



AGILENT VACUUM COMPONENTS

The Measure of Confidence



Agilent Technologies

FLANGES

Agilent Vacuum Flanges and Fittings

- Superior Quality Construction
- High Reliability
- Immediate Delivery



ConFlat Flanges & Fittings

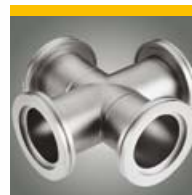
Agilent's ConFlat Flanges have set the industry standard for vacuum flange performance. These flanges are available in rotatable and non-rotatable models, and in sizes from 1.33 in. to 13.25 in. OD.

Agilent utilizes unique manufacturing processes and techniques to ensure leak-free performance in ConFlat Flanges. Our unbending commitment to quality assures you of trouble-free vacuum performance of the Agilent ConFlat Flange.



Klamp Flanges & Fittings

Designed in accordance with ISO standards the Agilent KF flange can be used in a variety of applications from atmospheric pressure to high vacuum. The KF flange is manufactured from 304 stainless steel and has a leak rate less than 1E^{-9} std cc/sec and can be baked to 150 °C when using a Viton O-Ring.



ISO Flanges & Fittings

ISO flanges and fittings are designed for applications requiring frequent disassembly and where tubing requirements generally exceed 2 in. OD. All ISO flanges and fittings listed are made of 304L stainless steel. These flanges can be used in a variety of applications from atmospheric to E^{-8} Torr. They can sustain a bakeout temperature of 150 °C when using Viton o-rings.



Feedthroughs

Rotary motion feedthrough.
High voltage feedthrough.



Supplies

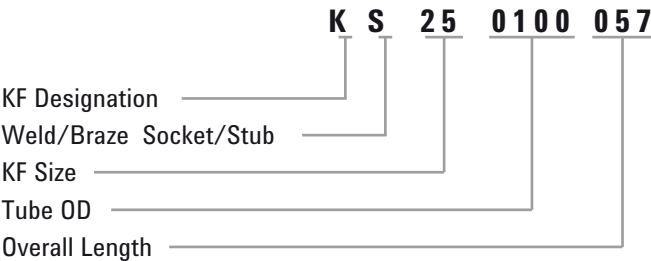
Greases and lubricants.
Diffusion and mechanical pump fluids.

KLAMPS FLANGES & FITTINGS

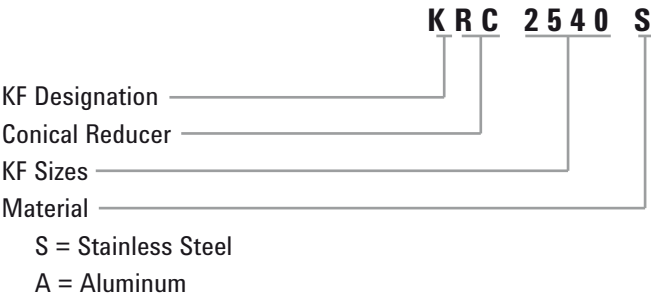
Agilent’s introduction of its extensive offering in vacuum flanges and fittings features an intuitive part numbering format. These part numbering format allows the customer to identify the product by the characters contained within the part number.

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

KF Flange Example



KF25 to 40 Conical Reducer Example



VACUUM COMPONENTS

Klump-Flanges

Designed in accordance with ISO standards the Agilent KF flange can be used in a variety of applications from atmospheric pressure to high vacuum. The KF flange is manufactured from 304 stainless steel and has a leak rate less than 1E⁻⁹ std cc/sec and can be baked to 150 °C when using a Viton O-Ring.

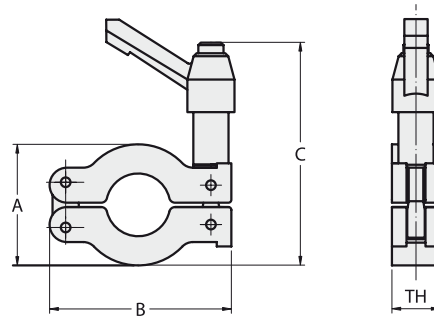
Klump Fittings

Employing the easy release clamping design, these fittings offer a quick and simple solution to vacuum system design and assembly. Bakeable to 150 °C when using Viton O-Rings, these fittings are ideal for roughing or high vacuum applications.

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KLAMPS FLANGES & FITTINGS

► Quick Clamps with Ratchet Closure NW10 - NW50 (ISO)



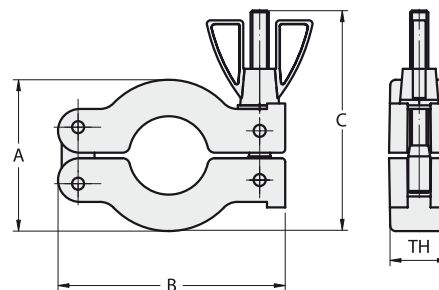
Specifications

- Aluminum
- Black or Metallic Finish

Ordering Information – (Black or Metallic Finish)

Description	Black	Metallic	A in. (mm)	B in. (mm)	C in. (mm)	Thickness in. (mm)	Weight lbs (kg)
NW10/16	KQ16AR	KQ16ARP	1.57 (40.00)	2.45 (62.30)	3.12 (79.25)	0.65 (16.50)	1.0 (0.5)
NW25	KQ25AR	KQ25ARP	2.13 (54.00)	2.85 (72.40)	3.38 (85.85)	0.65 (16.50)	1.0 (0.5)
NW40	KQ40AR	KQ40ARP	2.68 (68.00)	3.53 (89.70)	3.67 (93.22)	0.65 (16.50)	1.0 (0.5)
NW50	KQ50AR	KQ50ARP	3.54 (90.00)	4.80 (122.00)	4.42 (112.27)	0.91 (23.20)	1.0 (0.5)

► Quick Clamps with Wing-Nut Closure NW10 - NW50 (ISO)



Specifications

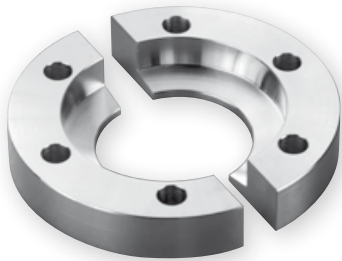
- Aluminum
- Black or Plain finish

Ordering Information – (Black or Metallic Finish)

Description	Black	Metallic	A in. (mm)	B in. (mm)	C in. (mm)	Thickness in. (mm)	Weight lbs (kg)
NW10/16	KQ16AW	KQ16AWP	1.57 (40.00)	2.45 (62.30)	2.17 (55.19)	0.65 (16.50)	1.0 (0.5)
NW25	KQ25AW	KQ25AWP	2.13 (54.00)	2.85 (72.40)	2.37 (60.20)	0.65 (16.50)	1.0 (0.5)
NW40	KQ40AW	KQ40AWP	2.68 (68.00)	3.53 (89.70)	2.64 (67.06)	0.65 (16.50)	1.0 (0.5)
NW50	KQ50AW	KQ50AWP	3.54 (90.00)	4.80 (122.00)	3.60 (90.44)	0.91 (23.20)	1.0 (0.5)

VACUUM COMPONENTS

Bulkhead Clamps



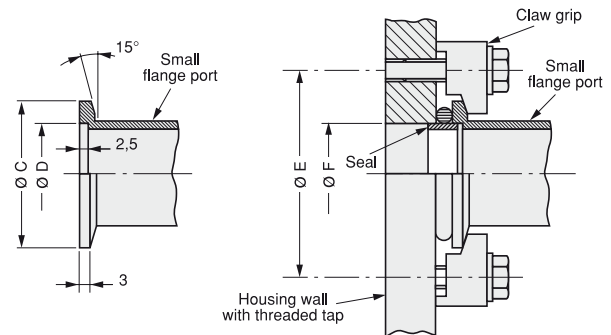
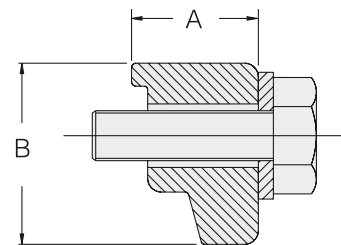
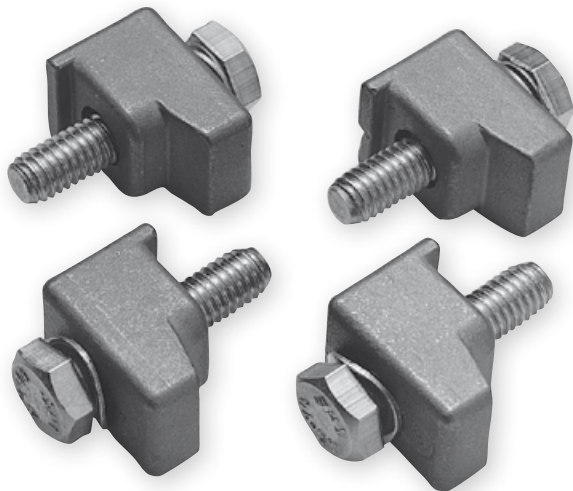
Specifications

- Aluminum
- Provides simple and secure baseplate connection
- Stainless Steel bolts and washers included (10-32 x 5/8)

Ordering Information

Description	Part Number	Bolts	Shipping Weight lbs (kg)
NW16	KBC16	6	0.5 (0.2)
NW25	KBC25	6	0.5 (0.2)
NW40	KBC40	6	0.5 (0.2)
NW50	KBC50	8	0.5 (0.2)

Bulkhead Claw Clamp Kit



Specifications

- Cast steel
- Spring loaded lock-washers, Single Claw Clamp Kit for bolting KF flanges to bulkheads
- Can be used instead of bulkhead clamps

Nominal Diameter	C	D	E	F	Nr. of Claw Grips
DN 10 KF	30	12.2	45	12.2	4
DN 16 KF	30	17.2	45	17.2	4
DN 25 KF	44	26.2	55	26.2	4
DN 40 KF	55	41.2	71	41.2	4
DN 50 KF	75	52.4	91	52.2	4

