



P&E TECHNOLOGY

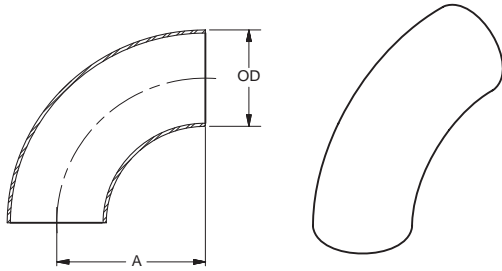


Fittings and Accessories for
Vacuum Piping Systems

Vacuum Flanges & Fittings

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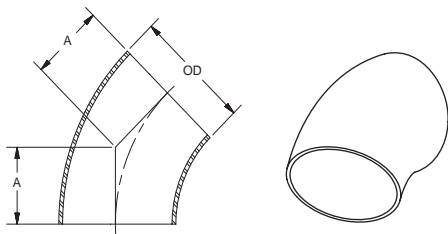
Butt Weld Vacuum Components



90° Elbow

in.

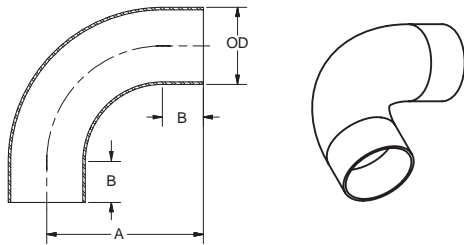
OD	Wall Thickness	A	Part Number
0.50	.065	0.75	1002390050
0.75	.065	1.13	1002390075
1.00	.065	1.52	1002390100
1.50	.065	2.25	1002390150
2.00	.065	3.00	1002390200
2.50	.065	3.75	1002390250
3.00	.065	4.50	1002390300
4.00	.065	6.00	1002390401
4.00	.083	6.00	1002390400
6.00	.083	9.00	1002390600



45° Elbow

in.

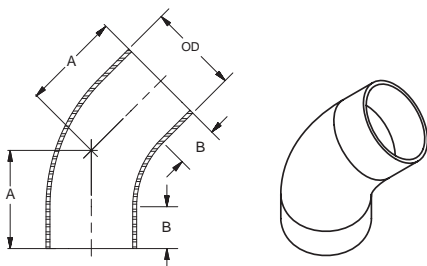
OD	Wall Thickness	A	Part Number
0.50	.065	0.31	1002345050
0.75	.065	0.47	1002345075
1.00	.065	0.62	1002345100
1.50	.065	0.93	1002345150
2.00	.065	1.24	1002345200
2.50	.065	1.56	1002345250
3.00	.065	1.86	1002345300
4.00	.065	2.49	1002345401
4.00	.083	2.49	1002345400
6.00	.083	3.75	1002345600



90° Elbow with Tangents

in.

OD	Wall Thickness	A	B	Part Number
0.75	.065	1.42	0.29	1002390WT075
1.00	.065	2.06	0.56	1002390WT100
1.50	.065	2.94	0.69	1002390WT150
2.00	.065	4.06	1.06	1002390WT200
2.50	.065	5.19	1.44	1002390WT250
3.00	.065	6.31	1.81	1002390WT300
4.00	.065	8.31	2.31	1002390WT401
4.00	.083	8.31	2.31	1002390WT400
6.00	.083	12.60	3.60*	1002390WT600

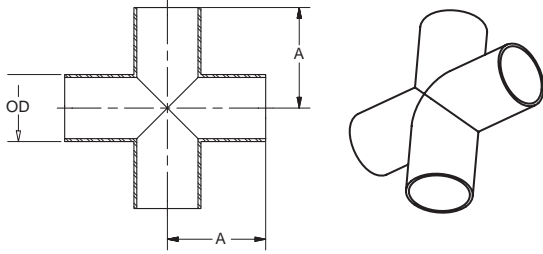


45° Elbow with Tangents

in.

OD	Wall Thickness	A	B	Part Number
0.75	.065	0.76	0.30	1002345WT075
1.00	.065	1.19	0.56	1002345WT100
1.50	.065	1.63	0.69	1002345WT150
2.00	.065	2.31	1.07	1002345WT200
2.50	.065	3.00	1.44	1002345WT250
3.00	.065	3.69	1.82	1002345WT300
4.00	.065	4.81	2.33	1002345WT401
4.00	.083	4.81	2.33	1002345WT400
6.00	.083	7.33	3.60	1002345WT600

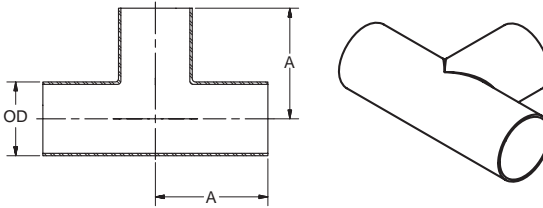
Butt Weld Vacuum Components



4-Way Cross

in.

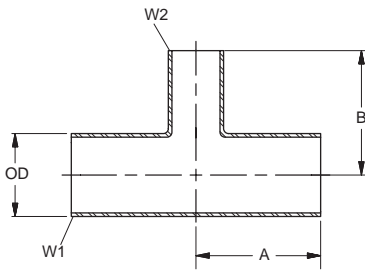
OD	Wall Thickness	A	Part Number
0.50	.065	0.75	100234X050
0.75	.065	1.88	100234X075
1.00	.065	1.88	100234X100
1.50	.065	2.25	100234X150
2.00	.065	3.00	100234X200
2.50	.065	3.00	100234X250
3.00	.065	3.25	100234X300
4.00	.065	3.88	100234X400
6.00	.083	5.00	100234X600



Tee

in.

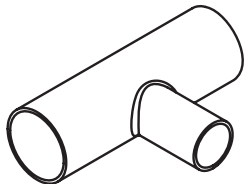
OD	Wall Thickness	A	Part Number
0.50	.065	0.75	10023T050
0.75	.065	1.88	10023T075
1.00	.065	1.88	10023T100
1.50	.065	2.25	10023T150
2.00	.065	3.00	10023T200
2.50	.065	3.00	10023T250
3.00	.065	3.25	10023T300
4.00	.065	3.88	10023T400
6.00	.083	5.00	10023T600



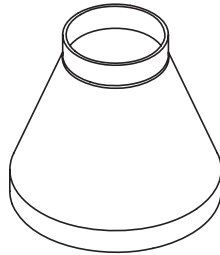
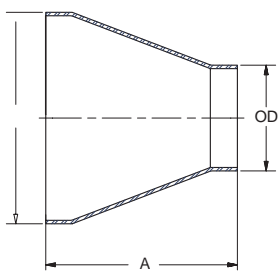
Reducing Tee

in.

OD	Wall Thickness		A	B	Part Number
	W1	W2			
1.00 x 0.50	.065	.065	1.88	1.00	10023100RT050
1.00 x 0.75	.065	.065	1.88	2.00	10023100RT075
1.50 x 0.50	.065	.065	2.25	1.25	10023150RT050
1.50 x 0.75	.065	.065	2.25	2.25	10023150RT075
1.50 x 1.00	.065	.065	2.25	2.25	10023150RT100
2.00 x 0.50	.065	.065	3.00	1.50	10023200RT050
2.00 x 0.75	.065	.065	3.00	2.50	10023200RT075
2.00 x 1.00	.065	.065	3.00	2.50	10023200RT100
2.00 x 1.50	.065	.065	3.00	2.50	10023200RT150
2.50 x 0.75	.065	.065	3.00	2.75	10023250RT075
2.50 x 1.50	.065	.065	3.00	2.75	10023250RT150
2.50 x 2.00	.065	.065	3.00	3.25	10023250RT200
3.00 x 0.75	.065	.065	3.25	3.00	10023300RT075
3.00 x 1.50	.065	.065	3.25	3.00	10023300RT150
3.00 x 2.00	.065	.065	3.25	3.50	10023300RT200
3.00 x 2.50	.065	.065	3.25	3.25	10023300RT250
4.00 x 0.75	.065	.065	3.88	3.50	10023400RT075
4.00 x 1.50	.065	.065	3.88	3.50	10023400RT150
4.00 x 2.00	.065	.065	3.88	3.50	10023400RT200
6.00 x 0.75	.083	.065	5.00	4.50	10023600RT075
6.00 x 1.50	.083	.065	5.00	4.50	10023600RT150
6.00 x 4.00	.083	.083	5.00	4.88	10023600RT400



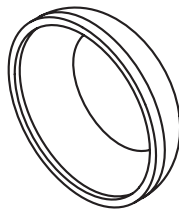
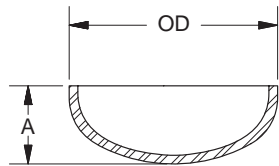
Butt Weld Vacuum Components



Concentric Reducer

in.

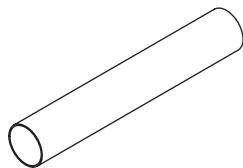
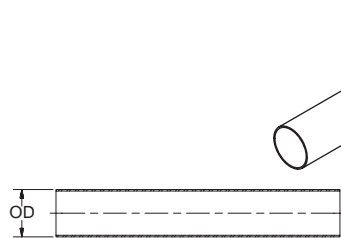
OD	Wall Thickness	A	Part Number
1.00 x 0.75	.065	1.37	10023100CR075
1.50 x 0.75	.065	2.38	10023150CR075
1.50 x 1.00	.065	2.38	10023150CR100
2.00 x 1.00	.065	2.38	10023200CR100
2.00 x 1.50	.065	2.38	10023200CR150
2.50 x 1.50	.065	2.38	10023250CR150
2.50 x 2.00	.065	2.38	10023250CR200
3.00 x 1.50	.065	3.63	10023300CR150
3.00 x 2.00	.065	3.63	10023300CR200
3.00 x 2.50	.065	3.63	10023300CR250
4.00 x 2.00	.065	3.63	10023400CR200
4.00 x 2.50	.065	3.63	10023400CR250
4.00 x 3.00	.065	3.63	10023400CR300
6.00 x 3.00	.065	9.00	10023600CR300
6.00 x 4.00	.083	9.00	10023600CR400



End Cap

in.

OD	Wall Thickness	A	Part Number
0.50	.065	0.25	10023C050
0.75	.065	0.31	10023C075
1.00	.065	0.38	10023C100
1.50	.065	0.50	10023C150
2.00	.065	0.75	10023C200
2.50	.065	1.00	10023C250
3.00	.065	1.25	10023C300
4.00	.065	1.50	10023C400



Tubing

in.

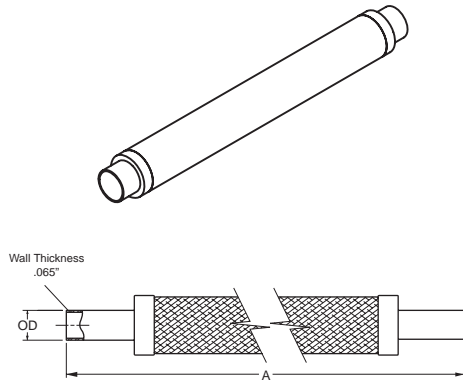
OD	Wall Thickness	Part Number
0.50	.065	100314300
0.75	.065	100314301
1.00	.065	100314303
1.50	.065	100314305
2.00	.065	100314306
2.50	.065	100764506
3.00	.065	100764508
4.00	.065	100764510
4.00	.083	100764511
6.00	.083	100764516
8.00	.120	100764520
10.00	.125	100764525

*Price per 10 foot length of tube

Butt Weld Vacuum Components

Short Stub Braided Metal Hose

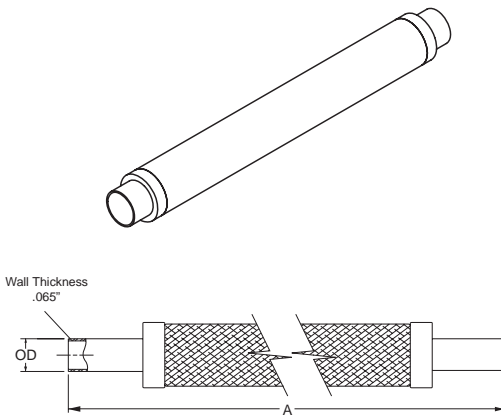
in.



OD	Static Bend Radius	A	Part Number
0.75	2.50	10.00	100006287
0.75	2.50	20.00	100006288
0.75	2.50	40.00	100006289
1.00	3.00	10.00	100006290
1.00	3.00	20.00	100006291
1.00	3.00	40.00	100006292
1.50	5.00	10.00	100006293
1.50	5.00	20.00	100006294
1.50	5.00	40.00	100006295
2.00	6.00	10.25	100006296
2.00	6.00	20.25	100006297
2.00	6.00	40.25	100006298
2.50	7.50	10.25	100006299
2.50	7.50	20.25	100006300
2.50	7.50	40.25	100006301
3.00	8.75	10.25	100006302
3.00	8.75	20.25	100006303
3.00	8.75	40.25	100006304
4.00	10.00	10.25	100006305
4.00	10.00	20.25	100006306
4.00	10.00	40.25	100006307

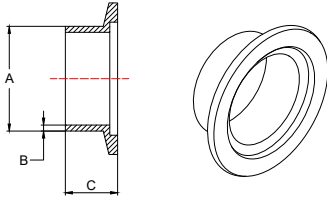
Long Stub Braided Metal Hose

in.



OD	Static Bend Radius	A	Part Number
0.75	2.50	10.50	100006313
0.75	2.50	20.50	100006314
0.75	2.50	40.50	100006315
1.00	3.00	12.00	100006316
1.00	3.00	22.00	100006317
1.00	3.00	42.00	100006318
1.50	5.00	12.00	100006319
1.50	5.00	22.00	100006320
1.50	5.00	42.00	100006321
2.00	6.00	12.25	100006322
2.00	6.00	22.25	100006323
2.00	6.00	42.25	100006324
2.50	7.50	13.25	100006325
2.50	7.50	23.25	100006326
2.50	7.50	43.25	100006327
3.00	8.75	13.25	100006328
3.00	8.75	23.25	100006329
3.00	8.75	43.25	100006330
4.00	10.00	13.45	100006331
4.00	10.00	23.45	100006332
4.00	10.00	43.45	100006333

ISO-KF Vacuum Flange Components

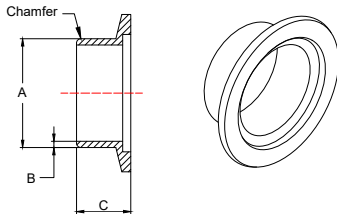


- Stainless Steel Type 304
- Buttweld
- Standard Inch Stub Diameters

Flange, Short Weld Stub, Stainless Steel

in./(mm)

Flange Size (ISO)	For Tubing OD	A	B	C	Part Number
NW 10	1/2"	0.50 (13)	0.065 (1.7)	0.50 (13)	100310300
NW 16	1/2"	0.50 (13)	0.065 (1.7)	0.50 (13)	100310301
NW 16	3/4"	0.75 (19)	0.065 (1.7)	0.50 (13)	100310311
NW 25	1"	1.00 (25)	0.065 (1.7)	0.50 (13)	100310303
NW 40	1 1/2"	1.50 (38)	0.065 (1.7)	0.75 (19)	100310305
NW 50	2"	2.00 (51)	0.065 (1.7)	0.75 (19)	100310306

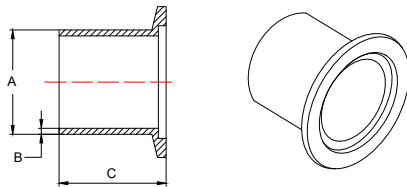


- Aluminum Type 6061T6
- Buttweld
- Standard Inch Stub Diameters

Flange, Short Weld Stub, Aluminum

in./(mm)

Flange Size (ISO)	For Tubing OD	A	B	C	Part Number
NW 16	1/2"	0.50 (13)	0.065 (1.7)	0.50 (13)	100310101
NW 16	3/4"	0.75 (19)	0.065 (1.7)	0.50 (13)	100310111
NW 25	1"	1.00 (25)	0.065 (1.7)	0.50 (13)	100310103
NW 40	1 1/2"	1.50 (38)	0.083 (2.1)	0.75 (19)	100310105
NW 50	2"	2.00 (51)	0.083 (2.1)	0.75 (19)	100310106

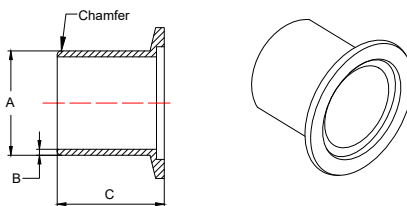


- Stainless Steel Type 304
- Buttweld
- Standard Inch Stub Diameters

Flange, Long Weld Stub, Stainless Steel

in./(mm)

Flange Size (ISO)	For Tubing OD	A	B	C	Part Number
NW 10	1/2"	0.50 (13)	0.065 (1.7)	1.58 (40)	100315700
NW 16	1/2"	0.50 (13)	0.065 (1.7)	1.58 (40)	100315701
NW 16	3/4"	0.75 (19)	0.065 (1.7)	1.58 (40)	100315711
NW 25	1"	1.00 (25)	0.065 (1.7)	1.58 (40)	100315703
NW 40	1 1/2"	1.50 (38)	0.065 (1.7)	1.58 (40)	100315705
NW 50	2"	2.00 (51)	0.065 (1.7)	1.58 (40)	100315706



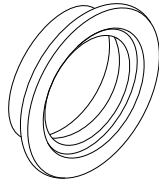
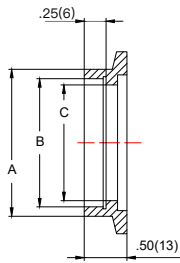
- Aluminum Type 6061T6
- Standard Inch Stub Diameters

Flange, Long Weld Stub, Aluminum

in./(mm)

Flange Size (ISO)	For Tubing OD	A	B	C	Part Number
NW 16	1/2"	0.50 (13)	0.065 (1.7)	1.58 (40)	100310201
NW 16	3/4"	0.75 (19)	0.065 (1.7)	1.58 (40)	100310211
NW 25	1"	1.00 (25)	0.065 (1.7)	1.58 (40)	100310203
NW 40	1 1/2"	1.50 (38)	0.083 (2.1)	1.58 (40)	100310205
NW 50	2"	2.00 (51)	0.083 (2.1)	1.58 (40)	100310206

