

**EXCEL™ LINEAR BEARINGS**

Designed to fit into precision bores, these bearings are self-aligning and offer long life. Precision hardened and ground bearing plates with conforming ball tracks are contained in a molded thermoplastic housing.

**LBB**

These bearings are used in lower load applications where self alignment is not required. The precision fit between the bearing and shaft is built into the bearing as a result of the solid steel shell. These bearings utilize a molded plastic bearing ball retainer assembled inside a hardened and ground shell.

**ILBB INSTRUMENT SERIES**

Similar in construction to LBB linear bearings, Instrument Series Linear Bearings are small diameter, high precision bearings with stainless steel shells. When matched with Instrument Series Linear Shafting, ILBB Linear Bearings provide high performance with .0001 to .0003 inch clearances.

ILBB Linear Bearings are used in light load, high precision applications where low friction guidance is required such as medical and semiconductor equipment.

**PowerTrax™**  
PRECISION LINEAR SYSTEMS,  
COMPONENTS, & SHAFTING

**Excel** SELF-ALIGNING  
LINEAR BEARINGS  
& PILLOW BLOCKS



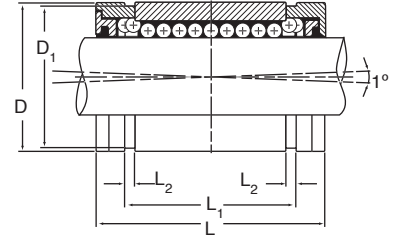
EXCEL™ INCH SELF-ALIGNING BEARINGS AND PILLOW BLOCKS TECHNICAL DATA

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**INCH - CLOSED BEARINGS**



- Designed for use on end supported PowerTrax™ HG “L” shafting.
- Bearings are available with or without shaft seals.

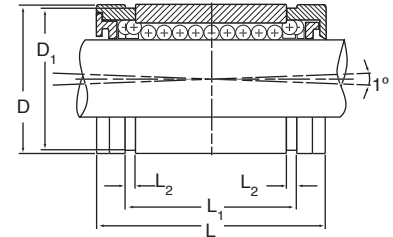
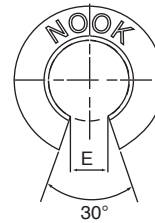


Nominal Shaft Dia.	EXCEL™ Without Seal	EXCEL™ With Seal	No. of Ball Circuits	Housing Bore Dia. D	D <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	Dynamic Load (lb.)		Static Load (lb.)	
									Normal	Maximum	Normal	Maximum
1/4"	XLEC04	XLEC04UU	4	0.5005/0.5000	0.4687	0.750/0.735	0.511/0.501	0.039	39	45	27	38
3/8"	XLEC06	XLEC06UU	4	0.6255/0.6250	0.5880	0.875/0.860	0.699/0.689	0.039	59	68	43	61
1/2"	XLEC08	XLEC08UU	4	0.8755/0.8750	0.8209	1.250/1.230	1.032/1.012	0.050	152	175	112	158
5/8"	XLEC10	XLEC10UU	5	1.1255/1.1250	1.0700	1.500/1.480	1.105/1.095	0.056	273	325	187	273
3/4"	XLEC12	XLEC12UU	6	1.2505/1.2500	1.1760	1.625/1.605	1.270/1.250	0.056	383	406	274	351
1"	XLEC16	XLEC16UU	6	1.5630/1.5625	1.4900	2.250/2.230	1.884/1.864	0.070	684	725	492	630
1 1/4"	XLEC20	XLEC20UU	6	2.0008/2.0000	1.8890	2.625/2.600	2.004/1.984	0.068	1017	1078	712	911
1 1/2"	XLEC24	XLEC24UU	6	2.3760/2.3750	2.2389	3.000/2.970	2.410/2.390	0.086	1298	1376	852	1091
2"	XLEC32	XLEC32UU	6	3.0010/3.0000	2.8379	4.000/3.960	3.193/3.163	0.105	2104	2230	1458	1866

**INCH - OPEN BEARINGS**



- Designed for use on fully supported PowerTrax™ HG “L” shafting.
- Longitudinal section equal to one ball circuit removed for support rail clearance.
- Standard bearing includes shaft seals.



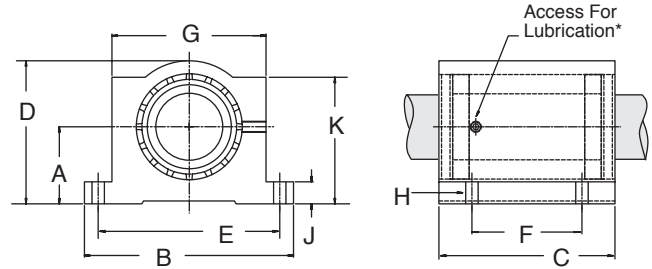
Nominal Shaft Dia.	EXCEL™ With Seal	No. of Ball Circuits	Housing Bore Dia. D	D <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	E	Dynamic Load (lb.)		Static Load (lb.)	
									Normal	Maximum	Normal	Maximum
1/2"	XLEN08UU	3	0.8755/0.8750	0.8209	1.250/1.230	1.032/1.012	0.050	0.32	152	152	112	112
5/8"	XLEN10UU	4	1.1255/1.1250	1.0700	1.500/1.480	1.105/1.095	0.056	0.38	315	318	229	236
3/4"	XLEN12UU	5	1.2505/1.2500	1.1760	1.625/1.605	1.270/1.250	0.056	0.43	386	398	279	312
1"	XLEN16UU	5	1.5630/1.5625	1.4900	2.250/2.230	1.884/1.864	0.070	0.56	690	711	501	561
1 1/4"	XLEN20UU	5	2.0008/2.0000	1.8890	2.625/2.600	2.004/1.984	0.068	0.63	1025	1056	726	813
1 1/2"	XLEN24UU	5	2.3760/2.3750	2.2389	3.000/2.970	2.410/2.390	0.086	0.75	1307	1346	867	971
2"	XLEN32UU	5	3.0010/3.0000	2.8379	4.000/3.960	3.193/3.163	0.105	1.00	2121	2185	1485	1663

\* DO NOT exceed 1/2 of rated values when load is applied through the bearing opening.

**INCH - CLOSED SINGLE PILLOW BLOCKS**



- Sealed at both ends, contains a closed unsealed EXCEL™ Bearing.
- Designed for use on end supported PowerTrax™ HG “L” shafting.



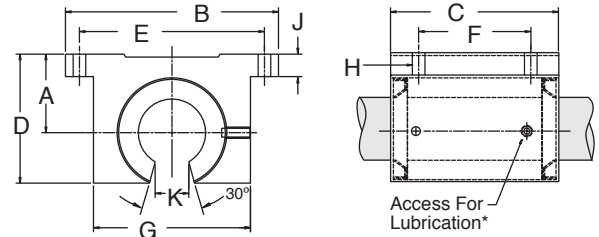
\* Lubrication holes for blocks up to 1/2" have flush lube fitting; 5/8" and above are 1/4 – 28 tapped hole with set screw

