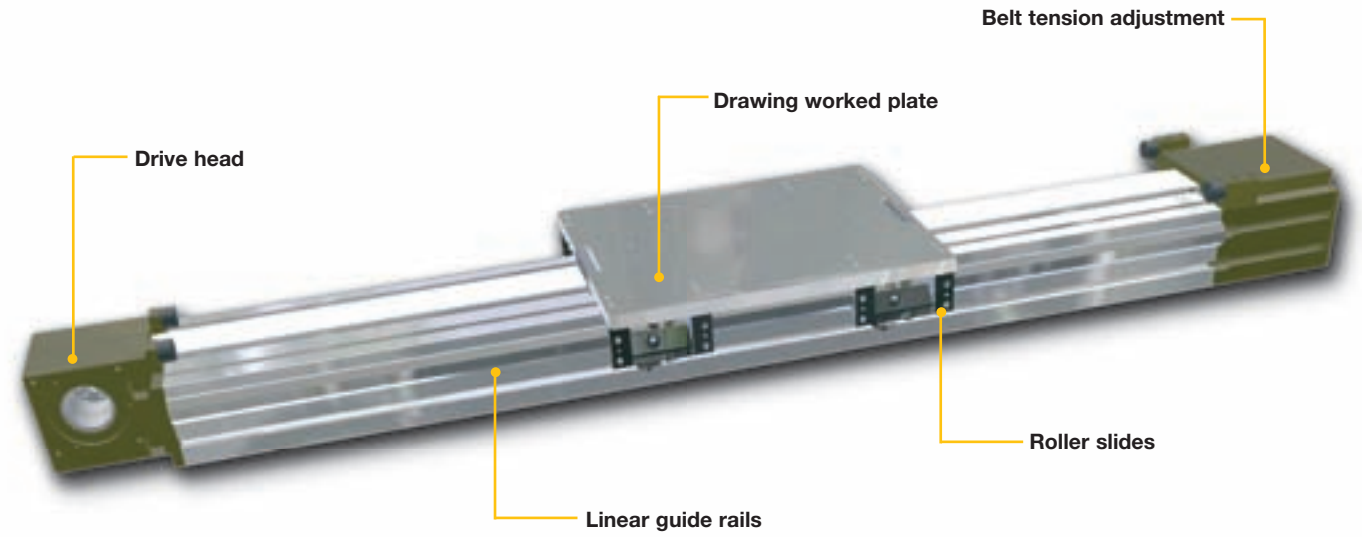
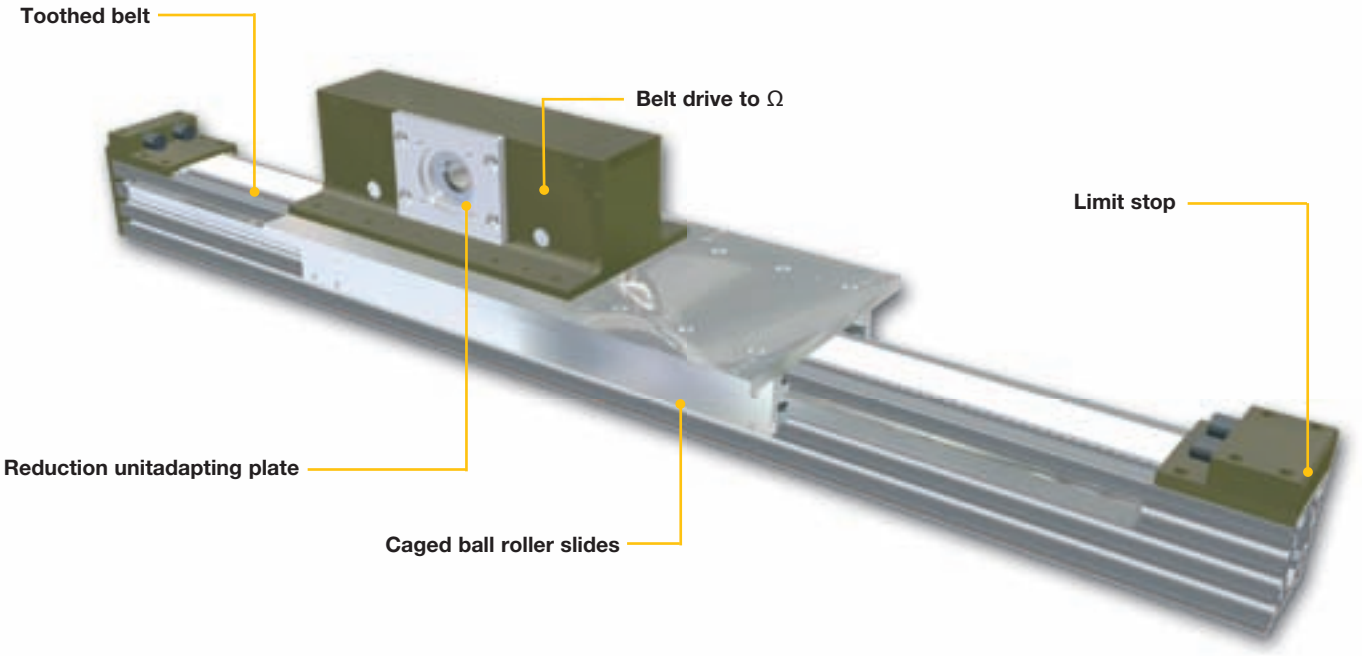
ROLLON®

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

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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 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, 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 ML-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

These units can be equipped with gearboxes, servomotors, mechanical limit switches, proximity switches and various accessories, such as energy chains, interface plates, fixing supports.

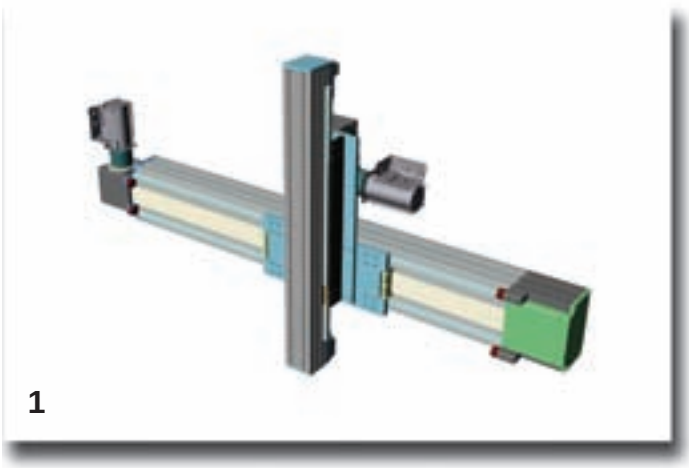
Our technical dept. is at your complete disposal for any scaling requirements and the choice of linear actuator suitable to achieve the required performance levels. We can draw on our experience to help our customers in their choice of linear unit and the following parts:
gearboxes: worm screw, planetary,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

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.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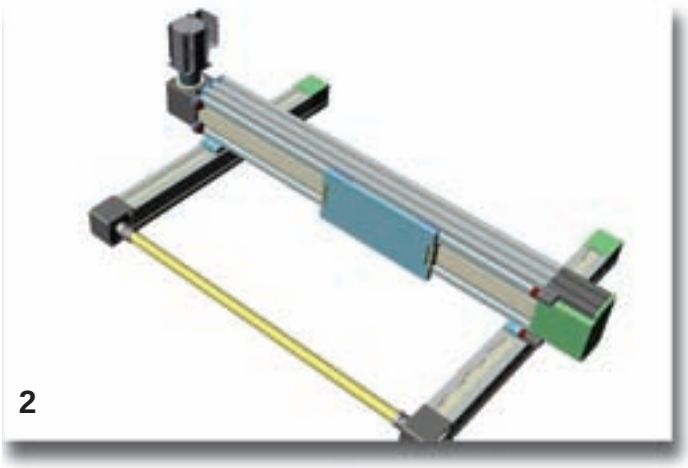
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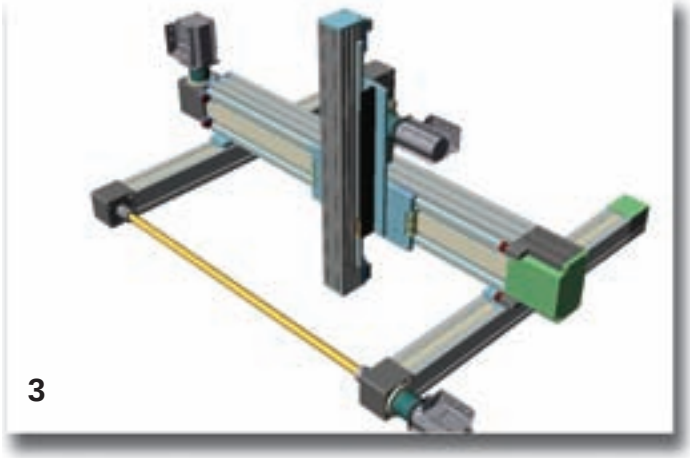
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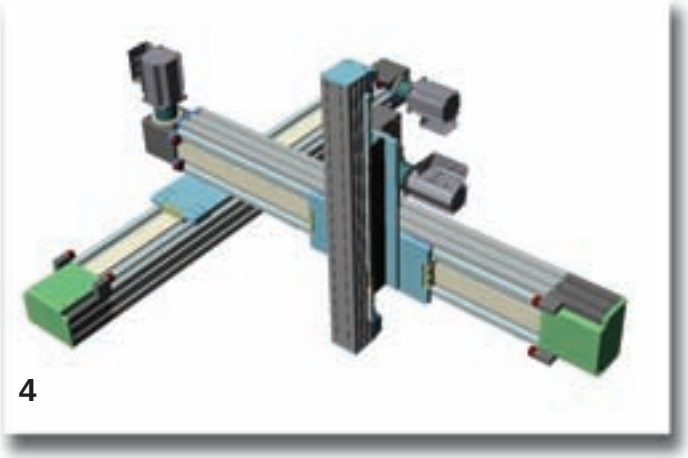
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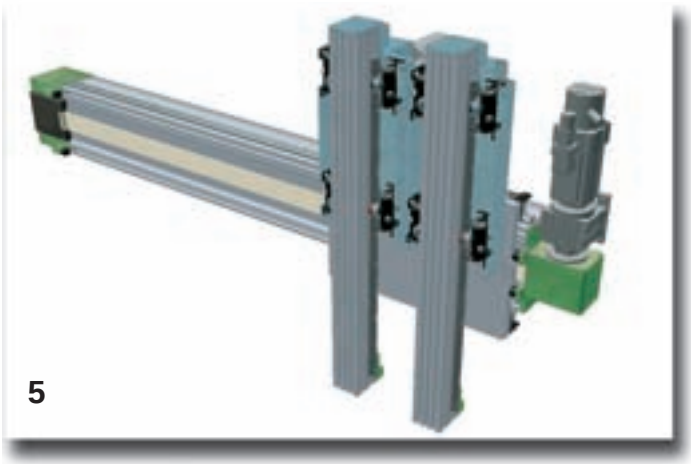
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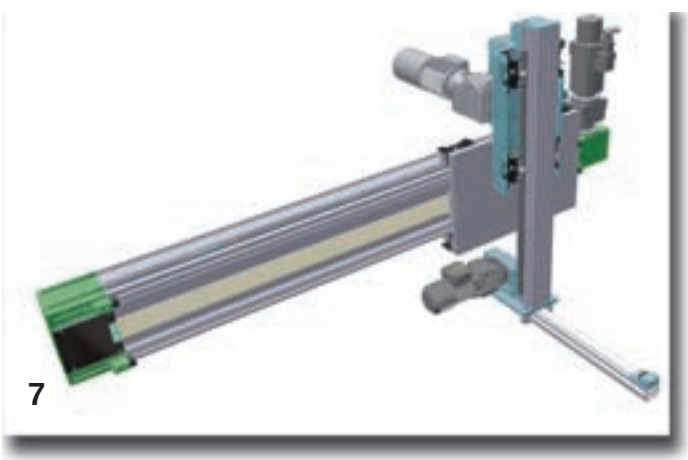
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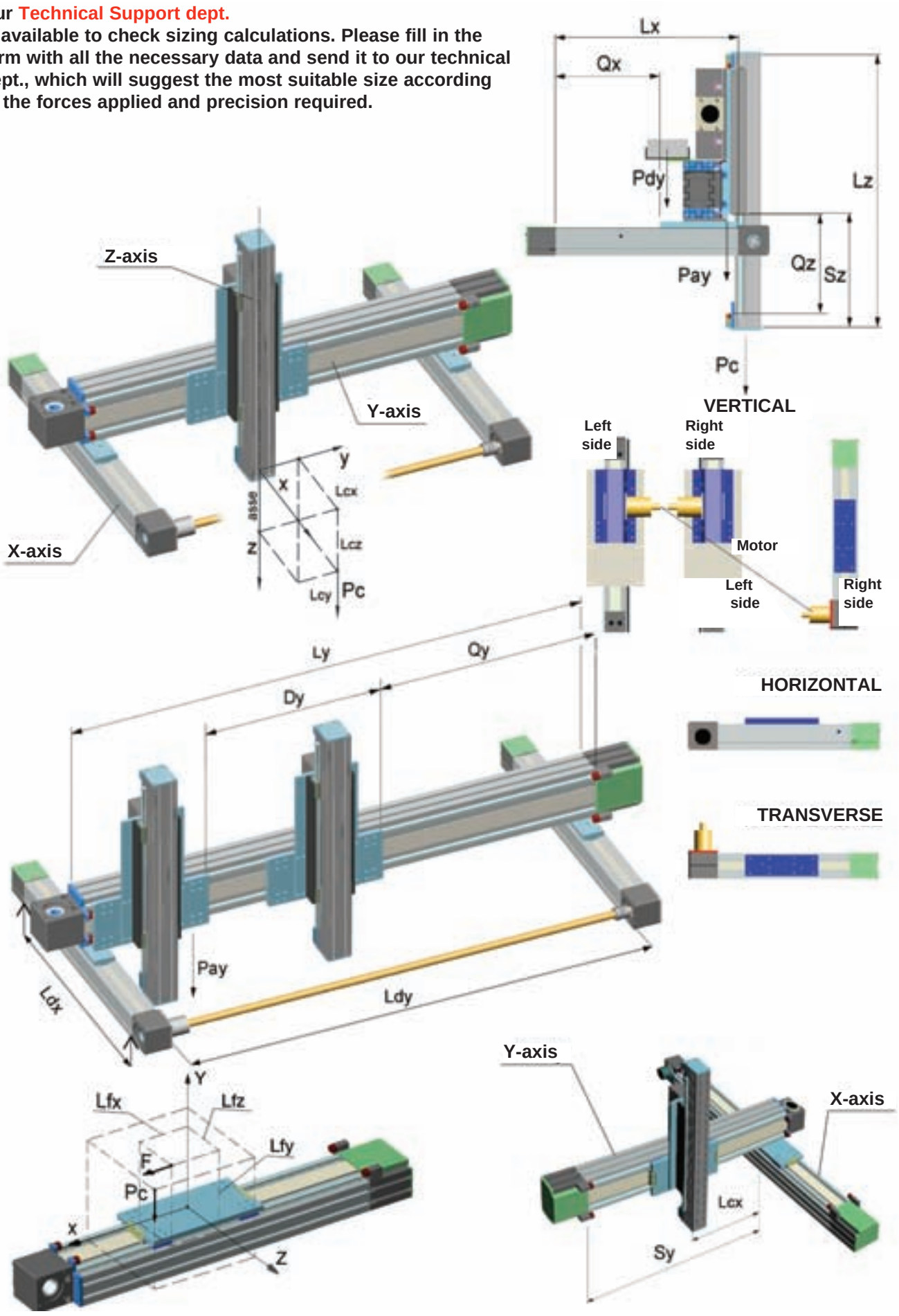
Sizing template

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

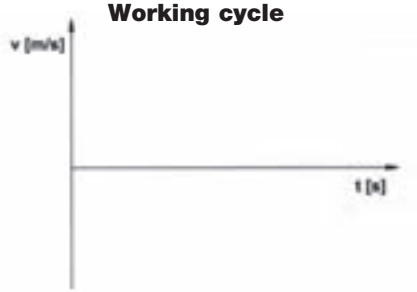
required data | optional data

MODLINE linear modules

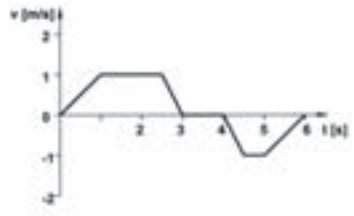
ASSEMBLY SOLUTIONS (see page ML-5) no.

	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:.....

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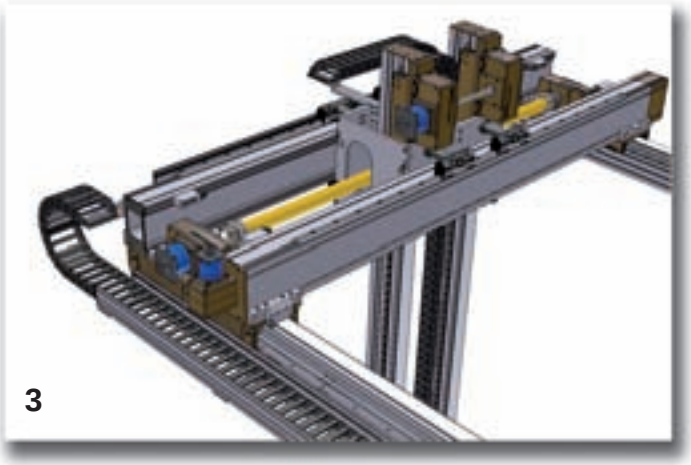
Special applications with standard modules


1


2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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

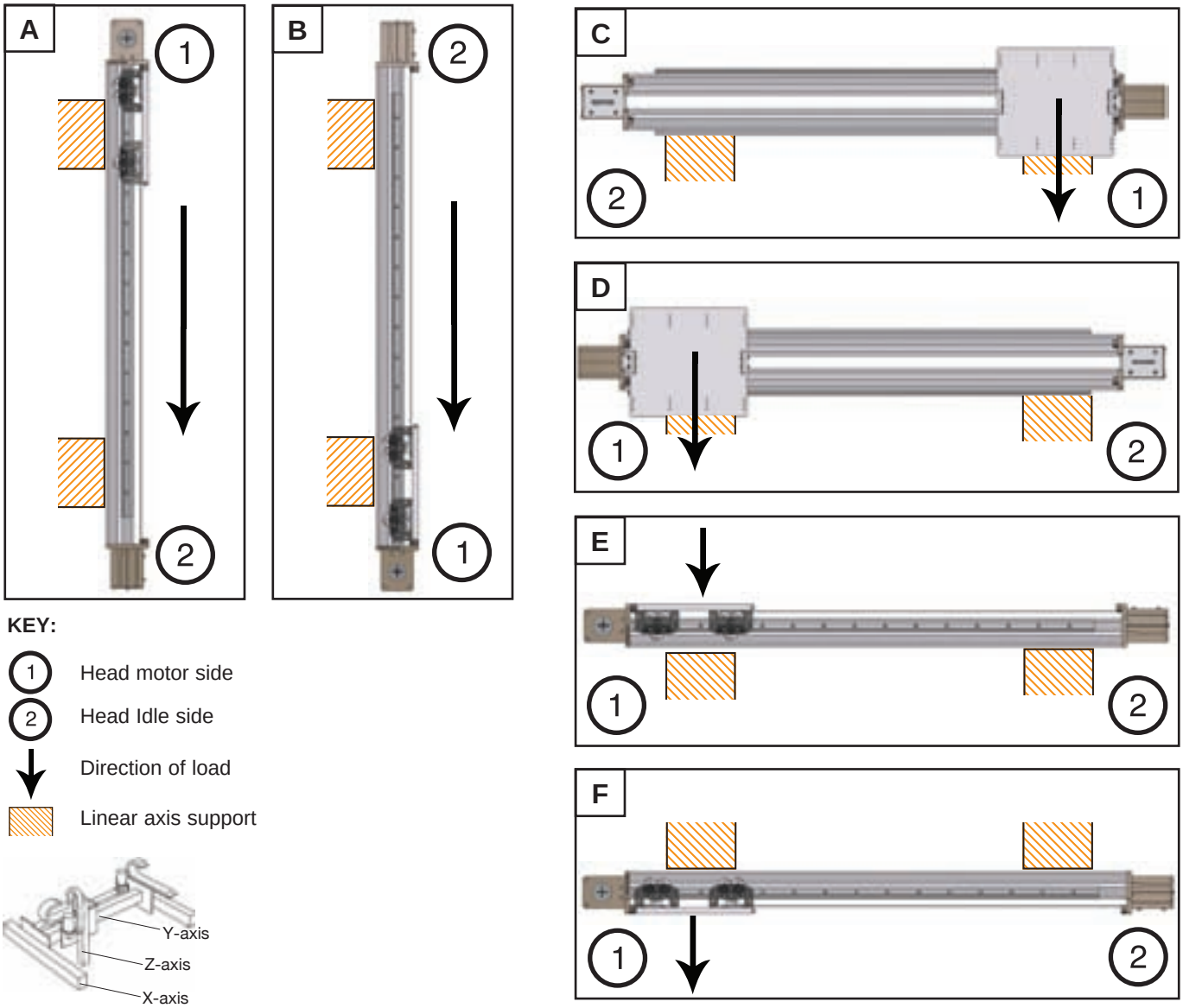
5 Pick and place system for packaging plant

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							
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 ML-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 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

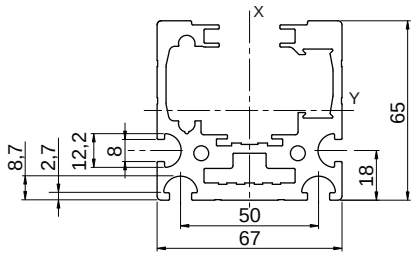
Protection **-**
SF Bellows
LI Stainless steel band for MC series

Additional accessories **-**

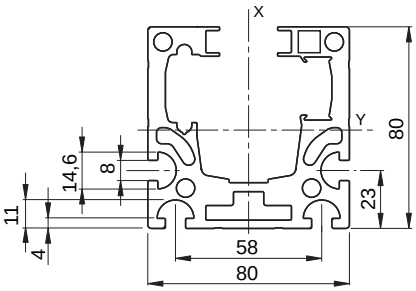
Additional accessories

Available upon request

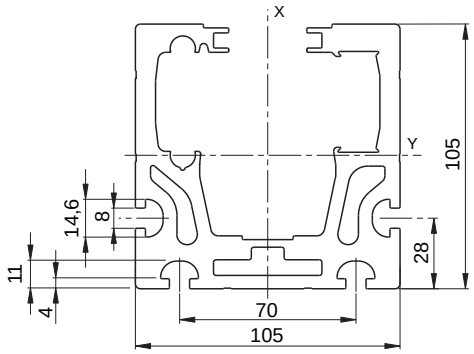
- Supply and assembly of cams and cam-holders for micro-switches, energy chains, etc.
- Assembly of optional accessories SUPPLIED BY THE CUSTOMER.
- Machining to specifications (drilling, milling) on the free surfaces of the plates or profile
- Customised applications (optional: structural inspections 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.



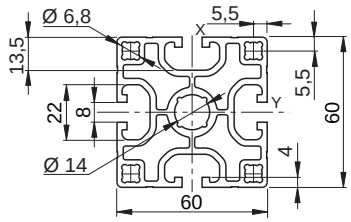
Profile	M 65x67	
Weight per metre	4.5	[kg/m]
Max. length	9	[m]
Moment of inertia Iy	683,900	[mm4]
Moment of inertia Ix	796,750	[mm4]
Module	MCR/L/H 65	



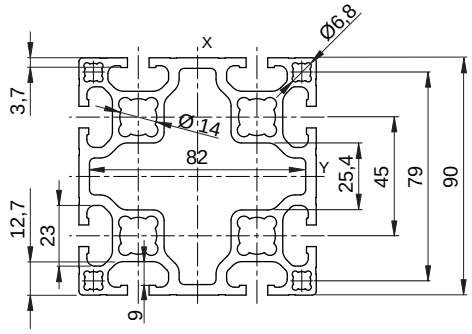
Profile	M 80x80	
Weight per metre	6.3	[kg/m]
Max. length	8	[m]
Moment of inertia Iy	1,430,000	[mm4]
Moment of inertia Ix	1,780,000	[mm4]
Module	MCR/S/H 80 - MVR/S/T 80	



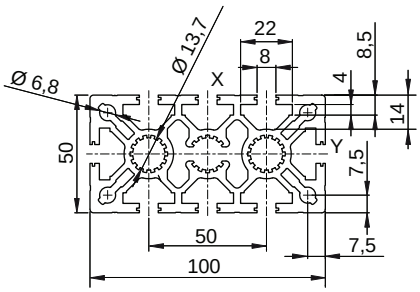
Profile	M 105x105	
Weight per metre	11	[kg/m]
Max. length	7,6	[m]
Moment of inertia Iy	4,466,000	[mm4]
Moment of inertia Ix	5,660,000	[mm4]
Module	MCR/S/H - MVR/S/T 105	

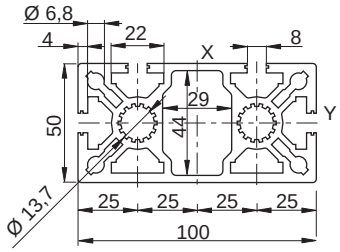


Profile (60x60)	F01-1	
Weight per metre	3.6	[kg/m]
Max. length	6	[m]
Moment of inertia Iy	466,600	[mm4]
Moment of inertia Ix	466,600	[mm4]
Module	ZCG/L 60	

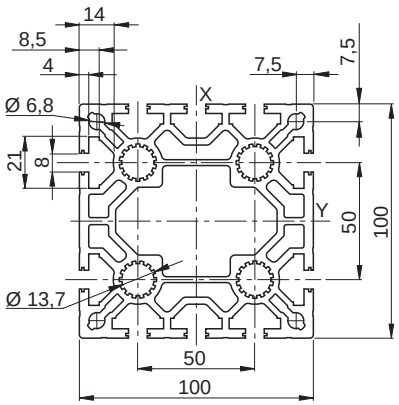


Profile (90x90)	E01-4	
Weight per metre	6	[kg/m]
Max. length	6	[m]
Moment of inertia Iy	2,027,000	[mm4]
Moment of inertia Ix	2,027,000	[mm4]
Module	ZCG - ZCL - ZCRR 90	

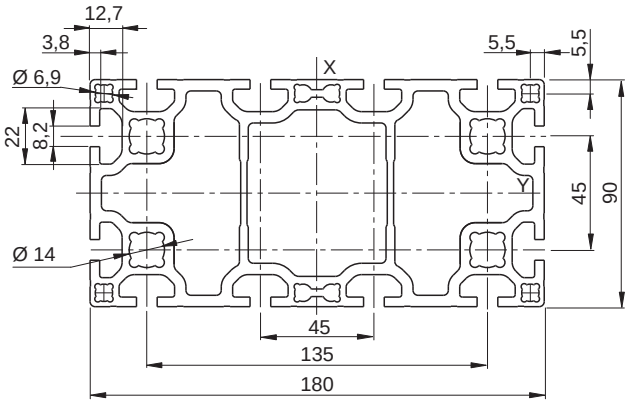




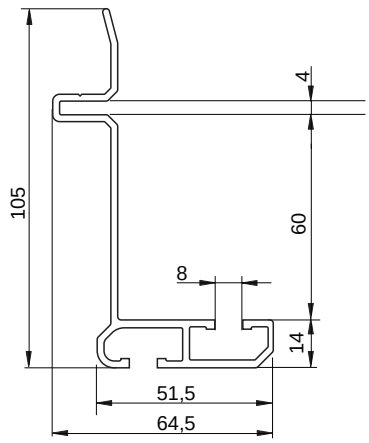
Profile (50x100)	MA 1-2	MA 1-4	
Weight per metre	5.3	5.2	[kg/m]
Max. length	6	6	[m]
Moment of inertia Iy	502,800	543,100	[mm^4]
Moment of inertia Ix	1,986,600	2,036,700	[mm^4]
Module	ZCR/L 100H	TCG/TCS/H 100	

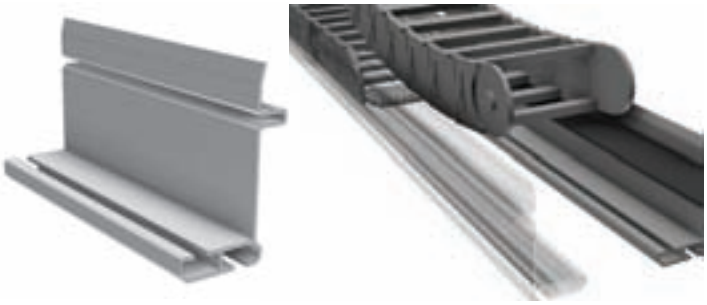


Profile (100x100)	MA 1-5	
Weight per metre	9.5	[kg/m]
Max. length	6	[m]
Moment of inertia Iy	3,650,000	[mm^4]
Moment of inertia Ix	3,800,000	[mm^4]
Module	ZCR/L 100	

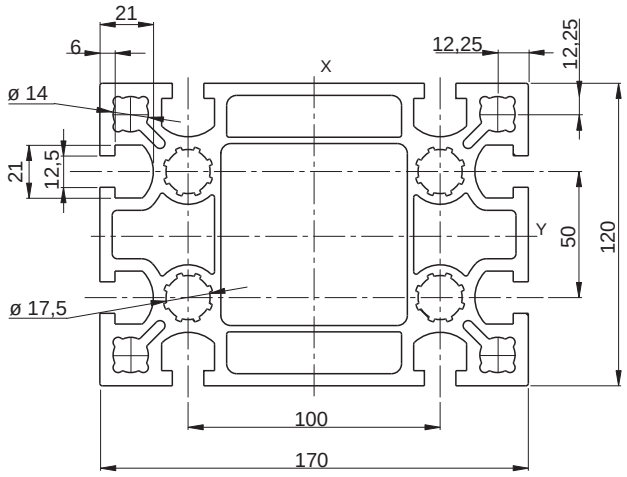


Profile (90x180)	E01-5	
Weight per metre	12.4	[kg/m]
Max. length	8	[m]
Moment of inertia Iy	4,420,000	[mm^4]
Moment of inertia Ix	15,180,000	[mm^4]
Module	TCR/G/S/H/ 180	

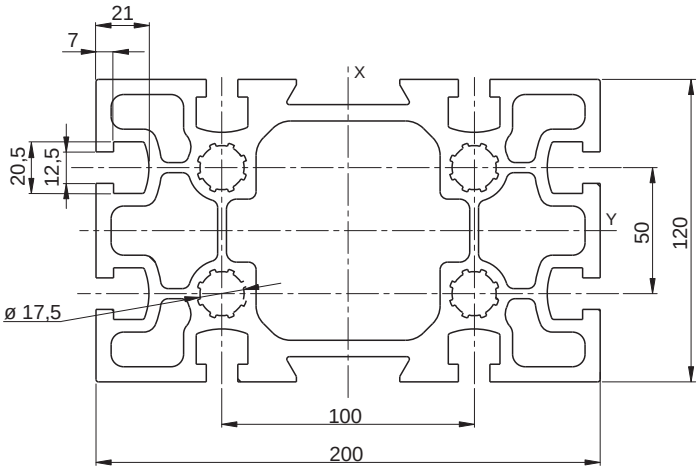




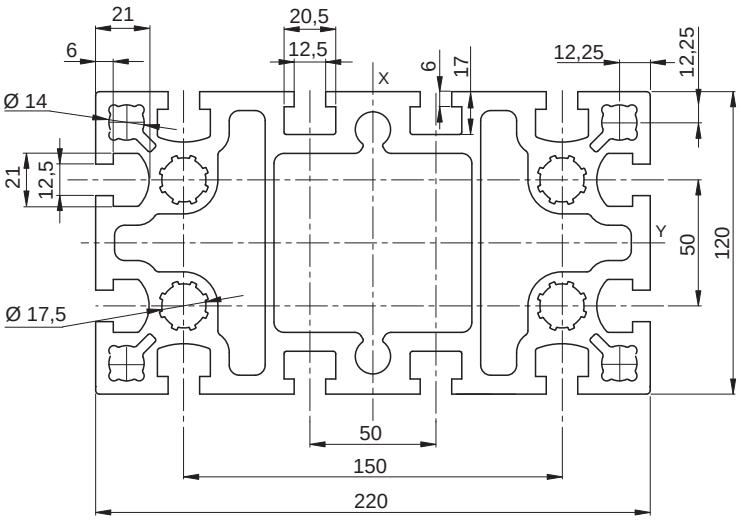
7400568 energy chain support profile		
Weight	1.5	kg/m
Available length	6	m



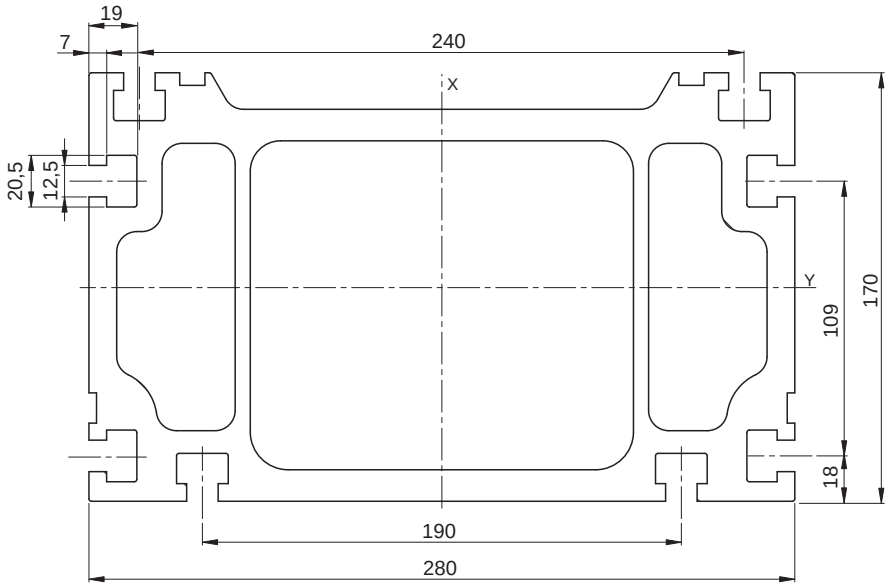
Statyca (120x170)		
Weight per metre	17	[kg/m]
Max. length	12	[m]
Moment of inertia Iy	10,200,000	[mm^4]
Moment of inertia Ix	20,360,000	[mm^4]
Module	TCR/S/H 170 - ZCR/L 170	



