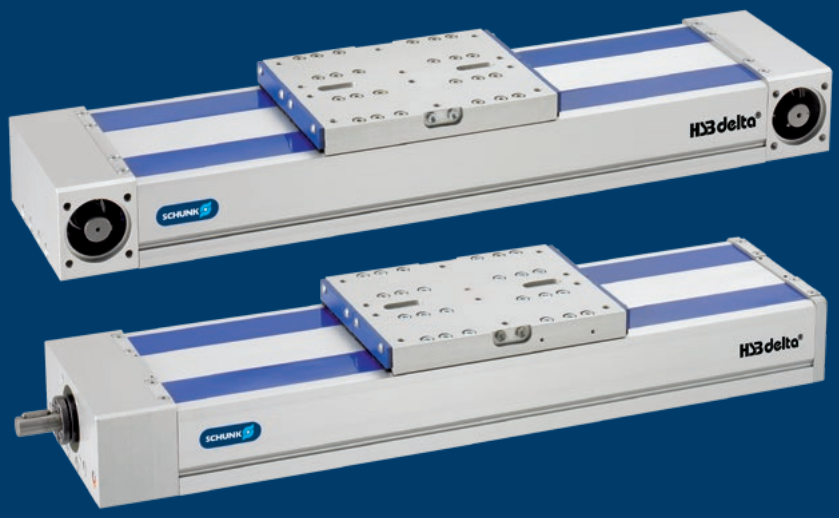


Superior Clamping and Gripping

SCHUNK®

Flat linear module Delta

Flat. Modular. Loadable.

Delta flat linear module

Flat linear module with either toothed belt drive or spindle drive

Field of application

Universal linear module with optional toothed belt drive for high acceleration and speed or spindle drive for precise positioning given high drive forces.

Advantages – Your benefits

Extremely flat design for minimal interfering contours

Double-profiled rail guide for highest rigidity and precision in the application

Optional belt or spindle driven for the optimum drive for your application

Various guide options for optimal adaption to your application

Adaptable drive motor for versatile approach and easy integration into existing control concepts

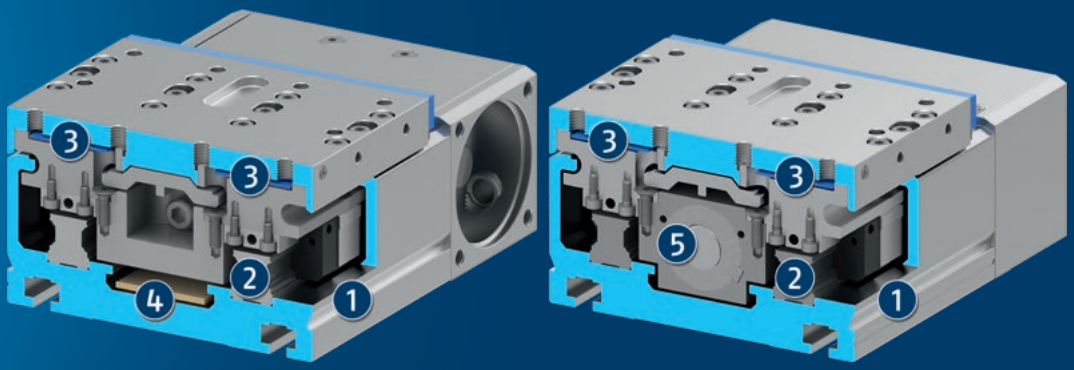
Integrated cover tape for versatility and a long tool life

Fixing via T-nuts or slot nut possible for flexibility in the integration

Sizes	Max. stroke	Max. driving force	Repeat accuracy	Max. speed
Quantity: 5	1245 .. 7820 mm	800 .. 12000 N	±0.03 .. 0.08 mm	0.5 .. 5 m/s

Functional description

The slide is driven by a toothed belt or a ball screw spindle and is precisely guided by a roller or (double) profiled rail guide. The cover band runs through the slide and covers the drive and guidance. The servomotor is connected to the profile via the drive shaft.



① **Aluminum profile**
Self-supporting and robust

② **Profiled rail guide**
for maximum positioning accuracy and moment loads

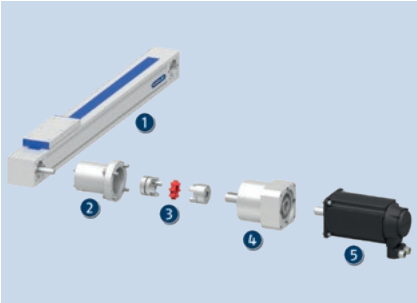
③ **Covering tape made of plastic**
along the whole guidance length against coarse dirt

④ **Toothed belt**
Transforms the rotational movement into a linear movement

⑤ **Spindle**
Transforms the rotational movement into a linear movement

Detailed functional description

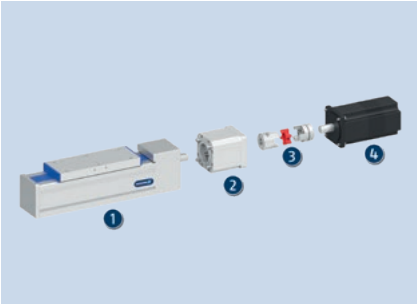
Toothed belt axis with right-angle-mounted motor



This illustration shows how to mount a motor at a right-angle on a toothed belt axis using a engine cone, a clutch and a transmission.

1. Toothed belt drive
2. Motor bell
3. Coupling
4. Gear
5. Servomotor

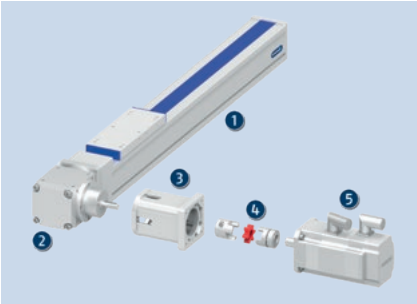
Spindle axis with axially mounted motor



This illustration shows how to mount a motor axially to a spindle axis using an engine cone and a coupling.

1. Spindle axis
2. Motor bell
3. Coupling
4. Servomotor

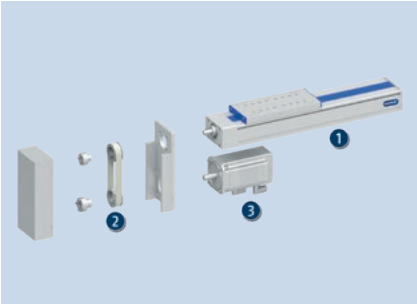
Spindle axis with right angular mounted motor



The motor can also be mounted at a right angle on a spindle axis using a bevel gear.

1. Spindle axis
2. Bevel gear
3. Motor bell
4. Coupling
5. Servomotor

Spindle axis with parallel-mounted motor



In order to save space, the motor can be mounted parallel to the spindle axis using an angle belt drive.

1. Spindle axis
2. Angle belt drive
3. Servomotor

General notes about the series

Operating principle: Choice of toothed belt or ball screw spindle drive

Drive: servomotors of different providers can be trouble-free adapted

Profile: Extruded aluminum profile with plastic cover strip

Slide: Aluminum slide with a brush seal

Scope of delivery: Assembly and operating manual with declaration of incorporation

Warranty: 24 months

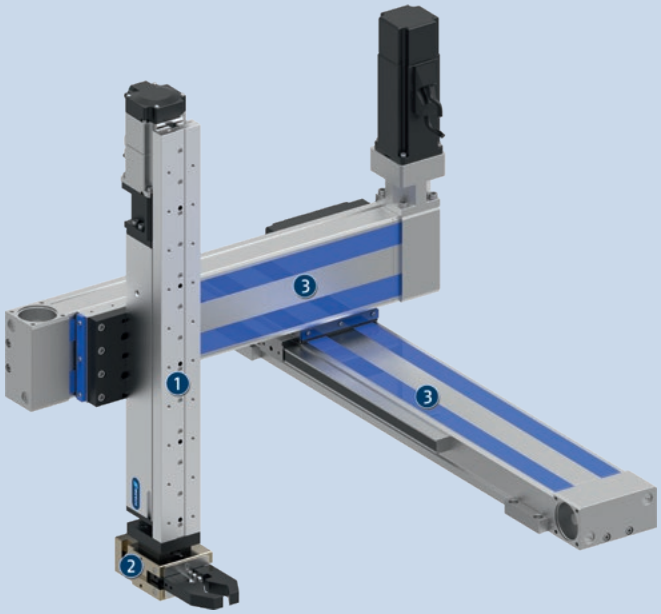
Ambient conditions: The modules are mainly designed for the use in clean ambient conditions. Please note that the life time of the modules can shorten if they are used in harsh ambient conditions, and that SCHUNK cannot assume liability in such cases. Please contact us for assistance.

Max. stroke: is the maximum permissible stroke. Acceleration and braking distances or possible overrun must be taken into consideration.

Repeat accuracy: defined as the spread of the target position after 100 consecutive positioning cycles under constant conditions.

Acceleration and speed: The values specified are the maximum values of the units without loading. The actual accelerations and speeds for your application must be designed separately and can deviate from the maximum values.

Layout or control calculation: Verifying the sizing of the selected unit is necessary, since otherwise overloading can result. Please contact us for assistance.



Application example

Electric linear gantry to center or reposition small components.

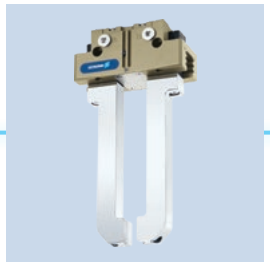
1. Compact linear module ELS
2. 2-finger angular parallel gripper GAP
3. Flat linear module Delta with toothed-belt drive

SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.


Rotary module, electric


Universal rotary module


Universal gripper

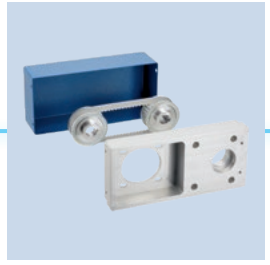

Universal swivel head


Inductive proximity switches


Pillar assembly system


Drive


Room gantry


Angle belt drive


Drive controller

ⓘ For more information on these products can be found on the following product pages or at schunk.com.

Options and special information

spindle supports: Spindle supports allow higher moving speeds for longer stroke lengths
Flexible in motor and controller selection: The electrical control is carried out via an adaptable servo drive using common standard controller like Bosch or Siemens.
Easy integration: The easy integration into the control system is ensured by the possibility of attaching a common servomotor.
Complete solutions: On request, SCHUNK can supply complete solutions including motor, gear, controller, and cables.
NEW: Version with food -compliant lubrication (H1G): on request as a solution for an easy entry into medical technology, lab automation,, pharmaceutical and food industry. The requirements of EN 1672-2:2020 are not fully met.

How to order – Ball screw spindle drive

D – 145-C – SSS – M – 2010 – 1000 – 1360 – 2SA – 2ES2 – 0

Product series D = Delta

Size (version)

Drive
S = Spindle

Guidance system
R = roller guide
S = rail guide

Design version
S = standard

Drive type
M = single nut (ball screw)
MM = double nut (ball screw)

Drive version
Diameter and pitch (ball screw)

Traverse path

Overall length

Spindle supports (SA)
(Number)

Accessories
BL = mounting strip
EMS EMB = mechanical limit switch (S = Siemens, B = Balluff) attached
E02/E010 = inductive limit switch opener with 2 m/10 m cable attached
ES2/ES10= inductive limit switch closer with 2 m/10 m cable attached
NS = T-nut
RM = rhombus nut

Customized design
0 = Standard
1 = customized (specification in plain text)

Additional accessories (separate item)
MGK = motor flange and coupling (according to dimension sheet)
URT = angle belt drive (from dimension sheet)

Cover tape is standard for ball screw spindle drive.

How to order – Toothed belt drive

D – 145-C – ZSS – 50AT5-E – 110 – 1000 – 1340 – AK – AZ1 – 1

Product series D = Delta

Size (version)

Drive
Z = Toothed belt drive

Guidance system
R = roller guide
S = rail guide

Design version
S = standard

Drive version
Toothed belt width and tooth pitch

Stroke per revolution

Traverse path

Overall length

Cover
AK = cover tape

Accessories
BL = mounting strip
EMS EMB = mechanical limit switch (S = Siemens, B = Balluff) attached
E02/E010 = inductive limit switch opener with 2 m/10 m cable attached
ES2/ES10= inductive limit switch closer with 2 m/10 m cable attached
NS = T-nut
RM = rhombus nut
AZ = drive shaft

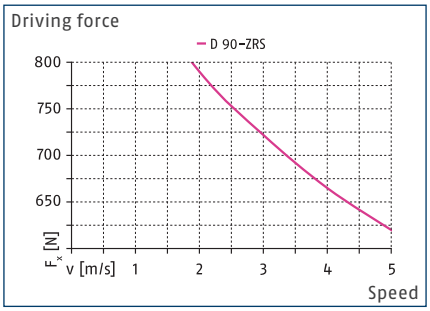
Customized design
0 = Standard
1 = customized (specification in plain text)

Additional accessories (separate item)
MGK = motor flange and coupling (according to dimension sheet)
URT = angle belt drive (from dimension sheet)

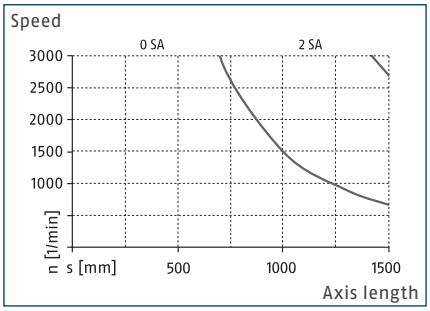
Delta 90

Flat linear module

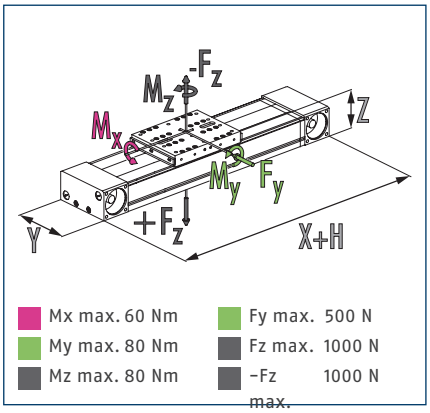
Max. driving force (toothed belt)*



Spindle supports**



Dimensions and maximum loads



Mx max. 60 Nm		Fy max.	500 N
My max. 80 Nm		Fz max.	1000 N
Mz max. 80 Nm		-Fz max.	1000 N

ⓘ The indicated forces and moments are maximum values for individual loading. If several forces and/or moments are applied at the same time, the maximum permitted individual values will be lower.

