Hardened and Ground 60 Case® Precision LinearRace® Shafting

Part Number Description

1 L PD SS CTL

Nominal Shaft Diameter

Class — **Description**

L	For use with XA, Open and Adjustable Ball Bushing bearings and Pillow Blocks as well as Super Ball Bushing® Bearings and Super Smart Ball Bushing bearings
S	For use with A type Ball Bushings
N	For use with needle roller bearings
D	For use with Thomson Die Set Ball Bushing Bearings
XL	For use with XR bearing (Carbon Steel)
G	Ball Groove Shafting for use with Thomson Super Ball Bushing
AL	Aluminum shafting, for use with FluoroNyliner® bearings

Type

CTL	Cut to Length(1)
RL	Random Length(2)
SM	Special Machined (see page 202)

Material

–	Carbon Steel or Aluminum depending on Class selection
SS	440C Stainless Steel
TU	52100 Tubular
SS316	316 Stainless Steel

Option

PD	Predrilled
CPPE	Chrome Plated Plain Ends (Carbon Steel Only)
DC	Deep Case (Carbon Steel Only - Random Length)

(1) CTL = Cut to length is Thomson 60 Case cut to your specified length.
(2) RL = Random length is full bar or long length shafting. It is called random length because we start with a raw bar 4" to 6" longer than the min. usable but guarantee only the min. usable. We mark the ends of what is out of our own tolerance. This is the result of the manufacturing process and tightly controlled roundness specifications.

Not all options are available in all sizes.
See catalog pages or contact Thomson Customer Support for combination availability.
For additional information on material options, see page 264.

Look for the Brand Logo

If you specify Thomson, look for the logo. Do not be fooled when ordering linear shafting. All Thomson 60 Case LinearRace shafting is etched with the Thomson logo as shown in the picture. If the shaft you have does not have the logo, it may not be a true Thomson 60 Case. Thomson 60 Case is etched approximately every 18 to 22 inches.

Solid Carbon Steel

Hardness: 60 ROCKWELL C Min.
Surface Finish: 8 Ra microinch Max
Roundness: .000080" Class L and S / .000050" Class N

Straightness: .001" Per Foot Cumulative (.002" TIR)
Taper: .0001"

Nominal Diameter (in)	Class L			Class S			Class N			Min. Hardness Depth (in)	Weight Per Inch (lb)
	Basic Part Number	Diameter To lerance (in)	Max. Length (in)	Basic Part Number	Diameter Tolerance (in)	Max. Length (in)	Basic Part Number	Diameter Tolerance (in)	Max. Length (in)		
3/16"	3/16 L	.1870 .1865	54	–	–	–	–	–	–	.027	.008
1/4"	1/4 L	.2495 .2490	94	1/4 S	.2490 .2485	94	1/4 N	.2500 .2498	94	.027	.014
3/8"	3/8 L	.3745 .3740	166	3/8 S	.3740 .3735	166	3/8 N	.3750 .3748	166	.027	.031
1/2"	1/2 L	.4995 .4990	166	1/2 S	.4990 .4985	166	1/2 N	.5000 .4998	166	.040	.055
5/8"	5/8 L	.6245 .6240	202	5/8 S	.6240 .6235	202	5/8 N	.6250 .6248	202	.040	.086
3/4"	3/4 L	.7495 .7490	202	3/4 S	.7490 .7485	202	3/4 N	.7500 .7498	202	.060	.125
7/8"	7/8 L	.8745 .8740	202	–	– –	–	7/8 N	.8750 .8748	202	.060	.170
1"	1 L	.9995 .9990	202	1 S	.9990 .9985	202	1 N	1.0000 .9998	202	.080	.222
1 1/8"	1 1/8 L	1.1245 1.1240	202	–	–	–	–	1.1250 1.1248	202	.080	.281
1 1/4"	1 1/4 L	1.2495 1.2490	202	1 1/4 S	1.2490 1.2485	202	1 1/4 N	1.2500 1.2498	202	.080	.348
1 3/8"	1 3/8 L	1.3745 1.3740	202	–	–	–	1 3/8 N	1.3750 1.3747	202	.080	.420
1 1/2"	1 1/2 L	1.4994 1.4989	202	1 1/2 S	1.4989 1.4984	202	1 1/2 N	1.5000 1.4997	202	.080	.500
1 5/8"	1 5/8 L	1.6245 1.6240	178	–	–	–	1 5/8 N	1.6250 1.6247	178	.080	.587
1 3/4"	1 3/4 L	1.7495 1.7490	178	–	–	–	1 3/4 N	1.7500 1.7497	178	.100	.681
2"	2 L	1.9994 1.9987	202	2 S	1.9987 1.9980	202	2 N	2.000 1.9997	202	.100	.890
2 1/4"	2 1/4 L	2.2494 2.2487	202	–	– –	–	2 1/4 N	2.2500 2.2497	202	.100	1.153
2 1/2"	2 1/2 L	2.4993 2.4985	202	2 1/2 S	2.4985 2.4977	202	2 1/2 N	2.5000 2.4996	202	.100	1.391
3"	3 L	2.9992 2.9983	202	3 S	2.9983 2.9974	202	3 N	3.0000 2.9996	202	.100	2.003
3 1/2"	3 1/2 L	3.4990 3.4980	202	–	–	–	–	–	–	.100	2.726
4"	4 L	3.9988 3.9976	202	4 S	3.9976 3.9964	202	–		–	.100	3.560

Solid Carbon Steel

Hardness: 60 ROCKWELL C Min.
Roundness: .000080" Class D and XL

Straightness: .001" Per Foot Cumulative (.002" TIR)
Taper: .0001"

Nominal Diameter (in)	Class D				Min. Hardness Depth (in)	Weight Per Inch (lb)
	Basic Part Number	Diameter Tolerance (in)	Surface Finish	Max. Length (in)		
1"	1 D	1.0003 1.0000	8 Ra µin. Max.	202	.080	.222
1 1/4"	1 1/4 D	1.2503 1.2500	8 Ra µin. Max.	202	.080	.348
1 1/2"	1 1/2 D	1.5003 1.5000	8 Ra µin. Max.	202	.080	.500
2"	2 D	2.0003 2.0000	8 Ra µin. Max.	202	.100	.890

