Rexroth
Bosch Group

Cam Roller Guides

The Drive and Control Company

Linear Motion Technology

Cam Roller Guides

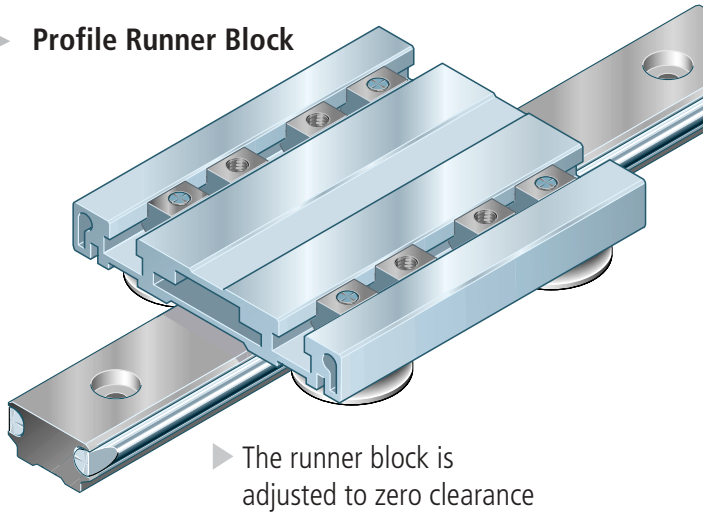
Cam Roller Guides
Product Overview

Cam Roller Guides have been specially developed for use in handling and automation applications.

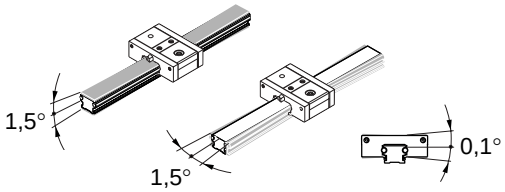
Features:

- high permissible speeds
- compact design
- light weight
- easy mounting
- low friction and extremely low-noise operation
- complete guideway systems
- interchangeability
- elements can be individually ordered and separately stocked

Profile Runner Block

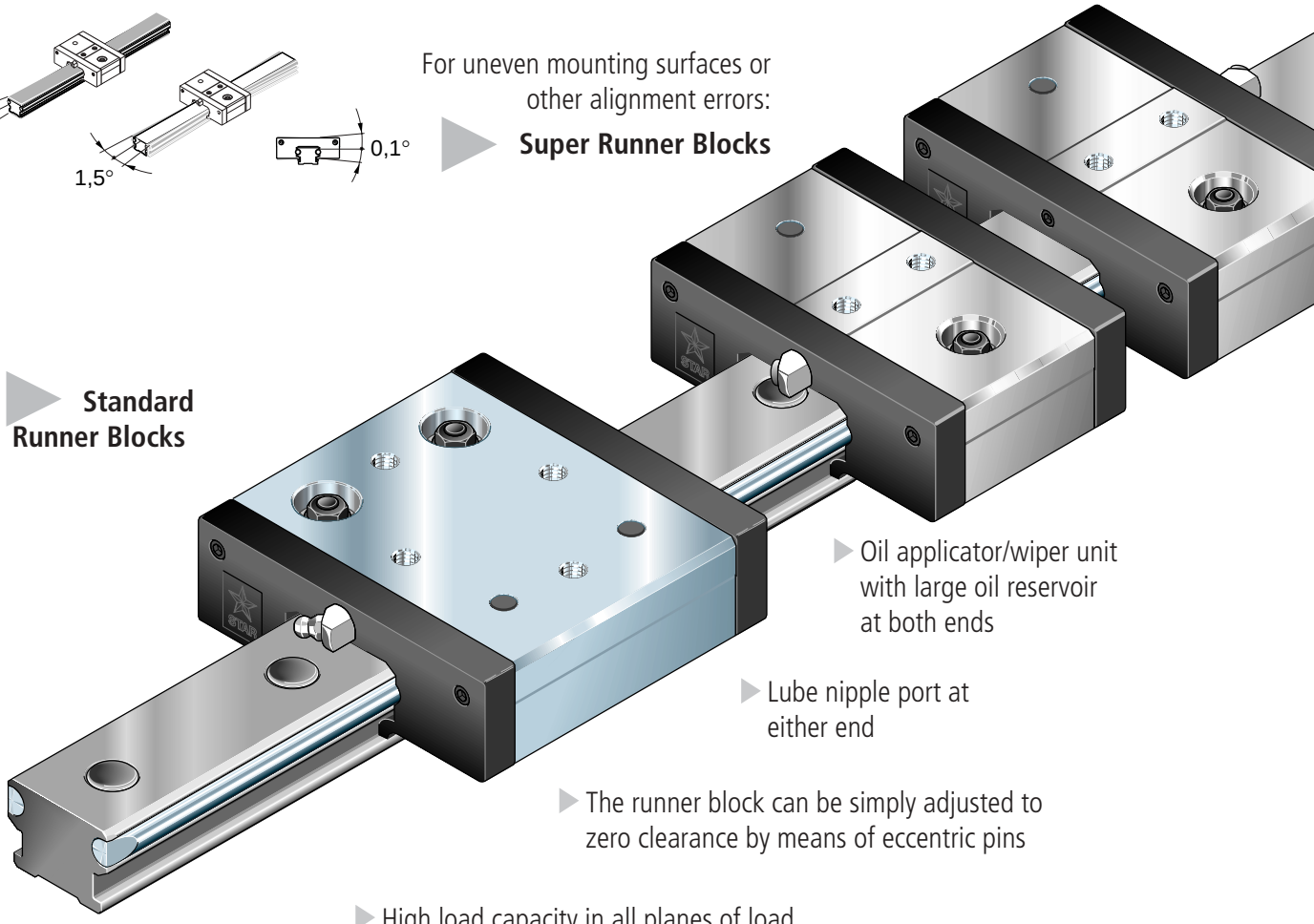


The runner block is adjusted to zero clearance before leaving the factory



For uneven mounting surfaces or other alignment errors:

Super Runner Blocks



Standard Runner Blocks

Oil applicator/wiper unit with large oil reservoir at both ends

Lube nipple port at either end

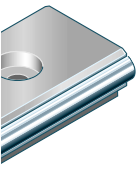
The runner block can be simply adjusted to zero clearance by means of eccentric pins

Standard guide rail

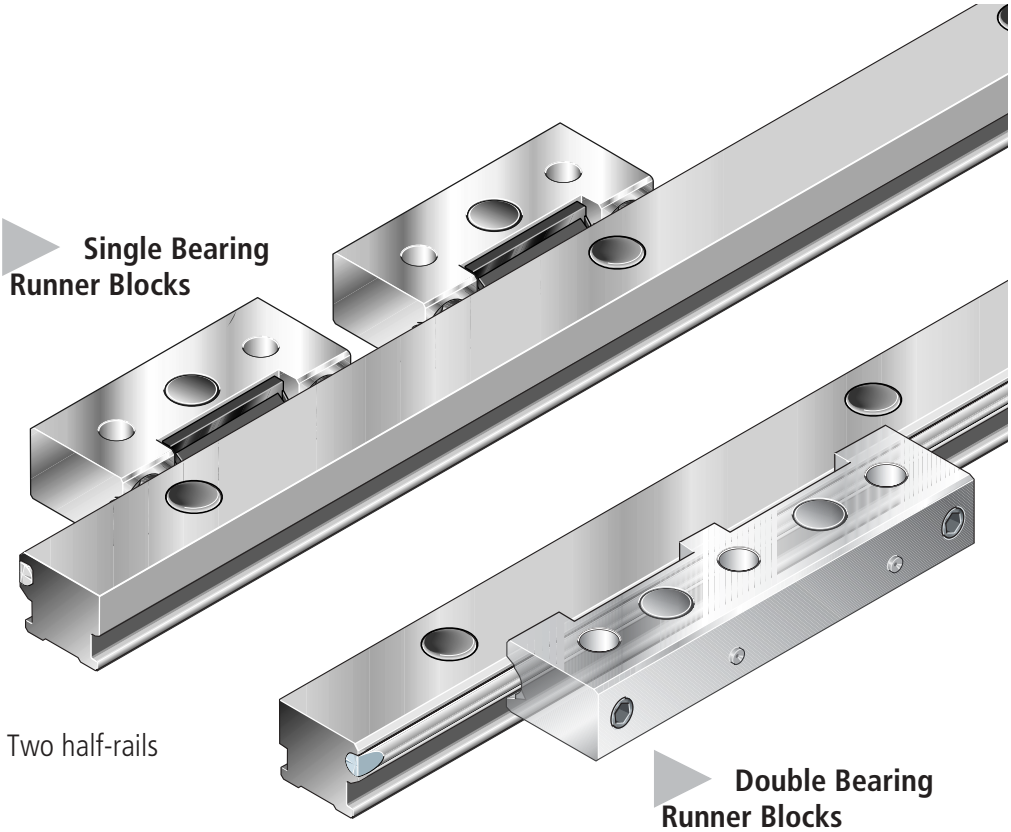
High load capacity in all planes of load application. High moment capacity about all axes

Guide shaft support made of anodized aluminum; optional mounting hole plugs

Cam Roller Guides



Single Bearing Runner Blocks



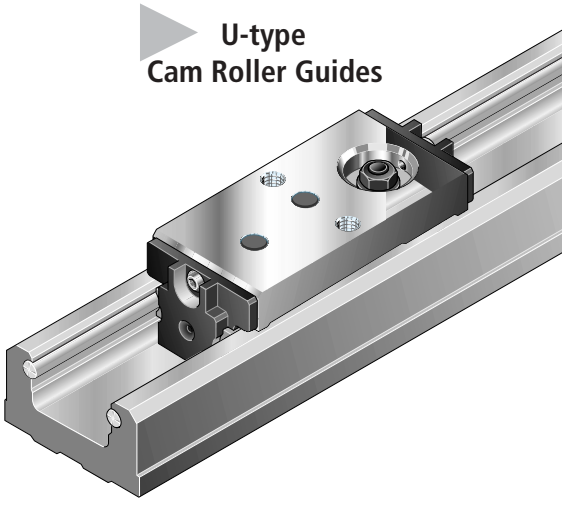
Two half-rails

Double Bearing Runner Blocks

- 2-row angular contact thrust ball bearing, sealed and lubricated for life

- Corrosion resistant precision steel shafts as running tracks

U-type Cam Roller Guides



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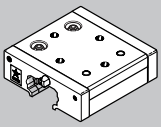
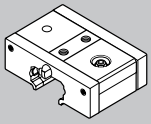
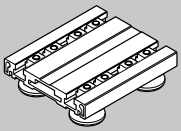
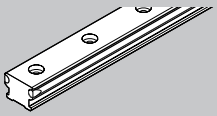
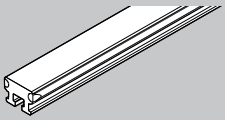
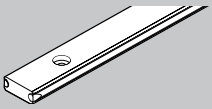
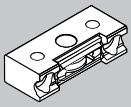
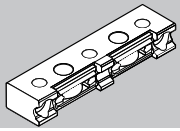
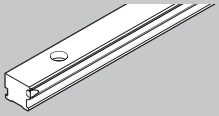
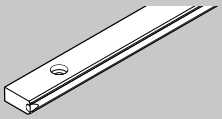
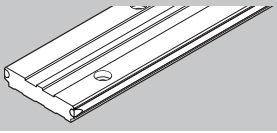
Combination options

		Page	20	
Standard Runner Block		**24**	1902-119-00	
Super Runner Block		**26**	1906-119-00	
Profile Runner Block		**28**		
Guide Rails	 Standard	**30**	1921-119-31	
	 WIth T-Slot	**32**		
	 Low-profile	**34**		
Single Bearing Runner Block		**36**		
Double Bearing Runner Block		**38**		
Guide Rails for Single/Double Bearing Runner Blocks	 Standard half-rail	**40**		
	 Low-profile half-rail	**42**		
	 Wide	**44**		

Size						
	25	32		42	52	
Part number / Size - Version						
	1902-125-00	1902-132-00			1902-152-00	1902-252-00 **52-h** (high loads)	1902-352-00 **52-sh** (extreme loads)
	1906-125-00						
				1907-142-00			
	1921-125-31	1921-132-31	1921-232-31 **32-2** (twice as many mounting holes)	1921-142-31	1921-152-31	1921-252-31 **52-2** (twice as many mounting holes)	1921-452-31 **52-4** (four times as many mounting holes)
	1922-025-31	1922-032-31			1922-052-31		
		1924-132-31	1924-232-31 **32-2** (twice as many mounting holes)		1924-152-31	1924-252-31 **52-2** (twice as many mounting holes)	1924-452-31 **52-4** (four times as many mounting holes)
		1903-132-10			1903-152-10	1903-252-10 **52-h** (high loads)	1903-352-10 **52-sh** (extreme loads)
		1904-132-10			1904-152-10	1904-252-10 **52-h** (high loads)	1904-352-10 **52-sh** (extreme loads)
		1925-132-31	1925-232-31 **32-2** (twice as many mounting holes)		1925-152-31	1925-252-31 **52-2** (twice as many mounting holes)	1925-452-31 **52-4** (four times as many mounting holes)
		1926-132-31	1926-232-31 **32-2** (twice as many mounting holes)		1926-152-31	1926-252-31 **52-2** (twice as many mounting holes)	1926-452-31 **52-4** (four times as many mounting holes)
						1927-152-31	

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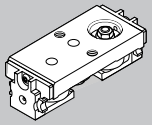
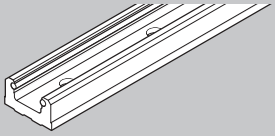
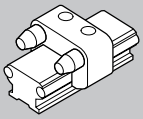
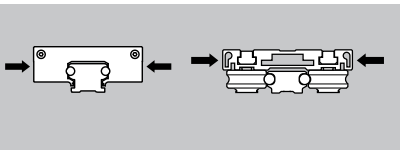
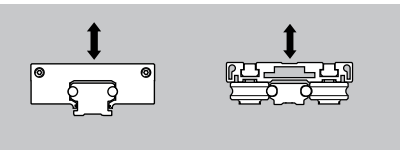
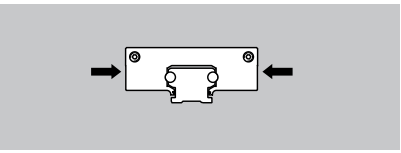
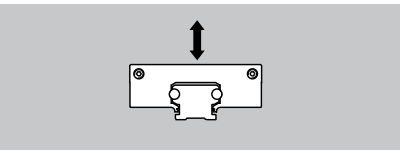
		Page	20	
U-type Runner Block		**46**	1905-119-00	
U-type Guide Rail	 U-type	**48**	1923-119-31	
Accessories	 Dead stop	**50**		

Size			
	25	32	52
Part number / Size - Version			
		1910-532-00	1910-552-00

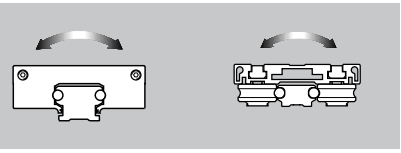
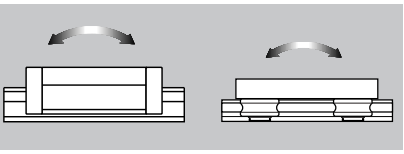
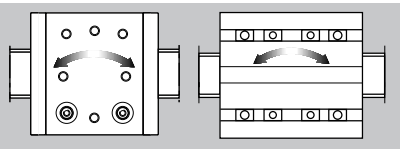
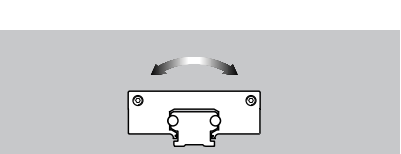
Cam Roller Guides
Maximum Permissible Loads

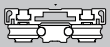
Important: Not to be used for calculating service life!
For service life calculations use the load capacities and moments given in the tables relating to the individual versions.

Maximum permissible force loads

			20	
Standard Runner Block 1902-, 1907-		$F_{max\ y}$ (N)*	700	
		$F_{max\ y0}$ (N)*	700	
		$F_{max\ z}$ (N)	400	
		$F_{max\ z0}$ (N)	600	
Super Runner Block		$F_{max\ y}$ (N)*	350	
		$F_{max\ y0}$ (N)*	350	
		$F_{max\ z}$ (N)	200	
		$F_{max\ z0}$ (N)	300	

Maximum permissible moment loads

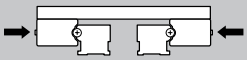
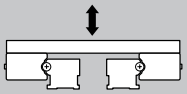
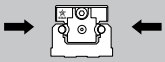
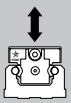
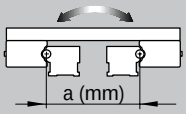
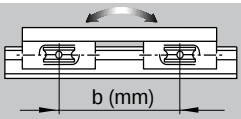
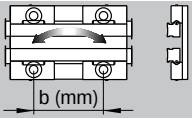
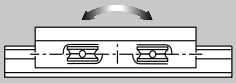
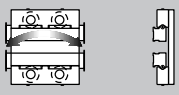
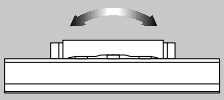
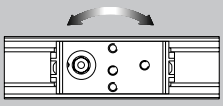
Standard Runner Block 1902-, 1907-		$M_{max\ x}$ (Nm)	3.2	
		$M_{max\ x0}$ (Nm)	4.8	
		$M_{max\ y}$ (Nm)	6.8	
		$M_{max\ y0}$ (Nm)	10.2	
		$M_{max\ z}$ (Nm)	12	
		$M_{max\ z0}$ (Nm)	12	
Super Runner Block		$M_{max\ x}$ (Nm)	1.6	
		$M_{max\ x0}$ (Nm)	2.4	

Size - Version								
	25	**32**	**32** **32-2**	**42** 	**52**	**52** **52-2**	**52-h** **52-2**	**52-sh** **52-4**
	700	1000	1400	3000	2500	3500	4500	8000
	700	1000	1400	3000	2500	3500	4500	8000
	400	850	850	1500	1500	1500	2400	4800
	660	1400	1400	2500	2500	2500	4000	7900
	350							
	350							
	200							
	330							
	3.8	11	11	27	32	32	50	101
	6	18	18	42	52	52	84	166
	9	26	26	63	45	45	126	288
	15	42	42	106	75	75	210	474
	16	30	42	127	75	105	236	480
	16	30	42	127	75	105	236	480
	1.9							
	3							

* Observe permissible side force on the rail (see Mounting Instructions).

Cam Roller Guides
Maximum Permissible Loads

Important: Not to be used for calculating service life!
For service life calculations use the load capacities and moments given in the tables relating to the individual versions.

