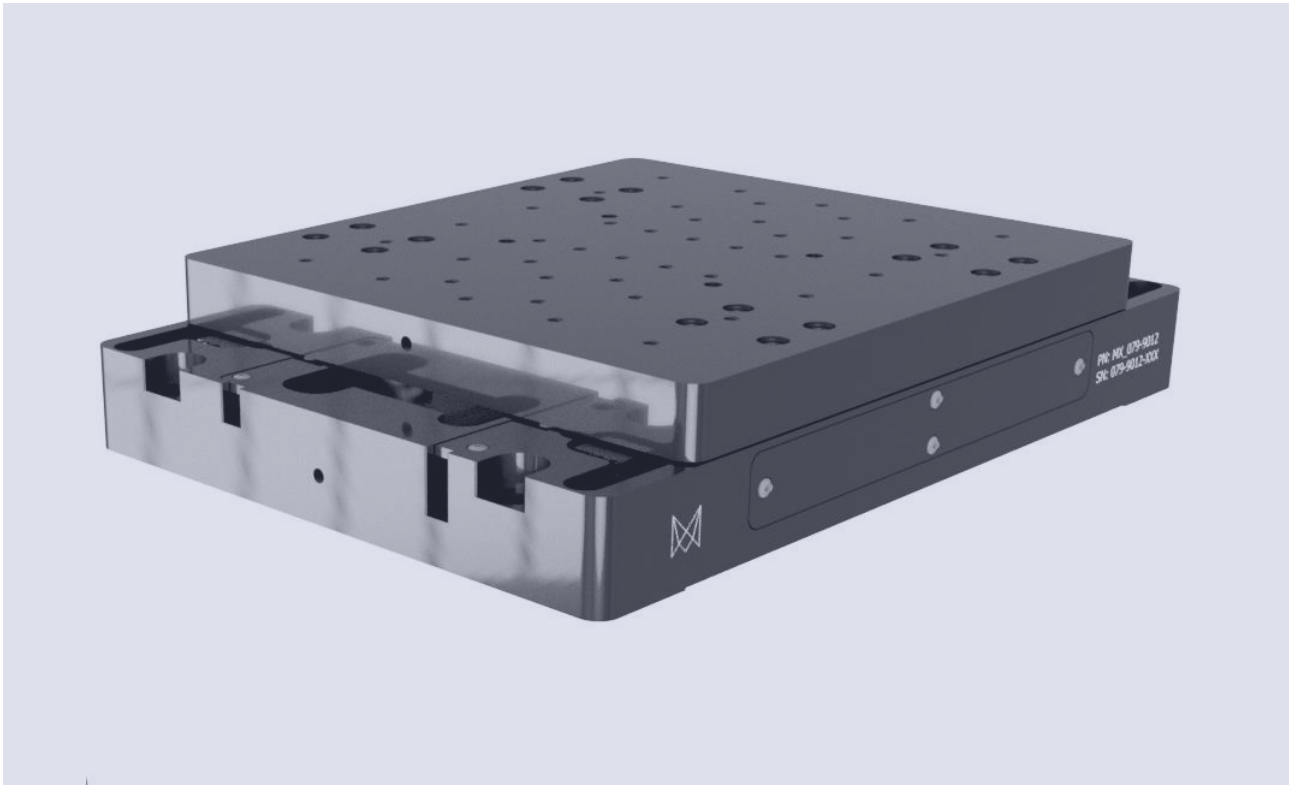


MX_079 – 9012/9013 – High Precision Dynamic Stage

High Accuracy Dynamic Linear Stage



MX_079-9012/9013 – Linear Stage 50/25mm

Long life recirculating linear ball bearing guides are distinguished by a beneficial combination of high load capacity, lifetime, maintenance-free operation, and guiding accuracy. This makes the MX_079-9012 and MX_079-9013 an attractive solution for high precision industrial applications.