Technical data

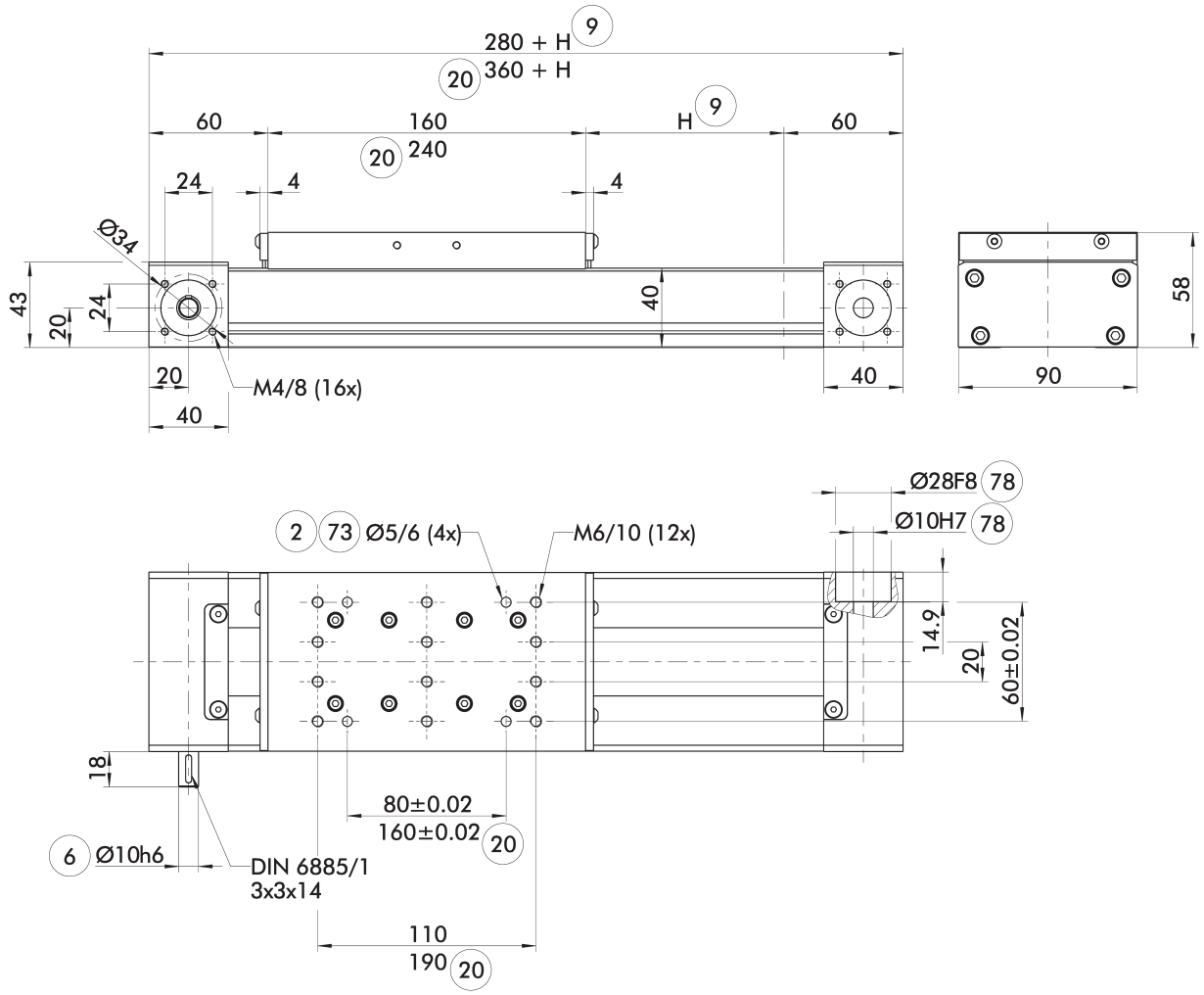
Description		D 90-ZRS	D 90-SRS
Max. stroke H	[mm]	3720	1245
Max. driving force	[N]	800	1000
Repeat accuracy	[mm]	±0.08	±0.03
Max. total length	[mm]	4000	1500
Max. speed	[m/s]	5	0.5
Max. acceleration	[m/s²]	30	20
Min./max. ambient temperature	[°C]	0/80	0/80
Dead weight of base including slide	[kg]	2.95	3.25
Additional mass per 100 mm stroke	[kg]	0.42	0.47
Weight of slide	[kg]	1.3	1.3
Dead weight of slide, long	[kg]	1.85	1.85
Guidance system		Roller guide	Roller guide
Roll diameter	[mm]	20	20
Drive concept		Belt drive	Spindle drive
Idle torque	[Nm]	2	0.3
Moment of inertia	[kgm²]	0.000465	0.0000113
Toothed belt type		32 AT 5-E	
Traverse path per revolution	[mm]	100	
Spindle diameter	[mm]		12
Spindle pitch	[mm]		5/10
Max. spindle speed	[1/min]		3000
Dimensions X x Y x Z	[mm]	280 x 90 x 58	255 x 90 x 58

ⓘ Please note that the long slide plates and the use of spindle supports (SA) reduce the maximum stroke H.
SCHUNK standard spindle supports with noise damping (SAG) reduce the maximum stroke by 10 mm for every 2 SAG.
Please note that the moment of inertia for spindle axes refers to one meter.

* The specified driving forces are maximum values for modules with toothed-belt drives at a given speed.

** The diagram shows the maximum spindle speed depending on the speed of the spindle supports (SA) and the overall length of the unit.

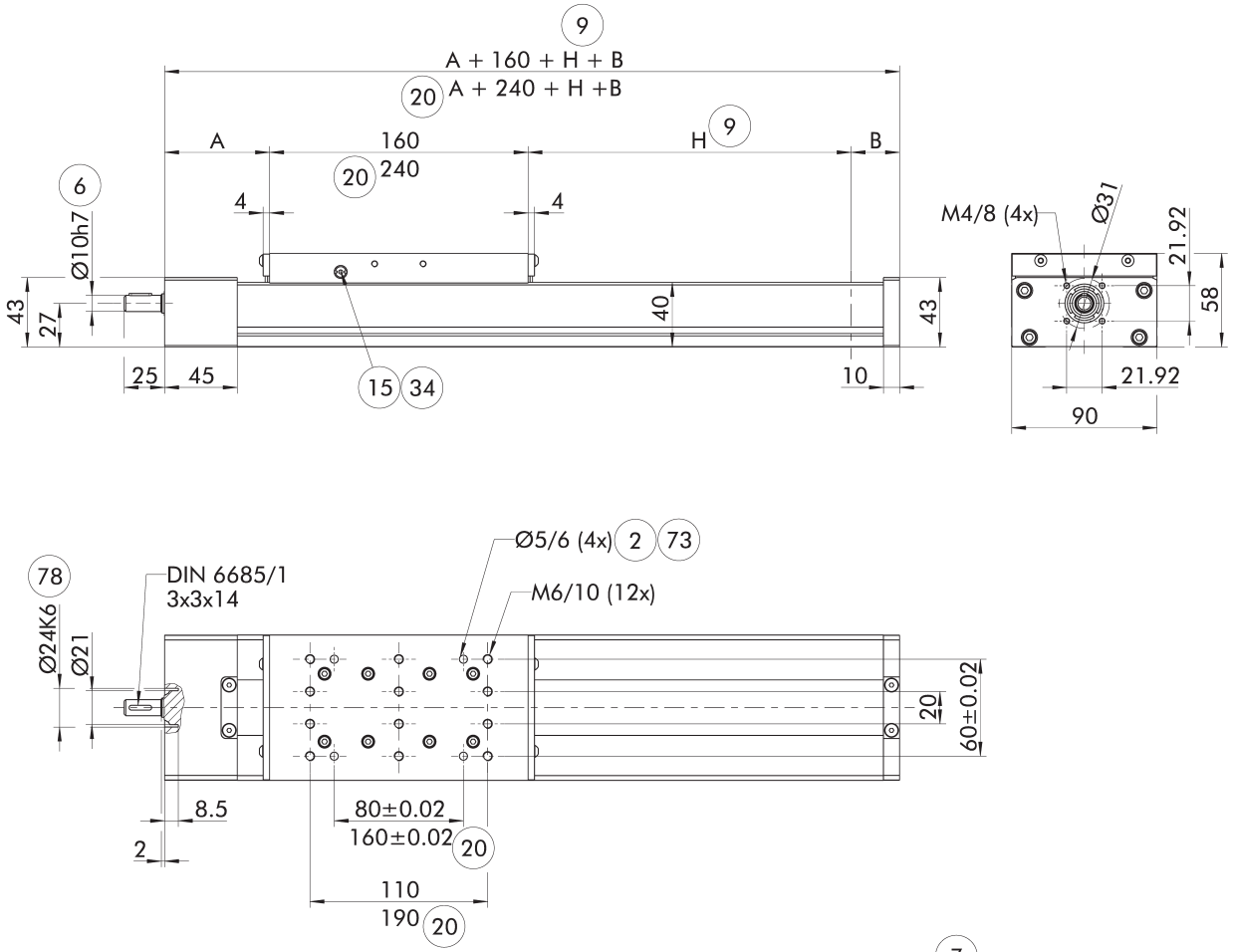
ZRS main view



The drawing shows the unit in standard design, without considering any dimensions of the options described below.

(2) Attachment connection
(6) Drive connection
(9) Nominal stroke
(20) With long slide plate
(73) Fit for centering pins
(78) Fit for centering

SRS main view



7

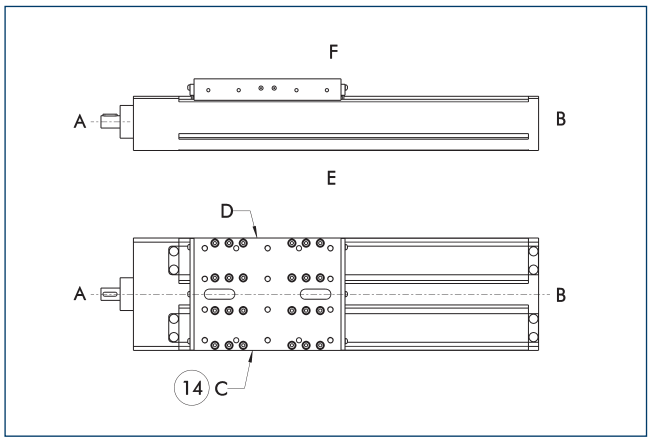
SA	A	B
0x	65	30
2x	85	50

The drawing shows the unit in standard design, without considering any dimensions of the options described below.

ⓘ SCHUNK standard spindle supports with noise damping (SAG) reduce the maximum stroke by 10 mm for every 2 SAG.

(2) Attachment connection
(6) Drive connection
(7) Number of spindle supports
(9) Nominal stroke
(15) Lubricant connection
(20) With long slide plate
(34) On both sides
(73) Fit for centering pins
(78) Fit for centering

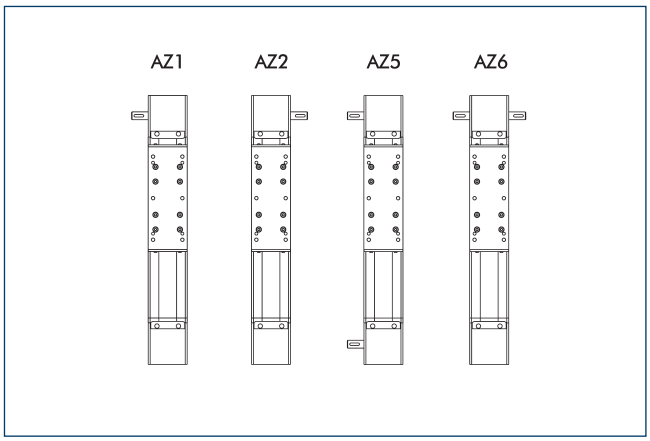
Side definition



(14) Limit switch standard position

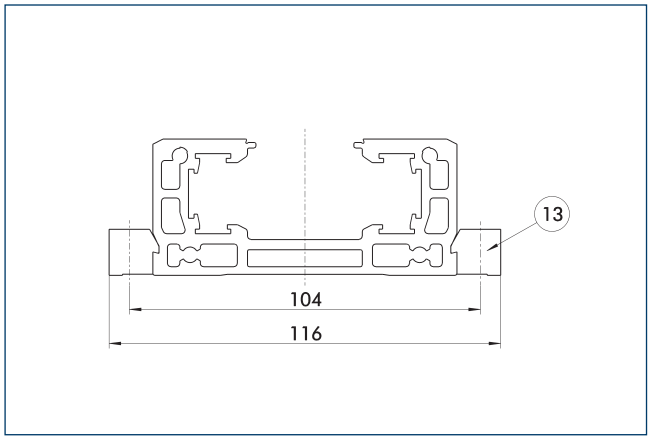
This drawing indicates the definition for the sides. This serves as the basis for all attachments.

Drive shafts in profile (rack and pinion drive)



Depending on the axis application, the seat of the drive shaft has to be defined in the order text. Particularly with axis combinations and mechanical synchronization, several drive shafts are required.

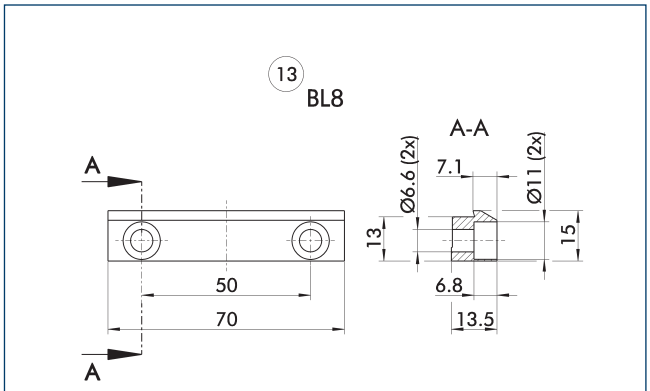
Mounting



(13) Mounting strip

The drawing shows the position of the mounting options.

Fastening elements



(13) Mounting strip

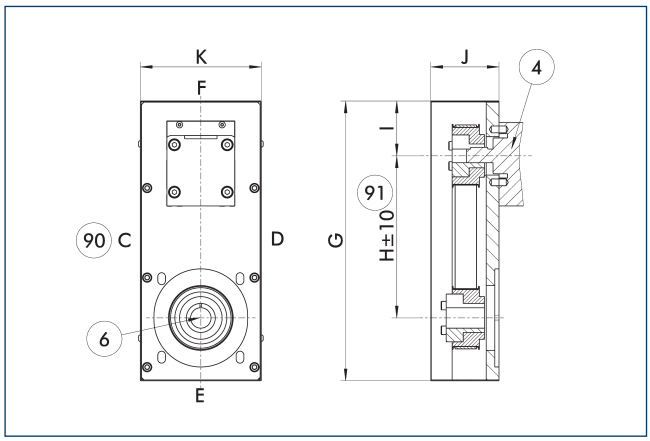
The unit can be secured by mounting strips. The exact mounting position is indicated on the adjacent attachment illustration.

