



## Section 2. Linear Motion Feedthroughs

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# Section 2. Linear Motion Feedthroughs

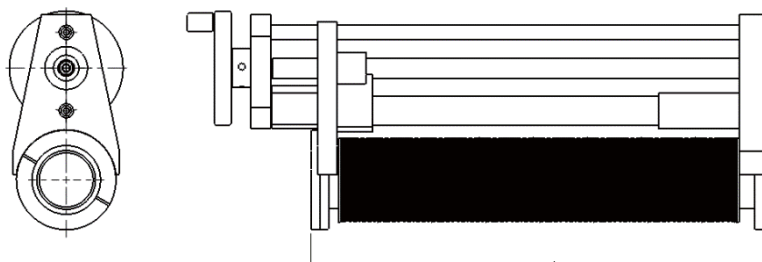
## Linear Translator

- Welded Bellows Seal with SS 316
- Manual/Motorized Actuator
- UHV Compatible Material
- Working Pressure:  $10^{-11}$  mbar to 1 bar
- Etched Scale in 1mm Increments
- Bakeable to 200°C
- Tapped Flanges on Both Sides
- Standard CF Mounting Flange\*
- Stroke\*:
  - NW16CF: 25 mm
  - NW38CF: 50/75/100/150/200 mm
  - NW63CF: 50/75mm



\*Fermi Instruments also offered linear translators with customized flanges and stroke.

Photo Gallery of LTM38 and LTM16



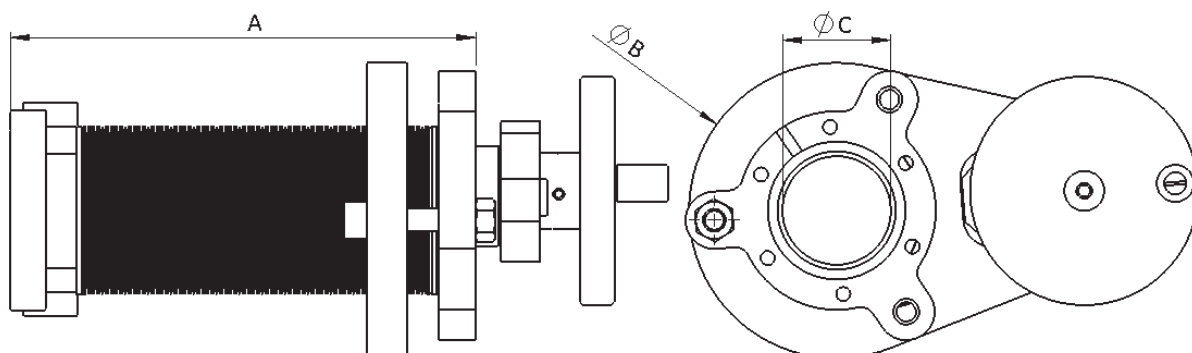
Dimensions of LTM Translators, other details or 3D models on request

Flange OD		Stroke (mm)	A Extended	A Compressed	Clear Bore	Weight (Kg)	Part Number
mm	inch		mm				
34	1.33	25	60	35	14	0.5	LTM16-25M
70	2.75	50	119	69	38	2.4	LTM38-50M
		75	162	87		2.5	LTM38-75M
		100	189	89		2.6	LTM38-100M
		150	255	105		2.9	LTM38-150M
		200	325	125		3.4	LTM38-200M
114	4.5	50	160	110	70	6.2	LTM63-50M
		75	185	110		9.0	LTM63-75M

This compact linear translator covers different flange size and travel length and could be either manual or motor driven. This offers samples or probes to be inserted with high accuracy and stability into a UHV environment. Standard version comes with manual actuator and please consult our sales or distributors for motorized option.