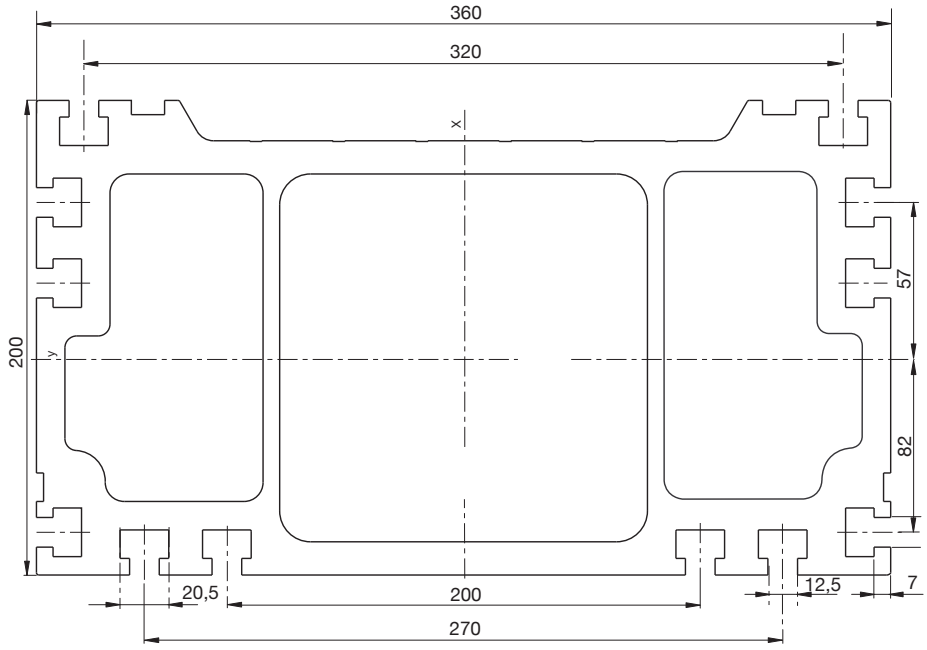
Valyda (120x200)		
Weight per metre	21	[kg/m]
Max. length	12	[m]
Moment of inertia Iy	12,980,000	[mm^4]
Moment of inertia Ix	32,980,000	[mm^4]
Module	TCR/S/H 200	
Anodised up to	9	[m]



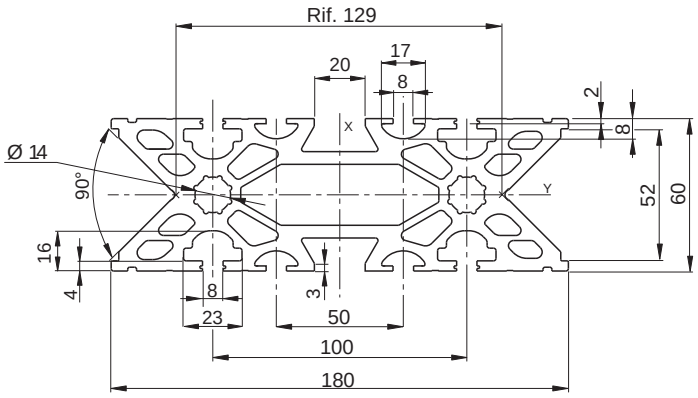
Logyca (120x220)		
Weight per metre	25	[kg/m]
Max. length	12	[m]
Moment of inertia Iy	15,650,000	[mm^4]
Moment of inertia Ix	46,550,000	[mm^4]
Module	TCR/S/H 220-ZCR/L/ 220	
Anodised up to	9	[m]



Pratyca (170x280)		
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)		
Weight per metre	60	[kg/m]
Max. length	12	[m]
Moment of inertia Iy	105,533,000	[mm⁴]
Moment of inertia Ix	318,687,000	[mm⁴]
Module	TCRP/S/H 360	
Usually not anodised		



SYS 1-G		
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		

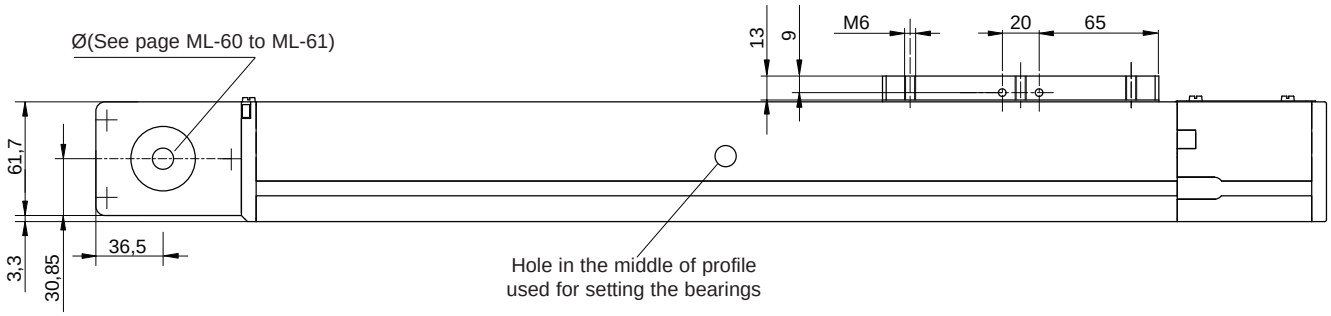
MCR 65

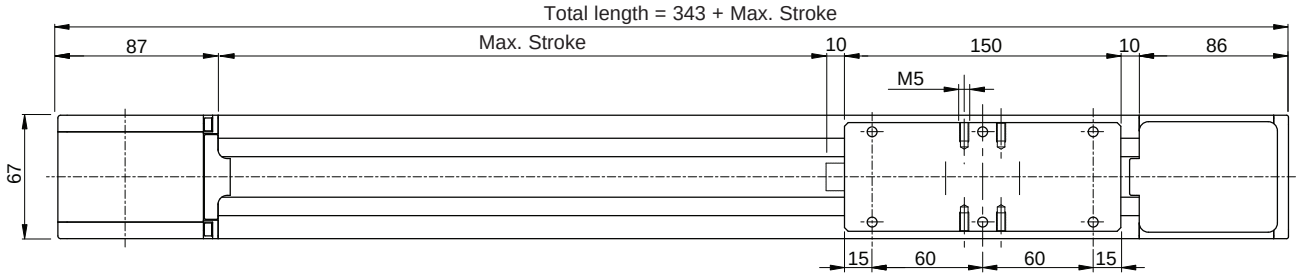
HARDENED GUIDE RAILS AND PROFILED ROLLERS

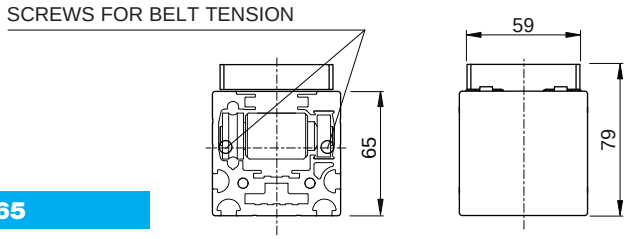
Registered model

Option: lighter version with pulley seats integrated within the profile

Accessories: see page ML-10





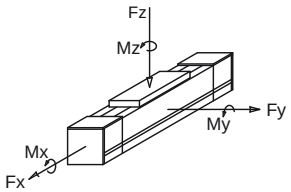


Performances	MCR 65	
Max. stroke	5,830	[mm]
Max. speed	4	[m/s]
Max. acceleration	20	[m/s^2]
Repeatability	± 0,1	[mm]
No load torque	-	[mm]

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

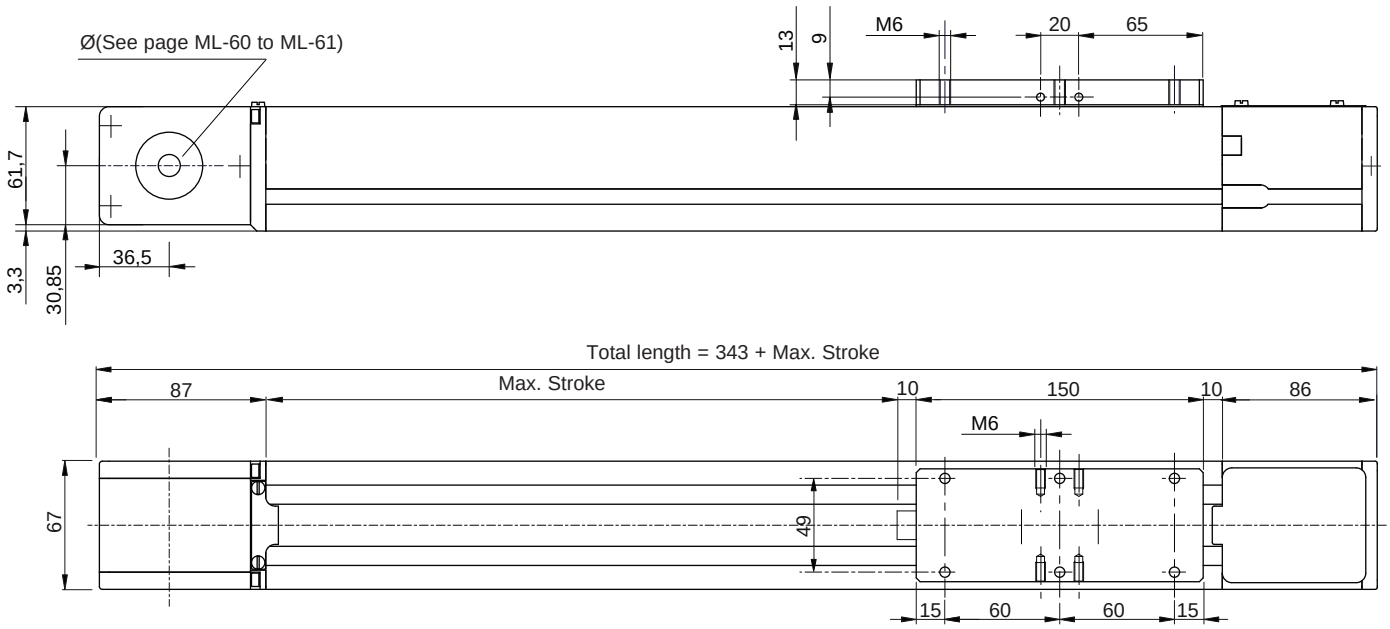
Data		
Belt	32AT05	
Slide	Rollers: 4 Ø 24 - 4 Ø 22 [mm]	
Load bearing profile	65x67	(see page ML-11)
Pulley Ø	50.93	[mm]
Lead	160	[mm/rev]

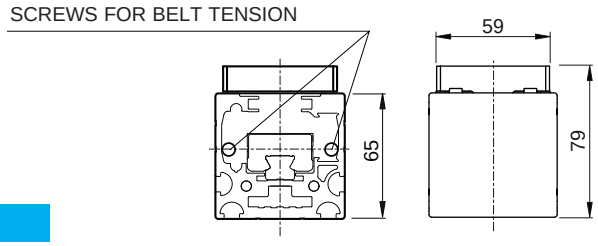
Weights		
Inertia of the pulley	-	[kgm^2]
Belt weight	0.22	[kg/m]
Carriage weight	1	[kg]
Base module (stroke=0)	M_{base}=4.4	[kg]
1,000 mm profile	q=5.4	[kg]

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 ML-10





Performances	MCH 65	
Max. stroke	7,830	[mm]
Max. speed	3	[m/s]
Max. acceleration	30	[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]	F_{zB}[N]
MCH 65	19	120	120	1,180	1,960	1,960	1,960

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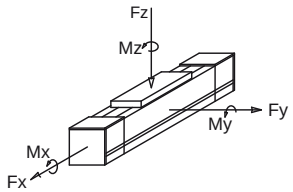


Fx= Max belt strength

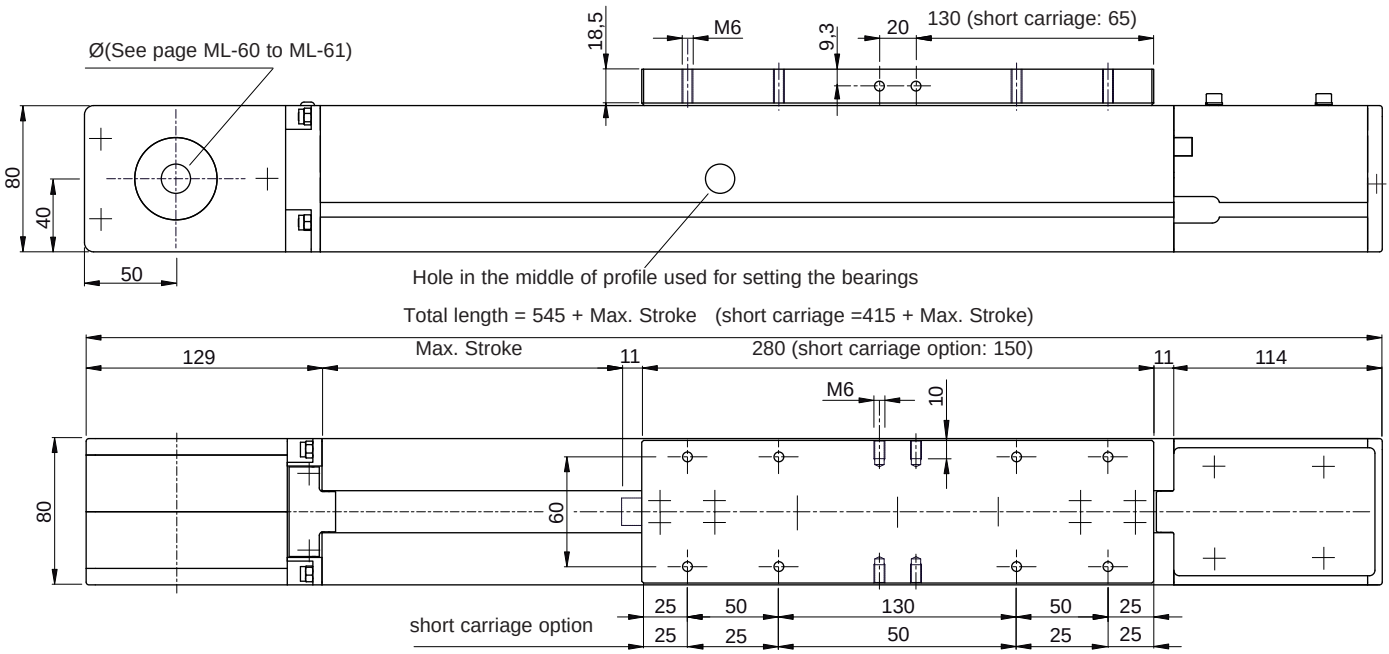
Data		
Belt	32AT05	
Slide	2 caged balls roller slides15[mm]	
Load bearing profile	65x67	(see page ML-11)
Pulley Ø	50.93	[mm]
Lead	160	[mm/rev]

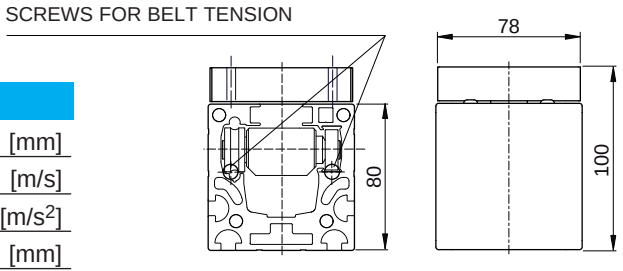
Weights		
Inertia of the pulley	-	[kgm^2]
Belt weight	0.22	[kg/m]
Carriage weight	1,1	[kg]
Base module (stroke=0)	M_{base}=4.2	[kg]
1,000 mm profile	q=6.2	[kg]

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 ML-70)
Option: short carriage version - code C
Accessories: see page ML-10





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

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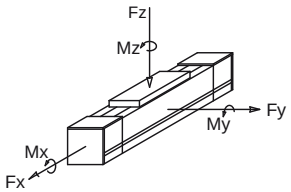


Fx= Max belt strength

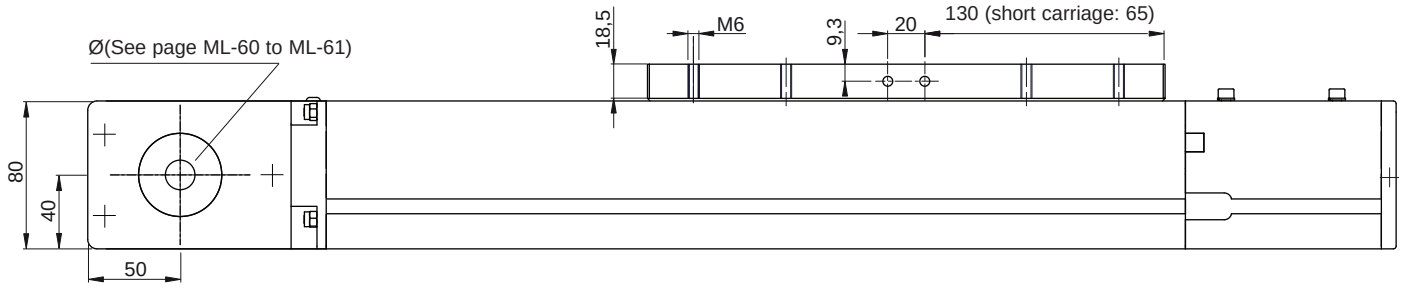
Data		
Belt	32AT10	
Slide	Rollers: 4 Ø 24 - 4 Ø 22 [mm]	
Load bearing profile	80x80	(see page ML-11)
Pulley Ø	70.03	[mm]
Lead	220	[mm/rev]

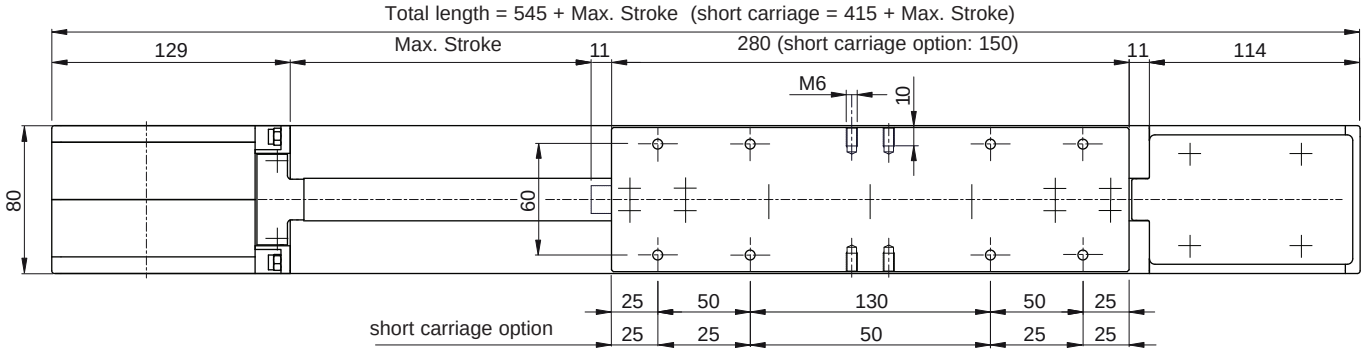
Weights		
Inertia of the pulley	0.0010	[kgm^2]
Belt weight	0.38	[kg/m]
Carriage weight	2	[kg]
Base module (stroke=0)	M_{base}=8	[kg]
1,000 mm profile	q=7	[kg]

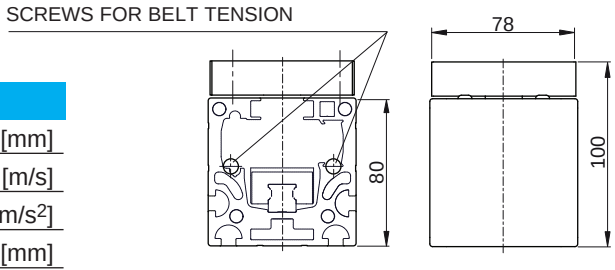
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

Option: version with additional belt protection (see page ML-70)
Option: short carriage version - code C
Accessories: see page ML-10







Performances	MCH 80	
Max. stroke	5,700	[mm]
Max. speed	5	[m/s]
Max. acceleration	40	[m/s^2]
Repeatability	± 0,1	[mm]
No load torque	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]
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]
MCH 80...C	14	15	12	2,150	1,450	1,450

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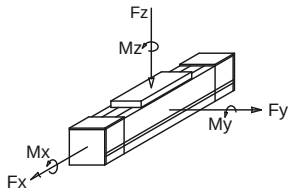


Fx= Max belt strength

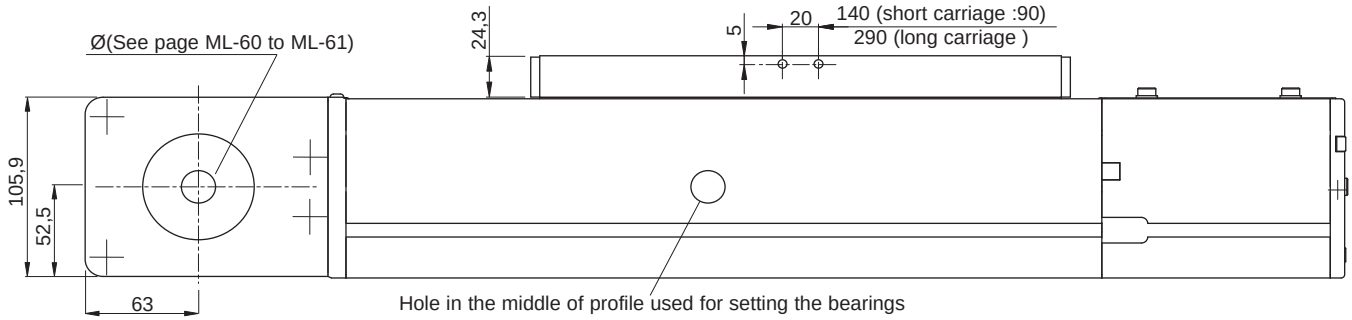
Data	MCS80 - MCH80	
Belt	32AT10	
Slide	2 caged ball roller slides size 15*	
Load bearing profile	80x80 (see page ML- 11)	
Pulley Ø	70.03	[mm]
Lead	220	[mm/rev]
* Short carriage option	1 pad	

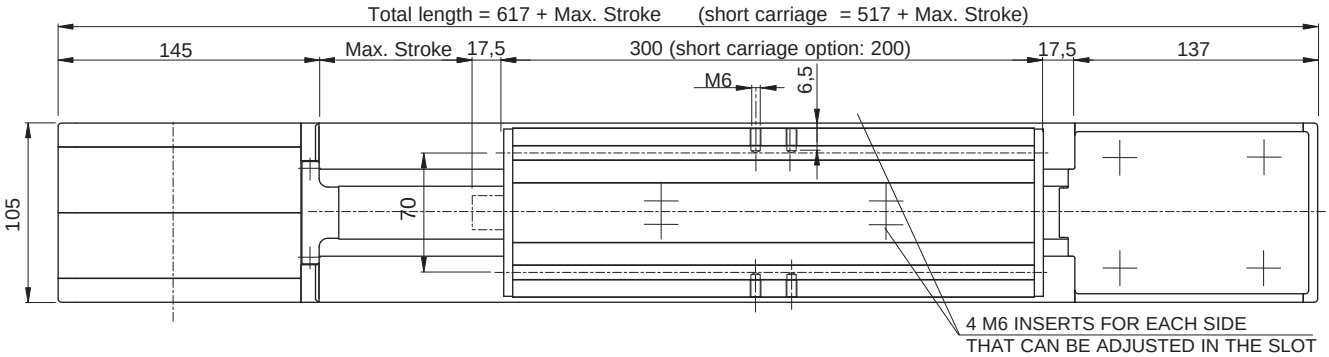
Weights	MCS80 - MCH80	
Inertia of the pulley	0.0010	[kgm^2]
Belt weight	0.38	[kg/m]
Carriage weight	2.6	[kg]
Base module (stroke=0)	M_{base}=9	[kg]
1,000 mm profile	q=8.2	[kg]

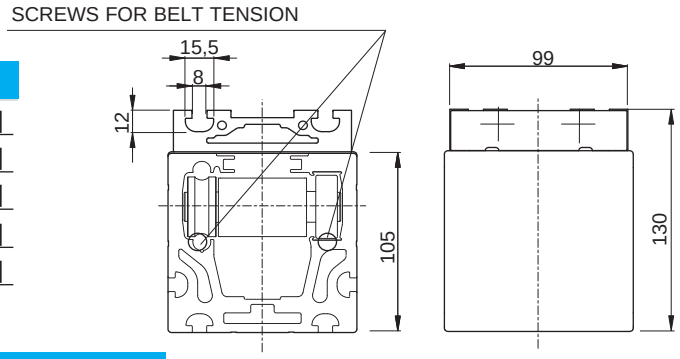
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

Option: version with additional belt protection (see page ML-70)
*Option: short carriage version - (code C) or long carriage (code L)
Accessories: see page ML-10







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

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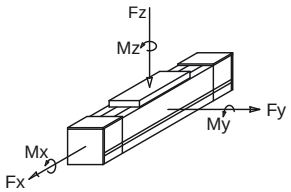


Fx= Max belt strength

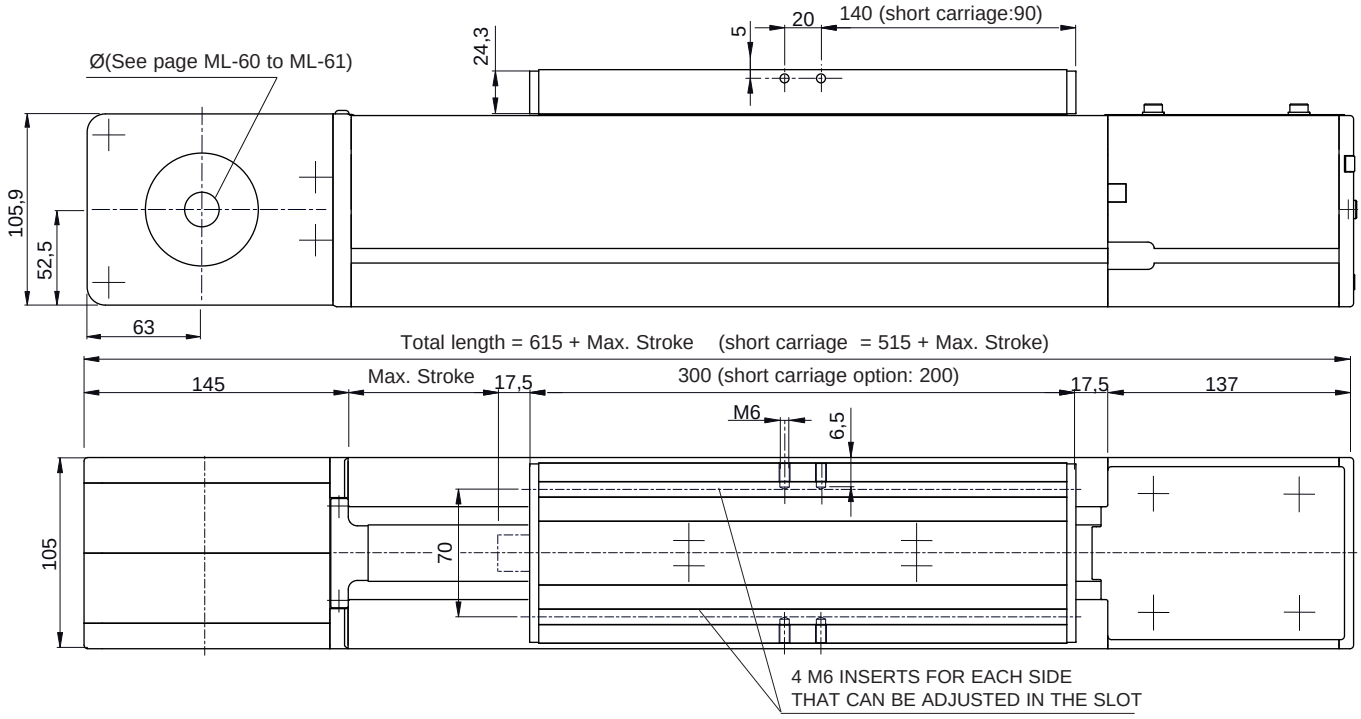
Data		
Belt	40AT10	
Slide	Rollers: 4 Ø 37 - 4 Ø 35 [mm]	
Load bearing profile	105x105	(see page ML-11)
Pulley Ø	92.31	[mm]
Lead	290	[mm/rev]

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]

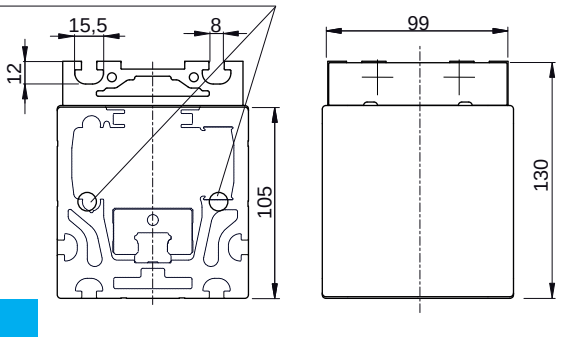
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

Option: version with additional belt protection (see page ML-70)
*Option: short carriage version - (code C)
Accessories: see page ML-10



SCREWS FOR BELT TENSION



Performances	MCH 105	
Max. stroke	10,100	[mm]
Max. speed	5	[m/s]
Max. acceleration	50	[m/s^2]
Repeatability	± 0.1	[mm]
No load torque	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]
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]
MCH 105...C	36	30	30	3,300	3,018	3,018

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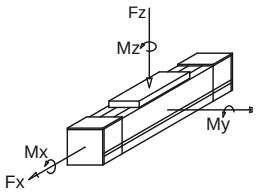


Fx= Max belt strength

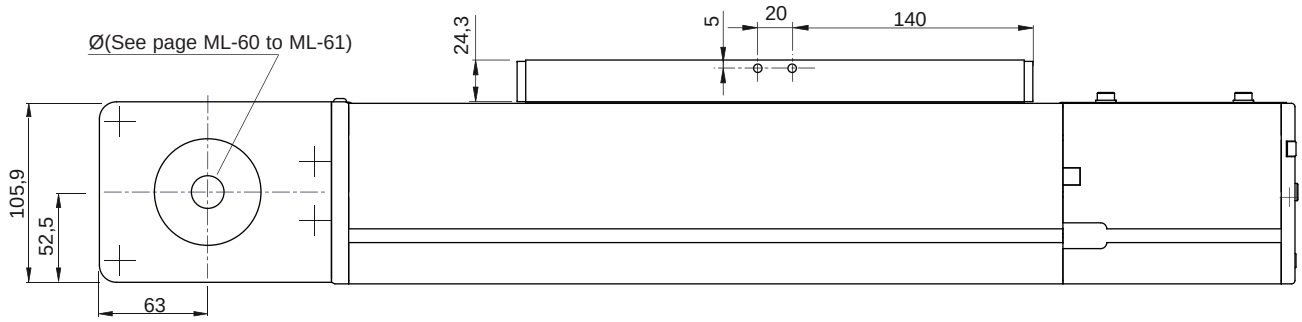
Constuctive data		
Belt	40AT10	
Slide	2 caged ball roller slides size 20*	
Load bearing profile	105x105 (see page ML- 11)	
Pulley Ø	92.31	[mm]
Lead	290	[mm/rev]
* Short carriage option	1 pad	

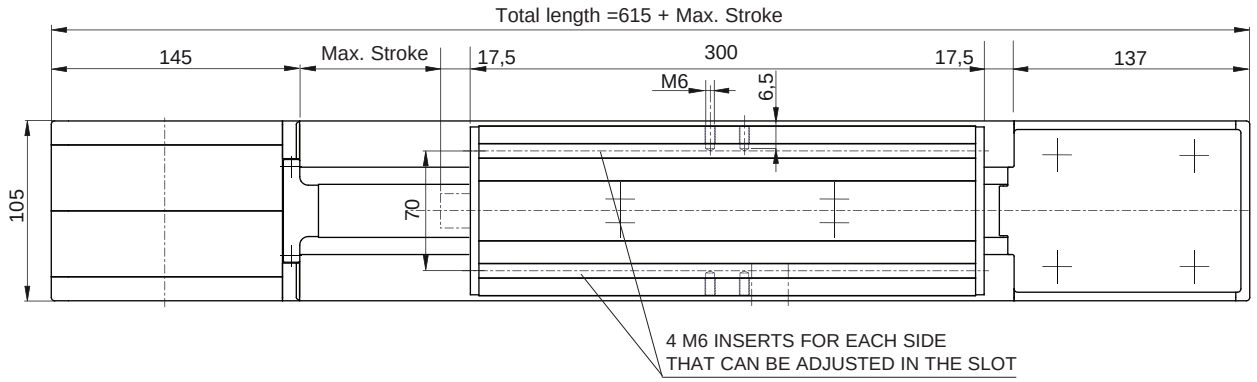
Weights		
Inertia of the pulley	0.0037	[kgm^2]
Belt weight	0.47	[kg/m]
Carriage weight	4.5	[kg]
Base module (stroke=0)	M_{base}=18	[kg]
1,000 mm profile	q=14.3	[kg]

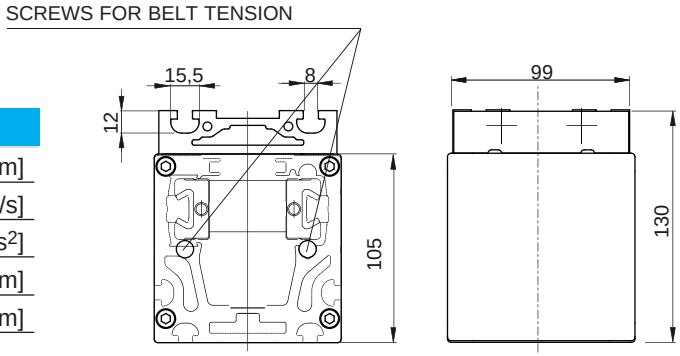
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

Accessories: see page ML-10



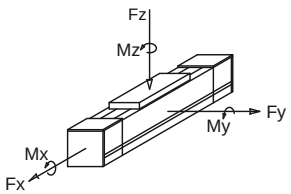




Performances	MCHH 105	
Max. stroke	7,400	[mm]
Max. speed	5	[m/s]
Max. acceleration	50	[m/s^2]
Repeatability	± 0.1	[mm]
No load torque	2.2	[Nm]

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



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In case of peak forces acting together please ask the technical dept

Fx= Max belt strength

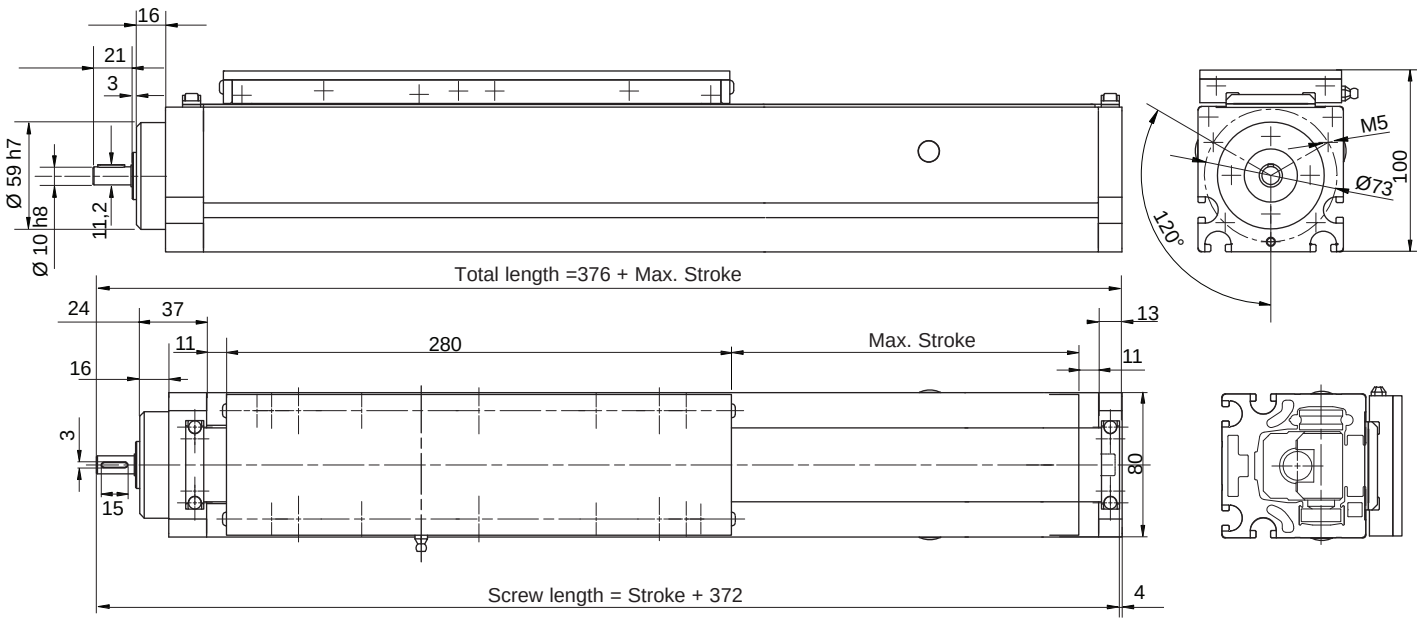
Data		
Belt	40ATL10	
Slide	4 caged ball roller slides size 15	
Load bearing profile	105x105 (see page ML- 11)	
Pulley Ø	92.31	[mm]
Lead	290	[mm/rev]

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

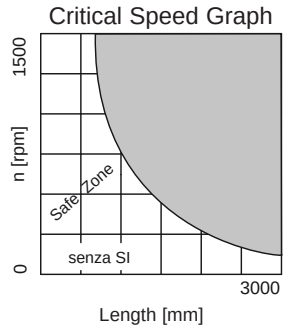
HARDENED GUIDES
WITH CYLINDRICAL ROLLERS - TRAPEZOIDAL BALL SCREW



Code

M	V	R					

V = Ball 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.

