

5.4 AXDL Parallel Axis

5.4.1 AXDL_Z Parallel Axis with toothed belt drive

5.4.1.1 Structure

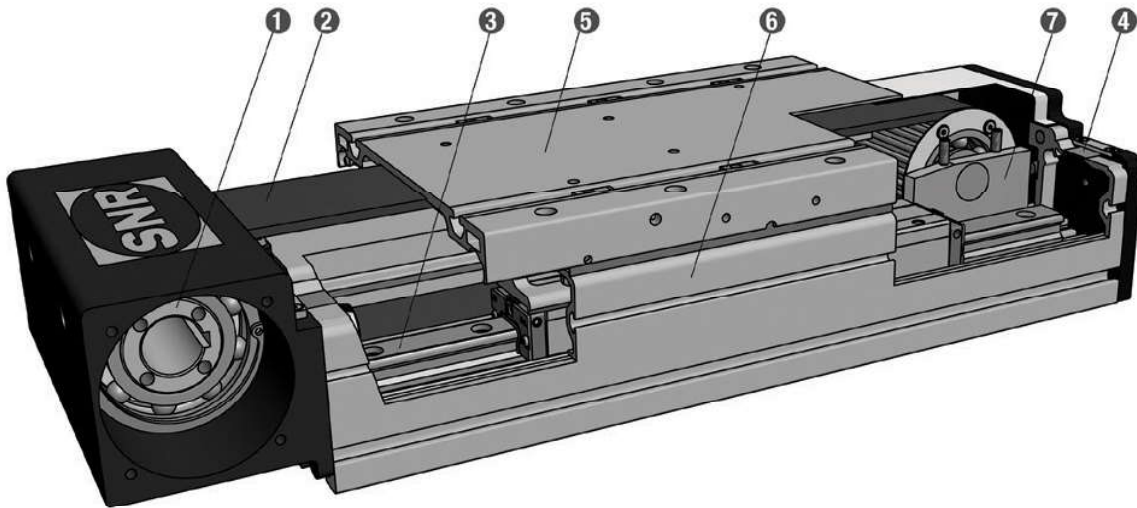
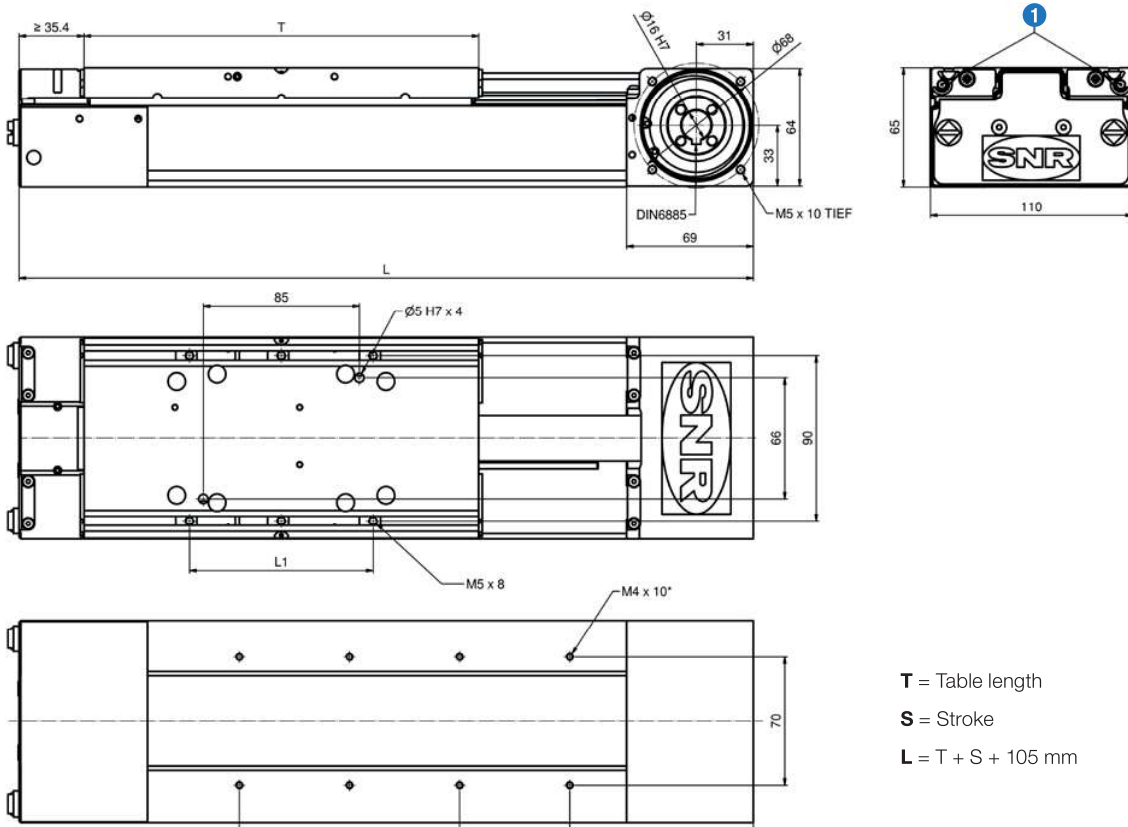