Nominal Shaft Dia.	EXCEL™ Part No.	A ±0.001	B	C	D	E ±0.005	F ±0.005	G	H		J	K	Weight lbs.	Dynamic Load (lb.)		Static Load (lb.)	
									Bolt	Hole				Normal	Maximum	Normal	Maximum
3/8"	XEP-06	0.500	1 3/4"	1 5/16"	1 5/16"	1.437	0.875	1 1/8"	#6	0.17	3/16"	7/8"	0.12	59	68	43	61
1/2"	XEP-08	0.687	2"	1 11/16"	1 1/4"	1.688	1.000	1 3/8"	#6	0.17	1/4"	1 1/8"	0.20	152	175	112	158
5/8"	XEP-10	0.875	2 1/2"	1 15/16"	1 5/8"	2.125	1.125	1 3/4"	#8	0.19	9/32"	1 7/16"	0.50	273	325	187	273
3/4"	XEP-12	0.937	2 3/4"	2 1/16"	1 3/4"	2.375	1.250	1 7/8"	#8	0.19	5/16"	1 9/16"	0.60	383	406	274	351
1"	XEP-16	1.187	3 1/4"	2 13/16"	2 3/16"	2.875	1.750	2 3/8"	#10	0.22	3/8"	1 15/16"	1.20	684	725	492	630
1 1/4"	XEP-20	1.500	4"	3 5/8"	2 13/16"	3.500	2.000	3"	#10	0.22	7/16"	2 1/2"	2.50	1017	1078	712	911
1 1/2"	XEP-24	1.750	4 3/4"	4"	3 1/4"	4.125	2.500	3 1/2"	1/4"	0.28	1/2"	2 7/8"	3.80	1298	1376	852	1091
2"	XEP-32	2.125	6"	5"	4 1/16"	5.250	3.250	4 1/2"	3/8"	0.41	5/8"	3 5/8"	7.00	2104	2230	1458	1866

**INCH - OPEN SINGLE PILLOW BLOCKS**



- Sealed at both ends, contains an open, sealed EXCEL™ Bearing.
- Designed for use with fully supported PowerTrax™ HG “L” shafting
- Longitudinal section equal to one ball circuit removed for support rail clearance.



\* Lubrication holes for blocks up to 1/2" have flush lube fitting; 5/8" and above are 1/4 – 28 tapped hole with set screw

Nominal Shaft Dia.	EXCEL™ Part No.	A ±0.001	B	C	D	E ±0.005	F ±0.005	G	H		J	K	Weight lbs.	Dynamic Load (lb.)		Static Load (lb.)	
									Bolt	Hole				Normal	Maximum	Normal	Maximum
1/2"	XEP-08-OPN	0.687	2"	1 1/2"	1 1/8"	1.688	1.000	1 3/8"	#6	0.17	1/4"	5/16"	0.20	152	152	112	112
5/8"	XEP-10-OPN	0.875	2 1/2"	1 3/4"	1 7/16"	2.125	1.125	1 3/4"	#8	0.19	9/32"	3/8"	0.40	315	318	229	236
3/4"	XEP-12-OPN	0.937	2 3/4"	1 7/8"	1 9/16"	2.375	1.250	1 7/8"	#8	0.19	5/16"	7/16"	0.50	386	398	279	312
1"	XEP-16-OPN	1.187	3 1/4"	2 5/8"	1 15/16"	2.875	1.750	2 3/8"	#10	0.22	3/8"	9/16"	1.00	690	711	501	561
1 1/4"	XEP-20-OPN	1.500	4"	3 3/8"	2 1/2"	3.500	2.000	3"	#10	0.22	7/16"	5/8"	2.10	1025	1056	726	813
1 1/2"	XEP-24-OPN	1.750	4 3/4"	3 3/4"	2 7/8"	4.125	2.500	3 1/2"	1/4"	0.28	1/2"	3/4"	3.20	1307	1346	867	971
2"	XEP-32-OPN	2.125	6"	4 3/4"	3 5/8"	5.250	3.250	4 1/2"	3/8"	0.41	5/8"	1"	6.00	2121	2185	1485	1663

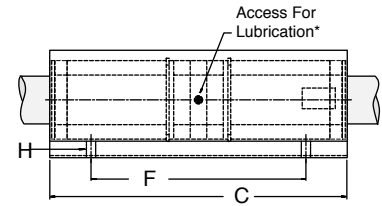
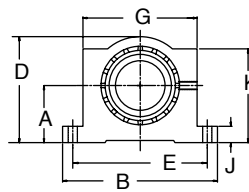
\* DO NOT exceed 1/2 of rated values when load is applied through the bearing opening.

EXCEL™ INCH SELF-ALIGNING BEARINGS AND PILLOW BLOCKS TECHNICAL DATA

**INCH - CLOSED TWIN PILLOW BLOCKS**



- Sealed at both ends, contains two closed unsealed EXCEL™ Bearings.
- Designed for use on end supported PowerTrax™ HG “L” shafting.



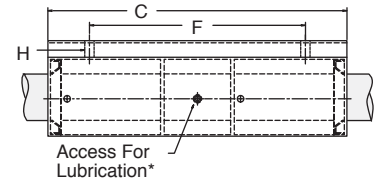
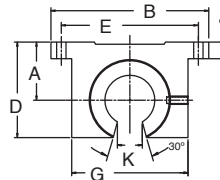
\* Lubrication holes for blocks up to 1/2" have flush lube fitting; 5/8" and above are 1/4 – 28 tapped hole with set screw

Nominal Shaft Dia.	EXCEL™ Part No.	A ±0.001	B	C	D	E ±0.005	F ±0.005	G	H		J	K	Weight lbs.	Dynamic Load (lb.)		Static Load (lb.)	
									Bolt	Hole				Normal	Maximum	Normal	Maximum
3/8"	TEP-06	0.500	1 3/4"	2 3/4"	1 5/16"	1.437	2.250	1 1/8"	#6	0.17	3/16"	7/8"	0.25	118	136	86	122
1/2"	TEP-08	0.687	2"	3 1/2"	1 1/4"	1.688	2.500	1 3/8"	#6	0.17	1/4"	1 1/8"	0.40	304	350	224	316
5/8"	TEP-10	0.875	2 1/2"	4"	1 5/8"	2.125	3.000	1 3/4"	#8	0.19	9/32"	1 7/16"	1.00	546	650	374	546
3/4"	TEP-12	0.937	2 3/4"	4 1/2"	1 3/4"	2.375	3.500	1 7/8"	#8	0.19	5/16"	1 9/16"	1.20	766	812	548	702
1"	TEP-16	1.187	3 1/4"	6"	2 3/16"	2.875	4.500	2 3/8"	#10	0.22	3/8"	1 15/16"	2.40	1368	1450	984	1260
1 1/4"	TEP-20	1.500	4"	7 1/2"	2 13/16"	3.500	5.500	3"	#10	0.22	7/16"	2 1/2"	5.00	2034	2156	1424	1822
1 1/2"	TEP-24	1.750	4 3/4"	9"	3 1/4"	4.125	6.500	3 1/2"	1/4"	0.28	1/2"	2 7/8"	7.80	2596	2752	1704	2182
2"	TEP-32	2.125	6"	10"	4 1/16"	5.250	8.250	4 1/2"	3/8"	0.41	5/8"	3 5/8"	14.50	4208	4460	2916	3732

**INCH - OPEN TWIN PILLOW BLOCKS**



- Sealed at both ends, contains two open, sealed EXCEL™ Bearings.
- Designed for use with fully supported PowerTrax™ HG “L” shafting.
- Longitudinal section equal to one ball circuit removed for support rail clearance.



