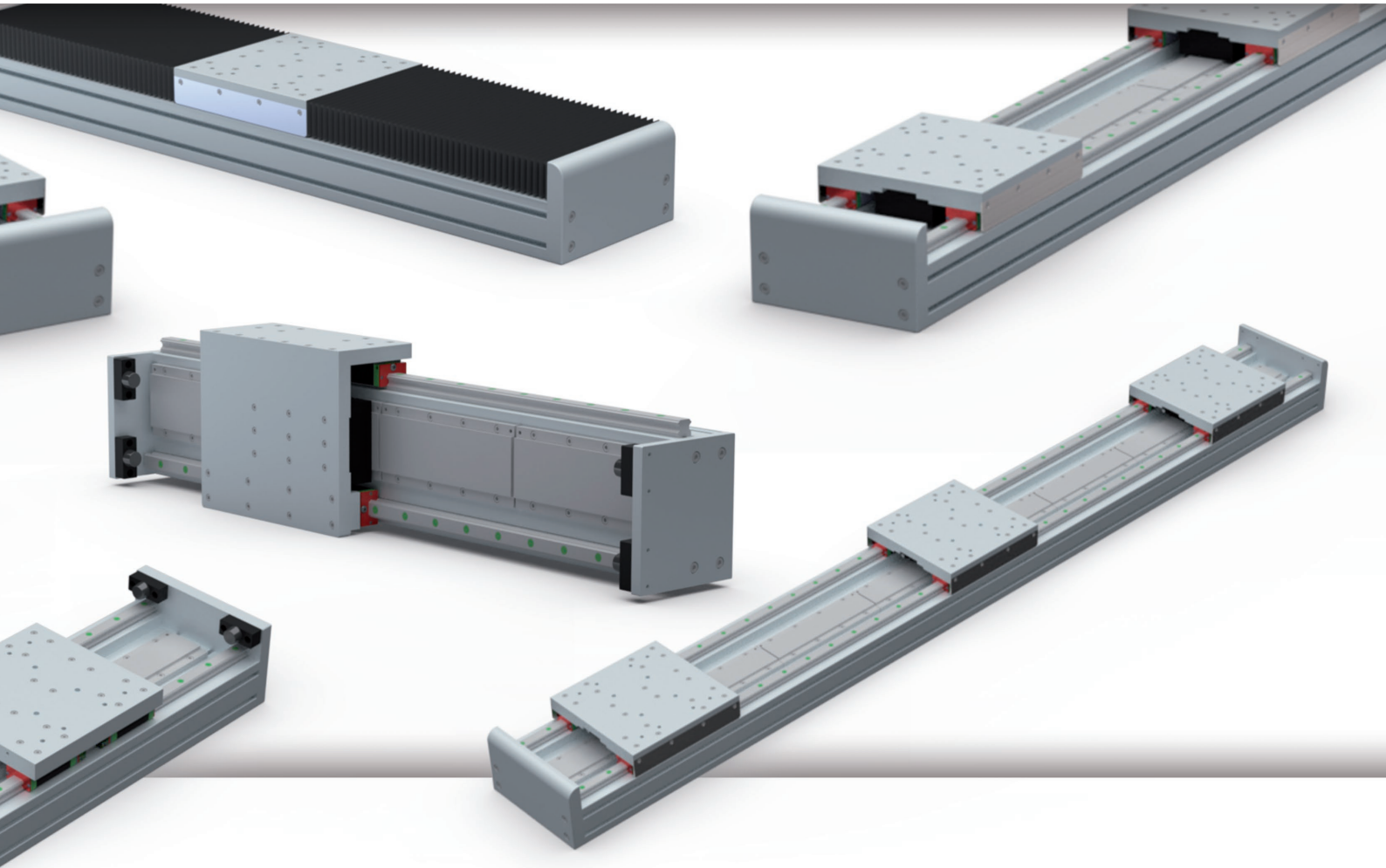




 MEMBER OF DEXIS EUROPE



**TECNOLINE**

TLS LINEAR MODULES WITH LINEAR MOTOR

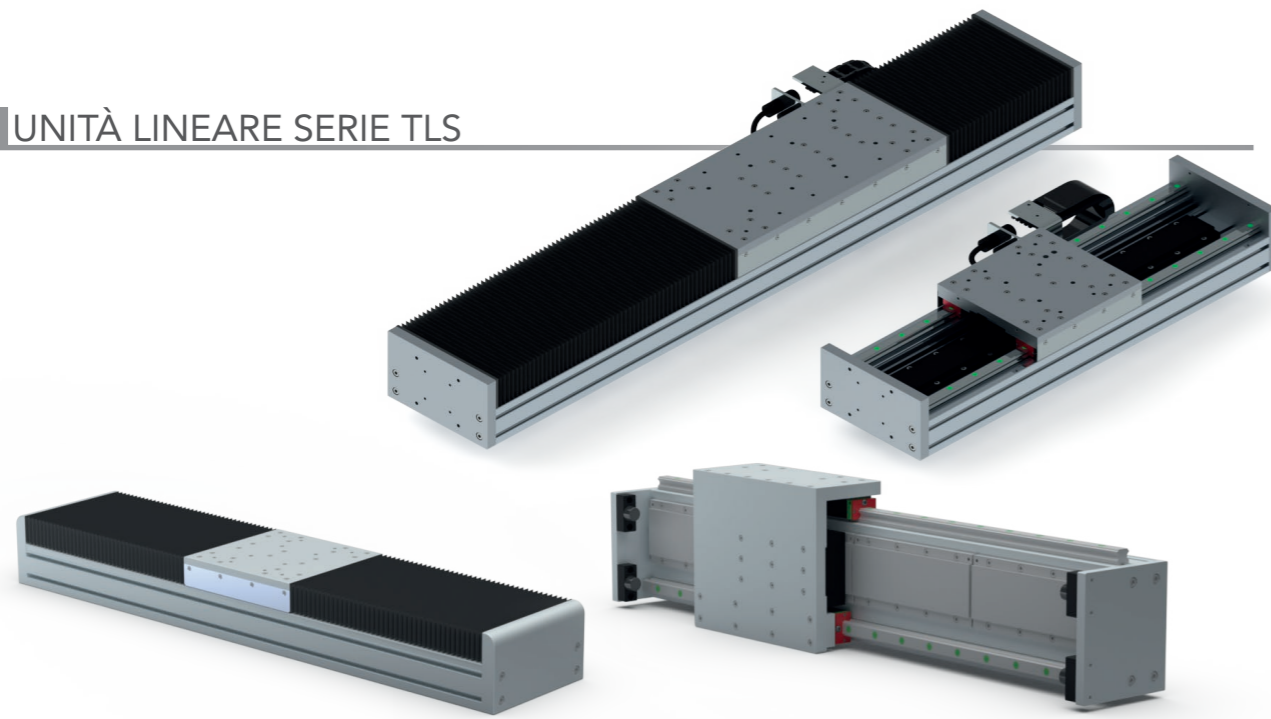
MADE IN ITALY



Since 1976, FAIT Group SpA has been manufacturing components and systems for linear motion, rotary motion and power transmission and distributes them in Italy, Europe and the United States. It operates on the national market through an integrated network of production and sales partners, basing the relationship with its customers on customised supplies, technical service efficiency and search for innovative solutions. Continuous investments in personnel, facilities, and production devices provide our customers with prompt, punctual and quality assistance.

Commercial and technical agreements with the best global manufacturers of linear motion systems, bearings and power transmission enable us to manage the most complex market requests. The distribution network in Italy and abroad guarantees the technical and commercial assistance that makes FAIT Group the most reliable partner for every need.

## UNITÀ LINEARE SERIE TLS



The TLS series has been designed by seeking high performance, precision, construction simplicity and easy assembly. The actuators are made up of an anodised aluminium self-supporting structure, available in size 160, 180 and 240.

The transmission section is controlled by a linear motor secured onto the profile and carriage of the axis.

All linear axes can be customised according to application specifications. The maximum length for a non-jointed profile is 6000 mm. Upon request, it is possible to obtain longer lengths by joining multiple profiles. The catalogue contains the standard versions available in stock and Fait Group reserves the right to modify its products based on the needs for their technical improvement.

## MAIN TECHNICAL FEATURES

The load capacity of the linear units depends on the block/rail system used, their interaxial distance and their size. Therefore, the load features will vary according to whether the load application directions are radial, lateral or combined. The recommended maximum values of a vertical load ( $F_z$ ) and lateral load ( $F_y$ ) are related to the block/rail system and are identified as 20% of the static load capacity and 12% of