

PRODUCT CATALOGUE





We have been manufacturing ball screws since 1967 and we deliver them almost all over the world. To provide our customers with the highest quality of the products and co-operation, we keep investing a lot of effort in continuous improvement. Thanks to this effort, every year we fight for the top positions in the leading innovative competitions. A certificate of quality in compliance with EN ISO 9001:2008 proves that our quality management system is at a high level. We also aim for maximum support of the industrial machinery

development activities in our area, for which we participate in the following associations:



Association of
Engineering
Technology



CECIMO



Brno Regional Chamber
of Commerce

OUR CUSTOMERS APPRECIATE ESPECIALLY THE FOLLOWING CHARACTERISTICS:



Quality

- We use new state-of-the-art technologies for manufacture and testing.
- Every ball screw undergoes substantial in-process and output inspections.
- We archive measured values for every product.



Speed of delivery

- Our usual lead times are within six weeks from order placement.
- In exceptional cases we are able to manufacture and deliver in five days from order placement



Reliability

- We always meet the agreed delivery deadlines.
- In case of customer doubt we immediately address the situation on the spot.



Development and courage

- We are not afraid of designing and implementing solutions for untypical applications.
- We take up full responsibility for our solutions.
- Thanks to our in-house development department we are very quick and flexible in this designing.



Customer orientation

- We produce on the basis of client drawings.
- We are able to produce matrices with smaller stop dimensions than required by ISO 3408.
- We like to actively engage in the proposed movement axes of our customers, helping them in correct dimensioning and cost-saving solutions.



Service

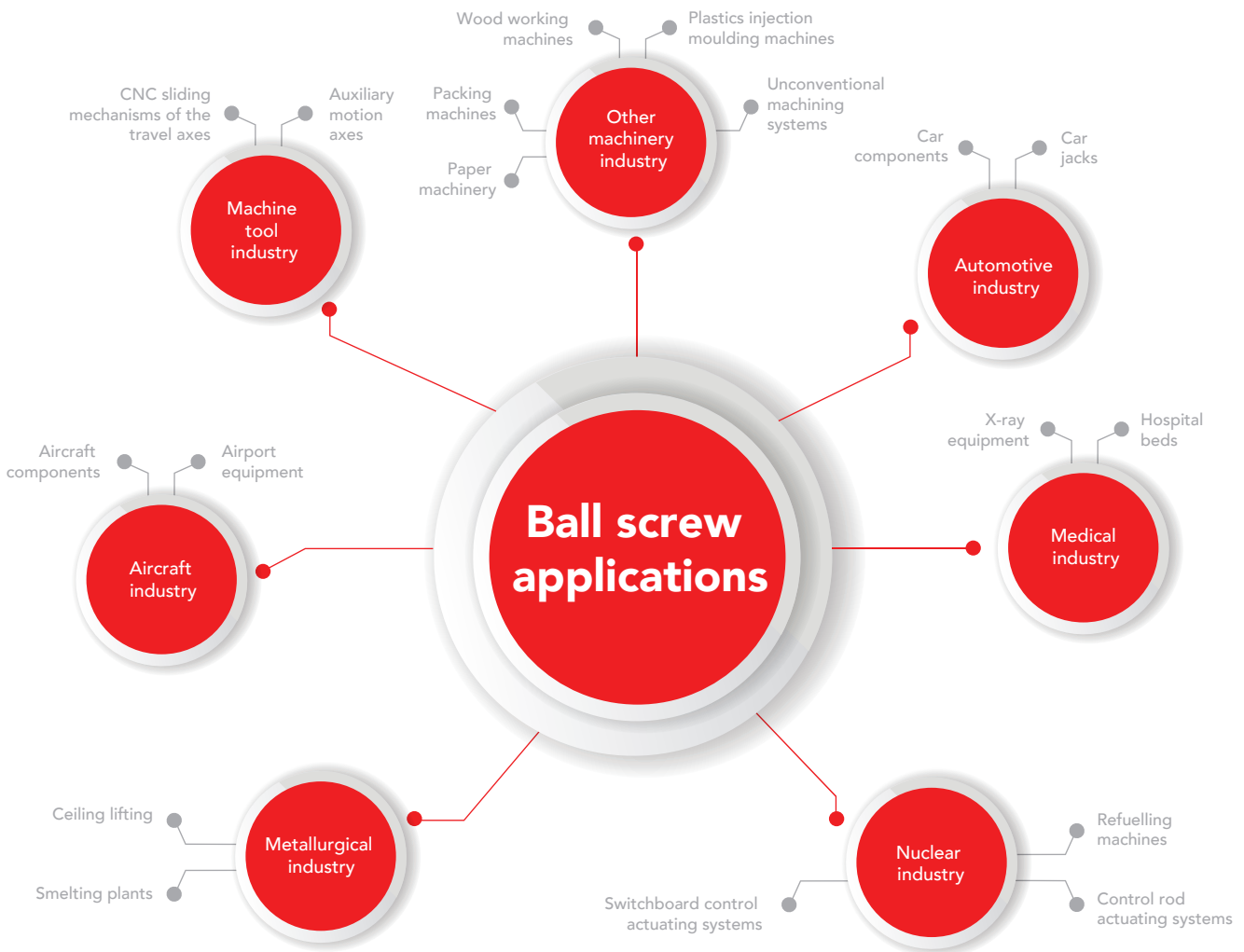
- We repair older ball and trapezoidal screws.
- In the case of an irreparable defect we are able to return the defective ball screw in short-term operation with an offer of a replacement made according to the original screw.

GENERAL INFORMATION ON BALL SCREWS, FAQs

2.1 Application and use

Ball screws (hereinafter BS) are structural elements, which transmit the rotary movement to straight movement with high efficiency (these screws are not self-locking). They feature high rigidity, accuracy and durability.

The ball screws are used in various machinery sectors, especially due to their high efficiency ensured by a low rolling resistance. BSs are most often used in the following sectors:



2.2 Ball screw assembly

In principle, the ball screw assembly consists of:

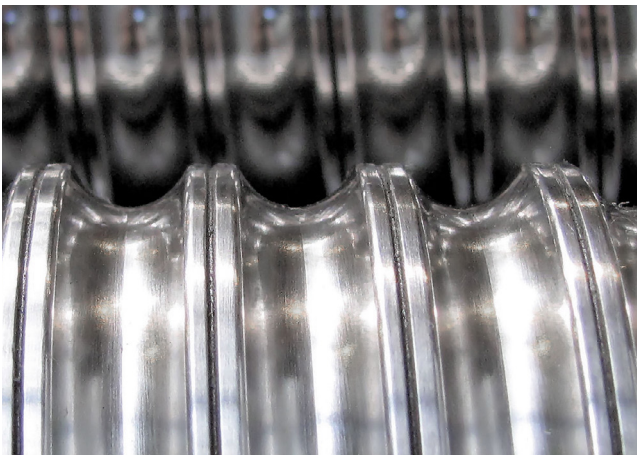
- Ball screw shaft
- Ball nut (or a double nut), including recirculating, preloading, sealing and lubricating elements
- Balls



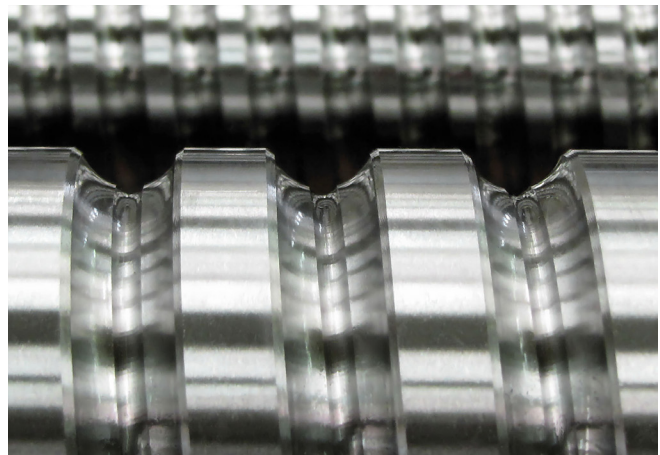
2.3. Standard manufacturing technology for making the ball screw thread

Accuracy and quality of the ball screws are largely dependent on the manufacturing technology selected. Generally, the following technologies are mainly used to produce the ball screw thread:

- Grinding (achieved accuracy class of the ball screw shaft thread pitch up to IT1).
- Rolling (achieved accuracy class of the ball screw shaft thread pitch up to T5).



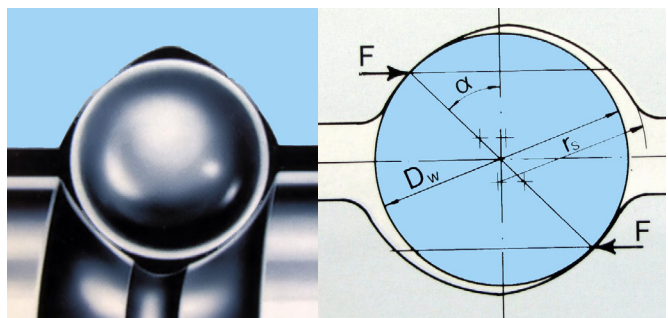
Rolled thread



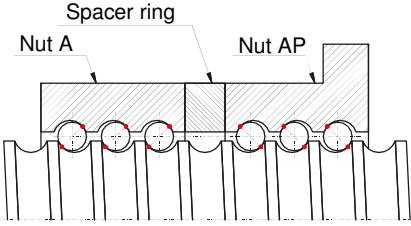
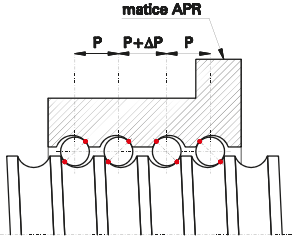
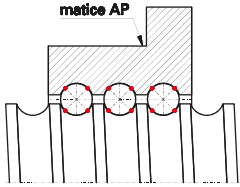
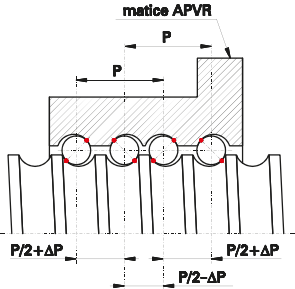
Ground thread

2.4 Ball screw profile

To achieve the maximum transmission efficiency, it is necessary to make an ideal profile of the ball screw thread. The profile is not made of one radius but of two radii with offset (so called gothic arch, see the figure below). This profile shape offers an ideal efficiency to load capacity (ratings) ratio of the ball screw.



2.5 Ball screw preloading methods

Preloading method	Used on the ball nut units	Preloading method diagram
Preload using a spacer ring	AP+A, A+A, B+B+K	
Preload using differential nut thread pitch	APR	
Preload using the ball size selection	APK	
Preload using the difference between individual threads (for multiple-start ball screws)	APVR	

2.6 Materials used for manufacturing of the ball screws and their heat treatment

To manufacture the ball screw shafts, we use steel with the grade of **42CrMo4**, or **CF53** and **14 260** (according to the CSN standard). To manufacture the ball nuts, the most often used steel grade is **14 209** or **14 109** (according to the CSN standard).

Nuts and the threaded part of the shaft are hardened to **58-60 HRC**. The minimum strength of the core and non-hardened parts of the shafts is **Rm = 650 MPa**. The final

quality is tested by long term durability tests followed by the analysis of the functional parts of the transmission assembly when the specified wear limits are achieved. Based on the achieved information and knowledge of the operating conditions, it is possible to guarantee the actual product lifetime, or to propose an optimum product for the conditions given.

2.7 Load capacity (ratings), rigidity and recirculation system lifetime

Another main technical parameter for selection of the ball screw is its load capacity. There are two types of the ball screw load capacity:

a) Static load capacity (C_0) is a static load, which corresponds to the permanent deformation of the ball and the running surface in the most stressed touch point; equal to 0.0001 of the ball diameter D_w .

b) Dynamic load capacity (C_a) is a permanent, invariable load, which may be (in theory) transmitted by the ball screw with the basic lifetime parameter $L_{10} = 1 \times 10^6$ revolutions.

The following equation is used to determine the **basic lifetime**, which is defined as number of shaft revolutions in relation to the nut body, performed with 90% reliability and with the force F applied, until the first signs of the material fatigue or functional recirculation elements are observed.

$$L_{10} = \left(\frac{C_a}{F} \right) \times 10^6 \text{ (rotation)}$$

Rigidity of the ball transmission (R) is defined as a ratio of the external force applied (F_a) and the nut axial shift Δ on the ball screw shaft: $R = F_a / \Delta$ (N/ μ m)

To achieve high rigidity and ensure axial play elimination, so called preload F_v is applied to the transmission chain, so that the ratio of the loading axial force F_a , which should not cause any play in the transmission yet, and **preload F_v** , satisfies the following condition: $F_a / F_v = 2,83$

To determine the force F_a and thus the preload value, it is necessary to consider this in a reasonable manner with respect to the time slope of the ball screw load, since the **preload reduces the transmission assembly lifetime**.

2.8 Ball screw mounting accuracy

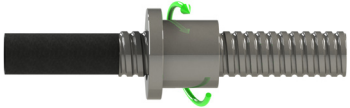

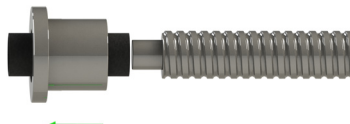
The ball screws require accurate and stiff mounting. The ball screw and guiding surface axes must be parallel within 0.02 mm / 1,000 mm and the ball nut unit must ensure its perpendicularity with respect to the longitudinal axis within 0.01 mm / 100 mm. The ball nut units may be loaded only in the axial direction.

The long, narrow ball screws must be designed so that their movement assembly can compensate shaft deflections resulting from its weight (supports or the driven nut design modifications).

