

Stainless Steel Thin Wall Flexible Hose Connectors

KEY HIGH VACUUM PRODUCTS, INC.'s stainless steel flexible hose connectors are ideal for solving alignment issues when straight ridged tubing is unpractical. Thin wall hoses are used for installing roughing pumps, gas lines and are extremely well suited for use with foreline applications. Flanges on these hose assemblies are fabricated from 304L stainless steel with the exception of the VCR® fittings which are produced from 316L stainless steel. The hose material itself is 321 stainless steel and all assemblies are TIG welded without exception and leak tested on a helium mass spectrometer.

Hoses are available standard with five distinct terminations suitable to a majority of existing applications; Standard flanges encompass; **KEY SPEEDY NW & ISO flanges, female or male VCR® fittings, MET-SEAL flanges, QS quick connect fittings and tube end fittings.** **KEY HIGH VACUUM PRODUCTS, INC.,** has selected the most common lengths and flanges requested in this catalog; however upon request nearly any length can be constructed to fit a particular requirement.

General installation guidelines are; extension of 20% and a compression of 30% of the free length for unbraided hose assemblies. Braided assemblies by their nature can not be extended nor compressed due to the braid itself; and hoses with braid will lose some lateral flexibility (approximately 25% dependent on the length) due to the braid. The main function of a braided assembly is to protect the hose from "squirming" during over pressure situations.



Stainless Steel Thin Wall Flexible Hose Connectors

Part Number	Hose I.D.	Length	Description
KH-025-MVC-3.5	1/4"	3-1/2"	1/4" Male VCR®
KH-025-FVC-3.5	1/4"	3-1/2"	1/4" Female VCR®
KH-025-MVC-6	1/4"	6"	1/4" Male VCR®
KH-025-FVC-6	1/4"	6"	1/4" Female VCR®
KH-025-MVC-12	1/4"	12"	1/4" Male VCR®
KH-025-FVC-12	1/4"	12"	1/4" Female VCR®
KH-025-MVC-24	1/4"	24"	1/4" Male VCR®
KH-025-FVC-24	1/4"	24"	1/4" Female VCR®
KH-025-MVC-36	1/4"	36"	1/4" Male VCR®
KH-025-FVC-36	1/4"	36"	1/4" Female VCR®
BK-75-3.94	3/4"	3.94"	NW 16 flange
BK-75-6	3/4"	6"	NW 16 flange
BC-75-6	3/4"	6"	Mini MET-SEAL
BQ-75-6	3/4"	6"	Quick connect
BT-75-6	3/4"	6"	3/4" OD tube
KSH-5316	3/4"	9.84"	NW 16 flange
BK-75-10.23	3/4"	10.23"	NW 16 flange
BK-75-12	3/4"	12"	NW 16 flange
BC-75-12	3/4"	12"	Mini MET-SEAL
BQ-75-12	3/4"	12"	Quick connect
BT-75-12	3/4"	12"	3/4" OD tube
BC-75-18	3/4"	18"	Mini MET-SEAL
KSH-5416	3/4"	19.69"	NW 16 flange
BK-75-20.23	3/4"	20.23"	NW 16 flange
BK-75-24	3/4"	24"	NW 16 flange
BC-75-24	3/4"	24"	Mini MET-SEAL
BQ-75-24	3/4"	24"	Quick connect
BT-75-24	3/4"	24"	3/4" OD tube
BK-75-36	3/4"	36"	NW 16 flange
BC-75-36	3/4"	36"	Mini MET-SEAL
BQ-75-36	3/4"	36"	Quick connect
BT-75-36	3/4"	36"	3/4" OD tube
KSH-5516	3/4"	39.4"	NW 16 flange
BK-75-40.23	3/4"	40.23"	NW 16 flange
BK-75-48	3/4"	48"	NW 16 flange
BC-75-48	3/4"	48"	Mini MET-SEAL
BQ-75-48	3/4"	48"	Quick connect
BT-75-48	3/4"	48"	3/4" OD tube
BK-75-60	3/4"	60"	NW 16 flange
BC-75-60	3/4"	60"	Mini MET-SEAL
BQ-75-60	3/4"	60"	Quick connect
BT-75-60	3/4"	60"	3/4" OD tube
BC-75-72	3/4"	72"	Mini MET-SEAL

Note: When ordering flexible hose connectors with the metal braid sheathing be sure to add the letter "S" to the prefix of the part number (**Example SBK-75-6**).

Please call Key High at 631-360-3970 or email us at info@KeyHigh.com for the most up-to-date listing of products and for pricing information.



