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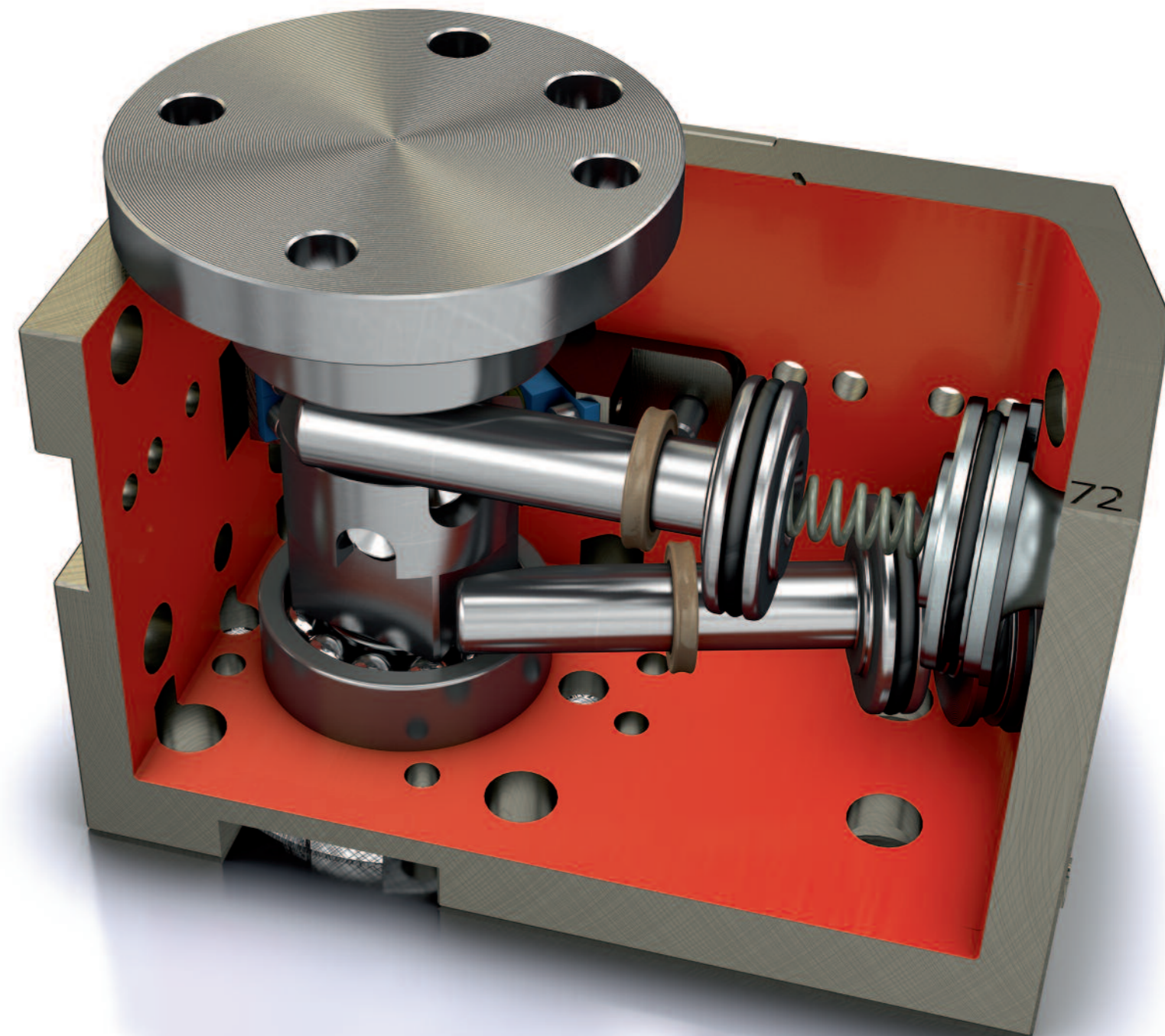
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Movement in the Fixture

Moving – An Automation Module of the Tünkers Group



Moving

Swivelling, moving, lifting, rotating – these are typical functions of the day-to-day business of fixture and plant construction, e. g. for

