

Telescopic guide for higher loads

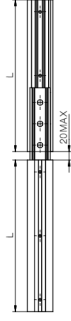


- Lubrication and maintenance-free
- Continuously extendable up to 2,000mm (extended length)
- Sliders made of durable high-performance polymers
- Quiet, sliding movement
- Full extension, partial extension and overextension possible

NT-60-“L” – Total extension



NT-60-“L”-“L”+max. 20” – overextension



NT-60-“L”-“B” – Partial extension



**1** 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 <b>New</b>	60	24	150	25	99,5	200	1,000

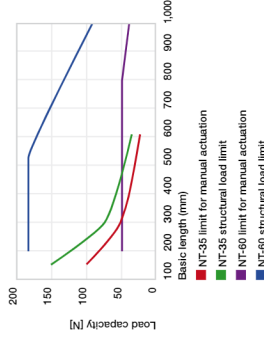
**Order key**

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

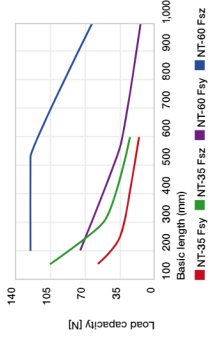
Telescopic system: **drylin® N**

Rail width: [ ]

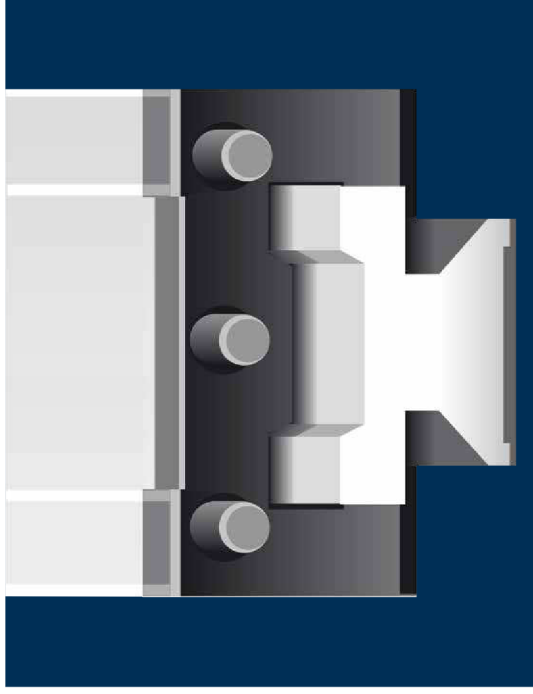
Length [mm]: [ ]



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



Resistant to dirt, low vibration, quiet, long service life



## 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](http://www.igus-asean.com/drylin-expert)

Profile rail with hard-anodised surface

All steel parts are made of durable stainless steel

Clear, anodised aluminium carriage body

Slicing elements made from high-performance polymer iglidur® J and L200 serve as a guide bearing and ensure optimum running properties

End cap made of solid plastic or stainless steel

Adjustable bearing clearance

Dimensionally identical to most recirculating ball-bearing guides



### High performance

- 50% longer service life due to iglidur® L200 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



### 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



### Clamps

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

► Page 1067



### 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



### Based on drylin® T drylin® SLT linear module

- From Page 1413



Cleanroom certified  
IPA Fraunhofer



Free from toxins  
2011/65/EU (RoHS)



ESD-compatible  
(electrostatic discharge)



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.



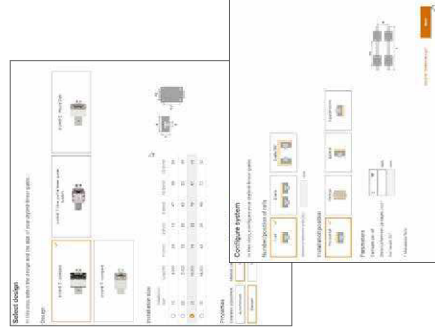
Due to the welding spatter and dust, the use of the extremely dirt-resistant drylin® T linear guide finds the balance between high service life and low costs.



