Precision Screws

Ball screws, trapezoidal and lead screws – highest level of performance and quality.

THOMSON®

Linear Motion. **Optimized.**™

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THOMSON®

*Linear Motion. **Optimized.***™

Thomson – the Choice for Optimized Motion Solutions

Often the ideal design solution is not about finding the fastest, sturdiest, most accurate or even the least expensive option. Rather, the ideal solution is the optimal balance of performance, life and cost.

The Best Positioned Supplier of Mechanical Motion Technology

Thomson has several advantages that makes us the supplier of choice for motion control technology.

- Thomson own the broadest standard product offering of mechanical motion technologies in the industry.
- Modified versions of standard product or white sheet design solutions are routine for us.
- Choose Thomson and gain access to over 70 years of global application experience in industries including packaging, factory automation, material handling, medical, clean energy, printing, automotive, machine tool, aerospace and defense.
- As part of Fortive Corporation, we are financially strong and unique in our ability to bring together control, drive, motor, power transmission and precision linear motion technologies.

A Name You Can Trust

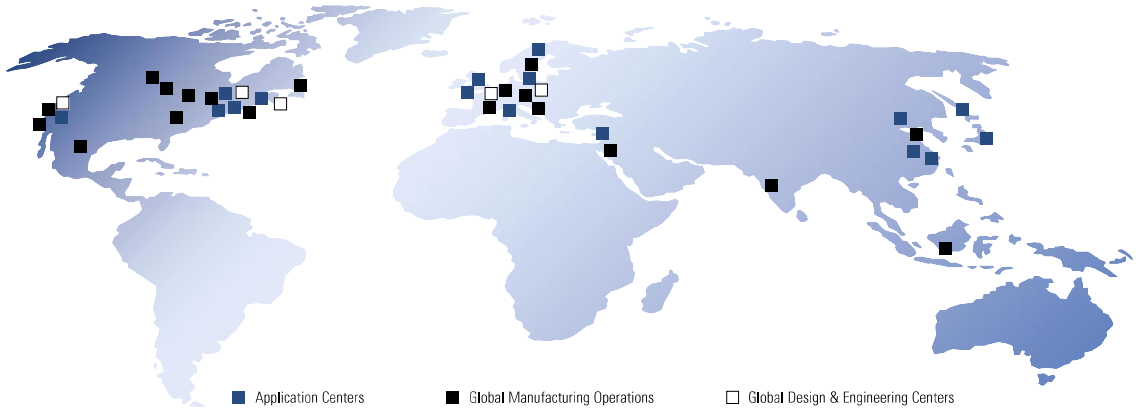
A wealth of product and application information as well as 3D models, software tools, our distributor locator and global contact information is available at www.thomsonlinear.com. For assistance in Europe, contact us at +44 1271 334 500 or e-mail us at sales.uk@thomsonlinear.com.

Talk to us early in the design process to see how Thomson can help identify the optimal balance of performance, life and cost for your next application. And, call us or any of our 2000+ distribution partners around the world for fast delivery of replacement parts.

The Fortive Business System

The Fortive Business System (FBS) was established to increase the value we bring to customers. It is a mature and successful set of tools we use daily to continually improve manufacturing operations and product development processes. FBS is based on the principles of Kaizen which continuously and aggressively eliminate waste in every aspect of our business. FBS focuses the entire organization on achieving breakthrough results that create competitive advantages in quality, delivery and performance – advantages that are passed on to you. Through these advantages Thomson is able to provide you faster times to market as well as unsurpassed product selection, service, reliability and productivity.

Local Support Around the Globe



What do you want from today's thread drives?

The principle behind the thread drive is incredibly easy to grasp. And yet, all kinds of demands are made of these drives in practice and there is a wide range of designs in use. Apart from technical requirements, the issue of cost is becoming increasingly important. This presents the user with the following challenges:

How can the costs associated with procurement, manufacture and installation be reduced?
Increasing pressure in terms of costs and the need for greater flexibility call for short delivery times and attractive prices when it comes to procuring the components to be used. This involves taking individual customer requirements into account right from the start.

How can I make my system more reliable?
Components are expected to deliver high levels of accuracy and quality as well as low maintenance costs.

How can I make my system more cost-effective?
When combined with the right thread drive, high speeds and more power make it possible to use a system more cost-effectively.

Recirculating ball screws

Our ball screws are ideal for use in all technological and mechanical engineering applications. These mainly include:

- Machine tools
- Aircraft construction
- Wood working
- Handling equipment, industrial robots
- Printing and paper machines
- Traffic engineering
- Medical equipment
- Measuring technology
- …

A ball screw is a driving element for converting rotary motion into axial motion and vice versa. A ball screw consists of a ball screw shaft, a ball screw nut featuring a ball return and the balls themselves.

