

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	TEK-E-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 _{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

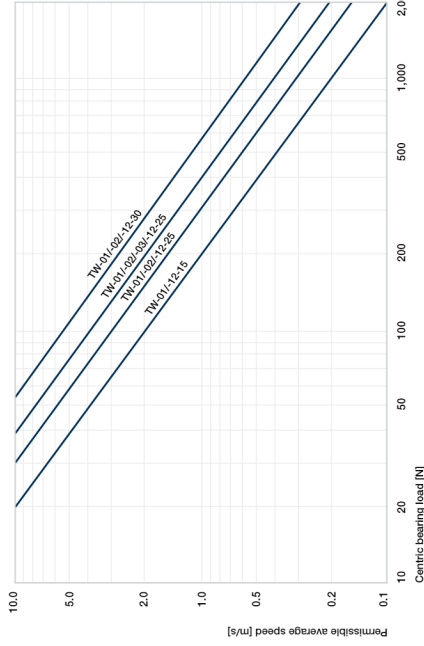


Diagram 04: Determination of the maximum permitted speed for the load



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



Hard-anodised aluminium shafts guarantee optimum running properties

Shafts made from steel, stainless steel or carbon fibre

Shafts and supported shafts available

Linear adapter made from solid plastic or aluminium

Complete housing made from anodised aluminium

drylin® liners made from five different lubrication-free iglidur® high-performance polymers

Hard-anodised aluminium tubes - lightweight

Lubrication-free shaft guides – drylin® R

drylin® R shaft guides are based on extremely wear-resistant polymers specially developed for the linear technology. The dimensions are compatible with standard ball bearings. The special geometry guarantees reliability even in extreme environments.

- 100% lubrication-free
- Dimensionally interchangeable with standard recirculating ball bearings
- Large variety of choice in housing shapes
- Shafts, shaft end blocks and accessories available from stock
- Replaceable liners
- Stainless steel housings available

Typical application areas

- Agricultural machinery
- Automotive
- Medical technology
- Facade construction
- Packaging industry

Available from stock

Detailed information about delivery time online.

Price breaks online

No minimum order value. No minimum order quantity.

Max. +200°C
Min. -40°C

Up to Ø 60mm
More dimensions upon request.

Imperial dimensions available

► From page 1612

Service life calculation

► www.igus-asean.com/drylin-expert



ESD-compatible
(electrostatic discharge)



Free from toxins
2011/65/EU (RoHS)



Cleanroom certified
IPA Fraunhofer



Linear plain bearings

- Dimensionally interchangeable with standard recirculating ball bearings
 - Extremely lightweight solid plastic bearing
 - Aluminium and stainless steel adapters equipped with iglidur® liners
- Page 1102



Liners and press-fit bearings

- Made from iglidur® high-performance polymers
 - Easy to fit
 - Unaffected by dirt and dust
 - Low coefficient of friction, optimised wear quality
- Page 1080



Closed pillow blocks

- Pre-assembled linear housing with drylin® liners
 - Material: Anodised aluminium
 - Fixed and floating bearing version available
- Page 1118



Linear bearings and pillow blocks, open design

- For supported shafts
 - Round or with housing
 - Clearance adjustment (optional)
- Page 1125



Flanged linear plain bearings

- Pre-assembled housings with drylin® liners
 - Round or square flange
 - Tandem flange housing for additional stability
- Page 1130



Quad block

- Closed and open design
 - Torque-resistant quad block housing with four linear adapters
 - Also available as tandem housing
- Page 1138



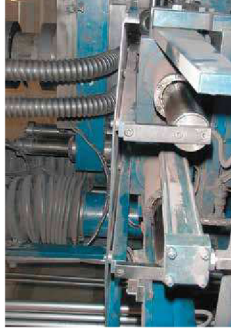
drylin® R linear plain bearings on supported aluminum shafts are used in this grinder to guide the cutting table. The drylin® components stand for extrema dirt resistance, accurate guidance and a smooth operation.



Saw mill: linear guide with iglidur® J plastic liner for the angle stops. iglidur® J liners are best suited for most linear applications due to their low wear and low friction properties.



