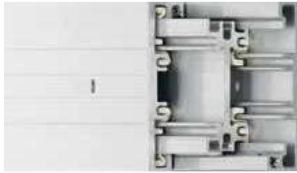


Telescopic guide for higher loads

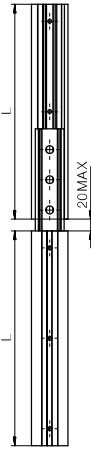


- Lubrication and maintenance-free
- Continuously extendable up to 2,000mm (extended length)
- Sliders made of durable high-performance polymers
- Quiet, sliding movement
- Full extension, partial extension and overextension possible

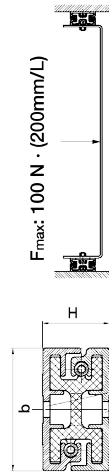
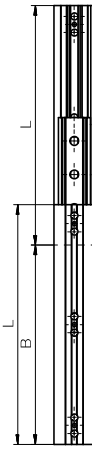
NT-60-"L" – Total extension



NT-60-"L"-L+max. 20" – overextension



NT-60-"L"-B" – Partial extension



Tip:
F_{max} calculated using this formula allows an easy manual use. Higher loads can be taken up by the system, but need a higher drive force.

Dimensions [mm]

Part No.	b	H	C4	C5 = C6	L		
	Min.	Max.	Min.	Max.	Min.	Max.	
NT-60-... mm New	60	24	150	25	99.5	200	1,000

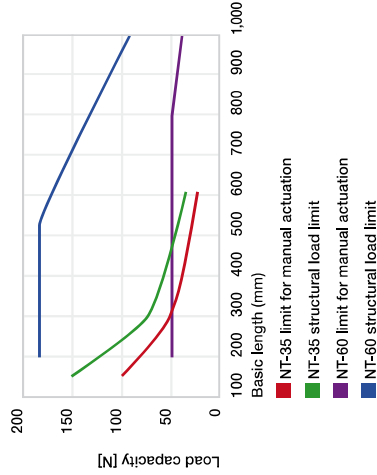
Order key

Type: **NT** Size: **T-60-200**

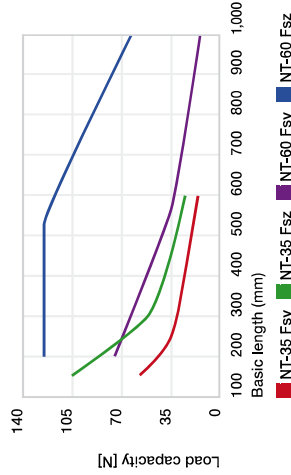
Telescopic system: **drylin® N**

Roll width: []

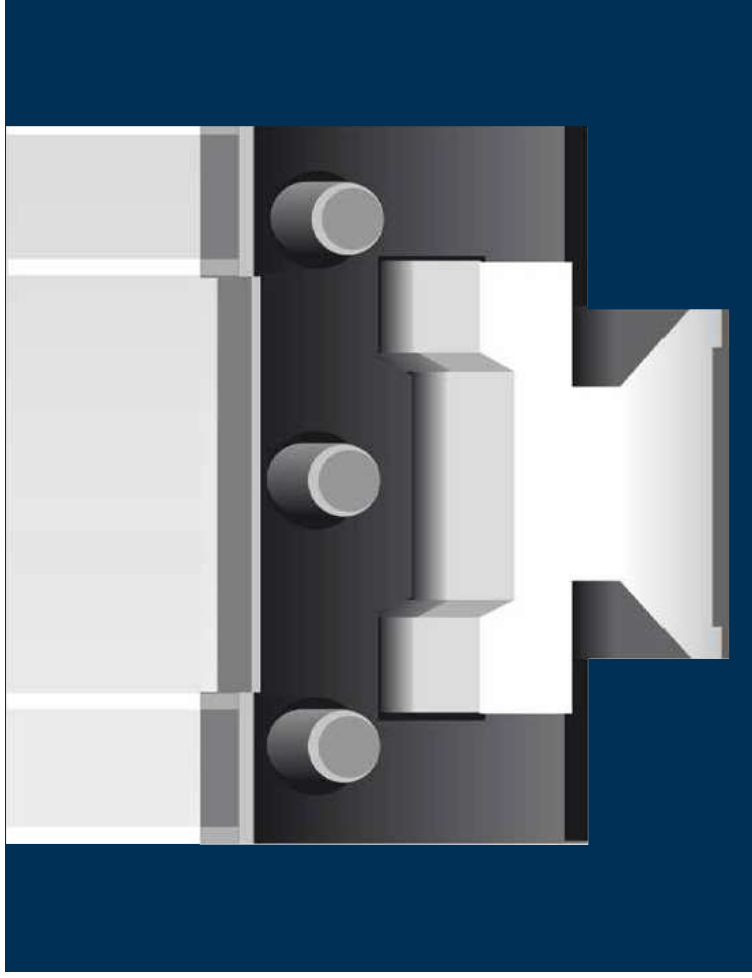
Length [mm]: []



