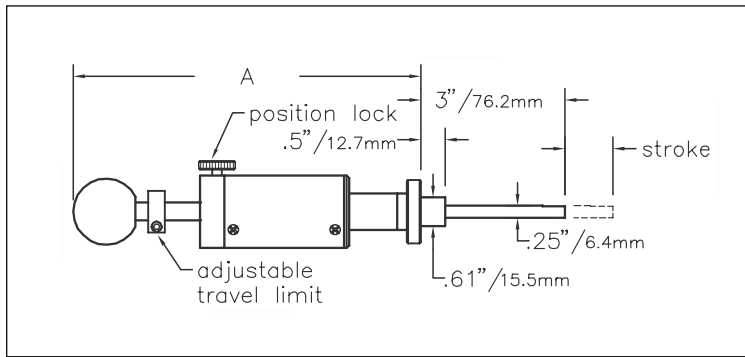


Linear Feedthroughs — Push-Pull

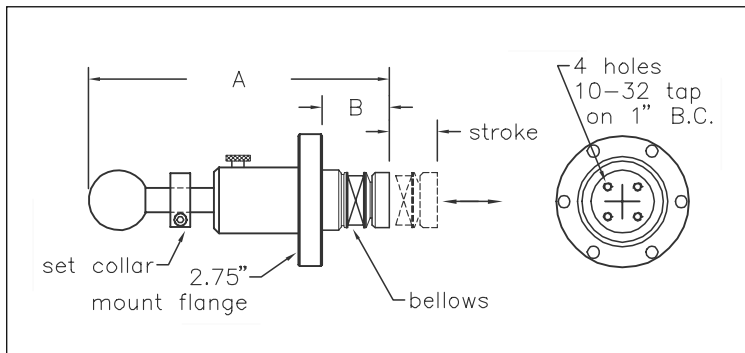


FLML-133-25

Push-Pull Linear Feedthroughs — FLML-133-25 Series

Flange O.D.	Probe O.D.	Stroke*	A	Model No.	Price
1.33"	0.25"	1"	7.24"	FLML-133-25-1	<i>on request</i>
		2"	9.64"	FLML-133-25-2	<i>on request</i>
		3"	12.03"	FLML-133-25-3	<i>on request</i>
		4"	14.42"	FLML-133-25-4	<i>on request</i>
		6"	19.21"	FLML-133-25-6	<i>on request</i>
Custom shaft probe					<i>on request</i>

* Other strokes available



FLML-275-50

Push-Pull Linear Feedthroughs — FLML-275-50 Series

O.D.	Stroke*	A	Model No.	Price
2.75"	1"	6.39"	FLML-275-50-1	<i>on request</i>
	2"	7.79"	FLML-275-50-2	<i>on request</i>
	3"	9.18"	FLML-275-50-3	<i>on request</i>
	4"	10.58"	FLML-275-50-4	<i>on request</i>
	6"	15.61"	FLML-275-50-6	<i>on request</i>
	10"	21.19"	FLML-275-50-10	<i>on request</i>

* Other strokes available

Hositrاد manufactures a full line of metal-sealed linear motion feedthroughs. They are designed and manufactured to a high level of quality. They are all metal, using welded bellows and stainless steel linear bearings. All manual units are bakeable to 200°C fully assembled. Higher bakeouts may be used with partial disassembly. These feed-throughs are available with a number of custom options, listed below.

Push-Pull Linear Feedthrough

FLML-133-25 Series

- 1/4" O.D. probe
- 1.33" O.D. mounting flange (2.75" O.D. flange optional)
- Up to 6" stroke
- Coarse linear actuated
- Adjustable position stop
- Position lock
- Stainless steel bellows sealed
- Stainless steel linear shaft bearing
- Maximum bakeout temperature: 200°C

FLML-275-50 Series

- 1/2" O.D. support shaft
- 2.75" O.D. mounting flange
- Up to 15" stroke
- Coarse linear actuated
- Adjustable position stop
- Position lock
- Stainless steel bellows sealed
- Stainless steel linear shaft bearing
- Maximum bakeout temperature: 200°C