Stainless Steel Thin Wall Flexible Hose Connectors

Part Number	Hose I.D.	Length	Description
BK-100-3.94	1"	3.94"	NW 25 flange
BK-100-6	1"	6"	NW 25 flange
BC-100-6	1"	6"	2-1/8" MET-SEAL
BQ-100-6	1"	6"	Quick connect
BT-100-6	1"	6"	1" OD tube
KSH-5325	1"	9.84"	NW 25 flange
BK-100-12	1"	12"	NW 25 flange
BC-100-12	1"	12"	2-1/8" MET-SEAL
BQ-100-12	1"	12"	Quick connect
BT-100-12	1"	12"	1" OD tube
BK-100-18	1"	18"	NW 25 flange
KSH-5425	1"	19.69"	NW 25 flange
BK-100-20.27	1"	20.27"	NW 25 flange
BK-100-24	1"	24"	NW 25 flange
BC-100-24	1"	24"	2-1/8" MET-SEAL
BQ-100-24	1"	24"	Quick connect
BT-100-24	1"	24"	1" OD tube
BK-100-36	1"	36"	NW 25 flange
BC-100-36	1"	36"	2-1/8" MET-SEAL
BQ-100-36	1"	36"	Quick connect
BT-100-36	1"	36"	1" OD tube
KSH-5525	1"	39.4"	NW 25 flange
BK-100-40.27	1"	40.27"	NW 25 flange
BK-100-48	1"	48"	NW 25 flange
BC-100-48	1"	48"	2-1/8" MET-SEAL
BQ-100-48	1"	48"	Quick connect
BT-100-48	1"	48"	1" OD tube
BK-100-60	1"	60"	NW 25 flange
BC-100-60	1"	60"	2-1/8" MET-SEAL
BQ-100-60	1"	60"	Quick connect
BT-100-60	1"	60"	1" OD tube
BK-150-3.94	1-1/2"	3.94"	NW 40 flange
BK-150-6	1-1/2"	6"	NW 40 flange
BC-150-6	1-1/2"	6"	2-3/4" MET-SEAL
BQ-150-6	1-1/2"	6"	Quick connect
BT-150-6	1-1/2"	6"	1-1/2" OD tube
KSH-5340	1-1/2"	9.84"	NW 40 flange
BK-150-10.28	1-1/2"	10.28"	NW 40 flange
BK-150-12	1-1/2"	12"	NW 40 flange
BC-150-12	1-1/2"	12"	2-3/4" MET-SEAL
BQ-150-12	1-1/2"	12"	Quick connect
BT-150-12	1-1/2"	12"	1-1/2" OD tube
BK-150-18	1-1/2"	18"	NW 40 flange
KSH-5440	1-1/2"	19.69"	NW 40 flange
BK-150-20.28	1-1/2"	20.28"	NW 40 flange

Note: When ordering flexible hose connectors with metal braid sheathing add letter "S" to prefix of part number (**Example SBK-150-6**).



Stainless Steel Thin Wall Flexible Hose Connectors

Part Number	Hose I.D.	Length	Description
BK-150-24	1-1/2"	24"	NW 40 flange
BC-150-24	1-1/2"	24"	2-3/4" MET-SEAL
BQ-150-24	1-1/2"	24"	Quick connect
BT-150-24	1-1/2"	24"	1-1/2" OD tube
BK-150-36	1-1/2"	36"	NW 40 flange
BC-150-36	1-1/2"	36"	2-3/4" MET-SEAL
BQ-150-36	1-1/2"	36"	Quick connect
BT-150-36	1-1/2"	36"	1-1/2" OD tube
KSH-5540	1-1/2"	40"	NW 40 flange
BK-150-40.28	1-1/2"	40.28"	NW 40 flange
BK-150-48	1-1/2"	48"	NW 40 flange
BC-150-48	1-1/2"	48"	2-3/4" MET-SEAL
BQ-150-48	1-1/2"	48"	Quick connect
BT-150-48	1-1/2"	48"	1-1/2" OD tube
BK-150-60	1-1/2"	60"	NW 40 flange
BC-150-60	1-1/2"	60"	2-3/4" MET-SEAL
BQ-150-60	1-1/2"	60"	Quick connect
BT-150-60	1-1/2"	60"	1-1/2" OD tube
BK-200-3.94	2"	3.94"	NW 50 flange
BK-200-6	2"	6"	NW 50 flange
BC-200-6	2"	6"	3-3/8" MET-SEAL
BQ-200-6	2"	6"	Quick connect
BT-200-6	2"	6"	2" OD tube
KSH-5350	2"	9.84"	NW 50 flange
BK-200-10.53	2"	10.53"	NW 50 flange
BK-200-12	2"	12"	NW 50 flange
BC-200-12	2"	12"	3-3/8" MET-SEAL
BQ-200-12	2"	12"	Quick connect
BT-200-12	2"	12"	2" OD tube
KSH-5450	2"	19.69"	NW 50 flange
BK-200-20.53	2"	20.53"	NW 50 flange
BK-200-24	2"	24"	NW 50 flange
BC-200-24	2"	24"	3-3/8" MET-SEAL
BQ-200-24	2"	24"	Quick connect
BT-200-24	2"	24"	2" OD tube
BK-200-36	2"	36"	NW 50 flange
BC-200-36	2"	36"	3-3/8" MET-SEAL
BQ-200-36	2"	36"	Quick connect
BT-200-36	2"	36"	2" OD tube
KSH-5550	2"	39.4"	NW 50 flange
BK-200-40.53	2"	40.53"	NW 50 flange
BK-200-48	2"	48"	NW 50 flange
BC-200-48	2"	48"	3-3/8" MET-SEAL
BQ-200-48	2"	48"	Quick connect
BT-200-48	2"	48"	2" OD tube
BK-200-60	2"	60"	NW 50 flange
BC-200-60	2"	60"	3-3/8" MET-SEAL
BQ-200-60	2"	60"	Quick connect
BT-200-60	2"	60"	2" OD tube

Note: When ordering flexible hose connectors with metal braid sheathing add letter "S" to prefix of part number (**Example SBK-150-24**).



