The Linear Actuator Systems

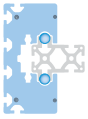
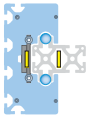
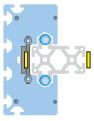
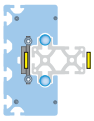
All *Paletti* linear motion systems are comprised of extruded aluminum profile track and carriage systems. Timing belts and ball bearing screws provide the transmission with a combination of electric motor and gearbox units. Pneumatic cylinders are also used to provide linear motion.

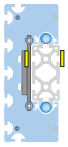
The *Paletti* modular approach allows for simple and complex systems to be manufactured to suit most customer and designer requirements. *Paletti* supplies individual linear motion components, single built actuators or complex multi axis systems.

Linear Actuators 16 roller track 16 with timing belt
roller track 16
with trapezoidal or ball screw spindle
roller track 16 with omega drive
Linear Actuators 25 roller track 25 with timing belt
Internal Guidance 120 x 120 linear ball slide with ball screw
linear ball slide with timing belt
Internal Guidance 80 x 85 linear ball slide with timing belt
C-Tracks roller track with plastic rollers
and timing belt
roller track with plastic rollers
and omega drive
Recirculating Ball Slides with plastic balls
Glider Slides with plastic gliders
Internal Guidances 80 / 90 single guidance
double guidance
Internal Guidances
120 x 120 AT 10 / 75 with plastic rollers
with steel rollers
2 Axis Systems
3 Axis Systems
Multi Axis Systems

Linear Systems 16



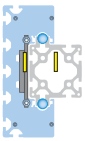
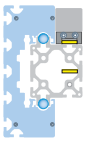
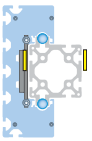
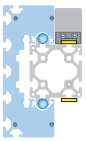
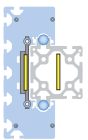
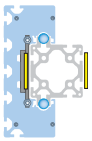
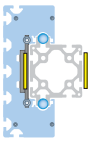
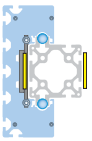
Pulley Assembly Tensioner Timing Belt	without – –	40 x 40 Internal AT 10/22	40 x 40 External –	40 x 80 Internal AT 10/22	40 x 80 External AT 10/22	80 x 90 Internal AT 10/50
F 16 40 x 80/40						
w/l 160/140	SL5100N	SL5000N	–	SL5001N	–	SL5002N
w/l 160/280	SL5110N	SL5005N	–	SL5004N	–	SL5003N
Special Length	SL5115N	SL5008N	–	SL5006N	–	SL5007N

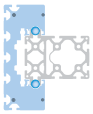
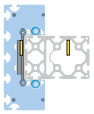
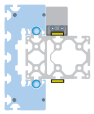
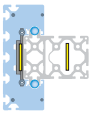
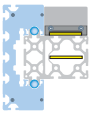
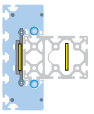
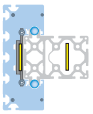
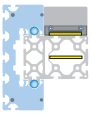
F 16 40 x 80/80			
w/l 200/140	SL5120N	SL5020N	–
w/l 200/200	SL5125N	SL5025N	–
w/l 200/280	SL5130N	SL5030N	–
Special Length	SL5135N	SL5031N	–

Linear Systems 16






Pulley Assembly Tensioner Timing Belt	without – –	40 x 40 Internal AT 10/22	40 x 40 External –	40 x 80 Internal AT 10/22	40 x 80 External AT 10/22	80 x 90 Internal AT 10/50	80 x 80 Internal AT 10/50	80 x 80 External AT 10/50	80 x 100 Internal AT 10/50	80 x 100 External AT 10/50	80 x 120 Internal AT 10/50	80 x 120 External AT 10/50
F 16 80 x 80												
w/l 200/140	SL5145N	SL5035N	–	SL5210N	–	SL5071N	SL5070N	–	SL5085N	–	SL5220N	–
w/l 200/200	SL5150N	SL5040N	SL5202N	SL5212N	SL5050N	SL5076N	SL5075N	–	SL5090N	–	SL5222N	–
w/l 200/280	SL5155N	SL5045N	SL5204N	SL5214N	SL5055N	SL5081N	SL5080N	–	SL5095N	–	SL5224N	–
w/l 200/200 sl	SL5160N	SL5047N	–	SL5216N	–	–	SL5082N	–	SL5096N	–	SL5226N	–
Special Length	SL5165N	SL5048N	SL5208N	SL5218N	SL5058N	–	SL5084N	–	SL5098N	–	SL5228N	–

F 16 80 x 120 8N												
w/l 200/140	SL5170N	–	–	SL5230N	–	–	SL6000N	–	SL5250N	–	SL6015N	–
w/l 200/200	SL5175N	–	–	SL5232N	SL5242N	–	SL6005N	SL5060N	SL5252N	SL5262N	SL6020N	SL6072N
w/l 200/280	SL5180N	–	–	SL5234N	SL5244N	–	SL6010N	SL5065N	SL5254N	SL5264N	SL6025N	SL6074N
w/l 200/200 SL	SL5185N	–	–	SL5236N	–	–	SL6012N	–	SL5256N	–	SL6066N	–
Special Length	SL5190N	–	–	SL5238N	SL5248N	–	SL6014N	SL5068N	SL5258N	SL5268N	SL6068N	SL6078N

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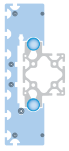
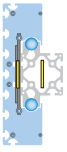
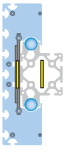
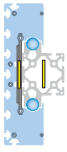
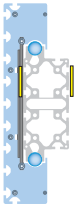
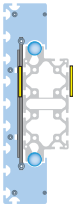
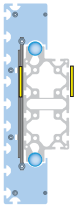
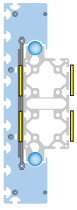
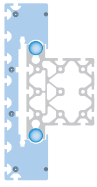
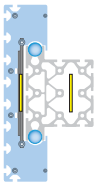
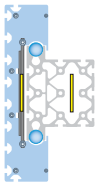
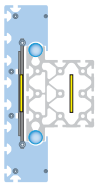
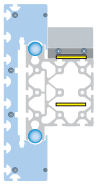
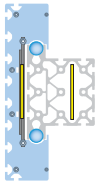
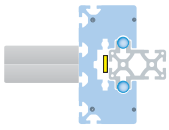
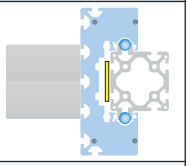
P. Assembly Tensioner Timing Belt	without – –	80 x 80 Internal AT 10 / 50	80 x 100 Internal AT 10 / 50	80 x 120 Internal AT 10 / 50	80 x 120 External AT 10 / 50	80 x 160 Internal 2 x AT 10 / 50	120 x 120 - 75 Internal AT 10 / 75
F 25 80 x 80							
w / l 280 / 280	SL5500N	SL5504N	SL5508N	SL5512N	–	–	–
Special Length	SL5502N	SL5506N	SL5510N	SL5514N	–	–	–

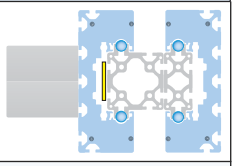
F 25 80 x 160							
w / l 360 / 360	SL5520N	SL5524N	SL5528N	SL5532N	–	SL5536N	–
Special Length	SL5522N	SL5526N	SL5530N	SL5534N	–	SL5538N	–

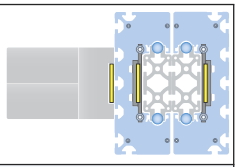
F 25 120 x 120							
w / l 320 / 320	SL5550N	SL5554N	SL5558N	SL5566N	SL5570N	–	SL5574N
Special Length	SL5552N	SL5556N	SL5560N	SL5568N	SL5572N	–	SL5576N

Linear Systems 16 with Omega drive

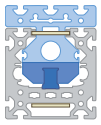
Pulley Assembly Timing Belt	Omega Drive 22 AT 10 / 22
F 16 40 x 80 / 40	
w / l 160 / 400	SL5018N
Special Length	SL5019N

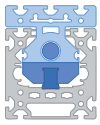
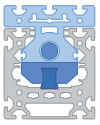
Pulley Assembly Timing Belt	Omega Drive 50 AT 10 / 50
F 16 80 x 80 / G 50	
w / l 200 / 400	SL5229N
Special Length	SL5231N

Pulley Assembly Timing Belt	Omega Drive 50 AT 10 / 50
F 16 80 x 80 + F 16 40 x 80 / 80	
w / l 200 / 400	SL5227N
Special Length	SL5233N

F 16 40 x 80 / 80 + F 16 40 x 80 / 80 / G 50 *Telescope Axis*	
w / l 200 / 400	SL5400N

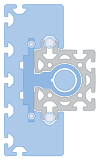
Internal Guidances

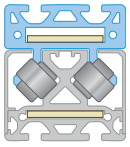
P. Assembly Belt / Spindle	40 x 40 AT 10 / 22	120 x 120 AT 10 / 50	Ball Screw 20 x 5	 20 x 20
F 120 x 120				
w / l 120 / 120	–	SL4050N	–	–
Special Length	–	SL4055N	–	–

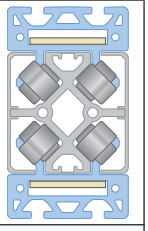
F 120 x 120				
w / l 120 / 225	–	–	SL4063N	SL4060N
Special Length	–	–	SL4064N	SL4061N

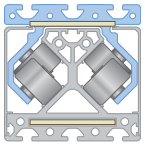
F 80 x 85	
w / l 80 / 200	SL4070N
Special Length	SL4075N

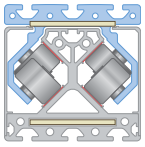
Ball Screw / Trapezoidal Screw

Shaft	Ball Screw 20 x 5	 20 x 20	Trapezoidal Screw
F 16 80 x 80 open			
w / l 200 / 140	SL7000N	SL7002N	SL7003N
w / l 160 / 200	SL7005N	SL7007N	SL7008N
w / l 160 / 280	SL7010N	SL7012N	SL7013N
w / l 160 / 200 SL	SL7015N	SL7017N	SL7018N
Special Length	SL7020N	SL7022N	SL7023N

P. Assembly Timing Belt	80 x 90 AT 10 / 50
F 80 / 90	
w / l 80 / 200	SL5300N
Single Guidance	

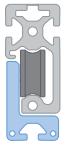
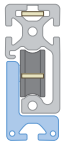
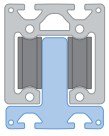
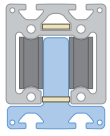
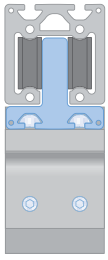
P. Assembly Timing Belt	80 x 80 AT 10 / 50
F 80 / 90 *double*	
w / l 80 / 200	SL5350N
Double Guidance	

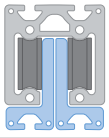
P. Assembly Timing Belt	120 x 120 - 75 AT 10 / 75
120 x 120 **AT 10 / 75** *plastic rollers*	
w / l 120 / 200	SL5360N
Single Guidance	

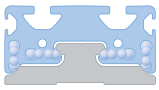
P. Assembly Timing Belt	120 x 120 - 75 AT 10 / 75
120 x 120 **AT 10 / 75** *steel rollers*	
w / l 120 / 200	SL5370N
Single Guidance	

C-Tracks




P. Assembly Timing Belt	without –	C 40 / 57 AT 3 / 10	C 40 / 100 AT 5 / 16	C 80 / 100 AT 10 / 22	C-Omega Dr. AT 5 / 16
C 30 / 43					
w / l 140 / 8	SL4000N	–	–	–	–
w / l 280 / 8	SL4005N	–	–	–	–
w / l 120 / 225	SL4006N	–	–	–	–
Special Length	SL4008N	–	–	–	–
C 40 / 57					
w / l 140 / 8	SL4009N	SL4010N	–	–	–
w / l 280 / 8	SL4014N	SL4015N	–	–	–
Special Length	SL4016N	SL4017N	–	–	–
C 40 / 100					
w / l 140 / 3	SL4019N	–	SL4020N	–	–
w / l 280 / 4	SL4024N	–	SL4025N	–	–
Special Length	SL4026N	–	SL4027N	–	–
C 80 / 100					
w / l 140 / 6	SL4029N	–	–	SL4030N	–
w / l 280 / 8	SL4034N	–	–	SL4035N	–
Special Length	SL4036N	–	–	SL4037N	SL4038N

C 80 / 100	
w / l 140 / 3	SL4040N
w / l 280 / 4	SL4045N
Special Length	SL4046N

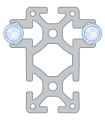
Recirculating Ball Slides	
w / l 80	SL4080N
w / l 120	SL4082N
w / l 160	SL4084N
Special Length	SL4086N

Glider Slides	
w / l 80	SL4090N
w / l 120	SL4092N
w / l 160	SL4094N
Special Length	SL4096N

Track Profiles 16

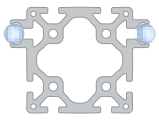
The *Paletti* actuator system 16 is based on several types of track profiles and carriages. The carriages run on 16 mm diameter steel rails that are pressed into the track profiles. Specific loading, speeds and acceleration are catered to by using a combination of drive units, timing belt widths and carriage lengths that meet the needs of most designers.

F 16 40 x 40

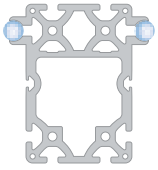


F 16 40 x 80 / 40

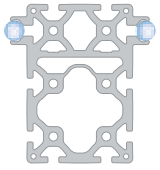
F 16 40 x 80 / 80



F 16 80 x 80



F 16 80 x 120



F 16 80 x 120 8N

The ground steel rails are pressed into the profile slot on each side of the track profile and forms a rigid and stable unit.

The guide rails in highly dynamic systems are doweled to the profile or fixed with plates at the end of the profile. This procedure prevents the rails from moving in the profile.

Carriage Profiles And Carriages 16

The carriages are made from one extruded profile and come in several standard sizes. Specific carriage lengths of up to 2300 mm long are manufactured to meet the needs of each specific application. For high load system the carriages are manufactured with additional rollers or as a combination of shaped and flat rollers. Should rollers need to be changed, standard carriages are made with service pockets so the rollers can be serviced or replaced with the carriage in place. The rollers are adjusted via two excentric axles and fixed using a double locking mechanism of a large locknut retained in position by a grub screw. A Wiper and Lubrication System lubricates the rollers and guide rails with felt pads which retain lubricant. For high dynamic loads we recommend the use of our external lubricant. For carriages with short strokes, lubrication of the rollers may not be guaranteed and in such cases service pockets with internal felt pads to wipe and lubricate the system are required. The timing belt is attached to the carriage by internal or external timing belt tensioners.

16 / 160 / 60 / 2 / S

16 / 200 / 60 / 2 / S

16 / 200 / 60 / 2 sl

Pulley Assemblies

The pulley assemblies are manufactured for timing belts AT 10 / 22 and AT 10 / 50. The motor is attached using standard motor attachment flange plates or plates to suit customer requirements. The bore of the pulley assembly is either plain or comes with a shrunken steel insert to suit customer drive requirements. Motors can be either direct drive or via flexible couplings and timing belt gearing can also be provided.

40 / 40

40 / 40 heavy duty

40 / 80

80 / 80

80 / 100

80 / 120

Trapezoidal / Ball Screw Transmission

Linear actuator system 16 using track profile 80 x 80 open have either trapezoidal or recirculating ball screw transmissions. Screw diameters and pitches of 20 x 20 or 20 x 5 are standard. Customer specific spindles with strengthened bearings are available on request.

Linear Actuators 16 with Omega drive

The omega drive is manufactured for timing belts AT 10 / 22 and AT 10 / 50. The carriage becomes the fixed part and motion is transfered to the profile axis. Standard ranges of omega drives are either attached to carriages or stand-alone for special customer applications.