the dynamic load capacity of the performance of the ball bearing guide installed. Based on our experience, these values make it possible to obtain sufficient static safety and endurance for most applications. To perform an actual verification of the operating conditions and, consequently, application of the linear axis, it is recommended to contact our Technical Department for the necessary technical verification test. The maximum acceptable values for speed, acceleration, and positioning repeatability might be lower in the case of heavy loads

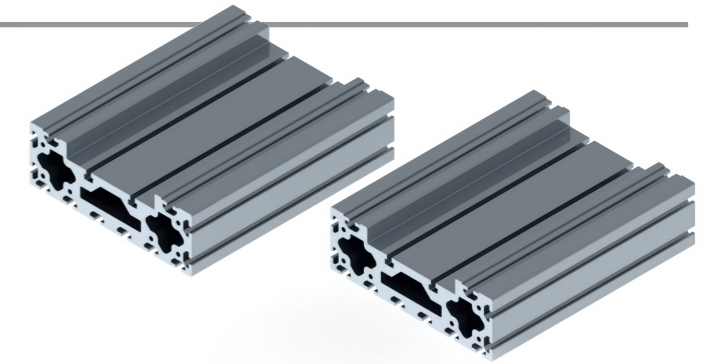
LINEAR AXIS	TYPICAL LOAD [KG]	SPEED [m/s]	ACCELERATION [m/s <sup>2</sup> ]	REPEATABILITY [mm]
TLS160-050	60	5*	50	±0,02
TLS240-050	100	5*	50	±0,02
TLS180-075	80	5*	50	±0,02
TLS240-075	120	5*	50	±0,02

\*max speed for caged ball carriages

## COMPONENTS

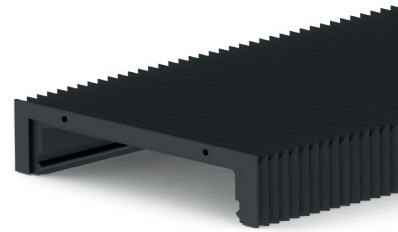
### ALUMINIUM PROFILE

The self-supporting profiles used are made of aluminium EN AW 6060. The dimensional tolerances comply with standards UNI EN 755-9 and UNI 3879. The extruded profiles are provided with slots to facilitate installation of the units and accessories.



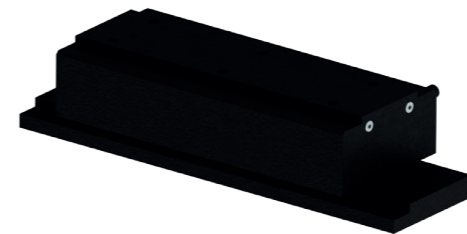
### PROTECTION BELLOW

The linear units size 240 can be equipped with plastic protection bellows. This makes it possible to protect the transfer system against dust and dirt. The presence of the bellows implies a longer axis length due to the dimensions of the open package and its closed package. Contact our Technical Department for an evaluation of the total length of the axis with the protective casing



### LINEAR MOTOR

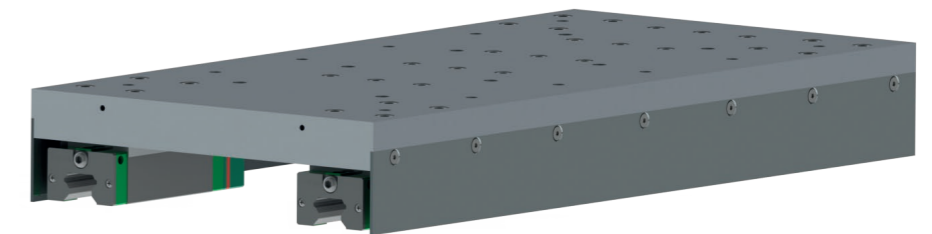
The linear motors provide high direct thrust dynamic performance. Linear movement is achieved without contact between the primary and secondary element. Therefore, there are no intermediate elements between them, not to mention phenomena of wear and tear. The motor is made of a primary with a laminated iron



structure that includes the windings carried in motion and a secondary element with high-performance magnets made of neodymium. The current and voltage specifications can be customised to cover the application requirements. The motors are available in two sizes with two different lengths regarding the secondary element.