Description	ID	
Mounting strip		
BL8-70x15x13,5-01	0331436	

Delta 90

Flat linear module

Angle belt drive



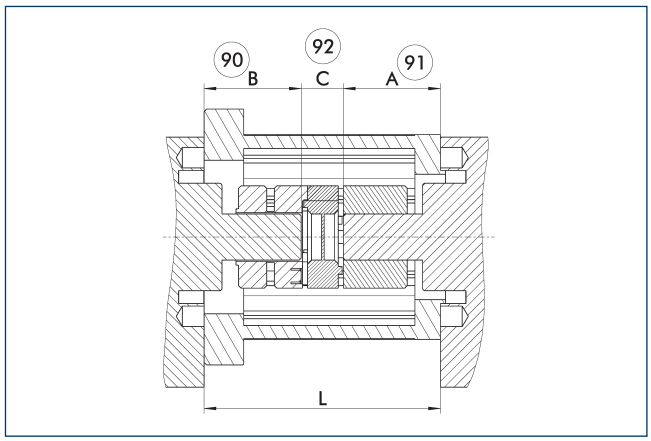
4 Linear unit
6 Drive connection
90 Attachment direction of angle belt drive
91 Dependent on transmission ratio and toothed belt design.

The angle belt drive makes it possible to achieve various drive solutions in confined spaces. SCHUNK offers the suitable angle gear for your drive.

Description	G	H	I	J	K
	[mm]	[mm]	[mm]	[mm]	[mm]
D 90-SRS	195	105	41	45	90

ⓘ Possible transmission ratios: i = 1 : 1, i = 2 : 1 and i = 3 : 1

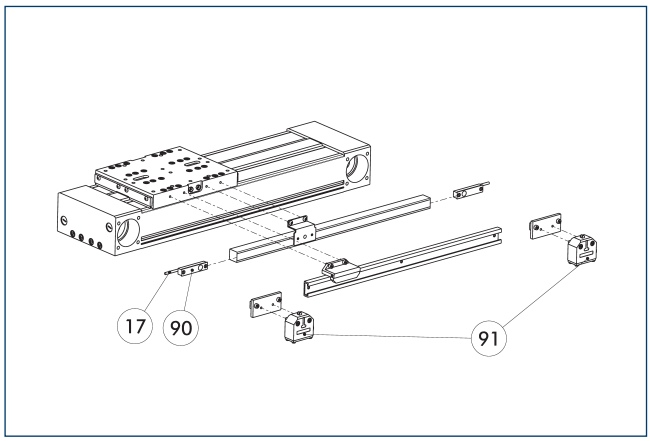
Motor flange schematic diagram



90 Length of motor / transmission drive shaft
91 Length of linear unit drive journal
92 Clutch length

Different drive solutions can be attached to our axes. SCHUNK offers you the right motor flange and coupling for your drive.

Limit and reference switch



17 Cable outlet
90 Inductive limit and reference switches
91 Mechanical limit switches

Generally two E0-02 switches are used as limit switches and one ES-02 is used as reference switch.

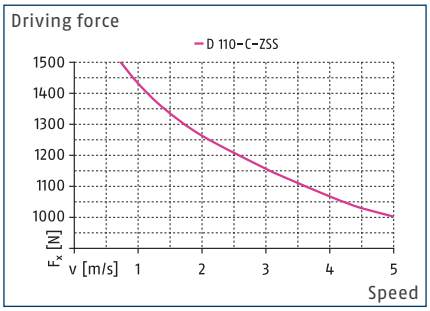
Description	ID	Often combined
Inductive limit switch		
E0-02	0331410	●
E0-10	0331412	
ES-02	0331411	●
ES-10	0331413	
Mechanical limit switch		
EMB	0331415	●
EMS	0331414	

ⓘ The positions and dimensions of limit switches, switching lugs, and mounting components may vary depending on the application and the selected limit switches. Please contact us for assistance.

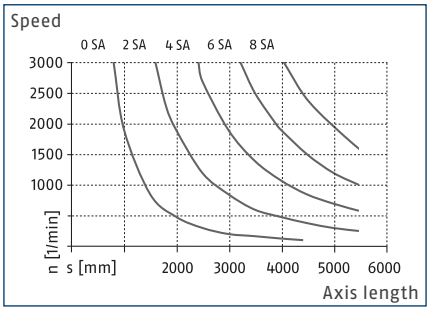
Delta 110

Flat linear module

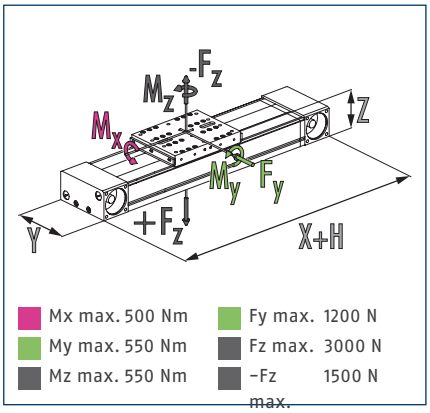
Max. driving force (toothed belt)*



Spindle supports**



Dimensions and maximum loads



Mx max. 500 Nm	Fy max. 1200 N
My max. 550 Nm	Fz max. 3000 N
Mz max. 550 Nm	-Fz max. 1500 N

ⓘ The indicated forces and moments are maximum values for individual loading. If several forces and/or moments are applied at the same time, the maximum permitted individual values will be lower.

Technical data

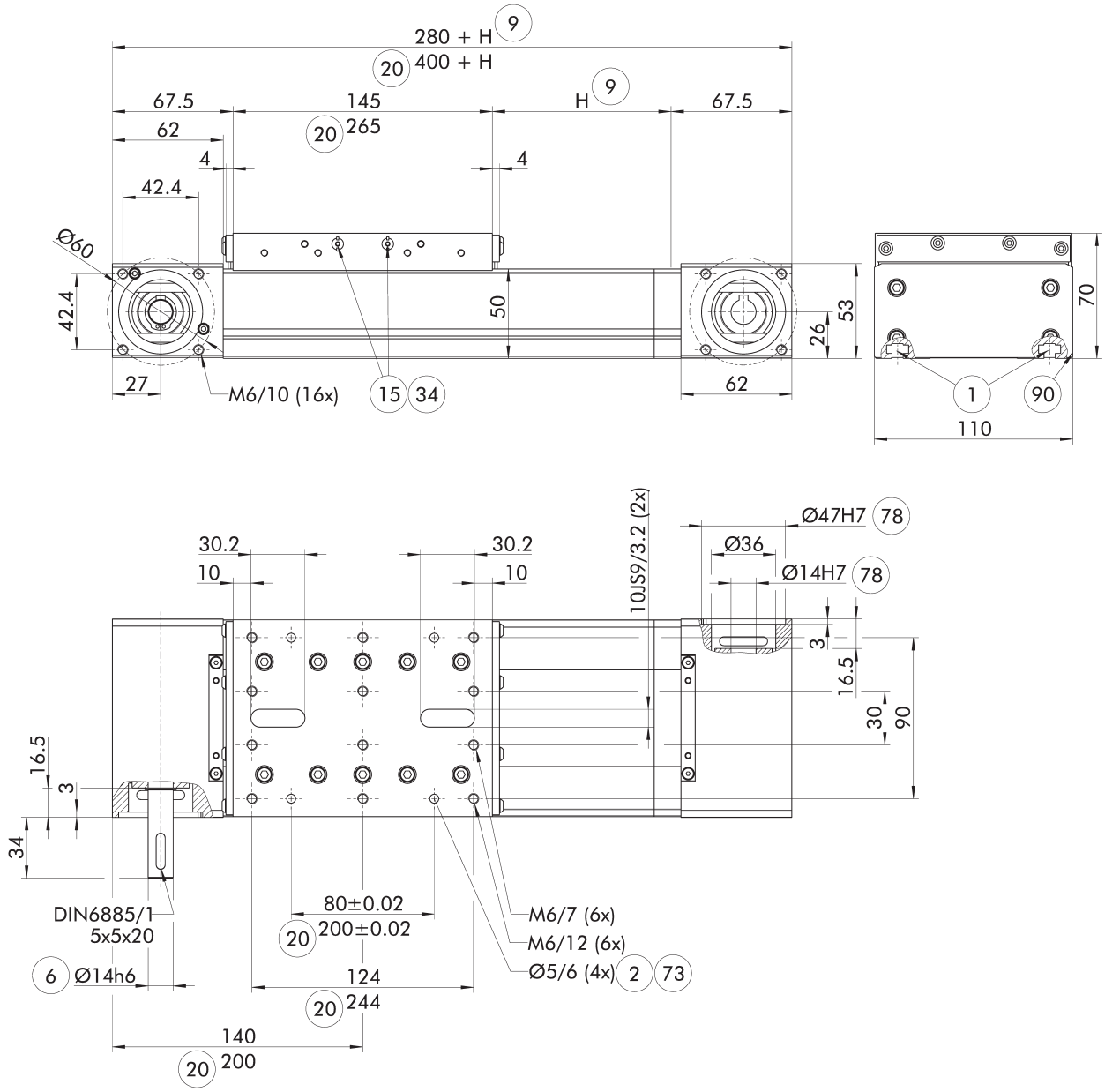
Description		D 110-C-ZSS	D 110-C-SSS
Max. stroke H	[mm]	7820	5370
Max. driving force	[N]	1100	2000
Repeat accuracy	[mm]	±0.08	±0.03
Max. total length	[mm]	8100	5600
Max. speed	[m/s]	5	2
Max. acceleration	[m/s²]	40	20
Min./max. ambient temperature	[°C]	0/80	0/80
Dead weight of base including slide	[kg]	5.1	4.9
Additional mass per 100 mm stroke	[kg]	0.8	0.9
Weight of slide	[kg]	2.2	2.3
Dead weight of slide, long	[kg]	3.15	3.25
Guidance system		Rail guide	Rail guide
Number of rails		2	2
Size of rails		15	15
Drive concept		Belt drive	Spindle drive
Idle torque	[Nm]	2	1
Moment of inertia	[kgm²]	0.00076	0.0000332
Toothed belt type		50 AT 5-E	
Traverse path per revolution	[mm]	110	
Spindle diameter	[mm]		16
Spindle pitch	[mm]		5/10/20/40
Max. spindle speed	[1/min]		3000
Dimensions X x Y x Z	[mm]	280 x 110 x 70	230 x 110 x 70

ⓘ Please note that the long slide plates and the use of spindle supports (SA) reduce the maximum stroke H.
SCHUNK standard spindle supports with noise damping (SAG) reduce the maximum stroke by 10 mm for every 2 SAG.
Longer total lengths are available on request. Please contact us for details.
Please note that the moment of inertia for spindle axes refers to one meter.

* The specified driving forces are maximum values for modules with toothed-belt drives at a given speed.

** The diagram shows the maximum spindle speed depending on the speed of the spindle supports (SA) and the overall length of the unit.

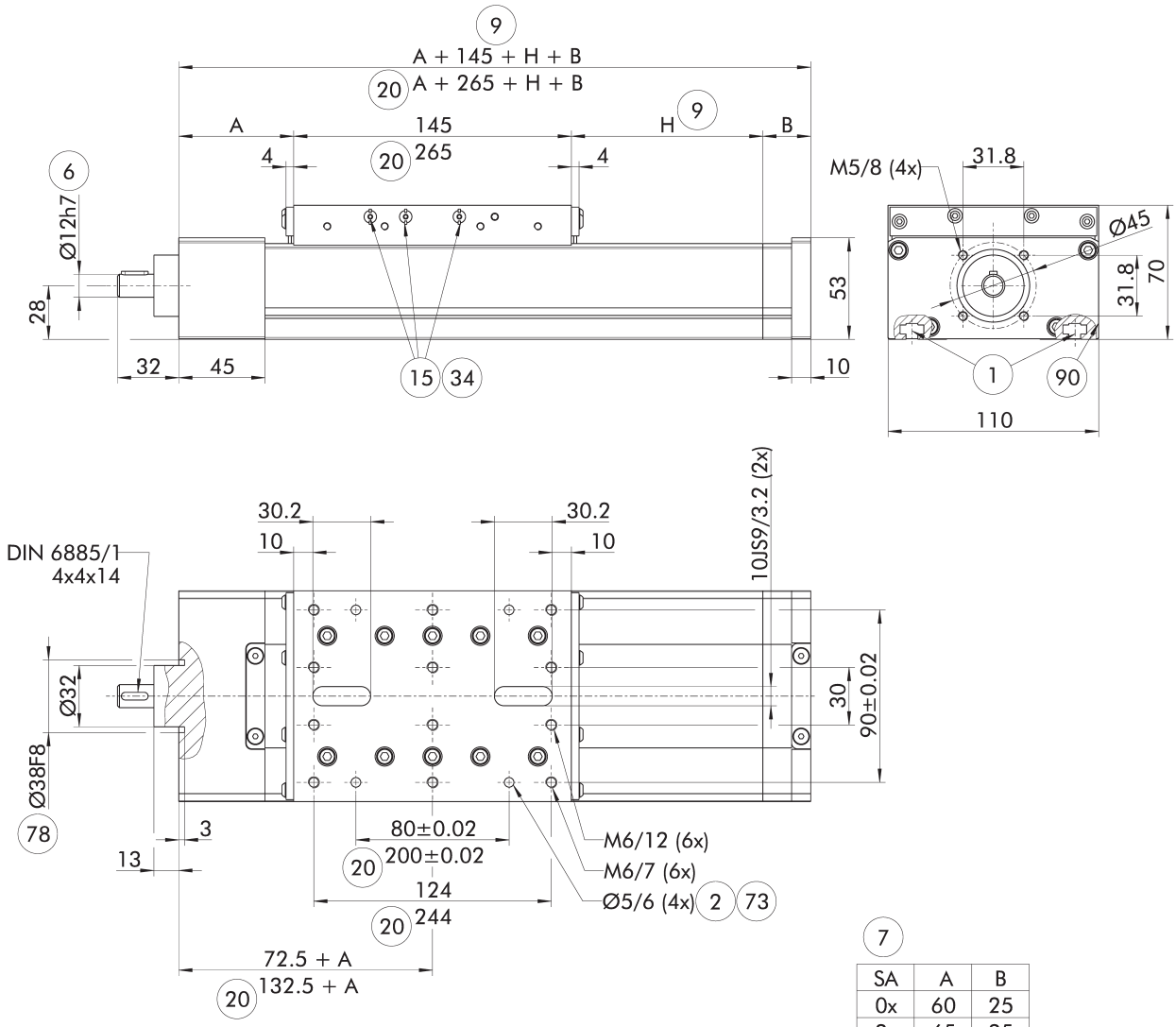
C-ZSS main view



The drawing shows the unit in standard design, without considering any dimensions of the options described below.

