



IDA

INTERNATIONAL DISTRIBUTION ALLIANCE, INC.

Uniting business - one person at a time

SELF-ALIGNING LINEAR BALL BUSHINGS & ACCESSORIES

FOR COMMERCIAL AND INDUSTRIAL APPLICATIONS



TABLE OF CONTENTS

Introduction	1
Closed Ball Bushings	2
Open Ball Bushings	3
Precision Ground Linear Shafting	4
Pre-drilled and Tapped Precision Ground Linear Shafting	5
Custom Machined Precision Ground Linear Shafting	5
Aluminum Pre-drilled Shaft Support Rail --	5
Steel Pre-drilled Low Shaft Support Rail --	6
Aluminum Shaft End Supports	6



International Distribution Alliance (IDA), Inc. sub-contract manufacturers, supplies and procures high quality power transmission products on a global scale. Our international manufacturing and distribution partnerships allow IDA to bring our customers the greatest value . . . that is, less time, effort and monetary resources spent for quality product delivered on time.

IDA is proud to introduce the SMK Series inch and metric self-aligning linear ball bushings. Outstanding features include:

- **Self-Aligning:** The convex shape of the ball plate allows alignment variation of up to 0.5°
- **Size Interchangeable:** 100% size interchangeable with international standard dimensioned ball bushings
- **In-stock for rapid delivery**

To compliment our SMK Series, IDA offers a full line of shafting (pre-drilled & tapped, custom machining), support rail and end supports.

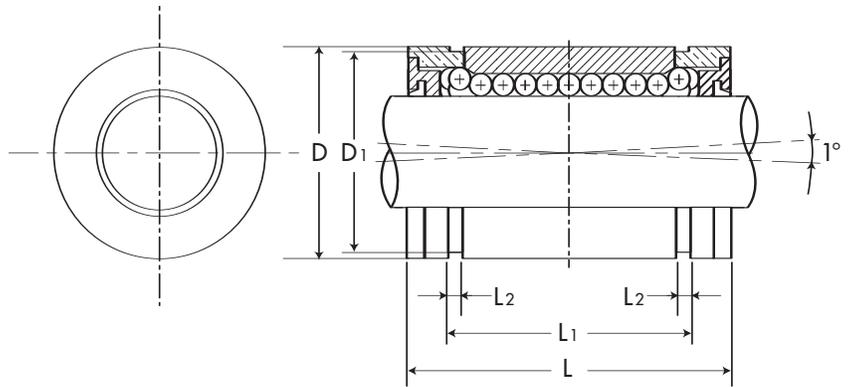
Other standard IDA linear motion products include: ball linear guides, and track rollers and systems.

Call for more information, brochures and quotations — IDA is here to serve you!

CLOSED BALL BUSHINGS



• Available with or without seals.



Inch (")

NOMINAL SHAFT DIA.	SMK W/O SEAL	SMK WITH SEAL	NO. OF BALL CIRCUITS	D (in.)	D ₁ (in.)	L (in.)	L ₁ (in.)	L ₂ (in.)	DYNAMIC LOAD (LB.)		STATIC LOAD (lb.)
									NORMAL	MAX.	
1/4"	SMKBS04	SMKBS04UU	4	0.5005/0.5000	0.4687	0.750/0.735	0.511/0.501	0.039	57		49
3/8"	SMKBS06	SMKBS06UU	4	0.6255/0.6250	0.588	0.875/0.860	0.699/0.689	0.039	78	105	66
1/2"	SMKBS08	SMKBS08UU	4	0.8755/0.8750	0.8209	1.250/1.230	1.032/1.012	0.050	190	265	190
5/8"	SMKBS10	SMKBS10UU	5	1.1255/1.1250	1.0700	1.500/1.480	1.105/1.095	0.056	290	420	340
3/4"	SMKBS12	SMKBS12UU	6	1.2505/1.2500	1.1760	1.625/1.605	1.270/1.250	0.056	500	640	430
1"	SMKBS16	SMKBS16UU	6	1.5630/1.5625	1.4900	2.250/2.230	1.884/1.864	0.070	820	1045	780
1-1/4"	SMKBS20	SMKBS20UU	6	2.0006/2.0000	1.8890	2.625/2.600	2.004/1.984	0.068	1240	1585	1270
1-1/2"	SMKBS24	SMKBS24UU	6	2.3756/2.3750	2.2389	3.000/2.970	2.410/2.390	0.086	1510	1930	1540
2"	SMKBS32	SMKBS32UU	6	3.0008/3.0000	2.8379	4.000/3.960	3.193/3.163	0.105	2230	2850	2580