drylin® N telescope systems load capacity of a drawer with two systems installed upright



drylin® N telescope static load capacity in different load directions



drylin® linear technology –
drylin® T rail guides

Robust linear guides

Adjustable bearing clearance

Wear-resistant and durable

Dimensionally identical to recirculating ball-bearing guides

Lubrication and maintenance-free





Profile rail with hard-anodised surface

All steel parts are made of durable stainless steel

Clear, anodised aluminium carriage body

Sliding elements made from high-performance polymer iglidur® J and J200 serve as a guide bearing and ensure optimum running properties

End cap made of solid plastic or stainless steel

Adjustable bearing clearance

Lubrication-free rail guides – drylin® T

drylin® T rail guides were originally developed for applications in both automation and materials handling. The goal was to create a robust linear guide for use in the most diverse, even extreme environments. Their dimensions are identical to most recirculating ball bearing guides.

- 100% lubrication-free
- Adjustable bearing clearance
- Automatic clearance adjustment
- High static load capacity
- Service life up to 50,000km
- Resistant to dirt
- Low vibration and quiet

Typical application areas

- Mechanical engineering
- Wood working industry
- Machine tools
- Handling



Available from stock

Detailed information about delivery time online.



Price breaks online

No minimum order value. No minimum order quantity.



Max. +90°C
Min. -40°C



7 carriage types
Rail length up to 4,000mm



Service life calculation

► www.igus-asean.com/drylin-expert



Free from toxins
2011/65/EU (RoHS)



Cleanroom certified
IPA Fraunhofer



ESD-compatible
(electrostatic discharge)



High performance

- 50% longer service life due to iglidur® J200 sliding elements
- Fast assembly
- Adjustable bearing clearance

► From page 1061



Standard / with manual clamp

- Manual clearance adjustment on the carriage
- Long service life with iglidur® J sliding elements
- Manual clamp on carriage (optional)

► From page 1062



Automatic

- Automatic clearance adjustment
- Easy assembly with pre-load key
- Long service life with iglidur® J sliding elements

► Page 1063



Heavy duty

- Robust design, factory clearance adjustment
- Long service life with iglidur® J sliding elements
- Quick assembly

► Page 1065



Compact

- Narrow guide carriages for small spaces
- Captive plastic sliders
- Corrosion-free

► Page 1066



Miniature guides / Adjustable miniature guides

- Small compact design
- Easy to fit
- Individual clearance adjustment on carriage

► Page 1068



drylin® T rails

- Lightweight, aluminium extruded section
- Robust and corrosion-resistant hard-anodised surfaces
- Shaft length delivered with millimetre precision up to max. 4,000mm

► Page 1060



Clamps

- Compact or heavy duty design
- Available for installation sizes 15 – 30mm
- Holding force up to 500N

► Page 1067



Based on drylin® T drylin® SLT linear module

► From Page 1413



Long service life and food grade quality are also prerequisites for the application like insensitivity to pungent detergents and humidity.



The adjustment of the pressing roller and the compensation of the imbalance of the grinding tools are implemented with drylin® T in place of recirculating ball bearing guides.