1 Connection linear unit
2 Attachment connection
6 Drive connection
9 Nominal stroke
15 Lubricant connection
20 With long slide plate
34 On both sides
73 Fit for centering pins
78 Fit for centering
90 Stop edge for alignment of axis

C-SSS main view



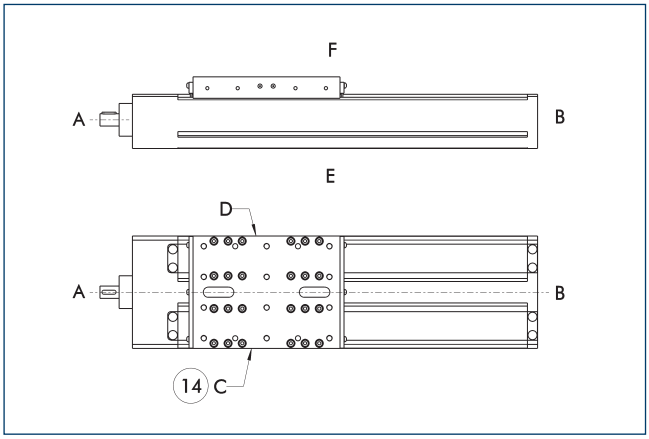
7

SA	A	B
0x	60	25
2x	65	25
4x	85	45
6x	105	65
8x	125	85

The drawing shows the unit in standard design, without considering any dimensions of the options described below.

(1) Connection linear unit
(2) Attachment connection
(6) Drive connection
(7) Number of spindle supports
(9) Nominal stroke
(15) Lubricant connection
(20) With long slide plate
(34) On both sides
(73) Fit for centering pins
(78) Fit for centering
(90) Stop edge for alignment of axis

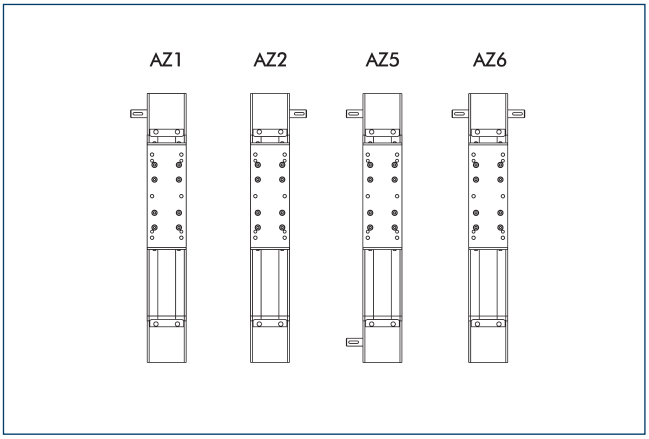
Side definition



14 Limit switch standard position

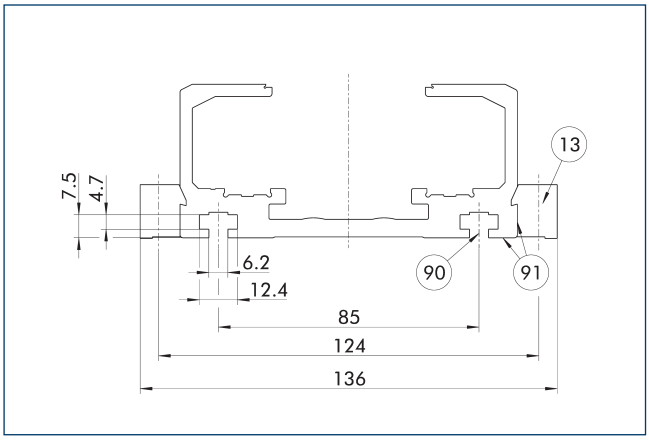
This drawing indicates the definition for the sides. This serves as the basis for all attachments.

Drive shafts in profile (rack and pinion drive)



Depending on the axis application, the seat of the drive shaft has to be defined in the order text. Particularly with axis combinations and mechanical synchronization, several drive shafts are required.

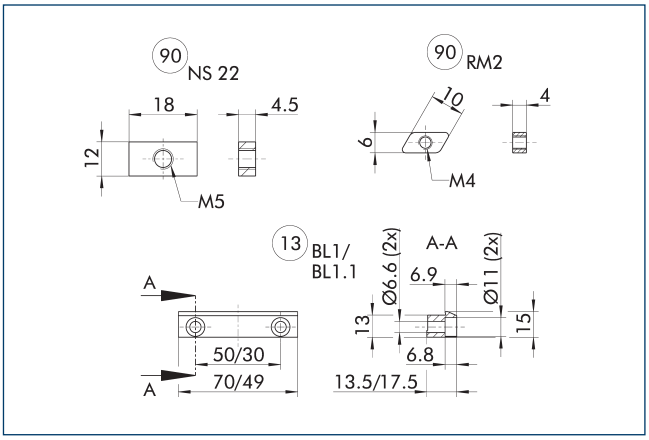
Mounting



13 Mounting strip
91 Stop edge for alignment of axis
90 T-nut at the bottom side

The drawing shows the position of the mounting options.

Fastening elements



13 Mounting strip
90 T-nut at the bottom side

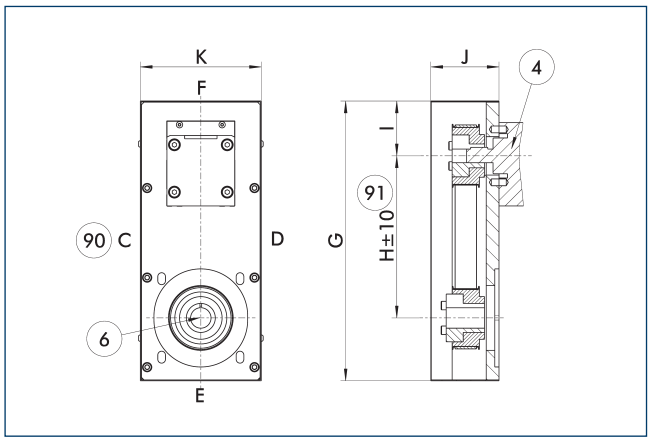
The unit can be secured either by using T-nuts or mounting strips. The exact mounting position is indicated on the adjacent attachment illustration.

Description	ID	
Mounting strip		
BL1.1-49x15x17.5-01	0331417	
BL1-70x15x17.5-01	0331400	
T-nut		
NS 22-M5	1346181	
NS 23-M6	1357397	
RM2-M4	0331425	

Delta 110

Flat linear module

Angle belt drive



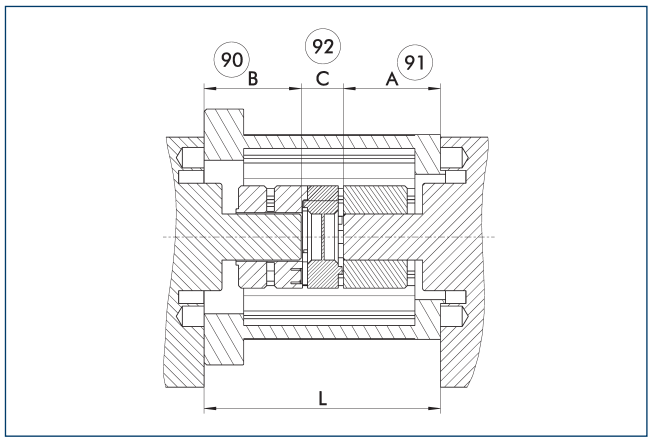
4 Linear unit
6 Drive connection
90 Attachment direction of angle belt drive
91 Dependent on transmission ratio and toothed belt design.

The angle belt drive makes it possible to achieve various drive solutions in confined spaces. SCHUNK offers the suitable angle gear for your drive.

Description	G	H	I	J	K
	[mm]	[mm]	[mm]	[mm]	[mm]
D 110-C-SSS	195	105	41	45	90

ⓘ Possible transmission ratios: i = 1 : 1, i = 2 : 1 and i = 3 : 1

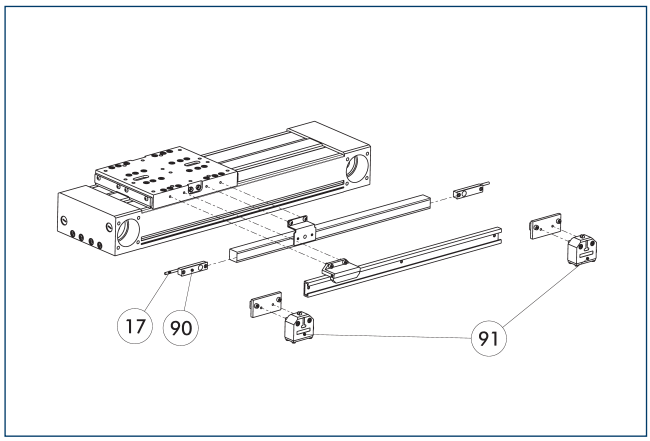
Motor flange schematic diagram



90 Length of motor / transmission drive shaft
91 Length of linear unit drive journal
92 Clutch length

Different drive solutions can be attached to our axes. SCHUNK offers you the right motor flange and coupling for your drive.

Limit and reference switch



17 Cable outlet
90 Inductive limit and reference switches
91 Mechanical limit switches

Generally two E0-02 switches are used as limit switches and one ES-02 is used as reference switch.

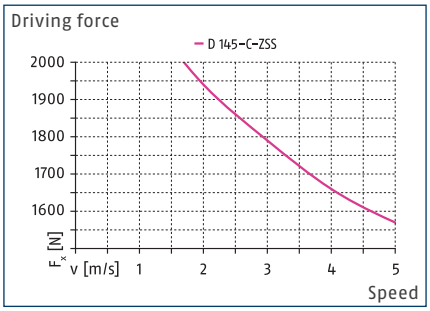
Description	ID	Often combined
Inductive limit switch		
E0-02	0331410	●
E0-10	0331412	
ES-02	0331411	●
ES-10	0331413	
Mechanical limit switch		
EMB	0331415	●
EMS	0331414	

ⓘ The positions and dimensions of limit switches, switching lugs, and mounting components may vary depending on the application and the selected limit switches. Please contact us for assistance.

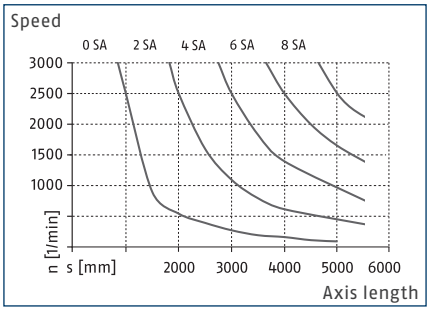
Delta 145

Flat linear module

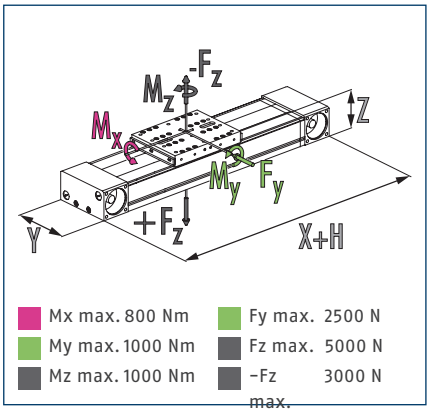
Max. driving force (toothed belt)*



Spindle supports**



Dimensions and maximum loads



Mx max.	800 Nm	Fy max.	2500 N
My max.	1000 Nm	Fz max.	5000 N
Mz max.	1000 Nm	-Fz max.	3000 N

ⓘ The indicated forces and moments are maximum values for individual loading. If several forces and/or moments are applied at the same time, the maximum permitted individual values will be lower.

Technical data

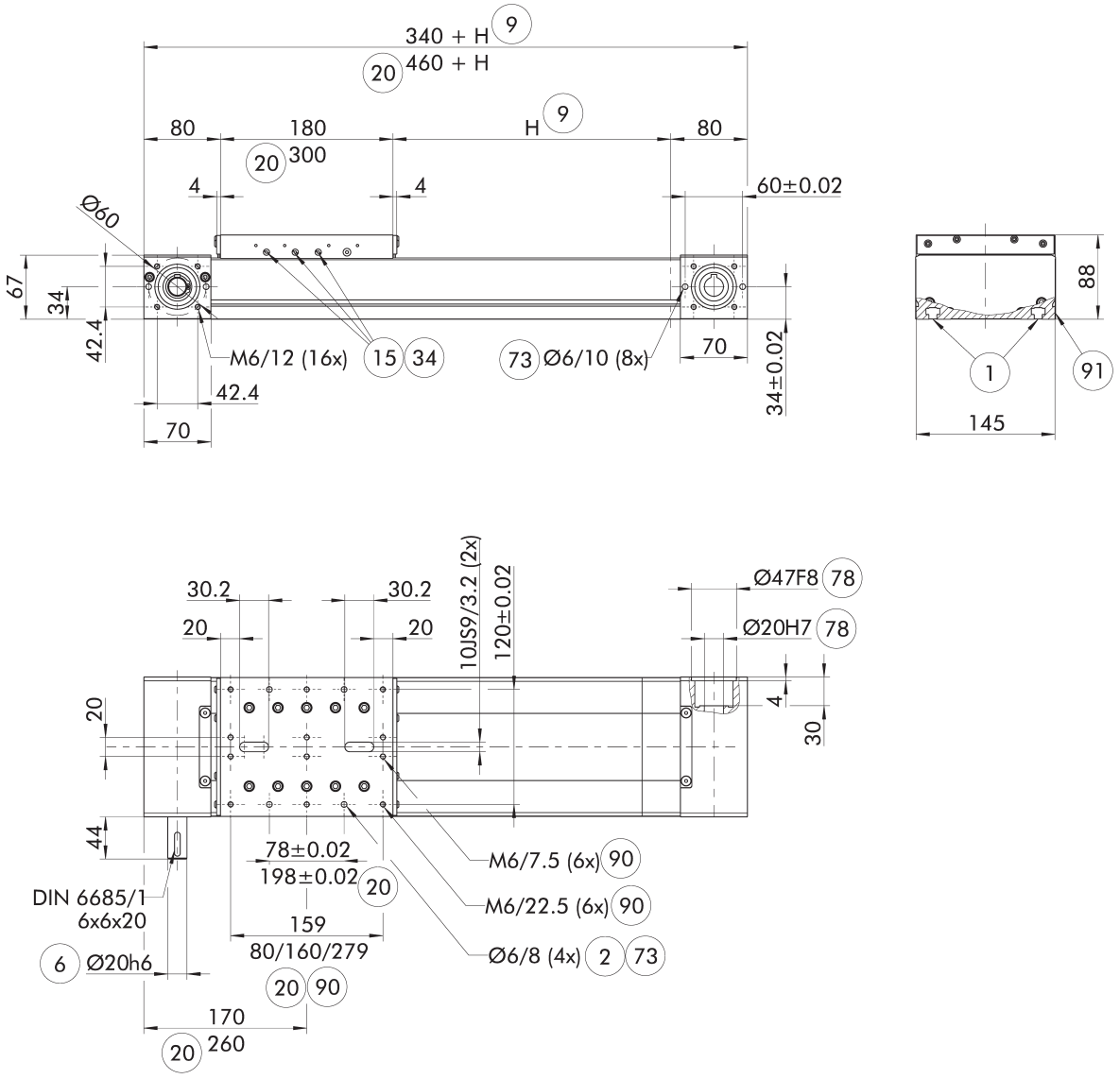
Description		D 145-C-ZSS	D 145-C-SSS
Max. stroke H	[mm]	7760	5300
Max. driving force	[N]	2000	6000
Repeat accuracy	[mm]	±0.08	±0.03
Max. total length	[mm]	8100	5600
Max. speed	[m/s]	5	2.5
Max. acceleration	[m/s²]	40	20
Min./max. ambient temperature	[°C]	0/80	0/80
Dead weight of base including slide	[kg]	10.4	10.3
Additional mass per 100 mm stroke	[kg]	1.3	1.5
Weight of slide	[kg]	3.9	4.9
Dead weight of slide, long	[kg]	5.4	6.5
Guidance system		Rail guide	Rail guide
Number of rails		2	2
Size of rails		20	20
Drive concept		Belt drive	Spindle drive
Idle torque	[Nm]	3	1
Moment of inertia	[kgm²]	0.00285	0.000084
Toothed belt type		60 AT 5-E	
Traverse path per revolution	[mm]	150	
Spindle diameter	[mm]		20
Spindle pitch	[mm]		5/10/20/50
Max. spindle speed	[1/min]		3000
Dimensions X x Y x Z	[mm]	340 x 145 x 88	300 x 145 x 88

