ROLLON®

Linear Evolution

CAMOZZI

Actuator Line

Part 2

General catalogue

English

www.rollon.com

www.camozzi.ru

When you move. We move

Rollon S.p.A. was set up in 1975 as a manufacturer of linear motion components. Today Rollon group is a leading name in the design, production and sale of linear rails, telescopic rails and actuators, with headquarters based in Italy and offices and distributors located throughout the world. Rollon products are used in many industries with creative and efficient solutions in a wide range of applications used on a daily basis.

Solutions for linear motion

Linear Rails

Rails with roller bearings
Rails with caged ball bearings
Rails with recirculating ball bearing

Telescopic Rails

Rails with partial/total extension
Heavy duty rails
Rails for and automated/manual applications

Actuators

Belt driven actuators
Ball screw driven actuators
Rack and pinion actuators

Core Competencies

- Full range of linear rails, telescopic rails and actuators
- Worldwide presence with branches and distributors
- Fast delivery all over the world
- Large technical know-how for applications

Standard solutions

Wide range of products and sizes
Linear rails with roller and caged ball bearings
Heavy duty telescopic rails
Belt or ball screw driven linear actuators
Multi-axis systems

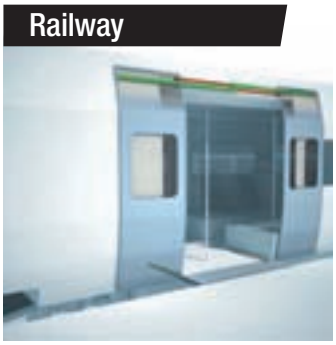
Collaboration

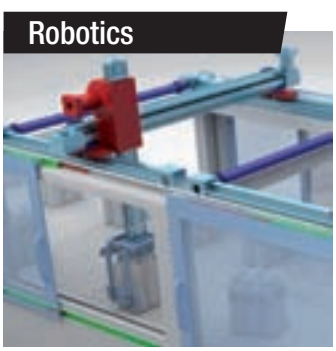
International know-how in several industries
Project consultancy
Maximizing performance and cost optimization

Customization

Special products
Research and development of new solutions
Technologies dedicated to different sectors
Optimal surface treatment

Applications



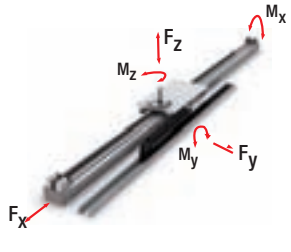


Technical features overview

Reference			Section		Driving			Anticorrosion	Protection
Family		Product	Balls	Rollers	Toothed belt	Ball screw	Rack and pinion		
TECLINE		PAR							
		PAS/M PAH/M							
MODLINE		MCS MCH							
		MCR							
		TVS TVH							
		TCS TCH TECH							
		KCH							
		TCR TECR							
		MVS MVH							
		MTR MVR							
MODLINE Z		ZCS ZCH							
		ZCR ZCY							
		ZMC							
SYS		SYS1							
		SYS2							
PRISMATIC RAIL		203							

Reported data must be verified according to the application.
For a complete overview about technical data, please consult our catalogues at www.rollon.com.
* Longer stroke is available for jointed version.
** When consulting the drawings in this catalog, always reference the legend listed on the same page.

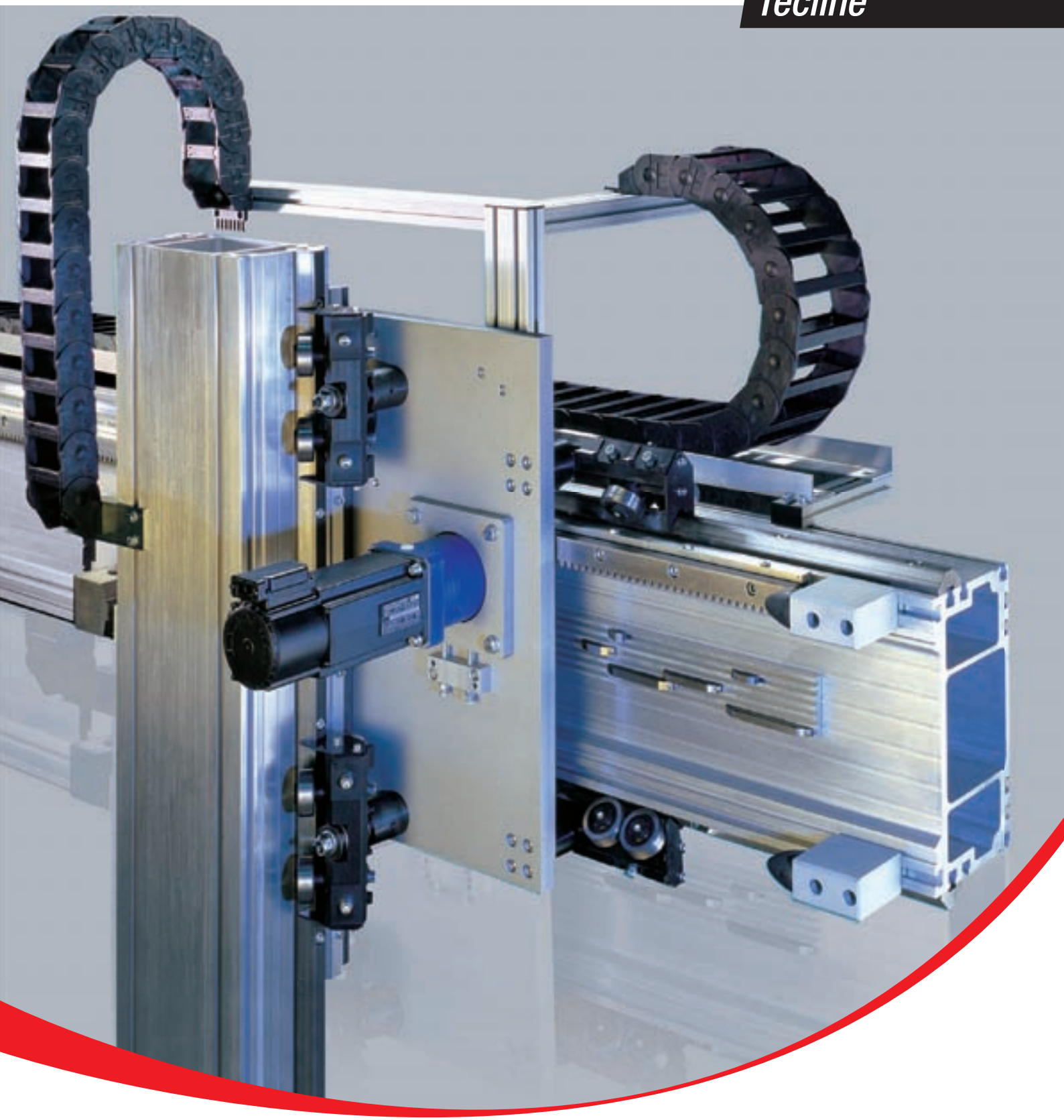
Size	Max. load capacity per carriage [N]			Max. static moment per carriage [Nm]			Max. travel speed [m/s]	Max. acceleration [m/s²]	Repeatability accuracy [mm]	Max. travel or stroke (per system) [mm]
	F_x	F_y	F_z	M_x	M_y	M_z				
170-180-200 220-280-360	10280	29900**	44860**	6900	13160**	8800**	3,5	10	± 0,2	10800*
170-180-200 220-280-360	11600	47350**	47350**	7240	13100**	13100**	3,5	10	± 0,05	10800*
65-80-105	3300	9550	9550	156	800	800	5	50	± 0,1	10100
65-80-105	3300	1500	2950	185	580	220	5	20	± 0,1	10100
170-180 220-280	6000	18300	18300	1300	3200	3200	1	5	± 0,05	4000
100-170 180-200-220 280- 360	8000	28600	28600	4000	5500	5500	5	50	± 0,1	11480
100-150-200	2150	6500	6000	110	680	680	4	50	0,1	5600
100-170 180-200-220 280- 360	8000	25400	25400	4900	5300	5300	7	20	± 0,1	11480
80-105	3000	9550	9550	156	800	800	0,75	5	± 0,05	5150
80-105	3000	1500	2950	185	580	220	0,75	5	± 0,05	5150
60-90-100 170-220	6000	10400	12000	810	2940	4560	4	25	± 0,1	11305
60-90-100 170-180-220	6000	7620	9500	440	1900	1485	4	25	± 0,1	11300
105	250	4500	4500	260	700	700	4	25	± 0,1	2000
50-100 130-180	6100	3950	6317	548	950	668	5	25	± 0,05	7500*
200	6320	6320	6320	700	820	705	5	25	± 0,05	7500*
28-35-55	-	-	15000	-	-	-	5	50	± 0,1	7500*

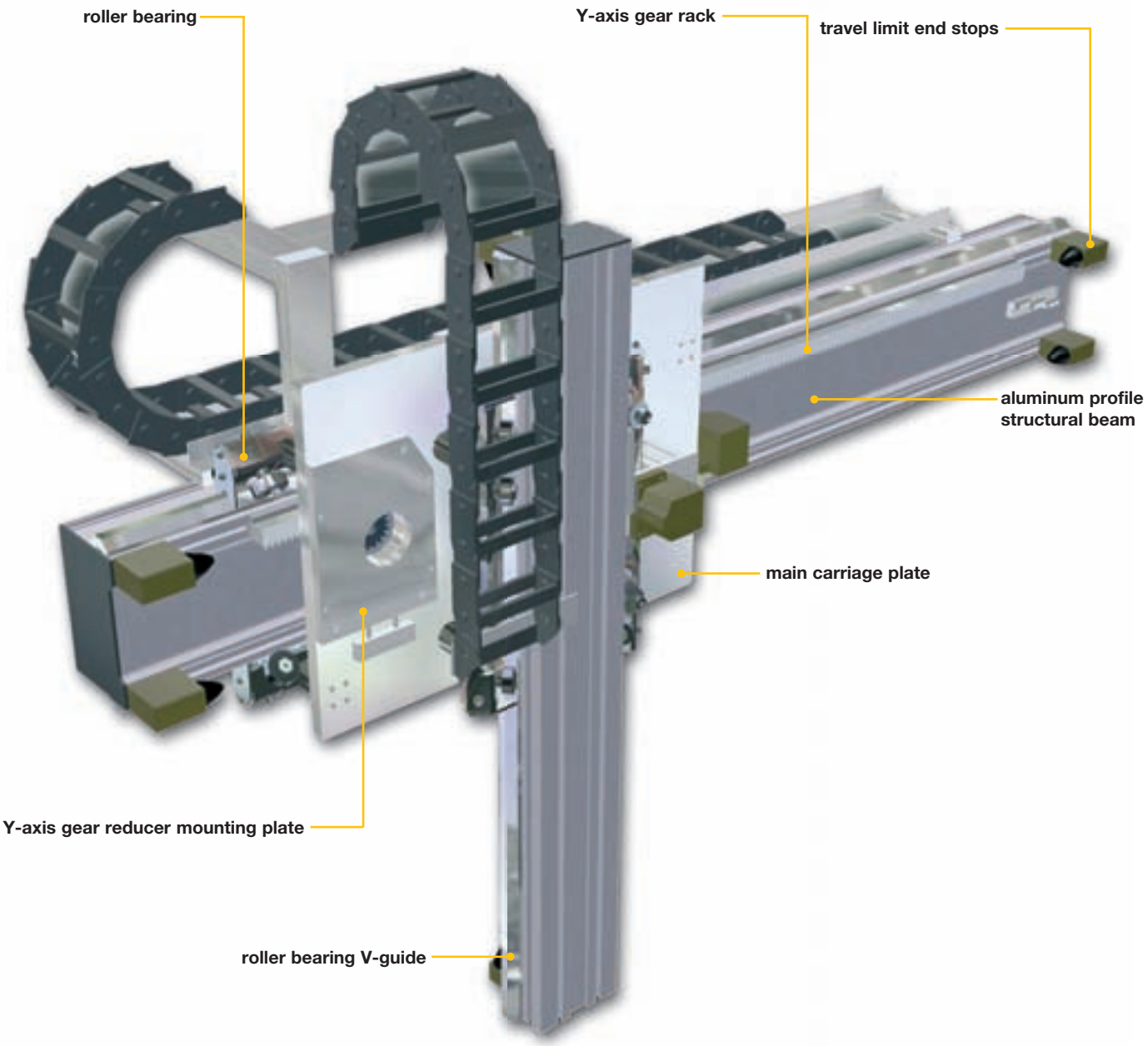


ROLLON®

Linear Evolution

Tecline





Our **tecline linear system** range is suitable for the handling of loads from 10 up to 1000 kg, by manufaturing **one or more axis systems** according to the customer **requirements**.

Our main application fields are: **robotics**, **palletization**, production **line**, **logistics** and **manufacturing machines** with Cartesian axis movements.

Our products stand out for their:

- **easy** and quick assembly
- **high quality** and **competitive** performances (profiles up to 12 m)
- **reduced** and simplified **maintenance**
- wide **range** of **integrated solutions**
- possibility of **customised solutions**
- **constant** technical **support** and CAD drawings available

Our Tecline linears strong points are:

- Solid beams obtained from aluminium alloy extruded profiles
- High-performance aluminium casting alloy plate and preset for tool assembly
- Adapting plate suitable for any commercial available gearboxes
- Fixed and oscillating roller slides, which can be adjusted through an eccentric bushing
- Without play and sealed rollers with a “for life” lubricating system
- Tempered or induction hardened and machined strong V-shaped steel guide rails
- Adjustable limit stops provided with rubber buffers
- Wide range of accessories for 3 or more axis linears

Linear systems with rack drive and components

INTRODUCTION

PROFILES

SINGLE AXES

DOUBLE AXES

COMPONENTS

ACCESSORIES

Edition 03-2015

Construction characteristics

Multiple-axis linear modules with rack drive

TECLINE linear systems are designed for ROBOTS with one, two or three CARTESIAN AXES and comprise Rollon linear modules with rack drive, in different sizes depending on the load to be translated. Modules with rack drive are suitable for transfer and positioning systems with an extremely low repeatability error and/or for dynamic performance and heavy loads.

They can be equipped / supplied with gearboxes, motors and drivers/drives upon request.

Whatever the application, the configuration can be adapted using the complete order code, within an extensive range of components (energy-chains, guides, micro-switches, lubrication units, etc.) and accessories.
Our technical dept. is available to provide assistance with code setting.

Beams

Manufactured with Rollon s extruded and anodised (*) profiles, made of hardened and tempered aluminium alloy Al Mg Si 0.5, quality F25, Rm 245 N/mm, tolerance according to UNI EN 755-9. Profiles are specifically designed by Rollon to create rigid and light structures, suitable for manufacturing linear transfer machines. The guide and rack housings on modules equipped with ball roller slides (PASM family) are milled.
(*) Valyda and Logyca profiles are anodised up to 12 m. Pratyca and Solyda are anodised upon request

Modules can be supplied with head-pieced beams, upon request

Plates

Manufactured with flattened extra-fine rolled sections made of high-performance casting alloy (tensile strength, Rm = 290 MPa, HB = 77). Standard plates can be machined according to drawings (code D).

V-shaped guide rails, PAR version

Made of specially treated high-carbon steel. Standard versions include both hardened and tempered and surface-hardened guides: section 28.6x11, 35x16 and 55x25 (max. length 5,900 mm – 28.6x11, max. length 3,980 mm). Joints bevel cut at an angle of 20°.

Roller slides, PAR version

Body in aluminium alloy G AL SI 91 hardened and tempered according to EN AB 46400, rollers with double rows of angular contact ball bearings, backlash-free, long life lubrication: Ø 30, Ø 40, Ø 52, Ø 62 mm rollers. Adjustable tolerance between rollers and guides. Complete with wiper scraper.

Caged ball roller slides and guide rails, PASM version

Systems are supplied with caged ball roller slides made by leading manufacturers. The cage included in the slides has two purposes: it much the friction between the guide rail and the slide and prolongs their service life, and allows lubrication refills to be performed must less running. The modules and guide rails are suitable for composing sections more than 10 m long. The assembled guide rails have a run parallelism of less than 0.030 mm. The assembly of caged ball roller slides and guide rails normally also involves the machining of the related seat in the profile (code M).

Racks / Toothed pinions

Racks with helical teeth, made of induction-hardened steel and hardened and tempered alloy steel, are available with three different cross-sections: 25x25, 30x30, 40x40 mm.
PAR versions with guide rails and roller slides, assembled with milled, KTD induction-hardened racks with pinions in high-performance tempered and surface-hardened steel (ND). PASM versions with guide rails and caged ball roller slides, are normally assembled with KSD racks and pinions in hardened and tempered RD steel, induction-hardened and fully ground. High-performance KRD racks are available upon request (Rs>900 MPa): hardened and tempered, induction-hardened, and fully ground (page 59). With RD pinions, KRD racks and continuous lubrication, speeds of up to 5 m/s can be reached.

Stop bumpers

Important: the rubber stop bumpers provided with standard linear models are suitable and regarded as static limit switches. For special needs, such as safety stops if the drive breaks, please specify loads, dynamics, details and discuss the use of specific parts, accessories and devices (reinforced plates and attachments - shock absorbers, safety and/or anti-drop devices, etc.) with our technical dept.

Energy chains or accessories

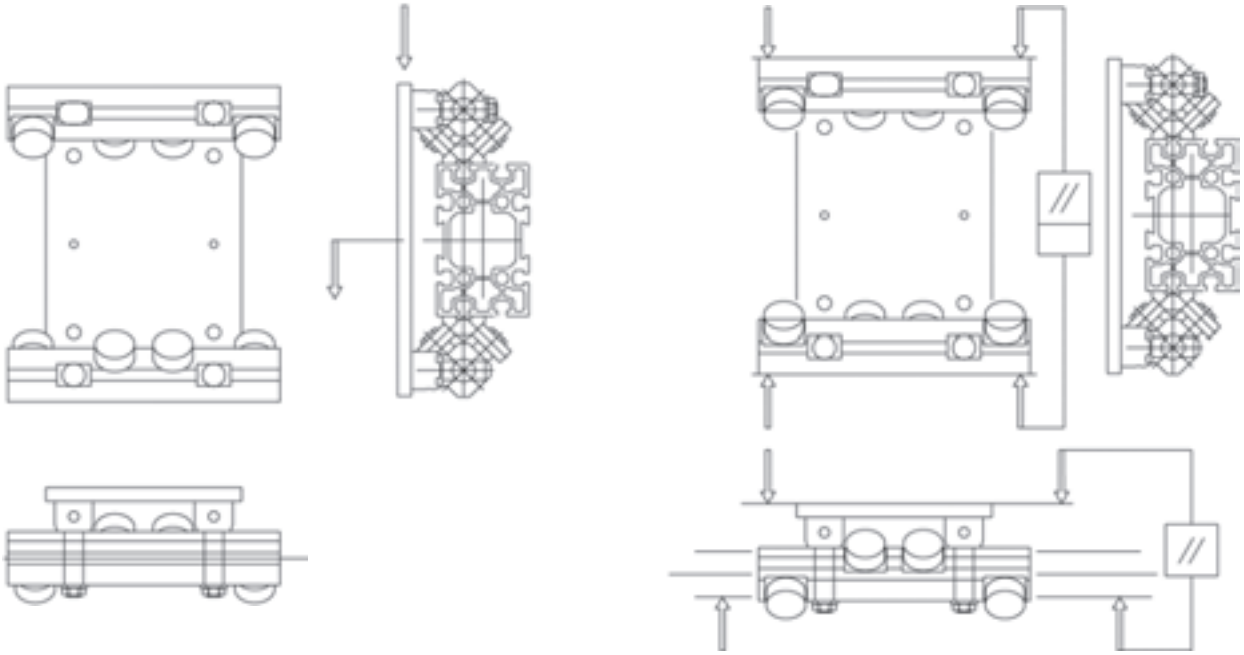
Energy chains are provided upon request, together with a wide range of accessories. Adjustable brackets and supports are included. Standard sizes are those shown in the catalogue. Energy chains and accessories can be added using the order code on page 11.

Anti-oxidation parts and coatings

Rack modules with anti-oxidation coating are available upon request. Materials with special coatings and lubrication are selected according to the environment of use (food industry, health sector, marine environment, exposure to weather, etc.)

A - Features of the system with roller slides

The translation system consists of a plate to which two roller slides with concentric pins and two with eccentric pins are fixed. The eccentric pins help to adjust the tolerance between the roller slide and the sliding track. Check that the angular position of the rollers is such that they can support the max. working load. See page 65 and 71.



A - Assembly and adjustment of the roller slide.

Check the sense of direction of the roller slide as shown in point A. Check the alignment. Bring the roller slides with concentric pin into contact with the sliding tracks. Adjust the eccentric pins until there is no clearance and the carriage can slide easily along the bar.

IMPORTANT: overloading is easily achieved: this may result in premature wear.

NOTE: always keep friction low: if friction is high, loosen and repeat the adjustment.

No adjustments are required with guide rails and recirculating caged ball linear guides. For high-precision applications, please order low-backlash roller slides.

B - Alignment

All profile anchor supports must be perfectly aligned (with axes side by side: perfectly parallel and coplanar).
When mounting the linear axes in parallel, it is necessary to not only verify the parallelism between the linear units themselves, but also the coplanarity of the surfaces of the heads so that the maximum error does not exceed 0.3 mm per meter between the parallel modules and within ± 0.03 mm compared to the parallelism."

C - Assembly of racks

The axis of the teeth and the guide rails must be parallel within tight tolerances. In the PASM version, the rack seat and the seat of the guide rails for the caged ball roller slide guides are machined together to ensure the correct assembly and positioning accuracy of the axis.

D - Tightening specifications and precautions

Make sure all parts are locked with the appropriate screws and with the right tightening torques.

E - Gearboxes, motors and drives

Supplied upon request. The use of right-angle reduction gears with hollow shaft and key is recommended. With this configuration the gearbox adapting plate is complete with shaft, pinion and step bearing. Otherwise, upon request, the adapting plate can be machined according to customer specifications and the pinion, if obtainable from the standard version. Backlash between the pinion and rack is only adjusted if the gearbox is supplied (or available).

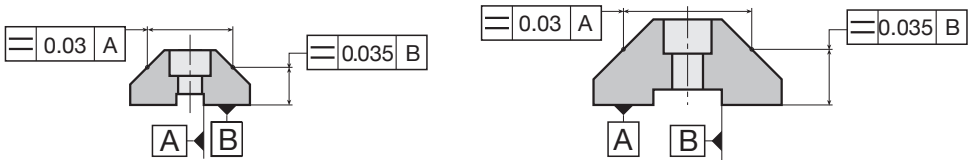
Accuracy

The accuracy of this system is based on the tolerance of:

1. guide rails
2. rolling parts
3. transmission chain (e.g. rack and pinion)

V-shaped guide rails

Made of specially treated high-carbon steel alloy. Their accuracy is shown in the figure below and they are supplied in the following versions: tempered and hardened only, or induction-hardened with a special grinding process, or tempered and hardened.
Hardness: tempered min. 58HRC; tempered and hardened: 240 HB uHB



Rolling parts

Rollers with double rows of angular contact ball bearings to absorb axial force have a low friction coefficient (± 0.03) and are complete with sliding sealing rings.
Roller tolerance and radial backlash are in line with DIN 620 parts 2 and 3 (except for the convex external ring R=500 mm), while the load and calculation coefficients comply with DIN ISO 281 and with DIN ISO 76.

Guide rails and caged ball roller slides

As a general rule, these are generally supplied in “normal” accuracy classes. Thus, they are suitable to ensure the appropriate combination of positioning precision, stiffness and self-alignment required for standard industrial applications.
Higher levels of accuracy with low backlash are available upon request.

Lubrication

Rack and pinion

These parts must be lubricated regularly with a gear grease (for high working pressures).
An automatic, programmable system is available to ensure correct lubrication of the teeth (page 61).
The tangential force and toque values shown in the table on page 61 refer to properly lubricated racks.

Rollers and roller slides

Roller slides and V-shaped rollers are provided with a permanent lubrication system. If properly used, this eliminates the need for any further maintenance, also considering the average life of handling devices.
Do not use solvents to clean rollers or roller slides, as you could unintentionally remove the grease lubricating coat applied to the rolling elements during assembly. However, grease may be added slowly to lithium soap according to DIN 51825 - K3N.

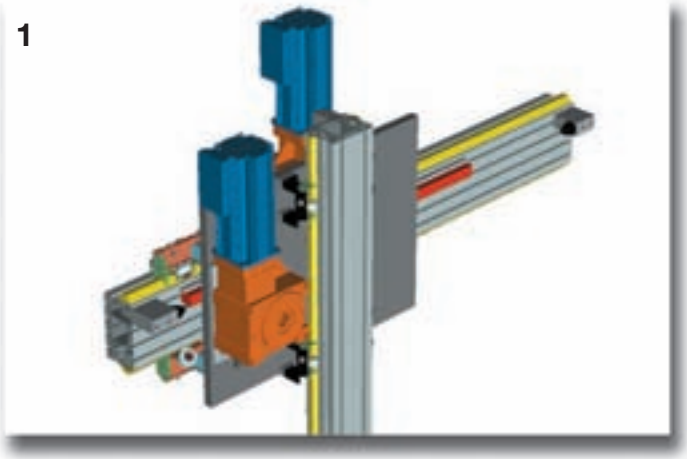
V-shaped guide rails

If properly assembled, with the felt scraper in place, these guides do not require any lubrication, which could attract impurities and have negative consequences.

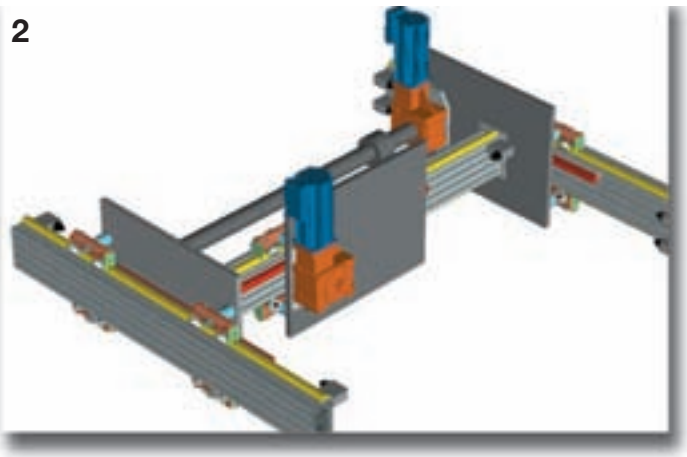
Guide rails and caged ball roller slides

Due to the cage keeping the ball bearings apart, these units are regarded as permanently lubricated; considering the average life of handling devices, no maintenance is needed before 30,000 Km. For applications where dynamic performance is required, our technical dept. will consider the need for special seals or suitable tanks or lubrication systems.

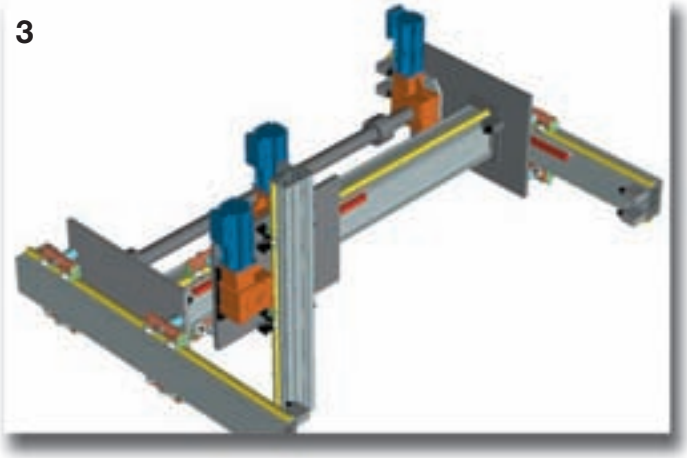
1



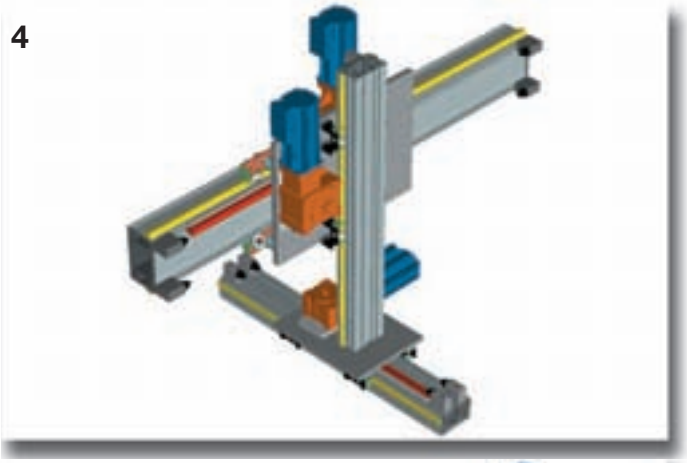
2



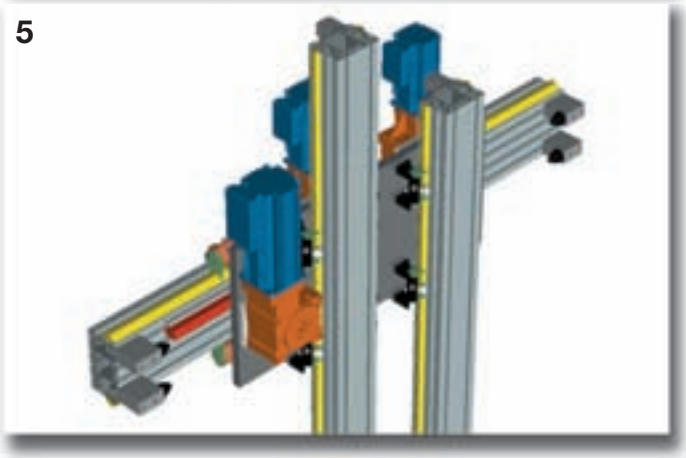
3



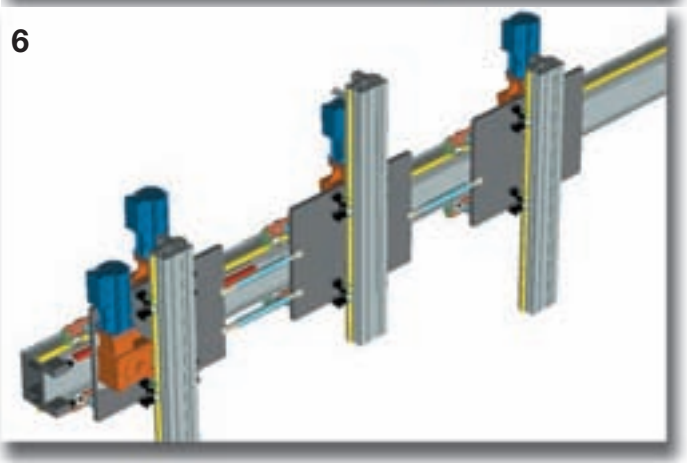
4



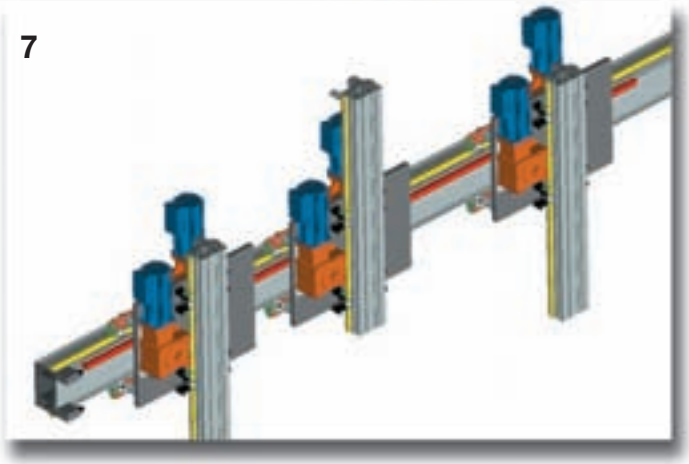
5



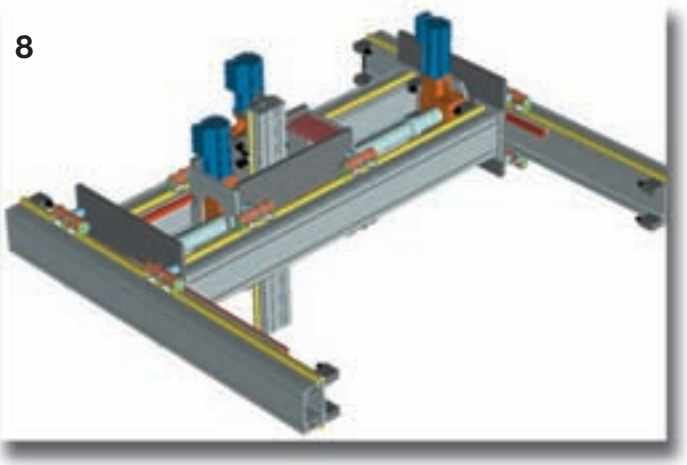
6



7

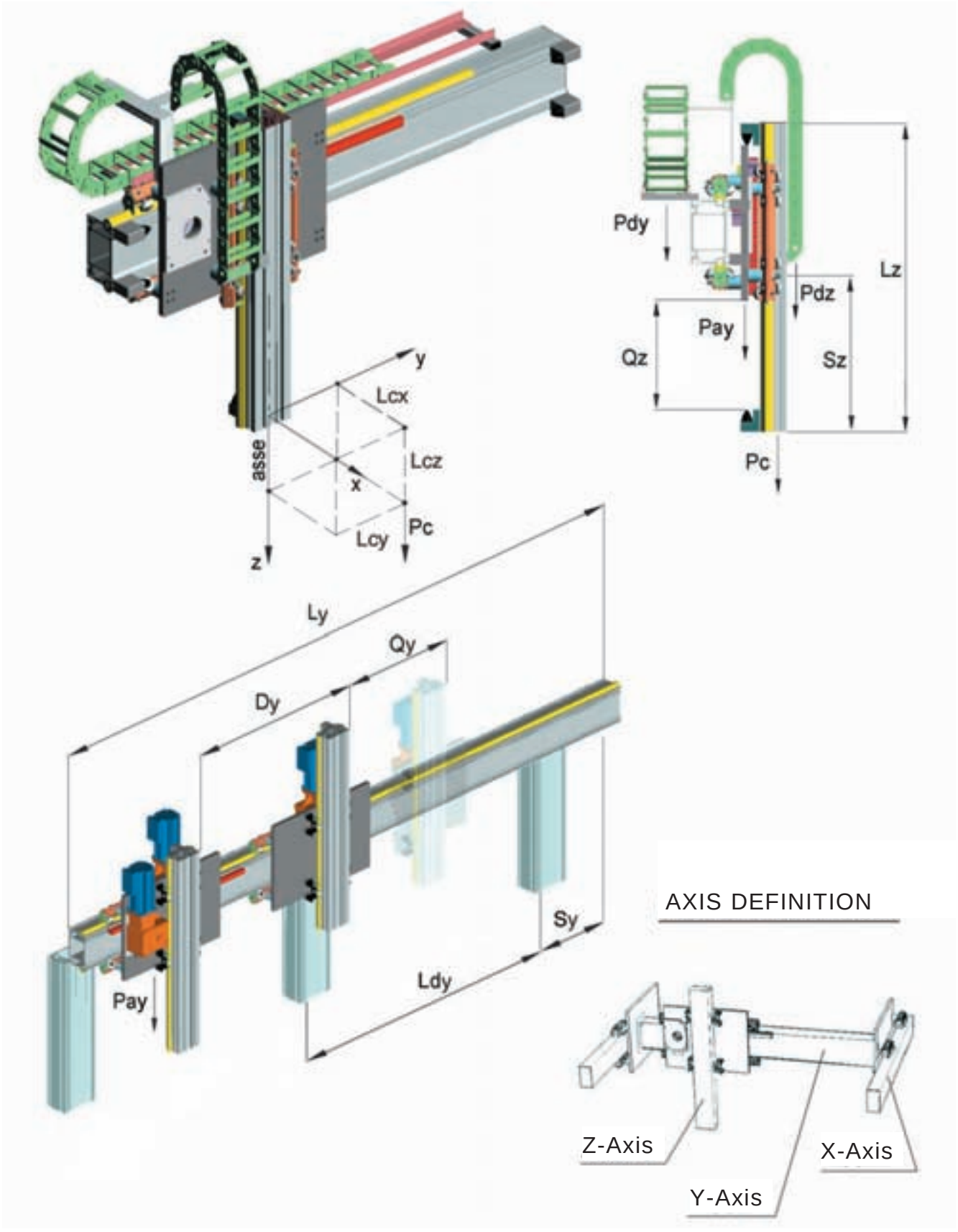


8



Sizing template

Our **technical department** is available to check sizing calculations. Please fill in the form with all the necessary data and send it to our technical dept., which will recommend the most suitable size according to the forces applied and precision required.



For a correct design of the system, please fill the form below and send it to our technical dept.

Date: .....Request n°.....

Filled in by.....

Company.....

Address.....

Phone .....Fax.....

E-mail .....

SIZING TEMPLATE

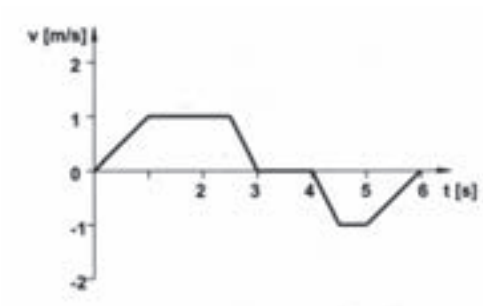
required data | optional data

Assembly solutions (see page 5) no.....

		Z-Axis		Y-Axis		X-Axis	
Total length	**Lz**		**Ly**		**Lx**		[mm]
Total working load including EOAT (add Z axis for Y and X axes)	**Pc**		**Py**		**Px**		[kg]
Equipment weight on carriage (gearbox, cylinder, OPTIONAL)			**Pay**		**Pax**		[kg]
Weight distributed on the beam (energy chain)	**Pdz**		**Pdy**		**Pdx**		[kg/m]
Beam supports			**n°**		**n°**		
Max. projection (any cantilever, the largest)	**Sz**		**Sy**		**Sx**		[mm]
Span (largest)			**Ldy**		**Ldx**		[mm]
Offset load's centre of gravity (X-axis)	**Lcx**						[mm]
Offset load's centre of gravity (Y-axis)	**Lcy**						[mm]
Offset load's centre of gravity (Z-axis)	**Lcz**						[mm]
Additional force, if any	**F**		**F**		**F**		[N] +/-
Possible distance between the carriages (see solutions 6 - 7 on page 5)			**Dy**		**Dx**		[mm]
Transmission performance	η						
Assembly: vertical= 90° - slope = 30°, 45°, 60° - horizontal = 0°	$\alpha°$						
Stroke	**Qz**		**Qy**		**Qx**		[mm]
Speed	**Vz**		**Vy**		**Vx**		[m/s]
Acceleration	**Az**		**Ay**		**Ax**		[m/s^2]
Cycle time	**Tz**		**Ty**		**Tx**		[s]
Positioning accuracy	**+/-**						
Repeatability	**+/-**						[mm]
Work environment (temperature and cleanliness)							
Daily working cycles	**N°**						
Minimum service life requested							[Km]

Working cycle

Working cycle example



Remarks: .....

.....

.....

.....

.....

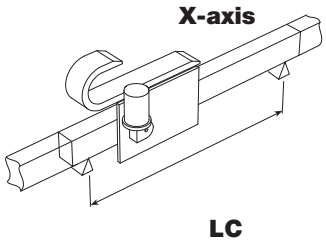
Preliminary selection table (1-2-3 axes)

These tables are useful for making a preliminary selection with load applied in a central position with respect to the plate or profile axis. Z axis length is < 1,600 mm.
Deflection is computed assuming continuous beams having the same span and concentrated static loads.

In the following table, select the appropriate X axes according to the load.

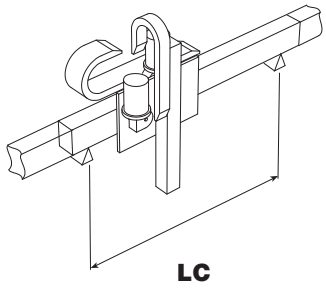
Max load capacity [kg.] PA	2X	3X	4X	5X	6X	8X	10X	LC
	Deflection							
50	1,4							5000
100	1,8							5000
200	2,7	1,8						5000
300		2,3	2,7					5000
400			3,3	2,4				5000
500				2,8	1,8			5000
600					2	2		6000
800						2,5	1,8	6000
1000							2,1	7000

N.B. per i PA 8X e 10X verticale compensare il carico.



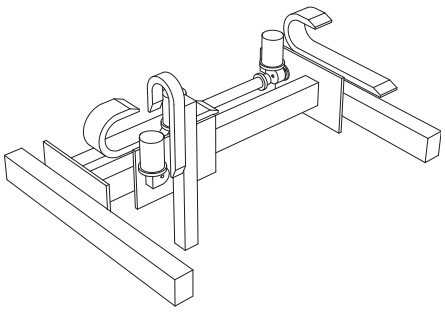
In the following table, select the appropriate Y-X axes according to the load.

Max load capacity [kg.] PA	2/1	3/1	4/1	5/2	6/2	8/3	6/4	8/6	10/6	10/8	LC
	Deflection										
50	1,9										5000
100	2,4	1,7	2	1,6							5000
200				2,2	0,8	0,8					5000
300					1,6	1,6	1,6				6000
400							1,9	2	0,9		6000
500								2,2	1		6000
600								2,5	1,2	1,2	6000
800										2,2	7000



In the following table, select the appropriate X and Y-Z axes according to the load.

X-axis PA	PA load [kg.]	2/1 100	3/1 100	4/1 100	5/2 200	6/2 200	8/3 300	6/4 400	8/6 600	10/6 600	10/8 700
		Y-Z-axes									
2X	**(200)**										
3X	**(300)**										
4X	**(400)**										
5X	**(500)**										
6X	**(600)**										
8X	**(800)**										
10X	**(1000)**										



NB: The choice of X axis is based upon the actual load, the supporting points, max. deflection and the total weight of the Y-Z axes.

EXAMPLE: selection of 3-axis system with roller slides
(Please see page 10 and the system pages for the nomenclature)

DATA: Total working load 300 kg, X axis stroke: 5,000 mm, Y axis stroke: 4,000 mm, Z axis stroke: 2,000 mm, support points: 2

By analysing the table of Y-Z axes based on the working load (Pc), profile length (Ly) and deflection, the selection falls on one PA 8/3 (load 300 kg.) system.

Check: $P_{eff} = P_{max}$- (Lz - 1,600)/1,000•q_z = 300-(2,900-1,600)/1,000•35 = 254.5 kg. < di 300 kg (not sufficient).

Therefore select the larger size PA 6/4 (max. load capacity 400 kg.)

M_{toty+z} PA 6/4 = M_{base}+(q_y• strokeQ_y+q_z• strokeQ_z)/1000+Pc = 244+(66•4,000+48•2,000)/1,000+300 = 904 kg.

$P_{totx} = M_{tot}$ PA 6/4 (Y+Z)•0.66 = 596.6 kg.

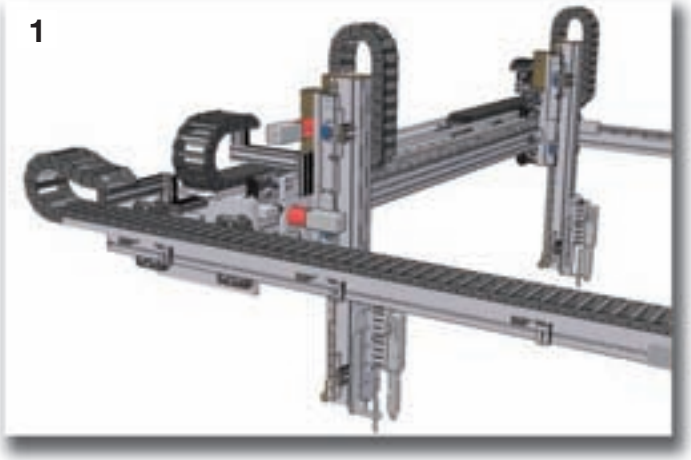
Lx = $stroke_x$ + 1,200 approx. = 5,000+1,200 = 6,200 mm

By analyzing the table of X axes based on the load (P_{totx}) profile length (Lx) and deflection, it is possible to select 2 linear axes PA 6X

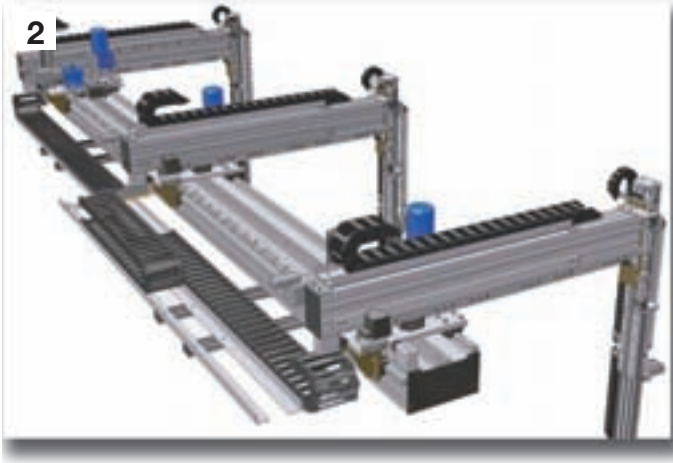
Chosen composition: n°1 PA 6/4 + n° 2 PA 6X

Perform a final analysis by computing the deflection based on the actual size of the spans.
Our technical dept. is at your complete disposal to help you examine the most suitable applications for your requirements and help you ...with motor and drive sizing for the whole project.

1

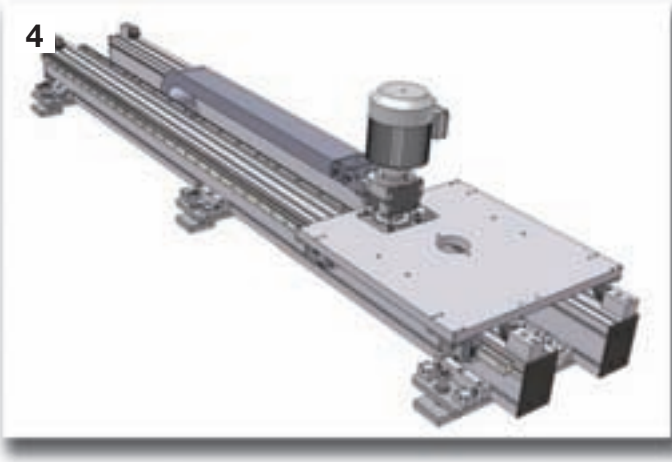


2



3

4



5

5

7

1/5 Pick and place system with twin vertical axis and rack and pinion drive for the production of panels in the construction industry.

2 Pipe handling system in welding plant.

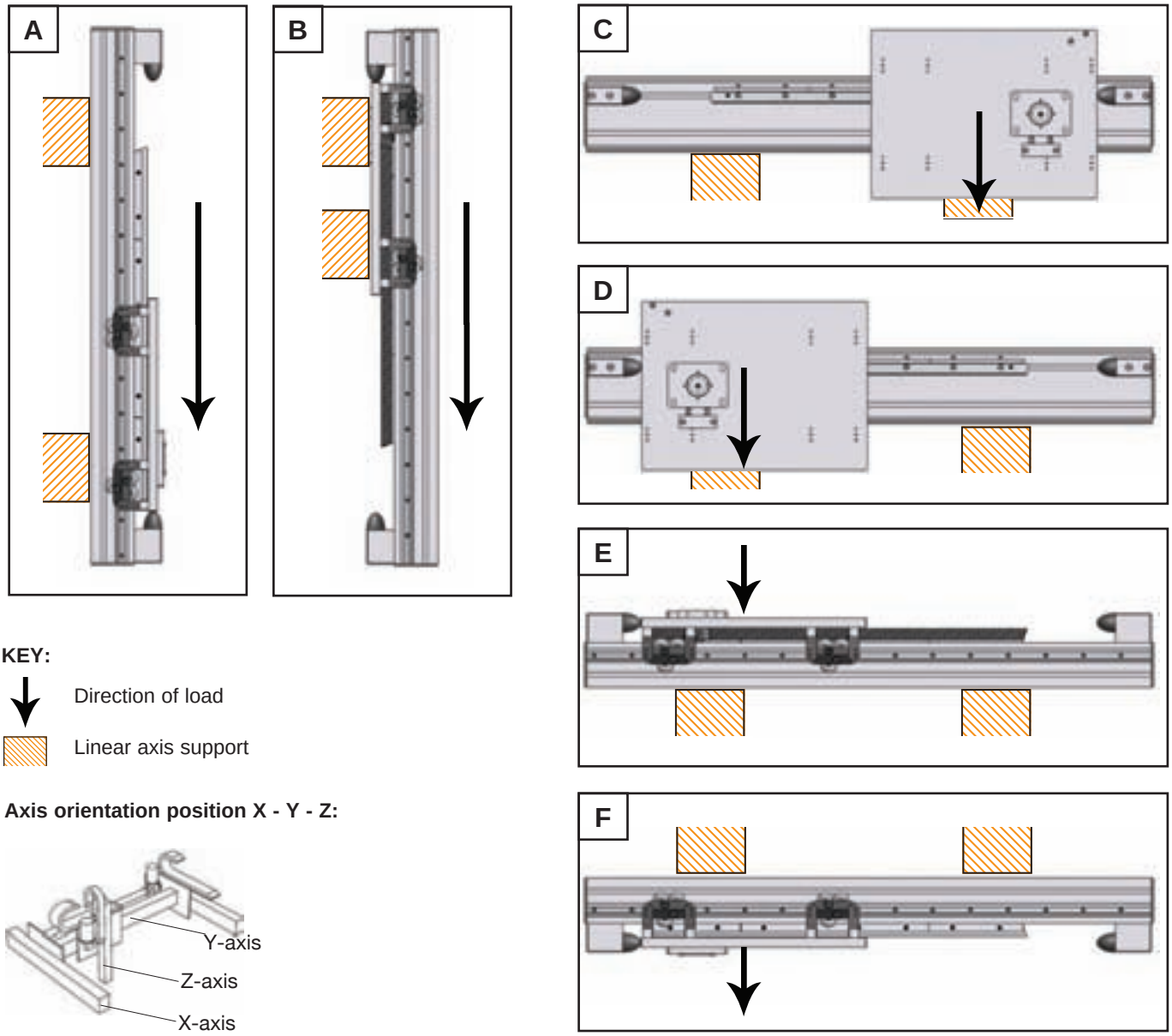
3/6 Multicarriage handling system with separate rack and pinion drive for each X and Y axis.

4 Shuttle system for 6-axis of SCARA robot.

7 Column lift - load 100 kg - stroke 17 m.

Assembly positions and load direction

For single-axis roller versions



KEY:

Direction of load

Linear axis support

Axis orientation position X - Y - Z:

Simplified code setting of the module

EXAMPLE	P	A	S	M	5	/	2	/	mm/mm/	...
SERIES	P									
SLIDE	A= rack									
DRIVE	R= Roller slides S= caged ball linear guides - high performance									
PROFILE MACHINING	M= profile with machined guide plane and rack plane									
SIZE OF X-AXIS	See catalog from page 18 to page 55									
SIZE OF Z-AXIS	See catalogue from page 18 to page 55 “X”= Z-axis not provided									
STROKE / Length	“mm” = X-axis / Y-axis / Z-axis									
ACCESSORY CODES	Various accessory codes									

Order code

Required | Accessories | **Complete for special versions**

Order code																														
Exemple	Y	C	P	A	R	-	280	m3	KTD	-	6000	7200	D	2	-	1800	FTD	-	-	-	-	R	-	-	S	-	-	-	-,-

Axis direction: **Y** (X, Y, Z)

See page 10 for assembly position. Exemple: **C**

Unit Type: **P**

Drive: **A** (Rack)

Guide rails and roller slides: **R**
- Guide rails 28x11 **RR**
- Guide rails 35x16 **RQ**
- Guide rails 55x25 **RP**
- Guide rails and caged ball roller slides **S**
- Without cage **H**

Profile machining: **-**
- Profile machined **M**
- Profile not machined **-**

Profile size: **280**
60, **90**, **100H/50**, **100**, **180**, **170**, **200**, **220**, **280**, **360**

Rack rail size: **-**
m2, m3, m4

Rack rail type: **-**
- Helical teeth, normalized, milled **KBD**
- Helical teeth, hardened **KTD**
- Helical teeth, hardened, ground **KSD**
- Helical teeth, hardened and tempered, tempered, ground **KRD**

Roller characteristic measurement: **-**

Caged ball roller slides size:
Ø 63, **Ø 75**, **Ø 30**, **Ø 40**, **Ø 52**, **Ø 62**
15, **20**, **25**, **30**, **35**, **45**

Stroke: **6000**

Total Length: **7200**

Standard carriage: **-**
- Drawing **D**
- No plate (coupled unit) **X**
- Not included **N**

Number of carriages: **-**

Special carriage dimensions: **-**

Carriage centre distance [mm]: **-**

Reducer flange, pinions: **FTD**
- Pinion hardened and tempered, ground **FRD**
- Pinion hardened and tempered, ground **FND**

Pinion pitch diameter: **-**

Energy chain width: **-**
K50 - K75 - K100 - K150 - K200

M Micro-switch present: **-**

P Cam-holder + cams: **-**

R Gearbox assembly: **-**

C Cylinder assembly: **-**
C Ø32 ÷ Ø100

A/B Anti-drop brake device: **-**
A Ø63 ÷ Ø125
B Ø63 ÷ Ø125

S Security lock-pin: **-**
S Ø20
S Ø30

Connection shaft: **-**
A1/Centre distance length
A2/Centre distance length
A3/Centre distance length

Shaft torsional moment [Nm]: **-**
20, 35, 70, 100, 190, 300, 420

SF Bellow: **-**
For caged roller slides

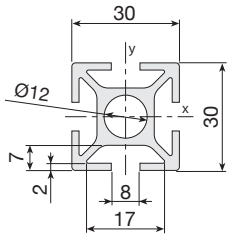
Additional accessories: **-**

Additional accessories

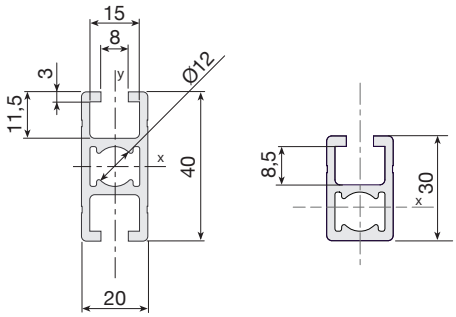
- The standard system includes all components illustrated in the drawings (profiles, gearbox plate, energy chain support, profile end caps, safety stops), except the energy chain.
- Pinion, reduction units, gearboxes and compensating cylinders supplied by the customer can be fitted upon request.
- Machining to specifications (drilling, hollowing, spot-facing, etc.) on the free surfaces of the plates.
• Customized applications (optional: systems with several plates, machining to drawing specifications, structural inspections for special loads, Cartesian robots with three or more axes, etc.)

Profile specifications (see machining code table on page 83)

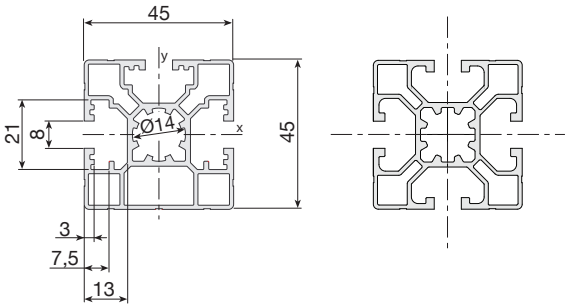
Small profiles



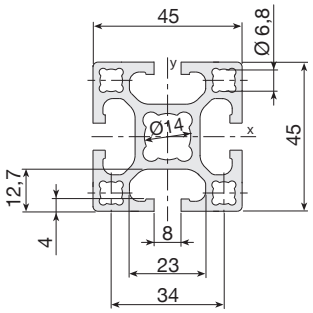
MB 1-1 (30x30)		
Weight	1.2	kg/m
Max. length	6	m
Moment of inertia Ix	39,000	mm⁴
Moment of inertia Iy	39,000	mm⁴



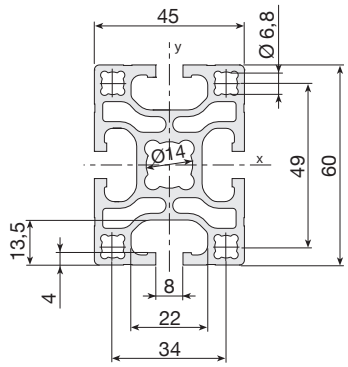
	E01-7 (20x40)	E01-8(20x30)	
Weight	1.3	0.75	kg/m
Max length	6	6	m
Moment of inertia Ix	22,000	24,600	mm⁴
Moment of inertia Iy	46,000	15,700	mm⁴



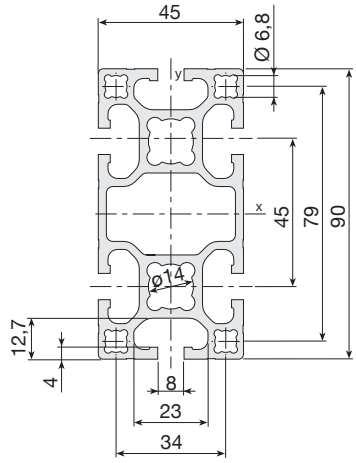
	E01-6 (45x45) light	E01-11	
Weight	1.4	1.4	kg/m
Max. length	6	6	m
Moment of inertia Ix	137,000	103,500	mm⁴
Moment of inertia Iy	138,000	103,500	mm⁴



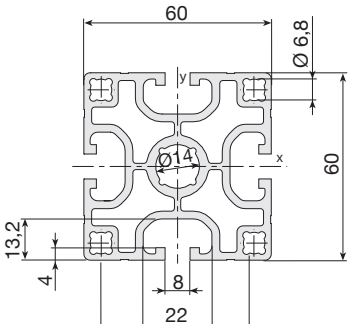
E 01-1 (45x45)		
Weight	2	kg/m
Max. length	6	m
Moment of inertia Ix	155,000	mm⁴
Moment of inertia Iy	155,000	mm⁴



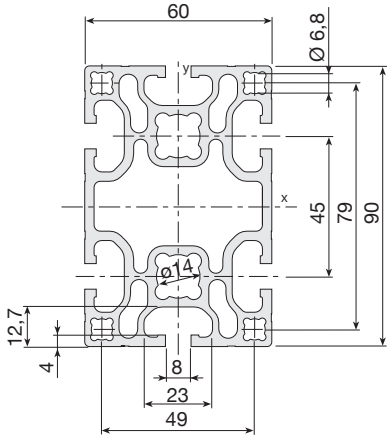
E 01-2 (45x60)		
Weight	2.7	kg/m
Max. length	6	m
Moment of inertia Ix	340,000	mm⁴
Moment of inertia Iy	208,000	mm⁴

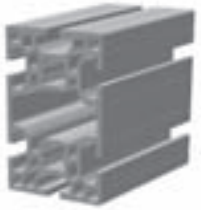


E 01-3 (45x90)		
Weight	3.5	kg/m
Max. length	6	m
Moment of inertia Ix	1,055,000	mm⁴
Moment of inertia Iy	284,000	mm⁴



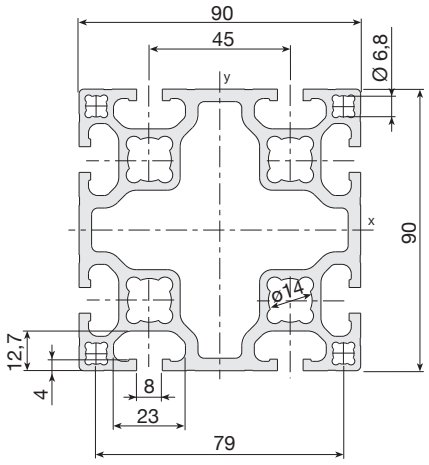
F 01-1 (60x60)		
Weight	3.6	kg/m
Max. length	6	m
Moment of inertia Ix	466,600	mm⁴
Moment of inertia Iy	466,600	mm⁴

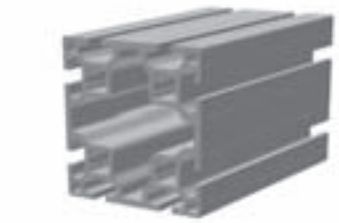




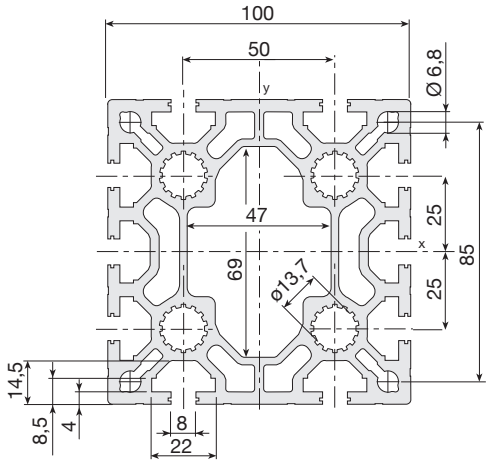
F 01-2 (60x90)		
Weight	4.6	kg/m
Max. length	6	m
Moment of inertia Ix	1,450,500	mm⁴
Moment of inertia Iy	641,600	mm⁴

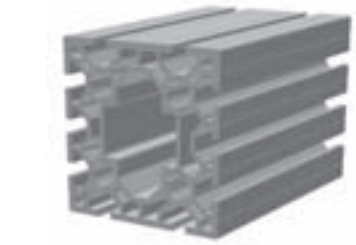
Medium profiles



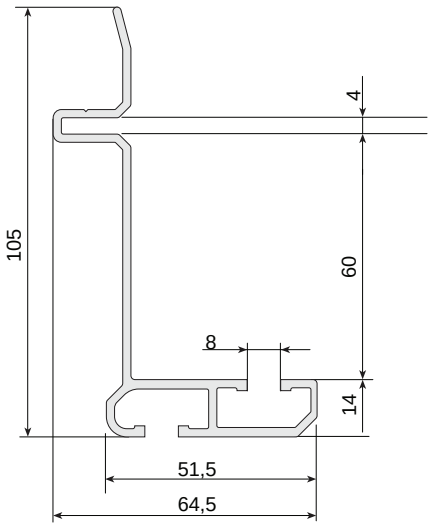


E 01-4 (90x90)		
Weight	6	kg/m
Max. length	6	m
Moment of inertia Ix	2,027,000	mm⁴
Moment of inertia Iy	2,027,000	mm⁴
Polar moment of inertia Iz	1,100,000	mm⁴
Bending section modulus Wx	45,040	mm³
Bending section modulus Wy	45,040	mm³

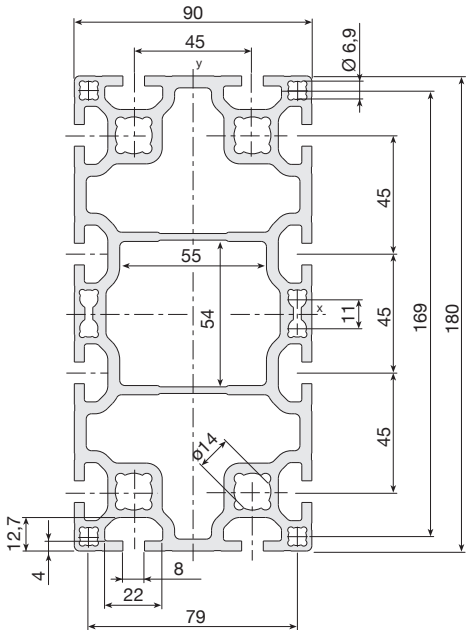


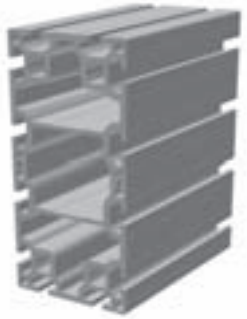


MA 1-5 (100x100)		
Weight	9.5	kg/m
Max. length	6	m
Moment of inertia Ix	3,800,000	mm⁴
Moment of inertia Iy	3,650,000	mm⁴
Polar moment of inertia Iz	1,900,000	mm⁴
Bending section modulus Wx	76,000	mm³
Bending section modulus Wy	73,000	mm³



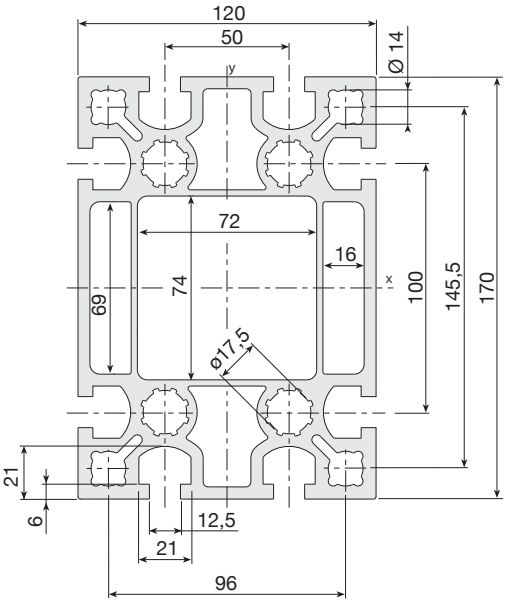
7400568 energy chain support profile		
Weight	1.3	kg/m
Available length	6	m

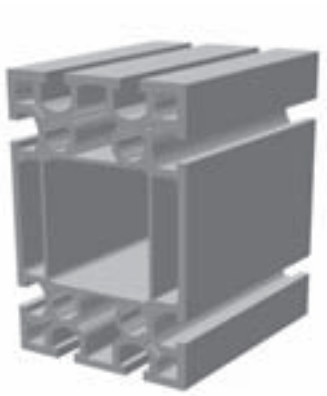




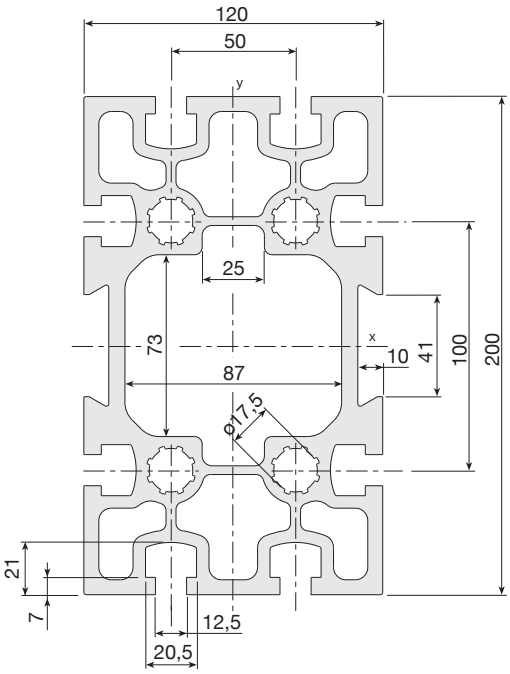
E 01-5 (90x180)		
Weight	approx. 12	kg/m
Max. length	8	m
Moment of inertia Ix	15,180,000	mm⁴
Moment of inertia Iy	4,420,000	mm⁴
Polar moment of inertia Iz	4,400,000	mm⁴
Bending section modulus Wx	168,670	mm³
Bending section modulus Wy	98,220	mm³

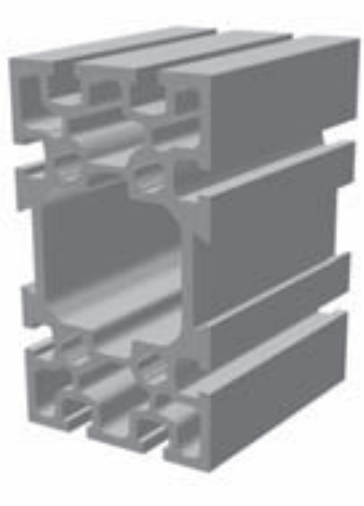
Load bearing profiles





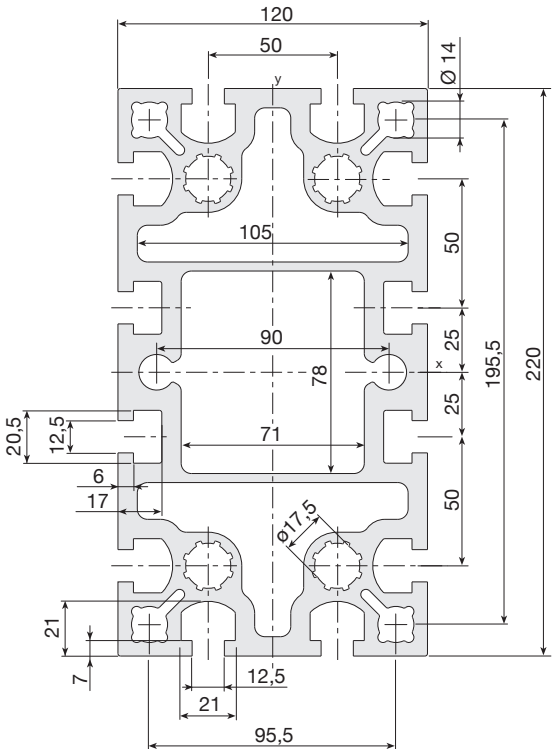
STATYCA (120x170)	code 202.1753	
Weight	17	kg/m
Max. length	12	m
Moment of inertia Ix	20,360,000	mm⁴
Moment of inertia Iy	10,200,000	mm⁴
Polar moment of inertia Iz	8,460,000	mm⁴
Bending section modulus Wx	239,500	mm³
Bending section modulus Wy	170,000	mm³

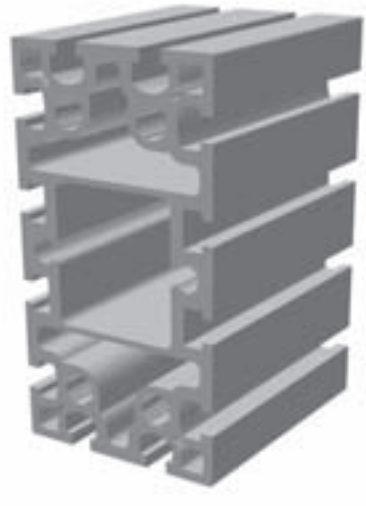




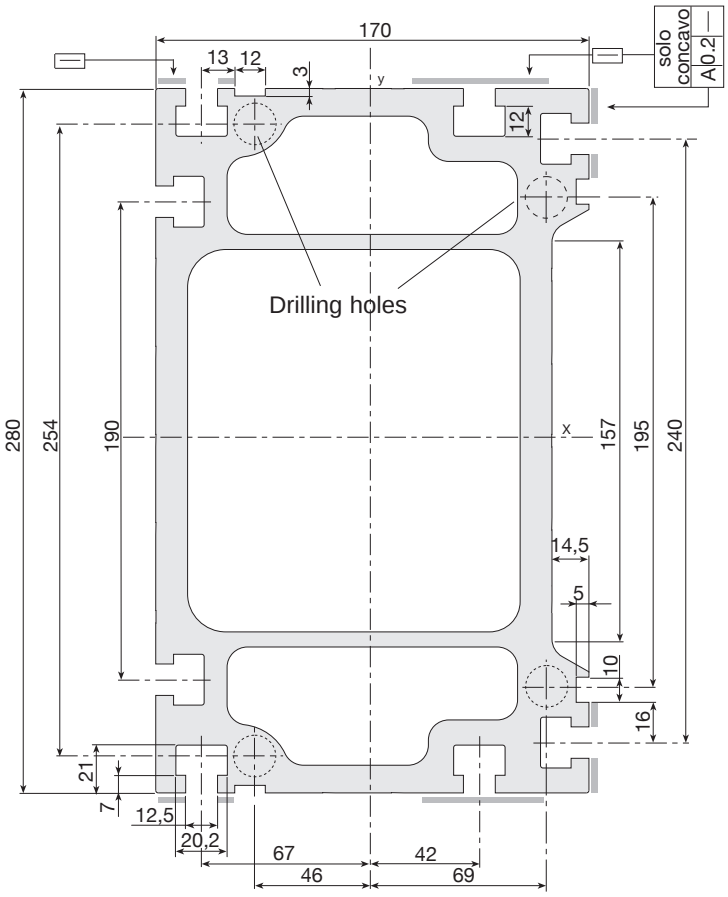
VALYDA (120x200)	code 202.1146	
Weight	21	kg/m
Max. length	12	m
Moment of inertia Ix	32,980,000	mm⁴
Moment of inertia Iy	12,980,000	mm⁴
Polar moment of inertia Iz	10,500,000	mm⁴
Bending section modulus Wx	329,800	mm³
Bending section modulus Wy	215,130	mm³
Only anodized up to	9	m

* Dovetail inserts available in various size

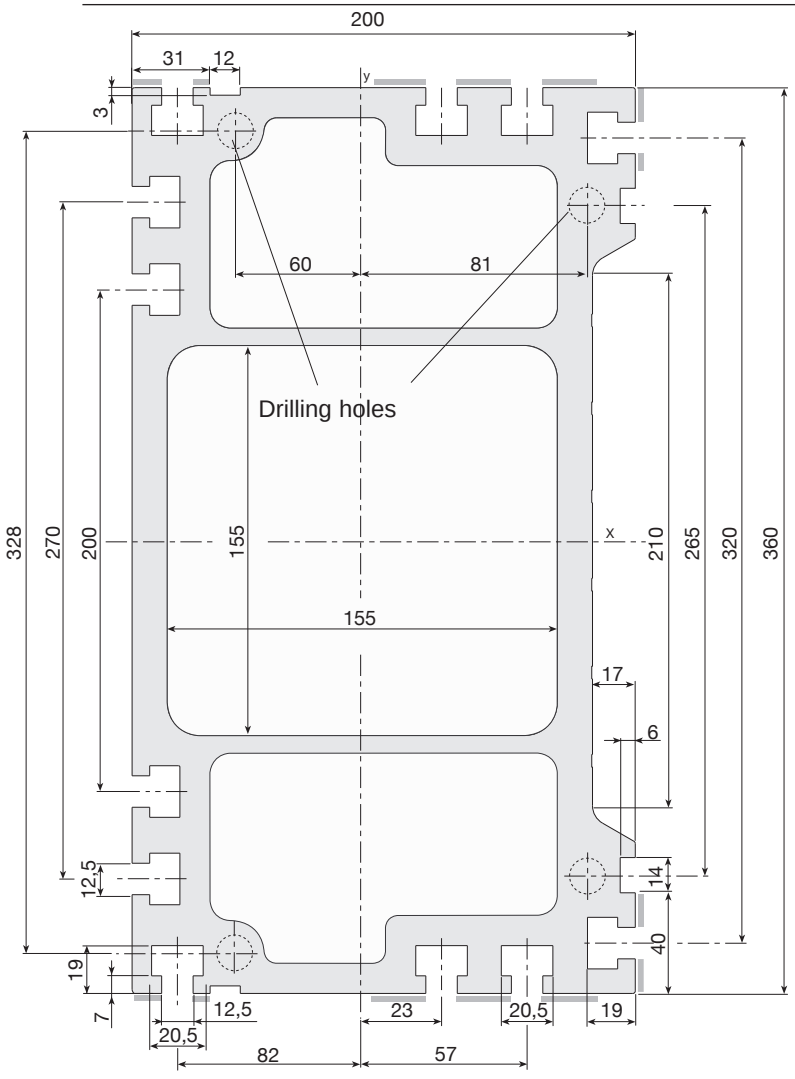


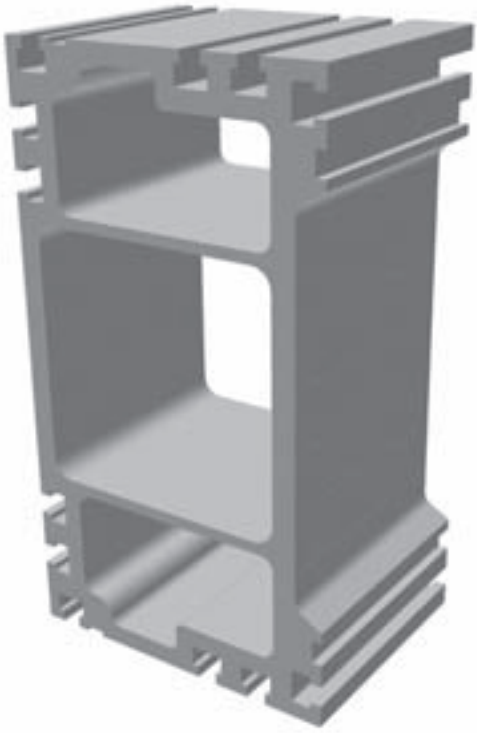


LOGYCA (120x220)	code 202.2184	
Weight	25	kg/m
Max. length	12	m
Moment of inertia Ix	46,550,000	mm⁴
Moment of inertia Iy	15,650,000	mm⁴
Polar moment of inertia Iz	14,300,000	mm⁴
Bending section modulus Wx	423,182	mm³
Bending section modulus Wy	260,833	mm³
Only anodized up to	9	m



PRATYCA (170x280)	code 202.1147	
Weight	40	kg/m
Max. length	12	m
Moment of inertia Ix	134,103,000	mm⁴
Moment of inertia Iy	50,288,000	mm⁴
Polar moment of inertia Iz	72,700,000	mm⁴
Bending section modulus Wx	957,790	mm³
Bending section modulus Wy	591,620	mm³





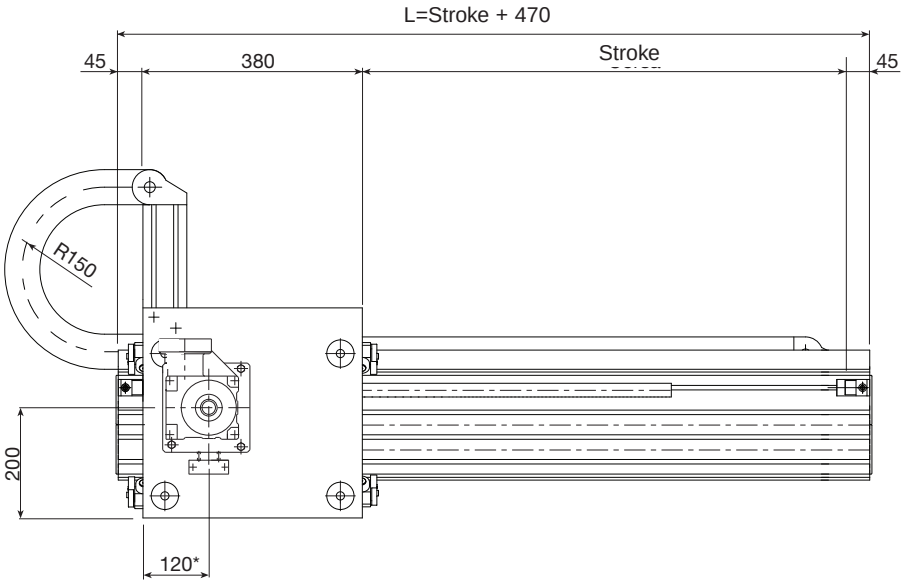
SOLYDA (200x360)	code 202.0342	
Weight	60	kg/m
Max. length	12	m
Moment of inertia Ix	318,687,200	mm⁴
Moment of inertia Iy	105,533,000	mm⁴
Polar moment of inertia Iz	150,000,000	mm⁴
Bending section modulus (Wx)	1,770,500	mm³
Bending section modulus (Wy)	1,035,300	mm³

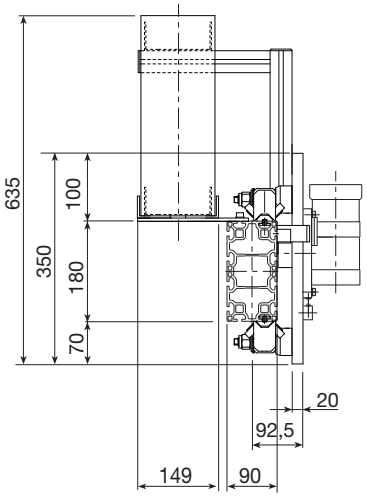
PAR 1

P / A / R / R / 180 / Stroke / Length / FND / ...

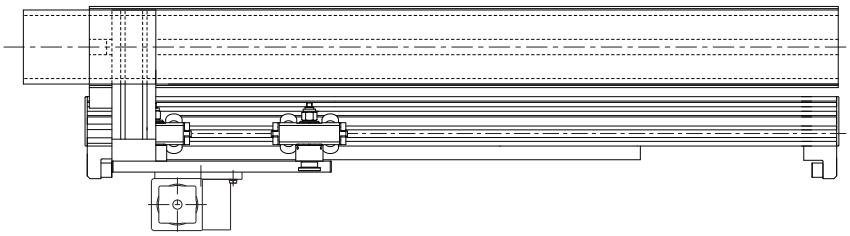
60 Kg PC **120 Kg**

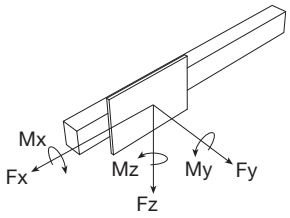
High Cycle Rate — Low Cycle Rate





* For indication only, variable according to the gearbox chosen





Performance	X-axis	
Max. load (Pc $_{max}$) with load on axis (L ≤ 1,600 mm)		
Max. speed	3.5	[m/s]
Max. acceleration	8	[m/s²]
Repeatability	± 0.2	[mm]
Beam max. length without joint	8,000	[mm]

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
PAR 1	490	1,170	1,170	2,700	5,900	5,900

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.

Assembly positions and load direction, see page 10

Construction data	X-axis	
Load-bearing beam (see page 15/17)	E01-5	
Rack (tempered, helical teeth: module KTD)	module 2	[mm²]
Guide rail	28x11 (hardened)	
Translation	4 roller slides with 4 rollers Ø30	
Room available for energy chain	115x45 approx.	[mm²]
Pinion pitch diameter type ND	44.56 (as an alternative 63.66)	[mm]

Weights	X-axis	
"Base" model (stroke$_x$=0)	M_{base} = 28	[kg]
Slide (plates + carriages)	M_{slide} = 15	[kg]
Beam (incl. guide rails and rack)	q_X = 19	[kg/m]

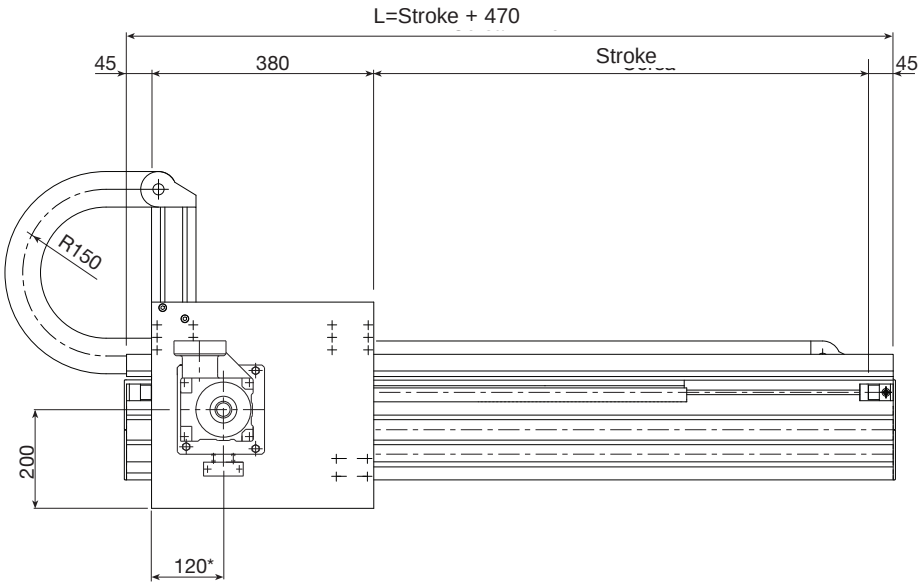
Formula:

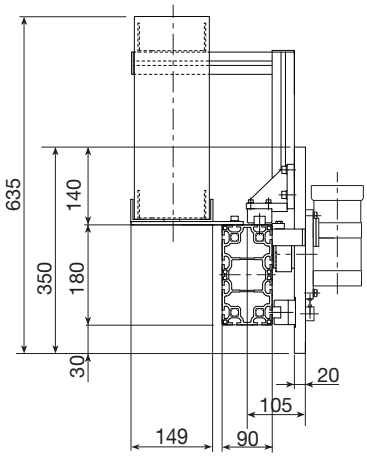
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_x \bullet stroke_x)/1{,}000}$ Stroke$_X$ [mm]

PAS 1

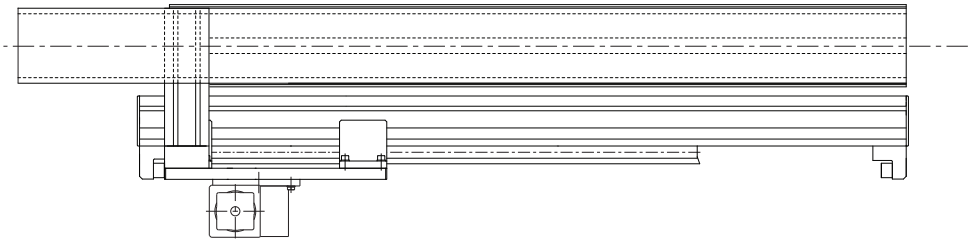
P / A / S / 180 / Stroke / Length / FRD / ...

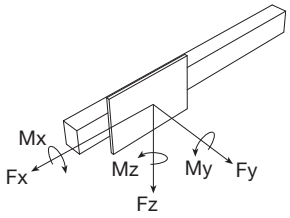
60 Kg PC **120 Kg**
High Cycle Rate Low Cycle Rate





* For indication only, variable according to the gearbox chosen





Performances	X-axis	
Max. load (Pc_{max}) with load on axis (L ≤ 1,600 mm)		
Max. speed	3.5	[m/s]
Max. acceleration	10	[m/s²]
Repeatability	± 0.05	[mm]
Beam max. length without joint	8,000	[mm]

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
PAS 1	1,250	3,450	3,450	2,900	16,950	16,950

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Construction data	X-axis	
Load-bearing beam (see page 15/17)	E01-5	
Rack (tempered, helical teeth, ground: module KSD)	module 2	[mm²]
Translation: 4 caged ball roller slides and guide rails	Size 20	
Room available for energy chain	115x45 approx.	[mm²]
Pinion pitch diameter (induction-hardened, ground - RD)	44.56 (as an alternative 63.66)	[mm]

Weights	X-axis	
"Base" model ($stroke_x$=0)	M_{base} = 27	[kg]
Slide (plates + carriages)	M_{slitta} = 14	[kg]
Beam (incl. guide rails and rack)	q_X = 19	[kg/m]

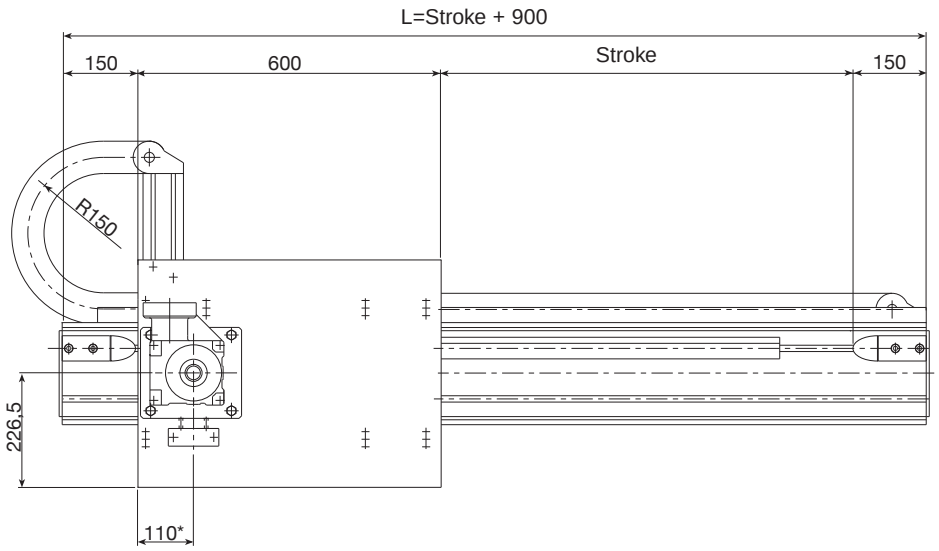
Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1{,}600)/1{,}000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_x \bullet stroke_x)/1{,}000}$ $Stroke_X$ [mm]

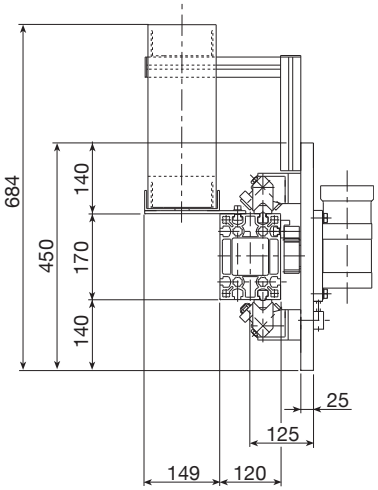
PAR 2

P / A / R / Q/ 170 / Stroke / Length / FND / ...

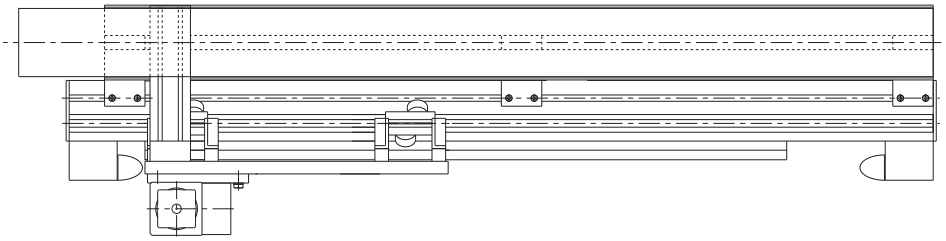
80 Kg PC **250 Kg**

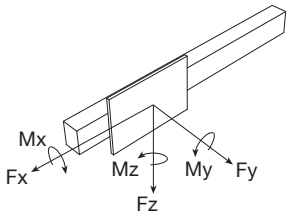
High Cycle Rate Low Cycle Rate





* For indication only, variable according to the gearbox chosen





Performance	X-axis	
Max. load (Pc_{max}) with load on axis (L ≤ 1,600 mm)		
Max. speed	3.5	[m/s]
Max. acceleration	10	[m/s²]
Repeatability	± 0.2	[mm]
Beam max. length without joint	12000	[mm]

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
PAR 2	560	1,350	1,350	5,980	7,000	7,050

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.

Assembly positions and load direction, see page 10

Construction data	X-axis	
Load-bearing beam (see page 15/17)	Statyca	
Rack (tempered, helical teeth: module KTD)	module 3	[mm²]
Guide rail	35x16 (hardened and polished)	
Translation	4 roller slides with 2 rollers Ø40	
Room available for energy chain	115x45	[mm²]
Pinion pitch diameter type ND	63.66 (as an alternative 89.13)	[mm]

Weights	X-axis	
"Base" model ($stroke_x$=0)	M_{base} = 59 approx.	[kg]
Slide (plates + carriages)	M_{slide} = 29 approx.	[kg]
Beam (incl. guide rails and rack)	q_X = 31 approx.	[kg/m]

Formula:

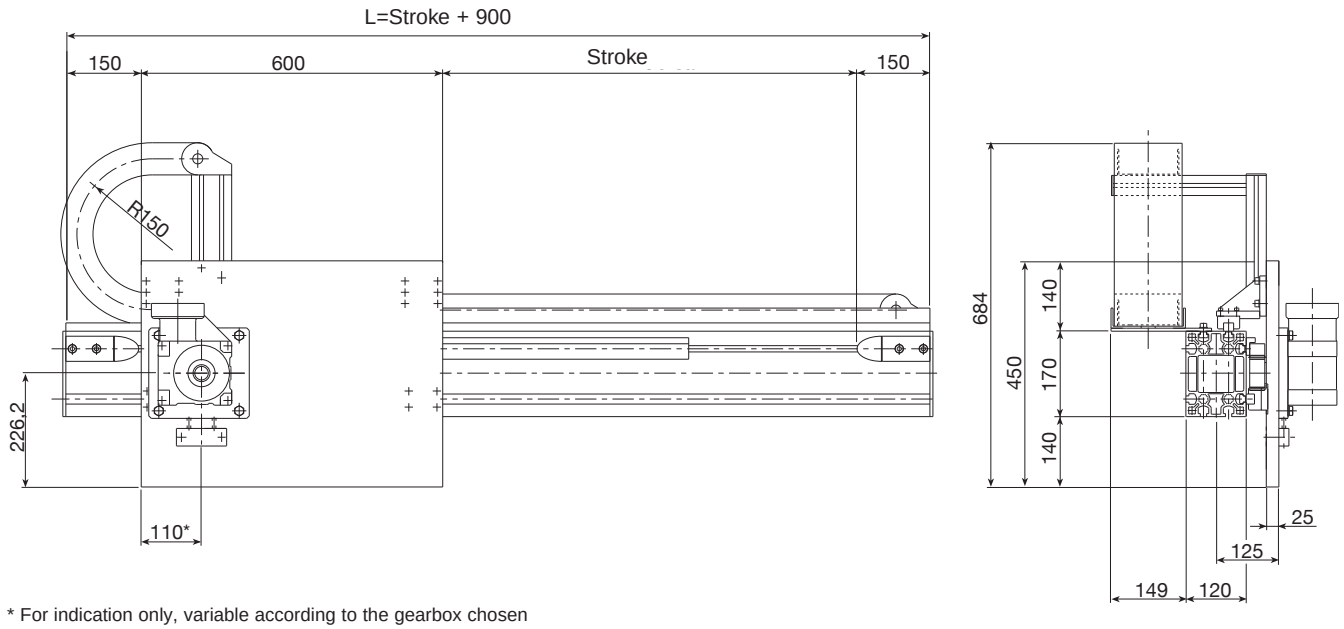
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_x \bullet stroke_x)/1{,}000}$ $Stroke_X$ [mm]

PASM 2

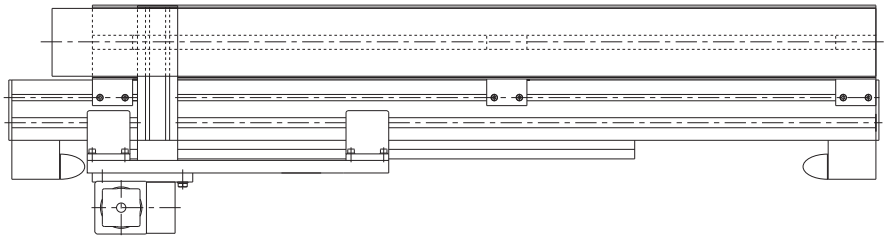
P / A / S / M / 170 / Stroke / Length / FRD / ...

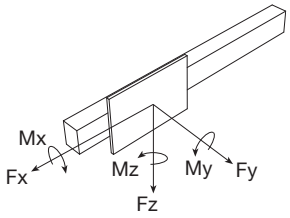
80 Kg PC **250 Kg**

High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen





Performances	X-axis	
Max. load (Pc_{max}) with load on axis (L ≤ 1,600 mm)		
Max. speed	3.5	[m/s]
Max. acceleration	10	[m/s²]
Repeatability	± 0.05	[mm]
Beam max. length without joint	12000	[mm]

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
PASM2	1,170	3,450	3,450	5,980	16,950	16,950

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Construction data	X-axis	
Load-bearing beam (see page 15/17)	Statyca	
Rack (tempered, helical teeth, ground: module KSD)	module 3	[mm²]
Translation: 4 caged ball roller slides and guide rails	Size 20	
Room available for energy chain	115x45	[mm²]
Pinion pitch diameter (induction-hardened, ground - RD)	63.66 (as an alternative 89.13)	[mm]

Weights	X-axis	
"Base" model ($stroke_x$=0)	M_{base} = 57 approx.	[kg]
Slide (plates + carriages)	M_{slitta} = 29 approx.	[kg]
Beam (incl. guide rails and rack)	q_X = 29 approx.	[kg/m]

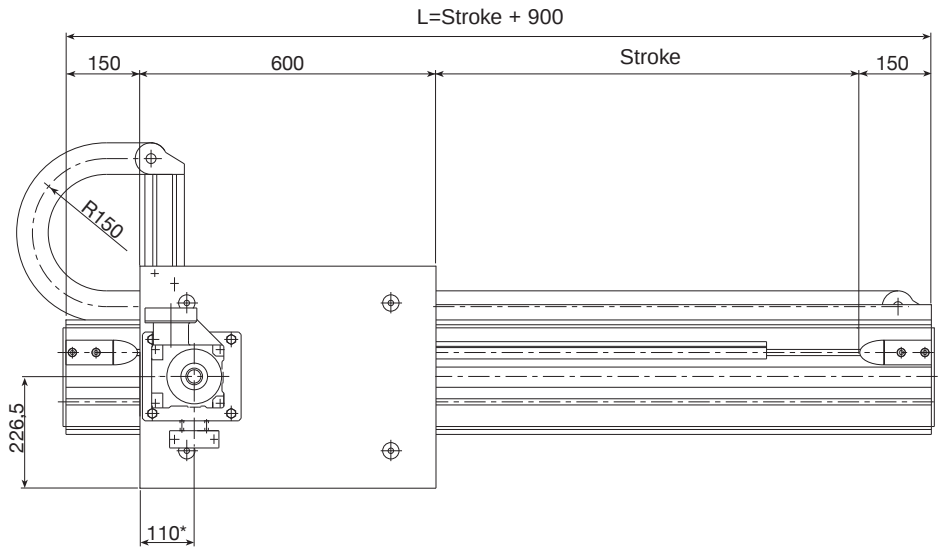
Formula:
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_x \bullet stroke_x)/1,000}$ $Stroke_X$ [mm]

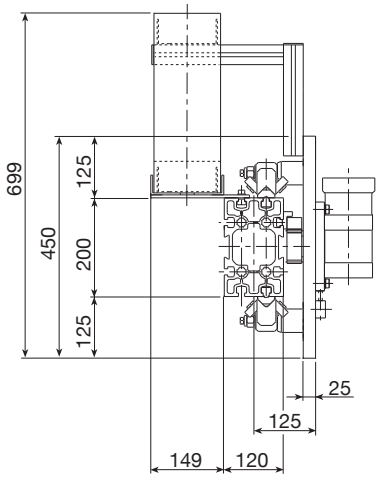
PAR 3

P / A / R / Q / 200 / Stroke / Length / FND / ...

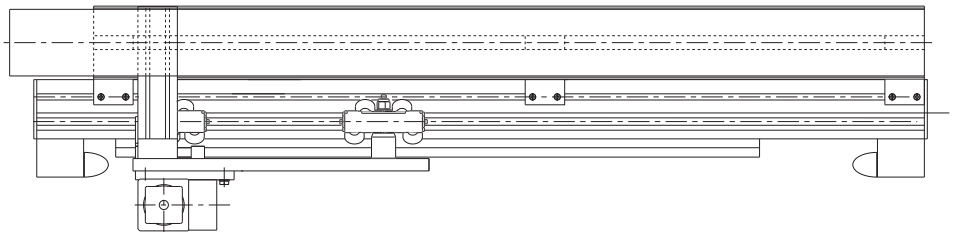
100 Kg PC **300 Kg**

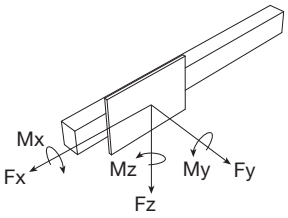
High Cycle Rate — Low Cycle Rate





* For indication only, variable according to the gearbox chosen





Performance	X-axis	
Max. load (Pc_{max}) with load on axis (L ≤ 1,600 mm)		
Max. speed	3	[m/s]
Max. acceleration	7	[m/s²]
Repeatability	± 0.2	[mm]
Beam max. length without joint	12000	[mm]

Assembly positions and load direction, see page 10

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
PAR 3	1,115	2,685	2,685	6,100	14,100	14,100

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.

Construction data	X-axis	
Load-bearing beam (see page 15/17)	Valyda	
Rack (tempered, helical teeth: module KTD)	module 3	[mm²]
Guide rail	28x11 (hardened and polished)	
Translation	4 roller slides with 4 rollers Ø40	
Room available for energy chain	115x45	[mm²]
Pinion pitch diameter type ND	63.66 (as an alternative 89.13)	[mm]

Weights	X-axis	
"Base" model ($stroke_x$=0)	M_{base} = 70 approx.	[kg]
Slide (plates + carriages)	M_{slide} = 36 appox.	[kg]
Beam (incl. guide rails and rack)	q_X = 35 approx.	[kg/m]

Formula:

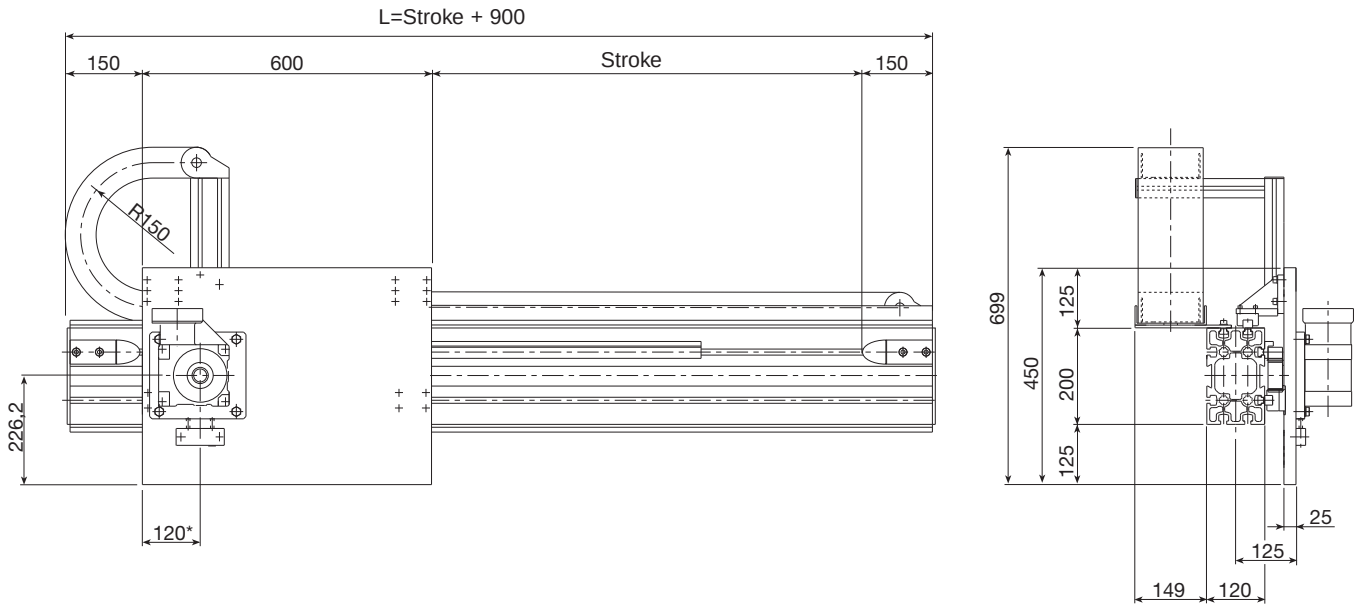
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_x \bullet stroke_x)/1{,}000}$ $Stroke_X$ [mm]

PASM 3

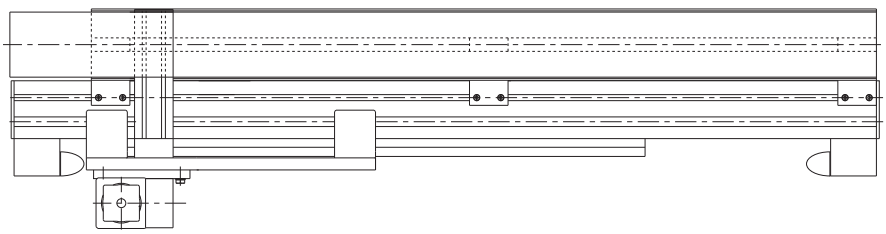
P / A / S / M / 200 / Stroke / Length / FRD / ...

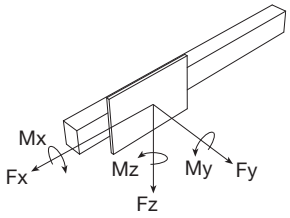
100 Kg PC **300 Kg**

High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen





Performances	X-axis	
Max. load (Pc_{max}) with load on axis (L ≤ 1,600 mm)		
Max. speed	3	[m/s]
Max. acceleration	7	[m/s²]
Repeatability	± 0.05	[mm]
Beam max. length without joint	12000	[mm]

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
PASM3	1,280	3,500	3,500	6,100	16,950	16,950

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Construction data	X-axis	
Load-bearing beam (see page 15/17)	Valyda	
Rack (tempered, helical teeth, ground: module KSD)	module 3	[mm²]
Translation: 4 caged ball roller slides and guide rails	Size 20	
Room available for energy chain	115x45	[mm²]
Pinion pitch diameter (induction-hardened, ground - RD)	63.66 (as an alternative 89.13)	[mm]

Weights	X-axis	
"Base" model ($stroke_x$=0)	M_{base} = 68 approx.	[kg]
Slide (plates + carriages)	M_{slitta} = 36 approx.	[kg]
Beam (incl. guide rails and rack)	q_X = 33 approx.	[kg/m]

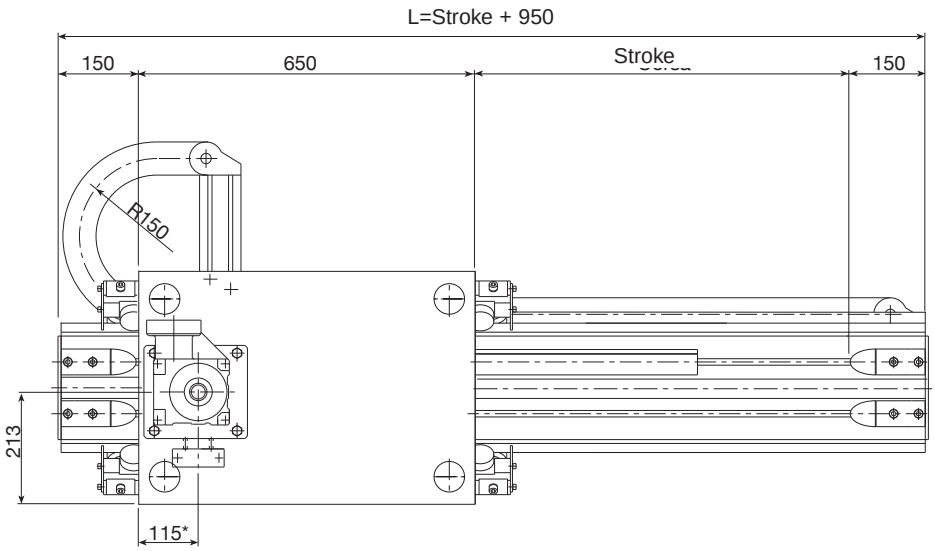
Formula:
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_x \bullet stroke_x)/1,000}$ $Stroke_X$ [mm]

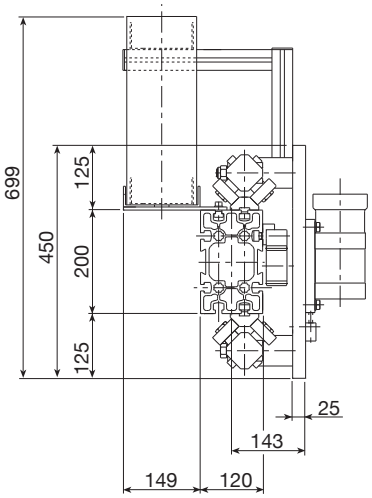
PAR 4

P / A / R / P / 200 / Stroke / Length / FND / ...

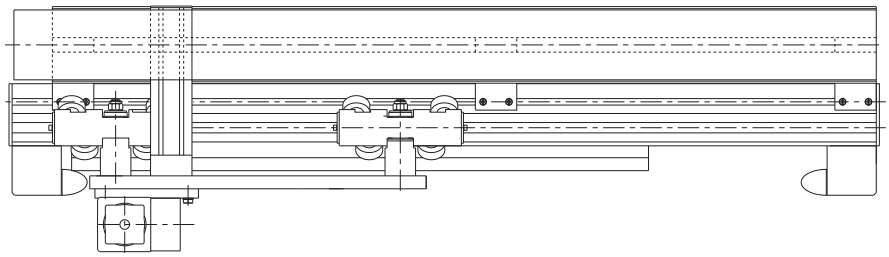
100 Kg PC **400 Kg**

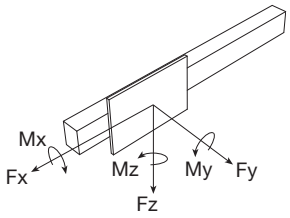
High Cycle Rate — Low Cycle Rate





* For indication only, variable according to the gearbox chosen





Performance	X-axis	
Max. load (Pc_{max}) with load on axis (L ≤ 1,600 mm)		
Max. speed	3	[m/s]
Max. acceleration	7	[m/s²]
Repeatability	± 0.2	[mm]
Beam max. length without joint	12000	[mm]

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
PAR 4	2,200	5,350	5,380	8,400	23,925	23,925

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.

