

METALLIC
FLEX

*Z-Manipulation
Linear Feedthroughs
Linear Translators*



METALLIC FLEX
guide you into vacuum

The offered Manipulation equipment is made for your application in the field of High Vacuum and Ultra High Vacuum.

It shifts the sample holder or any equipment attached, inside a vacuum chamber in one degree of freedom. Some with just shifting by hand others more definite by screws, gear screws or even more precise by motor driven screws.

There are a variety of designs which comprise

- closed design, we call it a “Feedthrough”, it requires you to attach your equipment to the front pin. Your chamber opening is closed after assembly

- open design, we call it a “Translator”, where you are able to put in your feedthrough equipment which reaches into the chamber and carries the needed equipment. For example your feedthrough equipment could be a cryostat with sample holder or a sample heater or a sensor.

For shift in one direction only we offer Linear Feedthroughs, Linear Translators and Magnetic Transfer Arms. The main direction of an assembly is called the Z-direction, so these are also called Z-Manipulators.

For precise movement Motors can drive the movement. Most chosen are stepper motors. We can offer such with 200steps per convolution as well as with many steps e.g. 40.000 per convolution. Be aware that a Motor needs a controller. For DN40 size we can offer a combined solution which comprises motor and controller in one unit.

Please look through the pages and choose your design

Flanges Description

Flange sizes

In publications for UHV research, flanges are called in a different way.

European determine a Nominal Diameter which refers to the Inner Diameter ID of the flange, while American refer to the Outer Diameter OD.

The advantage of European system is that the **Nominal Diameter DN** matches with other articles in a vacuum line.

So articles will match which have a same DN. For example a tubing with flanges DN100, a valve DN100, a bellows DN100 and a Manipulator DN100.

We see this as an advantage in specifying vacuum systems and determine our products this way. The flanges are the same, the sealings and knife edges are the same, just the name is different.

Our short cuts in tables:

CF fix flange

CFT tapped fix flange

Size	ODxWidth	OD in inch
DN16 CF	33.8x7.3	1.33"
DN25 CF	54x12	2.13"
DN40 CF	69.4x13	2.75"
DN50 CF	85.7x17.3	3.38"
DN63 CF	113.5x17.5	4.5"
DN100 CF	151.6x19.8	6"
DN160 CF	202.4x22.2	8"
DN200 CF	253.2x24.6	10"
DN250 CF	306x24.6	12"
DN300 CF	355.6x28.5	14"
DN350 CF	419.1x28.5	16.5"

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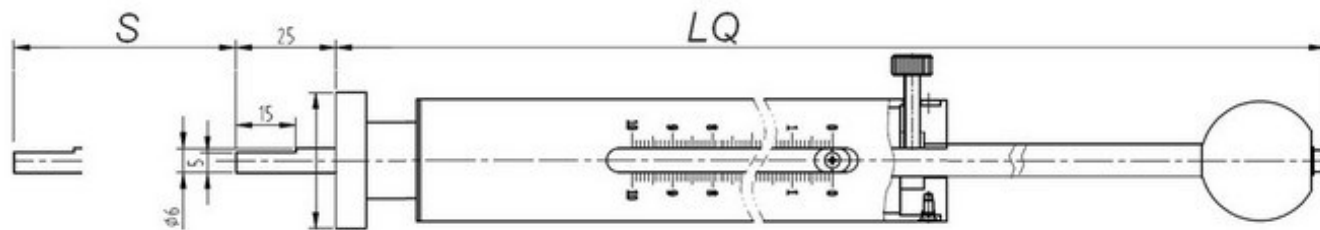
UHV-Z-Transferarm p.19



Note to following tables:

- *all dimensions are in mm*
- *technical data underly modifications*
- *u.r. means upon request, send us your inquiry to know more*