This way, it is possible to obtain:

- High performance;
- Low noise;
- Low wear.

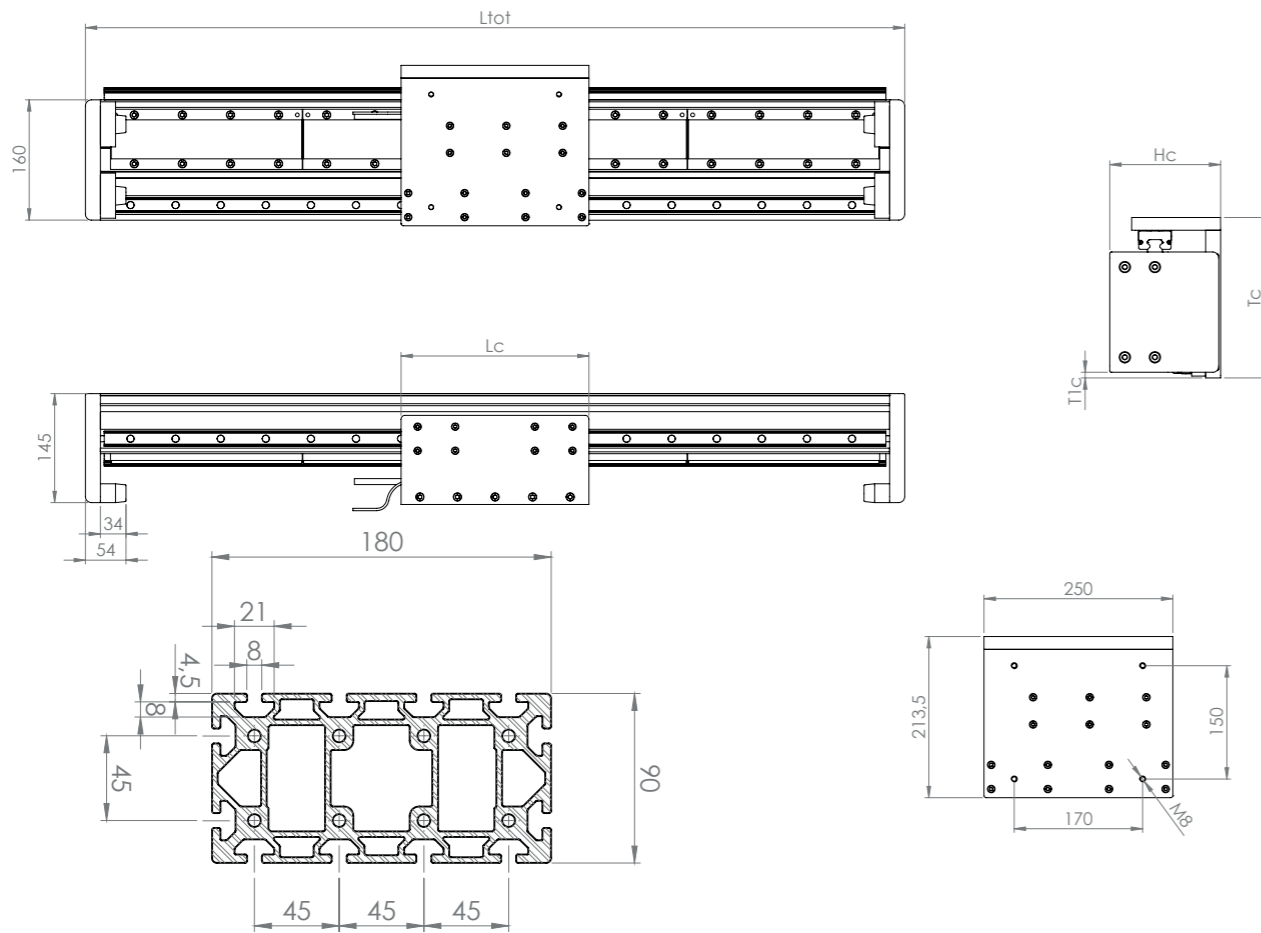


### SISTEMA DI TRASLAZIONE

The transfer system is crucial for the load capacity, speed, and maximum acceleration.

The TLS series uses a transfer system with the following features:

- The high load capacity guides are fitted in specific housings on the aluminium profile;
- The carriage, made of anodised aluminium, is fitted on caged ball bearing blocks that can withstand loads in the three main directions and reach high speeds;
- The ball bearing blocks are fitted with front seals on both sides and, where necessary, it is possible to equip them with additional seals or scrapers for applications in dusty environments;
- Tanks for automatic lubrication can be provided and assembled on the front of the blocks, which ensure correct lubrication during movement and thereby lengthening the maintenance frequency.



**GENERAL DIMENSIONS**

Total carriage length Lc [mm]	250
Total guide length Ltot [mm]	Corsa* + 364
Total carriage height Hc [mm]	147,5
Total carriage width Tc [mm]	213,5
Carriage overhang T1c [mm]	7,5

\*The stroke is obtained by joining subsequent secondary elements. Refer to the relevant table for the standard lengths of the secondary element.