Assembly positions and load direction, see page 10

Construction data	X-axis	
Load-bearing beam (see page 15/17)	Valyda	
Rack (tempered, helical teeth: module KTD)	module 4	[mm²]
Guide rail	55x25 (hardened and polished)	
Translation	4 roller slides with 4 rollers Ø52	
Room available for energy chain	115x45	[mm²]
Ø Pinion pitch diameter type ND	76.39 (as an alternative 106.10)	[mm]

Weights	X-axis	
"Base" model ($stroke_x$=0)	M_{base} = 96 approx.	[kg]
Slide (plates + carriages)	M_{slide} = 48 approx.	[kg]
Beam (incl. guide rails and rack)	q_X = 48 approx.	[kg/m]

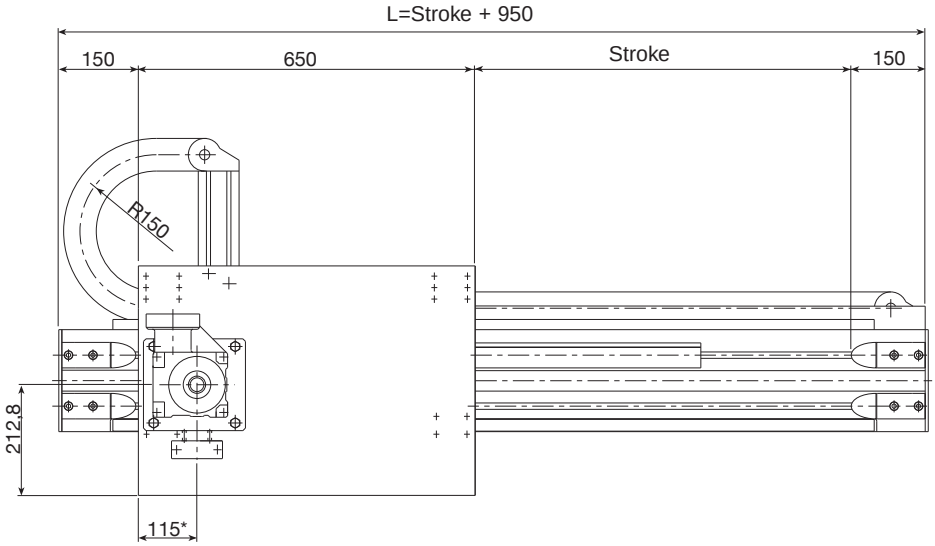
Formula:

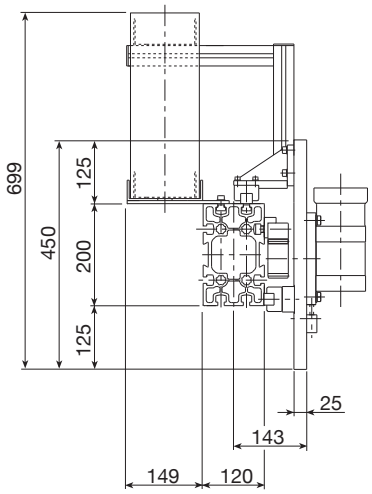
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_x \bullet stroke_x)/1{,}000}$ $Stroke_X$ [mm]

PASM 4

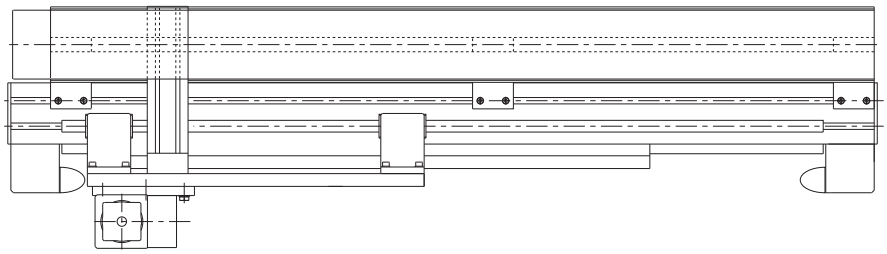
P / A / S / M / 200 / Stroke / Length / FRD / ...

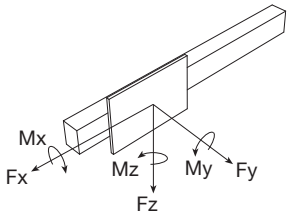
100 Kg PC **400 Kg**
High Cycle Rate — Low Cycle Rate





* For indication only, variable according to the gearbox chosen





Performances	X-axis	
Max. load (Pc_{max}) with load on axis (L ≤ 1,600 mm)		
Max. speed	3	[m/s]
Max. acceleration	7	[m/s²]
Repeatability	± 0,05	[mm]
Beam max. length without joint	12000	[mm]

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
PASM4	1,850	5,200	5,200	8,400	24,100	24,100

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Construction data	X-axis	
Load-bearing beam (see page 15/17)	Valyda	
Rack (tempered, helical teeth, ground: module KSD)	module 4	[mm²]
Translation: 4 caged ball roller slides and guide rails	Size 25	
Room available for energy chain	115x45	[mm²]
Pinion pitch diameter (induction-hardened, ground - RD)	76.39 (as an alternative 106.10)	[mm]

Weights	X-axis	
"Base" model ($stroke_x$=0)	M_{base} = 80 approx.	[kg]
Slide (plates + carriages)	M_{slitta} = 38 approx.	[kg]
Beam (incl. guide rails and rack)	q_X = 40 approx.	[kg/m]

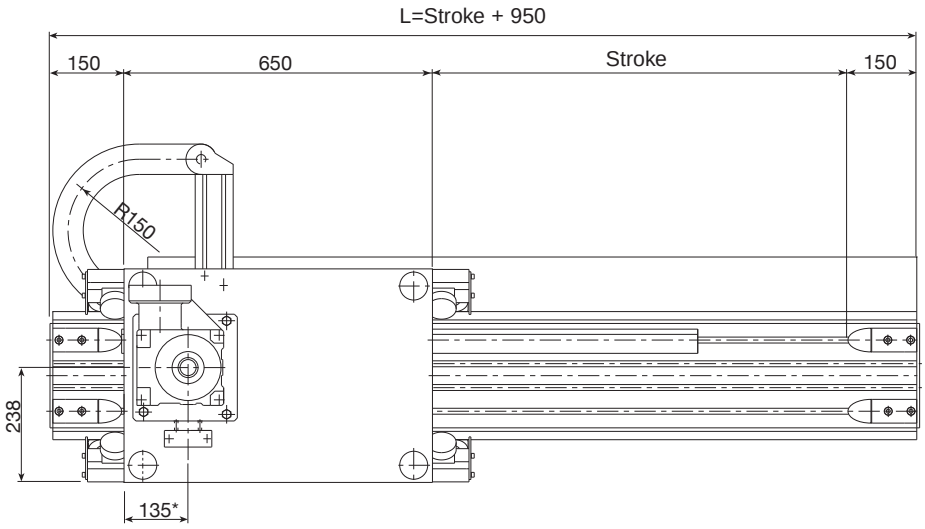
Formula:
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_x \bullet stroke_x)/1,000}$ $Stroke_X$ [mm]

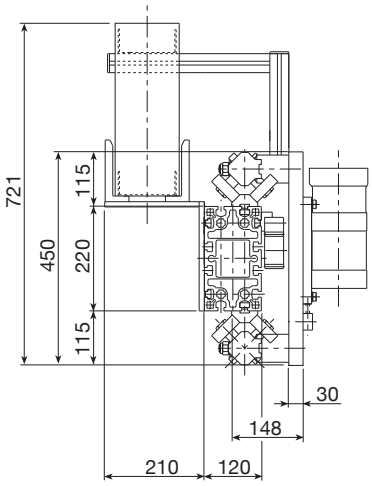
PAR 5

P / A / R / P / 220 / Stroke / Length / FND / ...

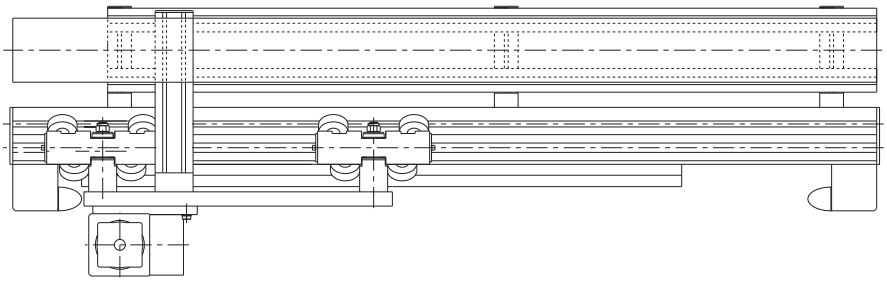
250 Kg PC **500 Kg**

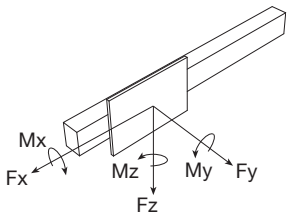
High Cycle Rate — Low Cycle Rate





* For indication only, variable according to the gearbox chosen





Performance	X-axis	
Max. load (Pc $_{max}$) with load on axis (L ≤ 1,600 mm)		
Max. speed	3	[m/s]
Max. acceleration	6	[m/s^2]
Repeatability	± 0.2	[mm]
Beam max. length without joint	12000	[mm]

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
PAR 5	3,000	6,720	6,720	9,800	29,900	29,900

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.

Assembly positions and load direction, see page 10

Construction data	X-axis	
Load-bearing beam (see page 15/17)	Logyca	
Rack (tempered, helical teeth: module KTD)	module 4	[mm^2]
Guide rail	55x25 (hardened and polished)	
Translation	4 roller slides with 4 rollers Ø62	
Room available for energy chain	115x45	[mm^2]
Ø Pinion pitch diameter type ND	76.39 (as an alternative 106.10)	[mm]

Weights	X-axis	
"Base" model (stroke$_x$=0)	M_{base} = 106 approx.	[kg]
Slide (plates + carriages)	M_{slide} = 54 approx.	[kg]
Beam (incl. guide rails and rack)	q_X = 52 approx.	[kg/m]

Formula:

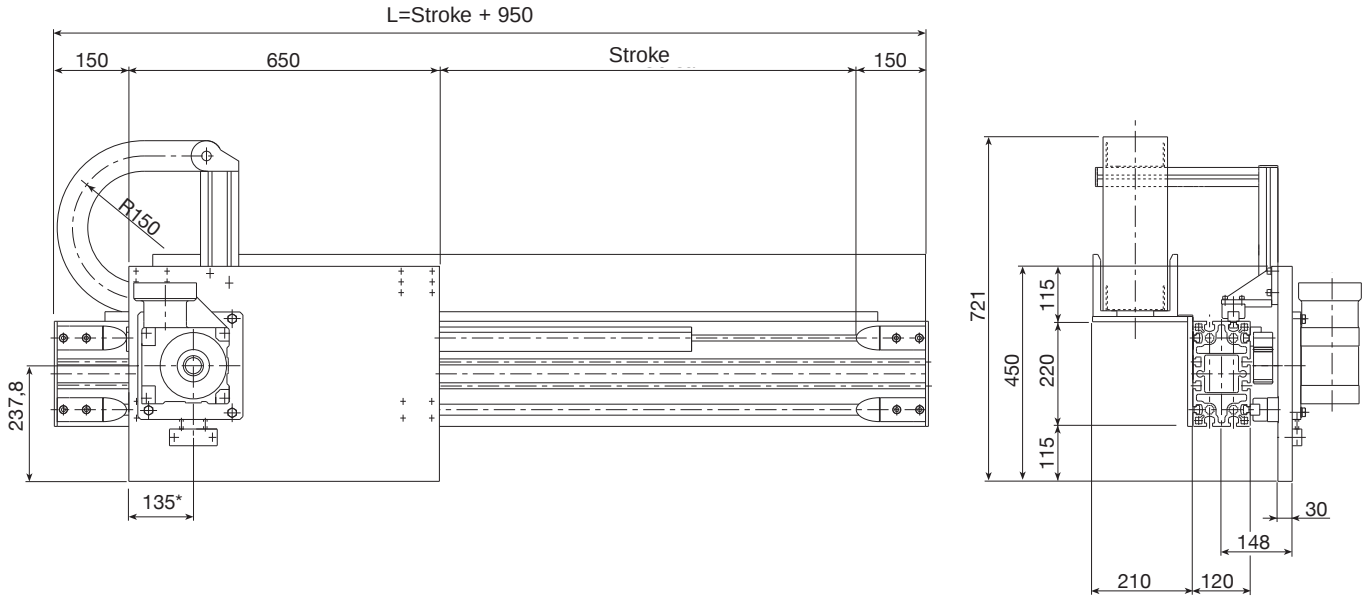
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_x \bullet stroke_x)/1{,}000}$ Stroke$_X$ [mm]

P / A / S / M / 220 / Stroke / Length / FRD / ...

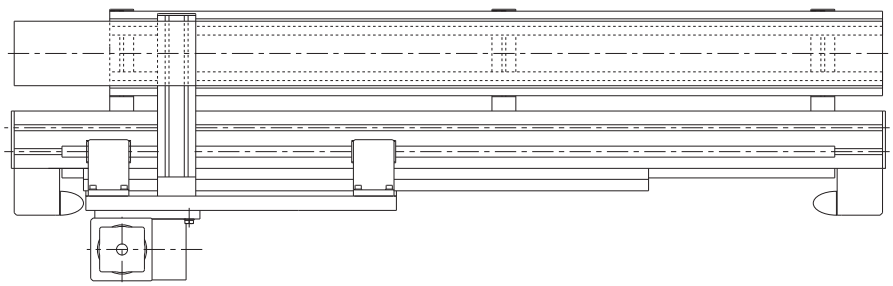
PC

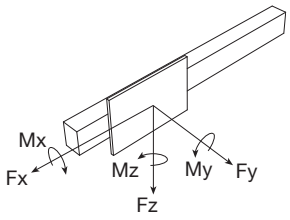
250 Kg — 500 Kg

High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen





Performances	X-axis	
Max. load (Pc $_{max}$) with load on axis (L ≤ 1,600 mm)		
Max. speed	3	[m/s]
Max. acceleration	6	[m/s^2]
Repeatability	± 0.05	[mm]
Beam max. length without joint	12000	[mm]

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
PASM 5	2,060	5,200	5,200	9,800	24,100	24,100

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Construction data	X-axis	
Load-bearing beam (see page 15/17)	Logyca	
Rack (tempered, helical teeth, ground: module KSD)	module 4	[mm^2]
Translation: 4 caged ball roller slides and guide rails	Size 25	
Room available for energy chain	115x45	[mm^2]
Pinion pitch diameter (induction-hardened, ground - RD)	76.39 (as an alternative 106.10)	[mm]

Weights	X-axis	
“Base” model (stroke$_x$=0)	M_{base} = 90 approx.	[kg]
Slide (plates + carriages)	M_{slitta} = 44 approx.	[kg]
Beam (incl. guide rails and rack)	q_X = 44 approx.	[kg/m]

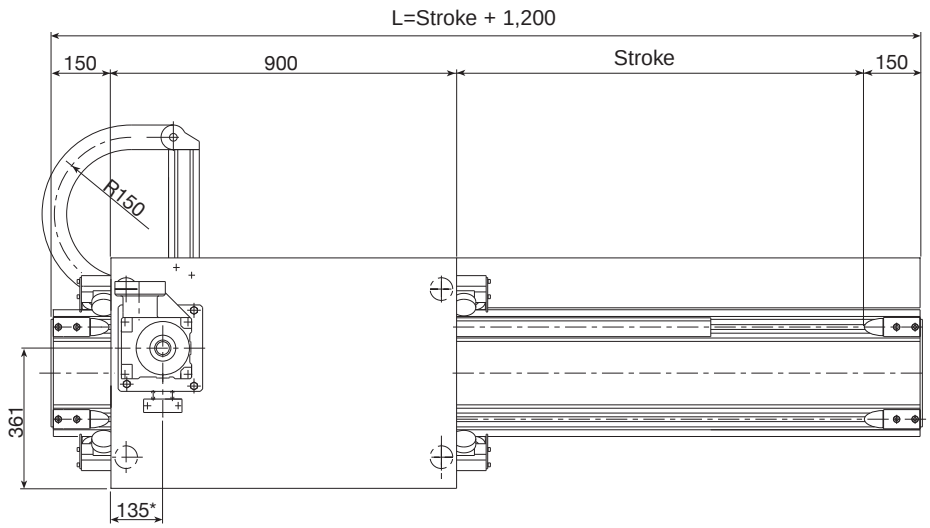
Formula:
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_x \bullet stroke_x)/1,000}$ Stroke$_X$ [mm]

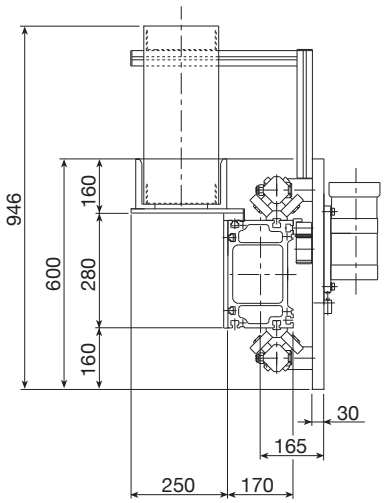
PAR 6

P / A / R / P / 280 / Stroke / Length / FND / ...

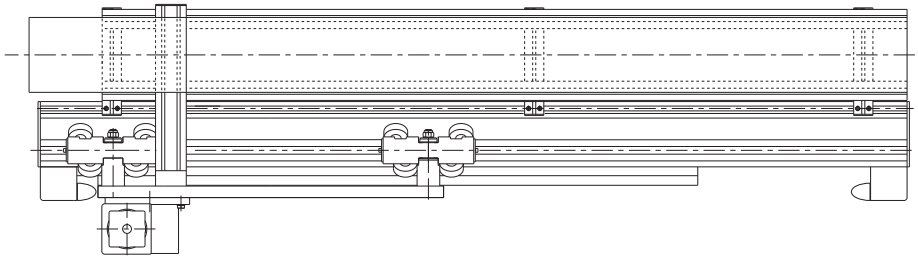
300 Kg PC **600 Kg**

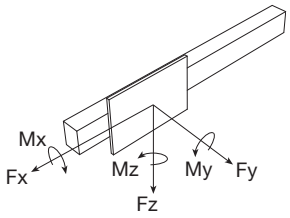
High Cycle Rate — Low Cycle Rate





* For indication only, variable according to the gearbox chosen





Performance	X-axis	
Max. load (Pc_{max}) with load on axis (L ≤ 1,600 mm)		
Max. speed	3	[m/s]
Max. acceleration	4	[m/s²]
Repeatability	± 0.2	[mm]
Beam max. length without joint	12000	[mm]

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
PAR 6	3,700	8,770	8,770	10,280	29,900	29,900

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.

Assembly positions and load direction, see page 10

Construction data	X-axis	
Load-bearing beam (see page 15/17)	Pratyca	
Rack (tempered, helical teeth: module KTD)	module 4	[mm²]
Guide rail	55x25 (hardened and polished)	
Translation	4 roller slides with 4 rollers Ø62	
Room available for energy chain	175x45	[mm²]
Pinion pitch diameter type ND	76.39 (as an alternative 106.10)	[mm]

Weights	X-axis	
"Base" model ($stroke_x$=0)	M_{base} = 164	[kg]
Slide (plates + carriages)	M_{slide} = 79	[kg]
Beam (incl. guide rails and rack)	q_X = 19	[kg/m]

Formula:

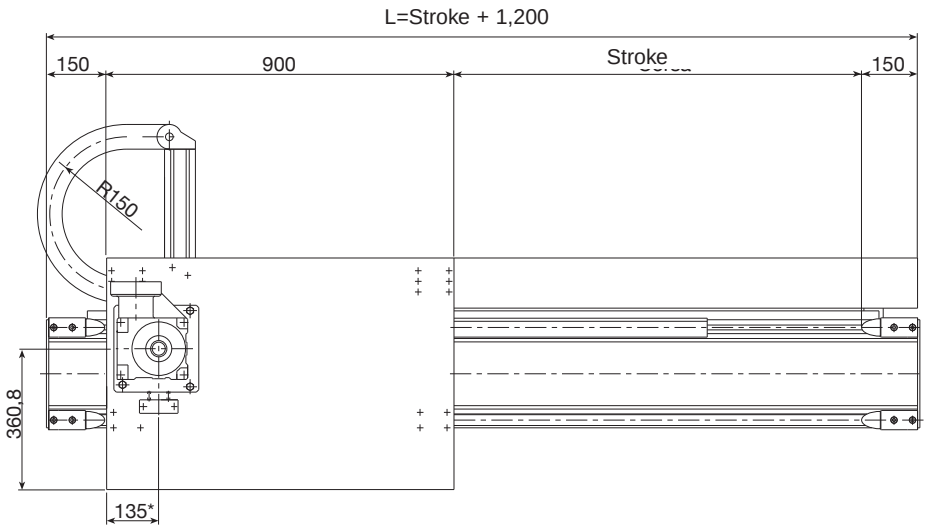
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_x \bullet stroke_x)/1,000}$ $Stroke_X$ [mm]

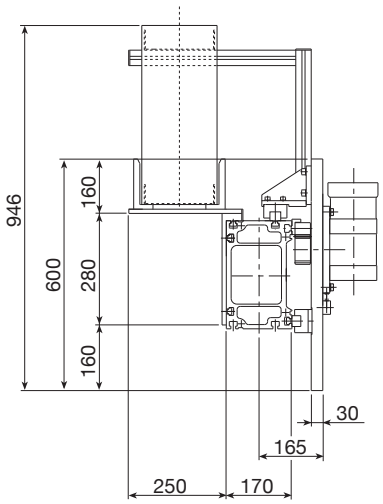
PASM 6

P / A / S / M / 280 / Stroke / Length / FRD / ...

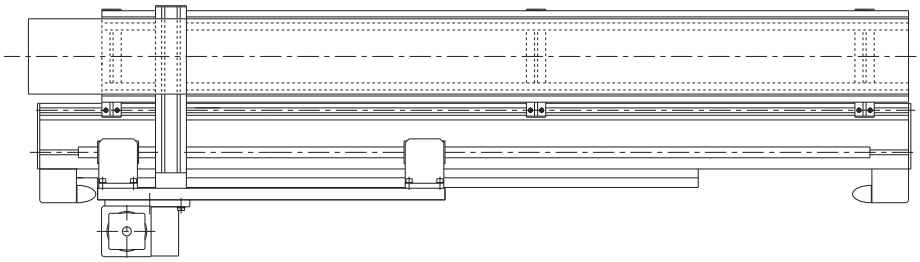
300 Kg PC **600 Kg**

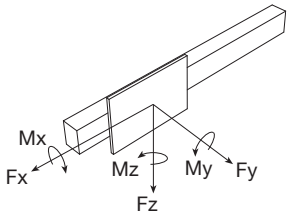
High Cycle Rate — Low Cycle Rate





* For indication only, variable according to the gearbox chosen





Performances	X-axis	
Max. load (Pc_{max}) with load on axis (L ≤ 1,600 mm)		
Max. speed	3	[m/s]
Max. acceleration	5	[m/s²]
Repeatability	± 0.05	[mm]
Beam max. length without joint	12000	[mm]

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
PASM 6	4,160	6,750	6,750	10,280	34,050	34,050

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Construction data	X-axis	
Load-bearing beam (see page 15/17)	Pratyca	
Rack (tempered, helical teeth, ground: module KSD)	module 4	[mm²]
Translation: 4 caged ball roller slides and guide rails	Size 30	
Room available for energy chain	175x45	[mm²]
Pinion pitch diameter (induction-hardened, ground - RD)	76.39 (as an alternative 106.10)	[mm]

Weights	X-axis	
"Base" model ($stroke_x$=0)	M_{base} = 149 approx.	[kg]
Slide (plates + carriages)	M_{slitta} = 69 approx.	[kg]
Beam (incl. guide rails and rack)	q_X = 60 approx.	[kg/m]

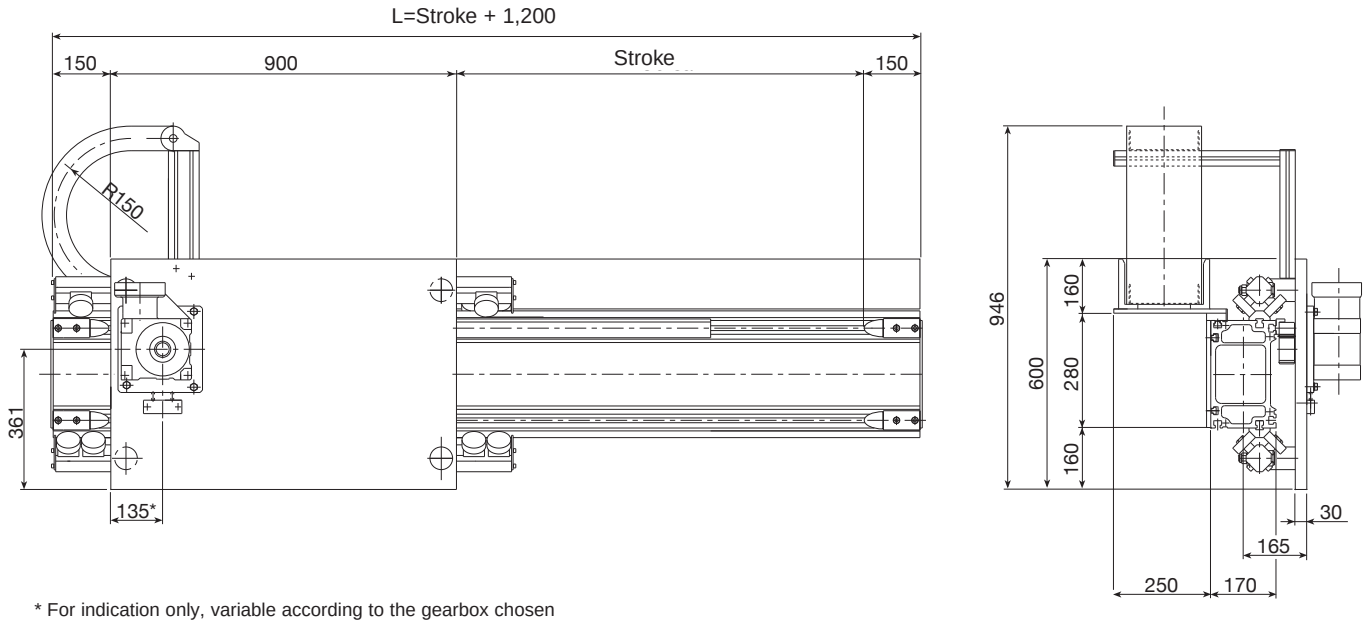
Formula:
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_x \bullet stroke_x)/1,000}$ $Stroke_X$ [mm]

PAR 8

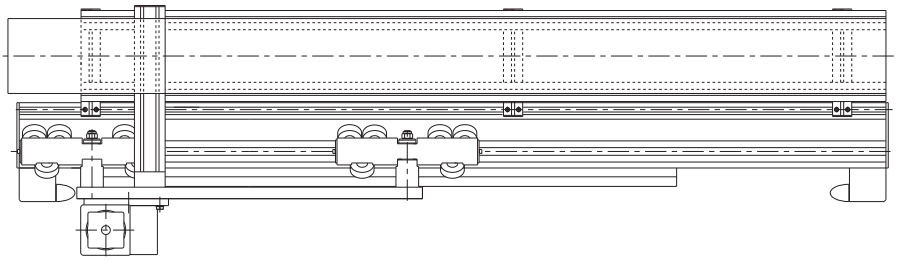
P / A / R / P / 280 / Stroke / Length / FND / ...

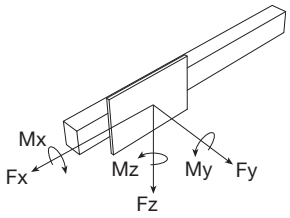
300 Kg PC **800 Kg**

High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen





Performance	X-axis	
Max. load (Pc_{max}) with load on axis (L ≤ 1,600 mm)		
Max. speed	2.5	[m/s]
Max. acceleration	2	[m/s²]
Repeatability	± 0.25	[mm]
Beam max. length without joint	12000	[mm]

Assembly positions and load direction, see page 10

** With vertical positioning of the unit, a partial load capacity compensation is required

Recommended max working conditions						
Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
PAR 8	5,550	8,800	13,160	10,280	44,800	29,900

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The values shown can be achieved with roller slides with 6 rollers suitable for maximum performance (see page 63-64).

Construction data	X-axis	
Load-bearing beam (see page 15/17)	Pratyca	
Rack (tempered, helical teeth: module KTD)	module 4	[mm²]
Guide rail	55x25 (hardened and polished)	
Translation	4 roller slides with 6 rollers Ø62	
Room available for energy chain	175x45	[mm²]
Ø Pinion pitch diameter type ND	76.39 (as an alternative 106.10)	[mm]

Weights	X-axis	
"Base" model ($stroke_x$=0)	M_{base} = 173 approx.	[kg]
Slide (plates + carriages)	M_{slide} = 88 approx.	[kg]
Beam (incl. guide rails and rack)	q_X = 66 approx.	[kg/m]

Formula:
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_x \bullet stroke_x)/1,000}$ $Stroke_X$ [mm]

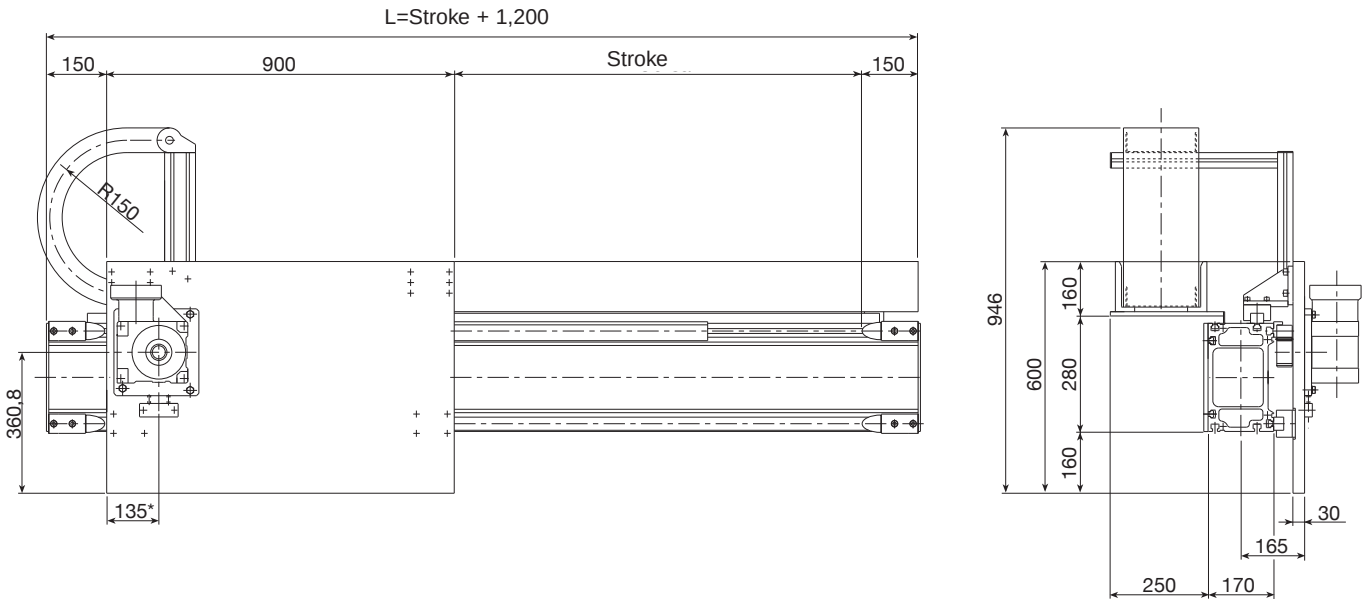
PASM 8

Tecline

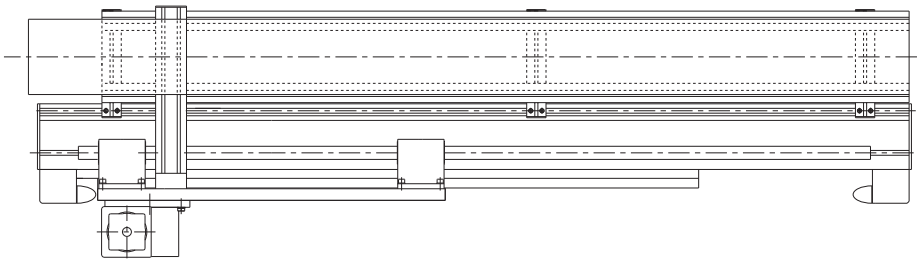
P / A / S / M / 280 / Stroke / Length / FRD / ...

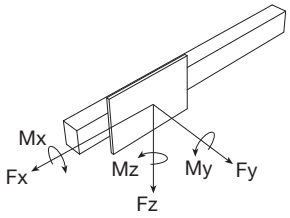
300 Kg PC **800 Kg**

High Cycle Rate Low Cycle Rate



* For indication only, variable according to the gearbox chosen





Performances	X-axis	
Max. load (Pc_{max}) with load on axis (L ≤ 1,600 mm)		
Max. speed	2.5	[m/s]
Max. acceleration	2	[m/s²]
Repeatability	± 0.1	[mm]
Beam max. length without joint	12000	[mm]

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
PASM 8	5,840	13,100	13,100	11,420	47,350	47,350

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Construction data	X-axis	
Load-bearing beam (see page 15/17)	Pratyca	
Rack (tempered, helical teeth, ground: module KSD)	module 4	[mm²]
Translation: 4 caged ball roller slides and guide rails	Size 35	
Room available for energy chain	175x45	[mm²]
Pinion pitch diameter (induction-hardened, ground - RD)	76.39 (as an alternative 106.10)	[mm]

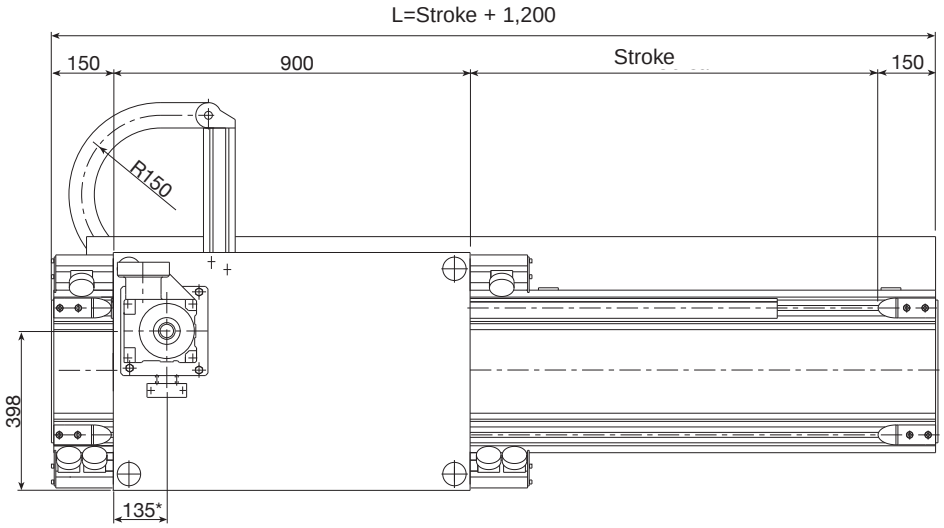
Weights	X-axis	
"Base" model ($stroke_x$=0)	M_{base} = 159 approx.	[kg]
Slide (plates + carriages)	M_{slitta} = 76 approx.	[kg]
Beam (incl. guide rails and rack)	q_X = 64 approx.	[kg/m]

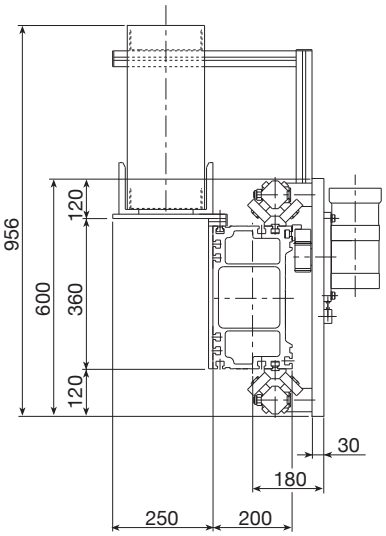
Formula:
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_x \bullet stroke_x)/1{,}000}$ $Stroke_X$ [mm]

PAR 10

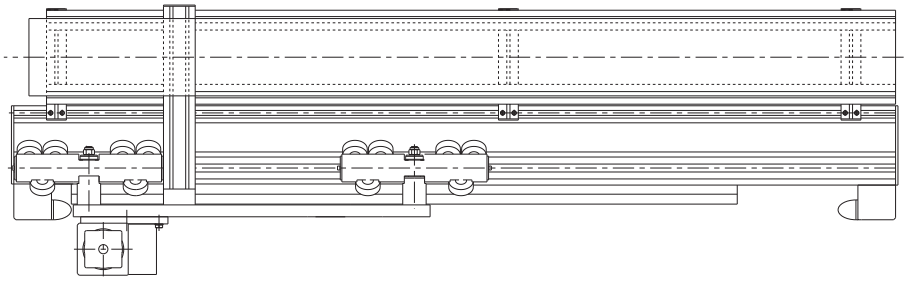
P / A / R / P / 360 / Stroke / Length / FND / ...

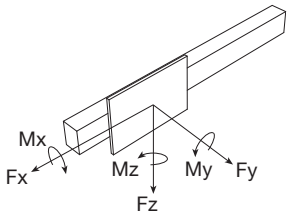
500 Kg PC **1000 Kg**
High Cycle Rate — Low Cycle Rate





* For indication only, variable according to the gearbox chosen





Performance	X-axis	
Max. load (Pc $_{max}$) with load on axis (L ≤ 1,600 mm)		
Max. speed	2.5	[m/s]
Max. acceleration	2	[m/s²]
Repeatability	± 0.25	[mm]
Beam max. length without joint	12000	[mm]

Assembly positions and load direction, see page 10

** With vertical positioning of the unit, a partial load capacity compensation is required

Recommended max working conditions						
Model	**M_x[Nm]**	**M_y[Nm]**	**M_z[Nm]**	**F_x[N]**	**F_y[N]**	**F_z[N]**
PAR 10	6,900	8,800	13,160	10,280	44,860	29,900

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The values shown can be achieved with roller slides with 6 rollers suitable for maximum performance (see page 63-64).

Construction data	X-axis	
Load-bearing beam (see page 15/17)	Solyda	
Rack (tempered, helical teeth: module KTD)	module 4	[mm²]
Guide rail	55x25 (hardened and polished)	
Translation	4 roller slides with 6 rollers Ø62	
Room available for energy chain	115x45	[mm²]
Pinion pitch diameter type ND	76.39 (as an alternative 106.10)	[mm]

Weights	X-axis	
"Base" model (stroke$_x$=0)	M_{base} = 196 approx.	[kg]
Slide (plates + carriages)	M_{slide} = 88 approx.	[kg]
Beam (incl. guide rails and rack)	q_X = 85 approx.	[kg/m]

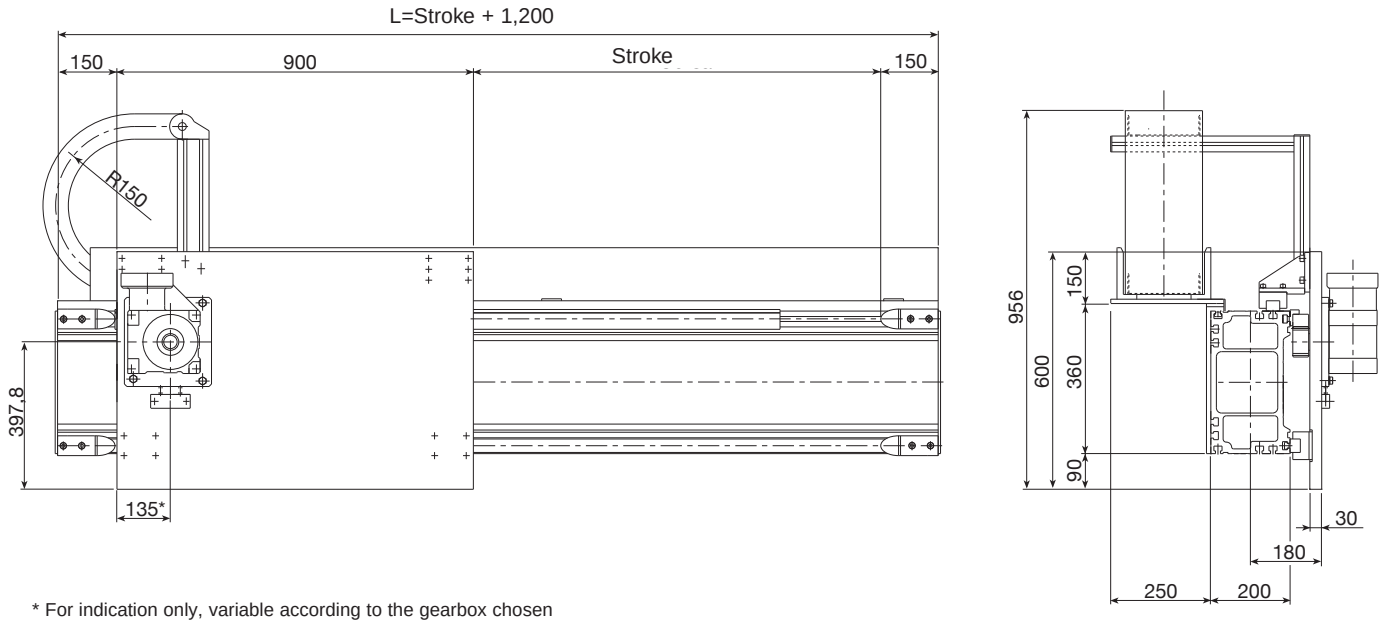
Formula:
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_x \bullet stroke_x)/1{,}000}$ Stroke$_X$ [mm]

PASM 10

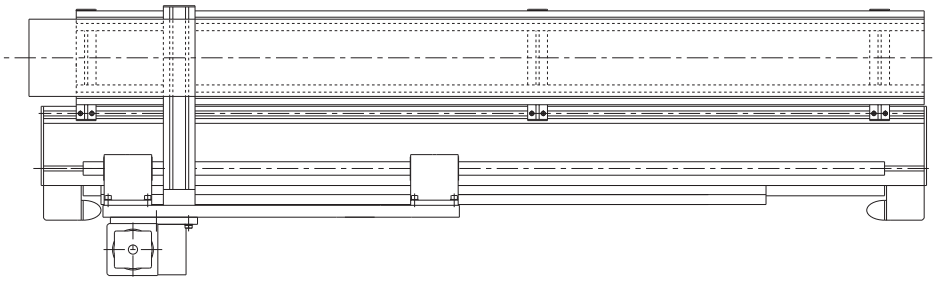
P / A / S / M / 360 / Stroke / Length / FRD / ...

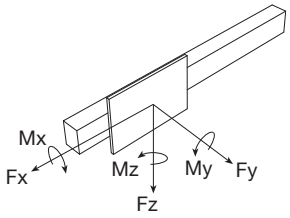
500 Kg PC **1000 Kg**

High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen





Performances	X-axis	
Max. load (Pc_{max}) with load on axis (L ≤ 1,600 mm)		
Max. speed	2.5	[m/s]
Max. acceleration	3	[m/s²]
Repeatability	± 0.1	[mm]
Beam max. length without joint	12000	[mm]

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
PASM10	7,240	13,100	13,100	11,600	47,350	47,350

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Construction data	X-axis	
Load-bearing beam (see page 15/17)	Solyda	
Rack (tempered, helical teeth, ground: module KSD)	module 4	[mm²]
Translation: 4 caged ball roller slides and guide rails	Size 35	
Room available for energy chain	175x45	[mm²]
Pinion pitch diameter (induction-hardened, ground - RD)	127.32	[mm]

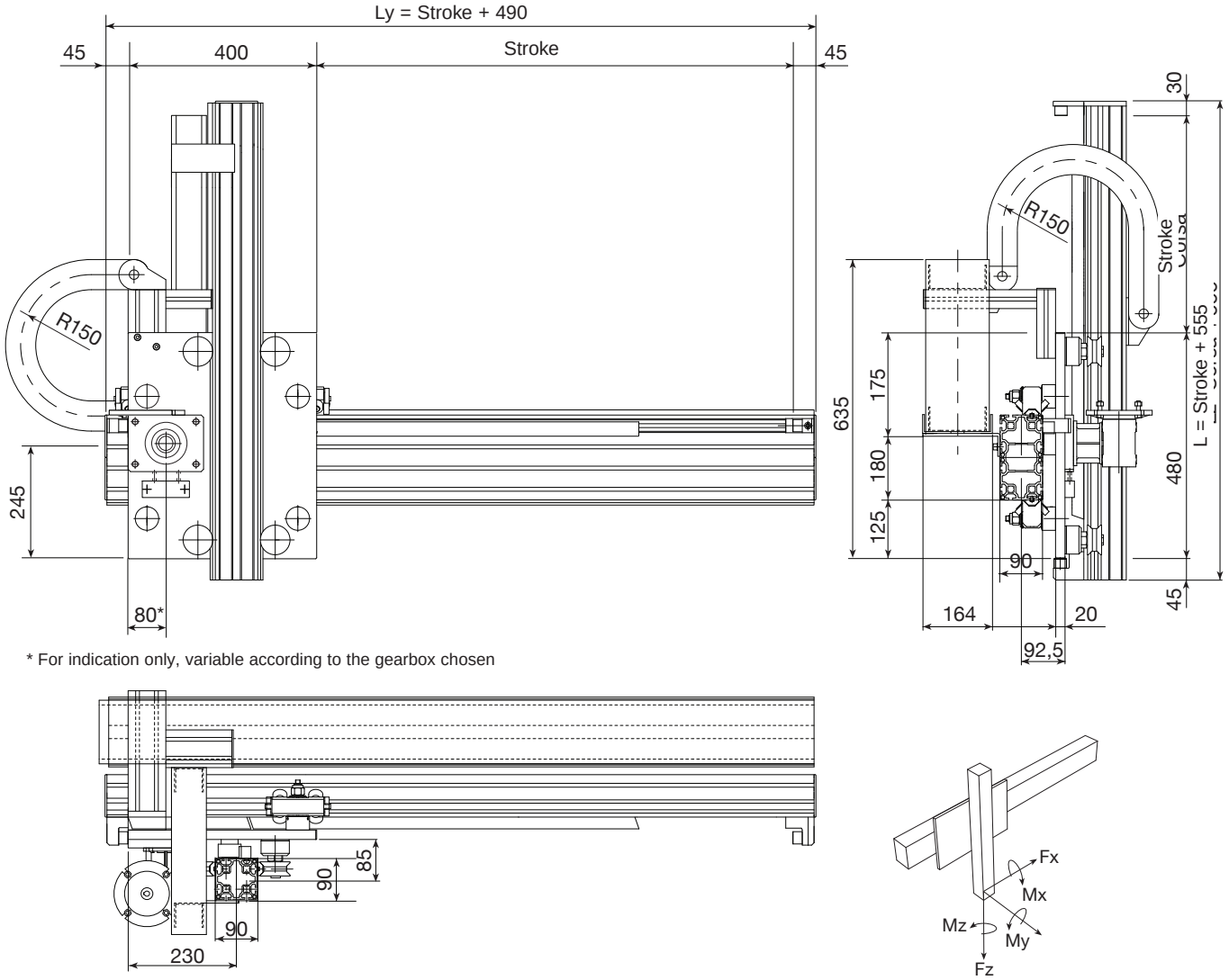
Weights	X-axis	
"Base" model ($stroke_x$=0)	M_{base} = 182 approx.	[kg]
Slide (plates + carriages)	M_{slitta} = 76 approx.	[kg]
Beam (incl. guide rails and rack)	q_X = 83 approx.	[kg/m]

Formula:
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_x \bullet stroke_x)/1,000}$ $Stroke_X$ [mm]

PAR 1/05

Y-Axis / P / A / R / Q / 180 / Stroke / Length / FND / ...
Z-Axis / P / A / R / Q / 90 / Stroke / Length / X / FND / ...

PC
5 Kg — 80 Kg
High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen

Performances	Y-axis	Z-axis	
Max. load (Pc $_{max}$) with load on axis	(Lz ≤ 1,600 mm)		
Max. speed	3.5	3.5	[m/s]
Max. acceleration	8	5	[m/s^2]
Repeatability	-	±0.2*	[mm]
Beam max. length without joint	8000	6000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions					
Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_z[N]
PAR 1/05	490	1,170	1,170	1,600	1,620

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	E01-5	E01-4	
Rack (tempered, helical teeth: module KTD)	module 2	module 2	[mm^2]
Guide rails	28x11 (hardened)	28x11 (hardened)	
Translation	4 roller slides with 4 rollers Ø30	4 V-shaped rollers Ø63	
Room available for energy chain	115x45	75x45	[mm^2]
Pinion pitch diameter type ND	44.56 (as an alternative 63.66)	44.56 (as an alternative 63.66)	[mm]

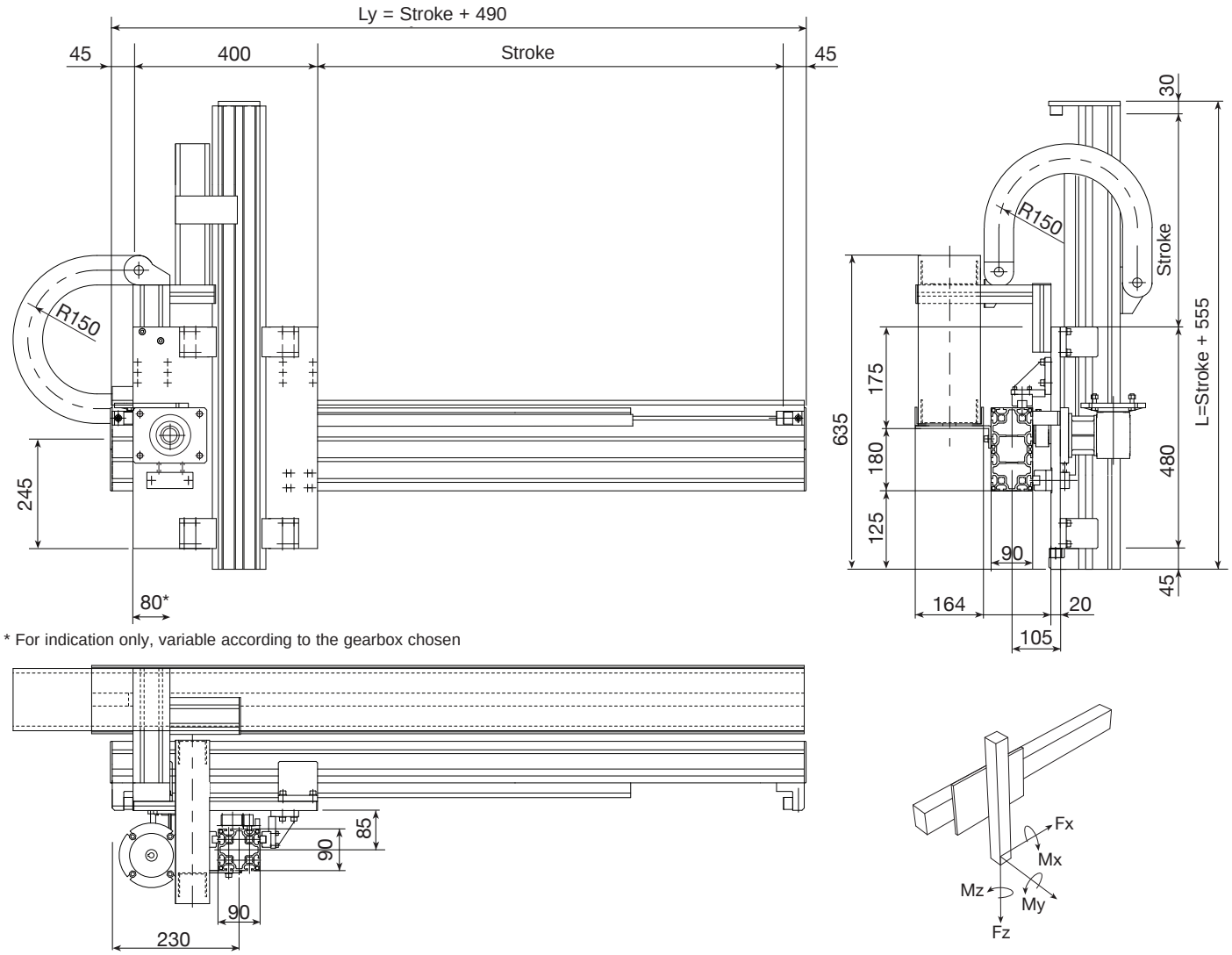
Weights	Y-axis	Z-axis	
"Base" model (stroke$_x$ and stroke$_z$=0)	M_{base} = 59		[kg]
Slide (plates + carriages)	M_{slide} = 26		[kg]
Beam (incl. guide rails and rack)	q_y = 22	q_z = 15	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1{,}600)/1{,}000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1{,}000}$ Stroke$_X$ and stroke$_Z$ [mm]

PAS 1/05

Y-Axis / P / A / S / 180 / Stroke / Length / FRD / ...
Z-Axis / P / A / S / 90 / Stroke / Length / X / FRD / ...

PC
25 Kg — **80 Kg**
High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen

Performances	Y-axis	Z-axis	
Max. load (Pc $_{max}$) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	3.5	3.5	[m/s]
Max. acceleration	8	5	[m/s^2]
Repeatability	-	±0.1*	[mm]
Beam max. length without joint	8000	6000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions					
Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_z[N]
PAS 1/05	1,220	1,440	320	1,200	2,310

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	E01-5	E01-4	
Rack (tempered, helical teeth, ground: module KSD)	module 2	module 2	[mm^2]
Translation: 4 caged ball roller slides and guide rails	size 20	size 15	
Room available for energy chain	115x45	75x45	[mm^2]
Pinion pitch diameter (induction-hardened, ground - RD)	44.56 (as an alternative 63.66)	44.56 (as an alternative 63.66)	[mm]

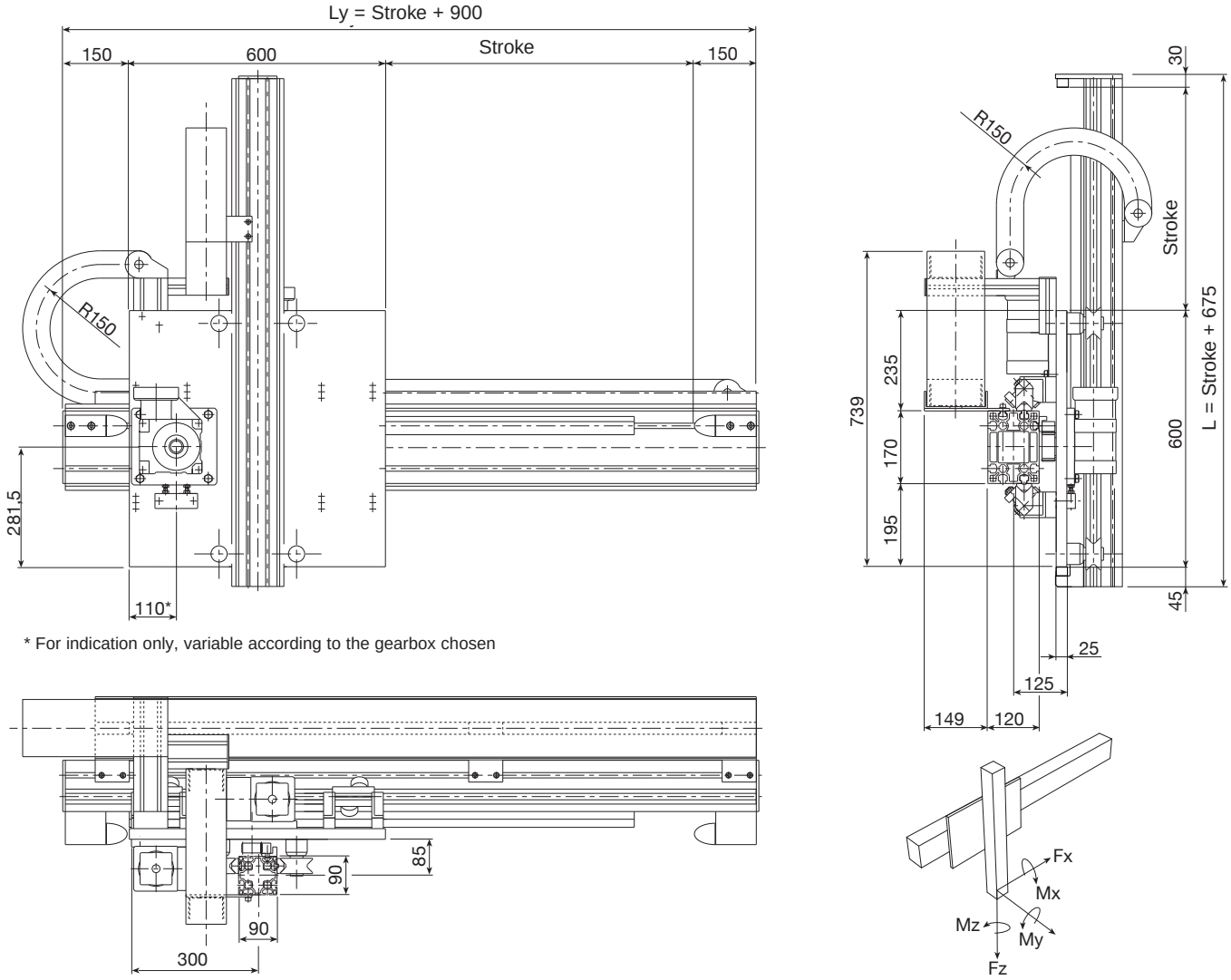
Weights	Y-axis	Z-axis	
Base" model (stroke$_x$ and stroke$_z$=0)	M_{base} = 59		[kg]
Slide (plates + carriages)	M_{slide} = 26		[kg]
Beam (incl. guide rails and rack)	q_y = 24	q_z = 14	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1,000}$ Stroke$_X$ and stroke$_Z$ [mm]

PAR 2/1

Y-Axis / P / A / R / Q / 170 / Stroke / Length / FND / ...
Z-Axis / P / A / R / P / 90 / Stroke / Length / X / FND / ...

25 Kg PC **80 Kg**
High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen

Performances	Y-axis	Z-axis	
Max. load (Pc_{max}) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	3.5	3.5	[m/s]
Max. acceleration	10	7	[m/s²]
Repeatability	-	±0.2*	[mm]
Beam max. length without joint	8000	6000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions					
Model	**M_x[Nm]**	**M_y[Nm]**	**M_z[Nm]**	**F_x[N]**	**F_z[N]**
PAR 2/1	956	1,340	170	3,200	2,300

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Statyca	E01-4	
Rack (tempered, helical teeth: module KTD)	module 3	module 2	[mm²]
Guide rails	28x11 (hardened and polished)	28x11 (hardened and polished)	
Translation	4 roller slides with 2 rollers Ø30	4 V-shaped rollers Ø63	
Room available for energy chain	115x45	75x45	[mm²]
Pinion pitch diameter type ND	63.66 (as an alternative 89.13)	44.56 (as an alternative 63.66)	[mm]

Weights	Y-axis	Z-axis	
"Base" model ($stroke_x$ and $stroke_z$=0)	M_{base} = 88 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 44 approx.		[kg]
Beam (incl. guide rails and rack)	q_y = 31 approx.	q_z = 15 approx.	[kg/m]

Formules:

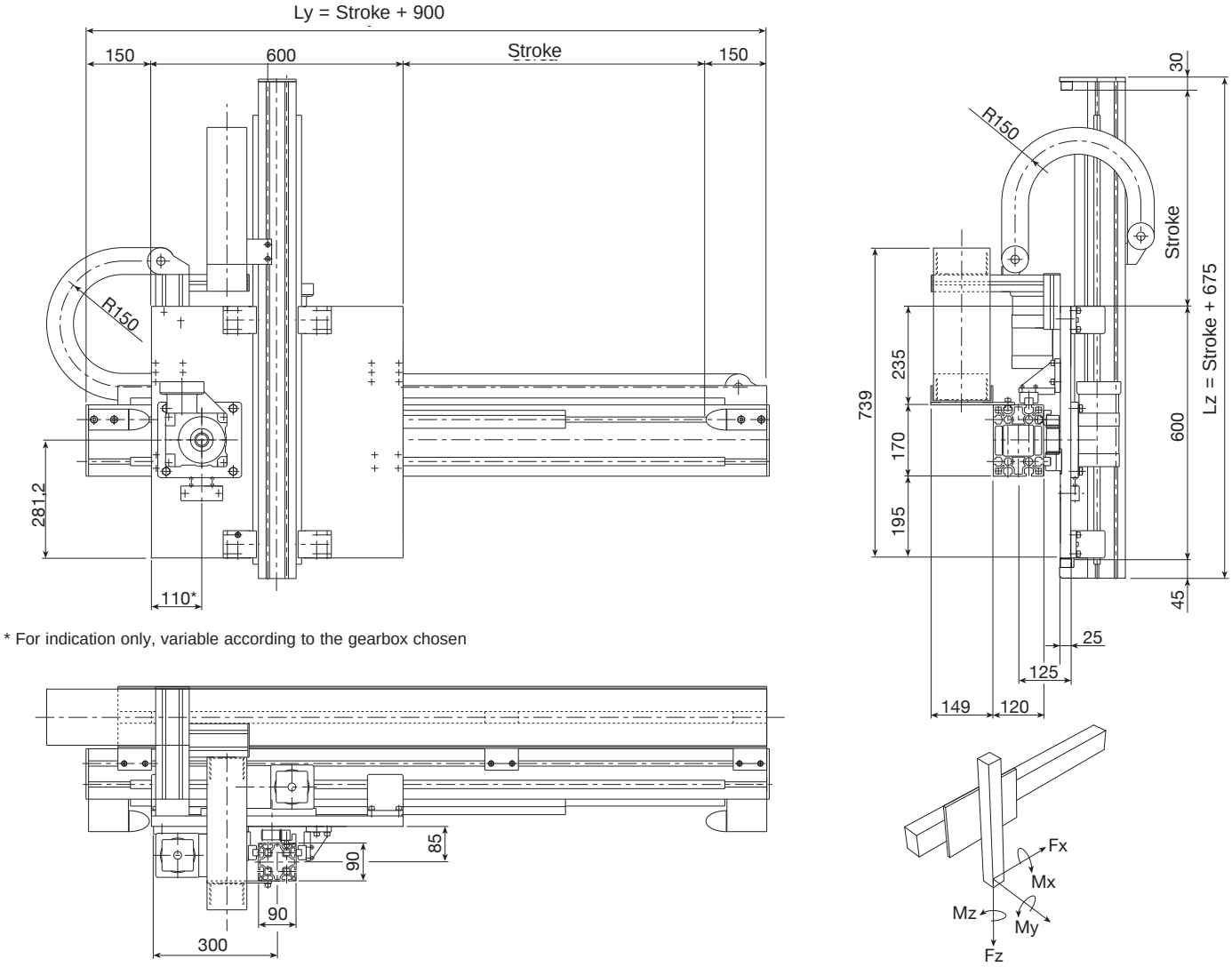
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**

Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1,000}$ $Stroke_X$ and $stroke_Z$ [mm]

PASM 2/1

Y-Axis / P / A / S / M / 170 / Stroke / Length / FRD / ...
Z-Axis / P / A / S / M / 90 / Stroke / Length / X / FRD / ...

25 Kg PC **80 Kg**
High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen

Performances	Y-axis	Z-axis	
Max. load (Pc $_{max}$) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	3.5	3.5	[m/s]
Max. acceleration	10	7	[m/s^2]
Repeatability	-	±0.1*	[mm]
Beam max. length without joint	6000	6000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions					
Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_z[N]
PASM 2/1	1,170	1,440	320	3,200	2,300

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Statyca	E01-4	
Rack (tempered, helical teeth, ground: module KSD)	module 3	module 2	[mm^2]
Translation: 4 caged ball roller slides and guide rails	size 20	size 15	
Room available for energy chain	115x45	75x45	[mm^2]
Pinion pitch diameter (induction-hardened, ground - RD)	63.66 (as an alternative 89.13)	44.56 (as an alternative 63.66)	[mm]

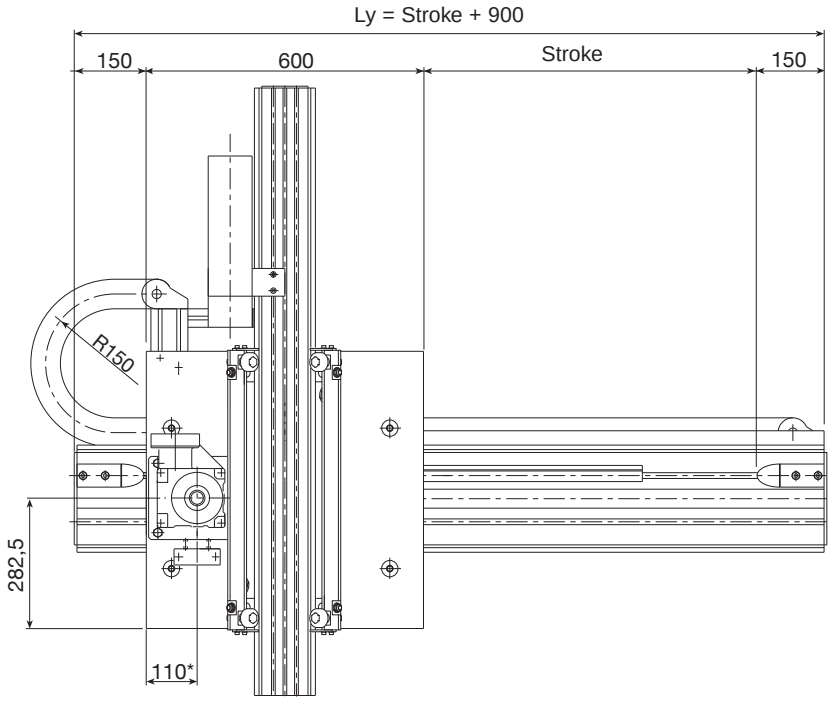
Weights	Y-axis	Z-axis	
Base" model (stroke$_x$ and stroke$_z$=0)	M_{base} = 89 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 43 approx		[kg]
Beam (incl. guide rails and rack)	q_y = 29 approx.	q_z = 14 approx.	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y+q_z \bullet stroke_z)/1,000}$ Stroke$_X$ and stroke$_Z$ [mm]

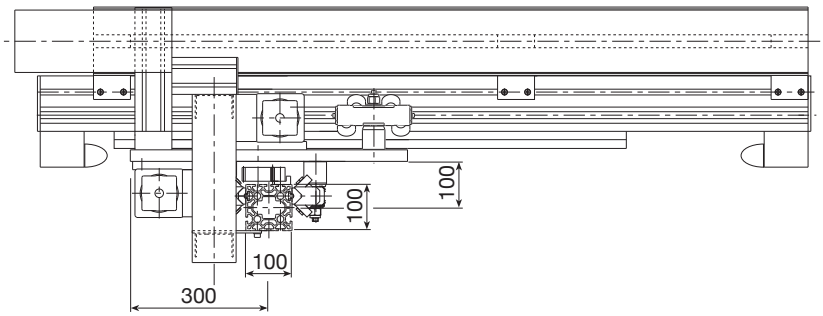
PAR 3/1

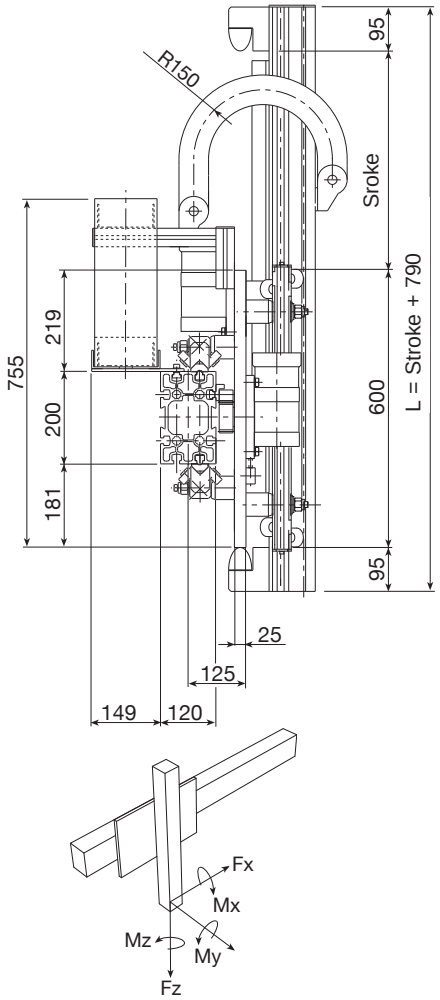
Y-Axis / P / A / R / Q / 200 / Stroke / Length / FND / ...
Z-Axis / P / A / R / Q / 100 / Stroke / Length / X / FND / ...

25 Kg PC **100 Kg**
High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen





Performances	Y-axis	Z-axis	
Max. load (Pc $_{max}$) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	3	3	[m/s]
Max. acceleration	7	7	[m/s^2]
Repeatability	-	±0.25*	[mm]
Beam max. length without joint	12000	6000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions					
Model	**M_x[Nm]**	**M_y[Nm]**	**M_z[Nm]**	**F_x[N]**	**F_z[N]**
PAR 3/1	1,115	1,520	352	3,200	2,400

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.

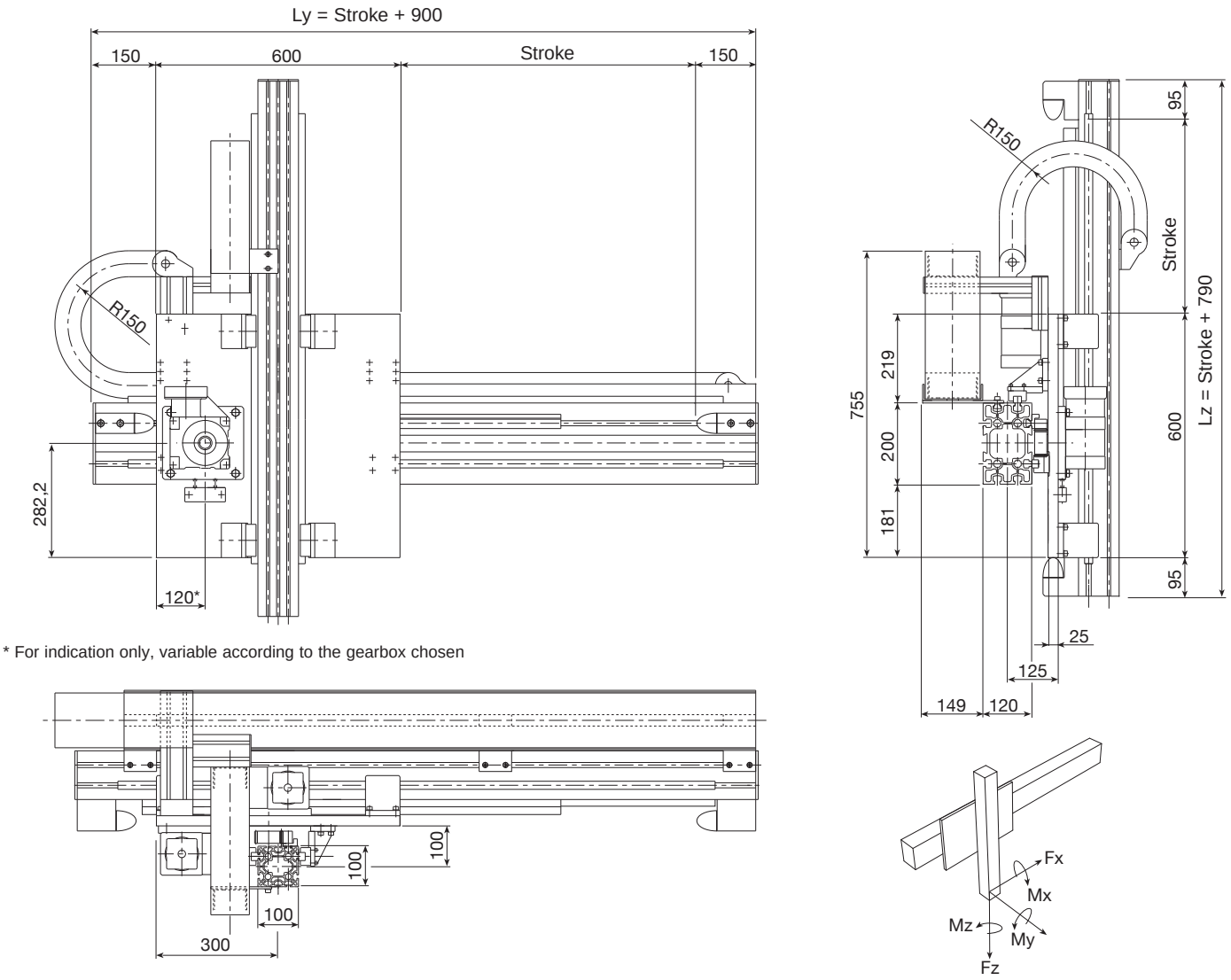
Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Valyda	MA1-5	
Rack (tempered, helical teeth: module KTD)	module 3	module 3	[mm^2]
Guide rails	35x16 (hardened and polished)	35x16 (hardened and polished)	
Translation	4 roller slides with 4 rollers Ø40	2 roller slides with 4 rollers Ø40	
Room available for energy chain	115x45	75x45	[mm^2]
Pinion pitch diameter type ND	63.66 (as an alternative 89.13)	63.66 (as an alternative 89.13)	[mm]

Weights	Y-axis	Z-axis	
"Base" model (stroke$_x$ and stroke$_z$=0)	M_{base} = 111 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 54 approx.		[kg]
Beam (incl. guide rails and rack)	q_y = 35 approx.	q_z = 24 approx.	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1,000}$ Stroke$_X$ and stroke$_Z$ [mm]

Y-Axis / P / A / S / M / 200 / Stroke / Length / FRD / ...
Z-Axis / P / A / S / M / 100 / Stroke / Length / X / FRD / ...

PC
25 Kg — 100 Kg
High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen

Performances	Y-axis	Z-axis	
Max. load (Pc $_{max}$) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	3	3	[m/s]
Max. acceleration	7	7	[m/s^2]
Repeatability	-	±0.1*	[mm]
Beam max. length without joint	12000	6000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions					
Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_z[N]
PASM 3/1	1,280	1,890	485	3,200	2,400

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Valyda	MA1-5	
Rack (tempered, helical teeth, ground: module KSD)	module 3	module 3	[mm^2]
Translation: 4 caged ball roller slides and guide rails	size 20	size 20	
Room available for energy chain	115x45	75x45	[mm^2]
Pinion pitch diameter (induction-hardened, ground - RD)	63.66 (as an alternative 89.13)	63.66 (as an alternative 89.13)	[mm]

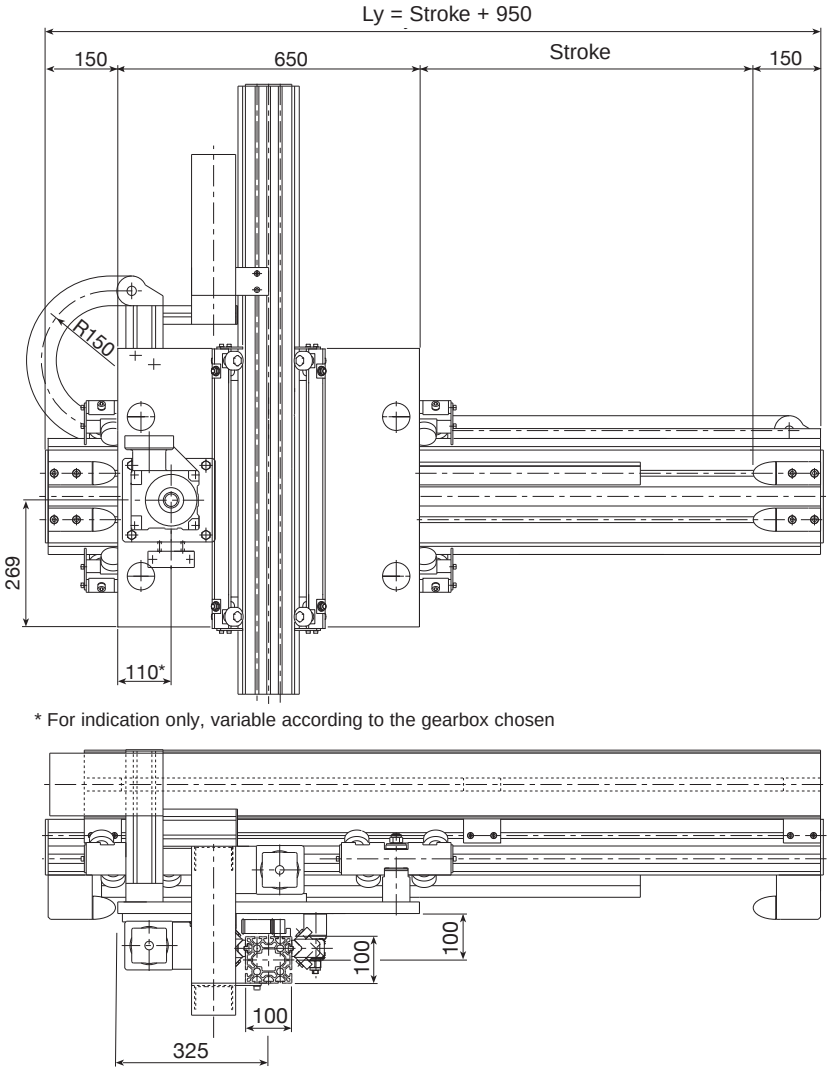
Weights	Y-axis	Z-axis	
Base" model (stroke$_x$ and stroke$_z$=0)	M_{base} = 100 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 45 approx.		[kg]
Beam (incl. guide rails and rack)	q_y = 33 approx.	q_z = 21 approx.	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1,000}$ Stroke$_X$ and stroke$_Z$ [mm]

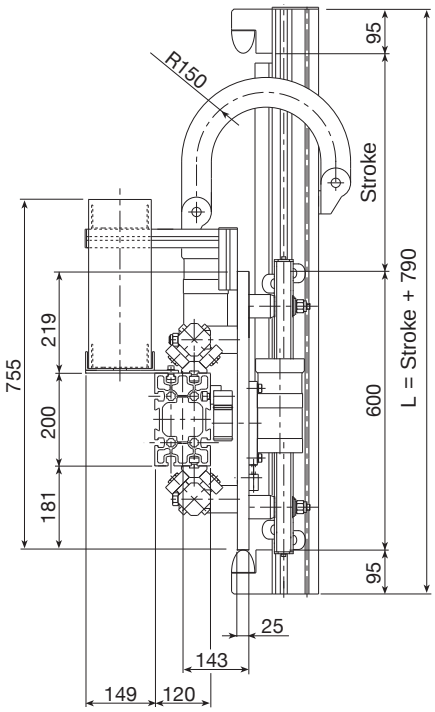
PAR 4/1

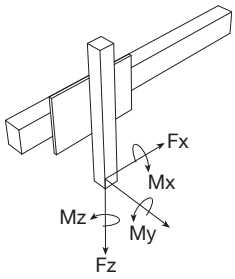
Y-Axis / P / A / R / P /200 / Stroke / Length / FND / ...
Z-Axis / P / A / R / Q / 100 / Stroke / Length / X / FND / ...

PC
25 Kg — 100 Kg
High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen





Performances	Y-axis	Z-axis	
Max. load (Pc $_{max}$) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	3	3	[m/s]
Max. acceleration	7	7	[m/s^2]
Repeatability	-	±0.25*	[mm]
Beam max. length without joint	12000	6000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions					
Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_z[N]
PAR 4/1	1520	1520	352	4250	2400

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Valyda	MA1-5	
Rack (tempered, helical teeth: module KTD)	module 4	module 3	[mm^2]
Guide rails	55x25 (hardened and polished)	35x16 (hardened and polished)	
Translation	4 roller slides with 4 rollers Ø52	2 roller slides with 4 rollers Ø40	
Room available for energy chain	115x45	75x45	[mm^2]
Pinion pitch diameter type ND	76.39 (as an alternative 106.10)	63.66 (as an alternative 89.13)	[mm]

Weights	Y-axis	Z-axis	
"Base" model (stroke$_x$ and stroke$_z$=0)	M_{base} = 140 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 69 approx.		[kg]
Beam (incl. guide rails and rack)	q_y = 48 approx.	q_z = 24 approx.	[kg/m]

Formules:

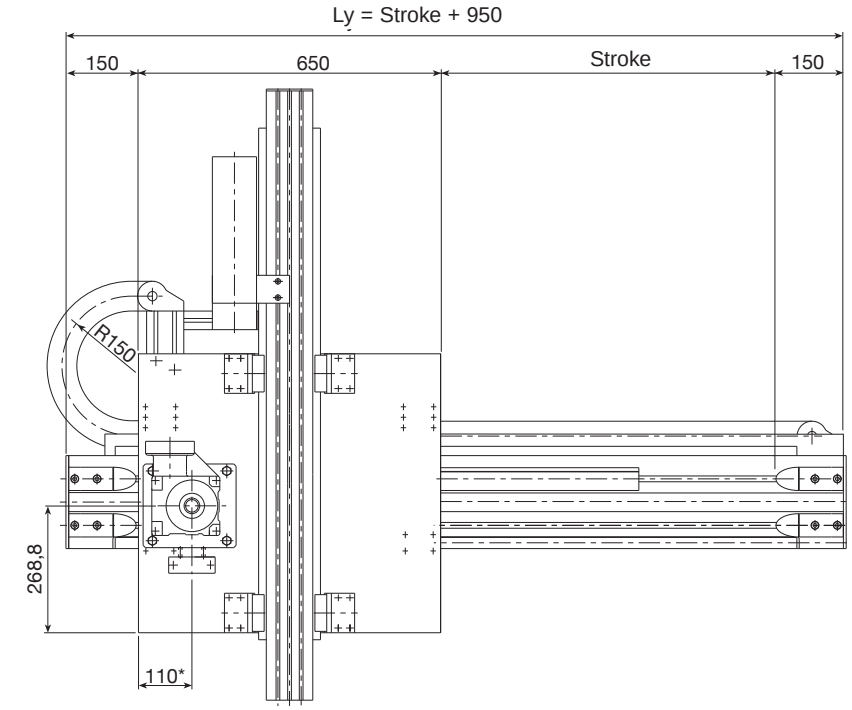
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**

Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1,000}$ Stroke$_X$ and stroke$_Z$ [mm]

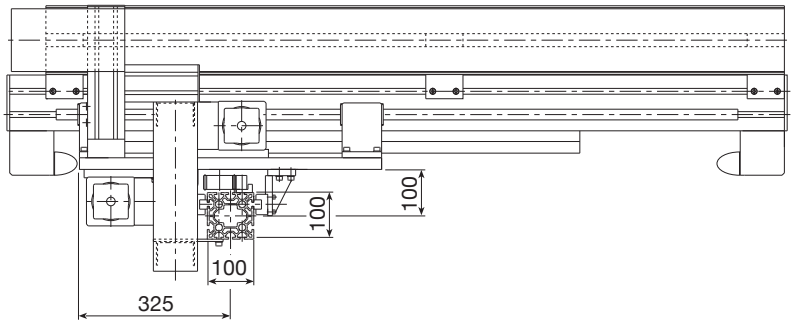
PASM 4/1

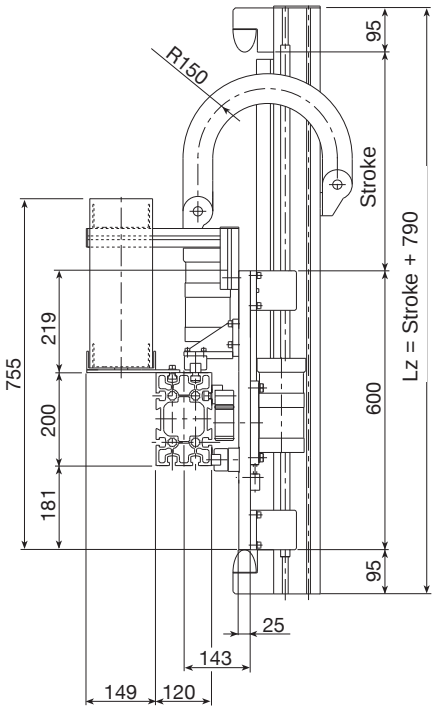
Y-Axis / P / A / S / M / 200 / Stroke / Length / FRD / ...
Z-Axis / P / A / S / M / 100 / Stroke / Length / X / FRD / ...

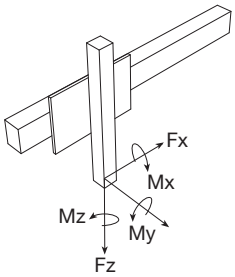
PC
25 Kg — **100 Kg**
High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen







Performances	Y-axis	Z-axis	
Max. load (Pc $_{max}$) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	3	3	[m/s]
Max. acceleration	7	7	[m/s^2]
Repeatability	-	±0.1*	[mm]
Beam max. length without joint	12000	6000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions					
Model	**M_x[Nm]**	**M_y[Nm]**	**M_z[Nm]**	**F_x[N]**	**F_z[N]**
PASM 4/1	1,700	1,890	485	4,250	2,400

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Valyda	MA1-5	
Rack (tempered, helical teeth, ground: module KSD)	module 4	module 3	[mm^2]
Translation: 4 caged ball roller slides and guide rails	size 25	size 20	
Room available for energy chain	115x45	75x45	[mm^2]
Pinion pitch diameter (induction-hardened, ground - RD)	76.39 (as an alternative 106.10)	63.66 (as an alternative 89.13)	[mm]

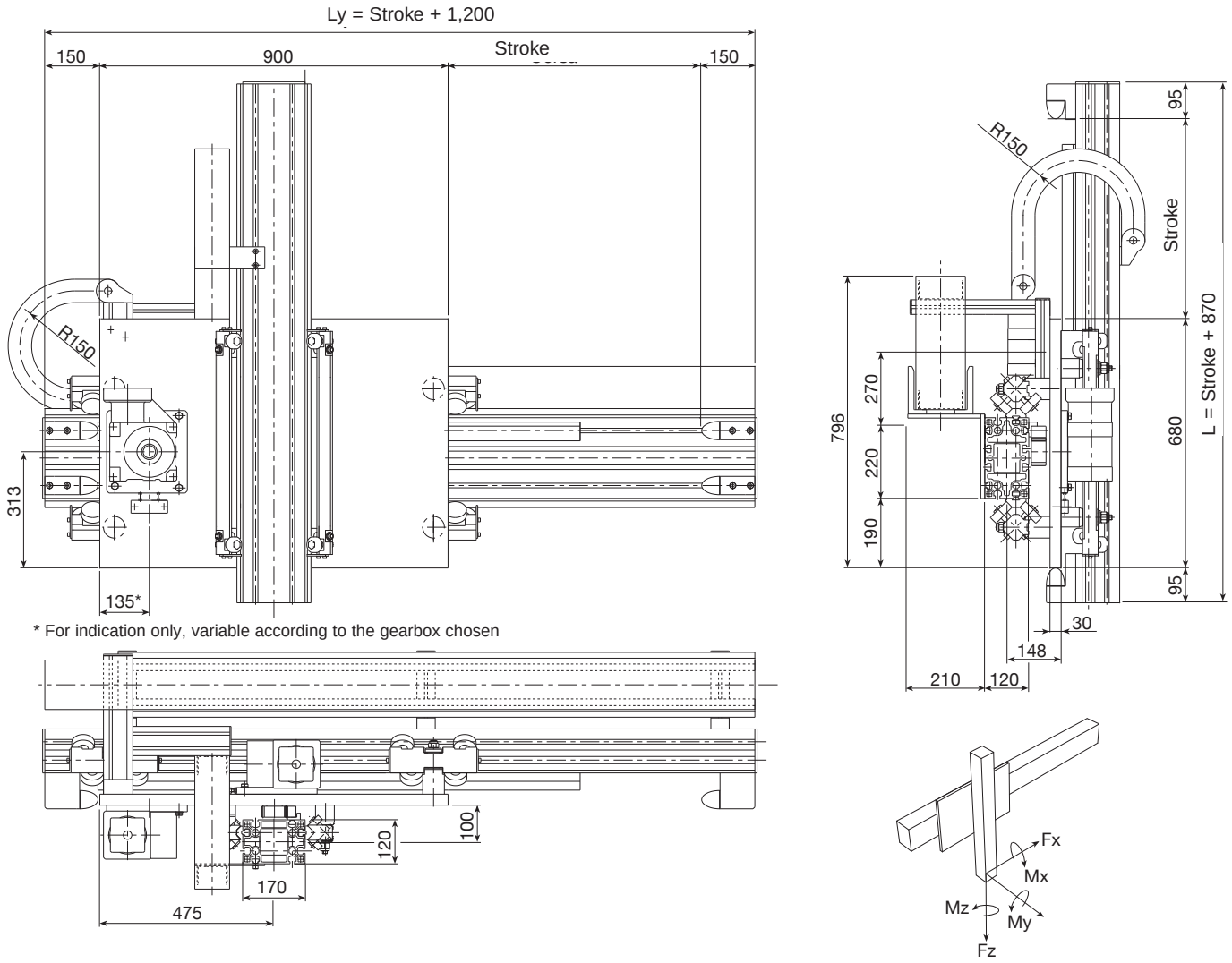
Weights	Y-axis	Z-axis	
Base" model (stroke$_x$ and stroke$_z$=0)	M_{base} = 121 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 59 approx.		[kg]
Beam (incl. guide rails and rack)	q_y = 40 approx.	q_z = 21 approx.	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1,000}$ Stroke$_X$ and stroke$_Z$ [mm]

PAR 5/2

Y-Axis / P / A / R / P / 220 / Stroke / Length / FND / ...
Z-Axis / P / A / R / Q / 170 / Stroke / Length / X / FND / ...

60 Kg PC **200 Kg**
High Cycle Rate — Low Cycle Rate



Performances	Y-axis	Z-axis	
Max. load (Pc_{max}) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	3	3	[m/s]
Max. acceleration	6	4	[m/s²]
Repeatability	-	±0.25*	[mm]
Beam max. length without joint	12000	6000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions					
Model	**M_x[Nm]**	**M_y[Nm]**	**M_z[Nm]**	**F_x[N]**	**F_z[N]**
PAR 5/2	1,520	1,520	580	4,670	3,580

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Logyca	Statyca	
Rack (tempered, helical teeth: module KTD)	module 4	module 3	[mm²]
Guide rails	55x25 (hardened and polished)	35x16 (hardened and polished)	
Translation	4 roller slides with 4 rollers Ø62	4 roller slides with 2 rollers Ø40	
Room available for energy chain	115x45	75x45	[mm²]
Pinion pitch diameter type ND	76.39 (as an alternative 106.10)	63.66 (as an alternative 89.13)	[mm]

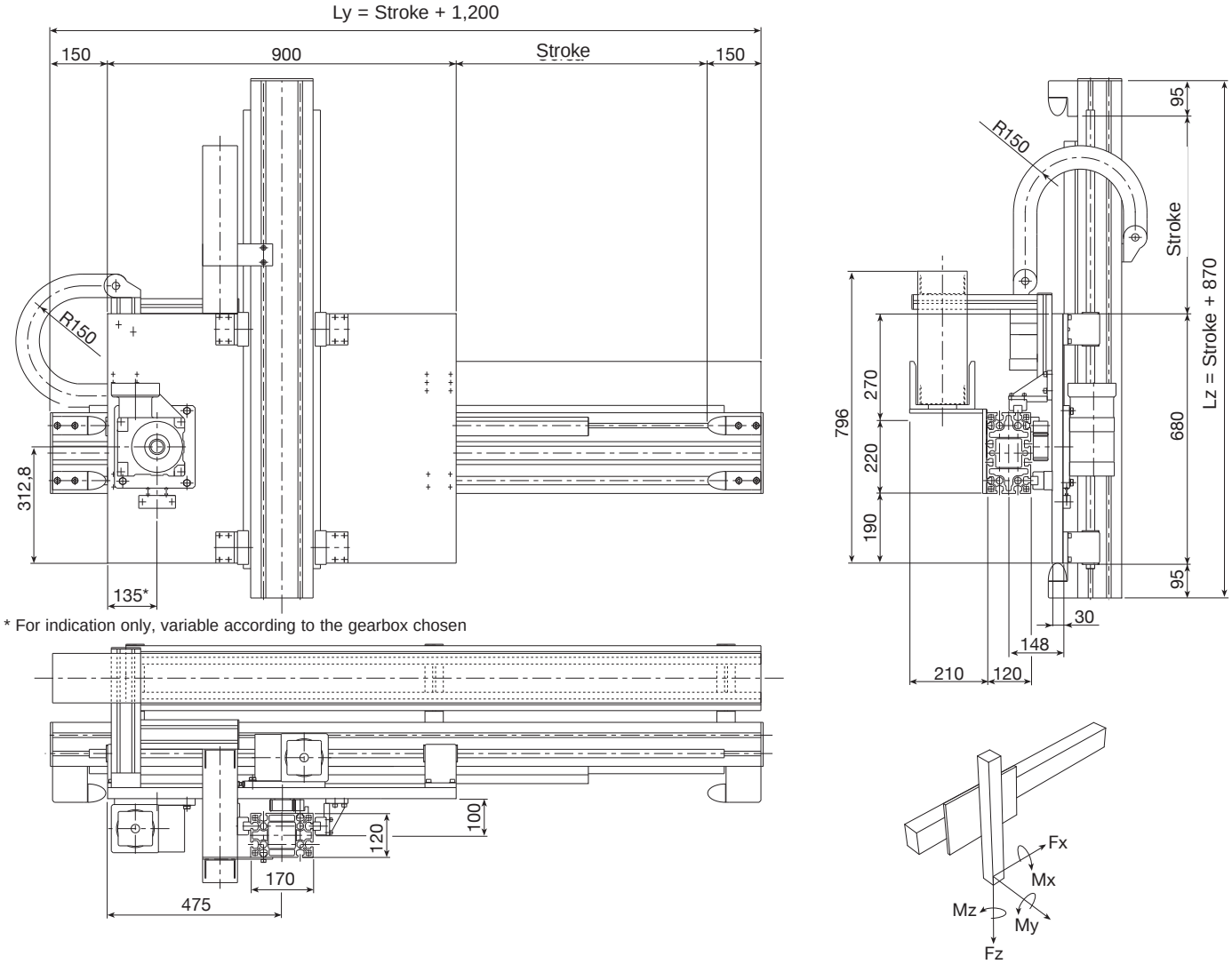
Weights	Y-axis	Z-axis	
"Base" model ($stroke_x$ and $stroke_z$=0)	M_{base} = 195 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 98 approx.		[kg]
Beam (incl. guide rails and rack)	q_y = 52 approx.	q_z = 31 approx.	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1,000}$ $Stroke_X$ and $stroke_Z$ [mm]

PASM 5/2

Y-Axis / P / A / S / M / 220 / Stroke / Length / FRD / ...
Z-Axis / P / A / S / M / 170 / Stroke / Length / X / FRD / ...

PC
60 Kg — **200 Kg**
High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen

Performances	Y-axis	Z-axis	
Max. load (Pc_{max}) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	3	3	[m/s]
Max. acceleration	6	4	[m/s²]
Repeatability	-	±0.1*	[mm]
Beam max. length without joint	12000	6000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions					
Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_z[N]
PASM 5/2	2,060	3,320	1,210	4,670	3,580

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Logyca	Statyca	
Rack (tempered, helical teeth, ground: module KSD)	module 4	module 3	[mm²]
Translation: 4 caged ball roller slides and guide rails	size 25	size 25	
Room available for energy chain	115x45	75x45	[mm²]
Pinion pitch diameter (induction-hardened, ground - RD)	76.39 (as an alternative 106.10)	63.66 (as an alternative 89.13)	[mm]

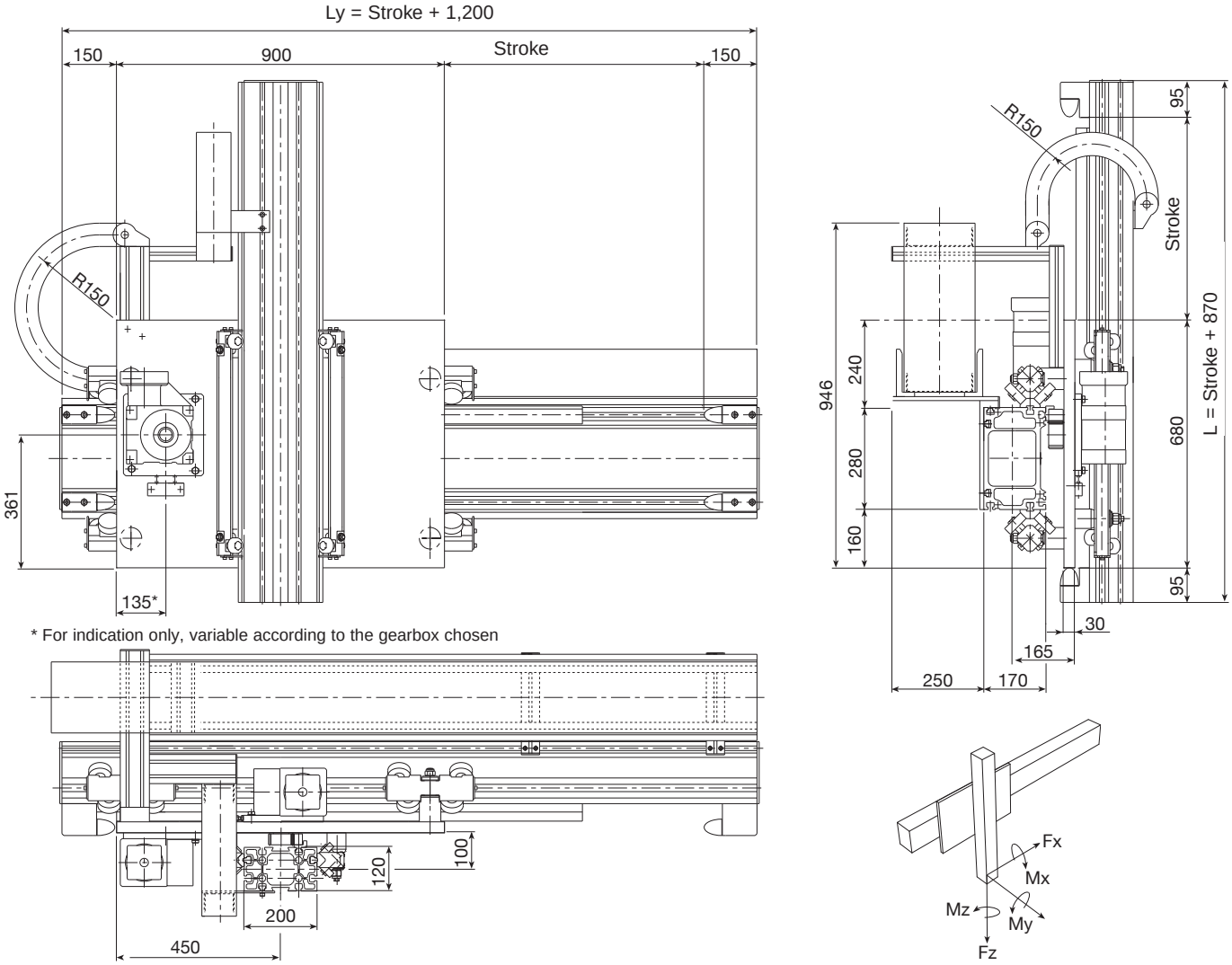
Weights	Y-axis	Z-axis	
Base" model ($stroke_x$ and $stroke_z$=0)	M_{base} = 178 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 95 approx.		[kg]
Beam (incl. guide rails and rack)	q_y = 44 approx.	q_z = 29 approx.	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1,000}$ $Stroke_X$ and $stroke_Z$ [mm]

PAR 6/2

Y-Axis / P / A / R / P / 280 / Stroke / Length / FND / ...
Z-Axis / P / A / R / Q / 200 / Stroke / Length / X / FND / ...

100 Kg PC **200 Kg**
High Cycle Rate — Low Cycle Rate



Performances	Y-axis	Z-axis	
Max. load (Pc_{max}) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	3	3	[m/s]
Max. acceleration	4	4	[m/s²]
Repeatability	-	±0.25*	[mm]
Beam max. length without joint	12000	12000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions					
Model	**M_x[Nm]**	**M_y[Nm]**	**M_z[Nm]**	**F_x[N]**	**F_z[N]**
PAR 6/2	1,520	1,520	670	3,585	3,665

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Pratyca	Valyda	
Rack (tempered, helical teeth: module KTD)	module 4	module 3	[mm²]
Guide rails	55x25 (hardened and polished)	35x16 (hardened and polished)	
Translation	4 roller slides with 4 rollers Ø62	2 roller slides with 4 rollers Ø40	
Room available for energy chain	175x45	75x45	[mm²]
Pinion pitch diameter type ND	76.39 (as an alternative 106.10)	63.66 (as an alternative 89.13)	[mm]

Weights	Y-axis	Z-axis	
"Base" model ($stroke_x$ and $stroke_z$=0)	M_{base} = 220 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 99 approx.		[kg]
Beam (incl. guide rails and rack)	q_y = 66 approx.	q_z = 35 approx.	[kg/m]

Formules:

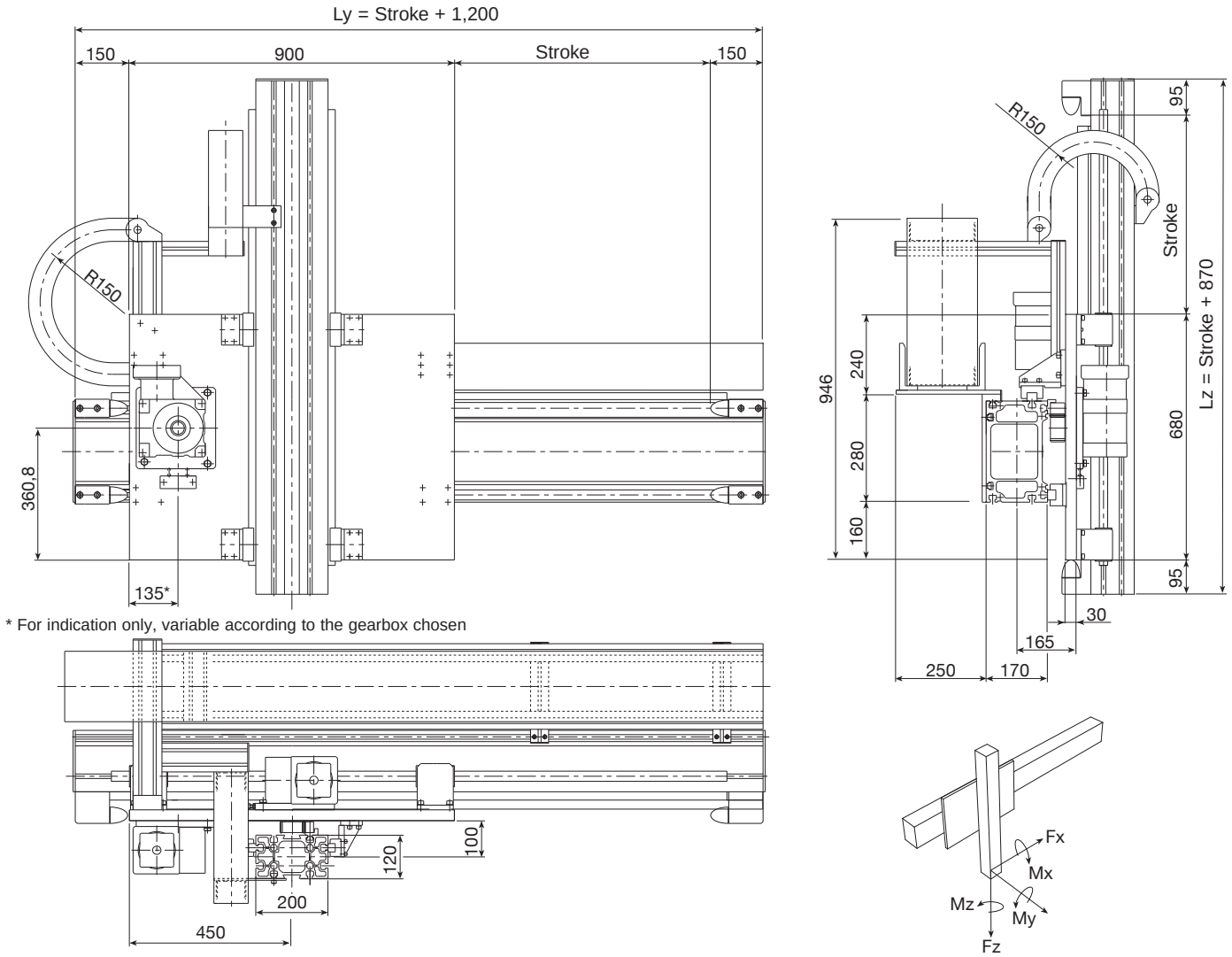
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**

Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1,000}$ $Stroke_X$ and $stroke_Z$ [mm]

PASM 6/2

Y-Axis / P / A / S / M / 280 / Stroke / Length / FRD / ...
Z-Axis / P / A / S / M / 200 / Stroke / Length / X / FRD / ...

100 Kg PC **200 Kg**
High Cycle Rate — Low Cycle Rate



Performances	Y-axis	Z-axis	
Max. load (Pc $_{max}$) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	3	3	[m/s]
Max. acceleration	4	4	[m/s²]
Repeatability	-	±0.1*	[mm]
Beam max. length without joint	12000	12000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions					
Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_z[N]
PASM 6/2	3,000	3,310	1,375	3,585	3,665

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Pratyca	Valyda	
Rack (tempered, helical teeth, ground: module KSD)	module 4	module 3	[mm²]
Translation: 4 caged ball roller slides and guide rails	size 30	size 25	
Room available for energy chain	175x45	75x45	[mm²]
Pinion pitch diameter (induction-hardened, ground - RD)	76.39 (as an alternative 106.10)	63.66 (as an alternative 89.13)	[mm]

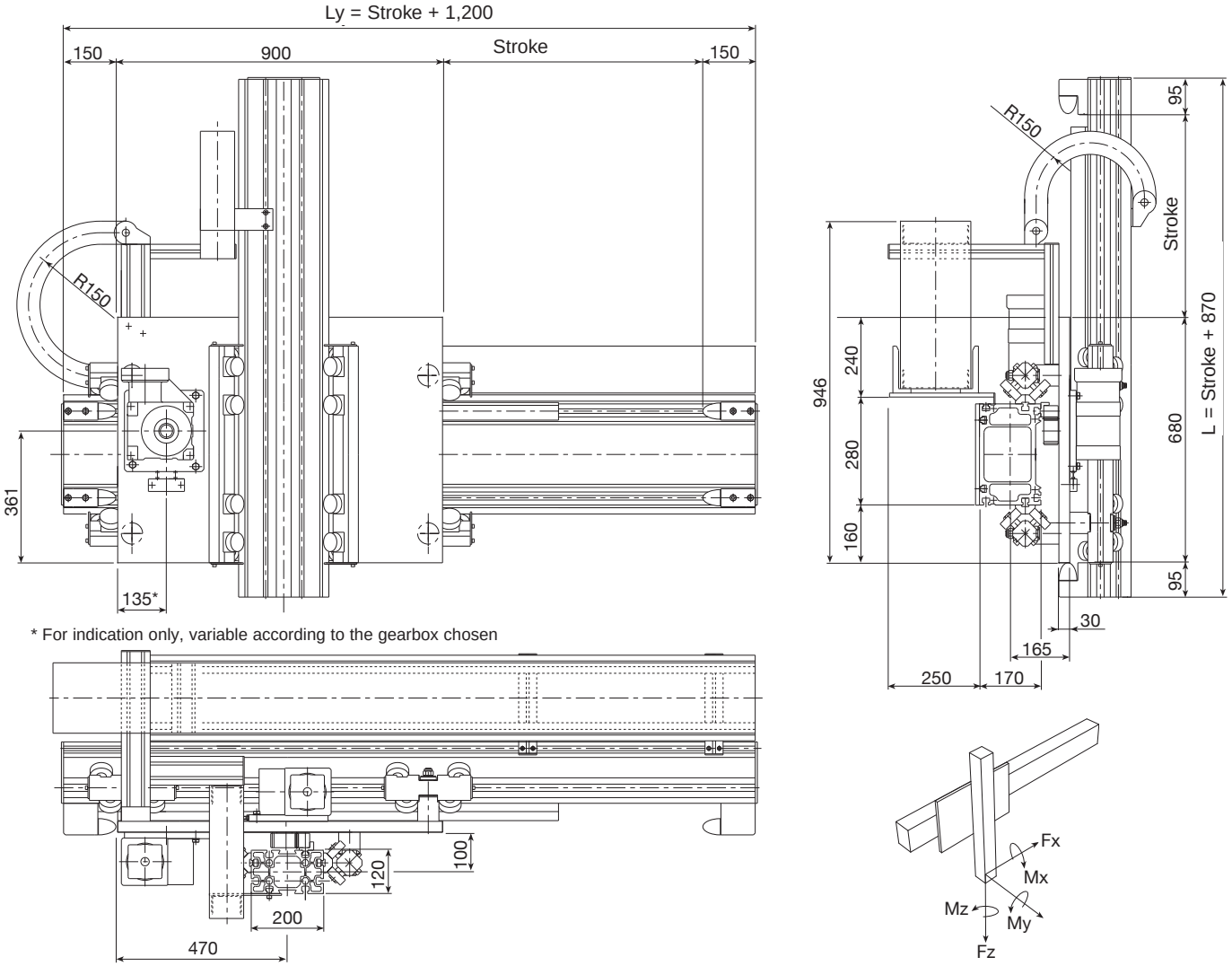
Weights	Y-axis	Z-axis	
Base" model (stroke$_x$ and stroke$_z$=0)		M_{base} = 202 approx.	[kg]
Slide (plates + carriages)		M_{slide} = 86 approx.	[kg]
Beam (incl. guide rails and rack)	q_y = 60 approx.	q_z = 34 approx.	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1,000}$ Stroke$_X$ and stroke$_Z$ [mm]

PAR 6/4

Y-Axis / P / A / R / P / 280 / Stroke / Length / FND / ...
Z-Axis / P / A / R / P / 200 / Stroke / Length / X / FND / ...