Stainless Steel Thin Wall Flexible Hose Connectors

Part Number	Hose I.D.	Length	Description
BC-250-6	2-1/2"	6"	4-1/2" MET-SEAL
BI-250-6	2-1/2"	6"	NW 63 ISO flange
BT-250-6	2-1/2"	6"	2-1/2" OD tube
KSH-7863-9.8	2-1/2"	9.8"	NW 63 ISO flange
BC-250-12	2-1/2"	12"	4-1/2" MET-SEAL
BI-250-12	2-1/2"	12"	NW 63 ISO flange
BT-250-12	2-1/2"	12"	2-1/2" OD tube
KSH-7863-19.7	2-1/2"	19.7"	NW 63 ISO flange
BC-250-24	2-1/2"	24"	4-1/2" MET-SEAL
BI-250-24	2-1/2"	24"	NW 63 ISO flange
BT-250-24	2-1/2"	24"	2-1/2" OD tube
BC-250-36	2-1/2"	36"	4-1/2" OD MET-SEAL
BI-250-36	2-1/2"	36"	NW 63 ISO-MF flange
BT-250-36	2-1/2"	36"	2-1/2" OD tube
BC-250-48	2-1/2"	48"	4-1/2" OD MET-SEAL
BI-250-48	2-1/2"	48"	NW 63 ISO-MF flange
BT-250-48	2-1/2"	48"	2-1/2" OD tube
BC-250-60	2-1/2"	60"	4-1/2" OD MET-SEAL
BI-250-60	2-1/2"	60"	NW 63 ISO-MF flange
BT-250-60	2-1/2"	60"	2-1/2" OD tube
BC-300-6	3"	6"	4-5/8" OD MET-SEAL
BI-300-6	3"	6"	NW 80 ISO-MF flange
BT-300-6	3"	6"	3" OD tube
KSH-7880-9.8	3"	9.8"	NW 80 ISO-MF flange
BC-300-12	3"	12"	4-5/8" OD MET-SEAL
BI-300-12	3"	12"	NW 80 ISO-MF flange
BT-300-12	3"	12"	3" OD tube
BI-300-18	3"	18"	NW 80 ISO-MF flange
KSH-7880-19.7	3"	19.7"	NW 80 ISO-MF flange
BC-300-24	3"	24"	4-5/8" OD MET-SEAL
BI-300-24	3"	24"	NW 80 ISO-MF flange
BT-300-24	3"	24"	3" OD tube
BC-300-36	3"	36"	4-5/8" OD MET-SEAL
BI-300-36	3"	36"	NW 80 ISO-MF flange
BT-300-36	3"	36"	3" OD tube
BC-300-48	3"	48"	4-5/8" OD MET-SEAL
BI-300-48	3"	48"	NW 80 ISO-MF flange
BT-300-48	3"	48"	3" OD tube
BC-300-60	3"	60"	4-5/8" OD MET-SEAL
BI-300-60	3"	60"	NW 80 ISO-MF flange
BT-300-60	3"	60"	3" OD tube

Note: When ordering flexible hose connectors with metal braid sheathing add letter "S" to prefix of part number (**Example SBC-300-12**).



Stainless Steel Thin Wall Flexible Hose Connectors

Part Number	Hose I.D.	Length	Description
BC-400-6	4"	6"	6" OD MET-SEAL
BI-400-6	4"	6"	NW 100 ISO-MF flange
BT-400-6	4"	6"	4" OD tube
KSH-78100-9.8	4"	9.8"	NW 100 ISO-MF flange
BC-400-12	4"	12"	6" OD MET-SEAL
BI-400-12	4"	12"	NW 100 ISO-MF flange
BT-400-12	4"	12"	4" OD tube
KSH-78100-19.7	4"	19.7"	NW 100 ISO-MF flange
BC-400-24	4"	24"	6" OD MET-SEAL
BI-400-24	4"	24"	NW 100 ISO-MF flange
BT-400-24	4"	24"	4" OD tube
BC-400-36	4"	36"	6" OD MET-SEAL
BI-400-36	4"	36"	NW 100 ISO-MF flange
BT-400-36	4"	36"	4" OD tube
KSH-78100-39.4	4"	39.4"	NW 100 ISO-MF flange
BC-400-48	4"	48"	6" OD MET-SEAL
BI-400-48	4"	48"	NW 100 ISO-MF flange
BT-400-48	4"	48"	4" OD tube
BC-400-60	4"	60"	6" OD MET-SEAL
BI-400-60	4"	60"	NW 100 ISO-MF flange
BT-400-60	4"	60"	4" OD tube
KSFC-78160	6"	7.9"	NW 160 ISO-MF flange
KSFC-78160-10	6"	10"	NW 160 ISO-MF flange
KSFC-78160-12	6"	12"	NW 160 ISO-MF flange
KSFC-78160-39.4	6"	39.4"	NW 160 ISO-MF flange
KSFC-78200	6"	9.8"	NW 200 ISO-MF flange
KSFC-78250	6"	11.8"	NW 250 ISO-MF flange

Note: When ordering flexible hose connectors with metal braid sheathing add letter "S" to prefix of part number (**Example SBC-400-12**).



Stainless Steel Thick Wall Hose Connectors

Description:

Thick wall hoses are constructed of the same materials as our thin wall hoses with the exception of the wall thickness of the hose itself. The walls of these thick wall hoses are double the thickness of the thin wall hoses, which reduces the overall flexibility of the units. The main advantage of the thick wall units is the fact that in most cases external supports are not required to support the hoses from collapsing while under a vacuum. Special lengths, flanges and configurations are available upon request.