**GENERAL TECHNICAL DATA**

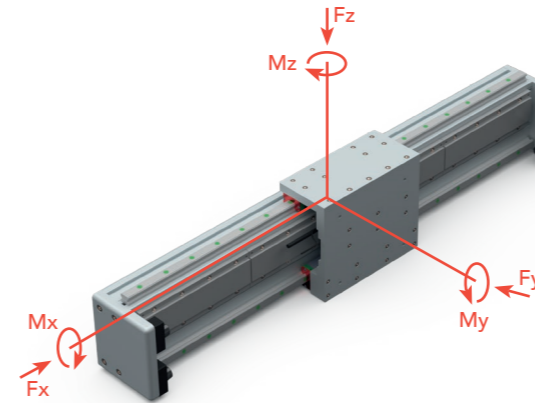
Repeatability [mm]*	± 0,02
Maximum speed [m/s]	5
Maximum acceleration [m/s <sup>2</sup> ]	50
Maximum profile length [mm]	6000
Typical load applied [Kg]**	60
Profile section [mm]	80 x 160
JX profile moment of inertia [cm <sup>4</sup> ]	1130,2
JY profile moment of inertia [cm <sup>4</sup> ]	325

\*Repeatability is related to the feedback resolution  
\*\*under static conditions

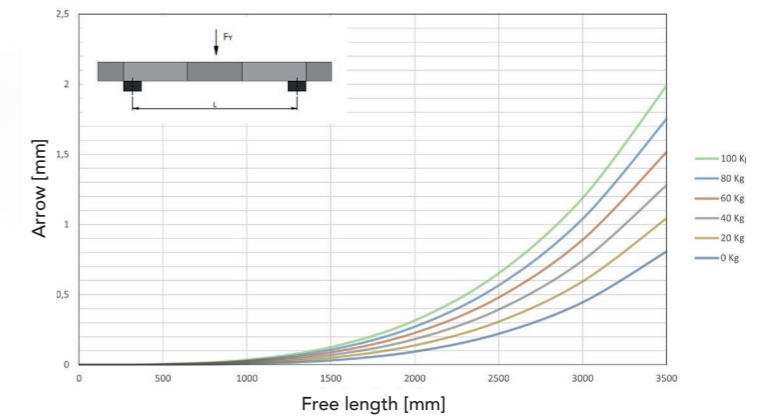
**LOAD CAPACITY**

	Theoretical		Max recommended	
	Static	Dynamic	Static	Dynamic
Fy [N]	126680	110120	25336	13214
Fz [N]	126680	110120	25336	13214
Mx [Nm]	9438	8204	1888	984
My [Nm]	9881	8589	1976	1031
Mz [Nm]	9881	8589	1976	1031

To be considered as non-combined loads



**LOAD DEFLECTION**



**LINEAR GUIDE**

Type of shoe	QHH20HA
Static load coefficient C0 [kN]	31,67
Dynamic load coefficient Cdin [kN]	27,53

**LINEAR MOTOR**

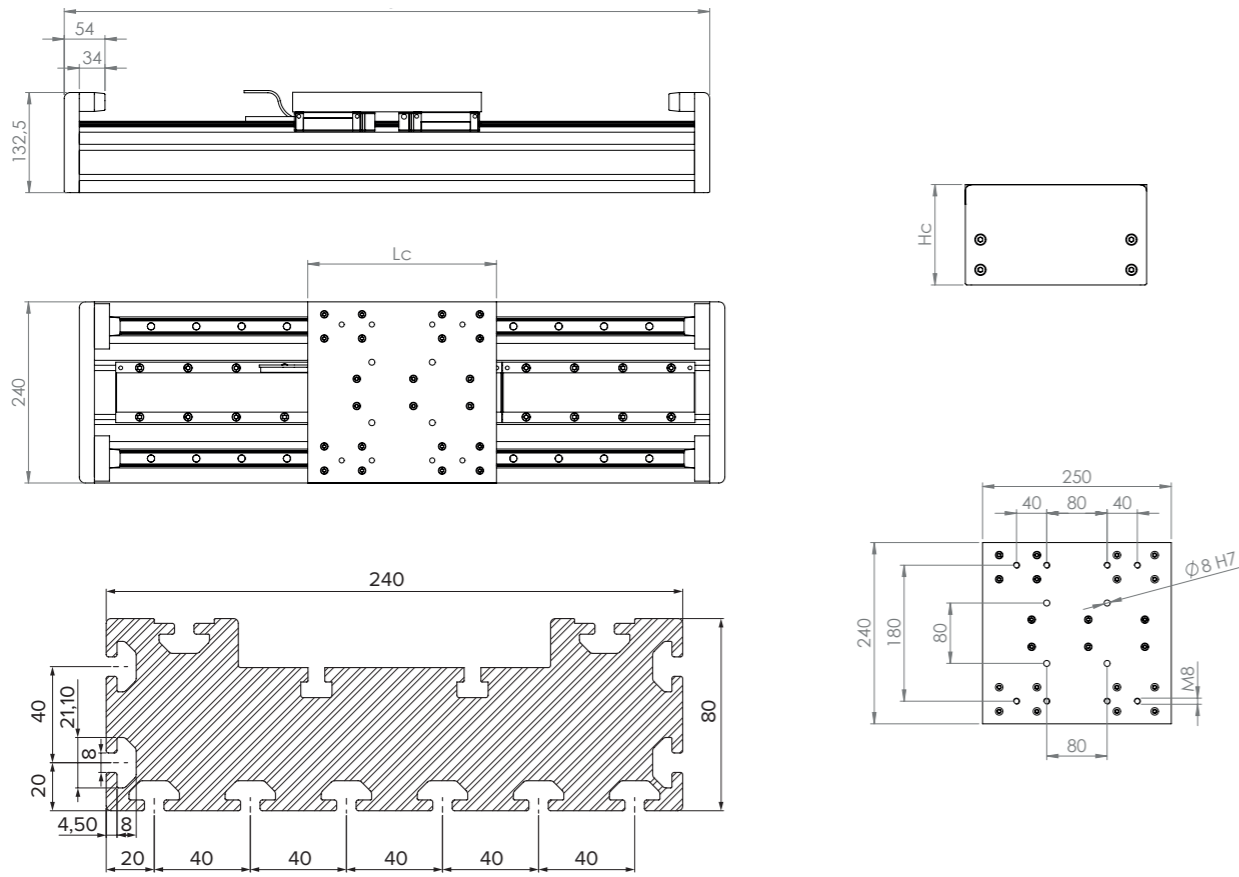
Type of primary element	<b>050-P</b>			
Length [mm]	200			
Weight of primary element [kg]	3,6			
Peak force [N]	533			
Continuous force [N]*	263			
Attraction force [kN]	2,4			
Maximum allowable temperature [°C]	130			
Type of secondary element	<b>050-S</b>			
Number of slots	050-0064	050-0128	050-0256	050-0512
Length [mm]	64	128	256	512
Weight of secondary element [kg]	0,47	0,96	1,92	3,84

\*The motor's continuous force is determined based on the force it can sustain when operating at its maximum allowable temperature.

