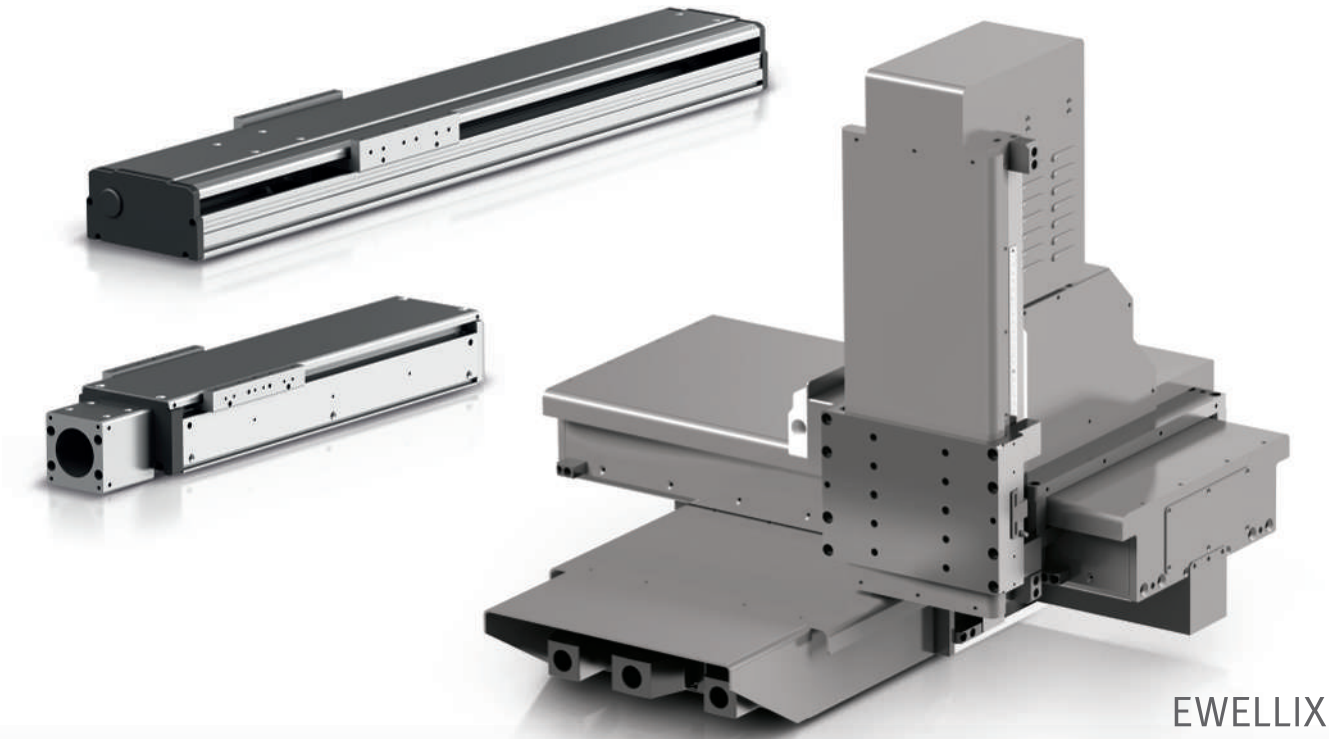

EWELLIX Linear Modules

CLSM, HLSM

Technical Product Information

We pioneer motion

SCHAEFFLER

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1 Standard Linear Modules CLSM

1.1 Product characteristics

Standard linear modules CLSM are designed for use in automation applications as well as in automotive applications. They consist of 2 profile rail guides, each with 2 carriages, and are designed to provide maximum rigidity and stability. The standard linear modules are available with a wide range of ball screws or lead screws, linear motors, and belt drives to ensure a high level of speed and positioning accuracy. The cover is available in aluminum, polyurethane, stainless steel, or steel.

Features

- compact design with ball screws or lead screw
- aluminum or steel as base material
- optional external mechanical brake (CLSM 92)
- inline gear box and parallel gear box
- customer-specific motor adapter
- various cover options for most applications

Benefits

- high load carrying capacity and long service life
- precise alignment and secure location
- easy maintenance via optional external lubrication port
- suitable for most brushless DC motors and servomotors

1 Overview

1	CLSM-92, lead screw or ball screw, stainless steel cover	2	CLSM-150-B...S, ball screw, steel cover
3	CLSM-150-B...A, ball screw, aluminum cover	4	CLSM-150-P...A, ball screw, aluminum cover
5	CLSM-150-B...P, ball screw, PU strip cover	6	CLSM-150-L...A, linear motor, aluminum cover

1 Performance overview – linear modules, rail guide, and ball bearings

Description	Symbol	Unit	CLSM-92-T	CLSM-92-B	CLSM-150-B...A	CLSM-150-B...P	CLSM-150-B...S
Performance data							
Max. capacity under dynamic load	C_{max}	N	31320	31320	67456	67456	67456
Max. capacity under static load	C_{0max}	N	36000	36000	98200	98200	98200
Max. dynamic moment M_x	Mxc_{max}	Nm	783	783	2901	2901	2901
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	1472	1472	2901	2901	2901
Mechanical data							
Rail guide profile	–	–	Size 15	Size 15	Size 20	Size 20	Size 20
Drive type	–	–	Lead screw	Ball bearing	Ball bearing	Ball bearing	Ball bearing
Stroke	s	mm	50 ... 800	50 ... 800	50 ... 1800	50 ... 1800	50 ... 1800
Repeatability (same direction and load)	–	mm	±0.07	±0.01	±0.01	±0.01	±0.01
Base material	–	–	Steel or aluminum	Steel or aluminum	Aluminum profile	Aluminum profile	Aluminum profile
External material	–	–	Stainless steel	Stainless steel	Aluminum profile	PU strip	Steel

2 Performance overview – linear modules, belt

Description	Symbol	Unit	CLSM-150-P...A
Performance data			
Max. belt tension	–	N	960
Max. belt thrust force	–	N	4500
Max. dynamic moment M_x	Mxc_{max}	Nm	2901
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	2901
Mechanical data			
Rail guide profile	–	–	Size 15
Drive type	–	–	Linear motor
Stroke	s	mm	50 ... 3000
Repeatability (same direction and load)	–	mm	±0.002
Base material	–	–	Aluminum profile
External material	–	–	Aluminum profile

3 Performance overview – linear modules, linear motor

Description	Symbol	Unit	CLSM-150-L...A
Performance data			
Linear motor force	F_{max}	N	220
Load capacity	m	kg	20
Straightness	–	µm/m	$\pm^{10}/_{300}$
Flatness	–	µm/m	$\pm^{10}/_{300}$
Mechanical data			
Rail guide profile	–	–	Size 20
Drive type	–	–	Toothed belt
Stroke	s	mm	50 ... 3000
Repeatability (same direction and load)	–	mm	±0.08
Base material	–	–	Aluminum profile
External material	–	–	Aluminum profile

1

1.2 Technical data

1.2.1 CLSM-92-T

Lead screw, steel cover

2 CLSM-92-T

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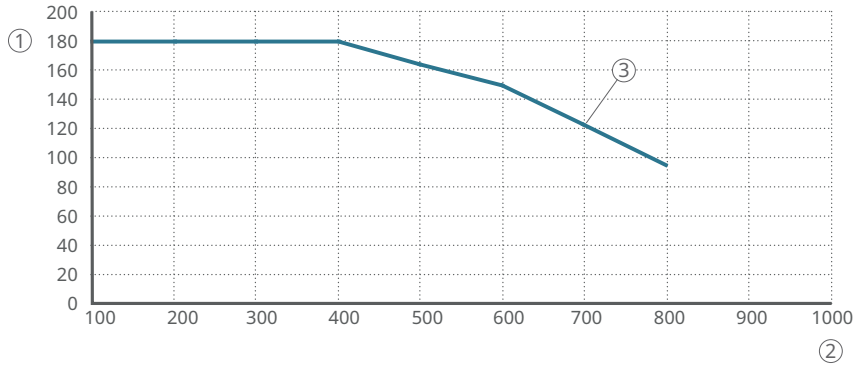
4 Technical data

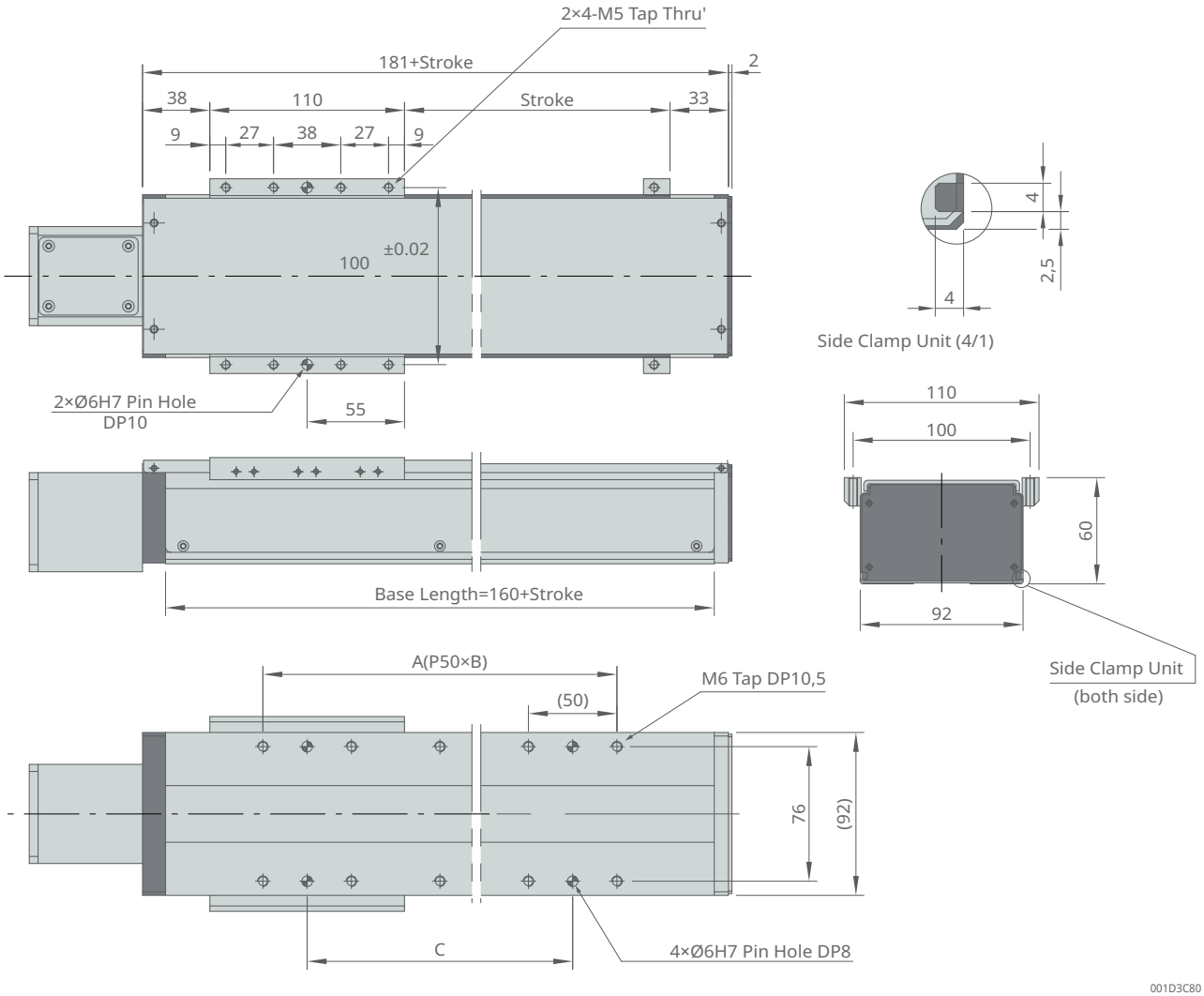
Description	Symbol	Unit	CLSM-92-T
Performance data			
Max. capacity under dynamic load	C_{max}	N	31320
Max. capacity under static load	C_{0max}	N	36000
Max. dynamic moment M_x	Mxc_{max}	Nm	783
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	1472
Max. input torque	T_{max}	Nm	9
Max. linear speed	V_{max}	mm/s	180
Max. rotational speed	n_{max}	min^{-1}	3600 (PV = 0.1)
Max. acceleration	a_{max}	m/s^2	1
Work cycle	D_{unit}	%	60
Mechanical data			
Rail guide profile	–	–	Size 15
Drive type	–	–	Lead screw
Drive diameter	d_{screw}	mm	14
Screw guidance	P_{screw}	mm	3
Guidance accuracy	–		Not applicable
Stroke	s	mm	50 ... 800
Repeatability (same direction and load)	–	mm	±0.07
Weight at 0 mm stroke, aluminum base	m_{lu}	kg	4.7
Δ weight per 100 mm stroke, aluminum base	Δm	kg	0.8
Weight at 0 mm stroke, steel base	m_{lu}	kg	5.1
Δ weight per 100 mm stroke, steel base	Δm	kg	1.2
Base material	–	–	Steel or aluminum
External material	–	–	Stainless steel
Ambient conditions			
Ambient temperature	$T_{ambient}$	°C	0 ... +50
Max. humidity	φ	%	95

3 CLSM-92-T, performance diagram



1	Linear speed (mm/s)	2	Stroke (mm)
3	CLSM-92-T03		

4 CLSM-92-T, dimensional drawing



1.2.2 CLSM-92-B

Ball screw, stainless steel cover

5 CLSM-92-B

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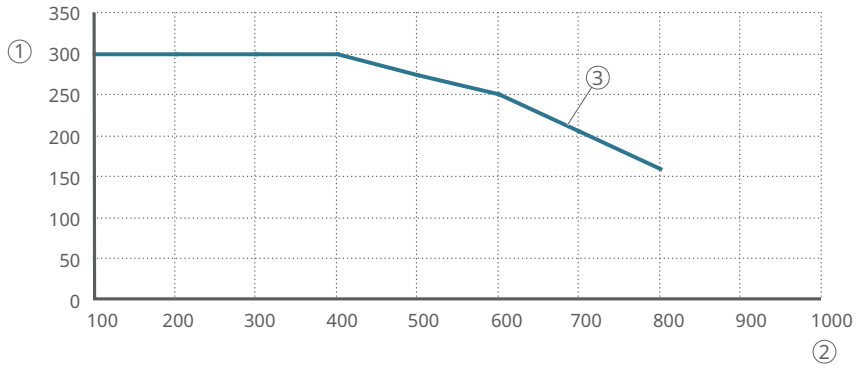
5 Technical data

