

Integrated

Process Solutions
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Series 76

ISO-UNIVERSAL FITTINGS
SIZES NW 63 TO NW 630
(2½" TO 25")



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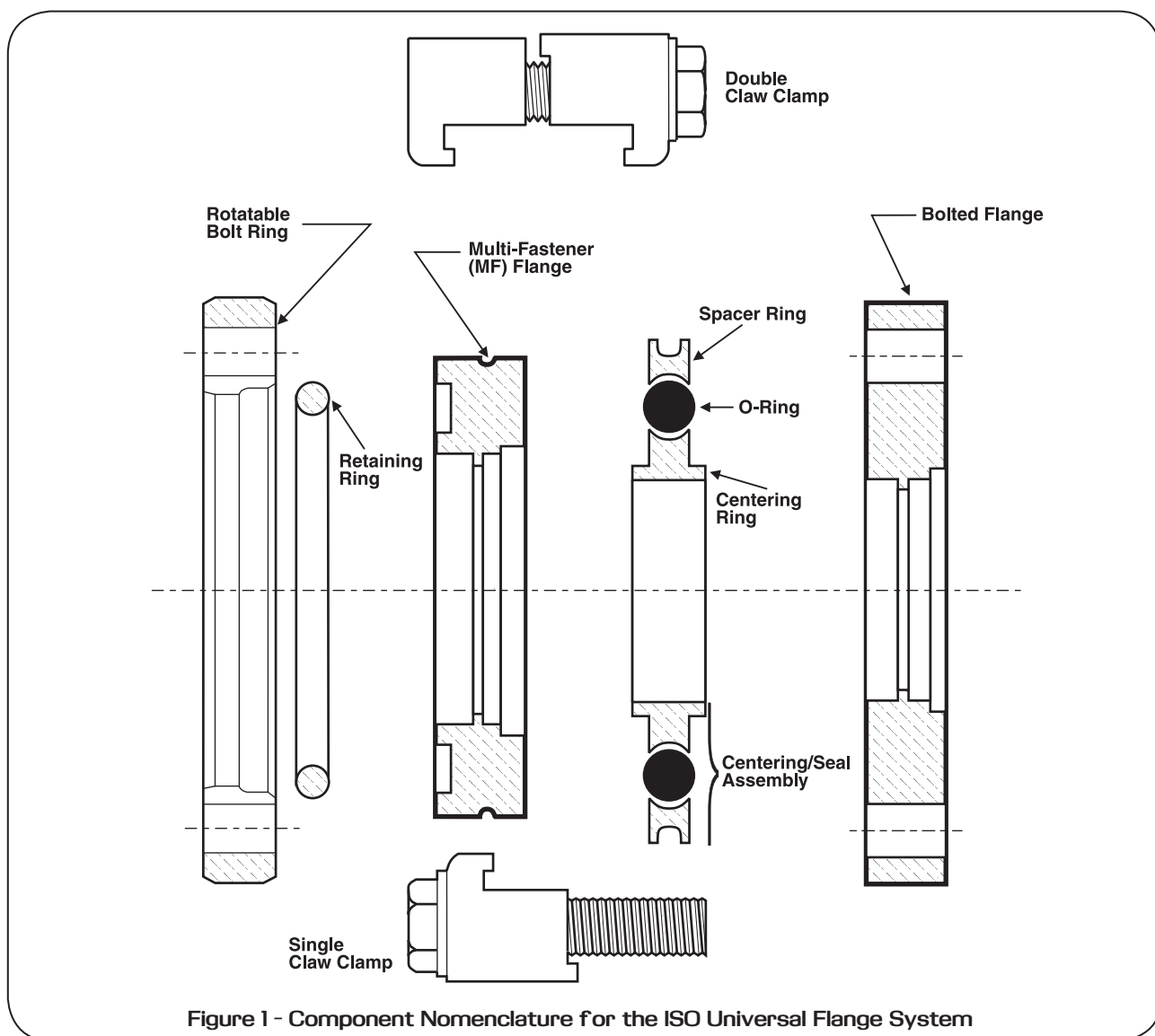
Introduction

Series 76 ISO-Universal components are a vacuum flanging system for 63 mm to 1000 mm fittings. The dimension criteria are based on requirements established by the International Standards Organization (ISO). There are two flange styles in the ISO-Universal system: Multi-Fastener (MF) and Bolted. The flange family is also called: ISO-MF, ISO-PF or ISO-K. Figure 1 illustrates the components of this flange system.

This catalog features a large variety of components such as elbows, tees, crosses, reducers and adapters having ISO-MF flanges. Currently there is no ISO standard for the flange face to centerline distance in this system. There is however, an industry standard followed by several manufacturers.

MKS Instruments follows these standards in designing the Series 76 ISO-Universal components.

There are several advantages in the use of ISO components. One advantage is that the flange is "sexless." The seal is on a symmetrical centering ring that interfaces with two identical flanges. In addition, ISO-Universal flanges are more compact than ASA flanges, which were designed for pressure and are unnecessarily massive for vacuum use. Since these flanges are an ISO standard, they can be used with components from other manufacturers.



Applications

The Series 76 ISO-Universal component system is used in a variety of industries from process manufacturing to semiconductor fabrication to thin film deposition. Some uses in vacuum systems are:

1. Roughing and foreline plumbing for large vacuum systems
2. High vacuum, high conductance, interconnections
3. Modular systems which will be modified frequently
4. Experimental systems in research laboratories

ISO-Universal flange components using elastomer seals are primarily designed for use at subatmospheric pressure. When elastomer seals are used without baking, typical limiting pressures may be around 10^{-6} Torr. Baked systems using Viton® can be used to 10^{-8} Torr.

Standard components can be used to a slight over pressure. MF flanges may be used at a maximum pressure of 30 psig if the metal spacer ring is used and the flange clamps are firmly retained.

Description

Series 76 ISO-Universal flanges and components in this catalog are made of type 304 stainless steel. Centering ring and seal assemblies are offered with an aluminum centering ring and spacer ring, or with a stainless centering ring and an aluminum spacer ring. Rotatable bolt rings and clamps are made of aluminum alloy. Retaining rings are made of steel.

Flange seal surfaces are carefully machined and inspected for defects. They are cleaned and packaged to remain clean and protected in shipping. The user should observe precaution as required to prevent seal surface harm. This is especially important for used components returned to storage.