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](http://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](http://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



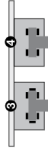
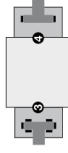
► [www.igus-asean.com/downloads](http://www.igus-asean.com/downloads)

**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 surfaces) 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.

**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****Technical details on floating bearings**

► Page 963  
The Z1 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

**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	LLZ	LLY
TW-04-07	0.4	0.4
TW-04-08	0.4	0.5
TW-04-12	0.5	0.7
TW-04-15	0.4	0.7

**Guide rail**

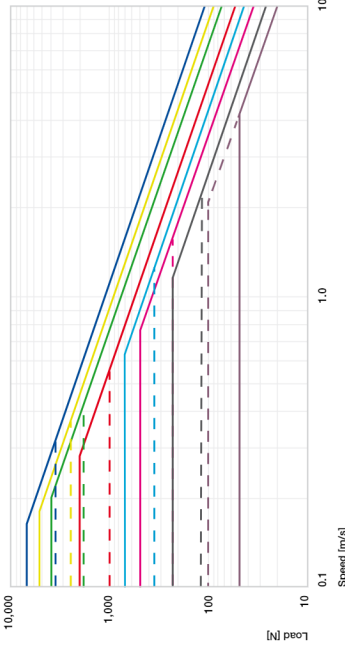
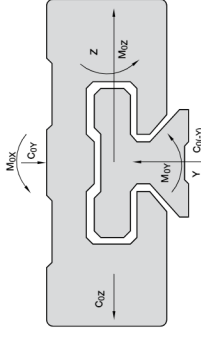
Material	Aluminium, extruded section
Material	EN AW-6060 T66
Coating	Hard-anodised aluminium, 50 µm
Hardness	500 HV

**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]	$C_{0(x-y)}$ [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
01-12-15	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**

## Guide rails



TS-01



TS-11

## Curved rail profiles

▶ Page 962



Order key

Type

Options

**TS-01-15-1000**

Guide rail

Standard

Installation size

Rail length [mm]

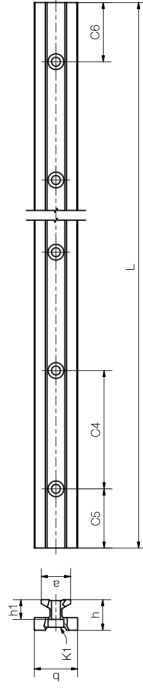
Options:

TS-01: Standard rail, hard-anodised

TS-11: Weight-reduced rail, clear-anodised

Hard-anodised surfaces

▶ Page 958



## High performance carriage with clearance adjustment



Type

**TW-12-15**

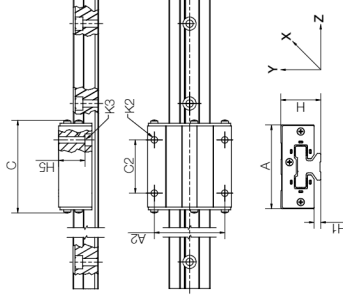
Guide carriage

High performance

Installation size



Order key



## Dimensions [mm]

Part No.	Weight [kg/m]	L	a	C4	C5	C6	h	h1	K1 for screw DIN 912	b	ly	lz	Wby	Wbz	Wbzd	
															Min.	Max.
TS-01-15	0.6	4,000	15	60	20	49.5	20	49.5	15.5	10.0	M4	22	6,440	4,290	585	488
TS-01-20	1.0	4,000	20	60	20	49.5	20	49.5	19.0	12.3	M5	31	22,570	11,520	1,458	1,067
TS-11-20	0.5	4,000	20	120	20	79.5	20	79.5	19.0	12.3	M5	31	12,140	6,360	780	620
TS-01-25	1.3	4,000	23	60	20	49.5	20	49.5	21.5	13.8	M6	34	34,700	19,300	2,041	1,608
TS-01-30	1.9	4,000	28	80	20	59.5	20	59.5	26.0	15.3	M8	40	70,040	40,760	3,502	2,832

Standard hole pattern symmetric C5 = C6

For rails without mounting holes, please use part number suffix "UNGEBOHRT"