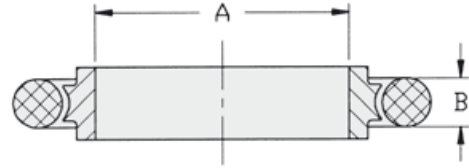
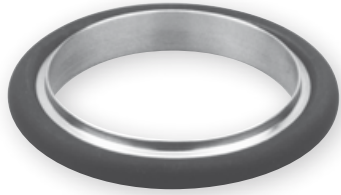
Dimensions: millimeters

Ordering Information

Description	Part Number	Qty	A in. (mm)	B in. (mm)	Bolt	Shipping Weight lbs (kg)
NW25 to NW50	KF1050CCS	4	.55 (14)	.79 (20)	M6 x 20 mm	.11 (.05)

KLAMPS FLANGES & FITTINGS

► Stainless Steel Centering Rings NW10 – NW50 (ISO)



Specifications

- 304 stainless steel centering ring
- Replaceable o-ring
- 100 °C maximum, Buna-N
- 200 °C maximum, Viton

Ordering Information – Centering Rings (Viton)

Description	Part Number	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW10	KC10SV	0.39 (9.91)	0.21 (5.33)	0.5 (0.2)
NW16	KC16SV	0.63 (16.00)	0.21 (5.33)	0.5 (0.2)
NW25	KC25SV	0.98 (24.89)	0.21 (5.33)	0.5 (0.2)
NW40	KC40SV	1.57 (39.88)	0.21 (5.33)	0.5 (0.2)
NW50	KC50SV	1.97 (50.04)	0.21 (5.33)	0.5 (0.2)

Ordering Information – Centering Rings (Buna-N)

Description	Part Number	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW10	KC10SB	0.39 (9.91)	0.21 (5.33)	0.5 (0.2)
NW16	KC16SB	0.63 (16.00)	0.21 (5.33)	0.5 (0.2)
NW25	KC25SB	0.98 (24.89)	0.21 (5.33)	0.5 (0.2)
NW40	KC40SB	1.57 (39.88)	0.21 (5.33)	0.5 (0.2)
NW50	KC50SB	1.97 (50.04)	0.21 (5.33)	0.5 (0.2)

Ordering Information – Centering Rings (Silicon)

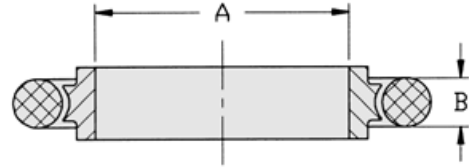
Description	Part Number	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW10	KC10SS	0.39 (9.91)	0.21 (5.33)	0.5 (0.2)
NW16	KC16SS	0.63 (16.00)	0.21 (5.33)	0.5 (0.2)
NW25	KC25SS	0.98 (24.89)	0.21 (5.33)	0.5 (0.2)
NW40	KC40SS	1.57 (39.88)	0.21 (5.33)	0.5 (0.2)
NW50	KC50SS	1.97 (50.04)	0.21 (5.33)	0.5 (0.2)

VACUUM COMPONENTS

▶ Aluminum Centering Rings NW10 – NW50 (ISO)

Specifications

- 6061 T6 aluminum centering ring
- Replaceable o-ring
- 100 °C maximum, Buna-N
- 200 °C maximum, Viton



Ordering Information – Centering Rings (Viton)

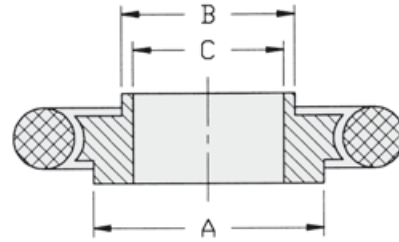
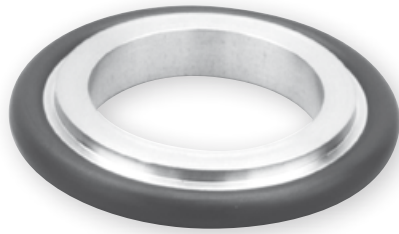
Description	Part Number	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW10	KC10AV	0.39 (9.91)	0.21 (5.33)	0.5 (0.2)
NW16	KC16AV	0.63 (16.00)	0.21 (5.33)	0.5 (0.2)
NW25	KC25AV	0.98 (24.89)	0.21 (5.33)	0.5 (0.2)
NW40	KC40AV	1.57 (39.88)	0.21 (5.33)	0.5 (0.2)
NW50	KC50AV	1.97 (50.04)	0.21 (5.33)	0.5 (0.2)

Ordering Information – Centering Rings (Buna-N)

Description	Part Number	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW10	KC10AB	0.39 (9.91)	0.21 (5.33)	0.5 (0.2)
NW16	KC16AB	0.63 (16.00)	0.21 (5.33)	0.5 (0.2)
NW25	KC25AB	0.98 (24.89)	0.21 (5.33)	0.5 (0.2)
NW40	KC40AB	1.57 (39.88)	0.21 (5.33)	0.5 (0.2)
NW50	KC50AB	1.97 (50.04)	0.21 (5.33)	0.5 (0.2)

KLAMPS FLANGES & FITTINGS

► Adaptive Stainless Steel Centering Rings NW10 – NW40 (ISO)



Specifications

- 304 stainless steel centering ring
- Replaceable o-ring
- 100 °C maximum, Buna-N
- 200 °C maximum, Viton

Ordering Information – Adaptive Centering Rings (Viton)

Description	Part Number	A in. (mm)	B in. (mm)	C in. (mm)	Shipping Weight lbs (kg)
NW10 to NW16	KCA1016SV	0.67 (17.02)	0.47 (11.94)	0.39 (9.91)	0.5 (0.2)
NW20 to NW25	KCA2025SV	1.02 (25.91)	0.87 (22.10)	0.79 (20.01)	0.5 (0.2)
NW32 to NW40	KCA3240SV	1.61 (40.89)	1.34 (34.04)	1.26 (32.00)	0.5 (0.2)

Ordering Information – Adaptive Centering Rings (Buna-N)

Description	Part Number	A in. (mm)	B in. (mm)	C in. (mm)	Shipping Weight lbs (kg)
NW10 to NW16	KCA1016SB	0.67 (17.02)	0.47 (11.94)	0.39 (9.91)	0.5 (0.2)
NW32 to NW40	KCA3240SB	1.61 (40.89)	1.34 (34.04)	1.26 (32.00)	0.5 (0.2)

► Adaptive Aluminum Centering Rings NW10 – NW40 (ISO)

Specifications

- 6061 T6 aluminum centering ring
- Replaceable o-ring
- 100 °C maximum, Buna-N
- 200 °C maximum, Viton

Ordering Information – Adaptive Centering Rings (Viton)

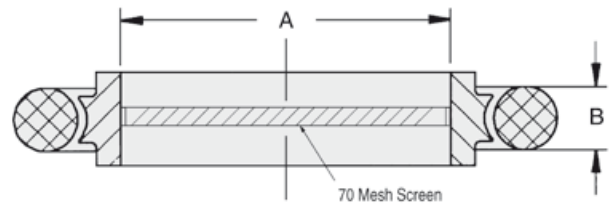
Description	Part Number	A in. (mm)	B in. (mm)	C in. (mm)	Shipping Weight lbs (kg)
NW10 to NW16	KCA1016AV	0.67 (17.02)	0.47 (11.94)	0.39 (9.91)	0.5 (0.2)
NW20 to NW25	KCA2025AV	1.02 (25.91)	0.87 (22.10)	0.79 (20.01)	0.5 (0.2)

Ordering Information – Adaptive Centering Rings (Buna-N)

Description	Part Number	A in. (mm)	B in. (mm)	C in. (mm)	Shipping Weight lbs (kg)
NW20 to NW25	KCA2025AB	1.02 (25.91)	0.87 (22.10)	0.79 (20.01)	0.5 (0.2)
NW32 to NW40	KCA3240AB	1.61 (40.89)	1.34 (34.04)	1.26 (32.00)	0.5 (0.2)

VACUUM COMPONENTS

▶ Stainless Steel Centering Rings with Screen NW16 – NW50 (ISO)



Specifications

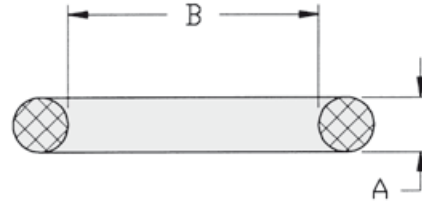
- 304 stainless steel centering ring
- Replaceable o-ring
- 200 °C maximum, Viton
- 70 mesh screen (0.2 x 0.2 x 0.15 mm)

Ordering Information – Centering Rings (Viton)

Description	Part Number	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW16	KC16SV72M	0.37 (9.5)	0.25 (5)	0.5 (0.2)
NW25	KC25SV72M	0.77 (19.5)	0.25 (5)	0.5 (0.2)
NW40	KC40SV72M	1.26 (32.0)	0.25 (5)	0.5 (0.2)
NW50	KC50SV72M	1.67 (43.0)	0.25 (5)	0.5 (0.2)

KLAMPS FLANGES & FITTINGS

► Replacement O-Rings NW10 – NW50 (ISO)



Specifications

- 100 °C maximum, Buna-N
- 200 °C maximum, Viton

Ordering Information – Replacement O-Rings (Viton)

Description	Part Number	Qty/Pkg	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW10	KG10V	10	0.21 (5.33)	0.60 (15.24)	0.5 (0.2)
NW16	KG16V	10	0.21 (5.33)	0.73 (18.42)	0.5 (0.2)
NW25	KG25V	10	0.21 (5.33)	1.10 (27.94)	0.5 (0.2)
NW40	KG40V	10	0.21 (5.33)	1.60 (40.64)	0.5 (0.2)
NW50	KG50V	10	0.21 (5.33)	2.10 (53.34)	0.5 (0.2)

Ordering Information – Replacement O-Rings (Buna-N)

