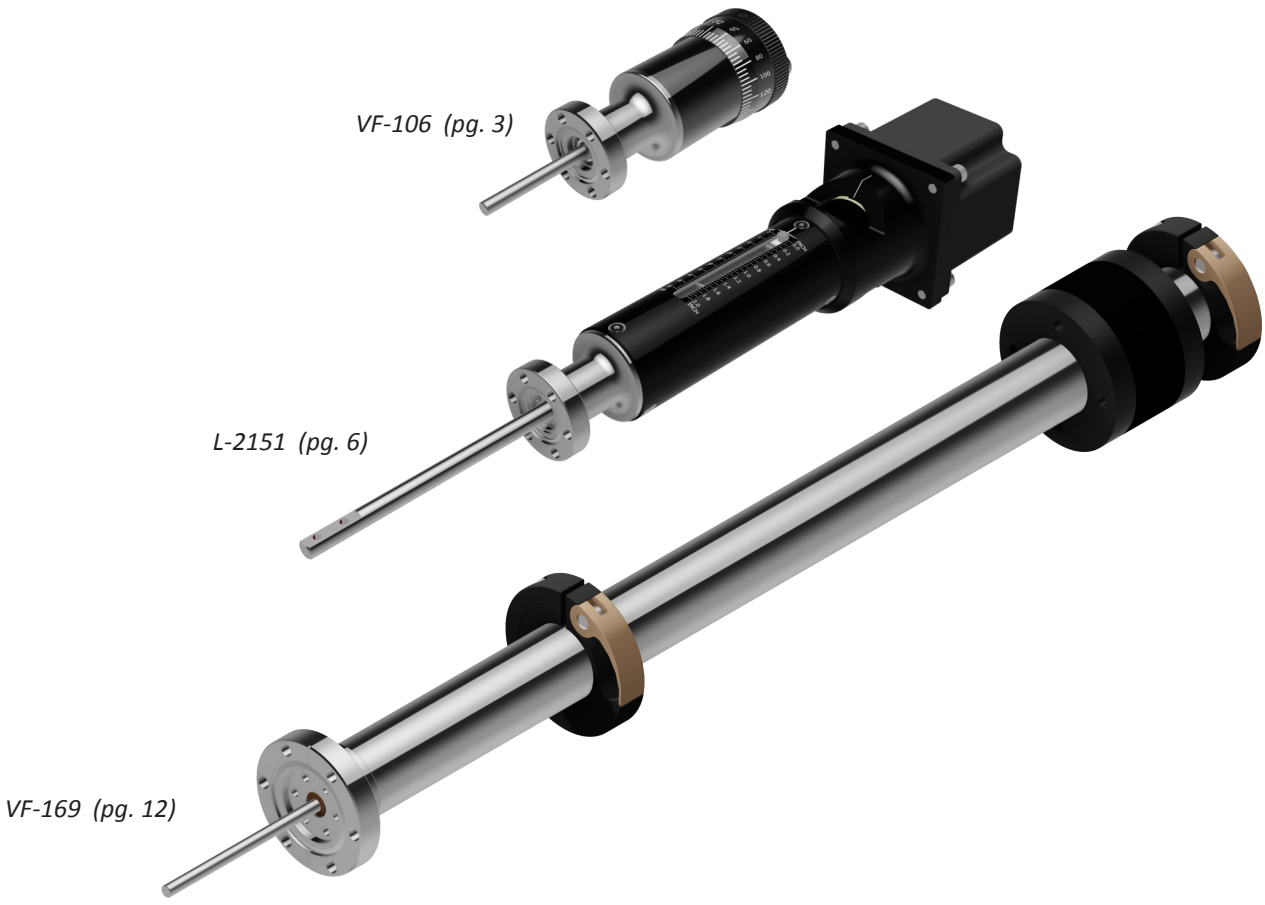
Huntington Mechanical Labs, Inc.

MOTION FEEDTHROUGHS

ULTRA-HIGH VACUUM COMPONENTS

Motion Control
MINI-CATALOG



MOTION DEVICES

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MOTION CONTROL
DEVICES

UHV Motion & Positioning Devices

Huntington offers a wide selection of UHV positioning devices. These include angular, linear, rotational and combined motion. Huntington motion & positioning devices are precision machined for accurate motion while maintaining efficient designs and industry leading value.

New Features

Many of our motion devices were recently updated with superior functionality and finish to exceed the needs of our customers. See our line of magnetic transporters, the L-2172, FHL-275-X and VF-176-X-R for just a few examples.

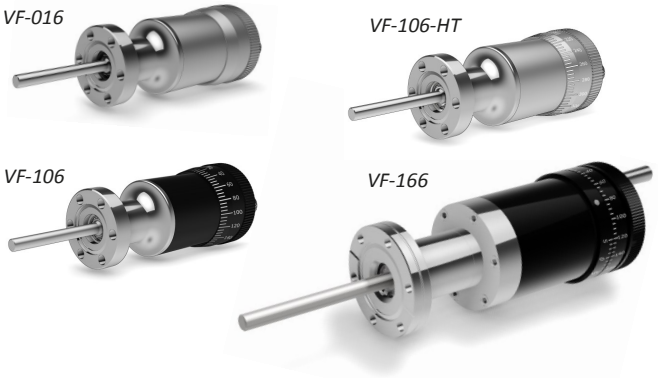
Ultra-high Vacuum Construction

Huntington positioning devices use AM-350 stainless steel welded bellows and permanently lubricated stainless steel bearings for industry leading lifespan and precision. Products are leaked checked to better than 1 x 10-9 std-cc/s leak rate of helium for guaranteed vacuum integrity. Huntington products are designed for system bakeout and for compatibility in ultra-high vacuum. See product details.

Optional motorized or pneumatically operated versions are available for most any device, please call for quote.

Rotary Motion Devices

Huntington's line of rotary motion devices are available in many drive types including manual, motorized and pneumatic. Coupled with optional mounting flanges and accessories, Huntington can fulfill your rotary motion requirement. Please inquire for other configurations.



Linear Motion Devices

Huntington's line of linear devices is one of the largest in the industry. Our linear series is available in manual push-pull, motorized and pneumatic actuation types. L-series manually actuated devices feature precise motion lead screws and accurate measurement scales, down to .002" [.05mm] increment. L-series linear devices are also available with various shaft and bellows configurations, see product details.

Magnetic Transporter Devices

Huntington magnetic transporter devices allow for extended linear travel, not possible in our L-Series linear devices. Our magnetic transporters utilize rare-earth magnets to firmly couple the inner shaft with the outer actuator, through a solid stainless steel body. Both linear and rotary motion is achieved while maintaining a solid vacuum seal. With no bellows and a robust internal bearing, our transporters are built for years of reliable service. Available in rough positioning and high precision models.

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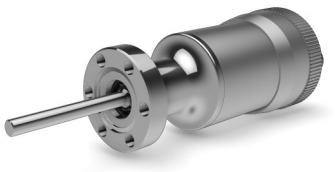
MOTION CONTROL
ROTARY DEVICES

Dimensions: inches (mm)

VF-016 MANUAL MINI ROTARY

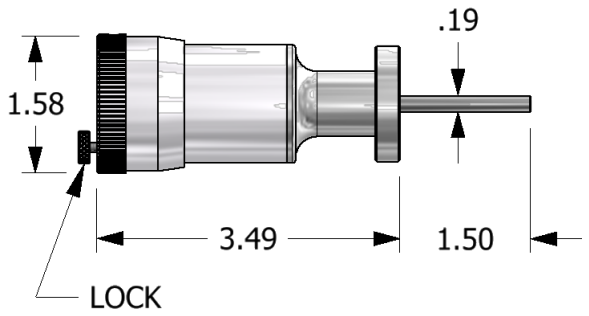


FLANGE	DESCRIPTION	WEIGHT (lbs.)	PART NUMBER	PRICE $
VAC-U-FLANGE® Series				
1 1/3"	Rotary Feedthrough, Aluminum w/o dial	0.6	**VF-016**	405
2 3/4"	Rotary Feedthrough, Aluminum w/o dial	1.1	**VF-016-A**	425
SPEED FLANGE SYSTEM (ISO-KF)				
KF 16	Rotary Feedthrough, Aluminum w/o dial	0.6	**VF-016-SF**	420
KF 40	Rotary Feedthrough, Aluminum w/o dial	1.0	**VF-016-SF-150**	425

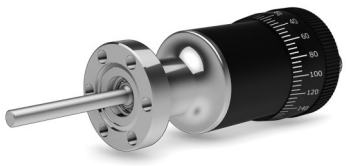
Need a Motorized Option? The VF-016 series can be motorized, please call for quote.