The machine now runs entirely free of troubles for multiple years with drylin® R/UM-01 linear bearings despite the extremely heavy – duty operation.



By changing over to the drylin® R linear plain bearing, the maintenance rate of this compaction unit could be extended by two years, despite high stressing from powder particles and abrasive agents.



Since the sliding bearing should be maintenance-free, precise, compact, durable and very resilient, liners were mounted directly in the passages of the machine frame.



The production line should be adjusted without setup time being required. drylin® linear guides, which enable precise and fast adjustment, were used for this.



Expert for linear guides: System selection & 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 more relevant parameter of the guidance and select a rail length. The results are displayed.



► www.igus-asean.com/drylin-expert



Download the online tool app now



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

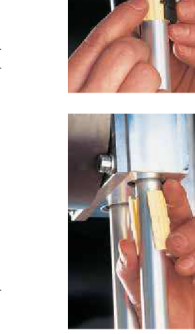


► www.igus-asean.com/downloads

drylin® R linear plain bearings

The drylin® standard round bearings consist of a interchangeable iglidur® J liner that is manufactured to be a mechanical fit into an anodised aluminium adapter. The loading spigot of the liner is carried out by a snap ring groove. drylin® R linear plain bearings, made from solid plastic, are dimensionally equivalent to standard ball bearings. They are made entirely out of wear-resistant iglidur® J material and can offer technical advantages in addition to the clear price advantages. Thus, applications in which machine parts are primarily stainless steel, e.g. food and filling equipment, are well suited for the use of solid plastic bearings. An additional weight saving is also easily obtained.

Both versions are designed for the installation in housing holes with the tolerance H7. The mounting is done like in ball bearings with circlips according to DIN 471/472. The narrow design of the 02 series linear plain bearings is clipped into the H7 housing hole. Standard commercial 2-component adhesives can be used for this purpose.



Dirt, dust, fibres

An important feature of all the available linear bearings is their tolerance of dirt. For most systems the application of wipers or seals is recommended for even low dirt accumulation. No other system features such a high safety with dust, lint and coarse dirt as drylin®. The patented design of the bearing surface using individual slide pads connected by thin film sections, provides performance benefits for dirty environments. Dirt, even when it becomes wet on the shaft, is wiped away by the individual glide pads and is moved into the open areas. The running sections of the drylin® bearing then slide on the shaft that has been cleared of all contaminants.

Spit linear bearings

Applications that are on the edge of technical feasibility or in extremely harsh environments often require frequent replacement of the bearings. In many cases, drylin® can give a multiple increase in the service life. However, in extreme applications, replacement of the bearings is necessary, even with drylin®. drylin® linear plain bearings can provide considerable cost reductions in such cases as only the polymer bearing liner has to be replaced. This often means a reduction of more than 90% in replacement part costs. In addition the dismantling of the shafts is avoided.



The split bearings are easily pulled off the housing and opened. The slotted liner can be simply mounted on the shaft. Clip a new bearing liner over the shaft, put the two housing halves together, install – done! With this product range of split drylin® bearings, installation times can be reduced to a minimum.

Series L1 – low-clearance press-fit bearings

The series L1 plain bearings are composed of the iglidur® L100 bearing material, an extremely wear-resistant plastic compound. They are sub-divided into a press-fit area and a gliding range. The gliding range is composed of individual crossbars which are linked to each other by thin film bridges. These film bridges compensate the elongation of the bearing through heating or moisture. This separation enables the almost clearance-free design of the bearings, as there is no clamping of the shaft. The cylinder-shaped press-fit area is also visually very distinct from the gliding range. The function of this area, which shows a distinct clearance compared to the shaft, is to fix the bushing firmly in the housing by means of a press fit.

Compressive strength

igidur® L1 plain bearings are homogeneously filled with solid lubricants. In this way, lubricants cannot be removed, even at high loads. The iglidur® L100 material allows an average static surface pressure of 70MPa. However, only half of the load-bearing surface can carry loads and this is taken into account in the calculation.

Surface speeds

The following table shows possible surface speeds of L1 bearings.