\* Lubrication holes for blocks up to 1/2" have flush lube fitting; 5/8" and above are 1/4 – 28 tapped hole with set screw

Nominal Shaft Dia.	EXCEL™ Part No.	A ±0.001	B	C	D	E ±0.005	F ±0.005	G	H		J	K	Weight lbs.	Dynamic Load (lb.)		Static Load (lb.)	
									Bolt	Hole				Normal	Maximum	Normal	Maximum
1/2"	TEP-08-OPN	0.687	2"	3 1/2"	1.13	1.688	2.500	1 3/8"	#6	0.17	1/4"	5/16"	0.40	304	304	224	224
5/8"	TEP-10-OPN	0.875	2 1/2"	4"	1.44	2.125	3.000	1 3/4"	#8	0.19	9/32"	3/8"	0.80	630	636	458	472
3/4"	TEP-12-OPN	0.937	2 3/4"	4 1/2"	1.56	2.375	3.500	1 7/8"	#8	0.19	5/16"	7/16"	1.00	772	796	558	624
1"	TEP-16-OPN	1.187	3 1/4"	6"	1.94	2.875	4.500	2 3/8"	#10	0.22	3/8"	9/16"	2.00	1380	1422	1002	1122
1 1/4"	TEP-20-OPN	1.500	4"	7 1/2"	2.50	3.500	5.500	3"	#10	0.22	7/16"	5/8"	4.20	2050	2112	1452	1626
1 1/2"	TEP-24-OPN	1.750	4 3/4"	9"	2.88	4.125	6.500	3 1/2"	1/4"	0.28	1/2"	3/4"	6.70	2614	2692	1734	1942
2"	TEP-32-OPN	2.125	6"	10"	3.63	5.250	8.250	4 1/2"	3/8"	0.41	5/8"	1"	12.50	4242	4370	2970	3326

\* DO NOT exceed 1/2 of rated values when load is applied through the bearing opening.

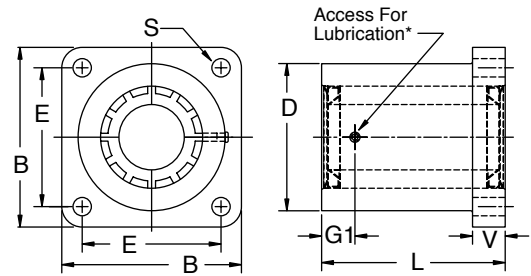
**INCH - FLANGE-MOUNT SINGLE AND TWIN PILLOW BLOCKS**

EXCEL™ Linear Bearings provide high efficiency and smooth operation in a variety of linear guidance applications. EXCEL™ Flange-Mount Pillow Blocks offer an installation alternative to standard foot-mount pillow blocks when the mounting surface is perpendicular to the guide shafts. Nook Industries flanged mount pillow blocks are available in both single and twin bearing

styles and include 1/2 , 3/4 or 1 inch EXCEL™ Linear Bearings. The blocks have integral lip seals, an aluminum housing and a lubrication port. Typical applications include: platform guidance, end stop support, conveyor width adjust mechanisms, edge guides and machine operator guards.



- Sealed at both ends, contains unsealed EXCEL™ Bearing (two bearings in twin).
- Designed for use on end supported PowerTrax™ HG "L" shafting.

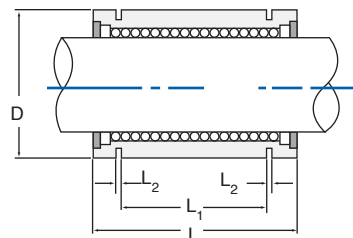


	Nominal Shaft Dia.	EXCEL™ Part No.	B	E ±0.005	L	D	V	G1	S Hole Dia.	DYNAMIC LOAD (lb.)		STATIC LOAD (lb.)	
										Normal	Maximum	Normal	Maximum
SINGLE	1/2"	XEP-08-FLM	1.63	1.250	1.69	1.25	0.25	0.35	0.19	152	175	112	158
	3/4"	XEP-12-FLM	2.38	1.750	2.06	1.75	0.38	0.37	0.22	383	406	274	351
	1"	XEP-16-FLM	2.75	2.125	2.81	2.25	0.50	0.51	0.28	684	725	492	630
Thread													
TWIN	1/2"	TEP-08-FLM	1.63	1.250	3.20	1.25	0.90	1.60	1/4-20	304	350	224	316
	3/4"	TEP-12-FLM	2.38	1.750	3.95	1.75	0.90	1.60	1/4-20	766	812	548	702
	1"	TEP-16-FLM	2.75	2.125	5.33	2.25	0.90	2.70	5/16-18	1368	1450	984	1260





- Designed for use on end supported PowerTrax™ HG “L” shafting
- Solid steel shell, no seals

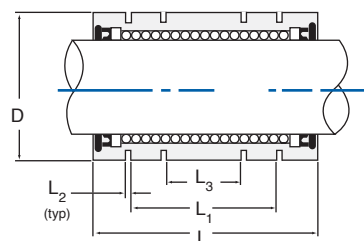


Nominal Shaft Dia.	LBB Bearing Part Number	D	L	L <sub>1</sub>	L <sub>2</sub>	Weight (lb.)	Dynamic Load (lb.)	Static Load (lb.)
1/4"	LBB-250	0.5000/0.4996	.750	.437	.040	.02	25	27
3/8"	LBB-375	0.6250/0.6246	.875	.562	.040	.04	38	36
1/2"	LBB-500	0.8750/0.8746	1.250	.875	.047	.11	88	79
5/8"	LBB-625	1.1250/1.1246	1.500	1.00	.058	.22	160	139
3/4"	LBB-750	1.2500/1.2496	1.625	1.062	.058	.26	204	191
1"	LBB-1000	1.5625/1.5621	2.250	1.625	.070	.50	371	353
1 1/4"	LBB-1250	2.0000/1.9995	2.625	1.875	.070	.91	724	712
1 1/2"	LBB-1500	2.3750/2.3745	3.000	2.250	.088	1.44	948	831
2"	LBB-2000	3.0000/2.9994	4.000	3.000	.105	2.78	1,391	1,434

**INCH - LBB PRECISION CLOSED SEALED BEARINGS**



- Designed for use on end supported PowerTrax™ HG “L” shafting
- Solid steel shell with lip seals

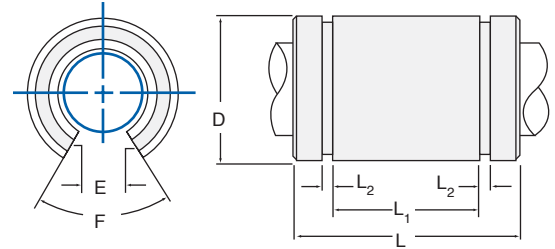


Nominal Shaft Dia.	LBB Bearing Part Number	D	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	Weight (lb.)	Dynamic Load (lb.)	Static Load (lb.)
1/4"	LBB-250PP	0.5000/0.4996	.750	.437	.040	—	.03	25	27
3/8"	LBB-375PP	0.6250/0.6246	.875	.562	.040	—	.05	38	36
1/2"	LBB-500PP	0.8750/0.8746	1.438	.875	.047	.531	.12	88	79
5/8"	LBB-625PP	1.1250/1.1246	1.688	1.000	.058	—	.24	160	139
3/4"	LBB-750PP	1.2500/1.2496	1.875	1.062	.058	.687	.29	204	191
1"	LBB-1000PP	1.5625/1.5621	2.500	1.625	.070	.844	.52	371	353
1 1/4"	LBB-1250PP	2.0000/1.9995	3.125	1.875	.070	1.031	1.12	724	712
1 1/2"	LBB-1500PP	2.3750/2.3745	3.438	2.250	.088	1.219	1.62	948	831
2"	LBB-2000PP	3.0000/2.9994	4.750	3.000	.105	1.531	3.08	1,391	1,434

**INCH - LBB PRECISION OPEN BEARINGS**



- Designed for use on fully supported PowerTrax™ HG “L” shafting
- Longitudinal section equal to one ball circuit removed for support rail clearance.
- Solid steel shell, with no seals.