Omega Drive AT 10 / 22

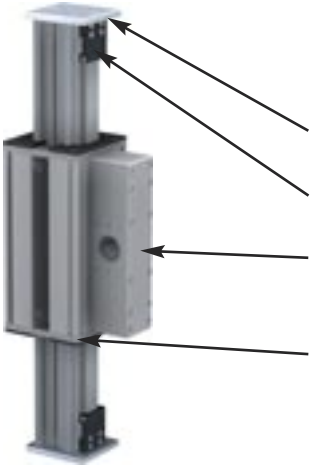
Omega Drive 22
with carriage

Omega Drive
AT 10 / 50

Omega Drive 50
with carriage

Omega Drive 50 closed

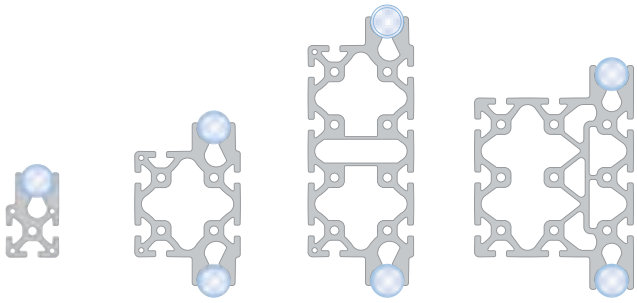
Telescope Axis 16
40 x 80 + 40 x 80 / 200 / G 50



Linear Actuator 16
80 x 80 + 40 x 80 / 80 / G 50

Track Profiles 25

The *Paletti* actuator system 25 is based on several types of track profiles and carriages. The carriages run on 25 mm diameter steel rails that are pressed into the track profiles. Specific loading, speeds and acceleration are catered to by using a combination of drive units, timing belt widths and carriage lengths that meet the needs of most designers



F 25 40 x 40 | F 25 80 x 80 | F 25 80 x 160 | F 25 120 x 120

The ground steel rails are pressed into the profile slot on each side of the track profile and form a rigid stable unit. Within highly dynamic systems they are doweled to the profile.

Carriages 25

The *Paletti* carriages 25 come in several standard sizes. Specific carriage lengths of up to 700 mm long are manufactured to meet the needs of each specific application. For high load system the carriages are manufactured with additional rollers or as a combination of shaped and flat rollers. Should rollers need to be changed, standard carriages are made with service pockets so the rollers can be serviced or replaced with the carriage in place. The rollers are adjusted via two excentric axles and fixed using a double locking mechanism of a large lock nut retained in position by a grub screw. A Wiper and Lubrication System lubricates the rollers and guide rails with felt pads which retain lubricant. For carriages with short strokes, lubrication of the rollers may not be guaranteed and in such cases service pockets with internal felt pads to wipe and lubricate the system are required. The timing belt is attached to the carriage by internal or external timing belt tensioners.

25 / 280 / 280 / 4 / S | 25 / 320 / 320 / 4 / S | 25 / 360 / 360 / 4 / S

Pulley Assemblies

The pulley assemblies are manufactured for timing belts AT 10 / 50 and AT 10 / 75. The motor is attached using standard motor attachment flange plates or plates to suit customer requirements. The bore of the pulley assembly is either plain or comes with a shrunken steel insert to suit customer drive requirements. Motors can be either direct drive or via flexible couplings and timing belt gearing can also be provided.

80 / 80

80 / 100

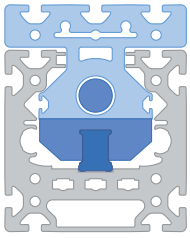
120 / 120 - 75

80 / 120

80 / 160

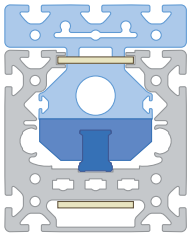
Internally Guided Actuator 120 x 120
Ball Screw With Recirculating Steel Ball Guide Rail

The actuator 120 x 120 is guided by means of an internal 25 mm recirculating steel ball guide rail. The unit is driven via ball screw and is maintenance free in operation. In order to guard the internal steel guide rail against contaminants, *Paletti* incorporates a textile cover strip in the actuator.



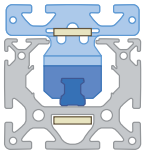
Internally Guided Actuator 120 x 120
Belt Drive With Recirculating Steel Ball Guide Rail

The belt driven actuator 120 x 120 is guided by means of an internal 25 mm re-circulating steel ball guide rail. A 50 mm wide AT 10 timing belt is used in combination with the pulley assembly 80 / 120 to drive the unit. The belt also acts as a cover in order to guard the internal steel guide rail against contaminants.



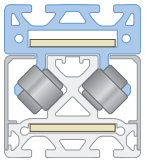
Internally Guided Actuator 80 x 85
Belt Drive With Recirculating Steel Ball Guide Rail

The belt driven actuator 80 x 85 is guided by means of an internal 15 mm recirculating steel ball guide rail. A 22 mm wide AT 10 tooth belt is used in combination with the pulley assembly 40 / 40 to drive the unit. The belt also acts as a cover in order to guard the internal steel guide rail against contaminants.



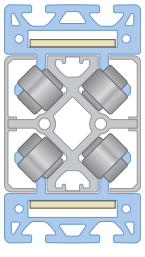
Internally Guided Actuator 80 / 90
Single Axis Actuator

The internally guided actuator 80 / 90 can be mounted and operated at any angle due to its unique roller guided design. This unit is maintenance free due to its engineered plastic rollers. A 50 mm wide AT 10 timing belt is used in combination with the pulley assembly 80 / 90 to drive the unit and also acts as a cover.



Internally Guided Actuator 80 / 90
Double Axis Acutator

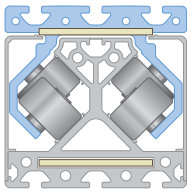
The internally guided actuator 80 / 90 can be mounted and operated at any angle due to its unique roller guided design, and allows two carriages to be driven in opposite direction to one another. This unit is maintenance free due to its engineered plastic rollers. A 50 mm wide AT 10 timing belt is used in combination with the pulley assembly 80 / 90 to drive the unit and also acts as a cover.



Internally Guided Actuator 120 x 120

Single Axis Actuator With Plastic Rollers

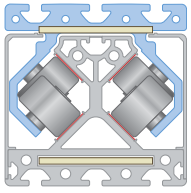
The internally guided actuator 120 x 120 AT 10 / 75 can be mounted and operated at any angle due to its unique roller guided design. This unit is maintenance free due to its engineered plastic rollers. A 75 mm wide AT 10 timing belt is used in combination with the tooth belt guide 120 / 120 - 75 to drive the unit and also acts as a cover.



Internally Guided Actuator 120 x 120

Single Axis Actuator With Steel Rollers

The internally guided actuator 120 x 120 AT 10 / 75 can be mounted and operated at any angle due to its unique roller guided design, and is maintenance free. This unit has larger load carrying capacity than the plastic roller version due to use of steel rollers riding on a steel strip in the unit. A 75 mm wide AT10 timing belt is used in combination with the timing belt guide 120 / 120 - 75 to drive the unit and also acts as a cover.



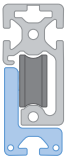
C-Tracks

With Plastic Rollers And Timing Belt

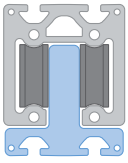
The *Paletti* C-track linear actuator system is based on a large selection of track and carriage profiles. Plastic rollers made from POM run directly in the aluminum profile. Pulley assemblies are selected based upon the track profiles which are used, and are tensioned internally to the carriage. C-track actuators are especially suited for rolling door applications.

C 30 x 43

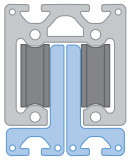
C 40 x 57



C 40 x 100



C 80 x 100



C 80 x 100
Double Guidance

C-Pulley Assemblies

The C-pulley assemblies are used together with AT 3 – 10 mm wide, AT 5 – 16 mm wide and AT 10 – 22 mm wide timing belts. The motor connection is made to the customer's requirements, and *Paletti* will also provide the adapter plates and couplings if desired.

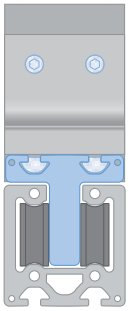
C 40 / 57

C 40 / 100

C 80 / 100

Omega Drive C-Type

The Omega drive is manufactured for the *Paletti* C 80 / 100 linear actuator system. The drive is transferred from the end of the actuator to the carriage which is now fixed, thereby transferring movement to the track profile.



Recirculating Ball Slide

The *Paletti* recirculating ball slide system uses an aluminum guidance rail and recirculating ball carriage that houses plastic ball bearings. The ball bearings go around in four guidance bores and are returned back through the carriage by plastic end caps attached to each end of the carriage.

Glider Slide

The *Paletti* glider slide guidance system uses an aluminum guidance rail and carriage that has four open round channels. Each channel holds up to four small plastic rods. The rods are retained by plastic end caps attached to each end of the carriage.

Multi Axis Systems

The combination of individual linear actuator systems allows the assembly of complex multi axis systems to customer specifications. Using the extensive range of linear motion system accessories, the application complexity can also be accentuated afterwards.

40 Linear Actuator Systems 16


SL5100N


SL5000N


SL5001N


SL5002N


SL5125N


SL5025N


SL5150N


SL5040N


SL5202N


SL5212N


SL5050N


SL5075N


SL5090N


SL5222N


SL5175N


SL5232N


SL6005N


SL5242N


SL5060N

SL5252N

SL6020N

SL5262N

SL6072N

SL7005N, SL7007N
Ball Bearing Screw 20 x 5, Ball Bearing Screw 20 x 5

SL7008N
Trapezoidal Screw

40 Linear Actuator Systems 16 with Omega Drive

SL5018N

SL5229N

SL5290N

SL5227N

SL5400N
Telescope Axis

40 Linear Actuator Systems 25

SL5500N SL5504N SL5508N SL5512N

SL5520N SL5524N SL5528N

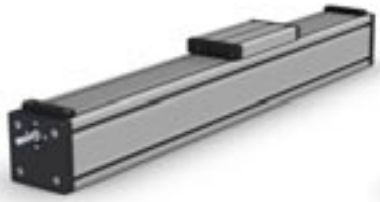
SL5532N SL5536N

SL5550N SL5554N SL5558N

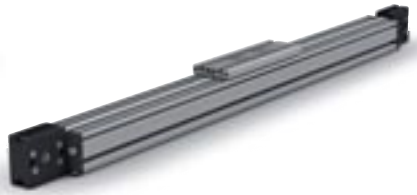
SL5566N SL5570N SL5574N

40 Internal Drive Systems

SL4050N
Internal Drive System 120 x 120



SL4063N
Ball Bearing Screw / Trapezoidal Screw



SL4070N
Internal Drive System 80 x 85

40 Internal Drive Systems 80 / 90

SL5300N
Single Guidance

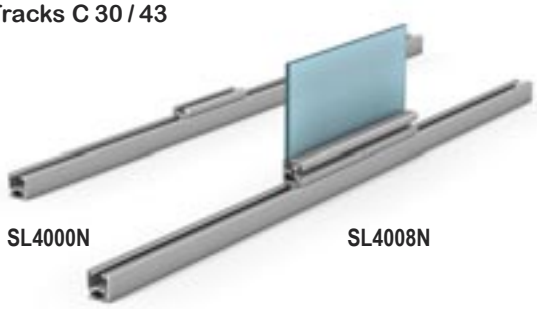
SL5350N
Double Guidance

40 Internal Drive Systems 120 / 120

SL5360N
Plastic Roller Guidance

SL5370N
Steel Roller Guidance

30 C-Tracks C 30 / 43



SL4000N SL4008N

40 C-Tracks C 40 / 57

SL4009N SL4010N

40 C-Tracks C 40 / 100

SL4019N

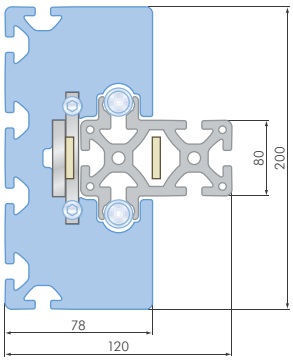
SL4025N

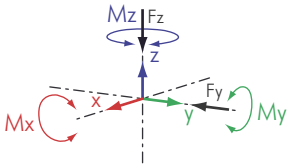
40 C-Tracks C 80 / 100

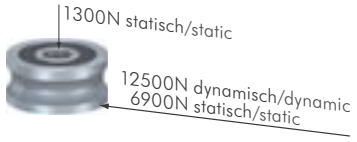
SL4029N SL4040N SL4035N SL4038N
Omega Drive C-Type

40 Recirculating Ball Slide / Glider Slide

SL4084N SL4094N







Pulley Assembly	without	40 x 40	40 x 80	40 x 40 heavy duty
Tensioner	–	Internal	Internal	Internal
Timing Belt	–	AT 10 / 22	AT 10 / 22	AT 10 / 22
W / L 160 / 140	SL5100N	SL5000N	SL5001N	SL5002N
W / L 160 / 280	SL5110N	SL5005N	SL5004N	SL5003N
Special Length (mm)	SL5115N	SL5008N	SL5006N	SL5007N
std. Bore Diameter	–	Ø 8 H 7	Ø 40 H 7	Ø 8 H 7

W carriage width
L carriage length

Carriage 16 / 160 / ...
- maximum speed: 8 $^{m}/_{s}$
- use only with wiper and lubrication system
- lubrication intervals according to loading

Track Profile F 16 40 x 80 / 40
(without guidance rails)
I_x = 102.09 cm^4
I_y = 37.21 cm^4
W_x = 24.19 cm^3
W_y = 11.45 cm^3
G = 4.75 $^{kg}/_{m}$

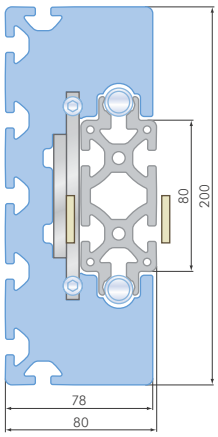
Standard Delivery: complete linear actuator inclusive of track profile, carriage, wiper and lubrication system, pulley assembly with customer specific motor connection on request

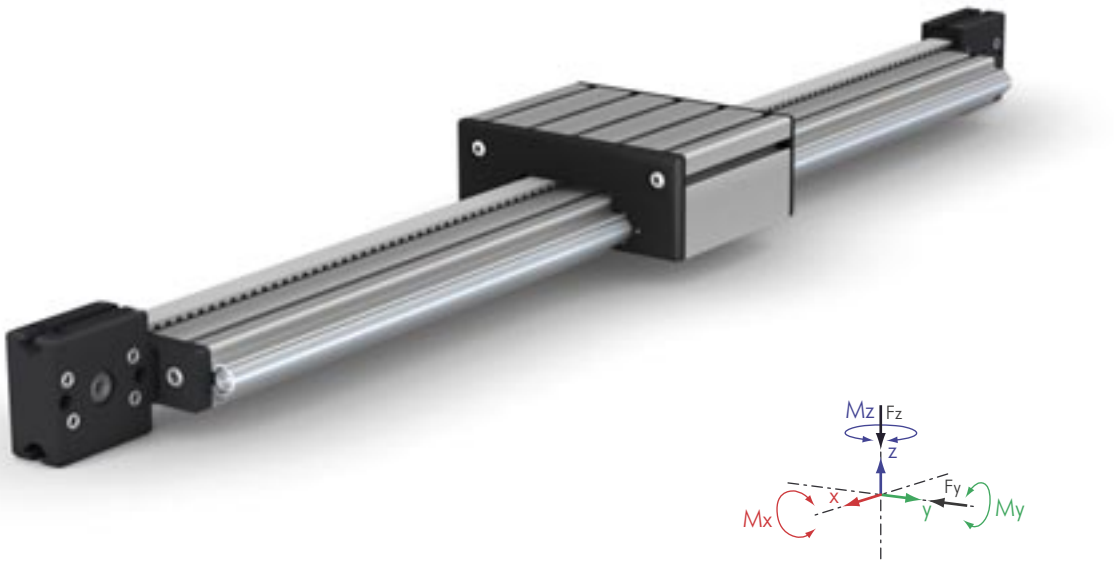
Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

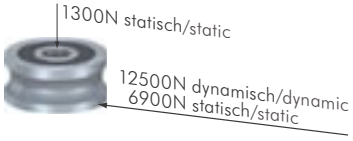
Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased. For long periods of continuous operation it is advisable to use our external lubrication system type E.