- Extremely high wear resistance
- Low coefficient of friction
- Vibration-dampening
- High static compressive strength
- Good chemical resistance
- Resistant to dirt
- Also suitable for soft and rough shafts

igidur® L100	Rotating	Oscillating	Linear
Continuous [m/s]	1.5	1.5	3
Short-term [m/s]	3	3	10

Table 02: Maximum surface speed for iglidur® L100

Material properties:

- igidur® J ▶ Page 159
- igidur® J200 ▶ Page 261
- igidur® X ▶ Page 279
- igidur® E7 ▶ Page 267
- igidur® A160 ▶ Page 419
- igidur® A180 ▶ Page 401
- igidur® L100 ▶ Page 1654



Coefficient of friction

Plain bearings of the L1 series are designed for dry operation against steel. The best results are attained with surface finishes from 0.3 to 0.8 Ra. The coefficient of sliding friction reduces with increasing load. Typical coefficient of friction in dry operation are 0.2 to 0.3. But the value can be higher with less suitable shafts.

Operating temperatures

Temperatures affect the compressive strength, the wear and the securing of the bearing in the housing. A firm fit could be determined in all the tests up to a temperature of +70°C. At higher temperatures, an additional securing of the bearing is recommended. With effective securing, L1 plain bearings could also be used at temperatures over +130°C.

Application temperatures	
Minimum	-30°C
Max. long-term	+100°C
Maximum, short-term	+190°C

Table 03: Temperature limits for iglidur® L100

Floating bearings for linear plain bearings

drylin® O3 series linear plain bearings offer great advantages in applications with parallel shafts. With their geometry, they are able to compensate for alignment and parallelism errors and should be used on the shaft located furthest from the drive mechanism. The design provides a spherical area on the outside diameter of the aluminium adapter for self-alignment. Reductions in total capacity are prevented, since the shaft always lies on the total projected surface. Due to the even load distribution over the entire bearing, edge pressure is not possible with the self-aligning drylin® linear bearings. In order to compensate parallelism errors between two shafts, the outer diameter is designed to be smaller than the housing hole diameter by 0.2 to 0.3mm (depending on the size). With the use of mounted O-rings, these bearings have an elastic bearing seat. The clearance between the bearing and housing allows for the maximum compensation of possible shaft mis-alignment.

The drylin® R self-aligning bearings are supplied hardened. These surfaces guarantee the highest wear resistance if the aluminium bearing moves in the housing during compensation adjustments. Another option are the pillow blocks in the OJUM-06 LL and RJUM-06 LL design series. The mounting of the bearing allows a parallelism adjustment between the shafts by ±3mm. The particular suspension of the supporting housing on an axis running in the z-direction enables an angular error compensation of up to 3.5°.

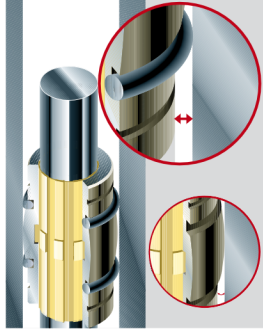


Diagram 02: By defined installation clearance and externally mounted O-rings, the self-aligning drylin® R bearings of the type series O3 can compensate parallelism errors. The spherical drylin® adapter can compensate for parallelism errors. A hard-anodisation protects the aluminium adapter from wear.

Eccentric forces

To ensure successful use of maintenance-free drylin® linear bearings, it is necessary to follow certain recommendations: if the distance between the driving force point and the fixed bearings is more than twice the bearing spacing (2:1 rule), a static friction value of 0.25 can theoretically result in jamming on the guides.

This principle applies regardless of the value of the load or drive force. The friction product is always related to the fixed bearings. The greater the distance between the drive and guide bearings, the higher the degree of wear and required drive force. Failure to observe the 2:1 rule during a use of linear plain bearings can result in uneven motion or even system blockage. Such situations can often be remedied with relatively simple modifications. If you have any questions on design and/or assembly, please make use of our technical support.