UHV-Z-Feedthrough Pollux



Z-Shift

UHV application

Pressure to $1E-11$ hPa

He-Leakrate $< 2E-11$ Pa m³ / s

Hand driven shift

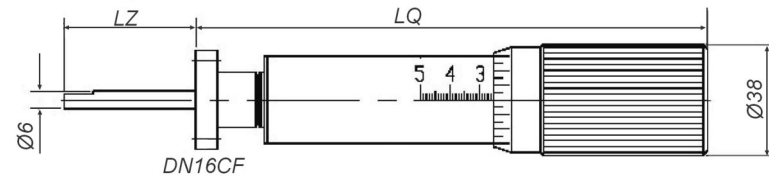
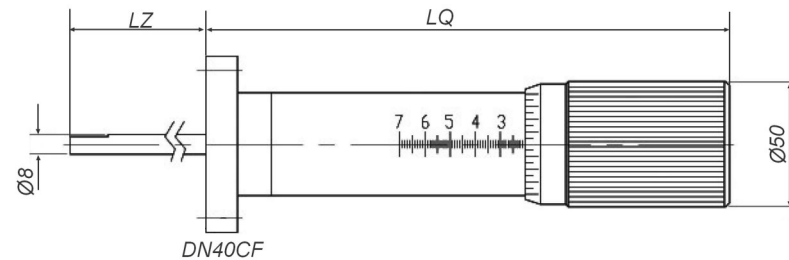
Graduation of scale 1mm

Degassing temp. $< 200^{\circ}C$

Any position

Size	Stroke	Length	Article
Base	S	LQ	
DN16CF	25	153 – 178	Pollux 16_25
DN16CF	50	197 - 247	Pollux 16_50
DN16CF	100	297 - 397	Pollux 16_100

UHV-Z-Feedthrough Corvus



Z-Shift

UHV application

Pressure to 1E-11 hPa

He-Leakrate < 2E-11Pa m3 /s

Hand driven screw

Precision 0.01mm

Degassing temp. < 200°C

Any position

Size	Stroke	Length	Length	Article
Base		LZ	LQ	
DN16CF	50	18—68	177—227	Corvus 16_50
DN40CF	70	35—105	220—290	Corvus 40_70

UHV-Z-Feedthrough Cetus

Z-Shift

UHV application

Pressure to 1E-11 hPa

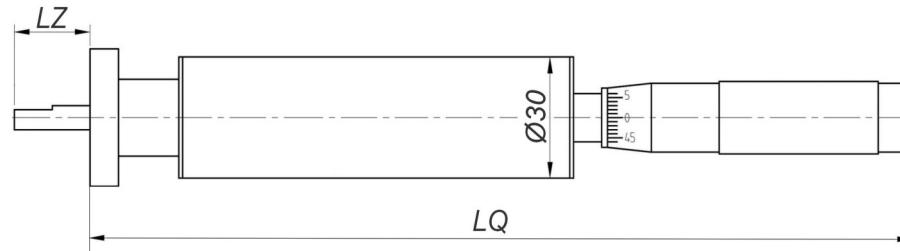
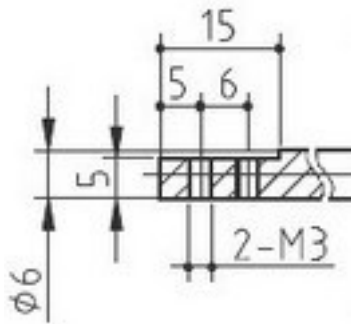
He-Leakrate < 2E-11Pa m3 /s

Hand driven screw

Precision < 0.01mm

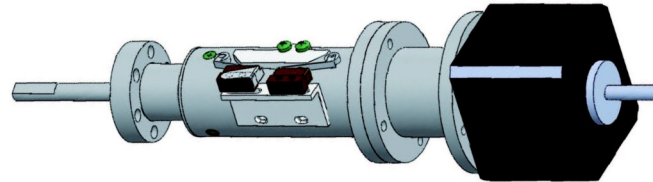
Degassing temp. < 200°C

Any position



Size	Stroke	Length	Length	Article
Base		LZ	LQ	
DN16CF	50	100 – 150	234 – 284	Cetus 16_50