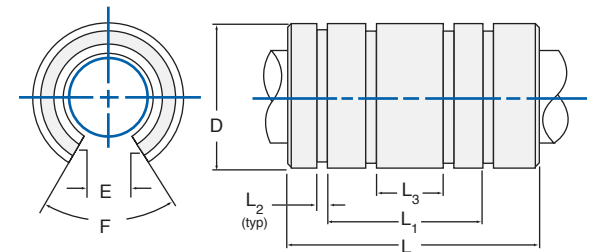


Nominal Shaft Dia.	LBB Bearing Part Number	D	L	L <sub>1</sub>	L <sub>2</sub>	E	F	Weight (lb.)	Dynamic Load (lb.)	Static Load (lb.)
1/2"	OPN-500	0.8750/0.8746	1.250	.875	.047	9/32	60°	.11	88	79
5/8"	OPN-625	1.1250/1.1246	1.500	1.000	.058	3/8	60°	.22	160	139
3/4"	OPN-750	1.2500/1.2496	1.625	1.062	.058	13/32	60°	.26	204	236
1"	OPN-1000	1.5625/1.5621	2.250	1.625	.070	9/16	60°	.50	445	438
1 1/4"	OPN-1250	2.0000/1.9995	2.625	1.875	.070	5/8	50°	.91	724	726
1 1/2"	OPN-1500	2.3750/2.3745	3.000	2.250	.088	3/4	50°	1.44	948	845
2"	OPN-2000	3.0000/2.9994	4.000	3.000	.105	1	50°	2.78	1,391	1,461

**INCH - LBB PRECISION OPEN SEALED BEARINGS**



- Designed for use on fully supported PowerTrax™ HG “L” shafting
- Longitudinal section equal to one ball circuit removed for support rail clearance.
- Solid steel shell, with lip seals.



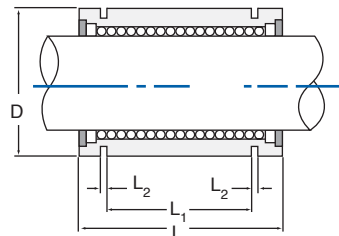
Nominal Shaft Dia.	LBB Bearing Part Number	D	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	E	F	Weight (lb.)	Dynamic Load (lb.)	Static Load (lb.)
1/2"	OPN-500PP	0.8750/0.8746	1.438	.875	.047	.531	9/32	60°	.12	88	79
5/8"	OPN-625PP	1.1250/1.1246	1.688	1.000	.058	—	3/8	60°	.24	160	139
3/4"	OPN-750PP	1.2500/1.2496	1.875	1.062	.058	.687	13/32	60°	.29	204	236
1"	OPN-1000PP	1.5625/1.5621	2.500	1.625	.070	.844	9/16	60°	.52	445	438
1 1/4"	OPN-1250PP	2.0000/1.9995	3.125	1.875	.070	1.031	5/8	50°	1.12	724	726
1 1/2"	OPN-1500PP	2.3750/2.3745	3.438	2.250	.088	1.219	3/4	50°	1.62	948	845
2"	OPN-2000PP	3.0000/2.9994	4.750	3.000	.105	1.531	1	50°	3.08	1,391	1,461

LBB LINEAR BEARINGS TECHNICAL DATA

**INCH - LBB STAINLESS STEEL CLOSED BEARINGS**



- Designed for use on an end supported PowerTrax™ HG "SL" shafting
- Solid stainless steel shell, no seals



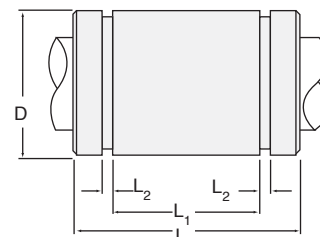
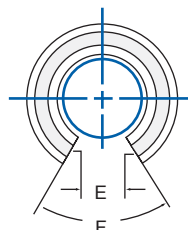
LBB LINEAR BEARINGS TECHNICAL DATA

Nominal Shaft Dia.	LBB Bearing Part Number	D	L	L <sub>1</sub>	L <sub>2</sub>	Weight (lb.)	Normal Load (lb.)	Max Load (lb.)
1/4"	LBB-250SS	0.5000/0.4996	.750	.437	.40	.02	17	25
3/8"	LBB-375SS	0.6250/0.6246	.875	.562	.404	.04	35	50
1/2"	LBB-500SS	0.8750/0.8746	1.250	.875	.047	.10	71	101
5/8"	LBB-625SS	1.1250/1.1246	1.500	1.000	.058	.22	126	179
3/4"	LBB-750SS	1.2500/1.2496	1.625	1.062	.058	.25	143	203
1"	LBB-1000SS	1.5625/1.5621	2.250	1.625	.070	.49	270	385

**INCH - LBB STAINLESS STEEL OPEN BEARINGS**



- Designed for use on a fully supported PowerTrax™ HG "SL" shafting.
- Longitudinal section equal to one ball circuit removed for support rail clearance.
- Solid stainless steel shell, no seals.



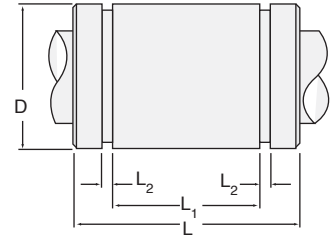
Nominal Shaft Dia.	LBB Bearing Part Number	D	L	L <sub>1</sub>	L <sub>2</sub>	E	F	Weight (lb.)	Normal Load (lb.)	Max Load (lb.)
3/8"	OPN375SS	0.6250/0.6246	.875	.562	.040	.25	60°	.04	35	50
1/2"	OPN-500SS	0.8750/0.8746	1.250	.875	.047	.28	60°	.10	71	101
5/8"	OPN-625SS	1.1250/1.1246	1.500	1.000	.058	.38	60°	.22	126	179
3/4"	OPN-750SS	1.2500/1.2496	1.625	1.062	.058	.40	60°	.25	143	203
1"	OPN-1000SS	1.5625/1.5621	2.250	1.625	.070	.56	60°	.49	270	385



**INCH - INSTRUMENT SERIES CLOSED BEARINGS**



- Designed for use on an end supported PowerTrax™ HG “ISL” shafting
- Solid stainless steel shell, no seals
- Require .0001" clearance
- Matched bearing and shaft assemblies are available



Nominal Shaft Dia.	LBB Bearing Part Number	D	L	L <sub>1</sub>	L <sub>2</sub>	Weight (lb.)	Normal Load (lb.)	Max Load (lb.)
1/8"	ILBB-125	.3125/.3121	.500	.312	.030	.02	7	9
3/16"	ILBB-187	.3750/.3746	.562	.375	.030	.04	9	11
1/4"	ILBB-250	.5000/.4996	.750	.437	.040	.11	17	25

**INCH - INSTRUMENT SERIES SHAFTING**

For optimum performance, PowerTrax™ ILBB Instrument Bearings should be matched with PowerTrax™ HG “ISL” instrument shafting.

- Material:** 440C stainless steel
- Hardness:** Rc 55-60
- Diameter Tolerance:** .0001" for shafts thru 6" long
- Finish:** 2-4 microinch (rms)
- Straightness:** 0.001 per inch of length of the shaft.



