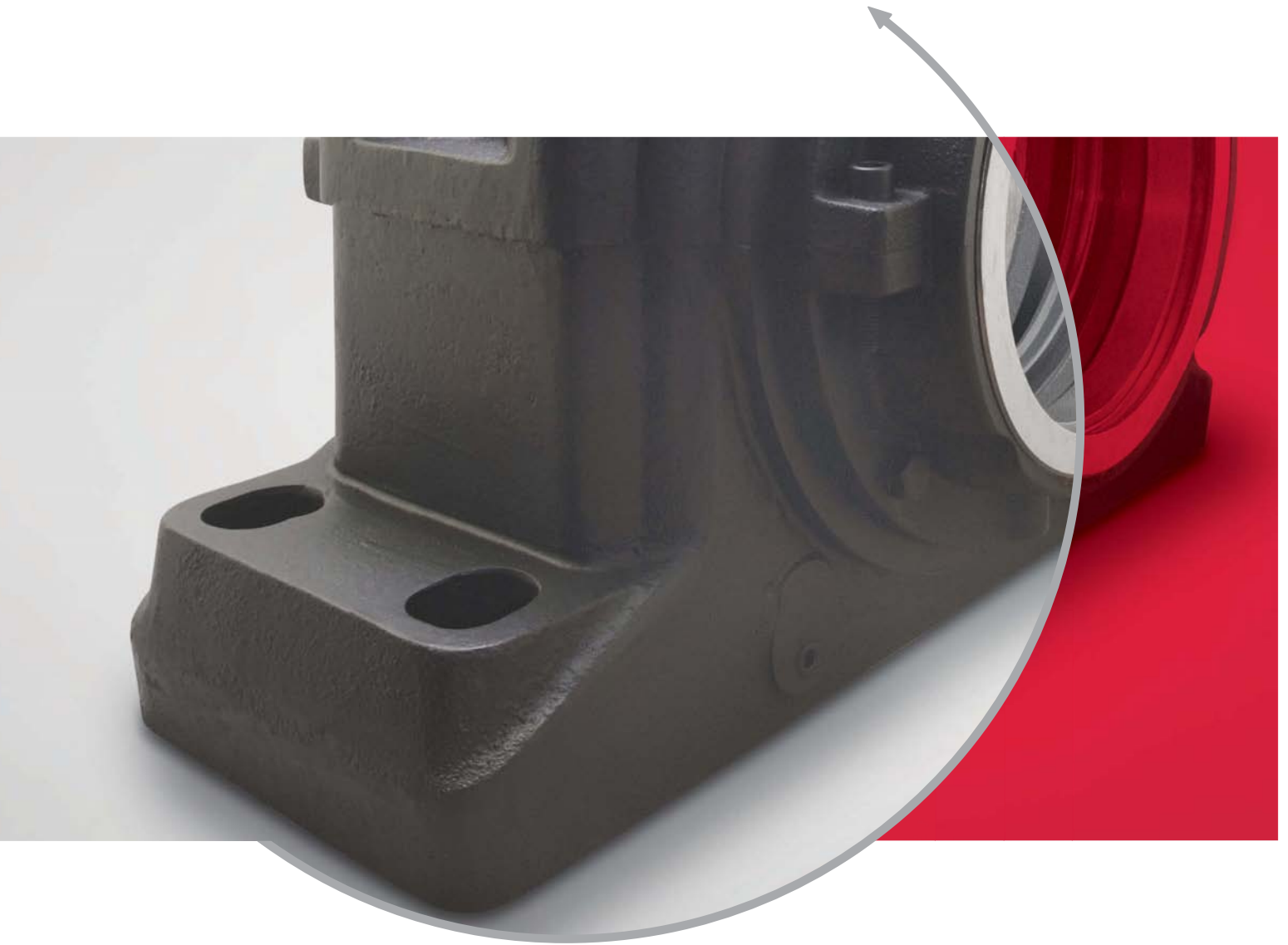


## SAF SERIES PILLOW BLOCKS



Featuring Series SAF500  
Assembly Components and Dimensions

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# Optimum Protection. Optimum Performance.

NSK's SAF series pillow blocks are designed to provide robust performance in a wide range of applications and challenging operating conditions. Manufactured from cast iron - with ductile iron and cast steel options, they possess a number of engineered advantages including strength to withstand substantial mechanical shock, resistance to corrosion and resilience in extreme temperatures. With standard features to accommodate high and low speeds, grease and oil lubrication, NSK SAF pillow blocks also offer optional seal arrangements to ensure protection against environmental contamination and optimum bearing service life.