Metric (mm)

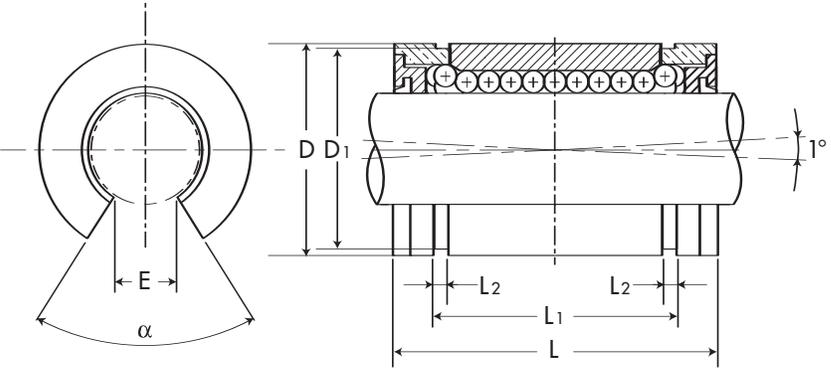
NOMINAL SHAFT DIA.	SMK W/O SEAL	SMK WITH SEAL	NO. OF BALL CIRCUITS	D (mm)	L (mm)	L ₁ (mm)	L ₂ (mm)	DYNAMIC LOAD (N)	STATIC LOAD (N)
10 mm	SMKES10	SMKES10UU	5	19.000/19.038	28.8/29.2	21.5/21.9	1.35	750	550
12 mm	SMKES12	SMKES12UU	5	22.000/22.040	31.8/32.2	22.5/22.9	1.35	1230	1100
16 mm	SMKES16	SMKES16UU	5	25.999/26.041	35.8/36.2	24.5/24.9	1.35	1550	1250
20 mm	SMKES20	SMKES20UU	6	31.999/32.047	44.8/45.2	31.1/31.5	1.65	2580	1670
25 mm	SMKES25	SMKES25UU	6	39.999/40.049	57.8/58.2	43.6/44.0	1.90	3800	2750
30 mm	SMKES30	SMKES30UU	6	46.999/47.049	67.8/68.2	51.6/52.0	1.90	4710	2800
40 mm	SMKES40	SMKES40UU	6	61.998/62.059	79.8/80.2	60.2/60.6	2.20	6500	5720
50 mm	SMKES50	SMKES50UU	6	74.998/75.059	99.8/100.2	77.2/77.6	2.70	11460	7940

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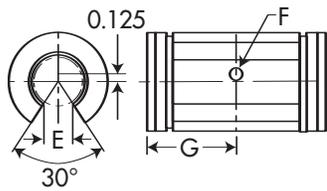
OPEN BALL BUSHINGS



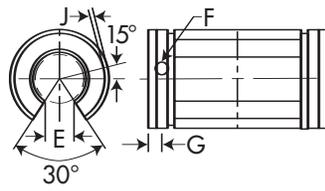
- Open bearings exclude one ball circuit to provide opening for support rail.
- Open bearing includes shaft seals as standard.



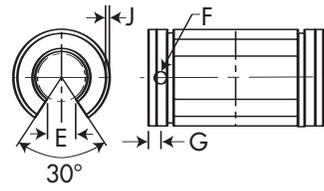
Inch (")