2.9 Ball nut mounting and removal procedure

If the nut needs to be removed from the delivered ball screw and then mounted back again, proceed as follows (please keep in mind that in the event of ball screw da-

mage due to unprofessional installation or removal, the warranty on the damaged product becomes invalid):

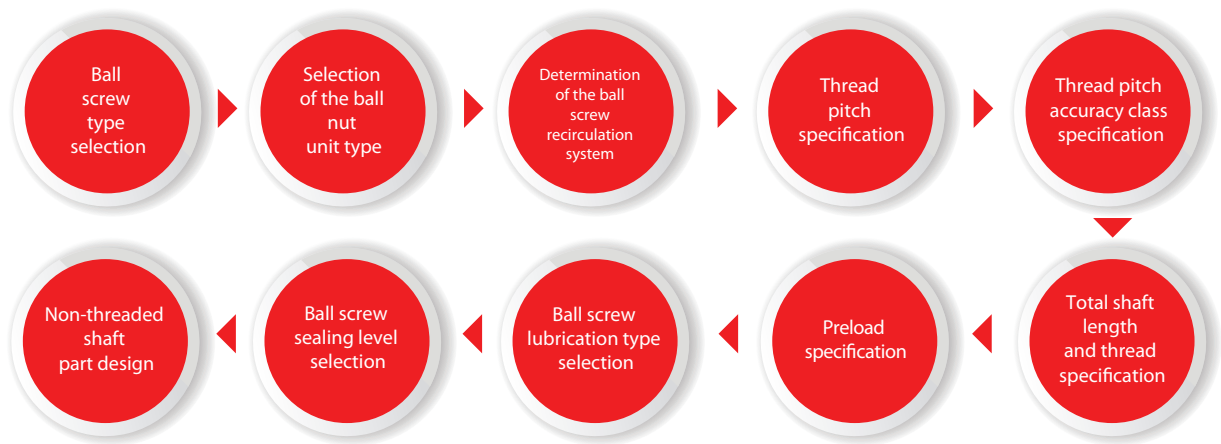
Step #	Activity description	Procedure diagram
1	To avoid pouring the balls out when the nut is removed, it is necessary to push the assembly tube towards the shaft thread face. The tube diameter can be found in the tables for individual versions. Please contact our technical support in order to finding the tube diameter.	
2	Slowly rotate the ball nut to move it to the tube.	
3	Now the nut with the tube may be moved from the ball screw. Please keep in mind that if the assembly tube is pulled out from the ball nut, the balls will fall out of the nut unit.	

NEW BALL SCREW DESIGN WIZARD

A complete configurator of ball screws is freely available on our website. Partial steps of this configurator are shown below.

The selection of the ball screw version from the offered pro-

duction range is driven mainly by the functional specification, required features and operating conditions. If you need any assistance with the design proposal, please contact our technical support, who will help you with the design proposal.



3.1 Ball screw type selection

At the beginning of the ball screw design it is necessary to select the ball screw type carefully. This selection should

be based on the requirements on the ball screw accuracy, motion quality, price, etc. There are four basic variants:



Grounded screws for precise applications

- Ground thread
- Accuracy classes: IT1, IT3, IT5
- Preloaded and non-preloaded nuts
- Length up to 15,500 mm
- Diameter up to 200 mm



Basic quality for fair price

- Rolled thread
- Accuracy classes: T5 and T7
- Preloaded and non-preloaded nuts
- Length up to 8,000 mm
- Diameter up to 100 mm



Power with no compromise

- High force transmission
- Ground thread
- Accuracy classes: IT1, IT3, IT5
- Preloaded and non-preloaded nuts
- Length up to 12,000 mm
- Diameter up to 200 mm










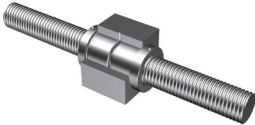

When customised performance requirements are necessary

- Telescopic Ball Screws
- Threadless Ball Screws
- Ball Screws with Ball Cage
- Ball Screws with Driven Nuts



3.2 Selection of the ball nut unit type


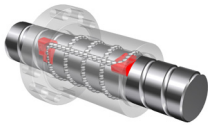


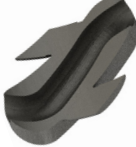

Description	Marking	Picture
Non-preloaded nut without flange	A	
Non-preloaded nut with flange	AP	
Double preloaded nut without flange	A+A	
Double preloaded nut with flange	AP+A	

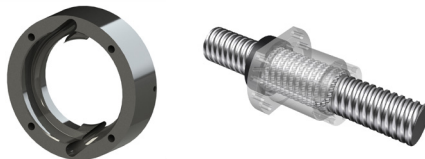
Description	Marking	Picture
Preloaded nut with flange	APR	
End cap return high-speed (fast-running) preloaded nut with flange	APVR	
Non-preloaded nut with flange for shafts with rolled thread	APE	
Double preloaded nut in a cube case	B+B+K	
Driven nut with inserted bearings	RMV	

3.3 Determination of the ball screw recirculation system

Nominal thread diameter d_0 is selected in the tables (chapter 4) based on the dimensions available and the required application. Nominal thread diameter determines the ball screw shaft column strength depending on

its length and support. The nominal thread diameter d_0 is used to determine its maximum speed n_{max} related to the circulation velocity of the balls in the recirculation and lubrication system used.

Recirculation system name	Maximum speed coefficient	Version marking	Recirculation unit design	Recirculation system function	Recirculation system information
Axially inserted segment	$n_{max} = \frac{125\,000}{d_0}$	AX			Housing dimensions in accordance with ISO 3408, a higher load capacity with the same nut length compared to the internal return system.
Radially inserted segment	$n_{max} = \frac{125\,000}{d_0}$	RS			Housing dimensions in accordance with ISO 3408, a higher load capacity with the same nut length compared to the internal return system.
Internal return	$n_{max} = \frac{100\,000}{d_0}$	LU			Housing dimensions smaller than in accordance with ISO 3408, a lower load capacity with the same nut length compared to the return systems with radially or axially inserted segments.

Recirculation endcap	$n_{max} = \frac{125\,000}{d_0}$	VI		Housing dimensions bigger than in accordance with ISO 3408, a return system suitable for high pitches and multiple-start ball screws.
Recirculation shim	$n_{max} = \frac{70\,000}{d_0}$	PR		Housing dimensions in accordance with ISO 3408, suitable for very small designs.

3.4 Thread pitch specification

Thread pitch P determines the nut travel per one rotation of the ball screw shaft. The standard offered combinati-

ons of the thread diameter and pitch can be found in the tables (see the chapter 4).

3.5 Thread pitch accuracy class specification

Thread accuracy class - the ball screws are offered in several **accuracy classes**, which are described in more detail in the **ISO 3408 standard**. The highest accuracy class are often used in cases where very precise positioning is required (e.g. machine tools). Lower accuracy classes are often used for applications where the positioning precision requirements are not high (e.g. manipulators). The accuracy classes can be found in the table below:

Pitch tolerance on the thread length of 300 mm (mm)	Ground thread			Rolled thread	
	IT1	IT3	IT5	T5	T7
	0.006	0.012	0.023	0.023	0.052

3.6 Shaft and thread lengths

The total shaft and thread lengths are among the most important parameters of the complete ball screw. The shaft lengths offered are technologically limited and

they are directly related to the thread accuracy and other parameters selected. The length limitations are described in the table below.

Recommended length of the thread (mm)	Class Accuracy	Nominal screw diameter (mm)													
		12	16	20	25	32	40	50	63	80	100	125	140	160	200
Ground thread	IT1	400	500	1200	1800	2000	4000	4500	5000	5000	5000	5000	4850	4850	4800
	IT3	500	600	1500	3000	3500	4500	5000	8250	8250	8250	8250	6000	6000	6000
	IT5	600	700	1800	3600	4000	5000	7500	12000	13000	15000	15500	6000	6000	6000
Rolled thread	T5	3000	5600	5600	5600	5600	5600	5600	5600	5600	-	-	-	-	-
	T7	3000	5600	5600	5600	5600	5600	5600	5600	5600	-	-	-	-	-

If the table above does not include the required design, we may not be able to provide this design. In this case, please contact our technical support, who will be pleased to assist you.

3.7 Preload specification

Based on the positioning precision and rigidity required, the proper ball nut mating on the shaft method should be selected. The higher the preload, the shorter ball screw transmission lifetime. The following options are available as standard:

- Fitted nut with axial play
- Fitted nut with preload corresponding to 3% of the dynamic load ratings (suitable for precise positioning and less loaded screws)

- Fitted nut with preload corresponding to 5% of the dynamic load ratings (suitable for precise positioning and moderately loaded screws)
- Fitted nut with preload corresponding to 10% of the dynamic load ratings (suitable for precise positioning and more loaded screws)

3.8 Ball screw lubrication type selection

The ball screws are lubricated by oil or grease. The lubrication method and the lubricants used are the same as for rolling bearings. The basic amount of lubricant for the specific ball nut unit is specified and recommended on request.

Oil lubrication

In general, the ball screws are lubricated with the same oils as the rolling bearings, i.e. with transmission or bearing mineral oils with the minimum viscosity of **50 mm²/s** at the temperature of **40 °C**. The oil amount is dependent on the operating conditions.

Grease lubrication

If the ball screw is lubricated by grease, the **class 2 acc. to DIN 51825** is recommended. The following standard greases can be used:

- KLÜBER Isoflex NBU 15
- OPTIMOL OPTITEMP TT1


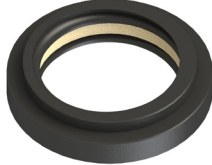

During the normal machine operation, the grease should be added every 6 to 10 months. Never mix the greases with different properties during the machine operation.

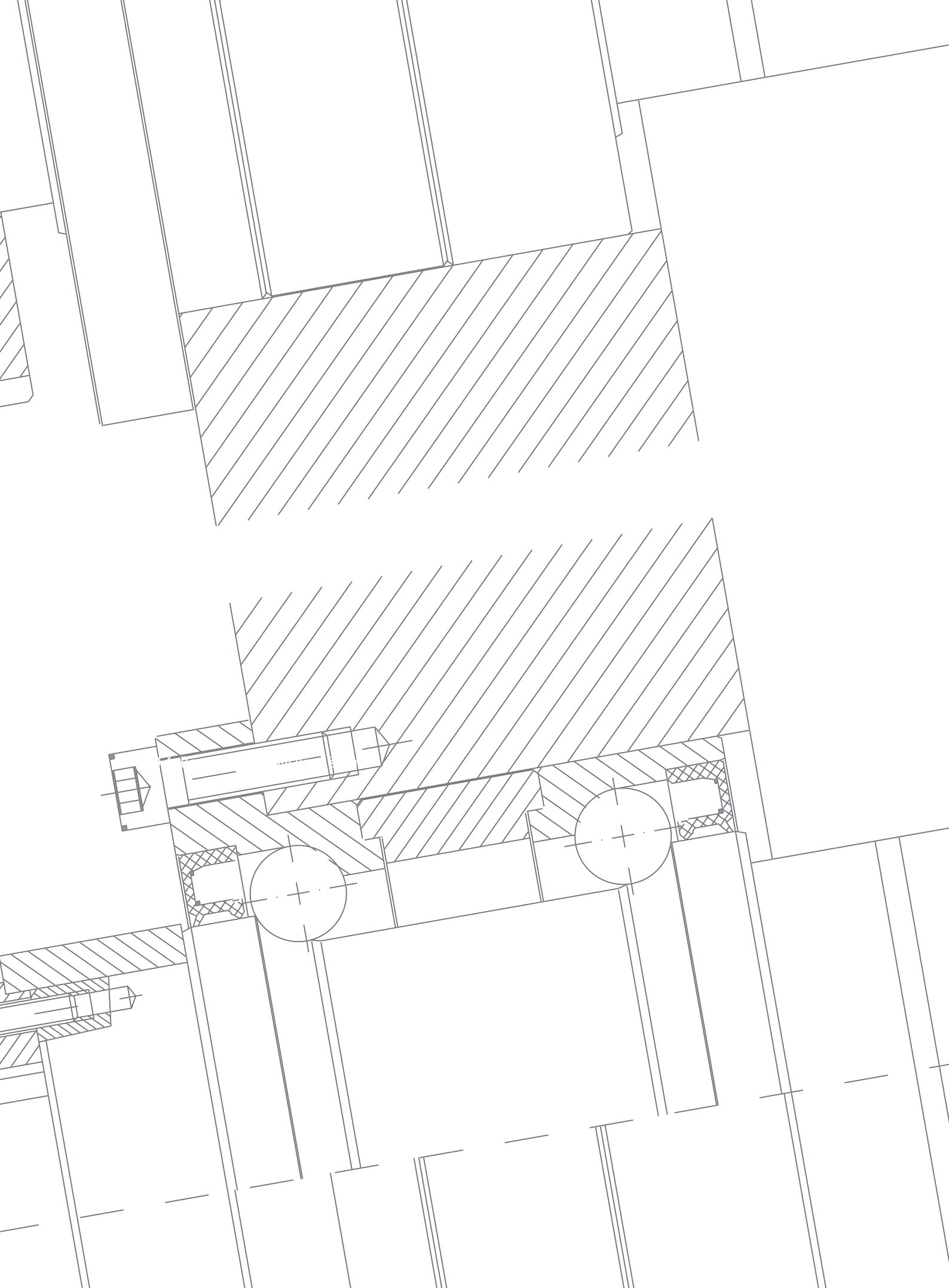
3.9 Ball screw sealing level selection

The sealing level is dependent on the working environment of the ball screw. There are 3 standard sealing types available:

3.10 Non-threaded shaft part design

The standard shaft ends are shown in the „Standard ball screw ends“ catalogue. Other design proposals of the non-threaded ends based on the customer's requirements are possible. If you are interested in help with the design proposal, our technical support department will be pleased to assist you.

Description	Picture
Polyamide wiper ring	
Polyamide wiper ring with felt ring	
Polyamide wiper ring with felt ring and brush	



BALL SCREW DESIGN



**Precise
Screw**

Basic technical parameters:

- Diameter from 12 to 200 mm
- pitch from 3 to 50 mm, length up to 15.5 m
- accuracy classes IT1 to IT5
- Minimum strength of the shaft material is $R_m = 650 \text{ MPa}$
- Efficiency approx. 94-97 %
- Operating temperature $-40 \text{ }^\circ\text{C}$ to $+80 \text{ }^\circ\text{C}$ (acc. to the lubricant type)

Application:

- Tool and forming machines
- Positioning robots
- Automotive and aircraft industry
- And others

4.1 Precise screw

This type of ball screws is mostly used for the practical purposes due to its versatility, excellent technical parameters and wide range of variants. Usually they are screws with ground threads.