Specifications

Sealing Mechanism: Welded Bellows
Material Exposed to Vacuum: Stainless Steel
Bakeout Temperature: 200°C
Operating Temperature: -20° to 150°C
Pressure Range: Atmosphere to 1 x 10^{-11} Torr
Position Lock: Thumb Screw
Maximum Torque: 100 oz./in.



VF-106 MANUAL MINI ROTARY

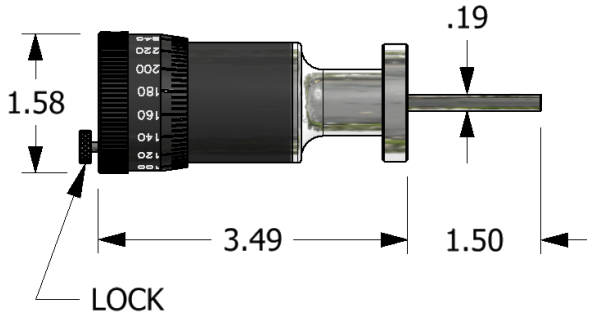


FLANGE	DESCRIPTION	WEIGHT (lbs.)	PART NUMBER	PRICE $
VAC-U-FLANGE® Series				
1 1/3"	Rotary Feedthrough, Anodized w/ dial	0.6	**VF-106**	450
2 3/4"	Rotary Feedthrough, Anodized w/ dial	1.1	**VF-106-A**	470
SPEED FLANGE SYSTEM (ISO-KF)				
KF 16	Rotary Feedthrough, Anodized w/ dial	0.6	**VF-106-SF**	465
KF 40	Rotary Feedthrough, Anodized w/ dial	1.0	**VF-106-SF-150**	470

Need a Motorized Option? The VF-106 series can be motorized, please call for quote.

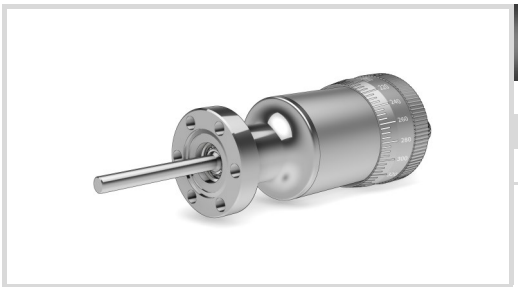
Specifications

Sealing Mechanism: Welded Bellows
Material Exposed to Vacuum: Stainless Steel
Bakeout Temperature: 200°C
Operating Temperature: -20° to 150°C
Pressure Range: Atmosphere to 1 x 10^{-11} Torr
Position Lock: Thumb Screw
Maximum Torque: 125 oz./in.
Scale Resolution: 5°



Dimensions: inches (mm)

VF-106 HIGH-TEMPERATURE MINI ROTARY

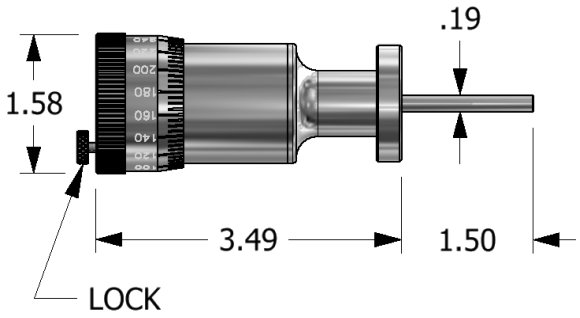


FLANGE	DESCRIPTION	WEIGHT (lbs.)	PART NUMBER	PRICE $
VAC-U-FLANGE® Series				
1 1/3"	Rotary Feedthrough, SST w/ dial	0.6	**VF-106-HT**	675
2 3/4"	Rotary Feedthrough, SST w/ dial	1.1	**VF-106-A-HT**	695

Stainless Steel Construction for use in high temperature applications

Specifications

Sealing Mechanism: Welded Bellows
Material Exposed to Vacuum: Stainless Steel
Bakeout Temperature: 230°C
Operating Temperature: -20° to 230°C
Pressure Range: Atmosphere to 1 x 10^{-11} Torr
Position Lock: Thumb Screw
Maximum Torque: 125 oz./in.
Scale Resolution: 5°



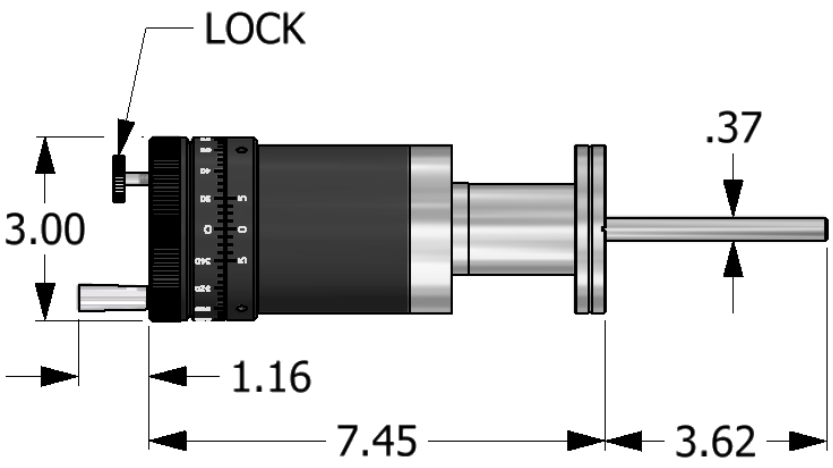
VF-166 MANUAL ROTARY

FLANGE	DESCRIPTION	WEIGHT (lbs.)	PART NUMBER	PRICE $
2 3/4"	Vernier Scale w/ VAC-U-FLANGE®	5.0	**VF-166**	1095
KF 40	Vernier Scale w/ KF Flange	4.3	**VF-166-SF**	1095

Motorized version available, please call for quote

Specifications

Sealing Mechanism: Welded Bellows
Material Exposed to Vacuum: Stainless Steel
Bakeout Temperature: 200°C
Operating Temperature: -20° to 150°C
Pressure Range: Atmosphere to 1 x 10^{-11} Torr
Position Lock: Thumb Screw
Maximum Torque: 5 lb./ft.
Scale Resolution: 1°



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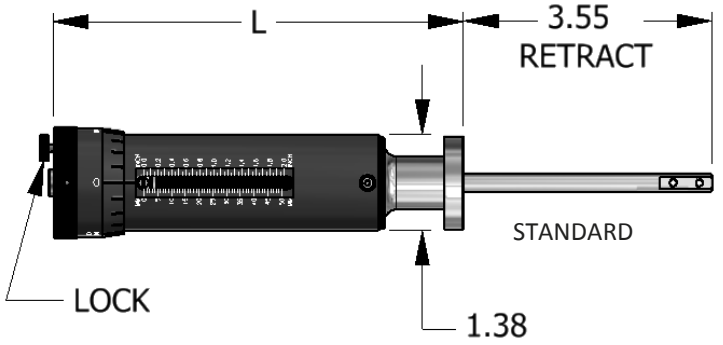
MOTION CONTROL
LINEAR FEEDTHROUGHS

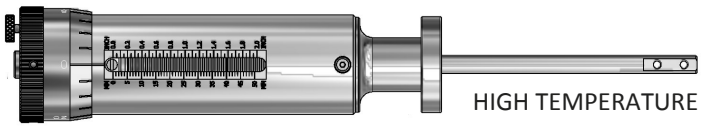
Huntington's L-Series Linear Motion Feedthroughs incorporate a unique modular design which accommodates three actuator options on two basic shaft/body configurations. Actuator options include manual, motorized and pneumatic versions. Body configurations include $1^1/_3$" and $2^3/_4$" VAC-U-FLANGE® or KF 16 and KF 40 SPEED FLANGE. The High Temp version features all Stainless Steel construction. Each combination of body and actuator is available in three standard stroke lengths with special lengths available upon request. Please call for quote on special options, custom configurations, or larger sizes not shown.

