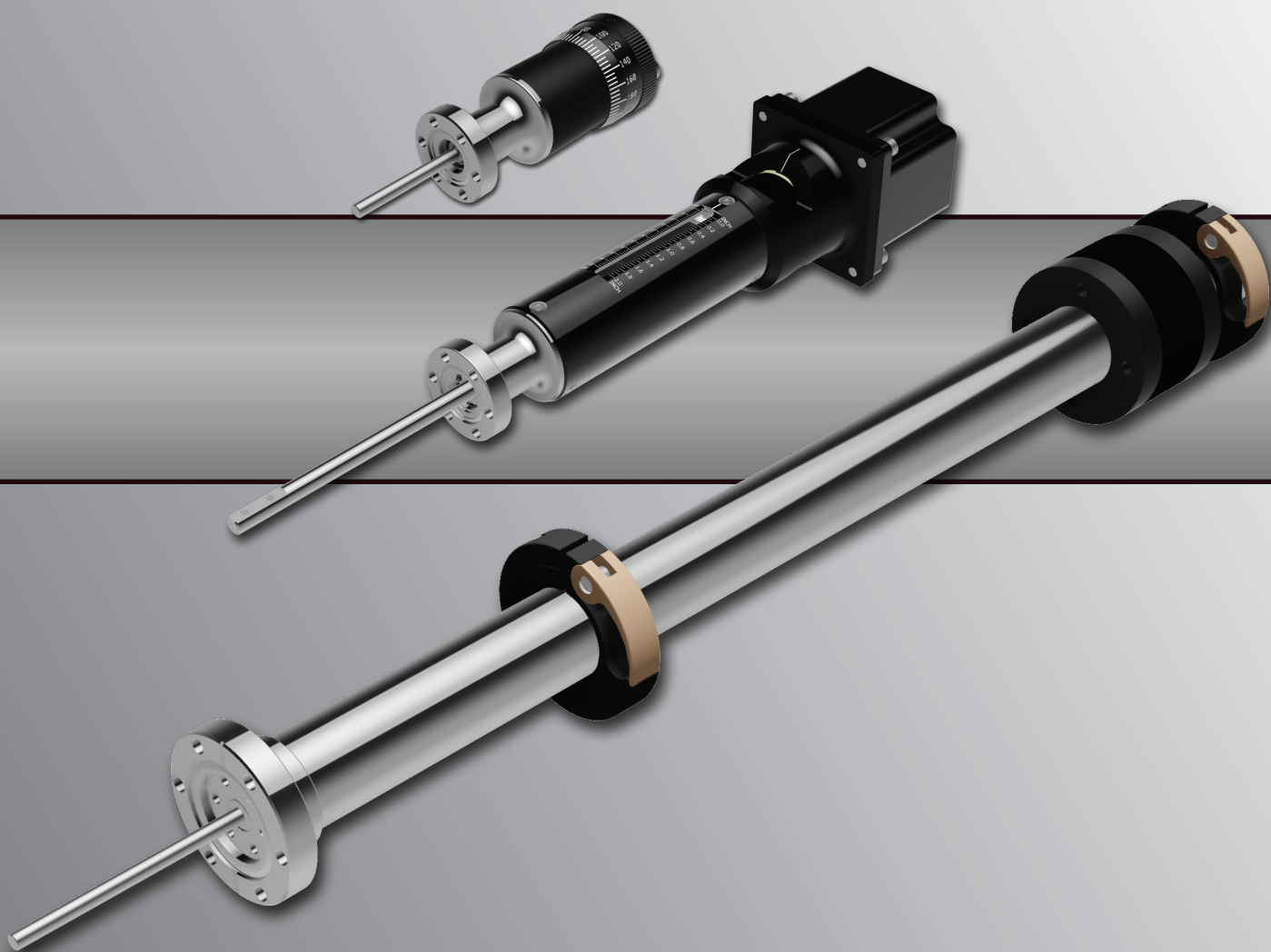




Huntington

Mechanical Labs, Inc.



MOTION FEEDTHROUGHS

ULTRA-HIGH VACUUM COMPONENTS

**tec
tra**

For quotes and additional information, please contact:
Tectra GmbH - Phone: +49-(0)-69-720040 - Email: info@tectra.de

VF-106-x (pg. 3)



VF-169-x (pg. 14)



L-2172-x (pg. 7)



THIS SECTION: 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 1×10^{-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.



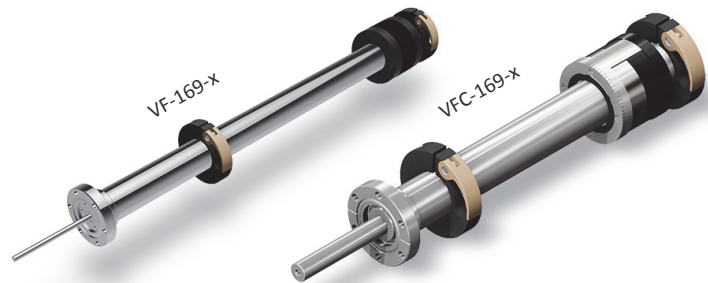
Linear Motion Devices

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.



MOTION CONTROL

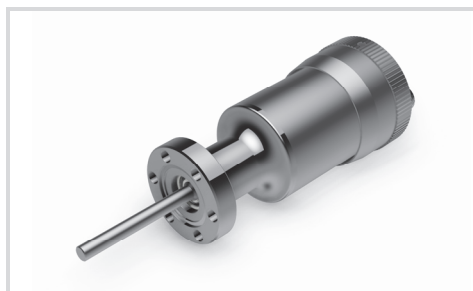
ROTARY FEEDTHROUGHS

Section

4

Dimensions: inches (mm)

VF-016 ECONOMY MINI ROTARY FEEDTHROUGH



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

Specifications (VF-016 & VF-106 Series)

Sealing Mechanism: Welded Bellows

Material Exposed to Vacuum: Stainless Steel

Bakeout Temperature: 200°C,

VF-106 Hi-Temp: 315°C

Operating Temperature: -20° to 150°C,

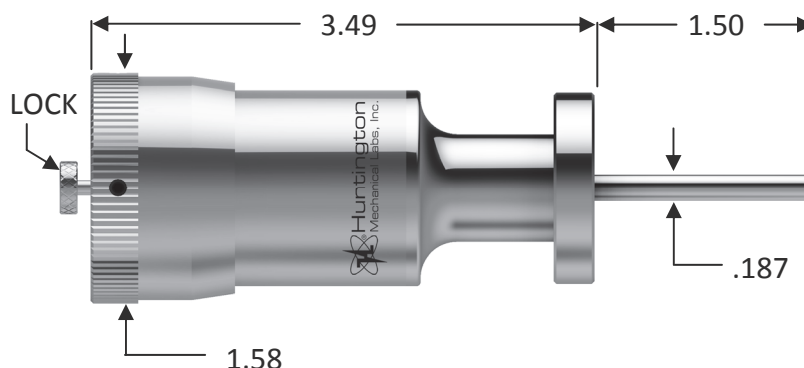
VF-106 Hi-Temp: max 315°C

Pressure Range: Atmosphere to 1×10^{-11} Torr

Position Lock: Thumb Screw

Maximum Torque: VF-016 & VF-106: 125 oz./in.