100 Kg PC **400 Kg**
High Cycle Rate — Low Cycle Rate



Performances	Y-axis	Z-axis	
Max. load (Pc_{max}) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	3	2	[m/s]
Max. acceleration	4	3	[m/s²]
Repeatability	-	±0.25*	[mm]
Beam max. length without joint	12000	12000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions					
Model	**M_x[Nm]**	**M_y[Nm]**	**M_z[Nm]**	**F_x[N]**	**F_z[N]**
PAR 6/4	2,435	2,435	1,200	3,585	6,350

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Pratyca	Valyda	
Rack (tempered, helical teeth: module KTD)	module 4	module 4	[mm²]
Guide rails	55x25 (hardened and polished)	55x25 (hardened and polished)	
Translation	4 roller slides with 4 rollers Ø62	2 roller slides with 6 rollers Ø52	
Room available for energy chain	175x45	75x45	[mm²]
Pinion pitch diameter type ND	76.39 (as an alternative 106.10)	76.39 (as an alternative 106.10)	[mm]

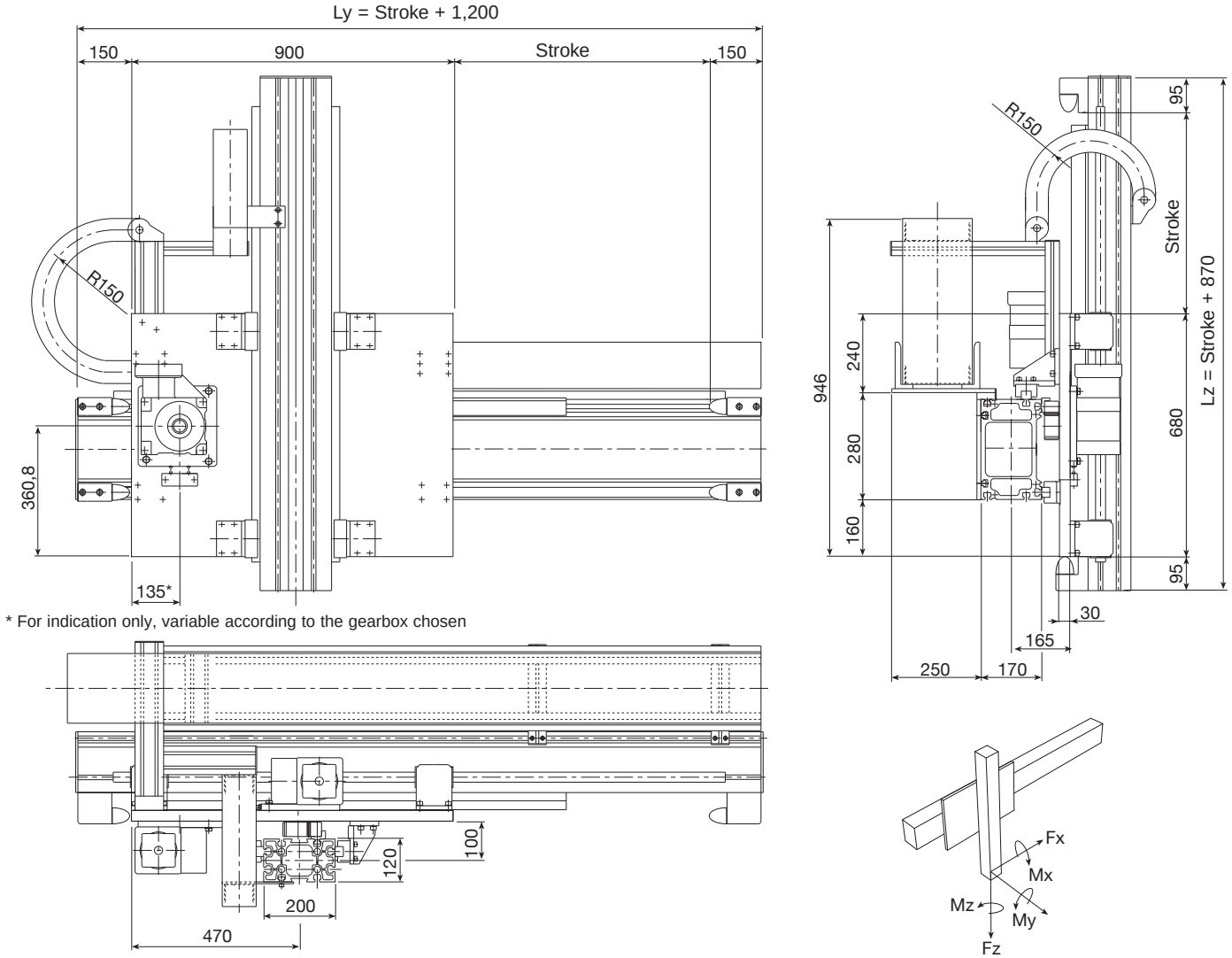
Weights	Y-axis	Z-axis	
"Base" model ($stroke_x$ and $stroke_z$=0)	M_{base} = 244 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 112 approx.		[kg]
Beam (incl. guide rails and rack)	q_y = 66 approx.	q_z = 48 approx.	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1,000}$ $Stroke_X$ and $stroke_Z$ [mm]

PASM 6/4

Y-Axis / P / A / S / M / 280 / Stroke / Length / FRD / ...
Z-Axis / P / A / S / M / 200 / Stroke / Length / X / FRD / ...

100 Kg PC **400 Kg**
High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen

Performances	Y-axis	Z-axis	
Max. load (Pc_{max}) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	3	2	[m/s]
Max. acceleration	4	3	[m/s²]
Repeatability	-	±0.1*	[mm]
Beam max. length without joint	12000	12000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions					
Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_z[N]
PASM 6/4	3,000	3,310	1,375	3,585	6,350

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Pratyca	E01-4	
Rack (tempered, helical teeth, ground: module KSD)	module 4	module 4	[mm²]
Translation: 4 caged ball roller slides and guide rails	size 30	size 25	
Room available for energy chain	175x45	75x45	[mm²]
Pinion pitch diameter (induction-hardened, ground - RD)	76.39 (as an alternative 106.10)	76.39 (as an alternative 106.10)	[mm]

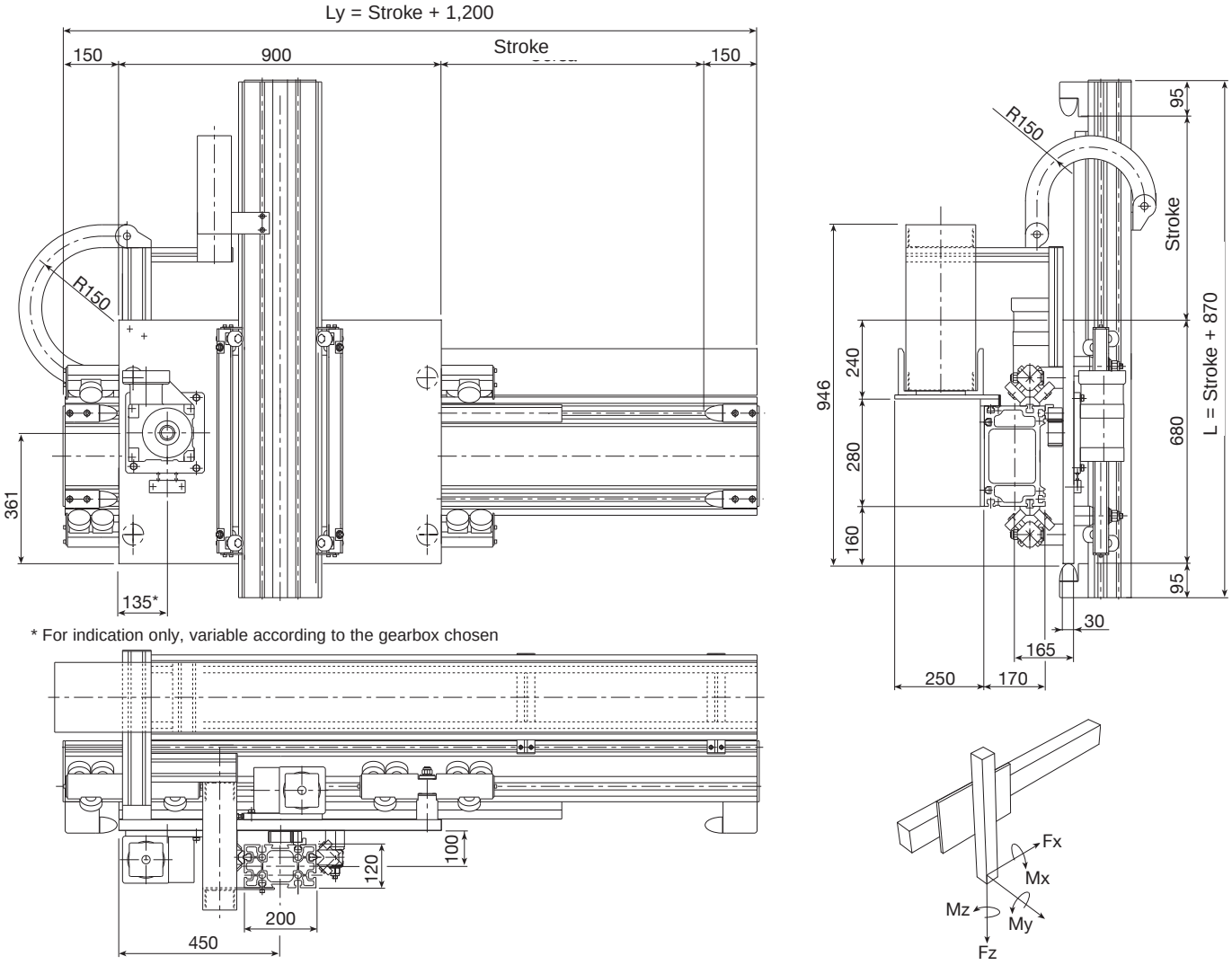
Weights	Y-axis	Z-axis	
Base" model ($stroke_x$ and $stroke_z$=0)	M_{base} = 217 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 105 approx.		[kg]
Beam (incl. guide rails and rack)	q_y = 60 approx.	q_z = 39 approx.	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1,000}$ $Stroke_X$ and $stroke_Z$ [mm]

PAR 8/3

Y-Axis / P / A / R / P / 280 / Stroke / Length / FND / ...
Z-Axis / P / A / R / P / 200 / Stroke / Length / X / FND / ...

100 Kg PC **300 Kg**
High Cycle Rate — Low Cycle Rate



Performances	Y-axis	Z-axis	
Max. load (Pc_{max}) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	2.5	2	[m/s]
Max. acceleration	2.5	3	[m/s²]
Repeatability	-	±0.25*	[mm]
Beam max. length without joint	12000	12000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_z[N]
PAR 8/3	1520	1520	670	3100	4740

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The values shown can be achieved with roller slides with 6 rollers suitable for maximum performance (see page 63-64).

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Pratyca	Valyda	
Rack (tempered, helical teeth: module KTD)	module 4	module 3	[mm²]
Guide rails	55x25 (hardened and polished)	35x16 (hardened and polished)	
Translation	4 roller slides with 6 rollers Ø62	2 roller slides with 4 rollers Ø40	
Room available for energy chain	175x45	75x45	[mm²]
Pinion pitch diameter type ND	76.39 (as an alternative 106.10)	63.66 (as an alternative 89.13)	[mm]

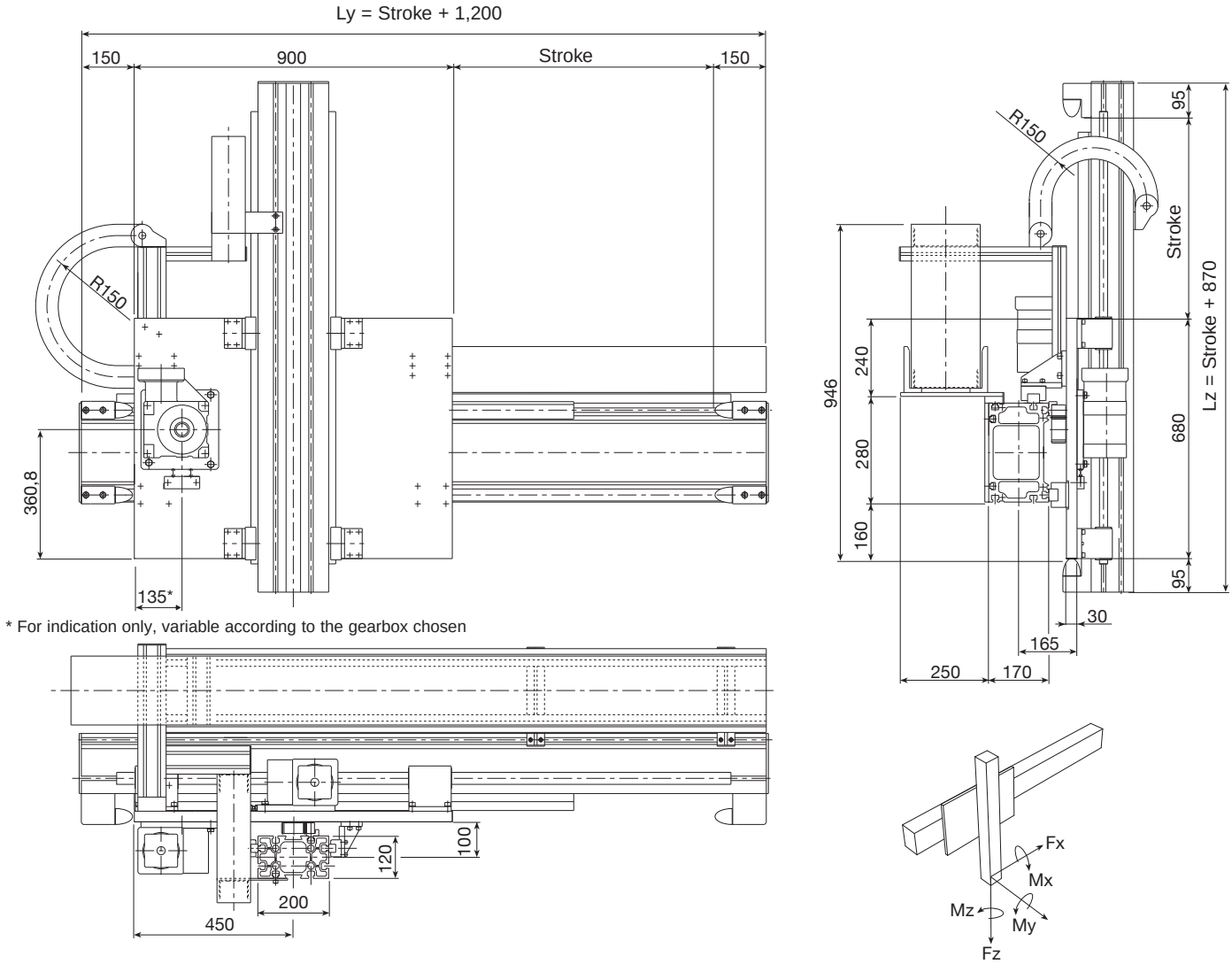
Weights	Y-axis	Z-axis	
"Base" model ($stroke_x$ and $stroke_z$=0)	M_{base} = 232 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 111 approx.		[kg]
Beam (incl. guide rails and rack)	q_y = 66 approx.	q_z = 35 approx.	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1,000}$ $Stroke_X$ and $stroke_Z$ [mm]

PASM 8/3

Y-Axis / P / A / S / M / 280 / Stroke / Length / FRD / ...
Z-Axis / P / A / S / 200 / M / Stroke / Length / X / FRD / ...

PC
100 Kg — **300 Kg**
High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen

Performances	Y-axis	Z-axis	
Max. load (Pc_{max}) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	2.5	2	[m/s]
Max. acceleration	2.5	3	[m/s²]
Repeatability	-	±0.1*	[mm]
Beam max. length without joint	12000	12000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_z[N]
PASM 8/3	3,000	3,310	1,375	3,100	4,740

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Pratyca	Valyda	
Rack (tempered, helical teeth, ground: module KSD)	module 4	module 3	[mm²]
Translation: 4 caged ball roller slides and guide rails	size 35	size 25	
Room available for energy chain	175x45	75x45	[mm²]
Pinion pitch diameter (induction-hardened, ground - RD)	76.39 (as an alternative 106.10)	63.66 (as an alternative 89.13)	[mm]

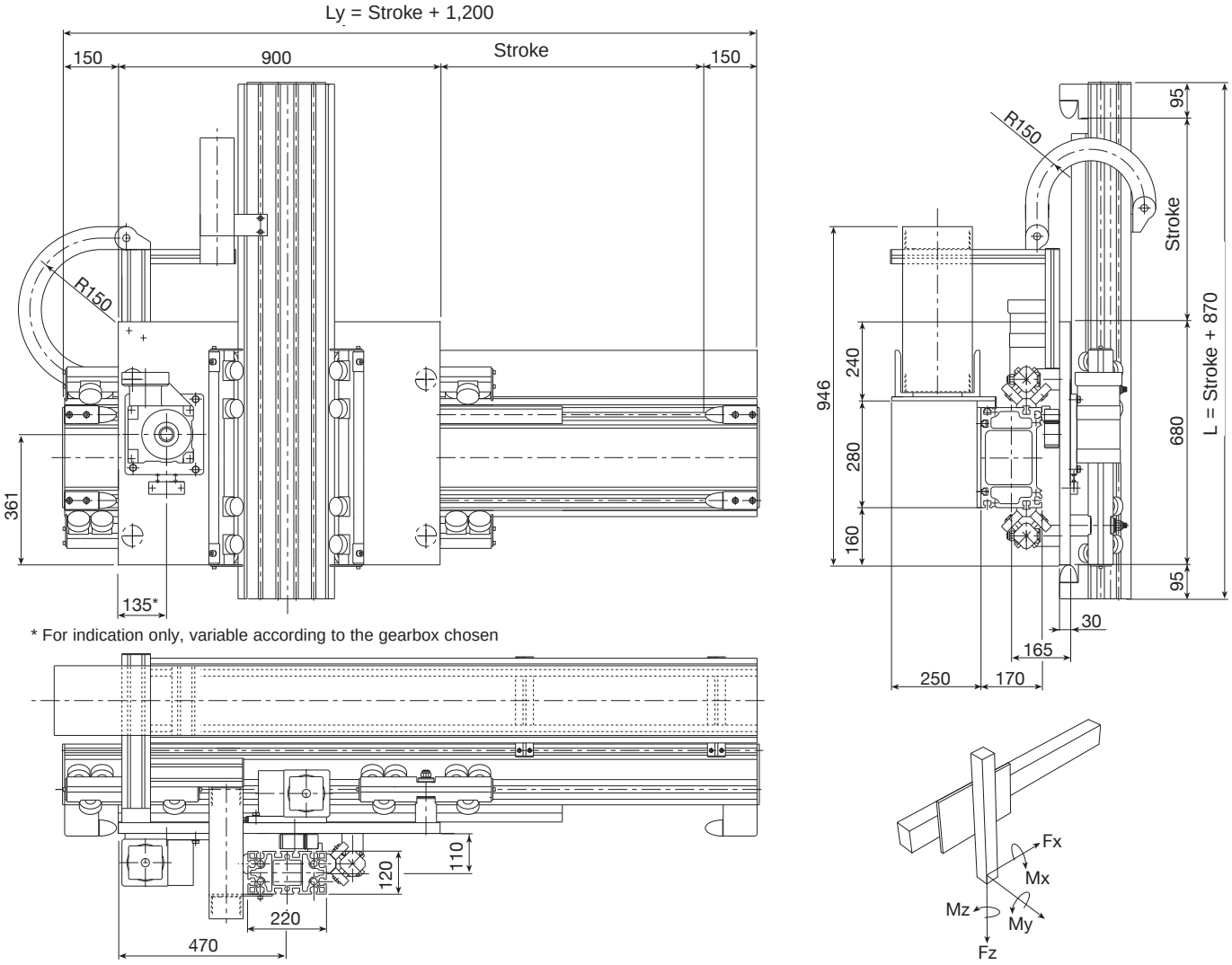
Weights	Y-axis	Z-axis	
Base" model ($stroke_x$ and $stroke_z$=0)	M_{base} = 220 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 102 approx.		[kg]
Beam (incl. guide rails and rack)	q_y = 64 approx.	q_z = 34 approx.	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1,000}$ $Stroke_X$ and $stroke_Z$ [mm]

PAR 8/6

Y-Axis / P / A / R / P / 280 / Stroke / Length / FND / ...
Z-Axis / P / A / R / P / 220 / Stroke / Length / X / FND / ...

250 Kg PC **600 Kg**
High Cycle Rate — Low Cycle Rate



Performances	Y-axis	Z-axis	
Max. load (Pc_{max}) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	2	2	[m/s]
Max. acceleration	2	2	[m/s²]
Repeatability	-	±0.25*	[mm]
Beam max. length without joint	12000	12000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions					
Model	**M_x[Nm]**	**M_y[Nm]**	**M_z[Nm]**	**F_x[N]**	**F_z[N]**
PAR 8/6	2,430	2,430	1,200	3,220	8,400

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The values shown can be achieved with roller slides with 6 rollers suitable for maximum performance (see page 63-64).

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Pratyca	Logyca	
Rack (tempered, helical teeth: module KTD)	module 4	module 4	[mm²]
Guide rails	55x25 (hardened and polished)	55x25 (hardened and polished)	
Translation	4 roller slides with 6 rollers Ø62	2 roller slides with 6 rollers Ø52	
Room available for energy chain	175x45	75x45	[mm²]
Pinion pitch diameter type ND	76.39 (as an alternative 106.10)	76.39 (as an alternative 106.10)	[mm]

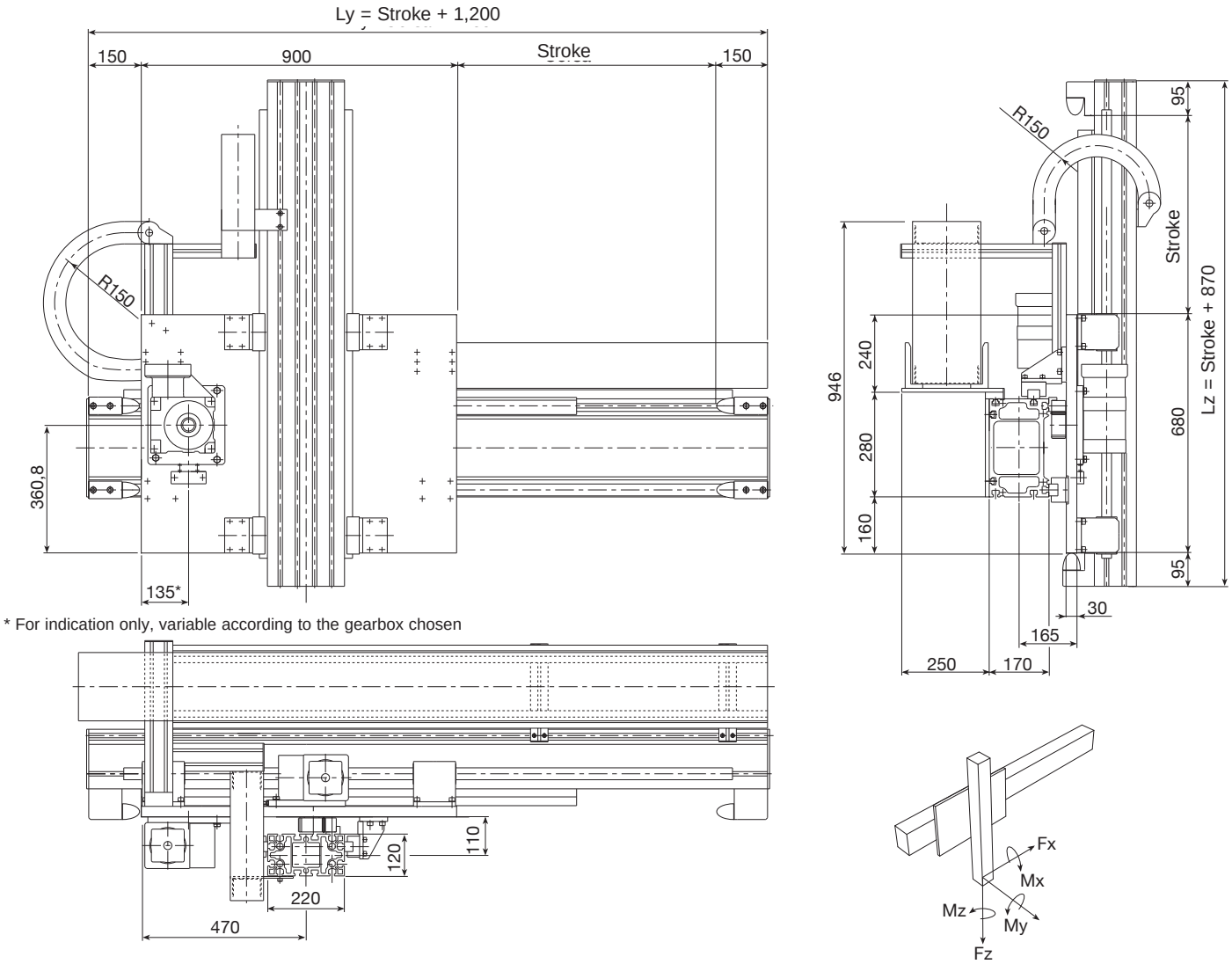
Weights	Y-axis	Z-axis	
"Base" model ($stroke_x$ and $stroke_z$=0)	M_{base} = 260 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 122 approx.		[kg]
Beam (incl. guide rails and rack)	q_y = 66 approx.	q_z = 52 approx.	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y+q_z \bullet stroke_z)/1,000}$ $Stroke_X$ and $stroke_Z$ [mm]

PASM 8/6

Y-Axis / P / A / S / M / 280 / Stroke / Length / FRD / ...
Z-Axis / P / A / S / M / 220 / Stroke / Length / X / FRD / ...

250 Kg PC **600 Kg**
High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen

Performances	Y-axis	Z-axis	
Max. load (Pc_{max}) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	2	2	[m/s]
Max. acceleration	2	2	[m/s²]
Repeatability	-	±0.15*	[mm]
Beam max. length without joint	12000	12000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_z[N]
PASM 8/6	4,330	4,790	2,090	3,220	8,400

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Pratyca	Logyca	
Rack (tempered, helical teeth, ground: module KSD)	module 4	module 4	[mm²]
Translation: 4 caged ball roller slides and guide rails	size 35	size 30	
Room available for energy chain	175x45	75x45	[mm²]
Pinion pitch diameter (induction-hardened, ground - RD)	76.39 (as an alternative 106.10)	76.39 (as an alternative 89.13)	[mm]

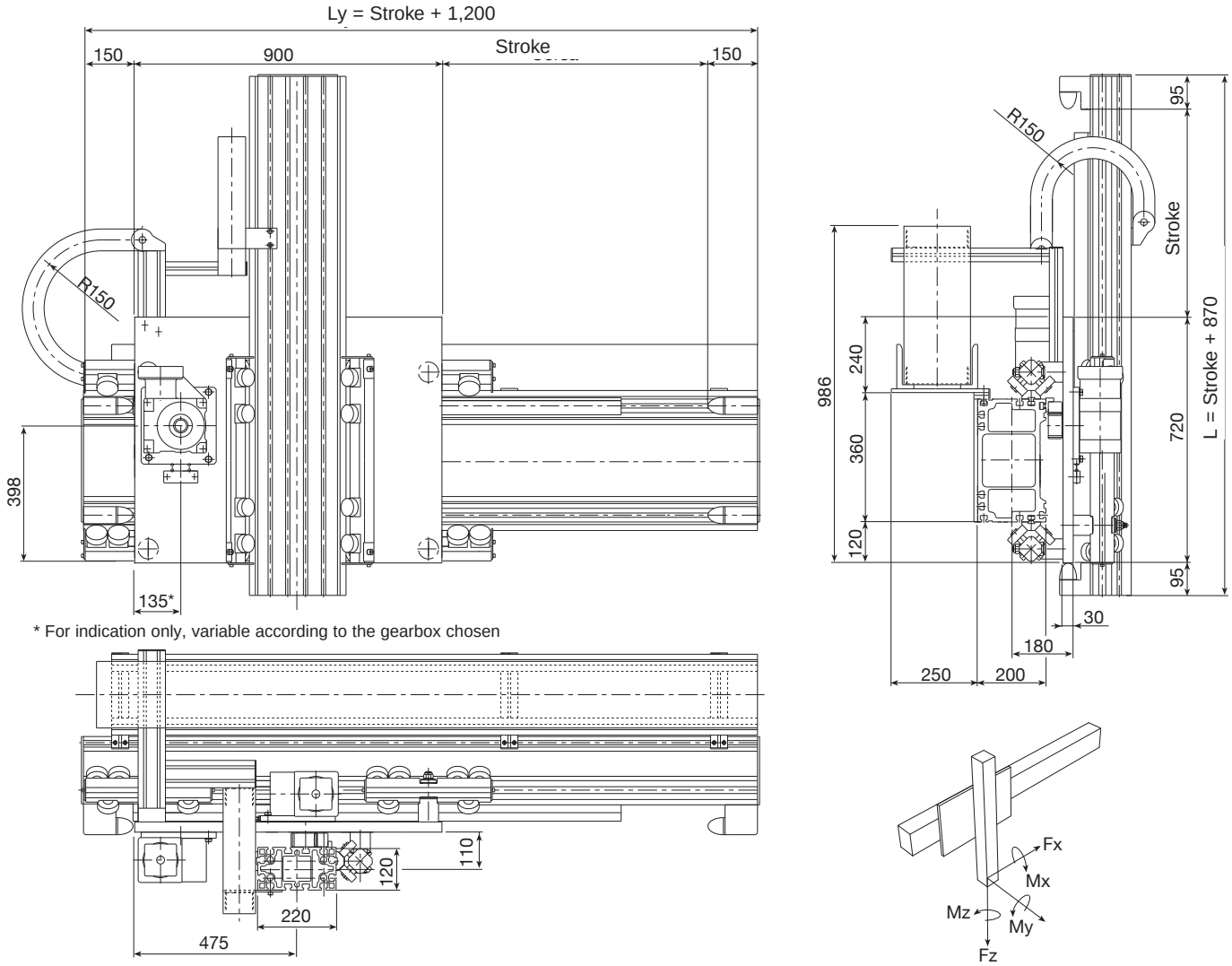
Weights	Y-axis	Z-axis	
Base" model ($stroke_x$ and $stroke_z$=0)	M_{base} = 234 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 102 approx.		[kg]
Beam (incl. guide rails and rack)	q_y = 64 approx.	q_z = 46 approx.	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1,000}$ $Stroke_X$ and $stroke_Z$ [mm]

PAR 10/6

Y-Axis / P / A / R / P / 360 / Stroke / Length / FND / ...
Z-Axis / P / A / R / P / 220 / Stroke / Length / X / FND / ...

300 Kg PC **600 Kg**
High Cycle Rate — Low Cycle Rate



Performances	Y-axis	Z-axis	
Max. load (Pc_{max}) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	2.5	2	[m/s]
Max. acceleration	2	2	[m/s²]
Repeatability	-	±0.25*	[mm]
Beam max. length without joint	12000	12000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_z[N]
PAR 10/6	2,435	2,435	1,200	3,185	8,400

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The values shown can be achieved with roller slides with 6 rollers suitable for maximum performance (see page 63-64).

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Solyda	Logyca	
Rack (tempered, helical teeth: module KTD)	module 4	module 4	[mm²]
Guide rails	55x25 (hardened and polished)	55x25 (hardened and polished)	
Translation	4 roller slides with 6 rollers Ø62	2 roller slides with 6 rollers Ø52	
Room available for energy chain	175x45	75x45	[mm²]
Pinion pitch diameter type ND	76.39 (as an alternative 106.10)	76.39 (as an alternative 106.10)	[mm]

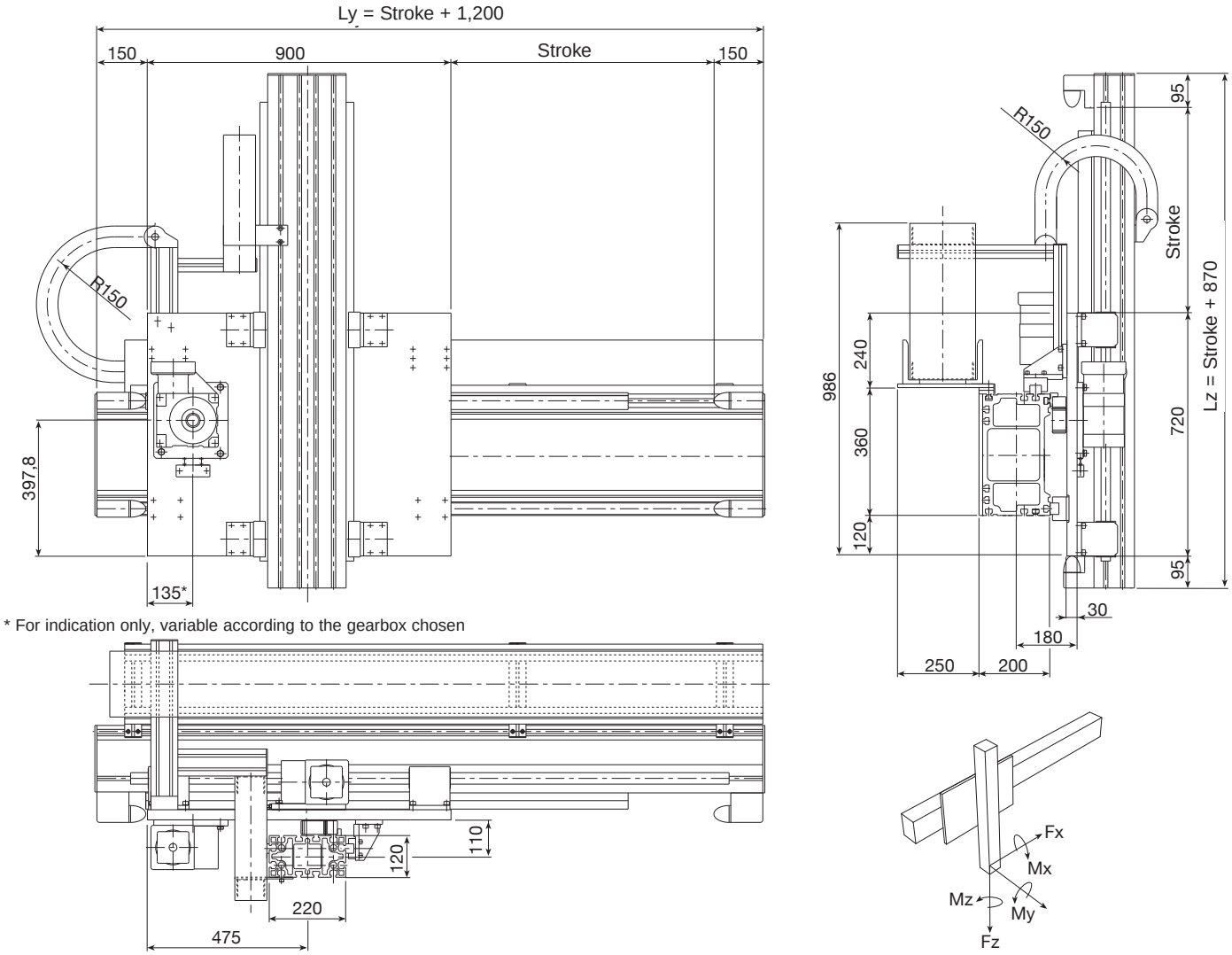
Weights	Y-axis	Z-axis	
"Base" model ($stroke_x$ and $stroke_z$=0)	M_{base} = 283 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 122 approx.		[kg]
Beam (incl. guide rails and rack)	q_y = 85 approx.	q_z = 52 approx.	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y+q_z \bullet stroke_z)/1,000}$ $Stroke_X$ and $stroke_Z$ [mm]

PASM 10/6

Y-Axis / P / A / S / M / 360 / Stroke / Length / FRD / ...
Z-Axis / P / A / S / M / 220 / Stroke / Length / X / FRD / ...

300 Kg PC **600 Kg**
High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen

Performances	Y-axis	Z-axis	
Max. load (Pc_{max}) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	2.5	2	[m/s]
Max. acceleration	2	2	[m/s²]
Repeatability	-	±0.15*	[mm]
Beam max. length without joint	12000	12000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_z[N]
PASM10/6	4,560	5,050	2,090	3,185	8,400

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Solyda	Logyca	
Rack (tempered, helical teeth, ground: module KSD)	module 4	module 4	[mm²]
Translation: 4 caged ball roller slides and guide rails	size 35	size 30	
Room available for energy chain	175x45	75x45	[mm²]
Pinion pitch diameter (induction-hardened, ground - RD)	76.39 (as an alternative 106.10)	76.39 (as an alternative 89.13)	[mm]

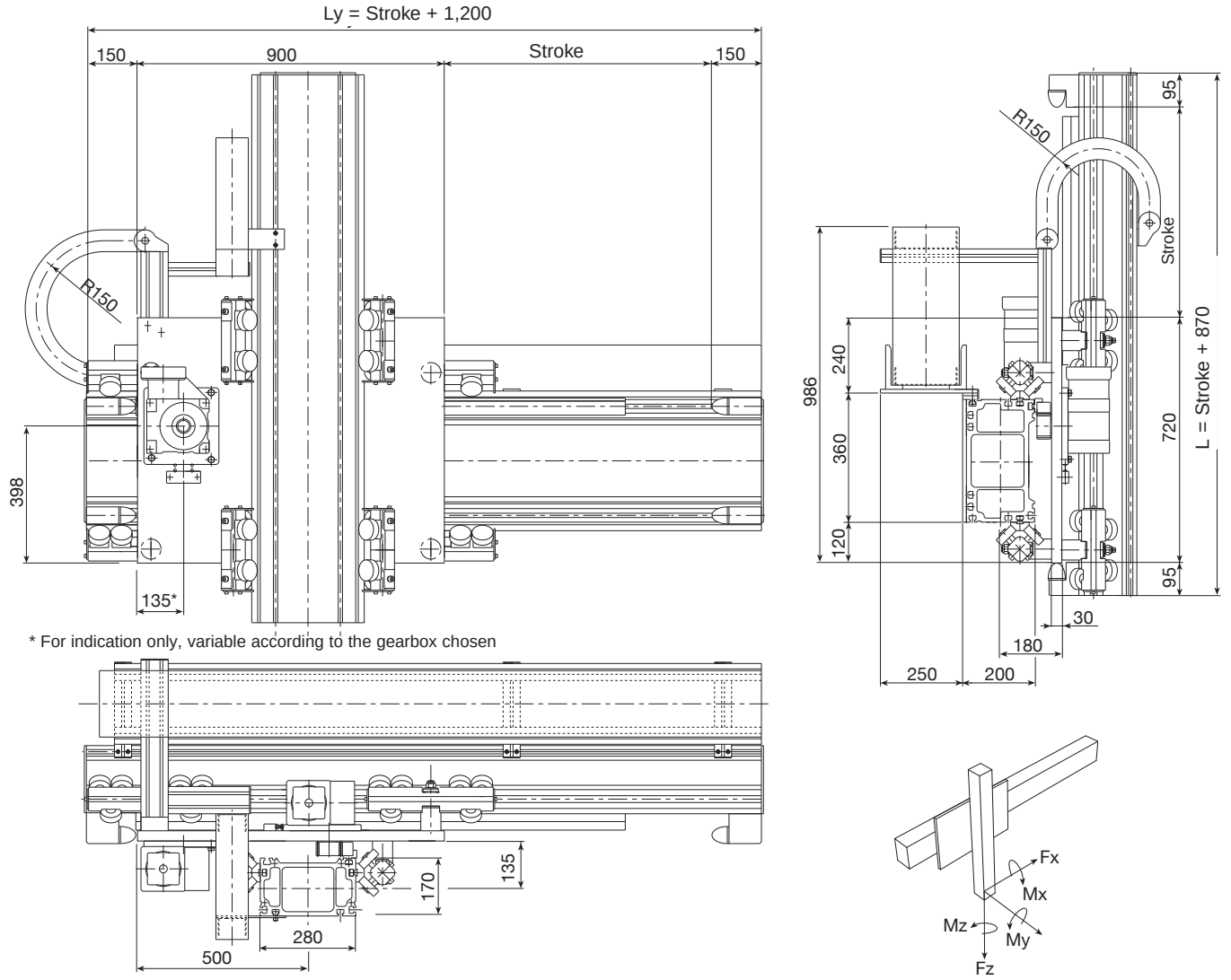
Weights	Y-axis	Z-axis	
Base" model ($stroke_x$ and $stroke_z$=0)	M_{base} = 260 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 102 approx.		[kg]
Beam (incl. guide rails and rack)	q_y = 83 approx.	q_z = 46 approx.	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1,000}$ $Stroke_X$ and $stroke_Z$ [mm]

PAR 10/8

Y-Axis / P / A / R / P / 360 / Stroke / Length / FND / ...
Z-Axis / P / A / R / P / 280 / Stroke / Length / X / FND / ...

400 Kg PC **800 Kg**
High Cycle Rate — Low Cycle Rate



Performances	Y-axis	Z-axis	
Max. load (Pc_{max}) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	2	2	[m/s]
Max. acceleration	2	2	[m/s²]
Repeatability	-	±0.25*	[mm]
Beam max. length without joint	12000	12000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

** With vertical positioning of the unit, a partial load capacity compensation is required

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_z[N]
PAR 10/8	6,900	7,335	4,590	3,250	11,140

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The values shown can be achieved with roller slides with 6 rollers suitable for maximum performance (see page 63-64).

Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Solyda	Pratyca	
Rack (tempered, helical teeth: module KTD)	module 4	module 4	[mm²]
Guide rails	55x25 (hardened and polished)	55x25 (hardened and polished)	
Translation	4 roller slides with 6 rollers Ø62	4 roller slides with 4 rollers Ø62	
Room available for energy chain	175x45	75x45	[mm²]
Pinion pitch diameter type ND	76.39 (as an alternative 106.10)	76.39 (as an alternative 106.10)	[mm]

Weights	Y-axis	Z-axis	
"Base" model ($stroke_x$ and $stroke_z$=0)	M_{base} = 300 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 122 approx		[kg]
Beam (incl. guide rails and rack)	q_y = 85 approx.	q_z = 66 approx.	[kg/m]

Formules:

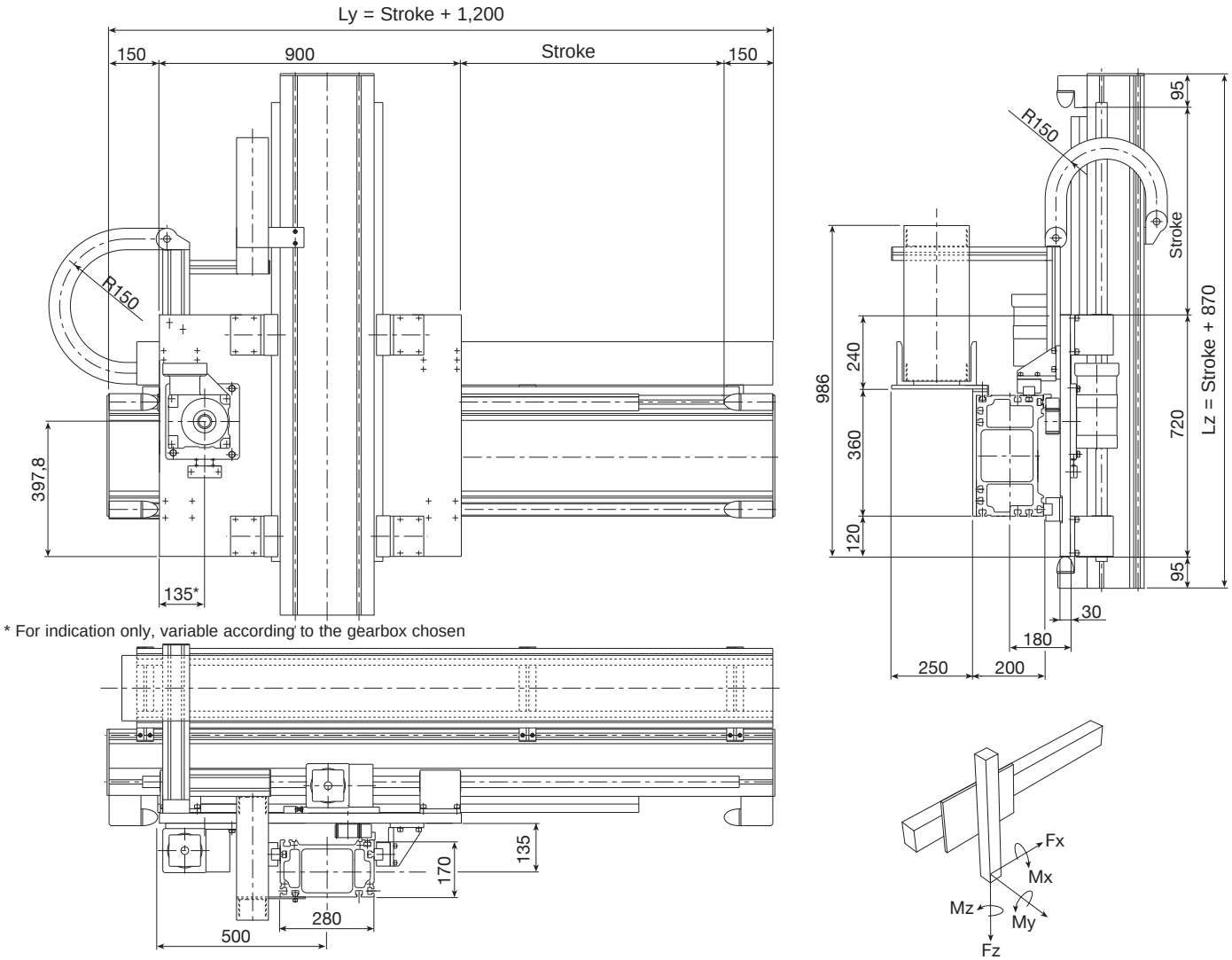
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1{,}600)/1{,}000 \bullet q_z}$ **< of Pc**

Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1{,}000}$ $Stroke_X$ and $stroke_Z$ [mm]

PASM 10/8

Y-Axis / P / A / S / M / 360 / Stroke / Length / FRD / ...
Z-Axis / P / A / S / M / 280 / Stroke / Length / X / FRD / ...

400 Kg PC **800 Kg**
High Cycle Rate — Low Cycle Rate



* For indication only, variable according to the gearbox chosen

Performances	Y-axis	Z-axis	
Max. load (Pc_{max}) with load on axis (Lz ≤ 1,600 mm)			
Max. speed	2	2	[m/s]
Max. acceleration	2	2	[m/s²]
Repeatability	-	±0.15*	[mm]
Beam max. length without joint	12000	12000	[mm]

* Reference value considering a stroke of 1000 mm on Z axis.

Recommended max working conditions

Model	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_z[N]
PASM 10/8	5,940	6,580	3,625	3,250	11,140

The values shown above include a safety coefficient for automated machinery. They refer to maximum performance with each force acting individually. In case of peak forces acting together please consult our technical dept.
The repeatability shown in the table can be achieved with a ground rack and low-backlash gearboxes.

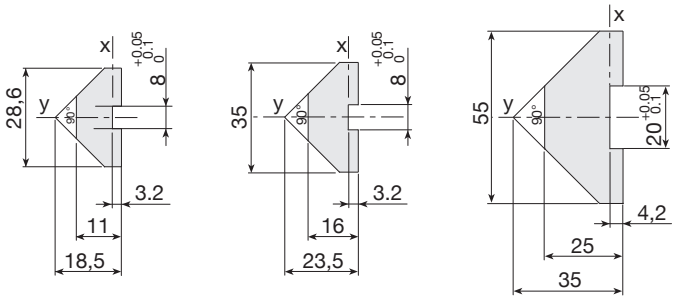
Constructive data	Y-axis	Z-axis	
Load-bearing beam (see page 15/17)	Solyda	Pratyca	
Rack (tempered, helical teeth, ground: module KSD)	module 4	module 4	[mm²]
Translation: 4 caged ball roller slides and guide rails	size 35	size 35	
Room available for energy chain	175x45	75x45	[mm²]
Pinion pitch diameter (induction-hardened, ground - RD)	76.39 (as an alternative 106.10)	76.39 (as an alternative 106.10)	[mm]

Weights	Y-axis	Z-axis	
Base" model ($stroke_x$ and $stroke_z$=0)	M_{base} = 275 approx.		[kg]
Slide (plates + carriages)	M_{slide} = 102 approx.		[kg]
Beam (incl. guide rails and rack)	q_y = 83 approx.	q_z = 64 approx.	[kg/m]

Formules:
Actual load: $\mathbf{P_{eff.} = P_{max}-(Lz - 1,600)/1,000 \bullet q_z}$ **< of Pc**
Module total weight: $\mathbf{M_{tot}=M_{base}+(q_y \bullet stroke_y + q_z \bullet stroke_z)/1,000}$ $Stroke_X$ and $stroke_Z$ [mm]

Steel V-shaped guide rails

Material: high-performance alloy steel: R > 900 MPa
Hardened and tempered: core hardness 240 HB.
Induction-hardened and polished. Track hardness > 58 HRC
Guide rail 28.6x11 code 203.0012 has anti-oxidation coating.
Anti-oxidation coating is available for all versions
upon request.

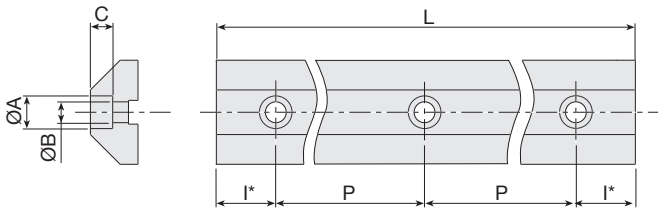


V-shaped guide rail 28.6x11 | V-shaped guide rail 35x16 | V-shaped guide rail 55x25

Features	28.6x11	35x16	55x25	
Moment of inertia Ix	2,148	7,932	41,906	mm^4
Moment of inertia Iy	14,490	36,405	194,636	mm^4
Weight	2	3.5	7.8	Kg/m

Machining: drilled guide rails with straight cut

Machining provided for guide rails with no joint. In addition to the code, please state the type of machining required by adding:
- **.L** V-shaped guide rails, length L, **not drilled**
- **.LF** V-shaped guide rails, length L, **drilled**

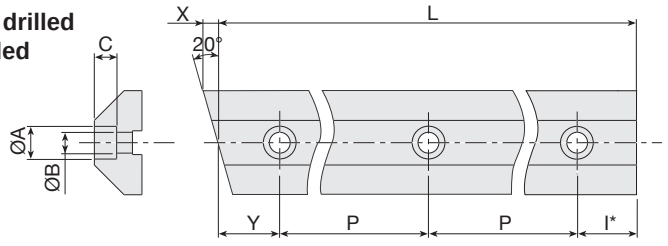


*: If "l" is more than 80 mm, a hole is added to the two ends of the guide rail. Centre-distance 20 for guide rails 203.0027/28; Center-distance 25 for guide rails 203.0122/0423

Size	Treatment	Max. Length	P	l	A	B	C	Code
28,6x11	hardened & tempered	3980	150	40	11	7	5	**203.0008**
28,6x11	hardened anti-oxidation	3980	150	40	11	7	5	**203.0030**
35x16	hardened & tempered	5900	150	25	11	7	7.5	**203.0028**
35x16	Induction-hardened	4000	100	50	11	7	7.5	**203.0027**
55x25	hardened & tempered	5900	200	50	18	11	11.5	**203.0122**
55x25	Induction-hardened	4000	150	25	18	11	11.5	**203.0423**

Machining: drilled guide rails with 1 bevel and 1 slanting cut

Machining provided for the crop down sizes of guide rail ends with joints. In addition to the code, please state the type of machining required by adding:
- **.LX** V-shaped guide rails with 1 slanting cut, length L, **not drilled**
- **.LFX** V-shaped guide rails with 1 slanting cut, length L, **drilled**



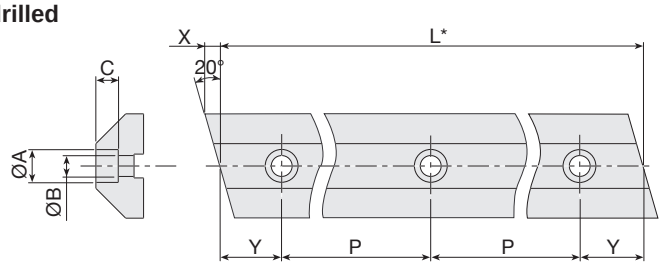
*: the first hole is drilled at a height of "Y", subsequent ones at a centre-distance of "P". If "l" is more than 80 mm, a hole is added to the end of the guide rail. Centre-distance 20 mm for guide rail 203.0027/28; Centre-distance 25 mm for guide rail 203.0122/0423.

Size	Treatment	Max. Length	P	Y	l	A	B	C	Code
28.6x11	hardened & tempered	3,850	150	50	50	11	7	5	**203.0008**
28.6x11	hardened anti-oxidation	3,850	150	50	50	11	7	5	**203.0030**
35x16	hardened & tempered	5,900	150	25	25	11	7	7.5	**203.0028**
35x16	Induction-hardened	4000	100	50	50	11	7	7.5	**203.0027**
55x25	hardened & tempered	5,900	200	25	75	18	11	11.5	**203.0122**
55x25	Induction-hardened	4000	150	25	25	18	11	11.5	**203.0423**

Machining: drilled guide rails with 2 slanting cuts

Machining provided for the intermediate crop down sizes of guide rail ends with multiple joints. In addition to the code, please state the type of machining required by adding:

- **.LXX** V-shaped guide rails with 2 slanting cuts, length L, **not drilled**
- **.LFXX** V-shaped guide rails with 2 slanting cuts, length L, **drilled**



*: in order to maintain a constant hole pitch, arrange the guide rails so that the length "L" is equal to: n•P + 2•Y

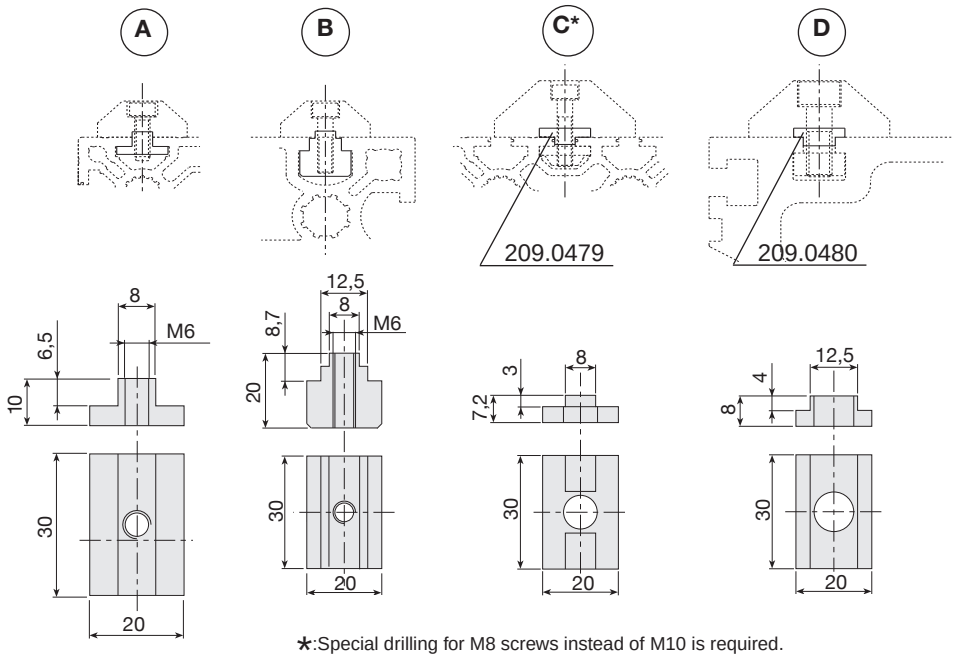
Size	Treatment	Max. Length	P	Y	A	B	C	Code
28,6x11	hardened & tempered	3850	150	50	11	7	5	**203.0008**
28,6x11	indurita antioss.	3850	150	50	11	7	5	**203.0030**
35x16	hardened & tempered	5900	150	25	11	7	7.5	**203.0028**
35x16	Induction-hardened	4000	100	50	11	7	7.5	**203.0027**
55x25	hardened & tempered	5900	200	50	17	11	11.5	**203.0122**
55x25	Induction-hardened	4000	150	25	17	11	11.5	**203.0423**

EXAMPLE OF ORDER: n° 2 pieces cod203.0027 / 5150 . LFX + n°1 piece 203.0027 / 5840 . LFXX

Machining
Length

V-shaped guide rail assembly inserts

Material: C40 galvanized steel.
A and C: suitable for medium profiles (see pages 14 - 15)
B and D: suitable for load-bearing profiles (see pages 15 to 17)

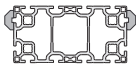
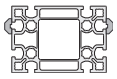
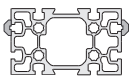
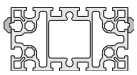
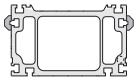
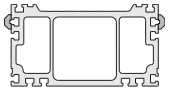


*:Special drilling for M8 screws instead of M10 is required.

	Guide rails	Slot side	Screw	Code
A	35x16	8	M6x20	**209.0298**
B	35x16	12.5	M6x25	**209.1855**
C*	55x25	8	M8x30	**209.0479**
D	55x25	12.5	M10x30	**209.0480**

Profiles equipped with assembled V-shaped guide rails (order codes)

For the profile specifications see from page 12 to page 17, for guide rails: page 56, for inserts: page 57.

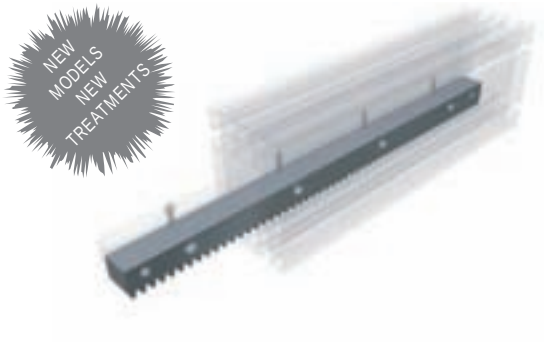
		hard.&temp.	hardened	hard.&temp.	Induct.-hard.	hard.&temp.	Induct.-hard.
	Guide rail	203.0008	203.0030	203.0028	203.0027	203.0122	203.0423
	Profile						
	E01-3	237.0029	237.0030	237.0013	237.2398	-	-
	F01-1	237.0031	237.0032	237.0014	237.0015	-	-
	F02-1	237.0033	237.0034	237.0016	237.0017	-	-
	E01-4	237.0035	237.0036	237.0018	237.0019	-	-
	MA1-3	237.0037	237.0038	237.1387	237.1388	-	-
	MA1-5	237.0039	237.0040	237.1141	237.1142	-	-
	E01-5	237.0041	237.0042	237.0027	237.0028	-	-
	STATYCA	237.0043	237.0044	237.2159	237.2158	237.2301	237.0005
	VALYDA	237.0045	237.0046	237.2126	237.2013	237.0004	237.1542
	LOGYCA	237.0047	237.0048	237.0020	237.2421	237.0021	237.0022
	PRATYCA	237.0049	237.0050	237.0023	237.0024	237.2157	237.1543
	SOLYDA	237.0051	237.0052	237.0025	237.0026	237.0002	237.0006

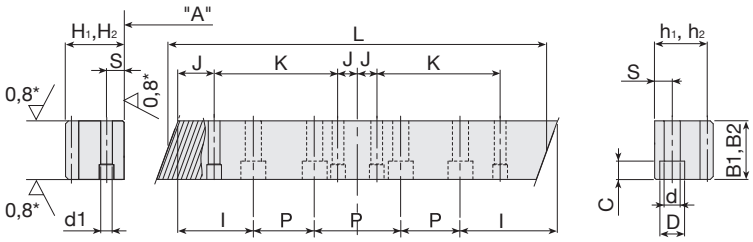
Order code: 237.XXXX - XX / L

- L — Guide rail and profile length
- XX — Special profile machining (see page 83)
- 237.XXXX — Table code

Helical teeth

Rack with helical teeth, right-hand 19° 31' 42", pressure angle 20°.





*Surface machining **not available** on KBD, KTD versions

Type		Rs	Hardness tooth	Quality	Precision
KBD	CK45 normalized milled	650 N/mm^2	-	Q8	0.085mm/300mm
KTD	CK45 normalized induction-hardened teeth	650 N/mm^2	≥ HRC 56	Q9	0.085mm/300mm
KSD	CK45 norm. induction-hard., teeth and ground sides	> 650 N/mm^2	≥ HRC 56	Q6	0.025mm/300mm
KRD	AISI 9840 alloy steel induct.-hard., teeth and ground sides	> 900 N/mm^2	HRC 60 c.a.	Q6	0.025mm/300mm

Mod.	H_1	H_2	B_1	B_2	L	I	J	d	D	C	d1(H7)	S	h_1	h_2	P	K	kg	Codice
2	25	24	25	24	500	62.5	35	7	11	7	6	8	23	22	125	430	2.2	**211.2429**
2	25	24	25	24	1,000	62.5	35	7	11	7	6	8	23	22	125	430	4.3	**211.2363**
3	30	29	30	29	500	62.5	35	10	15	9	8	9	27	26	125	430	3.0	**211.2367**
3	30	29	30	29	1,000	62.5	35	10	15	9	8	9	27	26	125	430	6.1	**211.2351**
4	40	39	40	39	500	62.5	35	10	15	9	8	12	36	35	125	430	5.5	**211.2366**
4	40	39	40	39	1,000	62.5	35	10	15	9	8	12	36	35	125	430	10.9	**211.2349**

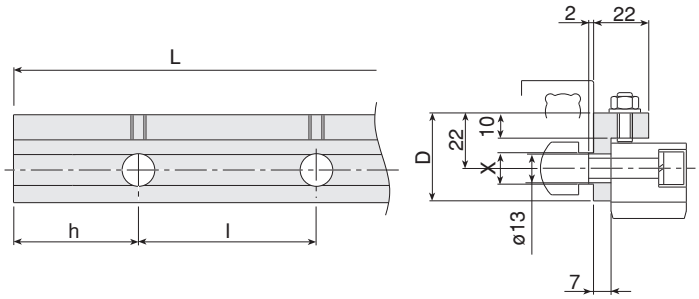
H_1 h_1 for racks KBD, KTD
H_2 h_2 for racks KRD, KSD
B_1 for racks KBD,KTD,
B_2 for racks KRD, KSD

EXEMPLE OF ORDER: **code 211.2367 / KSD**

└ Tooth and treatment characteristics

Adjusting plates for racks

Material: 6082 clear anodized aluminium alloy



Module	D	L	l	h	N° holes	X	Weight [kg]	Code
2	35	243	126.1	56.35	2	8	0.3	**215.0025**
2	35	491	126.1	56.35	4	8	0.6	**215.0026**
2	35	243	126.1	56.35	2	12.5	0.3	**215.0027**
2	35	491	126.1	56.35	4	12.5	0.6	**215.0028**
3	35	243	126.1	56.35	2	8	0.3	**215.2368**
3	35	491	126.1	56.35	4	8	0.6	**215.2137**
3	35	243	126.1	56.35	2	12.5	0.3	**215.2369**
3	35	491	126.1	56.35	4	12.5	0.6	**215.2281**
4	39	243	125.3	57.55	2	12.5	0.3	**215.2243**
4	39	491	125.3	57.55	4	12.5	0.6	**215.2078**

Pinion Gears

Straight or helical toothed pinions (19° 31' 42" left-hand). Pressure angle 20°.

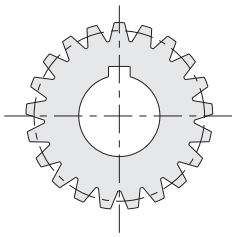
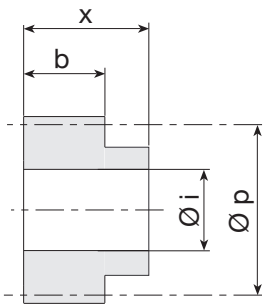


Fig. B



Type		Material	Surface treatment	RS	Quality	Tooth hardness
ND	Pinion with helical teeth	Special steel	tempered and hardened	>900 N/mm^2	Q8	HRC 50
RD	Pinion with ground helical teeth	16MnCr5	temp. induction-hardened	>900 N/mm^2	Q7	HRC 60

Helical tooth pinion

mod.	Weight	Z	Øp	Øi avail.	b	x	Code
2	0.2	21	44.56	22	28	56	**201.0005**
2	0.6	30	63.66	22,30,32	28	56	**201.0012**
3	0.8	20	63.66	22,25,30,32	28	65	**201.0007**
3	1.4	28	89.13	25,30,32	28	65	**201.0013**
4	1.5	18	76.39	32	40	75	**201.0009**
4	2.8	25	106.10	55	40	80	**201.0014**

EXEMPLE OF ORDER:

code 201.0007 /ND / 25

- Inner diameter (Øi)
- Features and treatment

Programmable Automatic Rack Lubrication System

Grease is delivered by means of an electromechanically controlled device with replaceable battery (average life: ca. 1 year) (a).
The grease is spread evenly on the racks through the specific pinion (1). You will need one kit per rack.
Kit: - for complete standard systems assembled on-site, the kit includes the products listed in Fig. C (e.g.: Fig. B);
- spare parts are those shown in Fig. A (codes in table 1);

FIG. A

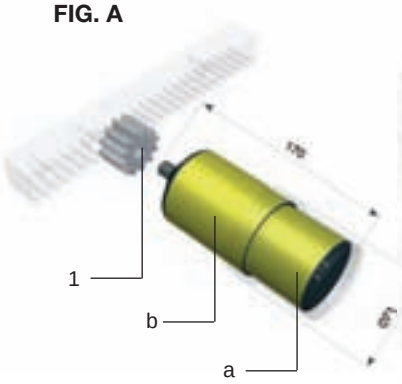


FIG. B

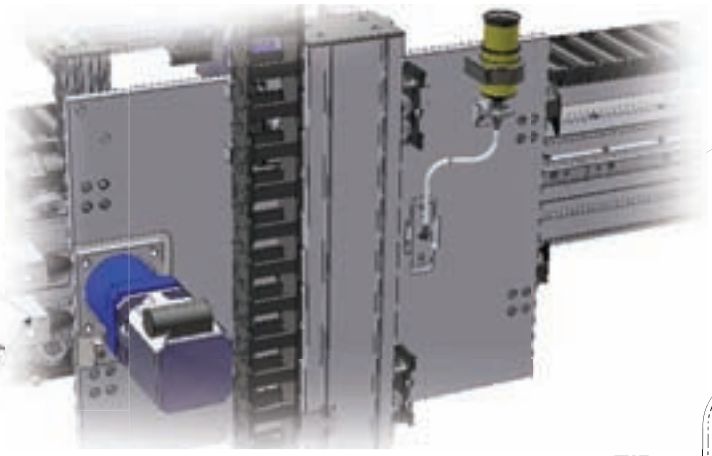
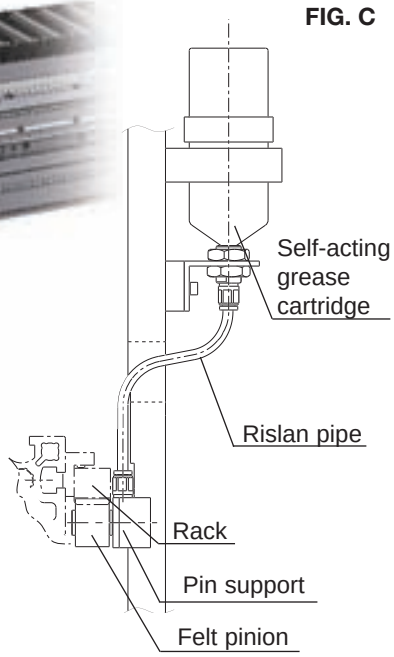


FIG. C



1- Kit including felt pinions and spares

Specification (see figure A)		Code
Cartridge battery set: [a]		**111.0034**
Programmable grease cartridge (120 cc) [b]		**111.0033**
m2 - straight tooth pinion	[1]	**116.0021**
m2 - helical tooth pinion	[1]	**116.0022**
m3 - straight tooth pinion	[1]	**116.0012**
m3 - helical tooth pinion	[1]	**116.0025**
m4 - straight tooth pinion	[1]	**116.0023**
m4 - helical tooth pinion	[1]	**116.0024**

2 - Complete self-acting lubrication system

Specification (see figures B and C)	Code
Complete kit	**136.0003**

Table for selecting maximum operating torque

Table 1 – With lubrication guaranteed under ideal load conditions, dynamics, (1 m/s) with rigid pinion support **[Nm].**

	Pinion / Racks - Helical tooth					
Module	**Z [n°]**	**Øp [mm]**	**KBD**	**KTD**	**KFD/KSD**	**KRD**
2	21	44.56	42	140	150	200
	30	63.66	55	190	205	265
3	20	63.66	100	370	400	500
	28	89.13	240	475	500	650
4	18	76.39	250	810	880	1000
	25	106.1	460	1100	1150	1500

21

Example of simplified calculation
To obtain the working torque value, divide the maximum operating torque (Tab. 1) by the safety factor (Tab. 2). Intermediate values can be adjusted according to the application.

Motion (A) = High shock *1.75*
Speed (B) = Low *1*
Lubrication (C) = Constant *0.9*
Rack = module 3 KTD
Pinion = Øp 63.66 (370 Nm)
Safety factor = A x B x C = 1.575

Motion (A)	Speed (B)	Lubrcation (C)	Safety fac. (AxBxC)
Low shock *1.25*	Low *1*	Constant *0.9*	*1.13*
Medium shock *1.5*	Medium *1.25*	Daily *1.2*	*2.25*
High shock *1.75*	High *1.5*	Monthly *2.5*	*6.56*

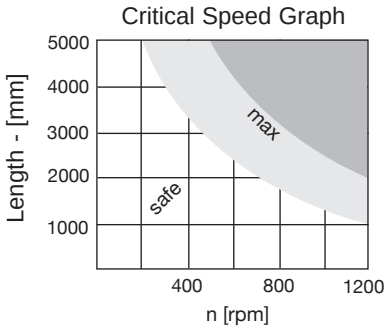
Tab.2

Maximum transmissible torque = Maximum torque 370 / Safety factor 1,575 ≤ 235 Nm

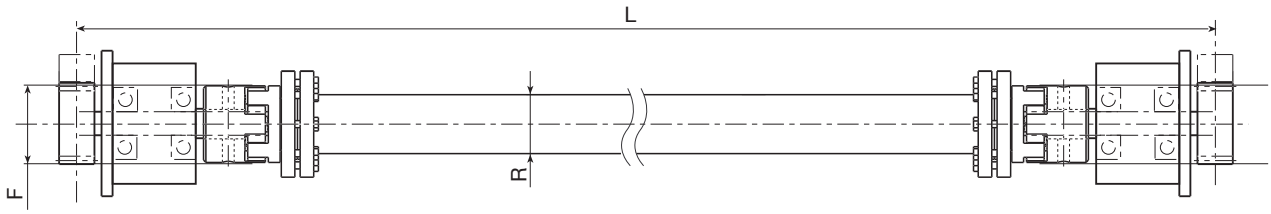
For heavy-duty applications, please ask our technical dept. to carry out the appropriate checks.

Connection shafts

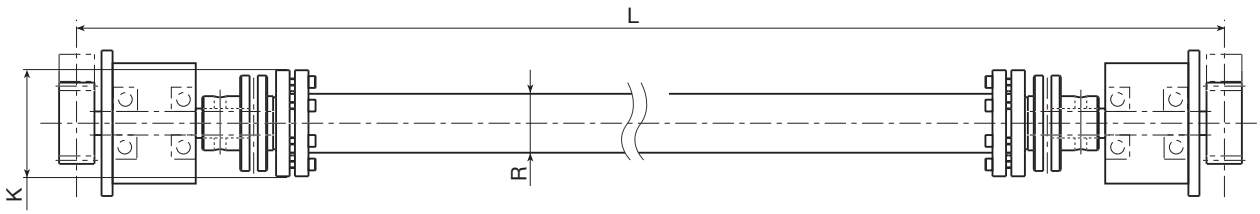
The Tecline range includes a series of hollow shafts for connecting the pinions on the systems. We can supply standard connections, according to your application requirements. The complete kit includes all the components needed to make the connection, with shrink-discs and crop down sizes of pins for insertion into the pinions.



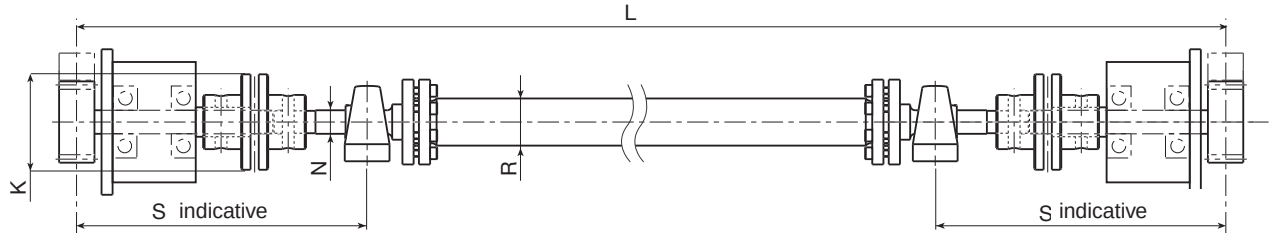
Type 1 - Elastic joint with connecting shaft, suitable for low speeds with center-distance and length of up to 2 m.



Type 2 - Stainless steel blade joint connecting shafts, for backlash-free transmissions



Type 3 - Stainless steel blade joint connecting shafts and support bearings, suitable for backlash-free transmissions

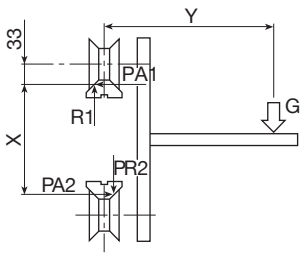


R(*)	K	F	N	S	Lmax	MTwork [Nm]	Mom. of inertia [kgm²]	Type 1: Code/L	Type 2: Code/L	Type 3: Code/L
40	67	55	20	200	6,200	20	0.0028 + 0.46 x L. x10^{-6}	**436.0948**	**436.0957**	**436.0965**
50	81	65	25	235	6,300	35	0.0092 + 0.66 x L. x10^{-6}	**436.0949**	**436.0958**	**436.0966**
50	93	80	25	235	6,300	70	0.0161 + 1.34 x L. x10^{-6}	**436.0951**	**436.0971**	**436.0974**
70	104	95	25	235	6,400	100	0.0293 + 2.93 x L. x10^{-6}	**436.0952**	**436.0960**	**436.0968**
80	126	120	25	250	6,400	190	0.0793 + 4.5 x L. x10^{-6}	**436.0955**	**436.0963**	**436.0984**
90	143	-	-	-	6,500	300	0.1456 + 6.53 x L. x10^{-6}	**-**	**436.0986**	**436.0987**
110	185	-	-	-	6,000	420	0.3499 + 12.3 x L. x10^{-6}	**436.0144**	**436.0145**	**436.0146**

(*) R: Shaft material and diameter are selected in accordance with required speed, centre-distance L, torque and accuracy.

Rollers and V-shaped guide rails 28.6x11 and 35x16

Material: Hardened and burnished C45 steel covering; burnished steel pins and bolts. Rollers with shaped plastic cover are available upon request. Rollers with longer centre-distance L can be supplied. The use of hardened guide rails is preferable.

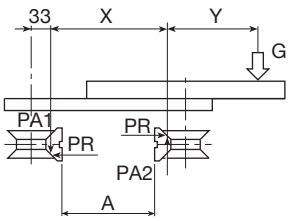


$P_{A1} = \frac{G \cdot Y}{X} = P_{A2}$

$P_{R1} = G + P_{A1}$

$P_{R2} = P_{A2}$

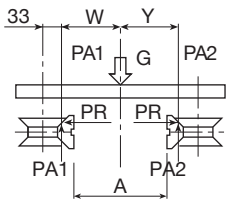
X = A + 20 mm



$P_{A1} = \frac{G \cdot Y}{X}$

$P_{A2} = P_{A1} + G$

X = A + 20 mm



$P_{A1} = \frac{G \cdot Y}{W + Y}$

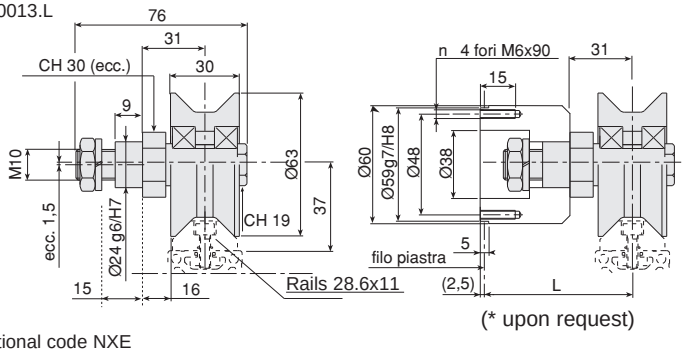
$P_{A2} = G - P_{A1}$

X = A + 20 mm

V-shaped rollers (Guide Rails 28.6 x 11) anti-oxidized version

Shaped rollers with radial or angular contact bearings (medium version). Also available in the light anti-oxidation version:
with radial bearings: code stainless steel

* IMPORTANT: upon request, spacers can be supplied to increase the centre-distance between the guide rail and the roller supporting surface. In addition to the roller code, please indicate the required centre-distance (L). e.g. 205.0013.L



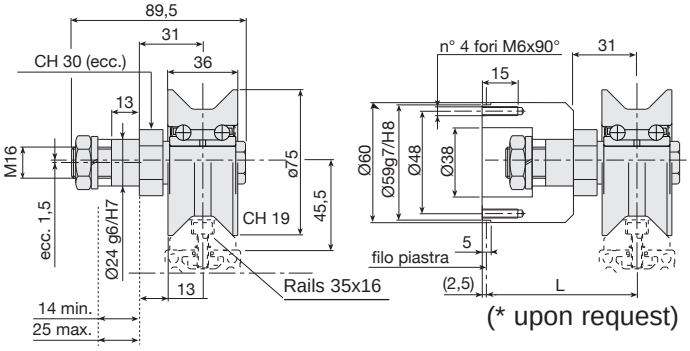
(* upon request)

Roller code anti-oxidation treatment and stainless steel bearings: additional code NXE

Version	Type	Bearing	C(1bear.)	Cw (2bear.)	C0w (2bear.)	PR[N]	PA[N]	Speed [mm/s]	Weight [kg]	Code
Medium	Conc.	angular contact	7,800	9,600	4,800	1,400	600	2,500	0.8	**205.0013**
Medium	Exc.	angular contact	7,800	9,600	4,800	1,400	600	2,500	0.8	**205.0014**

V-shaped rollers [rails 35 x 16] integrale

Shaped rollers with two rows of angular contact ball bearings. With bilateral sliding sealing rings. Accuracy class P6.
They support loads along the axis of the pin provided Pa eff < 0.4 Pr eff.
* IMPORTANT: upon request, spacers can be supplied to increase the centre-distance between the guide rail and the roller supporting surface. In addition to the roller code, please indicate the required centre-distance (L). e.g. 205.0011.L

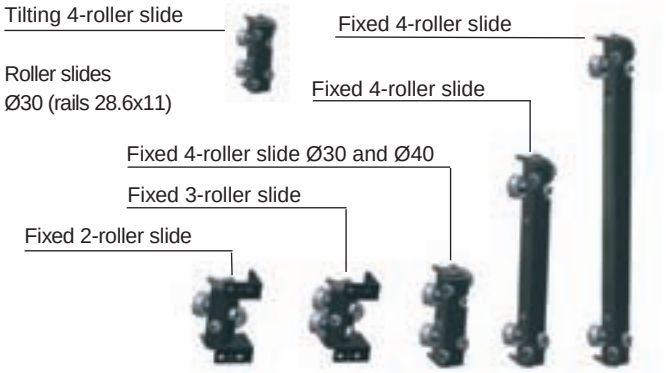


(* upon request)

Type	Bearing	C	C0 (2bear.)	PR[N]	PA[N]	Speed [mm/s]	Weight [kg]	Code
Conc.	angular contact	21,000	13,900	4,500	1,800	2,500	1	**205.0011**
Exc.	angular contact	21,000	13,900	4,500	1,800	2,500	1	**205.0012**

Roller slides

Ø40 roller slides with 2 or 3 rollers, aluminium alloy castings (Rs=280 N/mm2). Ø30, Ø40, Ø52 and Ø62 roller slides with 4 or 6 rollers, extruded aluminium alloy (Rs=310 N/mm2). Alloy steel pins (Rs=800 N/mm2) Rollers with double rows of angular contact ball bearings, long-life.



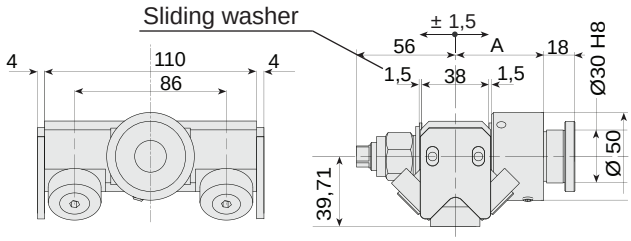
Roller slides Ø40 (V-shaped 35x16) - Ø30 (guide rail 28.6x11)

Roller slides Ø52 and Ø62 (V-shaped 55x25)

Tilting roller slides with 4 rollers Ø30 for V-shaped guide rails 28.6x11

Use the roller slide eccentric pin to adjust the backlash along the plane between the guide rails.

NEW



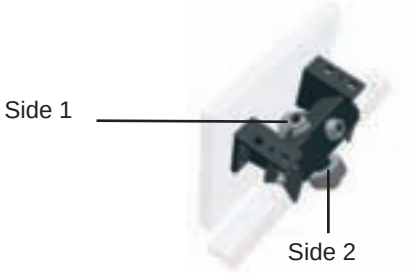
Important: remove the space washers to enable self-alignment of the roller slide

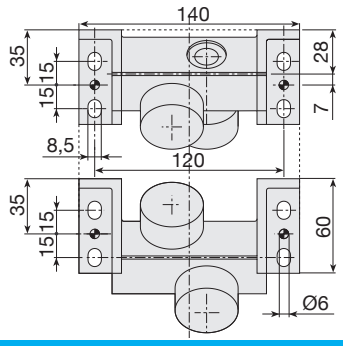
	A	Weight [kg]	Code
Roller slide with concentric pin	75	1.8	**204.0052**
Roller slide with excentric pin (±1 mm)	75	1.8	**204.0053**
Roller slide with concentric pin	50	1.4	**204.0054**
Roller slide with excentric pin (±1 mm)	50	1.4	**204.0055**

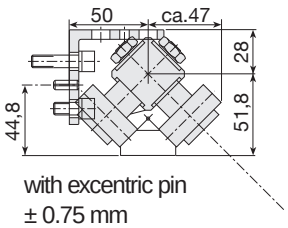
Spare parts	A	Code
Complete body with rollers		**204.0050**
Concentric pin	75	**236.0010**
Excentric pin (±1 mm)	75	**236.0011**
Concentric pin	50	**236.0014**
Excentric pin (±1 mm)	50	**236.0015**

2 Roller slides Ø40 for V-shaped guide rails 35x16

Please follow the diagrams below to ensure correct assembly. To make up for the tolerances in the profile shapes, use pins to lock carriages with eccentric rollers after placing them in the appropriate position. (With the eccentric pins in the neutral position).



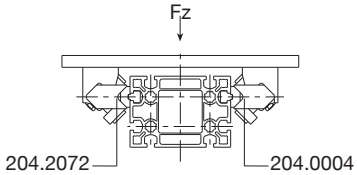


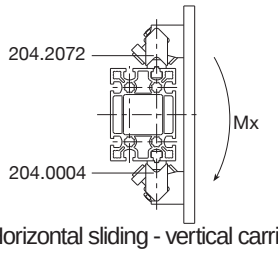


with excentric pin
± 0.75 mm

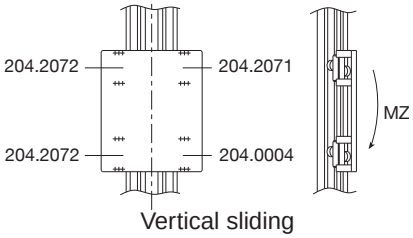
Roller side 1	Roller side 2	Specification	Weight [Kg]	Code
Concentric	Concentric	2-rollers carriage Ø40 - concentric	1	**204.2072**
Excentric	Concentric	2-rollers carriage Ø40 - 1 exc. side 1	1	**204.2071**
Concentric	Excentric	2-rollers carriage Ø40 - 1 exc. side 2	1	**204.0004**
Excentric	Excentric	2-rollers carriage Ø40 - excentric	1	**204.0019**

Application diagram common to 2-roller slides





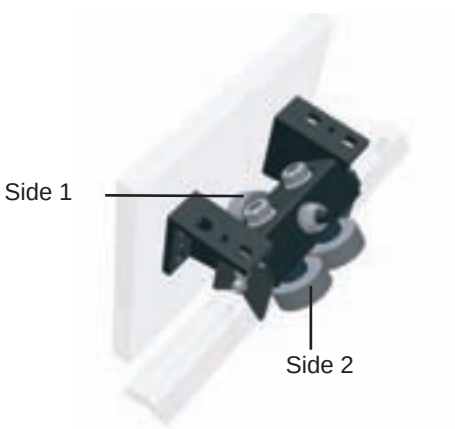
Horizontal sliding - vertical carriage

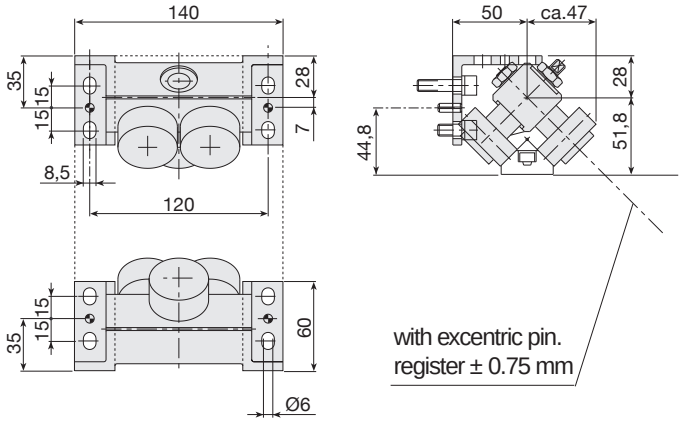


Vertical sliding

3-Roller slides Ø 40 for V-shaped guide rails 35x16

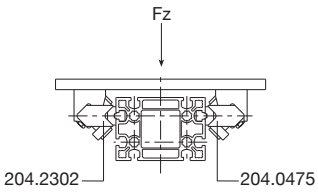
Please follow the diagrams below to ensure correct assembly. To make up for tolerances in the profile shapes, use pins to lock carriages with eccentric rollers after placing them in the appropriate position. (With the eccentric pins in the neutral position).



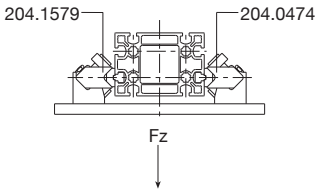


Rollers side 1	Rollers side 2	Specification	Weight [kg]	Code
1 concentric	2 concentric	3-rollers carriage Ø40 - concentric	1.3	**204.1579**
1 eccentric	2 concentric	3-rollers carriage Ø40 - 1 exc. side 1	1.3	**204.0474**
2 concentric	1 concentric	3-rollers carriage Ø40 - concentric	1.3	**204.2302**
2 concentric	1eccentric	3-rollers carriage Ø40 - 1 exc. side 2	1.3	**204.0475**

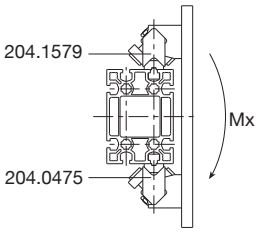
Application diagram common to 3-roller slides



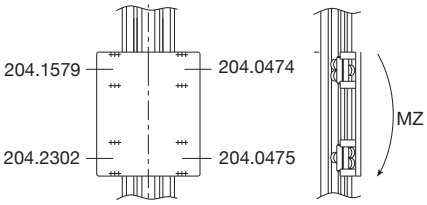
Horizontal sliding
Symmetric load



Horizontal sliding
Inverted load



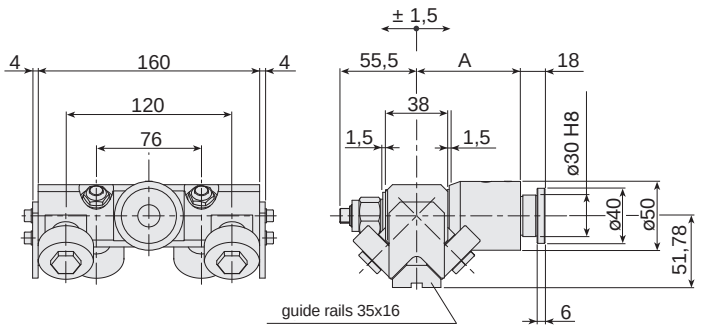
Horizontal sliding
Vertical carriage or asymmetric load

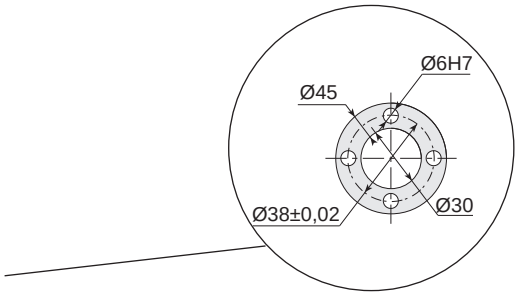


Vertical sliding

Tilting roller slides with 4 rollers Ø40 for V-shaped guide rails 35x16

Use the roller slide eccentric pin to adjust the backlash along the plane between the guide rails.tino.





Detail of plate
machining

Important: remove the spacer washers to enable self-alignment of the roller slide

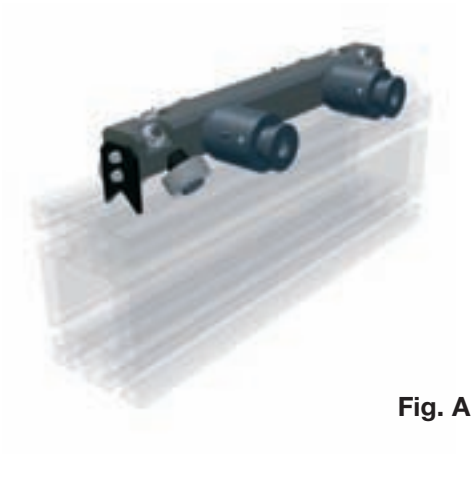
	A	Weight [kg]	Code
Slide with eccentric stud (±1 mm)	75	2.2	**204.0016**
Slide with eccentric stud (±1 mm)	50	1.8	**204.0033**

All pins are eccentric, but are made concentric by inserting the pin in the specific hole on the plate, in order to determine the required preload.

Spare parts	A	Code
Complete body with rollers		**204.0013**
Eccentric stud (±1 mm)	75	**236.0011**
Eccentric stud (±1 mm)	50	**236.0015**

Fixed 4-roller slide Ø40 for V-shaped guide rails V 35x16

Use the roller slide eccentric stud to adjust the backlash along the plane between the guide rails.
Important: machine the pin clamping plate as shown in Fig. A
Important: remove the space washers to enable self-alignment of the roller slide Sliding washers



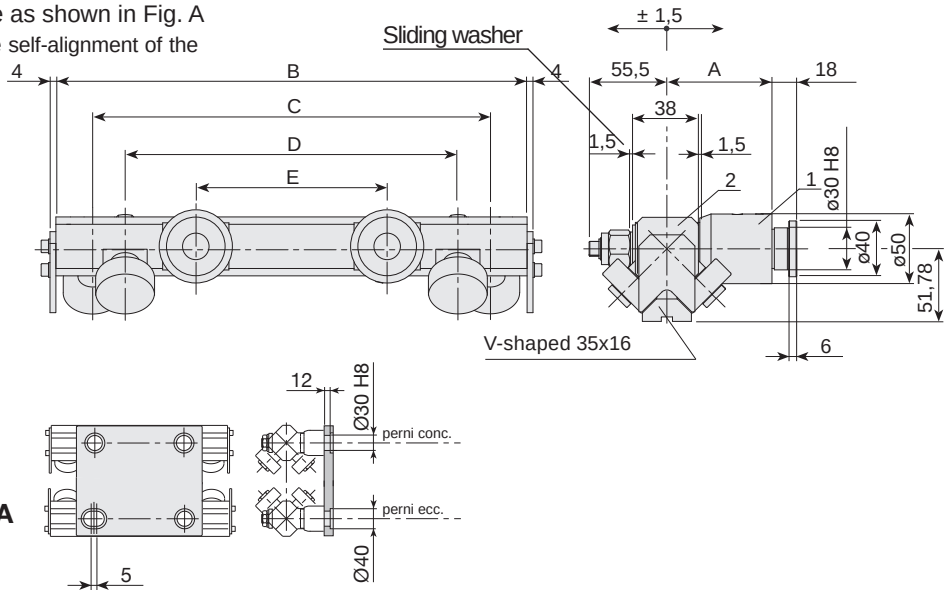


Fig. A

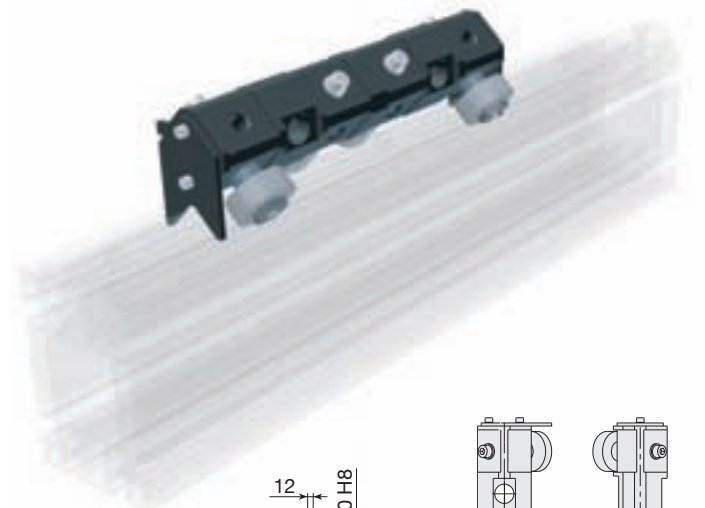
	A	Code
Roller slide L=370 complete with concentric pin	75	**204.0017**
R. slide L=370 complete with exc. pin (± 1 mm)	75	**204.0018**
Roller slide L=600 complete with concentric pin	75	**204.0027**
R. slide L=600 complete with exc. pin (± 1 mm)	75	**204.0028**
Roller slide L=370 complete with concentric pin	50	**204.0030**
R. slide L=370 complete with exc. pin (± 1 mm)	50	**204.0031**
Roller slide L=600 complete with concentric pin	50	**204.0034**
R. slide L=600 complete with exc. pin (± 1 mm)	50	**204.0035**

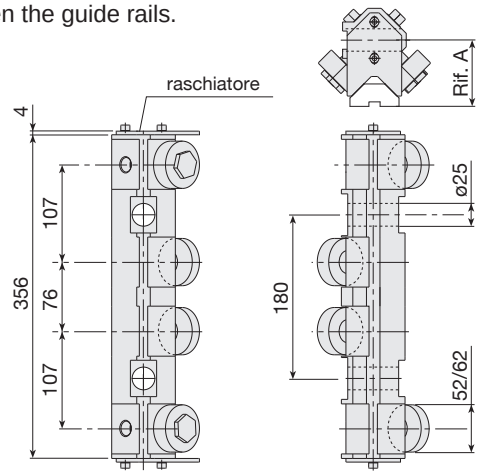
R. slide spare parts (2)	B	C	D	E	Code
Roller slide L=370	370	320	276	180	**204.0005**
Roller slide L=600	600	550	506	410	**204.0026**

Pin spare parts (1)	A	Weight [kg]	Code
Concentric pin	75	4.1	**236.0010**
Eccentric stud (± 1 mm)	75	4.1	**236.0011**
Concentric pin	50	3.5	**236.0014**
Eccentric stud (± 1 mm)	50	3.5	**236.0015**

E type roller slides (roller Ø52) and F type (roller Ø62) for V-shaped guide rails 55x25

4-Stiff Rollers slide. Suitable for mounting stud: **Type 7-8**
Use the roller slide eccentric stud to adjust the backlash along the plane between the guide rails.
Important: machine the pin clamping plate as shown in Fig. A





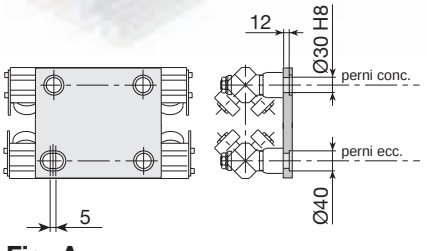
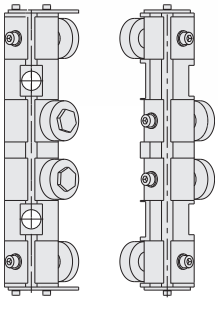


Fig. A



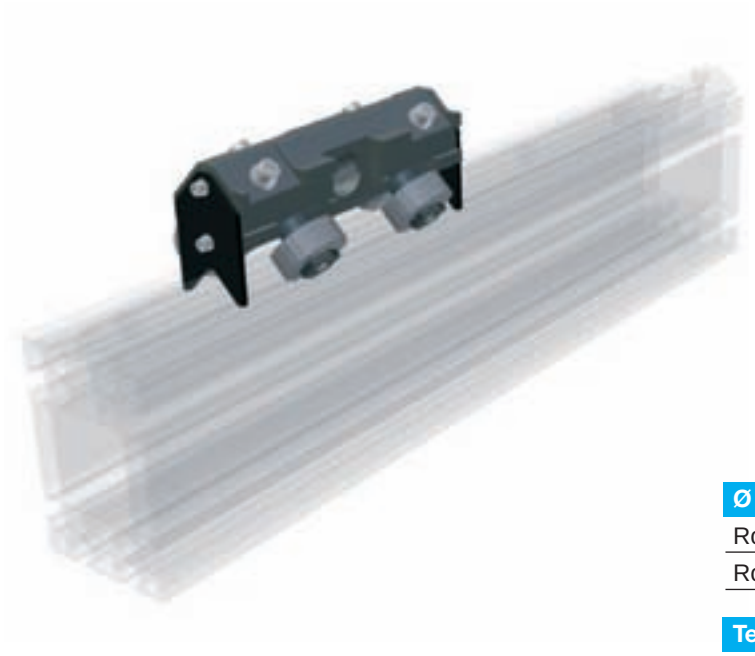
K version
inverted roller position see page 63

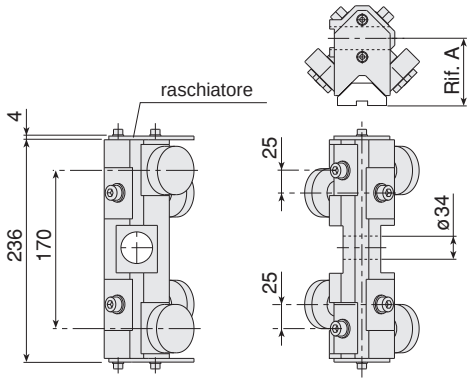
Ø Rollers	Rif. A
Rollers Ø52	71.75
Rollers Ø62	78.85

Technical caracteristics	Ø52	Ø62
N° rollers	4	4
Weight [kg.]	4.6	5.2
Spare parts code	**204.1518**	**204.1519**

Type G roller slides (roller Ø52) and H type (roller Ø62) for V-shaped guide rails 55x25

Tilting 4-roller slides Suitable for assembly pins: **Type 9**
Use the roller slide eccentric pin to adjust the backlash along the plane between the guide rails.



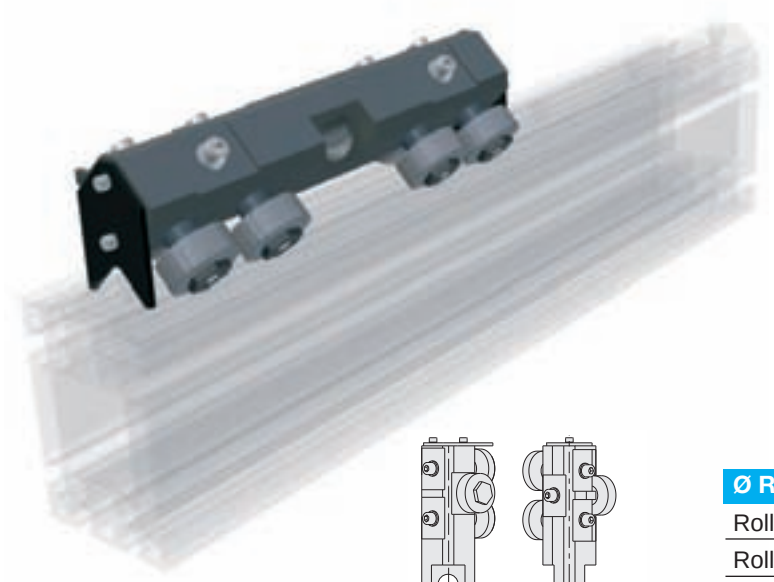


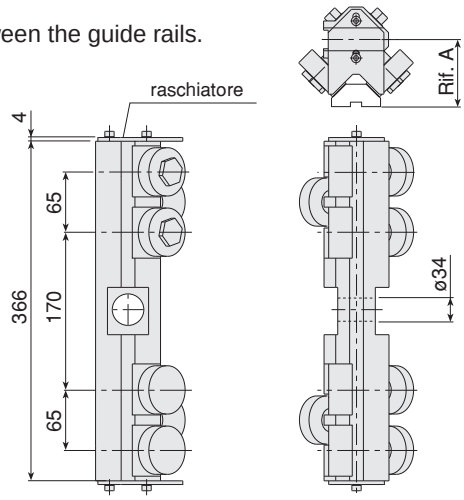
Ø Rollers	Rif. A
Roller Ø52	71.75
Roller Ø62	78.85

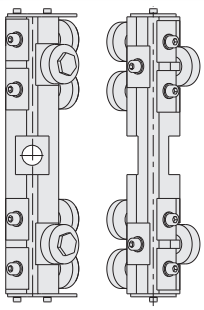
Technical caracteristics	Ø52	Ø62
N° roller	4	4
Weight [kg.]	3,2	3.8
Spare parts code	**204.1520**	**204.1521**

I-type roller slides (roller Ø52) and L-type (roller Ø62) for V-shaped guide rails V 55x25

Tilting 4-roller slides Suitable for assembly pins: **Type 9**
Use the roller slide eccentric pin to adjust the backlash along the plane between the guide rails.







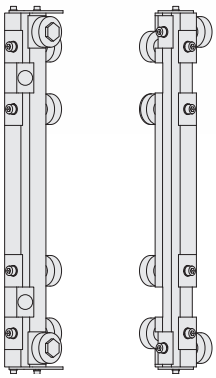
K version
inverted roller position see page 63

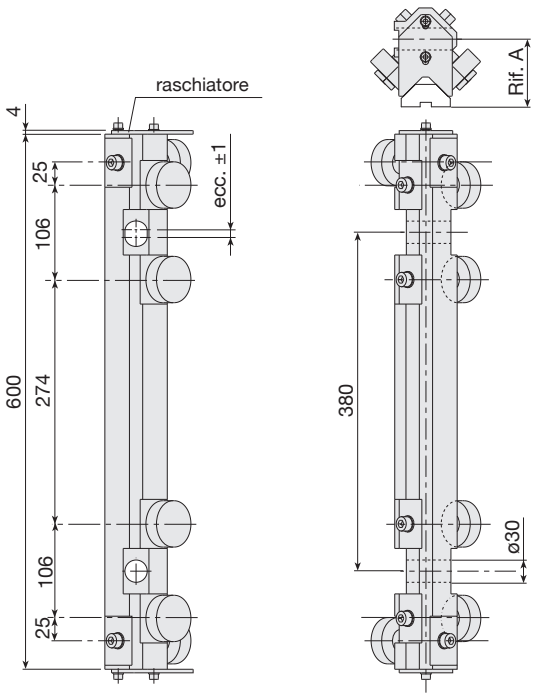
Ø Roller	Rif. A
Roller Ø52	71.75
Roller Ø62	78.85

Technical caracteristics	Ø52	Ø62
N° rollers	6	6
Weight [kg.]	4.9	5.9
Spare parts code	**204.1522**	**204.1523**

P-type roller slides (rollers Ø52) and Q-type (rollers Ø62) for V-shaped guide rails 55x25

Fixed 4-roller slides Suitable for assembly pins: **Type 10-11-12**
Use the roller slide eccentric pin to adjust the backlash along the plane between the guide rails.





K Version
inverted roller position see page 63

Technical caracteristics	Ø52	Ø62
N° rollers	6	6
Weight [kg.]	4.9	5.9
Spare parts code	**204.2086**	**204.2283**

Spare roller with stud

Make sure that all the components are locked in place with the appropriate screws. The recommended tightening torque for pin locking screws and nuts is 50 Nm.

Max. load factors for hardened and tempered guides

Roller	Cw [N]	C0w[N]	Fr amm.[N]	Max. S.
Ø30	5,000	3,000	1,350	7 m/s
Ø40	9,800	6,200	2,500	7 m/s
Ø52	15,800	10,500	4,250	6 m/s
Ø62	21,100	14,500	5,300	5 m/s

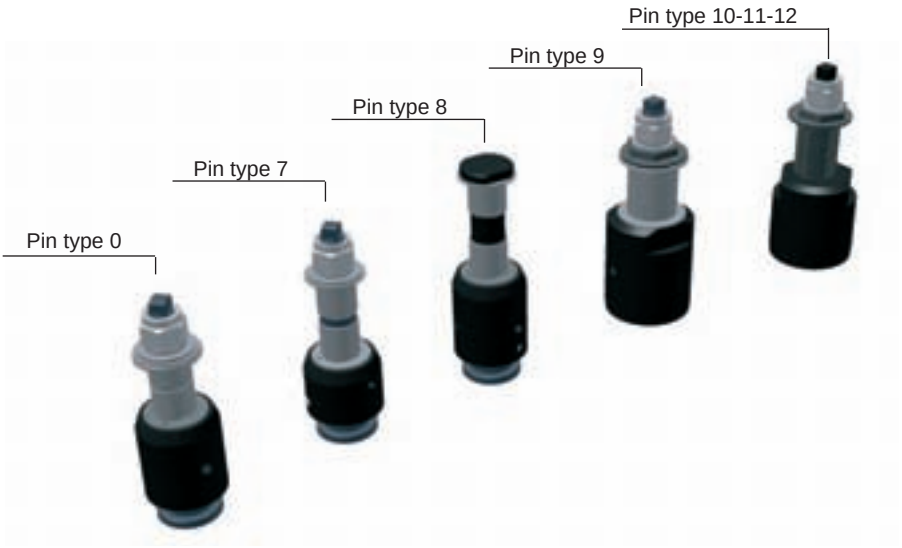
Max. load factors for induction-hardened guides

Roller	Cw [N]	C0w[N]	Fr amm.[N]	Max. S.
Ø30	5,000	3,000	400	2 m/s
Ø40	9,800	6,200	800	13 m/s
Ø52	15,800	10,500	1,400	2.5 m/s
Ø62	21,100	14,500	1,900	2 m/s

Spare roller with pin	Weight [kg]	Code
Ø30 Concentric	0.02	**406.0056**
Ø40 Concentric	0.22	**205.0464**
Ø40 Excentric (± 0.75 mm)	0.25	**205.0463**
Ø52 Concentric	0.4	**205.0163**
Ø62 Concentric	0.55	**205.0165**

Assembly Studs

Material: burnished steel (Rs=800 N/mm2). Special variants upon request. AISI 303 stainless steel versions are available upon request. Types 0-7-8-9 are complete with self-lubricating bushings to make roller slide self-adjustments easier.