ⓘ Please note that the long slide plates and the use of spindle supports (SA) reduce the maximum stroke H.
SCHUNK standard spindle supports with noise damping (SAG) reduce the maximum stroke by 10 mm for every 2 SAG.
Longer total lengths are available on request. Please contact us for details.
Please note that the moment of inertia for spindle axes refers to one meter.

* The specified driving forces are maximum values for modules with toothed-belt drives at a given speed.

** The diagram shows the maximum spindle speed depending on the speed of the spindle supports (SA) and the overall length of the unit.

C-ZSS main view



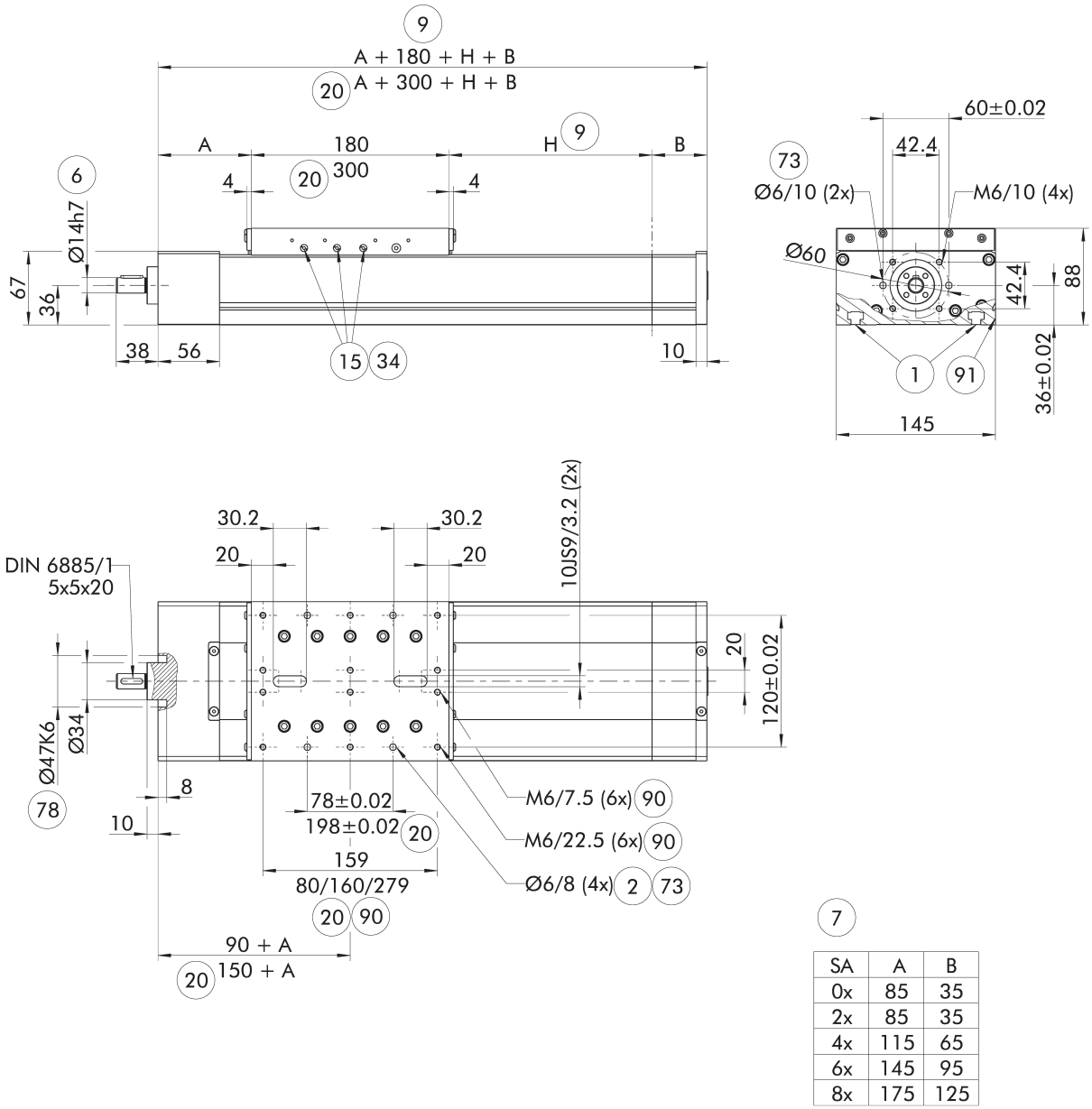
The drawing shows the unit in standard design, without considering any dimensions of the options described below.

1 Connection linear unit
2 Attachment connection
6 Drive connection
9 Nominal stroke
15 Lubricant connection
20 With long slide plate
34 On both sides
73 Fit for centering pins
78 Fit for centering
90 Additional screw threads in the case of a long slide plate
91 Stop edge for alignment of axis

Delta 145

Flat linear module

C-SSS main view



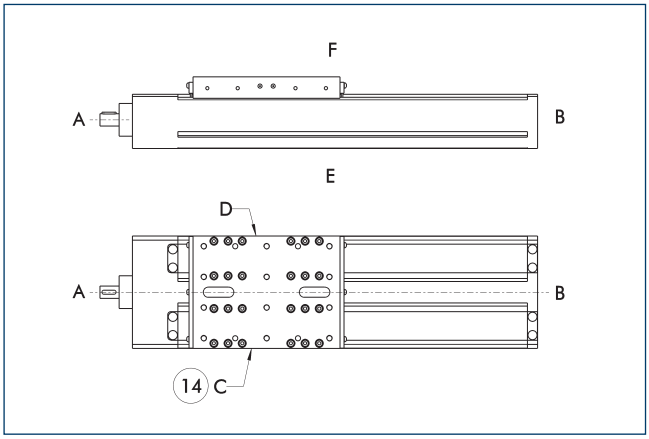
7

SA	A	B
0x	85	35
2x	85	35
4x	115	65
6x	145	95
8x	175	125

The drawing shows the unit in standard design, without considering any dimensions of the options described below.

1. Connection linear unit
2. Attachment connection
6. Drive connection
7. Number of spindle supports
9. Nominal stroke
15. Lubricant connection
20. With long slide plate
34. On both sides
73. Fit for centering pins
78. Fit for centering
90. Additional screw threads in the case of a long slide plate
91. Stop edge for alignment of axis

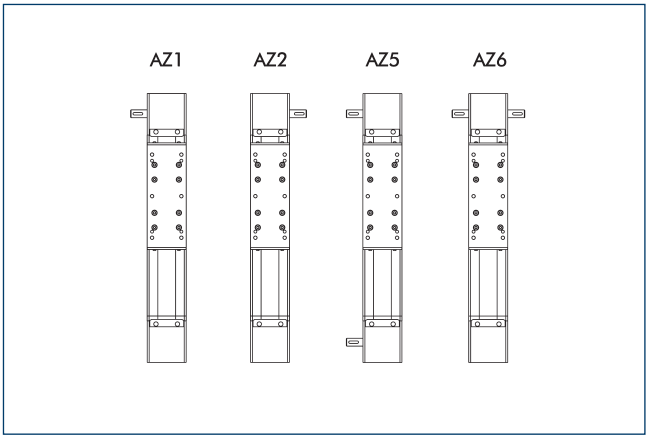
Side definition



(14) Limit switch standard position

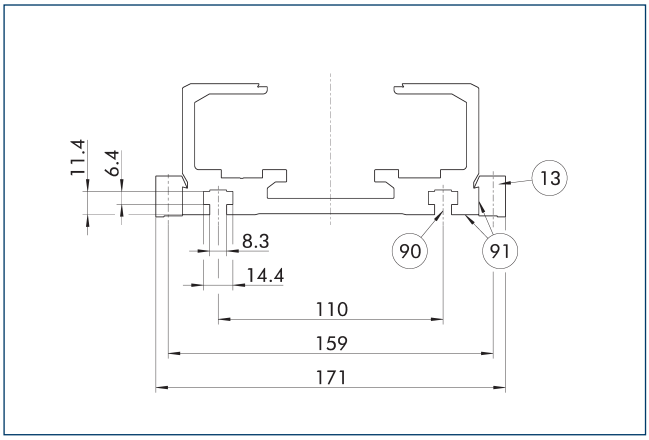
This drawing indicates the definition for the sides. This serves as the basis for all attachments.

Drive shafts in profile (rack and pinion drive)



Depending on the axis application, the seat of the drive shaft has to be defined in the order text. Particularly with axis combinations and mechanical synchronization, several drive shafts are required.

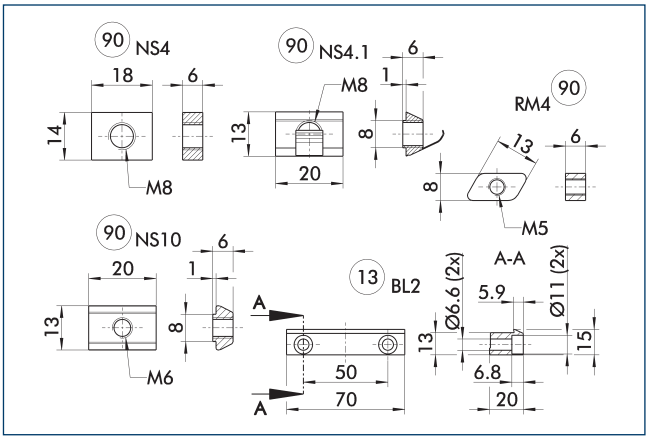
Mounting



(13) Mounting strip
(91) Stop edge for alignment of axis
(90) T-nut at the bottom side

The drawing shows the position of the mounting options.

Fastening elements



(13) Mounting strip
(90) T-nut at the bottom side

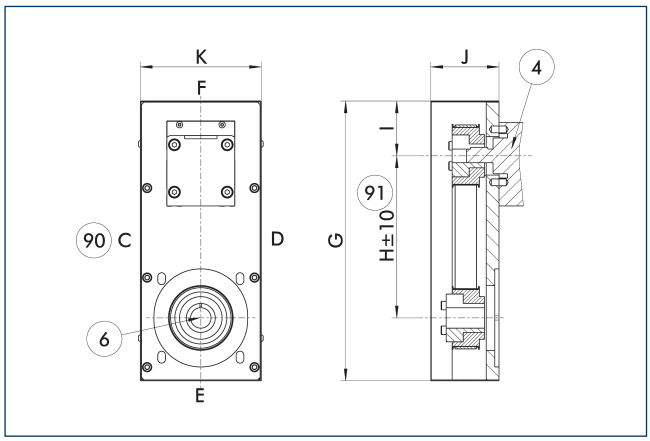
The unit can be secured either by using T-nuts or mounting strips. The exact mounting position is indicated on the adjacent attachment illustration.

Description	ID	
Mounting strip		
BL2-70x15x20-01	0331401	
T-nut		
NS 10-M6-6	0331422	
NS 4.1-M8-6	0331430	
NS 4-M8-6	0331407	
RM4-M5	0331426	

Delta 145

Flat linear module

Angle belt drive



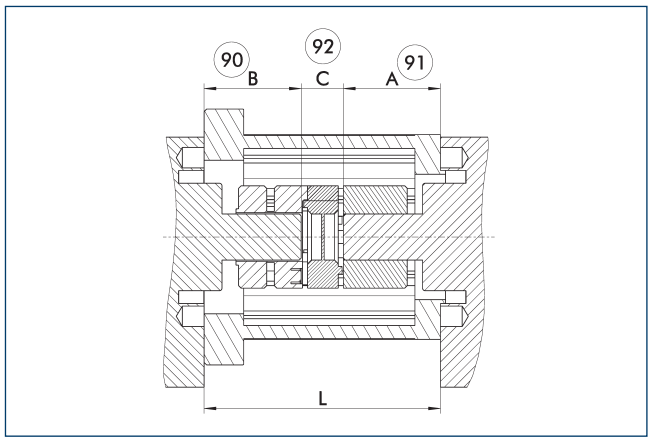
4 Linear unit
6 Drive connection
90 Attachment direction of angle belt drive
91 Dependent on transmission ratio and toothed belt design.

The angle belt drive makes it possible to achieve various drive solutions in confined spaces. SCHUNK offers the suitable angle gear for your drive.

