



We are proud of our Ideal Vacuum Super-Seal bellows valves as they are manufactured to meet the highest standards. Our bellows valve design includes a hermetically sealed valve stem for leak-free operation, being well suited for high-vacuum applications. These valves operate with a low friction, zero abrasion of the polymer elastomer surface, allowing for repeatable sealing action over thousands of cycles are typical. Save time and money, our premium Super-Seal bellows valves provide high-conductance to maximum the evacuated gas flow rate while minimizing your pump down time.

COMMON APPLICATIONS

- **Rough Vacuum**
 - ~ Freeze drying
 - ~ Food processing
 - ~ Metal ore refining
 - ~ Steam plant condensers
 - ~ Vacuum distillation
- **Medium Vacuum**
 - ~ Decorative coatings
 - ~ Functional coatings
 - ~ Chemical processes
 - ~ Electron microscopes
 - ~ Microscopy sample processing
- **High/Ultrahigh Vacuum**
 - ~ Physics research
- **Optics**
 - ~ Molecular & Atomic Spectroscopy
- **High energy**
 - ~ Semiconductor manufacturing
 - ~ Electron tube manufacturing
 - ~ Surface analysis (Auger Spectroscopy)
 - ~ Molecular beam epitaxy
 - ~ Outer space simulation

Our Super-Seal bellows valves are used in applications ranging from semiconductor manufacturing, plasma physics research, to nuclear accelerators. Our inline and angle bellows valves are an ideal choice for many vacuum processes and can be used over the pressure range from 15 PSI positive pressure to 10^{-9} Torr high-vacuum. They are configured with a variety of end pieces including tubulated ends for welding, CF flanges, KF flanges, as well as custom designs.

BENEFITS

- ~ Easy installation & service
- ~ Service-free performance
- ~ Maximizes pumping efficiency
- ~ Economical to use
- ~ Cost effective
- ~ Fail-safe operation
- ~ Minimizes operator error
- ~ Low outgassing
- ~ Higher resistance to corrosive gasses (with the use of Kalrez O-rings option)

TECHNICAL SPECIFICATIONS

Temperature of operation and or bake (with min/max)	120 ° C
Conductance (l/s)	99% of tube (refer table)
Cycles of operation	Typically 1.5 million cycles
Pressure rating (torr)	Up to 10^{-8} Torr (We have leak tested to that pressure)
Vacuum range	1×10^{-9} Torr
Leak test	1×10^{-9} STD cc/s He
Seal material	Viton, Buna, Silicon or Kalrez
Differential Pressure	15 psi

CONDUCTANCE CHART (right angle super seal)

FLANGE SIZE	ID (inch)	C (l/s)
KF-16	1.15	1.54
KF-25	2.2	4.25
KF-40	3.46	13.75
KF-50	4.75	21.25

HAND-OPERATED ANGLE BELLOWS VALVES

SIZE	DESCRIPTION	PART No.
KF-16	NW16 manual bellows angle valve, 304L SS	P103785
KF-25	NW25 manual bellows angle valve, 304L SS	P103784
KF-40	NW40 manual bellows angle valve, 304L SS	P103936
KF-50	NW50 manual bellows angle valve, 304L SS	P103935
0.75"	3/4" OD tube manual bellows angle valve, 304L SS	P103846
1.0"	1" OD tube manual bellows angle valve, 304L SS	P103847
1.5"	1-1/2" OD tube manual bellows angle valve, 304L SS	P103812
2.0"	2" OD tube manual bellows angle valve, 304L SS	P103938
1.33"	CF 1-1/3 inch manual bellows angle valve, 304L SS	P103843
2.12"	CF 2-1/8 inch manual bellows angle valve, 304L SS	P103844
2.75"	CF 2-3/4 inch manual bellows angle valve, 304L SS	P103787
3.38"	CF 3-1/3 inch manual bellows angle valve, 304L SS	P103937

HAND-OPERATED INLINE BELLOWS VALVES

SIZE	DESCRIPTION	PART No.
KF-16	NW16 manual bellows inline valve, 304L SS	P103786
KF-25	NW25 manual bellows inline valve, 304L SS	P103845
KF-40	NW40 manual bellows inline valve, 304L SS	P103908
KF-50	NW50 manual bellows inline valve, 304L SS	P103977
0.75"	3/4 inch OD tube manual bellows inline valve, 304L SS	P103939
1.0"	1 inch OD tube manual bellows inline valve, 304L SS	P103940
1.5"	1-1/2 inch OD tube manual bellows inline valve, 304L SS	P103941
2.0"	2 inches OD tube manual bellows inline valve, 304L SS	P103978