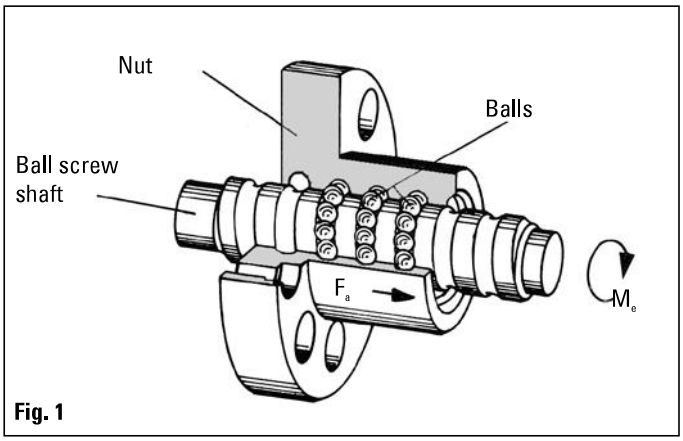


Fig. 1

Action: Torque M_e → Reaction: Force F_a

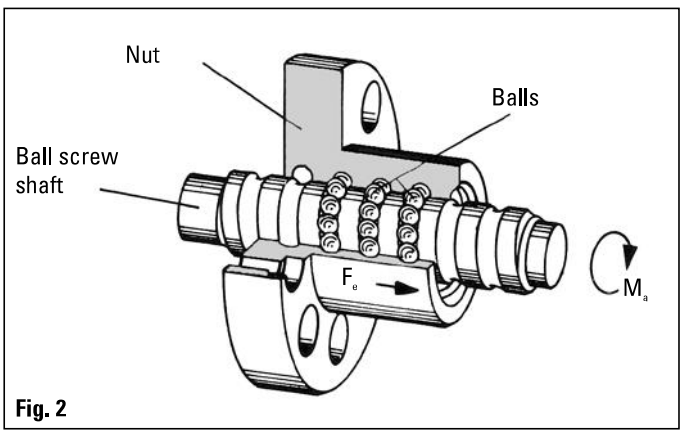
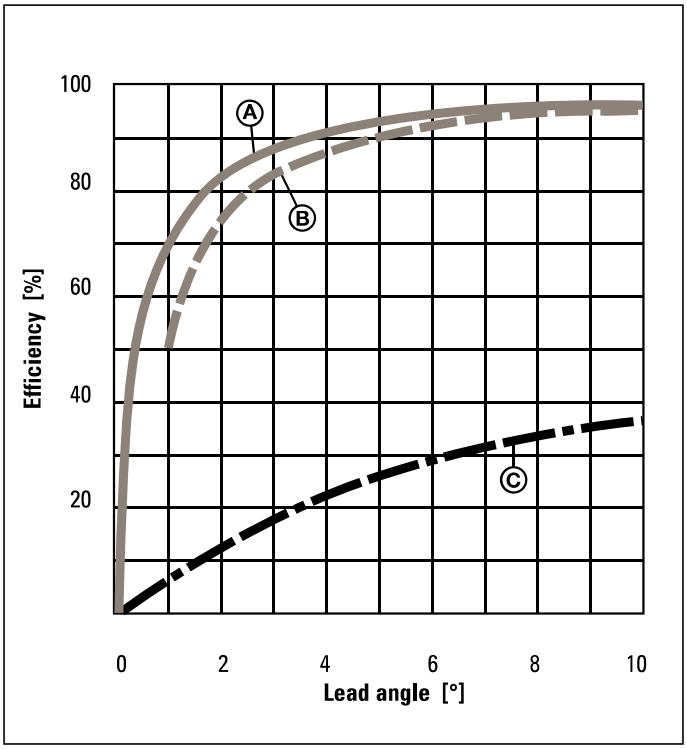


Fig. 2

Action: Force F_e → Reaction: Torque M_a

The balls, which roll between the screw shaft and the nut, offer optimum levels of efficiency (up to 98%).

As a result, ball screws, unlike trapezoidal screws, are not capable of self locking.



Ⓐ Efficiency for ball screws according to Fig. 1
Ⓑ Efficiency for ball screws according to Fig. 2
Ⓒ Efficiency for trapezoidal screw

Advantages of ball screws compared to trapezoidal screws:

- More accurate positioning throughout service life
- Less wear, longer service life
- Less drive power required
- Less heat generated
- Higher travel speeds
- No stick/slip effect

Standard manufacturing program

Nominal lead P_{h0} [mm]	Sizes used: Nominal diameter d_0 [mm]											
	12	16	20	25	32	40	50	63	80	100	125	160
4	●											
5	●	●○	●○	●○	●○	●○	○					
10	●	●	○	●○	●○	●○	●○	●○	●○	○	○	
15					○	○		○				
20			●	●	●	●○	●○△	●○△	○△	○△	○△	○△
25				●			△	○△	○△	○△	○△	○△
30									○	○	○△	○△
32					●							
40					●	●				○	○	
50			●	●								

● = rolled (stock item) ○ = ground/whirled △ = heavy duty ground/whirled

Precision drives us on

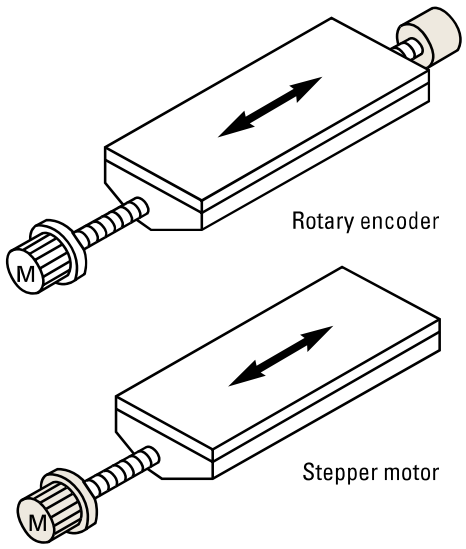
Our range complies with DIN 69051 and ISO 3408. All nuts, both flanged and cylindrical nuts, are available with connections complying with DIN specifications.

