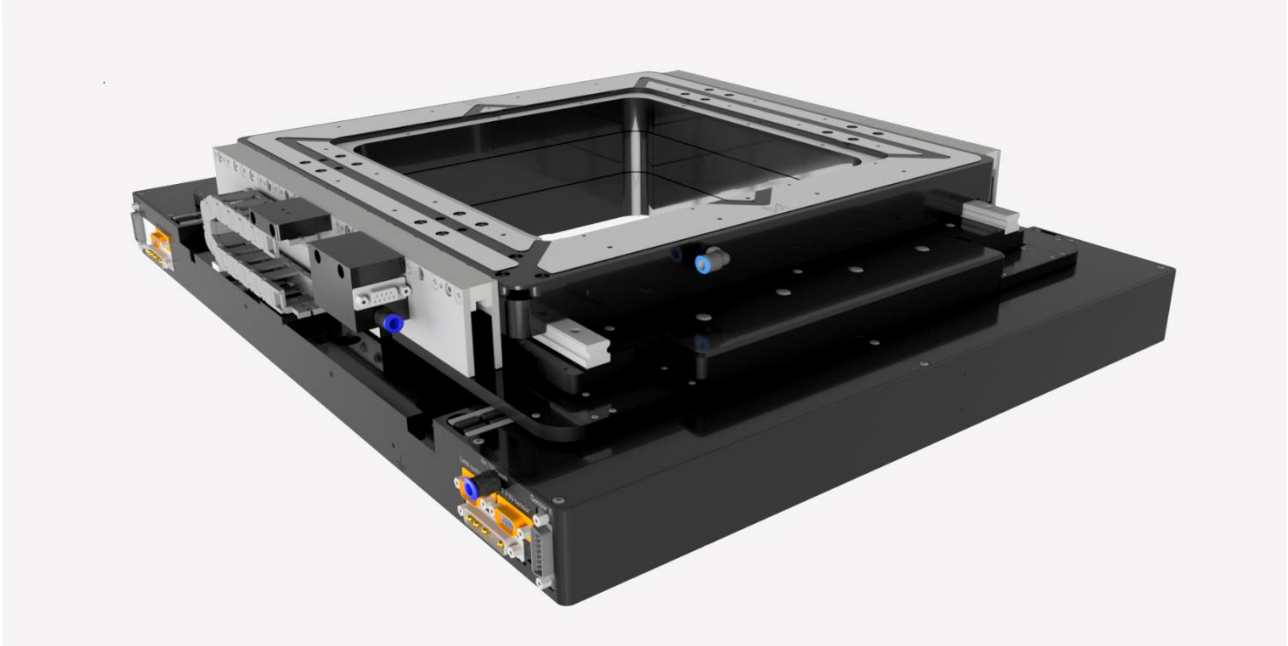


MX_079-9400-200 – Direct Drive XY Stage

High Precision Direct Drive XY Stage with Aperture



MX_079-9400 – Direct drive XY Stage

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_079-9400 an attractive solution for high precision industrial applications such as laser machining.

Magnetic Direct Drive

The ironless magnetic drives used in the direct transmission, apply the force directly to the movable part without any friction and practically without cogging. This avoids several undesirable effects limiting the precision, like non-linearities or mechanical play. Ironless magnetic drives are suitable 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 enables minimum incremental motion down to 50 nm and sub-micrometer repeatability. An optional factory calibration to improve positioning accuracy is also available.

Fields of application

Industry and research with High dynamic requirements, metrology, inspection, laser application, ecc

- Fast scanning and positioning
- Travel range 220x220 mm
- Max Speed to 500 mm/s
- Max Acceleration to 1.5g
- Bidirectional repeatability to 0.4µm
- High resolution absolute linear encoder
- Long life recirculating linear ball bearing guide
- Air or vacuum connector on the output surface
- 9 Pin connector on the output surface (8 pin connectet)