UHV-Z-Feedthrough Pavo



Z-Shift

UHV application

Pressure to $1E-11$ hPa

He-Leakrate $< 2E-11$ Pa m³ /s

Motor driven

Precision < 0.01 mm

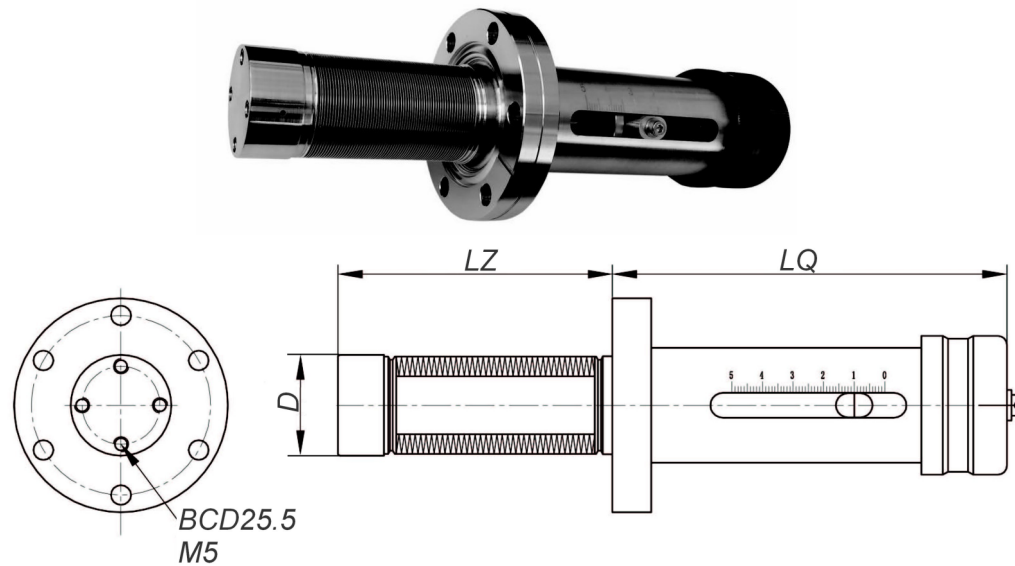
2 limit switches

Degassing temp. $< 200^{\circ}\text{C}$, without motor

Any position

Size Base	Stroke	Length	Length	Article
DN16CF	<i>u. r.</i>	<i>u. r.</i>	<i>u. r.</i>	Pavo 16
DN40CF	<i>u. r.</i>	<i>u. r.</i>	<i>u. r.</i>	Pavo 40