Options

/2.75" Flange

Model No. **FLML-133(275)-X**

Price *on request*

/CL Custom Length Probe

Price *on request*

/TM Tip Modification

Price *on request*

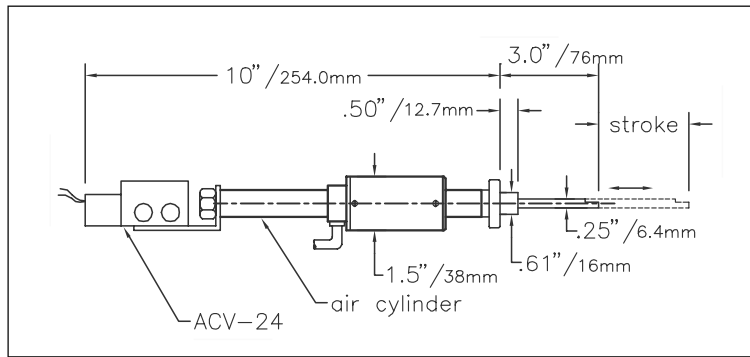


Linear Feedthroughs — Pneumatic

Pneumatic Linear Feedthrough

FLML-133-25/PNM Series

- 1/4" O.D. probe
- 1.33" O.D. mounting flange (2.75" O.D. flange optional)
- Up to 6" stroke
- Stainless steel bellows sealed
- Macor linear bushing
- Pneumatically actuated 0.75" I.D. cylinder 50 to 150 psi air pressure
- Stainless steel rod and cylinder with bumpers, both ends
- Maximum bakeout temperature: 200°C (with air control valve removed)



FLML-133-25-1/PNM/ACV-24 (shown with optional /ACV-24 air control valve)

FLML-275-50/PNM Series

- 1/2" O.D. support shaft
- 2.75" O.D. mounting flange
- Up to 6" stroke
- Stainless steel bellows sealed
- Bronze bushings
- Pneumatically actuated 0.75" I.D. cylinder 50 to 150 psi air pressure
- Stainless steel rod and cylinder with bumpers, both ends
- Maximum bakeout temperature: 200°C (with air control valve removed)

Pneumatic Linear Feedthroughs — FLML-133-25/PNM Series

Flange O.D.	Probe O.D.	Stroke*	Model No.	Price
1.33"	0.25"	1"	FLML-133-25-1/PNM	on request
	2"		FLML-133-25-2/PNM	on request
		3"	FLML-133-25-3/PNM	on request
	4"		FLML-133-25-4/PNM	on request
		6"	FLML-133-25-6/PNM	on request
Custom probe length				on request

* Other strokes available

Options

/2.75" Flange

Model No. **FLML-133(275)-X/PNM**

Price *on request*

/CL Custom Length Probe

Price *on request*

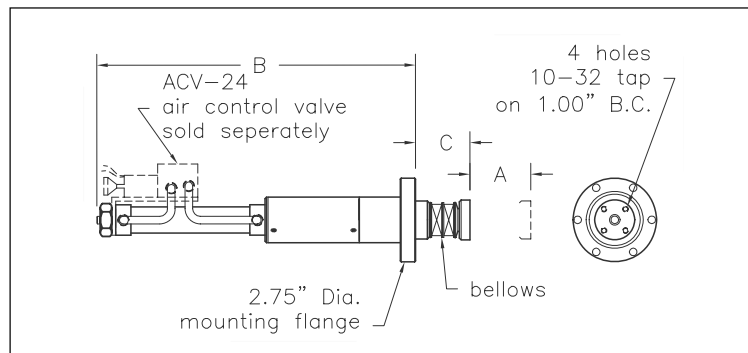
/TM Tip Modification

Price *on request*

/ACV-24 Air Control Valve

- For all FLML/PNM pneumatic feedthroughs
- Mounted to feedthrough
- Valve-to-actuator plumbing installed
- Control voltage 24 VDC standard or per customer requirements
- With flow controls, both directions
- Performance: <180 msec from coil energize to finish of 4" travel with 80 psi on an FLML-133-25-4/PNM with shutter