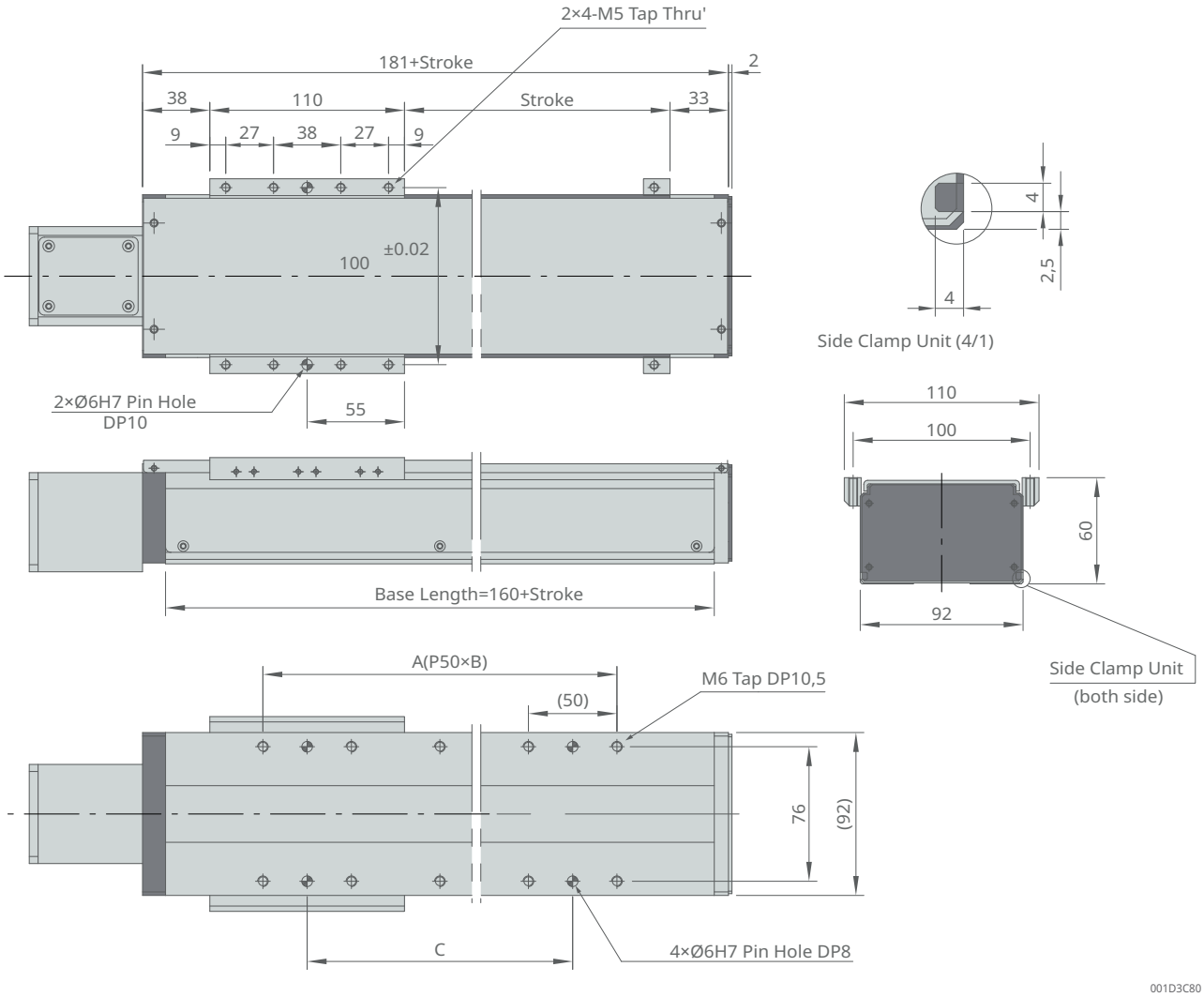
Description	Symbol	Unit	CLSM-92-B
Performance data			
Max. capacity under dynamic load	C_{max}	N	31320
Max. capacity under static load	C_{0max}	N	36000
Max. dynamic moment M_x	Mxc_{max}	Nm	783
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	1472
Max. input torque	T_{max}	Nm	3
Max. linear speed	V_{max}	mm/s	300
Max. rotational speed	n_{max}	min^{-1}	3600
Max. acceleration	a_{max}	m/s^2	6
Work cycle	D_{unit}	%	100
Mechanical data			
Rail guide profile	–	–	Size 15
Drive type	–	–	Ball screw
Drive diameter	d_{screw}	mm	12
Screw guidance	P_{screw}	mm	5
Guidance accuracy	–	–	G7
Stroke	s	mm	50 ... 800
Repeatability (same direction and load)	–	mm	±0.01
Weight at 0 mm stroke, aluminum base	m_{lu}	kg	4.7
Δ weight per 100 mm stroke, aluminum base	Δm	kg	0.8
Weight at 0 mm stroke, steel base	m_{lu}	kg	5.1
Δ weight per 100 mm stroke, steel base	Δm	kg	1.2
Base material	–	–	Steel or aluminum
External material	–	–	Stainless steel
Ambient conditions			
Ambient temperature	$T_{ambient}$	°C	0 ... +50
Max. humidity	φ	%	95

6 CLSM-92-B, performance diagram



1	Linear speed (mm/s)	2	Stroke (mm)
3	CLSM-92-B05		

7 CLSM-92-B, dimensional drawing



1.2.3 CLSM-150-B...A

Ball screw, PU cover

8 CLSM-150-B...A

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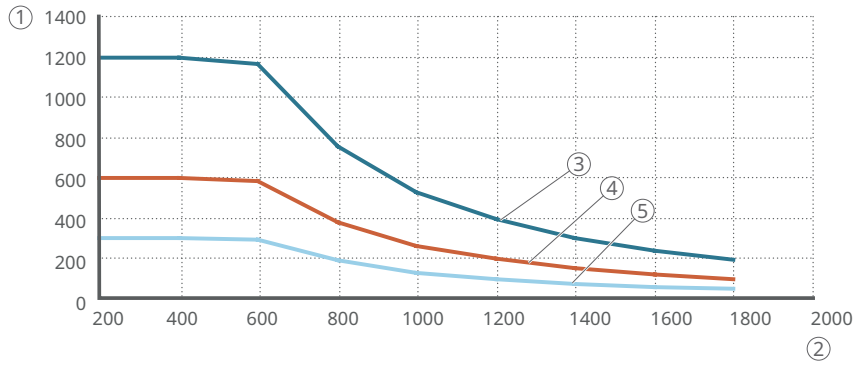
6 Technical data

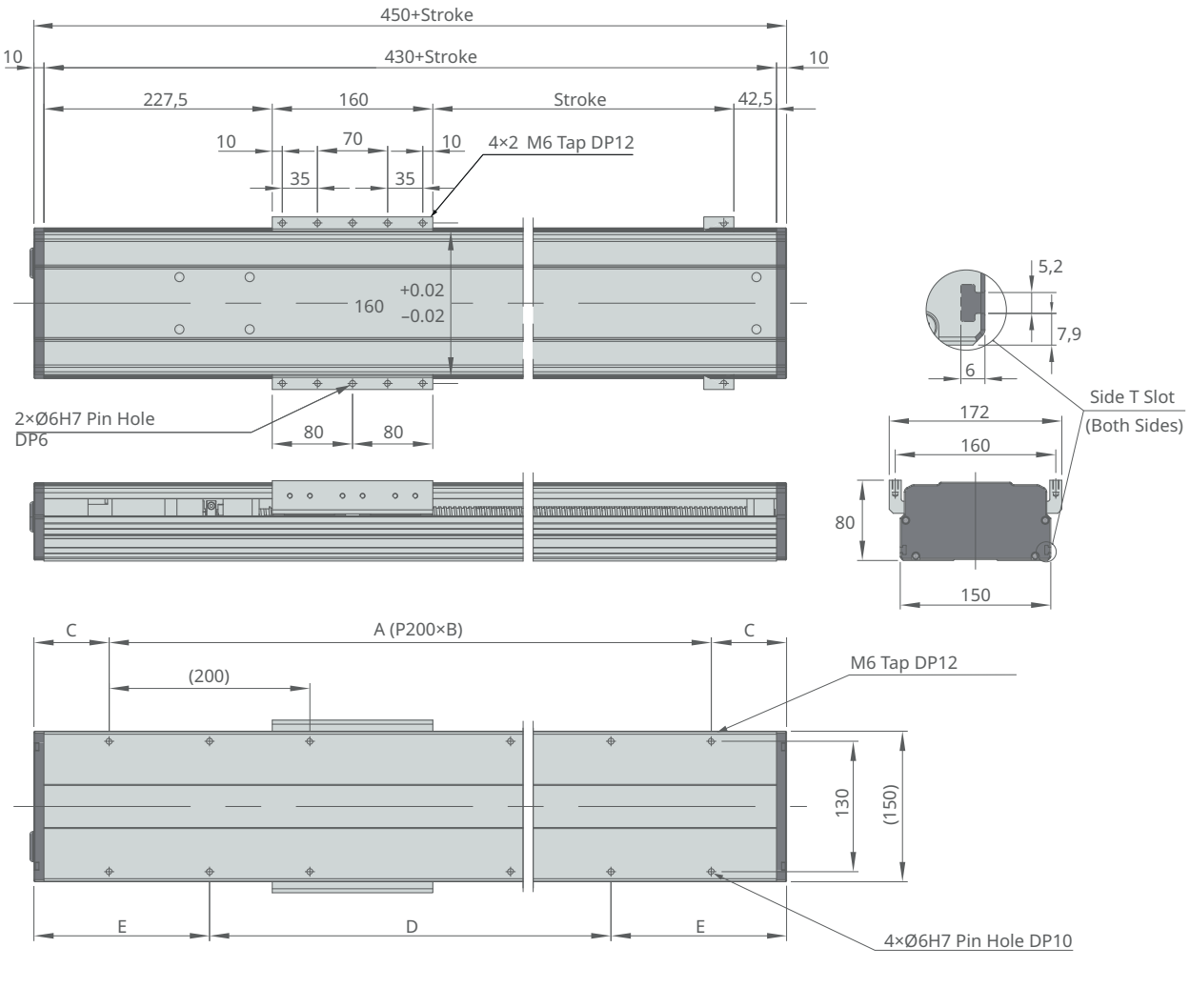
Description	Symbol	Unit	CLSM-150-B...A
Performance data			
Max. capacity under dynamic load	C_{max}	N	67456
Max. capacity under static load	C_{0max}	N	98200
Max. dynamic moment M_x	Mxc_{max}	Nm	2901
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	2901
Max. input torque	T_{max}	Nm	10
Max. linear speed	V_{max}	mm/s	1200
Max. rotational speed	n_{max}	min^{-1}	3600
Max. acceleration	a_{max}	m/s^2	10
Work cycle	D_{unit}	%	100
Mechanical data			
Rail guide profile	–	–	Size 20
Drive type	–	–	Ball screw
Drive diameter	d_{screw}	mm	20
Screw guidance	P_{screw}	mm	5 or 10 or 20
Guidance accuracy	–	–	G7
Stroke	s	mm	50 ... 1800
Repeatability (same direction and load)	–	mm	±0.01
Weight at 0 mm stroke	m_{lu}	kg	10
Δ weight per 100 mm stroke	Δm	kg	1.4
Base material	–	–	Aluminum profile
External material	–	–	Aluminum profile
Ambient conditions			
Ambient temperature	$T_{ambient}$	°C	0 ... +50
Max. humidity	φ	%	95

9 CLSM-150-B..A, performance diagram



1	Linear speed [mm/s]	2	Stroke (mm)
3	CLSM-150-B20...A	4	CLSM-150-B10...A
5	CLSM-150-B05...A		

10 CLSM-150-B...A, dimensional drawing



1.2.4 CLSM-150-B...P

Ball screw, PU cover

11 CLSM-150-B...P

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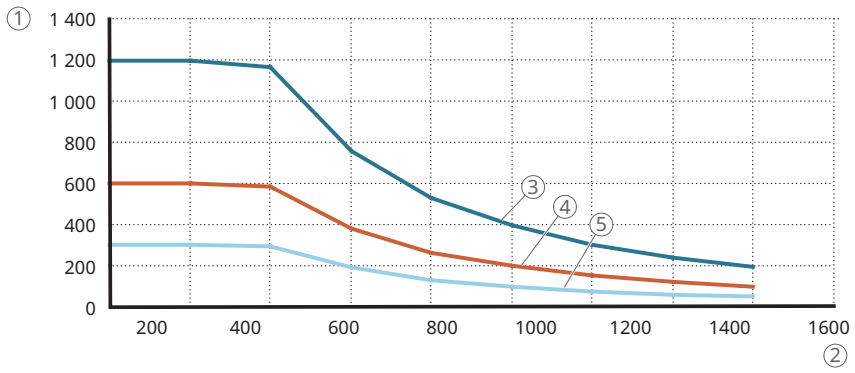
7 Technical data

Description	Symbol	Unit	CLSM-150-B...P
Performance data			
Max. capacity under dynamic load	C_{max}	N	67456
Max. capacity under static load	C_{0max}	N	98200
Max. dynamic moment M_x	Mxc_{max}	Nm	2901
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	2901
Max. input torque	T_{max}	Nm	10
Max. linear speed	V_{max}	mm/s	1200
Max. rotational speed	n_{max}	min^{-1}	3600
Max. acceleration	a_{max}	m/s^2	10
Work cycle	D_{unit}	%	100
Mechanical data			
Rail guide profile	–	–	Size 20
Drive type	–	–	Ball screw
Drive diameter	d_{screw}	mm	20
Screw guidance	P_{screw}	mm	5 or 10 or 20
Guidance accuracy	–	–	G7
Stroke	s	mm	50 ... 1800
Repeatability (same direction and load)	–	mm	±0.01
Weight at 0 mm stroke	m_{lu}	kg	9
Δ weight per 100 mm stroke	Δm	kg	1.3
Base material	–	–	Aluminum profile
External material	–	–	PU strip
Ambient conditions			
Ambient temperature	$T_{ambient}$	°C	0 ... +50
Max. humidity	φ	%	95