UHV-Z-Feedthrough Lynx



Z-Shift

UHV application

Pressure to $1E-11$ hPa

He-Leakrate $< 2E-11$ Pa m³ /s

Hand driven

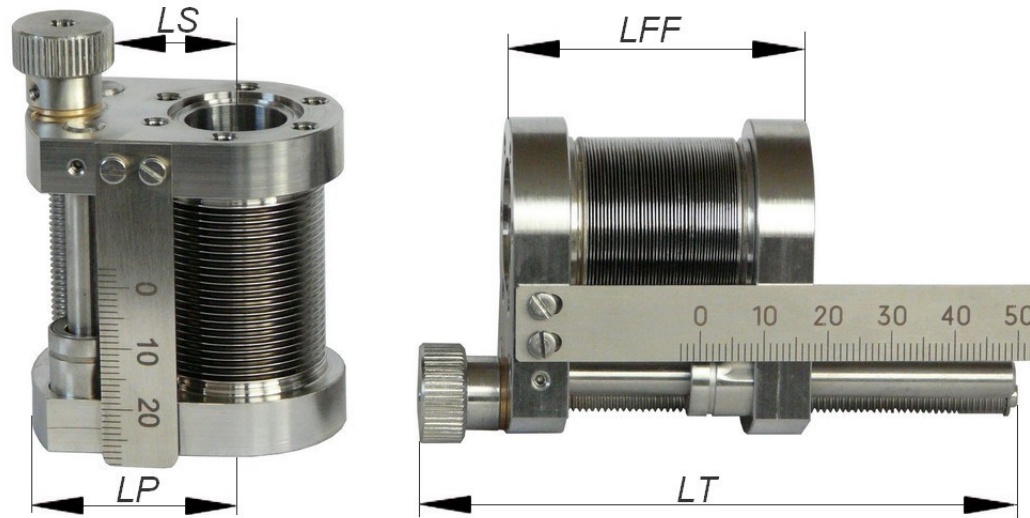
Precision 0.05mm

Degassing temp. $< 200^{\circ}C$

Any position

Size	Stroke	Length	Length	D	Article
Base		LZ	LQ		
DN16CF	50	50 to 100	125	15	Lynx 16_50
DN16CF	100	75 to 175	179	15	Lynx 16_100
DN16CF	150	90 to 240	229	15	Lynx 16_150
DN40CF	50	50 to 100	124	33	Lynx 40_50
DN40CF	100	75 to 175	174	33	Lynx 40_100
DN40CF	150	90 to 240	224	33	Lynx 40_150

UHV-Z-Translator Carina



Z-Shift

UHV application

Pressure to 1E-11 hPa

He-Leakrate < 2E-11Pa m3 /s

Hand driven screw

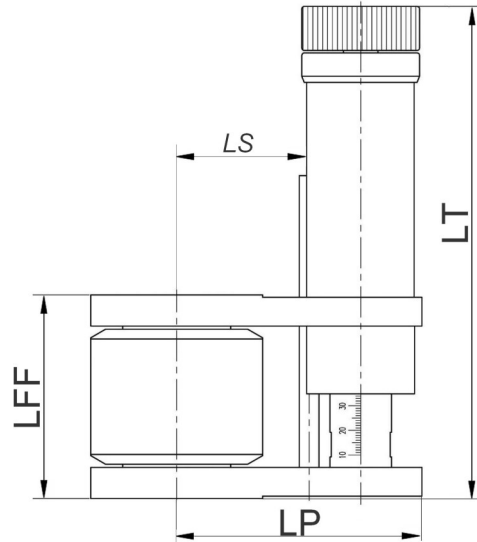
Graduation of scale 1mm

Degassing temp. < 200°C

Any position

Size Base	Size Moving	Stroke	Length LFF	Length LT	Length LS	Length LP	Article
DN16CFT	DN16CFT	25	29 to 54	66	19	33	Carina 16T_16T_25
DN16CFT	DN16CFT	50	34 to 84	101	19	33	Carina 16T_16T_50

UHV-Z-Translator Auriga



Z-Shift

UHV application

Pressure to 1E-11 hPa

He-Leakrate < 2E-11Pa m3 /s

Hand driven screw

self-locking screw drive

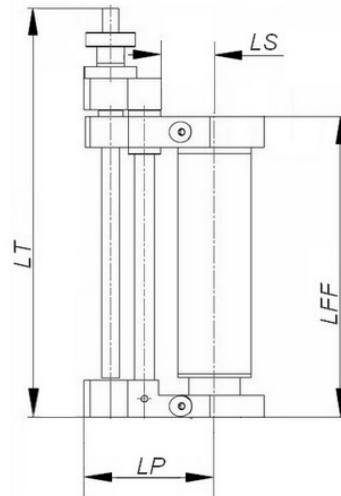
Graduation of scale 1mm

Degassing temp. < 200°C

Any position

Size Base	Size Moving	Stroke	Length LFF	Length LT	Length LS	Length LP	Article
DN40CFT	DN40CFT	50	58 – 108	176 - 226	50	100	Auriga 40T_40T_50
DN40CFT	DN40CFT	100	81 - 181	229 - 329	50	100	Auriga 40T_40T_100
DN40CFT	DN40CFT	150	96 - 246	285 - 445	50	100	Auriga 40T_40T_150
DN63CFT	DN63CFT	50	91 - 141	233 - 283	68	100	Auriga 63T_63T_50
DN63CFT	DN63CFT	100	112 - 212	283 - 383	68	100	Auriga 63T_63T_100