Price *on request*



FLML-275-50-1/PNM/ACV-24 (shown with optional /ACV-24 air control valve)

Pneumatic Linear Feedthroughs — FLML-275-50/PNM Series

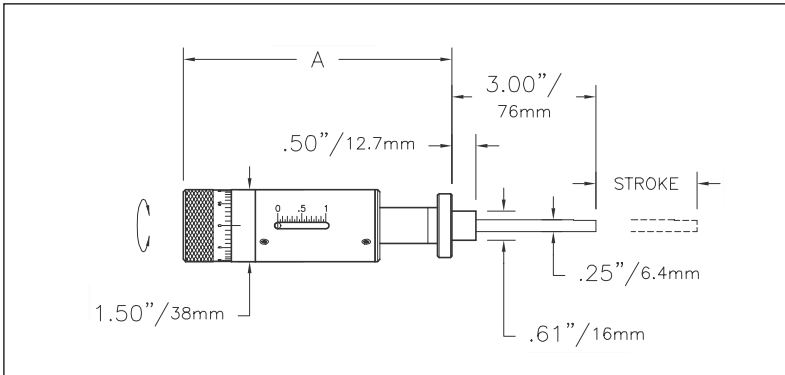
Flange O.D.	Stroke*	B	C	Model No.	Price
2.75"	1"	8.48"	1.39"	FLML-275-50-1/PNM	on request
	2"	10.48"	1.79"	FLML-275-50-2/PNM	on request
	3"	12.48"	2.18"	FLML-275-50-3/PNM	on request
	4"	14.48"	2.58"	FLML-275-50-4/PNM	on request
	6"	20.73"	3.36"	FLML-275-50-6/PNM	on request

* Other strokes available

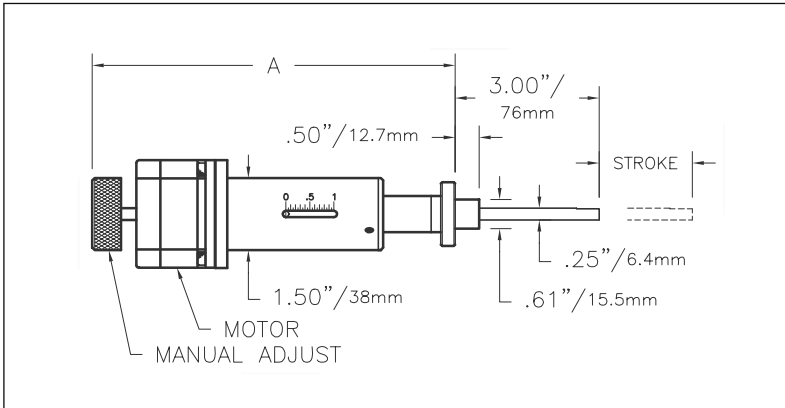
Linear Feedthroughs — Rotary Actuated



FLMR-133-25-2



FLMR-133-25-1



FLMR-133-25-1/MS (shown with optional /MS stepper motor drive)

Rotary Actuated Linear Feedthroughs — FLMR-133-25 Series

Flange Probe					Base Motorization Opt.*		
O.D.	O.D.	Stroke***	A****	Model No.	Price	/MS**	/MY**
1.33"	0.25"	1"	5.60"	FLMR-133-25-1	<i>on request</i>	<i>on request</i>	
		2"	6.99"	FLMR-133-25-2	<i>on request</i>	<i>on request</i>	
		3"	9.20"	FLMR-133-25-3	<i>on request</i>	<i>on request</i>	
		4"	12.60"	FLMR-133-25-4	<i>on request</i>	<i>on request</i>	
		6"	16.60"	FLMR-133-25-6	<i>on request</i>	<i>on request</i>	
Custom probe length					<i>on request</i>		

* Add motorization option price to base price.