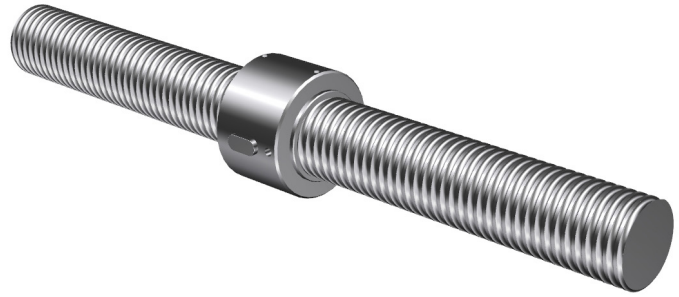
Category characteristics:

- Precise positioning screws
- Wide choice of sizes and pitches
- Standard geometrical and working accuracy, lifetime and load ratings in accordance with ISO 3408
- Delivered with the required preload adjusted



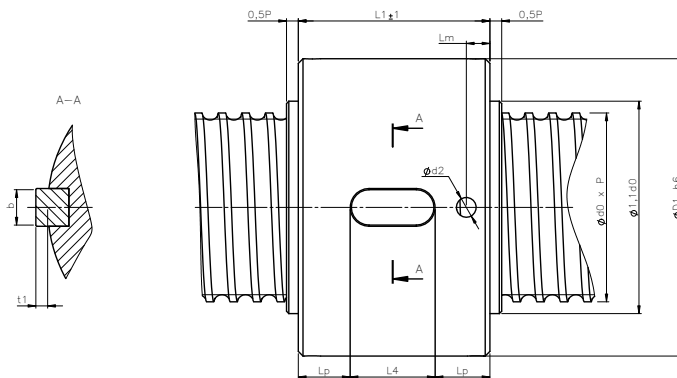
**Quality,
accuracy**

NUT TYPE A



TYPE	P	D _w	RECIR- CULA- TION	i	D ₁	d ₂	b	t ₁	L _n	L ₁	L _p	L ₁	C _{0am}	C _{0am}	R
	mm	mm		-	-	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN
K12	3	2,000	PR	1,7	24	2	5	1,3	3	8	5	18	3 309	4 998	203
				2,7						10	5,50	21	4 926	7 938	316
	4	2,500	PR	1,7	24	2	5	1,3	3	10	6,50	23	4 615	6 534	215
K16	3	2,000	PR	2,7	27	2	5	1,3	3	10	8,50	27	6 870	10 377	334
				3,7						10	7,00	24	7 344	14 555	535
	4	2,500	PR	2,7	29	2	5	1,3	3	12	7,50	27	7 997	14 136	429
	5	3,175	PR	3,7	32	2	5	1,3	3	12	9,50	31	10 486	19 371	579
				1,7						12	7,50	27	7 513	11 550	290
				2,7						16	8,50	32	11 184	18 344	451
4				10						5,50	21	6 271	13 729	485	
K20	3	2,000	PR	2,7	36	3	5	1,3	3	10	5,50	21	6 271	13 729	485
				3,7						12	6,00	24	8 223	18 814	656
	4	2,500	PR	2,7	36	3	5	1,3	3	12	7,50	27	8 899	17 891	516
	5	3,500 (P/L)	LU	3	36	3	5	1,3	3	16	7,50	31	11 669	24 518	696
				4						16	10,00	36	13 714	23 388	512
4				16						12,50	41	17 564	31 184	673	
K25	3	2,000	PR	2,7	40	3	5	1,3	6	10	5,50	21	6 783	16 861	568
				3,7						10	7,00	24	8 894	23 106	767
	4	2,500	PR	2,7	40	3	5	1,3	6	10	9,00	28	9 965	23 125	632
	5	3,500 (P/L)	LU	3,7	40	3	5	1,3	6	12	10,00	32	13 066	31 690	854
				3						16	10,00	36	16 010	31 617	654
				4						16	12,50	41	20 504	42 156	860
				4						12	11,00	34	16 543	33 908	692
	6	3,500	RS	2,8	40	3	5	1,3	6	16	12,00	40	21 512	46 017	926
	8	3,500	RS	3,8	40	3	5	1,3	6	16	13,00	42	16 498	33 836	689
				3,8						20	15,00	50	21 453	45 921	922
3				20						20,00	60	15 893	31 440	646	
3				20						20,50	61	10 929	21 225	430	
10	3,500	LU	3	40	3	5	1,3	10	25	28,00	81	15 980	33 017	655	
20	3,500	RS	1,8*	40	3	5	1,3	10	18	8,50	35	18 056	41 591	812	
K32	5	3,500	LU	2,8*	50	4	8	2,5	6	18	11,50	41	23 125	55 455	1 069
				3						18	16,50	51	32 773	83 182	1 573
				4						18	10,50	39	22 229	50 370	872
	6	3,969	RS	2,8	50	4	8	2,5	6	18	13,50	45	28 905	68 359	1 167
				3,8						18	16,50	51	35 336	86 348	1 458
				4,8						18	12,50	43	22 191	50 304	870
	8	3,969	RS	2,8	50	4	8	2,5	6	18	16,50	51	28 856	68 270	1 164
				3,8						18	20,50	59	35 276	86 236	1 454
				4,8						18	24,50	67	37 128	66 242	729
	10	6,350 (P/L)	LU	3	50	4	8	2,5	6	32	23,00	78	47 549	88 323	1 042
				4						32	21,50	75	37 033	66 113	789
				4						32	28,00	88	47 429	88 150	1 038
	12	6,350	LU	3	50	4	8	2,5	6	32	28,00	88	47 429	88 150	1 038
				4						18	22	62	14 875	31 844	553
				4						32	25	82	21 751	49 536	842
20	3,969	RS	1,8	50	4	8	2,5	12	32	22,75	72	14 682	31 526	541	
			2,8						40	31,25	97	21 469	49 041	825	
			2,8*						18	11,50	41	25 750	70 973	1 300	
25	3,969	RS	4	50	4	8	2,5	6	18	17,00	52	36 493	106 459	1 914	
			6						18	17,00	52	36 493	106 459	1 914	
K40	5	3,500 (P/L)	LU	4	63	4	8	2,5	6	18	11,50	41	25 750	70 973	1 300

* Nut with mark * could be manufactured as single-threaded with play or preload selection of balls.



TYPE	P	D _w	RECIRCULATION	i	D ₁	d ₂	b	t _i	L _m	L ₄	L _p	L ₁	C _{am}	C _{oam}	R			
	mm	mm	-	-	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	N/μm			
K40	6	3,500	RS	1,8	63	4							18	7,50	33	13 726	34 830	656
				2,8									18	10	39	20 071	54 179	999
				3,8									18	13	45	26 099	73 529	1 337
	8	5,000	LU	3	63	4							18	18,50	55	31 746	71 593	990
				4									18	22,50	63	40 657	95 457	1 303
				6									32	24,00	80	57 620	143 185	1 917
	10	6,350 (P/L)	LU	3	63	4							18	21,50	63	43 004	88 036	995
				4									32	20,00	73	55 075	117 381	1 309
				6									32	30,50	94	78 053	176 072	1 926
	12	6,350 (P/L)	RS	3,8	63	4							32	20,00	72	58 631	131 023	1 436
				4,8									32	26,00	84	71 677	165 503	1 794
				3									32	26,00	86	50 360	98 997	1 008
	15	7,144	LU	4	70	4							32	34,50	101	64 496	131 996	1 326
				6									32	51,50	135	91 405	197 994	1 951
				3,8									32	27,00	86	58 453	130 716	1 429
	15	6,350 (P/L)	RS	4,8	65	4							32	34,50	101	71 459	165 115	1 785
				3,8									32	29,00	90	58 385	130 599	1 426
				4,8									40	33,00	106	71 376	164 967	1 782
	16	6,350 (P/L)	RS	3,8	65	4							40	35,00	110	58 071	130 060	1 414
				4,8									40	45,00	130	70 993	164 286	1 767
				3,8									32	25,25	83	30 288	61 215	684
	20	6,350 (P/L)	RS	4,8	65	4							40	33,75	108	44 289	95 223	1 043
				1,8*									40	46,25	133	57 591	129 231	1 395
				2,8*														
25	6,350	RS	3,8*	65	4													

Key: P Pitch i Number of working threads - loaded turns k Rigidity factor R Axial rigidity
 D_w Ball diameter C_{am} Dynamic load capacity C_{oam} Static load capacity (P/L) Available in right and left design

Remark: In the tables above are listed only product in standard design. If you will need different, non standard design, please contact our technical support.

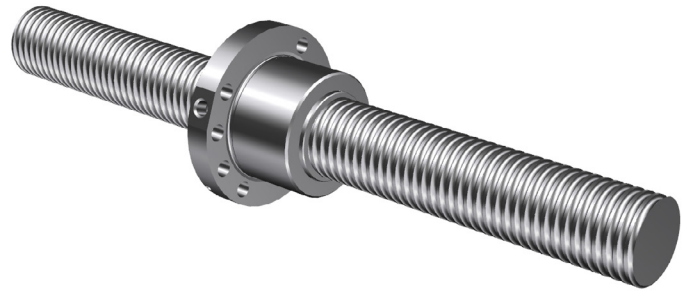
NUT TYPE

A

TYPE	P	D _w	RECIR- CULA- TION	i	D ₁	d ₂	b	t ₁	L _m	L ₄	L _p	L ₁	C _{am}	C _{0am}	R				
	mm	mm	-	-	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	N/μm				
K63	10	6,350 (P/L)	LU	3	90	5	10	2,9	15	25	18,00	73	54 639	148 343	1 510				
				32						20,00	86	69 976	197 791	1 986					
				32						30,50	94	99 172	296 687	2 923					
	12	7,938	LU	4	90	5				32	24,50	88	93 194	239 758	1 991				
				40						33,00	113	132 077	359 637	2 931					
				32						20	73	66 178	177 300	1 610					
	15	7,144	RS	3,8	90	5				32	28	88	86 054	240 622	2 154				
				4,8						32	35	103	105 202	303 944	2 691				
				2,8						32	36,00	114	93 032	239 437	1 986				
	16	7,938 (P/L)	LU	6	90	5				40	49,00	148	131 847	359 155	2 923				
				4						40	42,50	125	92 824	239 026	1 979				
	20	7,938	LU	4	95	5				45	61,00	167	131 553	358 539	2 912				
				6						40	49,00	138	132 203	308 494	2 063				
	20	10,319	LU	4	95	5				45	67,50	180	187 361	462 742	3 037				
				6						40	49,00	138	163 806	347 517	1 964				
	20	12,700	LU	4	100	5				45	67,50	180	232 149	521 276	2 891				
				6						40	42,00	124	58 936	188 736	1 442				
	32	7,938	AX	2,8	96	5				45	55,50	156	76 637	256 142	1 929				
				3,8						45	71,50	188	93 690	323 548	2 411				
				4,8						45	66,50	168	139 656	342 306	2 236				
32	10,319	RS	3,8	105	5	45	82,50	200	170 731	432 386	2 794								
			4,8			40	36	112	51 267	125 399	1 041								
			1,8			45	53	152	74 965	194 972	1 586								
40	7,938	RS	2,8	105	5	45	73	192	97 480	264 605	2 122								
			3,8			40	36,82	114	72 822	161 082	1 082								
40*	10,319	RS	1,8	105	5	45	54,32	154	106 485	250 572	1 648								
			2,8			45	74,32	194	138 467	340 062	2 206								
			3,8			32	20,00	73	93 088	292 569	2 507								
K80	10	7,144	LU	4	105	5	12	3,5	15	32	30,50	94	131 926	438 854	3 690				
				6						32	18,00	76	83 092	239 505	1 908				
	12	7,938	LU	3	110	5				32	24,50	89	106 416	319 341	2 509				
				6						40	33,00	114	150 815	479 011	3 694				
	16	10,319	RS	3,8	125	5				32	39,00	110	156 720	437 722	2 725				
				4,8						40	38,00	116	191 593	552 912	3 405				
	20	12,700	LU	3	125	5				32	35,50	122	147 896	346 843	1 875				
				6						40	42,50	144	189 410	462 457	2 467				
	24	10,319	LU	4	125	5				56	55,50	195	268 437	693 685	3 631				
				3						40	47,00	134	117 082	303 384	1 932				
	40	12,700	LU	4	125	5				40	59,00	158	149 947	404 512	2 542				
				3						56	59,00	174	146 241	343 853	1 842				
	K100	10	7,144	LU	6	125				5	14	4,5	15	56	80,50	217	187 291	458 471	2 423
					3									40	26,50	94	147 005	566 062	4 523
		16	7,938	LU	4	125				5				40	27,00	94	92 141	307 725	2 326
					6									40	35,00	110	118 005	410 300	3 060
		20	12,700	LU	4	150				5				70	27,50	145	215 519	606 066	3 080
					6									70	48,50	187	305 438	909 099	4 534
		25	20,638	LU	3	150				5				70	33,50	137	307 815	687 752	2 356
					4									70	47,00	164	394 218	917 003	3 099
32		12,700	LU	3	150	5	80	48,00	176	167 638				453 212	2 327				
				4			80	65,00	210	214 694				604 282	3 061				
40		12,700	LU	3	150	5	80	58,50	200	167 050				451 987	2 314				
				4			80	80,00	245	213 940				602 649	3 044				
K125		25	20,638	LU	4	180	8	16	4,5	15				80	42,00	189	439 103	1 147 070	3 687
					6									80	68,00	240	622 307	1 720 604	5 426
K140		32	25,400	LU	6	220	8							80	98,50	303	887 718	2 456 786	6 353
					8									80	131,00	368	1 136 900	3 275 714	8 358
K160		30	20,000	LU	10	230	8							80	167,00	440	1 377 415	4 094 643	10 339
					8									80	131,50	343	939 476	3 196 973	9 327
					10									80	165,00	410	1 138 225	3 996 216	11 538

* Nut with mark * could be manufactured as single-threaded with play or preload selection of balls.