SMKBS08UUOP



SMKBS10UUOP

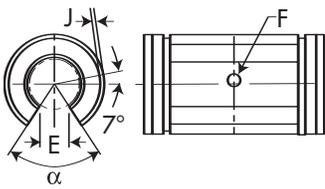


SMKBS12UUOP – SMKBS32UUOP

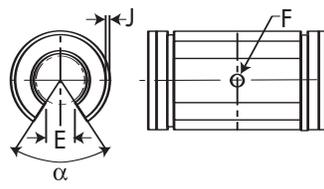
NOMINAL SHAFT DIA.	SMK WITH SEAL	NO. OF BALL CIRCUITS	D (in.)	D ₁ (in.)	L (in.)	L ₁ (in.)	L ₂ (in.)	E (in.)	F (in.)	G (in.)	J (in.)	DYNAMIC LOAD* (lb.)	STATIC LOAD* (lb.)
1/2"	SMKBS08UUOP	3	0.8755/0.8750	0.8209	1.250/1.230	1.032/1.012	0.050	0.32	0.14	0.63	Thru	210	190
5/8"	SMKBS10UUOP	4	1.1255/1.1250	1.0700	1.500/1.480	1.105/1.095	0.056	0.38	0.11	0.13	0.039	320	340
3/4"	SMKBS12UUOP	5	1.2505/1.2500	1.1760	1.625/1.605	1.270/1.250	0.056	0.43	0.14	0.13	0.059	510	430
1"	SMKBS16UUOP	5	1.5630/1.5625	1.4900	2.250/2.230	1.884/1.864	0.070	0.56	0.14	0.13	0.047	830	780
1-1/4"	SMKBS20UUOP	5	2.0008/2.0000	1.8890	2.625/2.600	2.004/1.984	0.068	0.63	0.20	0.19	0.090	1250	1270
1-1/2"	SMKBS24UUOP	5	2.3760/2.3750	2.2389	3.000/2.970	2.410/2.390	0.086	0.75	0.20	0.19	0.090	1520	1540
2"	SMKBS32UUOP	5	3.0010/3.0000	2.8379	4.000/3.960	3.193/3.163	0.105	1.00	0.27	0.31	Thru	2250	2580

*Load capacity is half of stated value when load is applied at bearing opening.

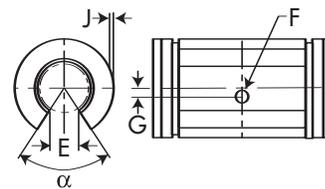
Metric (mm)



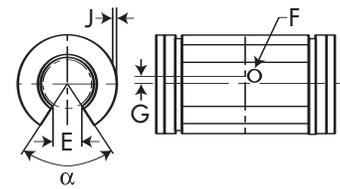
SMKES12UUOP



SMKES16UUOP – SMKES20UUOP



SMKES25UUOP



SMKES30UUOP, SMKES40UUOP, SMKES50UUOP

NOMINAL SHAFT DIA.	SMK WITH SEAL	NO. OF BALL CIRCUITS	D (mm)	L (mm)	L ₁ (mm)	L ₂ (mm)	E (mm)	F (mm)	G (mm)	J (mm)	α	DYNAMIC LOAD* (N)	STATIC LOAD* (N)
12 mm	SMKES12UUOP	4	22.000/22.040	31.8/32.2	22.5/22.9	1.35	6.5	3.0	—	0.7	66°	1290	1260
16 mm	SMKES16UUOP	4	25.999/26.041	35.8/36.2	24.5/24.9	1.35	9	3.0	—	0.7	68°	1640	1320
20 mm	SMKES20UUOP	5	31.999/32.047	44.8/45.2	31.1/31.5	1.65	9	3.0	—	0.9	55°	2630	1720
25 mm	SMKES25UUOP	5	39.999/40.049	57.8/58.2	43.6/44.0	1.90	11.5	3.0	1.5	1.4	57°	3910	2850
30 mm	SMKES30UUOP	5	46.999/47.049	67.8/68.2	51.6/52.0	1.90	14	3.0	2.0	2.2	57°	4850	2900
40 mm	SMKES40UUOP	5	61.998/62.059	79.8/80.2	60.2/60.6	2.20	19.5	3.0	1.5	2.7	56°	6700	5900
50 mm	SMKES50UUOP	5	74.998/75.059	99.8/100.2	77.2/77.6	2.70	22.5	3.0	2.5	2.3	54°	11700	8100

*Load capacity is half of stated value when load is applied at bearing opening.