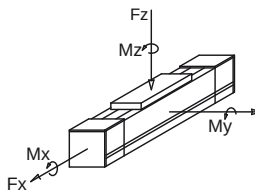
Performances	MVR 80	
Max. stroke	2,500	[mm]
Max. speed Pitch 5	0.15	[m/s]
Max. speed Pitch 10	0.30	[m/s]
Max. speed Pitch 16	0.50	[m/s]
Max. acceleration	5	[m/s²]
Repeatability	± 0,05	[mm]

Suggested working load conditions

Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
MVR 80	51	200	80	*1,600	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



Fx= Max belt strength

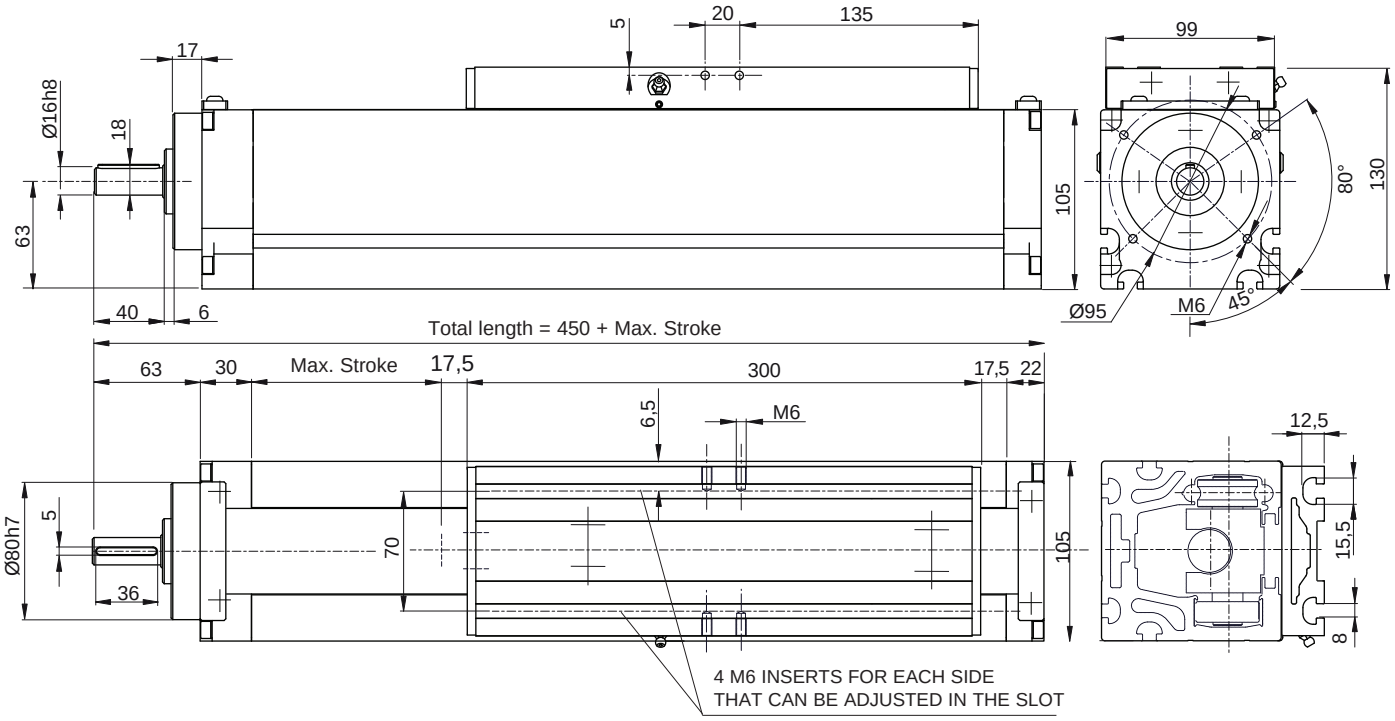
Data		
Slide	Rollers: 4 Ø24 - 4 Ø22	[mm]
Beam	80x80 (see page ML-11)	
Ø screw	16	[mm]
Length of the screw	367+$_{max}$stroke	[mm]

Weights		
Inertia of the worm	0.0003 • L. screw(m)	[kgm²]
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]

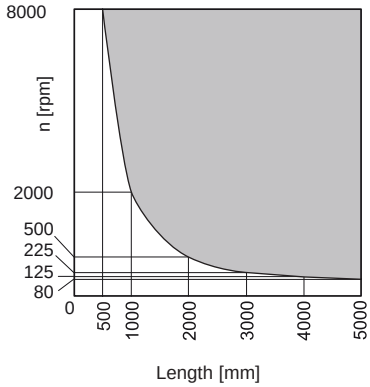
MVR 105

Registered model



Code	M	V	R					
V = Ball 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.

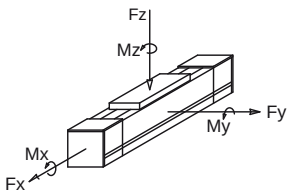
Performances	MVR 105		
Max. stroke	Pitch 5 -10 = 4550	Pitch 25 = 5,150	[mm]
Max. speed	Pitch 5 [mm]	0.15	[m/s]
	Pitch 10 [mm]	0.30	[m/s]
	Pitch 25 [mm]	0.75	[m/s]
Max. acceleration		5	[m/s^2]
Repeatability		± 0.05	[mm]

Suggested working load conditions

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

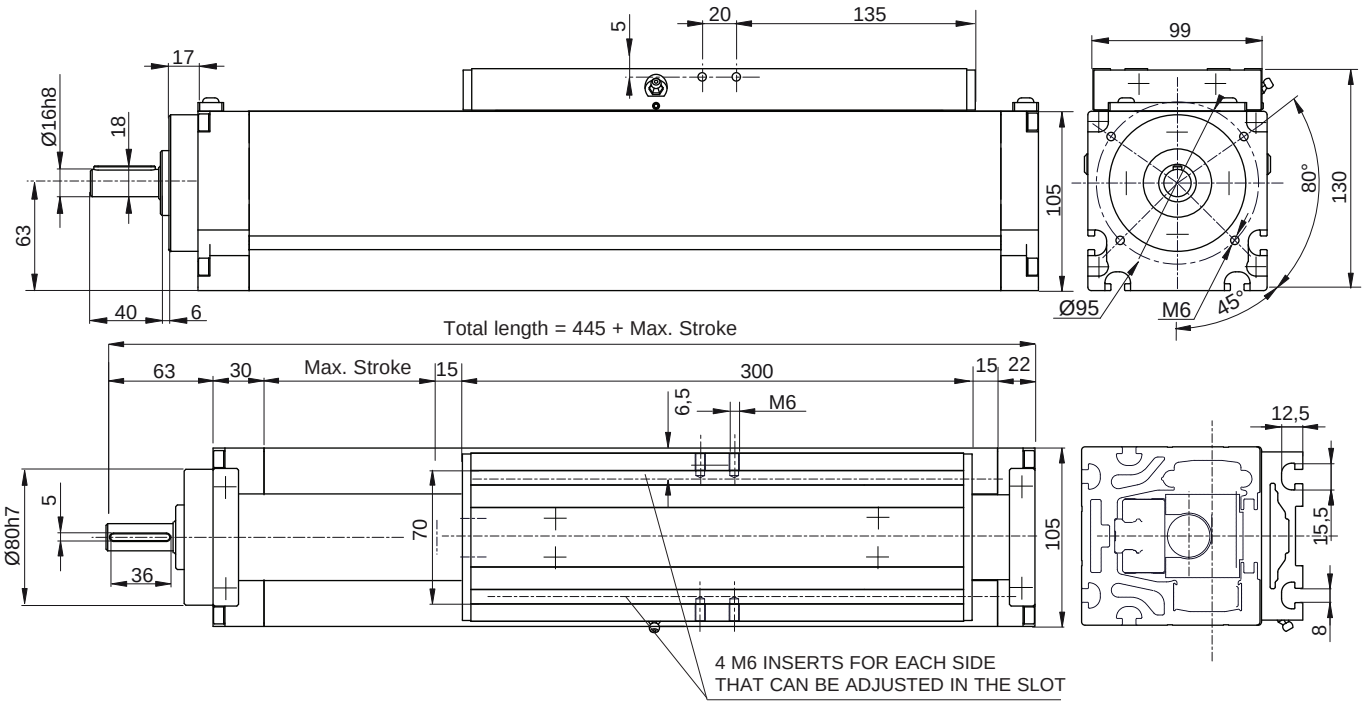


Fx= Max belt strength

Data		
Slide	Rollers: 4 Ø 37 - 4 Ø 35	[mm]
Beam	105x105 (see page ML-11)	
Ø screw	25	[mm]
Length of the screw	440+$_{max}$stroke	[mm]

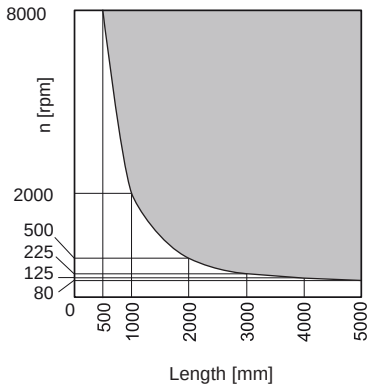
Weights		
Inertia of the worm	0.0003 • L. screw(m)	[kgm^2]
Carriage weight	4 approx.	[kg]
Base module (stroke=0)	M_{base}=11	[kg]
1,000 mm profile	q=17.2 approx.	[kg]

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

Critical Speed Graph



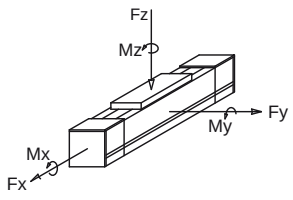
Max. stroke-speed limit over which some support bearings are required (SI) to avoid an excessive screw vibration. The working point marked inside the broken line is not recommended.

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



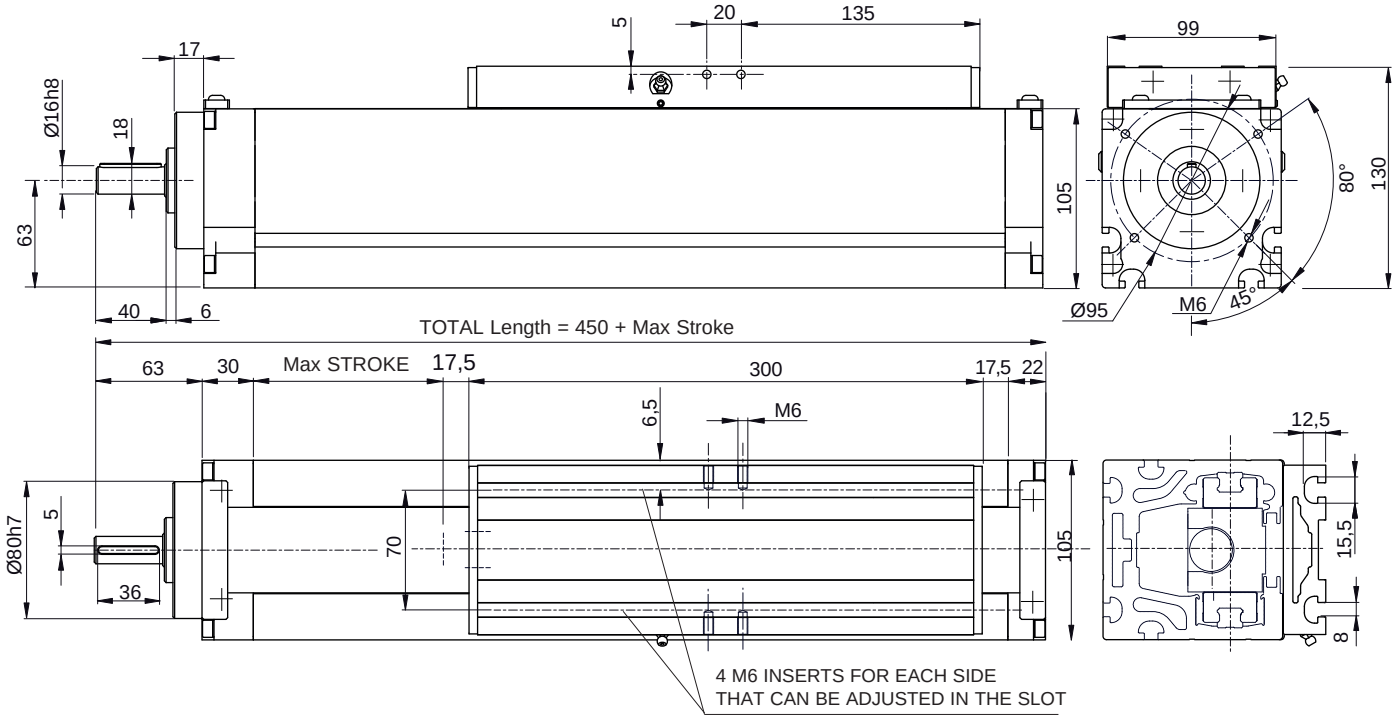
Fx= Max belt strength

Data		
Slide	2 caged ball roller slides size 20	
Beam	105x105 (see page ML- 11)	
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]

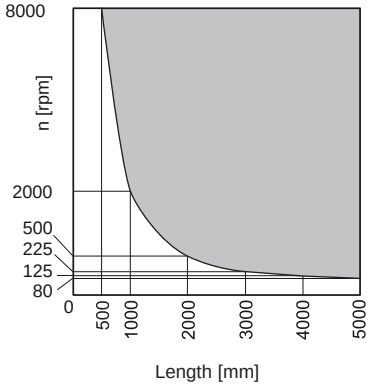
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

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.

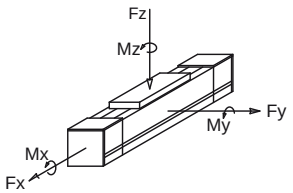
Performances	MVHH 105	
Max Stroke	Pitch 5 -10 = 4550 Pitch 25 = 5150	[mm]
Max Speed	Pitch 5 [mm]	0,15 [m/s]
	Pitch 10 [mm]	0,30 [m/s]
	Pitch 25 [mm]	0,75 [m/s]
Max acceleration	5	[m/s^2]
Repeatability	± 0,05	[mm]

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

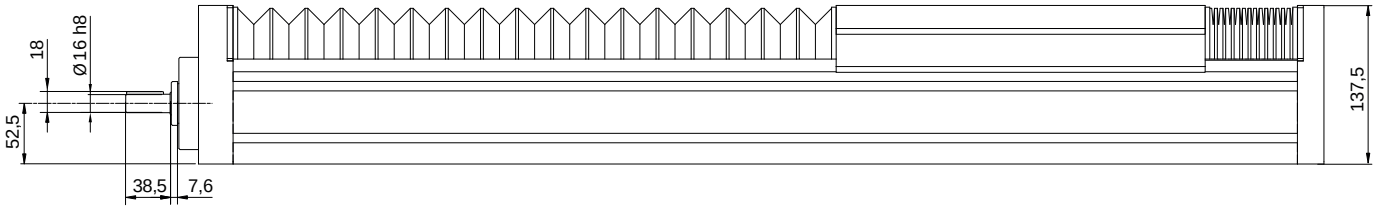


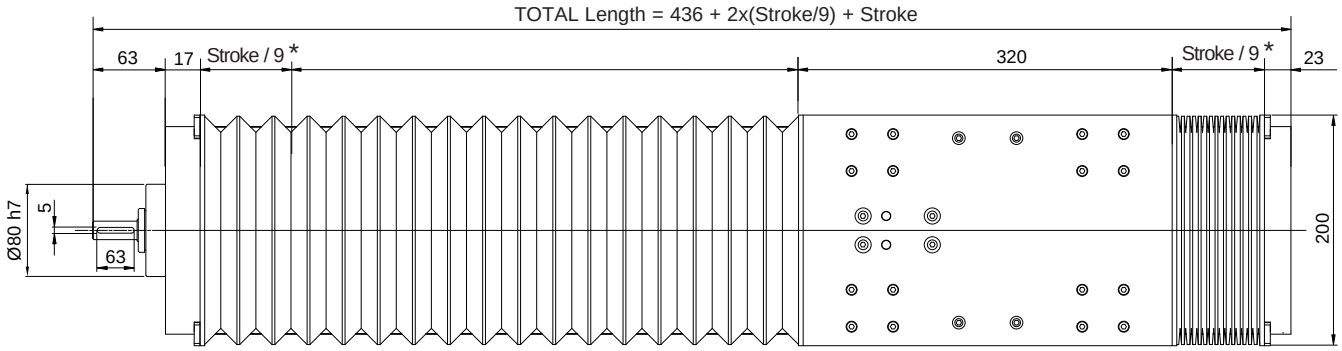
Fx= Max belt strength

Data		
Slide	4 caged ball roller slides size 15	
Beam	105x105 (see page ML- 11)	
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]

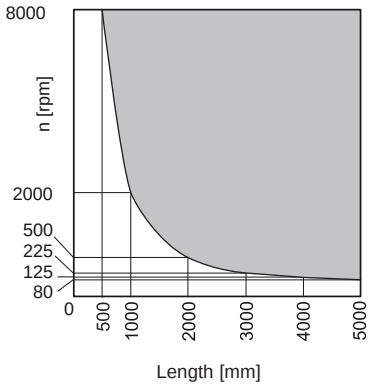
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** Stroke$_{max}$ [mm]



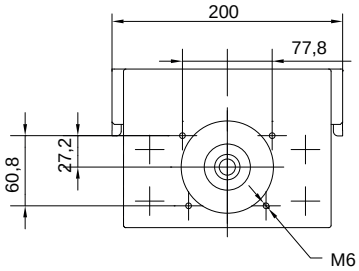


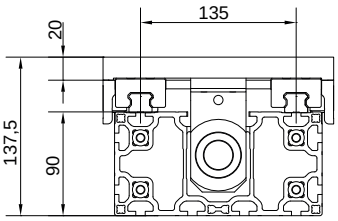
*valore indicativo

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.





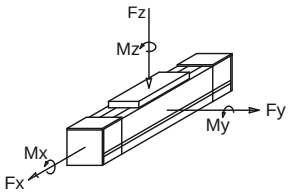
Performances			TVH 180	
Max Stroke	Pitch 5 -10 = 4550	Pitch 25 = 5150		[mm]
Max Speed	Pitch 5 [mm]		0,15	[m/s]
	Pitch 10 [mm]		0,30	[m/s]
	Pitch 25 [mm]		0,75	[m/s]

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

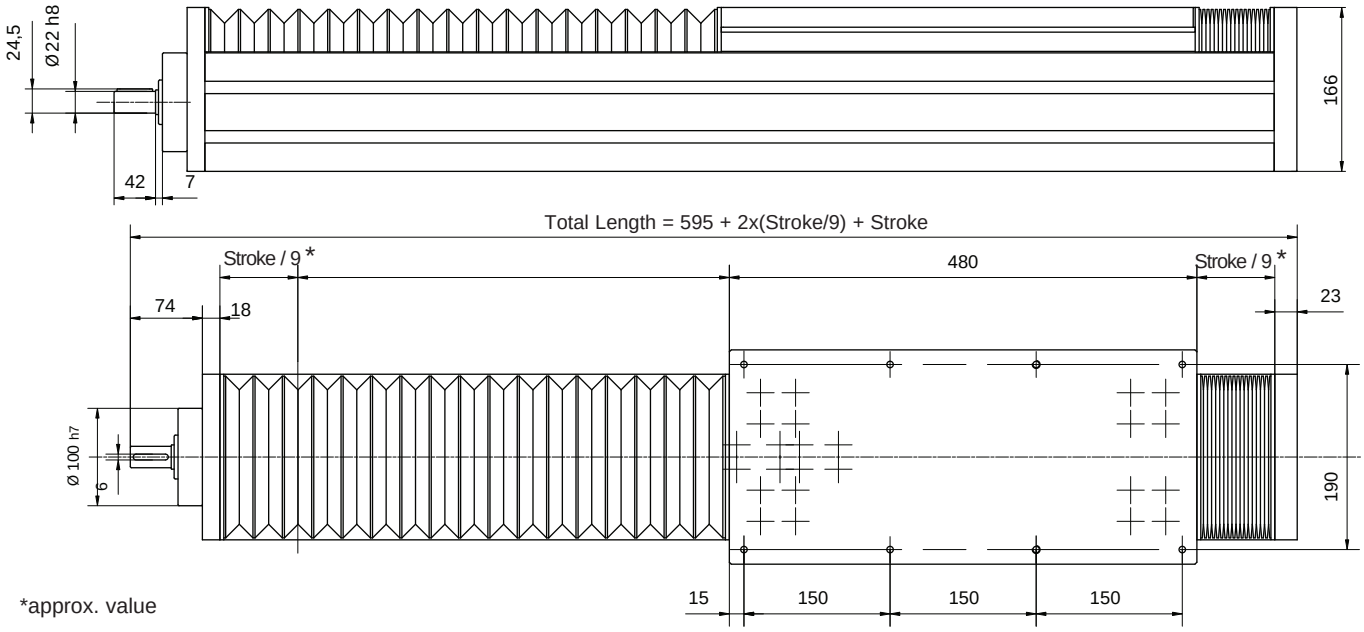


Fx= Max belt strength

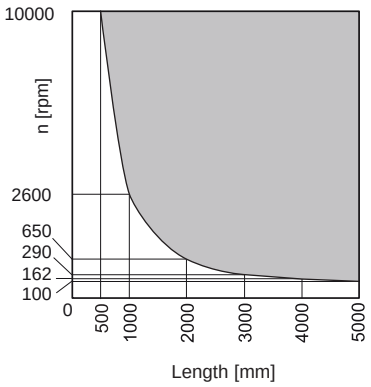
Data	
Slide	4 caged ball roller slides size 20
Beam	E01-5 (see page ML-12)
Ø screw	25 [mm]
Bellow	heat-sealed, plastic

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]

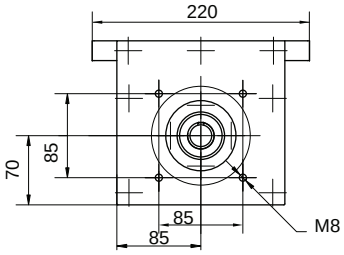
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

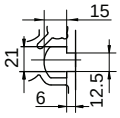


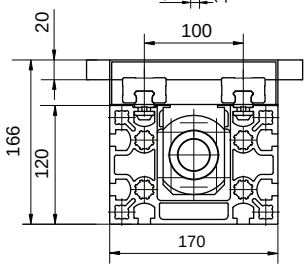
*approx. value



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.





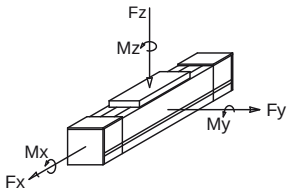


Performances			TVS 170	
Max. stroke			4,000	[mm]
Max. speed	Pitch 5	[mm]	0.15	[m/s]
	Pitch 10	[mm]	0.30	[m/s]
	Pitch 20	[mm]	0.75	[m/s]
	Pitch 32	[mm]	1.00	[m/s]

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

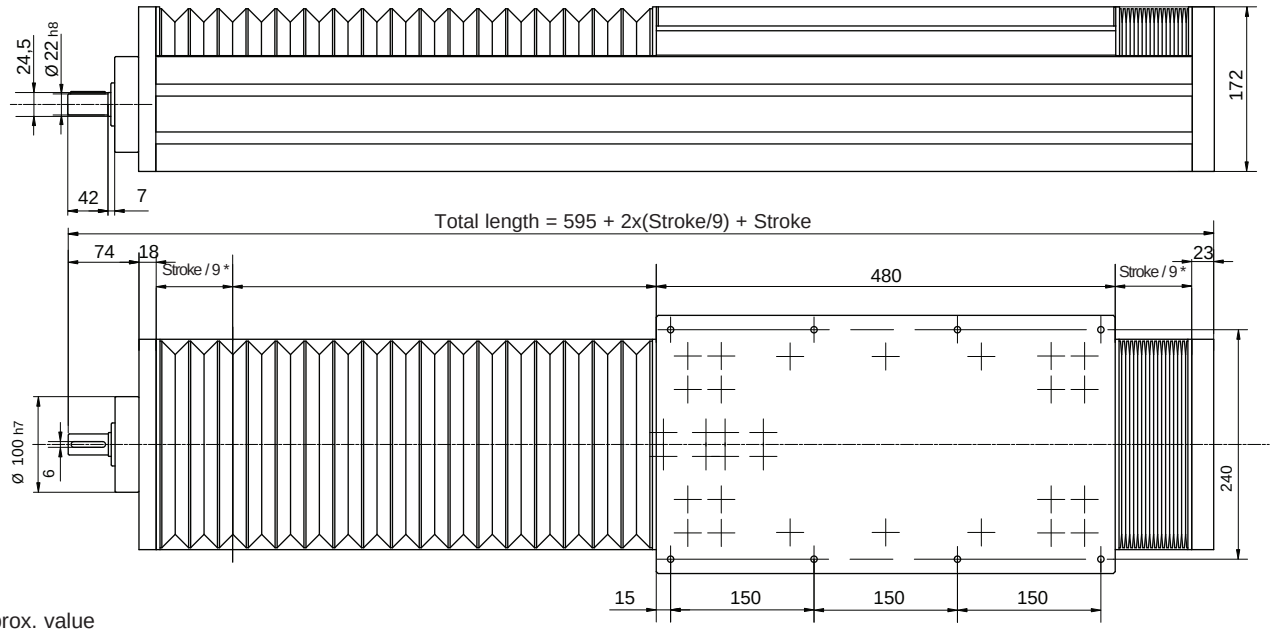


Fx= Max belt strength

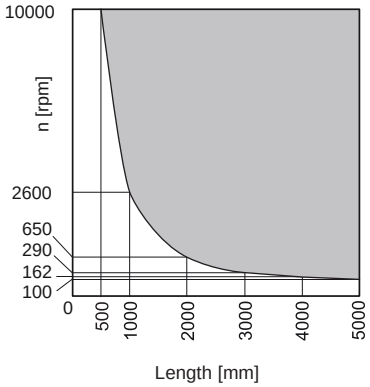
Data		
Slide	4 caged ball roller slides size 20	
Beam	Statyca	(see page ML-13)
Ø screw	32	[mm]
Bellow	heat-sealed, plastic	

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]

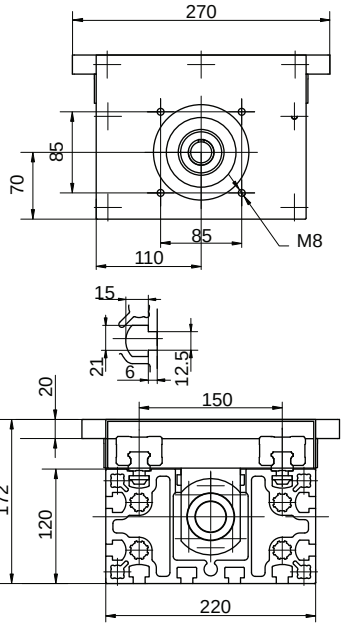
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]



*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.