Scale Resolution: 5°



VF-106 STANDARD MINI ROTARY FEEDTHROUGH



FLANGE	DESCRIPTION	WEIGHT (lbs.)	PART NUMBER
VAC-U-FLANGE® Series			
1 1/3"	Rotary Feedthrough, Anodized w/ dial	0.6	VF-106
2 3/4"	Rotary Feedthrough, Anodized w/ dial	1.1	VF-106-A
1 1/3"	Hi-Temp Rotary, 304 SS w/ dial	0.6	VF-106-HT
2 3/4"	Hi-Temp Rotary, 304 SS w/ dial	1.1	VF-106-A-HT
SPEED FLANGE SYSTEM (ISO-KF)			
KF 16	Rotary Feedthrough, Anodized w/ dial	0.6	VF-106-SF
KF 40	Rotary Feedthrough, Anodized w/ dial	1.0	VF-106-SF-150

(The VF-106-HT Series features Stainless Steel Construction for use in high temperature applications)

External dimensions same as VF-016 Series, above



*Need a Motorized Option?
The VF-016/VF-106 series can
be motorized, please call for quote.*



MOTION CONTROL

ROTARY FEEDTHROUGHS

Dimensions: inches (mm)

VF-161 MANUAL PRECISION ROTARY

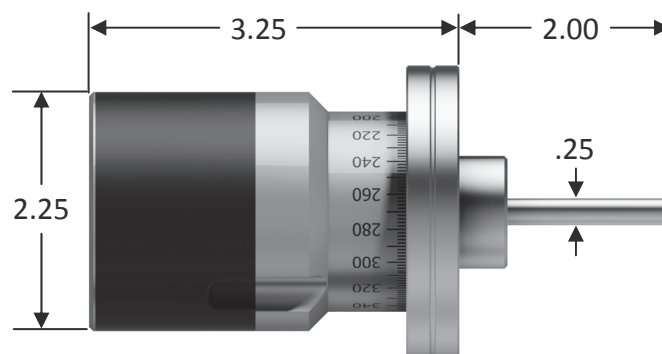


FLANGE	DESCRIPTION	WEIGHT (lbs.)	PART NUMBER
2 3/4"	Compact Design, w/1/4" shaft	3.0	VF-161
KF 40	Compact Design, w/1/4" shaft	2.5	VF-161-SF

This compact design manual rotary is perfect for cramped quarters installations and features indication scale with thumb screw lock.

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 1×10^{-11} Torr
Position Lock: Thumb Screw
Maximum Torque: 5 lb./ft.
Scale Resolution: 2°



VF-166 MANUAL HEAVY DUTY ROTARY



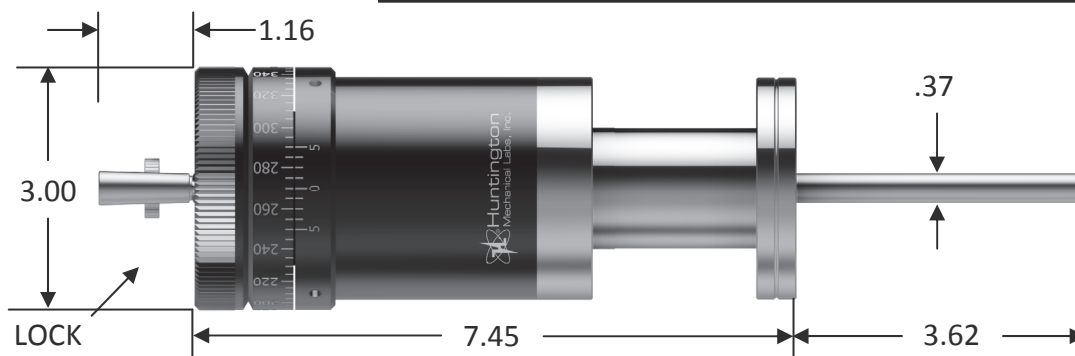
FLANGE	DESCRIPTION	WEIGHT (lbs.)	PART NUMBER
2 3/4"	Vernier Scale w/ VAC-U-FLANGE®	5.0	VF-166
KF 40	Vernier Scale w/ KF Flange	4.3	VF-166-SF

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 1×10^{-11} Torr
Position Lock: Thumb Screw
Maximum Torque: 5 lb./ft.
Scale Resolution: 1°

Motorized version available, please call for quote



MOTION CONTROL

LINEAR FEEDTHROUGHS

Section

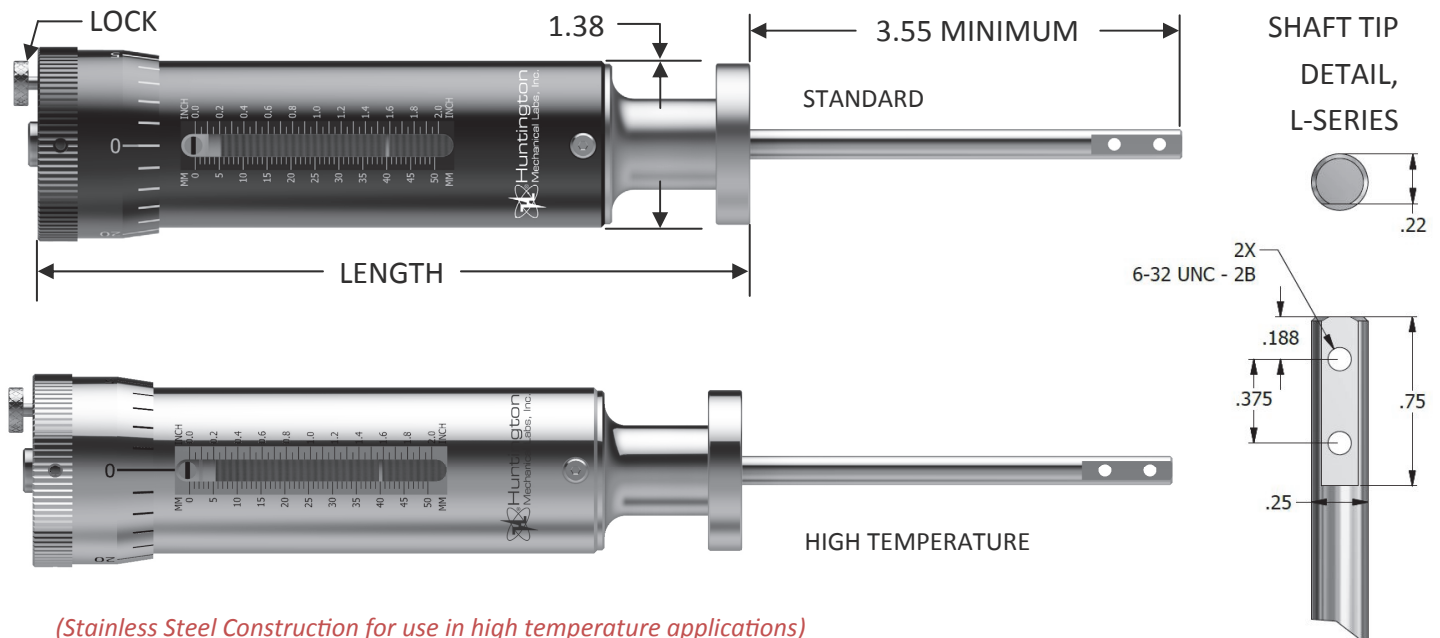
4

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 1¹/₃" and 2³/₄" 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
1 ¹ / ₃ "	1.0 (25.4)	4.47 (113.5)	1.0	L-2111-1	525	L-2111-1-HT
	2.0 (50.8)	5.85 (148.6)	1.5	L-2111-2	650	L-2111-2-HT
	4.0 (101.6)	8.61 (218.7)	2.5	L-2111-4	900	L-2111-4-HT
2 ³ / ₄ "	1.0 (25.4)	4.47 (113.5)	1.5	L-2111-1-A	545	L-2111-1-A-HT
	2.0 (50.8)	5.85 (148.6)	2.0	L-2111-2-A	670	L-2111-2-A-HT
	4.0 (101.6)	8.61 (218.7)	3.0	L-2111-4-A	920	L-2111-4-A-HT
KF 16	1.0 (25.4)	4.47 (113.5)	1.0	L-2111-1-SF	540	NOT APPLICABLE
	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.), 315°C (Hi Temp)