PRECISION GROUND LINEAR SHAFTING



- Shafting available up to 10" diameter – call factory
- Custom shafting sizes available – call factory
- RC 60 Case Hardened Steel
- 440 Stainless Steel (50-60 RC)
- Armoloy^{®1} Coated
 - alternative to stainless steel for wash-down
 - Klear Kote ends
 - FDA approved

Inch (")

NOMINAL SHAFT DIA.	RC 60 STEEL PART NO.	440 STAINLESS STEEL PART NO.	ARMOLY [®] -COATED* STEEL PART NO.	DIAMETER TOLERANCE (in.)	MIN. HARDNESS DEPTH (in.)	WEIGHT (lbs./in.)
1/4"	PGLS04-XX-I	PGLS04SS-XX-I	PGLS04ALY-XX-I	0.2495/0.2490	0.027	0.014
3/8"	PGLS06-XX-I	PGLS06SS-XX-I	PGLS06ALY-XX-I	0.3745/0.3740	0.027	0.031
1/2"	PGLS08-XX-I	PGLS08SS-XX-I	PGLS08ALY-XX-I	0.4995/0.4990	0.040	0.055
5/8"	PGLS10-XX-I	PGLS10SS-XX-I	PGLS10ALY-XX-I	0.6245/0.6240	0.040	0.086
3/4"	PGLS12-XX-I	PGLS12SS-XX-I	PGLS12ALY-XX-I	0.7495/0.7490	0.060	0.125
1"	PGLS16-XX-I	PGLS16SS-XX-I	PGLS16ALY-XX-I	0.9995/0.9990	0.060/.080 (stainless)	0.222
1-1/4"	PGLS20-XX-I	PGLS20SS-XX-I	PGLS20ALY-XX-I	1.2495/1.2490	0.080	0.348
1-1/2"	PGLS24-XX-I	PGLS24SS-XX-I	PGLS24ALY-XX-I	1.4994/1.4989	0.080	0.500
2"	PGLS32-XX-I	PGLS32SS-XX-I	PGLS32ALY-XX-I	1.9994/1.9987	0.100	0.890
2-1/2"	PGLS40-XX-I	PGLS40SS-XX-I	PGLS40ALY-XX-I	2.4993/2.4985	0.100	1.391
3"	PGLS48-XX-I	–	PGLS48ALY-XX-I	2.9992/2.9983	0.100	2.003
4"	PGLS64-XX-I	–	PGLS64ALY-XX-I	3.9988/3.9976	0.100	3.560

*Armoloy^{®1} shafting is cut-to-length and ends coated with Klear Kote.

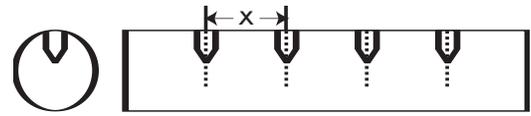
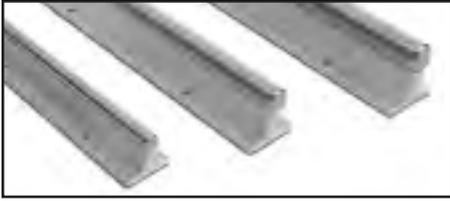
Metric (mm)

NOMINAL SHAFT DIA.	RC 60 STEEL PART NO.	ARMOLY [®] -COATED* STEEL PART NO.	DIAMETER TOLERANCE (mm)	MIN. HARDNESS DEPTH (mm)	WEIGHT (kg/m)	WEIGHT (lbs./in.)
10 mm	PGLS10-XX-M	PGLS10ALY-XX-M	10.000/9.990	0.4	0.6072	0.034
12 mm	PGLS12-XX-M	PGLS12ALY-XX-M	11.999/11.989	0.6	0.8929	0.050
14 mm	PGLS14-XX-M	PGLS14ALY-XX-M	14.000/13.988	0.6	1.2144	0.068
16 mm	PGLS16-XX-M	PGLS16ALY-XX-M	15.999/15.989	0.6	1.5715	0.088
20 mm	PGLS20-XX-M	PGLS20ALY-XX-M	20.000/19.987	0.9	2.4466	0.137
25 mm	PGLS25-XX-M	PGLS25ALY-XX-M	25.000/24.989	0.9	3.8217	0.214
30 mm	PGLS30-XX-M	PGLS30ALY-XX-M	30.000/29.987	0.9	5.5003	0.308
40 mm	PGLS40-XX-M	PGLS40ALY-XX-M	40.000/39.987	1.5	9.7863	0.548
50 mm	PGLS50-XX-M	PGLS50ALY-XX-M	50.000/49.985	1.5	15.2688	0.855
60 mm	PGLS60-XX-M	PGLS60ALY-XX-M	60.000/59.982	2.2	21.9657	1.230
80 mm	PGLS80-XX-M	PGLS80ALY-XX-M	80.000/79.982	2.2	39.1096	2.190