				20	
Maximum permissible force loads					
Four Single/Two Double Bearing Runner Blocks		$F_{max\ y}$	(N)		
		$F_{max\ y0}$	(N)		
		$F_{max\ z}$	(N)		
		$F_{max\ z0}$	(N)		
U-type Runner Block		$F_{max\ y}$	(N)	350	
		$F_{max\ y0}$	(N)	350	
		$F_{max\ z}$	(N)	200	
		$F_{max\ z0}$	(N)	300	
Maximum permissible moment loads					
Four Single/Two Double Bearing Runner Blocks		$M_{max\ x}$	(Nm)		
		$M_{max\ x0}$	(Nm)		
Four Single Bearing Runner Blocks		$M_{max\ y}$	(Nm)		
		$M_{max\ y0}$	(Nm)		
		$M_{max\ z}$	(Nm)		
		$M_{max\ z0}$	(Nm)		
Two Double Bearing Runner Blocks		$M_{max\ y}$	(Nm)		
		$M_{max\ y0}$	(Nm)		
		$M_{max\ z}$	(Nm)		
		$M_{max\ z0}$	(Nm)		
U-type Runner Block		$M_{max\ x}$	(Nm)	1.4	
		$M_{max\ x0}$	(Nm)	2.2	
		$M_{max\ y}$	(Nm)	3.4	
		$M_{max\ y0}$	(Nm)	5.1	
		$M_{max\ z}$	(Nm)	6.1	
		$M_{max\ z0}$	(Nm)	6.1	

Size - Version							
	25	**32**	**32 32-2**	**52**	**52 52-2**	**52-h 52-2**	**52-sh 52-4**
		1000	1400	2500	3500	4500	8000
		1000	1400	2500	3500	4500	8000
		850	850	1500	1500	2400	4800
		1400	1400	2500	2500	4000	7900
		0.42 · a	0.42 · a	0.75· a	0.75 · a	1.2 · a	2.4 · a
		0.7 · a	0.7 · a	1.2 · a	1.2 · a	2 · a	3.9 · a
		0.42 · b	0.42 · b	0.75· b	0.75 · b	1.2 · b	2.4 · b
		0.7 · b	0.7 · b	1.2 · b	1.2 · b	2 · b	3.9 · b
		0.5 · b	0.7 · b	1.2 · b	1.7 · b	2.2 · b	4 · b
		0.5 · b	0.7 · b	1.2 · b	1.7 · b	2.2 · b	4 · b
		21	21	49	49	91	194
		35	35	83	83	152	320
		25	35	83	116	171	324
		25	35	83	116	171	324

Cam Roller Guides
Technical Data

Maximum travel speed
at medium loads

v_{max} = 10 m/s

Permissible operating temperature

t = -20 °C bis + 80 °C

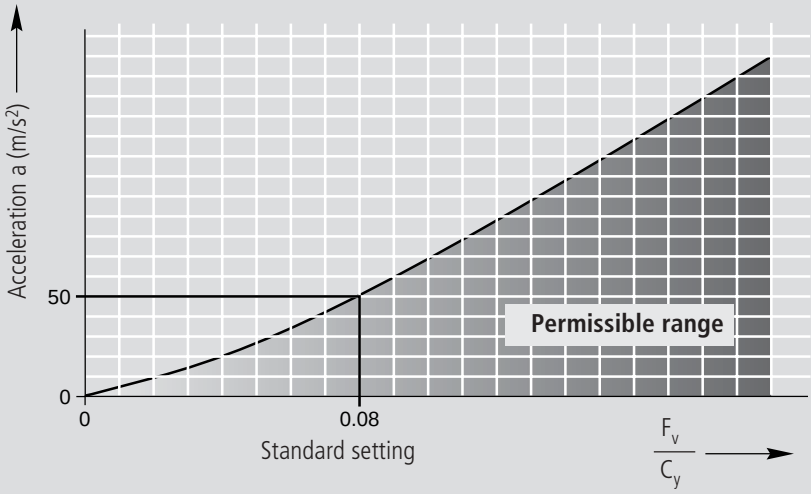
Acceleration

Higher acceleration rates are permissible as long as slip is avoided.

To do this, adjust preload F_v using the eccentric rollers, see chart.

⚠ Increasing the preload will reduce the maximum permissible load.

a_{max} = 50 m/s²



Rigidity

The rigidity can be improved by increasing the preload using the eccentric rollers.

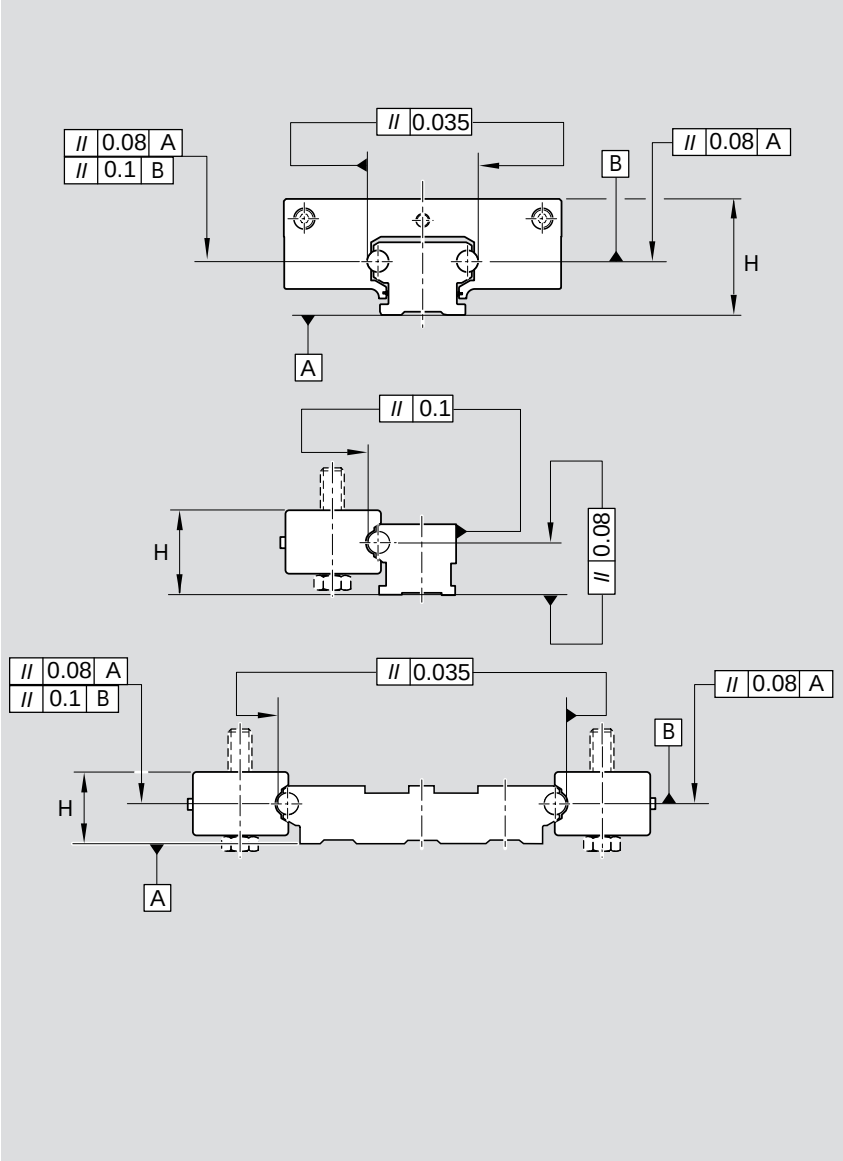
Accuracy

STAR Guide Rails are manufactured to very high precision standards.

Higher accuracies are available on request.

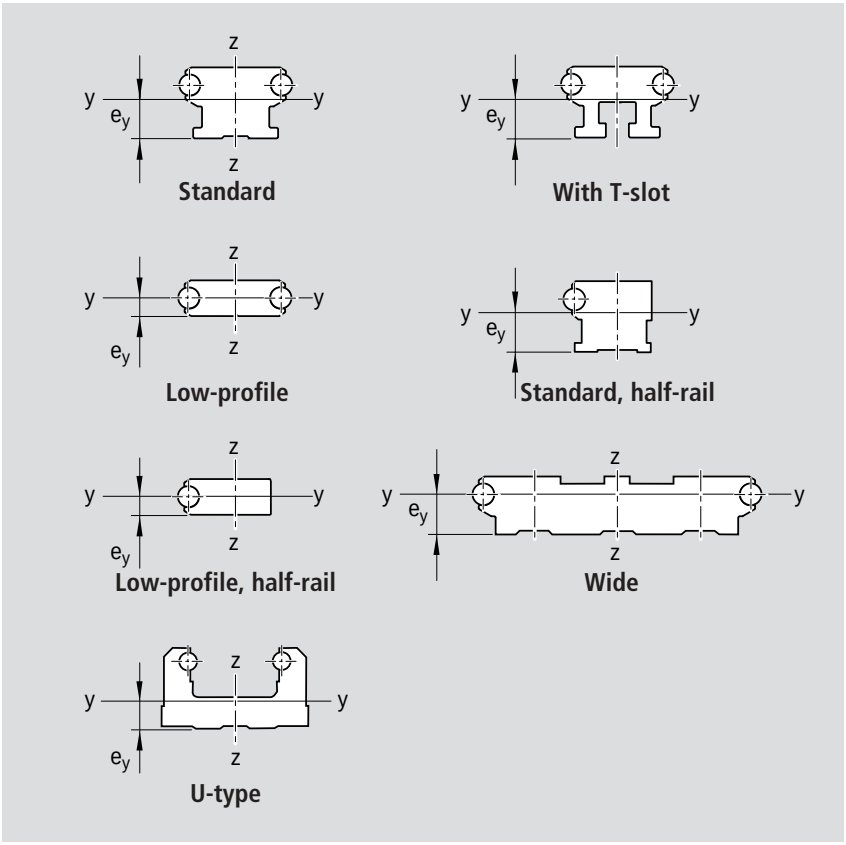
Tolerance for H:
± 0.2 mm

Maximum difference in H
on the same guide rail:
0.1 mm



Cam Roller Guides
Technical Data

Sectional characteristics of guide rails



e_y : Centroid distance
$I_{y,z}$: Second moment of inertia
$W_{y,z}$: Section modulus

	Size	Cross-sectional area	Neutral axis				
			y-y			z-z	
		A (mm^2)	e_y (mm)	I_y (mm^4)	W_y (mm^3)	I_z (mm^4)	W_z (mm^3)
Standard	**20**	168	6.0	2060	343	3090	364
	25	244	7.4	4738	623	6432	613
	32	435	10.4	14551	1399	19272	1357
	42	685	11.4	19628	1722	78534	4363
	52	1222	17.6	117945	6701	148971	6477
With T-slot	**25**	194	8.1	4155	513	6191	590
	32	355	11.4	12295	1079	18666	1315
	52	913	17.6	82725	4596	140984	6130
Low-profile	**32**	234	5.0	2163	433	11412	804
	52	690	9.0	20750	2306	91104	3961
Standard, half-rail	**32**	397	10.5	13182	1255	14724	1115
	52	1116	17.7	105926	5985	111856	5251
Low-profile, half-rail	**32**	217	5.0	1913	383	8841	665
	52	633	9.0	18142	2016	68209	3202
Wide	**52**	2492	12.4	119636	2099	2378777	41733
U-type	**20**	360	7.0	8604	782	42000	2545

Life Expectancy and Static Load Safety Factor

Life Expectancy
of one Cam Roller

The nominal service life expectancy L in meters or L_h in hours is attained or exceeded by at least 90% of a large number of identical rollers.

when subject to force loads

If the Cam Roller Guide is subject to a centrally-acting force F_y or F_z, calculate the nominal travel life using formulas (1) and (2):

The force F must not exceed the maximum permissible force given in the "Maximum Permissible Loads" tables.

(1) $$L = \left(\frac{C_{y,z}}{F}\right)^3 \cdot 10^5$$

(2) $$L_h = \frac{L}{2 \cdot s \cdot n \cdot 60}$$

L	=	nominal life expectancy	(m)
L_h	=	nominal life expectancy	(h)
$C_{y,z}$	=	dynamic load capacity	(N)
F	=	equivalent dynamic load	(N)
s	=	length of stroke	(m)
n	=	stroke repetition rate (complete cycles)	(min^{-1})

when subject to moment loads

If the Cam Roller Guide is subject to a moment M acting about the x, y or z axis only, calculate the nominal travel life using formulas (3) and (4):

The moment M must not exceed the maximum permissible moment load given in the "Maximum Permissible Loads" tables.

(3) $$L = \left(\frac{M_{x,y,z}}{M}\right)^3 \cdot 10^5$$

(4) $$L_h = \frac{L}{2 \cdot s \cdot n \cdot 60}$$

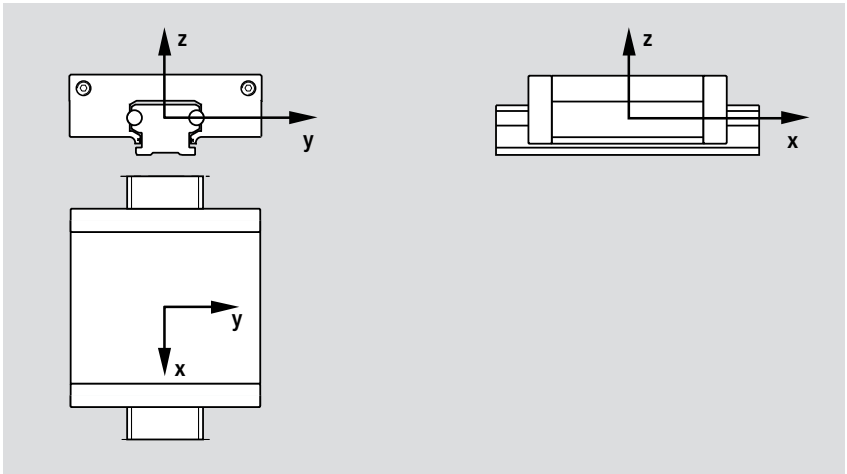
L	=	nominal life expectancy	(m)
L_h	=	nominal life expectancy	(h)
$M_{x,y,z}$	=	dynamic moment	(Nm)
M	=	equivalent dynamic moment load	(Nm)
s	=	length of stroke	(m)
n	=	stroke repetition rate (complete cycles)	(min^{-1})

Note

The above formulas for calculation of life expectancy apply only in applications subject to a single force acting centrally in the y or z axis, or a single moment acting about the x, y or z axis. For applications subject to a combination of forces from different directions or moments about different axes, or any combination of forces and moments, consult STAR.

Coordinate system

The following coordinate system is used to define the direction of action of forces and moments:



Cam Roller Guides
Life Expectancy and Static Load Safety Factor

Static
Load Safety Factor

when subject to force loads

If the Cam Roller Guide is subject to a centrally-acting force F_{y0} or F_{z0}, calculate the static load safety factor using formula (5):

The force F_0 must not exceed the maximum permissible force given in the "Maximum Permissible Loads" tables.

(5) $$S_0 = \frac{C_{y0,\,z0}}{F_0}$$

S_0	= static load safety factor	(-)
$C_{y0,z0}$	= static load capacity	(N)
F_0	= equivalent static load	(N)

when subject to moment loads

If the Cam Roller Guide is subject to a moment M_0 acting about the x, y or z axis only, calculate the static load safety factor using formula (6):

The moment M_0 must not exceed the maximum permissible moment load given in the "Maximum Permissible Loads" tables.

(6) $$S_0 = \frac{M_{x0,\,y0,\,z0}}{M_0}$$

S_0	= static load safety factor	(-)
$M_{x0,y0,z0}$	= static moment	(Nm)
M_0	= equivalent static moment load	(Nm)

Note

The above formulas for calculation of the static load safety factor apply only in applications subject to a single force acting centrally in the y or z axis, or a single moment acting about the x, y or z axis.

For applications subject to a combination of forces from different directions or moments about different axes, or any combination of forces and moments, consult STAR.

Mounting Instructions

General Instructions

STAR Cam Roller Guides are high-quality products and should be treated with the utmost care during transportation and mounting.

All steel parts are coated with preservative oil. The preservative coating need not be removed provided the recommended lubricants are used in the application.

Unfavorable environmental conditions (vibrations, major temperature fluctuations, etc.) can cause a relative shift between the aluminum frame and the rolled-in (or pressed-in) steel shafts of all guide rails. To prevent this phenomenon we recommend a positive-locking axial retention.

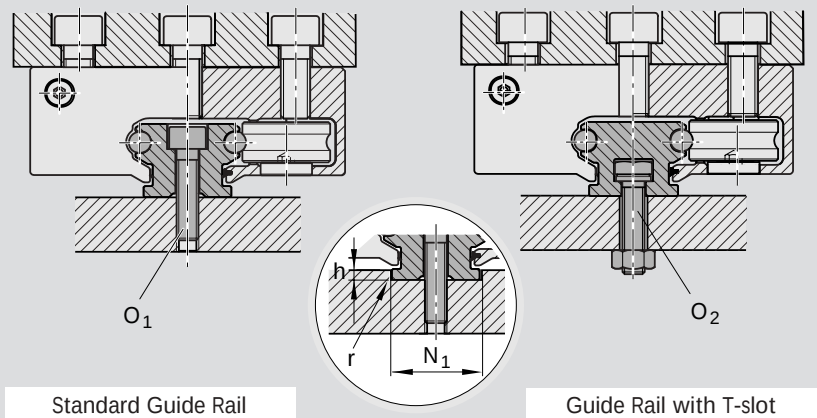
Guide Rail Mounting

To mount the guide rail:

- Slightly tighten screws.
- Align guide rail.
- Tighten screws to torque as shown in the table.

Standard Guide Rail (1921-...):
If the maximum permissible load is to be utilized, install washers to DIN 433.

Guide Rail with T-slot (1922-...):
Washers are supplied with the rail.



Standard Guide Rail (Mounting without reference edge)

(Mounting with reference edge)

Guide Rail with T-slot (Mounting without reference edge)

Screw sizes for guide rails

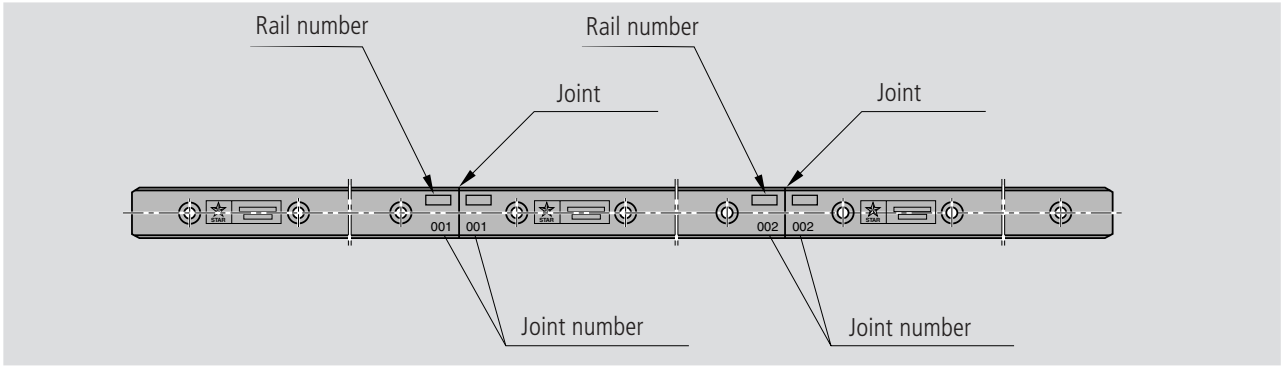
	Size - Version	20	25	32	32-2	42	52	52-2	52-4
Standard / With T-slot	O_1 (DIN 912)	M4x16	M5x20	M6x25	M6x25	M8x25	M10x40	M10x40	M12x40
	O_2 (DIN 931/933)	–	M5	M6	–	–	M10	–	–
	N_1 min. (mm)	17.1	21.1	24.1	24.1	–	40.1	40.1	40.1
	h max. (mm)	1.0	1.5	3.0	3.0	–	5.0	5.0	5.0
	r max. (mm)	0.2	0.2	0.2	0.2	–	0.2	0.2	0.2

Permissible side loads

Recommended values for permissible side forces without additional lateral retention of the rail.