Operating Temperature: -20° to 150°C (Std.), 315°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. (2.3 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

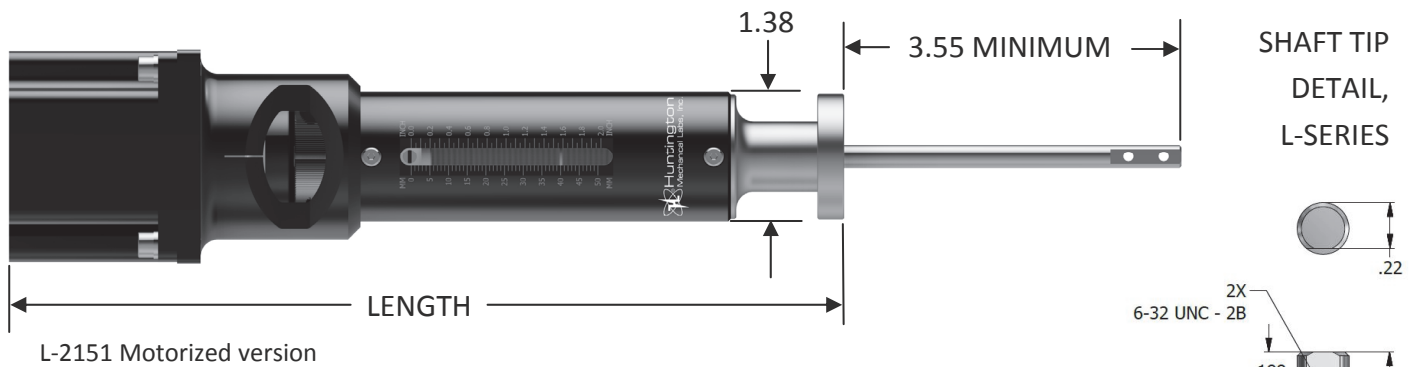
Dimensions: inches (mm)

L-SERIES MOTORIZED & PNEUMATIC MINI LINEAR

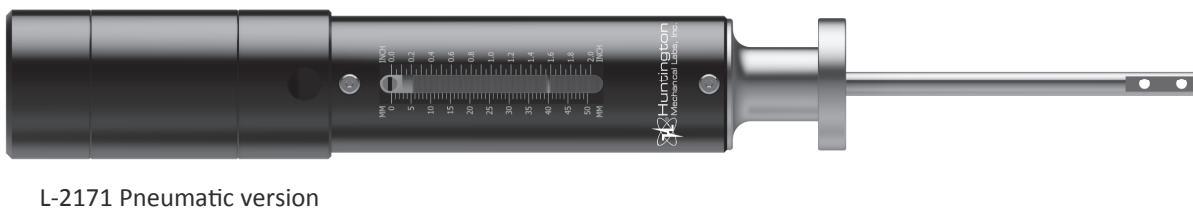
FLANGE	STROKE	LENGTH	WEIGHT (lbs.)	MOTORIZED PART NUMBER
1 1/3"	1.0 (25.4)	7.67 (194.8)	4.0	L-2151-1
	2.0 (50.8)	9.05 (229.9)	5.0	L-2151-2
	4.0 (101.6)	11.81 (300.0)	6.0	L-2151-4
2 3/4"	1.0 (25.4)	7.67 (194.8)	4.5	L-2151-1-A
	2.0 (50.8)	9.05 (229.9)	5.5	L-2151-2-A
	4.0 (101.6)	11.81 (300.0)	6.5	L-2151-4-A
KF 16	1.0 (25.4)	7.67 (194.8)	3.8	L-2151-1-SF
	2.0 (50.8)	9.05 (229.9)	4.8	L-2151-2-SF
	4.0 (101.6)	11.81 (300.0)	5.8	L-2151-4-SF

LENGTH	WEIGHT (lbs.)	PNEUMATIC PART NUMBER
6.06 (153.9)	2.0	L-2171-1
8.44 (214.3)	2.5	L-2171-2
13.20 (335.3)	3.5	L-2171-4
6.06 (153.9)	2.2	L-2171-1-A
8.44 (214.3)	2.7	L-2171-2-A
13.20 (335.3)	3.8	L-2171-4-A
6.06 (153.9)	2.0	L-2171-1-SF
8.44 (214.3)	2.5	L-2171-2-SF
13.20 (335.3)	3.5	L-2171-4-SF

Other flange sizes available upon request.



Optional position switches and solenoids available, please see options page 16.



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. (2.3 kg) @tip in ret. Position

Scale Resolution:

Linear: 0.05" (1 mm),

Dial: .002" (.05 mm), Micrometer: .002mm

Motorized Accuracy: 51,200 microsteps/revolution

Stepper Motor: 1.8° -full step

Thread Pitch: .05" (1.3mm) per revolution

Pneumatic Actuator: Port Size: 1/8" NPT (Solenoid not incl.)

Activation: Double-acting cylinder

Air Required: 100psi (6.9 bar) maximum

MOTION CONTROL

LINEAR FEEDTHROUGHS

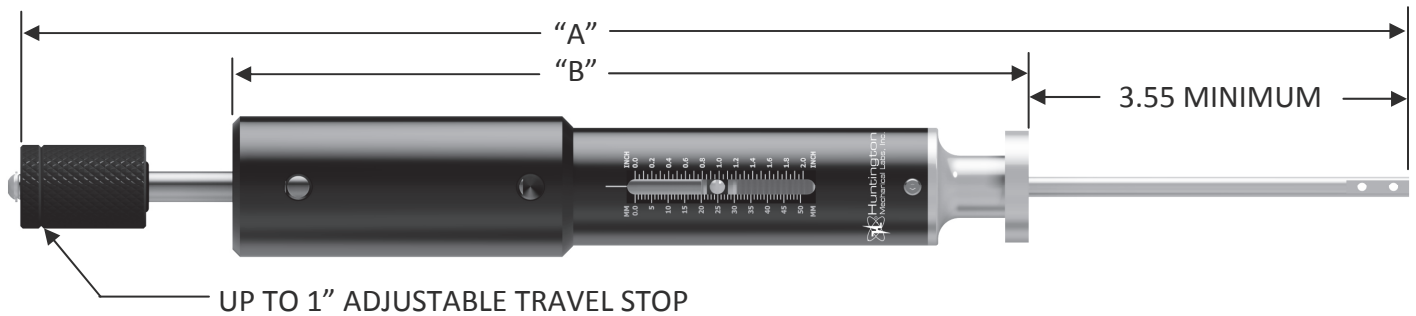
Section

4

Dimensions: inches (mm)

L-SERIES PNEUMATIC MINI LINEAR w/ADJUSTABLE STOP

FLANGE	STROKE	LENGTH "A"	LENGTH "B"	WEIGHT (lbs.)	PNEUMATIC PART NUMBER
1 1/3"	1.0 (25.4)	13.26 (336.8)	7.10 (180.3)	2.0	L-2172-1
	2.0 (50.8)	16.64 (422.7)	9.48 (240.8)	2.5	L-2172-2
	4.0 (101.6)	23.40 (594.4)	14.24 (361.7)	3.5	L-2172-4
2 3/4"	1.0 (25.4)	13.26 (336.8)	7.10 (180.3)	2.2	L-2172-1-A
	2.0 (50.8)	16.64 (422.7)	9.48 (240.8)	2.7	L-2172-2-A
	4.0 (101.6)	23.40 (594.4)	14.24 (361.7)	3.8	L-2172-4-A
KF 16	1.0 (25.4)	13.26 (336.8)	7.10 (180.3)	2.0	L-2172-1-SF
	2.0 (50.8)	16.64 (422.7)	9.48 (240.8)	2.5	L-2172-2-SF
	4.0 (101.6)	23.40 (594.4)	14.24 (361.7)	3.5	L-2172-4-SF