Dimensions: inches (mm)

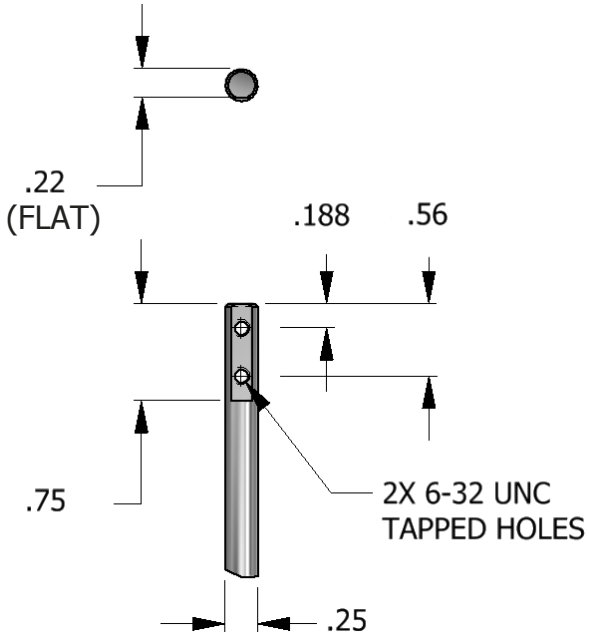
L-SERIES MANUAL MINI LINEAR, STANDARD & HI-TEMP

FLANGE	STROKE	LENGTH	WEIGHT (lbs.)	STANDARD MINI PART NUMBER	PRICE $	HI-TEMP MINI PART NUMBER	PRICE $
$1^1/_3$"	1.0 (25.4)	4.47 (113.5)	1.0	**L-2111-1**	525	**L-2111-1-HT**	725
	2.0 (50.8)	5.85 (148.6)	1.5	**L-2111-2**	650	**L-2111-2-HT**	850
	4.0 (101.6)	8.61 (218.7)	2.5	**L-2111-4**	900	**L-2111-4-HT**	1100
$2^3/_4$"	1.0 (25.4)	4.47 (113.5)	1.5	**L-2111-1-A**	545	**L-2111-1-A-HT**	745
	2.0 (50.8)	5.85 (148.6)	2.0	**L-2111-2-A**	670	**L-2111-2-A-HT**	870
	4.0 (101.6)	8.61 (218.7)	3.0	**L-2111-4-A**	920	**L-2111-4-A-HT**	1120
KF 16	1.0 (25.4)	4.47 (113.5)	1.0	**L-2111-1-SF**	540	-	-
	2.0 (50.8)	5.85 (148.6)	1.5	**L-2111-2-SF**	665	-	-
	4.0 (101.6)	8.61 (218.7)	2.5	**L-2111-4-SF**	915	-	-





Stainless Steel Construction for use in high temperature applications



Specifications

Sealing Mechanism: Welded Bellows
Material Exposed to Vacuum: Stainless Steel
Bakeout Temperature: 200°C (Std.), 230°C (Hi Temp)
Operating Temperature: -20° to 150°C (Std.), 230°C (HT)
Pressure Range: Atmosphere to 1 x 10^{-11} Torr

Position Lock: Thumb Screw
Maximum Axial Load: 10 lbs. (4.5 kg) concentric load
Maximum Lateral Load: 5 lbs. (1.36 kg) @tip in ret. Position
Scale Resolution:
Linear: 0.05" (1 mm)
Dial: .002" (.05 mm)
Thread Pitch: .05" (1.3 mm) per revolution

MOTION CONTROL

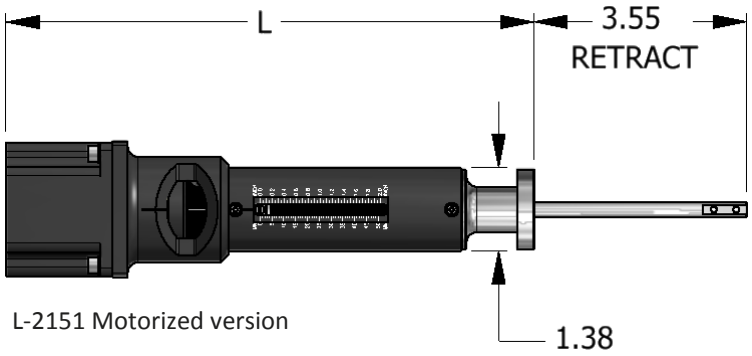
LINEAR FEEDTHROUGHS

Dimensions: inches (mm)

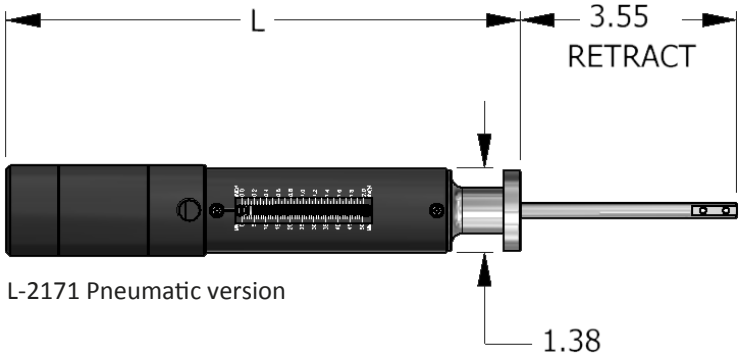
L-SERIES MOTORIZED & PNEUMATIC MINI LINEAR

FLANGE	STROKE	LENGTH	WEIGHT (lbs.)	MOTORIZED PART NUMBER	PRICE $	LENGTH	WEIGHT (lbs.)	PNEUMATIC PART NUMBER	PRICE $
1 1/3"	1.0 (25.4)	7.67 (194.8)	4.0	**L-2151-1**	975	6.06 (153.9)	2.0	**L-2171-1**	650
	2.0 (50.8)	9.05 (229.9)	5.0	**L-2151-2**	1100	8.44 (214.3)	2.5	**L-2171-2**	775
	4.0 (101.6)	11.81 (300.0)	6.0	**L-2151-4**	1350	13.20 (335.3)	3.5	**L-2171-4**	1025
2 3/4"	1.0 (25.4)	7.67 (194.8)	4.5	**L-2151-1-A**	995	6.06 (153.9)	2.2	**L-2171-1-A**	670
	2.0 (50.8)	9.05 (229.9)	5.5	**L-2151-2-A**	1120	8.44 (214.3)	2.7	**L-2171-2-A**	795
	4.0 (101.6)	11.81 (300.0)	6.5	**L-2151-4-A**	1370	13.20 (335.3)	3.8	**L-2171-4-A**	1045
KF 16	1.0 (25.4)	7.67 (194.8)	3.8	**L-2151-1-SF**	990	6.06 (153.9)	2.0	**L-2171-1-SF**	665
	2.0 (50.8)	9.05 (229.9)	4.8	**L-2151-2-SF**	1115	8.44 (214.3)	2.5	**L-2171-2-SF**	790
	4.0 (101.6)	11.81 (300.0)	5.8	**L-2151-4-SF**	1365	13.20 (335.3)	3.5	**L-2171-4-SF**	1040

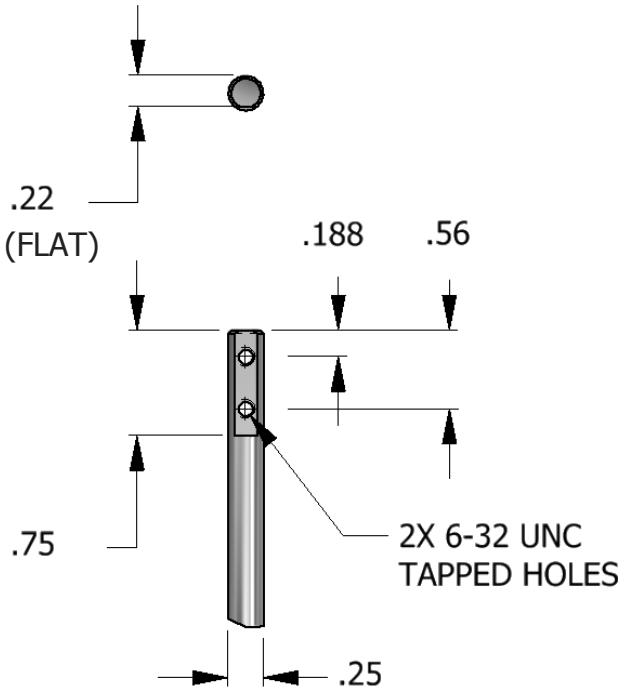
Other flange sizes available upon request. Optional position switches and solenoids available, please see options page 15.