Installation

The Series 76 ISO-Universal flange components can be connected in various ways. The figures below illustrate some possibilities. Figure 2a shows a pair of MF flanges retained by double claw clamps. This is usually the most economical arrangement. In Figure 2b an MF flange with a rotatable bolt ring is joined to a bolted flange using nuts and bolts. In Figure 2c an MF flange is joined to a tapped bolt flange using single claw clamps. Tapped flanges are found on some valve bodies. Alternatively, a rotatable bolt ring could have been used with an MF flange to obtain the same result shown in Figure 2c. Last, Figure 2d shows a pair of bolted flanges joined in the usual way by nuts and bolts.

In attaching a rotatable bolt ring to an MF flange as in Figure 2b, the ring is first passed over the flange with the larger bore of the ring facing outward from the open port. The split retaining ring is then snapped into the groove on the periphery of the MF flange. Then the bolt ring is pulled forward into position. Pairs of bolted flanges may also be used.

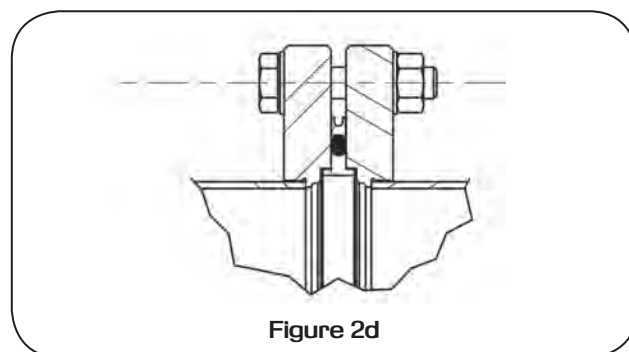
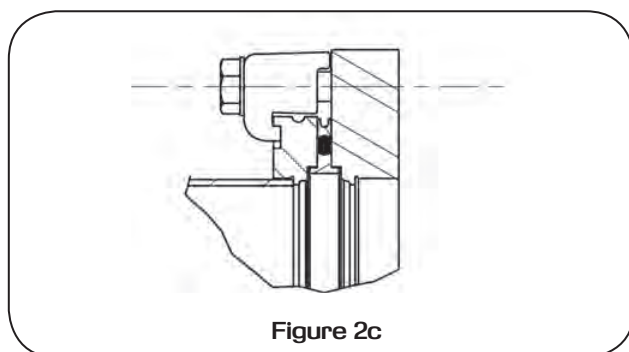
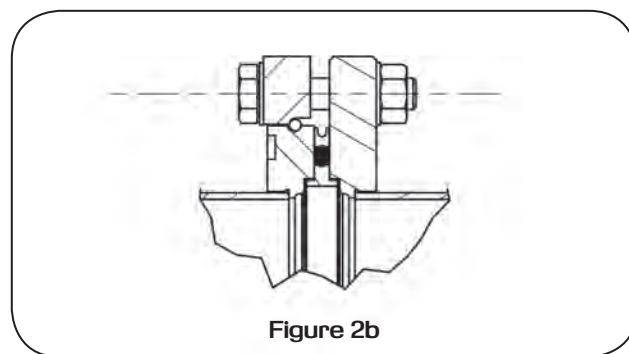
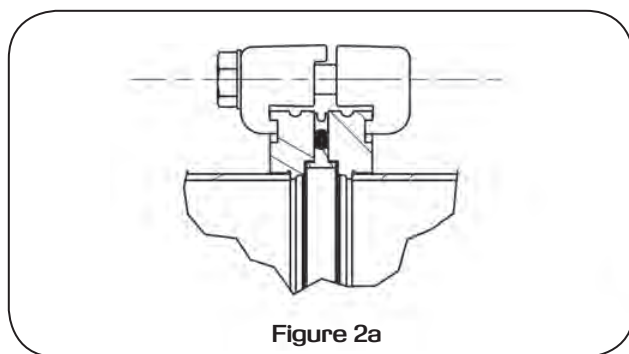


Figure 3 shows the dimensions of ISO Universal flange components for sizes from 63 to 630 mm, which are standard in this catalog. The maximum size for an MF flange is NW 500, while the bolted flange can run up to NW 1000. The recommended number of clamps to be used with MF flanges are also listed.

Flanges and seals are designed to be tightened to metal to metal contact. It is important that the clamps or bolts not be over tightened or warping of the flanges could result.

The torque rating for clamps and bolts is 7 to 10 pounds per foot.