## Dimensions [mm]

Part No.	Weight [kg]	H	H5	A	C	A2	C2	H1	K2 thread	K3 for cap screw	Sliding elements
TW-12-15	0.11	24	16.0	47	63	38	30	4.0	M5	M4	igidur® J200
TW-12-20	0.19	30	19.8	63	72	53	40	5.0	M6	M5	igidur® J200
TW-12-25	0.29	36	24.8	70	82	57	45	5.0	M8	M6	igidur® J200
TW-12-30	0.50	42	27.0	90	94	72	52	6.5	M10	M8	igidur® J200

Can be combined with:



TW-01...



TW-01-HKA



TW-02...



TW-03...

Can be combined with:



TW-01...



TW-02...



TW-03...

Can only be combined with:

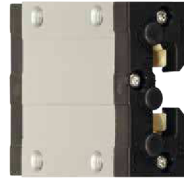


TW-01-20



TW-11-20

Guide carriage – manual clearance adjustment



TW-01

Complete system  
online

Order key

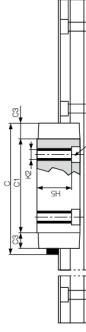
Type

TW-01-15

Guide carriage

Standard

Installation size

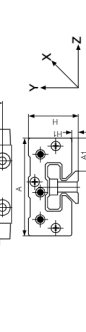
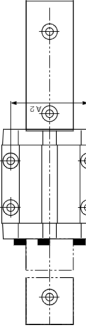
Complete system  
online

Options:

LLY: Floating bearing in y-direction

LLZ: Floating bearing in z-direction

LLZ: Floating bearing in z-direction



## Dimensions [mm]

Part No.	Weight [kg]	H ±0.35	A ±0.35	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	1.5	M4
TW-01-20	0.19	30	63	87	21.5	53	61	40	10	5.0	19.8	M6	2.5	M5
TW-01-25	0.29	36	70	96	23.5	57	68	45	11	5.0	24.8	M8	6.0	M6
TW-01-30	0.50	42	90	109	31.0	72	79	52	12	6.5	27.0	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

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

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

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:



Technical data

▶ Page 1059

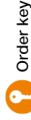
TS-01...

1062 Online tools and more information ▶ [www.igus-asean.com/drylinT](http://www.igus-asean.com/drylinT)

Guide carriages – automatic clearance adjustment



TWA-01

Complete system  
online

Order key

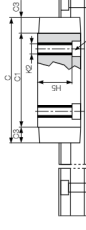
Type

TWA-01-15

Guide carriage

Standard

Installation size

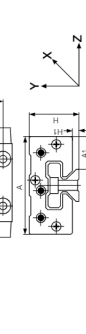
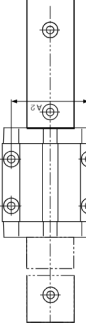
Complete system  
online

Options:

LLY: Floating bearing in y-direction

LLZ: Floating bearing in z-direction

LLZ: Floating bearing in z-direction



## Dimensions [mm]

Part No.	Weight [kg]	H ±0.35	A ±0.35	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	1.5	M4
TWA-01-20	0.19	30	63	81	21.5	53	61	40	10	5.0	19.8	M6	2.5	M5
TWA-01-25	0.29	36	70	90	23.5	57	68	45	11	5.0	24.8	M8	6.0	M6
TWA-01-30	0.50	42	90	103	31.0	72	79	52	12	6.5	27.0	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

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

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

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:



Technical data

▶ Page 1059

TS-01...