## DESIGN FEATURES

- Manufactured from cast iron
- Also available in ductile iron (SAFD) and cast steel (SAFS)
- Wide variety of series/sizes for shafts as large as 10 1/2"
- Equipped with multiple re-lubrication points and large inlet holes
- Internal cross-porting for improved oil flow
- Landing platform accommodates external sensors and lubrication systems
- Delivered with labyrinth seal and fixing ring included

## OPERATING BENEFITS

- Preserves optimum bearing lubrication and prevents ingress of contaminants
- Optional seal designs available for increasingly contaminated environments
- Resistant to corrosion, mechanical shock and resilient in extreme temperatures
- Split design facilitates simplified mounting and dismounting
- Dimensionally interchangeable for replacement of competitive designs



## POPULAR SERIES

SERIES	FOR SHAFTS:	FOR BEARING SERIES:
SAF000	4 3/16" - 10 1/2"	230
SAF200	3" - 9 9/16"	12 / 22 / 222
SAF300	1 7/16" - 8 3/4"	13 / 23 / 213 / 223
SAF500	1 7/16" - 7 15/16"	12 / 22 / 222
SAF600	1 7/16" - 7 3/16"	13 / 23 / 213 / 223

## SEAL OPTIONS

### LER

Series SAF pillow blocks come equipped with a non-contact LER standard labyrinth seal. This efficient general duty floating seal is self-locating within the seal grooves of the housing and is well suited for high speeds in operating environments with minimal risks of contamination. (Fig. 1)

### LER-DC

LER-DC dust covers / wiper seals can be used in conjunction with both LER and PER seals to provide an additional barrier to contaminants. The machined face of the SAFD pillow block provides an ideal contact surface for the LER-DC to shroud the seal area and create an additional cost-efficient labyrinth. (Fig. 1)

### PER/PER-PTV

PER seals are dimensionally interchangeable with the LER, and feature the inclusion of an O-ring seal for a snug fit to the assembly shaft (causing the PER to rotate with the shaft). PER-PTV is a lip contact seal installed over the PER and within the housing seal grooves. The PTV seal facilitates slow purging of the grease within the assembly, creating a barrier from contaminants. The lip contact seal can also be reversed to retain the grease within the assembly for applications where risk of contamination is moderate, or access for re-lubrication is difficult. (Fig. 2)

### TER-OS

TER-OS taconite seals are designed to prevent the ingress of contaminants in the most severe service conditions. They are equipped with a shaft contact spring-loaded oil seal, a grease-charged channel, a felt shaft seal and an O-ring seal in the housing labyrinth to form a virtually impenetrable barrier and provide a tight, yet flexible fit. (Fig. 3)

Fig. 1

LER seal with LER-DC dust cover

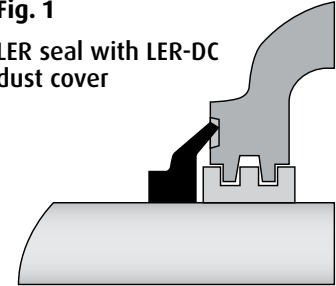


Fig. 2

PER seal with PER-PTV lip contact seal

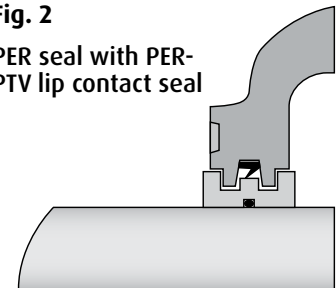
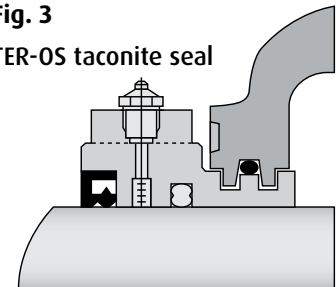