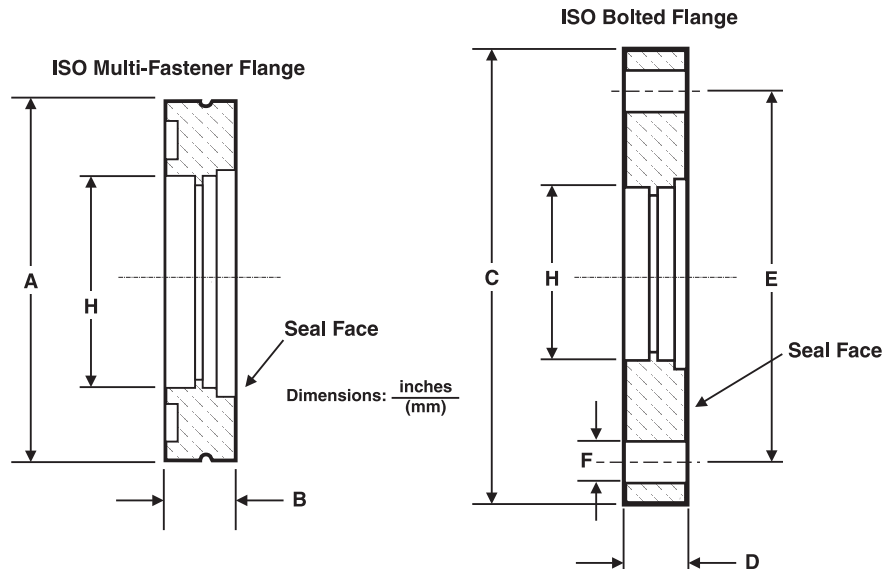


Figure 3

Nominal* Flange Size (mm)	H Suggested Table/Pipe Dims: ** O.D. x Wall (inches)	ISO Multi-Fastener Flange (ISO-MF)			ISO Bolted Flange (ISO-BF)					
		A (O.D.)	B (Thickness)	# Clamps Required	C (O.D.)	D (Thickness)	E (Bolt Circle)	F (Bolt Holes)	N (# Holes)	Wrench (mm)
NW 63	2.5 x .065	3.74 (95)	.47 (12)	3-4	5.12 (130)	.47 (12)	4.33 (110)	.35 (9)	4	13
NW 80	3.0 x .065	4.33 (110)	.47 (12)	4-8	5.71 (145)	.47 (12)	4.92 (125)	.35 (9)	8	13
NW 100	4.0 x .065	5.12 (130)	.47 (12)	4-8	6.50 (165)	.47 (12)	5.71 (145)	.35 (9)	8	13
NW 160	6.0 x .083	7.09 (180)	.47 (12)	4-8	8.86 (225)	.63 (16)	7.87 (200)	.43 (11)	8	17
NW 200	8.0 x .120	9.45 (240)	.47 (12)	6-12	11.22 (285)	.63 (16)	10.24 (260)	.43 (11)	12	17
NW 250	10.0 x .125	11.42 (290)	.47 (12)	6-12	13.19 (335)	.63 (16)	12.20 (310)	.43 (11)	12	17
NW 320	12.75 x .165	14.57 (370)	.67 (17)	8-12	16.73 (425)	.79 (20)	15.55 (395)	.55 (14)	12	19
NW 400	16.0 x .188	17.72 (450)	.67 (17)	8-16	20.08 (510)	.79 (20)	18.90 (480)	.55 (14)	16	19
NW 500	20.0 x .188	21.65 (550)	.67 (17)	12-16	24.02 (610)	.79 (20)	22.83 (580)	.55 (14)	16	19
NW 630	25.0 x .250	---	---	---	29.53 (750)	.94 (24)	28.35 (720)	.55 (14)	20	19

* NW is retained here by convention. It does not specify the flange type but is from the German "Nennweite," meaning nominal diameter.

** Schedule 5 pipe is for sizes 320 and above.

There are a variety of choices available when selecting centering ring assemblies. Two types of elastomers are available, Buna-N and Viton®. Use Viton® where temperatures, chemical resistance or long installed life make it beneficial. Use Buna-N where temperatures are moderate, and installed useful life is consistent with this material. The centering ring is available in two types of metal: stainless steel and aluminum. Use stainless steel where chemical resistance is needed.

Elastomer Comparison		
	Buna-N	Viton®
Compound	N674-70	V747-75
Color	Black	Black
Bakeout	80°C	150°C
Benefits	Seals easier, lower cost	High temperature, lasts longer

MKS Instruments presently supplies Series 76 ISO-Universal flanges drilled for inch dimension tubing and pipe. Weld assembly should be by an experienced TIG or MIG welder. Bored flanges have been designed for assembly by internal fusion welding without the use of filler metal. Tacking is advisable. A weld rotator aides in making attractive welds with minimum warping. Excessive current or non uniform rotation can cause warping of the flange face. When there is a concern about warping, use a flange with a stub. Butt welding to stubs in sizes up to 10 inch diameter with a wall thickness of $\frac{1}{8}$ inch can also be by fusion. Internal purge gas will prevent excessive oxidation.

Remove any oxidation by wire brushing. This should be done while the part is still slightly warm, since the oxides are nearly impossible to remove later. Use only a stainless steel wire brush or wheel, since ordinary steel brushes leave iron residue which will then rust.

Since the centering ring grooves on the NW 100 and NW 160 flange happen to be almost exactly the diameters of the tubing to be used with these sizes, the flange can be inadvertently welded on backwards. When working with the MF flange, note that the clamp retaining groove goes to the rear (tube) side. Working with the bolted flange requires more care. Close inspection of the weld prep detail will show the recess from the tube side to have a negligible radius, while there is a small radius visible on the seal side.

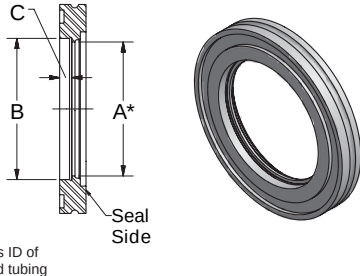
The technical staff of MKS Instruments is available to help you with system design and any special needs you may encounter. Call 800-345-1967 for a quotation.

Specifications	
Maximum Pressure (with spacer ring)	30 psig
Minimum Pressure	10 ⁻⁸ Torr
Leak Check	>10 ⁻⁹ std-cc/s
Torque Rating (clamps and bolts)	7-10 lbs/foot
Materials	
Fittings	304 stainless steel
Retaining Rings	Steel
Clamps	Aluminum alloy
Rotatable Bolt Rings	Aluminum alloy
Seal Assembly	Aluminum spacer ring, choice of aluminum or stainless steel centering ring, choice of Viton® or Buna-N elastomer seal



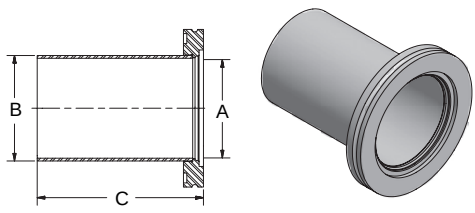
Flange, Bored

in./(mm)

 * Given as ID of suggested tubing	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 internal weld - Infinitely rotatable - Made for inch tube and pipe diameters - Use with clamps or rotatable bolt ring						

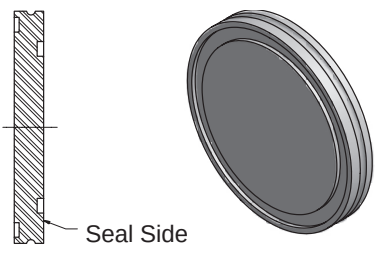
Flange, Long Weld Stub

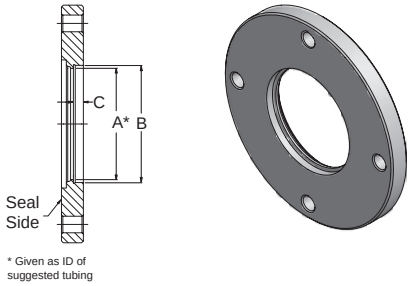
in./(mm)

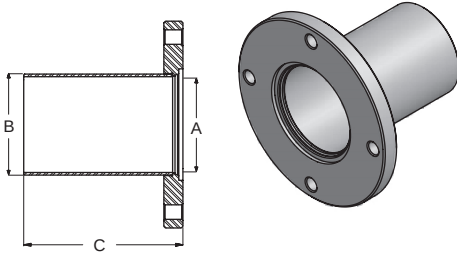
		Flange Size (ISO)	Nominal Bore	A	B	C	Part Number
		NW 63	2½"	2.37 (60)	2.50 (64)	3.94 (100)	100760406
		NW 80	3"	2.87 (73)	3.00 (76)	3.94 (100)	100760408
		NW 100	4"	3.87 (98)	4.00 (102)	3.94 (100)	100760410
		NW 100	4" (.065" wall)	3.87 (98)	4.00 (102)	3.94 (100)	100760411
		NW 160	6"	5.83 (148)	6.00 (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
- Stainless steel type 304 - For butt weld - Standard inch diameters - Use with clamps or rotatable bolt ring		NW 500	20"	19.62 (498)	20.00 (508)	3.94 (100)	100760450