Size - Version	20	25	32	32-2	42	52	52-2	52-4
F_{per} (N)	200	330	450	900	1000	1000	1600	4000

Composite Guide Rails made up of several sections



Cam Roller Guides
Mounting Instructions

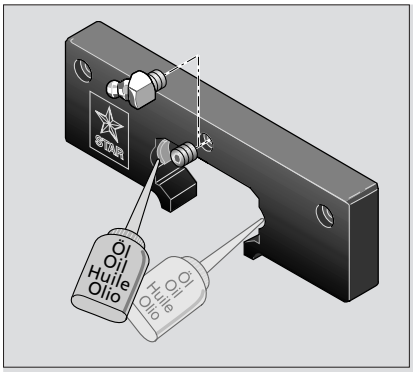
Instructions for mounting Standard and Super Runner Blocks to the Guide Rail

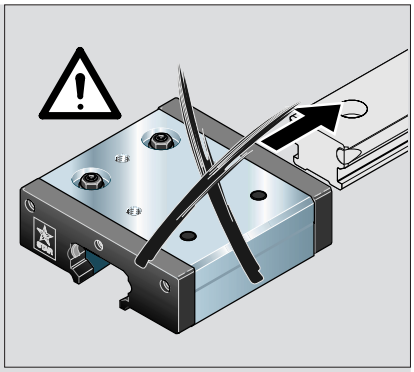
To mount the runner block:

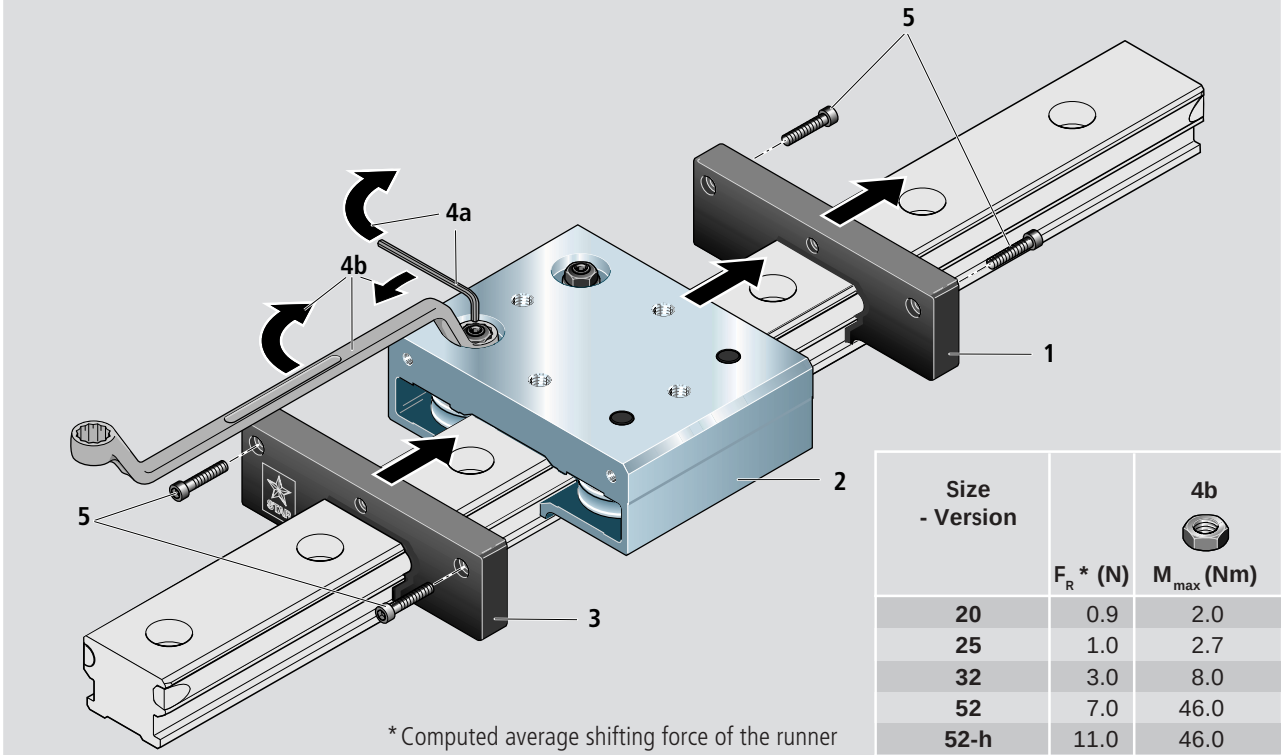
The oil applicator and wiper units ("oiling units" for short) are delivered separate to facilitate installation work.

- Push on the first oiling unit (1):
  The felt wiper strips are automatically pressed in by the chamfers on the steel shafts.
- Carefully slide the runner block (2) onto the guide rail.
- Adjust the eccentric rollers (4a), until a slight shifting force F_R is felt (see table for recommended values).
- Tighten the hex nut to torque as shown in the table using a hex wrench to stop the pin from turning (4b).
- Mount the second oiling unit (3).
- Screw the two oiling units to the runner block (5).

⚠ **After mounting, the runner block should move freely when pushed.**







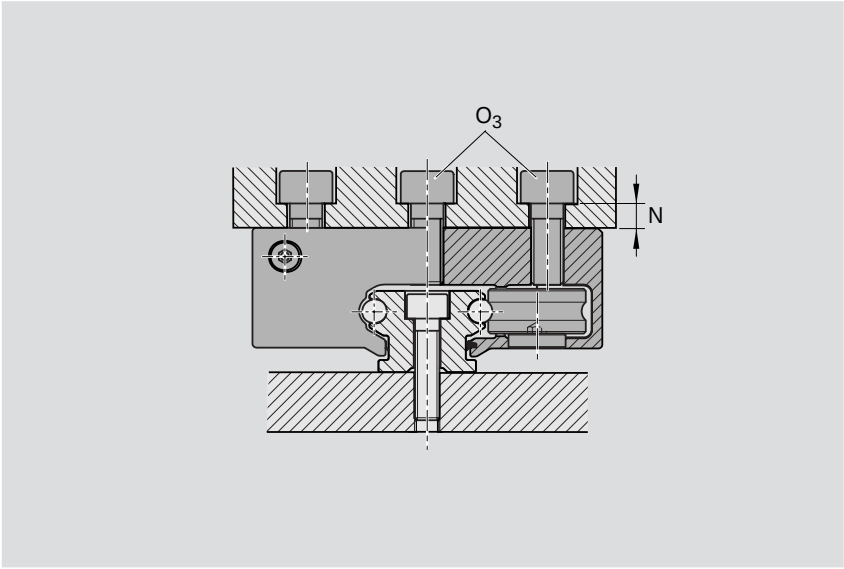
Size - Version	F_R * (N)	4b M_{max} (Nm)
20	0.9	2.0
25	1.0	2.7
32	3.0	8.0
52	7.0	46.0
52-h	11.0	46.0
52-sh	13.0	80.0

* Computed average shifting force of the runner block for standard adjustment 0.08 C

Mounting Superstructures on Runner Blocks:

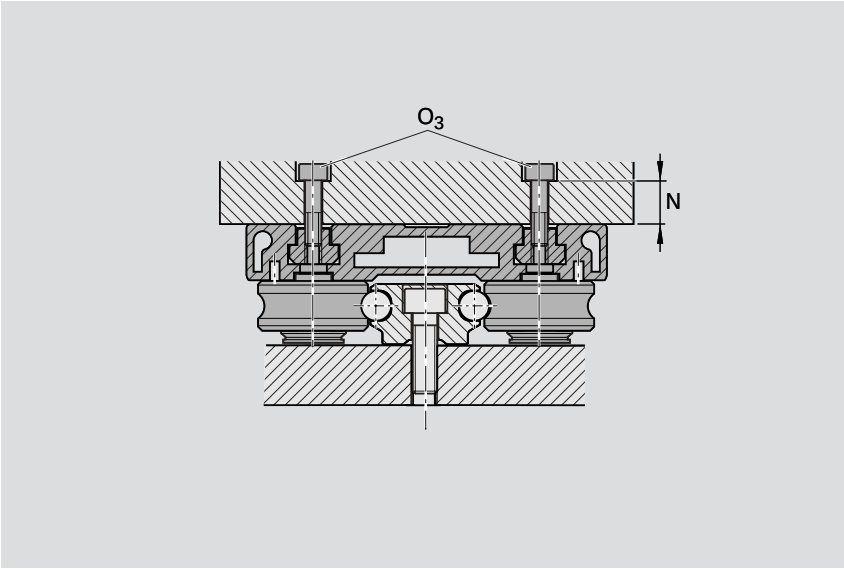
Standard Runner Block 1902-, 1906-

- Use screws as per table. Do not use overlong screws! Observe the minimum material strength N!
- Align the superstructure.
- Torque up the screws to the values given in the table.



Profile Runner Block 1907-

- Use screws as per table. Do not use overlong screws! Observe the minimum material strength N!
- Align the superstructure.
- Torque up the screws to the values given in the table.



Runner Blocks

	Size - Version	20	25	32	42	52	52-h	52-sh
O_3	(DIN 912)	M5x16	M5x16	M8x25	M8X20	M10x30	M10x35	M12x35
N	(mm)	8	7	7	7	12	12	12

Tightening torques for mounting screws

	8.8	M4	M5	M6	M8	M10	M12
	(Nm)	2.7	5.5	9.5	23	46	80

Design of mounting surface

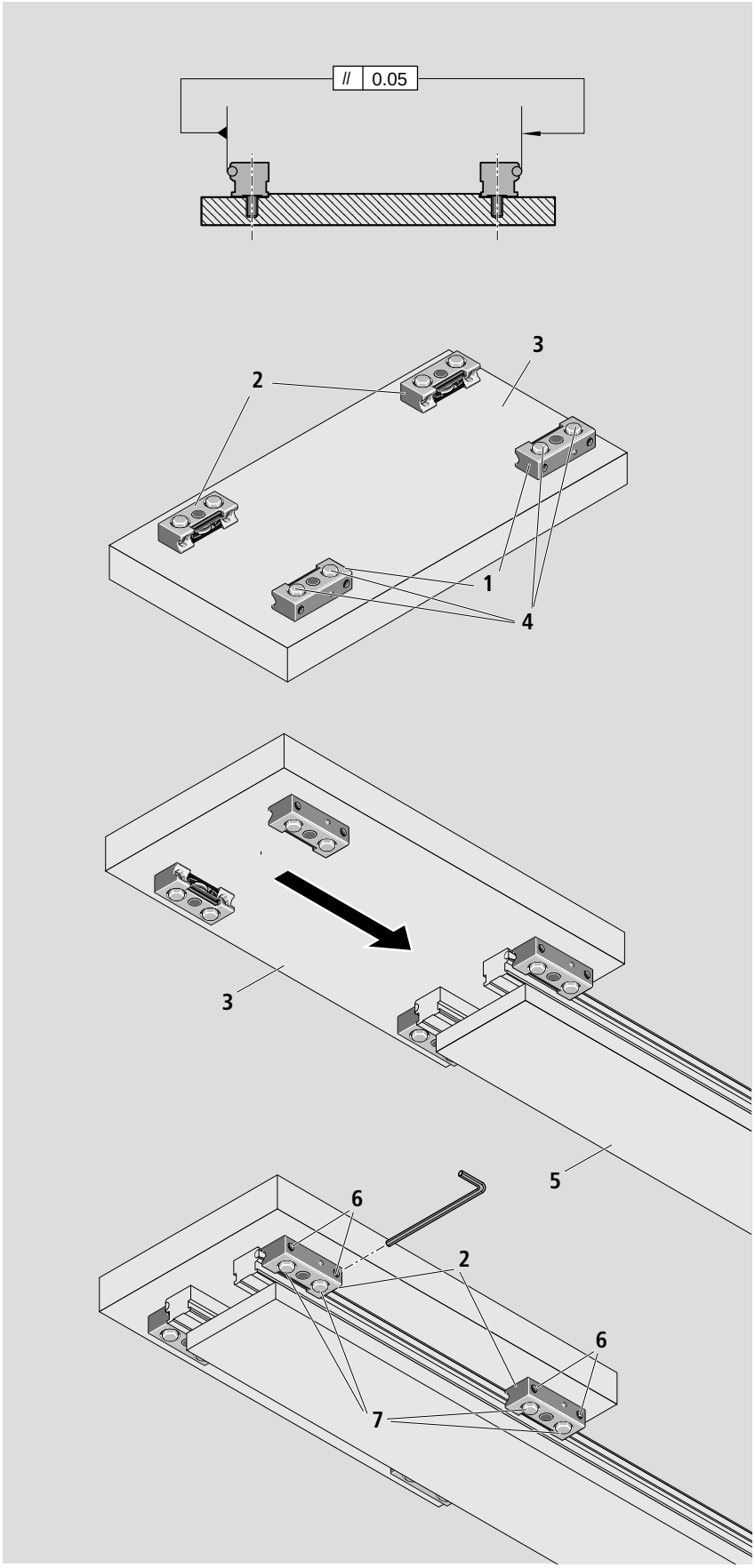
Unevenness or distortion of mounting surfaces (adjoining structures) will impair the accuracy of the guideway and should be kept to a minimum.

Cam Roller Guides
Mounting Instructions

Mounting
Single/Double Bearing Runner Blocks with Adjustment Screws

1. Mounting

- Align and mount the rails.
- Preassemble runner blocks (1+2) on the carriage (3). Do not yet tighten the screws.
- Align the runner blocks on one side (1) of the carriage (3) and tighten the mounting screws (4) alternately until tightening torque M_A is reached.
- Slide the carriage (3) onto the rails (5).
- Adjust the runner blocks on the opposite side (2) to zero clearance against the guide rail using adjustment screws (6). Adjust the preload.
- Alternately tighten the mounting screws (7) on the runner blocks (2) until tightening torque M_A is reached.



Size - Version	32	52	52-h	52-sh
M_A (Nm)	23	46	80	80

Lubrication

Lubrication

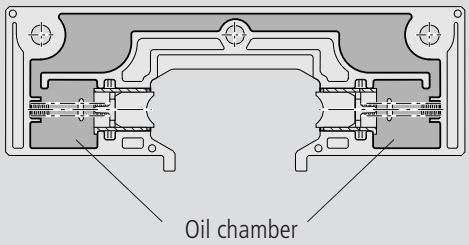
The runner blocks have an oiling unit at each end.

Apply oil to the felt wiper strips before installing runner blocks.

The oiling unit incorporates a large oil reservoir. To ensure long lubrication intervals, completely fill the reservoir until excess oil emerges.

Oiling unit with large oil reservoir 1910-4..-00 (see table for volumes)

- Longer travel until in-service lubrication required: $15 \cdot 10^5$ m stroke.
- Dual function: simultaneous lubricating and wiping.
- Targeted shaft lubrication.
- Lubrication even at 90° orientation.



Size - Version	Oil volume (cm^3)
20	2.5
25	3.0
32	6.5
52	18.0
52-h	20.0
52-sh	20.0

Lubricant:

Oil lubrication of runner blocks (including U-type)

We recommend the use of oil with a viscosity of about 680 mm^2/s at 40 °C.

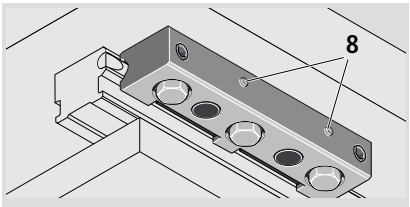
Grease lubrication of single/double bearing runner blocks

We recommend grease lubricants to DIN 51825 - K2K .

Caution: Do not use greases containing solid lubricant particles (e.g., graphite or MoS_2).

In-service lubricating intervals will depend on the application and the ambient conditions.

- Lubricate S/D bearing runner blocks until excess grease emerges.
- For double bearing runner blocks, use both lube nipples (8)!



Minimum stroke length

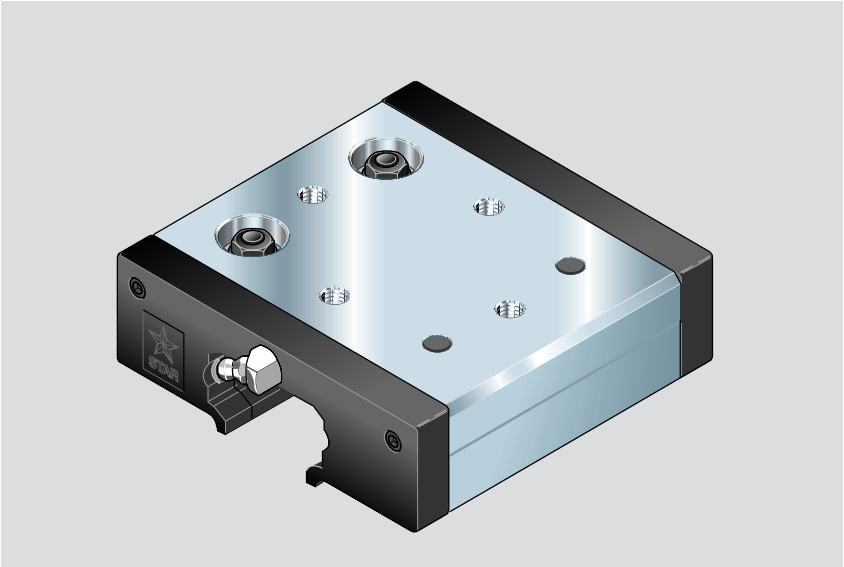
As a rule, the stroke length should not be less than the length of the runner block. For applications with shorter stroke lengths, consult STAR.

Angular contact bearings

The angular contact ball bearings in the roller elements are sealed and lubricated for life.

Cam Roller Guides
Standard Runner Blocks

Runner Block 1902-



Part numbers,
load capacities and moments for calculating service life

Size - Version	Part number	Load capacities and moments									
		C_y (N)	C_{y0} (N)	C_z (N)	C_{zo} (N)	M_x (Nm)	M_{xo} (Nm)	M_y (Nm)	M_{yo} (Nm)	M_z (Nm)	M_{zo} (Nm)
20	1902-119-00	2300	1600	1336	783	10.7	6.3	22.7	13.3	39	27
25	1902-125-00	2550	1780	1357	803	13.0	7.6	30.5	18.0	57	40
32	1902-132-00	7335	4560	4300	2200	56.0	29.0	129.0	66.0	220	137
52	1902-152-00	17150	10200	10050	4900	211.0	103.0	301.0	147.0	515	306
52-h	1902-252-00	27900	15400	16775	7630	352.0	160.0	880.0	400.0	1465	808
52-sh	1902-352-00	31000	18200	18400	8750	390.0	184.0	1100.0	520.0	1860	1100

Important:

Observe maximum permissible loads due to forces and moments as shown in the "Maximum Permissible Loads" tables!

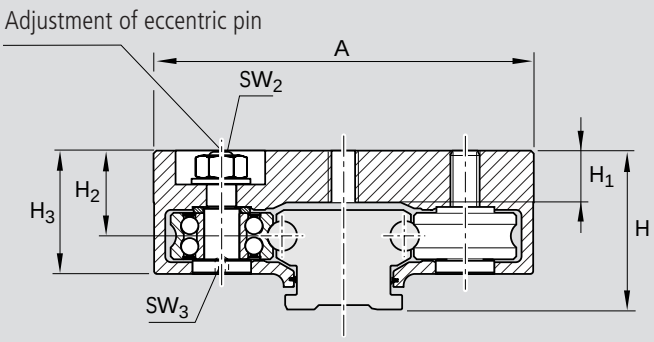
The part numbers refer to runner blocks with oiling units.