The drylin® T linear guides are used in these enveloping machines to guide an envelope suction opener that is mounted on one side.



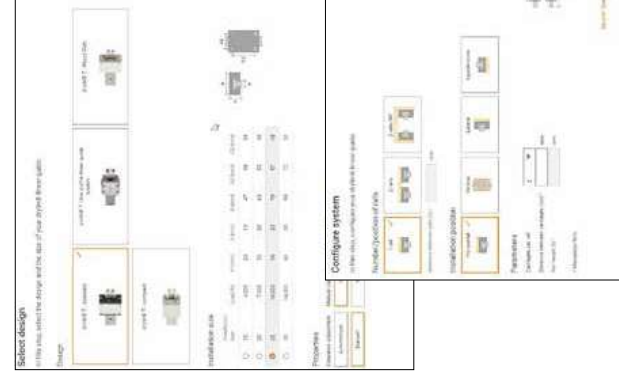
Due to the welding spatter and dust, the use of the extremely dirt-resistant drylin® T linear guide finds the balance between high service life and low costs.



drylin® T rail guides with adjustable clearance change the height of the work table silently and precisely.



Time saving: Reduced tool changing time due to this measuring system. The gauge is guided on a drylin® T rail. This solution works also without problems in dusty environments.



Expert for linear guides: System selection and service life calculation with CAD
Configure linear bearings and calculate their service life – constantly expanded by new sizes and products

Easily calculate the service life of your required linear guide and configure with a few clicks. Select a drylin® system and add the relevant environmental parameters. Select the bearing size, carriage, number and position. Then enter the distance between the rails and the mounting. Define the coordinates for the drive location and the centre of gravity, or enter these via the keyboard. Define the weight, acceleration, and distance of the bearing and select a rail length. The results are displayed.



► www.igus-asean.com/drylin-expert

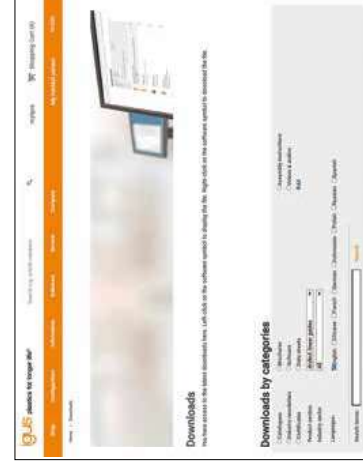


drylin® CAD configurator: Generate complete 3D models for drylin® linear technology according to your specifications

The igus® CAD online configurator gives you the ability to design and save your linear guide as a system, individual components directly as a 3D model in all commonly used formats, or to have these sent by e-mail – free of charge and without registration.



► www.igus-asean.com/drylin-CAD



More information about the products can be found in the igus® download area

- Assembly instructions
- Assembly videos
- System design
- Catalogues



► www.igus-asean.com/downloads

Design tip

The compensation of parallelism errors up to a maximum of 0.5mm between mounted rails is possible with a fixed/floating bearing. During installation, take care that the floating bearing has approximately the same clearance on both sides.

In the adjacent designs you can see the version of the fixed/floating bearing system recommended by us.

The mounting surfaces of the rails and guide carriages should be very flat (e.g. machined surface) to prevent twisting in the system. Small discrepancies in the mounting surfaces can be compensated up to a certain amount (0.5mm) by a greater clearance adjustment. The clearance adjustment is possible only in unloaded state. If you have any questions on design and/or assembly, please make use of our technical support.

Technical details on floating bearings

► Page 963
The 2:1 Rule ► Page 963

Installation drylin® T linear guide system

Make sure to assemble the side of the carriage saying "Reset Clearance" onto the rail first (see picture).