L-2151 Motorized version



L-2171 Pneumatic version



Specifications

Sealing Mechanism: Welded Bellows
Material Exposed to Vacuum: Stainless Steel
Bakeout Temperature: 200°C (Max. w/motor removed)
Operating Temperature: -20° to 80°C (Motorized), -20° to 150° C (Pneumatic)
Pressure Range: Atmosphere to 1 x 10^{-11} Torr
Maximum Axial Load:
10 lbs. (4.5 kg) concentric load (Motorized)
25 lbs. (11.3 kg) concentric load (Pneumatic)
Maximum Lateral Load: 5 lbs. (1.36 kg) @tip in ret. Position
Scale Resolution:
Linear: 0.05" (1 mm),
Dial: .002" (.05 mm)
Motorized Accuracy: 51,200 microsteps/revolution
Stepper Motor: 1.8° -full step
Thread Lead: .05" (1.3mm) per revolution
Pneumatic Actuator: Port Size: 1/8" NPT
Activation: Double-acting cylinder
Air Required: 100psi (6.9 bar) maximum

MOTION CONTROL

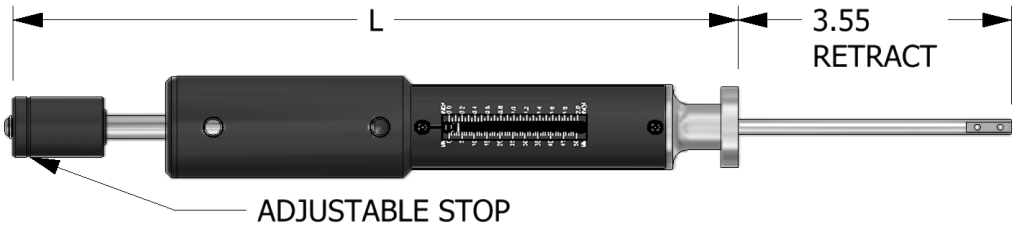
LINEAR FEEDTHROUGHS

Dimensions: inches (mm)

L-SERIES PNEUMATIC MINI LINEAR w/ADJUSTABLE STOP

FLANGE	STROKE	LENGTH	WEIGHT (lbs.)	PART NUMBER	PRICE $
1 1/3"	1.0 (25.4)	9.74 (247.4)	2.0	**L-2172-1**	650
	2.0 (50.8)	12.12 (307.8)	2.5	**L-2172-2**	775
	4.0 (101.6)	16.88 (428.7)	3.5	**L-2172-4**	1025
2 3/4"	1.0 (25.4)	9.74 (247.4)	2.2	**L-2172-1-A**	670
	2.0 (50.8)	12.12 (307.8)	2.7	**L-2172-2-A**	795
	4.0 (101.6)	16.88 (428.7)	3.8	**L-2172-4-A**	1045
KF 16	1.0 (25.4)	9.74 (247.4)	2.0	**L-2172-1-SF**	665
	2.0 (50.8)	12.12 (307.8)	2.5	**L-2172-2-SF**	790
	4.0 (101.6)	16.88 (428.7)	3.5	**L-2172-4-SF**	1040

Other flange sizes available upon request. Optional position switches and solenoids available, please see options page 15.

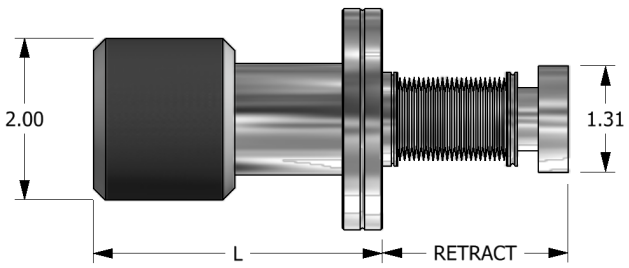


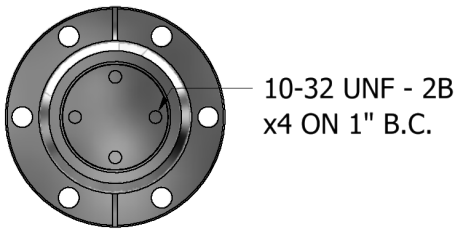
Specifications: Same as L-2171 Series plus the addition of an adjustable stop that allows for up to 1" of travel restriction.

HIGH LOAD MANUAL LINEAR

FLANGE	STROKE	BODY LENGTH	RETRACTED LENGTH	WEIGHT (lbs.)	PART NUMBER	PRICE $
2 3/4"	3.0 (76.2)	4.25 (107.9)	1.54 (39.1)	4.5	**FHL-275-3**	935

Other stroke lengths available, please call for quote





Specifications

Sealing Mechanism: Welded Bellows
Material Exposed to Vacuum: Stainless Steel
Bakeout Temperature: 200°C (Maximum)

Operating Temperature: -20° to 150°C
Pressure Range: Atmosphere to 1 x 10^{-11} Torr
Maximum Axial Load: 50 lbs. (9.1 kg) concentric load
Maximum Lateral Load: 20 lbs. (9.1 kg) @ 3" extension
Thread Pitch: 1.0" (25.4 mm) per 10 revolutions

MOTION CONTROL
LINEAR FEEDTHROUGHS

Dimensions: inches (mm)

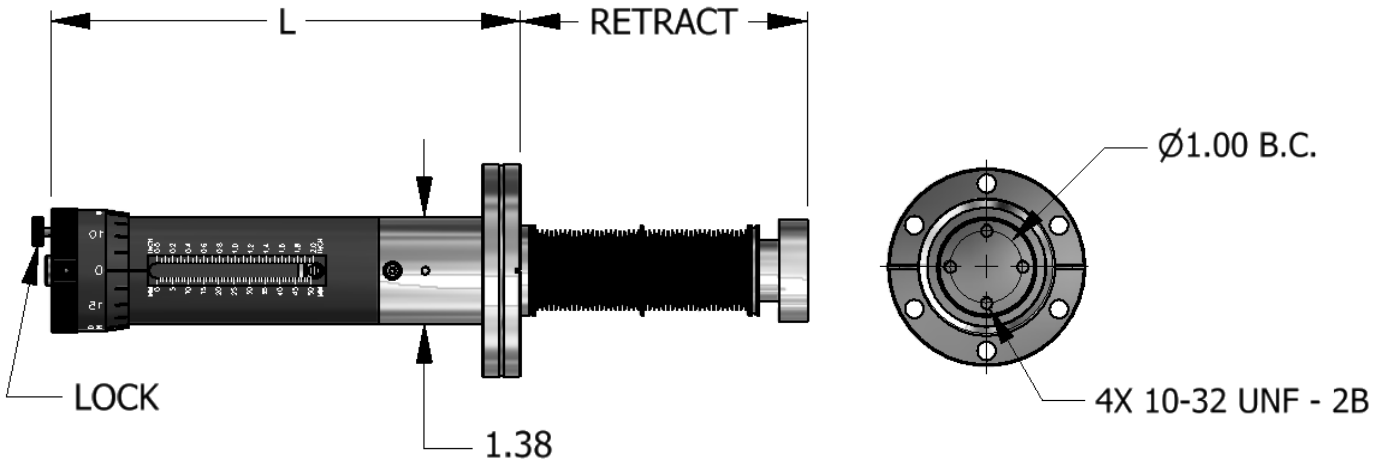
L-SERIES MANUAL LINEAR - .05 PITCH

FLANGE	STROKE	BODY LENGTH	RETRACTED LENGTH	WEIGHT (lbs.)	PART NUMBER	PRICE $
$2^3/_4$"	1.0 (25.4)	5.06 (128.5)	1.30 (33.0)	3.0	**L-2211-1**	795
	2.0 (50.8)	6.06 (153.9)	1.68 (42.7)	3.5	**L-2211-2**	920
	4.0 (101.6)	8.06 (204.7)	2.44 (62.0)	4.0	**L-2211-4**	1170
KF 40	1.0 (25.4)	5.06 (128.5)	1.30 (33.0)	2.8	**L-2211-1-SF**	790
	2.0 (50.8)	6.06 (153.9)	1.68 (42.7)	3.3	**L-2211-2-SF**	915
	4.0 (101.6)	8.06 (204.7)	2.44 (62.0)	3.8	**L-2211-4-SF**	1165