Every shaft can be supplied with customized end journals. On request, customers can also order screws with an annealed end for machining their own end journal.

Tolerance classes

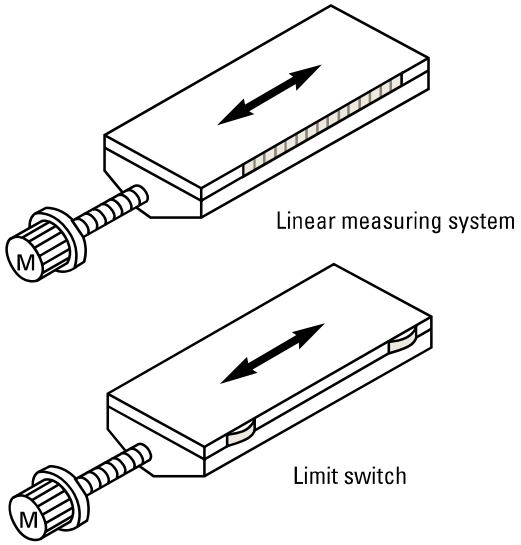
P	Positioning ball screws

Indirect measuring system



T	Transport ball screws

Direct measuring system



Type and tolerance class	Permissible travel variance within 300 mm travel in µm	Type and tolerance class
P1	6µm	
P3	12µm	
P5	23µm	***T5***
	52µm	***T7***

Standard

Ball nuts

Ball nut units – pre-loaded

As a rule all nuts can be combined to form backlash-free, pre-loaded nut units except when the lead is equal to or greater than the diameter of the screw. THOMSON NEFF supplies ready-to-install units with "O" pre-loading.

O pre-loading:
With this type of pre-loading the lines of forces run in a rhomboidal pattern (O-shaped), i.e. the nuts are pressed apart by the pre-loading force. This configuration offers particularly high rigidity against tilting. The standard preloading is equal to 10 % of the dynamic load rating C.

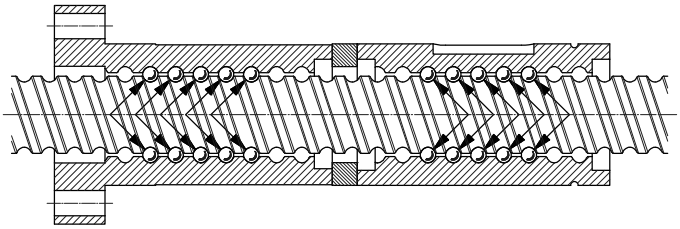
Note:
Backlash-free preloading is only possible with a lead accuracy ² 50 µm/300 mm and leads P < diameter d0.
Lead accuracies of > 50 µm/300 mm and leads ³ diameter d0 only allow a low backlash preloading. The total length of the nut can accelerate up to 10 mm due to the installed preloading disc.

Single nuts mounted backlash-free on request. Please contact our technical support.

Pre-loading variants

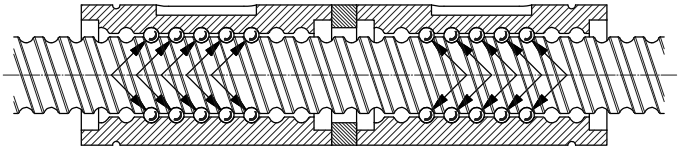
KGT-FM

Ball screw drive with one KGF flanged nut and one KGM cylindrical nut with O-pre-loading.



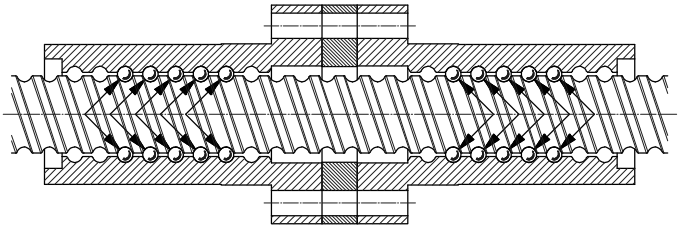
KGT-MM

Ball screw drive with two KGM cylindrical nuts and O-pre-loading. Only one of the two feather keys transmits the drive torque.



KGT-FF

Ball screw drive with two KGF flanged nuts with O-pre-loading.