Fig. 3

TER-OS taconite seal



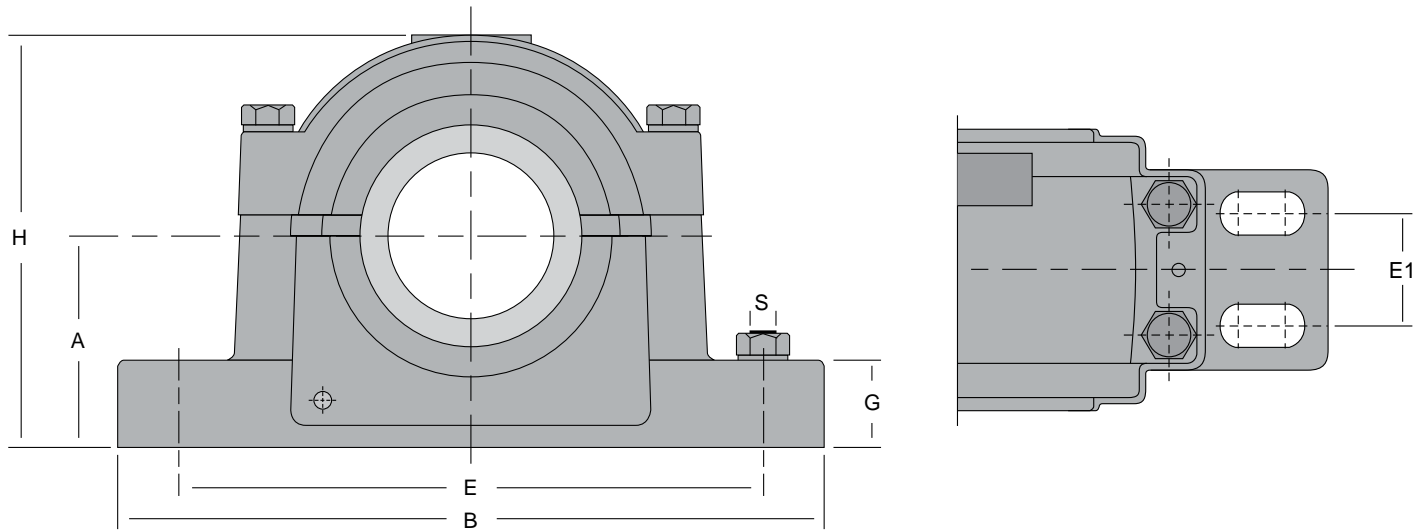
## SEAL CHARACTERISTICS

PERFORMANCE	LER	LER-DC	PER	TER-OS
Grease Lubrication	fair	very good	good	excellent
Oil Lubrication	fair	good	good	excellent
Friction Torque	very good	good	good	fair
Speed	same as bearing	8 m/s	same as bearing	7 m/s
Temperature Range	same as bearing	-40 to 220°F	220°F max	-40 to 220°F

PROTECTION	LER	LER-DC	PER	TER-OS
Dust	fair	very good	good	excellent
Large Particles	fair	excellent	good	excellent
Water	poor	good	fair	excellent

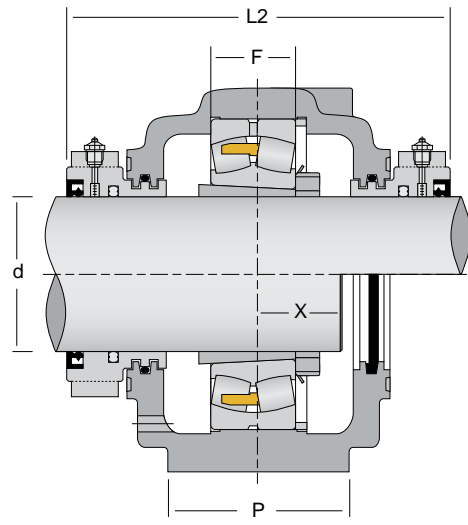
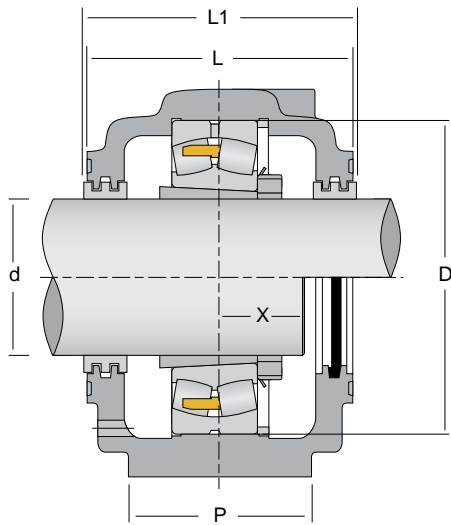
# Pillow Block Assembly Components and Dimensions