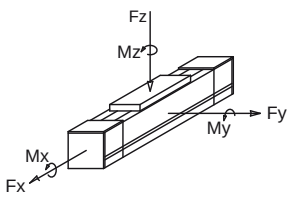
Performances			TVS 220	
Max. stroke			4,000	[mm]
Max. speed	Pitch 5	[mm]	0.15	[m/s]
	Pitch 10	[mm]	0.30	[m/s]
	Pitch 20	[mm]	0.75	[m/s]
	Pitch 32	[mm]	1.00	[m/s]

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 ML-13)	
Ø screw	32	[mm]
Bellow	heat-sealed, plastic	

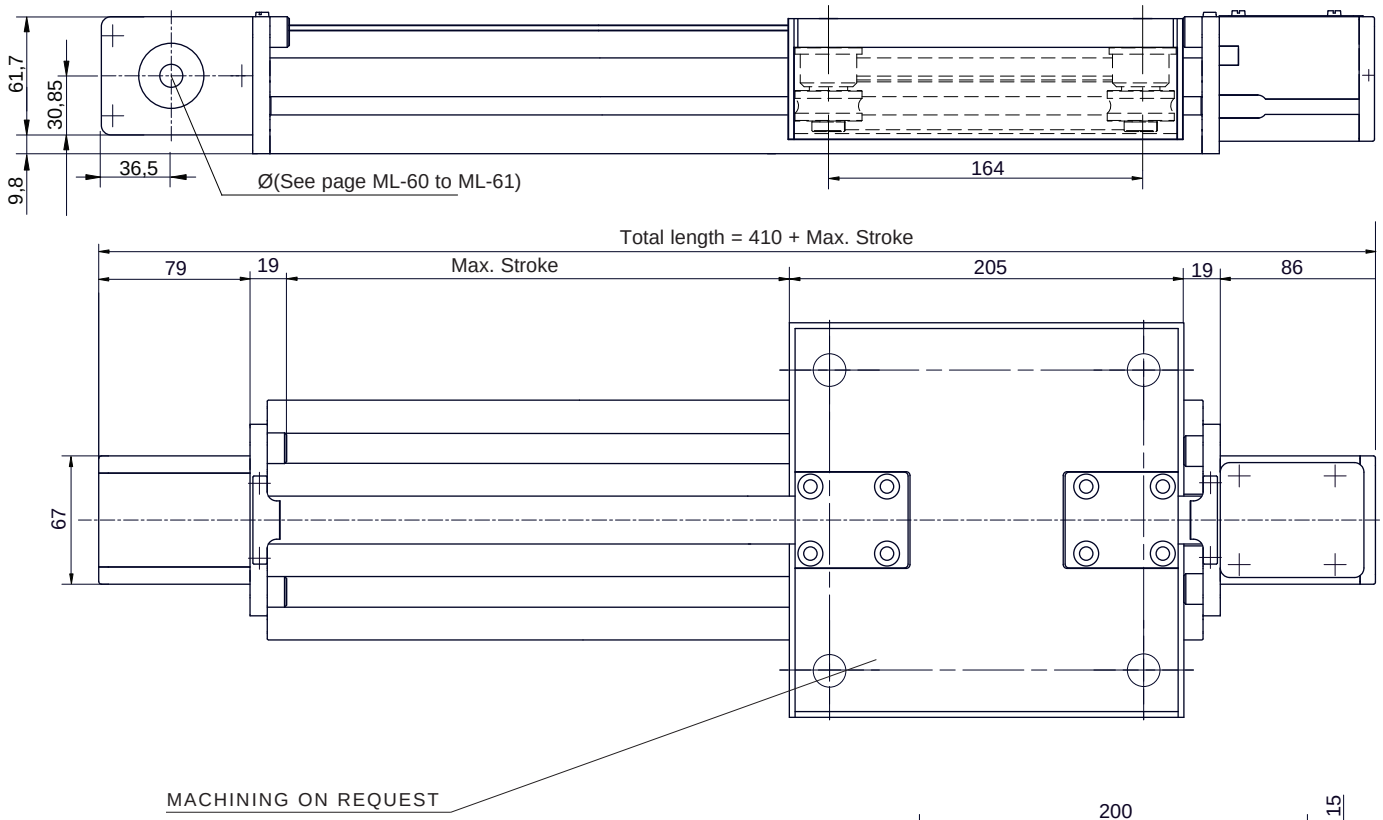
Weights		
Inertia of the worm	0.0006 • L. screw(m)	[kgm^2]
Carriage weight	13	[kg]
Base module (stroke=0)	M_{base}= 44	[kg]
1,000 mm profile	q= 37	[kg]

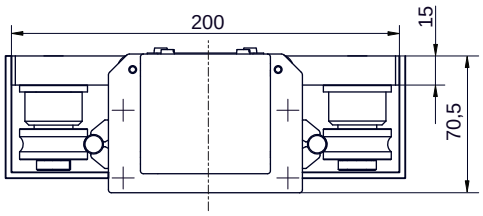
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

TCG 100

HARDENED GUIDE RAILS AND CYLINDRICAL SHAPED ROLLERS

Registered model



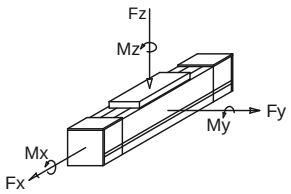


Performances	TCG 100	
Max. stroke	5,490	[mm]
Max. speed	5	[m/s]
Max. acceleration	20	[m/s^2]
Repeatability	± 0.1*	[mm]
Loadless torque	2	[Nm]

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



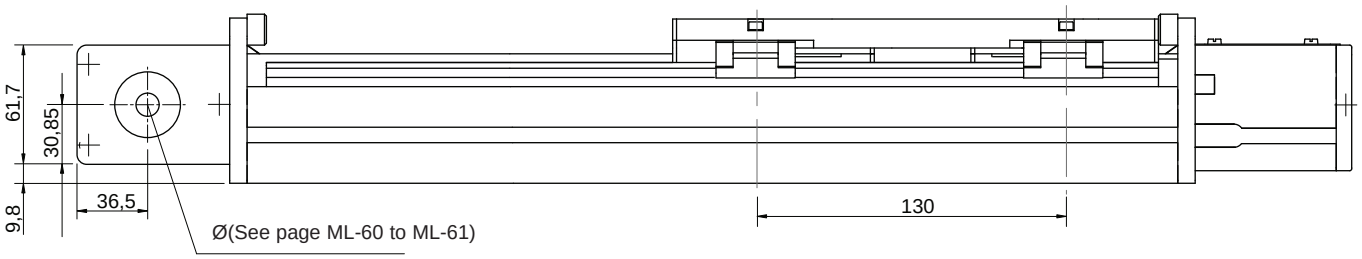
Fx= Max belt strength

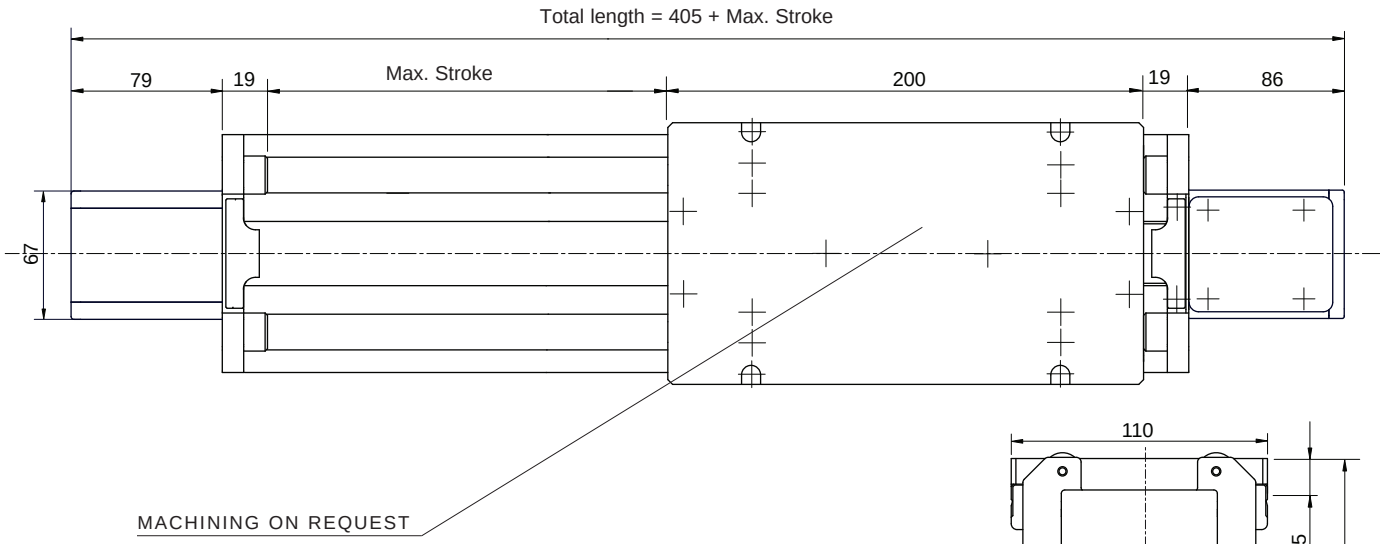
Assembly positions and load direction, see page ML-10

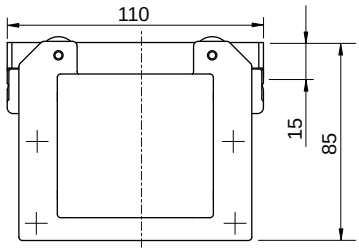
Data		
Belt	25AT5	
Slide	4 shaped rollers Ø35	[mm]
Load bearing profile	MA 1-4 (see page ML-12)	
Pulley Ø	50.93	[mm]
Linear displacement per revolution	160	[mm]

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]





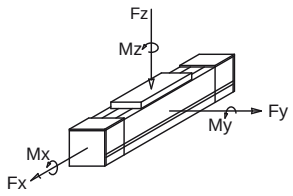


Performances	TCH 100	TCS 100	
Max. stroke	5,400	5,400	[mm]
Max. speed	5	5	[m/s]
Max. acceleration	50	50	[m/s^2]
Repeatability	± 0.1	± 0.1	[mm]
Loadless torque	-	-	[Nm]

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

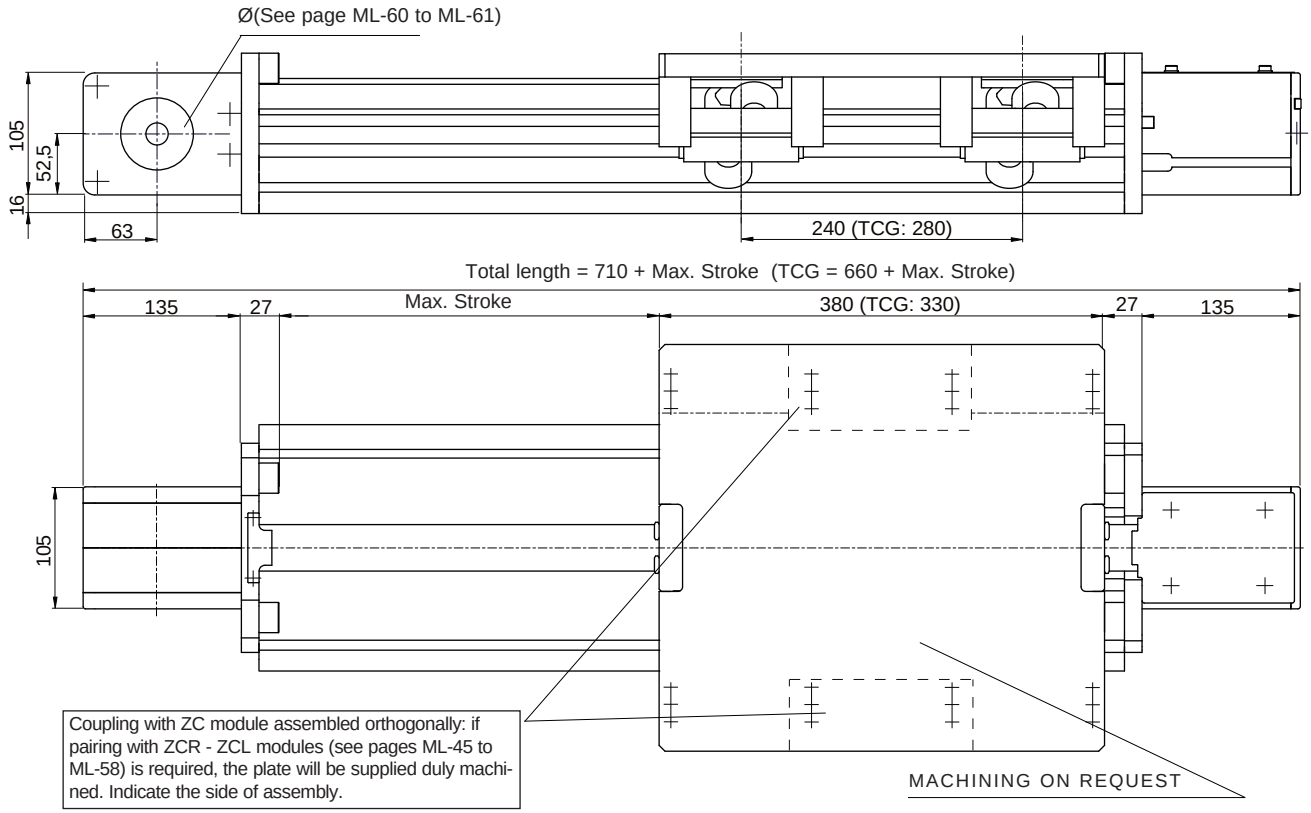
Data		
Belt	25AT5	
Sliding	4 caged ball roller slides size15	
Load bearing profile	MA 1-4	(see page ML- 12)
Pulley Ø	50.93	[mm]
Linear displacement per revolution	160	[mm]

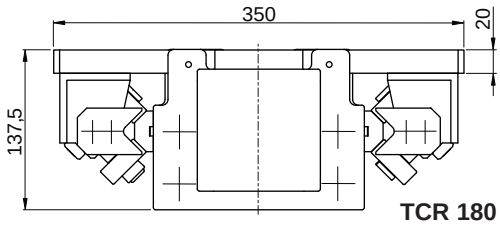
Weights		
Inertia of the pulley	-	[kgm^2]
Belt weight	0.21	[kg/m]
Carriage weight	2.6	[kg]
Base module (stroke=0)	M_{base}=6.5	[kg]
1,000 mm profile	q=9.2	[kg]

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

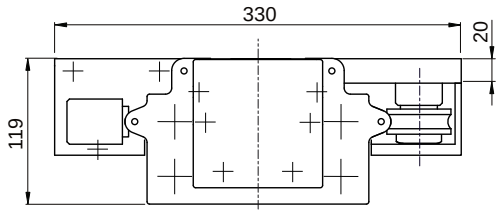
Registered model

Accessories: see page ML-10





TCR 180



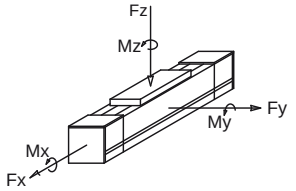
TCG 180

Performances	TCRQ 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]
TCRQ 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 ML-10

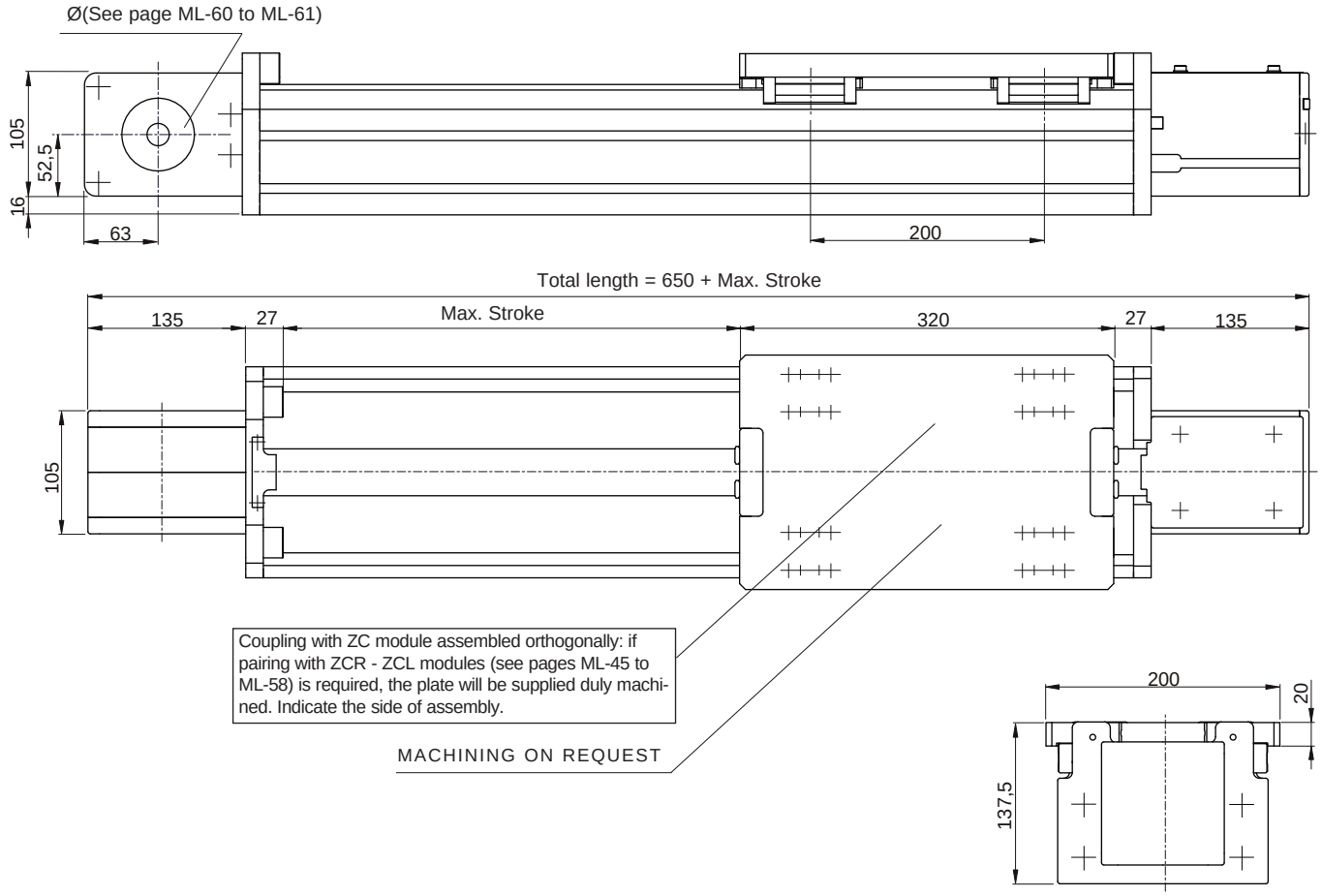
Data	TCRQ 180	TCG 180	
Belt	40ATL10		
Slide	4 roller slides with 2 rollers 4 rollers Ø 52, guide Ø16		
Load bearing profile	E01-5 (see page ML-12)		
Pulley Ø	92.31		[mm]
Linear displacement per rev.	290		[mm]

Weights	TCRQ 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]

Registered Model

Accessories: see page ML-10



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

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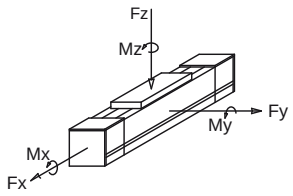
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

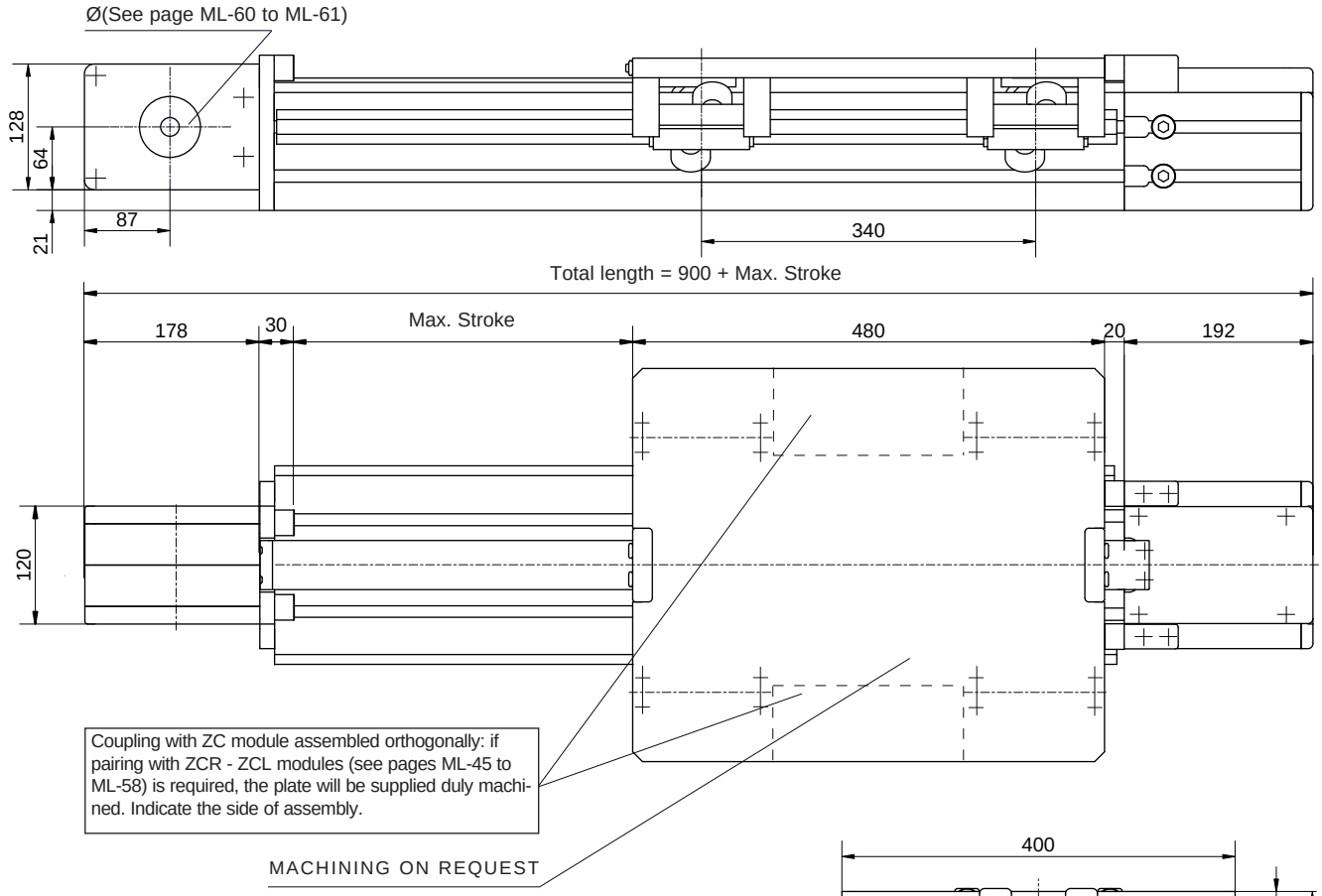
Data	TCH 180 - TCS 180	
Belt	40ATL10	
Slide	4 caged ball slides size 20	
Load bearing profile	E01-5 (see page ML-12)	
Pulley Ø	92.31	[mm]
Linear displacement per rev.	290	[mm]

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 ML-10



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	590	1,202	1,202	4,000	7,070	7,070

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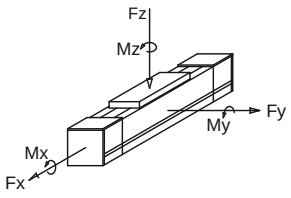
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



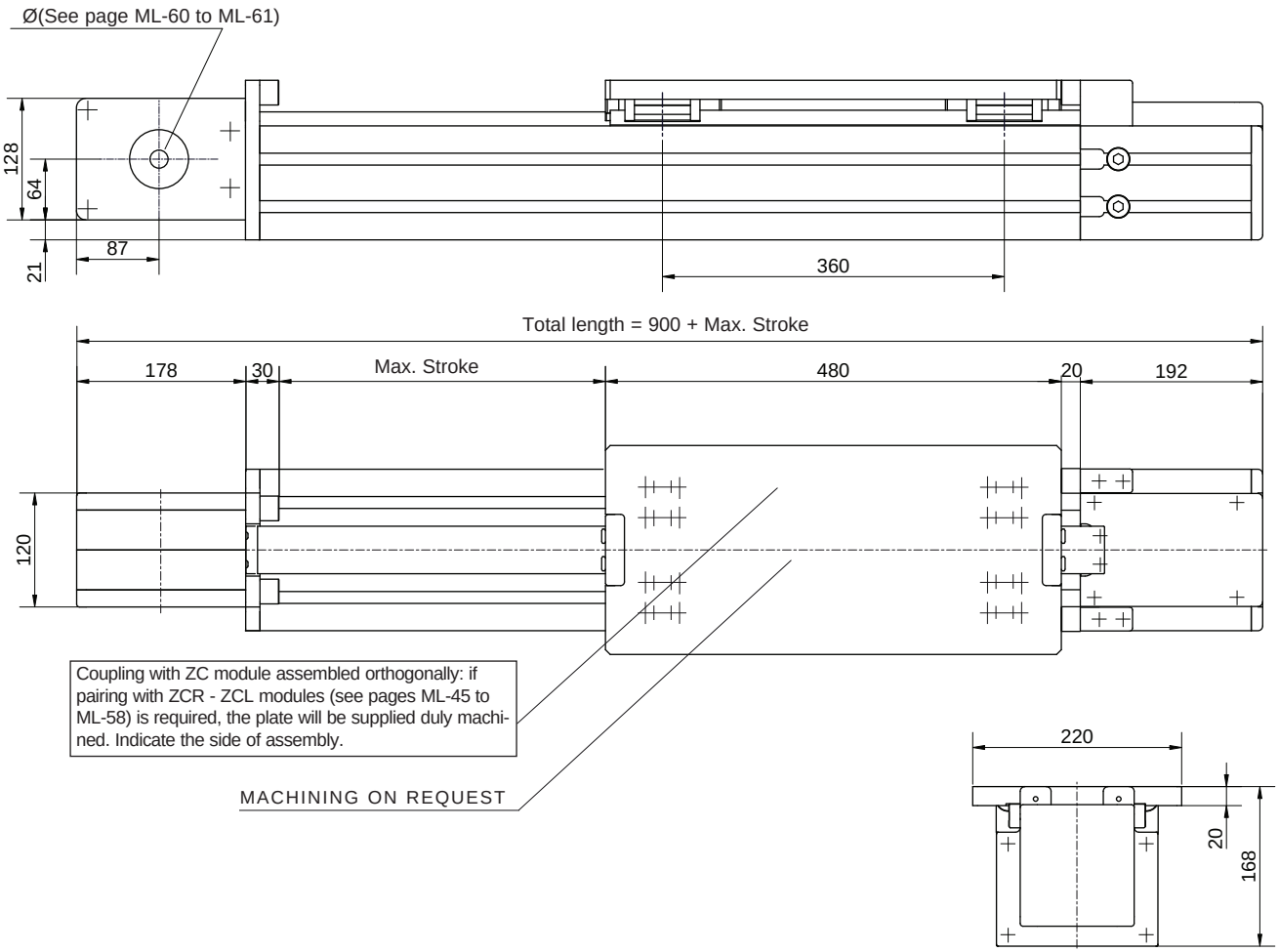
Fx= Max belt strength

Assembly positions and load direction, see page ML-10

Data		
Belt	50ATL10	
Slides	4 slides 2 rollers Ø40[mm]	
Load bearing profile	Statyca (see page ML-13)	
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]



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

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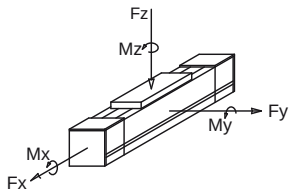
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

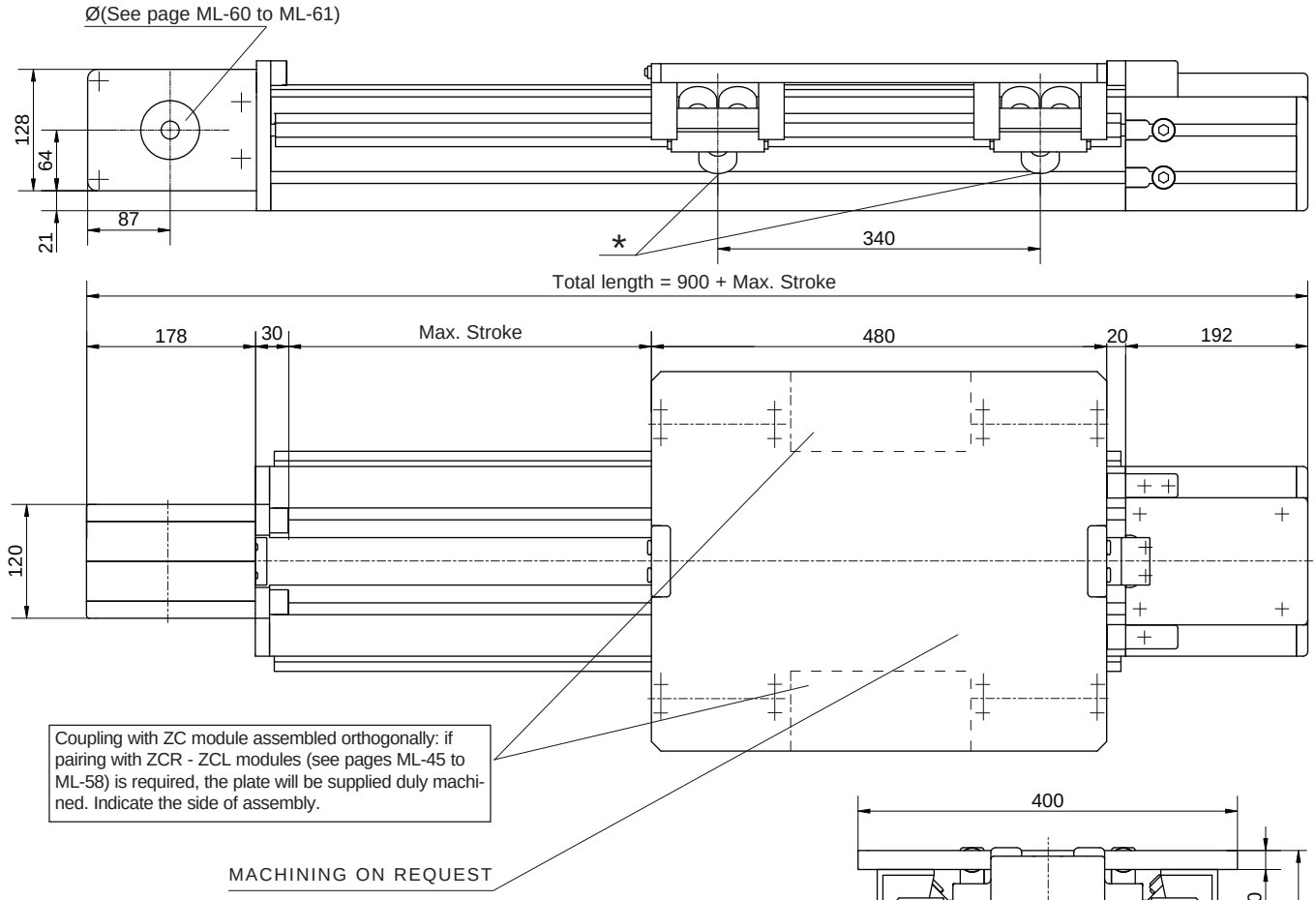
Data	TCH 170 - TCS 170	
Belt	50ATL10	
Slide	4 caged ball slides size 20	
Load bearing profile	Statyca (see page ML-13)	
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

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 ML-10



*: 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 (*)

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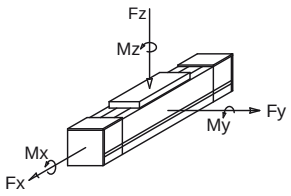


Fx= Max belt strength

Assembly positions and load direction, see page ML-10

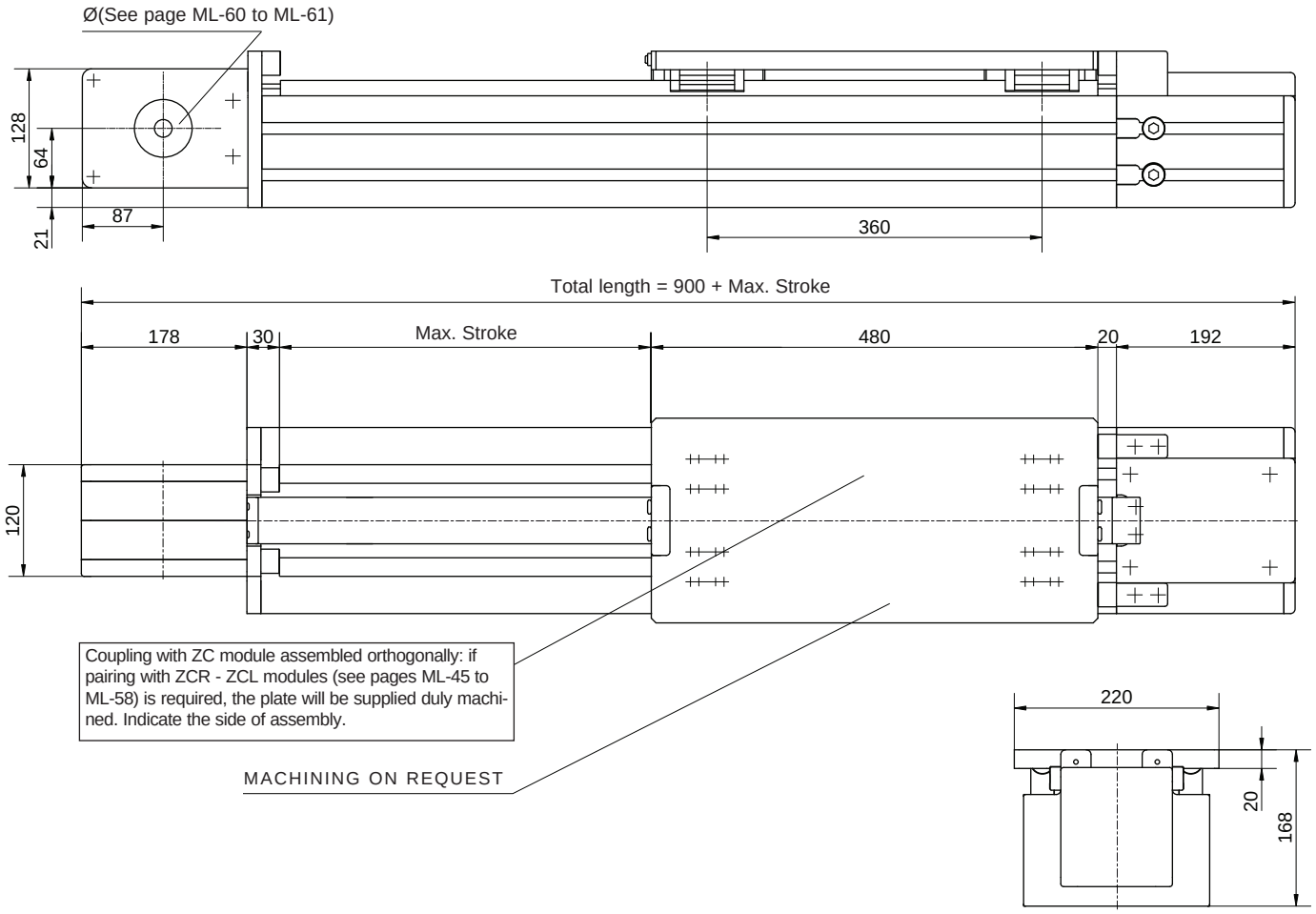
Data		
Belt	50ATL10	
Slide	4 slides 3 roll. Ø40	[mm]
Load bearing profile	Valyda	(see page 13)
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

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 ML-10



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

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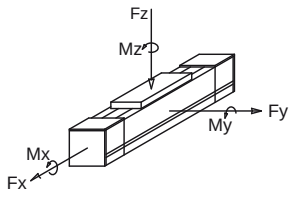
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

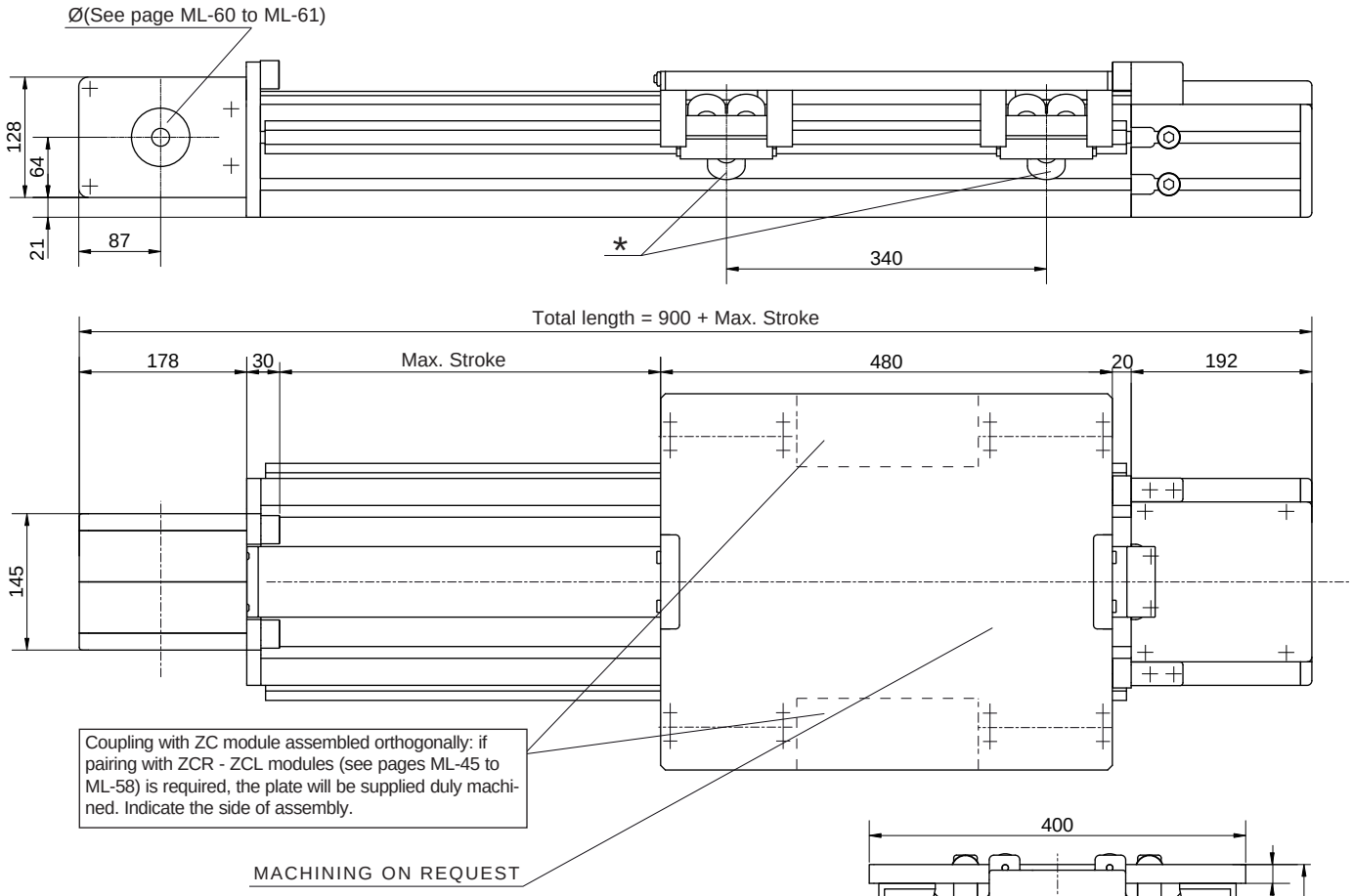
Data	TCH 200 - TCS 200	
Belt	50ATL10	
Slide	4 caged ball slides size 20	
Load bearing profile	Valyda (see page ML-13)	
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