General Specifications

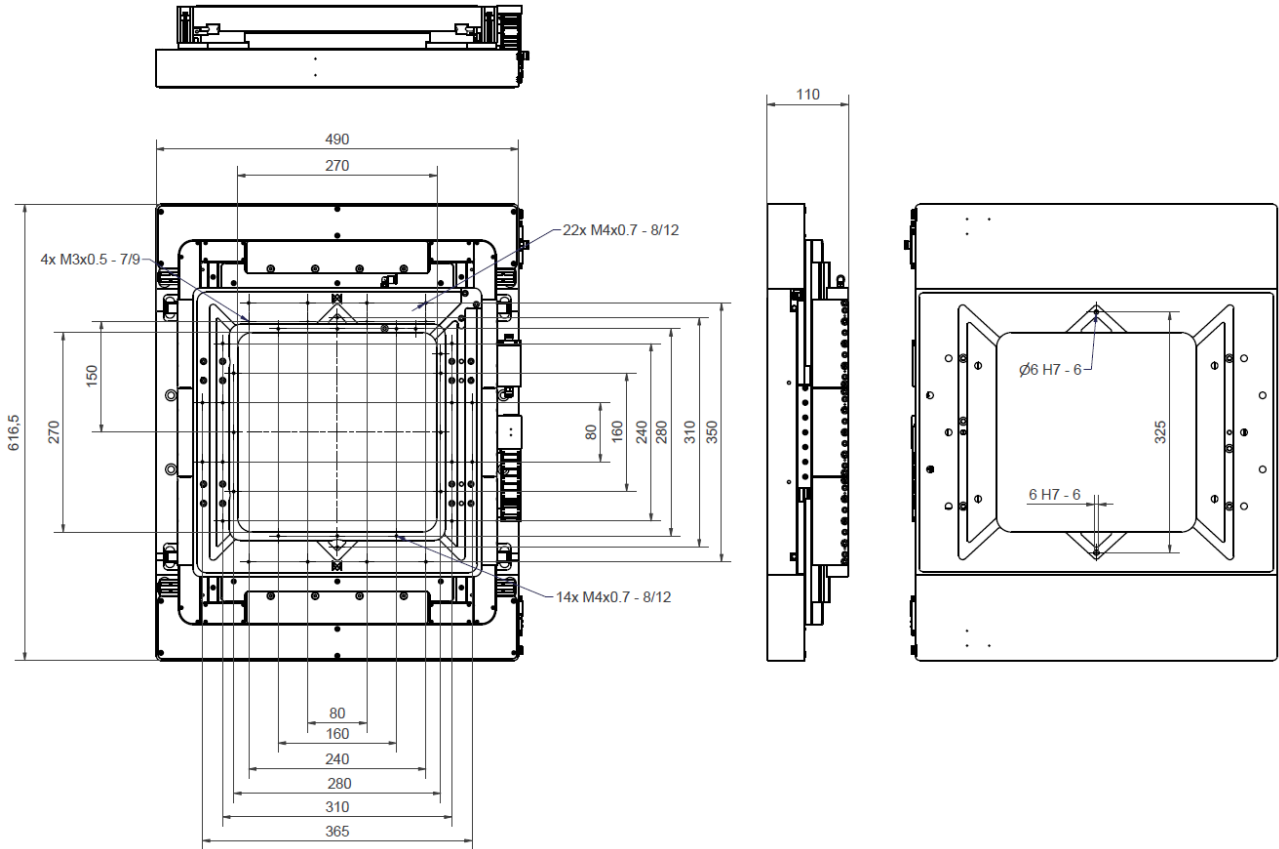
	MX_079 – 9400-200		Unit	Note
Motion and position				
Active axis	X-Y			
Travel range	220x220		mm	
Integrated sensor	Absolute optical EnDat 2.2 Optical 1 Vpp (optional)			
Sensor resolution	1		nm	EnDat 2.2
Min. incremental motion	50		nm	
Unidirectional repeatability			µm	Typ.
Bidirectional repeatability	±0.4		µm	
Orthogonality	±30		µrad	Typ.
Pitch	±60		µrad	Typ.
Yaw	±60		µrad	Typ.
Flatness	±2		µm	Typ.
Straightness	±2		µm	Typ.
Max speed ¹	500		mm/s	
Max acceleration ¹	15		m/s ²	
Mechanical properties				
Moved mass X	22.5		kg	
Moved mass Y	10.5		kg	
Load capacity in Z ²	5		kg	
Drive properties				
Drive type	Ironless 3-phase linear motor			
Operating voltage MAX	300		V	
Peak current (X/Y)	22.0	11.0	A _{RMS}	
Max continuous current ³ (X/Y)	6.4	3.2	A _{RMS}	
Peak force (X/Y)	800	400	N	
Continuous force (X/Y)	232	116	N	
Motor force constant	72.6	72.6	N/Arms	
Motor constant (X/Y)	190	96	N ² /W	
Resistance per Phase (X/Y)	2.3	4.65	Ω	
Inductance per Phase (X/Y)	0.75	1.5	mH	
Back EMF Phase-Phase _{peak}	30		V/m/s	
Magnet Pitch NN	30		mm	
Miscellaneous				
Housing material	Aluminium black anodized			
Operating temperature	18-28		°C	
Humidity	20-80%			
Connector	2x D-Sub hybrid (motor) 2x D-Sub 9 (limit switch) 2x D-Sub 15 HD (encoder) 1x D-Sub 9 (sensor on output surface) 8 Pin connected twisted (1-6,2-7,3-8,4-9) 1x 1x Quick release air connector Ø6 mm			