## 500 Series - For shaft diameters 1 7/16" to 3 3/16"



Shaft (d) in	Pillow Block Assembly Components												
	Housing	Basic Bearing		Adapter Sleeve		Seal Options					Fixing Ring	Qty	End Cover
		Ball	Roller	SNW Type	H Type	LER	LER-DC	PER	PER-PTV	TER-OS			
3/4	SAF505	1205K		SNW05X3/4	H205X3/4	LER6		PER6	PER6-PTV		FR52X5	2	
		2205K	22205K	SNW05X3/4	H305X3/4						FR52X7	1	
15/16	SAF506	1206K		SNW06X15/16	H206X15/16	LER10		PER10	PER10-PTV		FR62X7	2	
		2206K	22206K	SNW06X15/16	H306X15/16						FR62X10	1	
1-3/16	SAF507	1207K		SNW07X1-3/16	HA207X1-3/16	LER14		PER14	PER14-PTV	TER14OS	FR72X8	2	
		2207K	22207K	SNW07X1-3/16	HA307X1-3/16						FR72X10	1	
1-7/16	SAF509	1209K		SNW09X1-7/16	HA209X1-7/16	LER17		PER17	PER17-PTV	TER17OS	FR85X5	2	EPR03
		2209K	22209K	SNW09X1-7/16	HA309X1-7/16						FR85X6	1	
1-11/16	SAF510	1210K		SNW10X1-11/16	HA210X1-11/16	LER20		PER20	PER20-PTV	TER20OS	FR90X5	2	EPR04
		2210K	22210K	SNW10X1-11/16	HA310X1-11/16						FR90X7	1	
1-15/16	SAF511	1211K		SNW11X1-15/16	HA211X1-15/16	LER24		PER24	PER24-PTV	TER24OS	FR100X5	2	EPR05
		2211K	22211K	SNW11X1-15/16	HA311X1-15/16						FR100X6	1	
2-3/16	SAF513 FSAF513	1213K		SNW13X2-3/16	HA213X2-3/16	LER29		PER29	PER29-PTV	TER29OS	FR120X8	2	EPR06
		2213K	22213K	SNW13X2-3/16	HA313X2-3/16						FR120X8	1	
2-7/16	SAF515 FSAF515	1215K		SNW15X2-7/16	HA215X2-7/16	LER37		PER37	PER37-PTV	TER37OS	FR130X6	2	EPR07
		2215K	22215K	SNW15X2-7/16	HA315X2-7/16						FR130X10	1	
2-11/16	SAF516 FSAF516	1216K		SNW16X2-11/16	HA216X2-11/16	LER44		PER44	PER44-PTV	TER44OS	FR140X8.5	2	EPR08
		2216K	22216K	SNW16X2-11/16	HA316X2-11/16						FR140X10	1	
2-15/16	SAF517 FSAF517	1217K		SNW17X2-15/16	HA217X2-15/16	LER53	LER53DC	PER53	PER53-PTV	TER53OS	FR150X9	2	EPR09
		2217K	22217K	SNW17X2-15/16	HA317X2-15/16						FR150X10	1	
3-3/16	SAF518 FSAF518	1218K		SNW18X3-3/16	HA218X3-3/16	LER188	LER188DC	PER188	PER188-PTV	TER188OS	FR160X10	2	EPR11
		2218K	22218K	SNW18X3-3/16	HA318X3-3/16						FR160X10	1	

Standard inch shaft sizes are shown; for alternate shaft sizes and assembly component verification contact NSK.

