KHD Nut Series

Eliminates the need for load compensating preload forces. The KHD Series anti-backlash assembly makes use of the Kerk patented AXIAL TAKE-UP MECHANISM (see Lead-screw Assemblies: Anti-Backlash Technologies section) to provide backlash compensation. The unique split nut with torsional take-up provides increased load capacity and axial stiffness over comparably sized ZBX units. Although the KHD offers high axial stiffness, frictional drag torque (1-3 oz.-in.) is very low. The anti-backlash mechanism in the KHD unit eliminates the need for load compensating preload forces. The assembly consists of a 303 stainless steel screw mated with a self-lubricating polyacetal nut. End machining to customer specifications and Kerkote® TFE screw coating are optional.

KHD Series Nut Assemblies

Technical Data

Material	Polyacetal, Lubricant Additive
Tensile Strength	9,700 psi
Coefficient of Expansion	6.0 x 10 –5 in/in/°F
Coefficent of Friction Polyacetal Nut to Screw	Static = .08 .08 ** Dynamic = .15 .09 **
Standard Operating Temperature Range	32 - 200° F* (0 - 93° C)*

* Very high or low temperatures may cause significant changes in the nut fit or drag torque. Please call the HKP Engineering Team at 603 213 6290 for optional temperature range materials.
** with Kerkote® TFE Coating.

Grease Compatibility

Coatings	Compatible
Kerkote® TFE Coating	YES
Black Ice® TFE Coating	YES
Grease	NO

Anti-Backlash Life

Without Kerkote® TFE Coating inch / (cm)	With Kerkote® TFE Coating inch / (cm)
80 to 100 million (200 to 250 million)	180 to 230 million (450 to 580 million)

Anti-backlash life is defined as the nut's ability to compensate for wear while maintaining its zero backlash properties. Above life data is based on 25% of the dynamic load rating. Life will vary with loading, operating environment, and duty cycle. The longer screw leads generally provide longer life.

Identifying the KHD Series Nut Part Number Codes when Ordering

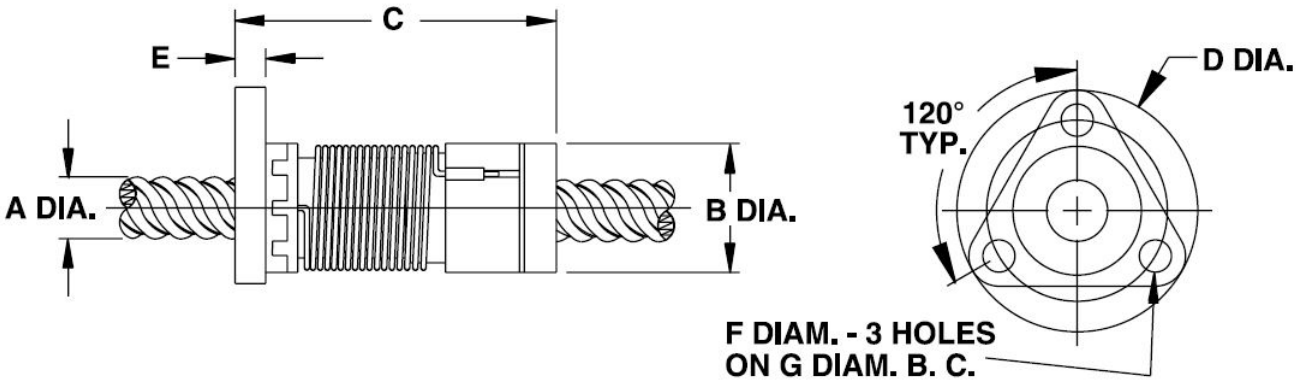
KHD	A	K	R	—	031	—	0039	—	XXXX
Prefix	**Nut Mounting Style**	**Lubrication**	**Thread Direction**		**Diameter Code**		**Nominal Thread Lead Code**		**Unique Identifier**
KHD	**A** = Flanged (Triangular) **T** = Threaded **X** = Custom	**S** = Uncoated **K** = Kerkote® TFE Coating **N** = Nut only **B** = Black Ice® TFE Coating	**R** = Right hand **L** = Left hand (Not Available for Micro Series) (Refer to leadscrew charts for availability		**031** = .313 in (8 mm) **037** = .375 in (10 mm)		(Refer to LEAD CODE Specifications chart, page 3)		Proprietary suffix assigned to a specific customer application. The identifier can apply to either a standard or custom part.

NOTE: Dashes must be included in Part Number (–) as shown above. For assistance call our Engineering Team at 603 213 6290.