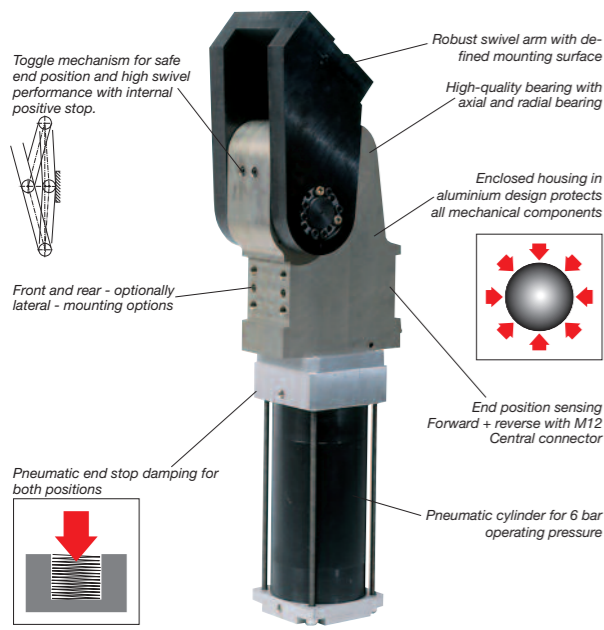
- Swivelling of welding tongs
- Lifting an entire assembly group to working level
- Moving a clamp to withdraw components

Simple cylinder or positioning axes do usually not meet the requirements of reproducibility and guidance accuracy. Manufacturers inevitably take recourse to complex special

Swivel Units

TÜNKERS swivel units are industry-wide proven driving elements to move loads up to 100 kg and up to 180° rotation. With pneumatic or electric cylinders, integrated toggle mechanism, rigid stops and position sensing cartridges, the TÜNKERS swivel units are ready-to-use complete systems.

Design Principle



designs comprising drive, linear guide, shock absorber and switch, these are again and again specially designed for each particular application. Our claim is to provide you with ready-to-use solutions

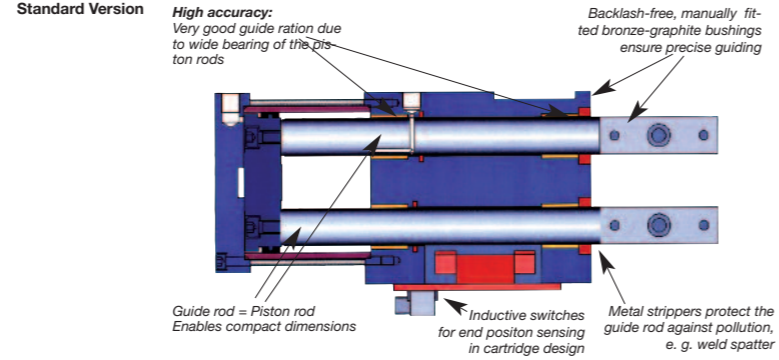
- robust, compact, complete and additionally proven in automobile series production.

Focused on robust design for large-scale serial production, all products described in the following provide

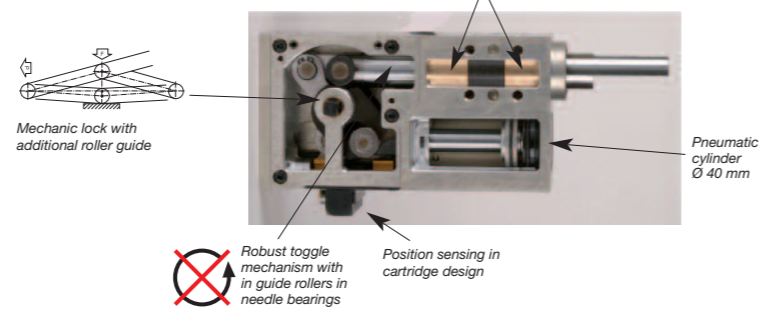
Linear cylinder

Mounted in a compact housing, TÜNKERS linear cylinders combine the pneumatic drive, a precise twin-bearing guide rod and the electric position sensing. The V series types additionally offer a mechanically locked end position.