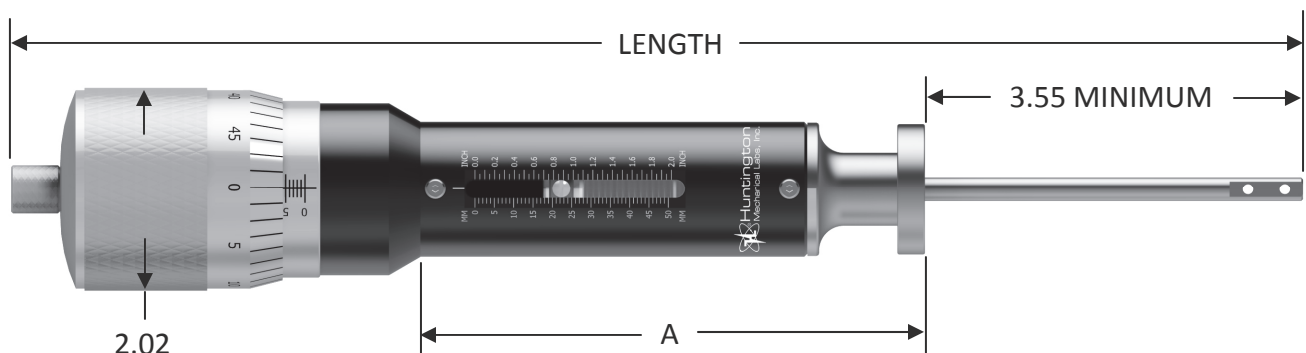


Specifications: Same as L-2171 Series plus the addition of an adjustable stop that allows for up to 1" of travel restriction.

L-SERIES MANUAL MINI LINEAR w/MICROMETER

FLANGE	STROKE	A	LENGTH	WEIGHT (lbs.)	PART NUMBER
1 1/3"	0.98 (25)	3.79 (96.2)	12.00 (304.7)	3.0	L-2141-1
	1.97 (50)	5.17 (131.2)	15.35 (389.8)	3.5	L-2141-2
KF 16	0.98 (25)	3.79 (96.2)	12.00 (304.7)	3.0	L-2141-1-SF
	1.97 (50)	5.17 (131.2)	15.35 (389.8)	3.5	L-2141-2-SF

For alternate flange sizes please call for quote.



MOTION CONTROL

LINEAR FEEDTHROUGHS

Dimensions: inches (mm)

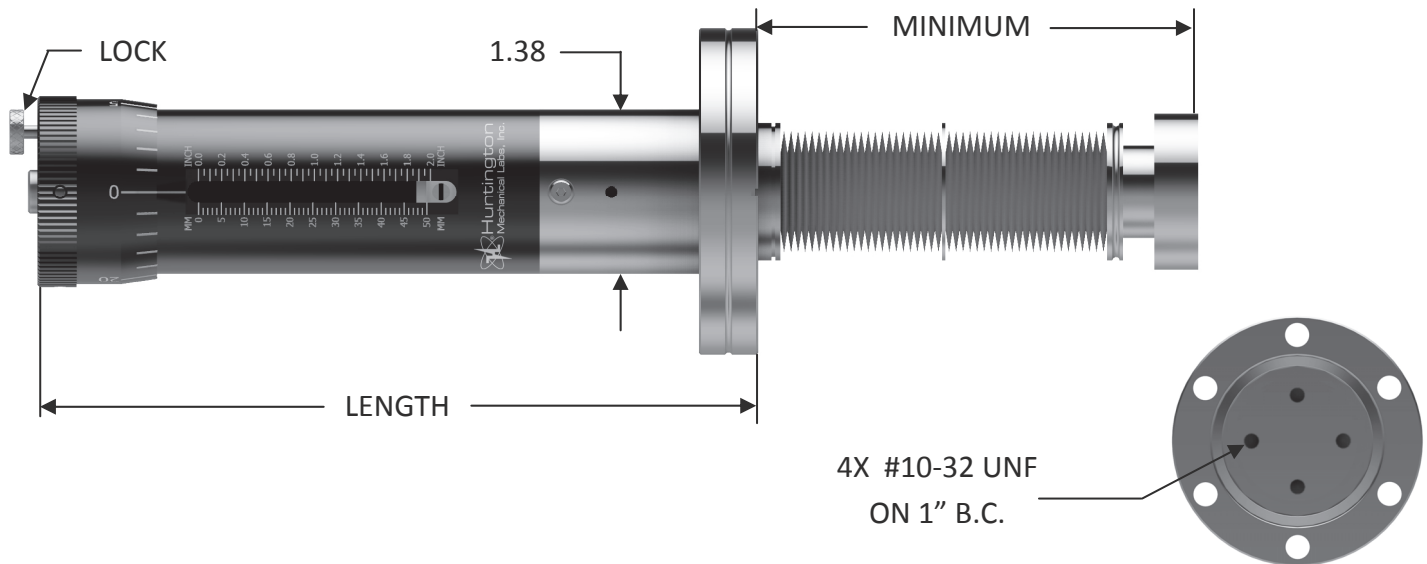
L-SERIES MANUAL LINEAR - .05 PITCH

FLANGE	STROKE	BODY LENGTH	MINIMUM LENGTH	WEIGHT (lbs.)	PART NUMBER
2 ³ / ₄ "	1.0 (25.4)	5.06 (128.5)	1.30 (33.0)	3.0	L-2211-1
	2.0 (50.8)	6.06 (153.9)	1.68 (42.7)	3.5	L-2211-2
	4.0 (101.6)	8.06 (204.7)	2.44 (62.0)	4.0	L-2211-4
KF 40	1.0 (25.4)	5.06 (128.5)	1.30 (33.0)	2.8	L-2211-1-SF
	2.0 (50.8)	6.06 (153.9)	1.68 (42.7)	3.3	L-2211-2-SF
	4.0 (101.6)	8.06 (204.7)	2.44 (62.0)	3.8	L-2211-4-SF

L-SERIES MANUAL LINEAR - .125 PITCH

FLANGE	STROKE	BODY LENGTH	MINIMUM LENGTH	WEIGHT (lbs.)	PART NUMBER
2 ³ / ₄ "	2.0 (50.8)	6.71 (170.4)	1.68 (33.0)	3.5	L-2212-2
	4.0 (101.6)	8.71 (221.2)	2.44 (62.0)	4.0	L-2212-4
	6.0 (152.4)	10.71 (272.0)	3.20 (81.3)	4.5	L-2212-6
KF 40	2.0 (50.8)	6.71 (170.4)	1.68 (33.0)	3.3	L-2212-2-SF
	4.0 (101.6)	8.71 (221.2)	2.44 (62.0)	3.8	L-2212-4-SF
	6.0 (152.4)	10.71 (272.0)	3.20 (81.3)	4.3	L-2212-6-SF