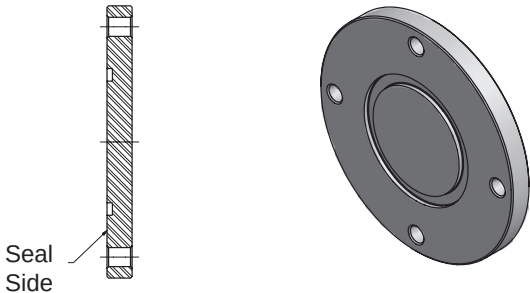
Flange, Blank-Off

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

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

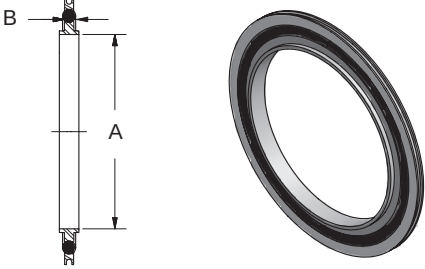
Flange, Bolted, Weld Stub						in./(mm)
	Flange Size (ISO)	Nominal Bore	A	B	C	Part Number
	NW 63	2½"	2.37 (60)	2.50 (64)	3.94 (100)	100762706
	NW 80	3"	2.87 (73)	3.00 (76)	3.94 (100)	100762708
	NW 100	4"	3.87 (98)	4.00 (102)	3.94 (100)	100762710
	NW 160	6"	5.83 (148)	6.00 (152)	3.94 (100)	100762716
	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 - For butt weld - For use with bolts only - Made for inch tube and pipe diameters						

Flange, Bolted, Blank		in./ (mm)	
 Seal Side	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	
- Stainless steel type 304 - To close off unused ports or for special boring - For use with bolts only - Tapped bolt holes on special order			



Seal, Centering Ring Assembly, Stainless Steel/Viton®

in./ (mm)

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

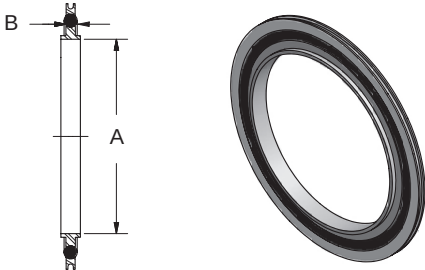
Seal, Centering Ring Assembly, Aluminum/Buna-N

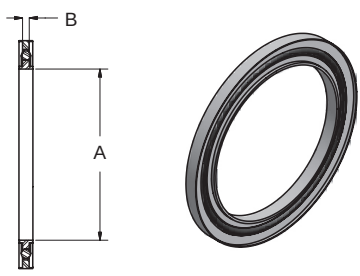
in./ (mm)

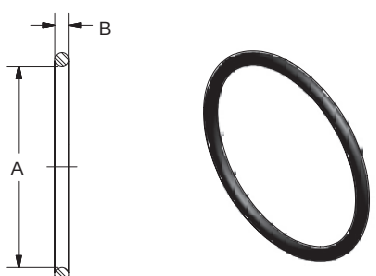
	Flange Size (ISO)	A	B	Part Number
	NW 63	2.63 (67)	0.15 (4)	100760706
	NW 80	3.14 (80)	0.15 (4)	100760708
	NW 100	3.89 (99)	0.15 (4)	100760710
	NW 160	5.90 (150)	0.15 (4)	100760716
	NW 200	8.26 (210)	0.15 (4)	100760720
	NW 250	10.14 (258)	0.15 (4)	100760725
	NW 320	12.30 (312)	0.22 (6)	100760732
	NW 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
- Aluminum centering ring - Replaceable Buna-N O-Ring - Aluminum spacer ring - Rated to 80°C max.				

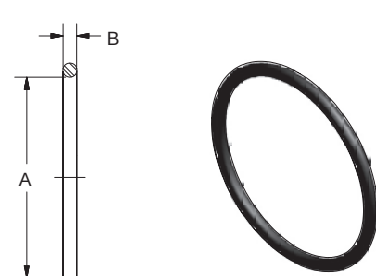
Seal, Centering Ring Assembly, Aluminum/Viton®

in./ (mm)

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

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

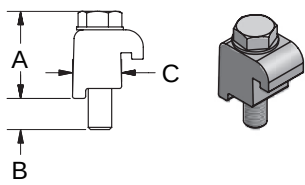
Seal, Replacement O-Ring, Viton®					in./(mm)
	Flange Size (ISO)	Standard Number	A	B	Part Number
	NW 63	2-336	2.85 (72)	0.21 (5)	100762006
	NW 80	2-340	3.35 (85)	0.21 (5)	100762008
	NW 100	2-346	4.10 (104)	0.21 (5)	100762010
	NW 160	2-361	5.98 (152)	0.21 (5)	100762016
	NW 200	2-371	8.48 (215)	0.21 (5)	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
- Viton® - Standard US O-Ring sizes - Bakeable to 150°C - Replaceable seal for centering ring assembly					

Seal, Replacement O-Ring, Buna-N					in./(mm)
	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
	- Buna-N - Standard US O-Ring sizes - Bakeable to 80°C - Replaceable seal for centering ring assembly				



Clamp, Single Claw

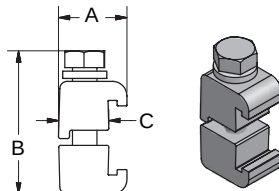
in./(mm)

	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 an MF flange to a tapped bolted flange

Clamp, Double Claw

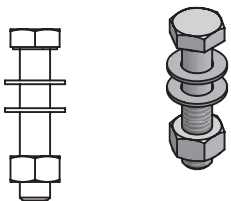
in./(mm)

	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

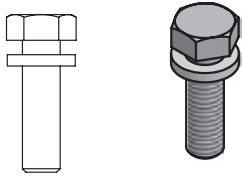
- Aluminum clamp
- Stainless steel bolt
- Stainless steel washer
- To join a pair of MF flanges