Rolled ball screw shafts

Nominal diameter	Lead	Number of threads	Ball diameter	best available tolerance class for right-hand thread shafts	best available tolerance class for left-hand thread shafts	External diameter	Thread minor diameter	Maximum length	Specific mass per meter shaft length	Cross-sectional area	Minimum axial moment of inertia	Polar moment of inertia
d_0	P_h		D_w			d_1	d_2	l_{max}	M	a	i	I_p
[mm]	[mm]		[mm]			[mm]	[mm]	[mm]	[kg/m]	[mm^2]	[mm^4]	[mm^4]
12	4	1	2.000	P3		11.60 h11	10.07	3000	0.76	9.63E+01	7.00E+02	1.48E+03
12	5	1	2.000	P3		11.50 h11	9.97	3000	0.76	9.64E+01	6.89E+02	1.48E+03
12	10	2	2.000	P3		11.50 h11	10.05	3000	0.75	9.61E+01	6.59E+02	1.48E+03
16	5	1	3.500	P3	T7	15.55 h11	12.88	6000	1.38	1.75E+02	2.22E+03	4.93E+03
16	5.08	1	3.500	P3		15.68 h12	12.86	6000	1.26	1.60E+02	2.03E+03	4.08E+03
16	10	2	3.000	P3		15.35 h11	12.89	6000	1.26	1.60E+02	1.69E+03	4.17E+03
20	5	1	3.500	P3	P3	19.50 h11	16.87	6000	2.21	2.82E+02	5.85E+03	1.27E+04
20	20	4	3.500	P3		19.50 h11	16.87	6000	2.03	2.59E+02	5.41E+03	1.08E+04
20	50	5	3.500	P3		19.10 h11	16.40	6000	2.05	2.62E+02	5.53E+03	1.11E+04
25	5	1	3.500	P3	T7	24.60 h11	21.90	6000	3.32	4.23E+02	1.42E+04	2.85E+04
25	10	2	3.500	P3		24.60 h11	21.92	6000	3.34	4.25E+02	1.27E+04	2.90E+04
25	20	4	3.500	P3		24.60 h11	21.92	6000	3.32	4.23E+02	1.44E+04	2.88E+04
25	25	4	3.500	P3		24.71 h12	21.92	6000	3.40	4.34E+02	1.51E+04	3.02E+04
25	25	5	3.500	P3		24.60 h11	21.92	6000	3.32	4.23E+02	1.44E+04	2.88E+04
25	50	5	3.500	P3		24.15 h11	21.47	6000	3.37	4.29E+02	1.48E+04	2.95E+04
32	5	1	3.500	P3	T7	31.50 h11	28.87	6000	5.90	7.52E+02	4.29E+04	9.01E+04
32	10	1	5.556	P3		31.67 h11	27.36	6000	5.54	7.05E+02	3.80E+04	7.92E+04
32	10	1	7.144	P3		32.74 h11	27.33	6000	5.57	7.10E+02	3.98E+04	8.03E+04
32	20	2	5.000	P3		31.70 h11	27.81	6000	5.67	7.22E+02	3.63E+04	8.38E+04
32	20	2	5.556	P3		31.67 h11	27.36	6000	5.53	7.04E+02	3.38E+04	7.99E+04
32	32	4	3.969	P3		31.30 h11	28.33	6000	5.74	7.31E+02	4.28E+04	8.56E+04
32	40	4	3.500	P3		30.90 h11	28.26	6000	5.63	7.17E+02	4.10E+04	8.21E+04
40	5	1	3.500	P3	T7	39.53 h11	36.90	6000	9.03	1.15E+03	1.05E+05	2.11E+05
40	10	1	7.144	P3	T7	39.62 h11	34.28	6000	8.43	1.07E+03	9.11E+04	1.83E+05
40	20	2	5.000	P3		39.70 h11	35.81	6000	9.05	1.15E+03	9.52E+04	2.13E+05
40	20	2	5.556	P3		40.00 h12	35.72	6000	8.87	1.13E+03	9.00E+04	2.05E+05
40	40	4	3.500	P3		38.95 h11	36.24	6000	9.02	1.15E+03	1.05E+05	2.11E+05
40	40	4	7.144	P3		39.81 h12	34.32	6000	8.37	1.07E+03	9.16E+04	1.83E+05
50	10	1	7.144	P3	T7	49.60 h11	44.11	6000	13.53	1.72E+03	2.35E+05	4.73E+05
50	20	2	6.350	P3		49.60 h11	44.87	6000	13.86	1.77E+03	2.22E+05	4.99E+05
50	20	2	7.144	P3		49.50 h11	43.99	6000	13.46	1.71E+03	2.05E+05	4.72E+05
63	10	1	7.144	P3		62.60 h11	57.15	6000	22.07	2.81E+03	6.25E+05	1.26E+06
63	20	2	7.144	P3		62.70 h11	57.16	6000	22.06	2.81E+03	5.70E+05	1.26E+06
80	10	1	7.144	T7		79.65 h12	74.20	6000	36.43	4.64E+03	1.71E+06	3.43E+06

Nuts for rolled ball screw shafts

See fold-out cover page for dimensions, form and drilling pattern

KGF-D (FK) style single nut

Nominal diameter	Lead	Number of threads on the shaft	Ball diameter	ID number	D_1	D_4	D_5	D_6	L	L_m	L_1	L_3
d_0	P_h		D_w		g6			h13				
[mm]	[mm]		[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
16	5	1	3.500	0215200269	28	38	5.5	48	48.5	33	10	5.5
20	5	1	3.500	0215200271	36	47	6.6	58	48.5	33	10	5.5
25	5	1	3.500	0215200273	40	51	6.6	62	49	33	10	6
32	5	1	3.500	0215200275	50	65	9	80	57	39	10	6
32	10	1	5.556	0215200346	50	65	9	80	73	55	16	6
40	5	1	3.500	0215200277	63	78	9	93	66	45	10	7
40	10	1	7.144	0215200320	63	78	9	93	88.5	67.5	16	7
50	10	1	7.144	0215200306	75	93	11	110	92	69	13	7
63	10	1	7.144	0215200279	90	108	11	125	103.5	78.5	16	7
80	10	1	7.144	0215200326	105	125	13.5	145	121	92	16	9