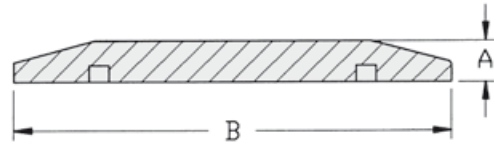
Description	Part Number	Qty/Pkg	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW10	KG10B	10	0.21 (5.33)	0.60 (15.24)	0.5 (0.2)
NW16	KG16B	10	0.21 (5.33)	0.73 (18.42)	0.5 (0.2)
NW25	KG25B	10	0.21 (5.33)	1.10 (27.94)	0.5 (0.2)
NW40	KG40B	10	0.21 (5.33)	1.60 (40.64)	0.5 (0.2)
NW50	KG50B	10	0.21 (5.33)	2.10 (53.34)	0.5 (0.2)

Ordering Information – Replacement O-Rings (Silicon)

Description	Part Number	Qty/Pkg	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW10	KG10S	10	0.21 (5.33)	0.60 (15.24)	0.5 (0.2)
NW16	KG16S	10	0.21 (5.33)	0.73 (18.42)	0.5 (0.2)
NW25	KG25S	10	0.21 (5.33)	1.10 (27.94)	0.5 (0.2)
NW40	KG40S	10	0.21 (5.33)	1.60 (40.64)	0.5 (0.2)
NW50	KG50S	10	0.21 (5.33)	2.10 (53.34)	0.5 (0.2)

VACUUM COMPONENTS

► Blank-Off Flanges NW10 – NW50 (ISO)



Specifications

- 304 stainless steel
- 6061 T6 aluminum
- Use as blank-off port
- Can be machined and welded

Ordering Information – Blank-Off Flanges (Stainless Steel)

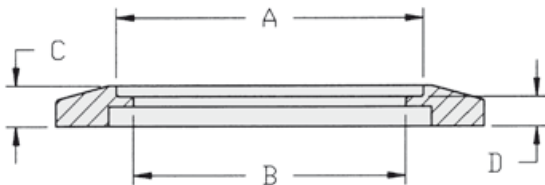
Description	Part Number	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW10/16	KF160000SB	0.20 (5.08)	1.18 (29.97)	0.5 (0.2)
NW25	KF250000SB	0.20 (5.08)	1.58 (40.13)	0.5 (0.2)
NW40	KF400000SB	0.20 (5.08)	2.17 (55.12)	0.5 (0.2)
NW50	KF500000SB	0.20 (5.08)	2.95 (74.93)	0.5 (0.2)

Ordering Information – Blank-Off Flanges (Aluminum)

Description	Part Number	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW10/16	KF160000AB	0.20 (5.08)	1.18 (29.97)	0.5 (0.2)
NW25	KF250000AB	0.20 (5.08)	1.58 (40.13)	0.5 (0.2)
NW40	KF400000AB	0.20 (5.08)	2.17 (55.12)	0.5 (0.2)
NW50	KF500000AB	0.20 (5.08)	2.95 (74.93)	0.5 (0.2)

KLAMPS FLANGES & FITTINGS

▶ Bored Blank-Off Flanges NW16 – NW50 (ISO)



Specifications

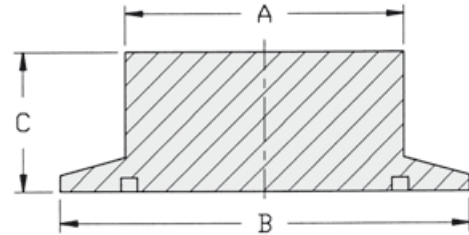
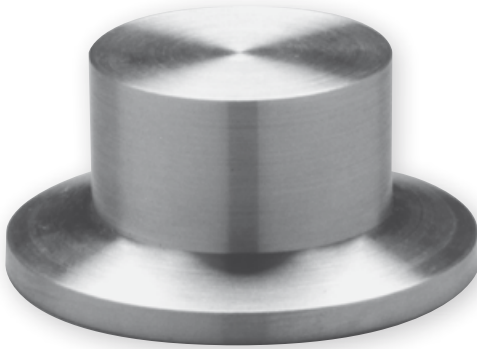
- Self-aligning
- 304 stainless steel
- Standard inch size tubing
- Standard tube weld prep

Ordering Information

Description	Part Number	Tube Size A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	Shipping Weight lbs (kg)
NW16 (0.75 in. tubing)	KS160075BB	0.76 (19.30)	0.69 (17.53)	0.17 (4.32)	0.15 (3.81)	0.5 (0.2)
NW25 (0.50 in. tubing)	KS250050BB	0.51 (12.95)	0.44 (11.18)	0.19 (4.82)	0.15 (3.81)	0.5 (0.2)
(0.75 in. tubing)	KS250075BB	0.76 (19.30)	0.69 (17.53)	0.19 (4.82)	0.15 (3.81)	0.5 (0.2)
(1.0 in. tubing)	KS250100BB	1.02 (25.91)	0.90 (22.86)	0.19 (4.82)	0.15 (3.81)	0.5 (0.2)
NW40 (1.0 in. tubing)	KS400100BB	1.02 (25.91)	0.90 (22.86)	0.20 (5.08)	0.15 (3.81)	0.5 (0.2)
(1.25 in. tubing)	KS400125BB	1.26 (32.00)	1.12 (28.45)	0.20 (5.08)	0.15 (3.81)	0.5 (0.2)
(1.50 in. tubing)	KS400150BB	1.50 (38.10)	1.37 (34.80)	0.20 (5.08)	0.15 (3.81)	0.5 (0.2)
NW50 (0.75 in. tubing)	KS500075BB	0.76 (19.30)	0.69 (17.53)	0.24 (6.10)	0.15 (3.81)	0.5 (0.2)
(1.50 in. tubing)	KS500150BB	1.52 (38.62)	1.37 (34.80)	0.24 (6.10)	0.15 (3.81)	0.5 (0.2)
(2.00 in. tubing)	KS500200BB	2.02 (51.31)	1.87 (47.50)	0.24 (6.10)	0.15 (3.81)	0.5 (0.2)

VACUUM COMPONENTS

► Unbored Stubs NW16 – NW50 (ISO)



Specifications

- 304 stainless steel
- 6061 T6 aluminum
- Stub can be turned, bored, or tapped to fit

Ordering Information – Unbored Stubs (Stainless Steel)

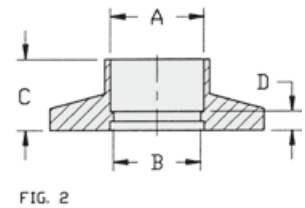
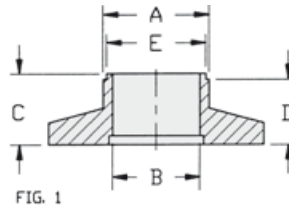
Description	Part Number	A in. (mm)	B in. (mm)	C in. (mm)	Shipping Weight lbs (kg)
NW16	KS160000SUB	0.75 (19.05)	1.18 (29.97)	0.75 (19.05)	0.5 (0.2)
NW25	KS250000SUB	1.00 (25.40)	1.58 (40.13)	0.75 (19.05)	0.5 (0.2)
NW40	KS400000SUB	1.50 (38.10)	2.17 (55.12)	1.00 (25.40)	0.5 (0.2)
NW50	KS500000SUB	2.00 (50.80)	2.95 (74.93)	1.00 (25.40)	0.5 (0.2)

Ordering Information – Unbored Stubs (Aluminum)

Description	Part Number	A in. (mm)	B in. (mm)	C in. (mm)	Shipping Weight lbs (kg)
NW16	KS160000AUB	0.75 (19.05)	1.18 (29.97)	0.75 (19.05)	0.5 (0.2)
NW25	KS250000AUB	1.00 (25.40)	1.58 (40.13)	0.75 (19.05)	0.5 (0.2)
NW40	KS400000AUB	1.50 (38.10)	2.17 (55.12)	1.00 (25.40)	0.5 (0.2)
NW50	KS500000AUB	2.00 (50.80)	2.95 (74.93)	1.00 (25.40)	0.5 (0.2)

KLAMPS FLANGES & FITTINGS

► Weld Sockets NW10 – NW50 (ISO)



Specifications

- Self-aligning
- 304 stainless steel
- Socket weld
- Standard tube weld prep

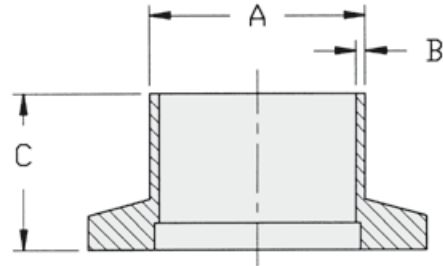
Ordering Information

Description	Part Number	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	Weight lbs (kg)
NW10 (.50 in. tubing)	KS100050056SW	0.52 (13.21)	0.48 (12.19)	0.56 (14.20)	0.50 (12.70)	0.42 (10.67)	0.5 (0.2)
NW16 (.50 in. tubing)	KS160050050SW	0.51 (12.95)	0.45 (11.43)	0.50 (12.70)	0.25 (6.35)	N/A	0.5 (0.2)
NW16 (.75 in. tubing)	KS160075050SW	0.76 (19.30)	0.68 (17.27)	0.50 (12.70)	0.25 (6.35)	N/A	0.5 (0.2)
NW25 (1 in. tubing)	KS250100047SW	1.02 (25.92)	0.90 (23.00)	0.47 (12.00)	0.17 (4.30)	N/A	0.5 (0.2)
	KS250100050SW	1.02 (25.92)	0.87 (22.10)	0.50 (12.70)	0.25 (6.40)	N/A	0.5 (0.2)
	KS250100052SW	1.02 (25.92)	0.90 (23.00)	0.52 (13.20)	0.22 (5.60)	N/A	0.5 (0.2)
NW40 (1.5 in. tubing)	KS400150030SW	1.51 (38.35)	1.37 (34.80)	0.30 (7.60)	0.21 (5.30)	N/A	0.5 (0.2)
	KS400150040SW	1.51 (38.35)	1.37 (34.80)	0.40 (10.20)	0.31 (7.80)	N/A	0.5 (0.2)
	KS400150050SW	1.51 (38.35)	1.37 (34.80)	0.50 (12.70)	0.21 (5.30)	N/A	0.5 (0.2)
	KS40015005ASW	1.51 (38.35)	1.37 (34.80)	0.50 (12.70)	0.25 (6.40)	N/A	0.5 (0.2)
NW50 (2 in. tubing)	KS500200050SW	2.02 (51.31)	1.87 (47.50)	0.50 (12.70)	0.25 (6.40)	N/A	0.5 (0.2)
	KS500200062SW	2.02 (51.31)	1.87 (47.50)	0.62 (15.70)	0.22 (5.60)	N/A	0.5 (0.2)

* See Fig. 1; all other Part Numbers see Fig. 2.

