



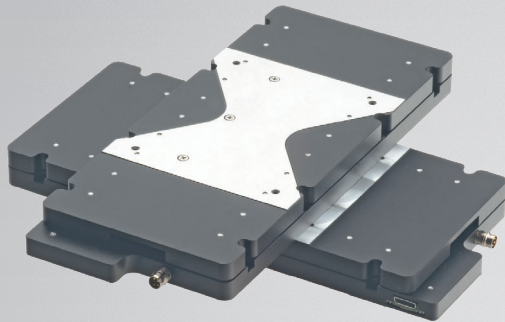
Positioning systems made to measure.

OEM Machines

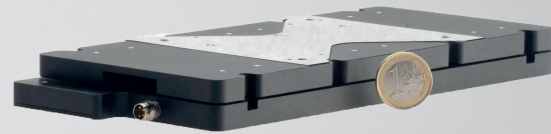
Positioning Systems

Modules

Components



FCS cross stage



FLS linear stage

Ultra-flat design

FCS/FLS Positioning Systems with Direct Drive

The positioning stages of the FCS and FLS series enable precise, coordinate-controlled movement for secure positioning and the most accurate repetition. With a new type of linear motor, they are a good alternative to spindle or piezo drives.

The stages are available as flat cross stage (FCS) or flat linear stage (FLS) and are characterised by an extremely flat design. They are supplied with powerful controls and other additional devices - individually manufactured according to customer specifications.

Key Features .

- Very flat design, only 23 mm overall height for one axis
- Position resolution in nm range
- Significantly higher dynamics compared to spindle or piezo drives due to innovative linear motor drive
- Large travel speed range from 100 nm/s to 500 mm/s
- Corrosion-resistant, pre-loaded and grinded industrial guides provide rigidity and long-term stability
- Black anodized aluminium alloy
- Carriages with oil reservoir reduce maintenance
- NanoStar sensor integrated to measure the absolute position
- Designed for industrial use

Your Advantages .

- Extremely flat design: Linear axis only 23 mm overall height
- Cross stage only 46 mm overall height
- No end switches necessary
- Absolute measuring – homing after switching on is therefore not necessary
- Various assembly options
- No wear parts



Highlights.

Complete solutions from a single source

Controllers.

The controllers of the Hydra series are optimally designed for controlling the FCS and FLS positioning stages. The focus is on dynamic and precise fine positioning down to the nanometre range. A new motor design ensures maximum performance in the smallest space. The high dynamics are based on ITK power amplifier technology with low heat losses.

The maximum force can be defined. Stepper motors, servo motors, torque motors or DC motors can be combined with a linear motor on the Hydra controller. Axis output stages can be specifically switched off for manual or motorised displacement of the axes. Our products bring decisive advantages in terms of speed, dynamics, maximum precision and reliability.

Hydra Controllers.



Hydra CM -
2-axis controller



Hydra DT -
with joystick



Hydra TT - Tabletop version
2-axis controller

Accessories.



2-axis Handwheel

- for moving two axes
- ergonomic and dynamic
- sensitive positioning due to high encoder resolution and precision roller bearings
- two programmable push-buttons mounted directly on the rotary axis enable rapid switching of the travel distance per revolution (electronic gear)
- connection to Hydra via CAN bus



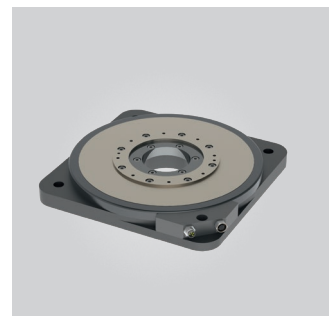
2-axis Joystick

- 6 freely programmable buttons
- 8 LEDs
- connected to the CAN bus
- versions with potentiometer or Hall sensors for normal or heavy use



QuickStar Interface

- clock and direction input to control the position
- additional I/O signals for connection to PLC or other controls