12 CLSM-150-B...P, performance diagram



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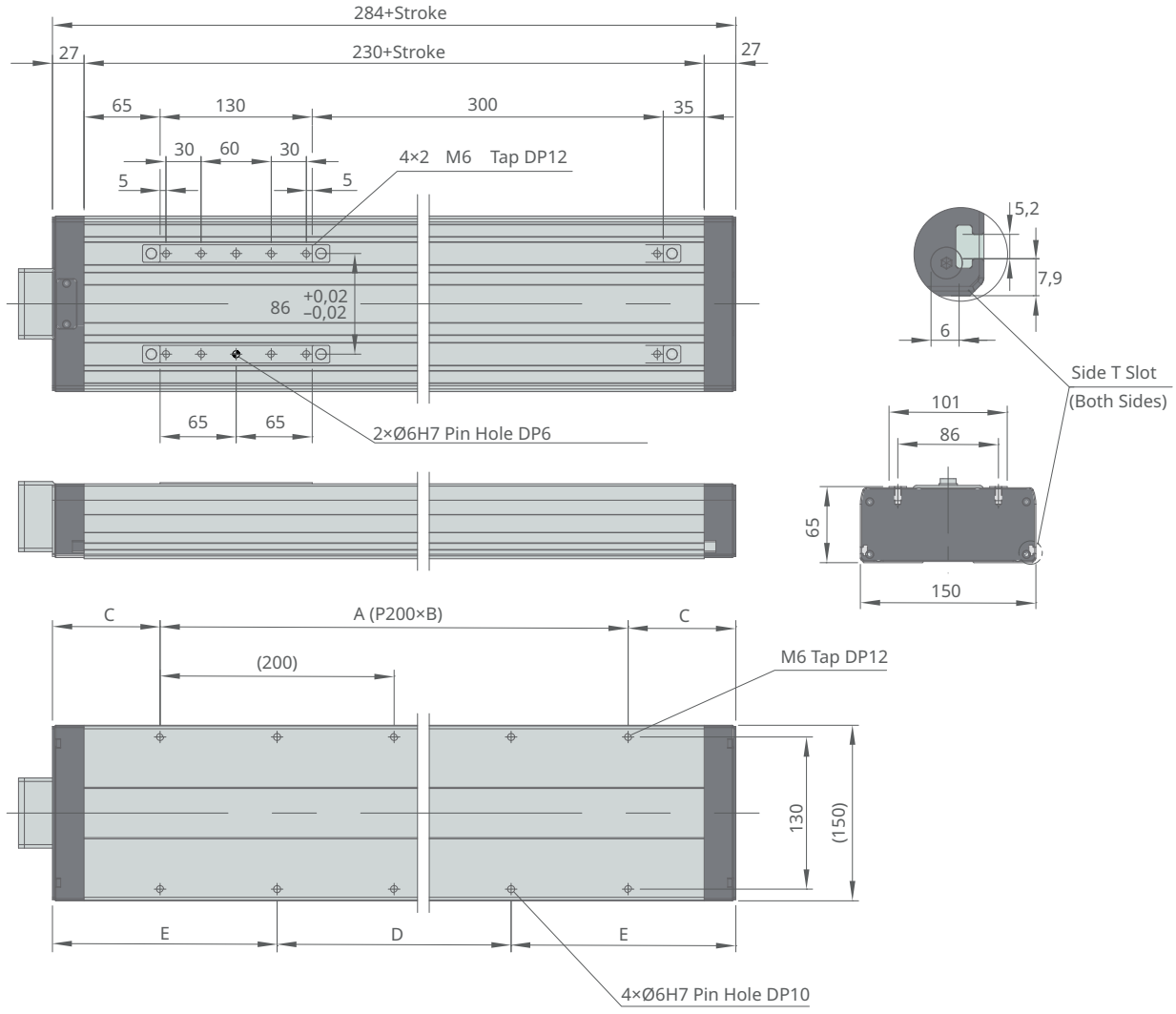
1	Linear speed (mm/s)	2	Stroke (mm)
3	CLSM-150-B20...P	4	CLSM-150-B10...P
5	CLSM-150-B05...P		

13 CLSM-150-B...P, dimensional drawing



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1.2.5 CLSM-150-B...S

Ball screw, steel cover

14 CLSM-150-B...S

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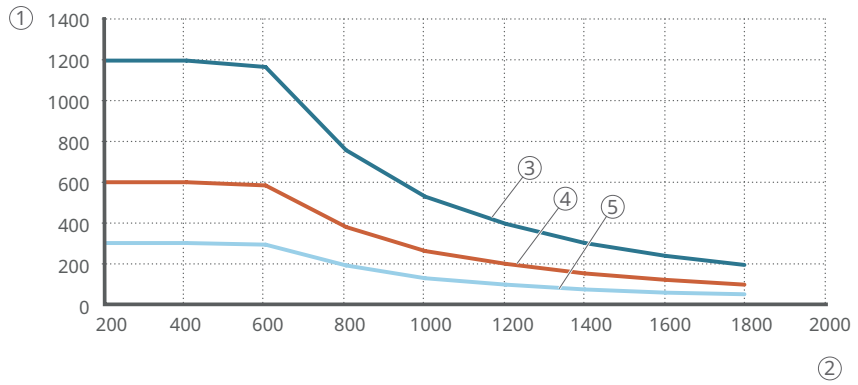
8 Technical data

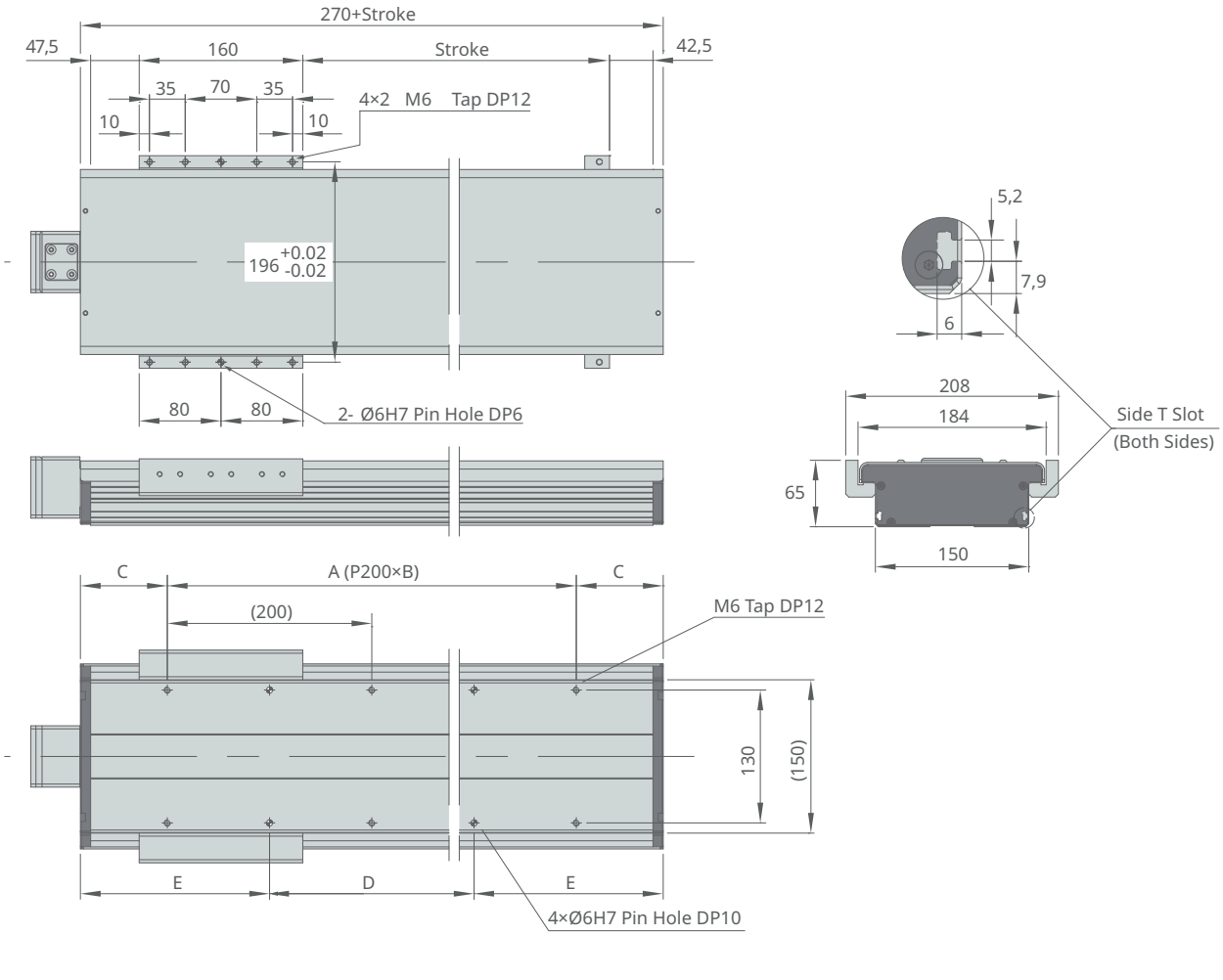
Description	Symbol	Unit	CLSM-150-B...S
Performance data			
Max. capacity under dynamic load	C_{max}	N	67456
Max. capacity under static load	C_{0max}	N	98200
Max. dynamic moment M_x	Mxc_{max}	Nm	2901
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	2901
Max. input torque	T_{max}	Nm	10
Max. linear speed	V_{max}	mm/s	1200
Max. rotational speed	n_{max}	min^{-1}	3600
Max. acceleration	a_{max}	m/s^2	10
Work cycle	D_{unit}	%	100
Mechanical data			
Rail guide profile	–	–	Size 20
Drive type	–	–	Ball screw
Drive diameter	d_{screw}	mm	20
Screw guidance	P_{screw}	mm	5 or 10 or 20
Accuracy	–	–	G7
Stroke	s	mm	50 ... 1800
Repeatability (same direction and load)	–	mm	±0.01
Weight at 0 mm stroke	m_{lu}	kg	11
Δ weight per 100 mm stroke	Δm	kg	1.5
Base material	–	–	aluminum
External material	–	–	Steel
Ambient conditions			
Ambient temperature	$T_{ambient}$	°C	0 ... +50
Max. humidity	φ	%	95

15 CLSM-150-B...S, performance diagram



1	Linear speed (mm/s)	2	Stroke (mm)
3	CLSM-150-B20...S	4	CLSM-150-B10...S
5	CLSM-150-B05...S		

16 CLSM-150-B...S, dimensional drawing



1.2.6 CLSM-150-P...A

Ball screw, steel cover

17 CLSM-150-P...A

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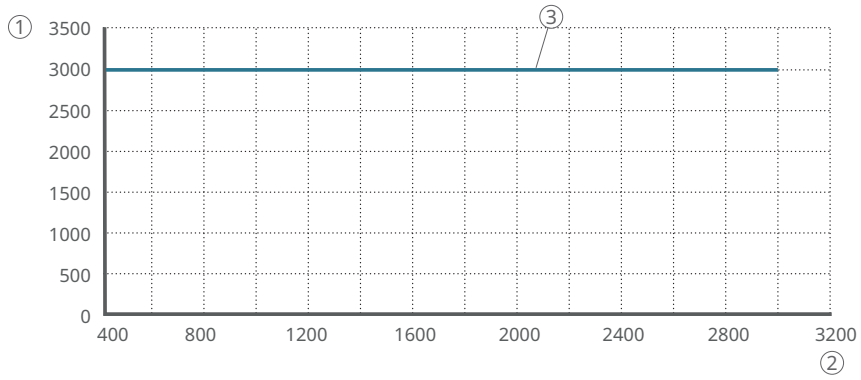
9 Technical data

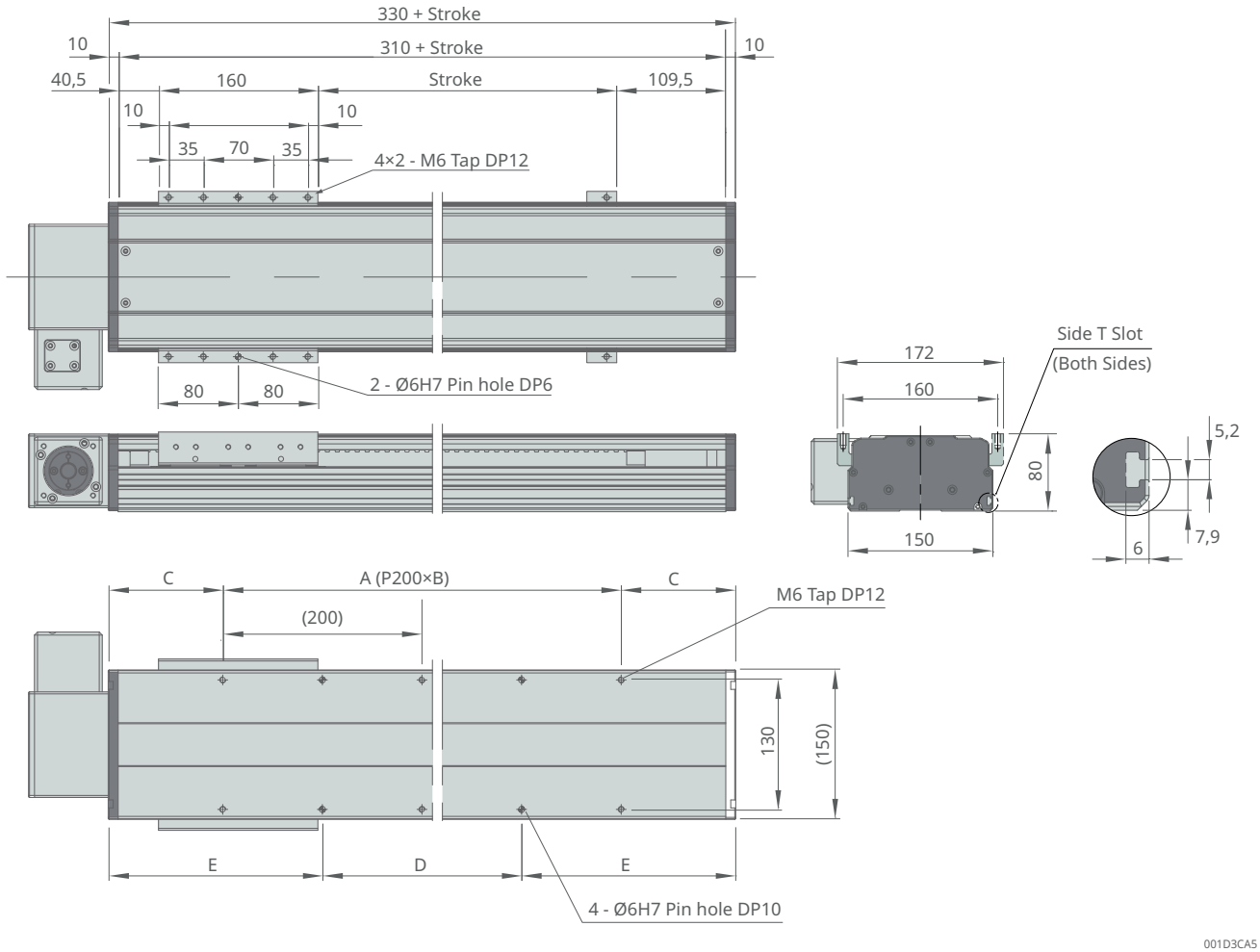
Description	Symbol	Unit	CLSM-150-P...A
Performance data			
Max. belt tension	C_{max}	N	67456
Max. belt tensile force	C_{0max}	N	98200
Max. dynamic moment M_x	Mxc_{max}	Nm	2901
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	2901
Max. linear speed	V_{max}	mm/s	3000
Max. rotational speed	n_{max}	min^{-1}	3600
Max. acceleration	a_{max}	m/s^2	5
Work cycle	D_{unit}	%	100
Mechanical data			
Rail guide profile	–	–	Size 20
Belt type	–	–	Toothed belt
Belt pulley (deviation/width)	–	mm	10/40
Stroke	s	mm	50 ... 3000
Repeatability (same direction and load)	–	mm	±0.08
Weight at 0 mm stroke	m_{lu}	kg	10
Δ weight per 100 mm stroke	Δm	kg	1.2
Base material	–	–	Aluminum profile
External material	–	–	Aluminum profile
Ambient conditions			
Ambient temperature	$T_{ambient}$	°C	0 ... +50
Max. humidity	φ	%	95