Dimensional Drawings

KHDA Flange Mount

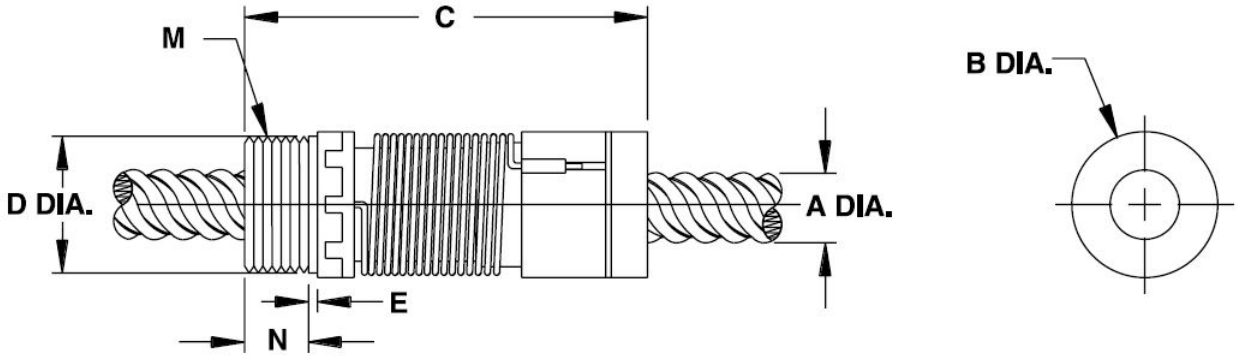
KHDA Flange Mount	Screw Diam. A inch (mm)	Nut Diam. B inch (mm)	Nut Length C inch (mm)	Flange Diam. D inch (mm)	Flange Thickness E inch (mm)	Thread M* inch	Thread Length N inch (mm)	Dynamic Load lbs (Kg)	Drag Torque oz-in (N-m)
	5/16 (8)	.80 (20.3)	2.2	.75 (19.1)	.05 (1.27)	3/4-20	.35 (8.9)	20 (10)	1-3 (.007-.020)
	3/8 (10)	.80 (20.3)	(55.9)	.75 (19.1)	.05 (1.27)	3/4-20	.35 (8.9)	20 (10)	1-3 (.007-.020)



KHDT Thread Mount

KHDT Thread Mount	Screw Diam. A inch (mm)	Nut Diam. B inch (mm)	Nut Length C inch (mm)	Flange Diam. D inch (mm)	Flange Thickness E inch (mm)	Thread M* inch	Thread Length N inch (mm)	Dynamic Load** lbs (Kg)	Drag Torque oz-in (N-m)
	5/16 (8)	.80 (20.3)	2.2 (55.9)	.75 (19.1)	.05 (1.27)	3/4-20	.35 (8.9)	20 (10)	1-3 (.007-.020)
	3/8 (10)	.80 (20.3)	2.2 (55.9)	.75 (19.1)	.05 (1.27)	3/4-20	.35 (8.9)	20 (10)	1-3 (.007-.020)

Metric numbers are for reference only.



Dimensional Tolerances			
Inches		Metric (mm)	
.X	± .02	< L 4	± 0.1
.XX	± .010	4 < L ≤ 16	± 0.15
.XXX	± .005	16 < L ≤ 63	± 0.2
		63 < L ≤ 250	± 0.3

Lead Screw Compatibility: KHD Series

Diameter		Diameter Code	Lead		LEAD CODE	Left Hand Available	Outside Diameter (for reference)		Root Diameter (for reference)		Efficiency %*
inches	mm		inches	mm			inches	mm	inches	mm	
5/16	8	031	0.039	1.00	**0039**		0.315	8.00	0.261	6.63	34
			0.057	1.44	**0057**		0.315	8.00	0.243	6.17	43
			0.0741	1.88	**0074**		0.312	7.92	0.211	5.36	51
			0.111	2.82	**0111**		0.312	7.92	0.232	5.89	60
			0.167	4.24	**0167**		0.312	7.92	0.211	5.36	69
			0.250	6.35	**0250**		0.312	7.92	0.234	5.94	76
			0.500	12.70	**0500**		0.312	7.92	0.232	5.89	83
			0.800	20.32	**0800**		0.306	7.77	0.243	6.17	86
3/8	10	037	0.025	0.64	**0025**		0.375	9.53	0.337	8.56	21
			0.039	1.00	**0039**		0.394	10.01	0.350	8.89	28
			0.04167	1.06	**0042**		0.375	9.53	0.320	8.13	34
			0.050	1.27	**0050**	•	0.375	9.53	0.301	7.65	36
			0.055	1.40	**0055**		0.375	9.53	0.303	7.70	38
			0.059	1.50	**0059**	•	0.389	9.88	0.313	7.95	38
			0.0625	1.59	**0063**	•	0.388	9.86	0.295	7.49	41
			0.068	1.73	**0068**		0.388	9.86	0.295	7.49	42
			0.079	2.00	**0079**		0.375	9.53	0.264	6.71	47
			0.0833	2.12	**0083**		0.375	9.53	0.293	7.44	48
			0.100	2.54	**0100**	•	0.375	9.53	0.266	6.76	53
			0.125	3.18	**0125**	•	0.375	9.53	0.295	7.49	59
			0.157	4.00	**0157**		0.375	9.53	0.274	6.96	65
			0.1667	4.23	**0167**		0.371	9.42	0.261	6.63	61
			0.197	5.00	**0197**		0.375	9.53	0.266	6.76	69
			0.200	5.08	**0200**	•	0.375	9.53	0.266	6.76	69
			0.250	6.35	**0250**		0.375	9.53	0.268	6.81	70
			0.300	7.62	**0300**		0.375	9.53	0.255	6.48	76
			0.333	8.46	**0333**		0.375	9.53	0.245	6.22	78
			0.363	9.22	**0363**	•	0.375	9.53	0.260	6.60	79
			0.375	9.53	**0375**		0.375	9.53	0.265	6.73	79
			0.394	10.00	**0394**		0.375	9.53	0.260	6.60	79
			0.400	10.16	**0400**		0.375	9.53	0.293	7.44	79
			0.472	12.00	**0472**		0.388	9.86	0.287	7.29	82
			0.500	12.70	**0500**	•	0.388	9.86	0.265	6.73	81
			0.667	16.94	**0667**		0.375	9.53	0.273	6.93	83
			0.667	19.05	**0750**		0.388	9.86	0.273	6.93	84
			0.984	25.00	**0984**		0.375	9.53	0.262	6.65	84
			1.000	25.40	**1000**		0.383	9.73	0.254	6.45	84
			1.200	30.48	**1200**	•	0.383	9.73	0.254	6.45	84
			1.250	31.75	**1250**		0.375	9.53	0.278	7.06	84
			1.500	38.10	**1500**		0.375	9.53	0.264	6.71	83