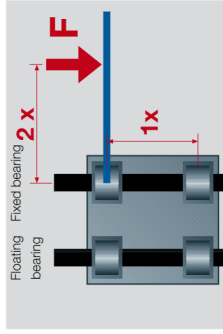
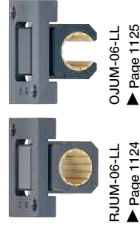


Figure 03: The 2:1 rule



RJUM-03/OJUM-03 series	+0.5°
RJUM-06-LL/OJUM-06-LL series	+3.5°

Table 04: Compensation of misalignment errors

RJUM-03/OJUM-03 series	+0.1mm
RJUM-06-LL/OJUM-06-LL series	+3.0mm

Table 05: Compensation of parallelism errors

drylin® R shaft guides are designed for completely lubrication-free operation. The dimensions of the respective linear adapter and housing meet the standard for recirculating ball bearings. During assembly, please note the following installation instructions:

Design tips for drylin® linear plain bearings:

The mentioned values for "F_{max}" relate to the performance of the iglidur® liners made from high-performance plastics and cannot be used as the only selection tool for the calculation of an application. The maximum carrying capacity of the entire bearing system depends on the geometry, housing shape, the housing material, the connection including the screws used and requires a separate inspection. For a detailed analysis, please use our online configurator at

► www.igus-asean.com/drylin-expert



Press-fit bearings:

- Interocking with the housing
- Loading spigot is bore
- Groove with chamfered groove
- Anti-rotation feature through engagement of the pin in hole Øz



Linear plain bearings:

- RJUM-01, RJUM-03, TJUM-03, TJUM-03
- RJUM-01, RJUM-03, TJUM-01, TJUM-03
- 4.72 crosses, metric types (not included)



Solid plastic bearings:

- Fastening with chokes (not included to DIN 471 or 472)
- The E9 inner press-fit applies only after the



Linear plain bearings:

- RJ26 (UM-02)
- Housing is made of steel
- Housing hole H7 or aluminium housing hole H7
- Alternatively, the adapter can be glued with commercially available 2-component adhesive and inserted into a housing



Compact bearings:

- RJ26 (UM-02)
- Housing is made of steel
- Housing hole H7 or aluminium housing hole H7
- Alternatively, the adapter can be glued with commercially available 2-component adhesive and inserted into a housing



Quad blocks:

- RQA, RGA
- Tandem design: RTA
- The bearing in the housing is secured by DIN 472 circles



Tandem design:

- OGA, OGA
- Tandem housing: OGA
- The bearings is secured by screws

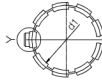
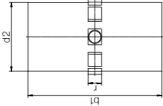


Pillow blocks:

- RJUM-E7-05, RJUM-06-LL, OJUM-E7-05, RJUM-07-02
- Tandem design: RGA, OGA
- The bearings is secured by mounting screws of the type series O3 according to DIN 7980

drylin® R liners | Product range

Long, closed design for shafts –
made from iglidur® J (the all-rounder)



Order key

Type	Size
JUM-01-10	Inner Ø d1
Standard	
Metric	
Liner	
igidur® J	

The all-rounder for all shaft surfaces
in indoor and outdoor applications


⁷⁸⁾ According to iglus® testing method ▶ Page 1146

Please note: Installation instructions ▶ Page 1079



Min. -50°C

Max. +90°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030+0.070	12	28	3.0	0.8	2.5	1.10	JUM-01-10
12	+0.030+0.070	14	31	3.0	0.8	3.0	1.50	JUM-01-12
16	+0.030+0.070	18	35	3.5	0.8	3.5	2.20	JUM-01-16
20	+0.030+0.070	23	44	5.0	0.8	3.5	4.90	JUM-01-20
25	+0.030+0.070	28	57	5.0	0.8	4.0	8.23	JUM-01-25
30	+0.040+0.085	34	67	5.0	0.8	4.0	14.95	JUM-01-30
35	+0.040+0.085	39	69	5.0	0.8	4.0	18.20	JUM-01-35
40	+0.040+0.085	44	79	6.0	1.3	5.0	23.16	JUM-01-40
50	+0.050+0.150	55	99	7.0	1.3	6.0	45.35	JUM-01-50
60	+0.050+0.150	65	124	8.0	2.0	6.5	70.00	JUM-01-60 ⁷⁸⁾

