



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)	
TWE-04-12	TEK-E-04-12 (J)	
TW-04-15	TEK-04-15 (J)	
TWE-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

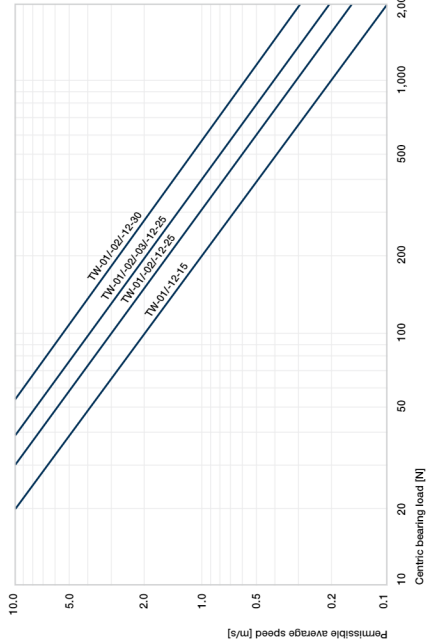


Diagram 04: Determination of the maximum permitted speed for the load



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



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



Clean Room
Cleanroom certified
IPA Fraunhofer

ESD-compatible
2011/65/EU (RoHS)
(electrostatic discharge)

1072 Online tools and more information ► www.igus-asean.com/drylinR



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



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



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



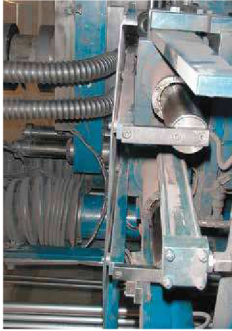
drylin® R linear plain bearings on supported aluminum shafts are used in this grinder to guide the cutting table. The drylin® components stand for extrema dirt resistance, accurate guidance and smooth operation.



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® RUM-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



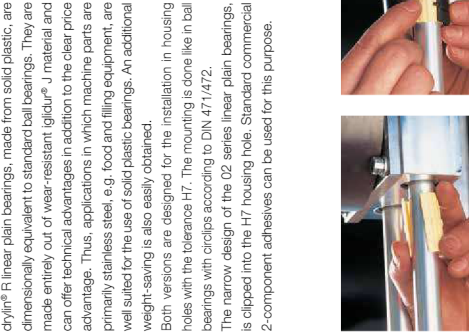
► www.igus-asean.com/downloads



drylin® R linear plain bearings

The drylin® standard round bearings consist of a interchangeable Igidur® 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 Igidur® J material and can offer technical advantages in addition to the clear price advantage. 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.

Split 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 all-rounder - Igidur® J	The specialist - Igidur® J200	The extreme - Igidur® X	The endurance runner - Igidur® E7	The FDA-compliant - Igidur® A150	Blue Sky Thinking runner - Igidur® A160
Application temperature	from -50°C to +90°C	from -50°C to +90°C	from -100°C to +250°C	from -50°C to +70°C	from -50°C to +40°C	from -50°C to +30°C
Best coefficient of friction with	Steel shaft > 10 ⁻³ Qcm	Hard-anodised aluminium > 10 ⁻³ Qcm	Hard-chromed steel < 10 ⁻³ Qcm	Steel/stainless steel shaft > 10 ⁻³ Qcm	Stainless steel shaft > 10 ⁻³ Qcm	Hardened stainless steel shafts
Volume resistance	1.3% weight	0.7% weight	0.5% weight	< 0.1% weight	0.2% weight	< 0.1% weight
Moisture absorption	Hard-anodised aluminium	Hard-anodised aluminium	Hardened stainless steel	Stainless steel shaft	Stainless steel shaft	Hardened stainless steel shafts
Maximum service life with	All shaft materials	Hard-anodised aluminium	Hardened stainless steel	Steel/stainless steel shaft	All shaft materials	Stainless steel steel shaft
Potential counter partner	35MPa	23MPa	150MPa	18MPa	28MPa	13MPa
Permissible stat. surface pressure	JUM-...	J200JUM-...	XUM-...	E7UM-...	A150UM-...	A160UM-...
Part No.						

Material properties:

- Igidur® J ► Page 159
- Igidur® J200 ► Page 261
- Igidur® X ► Page 279
- Igidur® E7 ► Page 287
- 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.

Igidur® L100	Application temperatures
Minimum	-30°C
Max. long-term	+100°C
Maximum, short-term	+190°C

Table 03: Temperature limits for Igidur® L100

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 Igidur® 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 the shaft, 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® plain bearings are homogeneously filled with solid lubricants. In this way, lubricants cannot be removed, even at high loads. The Igidur® 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 Igidur® 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 ideal 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 and self-aligning bearing. The outer diameter of the bearing is the same as the outer diameter of the aluminum adapter for self-alignment. Reductions in load 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 bore diameter by 0.2 to 0.3 mm (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 misalignment.

Eccentric forces

To ensure successful use of maintenance-free dylin® 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.