ISO-KF Vacuum Flange Components

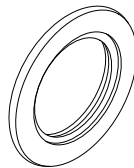
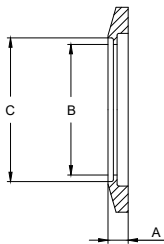


- Stainless Steel Type 304
- Self Aligning
- Standard Tube Weld Prep.
- Also Suitable for Buttweld

Flange, Weld Socket, Stainless Steel

in./ (mm)

Flange Size (ISO)	For Tubing OD	A	B	C	Part Number
NW 16	1/2"	0.61 (15)	0.51 (13)	0.45 (11)	100318301
NW 16	5/8"	0.77 (20)	0.64 (16)	0.58 (15)	100318311
NW 16	3/4"	0.87 (22)	0.76 (19)	0.68 (17)	100318321
NW 25	1"	1.13 (29)	1.02 (26)	0.87 (22)	100318303
NW 40	1 1/2"	1.75 (44)	1.50 (38)	1.37 (35)	100318305
NW 50	2"	2.25 (57)	2.02 (51)	1.87 (47)	100318306

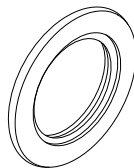
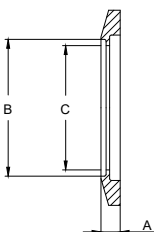


- Stainless Steel Type 304
- Standard Inch Tube OD's

Flange, Blank with Bore, Stainless Steel

in./ (mm)

Flange Size (ISO)	For Tubing OD	A	B	C	Part Number
NW 10	1/4"	0.20 (5)	0.26 (7)	N/A	100319710
NW 10	3/8"	0.20 (5)	0.39 (10)	N/A	100319720
NW 10	1/2"	0.20 (5)	0.44 (11)	0.51 (13)	100319700
NW 16	1/4"	0.20 (5)	0.26 (7)	N/A	100319711
NW 16	3/8"	0.20 (5)	0.39 (10)	N/A	100319721
NW 16	1/2"	0.20 (5)	0.51 (13)	N/A	100319731
NW 16	3/4"	0.20 (5)	0.68 (17)	0.76 (19)	100319701
NW 25	1/4"	0.20 (5)	0.26 (7)	N/A	100319713
NW 25	3/8"	0.20 (5)	0.39 (10)	N/A	100319723
NW 25	1/2"	0.20 (5)	0.51 (13)	N/A	100319733
NW 25	3/4"	0.20 (5)	0.63 (16)	0.76 (19)	100319743
NW 25	1"	0.20 (5)	0.89 (23)	1.02 (26)	100319703
NW 40	1/4"	0.20 (5)	0.26 (7)	N/A	100319715
NW 40	3/8"	0.20 (5)	0.39 (10)	N/A	100319725
NW 40	1/2"	0.20 (5)	0.51 (13)	N/A	100319735
NW 40	3/4"	0.20 (5)	0.63 (16)	0.76 (19)	100319745
NW 40	1"	0.20 (5)	0.89 (23)	1.02 (26)	100319755
NW 40	1 1/2"	0.20 (5)	1.39 (35)	1.52 (39)	100319705
NW 50	1/4"	0.20 (5)	0.26 (7)	N/A	100319716
NW 50	3/8"	0.20 (5)	0.39 (10)	N/A	100319726
NW 50	1/2"	0.20 (5)	0.51 (13)	N/A	100319736
NW 50	3/4"	0.20 (5)	0.63 (16)	0.76 (19)	100319746
NW 50	1"	0.20 (5)	0.89 (23)	1.02 (26)	100319756
NW 50	1 1/2"	0.20 (5)	1.39 (35)	1.52 (39)	100319766
NW 50	2"	0.20 (5)	1.89 (48)	2.02 (51)	100319706



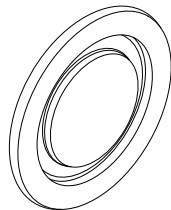
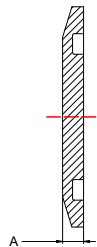
- Stainless Steel Type 304

Flange, Blank with Bore, KF 80 / KF 100, Stainless Steel

in./ (mm)

Flange Size (ISO)	For Tubing OD	A	B	C	Part Number
NW 80	3"	0.47 (12)	3.02 (76)	2.90 (74)	100319801
NW 100	4"	0.47 (12)	4.02 (102)	3.87 (98)	100319803

ISO-KF Vacuum Flange Components

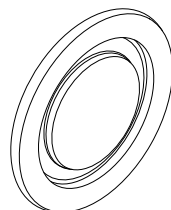
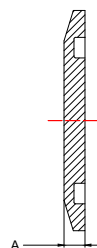


- Stainless Steel Type 304
- To Close Off Unused Ports

Flange, Blank-Off, Stainless Steel

in./(mm)

Flange Size (ISO)	A	Part Number
NW 10	0.20 (5)	100311700
NW 16	0.20 (5)	100311701
NW 25	0.20 (5)	100311703
NW 40	0.20 (5)	100311705
NW 50	0.20 (5)	100311706
NW 80	0.43 (11)	100319802
NW 100	0.43 (11)	100319804

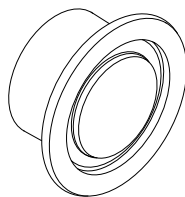
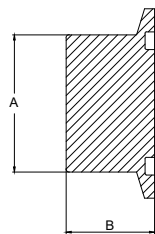


- Aluminum Alloy
- To Close Off Unused Ports

Flange, Blank-Off, Aluminum

in./(mm)

Flange Size (ISO)	A	Part Number
NW 10	0.20 (5)	100311600
NW 16	0.20 (5)	100311601
NW 25	0.20 (5)	100311603
NW 40	0.20 (5)	100311605
NW 50	0.20 (5)	100311606

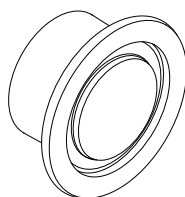
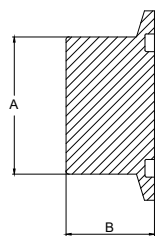


- Stainless Steel Type 304
- Stub may be turned, bored or tapped to fit

Flange, Unbored Stub, Stainless Steel

in./(mm)

Flange Size (ISO)	A	B	Part Number
NW 10	0.75 (19)	0.75 (19)	100311300
NW 16	0.75 (19)	0.75 (19)	100311301
NW 25	1.00 (25)	0.75 (19)	100311303
NW 40	1.50 (38)	1.00 (25)	100311305
NW 50	2.00 (51)	1.00 (25)	100311306



- Aluminum Type 6061T6
- Stub may be turned, bored or tapped to fit

Flange, Unbored Stub, Aluminum

in./(mm)

Flange Size (ISO)	A	B	Part Number
NW 10	0.75 (19)	0.75 (19)	100311100
NW 16	0.75 (19)	0.75 (19)	100311101
NW 25	1.00 (25)	0.75 (19)	100311103
NW 40	1.50 (38)	1.00 (25)	100311105
NW 50	2.00 (51)	1.00 (25)	100311106

ISO-KF Vacuum Flange Components

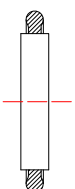
Seal, Centering Ring Assembly, Stainless Steel/Viton® in./(mm)



- 180°C Max
- Replaceable O-Ring
- NW 80/100 includes aluminum spacer ring

Flange Size (ISO)	Part Number
NW 10	100312700
NW 16	100312701
NW 25	100312703
NW 40	100312705
NW 50	100312706
NW 80	100760508
NW 100	100760510

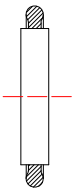
Seal, Centering Ring Assembly, Aluminum/Viton® in./(mm)



- 180°C Max
- Replaceable O-Ring
- NW 80/100 includes aluminum spacer ring

Flange Size (ISO)	Part Number
NW 10	100312600
NW 16	100312601
NW 25	100312603
NW 40	100312605
NW 50	100312606
NW 80	100760608
NW 100	100760610

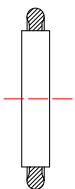
Seal, Centering Ring Assembly, Stainless Steel/Buna-N in./(mm)



- 80°C Max
- Replaceable O-Ring

Flange Size (ISO)	Part Number
NW 10	100312800
NW 16	100312801
NW 25	100312803
NW 40	100312805
NW 50	100312806

Seal, Centering Ring Assembly, Aluminum/Buna-N in./(mm)

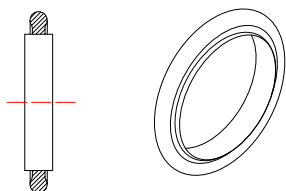


- 80°C Max
- Replaceable O-Ring
- NW 80/100 includes aluminum spacer ring

Flange Size (ISO)	Part Number
NW 10	100312500
NW 16	100312501
NW 25	100312503
NW 40	100312505
NW 50	100312506
NW 80	100760708
NW 100	100760710

ISO-KF Vacuum Flange Components

Seal, Centering Ring Assembly, Stainless Steel/Silicone in./(mm)



- 200°C Max
- Replaceable O-Ring

Flange Size (ISO)	Part Number
NW 10	100317300
NW 16	100317301
NW 25	100317303
NW 40	100317305
NW 50	100317306

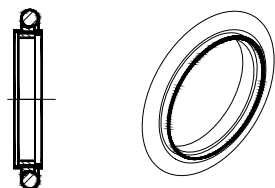
Seal, Centering Ring Assembly Overpressure, Stainless Steel/Viton in./(mm)



- Stainless Steel Centering Ring
- Replaceable Viton O-Ring
- Includes Aluminum Overpressure Ring

Flange Size (ISO)	Part Number
NW 25	100936525
NW 40	100936524
NW 50	100936523

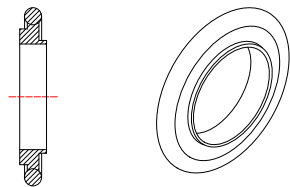
Seal, Centering Ring Assembly, w/Screen, Stainless Steel/Viton® in./(mm)



- Stainless Steel Centering Ring
- Replaceable Viton O-Ring
- 72 Mesh Screen Stainless Steel

Flange Size (ISO)	Part Number
NW 16	100318601
NW 25	100318603
NW 40	100318605
NW 50	100318606

Seal, Adaptive Centering Ring Assembly, Stainless Steel/Viton in./(mm)

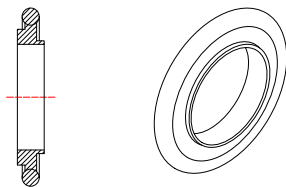


- Stainless Steel Centering Ring
- Replaceable Viton O-Ring
- For Obsolete Bore Sizes

Flange Size (ISO)	Flange Size (ISO)	Part Number
NW 16	NW 10	100315821
NW 25	NW 20	100315823
NW 40	NW 32	100315825

ISO-KF Vacuum Flange Components

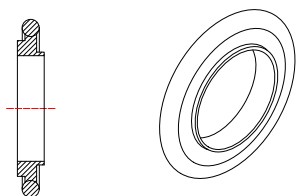
Seal, Adaptive Centering Ring Assembly, Aluminum/Viton in./(mm)



- Replaceable Viton O-Ring
- For Obsolete Bore Sizes

Flange Size (ISO)	Flange Size (ISO)	Part Number
NW 16	NW 10	100315811
NW 25	NW 20	100315813
NW 40	NW 32	100315815

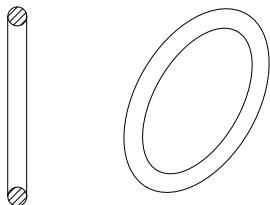
Seal, Adaptive Centering Ring Assembly, Aluminum/Buna-N in./(mm)



- Replaceable O-Ring
- For Obsolete Bore Sizes

Flange Size (ISO)	Flange Size (ISO)	Part Number
NW 16	NW 10	100315801
NW 25	NW 20	100315803
NW 40	NW 32	100315805

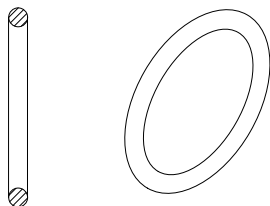
Seal, Replacement O-Ring, Viton® in./(mm)



- Standard Inch O-Ring Sizes

Flange Size (ISO)	Standard O-Ring Size	Part Number
NW 10	2-312	100314000
NW 16	2-314	100314001
NW 25	2-320	100314003
NW 40	2-326	100314005
NW 50	2-330	100314006
NW 80	2-340	100762008
NW 100	2-346	100762010

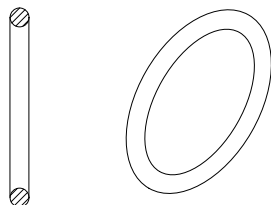
Seal, Replacement O-Ring, Buna-N in./(mm)



- Standard Inch O-Ring Sizes

Flange Size (ISO)	Standard O-Ring Size	Part Number
NW 10	2-312	100313900
NW 16	2-314	100313901
NW 25	2-320	100313903
NW 40	2-326	100313905
NW 50	2-330	100313906
NW 80	2-340	100761908
NW 100	2-346	100761910

ISO-KF Vacuum Flange Components

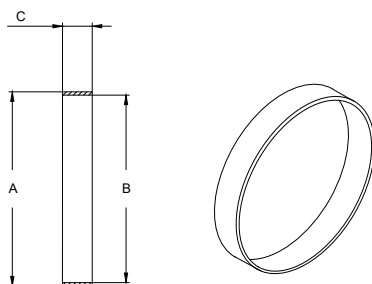


- Standard Inch O-Ring Sizes

Seal, Replacement O-Ring, Silicone

in./(mm)

Flange Size (ISO)	Standard O-Ring Size	Part Number
NW 10	2-312	100317310
NW 16	2-314	100317311
NW 25	2-320	100317313
NW 40	2-326	100317315
NW 50	2-330	100317316



- Stainless Steel
- Fits over OD of O-ring
- Use to retain O-ring when system is used at internal pressures over atmospheric

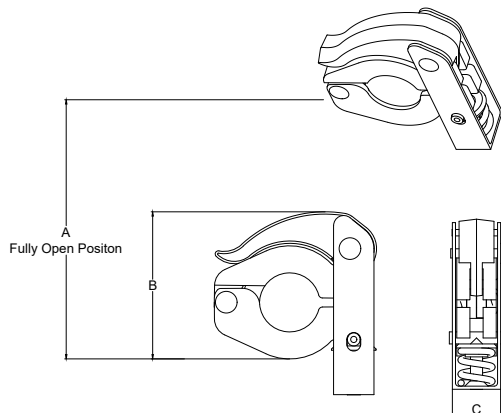
Ring, Overpressure

in./(mm)

Flange Size (ISO)	Max. Pressure	A	B	C	Part Number
NW 16	100 psig	1.25 (31)	1.19 (30)	0.35 (9)	100316301
NW 25	100 psig	1.66 (42)	1.58 (40)	0.35 (9)	100316303
NW 40	75 psig	2.25 (57)	2.17 (55)	0.35 (9)	100316305
NW 50	50 psig	2.75 (70)	2.66 (68)	0.14 (4)	100316306

Clamp, Toggle

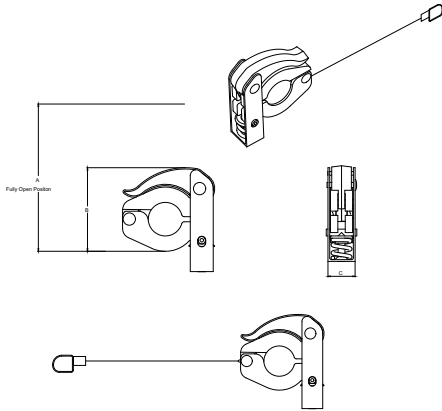
in./(mm)



- Aluminum
- Quick Operating
- Positive Locking Method
- Self Adjusting
- Cannot Be Over-tightened

Flange Size (ISO)	Fits Sizes	A	B	C	Part Number
NW 16	16/10	4.05 (103)	2.50 (64)	0.75 (19)	100318801
NW 25	25/20	4.31 (109)	2.96 (75)	0.75 (19)	100318803
NW 40	40/32	4.87 (124)	3.29 (84)	0.75 (19)	100318805
NW 50	50	6.34 (161)	4.73 (120)	0.89 (23)	100318806

ISO-KF Vacuum Flange Components

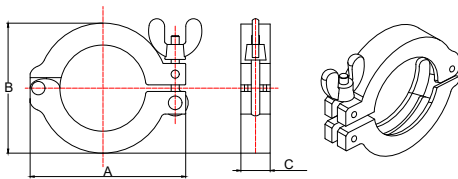


Clamp, Toggle w/Lanyard

in./(mm)

Flange Size (ISO)	Fits Sizes	A	B	C	Part Number
NW 16	16/10	4.05 (103)	2.50 (64)	0.75 (19)	100318801-L
NW 25	25/20	4.31 (109)	2.96 (75)	0.75 (19)	100318803-L
NW 40	40/32	4.87 (124)	3.29 (84)	0.75 (19)	100318805-L
NW 50	50	6.34 (161)	4.73 (120)	0.89 (23)	100318806-L

- Aluminum
- Fastening pin on lanyard prevents accidental opening and pin loss
- Positive locking method
- Self-adjusting
- Heavy duty spring supports the full range of production tolerance variables

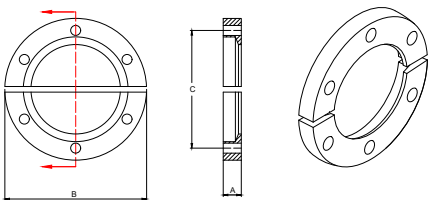


Clamp, Wing Nut

in./(mm)

Flange Size (ISO)	Fits Sizes	A	B	C	Part Number
NW 16	16/10	2.24 (57)	1.69 (43)	0.63 (16)	100312901
NW 25	25/20	2.76 (70)	2.17 (55)	0.63 (16)	100312903
NW 40	40/32	3.39 (86)	2.76 (70)	0.63 (16)	100312905
NW 50	50	4.33 (110)	3.70 (94)	0.79 (20)	100312906