*Armoloy^{®1} shafting is cut-to-length and ends coated with Klear Kote.

¹ Armoloy[®] is a registered trademark of the Armoloy Corporation.

PRE-DRILLED AND TAPPED PRECISION GROUND LINEAR SHAFTING



NOMINAL SHAFT DIA.	RC 60 STEEL PART NO.	440 STAINLESS STEEL PART NO.	ARMOLLOY®-COATED STEEL PART NO.	DIAMETER TOLERANCE (in.)	STANDARD THREAD SIZE	X (in.)	MAX. LENGTH (in.)	MIN. DEPTH (in.)	WEIGHT (lbs./in.)
1/2"	DTLS08-XX	DTLS08SS-XX	DTLS08ALY-XX	0.4995/0.4990	#6-32	4	166	0.040	0.055
5/8"	DTLS10-XX	DTLS10SS-XX	DTLS10ALY-XX	0.6245/0.6240	#8-32	4	178	0.040	0.086
3/4"	DTLS12-XX	DTLS12SS-XX	DTLS12ALY-XX	0.7495/0.7490	#10-32	6	178	0.060	0.125
1"	DTLS16-XX	DTLS16SS-XX	DTLS16ALY-XX	0.9995/0.9990	1/4-20	6	178	0.080	0.222
1-1/4"	DTLS20-XX	DTLS20SS-XX	DTLS20ALY-XX	1.2495/1.2490	5/16-18	6	178	0.080	0.348
1-1/2"	DTLS24-XX	DTLS24SS-XX	DTLS24ALY-XX	1.4994/1.4989	3/8-16	8	178	0.080	0.500
2"	DTLS32-XX	DTLS32SS-XX	DTLS32ALY-XX	1.9994/1.9987	1/2-13	8	178	0.100	0.890

*Bolt holes are symmetric (end to first hole is the same distance for each shaft end).

CUSTOM MACHINED PRECISION GROUND LINEAR SHAFTING



- Custom machining available for RC 60, 440 Stainless Steel and Armolloy® shafting
- Customer must supply drawing for quotation



O.D. THREADING



COAXIAL TAPPED HOLE(S)



MULTI-STEP DIAMETER REDUCTION



SNAP RING GROOVE(S)

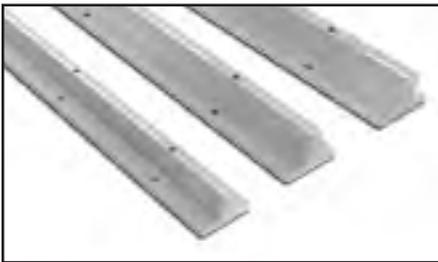


KEYWAY(S) ON O.D.

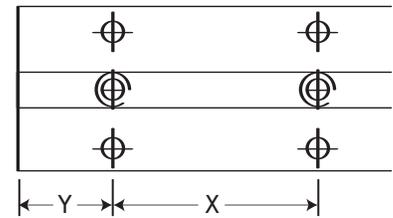
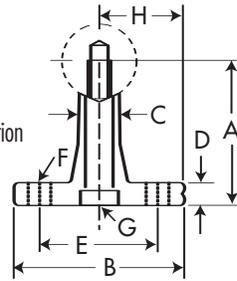


COUNTERBORED HOLE(S)