**MECHANICAL PROPERTIES**

Carriage weight [kg]	9,2
Weight of stroke guide 0 [kg] *	20,1
Weight of guide every 64 mm stroke [kg] **	1,7

\* Including the weight of the carriage, excluding the cable duct and the relevant supports.  
\*\* 64 mm minimum length of the secondary element



GENERAL DIMENSIONS	
Total carriage length Lc [mm]	250
Total guide length Ltot [mm]	Corsa* + 364
Total carriage height Hc [mm]	133

\*The stroke is obtained by joining subsequent secondary elements. Refer to the relevant table for the standard lengths of the secondary element.

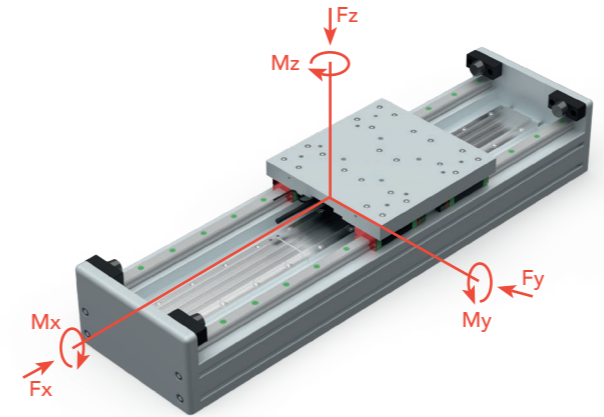
GENERAL TECHNICAL DATA	
Repeatability [mm]*	± 0,02
Maximum speed [m/s]	5
Maximum acceleration [m/s <sup>2</sup> ]	50
Maximum profile length [mm]	6000
Typical load applied [Kg]**	100
Profile section [mm]	80 x 240
JX profile moment of inertia [cm <sup>4</sup> ]	472,7
JY profile moment of inertia [cm <sup>4</sup> ]	4644,8

\*Repeatability is related to the feedback resolution  
 \*\*under static conditions

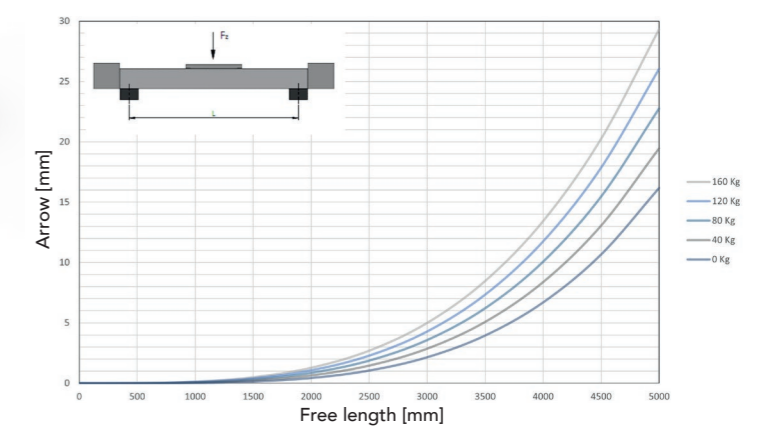
LOAD CAPACITY

	Theoretical		Max recommended	
	Static	Dynamic	Static	Dynamic
Fy [N]	126680	110120	25336	13214
Fz [N]	126680	110120	25336	13214
Mx [Nm]	11085	9636	2217	1156
My [Nm]	9881	8589	1976	1031
Mz [Nm]	9881	8589	1976	1031

To be considered as non-combined loads



LOAD DEFLECTION



LINEAR GUIDE

Type of shoe	QHH20HA
Static load coefficient C0 [kN]	31,67
Dynamic load coefficient Cdin [kN]	27,53

LINEAR MOTOR

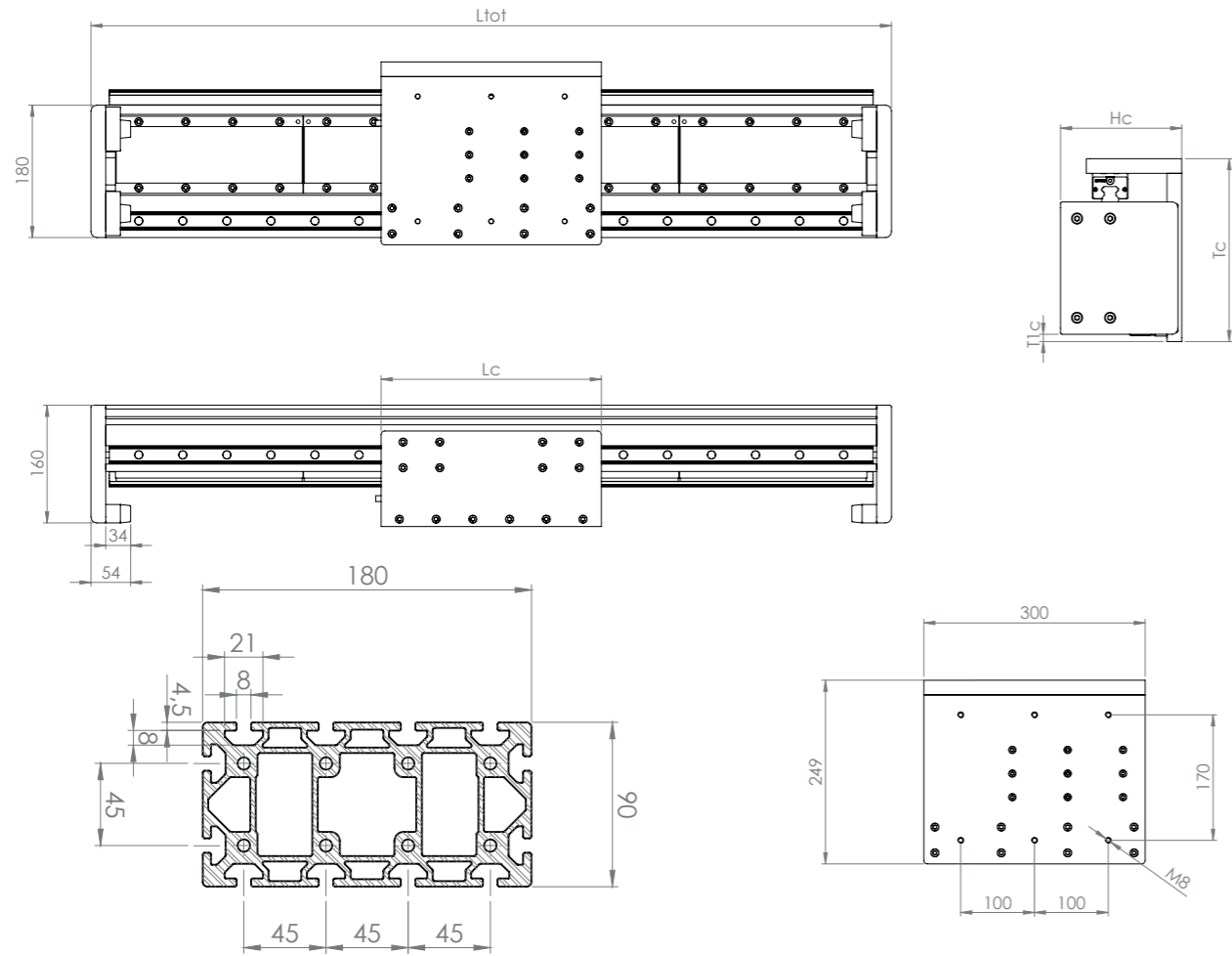
Type of primary element	050-P			
Length [mm]	200			
Weight of primary element [kg]	3,6			
Peak force [N]	533			
Continuous force [N]*	263			
Attraction force [kN]	2,4			
Maximum allowable temperature [°C]	130			
Type of secondary element	050-S			
Number of slots	050-0064	050-0128	050-0256	050-0512
Length [mm]	64	128	256	512
Weight of secondary element [kg]	0,47	0,96	1,92	3,84