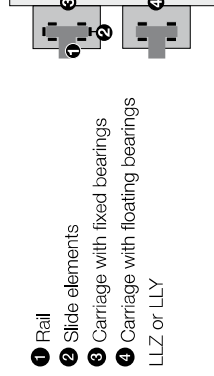
TW series, adjustable clearance

Tightening torque for drylin® connections between metal parts

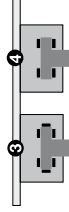
Metric thread (Da)	Torque [Nm]	Recommended tightening torque [Nm]
M3	0.5–1.1	0.7
M4	1.0–2.8	1.5
M5	2.0–5.5	3.0
M6	4.0–10.0	6.0
M8	8.0–23.0	15.0
M10	22.0–46.0	30.0

Minimal screw-in depth for aluminium and zinc die-casting parts: 1.5 x Da

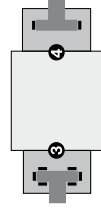
Version with floating bearing in z-direction



Horizontal version with floating bearing in z-direction



Horizontal version with floating bearing in the y-direction and lateral guide carriage



TWA series, automatic

Floating bearing clearances for drylin® T miniature guides

LLZ: Floating bearing in z-direction
LLY: Floating bearing in y-direction

Floating bearing clearances	TW-04-07	TW-04-09	TW-04-12	TW-04-15
LLY	–	0.4	0.5	0.7
LLZ	0.4	0.4	0.5	0.7

Guide rail	
Material	Aluminium, extruded section
Material	EN AW-6060 T66
Coating	Hard-anodised aluminium, 50 µm
Hardness	500 HV
Guide carriages	
Base structure	Aluminium, extruded section
Material	EN AW-6060 T66
Coating	Anodised aluminium
Sliding elements	Maintenance-free plain bearings materials iglidur® J, iglidur® J200 (TW-12/TW-04-07)
Bolts, springs	Stainless steel
End cap	Plastic (TW-01/TWA-01), steel (TW-02/TW-03/TW-12)
Max. surface speed	5m/s
Temperature range	from –40°C to +90°C

Table 01: drylin® – technical data

Type	C _{0y} [kN]	C _{0(-y)} [kN]	C _{0z} [kN]	M _{0x} [Nm]	M _{0y} [Nm]	M _{0z} [Nm]
04-07	0.2	0.2	0.1	1.2	0.6	0.6
04-09	0.48	0.48	0.24	3.4	1.8	1.8
04-12	0.96	0.96	0.48	9.2	4.4	4.4
04-12 (TWE)	0.48	0.48	0.24	4.6	2.2	2.2
04-15	1.4	1.4	0.7	17	8	8
04-15 (TWE)	0.7	0.7	0.35	8.5	4	4
01-/02-/12-15	4	4	2	32	25	25
01-/02-/12-20	7.4	7.4	3.7	85	45	45
01-/02-/03-/12-25	10	10	5	125	65	65
01-/02-/12-30	14	14	7	200	100	100

Table 02: drylin® – permissible static load capacity

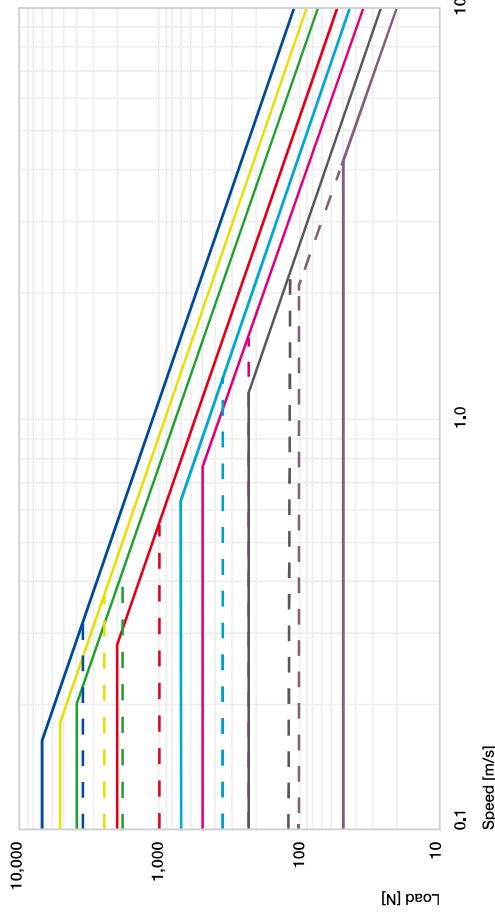
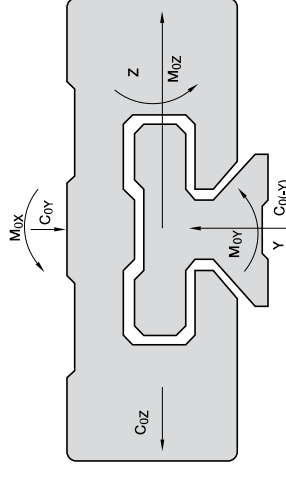
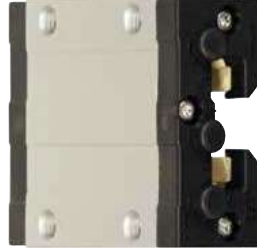


