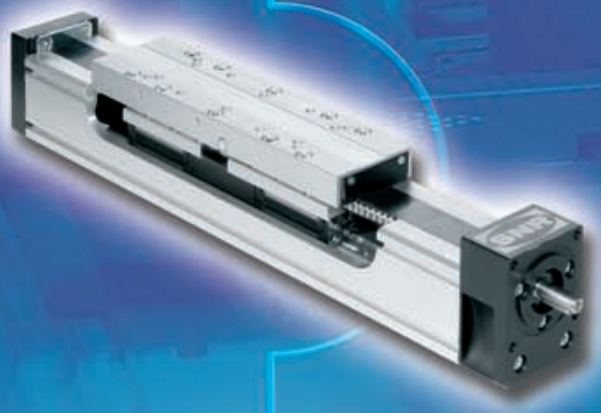
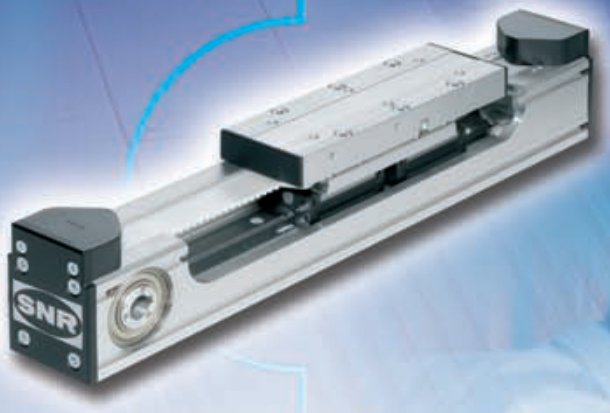
SNR, your guide to linear modules





Industry

SNR – A bearing manufacturer known across the world

For almost a century SNR has been focusing on the development, design and manufacture of bearings.

Today SNR has a distribution network in more than 200 countries on 5 continents. We offer you our expertise as Europe's third largest bearing manufacturer with worldwide production facilities.

SNR has been ISO 9001 certified since 1990. AQF and QS 9000 certification followed soon after. We are rounding off our quality policy with ISO 14001 certification and ISO 9001-2000 for design and sales.

SNR linear modules are developed, fabricated and tested under near-production conditions in our plant in Bielefeld. With a well-organised network of sales engineers and sales agents worldwide we can offer you dedicated and competent technical support at any time.

SNR linear axes are universally applicable modules that accommodate the steadily growing requirements for the automation of installation and manufacturing processes.
They are suitable for the most diverse applications in various industries: room automation, machine tools, electrical engineering/electronic hardware, automobile industry, printing industry, special-purpose machines, clean-room applications in the semiconductor industry, food industry.

The variants are built according to a modular design and depending on the problem, offer not only flexible drive and guiding concepts but also allow adequate freedom for customized solutions.

This means lower building costs and expenses for the user.

SNR linear axes can be quickly combined with each other and integrated into existing systems. They bring additional advantages through their reliability and durability.

SNR Engineering provides one-stop support for the design of individual linear axes and the development of system solutions. Through the optimal interaction of mechanics and electronics we offer short design times with optimized system configurations.

4. Linear Tables - AXLT Series

5. Linear Axes - AXS Series

Project Overview
AXC / AXDL / AXLT

	Profile diameter [mm]	Drive element	(Belt) pully feed [mm/rev.] or (screw) pitch [mm]	Max dynamic working load [N]	Repeatable precision [mm]	Max. speed [m/s]	Ball rail system
AXC40Z	40 x 40	Synchronous belt	75	210	0.05	10	
AXC60Z	60 x 60		150	560	0.05	10	•
AXC80Z	80 x 80		200	870	0.05	10	•
AXC120Z	120 x 120		320	2500	0.05	10	•
AXDL110Z	110 x 50		175	980	0.05	10	•
AXDL160Z	160 x 66		224	1830	0.05	10	•
AXDL240Z	240 x 100		272	5000	0.05	10	•
AXC60A	60 x 60		150	560	0.05	10	•
AXC80A	80 x 80		200	870	0.05	10	•
AXC120A	120 x 120		320	2500	0.05	10	•
AXC40S	40 x 40	Screw type drive	5/ 10	1000	0.03	1	•
AXC60S	60 x 60		5/ 10/ 16	3600	0.03	1.6	•
AXC80S	80 x 80		5/ 20/ 50	5200	0.03	2	•
AXC120S	120 x 120		5/ 10/ 20/ 32	9500	0.03	2	•
AXDL110S	110 x 50		5/ 10/ 16	3600	0.03	1.6	•
AXDL160S	160 x 66		5/ 10/ 20/ 50	5200	0.03	2	•
AXDL240S	240 x 100		5/ 10/ 20/ 32	9500	0.03	2	•
AXLT155	155 x 33		5/ 20	5200	0.03	2	•
AXLT225	225 x 40		5/ 10/ 25	4700	0.03	2	•
AXLT325	325 x 50		5/ 10/ 20/ 32	9500	0.03	2	•
AXLT455	455 x 70		5/ 10/ 20/ 40	16300	0.03	2	•

	Roller guide	Max. total length [m]	Max. loads and torque loads (dynamic)					
			PR [N]	PL [N]	PT [N]	MA [N.m]	MB [N.m]	MC [N.m]
	•	6	170	170	310	3,9	7	2.4
	•	8	2850	2750	2750	95	95	19
	•	8	5400	5400	5400	310	310	60
	•	8	10500	10500	10500	1750	1750	145
	•	6.1	3500	2150	1950	110	90	80
	•	6.1	8700	8700	8700	430	430	430
	•	6.35	12300	12300	12300	1050	1050	950
	•	8	2750	2750	2750	95	95	19
	•	8	4300	4300	4300	205	205	60
	•	8	9000	8700	8700	790	790	120
		3.5	660	660	660	18	18	4.5
	•	3.5	2750	2750	2750	200	200	24
	•	3.5	5400	5400	5400	420	420	54
	•	5.5	11400	11000	11000	950	950	180
		3.5	4450	2700	2450	140	115	95
		3.5	10900	10900	10900	700	700	540
		5.5	15500	15500	15500	1300	1300	1200
		3.5	6900	6900	6900	420	420	340
		3.5	10900	10900	10900	930	930	810
		3.2	22000	22000	22000	2700	2700	2250
		3.2	30000	30000	30000	3700	3700	3950

Project Overview AXS

		AXS120T	AXS160M	AXS200M	AXS230M	AXS280Z	AXS280M	AXS460M
Profile diameter [mm]		120x120	160x80	200x100	230x160	280x170	280x170	400x300
Drive element		synchronous belt rack and pinion	rack and pinion	rack and pinion	rack and pinion	Synchronous belt	rack and pinion	rack and pinion
(Belt) pulley or pinion feed [mm/rev.]		500 280	160	250 200	320	480	400 200	250
Max. dyn. working load [N]		2500	2860	6130	10750	4000	3190	5860
Repeatable precision [mm]		0.1	0.05	0.05	0.05	0.05	0.05	0.05
Speed [m/s]		10	3	3.4	2.5	6	3.3	6
Ball rail system		•	•	•	•	•	•	•
Max. total length [m]		3	6	6	10	10	10 *	10
Max. loads and torque loads (dyn.)	PR [N]	12200	7300	17400	17400	25000	28000	28000
	PL [N]	12200	6800	17400	17400	24000	28000	28000
	PT [N]	12200	6100	17400	17400	24000	28000	28000
	MA [N.m]	1750	690	2200	1850	2950	4300	5800
	MB [N.m]	1750	580	2200	1850	2950	4300	5800
	MC [N.m]	470	380	1200	1200	2600	3000	4500

* *Greater lengths with jointed aluminum sections available upon request.*

Dynamic load ratings of the linear guidance systems

Axis	Guide	PR [kN]	PL [kN]	PT [kN]	MA [kN.m]	MB [kN.m]	MC [kN.m]
AXC40S	S9	5.38	5.38	6.40	0.15	0.18	0.02
AXC40Z	L17	1.65	1.65	2.68	0.04	0.06	0.02
AXC60S	S15 H15 L24	18.20 28.40 4.43	9.10 28.40 4.43	9.65 28.40 6.83	0.46 1.79 0.22	0.48 1.79 0.33	0.11 0.32 0.08
AXC60Z	S15 H15 L24	29.40 28.40 4.43	14.70 28.40 4.43	15.58 28.40 6.83	0.54 1.05 0.22	0.58 1.05 0.33	0.19 0.32 0.08
AXC80S	W21	16.48	16.48	16.48	1.06	1.06	0.46
AXC80Z	S20 H20 W21 L47	39.20 44.60 16.48 16.11	19.60 44.60 16.48 16.11	20.78 44.60 16.48 24.17	1.26 2.88 0.90 0.81	1.34 2.88 0.90 1.21	0.36 0.72 0.46 0.44
AXC120S	R20 S30 H30 L47	39.60 93.00 89.60 16.11	39.60 46.50 89.60 16.11	39.60 49.29 89.60 24.17	3.74 4.51 8.69 1.82	3.74 4.78 8.69 2.73	1.11 1.14 1.73 0.54
AXC120Z	S30 H30 W35 L47	93.00 89.60 71.00 24.17	46.50 89.60 71.00 24.17	49.29 89.60 71.00 36.25	4.58 8.24 6.57 1.82	4.86 8.24 6.57 2.73	1.14 1.73 3.26 0.81
AXDL110S	S15	36.40	18.20	19.30	0.91	0.96	1.18
AXDL110Z	S15 L17	36.40 1.75	18.20 1.75	19.30 1.75	0.92 0.09	0.94 0.09	1.28 0.06
AXDL160S	H20	89.20	89.20	89.20	7.75	7.75	9.07
AXDL160Z	H20 L24	89.20 10.13	89.20 10.13	89.20 10.13	4.76 0.70	4.76 0.70	4.76 0.51
AXDL240S	H25	126.80	126.80	126.80	11.36	11.36	10.57
AXDL240Z	H25 L47	126.80 24.77	126.80 24.77	126.80 24.77	9.17 1.96	9.17 1.96	8.37 2.11
AXLT155	H15	56.80	56.80	56.80	2.43	2.43	2.98
AXLT225	H20	89.20	89.20	89.20	6.29	6.29	7.17
AXLT325	H30	179.20	179.20	179.20	18.28	18.28	20.61
AXLT455	H35	249.20	249.20	249.20	34.89	34.89	37.38
AXS120TE1	H25	126.80	126.80	126.80	20.92	20.92	5.07
AXS120TE2	W35	71.00	71.00	71.00	6.57	6.57	3.26
AXS160M	G30	75.20	69.94	66.55	7.31	6.96	4.20
AXS 200M	H30	216.80	216.80	216.80	26.45	26.45	16.26
AXS 230M	H30	179.20	179.20	179.20	21.68	21.68	13.44
AXS 280M	H35	291.60	291.60	291.60	53.07	53.07	35.28
AXS 280Z	H35	249.20	249.20	249.20	34.64	34.64	30.15
AXS460M	H45	331.20	331.20	331.20	86.28	86.28	62.93

Compact modules AXC

The compact linear axes of the AXC series are universally applicable as single-axis or in combination with other axes from this series or linear axes from our system range (AXS) in complex multiple-axis systems.

• Integrated coupling

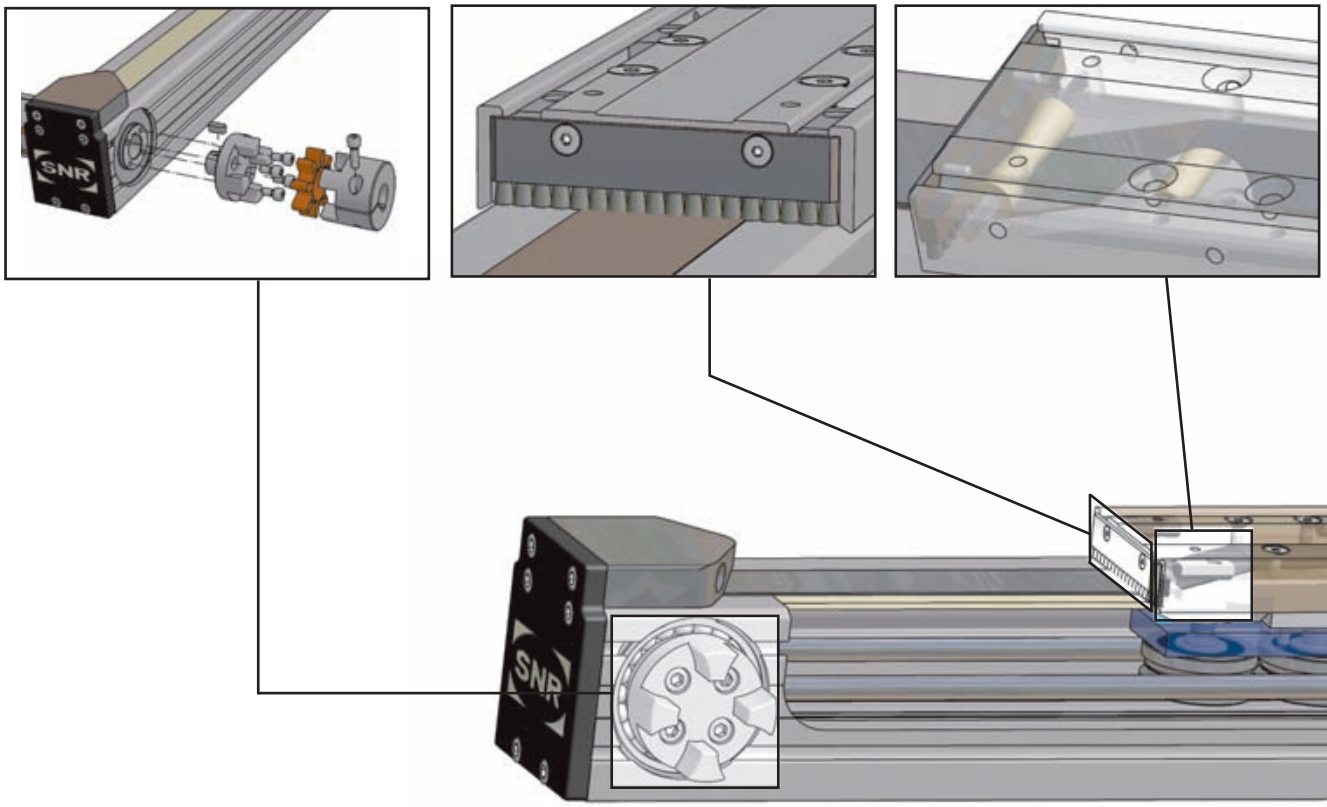
Friction-locked torque transfer is achieved using a coupling screwed down with a pulley. This torque transfer also ensures a permanent backlash-free and wear-free connection compared with conventional feather key couplings, even in the highest dynamic range.

• Scraper brushes

The scraper brushes reliably remove major contamination from the cover strip and aluminum section.

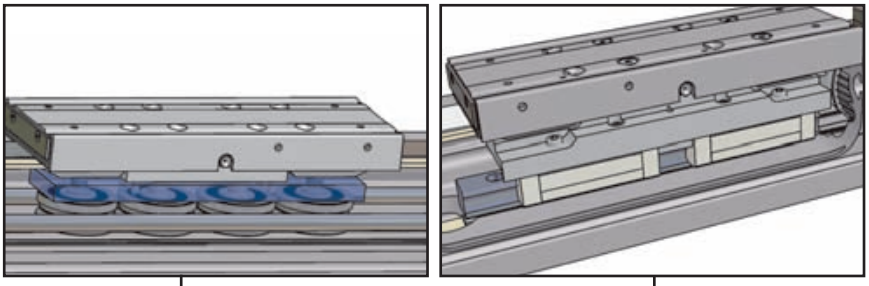
• Cover strip

A cover strip of tried and tested design protects the interior guidance and drive system from contamination.
The guide rollers of the cover strip ensure low-friction operation.
The special geometry also ensures an optimal seat for the cover strip even in overhead installations.



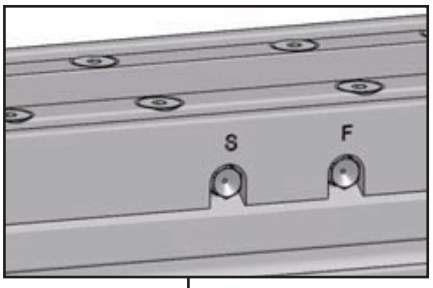
• Variable guidance system

The variable use of roller guides or caged ball linear guides allows optimal adaptation to the application.



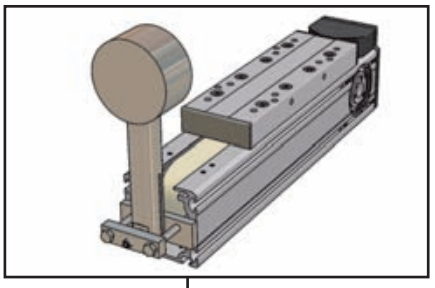
• Convenient relubrication

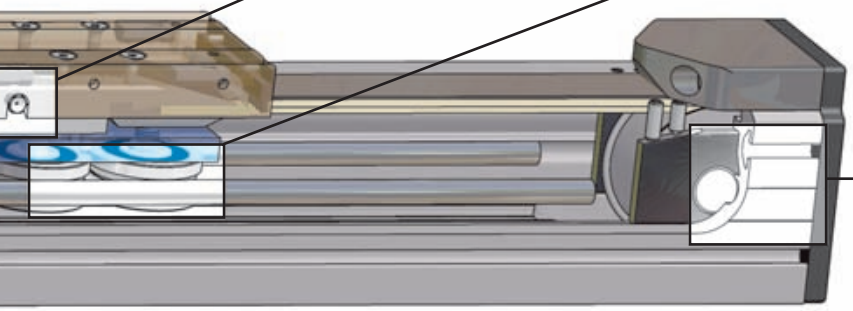
All AXC-type linear axes with ball screw or ball rail system are fitted with lubricating nipples on both sides to allow the best possible accessibility.
The screw-type drive and linear guidance are individually regreasable to ensure optimal lubricant supply for both.



• Synchronous belt tension

Radially adjustable mounting of the deflection pulley ensures 100% adjustability and reproducibility for the prescribed belt tension. This technology allows re-tensioning of the belt without having to remove the load in case of servicing.

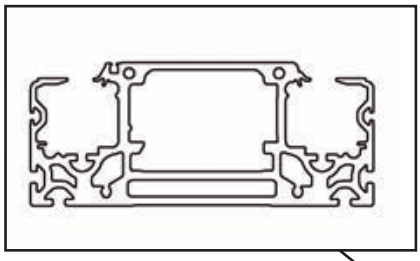




Parallel modules AXDL

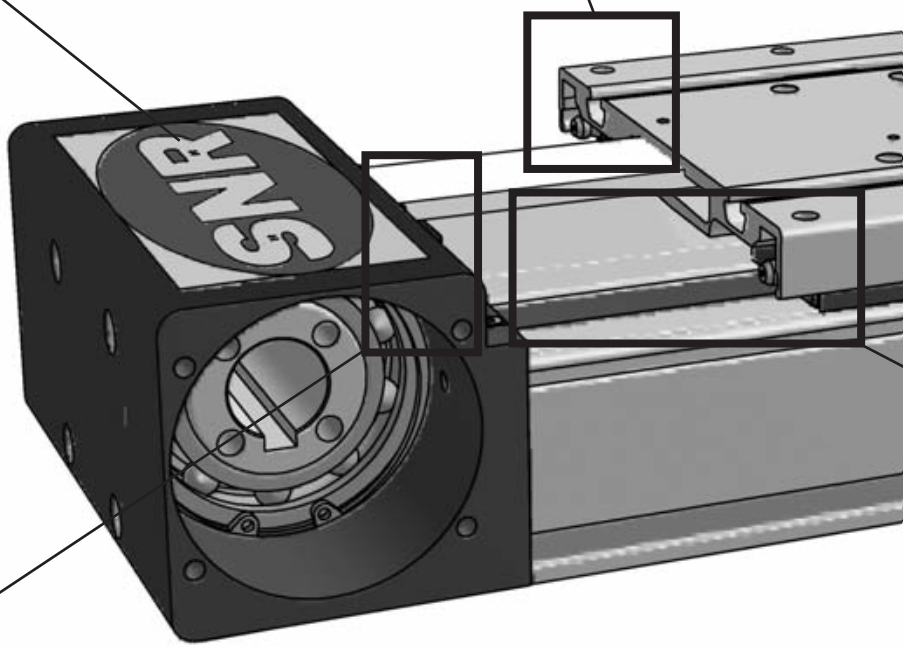
• Profiles with high rigidity

The closed profiles offer high rigidity especially in designs with synchronous belt drive.



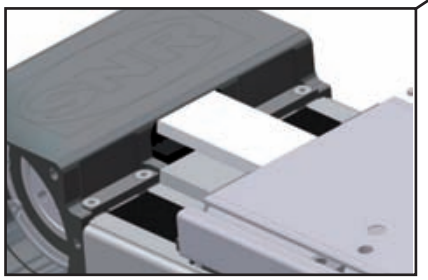
• Relubrication

Guidance system and ball screw are individually regreasable. Lubricating points are located on both front ends of the table top.



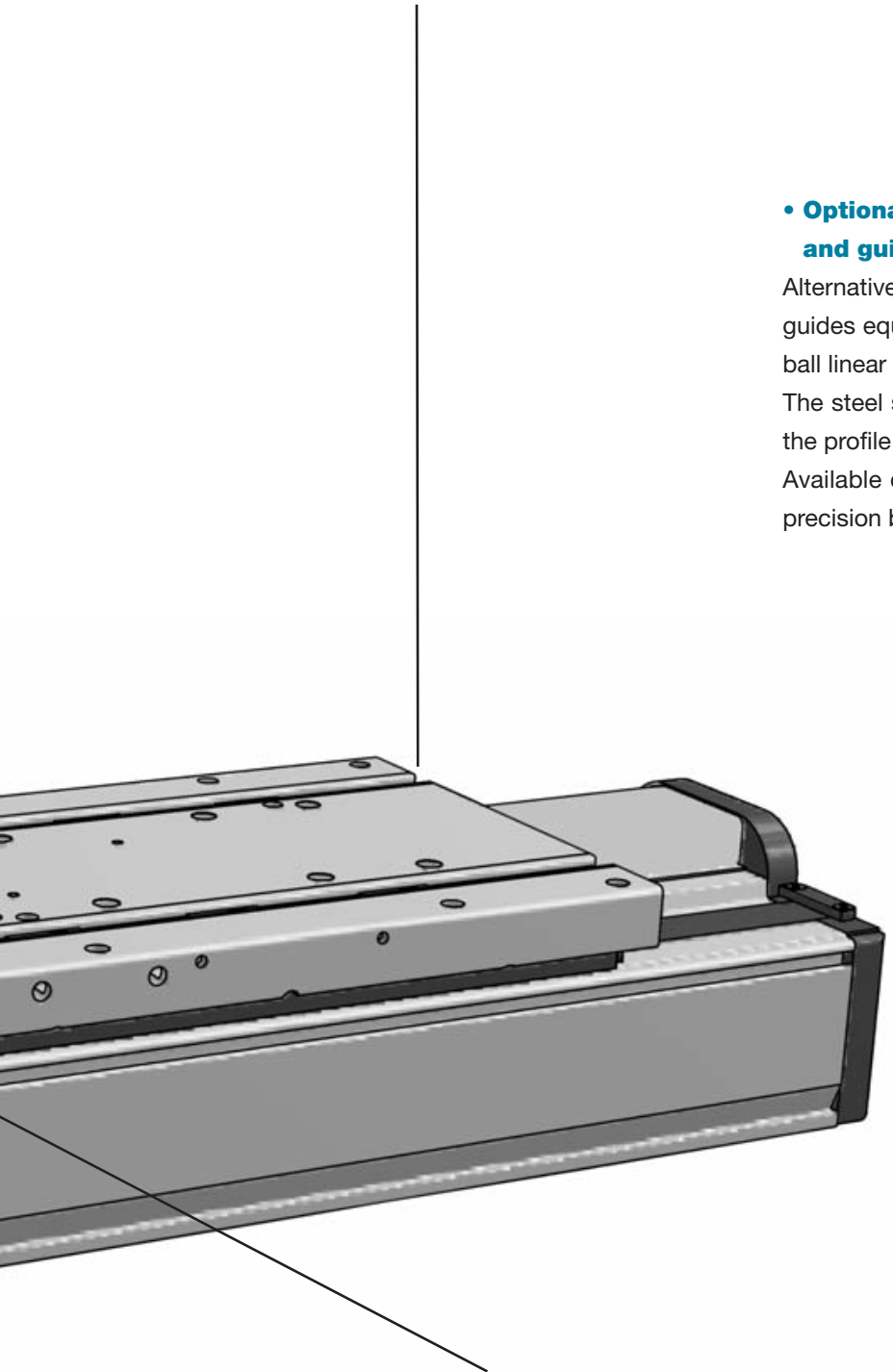
• Seal

The drive end of the synchronous belt axis is protected by a scraper brush.



• Ease of Service

The modular design lowers maintenance costs during servicing. The synchronous belts, cover strips and return pulleys of the cover strips can be replaced without having to remove the table or the load.

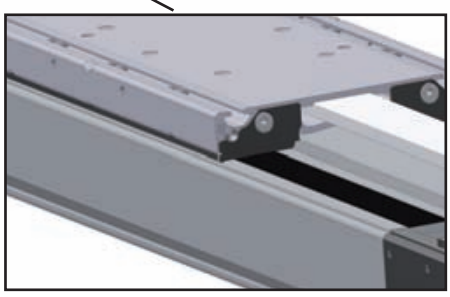


• Optional variants of drive and guidance system

Alternative guidance systems consist of two parallel guides equipped with crossed rollers or two caged ball linear guides.

The steel shafts of the roller guide are anchored in the profile at an angle of 45°.

Available drive systems are a synchronous belt or precision ball screw.



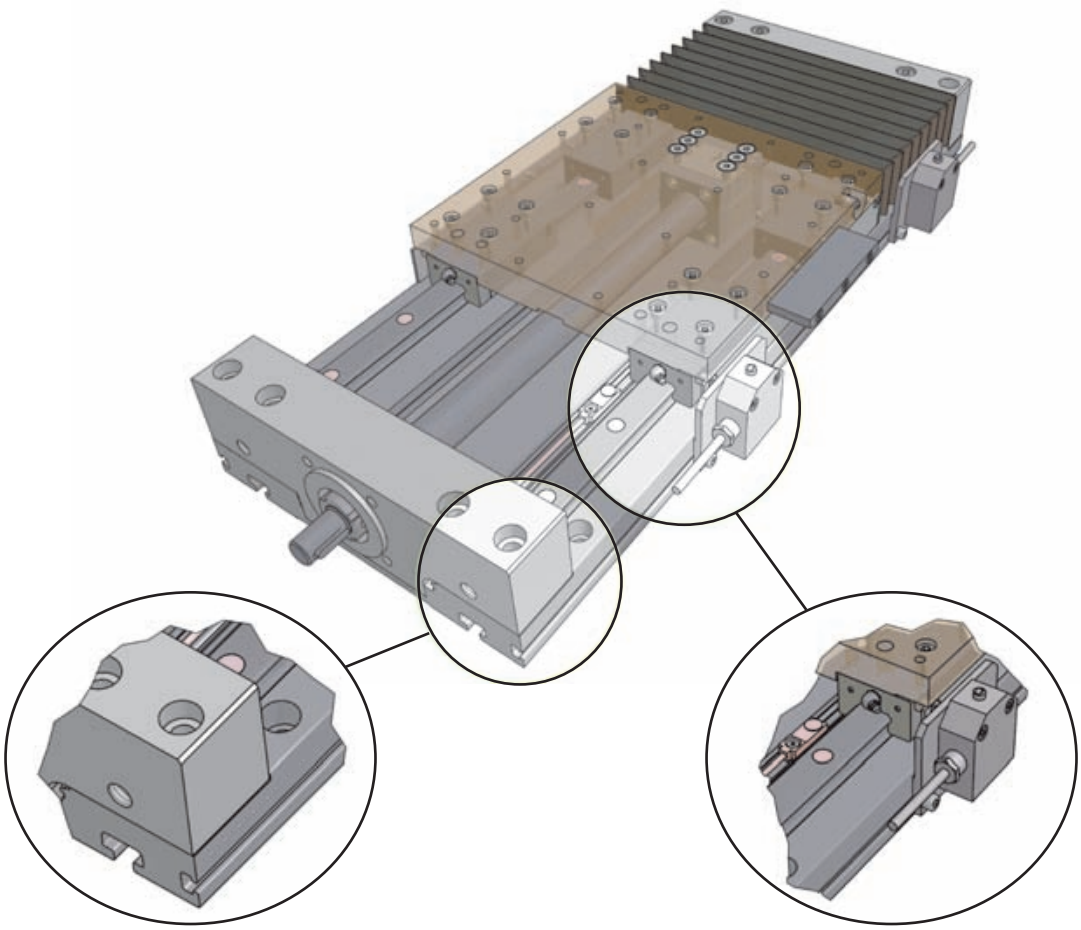
• Seal

Side gaskets on the table and specially shaped cover strips protect the guide and drive system from contamination. The cover strips are adapted to the table.

Felt wipers safely remove contamination from cover strips and profile.

Linear tables AXLT

For applications with high loads, especially torque loads, SNR linear tables from the AXLT series provide excellent solutions.
The integrated ball screw drive ensures precise movements even under the highest loads. Two parallel ball rail systems ensure that high torque loads are safely absorbed. All internal components such as the screw-type drive, the guidance system and the switch may be protected from external forces by optional bellows.



• Fastening

Depending on mounting position and size, our linear tables can be screwed from above or below using the sliding blocks, thanks to the structure of the base board.

• Limit switch sensors

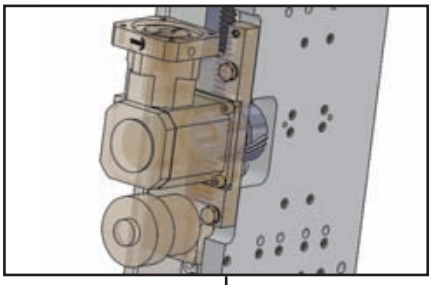
Internal inductive proximity switches or externally attached mechanical limit switches are available as limit stop devices.

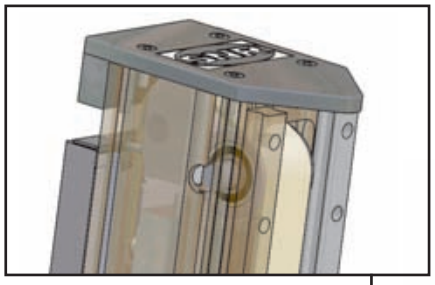
Telescopic axes AXS

SNR telescopic axes are distinguished by their optimally synchronized guidance systems and synchronous belt/rack and pinion drive combination.
They are especially suitable for use in confined installation spaces. Our modules are suitable for both vertical and horizontal applications, with the same dimensions and can achieve speeds of up to 10 m/s.
Telescopic axes can be delivered in combination with our gantry axes as a complete system or built into existing systems or new concepts as an individual module.

• Drive

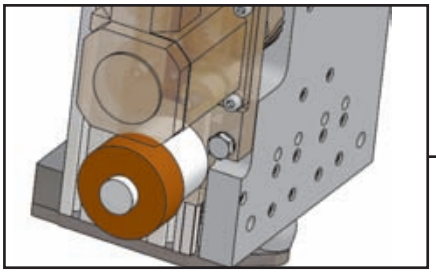
Telescopic function through a combined drive comprising of a rack-and-pinion and synchronous belt drive.





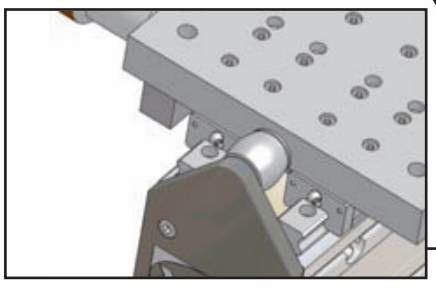
• Lubrication

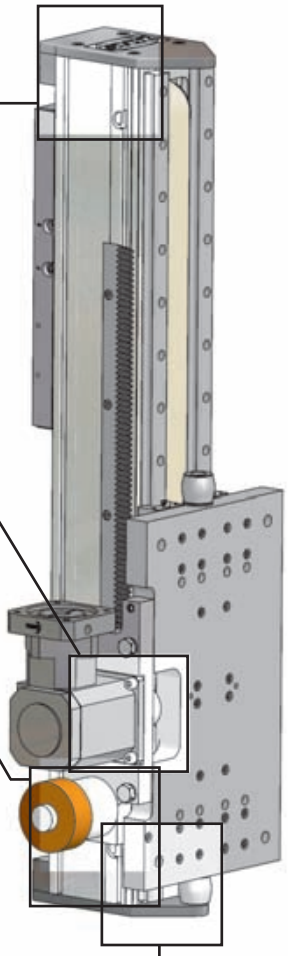
Optimal lubricant supply is ensured for the rack and pinion drive by the use of a permanent lubrication system in combination with a felt-toothed wheel.



• Shock absorbers

Standard structural shock absorbers are used as mechanical limit switches.



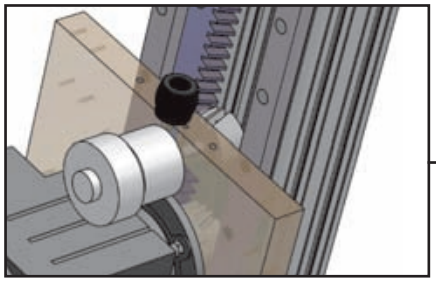


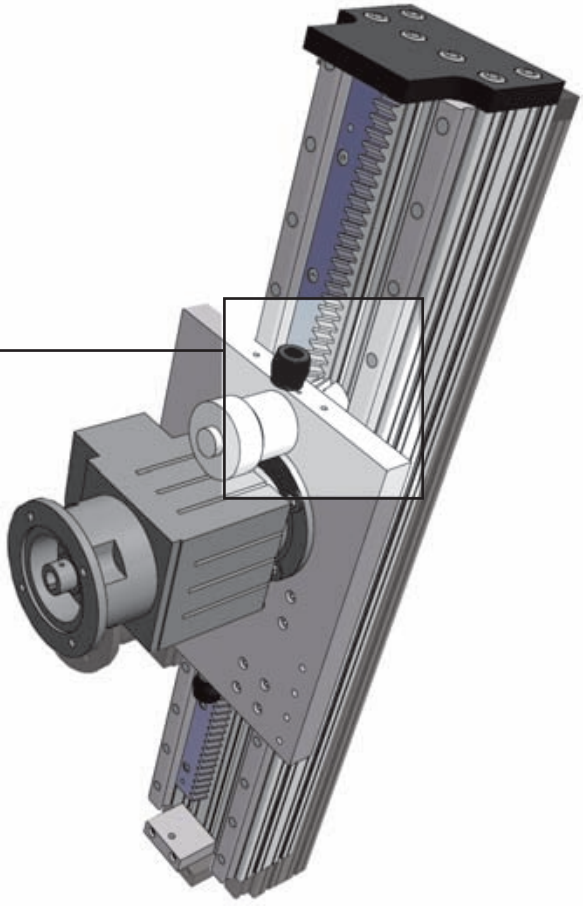
Lifting axes with rack and pinion drive AXS

SNR lifting axes are predominantly used in the field of vertical handling in linear and surface gantries due to the high dynamic load transmission capacity of the rack and pinion drive. Weights of up to 1000 kg can be moved thanks to the variable profile design and the rigid parallel construction of the ball rail system.

• Lubrication

Optimal lubricant supply is ensured for the rack and pinion drive through the use of a permanent lubrication system in combination with a felt-toothed wheel.





• Shock absorbers

In a vertical mounting position, structural shock absorbers are used for the mechanical stop position limit. These shock absorbers are dimensioned according to the maximum loads of the various installation sizes.

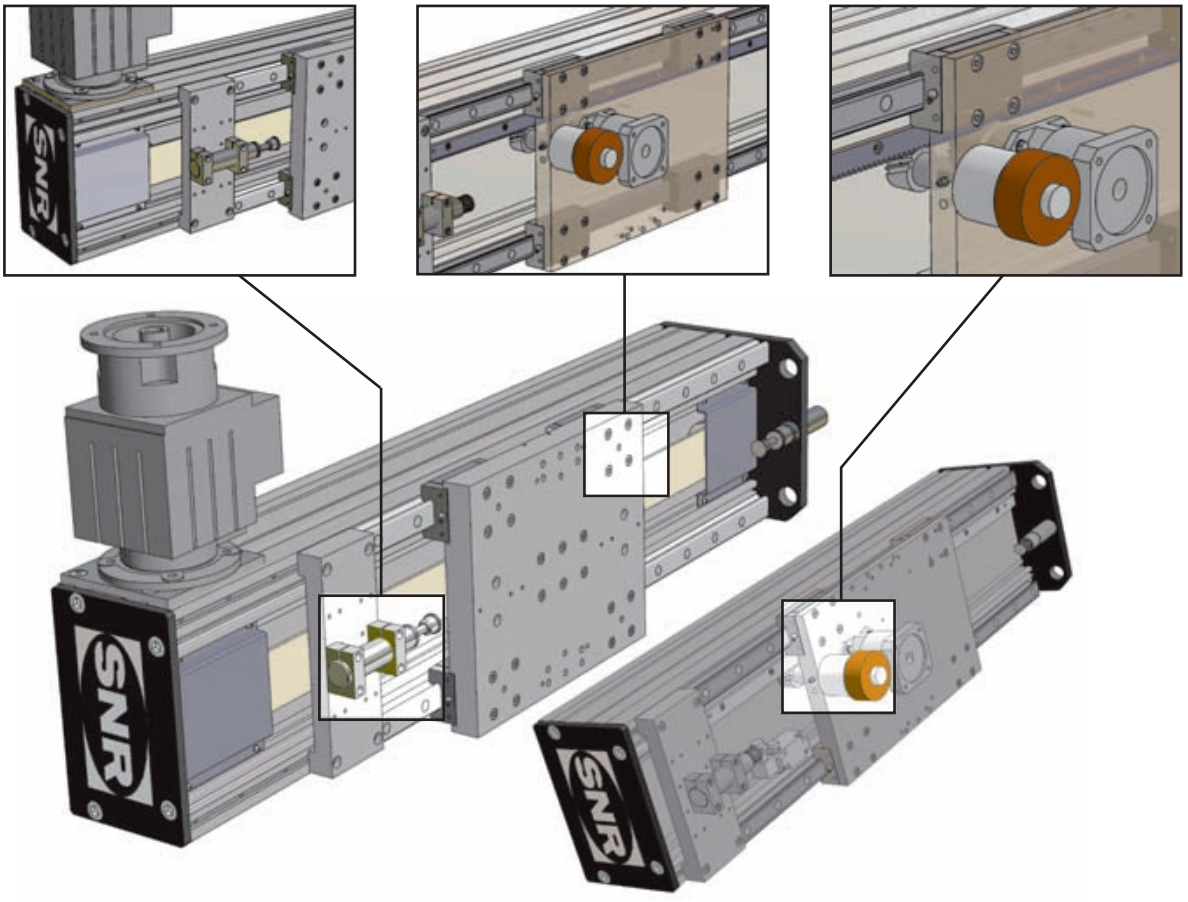
Gantry axes AXS

Gantry axes are characterized by high load capacity and total lengths of up to 10 m. Modules with synchronous belt drive are available for highly dynamic applications. Since caged ball linear guides are also used in these linear axes, they are distinguished by their exceptionally quiet running, even at high speeds. For applications where long lifting distances and the rigidity of the drive components are major considerations, our rack-and-pinion-driven linear axes offer multiple possibilities, since all the basic components, such as aluminum sections, guide bars and the rack and pinion can be extended to virtually any length to enable on-site assembly.
In these variants several carriage units can also be moved on one axis independently of each other.

• Damper
For SNR gantry axes, only hydraulic buffer shock absorbers are used as mechanical limit switches.

• Guidance system
Highest loads and smooth running performance due to parallel ball rail systems.

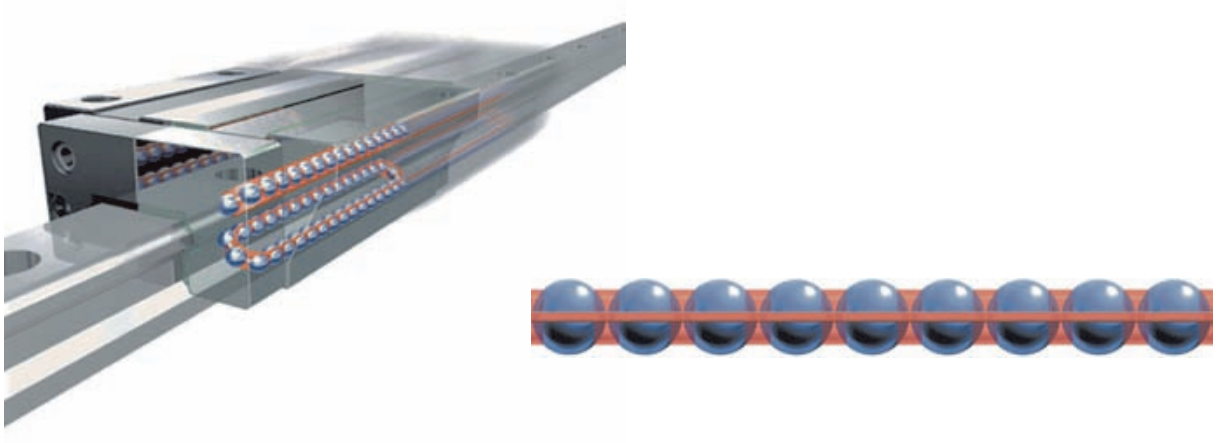
• Lubrication
Optimal lubricant supply is ensured for the rack and pinion drive through the use of a permanent lubrication system in combination with a felt-toothed wheel.



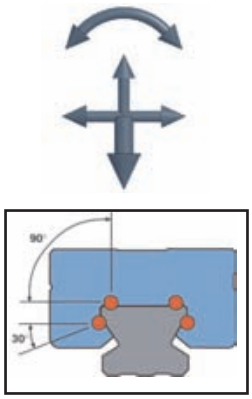
The guidance systems

• Ball rail systems

Caged ball linear guides are available for all sizes of our linear modules.
The caged ball system allows the guide to run smoothly and quietly. The results are minimum noise emissions, high-speed running, up to 8 m/s and long maintenance intervals.

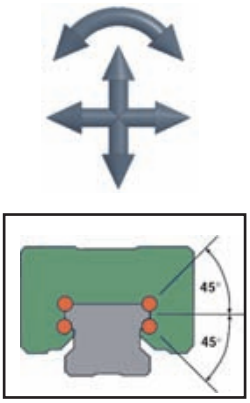


Depending on the installation size, one of various designs of linear controls may be selected to ensure optimal adaptation of the rail guide to the application. Consequently, high guidance accuracy is ensured, even at large loads.



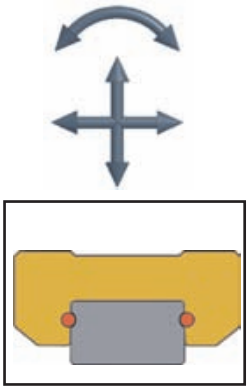
• Guidance type S

Ideal for radial loads.



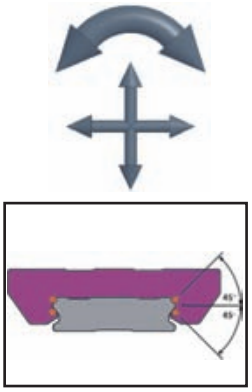
• Guidance type H

Multi-purpose use with same load ratings in all main load devices.



• Guidance type S (for AXC40)

Miniature guide. For this reason, optimal for use in small linear axes.



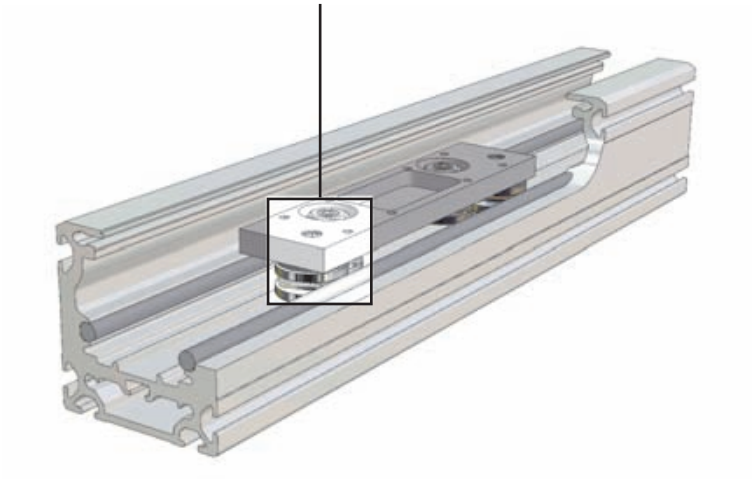
• Guidance type W

Highest torque load and rigidity with wide rail geometry.

• Roller guide

All sizes from the AXC and AXDL series are available in alternative versions with a roller guide system. This system consists of rollers which roll on burnished, tempered steel shafts incorporated in the aluminum section. The steel shafts are permanently supplied with lubricating oils from an oil reservoir that can be refilled from the outside.

Thanks to the eccentric mounting of the two rollers the guidance system can be precisely adjusted, thus maintaining the correct initial preload or zero backlash set at the factory. This technology provides for excellent running properties.



• Load-bearing capacities

The dynamic load-bearing capacities of both guidance systems are based on a nominal service life of 54,000 km for synchronous belt drives and 27,000 km for screw-type drives. Where static alternating loads are involved, the dynamic limit values need to be taken into account when dimensioning. Please consult our calculations department when dealing with unusual parameters and complex loading situations.

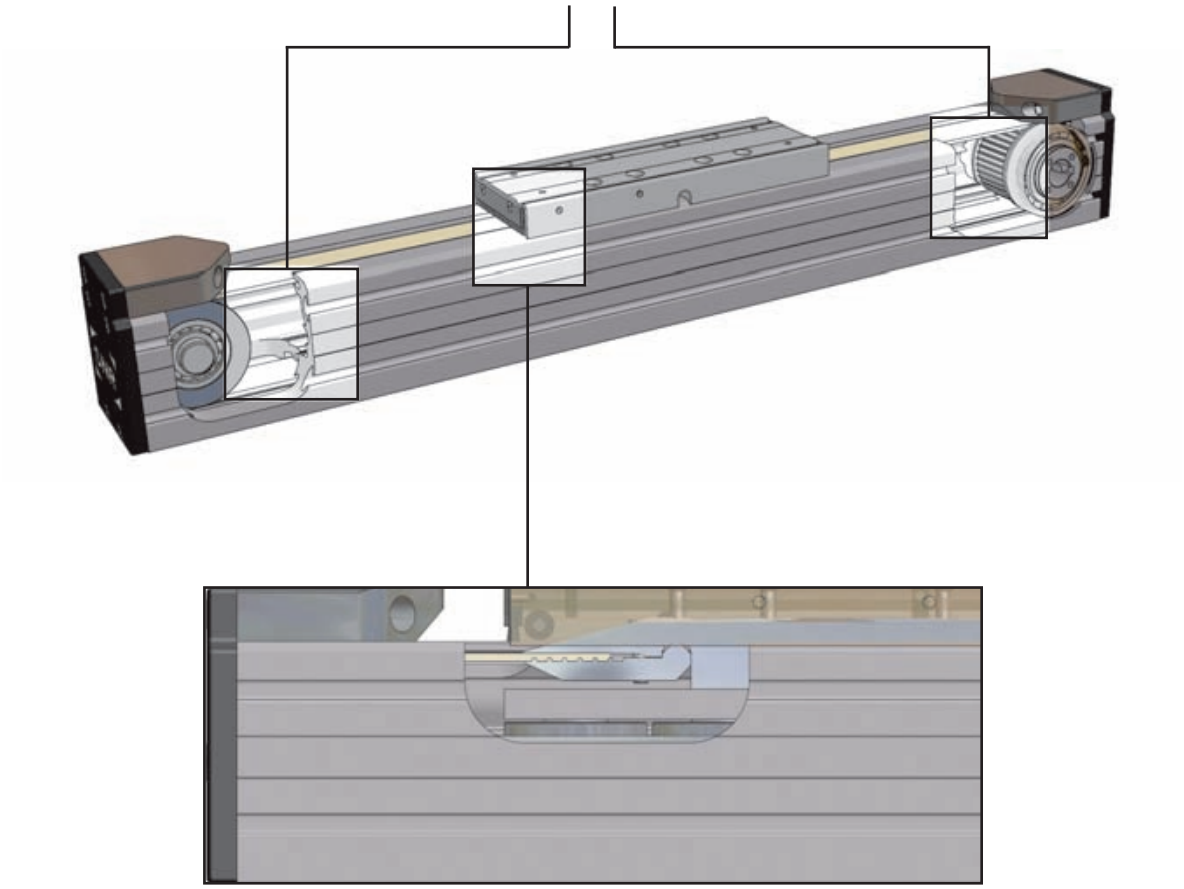
The drive systems

• Synchronous belt drive

The synchronous belt drive is used primarily for fast handling and positioning tasks since speed is the primary objective. All sizes from the AXC series are equipped with AT-type synchronous belts.

• Integrated pulleys

The integrated pulleys allow an optimal ratio between lift and total length as well as a continuous aluminum section. The advantages for the user are an extremely compact installation and significantly greater flexibility in the fastening of the linear axis.



• Synchronous belt clamping

The belt clamp allows the high strength joining of the synchronous belt so that its full load-bearing capacity is retained.