Design Principle

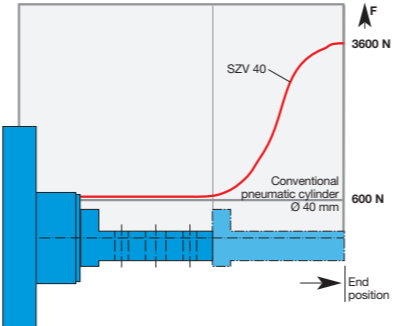


Version with mechanic end position sensing

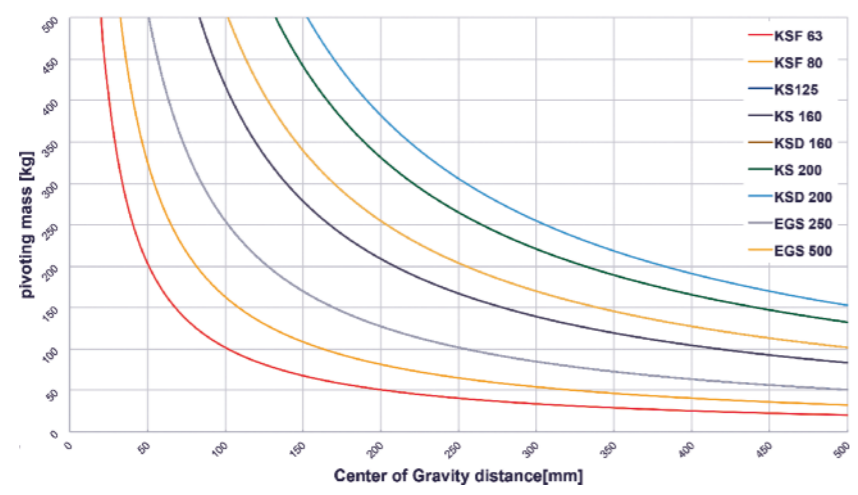


Force-displacement characteristic by toggle mechanism

Higher pull and push forces in critical end position e. g. for press-fitting operations or to overcome break-away forces