Diagram 01: Marking of the directions



drylin® T rail guides | Product range

Guide carriage – manual clearance adjustment



TW-01

Complete system
online

Order key

Type

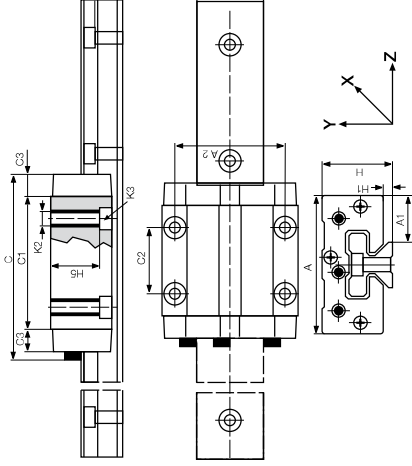
TW-01-15

Guide carriage

Standard

Installation size

Options:
LLY: Floating bearing in y-direction
LLZ: Floating bearing in z-direction



Dimensions [mm]

Part No.	Weight	H	A	C	A1	A2	C1	C2	C3	H1	H5	K2	thread	Tightening torque Max. [Nm]	K3 for screw DIN 912
TW-01-15	0.11	24	47	74	16.0	38	50	30	9	4.0	16.0	M5	M5	1.5	M4
TW-01-20	0.19	30	63	87	21.5	53	61	40	10	5.0	19.8	M6	M6	2.5	M5
TW-01-25	0.29	36	70	96	23.5	57	68	45	11	5.0	24.8	M8	M8	6.0	M6
TW-01-30	0.50	42	90	109	31.0	72	79	52	12	6.5	27.0	M10	M10	15.0	M8



All elements can be ordered individually or as assembled systems

TW-01-20-LLY: Standard guide carriage with manually adjustable clearance, installation size 20 and floating bearing in y-direction

TK-01-20-2-500: Complete system with two standard guide carriages type 01, installation size 20 and standard guide rail, 500mm length

Can be combined with:



TS-01-...



Technical data
▶ Page 1059

1062 Online tools and more information ▶ www.igus-asean.com/drylinT



drylin® T rail guides | Product range

Guide carriages – automatic clearance adjustment



TWA-01

Complete system
online

Order key

Type

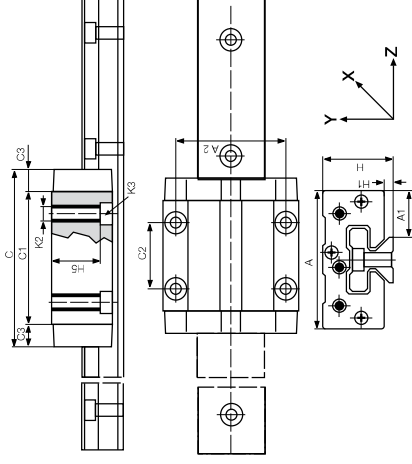
TWA-01-15

Guide carriage
Automatic version

Standard

Installation size

Options:
LLY: Floating bearing in y-direction
LLZ: Floating bearing in z-direction



Dimensions [mm]