18 CLSM-150-P...A, performance diagram



1	Linear speed (mm/s)	2	Stroke (mm)
3	CLSM-150-P40...A		

19 CLSM-150-P...A, dimensional drawing



1.2.7 CLSM-150-L...A

Linear motor, aluminum cover

20 CLSM-150-L...A

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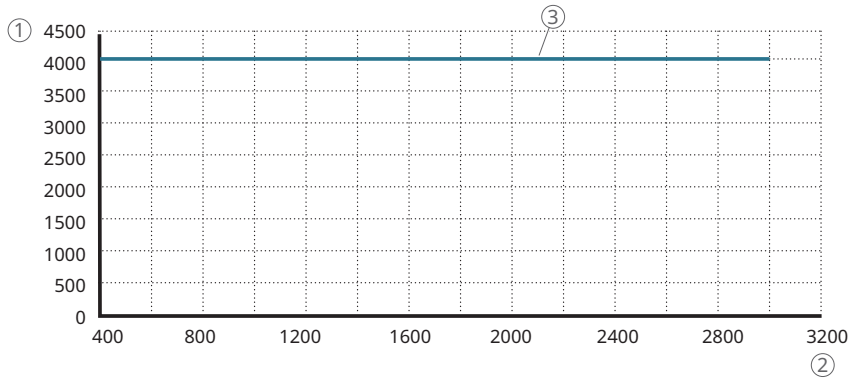
10 Technical data

Description	Symbol	Unit	CLSM-150-L...A
Performance data			
Max. linear motor force	F_{max}	N	220
Load capacity (adjustable)	m	kg	20 (0.5g)
Linear scale (grating pitch)	–	µm	40
Linear encoder resolution	–	µm/ct	1
Straightness	–	µm/m	$\pm^{10}/_{300}$
Flatness	–	µm/m	$\pm^{10}/_{300}$
Max. linear speed	V_{max}	m/s	4
Max. acceleration	a_{max}	m/s^2	40
Cleanliness	–	Class	1000
Work cycle	D_{unit}	%	100
Mechanical data			
Rail guide profile	–	–	Size 15
Linear motor type	–	–	Flat iron core
Linear encoder type	–	–	Optical and incremental type
Stroke	s	mm	50 ... 3000
Repeatability with same direction and load	–	mm	±0.002
Weight at 0 mm stroke	m_{lu}	kg	13.5
Δ weight per 100 mm stroke	Δm	kg	3.2
Base material	–	–	Aluminum profile
External material	–	–	Aluminum profile
Ambient conditions			
Ambient temperature	$T_{ambient}$	°C	0 ... +50
Max. humidity	φ	%	95

21 CLSM-150-L...A, performance diagram



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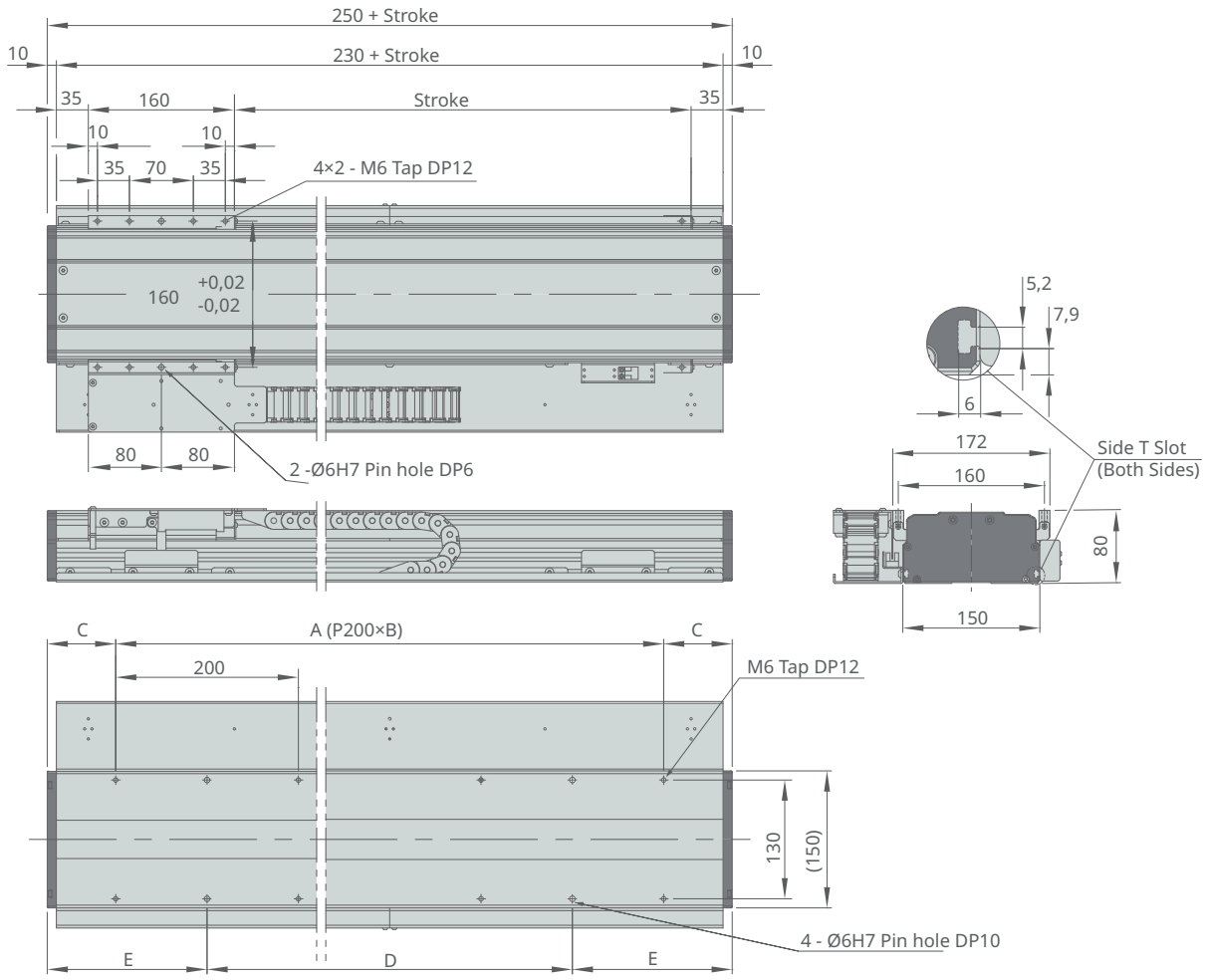
1	Linear speed (mm/s)	2	Stroke (mm)
3	CLSM-150-L22...A		

22 CLSM-150-L...A, dimensional drawing



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2 Configurable linear modules CLSM and HLSM

2.1 Product characteristics

CLSM-080-B

Features

- compact design with precision rail guide and high-precision ball screw
- aluminum or steel as base material
- PU cover

Benefits

- very high load carrying capacity with a small profile cross section
- very high running accuracy
- low friction
- longer service life compared to profile rail guides
- higher rigidity
- suitable for harsh ambient conditions

CLSM-100, CLSM-120, CLSM-170
HLSM-280, HLSM-330, HLSM-340, HLSM-380

Features

- ready-to-use heavy-duty solution
- designed for automotive applications and heavy industry
- high resistance to deflection
- high positioning accuracy and repeatability due to high-precision ball screws and profile rail guides

Benefits

- easy integration into the machine design
- solution for heavy-duty applications
- easy maintenance via optional external lubrication port
- suitable for most brushless DC motors and servomotors
- developed and validated for demanding automotive applications
- configurable to customer-specific requirements

11 Performance overview – linear modules CLSM, lead screw, and ball screw guidance

Description	Symbol	Unit	CLSM-080-B	CLSM-100-B	CLSM-100-T	CLSM-120-B	CLSM-120-T	CLSM-170-B
Performance data								
Max. capacity under dynamic load	C_{max}	N	34000	45496	45496	67456	67456	100694
Max. capacity under static load	C_{0max}	N	39000	61600	61600	98200	98200	122800
Max. dynamic moment M_x	Mxc_{max}	Nm	612	1319	1319	2294	2294	5739
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	646	2502	2502	4385	4385	4481
Max. linear speed	V_{max}	mm/s	250	250	150	250, 500	150	250, 500
Max. rotational speed	n_{max}	min^{-1}	3000	3000	3000	3000	3000	3000
Work cycle	D_{unit}	%	100	100	60	100	60	100
Mechanical data								
Rail guide profile	–	–	Size 6	Size 15	Size 15	Size 20	Size 20	Size 25
Drive type	–	–	Ball screw	Ball screw	Lead screw	Ball screw	Lead screw	Ball screw
Drive diameter	d_{screw}	mm	16	16	14	16	16	25
Screw guidance	P_{screw}	mm	5	5	3	5 or 10	3	5 or 10
Stroke	s	mm	50 ... 300	50 ... 800	50 ... 800	50 ... 800	50 ... 800	50 ... 800
Base material option	–	–	Steel or aluminum	Steel or aluminum	Steel or aluminum	Steel or aluminum	Steel or aluminum	Steel or aluminum
External material option	–	–	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Ambient conditions								
Ambient temperature	$T_{ambient}$	°C	0 ... +50	0 ... +50	0 ... +50	0 ... +50	0 ... +50	0 ... +50
Max. humidity	φ	%	95	95	95	95	95	95

12 Performance overview – linear modules HLSM, lead screw, and ball screw guidance

Description	Symbol	Unit	HLSM-280-B	HLSM-330-B	HLSM-340-B	HLSM-380-B
Performance data						
Max. capacity under dynamic load	C_{max}	N	67456	67456	100692	100692
Max. capacity under static load	C_{0max}	N	98200	98200	122800	122800
Max. dynamic moment M_x	Mxc_{max}	Nm	6273	7960	12083	14097
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	4317	5666	6444	8962
Max. linear speed	V_{max}	mm/s	250	250	250	250
Max. rotational speed	n_{max}	min^{-1}	3000	3000	3000	3000
Work cycle	D_{unit}	%	100	100	100	100
Mechanical data						
Rail guide profile	–	–	Size 20	Size 20	Size 25	Size 25
Drive type	–	–	Ball screw	Ball screw	Ball screw	Ball screw
Drive diameter	d_{screw}	mm	16	16	25	25
Screw guidance	P_{screw}	mm	5	5	5	5
Stroke	s	mm	100 ... 800	100 ... 800	100 ... 800	100 ... 800
Base material option	–	–	Steel or aluminum	Steel or aluminum	Steel or aluminum	Steel or aluminum
External material option	–	–	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Ambient conditions						
Ambient temperature	$T_{ambient}$	°C	0 ... +50	0 ... +50	0 ... +50	0 ... +50
Max. humidity	φ	%	95	95	95	95

2.2 Technical data

2.2.1 CLSM-080-B...S

Ball screw, stainless steel cover

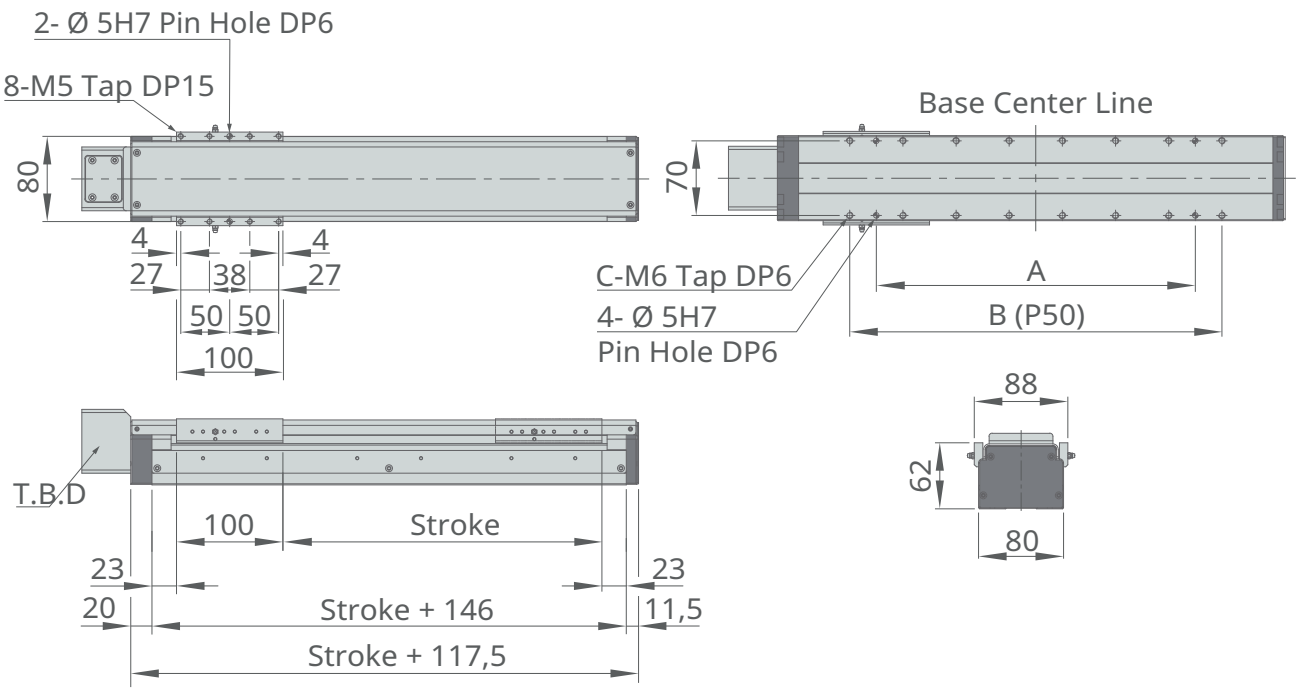
23 CLSM-080-B...S

001D3CB6

13 Technical data

Description	Symbol	Unit	CLSM-080-B
Performance data			
Max. capacity under dynamic load	C_{max}	N	34000
Max. capacity under static load	C_{0max}	N	39000
Max. dynamic moment M_x	Mxc_{max}	Nm	612
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	646
Max. linear speed	V_{max}	mm/s	250
Max. rotational speed	n_{max}	min^{-1}	3000
Work cycle	D_{unit}	%	100
Mechanical data			
Rail guide profile	–	–	Size 6
Drive type	–	–	Ball screw
Drive diameter	d_{screw}	mm	16
Screw guidance	P_{screw}	mm	5
Stroke	s	mm	50 ... 300
Base material option	–	–	Steel or aluminum
External material	–	–	Stainless steel
Ambient conditions			
Ambient temperature	$T_{ambient}$	°C	0 ... +50
Max. humidity	φ	%	95