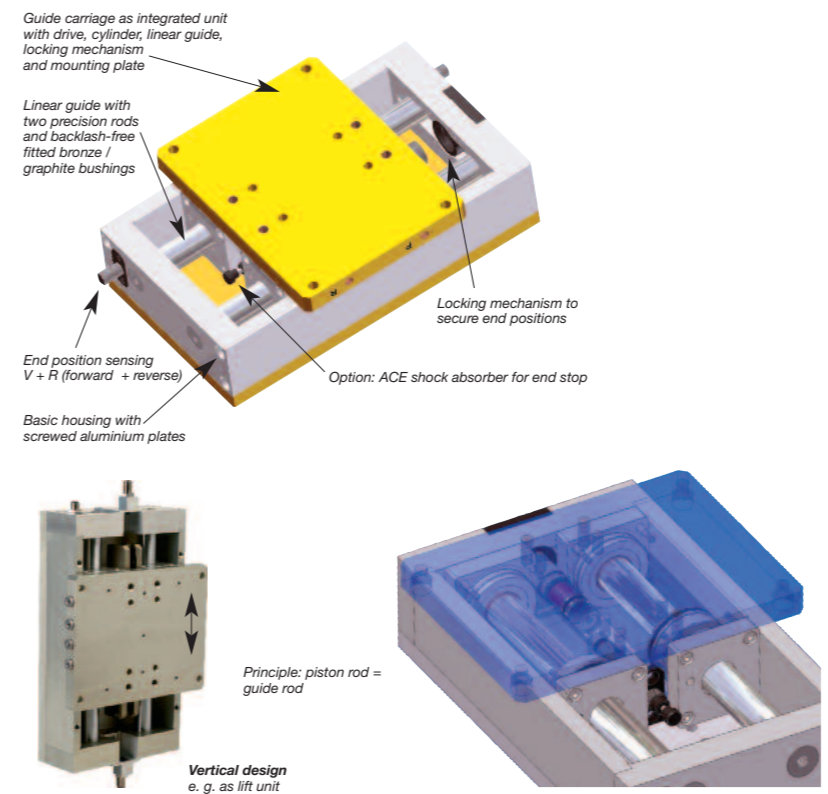


PERMISSIBLE PIVOTING WEIGHT DEPENDING ON CENTER OF GRAVITY DISTANCE



- enclosed housings for safe protection of the mechanical units, even in harsh production environments, e.g. spot welding,
- bearings and guides with needle or graphite bushing or designed for permanent load and at least three million stress cycles,
- drives with pneumatic cylinders or electric drives integrated in the housing,
- defined end position controls with positive stops, mechanic locking mechanism and position sensing.

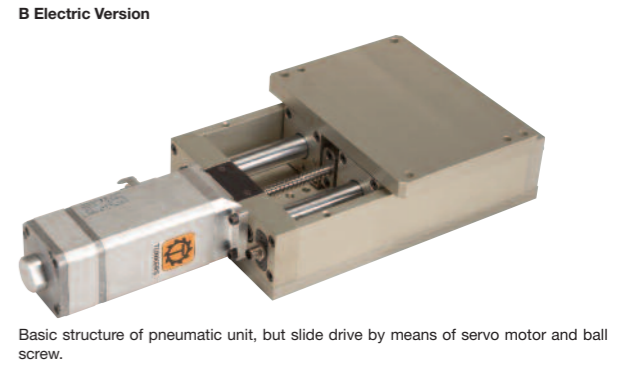
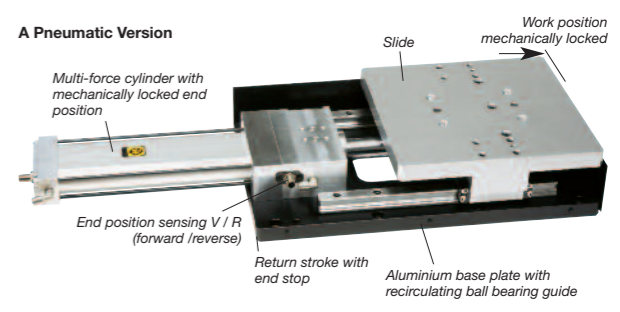
Slide units



The moving technology products form part of our nine automation technology components aimed at transferring fixture construction characterized by special designs into a modular design system.

In line with our company philosophy “A new product idea every day, a new product every week” we strive for continuously expanding this product range, we would be pleased to design special solutions for your particular application with you.