Type 0 assembly pins suitable for roller slide Ø30 and Ø40

Important: machine the pin clamping plate as shown in Fig. A

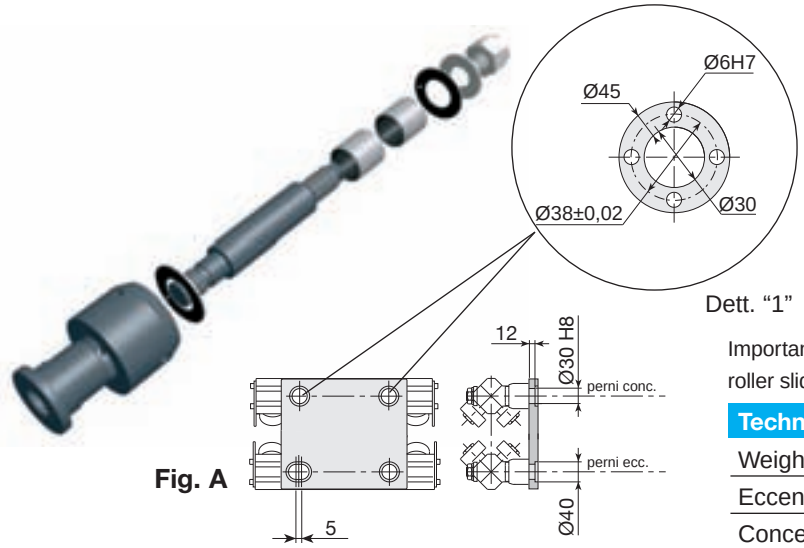
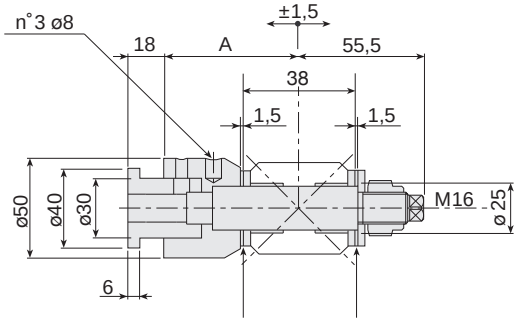


Fig. A



Important: remove the spacer washers to enable self-alignment of the roller slide

Technical caracteristics	A	
Weight [kg.]		1.1 approx.
Eccentric code (± 0,75 mm)	75	**236.0011**
Concentric code (± 0,75 mm)	50	**236.0015**

Type 7 assembly pins suitable for roller slide E-F

Important: machine the pin clamping plate as shown in Fig. A

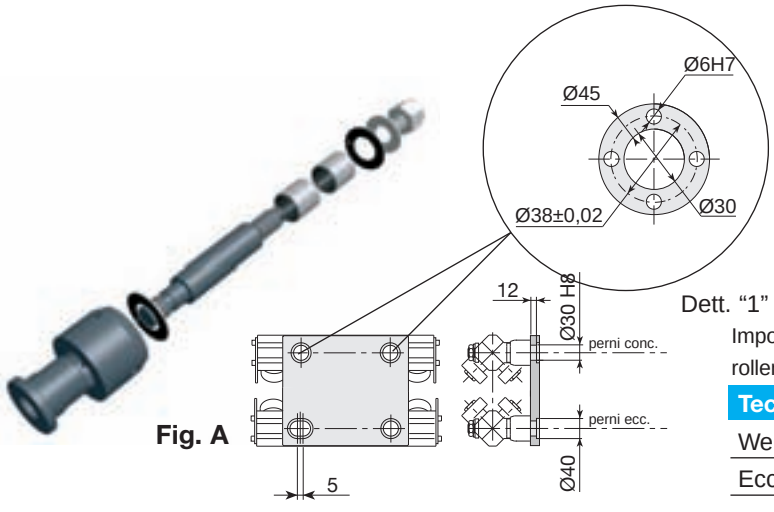
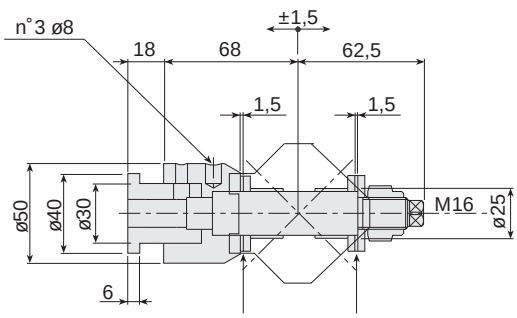


Fig. A



Important: remove the spacer washers to enable self-alignment of the roller slide

Technical caracteristics	
Weight [kg.]	1.1 approx.
Eccentric code (± 1 mm)	**236.1689**

Assembly pins type 8 suitable for carriage E-F

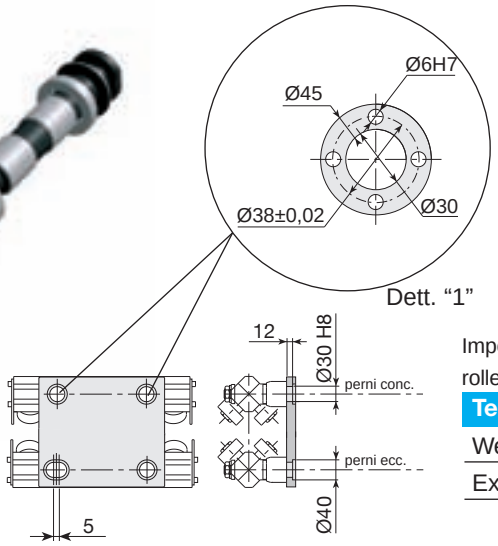
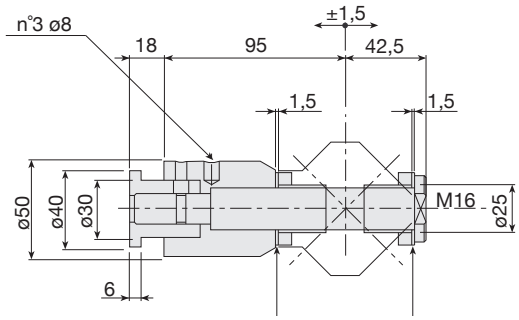


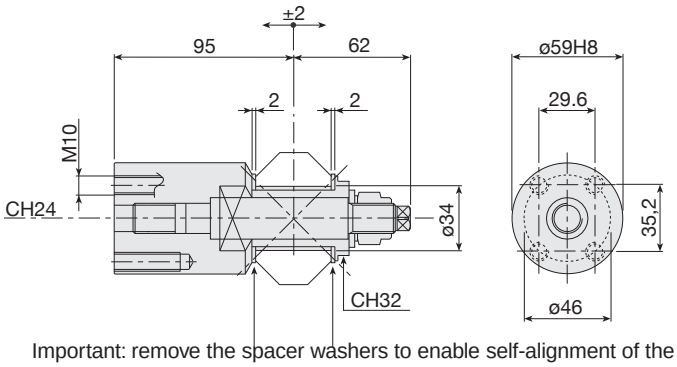
Fig. A



Important: remove the spacer washers to enable self-alignment of the roller slide

Technical caracteristics	
Weight [kg.]	1.8 approx.
Excentric code (± 1 mm)	**236.1691**

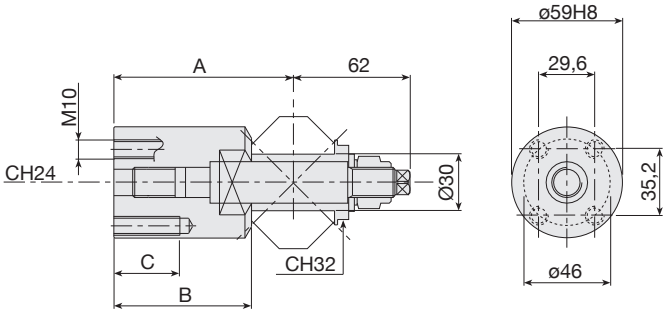
Type 9 assembly pins suitable for tilting roller slides G-H / I-L



Important: remove the spacer washers to enable self-alignment of the roller slide

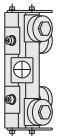
Technical caracteristics	
Weight [kg.]	2 approx.
Concentric code	**236.2076**
Excentric code (± 1,5 mm)	**236.2079**

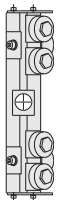
Type 10-11-12 assembly pins suitable for tilting roller slides A-D / P-Q

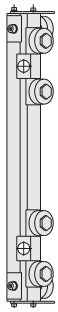


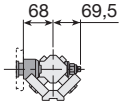
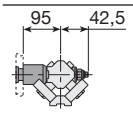
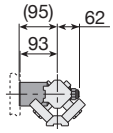
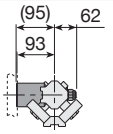
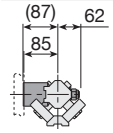
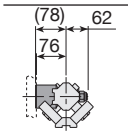
Type	A	B	C	Weight [kg]	Conc.code	Exc. code (± 1.5 mm)
10	95	73	35	2	**236.2082**	**236.2083**
11	87	65	27	1.8	**236.2088**	**236.2089**
12	78	56	18	1.7	**236.2090**	**236.2091**

Order code table for roller slides and pins





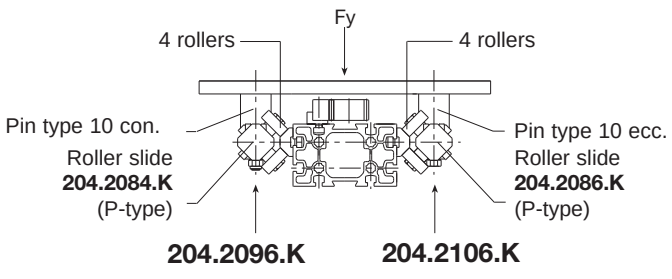


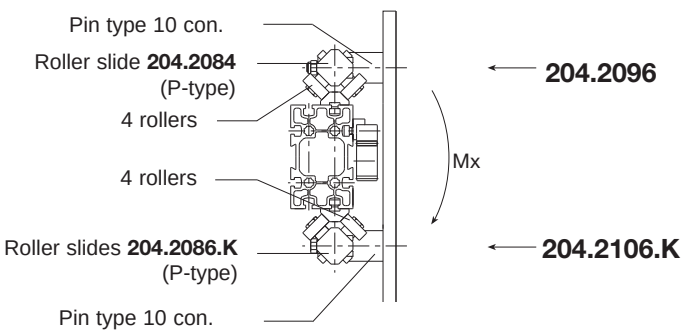
	Pin	Roller sl.	E	F	G	H	I	L	P	Q
		Ø roller	52	62	52	62	52	62	52	62
	7	con.	204.1314	204.1318	-	-	-	-	-	-
		exc.	204.1344	204.1348	-	-	-	-	-	-
	8	con.	204.1315	204.1319	-	-	-	-	-	-
		exc.	204.1345	204.1349	-	-	-	-	-	-
	9	con.	-	-	204.2092	204.2093	204.2094	204.2095	-	-
		exc.	-	-	204.2102	204.2103	204.2104	204.2105	-	-
	10	con.	-	-	-	-	-	-	204.2096	204.2097
		exc.	-	-	-	-	-	-	204.2106	204.2107
	11	con.	-	-	-	-	-	-	204.2098	204.2099
		exc.	-	-	-	-	-	-	204.2108	204.2109
	12	con.	-	-	-	-	-	-	204.2100	204.2101
		exc.	-	-	-	-	-	-	204.2110	204.2111

Assembly of standard carriages / K version carriages

IMPORTANT: for applications with high projecting loads, the rollers of the slides must be adjusted so that the load is supported by the maximum possible number of rollers. If this means arranging the rollers symmetrically with respect to the standard roller slide version, please add the letter K at the end of the code when filling in the order form. However, the roller assembly can also be inverted at a later date, by disassembling the pins and rollers and then **reassembling them in the opposite way.**

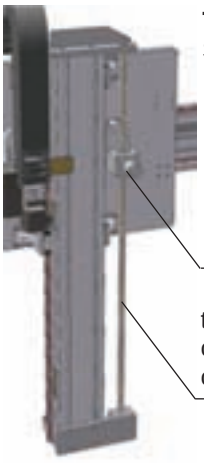
Example:





Anti-drop safety device with pneumatic brake system

Ant-droop safety devices, available in a range of sizes, are supplied according to the type of application. For instance, they can act as a mechanical stop to block the free-falling load at any stroke point, or as a lock in static conditions at any position.
Two-way blocking occurs following an unexpected pressure drop.
A mechanical safety release system is available on request (patented). Catalogue available upon request.
The kit includes: braking device and rod with relative supports, micro-switch. Solenoid valve available upon request.
Operating pressure 3-6 Bar.
With no pressure = locked.

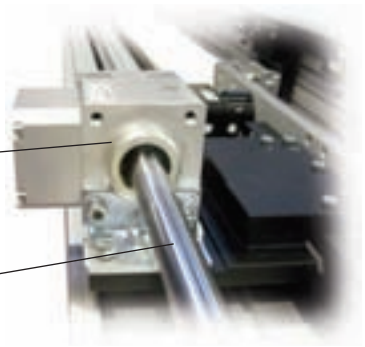


Type A
Static

Pneumatic brake system

tempered and chrome-plated cylindrical rod

Type B
Dynamic for free-falling load



1- Static rod blocking device

Type	Codice	Rod Blocking force [N]	Stroke [mm]
A	236.0018	/ 1,200	/ ...
A	236.0018	/ 1,900	/ ...
A	236.0018	/ 3,000	/ ...
A	236.0018	/ 5,400	/ ...
A	236.0018	/ 7,500	/ ...
A	236.0018	/ 12,000	/ ...

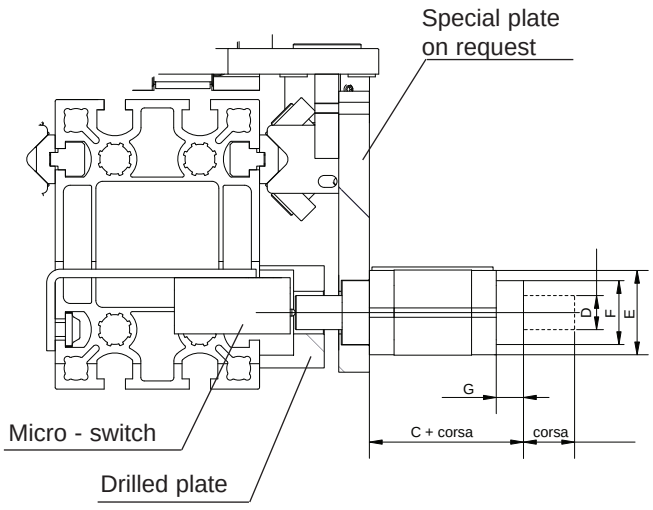
Emergency brake for free-falling load

1- Dynamic rod blocking device

Type	Code	Rod Blocking force [N]	Stroke [mm]
B	236.0019	/ 3,000	/ ...
B	236.0019	/ 5.400	/ ...
B	236.0019	/ 7,500	/ ...
B	236.0019	/ 12,000	/ ...

Safety lock-pin (stopper cylinder)

Lock-pins are available in two sizes to block the vertical axes in the safety position to allow horizontal movements during maintenance. The safety lock-pins comprise the use of the through rod. Select the size according to the load. The kit includes: drilled plate for rod, stopper cylinder, micro-switch and 2 magnetic gearboxes.
Max. operating pressure: 10 bar.



1- Safety lock-pin

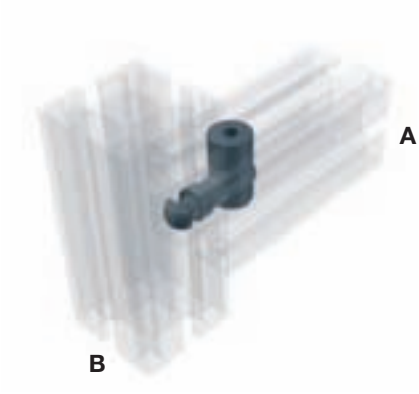
ØD Rod	Stroke	C	E	F	G	Kit Code
20	20	60.5	50	38	16	236.0021
32	30	-	-	-	-	236.0022

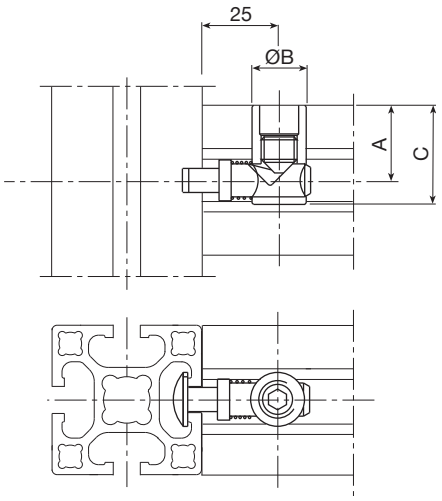
2- Accessory: drilled plate for rod

ØD Rod	Base	Width	Thickness
20	60	100	39
32	60	100	39

PVS® with round head and orthogonal milling

PVS® connecting elements with round anchor head and orthogonal milling that can be inserted frontally into the slots to join two orthogonal profiles.



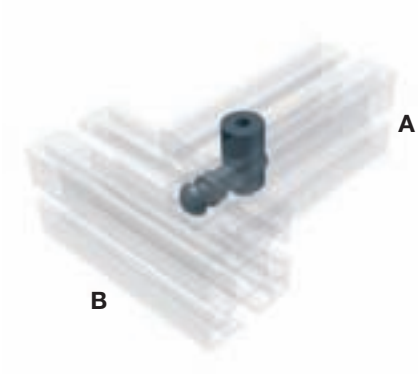


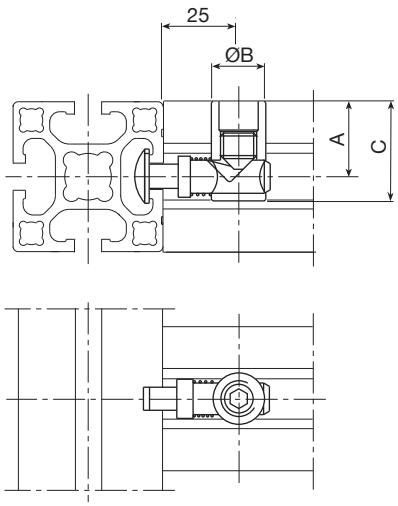
Profile B \ Profile A	30	45	50	60
60	-	-	-	F20-20
50	-	-	A20-20	A20-20
45	-	E20-20	E20-20	E20-20
30	B20-20	B210-20	B210-20	B210-20

Profile base	30	45	50	60
A wheelbase	15	22,5	25	30
B Ø milling	15.1	18.1	18.1	18.1
C profile milling	22	30.5	33	38

PVS® with round head and parallel milling

PVS® connecting elements with round anchor head and parallel milling that can be inserted frontally into the slots to join two orthogonal profiles.



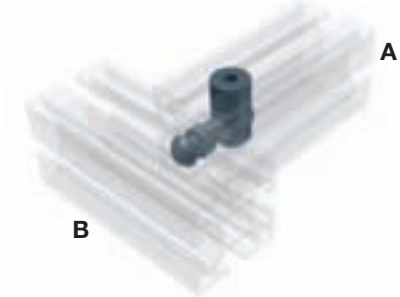


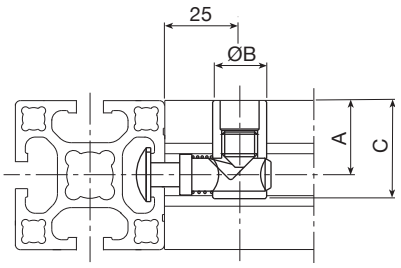
Profile B \ Profile A	30	45	50	60
60	-	-	-	F20-10
50	-	-	A20-10	A20-10
45	-	E20-10	E20-10	E20-10
30	B20-10	B210-10	B210-10	B210-10

Profile base	30	45	50	60
A wheelbase	15	22.5	25	30
B Ø milling	15.1	18.1	18.1	18.1
C profile milling	22	30.5	33	38

PVS® with general-purpose round head

PVS® connecting elements with round anchor head, to be inserted into the slot at the beginning of the profile, to join two orthogonal profiles in any position.



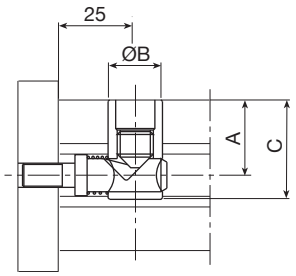


Profile B \ Profile A	30	45	50	60
60	-	-	-	F20-90
50	-	-	A20-90	A20-90
45	-	E20-90	E20-90	E20-90
30	B20-90	B20-90	B20-90	B20-90

Profile base	30	45	50	60
A wheelbase	15	22.5	25	30
B Ø milling	15.1	18.1	18.1	18.1
C profile milling	22	30.5	33	38

PVS® with threaded head

PVS® connecting elements with threaded anchor head, for fixing to plates or other assemblies.

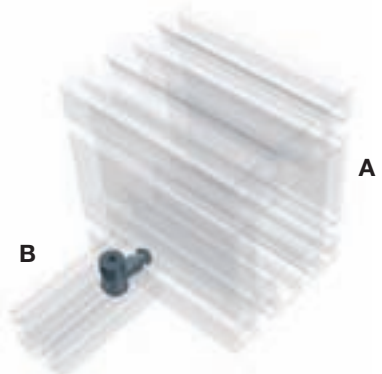


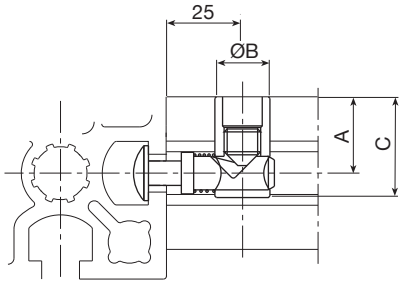
Profile \	M6	M8
60	-	F20-60
50	-	A20-60
45	-	E20-60
30	B20-66	B20-60

Profile base	30	45	50	60
A wheelbase	15	22,5	25	30
B Ø milling	15.1	18.1	18.1	18.1
C profile milling	22	30,5	33	38

Special PVS®

PVS® connecting elements with round head for fixing small/medium size profiles to beams.



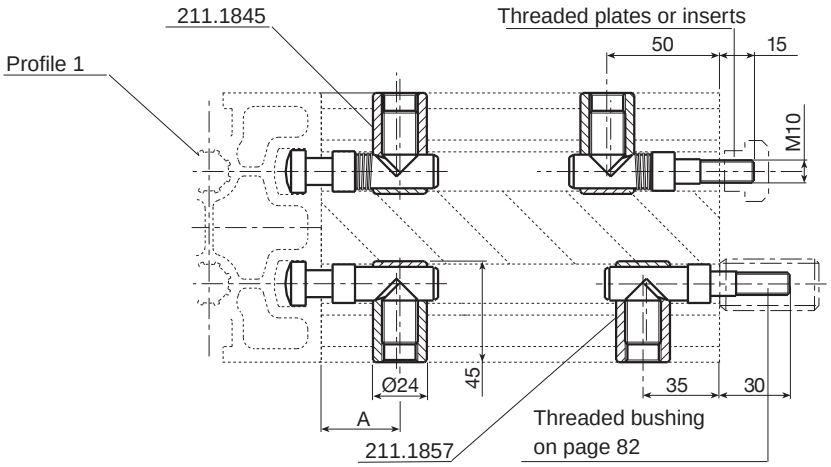


Profile B \ Profile A	load-bearing profile
60	211.0012
50	211.1849
45	211.0023
40	211.0018

Profile base	30	45	50	60
A wheelbase	15	22.5	25	30
B Ø milling	15.1	18.1	18.1	18.1
C profile milling	22	30.5	33	38

PVS® for profiles STATYCA, VALYDA and LOGYCA

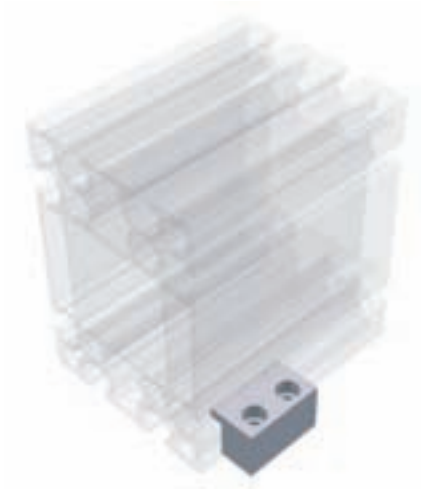
PVS® connecting elements with round anchor head and threaded head for beams and plate assembly.

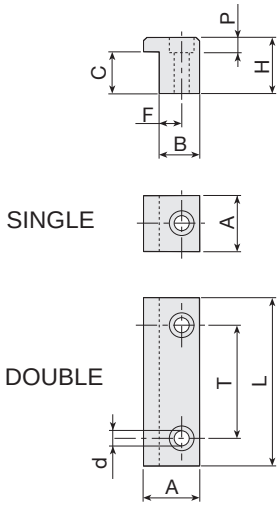


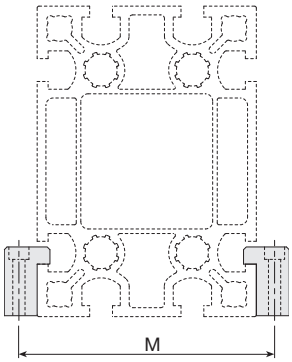
Profile 1	A
LOGYCA and VALYDA	35
STATYCA	38
Threaded version code	**211.1857**
Round head version code	**211.1845**

Profile anchor brackets

Material: alluminium alloy (Rs=310 N/mm^2).





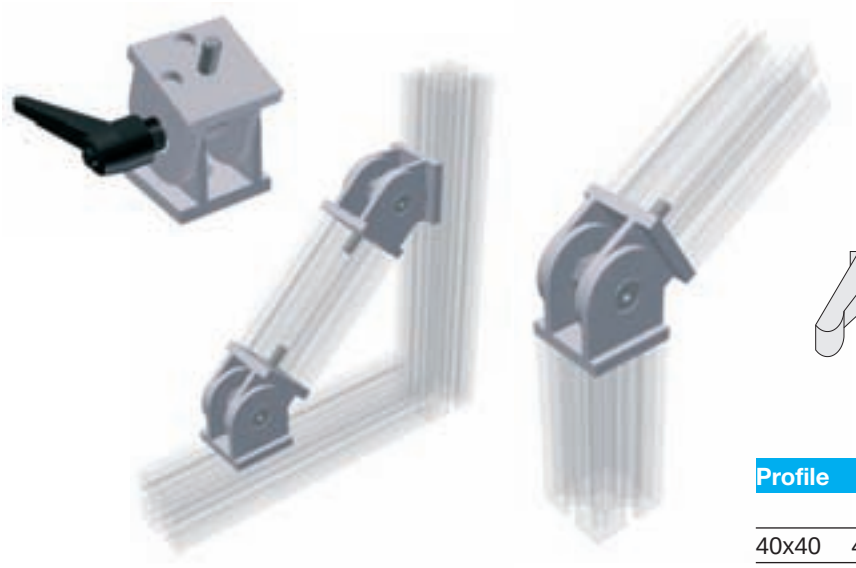


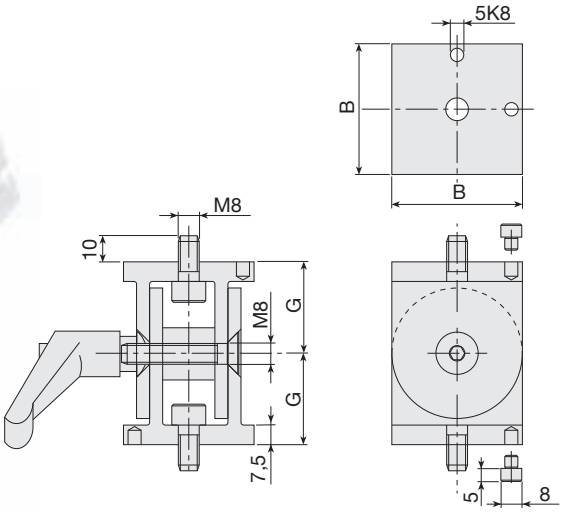
Profile	A	L	T	d	H	P	C	F	B	M	single code	double code
E01-6 ; E01-1 ; E01-3 / E01-4 ; E01-5	30	50	25	9	25	9.5	18	12	22	69/114	**415.0772**	**415.0773**
F01-1 / F01-2 horizontal	30	50	25	9	30	9.5	25.3	12	22	84/114	**215.0044**	**215.0043**
F01-2 vertical	30	50	25	9	25	9.5	18	12	22	84	**415.0772**	**415.0773**
MA1-3 / MA1-5	25	50	25	6.7	27	6.8	20.6	10	18	120	**415.0769**	**415.0764**
STATYCA	30	90	50	11	40	11	28.3	14	25	198	**415.0767**	**415.0762**
VALYDA horizontal	30	90	50	11	40	11	28.3	14	25	228	**415.0767**	**415.0762**
VALYDA vertical	30	90	50	11	50	11	43.1	14	25	148	**215.0042**	**215.0041**
LOGYCA	30	90	50	11	40	11	28.3	14	25	248	**415.0767**	**415.0762**
PRATYCA horizontal	30	90	50	11	20	11	11.3	14	25	308	**415.0768**	**415.0763**
PRATYCA vertical	30	90	50	11	25	11	13.5	14	25	198	-	**915.1174**
SOLYDA horizontal	30	90	50	11	20	11	11.3	14	25	308	**415.0768**	**415.0763**
SOLYDA vertical	30	90	50	11	25	11	13.5	14	25	198	-	**915.1174**

L-shaped brackets

Joint for small profiles

Mainly used to improve structural rigidity by means of diagonal struts. Can also be used as a hinge to fix command or control devices (consoles, display units, etc.) to existing structures.





Profile	B	G	Code	
			Screw lock	Handle lock
40x40	40	30.0	**C90-00**	**C90-00-M**
45x45	45	32.5	**E90-00**	**E90-00-M**
50x50	50	35.0	**A90-00**	**A90-00-M**

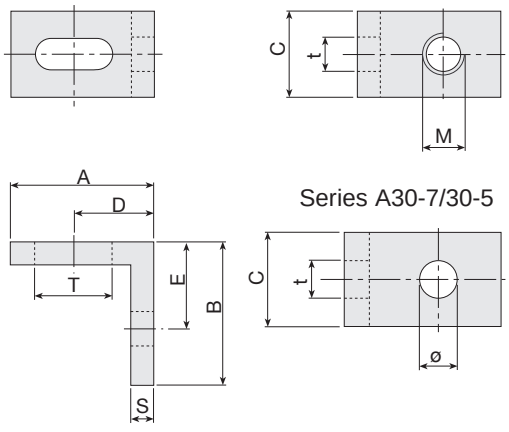
Threaded hole bracket

Threaded hole bracket for mounting additional equipment.
Material: 6060 clear anodized aluminium alloy.

Series A30-8/30-6

Series A30-7/30-5

Series A30-8/30-6

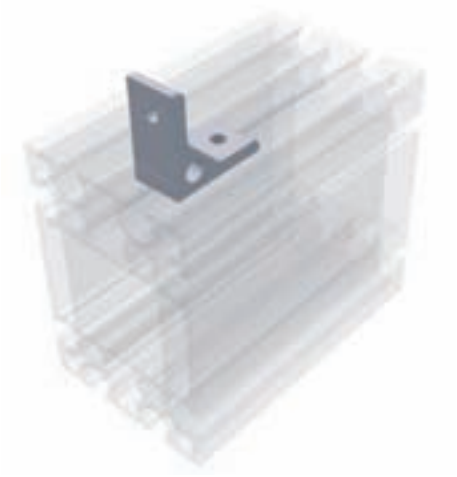


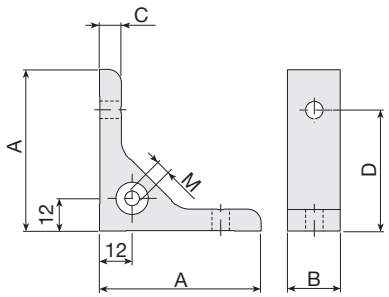
Series A30-7/30-5

A	B	C	D	E	S	T x t	M	Code	Ø	Code
45	45	20	25	25	5	15 x 6.5	M6	**A30-86**	6	**A30-76**
35	25	20	19	15	5	20 x 6.5	M4	**A30-64**	4	**A30-54**
35	25	20	19	15	5	20 x 6.5	M5	**A30-65**	5	**A30-55**
35	25	20	19	15	5	20 x 6.5	M6	**A30-66**	6	**A30-56**
25	25	15	14	15	4	13.5 x 5.5	M3	**B30-63**	3	**B30-53**
25	25	15	14	15	4	13.5 x 5.5	M4	**B30-64**	4	**B30-54**
25	25	15	14	15	4	13.5 x 5.5	M5	**B30-65**	5	**B30-55**
25	25	15	14	15	4	13.5 x 5.5	M6	**B30-66**	6	**B30-56**

Bracket for mounting additional equipment

L-shaped bracket for mounting additional equipment and improving the rigidity of frames made with profiles.
Material: 6060 clear anodized aluminium alloy.

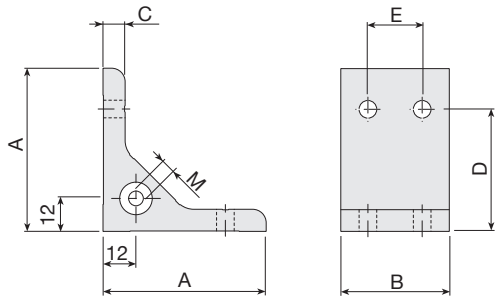




A	B	C	D	E	Ø	M	Code
60	20	8	45	-	6,5	-	**B30-10**
60	20	8	45	-	6.5	M6	**B30-20**
60	30	8	45	-	9	-	**A30-10**
60	30	8	45	-	9	M6	**A30-20**
38	30	8	25	-	9	-	**A30-00**
31	20	6	20	-	6.5	-	**C30-00**

Bracket for mounting additional profiles

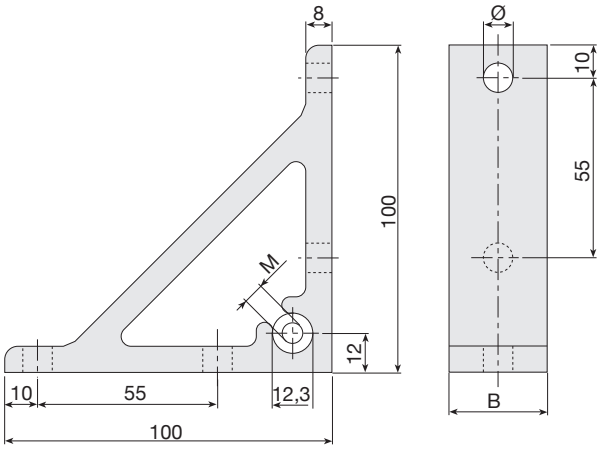
Material: 6060 clear anodized aluminium alloy.



A	B	C	D	E	Ø	M	Code
38	80	8	25	50	9	-	**A30-02**
31	60	6	20	40	6.5	-	**C30-02**

Bracket for mounting additional profiles

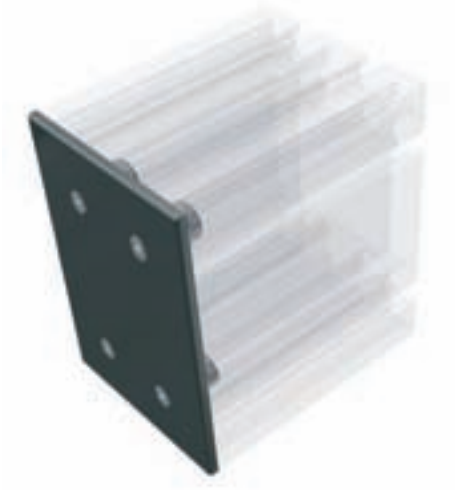
Material: 6060 clear anodized aluminium alloy.



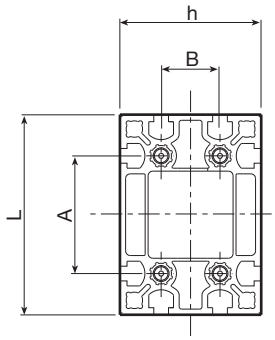
	B	M	Ø	Code
Without bushing	30	-	9	**A30-30**
Without bushing	20	-	6.5	**B30-30**
With bushing	30	M6	9	**A30-40**
With bushing	20	M6	6.5	**B30-40**

End caps for profiles

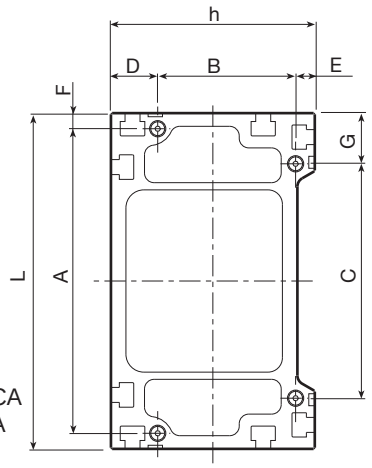
The end caps for STATYCA, VALYDA, and LOGYCA (supplied with 4 bushings 207.1892 thr. M20/6) are fixed to the profiles using the 4 holes provided in the centre that must be M20 threaded. PRATYCA and SOLYDA profiles must instead be M6 drilled and threaded as in the areas indicted in the drawing (in this case the end caps are supplied without any bushings). Please specify whether profiles will require end caps.
Material: black polyethylene, 6 mm thick. End caps in 6 mm-thick aluminium alloy are available upon request.



STATYCA
VALYDA
LOGYCA

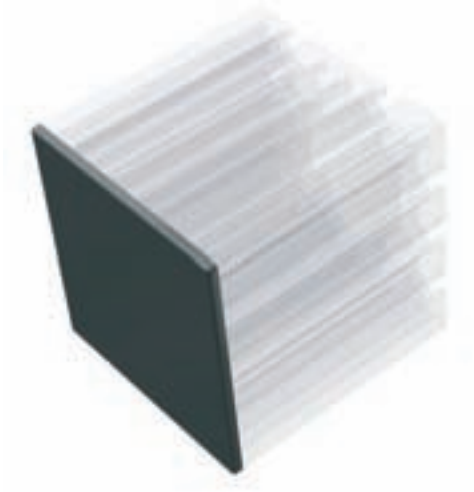


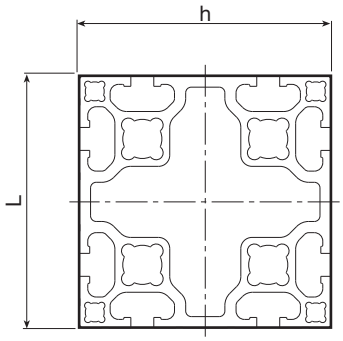
PRATYCA
SOLYDA



Bearing profile	L	h	A	B	C	D	Code
202.1753 - STATYCA	170	120	100	50	-	-	**212.1774**
202.1146 - VALYDA	200	120	100	50	-	-	**212.1704**
202.2184 - LOGYCA	220	120	150	50	-	-	**212.2279**
202.1147 - PRATYCA	280	170	254	115	195.5	39	**212.1705**
202.0342 - SOLYDA	360	200	328	141	265	40	**212.1706**

The end caps for small and medium profiles have no screws or bushes and are fitted simply by exerting moderate pressure on the end of the profile.
Material: black polyethylene, approx. 5 mm thick.

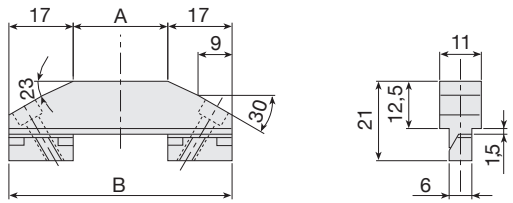




Profile	L	h	Code
MB 1-1	30	30	**B40-30**
E01-2	60	45	**E40-20**
E01-3	90	45	**E40-30**
E01-4	90	90	**E40-40**
E01-5	180	90	**E40-60**
E01-11/E01-6/E01-1	45	45	**E40-10**
E01-7	45	20	**-**
F01-1	60	60	**F40-10**
F01-2	90	60	**F40-20**
MA1-3	150	50	**A40-30**
MA1-5	100	100	**A40-50**
E01-13	90	135	**E40-10/E40-30**

Long cams (type B)

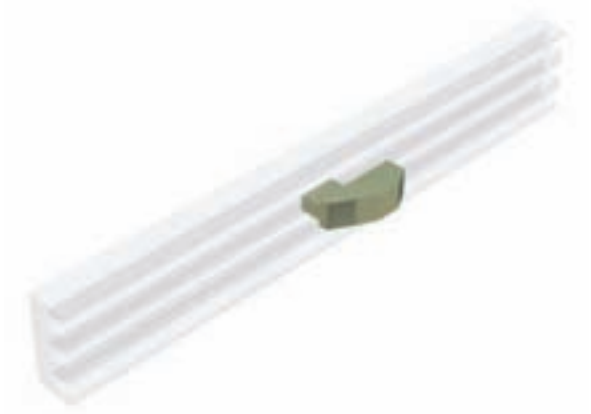
Cams in accordance with DIN 69639 except when marked “#”.
Material: steel with hardened and ground surface.

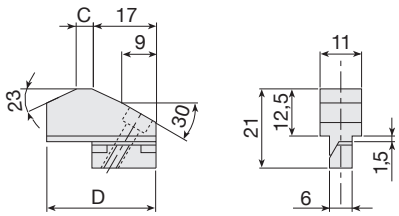


A	B	Code
25	59	**211.2132**
40	74	**211.2133**
63	97	**211.2134**
80 #	114	**211.2135**
100	134	**211.2136**

Short cams (type A)

Cams in accordance with DIN 69639
Material: steel with hardened and ground surface.

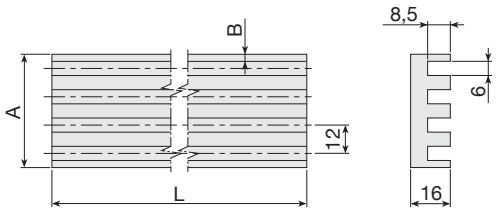




C	D	Code
0	25	**211.2128**
4	29	**211.2129**
10	35	**211.2130**
16	41	**211.2131**

Cam-holder guide rails

Cams in accordance with DIN 69638
Material: 6060 clear anodized aluminium alloy.

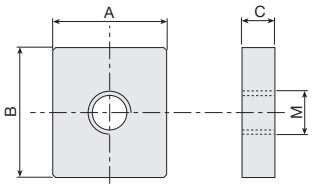


n°	B	A	L	Code
3	3	36	3,000	**202.2138**
4	5.5	53	3,000	**202.2139**
6	5.5	77	3,000	**202.2140**
8	5.5	101	3,000	**202.2141**

Threaded inserts for small and medium profiles

Inserts for base profiles 30/45/50/60

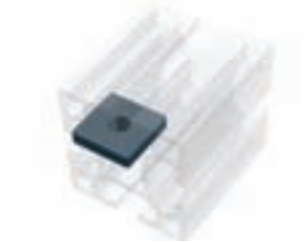
Material: galvanised steel.
Important: inserts must be inserted into the T-slots before assembling.

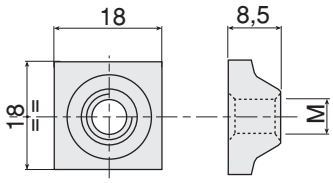


Thread	A-B-C Code	Thread	A-B-C Code
M3	**B32-30**	M4	**A32-40**
M4	**B32-40**	M5	**A32-50**
M5	**B32-50**	M6	**A32-60**
M6	**B32-60**	M8	**A32-80**
Spring	**211.1077**	Spring	**211.1061**

Square nuts

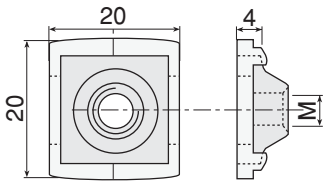
Also suitable for profiles **STATYCA, VALYDA, LOGYCA, PRATYCA and SOLYDA.**
Material: galvanised steel.
Important: inserts must be inserted into the longitudinal slots before assembling.





Thread	Code 18x18	Code 20x20
M4	**209.0031**	**209.0023**
M5	**209.0032**	**209.0019**
M6	**209.0033**	**209.1202**
M8	**209.0034**	**209.0467**

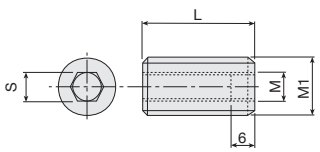
Plastic compound spring for vertical positioning of insert.



Spring	Code
Suitable for all inserts 18x18	**101.0732**

Threaded bushings

Material: chrome-plated steel.
M14 or M16 threading is necessary at the end of the profiles.

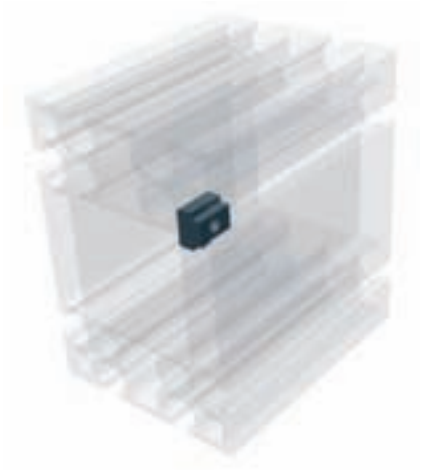


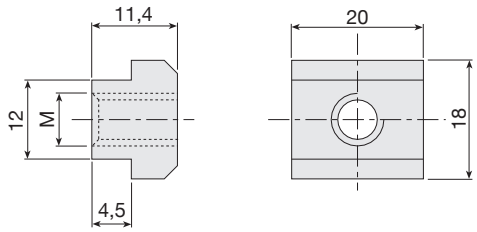
Profile	M1	M	S	L	Code
Base 30	14	10	10	25	**B33-21**
Base 30	14	8	8	25	**B33-28**
Base 30	14	6	6	25	**B33-26**
Base 45/50/60	16	10	10	25	**A33-20**
Base 45/50/60	16	8	8	25	**A33-28**
Base 45/50/60	16	6	6	25	**A33-26**

Threaded inserts for load-bearing profiles

Frontally insertable alignment plates

Material: galvanised steel.
Important: inserts must be inserted into the T-slots before assembling.

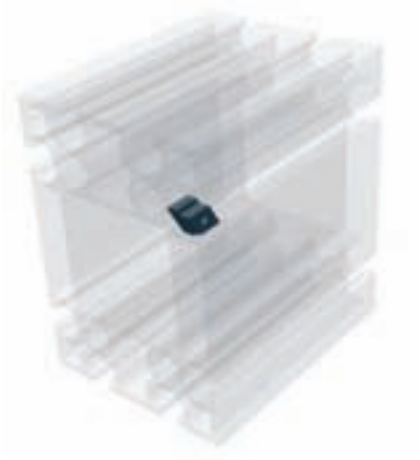


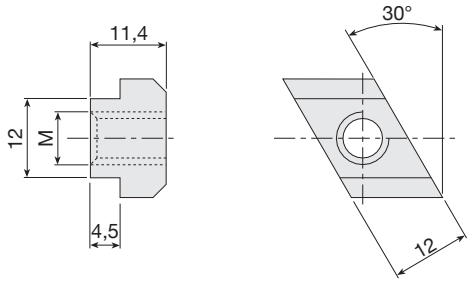


Thread	Code
M5	**215.1768**
M6	**215.1769**
M8	**215.1770**
M10	**215.2124**

Frontally insertable alignment plates

Material: galvanised steel.

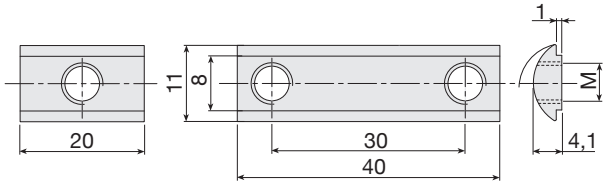




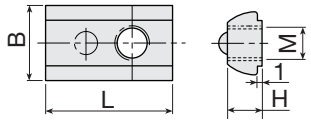
Thread	Code
M5	**215.1771**
M6	**215.1772**
M8	**215.1773**
M10	**215.2125**

Inserts for base profiles 30/40/45/50/60 with spring, frontally insertable

Material: galvanised steel. With retention spring.



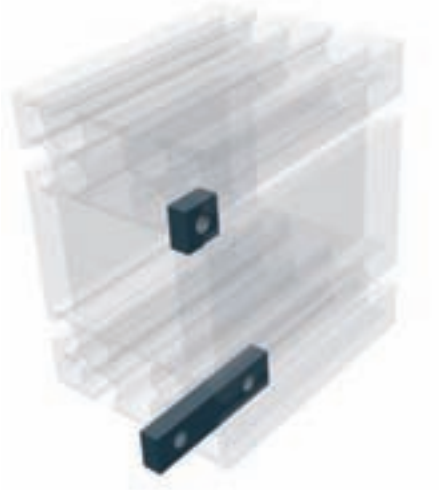
Base	B	H
30	11	4,1
40	13.6	5.9
45-60	14	7.8

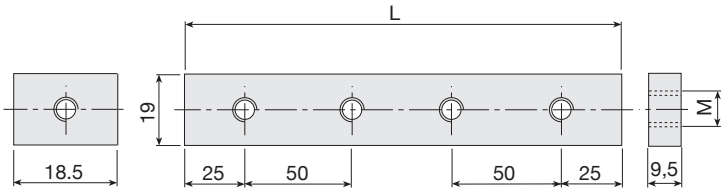


			Base 30	Base 40	45-50-60
Thread	N. holes	L	Code	Code	Code
M5	1	20	**B32-55**		**A32-55**
M6	1	22	**B32-65**		**A32-65**
M8	1	22	**B32-85**		**A32-85**
M6	2	40	**B32-67**		**A32-67**
M5	1	20		**C32-55**	
M6	1	20		**C32-65**	
M8	1	20		**C32-85**	
M6	2	40		**C32-67**	

Threaded inserts

Also suitable for base-50 profiles, except A32-91 insert.
Material: galvanised steel.

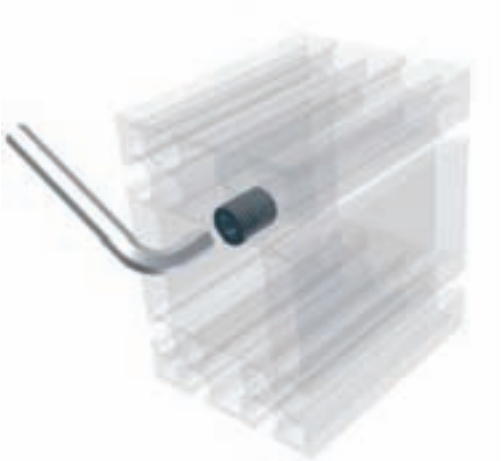


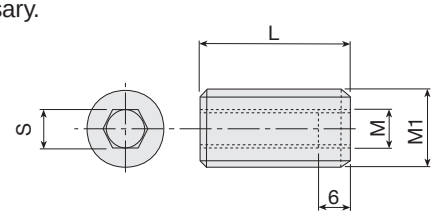


Thread	N. holes	L	Code
M10	1	40	**215.0477**
M12	1	40	**209.1281**
M10	1	20	**209.1277**
M10	2	80	**209.1776**
M10	3	150	**209.1777**
M10	4	200	**209.1778**
M10	5	250	**209.1779**
M10	6	300	**209.1780**
M10	7	350	**209.1781**

Threaded bushings

Material: galvanised steel. M20 threading at the end of the profile is necessary.

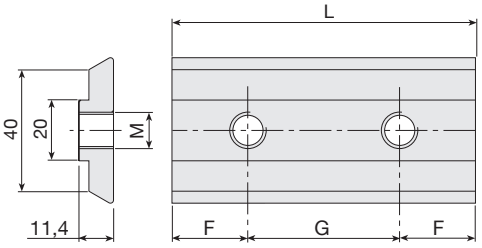


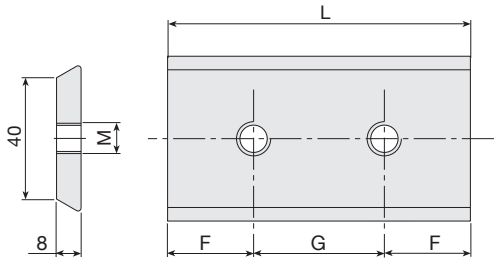


M1	M	S	L	Code
20	6	6	25	**207.1892**
20	8	8	25	**207.1893**
20	10	10	25	**207.1894**
20	12	12	25	**207.2288**

Dovetail inserts for VALYDA profile

Material: burnished C40.
Important: inserts must be inserted into the longitudinal slots before assembling.
Special sizes are available upon request.



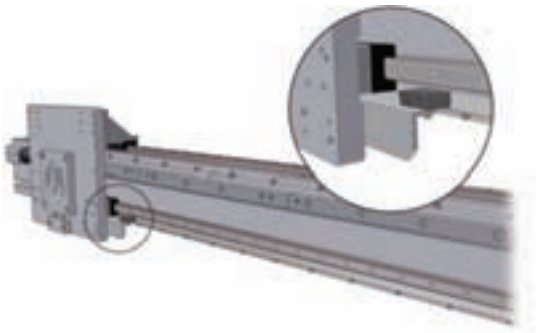


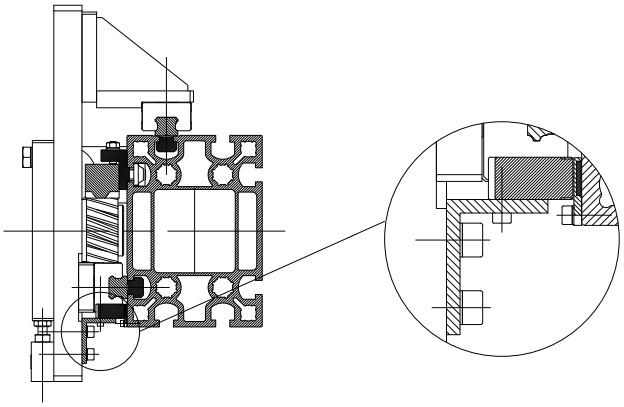
F	G	L	N° holes	M8	M10
25	-	50	1	**214.0388**	**214.0394**
25	50	100	2	**214.0389**	**214.0395**
25	50	200	4	**214.0391**	**214.0398**
25	50	300	6	**214.0393**	**214.0400**

F	G	L	N° holes	M10
25	-	50	1	**214.0430**
25	50	100	2	**214.0431**
25	50	200	4	**214.0433**
25	50	300	6	**214.0435**

Reader system with magnetic scale and sensor

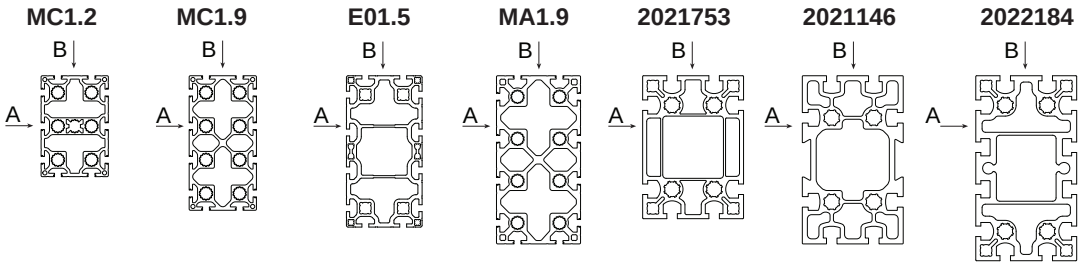
The magnetic scale is applied to the body of the module using a supporting and protective profile.
Precision from ± 0.015 to ± 0,05 mm
Max. speed = 4 - 10 m/s (according to type)

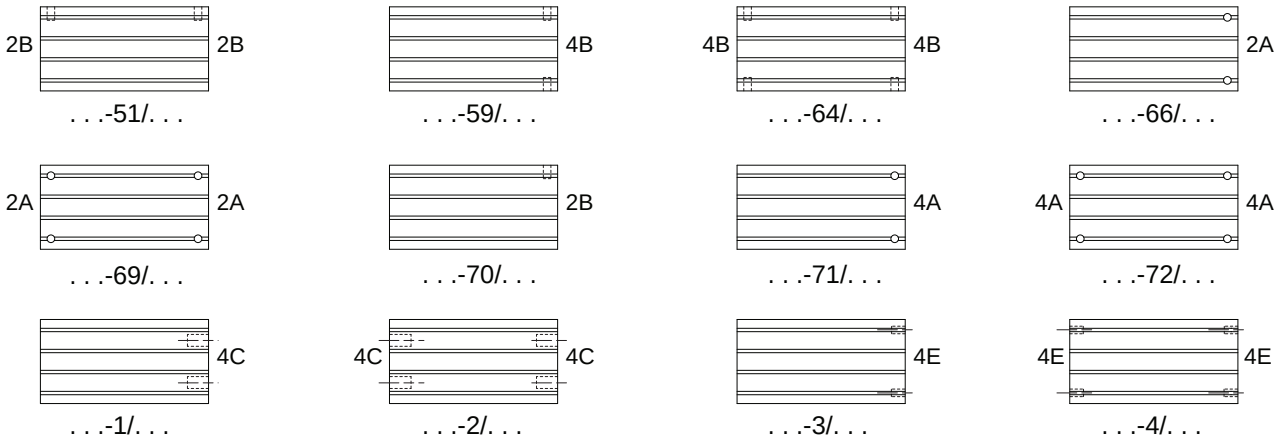




Machining code table

Machining for large profiles





KEY

A Milling for PVS® housing on X axis.

B Milling for PVS® housing on Y axis

C* Threading M20x25 for profiles with hole Ø17.5.

E M16x25 for profiles with hole Ø14.

M To be added after the machining code if PVS assembly is required with the profile.

* For square profiles processes 2 C are always performed on the same end in diametrically opposite positions.

*For cut-only profiles, omit the machining code and directly indicate the length.

EXAMPLE OF ORDER:

E01-5 - 72 / 1,525
- Length in mm
- Machining process
- profile type

E01-5 - 72M / 1,525
- Length in mm
- Machining process PVS assembled
- profile type

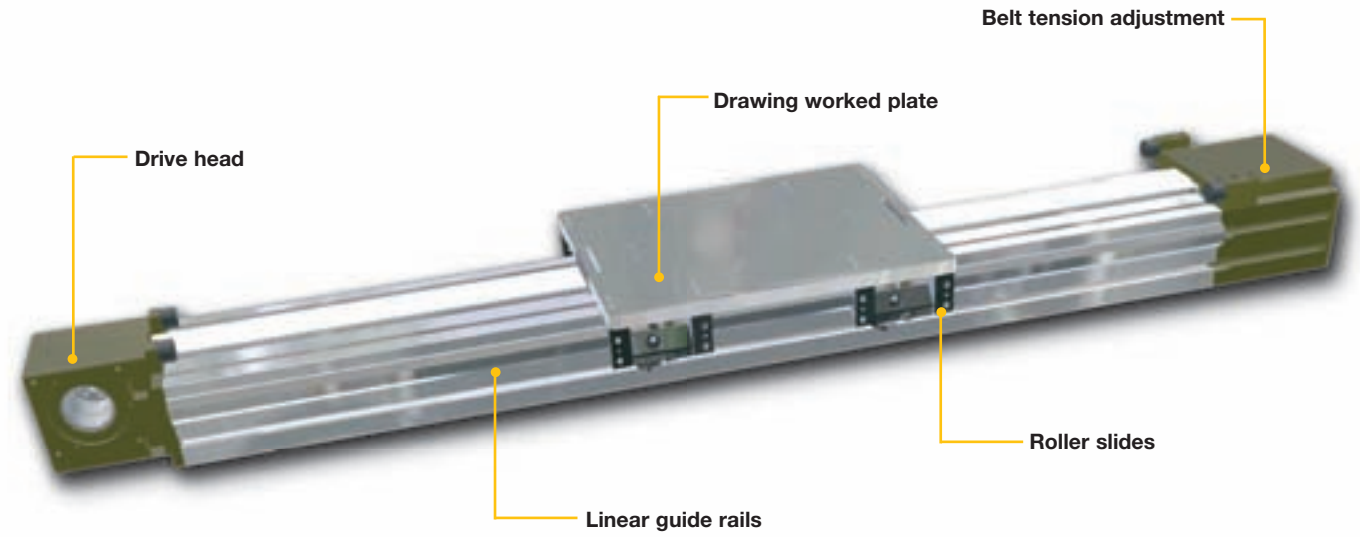
2021146 / 1,525
- Length in mm
- profile type

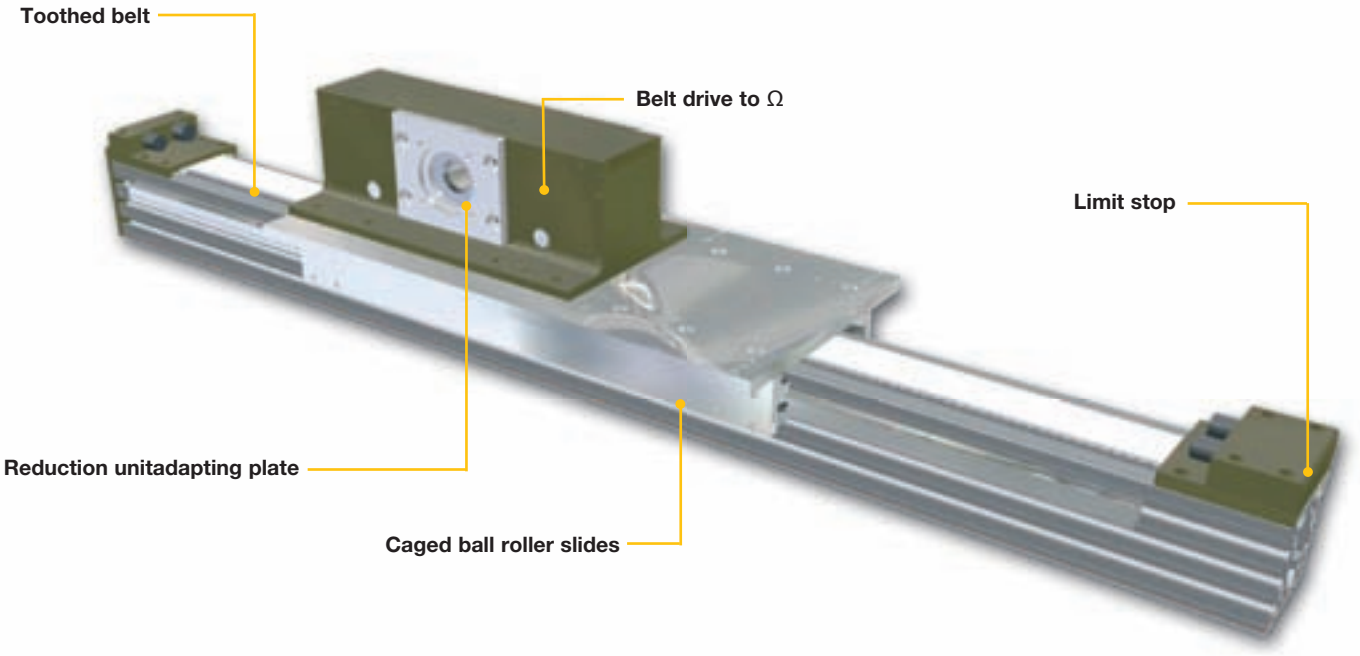
Index

ROLLON®

Linear Evolution

Modline





Modline linear modules are ready-to-use linear guide systems with high accuracy, speeds and load performances.

Our experience in the fields of the automotive plants, painting, plate working, manufacturing machines and palletization systems has allowed us to widen our product range with the most advanced technical solutions.

Our products stand out for their:

- high quality and **competitive performances** (profiles up to12m)
- **without play transmissions** achieved by high torque couplings
- **beams** with transversal stiffening ribs and preset for threads on profile ends
- **accurate scaling** and consequent reduced maintenance
- **fast** and accurate **belt** or without play screw drives
- the most **complete range** of accessories

The Modline linear module strong points are:

- Acomplete series of linear units to build up 3 or more axis cartesian robots
- Linear modules with linear guides suitable for parallel assembling
- Choice between strong steel linear guides with rollers or accurate caged ball roller slides and guides
- Choice between mobile carriage or fixed carriage and mobile profile
- Wide and complete solutions for control systems; programmable cards on request
- On request: assembling of E-chain cable carriers, reduction units, stiffening angle bars
- Drawing worked carriage plates
- Accessories and compatibility for pinion/rack drive unit integrated assembling

Contents

INTRODUCTION

M MODULES WITH BELT DRIVE

MODULES WITH SCREW DRIVE

T MODULES WITH BELT DRIVE

Z MODULES WITH OMEGA BELT DRIVE

Edition 03-2015

K MODULES WITH BELT DRIVE

ACCESSORIES AND APPLICATIONS

Construction Features

Beams
Obtained from Rollon extruded and anodised aluminium alloy profiles. Material features: Al Mg Si 0.5 hardened and tempered, F25 quality, Rm 245 N/mm2, tolerance as per EN 755-9 and EN 12020-2. Profiles have been specially designed to achieve high stiffness and long lengths (up to 12 m), in order to obtain solid, lightweight structures, suitable for the construction of linear transfer machines.

Plates
Obtained from aluminium alloy rolled sections, tensile strength Rm 290 N/mm2, HB 77, high performance. On request we perform machining work on all standard plates (D code) and according to detailed customer drawings.

V-shaped guide rails
In hardened and ground high carbon steel (min. hardness 58 HRC). (Anti-oxidation coating upon request).

Guide rails for caged ball roller slides
S version: high performance, with cage, primary producers. L version: high dynamics, medium loads.
H version: standard performance and limited dynamics.

Roller slides
Body in aluminium alloy G AL SI 5 hardened and tempered according to UNI 3600 or Alloy 6082, rollers with double rows of angular contact ball bearings, backlash-free, long life lubrication: Ø 30, Ø 40, Ø 52, Ø 62 mm rollers. Adjustable tolerance between rollers and guide rails. Complete with new felt scrapers.

Toothed drive and driven pulleys
In C40 steel with coupling toothing on the polyurethane belt, backlash-free, with anti-oxidation treatment. Equipped with large, watertight bearings, capable of withstanding high work performance, due to the use of the multicarriage with durable, alternating backlash-free movements.

Toothed belts
In durable polyurethane, fitted with high-resistance reinforced with high tensile strength steel cords, which prevent the belt from lengthening over time. They are grease, oil and gasoline-proof and can work at temperatures from - 30° up to +80°. The belt is fastened to the plate by means of a hooked support. The belt can be serviced without disassembling the equipment on the plate (standard versions).

Shrink-discs, shafts and pulleys
All models shown in the catalogue work with the standard conical shrink-disc drive system to lock the driving shaft and the driven shaft if present. Gearbox or shaft adapting plates are supplied upon request, as per drawing.

Bumper Stops
Important: the rubber stop pads provided with standard linear models are suitable and regarded as static limit switches. For special needs, such as safety stops if the drive breaks, please specify loads, dynamics, details and discuss the use of specific parts, accessories and devices (reinforced plates and attachments - shock absorbers, safety and/or anti-drop devices, etc.) with our technical dept.

Anodizing
We supply all linear modules equipped with: natural, anodised aluminium alloy profiles (min. 11µ), driving heads, driven heads, carriages (MC series), counter plates, in dark bronze anodizing (min. 11µ).

Anti-oxidation parts and coatings
Modules are also available with anti-oxidation coating. Materials and coatings are selected according to the environment of use (food industry, marine environment, etc.).

Assembly specifications

Main features of the roller translation system
The translation system consists of a plate to which two roller slides with concentric pins and two with eccentric pins are fixed. The eccentric pins are suitable for adjusting backlash between the roller slide and the sliding track. Check that the angular position of the rollers is such that they can support the max. working load (page 10).

Guide rails and roller slides are particularly suitable for use in dusty and aggressive environments.

Important: during adjustment, overloading is easily achieved: this may result in premature wear.

NB: always keep friction low. If friction is high, loosen and repeat the adjustment.

Main features of the caged ball roller slides translation system
The sliding system guarantees high performance in terms of precision and load resistance, reduced maintenance and stiffness thanks to the connecting slots of the profile.

All guide rails are directly fixed onto the profile surface, appropriately machined to guarantee geometric and dimensional tolerances, paying attention to the parallelism between them. In large modules, any profile flatness or parallelism errors are corrected by means of the appropriate machining procedures. Please inform our technical dept. of any specific application requirements.

When mounting the linear axes in parallel, it is necessary to not only verify the parallelism between the linear units themselves, but also the coplanarity of the surfaces of the heads so that the maximum error does not exceed 0.3 mm per meter between the parallel modules and within ± 0.03 mm compared to the parallelism.

Lubrication

Roller slides and caged ball roller slides
Roller slides are provided with a permanent lubrication system which, if properly used, eliminates the need for any further maintenance, also considering the average life of any handling device. As for screw modules, the caged ball or V screw requires periodical lubrication.

For applications on plants with a high number of daily cycles, or with a significant build-up of impurities, please check the need for lubrication, seals and additional tanks with our technical dept. Do not use solvents to clean rollers or roller slides, as you could unintentionally remove the grease lubricating coat applied to the rolling elements during assembly.
Use lithium soap based mineral grease according to DIN 51825 - K3N. Read the instruction manual

Complete central lubrication system. Grease cartridge upon request.

Guide rails
If properly assembled, guide rails do not require any lubrication, which would attract impurities and have negative consequences. Should there be any surface defects on the guide rails and/or on the rolling parts, such as pitting or erosion, this might be due to an excessive load. In this case, all worn parts must be replaced and the load geometry and alignment checked.

Introduction - operation and control unit

On request, we can supply systems complete with specific motor drives for industrial automation applications, suitable for specific handling tasks according to the customer's needs (moving loads, accelerations, speeds, cycle times, resolution, repeatability).
These can be equipped with gearboxes, servomotors, mechanical limit switches, proximity switches and various accessories, such as energy chains, interface plates, fixing supports.

Our technical dept. is at your complete disposal for any scaling requirements and the choice of moving unit and electromechanical parts suitable to achieve the required performance levels. We can draw on our experience to help our customers in their choice of linear unit and the following parts:
gearboxes: worm screw, planetary, bevel;
motors: stepper, brushless, DC, asynchronous.

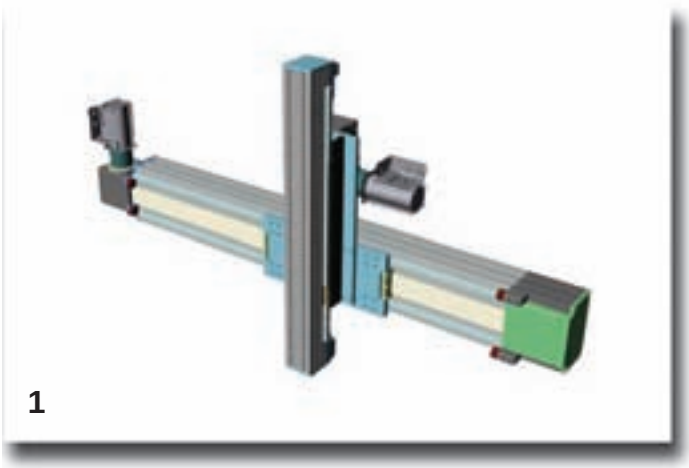
For each of these we can propose drives manufactured by primary producers marketed in Italy and abroad suitable for the calculated power ratings.
Rollon is able to support the customer in choosing complete systems equipped with axis control, with or without interpolation, with or without PLC, suitable for operating handling cycles and machine management. The customer has only to provide for piping and wiring.

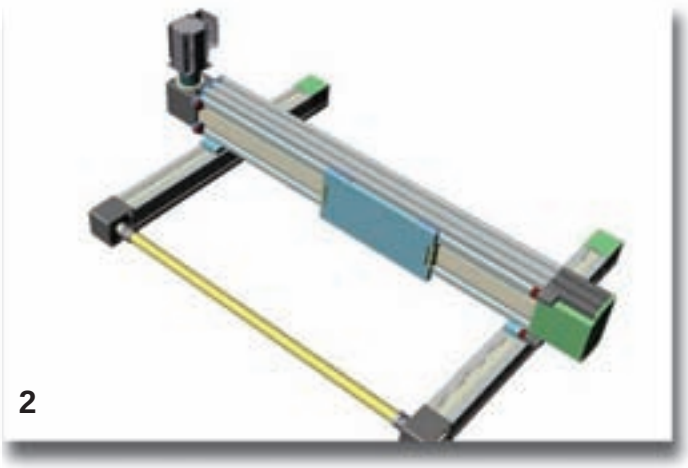
Application examples:

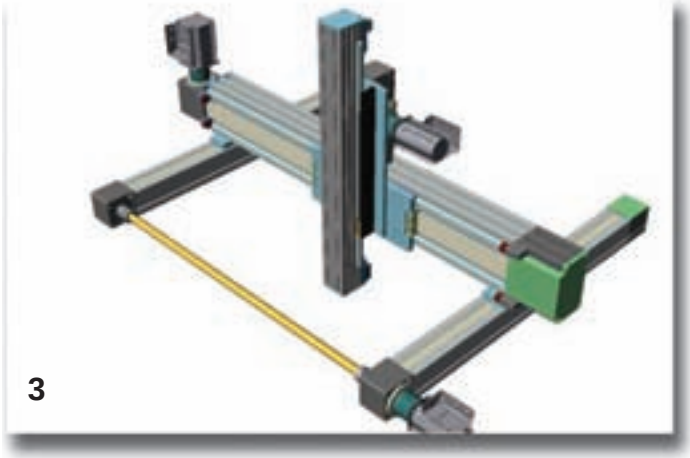
glue dispensing units
paint or resin distribution units
load/unload of manufacturing machines
pick and place systems
control and sensing instrument handling
drilling PCB boards
cartesian robots with 2, 3 or more axes

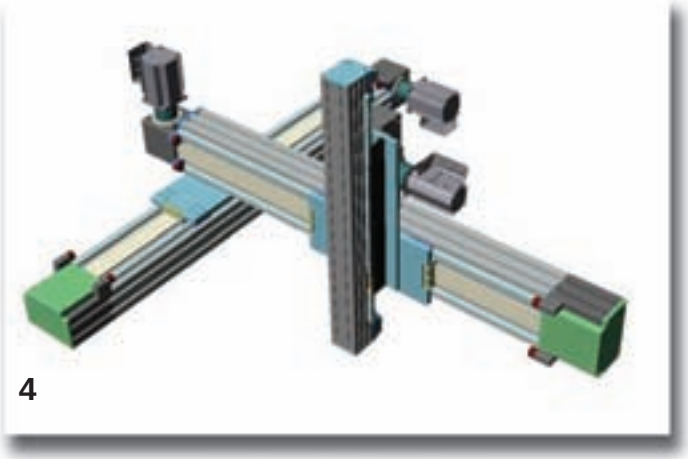
Tightening specifications

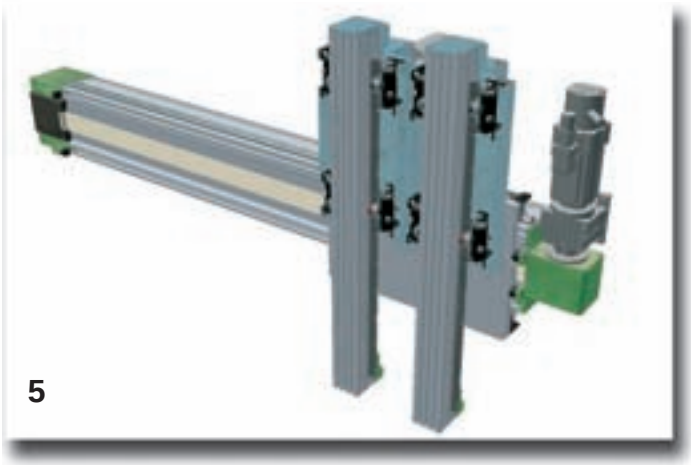
During set-up, make sure all parts are locked with the appropriate screws and with the right tightening torques.


1

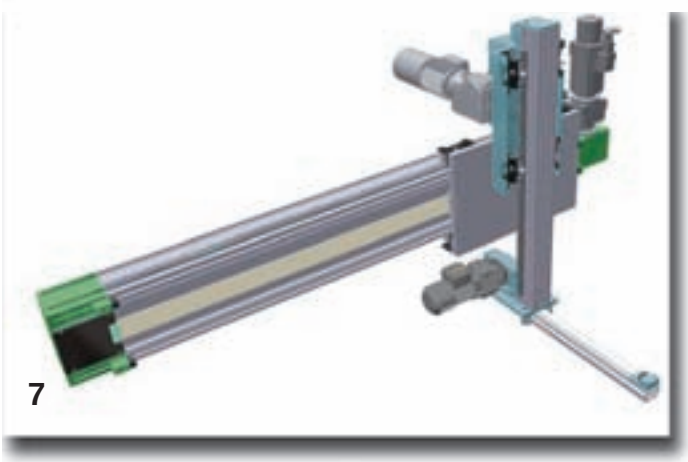

2

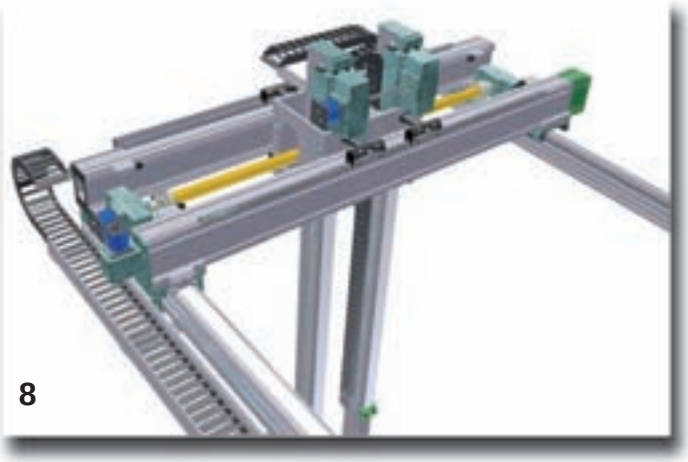

3


4


5

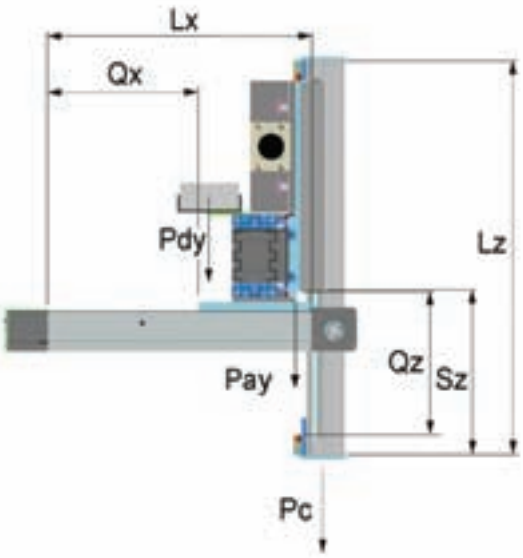

6

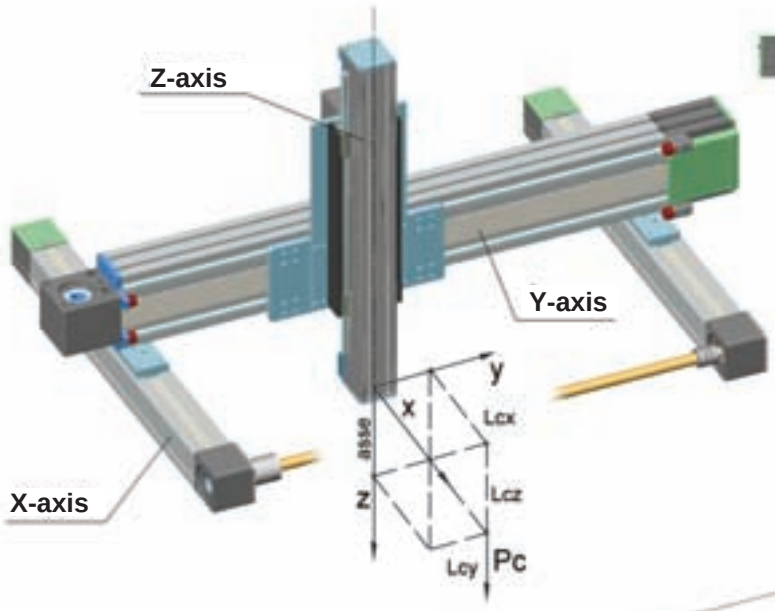

7

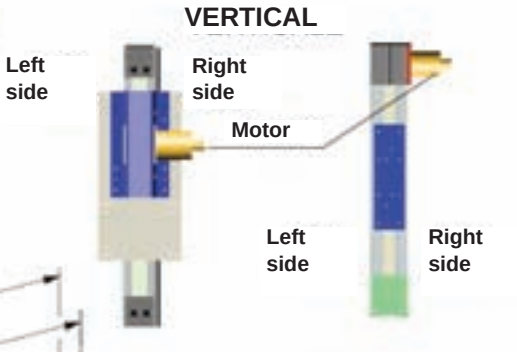

8

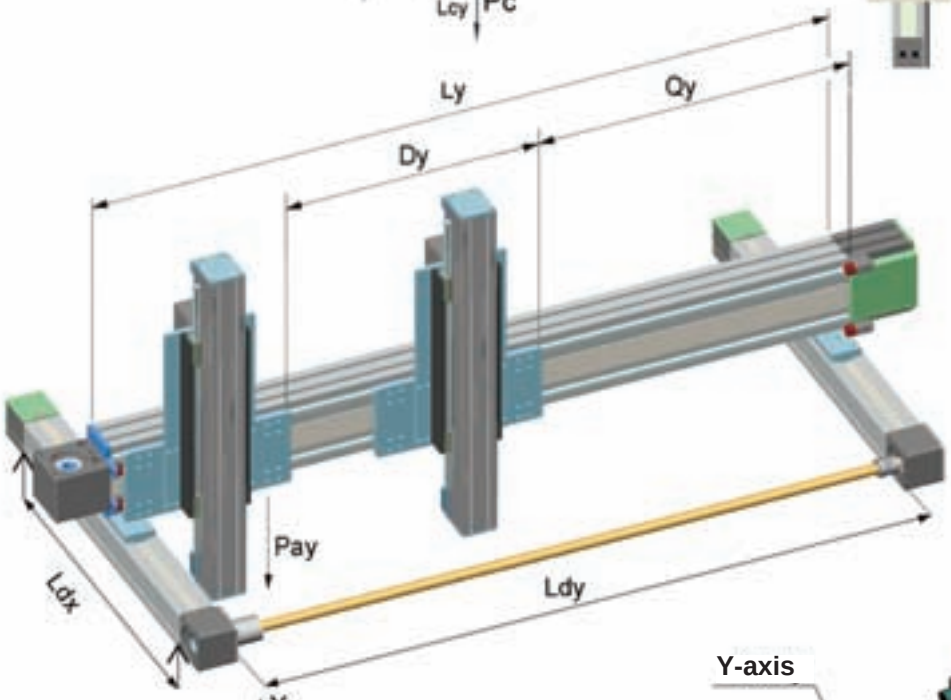
Sizing template

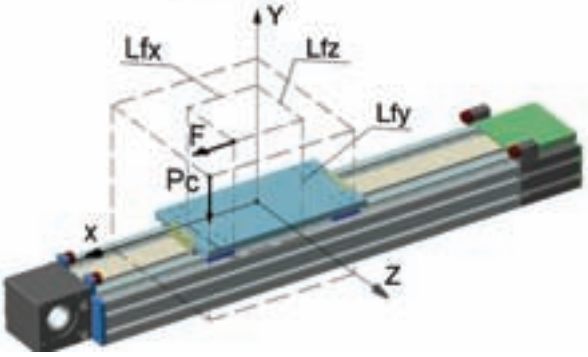
Our Technical Support dept.
is available to check sizing calculations. Please fill in the form with all the necessary data and send it to our technical dept., which will suggest the most suitable size according to the forces applied and precision required.

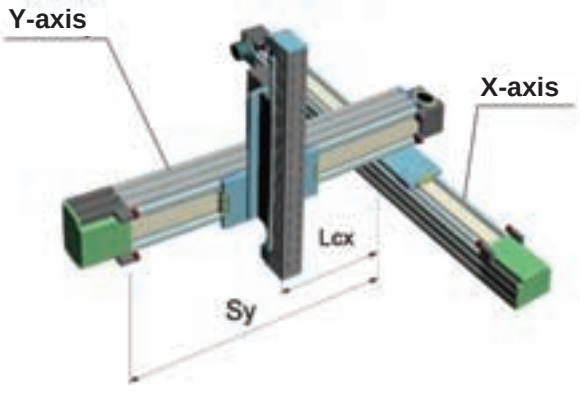












Sizing request form

For a proper definition of the linear units, fill in the scaling request form and send it to the Technical Support Department.

Date: .....Request n°.....

Filled in by.....

Company.....

Address.....

Phone .....Fax.....

E-mail .....

Sizing template

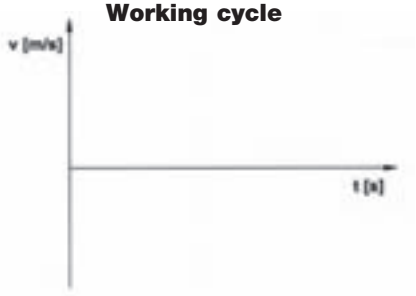
required data | optional data

MODLINE linear modules

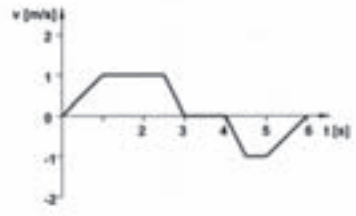
ASSEMBLY SOLUTIONS (see page 5) no.

	Z-axis		Y-axis		X-axis	
Total length	Lz		Ly		Lx	[mm]
Total working load including EOAT (add Z axis for Y and X axes)	Pc		Py		Px	[kg]
Equipment weight on carriage (gearbox, cylinder, OPTIONAL)	Paz		Pay		Pax	[kg]
Weight distributed on the beam (energy chain)	Pdz		Pdy		Pdx	[kg/m]
Profile supports			n°		n°	
Max. projection (any cantilever, the largest)	Sz		Sy		Sx	[mm]
Max. span			Ldy		Ldx	[mm]
Offset load's centre of gravity (X-axis)	Lcx					[mm]
Offset load's centre of gravity (Y-axis)	Lcy					[mm]
Offset load's centre of gravity (Z-axis)	Lcz					[mm]
Any additional force	F		F		F	[N] +/-
Offset additional force (X-axis)	Lfx					[mm]
Offset additional force (Y-axis)	Lfy					[mm]
Offset additional force (Z-axis)	Lfz					[mm]
Possible distance between the carriages	Dz		Dy		Dx	[mm]
Transmission performance	η					
Assembly: vertical= 90° - slope = 30°, 45°, 60° - horizontal	α=					
Stroke	Qz		Qy		Qx	
Speed	Vz		Vy		Vx	[m/s]
Acceleration	Az		Ay		Ax	[m/s^2]
Cycle time	Tz		Ty		Tx	[s]
Positioning accuracy	+/-					[mm]
Repeatability	+/-					[mm]
Work environment (temperature and cleanliness)						
Daily working cycles	n°					
Minimum service life requested						[Km]

Working cycle



Example working cycle



Notes:.....

.....

.....

.....

Preliminary selection table (1-2-3 axes)

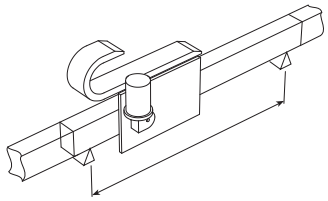
These tables are useful for making a preliminary selection with load applied in a central position with respect to the plate or profile axis. Z axis length is < 1600 mm. Deflection is computed assuming continuous beams having the same span and concentrated static loads.

In the following table, select the appropriate X axes according to the load

Max. Load capacity [kg.]	PA	2X	3X	4X	5X	6X	8X	10X	LC
		Deflection							
	50	1.4							5000
	100	1.8							5000
	200	2.7	1.8						5000
	300		2.3	2.7					5000
	400			3.3	2.4				5000
	500				2.8	1.8			5000
	600					2	2		6000
	800						2.5	1.8	6000
	1000							2.1	7000

NB: for vertical 8X and 10X portals, compensate the load

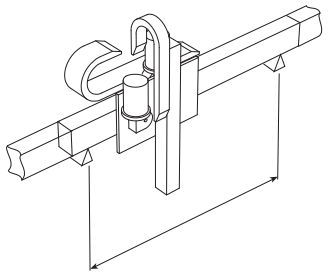
X-Axis



From the table below, select the most suitable combination of Y-Z axes depending on the load.

Max. Load capacity [kg.]	PA	2/1	3/1	4/1	5/2	6/2	8/3	6/4	8/6	10/6	10/8	LC
		Deflection										
	50	1.9										5000
	100	2.4	1.7	2	1.6							5000
	200				2.2	0.8	0.8					5000
	300					1.6	1.6	1.6				6000
	400							1.9	2	0.9		6000
	500								2.2	1		6000
	600								2.5	1.2	1.2	6000
	800										2.2	7000

Y-Z-Axis

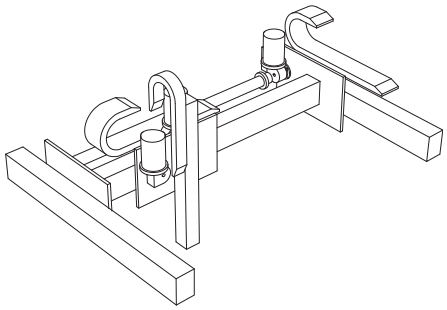


From the table below, select the most suitable combination of X-Y-Z axes depending on the load.

X-axis		Y-Z-axis									
	PA	2/1	3/1	4/1	5/2	6/2	8/3	6/4	8/6	10/6	10/8
	PA Load [kg.]	100	100	100	200	200	300	400	600	600	700
	2X										
	3X										
	4X										
	5X										
	6X										
	8X										
	10X										

NB : the choice of X axis is based upon the actual load, the supporting points, max. deflection and the total weight of the Y-Z axes

X-Y-Z-Axis



EXAMPLE: selection of 3-axis system with roller slides

(Please see page 7 and the system pages for the nomenclature)

DATA: Total working load 300 kg, X axis stroke: 5,000 mm, Y axis stroke: 4,000 mm, Z axis stroke: 2,000 mm, support points: 2

By analysing the table of Y-Z axes based on the working load (Pc), profile length (Ly) and deflection, the selection falls on one PA 8/3 (load 300 kg.) portal

Check: $P_{eff} = P_{max}$- (Lz - 1,600)/1,000•q_z = 300-(2,900-1,600)/1,000•35 = 254.5 kg. < di 300 kg. Therefore select the larger size PA 6/4 (max. load capacity 400 kg.)

M_{tot} PA 6/4 (Y+Z) = M_{base}+(q_y•stroke$_y$+q_z• stroke$_z$)/1,000+Pc = 244+(66•4,000+48•2,000)/1,000+300 = 904 kg.

Ptx = M_{tot} PA 6/4 (Y+Z)•0.66 = 596.6 kg.

Lx = stroke$_x$ + 1,200 approx = 5,000+1,200 = 6,200 mm

By analysing the table of X axes based on the load (Ptx) profile length (Lx) and deflection, it is possible to select two PA 6X linear axes

Chosen composition: n°1 PA 6/4 + n° 2 PA 6X

Perform a final analysis by computing the deflection based on the actual size of the spans. Our technical dept. is at your complete disposal to help you examine the most suitable applications for your requirements.


1


2


3


4


5


6


7

1 Multi-gripper handling system with belt drive

2 Panel handling system, construction industry

3 Tool handling system in the iron and steel industry

4 Pick and place system for storage battery production plant

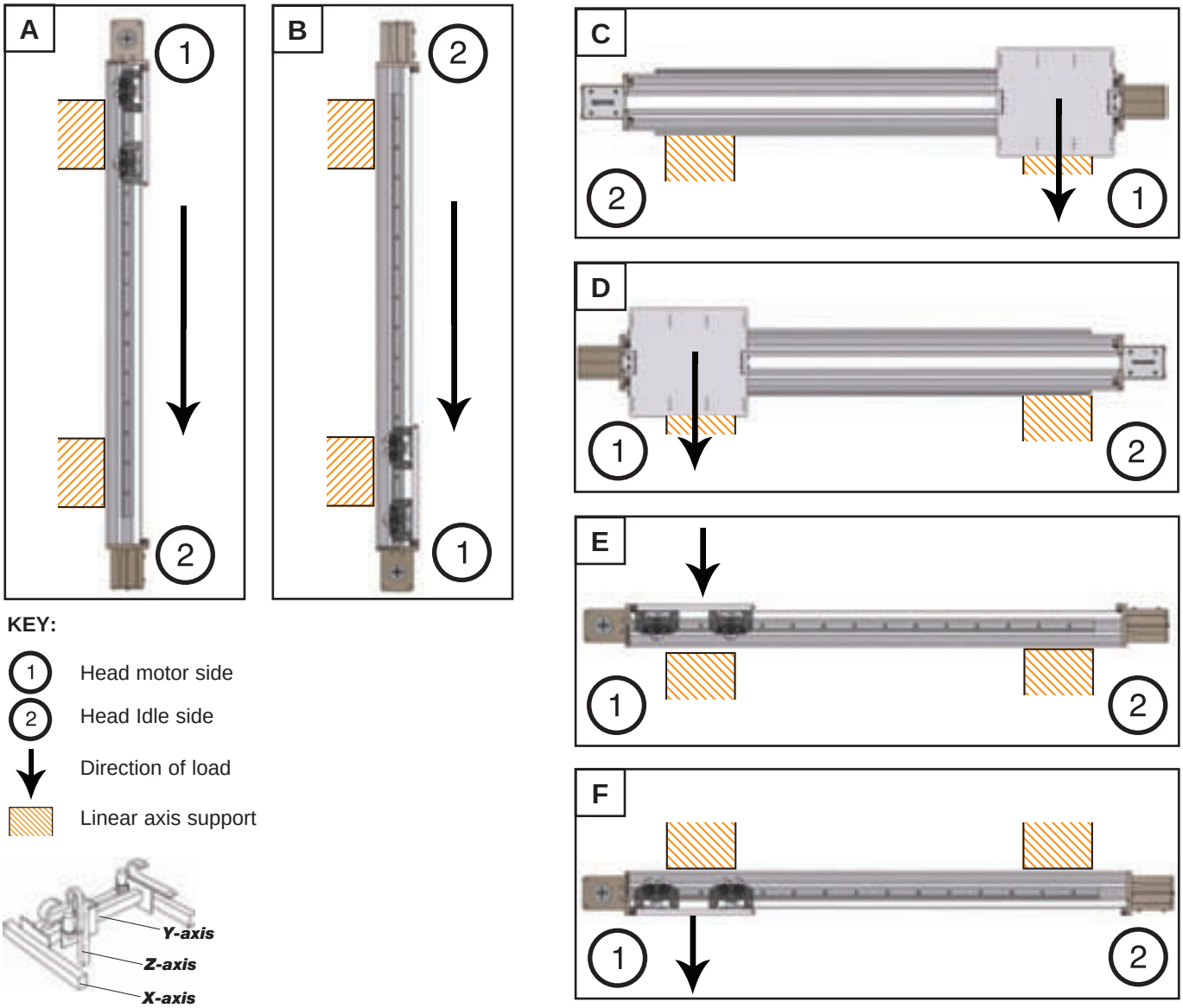
5 Pick and place system for packaging plant

6 Pick and place system for breadboards

7 Pick and place system for production plant

Assembly positions and load direction

For rollers profiles.



KEY:

1 Head motor side

2 Head Idle side

Direction of load

Linear axis support

Simplified code setting of the module

EXAMPLE		T	C	S	M	280	mm/mm/	...
SERIES	K= light M= compact closed section T= heavy Z= vertical omega belt							
HANDLING	C= belt CE= large belt V= ball screw T= trapezoidal screw N= idle L= linear motor							
SLIDE	RR / RQ /RP = guide rails for roller sl. Ø30 / Ø40 / Ø52 o Ø62 S= guide rails for caged balls roller slides H= guide rails for caged ball roller slides G= guide rails for cylindrical shaped rollers Y= guide rails for polyamide shaped rollers							
MACHINING PROFILE	M= profile with machined guide plane and rack plane							
PROFILE SIZE								
STROKE / Length	"mm" = X-axis / Y-axis / Z-axis							
ACCESSORY CODES	Various accessory codes							

Order Code

Required | **Complete for special versions** | Accessories

Order code																												
Example	Y	C	T	C	S	M	280	100	ATL	-	6000	8600	D	2	-	1200	FD 32	FX	K75	-	-	R	-	-	-	-	-	-	12, 40

Axis direction **Y**
X **Y** **Z**

See page 10 for assembly positions. Example C **C**

Unit type **T**
K **M** **T** **Z**

Drive **C**
Belt **C**
Extra large belt **CE**
Ball screw **V**
Trapezoidal screw **T**
Not included **N**

Guide rails and roller slides **S**
Guide rails 28x11 **RR**
Guide rails 35x16 **RQ**
Guide rails 55x25 **RP**
Guide rails with caged ball runner blocks **S**
Guide rails and compact caged ball roller slides **L**
Guide rails and ball roller slides without cage **H**
Round bar guide rails **G**
Sys guide rails **Y**

Profile machining **M**
Profile machined **M**
Profile not machined **-**

Profile size **280**
50 **60** **65** **90** **100H/50** **100** **180** **170** **200** **220** **280** **360**

Belt width or screw diameter **-**
Belt **10 ÷ 150** Ø Screw **16** **20** **25** **32** **40**

Types of belt
Light belt **T**
Light belt normal series **AT**
Light belt: reinforced wobbler **ATL**

Type of screw: pitch / accuracy **-**
Pitch **5 ÷ 10** **20 ÷ 25** **50**
Accuracy class **T7** **T5**

Roller characteristic measurement **-**
Ø 63 **Ø 75** **Ø 30** **Ø 40** **Ø 52** **Ø 62**

Caged ball roller slides size **15 ÷ 35**

Stroke **6000**

Total length **8600**

Standard carriage **-**
Drawing **D**
Short **C**
Long **L**
No plate (coupled unit) **X**
Not included **N**

Number of carriages **-**

Special carriage dimensions **-**

Carriage centre distance [mm] **-**

1° Flange gearbox entry side **FD32**
Right Ø **FDØ**
Left Ø **FSØ**
Drilled **FE**
Blind **FX**
Flange gearbox entry side **FSC - FDCØ**

FX 2° Opposite flange
FSØ Left Ø
FDØ Right Ø
FE Drilled
FX Blind

K50 - K75 - K100 - K150 - K200 Energy chain width **-**

M Micro-switch present **-**

P Cam-holder + cams **-**

R Gearbox assembly **-**

C Cylinder assembly **-**
C Ø32 ÷ Ø100

A/B Anti-drop brake device **-**
A Ø63 ÷ Ø125
B Ø63 ÷ Ø125

S Security lock-pin **-**
S Ø20
S Ø32

Connecting shaft **-**
A1/Centre distance length
A2/Centre distance length
A3/Centre distance length

Shaft torsional moment [Nm] **-**
20
35
70
100
190
300
420

SF Bellows
LI Stainless steel band for MC series **-** Protection

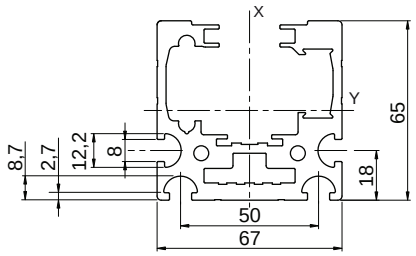
Additional accessories **-**

Additional accessories

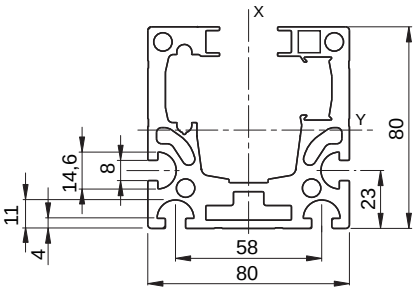
Available upon request

- Supply and assembly of cams and cam-holders for micro-switches, energy chains, etc.
- Assembly of optional accessories SUPPLIED BY THE CUSTOMER.
- Machining to specifications (drilling, milling) on the free surfaces of the plates or profile
- Customised applications (optional: structural inspections for special loads, Cartesian robots with three or more axes, linear units with several plates, etc.)
- Our technical dept. is at your complete disposal to examine the most suitable applications for your requirements.

