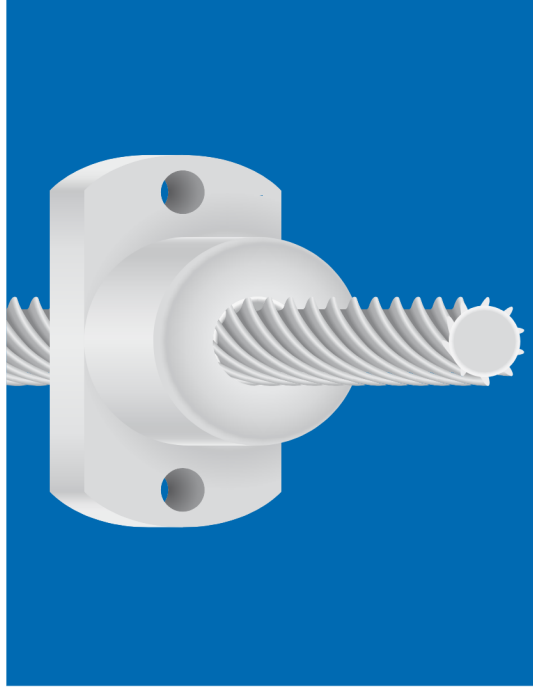




drylin® lead screw technology – dryspin® technology

Efficient high helix thread

Lead screw nuts made from lubrication-free

dry-tech® tribo-polymers

High efficiency and longer service life

Quiet operation with vibration dampening

Resistant to dirt



The right lead screw nut material for every technical requirement

Starting immediately, there are drylin® lead screw nuts from the full range available for every technical requirement. The full range includes lead screw nuts from 6 lubrication-free iglidur® high-performance polymers, in cylindrical design or flange variations. The ideal nut and lead screw for every application.

- Lubrication and maintenance-free
- Service life can be calculated online
- No minimum order value
- No minimum order quantity

- Find and calculate suitable lead screw drives
- www.igus-asean.com/leadscrewdrives-finder

High efficiency at all speeds:

- iglidur® J ► Page 159
- High speed
- Low wear
- Best coefficient of friction

For temperatures up to +150°C:

- iglidur® J350 ► Page 204
- For high temperatures
- Good coefficient of friction with medium loads

For medium to high speeds:

- iglidur® R ► Page 247
- High wear resistance for low loads
- Low moisture absorption
- Vibration-dampening

FDA-compliant for the food and pharmaceutical industry:

- iglidur® A180 ► Page 401
- FDA-compliant
- For contact with food

Best running partner for hard anodised aluminium:

- iglidur® J200 ► Page 261
- Low coefficient of friction and wear
- Long service life

For high speeds:

- iglidur® E7 ► Page 267
- Low loads up to 200N
- Speeds up to 1,200rpm



General properties		Unit	igidur® J	igidur® J350	igidur® R	igidur® A180	igidur® E7	igidur® J200
Density		[g/cm³]	1.49	1.44	1.39	1.46	1.05	1.72
Colour			yellow	yellow	red	white	dark grey	matt grey
Max. moisture absorption at +23°C and 50% relative humidity		[% weight]	0.30	0.30	0.20	0.20	0.1	0.2
Max. total moisture absorption		[% weight]	1.30	1.60	1.10	1.30	0.1	0.7
pV value, max. (dry)		[MPa · m/s]	0.34	0.45	0.27	0.31	0.08	0.30

Mechanical properties

Permissible surface pressure in thread at +20°C	[MPa]	4.0	3.0	2.0	3.5	0.5	2.0
Shore D hardness		74	80	77	76	61	70

Physical and thermal properties

Max. continuous operating temperature	[°C]	+90	+150	+90	+90	+70	+90
Max. short-term operating temperature	[°C]	+120	+150	+90	+90	+70	+90
Min. continuous operating temperature	[°C]	-20	-20	-20	-20	-20	-20
Thermal conductivity	[W/m · K]	0.25	0.24	0.25	0.25	0.25	0.24
Coefficient of thermal expansion at +23°C	[K ⁻¹ · 10 ⁻³]	10	7	11	11	11	8