VACUUM COMPONENTS

▶ Short Weld Stubs NW16 – NW50 (ISO)



Specifications

- Butt weld
- Standard and metric tube sizes

Ordering Information – Short Weld Stubs (304 Stainless Steel)

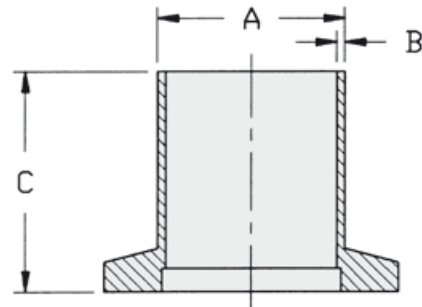
Description	Part Number	Tube Size A in. (mm)	B in. (mm)	C in. (mm)	Shipping Weight lbs (kg)
NW16 (.50 in. tubing)	KS160050050	0.50 (12.70)	0.065 (1.65)	0.50 (12.70)	0.5 (0.2)
NW16 (.75 in. tubing)	KS160075050	0.75 (19.05)	0.065 (1.65)	0.50 (12.70)	0.5 (0.2)
	KS160078078	0.78 (19.81)	0.080 (2.03)	0.78 (19.81)	0.5 (0.2)
NW25 (1 in. tubing)	KS250100050	1.00 (25.40)	0.065 (1.65)	0.50 (12.70)	0.5 (0.2)
	KS250100057	1.00 (25.40)	0.049 (1.24)	0.57 (14.48)	0.5 (0.2)
	KS250110078	1.10 (27.94)	0.077 (1.95)	0.78 (19.81)	0.5 (0.2)
NW40 (1.50 in. tubing)	KS400150057	1.50 (38.10)	0.065 (1.65)	0.57 (14.48)	0.5 (0.2)
	KS400150075	1.50 (38.10)	0.065 (1.65)	0.75 (19.05)	0.5 (0.2)
	KS400175100	1.75 (44.45)	0.078 (1.98)	1.00 (25.40)	0.5 (0.2)
NW50 (2 in. tubing)	KS500200057	2.00 (50.80)	0.065 (1.65)	0.57 (14.48)	0.5 (0.2)
	KS500220100	2.20 (55.88)	0.117 (2.97)	1.00 (25.40)	0.5 (0.2)

Ordering Information – Short Weld Stubs (6061 T6 Aluminum)

Description	Part Number	Tube Size A in. (mm)	B in. (mm)	C in. (mm)	Shipping Weight lbs (kg)
NW16 (.75 in. tubing)	KS160075050A	0.75 (19.05)	0.065 (1.65)	0.50 (12.70)	0.5 (0.2)
NW40 (1.5 in. tubing)	KS400150075A	1.50 (38.10)	0.065 (1.65)	0.75 (19.05)	0.5 (0.2)

KLAMPS FLANGES & FITTINGS

► Long Weld Stubs NW16 – NW50 (ISO)



Specifications

- Butt weld
- Standard and metric tube sizes

Ordering Information – Long Weld Stubs (304 Stainless Steel)

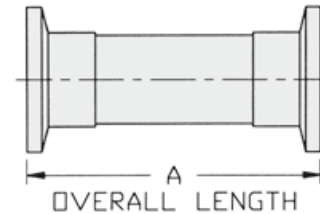
Description	Part Number	Tube Size A in. (mm)	B in. (mm)	C in. (mm)	Shipping Weight lbs (kg)
NW16 (.50 in. tubing)	KS160050157	0.50 (12.70)	0.065 (1.65)	1.57 (40.0)	0.5 (0.2)
NW16 (.75 in. tubing)	KS160075115	0.75 (19.05)	0.035 (0.89)	1.15 (29.2)	0.5 (0.2)
	KS160075157	0.75 (19.05)	0.065 (1.65)	1.57 (40.0)	0.5 (0.2)
	KS160078197	0.78 (19.81)	0.078 (1.98)	1.97 (50.0)	0.5 (0.2)
	KS250100143	1.00 (25.40)	0.049 (1.24)	1.43 (36.6)	0.5 (0.2)
NW25 (1 in. tubing)	KS250100157	1.00 (25.40)	0.065 (1.65)	1.57 (40.0)	0.5 (0.2)
	KS250100203	1.00 (25.40)	0.065 (1.65)	2.03 (51.6)	0.5 (0.2)
	KS250110197	1.10 (27.94)	0.077 (1.95)	1.97 (50.0)	0.5 (0.2)
	KS400150157	1.50 (38.10)	0.065 (1.65)	1.57 (40.0)	0.5 (0.2)
NW40 (1.50 in. tubing)	KS400150175	1.50 (38.10)	0.065 (1.65)	1.75 (44.5)	0.5 (0.2)
	KS400150246	1.50 (38.10)	0.065 (1.65)	2.46 (62.5)	1.0 (0.5)
	KS400175197	1.75 (44.45)	0.083 (2.11)	1.97 (50.0)	0.5 (0.2)
	KS500200157	2.00 (50.80)	0.065 (1.65)	1.57 (40.0)	0.5 (0.2)
NW50 (2 in. tubing)	KS500200169	2.00 (50.80)	0.065 (1.65)	1.69 (42.9)	0.5 (0.2)
	KS500220217	2.20 (55.88)	0.117 (2.97)	2.17 (55.1)	0.5 (0.2)

Ordering Information – Long Weld Stubs (6061 T6 Aluminum)

Description	Part Number	Tube Size A in. (mm)	B in. (mm)	C in. (mm)	Shipping Weight lbs (kg)
NW16 (.50 in. tubing)	KS160050157A	0.50 (12.70)	0.065 (1.65)	1.57 (39.88)	0.5 (0.2)
NW16 (.75 in. tubing)	KS160075157A	0.75 (19.05)	0.065 (1.65)	1.57 (39.88)	0.5 (0.2)
NW25 (1 in. tubing)	KS250100157A	1.00 (25.40)	0.065 (1.65)	1.57 (39.88)	0.5 (0.2)
NW40 (1.5 in. tubing)	KS400150157A	1.50 (38.10)	0.083 (2.11)	1.57 (39.88)	0.5 (0.2)
NW50 (2 in. tubing)	KS500200157A	2.00 (50.80)	0.083 (2.11)	1.57 (39.88)	0.5 (0.2)

VACUUM COMPONENTS

► Nipples NW16 – NW50 (ISO)



Specifications

- 304 stainless steel
- ISO-KF flanges
- Same flanges on both ports
- Full penetration vacuum welds
- Custom lengths available

Ordering Information

Description	Part Number	A in. (mm)	Shipping Weight lbs (kg)
NW16	KNF00750230	2.30 (58.42)	1.0 (0.5)
	KNF00750315	3.15 (80.01)	1.0 (0.5)
	KNF00750645	6.45 (163.83)	2.0 (0.9)
	KNF00751260	12.60 (320.04)	3.0 (1.4)
NW25	KNF01000394	3.94 (100.08)	1.0 (0.5)
	KNF01000406	4.06 (103.12)	1.0 (0.5)
	KNF01000408	4.08 (103.63)	1.0 (0.5)
	KNF01000803	8.03 (203.96)	2.0 (0.9)
	KNF01001260	12.60 (320.04)	3.0 (1.4)
NW40	KNF01500480	4.80 (121.92)	1.0 (0.5)
	KNF01500493	4.93 (125.22)	1.0 (0.5)
	KNF01500512	5.12 (130.05)	1.0 (0.5)
	KNF01501039	10.39 (263.91)	4.0 (1.8)
	KNF01501260	12.60 (320.04)	4.0 (1.8)
NW50	KNF02000551	5.51 (139.95)	1.0 (0.5)
	KNF02000630	6.30 (160.02)	1.0 (0.5)
	KNF02000643	6.43 (163.32)	1.0 (0.5)
	KNF02001118	11.18 (283.97)	4.0 (1.8)
	KNF02001260	12.60 (320.04)	4.0 (1.8)

KLAMPS FLANGES & FITTINGS

► Elbows (90°) NW16 – NW50 (ISO)

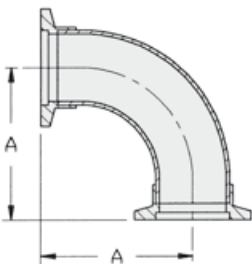


FIG. 1

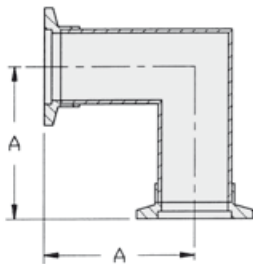


FIG. 2

Specifications

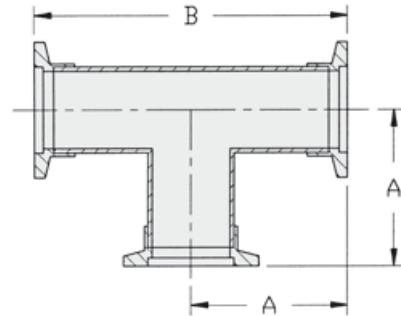
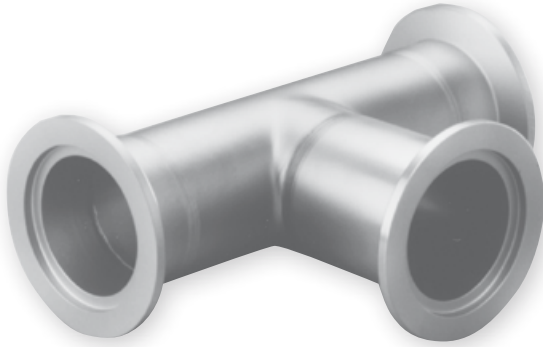
- 304 stainless steel
- ISO-KF Flanges
- Same flanges on both ports
- Full penetration vacuum welds
- Custom configurations available