Nominal Diameter (in)	Class XL				Min. Hardness Depth (in)	Weight Per Inch (lb)
	Basic Part Number	Diameter Tolerance (in)	Surface Finish	Max. Length (in)		
2"	2 XL	1.9994 1.9991	4-8 Ra µin. Max.	202	.100	.890
3"	3 XL	2.9992 2.9989	4-8 Ra µin. Max.	202	.100	2.003
4"	4 XL	3.9988 3.9983	6-10 Ra µin. Max.	202	.100	3.560

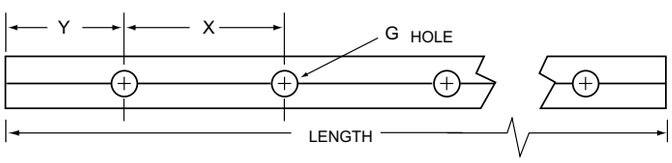
THOMSON
Linear Motion. Optimized.™

Standard Options for Carbon Steel Shafting
Chrome Plated Plain Ends (CPPE)(1), Predrilled (PD), Predrilled Chrome Plated Plain Ends (PDCPPE), Solid Steel

Hardness: 60 ROCKWELL C Min.
Surface Finish: 8 Ra microinch Max
Roundness: .000080"
Straightness: .001" Per Foot Cumulative (.002" TIR)
Taper: .0001"

Nominal Diameter (in)	Chrome Plated Plain Ends			Min. Hardness Depth (in)	Weight Per Inch (lb)
	Part Number	Tolerance Class L	Max. Length (in)		
1/2"	1/2 L CPPE	.4995 .4990	166	.040	.055
5/8"	5/8 L CPPE	.6245 .6240	202	.040	.086
3/4"	3/4 L CPPE	.7495 .7490	202	.060	.125
1"	1 L CPPE	.9995 .9990	202	.080	.222
1 1/4"	1 1/4 L CPPE	1.2495 1.2490	202	.080	.348
1 1/2"	1 1/2 L CPPE	1.4994 1.4989	202	.080	.500
2"	2 L CPPE	1.9994 1.9987	202	.100	.890

(1) CPPE - Chrome Plated Plain Ends, which means ends and chamfers, are not plated. Completely plated chamfers are available as a special machine part. See page 202.



Nominal Diameter (in)	Predrilled		Predrilled Chrome Plated		Hole Spacing	G Standard Thread Size	Length Tolerance (in)	Max. Length (in)	Min. Hardness Depth (in)	Weight Per Inch (lb)
	Part Number Predrilled	L PD Tolerance Class	Part Number Predrilled Chrome Plated Ends	L PD Tolerance Class	X (inch +/- 1/64) (noncumulative)					
1/2"	1/2 L PD	.4995 .4990	1/2 L PDCPPE	.4995 .4990	4	#6-32	+/- 1/32	166	.040	.055
5/8"	5/8 L PD	.6245 .6240	5/8 L PDCPPE	.6245 .6240	4	#8-32	+/- 1/32	178	.040	.086
3/4"	3/4 L PD	.7495 .7490	3/4 L PDCPPE	.7495 .7490	6	#10-32	+/- 1/32	178	.060	.125
1"	1 L PD	.9995 .9990	1 L PDCPPE	.9995 .9990	6	1/4-20	+/- 1/32	178	.080	.222
1 1/4"	1 1/4 L PD	1.2495 1.2490	1 1/4 L PDCPPE	1.2495 1.2490	6	5/16-18	+/- 1/32	178	.080	.348
1 1/2"	1 1/2 L PD	1.4994 1.4989	1 1/2 L PDCPPE	1.4994 1.4989	8	3/8-16	+/- 1/32	178	.080	.500
2"	2 L PD	1.9994 1.9987	2 L PDCPPE	1.9994 1.9987	8	1/2-13	+/- 1/16	178	.100	.890

Holes are drilled and tapped to the center of the shaft. Y = distance from end of rail to the center of first mounting hole, Y1 = Y2 unless specified.
Chrome plating is thin, dense chrome with thickness of .00005 - .0001".

Solid Steel Deep Case - Available in Random Length Only

Hardness: 60 ROCKWELL C Min.
Surface Finish: 8 Ra microinch Max
Roundness: .000080" Class L and S / .000050" Class N
Straightness: .001" Per Foot Cumulative (.002" TIR)
Taper: .0001"

Nominal Diameter (in)	Class L Deep Case			Class N Deep Case			Min. Hardness Depth (in)	Weight Per Inch (lb)
	Basic Part Number	Diameter Tolerance (in)	Max. Length (in)	Basic Part Number	Diameter Tolerance (in)	Max. Length (in)		
3/4"	3/4 L DC	.7495 .7490	202	3/4 N DC	.7500 .7498	202	.120	.125
7/8"	7/8 L DC	.8745 .8740	202	7/8 N DC	.8750 .8748	202	.120	.170
1"	1 L DC	.9995 .9990	202	1 N DC	1.0000 .9998	202	.160	.222
1 1/8"	1 1/8 L DC	1.1245 1.1240	202	1 1/8 N DC	1.1250 1.1248	202	.160	.281
1 1/4"	1 1/4 L DC	1.2495 1.2490	202	1 1/4 N DC	1.2500 1.2498	202	.180	.348
1 1/2"	1 1/2 L DC	1.4994 1.4989	202	1 1/2 N DC	1.5000 1.4997	202	.180	.500
1 3/4"	1 3/4 L DC	1.7495 1.7490	178	1 3/4 N DC	1.7500 1.7497	178	.250	.681
2"	2 L DC	1.9994 1.9987	202	2 N DC	2.0000 1.9997	202	.250	.890
2 1/4"	2 1/4 L DC	2.2494 2.2487	202	2 1/4 N DC	2.2500 2.2497	202	.250	1.153
2 1/2"	2 1/2 L DC	2.4993 2.4985	202	2 1/2 N DC	2.5000 2.4996	202	.250	1.391
3"	3 L DC	2.9992 2.9983	202	3 N DC	3.0000 2.9996	202	.250	2.003
3 1/2"	3 1/2 L DC	3.4990 3.4980	202	–	–	–	.250	2.726

Ball Groove LinearRace Shaft - Solid Carbon Steel

Hardness: 60 ROCKWELL C Min.
Surface Finish: 8 Ra microinch Max
Roundness: .000080"
Straightness: Shaft Groove .002" Per Foot Cumulative (.002" TIR)
Taper: .0001"