Electrical properties

Specific contact resistance	[Ωcm]	> 10 ¹³	> 10 ¹³	> 10 ¹²	> 10 ¹²	> 10 ⁸	> 10 ⁸
Surface resistance	[Ω]	> 10 ¹²	> 10 ¹⁰	> 10 ¹²	> 10 ¹¹	> 10 ⁸	> 10 ⁸

More material properties

Page	159	204	247	401	267	261
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Higher efficiency due to optimised thread angle

Due to a flatter thread angle in dryspin® high helix lead screws (similar to a trapezoidal thread), the applied force is efficiently converted into a linear motion. Compared with a steeper thread angle, this means a lower power loss.



Steeper thread angle, standard geometry



Flatter thread angle, dryspin® geometry

Silent and vibration-dampening due to rounded tooth geometry

Due to the rounded tooth geometry, the contact surface between the lead screw nut and the lead screw is reduced. Thereby the dryspin® lead screw nuts move without vibration, virtually noiselessly. This is because, the greater the contact of two surfaces moving against one another, the more vibrations are transmitted, which can be perceived as a rattle or squeak. The round teeth minimise this effect and the thread moves without lubrication and with no noise.



Angular tooth profile, standard geometry



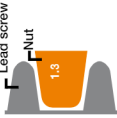
Rounded tooth profile, dryspin® geometry

Longer service life due to asymmetry

Due to the larger distances between the individual dryspin® thread pitches, the thread ideally matches the properties of the lubrication-free Igu® high-performance polymers. The proportion of the tribologically optimised polymer in the thread pitches can be extended by a factor of 1.3 for all sizes. More wear-resistant material and higher levels of efficiency are crucial for up to 5 times longer service life of standard geometries. The larger the lead screw diameter, the stronger the impact of this effect. Backlash can be minimised life-long with the use of dryspin® zero-backlash lead screw nuts with integrated spring pre-load.



Symmetrical standard geometry



Asymmetrical dryspin® geometry

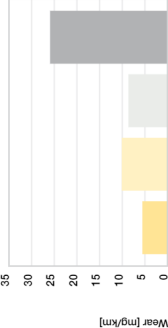
Tested: Lubrication-free Igu® materials from Igu®

Liners, sliding elements and lead screw nuts from drylin® adapted for your application: lubrication-free, tested and predictable.

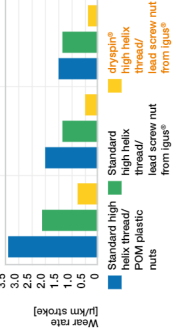
- 12,000 tribology tests per year
 - More than 300 parallel test facilities
 - 140 trillion test movements
 - Continuous testing of drylin® products
- www.igus-asean.com/test



Wear test dryspin® high helix thread
DST 10x25, load 175N, 540mm stroke, 125rpm

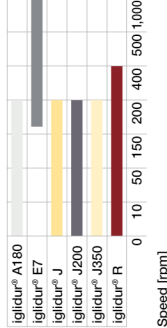


Wear test on C15 lead screw [mg/km]
Stroke 140mm, 50N, lead screw C15 rolled, 450rpm

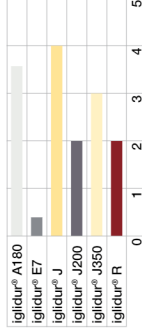


Wear-resistant high helix thread 10x50, dryspin® high helix thread / standard high helix thread, load 38N, 100rpm for 50,000/150,000/200,000 cycles

Correct choice of material



Speed [rpm]



Surface pressure in thread [MPa]

dry-tech® tribo-plastics

Igu® high-performance polymers are used in all drylin® linear and drive units as well as lead screw drives. The lubrication is incorporated into the bearing material, rendering the bearing materials suitable for dry operation, i.e. they are maintenance-free for their entire service life.

