MATERIAL PNEUROP KF

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KF Flange system

KF is a simple, flexible “O” ring vacuum flange system available up to 50 mm. It is also well known as NW system.

The KF or NW system is defined by Pneurop 6606 (1981), ISO 1609 (1986) and DIN 28403.

All VCS components are interchangeable with all assemblies made in complain to above standard; all welded assembly is helium leak checked and can be certified to have a leak rate of less than 1*10-9 mbar*l/s.

An assembly consists of two identical sexless, 360° rotatable, smooth-faced flanges, a quick acting enclosing rim-clamp and a center ring which support an elastomer “O”ring to align the flanges and prevent the “O”ring from collapsing. The quick acting clamp compresses the self –centering, sealing ring between the two flanges.

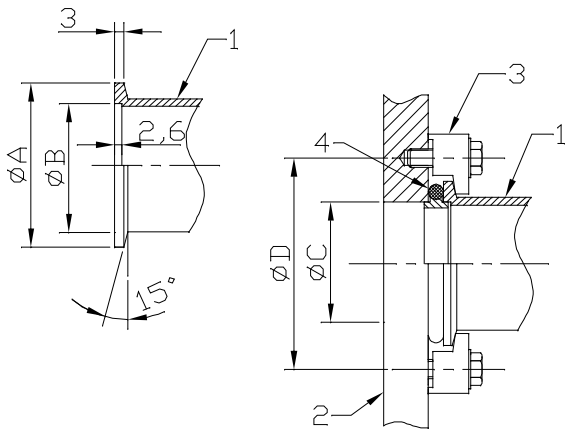
The KF sealing mechanism works from atmosphere to the low 10-7 mbar, within the temperature range -20°C. to 200°C. depending on the construction and “O” ring material. Lower pressure (10-8 mbar) can be reached in systems where Viton “O”rings are baked to 180°C.

Stainless steel flanged components are used for high temperature and corrosion conditions and aluminium or brass for more general applications.

Clamps are made from polymeric materials, cast aluminium, machined aluminium, and stainless steel, with two or three hinged segments and a variety of closing mechanism including thumbscrews, over-center levers, threaded rods or nuts, or set screw. The most popular are either of the first two since no tools are required.

The common elastomer “O”ring used in KF flanges are, depending on temperature and the composition of the gas: Buna-N, fluorocarbon (as Viton A), and silicone rubber. Chemraz or Kalrez having the best high temperature performances can also be used but are very expensive.

Typical Operating Temperature		(extreme conditions)
Buna-N	-20°C. to +80°C.	-40°C. to +120°C.
Viton A	-20°C. to +180°C.	-40°C. to +200°C.
Silicon	-30°C. to +200°C.	-40°C. to +300°C.



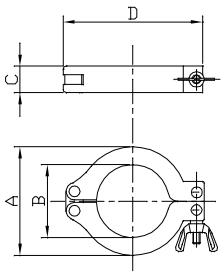
1 Small flange port
2 Housing panel with thread
3 Claw grip
4 Center ring

	A	B	C	D	Number of claw grips
DN 10 KF	30	12,2	12,2	45	4
DN 16 KF	30	17,2	17,2	45	4
DN 20 KF	40	22,2	22,2	55	4
DN 25 KF	40	26,2	26,2	55	4
DN 32 KF	55	34,2	34,2	71	4
DN 40 KF	55	41,2	41,2	71	4
DN 50 KF	75	52,2	52,2	91	4

Small flange components to DIN 28043 or Pneurop 6606 standard

Clamping ring

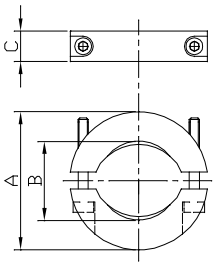
Aluminium



Nominal diameter	A	B	C	D	Order n°
DN 10-16 KF	43	22	16	62	VP-A01-016
DN 20-25 KF	55	32	16	72	VP-A01-025
DN 32-40 KF	70	47	16	90	VP-A01-040
DN 50 KF	95	63	25	123	VP-A01-050

Clamping ring for metal seal

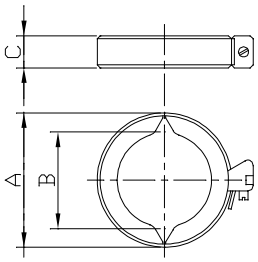
Stainless Steel



DN 10-16 KF	54	22	18		VP-A02-016
DN 20-25 KF	64	32	18		VP-A02-025
DN 32-40 KF	82	47	18		VP-A02-040
DN 50 KF	112	62	18		VP-A02-050

Isolated clamping ring

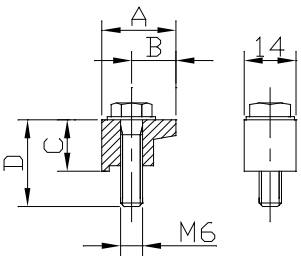
Zelamit



DN 10-16 KF	54	22	18		VP-A03-016
DN 20-25 KF	64	32	18		VP-A03-025
DN 32-40 KF	82	47	18		VP-A03-040
DN 50 KF	112	62	18		VP-A03-050

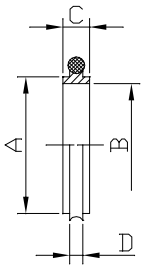
Claw grip

Stainless Steel



DN 10-50 KF	20	12	14	20	VP-A04-000

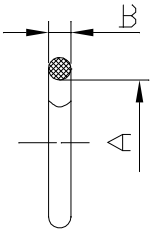
Centering ring



	Nominal diameter	A	B	C	D	Order n°
Stainless Steel-Viton	DN 10 KF	12	10	8	3,9	VP-A05-010
	DN 16 KF	17	16	8	3,9	VP-A05-016
	DN 25 KF	26	25	8	3,9	VP-A05-025
	DN 40 KF	41	40	8	3,9	VP-A05-040
	DN 50 KF	52	50	8	3,9	VP-A05-050
Stainless Steel-NBR	DN 10 KF	12	10	8	3,9	VP-A05-110
	DN 16 KF	17	16	8	3,9	VP-A05-116
	DN 25 KF	26	25	8	3,9	VP-A05-125
	DN 40 KF	41	40	8	3,9	VP-A05-140
	DN 50 KF	52	50	8	3,9	VP-A05-150
Aluminium-Viton	DN 10 KF	12	10	8	3,9	VP-A05-210
	DN 16 KF	17	16	8	3,9	VP-A05-216
	DN 25 KF	26	25	8	3,9	VP-A05-225
	DN 40 KF	41	40	8	3,9	VP-A05-240
	DN 50 KF	52	50	8	3,9	VP-A05-250
Aluminium-NBR	DN 10 KF	12	10	8	3,9	VP-A05-310
	DN 16 KF	17	16	8	3,9	VP-A05-316
	DN 25 KF	26	25	8	3,9	VP-A05-325
	DN 40 KF	41	40	8	3,9	VP-A05-340
	DN 50 KF	52	50	8	3,9	VP-A05-350
Teflon-Viton	DN 10 KF	12	10	8	3,9	VP-A05-410
	DN 16 KF	17	16	8	3,9	VP-A05-416
	DN 25 KF	26	25	8	3,9	VP-A05-425
	DN 40 KF	41	40	8	3,9	VP-A05-440
	DN 50 KF	52	50	8	3,9	VP-A05-450
Teflon-NBR	DN 10 KF	12	10	8	3,9	VP-A05-510
	DN 16 KF	17	16	8	3,9	VP-A05-516
	DN 25 KF	26	25	8	3,9	VP-A05-525
	DN 40 KF	41	40	8	3,9	VP-A05-540
	DN 50 KF	52	50	8	3,9	VP-A05-550

O-Ring

Viton



Nominal diameter	A	B	C	D	Order n°
DN 10 KF	15	5		5	VP-A06-010
DN 16 KF	18	5		5	VP-A06-016
DN 25 KF	28	5		5	VP-A06-025
DN 40 KF	42	5		5	VP-A06-040
DN 50 KF	52	5		5	VP-A06-050

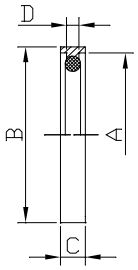
NBR

DN 10 KF	15	5		10	VP-A06-110
DN 16 KF	18	5		10	VP-A06-116
DN 25 KF	28	5		10	VP-A06-125
DN 40 KF	42	5		10	VP-A06-140
DN 50 KF	52	5		10	VP-A06-150