L-SERIES MANUAL LINEAR - .125 PITCH

FLANGE	STROKE	BODY LENGTH	RETRACTED LENGTH	WEIGHT (lbs.)	PART NUMBER	PRICE $
$2^3/_4$"	2.0 (50.8)	6.71 (170.4)	1.68 (33.0)	3.5	**L-2212-2**	1020
	4.0 (101.6)	8.71 (221.2)	2.44 (62.0)	4.0	**L-2212-4**	1270
	6.0 (152.4)	10.71 (272.0)	3.20 (81.3)	4.5	**L-2212-6**	1520
KF 40	2.0 (50.8)	6.71 (170.4)	1.68 (33.0)	3.3	**L-2212-2-SF**	1015
	4.0 (101.6)	8.71 (221.2)	2.44 (62.0)	3.8	**L-2212-4-SF**	1265
	6.0 (152.4)	10.71 (272.0)	3.20 (81.3)	4.3	**L-2212-6-SF**	1515

Other flange sizes available. ***All models can be motorized, series 2251 & 2252. Please call for quote.***



Specifications

Sealing Mechanism: Welded Bellows
Material Exposed to Vacuum: Stainless Steel
Bakeout Temperature: 200°C (Maximum)
Operating Temperature: -20° to 150°C
Pressure Range: Atmosphere to 1 x 10^{-11} Torr

Position Lock: Thumb Screw
Maximum Axial Load: 10 lbs. (4.5 kg) concentric load
Maximum Lateral Load: 20 lbs. (9.1 kg) @tip in ret. position
Scale Resolution:
Linear: 0.05" (1 mm)
Dial: .002" (.05 mm)
Thread Pitch: .05" (1.3mm) or .125" (3.2mm) per revolution

MOTION CONTROL
LINEAR FEEDTHROUGHS

Dimensions: inches (mm)

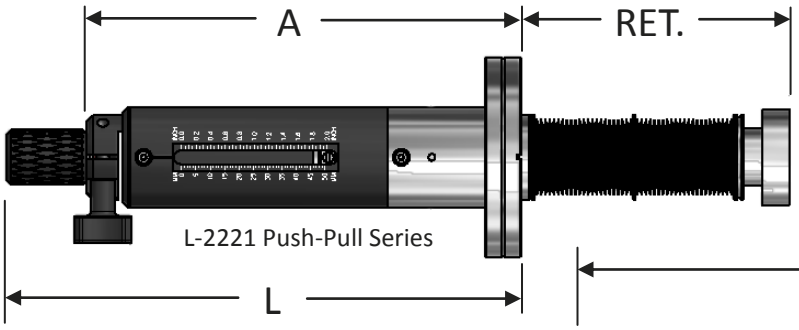
L-SERIES MANUAL LINEAR - PUSH/PULL

FLANGE	STROKE	A	BODY LENGTH	RETRACTED LENGTH	WEIGHT (lbs.)	PART NUMBER	PRICE $
$2^3/_4$"	1.0 (25.4)	4.98 (126.5)	8.37 (212.6)	1.30 (33.0)	2.5	**L-2221-1**	950
	2.0 (50.8)	5.98 (151.9)	10.75 (273.1)	1.68 (42.7)	3.0	**L-2221-2**	1075
	4.0 (101.6)	7.98 (206.7)	15.51 (394.0)	2.44 (62.0)	4.0	**L-2221-4**	1325
KF 40	1.0 (25.4)	4.98 (126.5)	8.37 (212.6)	1.30 (33.0)	2.3	**L-2221-1-SF**	945
	2.0 (50.8)	5.98 (151.9)	10.75 (273.1)	1.68 (42.7)	2.8	**L-2221-2-SF**	1070
	4.0 (101.6)	7.98 (206.7)	15.51 (394.0)	2.44 (62.0)	3.8	**L-2221-4-SF**	1320

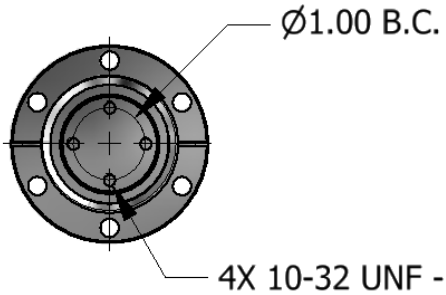
L-SERIES LINEAR - PNEUMATIC ACTUATOR

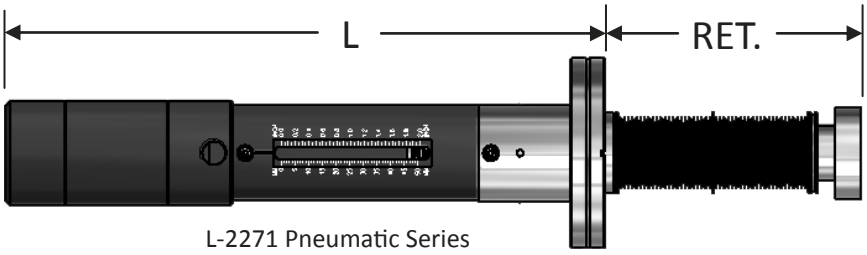
FLANGE	STROKE	BODY LENGTH	RETRACTED LENGTH	WEIGHT (lbs.)	PART NUMBER	PRICE $
$2^3/_4$"	1.0 (25.4)	6.65 (168.9)	1.30 (33.0)	3.5	**L-2271-1**	920
	2.0 (50.8)	8.65 (219.7)	1.68 (42.7)	4.0	**L-2271-2**	1045
	4.0 (101.6)	12.65 (321.3)	2.44 (62.0)	4.5	**L-2271-4**	1295
KF 40	1.0 (25.4)	6.65 (168.9)	1.30 (33.0)	3.3	**L-2271-1-SF**	915
	2.0 (50.8)	8.65 (219.7)	1.68 (42.7)	3.8	**L-2271-2-SF**	1040
	4.0 (101.6)	12.65 (321.3)	2.44 (62.0)	4.3	**L-2271-4-SF**	1290

Other Strokes and Configurations available upon request, please call for quote.



L-2221 Push-Pull Series





L-2271 Pneumatic Series

For Solenoid and Switch Options, see pg. 15

Specifications

Sealing Mechanism: Welded Bellows
Material Exposed to Vacuum: Stainless Steel
Bakeout Temperature: 200°C (Maximum)
Operating Temperature: -20° to 150°C
Pressure Range: Atmosphere to 1 x 10^{-11} Torr
Position Lock: Hand Knob (Push/Pull)

Maximum Axial Load: 25 lbs. (11.3 kg) concentric load
Maximum Lateral Load: 20 lbs. (9.1 kg) @tip in ret. position
Scale Resolution:
Push-Pull & Pneumatic Actuated: 0.05" (1 mm)
Pneumatic Actuator: 1/8" NPT (Solenoid not included), Double-acting cylinder, 100 psi (6.9 bar) Maximum

Other flange sizes available.

MOTION CONTROL
COMPACT LINEAR SERIES

Dimensions: inches (mm)

L-SERIES LINEAR - COMPACT, PUSH/PULL

FLANGE	STROKE	L	RETRACTED LENGTH	WEIGHT (lbs.)	PART NUMBER	PRICE $
$2^3/_4$"	1.0 (25.4)	5.83 (148.1)	1.30 (33.0)	2.5	**L-2220-1**	750
	2.0 (50.8)	7.21 (183.1)	1.68 (42.7)	2.5	**L-2220-2**	850
	4.0 (101.6)	9.97 (253.2)	2.44 (62.0)	3.0	**L-2220-4**	1050
KF 40	1.0 (25.4)	5.83 (148.1)	1.30 (33.0)	2.3	**L-2220-1-SF**	745
	2.0 (50.8)	7.21 (183.1)	1.68 (42.7)	2.5	**L-2220-2-SF**	845
	4.0 (101.6)	9.97 (253.2)	2.44 (62.0)	2.8	**L-2220-4-SF**	1045