Part No.	Weight	H	A	C	A1	A2	C1	C2	C3	H1	H5	K2	Thread	Tightening torque Max. [Nm]	K3 for screw DIN 912
TWA-01-15	0.11	24	47	68	16.0	38	50	30	9	4.0	16.0	M5	M5	1.5	M4
TWA-01-20	0.19	30	63	81	21.5	53	61	40	10	5.0	19.8	M6	M6	2.5	M5
TWA-01-25	0.29	36	70	90	23.5	57	68	45	11	5.0	24.8	M8	M8	6.0	M6
TWA-01-30	0.50	42	90	103	31.0	72	79	52	12	6.5	27.0	M10	M10	15.0	M8



All elements can be ordered individually or as assembled systems

TW-01-20-LLY: Guide carriage with automatic clearance adjustment, installation size 20 and floating bearing in y-direction

TKA-01-20-2-500: Complete system with two standard guide carriages type 01, automatic clearance adjustment, installation size 20 and standard guide rail, 500mm length

Can be combined with:



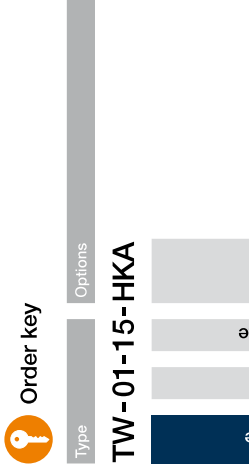
TS-01-...



Technical data
▶ Page 1059

3D CAD files, prices and delivery time online ▶ www.igus-asean.com/drylinT 1063

Guide carriage – with manual clamp

TW-01-HKA
Complete system
online

TW-01-HKA

Order key

Type

TW-01-15-HKA

Options

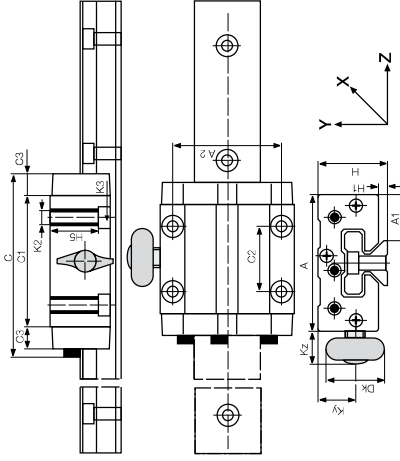
Guide carriage

Standard

Installation size

Manual clamp

i

Other dimensions as standard design
TW-01-... ▶ Page 1063

Dimensions [mm]

Part No.	Size	Kz	Ky	Dk	Manual clamp thread
TW-01-15-HKA	15	19.0	11.5	20.0	M6
TW-01-20-HKA	20	18.0	15.0	28.0	M8
TW-01-25-HKA	25	17.0	19.0	28.0	M8
TW-01-30-HKA	30	20.0	21.5	28.0	M8

All elements can be ordered individually or as assembled systems

TW-01-20-HKA: Guide carriage with manually adjustable clearance, installation size 20 and manual clamp
TK-01-20-HKA-2-500: Complete system with two standard guide carriages type 01 with manual clamp,
 installation size 20 and standard guide rail, 500mm length

The manual clamp thread was developed for simple tasks. The creep behaviour of the clamped plastic causes a reduction in clamping force over time (up to 70%). Therefore no safety-relevant parts may be clamped. Please contact our technical consultant, if you require other options for the clamping.

Can be combined with:



TS-01-...

1064 Online tools and more information ▶ www.igus-asean.com/drylinT

Technical data
▶ Page 1059

Guide carriage – heavy duty for extreme conditions



TW-02

Complete system
online

Type

TW-02-20

Order key

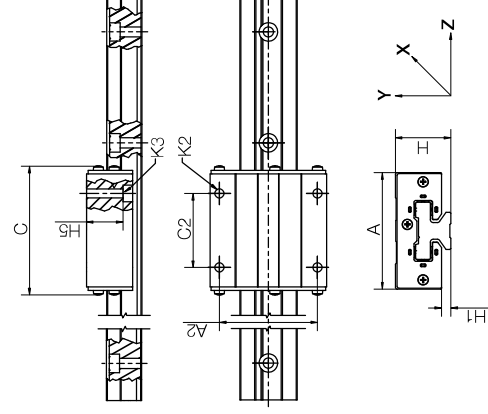
Guide carriage

Heavy duty

Installation size

i

Floating bearing upon request



Dimensions [mm]