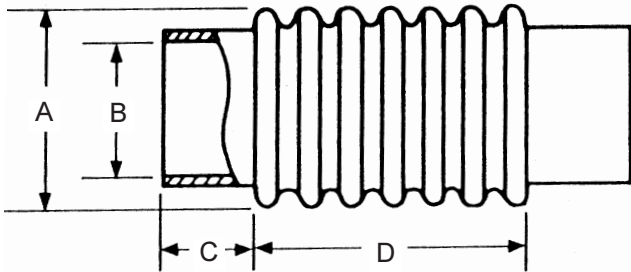


Part Number	Hose I.D.	Length	Description
KSH-4916	3/4"	9.84"	NW 16 flange
KSH-5016	3/4"	19.69"	NW 16 flange
KSH-5116	3/4"	39.4"	NW 16 flange
KSH-4925	1"	9.84"	NW 25 flange
KSH-5025	1"	19.69"	NW 25 flange
KSH-5125	1"	39.4"	NW 25 flange
KSH-4940	1-1/2"	9.84"	NW 40 flange
KSH-5040	1-1/2"	19.69"	NW 40 flange
KSH-5140	1-1/2"	39.4"	NW 40 flange
KSH-4950	2"	9.84"	NW 50 flange
KSH-5050	2"	19.69"	NW 50 flange
KSH-5150	2"	39.4"	NW 50 flange
KSH-7963-20	2-1/2"	20"	NW 63 ISO flange
KSH-7963	2-1/2"	24"	NW 63 ISO flange
KSH-8063	2-1/2"	36"	NW 63 ISO flange
KSH-7963-40	2-1/2"	40"	NW 63 ISO flange
KSH-7980-20	3"	20"	NW 80 ISO flange
KSH-7980	3"	24"	NW 80 ISO flange
KSH-8080	3"	36"	NW 80 ISO flange
KSH-7980-40	3"	40"	NW 80 ISO flange
KSH-79100-10	4"	10"	NW 100 ISO flange
KSH-80100-15	4"	15"	NW 100 ISO flange
KSH-79100-20	4"	20"	NW 100 ISO flange
KSH-79100	4"	24"	NW 100 ISO flange
KSH-80100	4"	36"	NW 100 ISO flange
KSH-79100-40	4"	40"	NW 100 ISO flange
KSH-79160-20	6"	20"	NW 160 ISO flange
KSH-79160	6"	24"	NW 160 ISO flange
KSH-80160	6"	36"	NW 160 ISO flange
KSH-79160-40	6"	40"	NW 160 ISO flange
KSH-79200-20	8"	20"	NW 200 ISO flange
KSH-79200	8"	24"	NW 200 ISO flange
KSH-80200	8"	36"	NW 200 ISO flange
KSH-79200-40	8"	40"	NW 200 ISO flange
KSH-79250-20	10"	20"	NW 250 ISO flange
KSH-79250	10"	24"	NW 250 ISO flange
KSH-80250	10"	36"	NW 250 ISO flange
KSH-79250-40	10"	40"	NW 250 ISO flange

Formed Stainless Steel Bellows

Description:

HFB Series bellows are manufactured from 321 stainless steel and are highly flexible. Typical applications include: expansion joints, vibration dampening, cryogenic applications and alignment issues. Upon request, **HFB** bellows can be manufactured with standard tube end fittings, as well as different cuff lengths and convoluted lengths.

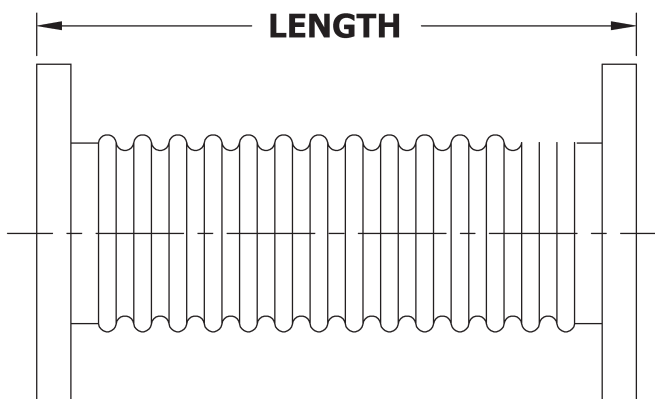


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Part Number	Wall Thickness	A	B	C	D	DEFLECTION + OR -
HFB-200	.004	.375	.250	.50	1.00	1/4"
HFB-201	.004	.450	.312	.50	1.00	1/4"
HFB-203	.004	.540	.375	.50	1.50	3/8"
HFB-204	.005	.740	.500	.50	1.50	3/8"
HFB-205	.006	.875	.625	.50	1.50	3/8"
HFB-206	.006	1.030	.750	.50	1.50	1/2"
HFB-207	.006	1.225	.875	.50	2.00	1/2"
HFB-208	.006	1.36	1.00	.75	2.00	1/2"
HFB-209	.006	1.46	1.125	.75	2.00	1/2"
HFB-210	.006	1.60	1.250	.75	2.00	1/2"
HFB-211	.006	1.78	1.375	.75	2.00	1/2"
HFB-212	.006	1.91	1.500	.75	2.00	1/2"
HFB-213	.006	2.12	1.625	.75	2.00	1/2"
HFB-214	.006	2.22	1.750	.75	2.00	1/2"
HFB-215	.006	2.47	2.00	.75	2.47	3/4"
HFB-216	.007	2.90	2.25	.75	2.50	3/4"
HFB-217	.007	3.00	2.50	.75	2.50	3/4"
HFB-218	.007	3.75	3.00	1.00	3.00	3/4"
HFB-219	.007	4.12	3.50	1.00	3.50	3/4"
HFB-220	.008	4.75	4.00	1.00	4.00	1-1/4"
HFB-221	.008	5.30	4.50	1.00	4.00	1-1/4"
HFB-222	.008	5.85	5.00	1.00	5.00	1-1/2"
HFB-223	.008	6.40	5.50	1.25	5.00	1-1/2"
HFB-224	.010	7.00	6.00	1.25	5.00	1-1/2"
HFB-225	.012	9.25	8.00	1.25	6.00	2"
HFB-226	.012	11.87	10.00	1.25	6.00	2"



ASA Stainless Steel Thin Wall Flexible Hose Connectors



ASA Stainless Steel Thin Wall Flexible Hose Connectors

- One flange rotatable, one flange non rotatable
- Stainless steel TIG welded construction