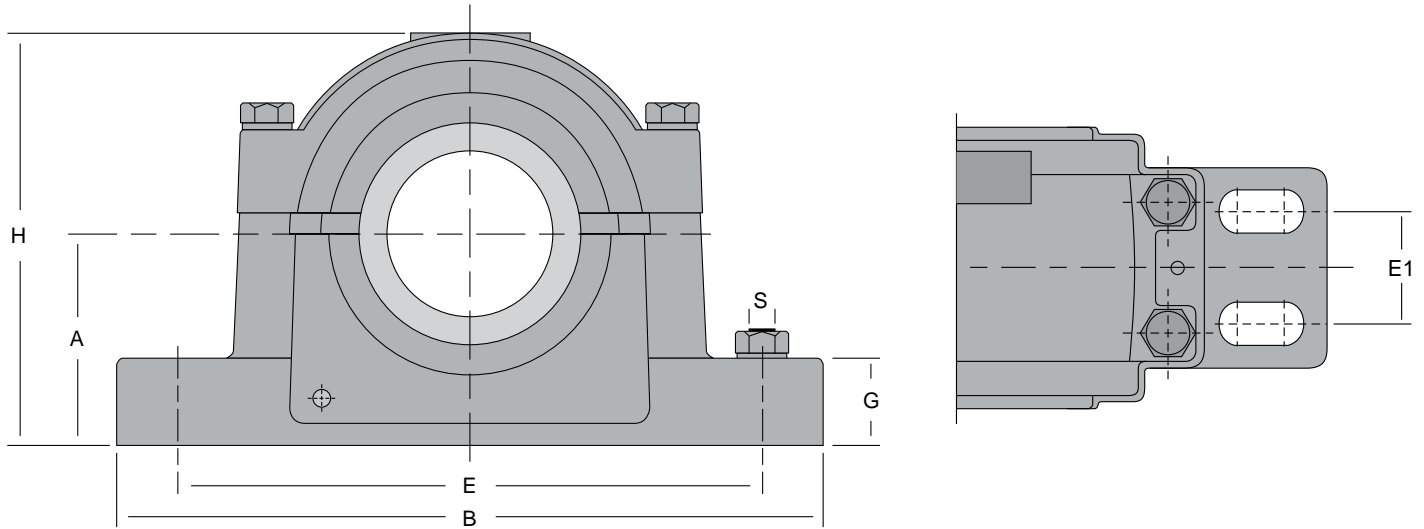


Pillow Block Dimensions

A in	B in	P in	G in	E <sub>max</sub> in	E <sub>min</sub> in	E1 in	H in	L in	L1 in	L2 in	X in	Bolts		Wt lbs	D mm	F mm
												pcs	in			
1-1/2	6-1/2	1-3/4	11/16	5-1/2	4-5/8		2-15/16	2-3/4	2-7/8		0.81	2	1/2	4		
1-3/4	7-1/2	2	11/16	6-1/8	5-1/4		3-5/16	3-1/16	3-1/4		0.94	2	1/2	6		
2	7-1/2	2	7/8	6-1/8	5-5/8		3-7/8	3-3/16	3-1/4		1.00	2	1/2	8	80	8
2-1/4	8-1/4	2-3/8	13/16	7	6-1/4		4-3/8	3-7/16	3-5/8	6-1/16	1.00	2	1/2	9.3	85	29
2-1/2	8-1/4	2-3/8	15/16	7	6-1/2		4-3/4	3-7/16	3-7/8	6-1/2	1.06	2	1/2	10.1	90	30
2-3/4	9-5/8	2-3/4	15/16	7-7/8	7-3/8		5-1/4	3-3/4	4-1/2	6-3/4	1.09	2	5/8	12.5	100	31
3	11	3-1/8	1	9-1/2	8-1/8	2	5-15/16	4-1/4	4-1/2	7-1/4	1.28	2	5/8	19	120	39
												4	1/2			
3-1/4	11-1/4	3-1/4	1-1/8	9-5/8	8-5/8	1-7/8	6-3/8	4-5/8	4-3/4	7-5/8	1.38	2	5/8	18.3	130	37
												4	1/2			
3-1/2	13	3-1/2	13/16	11	9-5/8	2-1/8	6-7/8	4-3/4	4-7/8	8-1/4	1.44	2	3/4	27.3	140	43
												4	5/8			
3-3/4	13	3-1/2	1-1/4	11	9-7/8	2-1/4	7-5/16	4-13/16	5	7-13/16	1.53	2	3/4	31.8	150	46
												4	5/8			
4	13-3/4	3-7/8	1-5/16	11-5/8	10-3/8	2-1/8	7-3/4	5-1/2	5-3/4	8-1/8	1.69	2	3/4	36.6	160	50
												4	5/8			