UHV-Z-Translator Virgo



Z-Shift

UHV application

Pressure to $1E-11$ hPa

He-Leakrate $< 2E-11$ Pa m³ / s

Hand driven screw

Self-locking screw drive

Graduation on rotary scale 0.1mm

Degassing temp. $< 230^{\circ}C$

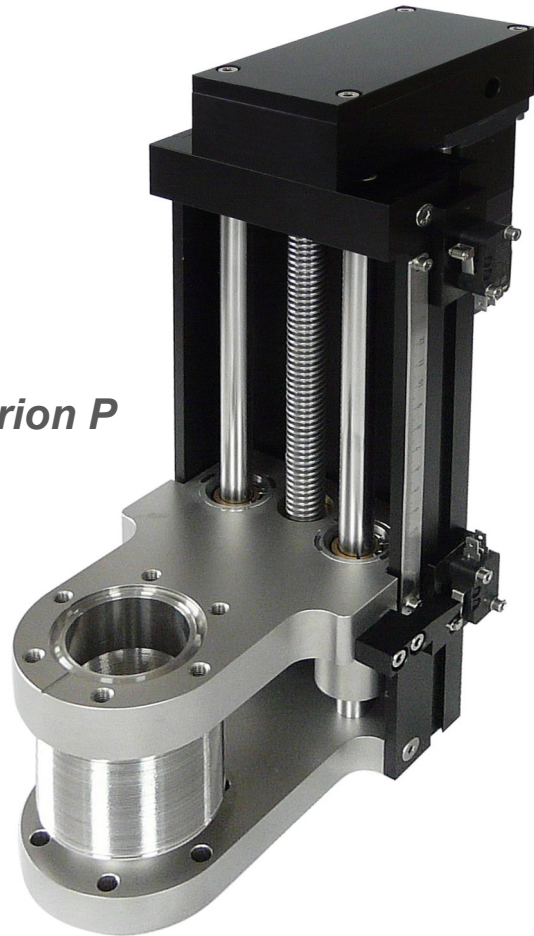
Any position

Size Base	Size Moving	Stroke e	Length LFF	Length LT	Length LS	Length LP	Article
DN40CF	DN40CFT	50	75 - 125	235	43	105	Virgo 40_40T_50
DN40CF	DN40CFT	100	90 - 190	300	43	105	Virgo 40_40T_100
DN40CF	DN40CFT	150	105 - 255	365	43	105	Virgo 40_40T_150
DN40CF	DN40CFT	200	120 - 320	430	43	105	Virgo 40_40T_200