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 ML-10



* : 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(*)

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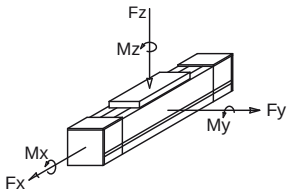
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept



Fx= Max belt strength

Assembly positions and load direction, see page ML-10

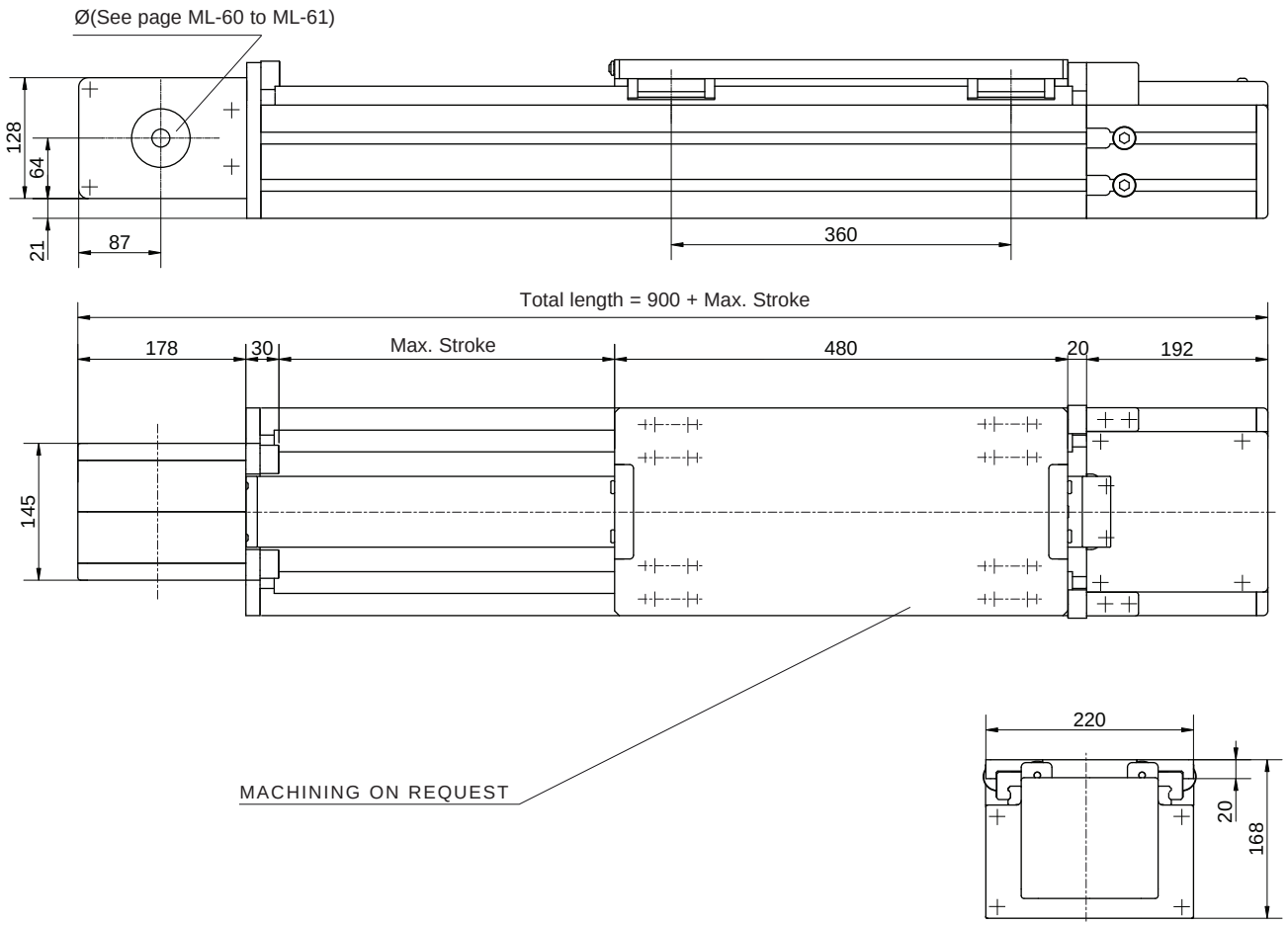
Data		
Belt	75ATL10	
Slide	4 slides 3 roll. Ø 40	[mm]
Load bearing profile	Logyca (see page ML-13)	
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

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 ML-10



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

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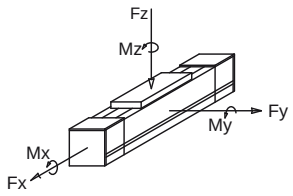


Fx= Max belt strength

Data	TCH 220 - TCS 220	
Belt	75ATL10	
Slide	4 caged ball slides size 25	
Load bearing profile	Logyca (see page ML-13)	
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]

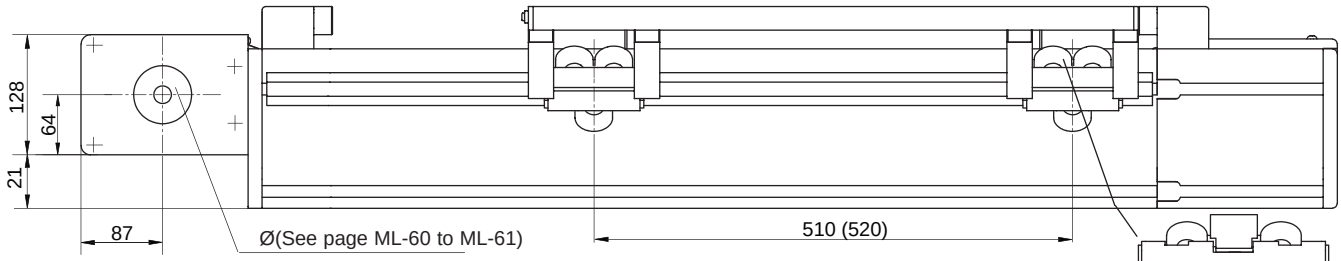
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

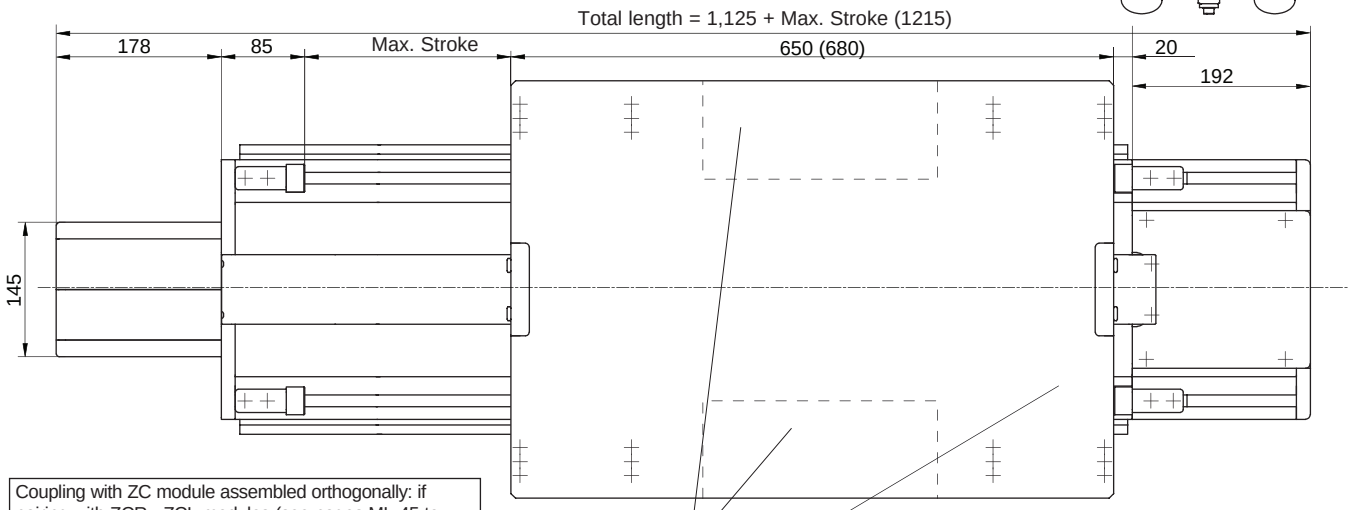
TCRQ 280 (TCRP 280)

Registered model*

RP= Heavy guide rails and roller slides - Ø52

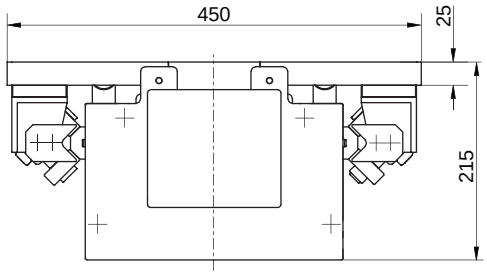
Accessories: see page ML-10





Coupling with ZC module assembled orthogonally: if pairing with ZCR - ZCL modules (see pages ML-45 to ML-58) is required, the plate will be supplied duly machined. Indicate the side of assembly.

MACHINING ON REQUEST

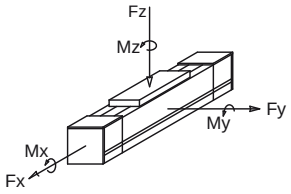


*: Please specify the roller orientation according to the barycentre of the applied load. Values corresponding to the most favourable load position.

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



Fx= Max belt strength

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They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept
Versions with a 100 mm belt are also available. (TCRE/TCREP)

Assembly positions and load direction, see page ML-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 ML-14)	
Pulley Ø	95.49		[mm]
Linear displacement per rev. [mm]	300		

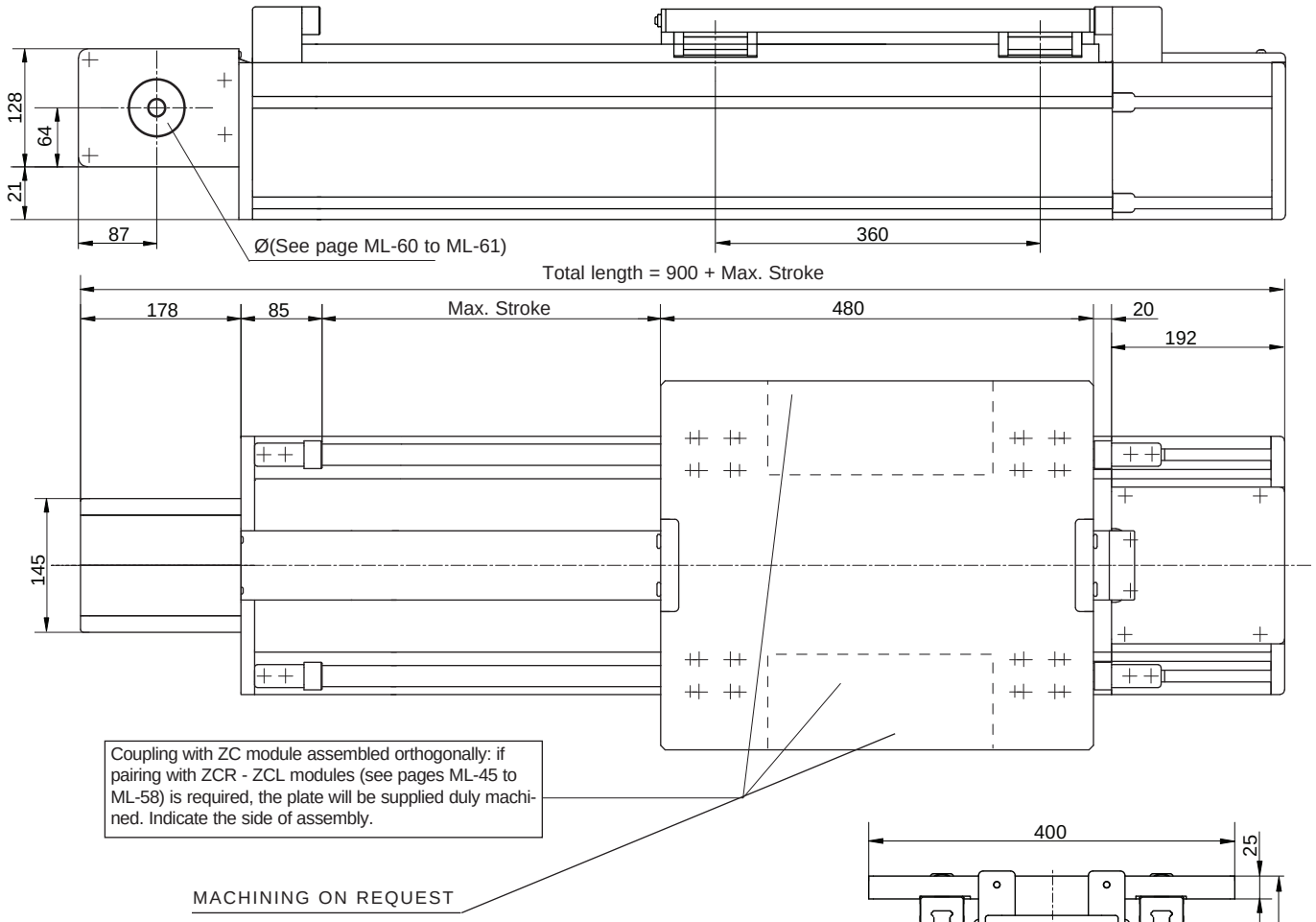
Weights	TCRQ 280	(TCRP 280)	
Inertia of the pulley	0.0082		[kgm^2]
Belt weight	1.02		[kg/m]
Carriage weight	27	55	[kg]
Base module	M_{base}=87	M_{base}=122	[kg]
1,000 mm profile	q=48	q=56	[kg]

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

TCH 280 - TCS 280

Registered model

Accessories: see page ML-10



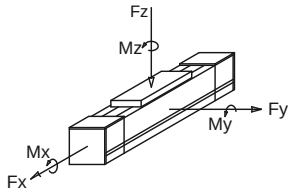
* Versions with a 100 mm belt are also available. (TCSE 280)

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

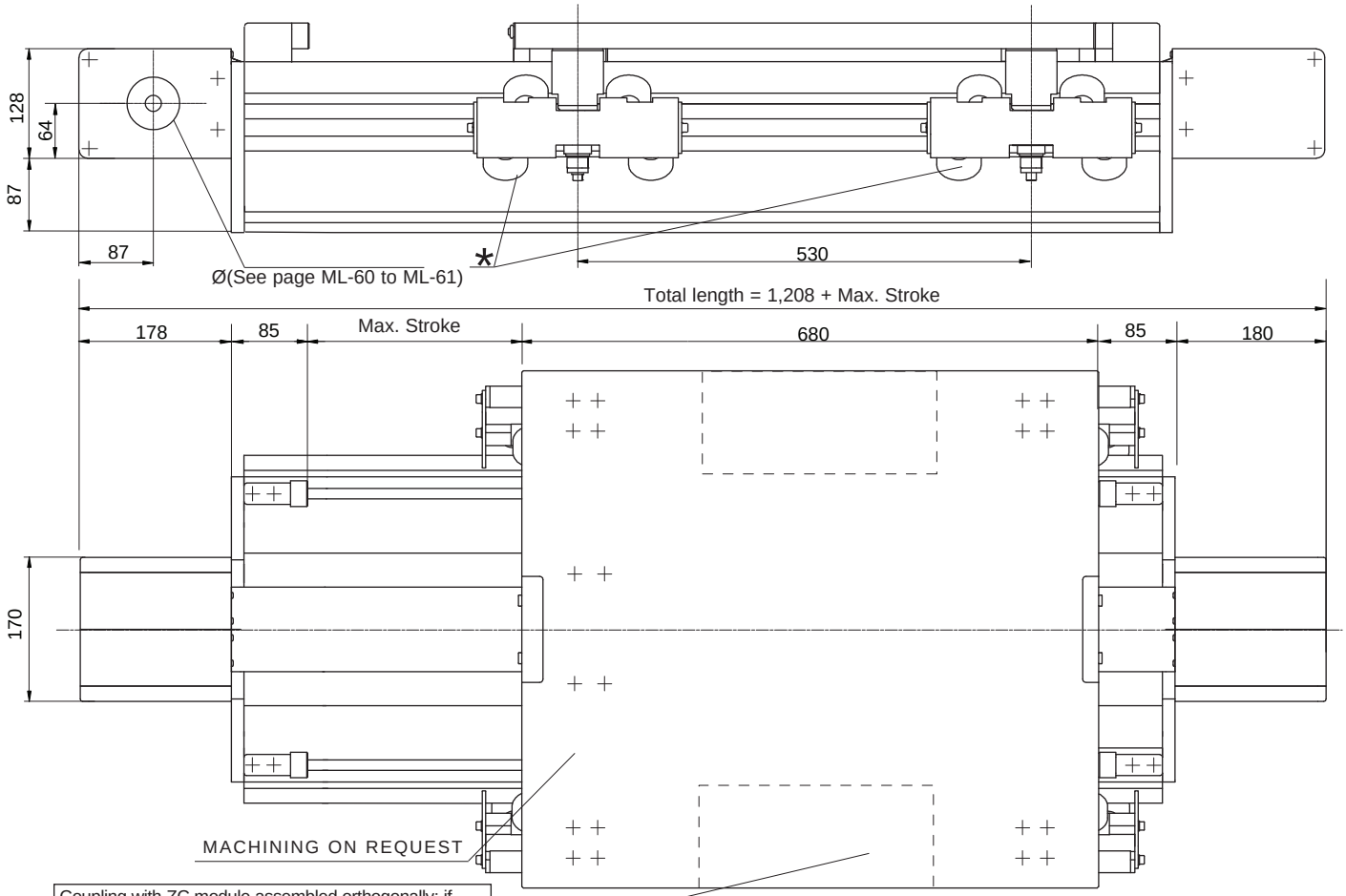
Data	TCH 280 - TCS 280	
Belt	75 ATL 10	
Slide	4 caged ball slides size 25	
Load bearing profile	Pratyca (see page ML-14)	
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

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]

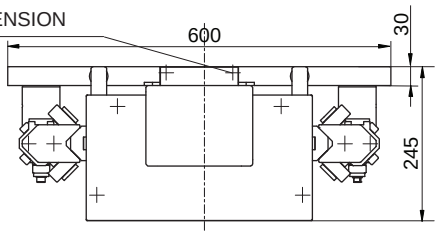
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Registered model

RP= Heavy guide rails and roller slides - Ø52
Accessories: see page ML-10



SCREWS FOR BELT TENSION

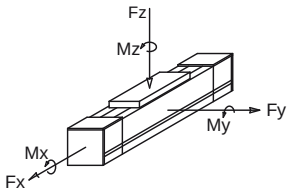


* Versions with a 150 mm belt are also available. (TCRPE360)

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 ML-10

Data		
Belt	100 ATL 10	
Slide	4 slides 4 rollers Ø52	[mm]
Load bearing profile	Solyda	(see page ML-14)
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

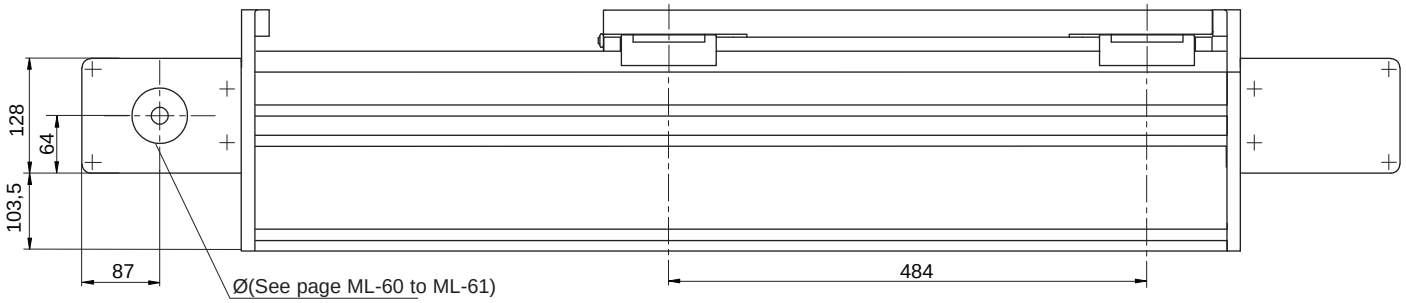
Weights		
Inertia of the pulley	0.0082	[kgm^2]
Belt weight	1.02	[kg/m]
Carriage weight	55	[kg]
Base module (stroke=0)	M_{base}=137	[kg]
1,000 mm profile	q=75	[kg]

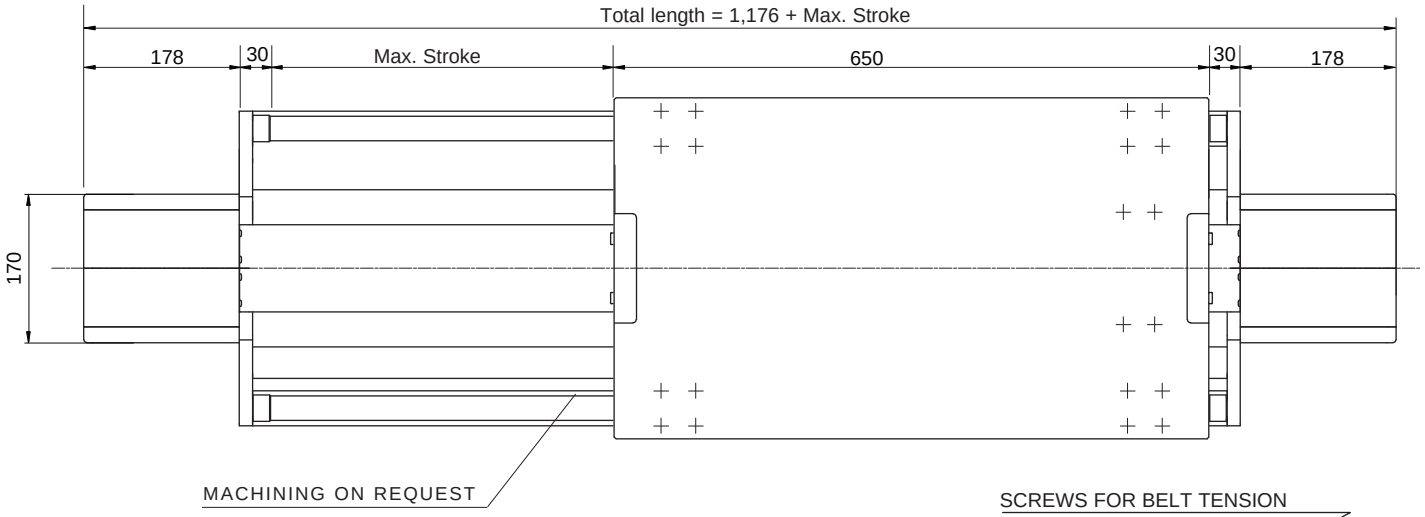
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

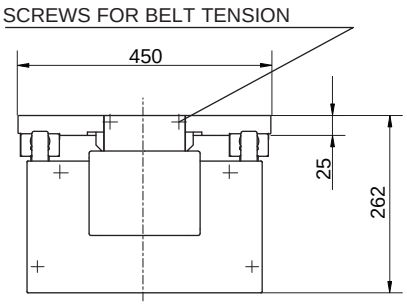
TCH 360 - TCS 360

Registered model

Accessories: see page ML-10







* 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

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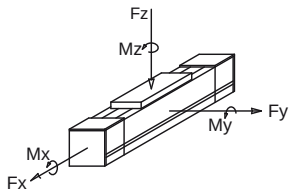
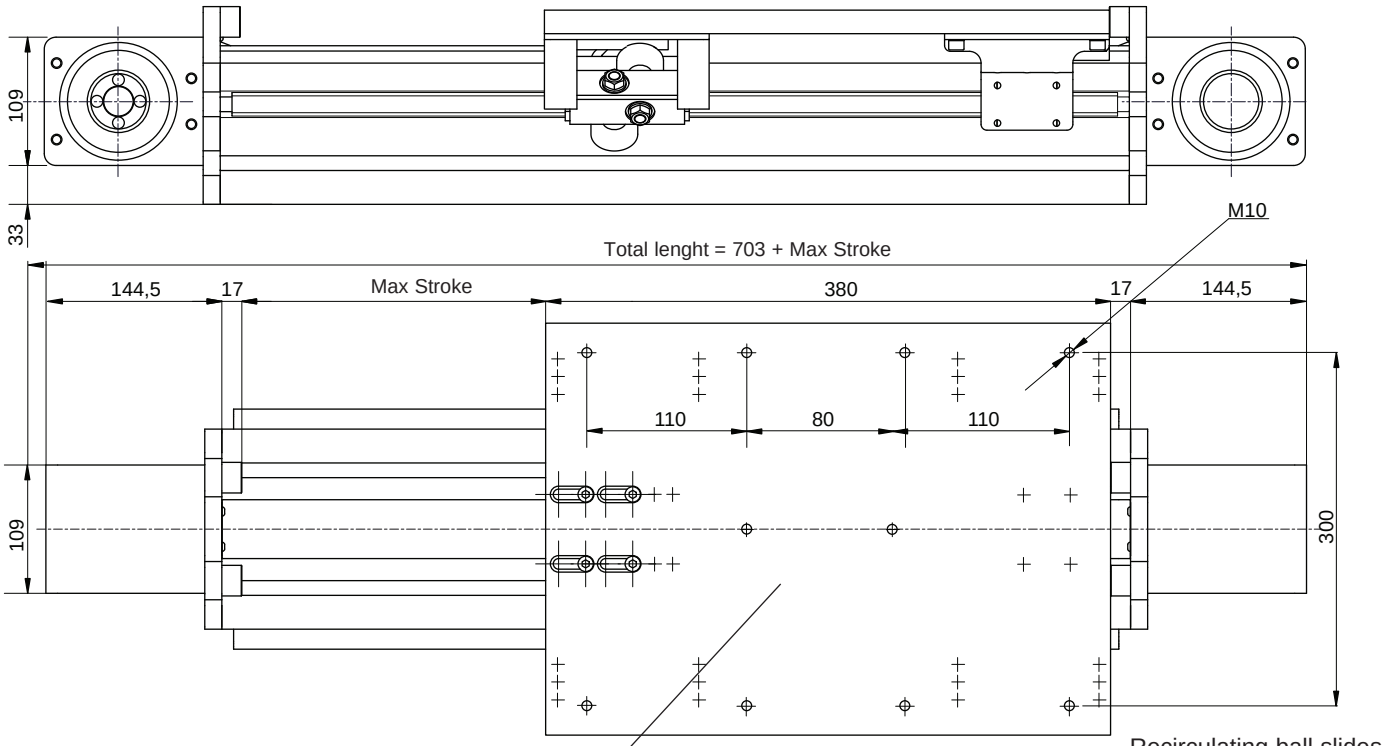


Fx= Max belt strength

Data	TCH 360 - TCS 360	
Belt	100 ATL 10	
Slide	4 caged ball roller slides 30	
Load bearing profile	Solyda (see page ML-14)	
Pulley Ø	95.49	[mm]
Linear displacement per rev.	300	[mm]

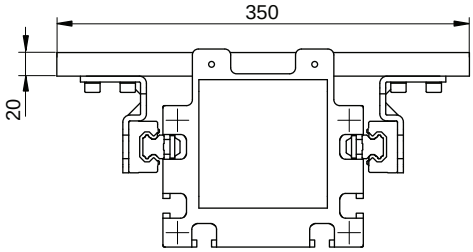
Weights	TCH 360 - TCS 360	
Inertia of the pulley	0.0082	[kgm^2]
Belt weight	1.02	[kg/m]
Carriage weight	28	[kg]
Base module (stroke=0)	M_{base}=105	[kg]
1,000 mm profile	q= 70	[kg]

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

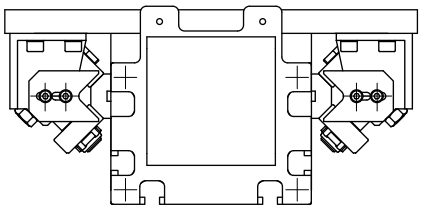


Recirculating ball slides

Coupling with ZC type module assembled at right angles: in the case of ZCR-ZCL unit assembly (see from pg. ML-45 to ML-58 of the Modline manual) the plate will be provided with notches and holes. Indicate the assembly side.



Roller slides

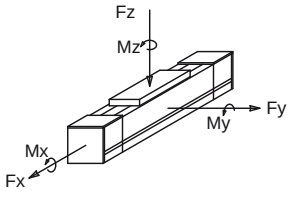


Performances	TECR 170	TECH 170	
Max stroke	5.560	5.560	[mm]
Max speed	5	4	[m/s]
Max acceleration	15	20	[m/s^2]
Repositioning accuracy	± 0.1	± 0.1	[mm]
Loadless torque	4.2	4.8	[Nm]

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	590	848	848	4.000	7.070	7.070
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

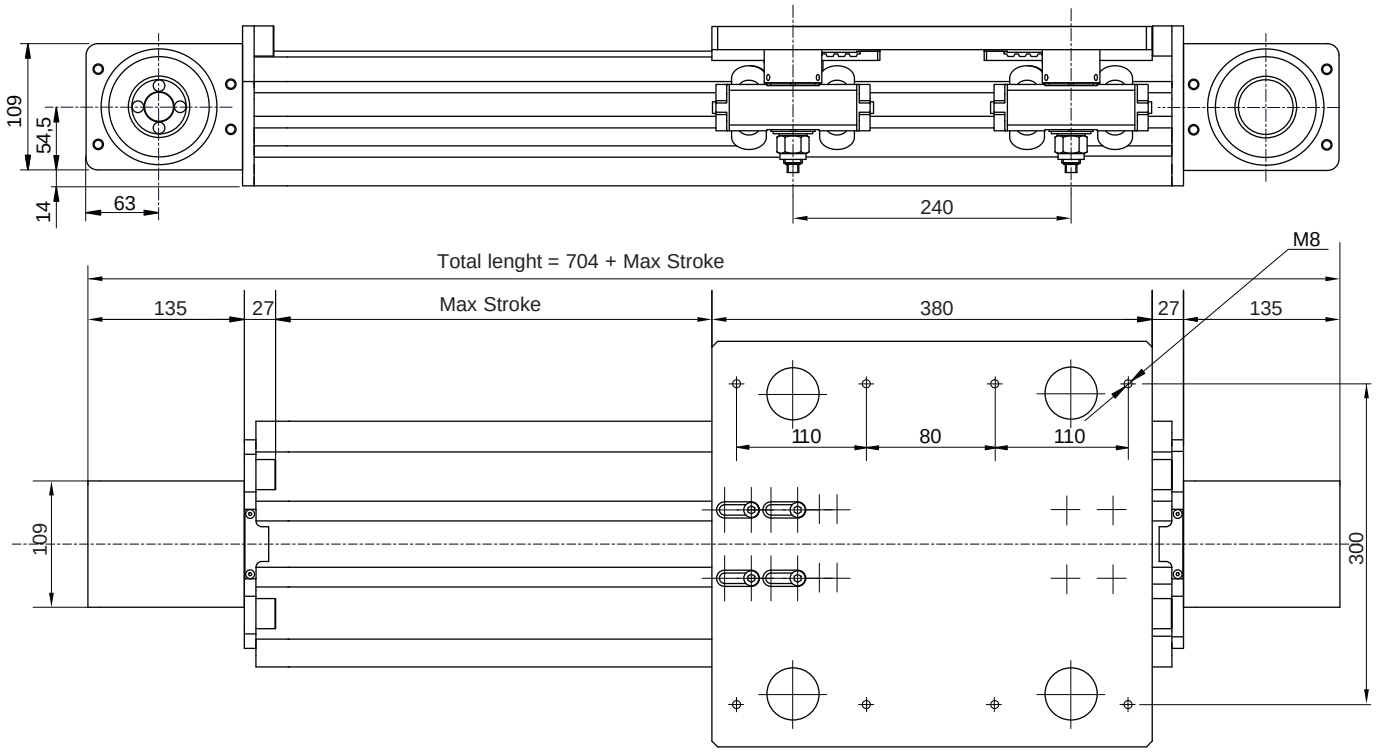
Constructive data	TECR 170 - TECH 170	
Belt	50 ATL 10	
Sliding (TECR170)	4 roller slides	[mm]
Sliding (TECH 170)	4 ball slides size 20	[mm]
Profile	Statyca (see page ML-13)	
Pulley Ø	95,49	[mm]
Linear displacement per revolution	300	[mm]

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]

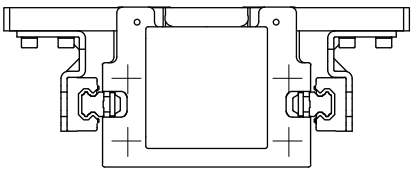
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot Stroke_{max}/1.000$** $Stroke_{max}$ [mm]

TECRR 180 - TECH 180 (EASY)

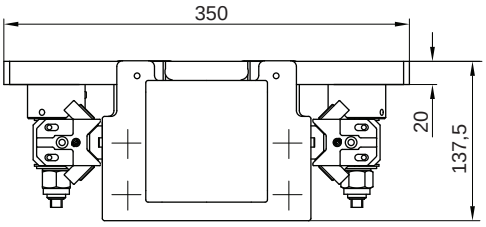
Patent pending



Recirculating ball slides



Roller slides

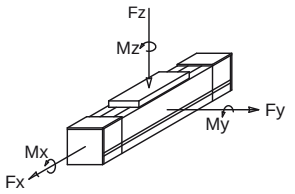


Performances	TECRR 180	
Max stroke	7.480	[mm]
Max speed	5	[m/s]
Max acceleration	20	[m/s^2]
Repositioning accuracy	± 0,1*	[mm]
Loadless torque	4,2	[Nm]

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.