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_z = 1500 N

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_y = 2875 N







Pulley Assembly	without	40 x 40
Tensioner	–	Internal
Timing Belt	–	AT 10 / 22
W / L 200 / 140	SL5120N	SL5020N
W / L 200 / 200	SL5125N	SL5025N
W / L 200 / 280	SL5130N	SL5030N
Special Length (mm)	SL5135N	SL5031N
std. Bore Diameter	–	Ø 8 H 7

W carriage width
L carriage length

Carriage 16 / 200 / ...

- maximum speed: 8 $^{m}/_{s}$
- use only with wiper and lubrication system
- lubrication intervals according to loading

Track Profile F 16 40 x 80 / 40

(without guidance rails)

I_x = 132.43 cm^4
I_y = 26.60 cm^4
W_x = 25.22 cm^3
W_y = 13.30 cm^3
G = 4.75 $^{kg}/_{m}$

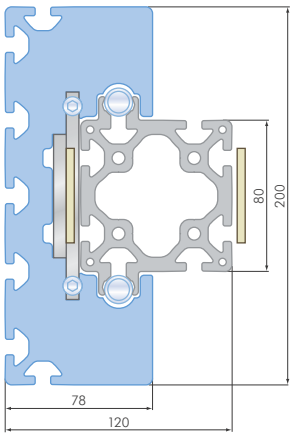
Standard Delivery: complete linear actuator inclusive of track profile, carriage, wiper and lubrication system, pulley assembly with customer specific motor connection on request

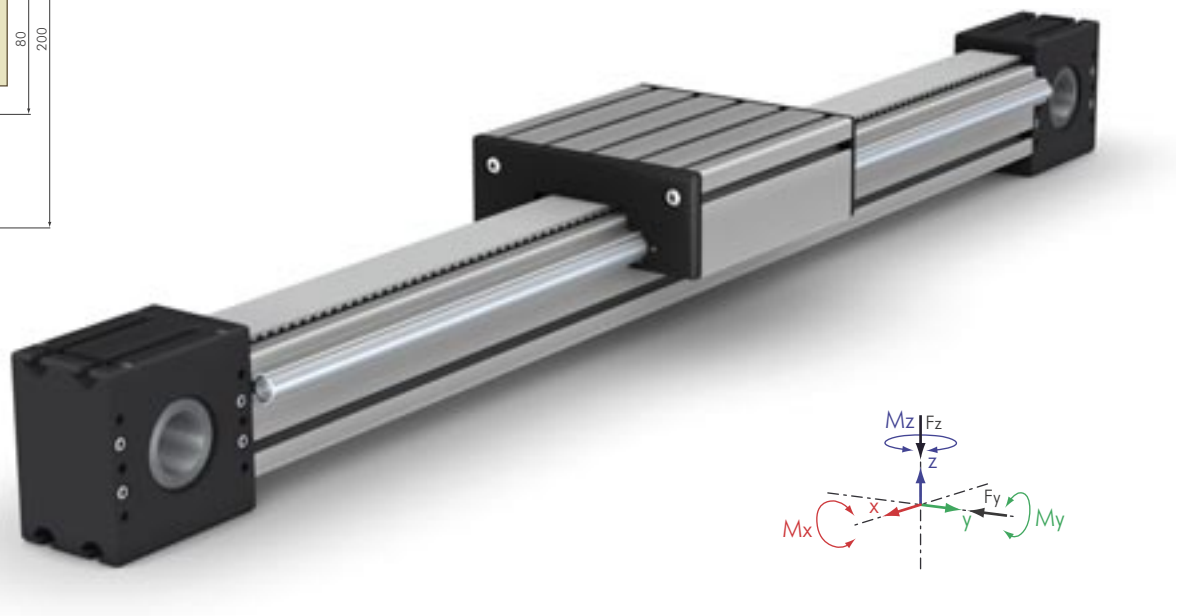
Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

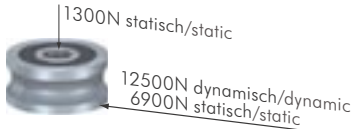
Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased. For long periods of continuous operation it is advisable to use our external lubrication system type E.

Maximum permissible loadings of one carriage with four rollers has the factor of safety 4:
Fz = 1500 N

Maximum permissible loadings of one carriage with four rollers has the factor of safety 4:
Fy = 2875 N







Pulley Assembly Tensioner Timing Belt	40 x 40 Internal AT 10 / 22	40 x 80 Internal AT 10 / 22	80 x 90 Internal AT 10 / 50	80 x 80 Internal AT 10 / 50	80 x 100 Internal AT 10 / 50	80 x 120 Internal AT 10 / 50
W / L 200 / 140	SL5035N	SL5210N	SL5071N	SL5070N	SL5085N	SL5220N
W / L 200 / 200	SL5040N	SL5212N	SL5076N	SL5075N	SL5090N	SL5222N
W / L 200 / 280	SL5045N	SL5214N	SL5081N	SL5080N	SL5095N	SL5224N
W / L 200 / 200 sl	SL5047N	SL5216N	–	SL5082N	SL5096N	SL5226N
Special Length (mm)	SL5048N	SL5218N	–	SL5084N	SL5098N	SL5228N
std. Bore Diameter	Ø 8 H 7	Ø 40 H 7	Ø 40 H 7	Ø 40 H 7	Ø 40 H 7	Ø 40 H 7

W carriage width
L carriage length

Carriage 16 / 200 / ...

- maximum speed: 8 $^{m}/_{s}$
- use only with wiper and lubrication system
- lubrication intervals according to loading

Track Profile F 16 80 x 80

(without guidance rails)

I_x = 212.89 cm^4
I_y = 182.47 cm^4
W_x = 40.55 cm^3
W_y = 43.97 cm^3
G = 7.60 $^{kg}/_{m}$

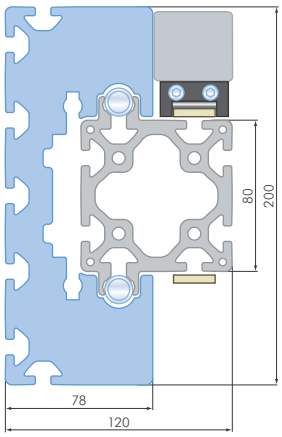
Standard Delivery: complete linear actuator inclusive of track profile, carriage, wiper and lubrication system, pulley assembly with customer specific motor connection on request

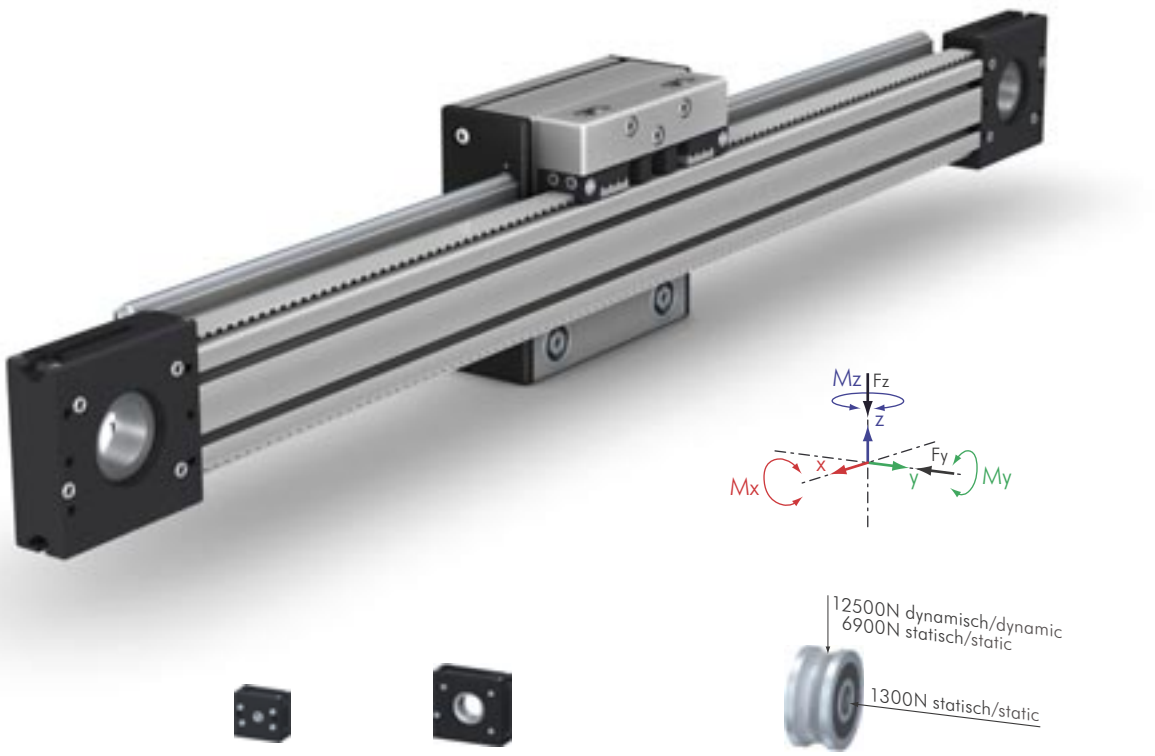
Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased. For long periods of continuous operation it is advisable to use our external lubrication system type E.

Maximum permissible loadings of one carriage with four rollers has the factor of safety 4:
Fz = 1500 N

Maximum permissible loadings of one carriage with four rollers has the factor of safety 4:
Fy = 2875 N





Pulley Assembly	without	40 x 40	40 x 80
Tensioner	–	External	External
Timing Belt	–	AT 10 / 22	AT 10 / 22
W / L 200 / 140	SL5145N	–	–
W / L 200 / 200	SL5150N	SL5202N	SL5050N
W / L 200 / 280	SL5155N	SL5204N	SL5055N
W / L 200 / 200 sl	SL5160N	–	–
Special Length (mm)	SL5165N	SL5208N	SL5058N
std. Bore Diameter	–	Ø 8 H 7	Ø 40 H 7

W carriage width
L carriage length

Standard Delivery: complete linear actuator inclusive of track profile, carriage, wiper and lubrication system, pulley assembly with customer specific motor connection on request

Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased. For long periods of continuous operation it is advisable to use our external lubrication system type E.

Carriage 16 / 200 / ...

- maximum speed: 8 $^{m}/_{s}$
- use only with wiper and lubrication system
- lubrication intervals according to loading

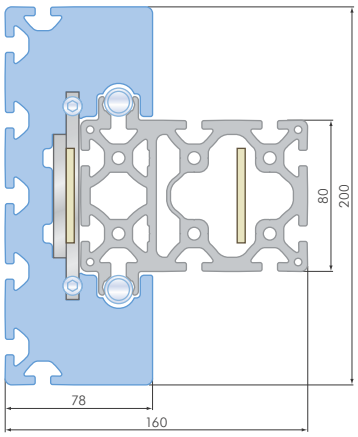
Track Profile F 16 80 x 80

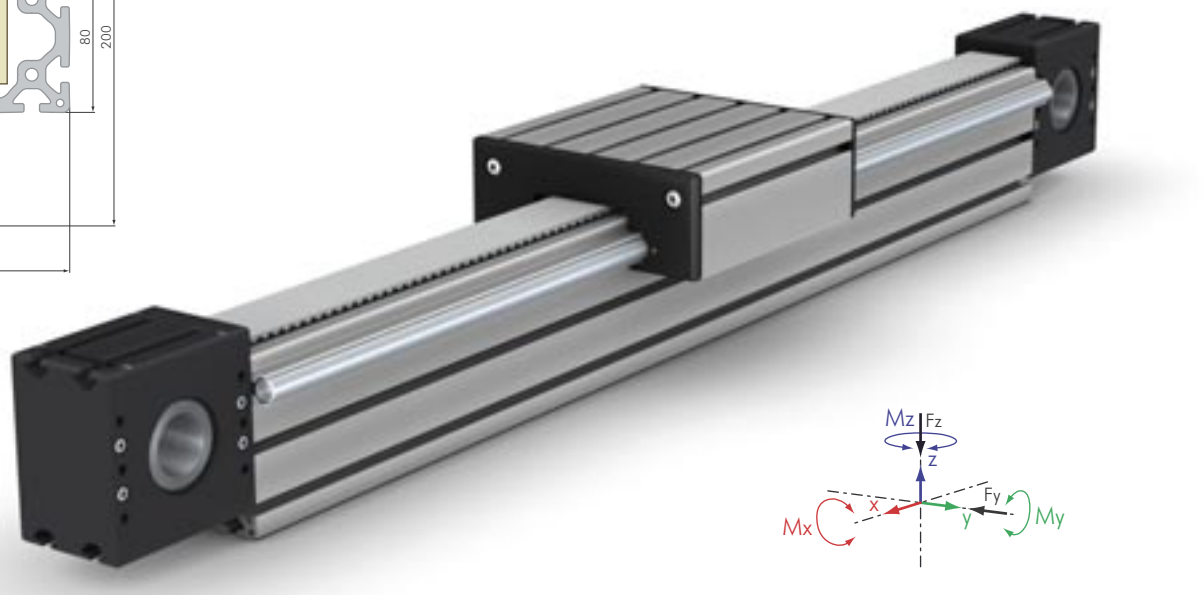
(without guidance rails)

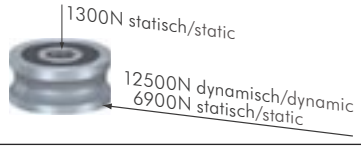
I_x = 212.89 cm^4
I_y = 182.47 cm^4
W_x = 40.55 cm^3
W_y = 43.97 cm^3
G = 7.60 $^{kg}/_{m}$

Maximum permissible loadings of one carriage with four rollers has the factor of safety 4:
Fz = 1500 N

Maximum permissible loadings of one carriage with four rollers has the factor of safety 4:
Fy = 2875 N







Pulley Assembly	without	40 x 80	80 x 80	80 x 100	80 x 120
Tensioner	–	Internal	Internal	Internal	Internal
Timing Belt	–	AT 10 / 22	AT 10 / 50	AT 10 / 50	AT 10 / 50
W / L 200 / 140	SL5170N	SL5230N	SL6000N	SL5250N	SL6015N
W / L 200 / 200	SL5175N	SL5232N	SL6005N	SL5252N	SL6020N
W / L 200 / 280	SL5180N	SL5234N	SL6010N	SL5254N	SL6025N
W / L 200 / 200 sl	SL5185N	SL5236N	SL6012N	SL5256N	SL6066N
Special Length (mm)	SL5190N	SL5238N	SL6014N	SL5258N	SL6068N
std. Bore Diameter	–	Ø 40 H 7	Ø 40 H 7	Ø 40 H 7	Ø 40 H 7

W carriage width
L carriage length

Standard Delivery: complete linear actuator inclusive of track profile, carriage, wiper and lubrication system, pulley assembly with customer specific motor connection on request

Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased. For long periods of continuous operation it is advisable to use our external lubrication system type E.

Carriage 16 / 200 / ...