** Price does not include controller.

*** Other strokes available.

**** Dimension A changes with addition of motorization options, Consult Factory.

Rotary Actuated Linear Feedthrough

FLMR-133-25 Series

- 1/4" O.D. probe
- 1.33" O.D. mounting flange (2.75" O.D. flange optional)
- Up to 6" stroke
- Rotary actuated, 20 turns/inch
- Stainless steel bellows sealed
- All ball-bearing drive
- Stainless steel linear shaft bearing
- Includes position indicator

Options

/2.75" Flange

Model No. **FLMR-133(275)-X**

Price *on request*

/CL Custom Length Probe

Price *on request*

/TM Tip Modification

Price *on request*

Motorization Options

/MS Stepper Motor Drive

Applications: *precise positioning, positioning multiple axes at one time, computer-controlled actuation*

- Direct drive
- 200 steps per revolution
- 100 oz-in holding torque (higher torque motors available)
- Maximum speed 300 rpm
- Low inertia design
- Manual knob
- Motor controller sold separately

Price *on request*

/MY Synchronous Motor Drive

Applications: *coarse positioning*

- Direct drive
- Single speed, 72 rpm
- 2 directions
- 100 oz-in holding torque (higher torque motors available)
- Maximum speed 300 rpm
- Low inertia design
- Manual knob
- Motor controller sold separately

Price *on request*

SMC Stepping or YMC Synchronous Motor Controller

On request



Linear Feedthroughs — Rotary Actuated

Hositrاد manufactures a full line of metal-sealed linear motion feedthroughs. They are designed and manufactured to a high level of quality. They are all metal, using welded bellows and stainless steel linear bearings. All manual units are bakeable to 200°C fully assembled. Higher bakeouts may be used with partial disassembly. These feed-throughs are available with a number of cus-tom options, listed below.

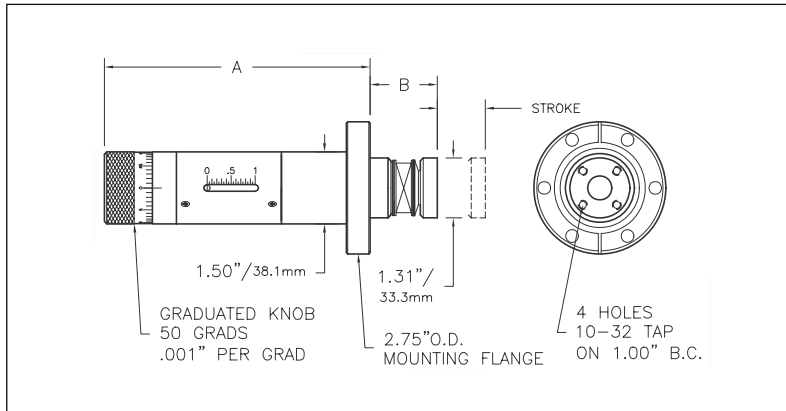
Rotary Actuated Linear Feedthrough

FLMR-275-50 Series

- 1/2" O.D. support shaft
- 2.75" O.D. mounting flange
- Up to 6" stroke
- Rotary actuated, 20 turns/inch
- Stainless steel bellows sealed
- All ball-bearing drive
- Includes position indicator
- Maximum bakeout temperature: 200°C



FLMR-275-50-4



FLMR-275-50-1

Motorization Options

/MS Stepper Motor Drive

Applications: precise positioning, positioning multiple axes at one time, computer-controlled actuation

- Direct drive
- 200 steps per revolution
- 100 oz-in holding torque (higher torque motors available)
- Maximum speed 300 rpm
- Low inertia design
- Manual knob
- Motor controller sold separately

Price on request

/MY Synchronous Motor Drive

Applications: coarse positioning

- Direct drive
- Single speed, 72 rpm
- 2 directions
- 100 oz-in holding torque (higher torque motors available)
- Maximum speed 300 rpm
- Low inertia design
- Manual knob
- Motor controller sold separately

