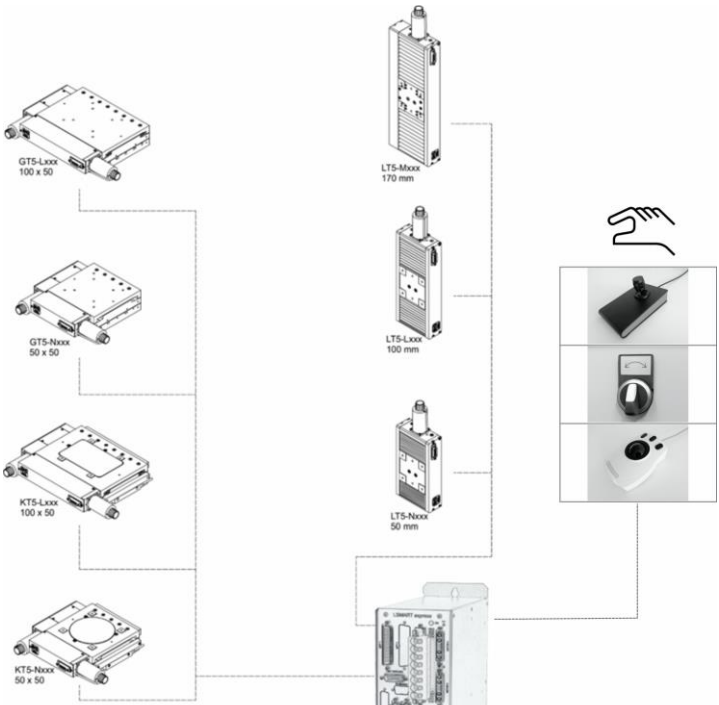


Mechanical components



Linear stages

LT Series

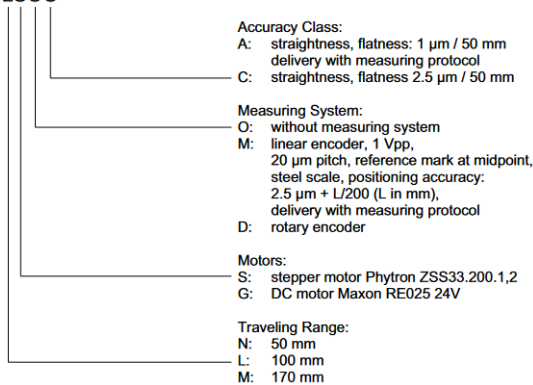


The linear stages of the LT series are distinguished by their compact design and high accuracy. Bellows protect guides, ball screws and measuring systems against external influences.

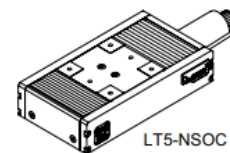
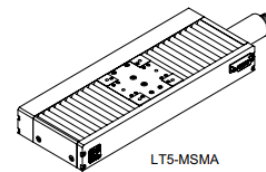
- ✓ Stress-relieved aluminium alloy
- ✓ Cross roller guides or linear guideways, backlash-free preloaded
- ✓ Ballscrew, backlash-free preloaded

Order Code

LT5-LSOC



Sample Configurations:



Technische Daten für LT 5 / 6 / 8

Travel / Hub	LT5	50 / 100 / 170 mm
Travel / Hub	LT6 + 8	200 / 300 mm
Guiding for N,L version		Backlash-free preloaded cross roller guides with anti-creeping cages
Guiding for M version		Bachlash-free proloaded linear guideways
Drive optional for	LT 5	Stepper motor / DC motor with backlash-free preloaded ballscrew, pitch 1 mm
Drive optional for	LT 6	Stepper motor / stepper motor with magnetic brake / DC motor with backlash-free preloaded ballscrew, pitch 2 mm
Drive optional for	LT 8	Stepper motor / stepper motor with magnetic brake with backlash-free preloaded ballscrew, pitch 5 mm
Weight of N/L/M Version	LT5	1,8 / 2 / 2,7 Kg
Weight of N/L Version	LT6	7 / 9,5 Kg
Weight of N/L Version	LT8	14 / 18 kg
Material		Stress-relieved aluminum alloy, black anodized