Nominal Diameter (in)	Class G			Min. Hardness Depth (in)	Weight Per Inch (lb)
	Basic Part Number	Diameter Tolerance (in)	Max. Length (in)		
1/4"	1/4 G	.2495 .2490	45	.027	.014
3/8"	3/8 G	.3745 .3740	45	.027	.031
1/2"	1/2 G	.4995 .4990	45	.040	.055
5/8"	5/8 G	.6245 .6240	45	.040	.086
3/4"	3/4 G	.7495 .7490	45	.060	.125
1"	1 G	.9995 .9990	45	.080	.222

440C Stainless Steel(1)

Hardness: 50 ROCKWELL C Min.
Surface Finish: 8 Ra microinch Max
Roundness: .000080"

Straightness: .001" Per Foot Cumulative (.002" TIR)
Taper: .0001"

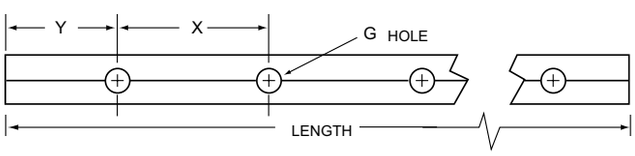
Nominal Diameter (in)	Class L			Class S			Min. Hardness Depth (in)	Weight Per Inch (lb)
	Basic Part Number	Diameter Tolerance (in)	Max. Length (in)	Basic Part Number	Diameter Tolerance (in)	Max. Length (in)		
3/16"	3/16 L SS	.1870 .1865	54	–	–	–	.027	.008
1/4"	1/4 L SS	.2495 .2490	94	1/4 S SS	.2490 .2485	94	.027	.014
3/8"	3/8 L SS	.3745 .3740	178	3/8 S SS	.3740 .3735	178	.027	.031
1/2"	1/2 L SS	.4995 .4990	178	1/2 S SS	.4990 .4985	178	.040	.055
5/8"	5/8 L SS	.6245 .6240	178	5/8 S SS	.6240 .6235	178	.040	.086
3/4"	3/4 L SS	.7495 .7490	178	3/4 S SS	.7490 .7485	178	.060	.125
1"	1 L SS	.9995 .9990	178	1 S SS	.9990 .9985	178	.080	.222
1 1/4"	1 1/4 L SS	1.2495 1.2490	178	1 1/4 S SS	1.2490 1.2485	178	.080	.348
1 1/2"	1 1/2 L SS	1.4994 1.4989	178	1 1/2 S SS	1.4989 1.4984	178	.080	.500
2"	2 L SS	1.9994 1.9987	178	2 S SS	1.9987 1.9980	178	.100	.890
2 1/2"	2 1/2 L SS	2.4993 2.4985	178	2 1/2 S SS	2.4985 2.4977	178	.100	1.391

(1) 440C stainless is "corrosion resistant"; it contains some carbon which allows for hardening. Carbon can result in corrosion over time.

Standard Options for 440C Stainless Steel Predrilled (PD)

Hardness: 50 ROCKWELL C Min.
Surface Finish: 8 Ra microinch Max
Roundness: .000080"

Straightness: .001" Per Foot Cumulative (.002" TIR)
Taper: .0001"



Nominal Diameter (in)	Predrilled		Hole Spacing	G Standard Thread Size	Length Tolerance (in)	Max. Length (in)	Min. Hardness Depth (in)	Weight Per Inch (lb)
	Part Number Predrilled	L PD Tolerance Class	X (inch +/- 1/64) (noncumulative)					
1/2"	1/2 L PD SS	.4995 .4990	4	#6-32	+/- 1/32	166	.040	.055
5/8"	5/8 L PD SS	.6245 .6240	4	#8-32	+/- 1/32	178	.040	.086
3/4"	3/4 L PD SS	.7495 .7490	6	#10-32	+/- 1/32	178	.060	.125
1"	1 L PD SS	.9995 .9990	6	1/4-20	+/- 1/32	178	.080	.222
1 1/4"	1 1/4 L PD SS	1.2495 1.2490	6	5/16-18	+/- 1/32	178	.080	.348
1 1/2"	1 1/2 L PD SS	1.4994 1.4989	8	3/8-16	+/- 1/32	178	.080	.500
2"	2 L PD SS	1.9994 1.9987	8	1/2-13	+/- 1/16	178	.100	.890

Holes are drilled and tapped to the center of the shaft. Y = distance from end of rail to the center of first mounting hole, Y1 = Y2 unless specified.

Ball Groove LinearRace Shaft - 440C Stainless Steel

Hardness: 50 ROCKWELL C Min.
Surface Finish: 8 Ra microinch Max
Roundness: .000080"
Straightness: Shaft Groove .002" Per Foot Cumulative
Taper: .0001"

Nominal Diameter (in)	Class G			Min. Hardness Depth (in)	Weight Per Inch (lb)
	Basic Part Number	Diameter Tolerance (in)	Max. Length (in)		
1/4"	1/4 G SS	.2495 .2490	45	.027	.014
3/8"	3/8 G SS	.3745 .3740	45	.027	.031
1/2"	1/2 G SS	.4995 .4990	45	.040	.055
5/8"	5/8 G SS	.6245 .6240	45	.040	.086
3/4"	3/4 G SS	.7495 .7490	45	.060	.125
1"	1 G SS	.9995 .9990	45	.080	.222

Instrument 440C Stainless Steel LinearRace® shafting for use with Thomson Instrument Ball Bushing® Bearings

Hardness: 55 ROCKWELL C Thru Hardened
Surface Finish: 4 Ra microinch Max
Roundness: .000080"
Straightness: .0001" Per Inch Cumulative
Taper: .0001"

Nominal Diameter (in)	INST Class			Max. Length (in)	Weight Per Inch (lb)
	Basic Part Number	Diameter Tolerance (in)	Length Tolerance (in)		
1/8"	INST2MS0L	.1248 .1247	+/- .005	12	.004
3/16"	INST3MS0L	.1873 .1872	+/- .005	12	.008
1/4"	INST4MS0L	.2498 .2497	+/- .005	12	.014

52100 Tubular

Hardness: 58 ROCKWELL C Min.
Surface Finish: 8 Ra microinch Max
Roundness: .000080" Class L and S
Straightness: .001" Per Foot Cumulative (.002" TIR)
Taper: .0001"