Design Principle Standard Slide



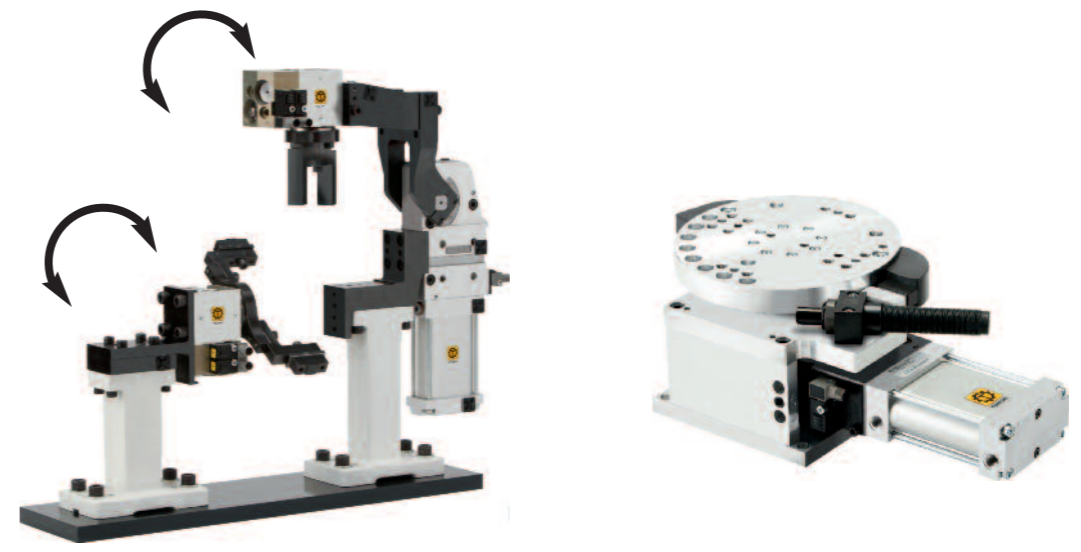
Rotary Units

A rotary unit is still the simplest technical solution to change tools or fixtures. It is not without good reason that rotary index drives machines have asserted themselves, e. g. in machine tools or revolver changing systems.

These rotary indexing units are suitable for torques between 4 and 40 Nm. Alternatively the systems are available with 2, 3 and 4 divisions, the end positions are mechanically locked in each case.

Application examples:

Rotary index unit to swivel 4 different positioning pins



Moving

Moving – An Automation Module of the Tünkers Group



Swivel Units

KS 63

- Smallest swivel unit
- Oblong-shaped flat cylinder
- Continuous adjustment of opening angle, range 5 – 135°



	KS 63
Lead torque (Nm)	23
Cylinder Ø (mm)	63
Dimensions (dxhxt) (mm)	335x106 x78
Weight (kg)	6,8

KS...

- Constant torque curve
- Pneumatic cylinder Ø 80-200 mm



	KS 80.5	KS 100.5	KS 125.5	KS 160.5	KS 200.5
Lead torque (Nm)	90	140	240	410	650
Cylinder Ø (mm)	80	100	125	160	200
Dimensions (dxhxt) (mm)	145x210 x604	145x210 x602	176x100 x730	176x100 x746	176x100 x751
Weight (kg)	30	35	65	75	85

KSV...

- Swivel unit with variable opening angle
- Proven adjustment mechanism in accordance with vario clamp series principle



	KSV 80.5	KSV 100.5	KSV 125.5	KSV 160.5	KSV 200.5
Lead torque (Nm)	90	140	250	410	650
Cylinder Ø (mm)	80	100	125	160	200
Dimensions (dxhxt) (mm)	679,5x80 x209,5	683,5x110 x209,5	804,5x140 x269	820,5x170,5 x269	825,5x220 x269
Weight (kg)	31	42	64	90	115

KSD...

- Slim design with oblong-shaped flat cylinder
- Locked end position
- Maximum dwell angle 180°



	KSD 63	KSD 80
Lead torque (Nm)	50	90
Cylinder Ø (mm)	63	80
Dimensions (dxhxt) (mm)	680x54 x220,5	730x62 x230,5
Weight (kg)	ca. 20	ca. 22

KSF...

- Flat design with oblong-shaped flat cylinder
- Locked end position
- Maximum dwell angle 135°



	KSF 63	KSF 80
Lead torque (Nm)	50	100
Cylinder Ø (mm)	63	80
Dimensions (dxhxt) (mm)	530x52 x155	500x62 x155
Weight (kg)	17	19

EGS...

- Electric swivel unit
- Power transmission by means of backlash-free globoidal drive
- Drive with frequency converter, brake and absolute encoder



	EGS 125	EGS 250	EGS 500
Lead torque (Nm)	125	250	500
Cylinder Ø (mm)	125	250	500
Dimensions (dxhxt) (mm)	598x187 x208	684x187 x215	743x216 x265
Weight (kg)	32	65	110

Linear cylinder

SZKD...

- Directly driven linear cylinder with tandem piston rod
- Compact and robust basic construction for accurate lifting and pushing operations



	SZKD 40	SZKD 63.5	SZKD 80
Tractive force (kN)	0,4	1,4	1,3
Thrust force (kN)	0,6	1,4	1,3
Cylinder Ø (mm)	40	63	80
Dimensions (dxhxt) (mm)	147x68,5 x43	283x120 x45	240x224 x80
Weight (kg)	1,3	4,95	34

SZVD...