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

Section 4

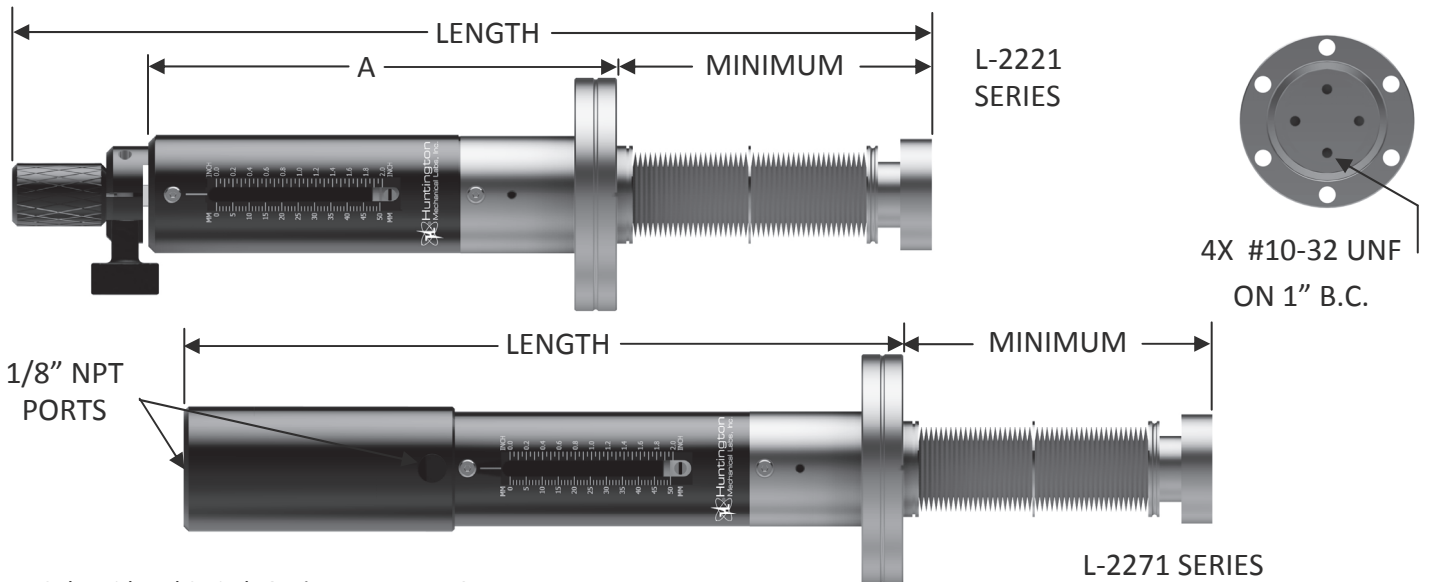
Dimensions: inches (mm)

L-SERIES MANUAL LINEAR - PUSH/PULL

FLANGE	STROKE	A	DEVICE LENGTH	MINIMUM LENGTH	WEIGHT (lbs.)	PART NUMBER
2 ³ / ₄ "	1.0 (25.4)	4.98 (126.5)	8.37 (212.6)	1.30 (33.0)	2.5	L-2221-1
	2.0 (50.8)	5.98 (151.9)	10.75 (273.1)	1.68 (42.7)	3.0	L-2221-2
	4.0 (101.6)	7.98 (206.7)	15.51 (394.0)	2.44 (62.0)	4.0	L-2221-4
KF 40	1.0 (25.4)	4.98 (126.5)	8.37 (212.6)	1.30 (33.0)	2.3	L-2221-1-SF
	2.0 (50.8)	5.98 (151.9)	10.75 (273.1)	1.68 (42.7)	2.8	L-2221-2-SF
	4.0 (101.6)	7.98 (206.7)	15.51 (394.0)	2.44 (62.0)	3.8	L-2221-4-SF

L-SERIES LINEAR - PNEUMATIC ACTUATOR

FLANGE	STROKE	BODY LENGTH	MINIMUM LENGTH	WEIGHT (lbs.)	PART NUMBER
2 ³ / ₄ "	1.0 (25.4)	6.65 (168.9)	1.30 (33.0)	3.5	L-2271-1
	2.0 (50.8)	8.65 (219.7)	1.68 (42.7)	4.0	L-2271-2
	4.0 (101.6)	12.65 (321.3)	2.44 (62.0)	4.5	L-2271-4
KF 40	1.0 (25.4)	6.65 (168.9)	1.30 (33.0)	3.3	L-2271-1-SF
	2.0 (50.8)	8.65 (219.7)	1.68 (42.7)	3.8	L-2271-2-SF
	4.0 (101.6)	12.65 (321.3)	2.44 (62.0)	4.3	L-2271-4-SF



For Solenoid and Switch Options, see pg. 16

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, please call for quote

MOTION CONTROL

COMPACT FEEDTHROUGHS

Dimensions: inches (mm)

L-SERIES LINEAR - COMPACT, PUSH/PULL

FLANGE	STROKE	L	MINIMUM LENGTH	WEIGHT (lbs.)	PART NUMBER
2 ³ / ₄ "	1.0 (25.4)	5.83 (148.1)	1.30 (33.0)	2.5	L-2220-1
	2.0 (50.8)	7.21 (183.1)	1.68 (42.7)	2.5	L-2220-2
	4.0 (101.6)	9.97 (253.2)	2.44 (62.0)	3.0	L-2220-4
KF 40	1.0 (25.4)	5.83 (148.1)	1.30 (33.0)	2.3	L-2220-1-SF
	2.0 (50.8)	7.21 (183.1)	1.68 (42.7)	2.5	L-2220-2-SF
	4.0 (101.6)	9.97 (253.2)	2.44 (62.0)	2.8	L-2220-4-SF

L-SERIES LINEAR - COMPACT, PNEUMATIC ACTUATOR

FLANGE	STROKE	L	MINIMUM LENGTH	WEIGHT (lbs.)	PART NUMBER
2 ³ / ₄ "	1.0 (25.4)	4.10 (104.1)	1.30 (33.0)	2.5	L-2270-1
	2.0 (50.8)	5.10 (129.3)	1.68 (42.7)	2.5	L-2270-2
	4.0 (101.6)	7.10 (180.3)	2.44 (62.0)	3.0	L-2270-4
KF 40	1.0 (25.4)	4.10 (104.1)	1.30 (33.0)	2.3	L-2270-1-SF
	2.0 (50.8)	5.10 (129.3)	1.68 (42.7)	2.5	L-2270-2-SF
	4.0 (101.6)	7.10 (180.3)	2.44 (62.0)	2.8	L-2270-4-SF

L-SERIES LINEAR - COMPACT, HOLLOW TUBE

FLANGE	STROKE	L	MINIMUM LENGTH	WEIGHT (lbs.)	PART NUMBER
2 ³ / ₄ "	1.0 (25.4)	5.83 (148.1)	1.30 (33.0)	2.5	L-2220-1-T
	2.0 (50.8)	7.21 (183.1)	1.68 (42.7)	2.5	L-2220-2-T
	4.0 (101.6)	9.97 (253.2)	2.44 (62.0)	3.0	L-2220-4-T
KF 40	1.0 (25.4)	5.83 (148.1)	1.30 (33.0)	2.3	L-2220-1-T-SF
	2.0 (50.8)	7.21 (183.1)	1.68 (42.7)	2.5	L-2220-2-T-SF
	4.0 (101.6)	9.97 (253.2)	2.44 (62.0)	2.8	L-2220-4-T-SF

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

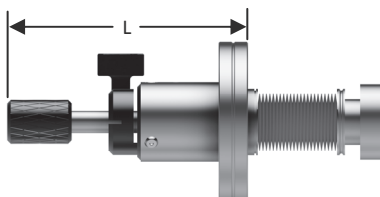
Position Lock: Hand Knob

Maximum Axial Load: 25 lbs. (11.3 kg) concentric load

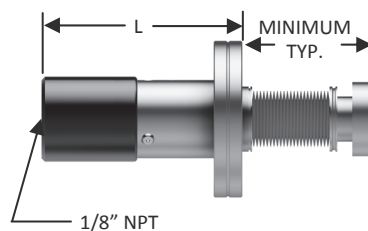
Maximum Lateral Load: 20 lbs. (9.1 kg) @tip in ret. position