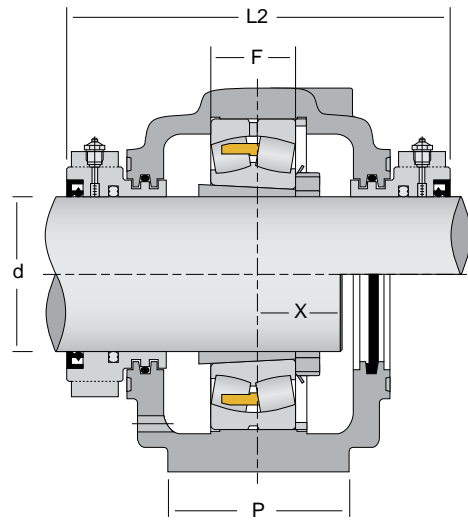
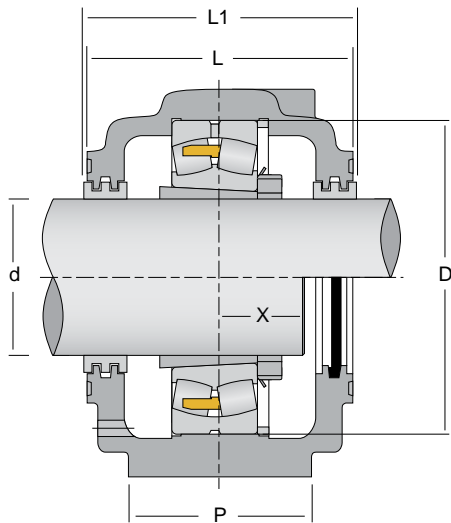
# Pillow Block Assembly Components and Dimensions

## 500 Series - For shaft diameters 3 7/16" to 7 15/16"



Shaft (d) in	Pillow Block Assembly Components												
	Housing	Basic Bearing		Adapter Sleeve		Seal Options					Fixing Ring	Qty	End Cover
		Ball	Roller	SNW Type	H Type	LER	LER-DC	PER	PER-PTV	TER-OS			
3-7/16	SAF520	1220K		SNW20X3-7/16	HA220X3-7/16	LER102	LER102DC	PER102	PER102-PTV	TER1020S	FR180X11	2	EPR12
	FSAF520	2220K	22220K	SNW20X3-7/16	HA320X3-7/16						FR180X10	1	
3-15/16	SAF522	1222K		SNW22X3-15/16	HA222X3-15/16	LER109	LER109DC	PER109	PER109-PTV	TER1090S	FR200X12.5	2	EPR13
		2222K	22222K	SNW22X3-15/16	HA322X3-15/16						FR200X10	1	
4-3/16	SAF524		22224K	SNW24X4-3/16	HA3124X4-3/16	LER113	LER113DC	PER113	PER113-PTV	TER1130S	FR215X10	1	EPR14
4-7/16	SAF526		22226K	SNW26X4-7/16	HA3126X4-7/16	LER117	LER117DC	PER117	PER117-PTV	TER1170S	FR230X10	1	EPR15
4-15/16	SAF528		22228K	SNW28X4-15/16	HA3128X4-15/16	LER122	LER122DC	PER122	PER122-PTV	TER1220S	FR250X10	1	EPR27
5-3/16	SAF530		22230K	SNW30X5-3/16	HA3130X5-3/16	LER125	LER125DC	PER125	PER125-PTV	TER1250S	FR270X10	1	EPR16
5-7/16	SAF532		22232K	SNW32X5-7/16	HA3132X5-7/16	LER130	LER130DC	PER130	PER130-PTV	TER1300S	FR290X10	1	EPR16
5-15/16	SAF534		22234K	SNW34X5-15/16	HA3134X5-15/16	LER140	LER140DC	PER140	PER140-PTV	TER1400S	FR310X10	1	EPR18
6-7/16	SAF536		22236K	SNW36X6-7/16	HA3136X6-7/16	LER148	LER148DC	PER148	PER148-PTV	TER1480S	FR320X10	1	EPR19
6-15/16	SAF538		22238K	SNW38X6-15/16	HA3138X6-15/16	LER155	LER155DC	PER155	PER155-PTV	TER1550S	FR340X10	1	EPR20
7-3/16	SAF540		22240K	SNW40X7-3/16	HA3140X7-3/16	LER159	LER159DC	PER159	PER159-PTV	TER1590S	FR360X10	1	EPR20
7-15/16	SAF544		22244K	SNW44X7-15/16	HA3144X7-15/16	LER167	LER167DC	PER167	PER167-PTV	TER1670S	FR400X10	1	EPR20

Standard inch shaft sizes are shown; for alternate shaft sizes and assembly component verification contact NSK.