- Aluminum
- 70 inch-pounds max torque



Clamp, Bulkhead

in./(mm)

Flange Size (ISO)	Number of Bolts	A	B	C	Part Number
NW 16	6	0.36 (9)	2.00 (51)	1.50 (38)	100318901
NW 25	6	0.39 (10)	2.38 (60)	1.89 (48)	100318903
NW 40	6	0.37 (9)	2.94 (75)	2.44 (62)	100318905
NW 50	8	0.40 (10)	3.75 (95)	3.25 (83)	100318906

- Aluminum
- Adapts to a baseplate or fixed flange
- Standard KF seal assembly
- Stainless steel bolts and washers included, 10-32 x 5/8"

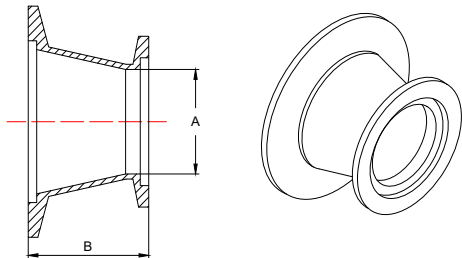
- For use with KF 80 and 100 flanges
- Aluminum

Clamp, Chain

in./(mm)

Flange Size (ISO)	Part Number
NW 80	100993460
NW 100	100994717

ISO-KF Vacuum Flange Components

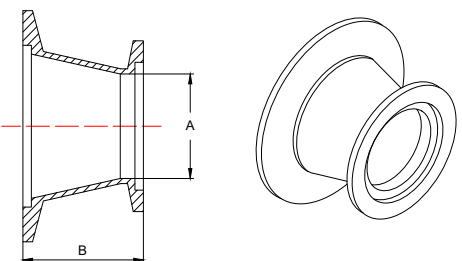


- Mates differing ISO-KF flange sizes

Conical Reducer, Stainless Steel

in./(mm)

Flange Size (ISO)	Flange Size (ISO)	A	B	Part Number
NW 16	NW 25	0.62 (16)	1.57 (40)	100313711
NW 16	NW 40	0.62 (16)	1.57 (40)	100313712
NW 16	NW 50	0.62 (16)	1.57 (40)	100313713
NW 25	NW 40	0.87 (22)	1.57 (40)	100313714
NW 25	NW 50	0.87 (22)	1.57 (40)	100313715
NW 40	NW 50	1.34 (34)	1.57 (40)	100313716

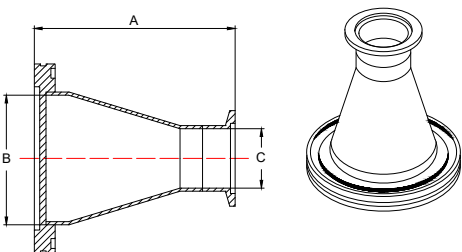


- Mates differing ISO-KF flange sizes

Conical Reducer, Aluminum

in./(mm)

Flange Size (ISO)	Flange Size (ISO)	A	B	Part Number
NW 16	NW 25	0.62 (16)	1.57 (40)	100313511
NW 16	NW 40	0.62 (16)	1.57 (40)	100313512
NW 16	NW 50	0.62 (16)	1.57 (40)	100313513
NW 25	NW 40	0.87 (22)	1.57 (40)	100313514
NW 25	NW 50	0.87 (22)	1.57 (40)	100313515
NW 40	NW 50	1.34 (34)	1.57 (40)	100313516



- Stainless Steel Type 304
- High conductance adapter
- Special adapters available upon request

Conical Adapter, ISO-MF to ISO-KF

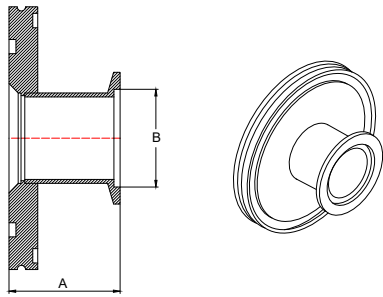
in./(mm)

Flange Size (ISO)	A	B	C	Part Number
NW 63 to NW 40	3.39 (86)	2.37 (60)	1.37 (35)	100765006
NW 63 to NW 50	3.39 (86)	2.37 (60)	1.87 (47)	100765017
NW 80 to NW 40	4.64 (118)	2.87 (73)	1.37 (35)	100765016
NW 80 to NW 50	4.64 (118)	2.87 (73)	1.87 (47)	100765008
NW 100 to NW 50	4.64 (118)	3.83 (97)	1.87 (47)	100765018

ISO-KF Vacuum Flange Components

Step Adapter, ISO-MF to ISO-KF

in./(mm)

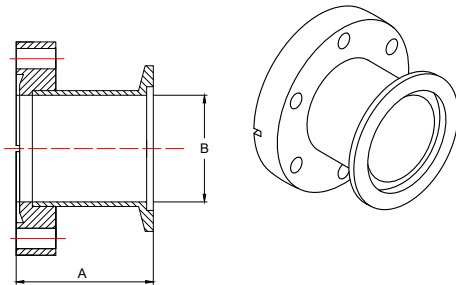


- Stainless Steel Type 304

Flange Size (ISO)	A	B	Part Number
NW 63 to NW 40	1.77 (45)	1.37 (35)	100762606
NW 63 to NW 50	1.77 (45)	1.87 (47)	100762617
NW 80 to NW 40	1.77 (45)	1.87 (47)	100762616
NW 80 to NW 50	1.77 (45)	1.87 (47)	100762608
NW 100 to NW 40	1.77 (45)	1.37 (35)	100762620
NW 100 to NW 50	1.77 (45)	1.87 (47)	100762618

Adapter, ISO-KF to CF

in./(mm)

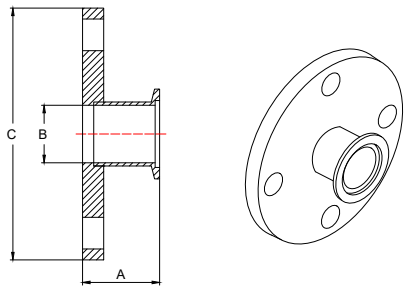


- Stainless Steel Type 304

Flange Size (KF)	Flange Size (CF)	A	B	Part Number
NW 16	Mini 1 1/3"	2.08 (53)	0.62 (16)	100315601
NW 16	2 3/4"	1.78 (45)	0.62 (16)	100315611
NW 25	2 1/8"	1.89 (48)	0.87 (22)	100319812
NW 25	2 3/4"	1.78 (45)	0.87 (22)	100315603
NW 40	2 3/4"	1.78 (45)	1.33 (34)	100315605
NW 50	2 3/4"	2.11 (54)	1.37 (35)	100319813
NW 50	4 1/2"	1.95 (50)	1.83 (46)	100315606

Adapter, ISO-KF to ASA, without O-Ring Groove

in./(mm)

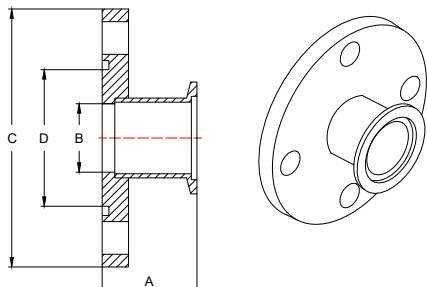


- Stainless Steel Type 304
- Without O-Ring Groove

Flange Size (KF)	Flange Size (ASA)	A	B	C	Part Number
NW 40	1 1/2"	1.81 (46)	1.33 (34)	5.00 (127)	100316755
NW 40	2"	1.81 (46)	1.33 (34)	6.00 (152)	100316705
NW 40	3"	1.81 (46)	1.33 (34)	7.50 (191)	100316715
NW 50	1 1/2"	1.81 (46)	1.83 (46)	5.00 (127)	100316756
NW 50	2"	1.81 (46)	1.83 (46)	6.00 (152)	100316706
NW 50	3"	1.81 (46)	1.83 (46)	7.50 (191)	100316716

Adapter, ISO-KF to ASA, with O-Ring Groove

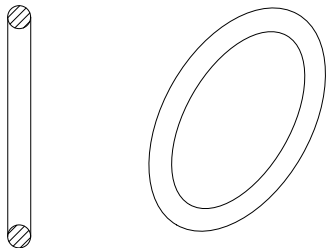
in./(mm)



- Stainless Steel Type 304
- With O-ring Groove

Flange Size (KF)	Flange Size (ASA)	Groove ID (O-Ring)	A	B	C	Part Number
NW 40	1 1/2"	2.66" (2-231)	1.81 (46)	1.33 (34)	5.00 (127)	100316775
NW 40	2"	3.42" (2-237)	1.81 (46)	1.33 (34)	6.00 (152)	100316725
NW 40	3"	4.69" (2-247)	1.81 (46)	1.33 (34)	7.50 (191)	100316735
NW 50	1 1/2"	2.66" (2-231)	1.81 (46)	1.83 (46)	5.00 (127)	100316776
NW 50	2"	3.42" (2-237)	1.81 (46)	1.83 (46)	6.00 (152)	100316726
NW 50	3"	4.69" (2-247)	1.81 (46)	1.83 (46)	7.50 (191)	100316736

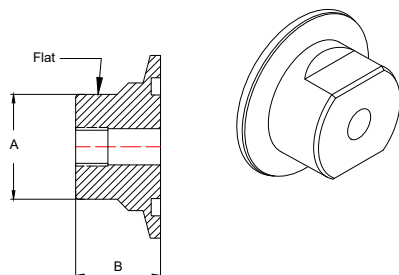
ISO-KF Vacuum Flange Components



ASA O-Ring, Viton®

in./(mm)

Flange Size (ASA)	O-Ring	Part Number
1 1/2"	2-231	100001380
2"	2-237	100006098
3"	2-247	100006099

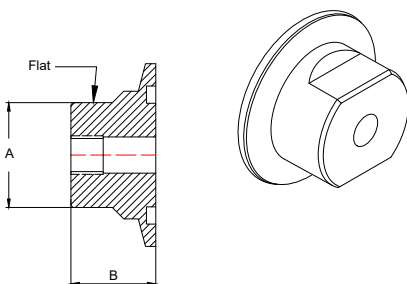


Adapter, ISO-KF to NPT-F Pipe, Stainless Steel

in./(mm)

Flange Size (KF)	Flange Size (NPT)	A	B	Part Number
NW 10	1/8"	0.62 (16)	0.75 (19)	100312100
NW 10	1/4"	0.62 (16)	0.75 (19)	100312300
NW 16	1/8"	0.62 (16)	0.75 (19)	100312101
NW 16	1/4"	0.62 (16)	0.75 (19)	100312301
NW 25	1/8"	0.88 (22)	0.75 (19)	100312103
NW 25	1/4"	0.88 (22)	0.75 (19)	100312303
NW 40	1/8"	1.25 (32)	1.00 (25)	100312105
NW 40	1/4"	1.25 (32)	1.00 (25)	100312305
NW 50	1/8"	1.75 (44)	1.00 (25)	100312106
NW 50	1/4"	1.75 (44)	1.00 (25)	100312306

- Teflon Tape recommended to seal
- Compatible with most TC and Pirani tubes



Adapter, ISO-KF to NPT-F Pipe, Aluminum

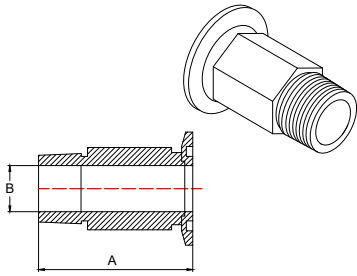
in./(mm)

Flange Size (KF)	Flange Size (NPT)	A	B	Part Number
NW 10	1/8"	0.62 (16)	0.75 (19)	100312000
NW 10	1/4"	0.62 (16)	0.75 (19)	100312200
NW 16	1/8"	0.62 (16)	0.75 (19)	100312001
NW 16	1/4"	0.62 (16)	0.75 (19)	100312201
NW 25	1/8"	0.88 (22)	0.75 (19)	100312003
NW 25	1/4"	0.88 (22)	0.75 (19)	100312203
NW 40	1/8"	1.25 (32)	1.00 (25)	100312005
NW 40	1/4"	1.25 (32)	1.00 (25)	100312205
NW 50	1/8"	1.75 (44)	1.00 (25)	100312006
NW 50	1/4"	1.75 (44)	1.00 (25)	100312206

- Teflon Tape recommended to seal
- Compatible with most TC and Pirani tubes

ISO-KF Vacuum Flange Components

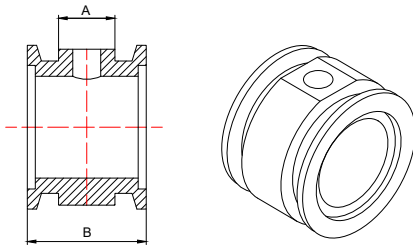
Adapter, ISO-KF to NPT-M Pipe, Stainless Steel in./(mm)



- Stainless Steel
- Hex Shank
- Tapered Thread
- Teflon Tape recommended to seal

Flange Size (KF)	Flange Size (NPT)	A	B	Part Number
NW 16	1/8"	1.57 (40)	0.19 (5)	100316801
NW 16	1/4"	1.97 (50)	0.26 (7)	100316811
NW 25	1/8"	1.57 (40)	0.19 (5)	100316803
NW 25	1/4"	1.97 (50)	0.26 (7)	100316813
NW 25	1/2"	2.95 (75)	0.45 (11)	100316823
NW 25	3/4"	2.95 (75)	0.78 (20)	100316833
NW 40	1/4"	1.97 (50)	0.26 (7)	100316805
NW 40	1/2"	2.95 (75)	0.45 (11)	100316815
NW 40	3/4"	2.95 (75)	0.78 (20)	100316825
NW 40	1"	2.95 (75)	0.88 (22)	100316835
NW 40	1 1/4"	2.00 (51)	1.12 (28)	100316844
NW 40	1 1/2"	2.00 (51)	1.34 (34)	100316845
NW 50	1/4"	1.97 (50)	0.26 (7)	100316806
NW 50	1/2"	2.95 (75)	0.45 (11)	100316816
NW 50	3/4"	2.95 (75)	0.78 (20)	100316826
NW 50	1"	2.95 (75)	0.88 (22)	100316836
NW 50	2"	2.00 (51)	1.87 (47)	100316846

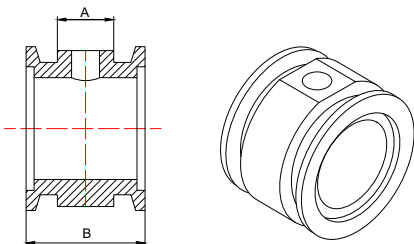
Adapter Tee, ISO-KF to NPT-F Pipe, Stainless Steel in./(mm)



- Available with additional NPT holes
- Teflon Tape recommended to seal

Flange Size (KF)	Flange Size (NPT)	A	B	Part Number
NW 16	1/8" Tapped	0.76 (19)	1.57 (40)	100319401
NW 16	1/4" Tapped	0.76 (19)	1.57 (40)	100319601
NW 25	1/8" Tapped	0.76 (19)	1.57 (40)	100319403
NW 25	1/4" Tapped	0.76 (19)	1.57 (40)	100319603
NW 40	1/8" Tapped	0.76 (19)	1.57 (40)	100319405
NW 40	1/4" Tapped	0.76 (19)	1.57 (40)	100319605
NW 50	1/8" Tapped	0.76 (19)	1.57 (40)	100319406
NW 50	1/4" Tapped	0.76 (19)	1.57 (40)	100319606

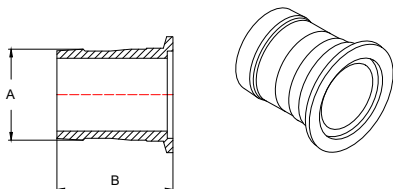
Adapter Tee, ISO-KF to NPT-F Pipe, Aluminum in./(mm)



- Available with additional NPT holes
- Teflon Tape recommended to seal

Flange Size (KF)	Flange Size (NPT)	A	B	Part Number
NW 16	1/8" Tapped	0.76 (19)	1.57 (40)	100319301
NW 16	1/4" Tapped	0.76 (19)	1.57 (40)	100319501
NW 25	1/8" Tapped	0.76 (19)	1.57 (40)	100319303
NW 25	1/4" Tapped	0.76 (19)	1.57 (40)	100319503
NW 40	1/8" Tapped	0.76 (19)	1.57 (40)	100319305
NW 40	1/4" Tapped	0.76 (19)	1.57 (40)	100319505
NW 50	1/8" Tapped	0.76 (19)	1.57 (40)	100319306
NW 50	1/4" Tapped	0.76 (19)	1.57 (40)	100319506

Adapter, ISO-KF to Rubber Hose in./(mm)



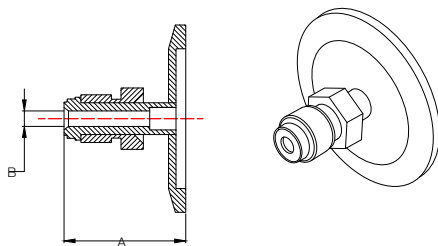
- Aluminum
- Compatible with standard vacuum hose bores

Flange Size (ISO)	Hose Size	A	B	Part Number
NW 16	1/2" or 5/8"	0.63 (16)	1.65 (42)	100311811
NW 16	5/8" or 3/4"	0.75 (19)	1.65 (42)	100311801
NW 25	3/4" or 7/8"	0.88 (22)	1.73 (44)	100311803
NW 40	1 1/2" or 1 5/8"	1.63 (41)	2.17 (55)	100311805
NW 50	1 1/2" or 1 5/8"	1.63 (41)	2.17 (55)	100311806

ISO-KF Vacuum Flange Components

Adapter, ISO-KF to VCR®-M

in./ (mm)