D = quantity delivered

External centering ring

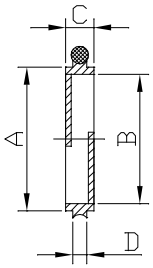
Aluminium-Viton



DN 10-16 KF	30	32	7	3,9	VP-A07-016
DN 20-25 KF	40	42	7	3,9	VP-A07-025
DN 32-40 KF	55	57	7	3,9	VP-A07-040
DN 50 KF	75	77	7	3,9	VP-A07-050

Centering ring with optical baffle

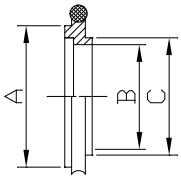
Stainless Steel-Viton



DN 16 KF	17	16	8	3,9	VP-A08-016
DN 25 KF	26	25	8	3,9	VP-A08-025
DN 40 KF	41	40	8	3,9	VP-A08-040

Reducing centering ring

Stainless Steel-Viton



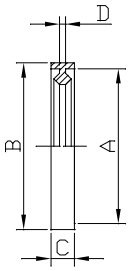
Nominal diameter	A	B	C	D	Order n°
DN 10-16 KF	17	10	12		VP-A09-016
DN 20-25 KF	26	21	22		VP-A09-025
DN 32-40 KF	41	32	34		VP-A09-040

Stainless Steel-NBR

DN 10-16 KF	17	10	12		VP-A09-116
DN 20-25 KF	26	21	22		VP-A09-125
DN 32-40 KF	41	32	34		VP-A09-140

Metal seal

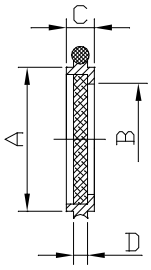
Aluminium



DN 10-16 KF	30	32	7	2	VP-A10-016
DN 20-25 KF	40	42	7	2	VP-A10-025
DN 32-40 KF	55	57	7	2	VP-A10-040
DN 50 KF	75	77	7	2	VP-A10-050

Centering ring with sintered metal filter

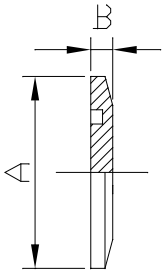
Stainless Steel-Viton



DN 16 KF	17	14	8	3,9	VP-A11-016
DN 25 KF	26	23	8	3,9	VP-A11-025
DN 40 KF	41	38	8	3,9	VP-A11-040

Blanking flange

Stainless Steel



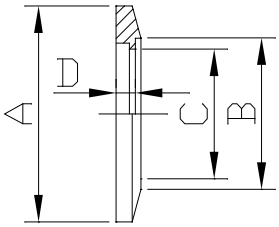
Nominal diameter	A	B	C	D	Order n°
DN 10 KF	30	5			VP-A12-010
DN 16 KF	30	5			VP-A12-016
DN 25 KF	40	5			VP-A12-025
DN 40 KF	55	5			VP-A12-040
DN 50 KF	75	5			VP-A12-050

Aluminium

DN 10 KF	30	5			VP-A12-110
DN 16 KF	30	5			VP-A12-116
DN 25 KF	40	5			VP-A12-125
DN 40 KF	55	5			VP-A12-140
DN 50 KF	75	5			VP-A12-150

Weld flange

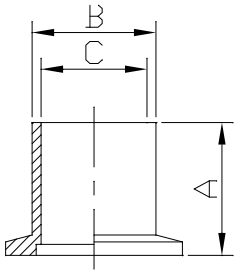
Stainless Steel



DN 10 KF	30	14	10	3,5	VP-A13-010
DN 16 KF	30	20	16	3,5	VP-A13-016
DN 25 KF	40	28	24	3,5	VP-A13-025
DN 40 KF	55	45	41	3,5	VP-A13-040
DN 50 KF	75	57	50	3.5	VP-A13-050

Short weld flange

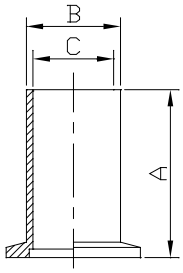
Stainless Steel



DN 10 KF	30	14	10		VP-A14-010
DN 16 KF	30	20	16		VP-A14-016
DN 25 KF	30	28	24		VP-A14-025
DN 40 KF	30	45	41		VP-A14-040
DN 50 KF	30	57	50		VP-A14-050

Long weld flange

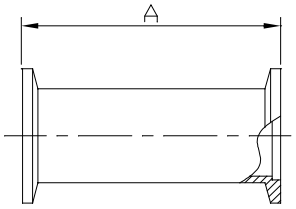
Stainless Steel



DN 10 KF	70	14	10		VP-A15-010
DN 16 KF	70	20	16		VP-A15-016
DN 25 KF	70	28	24		VP-A15-025
DN 40 KF	70	45	41		VP-A15-040
DN 50 KF	70	57	50		VP-A15-050

Intermediate piece

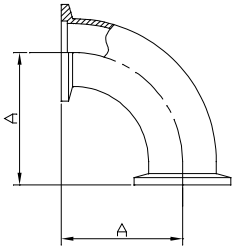
Stainless Steel



Nominal diameter	A	B	C	D	Order n°
DN 10 KF	60				VP-A16-010
DN 16 KF	80				VP-A16-016
DN 25 KF	100				VP-A16-025
DN 40 KF	130				VP-A16-040
DN 50 KF	140				VP-A16-050

Elbow 90°

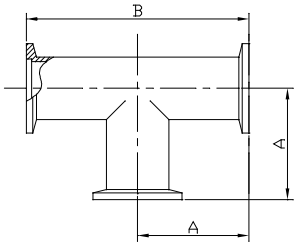
Stainless Steel



DN 10 KF	30				VP-A17-010
DN 16 KF	40				VP-A17-016
DN 25 KF	50				VP-A17-025
DN 40 KF	65				VP-A17-040
DN 50 KF	70				VP-A17-050

T-piece

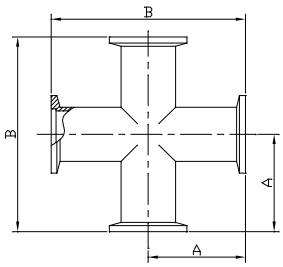
Stainless Steel



DN 10 KF	30	60			VP-A18-010
DN 16 KF	40	80			VP-A18-016
DN 25 KF	50	100			VP-A18-025
DN 40 KF	65	130			VP-A18-040
DN 50 KF	70	140			VP-A18-050

Cross-piece

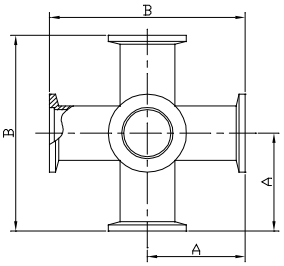
Stainless Steel



DN 10 KF	30	60			VP-A19-010
DN 16 KF	40	80			VP-A19-016
DN 25 KF	50	100			VP-A19-025
DN 40 KF	65	130			VP-A19-040
DN 50 KF	70	140			VP-A19-050

Double cross-piece

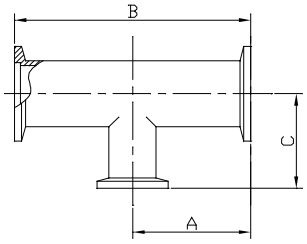
Stainless Steel



DN 10 KF	30	60			VP-A20-010
DN 16 KF	40	80			VP-A20-016
DN 25 KF	50	100			VP-A20-025
DN 40 KF	65	130			VP-A20-040
DN 50 KF	70	140			VP-A20-050

Reducing T-piece

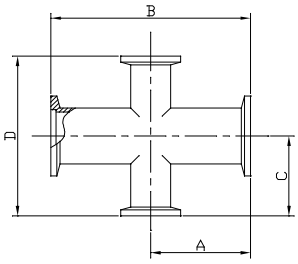
Stainless Steel



Nominal diameter	A	B	C	D	Order n°
DN 25-16 KF	50	100	40		VP-A21-125
DN 40-16 KF	65	130	40		VP-A21-140
DN 40-25 KF	65	130	50		VP-A21-240
DN50-25 KF	70	140	50		VP-A21-250
DN 50-40 KF	70	140	65		VP-A21-450