NUT TYPE AP



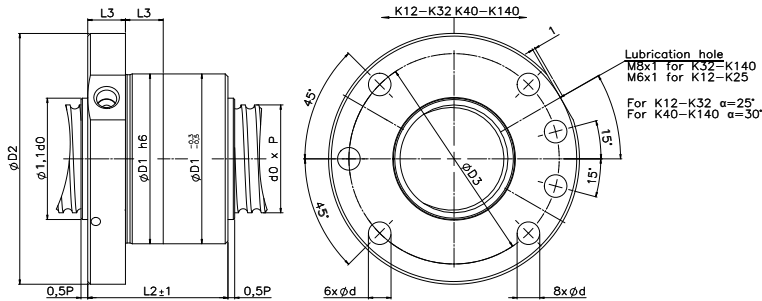
TYPE	P	D _w	RECIRCULATION	i	D ₁	D ₂	D ₃	d	L ₃	L ₂	C _{am}	C _{0am}	R
	mm	mm	-	-	mm	mm	mm	mm	mm	mm	kN	kN	N/μm ^{3/2}
K12	3	2,000	PR	1,7	24	40	30	4,5	10	28	3 309	4 998	203
				2,7						31	4 926	7 938	316
	4	2,500	PR	1,7	24	42	32	4,5		33	4 615	6 534	215
				2,7						37	6 870	10 377	334
K16	3	2,000	PR	1,7	24	42	32	4,5	10	36	4 598	6 515	213
				2,7						31	5 601	10 622	396
	4	2,500	PR	2,7	29	52	40	6,4		34	7 344	14 555	535
				3,7						37	7 997	14 136	429
K20	3	2,000	PR	1,7	32	55	43	6,4	10	41	10 486	19 371	579
				2,7						38	7 513	11 550	290
	4	2,500	PR	2,7	36	59	47	6,4		43	11 184	18 344	451
				3,7						31	6 271	13 729	485
K25	3	2,000	PR	2,7	40	62	51	6,4	12	34	8 223	18 814	656
				3,7						37	8 899	17 891	516
	4	2,500	PR	2,7	40	62	51	6,4		41	11 669	24 518	696
				3,7						42	13 714	23 388	512
K32	5	3,500 (P/L)	LU	3	36	59	47	6,4	10	46	17 564	31 184	673
				4						31	6 271	13 729	485
	3	2,000	PR	2,7	40	62	51	6,4		33	6 783	16 861	568
				3,7						36	8 894	23 106	767
K25	4	2,500	PR	2,7	40	62	51	6,4	12	39	9 965	23 125	632
				3,7						43	13 066	31 690	854
	5	3,500 (P/L)	LU	3	40	62	51	6,4		44	16 010	31 617	654
				4						50	20 504	42 156	860
K32	6	3,969	RS	2,8	40	62	51	6,4	12	49	16 543	33 908	692
				3,8						55	21 512	46 017	926
	8	3,500	RS	2,8	40	62	51	6,4		50	16 498	33 836	689
				3,8						58	21 453	45 921	922
K20	3	2,000	PR	1,8*	44	71	57	6,4	12	64	15 893	31 440	646
				2,8*						69	10 929	21 225	430
	5	3,500	LU	3	50	80	65	8,4		89	15 980	33 017	655
				4						44	18 056	41 591	812
K16	3	2,000	PR	1,7	24	40	30	4,5	10	50	23 125	55 455	1 069
				2,7						60	32 773	83 182	1 573
	4	2,500	PR	2,8	50	80	65	8,4		50	22 229	50 370	872
				3,8						56	28 905	68 359	1 167
K25	6	3,969	RS	4,8	50	80	65	8,4	12	62	35 336	86 348	1 458
				2,8						51	22 191	50 304	870
	8	3,969	RS	3,8	50	80	65	8,4		59	28 856	68 270	1 164
				4,8						67	35 276	86 236	1 454
K32	10	6,350 (P/L)	LU	3	50	80	65	8,4	12	69	37 128	66 242	729
				4						80	47 549	88 323	1 042
	12	6,350	LU	3	50	80	65	8,4		74	37 033	66 113	789
				4						87	47 429	88 150	1 038
K20	3	2,000	PR	1,8	36	59	47	6,4	10	68	14 875	31 844	553
				2,8*						88	21 751	49 536	842
	5	3,500	LU	1,8*	50	80	65	8,4		82,5	14 682	31 526	541
				2,8*						107,5	21 469	49 041	825

Key: P Pitch i Number of working threads - loaded turns k Rigidity factor R Axial rigidity
 D_w Ball diameter C_{am} Dynamic load capacity C_{0am} Static load capacity (P/L) Available in right and left design

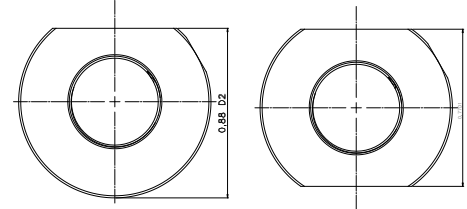
Remark: In the tables above are listed only product in standard design. If you will need different, non standard design, please contact our technical support.

* Nut with mark * could be manufactured as single-threaded with play or preload selection of balls.

NUT TYPE AP



Standard variants of flange types



TYPE	P	D _w	RECIRCULATION	I	D ₁	D ₂	D ₃	d	L ₃	L ₂	C _{am}	C _{0am}	R			
	mm	mm	-	-	mm	mm	mm	mm	mm	mm	kN	kN	N/μm ^{3/2}			
K40	5	3,500 (P/L)	LU	4	63	92	77	8,4	14	55	25 750	70 973	1 300			
				6									1 914			
	6	3,500	RS	1,8	63	92	77	8,4					42	13 726	34 830	656
				2,8									48	20 071	54 179	999
				3,8									54	26 099	73 529	1 337
				3									60	31 746	71 593	990
	8	5,000	LU	4	63	92	77	8,4					69	40 657	95 457	1 303
				6									86	57 620	143 185	1 917
				3									77	43 004	88 036	995
	10	6,350 (P/L)	LU	4	63	92	77	8,4					88	55 075	117 381	1 309
				6									109	78 053	176 072	1 926
				3									83	58 631	131 023	1 436
	12	6,350 (P/L)	RS	3,8	63	92	77	8,4					95	71 677	165 503	1 794
				4,8									95	50 360	98 997	1 008
	15	7,144	LU	4	70	100	85	8,4					112	64 496	131 996	1 326
				6									140	91 405	197 994	1 951
	15	6,350 (P/L)	RS	3,8	63	92	77	8,4					96	58 453	130 716	1 429
				4,8									111	71 459	165 115	1 785
	16	6,350 (P/L)	RS	3,8	65	92	77	8,4					103	58 385	130 599	1 426
				4,8									119	71 376	164 967	1 782
20	6,350 (P/L)	RS	3,8	65	92	77	8,4	116	58 071	130 060	1 414					
			4,8					136	70 993	164 286	1 767					
25	6,350	RS	1,8*	65	92	77	8,4	90	30 288	61 215	684					
			2,8*					115	44 289	95 223	1 043					
			3,8*					140	57 591	129 231	1 395					
			4					54	28 528	90 922	1 580					
K50	5	3,500	LU	4	75	110	93	10,5	16	64	40 431	136 383	2 326			
				6									62	36 251	95 297	1 246
	8	5,000	LU	3	75	110	93	10,5					71	46 426	127 063	1 639
				4									91	65 797	190 594	2 412
				6									74	48 931	115 375	1 237
				3									85	62 666	153 833	1 628
	10	6,350 (P/L)	LU	4	75	110	93	10,5					106	88 812	230 750	2 396
				6									79	57 089	127 635	1 234
				3									90	73 114	170 180	1 624
	10	7,144	LU	4	75	110	93	10,5					111	103 619	255 270	2 390
				6									76	50 160	122 265	1 296
				2,8									88	65 226	165 931	1 734
	12	6,350	RS	3,8	75	110	93	10,5					100	79 739	209 598	2 166
				4,8									98	63 996	136 952	1 223
				3									113	81 960	182 602	1 609
	15	7,938	LU	4	75	110	93	10,5					88	50 023	122 007	1 290
				3									104	65 046	165 581	1 726
	16	6,350	RS	2,8	82	115	100	10,5					120	79 520	209 155	2 157
				3,8									110	63 726	136 507	1 215
				4,8									135	81 614	182 009	1 598
20	7,938	LU	3	75	110	93	10,5	110	63 726	136 507	1 215					
			4					135	81 614	182 009	1 598					

* Nut with mark * could be manufactured as single-threaded with play or preload selection of balls.

TYPE	P	D _w	RECIRCULATION	i	D ₁	D ₂	D ₃	d	L ₃	L ₂	C _{am}	C _{oam}	R
	mm	mm	-	-	mm	mm	mm	mm	mm	mm	kN	kN	N/µm3/2
K50	30	6,350	RS	1,8*	82	115	100	10,5	16	105	33 680	77 498	826
				2,8*						135	49 249	120 553	1 258
	32	6,350	RS	1,8*	82	115	100	10,5		110	34 470	80 415	851
				2,8*						142	50 404	125 090	1 296
K63	10	6,350 (P/L)	LU	3	90	130	110	13	18	81	54 639	148 343	1 510
				4						89	69 976	197 791	1 986
				6						110	99 172	296 687	2 923
	12	7,938	LU	4	90	130	110	13		103	93 194	239 758	1 991
				6						130	132 077	359 637	2 931
	15	7,144	RS	2,8	90	130	110	13		82	66 178	177 300	1 610
				3,8						97	86 054	240 622	2 154
				4,8						112	105 202	303 944	2 691
	16	7,938 (P/L)	LU	4	90	130	110	13		125	93 032	239 437	1 986
				6						159	131 847	359 155	2 923
	20	7,938	LU	3	95	135	115	13		124	92 824	239 026	1 979
				4						146	131 553	358 539	2 912
	20	10,319	LU	4	95	135	115	13		146	132 203	308 494	2 063
				6						188	187 361	462 742	3 037
	20	12,700	LU	4	95	135	115	13		149	163 806	347 517	1 964
				6						190	232 149	521 276	2 891
	32	7,938	AX	2,8	96	135	115	13		124	58 936	188 736	1 442
				3,8						156	76 637	256 142	1 929
				4,8						188	93 690	323 548	2 411
	32	10,319	RS	3,8	106	145	125	13		183	139 656	342 306	2 236
				4,8						215	170 731	432 386	2 794
	40	7,938	RS	1,8	106	145	125	13		130	51 267	125 399	1 041
				2,8						170	74 965	194 972	1 586
				3,8						210	97 480	264 605	2 122
40	10,319	RS	1,8*	106	145	125	13	132	72 822	161 082	1 082		
			2,8*					172	106 485	250 572	1 648		
			3,8*					212	138 467	340 062	2 206		
K80	10	7,144	LU	4	106	145	125	13	20	87	93 088	292 569	2 507
				6						112	131 926	438 854	3 690
	12	7,938	LU	3	110	150	130	13		90	83 092	239 505	1 908
				4						100	106 416	319 341	2 509
				6						128	150 815	479 011	3 694
	16	10,319	RS	3,8	125	165	145	13		118	156 720	437 722	2 725
				4,8						124	191 593	552 912	3 405
	20	12,700	LU	3	125	165	145	13		138	147 896	346 843	1 875
				4						160	189 410	462 457	2 467
				6						200	268 437	693 685	3 631
	24	10,319	LU	3	125	165	145	13		150	117 082	303 384	1 932
				4						175	149 947	404 512	2 542
40	12,700	LU	3	125	165	145	13	240	146 241	343 853	1 842		
			4					283	187 291	458 471	2 423		
K100	10	7,144	LU	6	125	165	145	17	25	124	147 005	566 062	4 523
				3						118	92 141	307 725	2 326
	16	7,938	LU	4	150	202	175	17		134	118 005	410 300	3 060
				6						167	215 519	606 066	3 080
	20	12,700	LU	4	150	202	175	17		205	305 438	909 099	4 534
				6						165	307 815	687 752	2 356
	25	20,638	LU	3	150	202	175	17		192	394 218	917 003	3 099
				4						190	167 638	453 212	2 327
32	12,700	LU	3	150	202	175	17	225	214 694	604 282	3 061		
			4					210	167 050	451 987	2 314		
40	12,700	LU	3	150	202	175	17	255	213 940	602 649	3 044		
			4					197	439 103	1 147 070	3 687		
K125	25	20,638	LU	6	170	213	190	17	30	249	622 307	1 720 604	5 426
K140	32	25,400	LU	6	220	285	252	21	40	320	887 718	2 456 786	6 353
				8						385	1 136 900	3 275 714	8 358
				10						455	1 377 415	4 094 643	10 339
K160	30	20,638	LU	8	230	297	263	21	40	362	939 476	3 196 973	9 327
				10						430	1 138 225	3 996 216	11 538

Key: P Pitch i Number of working threads - loaded turns k Rigidity factor R Axial rigidity
D_w Ball diameter C_{am} Dynamic load capacity C_{oam} Static load capacity (P/L) Available in right and left design

Remark: In the tables above are listed only product in standard design. If you will need different, non standard design, please contact our technical support.

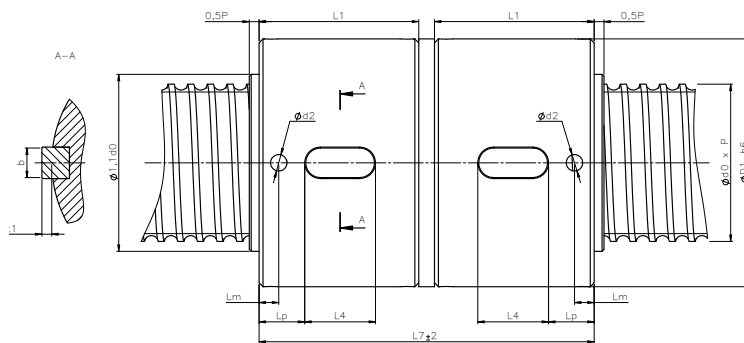
* Nut with mark * could be manufactured as single-threaded with play or preload selection of balls.