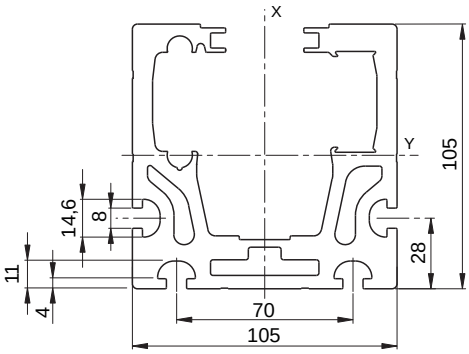
Profile specifications



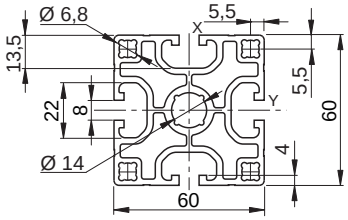
Profile	M 65x67	
Weight per metre	4.5	[kg/m]
Max. length	9	[m]
Moment of inertia Iy	683,900	[mm4]
Moment of inertia Ix	796,750	[mm4]
Module	MCR/L/H 65	



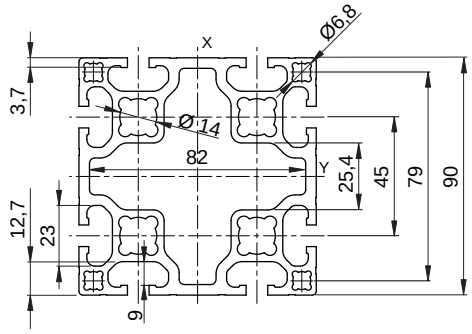
Profile	M 80x80	
Weight per metre	6.3	[kg/m]
Max. length	6	[m]
Moment of inertia Iy	1,430,000	[mm4]
Moment of inertia Ix	1,780,000	[mm4]
Module	MCR/S/H 80 - MVR/S/T 80	



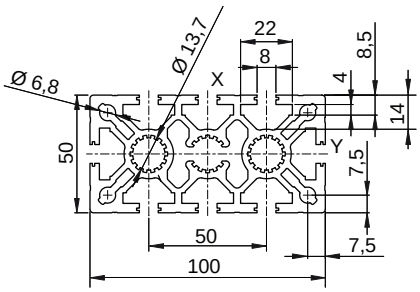
Profile	M 105x105	
Weight per metre	11	[kg/m]
Max. length	10.45	[m]
Moment of inertia Iy	4,466,000	[mm4]
Moment of inertia Ix	5,660,000	[mm4]
Module	MCR/S/H - MVR/S/T 105	

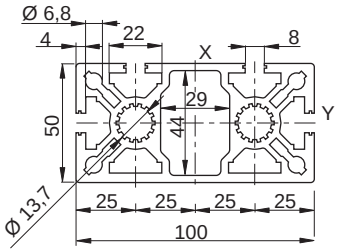


Profile (60x60)	F01-1	
Weight per metre	3.6	[kg/m]
Max. length	6	[m]
Moment of inertia Iy	466,600	[mm4]
Moment of inertia Ix	466,600	[mm4]
Module	ZCG/L 60	

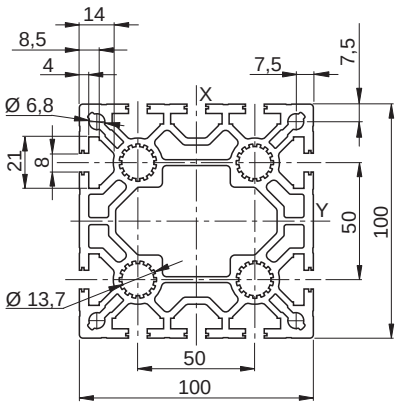


Profile (90x90)	E01-4	
Weight per metre	6	[kg/m]
Max. length	6	[m]
Moment of inertia Iy	2,027,000	[mm4]
Moment of inertia Ix	2,027,000	[mm4]
Module	ZCG - ZCL - ZCRR 90	

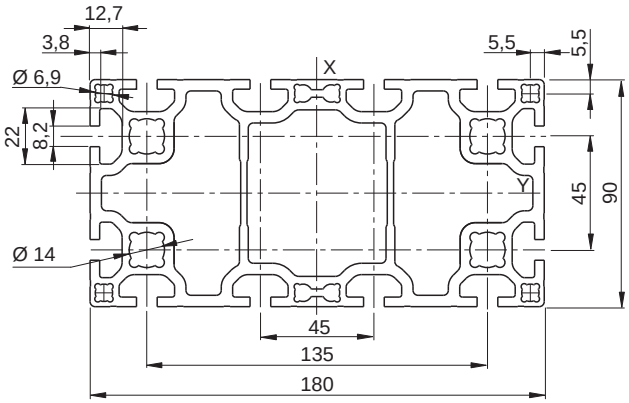




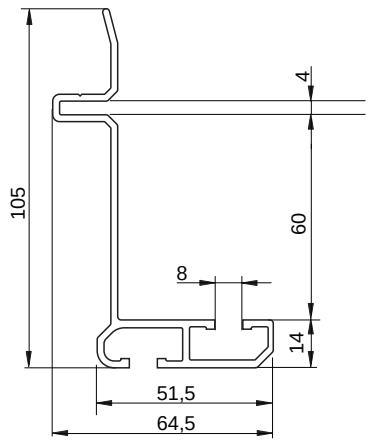
Profile (50x100)	MA 1-2	MA 1-4	
Weight per metre	5.3	5.2	[kg/m]
Max. length	6	6	[m]
Moment of inertia Iy	502,800	543,100	[mm^4]
Moment of inertia Ix	1,986,600	2,036,700	[mm^4]
Module	ZCR/L 100H	TCG/TCS/H 100	



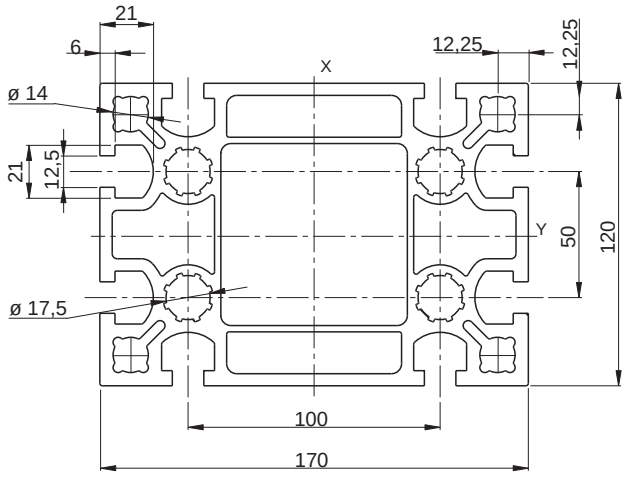
Profile (100x100)	MA 1-5	
Weight per metre	9.5	[kg/m]
Max. length	6	[m]
Moment of inertia Iy	3,650,000	[mm^4]
Moment of inertia Ix	3,800,000	[mm^4]
Module	ZCR/L 100	



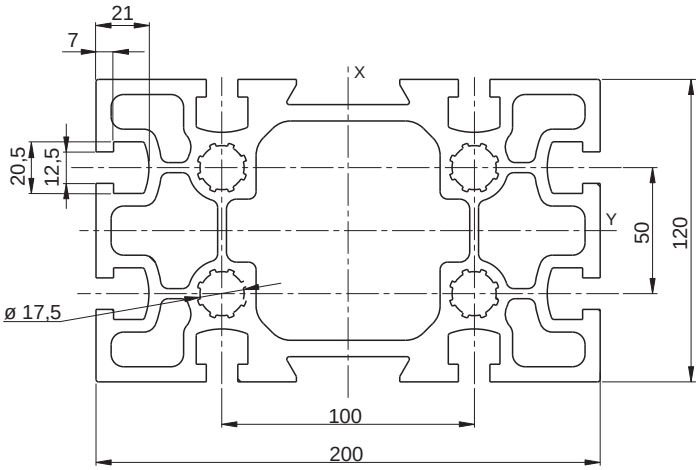
Profile (90x180)	E01-5	
Weight per metre	12.4	[kg/m]
Max. length	8	[m]
Moment of inertia Iy	4,420,000	[mm^4]
Moment of inertia Ix	15,180,000	[mm^4]
Module	TCR/G/S/H/ 180	



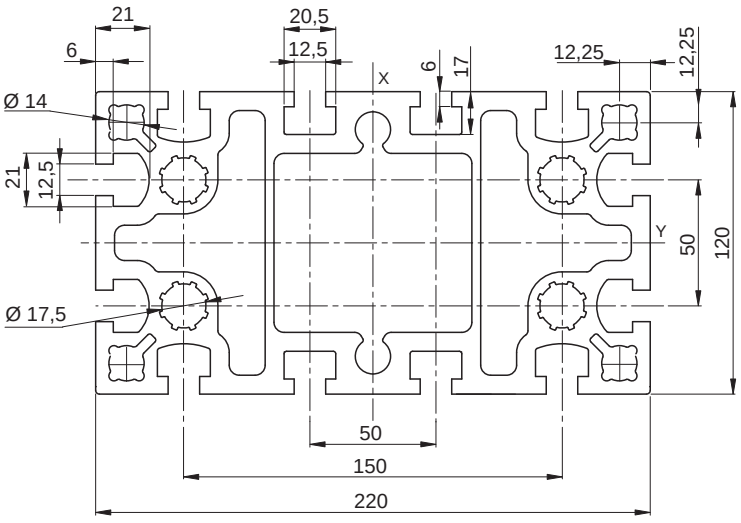
7400568 energy chain support profile		
Weight	1.5	kg/m
Available length	6	m



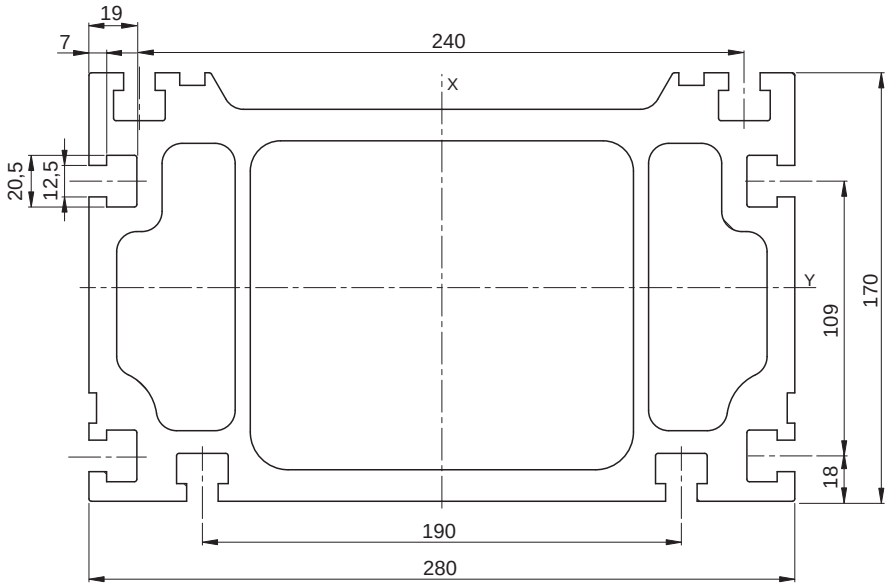
Statyca (120x170)	Code 202.1753	
Weight per metre	17	[kg/m]
Max. length	12	[m]
Moment of inertia Iy	10,200,000	[mm^4]
Moment of inertia Ix	20,360,000	[mm^4]
Module	TCR/S/H 170 - ZCR/L 170	



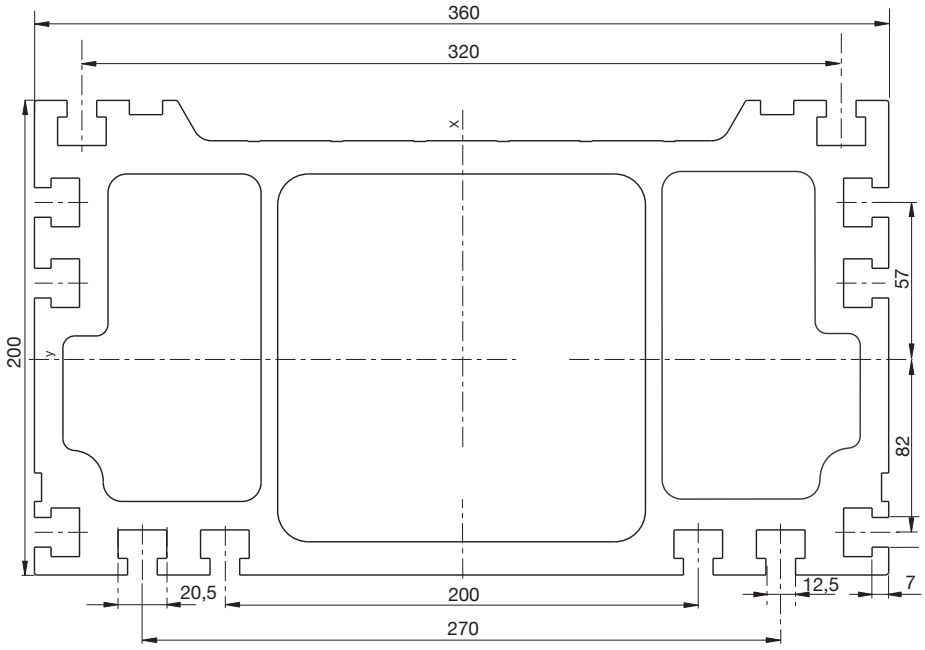
Valyda (120x200)	Code 202.1146	
Weight per metre	21	[kg/m]
Max. length	12	[m]
Moment of inertia Iy	12,900,000	[mm^4]
Moment of inertia Ix	32,900,000	[mm^4]
Module	TCR/S/H 200	
Anodised up to	9	[m]



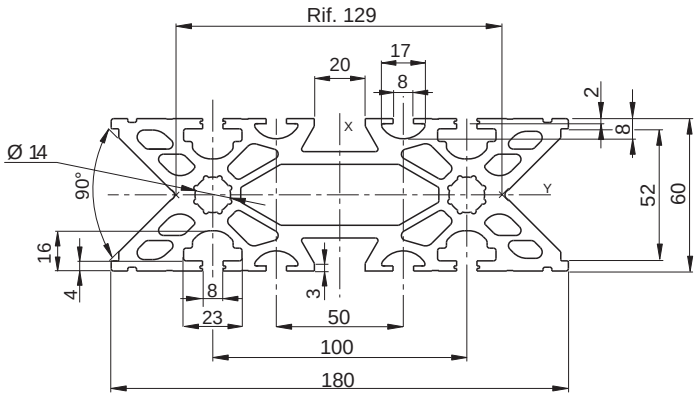
Logyca (120x220)	Code 202.2184	
Weight per metre	25	[kg/m]
Max. length	12	[m]
Moment of inertia Iy	15,650,000	[mm^4]
Moment of inertia Ix	46,550,000	[mm^4]
Module	TCR/S/H 220-ZCR/L/ 220	
Anodised up to	lungh. 9	[m]



Pratyca (170x280)	Code 202.1147	
Weight per metre	40	[kg/m]
Max. length	12	[m]
Moment of inertia Iy	50,288,000	[mm⁴]
Moment of inertia Ix	134,103,000	[mm⁴]
Module	TCR/RP/S/H 280	
Usually not anodised		



Solyda (200x360)	Code 202.0342	
Weight per metre	60	[kg/m]
Max. length	12	[m]
Moment of inertia Iy	318,687,000	[mm⁴]
Moment of inertia Ix	105,533,000	[mm⁴]
Module	TCRP/S/H 360	
Usually not anodised		



SYS 1-G	Code 302.0001	
Weight per metre	12	[kg/m]
Max. length	7.5	[m]
Moment of inertia Iy	1,600,000	[mm⁴]
Moment of inertia Ix	12,350,000	[mm⁴]
Module	ZCY180	
*Holes for M16 thread and for PVS connecting elements		

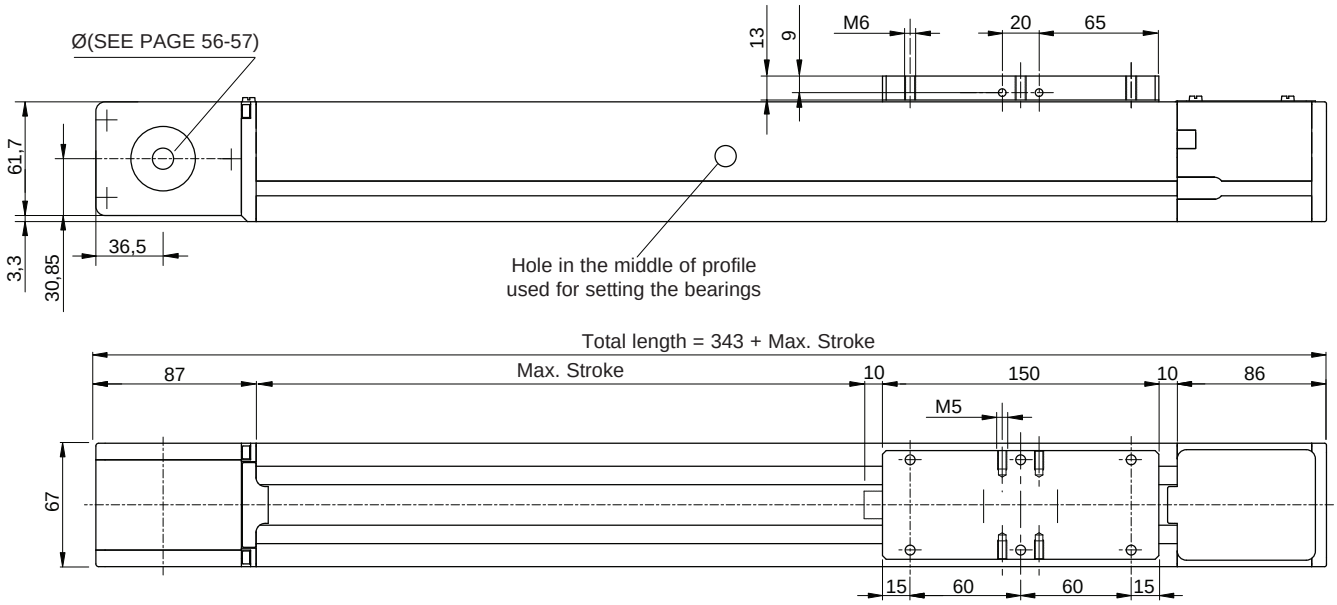
MCR 65

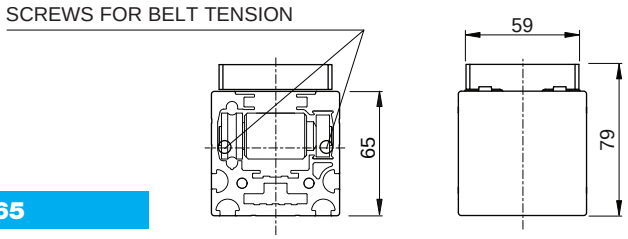
HARDENED GUIDE RAILS AND PROFILED ROLLERS

Registered model

Option: lighter version with pulley seats integrated within the profile

Accessories: see page 11



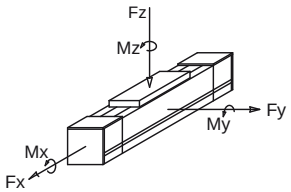


Performances	MCR 65	
Max. stroke	5,830	[mm]
Max. speed	4	[m/s]
Max. acceleration	20	[m/s^2]
Repeatability	± 0,1	[mm]
No load torque	-	[mm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
MCR 65	45	94	34	1,180	670	1,000

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

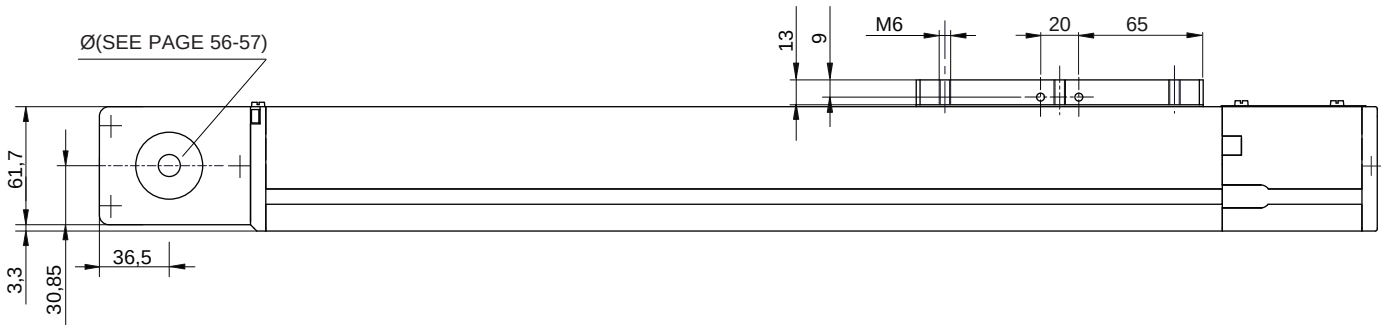
Data		
Belt	32AT05	
Slide	Rollers: 4 Ø 24 - 4 Ø 22 [mm]	
Load bearing profile	65x67	(see page 12)
Pulley Ø	50.93	[mm]
Lead	160	[mm/rev]

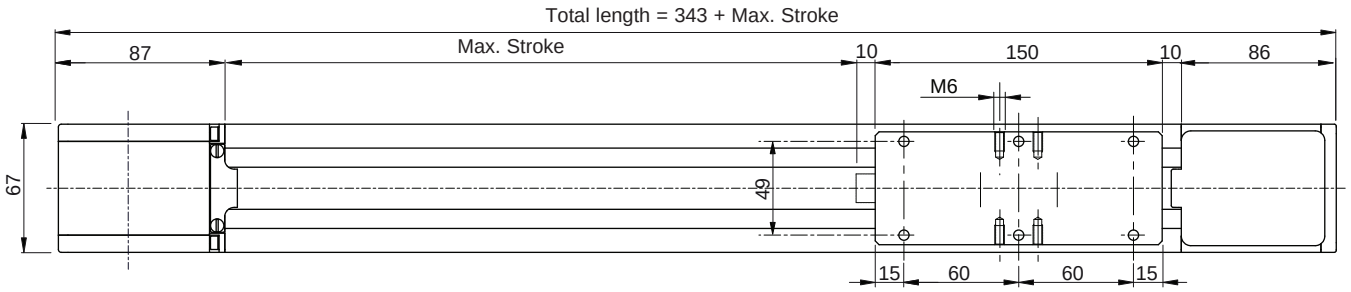
Weights		
Inertia of the pulley	-	[kgm^2]
Belt weight	0.22	[kg/m]
Carriage weight	1	[kg]
Base module (stroke=0)	M_{base}=4.4	[kg]
1,000 mm profile	q=5.4	[kg]

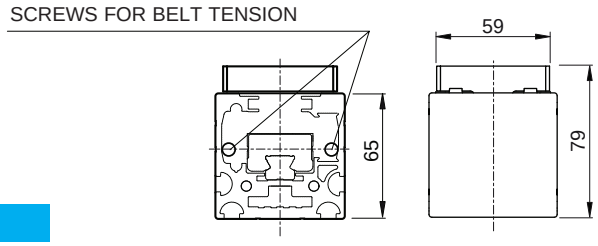
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

Option: lighter version with pulley seats integrated within the profile
Accessories: see page 11





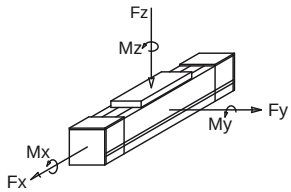


Performances	MCS 65	MCH 65	
Max. stroke	7,830	7,830	[mm]
Max. speed	5	3	[m/s]
Max. acceleration	50	30	[m/s^2]
Repeatability	± 0.1	± 0.1	[mm]
No load torque	-	-	[mm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]	F_{zB}[N]
MCH 65	19	120	120	1,180	1,960	1,960	1,960
MCS 65	16	140	103	1,180	2,094	3,740	2,320

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

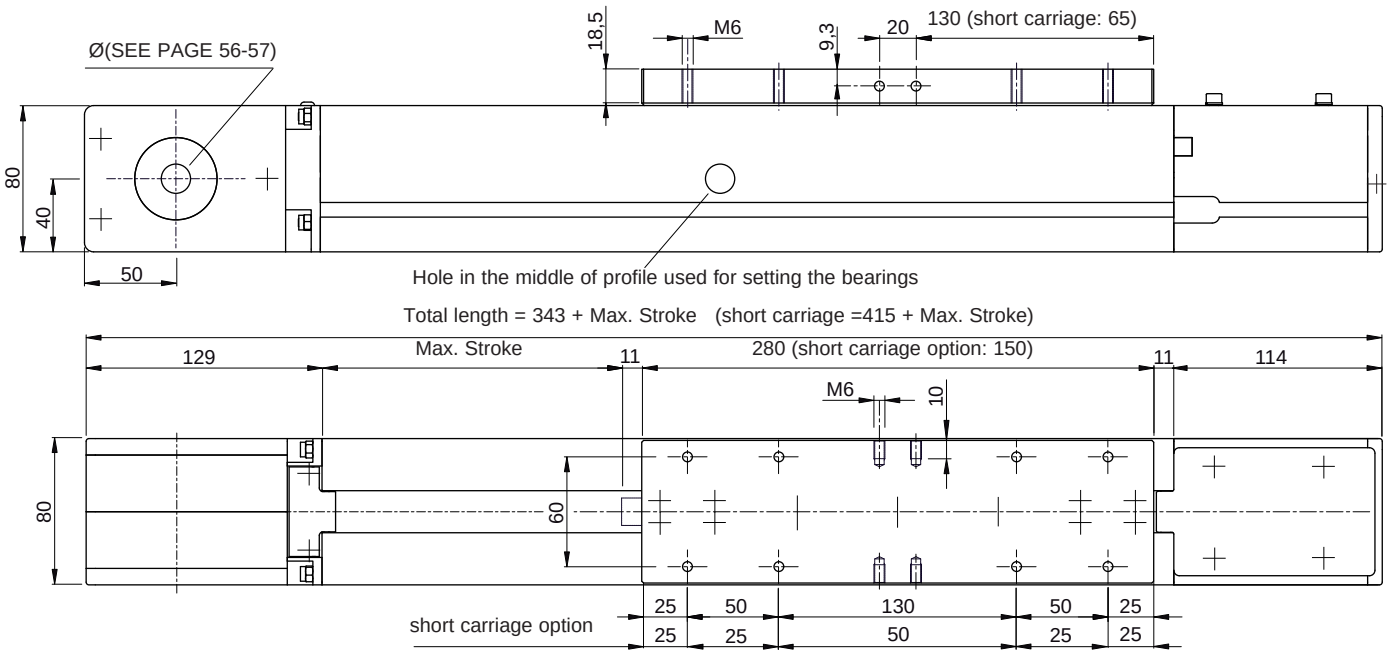
Data		
Belt	32AT05	
Slide	2 caged balls roller slides	15[mm]
Load bearing profile	65x67	(see page 12)
Pulley Ø	50.93	[mm]
Lead	160	[mm/rev]

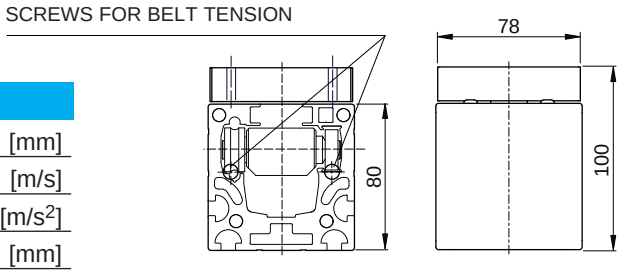
Weights		
Inertia of the pulley	-	[kgm^2]
Belt weight	0.22	[kg/m]
Carriage weight	1,1	[kg]
Base module (stroke=0)	M_{base}=4.2	[kg]
1,000 mm profile	q=6.2	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

Option: version with additional belt protection (see page 66)
Option: short carriage version - code C
Accessories: see page 11





Performances	MCR 80	
Max. stroke	5,700	[mm]
Max. speed	5	[m/s]
Max. acceleration	20	[m/s^2]
Repeatability	± 0.1	[mm]
No load torque	0.7	[Nm]

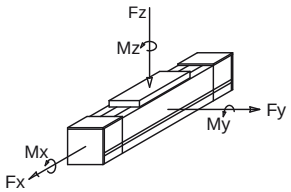
Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
MCR 80	51	200	80	2,150	850	1,400

Suggested working load conditions short carriage option

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
MCR 80...C	51	100	40	2,150	850	1,400

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

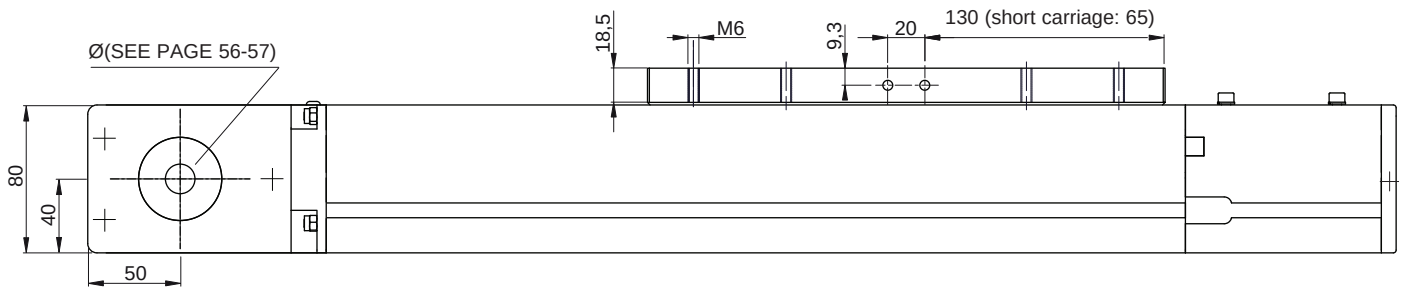
Data		
Belt	32AT10	
Slide	Rollers: 4 Ø 24 - 4 Ø 22 [mm]	
Load bearing profile	80x80	(see page 12)
Pulley Ø	70.03	[mm]
Lead	220	[mm/rev]

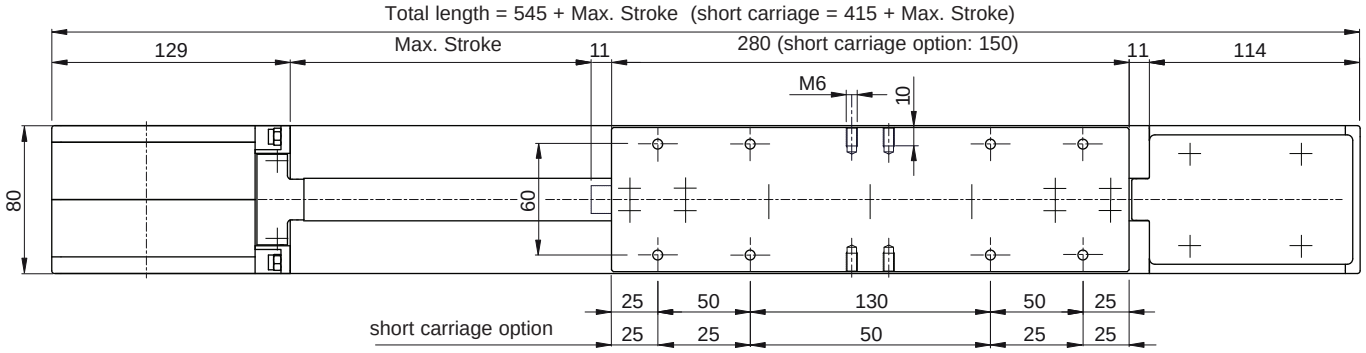
Weights		
Inertia of the pulley	0.0010	[kgm^2]
Belt weight	0.38	[kg/m]
Carriage weight	2	[kg]
Base module (stroke=0)	M_{base}=8	[kg]
1,000 mm profile	q=7	[kg]

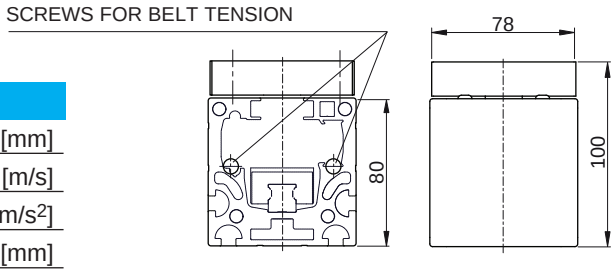
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

Option: version with additional belt protection (see page 66)
Option: short carriage version - code C
Accessories: see page 11







Performances	MCS 80	MCH 80	
Max. stroke	5,700	5,700	[mm]
Max. speed	5	5	[m/s]
Max. acceleration	40	40	[m/s^2]
Repeatability	± 0,1	± 0,1	[mm]
No load torque	0.9	0.9	[Nm]

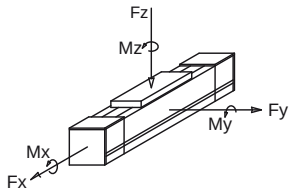
Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
MCS 80	52	400	400	2,150	4,200	4,200
MCH 80	30	290	290	2,150	2,900	2,900

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
MCS 80...C	16.5	15	15	2,150	2,100	2,100
MCH 80...C	14	15	12	2,150	1,450	1,450

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

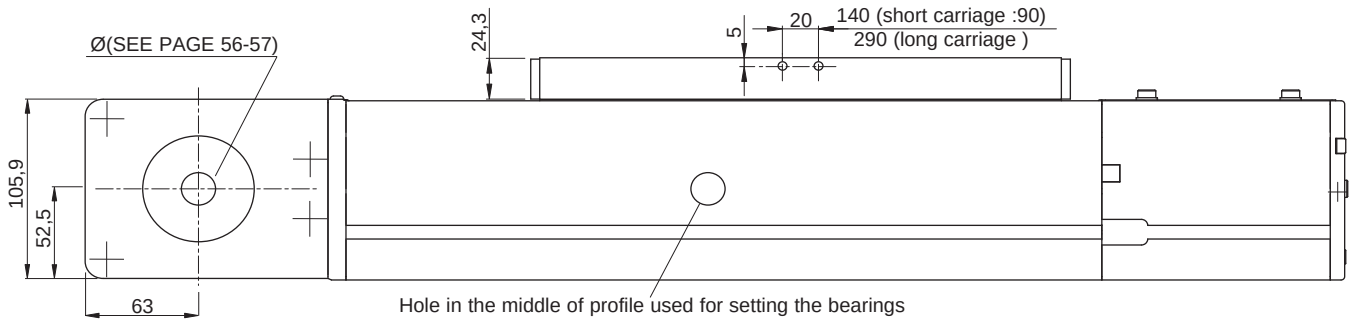
Data	MCS80 - MCH80	
Belt	32AT10	
Slide	2 caged ball roller slides size 15*	
Load bearing profile	80x80	(see page 12)
Pulley Ø	70.03	[mm]
Lead	220	[mm/rev]
* Short carriage option	1 pad	

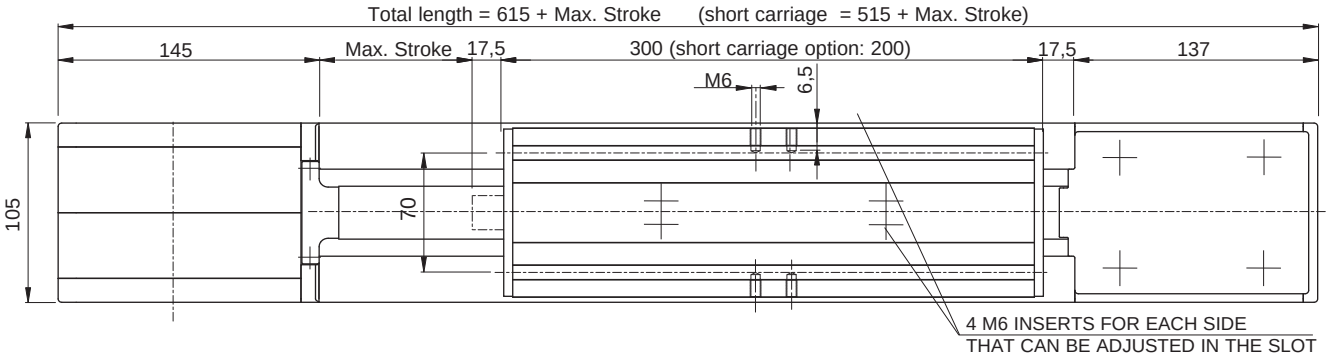
Weights	MCS80 - MCH80	
Inertia of the pulley	0.0010	[kgm^2]
Belt weight	0.38	[kg/m]
Carriage weight	2.6	[kg]
Base module (stroke=0)	M_{base}=9	[kg]
1,000 mm profile	q=8.2	[kg]

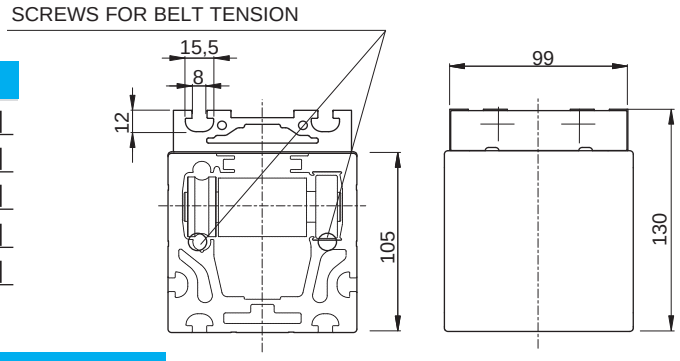
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

Option: version with additional belt protection (see page 66)
*Option: short carriage version - (code C) or long carriage (code L)
Accessories: see page 11







Performances	MCR 105	
Max. stroke	10,100	[mm]
Max. speed	5	[m/s]
Max. acceleration	20	[m/s^2]
Repeatability	± 0.1	[mm]
No load torque	1.2	[Nm]

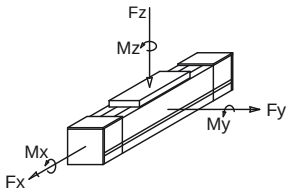
Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
MCR 105	185	580	220	3,300	1,500	2,950

Suggested working load conditions short carriage option

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
MCR 105...C	185	330	130	3,300	1,450	2,950

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

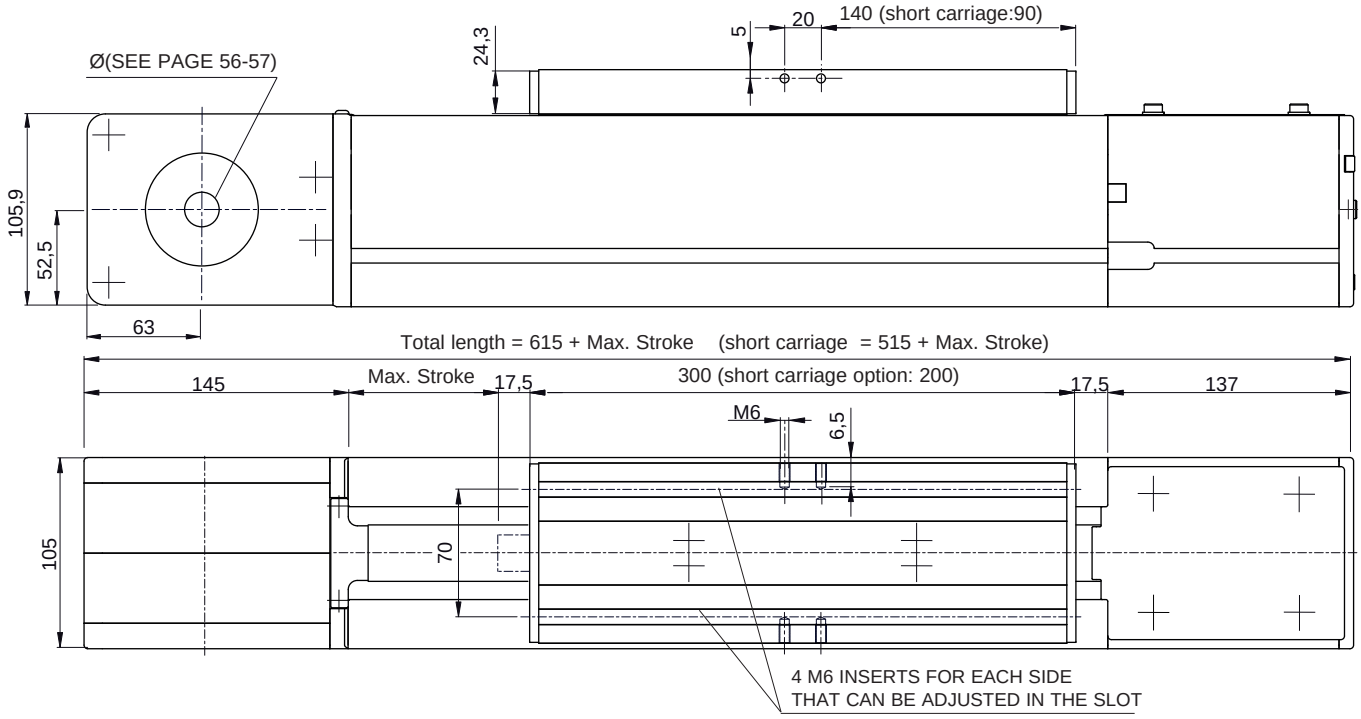
Data		
Belt	40AT10	
Slide	Rollers: 4 Ø 37 - 4 Ø 35 [mm]	
Load bearing profile	105x105	(see page 12)
Pulley Ø	92.31	[mm]
Lead	290	[mm/rev]

Weights		
Inertia of the pulley	0.0037	[kgm^2]
Belt weight	0.47	[kg/m]
Carriage weight	3.5	[kg]
Base module (stroke=0)	M_{base}=16.5	[kg]
1,000 mm profile	q=13	[kg]

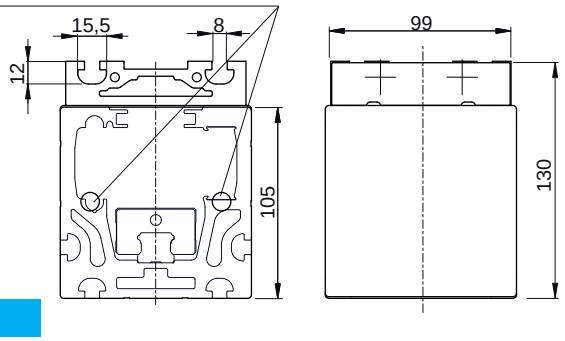
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

Option: version with additional belt protection (see page 66)
*Option: short carriage version - (code C)
Accessories: see page 11



SCREWS FOR BELT TENSION



Performances	MCS 105	MCH 105	
Max. stroke	10,100	10,100	[mm]
Max. speed	5	5	[m/s]
Max. acceleration	50	50	[m/s^2]
Repeatability	± 0.1	± 0.1	[mm]
No load torque	1.5	1.5	[Nm]

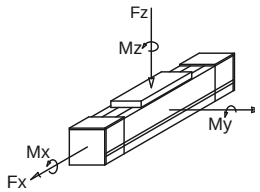
Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
MCS 105	156	800	800	3,300	9,550	9,550
MCH 105	116	600	600	3,300	6,030	6,030

Suggested working load conditions short carriage option

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
MCS 105...C	51	52	52	3,300	4,777	4,777
MCH 105...C	36	30	30	3,300	3,018	3,018

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

Constuctive data

Belt	40AT10	
Slide	2 caged ball roller slides size 20*	
Load bearing profile	105x105	(see page 12)
Pulley Ø	92.31	[mm]
Lead	290	[mm/rev]
* Short carriage option	1 pad	

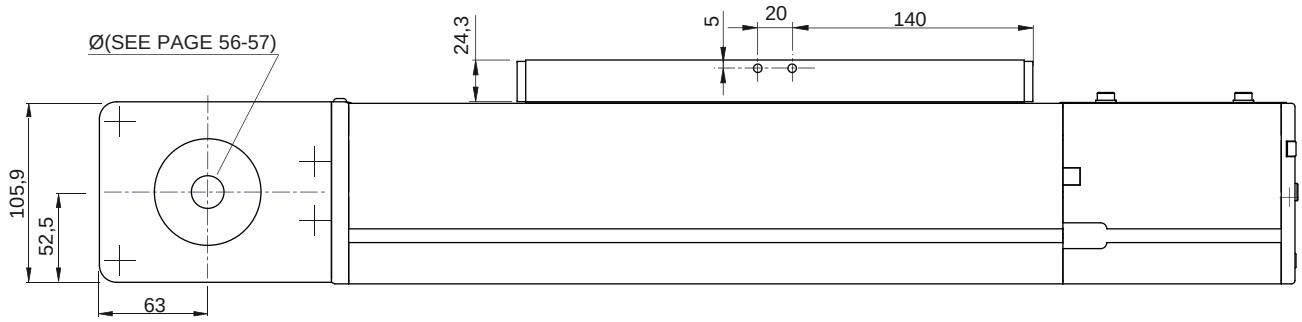
Weights

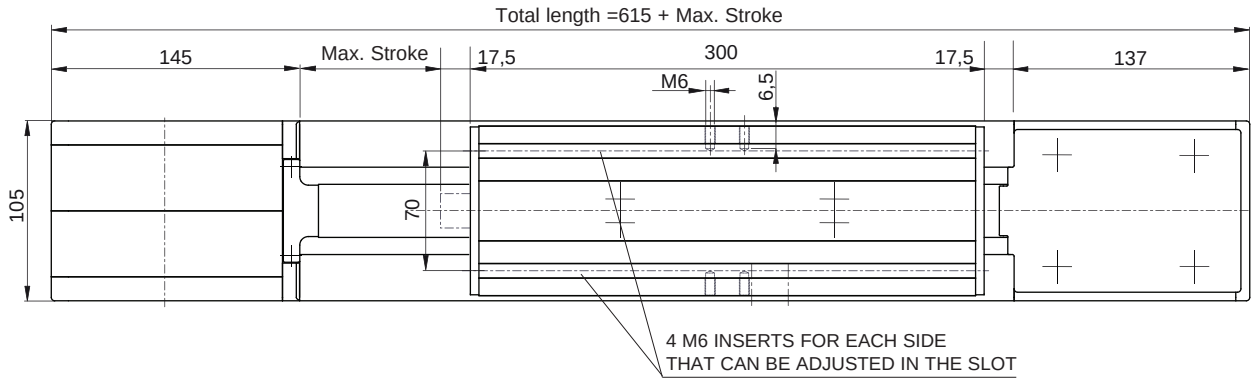
Inertia of the pulley	0.0037	[kgm^2]
Belt weight	0.47	[kg/m]
Carriage weight	4.5	[kg]
Base module (stroke=0)	M_{base}=18	[kg]
1,000 mm profile	q=14.3	[kg]

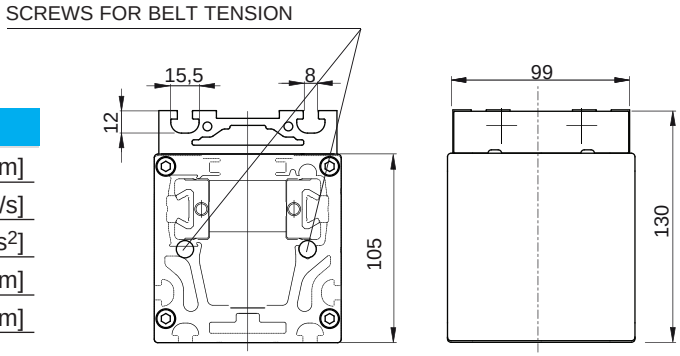
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

Accessories: see page 11



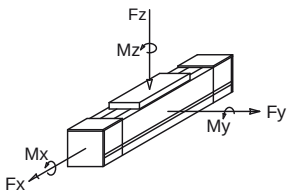




Performances	MCHH 105	
Max. stroke	7,400	[mm]
Max. speed	5	[m/s]
Max. acceleration	50	[m/s^2]
Repeatability	± 0.1	[mm]
No load torque	2.2	[Nm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
MCHH 105	210	1.033	700	3,300	7,200	6,210



The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

Fx= Max belt strength

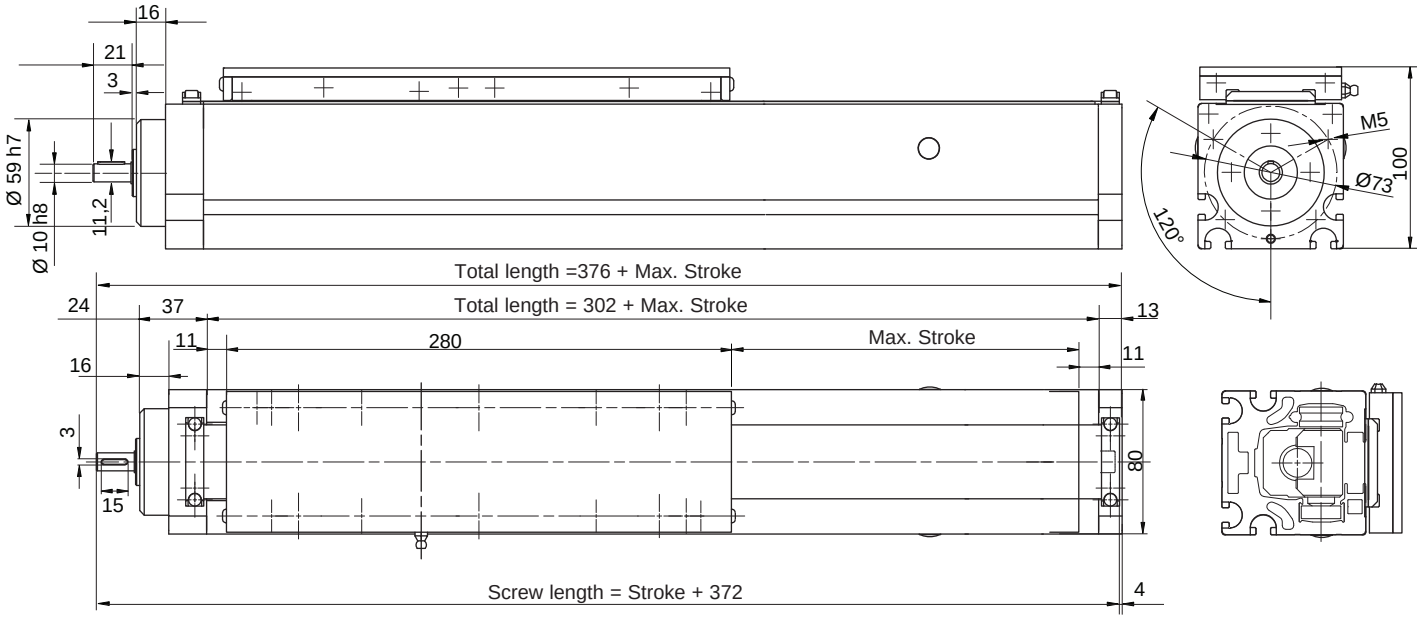
Data		
Belt	40ATL10	
Slide	4 caged ball roller slides size 15	
Load bearing profile	105x105	(see page 12)
Pulley Ø	92.31	[mm]
Lead	290	[mm/rev]

Weights		
Inertia of the pulley	0.0037	[kgm^2]
Belt weight	0.47	[kg/m]
Carriage weight	4.5	[kg]
Base module (stroke=0)	M_{base}=18	[kg]
1,000 mm di profile	q=14	[kg]

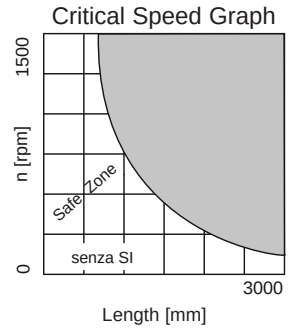
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

MVR 80 - MTR 80

HARDENED GUIDES
WITH CYLINDRICAL ROLLERS - TRAPEZOIDAL BALL SCREW

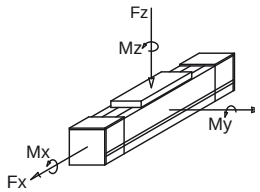


Code	M	T	R					
V = Ball screw T = Trapezoidal screw								
R = Rollers								
Max. Stroke [mm]								
Module total length [mm]								
Type of carriage							N/D	
Screw pitch							5-10	
Pedestal bearings								SI



Max. stroke-speed limit over which some support bearings are required (SI) to avoid an excessive screw vibration. The working point marked inside the broken line is not recommended.

Performances	MVR 80		MTR 80	
Max. stroke	2,500		3,000	[mm]
Max. speed	Pitch 5	0.15	Pitch 4	0.10 [m/s]
	Pitch 10	0.30	Pitch 8	0.20 [m/s]
	Pitch 16	0.50		[m/s]
Max. acceleration	5		2	[m/s^2]
Repeatability	± 0,05		± 0,20	[mm]



Fx= Max belt strength

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
MVR 80	51	200	80	*1,600	850	1,400
MTR 80	51	200	80	*2,000	850	1,400

The values shown refer to maximum performance with each force acting individually. The dynamic data shown do not refer to the max. theoretical load capacity. They include a safety coefficient for automated machinery.

(*) With a pitch of 5 mm

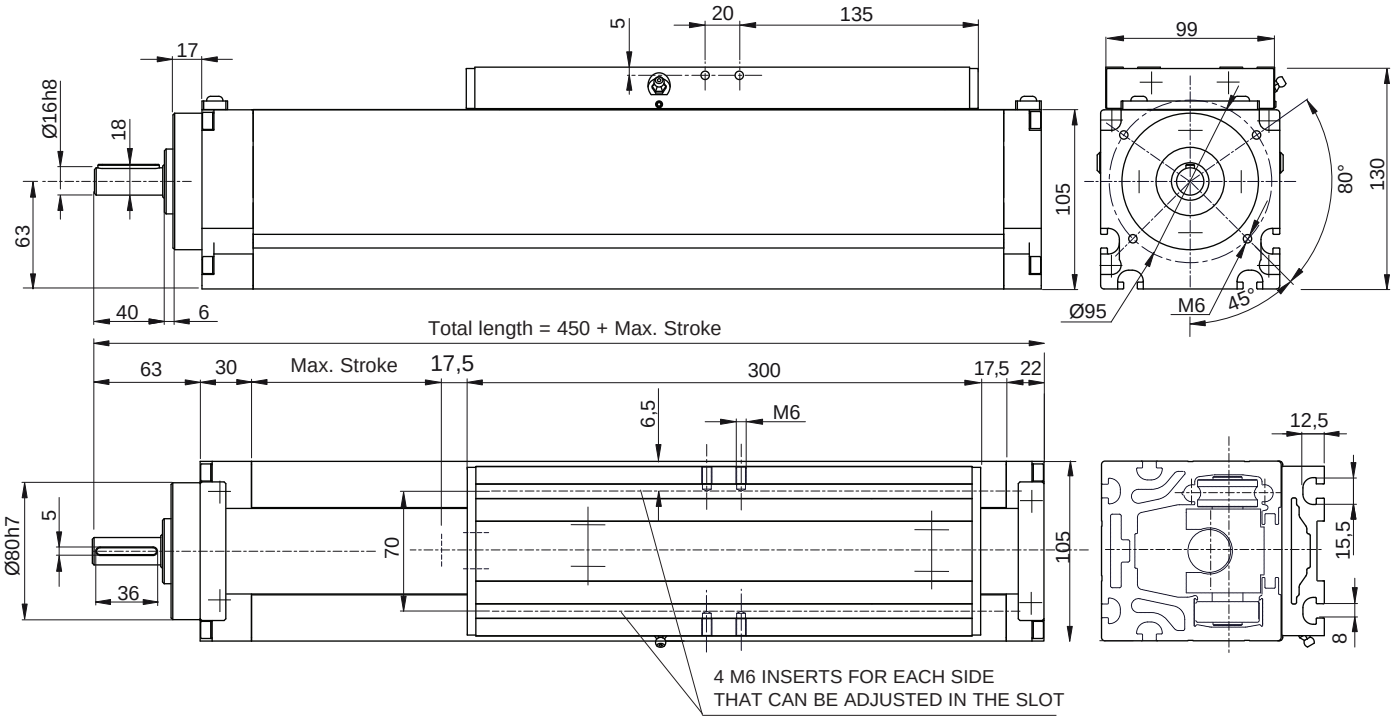
Data		
Slide	Rollers: 4 Ø24 - 4 Ø22	[mm]
Beam	80x80 (see page 12)	
Ø screw	16	[mm]
Length of the screw	367+$_{max}$stroke	[mm]

Weights		
Inertia of the worm	0.0003 • L. screw(m)	[kgm^2]
Carriage weight	2.5 c.a.	[kg]
Base module (stroke=0)	M_{base}= 5.5 approx.	[kg]
1,000 mm profile	q=8 approx.	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

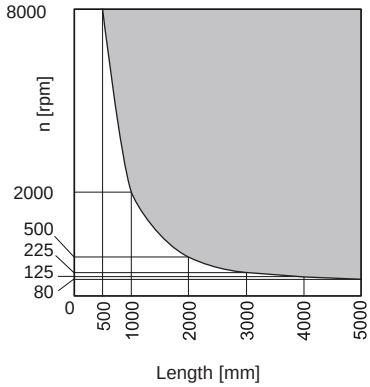
MVR 105 e MTR 105

Registered model



Code	M	T	R					
V = Ball screw T = Trapezoidal screw								
R = Rollers								
Max. stroke				[mm]				
Module total length					[mm]			
Type of carriage						N/D		
Screw pitch							5-10-25-50	
Pedestal bearings								SI

Critical Speed Graph



Max. stroke-speed limit over which some support bearings are required (SI) to avoid an excessive screw vibration. The working point marked inside the broken line is not recommended.

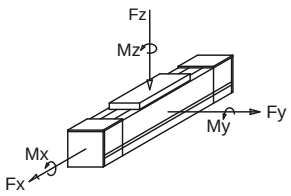
Performances			MVR 105	MTR 105	
Max. stroke	Pitch 5 -10 = 4550		Pitch 25 = 5,150		[mm]
Max. speed	Pitch 5	[mm]	0.15	0.075	[m/s]
	Pitch 10	[mm]	0.30	0.15	[m/s]
	Pitch 25	[mm]	0.75	0.37	[m/s]
Max. acceleration			5	2	[m/s^2]
Repeatability			± 0.05	± 0.2	[mm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
MVR 105	185	580	220	*2,000	1,500	2,950
MTR 105	185	580	220	*3,000	1,500	2,950

The values shown refer to maximum performance with each force acting individually. The dynamic data shown do not refer to the max. theoretical load capacity. They include a safety coefficient for automated machinery.

(*) With a pitch of 5 mm

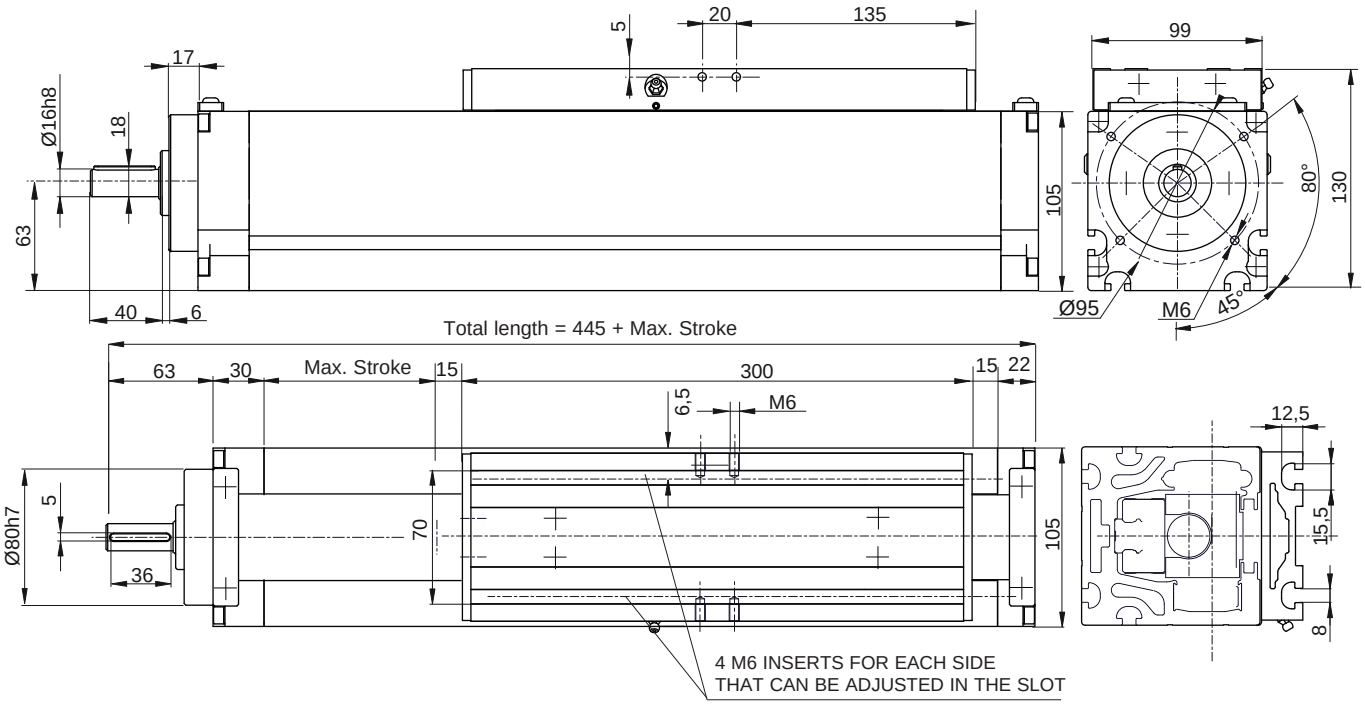


Fx= Max belt strength

Data		
Slide	Rollers: 4 Ø 37 - 4 Ø 35	[mm]
Beam	105x105	(see page 12)
Ø screw	25	[mm]
Length of the screw	440+$_{max}$stroke	[mm]

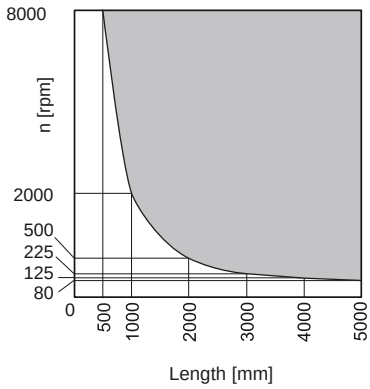
Weights		
Inertia of the worm	0.0003 • L. screw(m)	[kgm^2]
Carriage weight	4 approx.	[kg]
Base module (stroke=0)	M_{base}=11	[kg]
1,000 mm profile	q=17.2 approx.	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q•stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]



Code	M	V	L					
V = Ball screw								
S = Caged ball roller slides H = Ball roller slides								
Max. stroke [mm]								
Module total length [mm]								
Type of carriage						N/D		
Screw pitch							5-10-25-50	
Pedestal bearings								SI

Critical Speed Graph



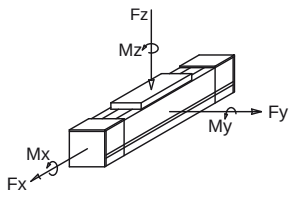
Max. stroke-speed limit over which some support bearings are required (SI) to avoid an excessive screw vibration. The working point marked inside the broken line is not recommended.

Performances		MVS 105	MVH 105	
Max. stroke	Pitch 5 -10 = 4,550	Pitch 25 = 5,150		[mm]
Max. speed	Pitch 5 [mm]	0.15	0.15	[m/s]
	Pitch 10 [mm]	0.30	0.30	[m/s]
	Pitch 25 [mm]	0.75	0.75	[m/s]
Max. acceleration		5	5	[m/s^2]
Repeatability		± 0.05	± 0.05	[mm]

Suggested working load conditions						
Module	**M_x[Nm]**	**M_y[Nm]**	**M_z[Nm]**	**F_x[N]**	**F_y[N]**	**F_z[N]**
MVS 105	156	800	800	3,000(*)	9,550	9,550
MVH 105	116	600	600	3,000(*)	6,030	6,030

The values shown refer to maximum performance with each force acting individually. The dynamic data shown do not refer to the max. theoretical load capacity. They include a safety coefficient for automated machinery.

(*) With a pitch of 5 mm



Fx= Max belt strength

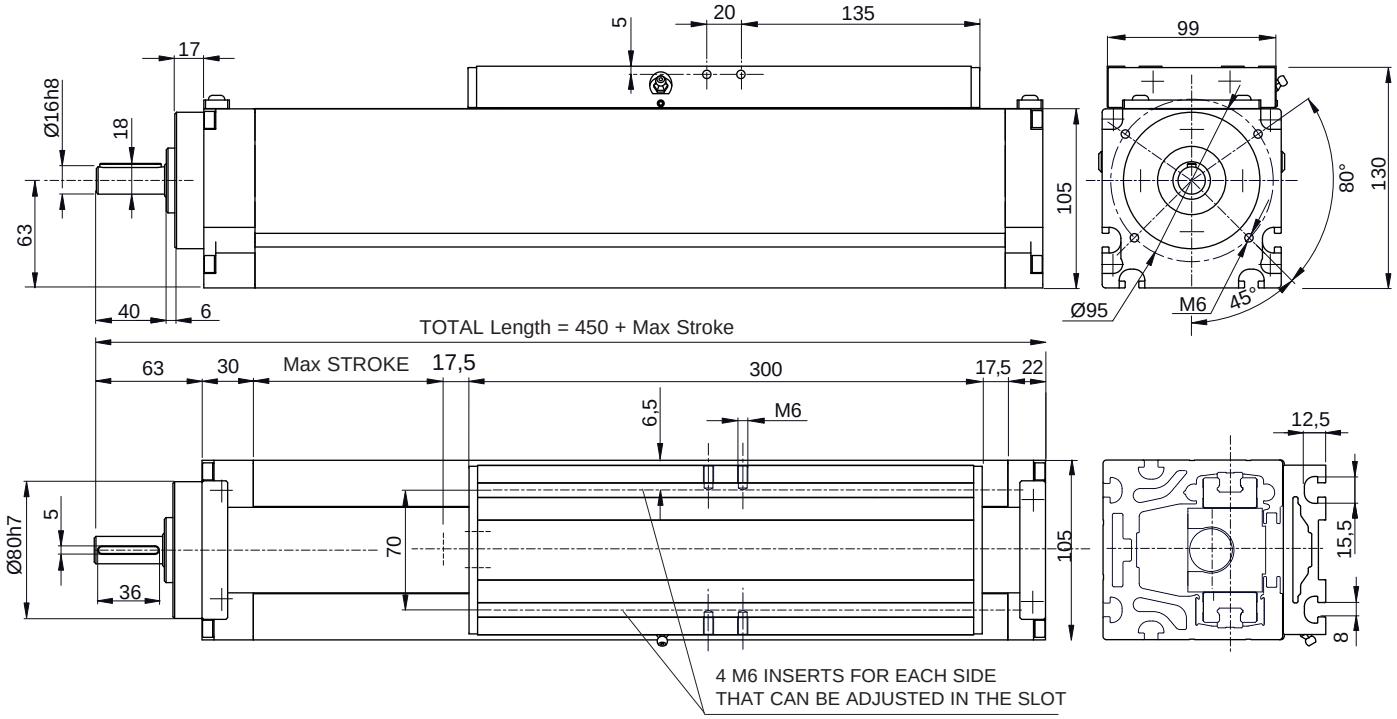
Data		
Slide	2 caged ball roller slides size 20	
Beam	105x105 (see page 12)	
Ø screw	25	[mm]
Length of the screw	440+$_{max}$stroke	[mm]

Weights		
Inertia of the worm	0.0003 • L. screw(m)	[kgm^2]
Carriage weight	4 approx.	[kg]
Base module (stroke=0)	M_{base}=12	[kg]
1,000 mm profile	q=17.2 approx.	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q•stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

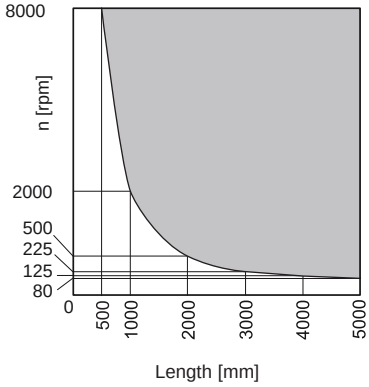
MVHH 105

Registered model



Code	M	V	HH					
V=ball screw								
H=ball roller slides								
Max Stroke				[mm]				
Module total length					[mm]			
Type of carriage						N/D		
Screw pitch							5-10-25	
Pedestal bearings								SI

Critical Speed Graph



Max. stroke-speed limit over which some support bearings are required (SI) to avoid an excessive screw vibration. The working point marked inside the broken line is not recommended.

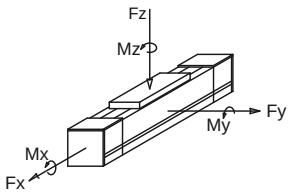
Performances	MVHH 105	
Max Stroke	Pitch 5 -10 = 4550 Pitch 25 = 5150	[mm]
Max Speed	Pitch 5 [mm]	0,15 [m/s]
	Pitch 10 [mm]	0,30 [m/s]
	Pitch 25 [mm]	0,75 [m/s]
Max acceleration	5	[m/s^2]
Repeatability	± 0,05	[mm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
MVHH 105	185	500	500	*3.000	6.000	6.000

The values shown refer to maximum performance with each force acting individually. The dynamic data shown do not refer to the max. theoretical load capacity. They include a safety coefficient for automated machinery.

(*) With a pitch of 5 mm

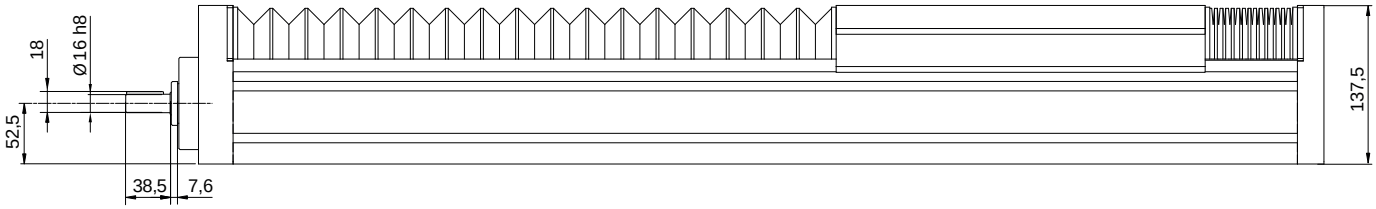


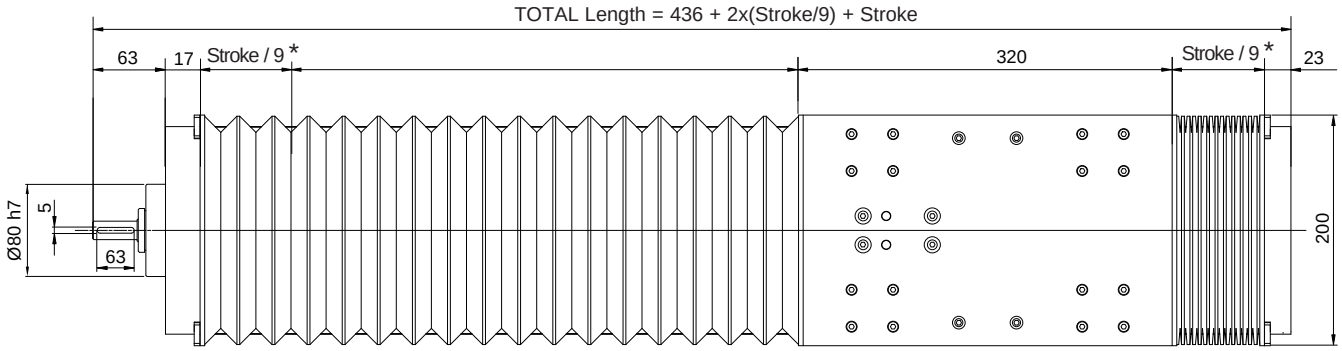
Fx= Max belt strength

Data		
Slide	4 caged ball roller slides size 15	
Beam	105x105 (see page 12)	
Ø screw	25	[mm]
Length of the screw	440+stroke$_{max}$	[mm]

Weights		
Inertia of the worm	0,0003 • L. screw(m)	[kgm^2]
Carriage weight	4 c.a.	[kg]
Base module (stroke=0)	M_{base}=13	[kg]
1,000 mm profile	q=17,5 approx.	[kg]

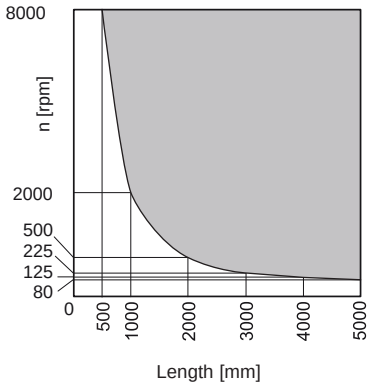
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** Stroke$_{max}$ [mm]



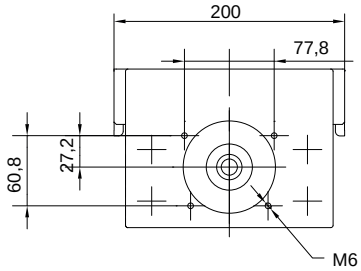


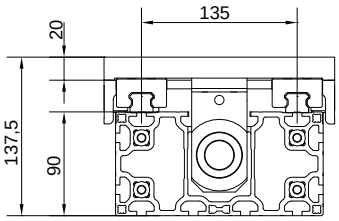
*valore indicativo

Critical Speed Graph



Max. stroke-speed limit over which some support bearings are required (SI) to avoid an excessive screw vibration. The working point marked inside the broken line is not recommended.





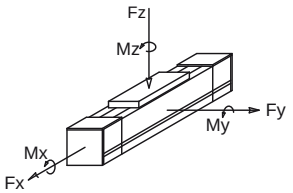
Performances			TVH 180	
Max Stroke	Pitch 5 -10 = 4550	Pitch 25 = 5150		[mm]
Max Speed	Pitch 5 [mm]		0,15	[m/s]
	Pitch 10 [mm]		0,30	[m/s]
	Pitch 25 [mm]		0,75	[m/s]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TVH 180	600	850	850	*3.000	9.200	9.200

The values shown refer to maximum performance with each force acting individually. The dynamic data shown do not refer to the max. theoretical load capacity. They include a safety coefficient for automated machinery.

(*) With a pitch of 5 mm

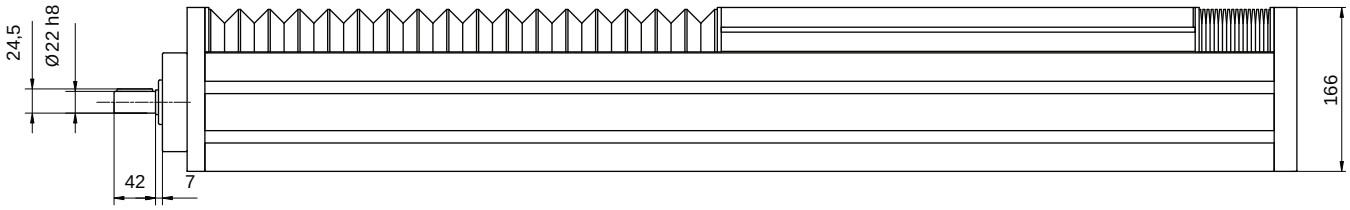


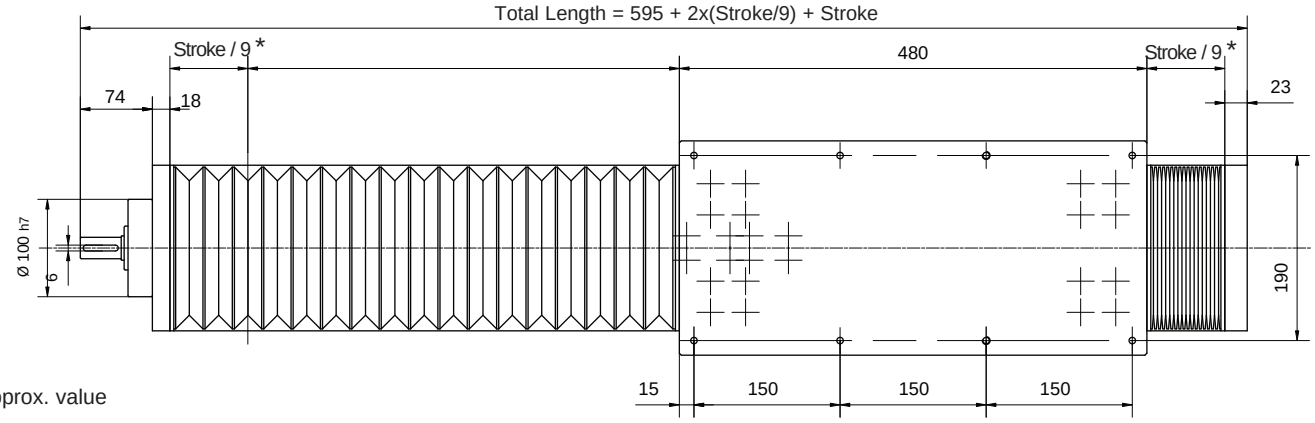
Fx= Max belt strength

Data		
Slide	4 caged ball roller slides size 20	
Beam	E01-5	(see page 13)
Ø screw	25	[mm]
Bellow	heat-sealed, plastic	

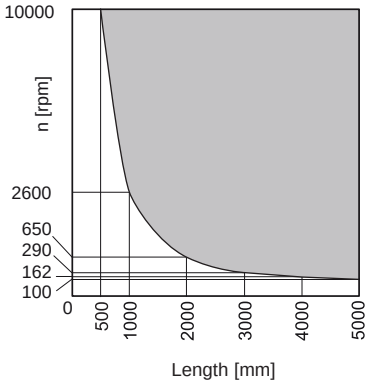
Weights		
Inertia of the worm	0,0003 • L. screw(m)	[kgm^2]
Carriage weight	7	[kg]
Base module (stroke=0)	M_{base}= 20	[kg]
1,000 mm profile	q= 20	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

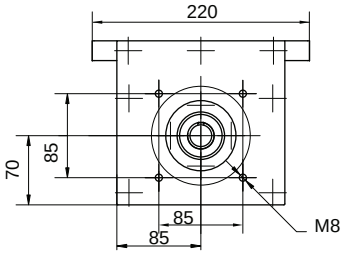


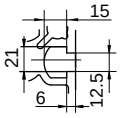


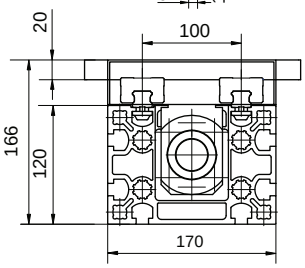
*approx. value



Max. stroke-speed limit over which some support bearings are required (SI) to avoid an excessive screw vibration. The working point marked inside the broken line is not recommended.





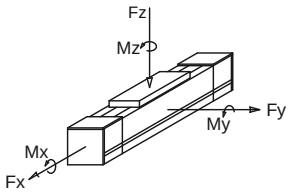


Performances			TVS 170	
Max. stroke			4,000	[mm]
Max. speed	Pitch 5	[mm]	0.15	[m/s]
	Pitch 10	[mm]	0.30	[m/s]
	Pitch 20	[mm]	0.75	[m/s]
	Pitch 32	[mm]	1.00	[m/s]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TVS 170	720	2,050	2,050	*6,000	11,950	11,950

The dynamic values shown do not refer to the max. theoretical load capacity. They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept.
(*) With a pitch of 10 mm

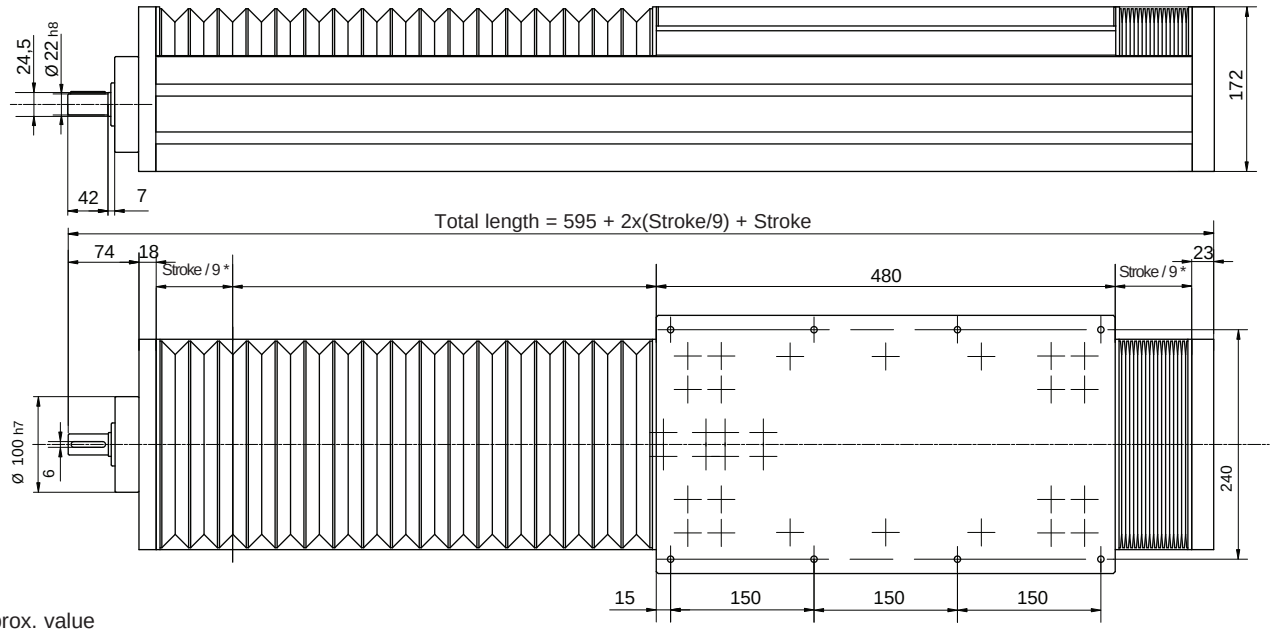


Fx= Max belt strength

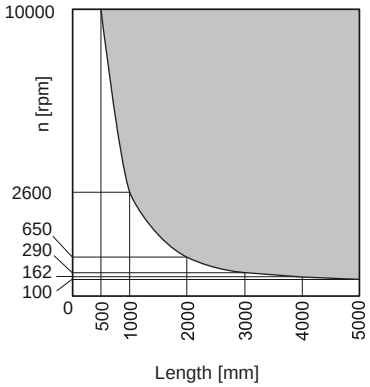
Data		
Slide	4 caged ball roller slides size 20	
Beam	Statyca	(see page 14)
Ø screw	32	[mm]
Bellow	heat-sealed, plastic	

Weights		
Inertia of the worm	0,0006 • L. screw(m)	[kgm^2]
Carriage weight	11	[kg]
Base module (stroke=0)	M_{base}= 36	[kg]
1,000 mm profile	q= 28	[kg]

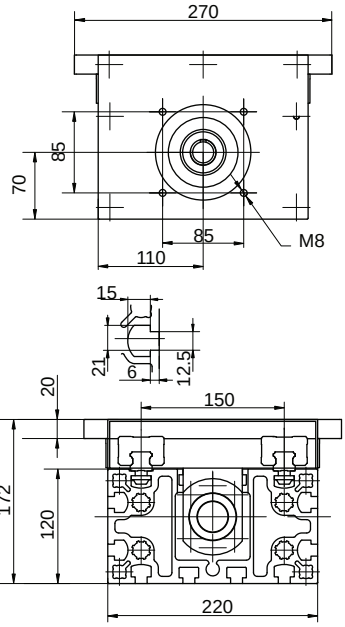
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]



*approx. value



Max. stroke-speed limit over which some support bearings are required (SI) to avoid an excessive screw vibration. The working point marked inside the broken line is not recommended.



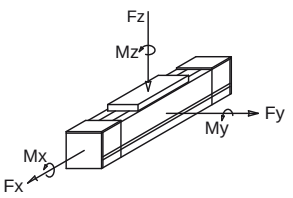
Performances			TVS 220	
Max. stroke			4,000	[mm]
Max. speed	Pitch 5	[mm]	0.15	[m/s]
	Pitch 10	[mm]	0.30	[m/s]
	Pitch 20	[mm]	0.75	[m/s]
	Pitch 32	[mm]	1.00	[m/s]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TVS 220	1,300	3,200	3,200	*6,000	18,300	18,300

The dynamic values shown do not refer to the max. theoretical load capacity. They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept.

(*) With a pitch of 10 mm



Fx= Max belt strength

Data		
Slide	4 caged ball roller slides size 25	
Beam	Logyca	(see page 14)
Ø screw	32	[mm]
Bellow	heat-sealed, plastic	

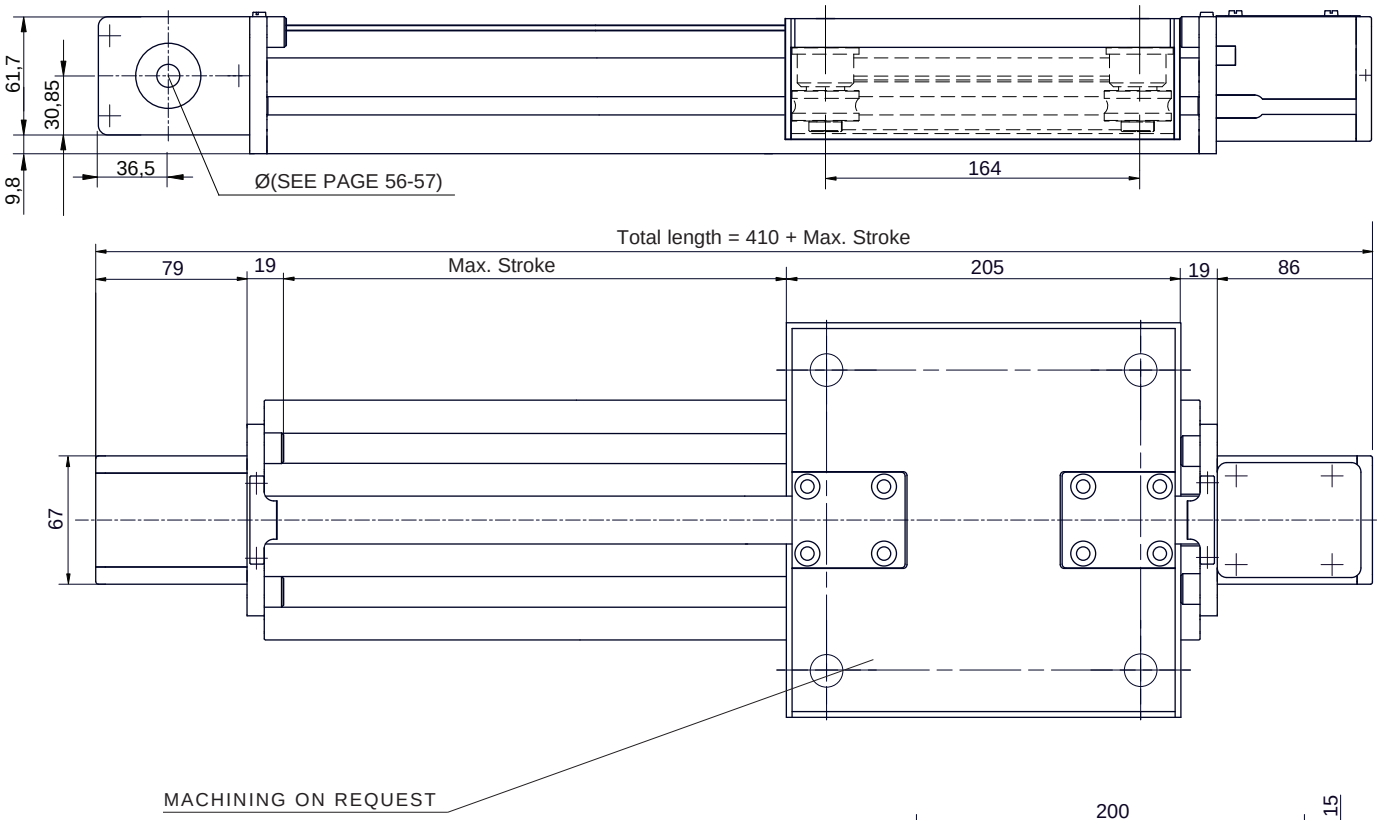
Weights		
Inertia of the worm	0.0006 • L. screw(m)	[kgm^2]
Carriage weight	13	[kg]
Base module (stroke=0)	M_{base}= 44	[kg]
1,000 mm profile	q= 37	[kg]

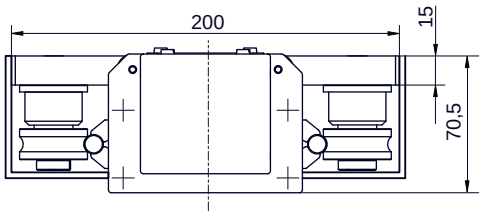
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

TCG 100

HARDENED GUIDE RAILS AND CYLINDRICAL SHAPED ROLLERS

Registered model



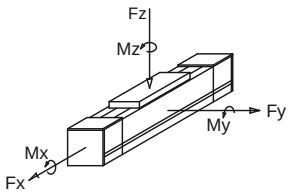


Performances	TCG 100	
Max. stroke	5,490	[mm]
Max. speed	5	[m/s]
Max. acceleration	20	[m/s^2]
Repeatability	± 0.1*	[mm]
Loadless torque	2	[Nm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TCG 100	40	120	200	1,100	1,700	1,200

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



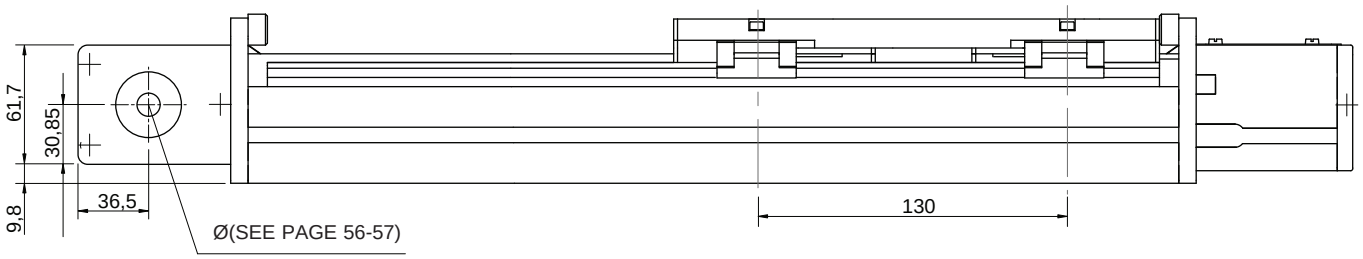
Fx= Max belt strength

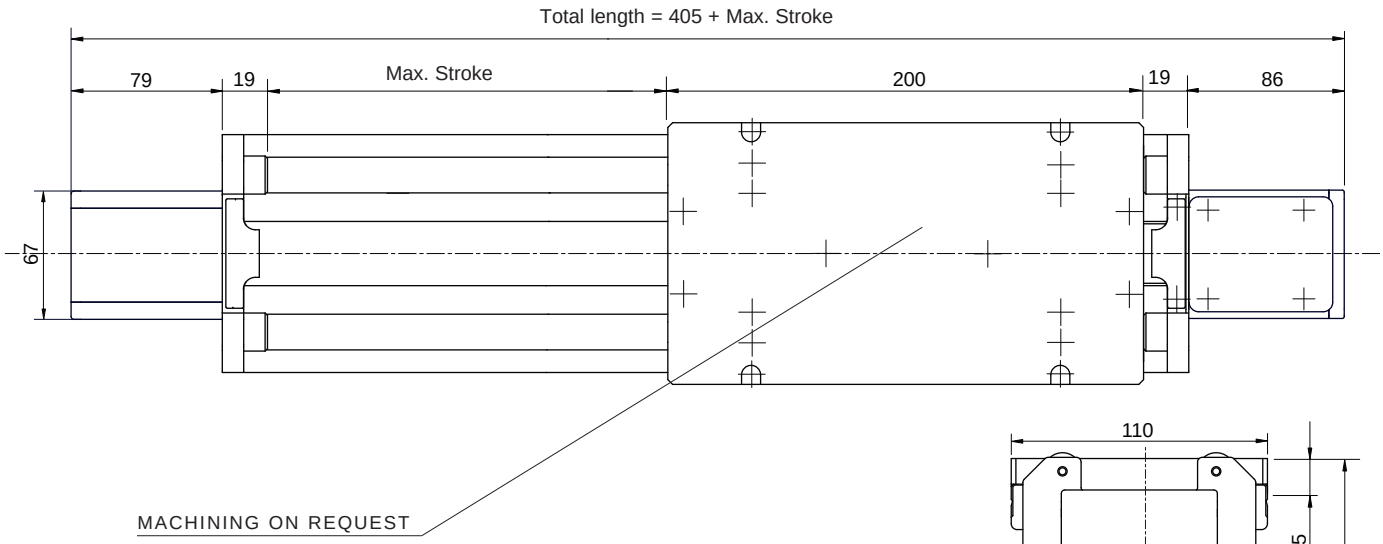
Assembly positions and load direction, see page 10

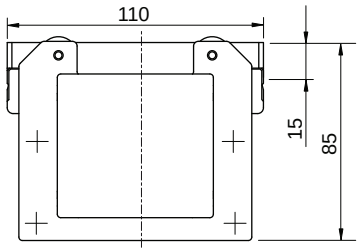
Data		
Belt	25AT5	
Slide	4 shaped rollers Ø35[mm]	
Load bearing profile	MA 1-4	(see page 13)
Pulley Ø	50.93	[mm]
Linear displacement per revolution	160	[mm]

Weights		
Inertia of the pulley	-	[kgm^2]
Belt weight	0.21	[kg/m]
Carriage weight	2.5	[kg]
Base module (stroke=0)	M_{base}=6.4	[kg]
1,000 mm profile	q=8.3	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]





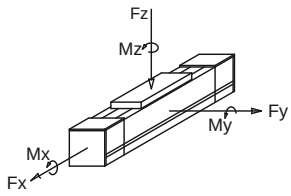


Performances	TCH 100	TCS 100	
Max. stroke	5,400	5,400	[mm]
Max. speed	5	5	[m/s]
Max. acceleration	50	50	[m/s^2]
Repeatability	± 0.1	± 0.1	[mm]
Loadless torque	-	-	[Nm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TCH 100	138	324	324	1,180	4,100	4,100
TCS 100	150	324	324	1,180	4,100	4,100

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

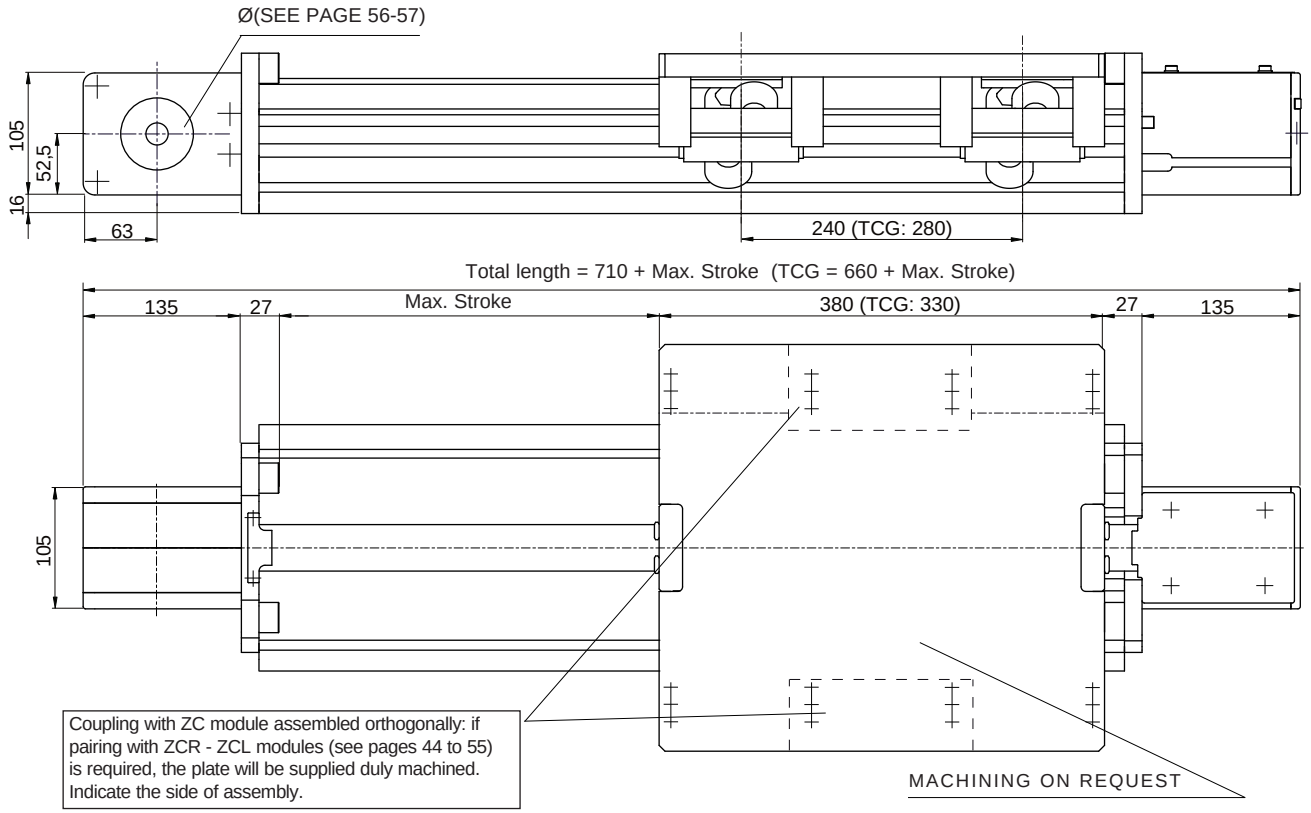
Data		
Belt	25AT5	
Sliding	4 caged ball roller slides size15	
Load bearing profile	MA 1-4	(see page 13)
Pulley Ø	50.93	[mm]
Linear displacement per revolution	160	[mm]

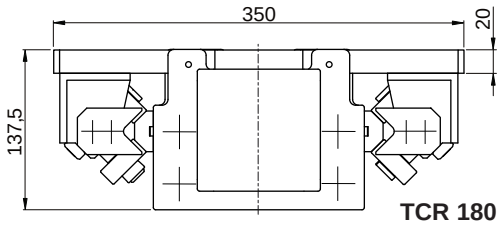
Weights		
Inertia of the pulley	-	[kgm^2]
Belt weight	0.21	[kg/m]
Carriage weight	2.6	[kg]
Base module (stroke=0)	M_{base}=6.5	[kg]
1,000 mm profile	q=9.2	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

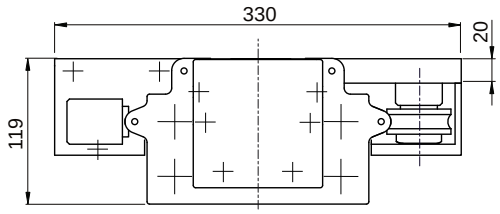
Registered model

Accessories: see page 11





TCR 180



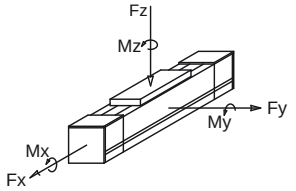
TCG 180

Performances	TCR 180	TCG 180	
Max. stroke	7,480	7,540	[mm]
Max. speed	5	5	[m/s]
Max. acceleration	20	20	[m/s^2]
Repeatability	± 0.1	± 0.1	[mm]
Loadless torque	4.2	1.2	[Nm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TCR 180	630	800	800	3,300	7,320	7,320
TCG 180	220	270	540	3,300	3,400	1,800

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

Assembly positions and load direction, see page 10

Data	TCR 180	TCG 180	
Belt	40ATL10		
Slide	4 roller slides with 2 rollers 4 rollers Ø 52, guide Ø16		
Load bearing profile	E01-5	(see page 13)	
Pulley Ø	92.31		[mm]
Linear displacement per rev.	290		[mm]

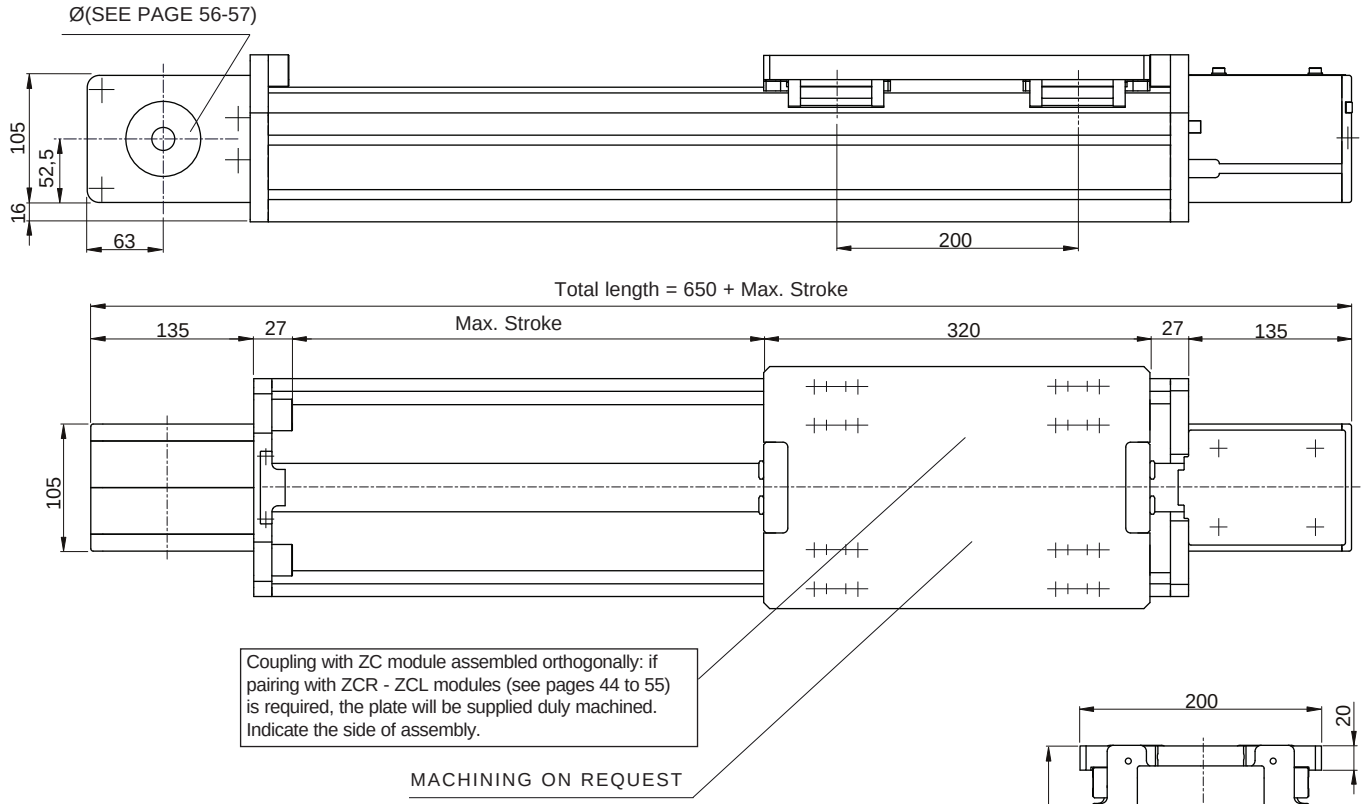
Weights	TCR 180	TCG 180	
Inertia of the pulley	0.0037		[kgm^2]
Belt weight	0.55		[kg/m]
Carriage weight	12.4	10.6	[kg]
Base module (stroke=0)	M_{base}=32	27.6	[kg]
1,000 mm profile	q=21	q=16.8	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

TCH 180 e TCS 180

Registered Model

Accessories: see page 11

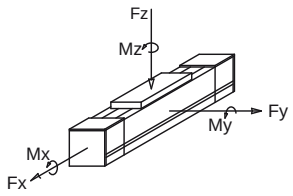


Performances	TCH 180	TCS 180	
Max. stroke	7,340	7,340	[mm]
Max. speed	5	5	[m/s]
Max. acceleration	50	50	[m/s^2]
Repeatability	± 0.1	± 0.1	[mm]
Loadless torque	3.2	3.2	[Nm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TCH 180	600	850	850	3,300	9,200	9,200
TCS 180	960	1,350	1,350	3,300	10,950	10,950

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

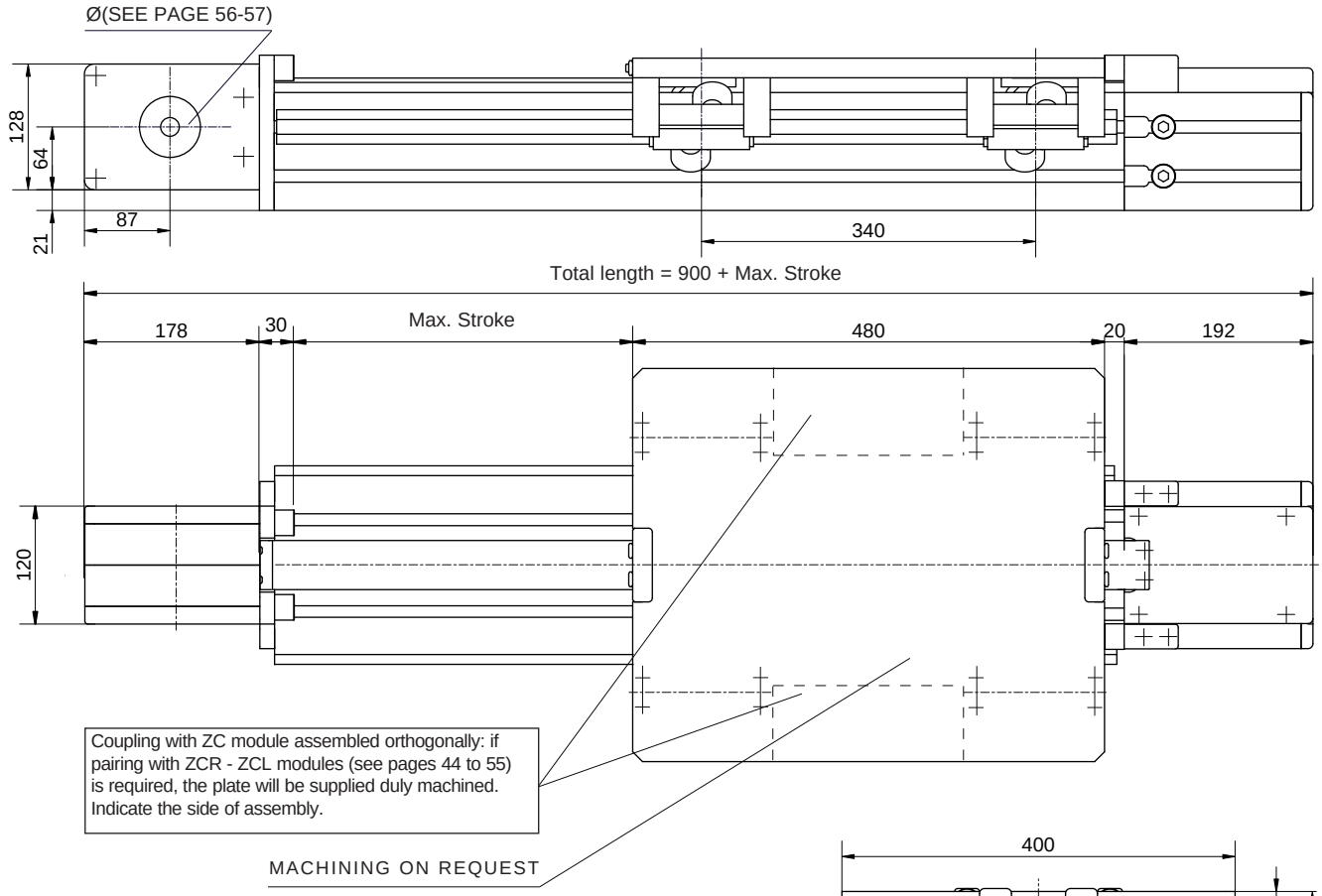
Data	TCH 180 - TCS 180	
Belt	40ATL10	
Slide	4 caged ball slides size 20	
Load bearing profile	E01-5	(see page 13)
Pulley Ø	92.31	[mm]
Linear displacement per rev.	290	[mm]

Weights	TCH 180 - TCS 180	
Inertia of the pulley	0.0037	[kgm^2]
Belt weight	0.55	[kg/m]
Carriage weight	6	[kg]
Base module (stroke=0)	M_{base}=23.6	[kg]
1,000 mm profile	q=19	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

Accessories: see page 11

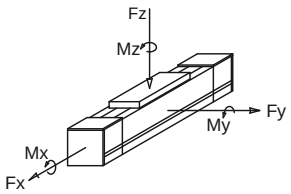


Performances	TCRQ 170	
Max. stroke	5,480	[mm]
Max. speed	7	[m/s]
Max. acceleration	20	[m/s^2]
Repeatability	± 0.1	[mm]
Loadless torque	4.2	[Nm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TCRQ 170	620	1,100	1,100	4,000	7,620	7,620

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

Assembly positions and load direction, see page 10

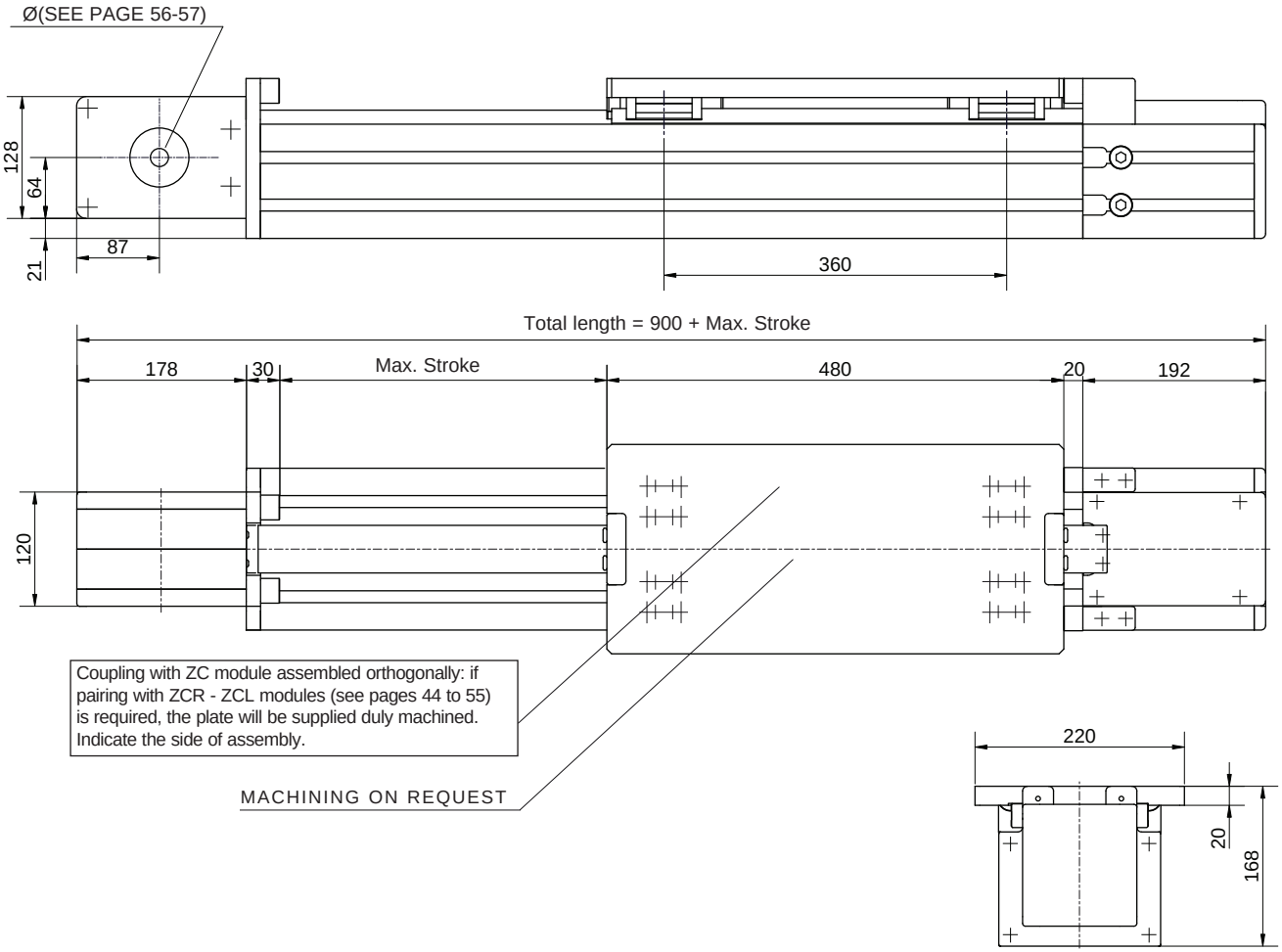
Data		
Belt	50ATL10	
Slides	4 slides 2 rollers Ø40[mm]	
Load bearing profile	Statyca	(see page 14)
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

Weights		
Inertia of the pulley	0.0053	[kgm^2]
Belt weight	0.68	[kg/m]
Carriage weight	14.6	[kg]
Base module (stroke=0)	M_{base}=44.6	[kg]
1,000 mm profile	q=25	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered Model

Accessories: see page 11

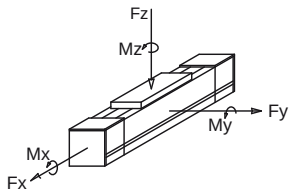


Performances	TCH 170	TCS 170	
Max. stroke	5,480	5,480	[mm]
Max. speed	5	5	[m/s]
Max. acceleration	50	50	[m/s^2]
Repeatability	± 0.1	± 0.1	[mm]
Loadless torque	4.8	4.8	[Nm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TCH 170	450	1,430	1,430	4,000	9,400	9,400
TCS 170	720	2,050	2,050	4,000	11,950	11,950

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

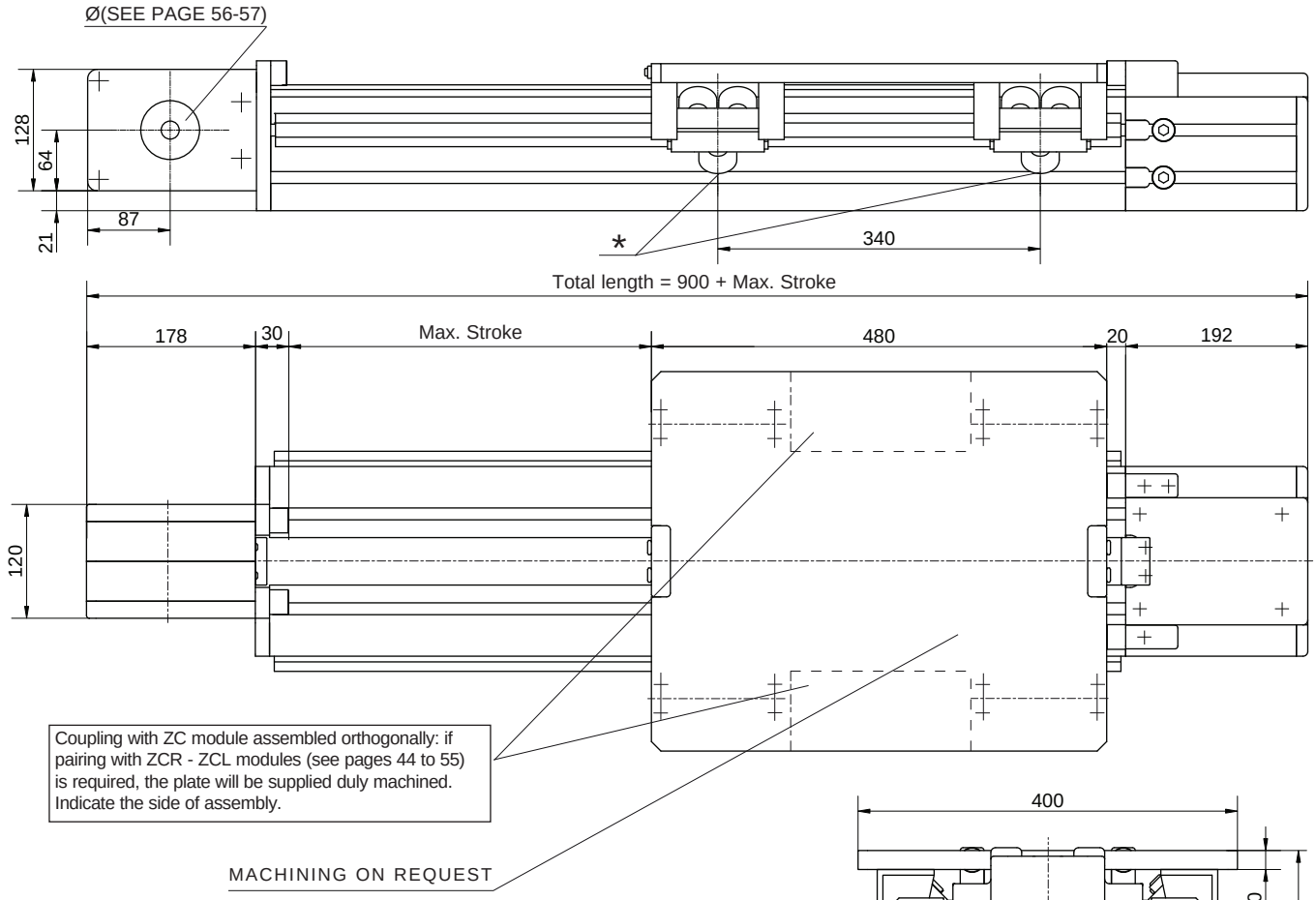
Data	TCH 170 - TCS 170	
Belt	50ATL10	
Slide	4 caged ball slides size 20	
Load bearing profile	Statyca	(see page 14)
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

Weights	TCH 170 - TCS 170	
Inertia of the pulley	0.0053	[kgm^2]
Belt weight	0.68	[kg/m]
Carriage weight	8.6	[kg]
Base module (stroke=0)	M_{base}=38	[kg]
1,000 mm profile	q=23	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

Accessories: see page 11



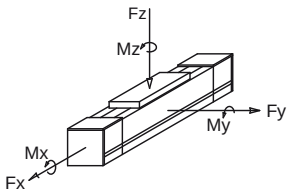
*: Please specify the roller orientation according to the barycentre of the applied load. Values corresponding to the most favourable load position.