Reducing cross-piece

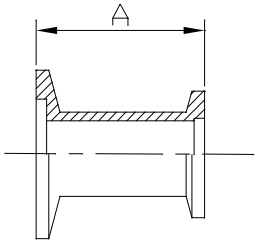
Stainless Steel



DN 25-16 KF	50	100	40	80	VP-A22-125
DN 40-16 KF	65	130	40	80	VP-A22-140
DN 40-25 KF	65	130	50	100	VP-A22-240
DN50-25 KF	70	140	50	100	VP-A22-250
DN 50-40 KF	70	140	65	130	VP-A22-450

Reducing-piece

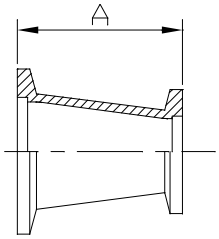
Stainless Steel



DN 25-16 KF	28	VP-A23-125
DN 40-16 KF	28	VP-A23-140
DN 40-25 KF	28	VP-A23-240
DN 50-25 KF	28	VP-A23-250
DN 50-40 KF	28	VP-A23-450

Conical reducing-piece

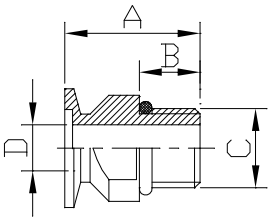
Stainless Steel



DN 25-16 KF	40	VP-A24-125
DN 40-16 KF	40	VP-A24-140
DN 40-25 KF	40	VP-A24-240

Screw-in flange

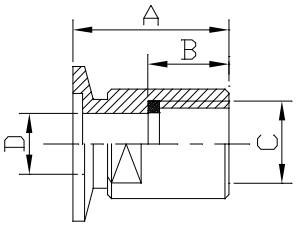
Stainless Steel-Viton



Nominal diameter	A	B	C	D	Order n°
DN 10 KF-G 3/8	35	15	G 3/8	10	VP-A35-010
DN 16 KF-G1/2	35	16	G 1/2	16	VP-A35-016
DN 25 KF-G 1	45	24	G 1	24	VP-A35-025
DN 40 KF-G 11/2	50	28	G 11/2	40	VP-A35-040

Screw-on flange

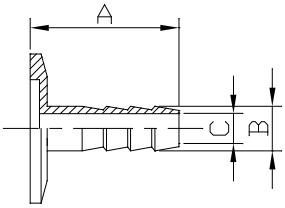
Stainless Steel-Viton



DN 10 KF-G 3/8	35	15	G 3/8	10	VP-A36-010
DN 16 KF-G1/2	35	16	G 1/2	16	VP-A36-016
DN 25 KF-G 1	45	24	G 1	24	VP-A36-025
DN 40 KF-G 11/2	50	28	G 11/2	40	VP-A36-040

Hose nipple

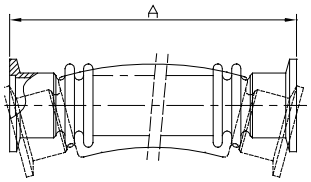
Stainless Steel



DN 16 KF	40	12	8		VP-A37-016
DN 25 KF	40	12	8		VP-A37-025
DN 40 KF	40	12	8		VP-A37-040

Flexible metal hose

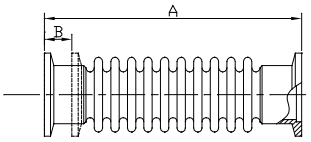
Stainless Steel



Nominal diameter	A	B	C	D	Order n°
DN 10 KF	250				VP-A38-010
DN 16 KF	250				VP-A38-016
DN 25 KF	250				VP-A38-025
DN 40 KF	250				VP-A38-040
DN 50 KF	250				VP-A38-050
DN 10 KF	500				VP-A38-110
DN 16 KF	500				VP-A38-116
DN 25 KF	500				VP-A38-125
DN 40 KF	500				VP-A38-140
DN 50 KF	500				VP-A38-150
DN 10 KF	750				VP-A38-210
DN 16 KF	750				VP-A38-216
DN 25 KF	750				VP-A38-225
DN 40 KF	750				VP-A38-240
DN 50 KF	750				VP-A38-250
DN 10 KF	1000				VP-A38-310
DN 16 KF	1000				VP-A38-316
DN 25 KF	1000				VP-A38-325
DN 40 KF	1000				VP-A38-340
DN 50 KF	1000				VP-A38-350

Bellow

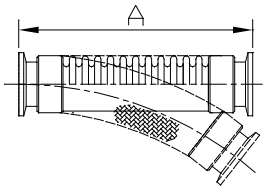
Stainless Steel



DN 10 KF	90	15			VP-A39-010
DN 16 KF	120	22			VP-A39-016
DN 25 KF	120	22			VP-A39-025
DN 40 KF	120	22			VP-A39-040
DN 50 KF	120	22			VP-A39-050

Braided flexible metal hose

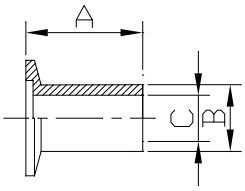
Stainless Steel



DN 16 KF	500				VP-A40-016
DN 25 KF	500				VP-A40-025
DN 40 KF	500				VP-A40-040
DN 16 KF	1000				VP-A40-116
DN 25 KF	1000				VP-A40-125
DN 40 KF	1000				VP-A40-140

Flange for PVC hose

Aluminium



Nominal diameter	A	B	C	D	Order n°
DN 16 KF	30	18	15		VP-A41-016
DN 25 KF	30	27	24		VP-A41-025
DN 40 KF	30	43	39		VP-A41-040

PVC hose with steel spiral

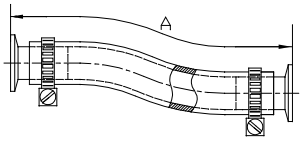
PVC

DN 16 KF	16	22,4			VP-A42-016
DN 25 KF	25	33			VP-A42-025
DN 40 KF	40	50			VP-A42-040

Price for one metre

PVC hose complete

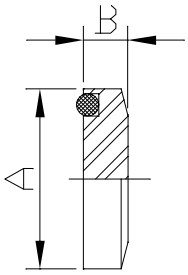
Aluminium-PVC



DN 16 KF	500				VP-A43-016
DN 25 KF	500				VP-A43-025
DN 40 KF	500				VP-A43-040
DN 16 KF	1000				VP-A43-116
DN 25 KF	1000				VP-A43-125
DN 40 KF	1000				VP-A43-140

Viewport

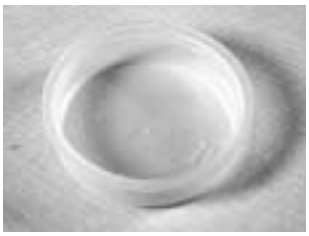
Plexiglass

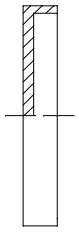


DN 16 KF	30	10			VP-A44-016
DN 25 KF	40	10			VP-A44-025
DN 40 KF	55	10			VP-A44-040

Protective cover

Plastic





DN 10-16 KF				10	VP-A45-016
DN 20-25 KF				10	VP-A45-025
DN 32-40 KF				10	VP-A45-040
DN 50 KF				10	VP-A45-050

D = quantity delivered

MATERIAL PNEUROP ISO-K

MATERIAL PNEUROP ISO-K

ISO Flange system

The ISO flange, defined by ISO 1609 (1986) and DIN 28404, has the same principle as the NW flange with two basic type of smooth-faced sexless flanges, an “O”ring, a center ring and several fastening methods. Some of them are showed below.

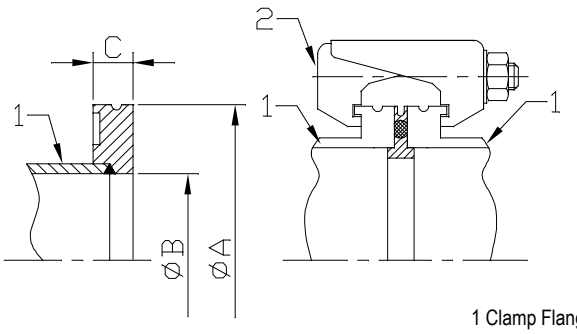
Manufacturers of ISO components machine flanges with interface dimensions in complain to the standards and they are interchangeable. Fittings and adapters, however, have not international standards and they dimension change with manufacturers. All VCS components dimensions are shown in this catalogue. All welded assembly is helium leak checked and can be certified to have a leak rate of less than 1*10-9 mbar*l/s.