## Linear Translator with Port Aligner

- Welded Bellows Seal with SS 316
- Manual/Motorized Actuator
- UHV Compatible Material
- Working Pressure:  $10^{-11}$  mbar to 1 bar
- Etched Scale in 1mm Increments
- Bakeable to 200°C
- Tapped Flanges on Both Sides
- Standard NW40CF Mounting Flange\*
- Adjustments:
  - Linear Motion: up to 150 mm
  - Tile Motion: +/-3 degrees



Dimensions of LPA38, details or 3D models on request

Flange (OD)		Axial Adjustments (mm)	Tile Adjustments (°)	A Extended	A Compressed	B	C	Weight (Kg)	Part Number
mm	inch			mm					
70	2.75	75	±3	163	88	104	38	2.7	LPA38-50
70	2.75	100		197	97	104	38	5.0	LPA38-100
70	2.75	150		257	107	104	38	7.3	LPA38-150

The device is based on the standard LSM series with the additional facility to tilt the moving flange by +/-3° for final alignment, acting as an integrated port aligner. Typically used on beamlines to align diagnostics or for ion/sputter source alignment. Adjustment is actuated via four threaded support shafts. All flanges in the series are supplied with tapped bolt holes on the base flange as standard.

## Section 2. Linear Motion Feedthroughs

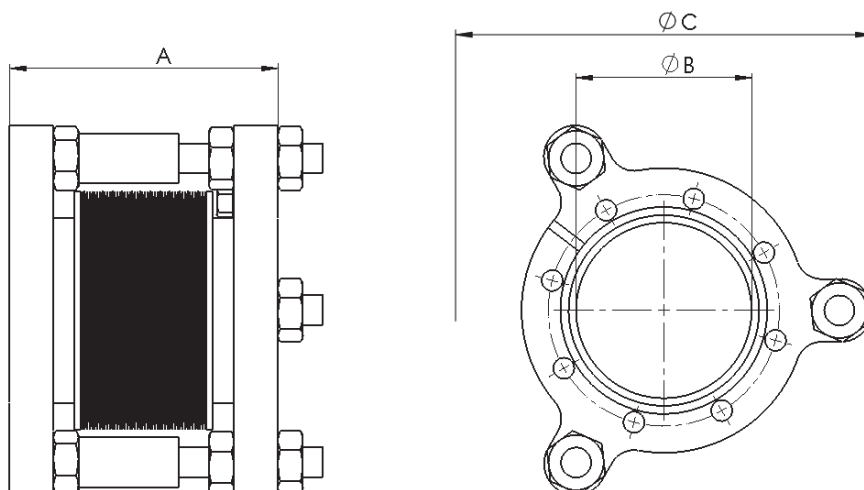
### Port Aligner



Photo Gallery of Port Aligners with different flanges

- Welded Bellows Seal with SS 316
- Any Orientation Mounting
- UHV Compatible Material
- Working Pressure:  $10^{-11}$  mbar to 1 bar
- +/- 2mm Axial Adjustment
- +/- 3° Angular Tilt
- Bakeable to 200°C
- Through Hole Flanges on Both Sides
- Standard CF Mounting Flange\*
- Life Time: 100,000 revolutions

\*Fermi Instruments also offer products with customized flanges and adjustments.



Dimensions of Port Aligners, details or 3D models on request

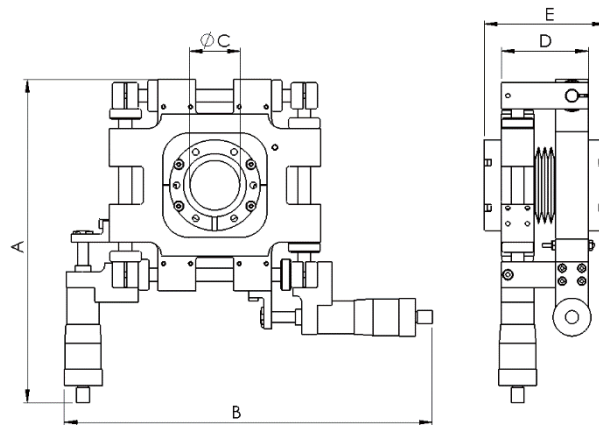
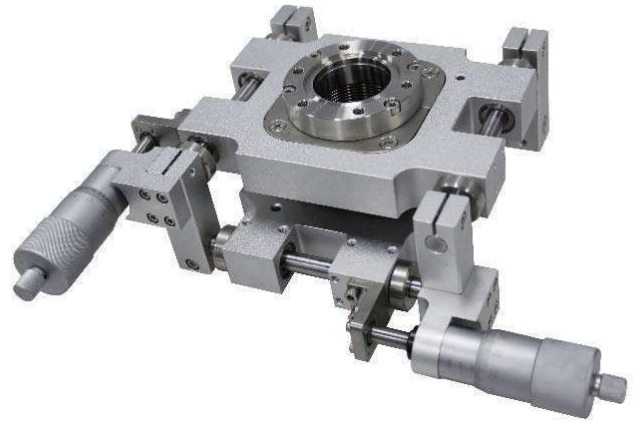
Flange (OD)		Axial Adjustments (mm)	Tilt Adjustments (°)	A	A	B	C	Weight (Kg)	Part Number
mm	inch			Extended	Compressed				
34	1.33	±2	±3	55	51	16	58	0.3	PA16
70	2.75			67	61	38	106	0.9	PA35
114	4.5			80	70	70	166	2.7	PA63