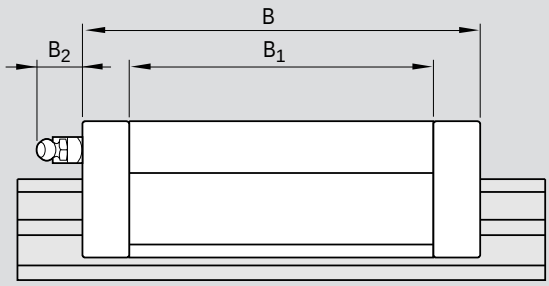
Part numbers for runner blocks without oiling units:

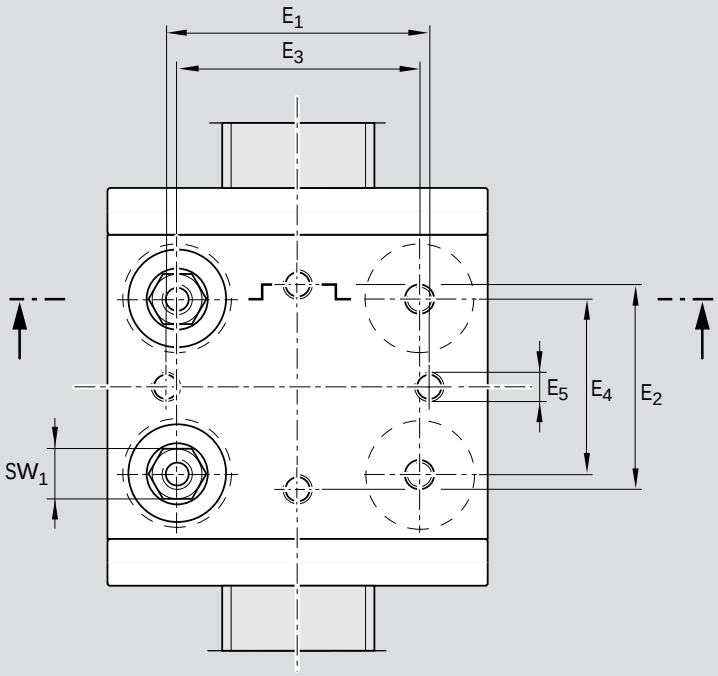
1901- ...-00 (otherwise as shown in table)

Part numbers for oiling units without runner blocks:

1910- 4..-00 (otherwise as shown in table)







Lube nipples

Size 20 – 32:

Funnel-type nipple
Type B - Thread size M3

Size 52 – 52-sh:

Tapered lube nipple
BM 6 DIN 71412

Lube nipple port at either end.

Center pins are already tightened on delivery

Size - Version	Dimensions (mm)																Mass
	A	B	B_1	B_2	H	H_1	H_2	H_3	E_1	E_2	E_3	E_4	E_5	SW_1	SW_2	SW_3	(kg)
20	56	79	59	7	22.0	8.5	13.0	20.0	39	49	34.0	34	M5	7	2	2	0.20
25	65	95	75	7	25.0	9.0	14.4	22.3	50	60	40.0	45	M5	7	2	2	0.25
32	86	112	92	7	35.5	13.0	20.5	29.5	59	70	54.0	60	M8	10	3	4	0.56
52	130	136	104	16	54.3	19.4	29.2	42.2	90	70	83.3	60	M10	16	4	6	1.50
52-h	145	186	154	16	60.4	24.0	35.3	51.0	105	110	90.0	105	M10	16	4	6	2.60
52-sh	155	205	173	16	60.4	24.0	35.3	51.0	115	140	95.0	120	M12	18	6	8	3.30

Cam Roller Guides
Super Runner Blocks

Runner Block 1906-

Part numbers,

load capacities and moments for calculating service life

Size - Version	Part number	Load capacities and moments					
		C_y (N)	C_{y0} (N)	C_z (N)	C_{zo} (N)	M_x (Nm)	M_{xo} (Nm)
20	1906-119-00	1150	800	660	390	5.4	3.1
25	1906-125-00	1275	890	670	400	6.5	3.8

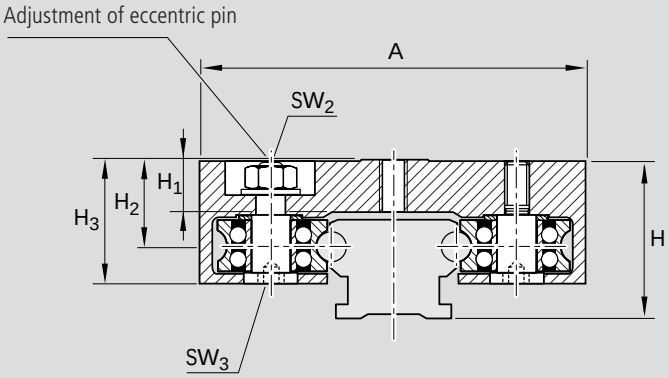
Important:

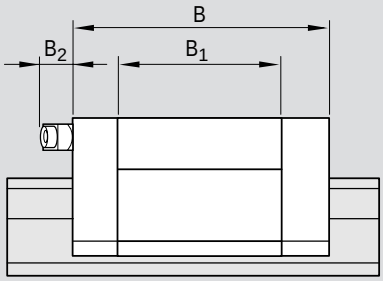
Observe maximum permissible loads due to forces and moments as shown in the "Maximum Permissible Loads" tables!

The part numbers refer to runner blocks with oiling units.

Part numbers for runner blocks without oiling units:
1906- 1..-30 (otherwise as shown in table)

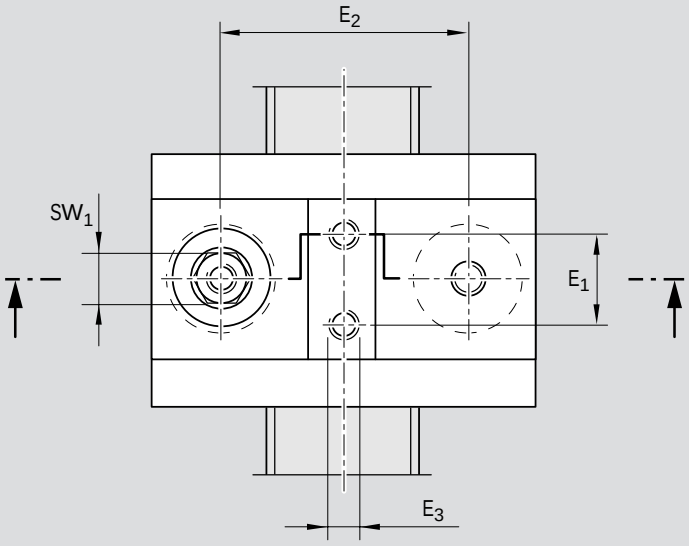
Part numbers for oiling units without runner blocks:
1910- 4..-00 (otherwise as shown in table)





Lube nipples

Funnel-type nipple
Type B - Thread size M3



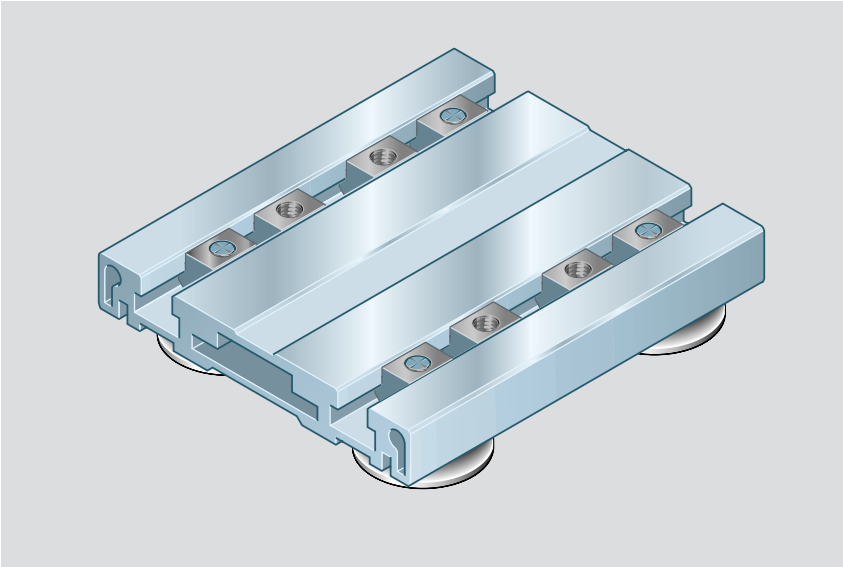
Center pins are already tightened on delivery

Size - Version	Dimensions (mm)														Mass
	A	B	B_1	B_2	H	H_1	H_2	H_3	E_1	E_2	E_3	SW_1	SW_2	SW_3	(kg)
20	56	50	30	7	22.0	8.5	13.0	20.0	17	34	M5	7	2	2	0.10
25	65	50	30	7	25.0	9.0	14.4	22.3	20	40	M5	7	2	2	0.10

Cam Roller Guides
Runner Blocks

Profile Runner Block 1907-

Lubrication unit in preparation.



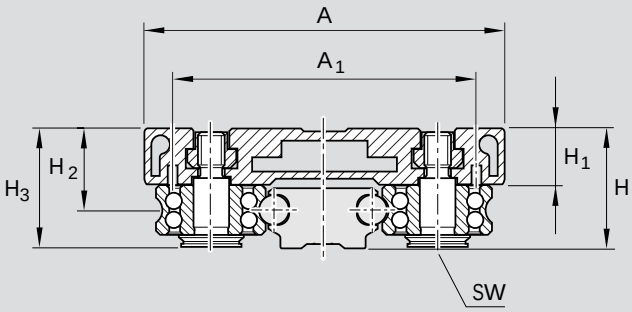
Part numbers,

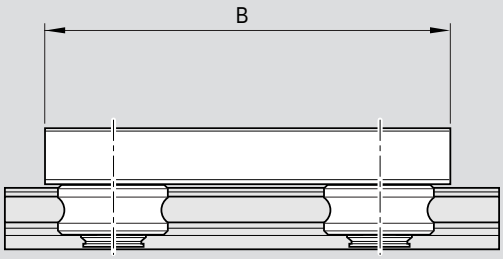
load capacities and moments for calculating service life

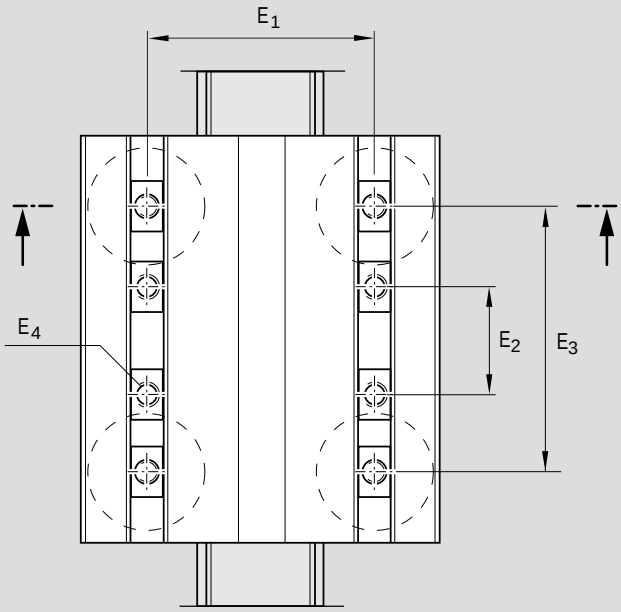
Size - Version	Part number	Load capacities and moments									
		C_y (N)	C_{y0} (N)	C_z (N)	C_{zo} (N)	M_x (Nm)	M_{xo} (Nm)	M_y (Nm)	M_{yo} (Nm)	M_z (Nm)	M_{zo} (Nm)
42	1907-142-00	17150	10200	10050	4900	162	97	430	258	729	433

Important:

Observe maximum permissible loads due to forces and moments as shown in the "Maximum Permissible Loads" tables!







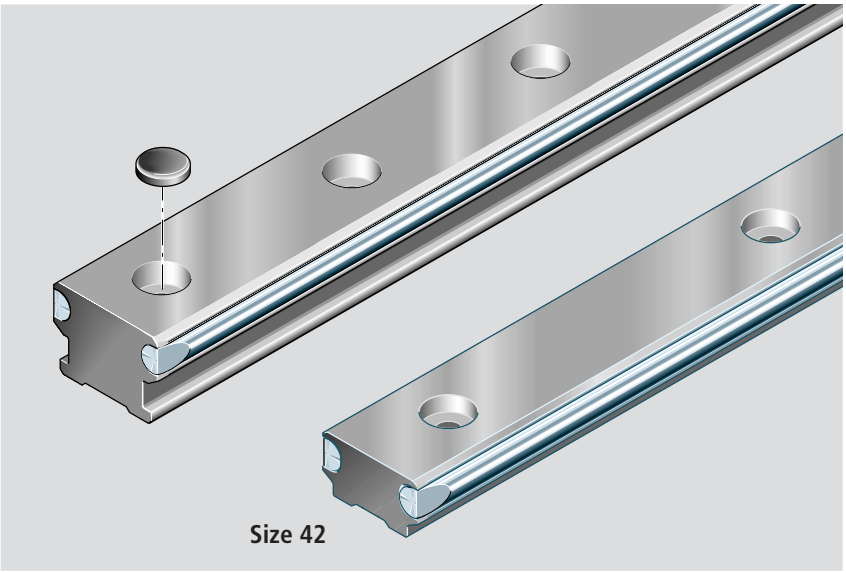
Size	Dimensions (mm)												Mass
- Version	A	A_1	B	H	H_1	H_2	H_3	E_1	E_2	E_3	E_4	SW	(kg)
42	116	98.5	150	39	18	26.4	38.1	73	15 - 55	85	M8	6	1.03

Cam Roller Guides
Guide Rails

Guide Rail standard 1921-

- For mounting from above
- Optional mounting hole plugs (to be ordered separately)
- Corrosion resistant steel shafts to DIN 17230 / EN 10088

⚠ Standard Guide Rails are not suitable for use with the ALU-STAR Profile System. For guide rails with hole spacing T = 60 mm for the ALU-STAR Profile System, see the ALU-STAR Profile System catalog 82 852.



Size 42

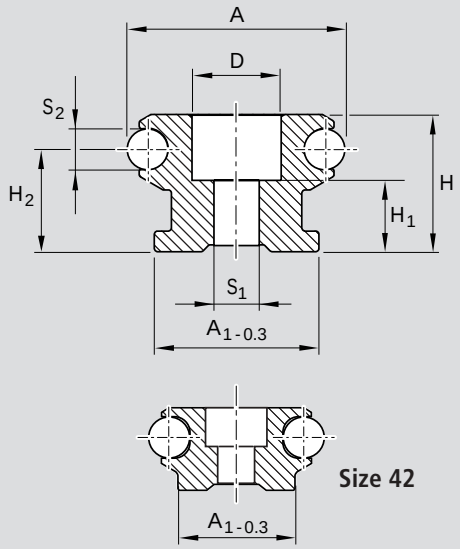
Part numbers, lengths

Size - Version	Standard length[1] (mm)	L_{max} (mm)	without holes Part number Length:,...(mm)	with holes Part number Length:,...(mm)	Mounting hole plugs Part number Quantity:,...	Holes per meter[2]
20	3500	7000	1921-019-31,...	1921-119-31,...	1605-800-90,...	16
25	3500	7000	1921-025-31,...	1921-125-31,...	1605-800-90,...	16
32	3500	7000	1921-032-31,...	1921-132-31,...	1605-200-90,...	8
32-2	3500	7000	–	1921-232-31,...	1605-200-90,...	16
42	3500	7000	1921-042-31,...	1921-142-31,...	1605-300-90,...	8
52	3500	7000	1921-052-31,...	1921-152-31,...	1605-400-90,...	4
52-2	3500	7000	–	1921-252-31,...	1605-400-90,...	8
52-4	3500	7000	–	1921-452-31,...	1605-500-90,...	16

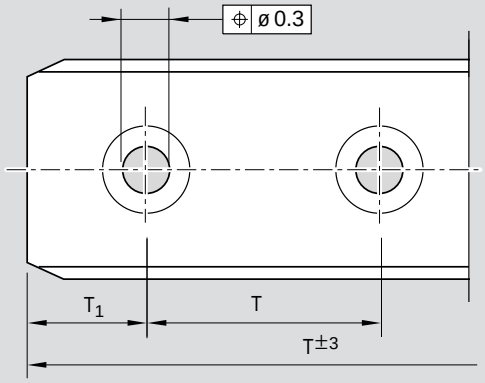
[1] Running tracks up to 3500 mm are made of one-piece precision steel shafts.

[2] Number for one meter at preferred length T_{1S}

Size - Version	Hole spacing T (mm)	Recommended rail lenghts Number of holes/Rail length L (mm)			
20, 25, 32-2, 52-4	62.5	2/121	10/621	18/1121	40/2496
		4/246	12/746	20/1246	50/3125
		6/371	14/871	24/1496	56/3496
		8/496	16/996	30/1871	
32, 42, 52-2	125	2/246	10/1246	18/2246	28/3496
		4/496	12/1496	20/2496	
		6/746	14/1746	22/2746	
		8/996	16/1996	24/2996	
52	250	2/496	6/1496	14/3496	
		3/746	8/1996		
		4/996	10/2496		
		5/1246	12/2996		



Size 42

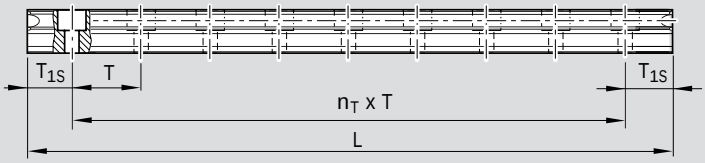


Shown rotated through 90°

Mounting hole drilling pattern not to scale

Size - Version	Dimensions (mm)											Mass
	A	A_1	H	H_1	H_2	D	S_1	S_2	T	T_{1S}	$T_{1\ min.}$	kg/m
20	20	17	12	5.0	9.0	9.4	4.5	4	62.5	29.25	13	0.60
25	25	21	15	6.0	10.6	9.4	5.5	6	62.5	29.25	13	1.00
32	32	24	20	9.5	15.0	11.0	6.5	6	125.0	60.50	13	1.60
32-2	32	24	20	9.5	15.0	11.0	6.5	6	62.5	29.25	13	1.60
42	42	28	20	9.0	12.6	15.0	9.0	10	125.0	60.50	13	2.68
52	52	40	34	19.0	25.1	20.0	11.0	10	250.0	123.00	20	4.40
52-2	52	40	34	19.0	25.1	20.0	11.0	10	125.0	60.50	20	4.40
52-4	52	40	34	17.0	25.1	24.0	13.0	10	62.5	29.25	20	4.40

Ordering a guide rail



Calculating guide rail length

Recommendation:
Use preferred length T_{1S}.
- Observe minimum spacing $T_{1\ min}$! (see table)
- T_1 is the same at either end of the rail.

$$L = n_B \cdot T - 4$$
or
$$L = n_T \cdot T + 2 \cdot T_{1S}$$

L	= rail length	(mm)
T	= hole spacing*)	(mm)
T_{1S}	= preferred dimension*)	(mm)
n_B	= number of holes	
n_T	= number of spaces	

*) see table for values

Ordering example

Guide rail: size 25
Desired length: 620 to 625 mm

n_B = 620/T = 620/62.5 = 9.92
rounded to whole numbers
= 10 holes,

n_T = n_B - 1 = 9

Length to be ordered

L = 10 · 62.5 - 4 = 621 mm or
L = 9 · 62.5 + 2 · 29.25 = 621 mm

Rail ordering data:
Part number, length (mm)
T_1 / n_T x T / T_1 (mm)
1921-125-31, 621
29.25 / 9 x 62.5 / 29.25

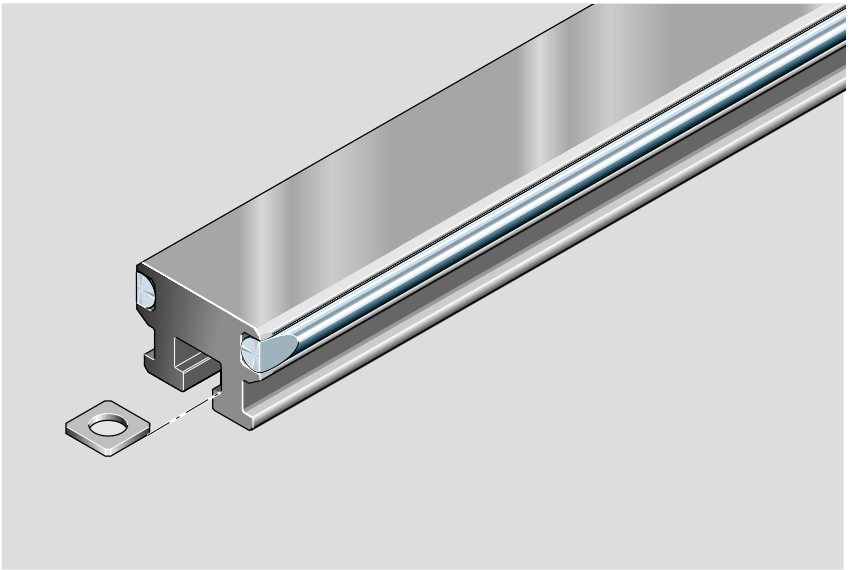
Mounting hole plug ordering data:
Part number, quantity
1605-800-90, 10

Cam Roller Guides
Guide Rails

Guide Rail with T-slot 1922-

– For mounting from below
– Washers supplied
(quantity according to spacing T)
– Corrosion resistant steel shafts to DIN 17230 / EN 10088

⚠ Standard Guide Rails are not suitable for use with the ALU-STAR Profile System. For guide rails with hole spacing T = 60 mm for the ALU-STAR Profile System, see the ALU-STAR Profile System catalog 82 852.