The ISO sealing mechanism are totally reliable in vacuum system from atmosphere to 10-6 mbar without baking and down to the 10-8 range, with Viton “O”ring baked up to 180°C.

In this system the clamping mechanism is either bolts through holes in flanges (ISO-F styles) or a number of individual clamps that are spaced around and hook over, the outer edge of the mating flanges (ISO-K) styles.

ISO-K flanges, sexless, infinitely rotatable, self-centering, are usually less expensive and better suited to restricted space with less clearance than is needed for the ISO-F.

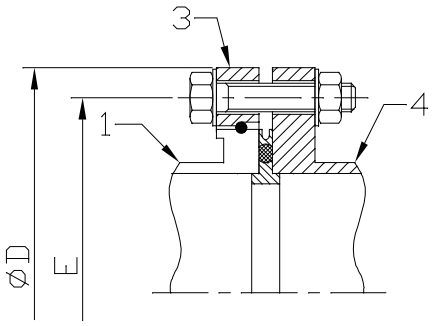
ISO-F flanges, sexless, self-centering, are stronger and are preferred when vacuum piping is used as a structural element of the system. ISO-K flanges can be converted to an infinitely rotatable ISO-F by adding a bolt ring and a wire snap ring (rotatable kit).



1 Clamp Flange
2 Clamps

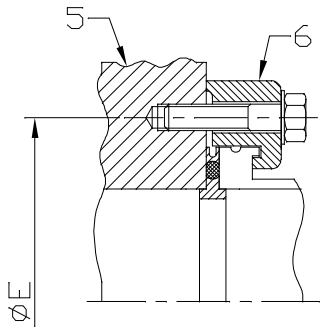
Clamp flange component to DIN 28404 or Pneurop 6606 standard

	A	B	C	Number clamps
DN 63 ISO	95	70	12	4
DN 100 ISO	130	102	12	4
DN 160 ISO	180	153	12	4
DN 200 ISO	240	213	12	6
DIN 250 ISO	290	261	12	6
DN 320 ISO	370	318	17	8
DN 400 ISO	450	400	17	8
DN 500 ISO	550	501	17	12
DN 630 ISO	690	651	22	12



3 Coupling flange
4 Fixed flange

	D	E	Number of holes	Screws
DN 63 ISO	130	110	4	M8x40
DN 100 ISO	165	145	8	M8x40
DN 160 ISO	225	200	8	M10x50
DN 200 ISO	285	260	12	M10x50
DN 250 ISO	335	310	12	M10x50
DN 320 ISO	425	395	12	M12x60
DN 400 ISO	510	480	16	M12x60
DN 500 ISO	610	580	16	M12x60
DN 630 ISO	750	720	20	M12x70

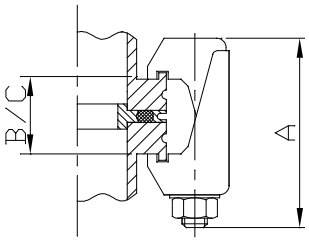


5 Base Plate
6 Claw grip

	E	Screws	Number of claw grips
DN 63 ISO	110	M8x35	4
DN 100 ISO	145	M8x35	8
DN 160 ISO	200	M10x40	8
DN 200 ISO	260	M10x40	12
DN 250 ISO	310	M10x40	12
DN 320 ISO	395	M12x50	12
DN 400 ISO	480	M12x50	16
DN 500 ISO	580	M12x50	16
DN 630 ISO	720	M12x55	20

Claw clamp

Steel, zinc plated



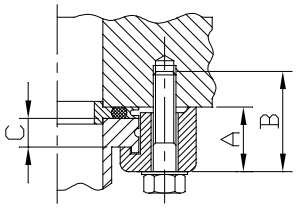
Nominal diameter	A	B	C	D	Order n°
DN 63-250 ISO	60	27	17		VP-B01-025
DN320-500 ISO	75	39	27		VP-B01-050
DN 630 ISO	85	46	30		VP-B01-063

Stainless Steel

DN 63-250 ISO	60	27	17		VP-B01-125
DN320-630 ISO	75	39	27		VP-B01-150

Claw grip for use with centering ring

Steel, zinc plated



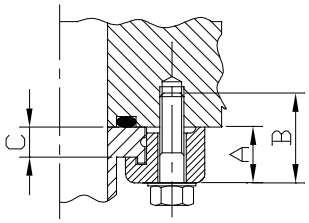
DN 63-100 ISO	22,5	35	10		VP-B02-010
DN 160-250 ISO	23	35	10		VP-B02-025
DN320-500 ISO	36,5	50	15		VP-B02-050

Stainless Steel

DN 63-100 ISO	22,5	35	10		VP-B02-110
DN 160-250 ISO	23	35	10		VP-B02-125
DN320-500 ISO	36,5	50	15		VP-B02-150
DN 630 ISO	41,5	55	20		VP-B02-163

Claw grip for use with sealing groove

Steel, zinc plated



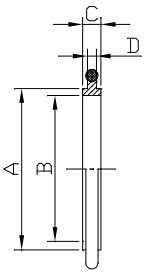
DN 63-100 ISO	18,6	30	10		VP-B03-010
DN 160-250 ISO	19,1	35	10		VP-B03-025
DN320-500 ISO	30,9	45	15		VP-B03-050

Stainless Steel

DN 63-100 ISO	18,6	30	10		VP-B03-110
DN 160-250 ISO	19,1	35	10		VP-B03-125
DN320-500 ISO	30,9	45	15		VP-B03-150
DN 630 ISO	36,5	55	20		VP-B03-163

Centering ring

Stainless Steel - Viton



Nominal diameter	A	B	C	D	Order n°
DN 63 ISO	70	67	8	3,9	VP-B04-006
DN 100 ISO	102	99	8	3,9	VP-B04-010
DN 160 ISO	153	150	8	3,9	VP-B04-016
DN 200 ISO	213	210	8	3,9	VP-B04-020
DN 250 ISO	261	258	8	3,9	VP-B04-025
DN 320 ISO	318	313	14	5,6	VP-B04-032
DN 400 ISO	400	395	14	5,6	VP-B04-040
DN 500 ISO	501	495	14	5,6	VP-B04-050
DN 630 ISO	651	645	14	5,6	VP-B04-063

Stainless Steel - NBR

DN 63 ISO	70	67	8	3,9	VP-B04-106
DN 100 ISO	102	99	8	3,9	VP-B04-110
DN 160 ISO	153	150	8	3,9	VP-B04-116
DN 200 ISO	213	210	8	3,9	VP-B04-120
DN 250 ISO	261	258	8	3,9	VP-B04-125

Aluminium - Viton

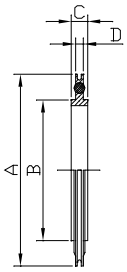
DN 63 ISO	70	67	8	3,9	VP-B04-206
DN 100 ISO	102	99	8	3,9	VP-B04-210
DN 160 ISO	153	150	8	3,9	VP-B04-216
DN 200 ISO	213	210	8	3,9	VP-B04-220
DN 250 ISO	261	258	8	3,9	VP-B04-225
DN 320 ISO	318	313	14	5,6	VP-B04-232
DN 400 ISO	400	395	14	5,6	VP-B04-240
DN 500 ISO	501	495	14	5,6	VP-B04-250
DN 630 ISO	651	645	14	5,6	VP-B04-263

Aluminium - NBR

DN 63 ISO	70	67	8	3,9	VP-B04-306
DN 100 ISO	102	99	8	3,9	VP-B04-310
DN 160 ISO	153	150	8	3,9	VP-B04-316
DN 200 ISO	213	210	8	3,9	VP-B04-320
DN 250 ISO	261	258	8	3,9	VP-B04-325

Centering ring with aluminium outer ring

Stainless Steel - Viton



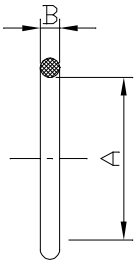
DN 63 ISO	95	70	8	3,9	VP-B05-006
DN 100 ISO	128	102	8	3,9	VP-B05-010
DN 160 ISO	179	153	8	3,9	VP-B05-016
DN 200 ISO	238	213	8	3,9	VP-B05-020
DN 250 ISO	286	261	8	3,9	VP-B05-025