- maximum speed: 8 $^{m}/_{s}$
- use only with wiper and lubrication system
- lubrication intervals according to loading

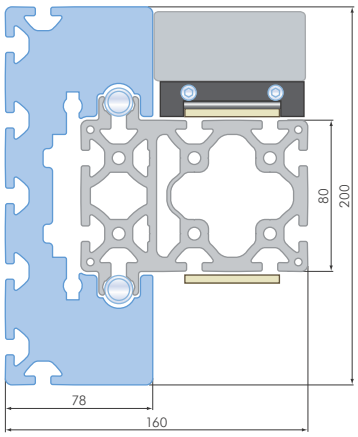
Track Profile F 16 80 x 120 8N

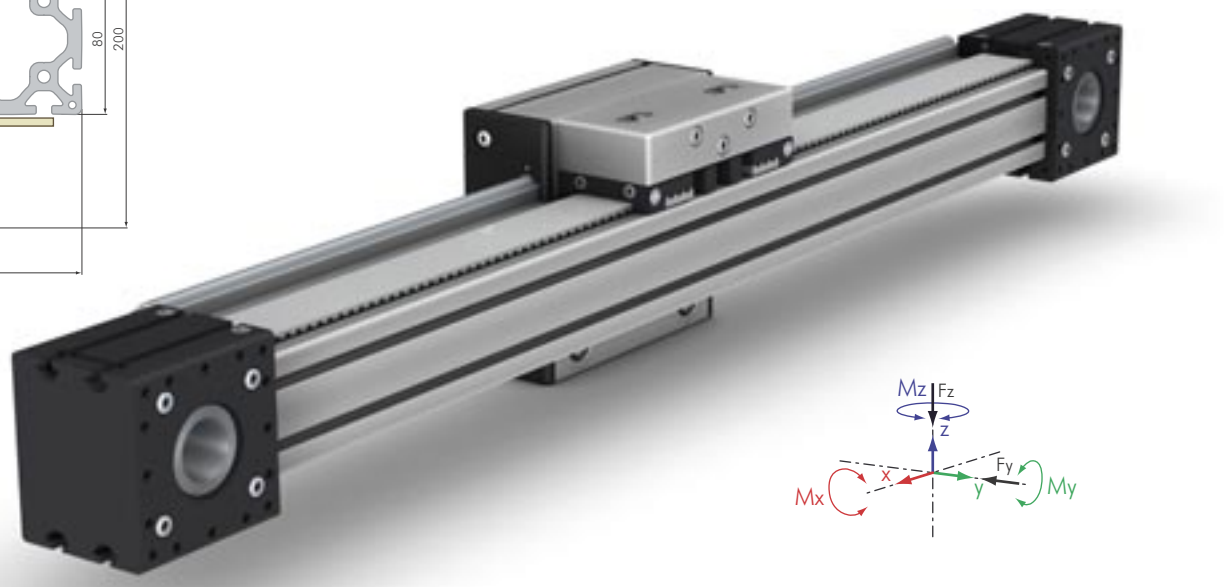
(without guidance rails)

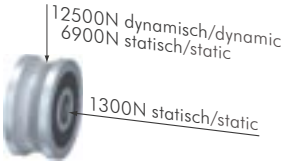
I_x = 311.19 cm^4
I_y = 570.07 cm^4
W_x = 59.27 cm^3
W_y = 59.27 cm^3
G = 11.00 $^{kg}/_{m}$

Maximum permissible loadings of one carriage with four rollers has the factor of safety 4:
Fz = 1500 N

Maximum permissible loadings of one carriage with four rollers has the factor of safety 4:
Fy = 2875 N







Pulley Assembly	without	40 x 80	80 x 80	80 x 100	80 x 120
Tensioner	–	External	External	External	External
Timing Belt	–	AT 10 / 22	AT 10 / 50	AT 10 / 50	AT 10 / 50
W / L 200 / 140	SL5170N	–	–	–	–
W / L 200 / 200	SL5175N	SL5242N	SL5060N	SL5262N	SL6072N
W / L 200 / 280	SL5180N	SL5244N	SL5065N	SL5264N	SL6074N
W / L 200 / 200 sl	SL5185N	–	–	–	–
Special Length (mm)	SL5190N	SL5248N	SL5068N	SL5268N	SL6078N
std. Bore Diameter	–	Ø 40 H 7	Ø 40 H 7	Ø 40 H 7	Ø 40 H 7

W carriage width
L carriage length

Standard Delivery: complete linear actuator inclusive of track profile, carriage, wiper and lubrication system, pulley assembly with customer specific motor connection on request

Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased. For long periods of continuous operation it is advisable to use our external lubrication system type E.

Carriage 16 / 200 / ...

- maximum speed: 8 $^{m}/_{s}$
- use only with wiper and lubrication system
- lubrication intervals according to loading

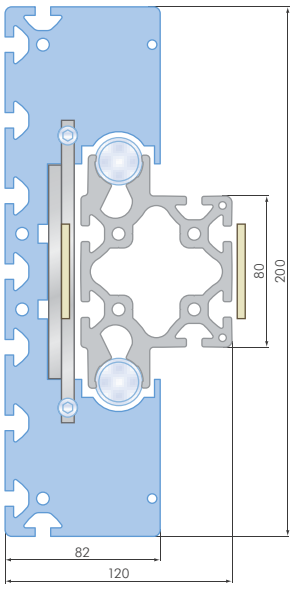
Track Profile F 16 80 x 120 8N

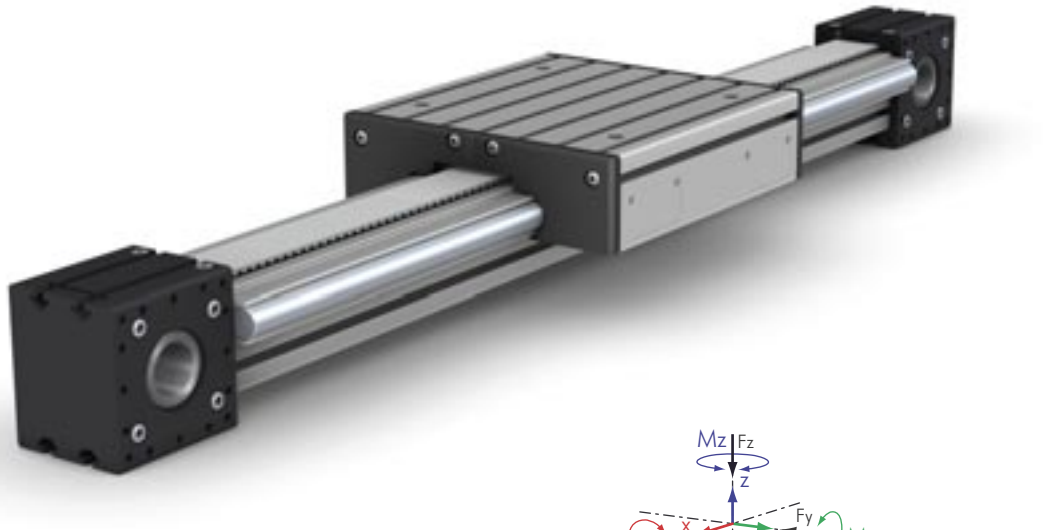
(without guidance rails)

I_x = 311.19 cm^4
I_y = 570.07 cm^4
W_x = 59.27 cm^3
W_y = 59.27 cm^3
G = 11.00 $^{kg}/_{m}$

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_z = 1500 N

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_y = 2875 N





Pulley Assembly	without	80 x 80	80 x 100	80 x 120
Tensioner	–	Internal	Internal	Internal
Timing Belt	–	AT 10 / 50	AT 10 / 50	AT 10 / 50
W / L 280 / 280	SL5500N	SL5504N	SL5508N	SL5512N
Special Length (mm)	SL5502N	SL5506N	SL5510N	SL5514N
std. Bore Diameter	–	Ø 40 H 7	Ø 40 H 7	Ø 40 H 7

W carriage width
L carriage length

Carriage 25 / 280 / ...

- maximum speed: 8 $^{m}/_{s}$
- use only with wiper and lubrication system
- lubrication intervals according to loading

Track Profile F 25 80 x 80

(without guidance rails)

I_x = 201.23 cm^4
I_y = 318.71 cm^4
W_x = 45.65 cm^3
W_y = 51.74 cm^3
G = 8.30 $^{kg}/_{m}$

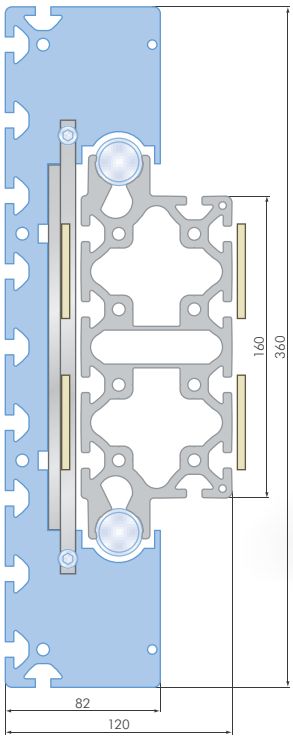
Standard Delivery: complete linear actuator inclusive of track profile, carriage, wiper and lubrication system, pulley assembly with customer specific motor connection on request

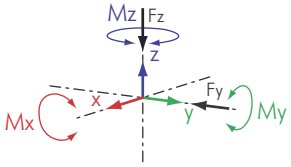
Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

Carriage Options: Carriage lengths of up to 700 mm are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased. For long periods of continuous operation it is advisable to use our external lubrication system type E.

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_z = 3700 N

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_y = 7900 N





Pulley Assembly	without	80 x 80	80 x 100	80 x 120	80 x 160
Tensioner	–	Internal	Internal	Internal	Internal
Timing Belt	–	AT 10 / 50	AT 10 / 50	AT 10 / 50	2 x AT 10 / 50
W / L 360 / 360	SL5520N	SL5524N	SL5528N	SL5532N	SL5536N
Special Length (mm)	SL5522N	SL5526N	SL5530N	SL5534N	SL5538N
std. Bore Diameter	–	Ø 40 H 7	Ø 40 H 7	Ø 40 H 7	Ø 40 H 7

W carriage width
L carriage length

Carriage 25 / 360 / ...

- maximum speed: 8 $^{m}/_{s}$
- use only with wiper and lubrication system
- lubrication intervals according to loading

Track Profile F 25 80 x 160

(without guidance rails)

I_x = 368.46 cm^4
I_y = 1,611.71 cm^4
W_x = 86.49 cm^3
W_y = 158.43 cm^3
G = 13.82 $^{kg}/_{m}$

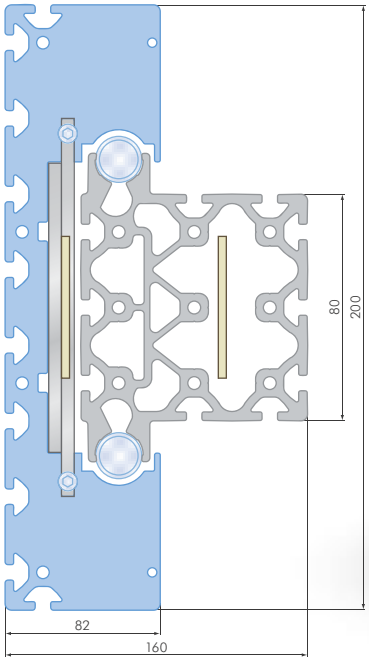
Standard Delivery: complete linear actuator inclusive of track profile, carriage, wiper and lubrication system, pulley assembly with customer specific motor connection on request

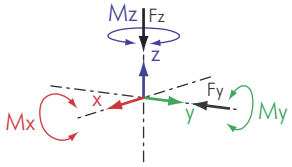
Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

Carriage Options: Carriage lengths of up to 700 mm are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased. For long periods of continuous operation it is advisable to use our external lubrication system type E.

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_z = 3700 N

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_y = 7900 N





Pulley Assembly	without	80 x 80	80 x 100	80 x 120	120 x 120 / 75
Tensioner	–	Internal	Internal	Internal	Internal
Timing Belt	–	AT 10 / 50	AT 10 / 50	AT 10 / 50	AT 10 / 75
W / L 320 / 320	SL5550N	SL5554N	SL5558N	SL5566N	SL5574N
Special Length (mm)	SL5552N	SL5556N	SL5560N	SL5568N	SL5576N
std. Bore Diameter	–	Ø 40 H 7	Ø 40 H 7	Ø 40 H 7	Ø 40 H 7

W carriage width
L carriage length

Standard Delivery: complete linear actuator inclusive of track profile, carriage, wiper and lubrication system, pulley assembly with customer specific motor connection on request

Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

Carriage Options: Carriage lengths of up to 700 mm are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased. For long periods of continuous operation it is advisable to use our external lubrication system type E.

Carriage 25 / 320 / ...

- maximum speed: 8 $^{m}/_{s}$
- use only with wiper and lubrication system
- lubrication intervals according to loading

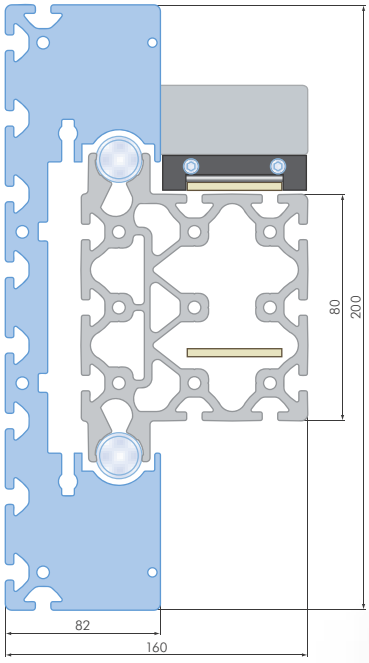
Track Profile F 25 120 x 120

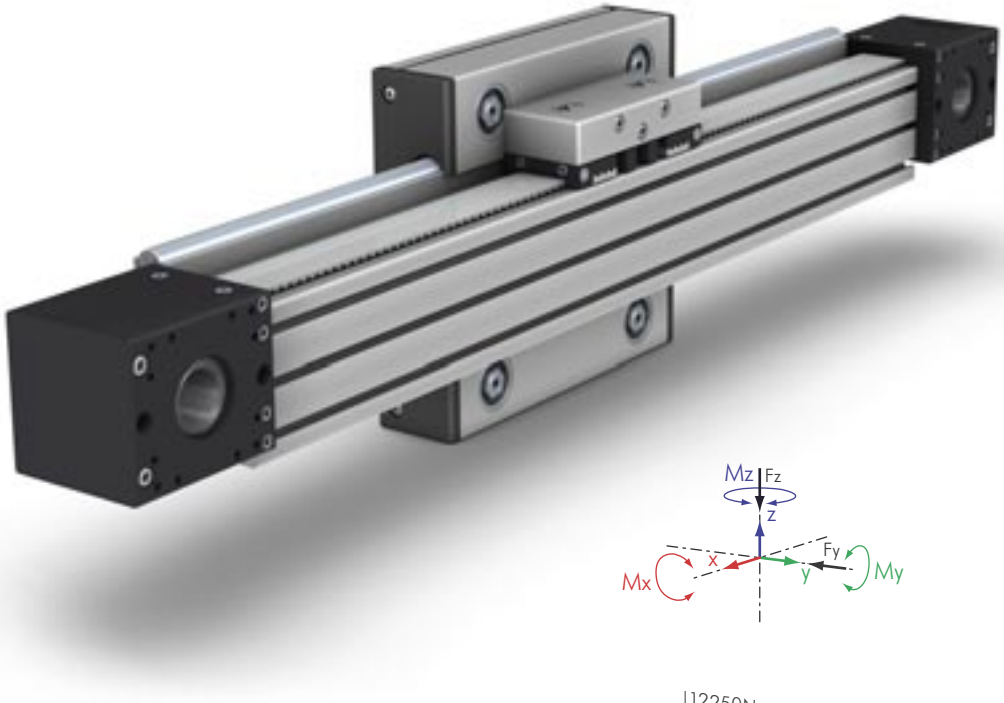
(without guidance rails)

I_x = 1,104.23 cm^4
I_y = 873.48 cm^4
W_x = 130.66 cm^3
W_y = 129.12 cm^3
G = 15.44 $^{kg}/_{m}$

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_z = 3700 N

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_y = 7900 N





Pulley Assembly	80 x 120
Tensioner	External
Timing Belt	AT 10 / 50
W / L 320 / 320	SL5570N
Special Length (mm)	SL5572N
std. Bore Diameter	Ø 40 H 7

W carriage width
L carriage length

Carriage 25 / 320 / ...

- maximum speed: 8 $^{m}/_{s}$
- use only with wiper and lubrication system
- lubrication intervals according to loading

Track Profile F 25 120 x 120

(without guidance rails)

I_x = 1104,23 cm^4
I_y = 873,48 cm^4
W_x = 130,66 cm^3
W_y = 129,12 cm^3
G = 15,44 $^{kg}/_{m}$

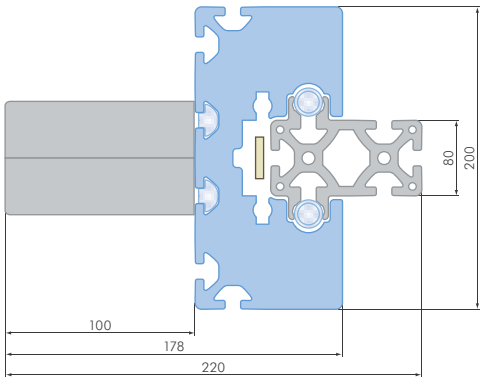
Standard Delivery: complete linear actuator inclusive of track profile, carriage, wiper and lubrication system, pulley assembly with customer specific motor connection on request

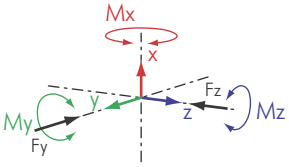
Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

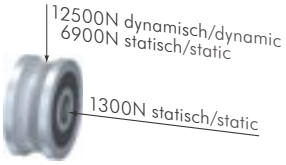
Carriage Options: Carriage lengths of up to 700 mm are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased. For long periods of continuous operation it is advisable to use our external lubrication system type E.