\*The motor's continuous force is determined based on the force it can sustain when operating at its maximum allowable temperature.

MECHANICAL PROPERTIES

Carriage weight [kg]	8,8
Weight of stroke guide 0 [kg] *	24,4
Weight of guide every 64 mm stroke [kg] **	2,4

\* Including the weight of the carriage, excluding the cable duct and the relevant supports.  
 \*\* 64 mm minimum length of the secondary element



GENERAL DIMENSIONS	
Total carriage length Lc [mm]	300
Total guide length Ltot [mm]	Corsa* + 428
Total carriage height Hc [mm]	165
Total carriage width Tc [mm]	249
Carriage overhang T1c [mm]	10

\*The stroke is obtained by joining subsequent secondary elements. Refer to the relevant table for the standard lengths of the secondary element.

GENERAL TECHNICAL DATA	
Repeatability [mm]*	± 0,02
Maximum speed [m/s]	5
Maximum acceleration [m/s <sup>2</sup> ]	50
Maximum profile length [mm]	6000
Typical load applied [Kg]**	80
Profile section [mm]	90 x 180
JX profile moment of inertia [cm <sup>4</sup> ]	1826,1
JY profile moment of inertia [cm <sup>4</sup> ]	491,8

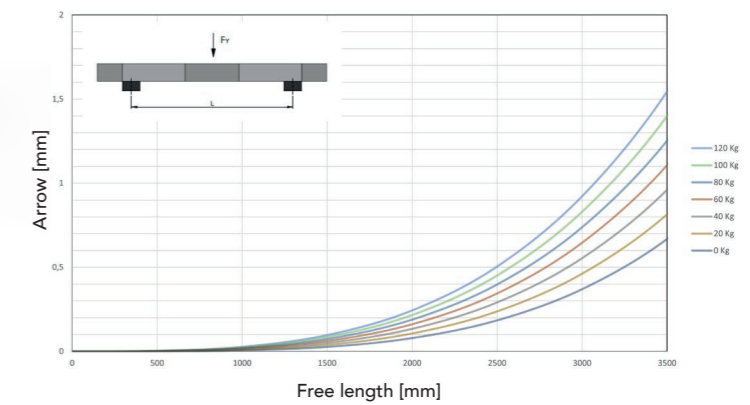
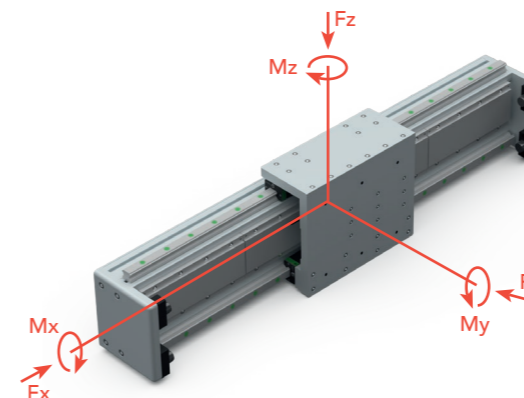
\*Repeatability is related to the feedback resolution  
\*\*under static conditions

LOAD CAPACITY

	Theoretical		Max recommended	
	Static	Dynamic	Static	Dynamic
Fy [N]	174480	157200	34896	18864
Fz [N]	174480	157200	34896	18864
Mx [Nm]	14831	13362	2966	1603
My [Nm]	16576	14934	3315	1792
Mz [Nm]	16576	14934	3315	1792

To be considered as non-combined loads

LOAD DEFLECTION



LINEAR GUIDE

Type of shoe	QHH25HA
Static load coefficient C0 [kN]	43,62
Dynamic load coefficient Cdin [kN]	39,30