Optionen

- ✓ Without measuring system
- ✓ Linear measuring system
- ✓ Rotary encoder
- ✓ Customized motors
- ✓ Measuring system TTL

Precision Linear Stages

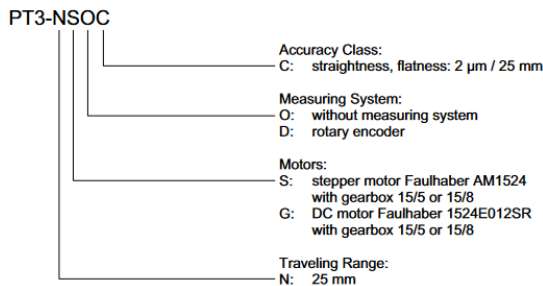
PT Series



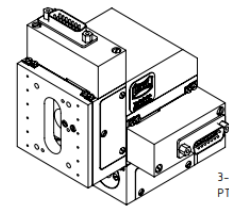
The linear stages of the PT series are distinguished by their compact design and high accuracy. Because of their structure without protruding roller cages they are more accurate and have a higher load capacity than the LT series. They are particularly suitable for use as a vertical axis.

The linear stages of the PT series are available in travel range of 25 to 300 mm.

Order Code



Sample Configurations



3-Achs-Manipulator PT3-D3L
3-Axis-Manipulator PT3-D3L

Technical Data PT 3 / 4 / 5 / 6 / 7 / 8

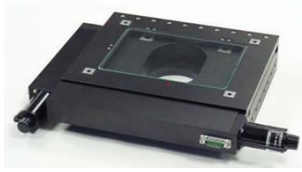
Travel N for	PT3	25 mm
Travel N/L/K for	PT4	25 / 50 / 25 mm
Travel N for	PT5	50 mm
Travel N for	PT6	100 mm
Travel N for	PT7	150 mm
Travel N/L for	PT8	200 / 300 mm
Drive optional for	PT 3	Stepper motor / DC motor with gearbox 15/5 oder 15/8 with backlash-free preloaded ballscrew, pitch 0,5 mm
Drive optional for	PT4+5+6	Stepper motor / DC motor with backlash-free preloaded ballscrew, pitch 1 mm
Drive optional for	PT 7	Stepper motor / DC motor with backlash-free preloaded ballscrew, pitch 2 mm
Drive optional for	PT 8	Stepper motor / stepper motor with magnetic brake with backlash-free preloaded ballscrew, pitch 5 mm
Weight for N Version	LT3 LT4 LT5 LT6 LT7	0,3 kg 1,2 kg 2,4 kg 3,0 kg 9,5 kg
Weight for N/L Version	PT8	13,2 / 14,5 kg
Material		Stress-relieved aluminum alloy, black anodized
Guiding		Backlash-free preloaded cross roller guides

Optionen

- ✓ Without measuring system
- ✓ Linear measuring system
- ✓ Rotary encoder
- ✓ Customized motors
- ✓ Measuring system TTL