KGF-D (FH) style single nut

Nominal diameter	Lead	Number of threads on the shaft	Ball diameter	ID number	D_1	D_4	D_5	D_6	L	L_m	L_1	L_3
d_0	P_h		D_w		g6			h13				
[mm]	[mm]		[mm]		[mm]	[MM]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
20	20	4	3.500	0215200228	36	47	6.6	58	36	15	4	11
25	10	2	3.500	0215200243	40	51	6.6	62	51	30.85	20.7	10.15
25	25	4	3.500	0215900239	40	51	6.6	62	39	19	9	10
32	20	2	5.556	0215900264	56	71	9	86	83	56	25	15
32	32	4	3.969	0215200232	56	71	9	86	42	21	12	9
40	20	2	5.556	0215200317	63	78	9	93	83	49.5	25	19.5
40	40	4	7.144	0215900282	70	85	9	100	104	72.5	25	17.5
50	20	2	6.350	0215200299	75	93	11	110	85	47	16	22
63	20	2	7.144	0215200325	95	115	13.5	135	86	42	18	24

[1] Dimension does not comply with DIN 69051; [2] Lubrication bore located anywhere on the circumference; [3] No wiper; [4] Round flange

						Nut form	Drilling pattern	Return system	Nominal axial backlash	Number of loaded turns	Modified dynamic rated load	Modified static rated load
	L_7	L_8	D_B	L_B	L_{10}						C_{am}	C_{0am}
	h13	h13										
	[mm]	[mm]	[mm]	[mm]	[mm]				[mm]		[kN]	[kN]
	10	40	M6x1	5	8	S	1	EUS	0.041	3	9.5	10.9
	10	44	M6x1	5	8	S	1	EUS	0.041	3	11.5	15.5
	10	48	M6x1	5	8	S	1	EUS	0.041	3	13.1	20.2
	12	62	M6x1	6	8	S	1	EUS	0.041	4	19.3	36.3
	12	62	M6x1	6	8	S	1	EUS	0.065	3	26.4	39
	14	70	M8x1	7	10	S	2	EUS	0.041	5	26.3	59.2
	14	70	M8x1	7	10	S	2	EUS	0.084	4	64.9	109
	16	85	M8x1	8	9	S	2	EUS	0.084	4	66.4	134.3
	18	95	M8x1	9	10	S	2	EUS	0.084	5	93.8	229.7
	20	110	M8x1	10	10	S	2	EUS	0.084	6	121.9	374.9

						Nut form	Drilling pattern	Return system	Nominal axial backlash	Number of loaded turns	Modified dynamic rated load	Modified static rated load
	L_7	L_8	D_B	L_B	L_{10}						C_{am}	C_{0am}
	h13	h13										
	[mm]	[mm]	[mm]	[mm]	[mm]				[mm]		[kN]	[kN]
	10	44	M6x1	5	8	S	1	End cap	0.041	2.8	10.8	17.5
	10	48	M6x1	5	8	S	1	End cap	0.041	6.1	24.7	53.4
	10	48	M6x1	5	8	S	1	End cap	0.041	3.6	13.1	26.0
	12	65	M6x1	6	9	S	1	End cap	0.065	5.6	47.2	83.2
	12	68	M6x1	6	8	S	1	End cap	0.047	4	19.7	39
	14	70	M8x1	7	10	S	2	End cap	0.065	5.6	52.2	103.6
	14	75	M8x1	7	10	S	2	End cap	0.084	6.4	80.0	178.6
	16	85	M8x1	8	10	S	2	End cap	0.084	5.6	78.8	188.7
	20	100	M8x1	10	10	S	2	End cap	0.084	5.6	103.1	270.8

Nuts for rolled ball screw shafts

See fold-out cover page for dimensions, form and drilling pattern

KGF-L (FL) style preloaded single nut

Nominal diameter	Lead	Number of threads on the shaft	Ball diameter	ID number	D_1	D_4	D_5	D_6	L	L_m	L_1	L_3
d_0	P_h		D_w		g6			h13				
[mm]	[mm]		[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
16	5	1	3.500	-	28	38	5.5	48	55	39.5	10	5.5
20	5	1	3.500	-	36	47	6.6	58	68.5	53	10	5.5
25	5	1	3.500	-	40	51	6.6	62	69.5	53.5	10	6
32	5	1	3.500	-	50	65	9	80	83	65	10	6
32	10	1	5.556	-	50	65	9	80	105.5	87.5	16	6
40	5	1	3.500	-	63	78	9	93	97	76	10	7
40	10	1	7.144	-	63	78	9	93	142	121	16	7
50	10	1	7.144	-	75	93	11	110	144	121	16	7
63	10	1	7.144	-	90	108	11	125	166	141	16	7

KGM-G (ZG) style single nut

Nominal diameter	Lead	Number of threads on the shaft	Ball diameter	ID number	D_1	D_{11}	L	L_{11}	D_B	L_B	L_{10}	D_{13}
d_0	P_h		D_w		h12							
[mm]	[mm]		[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
12	4	1	2.000	0215050362	25	M20x1	34	10	M6x1	5	through	-
16	5	1	3.500	0215050301	32	M30x1.5	57.5	16.5	M6x1	10.5	through	4
20	5	1	3.500	0215050307	38	M35x1.5	57.5	16.5	M6x1	10.5	through	4
25	5	1	3.500	0215050309	42	M40x1.5	63.5	17	M6x1	10.5	through	4
25	10	2	3.500	0215050317	42	M40x1.5	61	17	M6x1	10	through	4
32	5	1	3.500	0215050311	52	M48x1.5	65.5	19	M6x1	10.5	through	5
32	10	1	5.556	0215050358	52	M48x1.5	85	19	M6x1	12	through	5
40	5	1	3.500	0215050342	58	M56x1.5	67.5	19	M8x1	12	through	5
40	10	1	7.144	0215050333	65	M60x2	105.5	27	M8x1	13	through	6
40	20	2	5.556	0215050345	65	M60x2	83	27	M6x1	10	through	6
50	10	1	7.144	0215050335	78	M72x2	118	29	M8x1	13	through	6
63	10	1	7.144	0215050337	92	M85x2	118	29	M8x1	13	through	6
80	10	1	7.144	0215050346	120	M110x2	126	34	M8x1	15.5	through	8