- Dual lifting rods
- Optionally with manual feed
- Aluminium housing



	SZVD 32	SZVD 50
Tractive force (kN)	0,60	2,0
Thrust force (kN)	0,60	2,0
Cylinder Ø (mm)	32	50
Dimensions (dxhxt) (mm)	210x100 x50	328x160 x64
Weight (kg)	2	7

SZV...

- Linear unit with toggle-joint transmission
- Locked end position
- Option: manual feed



	SZV 40	SZV 60
Tractive force (kN)	0,36	0,80
Thrust force (kN)	0,45	0,88
Cylinder Ø (mm)	40	60
Dimensions (dxhxt) (mm)	313x115 x45	425x175 x80
Weight (kg)	ca. 3,5	9,2

FGPU 60...

- Linear cylinder in Euro-Gripper profile
- Extension of gripper profile
- For more varieties gripper



	FGPU 60
Lead torque (Nm)	6
Stroke (mm)	50
Dimensions (dxhxt) (mm)	300x150 x100
Weight (kg)	9,9

Lift Units

MZVD...

- Drive via multi-force cylinder arranged in housing with end position sensing
- Double lift columns
- Closed housing in aluminium design



	MZVD 40-40	MZVD 40-80	MZVD 40-120	MZVD 63-120
Adjusting force (kN)	0,7	0,7	0,7	1,75
Clamping force (kN)	4	4	4	10
Cylinder Ø (mm)	40	40	40	63
Dimensions (dxhxt) (mm)	253x200 x100	293x200 x100	333x200 x100	400x250 x125
Weight (kg)	17,5	19	20,5	35

HT 80...

- Lift table with 100 mm traverse path
- Option: table plate with drilling template according to customer specifications
- Mechanically locked end position via beyond dead-centre position of the toggle rocker

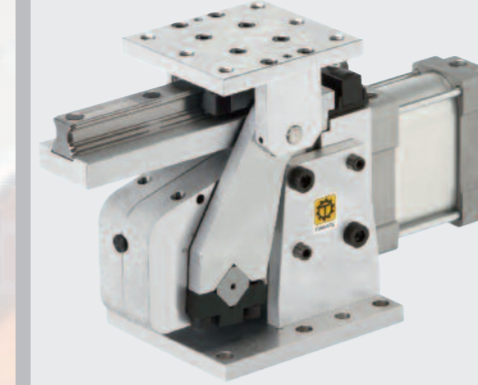


	HT 80
Lifting force (kN)	0,9
Cylinder Ø (mm)	80
Dimensions (dxhxt) (mm)	300x340 x172
Weight (kg)	30

Slide Units

LE 15

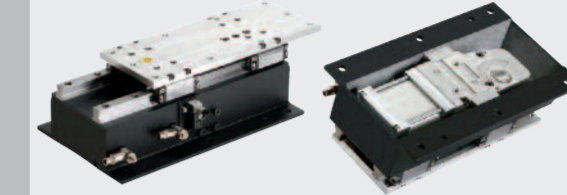
- Slide unit with pneumatic drive
- Mechanically locked end position



	LE 15
Lead force (kN)	0,15
Cylinder Ø (mm)	15
Dimensions (dxhxt) (mm)	337x202,5 x125
Weight (kg)	7,6

LE 30

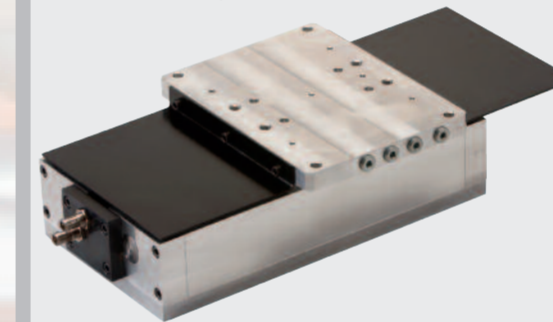
- Slide unit with pneumatic drive
- Mechanically locked end position



	LE 30
Lead force (kN)	0,3
Cylinder Ø (mm)	30
Dimensions (dxhxt) (mm)	475x244 x130,5
Weight (kg)	24

LE 60

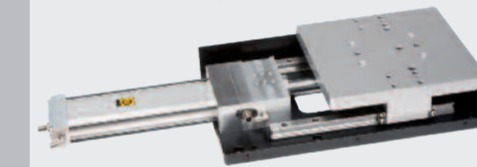
- Slide unit with pneumatic drive
- Mechanically locked end position



	LE 60
Lead force (kN)	0,3
Cylinder Ø (mm)	60
Dimensions (dxhxt) (mm)	542x226 x100
Weight (kg)	13,5

LE...