KITS
VITON

DESCRIPTION	MAJOR	MINOR
Rebuild kit for KF16/25, 0.75"/1.0" tube, CF 1.33", 2.125" manual bellows angle/inline valve	P106154	P106157
Rebuild kit for KF40, 1.0" tube, CF 2.75" manual bellows angle/inline valve	P106155	P106158
Rebuild kit for KF50, 2.0" tube, CF 3.38" manual bellows angle/inline valve	P106156	P106159

BUNA

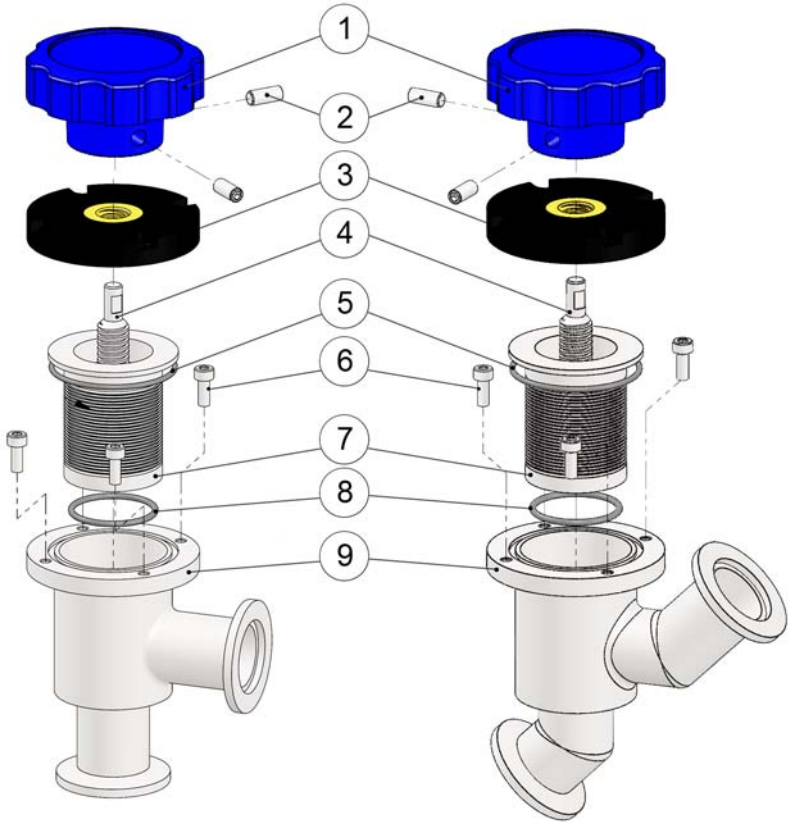
DESCRIPTION	MAJOR	MINOR
Rebuild kit for KF16/25, 0.75"/1.0" tube, CF 1.33", 2.125" manual bellows angle/inline valve	P106160	P106163
Rebuild kit for KF40, 1.0" tube, CF 2.75" manual bellows angle/inline valve	P106161	P106164
Rebuild kit for KF50, 2.0" tube, CF 3.38" manual bellows angle/inline valve	P106162	P106165

SILICON

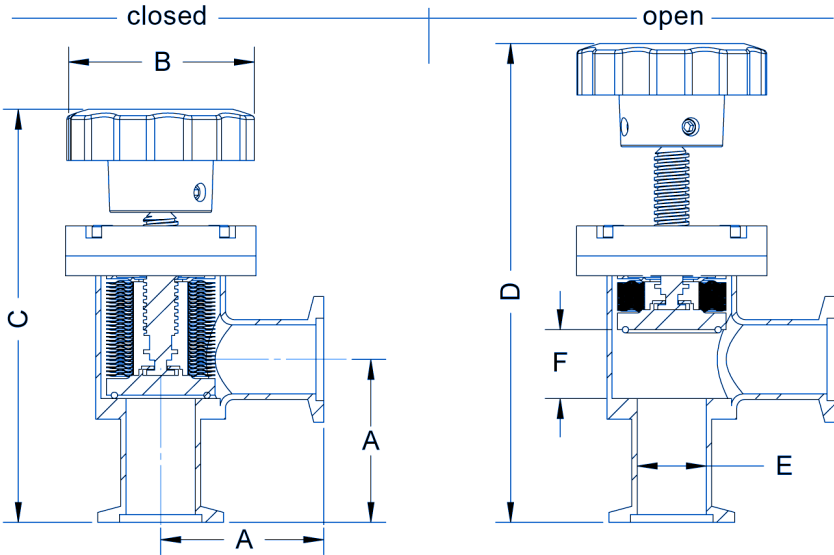
DESCRIPTION	MAJOR	MINOR
Rebuild kit for KF16/25, 0.75"/1.0" tube, CF 1.33", 2.125" manual bellows angle/inline valve	P106166	P106169
Rebuild kit for KF40, 1.0" tube, CF 2.75" manual bellows angle/inline valve	P106167	P106170
Rebuild kit for KF50, 2.0" tube, CF 3.38" manual bellows angle/inline valve	P106168	P106171