Description	G	H	I	J	K
	[mm]	[mm]	[mm]	[mm]	[mm]
D 145-C-SSS	238	120	46	52	102

ⓘ Possible transmission ratios: i = 1 : 1, i = 2 : 1 and i = 3 : 1

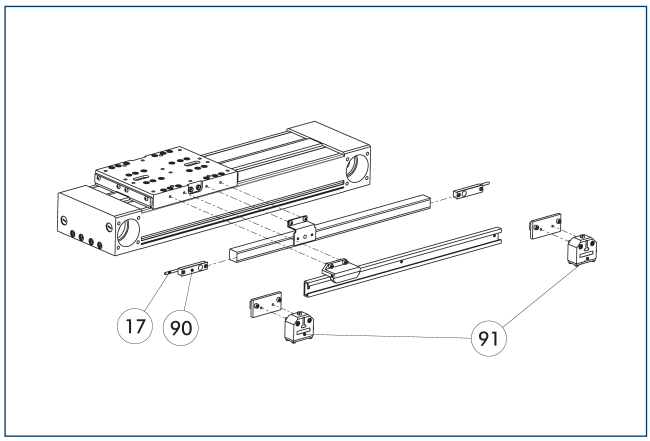
Motor flange schematic diagram



90 Length of motor / transmission drive shaft
91 Length of linear unit drive journal
92 Clutch length

Different drive solutions can be attached to our axes. SCHUNK offers you the right motor flange and coupling for your drive.

Limit and reference switch



17 Cable outlet
90 Inductive limit and reference switches
91 Mechanical limit switches

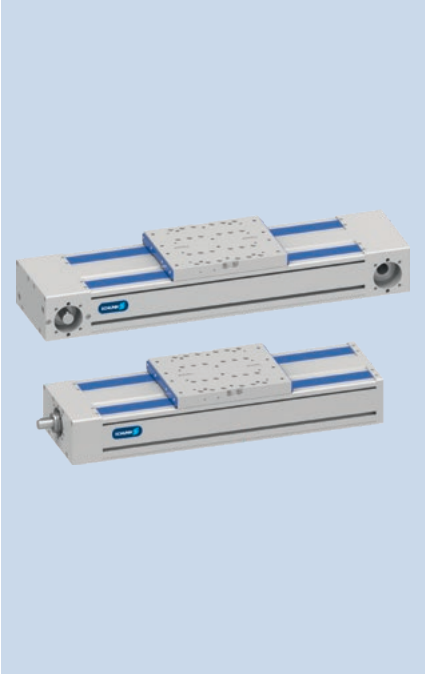
Generally two E0-02 switches are used as limit switches and one ES-02 is used as reference switch.

Description	ID	Often combined
Inductive limit switch		
E0-02	0331410	●
E0-10	0331412	
ES-02	0331411	●
ES-10	0331413	
Mechanical limit switch		
EMB	0331415	●
EMS	0331414	

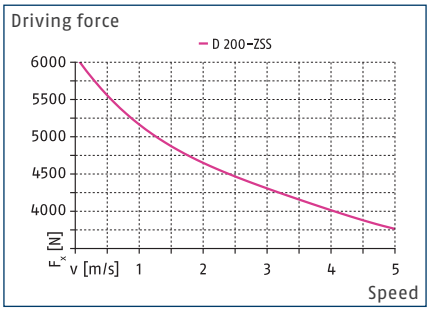
ⓘ The positions and dimensions of limit switches, switching lugs, and mounting components may vary depending on the application and the selected limit switches. Please contact us for assistance.

Delta 200

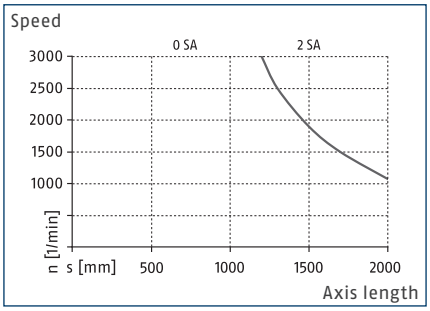
Flat linear module



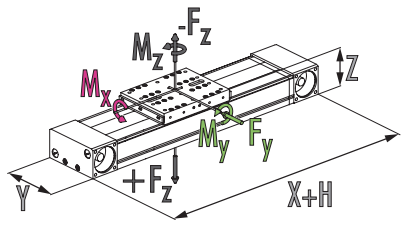
Max. driving force (toothed belt)*



Spindle supports**



Dimensions and maximum loads



Mx max.	3500 Nm	Fy max.	5000 N
My max.	4300 Nm	Fz max.	8000 N
Mz max.	3200 Nm	-Fz max.	5000 N

ⓘ The indicated forces and moments are maximum values for individual loading. If several forces and/or moments are applied at the same time, the maximum permitted individual values will be lower.

Technical data

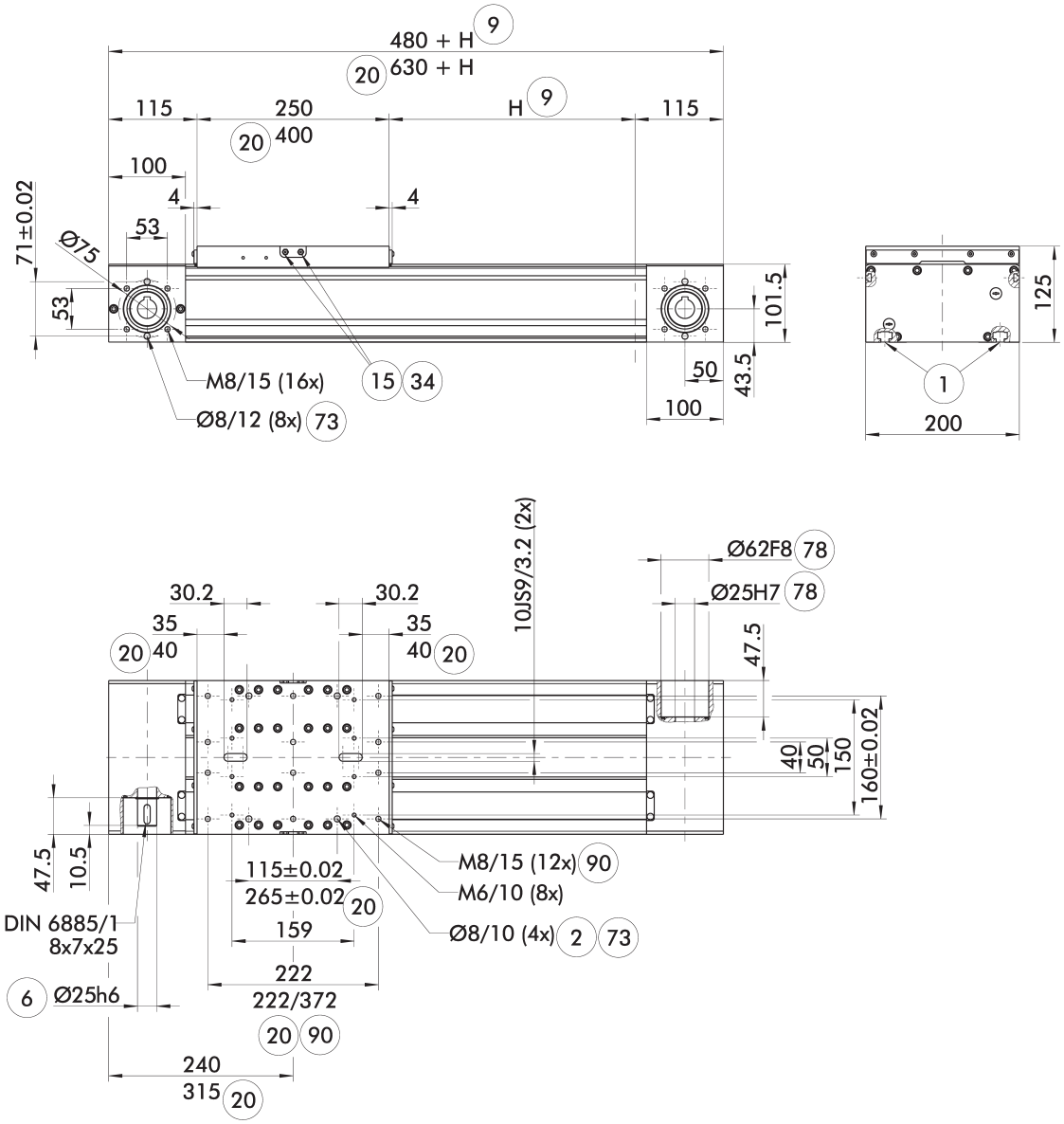
Description		D 200-ZSS	D 200-SSS
Max. stroke H	[mm]	1520	1620
Max. driving force	[N]	6000	10000
Repeat accuracy	[mm]	±0.08	±0.03
Max. total length	[mm]	2000	2000
Max. speed	[m/s]	5	3
Max. acceleration	[m/s²]	60	20
Min./max. ambient temperature	[°C]	0/80	0/80
Dead weight of base including slide	[kg]	25	22
Additional mass per 100 mm stroke	[kg]	2	2.6
Weight of slide	[kg]	8.2	8.4
Dead weight of slide, long	[kg]	10.5	11
Guidance system		Rail guide	Rail guide
Number of rails		2	2
Size of rails		25	25
Drive concept		Belt drive	Spindle drive
Idle torque	[Nm]	6.8	2.8
Moment of inertia	[kgm²]	0.012	0.000639
Toothed belt type		75 AT 10	
Traverse path per revolution	[mm]	220	
Spindle diameter	[mm]		32
Spindle pitch	[mm]		5/10/20/40/60
Max. spindle speed	[1/min]		3000
Dimensions X x Y x Z	[mm]	480 x 200 x 125	380 x 200 x 125

ⓘ Please note that the moment of inertia for spindle axes refers to one meter.

* The specified driving forces are maximum values for modules with toothed-belt drives at a given speed.

** The diagram shows the maximum spindle speed depending on the speed of the spindle supports (SA) and the overall length of the unit.

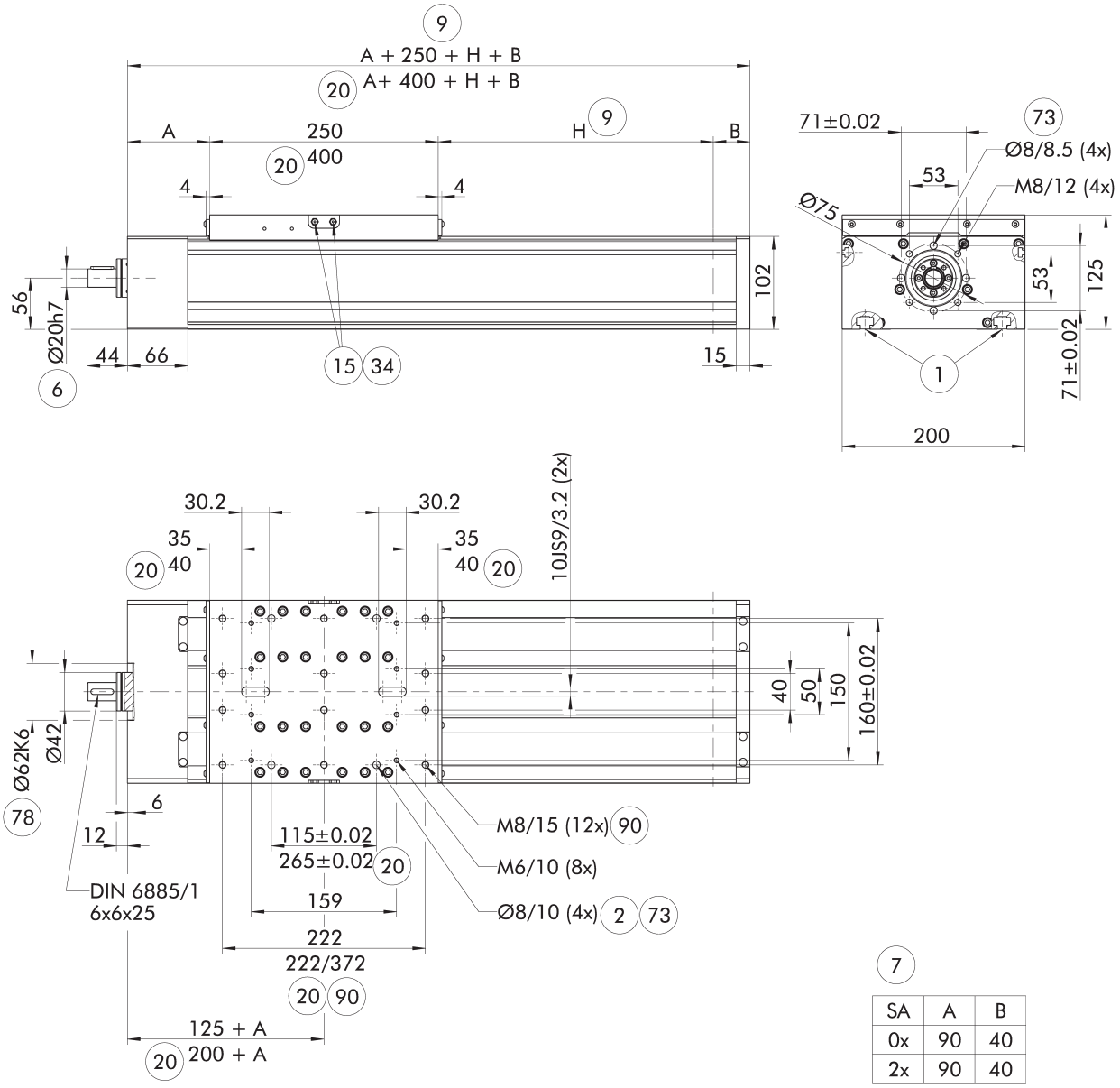
ZSS main view



The drawing shows the unit in standard design, without considering any dimensions of the options described below.

1. Connection linear unit
2. Attachment connection
6. Drive connection
9. Nominal stroke
15. Lubricant connection
20. With long slide plate
34. On both sides
73. Fit for centering pins
78. Fit for centering
90. Additional screw threads in the case of a long slide plate

SSS main view



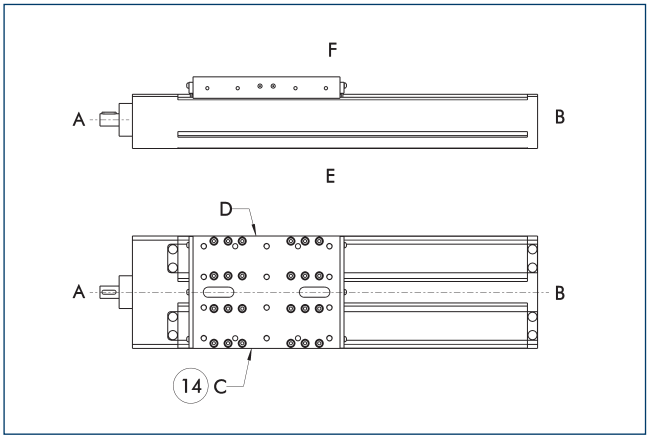
7

SA	A	B
0x	90	40
2x	90	40

The drawing shows the unit in standard design, without considering any dimensions of the options described below.