INSTRUMENT SERIES LINEAR SHAFTING					
PART NUMBER	NOMINAL DIAMETER (inch)	TOLERANCES CLASS "I" DIAMETER (inches)	MAXIMUM LENGTH (inch)	MINIMUM DEPTH OF HARDNESS (inch)	WEIGHT PER INCH OF LENGTH (pounds)
ISL-125	1/8	.1248/.1247	12	.027	.004
ISL-187	3/16	.1873/.1872	12	.027	.008
ISL-250	1/4	.2498/.2497	12	.027	.014

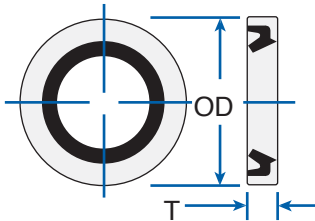
LBB LINEAR BEARINGS TECHNICAL DATA

PowerTrax™ Linear Bearing Seals are designed for use in custom housings where additional sealing is desired.

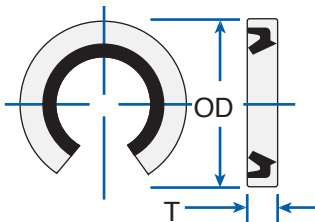
They are made of a synthetic rubber compound to allow smooth linear motion with maximum sealing efficiency.

LINEAR COMPONENTS TECHNICAL INTRODUCTION

**PRECISION SERIES**



**OPEN SERIES**



USE WITH POWERTRAX LINEAR BEARING	SHAFT DIAMETER INCH	PART NUMBER	DIMENSIONS	
			T	O.D.
<b>PRECISION LINEAR BEARING SEALS</b>				
LBB-250 LBB-375 LBB-500	1/4" 3/8" 1/2"	LS-250 LS-375 LS-500	0.125 0.125 0.125	0.504 0.629 0.879
LBB-625 LBB-750 LBB-1000	5/8" 3/4" 1"	LS-625 LS-750 LS-1000	0.125 0.125 0.187	1.129 1.254 1.567
LBB-1250 LBB-1500 LBB-2000	1-1/4" 1-1/2" 2"	LS-1250 LS-1500 LS-2000	0.375 0.375 0.375	2.004 2.379 3.004
<b>STAINLESS STEEL LINEAR BEARING SEALS</b>				
LBB-250SS LBB-375SS LBB-500SS	1/4" 3/8" 1/2"	LS-250SS LS-375SS LS-500SS	0.125 0.125 0.125	0.504 0.629 0.879
LBB-625SS LBB-750SS LBB-1000SS	5/8" 3/4" 1"	LS-625SS LS-750SS LS-1000SS	0.125 0.125 0.187	1.129 1.254 1.567

USE WITH POWERTRAX LINEAR BEARING	SHAFT DIAMETER INCH	PART NUMBER	DIMENSIONS	
			T	O.D.
<b>OPEN LINEAR BEARING SEALS</b>				
OPN-500 OPN-652	1/2" 5/8"	LSO-500 LSO-625	0.125 0.125	0.879 1.129
OPN-750 OPN-1000	3/4" 1"	LSO-750 LSO-1000	0.125 0.187	1.254 1.567
OPN-1250 OPN-1500	1-1/4" 1-1/2"	LSO-1250 LSO-1500	0.375 0.375	2.004 2.379
<b>STAINLESS STEEL OPEN LINEAR BEARING SEALS</b>				
OPN-375SS OPN-500SS OPN-625SS	3/8" 1/2" 5/8"	LSO-375SS LSO-500SS LSO-625SS	0.125 0.125 0.125	0.629 0.879 1.129
OPN-750SS OPN-1000SS	3/4" 1"	LSO-750SS LSO-1000SS	0.125 0.187	1.254 1.567

## Prolong Bearing Assembly Reliability and Life.

Lubrication is the key to continued performance and reliability of bearing assemblies. LBL-1 is a multi-purpose pure synthetic lubricant. The stable and predictable chemical properties of LBL-1 help it

last longer and outperform conventional petroleum-based greases and oils. Lubricant additives fill microscopic surface irregularities to form a smooth, lubricated surface.



### LBL-1 LUBRICANT FEATURES AND BENEFITS

- Synthetic, non-toxic, odorless
- Low coefficient of friction
- Free flowing at down to -40°
- USDA H-1 Rating
- Water and Saltwater Resistant
- Won't drip, run or evaporate
- Inhibits rust and corrosion
- Long lasting
- Reduces friction and wear

LBL-1 SPECIFICATIONS		
ISO GRADE		220
PENETRATION (worked)		285
DROPPING POINT		N/A
GELLING AGENT		Synthetic
TIMKEN OK LOAD		40 lbs.
OIL VISCOSITY	cst @ 40°C	118-122
	cst @ 100°C	14-17
TEMPERATURE RANGE		-45° F TO 450° F

### LBL-1 4 oz. Liquid Bearing Bottle

LBL-1 LIQUID	
PART NAME	LBL-1
NET CONTENTS PER UNIT	4 oz.
PART # NLU-1006	1 BOTTLE weight of 4 oz.
PART # NLU-2006	1 CASE with 12 Bottles total weight of 3 lbs.

**POWERTRAX™ HG  
GROUND & HARDENED SHAFTING**

Nook PowerTrax™ HG Shafting, made from high quality alloy steel, is manufactured and stocked for immediate shipment in our Cleveland, Ohio facility, in diameters from 5 to 80mm and 1/4 to 4 inches. Stainless Steel shafting is available from 1/4 thru 2 inch diameter.

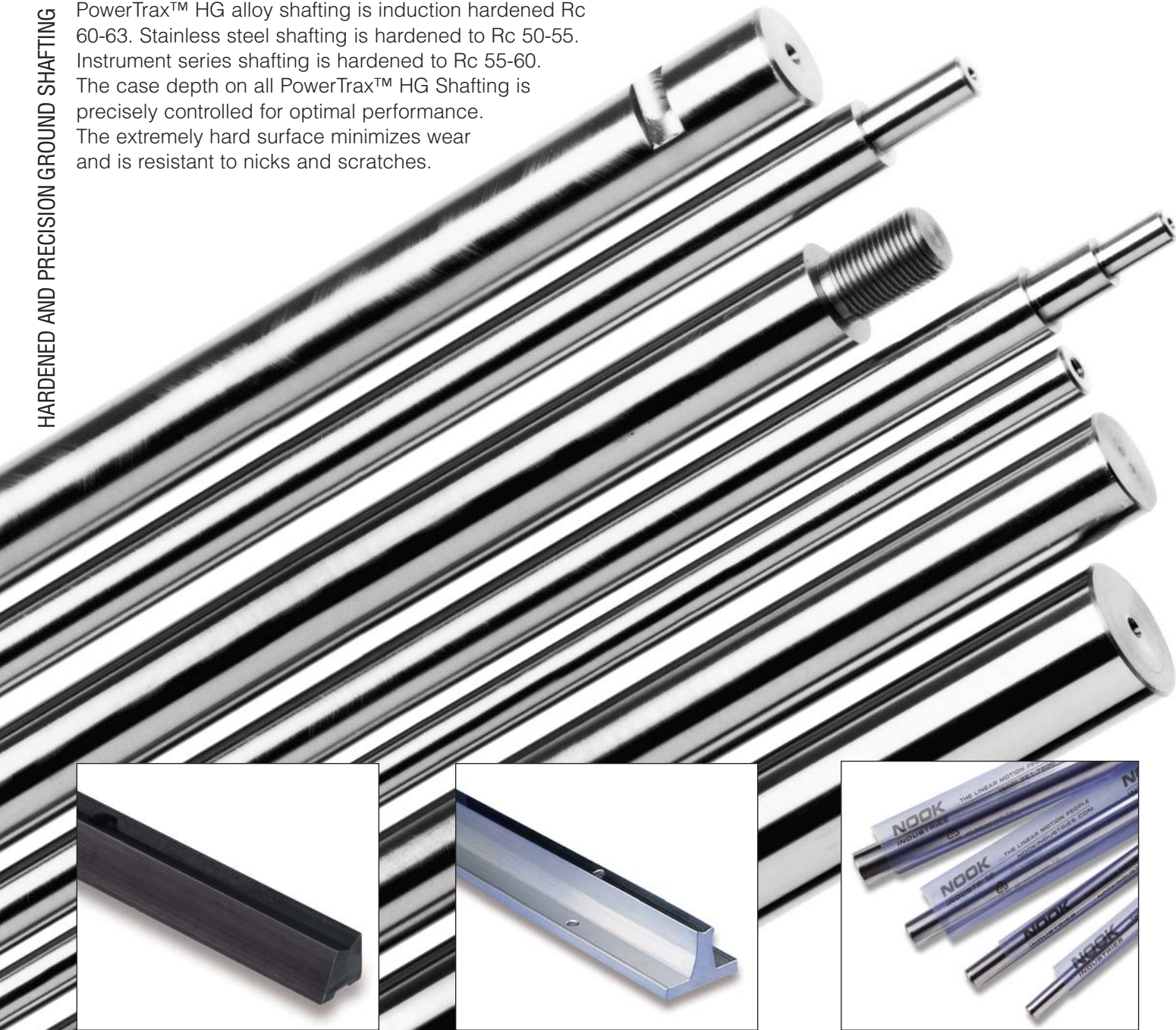
Standard diameters can be cut to your specified length and shipped within 24 hours of receipt of your order. Contact Nook Industries, Inc. for availability of special diameters.

