

Cantilever Shafts (Threaded with Retaining Ring Groove)

Standard / Stepped

Cantilever Shafts – Threaded with Retaining Ring Groove Standard

Thread Length Fixed	Type	Material	Surface Treatment
FXAA	FXNAA	1045 Carbon Steel or Equivalent	Black Oxide
PFXAA	PFXNAA		Electroless Nickel Plating
SFXAA	SFXNAA	304 Stainless Steel	—
HFXAA	—	4137 Alloy Steel Equivalent	Black Oxide
		Hardness 35–40 HRC min.	

Dimensions of Wrench Flats when Y ≥ 17: 17 or More, 6.3 / (1.6)

Refer to the table on P.915 for thread undercut dimensions.
This type may have centering holes depending on dimensions.

Part Number	Type	No.	Dg ₆	1 mm Increment			H	W	M (Coarse Thread)	Ref. Dim.	Tolerance	d	m	n	
				Y	F	N									
Thread Length Fixed FXAA PFXAA SFXAA HFXAA (D ≥ 6)	3	3	-0.002	2-30	3-50	3-6	7	5	M3	2	+0.060	0.5	2	2	
	4	4	-0.008				8	6	M4	3	0				
	5	5	-0.004				9	7	M5	4	+0.075				
	6	6	-0.012				10	8	M6	5	0				
	8	8	-0.005				12	10	M8	7	+0.090				
	Thread Length Configurable FXNAA PFXNAA SFXNAA	10	10	-0.014	2-60	5-100	5-10	13	11	M5	4	+0.075	0.7	3	3
		12	12	-0.006				14	12	M6	5	0			
		13	13	-0.017				15	13	M8	7	+0.090			
		16	16	-0.017				16	14	M10	9.6	0			
		17	17	-0.017				17	15	M12	9.6	-0.090			
Thread Length Configurable FXNAA PFXNAA SFXNAA		20	20	-0.007	4-60	10-150	12-24	18	15	M12	11.5	0	1.15	4	4
		22	22	-0.020				19	16	M16	19	0			
		25	25	-0.020				20	17	M16	21	0			
		28	28	-0.020				21	18	M20	23.9	-0.210			
		30	30	-0.020				22	19	M16	23.9	-0.210			
	30A	30	-0.020	23	20	M20	28.6	-0.210							

HFXAA is applicable to D6 or larger specifications. N is available for Thread Length Configurable Type only.

Cantilever Shafts – Threaded with Retaining Ring Groove Stepped

Type	Material	Surface Treatment
FXBA	1045 Carbon Steel or Equivalent	Black Oxide
PFXBA	1045 Carbon Steel or Equivalent	Electroless Nickel Plating
SFXBA	304 Stainless Steel	—
PHFXBA	4137 Alloy Steel Equivalent	Electroless Nickel Plating
	Hardness 35–40 HRC min.	

Dimensions of Wrench Flats when W < V, Y ≥ 17: 15, 17 or More, 6.3 / (1.6)

Refer to the table on P.915 for thread undercut dimensions.
This type may have centering holes depending on dimensions.

Part Number	Type	No.	Dg ₆	1 mm Increment			V	H	W	M (Coarse Thread)	Ref. Dim.	Tolerance	d	m	n							
				Y	F	N																
FXBA PFXBA SFXBA PHFXBA (D ≥ 6)	3	3	-0.002	7-30	3-50	3-5	5	7	5	M3	2	+0.060	0.5	2	2							
	4	4	-0.008				6	8	6	M4	3	0										
	5	5	-0.004				7	9	7	M5	4	+0.075										
	6	6	-0.012				8	10	8	M6	5	0										
	8	8	-0.005				9	11	9	M8	7	+0.090										
	Thread Length Configurable	10	10				-0.014	7-60	5-100	5-10	11	13				11	M5	4	+0.075	0.7	3	3
		12	12				-0.006				12	14				12	M6	5	0			
		13	13				-0.017				13	15				13	M8	7	+0.090			
		16	16				-0.017				14	16				14	M10	9.6	0			
		17	17				-0.017				15	17				15	M12	9.6	-0.090			
		Thread Length Configurable	20	20	-0.007	7-60	10-150	12-24	18	20	17	M12	11.5	0	1.15	4	4					
			22	22	-0.020				19	21	18	M16	19	0								
			25	25	-0.020				20	22	19	M16	21	0								
			28	28	-0.020				21	23	20	M20	23.9	-0.210								
			30	30	-0.020				22	24	24	M20	28.6	-0.210								
	30A		30	-0.020	23	26	26	M16	28.6	-0.210												

When W < V, width across flats W reaches outer diameter V. PHFXBA is applicable to D6 or larger specifications.

Cantilever Shafts (Threaded with Retaining Ring Groove)

Hex

Cantilever Shafts – Threaded with Retaining Ring Groove Hex

Thread Length Fixed	Type	Material	Surface Treatment
LXAA	LXNAA	1045 Carbon Steel or Equivalent	Black Oxide
PLXAA	PLXNAA		Electroless Nickel Plating
SLXAA	SLXNAA	304 Stainless Steel	—

Dimensions of Wrench Flats when Y ≥ 17: 15, 17 or More, 6.3 / (1.6)

Refer to the table below for thread undercut dimensions.
This type may have centering holes depending on dimensions.