• Synchronous belt drive in Omega design

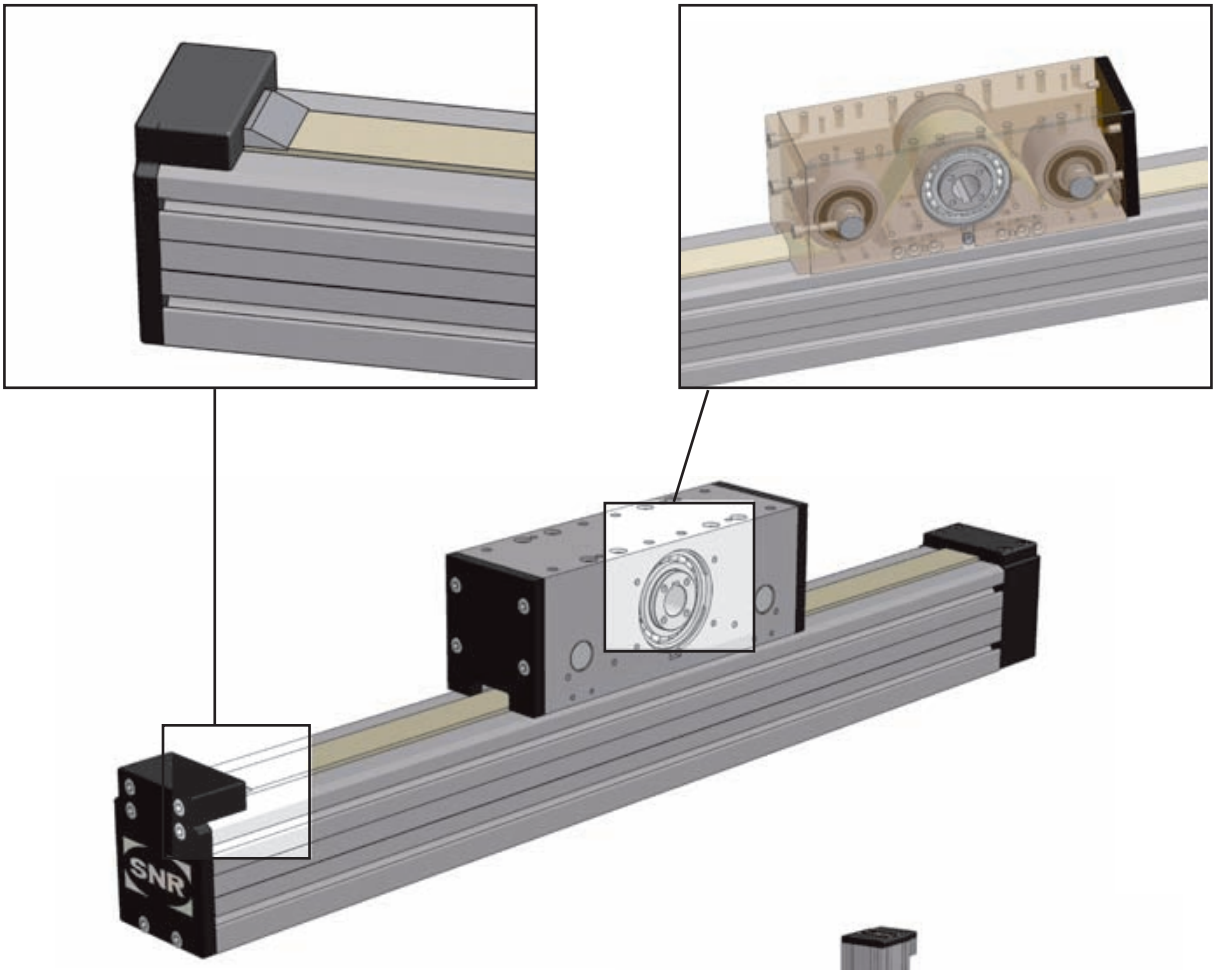
The Omega drive is a variant of the synchronous belt drive.

• Belt clamping

The synchronous belt clamping is located at the ends of the linear axis where the entire belt width is used.

• Drive

The drive components (pulley, deflection pulleys) are built into the carriage.



• Dynamics

Optimized for high dynamic performance with light to average loads in a vertical mounting position due to the low moving dead mass, as the drive is mounted on the stationary carriage.

The drive systems

• Screw-type drive

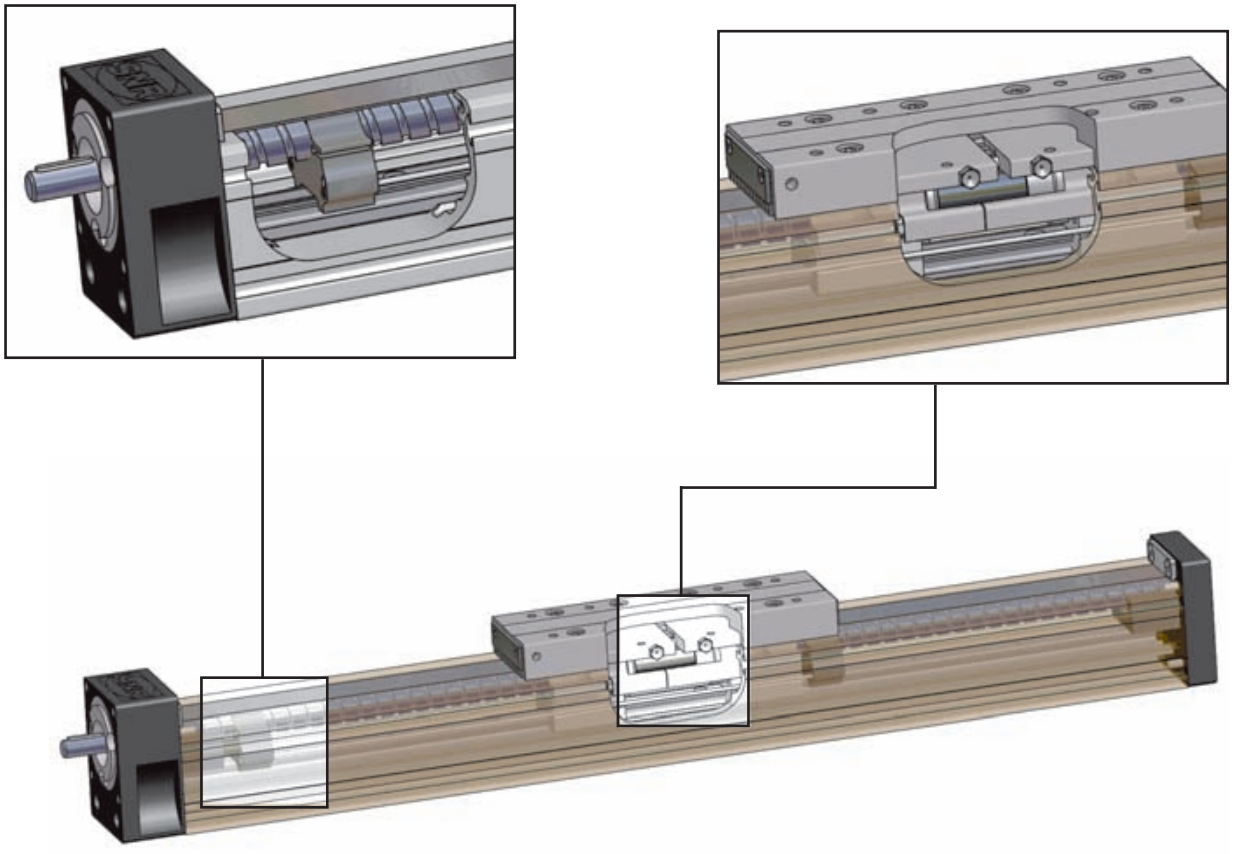
Screw-type drives, especially ball screws, is used where high where high positioning and repeat accuracies are required in combination with high rigidity of the drive elements. Trapezoidal thread drives with various pitches are also available for simple low-speed movements.

• Spindle support

At higher speeds our screw-type drives are equipped with corresponding spindle supports to ensure secure operation.

• Accuracy / Quality

In the standard versions, our AXC and AXLT linear modules are equipped with rolled ball screw spindles (pitch accuracy: 52 µm/ 300 mm) and low-backlash nuts.
Ball screws with higher pitch accuracies and pre-stressed nuts are also available for more sophisticated positioning tasks.



• Rack and pinion drive

Rack and pinion drives are available as another drive system for linear axes from the AXS series. Vertical applications in particular prove extremely reliable with this drive system.

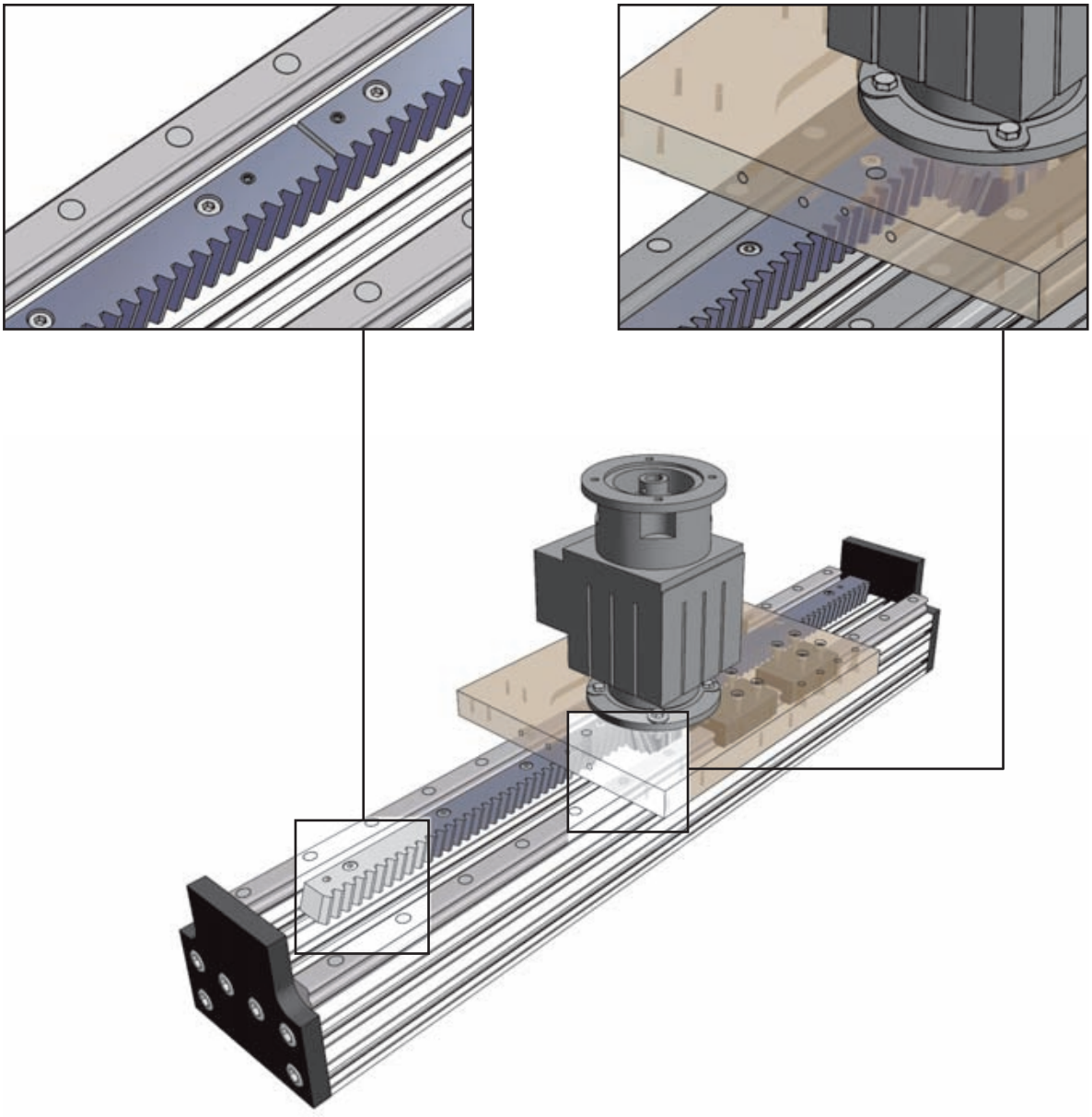
• Long travel distances

Rack and pinion extensions can be added for theoretically unlimited travel distances.

• Rack and pinion / Gearwheel

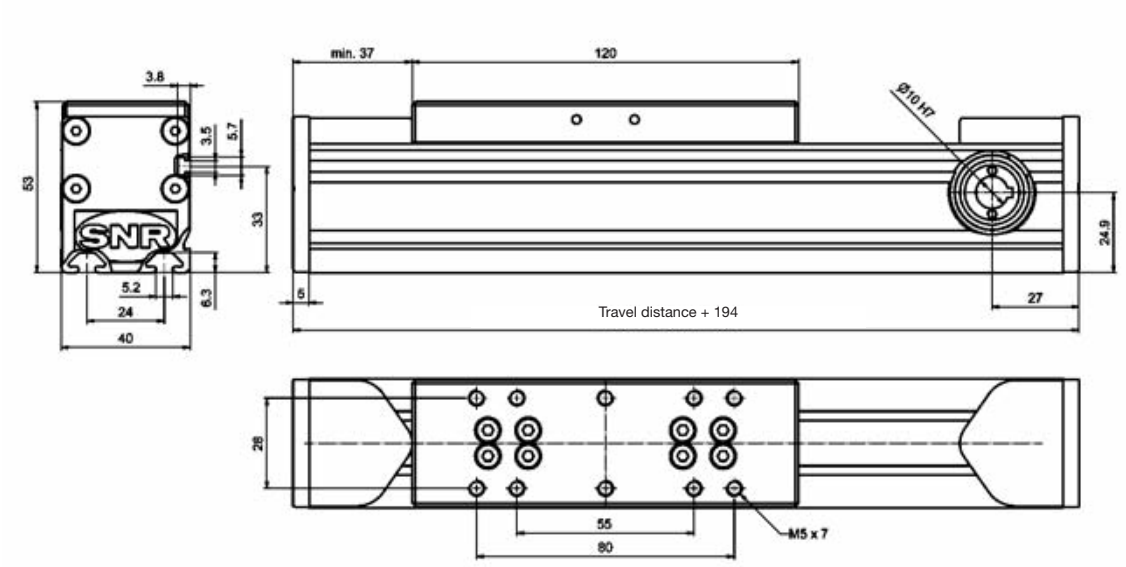
Induction hardened racks and pinions and the associated gearwheels ensure high service life.

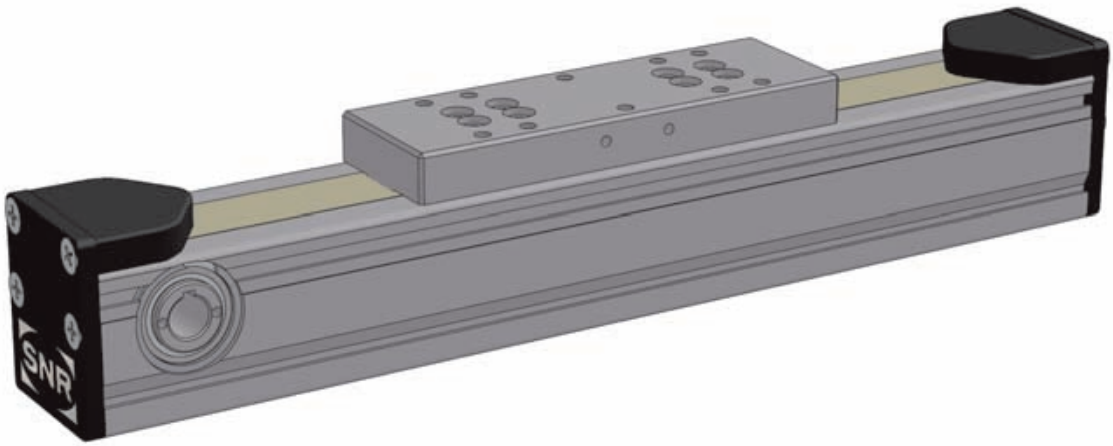
The rack and pinion drive offers the highest rigidity in a drive system, even under high loads.



AXC40Z compact module

with synchronous belt drive and roller guide

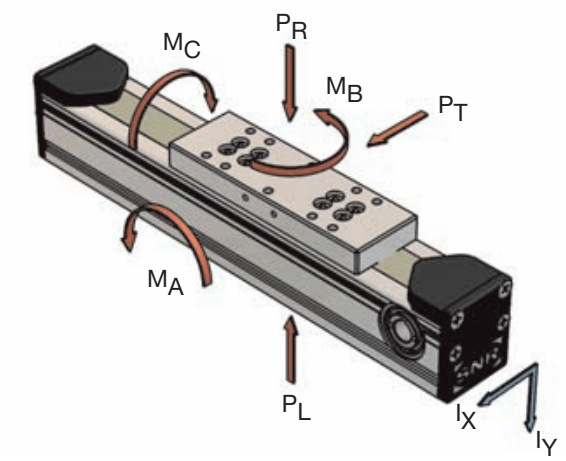




Loads and torque loads

	Roller guide L17	
Loads [N]	dyn.	stat.
P_R	170	200
P_L	170	300
P_T	310	330
Torque loads [N.m]		
M_A	3.9	4.5
M_B	7.0	7.4
M_C	2.4	2.8

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.



Technical specifications

Traverse rate	max. 10 m/s
Repeat accuracy	0.05 mm
Drive element	16 AT3 synchronous belt
Allowable. dyn. working load	210 N
Lift per revolution	75 mm
Idling speed torque	0.16 N.m
Inertia	0.033 kg.cm^2
Max. total length	6 m [1)]
Geometrical moment of inertia I_X	9.251 cm^4
Geometrical moment of inertia I_Y	12.14 cm^4

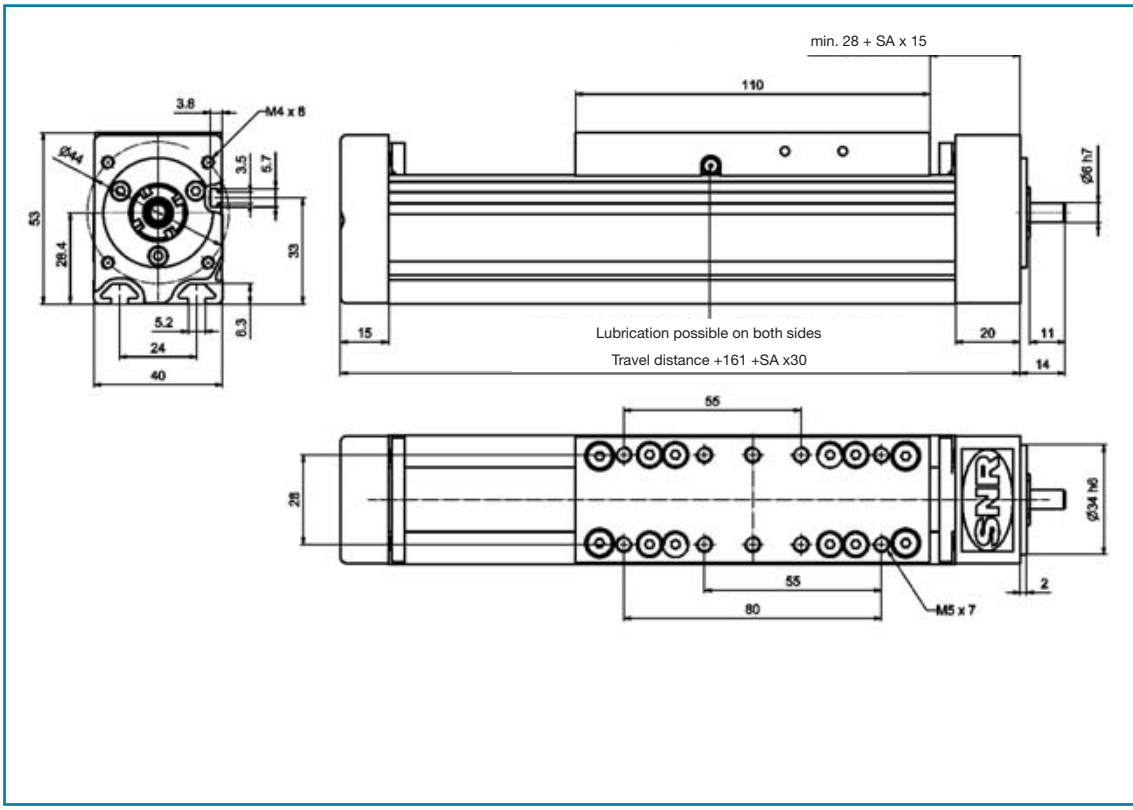
1) Greater lengths upon request.

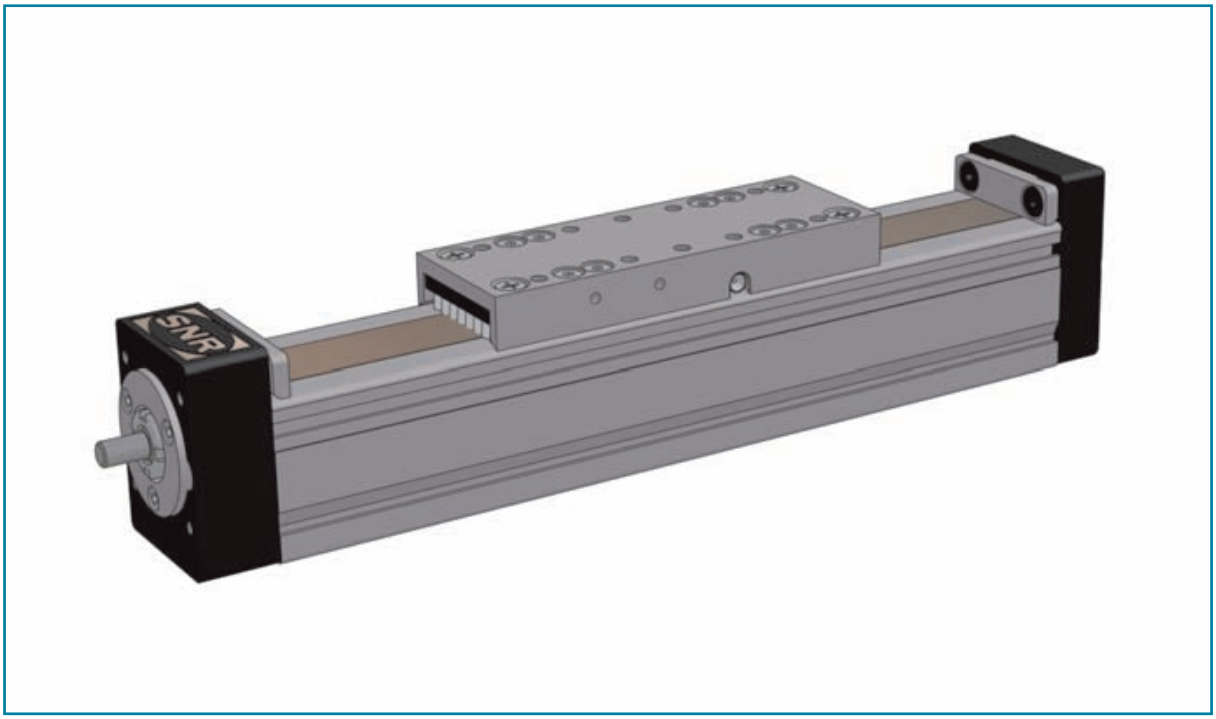
Mass

Base mass	1.0 kg
Mass per 100 mm of lift	0.2 kg
Carriage mass	0.4 kg

AXC40S compact module

with screw-type drive and ball rail guide

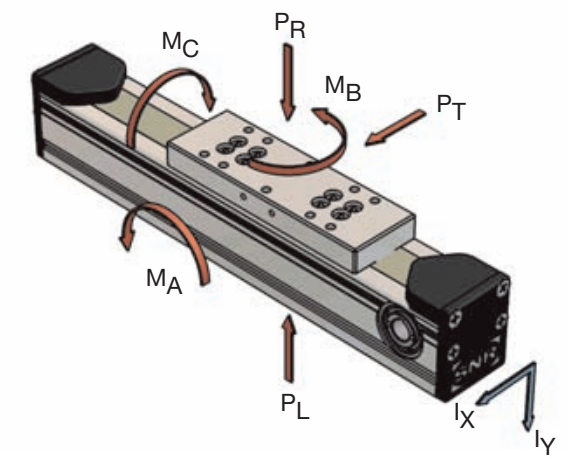




Loads and torque loads

	Ball rail guide S9	
Loads [N]	dyn.	stat.
P_R	660	910
P_L	660	910
P_T	660	910
Torque loads [N.m]		
M_A	18	25
M_B	18	25
M_C	4.5	6

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 27,000 km.



Technical specifications

Traverse rate	max. 1.0 m/s
Repeat accuracy	0.03 mm
Dyn. load rating of ball screw	3.6 kN
Idling speed torque	0.3 N.m
Inertia	0.11 kg.cm²/m
Max. total length	3.5 m
Geometrical moment of inertia I_X	9.251 cm⁴
Geometrical moment of inertia I_Y	12.14 cm⁴

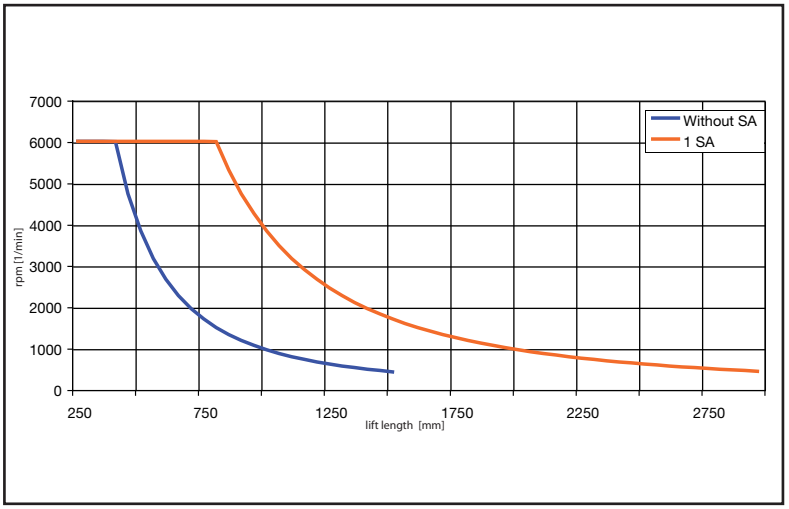
Drive elements

	Diameter	Pitch
Ball screw	12 mm	5/10 mm
Trapezoidal thread drive	12 mm	3 mm

Mass

Base mass	1.0 kg
Mass per 100 mm of lift	0.3 kg
Carriage mass	0.4 kg

Critical rotational speed for ball screws

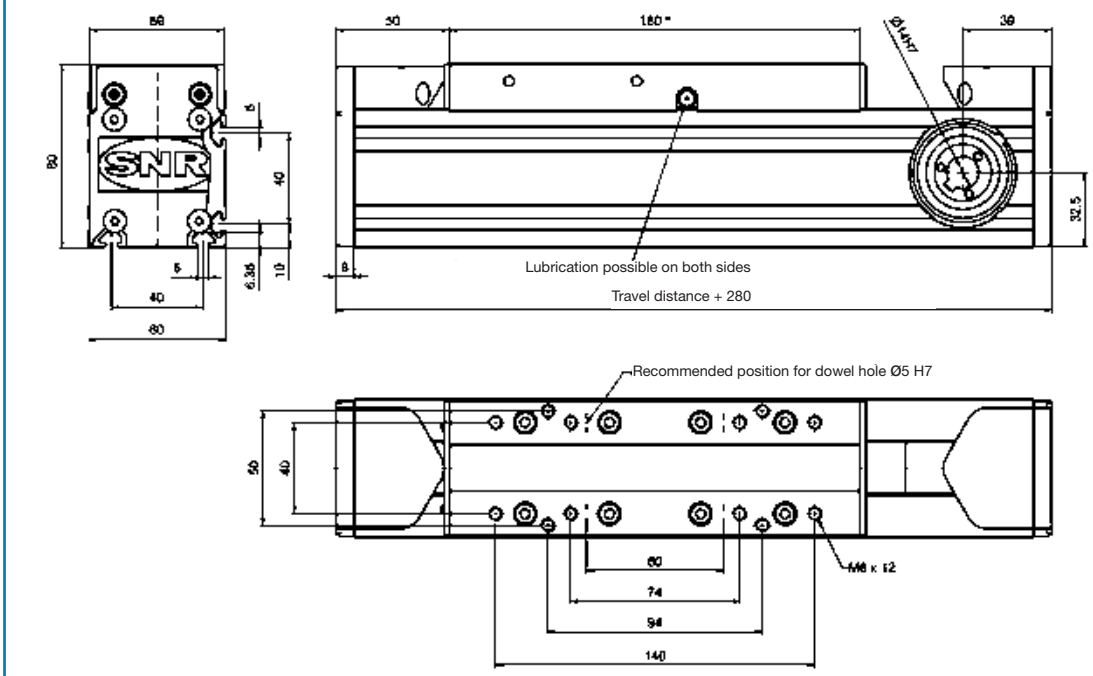


SA = set of spindle supports

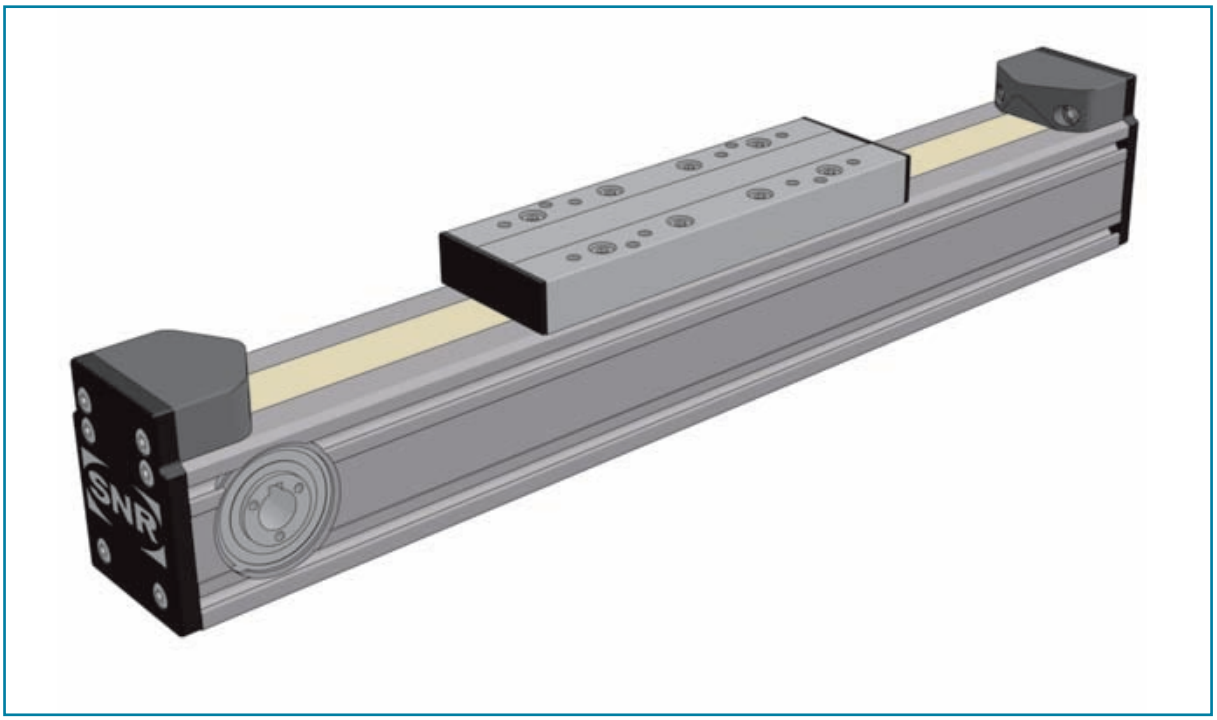
Subject to technical modifications.

AXC60Z compact module

with synchronous belt drive and ball rail guide or roller guide



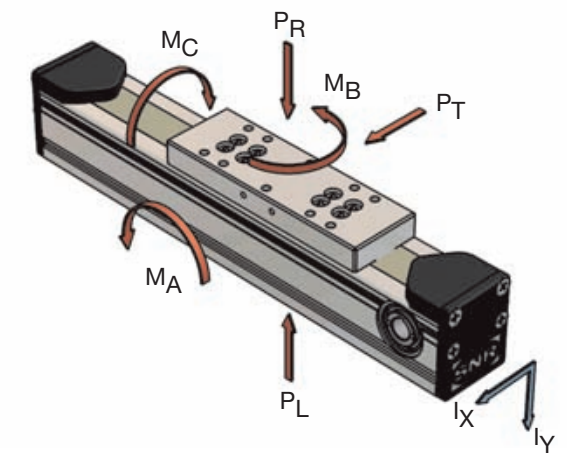
** Carriage length for design with cover strip: 230 mm.*



Loads and torque loads

	Roller guide L24		Rail guide S15		Rail guide H15	
Loads [N]	dyn.	stat.	dyn.	stat.	dyn.	stat.
P_R	500	550	2850	6500	2750	9650
P_L	500	550	1700	3300	2750	9650
P_T	840	840	1550	2800	2750	9650
Torque loads [N.m]						
M_A	27	27	65	125	95	345
M_B	41	41	55	100	95	345
M_C	10	10	12	22	19	69

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.



Technical specifications

Traverse rate	max. 10 m/s (L24)
Repeat accuracy	0.05 mm
Drive element	25 AT5 synchronous belt
Allowable dyn. working load	560 N
Lift per revolution	150 mm
Idling speed torque	0.8 N.m
Inertia	0.74 kg.cm^2
Max. total length L24	6 m
Max. total length S/H15	8 m
Geometrical moment of inertia I_X	40.04 cm^4
Geometrical moment of inertia I_Y	60.64 cm^4

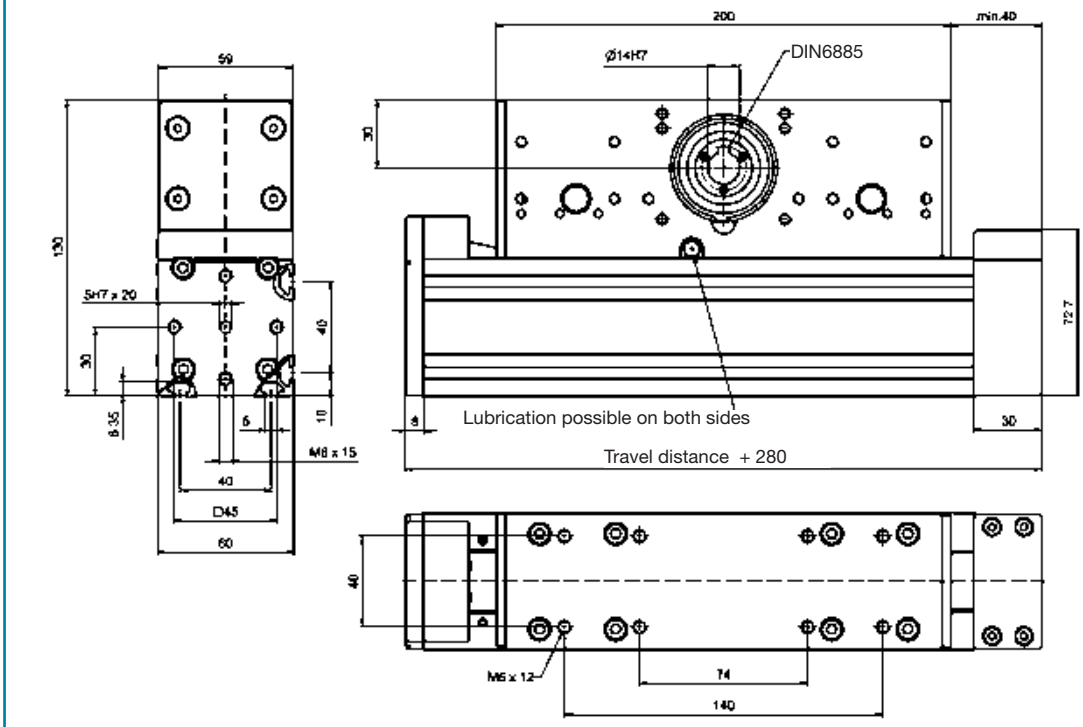
Mass

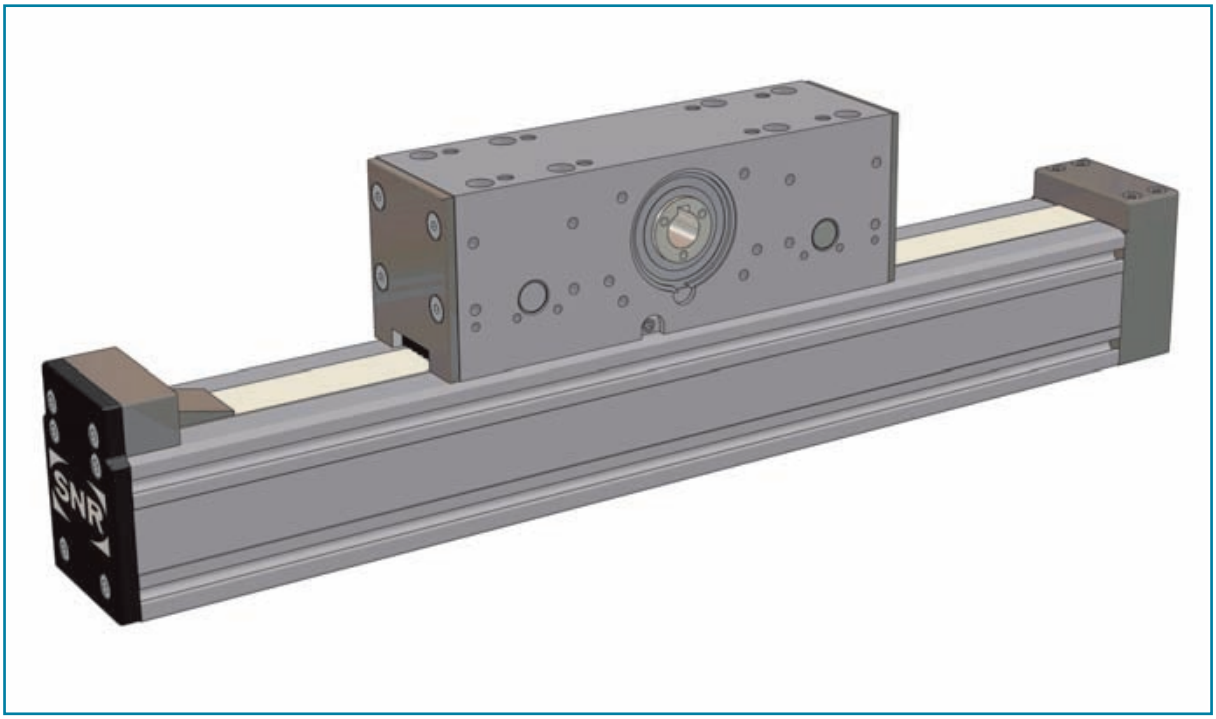
	Roller guide L24	Rail guide S15	Rail guide H15
Base mass	2.6 kg	2.8 kg	2.9 kg
Mass per 100 mm of lift	0.4 kg	0.5 kg	0.5 kg
Carriage mass	1.0 kg	1.0 kg	1.1 kg

Subject to technical modifications.

AXC60A compact module

with synchronous belt drive and rail system or roller guide

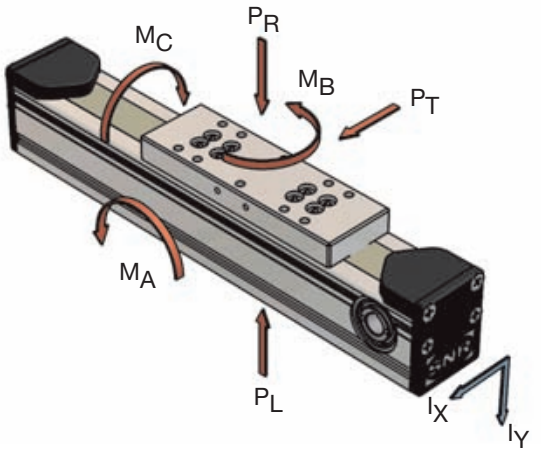




Loads and torque loads

	Roller guide L24		Rail guide H15	
Loads [N]	dyn.	stat.	dyn.	stat.
P_R	500	550	2750	9650
P_L	500	550	2750	9650
P_T	840	840	2750	9650
Torque loads [N.m]				
M_A	27	27	95	345
M_B	41	41	95	345
M_C	10	10	19	69

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.



Technical specifications

Traverse rate	max. 10 m/s (L24)
Repeat accuracy	0.05 mm
Drive element	25 AT5 synchronous belt
Allowable dyn. working load	560 N
Lift per revolution	150 mm
Idling speed torque	0.8 N.m
Inertia	1.07 kg.cm^2
Max. total length L24	6 m
Max. total length S/H15	8 m [1] (one part)
Geometrical moment of inertia I_X	40.04 cm^4
Geometrical moment of inertia I_Y	60.64 cm^4

1) Greater lengths upon request.

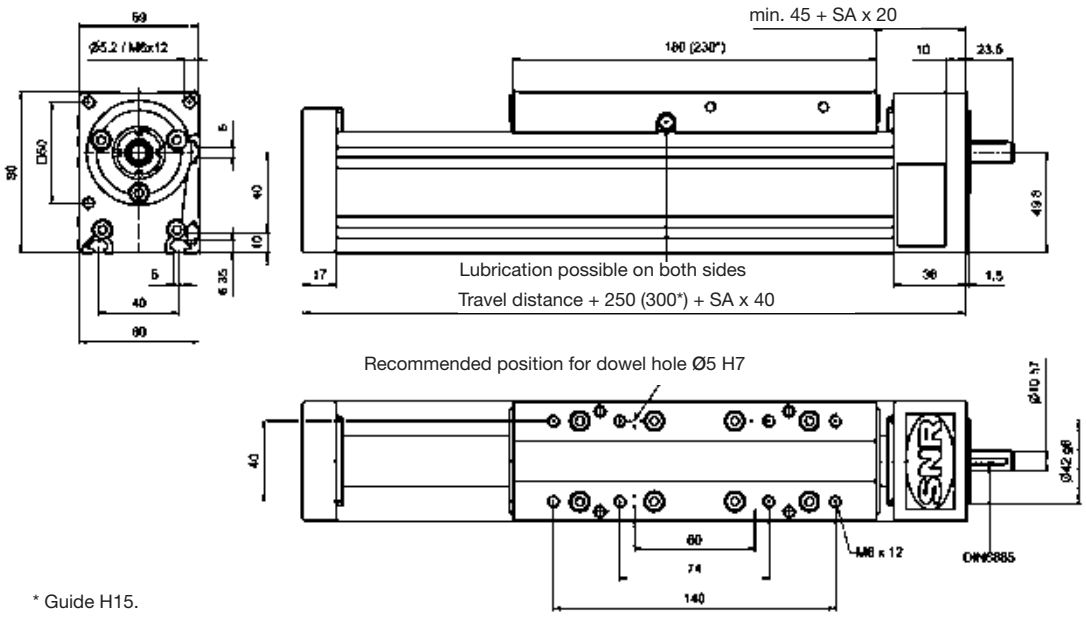
Mass

	Roller guide	Rail guide
Base mass	2.6 kg	4.6 kg
Mass per 100 mm of lift	0.4 kg	0.5 kg
Carriage mass	1.0 kg	2.7 kg

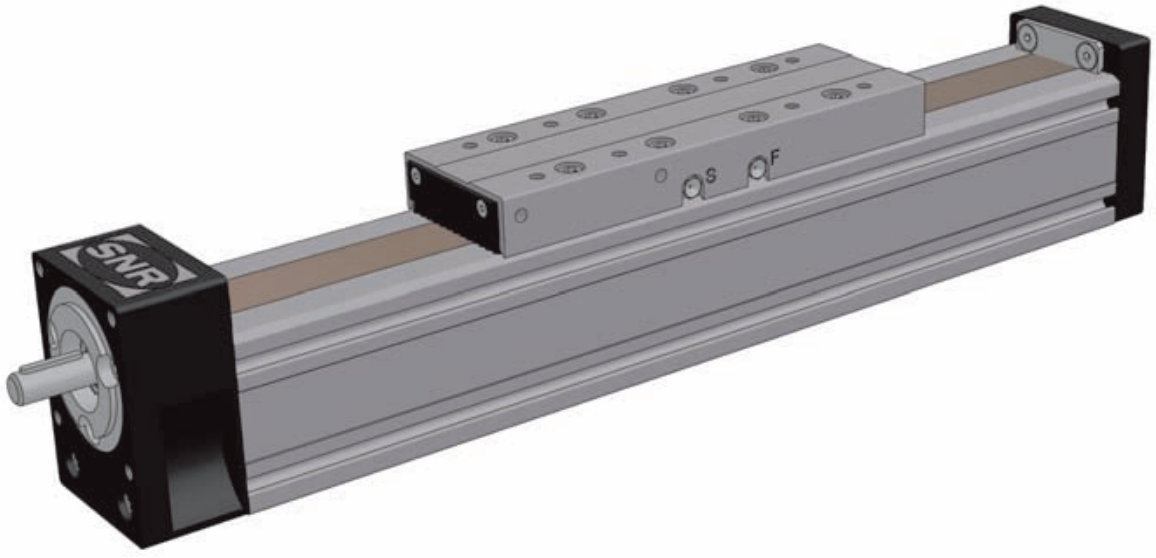
Subject to technical modifications.

AXC60S compact module

with screw-type drive and rail or roller guide



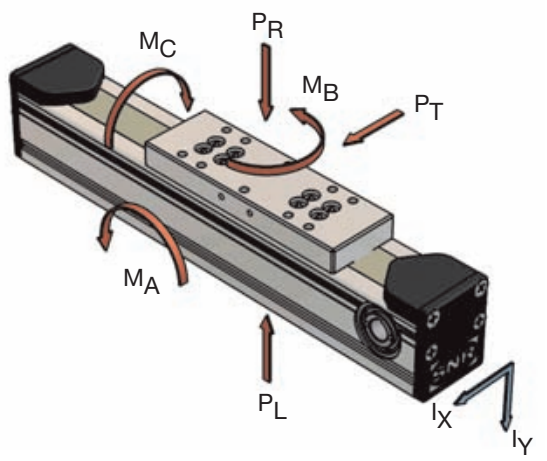
* Guide H15.



Loads and torque loads

	Roller guide L24		Rail guide S15		H15	
Loads [N]	dyn.	stat.	dyn.	stat.	dyn.	stat.
P_R	500	550	2200	3850	2750	9650
P_L	500	550	1350	1900	2750	9650
P_T	840	840	1200	1650	2750	9650
Torque loads [N.m]						
M_A	27	27	70	100	200	570
M_B	41	41	58	75	200	570
M_C	10	10	9	13	24	69

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 27,000 km.



Technical specifications

Traverse rate	max. 1.6 m/s
Repeat accuracy	0.03 mm
Dyn. load rating ball screw	6.3 à 12.1 kN [1]
Idling speed torque	0.4 N.m
Moments of inertia:	
Pitch 5/10 mm	0.31 kg.cm²/m
Pitch 16 mm	0.34 kg.cm²/m
Max. total length	3.5 m
Geometrical moment of inertia I_X	9.251 cm⁴
Geometrical moment of inertia I_Y	12.14 cm⁴

1) Depending on the design of the screw type drive.

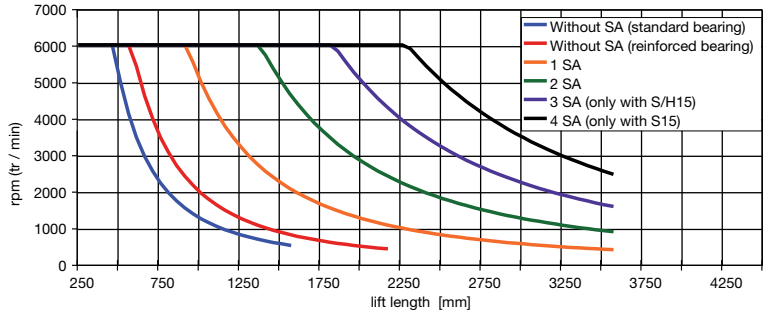
Drive elements

	Diameter	Pitch
Ball screw	16 mm	5/10/16 mm
Trapezoidal thread drive	16 mm	4/8 mm

Mass

	Roller guide L24	Rail guide S15	H15
Base mass	2.60 kg	2.70 kg	3.40 kg
Mass per 100 mm of lift	0.53 kg	0.61 kg	0.62 kg
Carriage mass	0.90 kg	0.80 kg	1.20 kg

Critical rotational speed for ball screws

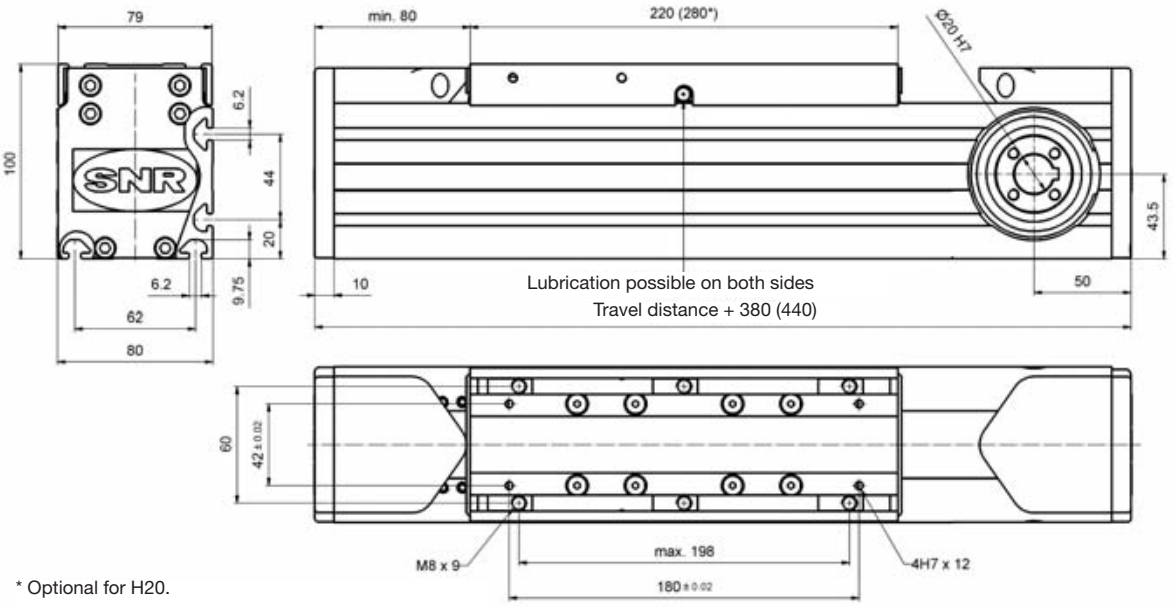


SA = set of spindle supports

Subject to technical modifications.