Figure 5.26__ Structure AXDL_Z

- ① Drive unit
- ② Toothed belt
- ③ Guiding system
- ④ Cover strip
- ⑤ Slider unit
- ⑥ Profile
- ⑦ Deflection pulley (AXDL110Z with deflection pulley head)

5.4.1.2 Dimensions / Technical data

AXDL110Z



T = Table length
S = Stroke
L = T + S + 105 mm

1 Re-greasing possibility on both sides

* Optional, note dimensions as a special specification

Technical data

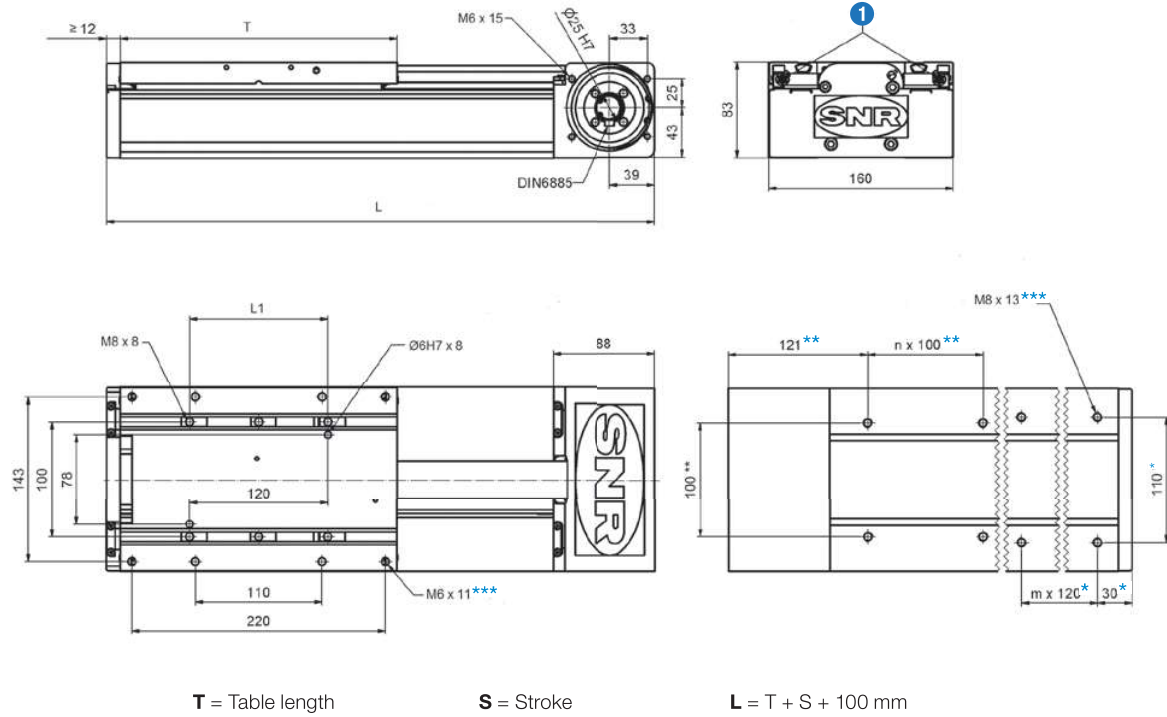
Guiding system		Linear guide D
Table length T	mm	215
Distance of the sliding blocks L1		≤ 200 mm (recommended 100 mm)
Drive element		Toothed belt 25STD5
Maximum velocity	m / min	300
Allowable dynamic operation load	N	980
Stroke per revolution	mm	170 ^{+0,5}
Idling speed torque	Nm	1,7
Maximum drive torque	Nm	26,5
Moment of inertia ¹	Kgcm ²	1,4
Geometrical moment of inertia (profile) I _y	cm ⁴	37,45
Geometrical moment of inertia (profile) I _z	cm ⁴	138,31
Maximum total length	m	6,1
Repeatability	mm	0,05