KALREZ

DESCRIPTION	MAJOR	MINOR
Rebuild kit for KF16/25, 0.75"/1.0" tube, CF 1.33", 2.125" manual bellows angle/inline valve	P106172	P106175
Rebuild kit for KF40, 1.0" tube, CF 2.75" manual bellows angle/inline valve	P106173	P106176
Rebuild kit for KF50, 2.0" tube, CF 3.38" manual bellows angle/inline valve	P106174	P106177

KF & TUBE ANGLE VALVES DIMENSIONS


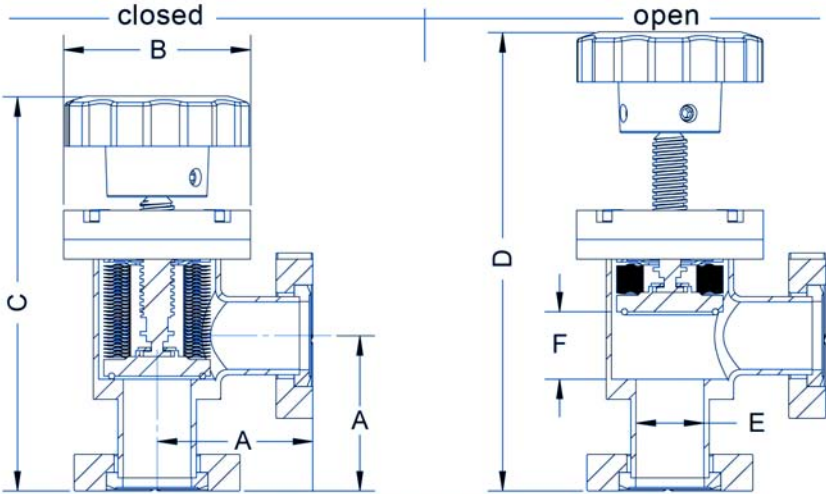
PARTS LIST			KITS	
ITEM	DESCRIPTION	QTY	MAJOR	MINOR
1	Knob	1		
2	M5 Screws	2	✓	
3	Top Cover	1	✓	
4	Center Rod	1	✓	
5	Top O-ring	1	✓	✓
6	M4 Screws	4	✓	
7	Bellows	1	✓	
8	Bottom O-ring	1	✓	✓
9	KF Body 180°	1		

KF & TUBE ANGLE VALVES DIMENSIONS

KF

SIZE	A	B	C	D	E	F
KF-16	2.2in (55mm)	2.4in (60mm)	5.4in (137mm)	6.2in (157mm)	0.6in (16mm)	0.8in (20mm)
KF-25	2.0in (52mm)	2.4in (60mm)	5.2in (132mm)	6.0in (152mm)	0.9in (22mm)	0.9in (22mm)
KF-40	2.6in (65mm)	2.4in (60mm)	7.4in (187mm)	6.3in (161mm)	1.4in (35mm)	1.0in (26mm)
KF-50	3.0in (76mm)	2.4in (60mm)	7.7in (197mm)	9.4in (240mm)	1.9in (47mm)	2.1in (53mm)