Price on request

SMC Stepping or YMC Synchronous Motor Controller

On request

Rotary Actuated Linear Feedthroughs — FLMR-275-50 Series

Flange O.D.	Stroke**	A	B	Model No.	Base Price	Motorization Opt.* /MS*** /MY***
2.75"	1"	5.54"	1.40"	FLMR-275-50-1	on request	on request
	2"	6.54"	1.79"	FLMR-275-50-2	on request	on request
	4"	8.54"	2.58"	FLMR-275-50-4	on request	on request
	6"	12.79"	3.36"	FLMR-275-50-6	on request	on request
Custom probe length					on request	

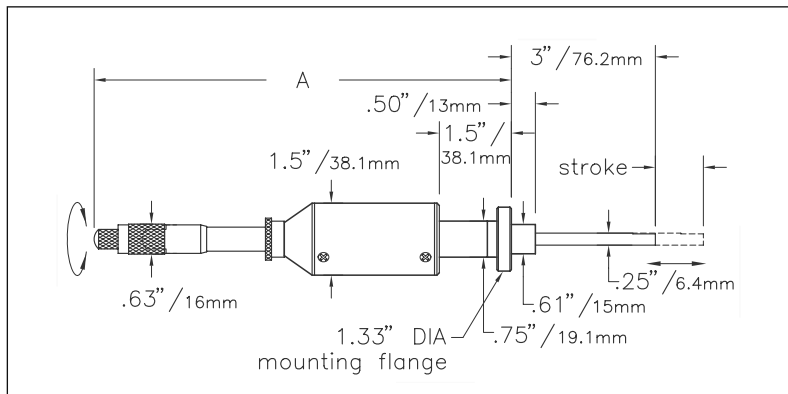
* Add motorization option price to base price

** Other strokes available

*** Price does not include controller



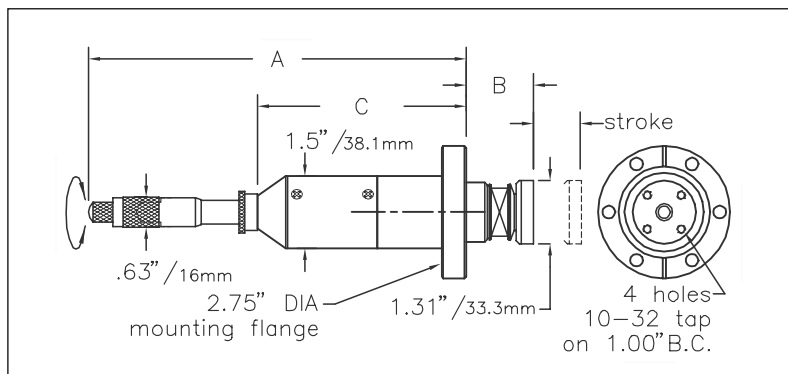
Linear Feedthroughs — Precision



FLMM-133-25 1 & 2

Precision Linear Feedthroughs — FLMM-133-25 Series

Flange O.D.	Probe O.D.	Stroke	A	Model No.	Price
1.33"	0.25"	1"	8.69"	FLMM-133-25-1	<i>on request</i>
	2"	12.64"		FLMM-133-25-2	<i>on request</i>



FLMM-275-50 1 & 2

Precision Linear Feedthroughs — FLMM-275-50 Series

Flange O.D.	Stroke	A	B	C	Model No.	Price
2.75"	1"	8.30"	1.40"	4.34"	FLMM-275-50-1	<i>on request</i>
	2"	12.09"	1.80"	6.03"	FLMM-275-50-2	<i>on request</i>

Hositrad manufactures a full line of metal-sealed linear motion feedthroughs. They are designed and manufactured to a high level of quality. They are all metal, using welded bellows and stainless steel linear bearings. All manual units are bakeable to 200°C fully assembled. Higher bakeouts may be used with partial disassembly. These feed-throughs are available with a number of custom options, listed below.