optional: Outlet DN16CF, Motorised

UHV-Z-Translator Orion

Orion P



optional: limiter switches, motor, increased LS/LP

Orion



Z-Shift

UHV application

Pressure to 1E-11 hPa

He-Leakrate < 2E-11Pa m³ /s

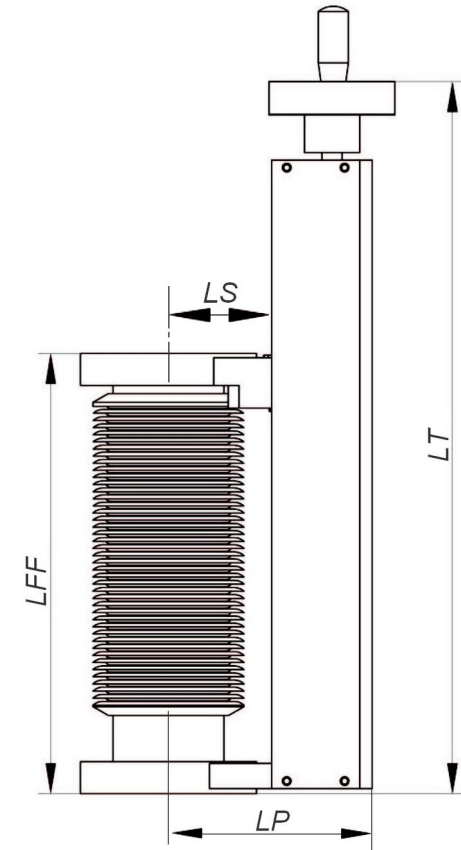
Hand driven screw

Graduation on rotary scale 0.1mm

Degassing temp. < 230°C

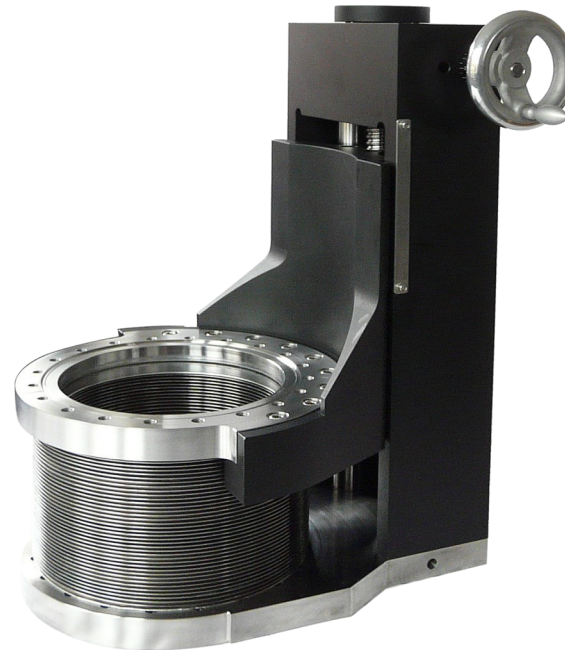
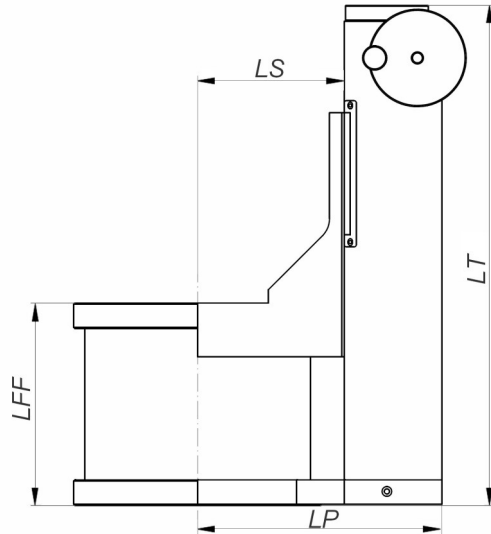
Size Base	Size Moving	Stroke	Length LFF	Length LT	Length LS	Length LP	Article
DN40CF	DN40CFT	50	128 - 178	200	63	115	OrionP 40_40_50
DN40CF	DN40CFT	100	90 - 190	255	63	115	OrionP 40_40_100
DN40CF	DN40CFT	150	105 - 255	320	63	125	OrionP 40_40_150
DN40CF	DN40CFT	200	120 - 320	385	63	155	OrionP 40_40_200
DN40CF	DN40CFT	250	135 - 385	450	63	185	OrionP 40_40_250
DN63CF	DN63CFT	50	85-135	248	u. r.	u. r.	OrionP 63_63_50
DN63CF	DN63CFT	100	95-195	298	u. r.	u. r.	OrionP 63_63_100
DN63CF	DN63CFT	150	110-260	348	u. r.	u. r.	OrionP 63_63_150
DN63CF	DN63CFT	200	125 - 325	398	69	131	OrionP 63_63_200
DN63CF	DN63CFT	250	140-390	463	u.r.	u.r.	OrionP 63_63_250
DN63CF	DN63CFT	300	u. r.	u. r.	u. r.	u. r.	OrionP 63_63_300
DN63CF	DN63CFT	400	u. r.	u. r.	u. r.	u. r.	OrionP 63_63_400
DN63CF	DN63CFT	500	u. r.	u. r.	u. r.	u. r.	OrionP 63_63_500