Pneumatic Cylinder: 1/8" NPT port, Double-acting cylinder, 100 psi. (6.9 bar) Max. *Solenoid not included, see options page 16*

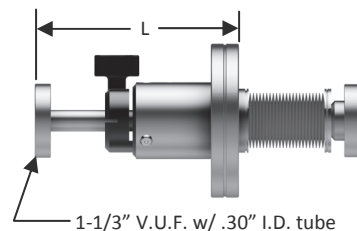
COMPACT PUSH-PULL



COMPACT PNEUMATIC ACTUATOR



COMPACT HOLLOW TUBE



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

MOTION CONTROL

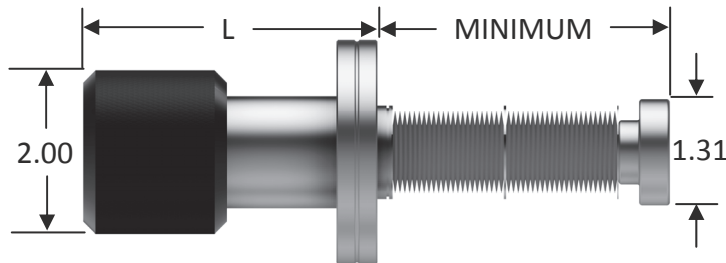
HIGH LOAD LINEAR & ROTARY/ LINEAR FEEDTHROUGHS

Section 4

Dimensions: inches (mm)

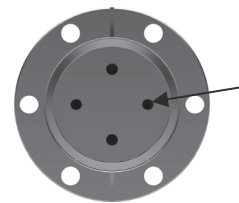
HIGH LOAD MANUAL LINEAR

FLANGE	STROKE	LENGTH "L"	MINIMUM	WEIGHT (lbs.)	PART NUMBER
2 3/4"	2.0 (50.8)	4.26 (108.2)	1.54 (39.1)	4.5	FHL-275-2
2 3/4"	3.0 (76.2)	5.32 (135.1)	1.92 (48.8)	4.7	FHL-275-3



Other stroke lengths and Motorized versions

please call for quote.



4X #10-32 UNF
ON 1" B.C.

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 1×10^{-11} Torr

Maximum Axial Load: 50 lbs. (22.7 kg) concentric load

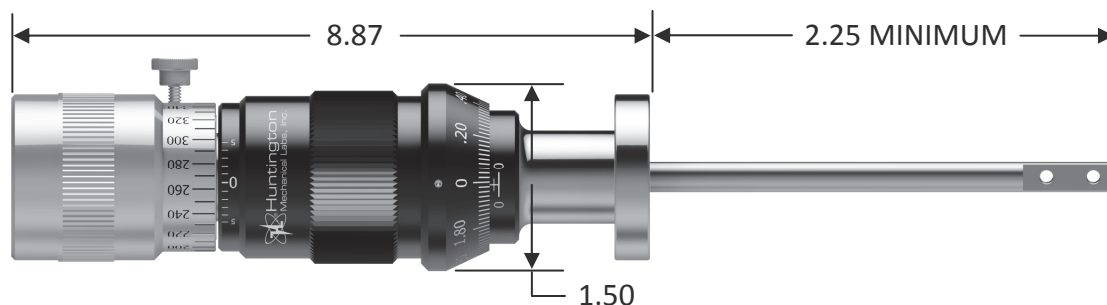
Maximum Lateral Load: 20 lbs. (9.1 kg) @ 3" extension

Thread Pitch: 1.0" (25.4 mm) per 10 revolutions

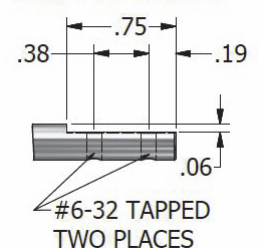
MANUAL ROTARY / LINEAR FEEDTHROUGH

FLANGE	LINEAR TRAVEL	WEIGHT (lbs.)	PART NUMBER
1 1/3"	1.20 (30.0)	1.2	VF-187
2 3/4"	1.20 (30.0)	1.7	VF-187-A
KF 16	1.20 (30.0)	1.2	VF-187-SF

The patented design of the **VF-187** Series provides the highest torque in the smallest envelope of any UHV-compatible rotary-linear feedthrough. The Vernier design provides excellent resolution in both the rotary and linear movements. Designed specifically for use in **STM** (Scanning Tunnel Microscopes), this versatile positioning device is suitable for a wide variety of applications while providing long life, high accuracy and smooth operation.



SHAFT TIP DETAIL



Specifications

Sealing Mechanism: Welded Bellows

Material Exposed to Vacuum: Stainless Steel

Bakeout Temperature: 200°C (Maximum)

Operating Temperature: -20° to 100°C

Pressure Range: Atmosphere to 1×10^{-11} Torr

Position Lock: Radial: Lock Screw Linear: Hand Knob

Maximum Axial Load: 20 lbs. (9.1 kg) concentric load

Rotary Resolution (Vernier): 1°

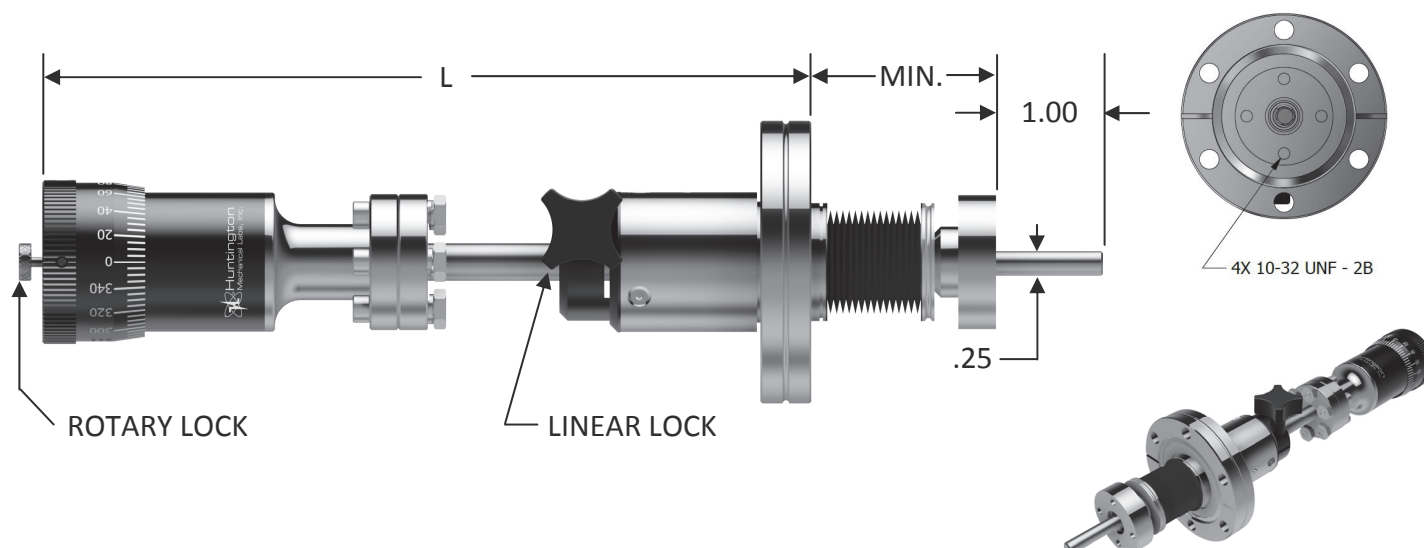
MOTION CONTROL

ROTARY/LINEAR FEEDTHROUGHS

Dimensions: inches (mm)