1063 3D CAD files, prices and delivery time online ▶ [www.igus-asean.com/drylinT](http://www.igus-asean.com/drylinT)



Guide carriage – with manual clamp



TW-01-HKA

Complete system  
online

Order key

Type

Options

TW-01-15-HKA

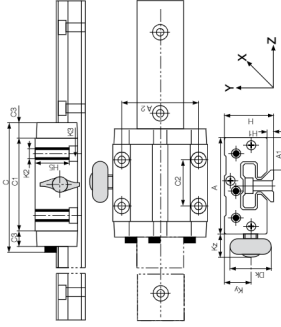
Guide carriage

Standard

Installation size

Manual clamp

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](http://www.igus-asean.com/drylinT)

Technical data  
▶ Page 1059

Guide carriage – heavy duty for extreme conditions



TW-02

Complete system  
online

Order key

Type

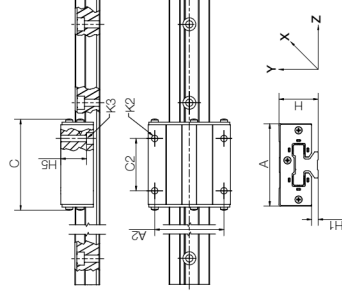
TW-02-20

Guide carriage

Heavy duty

Installation size

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	19.3	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-...

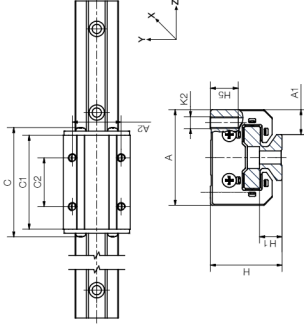
3D CAD files, prices and delivery time online ▶ [www.igus-asean.com/drylinT](http://www.igus-asean.com/drylinT) 1065

Technical data  
▶ Page 1059

Compact for tough applications



TW-03

Complete system  
online

Order key

Type

TW-03-25

Reduced weight

Installation size

Guide carriage

Dimensions [mm]

Part No.	Weight [kg]	H	A	C	A1	A2	C1	C2	H1	H5	K2	Tightening torque Max. [Nm]
TW-03-25	0.16	36	48	81	14	35	67,4	35	5	13	M6	6.0



All elements can be ordered individually or as assembled systems

TW-03-25: Compact guide carriage, installation size 25

TK-03-25-2-500: Complete system with two compact guide carriages type 03, installation size 25 and standard guide rail, 500mm length

Can only be combined with:



TS-01-20

1066 Online tools and more information ► [www.igus-asean.com/drylinT](http://www.igus-asean.com/drylinT)

Technical data

► Page 1059

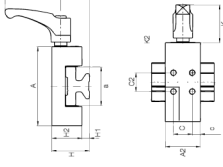
Accessories: Manual clamp

Compact design

Plastic clamping elements



TWBM-11



Order key

Type

TWBM-11-15

Manual clamp

Compact

Installation size

Dimensions [mm]

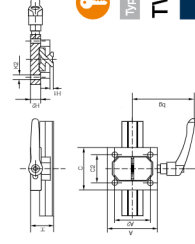
Part No.	Clamp force [N]	A	A2	H	H1	H2	K	K2	C	C2	lg	b
TWBM-11-15	180	47	22	23	24	4	20	30	M4	15	4	44
TWBM-11-20	180	63	31	28	30	5	24	30	M5	15	6.5	44
TWBM-11-25	400	70	34	35	36	5	31	39	M6	20	7.5	63,63
TWBM-11-30	500	90	40	38	42	6.5	35.5	47	M6	20	9	78
												80
												99

Standard design

with brass clamp



TWBM-01



Order key

Type

TWBM-01-25

Manual clamp

Standard

Installation size

Dimensions [mm]

Part No.	Clamp force [N]	A	A2	H	H1	H2	K2	C	C2	lg	bg
TWBM-01-25	500	80	57	36	5	16	M3	68	45	80	99

Can only be combined with:



TS-01-20

1066 Online tools and more information ► [www.igus-asean.com/drylinT](http://www.igus-asean.com/drylinT) 1067



Miniature guide rails



TS-04

Complete system  
online

Order key

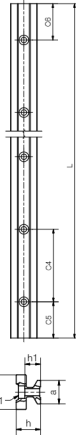
Type

TS-04-07

Guide rail

Miniature

Installation size



 Curved rail profiles  
 ▶ Page 962

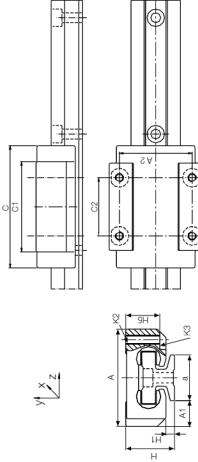
## Dimensions [mm]

