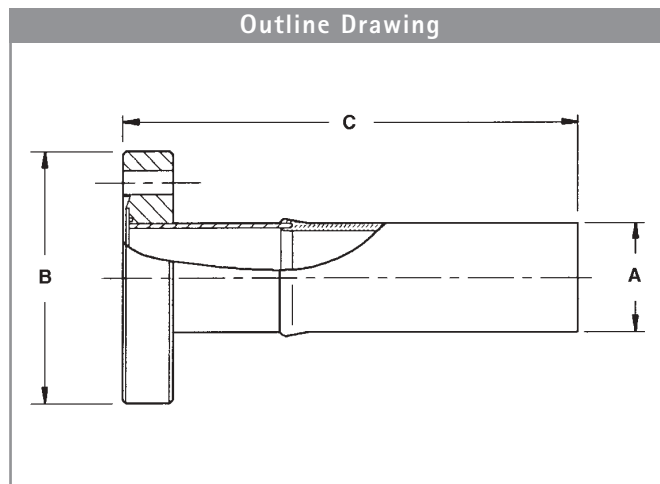
- Vacuum Range: To below  $10^{-11}$  Torr (mbar)
- Bakeout Temperature: 400° C
- Pyrex 7740 Glass

## Ordering Information – Glass Adapters with Bellows

Description	Part Number	A in. (mm)	B in. (mm) (Reference)	C in. (mm)	Shipping Weight lbs (kg)
<b>6 mm OD Glass Adapter</b> with bellows and mini ConFlat flange	FGAB7	1.33 (34.0)	0.24 (6.0)	6.69 (170.0)	1.0 (0.5)
<b>10 mm OD Glass Adapter</b> with bellows and mini ConFlat flange	FGAB10	1.33 (34.0)	0.39 (10.0)	5.50 (140.0)	1.0 (0.5)
<b>13 mm OD Glass Adapter</b> with bellows and mini ConFlat flange	FGAB13	1.33 (34.0)	0.51 (13.0)	6.69 (170.0)	2.0 (0.9)
<b>19 mm OD Glass Adapter</b> with bellows and 2.75 ConFlat flange	FGAB19	2.75 (70.0)	0.75 (19.0)	7.48 (190.0)	2.0 (0.9)
<b>25 mm OD Glass Adapter</b> with bellows and 2.75 ConFlat flange	FGAB25	2.75 (70.0)	1.00 (25.0)	7.87 (200.0)	2.0 (0.9)
<b>38 mm OD Glass Adapter</b> with bellows and 2.75 ConFlat flange	FGAB38	2.75 (70.0)	1.53 (39.0)	7.87 (200.0)	2.0 (0.9)

**NOTE** • Custom configurations available on request

# Glass Adapters



## Specifications

- Vacuum Range: To below  $10^{-11}$  Torr (mbar)
- Bakeout Temperature: 400° C
- Glass Type: see ordering information table

## Ordering Information – Glass Adapters

Description	Part Number	A in. (mm) Nom.	B in. (mm) (Reference)	C in. (mm)	Weight lbs (kg)
<b>1/4 in. Kovar to Pyrex Glass Adapter</b> on 1.33 (NW16) ConFlat	FGA0025KP	0.24 (6.0)	1.33 (34.0)	3.94 (100.0)	1.5 (0.7)
<b>1/4 in. Stainless Steel to Pyrex Glass Adapter</b> on 1.33 (NW16) ConFlat	FGA0025SP	0.24 (6.0)	1.33 (34.0)	4.88 (124.0)	1.5 (0.7)
<b>1/2 in. Kovar to Pyrex Glass Adapter</b> on 1.33 (NW16) ConFlat	FGA0050KP	0.51 (13.0)	1.33 (34.0)	3.94 (100.0)	1.5 (0.7)
<b>1/2 in. Stainless Steel to Pyrex Glass Adapter</b> on 1.33 (NW16) ConFlat	FGA0050SP	0.51 (13.0)	1.33 (34.0)	4.88 (124.0)	1.5 (0.7)
<b>3/4 in. Kovar to Pyrex Glass Adapter</b> on 1.33 (NW16) ConFlat	FGA0075KP	0.75 (19.0)	1.33 (34.0)	5.38 (137.0)	1.5 (0.7)
<b>3/4 in. Stainless Steel to Pyrex Glass Adapter</b> on 1.33 (NW16) ConFlat	FGA0075SP	0.75 (19.0)	1.33 (34.0)	4.88 (124.0)	1.5 (0.7)
<b>1 in. Kovar to Pyrex Glass Adapter</b> on 2.75 (NW35) ConFlat	FGA0100KP	1.00 (25.0)	2.75 (70.0)	3.94 (100.0)	3.0 (1.4)
<b>1 in. Stainless Steel to Pyrex Glass Adapter</b> on 2.75 (NW35) ConFlat	FGA0100SP	1.00 (25.0)	2.75 (70.0)	4.88 (124.0)	3.0 (1.4)
<b>1 1/2 in. Kovar to Pyrex Glass Adapter</b> on 2.75 (NW35) ConFlat	FGA0150KP	1.57 (40.0)	2.75 (70.0)	3.94 (100.0)	4.0 (1.8)
<b>1 1/2 in. Kovar to 7052 Glass Adapter</b> on 2.75 (NW35) ConFlat	FGA0150K7	1.57 (40.0)	2.75 (70.0)	3.94 (100.0)	4.0 (1.8)
<b>1 1/2 in. Stainless Steel to Pyrex Glass Adapter</b> on 2.75 (NW35) ConFlat	FGA0150SP	1.50 (38.0)	2.75 (70.0)	4.88 (124.0)	4.0 (1.8)
<b>2 1/2 in. Stainless Steel to Pyrex Glass Adapter</b> on 4.5 (NW63) ConFlat	FGA0250SP	2.50 (64.0)	4.50 (114.0)	5.33 (137.0)	5.0 (2.3)