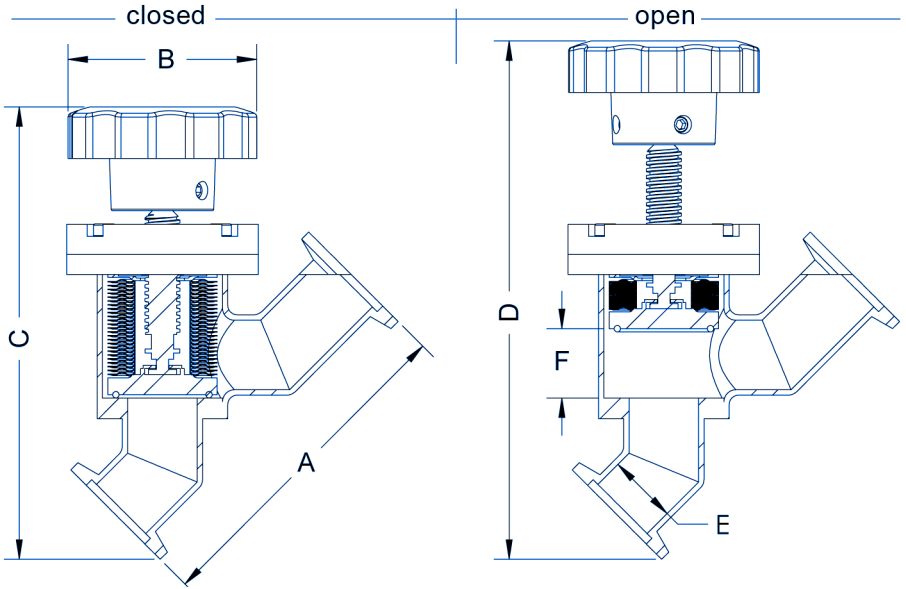
TUBE

SIZE	A	B	C	D	E	F
.75in.	2.0in (51mm)	2.4in (60mm)	5.3in (135mm)	6.1in (155mm)	0.6in (16mm)	0.8in (20mm)
1in.	2.0in (51mm)	2.4in (60mm)	5.0in (127mm)	5.8in (147mm)	0.9in (22mm)	0.9in (22mm)
1.5in.	2.4in (61mm)	2.4in (60mm)	6.2in (157mm)	7.2in (183mm)	1.4in (35mm)	1.0in (26mm)
2in.	2.9in (74mm)	2.4in (60mm)	7.5in (191mm)	9.2in (234mm)	1.9in (47mm)	2.1in (53mm)

CF ANGLE VALVES DIMENSIONS


SIZE	A	B	C	D	E	F
1.33in.	2.2in (55mm)	2.4in (60mm)	5.4in (137mm)	6.2in (157mm)	0.6in (16mm)	0.8in (20mm)
2.12in.	2.0in (52mm)	2.4in (60mm)	5.1in (128mm)	5.9in (149mm)	0.9in (22mm)	0.9in (22mm)
2.75in.	2.6in (65mm)	2.4in (60mm)	7.4in (189mm)	6.4in (162mm)	1.4in (35mm)	1.0in (26mm)
3.38in.	3.0in (76mm)	2.4in (60mm)	7.8in (199mm)	9.5in (242mm)	1.9in (47mm)	2.1in (53mm)



KF & TUBE INLINE VALVES DIMENSIONS

KF

SIZE	A	B	C	D	E	F
KF-16	4.0in (102mm)	2.4in (60mm)	5.5in (139mm)	6.3in (159mm)	0.6in (16mm)	0.8in (20mm)
KF-25	4.2in (106mm)	2.4in (60mm)	5.6in (143mm)	6.5in (164mm)	0.9in (22mm)	0.9in (22mm)
KF-40	6.1in (130mm)	2.4in (60mm)	7.1in (182mm)	8.2in (208mm)	1.4in (35mm)	1.0in (26mm)
KF-50	7.0in (177mm)	2.4in (60mm)	9.3in (235mm)	11.0in (279mm)	1.9in (47mm)	2.1in (53mm)

TUBE

SIZE	A	B	C	D	E	F
.75in.	3.7in (94mm)	2.4in (60mm)	5.2in (132mm)	6.1in (155mm)	0.6in (16mm)	0.8in (20mm)
1in.	3.9in (99mm)	2.4in (60mm)	5.3in (135mm)	6.1in (155mm)	0.9in (22mm)	0.9in (22mm)
1.5in.	4.8in (122mm)	2.4in (60mm)	6.8in (173mm)	7.8in (198mm)	1.4in (35mm)	1.0in (26mm)
2in.	6.7in (170mm)	2.4in (60mm)	8.7in (221mm)	10.4in (264mm)	1.9in (47mm)	2.1in (53mm)

KITS PARTS