Nominal Diameter (in)	Nominal I.D. (in)	Class L			Class S			Min. Hardness Depth (in)	Weight Per Inch (lb)
		Basic Part Number	Diameter Tolerance (in)	Max. Length (in)	Basic Part Number	Diameter Tolerance (in)	Max. Length (in)		
3/4"	.46 .42	3/4 L TU	.7495 .7490	174	3/4 S TU	.7490 .7485	174	.060	.0754
1"	.63 .57	1 L TU	.9995 .9990	174	1 S TU	.9990 .9985	174	.080	.158
1 1/2"	.93 .85	1 1/2 L TU	1.4994 1.4989	174	1 1/2 S TU	1.4989 1.4984	174	.080	.328
2"	1.32 1.19	2 L TU	1.9994 1.9987	174	2 S TU	1.9987 1.9980	174	.100	.542
2 1/2"	1.84 1.66	2 1/2 L TU	2.4993 2.4985	174	2 1/2 S TU	2.4985 2.4977	174	.100	.749
3"	2.20 1.80	3 L TU	2.9992 2.9983	174	3 S TU	2.9983 2.9974	174	.100	1.112
4"	3.30 2.70	4 L TU	3.9988 3.9976	174	4 S TU	3.9976 3.9964	174	.100	1.558

316 Stainless Steel(1)

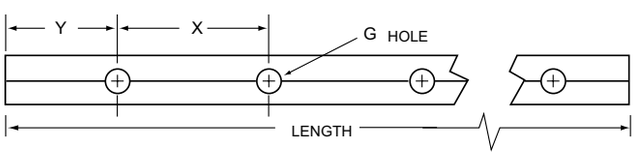
Hardness: 20-25 ROCKWELL C Min.
Surface Finish: 8 Ra microinch Max
Roundness: .000080"
Straightness: .001" Per Foot Cumulative (.002" TIR)
Taper: .0001"

Nominal Diameter (in)	Class L			Weight Per Inch (lb)
	Basic Part Number	Diameter Tolerance (in)	Max. Length (in)	
1/4"	1/4 L SS316	.2495 .2490	94	.014
3/8"	3/8 L SS316	.3745 .3740	138	.031
1/2"	1/2 L SS316	.4995 .4990	138	.055
5/8"	5/8 L SS316	.6245 .6240	138	.086
3/4"	3/4 L SS316	.7495 .7490	138	.125
1"	1 L SS316	.9995 .9990	138	.222
1 1/4"	1 1/4 L SS316	1.2495 1.2490	138	.348
1 1/2"	1 1/2 L SS316	1.4994 1.4989	138	.500
2"	2 L SS316	1.9994 1.9987	138	.890

(1) 316 Stainless Steel is corrosion-proof steel and has no carbon content that will result in corrosion.

Standard Options for 316 Stainless Steel Predrilled (PD)

Hardness: 20-25 ROCKWELL C Min.
Surface Finish: 8 Ra microinch Max
Roundness: .000080"
Straightness: .001" Per Foot Cumulative (.002" TIR)
Taper: .0001"

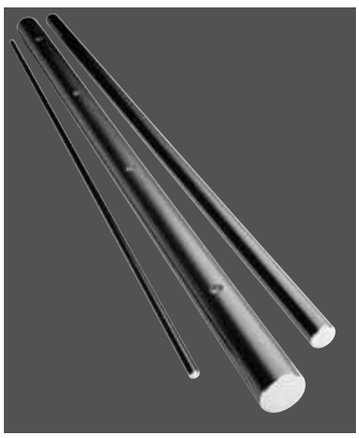


Nominal Diameter (in)	Predrilled		Hole Spacing	G Standard Thread Size	Length Tolerance (in)	Max. Length (in)	Weight Per Inch (lb)
	Part Number Predrilled	L PD Tolerance Class	X (inch +/- 1/64) (noncumulative)				
1/2"	1/2 L SS316PD	.4995 .4990	4	#6-32	+/- 1/32	138	.055
5/8"	5/8 L SS316PD	.6245 .6240	4	#8-32	+/- 1/32	138	.086
3/4"	3/4 L SS316PD	.7495 .7490	6	#10-32	+/- 1/32	138	.125
1"	1 L SS316PD	.9995 .9990	6	1/4-20	+/- 1/32	138	.222
1 1/4"	1 1/4 SS316PD	1.2495 1.2490	6	5/16-18	+/- 1/32	138	.348
1 1/2"	1 1/2 SS316PD	1.4994 1.4989	8	3/8-16	+/- 1/32	138	.500
2"	2 L SS316PD	1.9994 1.9987	8	1/2-13	+/- 1/16	138	.890

Holes are drilled and tapped to the center of the shaft. Y = distance from end of rail to the center of first mounting hole, Y1 = Y2 unless specified.

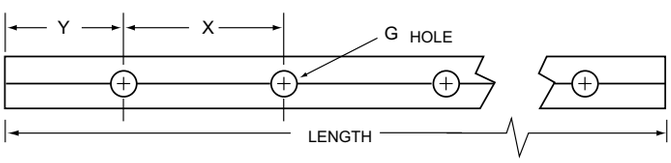
Ultra Light Aluminum

Hardness: 70 HRC Min (hard anodized coating)
Coating Thickness: .0015" - .002"
Surface Finish: 16 Ra microinch Max
Roundness: .000080" Max
Straightness: .001" Max Per Foot Cumulative (.002" TIR)
Taper: .0001" Max
Max Length: 120"



Inch Ultra Light Shafting

Nominal Diameter (in)	Part Number	Diameter Tolerance (in)		Length Tolerance (in)	Weight Per Inch (lb)
		Min	Max		
1/4	1/4 AL	0.2488	0.2496	+/- 1/32	0.005
3/8	3/8 AL	0.3738	0.3746	+/- 1/32	0.010
1/2	1/2 AL	0.4988	0.4996	+/- 1/32	0.019
5/8	5/8 AL	0.6238	0.6246	+/- 1/32	0.030
3/4	3/4 AL	0.7488	0.7496	+/- 1/32	0.043
1	1 AL	0.9988	0.9996	+/- 1/32	0.077



Inch Ultra Light Predrilled Shafting

Nominal Diameter (in)	Part Number	Diameter Tolerance (in)		Hole Spacing (in)	Thread Size G	Length Tolerance (in)	Weight Per Inch (lb)
		Min	Max	X			
1/2	1/2 AL PD	0.4988	0.4996	4	#6-32	+/- 1/32	0.019
5/8	5/8 AL PD	0.6238	0.6246	4	#8-32	+/- 1/32	0.03
3/4	3/4 AL PD	0.7488	0.7496	6	#10-32	+/- 1/32	0.043
1	1 AL PD	0.9988	0.9996	6	1/4-20	+/- 1/32	0.077

Holes are drilled and tapped to the center of the shaft. Y = distance from end of rail to the center of first mounting hole, Y1 = Y2 unless specified.