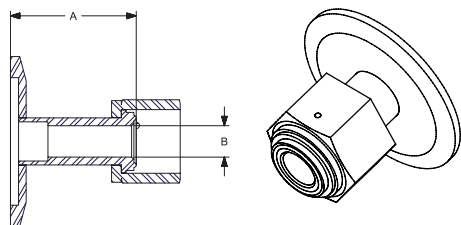


- Stainless Steel

Flange Size (ISO)	Flange Size (VCR)	A	B	VCR Size	Part Number
NW 16	4 VCR	1.40 (36)	0.19 (5)	1/4"	100319111
NW 16	8 VCR	1.63 (41)	0.41 (10)	1/2"	100319121
NW 25	4 VCR	1.40 (36)	0.19 (5)	1/4"	100319113
NW 25	8 VCR	1.60 (41)	0.41 (10)	1/2"	100319123
NW 25	12 VCR	2.14 (54)	0.62 (16)	3/4"	100319133
NW 40	4 VCR	1.40 (36)	0.19 (5)	1/4"	100319115
NW 40	8 VCR	1.60 (41)	0.41 (10)	1/2"	100319125
NW 40	12 VCR	2.10 (53)	0.62 (16)	3/4"	100319135
NW 50	4 VCR	1.40 (36)	0.19 (5)	1/4"	100319116
NW 50	8 VCR	1.60 (41)	0.41 (10)	1/2"	100319126
NW 50	12 VCR	2.10 (53)	0.62 (16)	3/4"	100319136

Adapter, ISO-KF to VCR®-F

in./ (mm)

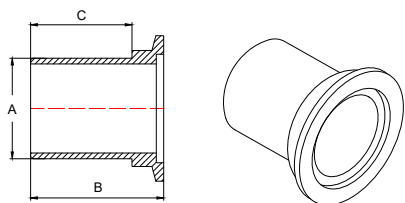


- Stainless Steel

Flange Size (ISO)	Flange Size (VCR)	A	B	VCR Size	Part Number
NW 16	4 VCR	1.40 (36)	0.19 (5)	1/4"	100319211
NW 16	8 VCR	1.63 (41)	0.41 (10)	1/2"	100319221
NW 25	4 VCR	1.40 (36)	0.19 (5)	1/4"	100319213
NW 25	8 VCR	1.60 (41)	0.41 (10)	1/2"	100319223
NW 25	12 VCR	2.14 (54)	0.62 (16)	3/4"	100319233
NW 40	4 VCR	1.40 (36)	0.19 (5)	1/4"	100319215
NW 40	8 VCR	1.60 (41)	0.41 (10)	1/2"	100319225
NW 40	12 VCR	2.10 (53)	0.62 (16)	3/4"	100319235
NW 50	4 VCR	1.40 (36)	0.19 (5)	1/4"	100319216
NW 50	8 VCR	1.60 (41)	0.41 (10)	1/2"	100319226
NW 50	12 VCR	2.10 (53)	0.62 (16)	3/4"	100319236

Adapter, ISO-KF to PVC Hose

in./ (mm)



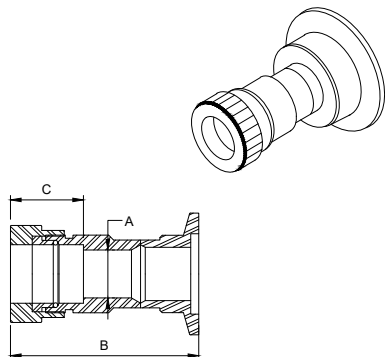
- Stainless Steel Type 304
- Recommend the use of hose clamps

Flange Size (ISO)	Hose Size	A	B	C	Part Number
NW 10	1/2"	0.50 (13)	1.26 (32)	0.79 (20)	100316400
NW 16	1/2"	0.50 (13)	1.26 (32)	0.79 (20)	100316411
NW 16	3/4"	0.75 (19)	1.26 (32)	0.79 (20)	100316401
NW 25	1"	1.00 (25)	1.50 (38)	1.02 (26)	100316403
NW 40	1 1/2"	1.50 (38)	1.97 (50)	1.50 (38)	100316405
NW 50	2"	2.00 (51)	2.17 (55)	1.61 (41)	100316406

ISO-KF Vacuum Flange Components

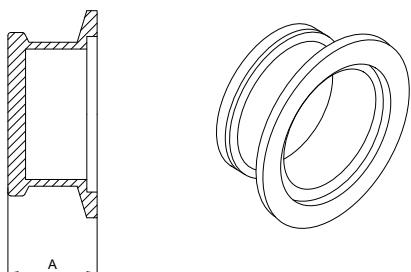
Adapter, ISO-KF to Compression Fitting

in./ (mm)



- Stainless Steel
- Viton O-Ring
- Compression fitting tightened by hand
- Compression connect for tube insertion

Flange Size (ISO)	For Tubing OD	A	B	C	Part Number
NW 10	1/2"	0.41 (10)	2.1 (53)	.80 (20)	100316910
NW 16	1/4"	0.19 (5)	1.4 (36)	.62 (16)	100316911
NW 16	1/2"	0.41 (10)	2.4 (61)	.80 (20)	100316921
NW 16	3/4"	0.62 (16)	2.4 (61)	.94 (24)	100316931
NW 25	1/2"	0.41 (10)	2.4 (61)	.80 (20)	100316903
NW 25	3/4"	0.62 (16)	2.5 (64)	.94 (24)	100316913
NW 25	1"	0.88 (22)	2.4 (61)	.94 (24)	100316923
NW 40	1/2"	0.41 (10)	2.6 (66)	.80 (20)	100316905
NW 40	3/4"	0.62 (16)	2.8 (71)	.94 (24)	100316915
NW 40	1"	0.88 (22)	2.8 (71)	.94 (24)	100316925
NW 40	1 1/8"	1.14 (29)	2.9 (74)	.94 (24)	100316945
NW 40	1 1/2"	1.25 (32)	2.9 (74)	.94 (24)	100316935
NW 50	3/4"	0.62 (16)	2.8 (71)	.94 (24)	100316926
NW 50	1"	0.88 (22)	2.8 (71)	.94 (24)	100316936
NW 50	1 1/8"	1.14 (29)	2.9 (74)	.94 (24)	100316946
NW 50	1 1/2"	1.25 (32)	3.0 (76)	.94 (24)	100316906
NW 50	2"	2.01 (51)	3.4 (87)	2.5 (63)	100316916

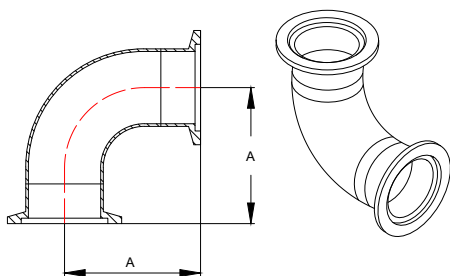


- Stainless Steel Flange
- Max. Temperature 150°C
- Optical quality borosilicate glass

ISO-KF Viewing Port

in./ (mm)

Flange Size (ISO)	A	Part Number
NW 40	0.93 (24)	100319005
NW 50	1.25 (32)	100319006



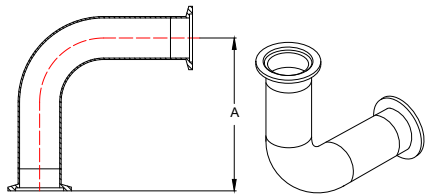
- Stainless Steel Type 304
- Same Size Flanges Both Ports
- Standard Modulus

ISO-KF Elbow 90° Smooth Radius

in./ (mm)

Flange Size (ISO)	A	Part Number
NW 16	1.57 (40)	100314401
NW 25	1.97 (50)	100314403
NW 40	2.56 (65)	100314505
NW 50	2.76 (70)	100314506

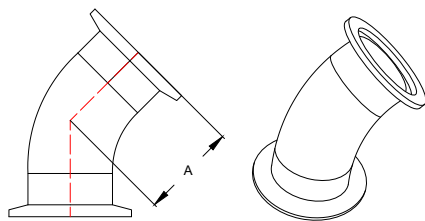
ISO-KF Vacuum Flange Components



- Stainless Steel Type 304
- Same Size Flanges both Ports
- Twice Standard Modulus

ISO-KF Elbow 90° Smooth, Long Radius in./(mm)

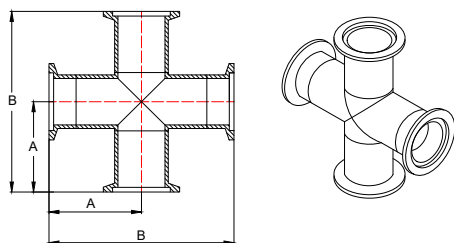
Flange Size (ISO)	A	Part Number
NW 40	5.12 (130)	100314415
NW 50	5.51 (140)	100314416



- Stainless Steel Type 304
- Same Size Flanges Both Ports

ISO-KF Elbow 45° Smooth Radius in./(mm)

Flange Size (ISO)	A	Part Number
NW 16	0.91 (23)	100318701
NW 25	1.12 (28)	100318703
NW 40	1.68 (43)	100318705
NW 50	1.99 (51)	100318706

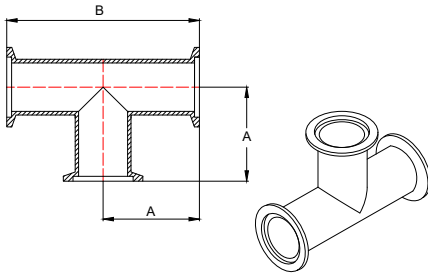


- Stainless Steel Type 304
- Same Size Flanges all Ports
- Standard Modulus

ISO-KF Cross in./(mm)

Flange Size (ISO)	A	B	Part Number
NW 16	1.57 (40)	3.15 (80)	100314801
NW 25	1.97 (50)	3.94 (100)	100314803
NW 40	2.56 (65)	5.12 (130)	100314805
NW 50	2.76 (70)	5.51 (140)	100314806

ISO-KF Vacuum Flange Components

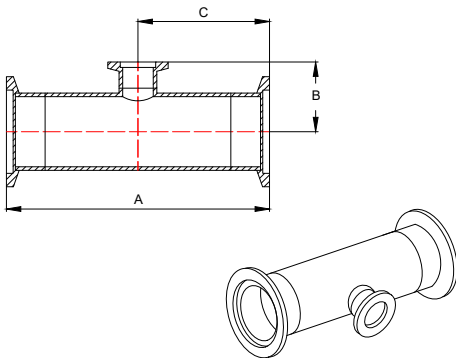


- Stainless Steel Type 304
- Same Size Flanges all Ports
- Standard Modulus

ISO-KF Tee

in./(mm)

Flange Size (ISO)	A	B	Part Number
NW 16	1.57 (40)	3.15 (80)	100314601
NW 25	1.97 (50)	3.94 (100)	100314603
NW 40	2.56 (65)	5.12 (130)	100314605
NW 50	2.76 (70)	5.51 (140)	100314606

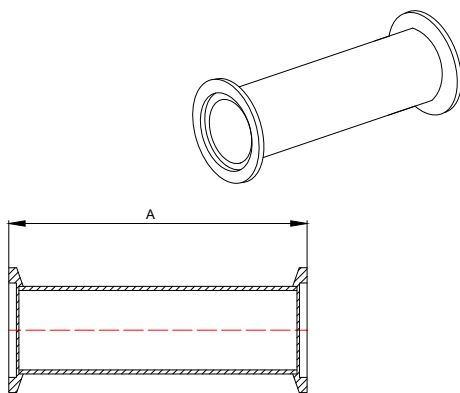


- Stainless Steel Type 304
- Same Size Flanges Thru Ports

ISO-KF Tee, Reducing

in./(mm)

Flange Size (ISO)	Flange Size (ISO) Tee	A	B	C	Part Number
NW 25	NW 16	3.94 (100)	1.08 (27)	1.97 (50)	100318403
NW 40	NW 16	5.12 (130)	1.32 (34)	2.56 (65)	100318405
NW 50	NW 16	5.51 (140)	1.58 (40)	2.76 (70)	100318406
NW 40	NW 25	4.80 (122)	2.40 (61)	2.40 (61)	100319816
NW 50	NW 25	6.29 (160)	2.65 (67)	3.15 (80)	100319815
NW 50	NW 40	6.29 (160)	2.65 (67)	3.15 (80)	100319814



- Stainless Steel Type 304
- Special lengths to order

ISO-KF Straight Section

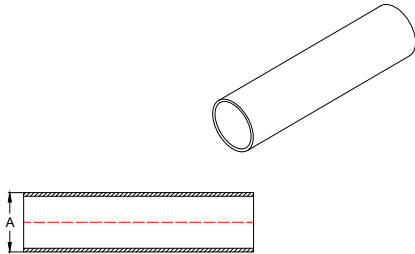
in./(mm)

Flange Size (ISO)	A	Part Number
NW 16	3.15 (80)	100315101
NW 16	12.60 (320)	100315111
NW 25	3.94 (100)	100315103
NW 25	12.60 (320)	100315113
NW 40	5.12 (130)	100315105
NW 40	12.60 (320)	100315115
NW 50	5.51 (140)	100315106
NW 50	12.60 (320)	100315116

ISO-KF Vacuum Flange Components

Tubing

in./(mm)

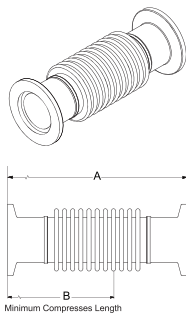


- Tube ends deburred
- Stainless Steel
- Price per 10 foot length of tube

Flange Size (ISO)	A	Tube Wall	Part Number
NW 10	0.50 (13)	0.065 (1.7)	100314300
NW 16	0.75 (19)	0.065 (1.7)	100314301
NW 25	1.00 (25)	0.065 (1.7)	100314303
NW 40	1.50 (38)	0.065 (1.7)	100314305
NW 50	2.00 (51)	0.065 (1.7)	100314306
NW 80	3.00 (76)	0.065 (1.7)	100764508
NW 100	4.00 (102)	0.065 (1.7)	100764510
NW 100	4.00 (102)	0.083 (2.1)	100764511

ISO-KF Bellows Section

in./(mm)

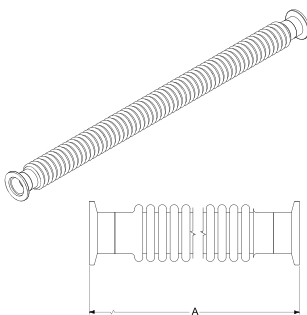


- Stainless Steel Type 321

Flange Size (ISO)	Static Bend Radius	Hose Wall	A	B	Spring Rate	Part Number
NW 16	1 1/8"	.006 (0.15)	3.94 (100)	3.07 (78)	56 lb/in	100314911G
NW 25	1 3/8"	.006 (0.15)	3.94 (100)	3.07 (78)	44 lb/in	100314913G
NW 40	2 1/2"	.006 (0.15)	3.94 (100)	2.93 (74)	32 lb/in	100314915G
NW 50	3 1/4"	.006 (0.15)	3.94 (100)	3.11 (79)	32 lb/in	100314916G

ISO-KF Thick Wall Metal Hose

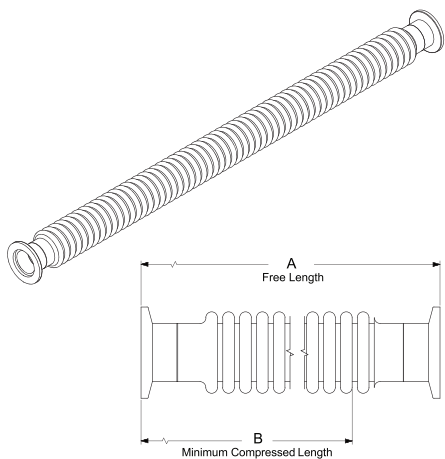
in./(mm)



- Stainless Steel
- Unsheathed
- Buttwelded
- Special Lengths to Order
- Thick wall hose static bend radius is to point of permanent deformation

Flange Size (ISO)	Static Bend Radius	Hose Wall	A	Spring Rate	Part Number
NW 16	2 1/8"	.012 (0.30)	9.84 (250)	256 lb/in	100315901
NW 16	2 1/8"	.012 (0.30)	19.69 (500)	128 lb/in	100316001
NW 16	2 1/8"	.012 (0.30)	39.40 (1000)	64 lb/in	100316111
NW 25	2 7/8"	.012 (0.30)	9.84 (250)	224 lb/in	100315903
NW 25	2 7/8"	.012 (0.30)	19.69 (500)	112 lb/in	100316003
NW 25	2 7/8"	.012 (0.30)	39.40 (1000)	56 lb/in	100316113
NW 40	3 1/2"	.012 (0.30)	9.84 (250)	220 lb/in	100315905
NW 40	3 1/2"	.012 (0.30)	19.69 (500)	110 lb/in	100316005
NW 40	3 1/2"	.012 (0.30)	39.40 (1000)	55 lb/in	100316115
NW 50	5 1/4"	.012 (0.30)	9.84 (250)	220 lb/in	100315906
NW 50	5 1/4"	.012 (0.30)	19.69 (500)	110 lb/in	100316006
NW 50	5 1/4"	.012 (0.30)	39.40 (1000)	55 lb/in	100316116

ISO-KF Vacuum Flange Components

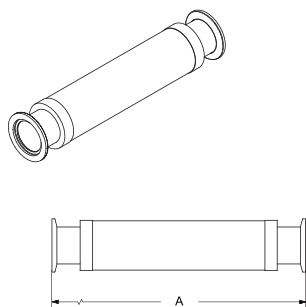


- Stainless Steel
- Unsheathed
- Buttwelded
- Special Lengths to Order

ISO-KF Thin Wall Metal Hose

in./(mm)