Performances	TCRQ 200	
Max. stroke	8,480	[mm]
Max. speed	5	[m/s]
Max. acceleration	20	[m/s^2]
Repeatability	± 0.1	[mm]
Loadless torque	4.2	[Nm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TCRQ 200	1,300(*)	1,600(*)	1,300	4,000	7,620	12,500 (*)

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

Assembly positions and load direction, see page 10

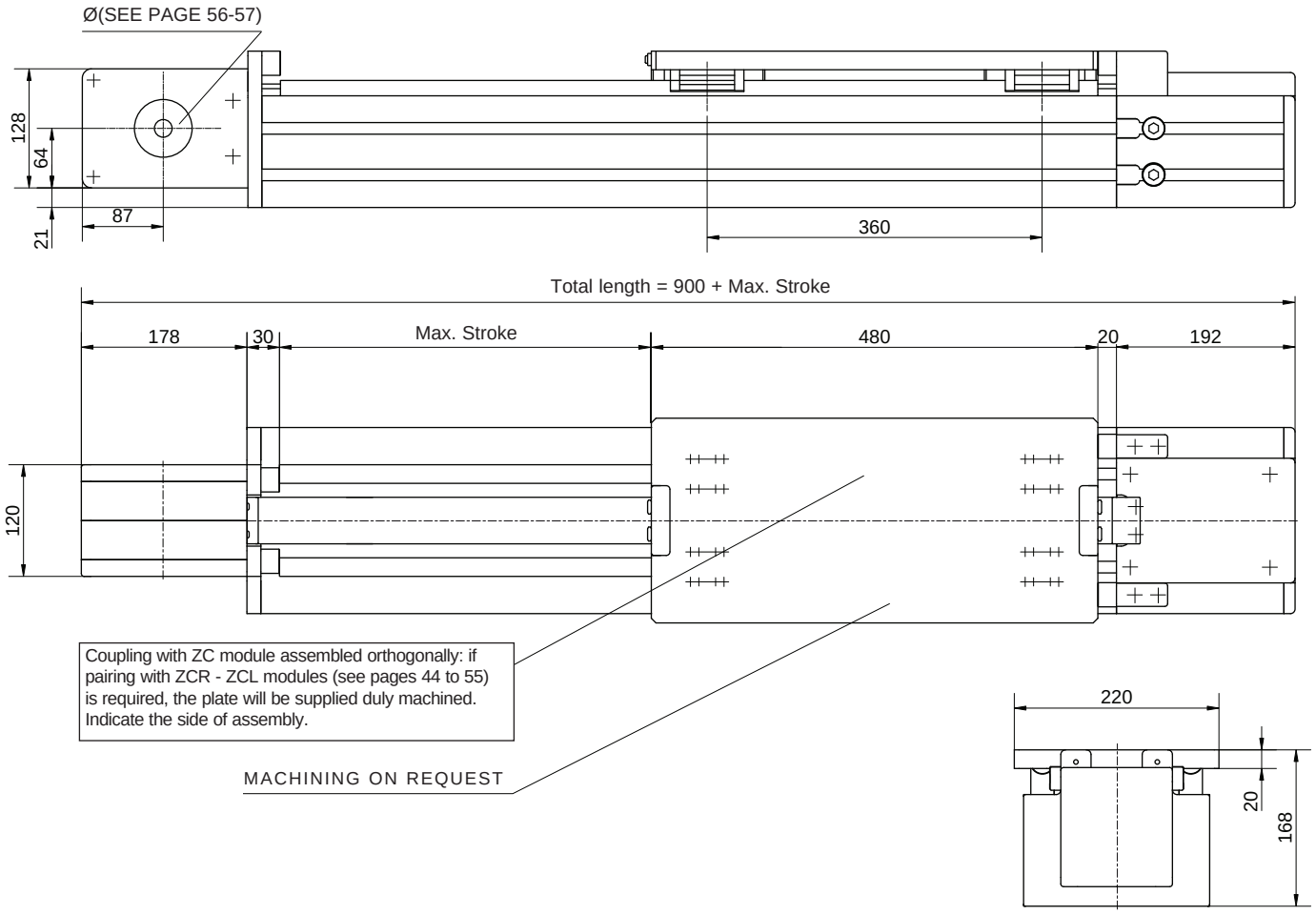
Data		
Belt	50ATL10	
Slide	4 slides 3 roll. Ø40	[mm]
Load bearing profile	Valyda	(see page 14)
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

Weights		
Inertia of the pulley	0.0053	[kgm^2]
Belt weight	0.68	[kg/m]
Carriage weight	15	[kg]
Base module (stroke=0)	M_{base}=52	[kg]
1,000 mm profile	q=30	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

Accessories: see page 11

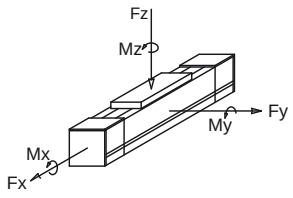


Performances	TCH 200	TCS 200	
Max. stroke	8,480	8,480	[mm]
Max. speed	5	5	[m/s]
Max. acceleration	50	50	[m/s^2]
Repeatability	± 0.1	± 0.1	[mm]
Loadless torque	4.8	4.8	[Nm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TCH 200	500	1,430	1,430	4,000	9,400	9,400
TCS 200	810	2,050	2,050	4,000	13,950	13,950

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

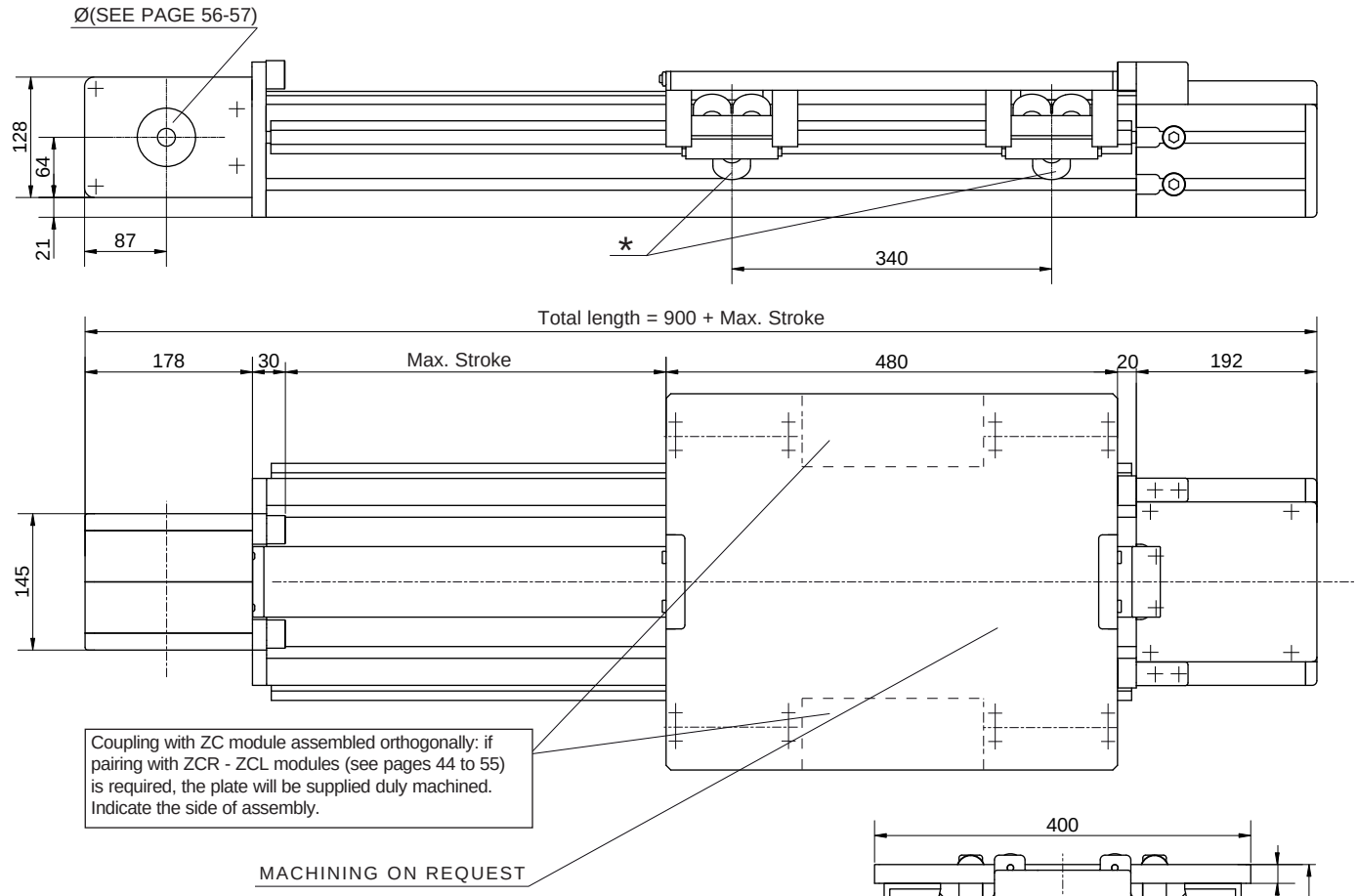
Data	TCH 200 - TCS 200	
Belt	50ATL10	
Slide	4 caged ball slides size 20	
Load bearing profile	Valyda	(see page 14)
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

Weights	TCH 200 - TCS 200	
Inertia of the pulley	0.0053	[kgm^2]
Belt weight	0.68	[kg/m]
Carriage weight	8,8	[kg]
Base module (stroke=0)	M_{base}=42	[kg]
1,000 mm profile	q=27.5	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

Accessories: see page 11



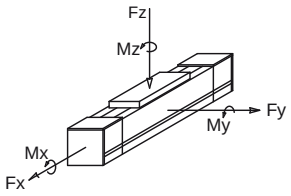
* : Please specify the roller orientation according to the barycentre of the applied load. Values corresponding to the most favourable load position.

Performances	TCRQ 220	
Max. stroke	11,480	[mm]
Max. speed	5	[m/s]
Max. acceleration	20	[m/s^2]
Repeatability	± 0.1	[mm]
Loadless torque	5.8	[Nm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TCRQ220	1,400(*)	1,600(*)	1,300	6,000	7,620	12,500(*)

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

Assembly positions and load direction, see page 10

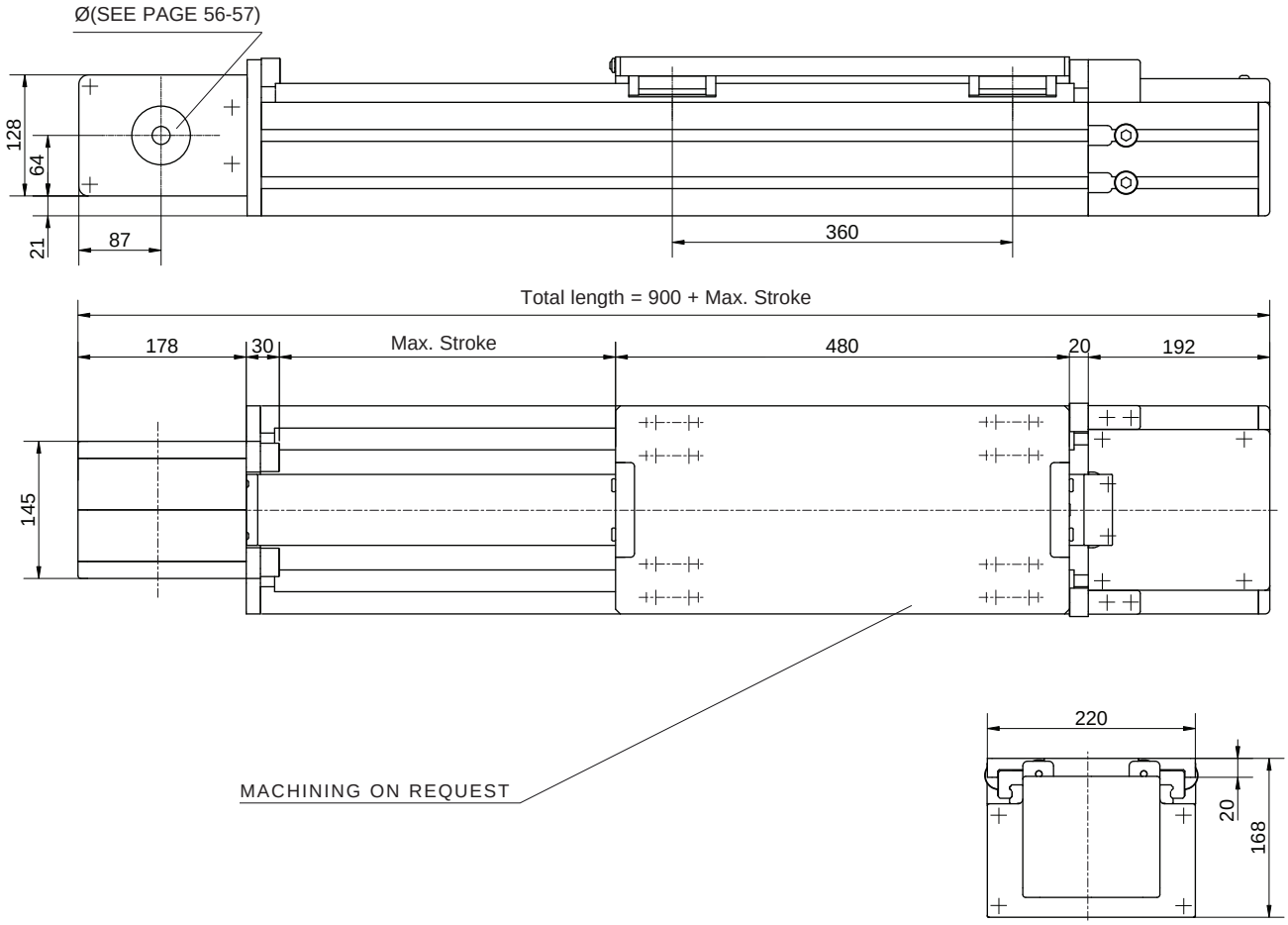
Data		
Belt	75ATL10	
Slide	4 slides 3 roll. Ø 40	[mm]
Load bearing profile	Logyca	(see page 14)
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

Weights		
Inertia of the pulley	0,0082	[kgm^2]
Belt weight	1,02	[kg/m]
Carriage weight	16	[kg]
Base module (stroke=0)	M_{base}=54.6	[kg]
1,000 mm profile	q= 33.7	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

Accessories: see page 11

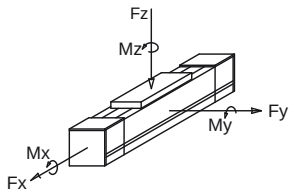


Performances	TCH 220	TCS 220	
Max. stroke	11,480	11,480	[mm]
Max. speed	5	5	[m/s]
Max. acceleration	50	50	[m/s^2]
Repeatability	± 0.1	± 0.1	[mm]
Loadless torque	6.9	6.9	[Nm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TCH 220	950	2,200	2,200	6,000	13,000	13,000
TCS 220	1,300	3,200	3,200	6,000	18,300	18,300

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

Data	TCH 220 - TCS 220	
Belt	75ATL10	
Slide	4 caged ball slides size 25	
Load bearing profile	Logyca	(see page 14)
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

Weights	TCH 220 - TCS 220	
Inertia of the pulley	0.0082	[kgm^2]
Belt weight	1.02	[kg/m]
Carriage weight	9.5	[kg]
Base module (stroke=0)	M_{base}=47.4	[kg]
1,000 mm profile	q=33	[kg]

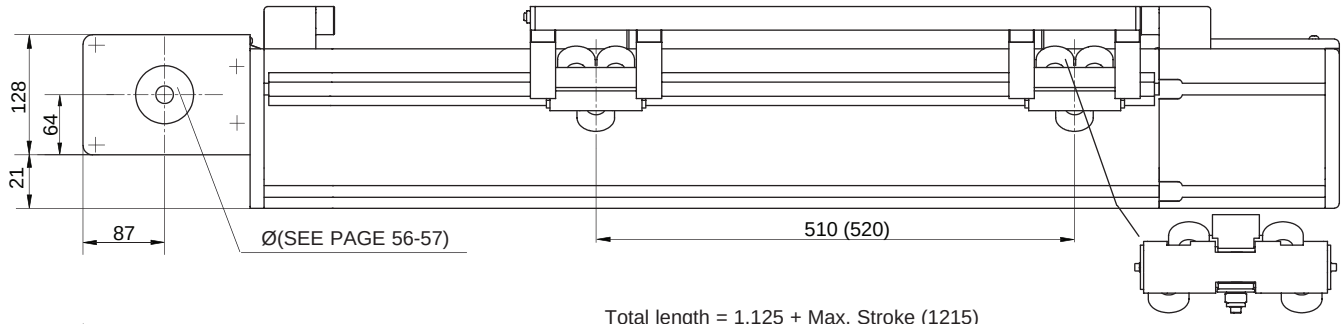
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

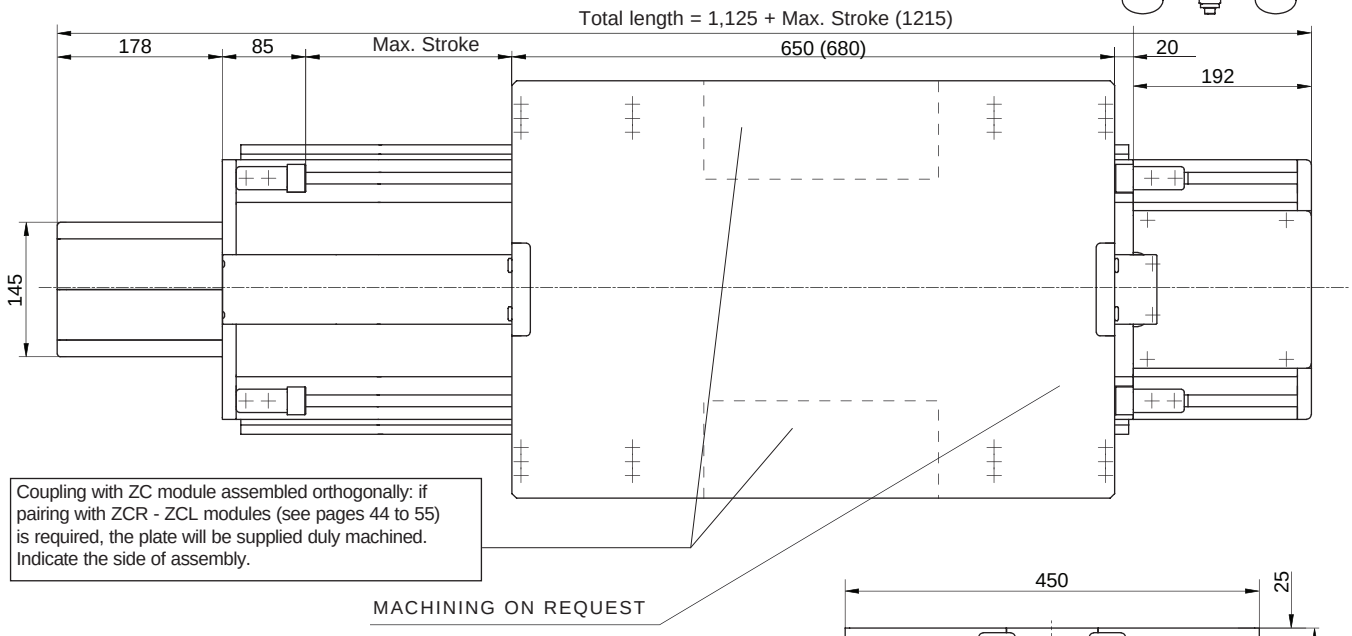
TCRQ 280 (TCRP 280)

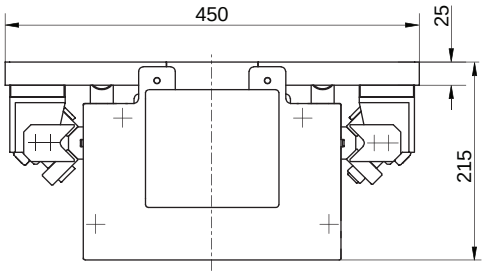
Registered model*

RP= Heavy guide rails and roller slides - Ø52

Accessories: see page 11







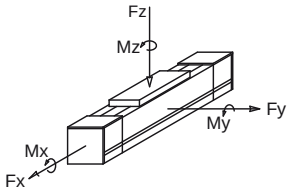
* Versions with a 100 mm belt are also available. (TCRE/TCREP)

Performances	TCRQ 280 (TCRP280)		
Max. stroke	11,315	11,175	[mm]
Max. speed	7	5	[m/s]
Max. acceleration	20	10	[m/s^2]
Repeatability	± 0.1	± 0.1	[mm]
Loadless torque	7.6	8.5	[Nm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TCRQ 280	1,950(*)	3,100(*)	1,950	6,000	7,620	13,500(*)
TCRP 280	3,100	4,150	4,150	6,000	20,100	20,100

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

Assembly positions and load direction, see page 10

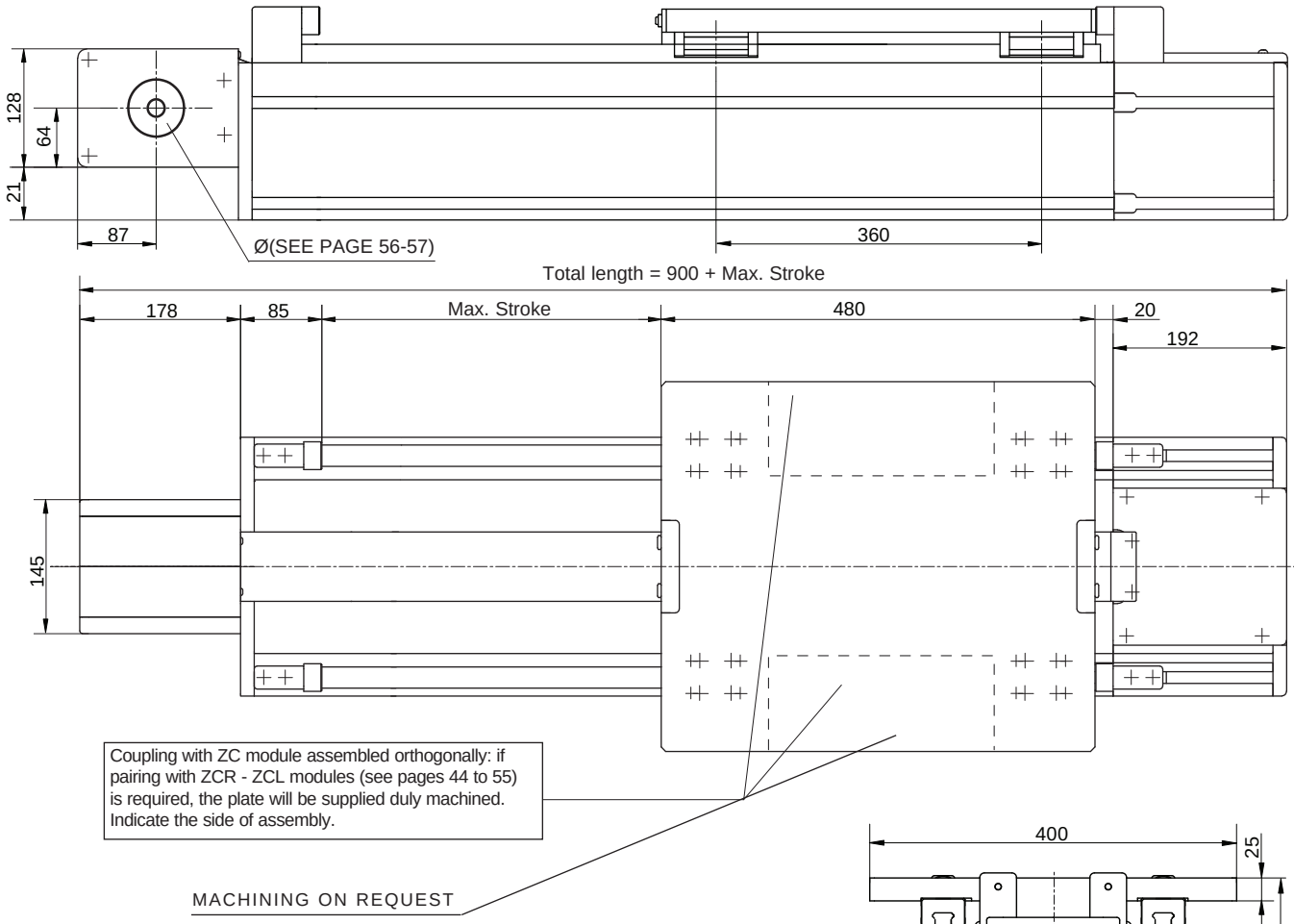
Data	TCRQ 280	(TCRP 280)	
Belt	75 ATL 10		
Slide	4 slides 3 rollers Ø40	4 slides 4 rollers Ø52	[mm]
Load bearing profile	Pratyca	(see page 15)	
Pulley Ø	95.49		[mm]
Linear displacement per rev.	300		[mm]

Weights	TCRQ 280	(TCRP 280)	
Inertia of the pulley	0.0082		[kgm^2]
Belt weight	1.02		[kg/m]
Carriage weight	27	55	[kg]
Base module	M_{base}=87	M_{base}=122	[kg]
1,000 mm profile	q=48	q=56	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

Accessories: see page 11



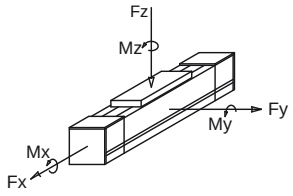
* Versions with a 100 mm belt are also available. (TCSE 280)

Performances	TCH 280	TCS 280	
Max. stroke	11,480	11,485	[mm]
Max. speed	5	5	[m/s]
Max. acceleration	50	50	[m/s^2]
Repeatability	± 0.1	± 0.1	[mm]
Loadless torque	8.3	8.3	[Nm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TCH 280	1,450	2,200	2,200	6,000	13,500	13,500
TCS 280	1,950	3,200	3,200	6,000	20,300	20,300

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

Data	TCH 280 - TCS 280	
Belt	75 ATL 10	
Slide	4 caged ball slides size 25	
Load bearing profile	Pratyca	(see page 15)
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

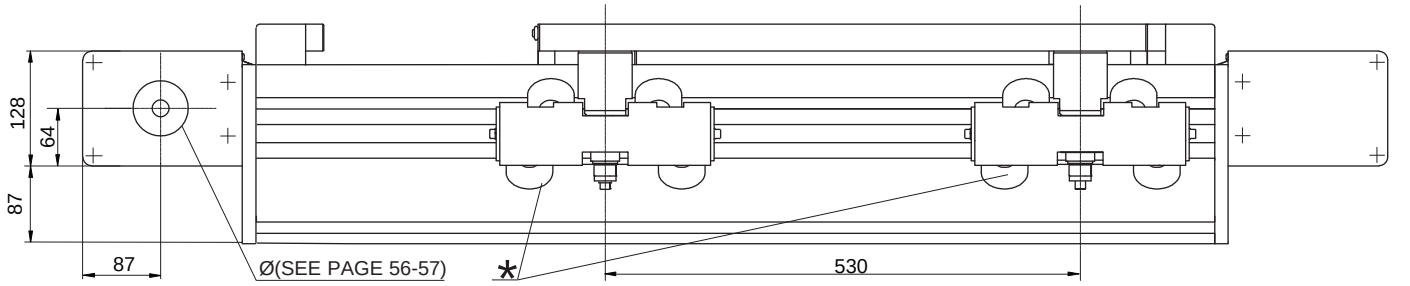
Weights	TCH 280 - TCS 280	
Inertia of the pulley	0.0082	[kgm^2]
Belt weight	1.02	[kg/m]
Carriage weight	18	[kg]
Base module (stroke=0)	M_{base}=69	[kg]
1,000 mm profile	q= 47	[kg]

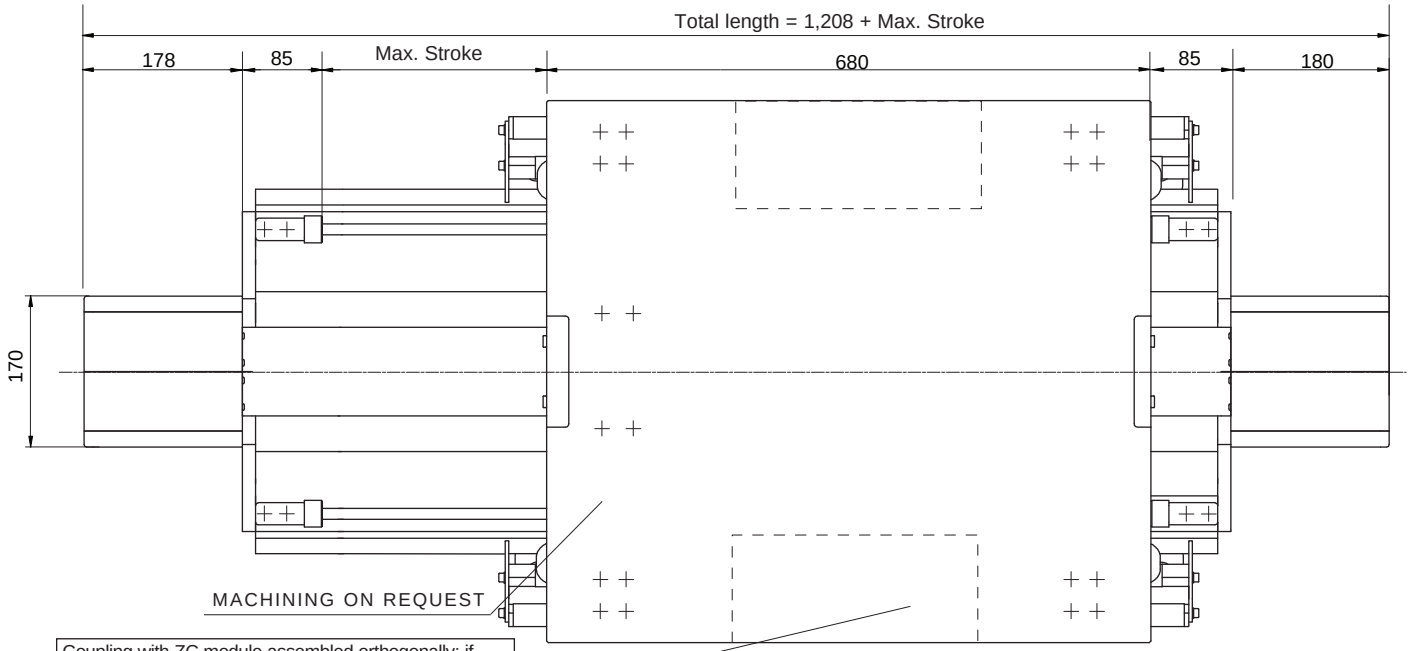
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

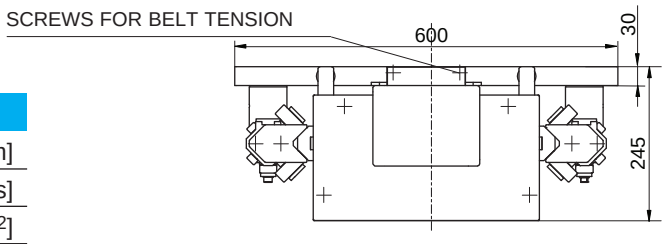
RP= Heavy guide rails and roller slides - Ø52

Accessories: see page 11





Coupling with ZC module assembled orthogonally: if pairing with ZCR - ZCL modules (see pages 42 to 53) is required, the plate will be supplied duly machined. Indicate the side of assembly.

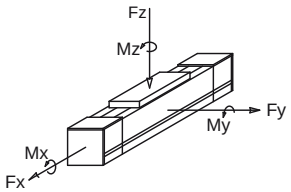


* Versions with a 150 mm belt are also available. (TCRPE360)

Performances	TCRP 360	
Max. stroke	11,175	[mm]
Max. speed	5	[m/s]
Max. acceleration	10	[m/s^2]
Repeatability	± 0.1	[mm]
Loadless torque	8.5	[Nm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TCRP 360	4,900	5,300	5,300	8,000	25,400	25,400



Fx= Max belt strength

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

Assembly positions and load direction, see page 10

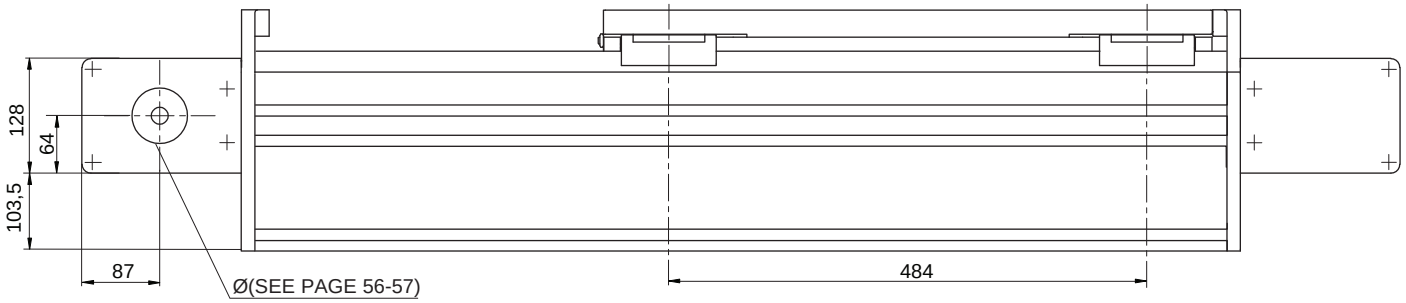
Data		
Belt	100 ATL 10	
Slide	4 slides 4 rollers Ø52	[mm]
Load bearing profile	Solyda	(see page 15)
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

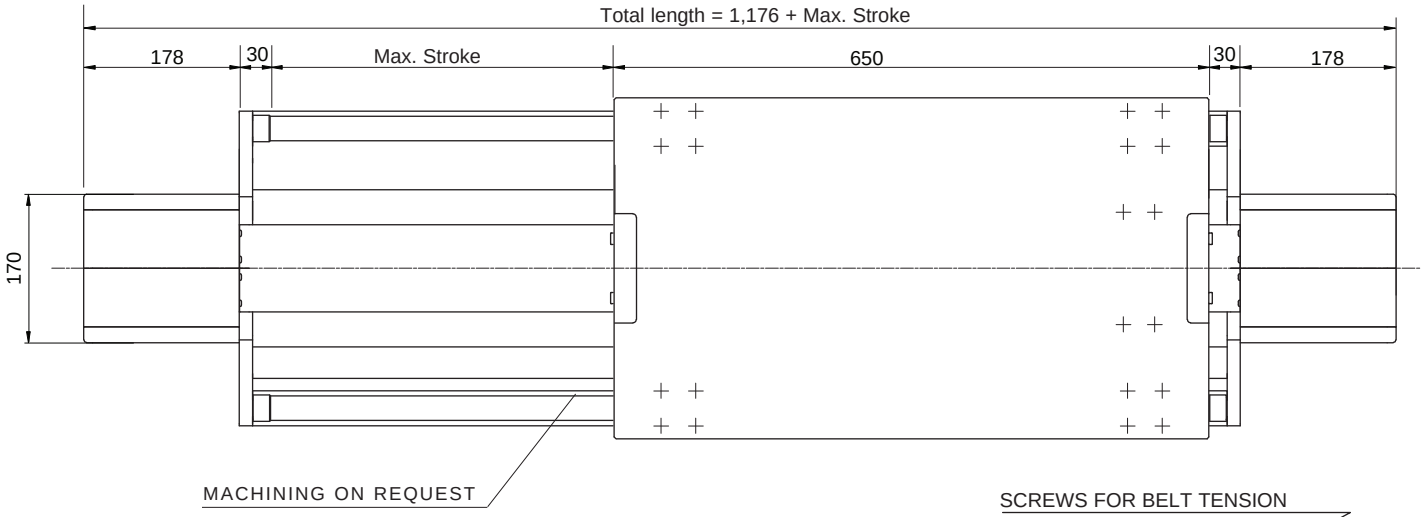
Weights		
Inertia of the pulley	0.0082	[kgm^2]
Belt weight	1.02	[kg/m]
Carriage weight	55	[kg]
Base module (stroke=0)	M_{base}=137	[kg]
1,000 mm profile	q=75	[kg]

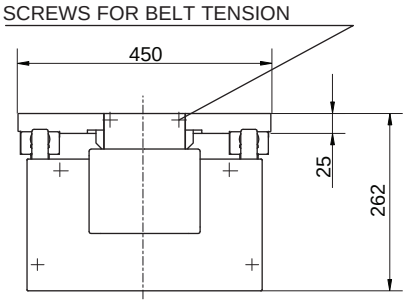
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

Accessories: see page 11







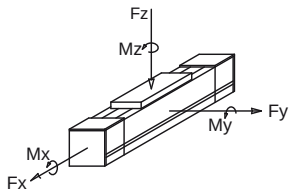
* Versions with a 150 mm belt are also available. (TCSE360)

Performances	TCH 360	TCS 360	
Max. stroke	11,480	11,485	[mm]
Max. speed	5	5	[m/s]
Max. acceleration	50	50	[m/s^2]
Repeatability	± 0.1	± 0.1	[mm]
Loadless torque	8.3	8.3	[Nm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TCH 360	2,600	3,710	3,710	8,000	19,050	19,050
TCS 360	4,000	5,500	5,500	8,000	28,600	28,600

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

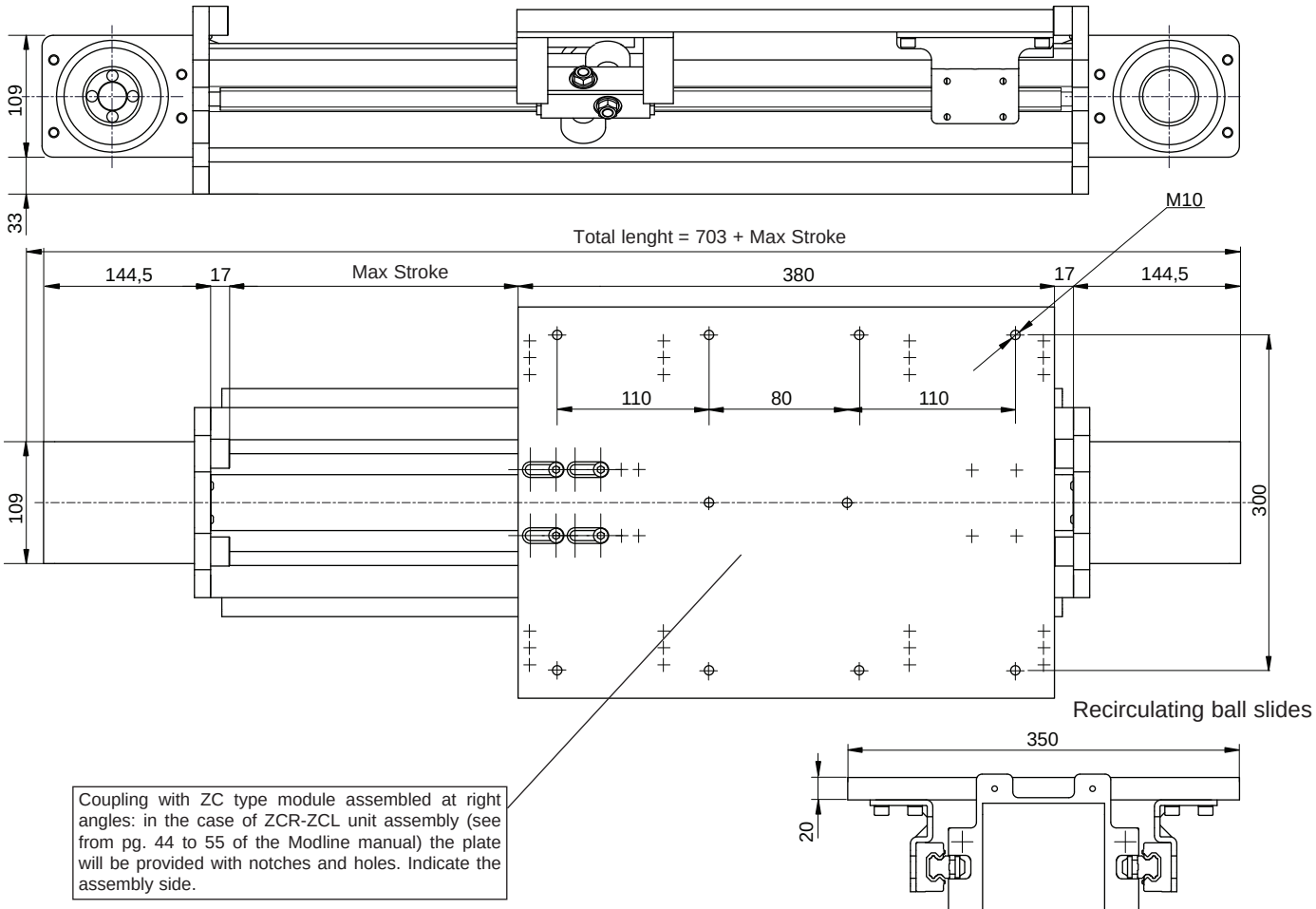


Fx= Max belt strength

Data	TCH 360 - TCS 360	
Belt	100 ATL 10	
Slide	4 caged ball roller slides 30	
Load bearing profile	Solyda	(see page 15)
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

Weights	TCH 360 - TCS 360	
Inertia of the pulley	0.0082	[kgm^2]
Belt weight	1.02	[kg/m]
Carriage weight	28	[kg]
Base module (stroke=0)	M_{base}=105	[kg]
1,000 mm profile	q= 70	[kg]

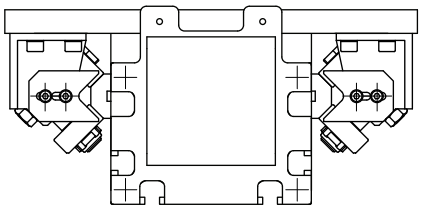
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]



Coupling with ZC type module assembled at right angles: in the case of ZCR-ZCL unit assembly (see from pg. 44 to 55 of the Modline manual) the plate will be provided with notches and holes. Indicate the assembly side.

Recirculating ball slides

Roller slides

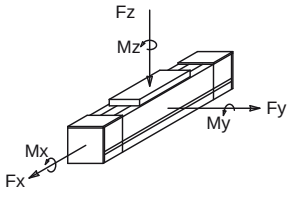


Performances	TECR 170	TECH 170	
Max stroke	5.560	5.560	[mm]
Max speed	5	4	[m/s]
Max acceleration	15	20	[m/s^2]
Repositioning accuracy	± 0.1	± 0.1	[mm]
Loadless torque	4.2	4.8	[Nm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TECR 170	620	1.600	1.600	4.000	6.000	6.000
TECH 170	580	900	1.050	4.000	7.620	7.620

The dynamic values indicated do not correspond to maximum theoretical load capacities. They already take safety factors into account which are suitable for machinery in the automation sector. In the event of combined stress consult the technical support service.



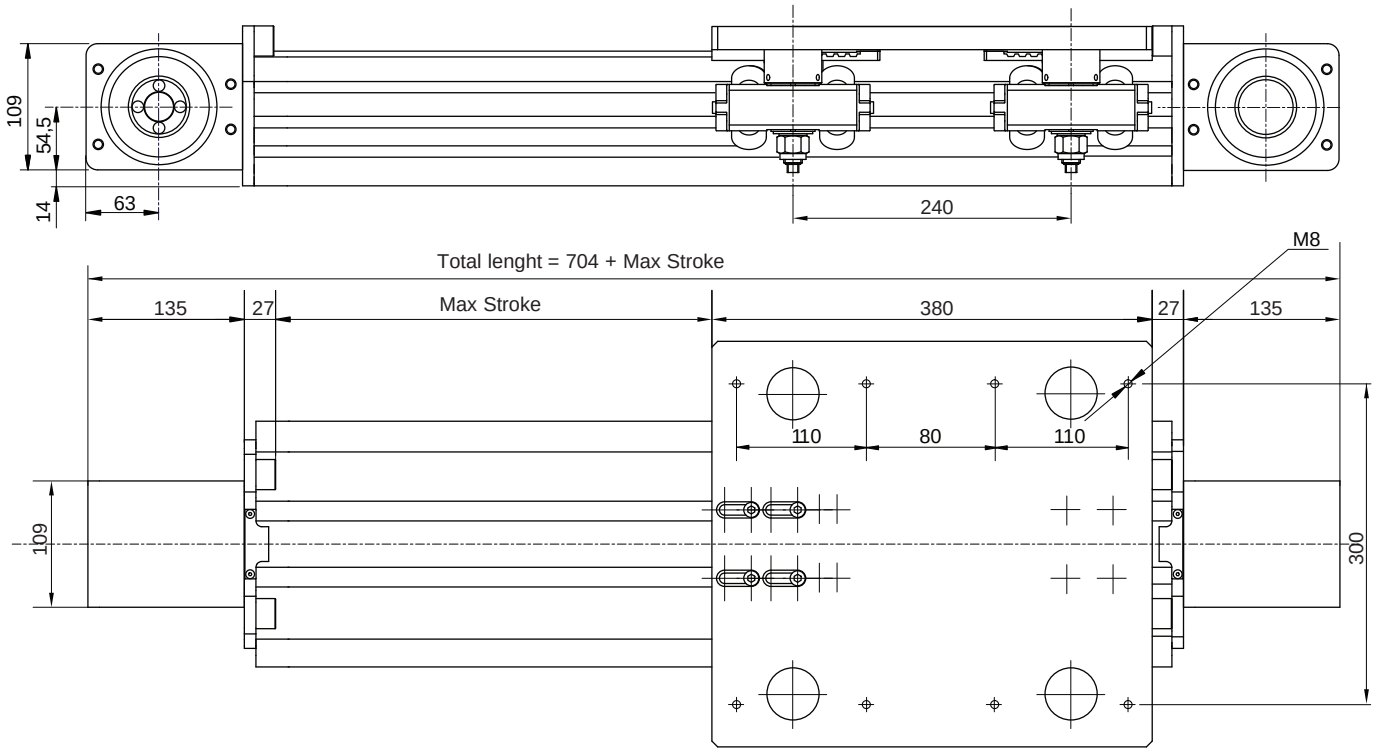
Fx= Max belt strenght

Constructive data	TECR 170 - TECH 170	
Belt	50 ATL 10	
Sliding (TECR170)	4 roller slides	[mm]
Sliding (TECH 170)	4 ball slides size 20	[mm]
Profile	Statyca	
Pulley Ø	95,49	[mm]
Linear displacement per revolution	300	[mm]

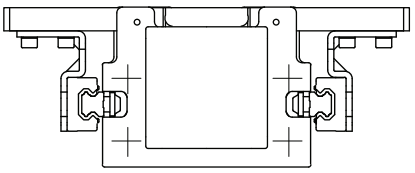
Weight	TECH 170 - TECR 170	
Inertia of the pulley	0,0053	[kgm^2]
Belt weight	0,68	[kg/m]
Carriage weight	8,6	[kg]
Base module (corsa=0)	M_{base}= 38	[kg]
1.000 mm profile	q=23	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot Stroke_{max}/1.000$** $Stroke_{max}$ [mm]

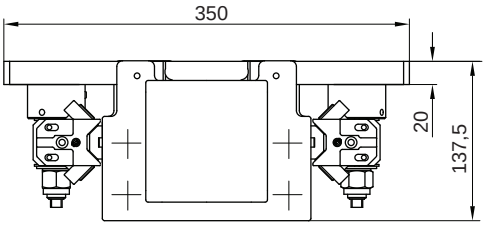
Patent pending



Recirculating ball slides



Roller slides

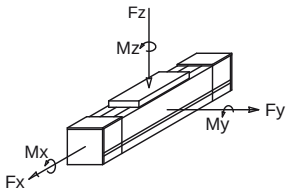


Performances	TECRR 180	
Max stroke	7.480	[mm]
Max speed	5	[m/s]
Max acceleration	20	[m/s^2]
Repositioning accuracy	± 0,1*	[mm]
Loadless torque	4,2	[Nm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
TECRR180	490	1.170	1.170	2.700	5.900	5.900

The dynamic values indicated do not correspond to maximum theoretical load capacities. They already take safety factors into account which are suitable for machinery in the automation sector. In the event of combined stress consult the technical support service.



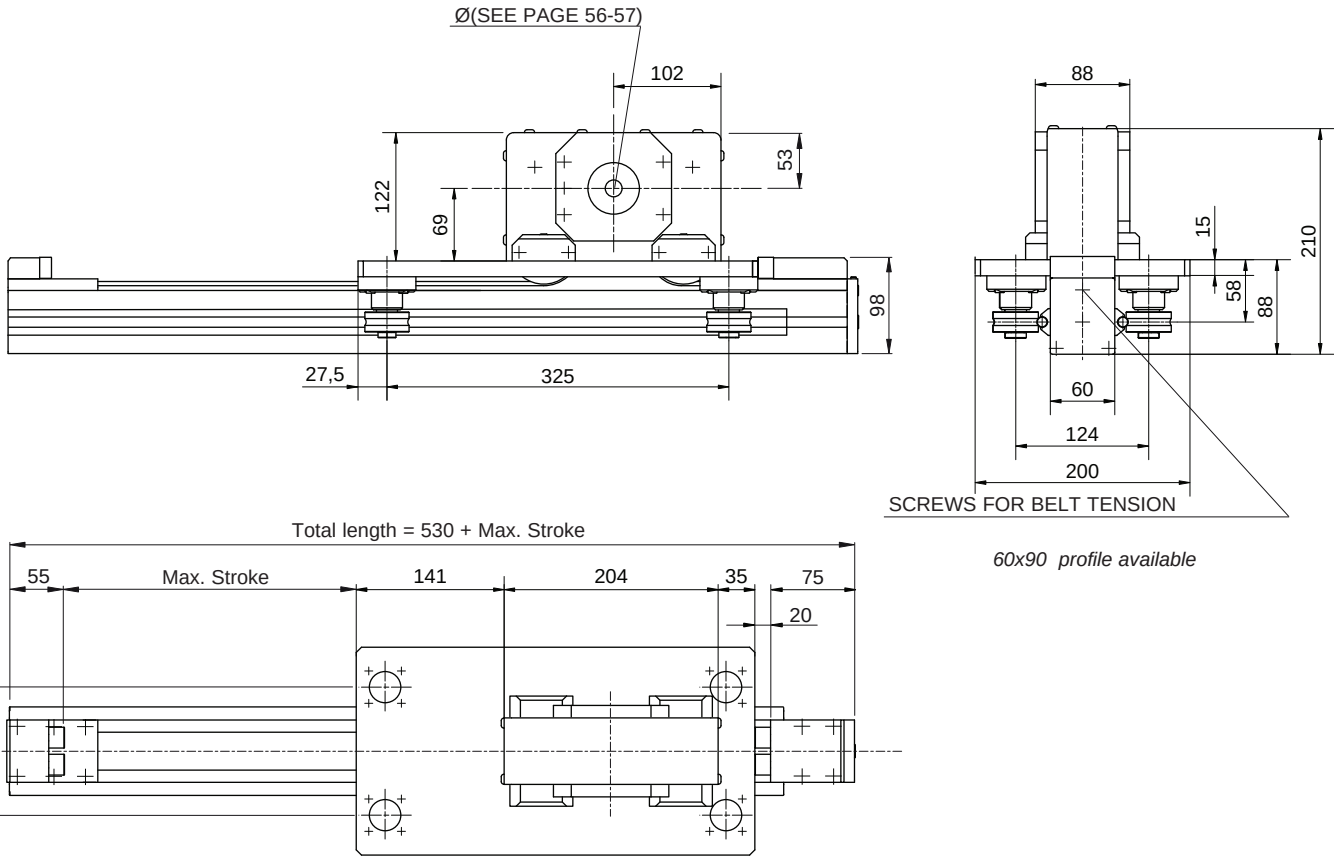
Fx= Max belt strenght

Constructive data		
Belt	40ATL10	
Sliding	4 slides 4 rollen Ø30	[mm]
Profile	180x90	
Pulley Ø	92,31	[mm]
Linear displacement per revolution	290	[mm]

Weight		
Inertia of the pulley	0,0037	[kgm^2]
Belt weight	0,55	[kg/m]
Carriage weight	13	[kg]
Base module (stroke=0)	M_{base}=33	[kg]
1.000 mm profile	q=16	[kg]

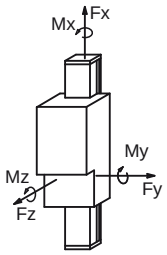
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot Stroke_{max}/1.000$** $Stroke_{max}$ [mm]

Accessories: see page 11



60x90 profile available

IMPORTANT: when pairing ZC... modules with TC... modules, please check the required Z axis stroke, as this could be limited by the size of the module plates sizes.



Fx= Max belt strength

Performances	ZCG 60	
Max. stroke	5,470	[mm]
Max. speed	4	[m/s]
Max. acceration	20	[m/s^2]
Repeatability	± 0.1	[mm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
ZCG 60	60	200	340	2,000	2,100	1,500

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

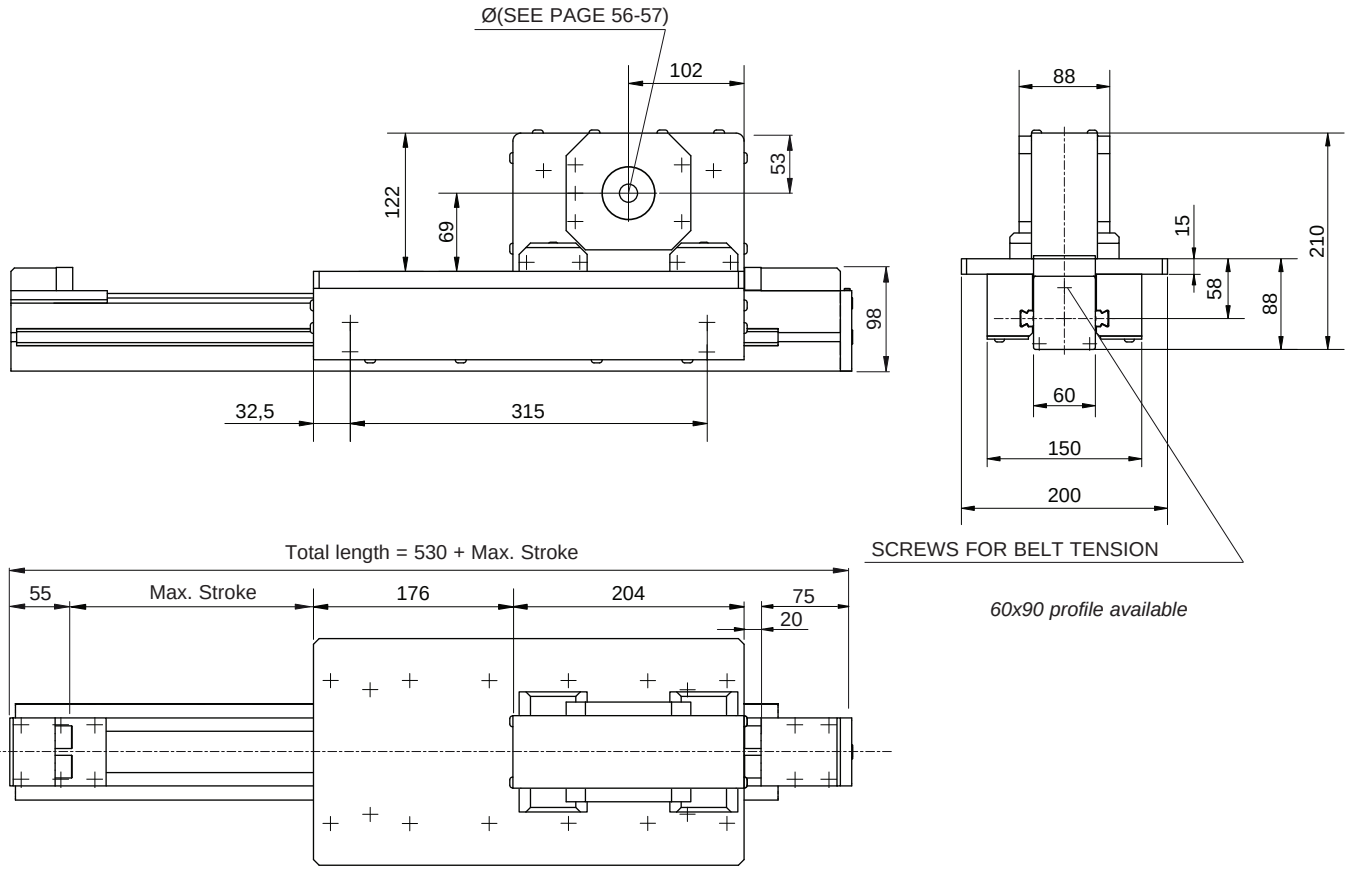
Assembly positions and load direction, see page 10

Data		
Belt	32AT10	
Slide	4 shaped roller slides Ø 42 [mm]	
Load bearing profile	F01-1	(see page 12)
Pulley Ø	70.03	[mm]
Linear displacement per rev.	220	[mm]

Weights		
Inertia of the pulley	0.0013	[kgm^2]
Belt weight	0.19	[kg/m]
Carriage weight	10	[kg]
Base module (stroke=0)	M_{base}=14	[kg]
1,000 mm profile	q=6	[kg]

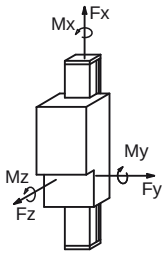
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Accessories: see page 11



60x90 profile available

IMPORTANT: when pairing ZC... modules with TC... modules, please check the required Z axis stroke, as this could be limited by the size of the module plates sizes.



Fx= Max belt strength

Performances	ZCL 60	
Max. stroke	5,470	[mm]
Max. speed	4	[m/s]
Max. acceleration	40	[m/s^2]
Repeatability	± 0.1	[mm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
ZCL 60	151	570	630	2,000	4,180	3,740

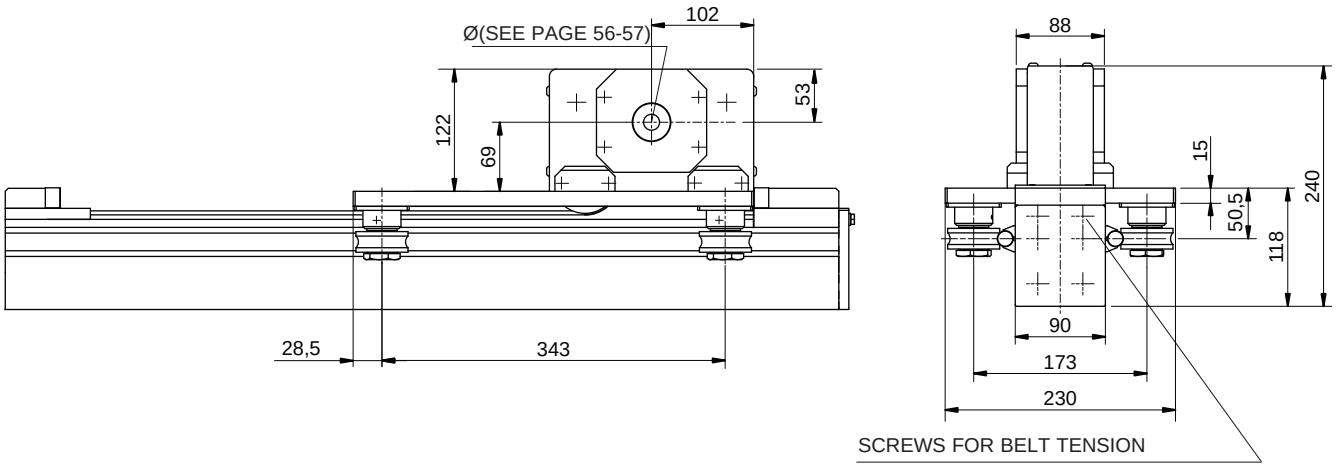
The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

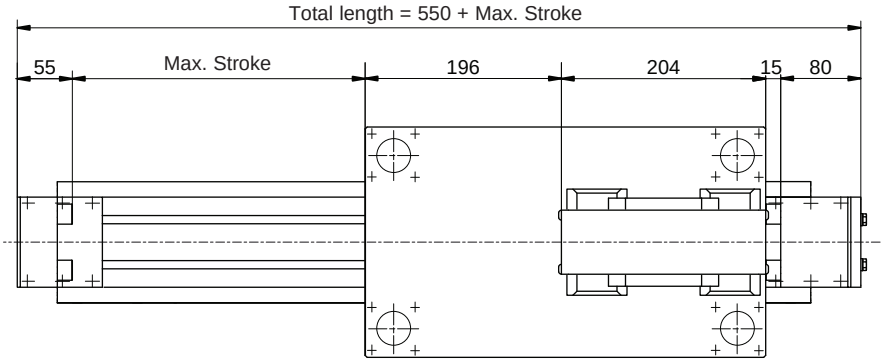
Data		
Belt	32AT10	
Slide	4 caged ball roller slides 15	
Load bearing profile	F01-1	(see page 12)
Pulley Ø	70.03	[mm]
Linear displacement per rev.	220	[mm]

Weights		
Inertia of the pulley	0.0013	[kgm^2]
Belt weight	0.19	[kg/m]
Carriage weight	11	[kg]
Base module (stroke=0)	M_{base}=16	[kg]
1,000 mm profile	q=7.2	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

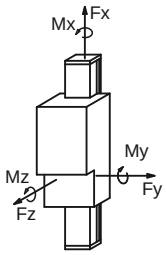
Accessories: see page 11





90x180 profile available

IMPORTANT: when pairing ZC... modules with TC... modules, please check the required Z axis stroke, as this could be limited by the size of the module plates sizes.



Fx= Max belt strength

Performances	ZCG 90	
Max. stroke	5,450	[mm]
Max. speed	4	[m/s]
Max. acceleration	15	[m/s^2]
Repeatability	± 0.1	[mm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
ZCG 90	120	400	540	2,000	3,400	1,800

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

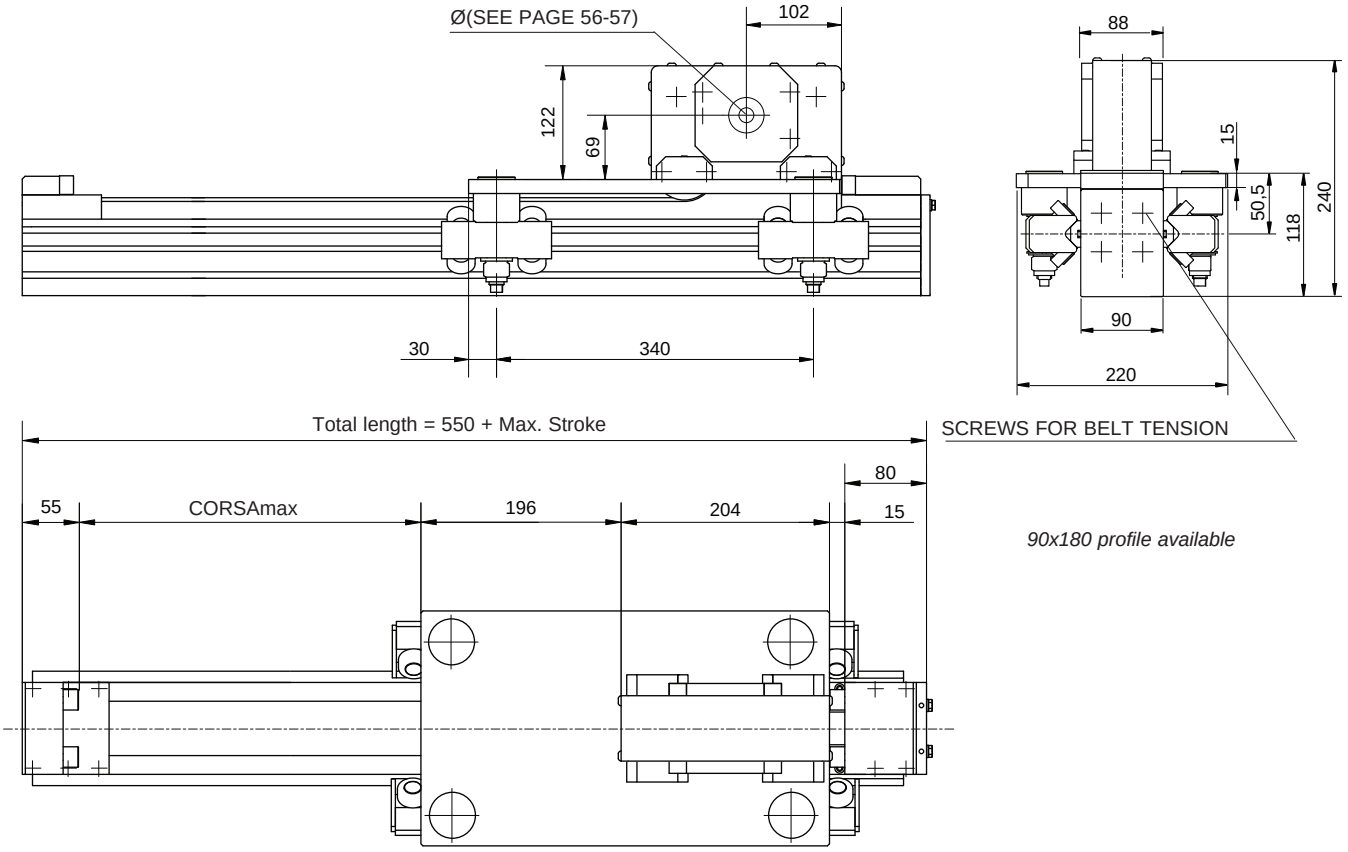
Assembly positions and load direction, see page 10

Data		
Belt	32AT10	
Slide	4 shap. r. Ø52 - guide Ø16	
Load bearing profile	E01-4	(see page 12)
Pulley Ø	70.03	[mm]
Linear displacement per rev.	220	[mm]

Weights		
Inertia of the pulley	0.0013	[kgm^2]
Belt weight	0.19	[kg/m]
Carriage weight	10.5	[kg]
Base module (stroke=0)	M_{base}=16	[kg]
1.000 mm profile	q=8.5	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Accessories: see page 11



90x180 profile available

IMPORTANT: when pairing ZC... modules with TC... modules, please check the required Z axis stroke, as this could be limited by the size of the module plates sizes.

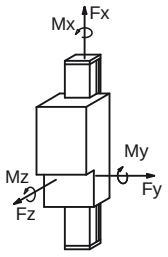
Performances	ZCRR 90	
Max. stroke	5,450	[mm]
Max. speed	4	[m/s]
Max. acceleration	25	[m/s^2]
Repeatability	± 0.1	[mm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
ZCRR 90	300	1,000	1,000	2,000	6,700	6,700

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

Assembly positions and load direction, see page 10



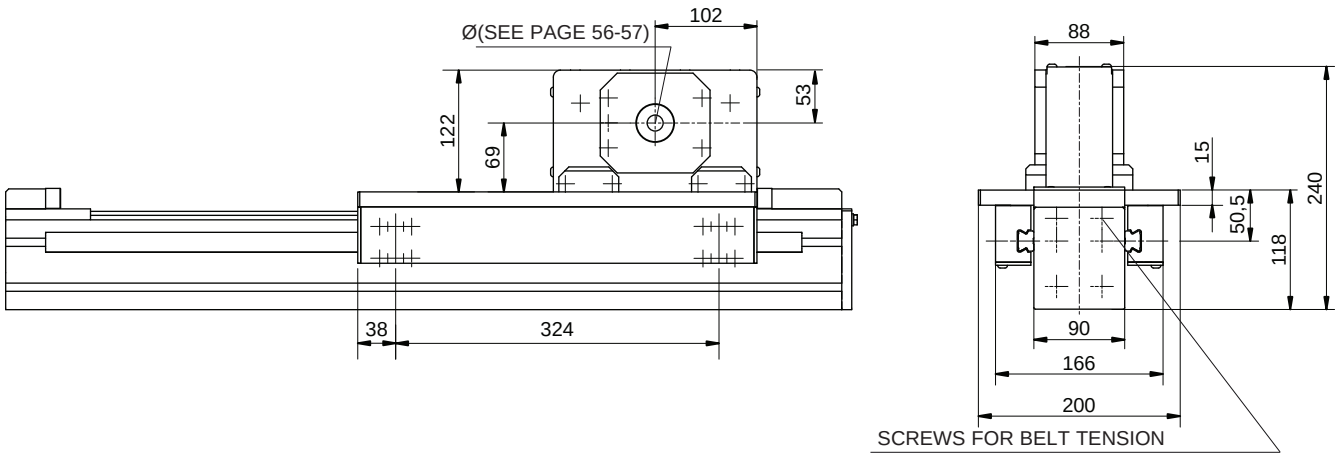
Fx= Max belt strength

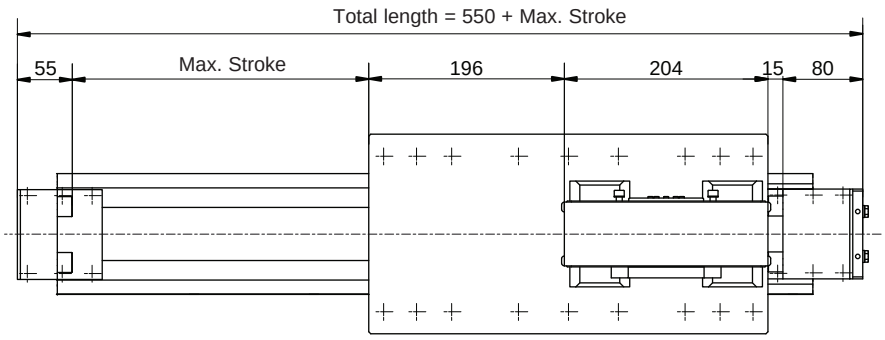
Data		
Belt	32 AT 10	
Slide	4 slides 4 roll. Ø30	[mm]
Load bearing profile	E01-4	(see page 12)
Pulley Ø	70.03	[mm]
Linear displacement per rev.	220	[mm]

Weights		
Inertia of the pulley	0.0013	[kgm^2]
Belt weight	0.21	[kg/m]
Carriage weight	13	[kg]
Base module (stroke=0)	M_{base}= 20	[kg]
1,000 mm profile	q=11.2	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Accessories: see page 11

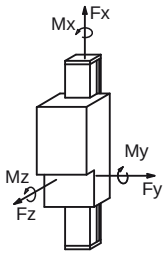




90x180 profile available

IMPORTANT: when pairing ZC... modules with TC... modules, please check the required Z axis stroke, as this could be limited by the size of the module plates sizes.

Performances	ZCL 90	
Max. stroke	5,450	[mm]
Max. speed	4	[m/s]
Max. acceleration	20	[m/s^2]
Repeatability	± 0.1	[mm]



Fx= Max belt strength

Suggested working load conditions						
Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
ZCL 90	260	730	1,000	2,000	5,500	5,000

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

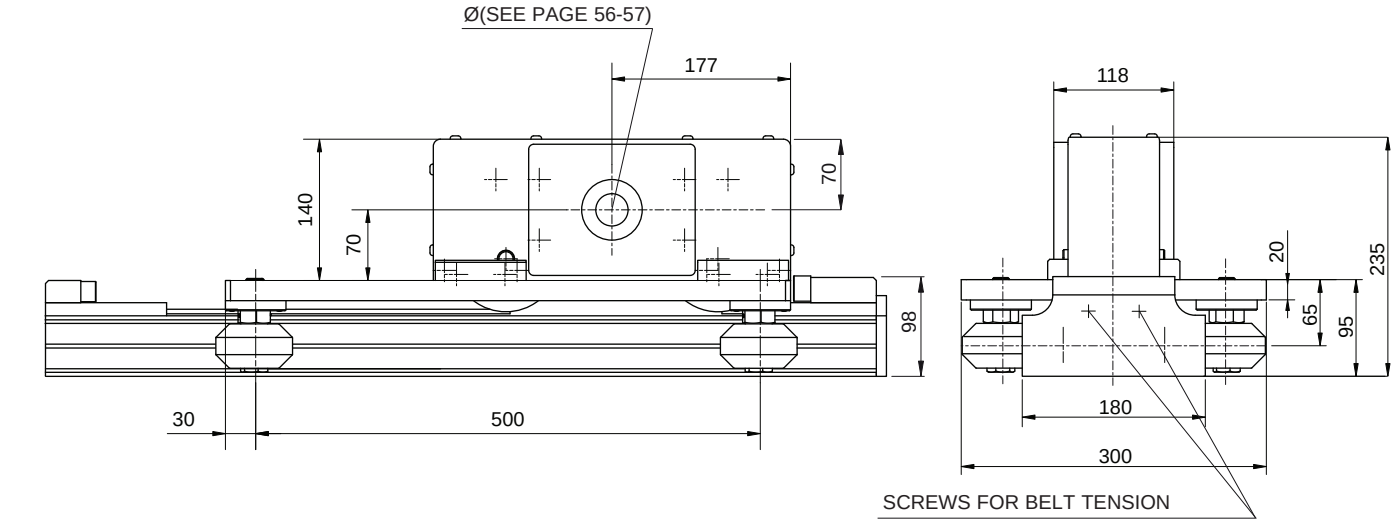
Data		
Belt	32AT10	
Slide	4 caged ball roller slides 20	
Load bearing profile	E01-4	(see page 12)
Pulley Ø	70.03	[mm]
Linear displacement per rev.	220	[mm]

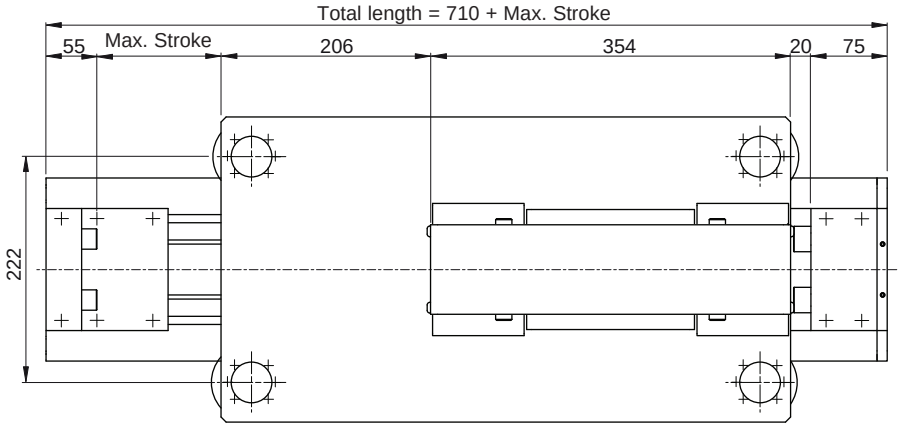
Weights		
Inertia of the pulley	0.0013	[kgm^2]
Belt weight	0.19	[kg/m]
Carriage weight	11.5	[kg]
Base module (stroke=0)	M_{base}=18.5	[kg]
1,000 mm profile	q=11.5	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

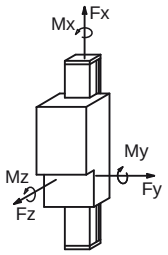
Registered model

Accessories: see page 11





IMPORTANT: when pairing ZC... modules with TC... modules, please check the required Z axis stroke, as this could be limited by the size of the module plates sizes.



Fx= Max belt strength

Performances	ZCY 180	
Max. stroke	6,750	[mm]
Max. speed	4	[m/s]
Max. acceleration	15	[m/s^2]
Repeatability	± 0.6	[mm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
ZCY 180	220	350	280	3,000	2,400	1,800

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

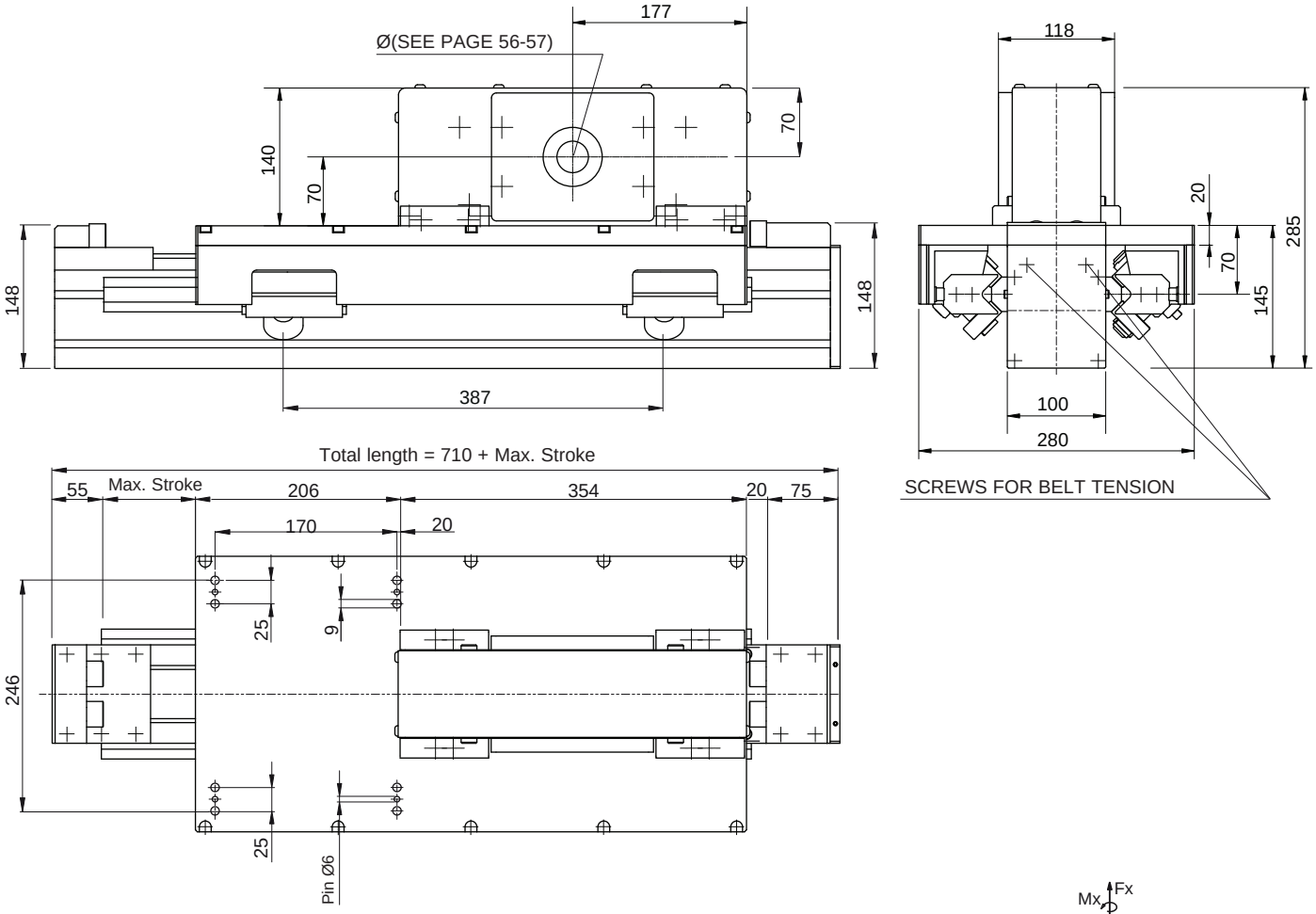
Assembly positions and load direction, see page 10

Data		
Belt	50ATL10	
Slide	4 Rollers Ø 76	[mm]
Load bearing profile	Sys -1G (see page 15)	
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

Weights		
Inertia of the pulley	0.0067	[kgm^2]
Belt weight	0.34	[kg/m]
Carriage weight	23.2	[kg]
Base module (stroke=0)	M_{base}=33.5	[kg]
1,000 mm profile	q=12.5	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Accessories: see page 11



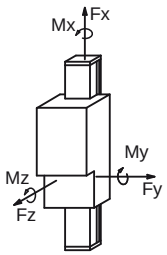
IMPORTANT: when pairing ZC... modules with TC... modules, please check the required Z axis stroke, as this could be limited by the size of the module plates sizes.

Performances	ZCRQ 100	
Max. stroke	5,300	[mm]
Max. speed	4	[m/s]
Max. acceleration	25	[m/s^2]
Repeatability	± 0.1	[mm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
ZCRQ 100	360	1,200	1,200	4,000	7,320	7,320

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

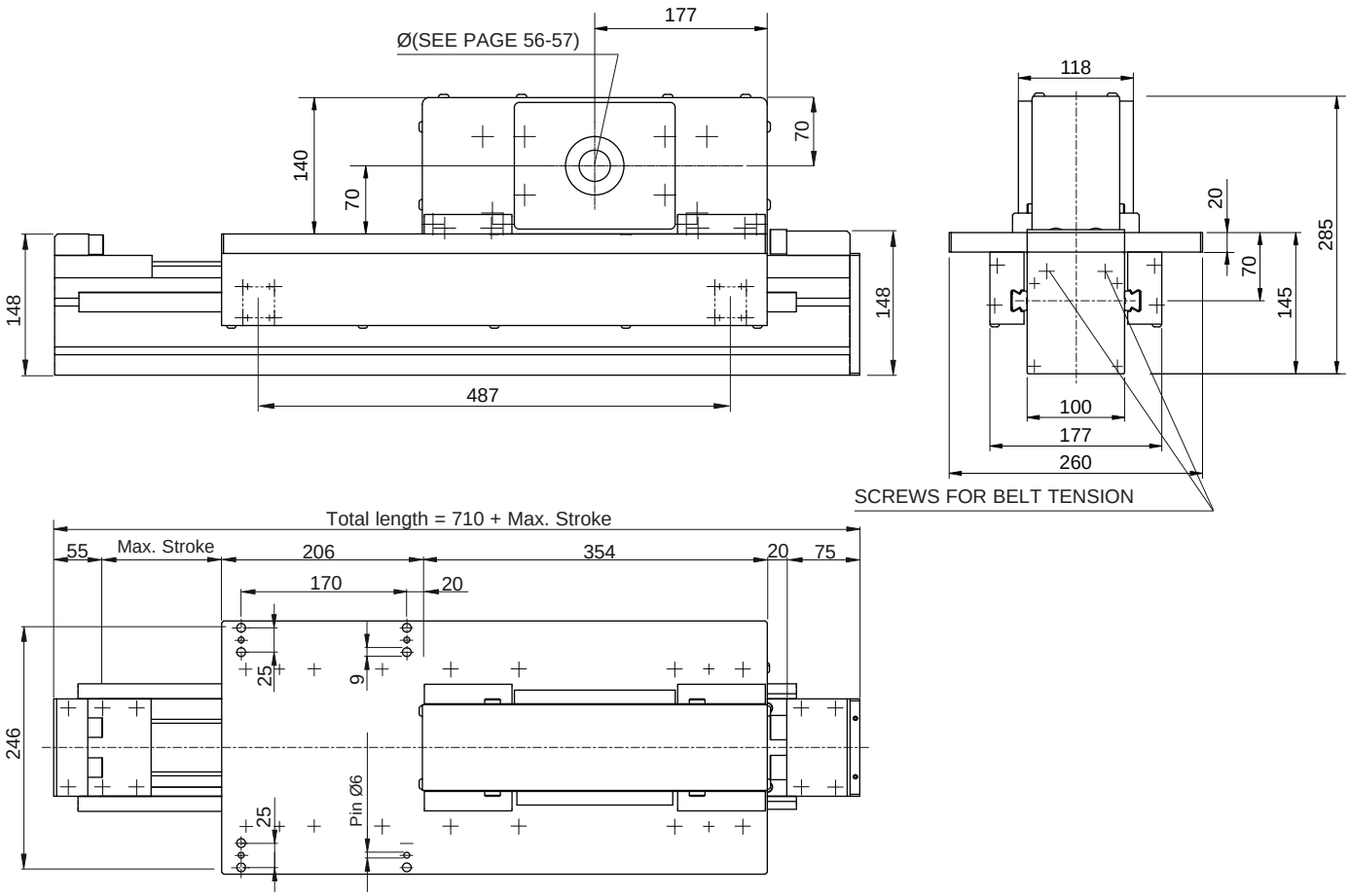
Assembly positions and load direction, see page 10

Data		
Belt	50 ATL 10	
Slide	4 slides 2 roll. Ø 40	[mm]
Load bearing profile	MA 1-5	(see page 13)
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

Weights		
Inertia of the pulley	0.0067	[kgm^2]
Belt weight	0.34	[kg/m]
Carriage weight	25	[kg]
Base module (stroke=0)	M_{base}=36.5	[kg]
1,000 mm di profile	q=16.5	[kg]

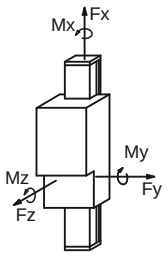
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Accessories: see page 11



IMPORTANT: when pairing ZC... modules with TC... modules, please check the required Z axis stroke, as this could be limited by the size of the module plates sizes.

Performances	ZCL 100	
Max. stroke	5,300	[mm]
Max. speed	4	[m/s]
Max. acceleration	25	[m/s^2]
Repeatability	± 0.1	[mm]



Fx= Max belt strength

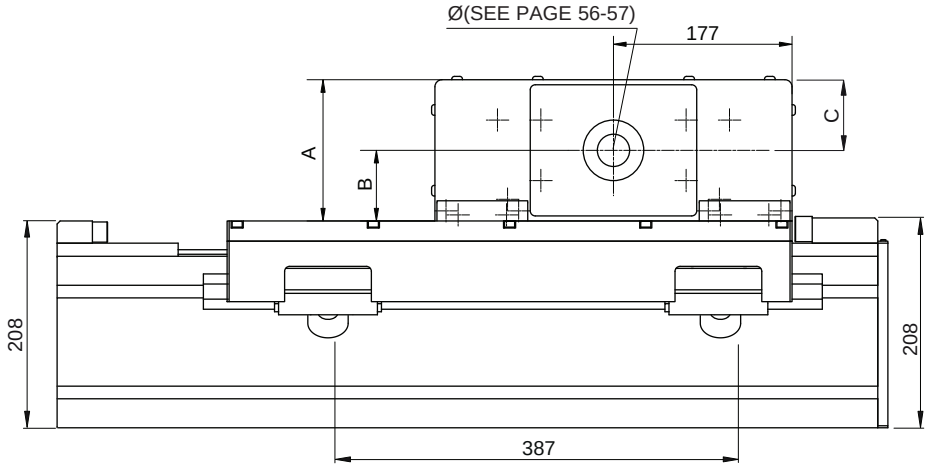
Suggested working load conditions						
Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
ZCL 100	480	1,630	1,840	4,000	7,360	8,260

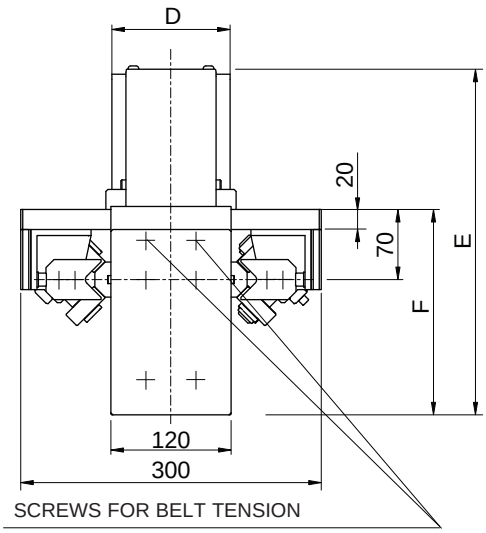
The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

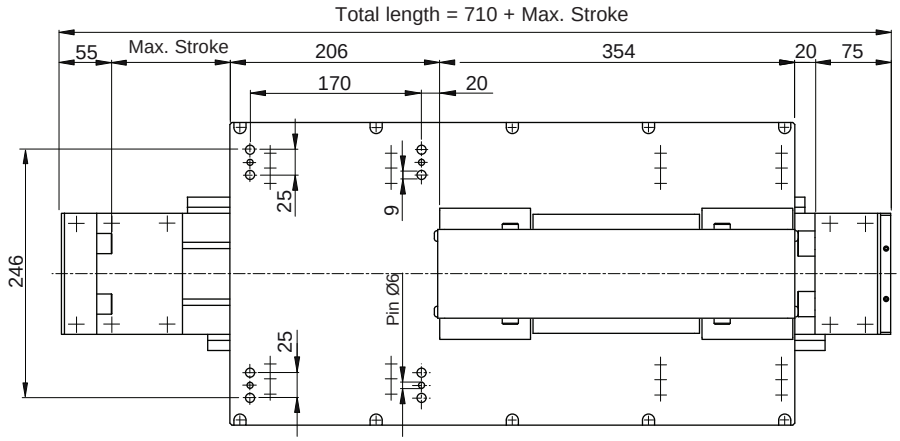
Data		
Belt	50 ATL 10	
Slide	4 caged ball roller slides 20	
Load bearing profile	MA 1-5	(see page 13)
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

Weights		
Inertia of the pulley	0.0067	[kgm^2]
Belt weight	0.34	[kg/m]
Carriage weight	24.4	[kg]
Base module (stroke=0)	M_{base}=36.6	[kg]
1,000 mm profile	q=15.2	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]







IMPORTANT: when pairing ZC... modules with TC... modules, please check the required Z axis stroke, as this could be limited by the size of the module plates sizes.

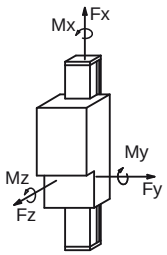
Performances	ZCRQ 170 - ZCERQ 170	
Max. stroke	5,300	[mm]
Max. speed	4	[m/s]
Max. acceleration	25	[m/s^2]
Repeatability	± 0.1	[mm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
ZCRQ 170	440	1,485	1,485	4,000	7,620	7,620
ZCERQ 170	440	1,485	1,485	6,000	7,620	7,620

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

Assembly positions and load direction, see page 10



Fx= Max belt strength

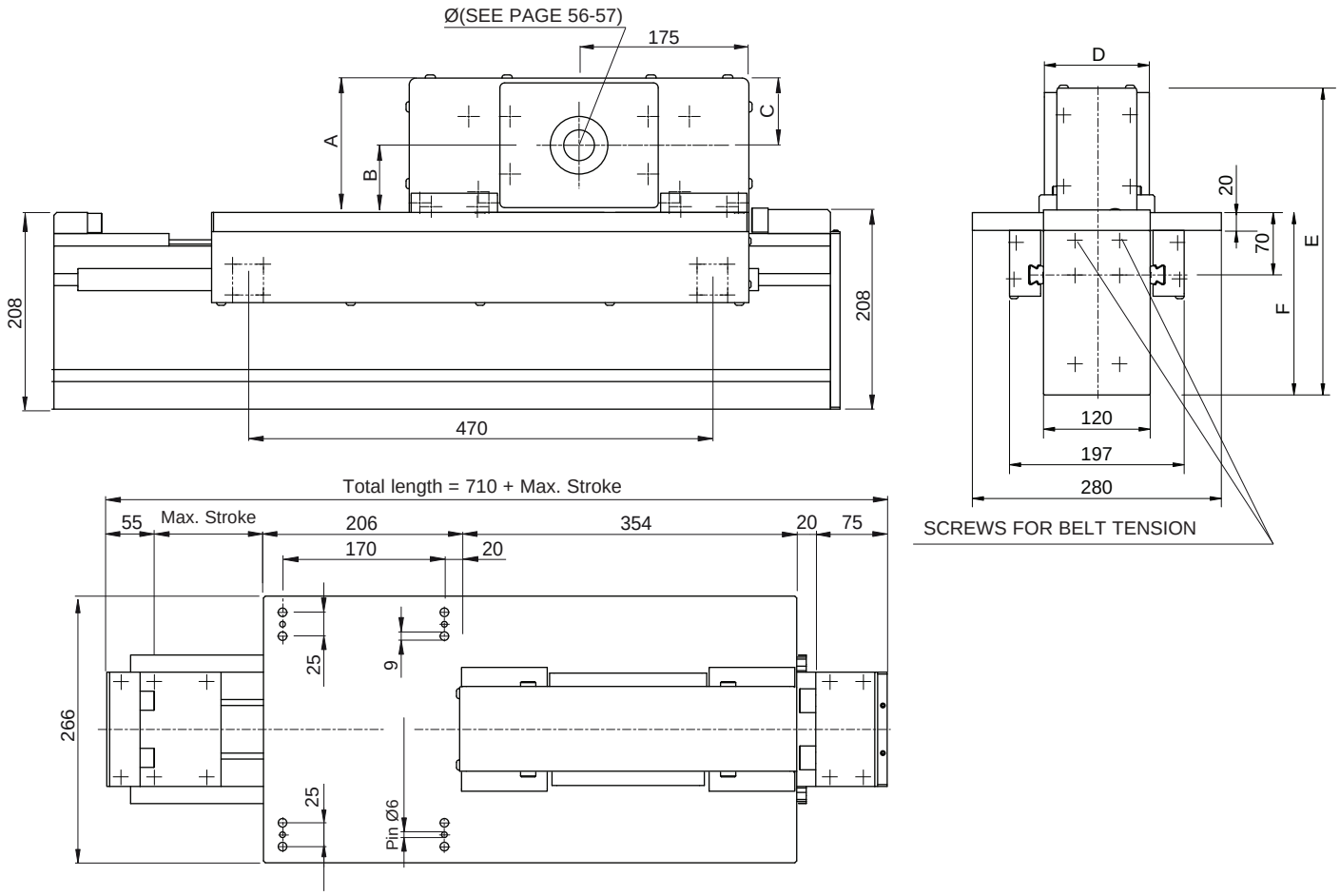
Belt	A	B	C	D	E	F
50	140	70	70	118	345	205
75	164	82	82	143	379	215

Data	ZCRQ 170	ZCERQ 170	
Belt	50 ATL 10	75 ATL 10	
Slide	4 slides 2 roll. Ø 40		[mm]
Load bearing profile	Statyca	(see page 14)	
Pulley Ø	95.49		[mm]
Linear displacement per rev.	300		[mm]

Weights	ZCRQ 170	ZCERQ 170	
Inertia of the pulley	0.0067	0.010	[kgm^2]
Belt weight	0.34	0.51	[kg/m]
Carriage weight	27.6	32	[kg]
Base module (stroke=0)	M_{base}=47	M_{base}=51.4	[kg]
1,000 mm profile	q=25	q=25	[kg]

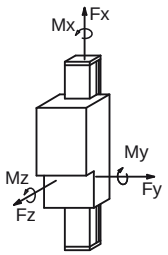
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Accessories: see page 11



IMPORTANT: when pairing ZC... modules with TC... modules, please check the required Z axis stroke, as this could be limited by the size of the module plates sizes.

Performances	ZCL 170 - ZCEL 170	
Max. stroke	5,300	[mm]
Max. speed	4	[m/s]
Max. acceleration	25	[m/s^2]
Repeatability	± 0.1	[mm]



Fx= Max belt strength

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
ZCL 170	810	2,940	4,560	4,000	10,400	12,000
ZCEL 170	810	2,940	4,560	6,000	10,400	12,000

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

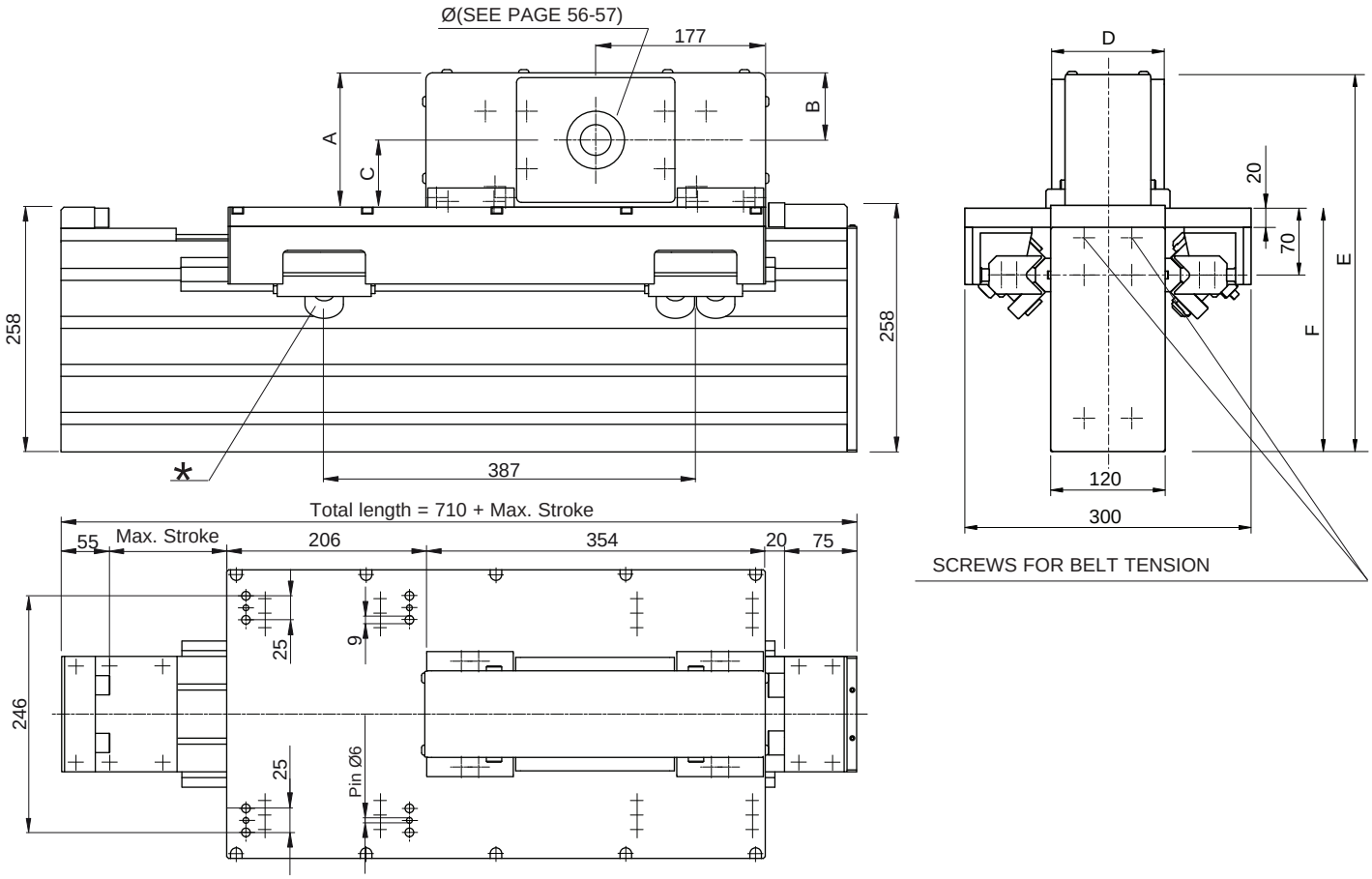
Belt	A	B	C	D	E	F
50	140	70	70	118	345	205
75	164	82	82	143	379	215

Data	ZCL 170	ZCEL 170	
Belt	50 ATL 10	75 ATL 10	
Slide	4 caged ball roller slides 25		
Load bearing profile	Statyca	(see page 14)	
Pulley Ø	95.49		[mm]
Linear displacement per rev.	300		[mm]

Weights	ZCL 170	ZCEL 170	
Inertia of the pulley	0.0067	0.010	[kgm^2]
Belt weight	0.34	0.51	[kg/m]
Carriage weight	27.6	31.6	[kg]
Base module (stroke=0)	M_{base}=46.2	M_{base}=50.2	[kg]
1,000 mm profile	q=24	q=24	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Accessories: see page 11



IMPORTANT: when pairing ZC... modules with TC... modules, please check the required Z axis stroke, as this could be limited by the size of the module plates sizes.

*: Please specify the roller orientation according to the barycentre of the applied load. Values corresponding to the most favourable load position.

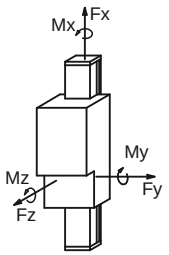
Performances	ZCRQ 220 - ZCERQ 220	
Max. stroke	11,300	[mm]
Mas. speed	4	[m/s]
Max. acceleration	25	[m/s^2]
Repeatability	± 0.1	[mm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
ZCRQ 220	440	1,900(*)	1,485	4,000	7,620	9,500(*)
ZCERQ 220	440	1,900(*)	1,485	6,000	7,620	9,500(*)

The dynamic values shown do not refer to the max. theoretical load capacity. They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

Assembly positions and load direction, see page 10



Fx= Max belt strength

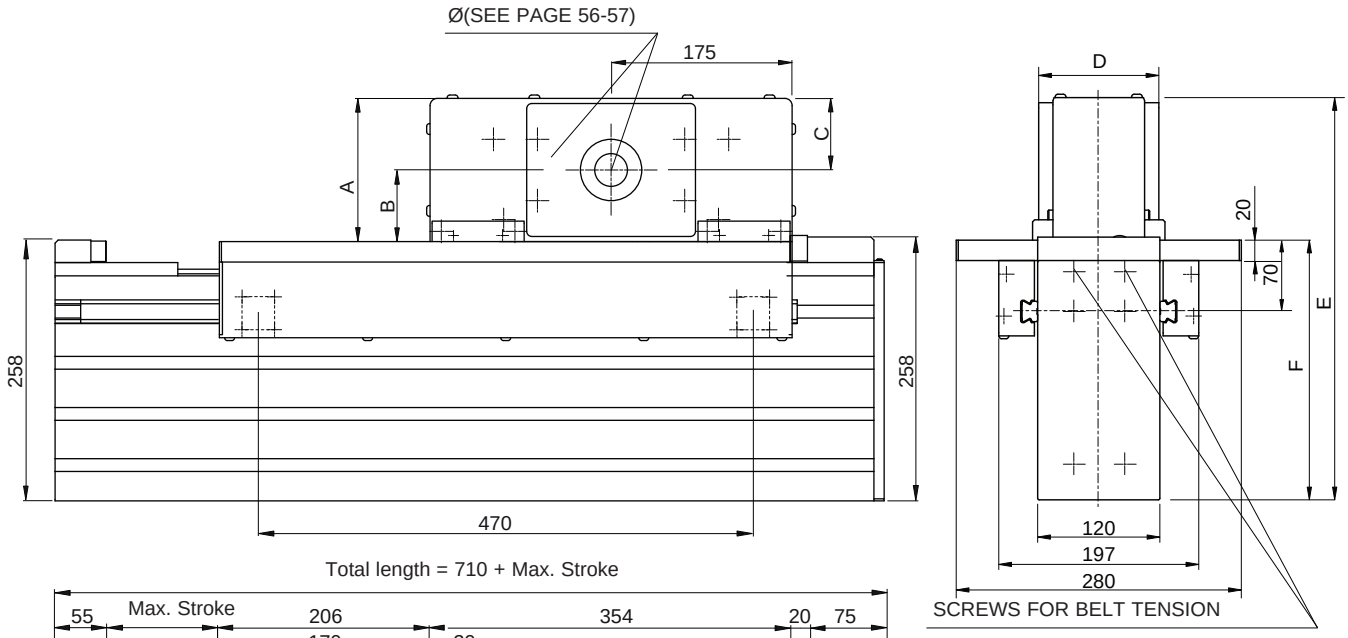
Belt	A	B	C	D	E	F
50	140	70	70	118	395	255
75	164	82	82	143	429	265

Data	ZCRQ 220	ZCERQ 220	
Belt	50 ATL 10	75 ATL 10	
Slide	4 slides 3 rollers Ø 40		[mm]
Load bearing profile	Logyca		(see page 14)
Pulley Ø	95.49		[mm]
Linear displacement per rev.	300		[mm]

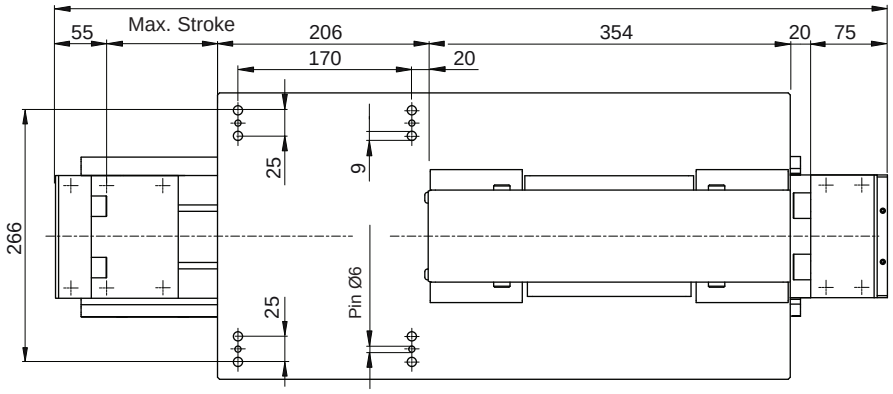
Weights	ZCRQ 220	ZCERQ 220	
Inertia of the pulley	0.0067	0.010	[kgm^2]
Belt weight	0.34	0.51	[kg/m]
Carriage weight	26	30	[kg]
Base module (stroke=0)	M_{base}=52	M_{base}=56	[kg]
1,000 mm profile	q=33.6	q=34	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Accessories: see page 11

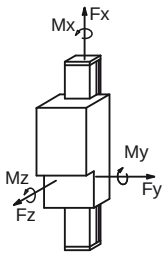


Total length = 710 + Max. Stroke



IMPORTANT: when pairing ZC... modules with TC... modules, please check the required Z axis stroke, as this could be limited by the size of the module plates sizes.