**CASE HARDNESS**

PowerTrax™ HG alloy shafting is induction hardened Rc 60-63. Stainless steel shafting is hardened to Rc 50-55. Instrument series shafting is hardened to Rc 55-60. The case depth on all PowerTrax™ HG Shafting is precisely controlled for optimal performance. The extremely hard surface minimizes wear and is resistant to nicks and scratches.



HARDENED AND PRECISION GROUND SHAFTING





**LINEAR SHAFTING**

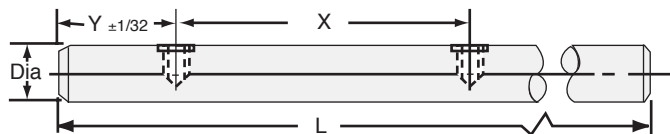
PART NUMBER	NOMINAL DIAMETER (inches)	TOLERANCES CLASS "L" DIAMETER (inches)	MAXIMUM LENGTH (feet)	MINIMUM DEPTH OF HARDNESS (inches)	WEIGHT PER INCH OF LENGTH (pounds)
L-1/4*	1/4	.2495/.2490	10 (12)*	.030	.014
L-3/8*	3/8	.3745/.3740	10 (12)*	.030	.03
L-1/2*	1/2	.4995/.4990	18 (12)*	.050	.06
L-5/8*	5/8	.6245/.6240	18 (12)*	.050	.09
L-3/4*	3/4	.7495/.7490	18 (12)*	.060	.13
L-1*	1	.9995/.9990	18 (12)*	.080	.22
L-1-1/4	1-1/4	1.2495/1.2490	18 (12)*	.080	.35
L-1-1/2	1-1/2	1.4994/1.4989	18 (12)*	.080	.50
L-2	2	1.9994/1.9987	18 (12)*	.100	.89
L-2-1/2	2-1/2	2.4993/2.4985	18	.100	1.39
L-3	3	2.9992/2.9983	18	.100	2.00
L-4	4	3.9988/3.9976	18	.100	3.56

\* Available in 440C stainless steel. For longer lengths contact Nook Industries.

**PRE-DRILLED AND TAPPED LINEAR SHAFTING**

PART NUMBER	NOMINAL DIAMETER (inches)	TOLERANCES CLASS "L" DIAMETER (inches)	HOLE SPACING (inches)		THREAD SIZE	WEIGHT PER INCH OF LENGTH (pounds)	MAXIMUM LENGTH (feet)
			X	Y			
PDL 1/2*	1/2	.4995/.4990	4	2	6-32	.06	12
PDL 5/8*	5/8	.6245/.6240	4	2	8-32	.09	12
PDL 3/4*	3/4	.7495/.7490	6	3	10-32	.13	12
PDL 1*	1	.9995/.9990	6	3	1/4-20	.22	12
PDL 1-1/4	1-1/4	1.2495/1.2490	6	3	5/16-18	.35	12
PDL 1-1/2	1-1/2	1.4994/1.4989	8	4	3/8-16	.50	12
PDL 2	2	1.9994/1.9987	8	4	1/2-13	.89	12

Holes are drilled and tapped to center of shaft. For different hole spacing contact Nook Industries.





**Precut and Packaged Stock Length Shafting**

- 1/2" to 1-1/2" diameters from 6" to 72" in length
- Precision center-less ground to 14 microinches rms surface finish or better
- 3 Materials to choose from:
  - Alloy Steel hardened to Rc 60
  - Stainless Steel hardened to Rc 50-55
  - Chrome-plated Alloy Steel
- Straightness: 0.001"/foot accumulative
- Cut length tolerance  $\pm 0.032"$
- End cut perpendicularity  $\pm 0.032"$
- Meets or exceeds specifications required by all other linear bearing manufacturers
- Packaged in VCI anti-corrosion protective sleeve
- Stocked for Immediate Availability
- Non-precision chamfered ends

**NS - 1 1/2 - L / SS / 18**

**DIAMETER**

**Available Diameters**

Part#	Dia.	Part#	Dia.	Part#	Dia.
1/4-L	= 1/4"	5/8-L	= 5/8"	1 1/4-L	= 1 1/4"
3/8-L	= 3/8"	3/4-L	= 3/4"	1 1/2-L	= 1 1/2"
1/2-L	= 1/2"	1-L	= 1"		

**MATERIAL**

HC = High Carbon Alloy Steel Heat Treated to Rc 60  
 SS = Stainless Steel - 440C  
 CP = Chrome Plated Alloy

**OVERALL LENGTH**

OAL tolerances will be  $\pm 0.010"$

Part #	Length	Part #	Length	Part #	Length
6	= 6"	24	= 24"	48	= 48"
12	= 12"	30	= 30"	60	= 60"
18	= 18"	36	= 36"	72	= 72"

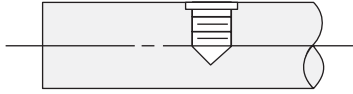
<b>NOOK SHAFT PRECUT STOCKED LINEAR SHAFTING</b>				
NOMINAL DIAMETER (inches)	STOCK LENGTHS (inches)	TOLERANCES CLASS "L" DIAMETER (inches)	MINIMUM DEPTH OF HARDNESS (inches)	WEIGHT PER INCH OF LENGTH (pounds)
1/4	6, 12, 18, 24, 30, 36, 48, 60	.2495/.2490	.030	.014
3/8	6, 12, 18, 24, 36, 48, 60	.3745/.3740	.030	.031
1/2	12, 18, 24, 30, 36, 42, 48, 60	.4995/.4990	.050	.055
5/8	12, 18, 24, 30, 36, 42, 48, 54, 60	.6245/.6240	.050	.086
3/4	12, 18, 24, 30, 36, 42, 48, 54, 60	.7495/.7490	.060	.125
1	18, 24, 30, 36, 42, 48, 54, 60, 72	.9995/.9990	.080	.222
1-1/4	18, 24, 30, 36, 42, 48, 54, 60, 72	1.2495/1.2490	.080	.348
1-1/2	18, 24, 36, 48, 54, 60, 72	1.4994/1.4989	.080	.500

## PRECISION END MACHINING

PowerTrax™ HG hardened and ground shafting is manufactured for use with precision linear bearings and other applications requiring an accurate, round, hardened shaft or guide rod. All linear shafting can be

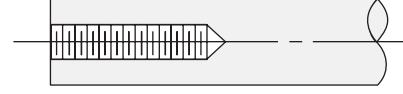
machined by Nook Industries, Inc. to any of the configurations detailed below. Templates for machining are available on our website—[www.nookindustries.com](http://www.nookindustries.com)

### RADIAL HOLES DRILLED AND TAPPED



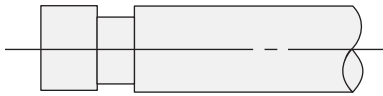
Radial drilled and tapped holes are available with either UNC or UNF Class 2B thread. The hole alignment and location tolerance is  $\pm .010$ ".