XY Stages

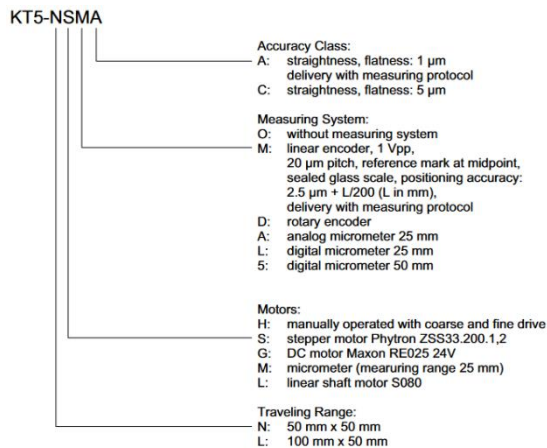
KT Series



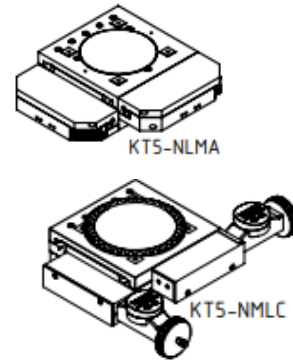
The XY stages of the KT series are especially suitable for use in measuring microscopy. Due to the open frame design, the measuring objects can also be captured in transmitted light. Another application of open frame stages is the thickness measurement of flat components, such as wafers, with two oppositely arranged sensors.

The XY stages of the KT series are available in travel ranges of 50 x 50 to 420 x 300 mm.

Order Code



Sample Configurations



Technical Data KT 5 / 6 / 7 / 8 / 9

Travel N/L for	KT5	50 x 50 / 100 x 50 mm
Travel N/L/M for	KT6	100 x 100 / 150 x 100 / 200 x 100 mm
Travel N/L for	PT7	150 x 150 / 250 x 150 mm
Travel N/L for	PT8	250 x 200 / 350 x 200 mm
Travel N/L/M for	PT9	350 x 300 / 420 x 300 / 460 x 300 mm
Drive optional for	KT5+6	Stepper motor / DC motor with backlash-free preloaded ballscrew, pitch 1 mm , Linear shaft motor, peak force 14 N, magn. Pitch 30 mm
Drive optional for	PT 7+8	Stepper motor / DC motor with backlash-free preloaded ballscrew, pitch 2 mm / ironless linear motor
Weight for N/L Version	KT5	4,0 / 5,0 Kg
Weight for N/L/M Version	KT6	7,5 / 9,0 / 11,0 Kg
Weight for N/L Version	KT7 + KT8	22 / 27 // 31 / 39 Kg
Weight for N/L/M Version	KT9	51 / 59 / 64 Kg
Material		Stress-relieved aluminum alloy, black anodized
Guiding		Backlash-free preloaded cross roller guides

Optionen

- ✓ Without measuring system
- ✓ Linear measuring system
- ✓ Rotary encoder
- ✓ Customized motors
- ✓ Measuring system TTL

XY Stages

GT Series



The XY stages of the GT series were specially developed for applications in surface metrology. Due to the compact design and the use of selected cross roller bearings as well as special grinded ballscrews highest requirements of accuracy and noise are achieved.

The XY stages of the GT series are available in travel ranges of 50 x 50 to 350 x 350 mm.

Order Code

GT5-NSOC

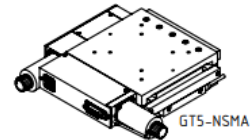
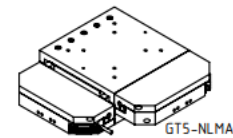
Accuracy Class:
 A: straightness, flatness: 1 µm
 delivery with measuring protocol
 C: straightness, flatness: 5 µm

Measuring System:
 O: without measuring system
 M: linear encoder, 1 Vpp,
 20 µm pitch, reference mark at midpoint,
 sealed glass scale, positioning accuracy:
 $2.5 \mu\text{m} + L/200$ (L in mm),
 delivery with measuring protocol
 D: rotary encoder

Motors:
 S: stepper motor Phytron ZSS33.200.1.2
 G: DC motor Maxon RE025 24V
 L: linear shaft motor