						Nut form	Drilling pattern	Return system	Preload force+	Number of loaded turns	Modified dynamic rated load	Modified static rated load
	L_7	L_8	D_B	L_B	L_{10}						C_{am}	C_{0am}
	h13	h13										
	[mm]	[mm]	[mm]	[mm]	[mm]				[kN]		[kN]	[kN]
	10	40	M6x1	5	8	S	1	EUS	0.67	2+2	6.7	7.2
	10	44	M6x1	5	8	S	1	EUS	1.15	3+3	11.5	15.5
	10	48	M6x1	5	8	S	1	EUS	1.26	3+3	12.6	19.1
	12	62	M6x1	6	9	S	1	EUS	1.93	4+4	19.3	36.4
	12	62	M6x1	6	8	S	1	EUS	2.64	3+3	26.4	39
	14	70	M8x1	7	10	S	2	EUS	2.63	5+5	26.3	59.2
	14	70	M8x1	7	10	S	2	EUS	6.49	4+4	64.9	109
	16	85	M8x1	8	10	S	2	EUS	6.64	4+4	66.4	134.3
	18	95	M8x1	9	10	S	2	EUS	9.38	5+5	93.8	229.7

		Return system	Nominal axial backlash	Number of loaded turns	Modified dynamic rated load	Modified static rated load
	L_{13}				C_{am}	C_{0am}
	[mm]		[mm]		[kN]	[kN]
	-	EUS	0.024	3	3.8	4.3
	22	EUS	0.041	4	12.1	14.5
	22	EUS	0.041	4	14.8	20.7
	23	EUS	0.041	5	20.4	33.7
	21	MUS	0.041	6	19.9	31.8
	23	EUS	0.041	5	23.3	45.5
	43	EUS	0.065	4	33.8	52
	22.5	EUS	0.041	5	26.3	59.2
	43	EUS	0.084	5	78.6	136.2
	33	MUS	0.065	4	34.2	57.2
	53	EUS	0.084	6	97.8	213.2
	53	EUS	0.084	6	109.7	275.6
	53	EUS	0.084	6	121.9	375

[1] Dimension does not comply with DIN 69051
[2] Lubrication bore located anywhere on the circumference
[3] No wiper
[4] Round flange

Nuts for rolled ball screw shafts

See fold-out cover page for dimensions, form and drilling pattern

Nominal diameter	Lead	Number of threads on the shaft	Ball diameter	ID number	KGF-D style single nut							
												
d_0	P_h		D_w		D_1	D_4	D_5	D_6	L	L_m	L_1	L_3
					g6			h13				
[mm]	[mm]		[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
12	10	2	2.000	0215200295	24	32	4.5	40	27.5	14.5	9.5	5
16	5	1	3.500	0215200048	28	38	5.5	48	42	32	10	0
16	10	2	3.000	0215200168	28	38	5.5	48	55	45	10	0
20	5	1	3.500	0215200185	36	47	6.6	58	42	32	10	0
25	5	1	3.500	0215200051	40	51	6.6	62	42	32	10	0
25	10	2	3.500	0215200175	40	51	6.6	62	55	45	16	0
25	20	4	3.500	0215200200	40	51	6.6	62	35	14.5	4	10.5
25	25	5	3.500	0215200201	40	51	6.6	62	35	17	9	8
25	50	5	3.500	0215200195	40	51	6.6	62	58	38	10	10
32	5	1	3.500	0215200054	50	65	9	80	55	43	10	0
32	10	1	7.144	0215200087	53 [1]	65	9	80	69	57	16	0
32	20	2	5.000	0215200191	53 [1]	65	9	80	80	68	16	0
32	32	4	3.969	0215200235	50	65	9	80	42	21	12	9
40	5	1	3.500	0215200056	63	78	9	93	57	43	10	0
40	10	1	7.144	0215200356	63	78	9	93	71	57	16	0
40	20	2	5.000	0215200206	63	78	9	93	80	66	16	0
40	40	4	3.500	0215200199	63	78	9	93	85	63.5	16	7.5
50	10	1	7.144	0215200074	75	93	11	110	95	79	16	0
50	20	2	7.144	0215200212	85 [1]	103 [1]	11	125	95	77	22	0
63	10	1	7.144	0215200086	90	108	11	125	97	79	16	0
63	20	2	7.144	0215200240	95	115	13.5	135	99	79	25	0

[1] Dimension does not comply with DIN 69051; [2] Lubrication bore located anywhere on the circumference; [3] No wiper; [4] Round flange