NUT TYPE A+A



TYPE	P	D _w	RECIR- CULATI- ON	I	D ₁	d ₂	b	t ₁	L _m	L ₄	L ₇	L ₇	L ₇	C _{am}	C _{0am}	R
	mm	mm	-	-	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	N/μm ^{3/2}
K12	3	2,000	PR	1,7	26	2	5	1,3	5	8	5	36	-	3 309	4 998	203
				2,7						10	5,50	42	-	4 926	7 938	316
	4	2,500	PR	1,7	24	2				10	6,50	47	-	4 615	6 534	215
				2,7						10	8,50	55	-	6 870	10 377	334
	5	2,500	PR	1,7	24	2				12	7,00	50	-	4 598	6 515	213
K16	3	2,000	PR	2,7	27	2	5	1,3	5	10	5,50	42	-	5 601	10 622	396
				3,7						10	7,00	48	-	7 344	14 555	535
	4	2,500	PR	2,7	29	2				12	7,50	55	-	7 997	14 136	429
				3,7						12	9,50	63	-	10 486	19 371	579
	5	3,175	PR	1,7	32	2				12	7,50	57	-	7 513	11 550	290
			2,7	16			8,50	67	-	11 184	18 344	451				
K20	3	2,000	PR	2,7	36	3	5	1,3	5,5	10	5,50	42	-	6 271	13 729	485
				3,7						12	6,00	48	-	8 223	18 814	656
	4	2,500	PR	2,7	36	3				12	7,50	55	-	8 899	17 891	516
				3,7						16	7,50	63	-	11 669	24 518	696
	5	3,500 (P/L)	LU	3	36	3				16	10,00	74	83,5	13 714	23 388	512
			4	16			12,50	86	95,5	17 564	31 184	673				
K25	3	2,000	PR	2,7	40	3	5	1,3	6	10	5,50	42	-	6 783	16 861	568
				3,7						10	7,00	48	-	8 894	23 106	767
	4	2,500	PR	2,7	40	3				10	9,00	55	-	9 965	23 125	632
				3,7						12	10,00	63	-	13 066	31 690	854
	5	3,500 (P/L)	LU	3	40	3				16	10,00	74	83,5	16 010	31 617	654
				4						16	12,50	86	95,5	20 504	42 156	860
	6	3,500	RS	2,8	40	3				12	11,00	63	73	16 543	33 908	692
				3,8						16	12,00	75	85	21 512	46 017	926
	8	3,500	RS	2,8	40	3				16	13,00	76	88	16 498	33 836	689
				3,8						20	15,00	92	104	21 453	45 921	922
10	3,500	LU	3	40	3	20	20,00	118	134	15 893	31 440	646				
			1,8*			20	48,50	117	133	10 929	21 225	430				
20	3,500	RS	2,8*	40	3	25	66,00	157	173	15 980	33 017	655				
			3			18	32,50	83	93	18 056	41 591	812				
K32	5	3,500	LU	4	50	4	8	2,5	6	18	38,00	94	104	23 125	55 455	1 069
				6						18	48,00	114	124	32 773	83 182	1 573
				2,8						18	27,50	73	83	22 229	50 370	872
	6	3,969	RS	3,8	50	4				18	33,50	85	95	28 905	68 359	1 167
				4,8						18	39,50	97	107	35 336	86 348	1 458
				2,8						18	12,50	82	95	22 191	50 304	870
	8	3,969	RS	3,8	50	4				18	16,50	98	111	28 856	68 270	1 164
				4,8						18	20,50	114	127	35 276	86 236	1 454
				3						18	53,50	125	141	37 128	66 242	729
	10	6,350 (P/L)	LU	4	50	4				32	58,50	149	165	47 549	88 323	1 042
				3						32	54,00	140	159	37 033	66 113	789
				4						32	66,50	165	184	47 429	88 150	1 038
	12	6,350	LU	3	50	4				18	51	119	135	14 875	31 844	553
				4						32	64	159	175	21 751	49 536	842
				1,8						32	22,75	141	157	14 682	31 526	541
20	3,969	RS	2,8*	50	4	40	31,25	191	207	21 469	49 041	825				
			1,8*													
25	3,969	RS	2,8*	50	4											

* Nut with mark * could be manufactured as single-threaded with play or preload selection of balls.



TYPE	P	D _w	RECIR- CULATI- ON	i	D ₁	d ₂	b	t ₁	L _m	L _s	L _p	L ₇	L ₇	C _{am}	C _{0am}	R				
	mm	mm	-	-	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	N/µm ^{3/2}				
K40	5	3,500 (P/L)	LU	4	63	4											18			
				6													18			
	6	3,500	RS	1,8	63	4	8	2,5	6									18		
				2,8														18		
				3,8														18		
K40	8	5,000	LU	3	63	4											18			
				4													18			
	10	6,350 (P/L)	LU	6	63	4												32		
				3														18		
				4														32		
				6														32		
	12	6,350 (P/L)	RS	3,8	76	4												32		
				4,8														32		
	15	7,144	LU	3	70	4												32		
				4														32		
	K40	15	6,350 (P/L)	RS	6	65	4											32		
					4,8													32		
		16	6,350 (P/L)	RS	3,8	65	4												32	
					4,8														40	
		20	6,350 (P/L)	RS	3,8	65	4												40	
					4,8														40	
		K40	25	6,350	RS	1,8*	65	4											40	
						2,8*													40	
						3,8*													40	
																			40	
	K50		5	3,500	LU	4	75	4											18	
						6													18	
			8	5,000	LU	3	75	4												18
						4														18
		10	6,350 (P/L)	LU	6	75	4												32	
3					18															
4					32															
6					32															
10		7,144	LU	3	75	4												18		
				4														18		
K50		12	6,350	RS	6	75	4											32		
					3													18		
					2,8														18	
					3,8														18	
					4,8														32	
																			18	
		15	7,938	LU	3	75	4												32	
					4														32	
16	6,350	RS	3	75	4													32		
			4															32		
			2,8															32		
			3,8															32		
20	7,938	LU	4,8	75	4													40		
			3															40		
30	6,350	RS	4	75	4													32		
			1,8*															32		
			2,8*															40		
			1,8*															40		
			2,8*															32		
																		40		

Key: P Pitch i Number of working threads - loaded turns k Rigidity factor R Axial rigidity
 D_w Ball diameter C_{am} Dynamic load capacity C_{0am} Static load capacity C_{0am} Static load capacity (P/L) Available in right and left design

Remark: In the tables above are listed only product in standard design. If you will need different, non standard design, please contact our technical support.

* Nut with mark * could be manufactured as single-threaded with play or preload selection of balls.

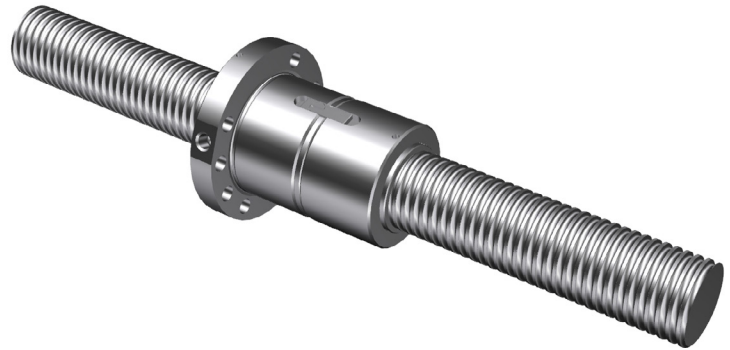
NUT TYPE

A+A

TYPE	P	D _w	RECIRCULATION	I	D ₁	d ₂	b	t ₁	L _m	L ₄	L ₇	L ₇	L ₇	C _{em}	C _{0em}	R				
	mm	mm	-	-	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	N/μm ^{3/2}				
K63	10	6,350 (P/L)	LU	3	90	5	10	2,9	15	25	18,00	153	169	54 639	148 343	1 510				
				4						32	20,00	165	181	69 976	197 791	1 986				
				6						32	30,50	194	210	99 172	296 687	2 923				
	4	32	24,50	184	203	93 194				239 758	1 991									
	6	40	33,00	233	252	132 077				359 637	2 931									
	12	7,938	LU	4	90	5				32	54	139	162	66 178	177 300	1 610				
K63	15	7,938	RS	2,8	90	5	10	2,9	15	32	69	169	192	86 054	240 622	2 154				
				3,8						32	84	199	221	105 202	303 944	2 691				
				4,8						32	36,00	239	261	93 032	239 437	1 986				
	4	90	5	40	49,00	307				329	131 847	359 155	2 923							
	6			40	85,00	210				226	92 824	239 026	1 979							
	4			45	104,00	253				269	131 553	358 539	2 912							
	4	95	5	40	119,00	278				294	132 203	308 494	2 063							
	6			45	158,50	362				378	187 361	462 742	3 037							
	4			40	119,00	278				294	163 806	347 517	1 964							
	4	100	5	45	158,50	362				378	232 149	521 276	2 891							
	6			40	42,00	252				282	58 936	188 736	1 442							
	4			45	55,50	314				334	76 637	256 142	1 929							
	4	96	5	45	71,50	380				410	93 690	323 548	2 411							
	6			45	66,50	328				360	139 656	342 306	2 236							
	4			45	82,50	392				424	170 731	432 386	2 794							
	4	105	5	40	89	218				251	51 267	125 399	1 041							
	6			45	127	298				331	74 965	194 972	1 586							
	4			45	167	378				411	97 480	264 605	2 122							
	4	105	5	40	88,50	217				250	72 822	161 082	1 082							
	6			45	126,00	297				330	106 485	250 572	1 648							
	4			45	166,00	377				410	138 467	340 062	2 206							
	4	105	5	45	166,00	377				410	138 467	340 062	2 206							
	6			45	166,00	377				410	138 467	340 062	2 206							
	4			45	166,00	377				410	138 467	340 062	2 206							
K80	10	7,144	LU	4	105	5	12	3,5	15	32	20,00	153	169	93 088	292 569	2 507				
				6						32	30,50	194	210	131 926	438 854	3 690				
				3						32	18,00	156	175	83 092	239 505	1 908				
	4	110	5	32	24,50	185				204	106 416	319 341	2 509							
	6			40	33,00	234				253	150 815	479 011	3 694							
	3			32	87,00	206				228	156 720	437 722	2 725							
	4	125	5	40	99,00	238				260	191 593	552 912	3 405							
	6			32	35,50	240				256	147 896	346 843	1 875							
	3			40	42,50	285				301	189 410	462 457	2 467							
	4	125	5	56	55,50	347				363	268 437	693 685	3 631							
	6			40	107,50	255				271	117 082	303 384	1 932							
	3			40	132,50	305				321	149 947	404 512	2 542							
	4	125	5	56	149,50	355				388	146 241	343 853	1 842							
	6			56	184,50	425				458	187 291	458 471	2 423							
	3			40	26,50	194				210	147 005	566 062	4 523							
	K100	16	7,938	LU	3	150				5	14	4,5	15	40	74,00	188	210	92 141	307 725	2 326
					4									40	90,00	220	242	118 005	410 300	3 060
					6									70	27,50	295	311	215 519	606 066	3 080
		4	150	5	70	48,50				380				396	305 438	909 099	4 534			
		6			70	33,50				260				276	307 815	687 752	2 356			
		3			70	47,00				332				348	394 218	917 003	3 099			
		4	150	5	80	48,00				337				370	167 638	453 212	2 327			
		6			80	65,00				405				438	214 694	604 282	3 061			
		3			80	58,50				385				418	167 050	451 987	2 314			
4		150	5	80	80,00	475	508	213 940	602 649	3 044										
6				80	42,00	354	370	439 103	1 147 070	3 687										
4				80	68,00	456	472	622 307	1 720 604	5 426										
K125	25	20,638	LU	6	180	8	16	4,5	15	80	98,50	560	593	887 718	2 456 786	6 353				
				4						80	131,00	690	723	1 136 900	3 275 714	8 358				
K140	32	25,400	LU	8	220	8	16	4,5	15	80	167,00	835	868	1 377 415	4 094 643	10 339				
				6						80	167,00	835	868	1 377 415	4 094 643	10 339				

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NUT TYPE AP+A



TYPE	P	D _w	RECIR- CULATI- ON	i	D ₁	D ₂	D ₃	d	L ₃	L ₅	L ₆	C _{am}	C _{0am}	R	
	mm	mm	-	-	mm	mm	mm	mm	mm	mm	mm	kN	kN	N/μm	
K12	3	2,000	PR	1,7	22	40	30	4,5	10	47	-	3 309	4 998	203	
				2,7						53	-	4 926	7 938	316	
	4	2,500	PR	1,7	24	42	32	4,5		56	-	4 615	6 534	215	
				2,7						64	-	6 870	10 377	334	
K16	3	2,000	PR	2,7	27	50	38	6,4	10	59	-	4 598	6 515	213	
				3,7						53	-	5 601	10 622	396	
	4	2,500	PR	2,7	29	52	40	6,4		59	-	7 344	14 555	535	
				3,7						64	-	7 997	14 136	429	
K20	3	2,000	PR	1,7	32	55	43	6,4	10	72	-	10 486	19 371	579	
				2,7						64	-	7 513	11 550	290	
	4	2,500	PR	2,7	36	59	47	6,4		74	-	11 184	18 344	451	
				3,7						55	-	6 271	13 729	485	
K25	3	2,000	PR	2,7	36	59	47	6,4	10	61	-	8 223	18 814	656	
				3,7						64	-	8 899	17 891	516	
	4	2,500	PR	2,7	36	59	47	6,4		72	-	11 669	24 518	696	
				3,7						81	90,5	13 714	23 388	512	
K32	5	3,500 (P/L)	LU	3	36	59	47	6,4	10	90	99,5	17 564	31 184	673	
				4						57	-	6 783	16 861	568	
	3	2,000	PR	2,7	40	62	51	6,4		63	-	8 894	23 106	767	
				3,7						66	-	9 965	23 125	632	
	4	2,500	PR	2,7	40	62	51	6,4	74	-	13 066	31 690	854		
				3,7					83	92,5	16 010	31 617	654		
	K25	5	3,500 (P/L)	LU	3	40	62	51	6,4	12	95	104,5	20 504	42 156	860
					4						79	88,5	16 543	33 908	692
		6	3,500	RS	2,8	40	62	51	6,4		91	100,5	21 512	46 017	926
					3,8						89	102	16 498	33 836	689
	K32	8	3,500	RS	2,8	40	62	51	6,4	105	118	21 453	45 921	922	
					3,8					108	124	15 893	31 440	646	
10		3,500	LU	3	40	62	51	6,4	130	146	10 929	21 225	430		
				4					170	186	15 980	33 017	655		
K32	5	3,500	LU	1,8	40	62	51	6,4	12	83	92,5	18 056	41 591	812	
				2,8						88	98	22 229	50 370	872	
	6	3,969	RS	3	50	80	65	8,4		94	103,5	23 125	55 455	1 069	
				4						114	123,5	32 773	83 182	1 573	
	K32	8	3,969	RS	2,8	50	80	65	8,4	100	110	28 905	68 359	1 167	
					3,8					112	122	35 336	86 348	1 458	
		10	6,350 (P/L)	LU	2,8	50	80	65	8,4	105	118	22 191	50 304	870	
					3,8					121	134	28 856	68 270	1 164	
	K32	12	6,350	LU	4,8	50	80	65	8,4	137	150	35 276	86 236	1 454	
					3					138	154	37 128	66 242	729	
		20	3,969	RS	3	50	80	65	8,4	157	173	47 549	88 323	1 042	
					4					144	163	37 033	66 113	789	
K32	20	3,969	RS	1,8	50	80	65	8,4	171	190	47 429	88 150	1 038		
				2,8					134	150	14 875	31 844	553		
	25	3,969	RS	1,8*	50	80	65	8,4	174	190	21 751	49 536	842		
				2,8*					152	168	14 682	31 526	541		
									202	218	21 469	49 041	825		