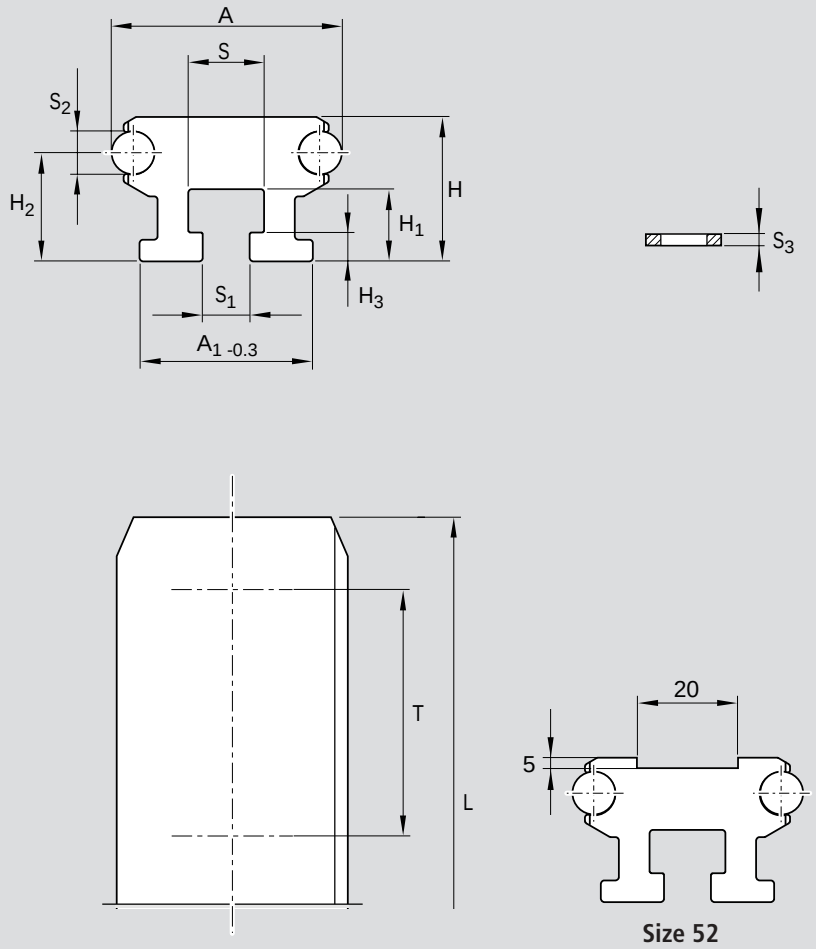


Part numbers, lengths

Guide Rail with T-slot

Size	Standard length[1)]	L_{max} (mm)	Part number Length:,...(mm)
25	3500	7000	1922-025-31,...
32	3500	7000	1922-032-31,...
52	3500	7000	1922-052-31,...

[1)] Running tracks up to 3500 mm are made of one-piece precision steel shafts.



Size 52

Note

See "Mounting Instructions, Guide Rail Mounting".

	Dimensions (mm)											Mass
Size	**A**	**A_1**	**H**	**H_1**	**H_2**	**H_3**	**S**	**S_1**	**S_2**	**S_3**	**T**	**kg/m**
25	25	21	15	8.0	10.6	3.0	8.2	5.5	6	1.0	62.5	0.95
32	32	24	20	10.0	15.0	4.0	10.5	6.5	6	1.6	125.0	1.60
52	52	40	34	15.4	25.1	6.4	18.5	11.0	10	1.6	250.0	3.60

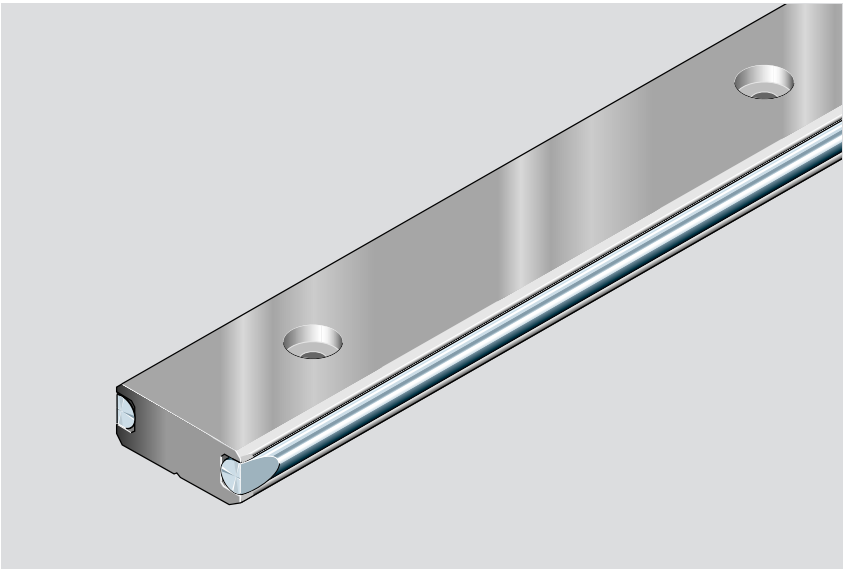
T = Maximum distance between mounting screws

Cam Roller Guides
Guide Rails

Guide Rail, low profile 1924-

– Corrosion resistant steel shafts to DIN 17230 / EN 10088

⚠ Standard Guide Rails are not suitable for use with the ALU-STAR Profile System. For guide rails with hole spacing T = 60 mm for the ALU-STAR Profile System, see the ALU-STAR Profile System catalog 82 852.



Teilenummern und Längen

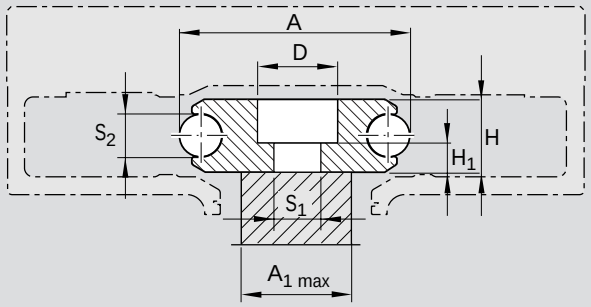
Guide Rail, low profile			without holes	with holes
Size	Standard length[1] (mm)	L_{max} (mm)	Part number Length:,...(mm)	Part number Length:,...(mm)
32	3500	7000	1924-032-31,...	1924-132-31,...
32-2	3500	7000	–	1924-232-31,...
52	3500	7000	1924-052-31,...	1924-152-31,...
52-2	3500	7000	–	1924-252-31,...
52-4	3500	7000	–	1924-452-31,...

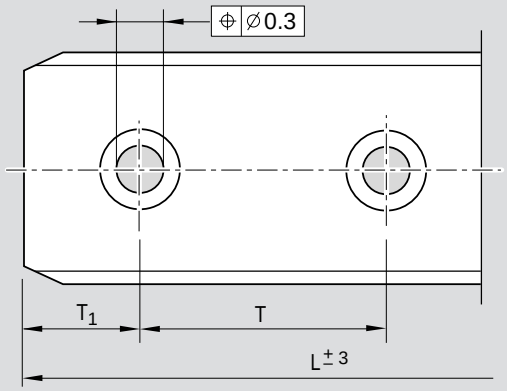
[1] Running tracks up to 3500 mm are made of one-piece precision steel shafts.

		Recommended rail lengths			
Size - Version	Hole spacing T (mm)	Number of holes/Rail length L (mm)			
32-2, 52-4	62.5	2/121	10/621	18/1121	40/2496
		4/246	12/746	20/1246	50/3125
		6/371	14/871	24/1496	56/3496
		8/496	16/996	30/1871	
32, 52-2	125	2/246	10/1246	18/2246	28/3496
		4/496	12/1496	20/2496	
		6/746	14/1746	22/2746	
		8/996	16/1996	24/2996	
52	250	2/496	6/1496	14/3496	
		3/746	8/1996		
		4/996	10/2496		
		5/1246	12/2996		

Shown rotated through 90°

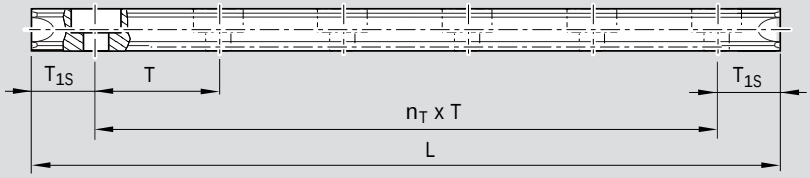
Mounting hole drilling pattern not to scale





Size - Version	Dimensions (mm)											Mass
	A	$A_{1\ max}$	H	H_1	H_2	D	S_1	S_2	T	T_{1S}	$T_{1\ min.}$	kg/m
32	32	19	10	3.5	5	11	6.5	6	125.00	60.50	13	1.1
32-2	32	19	10	3.5	5	11	6.5	6	62.50	29.25	13	1.1
52	52	32	18	7.0	9	20	11.0	10	250.00	123.00	20	3.1
52-2	52	32	18	7.0	9	20	11.0	10	125.00	60.50	20	3.1
52-4	52	32	18	7.0	9	20	11.0	10	62.50	29.25	20	3.1

Ordering a guide rail



Calculating guide rail length

Recommendation:
Use preferred length T_{1S}.
- Observe minimum spacing $T_{1\ min}$! (see table)
- T_1 is the same at either end of the rail.

$$L = n_B \cdot T - 4$$
or
$$L = n_T \cdot T + 2 \cdot T_{1S}$$

L	= rail length	(mm)
T	= hole spacing*)	(mm)
T_{1S}	= preferred dimension*)	(mm)
n_B	= number of holes	
n_T	= number of spaces	

*) see table for values

Ordering example

Guide rail: size 32-2
Desired length: 620 to 625 mm

n_B = 620/T = 620/62.5 = 9.92
rounded to whole numbers
= 10 holes,

$n_T = n_B - 1 = 9$

Rail ordering data:
Part number, length (mm)
T_1 / n_T x T / T_1 (mm)
1924-232-31, 621
29.25 / 9 x 62.5 / 29.25

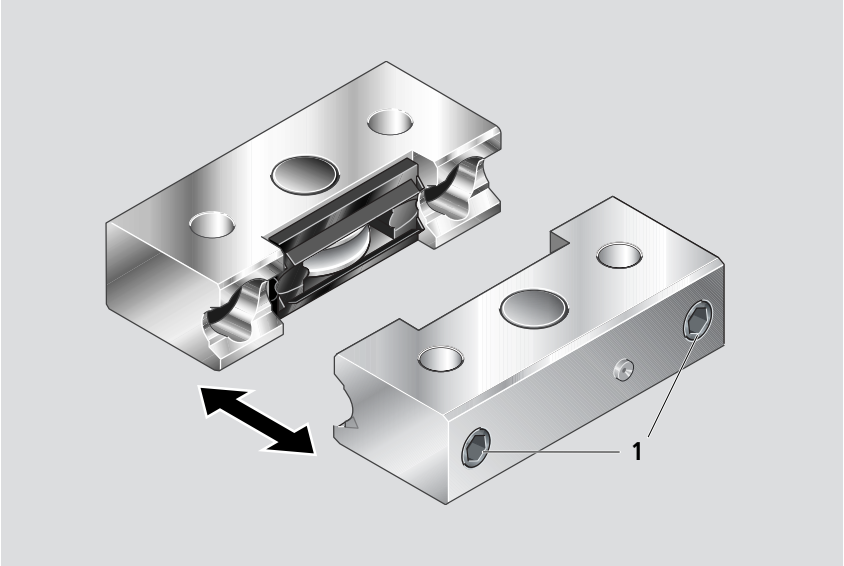
Length to be ordered

L = $10 \cdot 62.5 - 4 = 621$ mm or
L = $9 \cdot 62.5 + 2 \cdot 29.25 = 621$ mm

Cam Roller Guides

Single/Double Bearing Runner Blocks with Adjustment Screws

Single Bearing
Runner Blocks 1903-

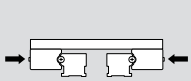
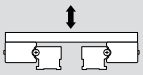
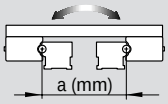
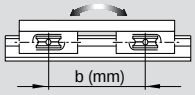
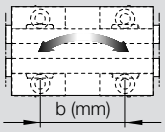


Special features:

- Freely selectable carriage structure spacing.
- Zero-clearance adjustment using socket hex screws (1) on the rear side of the runner blocks.
- Tough all-round sealing gives excellent wiper performance.
  Grease lubricant recommended.

⚠ Standard S/D Bearing Runner Blocks are not suitable for use with the ALU-STAR Profile System. For suitable runner blocks, see the ALU-STAR Profile System catalog 82 852.

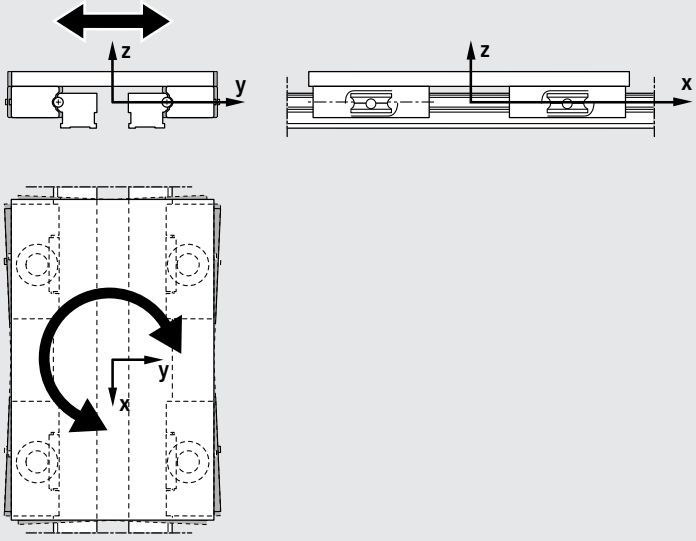
Part numbers,
Load capacities and moment loads for calculating service life when using four single bearing runner blocks

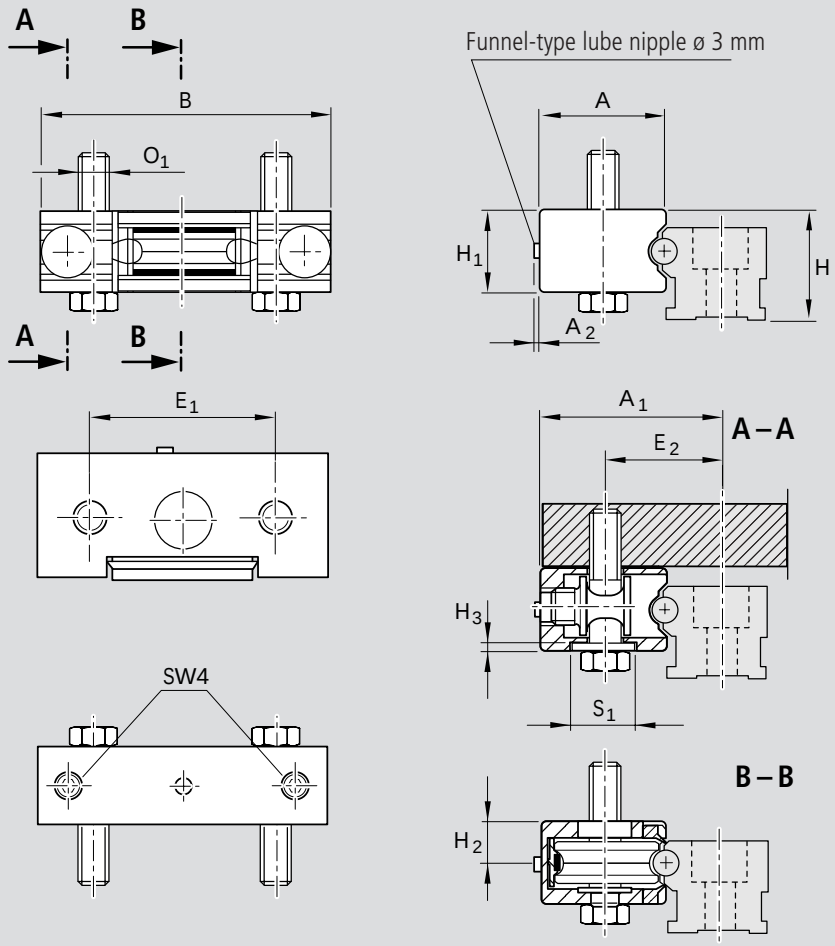
		Load capacities				Moment loads					
											
Size - Version	Part number	C_y (N)	C_{y0} (N)	C_z (N)	C_{z0} (N)	M_x (Nm)	M_{x0} (Nm)	M_y (Nm)	M_{y0} (Nm)	M_z (Nm)	M_{z0} (Nm)
32	1903-132-10	7335	4560	4300	2200	2.1 · a	1.1 · a	2.1 · b	1.1 · b	3.6 · b	2.2 · b
52	1903-152-10	17150	10200	10050	4900	5.0 · a	2.4 · a	5.0 · b	2.4 · b	8.5 · b	5.1 · b
52-h	1903-252-10	27900	15400	16775	7630	8.3 · a	3.8 · a	8.3 · b	3.8 · b	13.9 · b	7.6 · b
52-sh	1903-352-10	31000	18200	18400	8750	9.3 · a	4.4 · a	9.2 · b	4.3 · b	15.5 · b	9.1 · b

Advantage

The adjustment screws provide for zero-clearance running.

These screws can be used to rotate the runner block slightly about the z axis or shift it along the y axis to obtain optimal alignment.