						Nut form	Drilling pattern	Return system	Nominal axial backlash	Number of loaded turns	Modified dynamic rated load	Modified static rated load
	L_7	L_8	D_B	L_B	L_{10}						C_{am}	C_{0am}
	h13	h13										
	[mm]	[mm]	[mm]	[mm]	[mm]				[mm]		[kN]	[kN]
	8	26	M5x0.8	4	6	S	3	End cap	0.024	4	4.9	8
	10	40	M6x1	5	10	E	1	EUS	0.041	3	9.3	13.1
	10	40	M6x1	5	10	E	1	Channel	0.041	6	15.4	26.5
	10	44	M6x1	5	10	E	1	Channel	0.035	3	10.5	16.6
	10	48	M6x1	5	10	E	1	EUS	0.041	3	12.3	22.5
	10	48	M6x1	5	10	E	1	Channel	0.041	3	13.2	25.3
	10	48	M6x1	5	8	S	1	End cap	0.041	4	13	23.3
	10	- [4]	M6x1	5	8	S	1	End cap	0.041	5	16.7	32.2
	10	48	M6x1	5	8	S	1	End cap	0.041	5	15.4	31.7
	12	62	M6x1	6	10	E	1	EUS	0.041	5	21.5	49.3
	12	62	M8x1	6	10	E	1	EUS	0.084	3	33.4	54.5
	12	62	M6x1	6	10	E	1	Channel	0.059	4	29.7	59.8
	12	62	M6x1	6	8	S	1	End cap	0.047	4	19.7	37.4
	14	70	M6x1	7	10	E	2	EUS	0.041	5	23.8	63.1
	14	70	M8x1	7	10	E	2	EUS	0.084	3	38	69.1
	14	70	M8x1	7	10	E	2	Channel	0.059	4	33.3	76.1
	14	- [4]	M8x1	7	10	S	2	End cap	0.041	8	35	101.9
	16	85	M8x1	8	10	E	2	EUS	0.084	5	68.7	155.8
	18	95	M8x1	9	10	E	2	Channel	0.084	4	60	136.3
	18	95	M8x1	9	10	E	2	EUS	0.084	5	76	197
	20	100	M8x1	10	10	E	2	Channel	0.084	4	78.4	171.3

Nuts for rolled ball screw shafts

See fold-out cover page for dimensions, form and drilling pattern

Nominal diameter	Lead	Number of threads on the shaft	Ball diameter	ID number	KGF-N style single nut							
												
d_0	P_h		D_w		D_1	D_4	D_5	D_6	L	L_m	L_1	L_3
					g6			h13				
[mm]	[mm]		[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
16	5	1	3.500	0215200047	28	38	5.5	48	44	32	8	0
20	5	1	3.500	0215200049	32	45	7	55	44	32	8	0
20	20	4	3.500	0215200181	35	50	7	62	30	12	4	8
20	50	5	3.500	0215200211	35	50	7	62	56	37	10	9
25	5	1	3.500	0215200050	38	50	7	62	46	32	8	0
32	5	1	3.500	0215200053	45	58	7	70	59	43	10	0
32	10	1	7.144	0215200075	53	68	7	80	73	57	10	0
32	40	4	3.500	0215200210	53	68	7	80	45	21.5	14	7.5
40	5	1	3.500	0215200055	53	68	7	80	59	43	10	0
40	10	1	7.144	0215200353	63	78	9	95	73	57	10	0
50	10	1	7.144	0215200041	72	90	11	110	97	79	10	0
63	10	1	7.144	0215200058	85	105	11	125	99	79	10	0
80	10	1	7.144	0215200028	105	125	14	145	101	79	10	0

[1] Dimension does not comply with DIN 69051; [2] Lubrication bore located anywhere on the circumference; [3] No wiper; [4] Round flange

						Nut form	Drilling pattern	Return system	Nominal axial backlash	Number of loaded turns	Modified dynamic rated load	Modified static rated load
	L_7	L_8	D_B	L_B	L_{10}						C_{am}	C_{0am}
	h13	h13										
	[mm]	[mm]	[mm]	[mm]	[mm]				[mm]		[kN]	[kN]
	12	- [4]	M6x1	6	8	E	4	EUS	0.041	3	9.3	13.1
	12	- [4]	M6x1	6	8	E	4	EUS	0.041	3	10.5	16.6
	10	- [4]	M6x1	5	8	S	4	End cap	0.041	4	11.6	18.4
	10	- [4]	M6x1	5	8	S	4	End cap	0.041	5	13	24.6
	14	- [4]	M6x1	7	8	E	4	EUS	0.041	3	12.3	22.5
	16	- [4]	M6x1	8	8	E	4	EUS	0.041	5	21.5	49.3
	16	- [4]	M8x1	8	8	E	4	EUS	0.084	3	33.4	54.5
	16	- [4]	M6x1	8	10	S	4	End cap	0.041	4	14.9	32.4
	16	- [4]	M6x1	8	8	E	4	EUS	0.041	5	23.8	63.1
	16	- [4]	M8x1	8	8	E	4	EUS	0.084	3	38	69.1
	18	- [4]	M8x1	9	8	E	4	EUS	0.084	5	68.7	155.8
	20	- [4]	M8x1	10	8	E	4	EUS	0.084	5	76	197
	22	- [4]	M8x1	11	8	E	4	EUS	0.084	5	86.25	262.41