ALUMINUM PRE-DRILLED SHAFT SUPPORT RAIL



- 6061-T6 Aluminum Construction



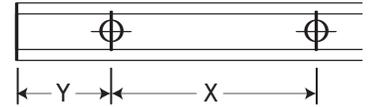
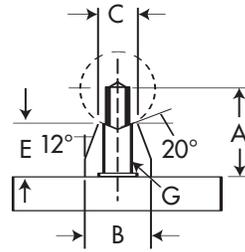
NOMINAL SHAFT DIA.	PART NO.	A (in.) +/- 0.001	B (in.)	C (in.)	D (in.)	E (in.) +/- 0.005	F		G		H (in.) +/- 0.001	X (in.)	Y (in.)	STANDARD LENGTHS	WEIGHT (lbs./in.)
							BOLT	HOLE (in.)	SCREW	HOLE (in.)					
1/2"	PDSR08A-XX	1.125	1-1/2	1/4	3/16	1.000	#6	0.169	6-32 x 7/8	0.169	0.750	4	2	24", 36"	0.050
5/8"	PDSR10A-XX	1.125	1-5/8	5/16	1/4	1.125	#8	0.193	8-32 x 7/8	0.193	0.812	4	2	24", 36", 48"	0.067
3/4"	PDSR12A-XX	1.500	1-3/4	3/8	1/4	1.250	#10	0.221	10-32 x 1-1/4	0.221	0.875	6	3	24", 36", 48"	0.083
1"	PDSR16A-XX	1.750	2-1/8	1/2	1/4	1.500	1/4"	0.281	1/4-20 x 1-1/2	0.281	1.062	6	3	24", 36", 48"	0.117
1-1/4"	PDSR20A-XX	2.125	2-1/2	9/16	5/16	1.875	5/16"	0.343	5/16-18 x 1-3/4	0.343	1.250	6	3	24", 36", 48"	0.175
1-1/2"	PDSR24A-XX	2.500	3	11/16	3/8	2.250	5/16"	0.343	3/8-16 x 2	0.406	1.500	8	4*	24", 36", 48"*	0.217
2"	PDSR32A-XX	3.250	3-3/4	7/8	1/2	2.750	3/8"	0.406	1/2-13 x 2-1/2	0.531	1.875	8	4*	24", 36", 48"*	0.350

* PDSR24A-36 and PDSR32A-36, Y = 2"

STEEL PRE-DRILLED LOW SHAFT SUPPORT RAIL

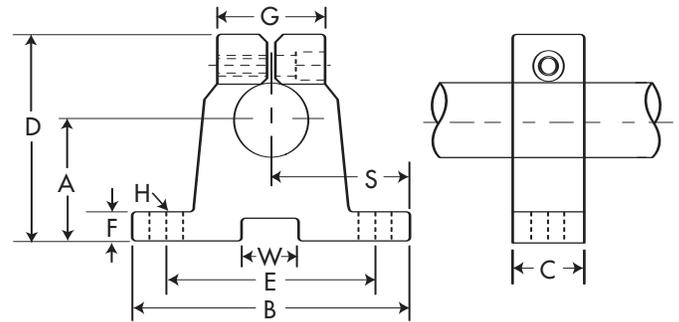


• Maximum Length = 48"



NOMINAL SHAFT DIA.	PART NO.	A (in.) +/- 0.001	B (in.)	C (in.)	E (in.) (REF.)	G		X (in.)	Y (in.)	WEIGHT (lbs./in.)
						SCREW	HOLE (in.)			
1/2"	PDLR08S-XX	0.562	0.370	1/4	0.341	6-32	0.169	4	2	0.027
5/8"	PDLR10S-XX	0.687	0.450	5/16	0.412	8-32	0.193	4	2	0.041
3/4"	PDLR12S-XX	0.750	0.510	3/8	0.420	10-32	0.221	6	3	0.049
1"	PDLR16S-XX	1.000	0.690	1/2	0.560	1/4-20	0.281	6	3	0.084
1-1/4"	PDLR20S-XX	1.187	0.780	9/16	0.626	5/16-18	0.343	6	3	0.106
1-1/2"	PDLR24S-XX	1.375	0.930	11/16	0.703	3/8-16	0.406	8	4	0.140
2"	PDLR32S-XX	1.750	1.180	7/8	0.845	1/2-13	0.531	8	4	0.216