Part No.	Weight [kg/m]	L		C4		C5		C6		h1		K1 for screw DIN 912		b	ly	lz	Wbz [mm]	Wby [mm]
		Max.	-0.2	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.							
TS-04-07	0.08	2,000	7	15	5	12	5	12	5.5	3.7	M2	8	131	90	32	29		
TS-04-09	0.11	2,000	9	20	5	14.5	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	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	29.5	10.8	7.0	M3	17	2,420	1,410	285	239		

## Miniature guide carriage – standard



TW-04



## Dimensions [mm]

Part No.	Weight [g]	H	A	C	A1	A2	C1	C2	H1	H5	K2 thread	K3 for screw DIN 912	Tightening torque [Nm]
TW-04-07	8	8	17	23	5	12	21	8	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	0.50	M2
TW-04-15	61	16	32	42	8.5	25	31	20	2.8	11	M3	0.50	M2

Adjustable miniature guide carriage



TW E-04

Complete system  
online

Order key

Type

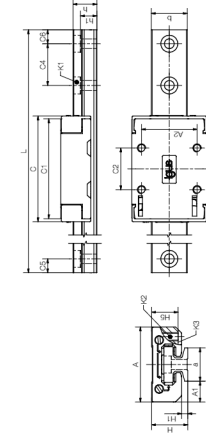
TW E-04-12

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 DIN 912
TWE-04-12	36	13	27	33	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

 Right side: setting the height  
 clearance

 Left side: setting the lateral  
 clearance

Can be combined with:



TS-04-...


 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

Guide carriages	Part No.	Sliding part set
TW-12-15	TEK-12-15 (J200)	
TW-12-20	TEK-12-20 (J200)	
TW-12-25	TEK-12-25 (J200)	
TW-12-30	TEK-12-30 (J200)	
TW-01-15	TEK-01-15 (J)	
TW-01-20	TEK-01-20 (J)	
TW-01-25	TEK-01-25 (J)	
TW-01-30	TEK-01-30 (J)	
TW-02-20	TEK-02-20 (J)	
TW-02-25	TEK-02-25 (J)	
TW-02-30	TEK-02-30 (J)	
TW-04-09	TEK-04-09 (J)	
TW-04-12	TEK-04-12 (J)	
TW-04-12	TEK-E-04-12 (J)	
TW-04-15	TEK-04-15 (J)	
TW-04-15	TEKE-04-15 (J)	



drylin® T end caps for series 01 guide rail holes:

Rail	Part No.	End cap
TS-01-15	TSZ-011501	
TS-01-20	TSZ-012001	
TS-01-25	TSZ-012501	
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.	$F_{y\max}$ , $F_{z\max}$ [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

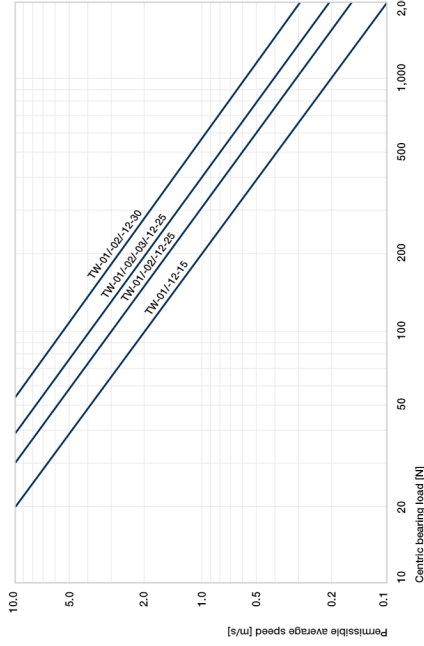


Diagram 04: Determination of the maximum permitted speed for the load



## 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

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