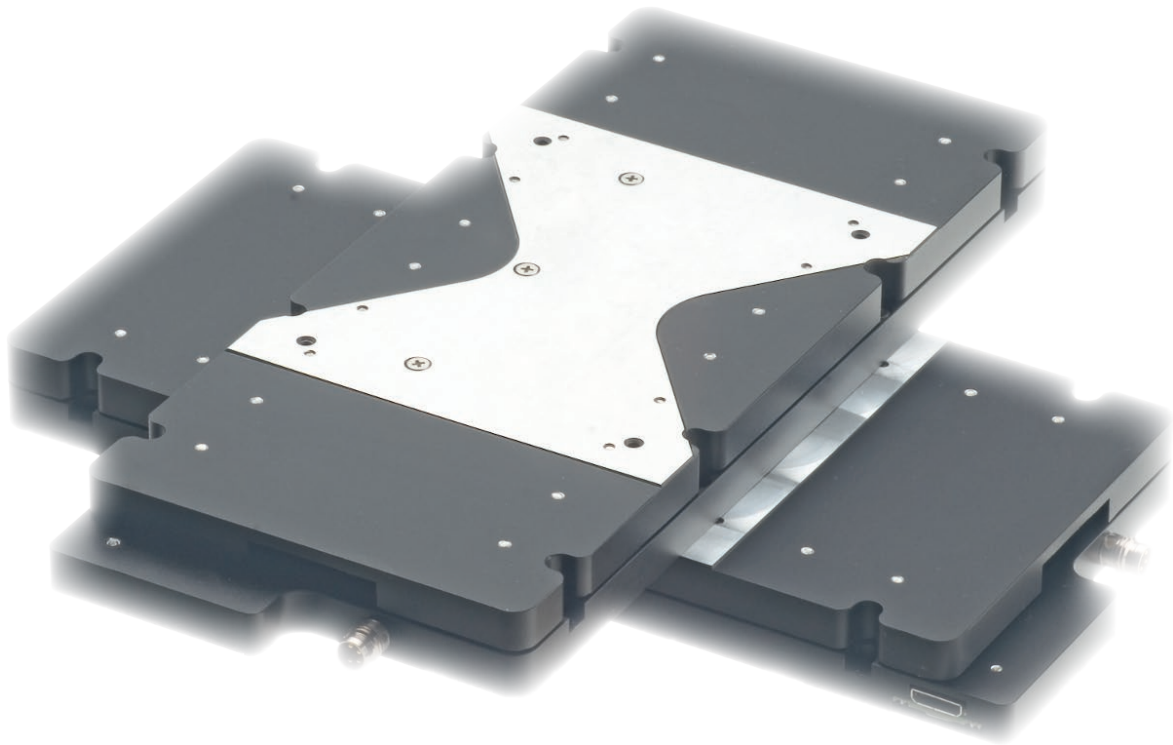


FRS200 Rotary Stage

- overall height 25 mm
- hollow shaft with 50 mm diameter for cable entry
- torque max. 20 Nm
- outer diameter 200 mm
- can be used in vacuum, clean-room or food applications

Technical Data.

Parameter	Unit	Value	Remarks
Acceleration			
	mm/s ²	≤ 10000	1 g lower stage
	mm/s ²	≤ 20000	2 g upper stage
	mm/s ²	≥ 100	both stages
Velocity			
	mm/s	≤ 500	lower stage
	mm/s	≤ 1000	upper stage
		≥ 100	both stages
Travel range	mm	100	
Position resolution	nm	5	
Position accuracy			
	μm	±5	standard
	μm	±1	option
Peak force	N	10	
Nominal force	N	8	



Possible Mounting Options■

Flat tables to reduce impact of angular error.

- Two linear tables can be screwed together directly without an intermediate plate to form a cross table with a total height of only 46 mm.
- The rotary stage FRS200 can be mounted directly on an axis with a total height of 45 mm
- With an X+Y and PHI arrangement, the total height is only 68 mm
- The rotary stage FRS200 is provided with a lateral vacuum or compressed air feed-through without increasing the overall height
- Innovative motor design ensures maximum performance in the smallest space
- High dynamics with minimal heat losses due to ITK power amplifier technology
- Maximum force is definable
- Stepper, servo, torque or DC motors can be combined with a linear motor on the Hydra controller
- Axis output stages can be specifically switched off for manual or motorised shifting of the axes

Your Benefit.

- Plug & Play: simply switch on and start – calibration is not required
- No set-up time – saves time and costs
- High rigidity – this ensures secure positioning
- High dynamics – due to the direct drive
- Wide speed range from 100 nm/s up to 500 mm/s
- High accuracy – through the precise absolute measuring system
- Complete solution from a single source – saving the user time and effort

Applications■

Built to last and based on over 30 years of experience, our motion and positioning products are renowned for their superior precision, accuracy, consistency and throughput. Standard or custom, component or system - we have exactly what you need.

Examples.

- In measuring tables for general measuring and testing set-ups
- In laser technology (optical benches): for adjusting optical components
- In microscopy: for automation tasks, also in combination with microscope stages from ITK
- In micro-hardness testers: for sample procedure
- In image processing: for object or camera adjustment
- Wire bonding: for moving the bond head