THOMSON
Linear Motion. Optimized.™

Support Rails and Assemblies for Continuously Supported Applications

Part Number Description

SR 16 - PD CTL

Type	Description
SR	Aluminum Support Rail
LSR	Low Profile Steel Support Rail
XSR	Extra Rigid Support Rail

Type	Description
–	Without Predrilled Holes
PD	Predrilled Holes

SRA 16 SS CTL

Type	Description
SRA	Aluminum Support Rail Assembly
LSRA	Low Profile Steel Support Rail Assembly
XSRA	Extra Rigid Support Rail Assembly

Size	Nominal Diameter
8	.500
10	.625
12	.750
16	1.000
20	1.250
24	1.500
32	2.000
40	2.500
48	3.000
64	4.000

Type	Description
–	Standard Assembly
SS	With 440C Stainless Steel Shafting
TU	With 52100 Tubular Lite Shafting
CPPE	With PrePlate Chrome Shafting
CR	LSRA Corrosion Resistant with 440C Stainless Steel Shaft with Zinc-Plated Rail

Type	Description
CTL	Cut to Length
SM	Special Machined

Not all options are available in all sizes.
See catalog pages or contact Thomson Customer Support for combination availability.
For additional information on material options, see page 264.

Shaft Rail Supports Type SR & SR-PD

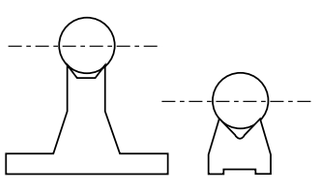
The low-cost way of mounting Thomson 60 Case® shafts

Shaft supports simplify mounting of Thomson 60 Case shafts. Users of Thomson 60 Case shafting should carefully consider the use of these low-cost shaft supports. They are standard, available from stock, and simplify shaft mounting. In addition to other benefits, they eliminate many problems encountered in designing and manufacturing shaft-supporting devices. These versatile mounts can be used horizontally or vertically, and in many different arrangements. Shaft support rails are available without predrilled holes (SR), or predrilled (SR-PD) shaft rails to support 1/2-inch- through 2-inch-diameter shafts are available in standard 24-, 48- and 72-inch lengths(1). Where shorter lengths are needed, rails are easily cut to length. For longer shafts, they can be mounted end to end, using shims or grout, if necessary, to compensate for slight variation within manufacturing tolerance. Thomson offers shaft support rails with pre-drilled holes to simplify shaft mounting.

Low Shaft Support Rails Type LSR & LSR-PD

For compact designs

Low shaft rails allow the design of more compact linear motion systems. The height from the base to the mean shaft center ranges from 9/16 inch for supporting a 1/2-inch-diameter shaft to a maximum 3 1/2 inches when supporting a 4-inch-diameter shaft – 40% lower than standard support rails. Low shaft rails are made of steel to maintain optimum shaft rigidity. Either continuous or intermittent support is possible when using Thomson open-type linear ball bearings. Low shaft rails are furnished in standard 4-foot lengths. Where shorter lengths are required, rails can easily be cut. For supporting longer shafts, rails can be mounted end to end without limit. Low shaft rails are available without pre-drilled mounting holes (LSR) or with predrilled mounting holes (LSR-PD) to match Thomson drilled and tapped shafts (PD). When using LSR-PD, the attachment bolts are underneath, so you must have access under your machine base plate. The LSRA assemblies highlighted below utilize attachment bolts from above. If one of the standard predrilled low shaft rails is not appropriate for your design needs, low shaft rails can be custom drilled by Thomson to your specifications. Send a print with all required dimensions, tolerances and quantities needed to our application engineering team.



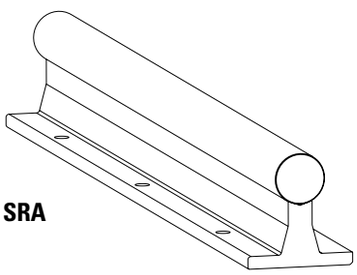
SR **LSR**

(1) Maximum continuous length is 71.94"

Extra-Rigid Shaft Support Rails

For XR Ball Bushing bearing systems

Extra-rigid shaft support rails (XSR) are designed specifically for use with our extra-rigid Series XR Ball Bushing® Bearings. XSR support rails are available in nominal 24-inch lengths and are made of ductile iron and powder epoxy coated to provide the most deflection-resistant shaft support of all Thomson supports. To facilitate quick and easy installation, each extra-rigid shaft support is drilled and counter-bored for securing a drilled and tapped shaft into it and for bolting it to a flat, rigid base. For supporting long shafts, XSR support rails can be mounted end-to-end.



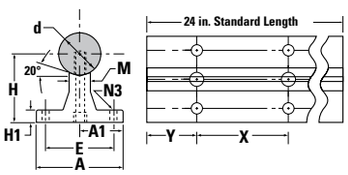
SRA

Pre-Assembled Shaft Rail Assemblies Type SRA & LSRA

Thomson 60 Case steel shafts mounted on shaft support rails are now available for instant bolt-down installation. Assemblies are supplied cut to any length with no limit on the overall length (long lengths are butt jointed together unless specified otherwise). Either solid or lightweight tubular shafting can be assembled to the standard Thomson support rails, which come with base mounting holes spaced evenly along the overall length of the assembly. The LSRA uses a special shaft unlike the LSR-PD. The attachment bolts for the LSRA are from the top down so you can easily mount into a machine base plate. The LSRA bolt pattern closely matches profile rail linear guides and can easily be used as a drop-in substitute to replace linear guides (ensure you review loading requirements). Corrosion-resistant lower support rail assemblies (LSRA) are available. The support is zinc plated and shaft is 440C.