Options: - DN100CF/DN40CFT or DN160CF/DN63CFT with 4x or 5x DN16CF on Base flange - Motor - Feedthrough-top with 3 or 4x DN16CF



METALLIC FLEX
guide you into vacuum

UHV-Z-Translator Draco



Z-Shift

UHV application

Pressure to $1E-11$ hPa

He-Leakrate $< 2E-11$ Pa m³ /s

Hand driven gear screw

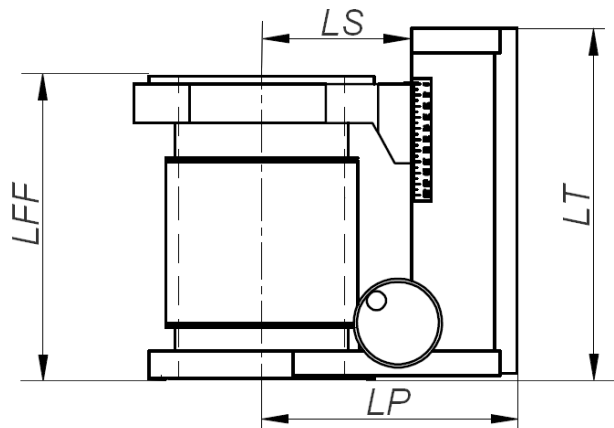
Graduation on rotary scale
0.01mm

Degassing temp. $< 230^{\circ}C$

Size Base	Size Moving	Stroke	Length LFF	Length LT	Length LS	Length LP	Article
DN160CFT	DN160CFT	100	166 – 266	410	120	200	Draco 160T_160T_100

Options: DN63, DN100, DN160 Stroke 50, 100, 150, 200, 250, 300, 350, 400, 500, Motorised