AXC80Z compact module

with synchronous belt drive and rail guide or roller guide



* Optional for H20.

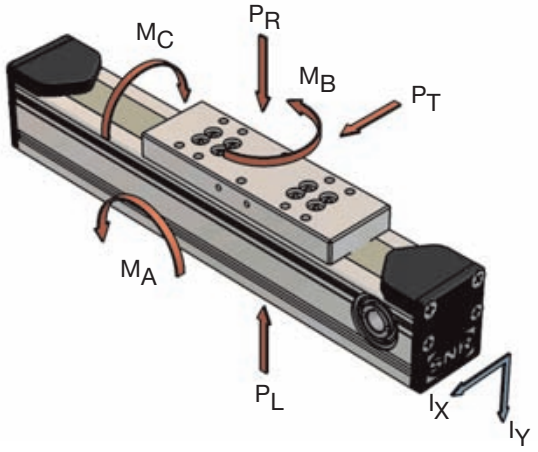
Loads and torque loads

	Roller guide L47		Rail guide S20		H20		W21	
Loads [N]	dyn.	stat.	dyn.	stat.	dyn.	stat.	dyn.	stat.
P_R	2300	2300	3800	9200	4300 (5400)	15000 (20000)	1590	5100
P_L	2300	2300	2300	4600	4300 (5400)	15000 (20000)	1590	5100
P_T	3400	3400	2100	4000	4300 (5400)	15000 (20000)	1590	5100
Torque loads [N.m]								
M_A	110	110	135	270	205 (310)	730 (1140)	82	260
M_B	170	170	110	210	205 (310)	730 (1140)	82	260
M_C	60	60	20	40	43 (54)	150 (200)	27	85

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.
Values in brackets for design with long table top (280 mm).

Technical specifications

Traverse rate	max. 10 m/s (L47)
Repeat accuracy	0.05 mm
Drive element	32 AT5 synchronous belt
Allowable dyn. working load	870 N
Lift per revolution	200 mm
Idling speed torque	1.6 N.m
Inertia	3.68 kg.cm^2
Max. total length	8 m (one part)[1)]
Geometrical moment of inertia I_X	146.9 cm^4
Geometrical moment of inertia I_Y	199.2 cm^4



1) Greater lengths upon request.

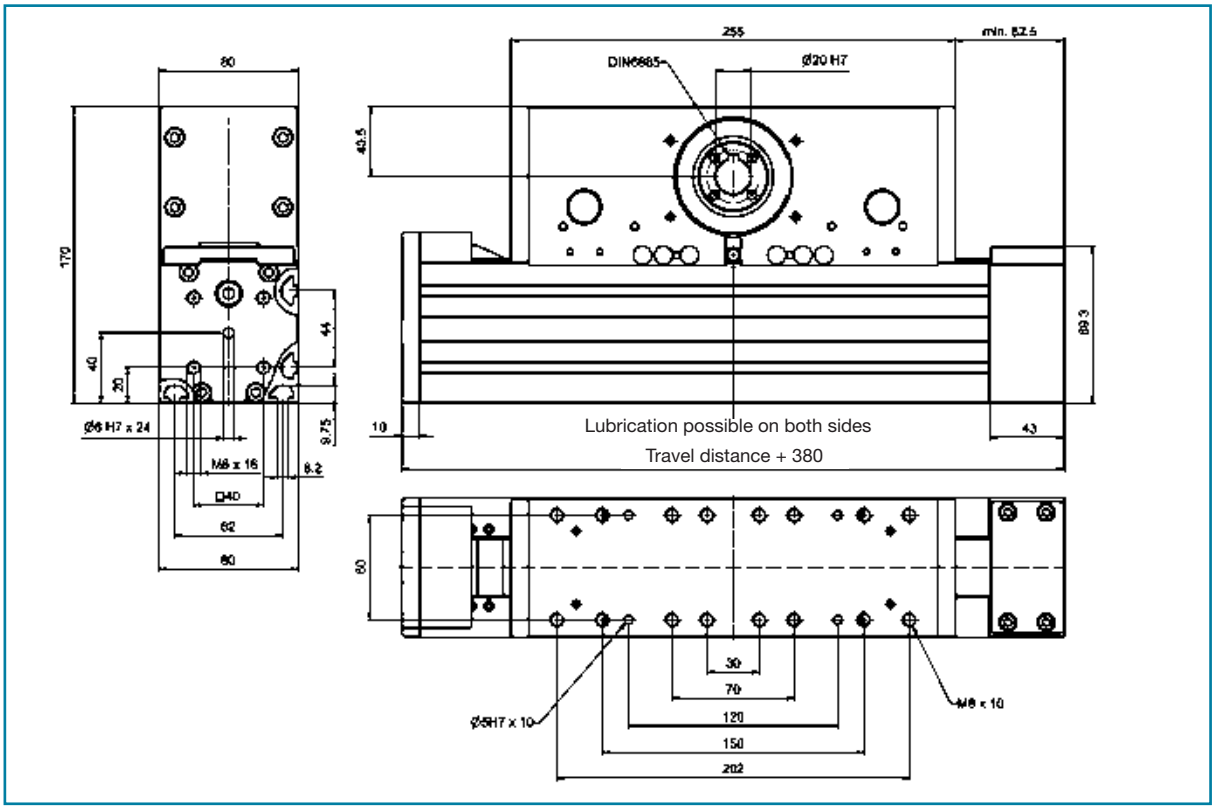
Mass

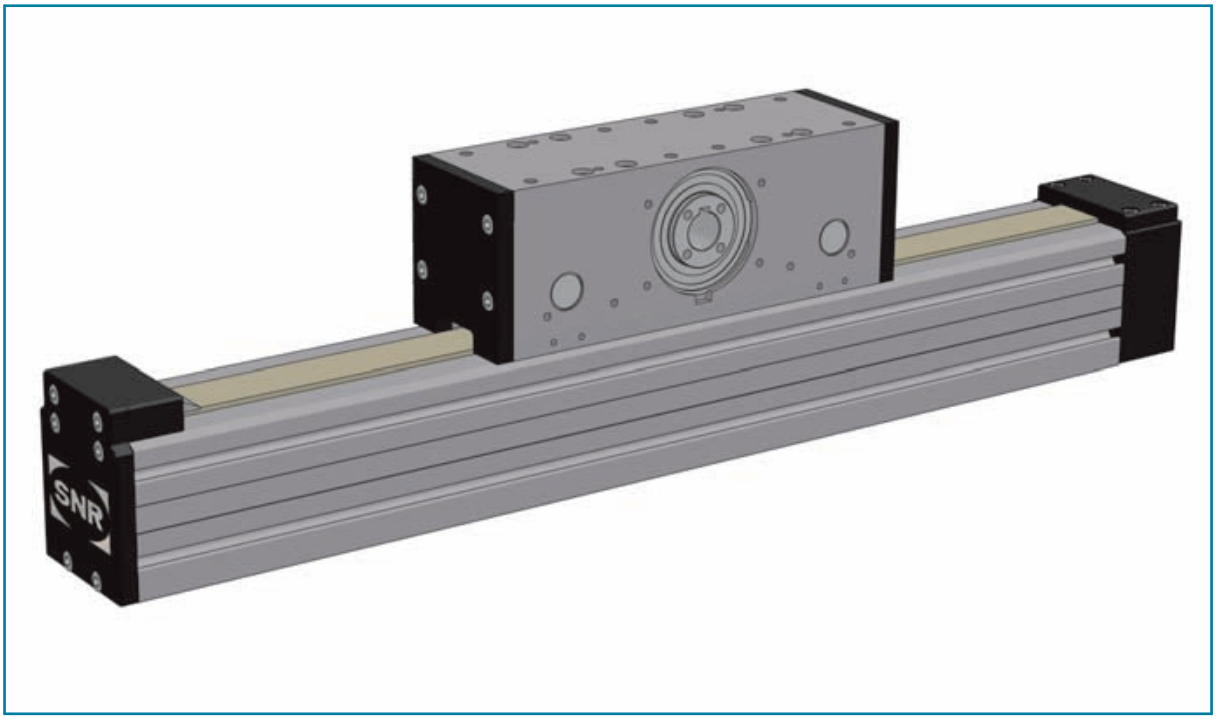
	Roller guide L47	Rail guide S20	H20	W21
Base mass	6.60 kg	6.00 kg	6.40 kg	6.00 kg
Mass per 100 mm of lift	0.79 kg	0.92 kg	0.94 kg	0.98 kg
Carriage mass	2.00 kg	1.60 kg	1.90 kg	1.40 kg

Subject to technical modifications.

AXC80A compact module

with synchronous belt drive and rail guide or roller guide

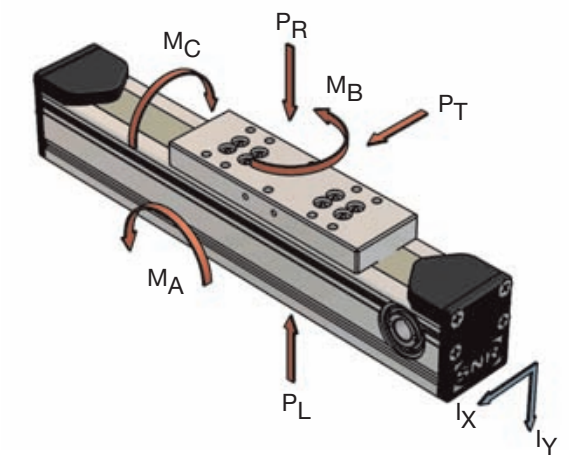




Loads and torque loads

	Roller guide L47		Rail guide H20	
Loads [N]	dyn.	stat.	dyn.	stat.
P_R	2300	2300	4300	15000
P_L	2300	2300	4300	15000
P_T	3400	3400	4300	15000
Torque loads [N.m]				
M_A	110	110	205	730
M_B	170	170	205	730
M_C	60	60	43	150

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.



Technical specifications

Traverse rate	max. 10 m/s (L47)
Repeat accuracy	0.05 mm
Drive element	32 AT5 synchronous belt
Allowable dyn. working load	870 N
Lift per revolution	200 mm
Idling speed torque	1.6 N.m
Inertia	5.0 kg.cm^2
Max. total length	8 m (one part)[1)]
Geometrical moment of inertia I_X	146.9 cm^4
Geometrical moment of inertia I_Y	199.2 cm^4

1) Greater lengths upon request.

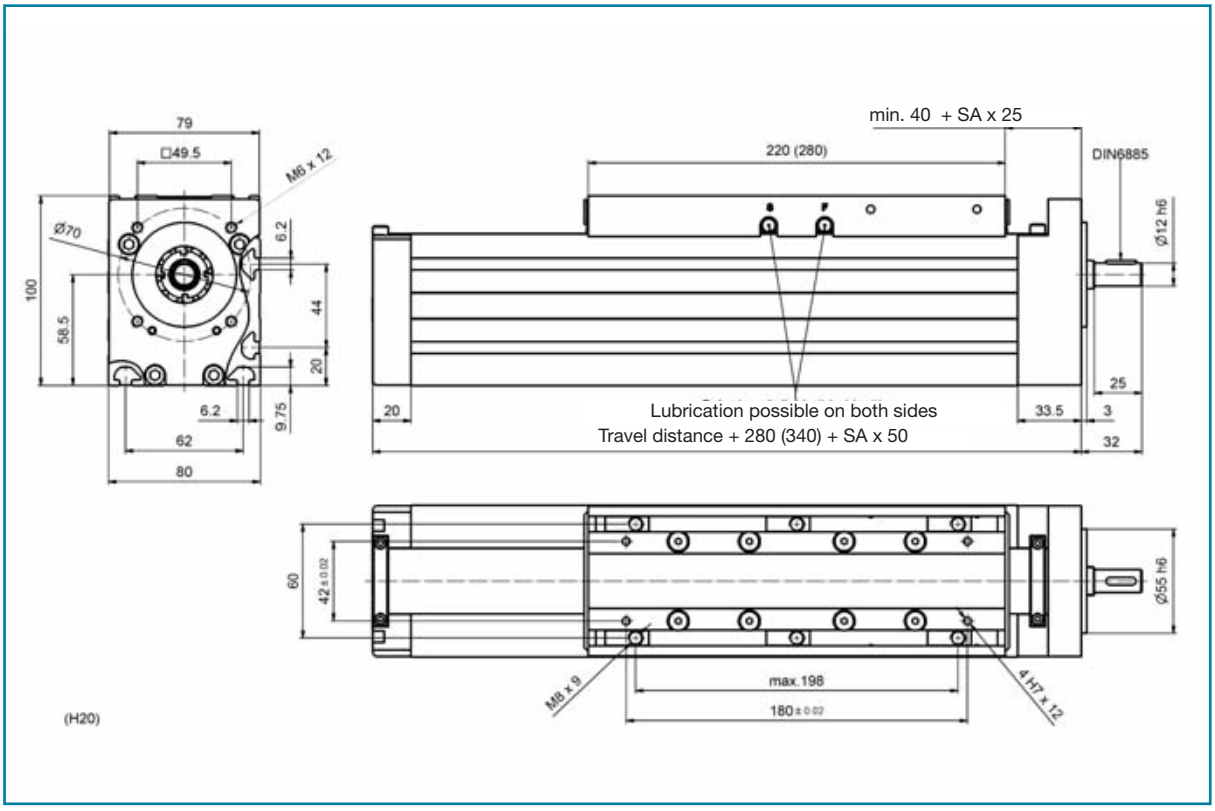
Mass

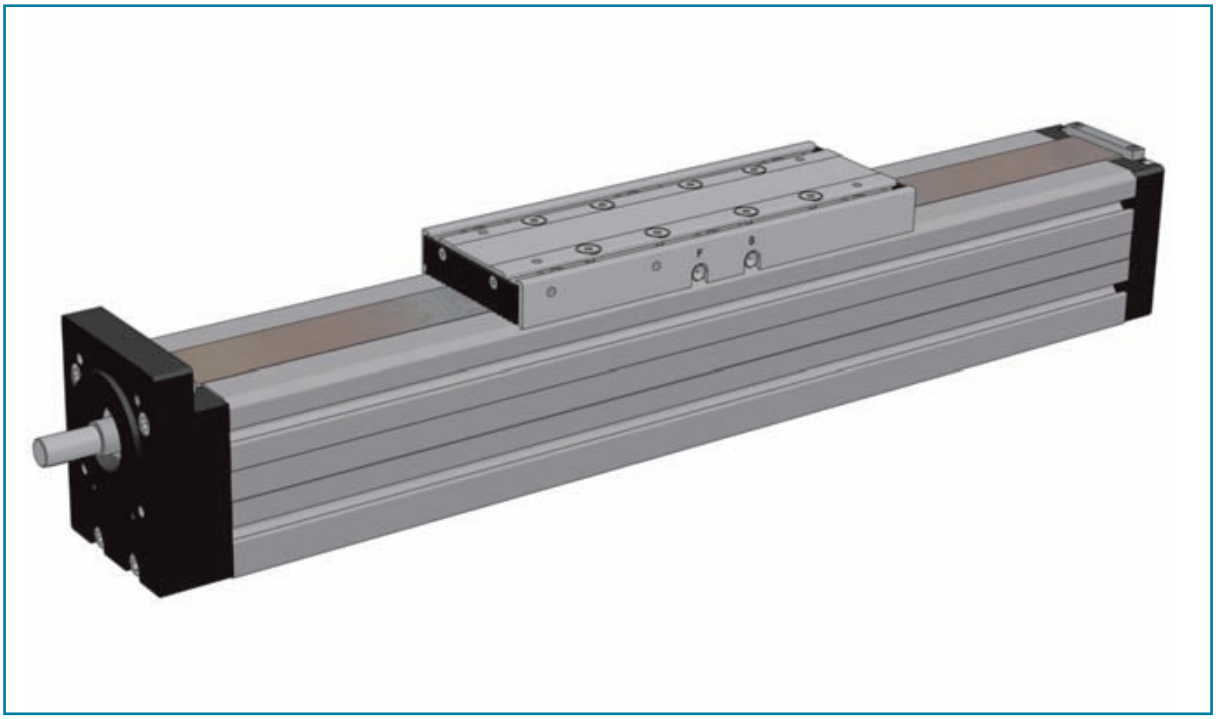
	Roller guide	Rail guide
Base mass	10.0 kg	10.6 kg
Mass per 100 mm of lift	0.7 kg	0.8 kg
Carriage mass	5.5 kg	5.9 kg

Subject to technical modifications.

AXC80S compact module

with screw-type drive and rail guide

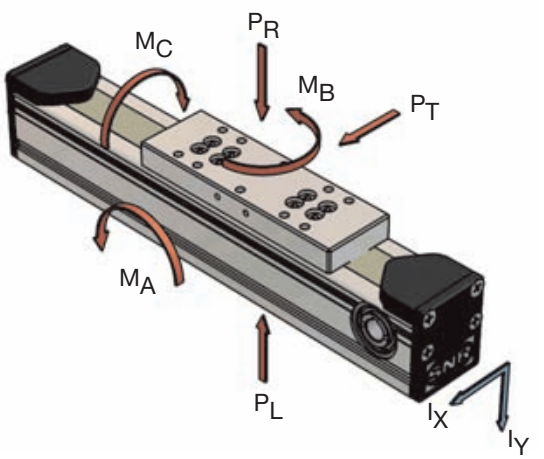




Loads and torque loads

	Roller guide L24		Rail guide H20 [1]		W21	
Loads [N]	dyn.	stat.	dyn.	stat.	dyn.	stat.
P_R	1400	1400	5400	15000	2000	5100
P_L	1400	1400	5400	15000	2000	5100
P_T	1000	1000	5400	15000	2000	5100
Torque loads [N.m]						
M_A	71	71	420	1150	120	310
M_B	100	100	420	1150	120	310
M_C	31	31	54	150	34	85

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 27,000 km.
1) Only for design with long table top (280 mm).



Technical specifications

Traverse rate	max. 2 m/s
Repeat accuracy	0.03 mm
Dyn. load rating of ball screw	7.9 to 17.5 kN [2]
Idling speed torque	0.4 - 0.6 N.m
Moments of inertia:	
Pitch 5 mm	0.84 kg.cm²/m
Pitch 20 mm	0.81 kg.cm²/m
Pitch 50 mm	0.79 kg.cm²/m
Max. total length	5.5 m
Geometrical moment of inertia I_X	146.9 cm⁴
Geometrical moment of inertia I_Y	199.2 cm⁴

2) Depending on the design of the screw type drive.

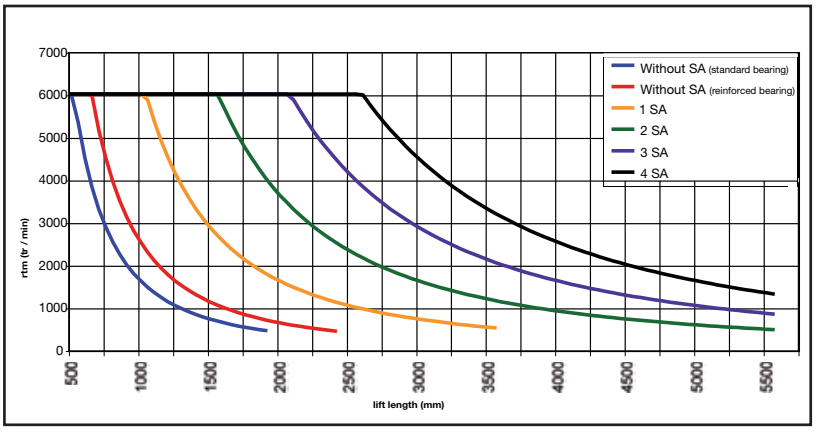
Drive elements

	Diameter	Pitch
Ball screw	20 mm	5/20/50 mm
Trapezoidal thread drive	20 mm	4/8 mm

Mass

	Roller guide L24	Rail guide H20	W21
Base mass	5.15 kg	6.27 kg	5.80 kg
Mass per 100 mm of lift	1.03 kg	1.08 kg	1.23 kg
Carriage mass	1.71 kg	1.68 kg	1.70 kg

Critical rotational speed for ball screws

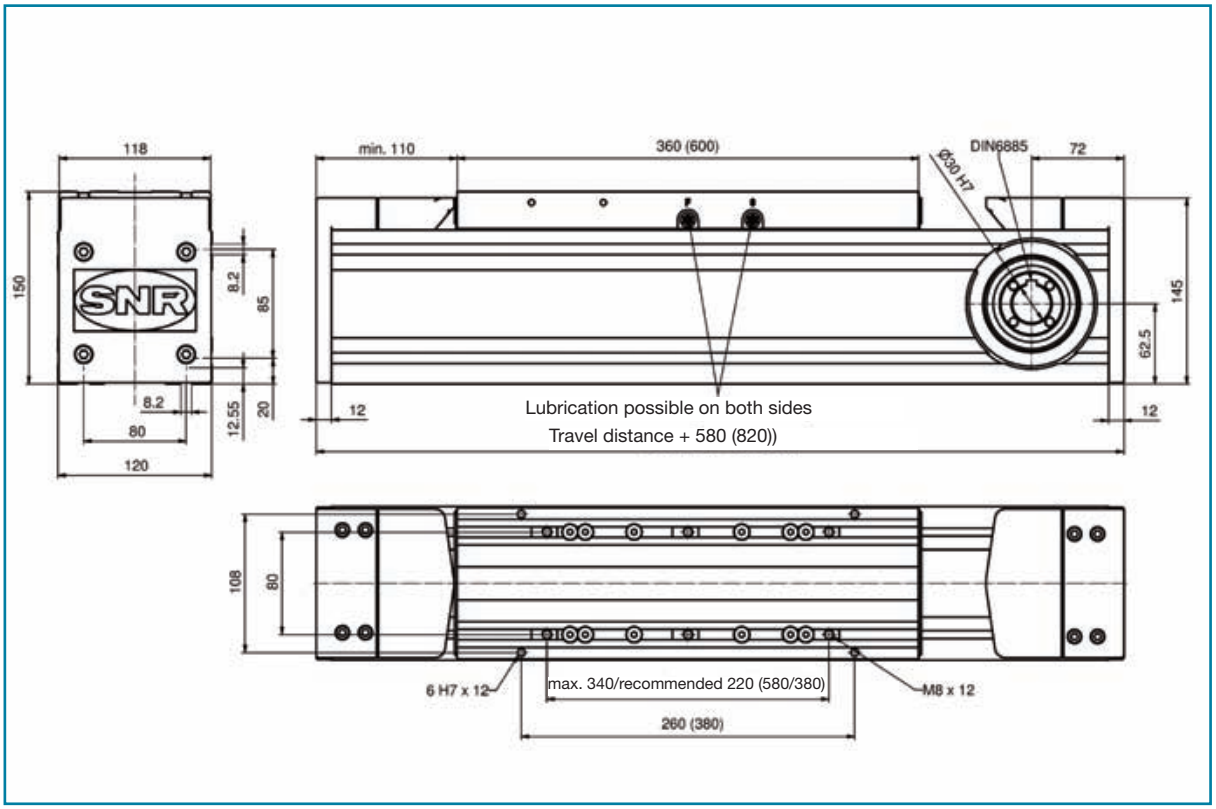


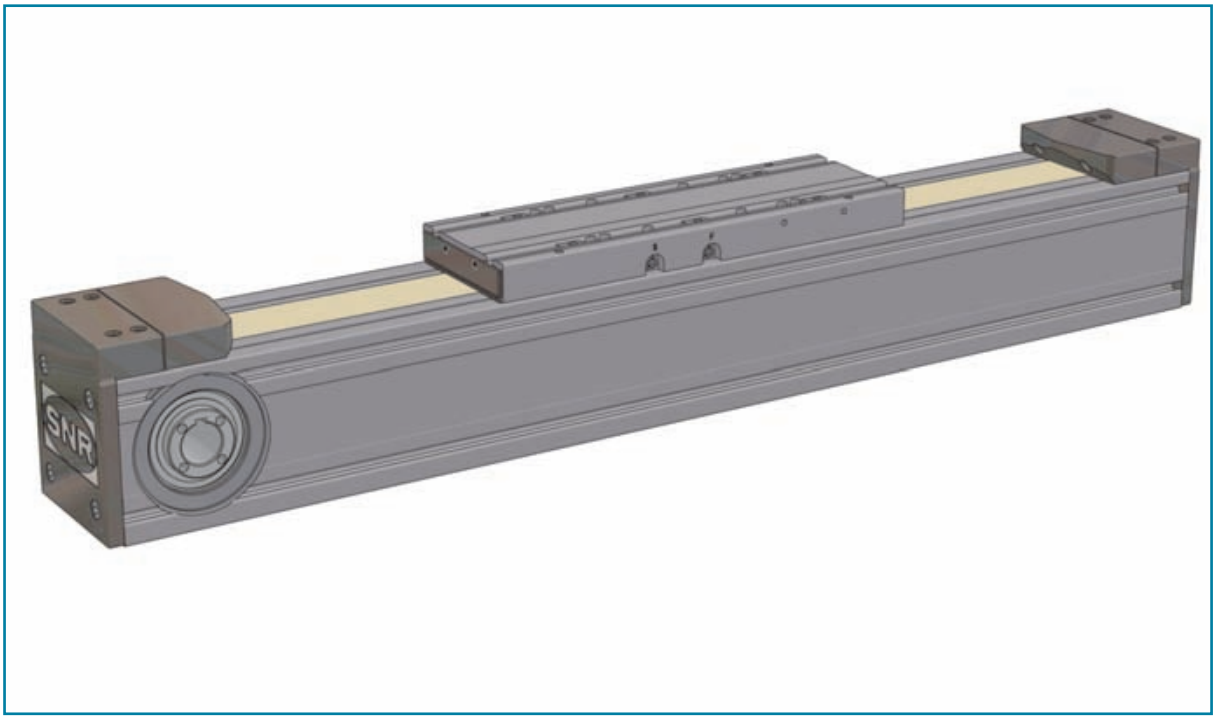
SA = set of spindle supports

Subject to technical modifications.

AXC120Z compact module

with synchronous belt drive and rail system or roller guide





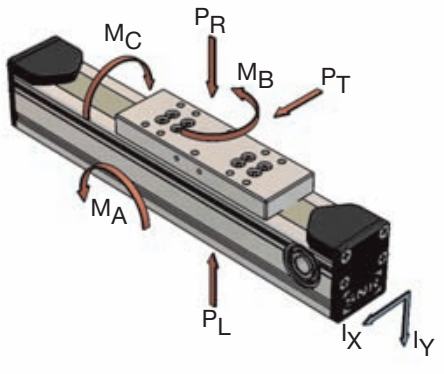
Loads and torque loads

	Roller guide L47		Rail guide S30		Rail guide H30		Rail guide W35	
Loads [N]	dyn.	stat.	dyn.	stat.	dyn.	stat.	dyn.	stat.
P_R	3400 (4500)	3400 (4500)	9000	21000	8700 (10500)	26500 (35500)	6900	19500
P_L	3400 (4500)	3400 (4500)	5500	10500	8700 (10500)	26500 (35500)	6900	19500
P_T	5100 (6800)	5100 (6800)	4950	9000	8700 (10500)	26500 (35500)	6900	19500
Torque loads [N.m]								
M_A	260 (530)	260 (530)	600 (1500)	1150 (2850)	730 (1750)	2250 (5900)	580	1650
M_B	390 (790)	390 (790)	440 (880)	810 (1600)	730 (1750)	2250 (5900)	580	1650
M_C	110 (150)	110 (150)	65	130	120 (145)	365 (490)	220	635

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.
Values in brackets for design with long carriage plate (600 mm).

Technical specifications

Traverse rate	max. 10 m/s (L47)
Repeat accuracy	0.05 mm
Drive element	50 AT10 synchronous belt
Allowable dyn. working load	2500 N
Lift per revolution	320 mm
Idling speed torque	4 N.m
Inertia	29.9 kg.cm^2
Max. total length	8 m (one part)[1)]
Geometrical moment of inertia I_X	661.10 cm^4
Geometrical moment of inertia I_Y	938.57 cm^4



1) Greater lengths upon request.

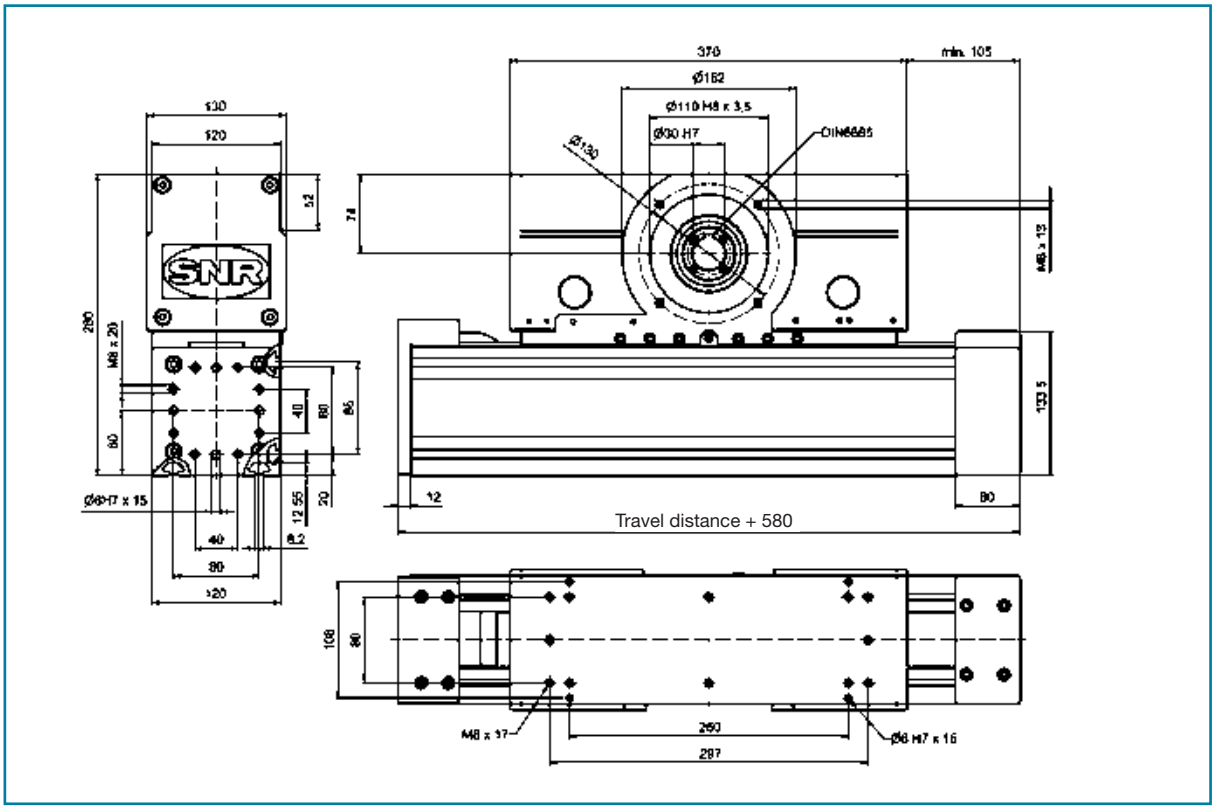
Mass

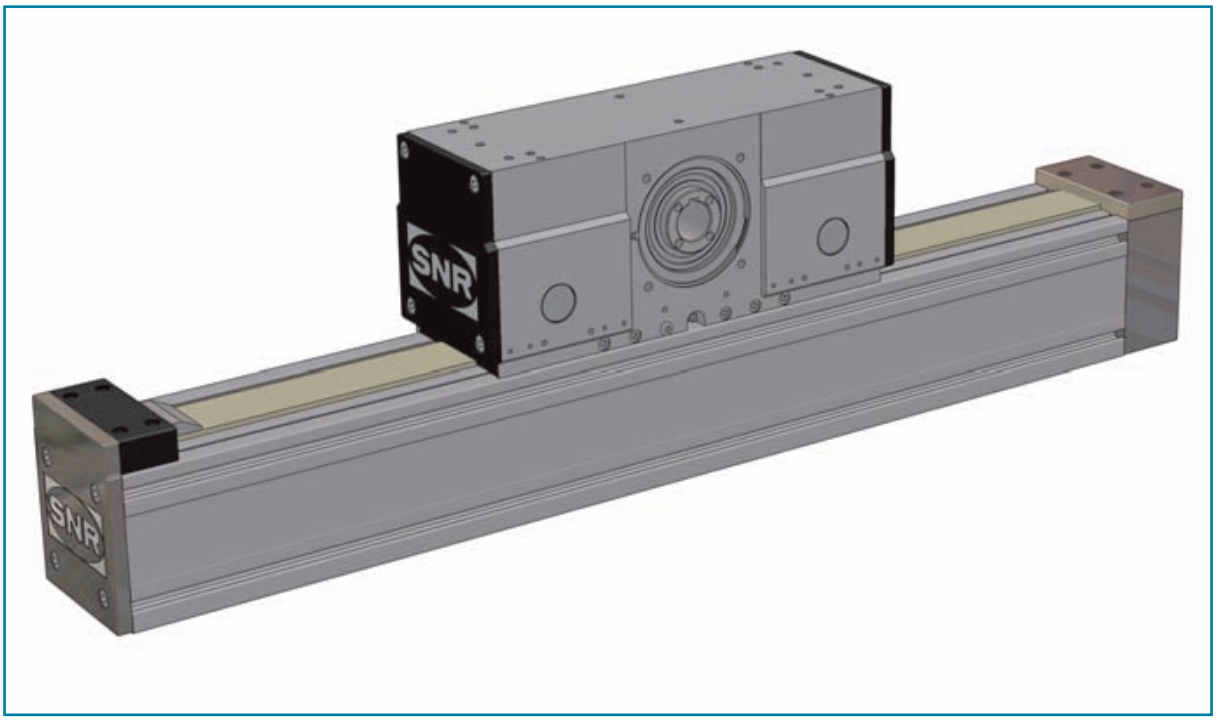
	Roller guide L47	Rail guide S30	Rail guide H30	Rail guide W35
Base mass	20.1 kg	19.6 (25.7) kg	21.6 (29) kg	24.4 kg
Mass per 100 mm of lift	1.4 kg	1.7 kg	2.1 kg	2.7 kg
Carriage mass	6.2	5.7 (7.8) kg	6.4 (8.8) kg	5.9 kg

Values in brackets for design with long carriage plate (600 mm).
Subject to technical modifications.

AXC120A compact module

with synchronous belt drive and rail system or roller guide

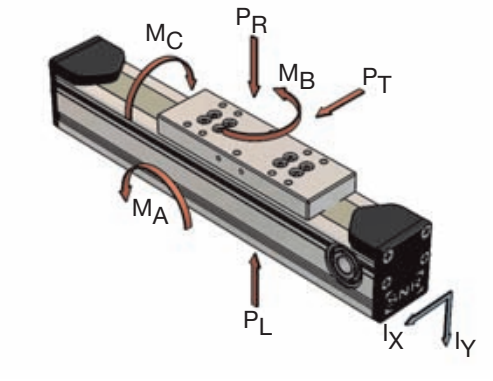




Loads and torque loads

	Roller guide L47		Rail guide S30		Rail guide H30	
Loads [N]	dyn.	stat.	dyn.	stat.	dyn.	stat.
P_R	3400	3400	9000	21000	8700	26500
P_L	3400	3400	5500	10500	8700	26500
P_T	5100	5100	4950	9000	8700	26500
Torque loads [N.m]						
M_A	260	260	600	1150	790	2400
M_B	390	390	440	810	790	2400
M_C	110	110	65	130	120	365

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.



Technical specifications

Traverse rate	max. 10 m/s (L47)
Repeat accuracy	0,05 mm
Drive element	50 AT10 synchronous belt
Allowable dyn. working load	2500 N
Lift per revolution	320 mm
Idling speed torque	4 N.m
Inertia	73.7 kg.cm^2
Max. total length	8 m (one part)[1)]
Geometrical moment of inertia I_X	661.10 cm^4
Geometrical moment of inertia I_Y	938.57 cm^4

1) Greater lengths upon request.

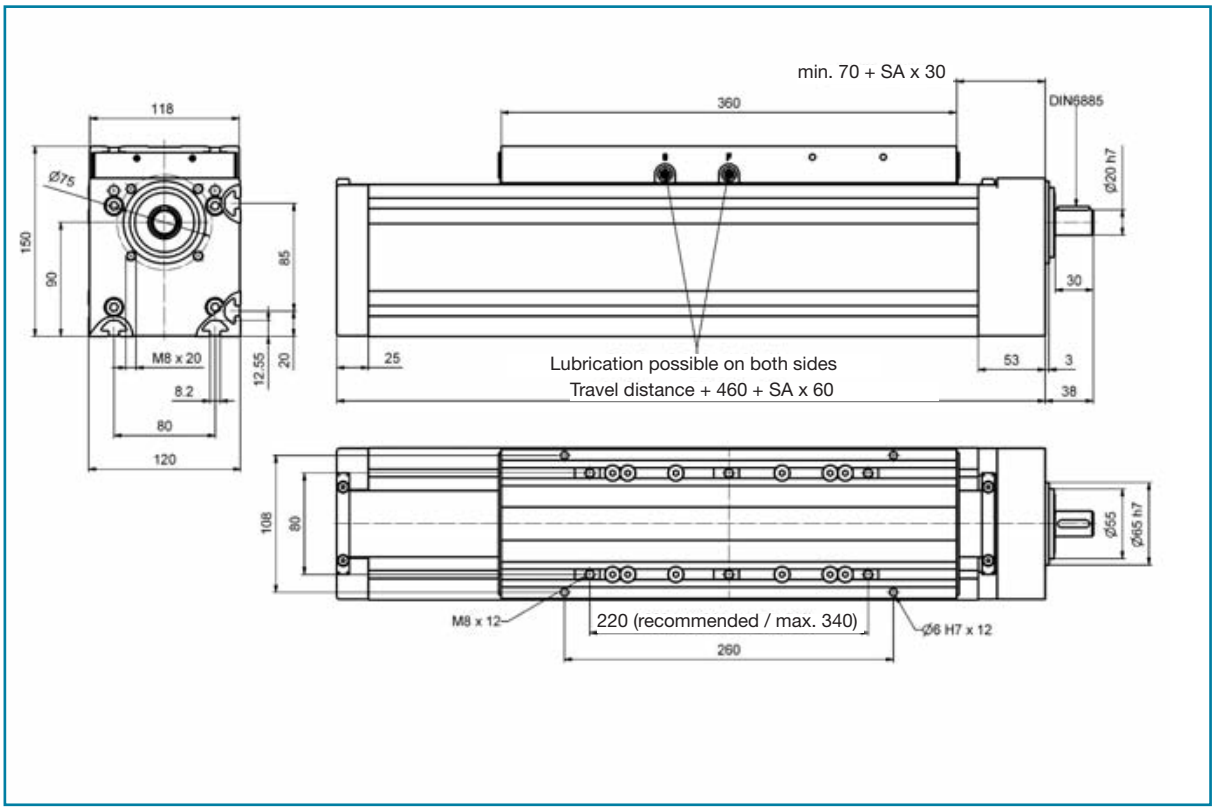
Mass

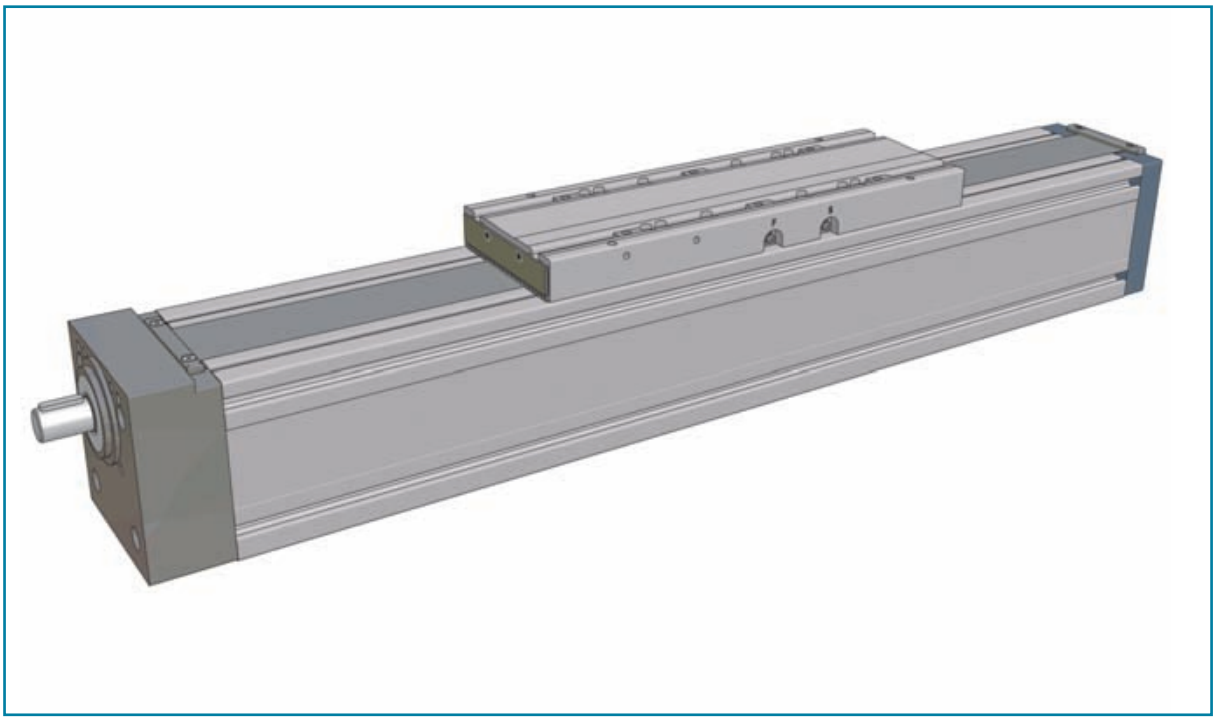
	Roller guide L47	Rail guide S30	Rail guide H30
Base mass	23.4 kg	22.9 kg	24.9 kg
Mass per 100 mm of lift	1.4 kg	1.7 kg	2.1 kg
Carriage mass	12. kg	12.3 kg	13.0 kg

Subject to technical modifications.

AXC120S compact module

with screw-type drive and rail or roller guide





Loads and torque loads

	Roller guide L47		Rail guide S30		H30		R20	
Loads [N]	dyn.	stat.	dyn.	stat.	dyn.	stat.	dyn.	stat.
P_R	2300	2300	11400	21000	11000	26500	6600	18300
P_L	2300	2300	6950	10500	11000	26500	6600	18300
P_T	3400	3400	6250	9000	11000	26500	6600	18300
Torque loads [N.m]								
M_A	260	260	740	1130	950	2350	570	1580
M_B	390	390	550	800	950	2350	570	1580
M_C	76	76	85	130	150	365	180	495

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 27,000 km.

Technical specifications

Traverse rate	max. 2 m/s
Repeat accuracy	0.03 mm
Dyn. load rating of ball screw	19.5 to 31.7 kN [1)]
Idling speed torque	1.0 - 1.3 N.m
Moments of inertia: Pitch 5 mm Pitch 10/20 mm Pitch 32 mm	 6,05 kg.cm²/m 6,40 kg.cm²/m 6.17 kg.cm²/m
Max. total length	5,5 m
Geometrical moment of inertia I_X	661.10 cm⁴
Geometrical moment of inertia I_Y	938.57 cm⁴

1) Depending on the design of the screw type drive.

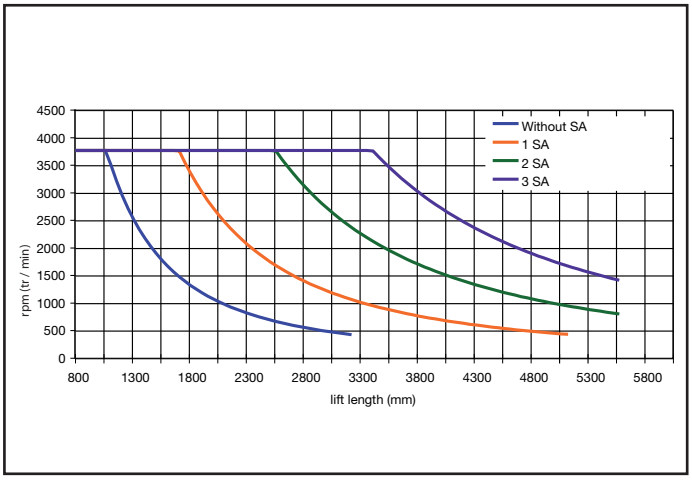
Drive elements

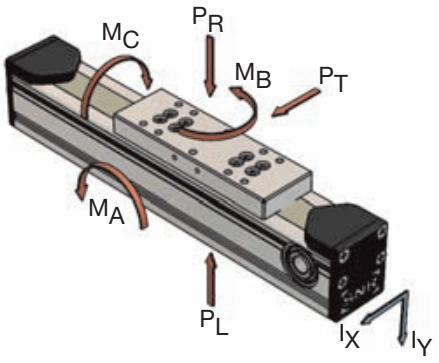
	Diameter	Pitch
Ball screw	32 mm	5/10/20/32 mm
Trapezoidal thread drive	36 mm	6/12 mm

Mass

	Roller guide L47	Rail guide S30/H30	R20
Bas mass	20 kg	20.5 kg	19.9 kg
Mass per 100 mm lift	2 kg	2.4 kg	2.4 kg
Carriage mass	6.7 kg	7.2 kg	6.5 kg

Critical rotational speed for ball screws



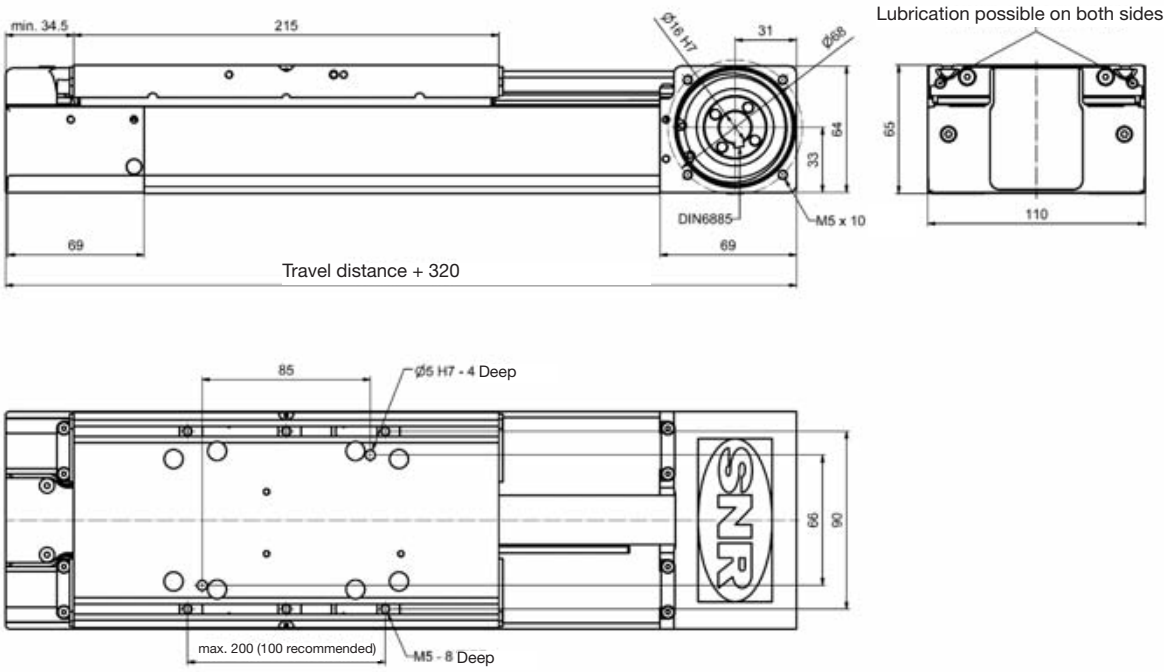


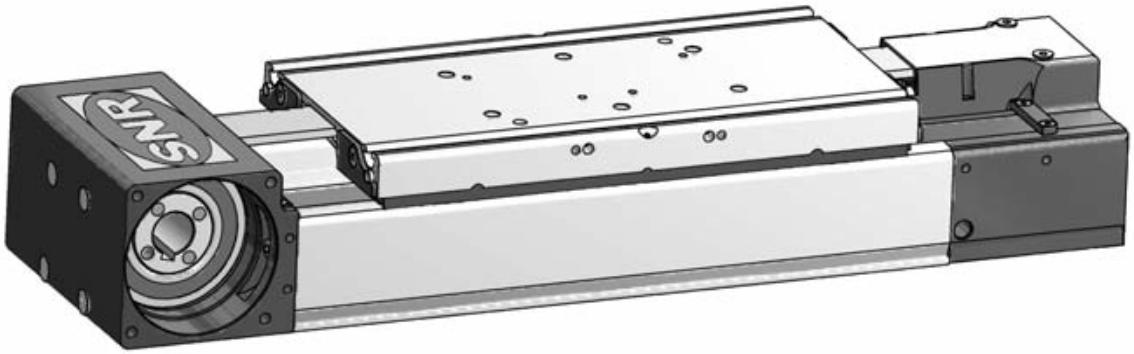
SA = set of spindle supports

Subject to technical modifications.

AXDL110Z parallel module

with synchronous belt drive and rail system or roller guide

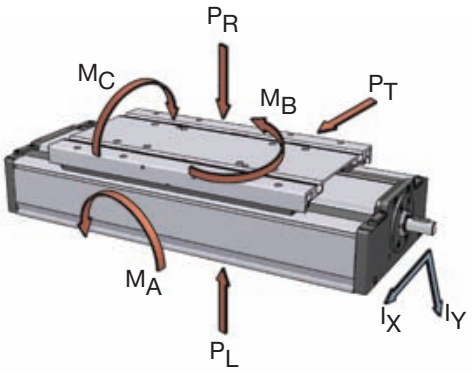




Loads and torque loads

	Roller guide L17		Rail guide S15	
Loads [N]	dyn.	stat.	dyn.	stat.
P_R	220	230	3500	7700
P_L	220	230	2150	3850
P_T	220	230	1950	3300
Torque loads [N.m]				
M_A	11	12	110	200
M_B	11	12	90	155
M_C	8	8	80	140

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.