Performances	ZCL 220 - ZCEL 220	
Max. stroke	11,305	[mm]
Max. speed	4	[m/s]
Max. acceleration	25	[m/s^2]
Repeatability	± 0.1	[mm]



Fx= Max belt strength

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
ZCL 220	810	2,940	4,560	4,000	10,400	12,000
ZCEL 220	810	2,940	4,560	6,000	10,400	12,000

The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

Belt	A	B	C	D	E	F
50	140	70	70	118	395	255
75	164	82	82	143	429	265

Data	ZCL 220	ZCEL 220	
Belt	50 ATL 10	75 ATL 10	
Slide	4 caged ball roller slides 25		
Load bearing profile	Logyca	(see page 14)	
Pulley Ø	95.49		[mm]
Linear displacement per rev.	300		[mm]

Weights	ZCL 220	ZCEL 220	
Inertia of the pulley	0.0067	0.010	[kgm^2]
Belt weight	0.34	0.51	[kg/m]
Carriage weight	27.5	37.5	[kg]
Base module (stroke=0)	M_{base}=53	M_{base}=57	[kg]
1,000 mm profile	q=32.3	q=32.7	[kg]

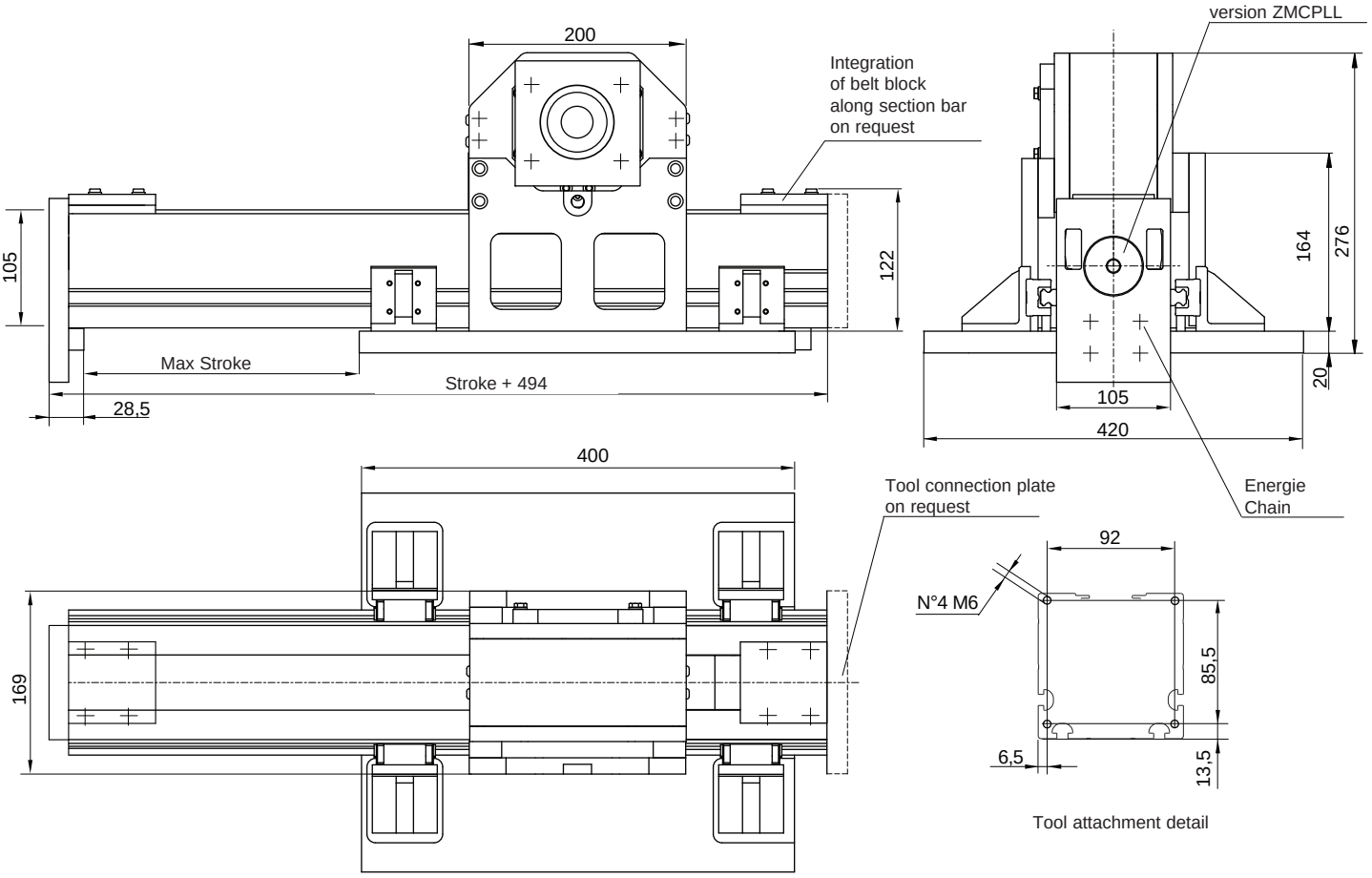
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

ZMCPLL 105 - ZMCLL 105

OMEGA BELT DRIVE SUITABLE FOR VERTICAL ASSEMBLY

Patent pending

LOAD COMPENSATION WITH INTEGRATED PNEUMATIC CYLINDER

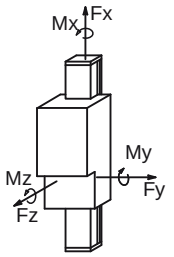


Performances	ZMCPLL 105	
Integrated pneumatic cylinder	Ø 50	[mm]
Maximum cylinder stroke	2000	[mm]
Max Speed	3	[m/s]
Maximum acceleration	25	[m/s^2]
Repositioning precision	± 0,1	[mm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
ZMCPLL105	260	700	700	2.500	4.500	4.500

The dynamic values indicated do not correspond to maximum theoretical load capacities. They already take safety factors into account which are suitable for machinery in the automation sector. In the event of combined stress consult the technical support service.



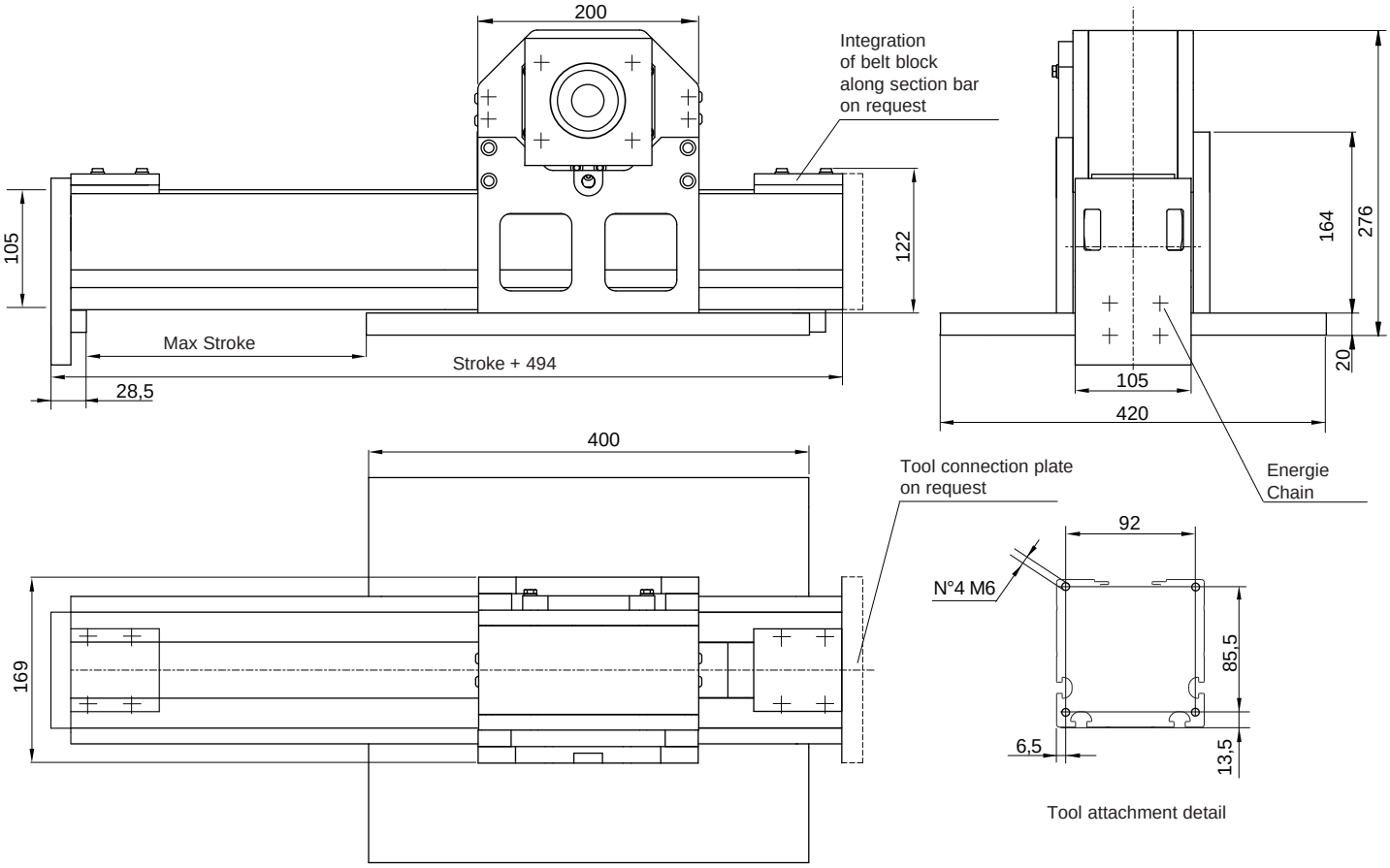
Fx= Max belt strenght

Constructive data		
Belt	50 AT 10	
Slide	4 ball slides size 15	[mm]
Profile	M105	
Pulley Ø	92,3	[mm]
Linear displacement per revolution	290	[mm]

Weights		
Inertia of the pulley	-	[kgm^2]
Belt weight	0,30	[kg/m]
Carriage weight	29	[kg]
Base Module (stroke=0)	M_{base}= 37	[kg]
1.000 profile	q=15	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot Stroke_{max}/1.000$** $Stroke_{max}$ [mm]

Patent pending

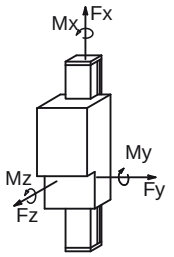


Performances	ZMCH 105	
Max Speed	3	[m/s]
Max Acceleration	25	[m/s^2]
Repositioning accuracy	± 0,1	[mm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
ZMCH105	260	700	700	2.500	4.500	4.500

The dynamic values indicated do not correspond to maximum theoretical load capacities. They already take safety factors into account which are suitable for machinery in the automation sector. In the event of combined stress consult the technical support service.



Fx= Max belt strenght

Constructive data		
Belt	50 AT 10	
Sliding	4 ball slides size 15	[mm]
Profile	M105	
Pulley Ø	92,3	[mm]
Linear displacement per revolution	290	[mm]

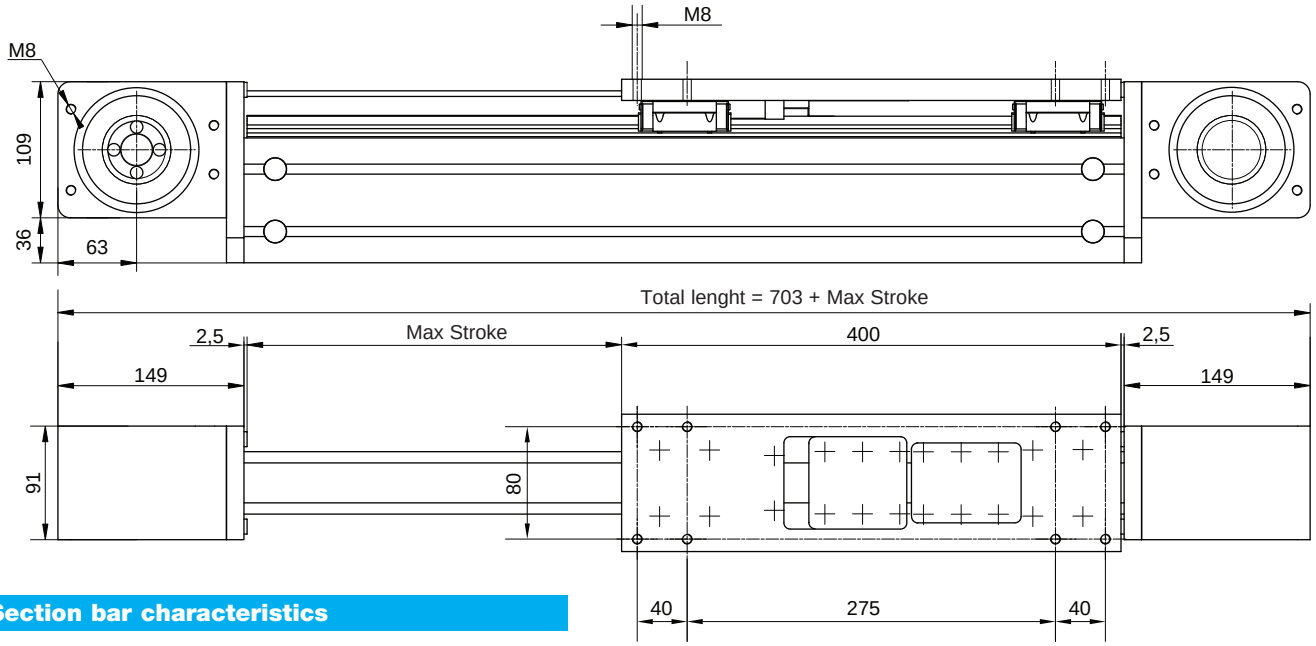
Weights		
Inertia of the pulley	-	[kgm^2]
Belt weight	0,30	[kg/m]
Carriage weight	29	[kg]
Base module (stroke=0)	M_{base}= 37	[kg]
1.000 mm profile	q=15	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot Stroke_{max}/1.000$** $Stroke_{max}$ [mm]

SERIE K MODULES GEAR MOTOR ASSEMBLY POSSIBLE FROM EACH SIDE

KCH 100/150/200

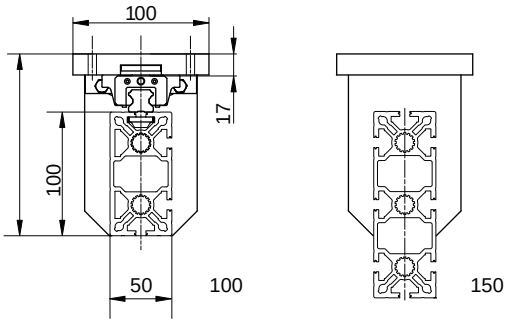
GEAR MOTOR ASSEMBLY POSSIBLE FROM EACH SIDE

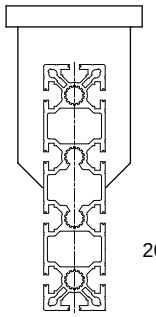


Section bar characteristics

Module	Mx	My	Weight [Kg]
KCH 100	203	54	4,6
KCH 150	30	60	7,1
KCH 200	40	80	9,0

Sizes available





Shrink disc interface

*Pulley hole (motor side = pipe side) Ø14 wrench 5x5 * [mm]

Interfaces with conical shrink discs and/or pulleys in steel are available on request. The heads are equal

Belt adjustment under load (does not require dismantling of equipment)

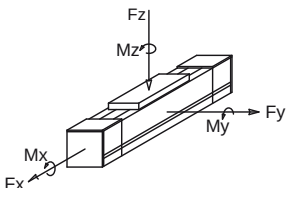
Performances	KCH /...	
Max stroke	5.600	[mm]
Max speed	4	[m/s]
Max acceleration	50	[m/s^2]
Repositioning accuracy	± 0,1*	[mm]
Loadless torque	-	[Nm]

*on request ± 0,05

Suggested working load conditions

Modulo	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
KCH/...	110	680	680	2.150	6.500	6.000

The dynamic values indicated do not correspond to maximum theoretical load capacities. They already take safety factors into account which are suitable for machinery in the automation sector. In the event of combined stress consult the technical support service.
Choice of beam depending on availability between supports.



Fx= Max belt strenght

Constructive data

Belt	32AT10	
Sliding	4 ball slides	[mm]
Profile	50 x ...	
Pulley Ø	70,03	[mm]
Linear displacement per revolution	220	[mm]
Colour	natural anodisation	

Weights

Inertia of the pulley	-	[kgm^2]
Belt weight	0,38	[kg/m]
Carriage weight	2,2	[kg]
Base module (stroke=0)	M_{base} = 9	[kg]
1.000 mm profile	q=3 + profile	[kg]

To calculate the module weight use the following formula: **$M=M_{base}+q \cdot Stroke_{max}/1.000$** $Stroke_{max}$ [mm]

Drive Pulley Bores for Shrink Discs

Registered model

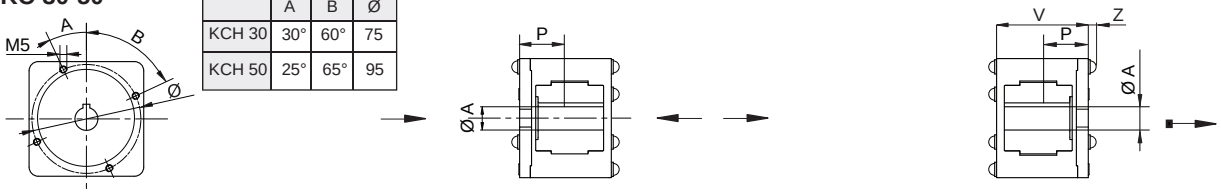
The motor connection is pre-engineered directly on the drive head by means of a removable flange, but integrated in the actual head. The drive shaft and/or the driven shaft are locked into the pulley by shrink-discs. (The gearbox can be easily removed without disassembling the head). Please see page 10 to identify the desired motor side (left or right); page 56 for shrink-disc and flange diameter and page 11 for the order code setting. Non-standard diameters are available upon request.

gearbox entry

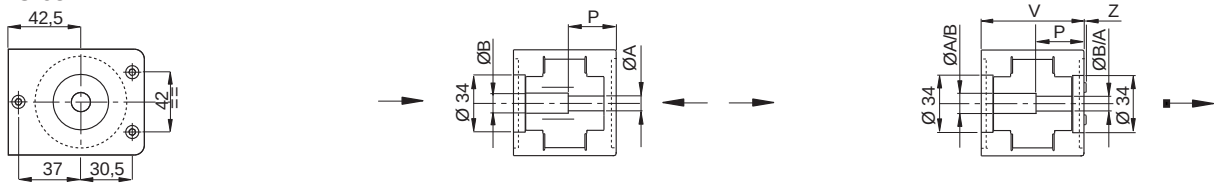
:input A
:input B
output B
output A
driven shaft side

	A	B	Ø
KCH 30	30°	60°	75
KCH 50	25°	65°	95

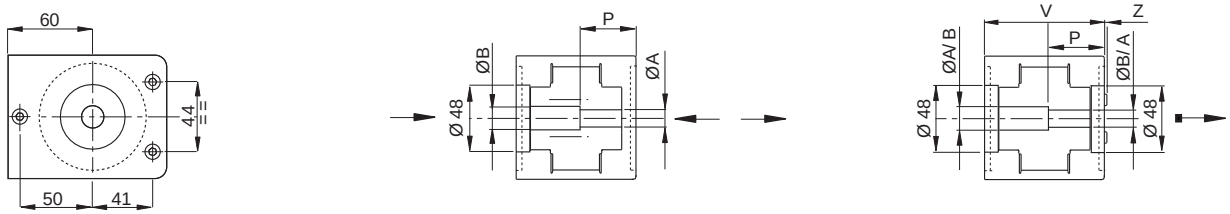
Series KC 30-50



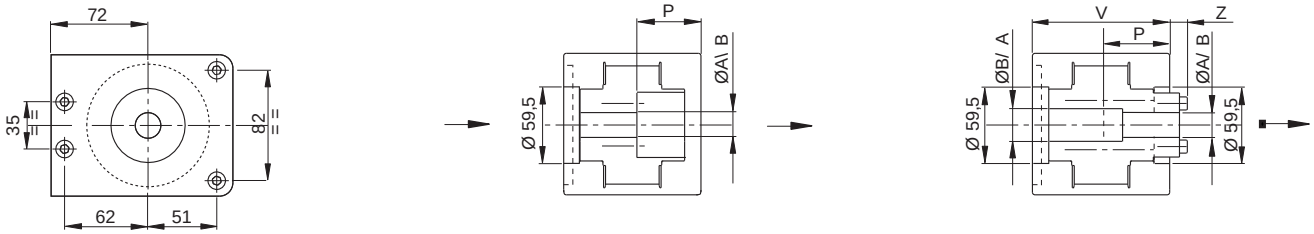
Series MC 65



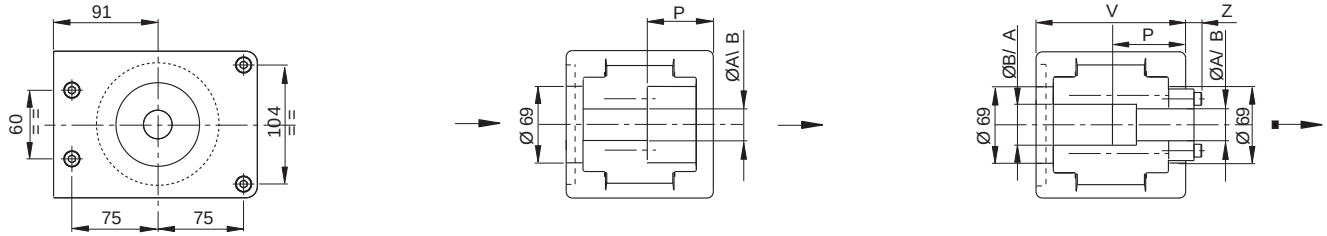
Serie MC 80



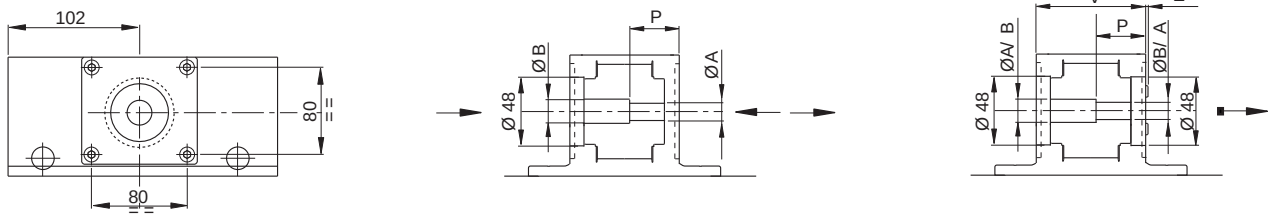
Series MC 105 - TC 180



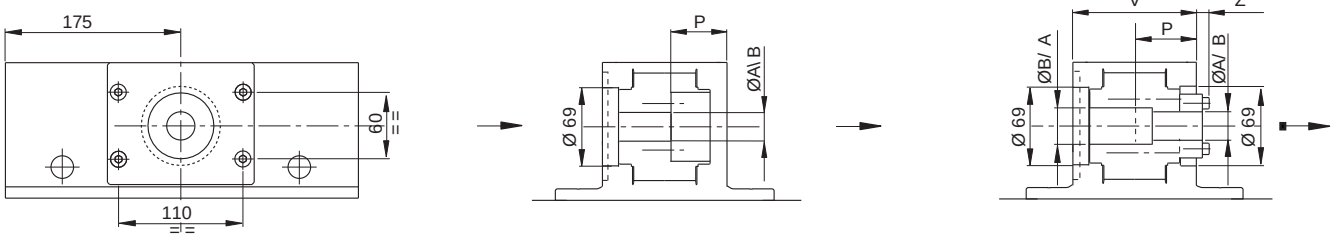
Series TC 170/200 - TC 220 - TC 280 - TC 360



Series ZC 60 - ZC 90



Series ZC 100 - ZCY 180 - ZC 170-220 - ZCE 170-220



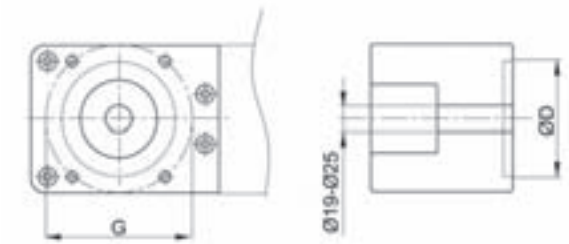
Module	A Ø [mm]	B Ø [mm]	V [mm]	P [mm]	Z [mm]
KCH30 - KCH50	12H7		40	34	4
	14H7		68	34	4
MC 65 - TC 100	12H7		67	34	0
		14H7	67	34	0
MC 80	16H7		80	52.4	1
		19H7	80	49.4	1
		20H7	80	49.4	1
MC 105 - TC 180	19H7		105	49	13.5
		25H7	105	51	8
TC 170 - TC 200	25H7		117	54.5	12.5
		32H7	117	57.5	7
TC 220 - TC 280 - TC 360	25H7		142	79.5	12.5
		32H7	142	82.5	7
		40H7	142	82.5	7
ZC 60 - ZC 90	16H7		100	62.4	0
		19H7	100	62.4	0
		20H7	100	62.4	0
ZC 100 - ZCY 180	25H7		108	48.5	11.5
		32H7	108	52.5	6
ZC 170 - 220	25H7		108	48.5	11.5
		32H7	108	52.5	6
		40H7	108	52.5	6
ZCE 170 - 220	25H7		143	65	12
		32H7	143	95	12
		40H7	143	95	12

Phosphating of drive and driven pulleys.

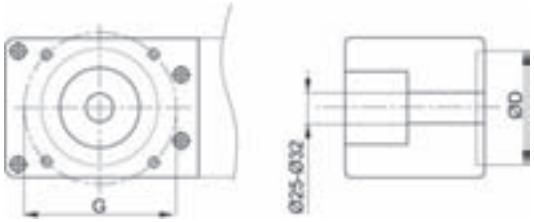
Adapter Flanges

Standard machining for planetary gearboxes - MP or MPTR, LP, EP series.
Machining is performed directly on the removable flange in a symmetric position, suitable for both sides.

Ex. module: MC 105



Ex. module: TC 280



Drilled flange: code E
Blind flange: code X

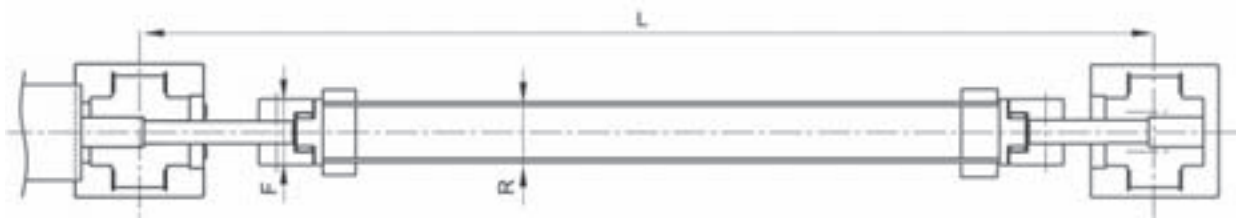
Linear module	Gearbox code			Size
Series		D	Ø	G
MC 65 KC 30-50	LP 050	35	12	44
	EP55	32	12	40
	MP053	32	12	40
MC 80-105 - ZC 60	MPTR080	50	19	65
	LP070	52	16	62
ZC 90	EP75 AA	40	14	52
MC 105 - TC-ZC 100	MPTR105	70	25	85
MC 105 - TC 180	LP090	68	22	80
	EP90 TT	50	19	65
	MPTR130	80	32	110
TC 170-360	LP120	90	32	108
ZC 170-220	EP120 TT	70	25	85

Connecting shafts for parallel modules

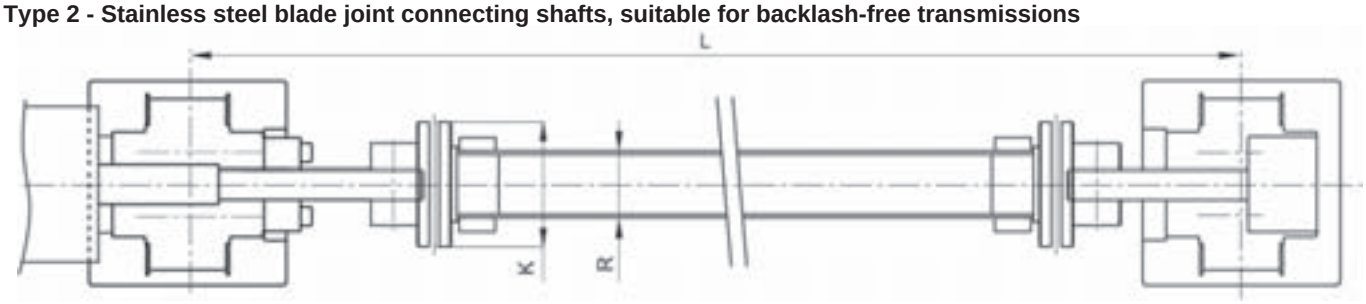
We can supply standard hollow shaft connections, according to your application requirements.
Please specify the type of module to be connected, together with speed, “L” centre-distance, working and peak torques, accuracy.
Some simplified solutions with solid shafts are available for low-speed applications and with “L” of up to 2,000 mm.
If high-speeds and/or “L” of more than 2,000 mm are needed, please ask our technical dept. for the shaft scaling.

The complete kit includes all the components needed to make the connection: tube, shrink-discs, shaft crop ends for connection between pulleys and shrink-discs, any supports.
Tube material: 6060 aluminium alloy
The customer is responsible for ensuring compliance with accident prevention rules in relation to all rotating parts.

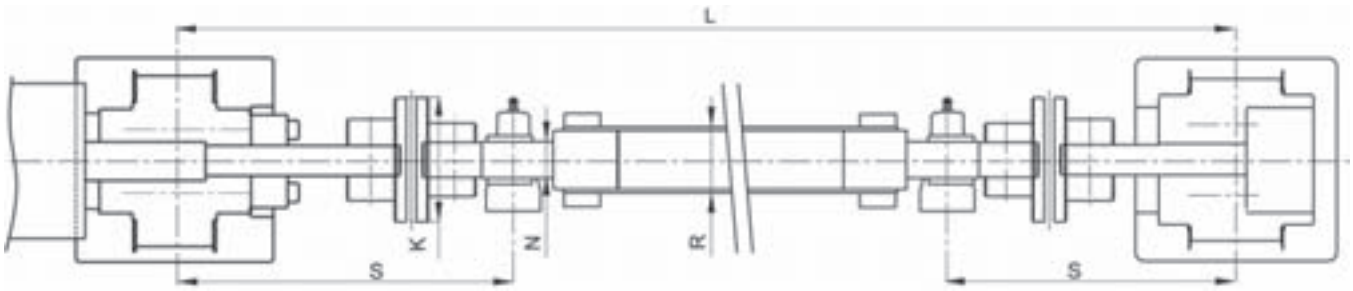
Type 1 - Elastic joint connecting shafts, normally suitable for low-speeds



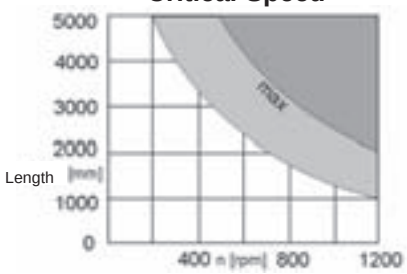
Type 2 - Stainless steel blade joint connecting shafts, suitable for backlash-free transmissions



Type 3 - Stainless steel blade joint connecting shafts and pedestal bearings, suitable for backlash-free transmissions



Critical Speed



R(*)	K	F	N	S	Lmax	MTwork [Nm]	Mom.Inertia. [Kgm²]	Type 1: Code/L	Type 2: Code/L	Type 3: Code/L
40	67	55	20	200	6,200	20	0.0028 + 0.46 x L. x10⁻⁶	436.0948	436.0957	436.0965
50	81	65	25	235	6,300	35	0.0092 + 0.66 x L. x10⁻⁶	436.0949	436.0958	436.0966
50	93	80	25	235	6,300	70	0.0161 + 1.34 x L. x10⁻⁶	436.0951	436.0971	436.0974
70	104	95	25	235	6,400	100	0.0293 + 2.93 x L. x10⁻⁶	436.0952	436.0960	436.0968
80	126	120	25	250	6,400	190	0.0793 + 4.5 x L. x10⁻⁶	436.0955	436.0963	436.0984
90	143	-	-	-	6,500	300	0.1456 + 6.53 x L. x10⁻⁶	-	436.0986	436.0987
110	185	-	-	-	6,000	420	0.3499 + 12.3 x L. x10⁻⁶	436.0144	436.0145	436.0146

The S value can vary by ± 20%, Lmax by ± 3%, according to the chosen type. Please contact our technical dept.

Spare rollers with pins

Make sure that all the components are locked in place with the appropriate screws. The recommended tightening torque for pin locking screws and nuts is 50 Nm.

Max. load factors for hardened and tempered guides

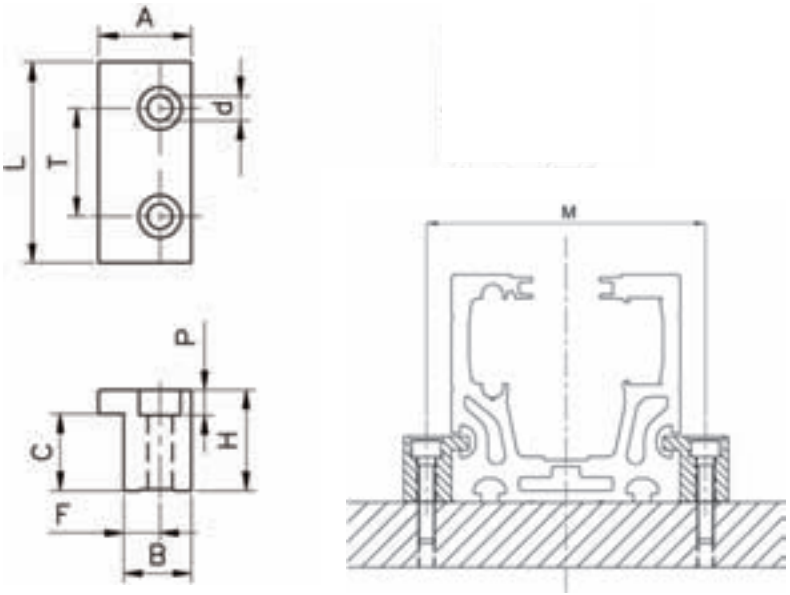
Roller	Cw [N]	C0w[N]	Fr amm.[N]	V max.
Ø30	5,000	3,000	1,350	7 m/s
Ø40	9,800	6,200	2,600	7 m/s
Ø52	15,800	10,500	4,400	6 m/s
Ø62	21,100	14,500	5,600	5 m/s

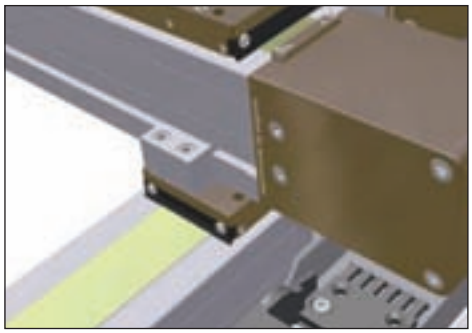
Max. load factors for hardened guides

Roller	Cw [N]	C0w[N]	Fr amm.[N]	V max.
Ø30	5,000	3,000	400	2 m/s
Ø40	9,800	6,200	800	13 m/s
Ø52	15,800	10,500	1,400	2.5 m/s
Ø62	21,100	14,500	1,900	2 m/s

Spare roller with pin	Weight [kg]	Code
Ø30 Concentric	0.02	**406.0056**
Ø40 Concentric	0.22	**205.0464**
Ø40 Eccentric (± 0.75 mm)	0.25	**205.0463**
Ø52 Concentric	0.4	**205.0163**
Ø62 Concentric	0.55	**205.0165**

Mounting brackets

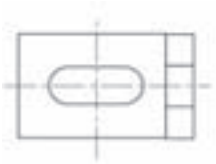


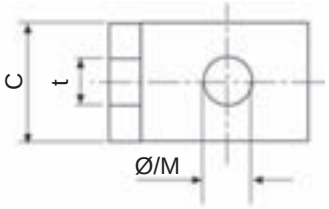


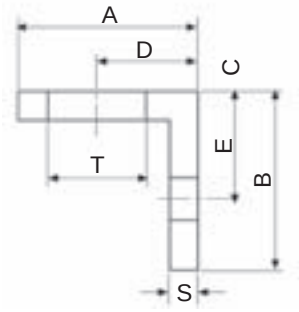
Material: aluminium alloy 6082

Module type	bxh	A	L	T	d	H	P	C	F	B	M	Code
KC 30	30x30	25	25	-	6.7	17	6.8	10.6	10	18	40	**415.1105**
MC 65	67x65	25	50	25	6.7	20	6.8	13.5	10	18	87	**415.0388**
MC 80	80x80	25	50	25	6.7	25	6.8	18.6	10	18	100	**415.0760**
KC 50, TC-ZC 100		25	50	25	6.7	27	6.8	20.6	10	18	120	**415.0764**
MC 105	105x105	30	50	25	9	30	9.5	23.6	12	22	129	**415.0761**
TC 180	180x90	30	50	25	9	25	9.5	18	12	25	204	**415.0773**
TC 170	120x170										198	
TC 200	120x200	30	90	50	11	40	11	28.3	14	25	228	**415.0762**
TC 220	120x220										248	
TC 280	170x280	30	90	50	11	20	11	11.3	14	25	308	**415.0763**
TC 280Vert.	280x170	30	90	50	11	20	11	13.5	14	25	198	**915.1174**

Assembly brackets





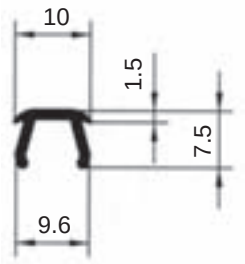


Material: natural, anodised anticorodal alloy.

Thread								Code	
A	B	C	D	E	S	Txt	ØM	Ø	M
45	45	20	25	25	5	20x6.5	6	**A30-76**	**A 30-86**
35	25	20	19	15	5	20x6.5	4	**A30-54**	**A 30-64**
35	25	20	19	15	5	20x6.5	5	**A30-55**	**A 30-65**
35	25	20	19	15	5	20x65	6	**A30-56**	**A 30-66**
25	25	15	14	15	4	13.5x5.5	3	**B30-53**	**B 30-63**
25	25	14	14	15	4	13.5x5.5	4	**B30-54**	**B 30-64**
25	25	15	14	15	4	13.5x5.5	5	**B30-55**	**B 30-65**
25	25	15	14	15	4	13.5x5.5	6	**B30-56**	**B 30-66**

Suitable for all the modules

Filler strips

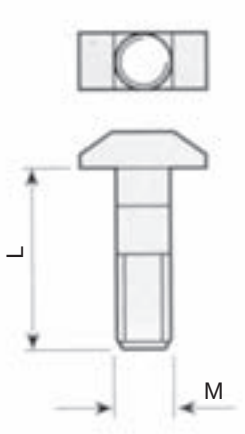


PVC filler strips, grey or black L=5,000 - 6,000 mm
for any longitudinal 8 mm slot

Suitable for series: **KC 50, MC 80-105, ZC 60-90-100-170, TC 100-180**

Color	Code A /Length
grey	**Cod.A39-25/5000**
black	**Cod.A39-26/5000**
orange (on request)	**Cod.A39-25/6000 A**

T Bolts



Assembly in longitudinal slots. Material: galvanised steel. Can be inserted through the profile slot.

Code A: KC 50, MC 80-105, ZC 60-90-100-170, TC 100-180
Code B: KC 30, MC 65

M x L	Code B	M x L	Code A
M 6x15	**B35-15**	M8x20	**A35-20**
M 6x20	**B35-20**	M8x25	**A35-20**
M 6x30	**B35-30**	M8x30	**A35-30**
M 6x40	**B35-40**	M8x40	**A35-40**
		M8x60	**A35-60**

Threaded inserts (suitable for the ZC series)

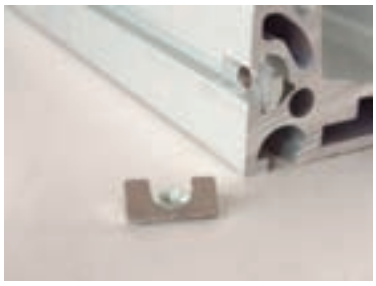
Suitable for ZC series

Material: galvanised steel

Ext. thread	Int.	a	L	Key	Code
M16	M	6	25	6	**A33-26**
M16	M	8	25	8	**A33-28**
M16	M	10	25	10	**A33-20**
M20	M	6	25	6	**207.1892**
M20	M	8	25	8	**207.1893**
M20	M	10	25	10	**207.1894**
M20	M	12	25	12	**207.2288**

Front insertable nuts and plates

Spring nut



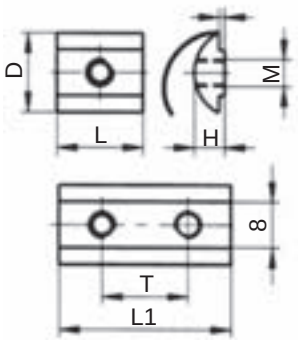


Plate suitable for every kind of module (8 mm slot).
Material: nut in galvanised steel welded to the harmonic steel spring. The B series can also be inserted through the slot.

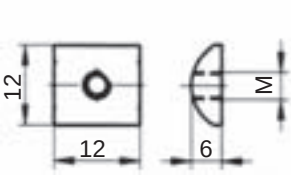
Code A: KC 50, MC 80-105, ZC 60-90-100-170, TC 100-180
Code B: KC 30, MC 65

Single plate	Code A	Code B
M5	A32-55	B32-55
M6	A32-65	B32-65
M8	A32-85	B32-85

Double plate	Code A	Code B
M6	A32-67	B32-67

Size					
Base Module	D	H	L	L1	T
MC 105, ZC 100	14	7.8	20	40	30
MC 80	11	4.1	20	40	30

Simple nut

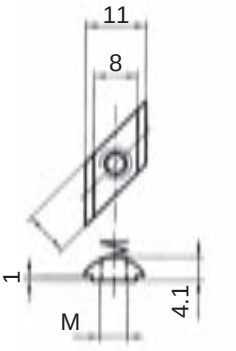


Material: galvanised steel.
Insert through the end of the profile.
Suitable for series:

KC 50, MC 80-105, ZC 60-90-100-170, TC 100-180

Thread	Code
M5	209.2431
M6	209.2432
M8	209.2433

Front insertable spring nut

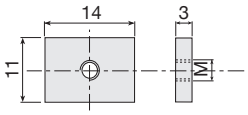


Material: galvanised steel, harmonic steel spring.
To be inserted through the slot.
Suitable for series:

KC 30, MC 65

Thread	Code B
M3	BD31-30
M4	BD31-40
M5	BD31-50
M6	BD31-60

Simple Nut

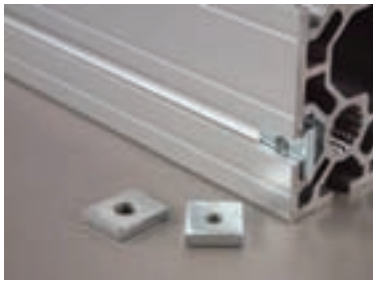


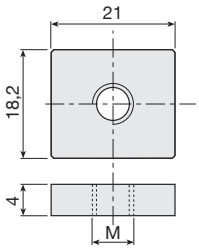
Materiale: galvanised steel.
To be inserted through the slot. Suitable for series:

KC 30, MC 65

Thread	Code B
M4	B32.40
M5	B32.50
M6	B32.60

Flat nut





Material: galvanised steel.
Insert through the end of the profile.
Retaining spring upon request.

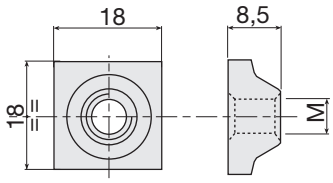
TC-ZC 100, TC 180, ZCY 180

Thread	Code
M4	A32-40
M5	A32-50
M6	A32-60
M8	A32-80
Molla	211.1061

Semi-rounded threaded inserts with spring

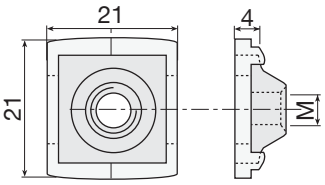
Threaded plate for base profile 45, 50 and 60. Material: galvanised steel.
Important: to be inserted through the
longitudinal slots before assembling.

Suitable for series:
TC-ZC 100, ZCY 180, TC 170-180-200-220-360, ZC 170-220



Thread	Code 18x18	Code 20x20
M4	209.0031	209.0023
M5	209.0032	209.0019
M6	209.0033	209.1202
M8	209.0034	209.0467

Plastic compound spring for vertical positioning of insert.



Spring	Code
Suitable for all inserts 18x18	101.0732

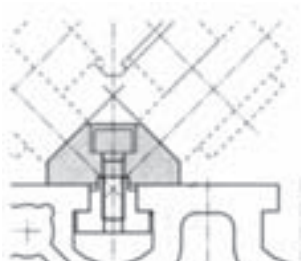
Alignment nuts

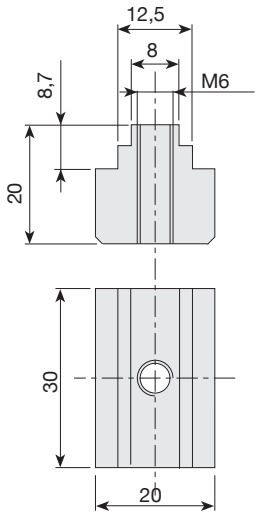
Nuts for steel guide rails

Material: galvanised steel.

Code 209.1855

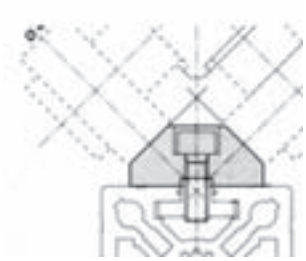
Alignment nuts.
V-shaped guide rail: 35x16
Profile with slot. 12.5 mm.
Series: **TC 170-200-220-280-360 e ZC 170-220**

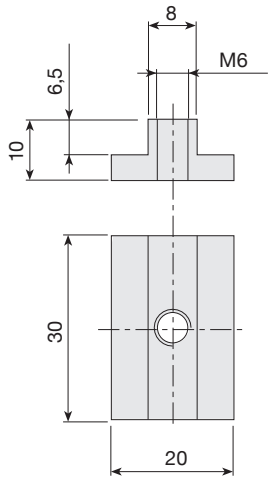




Code 209.0298

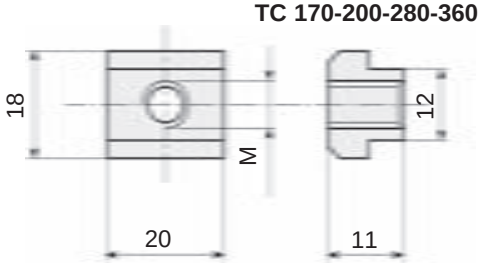
Alignment nuts.
V-shaped guide rail: 35x16
Profile with slot 8 mm.
Series: **TC-ZC 100, TC 180**





Alignment nut for slot 12.5 mm

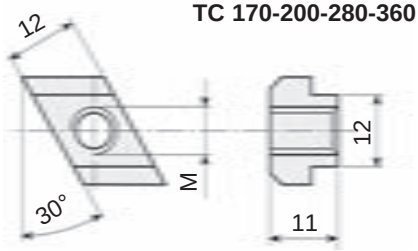
Material: galvanised steel. Suitable for series:
TC 170-200-280-360 and ZC 170-220



Thread	Code
M5	**215.1768**
M6	**215.1769**
M8	**215.1770**
M10	**215.2124**

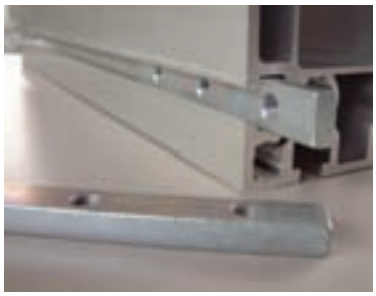
Alignment nut for slot 12.5 mm front insertable

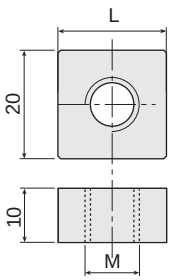
Material: galvanised steel. Suitable for series:
TC 170-200-280-360 and ZC 170-220

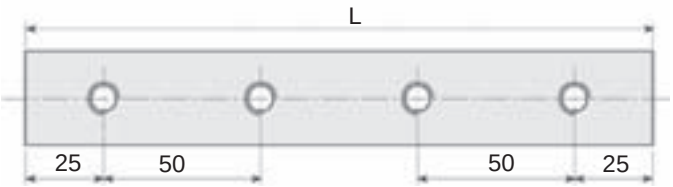


Thread	Code
M5	**215.1771**
M6	**215.1772**
M8	**215.1773**
M10	**215.2125**

Threaded nuts and plates







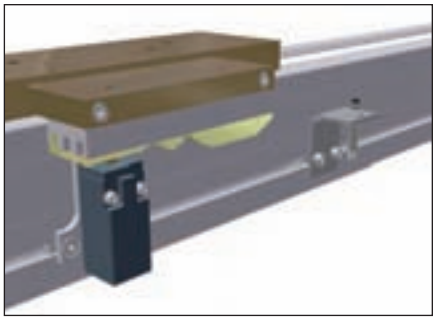
M12 (CH19) hexagonal-head screws can be used as stud bolts in profiles with 12.5 mm slots.

Material: galvanised steel. Suitable for series:
TC 170-200-220-280-360 and ZC 170-220

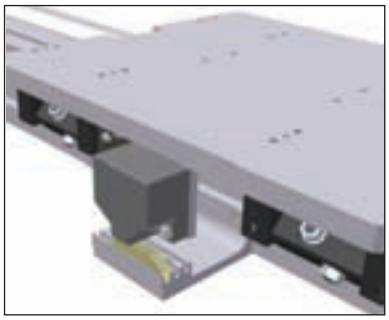
Thread	Type	L	Code
M10	1-hole plate	40	**215.0477**
M12	1-hole plate	40	**209.1281**
M10	1-hole plate	20	**209.1277**
M10	2-holes plate*	80	**209.1776**
M10	3-holes plate*	150	**209.1777**
M10	4-holes plate*	200	**209.1778**
M10	5-holes plate*	250	**209.1779**
M10	6-holes plate*	300	**209.1780**
M10	7-holes plate*	350	**209.1781**

* Hole centre-distance: 50 mm.

Micro-switch brackets - application examples



Mechanical and inductive micro-switches on MC series.



Multi-channel micro-switch on TC series.

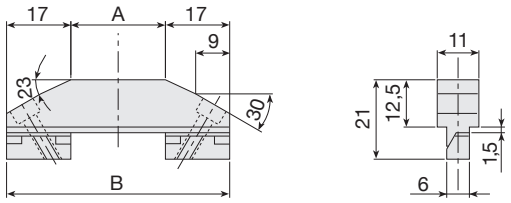
Mechanical and inductive micro-switches on MC series.

Micro-switches and brackets are supplied according to the needs of the application.
We can also supply cams and cam-holders for mechanical micro-switches in accordance with DIN standards.

Cams and cam-holders for micro-switches

Long cams

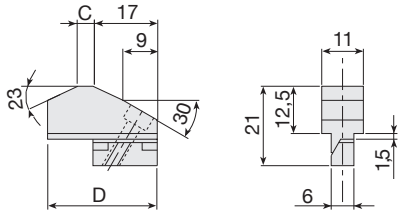
Cams in accordance with DIN 69639 except when marked “#”.
Material: steel with hardened and ground surface.



A	B	Code
25	59	**211.2132**
40	74	**211.2133**
63	97	**211.2134**
80 #	114	**211.2135**
100	134	**211.2136**

Short cams

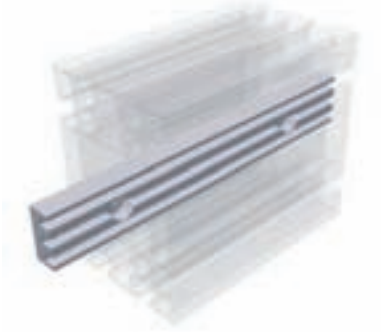
Cams in accordance with DIN 69639
Material: steel with hardened and ground surface.

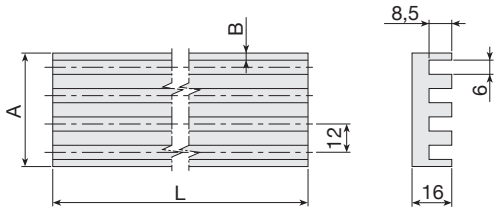


C	D	Code
0	25	**211.2128**
4	29	**211.2129**
10	35	**211.2130**
16	41	**211.2131**

Cam-holder guides

Cams in accordance with DIN 6963
Materiale: lega di alluminio 6060 anodizzato



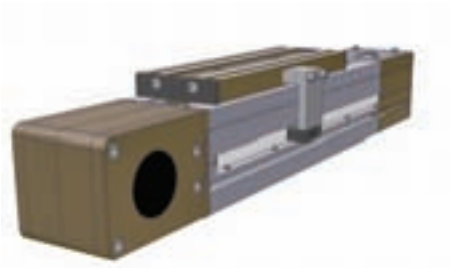


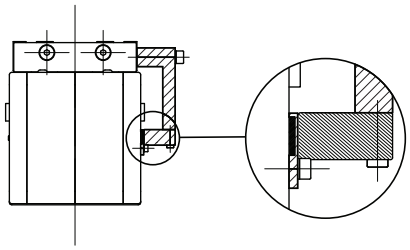
n°	B	A	L	Code
3	3	36	2,000	**202.2138**
4	5.5	53	3,000	**202.2139**
6	5.5	77	3,000	**202.2140**
8	5.5	101	3,000	**202.2141**

Special Options

Reader system with magnetic scale and sensor

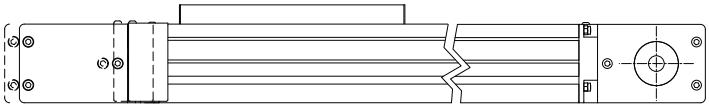
The magnetic scale is applied to the body of the module using a supporting and protective profile.
Precision of between ± 0.015 and ± 0.05 mm
Max speed = 4 ÷ 10 m/s (depending on the type)





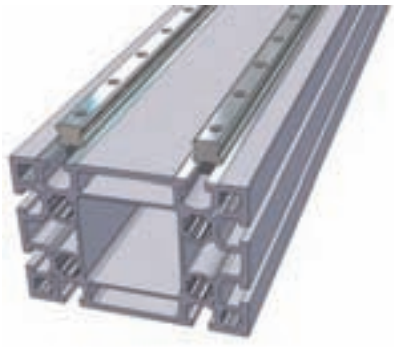
Twin drive head

Version with drive head on both sides.



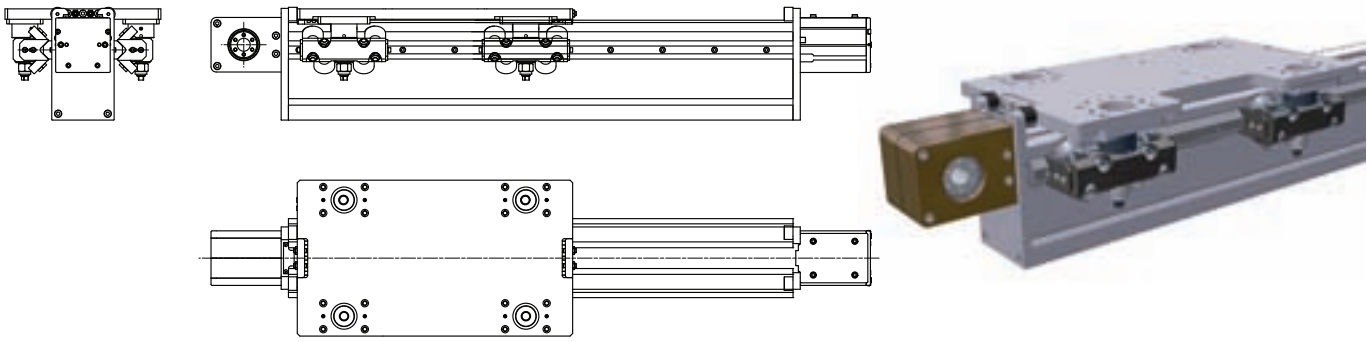
Precision profile machining

Profiles can be machined along their entire length, to provide the required precision or according to application specifications.
Example: for linear motors.



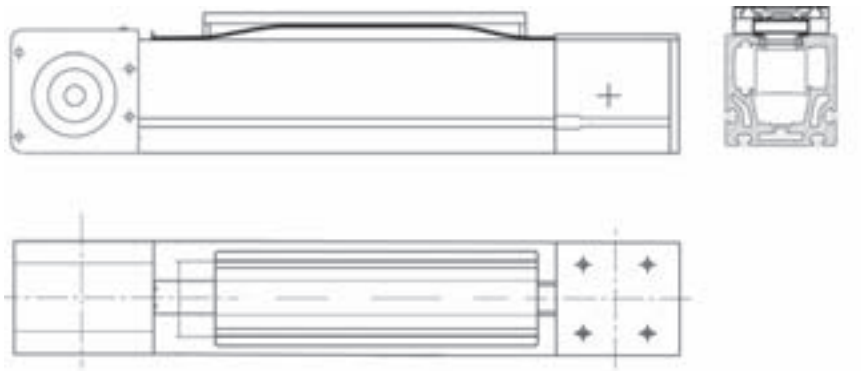
Rotatable load-bearing profile to fully exploit the moment of inertia

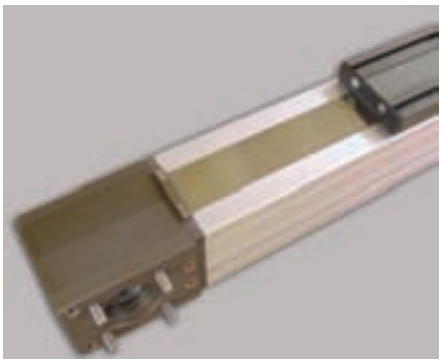
The load-bearing profile can be rotated in order to change the overall dimensions, or to fully exploit the moment of inertia.



Belt protection for series MC 65 - 80 - 105

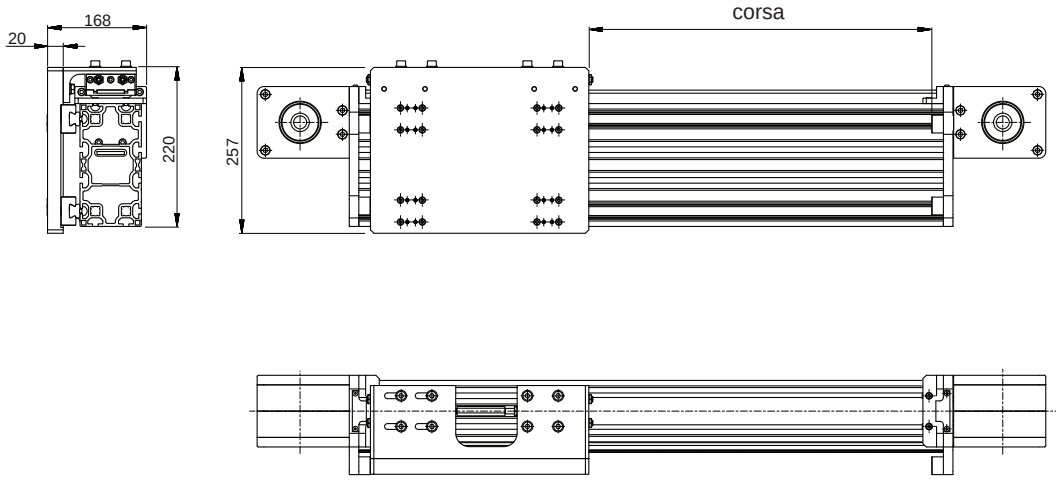
Guard system consisting of a magnetic stainless steel foil to protect the belt from dust and external agents (code: **LI**), which is attached to the profile.
NB: Avoid the use of a metallic band in the presence of ferrous filings. Optional.





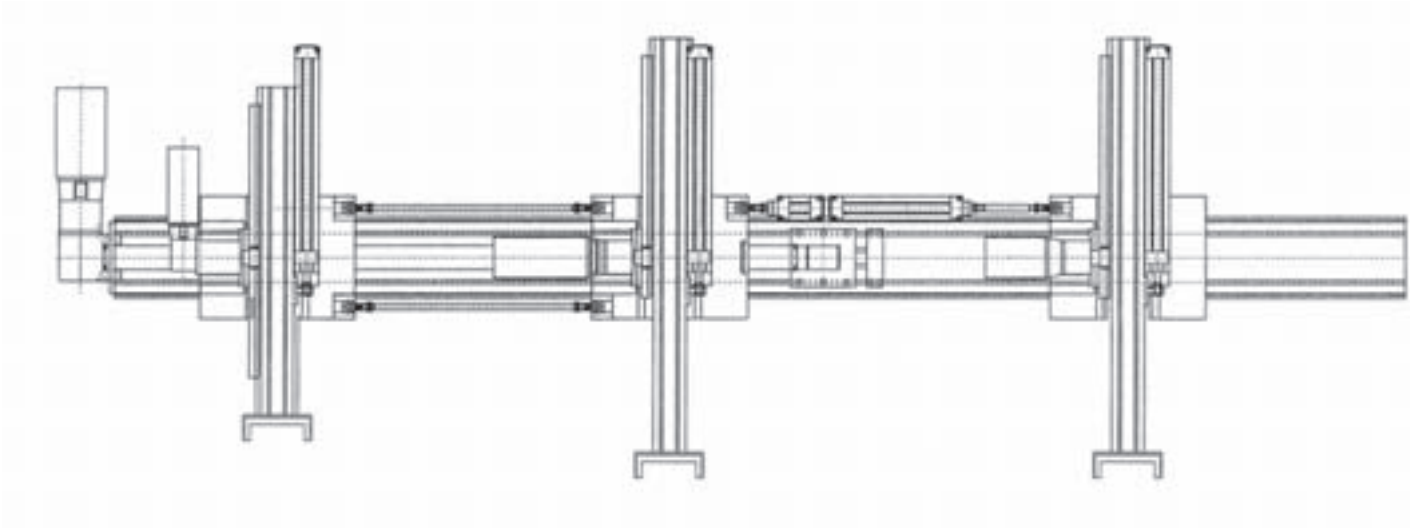
TC series of linear modules with pulley axis turned at 90°

In some applications which involve the use of high speeds and accelerations, the assembly of linear units having a vertical pulley axis and a centre-distance of more than 4 m may force the toothed belt and result in the need for premature maintenance. In this case we suggest you mount the pulleys and the belt in a horizontal position. The modification as shown in the figure below can be requested for the MODLINE TCS series. Optional.



TC multi-carriage linear modules with intermediate belt transmission

Example of horizontal transfer with integrated belt and transmission pulley support, in an intermediate position, all incorporated inside the profile. **(Registered design)**
Special feature: note the compensating cylinders and the horizontal cylinder for the different travel of carriage no. 3.

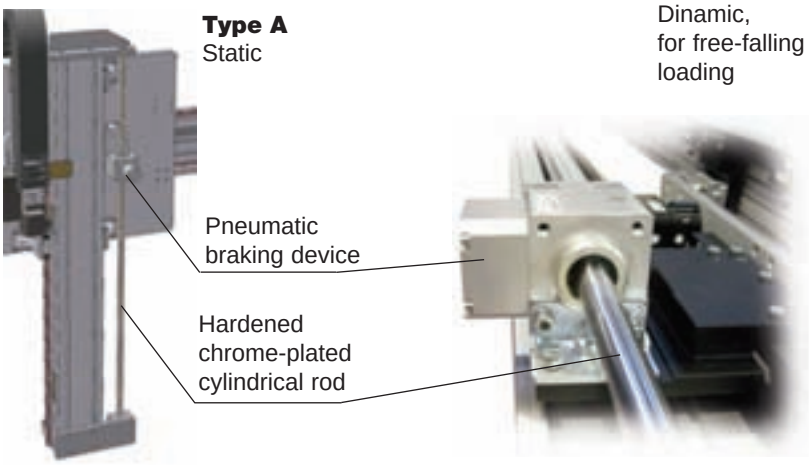


Anti-drop safety device with pneumatic brake system

Ant-droop safety devices, available in a range of sizes, are supplied according to the type of application. For instance, they can act as a mechanical stop to block the free-falling load at any stroke point, or as a lock in static conditions at any position. Two-way blocking occurs following an unexpected pressure drop. A mechanical safety release system is available upon request (patented). Catalogue available upon request. The kit includes: braking device and rod with relative supports, micro-switch and solenoid valve.
Operating pressure 3-6 Bar.
With no pressure = locked.

Type A
Static

Type B
Dinamic,
for free-falling
loading



1- Static rod blocking device

Type	Code	Rod blocking force [N]	Stroke [mm]
A	236.0018	/ 1,200	/ ...
A	236.0018	/ 1,900	/ ...
A	236.0018	/ 3,000	/ ...
A	236.0018	/ 5,400	/ ...
A	236.0018	/ 7,500	/ ...
A	236.0018	/ 12,000	/ ...

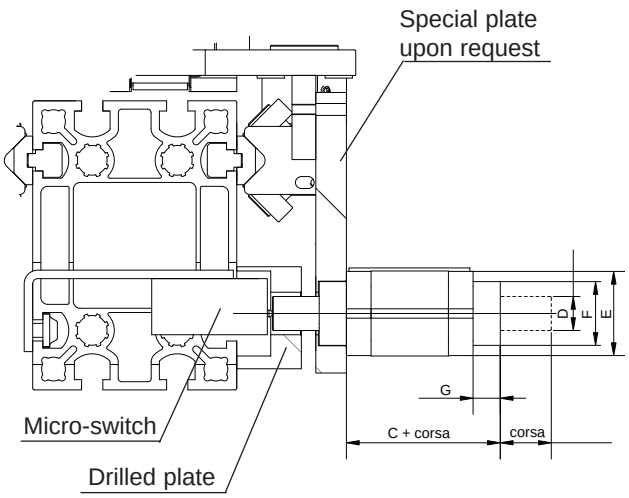
Emergency brake for free-falling load.

1- Dynamic rod blocking device

Type	Code	Rod blocking force [N]	Stroke [mm]
B	236.0019	/ 3,000	/ ...
B	236.0019	/ 5,400	/ ...
B	236.0019	/ 7,500	/ ...
B	236.0019	/ 12,000	/ ...

Safety lock-pin (stopper cylinders)

Lock-pin devices, available in two sizes, suitable to block the vertical axes in the safety position during horizontal movements. (e.g.: maintenance). The safety lock-pins are provided with a through rod.
Select the size according to the load. The kit includes: drilled plate for rod, stopper cylinder, micro-switch.
Max. operating pressure: 10 bar.



1- Lock-pin device

ØD rod	stroke	C	E	F	G	Kit Code
20	20	60.5	50	38	16	236.0021
32	30	-	-	-	-	236.0022

2- Accessory: drilled plate for rod

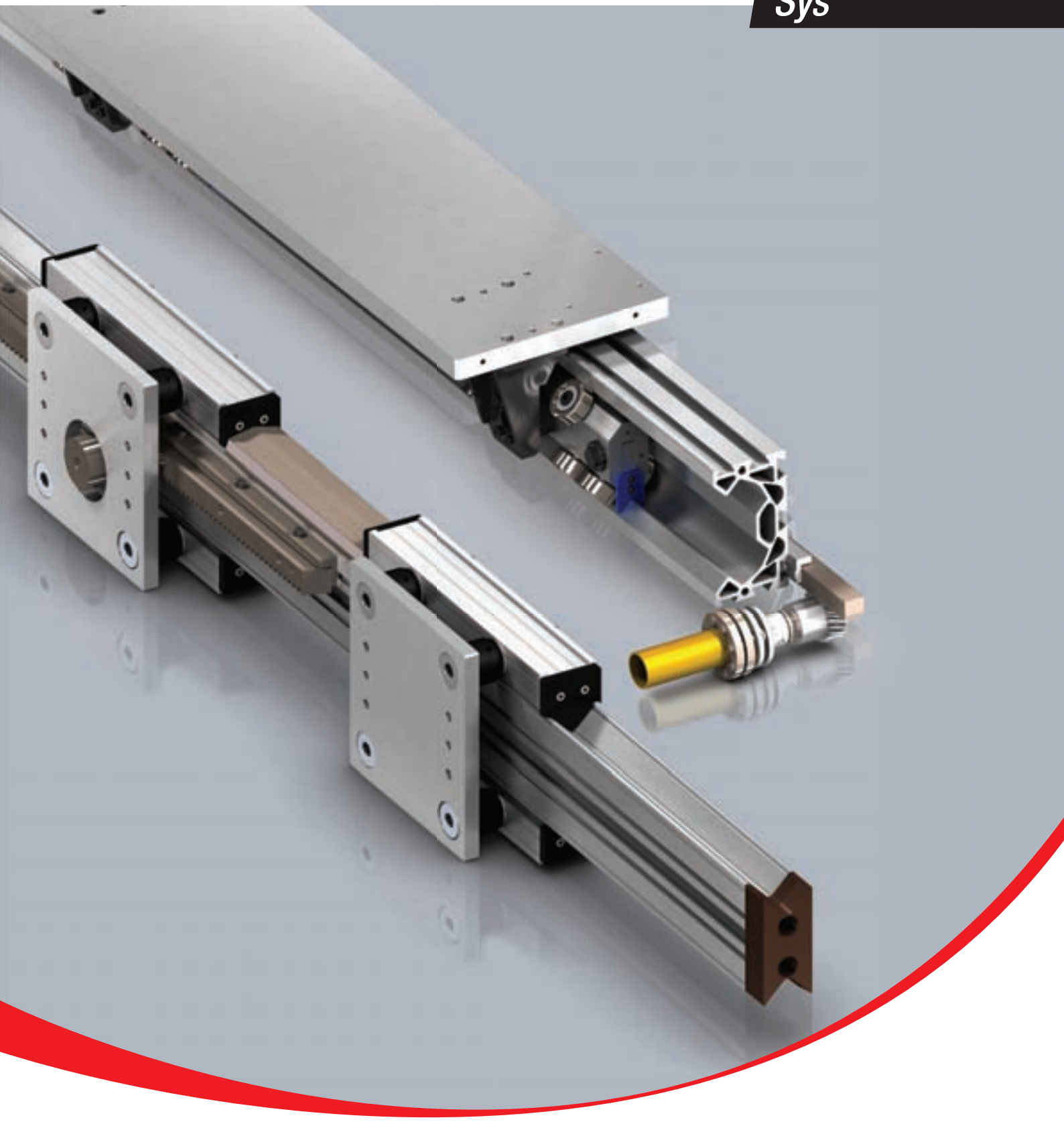
ØD rod	Base	Length	Thickness
20	60	100	39
32	60	100	39

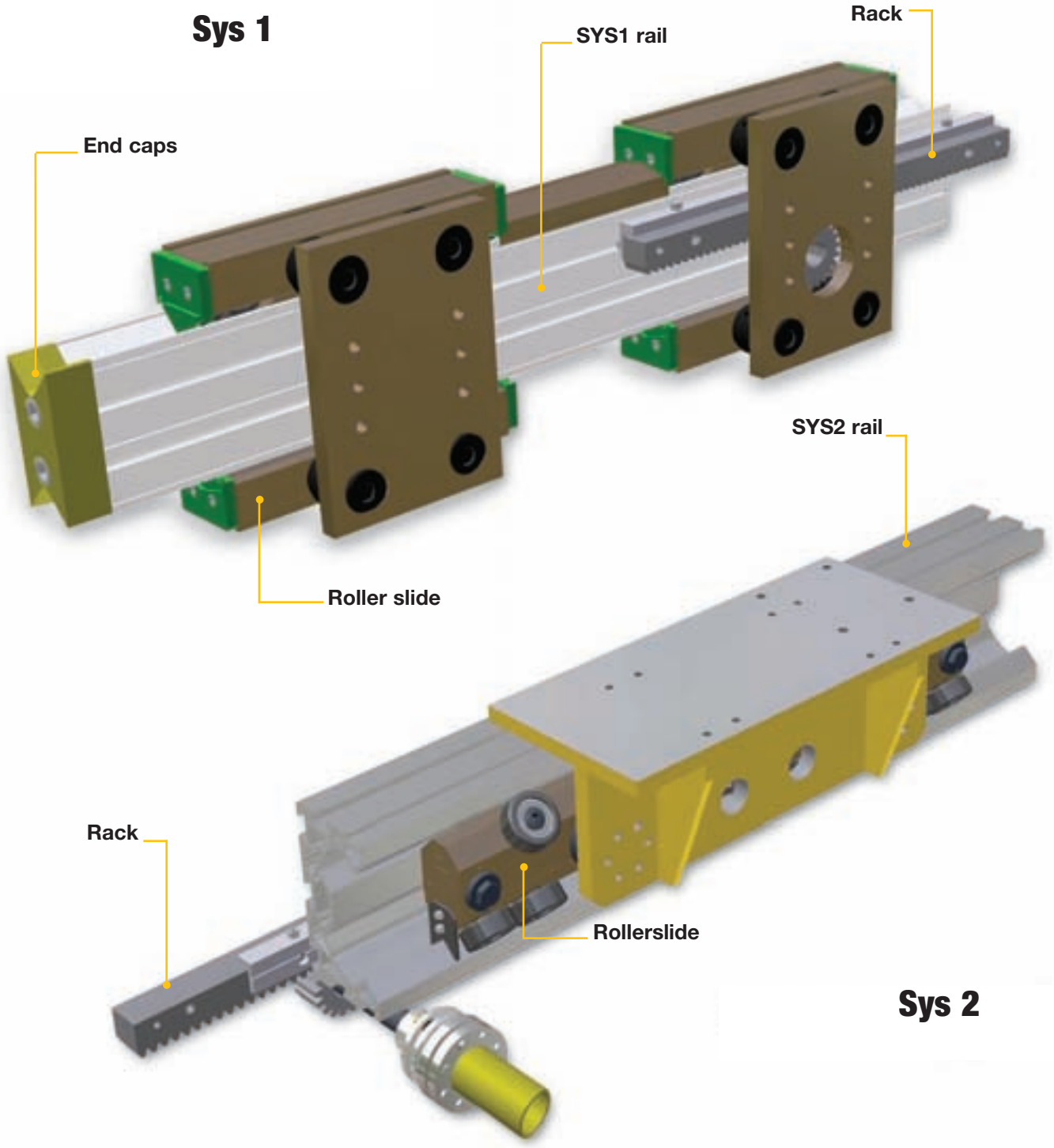
Index

ROLLON®

Linear Evolution

Sys





The **Sys** linear transfer system consists of higher mechanical performances aluminium alloy rail with dee-panodising surface and light alloy extruded roller slides.

Innovative features are:

- extremely small section sizes
- modularity of the system achieved by structural
- profiles and wide range of accessories
- special profile section to protect sliding tracks and roller
- slow friction lame contact roller
- shigh resistance polyamide roller surface
- customizable solutions for the applied loads

Applications such as handling units, Cartesian robots and **lift and shift** systems are implemented in the following sectors: wood working industry, **body in white welding** lines, white goods industry, **piping and sheet metal** working industry.

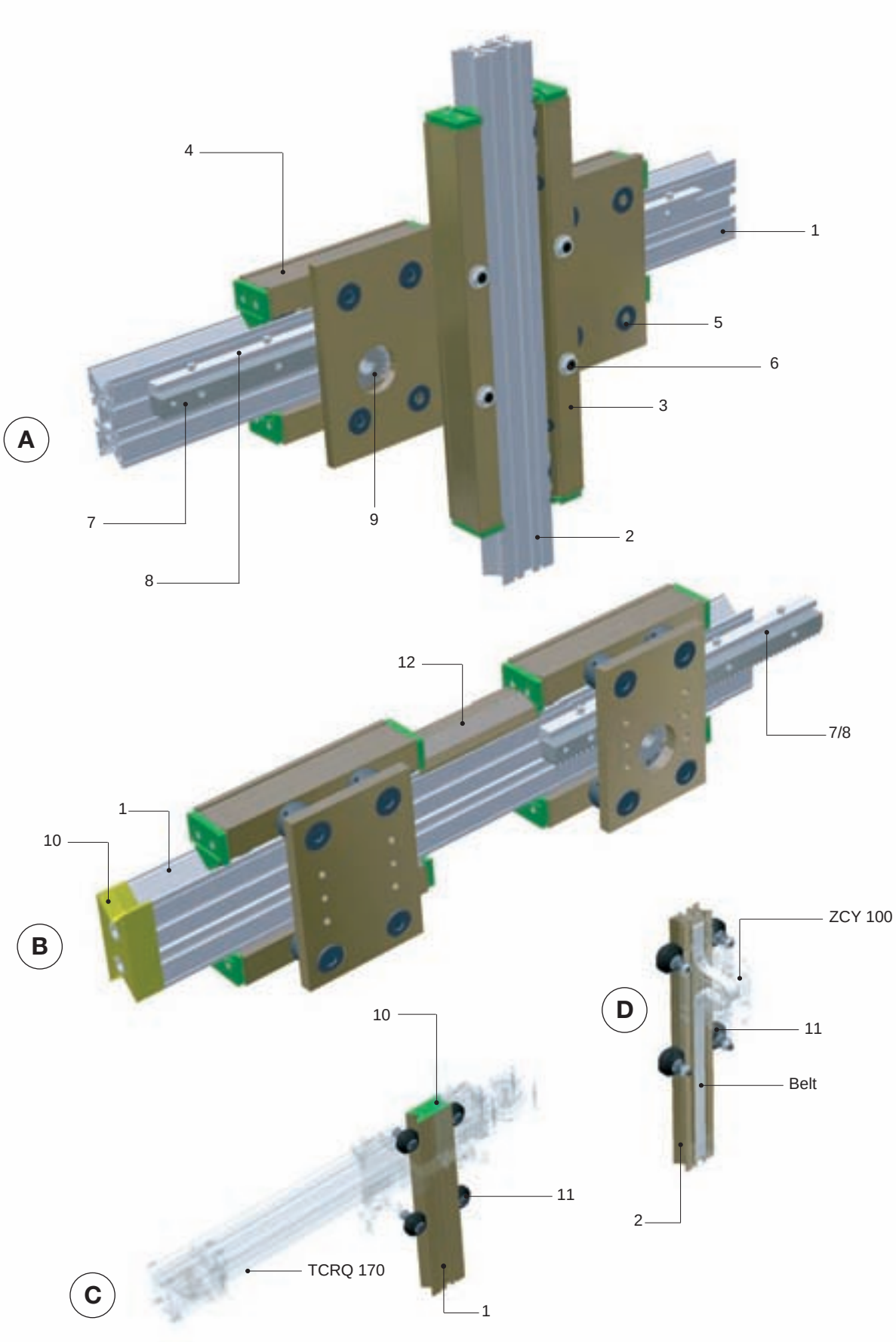
Index

SYS1

SYS2

03-2015 edition
This publication cancels any previous one.

Assembly solutions



“A” Assembly (fixed rail / moving carriage):

This example represents a typical 2-axis system completely manufactured with SYS1 products.
The horizontal traverse is made of a pinion/rack drive, handling a carriage composed of a plate and 4 roller slides. On the plate there is the pinion through hole.
For this kind of system we can supply motor adapter plate and shafts.
The vertical axis is pneumatically operated (not shown).
On demand we can supply cylinder supports as well.

“B” Assembly (moving rail / fixed carriage):

This example represents a system operated by a pinion/rack drive.
The rail runs on roller slides, which can be mounted on plates or fixed structural works.

Legend:
1 – SYS1-M rail (see page 8)
2 – SYS1-P rail (see page 8)
3 – Roller slides L=600mm (see page 11)
4 – Roller slides L=290mm (see page 10)
5 – Type D assembly pins (see page 13)
6 – Type A assembly pins (see page 13)
7 – Rack (see page 20-21)
8 – Rack fixing plate (see page 20)
9 – Toothed pinion
10 – End cap (see page 28)
11 – Ø76 shaped rollers (see page 17)
12 – Guard profile (see page 30)

“C” Assembly:

This example again shows a 2-axis system realised by coupling two Rollon products.
The horizontal axis is composed of a TCRQ 170 linear module (see Modline catalogue).
The vertical axis is pneumatically operated.

“D” Assembly:

This example represents a ZCY100 linear unit (see Modline catalogue).
This module is composed of a SYS rail sliding on rollers, it is toothed belt operated.

Sizing request form

For a proper definition of the application, fill in the scaling request form and send it to the Technical Support Department.

Date: .....Request n°.....

Filled in by.....

Company.....

Address.....

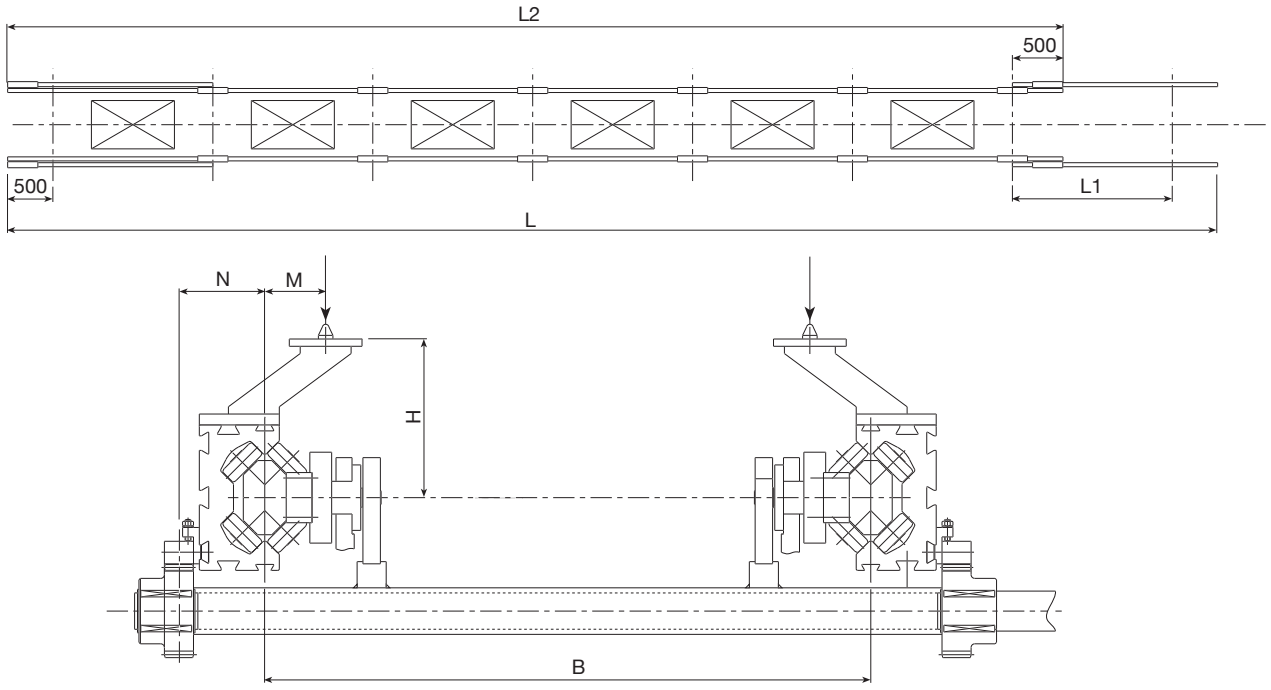
Phone .....Fax.....

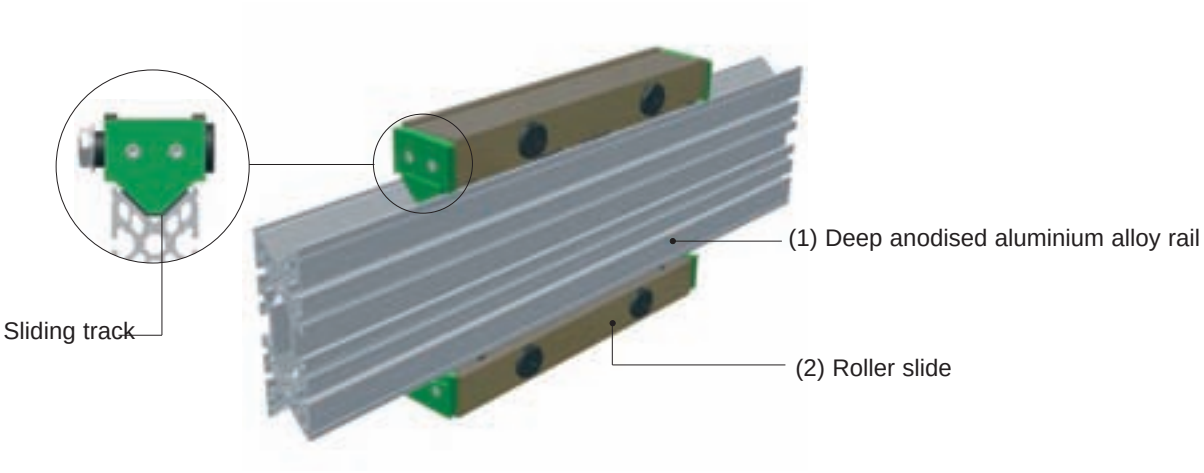
E-mail .....

Lift and shift system with moving rail

SIZING TEMPLATE

Applied load			[Kg]
No. of stations, loading/unloading included			
Total system length	L		[m]
Distance between stations	L1		[m]
Rail length	L2		[m]
Number of the part-holder arms on each rail side	R		
Part-holder arm weight	S		[Kg]
Total load on one rail	P		[Kg]
Distance between rail Y-axis and applied load	M		[mm]
Weight distributed on the rail (e.g.: 50x50 rack)	C		[kg/m]
Distance between rail Y-axis and applied distributed weight	N		[mm]
No. of the rail supports incl. extremity roller slides			
Distance between rail X-axis and applied load	H		[mm]
Number of rail sides			
Distance between rails	B		[mm]
Translation speed	V		[m/s]
Acceleration	a		[m/s^2]
Transport time (one way)	t		[s]





SYStema was conceived to offer the market competitive and easy to use products.
It is used in handling and transfer systems and consists of light aluminium alloy rails (1) and low-friction roller slides (2).
The peculiar feature of this rail is its geometry, that has been developed to optimize torsion performances and reduce reaction stresses on roller slides, with “competitive benefits” accordingly.
In detail, the sliding track configuration allows the system, with an equal torque applied to the rail, to minimize the roller reactions, compared to similar applications with the same overall dimensions, therefore:

• With an equal outside and overhanging load, the number of roller slides decreases as does the cost.

• With an equal roller slides number, the outside applied load and/or the projection can be increased.

The sliding tracks are built to protect the rolling elements and to minimize the width.
This allows the transfer system to be installed close to manufacturing sites.
Besides, the light alloy gives the rails a good mechanical resistance and protects them against aggressive external agents.

SYStema’s assembly possibilities are:

• Moving rail and fixed roller slides

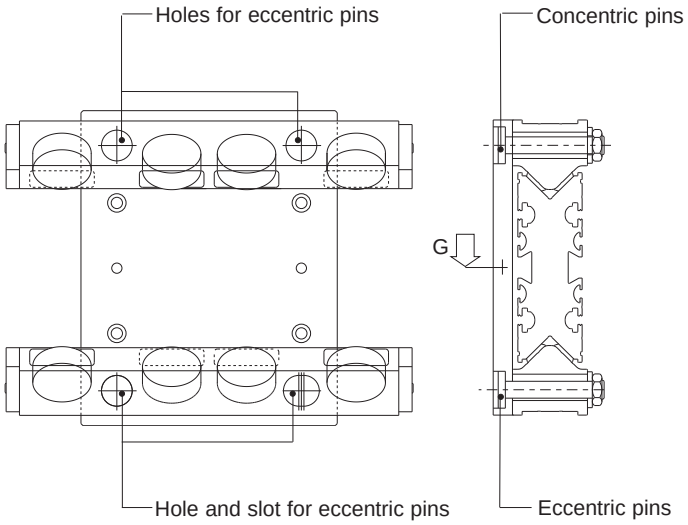
• Fixed roller slides and moving rail

These two solutions, single or combined, can solve many problems; particularly, there is a possibility to produce Cartesian robots, palletizers and portal systems.
Some interesting applications have been realised in automation and robotics fields, plastic moulding, light industry, wood and rubber industry, painting, textile and handling fields.

Assembly specifications

A - Features

This translation system consists of a plate, where roller slides with concentric and eccentric pins are fixed.
The eccentric pins are fitted for adjusting backlash between roller slides and track and have a circular identification mark (1).
The plate is supplied with machining for pin assembly: through holes for concentric pins and hole and slot for eccentric ones.



B - Alignment

Sliding tracks have to be perfectly aligned.

C - Rack assembly

With rack drive it is very important to guarantee the exact parallelism between the sliding system and the rack axis.

D - Roller slide: assembly and adjustment

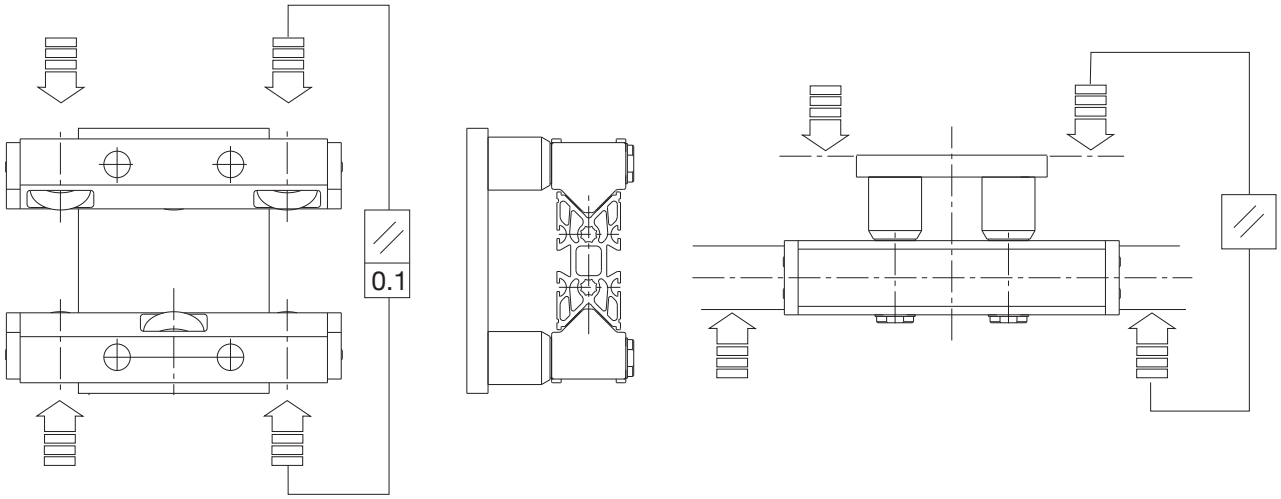
1) Check the alignment and set in contact the concentric pin roller slides and the rail.
2) Take up backlashes: operate on the eccentric pins fixed on the through hole first, then on the one fixed on the slot.
3) Repeat the adjustment.
4) Rotate the reachable rollers with a finger: they must slide without roller slide advancing.
The mean load condition is easily achieved and can damage the plastic coating.
For the simultaneous assembly of several roller slides in one system, it is possible that not all rollers can remain in contact with the rails, because of the rail natural deformation.
In this case it is not advisable to act on the eccentric pins. It is important to check the smoothless capacity of the whole system, which should be high; if not, loosen the pins and repeat the adjustment. While assembling, ensure that the rollers and the rail surfaces are not dirtied by foreign bodies (oil, grease, chips, etc). Always use scrapers or protections (see page 30).

E - Rail protection

The roller slides are provided with spring scrapers, in order to keep the sliding surface clean and to avoid the roller meeting any obstacle while moving.
If this does not meet the customer's requirements, we can supply on demand other track protections, such as bellows, toothed belts or protecting straps.
It is possible to use the guard profile to protect the area between two roller slides (code 302.0147 – see page 30), always available in stock.

F - Tightening specificatons

Make sure all parts are blocked with proper screws, in compliance with the prescribed tightening torque standards.



WARNINGS

The mean load condition is easily achieved and can damage the plastic coating.
To realise a moving carriage with 1 plate and 2 x 3-roller slides, rollers should be symmetrically positioned, respect to the connecting plate.
Check the correct parallelism between the two roller slide opposite plane surfaces and between the roller slide connecting plates and the rail (primary control for the correct 3+3-roller slide assembly), and then block the eccentric pins without moving them.

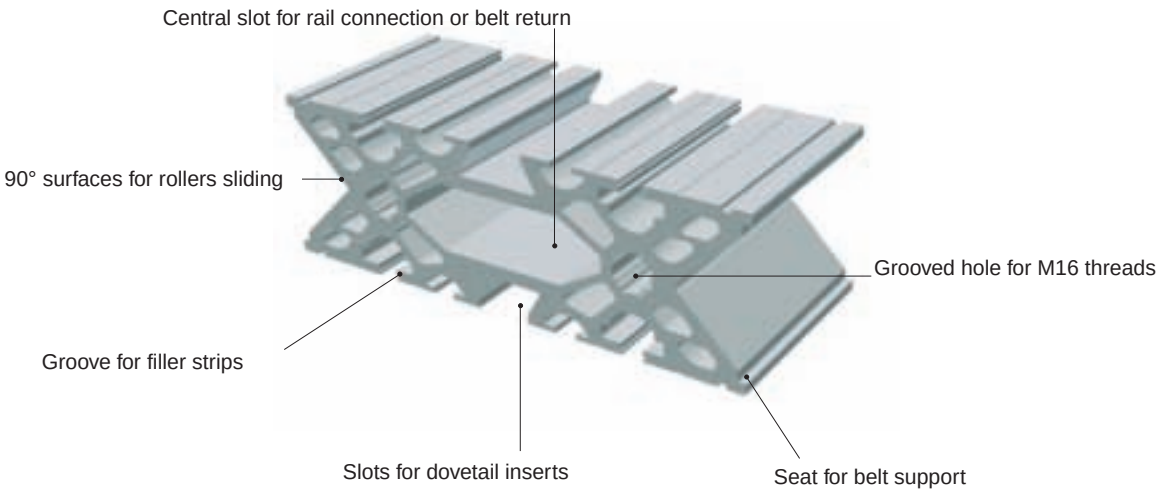
The adjustment of D and E executions (foreseen for one hole roller slides) should be made by acting on the eccentric pin gradually, until the roller contact is reached, without reaching the mean load capacity.
Ensure that rollers keep their low-friction features, and then assemble the scrapers, allowing a minimal back-lash with the rail.

Rail description

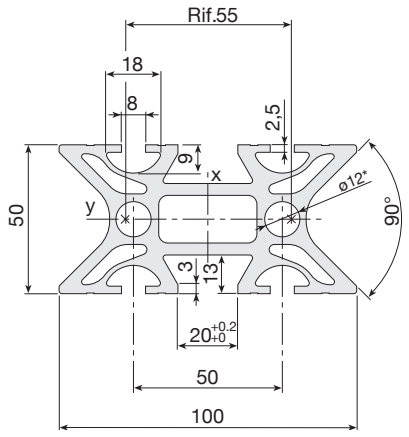
The symmetrical rail section was developed to achieve maximum rigidity. It is provided with slots that can be used with a wide range of accessories always available in stock.
The rail surface is chemically treated, in order to obtain considerable hardness above all on roller sliding tracks, guaranteeing its long-life (a silver anodised rail for light applications is available on demand).

Specifications	
Material:	hard. and temp. racks light alum. alloy (AlMgSi)
Quality:	F = 25
Tolerances:	1/2 UNI 3879
Tear resistance:	R = 245 - 270 N/mm^2
Yelding point:	Rp = 215 - 240 N/mm^2
Hardness:	HB = 70 - 90

Surface treatments:
Deep anodizing (bronze coloured) – thickness > 0,055 mm, or silver coloured anodizing - thickness > 0,015 mm (on demand)

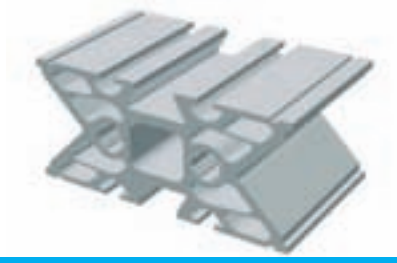


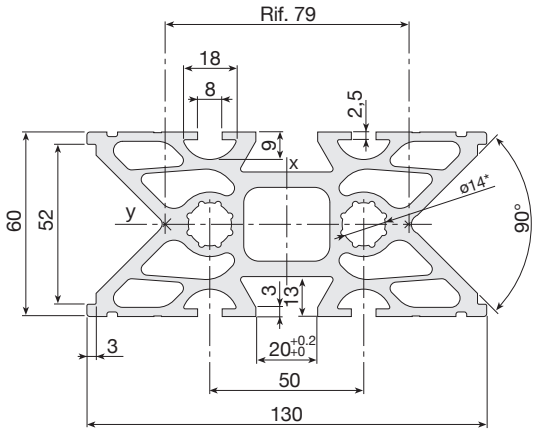
Rail specifications



SYS1-P	Code 302.0714	
Size	50x100	mm
Weight	4,7	Kg/m
Max. length	7,5	m
Moment of inertia (Ix)	1.430.000	mm⁴
Moment of inertia (Iy)	450.000	mm⁴
Bending section mod. (Wx)	28.600	mm³
Bending section mod. (Wy)	18.000	mm³

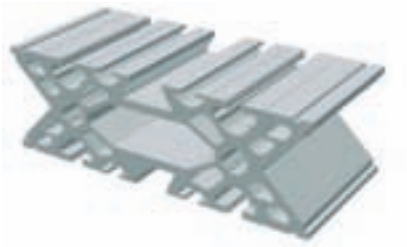
*Holes for M14 thread and PVS® connectors

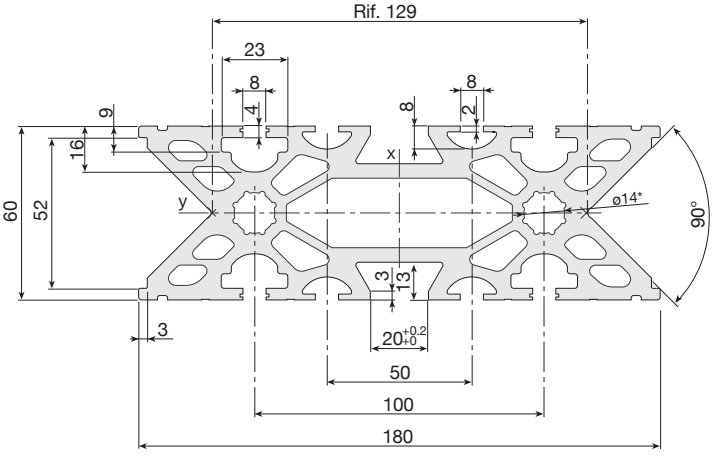




SYS1-M	Code 302.0113	
Size	60x130	mm
Weight	7,8	Kg/m
Max. length	7,5	m
Moment of inertia (Ix)	3.560.000	mm⁴
Moment of inertia (Iy)	1.005.000	mm⁴
Bending section module (Wx)	54.708	mm³
Bending section module (Wy)	33.500	mm³

*Holes for M16 thread and PVS® connectors

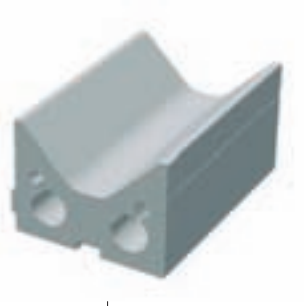


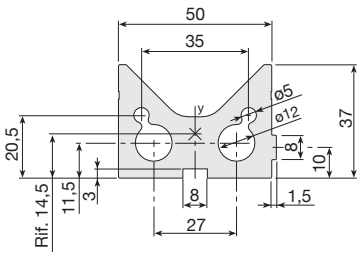


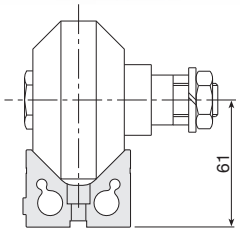
SYS1-G	Code 302.0001	
Size	60x180	mm
Weight	12	Kg/m
Max. length	7,5	m
Moment of inertia (Ix)	12.350.000	mm⁴
Moment of inertia (Iy)	1.600.000	mm⁴
Bending section module (Wx)	137.220	mm³
Bending section module (Wy)	53.330	mm³

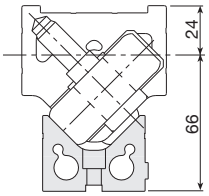
*Holes for M16 thread and PVS® connectors

Single track guide



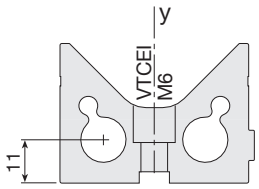




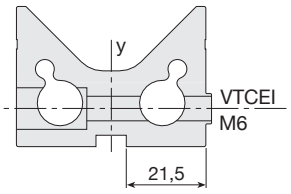


SYS1-H	Code 302.0552	
Weight	3,2	Kg/m
Max. length	6	m
Moment of inertia (Ix)	103.500	mm⁴
Moment of inertia (Iy)	292.000	mm⁴

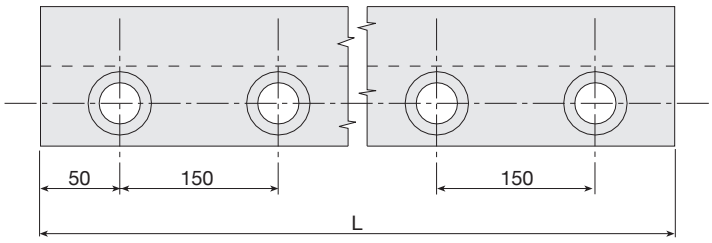
Special machining on demand



302.0895/L

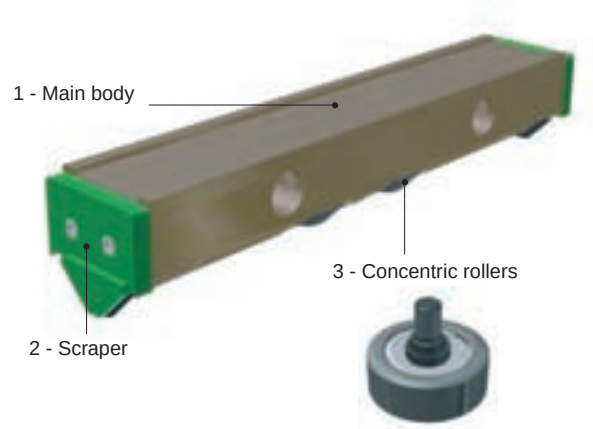


302.0896/L



Roller slide description

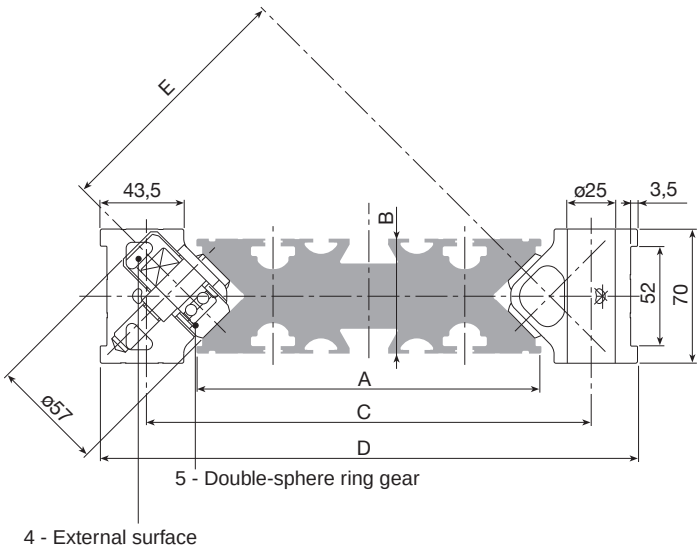
The main body (1) is made of a high strength aluminium alloy; it can be delivered with 2, 3, 4 and 6 concentric rollers (3) and equipped with scraper (2).
The roller slide is provided with double-sphere ring gear bearings (5), lubrication-free, and neoprene O-rings, to ensure the lowest friction coefficient. The roller external surface is covered with a low-friction plastic material, which guarantees the maximum noise reduction and lowest possible rail wear. Roller slides are mounted on a base plate by concentric and eccentric pins. It is very important to fix eccentric pins on the lowest load side.
A 4-roller slide version with central assembly pin is also available. This pin allows a well balanced load distribution on each bearing through a slight oscillation (type 7).
Type D and E pins (see page 13) are generally used in mounting double-rail assemblies, in order to compensate any parallel error.



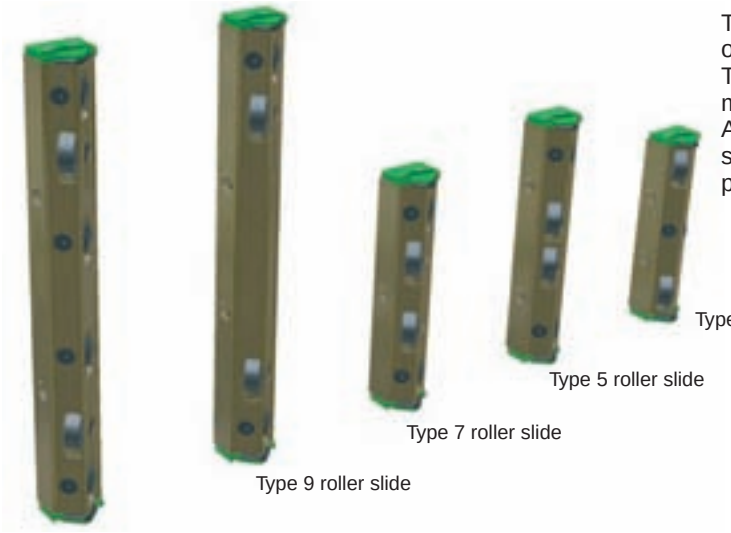
Type	A	B	C	D	E
SYS 1-P	100	50	158	206	81
SYS 1-M	130	60	182	230	98
SYS 1-G	180	60	232	280	134

Roller specifications

Specifications		
Cw	10.400	N
C0w	6.600	N
Admissible Fr	1.400	N
Max. speed	5	m/s



Roller slide size



Type 0 roller slide

Type 9 roller slide

Type 7 roller slide

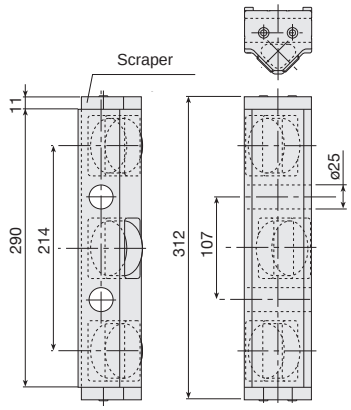
Type 5 roller slide

Type 3 roller slide

The stated dynamic values do not correspond to the theoretical max. load capacities.
They already consider safety factors proper for automation machinery.
All mentioned data refer to the peak efficiency of each stress. Should more peak stresses occur at the same time, please contact our technical dept.

Type 3

3-roller slide, fixed assembly with 2 pins
centre-distance: 107mm
ATTENTION: please refer to “Warnings” on page 7 for a correct assembly.

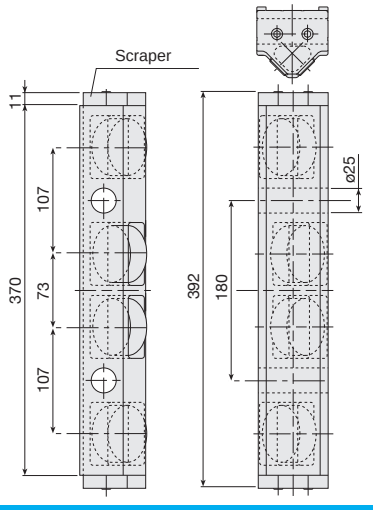


	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_y[N]	F_{z1}[N]	F_{z2}[N]
SYS1-M	257	128	128	2000	2000	3950
SYS1-G	343	128	128	2000	2000	3950

Specifications	
Number of rollers	3
Weight	about 3 Kg
Spare part	Code 304.0716

Type 5

4-roller slide, fixed assembly with 2 pins
centre-distance: 180mm



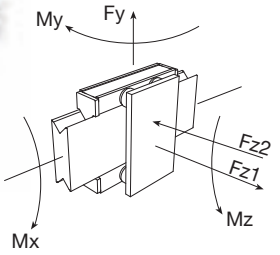
	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_y[N]	F_{z1}[N]	F_{z2}[N]
SYS1-M	257	355	315	3950	3950	3950
SYS1-G	343	355	315	3950	3950	3950

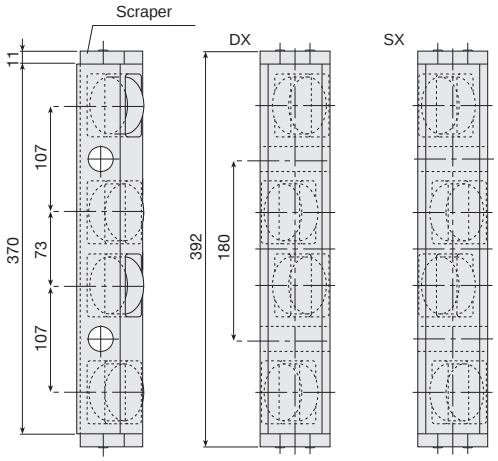
Specifications	
Number of rollers	4
Weight	about 4 Kg
Spare part	Code 304.0717

Alternative version

Roller slide with alternate rollers for vertical and/or overhanging horizontal rail applications

(Please state plate, pins and roller slide apart).
Position the roller slide properly while assembling.



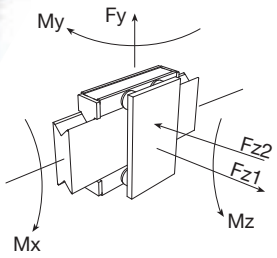


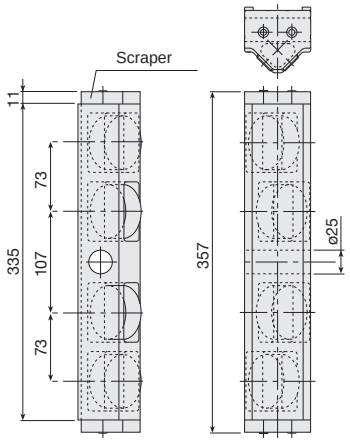
	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_y[N]	F_{z1}[N]	F_{z2}[N]
SYS1-M	257	567	315	3950	3950	3950
SYS1-G	343	567	315	3950	3950	3950

Components	
Right roller slide	Code 304.0837
Left roller slide	Code 304.0866

Type 7

4-roller slide, assembly with 1 self-aligning pin.