Nuts for rolled ball screw shafts

See fold-out cover page for dimensions, form and drilling pattern

Nominal diameter	Lead	Number of threads on the shaft	Ball diameter	ID number	KGM-D style single nut									Nut form	Return system	Nominal axial backlash	Number of loaded turns	Modified dynamic rated load	Modified static rated load
d_0	P_h		D_w		D_1	L	L_3	D_B	L_B	L_9	L_{12}	B	T					C_{am}	C_{0am}
					g6							P9							
[mm]	[mm]		[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]			[mm]		[kN]	[kN]
12	10	2	2.000	0215050328	24	27.5	5	2	7	8.75	10	3	1.8	S	End cap	0.024	4	4.9	8
16	5	1	3.500	0215050112	28	34	-	3	7	7	20	5	2	E	EUS	0.041	3	9.3	13.1
16	10	2	3.000	0215050209	28	50	-	3	7	15	20	5	2	E	Channel	0.035	6	15.4	26.5
20	5	1	3.500	0215050258	36	34	-	3	7	7	20	5	2	E	Channel	0.041	3	10.5	16.6
25	5	1	3.500	0215050114	40	34	-	3	7	7	20	5	2	E	EUS	0.041	3	12.3	22.5
25	10	2	3.500	0215050245	40	45	-	3	7.5	12.5	20	5	2	E	Channel	0.041	3	13.2	25.3
25	20	4	3.500	0215050268	40	35	10.5	1.5	14	11.5	12	5	3	S	End cap	0.041	4	13	23.3
25	25	5	3.500	0215050252	40	35	8	1.5	11.5	11	13	5	3	S	End cap	0.041	5	16.7	32.2
25	50	5	3.500	0215050263	40	58	10	1.5	17	19	20	5	3	S	End cap	0.041	5	15.4	31.7
32	5	1	3.500	0215050118	50	45	-	3	7.5	8	30	6	2.5	E	EUS	0.041	5	21.5	49.3
40	5	1	3.500	0215050120	63	45	-	3	7.5	8	30	6	2.5	E	EUS	0.041	5	23.8	63.1
40	10	1	7.144	0215050366	63	60	-	4	10	15	30	6	2.5	E	EUS	0.084	3	38	69.1
40	20	2	5.000	0215050270	63	70	-	3	7.5	20	30	6	2.5	E	Channel	0.059	4	33.3	76.1
40	40	4	3.500	0215050276	63	85	7.5	1.5	15	27.5	30	6	3.5	S	End cap	0.041	8	35	101.9
50	10	1	7.144	0215050110	75	82	-	4	11	23	36	6	2.5	E	EUS	0.084	5	68.7	155.8
63	10	1	7.144	0215050109	90	82	-	4	11	23	36	6	2.5	E	EUS	0.084	5	76	197
63	20	2	7.144	0215050297	95	82	-	4	10	23	36	6	2.5	E	Channel	0.084	4	78.4	171.3

[1] Dimension does not comply with DIN 69051; [2] Lubrication bore located anywhere on the circumference; [3] No wiper; [4] Round flange

KGM-N style single nut

Nominal diameter	Lead	Number of threads on the shaft	Ball diameter	ID number										Nut form	Return system	Nominal axial backlash	Number of loaded turns	Modified dynamic rated load	Modified static rated load
d_0	P_h		D_w		D_1	L	L_3	D_B	L_B	L_9	L_{12}	B	T					C_{am}	C_{0am}
					g6							P9							
[mm]	[mm]		[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]			[mm]		[kN]	[kN]
12	4	1	2.000	0215050293	20	24	-	0	0	5	14	3	1.8	E [3]	Channel	0.024	3	4.9	6.6
12	5	1	2.000	0215050250	20	24	-	0	0	5	14	3	1.8	E [3]	Channel	0.024	3	4.4	6.8
20	5	1	3.500	0215050115	32	34	-	3	7	7	20	5	2	E	EUS	0.041	3	10.5	16.6
20	20	4	3.500	0215050239	35	30	8	1.5	11.5	9	12	5	3	S	End cap	0.041	4	11.6	18.4
20	50	5	3.500	0215050279	35	56	9	1.5	16	18	20	5	3	S	End cap	0.041	5	13	24.6
25	5	1	3.500	0215050113	38	34	-	3	7	7	20	5	2	E	EUS	0.041	3	12.3	22.5
32	5	1	3.500	0215050117	45	45	-	3	7.5	8	30	6	2.5	E	EUS	0.041	5	21.5	49.3
32	10	1	7.144	0215050107	53	60	-	4	10	15	30	6	2.5	E	EUS	0.084	3	33.4	54.5
32	20	2	5.000	0215050255	53	70	-	3	7.5	20	30	6	2.5	E	Channel	0.059	4	29.7	59.8
32	40	4	3.500	0215050275	53	45	7.5	1.5	13	10	25	6	4	S	End cap	0.041	4	14.9	32.4
40	5	1	3.500	0215050119	53	45	-	3	7.5	8	30	6	2.5	E	EUS	0.041	5	23.8	63.1
50	10	1	7.144	0215050111	72	82	-	4	11	23	36	6	2.5	E	EUS	0.084	5	68.7	155.8
50	20	2	7.144	0215050283	85	82	-	4	10	23	36	6	2.5	E	Channel	0.084	4	60	136.3
63	10	1	7.144	0215050108	85	82	-	4	11	23	36	6	2.5	E	EUS	0.084	5	76	197
80	10	1	7.144	0215050142	105	82	-	4	11	23	36	8	3	E	EUS	0.084	5	86.3	262.4

[1] Dimension does not comply with DIN 69051; [2] Lubrication bore located anywhere on the circumference; [3] No wiper; [4] Round flange