ALUMINUM SHAFT END SUPPORTS



NOMINAL SHAFT DIA.	PART NO.	A (in.) +/- 0.001	B (in.)	C (in.)	D (in.)	E (in.) +/- 0.005	F (in.)	G (in.)	H		S +/- 0.001	W* + 0.00/- 0.01
									BOLT	HOLE (in.)		
1/4"	SES04A	0.750	1-5/8	9/16	1-3/16	1.250	1/4	11/16	#6	5/32	0.812	1/4
3/8"	SES06A	0.750	1-5/8	9/16	1-3/16	1.250	1/4	11/16	#6	5/32	0.812	1/4
1/2"	SES08A	1.000	2	5/8	1-5/8	1.500	1/4	3/4	#8	3/16	1.000	1/2
5/8"	SES10A	1.000	2-1/2	11/16	1-3/4	1.875	5/16	7/8	#10	7/32	1.250	1/2
3/4"	SES12A	1.250	2-3/4	3/4	2-1/8	2.000	5/16	1	#10	7/32	1.375	5/8
1"	SES16A	1.500	3-1/4	1	2-9/16	2.500	3/8	1-3/8	1/4"	9/32	1.625	5/8
1-1/4"	SES20A	1.750	4	1-1/8	3	3.000	7/16	1-3/4	5/16"	11/32	2.000	5/8
1-1/2"	SES24A	2.000	4-3/4	1-1/4	3-1/2	3.500	1/2	2	5/16"	11/32	2.375	3/4
2"	SES32A	2.500	6	1-1/2	4-1/2	4.500	5/8	2-5/8	3/8"	13/32	3.000	1

* "W" dimension is not machined

MANUFACTURING • DISTRIBUTION • GLOBAL PROCUREMENT

International Distribution Alliance (IDA), Inc. manufactures and procures high quality power transmission products on a global scale.

At IDA, the business philosophy is profoundly simple. Based on the onus of building the foundation for healthy families, communities and relationships, IDA embraces ideals of respect, courtesy and commitment.

Commitment to Quality Product

We are a versatile organization with the ability to design and manufacture high quality industrial products for OEMs, distributors and catalog houses economically and efficiently.

Commitment to Customer Service

Count on us for fast response to your business needs. We go all-out to deliver reliable information and product - on time, every time.

Commitment to Community

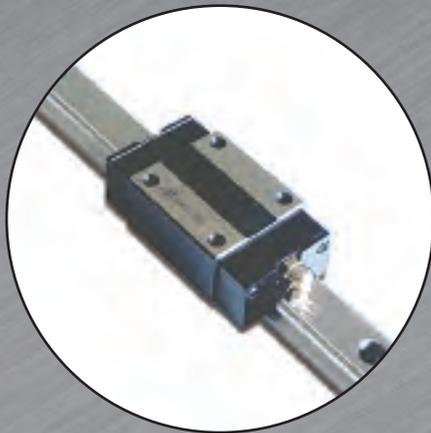
We're more than just a name. We are people, like you, working to serve each other to build strong individuals with a sound future. That is why IDA invests in local schools, apprenticeship programs and provides an environment for students, skilled workers and master craftsmen to find growth and fulfillment.

It is this commitment that creates immediate and long-term value for business partners, customers and employees.

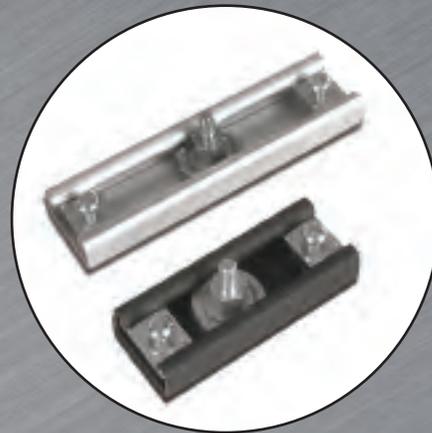
Headquarters:
Rockford, Illinois USA



Uniting business - one person at a time



BALL LINEAR GUIDES



TRACK ROLLERS &
ACCESSORIES



IDA, Inc.

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