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_z = 3700 N

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_y = 7900 N







Pulley Assembly Timing Belt	Omega Drive G 22 AT 10 / 22
W / L 160 / 400 Special Length (mm)	SL5018N SL5019N
std. Bore Diameter	Ø 40 H 7

W carriage width
L carriage length

Carriage 16 / 160 / ...
- maximum speed: 8 $^{m}/_{s}$
- use only with wiper and lubrication system
- lubrication intervals according to loading

Track Profile F 16 40 x 80
(without guidance rails)
I_x = 102,09 cm^4
I_y = 37,21 cm^4
W_x = 24,19 cm^3
W_y = 11,45 cm^3
G = 4,75 $^{kg}/_{m}$

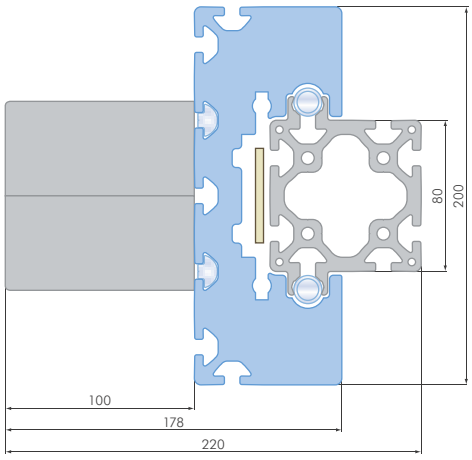
Standard Delivery: complete linear actuator inclusive of track profile, carriage, wiper and lubrication system, Omega Drive with customer specific motor connection

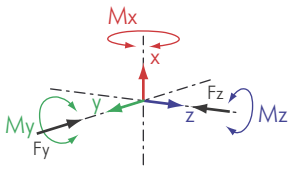
Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

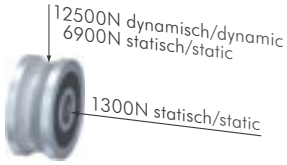
Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased. For long periods of continuous operation it is advisable to use our external lubrication system type E.

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_z = 1500 N

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_y = 2875 N







Pulley Assembly Timing Belt	Omega Drive G 50 AT 10 / 50
W / L 200 / 400 Special Length (mm)	SL5229N SL5231N
std. Bore Diameter	Ø 40 H 7

W carriage width
L carriage length

Carriage 16 / 200 / ...

- maximum speed: 8 $^{m}/_{s}$
- use only with wiper and lubrication system
- lubrication intervals according to loading

Track Profile F 16 80 x 80

(without guidance rails)

I_x = 215.75 cm^4
I_y = 185.32 cm^4
W_x = 41.10 cm^3
W_y = 44.76 cm^3
G = 7.31 $^{kg}/_{m}$

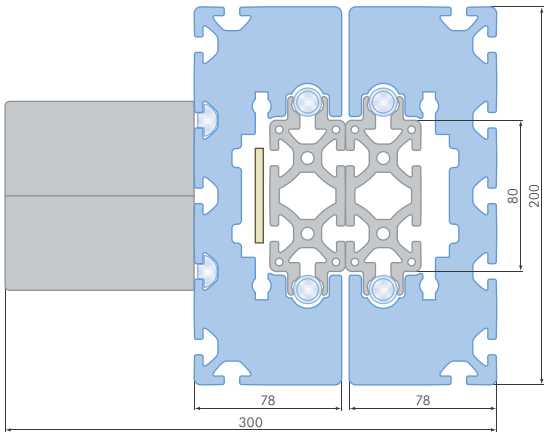
Standard Delivery: complete linear actuator inclusive of track profile, carriage, wiper and lubrication system, Omega Drive with customer specific motor connection

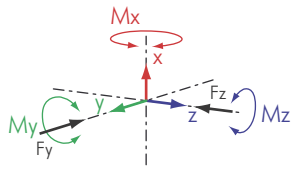
Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

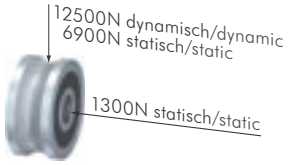
Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased. For long periods of continuous operation it is advisable to use our external lubrication system type E.

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_z = 1500 N

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_y = 2875 N







Carriage 16 / 200 / ...
- maximum speed: 8 $^{m}/_{s}$
- use only with wiper and lubrication system
- lubrication intervals according to loading

Pulley Assembly Timing Belt	Omega Drive G 50 AT 10 / 50
W / L 200 / 400 Special Length (mm)	SL5290N SL5291N
std. Bore Diameter	Ø 40 H 7

W carriage width
L carriage length

Track Profile (without guidance rails)

F 16 40 x 80			**F 16 40 x 80**		
I_x	=	132.43 cm^4	I_x	=	132.43 cm^4
I_y	=	26.60 cm^4	I_y	=	26.60 cm^4
W_x	=	25.22 cm^3	W_x	=	25.22 cm^3
W_y	=	13.30 cm^3	W_y	=	13.30 cm^3
G	=	4.75 $^{kg}/_{m}$	G	=	4.75 $^{kg}/_{m}$

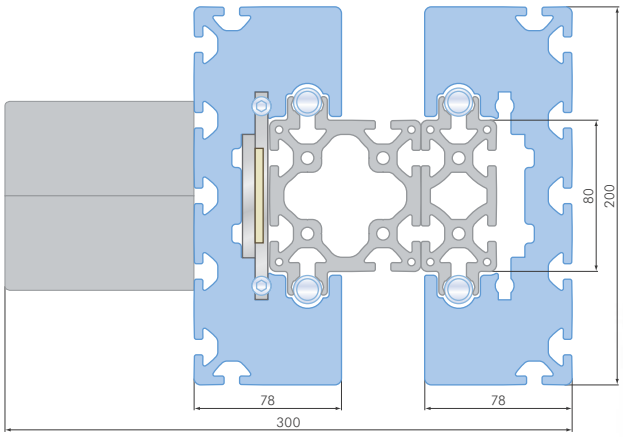
Standard Delivery: complete linear actuator inclusive of track profile, two carriages, wiper and lubrication system, Omega Drive with customer specific motor connection

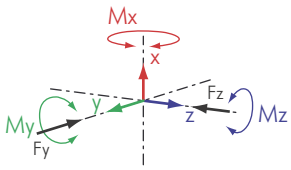
Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

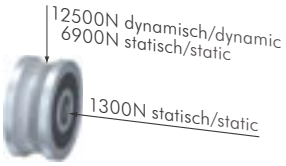
Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased. For long periods of continuous operation it is advisable to use our external lubrication system type E.

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: $F_z = 1500$ N

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: $F_y = 2875$ N







Carriage 16 / 200 / ...
- maximum speed: 8 $^{m}/_{s}$
- use only with wiper and lubrication system
- lubrication intervals according to loading

Pulley Assembly Timing Belt	Omega Drive G 50 AT 10 / 50
W / L 200 / 400 Special Length (mm)	SL5227N SL5233N
std. Bore Diameter	Ø 40 H 7

W carriage width
L carriage length

Track Profile (without guidance rails)

F 16 40 x 80			**F 16 80 x 80**		
I_x	=	132.43 cm^4	I_x	=	212.89 cm^4
I_y	=	26.60 cm^4	I_y	=	182.47 cm^4
W_x	=	25.22 cm^3	W_x	=	40.55 cm^3
W_y	=	13.30 cm^3	W_y	=	43.97 cm^3
G	=	4.75 $^{kg}/_{m}$	G	=	7.60 $^{kg}/_{m}$

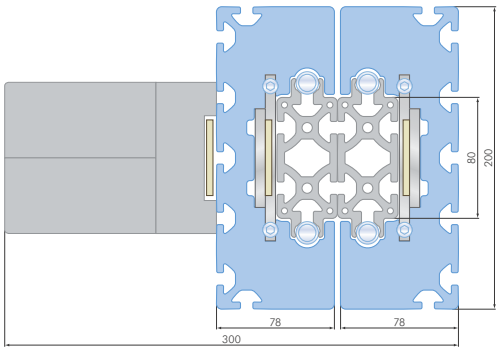
Standard Delivery: complete linear actuator inclusive of track profile, two carriages, wiper and lubrication system, Omega Drive with customer specific motor connection

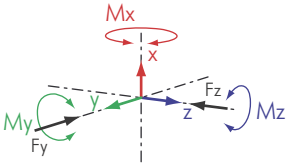
Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

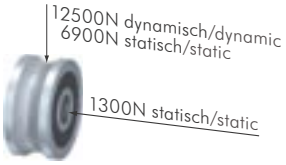
Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased. For long periods of continuous operation it is advisable to use our external lubrication system type E.

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_Z = 3700 N

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_Y = 7900 N







Pulley Assembly Timing Belt	Omega Drive G 50 / 80 x 80 AT 10 / 50
W / L 200 / 400	SL5400N
std. Bore Diameter	Ø 40 H 7

W carriage width
L carriage length

Carriage 16 / 200 / ...
- maximum speed: 8 $^{m}/_{s}$
- use only with wiper and lubrication system
- lubrication intervals according to loading

Track Profile (without guidance rails)

F 16 40 x 80			**F 16 40 x 80**		
I_x	=	132.43 cm^4	I_x	=	132.43 cm^4
I_y	=	26.60 cm^4	I_y	=	26.60 cm^4
W_x	=	25.22 cm^3	W_x	=	25.22 cm^3
W_y	=	13.30 cm^3	W_y	=	13.30 cm^3
G	=	4.75 $^{kg}/_{m}$	G	=	4.75 $^{kg}/_{m}$

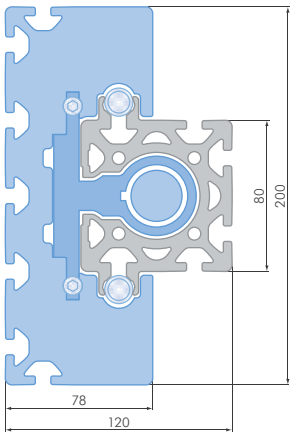
Standard Delivery: complete linear actuator inclusive of track profile, two carriages, wiper and lubrication system, Omega Drive with customer specific motor connection

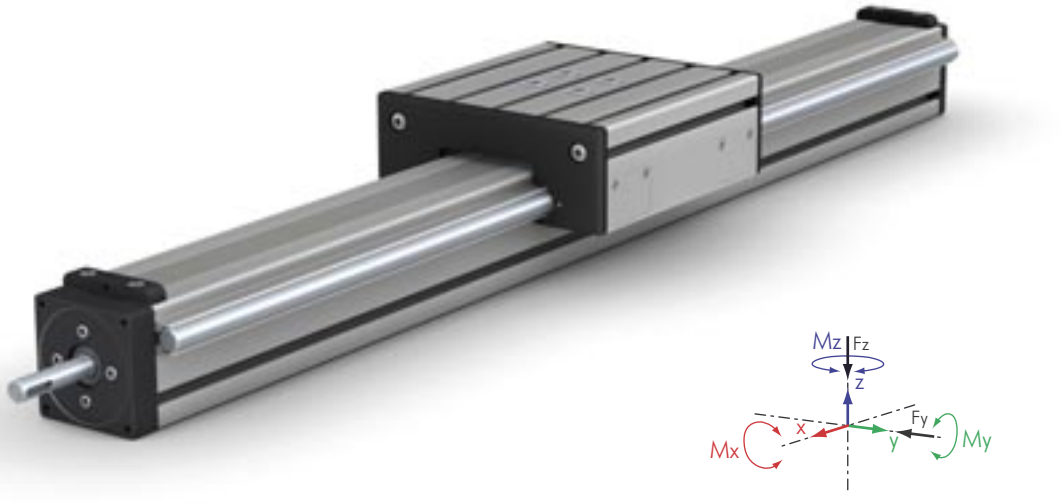
Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

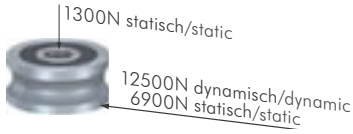
Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased. For long periods of continuous operation it is advisable to use our external lubrication system type E.

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: $F_z = 1500$ N

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: $F_y = 2875$ N







Shaft	Ball Screw Actuator 20 x 5	Ball Screw Actuator 20 x 20	Trapezoidal Screw Actuator
W / L 200 / 140	SL7000N	SL7002N	SL7003N
W / L 200 / 200	SL7005N	SL7007N	SL7008N
W / L 200 / 280	SL7010N	SL7012N	SL7013N
W / L 200 / 200 sl	SL7015N	SL7017N	SL7018N
Special Length (mm)	SL7020N	SL7022N	SL7023N

W carriage width
L carriage length

Carriage 16 / 200 / ...

- drive end on customer request
  maximum permissible Ø 14 mm
- use only with wiper and lubrication system
- lubrication intervals according to loading
- critical rotation speed and bending on page F-37

Track Profile F 16 80 x 80 open

(without guidance rails)

I_x = 240.32 cm^4
I_y = 189.65 cm^4
W_x = 45.77 cm^3
W_y = 46.71 cm^3
G = 8.06 kg/m

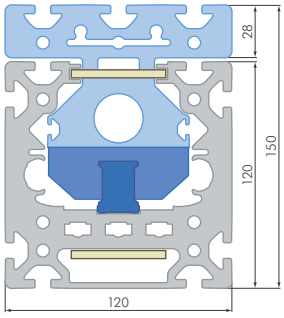
Standard Delivery: complete linear actuator inclusive of track profile, carriage and wiper and lubrication system

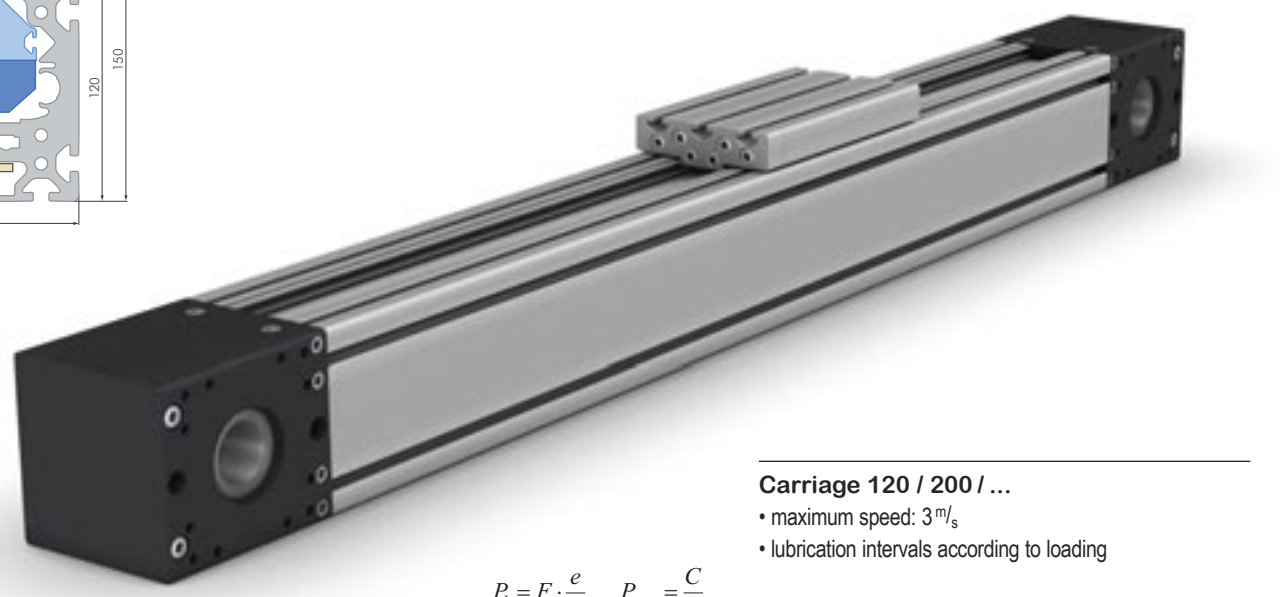
Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased. For long periods of continuous operation it is advisable to use our external lubrication system type E. Strengthened bearings on request.

Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_z = 3700 N

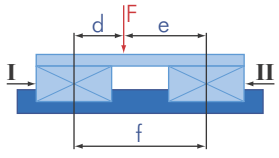
Maximum permissible loadings of one carriage with four rollers has the **factor of safety 4**: F_y = 7900 N

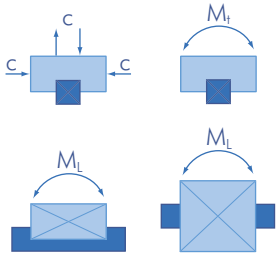




$$P_I = F \cdot \frac{e}{f} \qquad P_{max} = \frac{C}{S}$$

$$P_{II} = F \cdot \frac{d}{f}$$





Pulley Assembly	80 x 120
Timing Belt	AT 10 / 50
W / L 120 / 200	SL4050N
Special Length (mm)	SL4055N
std. Bore Diameter	Ø 40 H 7

W carriage width
L carriage length

Carriage 120 / 200 / ...

- maximum speed: 3 $^{m}/_{s}$
- lubrication intervals according to loading

Specifications below refer to one carriage of two that are situated below each upper carriage (dark blue element in the illustration on the left).

C	[N]	load rating dyn.	22800 N
C_0	[N]	load rating stat.	30400 N
M_t	[Nm]	torque dyn.	320 Nm
M_{t0}	[Nm]	torque stat.	430 Nm
M_L	[Nm]	torque dyn.	180 Nm
M_{L0}	[Nm]	torque stat.	240 Nm
S		factor of safety	2
P	[N]	corresponding load	

Track Profile 120 x 120

(without recirculating ball slide)

I_x = 644.60 cm^4
I_y = 1,002.94 cm^4
W_x = 96.21 cm^3
W_y = 167.16 cm^3
G = 14.76 $^{kg}/_{m}$

Standard Delivery: complete linear actuator inclusive of track profile, carriage and internal steel recirculating ball slide

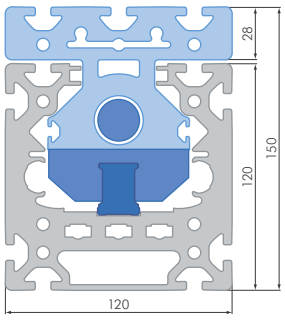
Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

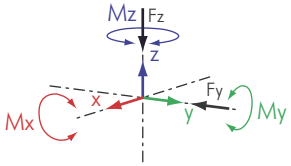
Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further recirculating ball carriages to the steel guidance rail.

Standard Delivery:
- carriage length 200 mm
- recirculating ball slide 25 with two internal carriages

On Request: custom lengths and number of carriages

The calculations shown are relative to the internal recirculating ball slide. When designing the overall system please note the permitted loading value for the open profile 120 x 120 and for the carriage design.





Shaft	Ball Screw Actuator 20 x 5	Ball Screw Actuator 20 x 20
W / L 120 / 140	SL4063N	SL4060N
Special Length (mm)	SL4064N	SL4061N

W carriage width
L carriage length

Carriage 120 / 200 / ...
- drive end on customer request
  maximum permissible Ø 14 mm
- lubrication intervals according to loading
- critical rotation speed and bending
  on page and F-37

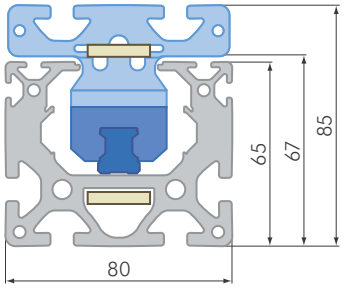
Track Profile F 16 120 x 120
(without guidance rails)

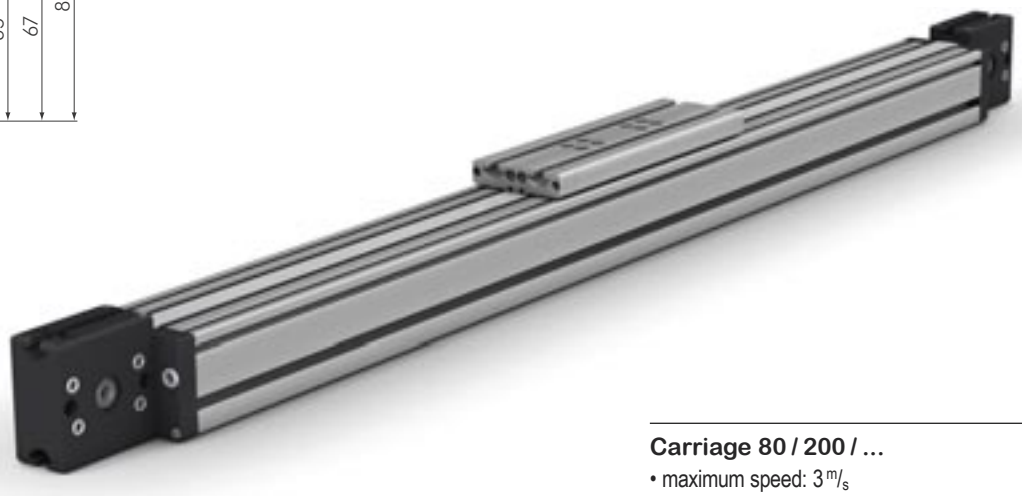
I_x = 644.60 cm^4
I_y = 1002.94 cm^4
W_x = 96.21 cm^3
W_y = 167.16 cm^3
G = 16.76 kg/m

Standard Delivery: complete linear actuator inclusive of track profile, carriage, wiper and lubrication system

Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

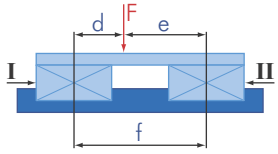
Carriage Options: Carriage lengths of up to 2,3 m are available. For high load systems it may be advisable to add further recirculating ball carriages to the steel guidance rail.

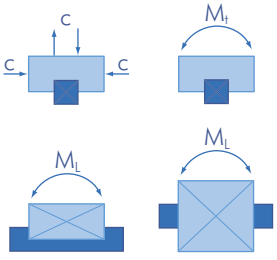




$$P_I = F \cdot \frac{e}{f} \qquad P_{max} = \frac{C}{S}$$

$$P_{II} = F \cdot \frac{d}{f}$$





Pulley Assembly	40 x 40
Timing Belt	AT 10 / 22
W / L 80 / 200	SL4070N
Special Length (mm)	SL4075N
std. Bore Diameter	Ø 14 H 7

W carriage width
L carriage length

Carriage 80 / 200 / ...

- maximum speed: 3 $^{m}/_{s}$
- lubrication intervals according to loading

Specifications below refer to one carriage of two that are situated below each upper carriage
(dark blue element in the illustration on the left).

C	[N]	load rating dyn.	7800 N
C_0	[N]	load rating stat.	13500 N
M_t	[Nm]	torque dyn.	74 Nm
M_{t0}	[Nm]	torque stat.	130 Nm
M_L	[Nm]	torque dyn.	40 Nm
M_{L0}	[Nm]	torque stat.	71 Nm
S		factor of safety	2
P	[N]	corresponding load	

Track Profile 80 x 85

(without recirculating ball slide)

I_x = 68.93 cm^4
I_y = 154.74 cm^4
W_x = 18.83 cm^3
W_y = 38.69 cm^3
G = 5.35 $^{kg}/_{m}$

Standard Delivery: complete linear actuator inclusive of track profile, carriage and internal steel recirculating ball slide

Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

Carriage Options: Carriage lengths of up to 2,3 m are available. For high load systems it may be advisable to add further recirculating ball slide carriages to the steel guidance rail.

Standard Delivery:
- carriage length 200 mm
- recirculating ball slide 25 with two internal carriages

On Request: special lengths with custom number of carriages

The calculations shown are relative to the internal recirculating ball slide. When designing the overall system please note the permitted loading value for the open profile 120 x 120 and for the carriage design.

Timing Belts

Timing belt guides are used to transmit rotary movement into linear movement. Transmission is via a range of tooth belts AT 3 up to AT 10. Customer specified belts can also be supplied upon of ordering.

Timing Belt Technical Data

The abrasive resistant polyurethane compound is also resistant against most oils, cutting fluids and wet conditions. It is also UV and ozone resistant with a permissible working temperature range of -30° C (-22° F) to 85° C (185° F). The timing belt has been carefully chosen to meet the demands of most linear actuator working conditions.

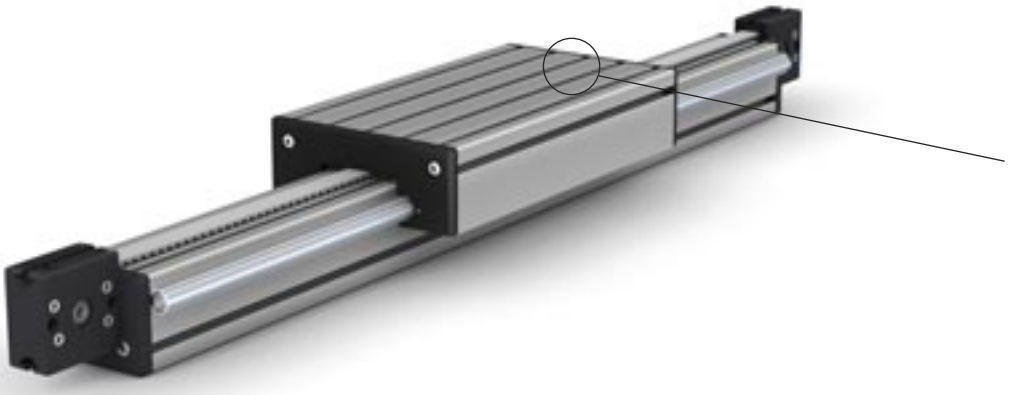
Timing Belt	Tensile Strength	Elongation
AT 3 / 10	410 N	0.1 % at 102 N
AT 5 / 16	1,260 N	0.1 % at 315 N
AT 10 / 22	3,200 N	0.1 % at 800 N
AT 10 / 50	8,050 N	0.1 % at 2,012 N
AT 10 / 75	12,220 N	0.1 % at 3,055 N

Timing Belt Tensioners

The timing belt is tensioned and held in the carriage by two belt tensioners as shown in the illustrations below. The timing belt is inserted sideways into the tensioners profile and then pushed into the guideway located in the carriage. Two M 12 grub screws push the tensioner into the center of the carriage. By loosening or tightening these grub screws on each of the tensioners, the carriage can be accurately positioned relative to the linear actuator position. In high speed and arduous conditions the M 12 pressure screws can be secured by means of a second M 12 grub screw.

Fixing Blocks

If the timing belt is to be connected to the side of the carriage, a fixing bock is attached to the carriage between the rollers as shown on the illustration below. The tooth belt is tensioned via two external tooth belt tensioners.

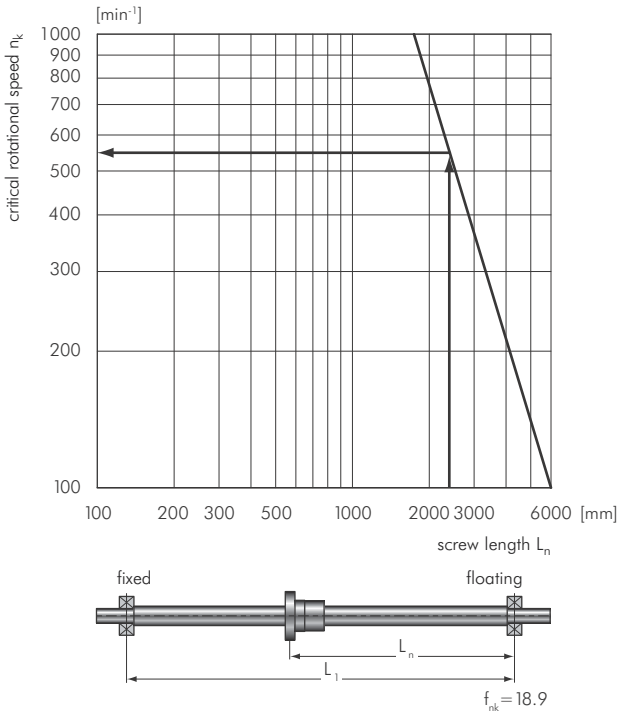


timing belt tensioner (internal)

timing belt tensioner external ZB

Critical Rotation Speed

The critical rotation speed is dependent on screw diameter, its length L_n and how it is fitted. The drive nut axial play must not be taken into consideration. The maximum operating rotation speed is 80 % of the critical rotation speed.



In the illustration above the critical rotation speed of 550 min^{-1} is achieved.
The permissible operation rotation speed equals 550 min^{-1} · 80 % = 440 min^{-1}.

Calculation Of The Critical Rotation Speed

Example: pitch diameter = 20 mm
core diameter = 16.9 mm
length = 2400 mm
bearing configuration = fixed – supported

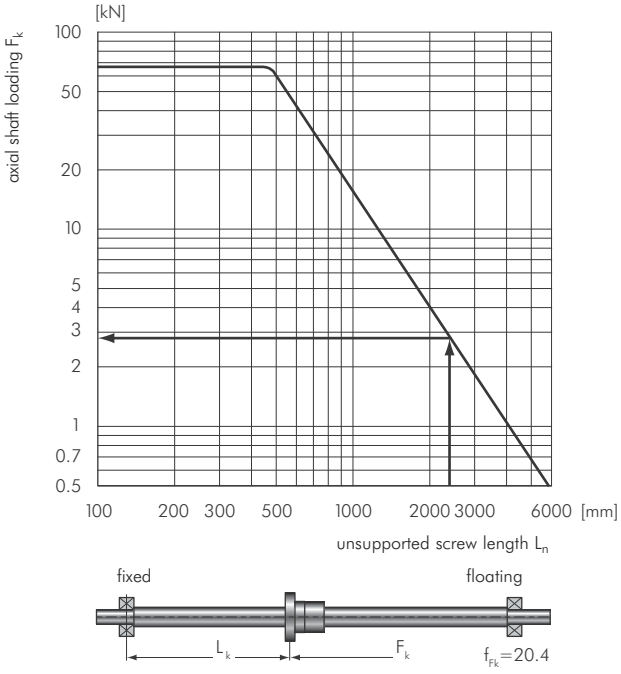
$n_k = f_{nk} \cdot d_2 / L_n^2 \cdot 107$ [min^{-1}]

$n_{kzul} = 0{,}8 \cdot n_k$ [min^{-1}]

n_k	critical rotation speed [min^{-1}]
n_{kzul}	permissible rotation speed [min^{-1}]
f_{nk}	value determined by bearing fitting
d_2	spindle core diameter [mm]
L_n	critical length [mm] for pretensioned nut systems
L_1	screw length [mm]

Permissible Axial Spindle Loading (Bending)

The axial spindle loading is independent of screw diameter, bearing configuration and unsupported length Lk. For axial loading, a **safety factor** of ≥ 2 should be taken.



The illustration shows that the theoretically axial loading is 2.9 kN.
With a **safety factor** of 2, this results in a permissible spindle loading of 2.9 kN / 2 = 1.45 kN.