MANUAL ROTARY / LINEAR FEEDTHROUGH

FLANGE	STROKE	L	MINIMUM LENGTH	WEIGHT (lbs.)	PART NUMBER
2 ³ / ₄ "	1.0 (25.4)	9.31 (236.5)	1.30 (33.0)	5.0	LR-2220-1
	2.0 (50.8)	10.69 (271.5)	1.68 (42.7)	5.5	LR-2220-2
	4.0 (101.6)	13.45 (341.6)	2.44 (62.0)	6.5	LR-2220-4
	6.0 (152.4)	16.21 (411.7)	3.20 (81.3)	7.0	LR-2220-6
KF 40	1.0 (25.4)	9.31 (236.5)	1.30 (33.0)	4.8	LR-2220-1-SF
	2.0 (50.8)	10.69 (271.5)	1.68 (42.7)	5.3	LR-2220-2-SF
	4.0 (101.6)	13.45 (341.6)	2.44 (62.0)	6.3	LR-2220-4-SF
	6.0 (152.4)	16.21 (411.7)	3.20 (81.3)	6.8	LR-2220-6-SF



Specifications

Material Exposed to Vacuum: SST & Cu

Sealing Mechanism: SST Bellows & Cu gasket

Pressure Range: Atmosphere to 1×10^{-11} Torr

Bakeout Temperature: 200°C (maximum)

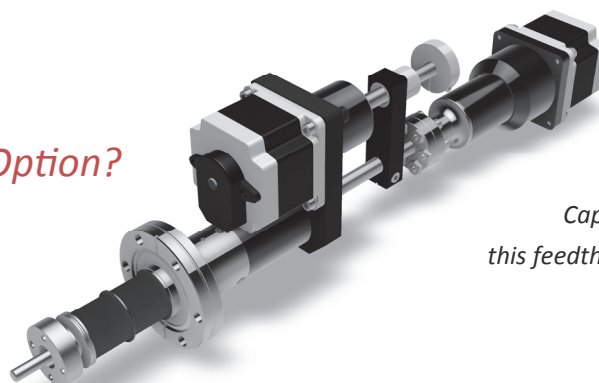
Operating Temperature: -20° to 150°C

Maximum Axial Load: 20 lbs. (9.1kg) concentric load

Maximum Torque: 125 oz. in.

Rotary Resolution: 5°

Need a Motorized Option?



The LRM-2250 Series feedthroughs feature linear & rotary movement accurate to 51,200 microsteps per rev.

Capable of handling concentric loads of 20 lbs. this feedthrough is ready to go to work. Call us today for a quote!

MOTION CONTROL

WOBBLE STICKS

Section 4

Dimensions: inches (mm)

LINEAR / ANGULAR WOBBLE STICK

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

Specifications

Sealing Mechanism: Welded Bellows

Material Exposed to Vacuum: Stainless Steel

Bakeout Temperature:
VUF: 450°C, -SF: 200°C,

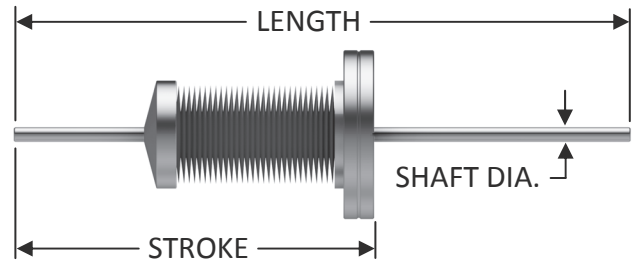
Operating Temperature: -20° to 230°C

Pressure Range:

VAC-U-FLANGE®: Atmosphere to 1×10^{-11} Torr

SPEED SYSTEM: Atmosphere to 1×10^{-9} Torr

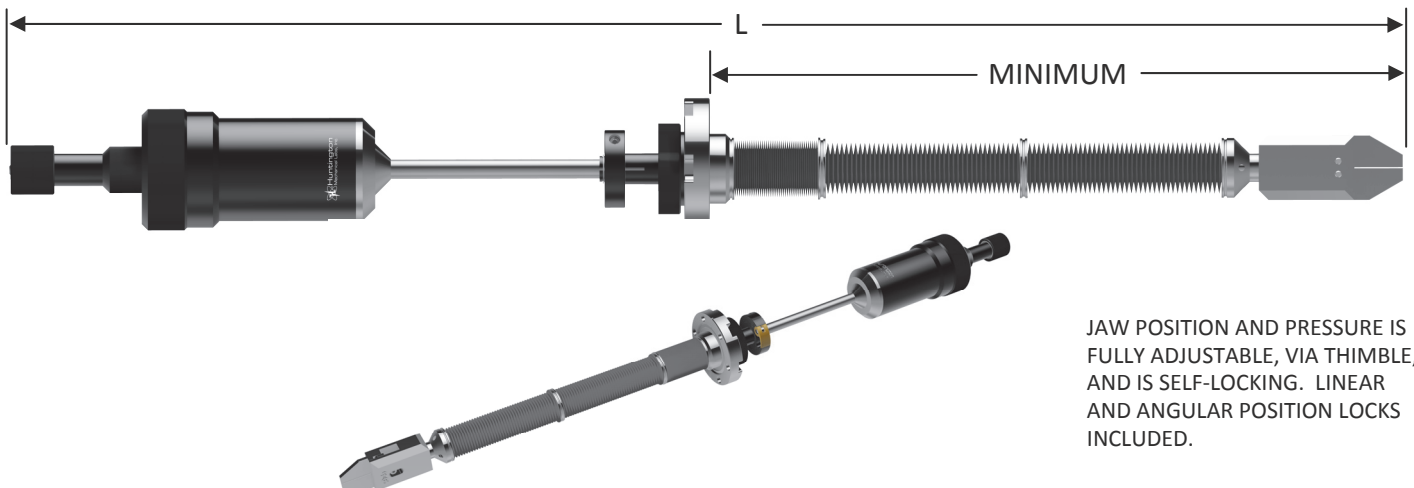
A very simple & cost-effective wobble stick



LINEAR / ANGULAR WOBBLE STICK with ROTATION

FLANGE	LINEAR TRAVEL	MINIMUM LENGTH	L	WEIGHT (lbs.)	PART NUMBER
2 3/4"	5"	5.94	22.82	8.0	VF-176-5-R
	10"	7.72	27.80	8.5	VF-176-10-R

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 1×10^{-11} Torr

Maximum Torque: 125 oz./in.

Maximum Axial Load: 10 lbs. concentric

Angular Motion: 45° included angle

MOTION CONTROL

MAGNETIC TRANSPORTERS

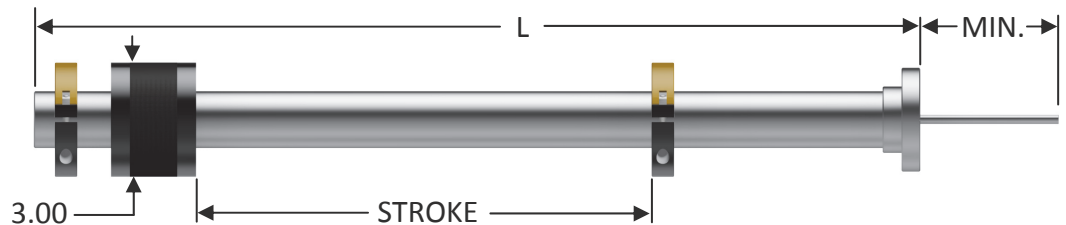
Dimensions: inches (mm)

ROUGH POSITIONING LINEAR / ROTARY

SHAFT	STROKE	L	MINIMUM LENGTH	WEIGHT (lbs.)	PART NUMBER
.25" OD SOLID	10.0	15.10	3.50	10	VF-169-10
	12.0	17.10	3.50	10	VF-169-12
	14.0	19.10	3.50	10	VF-169-14
	16.0	21.10	3.50	12	VF-169-16
	18.0	23.10	3.50	12	VF-169-18
.50" OD HOLLOW .065" WALL	18.0	17.10	3.50	14	VF-1695-18
	24.0	29.10	3.50	15	VF-1695-24
	36.0	41.10	3.50	16	VF-1695-36

All VF-169 & 1690 Series use a standard 2 3/4" VAC-U-FLANGE® mounting. VF-1695 Series shaft end detail see below.