Magnetic Direct Drive

The direct transmission through ironless magnetic drive avoids friction and mechanical play. The drives with zero cogging for super-smooth velocity and position control fit also for high velocity and acceleration

High resolution absolute linear encoder

Direct position measurement with absolute linear encoders are available as standard options. The direct measure of the position consents to reach high accuracy and enable minimum incremental motion down to 50 nm and sub-micrometer repeatability.

Fields of application

Industry and research with High dynamic requirements.

- Fast scanning and positioning
- Travel range 25 or 50 mm
- Scanning frequencies of more than 10 Hz
- Max Speed to 200 mm/s
- Bidirectional repeatability to 0.5µm
- Long life recirculating linear ball bearing guides

General Specifications

	MX_079-9012-50	MX_079-9013-25		Unit	Tolerances
Motion and position					
Active axis	X (Z ¹)	X (Z ²)			
Travel range	50	25		mm	
Integrated sensor	Absolute optical EnDat 2.2 Optical 1 Vpp (optional)	Absolute optical EnDat 2.2 Optical 1 Vpp (optional)			
Sensor resolution	1	1		nm	
Min. incremental motion	50	50		nm	Typ.
Unidirectional repeatability				μm	
Bidirectional repeatability	0.5	0.5		μm	Typ.
Pitch	50	50		μrad	Typ.
Yaw	40	40		μrad	Typ.
Horizontal Straightness	1	1		μm	Typ.
Vertical Straightness	1	1		μm	Typ.
Max Speed	200	200		mm/s	
Mechanical properties					
Load capacity in Z	50	50		N	
Drive properties					
Drive type	Ironless 3-phase linear motor	Ironless 3-phase linear motor			
Operating voltage MAX	300	300		V	
Peak current	2.8	2.8		ARMS	
Max continuous current ²	0.8	0.8		ARMS	
Peak force	100	100		N	
Continuous force	29	29		N	
Motor force constant	36.3	36.3		N/Arms	
Motor constant	24	24		N ² /W	
Resistance per Phase	18.5	18.5		Ω	
Inductance per Phase (X/Y)	6	6		mH	
Back EMF Phase-Phase _{peak}	30	30		V/m/s	
Magnet Pitch NN	30	30		mm	
Miscellaneous					
Housing material	Aluminum black anodized	Aluminum black anodized			
Operating temperature	18-28	18-28		°C	
Humidity	20-80%	20-80%			

¹ Gravity compensation to be defined

² Coils at 110 °C

Mecartex is a cutting-edge company operating in the field of high precision applications.

The company, founded in early 2002 offers micro-positioning devices with high dynamics and precision and base solutions with motion control.