Flange Size (ISO)	Static Bend Radius	Hose Wall	A	B	Spring Rate	Part Number
NW 16	1 5/8"	.006 (0.15)	9.84 (250)	6.41 (163)	27 lb/in	100317411
NW 16	1 5/8"	.006 (0.15)	12.02 (305)	7.82 (199)	21 lb/in	100319805
NW 16	1 5/8"	.006 (0.15)	19.69 (500)	12.30 (313)	12 lb/in	100317421
NW 16	1 5/8"	.006 (0.15)	24.09 (612)	18.12 (460)	9 lb/in	100319808
NW 16	1 5/8"	.006 (0.15)	39.40 (1000)	24.10 (613)	5.8 lb/in	100317441
NW 25	1 3/8"	.006 (0.15)	9.84 (250)	6.41 (163)	16 lb/in	100317413
NW 25	1 3/8"	.006 (0.15)	11.99 (305)	7.82 (199)	14 lb/in	100319806
NW 25	1 3/8"	.006 (0.15)	19.69 (500)	12.30 (313)	7.3 lb/in	100317423
NW 25	1 3/8"	.006 (0.15)	24.00 (610)	18.12 (460)	6.5 lb/in	100319809
NW 25	1 3/8"	.006 (0.15)	39.40 (1000)	24.10 (613)	3.4 lb/in	100317443
NW 40	2 1/2"	.006 (0.15)	9.84 (250)	6.23 (158)	8.6 lb/in	100317415
NW 40	2 1/2"	.006 (0.15)	12.12 (308)	7.88 (200)	7 lb/in	100319807
NW 40	2 1/2"	.006 (0.15)	19.69 (500)	11.70 (297)	3.9 lb/in	100317425
NW 40	2 1/2"	.006 (0.15)	24.05 (611)	18.12 (460)	3 lb/in	100319810
NW 40	2 1/2"	.006 (0.15)	39.40 (1000)	22.50 (571)	1.9 lb/in	100317445
NW 50	3 1/4"	.006 (0.15)	9.84 (250)	7.05 (179)	13 lb/in	100317416
NW 50	3 1/4"	.006 (0.15)	11.93 (303)	8.64 (219)	12 lb/in	100319817
NW 50	3 1/4"	.006 (0.15)	19.69 (500)	13.50 (342)	5.9 lb/in	100317426
NW 50	3 1/4"	.006 (0.15)	24.08 (612)	18.12 (460)	5 lb/in	100319811
NW 50	3 1/4"	.006 (0.15)	39.40 (1000)	26.30 (667)	2.9 lb/in	100317446



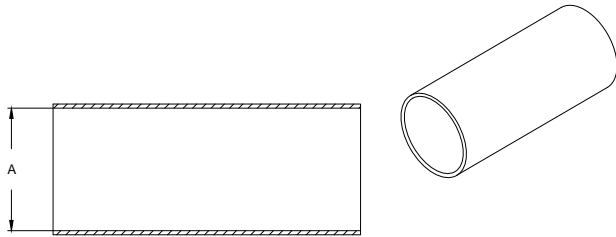
- Ideal for rough pumping lines
- Stainless Steel
- Flexible, yet resistant to contraction

ISO-KF Braided Metal Hose

in./(mm)

Flange Size (ISO)	Static Bend Radius	A	Part Number
NW 16	2 1/2"	10.23 (259)	100313201
NW 16	2 1/2"	20.23 (514)	100313301
NW 16	2 1/2"	40.23 (1022)	100313401
NW 25	3"	10.27 (261)	100313203
NW 25	3"	20.27 (515)	100313303
NW 25	3"	40.27 (1023)	100313403
NW 40	5"	10.28 (261)	100313205
NW 40	5"	20.28 (515)	100313305
NW 40	5"	40.28 (1023)	100313405
NW 50	6"	10.53 (268)	100313206
NW 50	6"	20.53 (522)	100313306
NW 50	6"	40.53 (1030)	100313406

ISO-KF Vacuum Flange Components

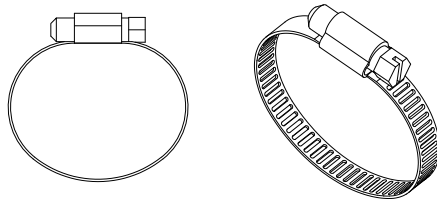


- Good for exhaust lines
- Wire molded in tube wall for reinforcement
- Larger OD PVC has limited flexibility in short lengths

PVC Hose in./(mm)

Flange Size (ISO)	A	Part Number
NW 10	0.50 (13)	100317500-100
NW 16	0.75 (19)	100317501-100
NW 25	1.00 (25)	100317503-100
NW 40	1.50 (38)	100317505-50
NW 50	2.00 (51)	100317506-50

PVC Hose Clamps in./(mm)



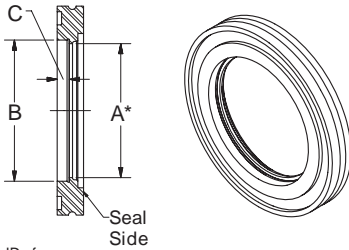
Flange Size (ISO)	A	Part Number
NW 10	1/2"	100000797
NW 16	3/4"	100000935
NW 25	1"	100000936
NW 40	1 1/2"	100000937
NW 50	2"	100000938

- Protects Flange Faces
- Plastic

Flange Protector Caps in./(mm)

Flange Size (ISO)	Part Number
NW 16	100310001
NW 25	100310003
NW 40	100310005
NW 50	100310006

ISO-MF and ISO-BF Vacuum Flange Components



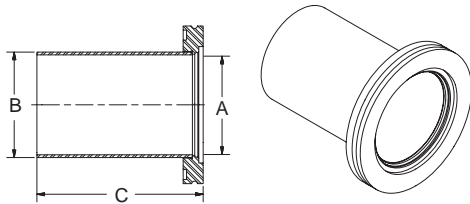
* Given as ID of suggested tubing

- Stainless steel type 304
- For internal weld
- Infinitely rotatable
- Made for inch tube and pipe diameters
- Use with clamps or rotatable bolt ring

Flange, Bored

in./(mm)

Flange Size (ISO)	Nominal Bore	A	B	C	Part Number
NW 63	2½"	2.37 (60)	2.50 (64)	0.22 (6)	100760206
NW 80	3"	2.87 (73)	3.00 (76)	0.22 (6)	100760208
NW 100	4"	3.87 (98)	4.00 (102)	0.22 (6)	100760210
NW 160	6"	5.83 (148)	6.00 (152)	0.22 (6)	100760216
NW 200	8"	7.76 (197)	8.00 (203)	0.22 (6)	100760220
NW 250	10"	9.75 (248)	10.00 (254)	0.22 (6)	100760225
NW 320	12¾"	12.42 (315)	12.75 (324)	0.30 (8)	100760232
NW 400	16"	15.62 (397)	16.00 (406)	0.30 (8)	100760240
NW 500	20"	19.62 (498)	20.00 (508)	0.30 (8)	100760250

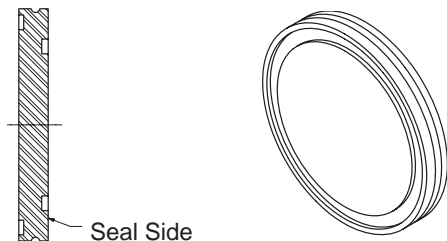


- Stainless steel type 304
- For butt weld
- Standard inch diameters
- Use with clamps or rotatable bolt ring

Flange, Long Weld Stub

in./(mm)

Flange Size (ISO)	Nominal Bore	A	B	C	Part Number
NW 63	2½"	2.37 (60)	2.50 (64)	3.94 (100)	100760406
NW 80	3"	2.87 (73)	3.00 (76)	3.94 (100)	100760408
NW 100	4" (.065" wall)	3.87 (98)	4.00 (102)	3.94 (100)	100760410
NW 100	4" (.083" wall)	3.87 (98)	4.00 (102)	3.94 (100)	100760411
NW 160	6"	5.83 (148)	6.00 (152)	3.94 (100)	100760416
NW 200	8"	7.76 (197)	8.00 (203)	3.94 (100)	100760420
NW 250	10"	9.75 (248)	10.00 (254)	3.94 (100)	100760425
NW 320	12¾"	12.42 (315)	12.75 (324)	3.94 (100)	100760432
NW 400	16"	15.62 (397)	16.00 (406)	3.94 (100)	100760440
NW 500	20"	19.62 (498)	20.00 (508)	3.94 (100)	100760450



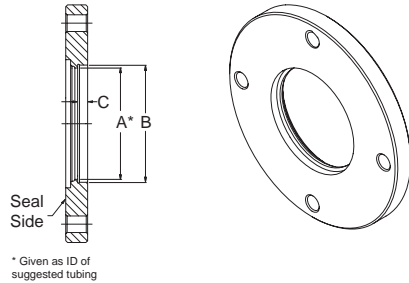
- Stainless steel type 304
- Infinitely rotatable
- To close off unused ports
- Use with clamps or rotatable bolt ring

Flange, Blank-Off

in./(mm)

Flange Size (ISO)	Part Number
NW 63	100760106
NW 80	100760108
NW 100	100760110
NW 160	100760116
NW 200	100760120
NW 250	100760125
NW 320	100760132
NW 400	100760140
NW 500	100760150

ISO-MF and ISO-BF Vacuum Flange Components

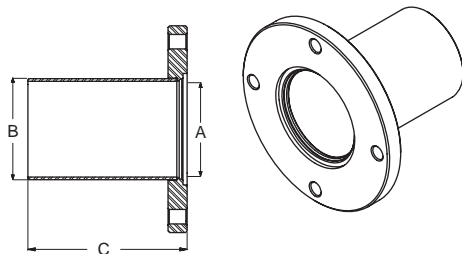


- Stainless steel type 304
- For use with bolts only
- For internal weld
- Made for inch tube and pipe diameters
- Tapped bolt holes on special order

Flange, Bolted, Bored

in./(mm)

Flange Size (ISO)	Nominal Bore	A	B	C	Part Number
NW 63	2½"	2.37 (60)	2.50 (64)	0.22 (6)	100762406
NW 80	3"	2.87 (73)	3.00 (76)	0.22 (6)	100762408
NW 100	4"	3.87 (98)	4.00 (102)	0.22 (6)	100762410
NW 160	6"	5.83 (148)	6.00 (152)	0.37 (10)	100762416
NW 200	8"	7.76 (197)	8.00 (203)	0.37 (10)	100762420
NW 250	10"	9.75 (248)	10.00 (254)	0.41 (11)	100762425
NW 320	12¾"	12.42 (315)	12.75 (324)	0.41 (11)	100762432
NW 400	16"	15.62 (397)	16.00 (406)	0.41 (11)	100762440
NW 500	20"	19.62 (498)	20.00 (508)	0.41 (11)	100762450
NW 630	24"	23.50 (597)	24.00 (610)	0.57 (15)	100762463

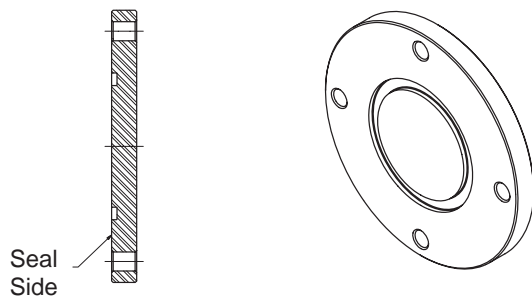


- Stainless steel type 304
- For butt weld
- For use with bolts only
- Made for inch tube and pipe diameters

Flange, Bolted, Weld Stub

in./(mm)

Flange Size (ISO)	Nominal Bore	A	B	C	Part Number
NW 63	2½"	2.37 (60)	2.50 (64)	3.94 (100)	100762706
NW 80	3"	2.87 (73)	3.00 (76)	3.94 (100)	100762708
NW 100	4" (.065" wall)	3.87 (98)	4.00 (102)	3.94 (100)	100762710
NW 160	6"	5.83 (148)	6.00 (152)	3.94 (100)	100762716
NW 200	8"	7.76 (197)	8.00 (203)	3.94 (100)	100762720
NW 250	10"	9.75 (248)	10.00 (254)	3.94 (100)	100762725
NW 320	12¾"	12.42 (315)	12.75 (324)	3.94 (100)	100762732
NW 400	16"	15.62 (397)	16.00 (406)	3.94 (100)	100762740
NW 500	20"	19.62 (498)	20.00 (508)	3.94 (100)	100762750
NW 630	24"	23.50 (597)	24.00 (610)	3.94 (100)	100762763



- Stainless steel type 304
- To close off unused ports or for special boring
- For use with bolts only
- Tapped bolt holes on special order

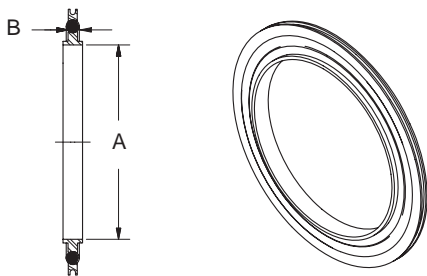
Flange, Bolted, Blank

in./(mm)

Flange Size (ISO)	Part Number
NW 63	100760306
NW 80	100760308
NW 100	100760310
NW 160	100760316
NW 200	100760320
NW 250	100760325
NW 320	100760332
NW 400	100760340
NW 500	100760350
NW 630	100760363

ISO-MF and ISO-BF Vacuum Flange Components

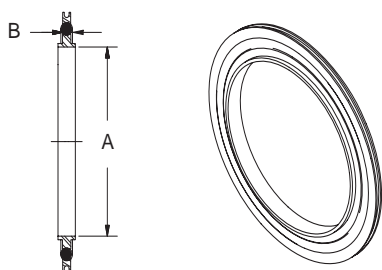
Seal, Centering Ring Assembly, Stainless Steel/Viton® in./(mm)



- Stainless steel centering ring
- Replaceable Viton O-Ring
- Aluminum spacer ring
- Rated to 150°C max

Flange Size (ISO)	A	B	Part Number
NW 63	2.63 (67)	0.15 (4)	100760506
NW 80	3.14 (80)	0.15 (4)	100760508
NW 100	3.89 (99)	0.15 (4)	100760510
NW 160	5.90 (150)	0.15 (4)	100760516
NW 200	8.26 (210)	0.15 (4)	100760520
NW 250	10.14 (258)	0.15 (4)	100760525
NW 320	12.30 (312)	0.22 (6)	100760532
NW 400	15.53 (395)	0.22 (6)	100760540
NW 500	19.51 (496)	0.22 (6)	100760550
NW 630	25.41 (645)	0.22 (6)	100760563

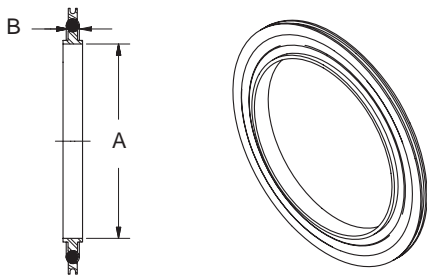
Seal, Centering Ring Assembly, Aluminum/Buna-N in./(mm)



- Aluminum centering ring
- Replaceable Buna-N O-Ring
- Aluminum spacer ring
- Rated to 80°C max.

Flange Size (ISO)	A	B	Part Number
NW 63	2.63 (67)	0.15 (4)	100760706
NW 80	3.14 (80)	0.15 (4)	100760708
NW 100	3.89 (99)	0.15 (4)	100760710
NW 160	5.90 (150)	0.15 (4)	100760716
NW 200	8.26 (210)	0.15 (4)	100760720
NW 250	10.14 (258)	0.15 (4)	100760725
NW 320	12.30 (312)	0.22 (6)	100760732
NW 400	15.53 (395)	0.22 (6)	100760740
NW 500	19.51 (496)	0.22 (6)	100760750
NW 630	25.41 (645)	0.22 (6)	100760763

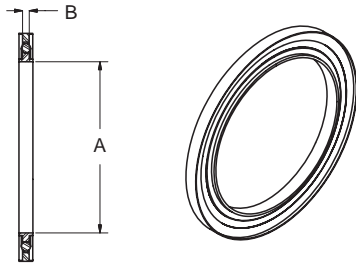
Seal, Centering Ring Assembly, Aluminum/Viton® in./(mm)



- Aluminum centering ring
- Replaceable Viton O-Ring
- Aluminum spacer ring
- Rated to 150°C max

Flange Size (ISO)	A	B	Part Number
NW 63	2.63 (67)	0.15 (4)	100760606
NW 80	3.14 (80)	0.15 (4)	100760608
NW 100	3.89 (99)	0.15 (4)	100760610
NW 160	5.90 (150)	0.15 (4)	100760616
NW 200	8.26 (210)	0.15 (4)	100760620
NW 250	10.14 (258)	0.15 (4)	100760625
NW 320	12.30 (312)	0.22 (6)	100760632
NW 400	15.53 (395)	0.22 (6)	100760640
NW 500	19.51 (496)	0.22 (6)	100760650
NW 630	25.41 (645)	0.22 (6)	100760663

ISO-MF and ISO-BF Vacuum Flange Components



- Stainless steel centering ring
- Replaceable Viton O-Ring
- Includes aluminum overpressure ring

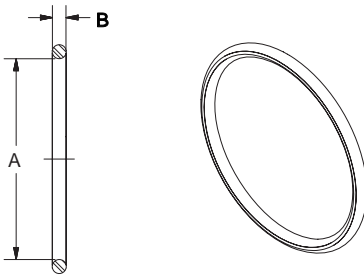
Seal, Overpressure Assembly

in./(mm)

Flange Size (ISO)	A	B	Part Number
NW 80	3.14 (80)	0.15 (4)	100938657
NW 100	3.89 (99)	0.15 (4)	100938658
NW 160	5.90 (150)	0.15 (4)	100937685

Seal, Replacement O-Ring, Viton®

in./(mm)

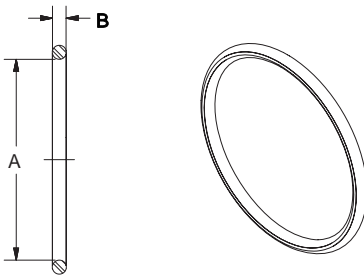


- Viton
- Standard US O-Ring sizes
- Bakeable to 150°C
- Replaceable seal for centering ring assembly

Flange Size (ISO)	Standard Number	A	B	Part Number
NW 63	2-336	2.85 (72)	0.21 (5)	100762006
NW 80	2-340	3.35 (85)	0.21 (5)	100762008
NW 100	2-346	4.10 (104)	0.21 (5)	100762010
NW 160	2-361	5.98 (152)	0.21 (5)	100762016
NW 200	2-371	8.48 (215)	0.21 (5)	100762020
NW 250	2-378	10.48 (266)	0.21 (5)	100762025
NW 320	2-454	12.48 (317)	0.28 (7)	100762032
NW 400	2-460	15.48 (393)	0.28 (7)	100762040
NW 500	2-468	19.46 (494)	0.28 (7)	100762050
NW 630	2-474	24.94 (634)	0.28 (7)	100762063