Technical specifications

Traverse rate	max. 10 m/s (L17)
Repeat accuracy	0.05 mm
Drive element	25STD5 synchronous belt
Allowable dyn. working loadt	980 N
Idling speed torque	1.7 N.m
Lift per revolution	175 mm
Max. total length	6.1 m
Geometrical moment of inertia I_X	37.45 cm^4
Geometrical moment of inertia I_Y	138.31 cm^4

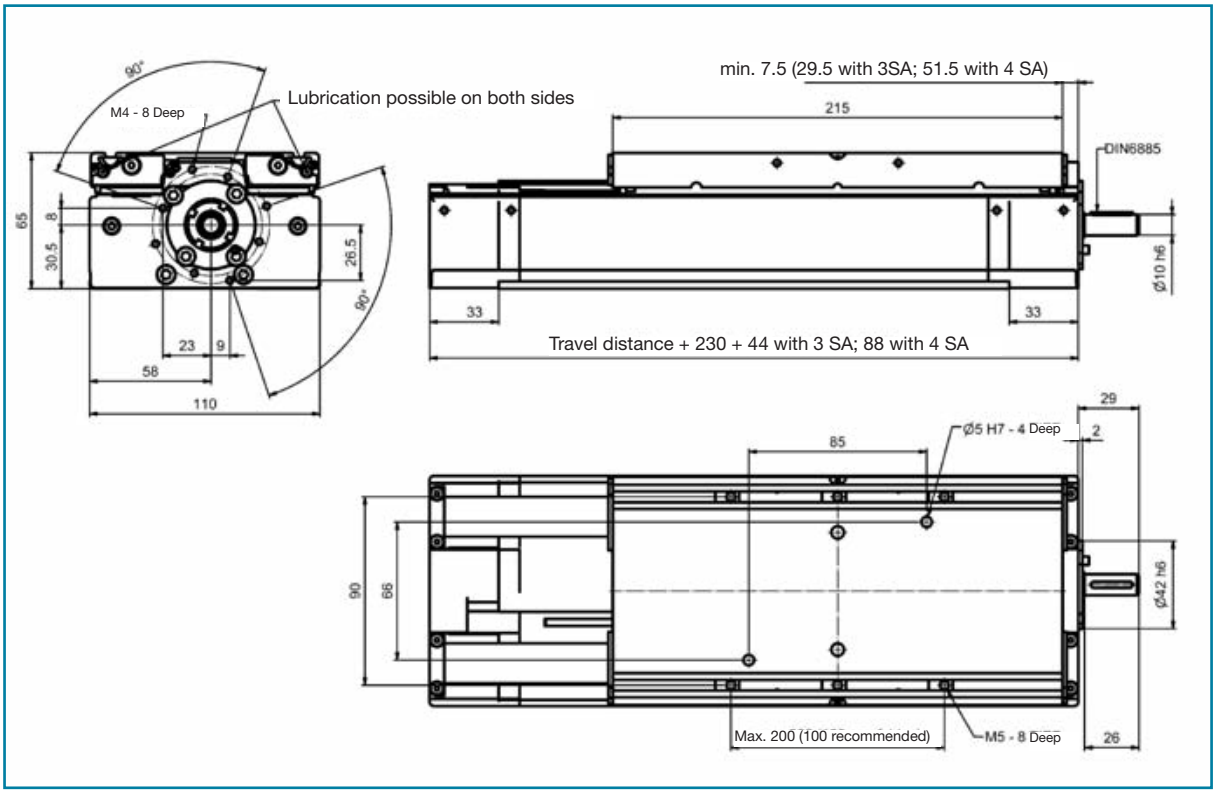
Mass

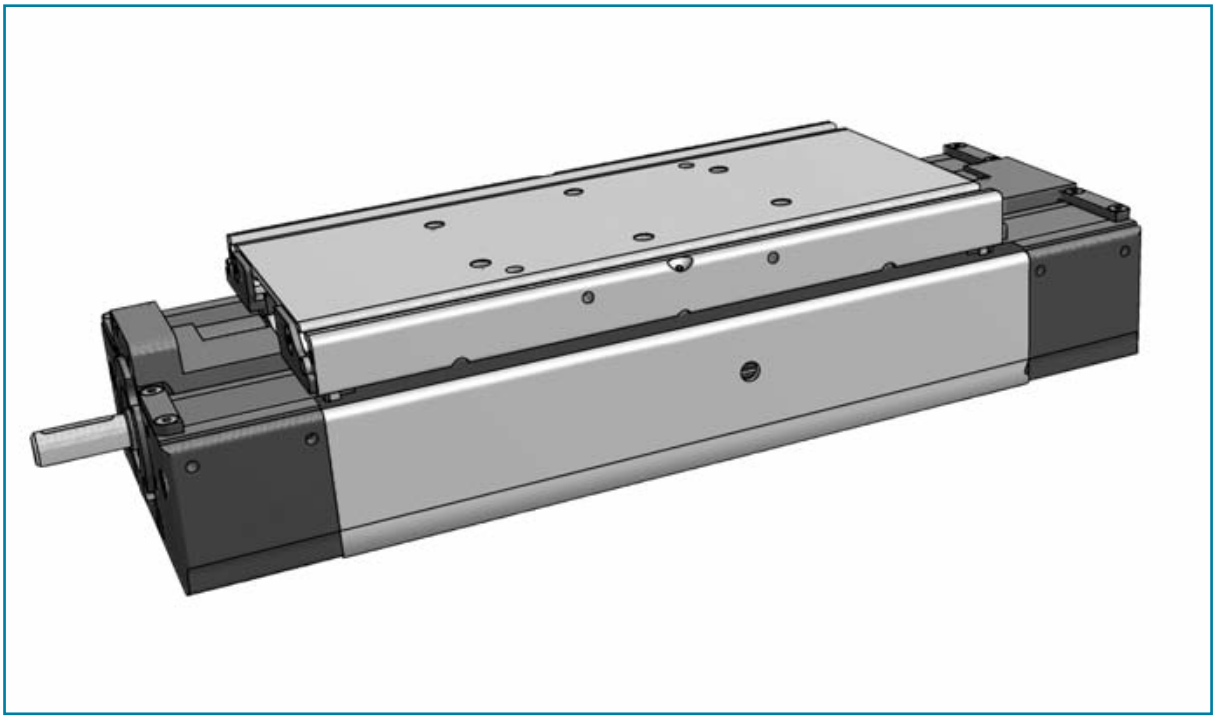
	Roller guide	Rail guide
Base mass	3.8 kg	3.8 kg
Mass per 100 mm of lift	0.5 kg	0.7 kg
Carriage mass	1.1 kg	0.9 kg

Subject to technical modifications.

AXDL110S parallel module

with screw-type drive and rail guide

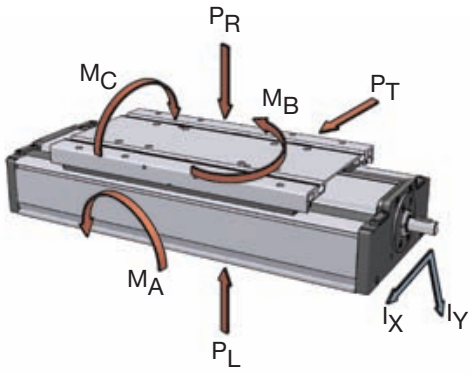




Loads and torque loads

	Rail guide S15	
Loads [N]	dyn.	stat.
P_R	4450	7700
P_L	2700	3850
P_T	2450	3300
Torque loads [N.m]		
M_A	140	200
M_B	115	155
M_C	95	140

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 27,000 km.



Technical specifications

Traverse rate	max. 1.6 m/s
Repeat accuracy	0.03 mm
Dyn. load rating of ball screw	6.3 to 12.1 kN [1]
Idling speed torque	0.6 N.m
Moments of inertia Pitch 5/10 mm Pitch 16 mm	 0.34 kg.cm²/m 0.31 kg.cm²/m
Max. total length	3.5 m [2]
Geometrical moment of inertia I_X	37.45 cm⁴
Geometrical moment of inertia I_Y	138.31 cm⁴

1) Depending on the design of the screw type drive.
2) Greater lengths upon request.

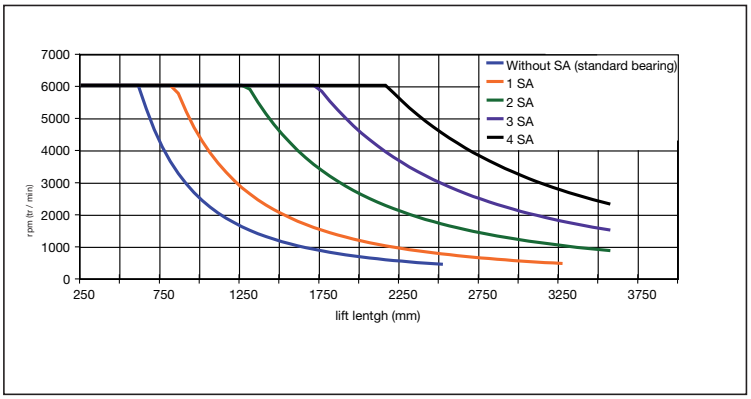
Drive elements

	Diameter	Pitch
Ball screw	16 mm	5/10/16 mm
Trapezoidal thread drive	16 mm	4/8 mm

Mass

	Rail guide
Base mass	4.2 kg
Mass per 100 m of lift	0.7 kg
Carriage mass	1.4 kg

Critical rotational speed for ball screws

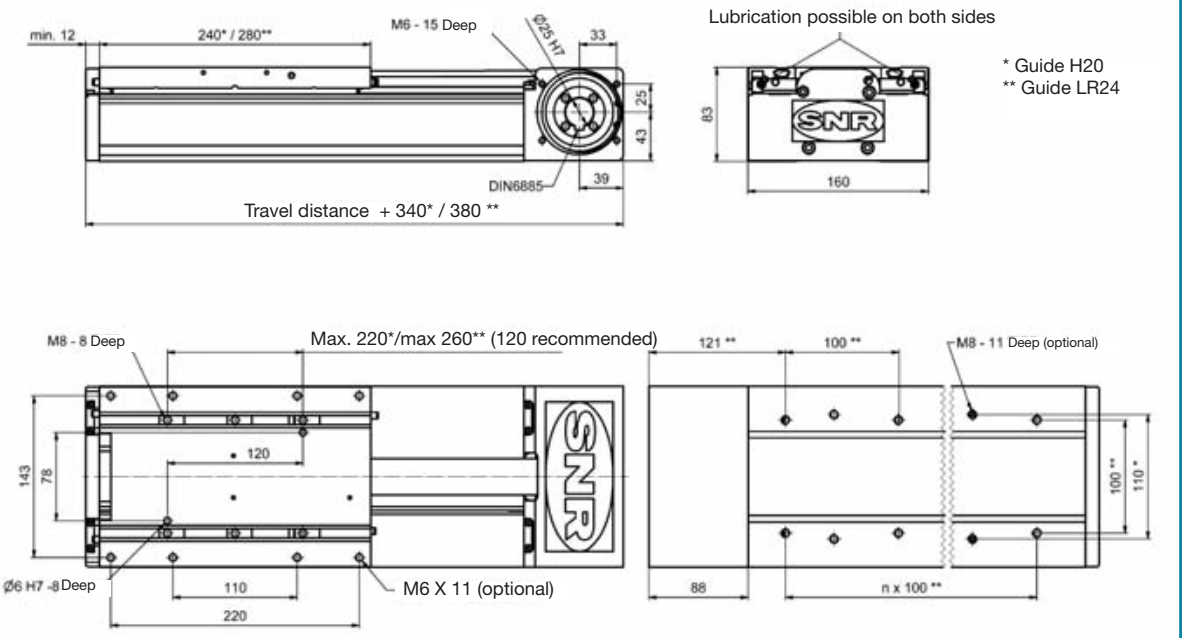


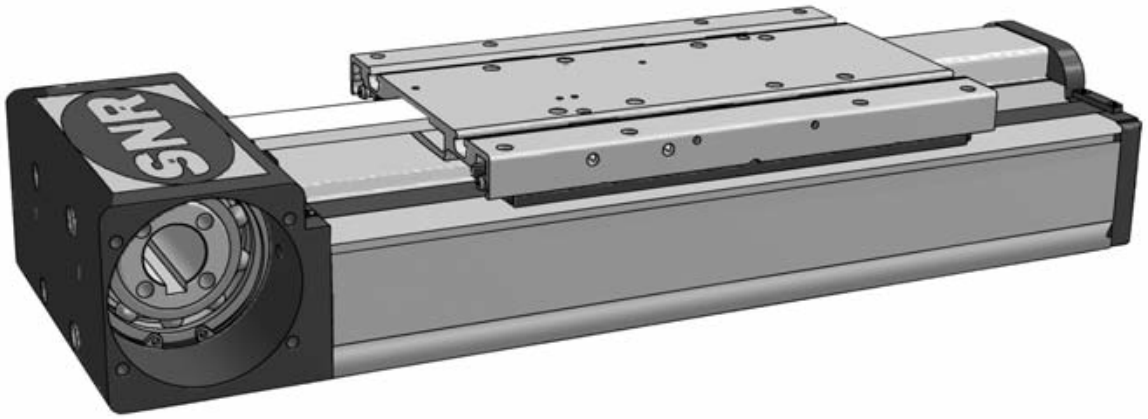
SA = set of spindle support

Subject to technical modifications.

AXDL160Z parallel module

with synchronous belt drive and rail system or roller guide

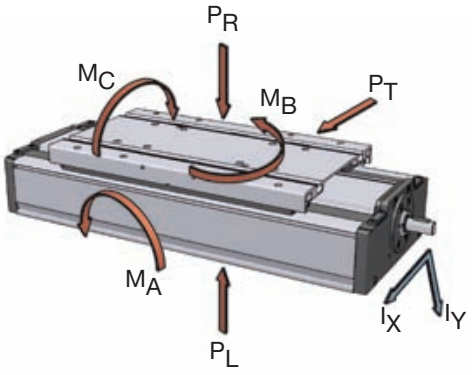




Loads and torque loads

	Roller guide L24		Rail guide H20	
Loads [N]	dyn.	stat.	dyn.	stat.
P_R	1200	1200	8700	30000
P_L	1200	1200	8700	30000
P_T	1200	1200	8700	30000
Torque loads [N.m]				
M_A	84	84	430	1500
M_B	84	84	430	1500
M_C	62	62	430	1500

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.



Technical specifications

Traverse rate	max. 10 m/s (L24)
Repeat accuracy	0.05 mm
Drive element	32STD8 synchronous belt
Allowable dyn. working load	1830 N
Idling speed torque	3.6 N.m
Lift per revolution	224 mm
Max. total length	6.1 m
Geometrical moment of inertia I_X	140.29 cm^4
Geometrical moment of inertia I_Y	666.8 cm^4

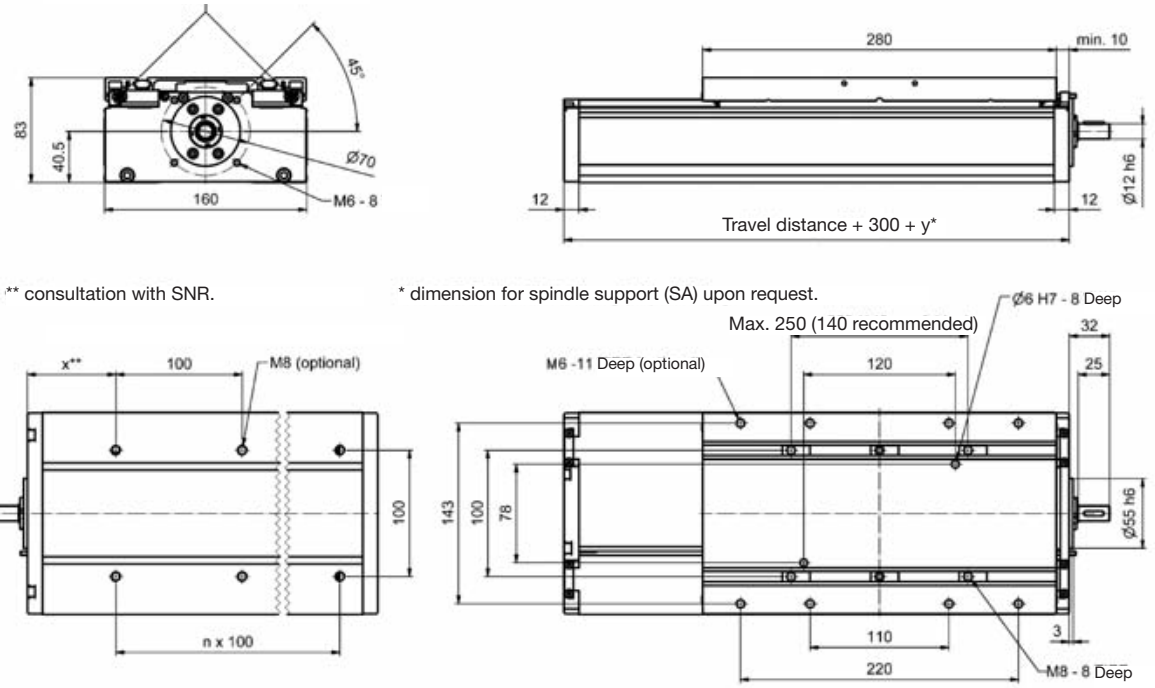
Mass

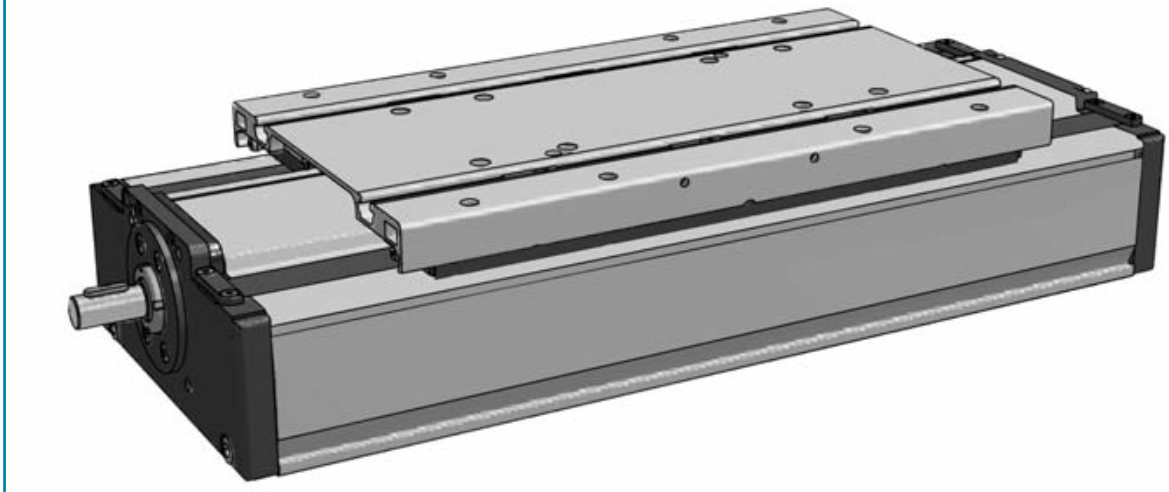
	Roller guide	Rail guide
Base mass	11.7 kg	11.9 kg
Mass per 100 mm of lift	0.9 kg	1.3 kg
Carriage mass	3.6 kg	3.6 kg

Subject to technical modifications.

AXDL160S parallel module

with screw-type drive and rail guide

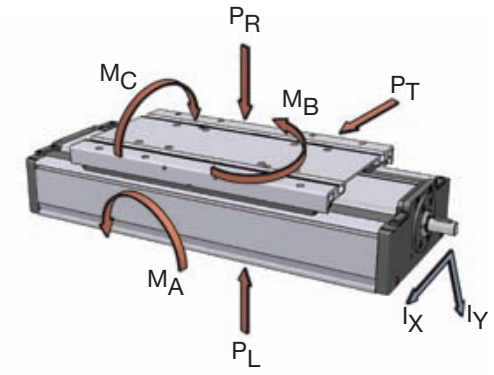




Loads and torque loads

	Roller guide H20	
Loads [N]	dyn.	stat.
P_R	10900	30000
P_L	10900	30000
P_T	10900	30000
Torque loads [N.m]		
M_A	700	2000
M_B	700	2000
M_C	540	1500

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 27,000 km.



Technical specifications

Traverse rate	max. 2 m/s
Repeat accuracy	0.03 mm
Dyn. load rating of ball screw	7.9 to 15.9 kN 1)
Idling speed torque	0.6 - 1,0 N.m
Moments of inertia	
Pitch 5 mm	2.22 kg.cm²/m
Pitch 10 mm	2.39 kg.cm²/m
Pitch 20 mm	0.81 kg.cm²/m
Pitch 50 mm	0.79 kg.cm²/m
Max. total length	3.5 m 2) / 5.5 m 3)
Geometrical moment of inertia Ix	140.29 cm⁴
Geometrical moment of inertia Iy	666.8 cm⁴

1) Depending on the design of the screw type drive.
2) With pitch 5, 10, 20 mm.
3) With pitch 50 mm.

Drive elements

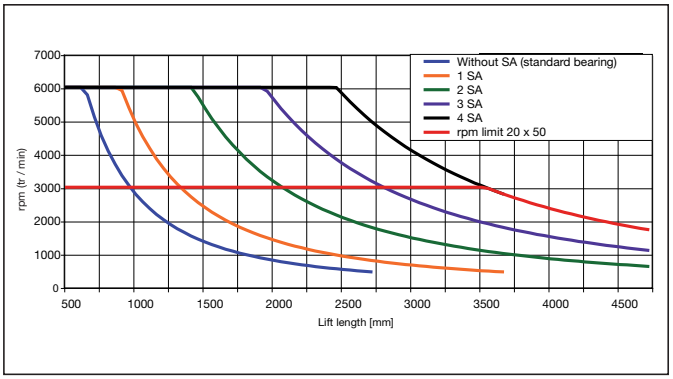
	Diameter	Pitch
Ball screw	20 mm	20/50 mm
Ball screw	25 mm	5/10 mm
Trapezoidal thread drive	24 mm	4/8 mm

Mass

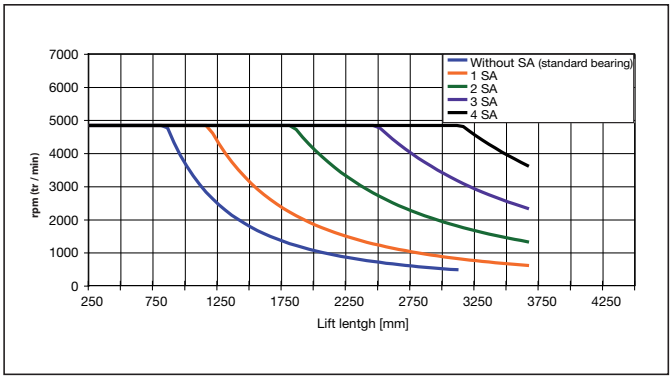
	Roller guide
Base mass	9.7 kg
Mass per 100 mm of lift	1.4 kg
Carriage mass	4.2 kg

Critical rotational speed for ball screws

• Ball screw diameter 20 mm



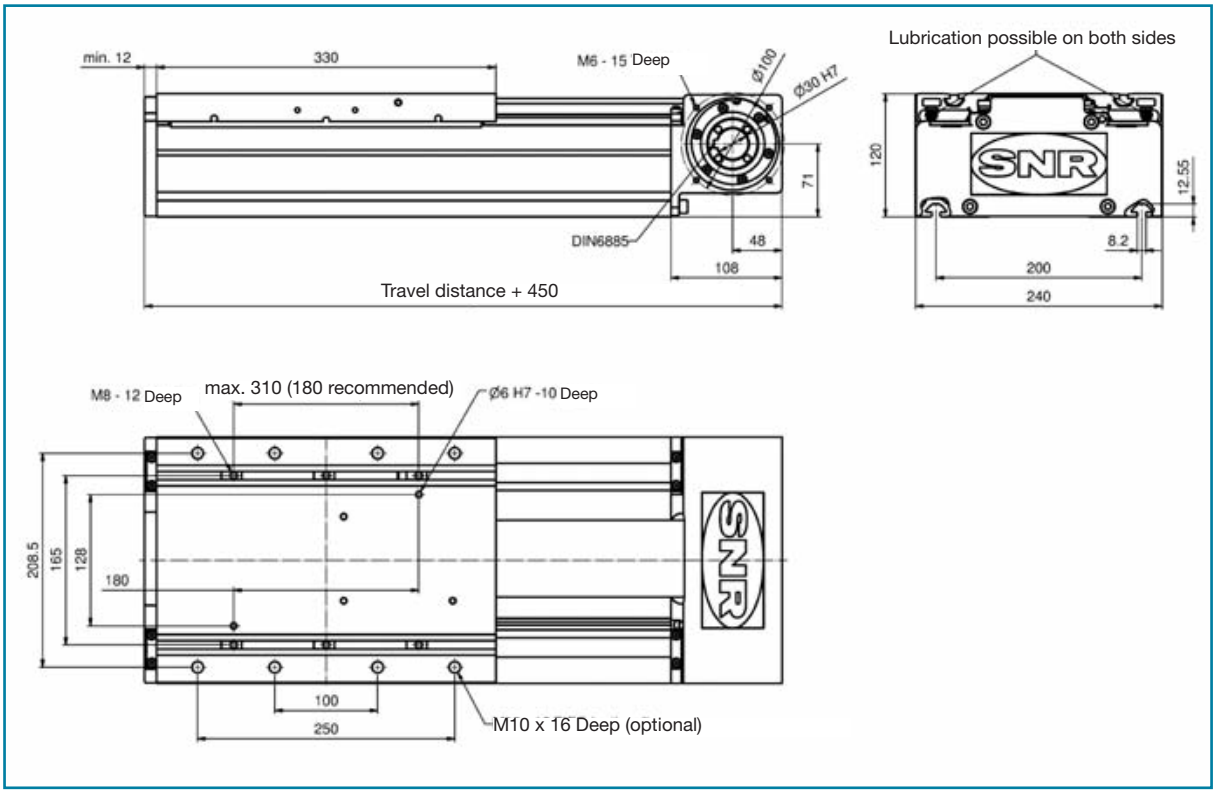
• Ball screw diameter 25 mm

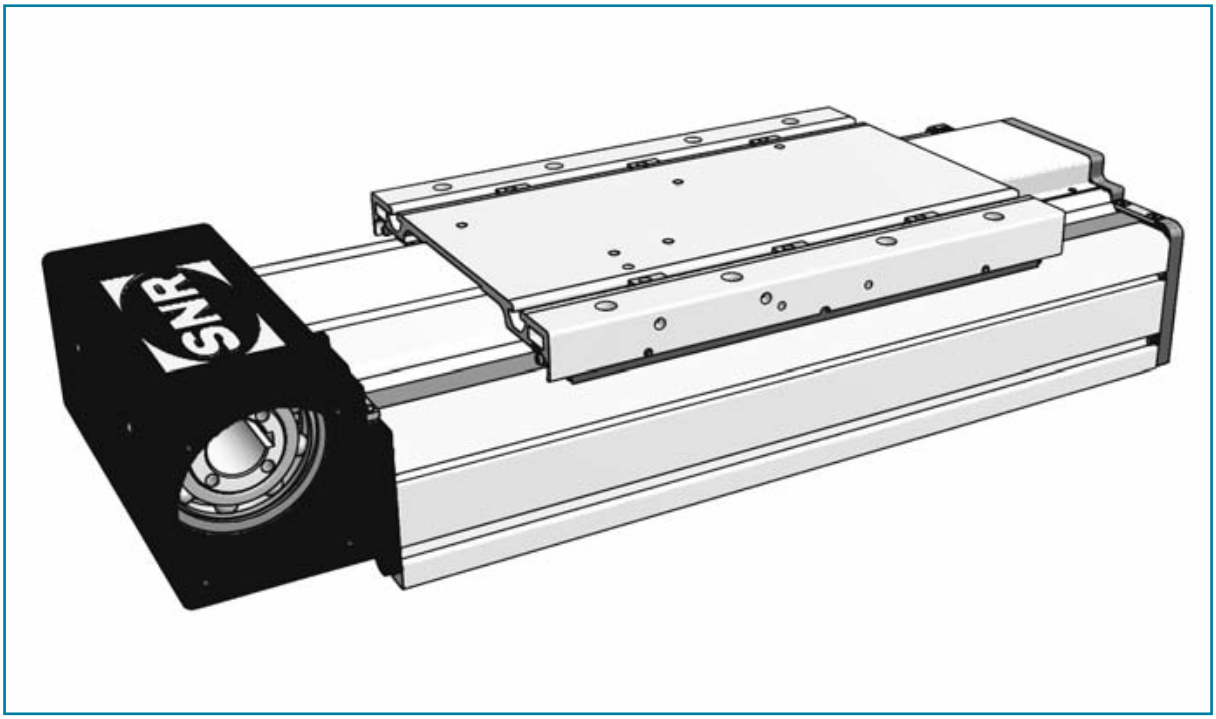


Subject to technical modifications.

AXDL240Z parallel module

with synchronous belt drive and rail system or roller guide

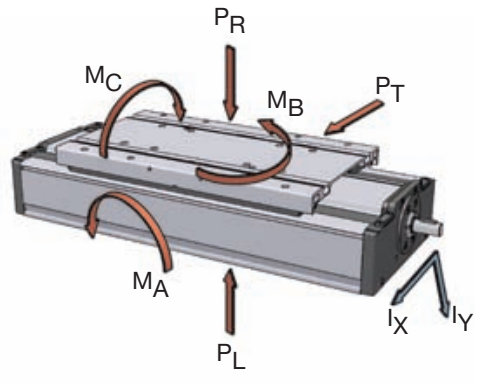




Loads and torque loads

	Roller guide L47		Rail guide H25	
Loads [N]	dyn.	stat.	dyn.	stat.
P_R	2600	2600	12300	42000
P_L	2600	2600	12300	42000
P_T	2600	2600	12300	42000
Torque loads [N.m]				
M_A	210	210	1050	3550
M_B	210	210	1050	3550
M_C	220	220	950	3200

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.



Technical specifications

Traverse rate	max. 10 m/s (L47)
Repeat accuracy	0.05 mm
Drive element	75STD8 synchronous belt
Allowable dyn. working load	5 000 N
Idling speed torque	6.5 N.m
Lift per revolution	272 mm
Max. total length	6.35 m
Geometrical moment of inertia I_X	751.7 cm^4
Geometrical moment of inertia I_Y	3956.0 cm^4

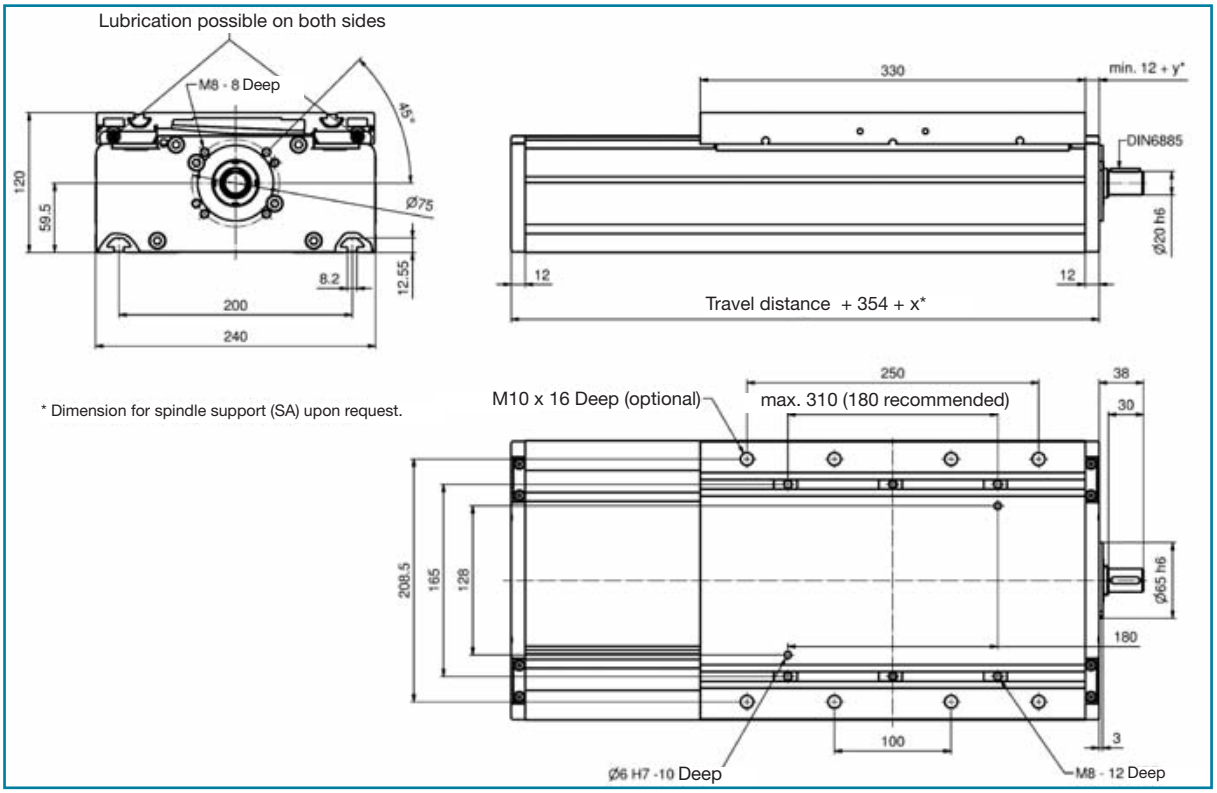
Mass

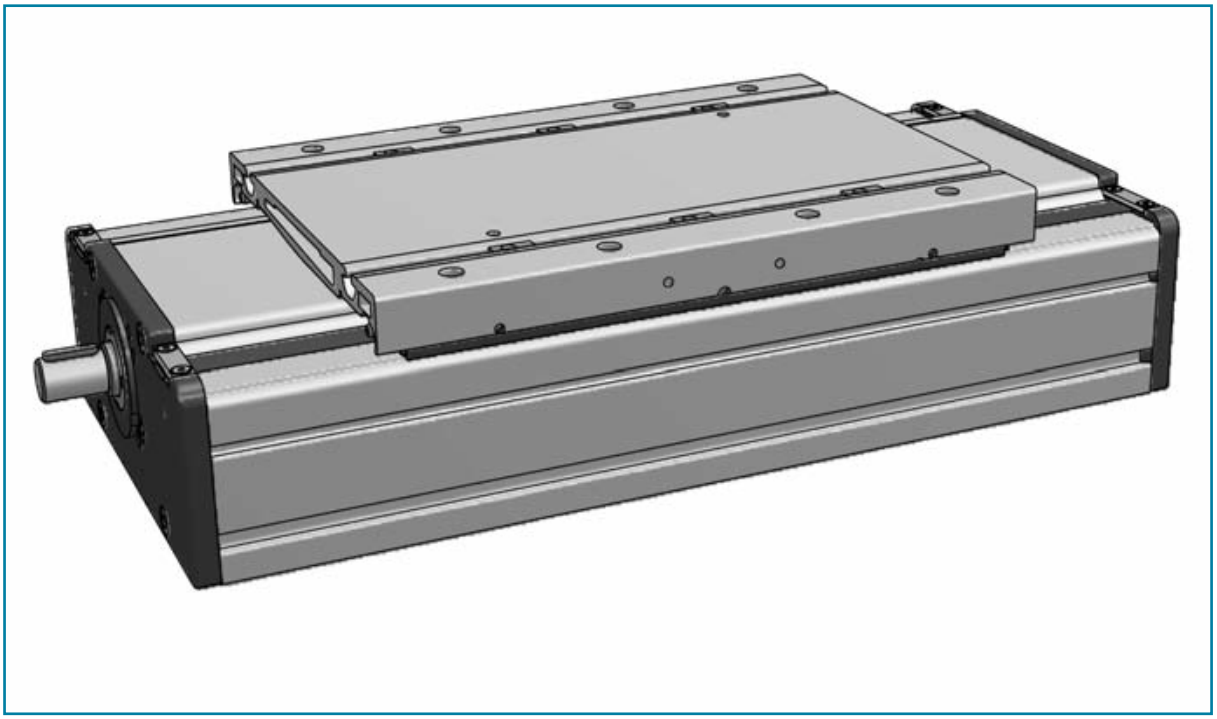
	Roller guide	Rail guide
Base mass	24.30 kg	24.90 kg
Mass per 100 mm of lift	2.20 kg	2.70 kg
Carriage mass	6.60 kg	5.70 kg

Subject to technical modifications.

AXDL240S parallel module

with screw-type drive and rail guide

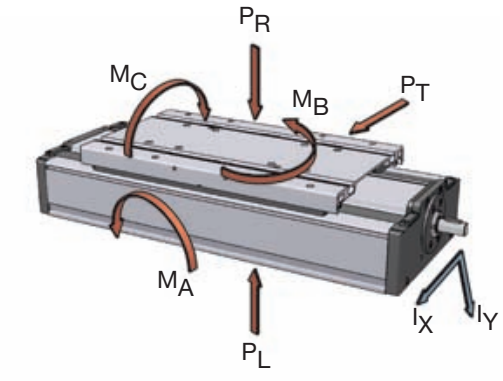




Loads and torque loads

	Roller guide H25	
Loads [N]	dyn.	stat.
P_R	15500	42000
P_L	15500	42000
P_T	15500	42000
Torque loads [N.m]		
M_A	1300	3550
M_B	1300	3550
M_C	1200	3200

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 27,000 km.



Technical specifications

Traverse rate	max. 2 m/s
Repeat accuracy	0.03 mm
Dyn. load rating of ball screw	19.5 to 31.7 kN (1)
Idling speed torque	1.5 - 2.0 N.m
Moments of inertia	
Pitch 5 mm	6.05 kg.cm²/m
Pitch 10/20 mm	6.40 kg.cm²/m
Pitch 32 mm	6.17 kg.cm²/m
Max. total length	5.5
Geometrical moment of inertia I_X	751.7 cm⁴
Geometrical moment of inertia I_Y	3956.0 cm⁴

1) Depending on the design of the screw type drive.

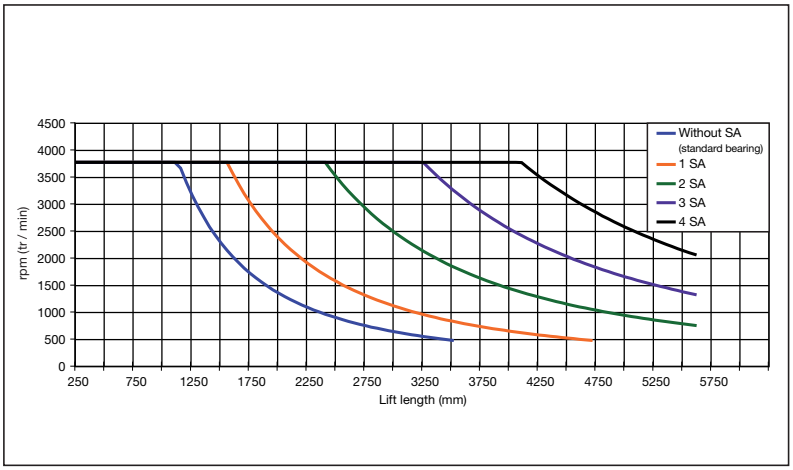
Drive elements

	Diameter	Pitch
Ball screw	32 mm	5/10/20/32 mm
Trapezoidal thread drive	36 mm	6/12 mm

Mass

	Roller guide
Base mass	22.10 kg
Mass per 100 mm of lift	3.10 kg
Carriage mass	6.40 kg

Critical rotational speed for ball screws

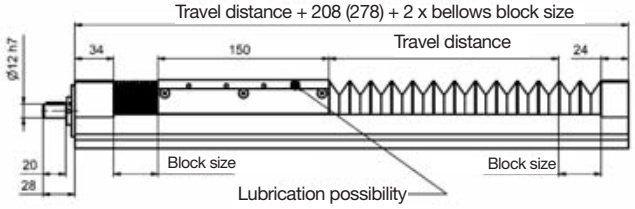


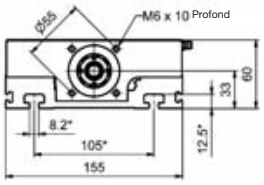
SA = set of spindle support

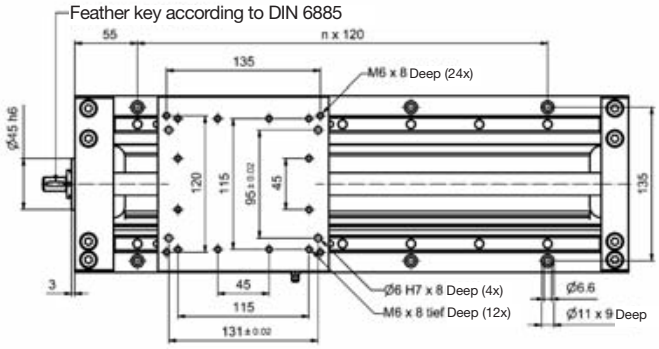
Subject to technical modifications.

AXLT155 linear table

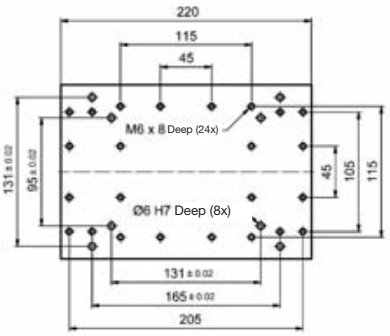
with screw-type drive and rail guide





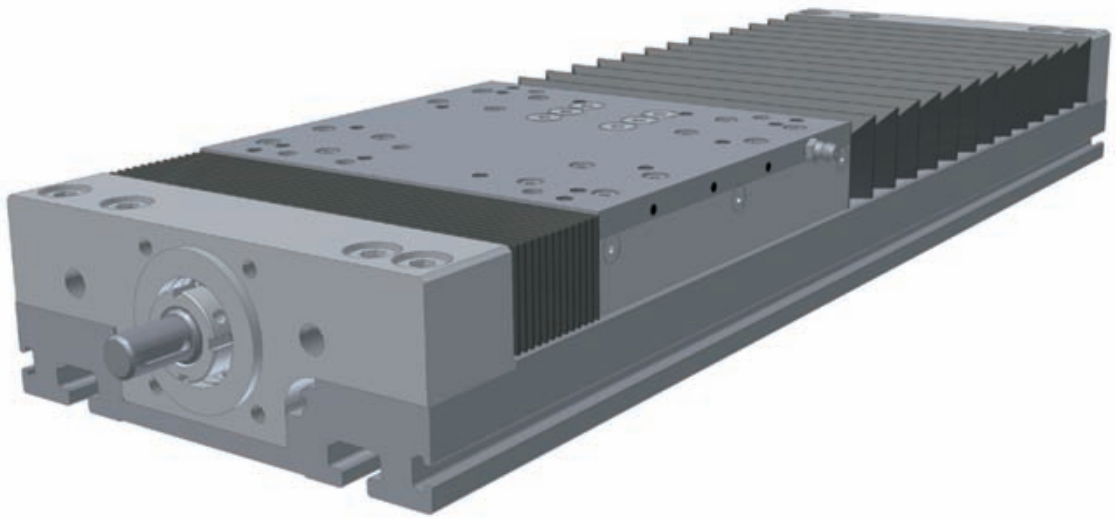


Hole pattern table length 220 mm:



* Not applicable with the steel design.

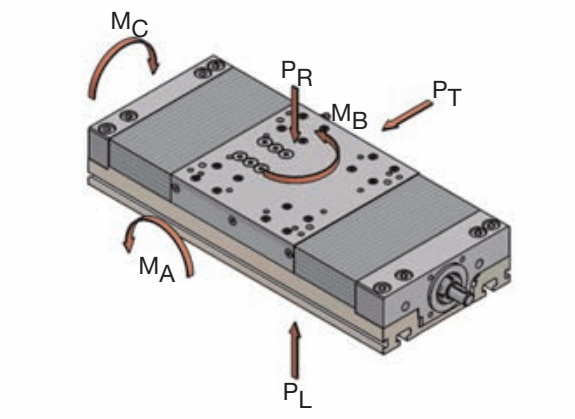
Bellows calculation:
Bellows number = round out (travel distance/ 16.5)
Block size = bellow number x3 +5 mm



Loads and torque loads

Table length	H15 Rail guide 150		220	
Loads [N]	dyn.	stat.	dyn.	stat.
P_R	6900	19000	6900	19000
P_L	6900	19000	6900	19000
P_T	6900	19000	6900	19000
Torque loads [N.m]				
M_A	280	790	420	1100
M_B	280	790	420	1100
M_C	340	950	340	950

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 27,000 km.



Technical specifications

Traverse rate	max. 2 m/s
Repeat accuracy	0.03 mm
Dyn. load rating of ball screw	9.1 to 17.5 kN (1)
Idling speed torque	0.6 - 0.8 N.m
Moments of inertia Pitch 5 mm Pitch 20 mm	 0.84 kg.cm²/m 0.81 kg.cm²/m
Max. total length	3.5 m

1) Depending on the design of the screw type drive.

Drive elements

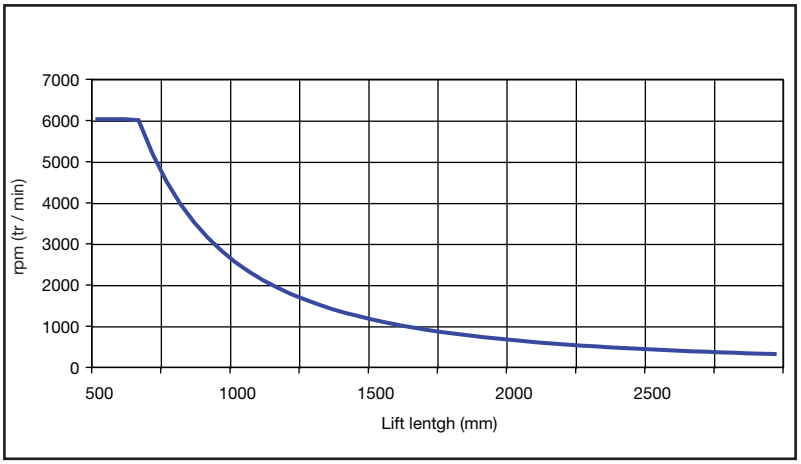
	Diameter	Pitch
Ball screw 20 mm	5/20 mm	
Trapezoidal thread drive	20 mm	4/8 mm

Mass

	Rail guide H15	H15*
Base mass	5.5 kg	6.2 kg
Mass per 100 mm of lift	1.2 kg	1.2 kg
Carriage mass	2 kg	2.3 kg

** Table length: 220 mm*

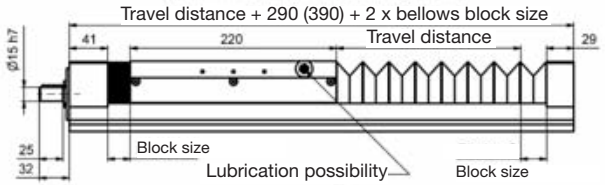
Critical rotational speed for ball screws

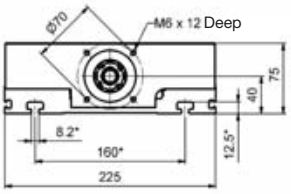


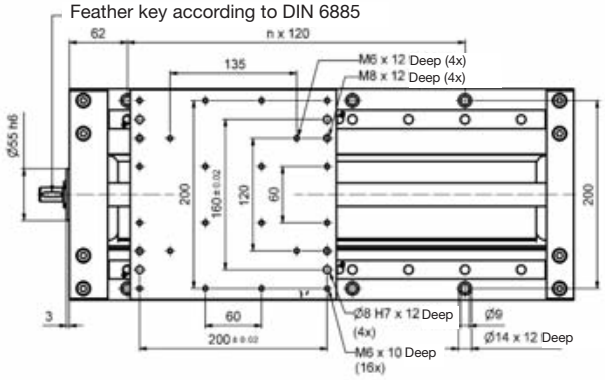
Subject to technical modifications.

AXLT225 linear table

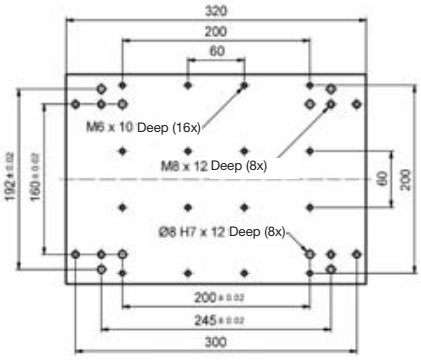
with screw-type drive and rail guide





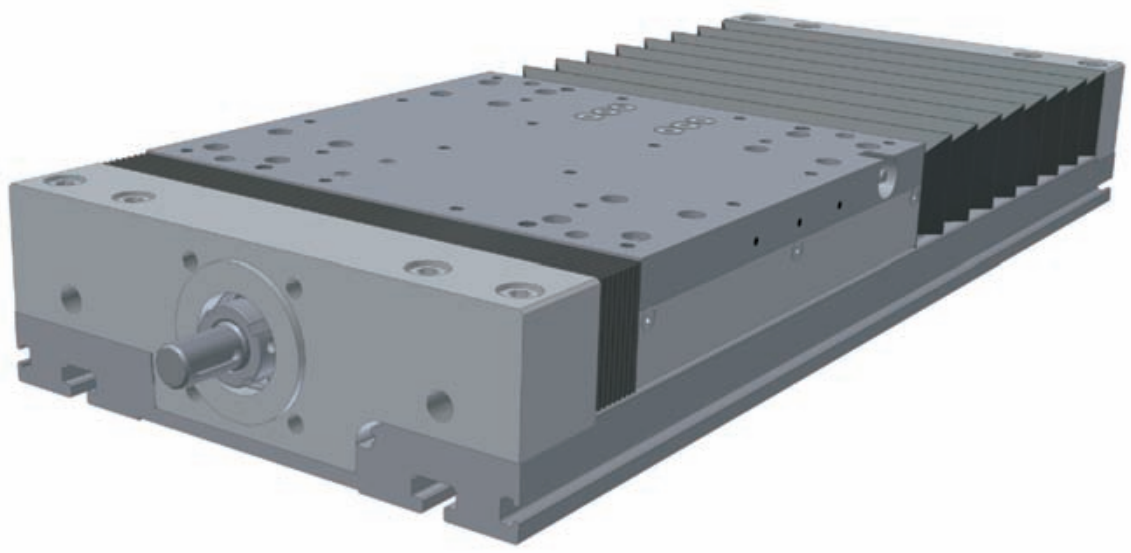


Hole pattern for table length 320 mm:



Bellows calculation:
Bellows number = round out (travel distance/ 27)
Block size = bellows number x3 + 5 mm

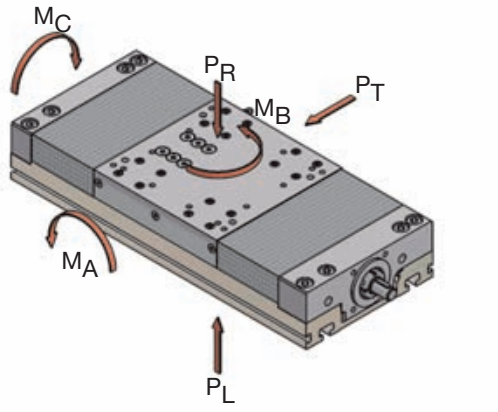
* Not applicable with the steel design.