Precision Linear Feedthrough

FLMM-133-25 Series

- 1/4" O.D. probe
- 1.33" O.D. mounting flange
- 1" or 2" stroke
- Micrometer actuated, 40 turns/inch, pre-loaded coupling
- 3" minimum flange face to probe tip
- Stainless steel bellows sealed
- Stainless steel linear shaft bearing
- Maximum bakeout temperature: 200°C

FLMM-275-50 Series

- 1/2" O.D. support shaft
- 2.75" O.D. mounting flange
- 1" or 2" stroke
- Micrometer actuated, 40 turns/inch, pre-loaded coupling
- Stainless steel bellows sealed
- Stainless steel linear shaft bearings
- Maximum bakeout temperature: 200°C

Options

/2.75" Flange

Model No. **FLMM-133(275)-X**

Price *on request*

/CL Custom Length Probe

Price *on request*

/TM Tip Modification

Price *on request*



Linear Feedthroughs — Rack & Pinion

Rack & Pinion Linear Feedthrough

RPL Series

- 3/8" O.D. linear probe
- 3/4" O.D. support shaft
- 2.75" O.D. mounting flange
- Up to 50" linear travel
- Rack and pinion positive drive
- Adjustable position stop and lock
- Maximum bakeout temperature: 200°C

Options

/MC Mechanical Counter

- 40 counts per feedthrough rotation
- Removable for bakeout
- Retrofit kit allows mounting without breaking vacuum

Price on request

/MS Stepping or /MY

Synchronous Motorization

- With integral motor drive
- /MS stepping or /MY synchronous motor drive
- 50 oz-in holding torque (higher torque motors available)
- Low inertia design
- Manual knob
- Motor controller sold separately

Price on request

NOTE: The /MS or /MY motor option is suitable for the linear actuation when the operation is horizontal. When the linear travel is other than horizontal, the /MS/W option should be used.

We strongly recommend the use of limit switches on this or any other motor drive being used to actuate the linear drive on the RPL. The limit switch actuator assembly (or one similar) should be used to protect the RPL from being over-driven. See the RLS rotary limit switch option on page 2-XX.

/MS/W Stepping or /MY/W

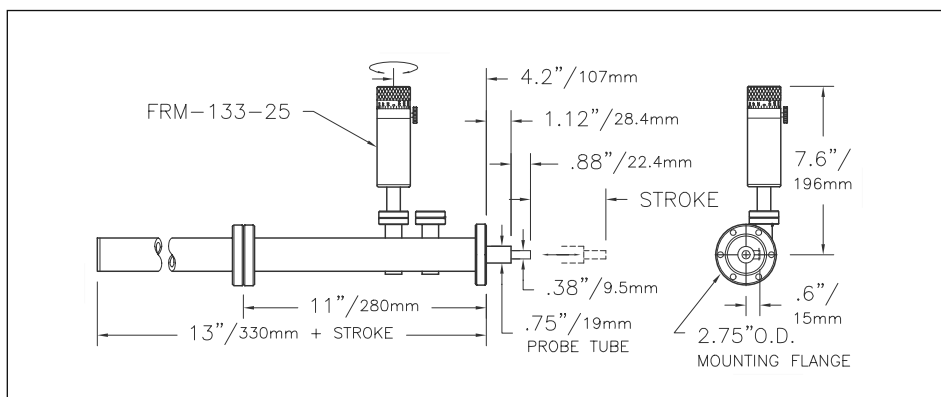
Synchronous Motorization with

High Precision Worm Drive

- Anti-backlash worm gear drive
- Self-locking
- Manual knob
- Capable of driving up to 16"/min minimum at 1,000 pps
- Motor controller sold separately
- May be field-mounted without breaking vacuum, or returned to the factory for installation

Price on request

NOTE: This motor drive is self-locking. This is necessary to protect the probe and associated equipment from changing location if the power is removed from the motor. However, because of the self-locking design, the drive can generate significant torque at the FRM, and thus do damage if overdriven.