¹ - Moment of inertia without gearbox

Mass

Guiding system		Linear guide D
Basic mass (including slider mass)	kg	3,8
Mass per 100 mm stroke	kg	0,7
Slider mass	kg	0,9

AXDL160Z



① Re-greasing possibility on both sides

* Guiding system D: optional hole pattern, note dimensions as a special specification
 ** Guiding system L: optional hole pattern, note dimensions as a special specification
 *** Optional, note dimensions as a special specification

Technical data

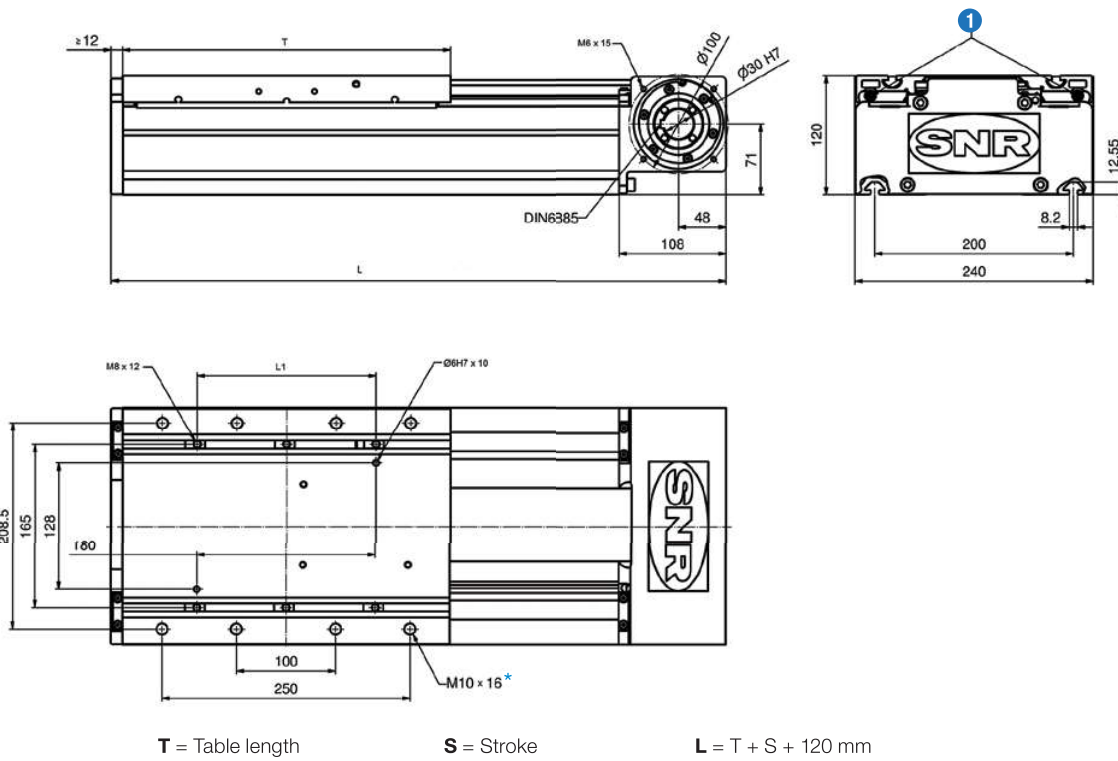
Guiding system		Linear guide D	Track roller guide L
Table length T	mm	240	280
Distance of the sliding blocks L1 (optional M6 threaded plate as special specification possible)		≤ 220 mm (recommended 120 mm)	≤ 280 mm (recommended 120 mm)
Drive element		Toothed belt 32STD8	
Maximum velocity	m /min	300	900
Allowable dynamic operation load	N	1 830	
Stroke per revolution	mm	216 ^{+0,5}	
Idling speed torque	Nm	3,6	
Maximum drive torque	Nm	62,9	
Moment of inertia ¹	Kgcm ²	5,8	
Geometrical moment of inertia (profile) I _y	cm ⁴	140,3	
Geometrical moment of inertia (profile) I _z	cm ⁴	666,8	
Maximum total length	m	6,1	
Repeatability	mm	0,05	