Loads and torque loads

Table length	H20 Rail guide 220		320	
Loads [N]	dyn.	stat.	dyn.	stat.
P_R	10900	30000	10900	30000
P_L	10900	30000	10900	30000
P_T	10900	30000	10900	30000
Torque loads [N.m]				
M_A	720	2000	930	2600
M_B	720	2000	930	2600
M_C	810	2250	810	2250

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 27,000 km.



Technical specifications

Traverse rate	max. 2 m/s
Repeat accuracy	0.03 mm
Dyn. load rating of ball screw	14.7 to 15.9 kN(1)
Idling speed torque	0.7 - 1.2 N.m
Moments of inertia	
Pitch 5 mm	2.22 kg.cm²/m
Pitch 10 mm	2.39 kg.cm²/m
Pitch 25 mm	2.15 kg.cm²/m
Max. total length	3.5 m

1) Depending on the execution of the screw type drive.

Drive elements

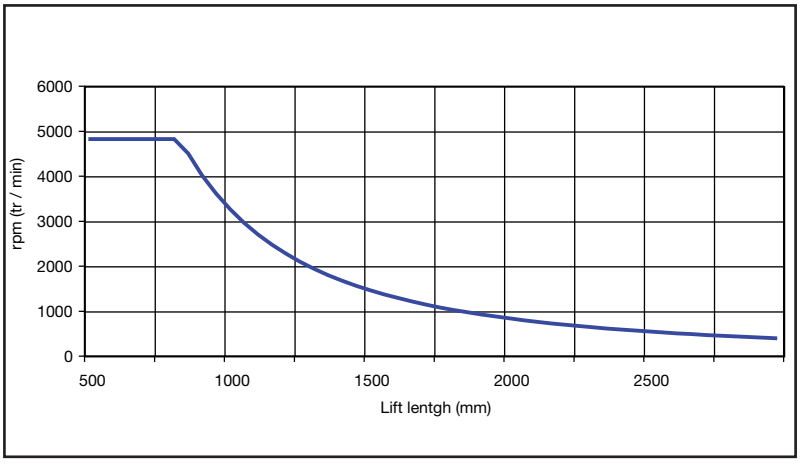
	Diameter	Pitch
Ball screw	25 mm	5/10/25 mm
Trapezoidal thread drive	24 mm	5/10 mm

Mass

	Roller guide H20	H20*
Base mass	13.0 kg	15.8 kg
Mass per 100 mm of lift	1.8 kg	1.8 kg
Carriage mass	5.0 kg	6.0 kg

** Table length: 320 mm.*

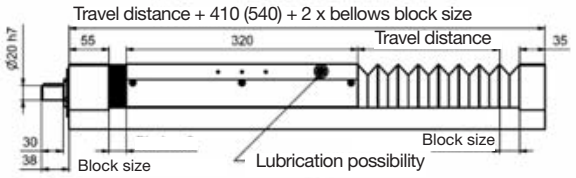
Critical rotational speed for ball screws

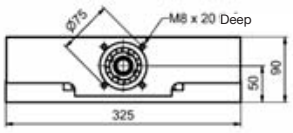


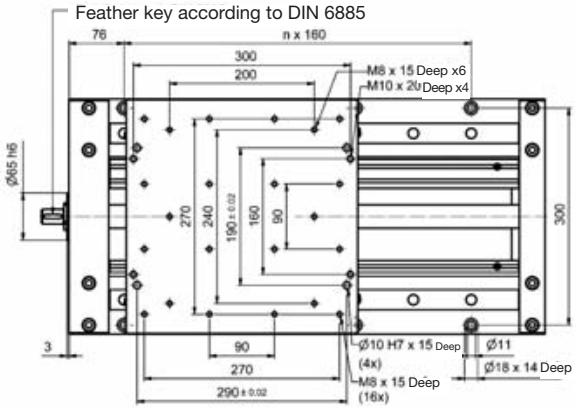
Subject to technical modifications.

AXLT325 linear table

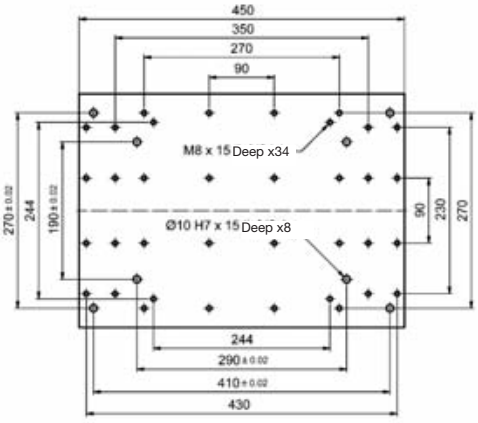
with screw-type drive and rail guide



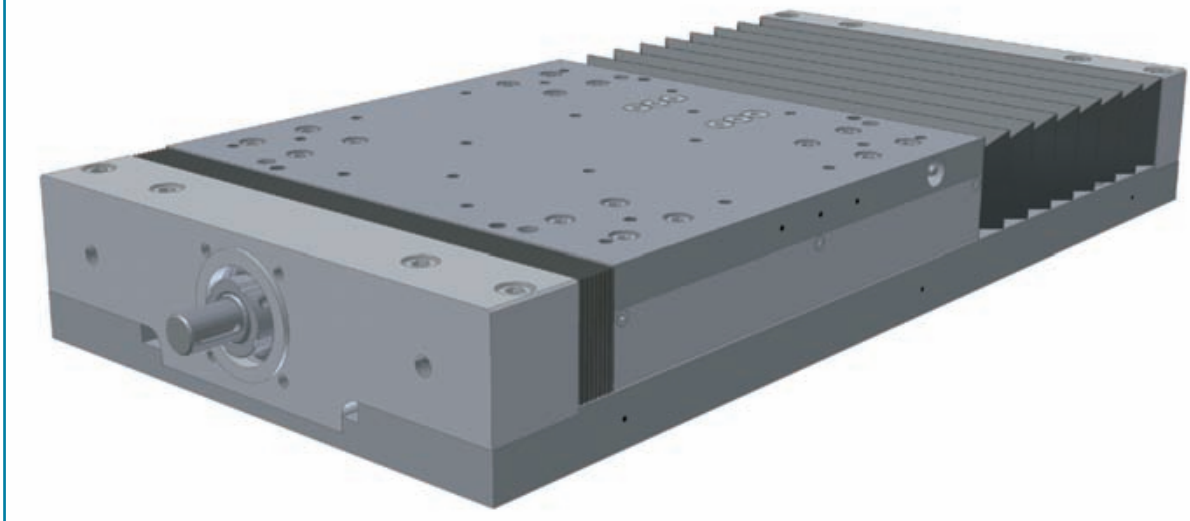




Hole pattern table length 450 mm:



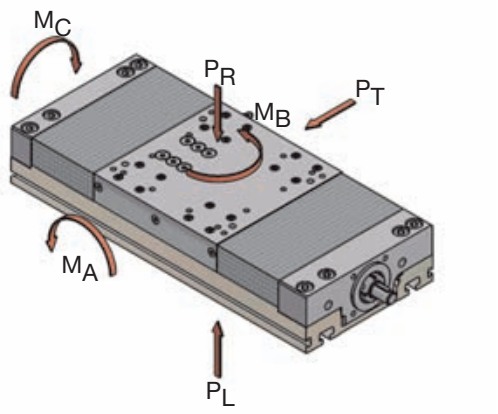
Bellows calculation:
Bellows number = round out (travel distance/ 27)
Block size = bellows number x3 +5 mm



Loads and torque loads

Table length	H30 Rail guide 320		450	
Loads [N]	dyn.	stat.	dyn.	stat.
P_R	22000	53000	22000	53000
P_L	22000	53000	22000	53000
P_T	22000	53000	22000	53000
Torque loads [N.m]				
M_A	2000	4900	2700	6500
M_B	2000	4900	2700	6500
M_C	2250	5500	2250	5500

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 27,000 km.



Technical specifications

Traverse rate	max. 2 m/s
Repeat accuracy	0.03 mm
Dyn. load rating of ball screw	19.5 to 31.7 kN (1)
Idling speed torque	1.1 - 1.5 N.m
Moments of inertia	
Pitch 5 mm	6.05 kg.cm²/m
Pitch 10 / 20 mm	6.40 kg.cm²/m
Pitch 32 mm	6.17 kg.cm²/m
Max. total length	3.2 m

1) Depending on the design of the screw type drive.

Drive elements

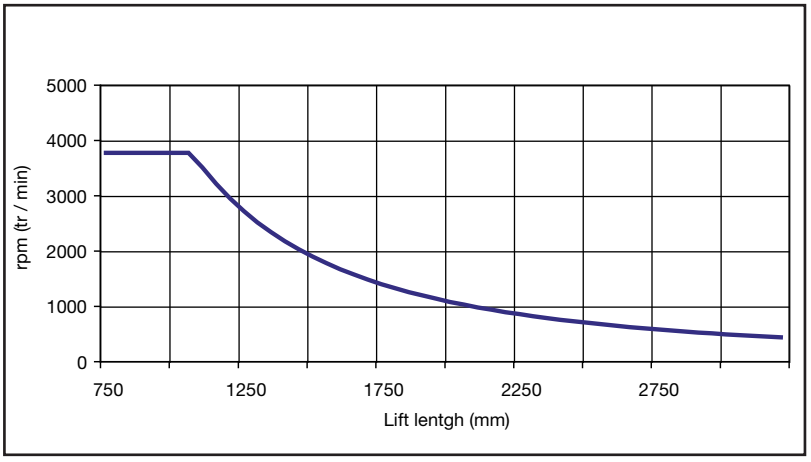
	Diameter	Pitch
Ball screw	32 mm	5/10/20/32 mm
Trapezoidal thread drive	36 mm	6/12 mm

Mass

	Rail guide H30	H30*
Base mass	31.5 kg	38.7 kg
Mass per 100 mm of lift	3.5 kg	3.5 kg
Carriage mass	12.0 kg	14.6 kg

** Table length: 450 mm.*

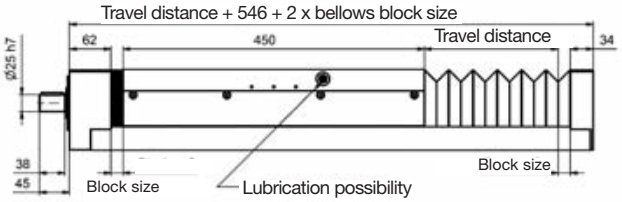
Critical rotational speed for ball screws

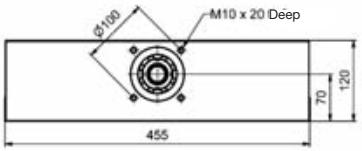


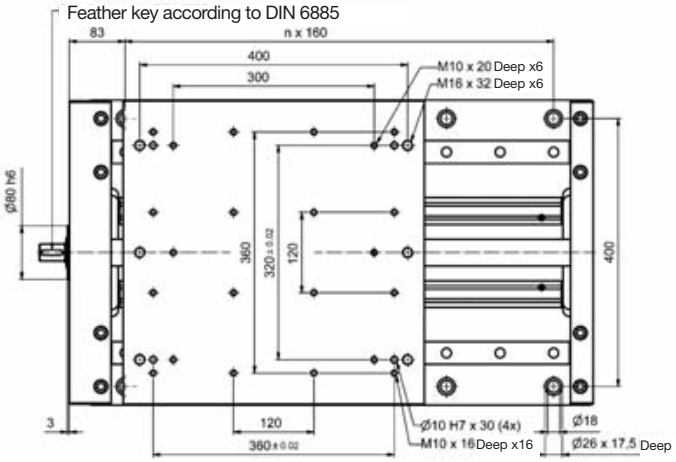
Subject to technical modifications.

AXLT455 linear table

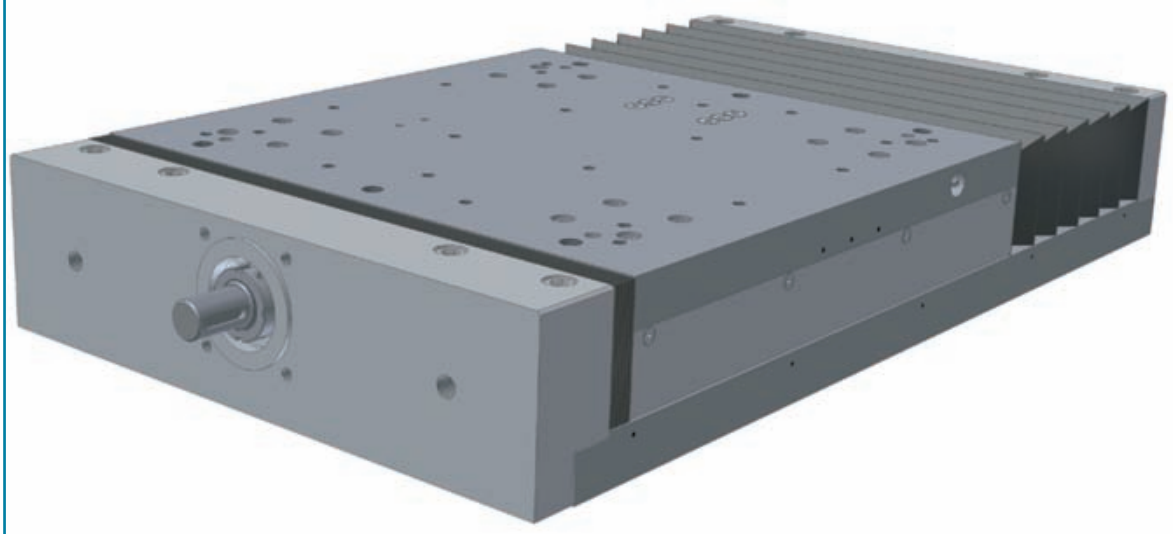
with screw-type drive and rail guide







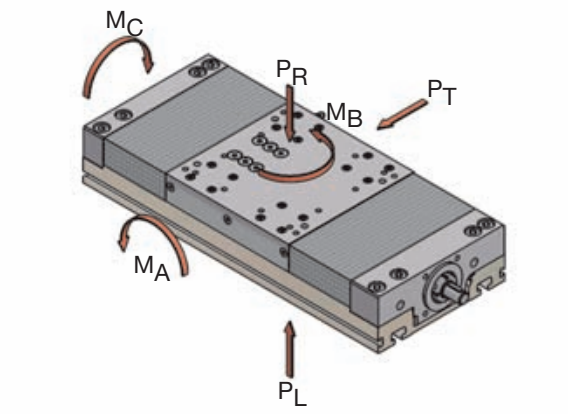
Bellows calculation:
Bellows number = round out (travel distance/ 34.5)
Block size = bellows number x3 +5 mm



Loads and torque loads

	Rail guide H35	
Loads [N]	dyn.	stat.
P_R	30000	77000
P_L	30000	77000
P_T	30000	77000
Torque loads [N.m]		
M_A	3700	9500
M_B	3700	9500
M_C	3950	10000

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 27,000 km.



Technical specifications

Traverse rate	max. 2 m/s
Repeat accuracy	0.03 mm
Dyn. load rating of ball screw	29.1 to 54.3 kN (1)
Idling speed torque	1.7 - 2.8 N.m
Moments of inertia	
Pitch 5 mm	15.64 kg.cm²/m
Pitch 10 mm	13.55 kg.cm²/m
Pitch 20 mm	13.52 kg.cm²/m
Pitch 40 mm	13.42 kg.cm²/m
Max. total length	3.2 m

1) Depending on the design of the screw type drive.

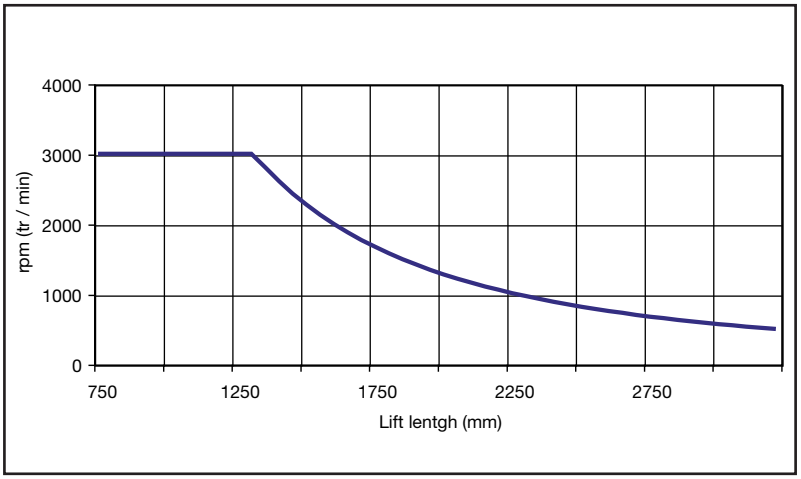
Drive elements

	Diameter	Pitch
Ball screw	40 mm	5/10/20/40 mm
Trapezoidal thread drive	40 mm	7 mm

Mass

Base mass	74 kg
Mass per 100 mm of lift	6.3 kg
Carriage mass	29 kg

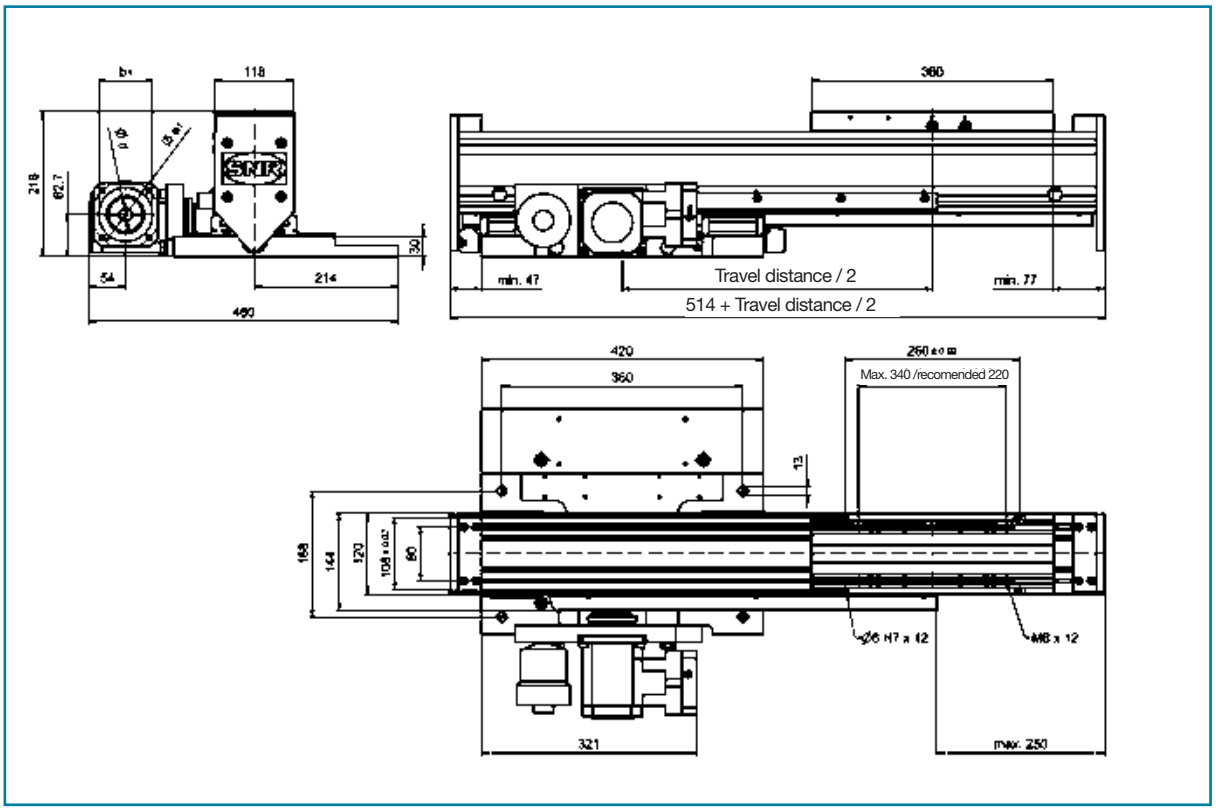
Critical rotational speed for ball screws



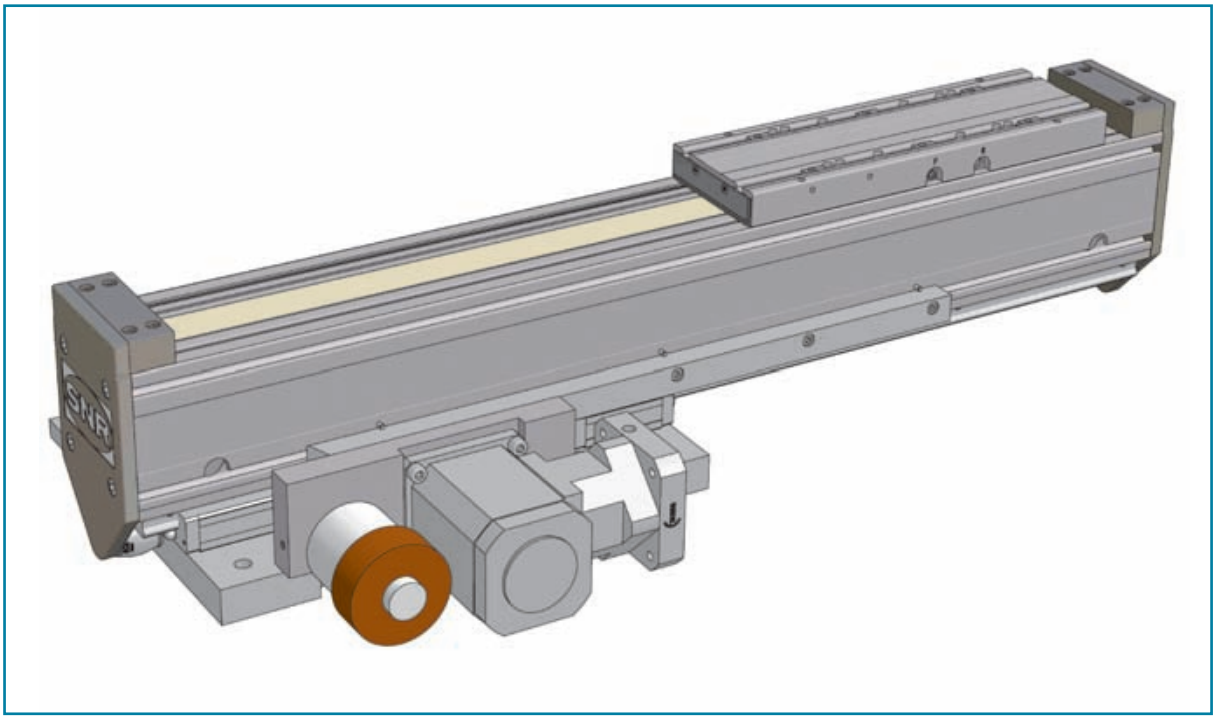
Subject to technical modifications.

AXS120TM telescopic axis

with combined drive made of synchronous belt and rack and pinion



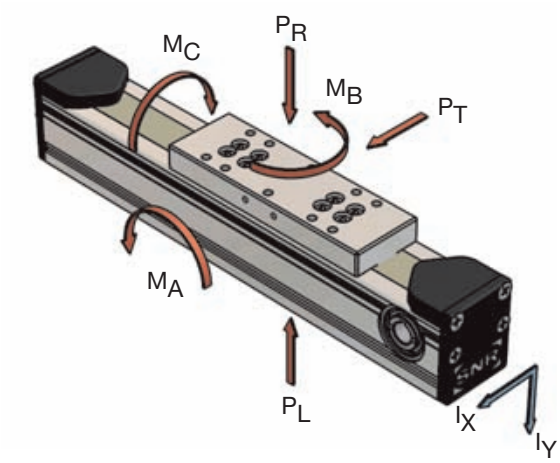
• **Picture: horizontal telescopic axis; for vertical design: see http://www.tracepartsonline.net**



Loads and torque loads

	Rail guide 1st guide level H25		2nd guide level W35	
Loads [N]	dyn.	stat.	dyn.	stat.
P_R	12200	41500	6900	19500
P_L	12200	41500	6900	19500
P_T	12200	41500	6900	19500
Torque loads [N.m]				
M_A	1750	5900	580	1650
M_B	1750	5900	580	1650
M_C	470	1600	220	635

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.



Technical specifications

	Horizontal installation	Vertical installation
Traverse rate	max. 10m/s	3.6 m/s maximum
Repeat accuracy	0.1 mm	0.1 mm
Drive elements	Rack and pinion, module 2 50 AT 10 synchronous belt	Rack and pinion, module 3 50 AT 10 synchronous belt
Lift per revolution (gearbox main drive pinion side)	280 mm	500 mm
Allowable dyn. working force of the belt of the rack and pinion	 2500 N 2880 N	 2500 N 5860 N
TA37-16 shock absorber Max. energy absorption	65 N.m	65 N.m
Max. total length	3 m	3 m
Geometrical moment of inertia I_X	661.1 cm^4	661.1 cm^4
Geometrical moment of inertia I_Y	938.57 cm^4	938.57 cm^4

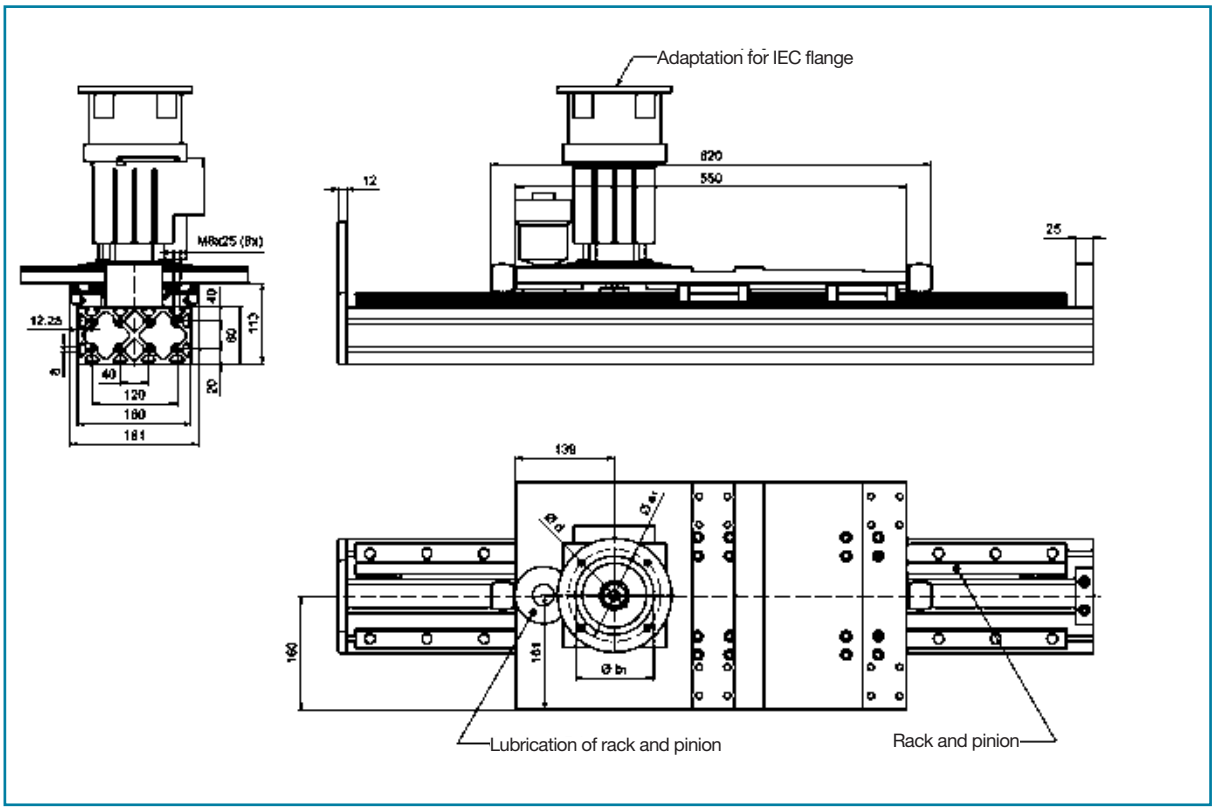
Mass

	Horizontal installation		Vertical installation	
		1st level		1st level
Base mass	41.3 kg	14.5 kg	70 kg	15.4 kg
Mass per 100 mm of lift	3.9 kg	–	4.1 kg	–
Carriage mass	5.9 kg	–	5.9 kg	–

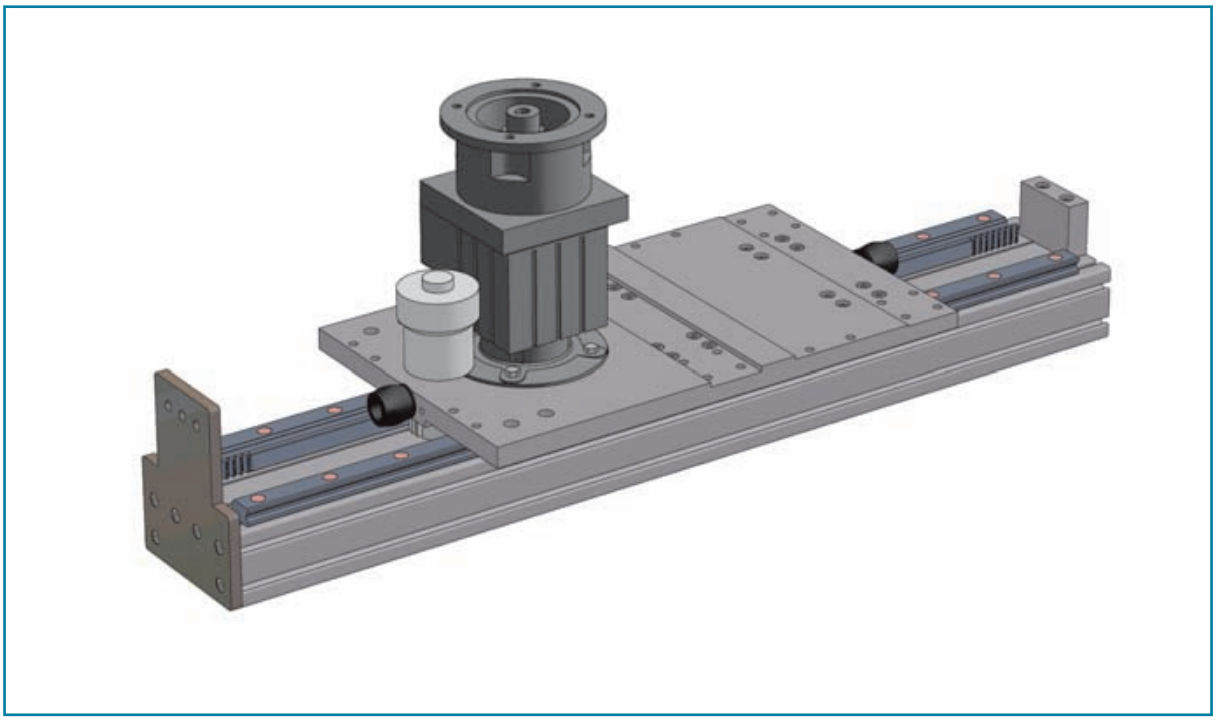
Subject to technical modifications.

AXS160M160 lifting axis

with rack and pinion drive and rail guide



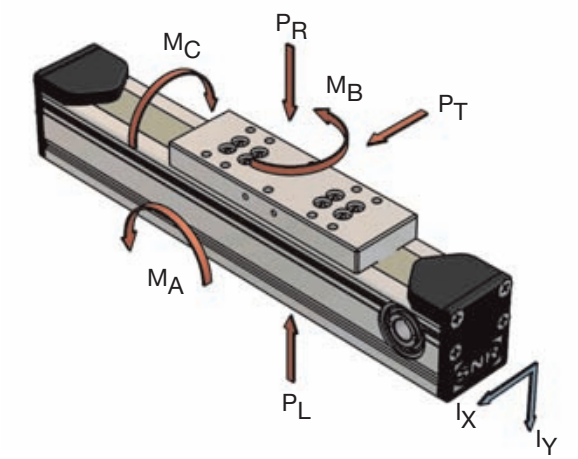
• **Linear axis only in combination with gantry axis AXS280-ZGx-x30** **(see page 113)**



Loads and torque loads

	Rail guide G30	
Loads [N]	dyn.	stat.
P_R	7300	20500
P_L	6800	20500
P_T	6100	16000
Torque loads[N.m]		
M_A	690	1950
M_B	580	1500
M_C	380	1050

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.



Technical specifications

Traverse rate	max. 3 m/s
Repeat accuracy	0.05 mm
Drive element	Rack and pinion, pitch 8 mm
Lift per revolution:	160 mm
Allowable dyn. working force	2860 N
TA40-16 shock absorber Max. energy absorption	80 N.m
Max. total length	6 m
Geometrical moment of inertia I_X	1890 cm^4
Geometrical moment of inertia I_Y	880 cm^4

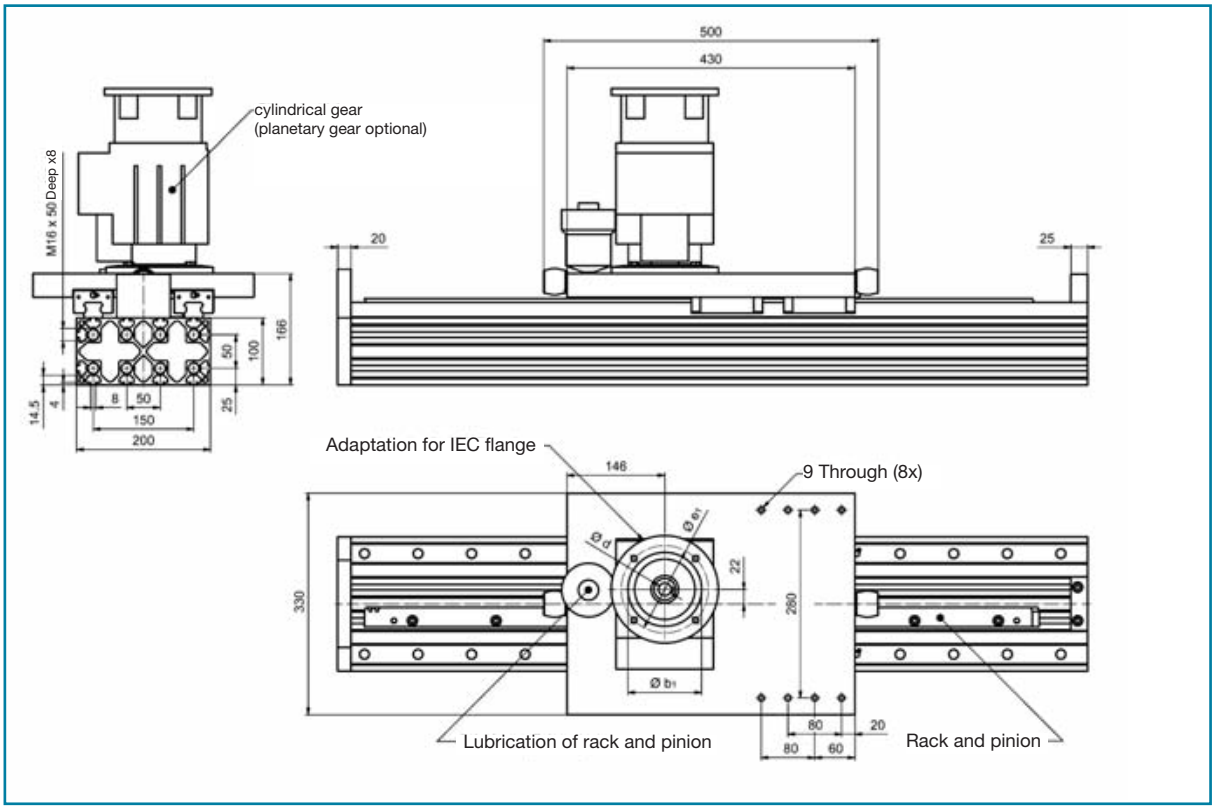
Mass

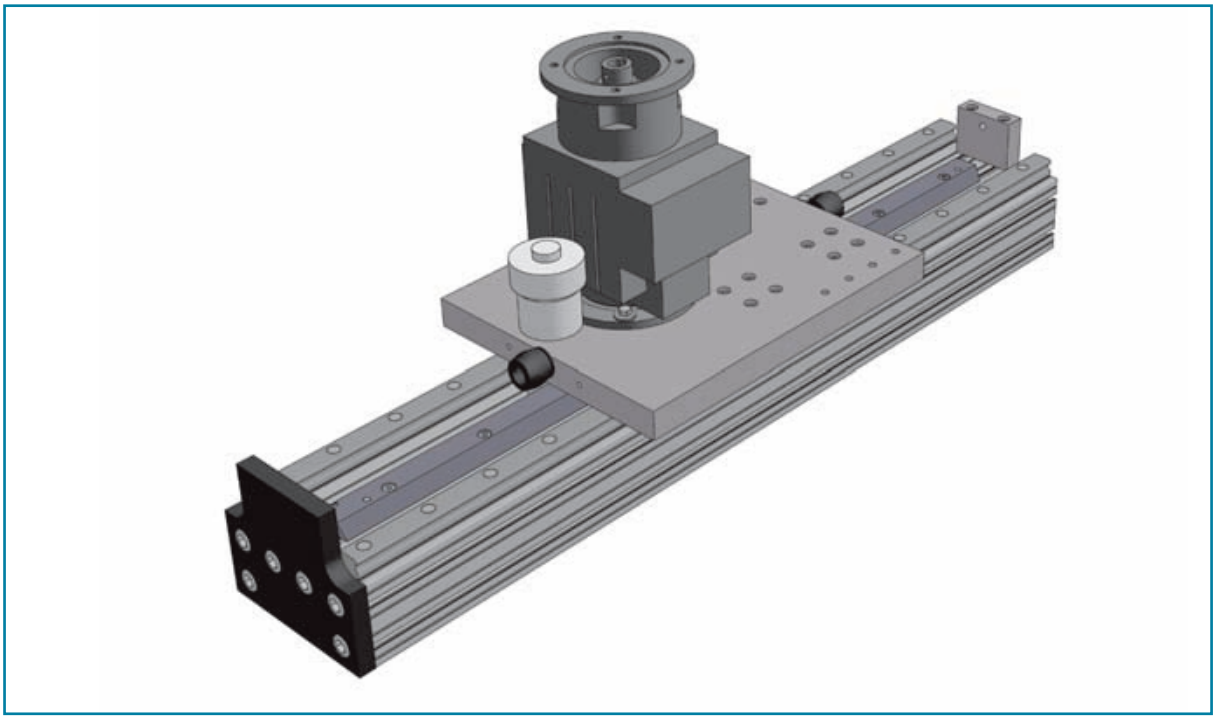
Base mass	41.3 kg
Mass per 100 mm of lift	3.9 kg
Carriage mass	5.9 kg

Masses without gearbox.
Subject to technical modifications.

XS200M200 lifting axis

with rack and pinion drive and rail guide



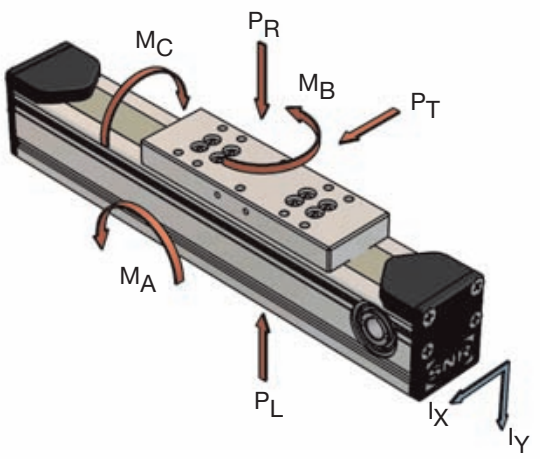


Loads and torque loads

Use	H30 Rail guide Single application		Y-Z combination [1]	
Loads [N]	dyn.	stat.	dyn.	stat.
P_R	17400	53000	17400	53000
P_L	17400	53000	17400	53000
P_T	17400	53000	17400	53000
Torque loads [N.m]				
M_A	1100	3400	2200	6700
M_B	1100	3400	2200	6700
M_C	1200	3700	1200	3700

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.

1) Valid values for fitting on AXS280-Z module (see page 113).



Technical specifications

Traverse rate	max. 3.4 m/s
Repeat accuracy	0.05 mm
Drive element	Rack and pinion, module 3
Lift per revolution	200 mm
Allowable dyn. working force	6130 N
TA40-16 shock absorber Max. energy absorption	80 N.m
Max. total length	6 m
Geometrical moment of inertia I_X	3500 cm^4
Geometrical moment of inertia I_Y	1100 cm^4

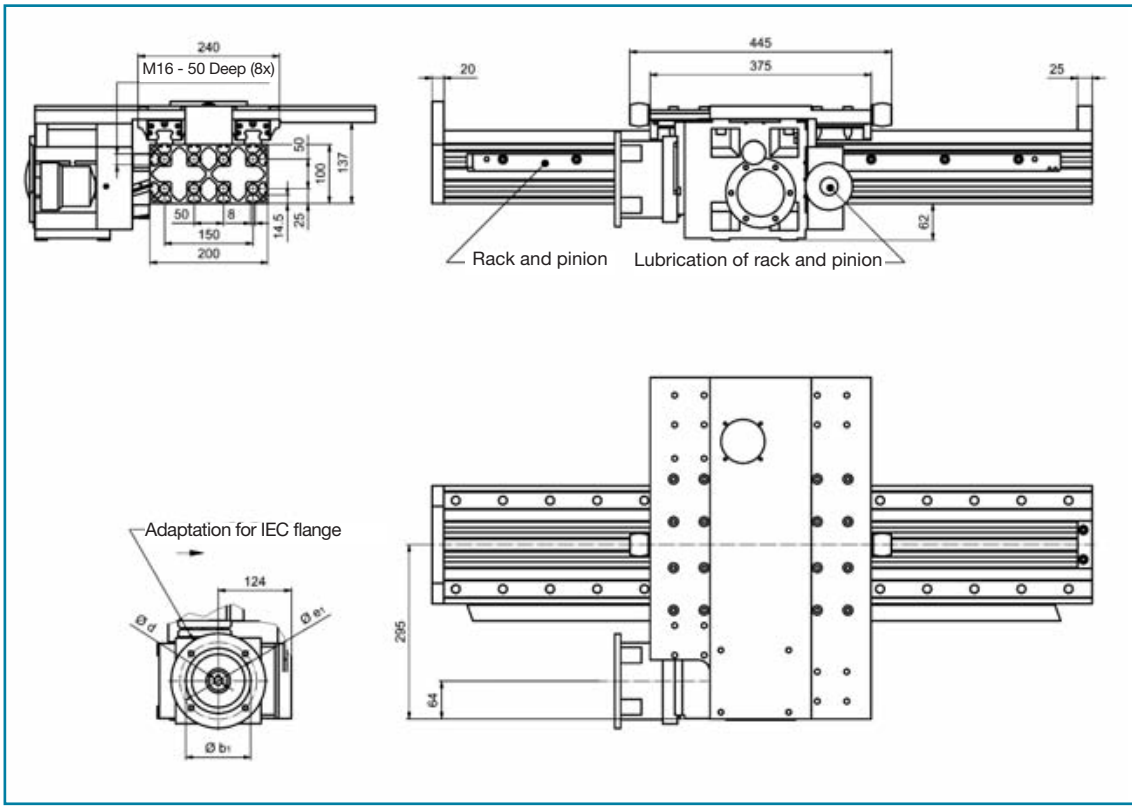
Mass

Base mass	35.0 kg
Mass per 100 mm of lift	3.5 kg
Carriage mass	17.0 kg

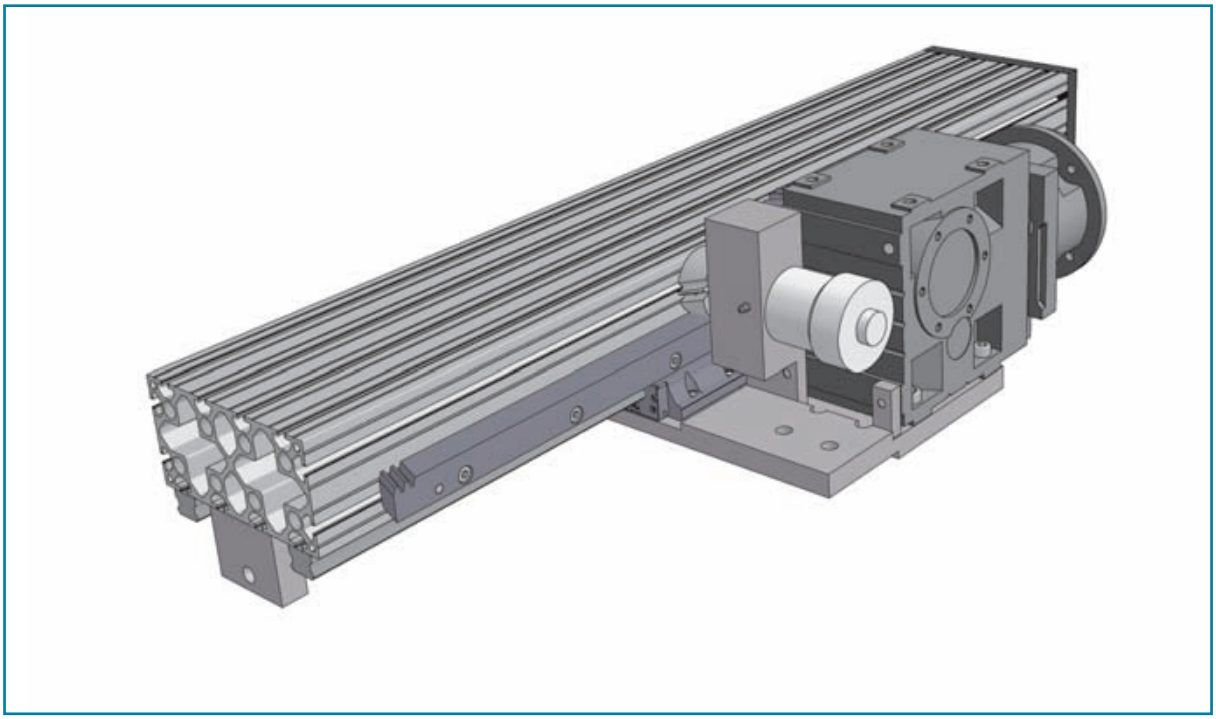
Masses without gearbox.
Subject to technical modifications.

AXS200M250 lifting axis

with rack and pinion drive and rail guide



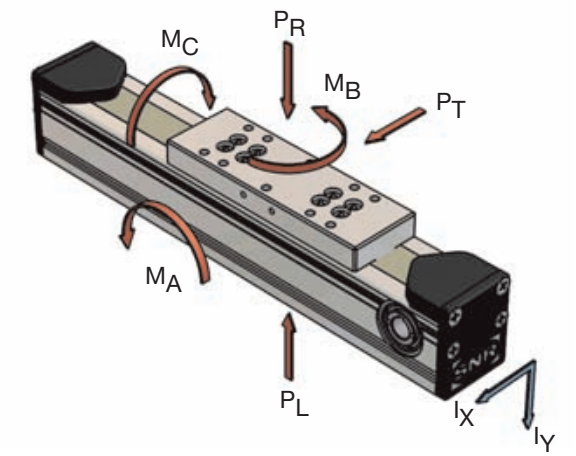
• Linear axis only in combination with gantry axis AXS 280-M200-x35 **(see page 113).**



Loads and torque loads

	Rail guide H30	
Loads [N]	dyn.	stat.
P_R	17400	53000
P_L	17400	53000
P_T	17400	53000
Torque loads [N.m]		
M_A	1850	5700
M_B	1850	5700
M_C	1200	3700

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.