Aluminium - Viton

DN 63 ISO	95	70	8	3,9	VP-B05-106
DN 100 ISO	128	102	8	3,9	VP-B05-110
DN 160 ISO	179	153	8	3,9	VP-B05-116
DN 200 ISO	238	213	8	3,9	VP-B05-120
DN 250 ISO	286	261	8	3,9	VP-B05-125

O-Ring

Viton



Nominal diameter	A	B	C	D	Order n°
DN 63 ISO	76	5,3		5	VP-B06-006
DN 100 ISO	107	5,3		5	VP-B06-010
DN 160 ISO	158	5,3		5	VP-B06-016
DN 200 ISO	209	5,3		5	VP-B06-020
DN 250 ISO	253	5,3		5	VP-B06-025
DN 320 ISO	330	7		5	VP-B06-032
DN 400 ISO	405	7		5	VP-B06-040
DN 500 ISO	507	7		5	VP-B06-050
DN 630 ISO	659	7		5	VP-B06-063

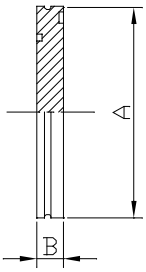
NBR

DN 63 ISO	76	5,3		10	VP-B06-106
DN 100 ISO	107	5,3		10	VP-B06-110
DN 160 ISO	158	5,3		10	VP-B06-116
DN 200 ISO	209	5,3		10	VP-B06-120
DN 250 ISO	253	5,3		10	VP-B06-125

D = quantity delivered

Blanking flange

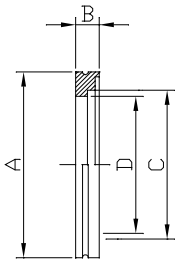
Stainless Steel



DN 63 ISO-K	95	12			VP-B12-006
DN 100 ISO-K	130	12			VP-B12-010
DN 160 ISO-K	180	12			VP-B12-016
DN 200 ISO-K	240	12			VP-B12-020
DN 250 ISO-K	290	12			VP-B12-025
DN 320 ISO-K	370	17			VP-B12-032
DN 400 ISO-K	450	17			VP-B12-040
DN 500 ISO-K	550	17			VP-B12-050
DN 630 ISO-K	690	22			VP-B12-063

Welding flange

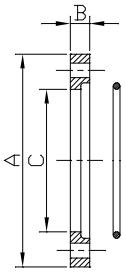
Stainless Steel



DN 63 ISO-K	95	12	76,5	70	VP-B13-006
DN 100 ISO-K	130	12	108,5	102	VP-B13-010
DN 160 ISO-K	180	12	159,5	153	VP-B13-016
DN 200 ISO-K	240	12	219,5	213	VP-B13-020
DN 250 ISO-K	290	12	267,5	261	VP-B13-025
DN 320 ISO-K	370	17	324,5	318	VP-B13-032
DN 400 ISO-K	450	17	407	400	VP-B13-040
DN 500 ISO-K	550	17	509	501	VP-B13-050
DN 630 ISO-K	690	22	661	651	VP-B13-063

Collar flange with retaining ring

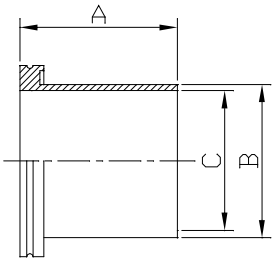
Steel, nickel plated



DN 63 ISO-F	130	12	95,5	VP-B14-006
DN 100 ISO-F	165	12	130,5	VP-B14-010
DN 160 ISO-F	225	16	180,7	VP-B14-016
DN 200 ISO-F	285	16	240,7	VP-B14-020
DN 250 ISO-F	335	16	290,7	VP-B14-025
DN 320 ISO-F	425	20	370,8	VP-B14-032
DN 400 ISO-F	510	20	451	VP-B14-040
DN 500 ISO-F	610	20	551	VP-B14-050
DN 630 ISO-F	750	24	691	VP-B14-063

Flange with pipe

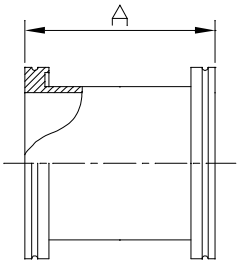
Stainless Steel



Nominal diameter	A	B	C	D	Order n°
DN 63 ISO-K	100	76	70		VP-B15-006
DN 100 ISO-K	100	108	102		VP-B15-010
DN 160 ISO-K	100	159	153		VP-B15-016
DN 200 ISO-K	100	219	213		VP-B15-020
DN 250 ISO-K	100	267	261		VP-B15-025
DN 320 ISO-K	100	324	318		VP-B15-032
DN 400 ISO-K	100	408	400		VP-B15-040
DN 500 ISO-K	100	508	500		VP-B15-050
DN 630 ISO-K	100	660	650		VP-B15-063

Intermediate piece

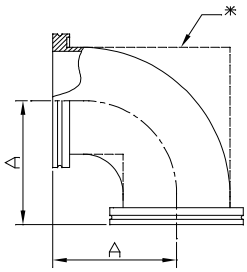
Stainless Steel



DN 63 ISO-K	100				VP-B16-006
DN 100 ISO-K	100				VP-B16-010
DN 160 ISO-K	100				VP-B16-016
DN 200 ISO-K	100				VP-B16-020
DN 250 ISO-K	100				VP-B16-025

Elbow 90°

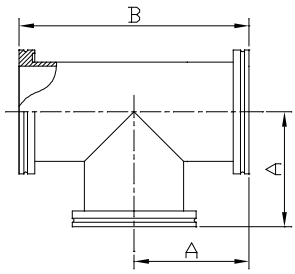
Stainless Steel



DN 63 ISO-K	88				VP-B17-006
DN 100 ISO-K	108				VP-B17-010
DN 160 ISO-K	138				VP-B17-016
DN 200 ISO-K	178				VP-B17-020
DN 250 ISO-K	208				VP-B17-025

T-piece

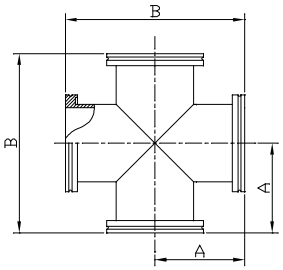
Stainless Steel



DN 63 ISO-K	88	176			VP-B18-006
DN 100 ISO-K	108	216			VP-B18-010
DN 160 ISO-K	138	276			VP-B18-016
DN 200 ISO-K	178	356			VP-B18-020
DN 250 ISO-K	208	416			VP-B18-025

Cross-piece

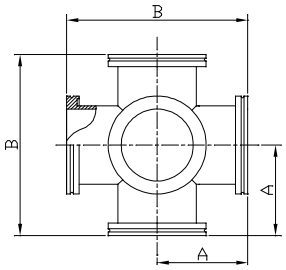
Stainless Steel



Nominal diameter	A	B	C	D	Order n°
DN 63 ISO-K	88	176			VP-B19-006
DN 100 ISO-K	108	216			VP-B19-010
DN 160 ISO-K	138	276			VP-B19-016
DN 200 ISO-K	178	356			VP-B19-020
DN 250 ISO-K	208	416			VP-B19-025

Double cross-piece

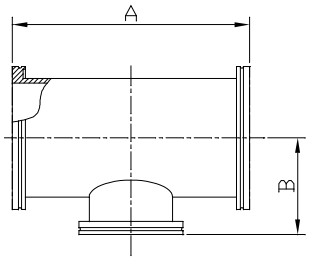
Stainless Steel



DN 63 ISO-K	88	176			VP-B20-006
DN 100 ISO-K	108	216			VP-B20-010
DN 160 ISO-K	138	276			VP-B20-016
DN 200 ISO-K	178	356			VP-B20-020
DN 250 ISO-K	208	416			VP-B20-025

Reducing T-piece

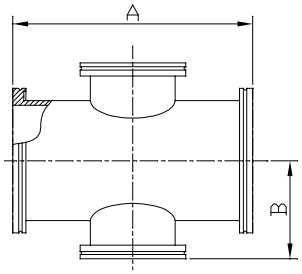
Stainless Steel



DN 100-63 ISO-K	216	100			VP-B21-010
DN 160-100 ISO-K	276	130			VP-B21-016
DN 200-160 ISO-K	356	160			VP-B21-020
DN 250-200 ISO-K	416	190			VP-B21-025