Traveling Range:
 N: 50 mm x 50 mm
 L: 100 mm x 50 mm

Sample Configurations



Technical Data GT 5 / 6 / 8 / 9

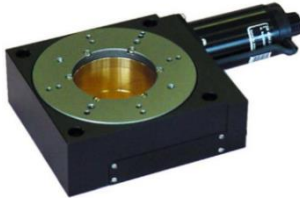
Travel N/L for	GT5	50 x 50 / 100 x 50 mm
Travel N for	GT6	100 x 100 mm
Travel N for	GT8	200 x 200 mm
Travel N/L for	GT9	300 x 300 / 350 x 350 mm
Drive optional for	GT5	Stepper motor / DC motor with backlash-free preloaded ballscrew, pitch 1 mm , Linear shaft motor
Drive optional for	GT6	Stepper motor / DC motor with backlash-free preloaded ballscrew, pitch 1 mm / ironless linear motor
Drive optional for	GT8	Stepper motor / DC motor with backlash-free preloaded ballscrew, pitch 2 mm / ironless linear motor
Drive optional for	GT9	Stepper motor / DC motor with backlash-free preloaded ballscrew, pitch 2 mm / ironless linear motor
Weight for N/L Version	GT5	4,0 / 5,0 Kg
Weight for N Version	GT6	9,0 Kg
Weight for N Version	GT8	30 Kg
Weight for N/L Version	GT9	50 / 65 Kg
Material		Stress-relieved aluminum alloy, black anodized
Guiding		Backlash-free preloaded cross roller guides

Optionen

- ✓ Without measuring system
- ✓ Linear measuring system
- ✓ Rotary encoder
- ✓ Customized motors
- ✓ Measuring system TTL

Rotary Stage

RT Series



The rotary stages of the RT series are used, when rotationally symmetric components must be measured or positioned with high accuracy. Pre-loaded bearings provide a very precise radial and axial runout. The exact positioning is ensured by a zero-backlash preloaded worm drive.

The rotary stages can be combined in various ways with other components of the UHL modular system.

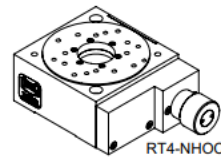
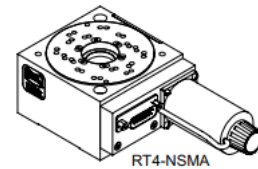
Order Code

RT4-NSOC



- Accuracy Class:
 A: axial and radial runout 2 µm at ø37 mm delivery with measuring protocol
 C: axial and radial runout 18 µm at ø37 mm
- Measuring System:
 O: without measuring system
 M: rotary encoder
 D: rotary encoder on motor shaft
- Motors:
 S: stepper motor
 G: DC motor
 H: manually operated
- Model:
 N: worm gear
 H: Harmonic-Drive gear

Sample Configurations



Technical Data RT 4 / 5 / 6 / 7

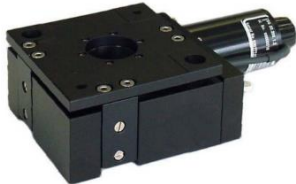
Travel		Infinite, limit switch for reference position
Drive optional for	RT4	Stepper motor /DC motor with backlash-free preloaded worm gear / $i = 70 : 1$
Drive optional for	RT5	Stepper motor /DC motor with backlash-free preloaded worm gear / $i = 128 : 1$
Drive optional for	RT6	Stepper motor with backlash-free preloaded worm gear / $i = 106 : 1$
Drive optional for	RT7	Stepper motor with backlash-free preloaded worm gear / $i = 100 : 1$
Weight for O/M Version	RT4	1,0 / 1,2 Kg
Weight for O/M Version	RT5	2,0 / 2,1 Kg
Weight for O Version	RT6 + RT7	6,3 / 13,4Kg
Material		Stress-relieved aluminum alloy, black anodized
Bearing		Backlash-free preloaded angular contact ball bearings

Optionen

- ✓ Without measuring system
- ✓ Rotary encoder
- ✓ Customized motors

Lift Stages

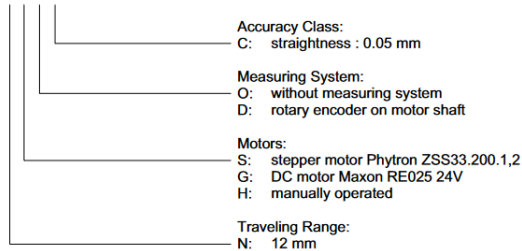
HT Series



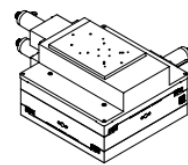
The lift stages of the HT series provides accurate positioning in vertical direction. By standardized mounting holes, they fit seamlessly into the UHL modular program.