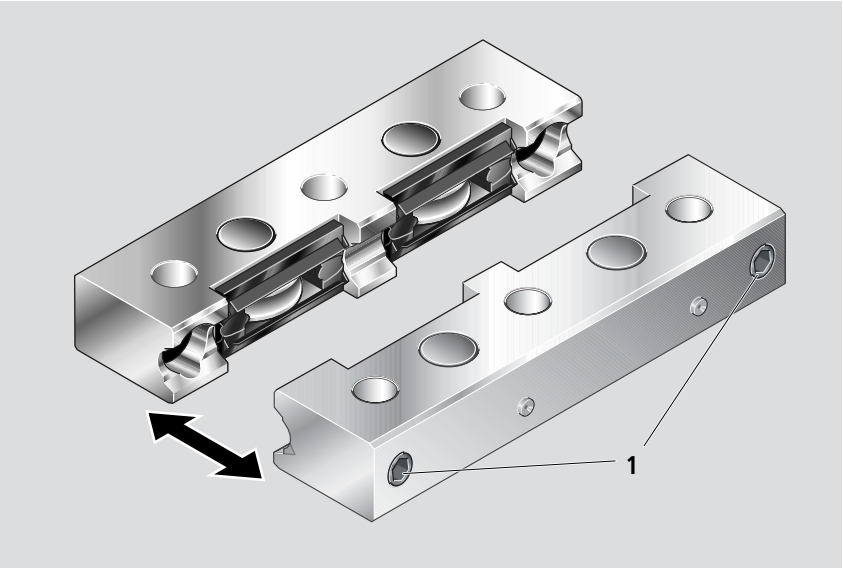


Size - Version	Dimensions (mm)												
	A	A_1	A_2	B	H	H_1	H_2	H_3	E_1	E_2	S_1	O_1 [1)]	
32	31.0	43.0	2	87.0	26	20.5	11.0	2.5	54	27.0	18	M8	
52	44.5	65.0	2	104.0	40	29.5	14.9	2.5	66	42.0	22	M10	
52-h	52.0	72.5	2	118.5	42	33.5	16.9	3.0	76	45.0	26	M12	
52-sh	57.0	77.5	2	123.5	42	33.5	16.9	3.0	81	47.5	26	M12	

[1)] Mounting screws are not included in the supply.
For screws to DIN 931-8.8, install a washer to DIN 125.

Cam Roller Guides

Double Bearing Runner Blocks 1904-



Special features:

- Freely selectable carriage structure spacing.
- Zero-clearance adjustment using socket hex screws (1) on the rear side of the runner blocks.
- Tough all-round sealing gives excellent wiper performance.
  Grease lubricant recommended.

⚠ Standard S/D Bearing Runner Blocks are not suitable for use with the ALU-STAR Profile System. For suitable runner blocks, see the ALU-STAR Profile System catalog 82 852.

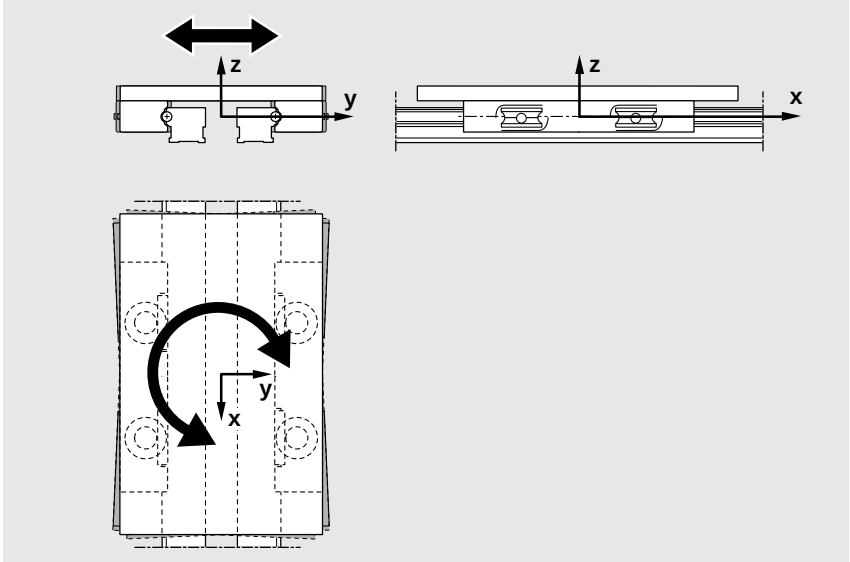
Part numbers,
Load capacities and moment loads for calculating service life when using two double bearing runner blocks

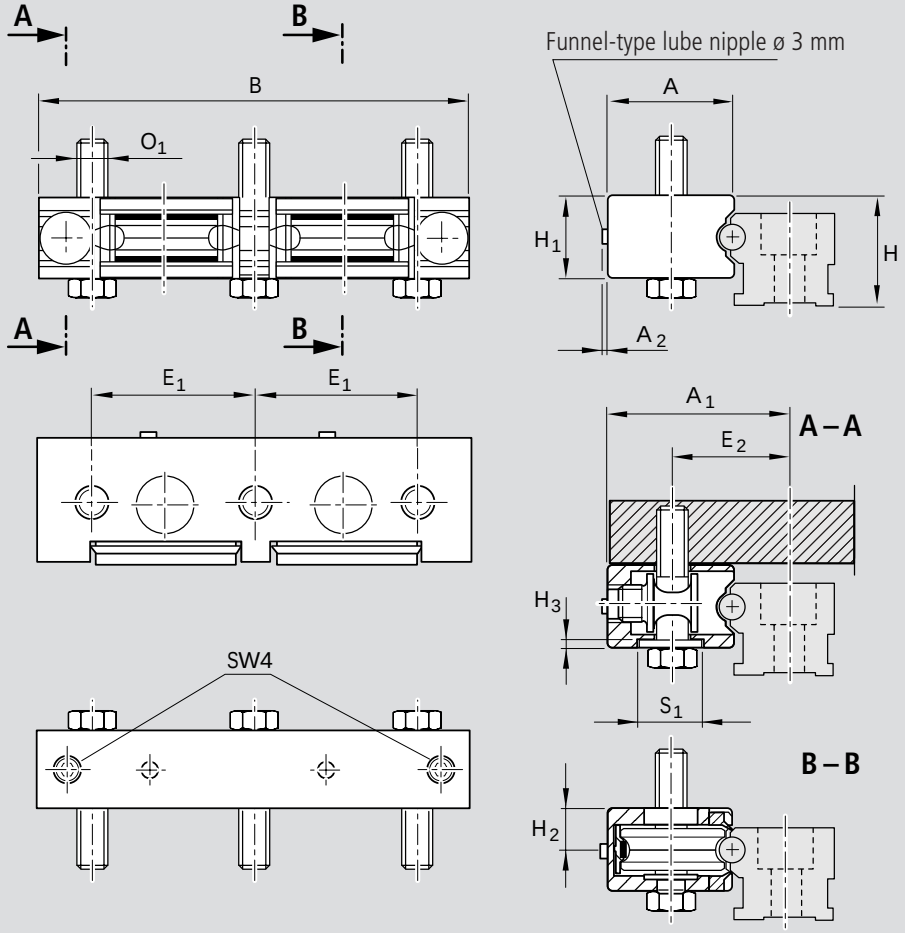
		Load capacities				Moment loads					
						a (mm)					
Size - Version	Part number	C_y (N)	C_{y0} (N)	C_z (N)	C_{zo} (N)	M_x (Nm)	M_{xo} (Nm)	M_y (Nm)	M_{yo} (Nm)	M_z (Nm)	M_{zo} (Nm)
32	1904-132-10	7335	4560	4300	2200	2.1 · a	1.1 · a	105	55	180	110
52	1904-152-10	17150	10200	10050	4900	5.0 · a	2.4 · a	330	158	561	337
52-h	1904-252-10	27900	15400	16775	7630	8.3 · a	3.8 · a	631	289	1056	578
52-sh	1904-352-10	31000	18200	18400	8750	9.3 · a	4.4 · a	740	350	1260	740

Advantage

The adjustment screws provide for zero-clearance running.

These screws can be used to rotate the runner block slightly about the z axis or shift it along the y axis to obtain optimal alignment.





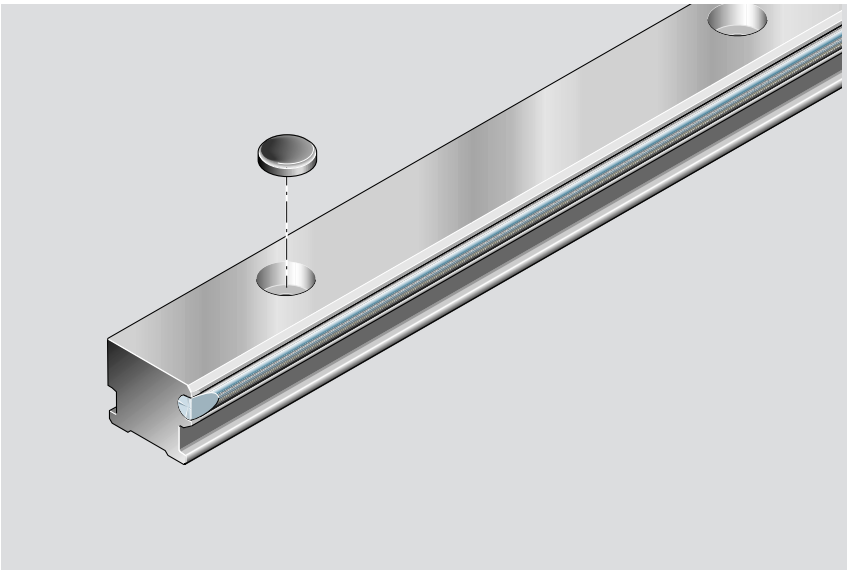
Size - Version	Dimensions (mm)												
	A	A_1	A_2	B	H	H_1	H_2	H_3	E_1	E_2	S_1	O_1[1)]	
32	31.0	43.0	2	129.0	26	20.5	11.0	2.5	48.0	27.0	18	M8	
52	44.5	65.0	2	159.0	40	29.5	14.9	2.5	60.5	42.0	22	M10	
52-h	52.0	72.5	2	184.5	42	33.5	16.9	3.0	71.0	45.0	26	M12	
52-sh	57.0	77.5	2	194.5	42	33.5	16.9	3.0	76.0	47.5	26	M12	

[1)] Mounting screws are not included in the supply.
For screws to DIN 931-8.8, install a washer to DIN 125.

Cam Roller Guides
Guide Rails

Guide Rail
standard half-rail 1925-

– For mounting from above
– Optional mounting hole plugs
– Corrosion resistant steel shafts to DIN 17230 / EN 10088



⚠ Standard Guide Rails are not suitable for use with the ALU-STAR Profile System. For guide rails with hole spacing T = 60 mm for the ALU-STAR Profile System, see the ALU-STAR Profile System catalog 82 852.

Part numbers, lengths

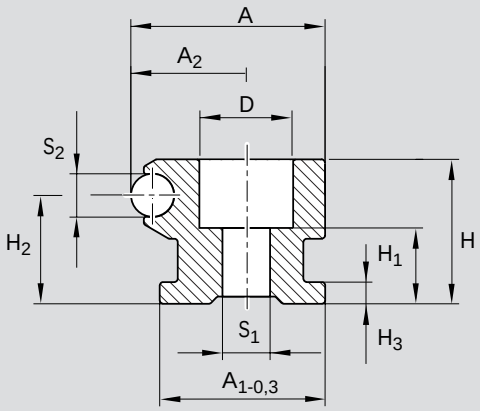
Guide Rail: standard half-rail			without holes	with holes	Mounting hole plugs (optional)	
Size - Version	Standard length[1] (mm)	L_{max} (mm)	Part number Length:,...(mm)	Part number Length:,...(mm)	Part number Quantity:,...	Holes per meter[2]
32	3500	7000	1925-032-31,...	1925-132-31,...	1605-200-90,...	8
32-2	3500	7000	–	1925-232-31,...	1605-200-90,...	16
52	3500	7000	1925-052-31,...	1925-152-31,...	1605-400-90,...	4
52-2	3500	7000	–	1925-252-31,...	1605-400-90,...	8
52-4	3500	7000	–	1925-452-31,...	1605-500-90,...	16

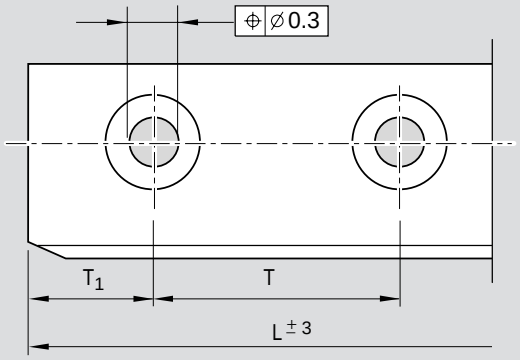
[1] Running tracks up to 3500 mm are made of one-piece precision steel shafts.
[2] Number for one meter at preferred length T_{1S}

		Recommended rail lengths			
Size - Version	Hole spacing T (mm)	Number of holes/Rail length L (mm)			
32-2, 52-4	62.5	2/121	10/621	18/1121	40/2496
		4/246	12/746	20/1246	50/3125
		6/371	14/871	24/1496	56/3496
		8/496	16/996	30/1871	
32, 52-2	125	2/246	10/1246	18/2246	28/3496
		4/496	12/1496	20/2496	
		6/746	14/1746	22/2746	
		8/996	16/1996	24/2996	
52	250	2/496	6/1496	14/3496	
		3/746	8/1996		
		4/996	10/2496		
		5/1246	12/2996		

Shown rotated through 90°

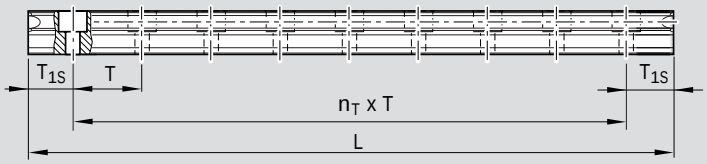
Mounting hole drilling pattern not to scale





Size - Version	Dimensions (mm) A	A_1	A_2	H	H_1	H_2	H_3	D	S_1	S_2	T	T_{1S}	$T_{1\ min.}$	Mass kg/m
32	26	22	16	20	9.5	15.0	3	11.0	6.5	6	125.0	60.50	13	1.3
32-2	26	22	16	20	9.5	15.0	3	11.0	6.5	6	62.5	29.25	13	1.3
52	42	36	26	34	19.0	25.1	5	20.0	11.0	10	250.0	123.00	20	3.5
52-2	42	36	26	34	19.0	25.1	5	20.0	11.0	10	125.0	60.50	20	3.5
52-4	42	36	26	34	17.0	25.1	5	24.0	13.0	10	62.5	29.25	20	3.5

Ordering a guide rail



Calculating guide rail length

Recommendation:
Use preferred length T_{1S}.
- Observe minimum spacing $T_{1\ min}$! (see table)
- T_1 is the same at either end of the rail.

$$L = n_B \cdot T - 4$$
or
$$L = n_T \cdot T + 2 \cdot T_{1S}$$

L	= rail length	(mm)
T	= hole spacing*)	(mm)
T_{1S}	= preferred dimension*)	(mm)
n_B	= number of holes	
n_T	= number of spaces	

*) see table for values

Ordering example

Guide rail: size 32-2
Desired length: 620 to 625 mm
n_B = 620/T = 620/62.5 = 9.92
rounded to whole numbers
= 10 holes,
n_T = n_B - 1 = 9

Length to be ordered

L = 10 · 62.5 - 4 = 621 mm or
L = 9 · 62.5 + 2 · 29.25 = 621 mm

Rail ordering data:
Part number, length (mm)
T_1 / n_T x T / T_1 (mm)
1925-232-31, 621
29.25 / 9 x 62.5 / 29.25

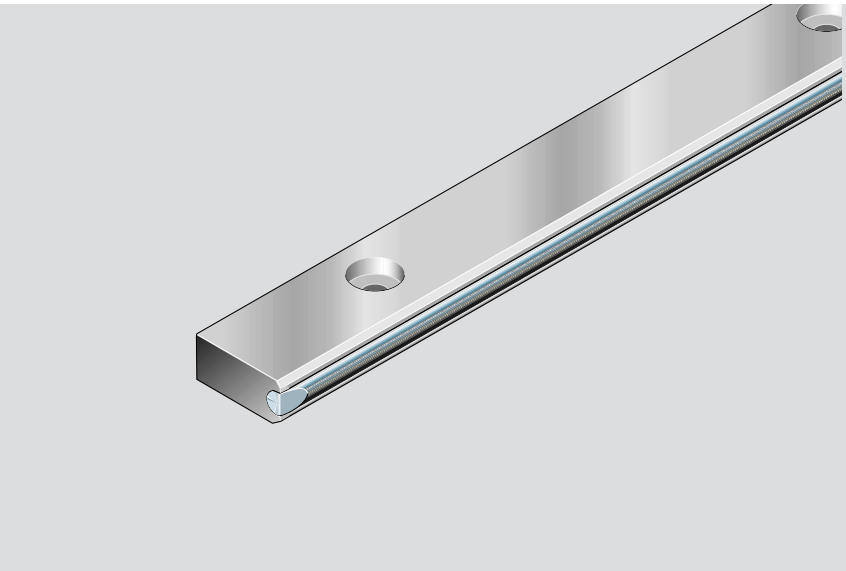
Mounting hole plug ordering data:
Part number, quantity
1605-200-90, 10

Cam Roller Guides
Guide Rails

Guide Rail
low-profile, half-rail 1926-

– For mounting from above
– Corrosion resistant steel shafts to DIN 17230 / EN 10088

⚠ Standard Guide Rails are not suitable for use with the ALU-STAR Profile System. For guide rails with hole spacing T = 60 mm for the ALU-STAR Profile System, see the ALU-STAR Profile System catalog 82 852.



Part numbers, lengths

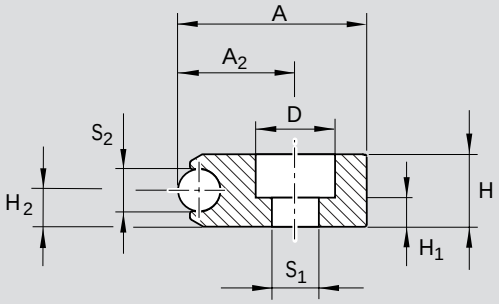
Guide rail: low-profile, half-rail			without holes	with holes
Size	Standard length [1] (mm)	L_{max} (mm)	Part number Length:,...(mm)	Part number Length:,...(mm)
32	3500	7000	1926-032-31,...	1926-132-31,...
32-2	3500	7000	–	1926-232-31,...
52	3500	7000	1926-052-31,...	1926-152-31,...
52-2	3500	7000	–	1926-252-31,...
52-4	3500	7000	–	1926-452-31,...

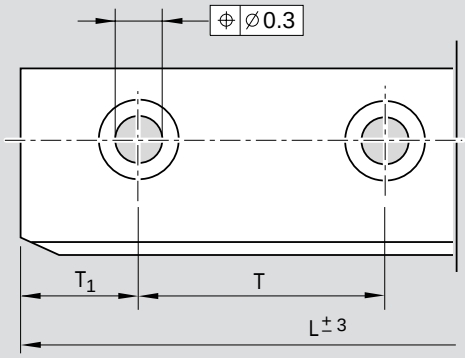
[1] Running tracks up to 3500 mm are made of one-piece precision steel shafts.