Part Number	Hose I.D.	Length	Description
HFB-ASA4-6	1"	6.00	4-1/4" OD ASA flanges
HFB-ASA4-1.5	1-1/2"	6.00	4-1/4" OD ASA flanges
HFB-ASA5	2"	6.00	5" OD ASA flanges
HFB-ASA5-2.5	2-1/2"	6.00	5" OD ASA flanges
HFB-ASA6	3"	7.00	6" OD ASA flanges
HFB-ASA7	4"	7.00	7-1/2" OD ASA flanges
HFB-ASA9	4"	7.00	9" OD ASA flanges
HFB-ASA9-6	6"	7.00	9" OD ASA flanges
HFB-ASA11	6"	7.00	11" OD ASA flanges
HFB-ASA-11-8	8"	7.00	11" OD ASA flanges



Welded Stainless Steel Bellows

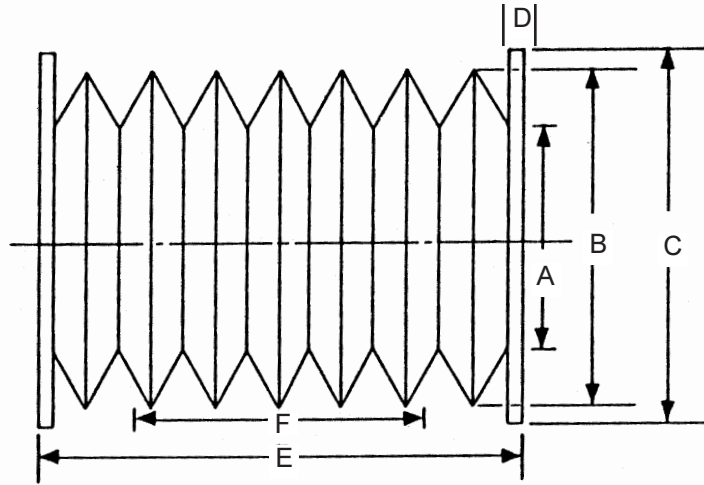
Introduction: The bellows material itself is fabricated for AM-350 stainless steel which allows for a wide spectrum of temperature, a more flexible diaphragm, greater stroke length and a lower compressed height. The bellows, diaphragm and attached flanges are TIG welded and all units are leak tested on a helium mass spectrometer at 5 x 10⁻¹⁰ torr.



Part Number	Bellows I.D. "A"	Bellows O.D. "B"	Flange O.D. "C"	Flange Thickness "D"	Extended Length "E"	Compressed Length "F"	Spring Rate
SSWB-100	.260	.595	.687	.010	.750	.210	10.2
SSWB-101	.260	.595	.687	.010	1.500	.42	4.9
SSWB-110	.250	.750	.900	.010	.930	.26	19.3
SSWB-111	.250	.750	.900	.010	3.00	.74	5.9
SSWB-120	.550	1.030	1.155	.015	1.38	.38	10.3
SSWB-121	.550	1.030	1.155	.015	3.38	.87	4.1
SSWB-130	.750	1.250	1.50	.015	.600	.20	33.0
SSWB-131	.750	1.250	1.50	.015	23.00	5.33	.8
SSWB-140	.540	1.350	1.350	.015	1.46	.360	8.8
SSWB-141	.540	1.350	1.350	.015	3.20	.55	3.8
SSWB-150	.937	1.437	1.437	.015	.750	.26	13.1
SSWB-151	.937	1.437	1.437	.015	2.25	.60	4.2
SSWB-160	.750	1.500	1.562	.015	1.25	3.7	N/A
SSWB-161	.750	1.500	1.562	.015	3.50	.63	N/A
SSWB-170	.970	1.500	1.562	.015	2.50	.63	6.9
SSWB-171	.970	1.500	1.562	.015	6.00	1.39	2.9
SSWB-180	.750	1.625	2.100	.015	2.25	.39	6.2
SSWB-181	.750	1.625	2.100	.015	4.50	.68	3.1
SSWB-190	.750	1.750	2.100	.015	8.50	1.58	2.9
SSWB-191	.750	1.750	2.100	.015	2.00	.41	12.2
SSWB-200	1.00	1.750	2.100	.015	4.25	.95	6.8
SSWB-201	1.00	1.750	2.100	.015	5.50	1.21	5.2
SSWB-210	1.070	2.000	2.100	.015	.75	.20	31.9
SSWB-211	1.070	2.000	2.100	.015	.350	.13	74.5
SSWB-220	1.250	2.000	2.100	.015	1.25	.34	17.7
SSWB-221	1.250	2.000	2.100	.015	3.50	.81	6.1
SSWB-230	1.500	2.250	2.375	.015	5.50	1.21	4.5
SSWB-231	1.500	2.250	2.375	.015	12.37	2.60	2.0