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

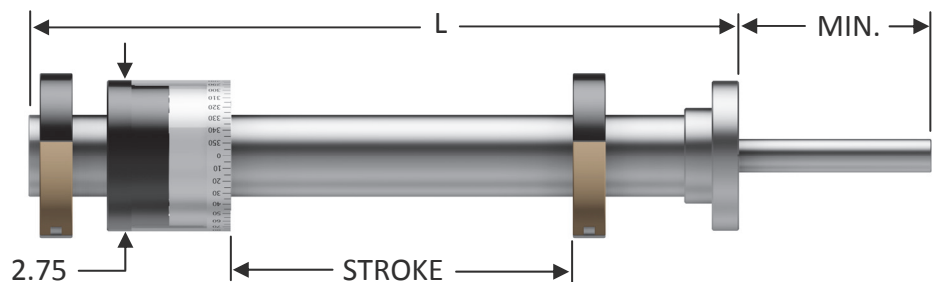
SHAFT	STROKE	L	MINIMUM LENGTH	WEIGHT (lbs.)	PART NUMBER
.625" OD SOLID	12.0	19.56	3.50	11	VFC-169-12
	18.0	25.56	3.50	13	VFC-169-18
	24.0	31.56	3.50	15	VFC-169-24
	36.0	43.56	3.50	18	VFC-169-36
	48.0	55.56	3.50	21	VFC-169-48

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

1/4"-20 THREAD



SHAFT END DETAIL FOR .50"
SHAFTS (VF-1695 & VFC-169
Series)



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

DIRECT DRIVE FEEDTHROUGHS

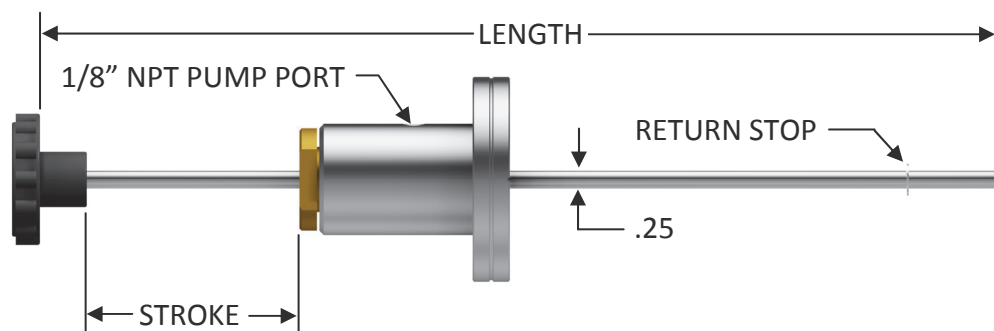
Section

4

ROTARY-LINEAR DIRECT DRIVE

FLANGE	STROKE	LENGTH	WEIGHT (lbs.)	PART NUMBER
2 3/4" (VAC-U-FLANGE®)	8.0 (203.2)	12.63 (320.8)	1.5	VF-170
KF 40 (SPEED SYSTEM)	8.0 (203.2)	12.63 (320.8)	1.2	VF-170-SF

The **VF-170** is a simple and cost-effective manual linear feedthrough with rotary action. Sealing is accomplished by Viton® seals (2) in the main body, which, when differentially pumped can achieve UHV compatibility to 10^{-9} Torr.



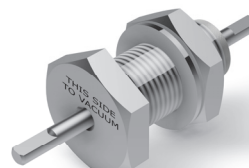
Specifications

Sealing Mechanism: Dual Viton® elastomer seals
Material Exposed to Vacuum: Stainless Steel, Viton®
Bakeout Temperature: 200°C (Maximum)

Operating Temperature: -20° to 100°C
Pressure Range: Atmosphere to 1×10^{-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
		DIRECT DRIVE ROTARY BASEPLATE FEEDTHROUGH	0.75	BP-20



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

MOTORIZED/PNEUMATIC

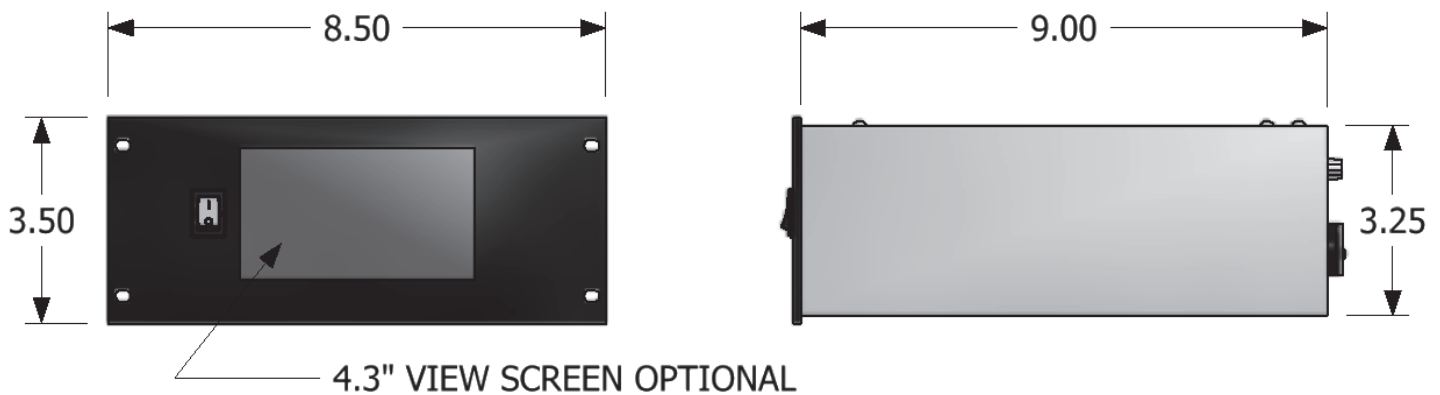
OPTIONS

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

MOTORIZED FEEDTHROUGH OPTIONS

DESCRIPTION	WEIGHT (lbs.)	PART NUMBER
Single axis Controller, Integrated, includes Power Supply & PC Interface	2.0	91-01-9904
Two axis Controller, Integrated, includes Power Supply & PC Interface	2.0	91-02-9904
Single axis Controller, Integrated, includes Power Supply & PC Interface, NEMA 34	2.0	91-01-9906
Three axis Controller, Integrated, includes Power Supply & PC Interface	2.5	91-03-9904
Four axis Controller, Integrated, includes Power Supply & PC Interface	2.5	91-04-9904
Six axis Controller, Integrated, includes Power Supply & PC Interface	3.0	91-06-9904

All controllers feature RS485-type PC Interfaces. For additional interfaces, like RS232 or USB dongle, 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 or position switch options, add the desired code to the model when placing an order with the 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
SOLENOID, 110 VAC	1A
SOLENOID, 240 VAC	2A
SOLENOID, 12 VDC	1D
SOLENOID, 24 VDC	2D

POSITION SWITCH OPTIONS

OPTION	CODE
REED SWITCH	SR
MICRO SWITCH	SM
HALL EFFECT - SINKING	SH1
HALL EFFECT - SOURCING	SH2



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For quotes and additional information, please contact:
Tetra GmbH – Phone: +49-(0)-69-720040 – Email: info@tetra.de

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