Seal, Replacement O-Ring, Buna-N

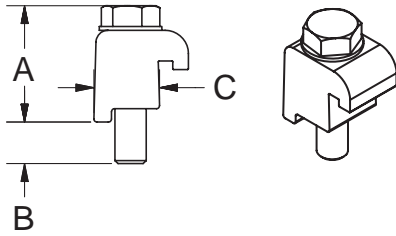
in./(mm)



- Buna-N
- Standard US O-Ring sizes
- Bakeable to 80°C
- Replaceable seal for centering ring assembly

Flange Size (ISO)	Standard Number	A	B	Part Number
NW 63	2-336	2.85 (72)	0.21 (5)	100761906
NW 80	2-340	3.35 (85)	0.21 (5)	100761908
NW 100	2-346	4.10 (104)	0.21 (5)	100761910
NW 160	2-361	5.98 (152)	0.21 (5)	100761916
NW 200	2-371	8.48 (215)	0.21 (5)	100761920
NW 250	2-378	10.48 (266)	0.21 (5)	100761925
NW 320	2-454	12.48 (317)	0.28 (7)	100761932
NW 400	2-460	15.48 (393)	0.28 (7)	100761940
NW 500	2-468	19.46 (494)	0.28 (7)	100761950
NW 630	2-474	24.94 (634)	0.28 (7)	100761963

ISO-MF and ISO-BF Vacuum Flange Components

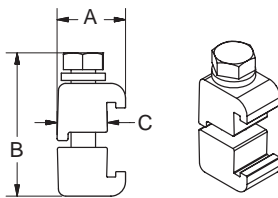


- Aluminum clamp
- Stainless steel bolt
- Stainless steel washer
- To join an MF flange to a tapped bolted flange

Clamp, Single Claw

n./(mm)

Flange Size (ISO)	Bolt Size	A	B	C	Part Number
NW 63	M 8	1.20 (30)	0.39 (10)	0.62 (16)	100761006
NW 80	M 8	1.20 (30)	0.39 (10)	0.62 (16)	100761006
NW 100	M 8	1.20 (30)	0.39 (10)	0.62 (16)	100761006
NW 160	M 10	1.25 (32)	0.39 (10)	0.80 (20)	100761016
NW 200	M 10	1.25 (32)	0.39 (10)	0.80 (20)	100761016
NW 250	M 10	1.25 (32)	0.39 (10)	0.80 (20)	100761016
NW 320	M 12	1.57 (40)	0.72 (18)	1.04 (26)	100761032
NW 400	M 12	1.57 (40)	0.72 (18)	1.04 (26)	100761040
NW 500	M 12	1.57 (40)	0.72 (18)	1.04 (26)	100761040

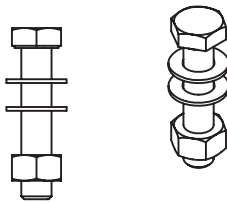


- Aluminum clamp
- Stainless steel bolt
- Stainless steel washer
- To join a pair of MF flange

Clamp, Double Claw

in./(mm)

Flange Size (ISO)	A	B	C	Part Number
NW 63	0.95 (24)	1.98 (50)	0.63 (16)	100761106
NW 80	0.95 (24)	1.98 (50)	0.63 (16)	100761106
NW 100	0.95 (24)	1.98 (50)	0.63 (16)	100761106
NW 160	1.10 (28)	2.05 (52)	0.80 (20)	100761116
NW 200	1.10 (28)	2.05 (52)	0.80 (20)	100761116
NW 250	1.10 (28)	2.05 (52)	0.80 (20)	100761116
NW 320	1.34 (34)	2.56 (65)	1.04 (26)	100761132
NW 400	1.34 (34)	2.56 (65)	1.04 (26)	100761140
NW 500	1.34 (34)	2.56 (65)	1.04 (26)	100761140



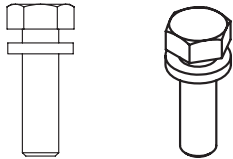
- Stainless steel
- To join two bolted flange
- Nuts and washers included

Bolt and Nut Set

in./(mm)

Flange Size (ISO)	Bolt Size	No. in Set	Pitch (mm)	Part Number
NW 63	M 8 x 40	4	1.25	100761206
NW 80	M 8 x 40	8	1.25	100761208
NW 100	M 8 x 40	8	1.25	100761208
NW 160	M 10 x 50	8	1.50	100761216
NW 200	M 10 x 50	12	1.50	100761220
NW 250	M 10 x 50	12	1.50	100761220
NW 320	M 12 x 60	12	1.75	100761232
NW 400	M 12 x 60	16	1.75	100761240
NW 500	M 12 x 60	16	1.75	100761240
NW 630	M 12 x 65	20	1.75	100761263

ISO-MF and ISO-BF Vacuum Flange Components

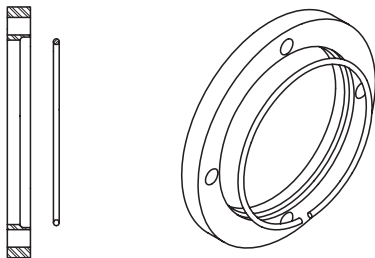


- Stainless steel
- Bolted flange to tapped flange
- Includes washer

Bolt Set

in./(mm)

Flange Size (ISO)	Bolt Size	No. in Set	Pitch (mm)	Part Number
NW 63	M 8 x 30	4	1.25	100761306
NW 80	M 8 x 30	8	1.25	100761308
NW 100	M 8 x 30	8	1.25	100761308
NW 160	M 10 x 35	8	1.50	100761316
NW 200	M 10 x 35	12	1.50	100761320
NW 250	M 10 x 35	12	1.50	100761320
NW 320	M 12 x 45	12	1.75	100761332
NW 400	M 12 x 45	16	1.75	100761340
NW 500	M 12 x 45	16	1.75	100761340
NW 630	M 12 x 55	20	1.75	100761363

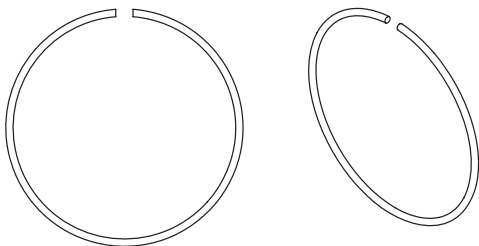


- Aluminum
- Use with MF flange
- Steel retaining ring included
- O.D. and bolt pattern same as bolted flange

Ring, Rotatable Bolt

in./(mm)

Flange Size (ISO)	Part Number
NW 63	100762806
NW 80	100762808
NW 100	100762810
NW 160	100762816
NW 200	100762820
NW 250	100762825
NW 320	100762832
NW 400	100762840
NW 500	100762850



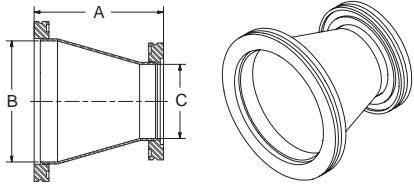
- Stainless steel
- Retains bolt ring

Ring, Retaining

in./(mm)

Flange Size (ISO)	Part Number
NW 63	100762906
NW 80	100762908
NW 100	100762910
NW 160	100762916
NW 200	100762920
NW 250	100762925
NW 320	100762932
NW 400	100762940
NW 500	100762950

ISO-MF and ISO-BF Vacuum Flange Components

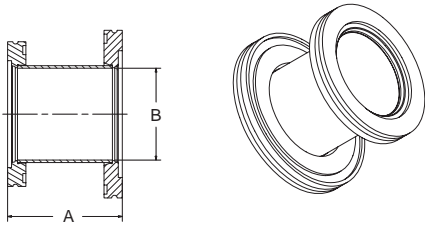


- Stainless steel type 304
- Other combinations available on request
- High conductance adapter

Conic Reducer

in./(mm)

Flange Size (ISO)	A	B	C	Part Number
NW 63 to NW 80	4.14 (105)	2.87 (73)	2.37 (60)	100764906
NW 63 to NW 100	4.14 (105)	3.83 (97)	2.37 (60)	100764917
NW 80 to NW 100	4.14 (105)	3.83 (97)	2.87 (73)	100764908
NW 80 to NW 160	9.52 (242)	5.78 (147)	2.87 (73)	100764927
NW 100 to NW 160	9.52 (242)	5.78 (147)	3.83 (97)	100764910



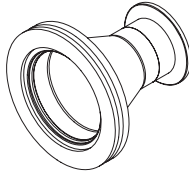
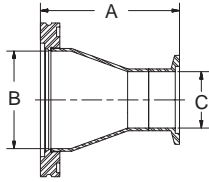
- Stainless steel type 304
- Short overall length

Step Reducer

in./(mm)

Flange Size (ISO)	A	B	Part Number
NW 63 to NW 80	2.95 (75)	2.31 (59)	100762506
NW 63 to NW 100	2.95 (75)	2.31 (59)	100762517
NW 63 to NW 160	2.95 (75)	2.31 (59)	100762527
NW 80 to NW 100	2.95 (75)	2.87 (73)	100762508
NW 100 to NW 160	2.95 (75)	3.87 (98)	100762510

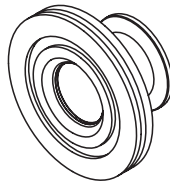
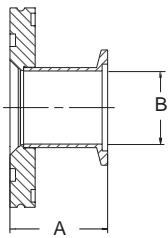
ISO-MF and ISO-BF Vacuum Flange Components



- Stainless steel type 304
- Special adapters available upon request
- High conductance adapter

Conic Adapter, ISO-MF Flange to ISO-KF Flange in./(mm)

Flange Size (ISO)	A	B	C	Part Number
NW 63 to NW 40	3.39 (86)	2.37 (60)	1.37 (35)	100765006
NW 63 to NW 50	3.39 (86)	2.37 (60)	1.87 (47)	100765017
NW 80 to NW 40	4.64 (118)	2.87 (73)	1.37 (35)	100765016
NW 80 to NW 50	4.64 (118)	2.87 (73)	1.87 (47)	100765008
NW 100 to NW 50	4.64 (118)	3.83 (97)	1.87 (47)	100765018

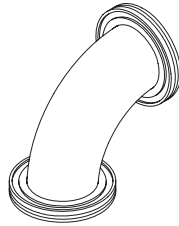
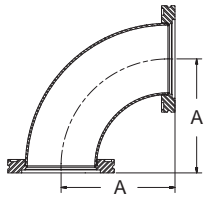


- Stainless steel type 304
- With O-ring groove
- Special adapters available upon request
- Short overall length

Step Adapter, ISO-MF Flange to ISO-KF Flange in./(mm)

Flange Size (ISO)	A	B	Part Number
NW 63 to NW 40	1.77 (45)	1.37 (35)	100762606
NW 63 to NW 50	1.77 (45)	1.87 (47)	100762617
NW 80 to NW 40	1.77 (45)	1.37 (35)	100762616
NW 80 to NW 50	1.77 (45)	1.87 (47)	100762608
NW 100 to NW 40	1.77 (45)	1.37 (35)	100762620
NW 100 to NW 50	1.77 (45)	1.87 (47)	100762618

ISO-MF and ISO-BF Vacuum Flange Components

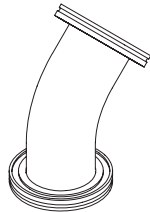
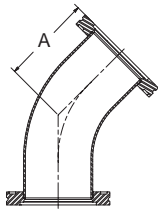


- Stainless steel type 304
- ISO-MF flange , same size both ports

90° Elbow, Smooth Radius

in./(mm)

Flange Size (ISO)	A	Part Number
NW 63	4.00 (102)	100764606
NW 80	4.74 (120)	100764608
NW 100	6.24 (158)	100764610
NW 160	9.24 (235)	100764616



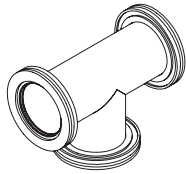
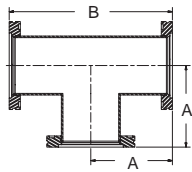
- Stainless steel type 304
- ISO-MF flange , same size both ports

45° Elbow, Smooth Radius

in./(mm)

Flange Size (ISO)	A	Part Number
NW 63	3.25 (83)	100764406
NW 80	3.93 (100)	100764408
NW 100	5.03 (128)	100764410
NW 160	5.49 (139)	100764416

ISO-MF and ISO-BF Vacuum Flange Components

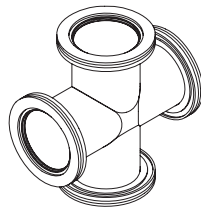
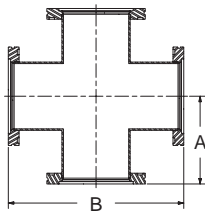


- Stainless steel type 304
- ISO-MF flange , same size all ports
- Standard flang face to centerline dimensions
- Larger sizes available on request

Tee

in./(mm)

Flange Size (ISO)	A	B	Part Number
NW 63	3.46 (88)	6.92 (176)	100761406
NW 80	3.86 (98)	7.72 (196)	100761408
NW 100	4.25 (108)	8.50 (216)	100761410
NW 160	5.43 (138)	10.86 (276)	100761416
NW 200	6.61 (168)	13.22 (336)	100761420
NW 250	8.19 (208)	16.38 (416)	100761425
NW 320	12.60 (320)	25.20 (640)	100761432



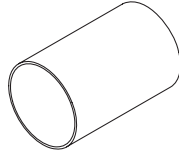
- Stainless steel type 304
- ISO-MF flange , same size all ports
- Standard flang face to centerline dimensions
- Larger sizes available on request

Cross

in./(mm)

Flange Size (ISO)	A	B	Part Number
NW 63	3.46 (88)	6.92 (176)	100761506
NW 80	3.86 (98)	7.72 (196)	100761508
NW 100	4.25 (108)	8.50 (216)	100761510
NW 160	5.43 (138)	10.86 (276)	100761516
NW 200	6.61 (168)	13.22 (336)	100761520
NW 250	8.19 (208)	16.38 (416)	100761525
NW 320	12.60 (320)	25.20 (640)	100761532

ISO-MF and ISO-BF Vacuum Flange Components

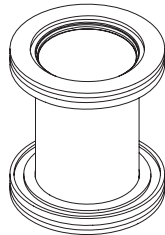
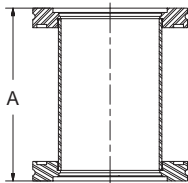


- Stainless steel type 304
- Tube ends deburred, cleaned and capped
- Price per 10 foot length of tube

Tubing

in./(mm)

Flange Size (ISO)	A	B	Part Number
NW 63	2½"	.065"	100764506
NW 80	3"	.065"	100764508
NW 100	4"	.065"	100764510
NW 100	4"	.083"	100764511
NW 160	6"	.083"	100764516
NW 200	8"	.120"	100764520
NW 250	10"	.125"	100764525



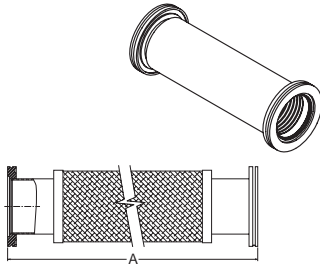
- Stainless steel type 304
- Special lengths to order
- MF type flange

Straight Section

in./(mm)

Flange Size (ISO)	A	Part Number
NW 63	6.92 (176)	100761706
NW 63	4.18 (106)	100761707
NW 80	7.72 (196)	100761708
NW 80	4.18 (106)	100761709
NW 100	8.50 (216)	100761710
NW 100	4.18 (106)	100761711
NW 160	10.86 (276)	100761716
NW 160	4.18 (106)	100761717
NW 200	13.22 (336)	100761720
NW 200	4.18 (106)	100761721
NW 250	16.38 (416)	100761725
NW 250	4.18 (106)	100761726

ISO-MF and ISO-BF Vacuum Flange Components

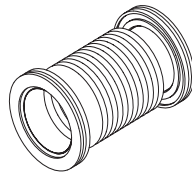
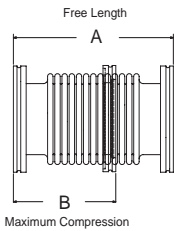


- Ideal for rough pumping line
- Stainless steel
- Flexible, yet resistant to contraction

Braided Metal Hose

in./(mm)

Flange Size (ISO)	A	Static Bend Radius	Part Number
NW 63	10.74 (273)	7.50 (191)	100766006
NW 63	20.74 (527)	7.50 (191)	100766106
NW 63	40.74 (1035)	7.50 (191)	100766206
NW 80	10.74 (273)	8.75 (222)	100766008
NW 80	20.74 (527)	8.75 (222)	100766108
NW 80	40.74 (1035)	8.75 (222)	100766208
NW 100	10.74 (273)	10.00 (254)	100766010
NW 100	20.74 (527)	10.00 (254)	100766110
NW 100	40.74 (1035)	10.00 (254)	100766210



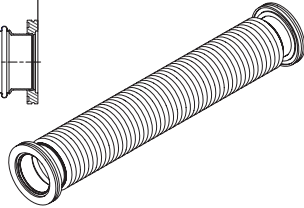
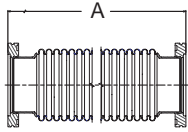
- CAUTION:
Flanges must be supported to prevent collapsing when subjected to vacuum
- Stainless steel
- Formed bellows
- Bellows buttwelded
- Thin wall
- Flexible

Bellows, Section

in./(mm)

Flange Size (ISO)	A	B	Part Number
NW 63	5.90 (150)	4.50 (115)	100763506G
NW 80	5.90 (150)	4.50 (115)	100763508G
NW 100	5.90 (150)	4.50 (115)	100763510G
NW 160	7.90 (200)	5.70 (145)	100763516G
NW 200	9.80 (250)	6.90 (175)	100763520G
NW 250	11.80 (300)	8.10 (205)	100763525G

ISO-MF and ISO-BF Vacuum Flange Components

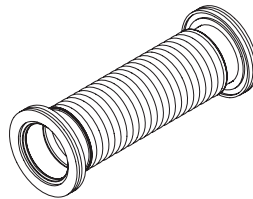
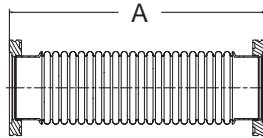