Order Code

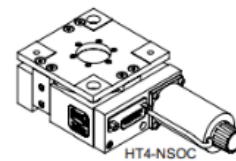
HT4-NSOC



Sampe Configurations



Positioniersystem XYZ
HT7-LSOC auf GT8-NSOC



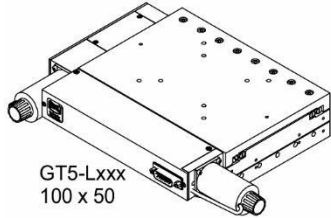
Technical Data HT 4 / 7

Travel N for	HT4	12 mm
Travel N for	HT7	30 mm
Drive optional for	HT4	Stepper motor /DC motor with backlash-free preloaded worm gear
Drive optional for	HT7	Stepper motor /DC motor with backlash-free preloaded ball screw, pitch 4 mm
Weight	HT4	1,0 Kg
Weight	HT7	10,0 Kg
Material		Stress-relieved aluminum alloy, black anodized
Guiding		Backlash-free preloaded roller guides

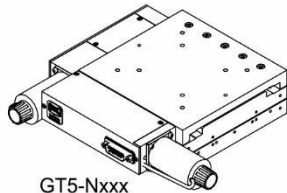
Optionen

- ✓ Without measuring system
- ✓ Linear measuring system
- ✓ Rotary encoder
- ✓ Customized motors

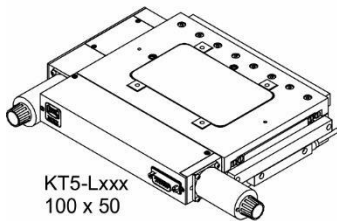
Application samples



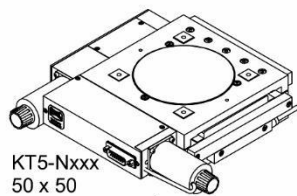
GT5-Lxxx
100 x 50



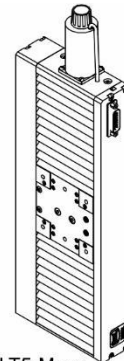
GT5-Nxxx
50 x 50



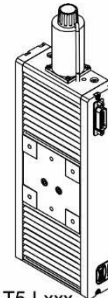
KT5-Lxxx
100 x 50



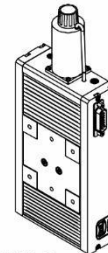
KT5-Nxxx
50 x 50



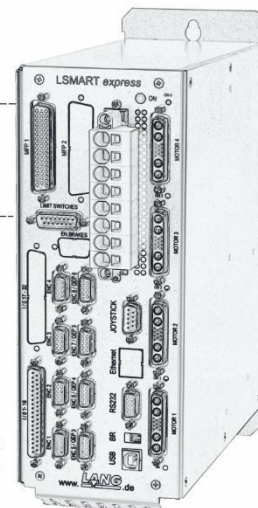
LT5-Mxxx
170 mm



LT5-Lxxx
100 mm



LT5-Nxxx
50 mm



LANG
Positioniersystem
LSMART express

Operating elements

or the exact and userfriendly operation of our controls, we also build the suitable control units for you. Here are a few examples:

LANG joystick for 2 Axis



LANG joystick for 3 Axis



LANG joystick for 4 Axis



LANG control unit trackball



LANG control unit jog mode