24 CLSM-080-B...S, dimensional drawing



2.2.2 CLSM-100-B...S

Ball screw, stainless steel cover

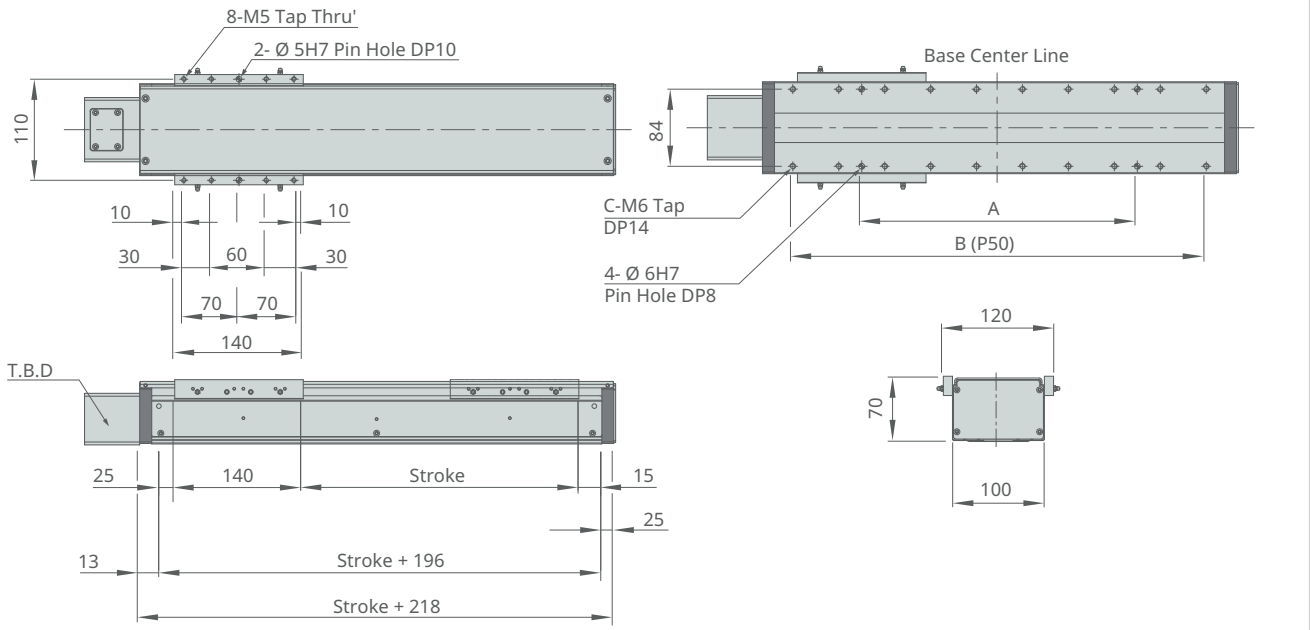
25 CLSM-100-B...S

001D3CC0

14 Technical data

Description	Symbol	Unit	CLSM-100-B
Performance data			
Max. capacity under dynamic load	C_{max}	N	45496
Max. capacity under static load	C_{0max}	N	61600
Max. dynamic moment M_x	Mxc_{max}	Nm	1319
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	2502
Max. linear speed	V_{max}	mm/s	250
Max. rotational speed	n_{max}	min^{-1}	3000
Work cycle	D_{unit}	%	100
Mechanical data			
Rail guide profile	–	–	Size 15
Drive type	–	–	Ball screw
Drive diameter	d_{screw}	mm	16
Screw guidance	P_{screw}	mm	5
Stroke	s	mm	50 ... 800
Base material, options	–	–	Steel or aluminum
External material	–	–	Stainless steel
Ambient conditions			
Ambient temperature	$T_{ambient}$	°C	0 ... +50
Max. humidity	φ	%	95

26 CLSM-100-B...S, dimensional drawing



2.2.3 CLSM-100-T...S

Lead screw, steel cover

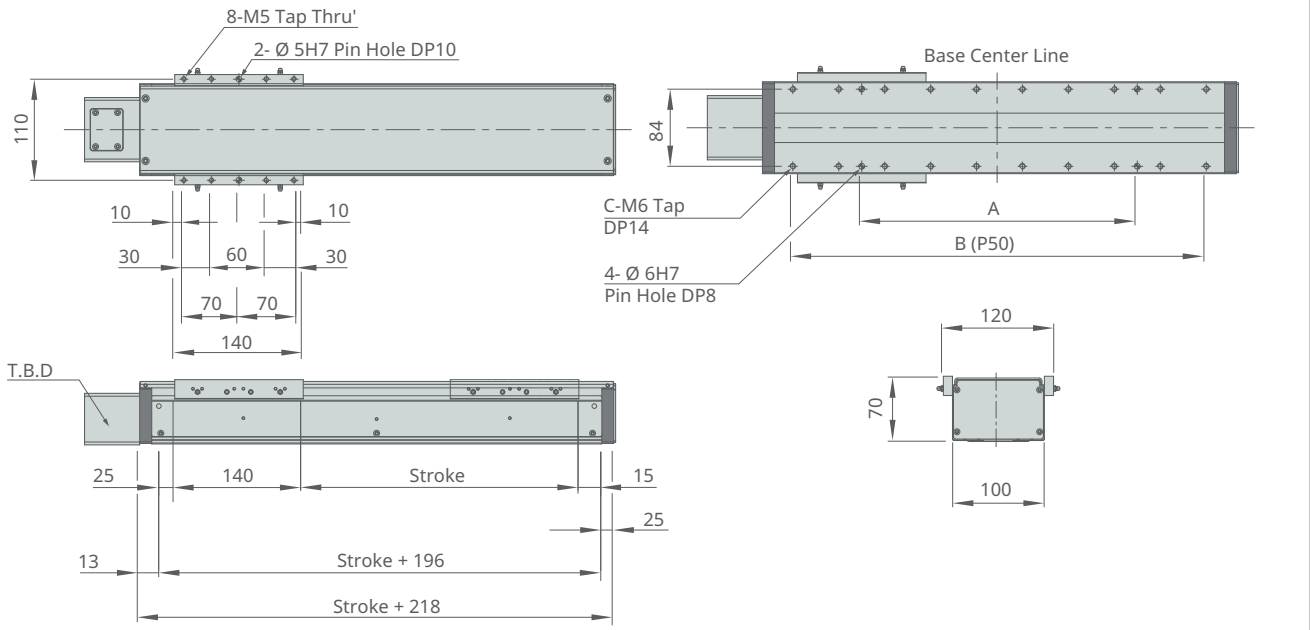
27 CLSM-100-T...S

001D3CC0

15 Technical data

Description	Symbol	Unit	CLSM-100-T
Performance data			
Max. capacity under dynamic load	C_{max}	N	45496
Max. capacity under static load	C_{0max}	N	61600
Max. dynamic moment M_x	Mxc_{max}	Nm	1319
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	2502
Max. linear speed	V_{max}	mm/s	150
Max. rotational speed	n_{max}	min^{-1}	3000
Work cycle	D_{unit}	%	60
Mechanical data			
Rail guide profile	–	–	Size 15
Drive type	–	–	Lead screw
Drive diameter	d_{screw}	mm	14
Screw guidance	P_{screw}	mm	3
Stroke	s	mm	50 ... 800
Base material, options	–	–	Steel or aluminum
External material	–	–	Stainless steel
Ambient conditions			
Ambient temperature	$T_{ambient}$	°C	0 ... +50
Max. humidity	φ	%	95

28 CLSM-100-T...S, dimensional drawing



2.2.4 CLSM-120-B...S

Ball screw, steel cover

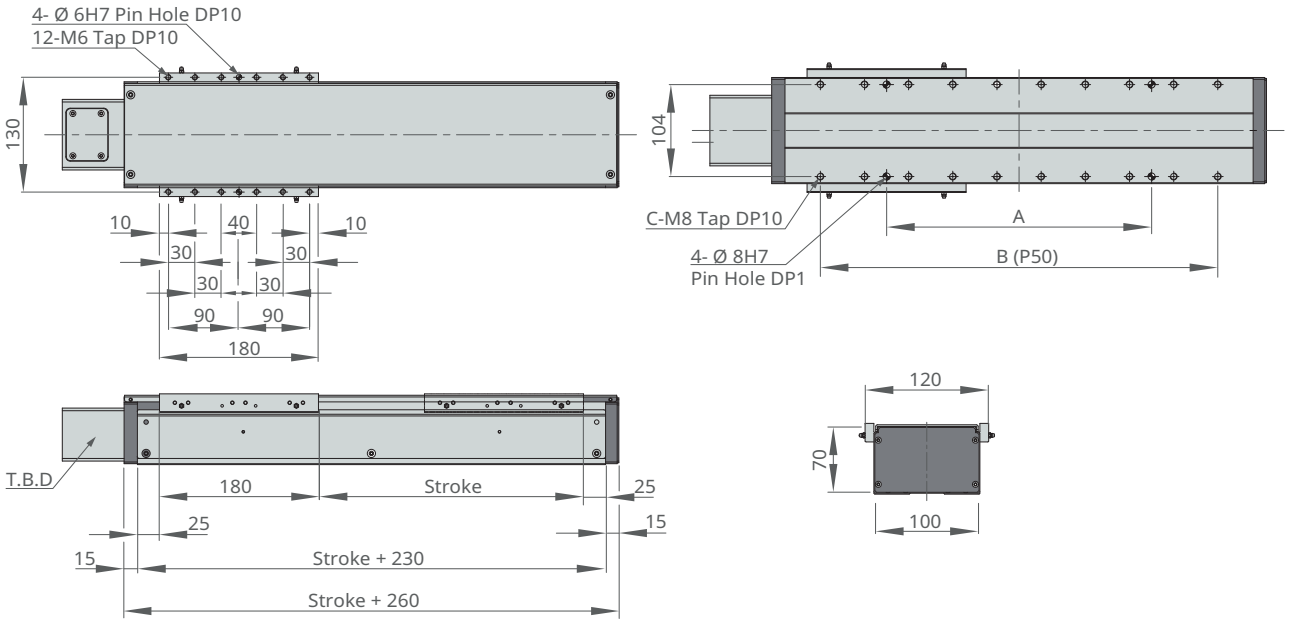
29 CLSM-120-B...S

001D3CC8

16 Technical data

Description	Symbol	Unit	CLSM-120-B
Performance data			
Max. capacity under dynamic load	C_{max}	N	67456
Max. capacity under static load	C_{0max}	N	98200
Max. dynamic moment M_x	Mxc_{max}	Nm	2294
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	4385
Max. linear speed	V_{max}	mm/s	250, 500
Max. rotational speed	n_{max}	min^{-1}	3000
Work cycle	D_{unit}	%	100
Mechanical data			
Rail guide profile	–	–	Size 20
Drive type	–	–	Ball screw
Drive diameter	d_{screw}	mm	16
Screw guidance	P_{screw}	mm	5 or 10
Stroke	s	mm	50 ... 800
Base material, options	–	–	Steel or aluminum
External material	–	–	Stainless steel
Ambient conditions			
Ambient temperature	$T_{ambient}$	°C	0 ... +50
Max. humidity	φ	%	95

30 CLSM-120-B...S, dimensional drawing



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2.2.5 CLSM-120-T...S

Ball screw, steel cover

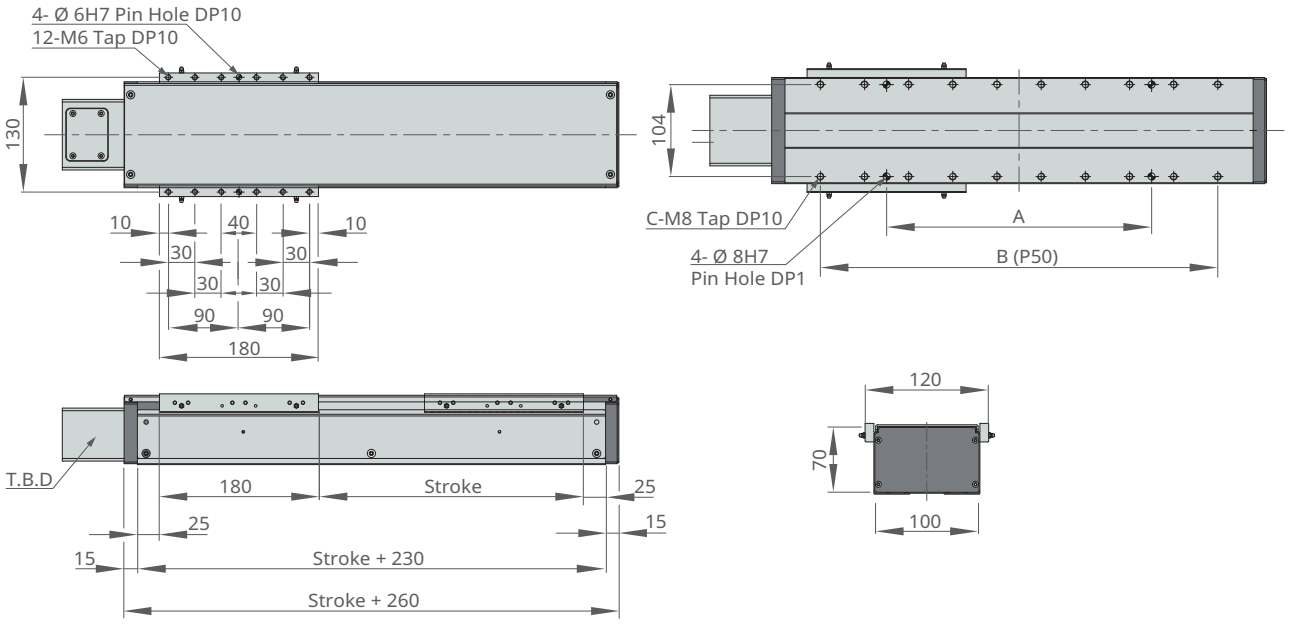
31 CLSM-120-T...S

001D3CC8

17 Technical data

Description	Symbol	Unit	CLSM-120-T
Performance data			
Max. capacity under dynamic load	C_{max}	N	67456
Max. capacity under static load	C_{0max}	N	98200
Max. dynamic moment M_x	Mxc_{max}	Nm	2294
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	4385
Max. linear speed	V_{max}	mm/s	150
Max. rotational speed	n_{max}	min^{-1}	3000
Work cycle	D_{unit}	%	60
Mechanical data			
Rail guide profile	–	–	Size 20
Drive type	–	–	Lead screw
Drive diameter	d_{screw}	mm	16
Ball screw	P_{screw}	mm	3
Stroke	s	mm	50 ... 800
Base material, options	–	–	Steel or aluminum
External material	–	–	Stainless steel
Ambient conditions			
Ambient temperature	$T_{ambient}$	°C	0 ... +50
Max. humidity	φ	%	95