Ordering Information

Description	Part Number	A in. (mm)	Fig. Number	Shipping Weight lbs (kg)
NW16	KE00750150	1.50 (38.10)	1	1.0 (0.5)
	KE00750157	1.57 (39.88)	1	1.0 (0.5)
NW25	KE01000197	1.97 (50.04)	1	1.0 (0.5)
	KE01000204	2.04 (51.82)	1	1.0 (0.5)
NW40	KE01500246	2.46 (62.48)	1	2.0 (0.9)
	KE01500256	2.56 (65.02)	1	2.0 (0.9)
NW50	KE02000276	2.76 (70.10)	2	2.0 (0.9)
	KE02000321	3.21 (81.53)	2	2.0 (0.9)

VACUUM COMPONENTS

► Tees NW16 – NW50 (ISO)



Specifications

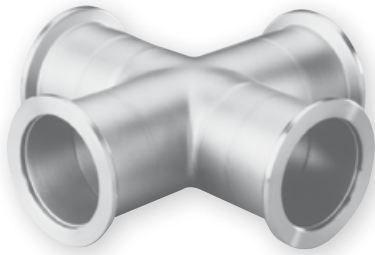
- 304 stainless steel
- ISO-KF flanges
- Same flanges on all ports
- Full penetration vacuum welds

Ordering Information

Description	Part Number	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW16	KT00750150	1.50 (38.10)	3.00 (76.20)	1.5 (0.7)
	KT00750157	1.57 (39.88)	3.15 (80.01)	1.5 (0.7)
NW25	KT01000197	1.97 (50.04)	3.94 (100.08)	2.0 (0.9)
	KT01000204	2.04 (51.82)	4.08 (103.63)	2.0 (0.9)
NW40	KT01500246	2.46 (62.48)	4.92 (124.97)	2.0 (0.9)
	KT01500256	2.56 (65.02)	5.12 (130.05)	2.0 (0.9)
NW50	KT02000276	2.76 (70.10)	5.52 (140.21)	3.0 (1.4)
	KT02000321	3.21 (81.53)	6.42 (163.07)	3.0 (1.4)

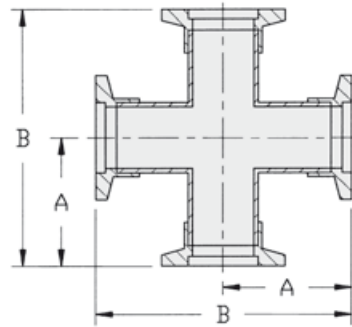
KLAMPS FLANGES & FITTINGS

► 4-Way Crosses NW16 – NW50 (ISO)



Specifications

- 304 stainless steel
- ISO-KF flanges
- Same flanges on all ports
- Full penetration vacuum welds



Ordering Information

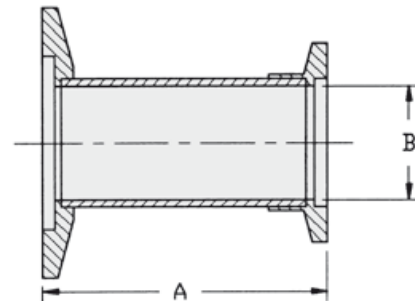
Description	Part Number	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW16	KC00750150	1.50 (38.10)	3.00 (76.20)	1.5 (0.7)
	KC00750157	1.57 (39.88)	3.14 (80.01)	1.5 (0.7)
NW25	KC01000197	1.97 (50.04)	3.94 (100.08)	2.0 (0.9)
	KC01000204	2.04 (51.82)	4.08 (103.63)	2.0 (0.9)
NW40	KC01500246	2.46 (62.48)	4.92 (124.97)	3.0 (1.4)
	KC01500256	2.56 (65.02)	5.12 (130.05)	3.0 (1.4)
NW50	KC02000276	2.76 (70.10)	5.52 (140.21)	3.0 (1.4)
	KC02000321	3.21 (81.53)	6.44 (163.60)	3.0 (1.4)

► Straight Reducers NW16 – NW50 (ISO)



Specifications

- 304 stainless steel
- Straight through

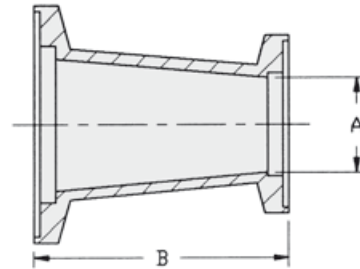


Ordering Information

Description	Part Number	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW16 to NW25	KRS1625	1.57 (39.88)	0.69 (17.53)	1.0 (0.5)
NW16 to NW40	KRS1640	1.57 (39.88)	0.69 (17.53)	1.0 (0.5)
NW16 to NW50	KRS1650	1.57 (39.88)	0.69 (17.53)	1.0 (0.5)
NW25 to NW40	KRS2540	1.57 (39.88)	0.90 (22.86)	1.0 (0.5)
NW25 to NW50	KRS2550	1.57 (39.88)	0.90 (22.86)	1.0 (0.5)
NW40 to NW50	KRS4050	1.57 (39.88)	1.37 (34.80)	1.0 (0.5)

VACUUM COMPONENTS

► Conical Reducers NW16 – NW50 (ISO)



Specifications

- 304 stainless steel
- 6061 T6 aluminum

Ordering Information – Conical Reducers (304 Stainless Steel)

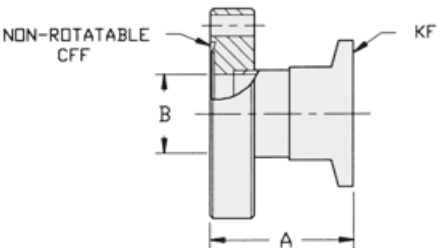
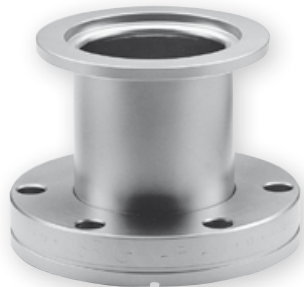
Description	Part Number	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW16 to NW25	KRC1625S	0.62 (15.75)	1.65 (41.91)	1.0 (0.5)
NW16 to NW40	KRC1640S	0.62 (15.75)	1.65 (41.91)	1.0 (0.5)
NW16 to NW50	KRC1650S	0.62 (15.75)	1.65 (41.91)	1.0 (0.5)
NW25 to NW40	KRC2540S	0.87 (22.10)	1.65 (41.91)	1.0 (0.5)
NW25 to NW50	KRC2550S	0.87 (22.10)	1.65 (41.91)	1.0 (0.5)
NW40 to NW50	KRC4050S	1.37 (34.80)	1.65 (41.91)	1.0 (0.5)

Ordering Information – Conical Reducers (6061 T6 Aluminum)

Description	Part Number	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW16 to NW25	KRC1625A	0.62 (15.75)	1.65 (41.91)	1.0 (0.5)
NW16 to NW40	KRC1640A	0.62 (15.75)	1.65 (41.91)	1.0 (0.5)
NW16 to NW50	KRC1650A	0.62 (15.75)	1.65 (41.91)	1.0 (0.5)
NW25 to NW40	KRC2540A	0.87 (22.10)	1.65 (41.91)	1.0 (0.5)
NW25 to NW50	KRC2550A	0.87 (22.10)	1.65 (41.91)	1.0 (0.5)
NW40 to NW50	KRC4050A	1.37 (34.80)	1.65 (41.91)	1.0 (0.5)

KLAMPS FLANGES & FITTINGS

KF to CFF Adapters



Ordering Information

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

VACUUM COMPONENTS

Accessories

Size	Gasket	Description	Part Number	Qty/Pkg	Shipping Weight lbs (kg)
1 1/8 in.	Copper	10-pack, individually sealed	FG0133CI	10	1.0 (0.5)
	Viton	5-pack	FG0133VU	5	0.5 (0.2)
2 1/8 in.	Copper	10-pack, individually sealed	FG0212CI	10	1.0 (0.5)
	Viton	5-pack	FG0212VU	5	0.5 (0.2)
2 3/8 in.	Copper	10-pack, individually sealed	FG0275CI	10	1.0 (0.5)
	Viton	5-pack	FG0275VU	5	0.5 (0.2)
3 3/8 in.	Copper	10-pack, individually sealed	FG0338CI	10	1.0 (0.5)
	Viton	1-pack	FG0338VU	1	0.5 (0.2)
4 1/2 in.	Copper	10-pack, individually sealed	FG0450CI	10	2.0 (0.9)
	Viton	1-pack	FG0450VU	1	0.5 (0.2)

Accessories

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

* Includes nuts, washers, and bolts

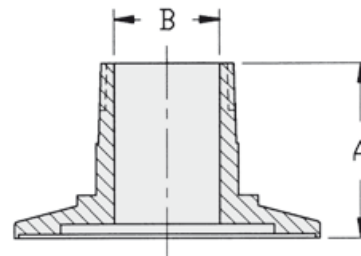
** Only available in Socket Head

Accessories

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

KLAMPS FLANGES & FITTINGS

▶ Stainless Steel Male Pipe Adapters NW16 – NW40 (ISO)



Specifications

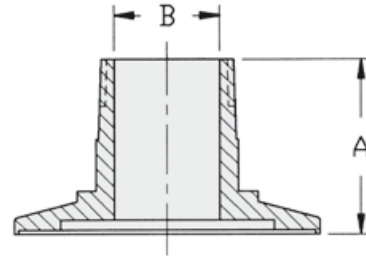
- 304 stainless steel
- Male pipe threads
- Wrench flats on shank