UHV-Z-Translator ARIES



Z-Shift

UHV application

Pressure to $1E-11$ hPa

He-Leakrate $< 2E-11$ Pa m³ /s

Hand driven gear screw

Graduation on rotary scale 0.01mm

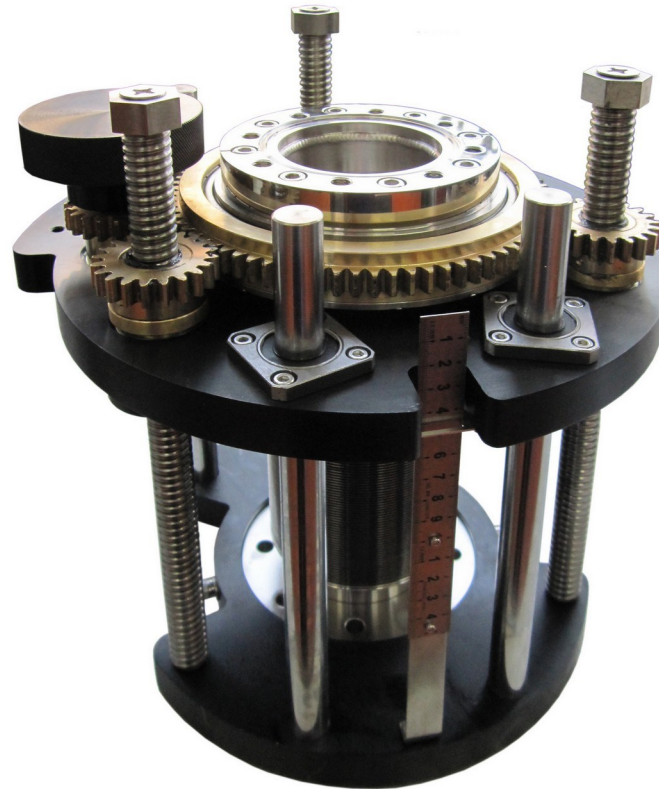
Degassing temp. $< 230^{\circ}C$

Any position

Size Base	Size Moving	Stroke	Length LFF	Length LT	Length LS	Length LP	Article
DN100CF	DN100CFT	50	u. r.	u. r.	u. r.	u. r.	ARIES 100_100T_50
DN100CF	DN100CFT	100	u. r.	u. r.	u. r.	u. r.	ARIES 100_100T_100
DN100CF	DN100CFT	150	u. r.	u. r.	u. r.	u. r.	ARIES 100_100T_150
DN160CF	DN160CFT	200	u. r.	u. r.	u. r.	u. r.	ARIES 160_160T_200
DN160CF	DN160CFT	50	u. r.	u. r.	u. r.	u. r.	ARIES 160_160T_50
DN160CF	DN160CFT	100	u. r.	u. r.	u. r.	u. r.	ARIES 160_160T_100
DN160CF	DN160CFT	150	u. r.	u. r.	u. r.	u. r.	ARIES 160_160T_150

Options: any stroke from 50 to 600mm in steps of 50 - Motorised

UHV-Z-Translator Hercules



*for DN63, DN100 Options: Motor,
Customised Design*

Z-Shift

UHV application

Pressure to $1\text{E-}11$ hPa

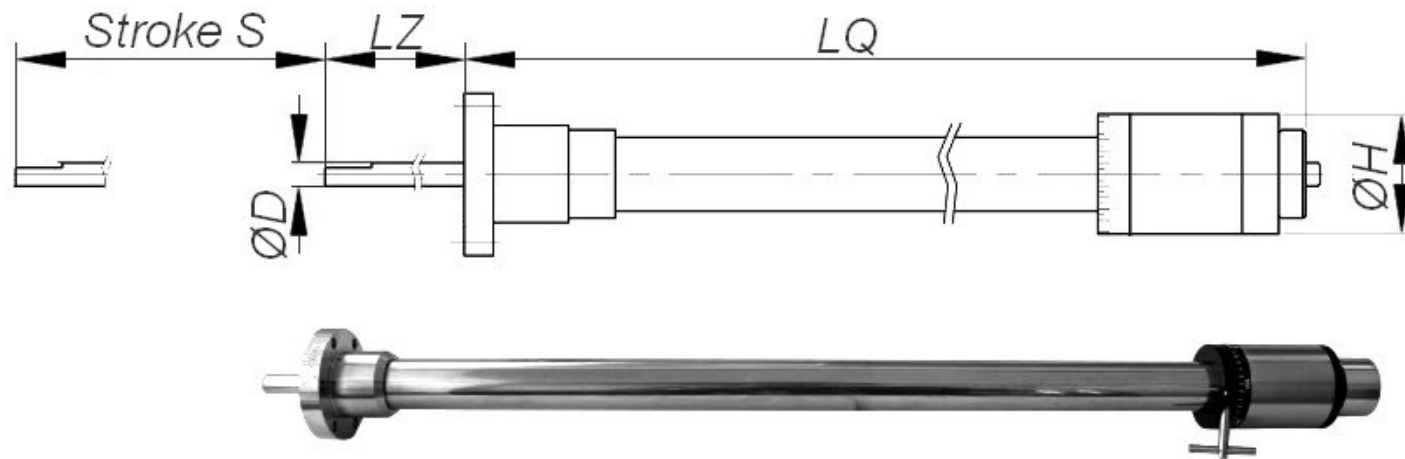
He-Leakrate $< 2\text{E-}11\text{Pa m}^3/\text{s}$

Hand driven gear screw

Degassing temp. $< 200^\circ\text{C}$

Any position

UHV-Z-Transferarm Trans Shift—Rotate



Size	Stroke	Length	Length	D	H	Article
Base	S	LZ	LQ			
DN16CF	customised	20	120 + S	6	35	Trans SR 16_.S.
DN40CF	customised	31	184 + S	12	54	Trans SR 40_.S.

Options: axial limiter - shift only guide - angular joint