32 CLSM-120-T...S, dimensional drawing



2.2.6 CLSM-170-B...S

Ball screw, steel cover

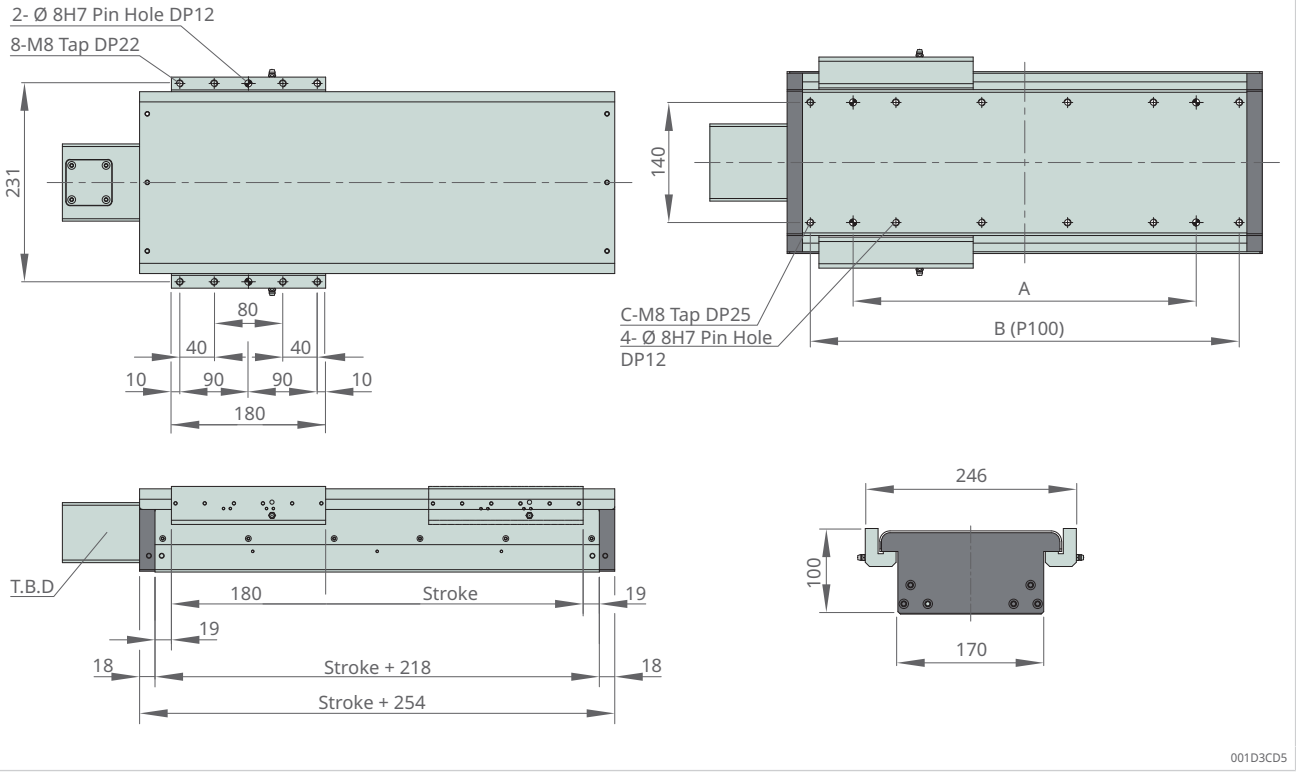
33 CLSM-170-B...S

001D3CD0

18 Technical data

Description	Symbol	Unit	CLSM-170-B
Performance data			
Max. capacity under dynamic load	C_{max}	N	100692
Max. capacity under static load	C_{0max}	N	122800
Max. dynamic moment M_x	Mxc_{max}	Nm	5739
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	4481
Max. linear speed	V_{max}	mm/s	250, 500
Max. rotational speed	n_{max}	min^{-1}	3000
Work cycle	D_{unit}	%	100
Mechanical data			
Rail guide profile	–	–	Size 25
Drive type	–	–	Ball screw
Drive diameter	d_{screw}	mm	25
Screw guidance	P_{screw}	mm	5 or 10
Stroke	s	mm	50 ... 800
Base material, options	–	–	Steel or aluminum
External material, options	–	–	Steel or aluminum
Ambient conditions			
Ambient temperature	$T_{ambient}$	°C	0 ... +50
Max. humidity	φ	%	95

34 CLSM-170-B...S, dimensional drawing



2.2.7 HLSM-280-B...S

Ball screw, steel cover

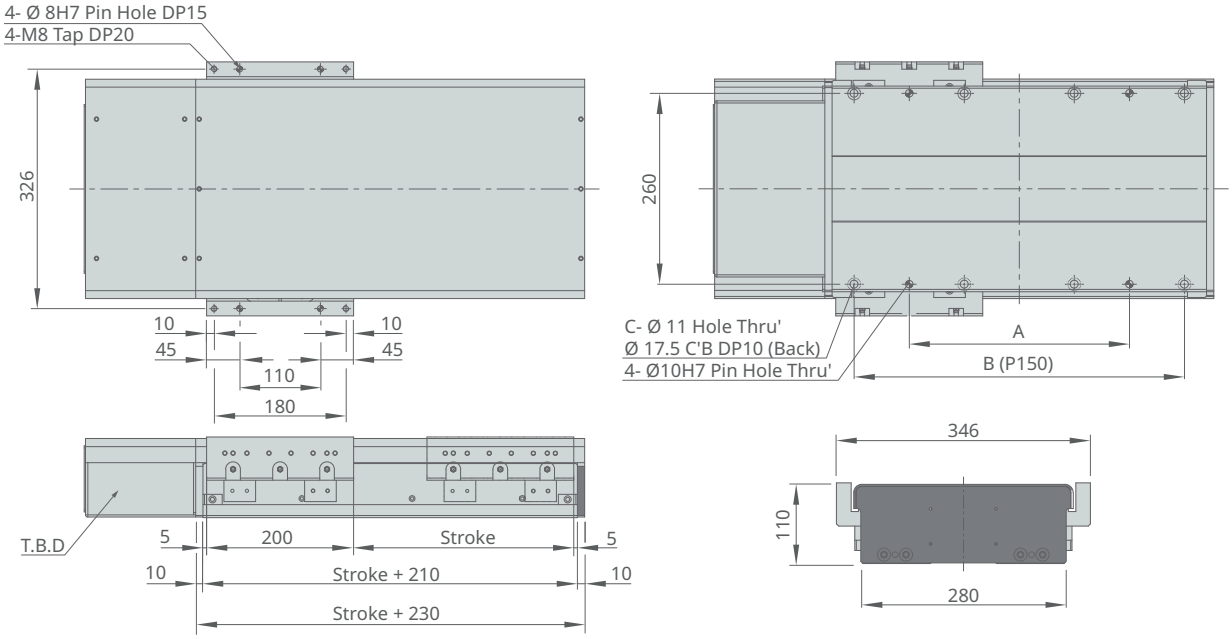
35 HLSM-280-B...S

001D3CDB

19 Technical data

Description	Symbol	Unit	HLSM-280-B
Performance data			
Max. capacity under dynamic load	C_{max}	N	67456
Max. capacity under static load	C_{0max}	N	98200
Max. dynamic moment M_x	Mxc_{max}	Nm	6273
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	4317
Max. linear speed	V_{max}	mm/s	250
Max. rotational speed	n_{max}	min^{-1}	3000
Work cycle	D_{unit}	%	100
Mechanical data			
Rail guide profile	–	–	Size 20
Drive type	–	–	Ball screw
Drive diameter	d_{screw}	mm	16
Screw guidance	P_{screw}	mm	5
Stroke	s	mm	100 ... 800
Base material, options	–	–	Steel or aluminum
External material	–	–	Steel
Ambient conditions			
Ambient temperature	$T_{ambient}$	°C	0 ... +50
Max. humidity	φ	%	95

36 CLSM-280-B...S, dimensional drawing



2.2.8 HLSM-330-B...S

Ball screw, steel cover

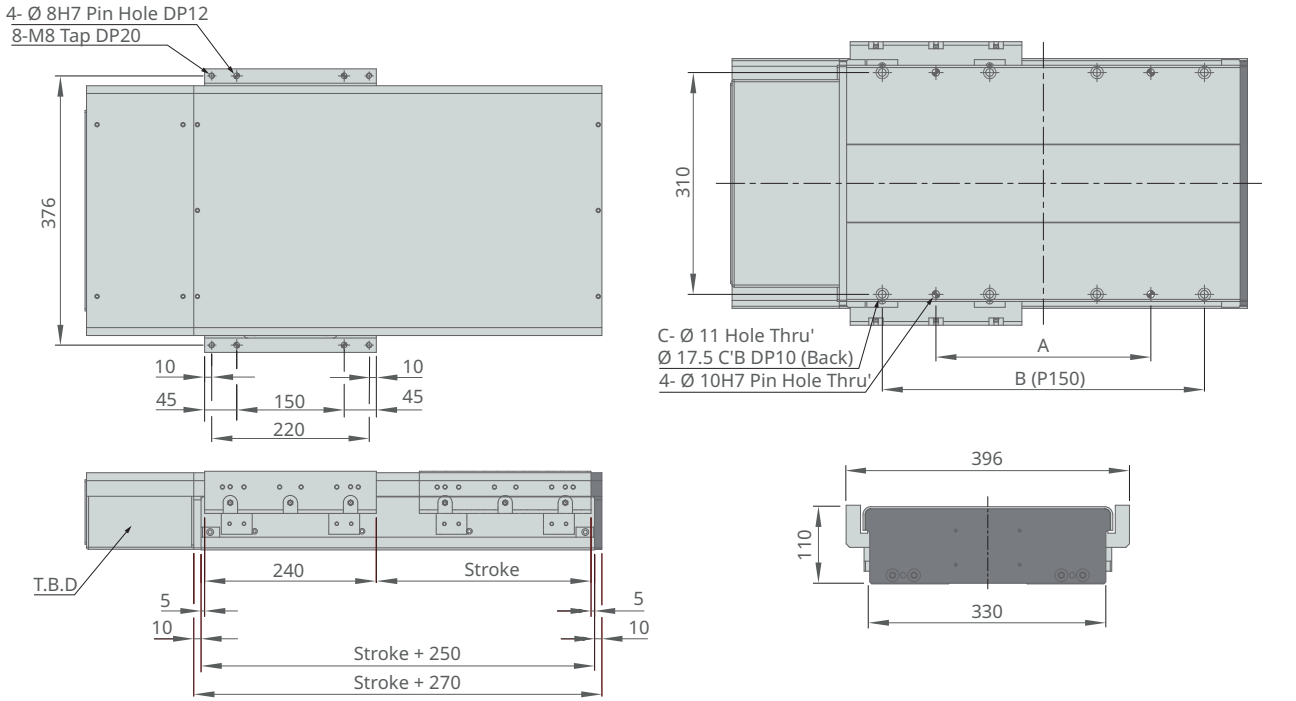
37 HLSM-330-B...S

001D3CE3

20 Technical data

Description	Symbol	Unit	HLSM-330-B
Performance data			
Max. capacity under dynamic load	C_{max}	N	67456
Max. capacity under static load	C_{0max}	N	98200
Max. dynamic moment M_x	Mxc_{max}	Nm	7960
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	5666
Max. linear speed	V_{max}	mm/s	250
Max. rotational speed	n_{max}	min^{-1}	3000
Work cycle	D_{unit}	%	100
Mechanical data			
Rail guide profile	–	–	Size 20
Drive type	–	–	Ball screw
Drive diameter	d_{screw}	mm	16
Screw guidance	P_{screw}	mm	5
Stroke	s	mm	100 ... 800
Base material, options	–	–	Steel or aluminum
External material	–	–	Steel
Ambient conditions			
Ambient temperature	$T_{ambient}$	°C	0 ... +50
Max. humidity	φ	%	95

38 CLSM-330-B...S, dimensional drawing



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2.2.9 HLSM-340-B...S

Ball screw, steel cover

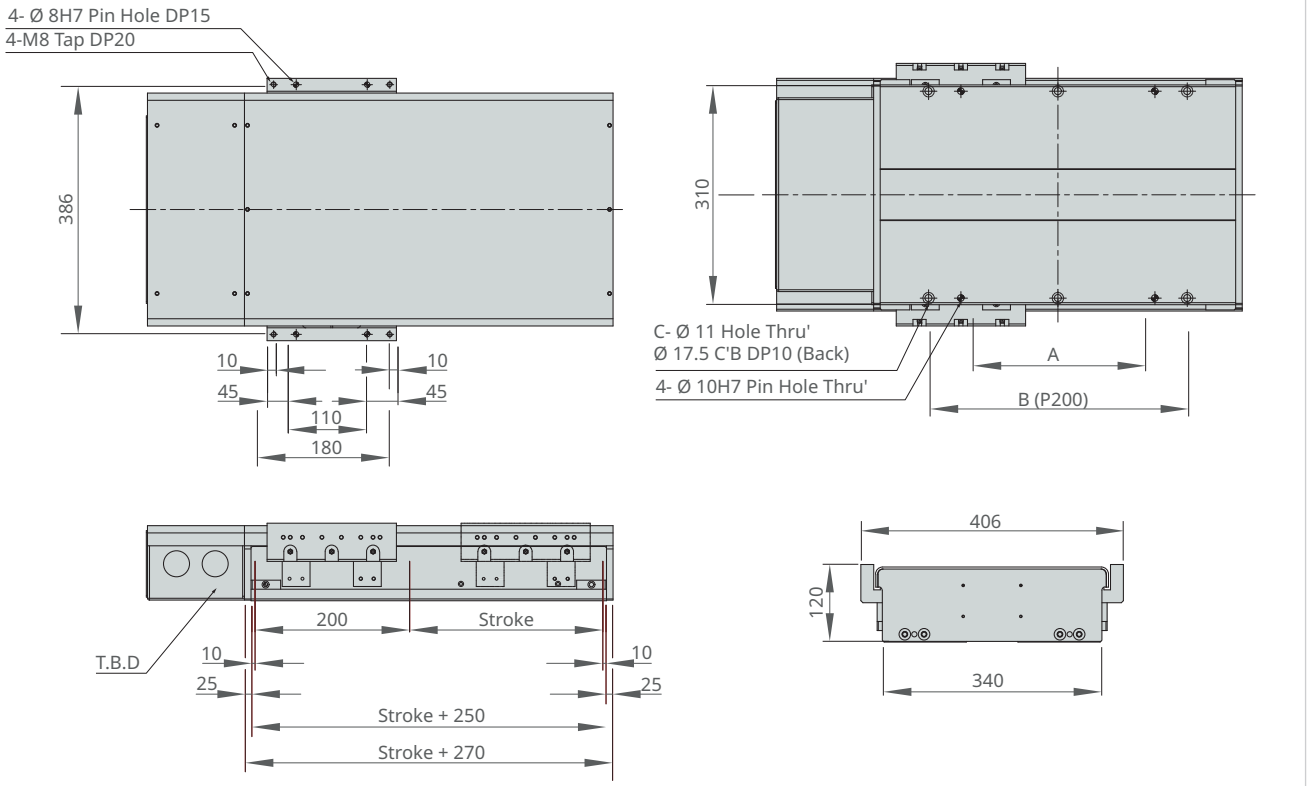
39 HLSM-340-B...S

001D3CED

21 Technical data

Description	Symbol	Unit	HLSM-340-B
Performance data			
Max. capacity under dynamic load	C_{max}	N	100692
Max. capacity under static load	C_{0max}	N	122800
Max. dynamic moment M_x	Mxc_{max}	Nm	12083
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	6444
Max. linear speed	V_{max}	mm/s	250
Max. rotational speed	n_{max}	min^{-1}	3000
Work cycle	D_{unit}	%	100
Mechanical data			
Rail guide profile	–	–	Size 25
Drive type	–	–	Ball screw
Drive diameter	d_{screw}	mm	25
Screw guidance	P_{screw}	mm	5
Stroke	s	mm	100 ... 800
Base material, options	–	–	Steel or aluminum
External material	–	–	Steel
Ambient conditions			
Ambient temperature	$T_{ambient}$	°C	0 ... +50
Max. humidity	φ	%	95