Ordering Information

Description		Part Number	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW16	1/8 NPT	KAMP160125S	1.47 (37.34)	0.19 (4.83)	1.0 (0.5)
	1/4 NPT	KAMP160250S	1.47 (37.34)	0.28 (7.11)	1.0 (0.5)
	3/8 NPT	KAMP160375S	1.47 (37.34)	0.42 (10.70)	1.0 (0.5)
	1/2 NPT	KAMP160500S	1.69 (42.93)	0.58 (14.73)	1.0 (0.5)
	3/4 NPT	KAMP160750S	1.69 (42.93)	0.78 (19.81)	1.0 (0.5)
NW25	1/8 NPT	KAMP250125S	1.47 (37.34)	0.19 (4.83)	1.0 (0.5)
	1/4 NPT	KAMP250250S	1.47 (37.34)	0.28 (7.11)	1.0 (0.5)
	3/8 NPT	KAMP250375S	1.47 (37.34)	0.42 (10.70)	1.0 (0.5)
	1/2 NPT	KAMP250500S	1.69 (42.93)	0.58 (14.73)	1.0 (0.5)
	3/4 NPT	KAMP250750S	1.69 (42.93)	0.78 (19.81)	1.0 (0.5)
NW40	1/8 NPT	KAMP400125S	1.47 (37.34)	0.19 (4.83)	1.0 (0.5)
	1/4 NPT	KAMP400250S	1.47 (37.34)	0.28 (7.11)	1.0 (0.5)
	3/8 NPT	KAMP400375S	1.47 (37.34)	0.42 (10.70)	1.0 (0.5)
	1/2 NPT	KAMP400500S	1.69 (42.93)	0.58 (14.73)	1.0 (0.5)
	3/4 NPT	KAMP400750S	1.69 (42.93)	0.78 (19.81)	1.0 (0.5)
	1NPT	KAMP401000S	1.69 (42.93)	1.02 (25.91)	1.0 (0.5)

VACUUM COMPONENTS

▶ Aluminum Male Pipe Adapters NW16 – NW40 (ISO)



Specifications

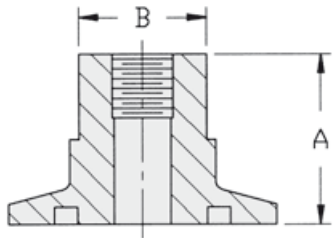
- 6061 T6 aluminum
- Male pipe threads
- Wrench flats on shank

Ordering Information

Description		Part Number	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW16	1/8 NPT	KAMP160125A	1.47 (37.34)	0.19 (4.83)	1.0 (0.5)
	1/4 NPT	KAMP160250A	1.47 (37.34)	0.28 (7.11)	1.0 (0.5)
	3/8 NPT	KAMP160375A	1.47 (37.34)	0.42 (10.70)	1.0 (0.5)
	1/2 NPT	KAMP160500A	1.69 (42.93)	0.58 (14.73)	1.0 (0.5)
	3/4 NPT	KAMP160750A	1.69 (42.93)	0.78 (19.81)	1.0 (0.5)
NW25	1/8 NPT	KAMP250125A	1.47 (37.34)	0.19 (4.83)	1.0 (0.5)
	1/4 NPT	KAMP250250A	1.47 (37.34)	0.28 (7.11)	1.0 (0.5)
	3/8 NPT	KAMP250375A	1.47 (37.34)	0.42 (10.70)	1.0 (0.5)
	1/2 NPT	KAMP250500A	1.69 (42.93)	0.58 (14.73)	1.0 (0.5)
	3/4 NPT	KAMP250750A	1.69 (42.93)	0.78 (19.81)	1.0 (0.5)
NW40	1/8 NPT	KAMP400125A	1.47 (37.34)	0.19 (4.83)	1.0 (0.5)
	1/4 NPT	KAMP400250A	1.47 (37.34)	0.28 (7.11)	1.0 (0.5)
	3/8 NPT	KAMP400375A	1.47 (37.34)	0.42 (10.70)	1.0 (0.5)
	1/2 NPT	KAMP400500A	1.69 (42.93)	0.58 (14.73)	1.0 (0.5)
	3/4 NPT	KAMP400750A	1.69 (42.93)	0.78 (19.81)	1.0 (0.5)
	1NPT	KAMP401000A	1.69 (42.93)	1.02 (25.91)	1.0 (0.5)

KLAMPS FLANGES & FITTINGS

► Stainless Steel Female Pipe Adapters NW16 – NW40 (ISO)



Specifications

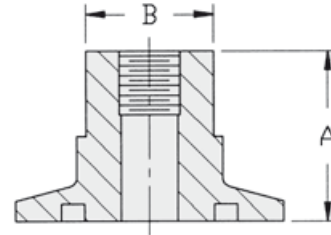
- 304 stainless steel
- Female pipe threads
- Wrench flats on shank

Ordering Information

Description		Part Number	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW16	1/8 NPT	KAFP160125S	1.04 (26.42)	0.75 (19.05)	1.0 (0.5)
	1/4 NPT	KAFP160250S	1.04 (26.42)	0.75 (19.05)	1.0 (0.5)
	3/8 NPT	KAFP160375S	1.04 (26.42)	0.88 (22.23)	1.0 (0.5)
NW25	1/8 NPT	KAFP250125S	1.04 (26.42)	0.75 (19.05)	1.0 (0.5)
	1/4 NPT	KAFP250250S	1.04 (26.42)	0.75 (19.05)	1.0 (0.5)
	3/8 NPT	KAFP250375S	1.04 (26.42)	0.88 (22.23)	1.0 (0.5)
	1/2 NPT	KAFP250500S	1.04 (26.42)	1.13 (28.58)	1.0 (0.5)
NW40	1/8 NPT	KAFP400125S	1.04 (26.42)	0.75 (19.05)	1.0 (0.5)
	1/4 NPT	KAFP400250S	1.04 (26.42)	0.75 (19.05)	1.0 (0.5)
	3/8 NPT	KAFP400375S	1.04 (26.42)	0.88 (22.23)	1.0 (0.5)
	1/2 NPT	KAFP400500S	1.65 (41.91)	1.13 (28.58)	1.0 (0.5)
	3/4 NPT	KAFP400750S	1.65 (41.91)	1.25 (31.75)	1.0 (0.5)
	1NPT	KAFP401000S	1.65 (41.91)	1.56 (39.67)	1.0 (0.5)

VACUUM COMPONENTS

▶ Aluminum Female Pipe Adapters NW16 – NW40 (ISO)



Specifications

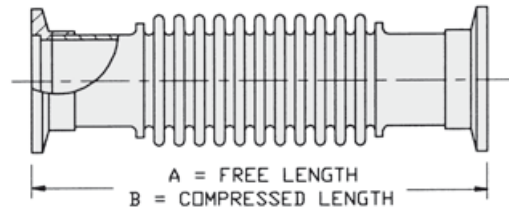
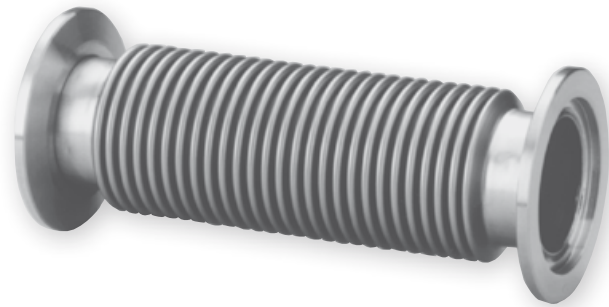
- 6061 T6 aluminum
- Female pipe threads
- Wrench flats on shank

Ordering Information

Description		Part Number	A in. (mm)	B in. (mm)	Shipping Weight lbs (kg)
NW16	1/8 NPT	KAFP160125A	1.04 (26.42)	0.75 (19.05)	1.0 (0.5)
	1/4 NPT	KAFP160250A	1.04 (26.42)	0.75 (19.05)	1.0 (0.5)
	3/8 NPT	KAFP160375A	1.04 (26.42)	0.88 (22.23)	1.0 (0.5)
NW25	1/8 NPT	KAFP250125A	1.04 (26.42)	0.75 (19.05)	1.0 (0.5)
	1/4 NPT	KAFP250250A	1.04 (26.42)	0.75 (19.05)	1.0 (0.5)
	3/8 NPT	KAFP250375A	1.04 (26.42)	0.88 (22.23)	1.0 (0.5)
	1/2 NPT	KAFP250500A	1.04 (26.42)	1.13 (28.58)	1.0 (0.5)
NW40	1/8 NPT	KAFP400125A	1.04 (26.42)	0.75 (19.05)	1.0 (0.5)
	1/4 NPT	KAFP400250A	1.04 (26.42)	0.75 (19.05)	1.0 (0.5)
	3/8 NPT	KAFP400375A	1.04 (26.42)	0.88 (22.23)	1.0 (0.5)
	1/2 NPT	KAFP400500A	1.65 (41.91)	1.13 (28.58)	1.0 (0.5)
	3/4 NPT	KAFP400750A	1.65 (41.91)	1.25 (31.75)	1.0 (0.5)
	1NPT	KAFP401000A	1.65 (41.91)	1.56 (39.67)	1.0 (0.5)

KLAMPS FLANGES & FITTINGS

► Flexible Couplings (Non-Braided)



Specifications

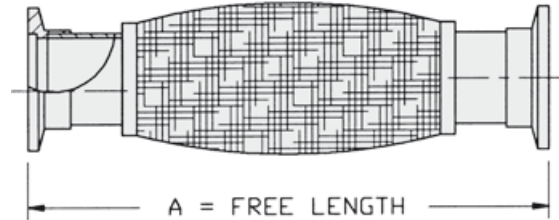
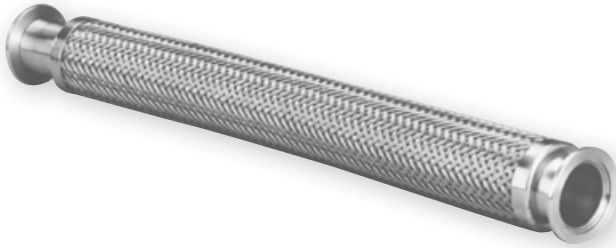
- Stainless steel
- Full penetration vacuum weld