Reducing cross-piece

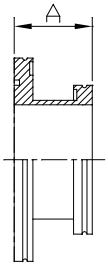
Stainless Steel



DN 100-63 ISO-K	216	100			VP-B22-010
DN 160-100 ISO-K	276	130			VP-B22-016
DN 200-160 ISO-K	356	160			VP-B22-020
DN 250-200 ISO-K	416	190			VP-B22-025

Reducing-piece ISO-K / ISO-K

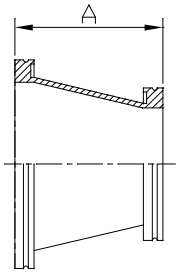
Stainless Steel



Nominal diameter	A	B	C	D	Order n°
DN 100-63 ISO-K	50				VP-B23-010
DN 160-100 ISO-K	50				VP-B23-016
DN 200-160 ISO-K	50				VP-B23-020
DN 250-200 ISO-K	50				VP-B23-025

Conical reducing-piece

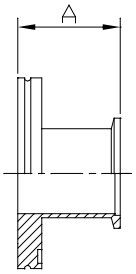
Stainless Steel



DN 100-63 ISO-K	100				VP-B24-010
DN 160-100 ISO-K	120				VP-B24-016
DN 200-160 ISO-K	140				VP-B24-020
DN 250-200 ISO-K	160				VP-B24-025

Adaptor piece ISO-K / KF

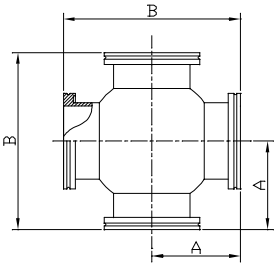
Stainless Steel



DN 63 ISO-K / 25 KF	40				VP-B25-062
DN 63 ISO-K / 40 KF	40				VP-B25-064
DN 100 ISO-K / 40 KF	40				VP-B25-104
DN 100 ISO-K / 50 KF	40				VP-B25-105
DN 160 ISO-K / 40 KF	40				VP-B25-164

Spherical cross-piece

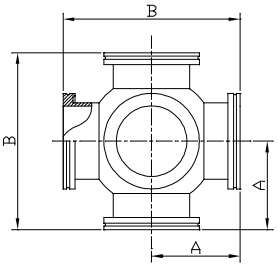
Stainless Steel



DN 63 ISO-K	88	176			VP-B30-006
DN 100 ISO-K	108	216			VP-B30-010
DN 160 ISO-K	138	276			VP-B30-016
DN 200 ISO-K	178	356			VP-B30-020
DN 250 ISO-K	208	416			VP-B30-025

Spherical double cross-piece

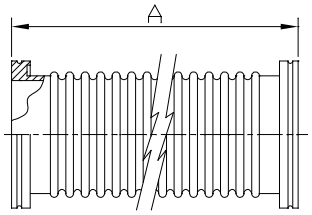
Stainless Steel



DN 63 ISO-K	88	176			VP-B31-006
DN 100 ISO-K	108	216			VP-B31-010
DN 160 ISO-K	138	276			VP-B31-016
DN 200 ISO-K	178	356			VP-B31-020
DN 250 ISO-K	208	416			VP-B31-025

Flexible metal hose

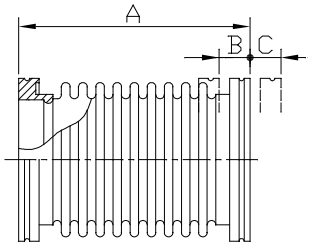
Stainless Steel



Nominal diameter	A	B	C	D	Order n°
DN 63 ISO-K	250				VP-B38-006
DN 100 ISO-K	250				VP-B38-010
DN 160 ISO-K	250				VP-B38-016
DN 63 ISO-K	500				VP-B38-106
DN 100 ISO-K	500				VP-B38-110
DN 160 ISO-K	500				VP-B38-116
DN 63 ISO-K	750				VP-B38-206
DN 100 ISO-K	750				VP-B38-210
DN 160 ISO-K	750				VP-B38-216
DN 63 ISO-K	1000				VP-B38-306
DN 100 ISO-K	1000				VP-B38-310
DN 160 ISO-K	1000				VP-B38-316

Bellow

Stainless Steel

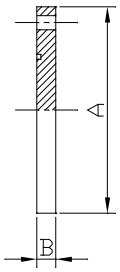


DN 63 ISO-K	130	14	7	90	VP-B39-006
DN 100 ISO-K	130	14	7	128	VP-B39-010
DN 160 ISO-K	150	16	8	175	VP-B39-016
DN 200 ISO-K	230	20	10	235	VP-B39-020
DN 250 ISO-K	250	20	10	285	VP-B39-025

MATERIAL PNEUROP ISO-K

Blanking flange

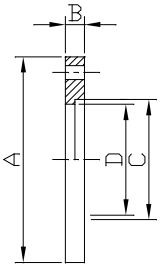
Stainless Steel



Nominal diameter	A	B	C	D	Order n°
DN 63 ISO-F	130	12			VP-B40-006
DN 100 ISO-F	165	12			VP-B40-010
DN 160 ISO-F	225	16			VP-B40-016
DN 200 ISO-F	285	16			VP-B40-020
DN 250 ISO-F	335	16			VP-B40-025
DN 320 ISO-F	425	20			VP-B40-032
DN 400 ISO-F	510	20			VP-B40-040
DN 500 ISO-F	610	20			VP-B40-050
DN 630 ISO-F	750	24			VP-B40-063

Welding flange

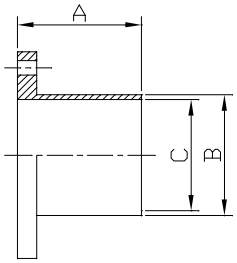
Stainless Steel



DN 63 ISO-F	130	12	76,5	70	VP-B41-006
DN 100 ISO-F	165	12	108,5	102	VP-B41-010
DN 160 ISO-F	225	16	159,5	153	VP-B41-016
DN 200 ISO-F	285	16	219,5	213	VP-B41-020
DN 250 ISO-F	335	16	267,5	261	VP-B41-025
DN 320 ISO-F	425	20	324,5	318	VP-B41-032
DN 400 ISO-F	510	20	407	400	VP-B41-040
DN 500 ISO-F	610	20	509	501	VP-B41-050
DN 630 ISO-F	750	24	661	651	VP-B41-063

Flange with pipe

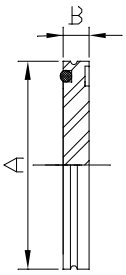
Stainless Steel



DN 63 ISO-F	100	76	70		VP-B42-006
DN 100 ISO-F	100	108	102		VP-B42-010
DN 160 ISO-F	100	159	153		VP-B42-016
DN 200 ISO-F	100	219	213		VP-B42-020
DN 250 ISO-F	100	267	261		VP-B42-025
DN 320 ISO-F	100	324	318		VP-B42-032
DN 400 ISO-F	100	408	400		VP-B42-040
DN 500 ISO-F	100	508	500		VP-B42-050
DN 630 ISO-F	100	660	650		VP-B42-063

Viewport

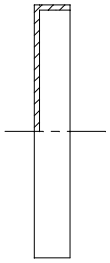
Plexiglass



DN 63 ISO-K	95	15			VP-B44-006
DN 100 ISO-K	130	15			VP-B44-010
DN 160 ISO-K	180	20			VP-B44-016

Protective cover

Plastic



DN 63 ISO-K				10	VP-B45-006
DN 100 ISO-K				10	VP-B45-010
DN 160 ISO-K				1	VP-B45-016
DN 200 ISO-K				1	VP-B45-020
DN 250 ISO-K				1	VP-B45-025

D = quantity delivered

MATERIAL CONFLAT® CF

MATERIAL CONFLAT® CF

UHV Conflat® flange fittings

The CF sealing mechanism works from atmosphere to the lowest measurable pressures, within the temperature range -196°C. to 450°C. CF sealing mechanism is especially suited to condition requiring ultra-high vacuum, very clean environments, high temperatures or the containment of toxic, corrosive or radioactive gasses.

The seal is made by bolting tighter two identical flanges, witch contains a knife-edge, with a flat metal ring gasket between the knife-edge (see the picture). The knife-edge is forced into the metal ring (usually copper). The knife edge press annular grooves in each side of the softer gasket material capable of withstanding high pressures or temperatures, fills the voids and defects in the knife edges producing an extremely reliable.