Housing hole for JUM-01 | Dimensions [mm]

Shaft Ø	d1	B	h10	r	t	f	Z	Part No.
10	12	29	3.0	1.0	1.0	2.6	+0.2	JUM-01-10
12	14	32	3.0	1.0	1.5	3.1	+0.2	JUM-01-12
16	18	36	3.5	1.0	1.7	3.6	+0.1	JUM-01-16
20	23	45	5.0	1.0	2.0	3.6	+0.1	JUM-01-20
25	28	58	5.0	1.0	2.0	4.1	+0.1	JUM-01-25
30	34	68	5.0	1.0	2.0	4.1	+0.1	JUM-01-30
35	39	70	5.0	1.0	2.0	4.1	+0.1	JUM-01-35
40	44	80	6.0	1.5	2.5	5.1	+0.1	JUM-01-40
50	55	100	7.0	1.5	2.5	6.1	+0.1	JUM-01-50
60	65	125	8.0	2.5	3.0	6.5	+0.1	JUM-01-60 ⁷⁸⁾

⁷⁸⁾ in two parts

Can be combined with:



JUM-01-03



FUM-06-06-LL

Imperial dimensions

▶ Page 1612



JUM-01-03

Can be combined with:



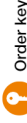
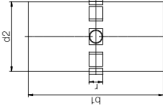
OUM-06-06-LL

Imperial dimensions

▶ Page 1612

drylin® R liners | Product range

Long, open design for supported shafts –
made from iglidur® J (the all-rounder)



Order key

Type	Size
JUM-01-10	Inner Ø d1
Standard	
Open	
Metric	
Liner	
igidur® J	

The all-rounder for all shaft surfaces
in indoor and outdoor applications


⁷⁸⁾ According to iglus® testing method ▶ Page 1146

Please note: Installation instructions ▶ Page 1079



Min. -50°C

Max. +90°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	b1	r	t	Z	Weight [g]	Part No.
10	+0.030+0.070	12	28	3.0	0.8	2.5	0.90	JUM-01-10
12	+0.030+0.070	14	31	3.0	0.8	3.0	1.16	JUM-01-12
16	+0.030+0.070	18	35	3.5	0.8	3.5	1.71	JUM-01-16
20	+0.030+0.070	23	44	5.0	0.8	3.5	4.16	JUM-01-20
25	+0.030+0.070	28	57	5.0	0.8	4.0	6.97	JUM-01-25
30	+0.040+0.085	34	67	5.0	0.8	4.0	12.38	JUM-01-30
40	+0.040+0.085	44	79	6.0	1.3	5.0	20.18	JUM-01-40
50	+0.050+0.150	55	99	7.0	1.3	6.0	38.60	JUM-01-50
60	+0.050+0.150	65	124	8.0	2.0	6.5	60.10	JUM-01-60 ⁷⁸⁾

Housing hole for JUM-01 | Dimensions [mm]

Shaft Ø	d1	B	W	r	t	f	Z	Part No.
10	12	29	7.3	3.0	1.0	1.0	2.6	JUM-01-10
12	14	32	9.0	3.0	1.0	1.5	3.1	JUM-01-12
16	18	36	11.6	3.5	1.0	1.7	3.6	JUM-01-16
20	23	45	12.0	5.0	1.0	2.0	3.6	JUM-01-20
25	28	58	14.5	5.0	1.0	2.0	4.1	JUM-01-25
30	34	68	16.6	5.0	1.0	2.0	4.1	JUM-01-30
40	44	80	21.0	6.0	1.5	2.5	5.1	JUM-01-40
50	55	100	25.5	7.0	1.5	2.5	6.1	JUM-01-50
60	65	125	27.2	8.0	2.5	3.0	6.5	JUM-01-60 ⁷⁸⁾

⁷⁸⁾ in two parts

Can be combined with:



JUM-01-03

Can be combined with:



OUM-06-06-LL

Imperial dimensions

▶ Page 1612



JUM-01-03

Can be combined with:



OUM-06-06-LL

Imperial dimensions

▶ Page 1612

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