



Data sheet ball screws KGS

Technical data

Thread:	Gothic profile (pointed profile)
Diameter:	Standard 12 – 80 mm
Lead:	Standard 5 – 50 mm
Number of starts:	1 – 5
Thread direction:	Right hand thread, KGS 2005, 2505 and 3205 also left hand thread
Length:	Standard 5600 mm, KGS 1205 2000 mm
Material:	1.1213 (Cf 53) Ball track inductively hardened and polished, Soft-annealed screw end and core
Straightness:	L<500 mm: 0,05mm/m L=500 – 1000 mm: 0,08 mm/m L>1000 mm: 0,1mm/m
Left and right hand srew:	Only KGS 2005, 2505 and 3205
End machining:	According to customer specifications

Linear speeds:

The maximum rotation limit is 3000 rpm, for single dimension up to 4500 rpm. This rotation limit defines the permissible rotation which can be run under ideal operating conditions only!

Installation positioning:

The position in which the screw can be installed is selectable.

Class of accuracy:

P3	Lead accuracy	12 µm/300 mm
P5	Lead accuracy	23 µm/300 mm
T7	Lead accuracy	52 µm/300 mm
T9	Lead accuracy	130 µm/300 mm
T10	Lead accuracy	200 µm/300 mm

Without any specifications we deliver T7

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Self-locking

Ball screws are generally not self-locking due to the low friction. It is therefore advisable to install a suitable motor with holding brake, particularly when the ball screw is installed vertically.

Efficiency

Ball screws have a maximum mechanical efficiency up to 98 % in comparison with a trapezoidal screw, which have a mechanical efficiency of 50 %.

Duty cycle

The ball screw permits a duty cycle of up to 100 %. Extremely high forces in combination with high duty cycles can reduce the life time.

Temperatures

All screw drives are designed for continuous operation at ambient temperatures of -30 °C up to 80 °C. Temperatures of up to 110°C are also permitted to brief periods. Ball screw drives are only in exceptional cases suitable for operation at subzero temperatures.

Repeatability

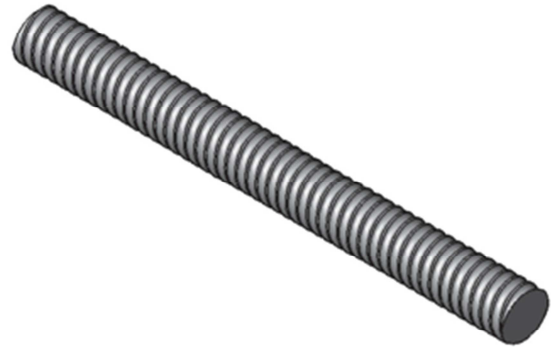
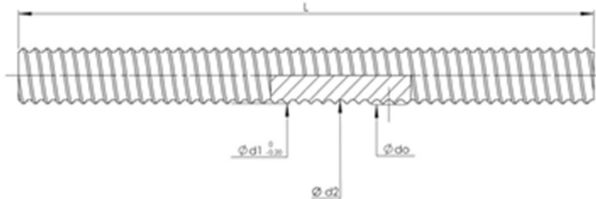
The repeatability is defined as the capability of a screw drive to reach an actual position that has once been reached again under the same conditions. It refers to the average position variation according to VDI/DGQ 3441. The repeatability is influenced by:

- Load
- Speed
- Deceleration
- Direction of movement
- Temperature

Aggressive ambient working conditions

In cases of heavy dirt and dust particles, an additional bellow or a spiral spring cover is recommended.

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Type Diameter [mm] Lead [mm] Right hand thread	Accuracy class [μm/300 mm]	Dimensions [mm]				Distributed load W _{KGS} [kg/m]	Planar moment of inertia I _y [10 ⁴ mm ⁴]	Section modulus [10 ³ mm ³]	Mass moment of inertia [kg m ² /m]
		d ₀	d ₁	d ₂	L max.				
KGS-1205	50	12	11,5	10,1	2000	0,75	0,051	0,101	1,13*10 ⁻⁵
KGS-1605	50	16	15,5	12,9	5600	1,26	0,136	0,211	3,21*10 ⁻⁵
KGS-1610	50	16	15,4	13,0	5600	1,26	0,140	0,216	3,21*10 ⁻⁵
KGS-2005	50	20	19,5	16,9	5600	2,04	0,400	0,474	8,46*10 ⁻⁵
KGS-2020	50	20	19,5	16,9	5600	2,04	0,400	0,474	8,46*10 ⁻⁵
KGS-2050	50	20	19,1	16,5	5600	2,04	0,364	0,441	8,46*10 ⁻⁵
KGS-2505	50	25	24,5	21,9	5600	3,33	1,129	1,031	2,25*10 ⁻⁴
KGS-2510	50	25	24,5	21,9	5600	3,33	1,129	1,031	2,25*10 ⁻⁴
KGS-2520	50	25	24,6	22,0	5600	3,33	1,150	1,045	2,25*10 ⁻⁴
KGS-2525	50	25	24,5	22,0	5600	3,33	1,150	1,045	2,25*10 ⁻⁴
KGS-2550	50	25	24,1	21,5	5600	3,33	1,049	0,976	2,25*10 ⁻⁴
KGS-3205	50	32	31,5	28,9	5600	5,63	3,424	2,370	6,43*10 ⁻⁴
KGS-3210	50	32	32,7	27,3	5600	5,63	2,727	1,998	6,43*10 ⁻⁴
KGS-3220	50	32	31,7	27,9	5600	5,63	2,974	2,132	6,43*10 ⁻⁴
KGS-3240	50	32	30,9	28,3	5600	5,63	3,149	2,225	6,43*10 ⁻⁴
KGS-4005	50	40	39,5	36,9	5600	9,01	9,101	4,933	1,65*10 ⁻³
KGS-4010	50	40	39,5	34,1	5600	8,35	6,737	3,893	1,41*10 ⁻³
KGS-4020	50	40	39,7	35,9	5600	9,01	8,154	4,542	1,65*10 ⁻³
KGS-4040	50	40	38,9	36,3	5600	9,01	8,523	4,696	1,65*10 ⁻³
KGS-5010	50	50	49,5	44,1	5600	13,5	18,566	8,420	3,70*10 ⁻³
KGS-5020	50	50	49,5	44,1	5600	13,5	18,566	8,420	3,70*10 ⁻³
KGS-6310	50	63	62,5	57,1	5600	22,03	52,181	18,280	9,84*10 ⁻³
KGS-8010	50	80	79,5	74,1	5600	36,41	148,0	39,950	2,69*10 ⁻²
Left hand thread									
KGS-2005 LH	50	20	19,5	16,9	5600	2,04	0,400	0,474	8,46*10 ⁻⁵
KGS-2505 LH	50	25	24,5	21,9	5600	3,33	1,129	1,031	2,25*10 ⁻⁴
KGS-3205-LH	50	32	31,5	28,9	5600	5,63	3,424	2,370	6,43*10 ⁻⁴

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