Part Number	Type	No.	Dg ₆	1 mm Increment			B	(C)	M (Coarse Thread)	Ref. Dim.	Tolerance	d	m	n	
				Y	F	N									
Thread Length Fixed LXAA PLXAA SLXAA	3	3	-0.002	2-30	3-50	3-6	6	6.9	M3	2	+0.060	0.5	2	2	
	4	4	-0.008				7	8.1	M4	3	0				
	5	5	-0.004				8	9.2	M5	4	+0.075				
	6	6	-0.012				9	10.3	M6	5	0				
	8	8	-0.005				10	11.5	M8	7	+0.090				
	Thread Length Configurable LXNAA PLXNAA SLXNAA	10	10	-0.014	2-60	5-100	5-10	13	15.0	M10	9.6	0	0.7	3	3
		12	12	-0.006				14	16.2	M12	9.6	-0.090			
		13	13	-0.017				15	17.4	M12	11.5	0			
		15	15	-0.006				16	18.6	M12	12.4	0			
		16	16	-0.017				17	19.8	M12	13.3	-0.110			
Thread Length Configurable LXNAA PLXNAA SLXNAA		20	20	-0.007	4-60	10-150	12-24	19	21.9	M12	16.2	0	1.15	4	4
		22	22	-0.020				20	23.1	M16	19	0			
		25	25	-0.020				21	24.3	M16	21	-0.210			
		28	28	-0.020				22	25.5	M20	23.9	-0.210			
		30	30	-0.020				23	26.7	M20	28.6	-0.210			
	30A	30	-0.020	24	27.9	M16	28.6	-0.210							

N is available for Thread Length Configurable Type only.

Part Number Example

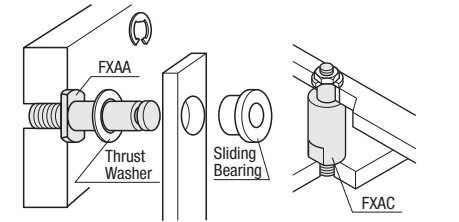
Part Number - Y - F - N
 FXAA10 - 25 - F18
 PLXNAA12 - 15 - F25 - N12

Part Number Alterations

Part Number - Y - F - N - (YKC / WSC / SET)
 FXAA20 - 20 - F20 - YKC

Application Example

Alterations	Y Dimension Tolerance	Four Wrench Flats	Retaining Ring Set																		
	YKC	WSC		SET																	
Code	YKC	WSC	SET																		
Spec.	Changes Y dimension tolerance to ±0.05. Applicable to all types. Ordering Code: YKC	Changes from two wrench flats to four wrench flats. Applicable to Standard / Stepped Types. Ordering Code: WSC	Attaches a retaining ring to each applicable shaft diameter. Ordering Code: SET Retaining Ring Shape No.=3-8A: E Type Retaining Ring No.=10-30A: C Type Retaining Ring Retaining Ring Material <table border="1"> <thead> <tr> <th colspan="2">Cantilever Shafts</th> <th>Retaining Ring Material</th> </tr> <tr> <th>Material</th> <th>Surface Treatment</th> <th>Material</th> </tr> </thead> <tbody> <tr> <td>1045 Carbon Steel or Equivalent</td> <td>Black Oxide</td> <td>Spring Steel</td> </tr> <tr> <td>304 Stainless Steel</td> <td>Electroless Nickel Plating</td> <td>304 Stainless Steel</td> </tr> <tr> <td>4137 Alloy Steel</td> <td>Black Oxide</td> <td>Spring Steel</td> </tr> <tr> <td></td> <td>Electroless Nickel Plating</td> <td>304 Stainless Steel</td> </tr> </tbody> </table>	Cantilever Shafts		Retaining Ring Material	Material	Surface Treatment	Material	1045 Carbon Steel or Equivalent	Black Oxide	Spring Steel	304 Stainless Steel	Electroless Nickel Plating	304 Stainless Steel	4137 Alloy Steel	Black Oxide	Spring Steel		Electroless Nickel Plating	304 Stainless Steel
Cantilever Shafts		Retaining Ring Material																			
Material	Surface Treatment	Material																			
1045 Carbon Steel or Equivalent	Black Oxide	Spring Steel																			
304 Stainless Steel	Electroless Nickel Plating	304 Stainless Steel																			
4137 Alloy Steel	Black Oxide	Spring Steel																			
	Electroless Nickel Plating	304 Stainless Steel																			



Thread Undercut Dimensions

Thread Dia. (M)	Coarse Thread		
	g	r	f
3	1.2	0.2	2.1-2.4
4	1.5	0.3	2.9-3.2
5			3.9-4.1
6			4.3-4.9
8	1.5	0.6	6.3-6.6
10			8.1-8.3
12	1.5		9.8-10.1
16	3.0	1.0	13.6-13.8
20	1.5		17.0-17.2