¹ Obtained with motor bus alimentation 95 V

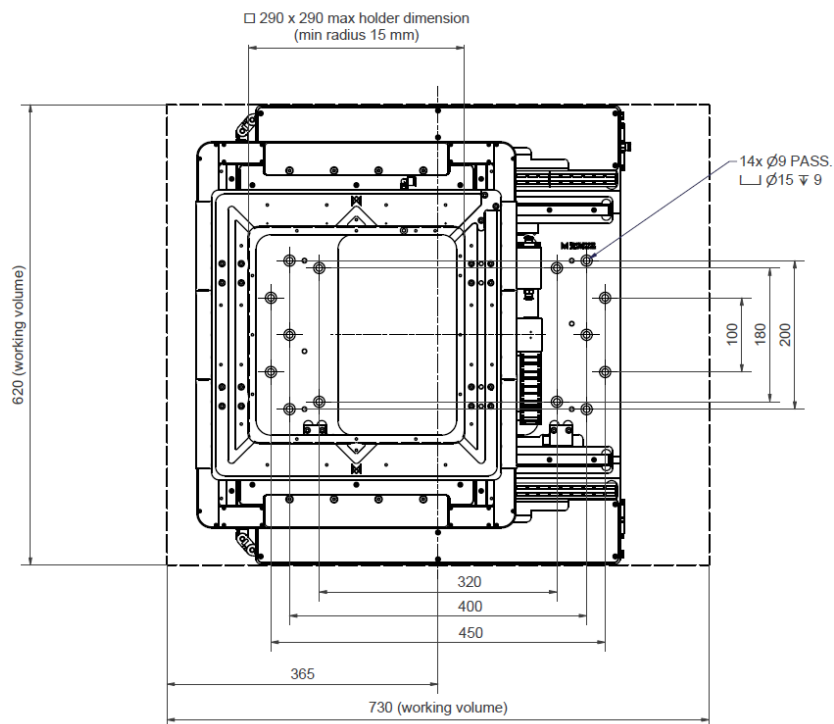
² Limited by desired performance

³ Coils at 110 °C

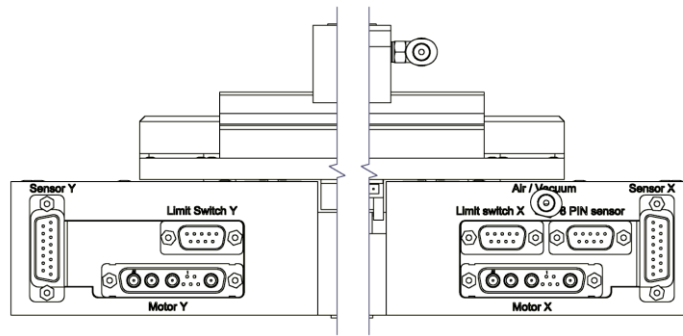
Mechanical Interface



Top view



Electrical Interface



	Description
D-Sub hybrid connector 9W4 male – Motor	
A1	Motor phase A
A2	Motor phase B
A3	Motor phase C
A4	FRAME
1	Motor PTC
2	Motor PTC
3	Motor NTC
4	Motor NTC
5	
D-Sub 9 male – Limit switch - PNP open-collector transistor⁴⁾	
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	
1	
2	0V
3	
4	5 V
5	Data +
6	
7	
8	Clock +
9	
10	0V
11	
12	5V
13	Data -
14	
15	Clock -

4) Limit switch connection diagram