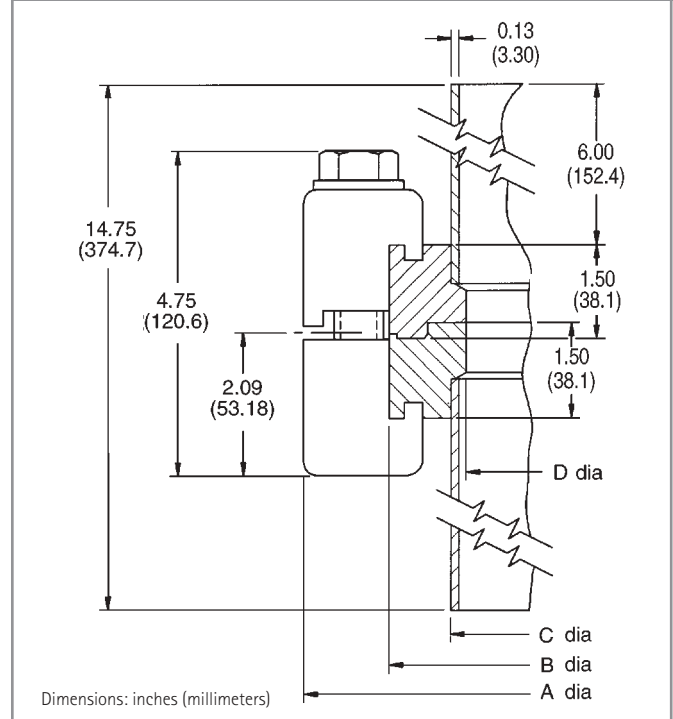
NOTE • Custom configurations available on request

# UHV Wire-Sealed Flange – Wheeler

## Specifications

- Vacuum Range: To below  $10^{-11}$  Torr (mbar)
- $-169^{\circ}\text{C}$  to  $+450^{\circ}\text{C}$

## Outline Drawing



## Ordering Information – UHV Wire-Sealed Flange

Part Number	Assy OD A in. (mm)	Flange OD B in. (mm)	Skirt OD C in. (mm)	Flange ID D in. (mm)	Shipping Weight lbs (kg)
<b>Male Flanges</b>					
WF1200M	15.62 (396.8)	14.00 (355.6)	12.00 (304.8)	11.50 (292.1)	38.0 (17.1)
WF1400M	17.62 (447.6)	16.00 (406.4)	14.00 (355.6)	13.00 (330.2)	38.0 (17.1)
WF1800M	21.62 (549.2)	20.00 (508.0)	18.00 (457.2)	17.00 (431.8)	48.0 (22.0)
<b>Female Flanges</b>					
WF1200F	15.62 (396.8)	14.00 (355.6)	12.00 (304.8)	11.50 (292.1)	38.0 (17.1)
WF1400F	17.62 (447.6)	16.00 (406.4)	14.00 (355.6)	13.00 (330.2)	38.0 (17.1)
WF1800F	21.62 (549.2)	20.00 (508.0)	18.00 (457.2)	17.00 (431.8)	48.0 (22.0)

Accessories – UHV Wire-Sealed Flange

Part Number	Gasket ID	Gasket Thickness (in.)	Qty/Pkg	Shipping Weight lbs (kg)
<b>Copper Gaskets</b>				
WG1075	11.39 (289.3)	0.091	3	2.0 (.9)
WG1200	13.74 (349.0)	0.091	3	2.0 (.9)
WG1400	15.74 (399.8)	0.091	3	2.0 (.9)
WG1800	19.74 (501.4)	0.091	3	3.0 (1.3)
WG2400	25.74 (653.8)	0.091	3	4.0 (1.8)
<b>Clamp Assembly</b>				
WCSI			1	.5 (.2)