Part No.	Weight [kg]	H	H5	A	C	A2	C2	H1	K2	K3
TW-02-20	0.19	30	19.8	63	70	53	40	5.0	M6	M5
TW-02-25	0.29	36	24.8	70	77	57	45	5.0	M8	M6
TW-02-30	0.50	42	27.0	90	92	72	52	6.5	M10	M8

All elements can be ordered individually or as assembled systems

TW-02-20: Heavy duty guide carriage, installation size 20
TK-02-20-2-500: Complete system with two heavy duty guide carriages type 02, installation size 20 and
 standard guide rail, 500mm length

Can be combined with:



TS-01-...

3D CAD files, prices and delivery time online ▶ www.igus-asean.com/drylinT 1065

Technical data
▶ Page 1059

drylin® T rail guides | Product range

Miniature guide rails



TS-04



Complete system online



Order key

Type

TS-04-07

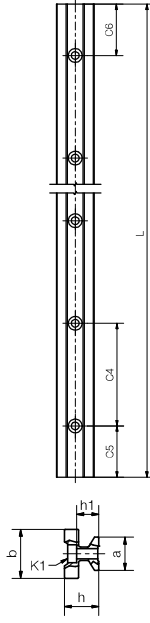
Guide rail

Miniature

Installation size



Curved rail profiles
▶ Page 962



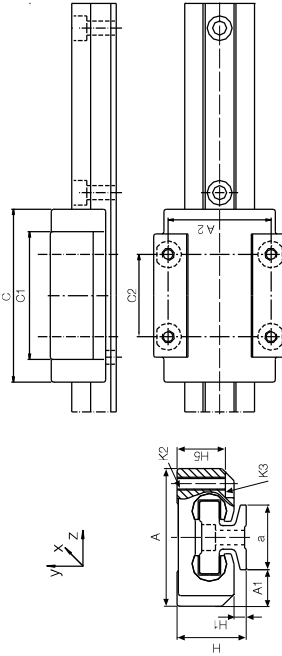
Dimensions [mm]

Part No.	Weight [kg/m]	L	a	C4	C5	C6	h	h1	K1 for screw	b	ly	lz	Wby	Wbz
TS-04-07	0.08	2,000	7	15	5	12	5.5	3.7	M2	8	131	90	32	29
TS-04-09	0.11	2,000	9	20	5	14.5	6.3	4.6	M2	9.6	252	169	52	49
TS-04-12	0.20	2,000	12	25	5	17.0	8.6	5.9	M3	13	856	574	132	120
TS-04-15	0.33	3,000	15	40	10	29.5	10.8	7.0	M3	17	2,420	1,410	285	239

Miniature guide carriage – standard



TS-04



Dimensions [mm]

Part No.	Weight [g]	H	A	C	A1	A2	C1	C2	H1	H5	K2 thread	K3 for screw	Tightening torque [Nm]
TW-04-07	8	8	17	23	5	12	21	8	1.5	1.5	M2	-	0.25
TW-04-09	17	10	20	29	5.5	15	18	13	1.7	7.2	M2	-	0.25
TW-04-12	34	13	27	34	7.5	20	22	15	2.2	9.5	M3	M2	0.50
TW-04-15	61	16	32	42	8.5	25	31	20	2.8	11	M3	M2	0.50

drylin® T rail guides | Product range

Adjustable miniature guide carriage



TWE-04



Complete system online



Order key

Type

TW E -04-12

Guide carriage

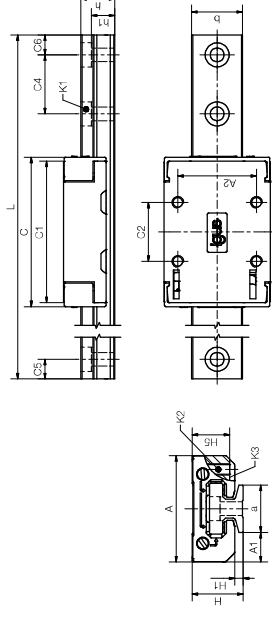
Adjustable clearance

Miniature

Installation size



High corrosion resistance by use of re-coating finish



Dimensions [mm]