Calculation Of The Bending

Example: spindle diameter = 20 mm
core diameter = 16.9 mm
pitch = 5 mm
length = 2400 mm
bearing configuration = fixed – supported

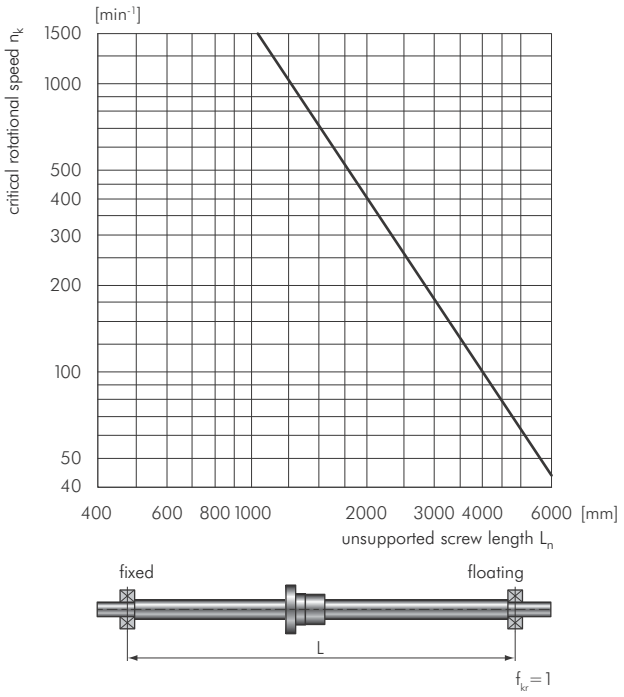
$n_k = f_{Fk} \cdot d_2^4 / L_k^2 \cdot 10^4$ [N]

$n_{kzul} = F_k / 2$ [N]

F_k	theoretically permissible axial loading
F_{kzul}	spindle loading permissible in operation
f_{Fk}	value determined by bearing fitting
d_2	spindle core diameter [mm]
L_k	unsupported screw length [mm]

Critical Rotation Speed

With small diamete, rotational components such as spindles, there is a danger of resonating frequency which vibrates the screw. The following calculation allows for the estimation of this resonating frequency, under the prerequisite of a robust installation. Speed approaching the critical rotational speed can significantly increase the chance of lateral buckling. The critical rotational speed must also be considered in relation with the permissible axial spindle loading.



Calculation Of The Critical Rotation Speed

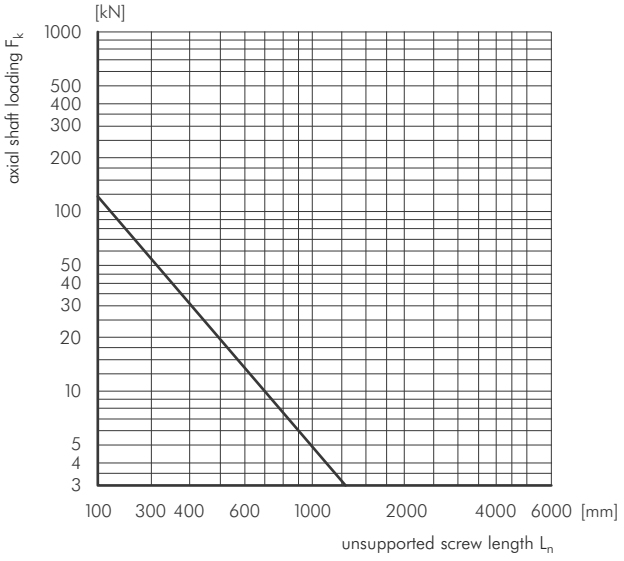
$n_{zul} = 0.8 \cdot n_{kr} \cdot f_{kr}$

n_{zul}	maximum permissible rotational speed (RPM) [min^{-1}]
n_{kr}	theoretical critical rotation speed [min^{-1}], that leads to resonating frequency
f_{kr}	bearing constant determined by bearing manufacturer

The working rotational speed may not exceed 80 % of the maximum permissible rotational speed!

Permissible Axial Spindle Loading (Bending)

With small diameter rotational components such as spindles, the possible failure due to axial overloading must be taken into account. The following calculation assists with the determination of the permissible axial spindle load.

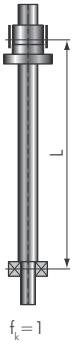


Calculation Of The Bending

$F_{kzul} = 0.8 \cdot F_k \cdot f_k$

F_{zul}	maximum allowable axial load [kN]
F_k	theoretically permissible axial loading [kN]
f_k	bearing constant determined by bearing manufacturer

The working rotational speed may not exceed 80 % of the maximum permissible rotational speed!

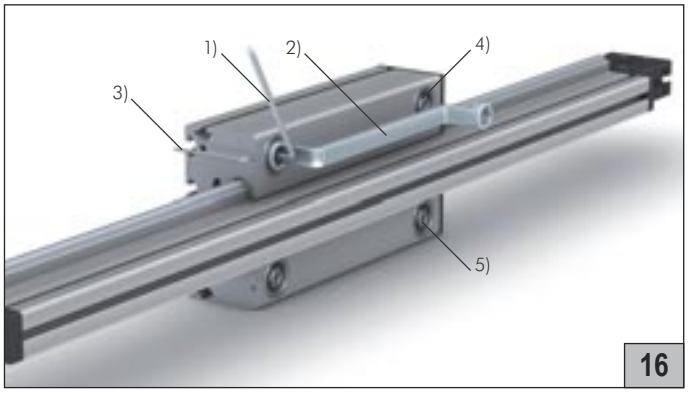


Rollers

The carriage rollers are designed for speeds of up to 8 m / s. The total permissible loading allowed depends on many factors and has to be calculated for each case. A minimum stroke length of 60 mm is required to ensure that the roller is lubricated during operation.

Carriage Assembly

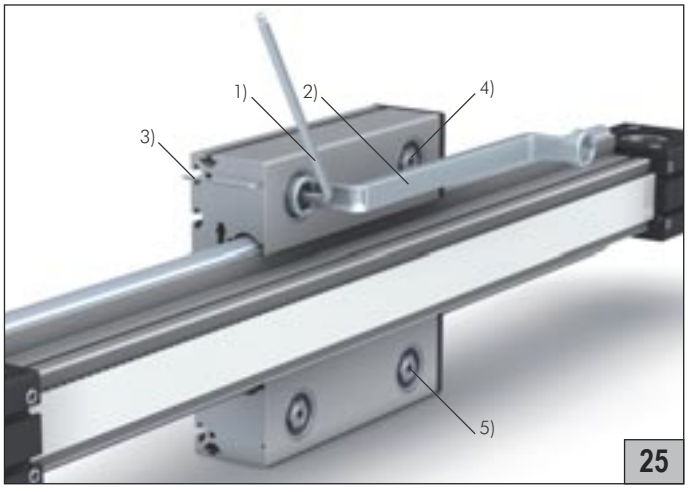
The rollers are assembled in the carriage with the concentric roller axle to the top and the excentric axle to the bottom. Excentric adjustment of ± 0.9 mm is provided. The roller is pressed firmly into the carriage against a steel disc and locked into position by a Ø 38 mm lock nut. The lock nut is also locked into position by a M 6 grub screw.



*1) hexagon key **A/F 5** to secure excentric adjustment (5).*
*2) ring wrench **A/F 17** to attach the lock nut.*
*3) hexagon key **A/F 3** to secure the lock nut grub screw.*
4) concentric roller axle (SL0152S).
5) excentric roller axle (SL0153S).

Wiper And Lubrication System

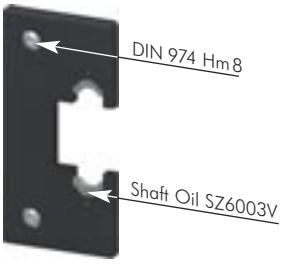
The wiper and lubrication system is attached to the front and rear faces of the carriage. The spring tensioned felt pad forms the oil reservoir to lubricate the contact face of the roller and guide rail. Lubrication is via a small hole on the front face of the lubrication system and we recommend our oil reference (SZ6003V). The lubrication intervals will vary according to individual circumstances and can be from two months up to one year. This is recognized by red discoloration of the rails or rollers. The new felt must be infused with oil and re-infused at the recommended lubrication intervals.



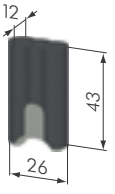
*1) hexagon key **A/F 8** to secure excentric adjustment (5).*
*2) ring wrench **A/F 24** to attach the lock nut.*
*3) hexagon key **A/F 3** to secure the lock nut grub screw.*
4) concentric roller axle (SL0154Z).
5) excentric roller axle (SL0154E).

Service Pockets

For long carriages that have short stroke lengths lubrication of the guide rails cannot be guaranteed. In this case, service pockets with internal wiper and lubrication system are installed.



external wiper and lubrication system



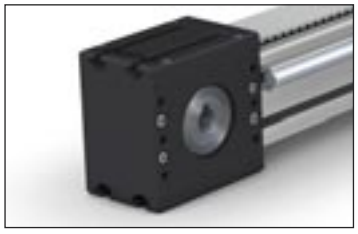
wiper and lubrication system

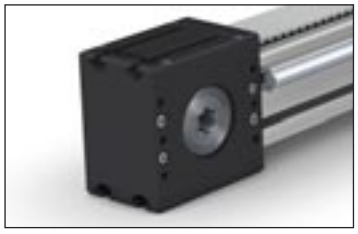
Motor Coupling

Maximum bore diameter is Ø 40 H 7 (standard delivery), complete with steel drive coupling shrunk fit to customer request (included in price).

- max. bore diameter for motor with keyway: Ø 30 H 7
- max. bore diameter for motor with taper lock coupling: Ø 34 H 7

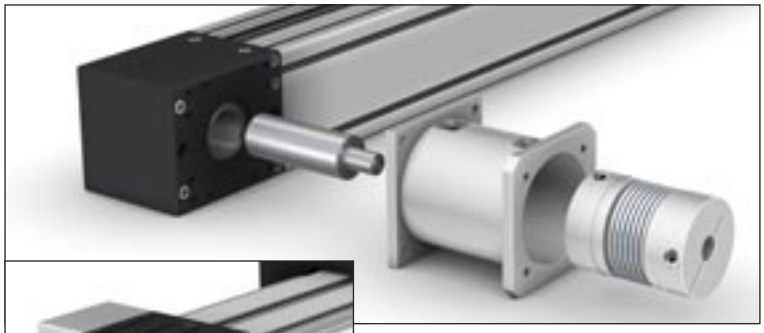
Motor couplings with flange plates at customer request.






Coupling And Timing Belt Gearbox

The coupling housing makes the mechanical connection between the motor and the pulley assembly. It also acts as a protection to the flexible coupling.



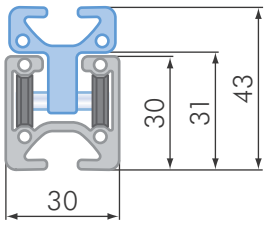

Omega Drive Operation

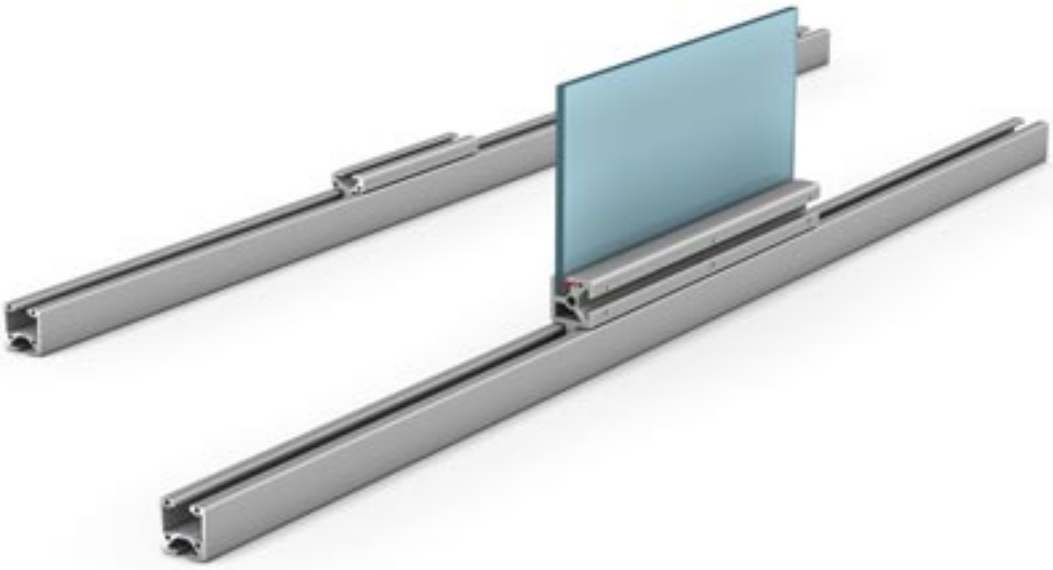
Omega Drives are manufactured in five basic variants. Their purpose is to replace the drive unit on the fixed part of the axis. The timing belt is tensioned via external timing belt tensioners at each end of the profile axis. Omega drives are normally used with integral carriages.

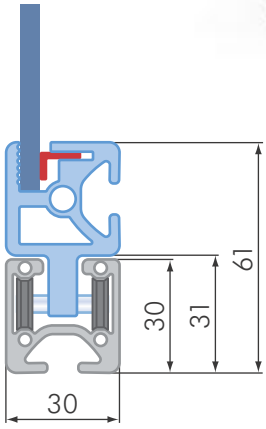

Omega Drive 22

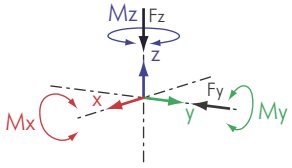

Omega Drive 50


Omega Drive 50 closed









Pulley Assembly	without
L / N 140 / 8	SL4000N
L / N 280 / 8	SL4005N
Special Length (mm)	SL4006N
w/ Clamp Profile	SL4008N

L carriage length
N number of rollers

C-Track Double Carriage C 30 / 43

- maximum speed: 2 $^{m}/_{s}$
- rollers can only be loaded radially
- F_{max} = 25 N per supporting roller

C-Track Profile C 30 / 43

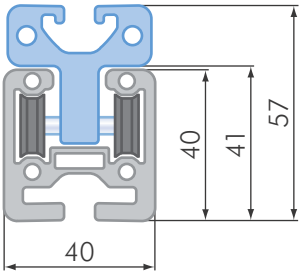
I_x = 2.83 cm^4
I_y = 3.75 cm^4
W_x = 1.66 cm^3
W_y = 2.50 cm^3
G = 0.82 $^{kg}/_{m}$

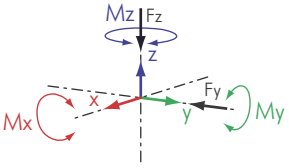
C-tracks with plastic rollers. C-tracks require no lubrication and are a low cost alternative to the linear actuators series 16.

Standard Delivery: complete linear actuator inclusive of track profile and carriage

Optional: proximity and end of stroke switches, end stops

Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased.





Pulley Assembly	without	C 40 / 57
Timing Belt	–	AT 3 / 10
L / N 140 / 8	SL4009N	SL4010N
L / N 280 / 8	SL4014N	SL4015N
Special Length (mm)	SL4016N	SL4017N
std. Bore Diameter	–	Ø 14 H 7

L carriage length
N number of rollers

C-Track Carriage C 40 / 57

- maximum speed: 2 $^{m}/_{s}$
- rollers can only be loaded radially
- F_{max} = 40 N per supporting roller

C-Track Profile C 40 / 57

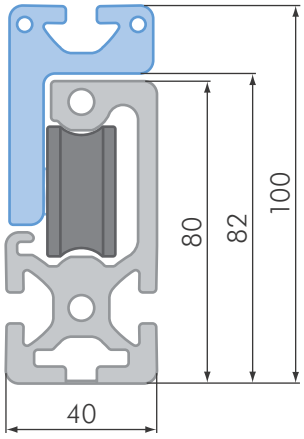
I_x = 2.83 cm^4
I_y = 3.75 cm^4
W_x = 1.66 cm^3
W_y = 2.50 cm^3
G = 0.82 $^{kg}/_{m}$

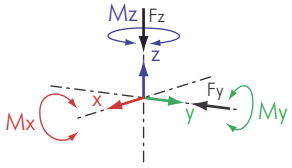
C-tracks with plastic rollers. C-tracks require no lubrication and are a low cost alternative to the linear actuators series 16.

Standard Delivery: complete linear actuator inclusive of track profile and carriage

Optional: proximity and end of stroke switches, end stops

Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased.