LINEAR MOTOR

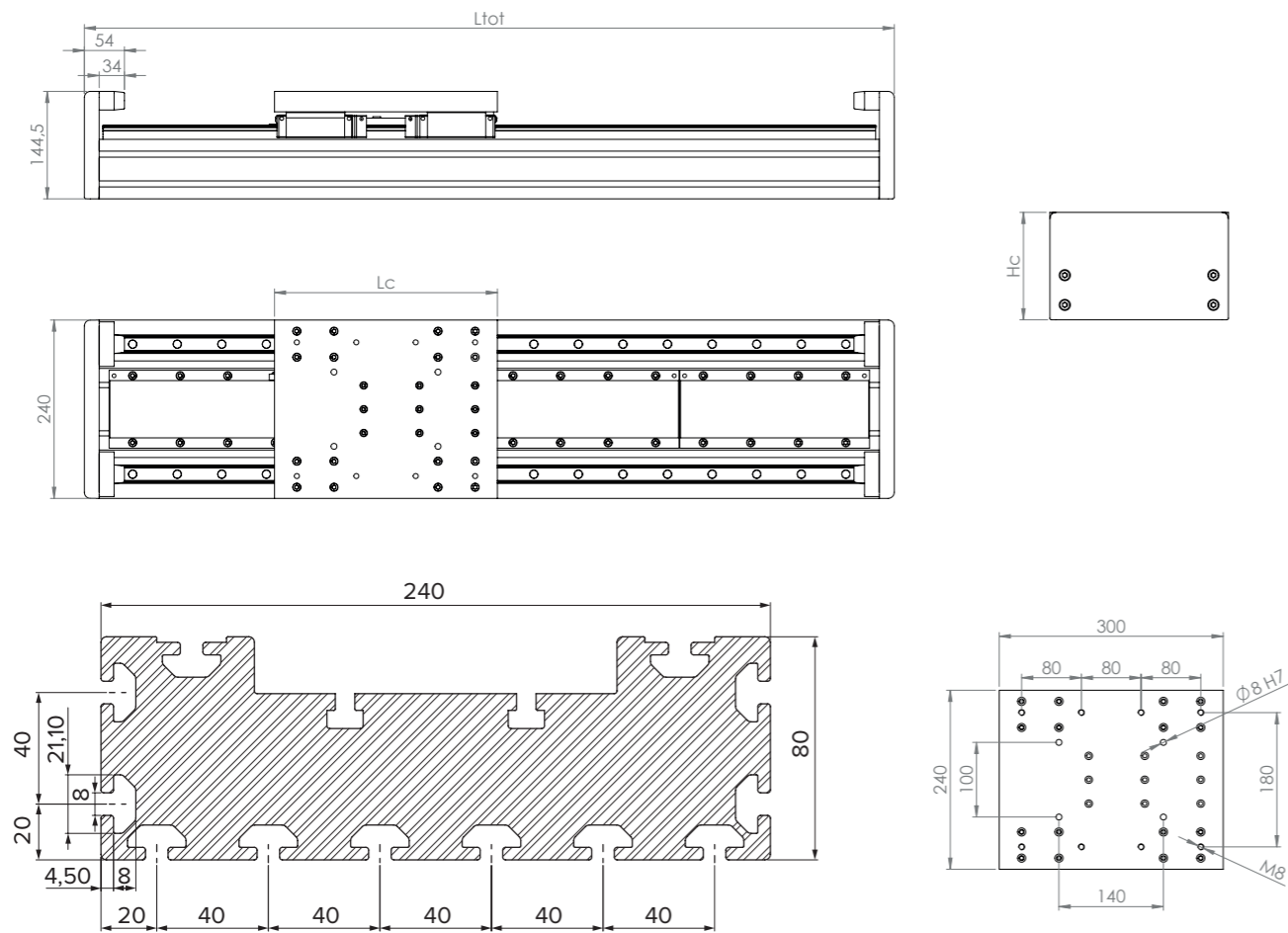
Type of primary element	075-P			
Length [mm]	200			
Weight of primary element [kg]	5			
Peak force [N]	800			
Continuous force [N]*	413			
Attraction force [kN]	3,7			
Maximum allowable temperature [°C]	130			
Type of secondary element	075-S			
Number of slots	075-0064	075-0128	075-0256	075-0512
Length [mm]	64	128	256	512
Weight of secondary element [kg]	0,65	1,29	2,58	5,32

\*The motor's continuous force is determined based on the force it can sustain when operating at its maximum allowable temperature.

MECHANICAL PROPERTIES

Carriage weight [kg]	13,9
Weight of stroke guide 0 [kg] *	29,6
Weight of guide every 64 mm stroke [kg] **	2,2

\* Including the weight of the carriage, excluding the cable duct and the relevant supports.  
\*\* 64 mm minimum length of the secondary element



GENERAL DIMENSIONS	
Total carriage length Lc [mm]	300
Total guide length Ltot [mm]	Corsa* + 428
Total carriage height Hc [mm]	144,5

\*The stroke is obtained by joining subsequent secondary elements. Refer to the relevant table for the standard lengths of the secondary element.

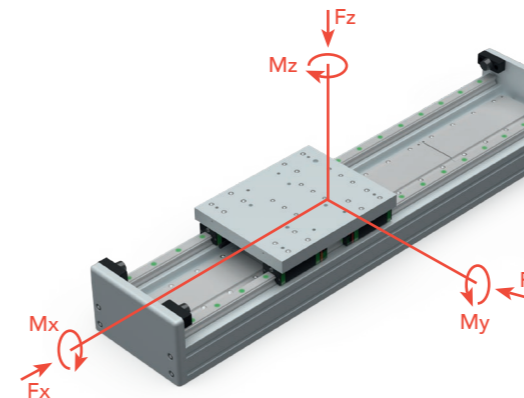
GENERAL TECHNICAL DATA	
Repeatability [mm]*	± 0,02
Maximum speed [m/s]	5
Maximum acceleration [m/s <sup>2</sup> ]	50
Maximum profile length [mm]	6000
Typical load applied [Kg]**	120
Profile section [mm]	80 x 240
JX profile moment of inertia [cm <sup>4</sup> ]	470,2
JY profile moment of inertia [cm <sup>4</sup> ]	4636,9

\*Repeatability is related to the feedback resolution  
 \*\*under static conditions