¹ : Moment of inertia without gearbox

Mass

Guiding system		Linear guide D	Track roller guide L
Basic mass (including slider mass)	kg	11,9	11,7
Mass per 100 mm stroke	kg	1,3	0,9
Slider mass	kg	3,6	3,6

AXDL240Z



① Re-greasing possibility on both sides

* Optional, note dimensions as a special specification

Technical data

Guiding system		Linear guide D	Linear guide E	Track roller guide L
Table length T	mm	330	500	330
Distance of the sliding blocks L1 (optional M10 threaded plate as special specification possible)		≤ 310 mm (recommended 180 mm)	≤ 480 mm (recommended 350 mm)	≤ 310 mm (recommended 180 mm)
Drive element		Toothed belt 75STD8		
Maximum velocity	m /min	300		900
Allowable dynamic operation load	N	5 000		
Stroke per revolution	mm	264 ^{+0.5}		
Idling speed torque	Nm	6,5		
Maximum drive torque	Nm	210,0		
Moment of inertia ¹	Kgcm ²	24,3		
Geometrical moment of inertia (profile) I _y	cm ⁴	751,7		
Geometrical moment of inertia (profile) I _z	cm ⁴	3 956,0		
Maximum total length	m	6,35		
Repeatability	mm	0,05		

¹ - Moment of inertia without gearbox

Mass

Guiding system		Linear guide D	Linear guide E	Track roller guide L
Basic mass (including slider mass)	kg	24,9	28,0	24,3
Mass per 100 mm stroke	kg	2,7	2,7	2,2
Slider mass	kg	5,7	8,8	6,6

5.4.1.3 Maximum static load capacity

Type	Guiding system	Load [N]		Load moment [Nm]		
		F_y	F_z	M_x	M_y	M_z
AXDL110Z	D	7 900	7 900	275	375	375
AXDL160Z	D	32 000	32 000	1 600	1 650	1 650
	L	1 200	1 200	62	84	84
AXDL240Z	D	42 500	42 500	3 550	3 900	3 900
	E	42 500	42 500	3 550	8 750	8 750
	L	2 600	2 600	220	210	210

5.4.1.4 Dynamic load capacity

The dynamic load capacities of the guiding systems are based on a nominal life time of 50 000 km.

Type	Guiding system	Load [N]		Load moment [Nm]		
		F_y	F_z	M_x	M_y	M_z
AXDL110Z	D	2 300	2 300	80	110	110
AXDL160Z	D	9 000	9 000	475	475	475
	L	1 200	1 200	62	84	84
AXDL240Z	D	12 500	12 500	1 050	1 200	1 200
	E	12 500	12 500	1 200	2 500	2 500
	L	2 600	2 600	220	210	210