- CAUTION:**
Flanges must be supported to prevent collapsing when subjected to vacuum
- Unsheathed
 - Stainless steel
 - Formed metal
 - Special lengths on request
 - Hose buttwelded

Metal Hose, Thick Wall

in./(mm)

Flange Size (ISO)	Static Bend Radius	A	Part Number
NW 63	6½"	19.69 (500)	100763606
NW 63	6½"	39.40 (1000)	100763706
NW 80	7"	19.69 (500)	100763608
NW 80	7"	39.40 (1000)	100763708
NW 100	11"	19.69 (500)	100763610
NW 100	11"	39.40 (1000)	100763710
NW 160	17"	19.69 (500)	100763616
NW 160	17"	39.40 (1000)	100763716
NW 200	18"	19.69 (500)	100763620
NW 200	18"	39.40 (1000)	100763720
NW 250	24"	19.69 (500)	100763625
NW 250	24"	39.40 (1000)	100763725



- **CAUTION:**
Flanges must be supported to prevent collapsing when subjected to vacuum
- Unsheathed
- Stainless steel
- Formed metal
- Flexible
- Hose buttwelded

Metal Hose, Thin Wall

in./(mm)

Flange Size (ISO)	A	Part Number
NW 63	9.84 (250)	100763806
NW 63	19.69 (500)	100763906
NW 63	39.40 (1000)	100764006
NW 80	9.84 (250)	100763808
NW 80	19.69 (500)	100763908
NW 80	39.40 (1000)	100764008
NW 100	9.84 (250)	100763810
NW 100	19.69 (500)	100763910

- Protects flange faces
- Plastic

Flange Protector Cap

in./(mm)

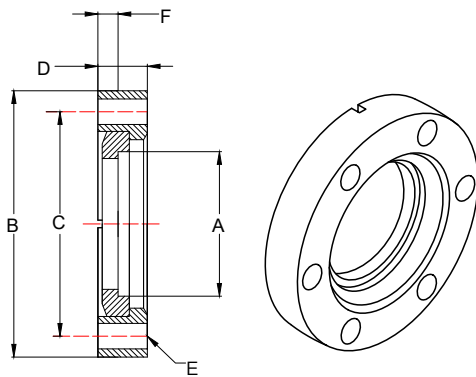
Flange Size (ISO)	Part Number
NW 63	100760006
NW 80	100760008
NW 100	100760010
NW 160	100005788

CF UHV Flange Components and Fittings

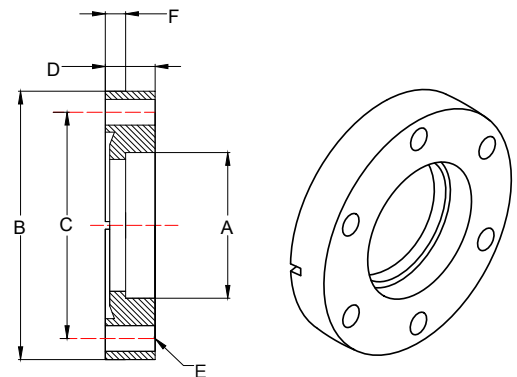
CF Flange Dimensions

in/(mm)

Flange Size	A Nominal Tube Diameter	B Flange Outside Diameter	C Bolt Circle Diameter	D Thickness	E Number of Holes	Tapped Holes Thread	Thru Holes Diameter	F Face to Counter Bore
1 1/3	.75 (19)	1.33 (34)	1.06 (27)	.30 (8)	6	8-32	.172 (4.3)	.18 (4.6)
2 1/8	1.00 (25)	2.12 (54)	1.62 (41)	.50 (13)	4	1/4-28	.265 (6.7)	.17 (4.3)
2 3/4	1.50 (38)	2.75 (70)	2.31 (59)	.50 (13)	6	1/4-28	.265 (6.7)	.21 (5.3)
3 3/8	2.00 (51)	3.38 (86)	2.85 (72)	.69 (18)	8	5/16-24	.332 (8.4)	.22 (5.6)
4 1/2	2.50 (64)	4.50 (114)	3.63 (92)	.69 (18)	8	5/16-24	.332 (8.4)	.38 (9.6)
4 5/8	3.01 (76)	4.61 (118)	4.03 (102)	.75 (19)	10	5/16-24	.332 (8.4)	.38 (9.6)



Rotatable



Non-Rotatable

CF Flanges

in/(mm)

Flange Size	For Tubing OD	Rotatable / Non-Rotatable	Bolt Holes	Part Number
1 1/3	Blank	Rotatable	Thru	100881014
1 1/3	Blank	Rotatable	Tapped	100881021
1 1/3	Blank	Non-Rotatable	Thru	100881000
1 1/3	Blank	Non-Rotatable	Tapped	100881007
1 1/3	.75 (19)	Rotatable	Thru	100881018
1 1/3	.75 (19)	Rotatable	Tapped	100881025
1 1/3	.75 (19)	Non-Rotatable	Thru	100881004
1 1/3	.75 (19)	Non-Rotatable	Tapped	100881011
2 1/8	Blank	Rotatable	Thru	100882010
2 1/8	Blank	Rotatable	Tapped	100882015
2 1/8	Blank	Non-Rotatable	Thru	100882000
2 1/8	Blank	Non-Rotatable	Tapped	100882005
2 1/8	.25 (6)	Rotatable	Thru	100882011
2 1/8	.25 (6)	Rotatable	Tapped	100882016
2 1/8	.25 (6)	Non-Rotatable	Thru	100882001
2 1/8	.25 (6)	Non-Rotatable	Tapped	100882006
2 1/8	.50 (13)	Rotatable	Thru	100882012
2 1/8	.50 (13)	Rotatable	Tapped	100882017
2 1/8	.50 (13)	Non-Rotatable	Thru	100882002
2 1/8	.50 (13)	Non-Rotatable	Tapped	100882007
2 1/8	.75 (19)	Rotatable	Thru	100882013
2 1/8	.75 (19)	Rotatable	Tapped	100882018
2 1/8	.75 (19)	Non-Rotatable	Thru	100882003
2 1/8	.75 (19)	Non-Rotatable	Tapped	100882008
2 1/8	1.00 (25)	Rotatable	Thru	100882014
2 1/8	1.00 (25)	Rotatable	Tapped	100882019
2 1/8	1.00 (25)	Non-Rotatable	Thru	100882004
2 1/8	1.00 (25)	Non-Rotatable	Tapped	100882009
2 3/4	Blank	Rotatable	Thru	100883014
2 3/4	Blank	Rotatable	Tapped	100883021

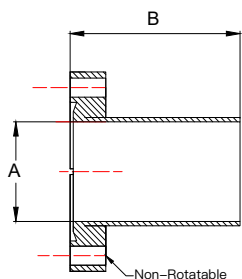
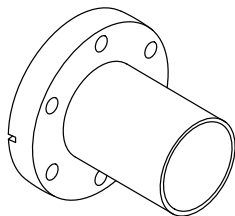
CF UHV Flange Components and Fittings

CF Flanges

in/(mm)

Flange Size	For Tubing OD	Rotatable / Non-Rotatable	Bolt Holes	Part Number
2 3/4	Blank	Non-Rotatable	Thru	100883000
2 3/4	Blank	Non-Rotatable	Tapped	100883007
2 3/4	.25 (6)	Rotatable	Thru	100883015
2 3/4	.25 (6)	Rotatable	Tapped	100883022
2 3/4	.25 (6)	Non-Rotatable	Thru	100883001
2 3/4	.25 (6)	Non-Rotatable	Tapped	100883008
2 3/4	.50 (13)	Rotatable	Thru	100883016
2 3/4	.50 (13)	Rotatable	Tapped	100883023
2 3/4	.50 (13)	Non-Rotatable	Thru	100883002
2 3/4	.50 (13)	Non-Rotatable	Tapped	100883009
2 3/4	.75 (19)	Rotatable	Thru	100883017
2 3/4	.75 (19)	Rotatable	Tapped	100883024
2 3/4	.75 (19)	Non-Rotatable	Thru	100883003
2 3/4	.75 (19)	Non-Rotatable	Tapped	100883010
2 3/4	1.00 (25)	Rotatable	Thru	100883018
2 3/4	1.00 (25)	Rotatable	Tapped	100883025
2 3/4	1.00 (25)	Non-Rotatable	Thru	100883004
2 3/4	1.00 (25)	Non-Rotatable	Tapped	100883011
2 3/4	1.25 (32)	Rotatable	Thru	100883019
2 3/4	1.25 (32)	Rotatable	Tapped	100883026
2 3/4	1.25 (32)	Non-Rotatable	Thru	100883005
2 3/4	1.25 (32)	Non-Rotatable	Tapped	100883012
2 3/4	1.50 (38)	Rotatable	Thru	100883020
2 3/4	1.50 (38)	Rotatable	Tapped	100883027
2 3/4	1.50 (38)	Non-Rotatable	Thru	100883006
2 3/4	1.50 (38)	Non-Rotatable	Tapped	100883013
2 3/4	1.75 (45)	Rotatable	Thru	100883065
2 3/4	1.75 (45)	Rotatable	Tapped	100883067
2 3/4	1.75 (45)	Non-Rotatable	Thru	100883064
2 3/4	1.75 (45)	Non-Rotatable	Tapped	100883066
3 3/8	Blank	Rotatable	Thru	100884006
3 3/8	Blank	Rotatable	Tapped	100884009
3 3/8	Blank	Non-Rotatable	Thru	100884000
3 3/8	Blank	Non-Rotatable	Tapped	100884003
3 3/8	1.50 (38)	Rotatable	Thru	100884007
3 3/8	1.50 (38)	Rotatable	Tapped	100884010
3 3/8	1.50 (38)	Non-Rotatable	Thru	100884001
3 3/8	1.50 (38)	Non-Rotatable	Tapped	100884004
3 3/8	2.00 (51)	Rotatable	Thru	100884008
3 3/8	2.00 (51)	Rotatable	Tapped	100884011
3 3/8	2.00 (51)	Non-Rotatable	Thru	100884002
3 3/8	2.00 (51)	Non-Rotatable	Tapped	100884005
4 1/2	Blank	Rotatable	Thru	100885008
4 1/2	Blank	Rotatable	Tapped	100885012
4 1/2	Blank	Non-Rotatable	Thru	100885000
4 1/2	Blank	Non-Rotatable	Tapped	100885004
4 1/2	1.50 (38)	Rotatable	Thru	100885009
4 1/2	1.50 (38)	Rotatable	Tapped	100885013
4 1/2	1.50 (38)	Non-Rotatable	Thru	100885001
4 1/2	1.50 (38)	Non-Rotatable	Tapped	100885005
4 1/2	2.00 (51)	Rotatable	Thru	100885010
4 1/2	2.00 (51)	Rotatable	Tapped	100885014
4 1/2	2.00 (51)	Non-Rotatable	Thru	100885002
4 1/2	2.00 (51)	Non-Rotatable	Tapped	100885006
4 1/2	2.50 (64)	Rotatable	Thru	100885011
4 1/2	2.50 (64)	Rotatable	Tapped	100885015
4 1/2	2.50 (64)	Non-Rotatable	Thru	100885003
4 1/2	2.50 (64)	Non-Rotatable	Tapped	100885007
4 5/8	Blank	Rotatable	Thru	100885504
4 5/8	Blank	Rotatable	Tapped	100885506
4 5/8	Blank	Non-Rotatable	Thru	100885500
4 5/8	Blank	Non-Rotatable	Tapped	100885502
4 5/8	3.00 (76)	Rotatable	Thru	100885505
4 5/8	3.00 (76)	Rotatable	Tapped	100885507
4 5/8	3.00 (76)	Non-Rotatable	Thru	100885501
4 5/8	3.00 (76)	Non-Rotatable	Tapped	100885503

CF UHV Flange Components and Fittings

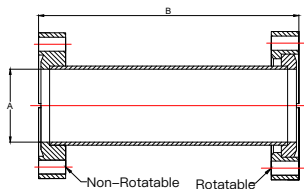
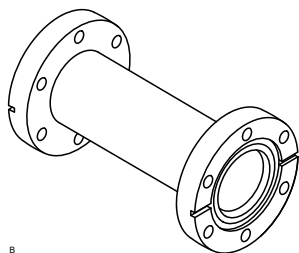


- Butt weld
- For use with orbital welders
- Thru holes

CF Half Nipple

in./(mm)

Flange Size	For Tubing Size (OD)	A	B	Part Number
1 1/3	.75 (19)	.62 (16)	1.50 (38)	100881046
2 1/8	1.00 (25)	.87 (22)	2.05 (52)	100882040
2 3/4	1.50 (38)	1.37 (35)	2.43 (62)	100883049
3 3/8	2.00 (51)	1.87 (47)	3.21 (82)	100884027
4 1/2	2.50 (64)	2.37 (60)	4.13 (105)	100885032
4 5/8	3.00 (76)	2.87 (73)	4.93 (125)	100885531



- Special lengths to order
- Thru holes

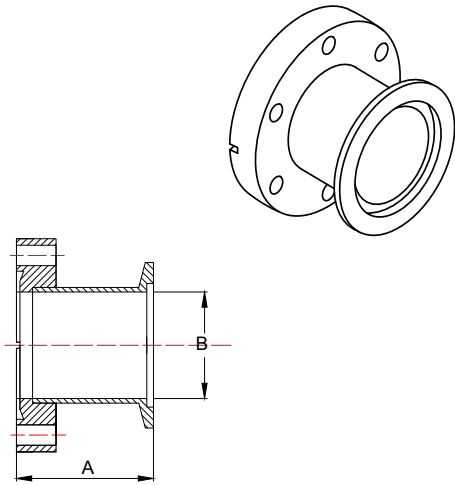
* Includes 12 mesh screen, 1/2" in from rotatable port

CF Full Nipple

in./(mm)

Flange Size	For Tubing Size (OD)	A	B	Part Number
1 1/3	.75 (19)	.62 (16)	3.00 (76)	100881047
2 1/8	1.00 (25)	.87 (22)	4.10 (104)	100882041
2 3/4	1.50 (38)	1.37 (35)	4.92 (125)	100883050
2 3/4*	1.50 (38)	1.37 (35)	4.00 (102)	100883069
3 3/8	2.00 (51)	1.87 (47)	6.42 (163)	100884028
4 1/2	2.50 (64)	2.37 (60)	8.26 (210)	100885033
4 5/8	3.00 (76)	2.87 (73)	9.88 (250)	100885532

CF UHV Flange Components and Fittings

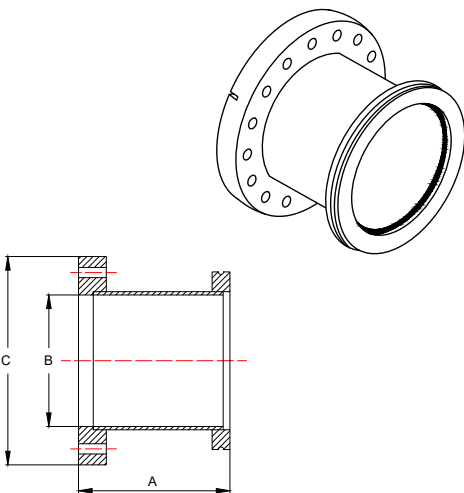


- Stainless steel type 304

Adapter, ISO-KF to CF

in./(mm)

Flange Size (KF)	Flange Size (CF)	A	B	Part Number
NW 16	Mini 1 1/3	2.08 (53)	0.62 (16)	100315601
NW 16	2 3/4	1.78 (45)	0.62 (16)	100315611
NW 25	2 1/8	1.89 (48)	0.87 (22)	100319812
NW 25	2 3/4	1.78 (45)	0.87 (22)	100315603
NW 40	2 3/4	1.78 (45)	1.33 (34)	100315605
NW 50	2 3/4	2.11 (54)	1.37 (35)	100319813
NW 50	4 1/2	1.95 (50)	1.83 (46)	100315606



- Stainless steel type 304
- Special adapters available upon request

Adapter, ISO-MF Flange to CF Flange

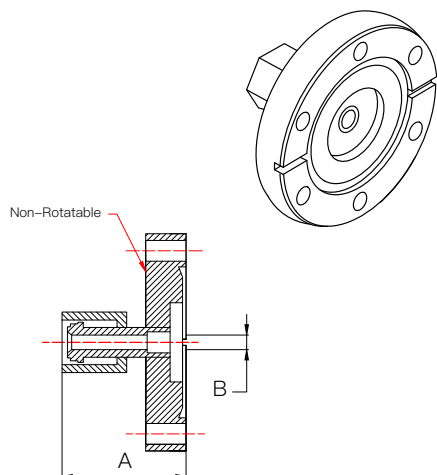
in./(mm)

Flange Size	A	B	C	Part Number
NW 63 to 4 1/2" CF	4.33 (110)	2.37 (60)	4.50 (114)	100762206

CF UHV Flange Components and Fittings

Adapter, CF to VCR® Female*

in./(mm)

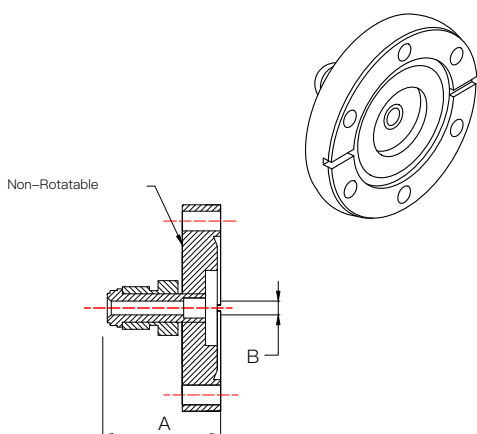


- Thru holes
- VCR-compatible parts may be used

Flange Size	A	B	VCR Size	Part Number
1 1/3 to 4 VCR	1.43 (36)	.19 (5)	1/4	100881049
2 1/8 to 4 VCR	1.50 (38)	.19 (5)	1/4	100882032
2 1/8 to 8 VCR	1.69 (43)	.41 (10)	1/2	100882033
2 1/8 to 12 VCR	2.19 (56)	.62 (16)	3/4	100882036
2 3/4 to 4 VCR	1.50 (38)	.19 (5)	1/4	100883054
2 3/4 to 8 VCR	1.69 (43)	.41 (10)	1/2	100883057
2 3/4 to 12 VCR	2.19 (56)	.62 (16)	3/4	100883058
3 3/8 to 4 VCR	1.80 (46)	.19 (5)	1/4	100884033
3 3/8 to 8 VCR	1.88 (48)	.41 (10)	1/2	100884035
3 3/8 to 12 VCR	2.38 (60)	.62 (16)	3/4	100884037