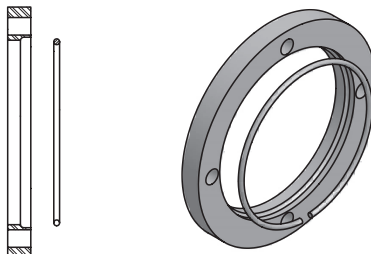
Bolt and Nut Set

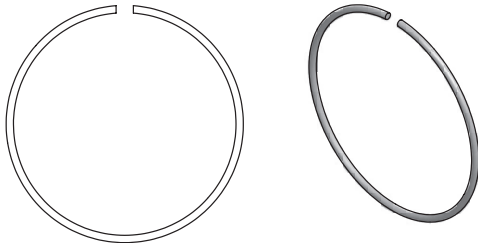
in./(mm)

	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

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

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
• Stainless Steel • Bolted flange to tapped flange • Includes washer	NW 630	M 12 x 55	20	1.75	100761363

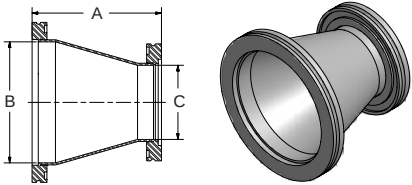
Ring, Rotatable Bolt		in./.(mm)
	Flange Size (ISO)	Part Number
	NW 63	100762806
	NW 80	100762808
	NW 100	100762810
	NW 160	100762816
	NW 200	100762820
	NW 250	100762825
	NW 320	100762832
	NW 400	100762840
	NW 500	100762850
• Aluminum • Use with MF Flange • Steel retaining ring included • O.D. and bolt pattern same as bolted flange		

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	
• Stainless Steel • Retains bolt ring			



Conic Reducer

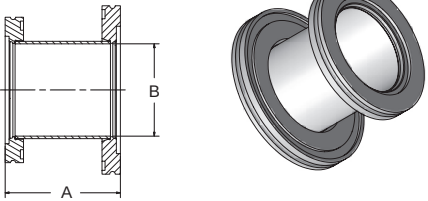
in./(mm)

	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

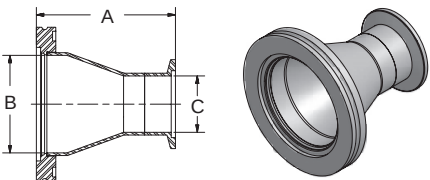
- Stainless steel type 304
- Other combinations available on request
- High conductance adapter

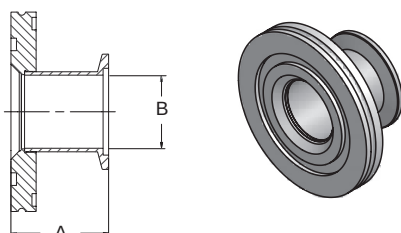
Step Reducer

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

- Stainless steel type 304
- Short overall length

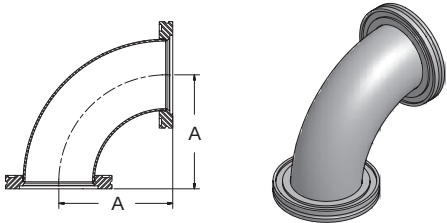
Conic Adapter, ISO-MF Flange to ISO-KF Flange					in./ (mm)
	Flange Size (ISO)	A	B	C	Part Number
	NW 63 to NW 40	3.39 (86)	2.37 (60)	1.37 (35)	100765006
	NW 63 to NW 50	3.39 (86)	2.37 (60)	1.87 (47)	100765017
	NW 80 to NW 40	4.64 (118)	2.87 (73)	1.37 (35)	100765016
	NW 80 to NW 50	4.64 (118)	2.87 (73)	1.87 (47)	100765008
	NW 100 to NW 50	4.64 (118)	3.83 (97)	1.87 (47)	100765018
- Stainless steel type 304 - Special adapters available upon request - High conductance adapter					

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



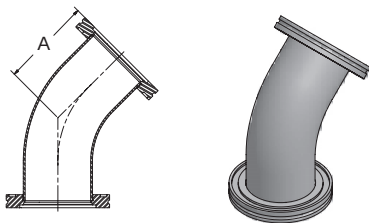
90° Elbow, Smooth Radius

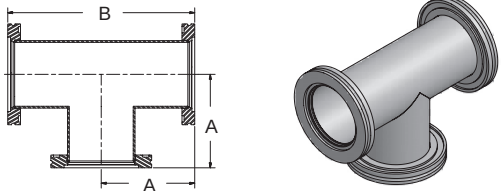
in./ (mm)

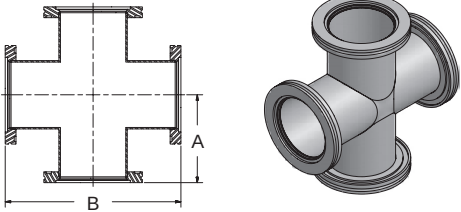
	Flange Size (ISO)	A	Part Number
	NW 63	4.00 (102)	100764606
	NW 80	4.74 (120)	100764608
	NW 100	6.24 (158)	100764610
	NW 160	9.24 (235)	100764616
- Stainless steel type 304 - ISO-MF flanges, same size both ports			

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

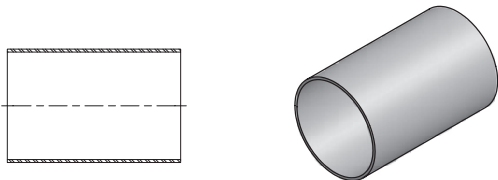
Tee		in./ (mm)		
	Flange Size (ISO)	A	B	Part Number
	NW 63	3.46 (88)	6.92 (176)	100761406
	NW 80	3.86 (98)	7.72 (196)	100761408
	NW 100	4.25 (108)	8.50 (216)	100761410
	NW 160	5.43 (138)	10.86 (276)	100761416
	NW 200	6.61 (168)	13.22 (336)	100761420
	NW 250	8.19 (208)	16.38 (416)	100761425
	NW 320	12.60 (320)	25.20 (640)	100761432
- Stainless steel type 304 - ISO-MF flanges, same size all ports - Standard flange 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
- Stainless steel type 304 - ISO-MF flanges, same size all ports - Standard flange face to centerline dimensions - Larger sizes available on request				



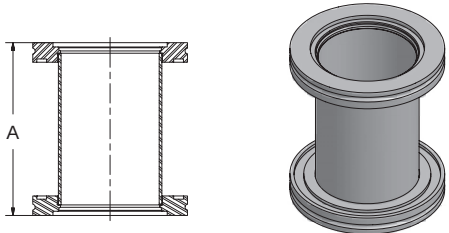
Tubing

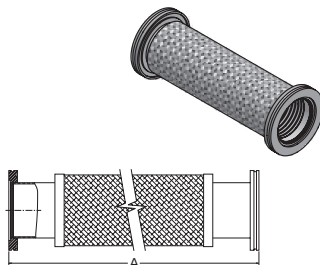
in./ (mm)