There are rotatable and fixed flanges. Rotatable flange is made from two pieces with the knife-edge part and external bolt holes being separate. Once the knife-edge part is welded in position it is easy to change the orientation of the bolt holes relative to the axis of the port.

This flange is used where alignment of a component to a chamber or to another component need to be set up accurately before the flange mounting bolts are tightened. Fixed flange is a single piece machined item with the bolt hole orientation fixed into position once they are welded.

Conflat® and equivalent flange names

While American manufacturers identify CF flanges using inch, the Europeans identify them with variety of conventions that can generate unpleasant misunderstand. They are many descriptions used to describe the same flange size as the flange OD in mm, the ID, in mm, of counterbore that accepts the tube for welding or the ID, in mm, of the largest clear bore.

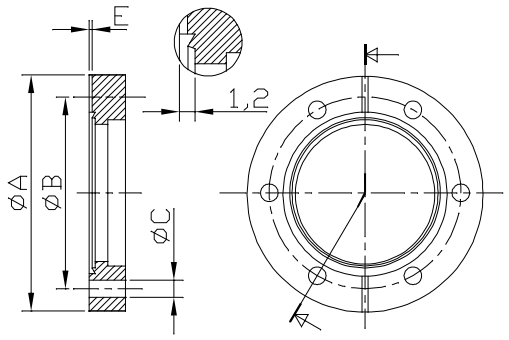
Thus, the metric equivalent of a bored 2$^{3/4}$" OD CFflange could be called: CF70 indicating a 70 mm flange OD DN40CF indicating a 40 mm OD connecting tube or NW38CF indicating a 38,1 mm clear bore and 41,1 mm counterbore and CF23/4" is equivalent to FC70, DN40CF, NW38CF.

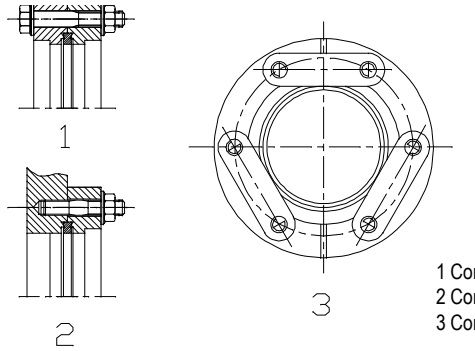
CF Flange name equivalent					OD (mm)	OD(in)
DN16CF	CF34	NW16CF	FC34	CF11/2"	34.00	1.33
DN40CF	CF70	NW40CF	FC70	CF23/4"	70.00	2.73
DN63CF	CF114	NW63CF	FC114	CF41/2"	114.00	4.47
DN100CF	CF150	NW100CF	FC150	CF6"	152.00	5.97
DN160CF	CF200	NW160CF	FC200	CF8"	202.00	7.97
DN200CF	CF250	NW200CF	FC250	CF10"	253.00	9.97
DN250CF	CF300	NW250CF	FC300	CF12"	306.00	13.25

Materials:
Our range of CF components is manufactured from selected high cleanliness AISI 316 stainless steel that offers optimum performances at an affordable cost AISI 316 LN stainless steel is also available on request for applications where harder material at higher bakeout temperature and lower magnetic permeability are required.

There are many types of CF gaskets.

Copper gasket	for general application. The most common is the high purity scratch, oxygen free, 1/4 hard copper gasket.
Silver plated copper gasket	protect against flaking oxide production caused by frequent high temperature bakeout
Fully annealed copper gasket	is used to minimize strain during bolt tightening
Aluminium gaskets	is used with aluminium knite-edge flange or with S.S. CF flange non submitted to high temperature bakeout
Viton gasket	re-usable elastomeric gasket used in non-UHV, non-bakeable applications
Gold-plated copper; silver diffused copper; zirconium-copper alloy; Wire of nickel, gold, lead, indium.	gaskets made for special application



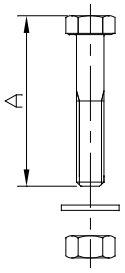


1 Connection with screws
2 Connection with stud screws
3 Connection with DUO nuts

Nominal Diameter	A	O.D.	B	C	N. of Holes	Number of screws	Number of stud screws	Number of DUO nuts
DN 16 CF	34,0	1 ⅓”	27,0	4,3	6	6xM4	6xM4	3xM4
DN 40 CF	69,5	2 ¾”	58,7	6,6	6	6xM6	6xM6	3xM6
DN 63 CF	113,5	4 ½”	92,2	8,4	8	8xM8	8xM8	
DN 100 CF	152,0	6”	130,3	8,4	16	16xM8	16xM8	
DN 160 CF	202,5	8”	181,0	8,4	20	20xM8	20xM8	
DN 200 CF	253,0	10”	231,8	8,4	24	24xM8	24xM8	
DN 250 CF	306,0	12”	284,0	8,4	32	32xM8	32xM8	

Set of hexagonal bolts

Stainless Steel

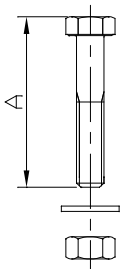


Nominal diameter	A	B	C	D	Order n°
DN 16 CF	20	M4		25	VP-C01-001
DN 40 CF	35	M6		25	VP-C01-004
DN 63 CF	45	M8		25	VP-C01-006
DN 100 CF	50	M8		25	VP-C01-010
DN 160 CF	55	M8		25	VP-C01-016
DN 200 CF	60	M8		25	VP-C01-020
DN 250 CF	65	M8		25	VP-C01-025

D = quantity delivered

Set of hexagonal bolts for TAPPED hole

Stainless Steel

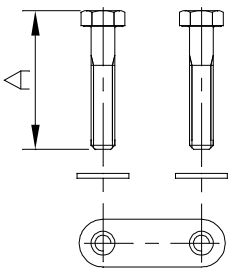


Nominal diameter	A	B	C	D	Order n°
DN 16 CF	16	M4		25	VP-C02-001
DN 40 CF	25	M6		25	VP-C02-004
DN 63 CF	30	M8		25	VP-C02-006
DN 100 CF	35	M8		25	VP-C02-010
DN 160 CF	40	M8		25	VP-C02-016
DN 200 CF	45	M8		25	VP-C02-020
DN 250 CF	50	M8		25	VP-C02-025

D = quantity delivered

Set of hexagonal bolts with DUO nuts

Stainless Steel

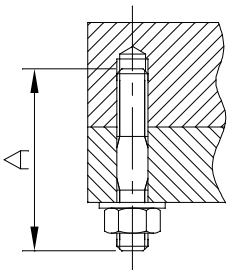


Nominal diameter	A	B	C	D	Order n°
DN 16 CF	20	M4		6+3	VP-C03-001
DN 40 CF	35	M6		6+3	VP-C03-004
DN 63 CF	40	M8		8+4	VP-C03-006
DN 100 CF	45	M8		16+8	VP-C03-010
DN 160 CF	50	M8		20+10	VP-C03-016
DN 200 CF	55	M8		24+12	VP-C03-020
DN 250 CF	60	M8		32+16	VP-C03-025

D = quantity delivered

Set of stud screws

Stainless Steel

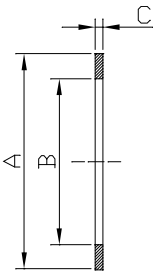


Nominal diameter	A	B	C	D	Order n°
DN 16 CF	20	M4		25	VP-C04-001
DN 40 CF	35	M6		25	VP-C04-004
DN 63 CF	45	M8		25	VP-C04-006
DN 100 CF	50	M8		25	VP-C04-010
DN 160 CF	55	M8		25	VP-C04-016
DN 200 CF	60	M8		25	VP-C04-020
DN 250 CF	65	M8		25	VP-C04-025

D = quantity delivered

Gaskets

Copper



DN 16 CF	2	21	16	10	VP-C05-001
DN 40 CF	2	48	37	10	VP-C05-004
DN 63 CF	2	82	63	10	VP-C05-006
DN 100 CF	2	120	101	10	VP-C05-010
DN 160 CF	2	171	152	10	VP-C05-016
DN 200 CF	2	222	203	10	VP-C05-020
DN 250 CF	2	273	258	5	VP-C05-025

Annealed copper

DN 16 CF	2	21	16	5	VP-C05-101
DN 40 CF	2	48	37	5	VP-C05-104
DN 63 CF	2	82	63	5	VP-C05-106
DN 100 CF	2	120	101	5	VP-C05-110
DN 160 CF	2	171	152	5	VP-C05-116
DN 200 CF	2	222	203	5	VP-C05-120
DN 250 CF	2	273	258	5	VP-C05-125