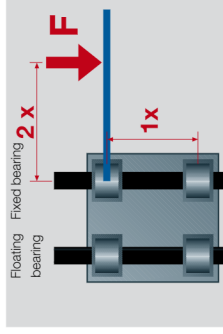


Figure 03: The 2:1 rule

RJUM-06-LL
▶ Page 1124

RJUM-03/OJUM-03 series	$\pm 0.5^\circ$
RJUM-06-LL/OJUM-06-LL series	$\pm 3.5^\circ$
Table 04: Compensation of misalignment errors	
RJUM-03/OJUM-03 series	$\pm 0.1\text{mm}$
RJUM-06-LL/OJUM-06-LL series	$\pm 3.0\text{mm}$
Table 05: Compensation of parallelism errors	

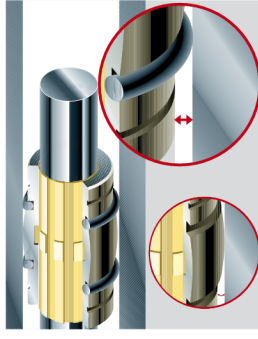


Diagram 02: By defined installation clearance and externally mounted O-rings, the self-aligning drylin® R bearings of the type series 03 can compensate parallelism errors. The spherical drylin® adapter can compensate for parallelism errors. A hard-anodisation protects the aluminium adapter from wear.

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 τ_{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.iqus-asean.com/drylin-expert



Liners:
 _UM-01, _UMO-01, _UM-11,
 _UMO-11, _UM-02
 ● Interlocking with the housing
 bore ● Locating spigot is
 supported by a snap ring
 groove ● Anti-rotation feature
 through engagement of the pin
 in hole Ø z



Press-fit bearings:
WLM, WLFM
● Press-fit installation into the
H7 housing hole
▲ Assembly instructions,
page 57



Linear plain bearings:
RJUM-01, RJUM-11, RJUM-ES,
TJUM-01, RJUM-03, TJUM-03,
RJUI-01, RJUI-03, TJUI-01,
TJUI-03



Solid plastic bearings:
RJM, RJ1-01
 ● Fastening with circlips according to DIN 471 or 472 (not included) ● The E9 inner tolerance applies only after the press-fit



Solid plastic bearings:
RJMP

- Easy assembly by soft press-fit
- Secured by DIN 471 or 472 circlips (not included)



**Linear plain bearings
RJUM-02**

- Secured by press-in housing hole H7 or aluminum housing hole K7
- Alternatively, the adapter can be glued with commercial available 2-component epoxy into a housing



Compact bearings:
RJ260 (UM-02)

- Locating spigot and press-fit into housing hole H7 ●

Alternatively, the adapter can be glued with commercially available 2-component adhesives into a housing.



Linear plain bearings:
OJUM-01, OJUM-03, OJUI-01,
OJUI-03

- Adapter secured with
setscrews (not included)



● The bearing in the housing is secured by DIN 472 circlip



Linear housings:
RGAS



Quad blocks: OQA, OGA,
Linear housings: OGAS,
Tandem design: OTA



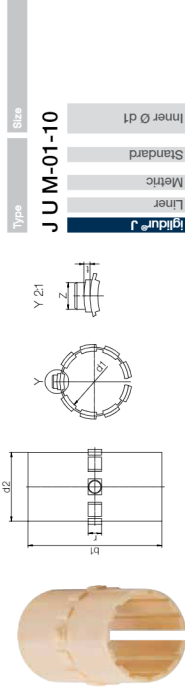
Pillow blocks: RJUM/E/T-05,
RJUM-06/-LL, QJUM/E-
06/-LL, Flange housings:
FJUM/T-01/02
quad blocks: RGA, OGA
Tandem designs: RTA, OTA
Linear bearings: RGAS, OGAS
● Mounting screws of the
housing DIN 912-5.5 ● Circlips

drylin® R liners | Product range
Long, closed design for shafts –
made from iglidur® J (the all-rounder)

drylin® R liners | Product range
Long, open design for supported shafts –
made from iglidur® J (the all-rounder)



Order key



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



⁷⁸⁾ According to igus® testing method ▶ Page 1146

Please note: Installation instructions ▶ Page 1079



Min. –50°C

Max. +90°C

Dimensions [mm]

d1	d1 tolerance ⁷⁸⁾	d2	r	t	b1	f	Z	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	d1	B	r	t	f	Z	Part No.
Ø	H7	h10	+0.05	+0.1	+0.5	+0.2	
10	12	29	3.0	1.0	1.0	2.6	JUM-01-10
12	14	32	3.0	1.0	1.5	3.1	JUM-01-12
16	18	36	3.5	1.0	1.7	3.6	JUM-01-16
20	23	45	5.0	1.0	2.0	3.6	JUM-01-20
25	28	58	5.0	1.0	2.0	4.1	JUM-01-25
30	34	68	5.0	1.0	2.0	4.1	JUM-01-30
35	39	70	5.0	1.0	2.0	4.1	JUM-01-35
40	44	80	6.0	1.5	2.5	5.1	JUM-01-40
50	55	100	7.0	1.5	2.5	6.1	JUM-01-50
60	65	125	8.0	2.5	3.0	6.5	JUM-01-60 ⁷⁸⁾

⁷⁸⁾ in two parts

Can be combined with:



Imperial dimensions

▶ Page 1612



Imperial dimensions

▶ Page 1612