Part No.	Weight [g]	H	A	C	A1	A2	C1	C2	H1	H5	K2 thread	K3 for screw
TWE-04-12	36	13	27	38	7.5	20	36	15	2.2	9.5	M3	M2
TWE-04-15	61	16	32	45	8.5	25	31	20	2.8	11	M3	M2



Press in, turn, snap into place



Tool: screwdriver with 3mm edge wide



Left side: setting the lateral clearance

Can be combined with:



Technical data
▶ Page 1059

drylin® T rail guides | Ordering options



drylin® T replacement plastic slide elements (set)

Material iglidur® J ▶ Page 159

Material iglidur® J200 ▶ Page 261



drylin® T end caps for series O1 guide rail holes:

Guide carriages	Part No. Sliding part set	Rail	Part No. End cap
TW-12-15	TEK-12-15 (J200)	TS-01-15	TSZ-011501
TW-12-20	TEK-12-20 (J200)	TS-01-20	TSZ-012001
TW-12-25	TEK-12-25 (J200)	TS-01-25	TSZ-012501
TW-12-30	TEK-12-30 (J200)	TS-01-30	TSZ-013001

When using the end caps, screws with a low screw head must be used to attach the rail.

Part No.	F _{ymax} , F _{zmax} [N]
TW-01/-12-15	2,000
TW-01/-02/-12-20	3,700
TW-01/-02/-03/-12-25	5,000
TW-01/-02/-12-30	7,000

drylin® T – system design

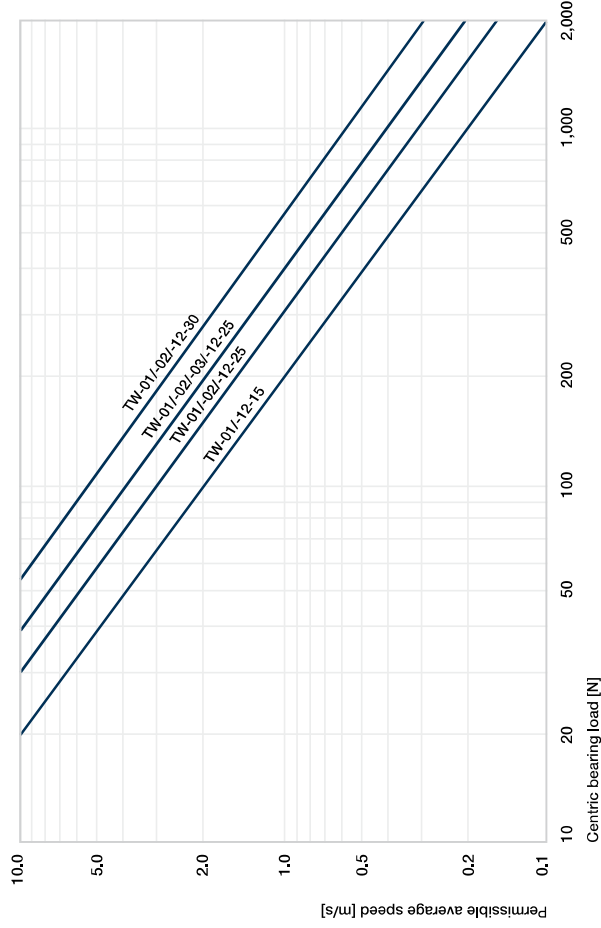


Diagram 04: Determination of the maximum permitted speed for the load



drylin® linear technology – drylin® R shaft guides



Lubrication-free drylin® liners

Resistance to dust and dirt

Low coefficient of friction

Extremely quiet operation

Many adapter and housing options