		Recommended rail lengths			
Size - Version	Hole spacing T (mm)	Number of holes/Rail length L (mm)			
32-2, 52-4	62.5	2/121	10/621	18/1121	40/2496
		4/246	12/746	20/1246	50/3125
		6/371	14/871	24/1496	56/3496
		8/496	16/996	30/1871	
32, 52-2	125	2/246	10/1246	18/2246	28/3496
		4/496	12/1496	20/2496	
		6/746	14/1746	22/2746	
		8/996	16/1996	24/2996	
52	250	2/496	6/1496	14/3496	
		3/746	8/1996		
		4/996	10/2496		
		5/1246	12/2996		

Shown rotated through 90°

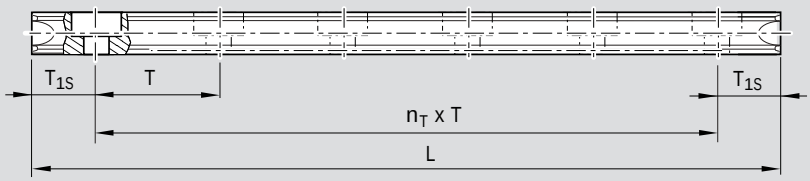
Mounting hole drilling pattern not to scale





Size - Version	Dimensions (mm)											Mass
	A	A_2	H	H_1	H_2	D	S_1	S_2	T	T_{1S}	$T_{1\ min.}$	kg/m
32	26	16	10	3.5	5	11.0	6.5	6	125.0	60.50	13	0.8
32-2	26	16	10	3.5	5	11.0	6.5	6	62.5	29.25	13	0.8
52	42	26	18	7.0	9	20.0	11.0	10	250.0	123.00	20	2.3
52-2	42	26	18	7.0	9	20.0	11.0	10	125.0	60.50	20	2.3
52-4	42	26	18	7.0	9	24.0	13.0	10	62.5	29.25	20	2.3

Ordering a guide rail



Calculating guide rail length

Recommendation:
Use preferred length T_{1S}.
- Observe minimum spacing $T_{1\ min}$! (see table)
- T_1 is the same at either end of the rail.

$$L = n_B \cdot T - 4$$
or
$$L = n_T \cdot T + 2 \cdot T_{1S}$$

L	= rail length	(mm)
T	= hole spacing*)	(mm)
T_{1S}	= preferred dimension*)	(mm)
n_B	= number of holes	
n_T	= number of spaces	

*) see table for values

Ordering example

Guide rail: size 32-2
Desired length: 620 to 625 mm

n_B = 620/T = 620/62.5 = 9.92
rounded to whole numbers
= 10 holes,

n_T = n_B - 1 = 9

Length to be ordered

L = 10 · 62.5 - 4 = 621 mm or
L = 9 · 62.5 + 2 · 29.25 = 621 mm

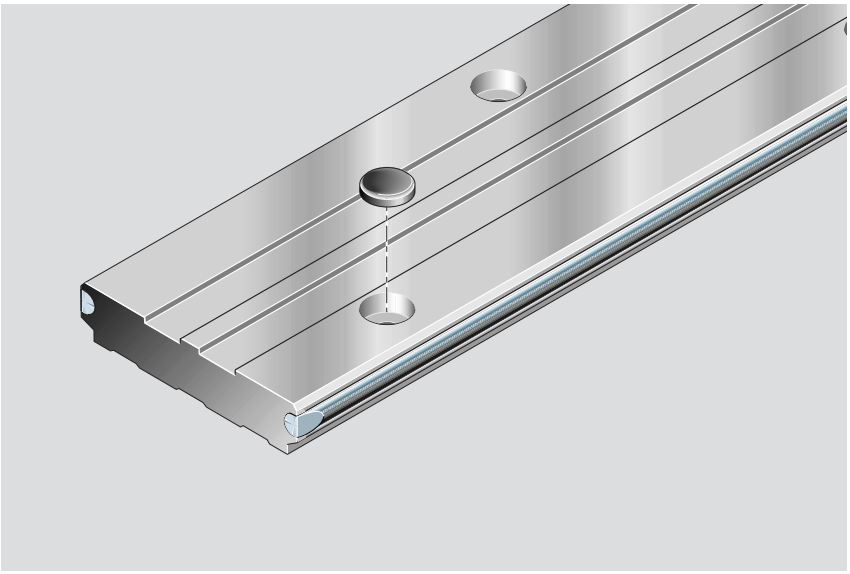
Rail ordering data:
Part number, length (mm)
T_1 / n_T x T / T_1 (mm)
1926-232-31, 621
29.25 / 9 x 62.5 / 29.25

Cam Roller Guides
Guide Rails

Guide Rail wide 1927-

- For mounting from above
- Optional mounting hole plugs
- Corrosion resistant steel shafts to DIN 17230 / EN 10088

⚠ Standard Guide Rails are not suitable for use with the ALU-STAR Profile System. For guide rails with hole spacing T = 180 mm for the ALU-STAR Profile System, see the ALU-STAR Profile System catalog 82 852.



Part numbers, lengths

Guide rail: wide			without holes	with holes	Mounting hole plugs (optional)	
Size - Version	Standard length[1] (mm)	L_{max} (mm)	Part number Length:,...(mm)	Part number Length:,...(mm)	Part number Quantity:,...	Holes per meter[2]
52/120	3500	7000	1927-052-31,...	1927-152-31,...	1605-400-90,...	8

[1] Running tracks up to 3500 mm are made of one-piece precision steel shafts.

[2] Number for one meter at preferred length

Ordering a guide rail

Wherever possible, use the recommended rail lengths (1.).

Intermediate lengths (2.) or special lengths (3.) may also be manufactured on request.

L	=	rail length	(mm)
n_B	=	number of holes (both rows)	
n_T	=	number of spaces between holes ($n_T = n_B - 1$)	
T_1, T_2	=	end spaces, see drawings	(mm)
T	=	hole spacing (125 mm)	

Ordering data

1. Recommended rail length: Odd number of holes n_B
$T_1 \neq T_2$

Preferred dimensions T_1: 60.5 mm,
T_2: 185.5 mm

By turning the rail over it is possible to alternate between mounting hole pattern 1a) and 1b). When this is done, T_1 becomes T_2 and vice versa.

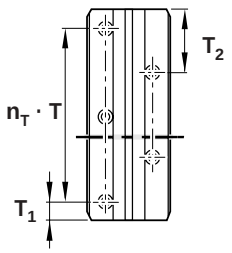
Calculating the rail length

– Observe minimum spacing $T_{1,2\ min}$! (see table)

Ordering example for recommended rail length

Rail ordering data:
Part number, length L (mm)
T_1 / n_T x T / T_2 (mm)

1 a)



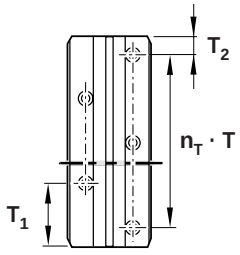
(1)	$L = n_B \cdot 125 - 4$	
	or	
(2)	$L = n_T \cdot 125 + 121$	

Example
(1) L = 11 · 125 - 4 = 1371 mm or
(2) L = 10 · 125 + 121 = 1371 mm

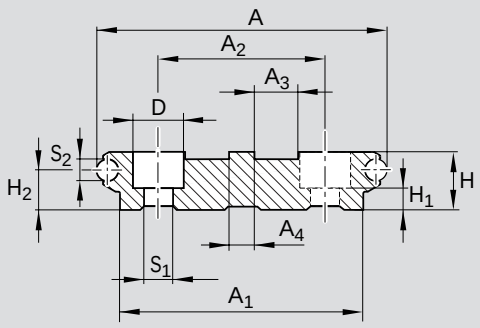
1927-152-31, 1371
60.5 / 10 x 125 / 185.5

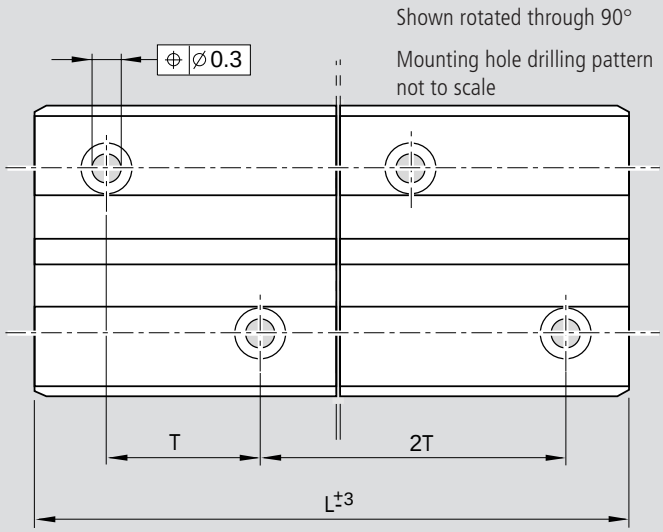
Mounting hole plug ordering data:
Part number, quantity = n_B
Example: 1605-400-90, 11

1 b)



Number of holes n_B = 11
Number of spaces between holes n_T = 10





Size - Version	Dimensions (mm)													Mass
	A	A_1	A_2	A_3	A_4	H	H_1	H_2	D	S_1	S_2	T	$T_{1.2\ min.}$	kg/m
52/120	120	100	68	18	10	25	10	16.1	20	11	10	125	13	7.8

2. Intermediate length:

Even number of holes n_B

The mounting hole drilling pattern remains the same when the rail is turned over. Dimensions T_1 and T_2 remain the same and can therefore not be matched to a different pre-drilled hole pattern.

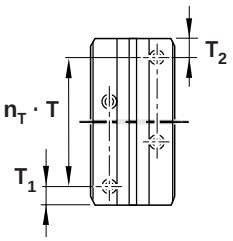
$T_1 = T_2 = 60.5$ mm or

$T_1 = T_2 = 185.5$ mm

(preferred dimensions)

Calculate the length according to item 1. "Recommended rail length"

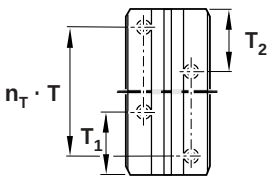
2 a)



Ordering example: Rail 2a:

1927-152-31, 1496 mm
60.5 / 11 x 125 / 60.5

2 b)



Ordering example: Rail 2b:

1927-152-31, 1496 mm
185.5 / 11 x 125 / 185.5

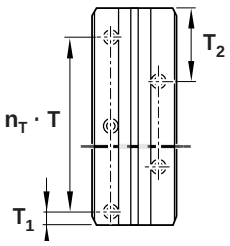
3. Special length:

Odd (3a) or even (3b) number of holes n_B

If the preferred dimensions T_1 and T_2 cannot be used (neither the recommended rail lengths nor intermediate lengths), determine T_1 and T_2 as required.

T_1 and T_2 must not fall within the following ranges:
0 to 13 and 112 to 139 mm

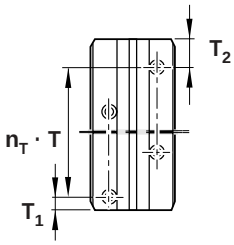
3 a)



Ordering example: Rail 3a:

1927-152-31, 1305 mm
20 / 10 x 125 / 160

3 b)

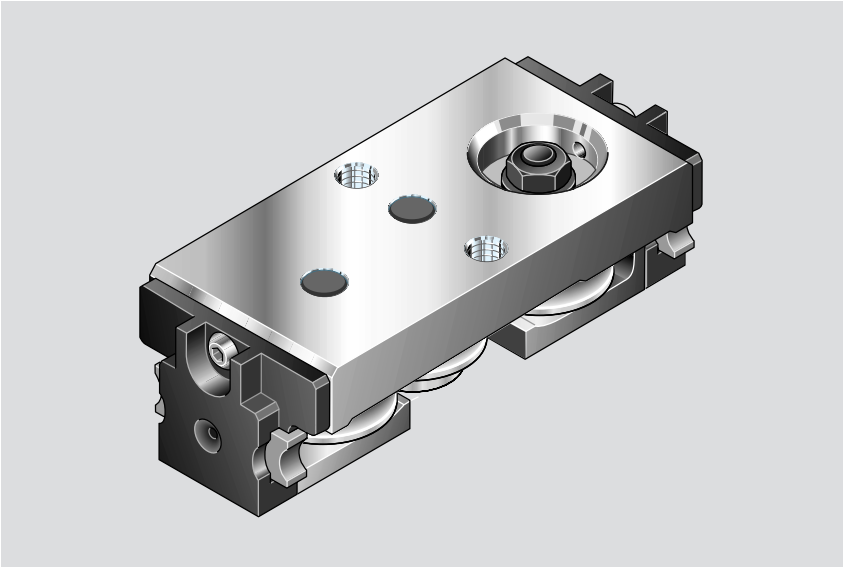


Ordering example: Rail 3b:

1927-152-31, 1435 mm
20 / 11 x 125 / 40

Cam Roller Guides
U-type Runner Blocks

U-type Runner Block 1905-

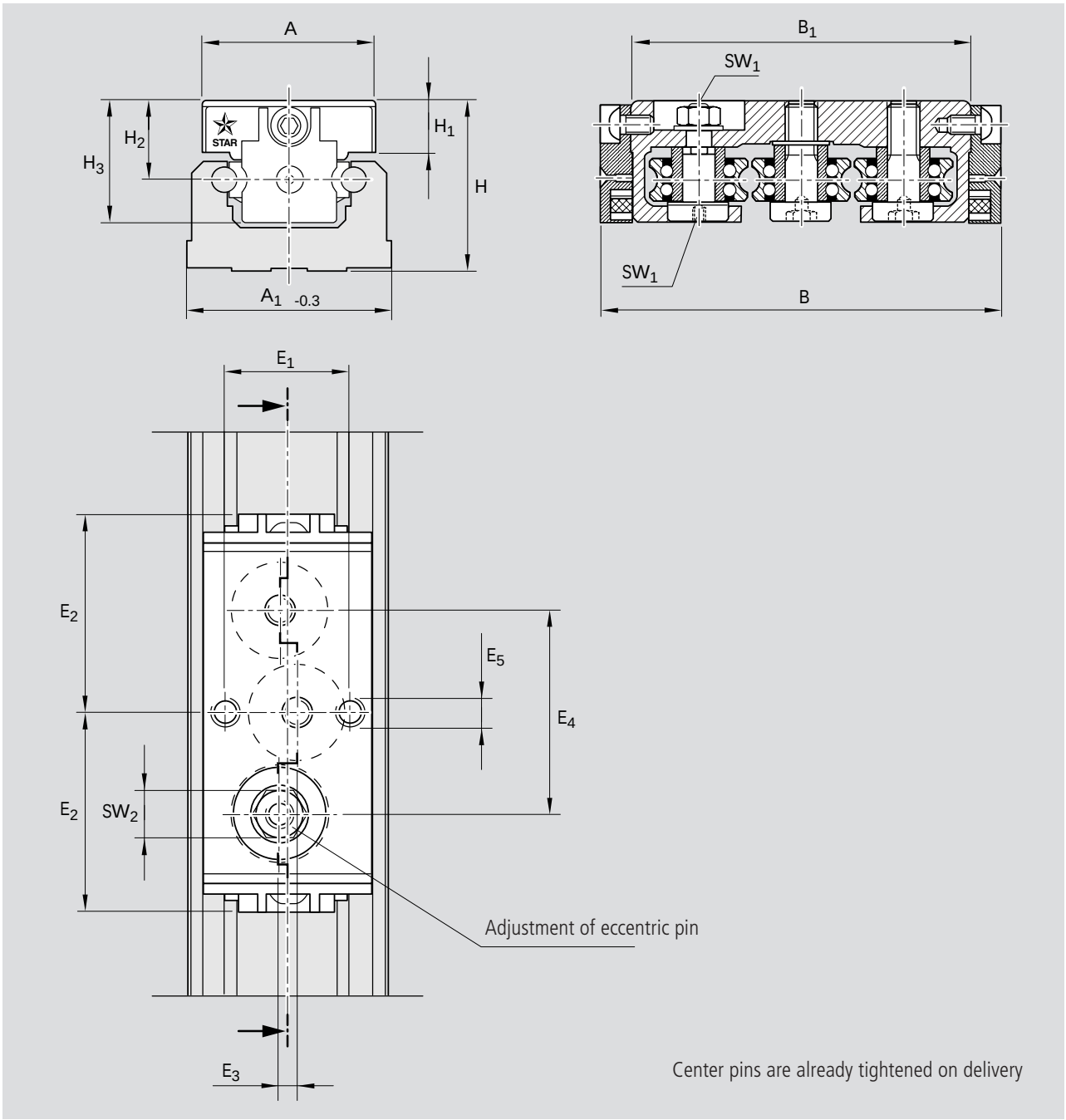


Part numbers,

load capacities and moments for calculating service life

Size - Version	Part number	Load capacities and moments									
		C_y (N)	C_{y0} (N)	C_z (N)	C_{zo} (N)	M_x (Nm)	M_{xo} (Nm)	M_y (Nm)	M_{yo} (Nm)	M_z (Nm)	M_{zo} (Nm)
20	1905-119-00	1150	800	668	392	4.8	2.8	11.3	6.6	19.5	13.5

Important: Observe maximum permissible loads due to forces and moments as shown in the "Maximum Permissible Loads" tables!



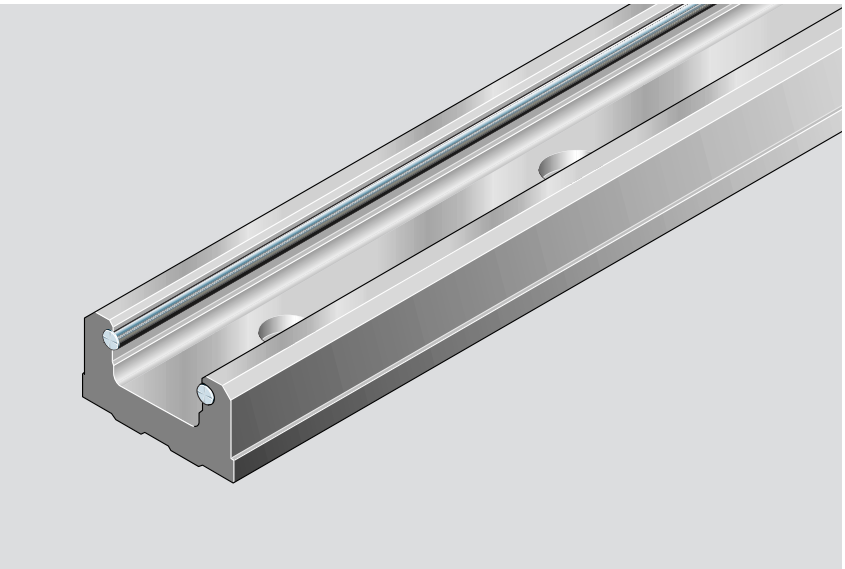
Size - Version	Dimensions (mm)															Mass
	A	A_1	B	B_1	H	H_1	H_2	H_3	E_1	E_2	E_3	E_4	E_5	SW_1	SW_2	(kg)
20	28	33	66	56	28	8.5	13	20	20	33	3	34	M5	2	7	0.08

Cam Roller Guides
U-type Guide Rails

U-type Guide Rail 1923-

– For mounting from above
– Corrosion resistant steel shafts to DIN 17230 / EN 10088

⚠ Standard Guide Rails are not suitable for use with the ALU-STAR Profile System. For guide rails with hole spacing T = 60 mm for the ALU-STAR Profile System, see the ALU-STAR Profile System catalog 82 852.



