

**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.

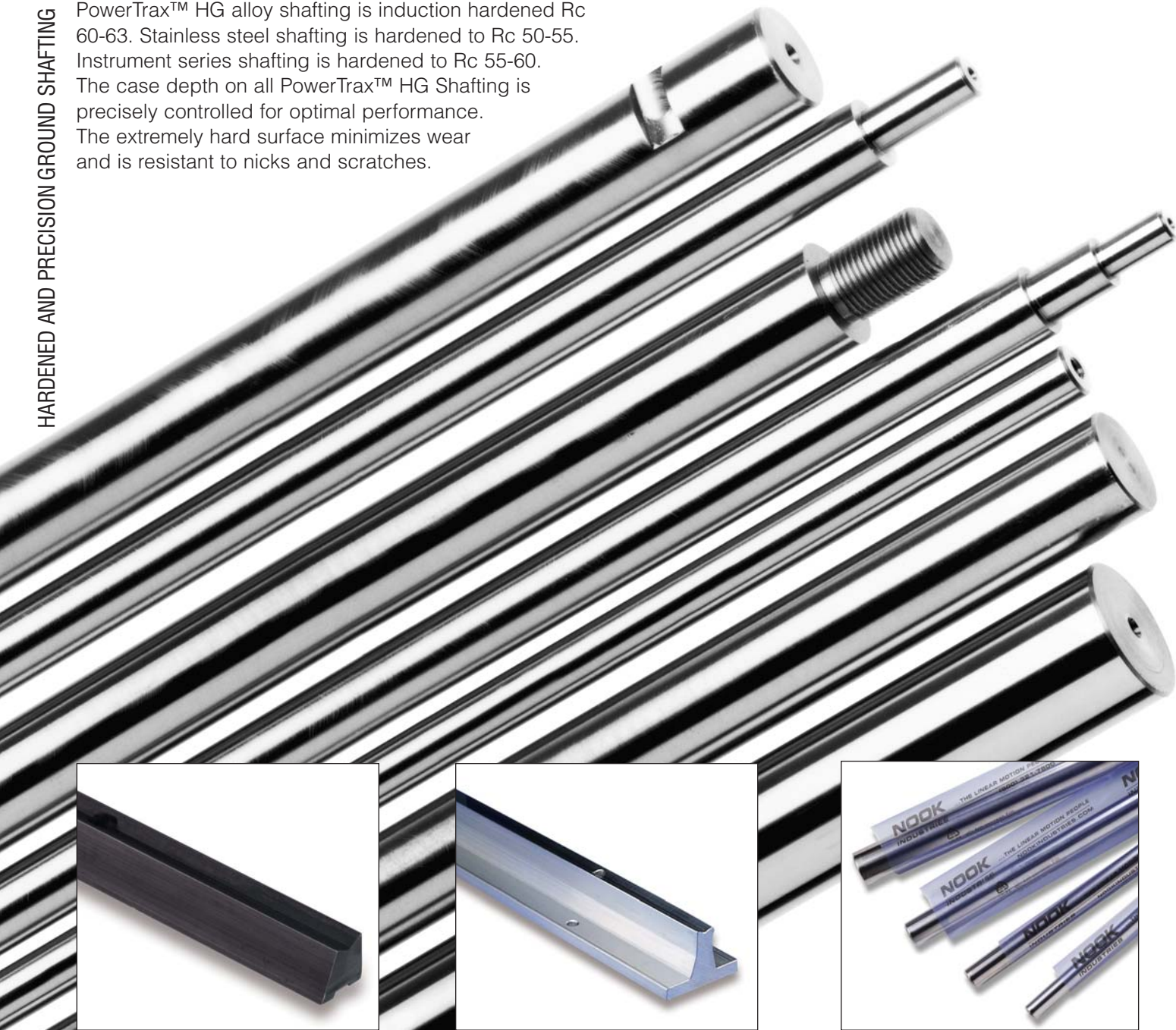
Standard diameters can be cut to your specified length and shipped within 24 hours of receipt of your order. Contact Nook Industries, Inc. for availability of special diameters.