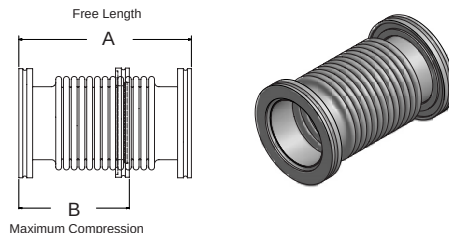
	Flange Size (ISO)	OD	Wall Thickness	Part Number
	NW 63	2½"	.065"	100764506
- Stainless steel type 304 - Tube ends deburred, cleaned & capped - Price per 10 foot length of tube	NW 80	3"	.065"	100764508
	NW 100	4"	.065"	100764510
	NW 100	4"	.083"	100764511
	NW 160	6"	.083"	100764516
	NW 200	8"	.120"	100764520
	NW 250	10"	.125"	100764525

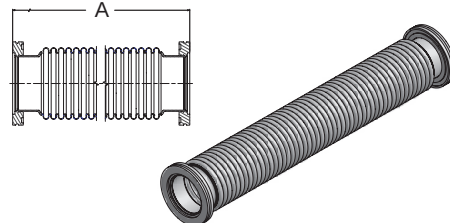
Straight Section

in./ (mm)

	Flange Size (ISO)	A	Part Number
	NW 63	6.92 (176)	100761706
- Stainless steel type 304 - Special lengths to order - MF type flanges	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

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

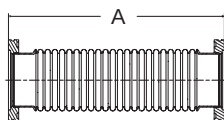
Bellows, Section				in./ (mm)
	Flange Size (ISO)	A	B	Part Number
	NW 63	5.90 (150)	4.50 (115)	100763506
	NW 80	5.90 (150)	4.50 (115)	100763508
	NW 100	5.90 (150)	4.50 (115)	100763510
	NW 160	7.90 (200)	5.70 (145)	100763516
	NW 200	9.80 (250)	6.90 (175)	100763520
	NW 250	11.80 (300)	8.10 (205)	100763525
• CAUTION: Flanges must be supported to prevent collapsing when subjected to vacuum • Stainless steel • Formed bellows • Bellows butt welded • Thin wall • Flexible				

Metal Hose, Thick Wall				in./ (mm)
	Flange Size (ISO)	Static Bend Radius (to C _L)	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 • Special lengths on request • Hose butt welded				



Metal Hose, Thin Wall

in./ (mm)



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

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

Flange Protector Cap

in./ (mm)

- Protects flange faces
- Plastic

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

Numerical Listing

100005788	Flange Protector Cap, NW 160	100760550	Seal, Centering Ring Assy, NW 500, SS/Viton
100760006	Flange Protector Cap, NW 63	100760563	Seal, Centering Ring Assy, NW 630, SS/Viton
100760008	Flange Protector Cap, NW 80	100760606	Seal, Centering Ring Assy, NW 63, Alum./Viton®
100760010	Flange Protector Cap, NW 100	100760608	Seal, Centering Ring Assy, NW 80, Alum./Viton®
		100760610	Seal, Centering Ring Assy, NW 100, Alum./Viton®
100760106	Flange, Blank-Off, NW 63	100760616	Seal, Centering Ring Assy, NW 160, Alum./Viton®
100760108	Flange, Blank-Off, NW 80	100760620	Seal, Centering Ring Assy, NW 200, Alum./Viton®
100760110	Flange, Blank-Off, NW 100	100760625	Seal, Centering Ring Assy, NW 250, Alum./Viton®
100760116	Flange, Blank-Off, NW 160	100760632	Seal, Centering Ring Assy, NW 320, Alum./Viton®
100760120	Flange, Blank-Off, NW 200	100760640	Seal, Centering Ring Assy, NW 400, Alum./Viton®
100760125	Flange, Blank-Off, NW 250	100760650	Seal, Centering Ring Assy, NW 500, Alum./Viton®
100760132	Flange, Blank-Off, NW 320	100760663	Seal, Centering Ring Assy, NW 630, Alum./Viton®
100760140	Flange, Blank-Off, NW 400		
100760150	Flange, Blank-Off, NW 500	100760706	Seal, Centering Ring Assy, NW 63, Alum/Buna-N
		100760708	Seal, Centering Ring Assy, NW 80, Alum/Buna-N
100760206	Flange, Bored, NW 63	100760710	Seal, Centering Ring Assy, NW 100, Alum/Buna-N
100760208	Flange, Bored, NW 80	100760716	Seal, Centering Ring Assy, NW 160, Alum/Buna-N
100760210	Flange, Bored, NW 100	100760720	Seal, Centering Ring Assy, NW 200, Alum/Buna-N
100760216	Flange, Bored, NW 160	100760725	Seal, Centering Ring Assy, NW 250, Alum/Buna-N
100760220	Flange, Bored, NW 200	100760732	Seal, Centering Ring Assy, NW 320, Alum/Buna-N
100760225	Flange, Bored, NW 250	100760740	Seal, Centering Ring Assy, NW 400, Alum/Buna-N
100760232	Flange, Bored, NW 320	100760750	Seal, Centering Ring Assy, NW 500, Alum/Buna-N
100760240	Flange, Bored, NW 400	100760763	Seal, Centering Ring Assy, NW 630, Alum/Buna-N
100760250	Flange, Bored, NW 500		
		100761006	Single Claw Clamp, NW 63, Aluminum
100760306	Flange, Bolted, Blank, NW 63	100761006	Single Claw Clamp, NW 80, Aluminum
100760308	Flange, Bolted, Blank, NW 80	100761006	Single Claw Clamp, NW 100, Aluminum
100760310	Flange, Bolted, Blank, NW 100	100761016	Single Claw Clamp, NW 160, Aluminum
100760316	Flange, Bolted, Blank, NW 160	100761016	Single Claw Clamp, NW 200, Aluminum
100760320	Flange, Bolted, Blank, NW 200	100761016	Single Claw Clamp, NW 250, Aluminum
100760325	Flange, Bolted, Blank, NW 250	100761032	Single Claw Clamp, NW 320, Aluminum
100760332	Flange, Bolted, Blank, NW 320	100761040	Single Claw Clamp, NW 400, Aluminum
100760340	Flange, Bolted, Blank, NW 400	100761040	Single Claw Clamp, NW 500, Aluminum
100760350	Flange, Bolted, Blank, NW 500		
100760363	Flange, Bolted, Blank, NW 630	100761106	Double Claw Clamp, NW 63, Aluminum
		100761106	Double Claw Clamp, NW 80, Aluminum
100760406	Flange, Long Weld Stub, NW 63	100761106	Double Claw Clamp, NW 100, Aluminum
100760408	Flange, Long Weld Stub, NW 80	100761116	Double Claw Clamp, NW 160, Aluminum
100760410	Flange, Long Weld Stub, NW 100, .065" wall	100761116	Double Claw Clamp, NW 200, Aluminum
100760411	Flange, Long Weld Stub, NW 100, .083" wall	100761116	Double Claw Clamp, NW 250, Aluminum
100760416	Flange, Long Weld Stub, NW 160	100761132	Double Claw Clamp, NW 320, Aluminum
100760420	Flange, Long Weld Stub, NW 200	100761140	Double Claw Clamp, NW 400, Aluminum
100760425	Flange, Long Weld Stub, NW 250	100761140	Double Claw Clamp, NW 500, Aluminum
100760432	Flange, Long Weld Stub, NW 320		
100760440	Flange, Long Weld Stub, NW 400	100761206	Bolt and Nut Set, NW 63, Stainless Steel
100760450	Flange, Long Weld Stub, NW 500	100761208	Bolt and Nut Set, NW 80, Stainless Steel
		100761208	Bolt and Nut Set, NW 100, Stainless Steel
100760506	Seal, Centering Ring Assy, NW 63, SS/Viton	100761216	Bolt and Nut Set, NW 160, Stainless Steel
100760508	Seal, Centering Ring Assy, NW 80, SS/Viton	100761220	Bolt and Nut Set, NW 200, Stainless Steel
100760510	Seal, Centering Ring Assy, NW 100, SS/Viton	100761220	Bolt and Nut Set, NW 250, Stainless Steel
100760516	Seal, Centering Ring Assy, NW 160, SS/Viton	100761232	Bolt and Nut Set, NW 320, Stainless Steel
100760520	Seal, Centering Ring Assy, NW 200, SS/Viton	100761240	Bolt and Nut Set, NW 400, Stainless Steel
100760525	Seal, Centering Ring Assy, NW 250, SS/Viton	100761240	Bolt and Nut Set, NW 500, Stainless Steel
100760532	Seal, Centering Ring Assy, NW 320, SS/Viton	100761263	Bolt and Nut Set, NW 630, Stainless Steel
100760540	Seal, Centering Ring Assy, NW 400, SS/Viton		