Technical specifications

Traverse rate	max. 1.8 m/s
Repeat accuracy	0.05 mm
Drive element	Rack and pinion, module 3
Lift per revolution	250 mm
Allowable dyn. working force	5860 N
TA40-16 shock absorber Max. energy absorption	80 N.m
Max. total length	6 m
Geometrical moment of inertia I_X	3500 cm^4
Geometrical moment of inertia I_Y	1100 cm^4

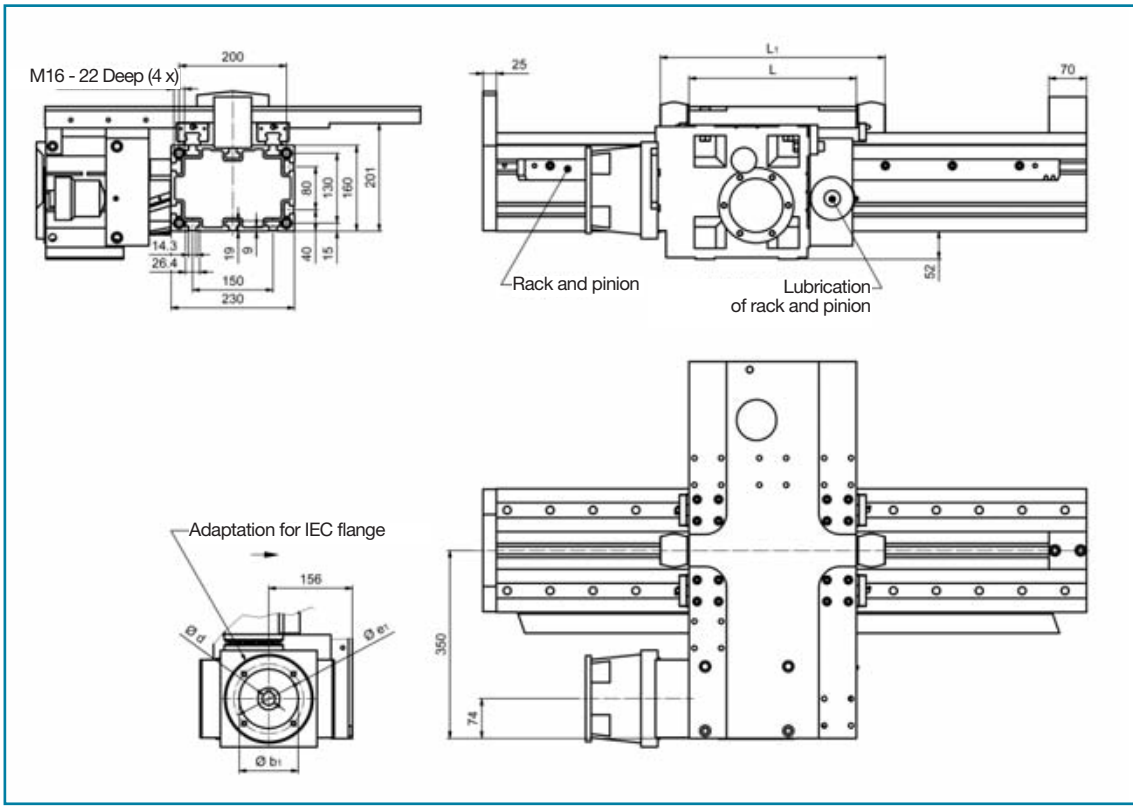
Mass

Base mass	39.5 kg
Mass per 100 mm of lift	3.5 kg
Carriage mass	23.0 kg

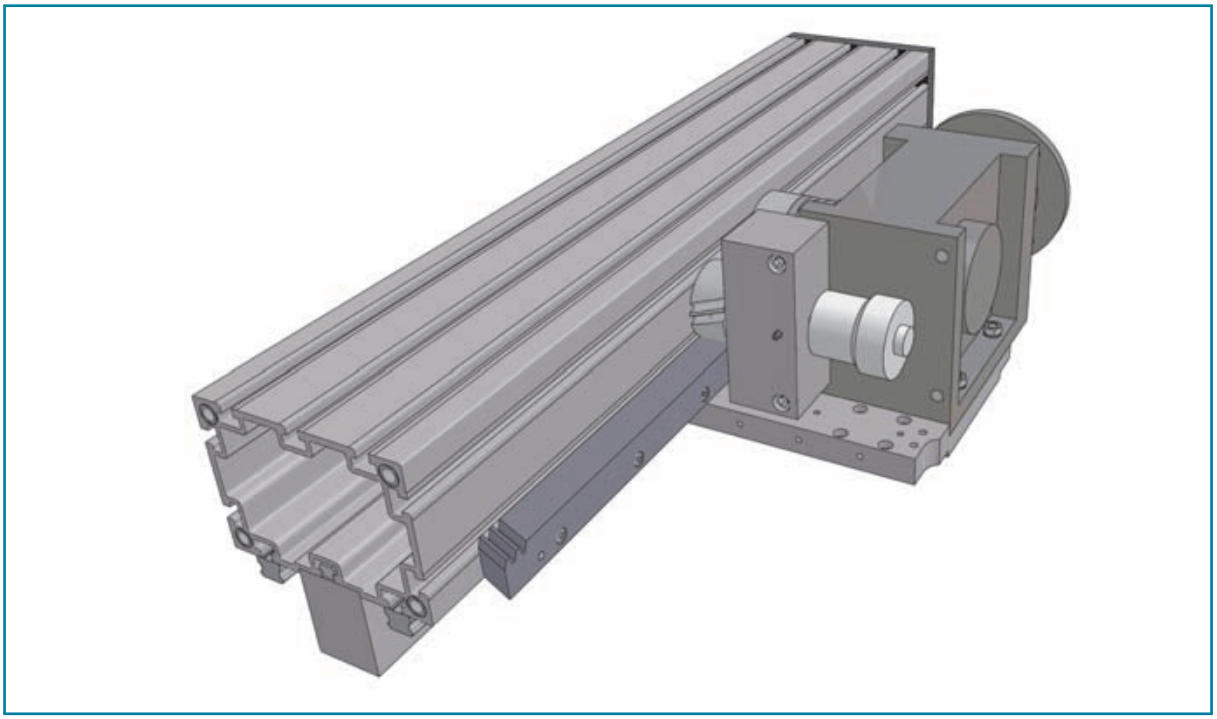
Masses without gearbox.
Subject to technical modifications.

AXS230M320 lifting axis

with rack and pinion drive and rail guide



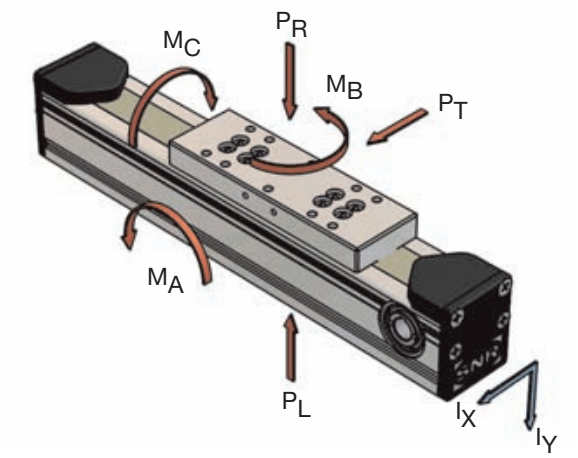
• Linear axis only in combination with gantry axis AXS280 and AXS460 **(see page 113).**



Loads and torque loads

	Rail guide H30	
Loads [N]	dyn.	stat.
P_R	17400	53000
P_L	17400	53000
P_T	17400	53000
Torque loads [N.m]		
M_A	1850	5700
M_B	1850	5700
M_C	1200	3700

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.



Technical specifications

Traverse rate	max. 2.5 m/s
Repeat accuracy	0.05 mm
Drive element	Rack and pinion, module 4
Lift per revolution:	320 mm
Allowable dyn. working force	10750 N
TA62-25 shock absorber Max. energy absorption	280 N.m
Max. total length	10 m
Geometrical moment of inertia I_X	8850 cm^4
Geometrical moment of inertia I_Y	6780 cm^4

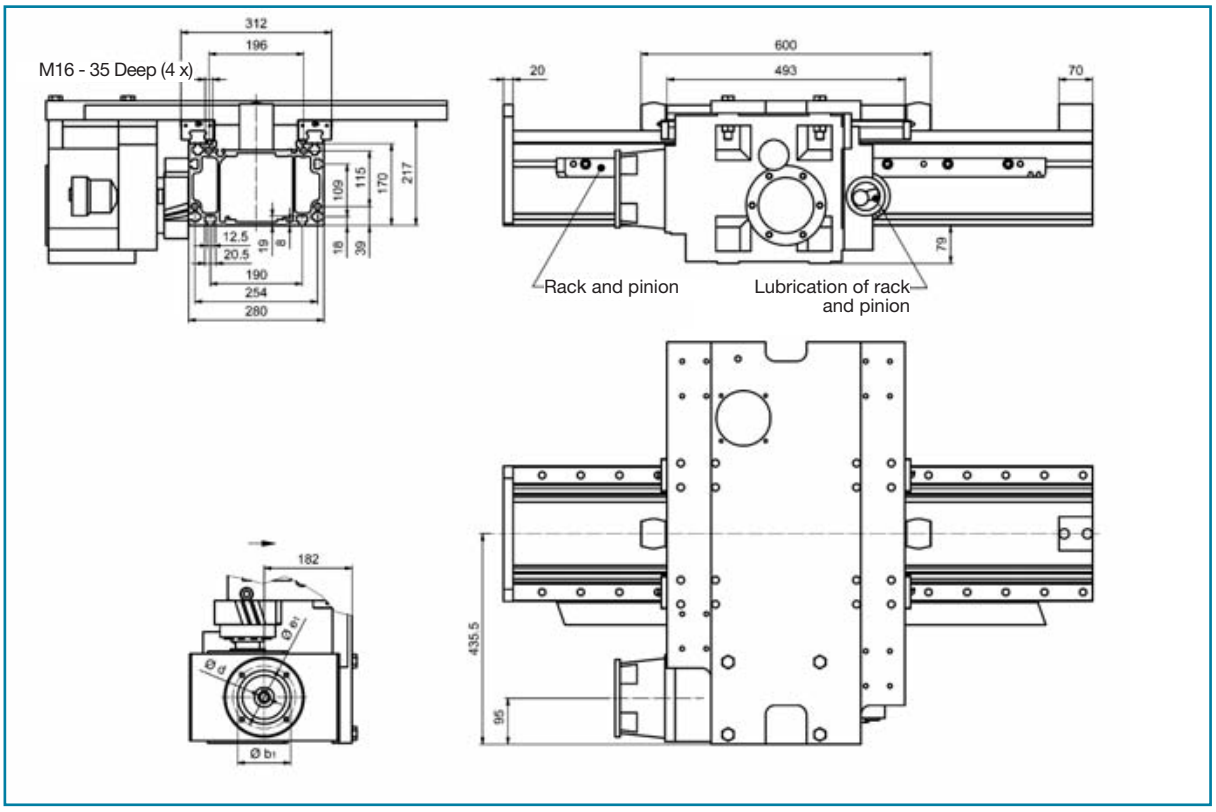
Mass

Base mass	56.0 kg
Mass per 100 mm of lift	4.4 kg
Carriage mass	30.5 kg

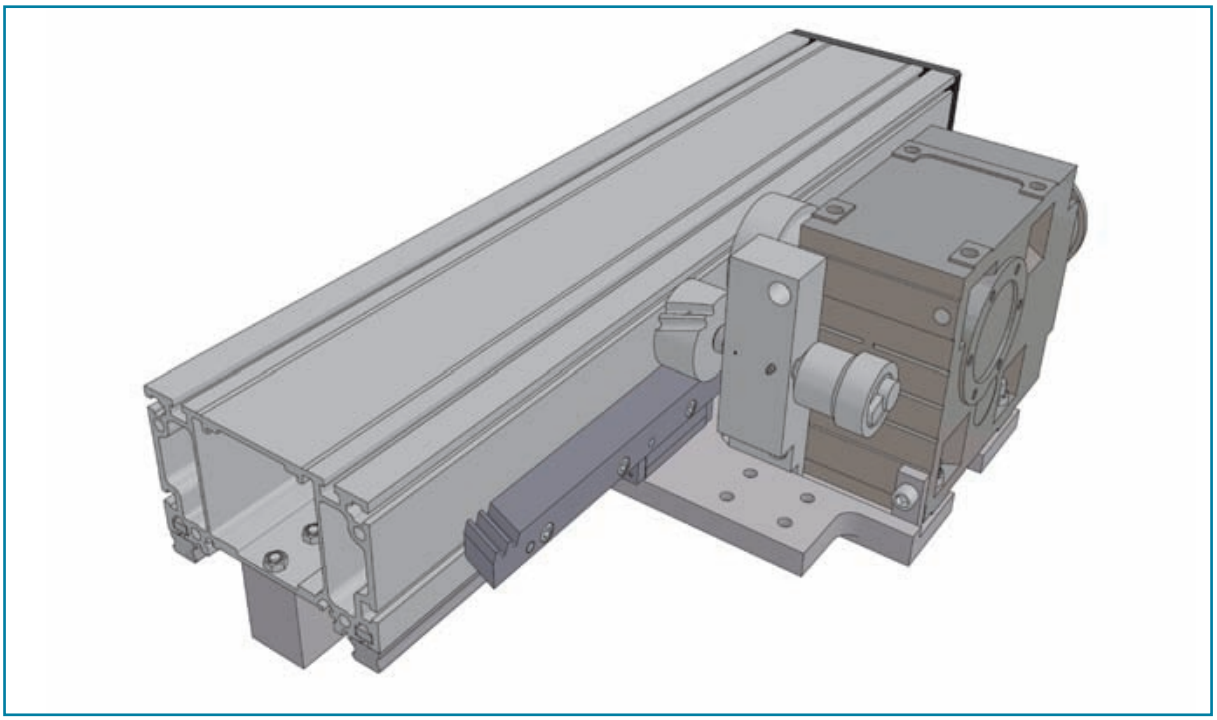
Masses without gearbox.
Subject to technical modifications.

AXS280M400 lifting axis

with rack and pinion drive and rail guide



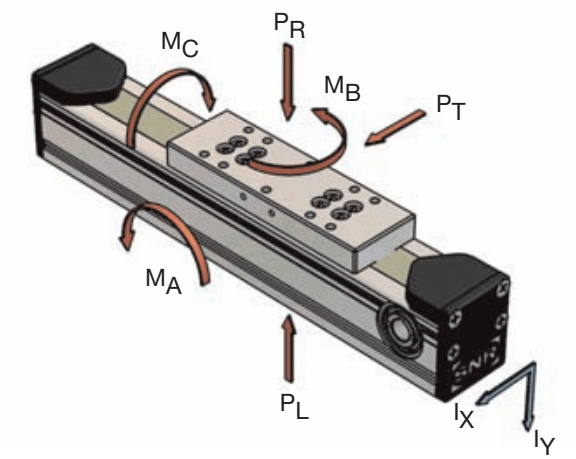
• Linear axis only in combination with gantry axis AXS460M250-H35 **(see page 113).**



Loads and torque loads

	Rail guide H35	
Loads [N]	dyn.	stat.
P_R	28000	100000
P_L	28000	100000
P_T	28000	100000
Torque Loads [N.m]		
M_A	4300	15500
M_B	4300	15500
M_C	3000	10500

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.



Technical specifications

Traverse rate	max. 3.3 m/s
Repeat accuracy	0.05 mm
Drive element	Rack and pinion, module 5
Lift per revolution:	400 mm
Allowable dyn. working force	16240 N
TA62-25 shock absorber Max. energy absorption	280 N.m
Max. total length	10 m
Geometrical moment of inertia I_X	14645 cm^4
Geometrical moment of inertia I_Y	7958 cm^4

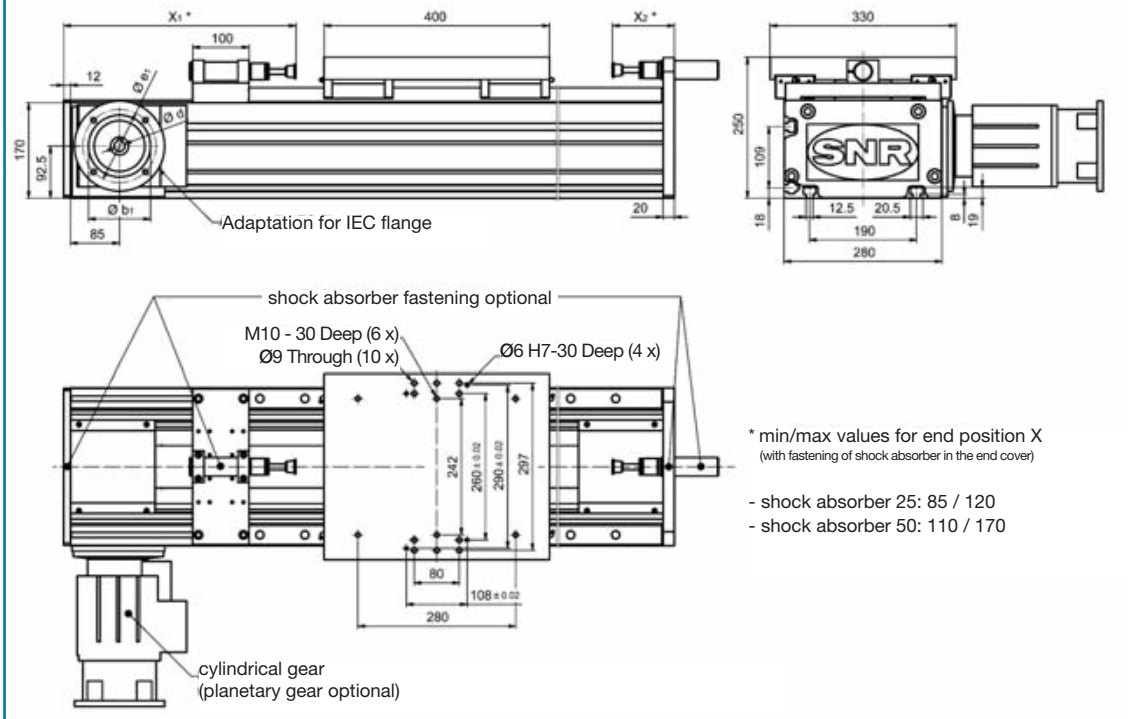
Mass

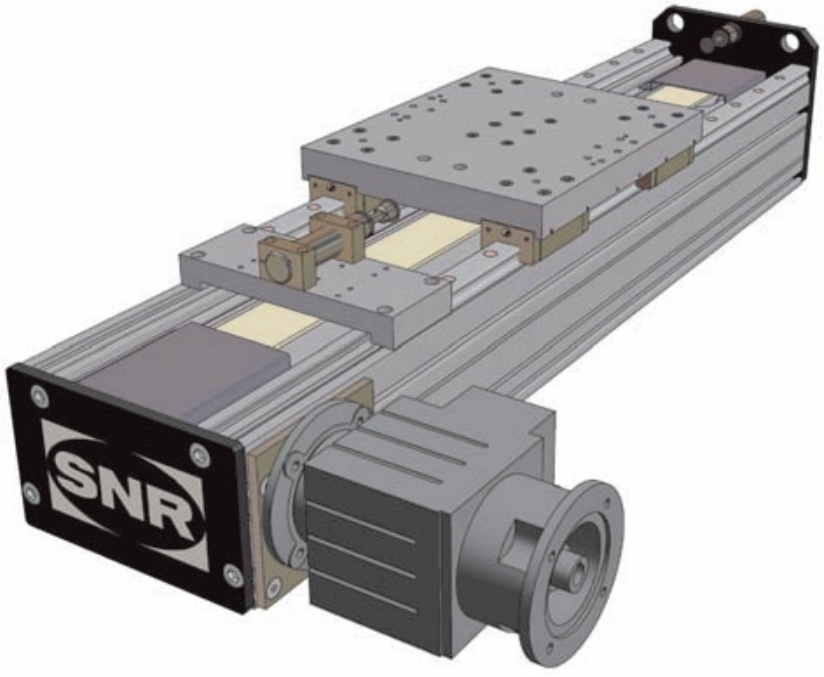
Base mass	96.0 kg
Mass per 100 mm of lift	5.9 kg
Carriage mass	54.5 kg

Masses without gearbox.
Subject to technical modifications.

AXS280Z gantry axis

with synchronous belt drive and rail guide





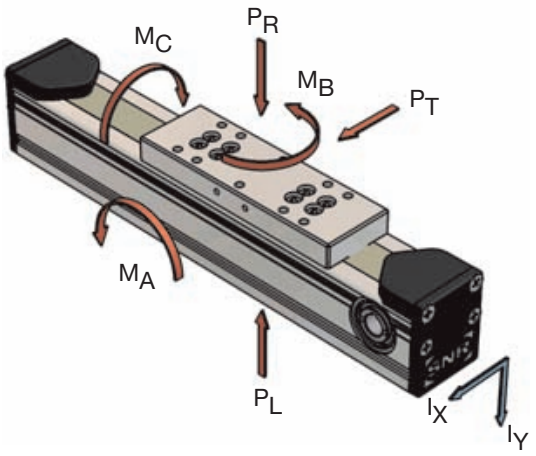
Loads and torque loads

	Rail guide							
	S30		H30		S35		H35	
Loads [N]	dyn.	stat.	dyn.	stat.	dyn.	stat.	dyn.	stat.
P_R	18000	42000	17400	53000	25000	57000	24000	77000
P_L	11000	21000	17400	53000	15300	28500	24000	77000
P_T	9900	18000	17400	53000	13800	24500	24000	77000
Torque loads [N.m]								
M_A	1750	3400	2100	6500	2450	4600	2950	9400
M_B	1200	2200	2100	6500	1650	3000	2950	9400
M_C	1150	2200	1850	5700	1600	3000	2600	8300

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.

Technical specifications

Traverse rate	max. 6 m/s
Repeat accuracy	0.05 mm
Drive element	75 AT10 synchronous belt
Allowable dyn. working force	4000 N
Max. energy absorption per end absorber:[1)]	
SCS33-25 (25 mm lift)	310 N.m
SCS33-50 (50 mm lift)	620 N.m
Lift per revolution	480 mm
Idling speed torque	9 N.m
Inertia	227.6 kg.cm^2
Max. total length	10 m (one part) [2)]
Geometrical moment of inertia I_X	14645 cm^4
Geometrical moment of inertia I_Y	7958 cm^4



1) Max. two pieces per end position.
2) Greater lengths upon request.

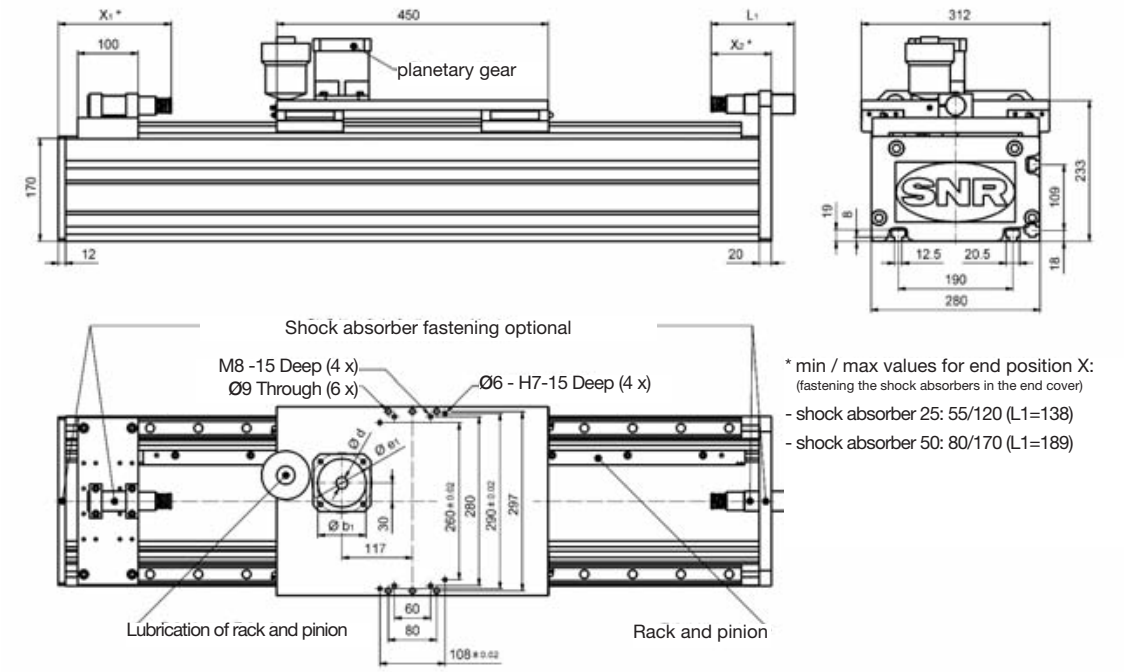
Mass

	Rail guide	
	S/H30	S/H35
Base mass	73 kg	78 kg
Mass per 100 mm of lift	4.3 kg	4.6 kg
Carriage mass	19 kg	19 kg

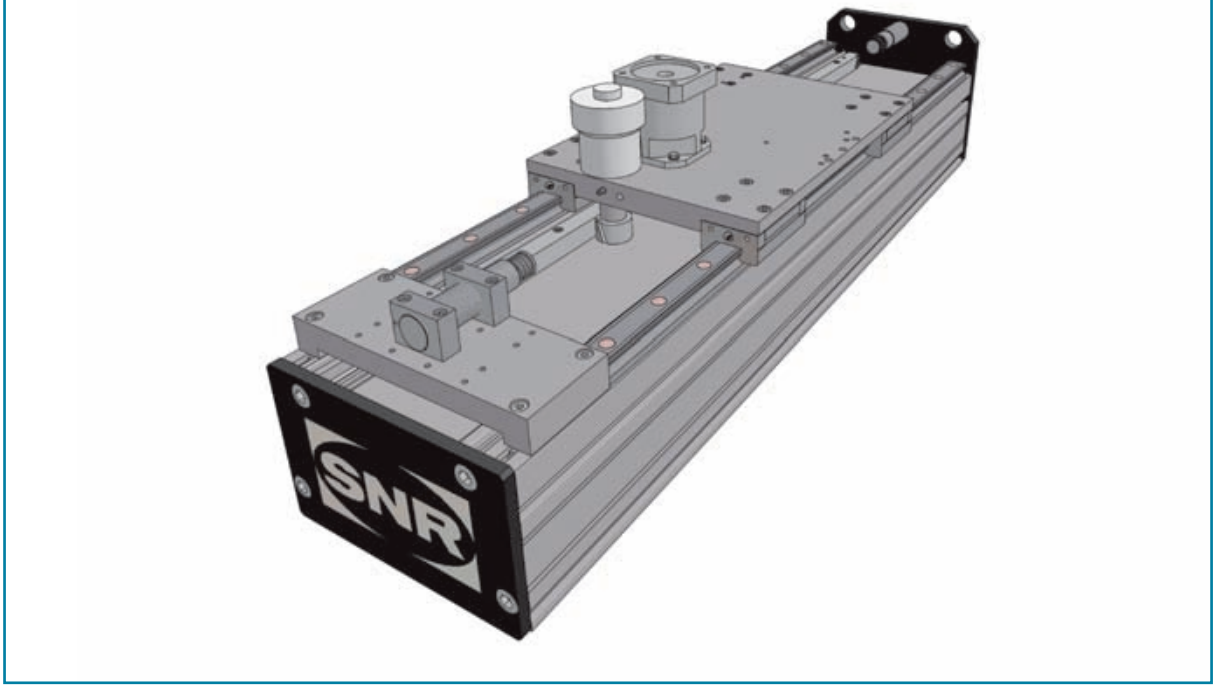
Subject to technical modifications.

AXS280M200 gantry axis

with rack and pinion drive and rail guide



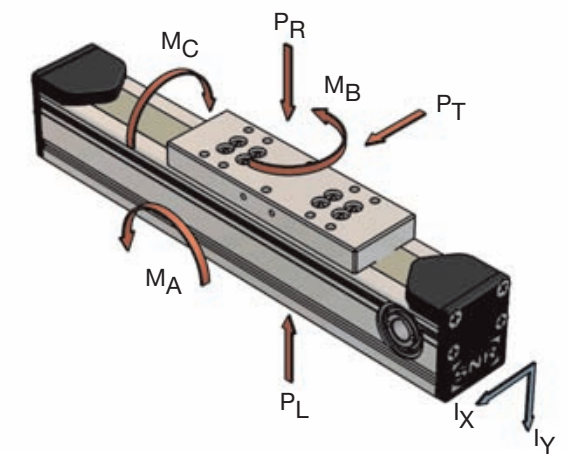
• **Description: multi-purpose use, for combination with lifting axes** **(see page 113).**



Loads and torque loads

	Rail guide			
	S35		H35	
Loads [N]	dyn.	stat.	dyn.	stat.
P_R	25000	57000	24000	77000
P_L	15300	28500	24000	77000
P_T	13800	24500	24000	77000
Torque loads [N.m]				
M_A	3100	5800	3500	11200
M_B	2000	3500	3500	11200
M_C	1600	3000	2600	8300

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.



Technical specifications

Traverse rate	max. 3.3 m/s
Repeat accuracy	0.05 mm
Drive element	Rack and pinion, module 2
Lift per revolution	200 mm
Allowable dyn. working force	3190 N
Max. energy absorption per end absorber:[1]	
SCS33-25 (25 mm lift)	310 N.m
SCS33-50 (50 mm lift)	620 N.m
Max. total length	10 m [2]
Geometrical moment of inertia I_X	14645 cm^4
Geometrical moment of inertia I_Y	7958 cm^4

1) Max. two pieces per end position.
2) Greater lengths upon request.

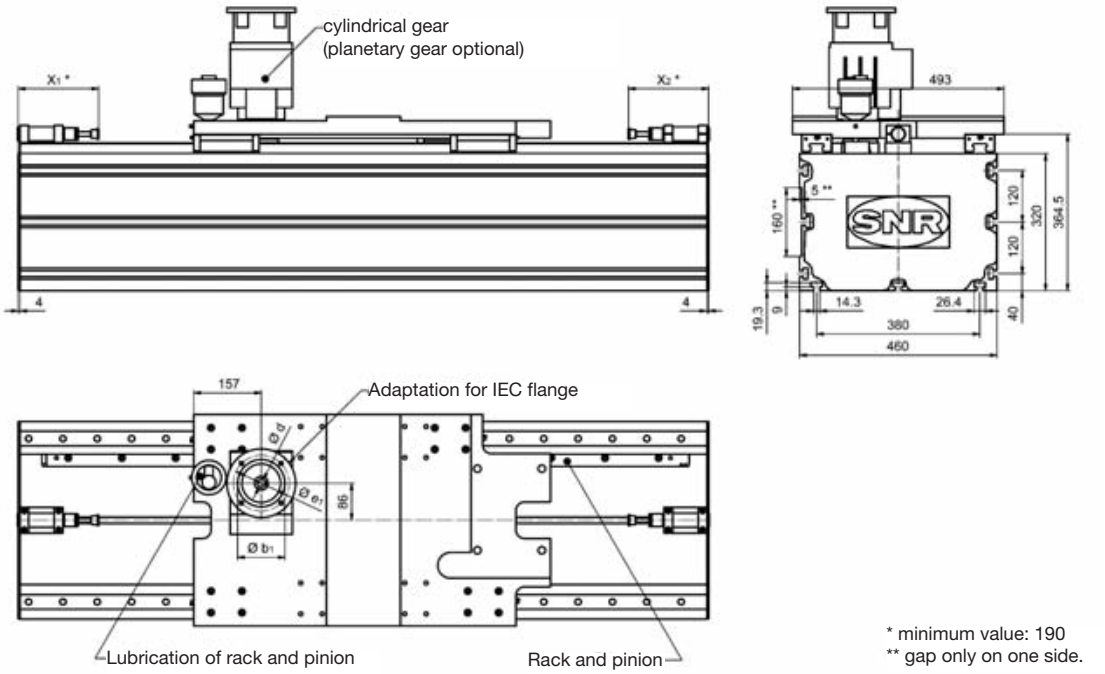
Mass

Base mass	52.0 kg
Mass per 100 mm of lift	4.9 kg
Carriage mass	16.5 kg

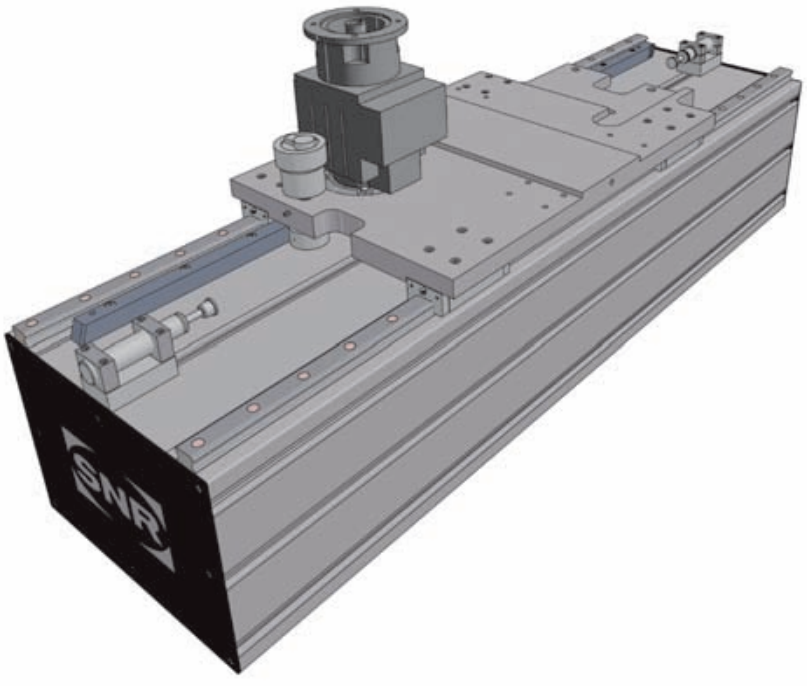
Masses without gearbox.
Subject to technical modifications.

AXS460M250 gantry axis

with rack and pinion drive and rail guide



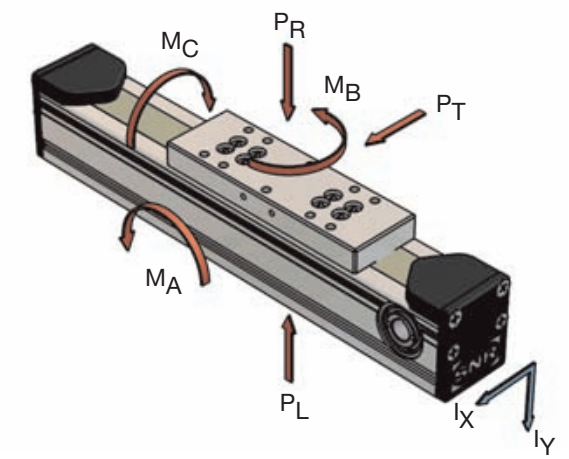
• Gantry axis in steel design



Loads and torque loads

	Rail guide H35	
Loads [N]	dyn.	stat.
P_R	28000	100000
P_L	28000	100000
P_T	28000	100000
Torque loads [N.m]		
M_A	5800	21000
M_B	5800	21000
M_C	4500	16000

The dynamic load-bearing capacities of the guidance system are based on a nominal service life of 54,000 km.



Technical specifications

Traverse rate	max. 6 m/s
Repeat accuracy	0.05 mm
Drive element	Rack and pinion, module 3
Lift per revolution	250 mm
Allowable dyn. working force	5860 N
SCS33-50 shock absorber Max. energy absorption	620 N.m
Max. total length	10 m [1)]
Geometrical moment of inertia I_X	88490 cm^4
Geometrical moment of inertia I_Y	54170 cm^4

1) Greater lengths upon request.

Mass

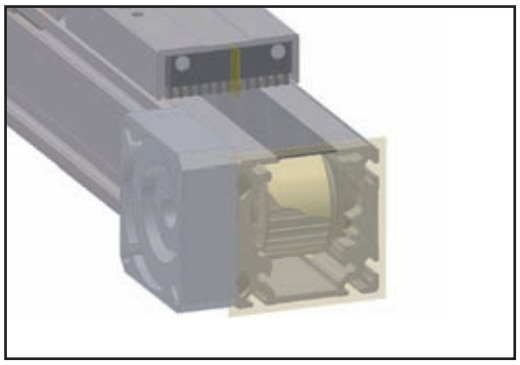
Base mass	139.5 kg
Mass per 100 mm of lift	8.9 kg
Carriage mass	46.5 kg

Masses without gearbox.
Subject to technical modifications.

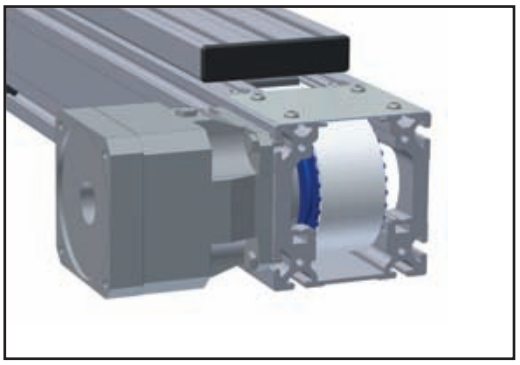
Drive adaptation AXC / AXLT / AXDL

I Integrated planetary gearbox

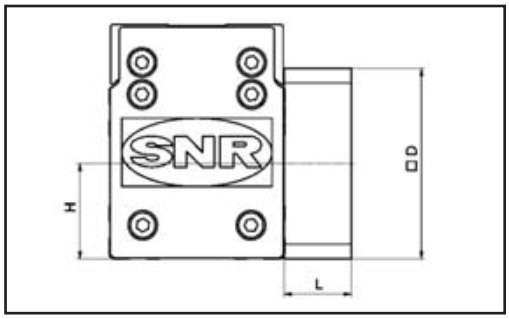
The AXC series with an integrated planetary gearbox is available where extremely high demands on accuracy and dynamics are required. In size 60 the planetary gearbox is directly integrated in the pulley of the synchronous belt drive of the axis. In sizes 80 and 120 a pulley friction-lock mounted on the drive shaft of the gearbox ensures zero-backlash torque transfer. The direct mounting removes the need for a coupling cone and coupling, resulting in extremely compact dimensions. Only motors with a smooth shaft should be used.



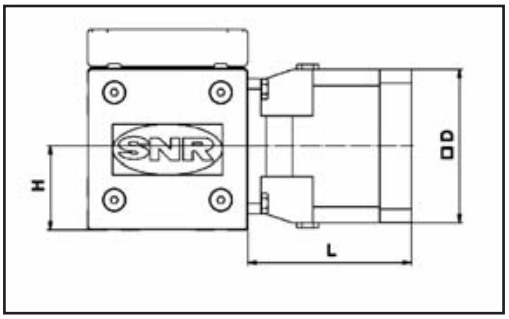
AXC 60



AXC80 and 120



AXC60



AXC80 and 120

• ID number of drive adaptation

D number	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	Y
Centering b [mm]	40	50	50	60	60	60	60	70	80	80	95	95	95	95	110	110	110	110	110	110	130	130
Reference circle e [mm]	63	70	95	75	75	90	90	90	100	100	115	115	130	130	130	130	145	145	165	165	165	165
Thread	M4	M4	M6	M5	M5	M5	M5	M5	M6	M6	M8	M8	M8	M8	M8	M8	M8	M8	M10	M10	M10	M10
Diameter of shaft [mm]	9	14	14	11	14	11	14	14	14	19	19	24	19	24	19	24	19	24	19	24	24	32

Please use the ID number to label the desired drive adaptation in the order description.
ID number X: special size or all dimensions not listed.

	AXC60 1-stage		AXC80 1-stage			AXC80 2-stage	
Reduction ratio i	4	9	3	4 / 5 / 7	10	16 / 20 / 25 / 28 / 35 / 40 / 50 / 70	100
Rated torque on the main drive pinion [N.m]	6	5.5	47	75	52	75	52
Max. accelerating torque [Nm] 1)	12	11	85	110	90	110	90
Allowable mean drive speed [30 min^{-1}]	4000		2900	2900-3100	3100	3500 - 4500	4500
Max. drive speed [30 min^{-1}]	8000		6000			6000	
Circumferential backlash [arc min]	6		Standard: ≤ 4 / reduced: ≤ 2			Standard: ≤ 6 / reduced: ≤ 4	
Shaft height H [mm]	32.5		43.5			43.5	
Mass [Kg]	0.45		3.9			3.6	

1) Note permissible operating load of the linear axis.

	AXC60 1-stage			AXC80 1-stage			AXC80 2-stage		
Diameter of motor shaft d [mm]	max. 11	max. 14	max. 14	14	19	24	11	14	19
Mass moment of inertia [$kg.cm^2$] with d	0.06	0.06	0.09	0.42-0.94	0.67-1.19	2.30-2.81	0.10-0.14	0.18-0.25	0.60-0.68
Flange size D [mm]	65	65	86	90		120	70		90
Overall length L [mm] at d	22.3	29.5	29.5	125.3	129	147	136.5	140.9	153.5
Reference circle e1 [mm]	63	70-75	95-100						
ID number for drive adaptation	See table of codification on page 82 (smooth shaft)								

	AXC120 1-stage					AXC120 2-stage	
Reduction ratios i	3	4	5	7	10	16 / 20 / 25/ 28 / 35 / 40 / 50 / 70	100
Rated torque on the main drive pinion [N.m]	120	180	175	170	120	170 - 180	120
Max. accelerating torque [N.m] 1)	225	300			225	300	225
Allowable mean drive speed [30 min^{-1}]	2500			2800	2500	3100 - 4500	4200
Max. drive speed [30 min^{-1}]	4500					4500	
Circumferential backlash [arc min]	Standard: ≤ 3 / reduced: ≤ 1					Standard: ≤ 5 / reduced: ≤ 3	
Shaft height H [mm]	62.5					62.5	
Mass [Kg]	7.7					7.9	

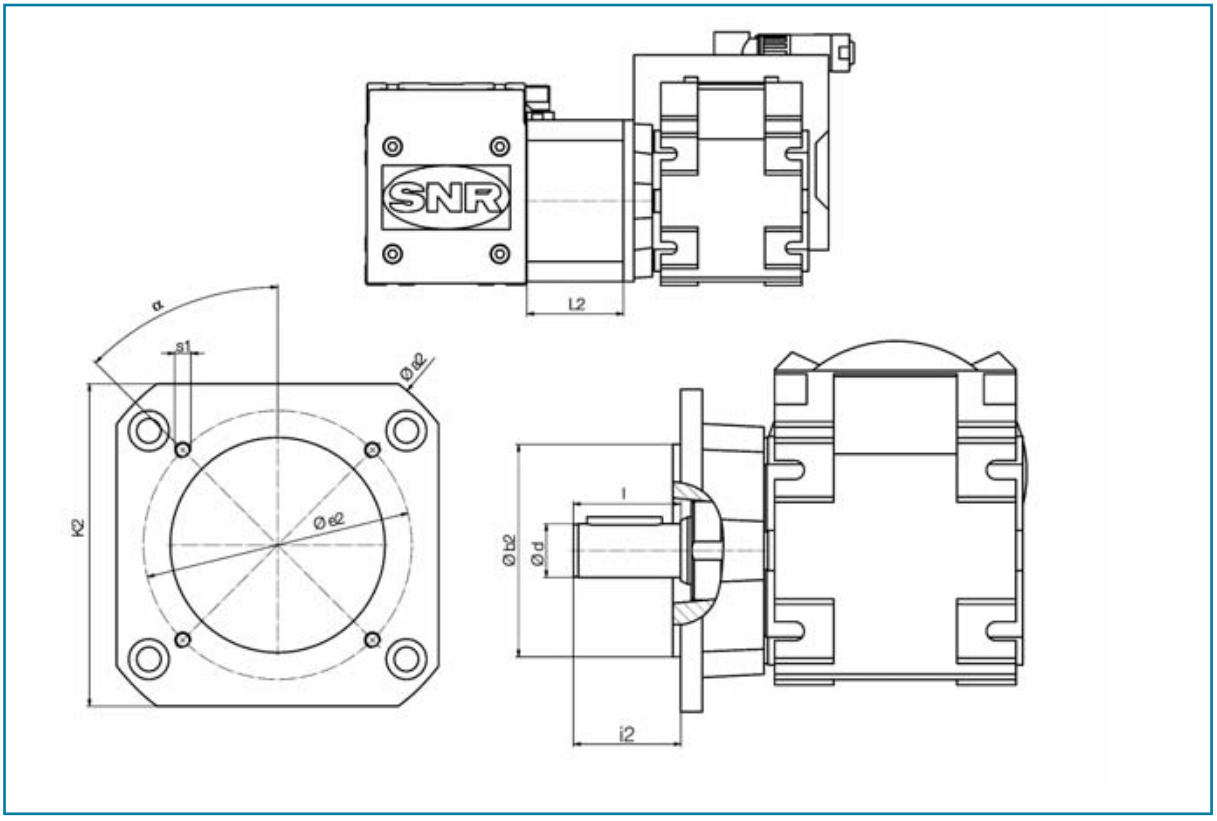
1) Note permissible operating load of the linear axis.

	AXC120 1-stage			AXC120 2-stage			
Motor shaft diameter of d [mm]	19	24	28	38	14	19	24
Mass moment of inertia [$kg.cm^2$] with d	1.55-3.65	2.59-4.68	2.47-4.57	8.36-10.46	0.42-0.72	0.66-0.96	2.29-2.6
Flange size D [mm]	120			150	90		120
Overall length L [mm] at d	149	156		183	169.3	173	191
ID number for drive adaptation	See table of codification on page 82 (smooth shaft)						

I Adapter/coupling cone for synchronous belt drive

In the simplest type of linking, the drive shaft of the gearbox or motor is directly inserted into the hollow shaft of the driving belt pulley. The drive is screwed down through a flat adapter plate onto the linear axis. The feather key provides positive power transmission. However, the requirement for this is that the output shaft diameter coincides with the respective hollow shaft diameter of the axis (see axis data sheet).

However, adaptation via the integrated clutch in combination with a coupling cone is more common. The axis-side coupling is screwed down onto the driving belt pulley and due to the friction-lock torque transfer offers optimal operational safety even at high speeds. A large selection of coupling cones is available for standard drives with a standardized B5 flange. Drives with smooth shaft and shaft with feather key can be used.



I Drive adapter flange with interlocking connection

Linear axis	ID number	Model	e2	α	s_1	b_2	d	i2 max.	i2 - 1 max.	k_2	a_2	L_2
AXC40ZF	A	VC065-E0	54	0°	4 x Ø 6,5	44	12	–	20	–	64.5	20.5
	B	B5 C100	80	45°	4 x M6 x 8	60	9	36	9	–	100	9
AXC60ZF/AF	A	B14 C60	52	45°	4 x Ø 5.5	40	14	47	5	60	–	5
	B	VC065-E0	54	0°	4 x Ø 6.5	44	14	–	18	70	80	18
	C	B5 C120	100	45°	4 x M6x8	80	14	50	8	100	120	8
AXC80ZF/AF	A	B14 C80	70	45°	4 x Ø 6.5	60	20	71	12	82	–	12
	B	GST04-2x-VCR	61	90°	6 x Ø 5.5	48	20	71	12	80	–	12
	C	GKR03-2x-VCR	70	0°	4 x Ø 6.5	55*	20	69	10	82	100	10
	D	VC065-E0	54	0°	4 x Ø 6.5	44	12	–	20	82	–	20
	E	B5 C120	100	45°	4 x M6x12	80	20	72	12.5	–	120	12.5
AXC120ZF/AF	A	B5 C120	100	45°	4 x M6x12	80	30	107	13	120	–	13
	B	GST06-2x-VCR	90	0°/90°	6 x Ø 9	70	30	108	14	120	150	14
	C	B5 C200	165	45°	4 x M10x20	130	30	119	25	–	200	25

** (Inverse)*

Size ID for drive design corresponds to diameter d of the inclusive plug-in shaft with model E0.

I Interlocking and force-fit connection with coupling and coupling cone

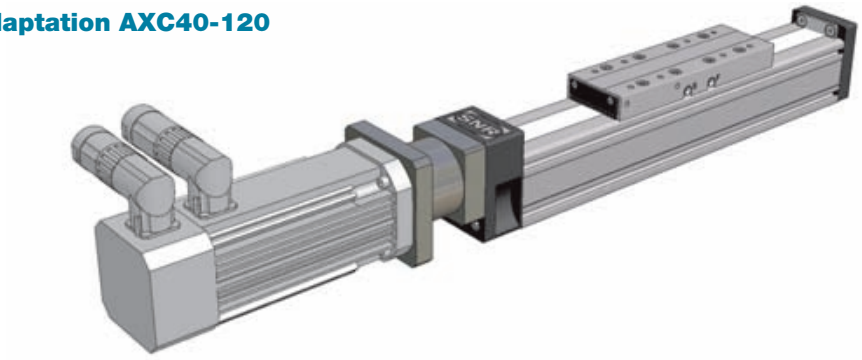
Linear axis	ID number	Model	e2	α	s_1	b_2	d min.	d max.	i2 max.	i2-1 max.	k_2	a_2	L_2
AXC40ZG	A	B5 TK63	63	45°	4 x M4x8	40	6	10	23	7	54	72	37
AXC60ZG/AG	A	LP70	62	0°	4 x Ø 5.5	52	16	16	36	8	70	80	58
	B	LP90	80	0°	4 x Ø 6.5	68	20	24	46	21	-	90	71
	C	B14 C80	70	45°	4 x Ø 5.5	60	14	24	40	15	64	80	65
	D	B5 / B14 C100	80	0°	4 x Ø 6.5	60	12	18	34	3	-	100	53
	E	B5 C120	100	45°	4 x M6x12	80	19	20	40	15	96	120	65
AXC80ZG/AG	A	B5 C160	130	45°	4 x M8x16	110	19	25	52	15	120	150	74
	B	B5 C120	100	45°	4 x M6x12	80	19	20	40	11	90	110	70
	C	B5 C120	100	45°	4 x M6x15	80	14	20	40	3	83	110	62
	D	LP70	62	0°	4 x Ø 5.5	52	16	16	36	8	82	100	66
	E	LP90	80	0°	4 x Ø 6.5	68	22	25	52	22	80	90	81
	F	B14 C80	70	45°	4 x Ø 6.5	60	19	20	40	11	80	110	70
AXC120ZG/AG	A	B5 C120	100	45°	4 x M6x18	80	19	30	50(60)	7	120	150	72(91)
	B	B5 C160	130	45°	4 x M6x18	80	24	30	60	18	-	160	83
	C	B5 C200	165	45°	4 x M10x20	130	19	20	40	1	-	200	66

Please use the ID number to label the desired drive adaptation in the order description.
ID number X: special size or all dimensions not listed.