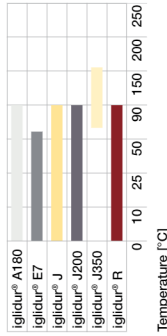
Material selection

drylin® lead screw nuts are made from tribologically optimised materials. Already during the development phase, the focus is on optimising the friction properties of the drylin® lead screw drives, with the objective of attaining the lowest possible coefficient of wear and friction.

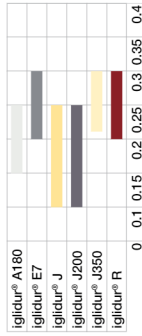
Service life

Every year, several hundred tests are set up and performed on test rigs in the Igu® test laboratory. The results are incorporated into easily accessible online tools, where the service life and the required torque can be determined.

► www.igus-asean.com/leadscrew-expert



Temperature [°C]



Coefficient of friction [µ]

Igidur® J200 most suitable in combination with hard anodised aluminium



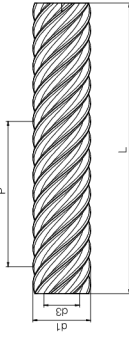
Technical data



Stainless steel, rolled, AISI 304



Aluminium, rolled (EN AW 6082)



Helix deviation	0.1mm to 300mm
Straightness (standard)	0.3mm to 300mm
Aligned	<0.1mm to 300mm

The tensile/compressive strength of the EN AW 6082 lead screw materials is 160MPa per mm² (elongation limit 0.2mm).

Technical data

Thread	Hand of rotation	Material		Pitch P [mm]	Number of thread pitches	Pitch angle α [°]	Weight	
		Stainless steel	Aluminium				Stainless steel	Aluminium
		AISI 304	EN AW 6062				[kg/m]	[kg/m]
Ds4x2.4	●	●	–	2.4	2	10.81	0.10	–
Ds5x5	●	–	–	5.0	2	17.70	0.20	–
Ds6.35x2.54	●	●	–	2.54	2	7.26	0.25	–
Ds6.35x5.08	●	●	–	5.08	4	14.29	0.25	–
Ds6.35x12.7	●	–	–	12.7	4	32.48	0.25	–
Ds6.35x25.4	●	–	–	25.4	8	51.85	0.25	–
Ds8x10	●	●	●	10.0	4	21.70	0.40	0.14
Ds8x15	●	●	●	15.0	6	30.83	0.40	0.14
Ds8x24	●	–	–	24.0	8	43.70	0.40	–
Ds10x3	●	–	–	3.0	2	5.45	0.62	–
Ds10x12	●	●	●	12.0	4	21.54	0.62	0.21
Ds10x25	●	●	●	25.0	8	38.51	0.62	0.21
Ds10x50	●	●	●	50.0	10	57.86	0.62	0.21
Ds12x5	●	–	●	5.0	2	7.55	0.89	0.31
Ds12.7x12.7	●	–	–	12.7	4	17.65	0.90	–
Ds12x15	●	–	–	15.0	5	21.90	0.98	–
Ds12x25	●	–	●	25.0	8	33.55	0.89	0.31
Ds14x25	●	–	●	25.0	5	29.61	1.22	0.42
Ds14x30	●	–	●	30.0	6	34.30	1.22	0.42
Ds14x40.6	●	–	–	40.6	8	42.71	1.22	0.42
Ds16x35	●	–	●	35.0	7	34.85	1.59	0.54
Ds18x24	●	●	●	24.0	6	22.99	2.01	0.69



Available from stock
Upon request



Order key

Part number	Thread	Options
DST-LS-10X50-R-1000-ES		
dryspin® technology	Lead screw	Length [mm]
	Diameter	Hand of rotation
	Pitch	Lead screw material

Options:

Hand of rotation

R: Right-hand thread

L: Left-hand thread

Length in mm: Freely selectable (see table)

Lead screw material

ES: Stainless steel, rolled

AL: Aluminium, rolled



Please contact us!