100761306	Bolt Set, for tapped bolted flanges, NW 63
100761308	Bolt Set, for tapped bolted flanges, NW 80
100761308	Bolt Set, for tapped bolted flanges, NW 100
100761316	Bolt Set, for tapped bolted flanges, NW 160
100761320	Bolt Set, for tapped bolted flanges, NW 200
100761320	Bolt Set, for tapped bolted flanges, NW 250
100761332	Bolt Set, for tapped bolted flanges, NW 320
100761340	Bolt Set, for tapped bolted flanges, NW 400
100761340	Bolt Set, for tapped bolted flanges, NW 500
100761363	Bolt Set, for tapped bolted flanges, NW 630
100761406	Tee, NW 63, Stainless Steel
100761408	Tee, NW 80, Stainless Steel
100761410	Tee, NW 100, Stainless Steel
100761416	Tee, NW 160, Stainless Steel
100761420	Tee, NW 200, Stainless Steel
100761425	Tee, NW 250, Stainless Steel
100761432	Tee, NW 320, Stainless Steel
100761506	Cross, NW 63, Stainless Steel
100761508	Cross, NW 80, Stainless Steel
100761510	Cross, NW 100, Stainless Steel
100761516	Cross, NW 160, Stainless Steel
100761520	Cross, NW 200, Stainless Steel
100761525	Cross, NW 250, Stainless Steel
100761532	Cross, NW 320, Stainless Steel
100761706	Straight Section, NW 63, 6.92" length
100761707	Straight Section, NW 63, 4.18" length
100761708	Straight Section, NW 80, 7.72" length
100761709	Straight Section, NW 80, 4.18" length
100761710	Straight Section, NW 100, 8.5" length
100761711	Straight Section, NW 100, 4.18" length
100761716	Straight Section, NW 160, 10.86" length
100761717	Straight Section, NW 160, 4.18" length
100761720	Straight Section, NW 200, 13.22" length
100761721	Straight Section, NW 200, 4.18" length
100761725	Straight Section, NW 250, 16.38" length
100761726	Straight Section, NW 250, 4.18" length
100761906	Seal, Replacement O-Ring, NW 63, Buna-N
100761908	Seal, Replacement O-Ring, NW 80, Buna-N
100761910	Seal, Replacement O-Ring, NW 100, Buna-N
100761916	Seal, Replacement O-Ring, NW 160, Buna-N
100761920	Seal, Replacement O-Ring, NW 200, Buna-N
100761925	Seal, Replacement O-Ring, NW 250, Buna-N
100761932	Seal, Replacement O-Ring, NW 320, Buna-N
100761940	Seal, Replacement O-Ring, NW 400, Buna-N
100761950	Seal, Replacement O-Ring, NW 500, Buna-N
100761963	Seal, Replacement O-Ring, NW 630, Buna-N

100762006	Seal, Replacement O-Ring, NW 63, Viton®
100762008	Seal, Replacement O-Ring, NW 80, Viton®
100762010	Seal, Replacement O-Ring, NW 100, Viton®
100762016	Seal, Replacement O-Ring, NW 160, Viton®
100762020	Seal, Replacement O-Ring, NW 200, Viton®
100762025	Seal, Replacement O-Ring, NW 250, Viton®
100762032	Seal, Replacement O-Ring, NW 320, Viton®
100762040	Seal, Replacement O-Ring, NW 400, Viton®
100762050	Seal, Replacement O-Ring, NW 500, Viton®
100762063	Seal, Replacement O-Ring, NW 630, Viton®
100762406	Flange, Bolted, Bored, NW 63
100762408	Flange, Bolted, Bored, NW 80
100762410	Flange, Bolted, Bored, NW 100
100762416	Flange, Bolted, Bored, NW 160
100762420	Flange, Bolted, Bored, NW 200
100762425	Flange, Bolted, Bored, NW 250
100762432	Flange, Bolted, Bored, NW 320
100762440	Flange, Bolted, Bored, NW 400
100762450	Flange, Bolted, Bored, NW 500
100762463	Flange, Bolted, Bored, NW 630
100762506	Step Reducer, NW 63 to NW 80
100762508	Step Reducer, NW 80 to NW 100
100762510	Step Reducer, NW 100 to NW 160
100762517	Step Reducer, NW 63 to NW 100
100762527	Step Reducer, NW 63 to NW 160
100762606	Step Adapter, NW 63 to NW 40, w/ Groove
100762608	Step Adapter, NW 80 to NW 50, w/ Groove
100762616	Step Adapter, NW 80 to NW 40, w/ Groove
100762617	Step Adapter, NW 63 to NW 50, w/ Groove
100762618	Step Adapter, NW 100 to NW 50, w/ Groove
100762620	Step Adapter, NW 100 to NW 40, w/ Groove
100762706	Flange, Bolted, Weld Stub, NW 63
100762708	Flange, Bolted, Weld Stub, NW 80
100762710	Flange, Bolted, Weld Stub, NW 100
100762716	Flange, Bolted, Weld Stub, NW 160
100762720	Flange, Bolted, Weld Stub, NW 200
100762725	Flange, Bolted, Weld Stub, NW 250
100762732	Flange, Bolted, Weld Stub, NW 320
100762740	Flange, Bolted, Weld Stub, NW 400
100762750	Flange, Bolted, Weld Stub, NW 500
100762763	Flange, Bolted, Weld Stub, NW 630

