

# Cantilever Shafts (Bolt Mount with Retaining Ring Groove)

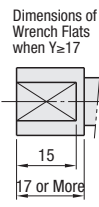
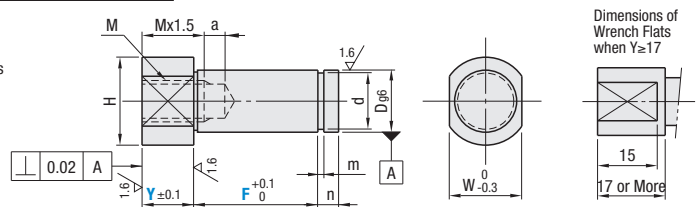
Standard / Stepped

Cantilever Shafts – Bolt Mount with Retaining Ring Groove Standard

Type	Material	Surface Treatment
FXHA	1045 Carbon Steel or Equivalent	Black Oxide
PFXHA		Electroless Nickel Plating
SFXHA	304 Stainless Steel	—

6.3/(1.6/)

This type may have centering holes depending on dimensions.



RoHS10

Part Number	Type	No.	Dg <sub>s</sub>	1 mm Increment		M (Coarse)	H	W	d		m	n
				Y	F				Ref. Dim.	Tolerance		
6	FXHA PFXHA SFXHA	6A	6	-0.004 -0.012	5-100	M 3	10	8	5	+0.075 0	0.7	2
8		12					10	7	+0.090 0			
8A		8	-0.005 -0.014	M 4		16	14	9.6	0	-0.090		
10						15	13					
10A		10	-0.006 -0.017	M 6		20	17	11.5	0	-0.110		
12						18	15					
12A		12	-0.007 -0.020	M 8		17	14	12.4	0	-0.110		
13						18	15					
13A		13	-0.006 -0.017	M 10		20	17	14.3	0	-0.110		
15						21	18					
15A	15	-0.006 -0.017	M 10	23	20	16.2	0	-0.110				
16				23	20							
16A	16	-0.007 -0.020	M 12	26	24	19	0	-0.210				
17				28	26							
17A	17	-0.007 -0.020	M 16	28	26	21	0	-0.210				
18				31	27							
18A	18	-0.007 -0.020	M 12	31	27	23.9	0	-0.210				
20				31	27							
20A	20	-0.007 -0.020	M 16	36	32	28.6	0	-0.210				
22				36	32							
22A	22	-0.007 -0.020	M 16	36	32	28.6	0	-0.210				
25				36	32							
25A	25	-0.007 -0.020	M 16	36	32	28.6	0	-0.210				
30				36	32							
30A	30	-0.007 -0.020	M 16	36	32	28.6	0	-0.210				
30A				36	32							

M	a
M3-M10	5
M12-M20	7

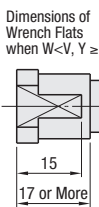
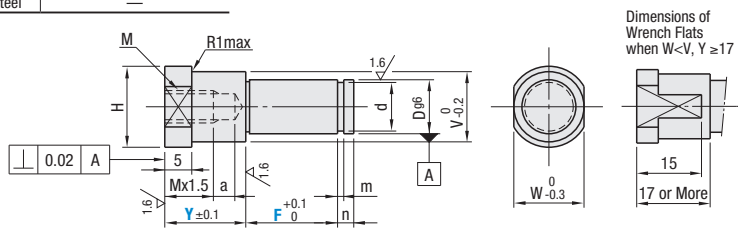
When (Mx1.5)+a≥Y+F, the pilot hole for M goes through.  
When Mx1.5 ≥ Y+F, M goes through.

Cantilever Shafts – Bolt Mount with Retaining Ring Groove Stepped

Type	Material	Surface Treatment
FXJA	1045 Carbon Steel or Equivalent	Black Oxide
PFXJA		Electroless Nickel Plating
SFXJA	304 Stainless Steel	—

6.3/(1.6/)

This type may have centering holes depending on dimensions.



RoHS10

Part Number	Type	No.	Dg <sub>s</sub>	1 mm Increment		M (Coarse)	a	V	H	W	d		m	n
				Y	F						Ref. Dim.	Tolerance		
6	FXJA PFXJA SFXJA	6A	6	-0.004 -0.012	7-60	M 3	5	8	10	8	5	+0.075 0	0.7	2
8		12						10	7	+0.090 0				
8A		8	-0.005 -0.014	M 4		14	12	9.6	0	-0.090				
10						16	14							
10A		10	-0.006 -0.017	M 6		18	15	11.5	0	-0.110				
12						17	14							
12A		12	-0.006 -0.017	M 8		16	18	12.4	0	-0.110				
13						19	15							
13A		13	-0.006 -0.017	M 10		20	17	14.3	0	-0.110				
15						21	18							
15A	15	-0.007 -0.020	M 10	23	20	16.2	0	-0.110						
16				23	20									
16A	16	-0.007 -0.020	M 12	26	24	19	0	-0.210						
17				28	26									
17A	17	-0.007 -0.020	M 8	26	28	21	0	-0.210						
18				29	27									
18A	18	-0.007 -0.020	M 16	29	31	23.9	0	-0.210						
20				31	27									
20A	20	-0.007 -0.020	M 12	34	36	28.6	0	-0.210						
22				34	36									
22A	22	-0.007 -0.020	M 8	34	36	28.6	0	-0.210						
25				34	36									
25A	25	-0.007 -0.020	M 16	34	36	28.6	0	-0.210						
30				34	36									
30A	30	-0.007 -0.020	M 16	34	36	28.6	0	-0.210						
30A				34	36									

When W<V, width across flats W reaches outer diameter V.  
When (Mx1.5)+a≥Y+F, the pilot hole for M goes through. When Mx1.5 ≥ Y+F, M goes through.