Support Rails and Assemblies for Continuously Supported Applications

Type SR/SR-PD 60 Case® LinearRace® Support Rails and Assemblies (Dimensions in inches)

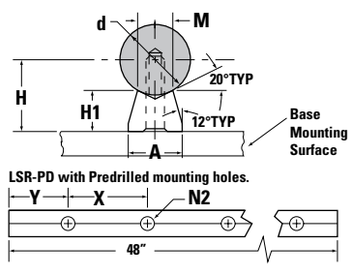


Material: Unfinished Aluminum Alloy

SR Without Holes	SR-PD With Predrilled Holes	Nominal LinearRace Diameter d	H ±.002	H1	A	A1	E	M	N3		LinearRace Mounting Bolt N1 (PD only)	X	Weight lb/ft
									Hole	Bolt			
SR8	SR8-PD	.500	1.125	.19	1.50	.750	1.00	.25	.17	#6	#6-32 x .88	4	.57
SR10	SR10-PD	.625	1.125	.25	1.63	.813	1.13	.31	.19	#8	#8-32 x .88	4	.70
SR12	SR12-PD	.750	1.500	.25	1.75	.875	1.25	.38	.22	#10	#10-32 x 1.25	6	.94
SR16	SR16-PD	1.000	1.750	.25	2.13	1.063	1.50	.50	.28	1/4	1/4-20 x 1.5	6	1.27
SR20	SR20-PD	1.250	2.125	.31	2.50	1.250	1.88	.56	.34	5/16	5/16-18 x 1.75	6	1.77
SR24	SR24-PD	1.500	2.500	.38	3.00	1.500	2.25	.69	.34	5/16	3/8-16 x 1.75	8	2.52
SR32	SR32-PD	2.000	3.250	.50	3.75	1.875	2.75	.88	.406	3/8	1/2-13 x 2.50	8	4.09

N1 Hole Dia. includes counterbore for socket head cap screw. Alignment and location of holes are ± .010", noncumulative. Y = distance from end of rail to the center of first mounting hole, Y1 = Y2 unless specified.

Type LSR and LSR-PD 60 Case LinearRace Support Rails (Dimensions in inches)



Material: Unfinished Steel Alloy

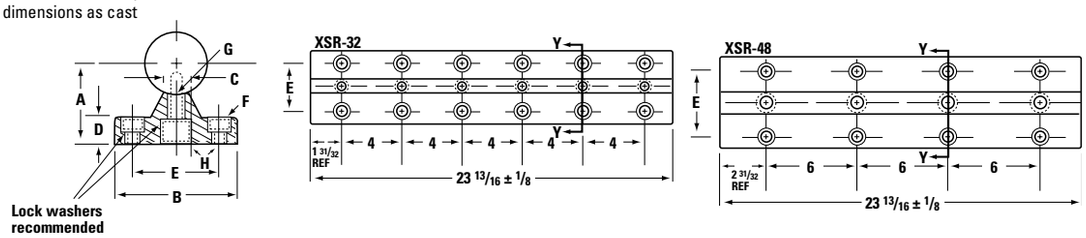
LSR Standard Without Holes	LSR-PD Standard w/Predrilled Holes	Nominal LinearRace Diameter d	H ±.002	H1	A	M	N2	N1	X	Weight lb/ft
							Hole	Bolt		
LSR-8	LSR-8-PD	.500	.562	.34	.37	.25	.17	#6	4	.33
LSR-10	LSR-10-PD	.625	.687	.41	.45	.31	.19	#8	4	.50
LSR-12	LSR-12-PD	.750	.750	.42	.51	.38	.22	#10	6	.58
LSR-16	LSR-16-PD	1.000	1.000	.56	.69	.50	.28	1/4	6	1.03
LSR-20	LSR-20-PD	1.250	1.187	.63	.78	.56	.34	5/16	6	1.30
LSR-24	LSR-24-PD	1.500	1.375	.70	.93	.69	.41	3/8	8	1.72
LSR-32	LSR-32-PD	2.000	1.750	.845	1.180	.875	.531	1/2	8	2.60
LSR-40	LSR-40-PD	2.500	2.250	1.125	1.500	1.125	.687	5/8	8	4.49
LSR-48	LSR-48-PD	3.000	2.750	1.404	1.875	1.375	.812	3/4	8	6.92
LSR-64	LSR-64-PD	4.000	3.500	1.750	2.500	1.875	1.060	1	8	11.36

Not for use with PB-OPN pillow blocks. Y = distance from end of rail to the center of first mounting hole, Y1 = Y2 unless specified.

Type XSR Shaft Support Rails (Dimensions in inches)

Part Number	Nominal Shaft Diameter	A† +.000/-.001	B	C	D	E	Screw Diameter	F	C Bore	Recommended Screw	G	C Bore	H	Weight lb/ft
								Hole			Hole		Degrees	
XSR32	2	2.750	4-1/2	7/8	1	3-1/8	1/2	9/16	1 x 5/8 DP	1/2-13 x 2	9/16	1 x 3/4 DP	15	14.92
XSR48	3	4.000	6	1-1/4	1-5/16	4-1/4	5/8	11/16	1 1/4 x 3/4 DP	3/4-10 x 2-3/4	13/16	1 7/16 x 1 1/8 DP	25	29.03

† Centerline of shaft will be parallel to base within .0005.
Surface dimensions as cast

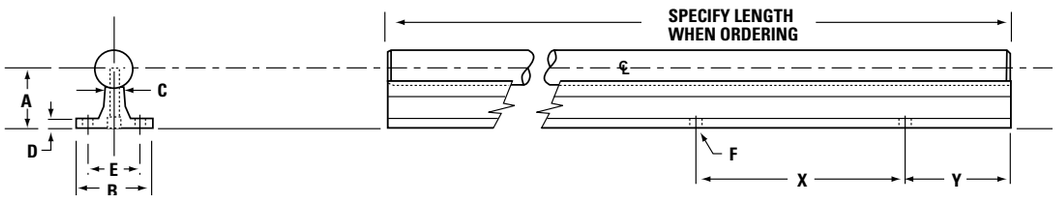


Material: Painted Ductile Iron

Standard Shaft Rail Assemblies (Dimensions in inches)

Assembly Number			Nominal Linear Bearing Race Dia.	Dimensions							Base Holes	Weight lb/ft[1]	
With Solid Carbon Steel Shaft	With Solid Stainless Steel Shaft	With Tubular 52100		A ±.002	B	C	D	E	F Bolt	F Hole	X	SRA and SRA-SS	SRA-TU
SRA-8	SRA-8-SS	–	1/2	1.125	1 1/2	1/4	3/16	1	#6	.169	4	1.23	–
SRA-10	SRA-10-SS	–	5/8	1.125	1 5/8	5/16	1/4	1 1/8	#8	.193	4	1.74	–
SRA-12	SRA-12-SS	SRA-12-TU	3/4	1.500	1 3/4	3/8	1/4	1 1/4	#10	.221	6	2.44	1.85
SRA-16	SRA-16-SS	SRA-16-TU	1	1.750	2 1/8	1/2	1/4	1 1/2	1/4	.281	6	3.94	3.17
SRA-20	SRA-20-SS	–	1 1/4	2.125	2 1/2	9/16	5/16	1 7/8	5/16	.343	6	5.95	–
SRA-24	SRA-24-SS	SRA-24-TU	1 1/2	2.500	3	11/16	3/8	2 1/4	5/16	.343	8	8.52	6.46
SRA-32	SRA-32-SS	SRA-32-TU	2	3.250	3 3/4	7/8	1/2	2 3/4	3/8	.406	8	14.77	10.59