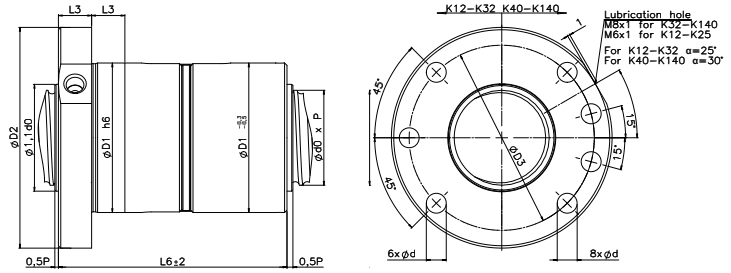
Key: P Pitch i Number of working threads - loaded turns k Rigidity factor R Axial rigidity
D_w Ball diameter C_{am} Dynamic load capacity C_{0am} Static load capacity (P/L) Available in right and left design

Remark: In the tables above are listed only product in standard design. If you will need different, non standard design, please contact our technical support.

* Nut with mark * could be manufactured as single-threaded with play or preload selection of balls.

NUT TYPE

AP+A



TYPE	P	D_w	RECIRCULATION	I	D_1	D_2	D_3	d	L_3	L_4	L_5	C_{am}	C_{0am}	R
	mm	mm	-	-	mm	mm	mm	mm	mm	mm	mm	kN	kN	N/ μ m
K40 K40	5	3,500 (P/L)	LU	4	63	92	77	8,4	14	96	105,5	25 750	70 973	1 300
				6						116	125,5	36 493	106 459	1 914
	6	3,500	RS	1,8	63	92	77	8,4		71	81	13 726	34 830	656
				2,8						83	93	20 071	54 179	999
				3,8						95	105	26 099	73 529	1 337
				3						115	128	31 746	71 593	990
	8	5,000	LU	4	63	92	77	8,4	133	146	40 657	95 457	1 303	
				6					167	180	57 620	143 185	1 917	
				3					141	157	43 004	88 036	995	
	10	6,350 (P/L)	LU	4	63	92	77	8,4	161	177	55 075	117 381	1 309	
				6					200	216	78 053	176 072	1 926	
	12	6,350 (P/L)	RS	3,8	76	105	90	8,4	159	178	58 631	131 023	1 436	
				4,8					183	202	71 677	165 503	1 794	
	15	7,144	LU	3	70	100	85	8,4	190	212	50 360	98 997	1 008	
				4					210	232	64 496	131 996	1 326	
				6					230	252	91 405	197 994	1 951	
	15	6,350 (P/L)	RS	3,8	63	92	77	8,4	180	202	58 453	130 716	1 429	
				4,8					210	232	71 459	165 115	1 785	
	16	6,350 (P/L)	RS	3,8	63	92	77	8,4	185	207	58 385	130 599	1 426	
				4,8					217	239	71 376	164 967	1 782	
20	6,350 (P/L)	RS	3,8	63	92	77	8,4	217	233	58 071	130 060	1 414		
			4,8					257	273	70 993	164 286	1 767		
25	6,350	RS	1,8*	63	92	77	8,4	164	180	30 288	61 215	684		
			2,8*					214	230	44 289	95 223	1 043		
			3,8*					264	280	57 591	129 231	1 395		
			4					98	107,5	28 528	90 922	1 580		
K50	5	3,500	LU	4	75	110	93	10,5	118	127,5	40 431	136 383	2 326	
				6					121	134	36 251	95 297	1 246	
	8	5,000	LU	3	75	110	93	10,5	137	150	46 426	127 063	1 639	
				4					174	187	65 797	190 594	2 412	
				6					142	158	48 931	115 375	1 237	
	10	6,350 (P/L)	LU	4	75	110	93	10,5	163	179	62 666	153 833	1 628	
				6					204	220	88 812	230 750	2 396	
	10	7,144	LU	3	75	110	93	10,5	142	158	57 089	127 635	1 234	
				4					163	179	73 114	170 180	1 624	
				6					206	222	103 619	255 270	2 390	
	12	6,350	RS	2,8	75	110	93	10,5	140	159	50 160	122 265	1 296	
				3,8					164	183	65 226	165 931	1 734	
				4,8					188	207	79 739	209 598	2 166	
				3					188	210	63 996	136 952	1 223	
	15	7,938	LU	4	75	110	93	10,5	222	244	81 960	182 602	1 609	
				2,8					160	182	50 023	122 007	1 290	
	16	6,350	RS	3,8	75	110	93	10,5	192	214	65 046	165 581	1 726	
				4,8					224	246	79 520	209 155	2 157	
	20	7,938	LU	3	75	110	93	10,5	215	231	63 726	136 507	1 215	
				4					265	281	81 614	182 009	1 598	
30	6,350	RS	1,8*	75	110	93	10,5	182	212	33 680	77 498	826		
			2,8*					242	272	49 249	120 553	1 258		
32	6,350	RS	1,8*	75	110	93	10,5	188	220	34 470	80 415	851		
			2,8*					252	284	50 404	125 090	1 296		

* Nut with mark * could be manufactured as single-threaded with play or preload selection of balls.

NUT TYPE

AP+A

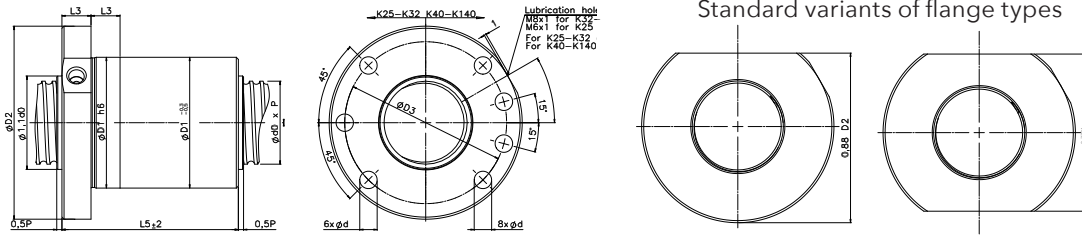
TYPE	P	D _w	RECIR- CULATI- ON	i	D ₁	D ₂	D ₃	d	L ₃	L ₆	L ₆	C _{am}	C _{0am}	R	
	mm	mm	-	-	mm	mm	mm	mm	mm	mm	mm	kN	kN	N/μm	
K63	10	6,350 (P/L)	LU	3	90	130	110	13	18	140	156	54 639	148 343	1 510	
				4						167	183	69 976	197 791	1 986	
				6						209	225	99 172	296 687	2 923	
	12	7,938	LU	4	90	130	110	13		192	211	93 194	239 758	1 991	
				6						242	261	132 077	359 637	2 931	
				2,8						155	177	66 178	177 300	1 610	
K63	15	7,938	RS	3,8	90	130	110	13	185	207	86 054	240 622	2 154		
				4,8					215	237	105 202	303 944	2 691		
				4					90	130	110	13	245	267	93 032
	6	311	333	131 847	359 155	2 923									
	3	95	135	115	13	217	233	92 824					239 026	1 979	
	4					260	276	131 553	358 539	2 912					
	4					95	135	115	13	240	256	132 203	308 494	2 063	
	6	285	301	187 361	462 742					3 037					
	4	95	135	115	13					275	291	163 806	347 517	1 964	
	6					358	374	232 149	521 276	2 891					
	32					7,938	AX	2,8	96	135	115	13	252	282	58 936
		3,8	314	334	76 637			256 142					1 929		
		4,8	380	410	93 690			323 548					2 411		
	32	10,319	RS	3,8	106	145	125	13	336	369	139 656	342 306	2 236		
				4,8					400	433	170 731	432 386	2 794		
				1,8					106	145	125	13	221	254	51 267
	2,8	301	334	74 965	194 972	1 586									
	3,8	381	414	97 480	264 605	2 122									
	40	7,938	RS	1,8*	106	145	125	13	237	269	72 822	161 082	1 082		
				2,8*					317	349	106 485	250 572	1 648		
				3,8*					397	429	138 467	340 062	2 206		
	K80	10	7,144	LU	4	105	145	125	13	20	169	185	93 088	292 569	2 507
					6						210	226	131 926	438 854	3 690
		12	7,938	LU	3	110	150	130	13		172	191	83 092	239 505	1 908
4					194						213	106 416	319 341	2 509	
6					247						266	150 815	479 011	3 694	
16		10,319	RS	3,8	125	165	145	13	215		237	156 720	437 722	2 725	
				4,8					247		269	191 593	552 912	3 405	
20		12,700	LU	3	125	165	145	13	248		264	147 896	346 843	1 875	
				4					292		308	189 410	462 457	2 467	
				6					376		392	268 437	693 685	3 631	
24		10,319	LU	3	125	165	145	13	310		326	117 082	303 384	1 932	
				4					358		374	149 947	404 512	2 542	
	3			125					165	145	13	340	373	146 241	343 853
4	447	480	187 291		458 471	2 423									
3	125	165	145		13	213	229	147 005				566 062	4 523		
4				213		235	92 141	307 725	2 326						
6				245		267	118 005	410 300	3 060						
K100	10	7,144	LU	3	150	202	175	17	25	322	338	215 519	606 066	3 080	
				4						402	418	305 438	909 099	4 534	
	20	12,700	LU	3	150	202	175	17		287	303	307 815	687 752	2 356	
				4						341	357	394 218	917 003	3 099	
	25	20,638	LU	3	150	202	175	17		342	375	167 638	453 212	2 327	
				4						412	445	214 694	604 282	3 061	
32	12,700	LU	3	150	202	175	17	397	430	167 050	451 987	2 314			
			4					484	517	213 940	602 649	3 044			
K125	25	20,638	LU	4	170	213	190	17	30	358	374	439 103	1 147 070	3 687	
				6						462	478	622 307	1 720 604	5 426	
K140	32	25,400	LU	6	220	285	252	21	40	578	611	887 718	2 456 786	6 353	
				8						708	741	1 136 900	3 275 714	8 358	
				10						850	883	1 377 415	4 094 643	10 339	

Key: P Pitch i Number of working threads - loaded turns k Rigidity factor R Axial rigidity
 D_w Ball diameter C_{am} Dynamic load capacity C_{0am} Static load capacity (P/L) Available in right and left design

Remark: In the tables above are listed only product in standard design. If you will need different, non standard design, please contact our technical support.

* Nut with mark * could be manufactured as single-threaded with play or preload selection of balls.

NUT TYPE APR



TYPE	P	D _w	RECIRCULATION	i	D ₁	D ₂	D ₃	d	L ₃	L ₅	C _{am}	C _{0am}	R	
	mm	mm	-	-	mm	mm	mm	mm	mm	mm	kN	kN	N/µm ³ /2	
K25	5	3,500 (P/L)	LU	3	40	62	51	6,4	12	63	16 010	31 617	654	
				4							20 504	42 156	860	
K32	5	3,500	LU	3	50	80	65	8,4	12	63	18 056	41 591	812	
				4							23 125	55 455	1 069	
				6							32 773	83 182	1 573	
				3							117	37 128	66 242	729
K40	10	6,350 (P/L)	LU	4	50	80	65	8,4	14	138	47 549	88 323	1 042	
				3							72	20 106	53 229	989
K50	5	3,500 (P/L)	LU	4	63	92	77	8,4	16	82	25 750	70 973	1 300	
				6							89	36 493	106 459	1 914
				3							111	43 004	88 036	995
	10	6,350 (P/L)	LU	4	63	92	77	8,4	14	134	55 075	117 381	1 309	
				3							164	15 423	28 348	325
				0,8							173	15 354	28 250	322
K63	5	3,500	LU	4	75	110	93	10,5	16	80	28 528	90 922	1 580	
				6							102	40 431	136 383	2 326
				3							113	48 931	115 375	1 237
				4							140	62 666	153 833	1 628
	10	6,350 (P/L)	LU	6	75	110	93	10,5	16	185	88 812	230 750	2 396	
				2,8							122	50 160	122 265	1 296
				3,8							146	65 226	165 931	1 734
				4,8							170	79 739	206 598	2 166
K80	20	7,938	LU	3	75	110	93	10,5	18	195	63 726	136 507	1 215	
				4							115	54 639	148 343	1 510
K100	10	6,350 (P/L)	LU	3	90	130	110	10,5	20	138	69 976	197 791	1 986	
				4							200	103 227	231 371	1 569
				3							145	93 088	292 569	2 327
	20	10,319	LU	4	105	145	125	13	20	160	112 781	365 712	2 879	
				5							185	131 926	438 854	3 425
				3							205	147 896	346 843	1 875
K120	20	12,7	LU	4	125	165	145	13	25	245	189 410	462 457	2 467	
				5							285	229 480	578 071	3 052
	25	10,319	RS	2,8	125	165	145	13	25	243	120 097	321 655	2 025	
				3,8							293	156 167	436 532	2 710
K140	10	7,144	LU	4	150	202	175	13	25	145	103 727	377 375	3 073	
				5							165	125 671	471 718	3 801
	20	12,7	LU	3	150	202	175	13	30	225	168 282	454 550	2 341	
				4							265	215 519	606 066	3 080

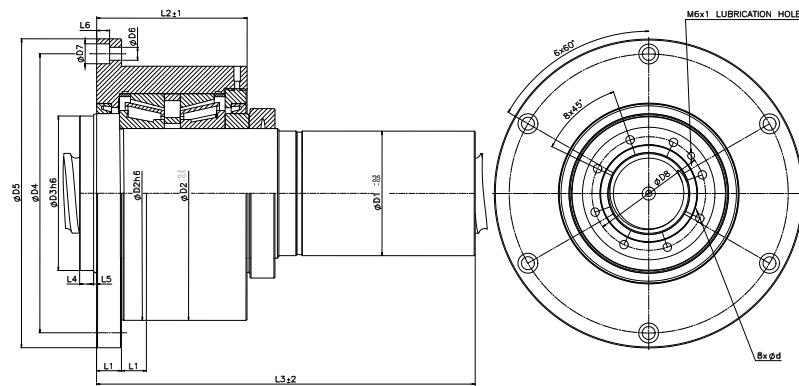
Key: P Pitch i Number of working threads - loaded turns k Rigidity factor R Axial rigidity
 D_w Ball diameter C_{am} Dynamic load capacity C_{0am} Static load capacity (P/L) Available in right and left design

Remark: In the tables above are listed only product in standard design. If you will need different, non standard design, please contact our technical support.