### COAXIAL HOLES



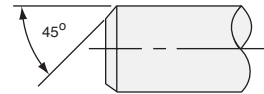
Coaxial holes are machined with concentricity of  $.005$ " centered in the shaft end for shafting 1/2 inch diameter and larger. UNC or UNF Class 2B internal threads are available. Based on tapped hole size, some ends may require annealing and will remain soft on the outside diameter.

### RETAINING RING GROOVES



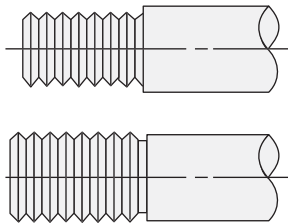
Retaining ring or other grooves area available for all diameter shafting. Annealing may require be in the machined area.

### OPTIONAL MACHINED CHAMFER



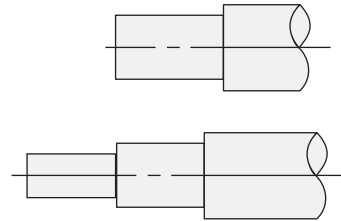
Cut shafts are supplied with Nook non-precision standard end chamfers. Specific chamfer dimensions may be specified.

### THREADED DIAMETERS



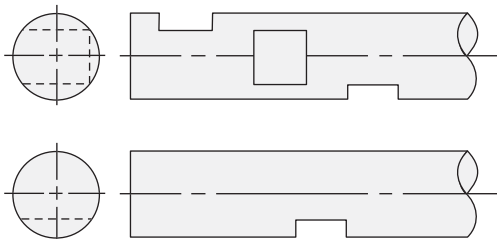
Either the major diameter or reduced diameter may be threaded to UNC or UNF Class 2A. Threaded areas will not have full depth of hardness.

### REDUCED DIAMETER



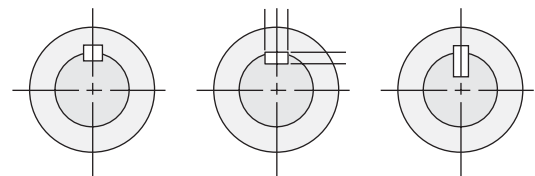
Single or multiple-step machined diameters are available. Concentricity held within  $.002$ ". The reduced diameters will not have full hardness.

### FLATS – SINGLE OR MULTIPLE



Flats have a location tolerance of  $\pm 1/64$ ". Multiple flats available on single plane or different planes with location tolerance  $\pm 1/64$ ". Contact Nook Industries, Inc. for flat length limits.

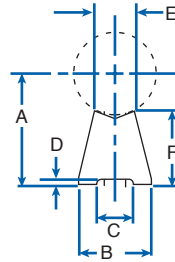
### KEYWAYS



Keyways are available for square, rectangular or ANSI Standard Woodruff keys. Keyway diameter will not have full hardness.

HARDENED AND PRECISION GROUND SHAFTING TECHNICAL DATA

**LOW-PROFILE: SHAFT SUPPORT RAILS**



STANDARD LENGTHS:  
12", 24", 36", and 48"

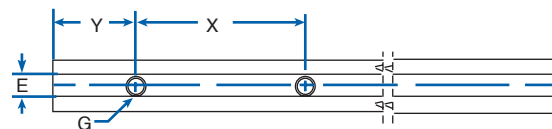
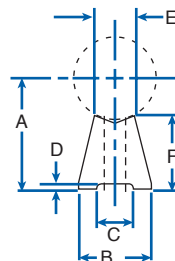
HOW TO ORDER:  
State appropriate part number and length.  
NLR-10-xx      xx=OAL [inches]

MATERIAL: Aluminum alloy extrusion

PART NO.	NOM. SHAFT DIA. (in.)	A ±.002	B	C	D	E	F	WT. PER FT./LBS.
NLR-8	1/2	.5625	.370	.169	.04	.226	.338	.11
NLR-10	5/8	.6875	.450	.193	.04	.278	.406	.17
NLR-12	3/4	.7500	.510	.221	.06	.335	.412	.21
NLR-16	1	1.000	.690	.281	.06	.456	.551	.36
NLR-20	1-1/4	1.1875	.780	.343	.09	.518	.617	.45
NLR-24	1-1/2	1.3750	.930	.406	.09	.635	.693	.60

SHAFTING SUPPORTS TECHNICAL DATA

**LOW PROFILE: PREDRILLED SHAFT SUPPORT RAILS**



STANDARD LENGTHS: 12", 24", 36" and 48"

HOW TO ORDER:  
State appropriate part number and length.  
NLR-8-PD-xx      xx=OAL [inches]

MATERIAL: Aluminum alloy extrusion

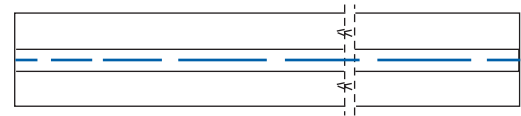
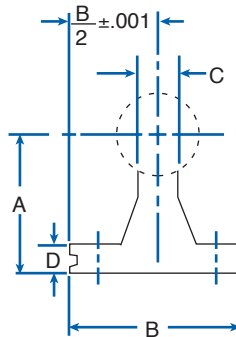
PART NO.	NOM. SHAFT DIA. (in.)	A ±.002	B	C	D	E	F	G		Y	X	WT. PER FT./LBS.
								BOLT	HOLE			
NLR-8-PD	1/2	.5625	.370	.169	.04	.226	.338	6	.169	2	4	.11
NLR-10-PD	5/8	.6875	.450	.193	.04	.278	.406	8	.193	2	4	.17
NLR-12-PD	3/4	.7500	.510	.221	.06	.335	.412	10	.221	3	6	.21
NLR-16-PD	1	1.000	.690	.281	.06	.456	.551	1/4	.281	3	6	.36
NLR-20-PD	1-1/4	1.1875	.780	.343	.09	.518	.617	5/16	.343	3	6	.45
NLR-24-PD	1-1/2	1.3750	.930	.406	.09	.635	.693	3/8	.406	4*	8	.60

\*2 on 36" length



# SHAFT SUPPORT RAILS

## SHAFT SUPPORT RAILS



STANDARD LENGTHS: 24", 36", and 48"  
Special lengths available, contact the factory.