All drylin® leads screws can be custom machined. Please send us your drawing or configure online.
We can then provide a quotation quickly.

▶ www.igus-asean.com/leadscrew-configurator

Dimensions [mm]

Outer Ø d1	Core Ø d3	Max. total length L	Part No.
–0.1	–0.1	ES	AL
4.0–0.05	3.0–0.1	1,000	DST-LS-4X2.4-R-□-□-ES
5.0	3.30	1,000	DST-LS-5X5-R-□-□-ES New
6.35–0.05	4.35–0.05	1,000	DST-LS-6.35X2.54-□-□-ES
6.35–0.05	4.85–0.05	1,000	DST-LS-6.35X5.08-R-□-ES
6.35–0.05	4.35–0.05	1,000	DST-LS-6.35X12.7-R-□-ES
6.35–0.05	4.15–0.05	1,000	DST-LS-6.35X25.4-R-□-ES
8.0	5.63	1,000	DST-LS-8X10-□-□-ES
8.0	5.63	1,000	DST-LS-8X15-□-□-ES
8.0	5.55	1,000	DST-LS-8X24-R-□-ES New
10.0	7.85	3,000	DST-LS-10X3-R-□-□-ES New
10.0	6.95	3,000	DST-LS-10X12-□-□-ES
10.0	7.10	3,000	DST-LS-10X25-□-□-ES
10.0	7.35	3,000	DST-LS-10X50-□-□-ES
12.0	9.60	3,000	DST-LS-12X5-R-□-□-ES
12.7	9.60	3,000	DST-LS-12.7X12.7-R-□-□-ES New
12.0	9.00	3,000	DST-LS-12X15-R-□-□-ES New
12.0	8.95	3,000	DST-LS-12X25-R-□-□-ES
14.0	9.60	3,000	DST-LS-14X25-□-□-ES
14.0	9.60	3,000	DST-LS-14X30-R-□-□-ES
14.0	9.65	3,000	DST-LS-14X40.6-R-□-□-ES
16.0	11.60	3,000	DST-LS-16X35-R-□-□-ES
18.0	14.28	3,000	DST-LS-18X24-□-□-□-ES

Technical data

Thread	Hand of rotation right left	Material		Pitch P [mm]	Number of thread pitchess	Pitch angle α [°]	Weight	
		Stainless steel AISI 304	Aluminium EN AW 6062				steel [kg/m]	Aluminium [kg/m]
Ds18x40	●	●	●	40,0	8	35,55	2,01	0,69
Ds18x80	●	●	●	80,0	12	54,74	2,01	0,69
Ds18x100	●	●	●	100,0	12	60,51	2,01	0,69
Ds20x20	●	●	●	20,0	4	17,66	2,48	0,85
Ds20x50	●	–	●	50,0	8	38,51	2,48	0,85
Ds20x60	●	●	●	60,0	8	43,68	2,48	0,85
Ds20x80	●	●	●	80,0	12	55,07	2,48	0,85
Dx20x90	●	●	●	90,0	12	55,08	2,48	0,85

Dimensions [mm]

Outer Ø d1	Core Ø d3	Max. total length L		Part No.
		ES	AL	
–0,1	–0,1			
18,0	13,60	3,000	1,500	DST-LS-18X40-□-□-ES
18,0	14,00	3,000	1,500	DST-LS-18X80-□-□-ES
18,0	13,55	3,000	1,500	DST-LS-18X100-□-□-ES
20,0	15,60	3,000	1,500	DST-LS-20X20-□-□-ES
20,0	15,48	3,000	1,000	DST-LS-20X50-□-□-ES
20,0	15,55	3,000	1,500	DST-LS-20X60-□-□-ES
20,0	15,98	3,000	1,500	DST-LS-20X80-□-□-ES
20,0	15,55	3,000	1,500	DST-LS-20X90-□-□-ES

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