* Nut with mark * could be manufactured as single-threaded with play or preload selection of balls.

NUT TYPE

RMV



TYPE	P	D _w	RECIRCULATION	i	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	D ₇	D ₈	d	
	mm	mm			mm	mm	mm	mm	mm	mm	mm	mm		
K50	20	7,938	LU	4	76	155	105	175	200	10,5	18	90	M8	33016/Q
				6										
	25	6,350	RS	3,8										
				4,8										
K63	20	7,938	LU	4	96	180	125	200	230	13	20	105	M8	33020/Q
				6										
	25	7,938	RS	3,8										
				4,8										
K80	20	12,700	LU	4	126	230	160	250	280	13	20	140	M10	32026 X
				6										
	25	10,319	RS	3,8										
				4,8										
K100	20	12,700	LU	6	145	260	220	285	320	17	25	190	M12	33030
				8										
				4										
	32	12,700	LU	6										
				8										
				4										
40	12,700	LU	6											
			8											
			4											
K125	25	20,638	LU	6	186	330	260	360	400	21	31	230	M16	32038 X
				8										
				6										

TYPE	D ₁	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆	C _{am}	C _{0am}	
	mm	mm	mm	mm	mm	mm	mm			kN
K50	125	16	122	143	288	8	1	11	81 614	182 009
			164	185	353				115 665	273 014
			118	139,5	275				64 465	164 441
			143	164,5	325				78 810	207 715
K63	150	18	122	146	272	8	2	13	92 824	239 026
			166	187	355				131 533	258 539
			122	146	286				96 384	257 350
			147	171	336				117 831	325 074
K80	200	20	143	163	358	12	3	13	189 410	462 457
			168	190	357				268 437	693 685
			141	161	304				156 167	436 532
			154	176	344				190 916	551 409
K100	225	25	175	205	373	12	5	17	305 468	909 099
			205	235	445				391 175	1 212 132
			208	238	451				304 270	906 423
			275	305	585				228 430	824 021
			300	370	715				389 678	1 208 564
			238	268	505				213 940	602 649
K125	290	30	190	259	477	16	5	21	622 307	1 720 604
			210	300	569				796 988	2 294 139
			208	238	451				304 270	906 423

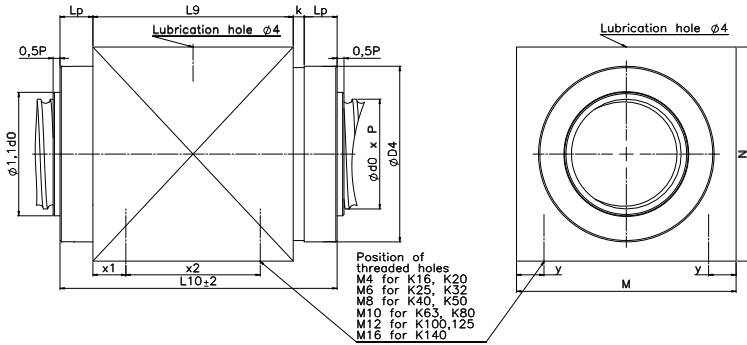
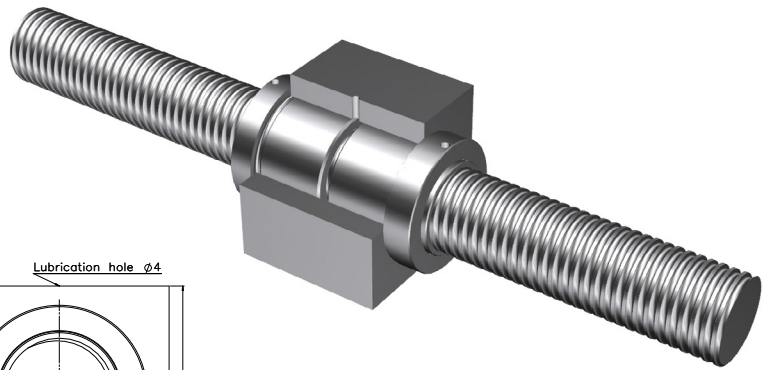
Key:

- P Pitch
- D_w Ball diameter
- i Number of working threads – loaded turns
- C_{am} Dynamic load capacity
- k Rigidity factor
- C_{0am} Static load capacity
- R Axial rigidity
- (P/L) Available in right and left design

Remark:

In the tables above are listed only product in standard design. If you will need different, non standard design, please contact our technical support.

NUT TYPE B+B+K



Note: Rectangular housing can be changed into cylindrical with flange.

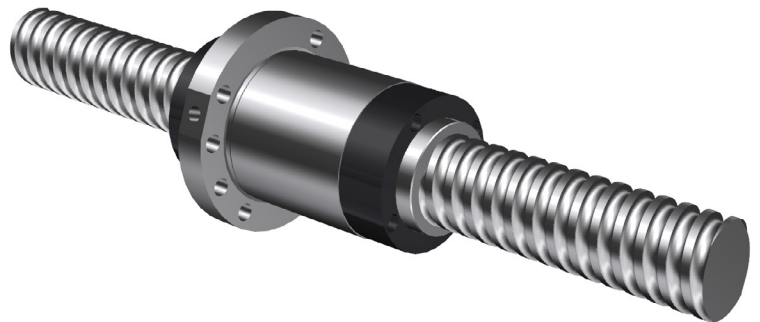
TYPE	P	D_w	RECIRCULATION	i	D_s	M	N	x_1	x_2	y	k	L_p	L_9	L_{10}	C_{am}	C_{oam}	R
	mm	mm	-	-	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	$N/\mu m^{3/2}$
K20	5	3,500 (P/L)	LU	3	40	46	44	12	55	6	4	8	69	89	13 714	23 388	512
				4					72				92	17 564	31 184	673	
K25	5	3,500 (P/L)	LU	3	46	52	50	10	53	7	3	8	63	82	16 010	31 617	654
				4					65				73	92	20 504	42 156	860
				10					3,500				LU	3	101	109	133
K32	5	3,500	LU	3	56	62	60	10	53	7	3	10	66	89	18 056	41 591	812
				4					65				73	96	23 125	55 455	1 069
				6					85				108	131	32 773	83 182	1 573
				10					6,350 (P/L)				LU	3	101	117	140
K40	5	3,500 (P/L)	LU	4	76	80	78	12	49	10	3	12	84	111	25 750	70 973	1 300
				6					81				108	135	36 493	106 459	1 914
				3					93				113	142	43 004	88 036	995
				4					115				133	162	55 075	117 381	1 309
K50	10	6,350 (P/L)	LU	6	86	90	88	14	157	10	5	14	168	197	78 053	176 072	1 926
				3					45				71	102	28 528	90 922	1 580
				4					77				91	122	40 431	136 383	2 326
				6					93				115	148	48 931	115 375	1 237
	10	7,144	LU	3	86	90	88	14	115	10	5	14	135	168	62 666	153 833	1 628
				4					157				207	240	88 812	230 750	2 396
				6					93				124	157	57 089	127 635	1 234
				3					115				145	178	73 114	170 180	1 624
20	7,938	LU	3	86	90	88	14	157	10	5	14	185	218	103 619	255 270	2 390	
			4					177				186	219	63 726	136 507	1 215	
K63	10	6,350 (P/L)	LU	4	105	115	110	20	81	13	5	16	168	205	69 976	197 791	1 986
				6					145				208	245	99 172	296 687	2 923
				3					104				186	227	103 227	231 371	1 569
				4					147				226	267	132 203	308 494	2 063
K80	10	7,144	LU	4	125	135	130	20	107	13	5	18	135	176	93 088	292 569	2 507
				6					149				182	223	131 926	438 854	3 690
				3					171				230	271	147 896	346 843	1 875
				4					215				274	315	189 410	462 457	2 467
				6					299				354	395	268 437	693 685	3 631
K100	10	7,144	LU	6	160	170	165	30	83	15	5	20	197	242	147 005	566 062	4 523
				4					147				280	325	215 519	606 066	3 080
				6					275				360	405	305 438	909 099	4 534

Key: P Pitch i Number of working threads - loaded turns k Rigidity factor R Axial rigidity
 D_w Ball diameter C_{am} Dynamic load capacity C_{oam} Static load capacity (P/L) Available in right and left design

Remark: In the tables above are listed only product in standard design. If you will need different, non standard design, please contact our technical support.

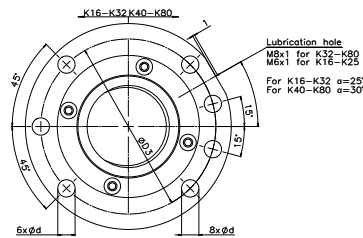
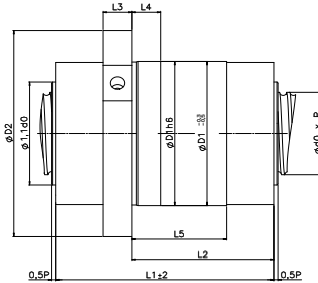
NUT TYPE

APVR

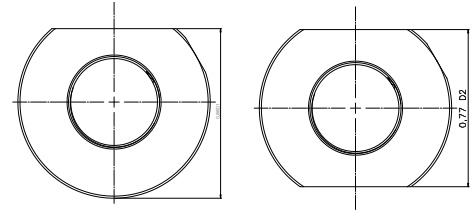


TYPE	P	D _w	RUNNING	I	D _{min}	D _{PRÍRUBY}	D _{KOZTEČ}	D _{PRÍP. otvoru}	L ₁	L ₂	L ₃	L ₄	L ₅	C _{am}	C _{0am}	R
	mm	mm	-	-	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	N/μm ^{3/2}
K40	20,0	6,350	2	2,3*	70,0	100,0	85,0	8,4	86,0	49,0	14,0	14,0	26,0	37 708	78 721	813
				2,8					96,0	59,0			36,0	44 659	95 834	1 057
				3,3*					106,0	69,0			46,0	51 436	112 947	1 236
				3,8					116,0	79,0			56,0	58 071	130 060	1 414
				4,3*					126,0	89,0			66,0	64 585	147 173	1 591
				4,8					136,0	99,0			76,0	70 993	164 286	1 767
				5,3*					146,0	109,0			86,0	77 308	181 400	1 942
	40,0	6,350	2	1,5*	70,0	100,0	85,0	8,4	105,0	65,0	14,0	14,0	39,0	25 833	52 146	568
				2,0					125,0	85,0			59,0	33 084	69 528	747
				2,5*					145,0	105,0			79,0	40 083	86 910	924
			4	3,0					165,0	125,0			99,0	46 887	104 292	1 099
				3,0					105,0	65,0			39,0	46 887	104 292	1 099
				4,0					125,0	85,0			59,0	60 049	139 057	1 446
				5,0					145,0	105,0			79,0	72 752	173 821	1 789
6,0	165,0	125,0	99,0	85 102	208 585	2 129										
	115,0	88,0	46,5	54 375	126 860	1 192										
K50	30,0	7,144	2	2,5*	80,0	115,0	98,0	10,5	130,0	103,0	16,0	16,0	61,5	63 606	152 232	1 418
				3,5*					145,0	118,0			76,5	72 623	177 604	1 642
				4,0					160,0	133,0			91,5	81 460	202 976	1 865
				4,5*					175,0	148,0			106,5	90 144	228 348	2 087
				2,0					105,0	59,0			29,0	44 749	101 259	959
	32,0	7,144	2	2,5*					121,0	75,0			45,0	54 216	126 574	1 186
				3,0					137,0	91,0			61,0	63 420	151 888	1 411
				3,5*					153,0	107,0			77,0	72 410	177 203	1 517
				4,0					169,0	123,0			93,0	81 221	202 518	1 856
				4,5*					185,0	139,0			109,0	89 880	227 833	2 077
	40,0	7,144	2	2,0					125,0	78,0			47,0	44 150	100 215	938
				2,5*					145,0	98,0			67,0	53 491	125 269	1 160
				3,0					165,0	118,0			87,0	62 571	150 323	1 381
				3,5*					185,0	138,0			107,0	71 441	175 376	1 599
			4	4,0					125,0	78,0			47,0	80 135	200 430	1 816
				5,0					145,0	98,0			67,0	97 087	250 538	2 247
				6,0					165,0	118,0			87,0	113 569	300 645	2 673
				7,0					185,0	138,0			107,0	129 668	350 753	3 097
	50,0	7,144	2	1,6*					122,0	78,0			50,0	35 702	78 917	734
				2,1					147,0	103,0			75,0	45 108	103 579	951
				2,6*					172,0	128,0			100,0	54 203	128 241	1 165
				3,1					197,0	153,0			125,0	63 054	152 903	1 378
				3,2					122,0	78,0			50,0	64 800	157 835	1 420
			4	4,2					147,0	103,0			75,0	81 872	207 158	1 841
				5,2					172,0	128,0			100,0	98 380	256 482	2 257
				6,2					197,0	153,0			125,0	114 446	305 805	2 668

* Nut with mark * could be manufactured as single-threaded with play or preload selection of balls.