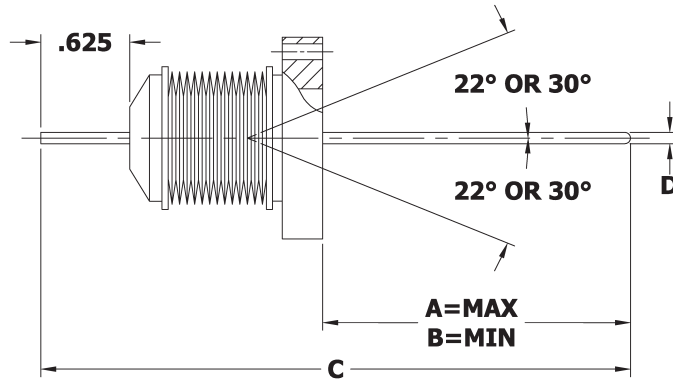
Welded Stainless Steel Bellows



Part Number	Bellows I.D. "A"	Bellows O.D. "B"	Flange O.D. "C"	Flange Thickness "D"	Extended Length "E"	Compressed Length "F"	Spring Rate
SSWB-250	1.875	2.625	2.750	.015	.87	.32	45.3
SSWB-251	1.875	2.625	2.750	.015	3.50	.98	10.6
SSWB-260	2.000	3.000	3.250	.015	2.2	.52	10.1
SSWB-261	2.000	3.000	3.250	.015	4.75	1.02	4.5
SSWB-270	2.150	3.000	3.125	.015	1.75	.39	6.2
SSWB-271	2.150	3.000	3.125	.015	3.25	.60	3.4
SSWB-280	2.250	3.250	3.375	.015	1.46	.36	14.9
SSWB-281	2.250	3.250	3.375	.015	3.20	.67	6.5
SSWB-290	2.500	3.500	3.625	.015	3.50	.79	6.3
SSWB-291	2.500	3.500	3.625	.015	7.00	1.58	3.2
SSWB-300	3.000	4.000	4.125	.015	4.12	1.00	7.3
SSWB-301	3.000	4.000	4.125	.015	7.37	1.70	4.1
SSWB-310	3.750	4.750	4.875	.015	3.00	.83	6.6
SSWB-311	3.750	4.750	4.875	.015	5.75	1.48	3.5
SSWB-320	4.200	5.250	5.375	.020	3.25	.87	19.0
SSWB-321	4.200	5.250	5.375	.020	9.00	2.12	6.7
SSWB-330	4.500	6.000	6.125	.020	4.00	.88	12.3
SSWB-331	4.500	6.000	6.125	.020	10.25	1.97	4.8
SSWB-340	5.400	6.440	6.565	.030	3.00	1.09	34.9
SSWB-341	5.400	6.440	6.565	.030	6.50	2.21	15.7
SSWB-350	6.000	7.500	7.625	.030	8.25	1.58	3.1
SSWB-351	6.000	7.500	7.625	.030	10.00	1.88	2.6
SSWB-360	6.300	8.00	8.125	.030	8.40	1.63	5.9
SSWB-361	6.300	8.00	8.125	.030	12.00	2.29	4.1
SSWB-370	9.500	11.00	11.250	.040	8.00	12.60	12.6
SSWB-371	9.500	11.00	11.250	.040	12.37	2.95	8.2



Welded Stainless Steel Bellows Assemblies



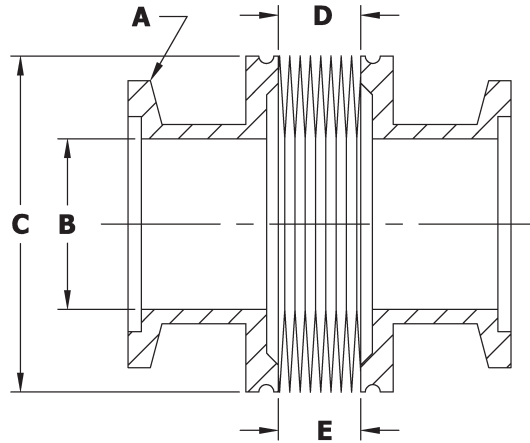
Wobble Stick Manipulator

Features:

KEY SPEEDY or MET-SEAL flange mounts standard

- AM 350 welded bellows
- Simple means of positioning samples
- Bakeable design

Part Number	Flange Mount	A	B	C	D	Angle
WSM-133	1-1/3" OD Mini	3.5	3.0	6.0	.12	44 degrees
WSM-16	NW 16	3.5	3.0	6.0	.12	44 degrees
WSM-275	2-3/4" OD MET-SEAL	6.0	3.7	10.0	.25	60 degrees
WSM-40	NW 40	6.0	3.7	10.0	.25	60 degrees



Welded Bellows Volume Compensators

- AM-350 bellows
- TIG welded construction
- Other strokes, flanges available upon request

Part Number	A	B	C	D = Ext	E = Comp	Stroke
SSWB-NW16	NW 16	.63	1.24	1.65	1.26	.394
SSWB-NW40	NW 40	1.54	2.32	1.77	1.30	.472
SSWB-NW63	NW 63	2.95	3.94	3.35	2.87	.472
SSWB-NW100	NW 100	4.02	5.20	3.74	3.27	.472
SSWB-NW160	NW 160	5.91	7.28	4.17	3.70	.472
SSWB-MS275	2-3/4" OD MET-SEAL	1.54	2.32	2.95	2.48	.472
SSWB-MS600	6" OD MET-SEAL	4.02	5.20	3.74	3.27	.472
SSWB-MS800	8" OD MET-SEAL	5.91	7.28	4.17	3.70	.472



Stainless Steel Thin Wall "Gas Flex" Hose Connectors

KEY HIGH VACUUM PRODUCTS, INC.'s "GAS FLEX" hose assemblies are flexible (corrugated) metal stainless steel hose, which can be used in both vacuum and positive pressure service. **KHVP** offers this hose series in 1/4", 3/8" and 1/2" ID. Hoses are produced from fully annealed type 321 stainless steel sheet stock, which is rolled into a tube, and seam welded.



Braided hoses can be used both in vacuum and positive pressure service. **"SGF"** Series (braided) **"GAS FLEX"** hoses are an ideal solution for gas box delivery applications (positive pressure). Often the delivery lines are not straight, and require some flexibility. **"GAS FLEX"** hoses allow the user to form the hose to their individual requirements; and still allow for "clean arrangements" of the delivery lines.