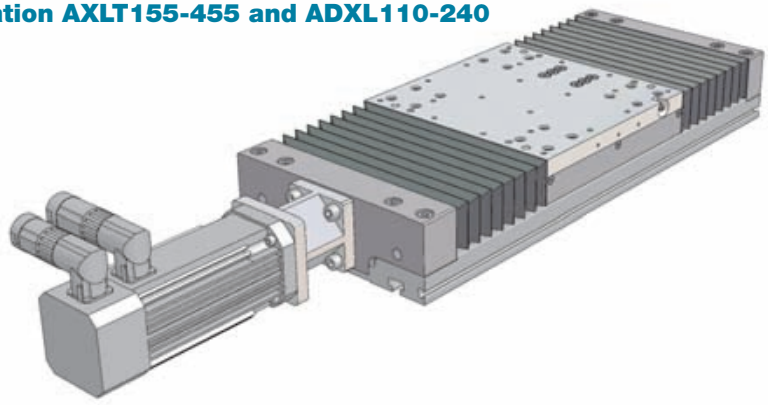
I Coupling cone for screw-type drive

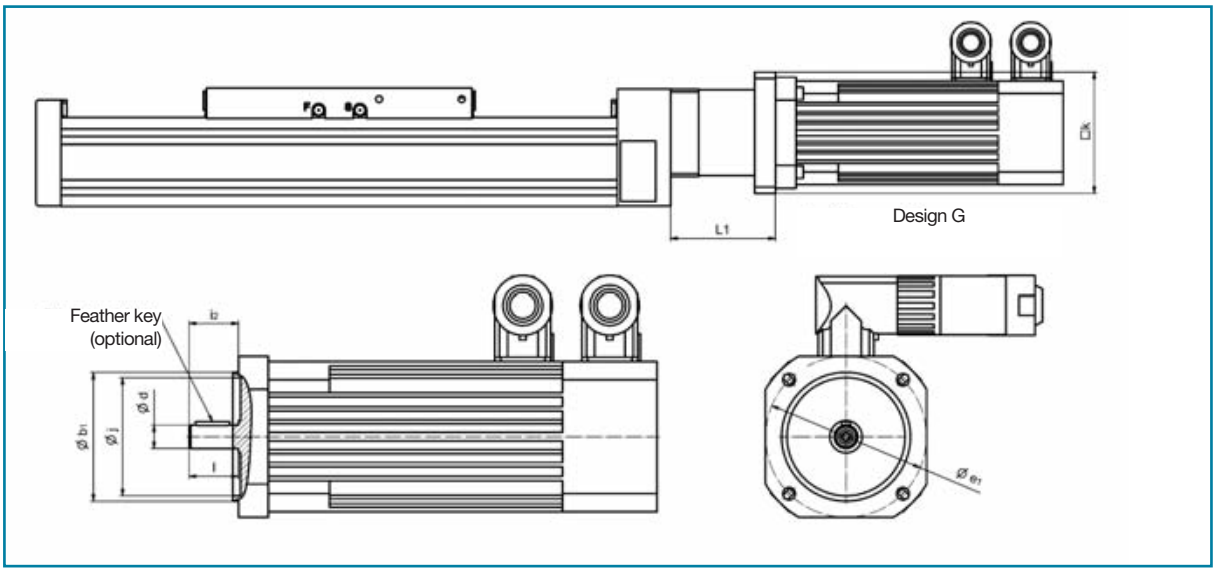
In this variation, the drive is connected to the linear axis via a coupling cone. The power transmission is through an elastomer coupling insert. Motors with a plain shaft (friction-lock connections) and shafts with feather key (non-positive and interlocking connections.

• Drive adaptation AXC40-120



• Drive adaptation AXLT155-455 and ADXL110-240





Linear axis	Motor model	e1 min.	e1 max.	b1 min.	b1 max.	j	d min.	d max.	i2 min.	i2 - i1 max.	k	L1	Max. drive torque
AXC40S	B5 / B14	45	63	35*	50	-	5	14	30	7	55	47	7.5 N.m
AXC60S	B5 (B14)	63 (75)	100	50*	80	-	9	19**	40	3	82	71	10 N.m
	B5	115	130	95	95	-	19	20	40	15	110	84	10 N.m
	B5	130	130	110	110	-	24	24	50	25	120	93	10 N.m
AXDL110	B5 (B14)	50 (70)	75	40	60	-	9	19**	40	3	60	72	10N.m
AXLT155	B5 / B14	55	100	34*	80	-	5	14	30	7	85	71	10 N.m
AXC80 / AXDL160 / AXLT225	B5 / B14	63	100	50	80	>40	9	19**	40	3	82	76	17 N.m
	B5	115	130	95	110	-	19	20	40	15	110	88	17 N.m
	B5	130	130	110	110	-	24	24	50	25	120	98	17 N.m
AXC120 / AXDL240 / AXLT325	B5 / B14	75	130	60*	110	-	14	24**	50	3	112	89	60 N.m
AXLT455	B5 / B14	100	165	80*	130	-	19	25	50	8	140	105	160 N.m
	B5 / B14	130	165	110	130	-	28	32	60	23	155	120	160 N.m
	B5 / B14	215	215	180	180	-	38	38	80	45	192	142	160 N.m

** Motors with smaller centering can also be used. The centering is then effected via the coupling.*
*** For motors with a feather key with maximum shaft length a shorter replacement feather key is provided.*

I ID number drive adaptation

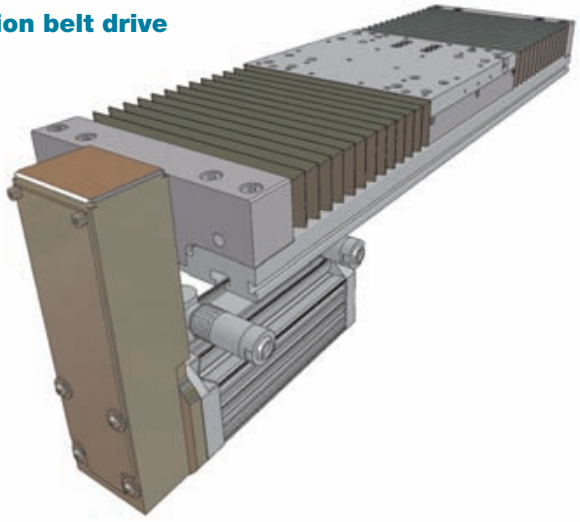
Centering b [mm]		35	40	50	60	60	70	70	80	80	95	95	110	110	130	130	180	180	180
Diameter shaft [mm]		8	9	14	11	14	14	16	14	19	19	24	19	24	24	32	24	28	38
ID number	Shaft without feather key	A	C	E	G	I	K		N	P	R	T	V	Y	A	C	E	G	I
	Shaft with feather key	B	D	F	H	J	L	M	O	Q	S	U	W	Z	B	D	F	H	J
Reference circle e [mm] [1]			46	63	70/95		75		90		100	115	130		130				
Thread [1]		M4	M4	M4/M6	M5		M5		M6		M8		M8		M10				

1) Only if using a deflection belt drive following the limit size, see page 89.
Please use the ID number to label the desired drive adaptation in the order description.
ID number X: special size or all dimensions not listed.

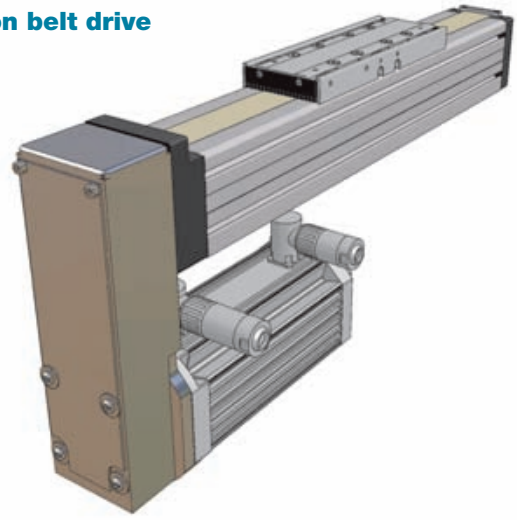
Deflection belt drive for screw-type drive

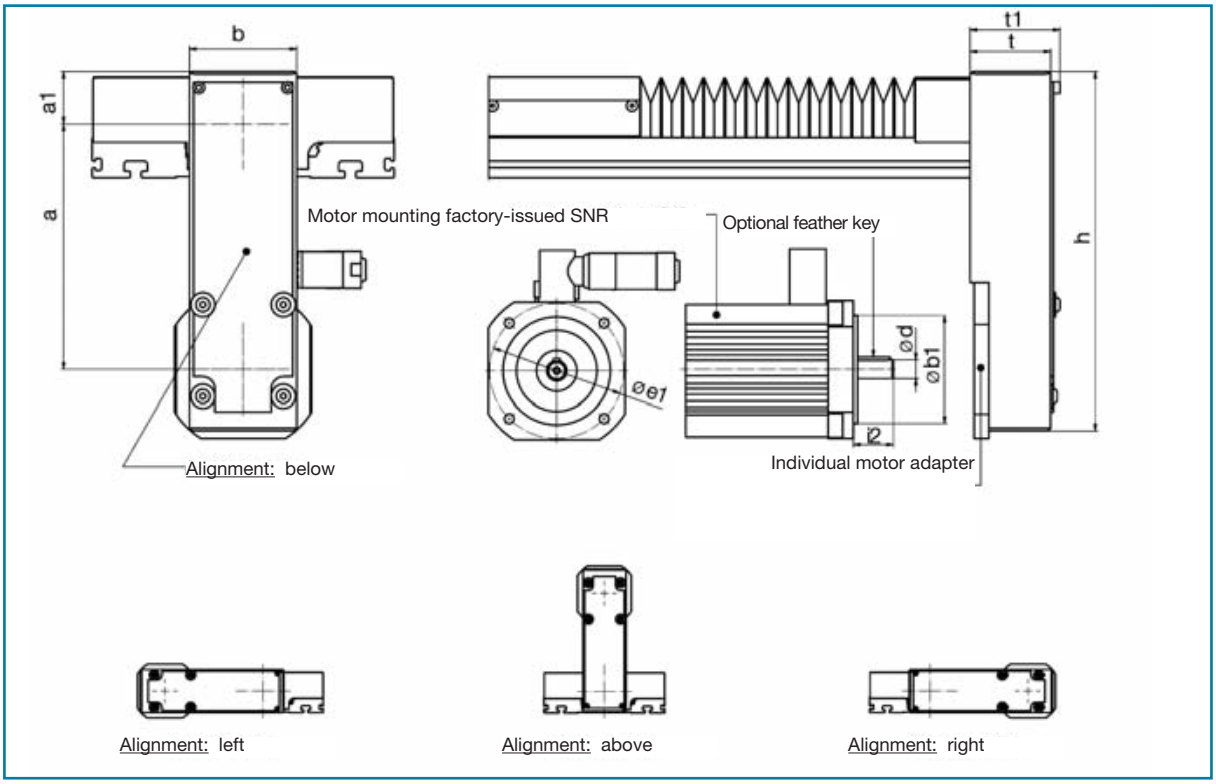
To be able to take best advantage of the existing space even in cramped installation spaces, we offer deflection belt drives for linear axes with screw-type drive as well as for the linear tables. The mounting position of the drive can then be adapted to the environmental conditions. Motors with a plain shaft or a shaft with feather key are used depending on the selected reduction ratio and the associated fastening variations.

• AXLT with deflection belt drive



• AXC with deflection belt drive





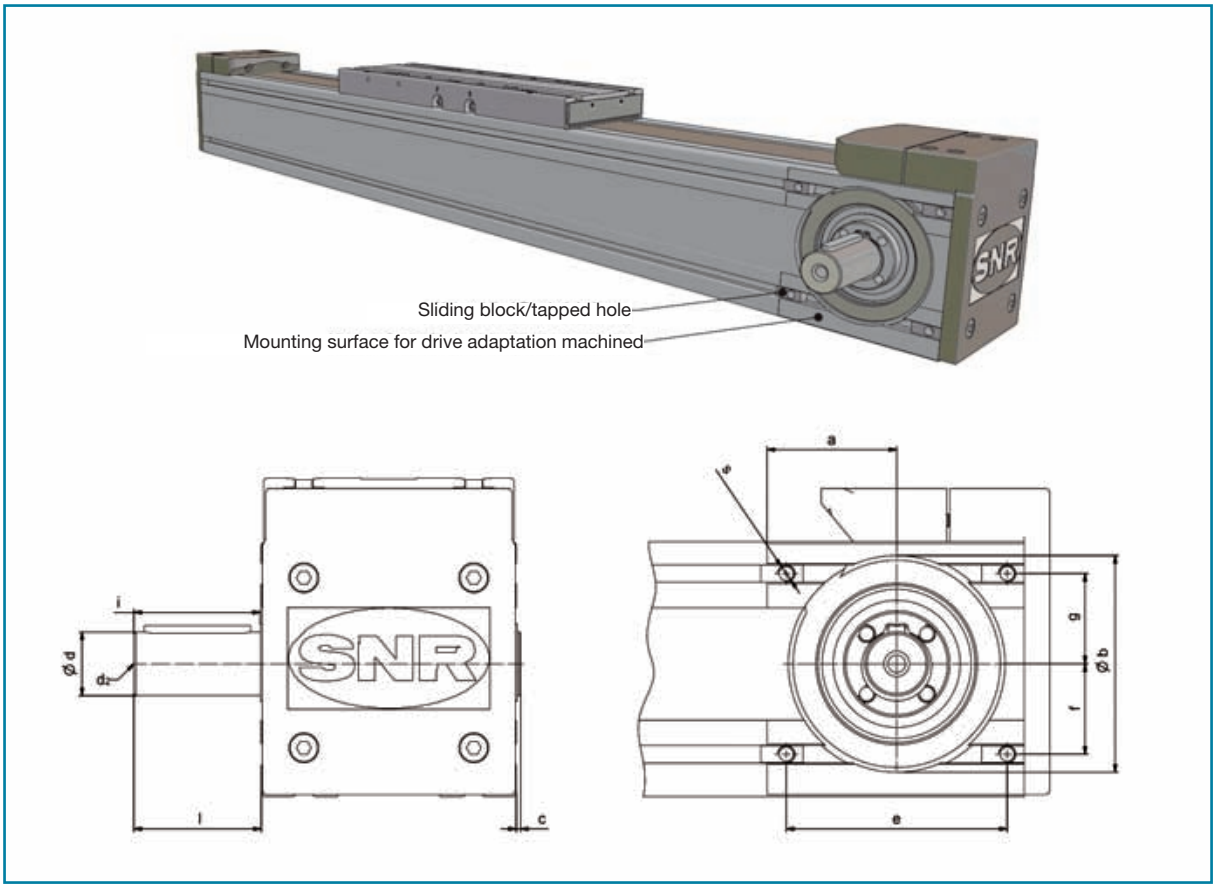
Linear axis	Available reduction ratios Max. motor shaft diameter for fastening variations: Clamping set / feather key / adhesive joint																	
AXC60 / AXDL110 AXLT155	1			1.5			1.8			2.25								
	14	–	–	–	14	14	–	11	14	–	9	9						
AXC80 / AXDL160 AXLT225	1			1.25			1.5			2			2.5					
	16	24	24	14	19	19	10	16	16	–	12	12	–	9	9			
AXC120 / AXDL240 AXLT325	1			1.2			1.5			2			2.4				3	
	24	–	–	19	24	24	14	24	24	9	19	19	–	14	19	–	9	14
AXLT455	1			1.25			1.6			2								
	28	–	–	28	–	–	28	–	–	19	28	28						

Linear axis	Motor size limits (min. / max.)						Model	Dimensions					
	Ø b_1		Ø e_1		i_2			a	a_1	b	h	t	t_1
AXC60	50*	60	63	75	20	30	B5	106±6	35	60	197	40	45
AXLT155 / AXDL110	50*	60	63	75	20	30	B5	140,5±2	31,5	60	216	40	45
AXC80 / AXLT225 / AXDL160	50*	80	63	100	20	50	B5	185±2,5	39	80	267	60	67
AXC120 / AXLT325 / AXDL240	60*	110	75	130	30	50	B5/B14	249,5±5,5	57	100	407	60	67
AXLT455	80*	130	100	165	30	60	B5/B14	354±5	89	180	565	80	89

*** Motors with smaller centering (Ø b1) can also be used. In this case the centering through the motor adapter is not applicable.*
ID number drive adaptation: see page 87

I Exterior size/plug-in shaft for synchronous belt drive

In the event of a drive adaptation by the user, the designated mounting side must be indicated when ordering, since the axis profile for an optimal seat of the drive adapter is determined. The corresponding sliding blocks for drive fastening are contained in the delivery kit.

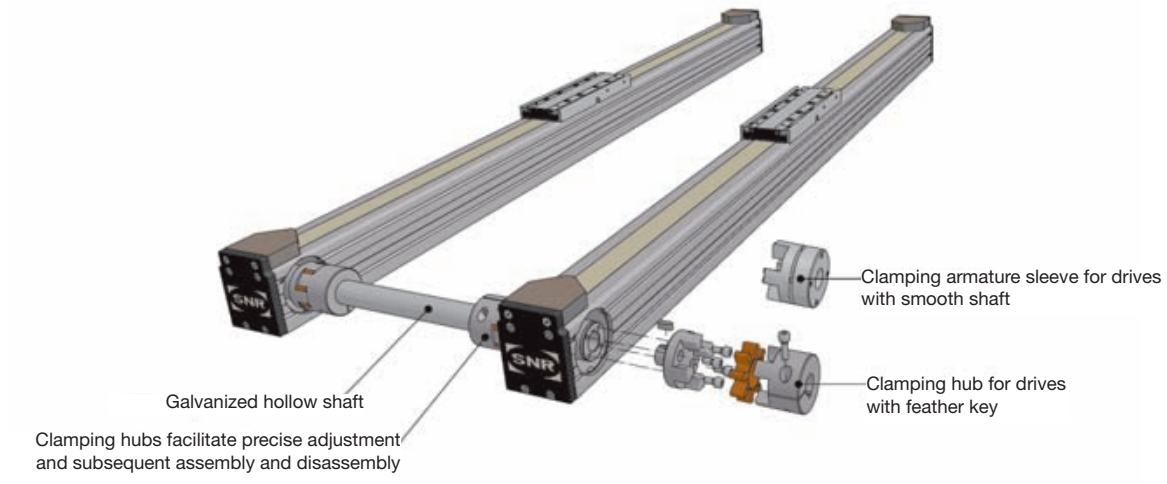


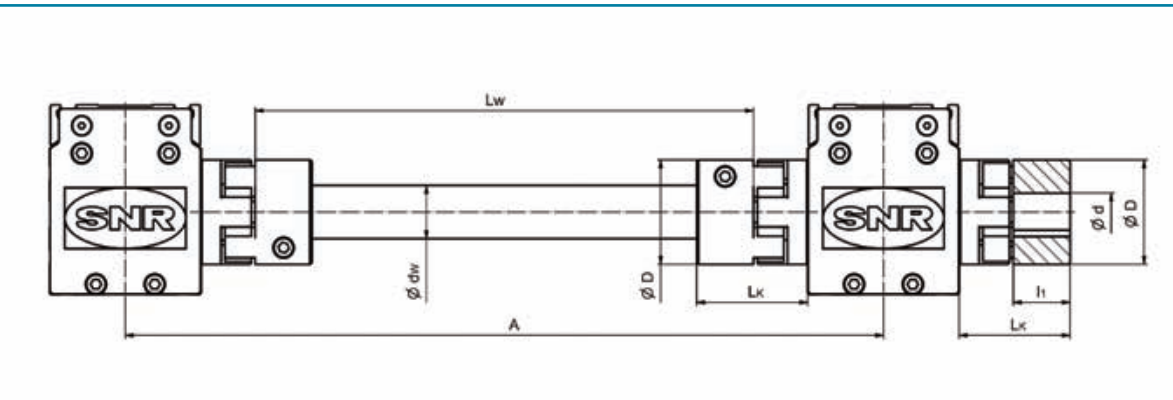
Linear axis	a	b	c	d h6	d2	e	f	g	i	l	s
AXC40Z	23	26H7x1	1	10	M4x7	34	9.9	8.1	29.5	30	M3x5
AXC60Z / A	34	47H7x1	1	14	M5x8	54	22.5	17.5	30.0	30	M5x6
AXC80Z / A	42	68H7x2	2	20	M6x10	72	23.0	20.5	39.3	40	M5x9
AXC120Z / A	61	102H8x2		2	30	104	42.5	42.5	59.5	60	M8x12
AXC120A [1)]	Ø 162	110H8x3.5		2	30	Ø 130	–	–	59.5	60	M8x13
AXDL110Z [1)]	–	60H8x19	–	16	M5x8	Ø 68	–	–	55.5	30	M5x10
AXDL160Z	–	75H8x41	–	25	M10x17	66	25.0	25.0	92.3	50	M6x15
AXDL240Z [1)]	–	90H8x53	–	30	M10x17	Ø 100	–	–	113.5	60	M6x18

1) For description see diagrams on pages 40, 44 and 52.

Coupling and connecting shaft

Parallel axes can be coupled via a connecting shaft to transfer the torque of the motor-driven axis to the second axis.





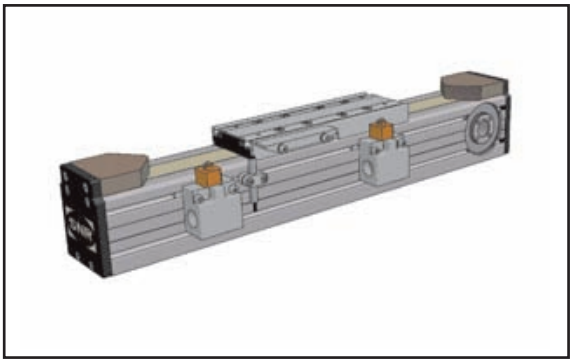
Linear axis	Dimensions							Clamping hub			Clamping armature sleeve		
	dw	Lw	A min.[1]	A DKM [2]	D	LK	l1	d min.	d max.	TA [3] [N.m]	d min.	d max.	TA [3] [N.m]
AXC40ZK	14x2	A - 79	125	87^{+2}	30	31 38	11 19	8 –	16 –	1.34 –	– 10	– 14	– 1.34
AXC60-..K	22x2	A - 110	188	120^{+2}	40	50	25	12	24	10.5	10	20	3
AXC80-..K	28x2.5	A - 137	230	$154(160)^{+3}$	55	59	30	12	28	10.5	15	28	6
AXC120-..K	38x4	A - 180	285	198^{+3}	65	65	35	20	38	25	18	38	6
AXC120-..P..K	38x4	A - 140	245	158^{+3}	65	25	–	20	38	25	–	–	–
AXDL110	Connecting not available				55	32.5	30	12	28	10.5	15	28	6
AXDL160	Connecting not available				65	22.5	35	20	38	25	18	38	6
AXDL240	Connecting not available				65	10	35	20	38	25	18	38	6

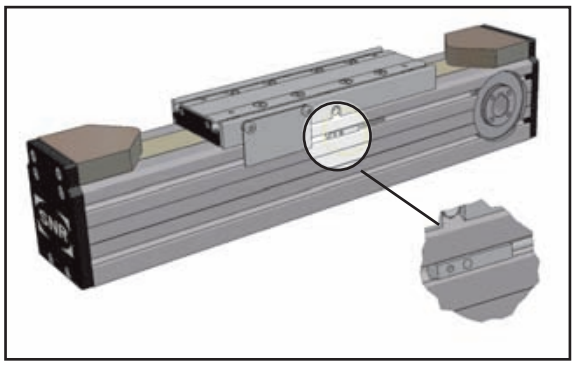
1) With possibility of removal without disassembly of the linear axes.
2) DKM = special design with double output middle piece.
3) Tightening torque.

Switch add-on on AXC / AXLT / AXDL

Mechanical switches in different protection classes as well as inductive proximity switches with the conventional output circuits are available for position detection depending on requirements.

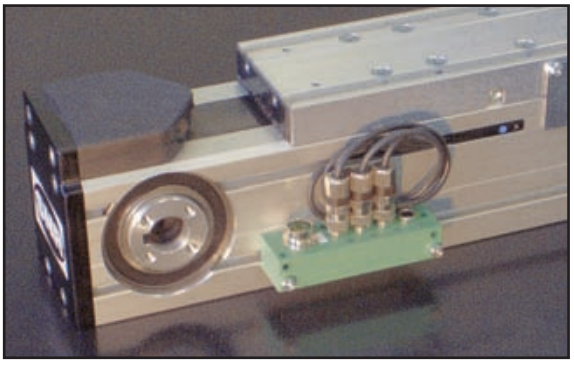
In an emergency, to disconnect the drive before the mechanical stop buffer shock absorber is reached, the mechanically activated switch is usually used.
These can also be combined with external inductive proximity switches to set additional switching points for reference runs for example. A set of mechanical limit switches consists of two switches with fastening elements and a cam switch. (see picture 1)



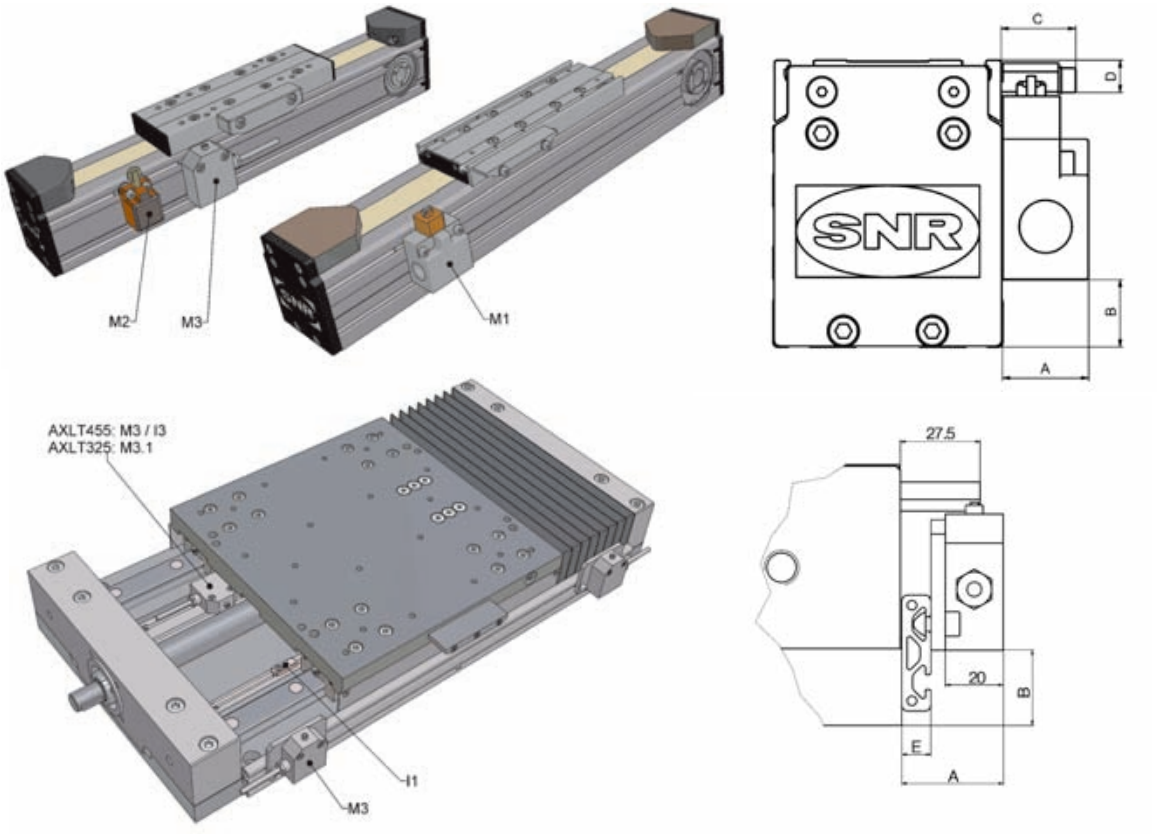


Our inductive proximity switch for groove installation is the most compact variation. It locks flush with the surface of the aluminum profile of the axis and forms almost no disruption to the surface.
The switches are obtainable as PNP break contacts/make contacts or NPN break contacts. A set of inductive proximity switches consists of two switches with fastening elements and a cam switch. All switches are already factory-installed. (see picture 2)

Professional cabling can be simply carried out with the standard sensor boxes in a few quick operations.
(see picture 3)
All switching signals are integrated here. The connection to the signal-processing control unit can be set up rapidly with the help of ready-to-use industry-standard leads.

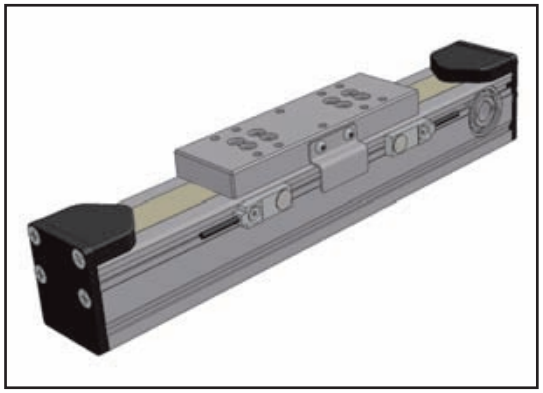


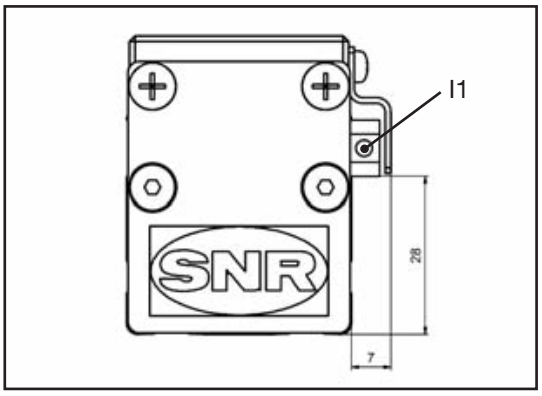
• Mechanical switch AXC60-120 / AXLT155-455 / AXDL110-240



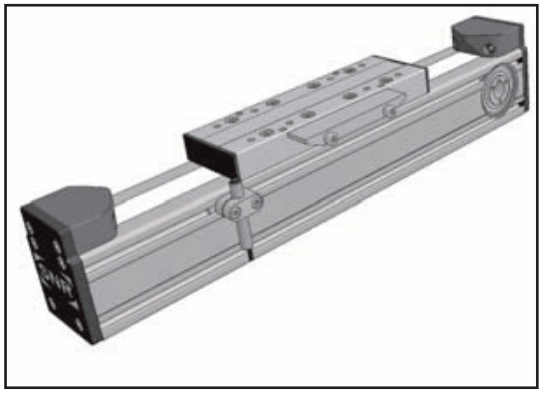
Linear axis	Switch	A	B	C	D	E
AXC60S / Z	M2 M3	22 20	19.5 12.5	25 18	11.5 19	– –
AXC60A	M1	30	9.5	18	55	–
AXC80	M1	30	25.5	26	11	–
AXC120	M1	30	64.5	26	20	–
AXLT155	M3	25	1	–	–	–
AXLT225	M3	25	11	–	–	5
AXLT325	M3	35	26	–	–	10
AXLT455	M3	34	39.5	–	–	14
AXDL110	M2	31	7	24	9.3	10
AXDL160	M1	30	9.5	15	8.5	–
AXDL240	M1	30	22	15	33	–

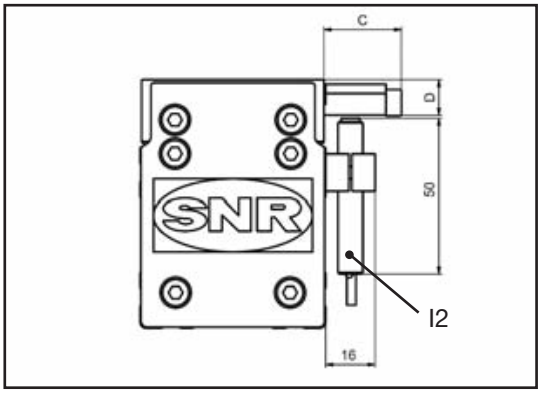
• Inductive proximity switch I1 for AXC40





• Inductive proximity switch I2 for AXC60-120





• Cable connections to the proximity switches

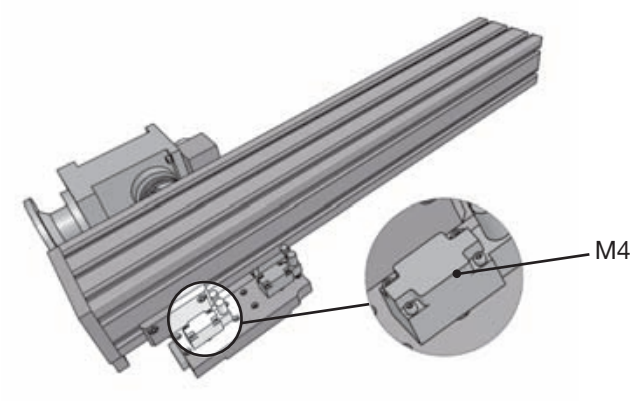
The cables from the AXC initiators to the drive are set in a groove. The cable length is designed to leave at least 0.5 m free. Should this prove not to be the case with the maximum cable length available, the cable should be routed from the opposite side.
In the type AXC60 only two AXC120 initiator elements per side can be installed.

The cables from initiators I2 to the drive are set in a groove except in the AXC40. The cable length is designed to leave at least 0.5 m free. Should this prove not to be the case with the cable length available, the cable should be routed from the opposite side. In type AXDL110Z the cables are always conducted to the deflection side. In the type AXLT155, the cables are always conducted to the drive side.

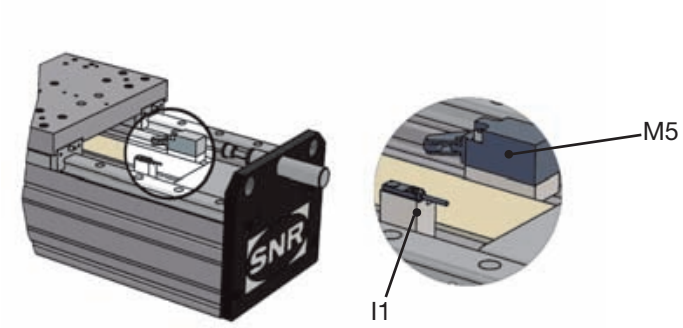
Fitting of switches to AXS modules

All linear axes of the AXS series are available with mechanical switches as standard. Inductive proximity switches are also available for the AXS280Z gantry axis.

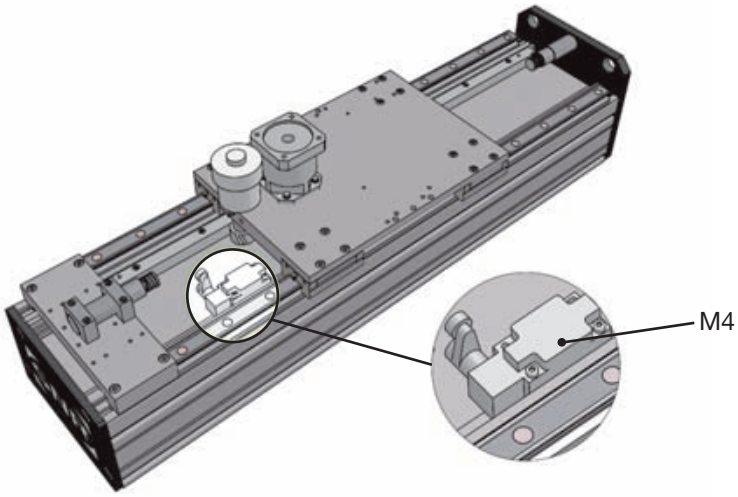
• Lifting axes AXS160M to AXS280M and telescopic axis AXS120



• AXS280Z gantry axis



• AXS280M and AXS460M gantry axis

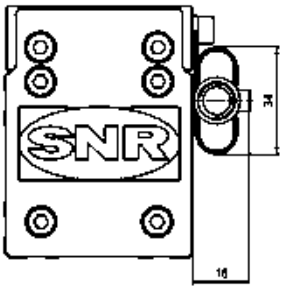


Sensor box on AXC / AXLT

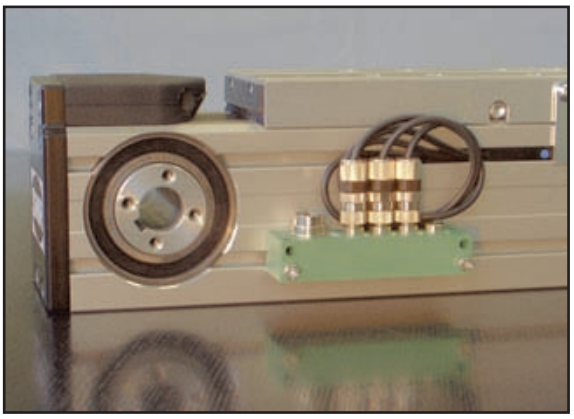
Depending on the number of switches required, either a 2x distributor can be used or a sensor box to which four or more switches can be connected.
Both designs have an IP67 protection rating and are supplied completely wired, as shown in the picture.

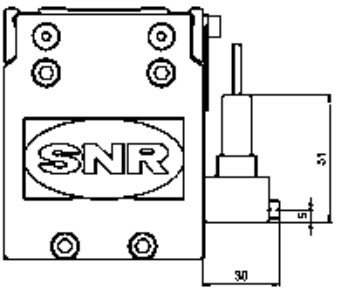
A 14-pole plug connection with M16 thread for the sensor box or a 5-pole plug connection with M8 thread for the 2x distributor is available for the connection to the signal-processing control unit.

• 2x distributor

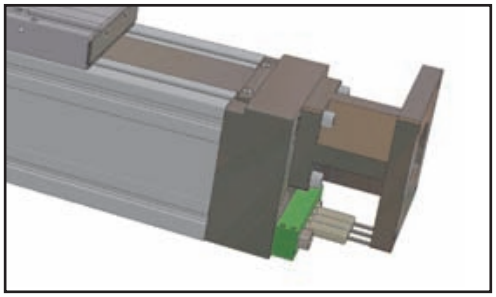


• Sensor box for 4 switches





To prevent unwanted projections, the sensor box in type AXC120-S and AXLT325 can also be mounted under the motor adapter as a space-saving measure.



Technical Specifications of switches

• Mechanical safety limit switch

	Service life	Housing material	Screw fitting	Protection class
Switch M1 / M4 / M5	$30x10^6$ Contacts	Plastic	M20x1.5 Cross-section area: 0,5...2.5 mm^2	IP67
Switch M2	$30x10^6$ Contacts	Plastic	Threaded terminal ends: 4xM3.5 Cross-section area: 0.5 ...1.5 mm^2	IP67
Switch M3	$10x10^6$ Contacts	Metal	Threaded terminal ends Cross-section area: max. 1.5 mm^2	IP67
Switch M3.1 (soldering connection)	$10x10^6$ Contacts	Metal	Soldering connection Cross-section area: max. 1.5 mm^2	IP67

Switch element: snap switch (automatic separation)/1x break contact and 1x make contact.

• Inductive proximity switch

	Connection voltage	Max. load power	Indexing précision	Cable lenght	Protection class
Switch I1 PNP-NO (make contact) or NPN/PNP-NC (break contact) AXC40 AXDL AXLT155 - AXLT325 AXS	10...30 V DC	100 mA	≤ 10% of the switch distance	5 m	IP67
AXC- Initiator[1)] PNP-NC (break contact)/ NO (make contact) NPN-NC AXC60S/Z - AXC120S/Z	10...30 V DC	100 mA	≤ 2% of the switch distance	3 and 10 m	IP67
Switch I2 AXC60 - AXC120	12...30 V DC	100 mA	≤ 5% of the switch distance	2 m	IP67
Switch I3 AXLT455	10...30 V DC	130 mA	≤ 5% of the switch distance	Threaded joint as in M3	IP67

1) For AXC60, max. 2 switches on each side.
For AXC80, max. 3 switches on each side.

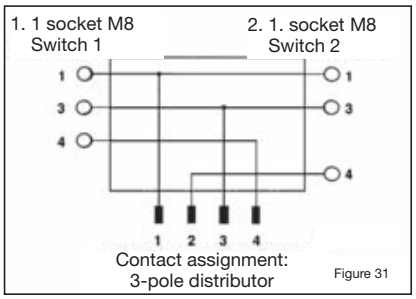
• Combination options for fitting of switches

	Number of switch									
	Mecanical switch		Inductive proximity switch AXC-Initiator					I1 -- I2 -- I3		
Encoding	M1, M2, M4, M5	M3, M3.1	PNP-NC	PNP-NC	PNP-NO	PNP-NO	NPN-NC	PNP-NC	PNP-NO	NPN-NO
			3 m cable	10 m cable	3 m cable	10 m cable	3 m cable			
00										
01	1									
02	2									
03	2								1	
04	2									1
05		1								
06		2								
07		2							1	
08		2								1
09			1							
10			2							
11			3							
12				1						
13				2						
14				3						
15					1					
16					2					
17					3					
18						1				
19						2				
20						3				
21							1			
22							2			
23							3			
24			2		1					
25				2		1				
26								1		
27								2		
28								3		
29									1	
30									2	
31									3	
32										1
33										2
34										3
35								2	1	

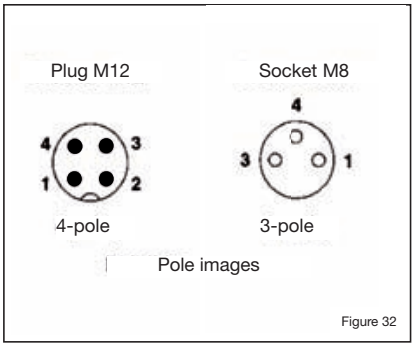
Please include the ID number in the order description to designate the desired switch combination.
ID number X: all switch combinations not listed.

Circuit diagrams

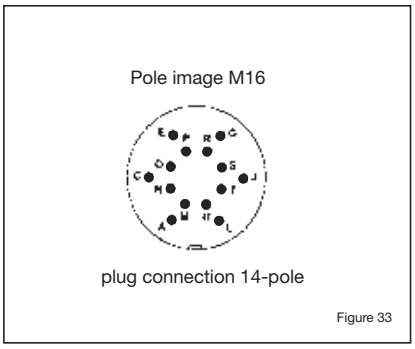
Mechanical switches or inductive proximity switches are available for position detection depending on requirements. Professional cabling is possible thanks to the duplex distributors and sensor boxes included as standard.



Duplex distributor



Duplex distributor



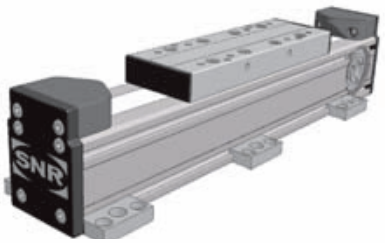
Distributor: 4

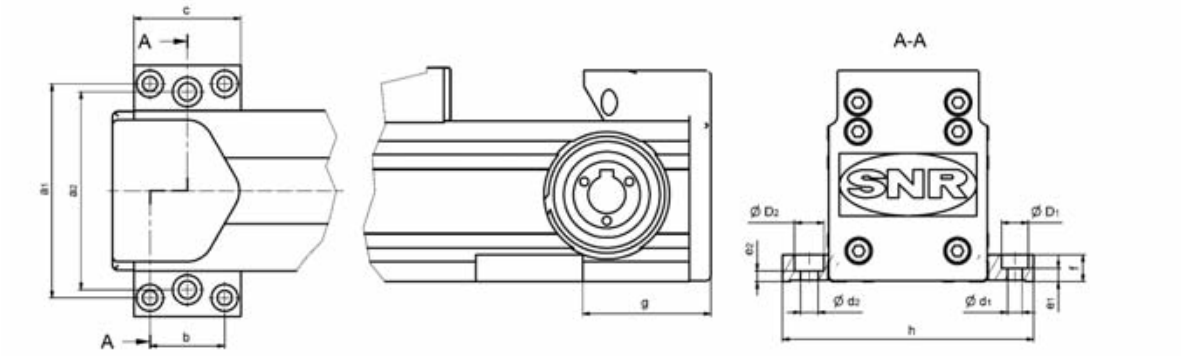
Wire color	Plug connection M16	Expansion slot/pole (potential)	Use
WH	P	1 (A)	End position on drive side
GN	J	2 (A)	End position on opposite side
YE	T	3 (A)	Reference/position on drive side
GY	S	4 (A)	Position on opposite side

Attachments and fasteners

There is a range of optimally coordinated fixing elements available for the fastening of the different linear modules. Sliding blocks, fastening strips and adapters offer the most diverse possibilities to bolt down our modules on mounting surfaces or with each other. In addition, we also offer gantry support legs matched to the linear axes and axle systems to complete the range.
The distance of the fixing points depends on the load and the desired straightness as well as rigidity.

I Fastening strips for AXC / AXDL





Linear axis	Fastening strip designation	a1	a2	b	c	d1	D1	e1	d2	D2	e2	f	g [1]	h
AXC40	AXC 40	55	-	28	40	5.5	10	7	-	-	-	13	38 [2]	66
AXC60 [3]	AXC 60	80	74	28	40	5.5	10	5	6.6	11	4	10	48	94
AXC80	AXC 80	94	-	50	70	6.6	11	14	-	-	-	20	76	108
AXC120 [4]	AXC 120	136	-	60	78	9	15	11.5	-	-	-	22	105	160
	AXC120-2	140	-	40	80	9	15	13	-	-	-	22	105	160
	AXC120-3	140	140	80	120	9	15	13	9	15	13	22	105	160
AXDL110	AXDL 110	126	-	30	47	5.5	9	3.5	-	-	-	7	69	140
AXDL160	AXDL 160	174	-	50	68	6.6	11	3.5	-	-	-	9	88	188
AXDL240 [4]	AXC 120	256	-	60	78	9	15	11.5	-	-	-	22	108	280
	AXC120-2	260	-	40	80	9	15	13	-	-	-	22	108	280
	AXC120-3	260	260	80	120	9	15	13	9	15	13	22	108	280

1) If applicable: size k2 of drive adapter or gearbox, however follow at least size a of the drive-side machining!
2) With mounted coupling.
3) Furthermore, suitable for size 20 standard profiles.
4) Furthermore, suitable for size 40 standard profiles.

Sliding blocks

Model E

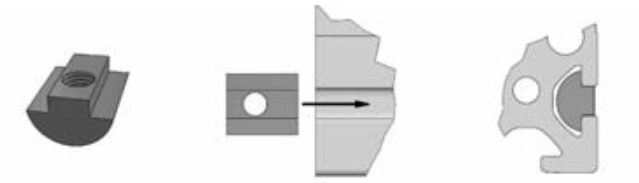
- Standard sliding block
- St galvanized
- Can be swiveled into any position
- Fixed via spring-loaded ball

Model R

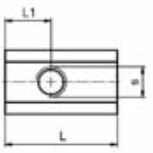
- For efficient part installation
- Zn galvanized
- Pre-mounted on the component and used in any position
- Locked by turning of screw

Model S

- Heavy-duty sliding block
- St galvanized
- Push in from profile end
- To groove width 8 fixed via spring-loaded ball



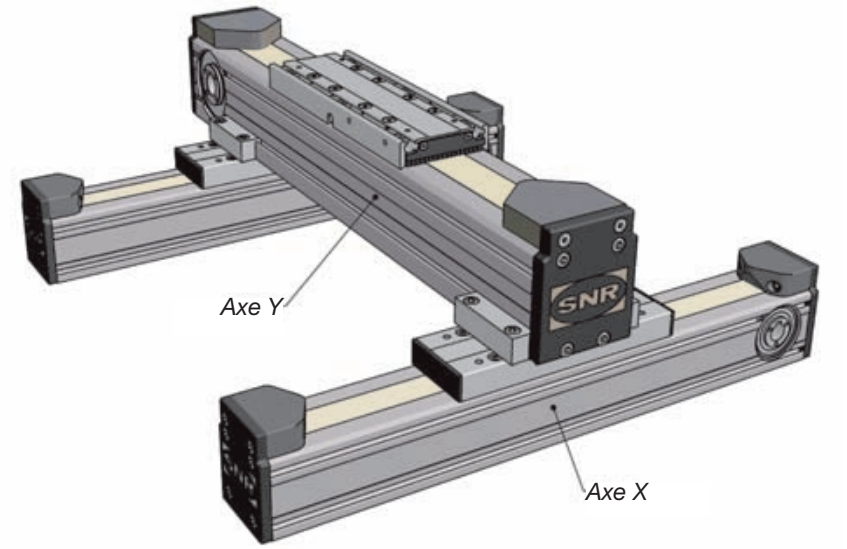
Linear axis	Sliding block designation	Model	s	L [1]	L1 [1]	TA N.m [2] force	Max. tensile [N]
AXC40 AXC60	5 ST M3	E	M3	12	3	1.5	500
	5 ST M4	E	M4	12	4	3.0	500
	5 ST M5	E	M5	12	4	4.5	500
	5 Zn M3	R	M3	5	2.5	1.0	50
AXC80	6 ST M4	E	M4	17	5	4.0	1750
	6 ST M5	E	M5	17	5	8.0[3]	1750
	6 ST M6	E	M6	17	5.5	14[3]	1750
	6 Zn M4	R	M4	15	7.5	1.5	150
AXC120 AXLT155 AXLT225 AXS120T AXS160 AXS200 AXDL240	8 ST M4	E	M4	22	9	4.0	2500
	8 ST M6	E	M6	22	9	14[3]	3500
	8 ST M8	E	M8	22	9	25	5000
	8 Zn M4	R	M4	19	9.5	1.5	250
	8 Zn M5	R	M5	19	9.5	1.5	250
	8 ST M5 adjustable	S	M5	22	9	8,0[3]	2500
	8 ST M6 adjustable	S	M6	22	7	14[3]	3500
	8 ST M8 adjustable	S	M8	20	7	34[3]	5000
AXS280	12 ST M6	S	M6	20	10	14[3]	3500
	12 ST M8	S	M8	20	10	34[3]	6000
	12 ST M10	S	M10	35	11.5	46	10000
AXS230 AXS460	DIN508-14 M8	S	M8	22	11	34[3]	6000
	DIN508-14 M12	S	M12	22	11	85	10000



1) maximum values, different dimensions possible.
2) maximum tightening torque.
3) screws with strength category 10.9 are necessary in space utilization of the maximum tightening torques.