(1) Connection linear unit
(2) Attachment connection
(6) Drive connection
(7) Number of spindle supports
(9) Nominal stroke
(15) Lubricant connection
(20) With long slide plate
(34) On both sides
(73) Fit for centering pins
(78) Fit for centering
(90) Additional screw threads in the case of a long slide plate

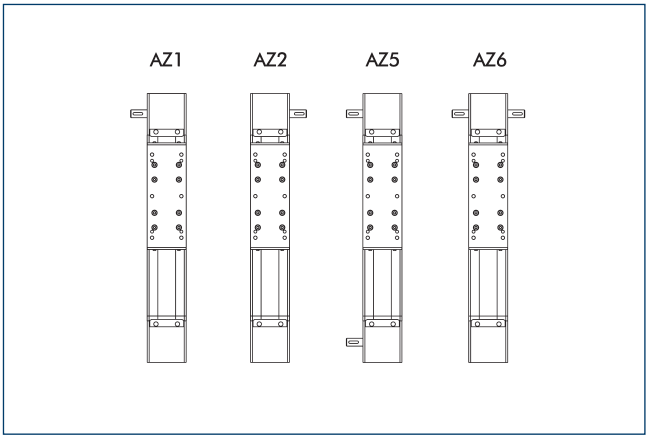
Side definition



(14) Limit switch standard position

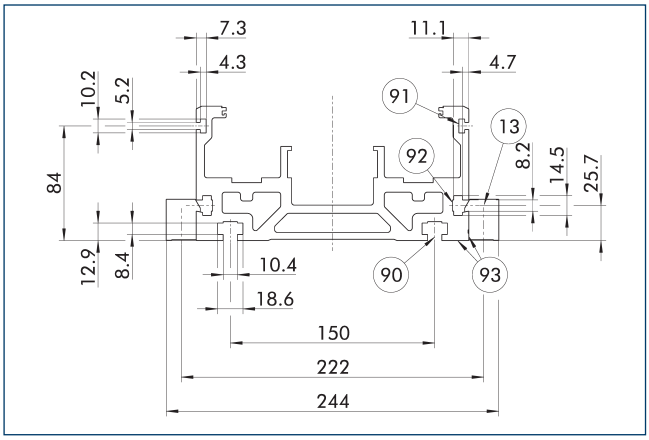
This drawing indicates the definition for the sides. This serves as the basis for all attachments.

Drive shafts in profile (rack and pinion drive)



Depending on the axis application, the seat of the drive shaft has to be defined in the order text. Particularly with axis combinations and mechanical synchronization, several drive shafts are required.

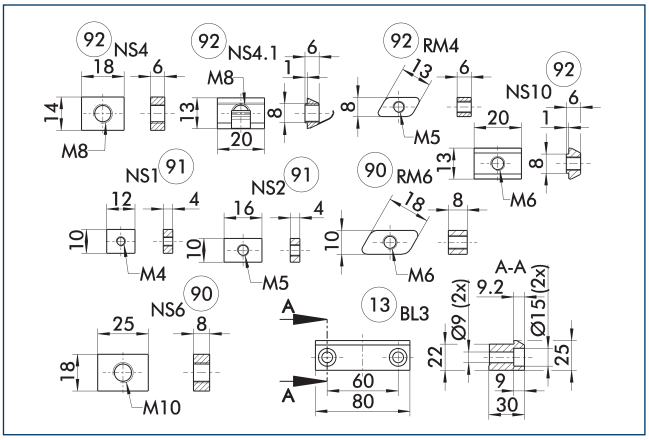
Mounting



(13) Mounting strip
(90) T-nut at the bottom side
(91) T-nut, laterally on top
(92) T-nut, laterally at the bottom
(93) Stop edge for alignment of axis

The drawing shows the position of the mounting options.

Fastening elements



(13) Mounting strip
(90) T-nut at the bottom side
(91) T-nut, laterally at the bottom
(92) T-nut, laterally on top

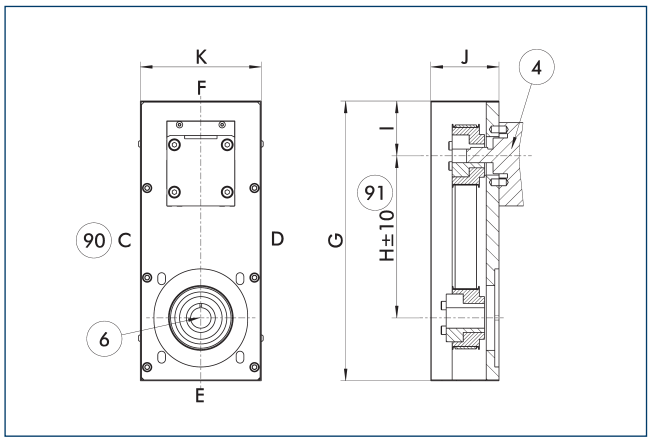
The unit can be secured either by using T-nuts or mounting strips. The exact mounting position is indicated on the adjacent attachment illustration.

Description	ID	
Mounting strip		
BL3-80x25x30-01	0331402	
T-nut		
NS 10-M6-6	0331422	
NS 1-M4	0331404	
NS 2-M5	0331405	
NS 4.1-M8-6	0331430	
NS 4-M8-6	0331407	
NS 6-M10	0331409	
RM4-M5	0331426	
RM6-M6	0331427	

Delta 200

Flat linear module

Angle belt drive



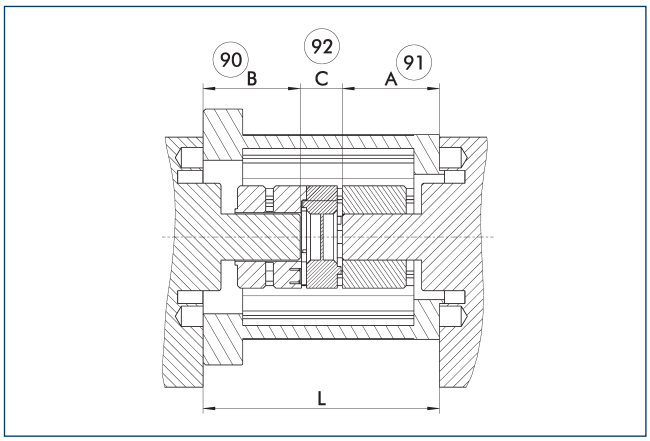
(4) Linear unit
(6) Drive connection
(90) Attachment direction of angle belt drive
(91) Dependent on transmission ratio and toothed belt design.

The angle belt drive makes it possible to achieve various drive solutions in confined spaces. SCHUNK offers the suitable angle gear for your drive.

Description	G	H	I	J	K
	[mm]	[mm]	[mm]	[mm]	[mm]
D 200-SSS	328	190	64	80	142

ⓘ Possible transmission ratios: i = 1 : 1, i = 2 : 1 and i = 3 : 1

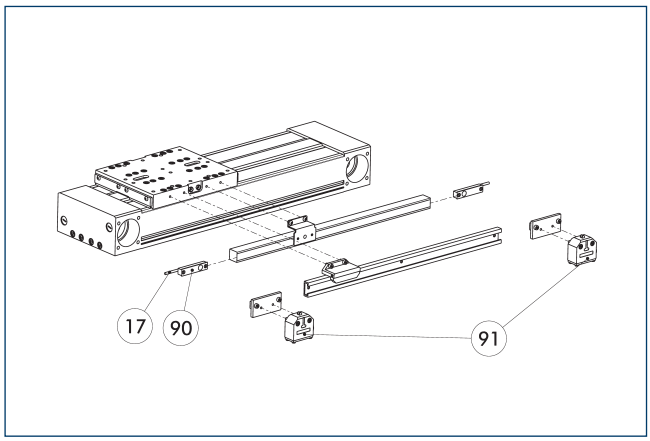
Motor flange schematic diagram



(90) Length of motor / transmission drive shaft
(91) Length of linear unit drive journal
(92) Clutch length

Different drive solutions can be attached to our axes. SCHUNK offers you the right motor flange and coupling for your drive.

Limit and reference switch



17 Cable outlet
90 Inductive limit and reference switches
91 Mechanical limit switches

Generally two E0-02 switches are used as limit switches and one ES-02 is used as reference switch.

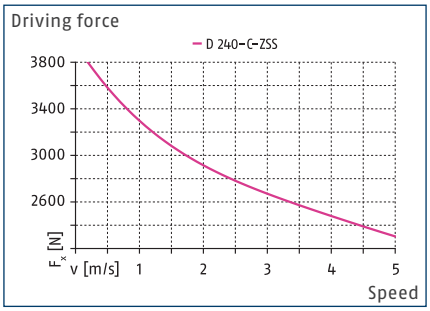
Description	ID	Often combined
Inductive limit switch		
E0-02	0331410	●
E0-10	0331412	
ES-02	0331411	●
ES-10	0331413	
Mechanical limit switch		
EMB	0331415	●
EMS	0331414	

ⓘ The positions and dimensions of limit switches, switching lugs, and mounting components may vary depending on the application and the selected limit switches. Please contact us for assistance.

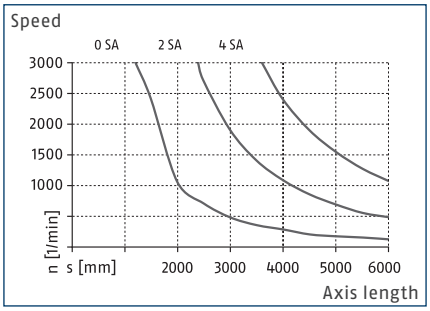
Delta 240

Flat linear module

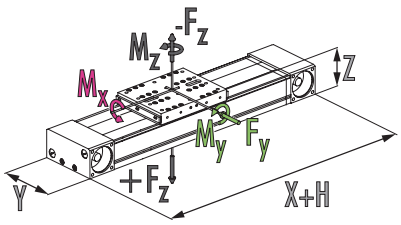
Max. driving force (toothed belt)*



Spindle supports**



Dimensions and maximum loads



Mx max.	4500 Nm	Fy max.	6000 N
My max.	6000 Nm	Fz max.	12000 N
Mz max.	4500 Nm	-Fz max.	8000 N

ⓘ The indicated forces and moments are maximum values for individual loading. If several forces and/or moments are applied at the same time, the maximum permitted individual values will be lower.

Technical data

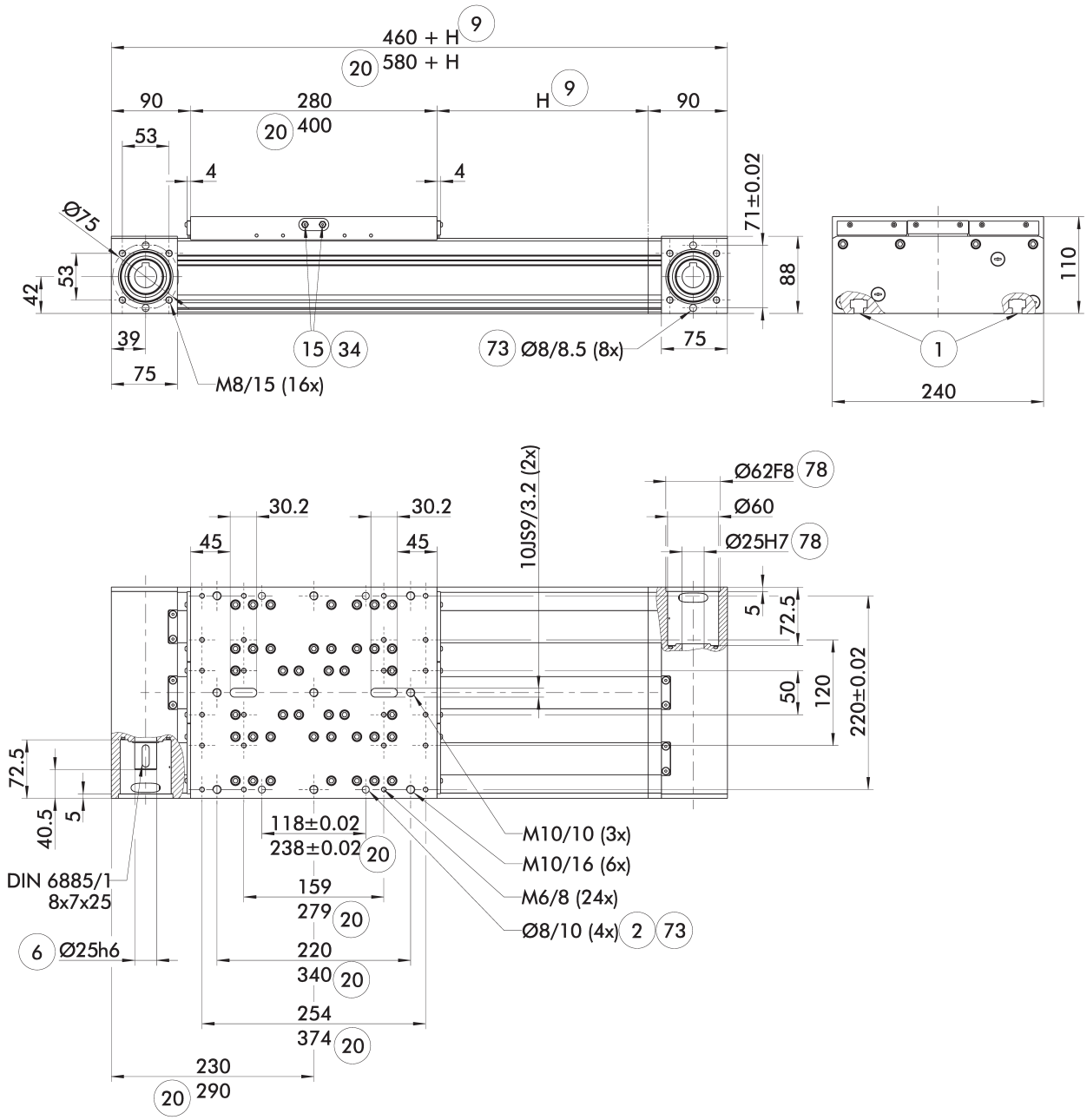
Description		D 240-C-ZSS	D 240-C-SSS
Max. stroke H	[mm]	7540	5200
Max. driving force	[N]	3800	12000
Repeat accuracy	[mm]	±0.08	±0.03
Max. total length	[mm]	8000	5600
Max. speed	[m/s]	5	3
Max. acceleration	[m/s²]	60	20
Min./max. ambient temperature	[°C]	0/80	0/80
Dead weight of base including slide	[kg]	25.5	24.2
Additional mass per 100 mm stroke	[kg]	2.75	3.25
Weight of slide	[kg]	9.8	10.2
Dead weight of slide, long	[kg]	14	14.6
Guidance system		Rail guide	Rail guide
Number of rails		2	2
Size of rails		25	25
Drive concept		Belt drive	Spindle drive
Idle torque	[Nm]	5.5	2.8
Moment of inertia	[kgm²]	0.026	0.000639
Toothed belt type		60 ATL 10	
Traverse path per revolution	[mm]	180	
Spindle diameter	[mm]		32
Spindle pitch	[mm]		5/10/20/40/60
Max. spindle speed	[1/min]		3000
Dimensions X x Y x Z	[mm]	460 x 240 x 110	400 x 240 x 110

ⓘ Please note that the long slide plates reduce the maximum stroke H.
Please note that the moment of inertia for spindle axes refers to one meter.