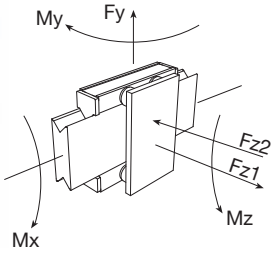


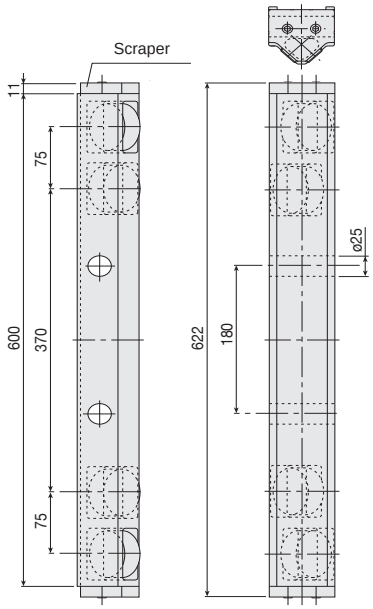
	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_y[N]	F_{z1}[N]	F_{z2}[N]
SYS1-M	257	355	-	3950	3950	3950
SYS1-G	343	355	-	3950	3950	3950

Specifications	
Number of rollers	4
Weight	about 4 Kg
Spare part	Code 304.0718

Type 9

4-roller slide, fixed assembly with 2 pin
centre-distance: 180mm



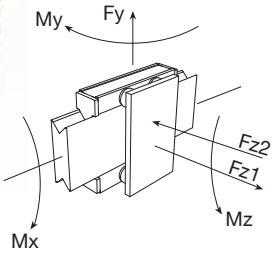


	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_y[N]	F_{z1}[N]	F_{z2}[N]
SYS1-M	257	878	668	3950	3950	3950
SYS1-G	343	878	668	3950	3950	3950

Specifications	
Number of rollers	4
Weight	about 6,5 Kg
Spare part	Code 304.0719

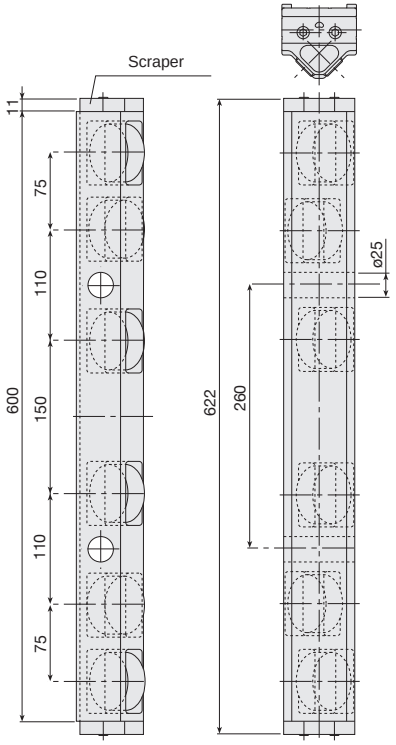
Type 0

6-roller slide, fixed assembly with 2 pins
centre-distance: 260mm
On request it is possible to ask for this roller slide equipped with 4 external rollers only (code 304.0934).



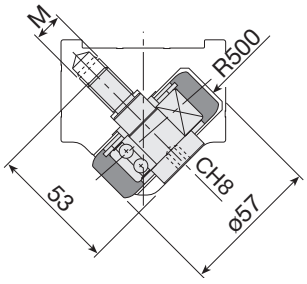
	M_{x1}[Nm]	M_{x2}[Nm]	M_y[Nm]	M_z[Nm]	F_y[N]	F_{z1}[N]	F_{z2}[N]
SYS1-M	257	411	950	668	3950	6317	3950
SYS1-G	343	548	950	668	3950	6317	3950

Specifications	
Number of rollers	6
Weight	about 7 Kg
Spare part	Code 304.0720



Spare part pin with roller

In case of maintenance, by reassembling the pin, do not lubricate the thread and apply **a tightening torque of max 55 Nm.**

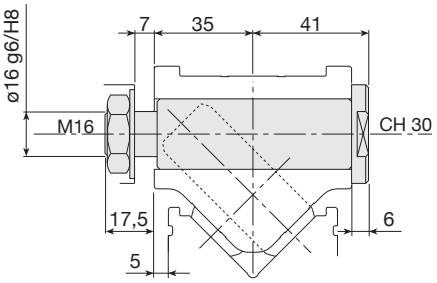


Components	
Spare part pin with Ø 57 roller	Code 305.0958
Spare part with stainless steel pin	Code 305.0951

Assembly pins

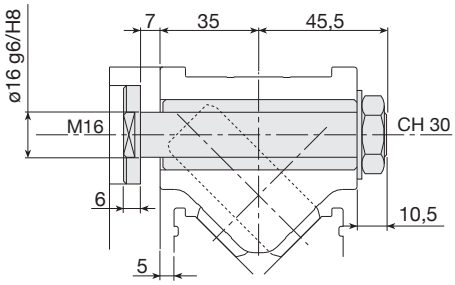
Type N assembly pins

Material: blued steel. Special executions on demand.
Some versions are also available in AISI 303 stainless steel
ATTENTION: please refer to “Warnings” on page 7 for a correct assembly.



Specifications	
Weight	0,4 Kg circa
Concentric	Code 336.1001
Eccentric	Code 336.1002

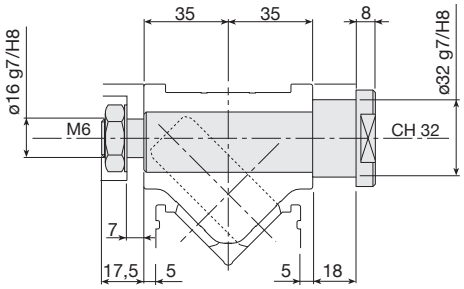
Type A assembly pins



Specifications	
Weight	about 0,4 Kg
Concentric	Code 336.0701
Eccentric	Code 336.0702

Type F assembly pins

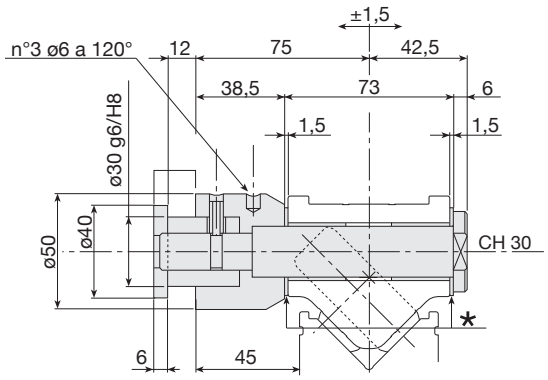
For double plate carriage.



Specifications	
Weight	about 0,5 Kg
Concentric	Code 336.0738
Eccentric	Code 336.0739

Type D self-aligning pins

For parellelism error compensation (±1,5 mm).

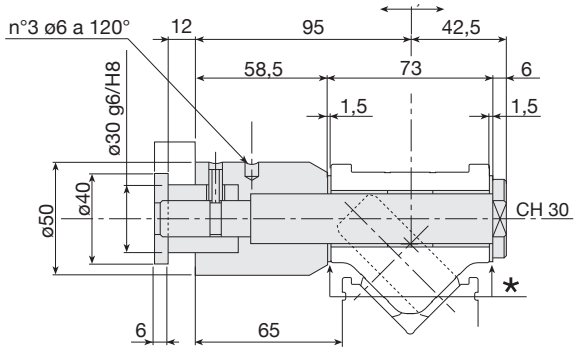


* **NB:** remove the two washers to obtain a roller slide self-alignment of ±1,5mm.

Specifications	
Weight	about 1,3 Kg
Concentric	Code 336.0707
Eccentric	Code 336.0708

Type E self-aligning pins

For parellelism error compensation (±1,5 mm).



* **NB:** remove the two washers to obtain a roller slide self-alignment of ±1,5mm.

Specifications	
Weight	about 1,6 Kg
Concentric	Code 336.0709
Eccentric	Code 336.0710

Connecting plates

Material: 6082 aluminium alloy.
ATTENTION: eccentric pins must be mounted on the side with the lower load.

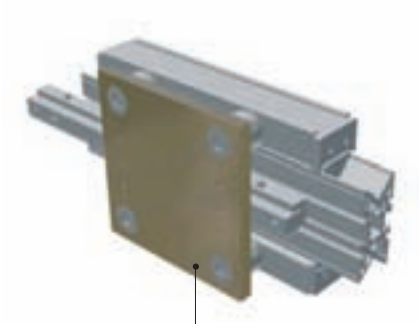


Plate for type D-E pins

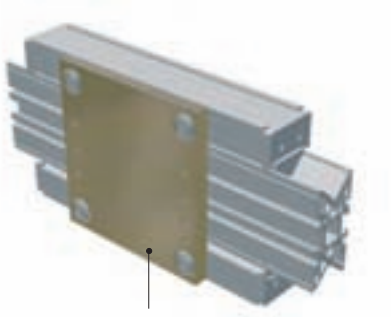


Plate for type A-N pins

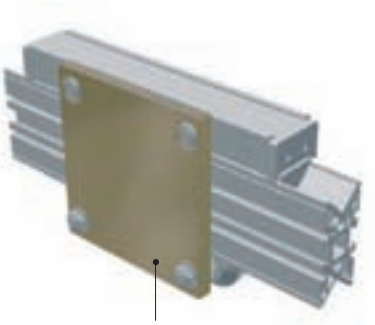


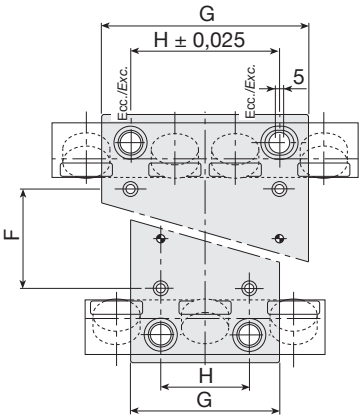
Plate for type A-N pins and V-shaped rollers

Plate for type D-E pins

When a “fixed carriage/moving rail” application is required, where the load (P) is applied onto the bar, please arrange pins as shown in figure no.1.

When a “moving carriage/fixed rail” application is required, where the load (P) is applied onto the carriage, please arrange pins as shown in figure no. 2

Fig. 1



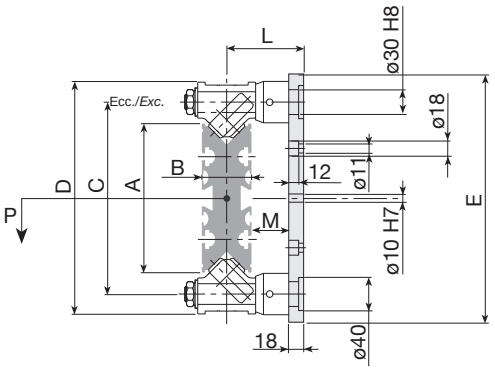
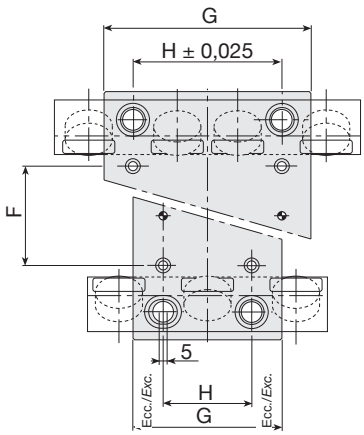
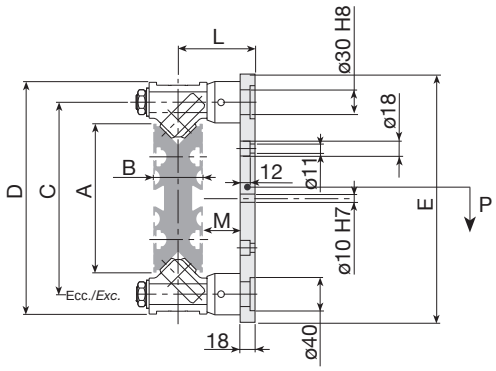


Fig. 2





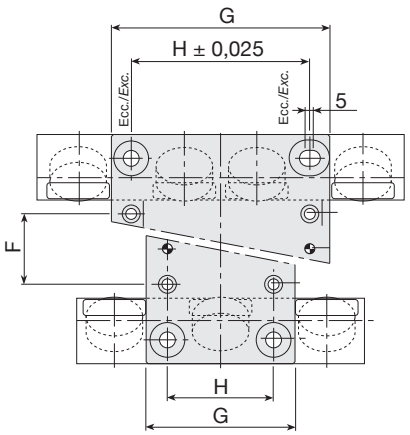
Roller slide	Pins	Rail	A	B	C	D	E	F	G	H	L	M	Plate
Type 5-9	D	SYS1-M	130	60	182	230	250	70	250	180	93	45	315.0660
Type 5-9	D	SYS1-G	180	60	232	280	300	100	250	180	93	45	315.0659
Type 5-9	E	SYS1-M	130	60	182	230	250	70	250	180	113	65	315.0660
Type 5-9	E	SYS1-G	180	60	232	280	300	100	250	180	113	65	315.0659
Type 3	D	SYS1-M	130	60	182	230	250	70	180	107	93	45	315.0662
Type 3	D	SYS1-G	180	60	232	280	300	100	180	107	93	45	315.0661
Type 3	E	SYS1-M	130	60	182	230	250	70	180	107	113	65	315.0662
Type 3	E	SYS1-G	180	60	232	280	300	100	180	107	113	65	315.0661

Plate for type A-N pins

When a “fixed carriage/moving rail” application is required, where the load (P) is applied onto the bar, please arrange pins as shown in figure no. 3.

When a “moving carriage/fixed rail” application is required, where the load (P) is applied on the carriage, please arrange pins as shown in figure no. 4

Fig. 3



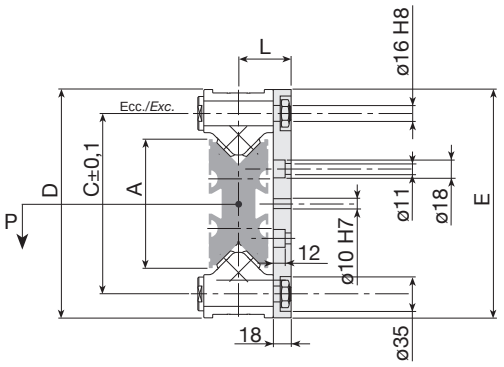
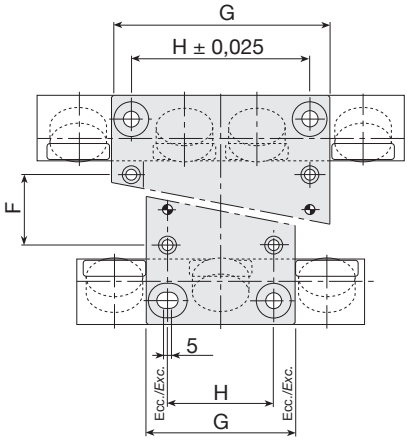
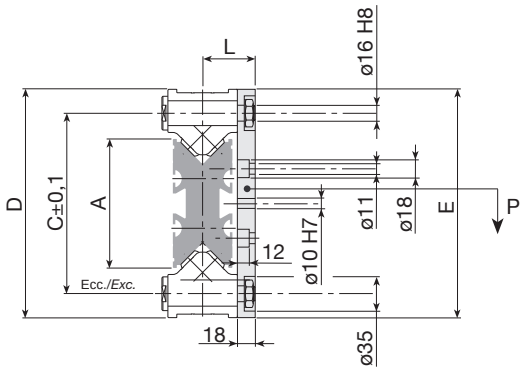


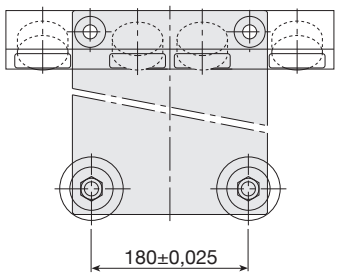
Fig. 4

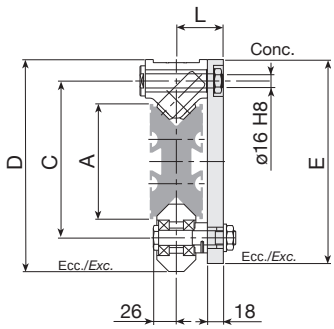




Roller slide	Pins	Rail	A	B	C	D	E	F	G	H	L	M	Plate
Type 5-9	A-N	SYS1-M	130	60	182	230	230	70	220	180	53	5	315.0656
Type 5-9	A-N	SYS1-G	180	60	232	280	280	100	220	180	53	5	315.0655
Type 3	A-N	SYS1-M	130	60	182	230	230	70	150	107	53	5	315.0658
Type 3	A-N	SYS1-G	180	60	232	280	280	100	150	107	53	5	315.0657

Plate for type A-N pins and V-shaped rollers

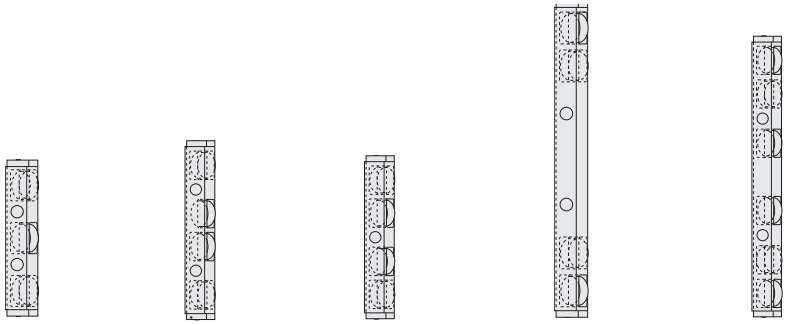


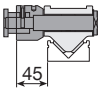
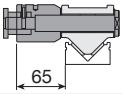
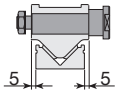


Roller slide	Pins	Rail	A	B	C	D	E	F	G	H	L	Plate
Type 5-9 + *shaped roll.*	**A-N**	SYS1-M	130	60	177	239	230	-	220	180	53	315.1032
Type 5-9 + *shaped roll.*	**A-N**	SYS1-G	180	60	227	289	280	-	220	180	53	315.1031

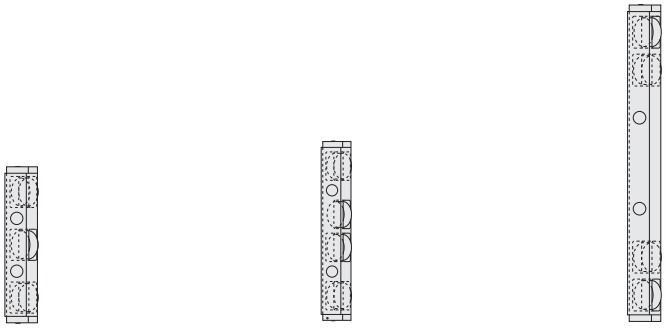
Order code table

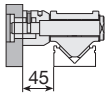
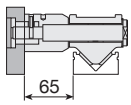
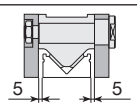
Roller slides and pins



			3	5	7	9	0
	**N**	con.	304.0243	304.0245	-	304.0726	304.0727
		exc.	304.0303	304.0305	-	304.0728	304.0729
	**A**	con.	304.0203	304.0205	-	304.0601	304.0602
		exc.	304.0263	304.0265	-	304.0617	304.0618
	**D**	con.	304.0221	304.0223	304.0225	304.0607	304.0608
		exc.	304.0281	304.0283	304.0285	304.0623	304.0624
	**E**	con.	304.0229	304.0231	304.0233	304.0609	304.0610
		exc.	304.0289	304.0291	304.0293	304.0625	304.0626
	**F**	con.	304.0237	304.0239	-	304.0611	304.0612
		exc.	304.0297	304.0299	-	304.0627	304.0628

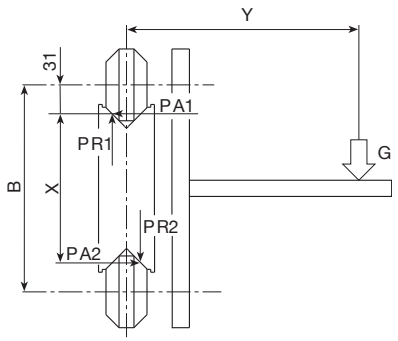
Roller slides equipped with pins and plate



		Rail	3	5	9
	**N**	SYS1-M	304.0423	304.0425	304.0735
		SYS1-G	304.0363	304.0365	304.0734
	**A**	SYS1-M	304.0383	304.0385	304.0641
		SYS1-G	304.0323	304.0325	304.0633
	**D**	SYS1-M	304.0401	304.0403	304.0644
		SYS1-G	304.0341	304.0343	304.0636
	**E**	SYS1-M	304.0409	304.0411	304.0645
		SYS1-G	304.0349	304.0351	304.0637
	**F**	SYS1-M	304.0417	304.0419	304.0646
		SYS1-G	304.0357	304.0359	304.0638

Material: black high-resistance polyamide coating.
Eccentric or concentric blued steel pin.

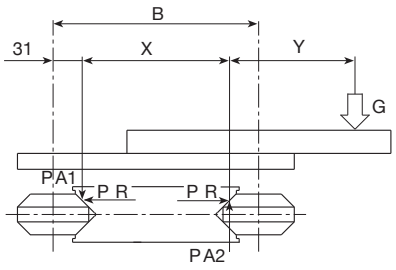
On demand: white polyacetic coating (high hardness); longer pins.



$$P_{A1} = \frac{G \bullet Y}{X} = P_{A2}$$

$$P_{R1} = G + P_{A1}$$

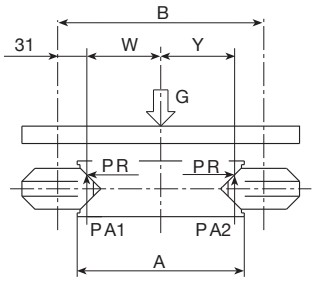
$$P_{R2} = P_{A2}$$



$$P_{A1} = \frac{G \bullet Y}{X}$$

$$P_{A2} = P_{A1} + G$$

$$X = A - 20 \text{ mm}$$



$$P_{A1} = \frac{G \bullet Y}{W + Y}$$

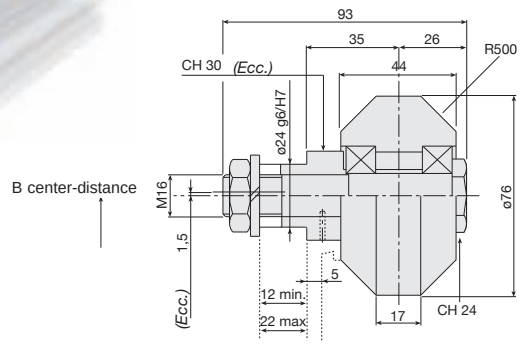
$$P_{A2} = G - P_{A1}$$

B center-distances

SYS1-H	SYS1-P	SYS1-M	SYS1-G	Code
61	148	172	222	305.0730/1
61	148	172	222	305.0732/3
61	148	172	222	305.0747/8
57	140	164	214	305.1570/1

Ø76 shaped rollers

Material: high-resistance black polyamide coating.
Eccentric or concentric blued steel pin.



Middle version roller (radial bearings)

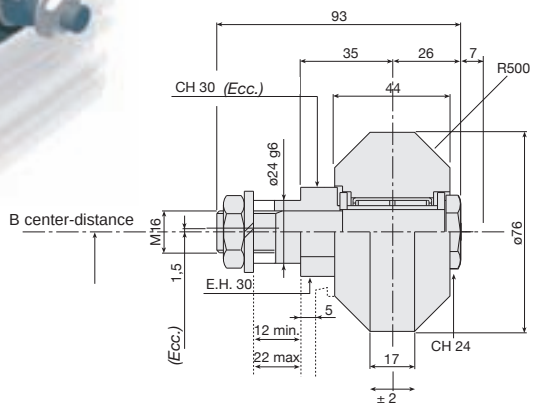
Type	Weight [kg]	PR [N]	PA [N]	Speed [m/s]	Code
Ecc.	0,6	800	200	2	305.0730
Conc.	0,6	800	200	2	305.0731

Heavy version roller (skew contact bearings)

Type	Weight [kg]	PR [N]	PA [N]	Speed [m/s]	Code
Ecc.	0,6	1200	500	2	305.0732
Conc.	0,6	1200	500	2	305.0733

Ø76 V-shaped self-aligning rollers

External coating with ±3 mm end float.
For parallel rail application.
To be coupled with shaped roller (see page 17).

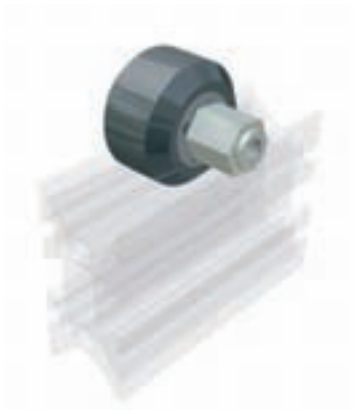


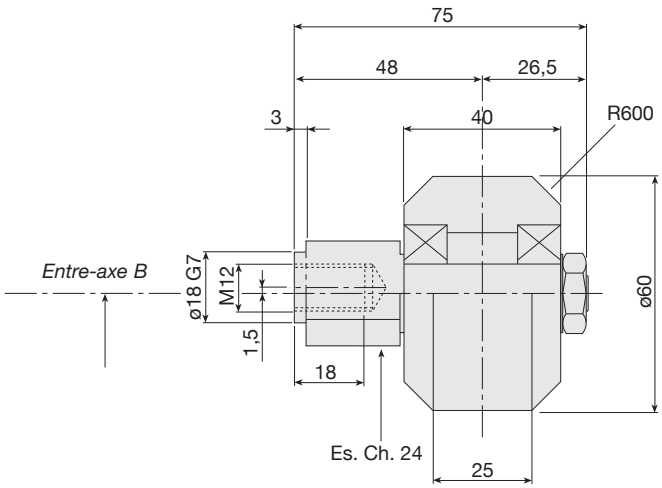
Floating roller

Type	Weight [kg]	PR [N]	PA [N]	Speed [m/s]	Code
Ecc.	0,6	1400	0	2	305.0748
Conc.	0,6	1400	0	2	305.0747

Ø60 V-shaped rollers

Material: high-resistance black polyamide coating.
Drilled, threaded, chromium plated steel enbloc pin.
Clamping screw not included.

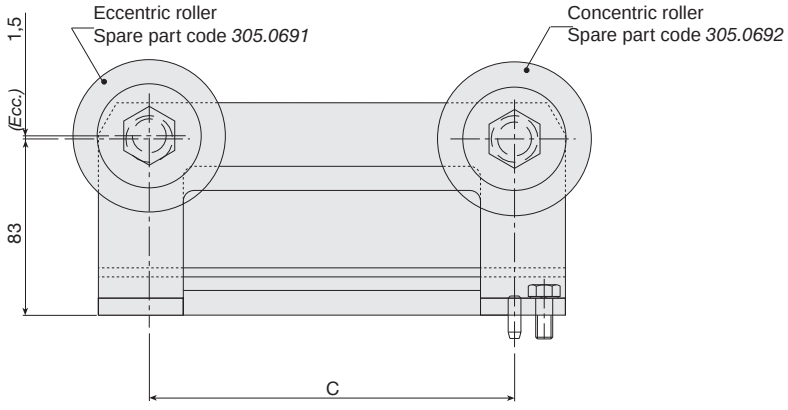


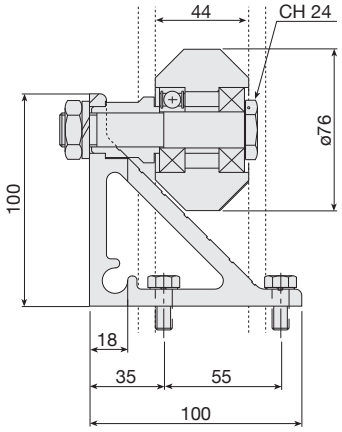


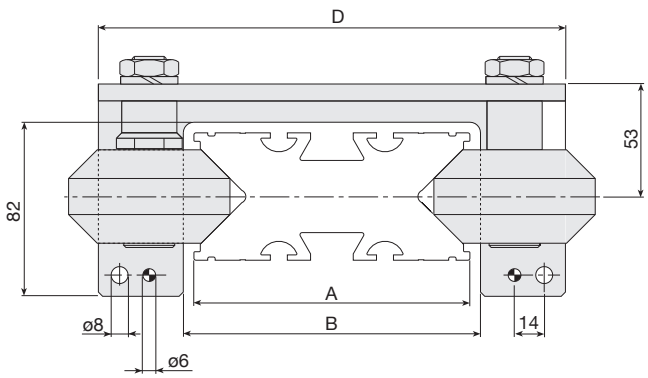
Type	Weight [kg]	PR [N]	PA [N]	Speed [m/s]	Code
Ecc.	0,5	500	120	2	305.1570
Conc.	0,5	500	120	2	305.1571

Angular support

Angular support complete with 2 V-shaped rollers for SYS1 rails. Suitable for applications with rail mounted orthogonally respect to the plate plane.





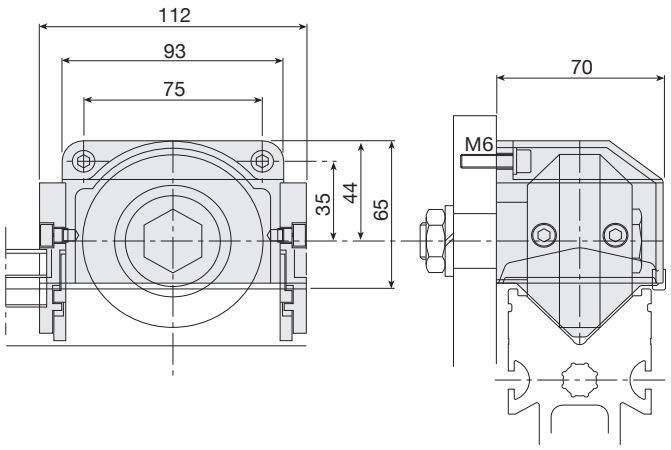


Rail	A	B	C	D	Weight [Kg]	Code
SYS1-P	100	110	148	195	1,6	304.1017
SYS1-M	130	140	172	220	1,8	304.0476
SYS1-G	180	190	222	270	2	304.0667

Roller guard

Code 312.1572

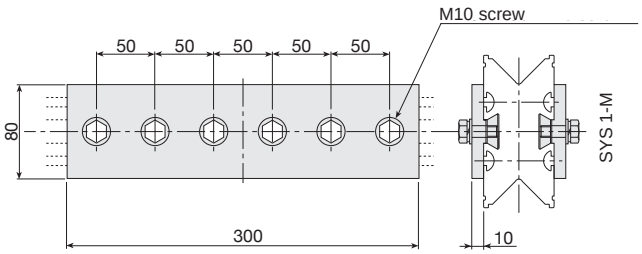
Ø76 shaped roller guard in black stiffened plastic material, complete with grooved scraper for guard profile.
(see page 30).



Rail connecting plates

SYS1-M connecting plate

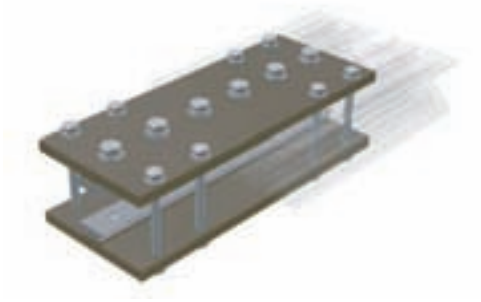
Material: bronze coloured anodized 6082 aluminium alloy.

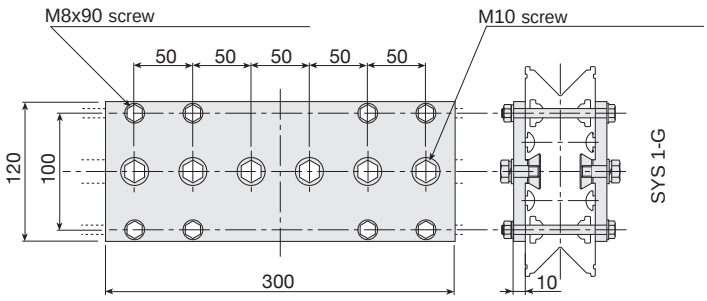


Double connecting plate	Code
Complete set	336.0198
Single plate	315.0724

SYS1-G connecting plate

Material: bronze coloured anodized 6082 aluminium alloy.



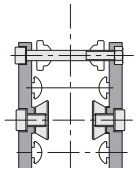


Double connecting plate	Code
Complete set	336.0188
Single plate	315.0713

N.B.: Please ask for code ..-62/… or …-63/…
to get the rail drilled (see page 31)

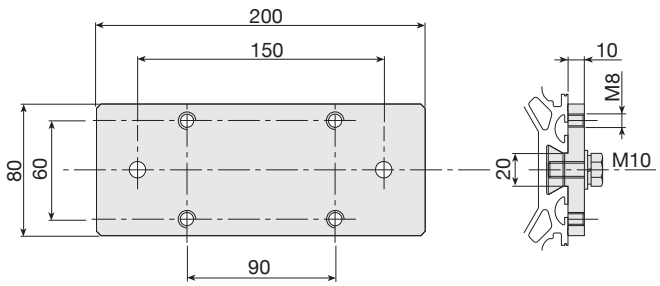
On demand

Plate for built in screws and nuts	Code
Double plate	336.0879
Single plate	315.0882



Accessory fixing plate

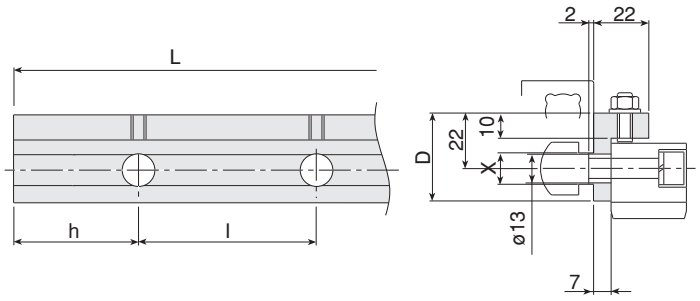
Material: bronze coloured anodiz ed 6082 aluminium alloy.



For SYS1 rail	Code
Complete set	336.0666
Single plate	315.0185

Rack fixing plate

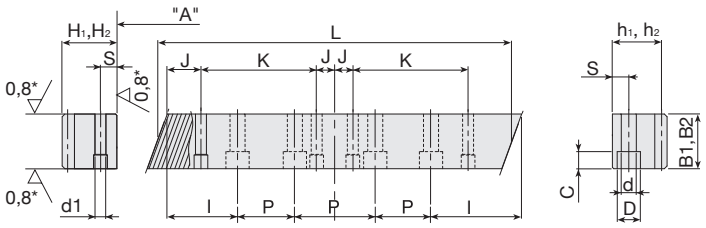
Obtained by extrusion.
Material: natural anodized 6082 aluminium alloy.



Module	D	L	l	h	Hole no.	X	Code
2	35	50	-	25	1	8	315.0005
2	35	243	126,1	56,35	2	8	215.0025
2	35	491	126,1	56,35	4	8	215.0026
3	35	50	-	25	1	8	315.0583
3	35	243	126,1	56,35	2	8	215.2368
3	35	491	126,1	56,35	4	8	215.2137
3	35	50	-	25	1	20	315.0578
3	35	243	126,1	56,35	2	20	315.0001
3	35	491	126,1	56,35	4	20	315.0002
4	39	243	125,3	57,55	2	20	315.0003
4	39	491	125,3	57,55	4	20	315.0004

Helical Teeth (right-hand 19° 31' 42", press. angle 20°)

- KBD CK 45: normalized, milled
- KTD CK 45: normalized, induction hardened teeth
- KFD CK 45: normalized, hardened teeth, 3 ground sides
- KSD CK 45: normalized, hardened, induction, ground teeth and sides
- KRD AISI 984: induction hardened alloyed steel, ground sides and teeth



*machining of surfaces **NOT** available on version KBD - KTD

Treatment	Rs	Hardness	Quality	Precision
KBD CK 45	650 N/mm^2	-	Q8	0,085mm/300mm
KTD CK 45	650 N/mm^2	≥ HRC 56	Q9	0,085mm/300mm
KSD CK45	> 650 N/mm^2	≥ HRC 56	Q6	0,025mm/300mm
KRD AISI 9840	> 900 N/mm^2	HRC 60 c.a.	Q6	0,025mm/300mm

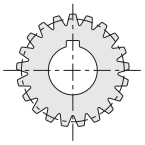
Mod.	H1	H2	B1	B2	L	I	J	d	D	C	d1(H7)	S	h1	h2	P	K	p.[kg]	Code
2	25	24	25	24	500	62,5	35	7	11	7	6	8	23	22	125	430	2,2	**211.2429**
2	25	24	25	24	1000	62,5	35	7	11	7	6	8	23	22	125	430	4,3	**211.2363**
3	30	29	30	29	500	62,5	35	10	15	9	8	9	27	26	125	430	3,0	**211.2367**
3	30	29	30	29	1000	62,5	35	10	15	9	8	9	27	26	125	430	6,1	**211.2351**
4	40	39	40	39	500	62,5	35	10	15	9	8	12	36	35	125	430	5,5	**211.2366**
4	40	39	40	39	1000	62,5	35	10	15	9	8	12	36	35	125	430	10,9	**211.2349**

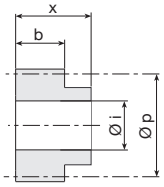
Code 211.2426 / BD

└──── Teeth and treatment features

Pinion Gears

- ND Pinion with helical teeth
- RD Pinion with ground helical teeth





Type	Material	Surf. treat.	RS	Quality	Hardness
ND	Special steel	tempered and hardened	>900 N/mm^2	Q8	HRC 50
RD	16MnCr5	temp. induction-hardened	>900 N/mm^2	Q7	HRC 60

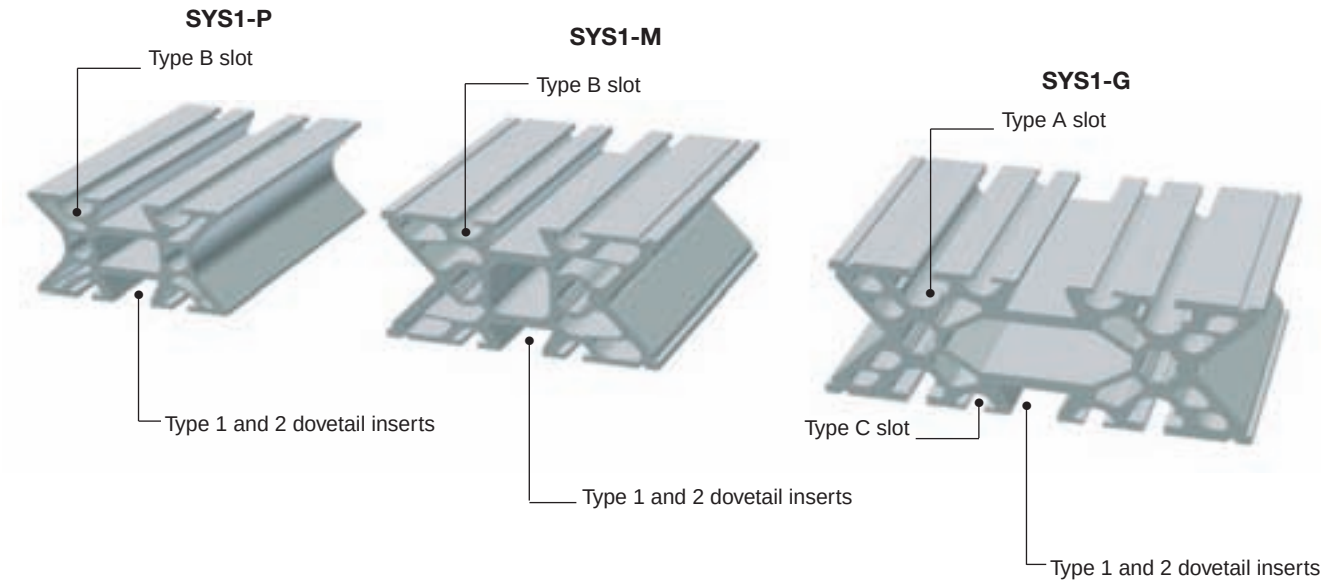
Helical tooth pinion

mod.	p.[kg]	Z	Øp	Øi	b	x	Code
2	0.2	21	44.56	22	28	56	**201.0005**
2	0.6	30	63.66	22,30,32	28	56	**201.0012**
3	0.8	20	63.66	22,25,30,32	28	65	**201.0007**
3	1.4	28	89.13	25,30,32	28	65	**201.0013**
4	1.5	18	76.39	32	40	75	**201.0009**
4	2.8	25	106.10	55	40	80	**201.0014**

Code 201.0007 / ND / 25 ──── Øi

└──── Teeth and treatment features

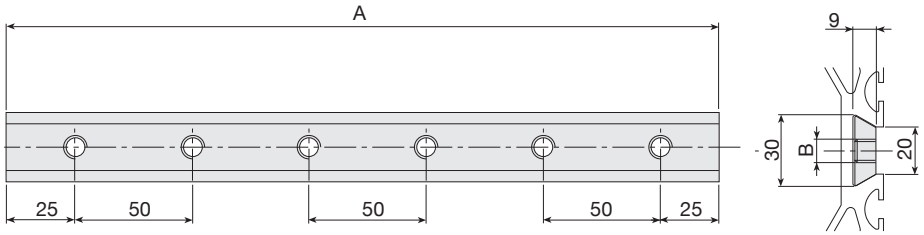
Slot details



Dovetail inserts

Dovetail insert

Material: C40 blued - M8 and M10 holes.
Special lengths on demand.

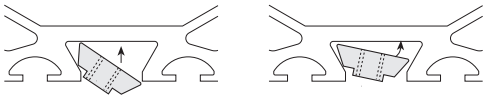


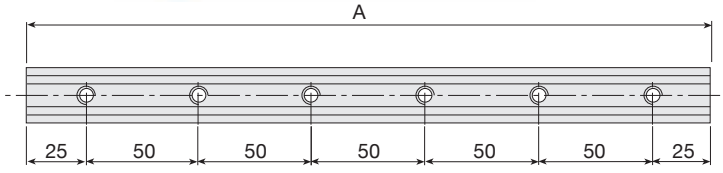
A	B	Hole no.	Code
50	M8	1	314.0170
150	M8	3	314.0172
300	M8	6	314.0175
50	M10	1	314.0164
150	M10	3	314.0166
300	M10	6	314.0169

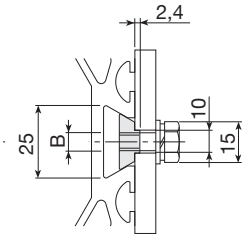
Dovetail centering insert (type 2)

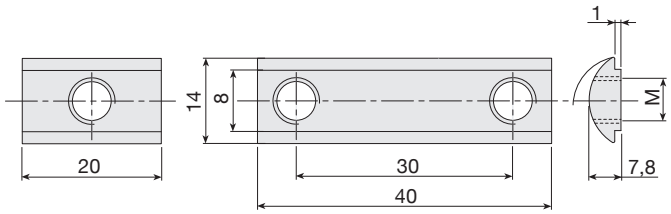
NB: All dovetail centering inserts can be frontally inserted into the bigger slot.

A	B	Hole no.	Code
50	M8	1	314.0178
300	M8	6	314.0183





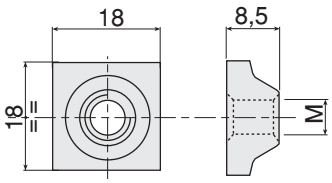




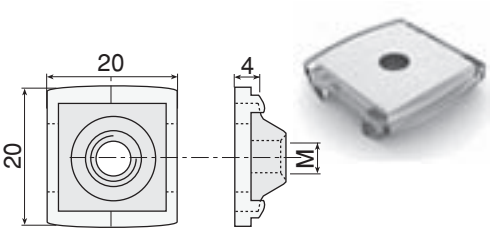
Thread	Hole no.	L	Code
M5	1	20	A32-55
M6	1	20	A32-65
M8	1	20	A32-85
M6	2	40	A32-67

Square nuts and spring

Also suitable for profiles **STATYCA, VALYDA, LOGYCA, PRATYCA and SOLYDA.**
Material: galvanised steel.
Important: inserts must be inserted into the longitudinal slots before assembling.



Square nut

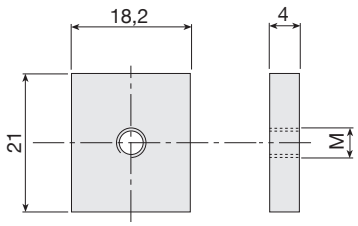


Plastic compound spring

Thread	Code 18x18	Code
Spring	**101.0732**	
M4	209.0031	209.0023
M5	209.0032	209.0019
M6	209.0033	209.1202
M8	209.0034	209.0467

Flat inserts

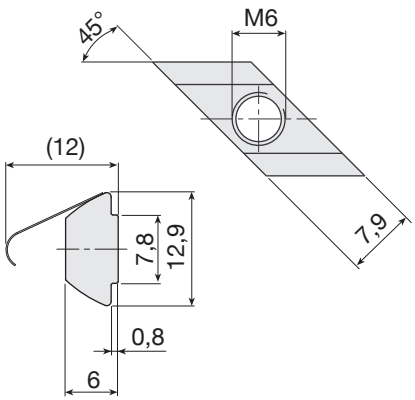
Material: zinc plated steel.



Thread	Code
M4	A32-40
M5	A32-50
M6	A32-60
M8	A32-80
Spring	211.1061

Spring nuts

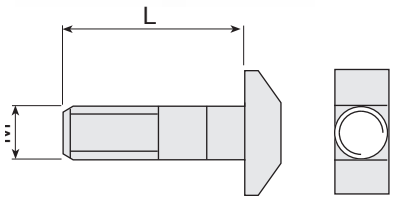
For universal assembly. Can be frontally inserted into the slot, even after assembly. Material: zinc plated steel.



Thread	Code
M3	AC31-30
M4	AC31-40
M5	AC31-50
M6	AC31-60
Spring	AC31-90

T-bolts

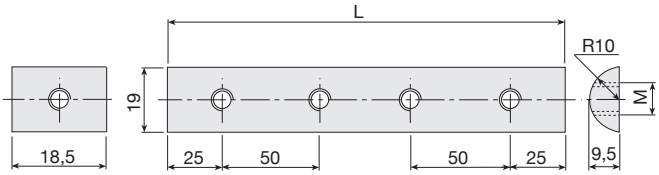
Suitable for 8mm slots. Can be frontally inserted, even after assembly. Material: zinc plated steel.



M x L	Code
M8x20	A35-20
M8x25	A35-25
M8x30	A35-30
M8x40	A35-40
M8x60	A35-60

Half-round threaded inserts

Material: zinc plated steel.

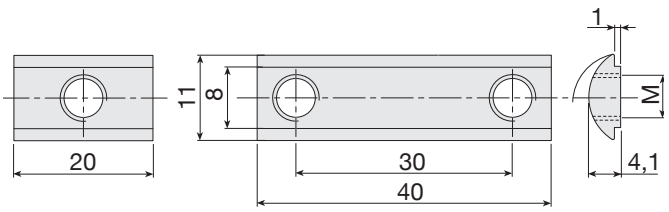


Thread	Hole no.	L	Code
M6	1	18.5	A32-61
M8	1	18.5	A32-81
M8	2	80	A32-82
M8	3	150	A32-83
M8	4	200	A32-84
M8	5	250	A32-89
M8	6	300	A32-86
M8	7	350	A32-87

Type B-C slots

Steel threaded inserts

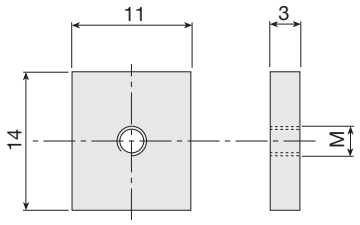
Material: zinc plated steel; harmonic steel spring.



Thread	Hole no.	L	Code
M5	1	20	B32-55
M6	1	20	B32-65
M8	1	20	B32-85
M6	2	40	B32-67

Flat inserts

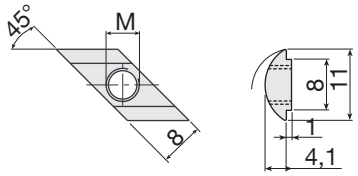
Material: zinc plated steel.



Thread	Code
M3	B32-30
M4	B32-40
M5	B32-50
M6	B32-60
Spring	211.1077

Spring nuts

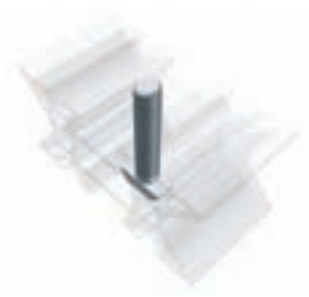
For universal assembly. Can be frontally inserted into the slot, even after assembly. Material: zinc plated steel.

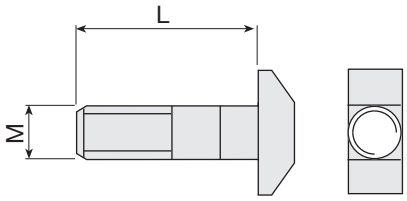


Thread	Code
M3	BD31-30
M4	BD31-40
M5	BD31-50
M6	BD31-60
Spring	BD31-90

T-bolts

Suitable for 8mm slots. Can be frontally inserted, even after assembly. Material: zinc plated steel.

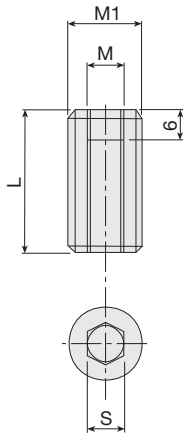




M x L	Code
M6x15	B35-15
M6x20	B35-20
M6x30	B35-30
M6x40	B35-40

Threaded Inserts

Material: chromium plated steel.
Ask for M14 or M16 thread.
SYS1-P : M14 thread (B33-.. series)
SYS1-M,G: M16 thread (A33-.. series)

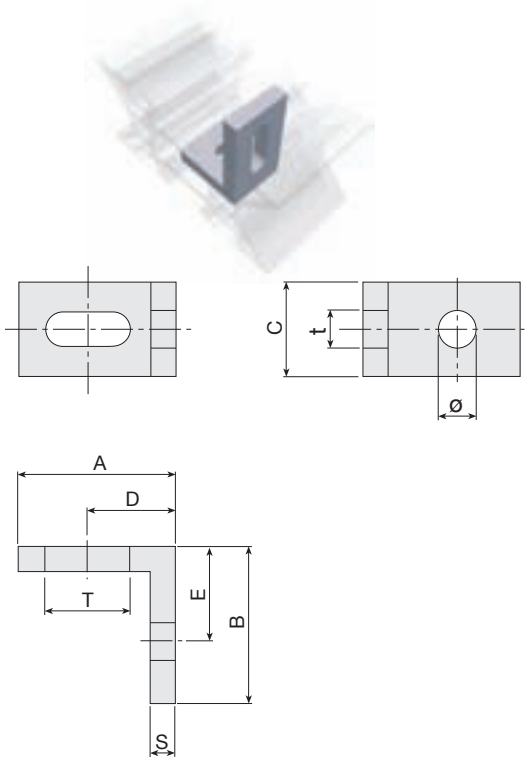


Rail	M1	M	S	L	Code
SYS1-P	14	10	10	25	B33-21
SYS1-P	14	8	8	25	B33-28
SYS1-P	14	6	6	25	B33-26
SYS1-M / G	16	10	10	25	A33-20
SYS1-M / G	16	8	8	25	A33-28
SYS1-M / G	16	6	6	25	A33-26

Assembly brackets

Through hole bracket

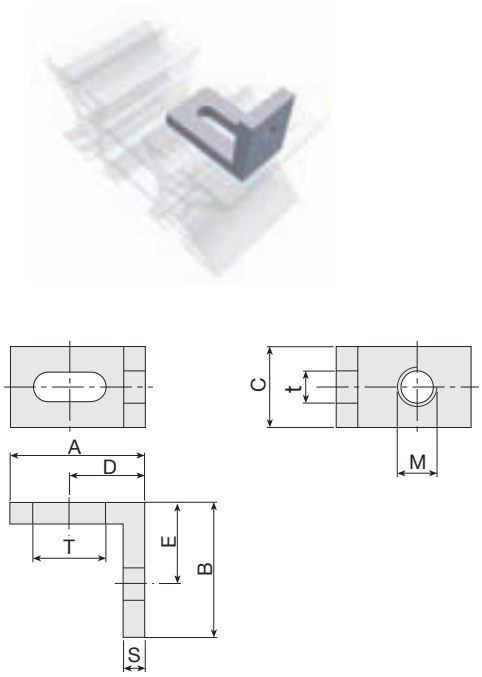
Through hole bracket for mounting additional equipment.
Material: natural anodized 6060 aluminium alloy.



A	B	C	D	E	S	T x t	Ø	Code
45	45	20	25	25	5	15 x 6.5	6	A30-76
35	25	20	19	15	5	20 x 6.5	4	A30-54
35	25	20	19	15	5	20 x 6.5	5	A30-55
35	25	20	19	15	5	20 x 6.5	6	A30-56
25	25	15	14	15	4	13.5 x 5.5	3	B30-53
25	25	15	14	15	4	13.5 x 5.5	4	B30-54
25	25	15	14	15	4	13.5 x 5.5	5	B30-55
25	25	15	14	15	4	13.5 x 5.5	6	B30-56

Threaded hole bracket

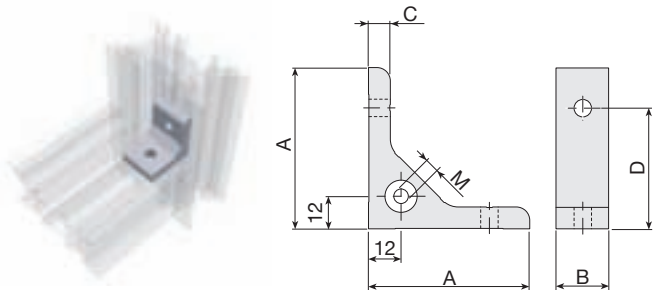
Threaded hole bracket for mounting additional equipment.
Material: natural anodised 6060 aluminium alloy.



A	B	C	D	E	S	T x t	M	Code
45	45	20	25	25	5	15 x 6.5	M6	A30-86
35	25	20	19	15	5	20 x 6.5	M4	A30-64
35	25	20	19	15	5	20 x 6.5	M5	A30-65
35	25	20	19	15	5	20 x 6.5	M6	A30-66
25	25	15	14	15	4	13.5 x 5.5	M3	B30-63
25	25	15	14	15	4	13.5 x 5.5	M4	B30-64
25	25	15	14	15	4	13.5 x 5.5	M5	B30-65
25	25	15	14	15	4	13.5 x 5.5	M6	B30-66

Accessory fixing bracket

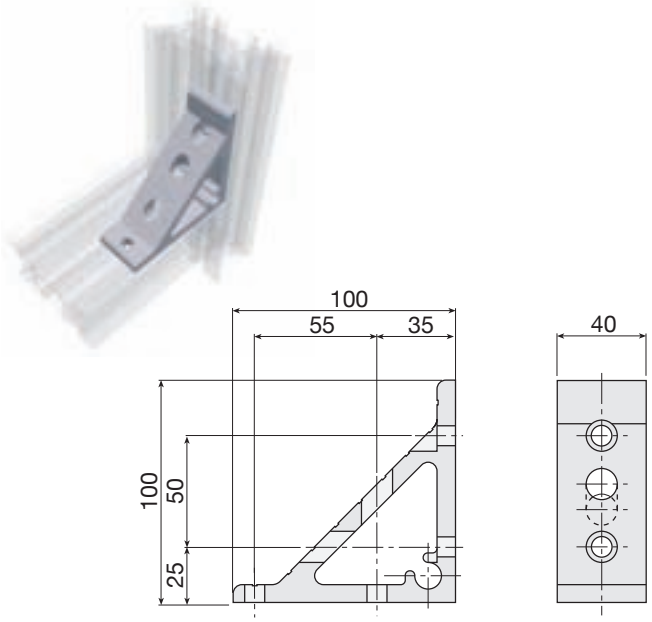
Bracket mainly used to fix accessories and to reinforce frames realised with profiles.
Material: natural anodized 6060 aluminium alloy.



A	B	C	D	E	Ø	M	Code
60	20	8	45	-	6,5	-	B30-10
60	20	8	45	-	6,5	M6	B30-20
60	30	8	45	-	9	-	A30-10
60	30	8	45	-	9	M6	A30-20
38	30	8	25	-	9	-	A30-00
31	20	6	20	-	6,5	-	C30-00

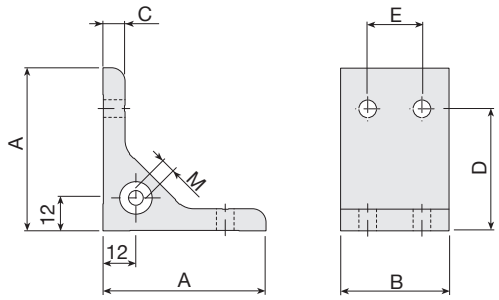
Code 213.0756

Bracket for rail connection.
Material: natural anodized 6060 aluminium alloy.



Threaded hole bracket

Bracket for rail connection.
Material: natural anodized 6060 aluminium alloy.

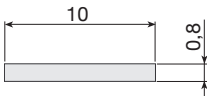


A	B	C	D	E	Ø	M	Code
38	80	8	25	50	9	-	A30-02
31	60	6	20	40	6,5	-	C30-02

Filler strips

Aluminium filler strips

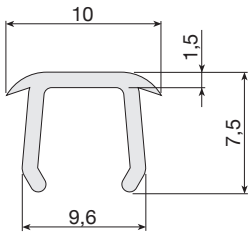
Aluminium filler strips L=1000 mm are used to blank out the longitudinal SYS1-G “A” slots.



Description	Code
Black	A39-10
Natural anodized	A39-10 ALU

PVC filler strips

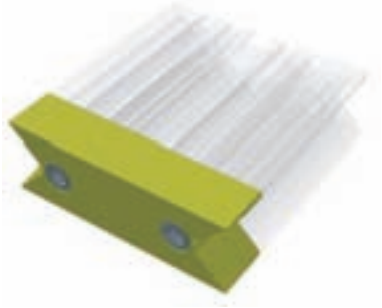
Grey or black PVC filler strips L= 5000mm suitable for any 8 mm longitudinal slots.

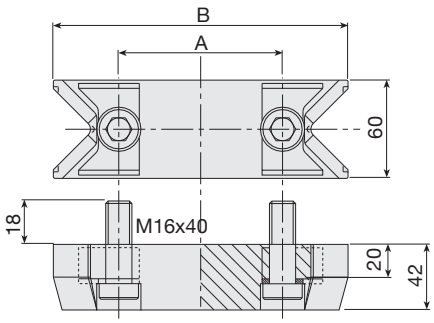


Description	Code
Grey	A39-25/5000
Black	A39-26/5000

Guide end parts

Guide end parts for the rail fitting in the roller slides (degree 15°). Yellow plastic material (hardness: 95° Shore), complete with assembling accessories.



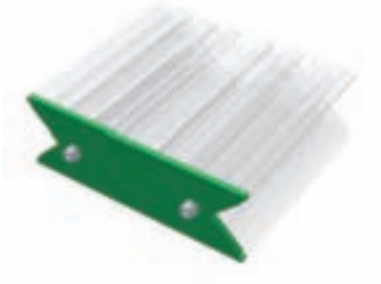


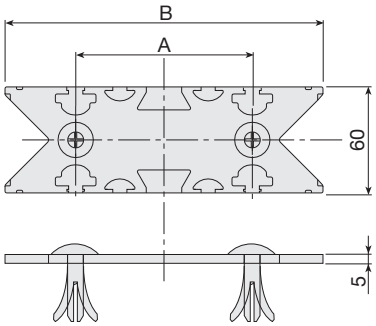
Rail	A	B	Code
SYS1-P	50	100	336.1069
SYS1-M	50	130	312.0159
SYS1-G	100	180	312.0158

NB: holes on rail ends should be threaded M16.

End caps

Green polymer material, complete with assembling accessoires.



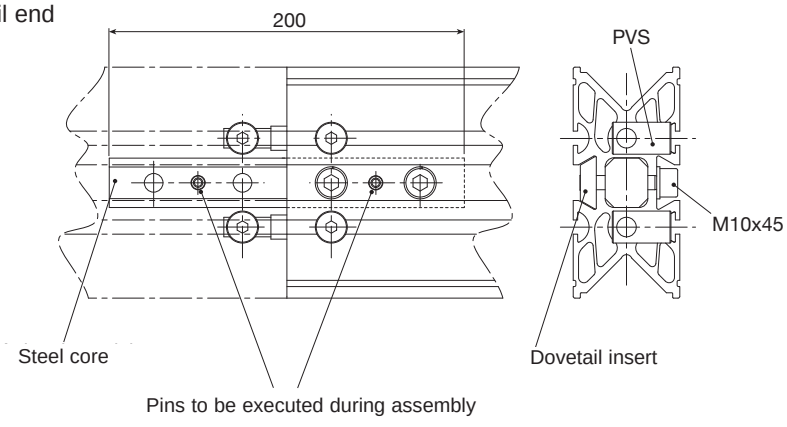


Rail	A	B	Code
SYS1-P	50	100	312.0846
SYS1-M	50	130	312.0679
SYS1-G	100	180	312.0680

Rail Extension Kits

Code 336.0597

Complete group for SYS1-G and SYS1-M rail extension (without side projections on the rail).
Please ask for code ..-60/… or …-61/… to get the rail end drilled (see page 31).

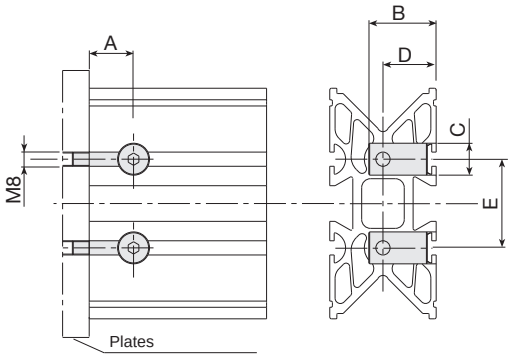


PVS® connectors

PVS® connectors are used to mount plates or accessories to the rail end.
They are manufactured in zinc plated steel.
To use PVS® connectors, rails should be drilled.
Please ask for machining code 33 or 34 (see page 31).

Threaded connectors

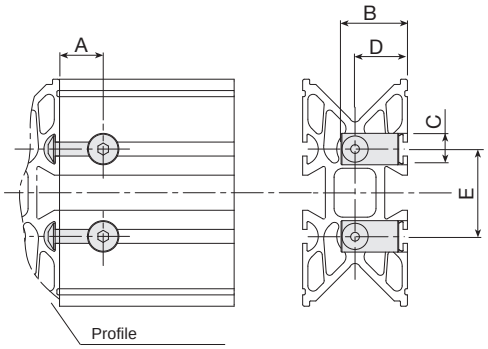
PVS® for rail / plate at 90° assembly.



Rail	A	B	C	D	E	Code
SYS1-P	25	33	15	25	50	B20-60
SYS1-M	25	38	18	30	50	A20-60
SYS1-G	25	38	18	30	100	A20-60

Standard connectors

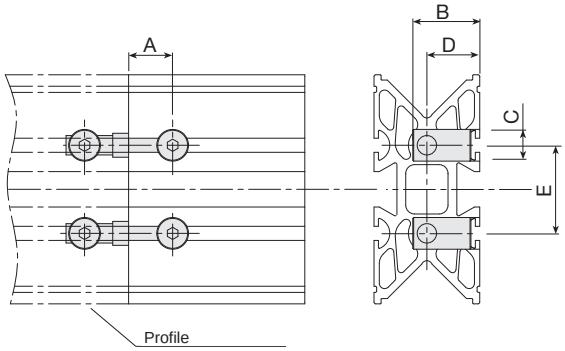
PVS® for rail / rail at 90° assembly.



Rail	A	B	C	D	E	Code
SYS1-P	25	33	15	25	50	B20-90
SYS1-M	25	38	18	30	50	211.1617
SYS1-G	25	38	18	30	100	A20-90

Rail extension connectors

PVS® for rail / rail assembly.

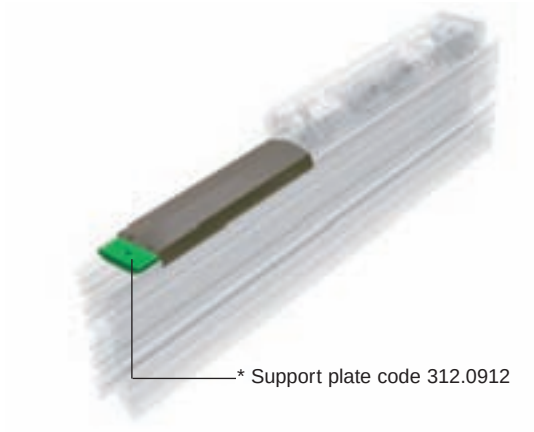


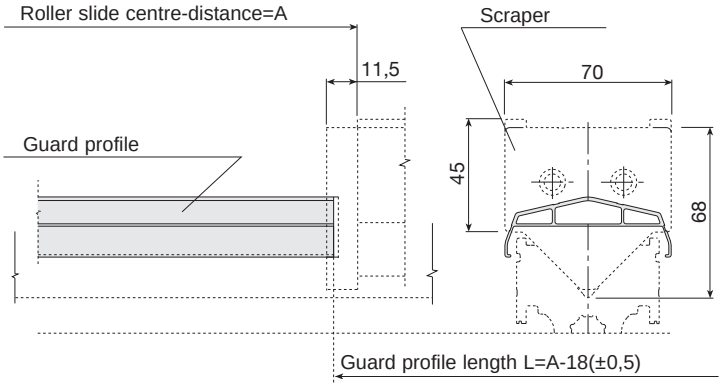
Rail	A	B	C	D	E	Code
SYS1-P	25	33	15	25	50	B24-00
SYS1-M	25	38	18	30	50	A24-00
SYS1-G	25	38	18	30	100	A24-00

Guard profiles

Guard profile code 302.0147 / length

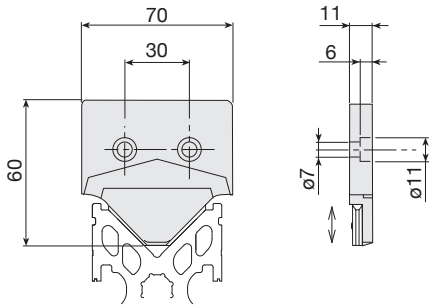
Material: bronze anodized aluminium alloy (max. L=7 m)
*Guard profile longer than 3 m should be mounted with a support plate in intermediate position.





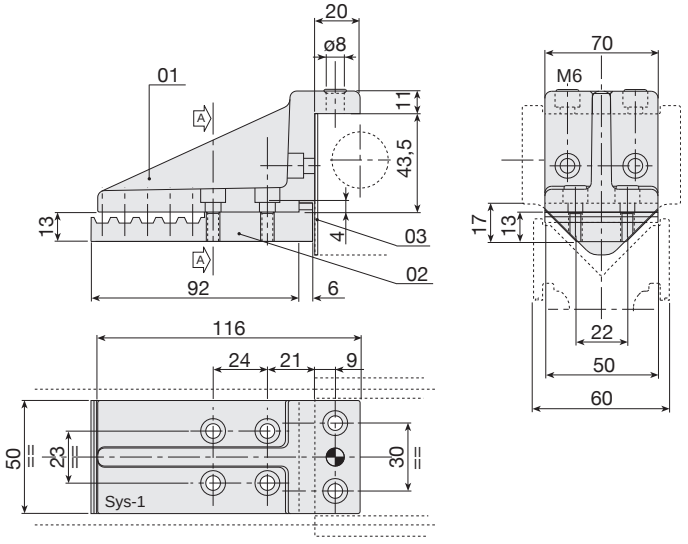
Spring scraper code 312.1026

With grooved seat for guard profile.
Material: green coloured plastic.



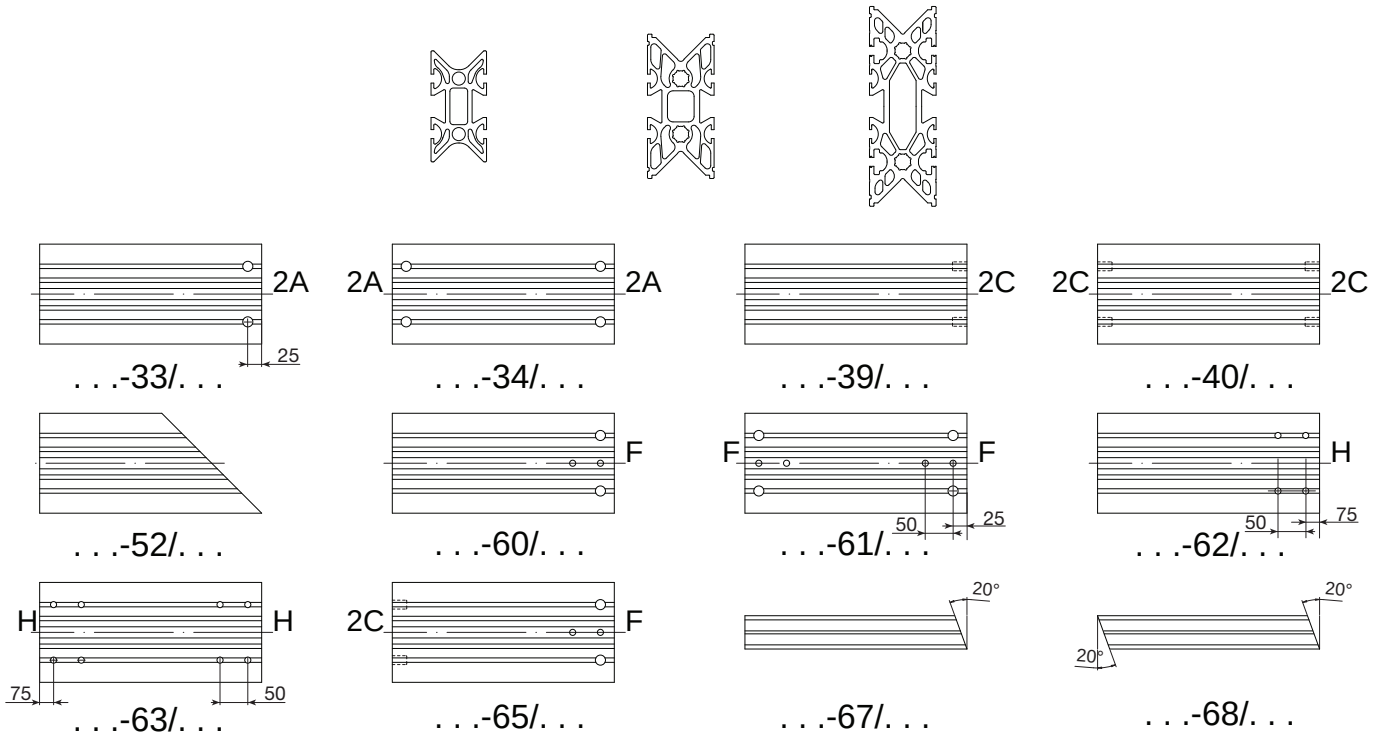
Belt assembly

This device is used to fix the toothed belt to the roller slide and is provided with toothed plate and special scraper.
N.B. Please ask for roller slide presetting.



Complete belt fixing group		Code 336.0007
01	Belt fixing bracket	313.0884
02	Toothed plate for 50AT10 belt	315.0885
03	Special scraper (1,5 mm thickness)	312.0935

Standard machining on rails



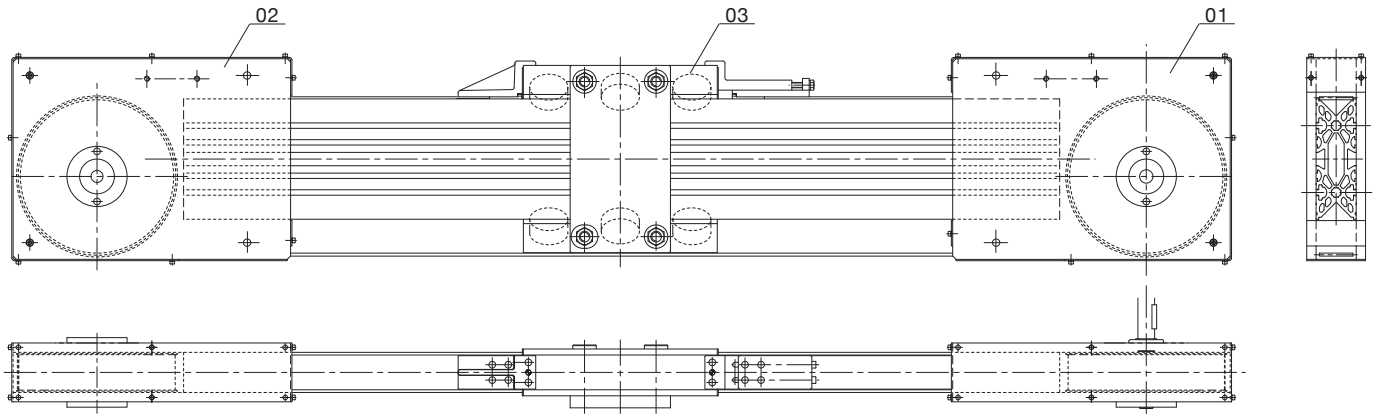
A Milling for Ø15 or Ø18 PVS® (see rails)
C M14 or M16 threads (see rails)
F Drilling to rails connection, code 336.0597
H Drilling to rails connection, code 336.0597

ORDER CODE EXAMPLE:

2 - 3020001 - 60 / 2500

- Required length
- Machining code
- Rail code (see page 8)
- No. of ordered rails

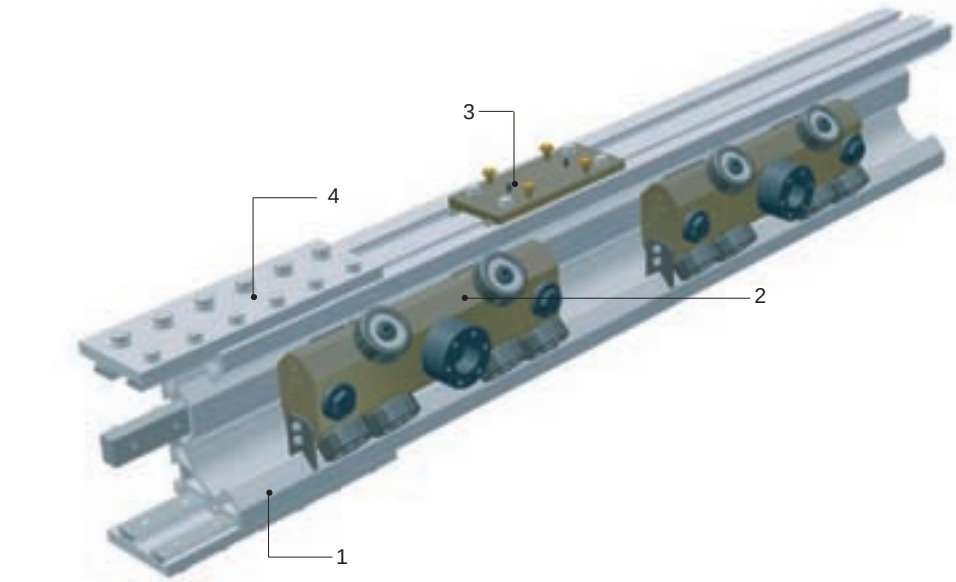
Special application



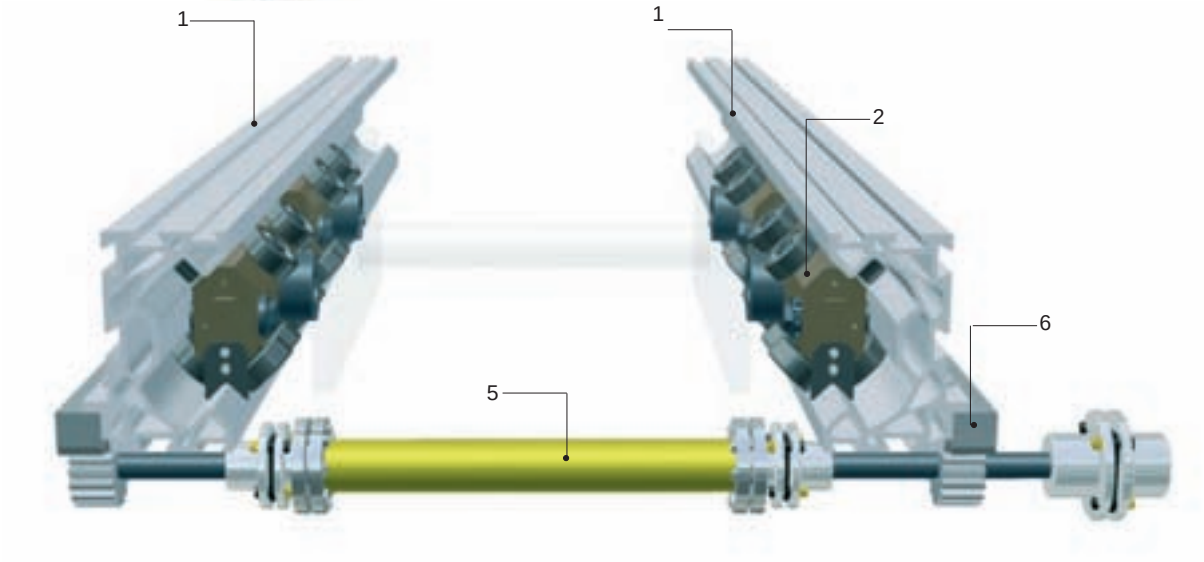
Components		Code
01	Drive head	336.0003
02	Driven head	336.0004
03	Complete carriage	336.0005

Assembly solutions

A



B



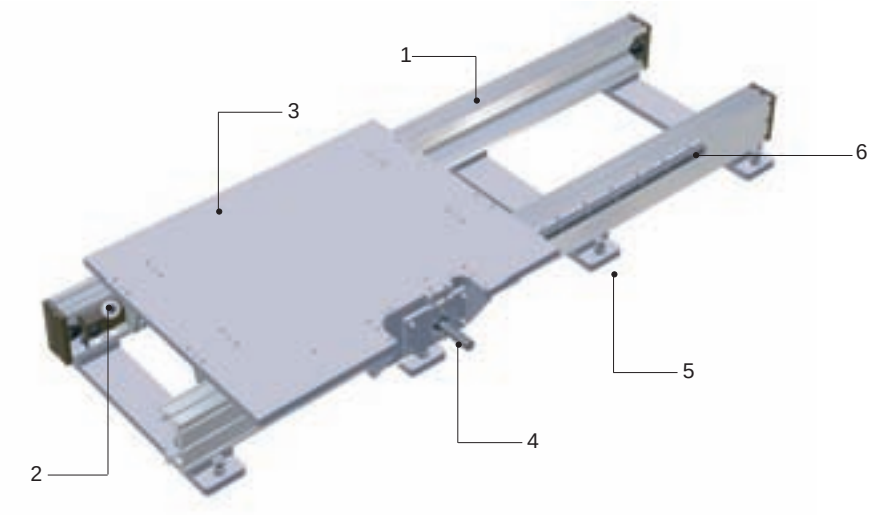
A assembly:

This assembly example represents an axis composed of a single rail. With this configuration you can keep the roller slides steady and move the rail by using pneumatic cylinders, pinion/rack or belt drive systems (not shown here).

B assembly:

This assembly example represents a system composed of 2 pinion/rack-operated moving rails.
It is mainly used to build lift and shift linear units for metal sheet handling.

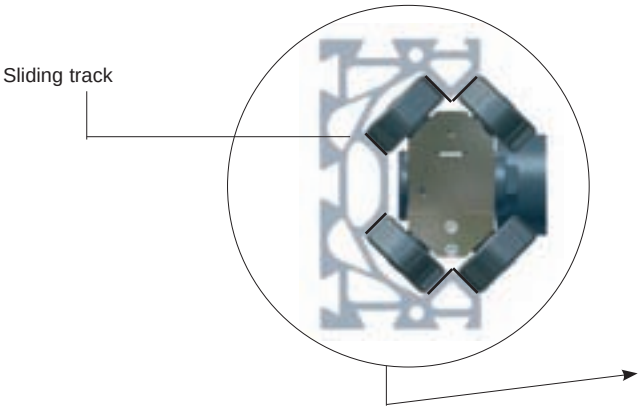
Legend:
1 – SYS 2 rail (see page 35)
2 – Self-aligning roller slide (see page 36)
3 – Accessory fixing set (see page 38)
4 – Rail extension plate set (see page 38)
5 – Connecting shaft (see Modline and Tecline catalogue)
6 – Racks and fixing plates (see page 20-21)

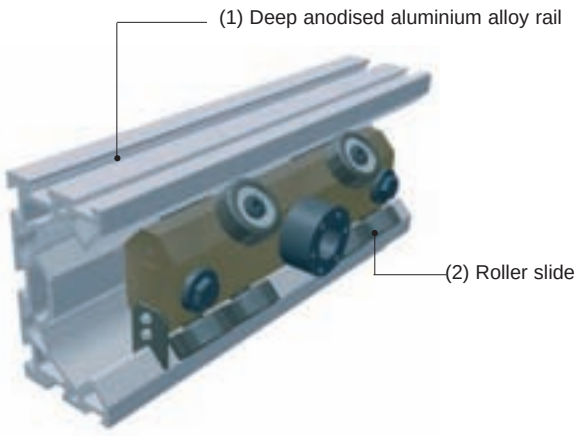


This assembly example represents a slide composed of a carriage (plate and 4 roller slides complete with welded supports) running on 2 profiles that act like a rail.
In this configuration the self-aligning roller slides are mounted on the rack opposite site (see page 36), to compensate any stress caused by rail parallelism errors.
This system is mainly used as robot-holder, elevators and palletisers.

Legend:
1 – SYS2 rail (see page 35)
2 – Self-aligning roller slide (see page 36)
3 – Base plate
4 – Gearbox assembly set
5 – Risers
6 – Racks and fixing plate (see page 20-21)

Overview



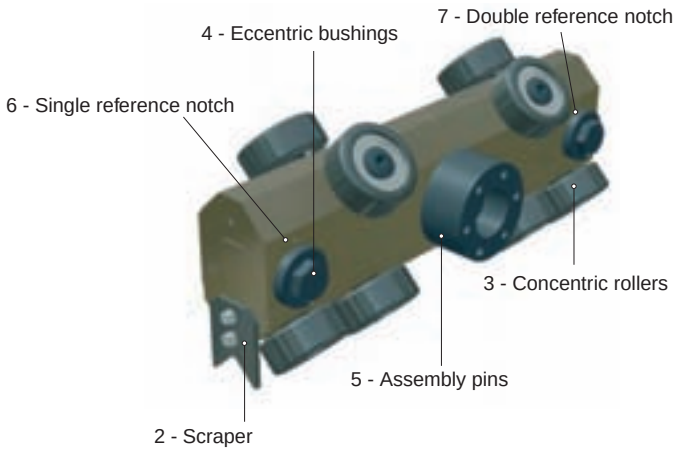


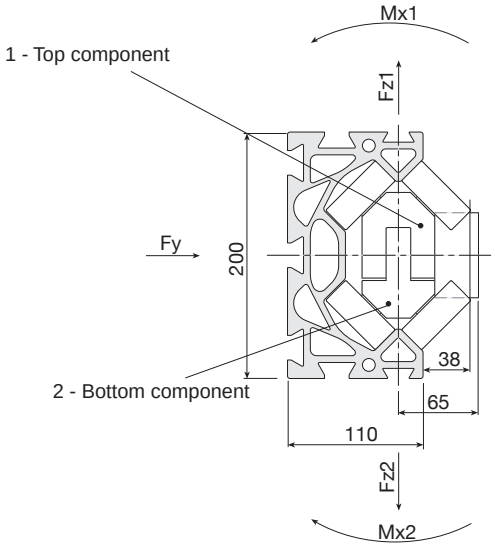
A rugged aluminium C-shaped rail (1) is at the basis of the SYS2 translation system.
The linear motion is made through 8-12- or more roller slides running on the hardened inside surfaces.
The rail section allows the full rollers and sliding surfaces protection; moreover, an additional lateral guard gives the rail a completely closed rectangular section.
Thanks to its particular features, this system can also be used as slide handlings, elevators, palletizers and Cartesian robots.

Roller slide description

The main body consists of two joined high-resistance light alloy components (1-2). It is provided with double-sphere ring gear angular contact bearings, neoprene O-rings, to ensure the lowest friction coefficient.
Lubrication is not required for the standard version, giving a great advantage to the plant operating efficiency.
The roller external surface is covered by a low-friction plastic material, which guarantees the maximum noise reduction and lowest possible rail wear.

Roller slides can be supplied in two solutions: 16- and 20-rollers with 2 assembly pins (length: 480 and 600 mm) and scraper (4) or 8- 12-rollers with just 1 central assembly pin, which allows a well balanced load distribution on each bearing through a slight oscillation.
A self-aligning roller slide version with 1 locking pin is also available.





Assembly specifications

A - Features

The sliding system generally foresees 2 assembly possibilities: moving rail and fixed roller slides (example 1) or fixed roller slides and moving rail (example 2).
If the application requires fixed rails and moving carriage, it is very important to pay particularly attention to the rail alignment while assembling, in order to avoid any additional loads on the rollers, that could limit their life.
The max. possible tolerance between 2 rails is ±1mm.
In this case is highly recommended to use self-aligning roller slides. If the sliding system is pinion/rack operated, check that slipping washers (see page 36) are removed on the roller slides fixed on the rack opposite side.
Rail connecting systems are available on demand.

B - Alignment

Sliding tracks have to be perfectly aligned.

C - Rack assembly

With rack drive it is very important to guarantee exact parallelism between the sliding system and the rack axis. (rack and fixing plates on page 20-21).

D - Roller slide assembly and adjusting

The roller slide can be assembled and disassembled through the rail groove.
The correct backlash adjustment between rollers and rail sliding tracks must be made along the rail vertical axis, acting on the roller slide eccentric bushings (4).

It is recommended to adjust any backlash near each support, to avoid possible rail deformations caused by roller preloading.
An optimum condition for preloading is reached when rollers without any load, touching the sliding track, are not blocked and you can easily let them roll on the track just by hand.
For the simultaneous assembly of several roller slides in one system, it is possible that not all rollers can remain in contact with rails, because of the natural deformation of the rails.
In this case it is not advisable to act on the eccentric pins.
It is important to check the smoothness capacity of the whole system, which should be high; if not, loosen the pins and repeat the adjustment.
Please follow these instructions to disassemble roller slides: loosen the screws and the eccentric bushings (4) placed on the roller slide end, and the assembly pin CH24 bolts (5); free the roller slide from the equipment (welded parts or plates) and take it off; remove pins and bushings; split the two roller slide parts (1 and 2) and remove them from the rail.
To assemble the roller slide please follow the instructions in reverse order. Before blocking the CH24 bolts, adjust the roller slide by rotating counter-clockwise the eccentric bushing marked with the single notch (6) until all rollers touch the rail.
Do the same with double notched bushing. Repeat the previous fine-adjustment, by paying attention that rollers without any load can easily slide on the track just by hand.

Rail specifications

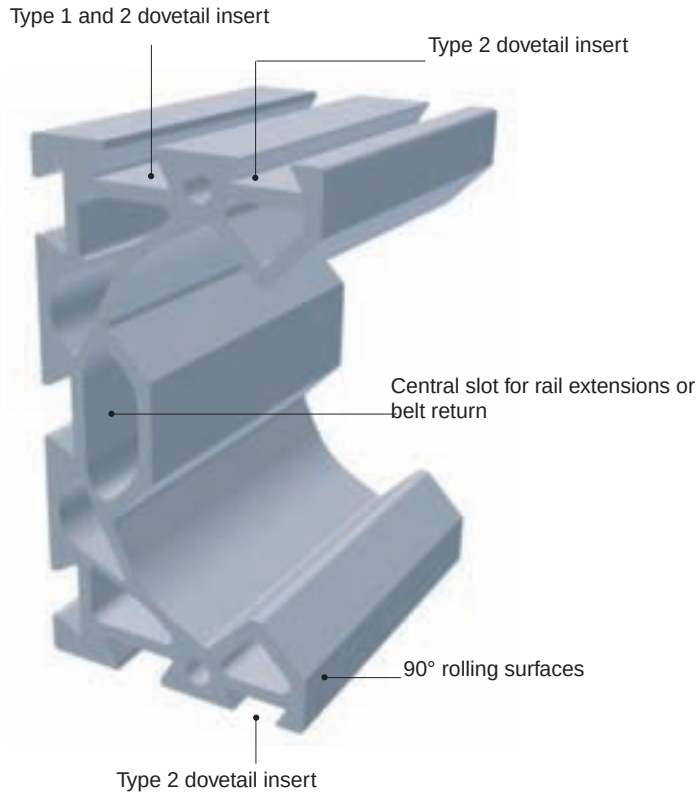
SYS2 rail has been developed to obtain a very strong asymmetrical section and limited on load structural deformation. It is provided with slots that can be used with a wide range of accessories.
The rail surface is chemically treated, in order to obtain a great hardness above all on roller sliding tracks, guaranteeing its long-life.

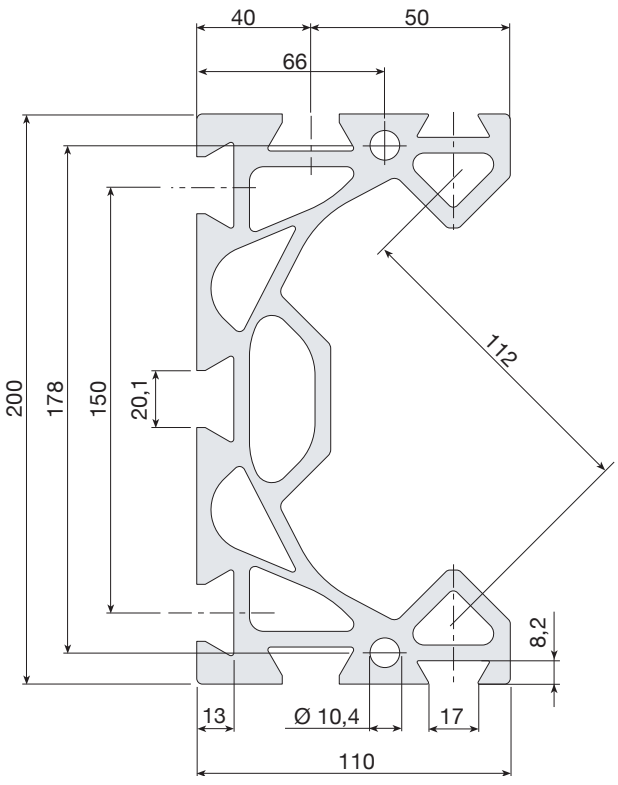
Specifications	
Material:	hard. and temp. light alum. alloy (AlMgSi)
Quality:	F = 25
Tolerances:	1/2 UNI 3879
Tear resistance:	R = 245 - 270 N/mm^2
Yelding point:	Rp = 215 - 240 N/mm^2
Hardness:	HB = 70 - 90

Surface treatment: deep anodising (bronze coloured) , thickness > 0,055 mm

SYS2 rail	Code 302.0539	
Size	200x110	mm
Weight	16,8	Kg/m
Max. length	7,5	m
Moment of inertia X (Ix)	31.900.000	mm^4
Moment of inertia Y (Iy)	6.600.000	mm^4
Bending section mod. (Wx)	319.000	mm^3
Bending section mod. (Wy)	120.000	mm^3

*Holes for M14 thread and PVS® connectors

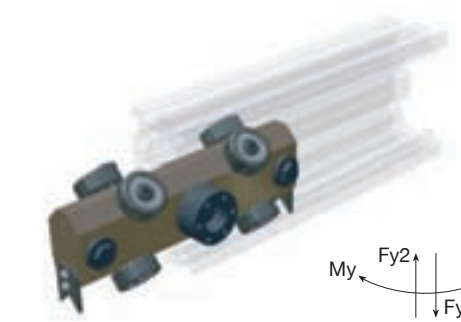


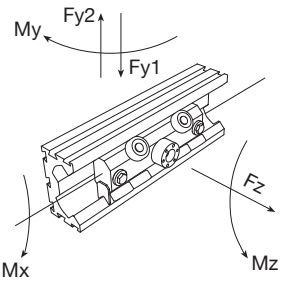


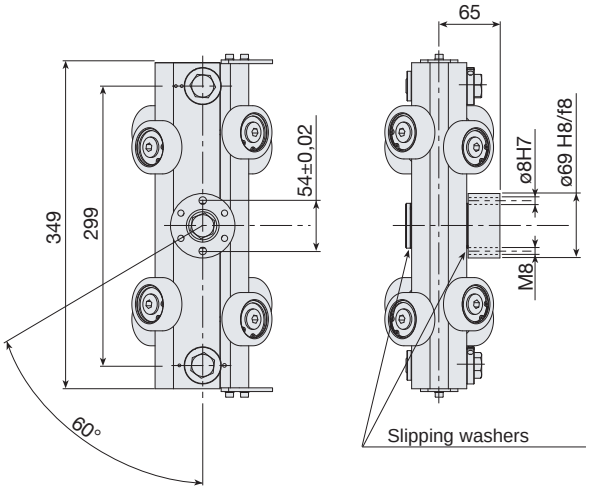
Roller slide size

Code 304.0833

8-roller slide, assembly with 1 self-aligning pin.





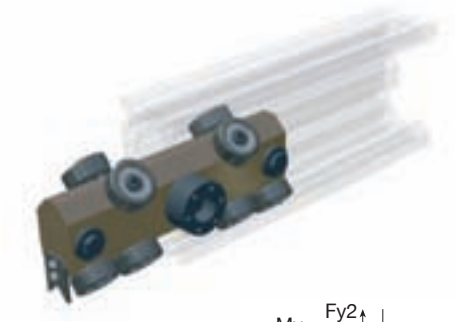


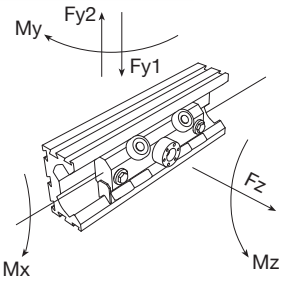
	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_{y1}[N]	F_{y2}[N]	F_z[N]
SYS2	293	363	-	3950	3950	3950

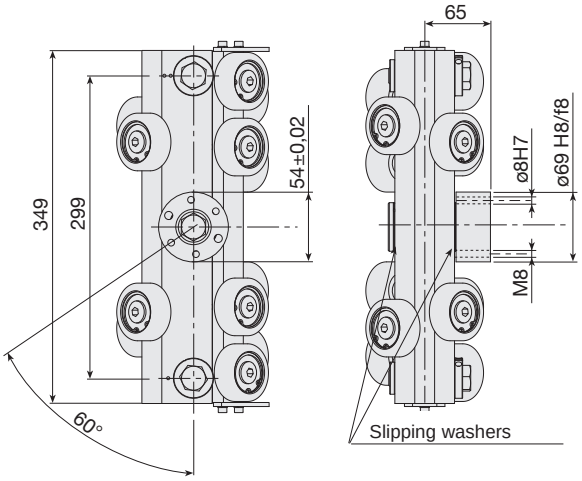
Specifications	
Support pins no.	1
Adjusting bushings no.	2
Rollers no.	8

Code 304.0001

12-roller slide, assembly with 1 self-aligning pin.





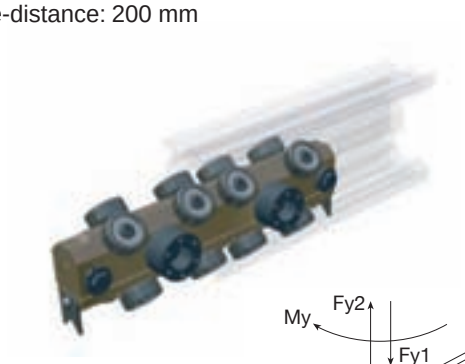


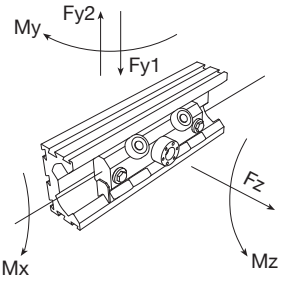
	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_{y1}[N]	F_{y2}[N]	F_z[N]
SYS2	320	363	-	6320	3950	3950

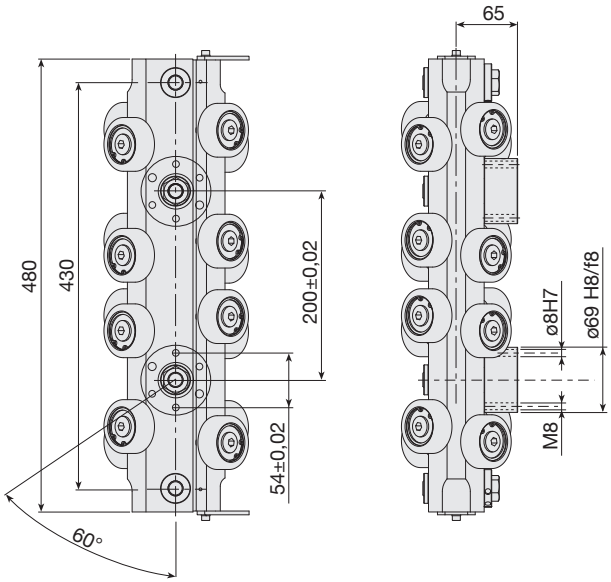
Specifications	
Support pins no.	1
Adjusting bushings no.	2
Rollers no.	12

Code 304.0911

16-roller slide, fixed assembly with 2 pins
centre-distance: 200 mm





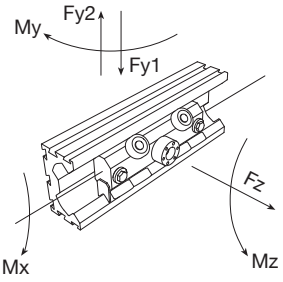


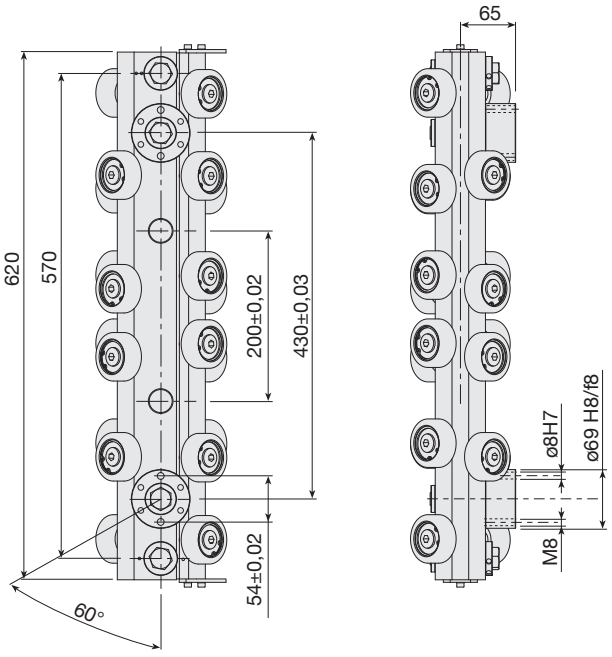
	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_{y1}[N]	F_{y2}[N]	F_z[N]
SYS2	470	620	705	6320	6320	6300

Specifications	
Support pins no.	2
Adjusting bushings no.	2
Rollers no.	16

Code 304.0902

20-roller slide, fixed assembly with 2 pins
centre-distance: 430 mm





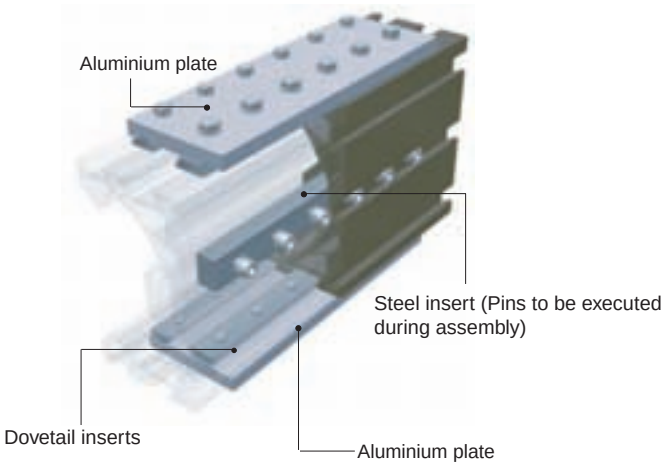
	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_{y1}[N]	F_{y2}[N]	F_z[N]
SYS2	700	820	705	6320	6320	6320

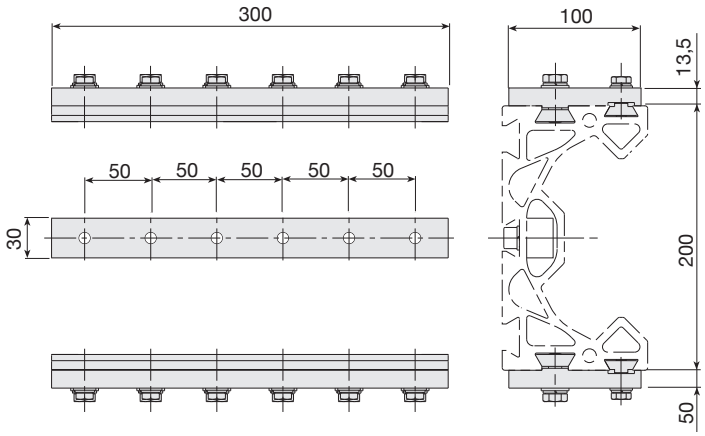
Specifications	
Support pins no.	2
Adjusting bushings no.	2
Rollers no.	20

Rail connecting plate

Code 336.0803

N.B.: please ask for the specific rail machining.

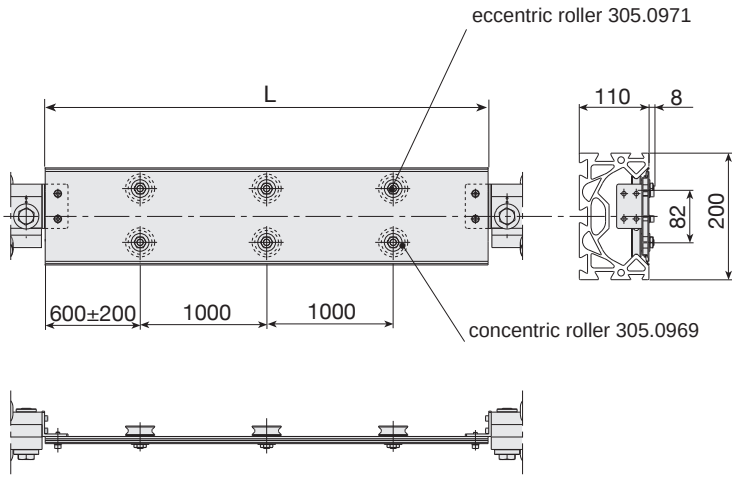




Roller slide guard profile

Code 335.0805/L

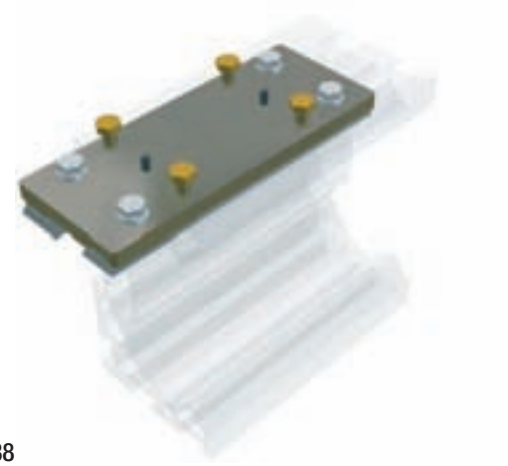
Material: aluminium alloy profile.

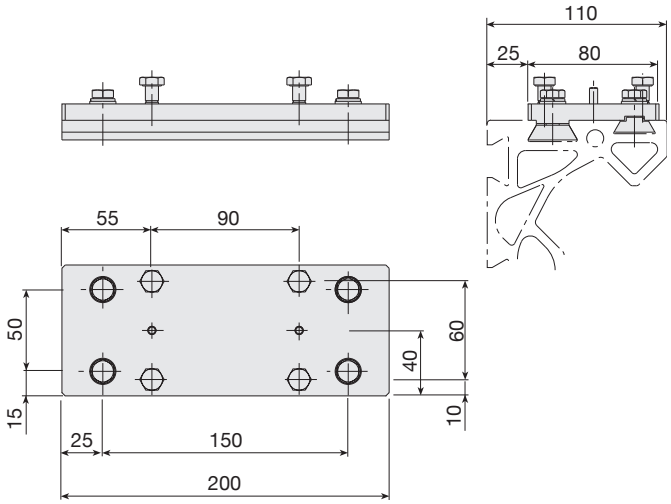


Accessory fixing plate

Code 336.0810

Material: bronze anodised 6082 aluminium alloy.

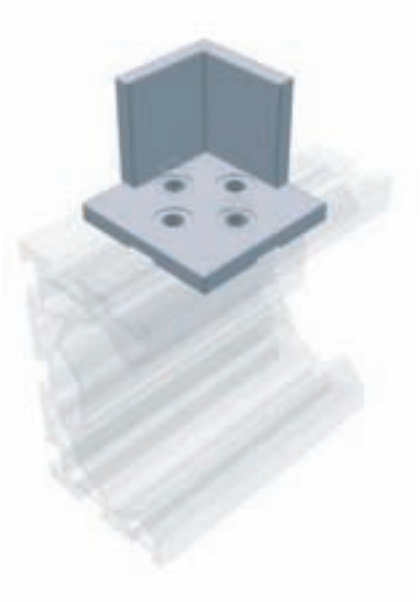


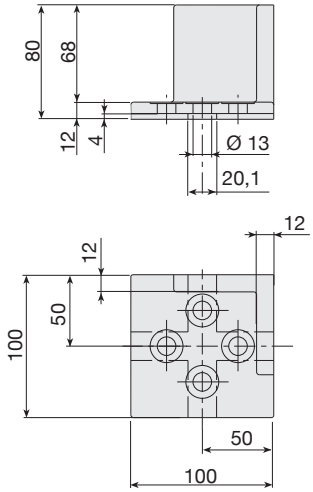


Tool fixing bracket

Code 213.1100

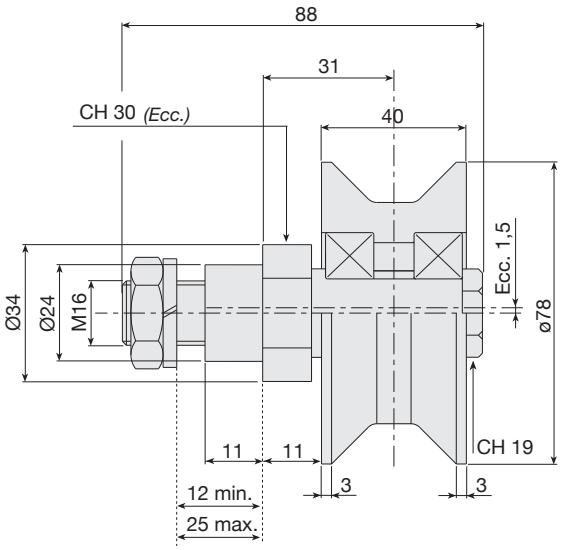
Material: aluminium alloy extrusion.





Ø78 V-shaped rollers

Material: high-resistance black polyamide coating.
Eccentric or concentric blued steel pin.



Type	Weight [kg]	PR [N]	PA [N]	Speed [m/s]	Code
Ecc.	0,6	500	130	2	305.1037
Conc.	0,6	500	130	2	305.1036

Code Parts Index

Notes

ROLLON®
LinearEvolution

- Rollon Branches & Rep. Offices
- Distributors

ROLLON S.p.A. - ITALY

Via Trieste 26
I-20871 Vimercate (MB)
Phone: (+39) 039 62 59 1
www.rollon.it - infocom@rollon.it

Branches:

ROLLON GmbH - GERMANY

Bonner Strasse 317-319
D-40589 Düsseldorf
Phone: (+49) 211 95 747 0
www.rollon.de - info@rollon.de

ROLLON B.V. - NETHERLANDS

Ringbaan Zuid 8
6905 DB Zevenaar
Phone: (+31) 316 581 999
www.rollon.nl - info@rollon.nl

ROLLON S.A.R.L. - FRANCE

Les Jardins d'Eole, 2 allée des Séquoias
F-69760 Limonest
Phone: (+33) (0) 4 74 71 93 30
www.rollon.fr - infocom@rollon.fr

ROLLON Corporation - USA

101 Bilby Road. Suite B
Hackettstown, NJ 07840
Phone: (+1) 973 300 5492
www.rolloncorp.com - info@rolloncorp.com

ROLLON Ltd - CHINA

51/F Raffles City, 268 Xi Zang Middle Road,
200001 Shanghai (China)
Phone: (+86) 021 2312 7582
www.rollon.cn.com - info@rollon.cn.com

ROLLON India Pvt. Ltd. - INDIA

1st floor, Regus Gem Business Centre, 26/1
Hosur Road, Bommanahalli, Bangalore 560068
Phone: (+91) 80 67027066
www.rollonindia.in - info@rollonindia.in

Rep. Offices:

ROLLON S.p.A. - RUSSIA

117105, Moscow, Varshavskoye
shosse 17, building 1, office 207.
Phone: +7 (495) 508-10-70
www.rollon.ru - info.russia@rollon.com

Regional Manager:

ROLLON - SOUTH AMERICA

R. Joaquim Floriano, 397, 2o. andar
Itaim Bibi - 04534-011, São Paulo, BRASIL
Phone: +55 (11) 3198 3645
www.rollonbrasil.com.br - info@rollonbrasil.com

Consult the other ranges of products

Distributor

All addresses of our global sales partners can also be found at www.rollon.com