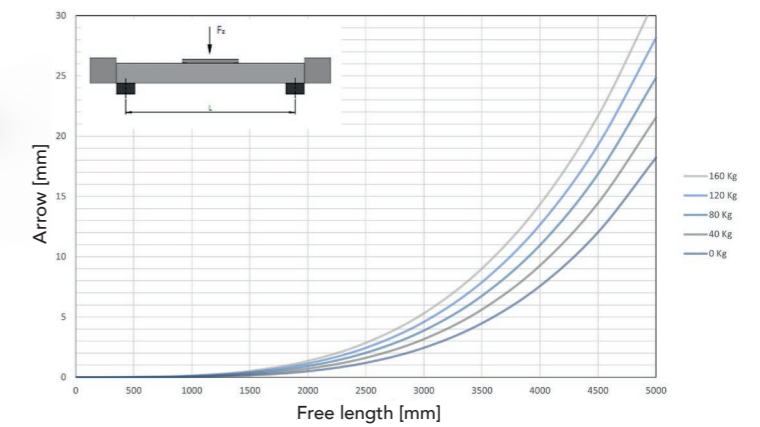
LOAD CAPACITY

	Theoretical		Max recommended	
	Static	Dynamic	Static	Dynamic
Fy [N]	174480	157200	34896	18864
Fz [N]	174480	157200	34896	18864
Mx [Nm]	15267	13755	3053	1651
My [Nm]	16576	14934	3315	1792
Mz [Nm]	16576	14934	3315	1792

To be considered as non-combined loads



LOAD DEFLECTION



LINEAR GUIDE

Type of shoe	QHH25HA
Static load coefficient C0 [kN]	43,62
Dynamic load coefficient Cdin [kN]	39,30

LINEAR MOTOR

Type of primary element	075-P			
Length [mm]	200			
Weight of primary element [kg]	5			
Peak force [N]	800			
Continuous force [N]*	413			
Attraction force [kN]	3,7			
Maximum allowable temperature [°C]	130			
Type of secondary element	075-S			
Number of slots	075-0064	075-0128	075-0256	075-0512
Length [mm]	64	128	256	512
Weight of secondary element [kg]	0,65	1,29	2,58	5,32

\*The motor's continuous force is determined based on the force it can sustain when operating at its maximum allowable temperature.

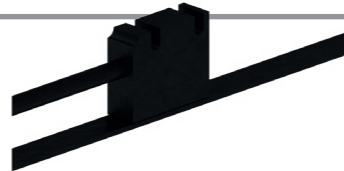
MECHANICAL PROPERTIES

Carriage weight [kg]	13,0
Weight of stroke guide 0 [kg] *	32,1
Weight of guide every 64 mm stroke [kg] **	2,7

\* Including the weight of the carriage, excluding the cable duct and the relevant supports.  
 \*\* 64 mm minimum length of the secondary element

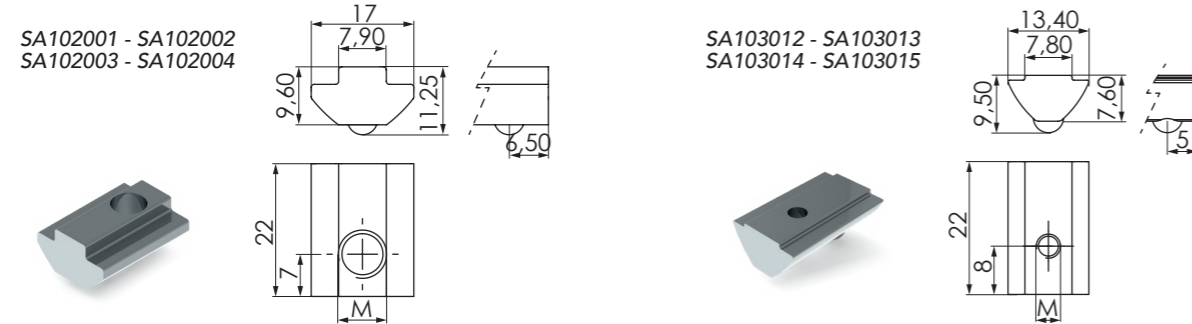
## POSITION TRANSDUCER WITH MAGNETIC BAND

The position transducer with the magnetic band is an effective linear incremental measurement system. The measuring transducer integrates within the same device the sensor sensitive to the magnetic field, the signal conversion electronic circuit or the output phase. By sliding on the magnetic band, the sensor generates a signal that is converted into an incremental position signal. The magnetic band is made up of a magnetised plasto ferrite strip with alternating magnetic poles. Depending on the type of application, transducers with varying resolutions can be identified, and they can feature either incremental or absolute measurement systems.



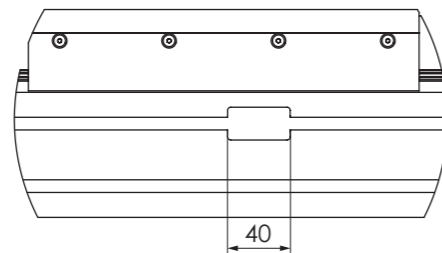
## FIXING SLIDERS

LINEAR AXIS	NUT CODE	M	MATERIAL	ATTACHABLE AFTER ASSEMBLY
TLS160-050 TLS240-050 TLS180-075 TLS240-07	SA102001	M4	GALVANIZED STEEL	NO
	SA102002	M5	GALVANIZED STEEL	NO
	SA102003	M6	GALVANIZED STEEL	NO
	SA102004	M8	GALVANIZED STEEL	NO
	SA103012	M4	GALVANIZED STEEL	YES
	SA103013	M5	GALVANIZED STEEL	YES
	SA103014	M6	GALVANIZED STEEL	YES
	SA103015	M8	GALVANIZED STEEL	YES



## PROFILE GROOVING

On request, it is possible to perform milling in the vicinity of one or more cavities so that the sliders for fixing the sensor kit can be inserted once the axis has already been completely assembled. Machining is performed as standard near the centre of the profile.



If not required, the construction standard does not provide for this processing.

## STANDARD CODING LINEAR AXIS

	C	LS	
<b>SERIES</b>			<b>SPECIAL PROCESSING</b>
-TLS160-050			0 NO
-TLS240-050			1 PROFILE GROOVING
-TLS180-075			
-TLS240-075			

\*Accessories or any motorization predispositions must be requested separately from the axis coding



 MEMBER OF DEXIS EUROPE

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