* The specified driving forces are maximum values for modules with toothed-belt drives at a given speed.

** The diagram shows the maximum spindle speed depending on the speed of the spindle supports (SA) and the overall length of the unit.

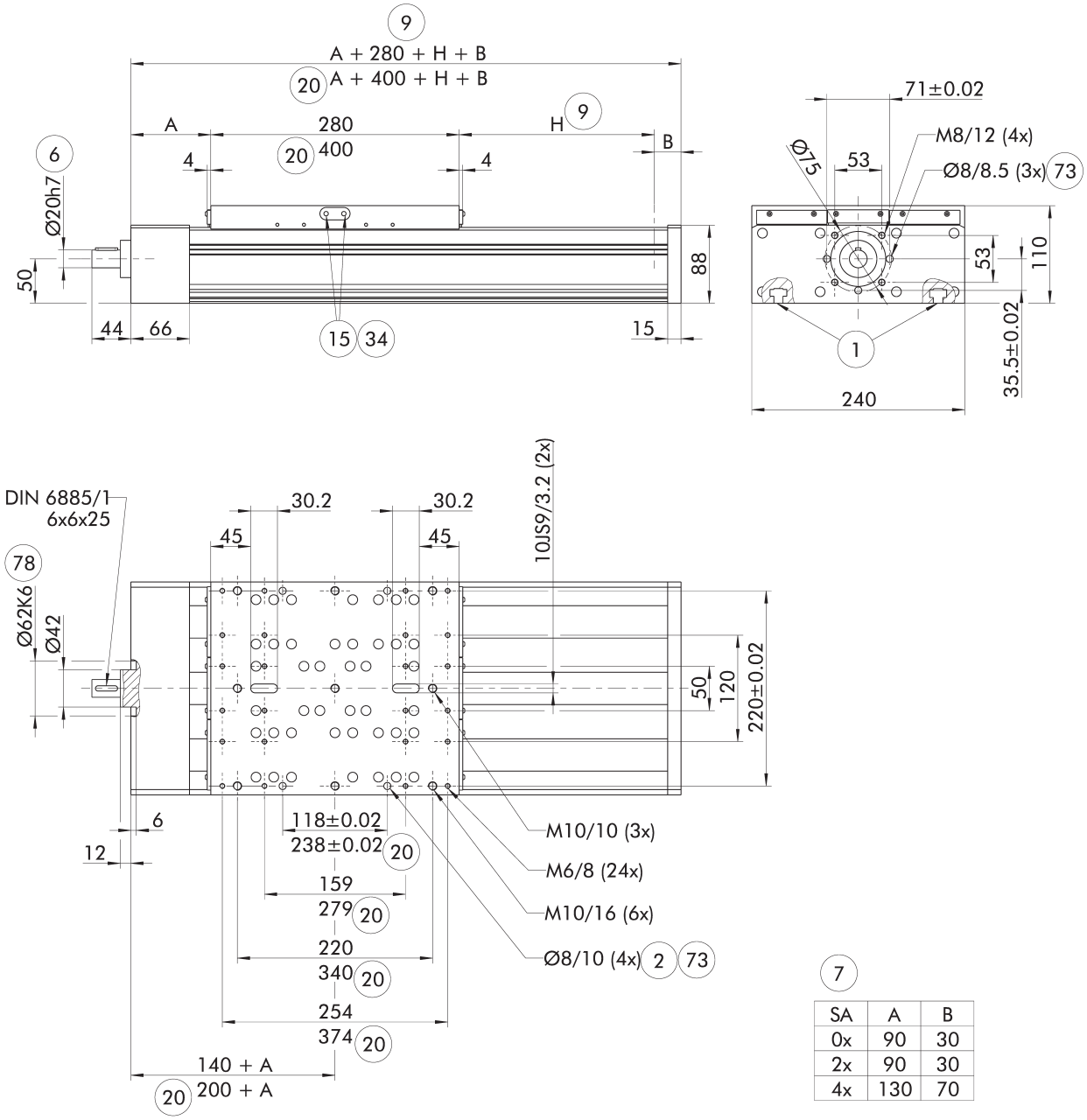
C-ZSS main view



The drawing shows the unit in standard design, without considering any dimensions of the options described below.

1 Connection linear unit
2 Attachment connection
6 Drive connection
9 Nominal stroke
15 Lubricant connection
20 With long slide plate
34 On both sides
73 Fit for centering pins
78 Fit for centering

C-SSS main view



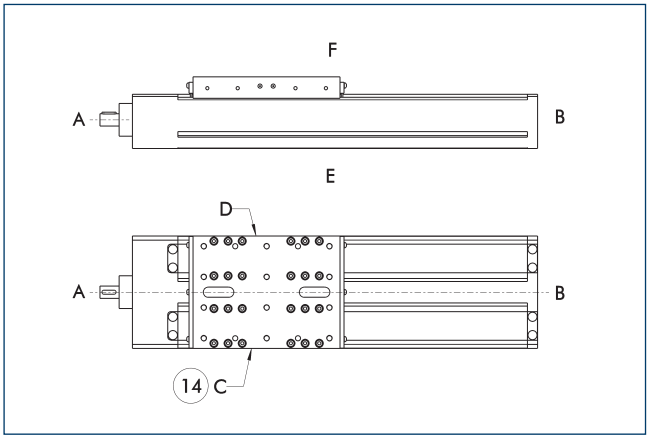
7

SA	A	B
0x	90	30
2x	90	30
4x	130	70

The drawing shows the unit in standard design, without considering any dimensions of the options described below.

(1) Connection linear unit
(2) Attachment connection
(6) Drive connection
(7) Number of spindle supports
(9) Nominal stroke
(15) Lubricant connection
(20) With long slide plate
(34) On both sides
(73) Fit for centering pins
(78) Fit for centering

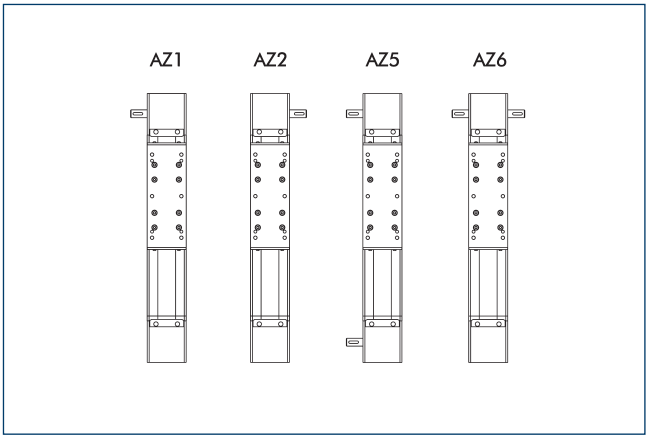
Side definition



(14) Limit switch standard position

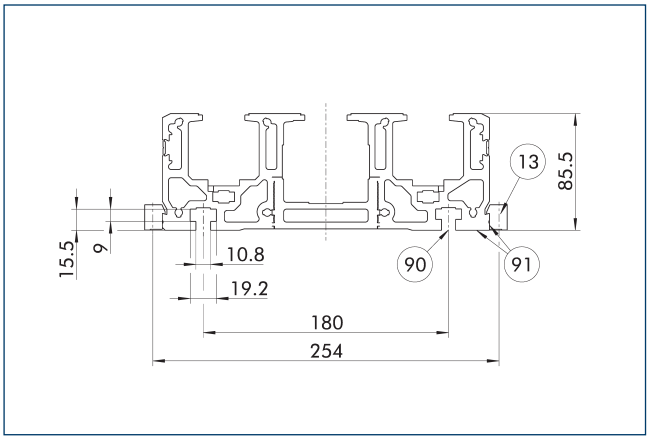
This drawing indicates the definition for the sides. This serves as the basis for all attachments.

Drive shafts in profile (rack and pinion drive)



Depending on the axis application, the seat of the drive shaft has to be defined in the order text. Particularly with axis combinations and mechanical synchronization, several drive shafts are required.

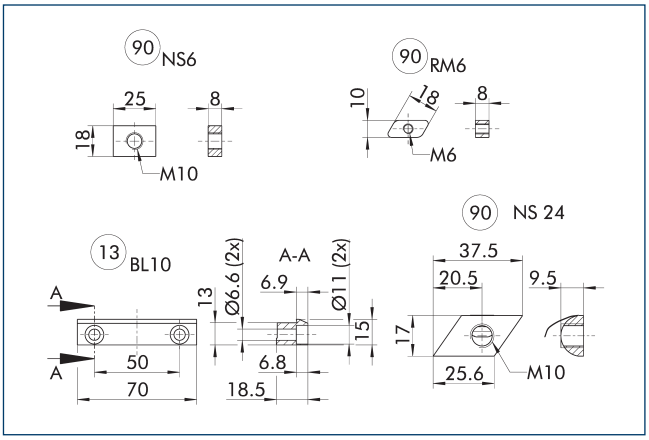
Mounting



(13) Mounting strip
(91) Stop edge for alignment of axis
(90) T-nut at the bottom side

The drawing shows the position of the mounting options.

C-version mounting elements



(13) Mounting strip
(91) Side T-nut
(90) T-nut at the bottom side

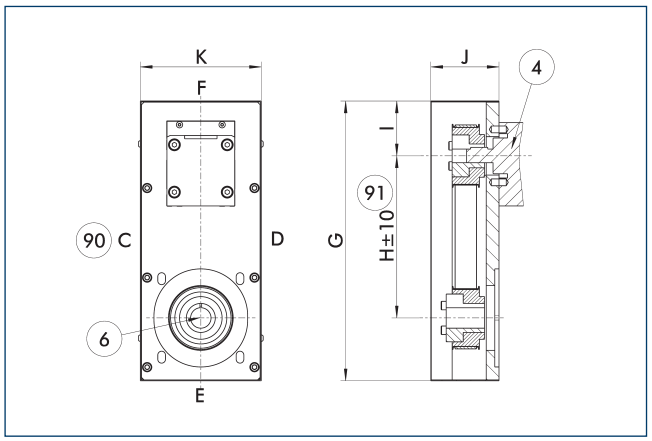
The unit can be secured either by using T-nuts or mounting strips. The exact mounting position is indicated on the adjacent attachment illustration.

Description	ID	
Mounting strip		
BL10-70x15x18,5-01	0331399	
T-nut		
NS 24-M10	1516296	
NS 6-M10	0331409	
RM6-M6	0331427	

Delta 240

Flat linear module

Angle belt drive



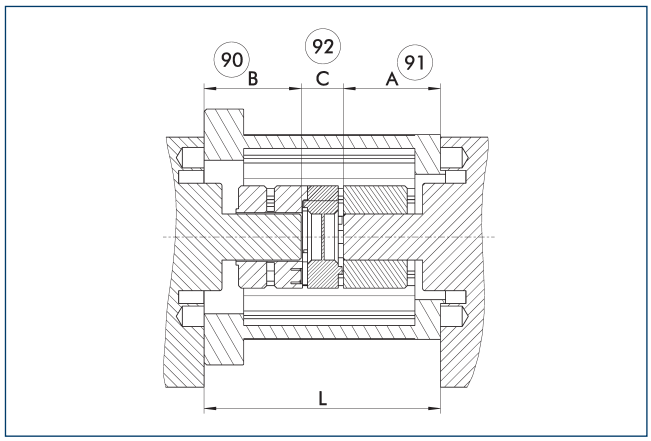
4 Linear unit
6 Drive connection
90 Attachment direction of angle belt drive
91 Dependent on transmission ratio and toothed belt design.

The angle belt drive makes it possible to achieve various drive solutions in confined spaces. SCHUNK offers the suitable angle gear for your drive.

Description	G	H	I	J	K
	[mm]	[mm]	[mm]	[mm]	[mm]
D 240-C-SSS	328	190	64	80	142

ⓘ Possible transmission ratios: i = 1 : 1, i = 2 : 1 and i = 3 : 1

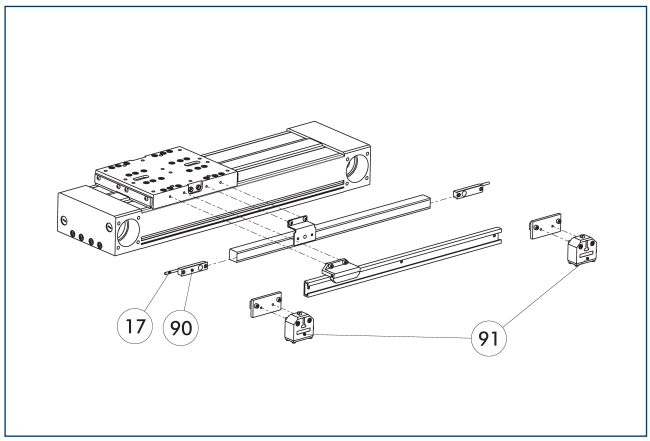
Motor flange schematic diagram



90 Length of motor / transmission drive shaft
91 Length of linear unit drive journal
92 Clutch length

Different drive solutions can be attached to our axes. SCHUNK offers you the right motor flange and coupling for your drive.

Limit and reference switch



17 Cable outlet
90 Inductive limit and reference switches
91 Mechanical limit switches

Generally two E0-02 switches are used as limit switches and one ES-02 is used as reference switch.

Description	ID	Often combined
Inductive limit switch		
E0-02	0331410	●
E0-10	0331412	
ES-02	0331411	●
ES-10	0331413	
Mechanical limit switch		
EMB	0331415	●
EMS	0331414	

ⓘ The positions and dimensions of limit switches, switching lugs, and mounting components may vary depending on the application and the selected limit switches. Please contact us for assistance.

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