Pulley Assembly	without	C 40 / 100
Timing Belt	–	AT 5 / 16
W / L 140 / 3	SL4019N	SL4020N
W / L 280 / 4	SL4024N	SL4025N
Special Length (mm)	SL4026N	SL4027N
std. Bore Diameter	–	Ø 40 H 7

W carriage width
L carriage length

C-Track Single Carriage C 40 / 100

- maximum speed: 2 $^{m}/_{s}$
- rollers can only be loaded radially
- F_{max} = 100 N per supporting roller

C-Track Profile C 40 / 100

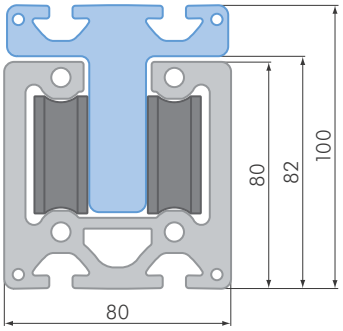
I_x = 79.52 cm^4
I_y = 11.04 cm^4
W_x = 17.46 cm^3
W_y = 4.73 cm^3
G = 3.32 $^{kg}/_{m}$

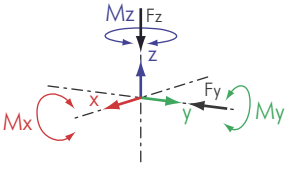
C-tracks with plastic rollers. C-tracks require no lubrication and are a low cost alternative to the linear actuators series 16.

Standard Delivery: complete linear actuator inclusive of track profile and carriage

Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased.





Pulley Assembly Timing Belt	without –	C 80 / 100 AT 10 / 22
W / L 140 / 6	SL4029N	SL4030N
W / L 280 / 8	SL4034N	SL4035N
Special Length (mm)	SL4036N	SL4037N
std. Bore Diameter	–	Ø 40 H 7

W carriage width
L carriage length

C-Track Double Carriage C 80 / 100

- maximum speed: 4 $^{m}/_{s}$
- rollers can only be loaded radially
- F_{max} = 100 N per supporting roller

C-Track Profile C 80 / 100

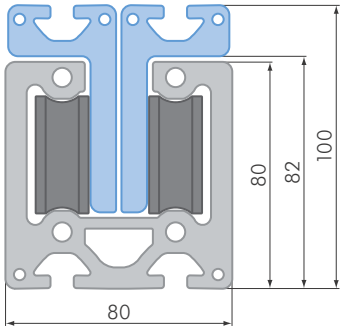
I_x = 174.65 cm^4
I_y = 213.08 cm^4
W_x = 38.98 cm^3
W_y = 53.27 cm^3
G = 6.88 $^{kg}/_{m}$

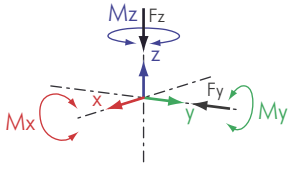
C-tracks with plastic rollers. C-tracks require no lubrication and are a low cost alternative to the linear actuators series 16.

Standard Delivery: complete linear actuator inclusive of track profile and carriage, pulley assembly with customer specific motor connection

Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased.





Pulley Assembly	without
L / N 140 / 3	SL4040N
L / N 280 / 4	SL4045N
Special Length (mm)	SL4046N

L carriage length
N number of rollers

C-Track Single Carriage C 80 / 100

- maximum speed: 4 $^{m}/_{s}$
- rollers can only be loaded radially
- F_{max} = 100 N per supporting roller

C-Track Profile C 80 / 100

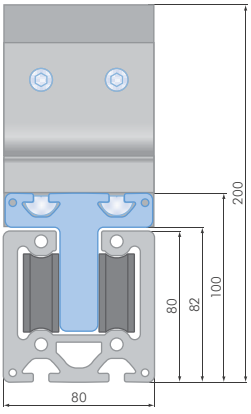
I_x = 174.65 cm^4
I_y = 213.08 cm^4
W_x = 38.98 cm^3
W_y = 53.27 cm^3
G = 6.88 $^{kg}/_{m}$

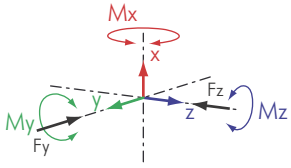
C-tracks with plastic rollers. C-tracks require no lubrication and are a low cost alternative to the linear actuators series 16.

Standard Delivery: complete linear actuator inclusive of track profile and carriage

Optional: proximity and end of stroke switches, end stops, energy cable

Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased.





Pulley Assembly Timing Belt	Omega Drive C-Type AT 5 / 16
Special Length (mm)	SL4038N
std. Bore Diameter	Ø 40 H 7

C-Track Double Carriage C 80 / 100

- maximum speed: 4 $^{m}/_{s}$
- rollers can only be loaded radially
- F_{max} = 100 N per supporting roller

C-Track Profile C 80 / 100

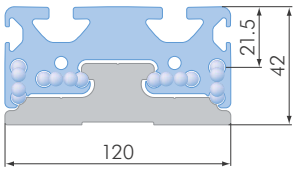
I_x = 174.65 cm^4
I_y = 213.08 cm^4
W_x = 38.98 cm^3
W_y = 53.27 cm^3
G = 6.88 $^{kg}/_{m}$

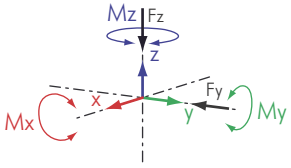
C-tracks with plastic rollers. C-tracks require no lubrication and are a low cost alternative to the linear actuators series 16.

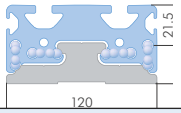
Standard Delivery: complete linear actuator inclusive of track profile and carriage, pulley assembly with customer specific motor connection

Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

Carriage Options: Carriage lengths of up to 2.3 m are available. For high load systems it may be advisable to add further rollers. By having a combination of guidance and flat faced rollers the permissible actuator loading values may be increased.







Pulley Assembly	without
L 80	SL4080N
L 120	SL4082N
L 160	SL4084N
Special Length (mm)	SL4086N

L carriage length

Roller Bearing Carriage

- maximum speed: 1 $^{m}/_{s}$
- F_y = 20 N per 10 mm carriage length
- F_z = 20 N per 10 mm carriage length

Recirculating Ball Slide Guidance Rail

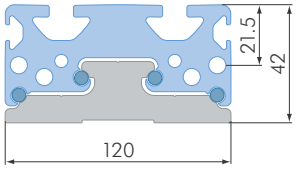
I_x = 3.34 cm^4
I_y = 35.73 cm^4
W_x = 2.37 cm^3
W_y = 8.93 cm^3
G = 2.63 $^{kg}/_{m}$

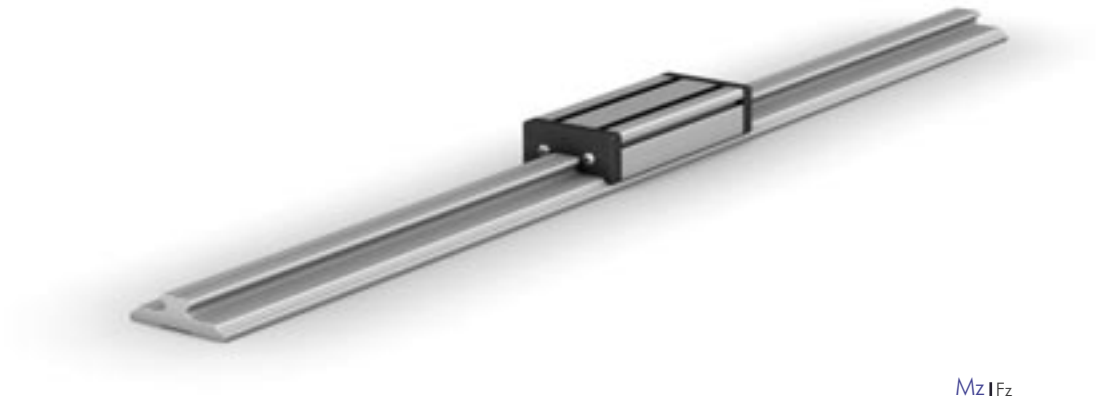
The recirculating ball slide system uses an aluminum guidance rail and a recirculating ball carriage that houses plastic ball bearings. The ball bearings go around and through four guidance bores and are returned back through the carriage by plastic end caps attached to each end of the carriage.

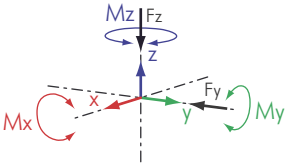
Standard Delivery: complete linear actuator inclusive of track profile and carriage

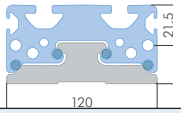
Optional: proximity and end of stroke switches, end stops

Carriage Options: Carriage lengths of up to 0.30 m are available.









Pulley Assembly	without
L 80	SL4090N
L 120	SL4092N
L 160	SL4094N
Special Length (mm)	SL4096N

L carriage length

Glider Slide Carriage

- maximum speed: 1 $^{m}/_{s}$
- F_y = 30 N per 10 mm carriage length
- F_z = 30 N per 10 mm carriage length

Glider Slide Guidance Rail

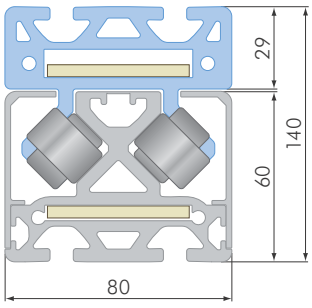
I_x = 3.34 cm^4
I_y = 35.73 cm^4
W_x = 2.37 cm^3
W_y = 8.93 cm^3
G = 2.63 $^{kg}/_{m}$

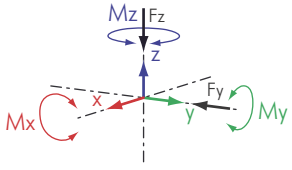
The slide guidance system uses an aluminum guidance rail and carriage that has four round, open channels. Each channel holds up to four small plastic rods. These rods are retained by plastic end caps attached to each end of the carriage.

Standard Delivery: complete linear actuator inclusive of track profile carriage

Optional: proximity and end of stroke switches, end stops

Carriage Options: Carriage lengths of up to 0.30 m are available.





Pulley Assembly Timing Belt	80 / 90 AT 10 / 50
W / L 80 / 90 160 / 8	SL5310N
W / L 80 / 90 200 / 10	SL5300N
W / L 80 / 90 280 / 10	SL5320N
std. Bore Diameter	Ø 40 H 7

W carriage width
L carriage length

Carriage 80 / 90

- maximum speed: 8 $^{m}/_{s}$
- maintenance free

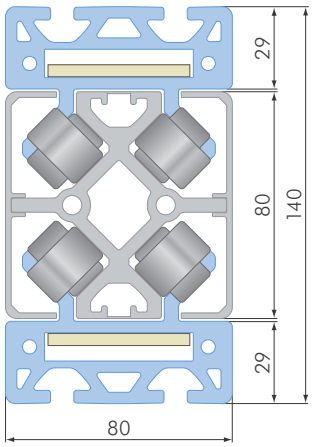
Track Profile 60 x 80

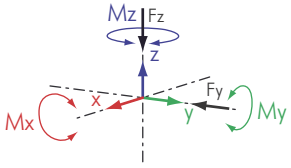
I_x = 41.64 cm^4
I_y = 47.92 cm^4
W_x = 10.98 cm^3
W_y = 11.98 cm^3
G = 3.70 $^{kg}/_{m}$

Standard Delivery: complete linear actuator inclusive of track profile and carriage, pulley assembly with customer specific motor connection on request

Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

Carriage Options: The carriagesare manufactured in three different lengths. Carriages with special lengths are only available on request.





Pulley Assembly Timing Belt	80 x 80 AT 10 / 50
W / L 80 / 90 200 / 10	SL5350N
std. Bore Diameter	Ø 40 H 7

W carriage width
L carriage length

Carriage 80 / 90
- maximum speed: 8 $^{m}/_{s}$
- maintenance free

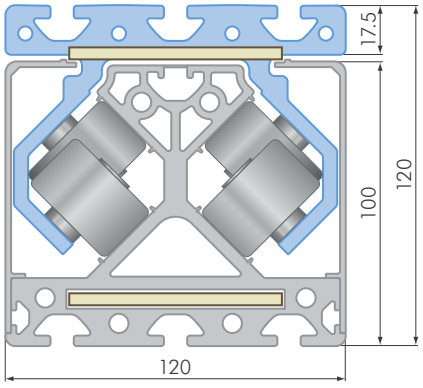
Double Guidance Track Profile 80 x 80

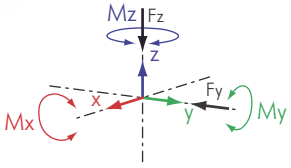
I_x = 68.93 cm^4
I_y = 154.80 cm^4
W_x = 18.83 cm^3
W_y = 38.70 cm^3
G = 5.35 $^{kg}/_{m}$

Standard Delivery: complete linear actuator inclusive of track profile and two carriages, pulley assembly with customer specific motor connection on request

Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

Carriage Options: Both carriages are manufactured with a length of 200 mm and ten track rollers. Carriages with special lengths are only available on request.





Pulley Assembly Timing Belt	120 x 120 - 75 AT 10 / 75
W / L 100 / 120 200 / 10	SL5360N
std. Bore Diameter	Ø 40 H 7

W carriage width
L carriage length

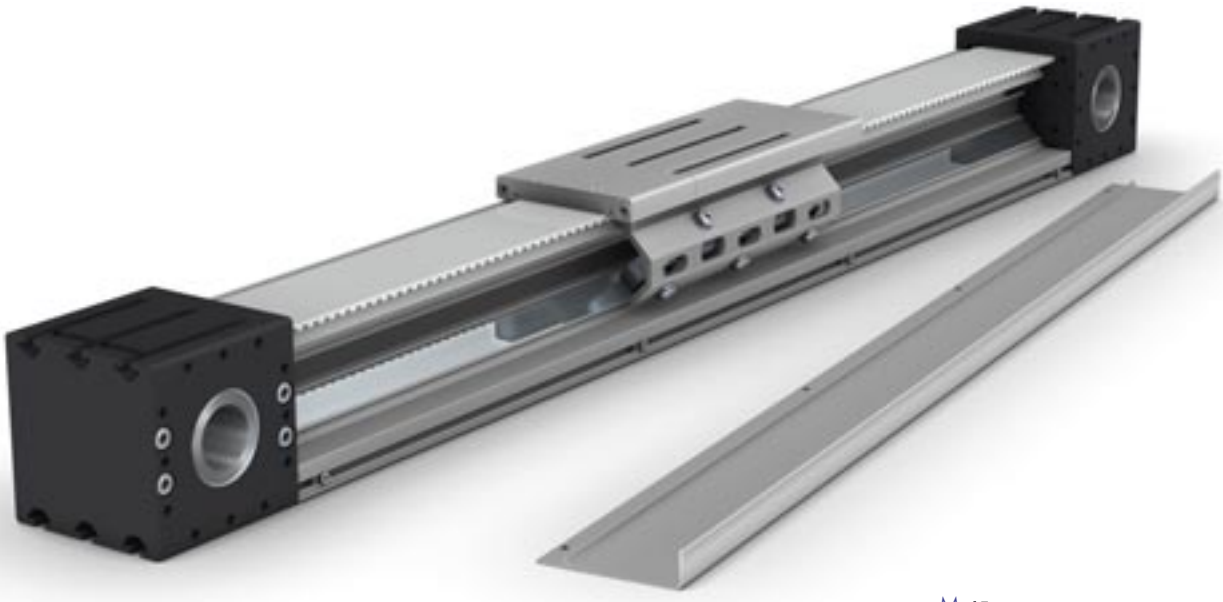
Carriage 120
- maximum speed: 8 $^{m}/_{s}$
- maintenance free

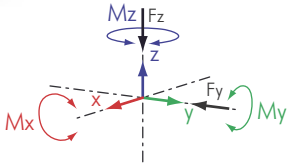
Track Profile 100 x 120
I_x = 267.57 cm^4
I_y = 217.21 cm^4
W_x = 41.73 cm^3
W_y = 36.20 cm^3
G = 7.40 $^{kg}/_{m}$

Standard Delivery: complete linear actuator inclusive of track profile and carriage, pulley assembly with customer specific motor connection on request

Optional: proximity and end of stroke switches, end stops, motor coupling, motors, energy cable

Carriage Options: The carriage is manufactured with a length of 250 mm and ten plastic track rollers. Carriages with special lengths are only available on request.

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