**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**

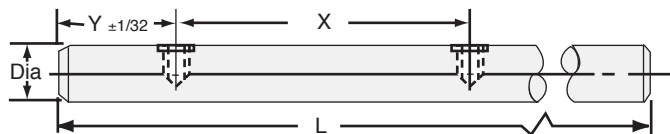
PART NUMBER	NOMINAL DIAMETER (inches)	TOLERANCES CLASS "L" DIAMETER (inches)	MAXIMUM LENGTH (feet)	MINIMUM DEPTH OF HARDNESS (inches)	WEIGHT PER INCH OF LENGTH (pounds)
L-1/4*	1/4	.2495/.2490	10 (12)*	.030	.014
L-3/8*	3/8	.3745/.3740	10 (12)*	.030	.03
L-1/2*	1/2	.4995/.4990	18 (12)*	.050	.06
L-5/8*	5/8	.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"

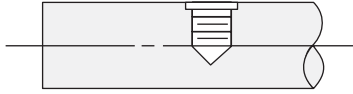
NOOK SHAFT PRECUT STOCKED LINEAR SHAFTING				
NOMINAL DIAMETER (inches)	STOCK LENGTHS (inches)	TOLERANCES CLASS "L" DIAMETER (inches)	MINIMUM DEPTH OF HARDNESS (inches)	WEIGHT PER INCH OF LENGTH (pounds)
1/4	6, 12, 18, 24, 30, 36, 48, 60	.2495/.2490	.030	.014
3/8	6, 12, 18, 24, 36, 48, 60	.3745/.3740	.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

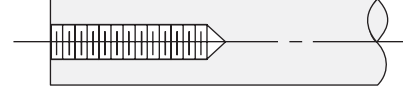
machined by Nook Industries, Inc. to any of the configurations detailed below. Templates for machining are available on our website—[www.nookindustries.com](http://www.nookindustries.com)

### RADIAL HOLES DRILLED AND TAPPED



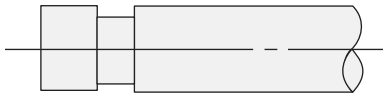
Radial drilled and tapped holes are available with either UNC or UNF Class 2B thread. The hole alignment and location tolerance is  $\pm .010$ ".

### COAXIAL HOLES



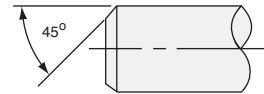
Coaxial holes are machined with concentricity of  $.005$ " centered in the shaft end for shafting 1/2 inch diameter and larger. UNC or UNF Class 2B internal threads are available. Based on tapped hole size, some ends may require annealing and will remain soft on the outside diameter.

### RETAINING RING GROOVES



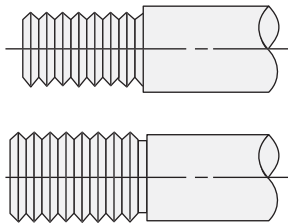
Retaining ring or other grooves area available for all diameter shafting. Annealing may require be in the machined area.

### OPTIONAL MACHINED CHAMFER



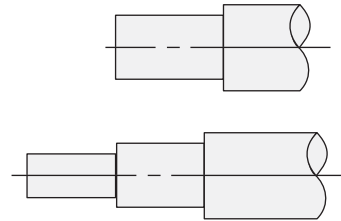
Cut shafts are supplied with Nook non-precision standard end chamfers. Specific chamfer dimensions may be specified.

### THREADED DIAMETERS



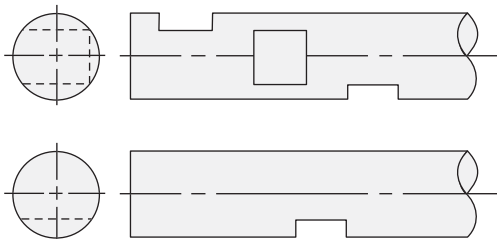
Either the major diameter or reduced diameter may be threaded to UNC or UNF Class 2A. Threaded areas will not have full depth of hardness.

### REDUCED DIAMETER



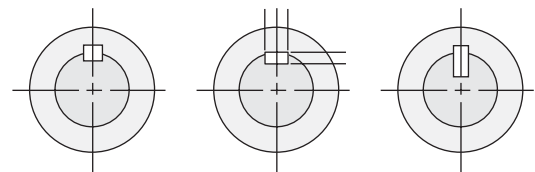
Single or multiple-step machined diameters are available. Concentricity held within  $.002$ ". The reduced diameters will not have full hardness.

### 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.

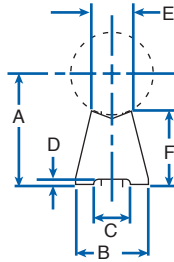
### KEYWAYS



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"

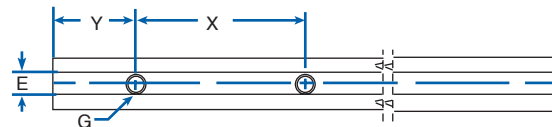
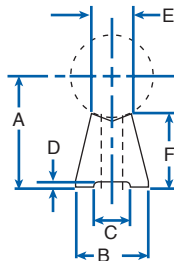
HOW TO ORDER:  
State appropriate part number and length.  
NLR-10-xx    xx=OAL [inches]

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]

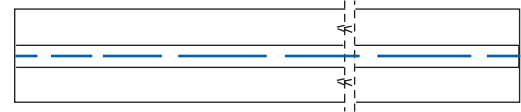
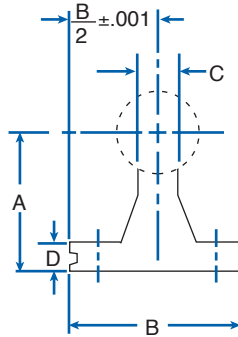
MATERIAL: Aluminum alloy extrusion

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.