40 HLSM-330-B...S, dimensional drawing



2.2.10 HLSM-380-B...S

Ball screw, steel cover

41 HLSM-380-B...S

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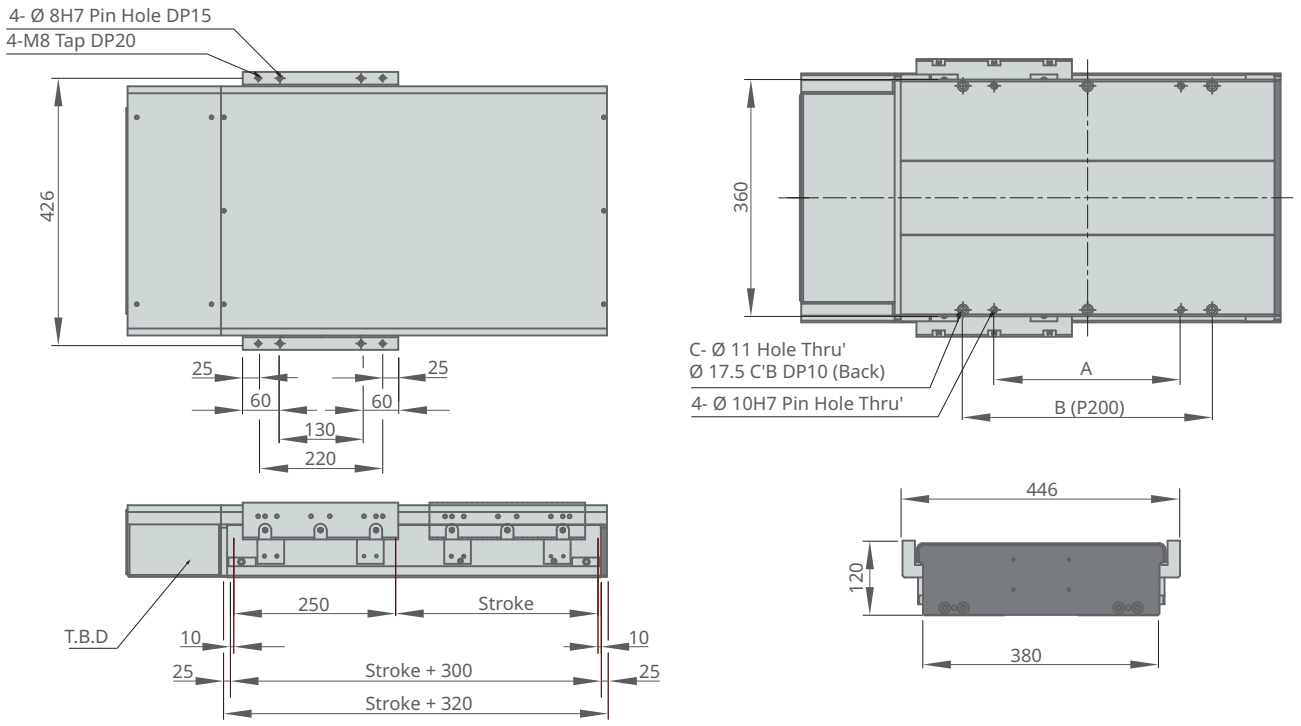
22 Technical data

Description	Symbol	Unit	HLSM-380-B
Performance data			
Max. capacity under dynamic load	C_{max}	N	100692
Max. capacity under static load	C_{0max}	N	122800
Max. dynamic moment M_x	Mxc_{max}	Nm	14097
Max. dynamic moment $M_{y/z}$	My/zc_{max}	Nm	8962
Max. linear speed	V_{max}	mm/s	250
Max. rotational speed	n_{max}	min^{-1}	3000
Work cycle	D_{unit}	%	100
Mechanical data			
Rail guide profile	–	–	Size 25
Drive type	–	–	Ball screw
Drive diameter	d_{screw}	mm	25
Screw guidance	P_{screw}	mm	5
Stroke	s	mm	100 ... 800
Base material, options	–	–	Steel or aluminum
External material	–	–	Steel
Ambient conditions			
Ambient temperature	$T_{ambient}$	°C	0 ... +50
Max. humidity	φ	%	95

42 HLSM-380-B...S, dimensional drawing



3 Units for vehicle positioning

The positioning systems are designed for automotive applications. They consist of a pair of profile rail guides, each with 2 guide carriages, and are characterized by high performance in terms of guiding accuracy and rigidity. The profile rail guide system is available with a wide range of ball screws to ensure high dynamics and positioning accuracy. The systems feature an integrated motor, a control unit, cables, a mechanical brake, a shock absorber, and a steel cover. The systems are available with lifting columns or linear modules for the vertical axis.

Features

- compact design with aluminum or steel as base material
- integrated motor, control unit, cables, mechanical brake, and shock absorber
- lifting column or linear module as an option for the vertical axis
- inline gear box and parallel gear box with customer-specific motor adapter

Benefits

- designed for high loads and long service life
- easy maintenance via external lubrication port
- precise alignment and secure location
- high positioning accuracy and repeatability

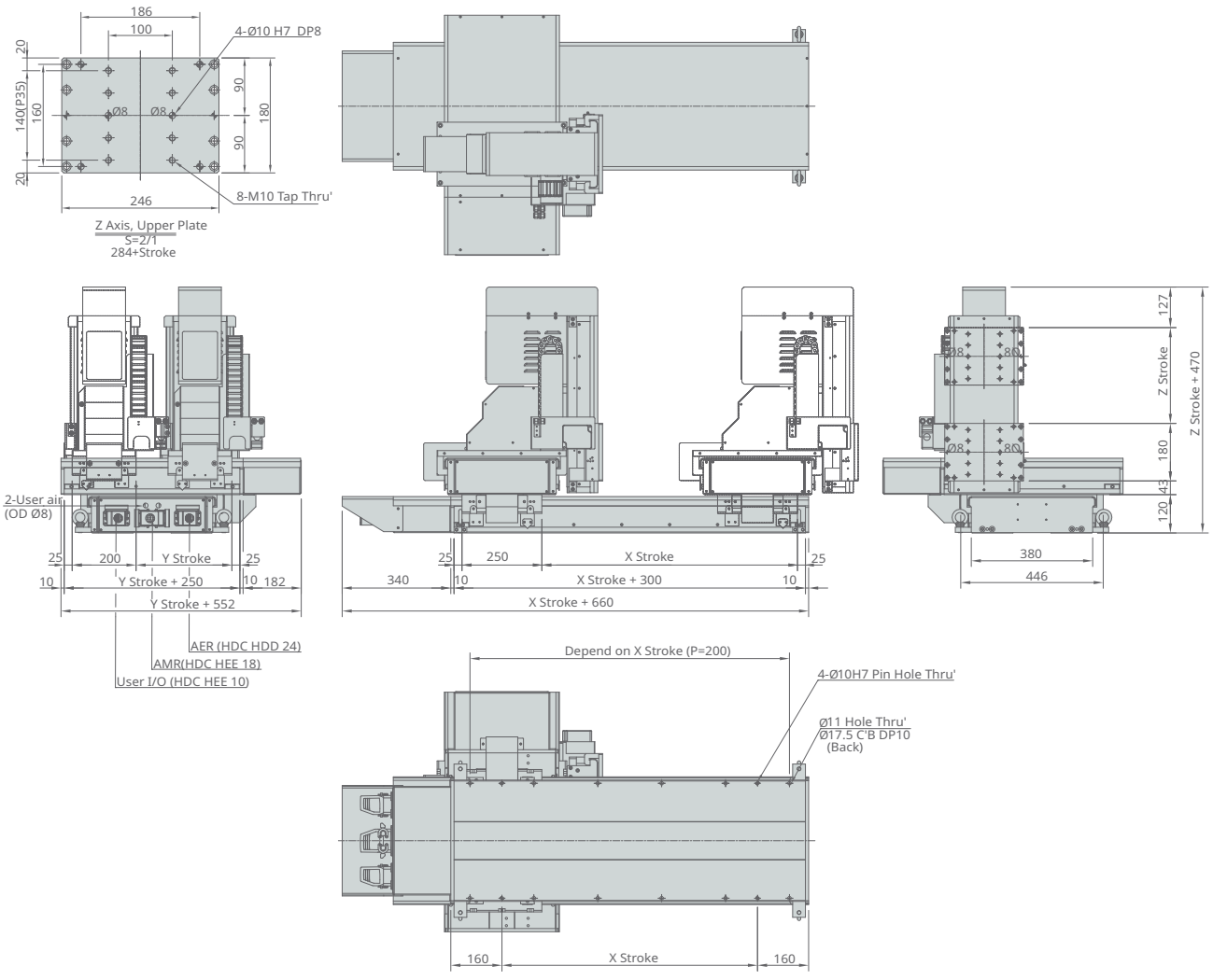
3.1 Positioning unit LCTU

3.1.1 Product characteristics

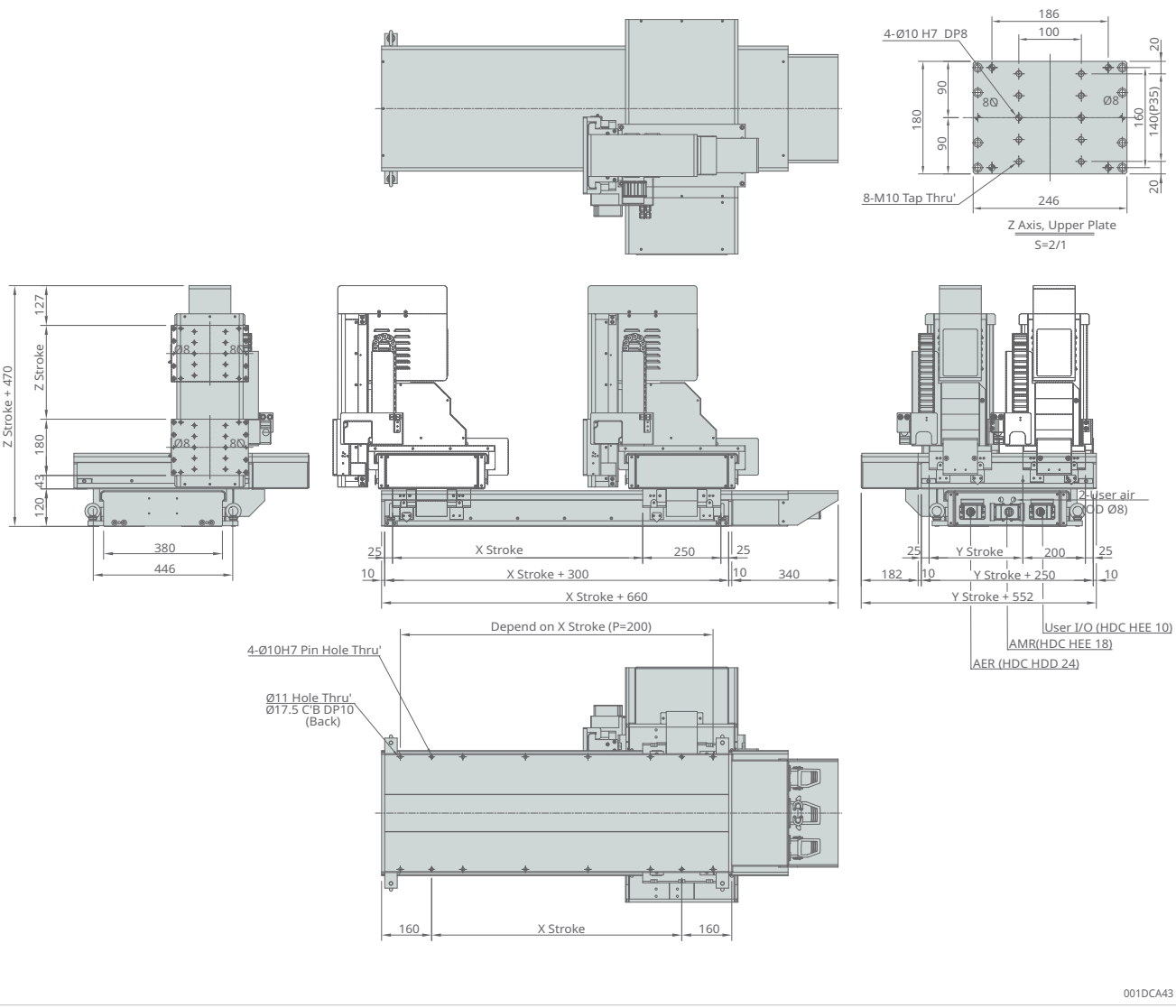
LCTU systems are high-performance multi-axis systems for production lines in automotive applications, featuring integrated linear guides as a ready-to-use solution for precise motion. The systems are available with a wide range of ball screws to ensure a high level of positioning accuracy.

LCTU systems are available with linear modules for the vertical axis.

43 LCTU, type left



44 LCTU, type right



3.1.2 Technical data

23 Technical information

	Symbol	Unit	X-axis	Y-axis	Z-axis
Performance data					
Max. linear speed at 3000 min^{-1}	V_{max}	mm/s	250	250	250
Max. payload	P_{max}	kg	250	250	200
Max. acceleration	a_{max}	m/s^2	10	10	10
Load cycles	D_{unit}	%	100	100	100
Mechanical data					
Profile rail guide	–	–	25	25	25
Screw nut	–	–	Ball screw drive	Ball screw drive	Ball screw drive
Thread diameter	D_{screw}	mm	25	25	25
Screw pitch	P_{screw}	mm	5	5	10 ($^1/_2$)
Stroke	–	mm	100 ... 800	200 ... 600	100 ... 600
Repeatability	–	mm	±0.02	±0.02	±0.02
Base plate	–	–	Aluminum or steel	Aluminum or steel	Aluminum or steel
Cover	–	–	Steel	Steel	Steel
Ambient data					
Ambient temperature	$T_{ambient}$	°C	0 ... +50	0 ... +50	0 ... +50
Max. humidity	ϑ	%	95	95	95