Standard end connections include 304 stainless steel tube end, NW flanges, and Met-Seal flanges, Swagelok and VCR fittings. **"GAS FLEX"** hoses are offered in standard and custom lengths, available upon request.

All **"GAS FLEX"** hoses are leak tested after assembly assuring they are leak tight, and defect free. As always, all assemblies are thoroughly cleaned at all stages of the manufacturing process, not just at final inspection. Each hose is individually bagged after final leak test.

Technical Data

STATIC

Nominal Hose ID	Minimum Bend Radius	Maximum Working Pressure 70°F PSIG	Minimum Bend Radius	Dynamic Max. Working Pressure 70° (PSIG)	Burst Pressure 70° (PSIG)
1/4"	0.35	390	N/A	N/A	N/A
1/4" w/Braid	0.75	4800	5.5	2030	11165
3/8"	0.55	170	N/A	N/A	N/A
3/8" w/Braid	1.14	3700	6	1450	8000
1/2"	0.83	130	N/A	N/A	N/A
1/2" w/Braid	1.34	2900	4.88	1160	6100

"GAS FLEX" hoses will render maximum service life when properly installed.

The following precautions should be observed when installing:

- 1) Do not subject any metal hose to gas surges greater than 50% of the rated working pressure (this will shorten the service life of the hose).
- 2) Avoid torque: Torque (twisting) is harmful to hose and substantially reduces service life. Always install a hose so that flexing takes place in one plane.
- 3) Avoid over bending: If metal hose is bent below the minimum recommended bend radius, fatigue occurs, and premature failure can result. This bending typically occurs near the end connections, and should be avoided.



Stainless Steel Thin Wall "Gas Flex" Hose Connectors



Part Number	Hose ID	Length	Description
GF-025-MS-4★	1/4"	4"	Mini MET-SEAL
GF-025-MS-8★	1/4"	8"	Mini MET-SEAL
GF-025-MS-12★	1/4"	12"	Mini MET-SEAL
GF-025-MS-18★	1/4"	18"	Mini MET-SEAL
GF-025-MS-24★	1/4"	24"	Mini MET-SEAL
GF-025-MS-36★	1/4"	36"	Mini MET-SEAL
GF-037-MS-4★	3/8"	4"	Mini MET-SEAL
GF-037-MS-8★	3/8"	8"	Mini MET-SEAL
GF-037-MS-12★	3/8"	12"	Mini MET-SEAL
GF-037-MS-18★	3/8"	18"	Mini MET-SEAL
GF-037-MS-24★	3/8"	24"	Mini MET-SEAL
GF-037-MS-36★	3/8"	36"	Mini MET-SEAL
GF-050-MS-4★	1/2"	4"	Mini MET-SEAL
GF-050-MS-8★	1/2"	8"	Mini MET-SEAL
GF-050-MS-12★	1/2"	12"	Mini MET-SEAL
GF-050-MS-18★	1/2"	18"	Mini MET-SEAL
GF-050-MS-24★	1/2"	24"	Mini MET-SEAL
GF-050-MS-36★	1/2"	36"	Mini MET-SEAL
GF-025-4★	1/4"	4"	NW 16
GF-025-8★	1/4"	8"	NW 16
GF-025-12★	1/4"	12"	NW 16
GF-025-18★	1/4"	18"	NW 16
GF-025-24★	1/4"	24"	NW 16
GF-025-36★	1/4"	36"	NW 16
GF-037-4★	3/8"	4"	NW 16
GF-037-8★	3/8"	8"	NW 16
GF-037-12★	3/8"	12"	NW 16
GF-037-18★	3/8"	18"	NW 16
GF-037-24★	3/8"	24"	NW 16
GF-037-36★	3/8"	36"	NW 16
GF-050-4★	1/2"	4"	NW 16
GF-050-8★	1/2"	8"	NW 16
GF-050-12★	1/2"	12"	NW 16
GF-050-18★	1/2"	18"	NW 16
GF-050-24★	1/2"	24"	NW 16
GF-050-36★	1/2"	36"	NW 16

★= New Product

Note: When ordering "Gas Flex" hose connectors with braid; Add "S" to prefix of part number (Example **SGF-025-4**).



Stainless Steel Thin Wall "Gas Flex" Hose Connectors



Part Number	Hose ID	Length	Description
GF-025-MVC-4★	1/4"	4"	Male VCR's
GF-025-MVC-8★	1/4"	8"	Male VCR's
GF-025-MVC-12★	1/4"	12"	Male VCR's
GF-025-MVC-18★	1/4"	18"	Male VCR's
GF-025-MVC-24★	1/4"	24"	Male VCR's
GF-025-MVC-36★	1/4"	36"	Male VCR's
GF-025-FVC-4★	1/4"	4"	Female VCR's
GF-025-FVC-8★	1/4"	8"	Female VCR's
GF-025-FVC-12★	1/4"	12"	Female VCR's
GF-025-FVC-18★	1/4"	18"	Female VCR's
GF-025-FVC-24★	1/4"	24"	Female VCR's
GF-025-FVC-36★	1/4"	36"	Female VCR's
GF-037-MVC-4★	3/8"	4"	Male VCR's
GF-037-MVC-8★	3/8"	8"	Male VCR's
GF-037-MVC-12★	3/8"	12"	Male VCR's
GF-037-MVC-18★	3/8"	18"	Male VCR's
GF-037-MVC-24★	3/8"	24"	Male VCR's
GF-037-MVC-36★	3/8"	36"	Male VCR's
GF-037-FVC-4★	3/8"	4"	Female VCR's
GF-037-FVC-8★	3/8"	8"	Female VCR's
GF-037-FVC-12★	3/8"	12"	Female VCR's
GF-037-FVC-18★	3/8"	18"	Female VCR's
GF-037-FVC-24★	3/8"	24"	Female VCR's
GF-037-FVC-36★	3/8"	36"	Female VCR's
GF-050-MVC-4★	1/2"	4"	Male VCR's
GF-050-MVC-8★	1/2"	8"	Male VCR's
GF-050-MVC-12★	1/2"	12"	Male VCR's
GF-050-MVC-18★	1/2"	18"	Male VCR's
GF-050-MVC-24★	1/2"	24"	Male VCR's
GF-050-MVC-36★	1/2"	36"	Male VCR's
GF-050-FVC-4★	1/2"	4"	Female VCR's
GF-050-FVC-8★	1/2"	8"	Female VCR's
GF-050-FVC-12★	1/2"	12"	Female VCR's
GF-050-FVC-18★	1/2"	18"	Female VCR's
GF-050-FVC-24★	1/2"	24"	Female VCR's
GF-050-FVC-36★	1/2"	36"	Female VCR's