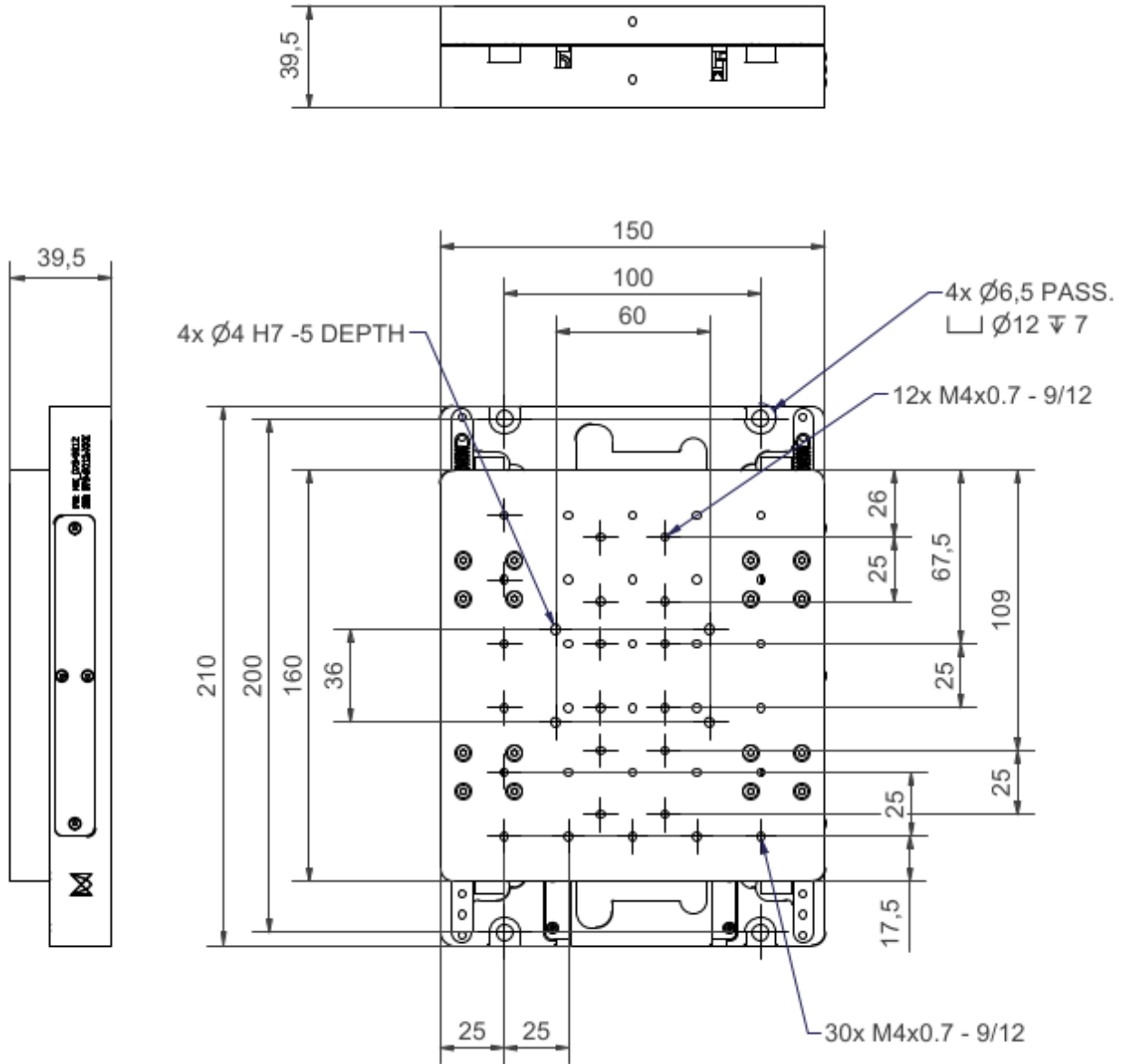
Customized solutions & manufacturing

Mecartex provides innovative solutions for very high precision applications, offering complete support from development through production while maintaining a short time-to-market.