I AXC direct connection

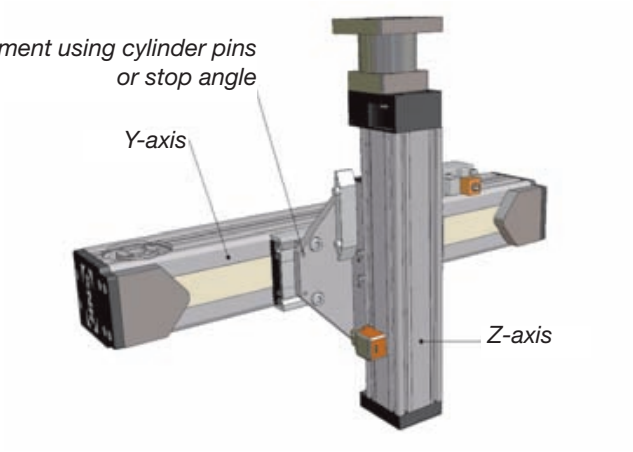
We offer to the user a high degree of flexibility for the layout of the axes in a multi-axis system.
Adapters in different designs are available for this purpose. The connection sets contain all other required fasteners (e.g.: adapter plates, screws, etc.).

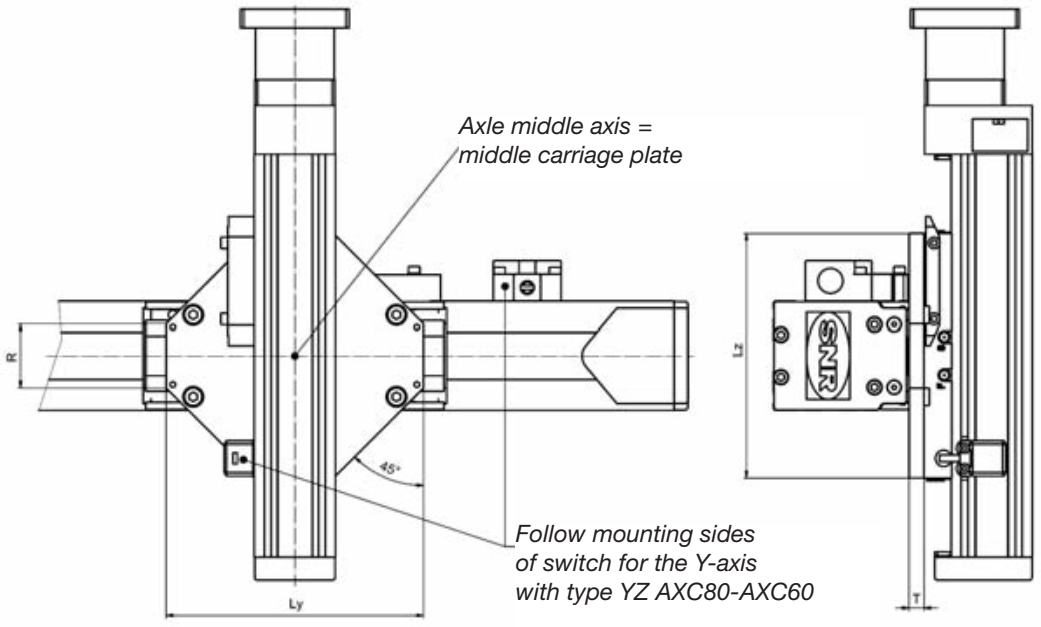


X axis	Y axis			
	AXC40	AXC60	AXC80	AXC120
AXC40	Direct connection XY-AXC 40-40	Direct connection XY-AXC 40-60		
AXC60		Direct connection XY-AXC 60-60	Direct connection XY-AXC 60-80	Direct connection XY-AXC 60-120
AXC80				Direct connection XY-AXC 80-120
AXC120				Direct connection XY-AXC 120-120
Profile MB Size 40		Direct connection XY-AXC 60-60 + 2 sliding block 8STM6		2 fastening strip 2 (3) + 4 (6) M8x25 DIN912 + 4 (6) sliding block 8STM8
Profile MB Size 50			Direct connection XY-AXC 60-80 + 4 sliding block 8STM6	

For dimensions of the fastening strips see page 86.

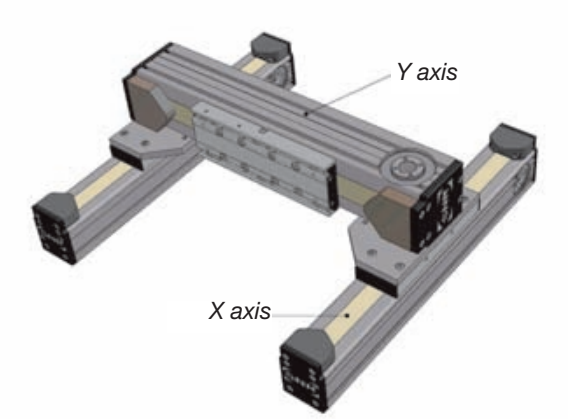
AXC cross connection

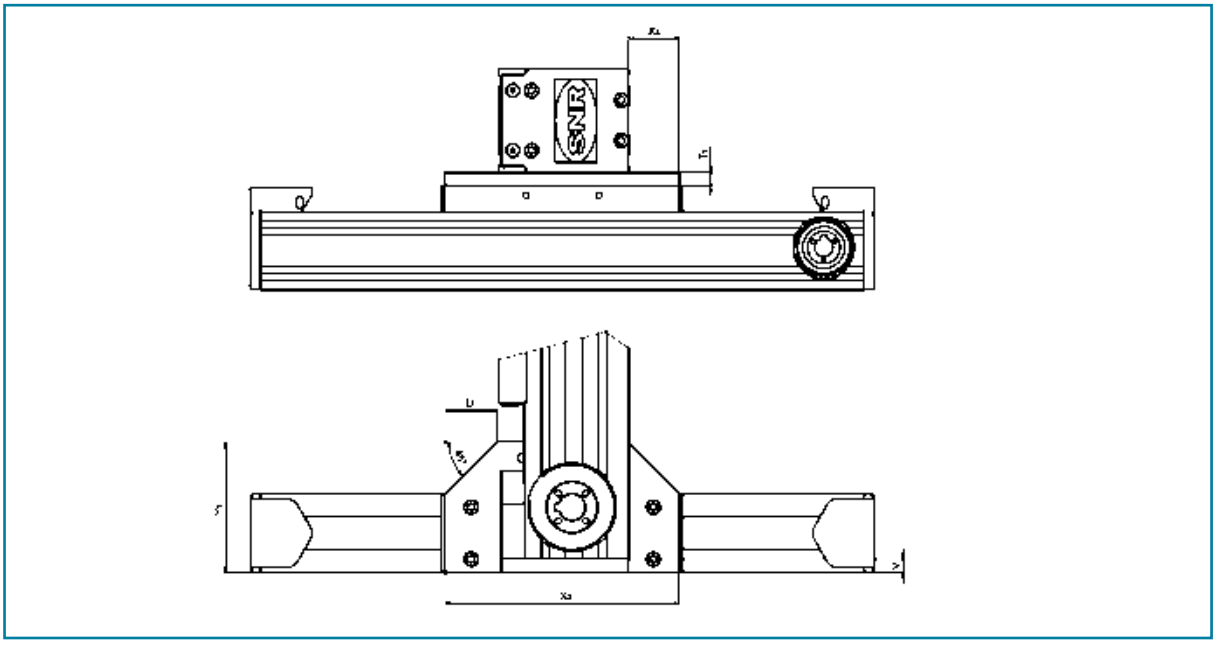




Y axis	Z axis	Ly	Lz	R	T	Cross connection designation
AXC60	AXC40	90	90	58	10	YZ AXC-60-40
AXC60	AXC60	90	90	58	12	YZ AXC-60-60
AXC80	AXC60	190	180	47	11	YZ AXC-80-60
AXC80	AXC80	220	220	77	15	YZ AXC-80-80
AXC120	AXC80	280	220	116	20	YZ AXC-120-80
AXC120	AXC120	280	280	116	20	YZ AXCg-120-120

AXC gantry connection

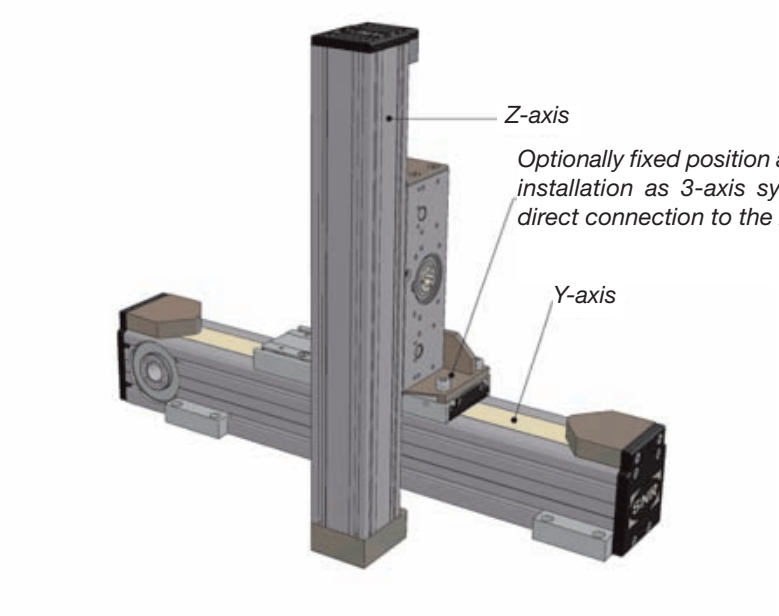


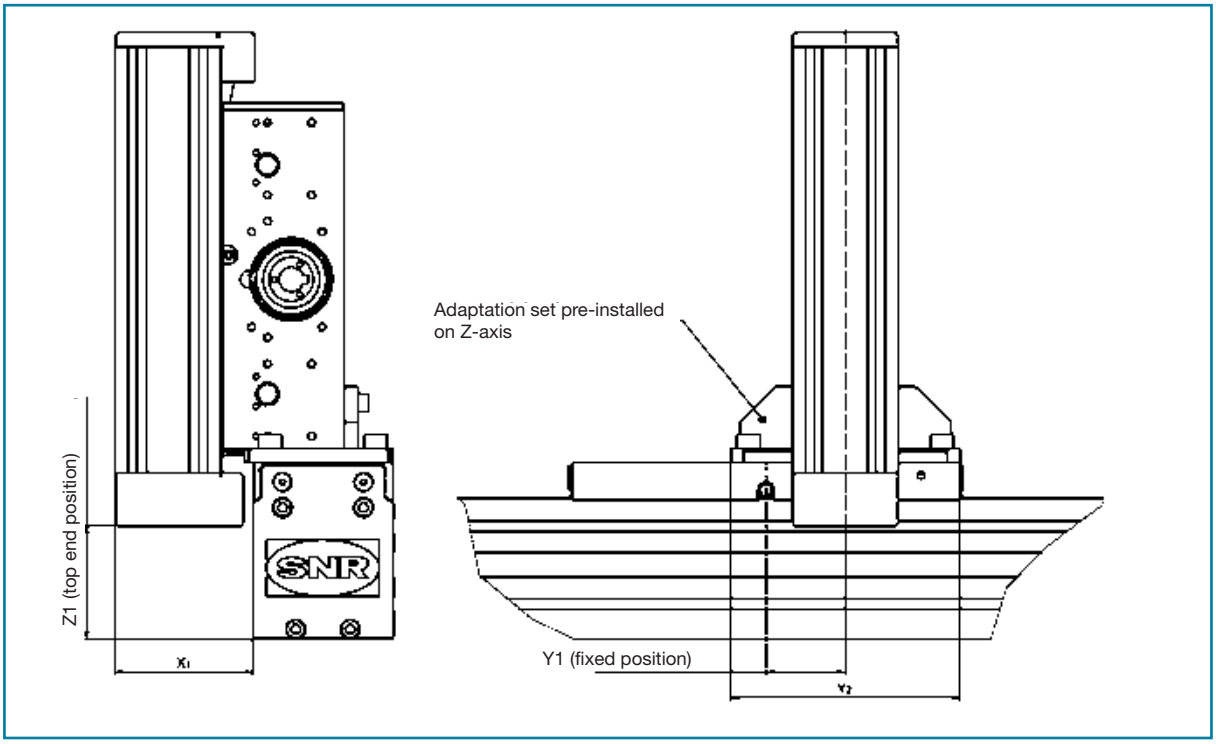


X axis	Y axis	T1	U	V	X2	X3	Y3	Gantry connection designation
AXC40	AXC60	8	20	-11	98	19	59	XY-AXC-40-60
AXC60	AXC80Z AXC80S / A	10	40	10 22	180	39	100	XY-AXC-60-80
AXC80	AXC80Z AXC80S / A	10	-	0 10	155	19	80	XY-AXC-80-80
AXC80	AXC120Z AXC120S / A	15	6	-20[1]/ 10 -20[1]/ 25	194	16	140	XY-AXC-80-120
AXS120	AXS280	30	-	-40[1]	170	30/90[2]	200	XY-AXC-120-280

1) Position on X-axis fixed with cylinder pins.
2) With table length 600 mm.

AXC-A standard connection





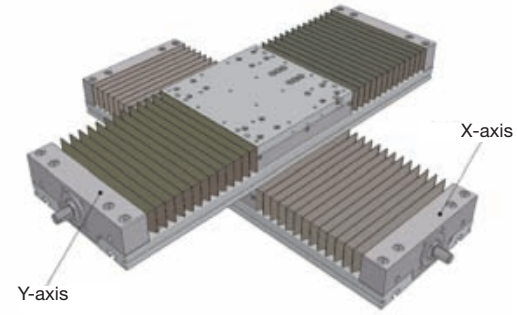
Y axis	Z axis	X1	Y1	Y2	Z1	Standard connection designation
AXC80 AXC80A	AXC60-A AXC60-A	78 78	45 20	130 130	64 64	YZ-AXC80-60A
AXC120 AXC120A	AXC80-A AXC80-A	92 92	59 0 / 55	150 150	87.5 87.5	YZ-AXC120-80A

AXLT direct connection

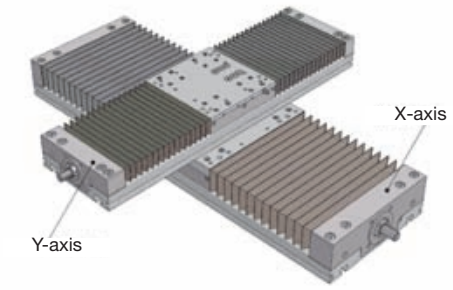
The linear tables of the AXLT series are conceived so that they can be mounted in the simplest way to compound tables. Depending on size an adapter can even be omitted here.

Compound table variation in the layout base board on table top

In this layout linear tables of same size or the next smallest size can be installed on the table top.
An adapter plate in both cases is unnecessary.



- **Combination of same sizes**



- **Combination with next smaller size**

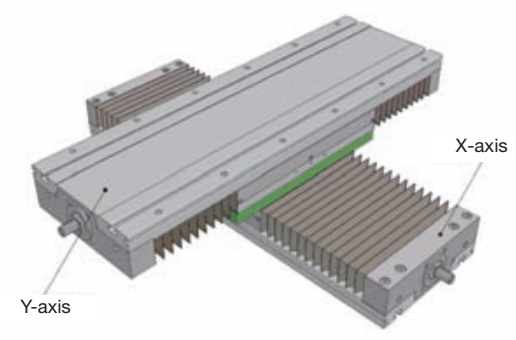
X axis	Y axis			
	AXLT155	AXLT225	AXLT325	AXLT455
AXLT155	AXLT direct connection 155-155			
AXLT225	AXLT direct connection 225-155	AXLT direct connection 225-225		
AXLT325		AXLT direct connection 325-225	AXLT direct connection 325-325	
AXLT455			AXLT direct connection 455-325	AXLT direct connection 455-455

I AXLT cross connection

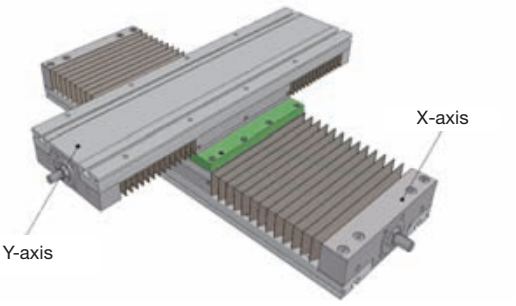
Compound table variation in the layout table top on table top

Also in this layout the linear tables (X-axis) can be combined either with the same or the next smallest size. An adapter plate is no longer necessary from size 325 (X-axis).

• Combination of same sizes



• Combination with next size down

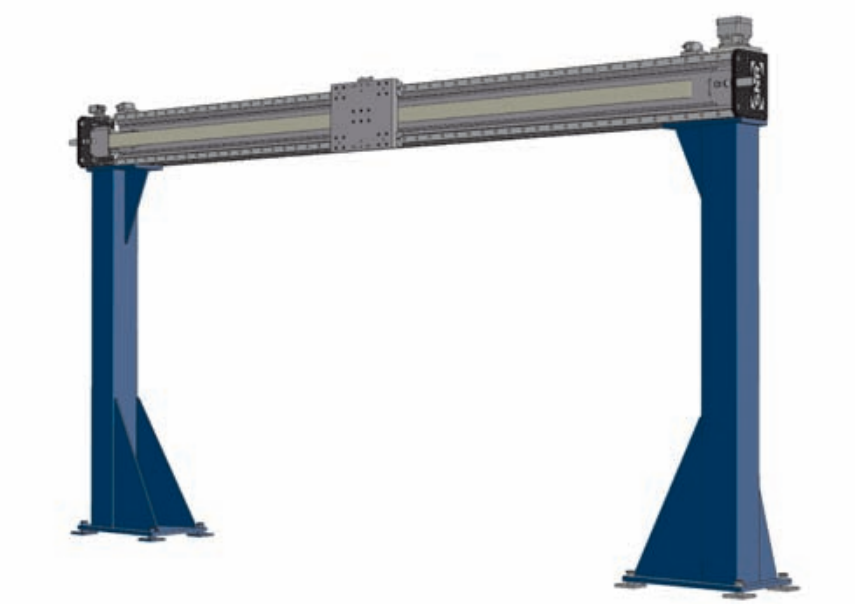


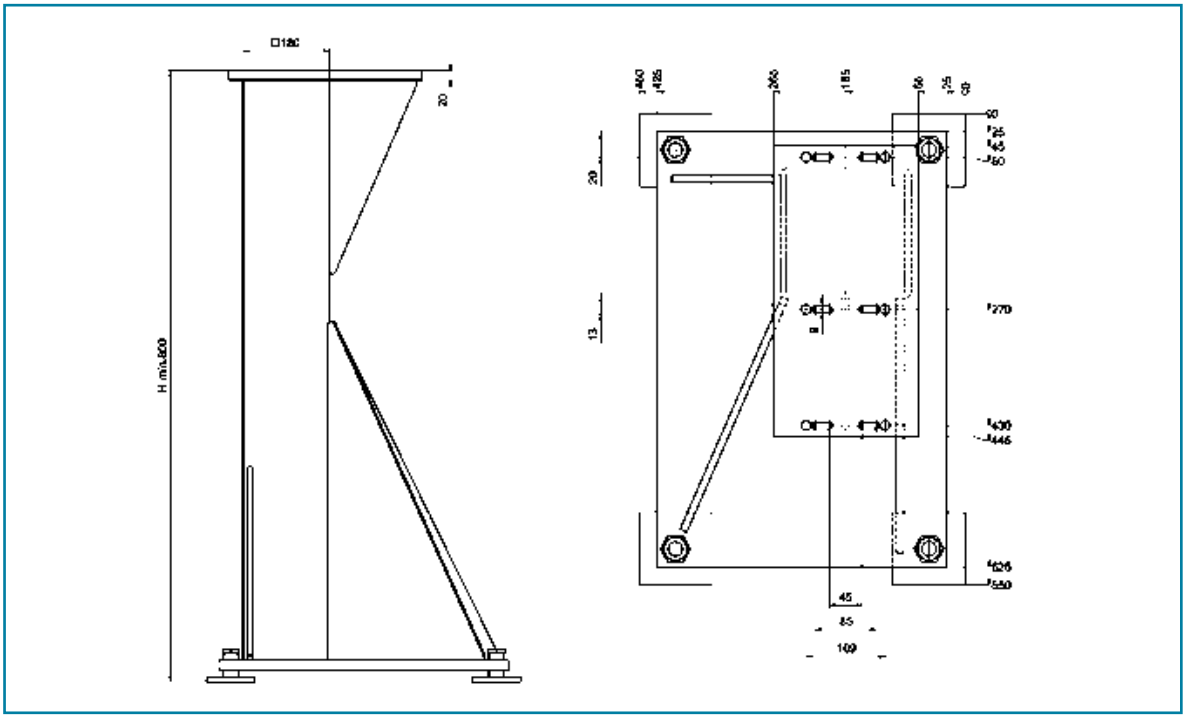
X axis	Y axis				
	AXLT155 (LT=220)	AXLT225 (LT=320)	AXLT325 (LT=320)	AXLT325 (LT=450)	AXLT455
AXLT155	AXLT Cross connexion 155-155				
AXLT225	AXLT Cross connexion 225-155	AXLT Cross connexion 225-225			
AXLT325		AXLT Cross connexion 325-225	AXLT Cross connexion 325-325	AXLT Cross connexion 325-325	
AXLT455				AXLT Cross connexion 455-325	AXLT Cross connexion 455-455

T = table length in mm.

SNR gantry support legs

SNR gantry support legs can be used with the AXC series as well as with the AXS series.





Groove cover for AXC

Groove insert

To facilitate the cleaning of the linear axis or to prevent heavy contamination, the groove of the profile body can be sealed with the corresponding groove insert.

Groove insert Al
Color: natural

Groove insert PP
Color: black

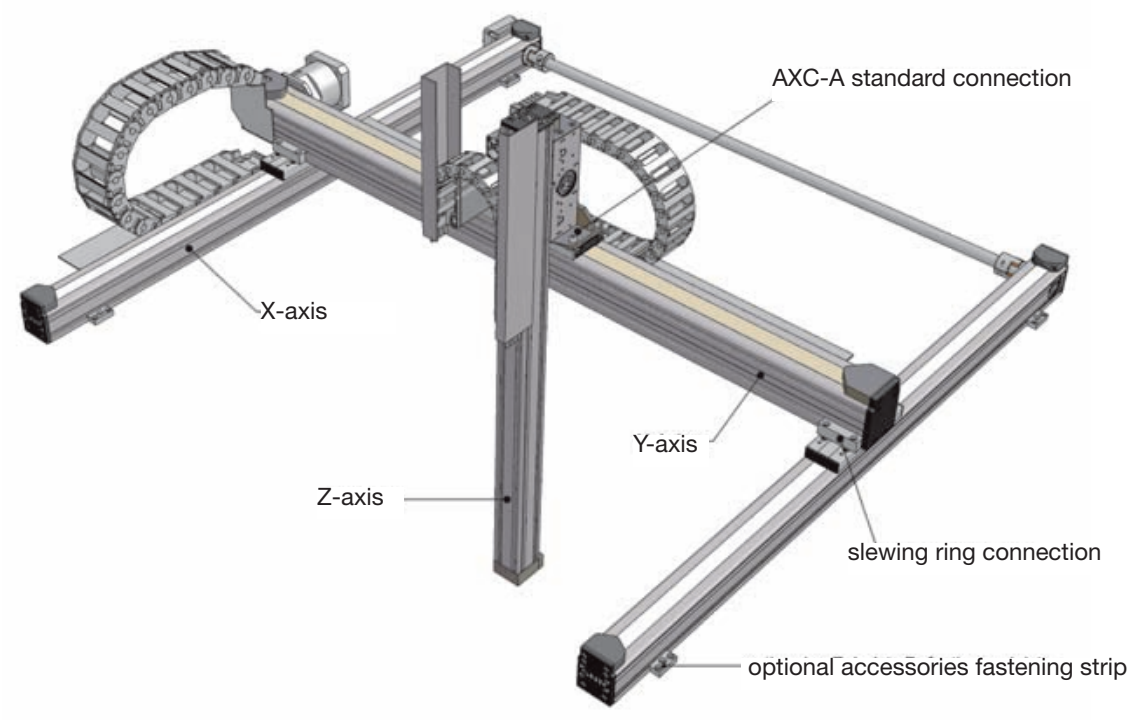
Linear axis	Material	Groove insert designation
AXC40 AXC60	PP	5.PP.black.2000L
AXC80	PP AL	6.PP.black.2000L 6.2000L natural
AXC120	PP Al	8.PP.black.2000L 8.3000L natural

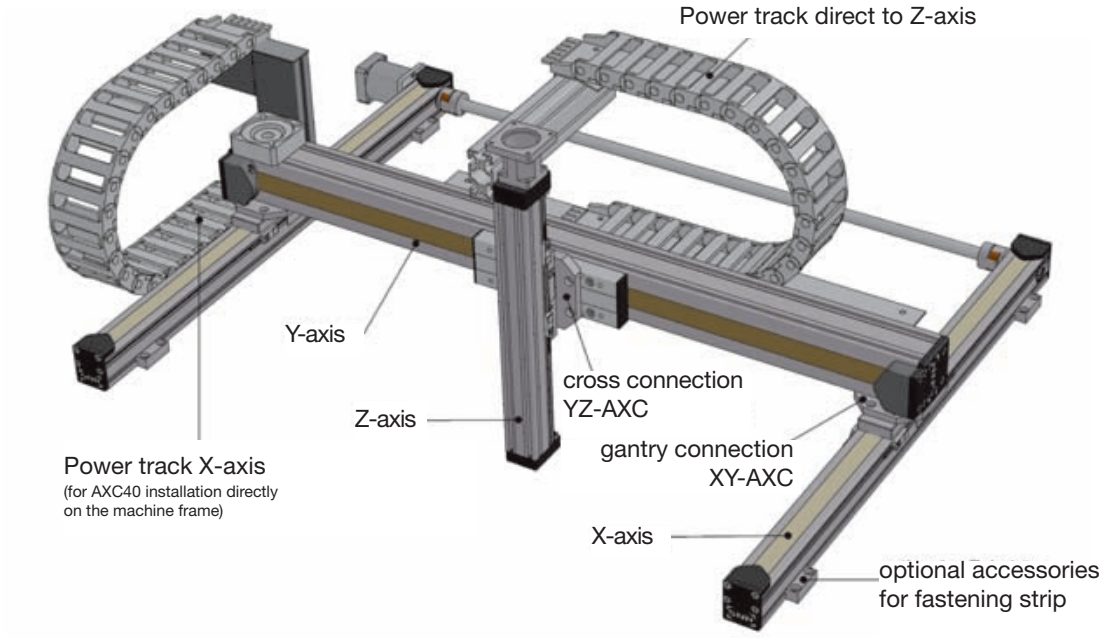
Standard combinations

Our standard axis systems facilitate a clear reduction of design costs. The range includes powerful 2-axis or 3-axis systems that are made of practical combinations of the AXC and AXS range.

Standard combinations in the AXC range

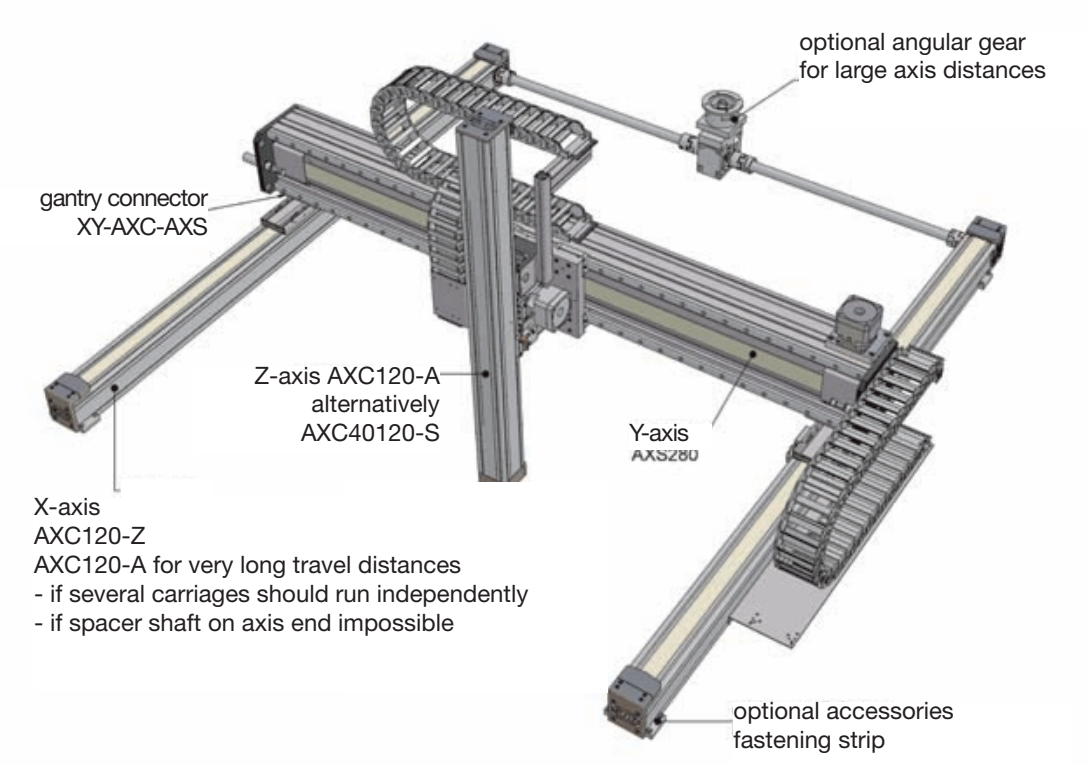
All sets and kits are pre-arranged with ready-to-be-installed switches, energy chains and all fixing hardware. If no energy chain is desired, the individual components are delivered with the required fixing hardware.
The tables for the direct, gantry, cross and AXC-A standard connections in the chapter on fastening elements (from page 100) give information about the possible combinations of axis sizes and designs according to images below.





I Standard combination of AXC and AXS range

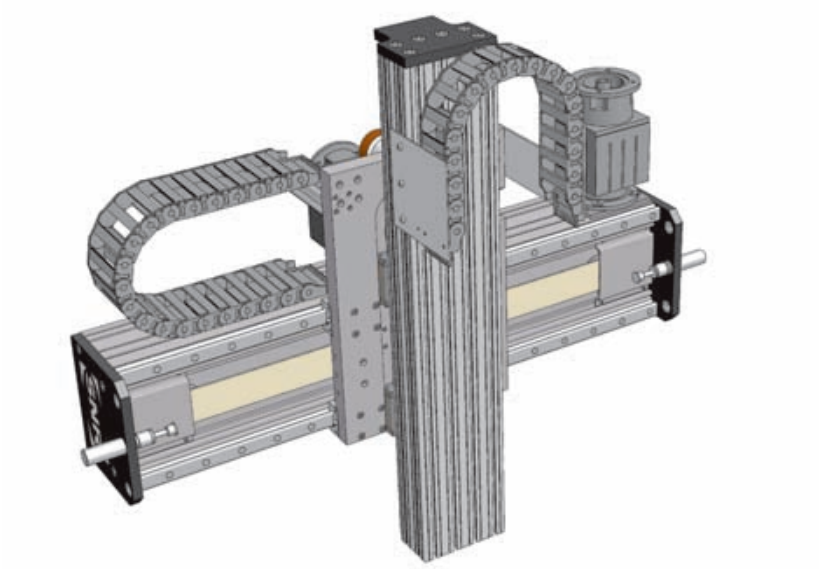
In large lift lengths and rising requirements for the load-bearing capacity and stiffness we offer the optimal alternative with a standard combination from the AXC – and AXS ranges.



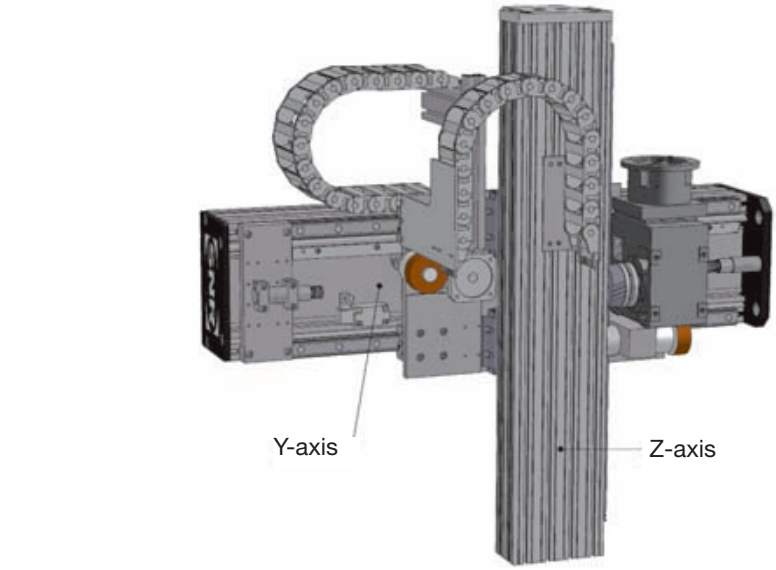
Standard combinations in the AXS range

SNR standard systems from the AXS range are available in the top load range.

• Standard layout with synchronous belt driven gantry axis

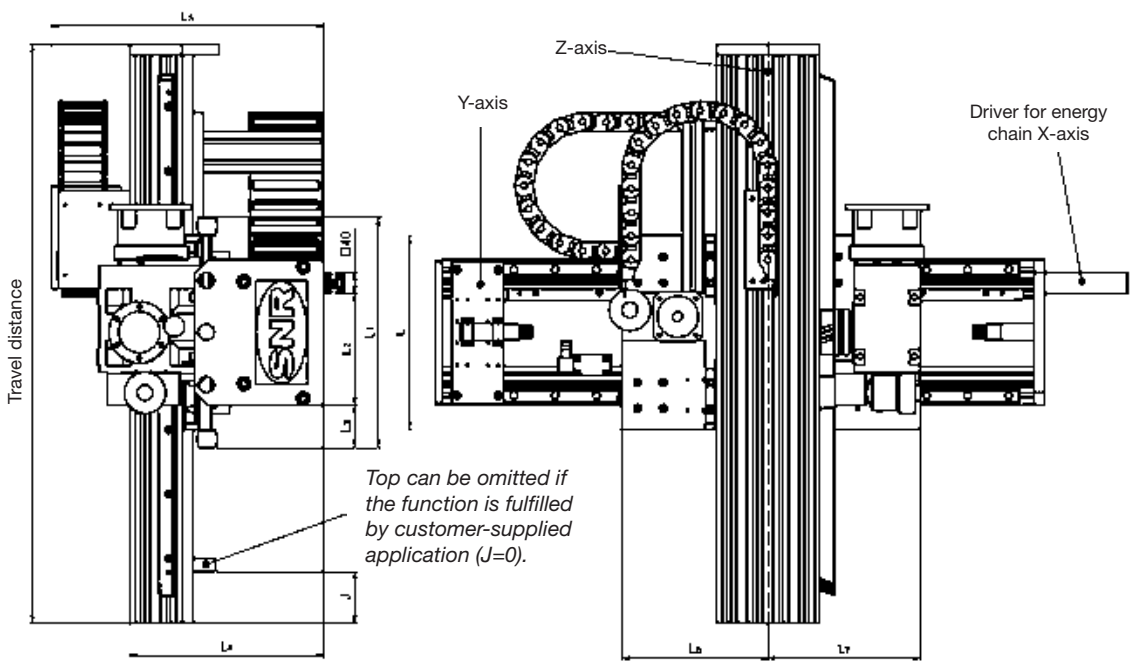


• Standard layout with rack-and-pinion-driven gantry axis



Overview of AXS combinations

	Z axis	Y axis			
		Drive synchronous belt		Drive rack and pinion	
		AXS280-ZGxx-x30	AXS280-ZGxx-x35	AXS280-M200-x3x	AXS460-M250-H35
Drive rack and pinion	AXS160-M160-G30	•			
	AXS200-M200-x30		•		
	AXS200-M250-x30			•	
	AXS230-M320-H30		•	•	•
	AXS280-M400-H35				•
	AXS120T-M400-H25	•	•		



Y axis	Z axis	K	L	L1	L2	L3	L4	L5	L6	L7
AXS280-ZGx-x30	AXS160-M160-G30	657	550	620	215	46	342	445	160	160
AXS280-ZGx-x35	AXS200-M200-x30	725	610	680	215	51	382	520	200	200
	AXS230-M320-H30	515	312	420	215	70	442	581	350	350
AXS280-M200-x35	AXS200-M250-x30	490	375	445	215	82.5	375	528	283	295
	AXS230-M320-H30	515	312	420	215	70	442	581	350	350
AXS460-M250-H35	AXS230-M320-H30	695	492	600	210	70	598	737	350	350
	AXS280-M400-H35	690	493	600	210	70	612	752	355	355

I Overview of energy chains

Depending on requirements, energy chains of different designs are available for the linear axis systems. Energy chains can only be offered and installed in complete systems.

Designation	Average radius [mm]	Open		Internal dimension		max. lift horizontal self-supporting [mm]	filling mass horizontal max. lift kg/m	X axis					Y axis					Z axis							
		Interior	Exterior	B	H			AXC40	AXC60	AXC80	AXC120	AXS120T	AXC60	AXC80	AXC120	AXS280	AXS460	AXC60-A	AXC80-A	AXC120-A	AXS120T	AXS160	AXS200	AXS230	AXS280
B15i.038.075	75	•		38	17	1500	1											•							
B15.5.110	110		•	63	17	1500	1	•					•	•											
B15i.5.110	110	•		63	17	1500	1												•						
240.07.75	75	•		77	25	3000	2					•													
240.07.100	100	•		77	25	3000	2					•										•			
240.07.125	125	•		77	25	3000	2													•	•		•	•	•
250.07.125	125		•	77	25	3000	2		•	•					•										
240.10.125	125	•		103	25	3000	2													•			•	•	•
250.12.125	125		•	125	25	3000	2				•					•									
27.12.175	175		•	125	32	3500	3				•					•[1)]									
27i.12.125	125	•		125	32	3500	3													•			•	•	
27i.12.200	200	•		125	32	3500	3																		•
350.125.125	125		•	125	42	4000	3.5				•					•[1)]									
390.12.150	150	•	•	125	38	5000	6				•					•[1)]	•								
410.11.135	135	•	•	112	50	7000	12				•					•[1)]	•								

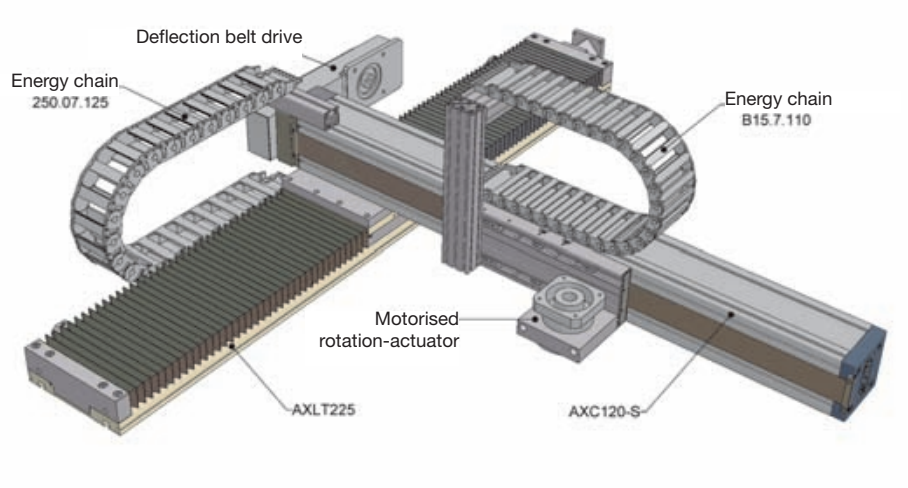
1) not for combination with Z-axis AXS160.
H= inner height
B= inner width

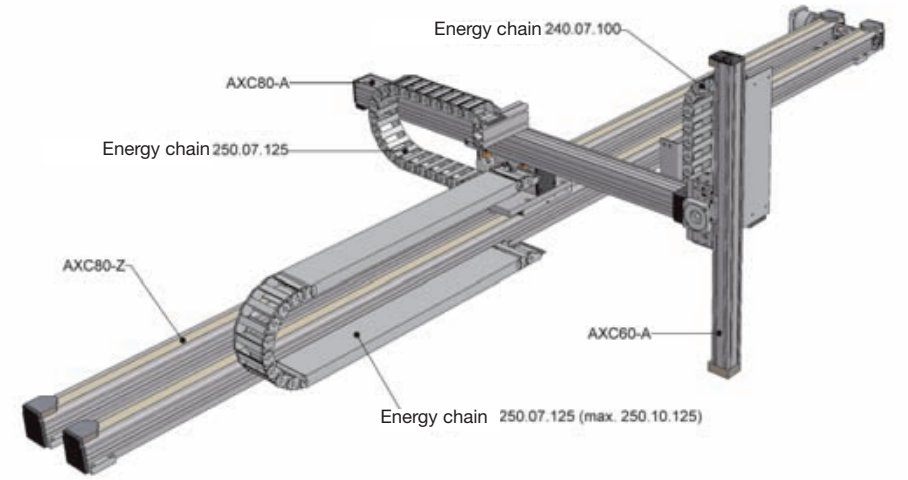
A separating strip is installed every 2nd link up to design 250.07 with internal dimension B = 77 mm.
Two separating strips are installed every 2nd link from design 240.10 with internal dimension B = 103 mm.

Up to design 350 the terminals for fastening the lines are prepared using cable straps.
From design 390 a C-bar is installed.

I Application examples

The tables below of application examples demonstrate once again the flexibility of our linear axis systems.





Type designation code for SNR linear axes

Order example

AXC80	S	G	2005	-	H20	-	1000	-	1380	-	V2	-	00	-	00	-	A	-	0
1	2	3	4		5		6		7		8		9		10		11		12

1	AXC80	MODEL DESIGNATION as entered in the catalog
2	S	DRIVE TYPE **Z:** Synchronous belt drive **A:** Synchronous belt drive **S:** Ball screw **T:** Trapezoidal thread drive **M:** Rack and pinion drive **O:** no drive
3	G	DRIVE DESIGN WITH SYNCHRONOUS BELT DRIVE **HL (HR):** Mounting surface machined on left side (right) and drive for hollow shaft **HW:** hollow shaft **WL (WR):** Free end of the shaft left (right) **WD:** Free ends of the shaft on both sides **KL (KR):** Integrated coupling for main drive pinion side, left (right) **KLK (KRK):** Integrated drive coupling, left side (right) + integrated coupling for connecting shaft, right (left) **PL (PR):** Integrated planetary reduction gearbox left (right) **PLK (PRK):** Integrated planetary reduction gearbox left (right)+ integrated coupling for spacer shaft right (left) **GL (GR):** Coupling and coupling cone left (right) **GLK (GRK):** Coupling and coupling cone left (right) + integrated coupling for spacer shaft right (left) **FL (FR):** Drive adapter flange (direct connection between drive shaft and hollow shaft of unit), left side(right)
		For screw-type drive G: Coupling cone + coupling U: Deflection belt drive No information: Free drive shaft
4	2005	SIZE ID FOR DRIVE DESIGN For synchronous belt drive • Shaft or hollow shaft diameter (HW, WL, WR, WD, FL, FR) • Coupling internal diameter, drive side (KL, DD, GL, GR) • Reduction ratio (PL, PR) • For PLK or PRK design, only the reduction ratio is indicated. For screw-type drives • Spindle diameter and thread pitch For rack and pinion drive • Input constant: 160 / 200 / 250 / 320 / 400
5	H20	GUIDANCE SYSTEM see catalog entry (roller or rail guide)
6	1000	LIFTING DISTANCE
7	1380	TOTAL LENGTH (lift + additional length stipulated in the catalog)
8	V	REINFORCED SPINDLE SUPPORTS (not specified if not applicable)
	A	PROTECTION FROM CONTAMINATION (not applicable if not available or available as standard) For synchronous belt drive: A: cover band For linear tables: F: bellows
	2	SPINDLE SUPPORT (number of sets, not specified if not applicable)
9	00	SWITCH COMBINATION, LEFT (inductive/ or interior) ID number as entered in the catalog page 98
10	00	SWITCH COMBINATION, RIGHT (inductive/ or interior) ID number as entered in the catalog page 98
11	A	DRIVE ADAPTATION ID number as entered in the catalog (ID number 0 if not available) pages 82, 85 and 87
12	0	OPTIONAL REFERENCE is internally allocated and indicates options, built-in components and special designs that are indicated in plain text.

Inquiry guide

Date _____
Bid to _____

Company _____
Place _____ Street _____
Contact person _____ Function/Department _____
Telephone _____ Fax _____
Project name _____

☐ One-off requirement Item _____ ☐ New installation
Desired date _____ CW ☐ Technical improvement
☐ Regular requirement Pieces/year _____ ☐ Cost reductions - price until now _____ EUR
Desired date for Pieces _____ CW

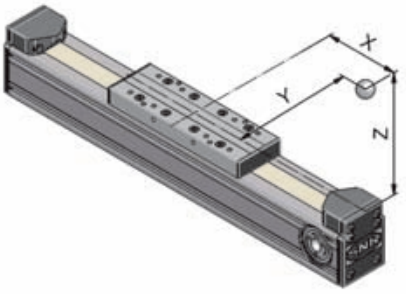
• Application parameters

Axis name	X	Y	Z
Single-axis/parallel (center-to-center distance)			
Mounting position: horizontal / vertical			
Effective travel distance [mm]			
Useful load [kg]			
Traverse rate [m/s]			
Acceleration [m/s2]			
Optional traverse time [sec			

Repeat accuracy _____ mm _____
Desired service life _____ travel distances or ____ hours
Cycle time _____ sec _____

With higher or instantaneous loads please attach a sketch!

Coordinates of center of gravity:



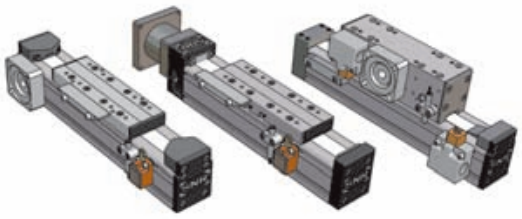
X _____
Y _____
Z _____

• drive/control unit

☐ Existing drive, manufacture/type _____
☐ Electrical power cord length _____ m (please indicate length)
☐ Inductive proximity switch _____ pieces
☐ Mechanical limit switch _____ pieces

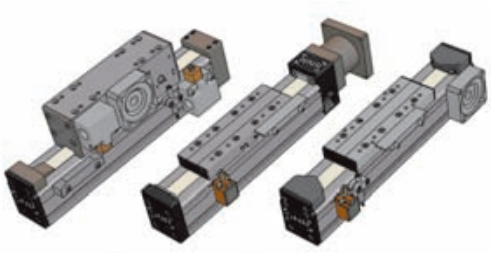
Device to linear axis AX

Please cross out/enter applicable



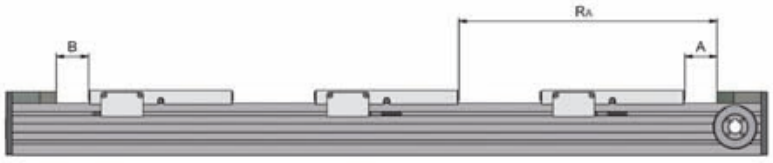
☐ Drive
☐ Switch

Built-in components left



☐ Drive
☐ Switch

Built-in components right



A/B = switching points in the end positions

A= _____ B= _____ or 2x motor rev, i=

RA= (reference) switching point (B side = RB, other=Sa, TA…)

RA= _____ RB= _____

without default the following setting applies: RA= neutral position, max. 1000mm

Free cable length initiator groove installation:

☐ 0,2 m ☐ 2 m
☐ 3 m ☐ > 3 m

☐ Plug box

☐ Mechanical end positions

☐ IP30
☐ IP67

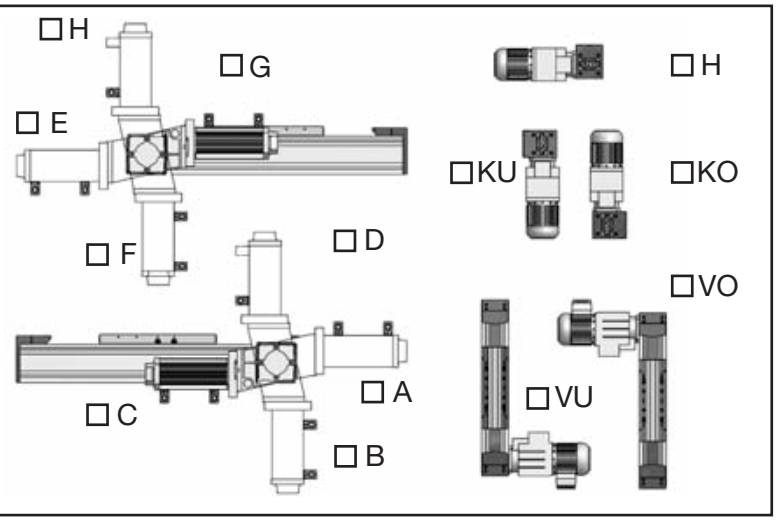
☐ Inductive limit switch

☐ Break contact NC (standard)
☐ Make contact NO

☐ Reference switch NO
☐ Switch mounting

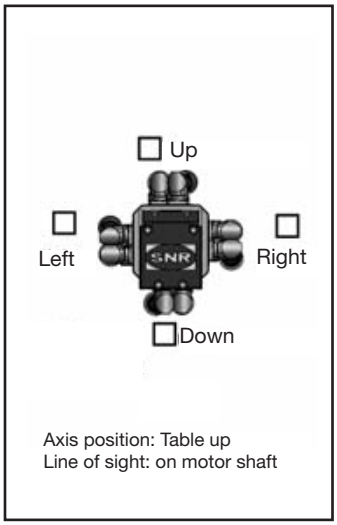
☐ PNP (standard)
☐ NPN

Montage des capteurs



Mounting position angular gear

Mounting position linear axis



Axis position: Table up
Line of sight: on motor shaft

Location motor connection

Notes