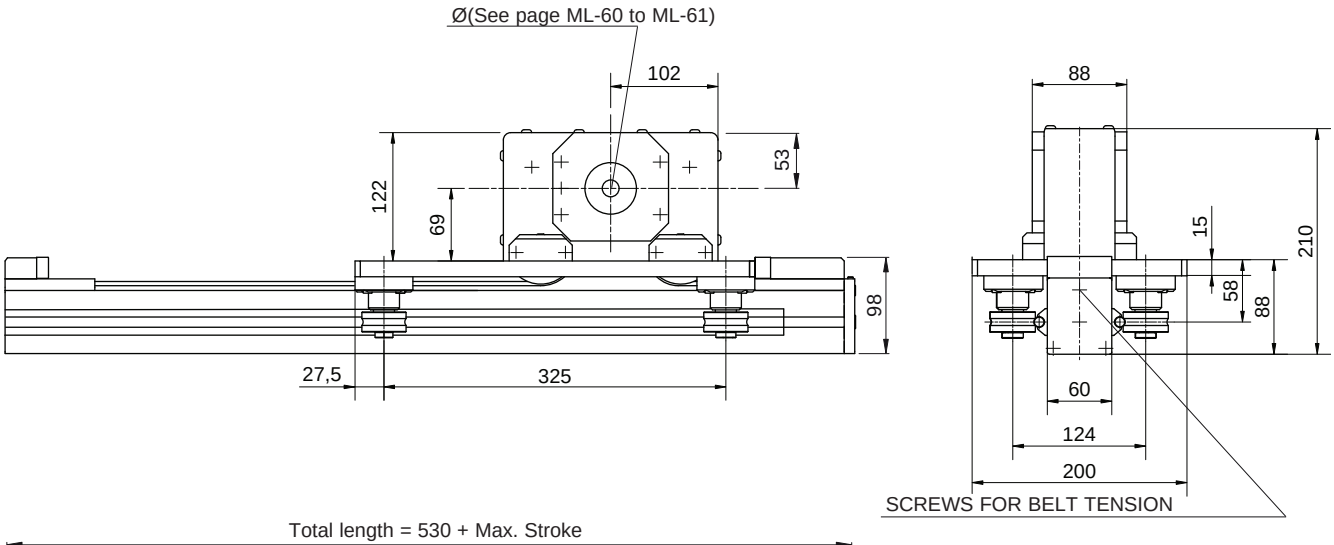
Fx= Max belt strenght

Constructive data		
Belt	40ATL10	
Sliding	4 slides 4 rollers 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]

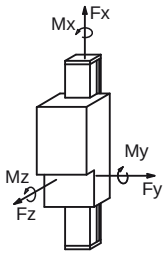
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot Stroke_{max}/1.000$** $Stroke_{max}$ [mm]

Accessories: see page ML-10



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

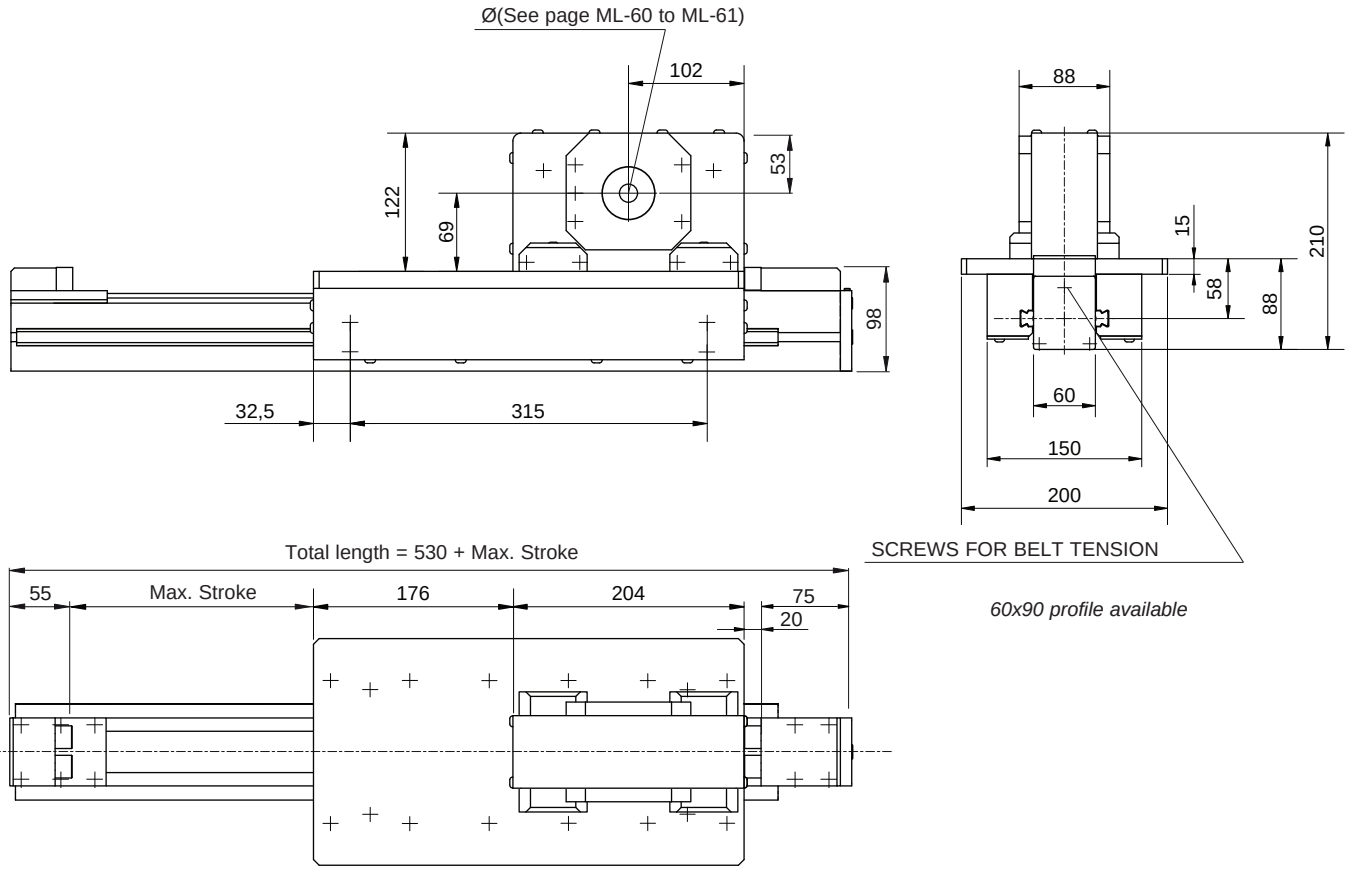
Assembly positions and load direction, see page ML-10

Data		
Belt	32AT10	
Slide	4 shaped roller slides Ø 42 [mm]	
Load bearing profile	F01-1 (see page ML-11)	
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]

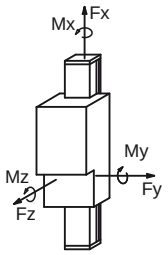
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Accessories: see page ML-10



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

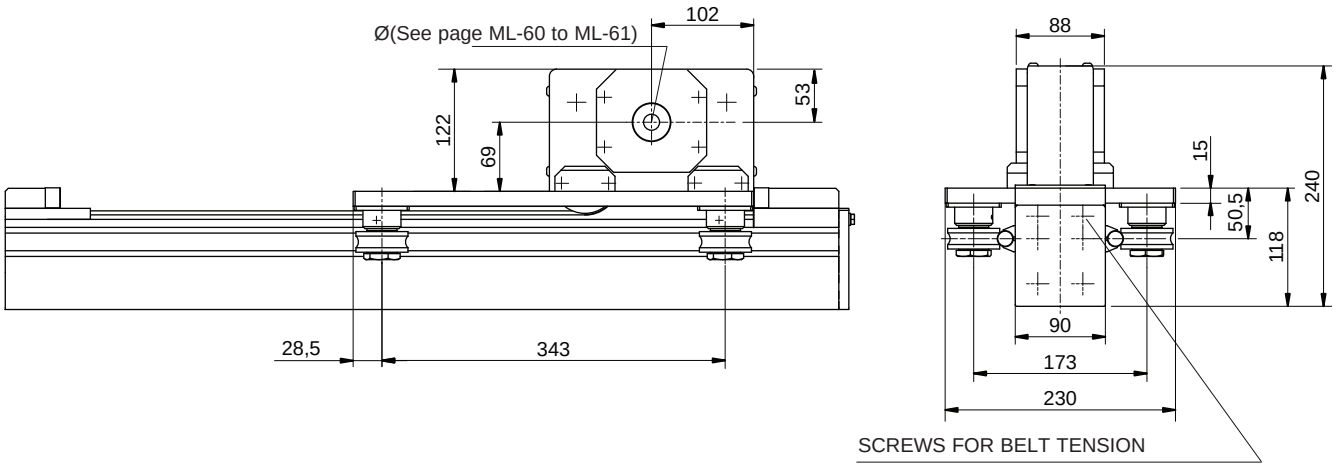
The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

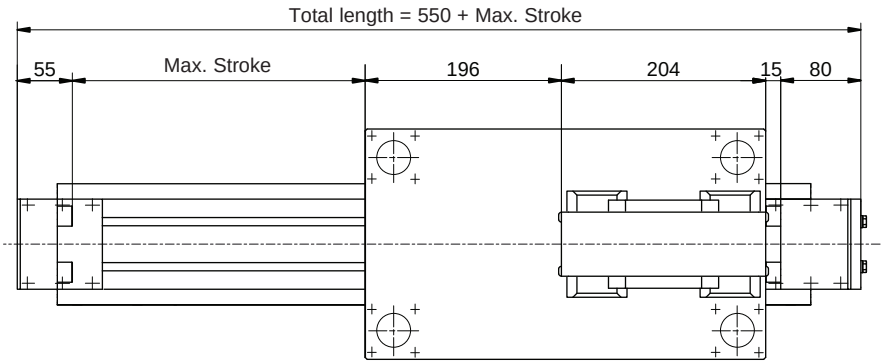
Data		
Belt	32AT10	
Slide	4 caged ball roller slides 15	
Load bearing profile	F01-1 (see page ML-11)	
Pulley Ø	70.03	[mm]
Linear displacement per rev.	220	[mm]

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]

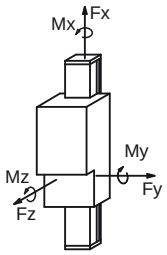
Accessories: see page ML-10





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

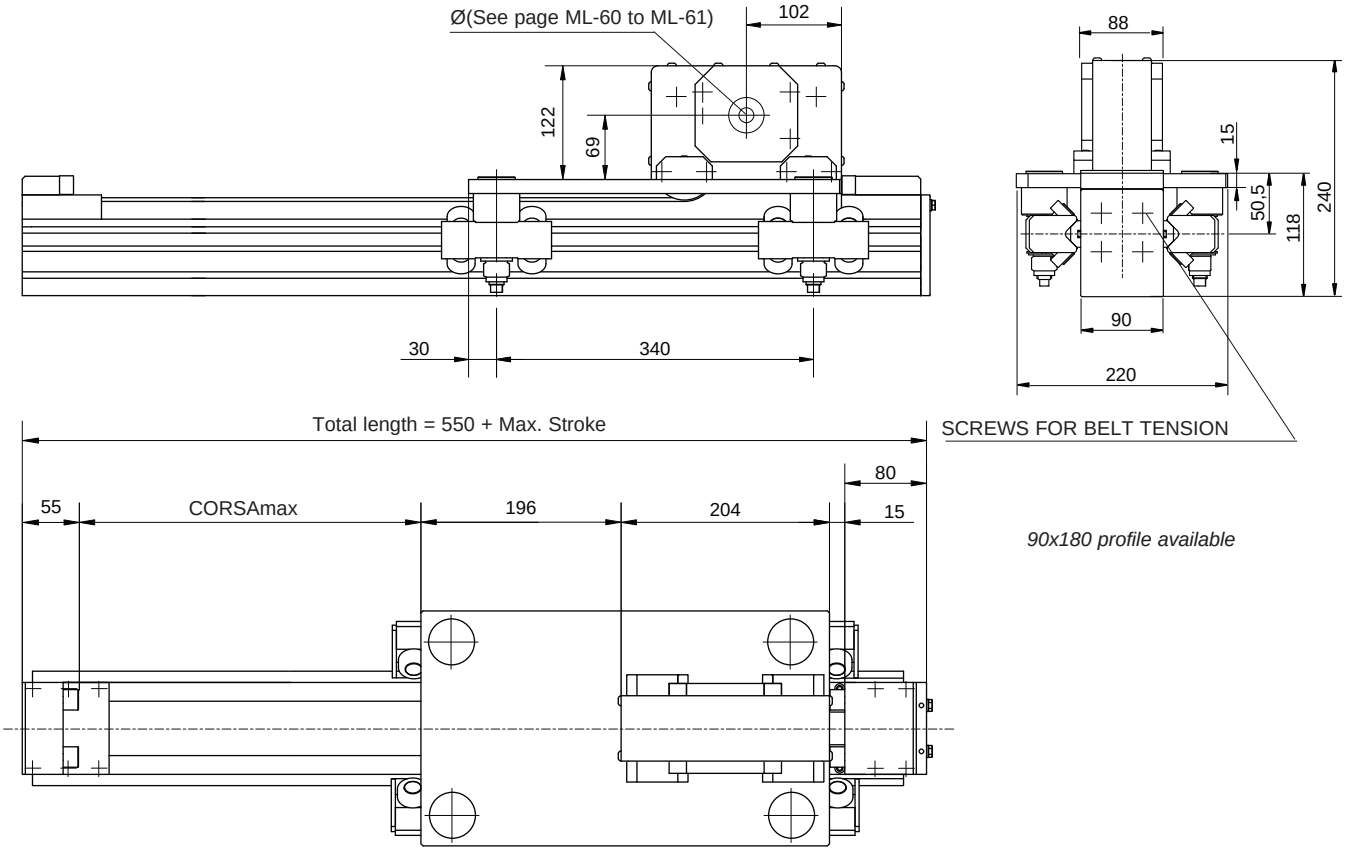
Assembly positions and load direction, see page ML-10

Data		
Belt	32AT10	
Slide	4 shap. r. Ø52 - guide Ø16	
Load bearing profile	E01-4 (see page ML-11)	
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]

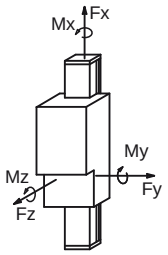
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Accessories: see page ML-10



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	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

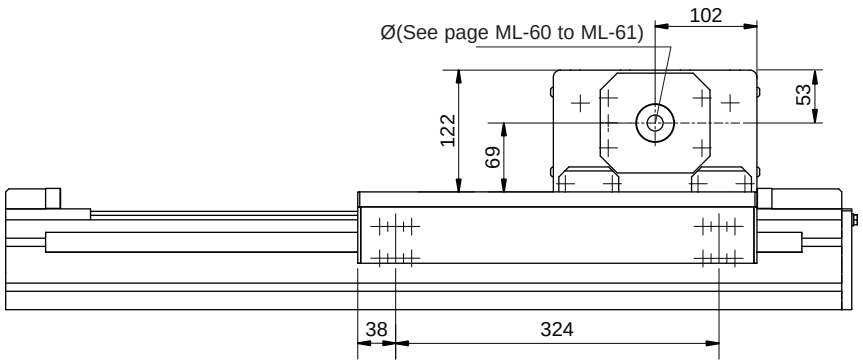
Assembly positions and load direction, see page ML-10

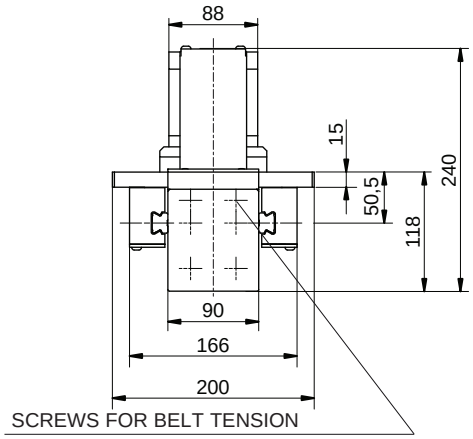
Data		
Belt	32 AT 10	
Slide	4 slides 4 roll. Ø30	[mm]
Load bearing profile	E01-4 (see page ML-11)	
Pulley Ø	70.03	[mm]
Linear displacement per rev.	220	[mm]

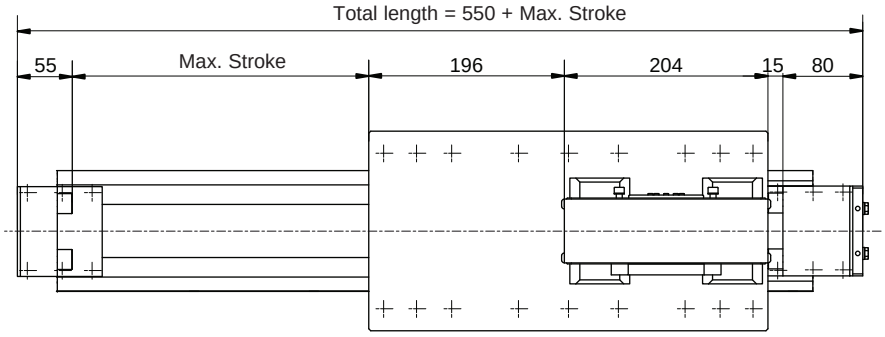
Weights		
Inertia of the pulley	0.0013	[kgm^2]
Belt weight	0.21	[kg/m]
Carriage weight	13	[kg]
Base module (stroke=0)	M_{base}= 20	[kg]
1,000 mm profile	q=11.2	[kg]

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

Accessories: see page ML-10

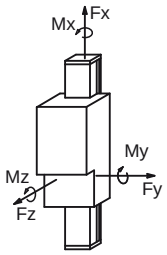






90x180 profile available

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	ZCL 90	
Max. stroke	5,450	[mm]
Max. speed	4	[m/s]
Max. acceleration	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]
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

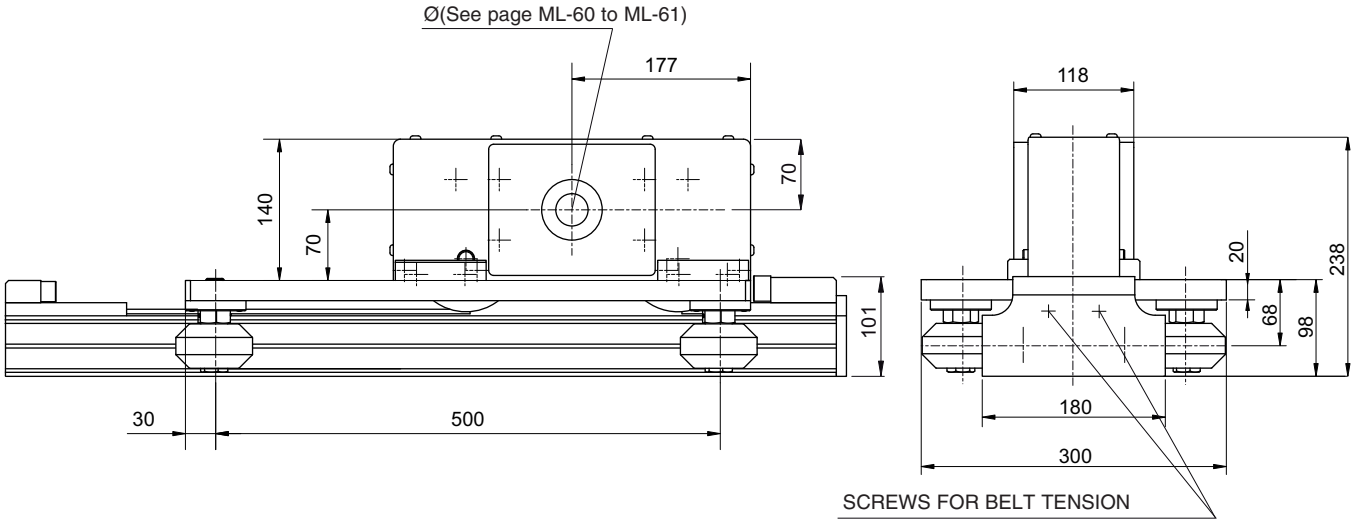
Data		
Belt	32AT10	
Slide	4 caged ball roller slides 20	
Load bearing profile	E01-4 (see page ML-11)	
Pulley Ø	70.03	[mm]
Linear displacement per rev.	220	[mm]

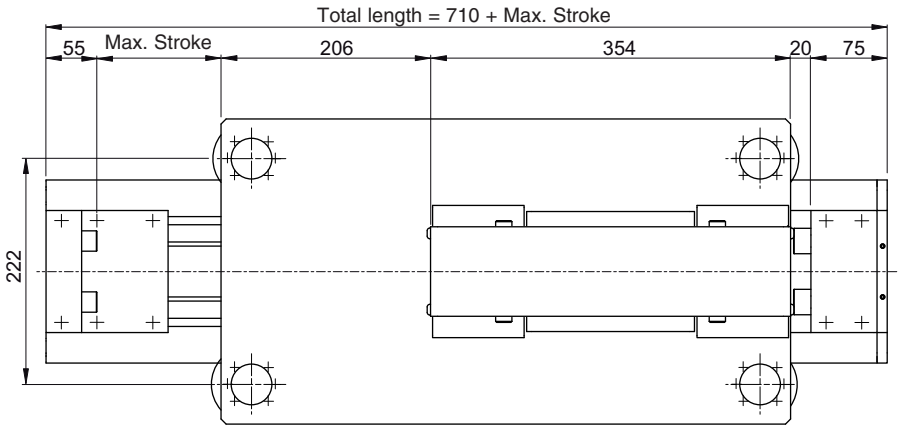
Weights		
Inertia of the pulley	0.0013	[kgm^2]
Belt weight	0.19	[kg/m]
Carriage weight	11.5	[kg]
Base module (stroke=0)	M_{base}=18.5	[kg]
1,000 mm profile	q=11.5	[kg]

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

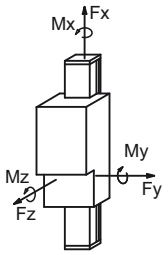
Registered model

Accessories: see page ML-10





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

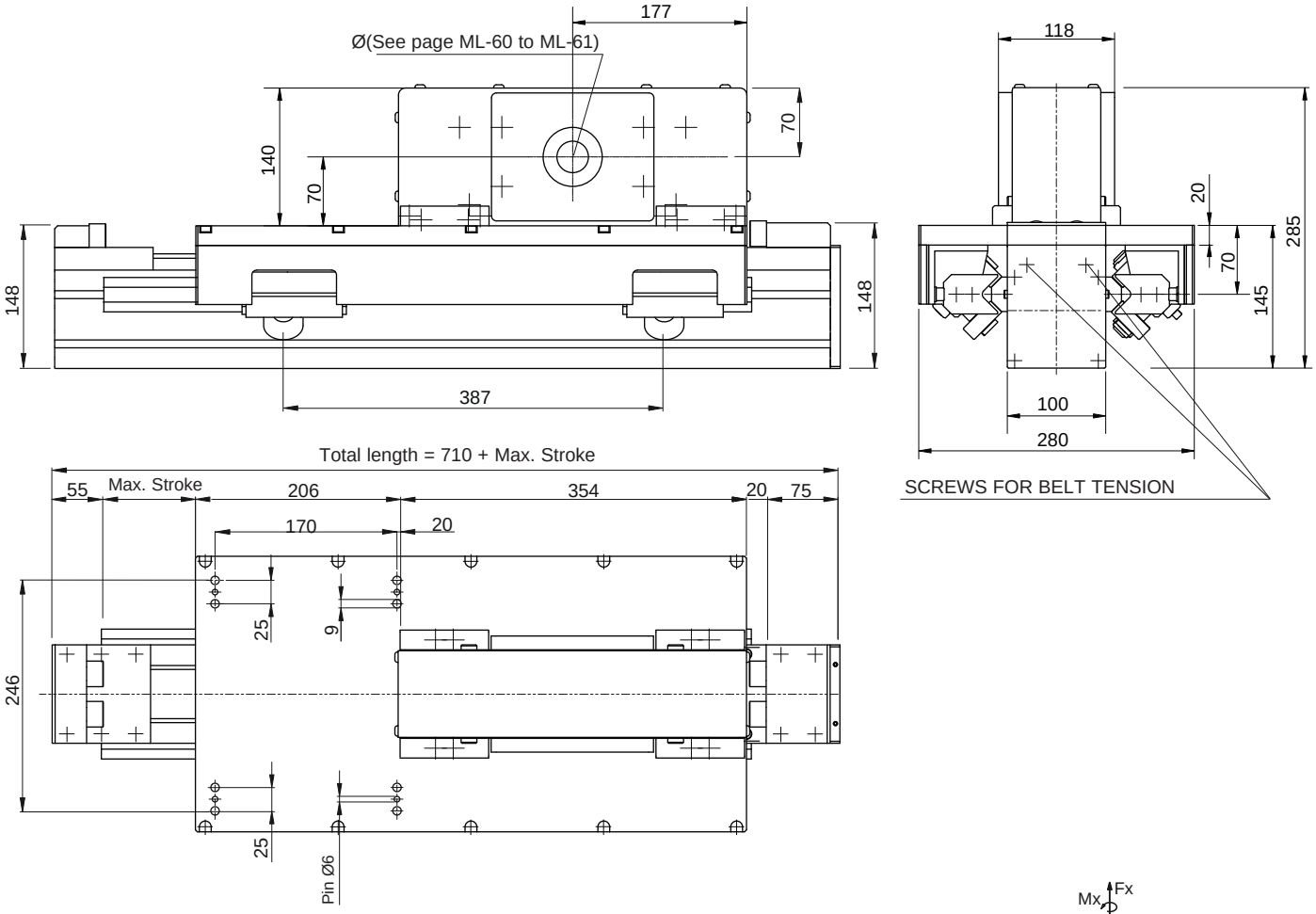
The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

Assembly positions and load direction, see page ML-10

Data		
Belt	50ATL10	
Slide	4 Rollers Ø 76	[mm]
Load bearing profile	Sys -1G (see page ML-14)	
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=11.61	[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 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.
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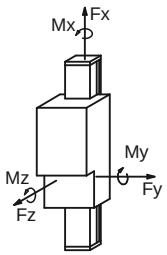


Fx= Max belt strength

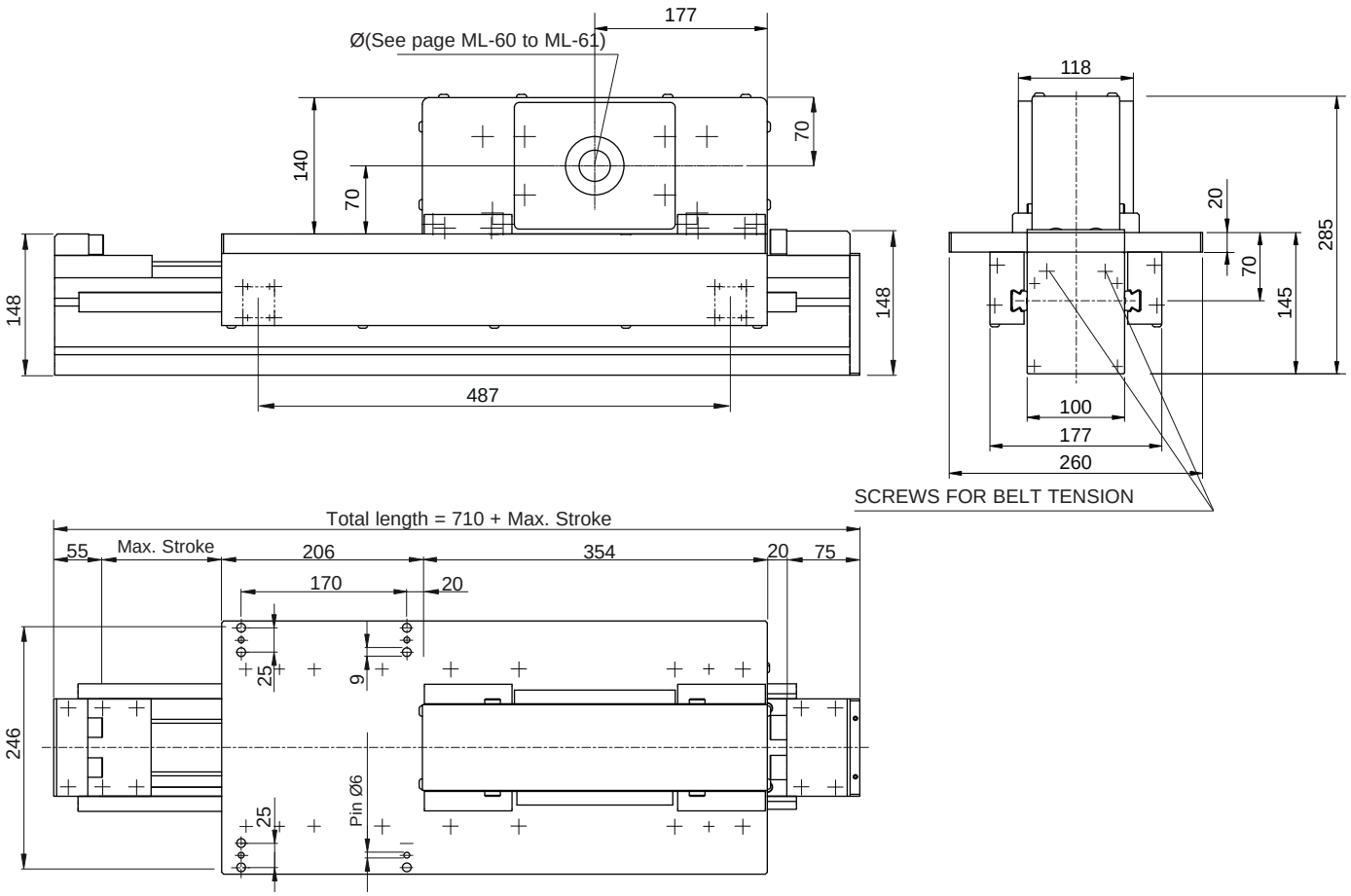
Assembly positions and load direction, see page ML-10

Data		
Belt	50 ATL 10	
Slide	4 slides 2 roll. Ø 40	[mm]
Load bearing profile	MA 1-5 (see page ML-12)	
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]

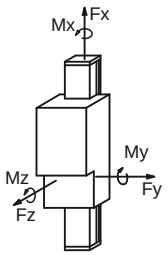
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Accessories: see page ML-10



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	ZCS 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

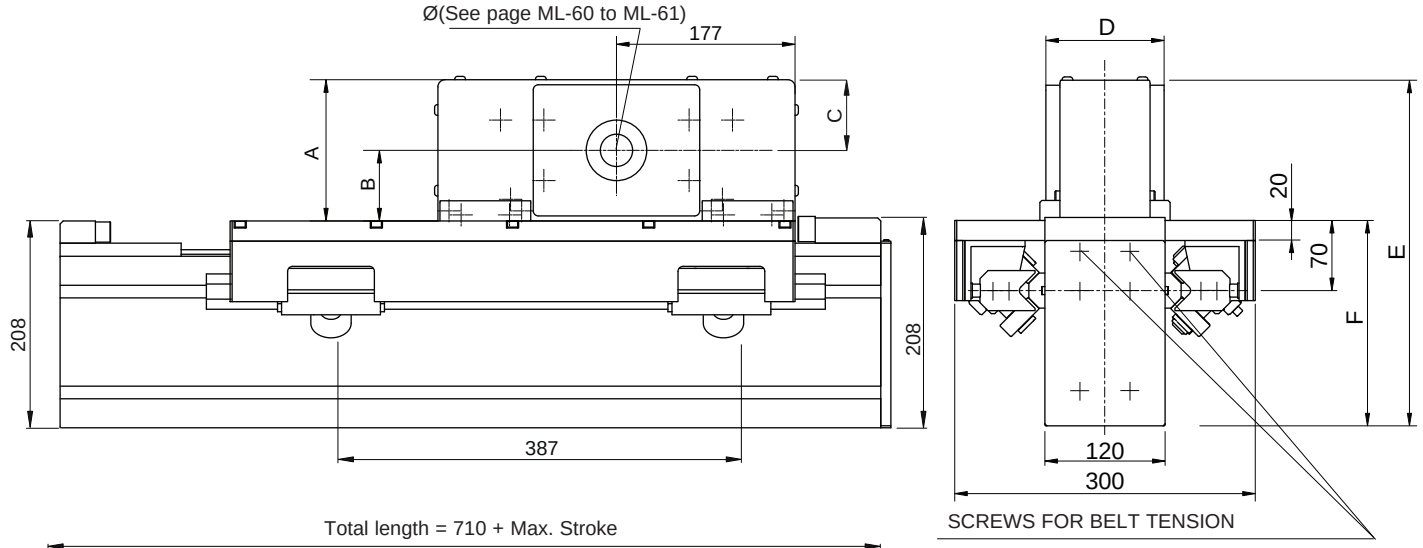
Suggested working load conditions						
Module	M_x[Nm]	M_y[Nm]	M_z[Nm]	F_x[N]	F_y[N]	F_z[N]
ZCS 100	480	1,630	1,840	4,000	7,360	8,260

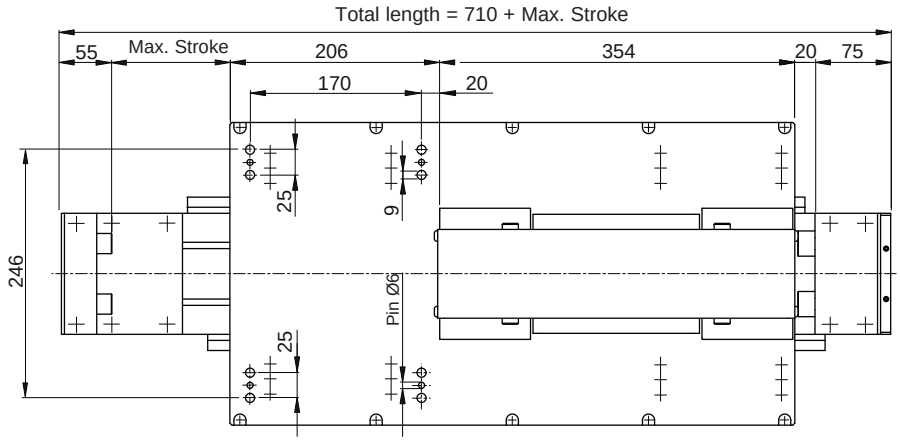
The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

Data		
Belt	50 ATL 10	
Slide	4 caged ball roller slides 20	
Load bearing profile	MA 1-5 (see page ML-12)	
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]



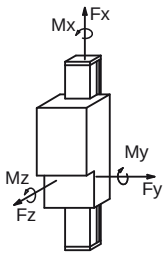


IMPORTANT: when pairing ZC... modules with TC... modules, please check the required Z axis stroke, as this could be limited by the size of the module plates sizes.