Ordering Information

Flange Size	Part Number	Length Free A in. (mm)	Length Compressed B in. (mm)	Static Bend Radius in. (mm)	Bellows Wall Thickness in.	Nominal ID in. (mm)	Shipping Weight lbs (kg)
NW16	KL00750315	3.2 (81)	2.9 (75)	3.0 (76)	0.006	0.75 (19.1)	1.0 (0.5)
	KL00750394	3.9 (100)	3.7 (93)	3.0 (76)	0.006	0.75 (19.1)	1.0 (0.5)
	KL00750984	9.8 (250)	9.0 (228)	3.0 (76)	0.006	0.75 (19.1)	1.5 (0.7)
	KL00751969	19.7 (500)	17.8 (453)	1.3 (33)	0.008	0.75 (19.1)	3.0 (1.4)
	KL00753940	39.4 (1000)	35.6 (903)	1.3 (33)	0.008	0.75 (19.1)	4.0 (1.8)
	KL00754800	48.0 (1219)	43.3 (1100)	1.3 (33)	0.008	0.75 (19.1)	5.0 (2.3)
NW25	KL01000394	3.9 (100)	3.6 (92)	4.0 (102)	0.006	1.00 (25.4)	1.0 (0.5)
	KL01000984	9.8 (250)	8.9 (227)	4.0 (102)	0.006	1.00 (25.4)	1.0 (0.5)
	KL01001969	19.7 (500)	17.8 (452)	1.5 (38)	0.008	1.00 (25.4)	3.0 (1.4)
	KL01002400	24.0 (609)	21.7 (551)	1.5 (38)	0.008	1.00 (25.4)	3.0 (1.4)
	KL01003940	39.4 (1000)	35.5 (903)	1.5 (38)	0.008	1.00 (25.4)	4.0 (1.8)
	KL01004800	48.0 (1219)	43.3 (1100)	1.5 (38)	0.008	1.00 (25.4)	5.0 (2.3)
NW40	KL01500394	3.9 (100)	3.6 (92)	6.0 (152)	0.006	1.38 (35.1)	1.0 (0.5)
	KL01500512	5.1 (130)	4.7 (119)	6.0 (152)	0.006	1.50 (38.1)	1.5 (0.7)
	KL01500984	9.8 (250)	8.9 (227)	6.0 (152)	0.006	1.50 (38.1)	2.0 (0.9)
	KL01501200	12.0 (305)	10.9 (276)	6.0 (152)	0.006	1.50 (38.1)	2.5 (1.1)
	KL01501969	19.7 (500)	17.8 (452)	2.2 (56)	0.010	1.50 (38.1)	3.0 (1.4)
	KL01502400	24.0 (609)	21.7 (551)	2.2 (56)	0.010	1.50 (38.1)	3.5 (1.6)
	KL01503940	39.4 (1000)	35.5 (903)	2.2 (56)	0.010	1.50 (38.1)	4.0 (1.8)
	KL01504800	48.0 (1219)	43.3 (1100)	2.2 (56)	0.010	1.50 (38.1)	5.0 (2.3)
NW50	KL02000394	3.9 (100)	3.7 (93)	6.0 (152)	0.006	1.88 (47.8)	1.0 (0.5)
	KL02000551	5.5 (140)	5.1 (129)	7.5 (191)	0.006	2.00 (50.8)	1.5 (0.7)
	KL02000984	9.8 (250)	9.0 (228)	7.5 (191)	0.006	2.00 (50.8)	2.0 (0.9)
	KL02001969	19.7 (500)	17.8 (453)	2.6 (66)	0.012	2.00 (50.8)	3.0 (1.4)
	KL02003940	39.4 (1000)	35.6 (903)	2.6 (66)	0.012	2.00 (50.8)	4.0 (1.8)
	KL02004800	48.0 (1219)	43.3 (1100)	2.6 (66)	0.012	2.00 (50.8)	5.0 (2.3)

VACUUM COMPONENTS

► Flexible Couplings (Braided)



Specifications

- Stainless steel
- Braided sheathing
- Full penetration vacuum weld

Ordering Information

Flange Size	Part Number	Length Free A in. (mm)	Static Bend Radius in. (mm)	Bellows Wall Thickness in.	Nominal ID in. (mm)	Shipping Weight lbs (kg)
NW16	KLB00751200	12.0 (305)	2.1 (53)	0.008	0.75 (19.1)	2.0 (0.9)
	KLB00751850	18.5 (470)	2.1 (53)	0.008	0.75 (19.1)	2.0 (0.9)
	KLB00752400	24.0 (610)	2.1 (53)	0.008	0.75 (19.1)	3.0 (1.4)
	KLB00753600	36.0 (914)	2.1 (53)	0.008	0.75 (19.1)	4.0 (1.8)
	KLB00754000	40.0 (1016)	2.1 (53)	0.008	0.75 (19.1)	5.0 (2.3)
	KLB00754800	48.0 (1219)	2.1 (53)	0.008	0.75 (19.1)	5.0 (2.3)
NW25	KLB01001000	10.0 (254)	2.5 (64)	0.008	1.00 (25.4)	3.0 (1.4)
	KLB01001200	12.0 (305)	2.5 (64)	0.008	1.00 (25.4)	3.0 (1.4)
	KLB01001850	18.5 (470)	2.5 (64)	0.008	1.00 (25.4)	3.0 (1.4)
	KLB01002000	20.0 (508)	2.5 (64)	0.008	1.00 (25.4)	3.0 (1.4)
	KLB01002400	24.0 (610)	2.5 (64)	0.008	1.00 (25.4)	3.0 (1.4)
	KLB01003600	36.0 (914)	2.5 (64)	0.008	1.00 (25.4)	4.0 (1.8)
	KLB01004000	40.0 (1016)	2.5 (64)	0.008	1.00 (25.4)	5.0 (2.3)
	KLB01004800	48.0 (1219)	2.5 (64)	0.008	1.00 (25.4)	5.0 (2.3)
NW40	KLB01501000	10.0 (254)	3.9 (99)	0.010	1.50 (38.1)	4.0 (1.8)
	KLB01501200	12.0 (305)	3.9 (99)	0.010	1.50 (38.1)	4.0 (1.8)
	KLB01501850	18.5 (470)	3.9 (99)	0.010	1.50 (38.1)	4.0 (1.8)
	KLB01502000	20.0 (508)	3.9 (99)	0.010	1.50 (38.1)	4.0 (1.8)
	KLB01502400	24.0 (610)	3.9 (99)	0.010	1.50 (38.1)	4.5 (2.1)
	KLB01503600	36.0 (914)	3.9 (99)	0.010	1.50 (38.1)	4.5 (2.1)
	KLB01504000	40.0 (1016)	3.9 (99)	0.010	1.50 (38.1)	5.0 (2.3)
	KLB01504800	48.0 (1219)	3.9 (99)	0.010	1.50 (38.1)	5.0 (2.3)
NW50	KLB02002400	24.0 (610)	4.7 (120)	0.012	2.00 (50.8)	6.0 (2.7)
	KLB02003600	36.0 (914)	4.7 (120)	0.012	2.00 (50.8)	7.0 (3.2)
	KLB02004000	40.0 (1016)	4.7 (120)	0.012	2.00 (50.8)	7.0 (3.2)
	KLB02004800	48.0 (1219)	4.7 (120)	0.012	2.00 (50.8)	8.0 (3.6)

KLAMPS FLANGES & FITTINGS

► KF to Compression Port Adapters



Specifications

- 304 stainless steel
- Knurled nut for hand-tightening
- ISO-KF Flanges
- Use for standard inch size tubulation

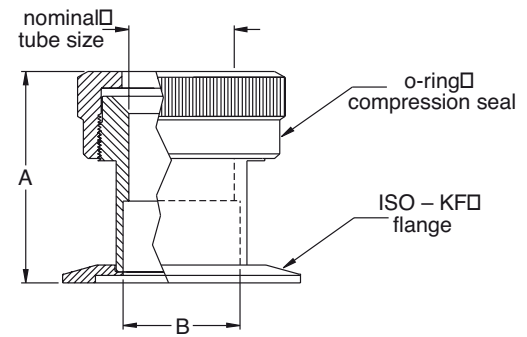


Figure 1

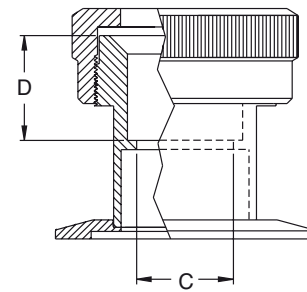


Figure 2

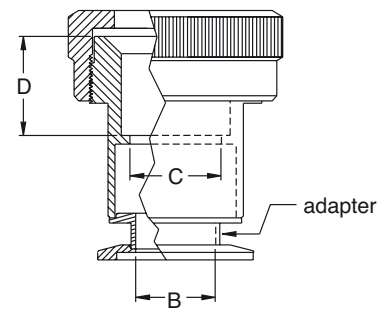


Figure 3

VACUUM COMPONENTS

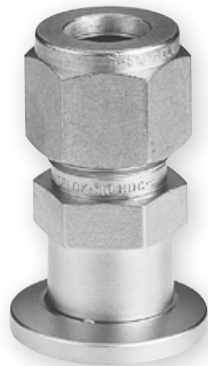
Ordering Information

Flange Size	Part Number	Nominal Tube Size	Length A in. (mm)	Bore B in. (mm)	ID C in. (mm)	Tube Stop D in. (mm)	Fig.	Weight lbs (kg)
NW16	KCP160125	1/8 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	1.0 (0.5)
	KCP160190	3/16 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	1.0 (0.5)
	KCP160250	1/4 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	1.0 (0.5)
	KCP160375	3/8 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	1.0 (0.5)
	KCP160500	1/2 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	1.0 (0.5)
	KCP160625	5/8 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	1.0 (0.5)
NW25	KCP250062	1/16 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	1.0 (0.5)
	KCP250125	1/8 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	1.0 (0.5)
	KCP250190	3/16 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	1.0 (0.5)
	KCP250250	1/4 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	1.0 (0.5)
	KCP250312	5/16 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	1.0 (0.5)
	KCP250375	3/8 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	1.0 (0.5)
	KCP250500	1/2 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	1.0 (0.5)
	KCP250625	5/8 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	1.0 (0.5)
	KCP250750	3/4 in.	2.37 (60.20)	0.90 (22.86)	0.63 (16.0)	1.13 (28.7)	3	1.0 (0.5)
NW40	KCP400125	1/8 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	2.0 (0.9)
	KCP400250	1/4 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	2.0 (0.9)
	KCP400375	3/8 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	2.0 (0.9)
	KCP400500	1/2 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	2.0 (0.9)
	KCP400625	5/8 in.	1.65 (41.91)	0.63 (16.00)	—	—	1	2.0 (0.9)
	KCP400750	3/4 in.	2.02 (51.31)	1.38 (35.05)	—	—	1	2.0 (0.9)
	KCP400880	7/8 in.	2.02 (51.31)	1.38 (35.05)	—	—	1	2.0 (0.9)
	KCP401000	1 in.	2.02 (51.31)	1.38 (35.05)	0.88 (22.4)	1.13 (28.7)	2	2.0 (0.9)
	KCP401125	1 1/8 in.	2.02 (51.31)	1.38 (35.05)	—	—	1	2.0 (0.9)
	KCP401250	1 1/4 in.	2.02 (51.31)	1.38 (35.05)	—	—	1	2.0 (0.9)