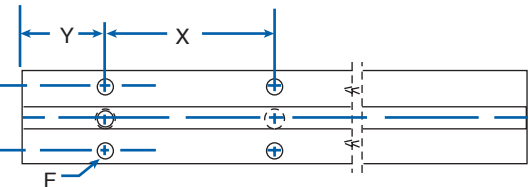
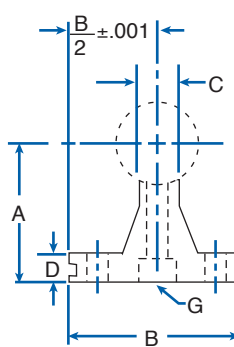
**HOW TO ORDER:**

State appropriate part number and length.  
NSR-10-xx      xx=OAL [inches]

MATERIAL: Aluminum alloy extrusion

PART NO.	NOM. SHAFT DIA. (in.)	A ±.002	B	C	D	WT. PER FT./LBS.
NSR-8	1/2	1.125	1-1/2"	1/4"	3/16"	.6
NSR-10	5/8	1.125	1-5/8"	5/16"	1/4"	.8
NSR-12	3/4	1.500	1-3/4"	3/8"	1/4"	1.0
NSR-16	1	1.750	2-1/8"	1/2"	1/4"	1.4
NSR-20	1-1/4	2.125	2-1/2"	9/16"	5/16"	2.1
NSR-24	1-1/2	2.500	3"	11/16"	3/8"	2.6
NSR-32	2	3.250	3-3/4"	7/8"	1/2"	4.2

## PREDRILLED SHAFT SUPPORT RAILS



STANDARD LENGTHS: 24", 36", and 48"

**HOW TO ORDER:**

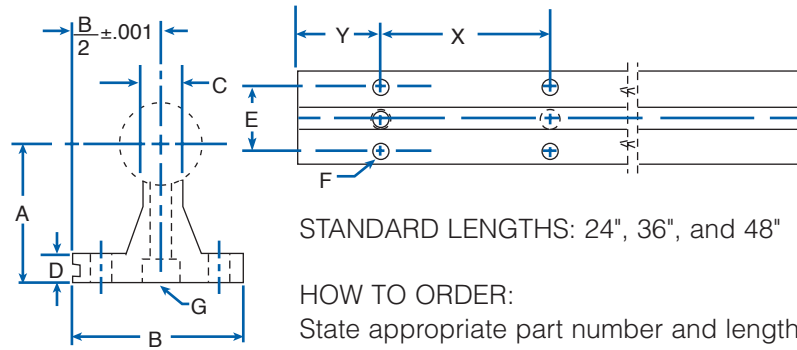
State appropriate part number and length.  
NSR-8-PD-xx      xx=OAL [inches]

MATERIAL: Aluminum alloy extrusion

PART NO.	NOM. SHAFT DIA. (in.)	A ±.002	B	C	D	E	F		G		Y	X	WT. PER FT./LBS.
							BOLT	HOLE	SCREW	HOLE			
NSR-8-PD	1/2	1.125	1-1/2"	1/4"	3/16"	1"	6	.169	6-32 x 7/8	.169"	2	4	.5
NSR-10-PD	5/8	1.125	1-5/8"	5/16"	1/4"	1-1/8"	8	.193	8-32 x 7/8	.193"	2	4	.7
NSR-12-PD	3/4	1.500	1-3/4"	3/8"	1/4"	1-1/4"	10	.221	10-32 x 7/8	.221"	3	6	.9
NSR-16-PD	1	1.750	2-1/8"	1/2"	1/4"	1-1/2"	1/4"	.281	1/4-20 x 1-1/2	.281"	3	6	1.2
NSR-20-PD	1-1/4	2.125	2-1/2"	9/16"	5/16"	1-7/8"	5/16"	.343	5/16-18 x 1-3/4	.343"	3	6	2.0
NSR-24-PD	1-1/2	2.500	3"	11/16"	3/8"	2-1/4"	3/8"	.406	3/8-16 x 2	.406"	4*	8	2.4
NSR-32-PD	2	3.250	3-3/4"	7/8"	1/2"	2-3/4"	1/2"	.531	1/2-13 x 2-1/2	.531"	4*	8	4.0

\*2 on 36" length

**PREDRILLED SHAFT SUPPORT ASSEMBLIES**

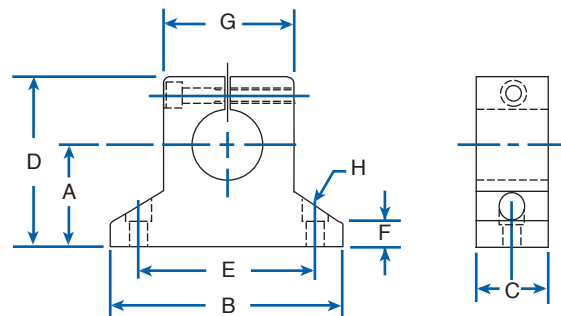


SHAFTING SUPPORTS TECHNICAL DATA

PART NO.	NOM. SHAFT DIA. (in.)	A ±.002	B	C	D	E	F		G		Y	X	WT. PER FT./LBS.
							BOLT	HOLE	SCREW	HOLE			
NSR-8-PDA	1/2	1.125	1-1/2"	1/4"	3/16"	1"	6	.169	6-32 x 7/8	.169	2	4	1.26
NSR-10-PDA	5/8	1.125	1-5/8"	5/16"	1/4"	1-1/8"	8	.193	8-32 x 7/8	.193	2	4	1.83
NSR-12-PDA	3/4	1.500	1-3/4"	3/8"	1/4"	1-1/4"	10	.221	10-32 x 1-1/4	.221	3	6	2.50
NSR-16-PDA	1	1.750	2-1/8"	1/2"	1/4"	1-1/2"	1/4"	.281	1/4-20 x 1-1/2	.281	3	6	4.06
NSR-20-PDA	1-1/4	2.125	2-1/2"	9/16"	5/16"	1-7/8"	5/16"	.343	5/16-18 x 1-3/4	.343	3	6	6.28
NSR-24-PDA	1-1/2	2.500	3"	11/16"	3/8"	2-1/4"	3/8"	.406	3/8-16 x 2	.406	4*	8	8.60
NSR-32-PDA	2	3.250	3-3/4"	7/8"	1/2"	2-3/4"	1/2"	.531	1/2-13 x 2-1/2	.531	4*	8	14.88

\*2 on 36" length

**SHAFT SUPPORT BLOCKS**



PART NO.	NOM. SHAFT DIA. (in.)	A ±.001	B	C	D	E ± 0.010	F	G	H		WEIGHT EACH
									BOLT	HOLE	
NSB-4	1/4	.687	1-1/2"	1/2"	1-1/16"	1-1/8"	1/4"	.63	#6	5/32"	.03
NSB-6	3/8	.750	1-5/8"	9/16"	1-3/16"	1-1/4"	1/4"	.75	#6	5/32"	.05
NSB-8	1/2	1.000	2"	5/8"	1-5/8"	1-1/2"	1/4"	.88	#8	3/16"	.14
NSB-10	5/8	1.000	2-1/2"	11/16"	1-3/4"	1-7/8"	5/16"	1.13	#10	7/32"	.16
NSB-12	3/4	1.250	2-3/4"	3/4"	2-1/8"	2"	5/16"	1.25	#10	7/32"	.21
NSB-16	1	1.500	3-1/4"	1"	2-9/16"	2-1/2"	3/8"	1.50	1/4"	9/32"	.40
NSB-20	1-1/4	1.750	4"	1-1/8"	3"	3"	7/16"	2.00	5/16"	11/32"	.80
NSB-24	1-1/2	2.000	4-3/4"	1-1/4"	3-1/2"	3-1/2"	1/2"	2.25	5/16"	11/32"	1.10
NSB-32	2	2.500	6"	1-1/2"	4-3/8"	4-1/2"	5/8"	3.00	3/8"	13/32"	1.90