These Port Aligners enable the distance and angular relationship between two flanges to be adjusted. They are offered with three different but widely used CF standard flanges. Each type provides +/-2 mm axial length adjustment, with +/- 3° angular tilt.

# Section 2. Linear Motion Feedthroughs

## XY Stage

- Welded Bellows Seal with SS 316
- Manual/Motorized Actuator
- UHV Compatible Material
- Working Pressure:  $10^{-11}$  mbar to 1 bar
- Micrometer with 10um Resolution
- Bakeable to 150°C
- Tapped Flanges on Both Sides
- Clear Bore >38mm
- Adjustments:
  - XY Movement: up to +/- 12.5mm



Dimensions of LTM Translators, other details or 3D models on request

Flange (OD)		XY Movement	A	B	C	D	E	Weight (Kg)	Part Number
mm	inch	mm							
70	2.75	±7	239	272	38	67	93	3.9	XY275
		±10	239	272	38	67	93	3.9	XY275-W*

The XY stage is one easy option for users who requires precise motion, true UHV performance, and rugged construction which allows mounting in any orientation.

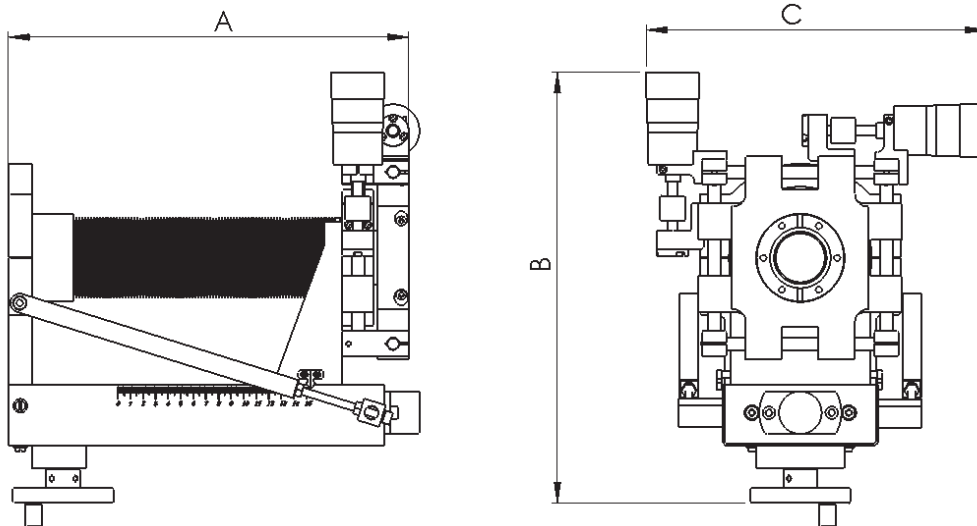
The XY Stage includes two parallel flanges. One remains fixed while the other provides the movement. A high quality, edge welded bellows allows the flanges to accommodate the required motion while ensuring an all-metal vacuum enclosure. The device works by adjusting the position of the traveling flange in relation to the fixed system mounting flange. Positioning of the traveling flange is controlled through two micrometer drive with 10um resolution.