L-SERIES LINEAR - COMPACT, PNEUMATIC ACTUATOR

FLANGE	STROKE	L	RETRACTED LENGTH	WEIGHT (lbs.)	PART NUMBER	PRICE $
$2^3/_4$"	1.0 (25.4)	4.10 (104.1)	1.30 (33.0)	2.5	**L-2270-1**	825
	2.0 (50.8)	5.10 (129.3)	1.68 (42.7)	2.5	**L-2270-2**	925
	4.0 (101.6)	7.10 (180.3)	2.44 (62.0)	3.0	**L-2270-4**	1125
KF 40	1.0 (25.4)	4.10 (104.1)	1.30 (33.0)	2.3	**L-2270-1-SF**	820
	2.0 (50.8)	5.10 (129.3)	1.68 (42.7)	2.5	**L-2270-2-SF**	920
	4.0 (101.6)	7.10 (180.3)	2.44 (62.0)	2.8	**L-2270-4-SF**	1120

L-SERIES LINEAR - COMPACT, HOLLOW TUBE

FLANGE	STROKE	L	RETRACTED LENGTH	WEIGHT (lbs.)	PART NUMBER	PRICE $
$2^3/_4$"	1.0 (25.4)	5.83 (148.1)	1.30 (33.0)	2.5	**L-2220-1-T**	900
	2.0 (50.8)	7.21 (183.1)	1.68 (42.7)	2.5	**L-2220-2-T**	1000
	4.0 (101.6)	9.97 (253.2)	2.44 (62.0)	3.0	**L-2220-4-T**	1200
KF 40	1.0 (25.4)	5.83 (148.1)	1.30 (33.0)	2.3	**L-2220-1-T-SF**	895
	2.0 (50.8)	7.21 (183.1)	1.68 (42.7)	2.5	**L-2220-2-T-SF**	995
	4.0 (101.6)	9.97 (253.2)	2.44 (62.0)	2.8	**L-2220-4-T-SF**	1195

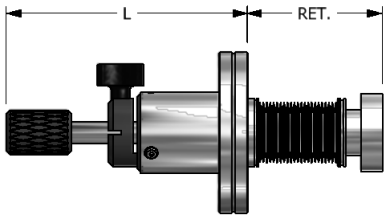
Specifications

Sealing Mechanism: Welded Bellows
Material Exposed to Vacuum: Stainless Steel
Bakeout Temperature: 200°C (Maximum)
Operating Temperature: -20° to 150°C

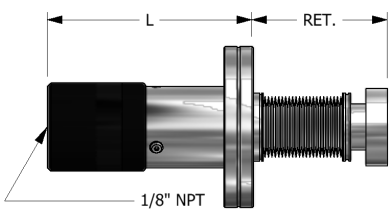
Pressure Range: Atmosphere to 1 x 10^{-11} Torr
Position Lock: Hand Knob
Maximum Axial Load: 25 lbs. (11.3 kg) concentric load
Maximum Lateral Load: 20 lbs. (4.5 kg) @tip in ret. position
Pneumatic Cylinder: 1/8" NPT port, Double-acting cylinder, 100 psi. (6.9 bar) Max.

Solenoid not included, see options page 15

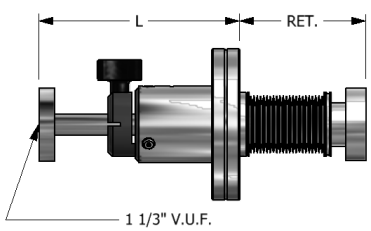
COMPACT PUSH-PULL



COMPACT PNEUMATIC ACTUATOR



COMPACT HOLLOW TUBE



END VIEW:
4X #10-32 THREAD
ON 1.00" B.C.

www.huntvac.com ◆ 800-227-8059 ◆ vacman@huntvac.com

MOTION CONTROL
WOBBLE STICKS

Dimensions: inches (mm)

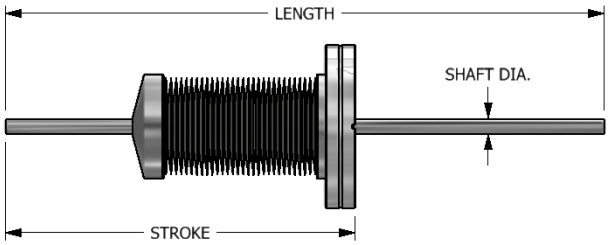
LINEAR / ANGULAR WOBBLE STICK

FLANGE	SHAFT DIA.	STROKE	LENGTH	ANGULAR MOVEMENT	WEIGHT (lbs.)	PART NUMBER	PRICE $
1 1/3"	.125	0.50 (12.7)	6.00	44° TOTAL	1.0	**VF-177-133**	375
2 3/4"	.250	2.00 (50.8)	10.0	60° TOTAL	3.0	**VF-177-275**	415
KF 16	.125	0.50 (12.7)	6.00	44° TOTAL	.75	**VF-177-133-SF**	370
KF 40	.250	2.00 (50.8)	10.0	60° TOTAL	2.5	**VF-177-275-SF**	410

Specifications

Sealing Mechanism: Welded Bellows
Material Exposed to Vacuum: Stainless Steel
Bakeout Temperature: 230°C (Maximum)
Operating Temperature: -20° to 230°C
Pressure Range:
VAC-U-FLANGE®: Atmosphere to 1 x 10^{-11} Torr
SPEED SYSTEM: Atmosphere to 1 x 10^{-9} Torr

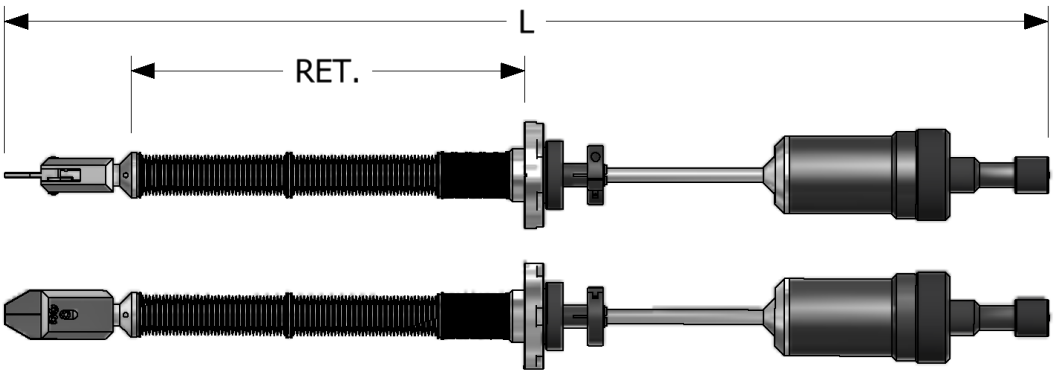
A very simple & cost-effective wobble stick



LINEAR / ANGULAR WOBBLE STICK with ROTATION

FLANGE	LINEAR TRAVEL	RETRACTED LENGTH	L	WEIGHT (lbs.)	PART NUMBER	PRICE $
2 3/4"	5"	5.76	22.82	8.0	**VF-176-5-R**	3595
	10"	6.74	27.80	8.5	**VF-176-10-R**	3995

Custom Jaw or Pincer styles are available, please talk to Technical Support for quoting your requirements.



JAW POSITION AND PRESSURE IS FULLY ADJUSTABLE, VIA THIMBLE, AND IS SELF-LOCKING. LINEAR AND ANGULAR POSITION LOCKS INCLUDED.

Specifications

Sealing Mechanism: Welded Bellows
Material Exposed to Vacuum: Stainless Steel
Standard Mounting: 2 3/4" VAC-U-FLANGE®
Bakeout Temperature: 200°C (Maximum)
Operating Temperature: -20° to 150°C
Pressure Range: Atmosphere to 1 x 10^{-11} Torr
Maximum Torque: 125 oz./in.
Maximum Axial Load: 10 lbs. concentric
Angular Motion: 45° included angle

MOTION CONTROL
TRANSPORTERS

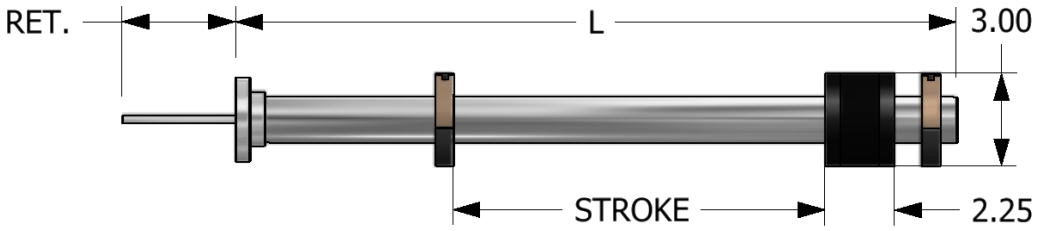
Dimensions: inches (mm)

ROUGH POSITIONING LINEAR / ROTARY

SHAFT	STROKE	L	RETRACTED LENGTH	WEIGHT (lbs.)	PART NUMBER	PRICE $
.25" OD SOLID	10.0	15.10	3.50	10	**VF-169-10**	1225
	12.0	17.10	3.50	10	**VF-169-12**	1245
	14.0	19.10	3.50	10	**VF-169-14**	1265
	16.0	21.10	3.50	12	**VF-169-16**	1285
	18.0	23.10	3.50	12	**VF-169-18**	1305
.50" OD HOLLOW TUBE	18.0	17.10	3.50	14	**VF-1695-18**	1375
	24.0	29.10	3.50	15	**VF-1695-24**	1525
	36.0	41.10	3.50	17	**VF-1695-36**	1825

All VF-169 & 1690 Series use a standard 2 3/4" VAC-U-FLANGE® mounting.