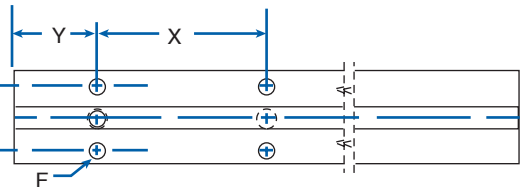
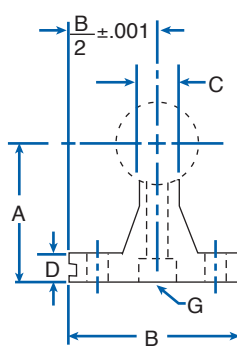
**HOW TO ORDER:**

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]

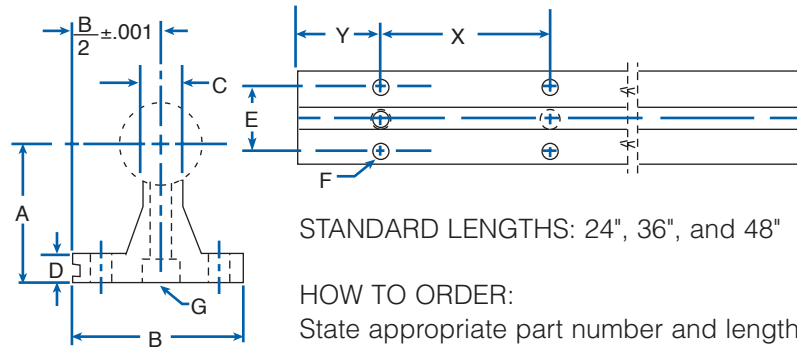
MATERIAL: Aluminum alloy extrusion

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

The specifications and data in this publication are believed to be accurate and reliable. However, it is the responsibility of the product user to determine the suitability of Nook Industries products for a specific application. While defective products will be replaced without charge if promptly returned, no liability is assumed beyond such replacement.

**PREDRILLED SHAFT SUPPORT ASSEMBLIES**

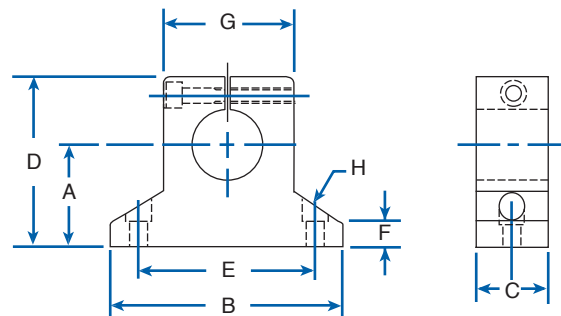


SHAFTING SUPPORTS TECHNICAL DATA

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



EXCEL™ METRIC HARDENED AND GROUND SHAFTING TECHNICAL DATA

LINEAR SHAFTING						
PART NUMBER	NOMINAL DIAMETER (mm)	TOLERANCES CLASS "M" DIAMETER (μm)	MAXIMUM LENGTH (m)	MINIMUM DEPTH OF HARDNESS (mm)	WEIGHT PER METER OF LENGTH (kg)	WEIGHT PER INCH OF LENGTH (lb.)
5mm	5	+0/-8	3.0	1.0	.15	.009
8mm	8	+0/-9	3.0	1.0	.39	.022
10mm	10	+0/-9	5.5	1.0	.62	.034
12mm	12	+0/-11	5.5	1.0	.89	.050
16mm	16	+0/-11	5.5	1.7	1.57	.088
20mm	20	+0/-13	5.5	1.7	2.46	.14
25mm	25	+0/-13	5.5	2.7	3.84	.22
30mm	30	+0/-13	5.5	2.7	5.53	.31
40mm	40	+0/-16	5.5	2.7	9.83	.55
50mm	50	+0/-16	5.5	3.7	15.36	.86
60mm	60	+0/-19	5.5	3.7	22.12	1.24
80mm	80	+0/-19	5.5	3.7	39.33	2.21