Silver plated copper

DN 16 CF	2	21	16	5	VP-C05-201
DN 40 CF	2	48	37	5	VP-C05-204
DN 63 CF	2	82	63	5	VP-C05-206
DN 100 CF	2	120	101	5	VP-C05-210
DN 160 CF	2	171	152	5	VP-C05-216
DN 200 CF	2	222	203	5	VP-C05-220
DN 250 CF	2	273	258	5	VP-C05-225

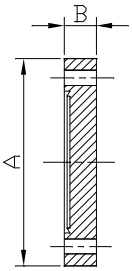
Viton

DN 16 CF				5	VP-C05-501
DN 40 CF				5	VP-C05-504
DN 63 CF				1	VP-C05-506
DN 100 CF				1	VP-C05-510
DN 160 CF				1	VP-C05-516
DN 200 CF				1	VP-C05-520
DN 250 CF				1	VP-C05-525

D = quantity delivered

Blanking flange

AISI 316 L 1.4404



Nominal diameter	A	B	C	D	Order n°
DN 16 CF	34	7,3			VP-C08-001
DN 40 CF	69,5	12,7			VP-C08-004
DN 63 CF	113,5	17,5			VP-C08-006
DN 100 CF	152	20			VP-C08-010
DN 160 CF	202,5	22			VP-C08-016
DN 200 CF	253	24,5			VP-C08-020
DN 250 CF	306	26			VP-C08-025

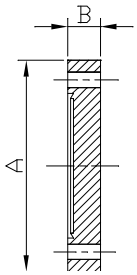
AISI 316 LN ESR-FORG 1.4429

DN 16 CF*	34	7,3			VP-C08-201
DN 40 CF*	69,5	12,7			VP-C08-204
DN 63 CF	113,5	17,5			VP-C08-206
DN 100 CF	152	20			VP-C08-210
DN 160 CF	202,5	22			VP-C08-216
DN 200 CF	253	24,5			VP-C08-220
DN 250 CF	306	26			VP-C08-225

* not forged

Blanking flange with tapped holes

AISI 316 L 1.4404



DN 16 CF	34	7,3			VP-C08-501
DN 40 CF	69,5	12,7			VP-C08-504
DN 63 CF	113,5	17,5			VP-C08-506
DN 100 CF	152	20			VP-C08-510
DN 160 CF	202,5	22			VP-C08-516
DN 200 CF	253	24,5			VP-C08-520
DN 250 CF	306	26			VP-C08-525

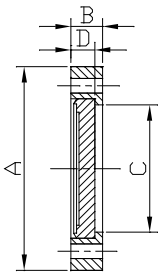
AISI 316 LN ESR-FORG 1.4429

DN 16 CF*	34	7,3			VP-C08-701
DN 40 CF*	69,5	12,7			VP-C08-704
DN 63 CF	113,5	17,5			VP-C08-706
DN 100 CF	152	20			VP-C08-710
DN 160 CF	202,5	22			VP-C08-716
DN 200 CF	253	24,5			VP-C08-720
DN 250 CF	306	26			VP-C08-725

* not forged

Blanking flange rotatable

AISI 316 L 1.4404



Nominal diameter	A	B	C	D	Order n°
DN 16 CF	34	7,3	19,4	5,8	VP-C09-001
DN 40 CF	69,5	12,7	40,5	7,6	VP-C09-004
DN 63 CF	113,5	19	70,5	12,6	VP-C09-006
DN 100 CF	152	21,5	109	14,3	VP-C09-010
DN 160 CF	202,5	24	160	15,8	VP-C09-016
DN 200 CF	253	24,5	207	17,1	VP-C09-020
DN 250 CF	306	26	257	18	VP-C09-025

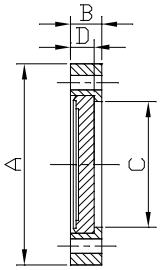
AISI 316 LN ESR-FORG 1.4429

DN 16 CF*	34	7,3	19,4	5,8	VP-C09-201
DN 40 CF*	69,5	12,7	40,5	7,6	VP-C09-204
DN 63 CF	113,5	19	70,5	12,6	VP-C09-206
DN 100 CF	152	21,5	109	14,3	VP-C09-210
DN 160 CF	202,5	24	160	15,8	VP-C09-216
DN 200 CF	253	24,5	207	17,1	VP-C09-220
DN 250 CF	306	26	257	18	VP-C09-225

* not forged

Blanking flange rotatable with tapped holes

AISI 316 L 1.4404



DN 16 CF	34	7,3	19,4	5,8	VP-C09-501
DN 40 CF	69,5	12,7	40,5	7,6	VP-C09-504
DN 63 CF	113,5	19	70,5	12,6	VP-C09-506
DN 100 CF	152	21,5	109	14,3	VP-C09-510
DN 160 CF	202,5	24	160	15,8	VP-C09-516
DN 200 CF	253	24,5	207	17,1	VP-C09-520
DN 250 CF	306	26	257	18	VP-C09-525

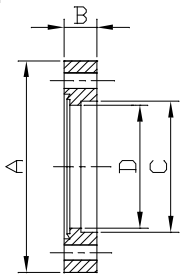
AISI 316 LN ESR-FORG 1.4429

DN 16 CF*	34	7,3	19,4	5,8	VP-C09-701
DN 40 CF*	69,5	12,7	40,5	7,6	VP-C09-704
DN 63 CF	113,5	19	70,5	12,6	VP-C09-706
DN 100 CF	152	21,5	109	14,3	VP-C09-710
DN 160 CF	202,5	24	160	15,8	VP-C09-716
DN 200 CF	253	24,5	207	17,1	VP-C09-720
DN 250 CF	306	26	257	18	VP-C09-725

* not forged

Welding flange

AISI 316 L 1.4404



Nominal diameter	A	B	C	D	Order n°
DN 16 CF	34	14,2	19,2	16	VP-C10-001W
DN 16 CF	34	7,3	19,2	16	VP-C10-001
DN 40 CF	69,5	12,7	40,2	37	VP-C10-004
DN 63 CF	113,5	17,5	70,2	64	VP-C10-006
DN 100 CF	152	20	108,5	102	VP-C10-010
DN 160 CF	202,5	22	159,5	153	VP-C10-016
DN 200 CF	253	24,5	206,5	200	VP-C10-020
DN 250 CF	306	26	256,5	250	VP-C10-025

(W) long flange

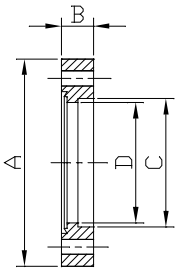
AISI 316 LN ESR-FORG 1.4429

DN 16 CF*	34	14,2	19,2	16	VP-C10-201W
DN 16 CF*	34	7,3	19,2	16	VP-C10-201
DN 40 CF*	69,5	12,7	40,2	37	VP-C10-204
DN 63 CF	113,5	17,5	70,2	64	VP-C10-206
DN 100 CF	152	20	108,5	102	VP-C10-210
DN 160 CF	202,5	22	159,5	153	VP-C10-216
DN 200 CF	253	24,5	206,5	200	VP-C10-220
DN 250 CF	306	26	256,5	250	VP-C10-225

* not forged

Welding flange with tapped holes

AISI 316 L 1.4404



DN 16 CF	34	7,3	19,2	16	VP-C10-501
DN 40 CF	69,5	12,7	40,2	37	VP-C10-504
DN 63 CF	113,5	17,5	70,2	64	VP-C10-506
DN 100 CF	152	20	108,5	102	VP-C10-510
DN 160 CF	202,5	22	159,5	153	VP-C10-516
DN 200 CF	253	24,5	206,5	200	VP-C10-520
DN 250 CF	306	26	256,5	250	VP-C10-525

AISI 316 LN ESR-FORG 1.4429

DN 16 CF*	34	7,3	19,2	16	VP-C10-701
DN 40 CF*	69,5	12,7	40,2	37	VP-C10-704
DN 63 CF	113,5	17,5	70,2	64	VP-C10-706
DN 100 CF	152	20	108,5	102	VP-C10-710
DN 160 CF	202,5	22	159,5	153	VP-C10-716
DN 200 CF	253	24,5	206,5	200	VP-C10-720
DN 250 CF	306	26	256,5	250	VP-C10-725

* not forged