Part numbers, lengths

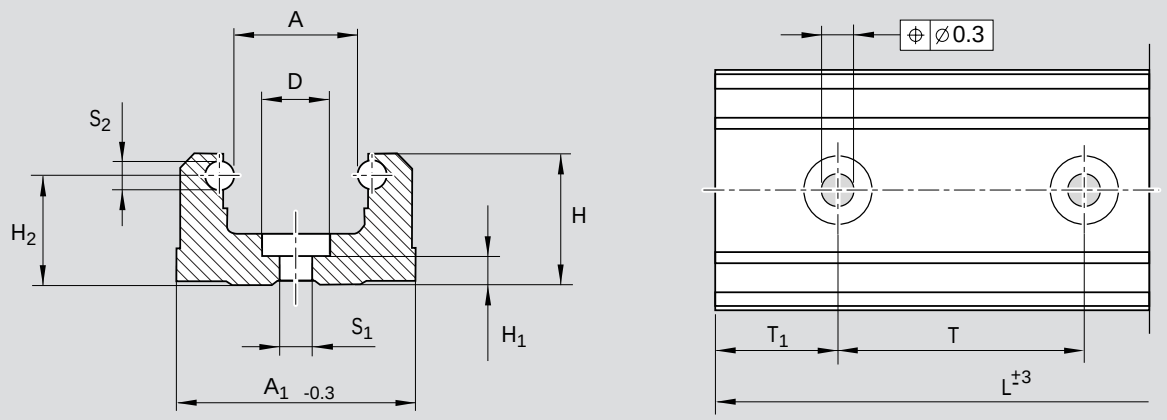
Guide Rail: U-type			without holes	with holes
Size	Standard length [1] (mm)	L_{max} (mm)	Part number Length:,...(mm)	Part number Length:,...(mm)
20	3500	7000	1923-019-31,...	1923-119-31,...

[1] Running tracks up to 3500 mm are made of one-piece precision steel shafts.

Size - Version	Hole spacing T (mm)	Recommended rail lengths Number of holes/Rail length L (mm)			
20	62.5	2/121	10/621	18/1121	40/2496
		4/246	12/746	20/1246	50/3125
		6/371	14/871	24/1496	56/3496
		8/496	16/996	30/1871	

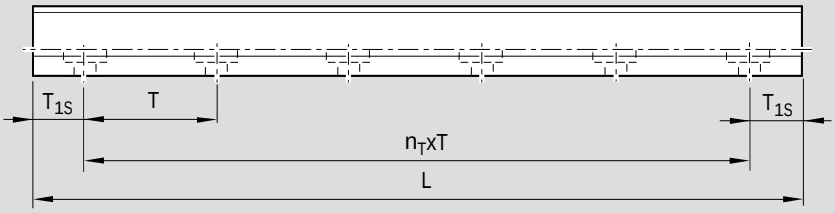
Shown rotated through 90°

Mounting hole drilling pattern not to scale



Size - Version	Dimensions (mm) A	A_1	H	H_1	H_2	D	S_1	S_2	T	T_{1S}	$T_{1\ min.}$	Mass kg/m
20	17	33	18	3.4	15	9.4	4.5	4	62.5	29.25	13	1.10

Ordering a guide rail



Calculating guide rail length

Recommendation:
Use preferred length T_{1S}.
- Observe minimum spacing $T_{1\ min}$! (see table)
- T_1 is the same at either end of the rail.

$$L = n_B \cdot T - 4$$
or
$$L = n_T \cdot T + 2 \cdot T_{1S}$$

L	= rail length	(mm)
T	= hole spacing*)	(mm)
T_{1S}	= preferred dimension*)	(mm)
n_B	= number of holes	
n_T	= number of spaces	

*) see table for values

Ordering example

Guide rail: size 20
Desired length: 620 to 625 mm
n_B = 620/T = 620/62.5 = 9.92
rounded to whole numbers
= 10 holes,
n_T = n_B - 1 = 9

Rail ordering data:
Part number, length (mm)
T_1 / n_T x T / T_1 (mm)
1923-119-31, 621
29.25 / 9 x 62.5 / 29.25

Length to be ordered

L = 10 · 62.5 - 4 = 621 mm or
L = 9 · 62.5 + 2 · 29.25 = 621 mm

Cam Roller Guides
Accessories

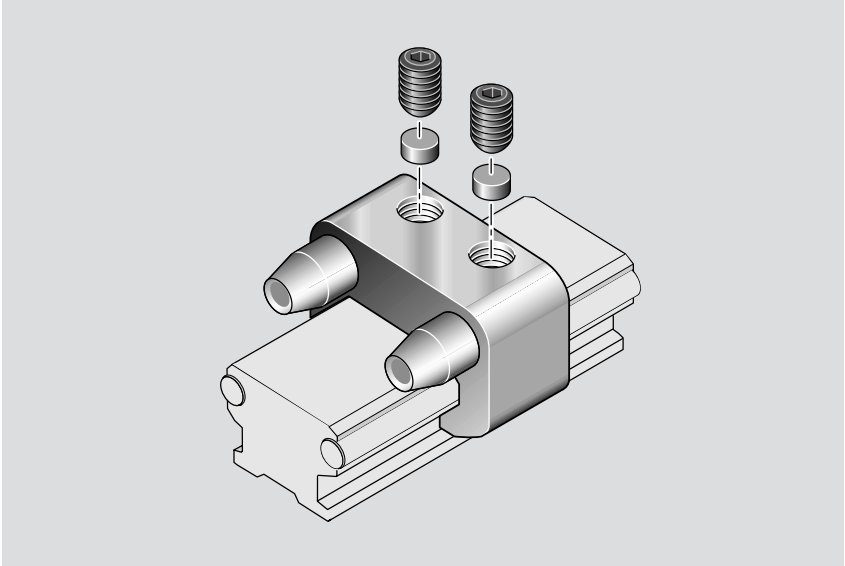
Dead stop 1910-5..-00

The dead stop can be used with guide rails 1921- (standard),1922- (with T-slot) and 1924 (low-profile).

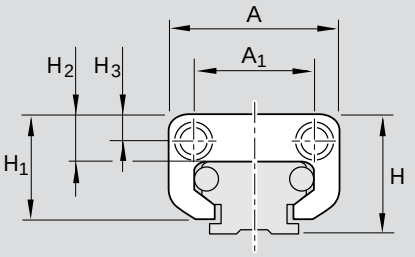
Holding force: 1500 N

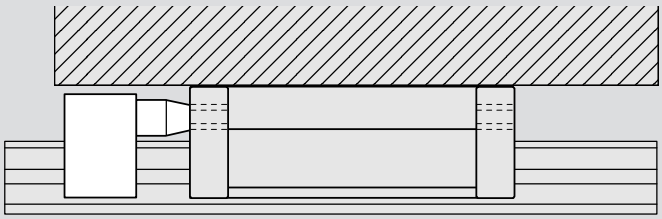
If a set screw to ISO 7434 is used without a soft-metal pin, there will be a pressure point in the guide rail.
The resulting contour locking effect will increase the holding force.

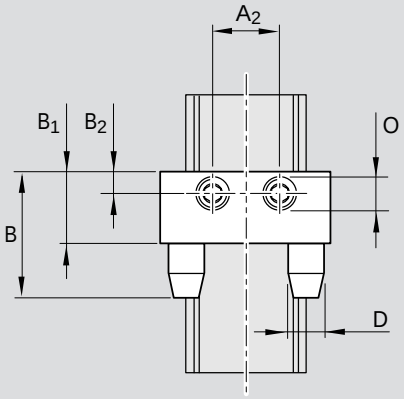
The lubrication unit is reinforced in the area corresponding to the dead stop.



Size	Dead stop Part number	For guide rails: Part number
32	1910-532-00,...	1921-, 1922-, 1924-
52	1910-552-00,...	1921-, 1922-, 1924-







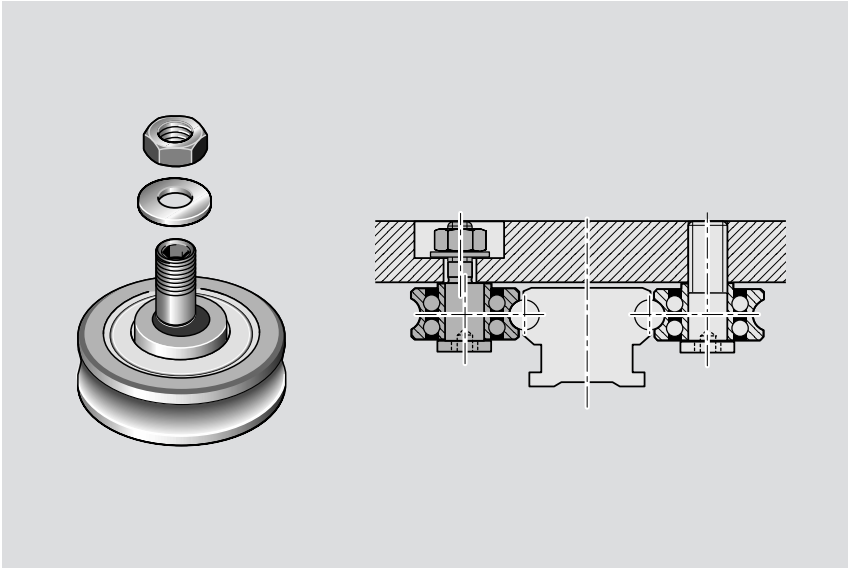
Size - Version	Dimensions (mm)												Mass
	A	A_1	A_2	B	B_1	B_2	D	H	H_1	H_2	H_3	O	(kg)
32	46	33	18	35	20	5.5	10	33.5	29	13	7.5	M8	0.05
52	70	46	32	43	23	5.5	16	53.0	42	18	9.0	M8	0.11

Cam Roller Guides
Cam Rollers with Spigots, Assembly Kits

Cam Roller with eccentric spigot 1900-...-.0

For mounting customer-built carriages, with central and eccentric spigots for zero-clearance adjustment to the guide rail.

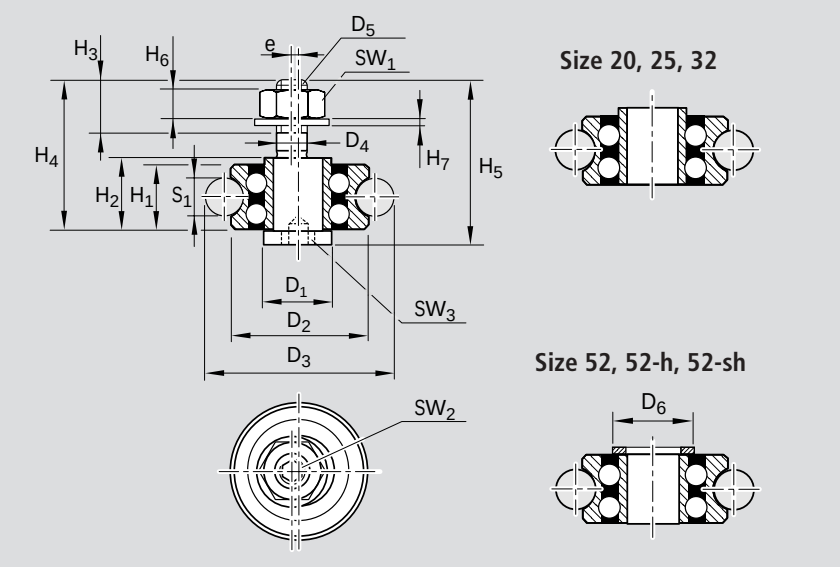
For applications where even the versatile standard range does not offer the optimum solution to your problem.



Part numbers
Load capacities for calculating service life
Maximum permissible loads

		Load capacities				Maximum permissible loads	
Size - Version	Part number	C_y (N)	C_{y0} (N)	C_z (N)	C_{zo} (N)	$F_{y\,max}$ (N)	$F_{z\,max}$ (N)
20	1900-119-00	1150	800	330	190	350	100
25	1900-125-00	1280	890	340	200	350	100
32	1900-132-00	3670	2280	1080	550	550	180
52	1900-152-00	8580	5100	2510	1230	2500	700
52-h	1900-152-10	13950	7700	4190	1910	2600	800
52-sh	1900-152-20	15500	9100	4600	2190	5300	1600

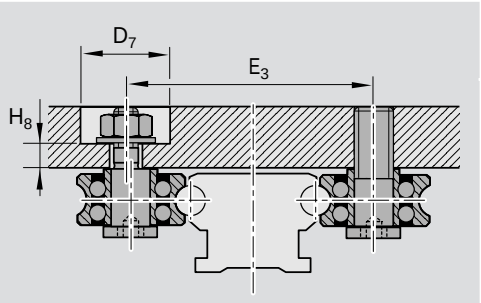
Dimensions



Size - Version	Dimensions (mm)																		
	D_1	D_2	D_3	D_4	D_5	D_6	H_1	H_2	H_3	H_4	H_5	H_6	H_7	SW_1	SW_2	SW_3		e	s_1
	g6			g6															
20	10	16	22.0	4	M4	9.0	7.0	8.5	4.6	16.0	19.5	3.2	0.8	7	2	2		0.45	4
25	10	17	27.0	4	M4	9.0	7.0	8.5	5.5	17.4	21.4	3.2	0.8	7	2	2		0.45	6
32	14	24	34.0	6	M6	11.8	11.0	12.5	7.0	25.5	29.0	5.2	1.6	10	3	4		0.90	6
52	20	35	51.3	10	M10	19.0	15.9	17.9	11.0	36.5	41.5	8.4	2.0	16	4	6		0.90	10
52-h	20	42	58.0	10	M10	19.0	19.0	21.0	11.0	44.3	50.3	8.4	2.0	16	4	6		0.90	10
52-sh	25	47	63.3	12	M12	24.0	19.0	21.0	13.0	44.3	50.3	10.8	2.5	18	6	8		0.90	10

Recommended hole spacing when using the following STAR Cam Roller Guide Rails:

- **Standard 1921-**
- **With T-slot 1922-**
- **Low-profile 1924-**



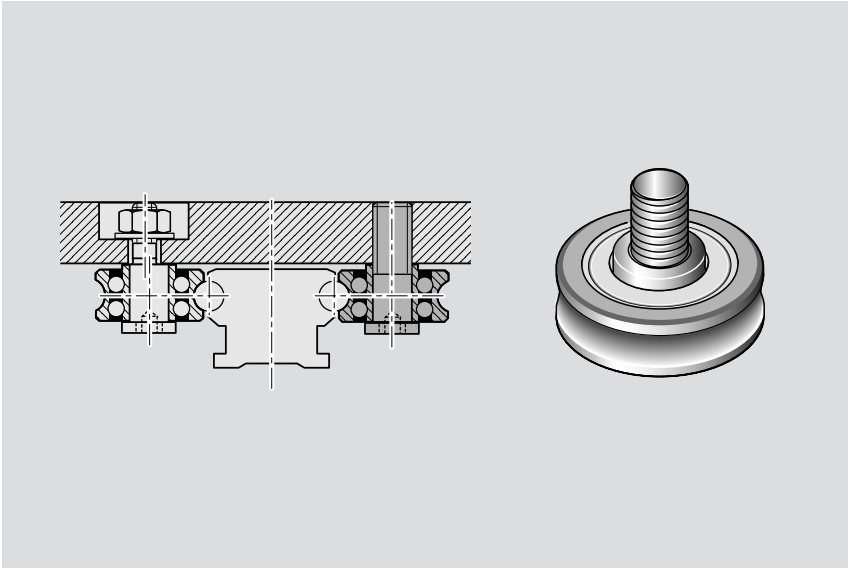
Size - Version	E_3 ± 0.2	D_7	H_8
20	33.8	15	3.0
25	39.8	15	3.6
32	54.0	18	5.5
52	83.3	30	7.3
52-h	90.0	30	11.8
52-sh	95.0	34	9.3

Cam Roller Guides
Cam Rollers with Spigots, Assembly Kits

Cam Roller with central spigot 1900-...-.1

For mounting customer-built carriages, with central and eccentric spigots for zero-clearance adjustment to the guide rail.

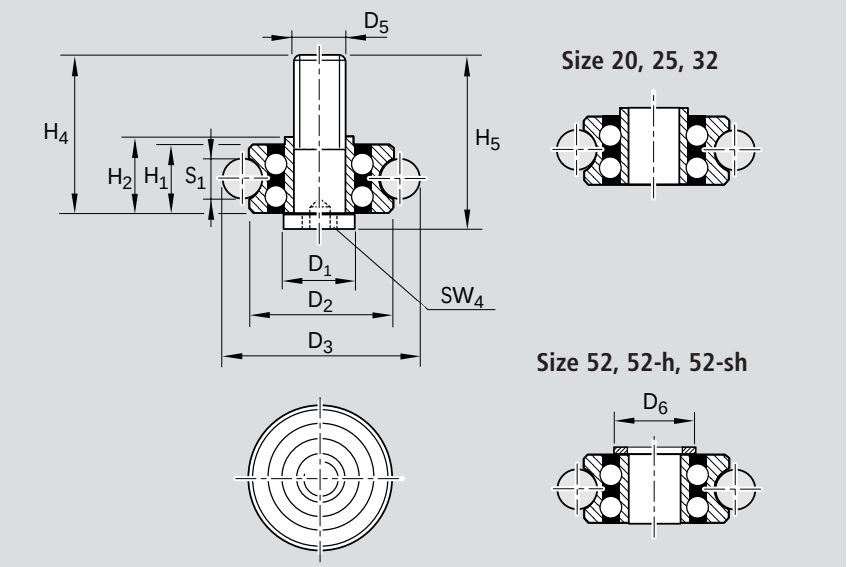
For applications where even the versatile standard range does not offer the optimum solution to your problem.



Part numbers
Load capacities for calculating service life
Maximum permissible loads

		Load capacities				Maximum permissible loads	
Size - Version	Part number	C_y (N)	C_{y0} (N)	C_z (N)	C_{zo} (N)	$F_{y\ max}$ (N)	$F_{z\ max}$ (N)
20	1900-119-01	1150	800	330	190	350	100
25	1900-125-01	1280	890	340	200	350	100
32	1900-132-01	3670	2280	1080	550	550	180
52	1900-152-01	8580	5100	2510	1230	2500	700
52-h	1900-152-11	13950	7700	4190	1910	2600	800
52-sh	1900-152-21	15500	9100	4600	2190	5300	1600

Dimensions



Size - Version	Dimensions (mm)																	
	D_1 g6	D_2	D_3		D_5	D_6	H_1	H_2		H_4	H_5						SW_4		s_1
20	10	16	22.0		M5	9.0	7.0	8.5		16.0	19.5						4	0.45	4
25	10	17	27.0		M5	9.0	7.0	8.5		17.4	21.4						4	0.45	6
32	14	24	34.0		M8	11.8	11.0	12.5		25.5	29.0						5	0.90	6
52	20	35	51.3		M10	19.0	15.9	17.9		36.5	41.5						8	0.90	10
52-h	20	42	58.0		M12	19.0	19.0	21.0		44.3	50.3						8	0.90	10
52-sh	25	47	63.3		M12	24.0	19.0	21.0		44.3	50.3						10	0.90	10

Recommended hole spacing when using the following STAR Cam Roller Guide Rails:

- **Standard 1921-**
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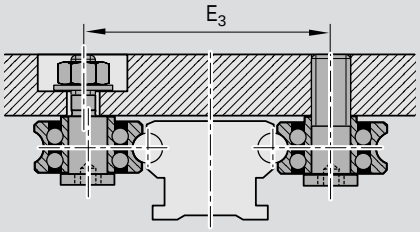
- **Low-profile 1924-**



Size - Version	E_3 ± 0.2
20	33.8
25	39.8
32	54.0
52	83.3
52-h	90.0
52-sh	95.0

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