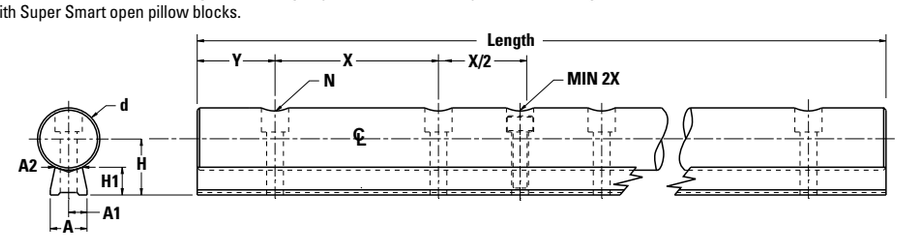
(1) Assembly weights do not include hardware.
Support Rail Material: Unfinished aluminum alloy extrusion. Base mounting hole locations are within ±.010 (noncumulative).
Notes: Lengths longer than 48" will use end to end support rails. Y = distance from end of rail to the center of first mounting hole, Y1 = Y2 unless specified.



Type LSRA 60 Case Smart Rail Guides (Dimensions in inches)

Part Number [3]		LinearRace Shafting Diameter	H ±.002	A	A1	A2	Mounting Holes		Weight lb/ft[4]
Smart Rail Assembly [1]	Smart Rail Assembly [2]						X	N	
LSRA10	LSRA10 CR	.625	.687	.45	.225	.31	2	#5	1.49
LSRA12	LSRA12 CR	.750	.750	.51	.255	.38	3	#6	2.04
LSRA16	LSRA16 CR	1.000	1.000	.69	.345	.5	3	#10	3.61
LSRA20	LSRA20 CR	1.250	1.187	.78	.390	.56	3	5/16	5.20
LSRA24	LSRA24 CR	1.500	1.375	.93	.465	.69	4	3/8	7.37

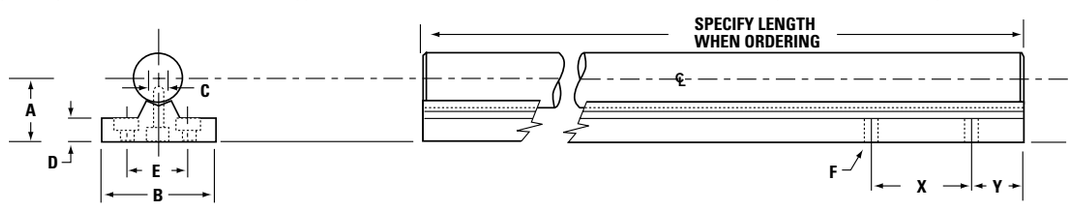
(1) Consists of black oxide steel rail and high carbon steel LinearRace shafting (HRC 60 min.).
(2) Consists of zinc plated steel rail and 440C stainless steel LinearRace shafting (HRC 50 min.).
(3) Specify length of assembly when ordering. For example, LSRA12CR x 24.00 inches. Y dimension is equal on each end unless specified by customer.
(4) Assembly weights do not include hardware.
NOTE: LSRAs do not use standard "PD" shafting. The shafting requires a different hole pattern and configuration.
NOTE: Use only with Super Smart open pillow blocks.



XSRA Extra Rigid Shaft Rail Assemblies (Dimensions in inches)

Assembly Number		LinearRace Shafting Diameter	Dimensions								Base Holes	Weight lb/ft[1]	
With Solid Carbon Steel Shaft	With Tubular Carbon Steel Shaft		A +.000/-.001	B	C	D	E	F Screw Dia.	F Hole	F C Bore	X	XSRA	XSRA-TU
XSRA-32	XSRA-32-TU	2	2.750	4 1/2	7/8	1	3 1/8	1/2	9/16	1 x 5/8 DP	4	25.60	21.42
XSRA-48	XSRA-48-TU	3	4.000	6	1 1/4	1 5/16	4 1/4	5/8	11/16	1 1/4 x 3/4 DP	6	53.07	42.38

(1) Assembly weights do not include hardware.
Note: Lengths longer than 24" will use end to end support rails. Y = distance from end of rail to the center of first mounting hole, Y1 = Y2 unless specified.



Support Blocks for End Supported Applications

Part Number Description

ASB 16

Type	Description
ASB	Low Profile 60 Case® LinearRace® End Support Block
SB	Standard 60 Case LinearRace End Support Block
FSB	Flanged 60 Case LinearRace End Support Block
WM	Waymount Support

Size	Nominal Diameter
4	.250
6	.375
8	.500
10	.625
12	.750
16	1.000
20	1.250
24	1.500
32	2.000
48	3.000
64	4.000

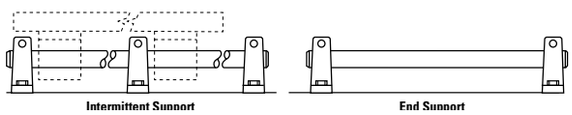
All sizes are not available for all support block types.
See specific product charts for size availability.

Shaft Support Blocks – Type SB and ASB

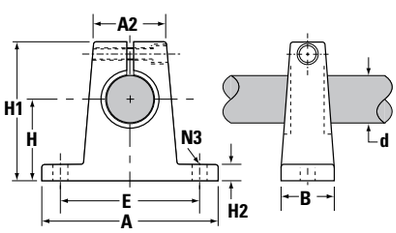
For end support or intermittent support

Shaft support blocks are used for end or intermittent support where loads are light and deflection between supports is not a problem. Unlike shaft support rails, blocks do not permit longitudinal passage of open-type Ball Bushing® Bearings. Type SB shaft support blocks enable clamping of shafts and eliminate the need for bolts, etc. to maintain shaft position. Shimming is suggested for high-precision applications to eliminate the effect of variations in surface of base or manufacturing tolerances between supports.

Type ASB shaft blocks, manufactured from high-strength, extruded aluminum, provide either end or intermittent support in applications where loads are designed with a reference edge on one side of the base. This provides a surface parallel to the center of the shaft within ±.001" that can be used to simplify shaft alignment.