Standard variants of flange types



TYPE	P	D _w	RUNNING	i	D _{min}	D _{PRÍRUBY}	D _{ROZTEČ}	D _{přip. otvoru}	L ₁	L ₂	L ₃	L ₄	L ₅	C _{am}	C _{0am}	R										
	mm	mm	-	-	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	N/µm ^{3/2}										
K63	32,0	7,938	2	1,9	95,0	140,0	125,0	13,0	108,0	58,0	18,0	18,0	26,0	52 779	128 071	1 073										
				2,4*					124,0	74,0			42,0	64 523	161 774	1 341										
				2,9					140,0	90,0			58,0	75 927	195 477	1 606										
				3,4*					156,0	106,0			74,0	87 058	229 180	1 869										
				3,9					172,0	122,0			90,0	97 961	262 883	2 131										
				4,4*					188,0	138,0			106,0	108 669	296 586	2 390										
				4,9					204,0	154,0			122,0	119 208	330 289	2 648										
	40,0	10,319	2	1,9	105,0	150,0	135,0	13,0	137,0	81,0	20,0	20,0	45,0	76 288	170 031	1 139										
				2,4*					157,0	101,0			65,0	93 264	214 776	1 423										
				2,9					177,0	121,0			85,0	109 747	259 521	1 705										
				3,4*					197,0	141,0			105,0	125 835	304 266	1 984										
				3,9					217,0	161,0			125,0	141 595	349 011	2 261										
				K80					30,0	10,319			2	2,8	125,0	165,0	145,0	13,0	136,0	73,0	25,0	25,0	35,0	119 782	321 006	2 017
														3,3*					151,0	88,0			50,0	137 961	378 329	2 359
3,8	166,0	103,0	65,0		155 757	435 651	2 698																			
4,3*	181,0	118,0	80,0		173 228	492 974	3 036																			
4,8	196,0	133,0	95,0		190 415	550 297	3 372																			
5,3*	211,0	148,0	110,0		207 354	607 619	3 706																			
40,0	12,700	2	2,3*		130,0	170,0	150,0	13,0			156,0	93,0		25,0					25,0	55,0			129 683	310 142	1 652	
			2,8						176,0	113,0	75,0	153 587	377 565		1 992											
			3,3*						196,0	133,0	95,0	176 897	444 987		2 330											
			3,8						216,0	153,0	115,0	199 716	512 409		2 666											
			4,3*						236,0	173,0	135,0	22 117	579 831		2 999											
			4,8						256,0	193,0	155,0	244 155	647 253		3 331											
			5,3*						276,0	213,0	175,0	265 874	714 676		3 661											
5,8	296,0	233,0	195,0		287 307	782 098	3 989																			

Key: P Pitch i Number of working threads - loaded turns k Rigidity factor R Axial rigidity
 D_w Ball diameter C_{am} Dynamic load capacity C_{0am} Static load capacity (P/L) Available in right and left design

Remark: In the tables above are listed only product in standard design. If you will need different, non standard design, please contact our technical support.

* Nut with mark * could be manufactured as single-threaded with play or preload selection of balls.

BALL SCREW DESIGN



Basic technical parameters:

- Diameter from 12 to 100 mm
- Length up to 6 m
- Accuracy classes T5, T7
- Minimum strength of the shaft material $R_m = 650 \text{ MPa}$
- Efficiency approx. 93-95 %
- Operating temperature $-20 \text{ }^\circ\text{C}$ to $+60 \text{ }^\circ\text{C}$
(acc. to the lubricant type)

Application:

- Transport mechanisms
- Woodworking machines
- And others

4.2 Basic (rolled) screw

Transport ball screws are used for applications with less emphasis on the high precision of positioning, e.g. transport or lifting equipment, woodworking machines, etc. The screw thread is rolled.

Category characteristics:

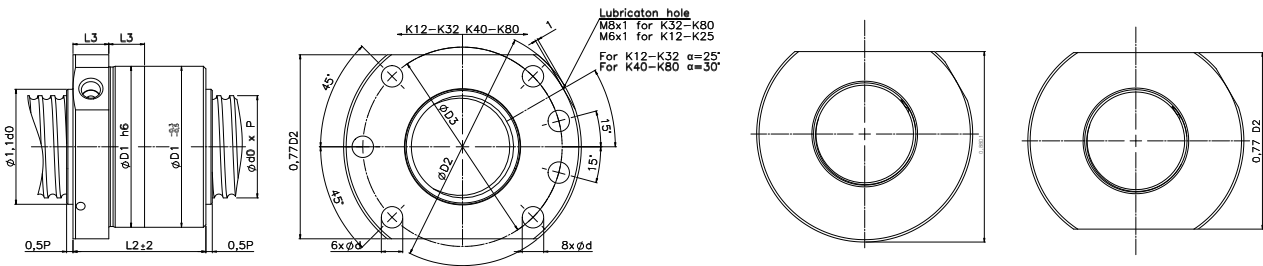
- Very good quality/price ratio
- Standard geometrical and working accuracy, lifetime and load ratings in accordance with ISO 3408



**Reasonable
price**

NUT TYPE APE

Standard variants of flange types



TYPE	P	D _w	RECIRCULATION	i	D ₁	D ₂	D ₃	d	L ₃	L ₂	C _{am}	C _{0am}	R
	mm	mm	-	-	mm	mm	mm	mm	mm	mm	kN	kN	N/μm ^{3/2}
K12	4	2,000	PR	2,7	24	42	32	4,5	10	36	4 912	7 920	314
K16	5	3,500	PR	1,7	32	55	43	6,4	10	38	8 640	13 021	300
				2,7						43	12 861	20 680	466
K20	5	3,500 (P/L)	LU	3	36	59	47	6,4	10	42	13 714	23 388	512
				4						46	17 564	31 184	673
				6						57	24 892	46 775	991
				3						44	16 010	31 617	654
K25	5	3,500 (P/L)	LU	4	40	62	51	6,4	12	50	20 504	42 156	860
				0,8						54	5 484	9 689	199
	25	3,500	RS	1,8	40	63	51	6,4	12	79	11 015	21 801	432
				3						44	18 056	41 591	812
K32	5	3,500	LU	4	50	80	65	8,4	12	50	23 125	55 455	1 069
				6						60	32 773	83 182	1 573
				4						55	25 750	70 973	1 300
				6						65	36 493	106 459	1 914
K40	5	3,500 (P/L)	LU	3,8	63	92	77	8,4	14	62	26 070	73 467	1 335
				4,8						68	31 871	92 800	1 668
	4	85	64 797	132 471	1 336								
	6	106	91 832	198 706	1 966								
	8	3,500	RS	4	63	92	77	8,4		90	73 114	170 180	1 624
10	7,144	LU	6	111					103 619	255 270	2 390		
K50	10	7,144	LU	3,8	75	110	93	10,5	16	120	64 818	165 133	1 716
				4,8						140	79 241	208 590	2 145
	20	6,350	RS	4	75	110	93	10,5		89	83 554	226 489	2 052
				6						110	118 414	339 733	3 020
K63	10	7,144	LU	2,8	90	130	110	10,5	18	120	65 998	176 929	1 603
				4,8						120	65 998	176 929	1 603
	20	7,144	RS	4	95	135	115	13		160	104 916	303 307	2 679

Key: P Pitch i Number of working threads - loaded turns k Rigidity factor R Axial rigidity
 D_w Ball diameter C_{am} Dynamic load capacity C_{0am} Static load capacity (P/L) Available in right and left design

Remark: In the tables above are listed only product in standard design. If you will need different, non standard design, please contact our technical support.

BALL SCREW DESIGN



Basic technical parameters:

- The recommended thread diameter range from 63 to 200 mm
- Minimum strength of the shaft material is $R_m = 720 \text{ MPa}$
- Efficiency approx. 93-95 %
- These ball screws should be lubricated by lubricants for high loads
- Operating temperature up to 90 °C

Application

- Injection molding machines
- Transport mechanisms
- Lifting equipment
- Replacements of hydraulic cylinders
- And others

4.3 Heavy duty (high-load) screw

High-load ball screws provide more than double load capacity and rigidity compared to the standard ball screws due to a modified radius of the thread profile.

The high-load ball screws have lower efficiency and are designed for slow-running applications only. The high-load ball screws are usually produced as non-preloaded.

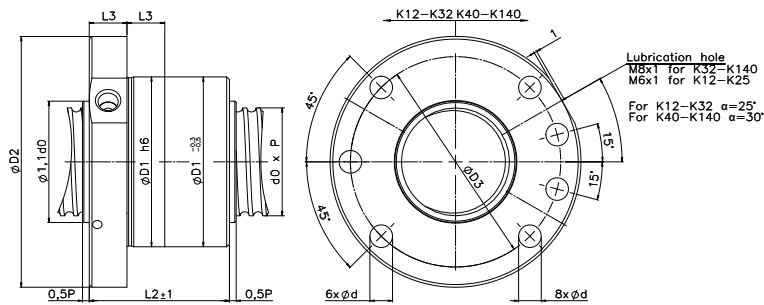
Category characteristics:

- Precise motion ball screws for big axial loads and long lifetime
- The thread accuracy of high-load ball screws is normally selected in the class IT1 (acc. to ISO 3408)

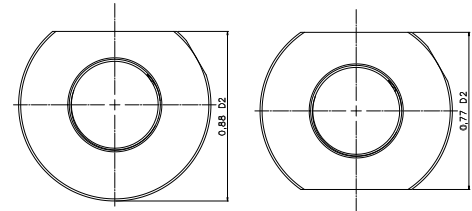


**Very
high
loads**

NUT TYPE AP HEAVY DUTY



Standard variants of flange types



TYPE	P	D_w	RECIRCULATION	i	D_1	D_2	D_3	d	L_1	L_2	C_{am} [kN]	C_{0am} [kN]
	mm	mm	-	-	mm	mm	mm	mm	mm	mm	kN	kN
K63	20	12,700	L	8	99	138	118	13	18	228	413	1 038
K80	20	12,700	L	8	122	161	141	13	20	230	477	1 381
				10						275	578	1 726
K100	20	12,700	L	12	142	193	167	17	25	325	770	2 715
	25	20,638		10	165	216	190			351	1 205	3 425
K125	25	20,638	L	8	188	239	213	17	30	300	1 108	3 428
				10						356	1 342	4 285
				12						412	1 570	5 142
K140	32	25,400	L	8	220	285	252	21	40	385	1 565	4 840
				10						457	1 896	6 050
				12						529	1 776	7 253
K160	30	20,638	L	8	230	297	263	21	40	332	1306	4 777
				10						400	1 582	5 971
				12						467	1 851	7 165

Key: P Pitch i Number of working threads - loaded turns k Rigidity factor R Axial rigidity
 D_w Ball diameter C_{am} Dynamic load capacity C_{0am} Static load capacity (P/L) Available in right and left design

Remark: In the tables above are listed only product in standard design. If you will need different, non standard design, please contact our technical support.

BALL SCREW DESIGN



Telescopic ball screw:

- Used in applications where small housing dimensions and large pitches are required (e.g. handling platforms, hexapods, etc.).
- It is a telescopic set of several ball screws screwed in one assembly. The ball nuts work as bearings supporting the inner ball screw assembly.
- The telescopic ball screws replace hydraulic cylinders with the advantage of easy control and positioning.



Telescopic ball screw

4.4 Special screw

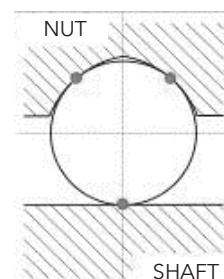
The special ball screw category includes e.g. these variants:

Threadless ball screw:

- The threadless ball screw is intended especially for motion mechanisms of manipulators and transport equipment, which require efficient transmission of the rotary to linear motion without emphasis on the rigidity and load capacity, but with requirements on simplicity, easy maintenance, and undemanding manufacturability.
- The profiled thread is used only for the ball nut and the forces are transmitted via the balls inserted between this profile and the smooth cylindrical profile of the shaft. To transmit the forces, this solution uses elastic deformation of the hardened and grounded cylindrical shaft, on which the preloaded balls in the profiled inner thread of the nut are rolling.



Threadless ball screw



Threadless ball screw operation

Linear actuator:

- The linear actuator ensures motor controlled linear movement within the operating range; it replaces the hydraulic cylinders. It uses the transmission of the rotary to linear motion using the ball screw with minimum efficiency of 95 %.
- The movement speed can be controlled or adjusted by a suitable selection of the used.

*Linear actuator***Ball screw with cage:**

- This solution does not use the standard recirculation systems (A, R, L, P), but the balls are returned via an inserted cage.
- The ball screw with cage is suitable for solutions, which require the highest running quality in combination with small strokes.

*Ball screw with cage*

If you are interested in any of the above mentioned designs, we will be pleased to provide you with our technical support.



„Our goal is to be an honest partner of our customers, suppliers, and associates.“

- The up-to-date catalogue version is always available on the company website <http://www.ksk-pm.cz/ke-stazeni/>.
- General terms and conditions as well as operating conditions can be found on the company website <http://www.ksk-pm.cz/ke-stazeni/>
- Most of the used calculations are based on the ISO 3408 standard dealing with ball screws.
- Due to continuous technical development within our company, the technical parameters quoted in this catalogue are not binding on the KSK Precise Motion, a.s. company.
- The KSK Precise Motion, a.s. company hereby declares that it bears no liability for incorrect design proposals made by customers based on the data contained in this catalogue. If you need assistance, please contact our technical support.



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