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



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 ML-10

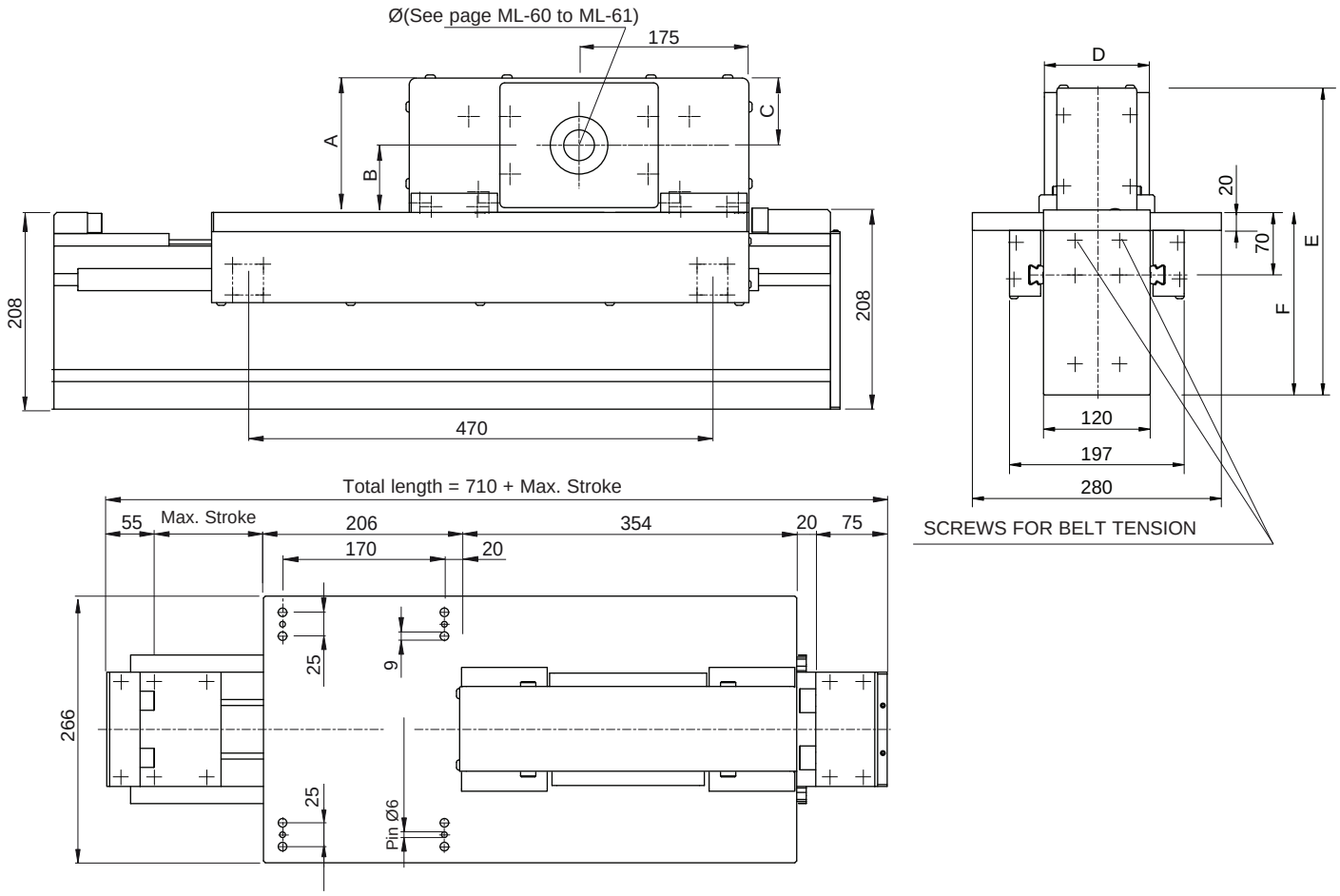
Belt	A	B	C	D	E	F
50	140	70	70	118	345	205
75	164	82	82	143	379	215

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 ML-13)	
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]

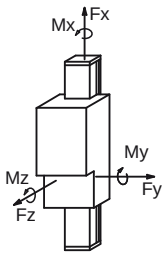
To calculate the module weight use the following formula: **$M=M_{base}+q \cdot stroke_{max}/1{,}000$** $Stroke_{max}$ [mm]

Accessories: see page ML-10



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

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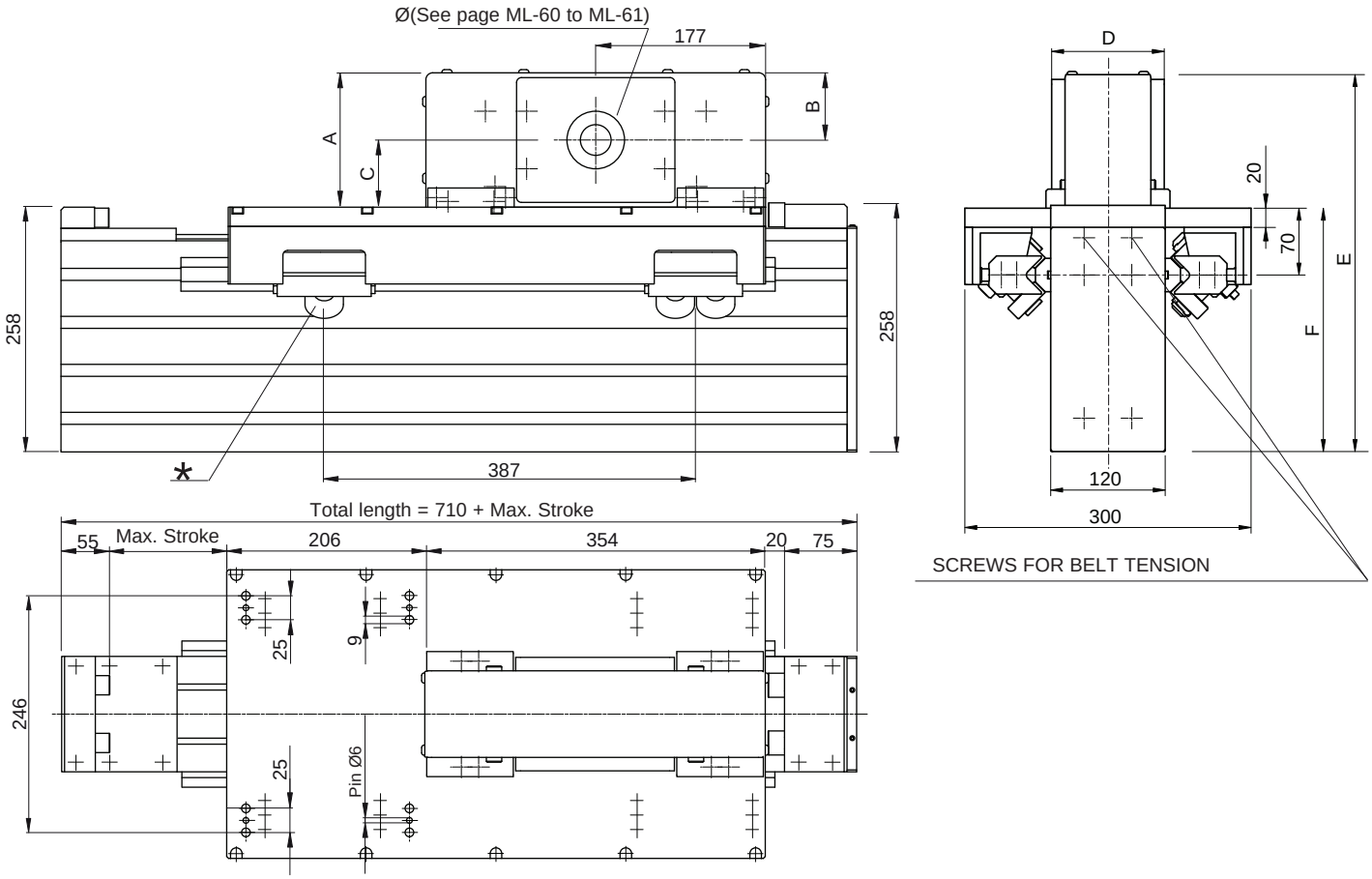
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

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 ML-13)	
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]



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(*)

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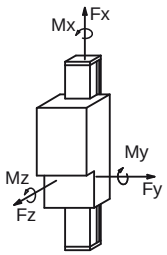
In case of peak forces acting together please ask the technical dept

Assembly positions and load direction, see page ML-10



Fx= Max belt strength

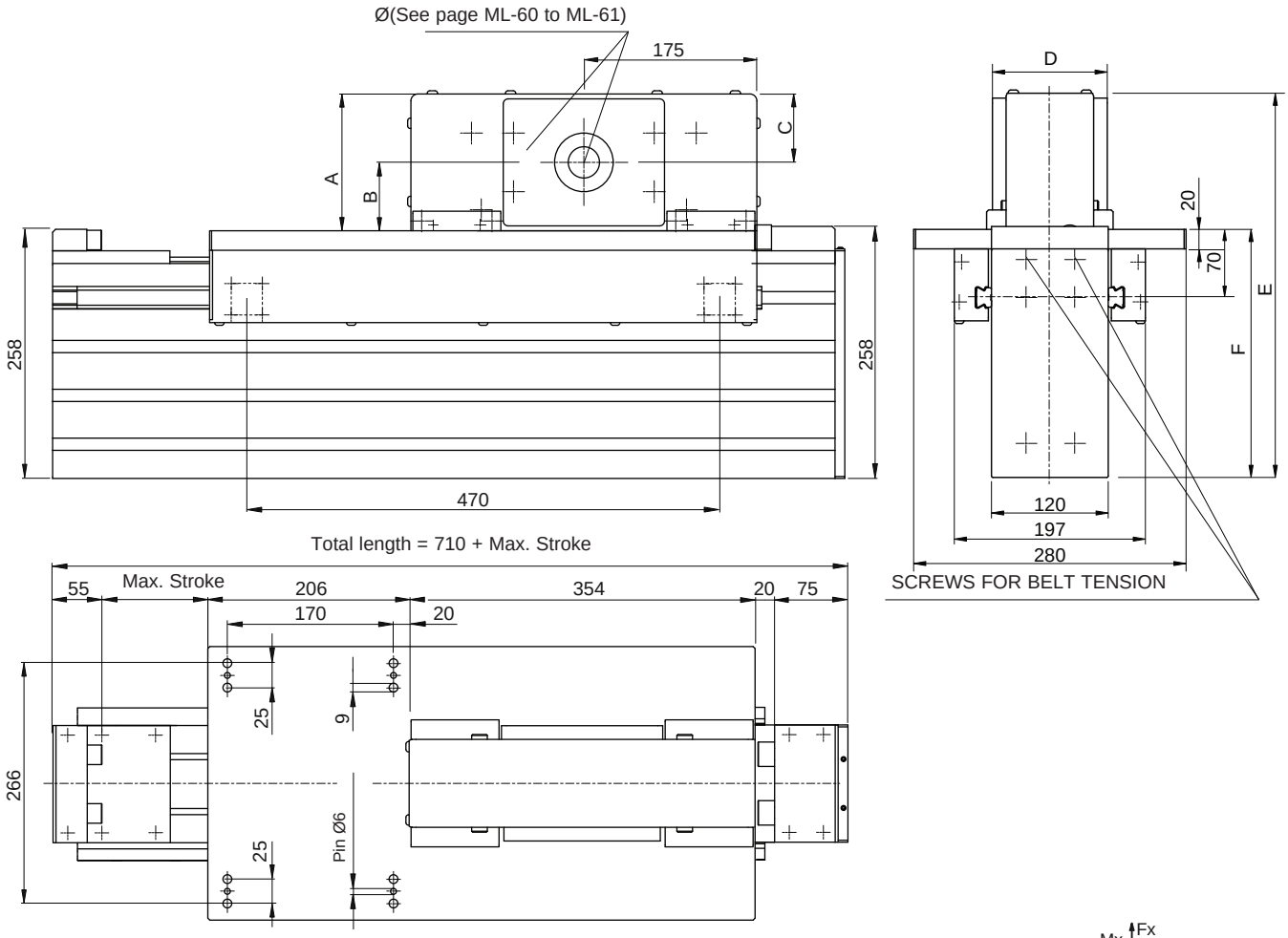
Belt	A	B	C	D	E	F
50	140	70	70	118	395	255
75	164	82	82	143	429	265

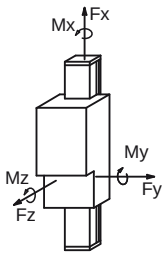
Data	ZCRQ 220	ZCERQ 220	
Belt	50 ATL 10	75 ATL 10	
Slide	4 slides 3 rollers Ø 40		[mm]
Load bearing profile	Logyca	(see page ML-13)	
Pulley Ø	95.49		[mm]
Linear displacement per rev.	300		[mm]

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 ML-10





Fx= Max belt strength

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]

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

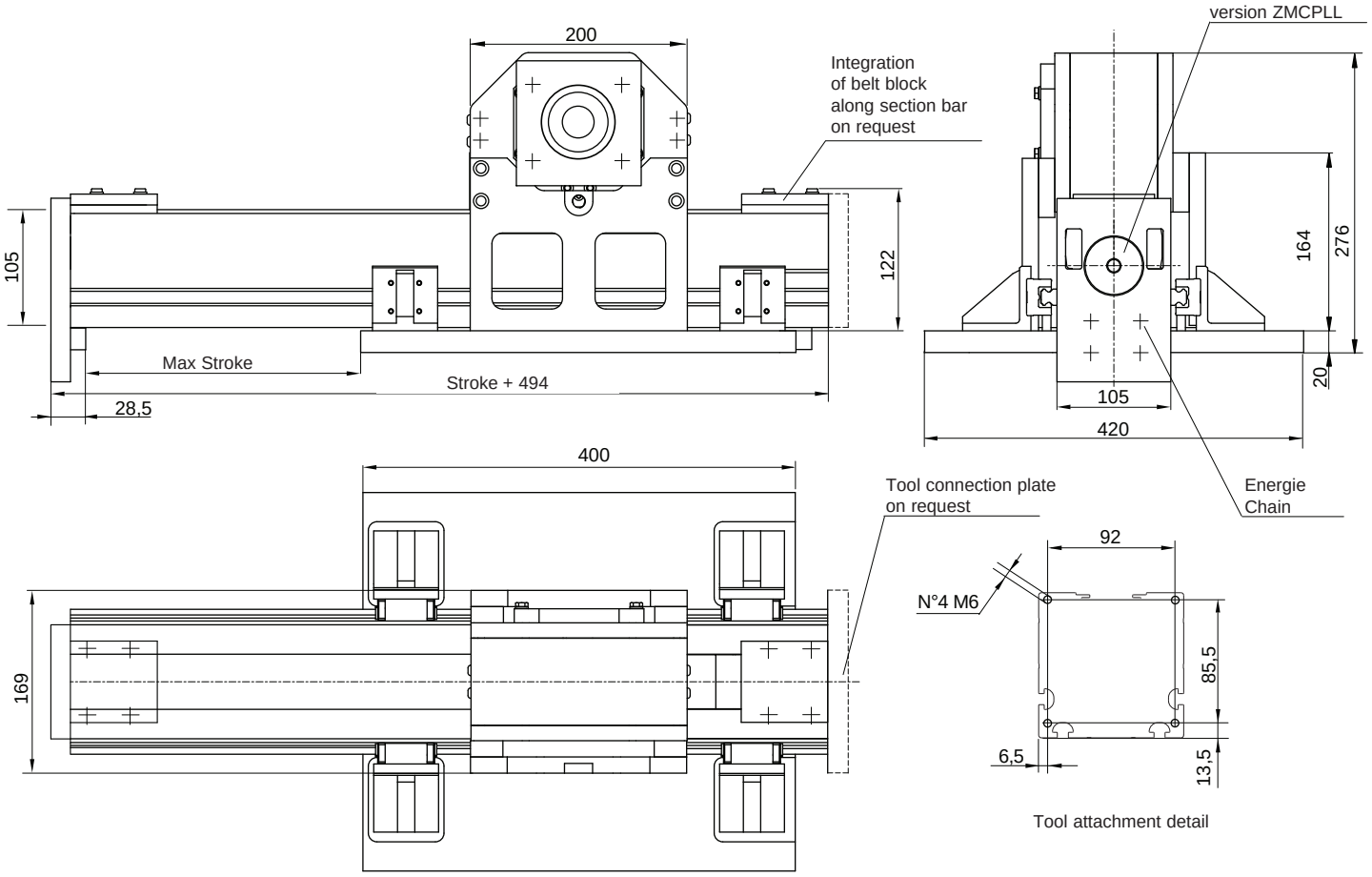
The dynamic values shown do not refer to the max. theoretical load capacity.
They include a safety coefficient for automated machinery.
In case of peak forces acting together please ask the technical dept

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 ML-13)	
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]

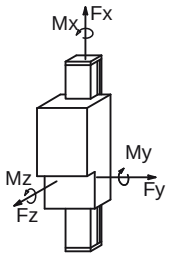


Performances	ZMCPLL 105	
Integrated pneumatic cylinder	Ø 50	[mm]
Maximum cylinder stroke	2000	[mm]
Max Speed	3	[m/s]
Maximum acceleration	25	[m/s^2]
Repositioning precision	± 0,1	[mm]

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.



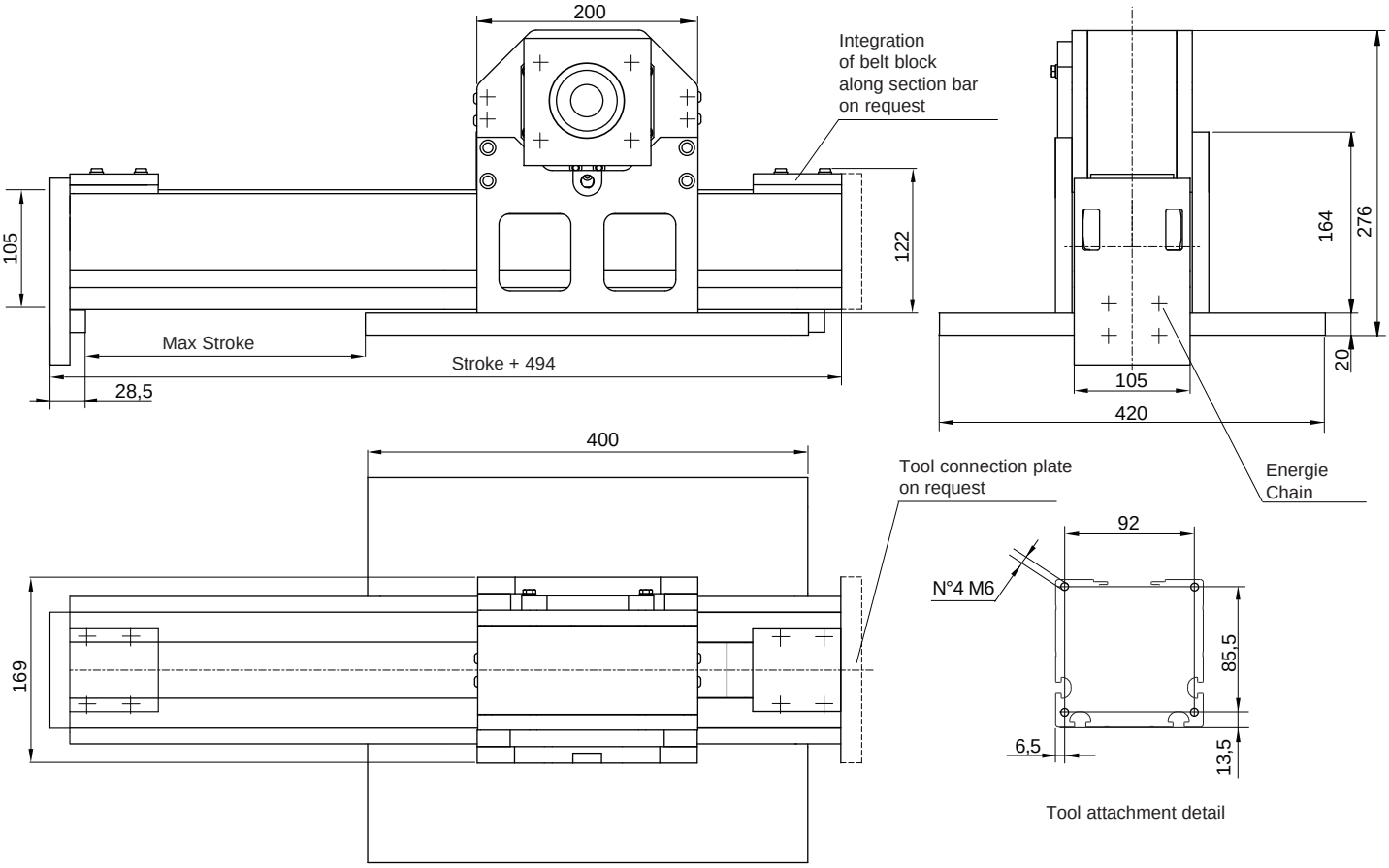
Fx= Max belt strenght

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

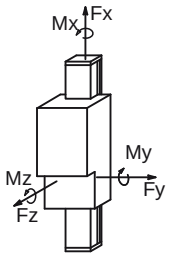


Performances	ZMCH 105	
Max Speed	3	[m/s]
Max Acceleration	25	[m/s^2]
Repositioning accuracy	± 0,1	[mm]

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

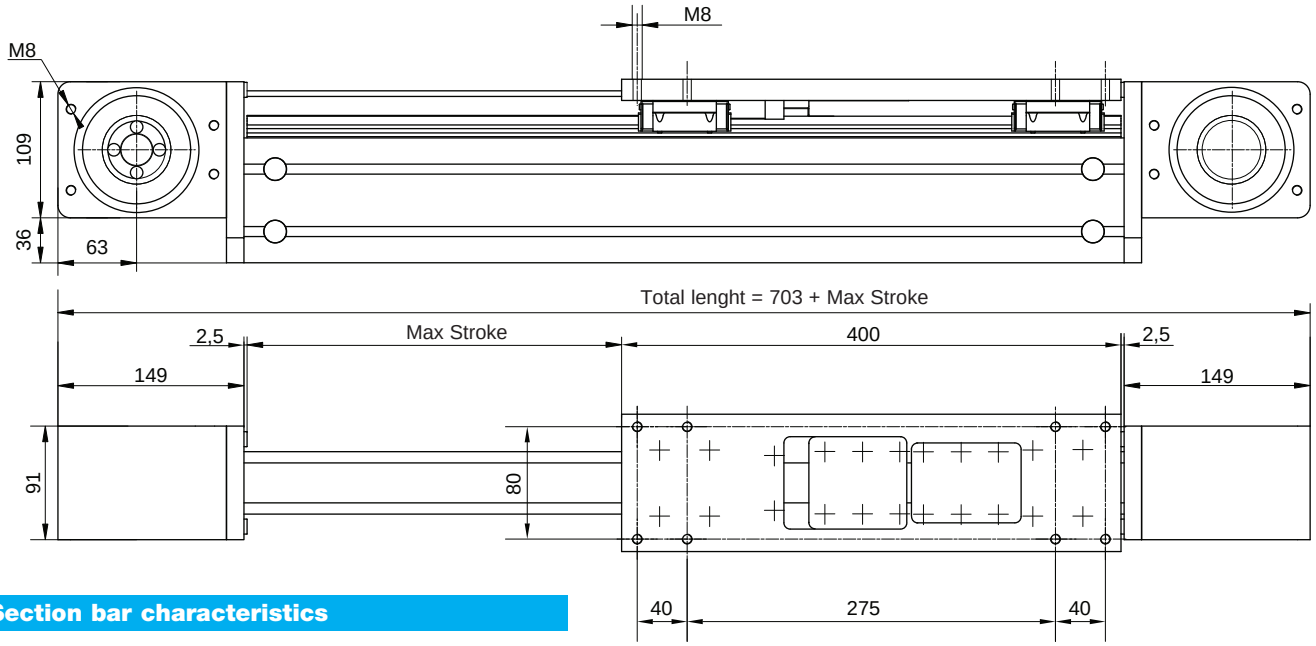
Constructive data		
Belt	50 AT 10	
Sliding	4 ball slides size 15	[mm]
Profile	M105	
Pulley Ø	92,3	[mm]
Linear displacement per revolution	290	[mm]

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]

KCH 100/150/200

GEAR MOTOR ASSEMBLY POSSIBLE FROM EACH SIDE



Section bar characteristics

Module	Mx	My	Weight [Kg/m]
KCH 100	203	54	4,6
KCH 150	30	60	7,1
KCH 200	40	80	9,0

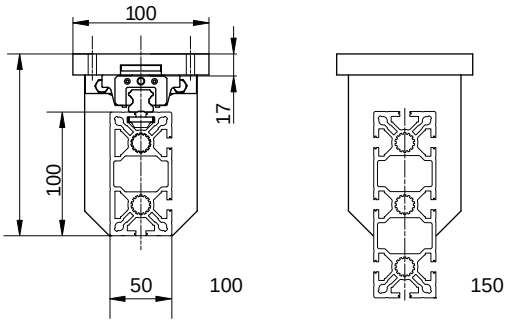
Shrink disc interface

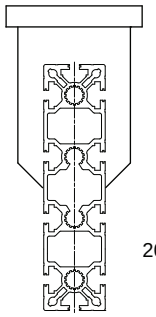
*Pulley hole (motor side = pipe side) Ø14 wrench 5x5 * [mm]

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)

Sizes available





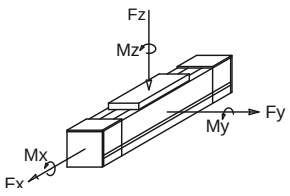
Performances	KCH /...	
Max stroke	5.600	[mm]
Max speed	4	[m/s]
Max acceleration	50	[m/s^2]
Repositioning accuracy	± 0,1*	[mm]
Loadless torque	-	[Nm]

*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

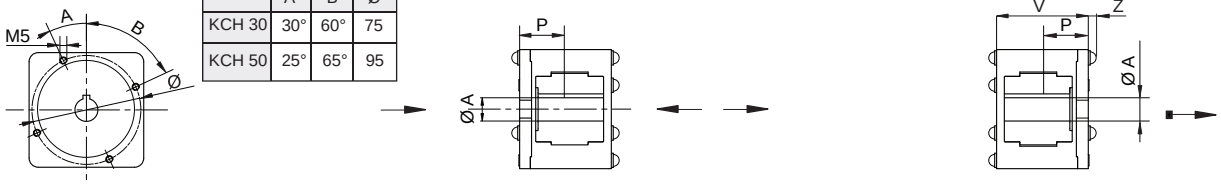
The motor connection is pre-engineered directly on the drive head by means of a removable flange, but integrated in the actual head. The drive shaft and/or the driven shaft are locked into the pulley by shrink-discs. (The gearbox can be easily removed without disassembling the head). Please see page ML-6 to identify the desired motor side (left or right); page ML-61 for shrink-disc and flange diameter and page ML-10 for the order code setting. Non-standard diameters are available upon request.

gearbox entry

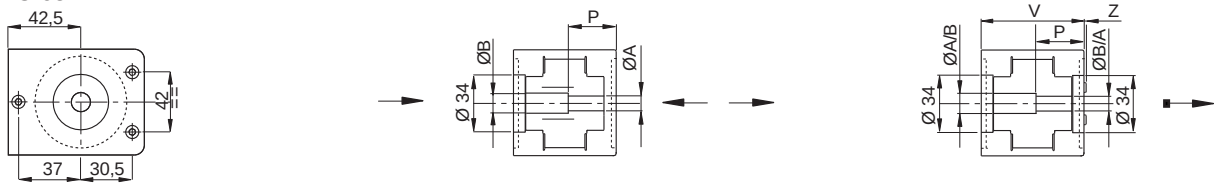
:input A
:input B
output B
output A
driven shaft side

Series KC 30-50

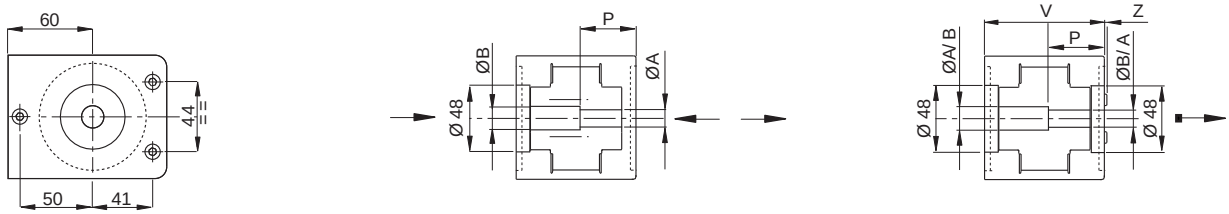
	A	B	Ø
KCH 30	30°	60°	75
KCH 50	25°	65°	95



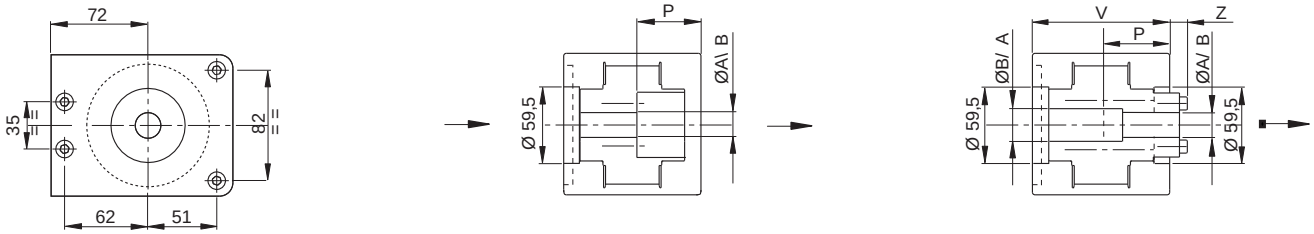
Series MC 65



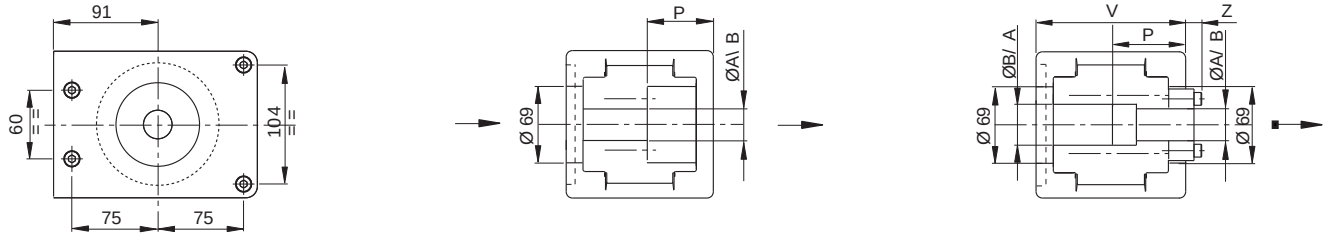
Serie MC 80



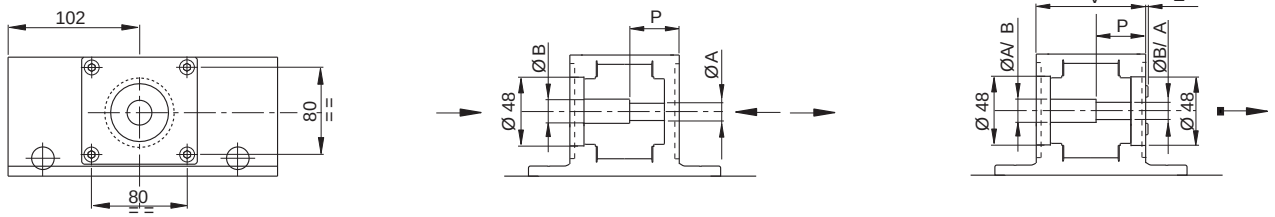
Series MC 105 - TC 180



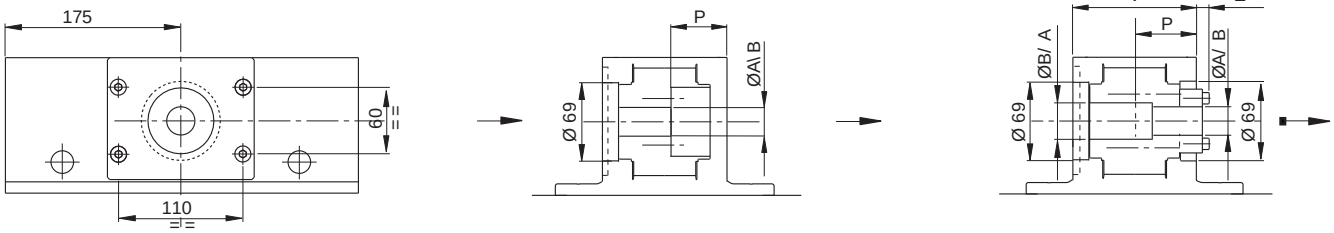
Series TC 170/200 - TC 220 - TC 280 - TC 360



Series ZC 60 - ZC 90



Series ZC 100 - ZCY 180 - ZC 170-220 - ZCE 170-220



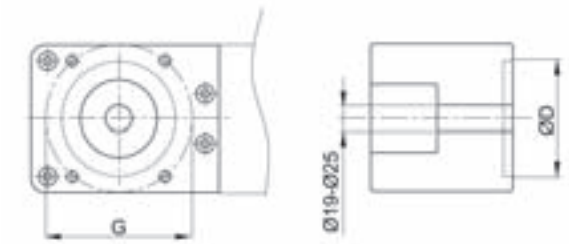
Module	A Ø [mm]	B Ø [mm]	V [mm]	P [mm]	Z [mm]
MC 65 - TC 100	12H7		67	34	0
		14H7	67	34	0
MC 80	16H7		80	52.4	1
		19H7	80	49.4	1
		20H7	80	49.4	1
MC 105 - TC 180	19H7		105	49	13.5
		25H7	105	51	8
TC 170 - TC 200	25H7		117	54.5	12.5
		32H7	117	57.5	7
TC 220 - TC 280 - TC 360	25H7		142	79.5	12.5
		32H7	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.