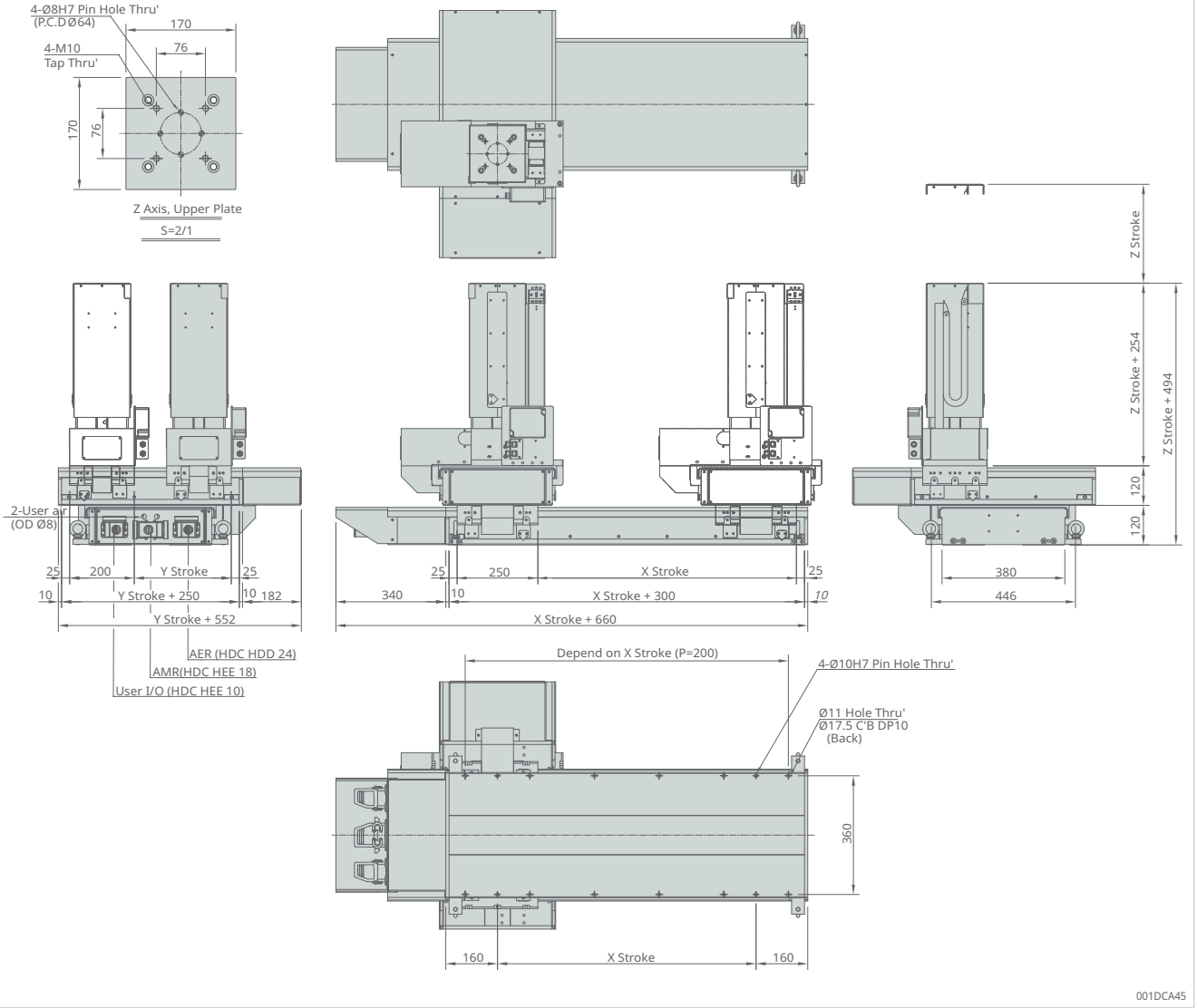
3.2 Positioning unit HCTU

3.2.1 Product characteristics

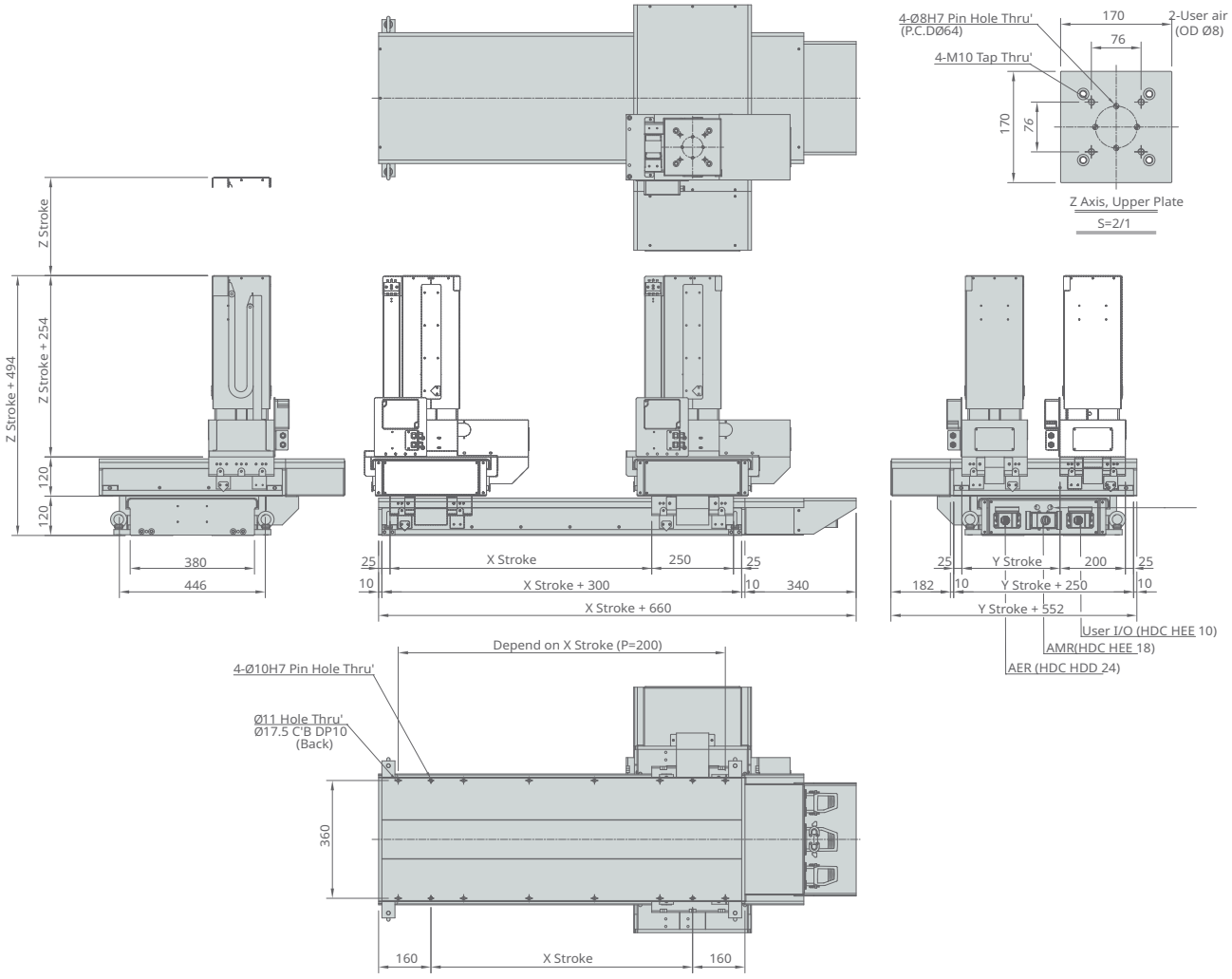
HCTU systems are high-performance multi-axis systems for production lines in automotive applications, featuring integrated linear guides as a ready-to-use solution for precise motion. The systems are available with a wide range of ball screws to ensure a high level of positioning accuracy.

HCTU systems are available with lifting columns for the vertical axis.

45 HCTU, type left



46 HCTU, type right



3.2.2 Technical data

24 Technical information

	Symbol	Unit	X-axis	Y-axis	Z-axis
Performance data					
Max. linear speed at 3000 min^{-1}	V_{max}	mm/s	250	250	200
Max. payload	P_{max}	kg	250	250	200
Max. acceleration	a_{max}	m/s^2	10	10	5
Load cycles	D_{unit}	%	100	100	90
Mechanical data					
Profile rail guide	–	–	25	25	25
Screw nut	–	–	Ball screw drive	Ball screw drive	Ball screw drive
Thread diameter	D_{screw}	mm	25	25	20
Screw pitch	P_{screw}	mm	5	5	10 or 20 ($^1/_5$ or $^1/_{10}$)
Stroke	–	mm	100 ... 800	200 ... 600	100 ... 600
Repeatability	–	mm	±0.02	±0.02	±0.05
Base plate	–	–	Aluminum or steel	Aluminum or steel	Aluminum or steel
Cover	–	–	Steel	Steel	Steel
Ambient data					
Ambient temperature	$T_{ambient}$	°C	0 ... +50	0 ... +50	0 ... +50
Max. humidity	ϑ	%	95	95	95

4 Structure of the ordering key

47 Ordering key for linear modules, part 1

Size

C	Compact
H	Heavy

Width

Design

B	Ball screw
T	Lead screw (trapezoidal or Acme interface)
P	Belt (for CLSM-150 only)
L	Linear motor (for CLSM-150 only)

Guide type (ball bearing/plain bearing) or force-driven (linear motor)

03	Lead screw
05	Ball screw
10	Ball screw
20	Ball screw
22	Linear motor (for CLSM-150 only)
40	Belt (for CLSM-150 only)

Stroke

100 ... 3000 m

Base

A	aluminum
S	Steel
P	Aluminum profile (for CLSM-150 only)

Option 1: Motor adapter

0	None
A	Dunker
D	Dyadic
W	Dyadic, waterproof
R	Dyadic, waterproof (protection rotation type)
F	Fastech
Y	Yaskawa
M	Mitsubishi
P	Panasonic
S	Siemens
J	JVL
T	Tamagawa
C	Magnetic coupling
K	Komotec
E	Festo
O	Omron
X	Other

Option 2: Brake and U-shaped bracket

0	None
B	Brake
D	U-shaped bracket - bottom side
U	U-shaped bracket - top side
L	U-shaped bracket - left side
R	U-shaped bracket - right side

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48 Ordering key for linear modules, part 2

Option 3: Motor

0	None
A	Dunker
D	Dyadic
W	Dyadic, waterproof
R	Dyadic, waterproof (protection rotation type)
F	Fastech
Y	Yaskawa
M	Mitsubishi
P	Panasonic
S	Siemens
J	JVL
T	Tamagawa
C	Magnetic coupling
K	Komotec
E	Festo
O	Omron
X	Other

Option 4: Cover

0	None
A	Aluminum profile (for CLSM-150 only)
P	PU strip (for CLSM-150 only)
S	Steel (for HLSM-280/330/340/380 and CLSM-150/170) Stainless steel (for CLSM-80/92/100/120)

Option 5: Gearbox

0	None
G	Gearbox

Option 5: Central lubrication

0	None
G	Central lubrication

Option 5: Limit switch

0	None
S	Limit switches

Option 8: Cable routing

0	None
C	Cable routing

Option 9: Carriage

0	None
G	U-type (for CLSM-92 only)

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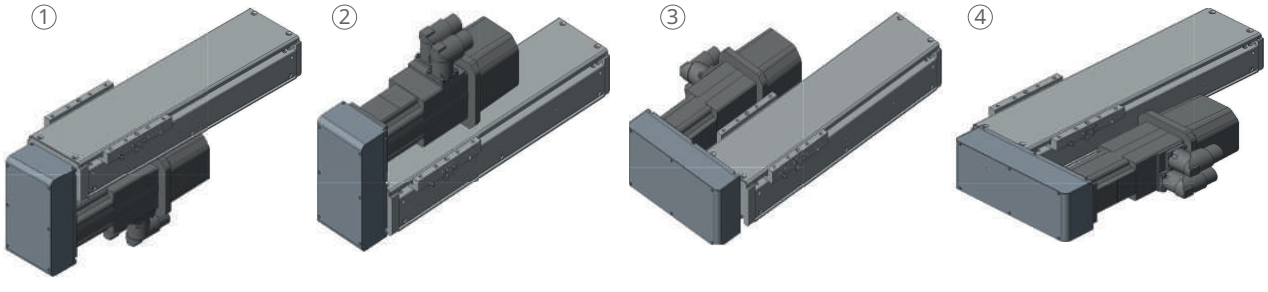
49 Motor and U-bracket positions



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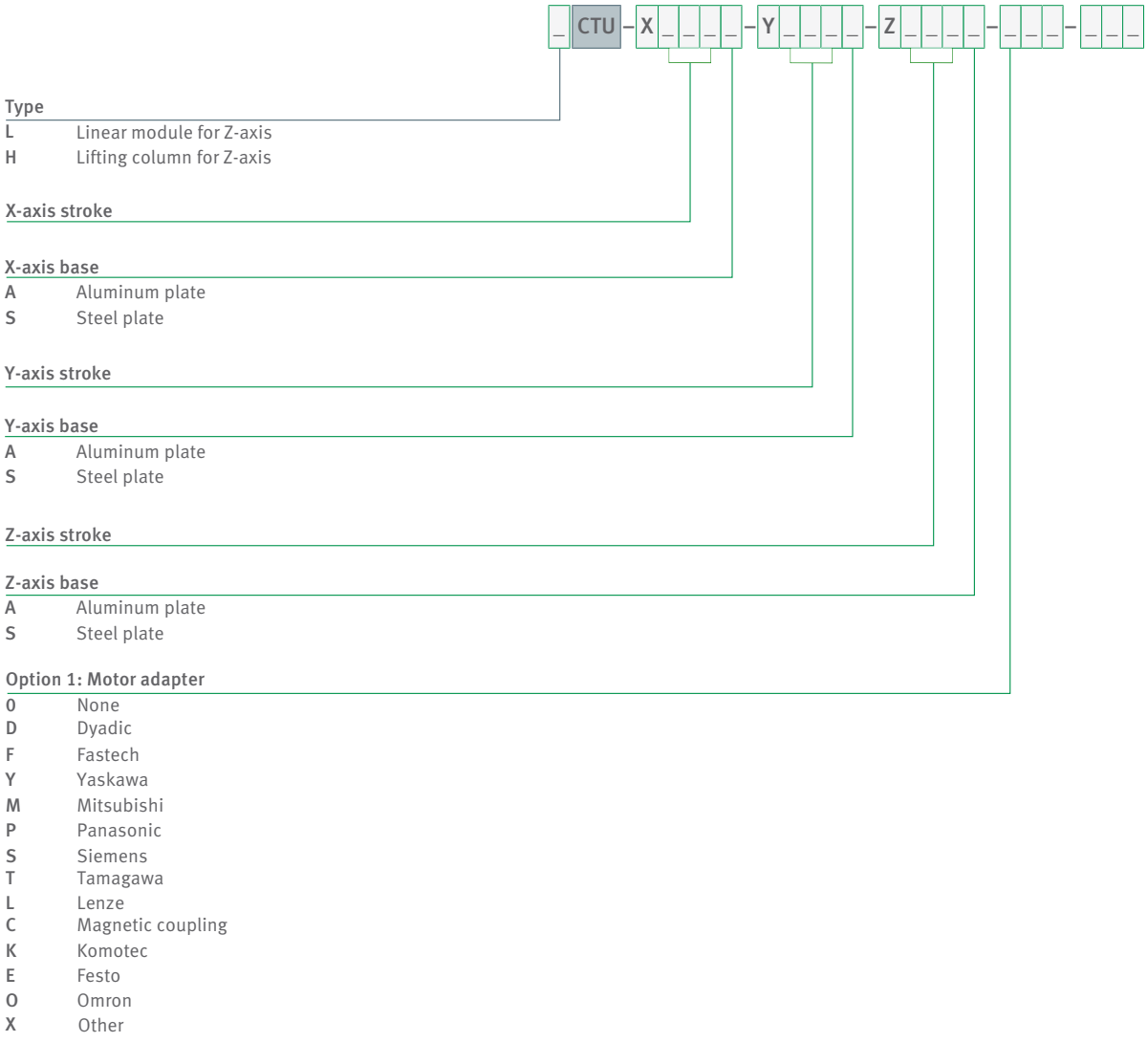
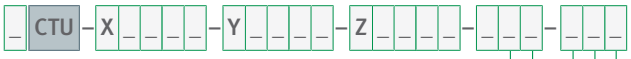
1	Motor and U-bracket at the bottom	2	Motor and U-bracket at the top
3	Motor and U-bracket on the left	4	Motor and U-bracket on the left

50 Structure of the ordering designation, part 1



51 Structure of the ordering designation, part 2



Option 2: Brake mounting

0	No
B	brake

Option 3: Motor mounting

0	None
D	Dyadic
F	Fastech
Y	Yaskawa
M	Mitsubishi
P	Panasonic
S	Siemens
T	Tamagawa
L	Lenze
C	Magnetic coupling
K	Komotec
E	Festo
O	Omron
X	Other

Connection electronics

0	None
I	Integrated connection electronics
C	External connection electronics

Cable routing

0	Cable routing, external
I	Cable routing, internal

Direction

L	Direction: left (LH)
R	Direction: right (RH)
C	Centered

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