Pillow Block Dimensions

A in	B in	P in	G in	E <sub>max</sub> in	E <sub>min</sub> in	E1 in	H in	L in	L1 in	L2 in	X in	Bolts		Wt lbs	D mm	F mm
												pcs	in			
4-1/2	15-1/4	4-3/8	1-3/4	13-1/8	11-5/8	2-3/8	8-3/4	5-13/16	6	8-3/4	2.00	2	7/8	50.3	180	56
												4	3/4			
4-15/16	16-1/2	4-3/4	2	14-1/2	12-5/8	2-3/4	9-5/8	6-7/16	6-1/2	9-1/8	2.06	4	3/4	69.2	200	63
5-1/4	16-1/2	4-3/4	2-1/8	14-1/2	13-1/4	2-3/4	10-1/4	7-1/8	7-3/8	10	2.22	4	3/4	71.2	215	68
6	18-3/4	5-1/8	2-3/8	16	14-5/8	3-1/4	11-1/2	7-3/4	8	10-5/8	2.38	4	7/8	94.8	230	74
6	20-1/8	5-7/8	2-3/8	17-1/8	16	3-3/8	11-3/4	7-3/8	7-5/8	10-1/4	2.50	4	1	110	250	78
6-5/16	21-1/4	6-1/4	2-1/2	18-1/4	17	3-3/4	12-1/2	8-1/8	8-3/8	11	2.72	4	1	138	270	83
6-11/16	22	6-1/4	2-5/8	19-1/4	17-3/8	3-3/4	13-5/16	8-1/2	8-3/4	11-3/8	2.94	4	1	158	290	90
7-1/16	24-3/4	6-3/4	2-3/4	21-5/8	19-3/8	4-1/4	14-3/16	9-1/4	9-5/8	10-1/8	3.09	4	1	185	310	96
7-1/2	26-3/4	7-1/8	3	23-5/8	20-7/8	4-5/8	14-7/16	9-5/8	10	10-1/2	3.13	4	1	217	320	96
7-7/8	28	7-1/2	3-1/8	24-3/8	21-5/8	4-1/2	15-11/16	10-1/2	10-3/4	13-3/8	3.28	4	1-1/4	285	340	102
8-1/4	29-1/2	8	3-3/8	25	22-1/2	5	16-1/2	11	11-1/4	14-1/8	3.44	4	1-1/4	331	360	108
9-1/2	32-3/4	8-3/4	3-3/4	27-7/8	24-3/4	5-1/4	18-5/8	11-3/4	12	14-1/2	3.81	4	1-1/2	391	400	111

## SAF GREASE FILL AND CAP BOLT INFORMATION

SAF500 Series	Cap Bolts			Initial Lube Fill (oz)	
	Bolt Size	Qty	T (Ft-lbs)	Low Speed <sup>(1)</sup>	Hi Speed <sup>(2)</sup>
SAF509	3/8-16UNC x 2	2	26	2.2	1.8
SAF510	3/8-16UNC x 2	2	26	2.8	2
SAF511	1/2-13UNC x 2-1/4	2	50	3.7	2.5
(F)SAF513	1/2-13UNC x 2-1/4	2	50	6.5	4
(F)SAF515	1/2-13UNC x 2-1/4	2	50	8.3	5
(F)SAF516	1/2-13UNC x 2-1/4	4	50	10	6
(F)SAF517	1/2-13UNC x 3	4	50	12	7
(F)SAF518	1/2-13UNC x 3	4	50	16	7.5
(F)SAF520	5/8-11UNC x 3-1/2	4	100	23	15
SAF522	5/8-11UNC x 3-1/2	4	100	31	20
SAF524	5/8-11UNC x 4	4	100	37	22
SAF526	3/4-10UNC x 4-1/2	4	175	40	28
SAF528	3/4-10UNC x 4-1/2	4	175	52	32
SAF530	3/4-10UNC x 5	4	175	62	34
SAF532	3/4-10UNC x 5	4	175	75	40
SAF534	1-8UNC x 6-1/2	4	245	90	55
SAF536	1-8UNC x 6-1/2	4	245	120	65
SAF538	1-8UNC x 6-1/2	4	245	150	75
SAF540	1-8UNC x 7	4	245	200	85
SAF544	1-8UNC x 7-1/2	4	245	250	125

(1) Low speed applications generally involve conveyors. Bearings exposed to weather are better off relatively full to deter moisture from entering.

(2) Higher speed applications do not require as much grease, as purging of excess will occur at the seals naturally.

For other Series SAF Blocks, contact NSK.







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