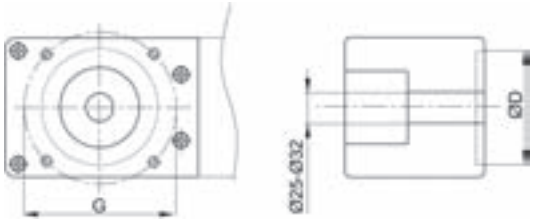
Adapter Flanges

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

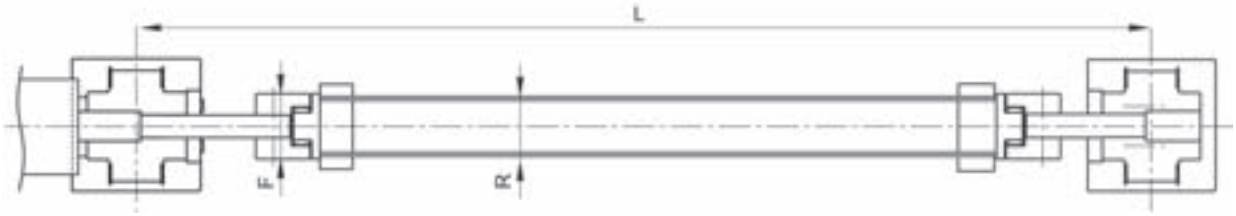
Linear module	Gearbox code			Size
Series		D	Ø	G
MC 65 KC 30-50	LP 050	35	12	44
	EP55	32	12	40
	MP053	32	12	40
MC 80-105 - ZC 60	MPTR080	50	19	65
	LP070	52	16	62
ZC 90	EP75 AA	40	14	52
MC 105 - TC-ZC 100 MC 105 - TC 180	MPTR105	70	25	85
	LP090	68	22	80
	EP90 TT	50	19	65
TC 170-360 ZC 170-220	MPTR130	80	32	110
	LP120	90	32	108
	EP120 TT	70	25	85

Connecting shafts for parallel modules

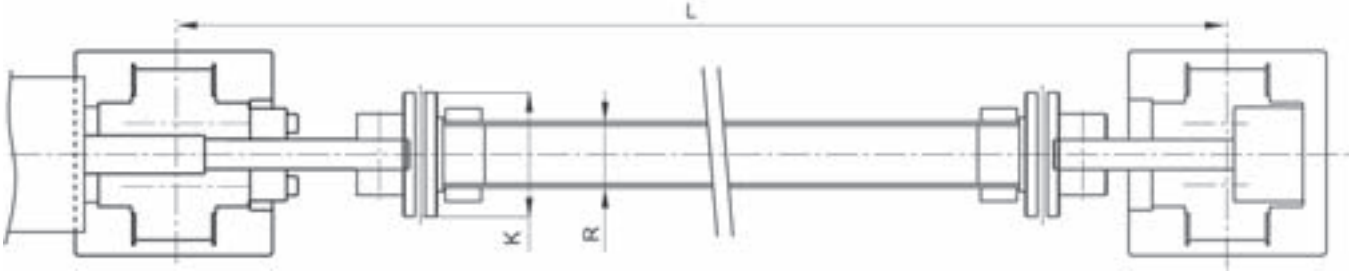
We can supply standard hollow shaft connections, according to your application requirements.
Please specify the type of module to be connected, together with speed, “L” centre-distance, working and peak torques, accuracy.
Some simplified solutions with solid shafts are available for low-speed applications 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.

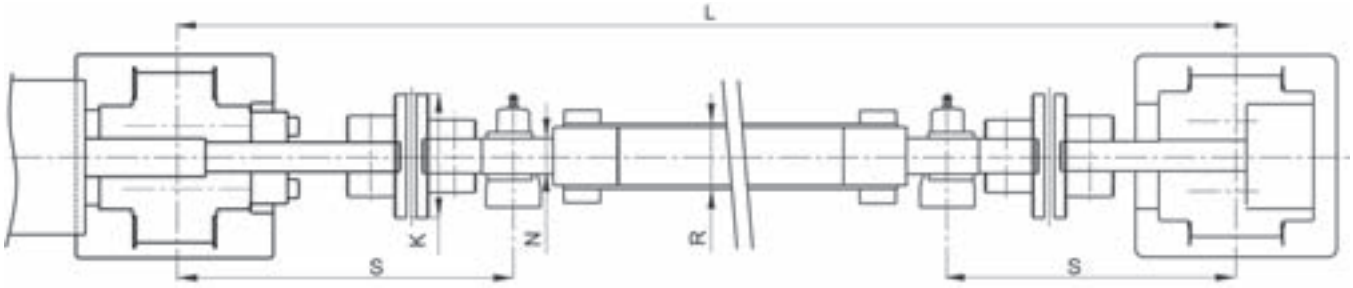
Type 1 - Elastic joint connecting shafts, normally suitable for low-speeds

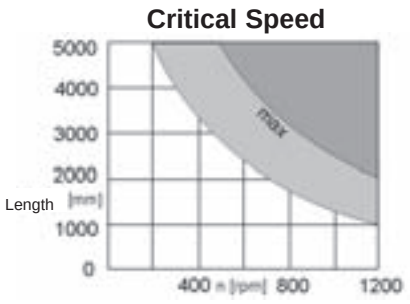


Type 2 - Stainless steel blade joint connecting shafts, suitable for backlash-free transmissions



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





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

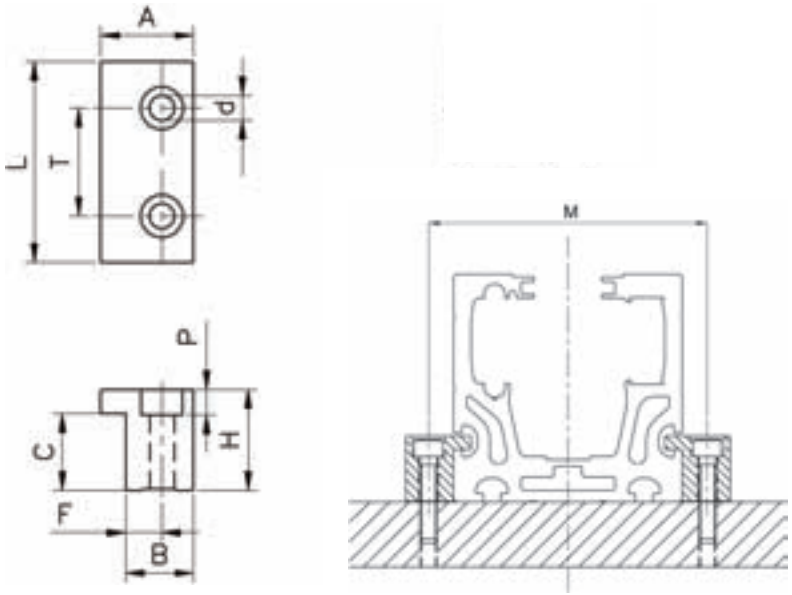
Roller	Cw [N]	C0w[N]	Fr amm.[N]	V max.
Ø30	5,000	3,000	1,350	7 m/s
Ø40	9,800	6,200	2,600	7 m/s
Ø52	15,800	10,500	4,400	6 m/s
Ø62	21,100	14,500	5,600	5 m/s

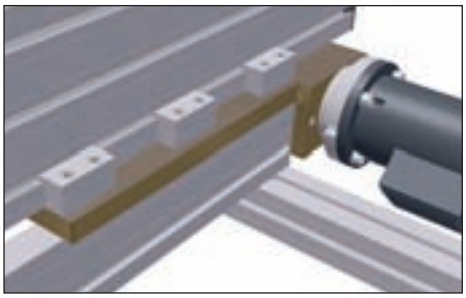
Max. load factors for hardened guides

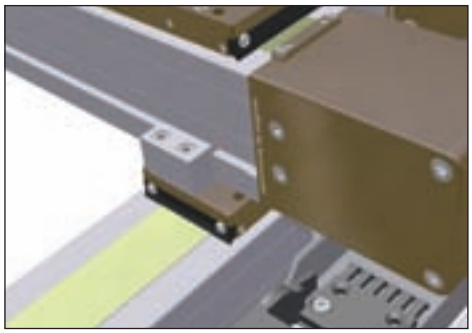
Roller	Cw [N]	C0w[N]	Fr amm.[N]	V max.
Ø30	5,000	3,000	400	2 m/s
Ø40	9,800	6,200	800	13 m/s
Ø52	15,800	10,500	1,400	2.5 m/s
Ø62	21,100	14,500	1,900	2 m/s

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





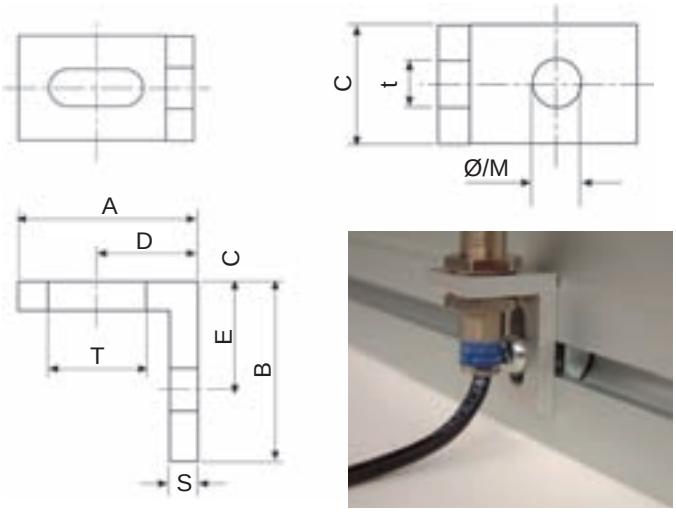


Material: aluminium alloy 6082

Module type	bxh	A	L	T	d	H	P	C	F	B	M	Code
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**
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**

Accessories and screws

Assembly brackets

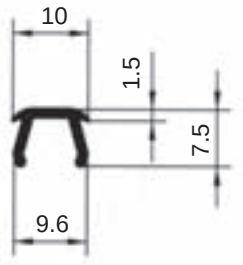


Material: natural, anodised anticorodal alloy.

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

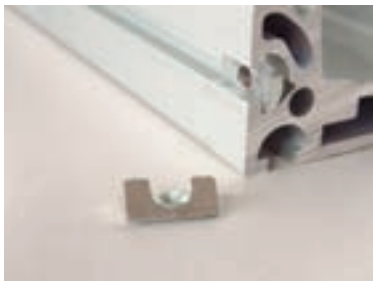


PVC filler strips, grey or black L=5,000 - 6,000 mm
for any longitudinal 8 mm slot

Suitable for series: **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**

Spring nut



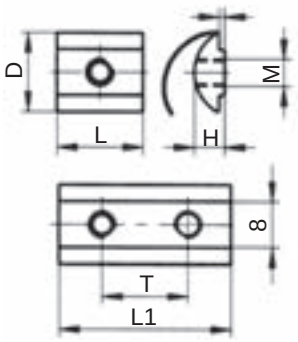


Plate suitable for every kind of module (8 mm slot).
Material: nut in galvanised steel welded to the harmonic steel spring. The B series can also be inserted through the slot.

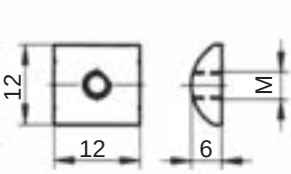
Code A: MC 80-105, ZC 60-90-100-170, TC 100-180
Code B: MC 65

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

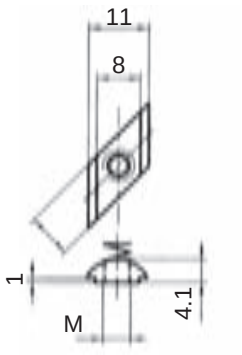


Material: galvanised steel.
Insert through the end of the profile.
Suitable for series:

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

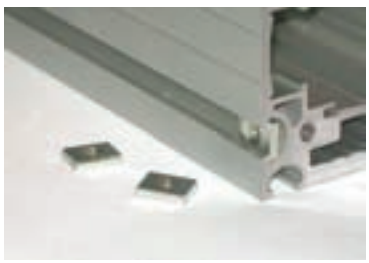


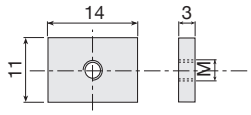
Material: galvanised steel, harmonic steel spring.
To be inserted through the slot.
Suitable for series:

MC 65

Thread	Code B
M3	BD31-30
M4	BD31-40
M5	BD31-50
M6	BD31-60

Simple Nut





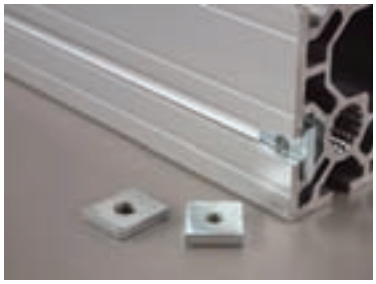
Materiale: galvanised steel.
To be inserted through the slot. Suitable for series:

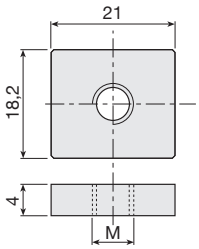
MC 65

Thread	Code B
M4	B32.40
M5	B32.50
M6	B32.60

Threaded nuts and plates

Flat nut





Material: galvanised steel.
Insert through the end of the profile.
Retaining spring upon request.

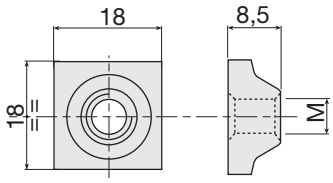
TC-ZC 100, TC 180, ZCY 180

Thread	Code
M4	**A32-40**
M5	**A32-50**
M6	**A32-60**
M8	**A32-80**
Molla	**211.1061**

Semi-rounded threaded inserts with spring

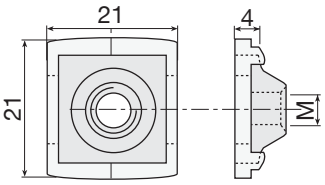
Threaded plate for base profile 45, 50 and 60. Material: galvanised steel.
Important: to be inserted through the
longitudinal slots before assembling.

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.



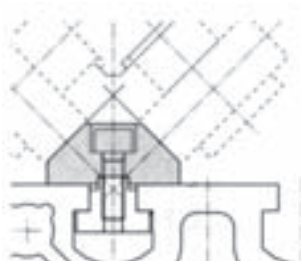
Spring	Code
Suitable for all inserts 18x18	**101.0732**

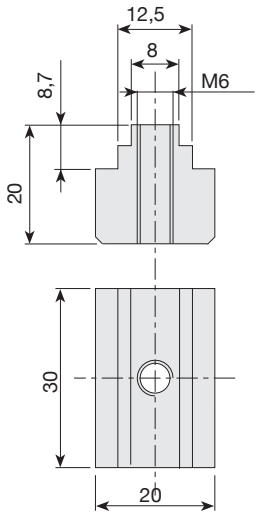
Nuts for steel guide rails

Material: galvanised steel.

Code 209.1855

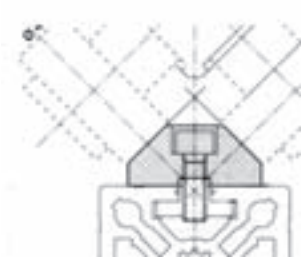
Alignment nuts.
V-shaped guide rail: 35x16
Profile with slot. 12.5 mm.
Series: **TC 170-200-220-280-360 e ZC 170-220**

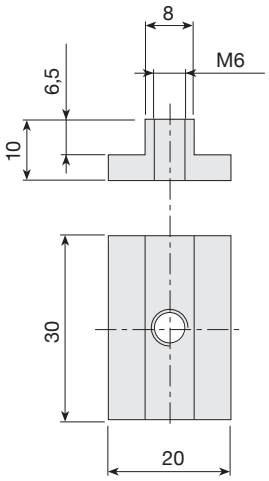




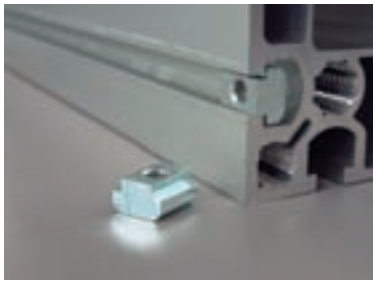
Code 209.0298

Alignment nuts.
V-shaped guide rail: 35x16
Profile with slot 8 mm.
Series: **TC-ZC 100, TC 180**

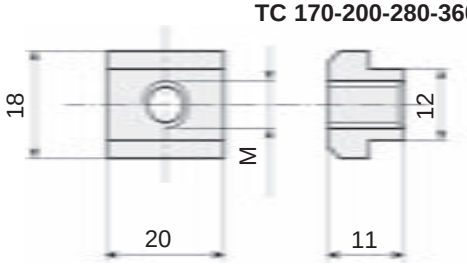




Alignment nut for slot 12.5 mm



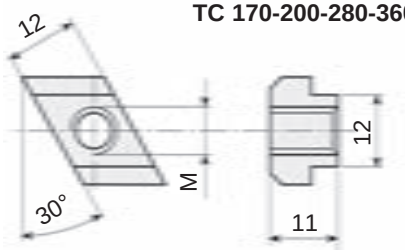
Material: galvanised steel. Suitable for series:
TC 170-200-280-360 and ZC 170-220



Thread	Code
M5	215.1768
M6	215.1769
M8	215.1770
M10	215.2124

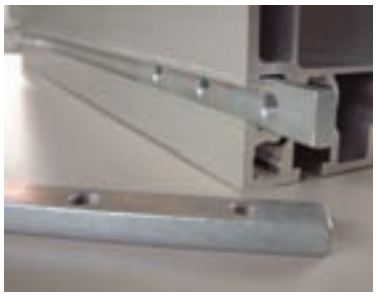
Alignment nut for slot 12.5 mm front insertable

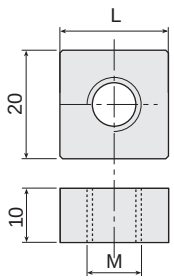
Material: galvanised steel. Suitable for series:
TC 170-200-280-360 and ZC 170-220

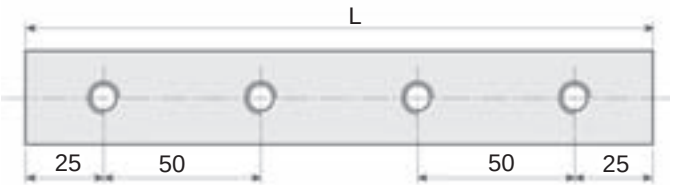


Thread	Code
M5	215.1771
M6	215.1772
M8	215.1773
M10	215.2125

Threaded nuts and plates







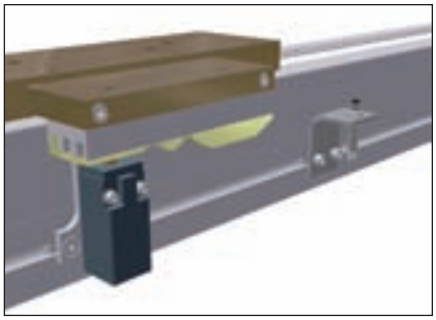
M12 (CH19) hexagonal-head screws can be used as stud bolts in profiles with 12.5 mm slots.

Material: galvanised steel. Suitable for series:
TC 170-200-220-280-360 and ZC 170-220

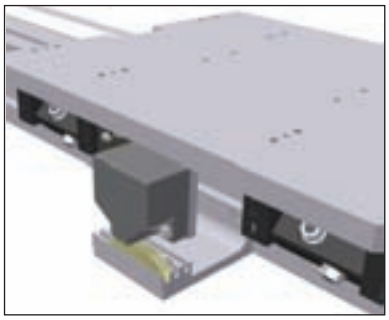
Thread	Type	L	Code
M10	1-hole plate	40	215.0477
M12	1-hole plate	40	209.1281
M10	1-hole plate	20	209.1277
M10	2-holes plate*	80	209.1776
M10	3-holes plate*	150	209.1777
M10	4-holes plate*	200	209.1778
M10	5-holes plate*	250	209.1779
M10	6-holes plate*	300	209.1780
M10	7-holes plate*	350	209.1781

* 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.

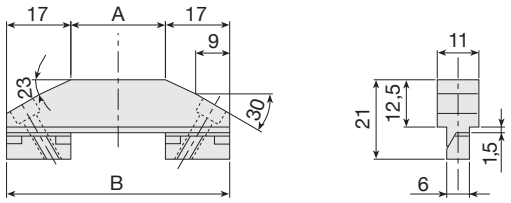
Mechanical and inductive micro-switches on MC series.

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

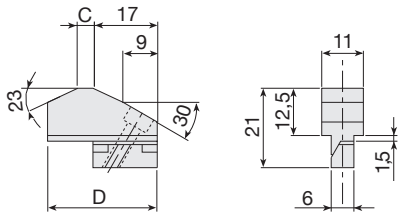
Cams in accordance with DIN 69639 except when marked “#”.
Material: steel with hardened and ground surface.



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

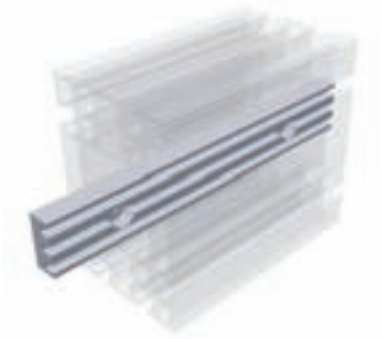
Cams in accordance with DIN 69639
Material: steel with hardened and ground surface.

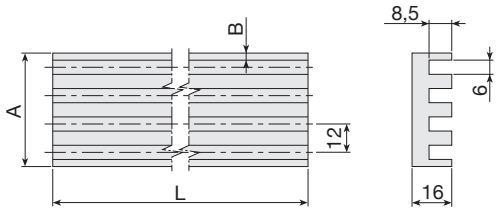


C	D	Code
0	25	**211.2128**
4	29	**211.2129**
10	35	**211.2130**
16	41	**211.2131**

Cam-holder guides

Cams in accordance with DIN 6963
Materiale: lega di alluminio 6060 anodizzato

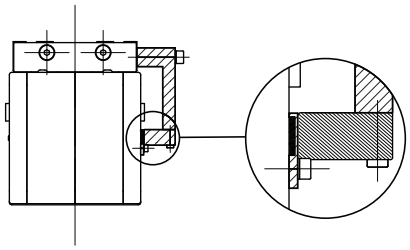




n°	B	A	L	Code
3	3	36	2,000	**202.2138**
4	5.5	53	3,000	**202.2139**
6	5.5	77	3,000	**202.2140**
8	5.5	101	3,000	**202.2141**

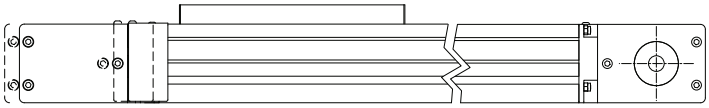
Reader system with magnetic scale and sensor

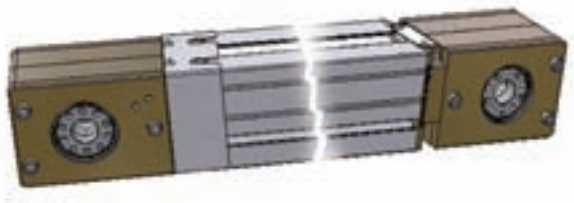
The magnetic scale is applied to the body of the module using a supporting and protective profile.
Precision of between ± 0.015 and ± 0.05 mm
Max speed = 4 ÷ 10 m/s (depending on the type)



Twin drive head

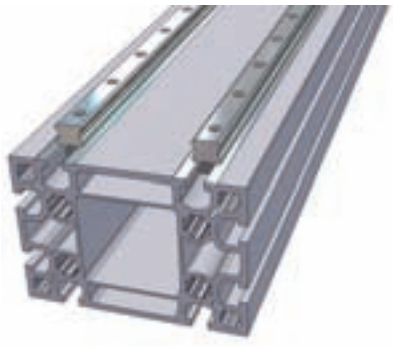
Version with drive head on both sides.





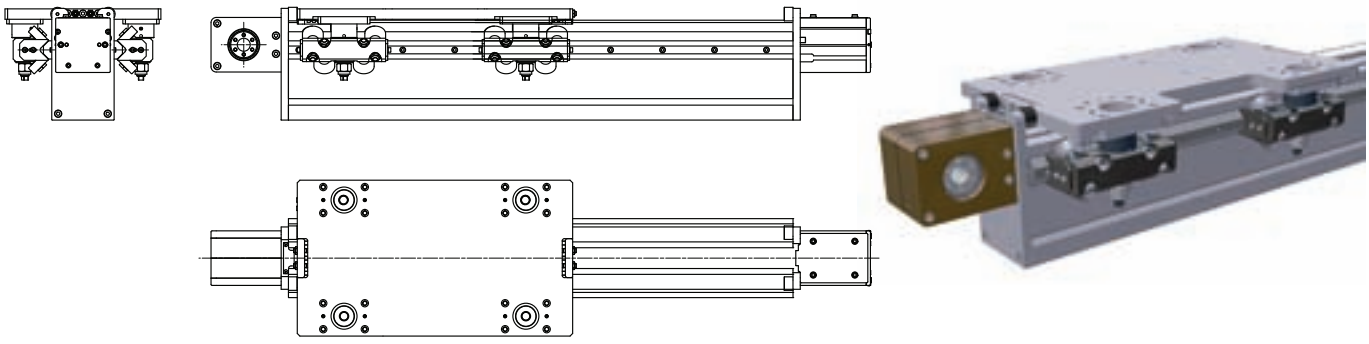
Precision profile machining

Profiles can be machined along their entire length, to provide the required precision or according to application specifications.



Rotatable load-bearing profile to fully exploit the moment of inertia

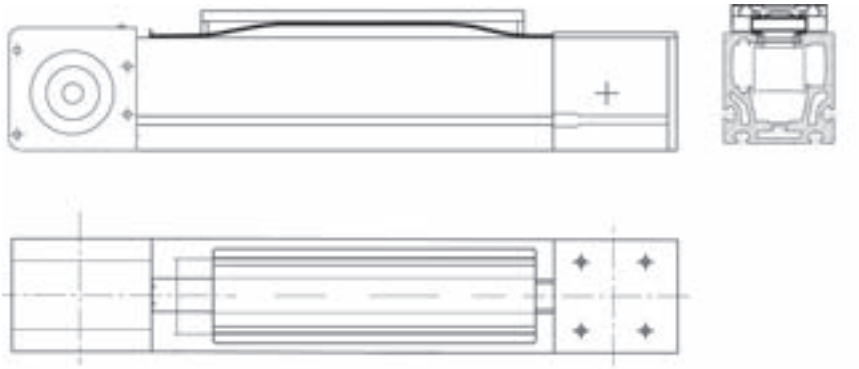
The load-bearing profile can be rotated in order to change the overall dimensions, or to fully exploit the moment of inertia.

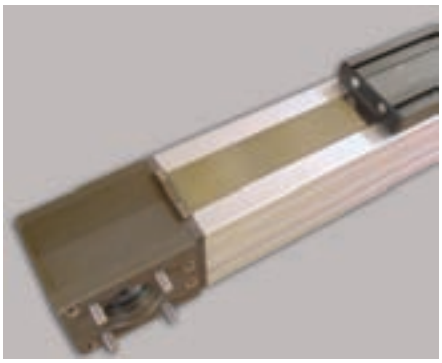


Special applications

Belt protection for series MC - 80 - 105

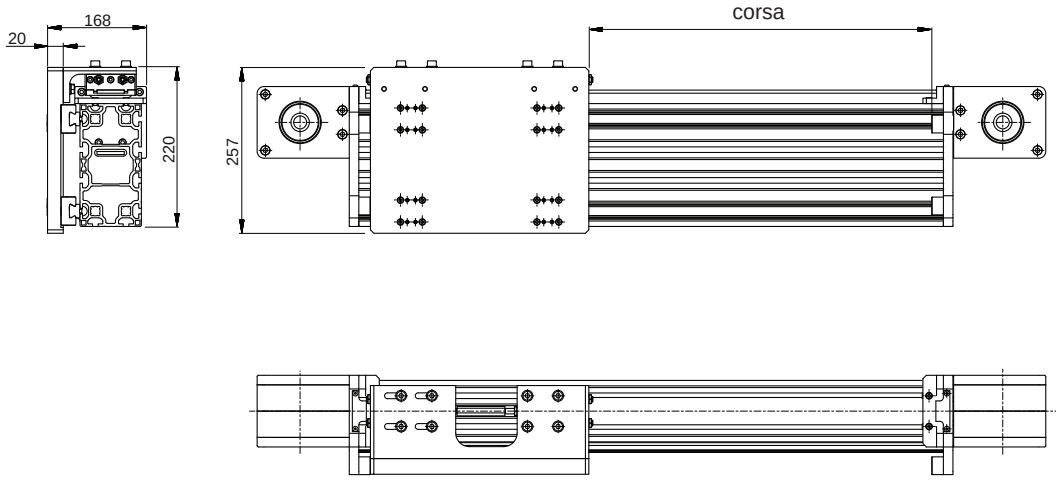
Guard system consisting of a magnetic stainless steel foil to protect the belt from dust and external agents (code: **LI**), which is attached to the profile.
NB: Avoid the use of a metallic band in the presence of ferrous filings. Optional.





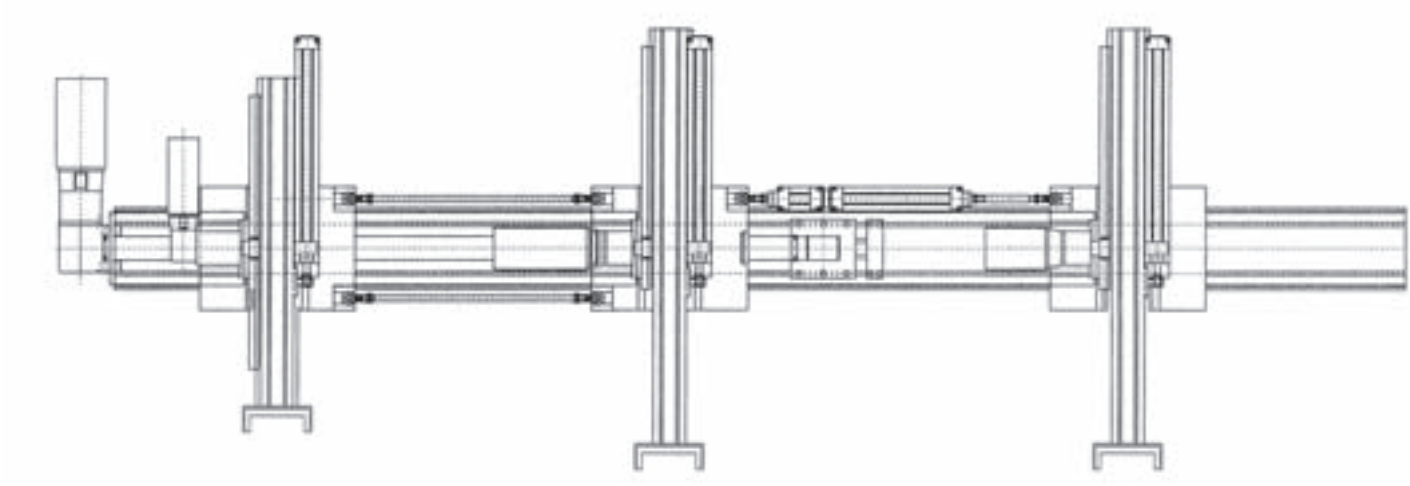
TC series of linear modules with pulley axis turned at 90°

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.



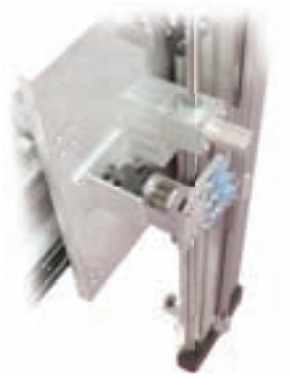
TC multi-carriage linear modules with intermediate belt transmission

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.

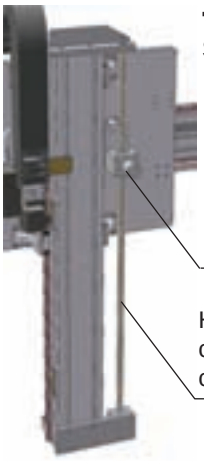


Anti-drop device with pneumatic brake system

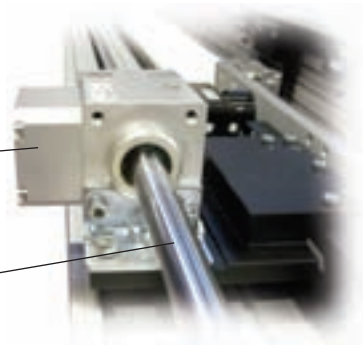
Ant-droop devices, available in a range of sizes, are supplied according to the type of application. For instance, they can act as a mechanical stop to block the free-falling load at any stroke point, or as a lock in static conditions at any position. Two-way blocking occurs following an unexpected pressure drop. A mechanical 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	/ ...

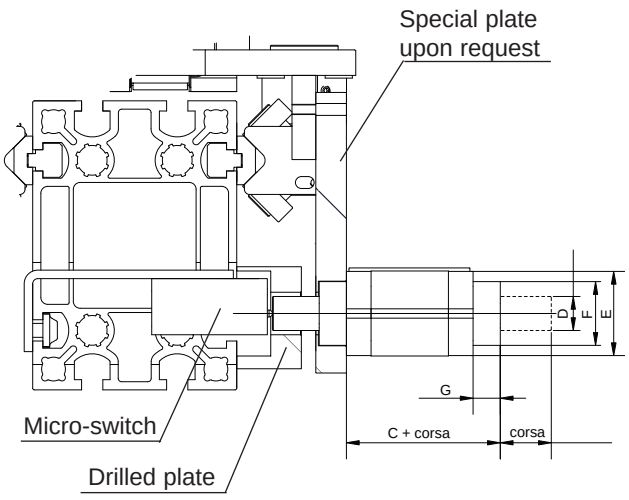
Emergency brake for free-falling load.

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	/ ...

Lock-pin (stopper cylinders)

Lock-pin devices, available in two sizes, suitable to block the vertical axes in position during horizontal movements. (e.g.: maintenance). The 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

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