RPL-75

Rack & Pinion Linear Feedthroughs — RPL Series

Flange O.D.	Probe Diameter	Stroke	Model No.	Base Price	Motorization Options*				
					/MS	/MY	/SCC**	/MS/W	/MY/W
2.75"	0.38"	10"	RPL-.75-10	on request			on request		
		20"	RPL-.75-20	on request			on request		
		30"	RPL-.75-30	on request			on request		
		40"	RPL-.75-40	on request			on request		
		50"	RPL-.75-50	on request			on request		
Additional stroke, per inch				on request					

Note: Custom strokes between those listed are available.

* Add motorization option price to base price.

** Price includes controller. Other options do not include controller.

SMC Stepping or YMC Synchronous

Motor Controller

On request

/RLS Rotary Limit Switch

Actuator Assembly

On request

/MC Mechanical Counter —

Motorized Operation

- Mounts to rear of stepping or synchronous drive motors
- Maximum motor speed: 2,500 pps
- 5 digit Veeder Root mechanical counter, metal case
 - 2:1 ratio gear drive
 - Adjustable counter orientation
 - Removes with motor for bakeout
 - Retrofit kit available

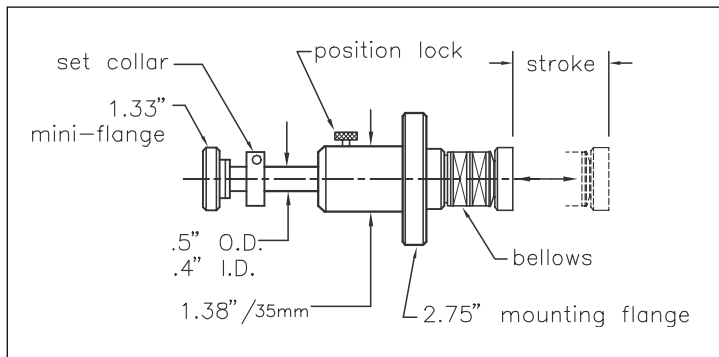
Price on request

/SCC Speed Control Motor Drive

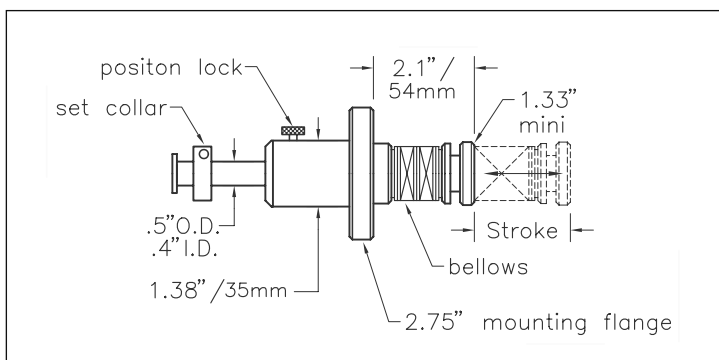
- Variable speed
- Switchable direction
- 5-95 rpm with 50 oz-in torque
- Options: Higher torque motors
Different speed ranges
- Includes controller

Price, per axis on request

Linear Feedthroughs — Hollow



FLMH-275-50



FLMH/R-275-50-2 (shown with optional /R reversed flange)

FLMH-275-50 Series

Hollow Linear Feedthroughs

- 1/2" O.D. support tube
Open through unit
1.33" O.D. flange
- 2.75" O.D. mounting flange
- Up to 16" linear travel
- Push-pull linear (12 lb maximum force)
- Adjustable position stop and lock

Hollow Linear Feedthroughs — FLMH-275 Series

Stroke	Model No.	Price
1"	FLMH-275-50-1	<i>on request</i>
4"	FLMH-275-50-4	<i>on request</i>
6"	FLMH-275-50-6	<i>on request</i>
Additional stroke, per inch		<i>on request</i>

Options

/R Reversed Flange

- 1.33" O.D. flange mounted on vacuum side
- Liquid or gas feedthrough to mini-flange in vacuum

Price *on request*