ALL MAGNETIC TRANSPORTERS CAN BE MOTORIZED AND/OR FITTED WITH GUIDE RAILS. PLEASE CALL FOR QUOTE

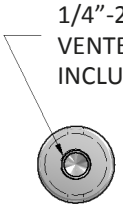


Specifications
Material Exposed to Vacuum: Stainless Steel, Torlon® & Teflon®
Bakeout Temp.: 200°C w/o Magnet
Operating Temperature: -20° to 100° C
Pressure Range: Atmosphere to 1 x 10^{-11} Torr
Maximum Axial Load: 5 lbs. concentric load
Maximum Torque: 60 oz./in.
Linear Stops: 2 Quick Release Clamps

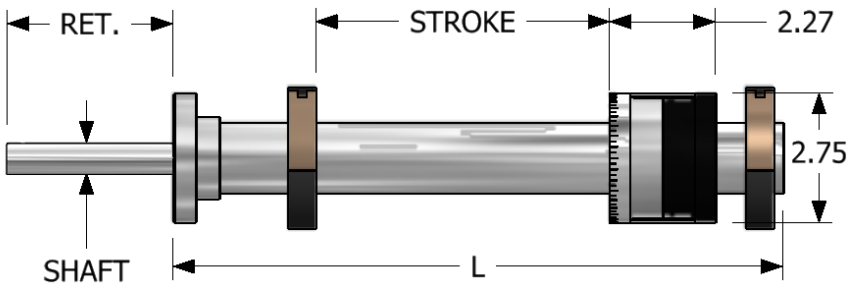
RARE EARTH LINEAR / ROTARY

SHAFT	STROKE	L	RETRACTED LENGTH	WEIGHT (lbs.)	PART NUMBER	PRICE $
.625" OD SOLID	12.0	19.56	3.50	11	**VFC-169-12**	3425
	18.0	25.56	3.50	13	**VFC-169-18**	3485
	24.0	31.56	3.50	15	**VFC-169-24**	3545
	36.0	43.56	3.50	18	**VFC-169-36**	3665
	48.0	55.56	3.50	21	**VFC-169-48**	3785

*The **VFC** series feature a multi-patented design that is more precise and smoother operating than the rough positioning **VF** series.*



SHAFT END DETAIL FOR ALL .50" OR LARGER SHAFTS



Specifications
Material Exposed to Vacuum: Stainless Steel & Teflon®
Standard Mount: 2 3/4" VAC-U-FLANGE®
Bakeout Temp.: 200°C w/o Magnet (30 mins.)
Operating Temperature: -20° to 100° C
Pressure Range: Atmosphere to 1 x 10^{-11} Torr
Maximum Axial Load: 25 lbs. concentric load
Maximum Torque: 128 oz./in.
Rotary Resolution: Vernier: 5°
Magnet Type: Samarium Cobalt
Linear Stops: 2 Quick Release Clamps

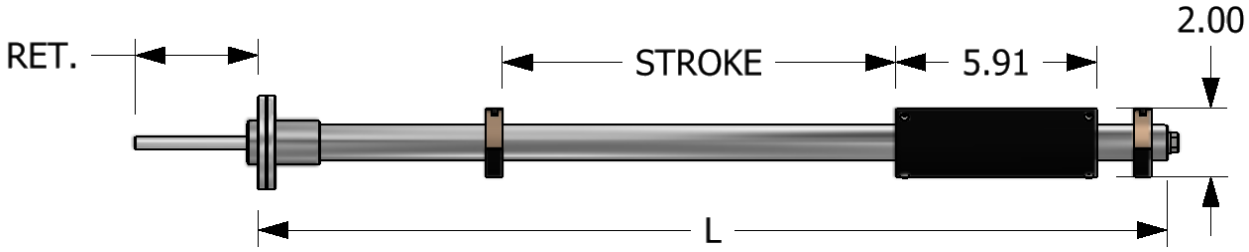
MOTION CONTROL
TRANSPORTERS

Dimensions: inches (mm)

HEAVY DUTY LINEAR / ROTARY - .375" SHAFT

SHAFT	STROKE	L	RETRACTED LENGTH	WEIGHT (lbs.)	PART NUMBER	PRICE $
.375" OD SOLID	12.0	20.71	3.50	12	**VFS-169-12**	3925
	18.0	26.71	3.50	14	**VFS-169-18**	4055
	24.0	32.71	3.50	16	**VFS-169-24**	4185
	36.0	44.71	3.50	19	**VFS-169-36**	4445

*The **VFS** series are far more precise than the **VF** series. The 70 and 200 lb. axial force allows repeatability within .005".*



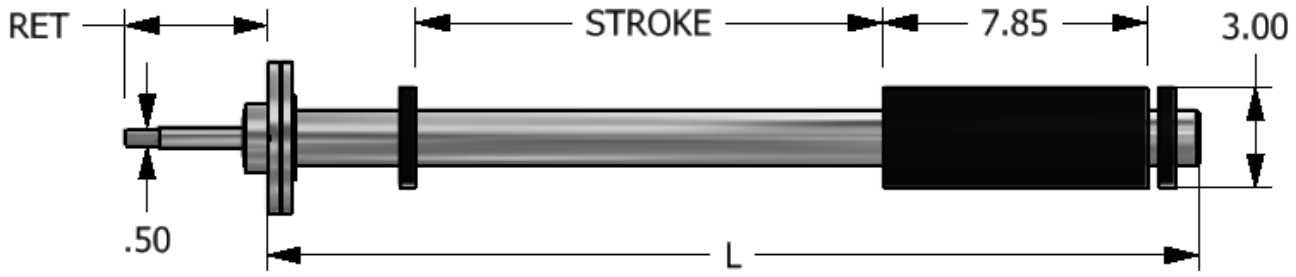
Specifications

Material Exposed to Vacuum: Stainless Steel & Teflon®
Bakeout Temperature: 200°C (30 minutes max., w/o Magnet)
Standard Mounting: 2 $^{3}/_{4}$" VAC-U-FLANGE®

Operating Temp: -20° to 100°C
Pressure Range: Atmosphere to 1 x 10^{-11} Torr
Maximum Axial Load: 70 lbs. concentric load
Linear Stops: 2 Quick Release Clamps

HEAVY DUTY LINEAR / ROTARY - .625" SHAFT

SHAFT	STROKE	L	RETRACTED LENGTH	WEIGHT (lbs.)	PART NUMBER	PRICE $
.625" OD SOLID	12.0	21.88	3.50	13	**VFS-1690-12**	4500
	18.0	27.88	3.50	15	**VFS-1690-18**	4800
	24.0	33.88	3.50	17	**VFS-1690-24**	5100
	36.0	45.88	3.50	20	**VFS-1690-36**	5700
	48.0	57.88	3.50	24	**VFS-1690-48**	6300



Specifications

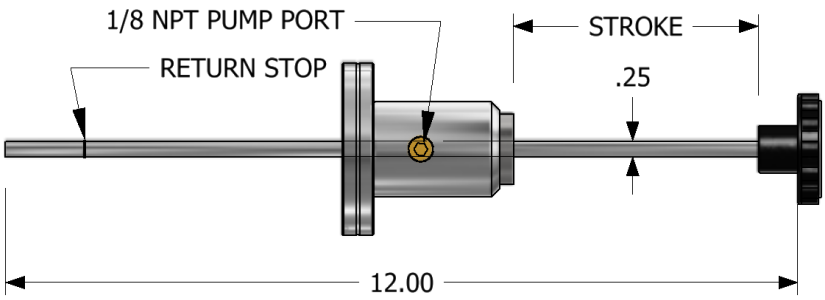
Material Exposed to Vacuum: Stainless Steel & Teflon®
Bakeout Temperature: 200°C (30 minutes max., w/o Magnet)
Standard Mounting: 4 $^{1}/_{2}$" VAC-U-FLANGE®