\*XY275-W Shares the same frame but with more flexible bellow to achieve more movement

# Section 2. Linear Motion Feedthroughs

## Compact XYZ Stage

- Welded Bellows Seal with SS 316
- Manual/Motorized Actuator
- Working Pressure:  $10^{-11}$  mbar to 1 bar
- Micrometer with 10um Resolution
- Bakeable to 150°C
- Standard NW40/63CF Mounting Flange
- Clear Bore >38mm
- Adjustments:
  - XY Movement: up to +/- 10mm



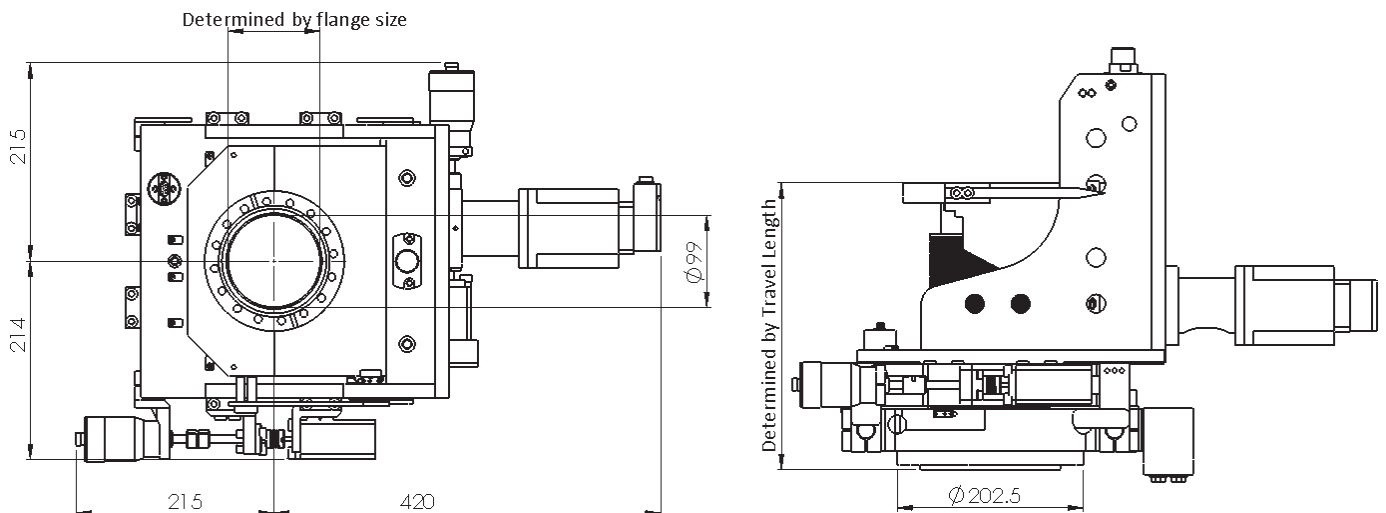
Dimensions of Compact XYZ Stage, other details or 3D models on request

Moving Flange (OD)		XY Movement	Z Movement	A Compressed	A Extended	B	C	Weight (Kg)	Part Number
mm	inch								
70	2.75	±10	50	166	216	350	270	9.0	SXYZ-2
			75	166	241			9.5	SXYZ-3
			100	166	266			10	SXYZ-4
			150	166	316			11	SXYZ-6

This compact XYZ stage provides precise motion and manipulation of samples inside ultrahigh vacuum environments. Mounting flanges are available in NW38 or NW63CF flanges. Edge welded stainless steel bellows is used to allow the DN40 flanges to travel within limited range.

## Full Size XYZ Stage

- Welded Bellows Seal with SS 316
- Manual/Motorized Actuator
- UHV Compatible Material
- Working Pressure:  $10^{-11}$  mbar to 1 bar
- Micrometer with 10um Resolution
- Bakeable to 150°C
- Clear Bore up to 100mm
- Heavy Duty Design
- Adjustments:
  - XY Movement: up to +/- 25mm
  - Z Movement: up to 600mm



Dimensions of Full XYZ Stage, other details or 3D models on request

Available Mounting Flange: NW 150CF/NW100CF/NW63CF

Available Travel Flange: NW100CF/NW63CF

Consult our sales or local distributor for detailed configuration.

The full size XYZ stage is a high specification translator using a single edge welded bellows for X, Y and Z movements.

The single bellows design allows the stage to be mounted in any orientation. It is designed to be configured through a series of modules offering a wide range of installation flanges and clear bores. Please consult our sales department or your local distributors for more information.