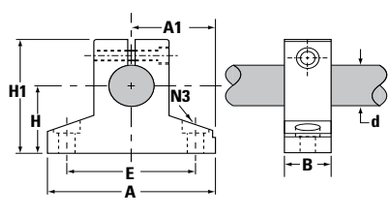
Type SB 60 Case LinearRace Shaft End Support Blocks (Dimensions in inches)



Material: Painted Malleable Iron for sizes .5 to 2 in.
Unfinished Aluminum Alloy for sizes .25 and 375 in.

Part [2] Number	Nominal LinearRace Diameter d	H ±.002	H1	H2	A	A2	B	E ±.010	N3		Weight lb
									Hole	Bolt	
SB4	.250	.687	1.06	.25	1.50	.63	.50	1.125	.16	#6	.03
SB6	.375	.750	1.19	.25	1.63	.69	.56	1.250	.16	#6	.05
SB8	.500	1.000	1.63	.25	2.00	.75	.63	1.500	.19	#8	.30
SB10	.625	1.000	1.75	.31	2.50	.88	.69	1.875	.22	#10	.40
SB12	.750	1.250	2.13	.31	2.75	1.00	.75	2.000	.22	#10	.50
SB16	1.000	1.500	2.56	.38	3.25	1.38	1.00	2.500	.28	.25	1.0
SB20	1.250	1.750	3.00	.44	4.00	1.75	1.13	3.000	.34	.31	2.0
SB24	1.500	2.000	3.50	.50	4.75	2.00	1.25	3.500	.34	.31	2.6
SB32	2.000	2.500	4.50	.63	6.00	2.63	1.50	4.500	.41	3/8	4.8

Type ASB 60 Case LinearRace Shaft End Support Blocks (Dimensions in inches)



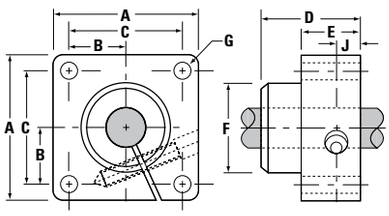
Material: Unfinished Aluminum Alloy

Part [2] Number	Nominal LinearRace Diameter d	H ±.001	H1	A	A1 ±.001	B	E ±.010	N3		Weight lb
								Hole	Bolt	
ASB4	.250	.500	.89	1.50	.750	.50	1.12	.16	#6	.06
ASB6	.375	.562	1.00	1.62	.813	.56	1.25	.16	#6	.08
ASB8	.500	.875	1.48	2.00	1.000	.63	1.50	.19	#8	.11
ASB12	.750	1.125	1.95	2.50	1.250	.75	2.00	.22	#10	.22
ASB16	1.000	1.375	2.48	3.25	1.625	1.00	2.50	.28	1/4	.44
ASB24	1.500	2.000	3.50	4.75	2.375	1.25	3.50	.34	5/16	1.16

Shaft Support Blocks – Type FSB

Thomson flanged support blocks offer perpendicular mounting without the need for special adaptor brackets.

Type FSB Flanged 60 Case® LinearRace® Shaft End Support Blocks (Dimensions in inches)

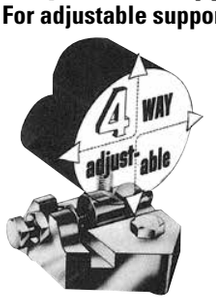


Material: Unfinished Aluminum Alloy

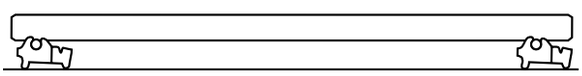
Part Number	Nominal LinearRace Diameter d	A ±.001	B	C ±.010	D	E	F	G		J	Weight lb
								Hole	Bolt		
FSB8	.500	1.63	.63	1.250	.88	.50	1.00	.81	#8	.25	.3
FSB12	.750	2.38	.88	1.750	1.00	.63	1.25	.21	#10	.31	.6
FSB16	1.000	2.75	1.06	2.125	1.25	.63	1.50	.27	1/4	.31	.8
FSB20	1.250	3.13	1.19	2.375	1.38	.75	1.75	.27	1/4	.38	.9

Waymount® Support

For adjustable support



Designed for use with RoundWay® bearings. Two or more can be used to provide intermittent support and adjustment along the length of the shaft. Unlike shaft support rails, Waymount supports do not permit longitudinal passage of open-type Ball Bushing® Bearings. When it is necessary to travel over Waymount supports, RoundWay bearings should be used. Open-type Ball Bushing Bearings can be used only if side loads are light and an adapter block is used (consult Thomson Customer Support for recommendation).



End Support

Waymount Supports (Dimensions in inches)

Waymount Part Number	D RoundWay Diameter	L	H†	W	A	B	C	E	F	G	J	K	M	N	P	Weight (lbs)
WM8	1/2	1 1/2	1 1/16	1 3/4	1/2	7/8	1/4	3/4	7/32	8-32	3/64	3/32	11/16	1/2	7/16	.2
WM16	1	2	1 1/2	2 1/2	3/4	1 1/4	5/16	1 1/16	9/32	1/4-28	1/16	1/8	13/16	11/16	11/16	.5
WM24	1 1/2	2 1/2	2	3 1/2	1 3/16	1 5/8	7/16	1 3/16	11/32	5/16-24	1/8	1/8	1	3/4	3/4	1.1
WM32	2	3	2 1/2	4	1 7/16	1 7/8	1/2	1 3/8	13/32	3/8-24	1/8	1/8	1 1/4	15/16	1	1.8
WM48	3	5	4 5/16	6 3/4	2 3/8	3 3/8	3/4	2 5/8	21/32	5/8-18	1/8	1/8	2 1/4	1 5/8	1 1/2	10.2
WM64	4	6 1/2	5 7/16	8 1/2	3	4 1/4	1	3 1/8	25/32	3/4-16	1/8	1/8	2 3/4	2	2	21.2

In-Between Shaft Sizes: Waymount supports will accommodate all shaft sizes from approximately 3/8" to 6" diameter. Use the Waymount support size nearest to your particular shaft diameter. Favor the next largest Waymount support if the shaft size falls midway between two of them. The mean centering height "H" will vary somewhat with different diameter shafts.

† Please note difference in dimension between shaft centerline of rails, blocks and Waymount supports. Shimming or blocking is suggested when these are used on a single shaft.