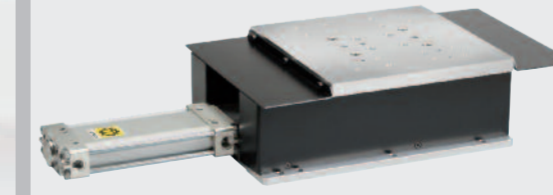
- Slide unit with pneumatic drive
- Mechanically locked end position



	LE 100	LE 100.1	LE 200
Lead force (kN)	1,0	1,0	2,0
Cylinder Ø (mm)	63	63	80
Dimensions (dxhxt) (mm)	1375x305 x105	514x305 x105	1570x405 x130
Weight (kg)	30	30	30

LEV 100

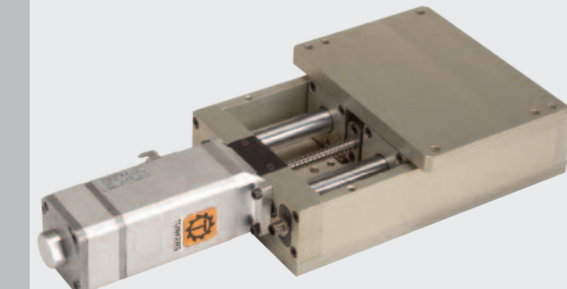
- Slide unit with pneumatic drive
- Backlash-free locked in both end positions
- Option: Adjustable vario lift



	LEV 100
Lead torque (Nm)	100
Cylinder Ø (mm)	63
Dimensions (dxhxt) (mm)	L = 705 - IIT 100 B = 305 T = 140

Elektrolineareinheit

- Slide unit with pneumatic drive
- Mechanically locked end position



	ELE 100	ELE 200
Lead force (kN)	1,0	2,0
Cylinder Ø (mm)	100	200
Dimensions (dxhxt) (mm)	515x305 x135	1115x405 x135
Weight (kg)	60	100

Rotary Units

TD...

- Rotary table with clamp drive
- Simple actuation
- End positions locked



	TD 215	TD 360
Lead force (kN)	0,3	0,2
Cylinder Ø (mm)	63	80
Dimensions (dxhxt) (mm)	351,5x185 x155	750x400 x155
Weight (kg)	ca. 14	ca. 35

RT4-C

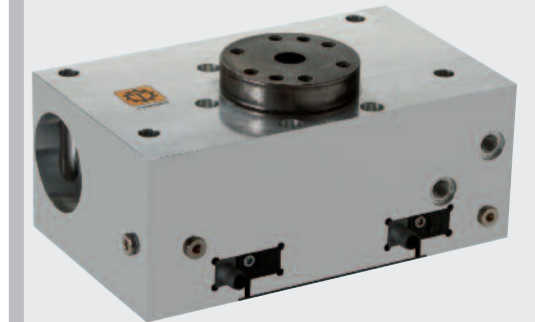
- Rotary Index Unit
- Mini rotary table with pneumatic piston drive
- Application as compact rotary / drive unit



	RT4-C
Torque (kN)	4
Cylinder Ø (mm)	25
Dimensions (dxhxt) (mm)	110x80 x60
Weight (kg)	1,7

RT40

- Rotary Index Table
- Rotary table with pneumatic piston drive
- Application as compact rotary / changing unit



	RT40
Torque (kN)	40
Cylinder Ø (mm)	60
Dimensions (dxhxt) (mm)	270x170 x130
Weight (kg)	14