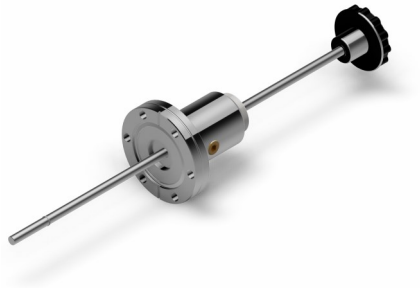
Operating Temp: -20° to 100°C
Pressure Range: Atmosphere to 1 x 10^{-9} Torr
Maximum Axial Load: 200 lbs. concentric load
Linear Stops: 2 Quick Release Clamps

LINEAR / ROTARY DIRECT DRIVE

FLANGE	STROKE	LENGTH	WEIGHT (lbs.)	PART NUMBER	PRICE $
2 3/4" (VAC-U-FLANGE®)	8.0 (203.2)	12.0	1.5	**VF-170**	415
KF 40 (SPEED SYSTEM)	8.0 (203.2)	12.0	1.0	**VF-170-SF**	405

The VF-170 is a simple and cost-effective manual linear feedthrough with rotary action. Sealing is accomplished by dual Viton® seals in the main body, which, when differentially pumped can achieve UHV compatibility to 10^{-9} Torr.



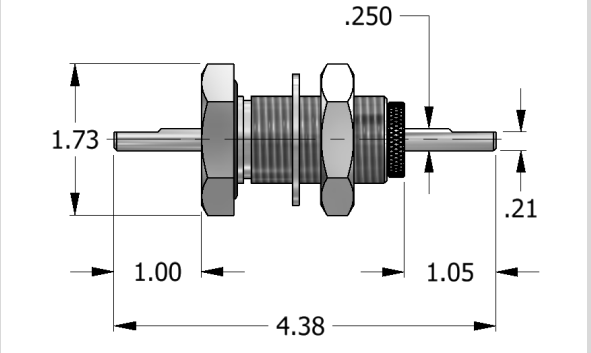


Specifications

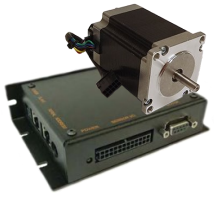
Sealing Mechanism: Dual Viton® elastomer seals
Material Exposed to Vacuum: Stainless Steel
Bakeout Temperature: 100°C (Maximum)
Operating Temperature: -20° to 100°C
Pressure Range: Atmosphere to 1 x 10^{-9} Torr (when pumped)
Maximum Axial Load: 10 lbs. (9.1 kg) concentric load
Maximum Lateral Load: 5 lbs. (9.1 kg) @ 4" extension
Maximum Torque: 1600 oz./in.

DIRECT DRIVE ROTARY BASEPLATE

Material: 304 SST w/Viton® O-Ring	DESCRIPTION	WEIGHT (lbs.)	PART NUMBER	PRICE $
	DIRECT DRIVE ROTARY BASEPLATE FEEDTHROUGH	0.75	**BP-20**	375



SPECIFICATIONS: For standard 1" baseplate through hole mounting, constructed of 304 stainless steel and sealed with a pre-loaded Viton® O-ring. Provided with a 1/4" shaft supported by two ball bearings for smooth operation, it is designed for either manual or motorized applications at speeds up to 500 rpm and maximum torque of 1600 oz./in.



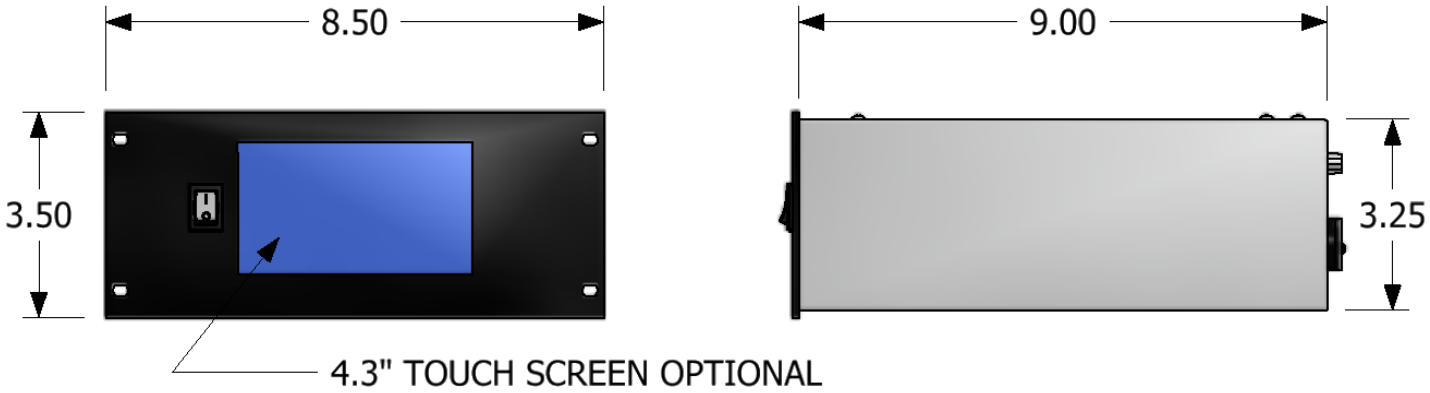
MOTION CONTROL
AUTOMATION OPTIONS

Huntington offers several motor/encoder/controller options beyond our standard motorized feedthrough configurations. This allows greater flexibility in speed, control and torque to meet your exact specifications. All optional configurations are tested at the factory prior to shipping to ensure correct operation. If the options noted below do not meet your specifications please call and speak with one of our expert technical support specialists at **800-227-8059.**

MOTORIZED FEEDTHROUGH CONTROLLERS

DESCRIPTION	WEIGHT (lbs.)	PART NUMBER	PRICE $
Single axis Controller, Integrated, includes Power Supply & PC Interface, NEMA 23	2.0	**91-01-9904**	1650
Two axis Controller, Integrated, includes Power Supply & PC Interface, NEMA 23	2.0	**91-02-9904**	2079
Two axis Controller, Integrated, includes Power Supply & PC Interface, NEMA 34	2.0	**91-02-9906**	2059
Three axis Controller, Integrated, includes Power Supply & PC Interface, NEMA 23	2.5	**91-03-9904**	2290
Four axis Controller, Integrated, includes Power Supply & PC Interface, NEMA 23	2.5	**91-04-9904**	2899
Six axis Controller, Integrated, includes Power Supply & PC Interface, NEMA 23	3.0	**91-06-9904**	3699

All controllers feature USB-type PC Interfaces. For additional interfaces, like RS232 or RS485, please specify at time of ordering. Cables are ordered separately as they are custom made to your requirements. Please consult Technical Support.



SPECIFYING PNEUMATIC FEEDTHROUGH OPTIONS

To order any pneumatic feedthrough with solenoid and/or position switch options, add the desired code(s) to the model number when placing an order with our customer service specialist.

For example, your part number for an optionally configured **L-2270-2** feedthrough might look like this:
With 12 VDC solenoid and Reed Switches: **L-2270-2-1D-SR**

SOLENOID OPTIONS

OPTION	CODE	ADD TO PRICE
SOLENOID, 110 VAC	**1A**	$100
SOLENOID, 240 VAC	**2A**	
SOLENOID, 12 VDC	**1D**	
SOLENOID, 24 VDC	**2D**	

POSITION SWITCH OPTIONS

OPTION	CODE	ADD TO PRICE
REED SWITCH	**SR**	$210
MICRO SWITCH	**SM**	
HALL EFFECT - SINKING	**SH1**	
HALL EFFECT - SOURCING	**SH2**	

NOTES

13355 Nevada City Avenue
Grass Valley, CA. 95945
Call Toll Free: **800-227-8059**
Local: 530-273-4135
FAX: 530-273-4165
Sales email: vacman@huntvac.com
Website: www.huntvac.com