100762806 Rotatable, Bolted Ring Assy, NW 63
 100762808 Rotatable, Bolted Ring Assy, NW 80
 100762810 Rotatable, Bolted Ring Assy, NW 100
 100762816 Rotatable, Bolted Ring Assy, NW 160
 100762820 Rotatable, Bolted Ring Assy, NW 200
 100762825 Rotatable, Bolted Ring Assy, NW 250
 100762832 Rotatable, Bolted Ring Assy, NW 320
 100762840 Rotatable, Bolted Ring Assy, NW 400
 100762850 Rotatable, Bolted Ring Assy, NW 500

 100762906 Retaining Ring, NW 63
 100762908 Retaining Ring, NW 80
 100762910 Retaining Ring, NW 100
 100762916 Retaining Ring, NW 160
 100762920 Retaining Ring, NW 200
 100762925 Retaining Ring, NW 250
 100762932 Retaining Ring, NW 320
 100762940 Retaining Ring, NW 400
 100762950 Retaining Ring, NW 500

 100763506 Bellows, NW 63, 5.9" length
 100763508 Bellows, NW 80, 5.9" length
 100763510 Bellows, NW 100, 5.9" length
 100763516 Bellows, NW 160, 7.9" length
 100763520 Bellows, NW 200, 9.8" length
 100763525 Bellows, NW 250, 11.8" length

 100763606 Thick Wall Metal Hose, NW 63, 19.69" length
 100763608 Thick Wall Metal Hose, NW 80, 19.69" length
 100763610 Thick Wall Metal Hose, NW 100, 19.69" length
 100763616 Thick Wall Metal Hose, NW 160, 19.69" length
 100763620 Thick Wall Metal Hose, NW 200, 19.69" length
 100763625 Thick Wall Metal Hose, NW 250, 19.69" length
 100763706 Thick Wall Metal Hose, NW 63, 39.40" length
 100763708 Thick Wall Metal Hose, NW 80, 39.40" length
 100763710 Thick Wall Metal Hose, NW 100, 39.40" length
 100763716 Thick Wall Metal Hose, NW 160, 39.40" length
 100763720 Thick Wall Metal Hose, NW 200, 39.40" length
 100763725 Thick Wall Metal Hose, NW 250, 39.40" length

 100763806 Thin Wall Metal Hose, NW 63, 9.84" length
 100763808 Thin Wall Metal Hose, NW 80, 9.84" length
 100763810 Thin Wall Metal Hose, NW 100, 9.84" length
 100763906 Thin Wall Metal Hose, NW 63, 19.69" length
 100763908 Thin Wall Metal Hose, NW 80, 19.69" length
 100763910 Thin Wall Metal Hose, NW 100, 19.69" length
 100764006 Thin Wall Metal Hose, NW 63, 39.40" length
 100764008 Thin Wall Metal Hose, NW 80, 39.40" length

100764406 45° Elbow, Smooth Radius, NW 63
 100764408 45° Elbow, Smooth Radius, NW 80
 100764410 45° Elbow, Smooth Radius, NW 100
 100764416 45° Elbow, Smooth Radius, NW 160

 100764506 Tubing, (price per 10 foot), NW 63, 0.065 wall, Stainless Steel
 100764508 Tubing, (price per 10 foot) NW 80, 0.065 wall, Stainless Steel
 100764510 Tubing, (price per 10 foot) NW 100, 0.065 wall, Stainless Steel
 100764511 Tubing, (price per 10 foot) NW 100, 0.083 wall, Stainless Steel
 100764516 Tubing, (price per 10 foot) NW 160, 0.083 wall, Stainless Steel
 100764520 Tubing, (price per 10 foot) NW 200, 0.120 wall Stainless Steel
 100764525 Tubing, (price per 10 foot) NW 250, 0.125 wall, Stainless Steel

 100764606 90° Elbow, Smooth Radius, NW 63
 100764608 90° Elbow, Smooth Radius, NW 80
 100764610 90° Elbow, Smooth Radius, NW 100
 100764616 90° Elbow, Smooth Radius, NW 160

 100764906 Conic Reducer, NW 63 to NW 80
 100764908 Conic Reducer, NW 80 to NW 100
 100764910 Conic Reducer, NW 100 to NW 160
 100764917 Conic Reducer, NW 63 to NW 100
 100764927 Conic Reducer, NW 80 to NW 160

 100765006 Conic Adapter, NW 63 to NW 40
 100765008 Conic Adapter, NW 80 to NW 50
 100765016 Conic Adapter, NW 80 to NW 40
 100765017 Conic Adapter, NW 63 to NW 50
 100765018 Conic Adapter, NW 100 to NW 50

 100766006 Braided Metal Hose, NW 63, 10.74" length
 100766008 Braided Metal Hose, NW 80, 10.74" length
 100766010 Braided Metal Hose, NW 100, 10.74" length
 100766106 Braided Metal Hose, NW 63, 20.74" length
 100766108 Braided Metal Hose, NW 80, 20.74" length
 100766110 Braided Metal Hose, NW 100, 20.74" length
 100766206 Braided Metal Hose, NW 63, 40.74" length
 100766208 Braided Metal Hose, NW 80, 40.74" length
 100766210 Braided Metal Hose, NW 100, 40.74" length

 100937685 Seal, Overpressure Assembly, NW 160
 100938657 Seal, Overpressure Assembly, NW 80
 100938658 Seal, Overpressure Assembly, NW 100





Series 76 ISO-Universal Flanges - 11/15
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