Adapter, CF to VCR® Male*

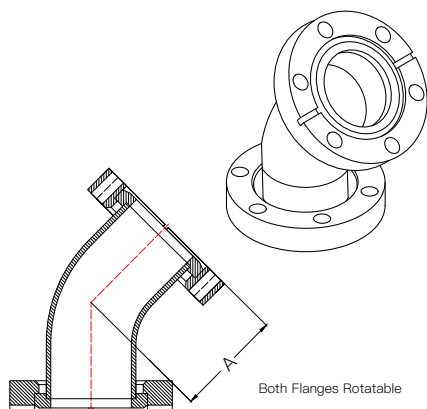
in./(mm)



- Thru holes
- VCR-compatible parts may be used

Flange Size	A	B	VCR Size	Part Number
1 1/3 to 4 VCR	1.43 (36)	.19 (5)	1/4	100881050
2 1/8 to 4 VCR	1.50 (38)	.19 (5)	1/4	100882031
2 1/8 to 8 VCR	1.69 (43)	.41 (10)	1/2	100882034
2 1/8 to 12 VCR	2.19 (56)	.62 (16)	3/4	100882035
2 3/4 to 4 VCR	1.50 (38)	.19 (5)	1/4	100883055
2 3/4 to 8 VCR	1.69 (43)	.41 (10)	1/2	100883056
2 3/4 to 12 VCR	2.19 (56)	.62 (16)	3/4	100883059
3 3/8 to 4 VCR	1.80 (46)	.19 (5)	1/4	100884032
3 3/8 to 8 VCR	1.88 (48)	.41 (10)	1/2	100884034
3 3/8 to 12 VCR	2.38 (60)	.62 (16)	3/4	100884036

CF UHV Flange Components and Fittings

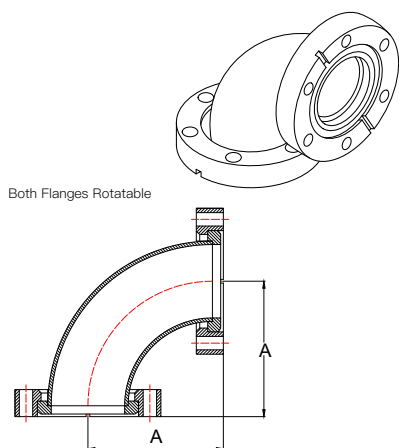


- Flanges same size on both sides

CF Elbow 45° Smooth Radius

in./(mm)

Flange Size	For Tubing OD	A	Part Number
1 1/3	.75 (19)	.81 (21)	100881052
2 1/8	1.00 (25)	1.35 (34)	100882038
2 3/4	1.50 (38)	1.82 (46)	100883061
3 3/8	2.00 (51)	2.53 (64)	100884039
4 1/2	2.50 (64)	3.37 (86)	100885037
4 5/8	3.00 (76)	4.05 (103)	100885528



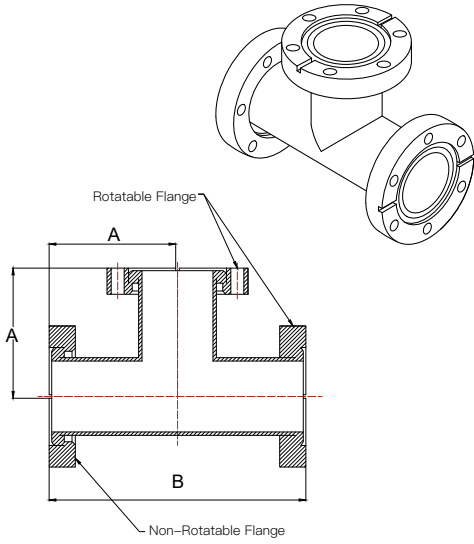
- Flanges same size on both sides

CF Elbow 90° Smooth Radius

in./(mm)

Flange Size	For Tubing OD	A	Part Number
1 1/3	.75 (19)	1.50 (38)	100881030
2 1/8	1.00 (25)	2.22 (56)	100882039
2 3/4	1.50 (38)	2.46 (63)	100883030
3 3/8	2.00 (51)	3.21 (82)	100884014
4 1/2	2.50 (64)	4.13 (105)	100885018
4 5/8	3.00 (76)	4.86 (123)	100885529

CF UHV Flange Components and Fittings

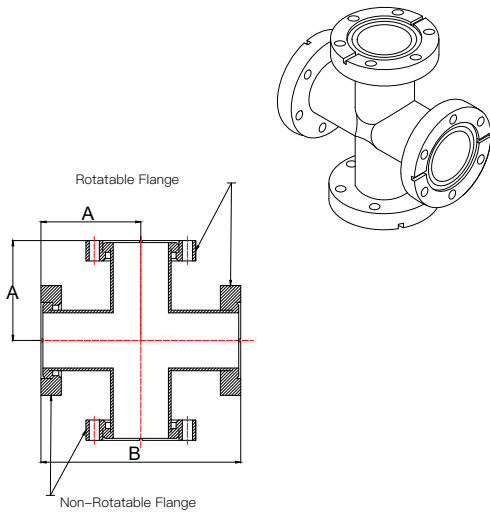


- Flanges same size on all sides

CF Tee

in./(mm)

Flange Size	For Tubing OD	A	B	Part Number
1 1/3	.75 (19)	1.50 (38)	3.00 (76)	100881028
2 1/8	1.00 (25)	2.06 (52)	4.12 (105)	100882042
2 3/4	1.50 (38)	2.46 (63)	4.92 (125)	100883028
3 3/8	2.00 (51)	3.21 (82)	6.42 (166)	100884012



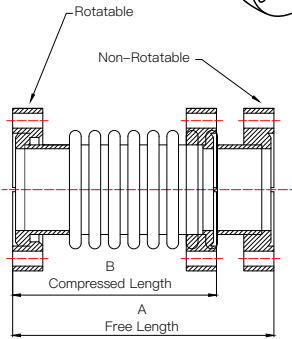
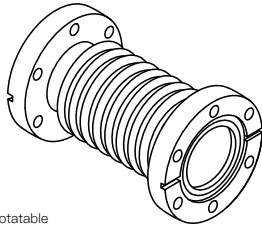
- Flanges same size on all sides

CF Cross

in./(mm)

Flange Size	For Tubing OD	A	B	Part Number
1 1/3	.75 (19)	1.50 (38)	3.00 (76)	100881029
2 1/8	1.00 (25)	2.06 (52)	4.12 (105)	100882043
2 3/4	1.50 (38)	2.46 (63)	4.92 (125)	100883029
3 3/8	2.00 (51)	3.21 (82)	6.42 (166)	100884013

CF UHV Flange Components and Fittings

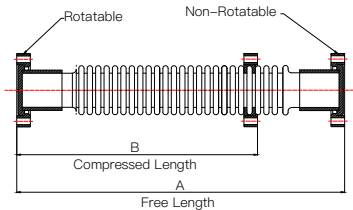
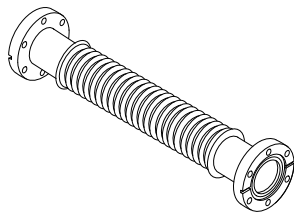


- Type 321 stainless steel
- Flexible coupling for vibrations and alignment
- Thru holes

Bellows Section

in./(mm)

Flange Size	Static Bend Radius	A	B	Spring Rate (lb/in)	Part Number
1 1/3	3.0 (76)	4.15 (105)	3.80 (97)	70	100881045
2 1/8	4.0 (102)	3.41 (86)	3.20 (81)	58	100882028
2 3/4	5.5 (140)	4.15 (105)	3.20 (81)	61	100883047
3 3/8	8.0 (203)	4.29 (109)	3.20 (81)	58	100884025



- Type 321 stainless steel
- Special lengths to order
- Both ends must be supported for the 4 1/2 and 6 inch sizes

Thin Wall Metal Hose

in./(mm)

Flange Size	Static Bend Radius	A	B	Wall Thickness	Spring Rate (lb/in)	Part Number
1 1/3	1.63 (41)	11.3 (287)	7.8 (198)	.006 (.152)	27	100881032
1 1/3	1.63 (41)	21.2 (539)	13.8 (351)	.006 (.152)	12	100881033
1 1/3	1.63 (41)	40.9 (1039)	25.6 (650)	.006 (.152)	9	100881034
2 1/8	1.38 (35)	11.3 (287)	7.8 (198)	.006 (.152)	16	100882020
2 1/8	1.38 (35)	22.1 (561)	14.7 (373)	.006 (.152)	7	100882021
2 1/8	1.38 (35)	41.8 (1062)	26.5 (673)	.006 (.152)	3	100882022
2 3/4	2.50 (64)	12.3 (312)	8.7 (221)	.006 (.152)	9	100883032
2 3/4	2.50 (64)	22.1 (561)	14.1 (358)	.006 (.152)	4	100883033
2 3/4	2.50 (64)	41.9 (1064)	25.0 (635)	.006 (.152)	2	100883034
3 3/8	3.25 (83)	13.3 (338)	10.5 (267)	.006 (.152)	13	100884016
3 3/8	3.25 (83)	23.2 (589)	17.0 (432)	.006 (.152)	6	100884017
3 3/8	3.25 (83)	42.9 (1090)	29.8 (757)	.006 (.152)	3	100884018
4 1/2	6.75 (172)	13.8 (351)	9.1 (231)	.006 (.152)	15	100885020
4 1/2	6.75 (172)	23.7 (602)	16.2 (412)	.006 (.152)	7	100885021
4 1/2	6.75 (172)	43.4 (1102)	30.3 (770)	.006 (.152)	3	100885022

Flange Protector Caps

Flange Size	Description	Part Number
1 1/3	Flange protector cap, plastic	100003050
2 1/8	Flange protector cap, plastic	100005285
2 3/4	Flange protector cap, plastic	100003049
3 3/8	Flange protector cap, plastic	100003048

CF UHV Flange Components and Fittings

CF Hardware

Flange Size	Description	Quantity	Part Number
1 1/3	Bolt Set, Tapped, 8-32 x 0.56	25	100889029
1 1/3	Bolt Set, Tapped, 8-32 x 0.62	25	100889030
1 1/3	Bolt Set, Tapped, 8-32 x 0.75	25	100889031
1 1/3	Bolt Set, Tapped, 8-32 x 0.50	25	100889032
2 1/8, 2 3/4	Bolt Set, Tapped, 1/4-28 x 1.00	25	100889033
3 3/8, 4 1/2, 4 5/8	Bolt Set, Tapped, 5/16-24 x 1.25	25	100889035
1 1/3	Bolt/Nut Set, Thru, 8-32 x 0.75	25	100889047
1 1/3	Bolt/Nut Set, Thru, 8-32 x 0.87	25	100889147
1 1/3	Bolt/Nut Set, Thru, 8-32 x 0.75, Ag	25	100889048
1 1/3	Bolt/Nut Set, Thru, 8-32 x 0.87, Ag	25	100889148
2 1/8, 2 3/4	Bolt/Nut Set, Thru, 1/4-28 x 1.25	25	100889049
2 1/8, 2 3/4	Bolt/Nut Set, Thru, 1/4-28 x 1.38	25	100889150
3 3/8	Bolt/Nut Set, Thru, 5/16-24 x 1.75	25	100889051
4 1/2	Bolt/Nut Set, Thru, 5/16-24 x 2.00	25	100889053
4 5/8	Bolt/Nut Set, Thru, 5/16-24 x 2.25	25	100889055
1 1/3	Bolt/Nut Set, Double-Sided, 8-32 x 1.25	25	100889123
1 1/3	Bolt/Nut Set, Double-Sided, 8-32 x 1.25, Ag	25	100889124
2 1/8, 2 3/4	Bolt/Nut Set, Double-Sided, 1/4-28 x 1.75	25	100889125
2 3/4	Bolt/Nut Set, Double-Sided, 1/4-28 x 2.00	25	100889126
2 3/4	Bolt/Nut Set, Double-Sided, 1/4-28 x 2.50	25	100889153
3 3/8	Bolt/Nut Set, Double-Sided, 5/16-24 x 2.50	25	100889130
4 1/2	Bolt/Nut Set, Double-Sided, 5/16-24 x 2.75	25	100889127
4 5/8	Bolt/Nut Set, Double-Sided, 5/16-24 x 3.00	25	100889128
1 1/3	Viton Seal, Beveled Edge	5	100889020
2 1/8	Viton Seal, Beveled Edge	5	100889021
2 3/4	Viton Seal, Beveled Edge	5	100889022
3 3/8	Viton Seal, Beveled Edge	5	100889023
4 1/2	Viton Seal, Beveled Edge	5	100889024
4 5/8	Viton Seal, Beveled Edge	5	100889025

CF Hardware

Flange Size	Description	Quantity	Part Number
1 1/3	Silver-Plated Copper Gasket	1	100889181
2 1/8	Silver-Plated Copper Gasket	1	100889182
2 3/4	Silver-Plated Copper Gasket	1	100889183
3 3/8	Silver-Plated Copper Gasket	1	100889184
4 1/2	Silver-Plated Copper Gasket	1	100889185
4 5/8	Silver-Plated Copper Gasket	1	100889186
1 1/3	Copper Gasket, Etched, Individually Sealed	10	100889103
2 1/8	Copper Gasket, Etched, Individually Sealed	10	100889104
2 3/4	Copper Gasket, Etched, Individually Sealed	10	100889105
3 3/8	Copper Gasket, Etched, Individually Sealed	10	100889106
4 1/2	Copper Gasket, Etched, Individually Sealed	10	100889107
4 5/8	Copper Gasket, Etched, Individually Sealed	10	100889108

CF UHV Flange Components and Fittings

Plate Nut Sets

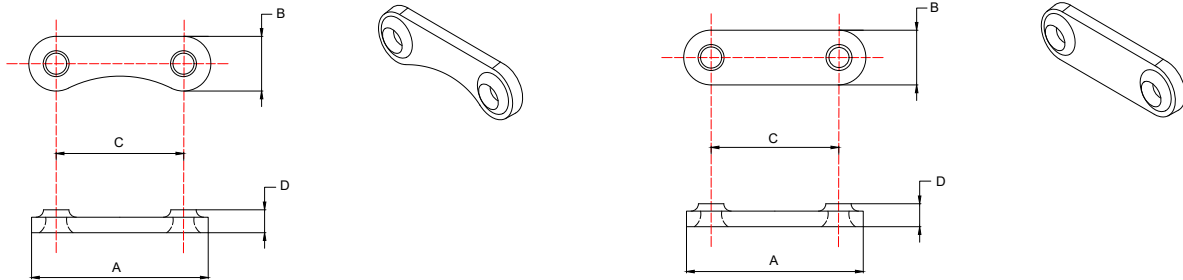


Plate Nut (24 per package)

Flange Size	Thread Size	A	B	C	D	Part Number
1 1/3	8-32	.80"	.30"	.53"	.15"	100889071
2 3/4	1/4-28	1.41"	.50"	1.16"	.18"	100889072
3 3/8	5/16-24	1.75"	.50"	1.09"	.22"	100889073
4 1/2	5/16-24	2.03"	.50"	1.39"	.22"	100889074

Plate Nut and Bolt Sets

Flange Size	Description	Part Number
1 1/3	Plate Nut/Bolt Set: 12 Plate Nuts, 24 Bolts/Washers, 8-32 x 0.75	100889077
2 3/4	Plate Nut/Bolt Set: 12 Plate Nuts, 24 Bolts/Washers, 1/4-28 x 1.25	100889079
3 3/8	Plate Nut/Bolt Set: 16 Plate Nuts, 32 Bolts/Washers, 5/16-24 x 1.75	100889081
4 1/2	Plate Nut/Bolt Set: 16 Plate Nuts, 32 Bolts/Washers, 5/16-24 x 2.00	100889083

Plate Nut and Dodecagon (12 pt) Silver Plated Bolt Sets

Flange Size	Description	Part Number
1 1/3	Dodecagon Plate Nut/Bolt Set: 12 Plate Nuts, 24 Bolts/Washers, 8-32 x 0.75	100889090
2 3/4	Dodecagon Plate Nut/Bolt Set: 12 Plate Nuts, 24 Bolts/Washers, 1/4-28 x 1.25	100889092
3 3/8	Dodecagon Plate Nut/Bolt Set: 16 Plate Nuts, 32 Bolts/Washers, 5/16-24 x 1.75	100889094
4 1/2	Dodecagon Plate Nut/Bolt Set: 16 Plate Nuts, 32 Bolts/Washers, 5/16-24 x 2.00	100889096

Dodecagon (12 pt) Bolts with Nuts and Washers*

Flange Size	Description	Part Number
2 1/8, 2 3/4	Dodecagon Bolt/Nut/Washer Set, Silver Plated, Tapped, 1/4-28 x 1.00	100889042
2 1/8, 2 3/4	Dodecagon Bolt/Nut/Washer Set, Silver Plated, Thru, 1/4-28 x 1.25	100889062
2 1/8, 2 3/4	Dodecagon Bolt/Nut/Washer Set, Silver Plated, Thru, 1/4-28 x 1.38	100889151
3 3/8, 4 1/2, 4 5/8	Dodecagon Bolt/Nut/Washer Set, Silver Plated, Tapped, 5/16-24 x 1.25	100889044
4 1/2	Dodecagon Bolt/Nut/Washer Set, Silver Plated, Thru, 5/16-24 x 2.00	100889066
3 3/8	Dodecagon Bolt/Nut/Washer Set, Silver Plated, Thru, 5/16-24 x 1.75	100889064
4 5/8	Dodecagon Bolt/Nut/Washer Set, Silver Plated, Thru, 5/16-24 x 2.25	100889068

* Note: There are 25 bolts, nuts, and washers per package.



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