KLAMPS FLANGES & FITTINGS

▶ Adapters: KF to Swagelok

NOTE • KF flanges are 304L stainless steel



Ordering Information

Flange Size	Tube Size	Part Number	Length in. (mm)	Shipping Weight lbs (kg)
NW16	¼ in.	KASW025016	1.47 (37.3)	0.2 (0.11)
NW25	¼ in.	KASW025025	1.47 (37.3)	0.2 (0.11)
NW40	¼ in.	KASW025040	1.47 (37.3)	0.2 (0.11)
NW50	¼ in.	KASW025050	1.47 (37.3)	0.2 (0.11)
NW16	⅜ in.	KASW037516	1.63 (41.4)	0.2 (0.11)
NW25	⅜ in.	KASW037525	1.63 (41.4)	0.2 (0.11)
NW40	⅜ in.	KASW037540	1.63 (41.4)	0.2 (0.11)
NW50	⅜ in.	KASW037550	1.63 (41.4)	0.2 (0.11)
NW16	½ in.	KASW050016	1.77 (45.0)	0.2 (0.11)
NW25	½ in.	KASW050025	1.77 (45.0)	0.2 (0.11)
NW40	½ in.	KASW050040	1.77 (45.0)	0.5 (0.22)
NW50	½ in.	KASW050050	1.77 (45.0)	0.5 (0.22)
NW40	½ in.	KASW075040	2.14 (54.4)	0.5 (0.22)
NW50	½ in.	KASW075050	2.14 (54.4)	0.5 (0.22)
NW40	1 in.	KASW100040	2.60 (66.0)	0.5 (0.22)

VACUUM COMPONENTS

► Adapters: KF to VCR – Male & Female

NOTE • KF flanges are 304L stainless steel



Ordering Information

Flange Size	Tube Size	Part Number	Length in. (mm)	Shipping Weight lbs (kg)
Male				
NW16	¼ in.	KAVM025016	1.46 (37.1)	0.2 (0.11)
NW25	¼ in.	KAVM025025	1.46 (37.1)	0.2 (0.11)
NW40	¼ in.	KAVM025040	1.46 (37.1)	0.2 (0.11)
NW16	½ in.	KAVM050016	1.65 (41.9)	0.2 (0.11)
NW25	½ in.	KAVM050025	1.65 (41.9)	0.2 (0.11)
NW40	½ in.	KAVM050040	1.65 (41.9)	0.5 (0.22)
NW25	¾ in.	KAVM075025	2.15 (54.6)	0.2 (0.11)
Female				
NW16	¼ in.	KAVF025016	1.46 (37.1)	0.2 (0.11)
NW25	¼ in.	KAVF025025	1.46 (37.1)	0.2 (0.11)
NW40	¼ in.	KAVF025040	1.46 (37.1)	0.2 (0.11)
NW16	½ in.	KAVF050016	1.65 (41.9)	0.2 (0.11)
NW25	½ in.	KAVF050025	1.65 (41.9)	0.2 (0.11)
NW40	½ in.	KAVF050040	1.65 (41.9)	0.5 (0.22)
NW16	¾ in.	KAVF075016	2.15 (54.6)	0.2 (0.11)
NW25	¾ in.	KAVF075025	2.15 (54.6)	0.2 (0.11)

KLAMPS FLANGES & FITTINGS

► PVC Cord-Reinforced Flexible Vacuum Hose



Features

- Lightweight
- Transparent
- Smooth surface inside and out

Technical Specifications

Vacuum Range

To 1×10^7

Temperature Range

-25 °C to 45 °C

Ordering Information

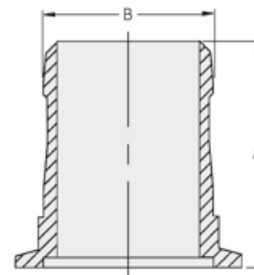
Part Number	I.D. in.	O.D. in.	Weight lbs (kg)
Flexible Vacuum Hose			
HFP075	0.75	1.00	0.2 (0.11)
HFP100	1.00	1.25	0.2 (0.11)
HFP125	1.25	1.62	0.2 (0.11)
HFP150	1.50	1.87	0.2 (0.11)
HFP200	2.00	2.50	0.2 (0.11)

Part Number	Size Range	Weight lbs (kg)
Steel Worm Gear Hose Clamps		
HFPC056	$\frac{9}{16}$ in. to $1 \frac{1}{4}$ in.	0.5 (0.22)
HFPC075	$\frac{3}{4}$ in. to $1 \frac{3}{4}$ in.	0.5 (0.22)
HFPC131	$1 \frac{5}{16}$ in. to $2 \frac{1}{4}$ in.	0.5 (0.22)
HFPC156	$1 \frac{9}{16}$ in. to $2 \frac{1}{2}$ in.	0.5 (0.22)

NOTE • 10 per package
• Use Weld Stubs (page 52) with this hose for correct fit

► Aluminum Male Rubber Hose Adapter

NOTE • not intended for use with the PVC Cord-Reinforced Flexible Vacuum Hose; suitable for use with rubber hose.



Ordering Information

Flange Size	Hose Size in.	Part Number	A in.	B in.	Weight lbs (kg)
NW16	0.50 – 0.62	KAH16050A	1.65	0.625	0.5 (0.11)
NW16	0.62 – 0.75	KAH16075A	1.65	0.750	0.5 (0.11)
NW25	0.75 – 0.87	KAH25075A	1.73	0.875	0.5 (0.11)
NW40	1.50 – 1.62	KAH40150A	2.17	1.630	0.5 (0.11)
NW50	1.50 – 1.62	KAH50150A	2.17	1.630	0.5 (0.11)

SUPPLIES, GREASES AND LUBRICANTS

▶ Torr Seal Low Vapor Pressure Resin Sealant



Torr Seal epoxy resin quickly seals leaks on any type of vacuum system or component. Provided in convenient tubes, Torr Seal is solvent-free and can be used at pressures of 10^{-9} Torr (mbar) and below, at temperatures from -45°C to 120°C (bakeable temperature). Additionally, Torr Seal permits leak checking immediately after curing and bonds with many materials including metal, ceramic, and glass.

Ordering Information

Description	Part Number	Weight lbs (kg)
Torr Seal base resin, 82 grams, and Torr Seal hardener, 36 grams	9530001	1.0 (0.45)

▶ Torr Seal Mixing System



The Torr Seal Mixing System includes an applicator gun, a premeasured Torr Seal cartridge, and an epoxy/resin mixer. The system uses the same low vapor pressure resin sealant as standard Torr Seal, while providing a systematic and scientific way of mixing the Torr Seal epoxy and resin. The applicator gun dispenses premeasured epoxy and resin from the cartridge through the mixer so that a uniform Torr Seal bead can be placed on any surface. As with the standard Torr Seal tubes, the mixing system can be used at pressures of 10^{-9} Torr and below, and at temperatures from -45°C to 120°C (bakeable temperature).

Ordering Information

Description	Part Number	Weight lbs (kg)
Applicator gun with Torr Seal cartridge (2 oz.) and three mixers	9530002	2.00 (0.91)
Applicator gun only	9530003	1.50 (0.68)
Torr Seal cartridge (2 oz.) and three mixers	9530004	0.75 (0.34)
Mixers only (six to a package)	9530005	0.25 (0.11)

▶ Fel-Pro Heavy Duty Anti-Seize

Fel-Pro Heavy Duty Anti-Seize is a high-temperature, anti-galling lubricant designed for screw threads and other mated components of all types. Generally used in applications that are external to vacuum systems, Fel-Pro is useful in temperature ranges of 70°C to $+1315^{\circ}\text{C}$.

Ordering Information

Description	Part Number	Weight lbs (kg)
Fel-Pro Heavy Duty Anti-Seize Lubricant	9530031	0.3 (0.13)

▶ Apiezon Vacuum Grease, Type L

Apiezon L is a general vacuum grease that has a vapor pressure from 10^{-11} Torr (mbar) at 20°C to 10^{-3} Torr (mbar) at 300°C , and has a melting point of $< 50^{\circ}\text{C}$.

Ordering Information

Description	Part Number	Weight lbs (kg)
Apiezon L vacuum grease, 1 oz.	695400004	1.0 (0.45)

▶ Agilent Vacuum Grease

This is a general purpose grease with a vapor pressure in the 10^{-6} Torr range. It is a non-silicone grease that comes in two viscosities and two sizes.

Ordering Information

Description	Part Number	Weight lbs (kg)
Agilent Vacuum grease, Medium Weight, $\frac{1}{4}$ lb size	LGCMID025	1.0 (0.45)
Agilent Vacuum grease, Medium Weight, 1 lb size	LGCMID100	1.0 (0.45)
Agilent Vacuum grease, Heavy Weight, $\frac{1}{4}$ lb size	LGCHEV025	1.0 (0.45)
Agilent Vacuum grease, Heavy Weight, 1 lb size	LGCHEV100	1.0 (0.45)