Shaded areas have been translated from their designed inch or mm dimension to an equivalent mm or inch dimension.

* Listed efficiencies are theoretical values based on Kerkote® TFE coated lead-screw
** Listed efficiencies for Micro screws are theoretical values based on non-coated lead-screws

Material & Teflon TFE Coating Options

Materials		Teflon TFE Coatings	
Kerkite® Composite Polymer Nuts	In addition to the Kerk® self-lubricating acetal nut material, we offer a variety of custom compounded Kerkite composite polymers. Kerkite polymers are a family of high performance materials that offer exceptional wear properties with the cost and design advantages afforded through injection molding. Kerkite polymers offer a variety of mechanical, thermal and electrical properties and are compatible with many chemicals and environmental conditions. Each member of the Kerkite family is compounded with lubricants, reinforcements and thermoplastic polymers formulated to provide optimum performance in its target conditions and applications.	**Kerkote® TFE Coating**	Soft coating that is a long-term. maintenance-free. dry lubricant, optimized for softer plastics like acetals and nylons, with or without mechanical reinforcement. Lubrication to the nut/screw interface occurs by the nut picking up Kerkote® TFE particles from the coating as well as from the migration of the internal lubricant within the plastic nut. The transfer of TFE to the nut continues throughout the operating life of the assembly as long as the nut periodically travels over areas with Kerkote® TFE coating. The lubricant, although solid, also has some "spreading" ability as in fluid lubricants. Kerkote® TFE coated screws provide the maximum level of self-lubrication and should not be additionally lubricated or used in environments where oils or other lubricant contamination is possible.
Special Materials	Kerk® has rolled screws in many materials, including 316 stainless, 400 series stainless, precipitate hardening materials, carbon steel, aluminum, and titanium. Kerk® nuts have been produced in many alternative plastics including PEEK, polyester, Torlon®, Vespel®, PVDF, UHMW, Ertalyte®, customer-supplied specialty materials, and metal nuts made from bronze, brass, and stainless steel. If the material can be molded, machined, ground, or rolled, we can likely process it.	**Black Ice® TFE Coating**	Hard coating that is long term, maintenance-free and is exceptionally durable in all types of environments, with virtually any type of polymer nut. Black Ice® TFE coating remains on the screw, offering a low friction surface upon which the nut travels. Rather than acting as a dry lubricant, Black Ice® TFE is an anti-friction coating whose surface properties displace the metal to which it is applied. Though it is not intended for use with metal or glass fiber reinforced nuts, Black Ice® TFE is bonded securely to the screw's surface and can withstand abrasion from contamination, rigid polymer systems, fluid impingement and wash down applications. Black Ice® TFE can be used in more aggressive environment conditions, or anywhere reduced friction and a permanent coating is desired. Not intended to be used with additional lubricants.

Note: There are certain applications where external lubrication may be desired. These include the use of nut materials such as glass reinforced plastic or metal.Greases, when used properly can provide unique capabilities and Haydon Kerk Motion Solutions does offer a selection of greases developed specifically for these applications. Please contact a sales engineer for assistance selecting the best lubricant for your requirements.