★= New Product

Note: When ordering "Gas Flex" hose connectors with braid; Add "S" to prefix of part number (Example **SGF-025-MVC-4**).

Stainless Steel Thin Wall "Gas Flex" Hose Connectors



Part Number	Hose ID	Length	Description
GF-025-MFVC-4★	1/4"	4"	Male to Female VCR
GF-025-MFVC-8★	1/4"	8"	Male to Female VCR
GF-025-MFVC-12★	1/4"	12"	Male to Female VCR
GF-025-MFVC-18★	1/4"	18"	Male to Female VCR
GF-025-MFVC-24★	1/4"	24"	Male to Female VCR
GF-025-MFVC-36★	1/4"	36"	Male to Female VCR
GF-037-MFVC-4★	3/8"	4"	Male to Female VCR
GF-037-MFVC-8★	3/8"	8"	Male to Female VCR
GF-037-MFVC-12★	3/8"	12"	Male to Female VCR
GF-037-MFVC-18★	3/8"	18"	Male to Female VCR
GF-037-MFVC-24★	3/8"	24"	Male to Female VCR
GF-037-MFVC-36★	3/8"	36"	Male to Female VCR
GF-050-MFVC-4★	1/2"	4"	Male to Female VCR
GF-050-MFVC-8★	1/2"	8"	Male to Female VCR
GF-050-MFVC-12★	1/2"	12"	Male to Female VCR
GF-050-MFVC-18★	1/2"	18"	Male to Female VCR
GF-050-MFVC-24★	1/2"	24"	Male to Female VCR
GF-050-MFVC-36★	1/2"	36"	Male to Female VCR
GF-025-SW-4★	1/4"	4"	Swagelok
GF-025-SW-8★	1/4"	8"	Swagelok
GF-025-SW-12★	1/4"	12"	Swagelok
GF-025-SW-18★	1/4"	18"	Swagelok
GF-025-SW-24★	1/4"	24"	Swagelok
GF-025-SW-36★	1/4"	36"	Swagelok
GF-037-SW-4★	3/8"	4"	Swagelok
GF-037-SW-8★	3/8"	8"	Swagelok
GF-037-SW-12★	3/8"	12"	Swagelok
GF-037-SW-18★	3/8"	18"	Swagelok
GF-037-SW-24★	3/8"	24"	Swagelok
GF-037-SW-36★	3/8"	36"	Swagelok
GF-050-SW-4★	1/2"	4"	Swagelok
GF-050-SW-8★	1/2"	8"	Swagelok
GF-050-SW-12★	1/2"	12"	Swagelok
GF-050-SW-18★	1/2"	18"	Swagelok
GF-050-SW-24★	1/2"	24"	Swagelok
GF-050-SW-36★	1/2"	36"	Swagelok

★= New Product

Note: When ordering "Gas Flex" hose connectors with braid; Add "S" to prefix of part number (Example **SGF-025-MVC-4**).



Stainless Steel Thin Wall "Gas Flex" Hose Connectors

Part Number	Hose ID	Length	Description
BT-025-4★	1/4"	4"	1/4" OD X .035 wall tube end
BT-025-8★	1/4"	8"	1/4" OD X .035 wall tube end
BT-025-12★	1/4"	12"	1/4" OD X .035 wall tube end
BT-025-18★	1/4"	18"	1/4" OD X .035 wall tube end
BT-025-24★	1/4"	24"	1/4" OD X .035 wall tube end
BT-025-36★	1/4"	36"	1/4" OD X .035 wall tube end
BT-037-4★	3/8"	4"	3/8" OD X .035 wall tube end
BT-037-8★	3/8"	8"	3/8" OD X .035 wall tube end
BT-037-12★	3/8"	12"	3/8" OD X .035 wall tube end
BT-037-18★	3/8"	18"	3/8" OD X .035 wall tube end
BT-037-24★	3/8"	24"	3/8" OD X .035 wall tube end
BT-037-36★	3/8"	36"	3/8" OD X .035 wall tube end
BT-050-4★	1/2"	4"	1/2" OD X .035 wall tube end
BT-050-8★	1/2"	8"	1/2" OD X .035 wall tube end
BT-050-12★	1/2"	12"	1/2" OD X .035 wall tube end
BT-050-18★	1/2"	18"	1/2" OD X .035 wall tube end
BT-050-24★	1/2"	24"	1/2" OD X .035 wall tube end
BT-050x-36★	1/2"	36"	1/2" OD X .035 wall tube end

★= New Product

Note: When ordering "Gas Flex" hose connectors with braid; Add "S" to prefix of part number (Example **SBT-025-4**).