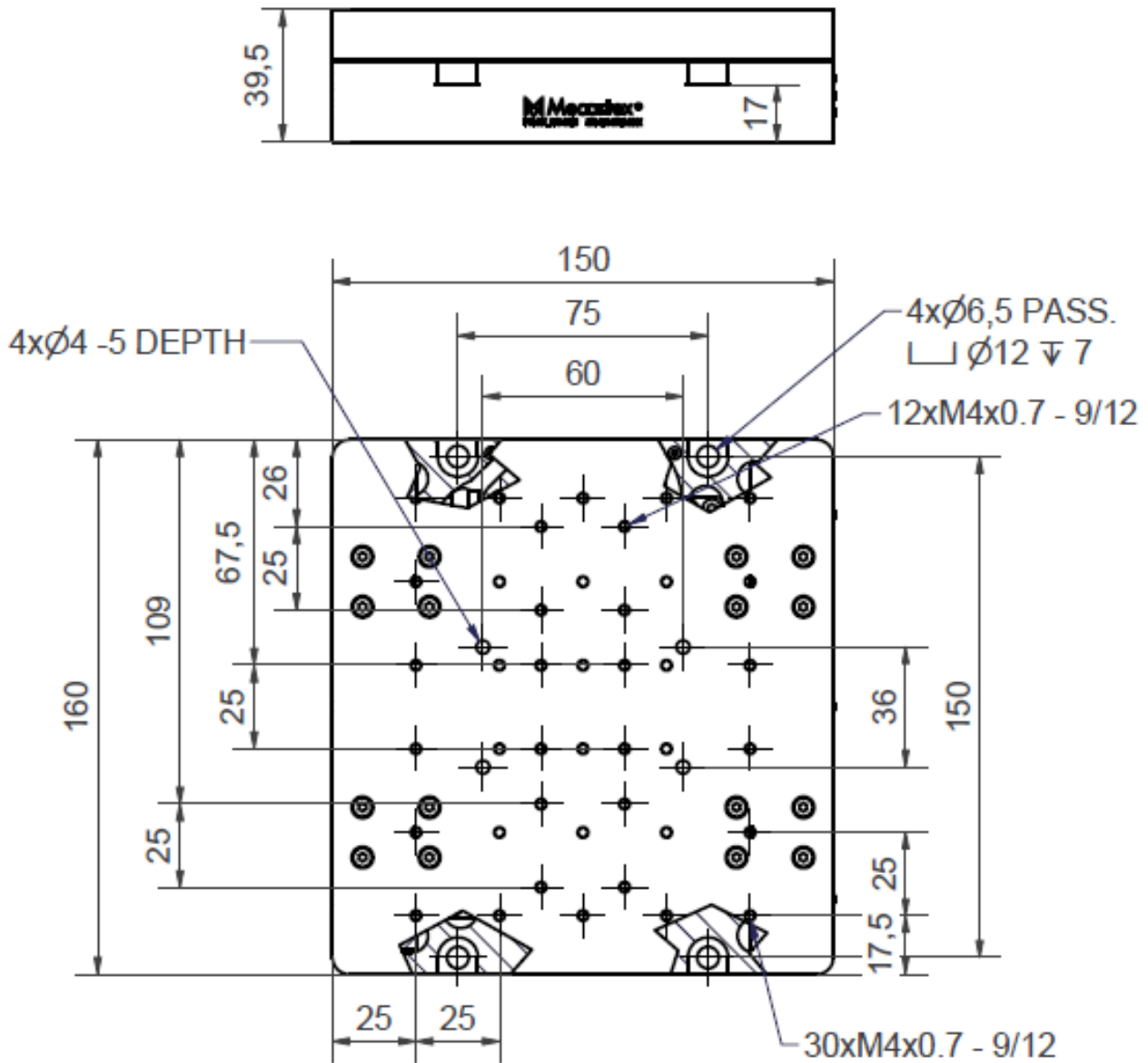
Flexures technology

Mecartex offers a unique expertise in flexures. This technology enables extremely accurate movements and has numerous advantages like high reliability, frictionless, contamination proof or cleanliness.

Mechanical Interface – MX_079-9012-50



Mechanical Interface – MX_079-9013-25



Electrical Interface MX_079-9012-50 and MX_079-9013-25

	Description
D-Sub hybrid connector 5W5 male – Motor	<i>Example: Molex FM5W5S-K121</i>
A1	Motor phase A
A2	Motor phase B
A3	Motor phase C
A4	Frame
1	PTC-1k-typ
2	PTC-1k-typ
3	NTC
4	NTC
5	
D-Sub 9 male – Limit switch - PNP open-collector transistor³	
1	0 V
2	Switch POS (output 1)
3	Switch NEG (output2)
4	
5	
6	24 V
7	
8	
9	
D-Sub 15 male – Sensor EnDat 2.2	
1	
2	0 V
3	
4	5 V
5	Data +
6	
7	
8	Clock +
9	
10	0 V
11	
12	5 V
13	Data -
14	
15	Clock -

³ Limit switch connection diagram