# Cantilever Shafts (Bolt Mount with Retaining Ring Groove)

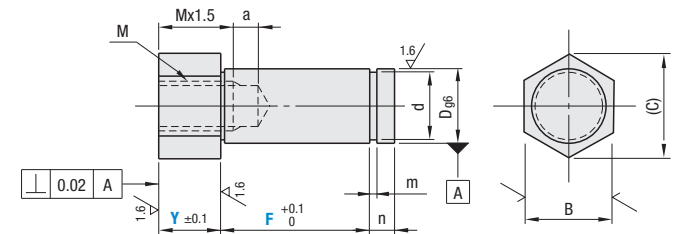
Hex

Cantilever Shafts – Bolt Mount with Retaining Ring Groove Hex

Type	Material	Surface Treatment
LXHA	1045 Carbon Steel or Equivalent	Black Oxide
PLXHA		Electroless Nickel Plating

6.3/(1.6/)

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RoHS10

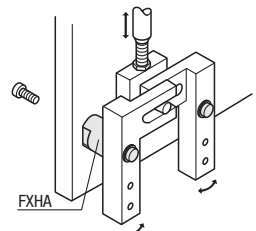
Part Number	Type	No.	Dg <sub>s</sub>	1 mm Increment		M (Coarse)	a	B	C	d		m	n
				Y	F					Ref. Dim.	Tolerance		
6	LXHA PLXHA	6A	6	-0.004 -0.012	5-100	M 3	5	8	9.2	5	+0.075 0	0.7	2
8		10						11.5	7	+0.090 0			
8A		8	-0.005 -0.014	M 4		13	15.0	9.6	0	-0.090			
10						14	16.2						
10A		10	-0.006 -0.017	M 6		17	19.6	11.5	0	-0.110			
12						17	14.3						
12A		12	-0.006 -0.017	M 8		20	27.7	19	0	-0.110			
13						21	17						
13A		13	-0.006 -0.017	M 10		24	31.2	23.9	0	-0.210			
15						27	21						
15A	15	-0.007 -0.020	M 12	27	31.2	23.9	0	-0.210					
16				27	21								
16A	16	-0.007 -0.020	M 12	32	36.9	28.6	0	-0.210					
17				32	28.6								
17A	17	-0.007 -0.020	M 16	32	36.9	28.6	0	-0.210					
20				32	28.6								
20A	20	-0.007 -0.020	M 16	32	36.9	28.6	0	-0.210					
22				32	28.6								
22A	22	-0.007 -0.020	M 16	32	36.9	28.6	0	-0.210					
25				32	28.6								
25A	25	-0.007 -0.020	M 16	32	36.9	28.6	0	-0.210					
30				32	28.6								
30A	30	-0.007 -0.020	M 16	32	36.9	28.6	0	-0.210					
30A				32	28.6								

When (Mx1.5)+a≥Y+F, the pilot hole for M goes through. When Mx1.5≥Y+F, M also goes through.

Part Number Example  
FXHA12 - 5 - F15  
PLXHA10 - 20 - F35

Part Number Alterations  
FXHA15 - 20 - F22 - APC

Application Example



Alterations	Y Dimension Tolerance	Four Wrench Flats	Add a Pilot	Dimensions of Wrench Flats	Additional Straight Slot Groove	Y Dimension	Retaining Ring Set										
	Code	YKC	WSC	APC	FW	MM		YC	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	Adds a pilot to the shaft seat. Applicable to all types. For 8A and 12A, pilot depth is 2mm. Ordering Code: APC	Applies Wrench Flat Dimension Changes. 1mm Increment Ordering Code: FW3 D≤FW≤15 When FW=0, there are no Wrench Flats Applicable to Standard / Stepped Types.	Adds a flat head screwdriver slot to D. Ordering Code: MM It will not be aligned with wrench flats.	Increases Y dimension by increments. 1mm Increment Ordering Code: YC10.8	Attaches a retaining ring to each applicable shaft diameter. Ordering Code: SET Applicable to all types Retaining Ring Shape No. 6, 8: E Type Retaining Ring No. 10-30A: C Type Retaining Ring  Retaining Ring Material <table border="1"> <thead> <tr> <th>Cantilever Shafts</th> <th>Retaining Ring</th> </tr> </thead> <tbody> <tr> <td>Material</td> <td>Material</td> </tr> <tr> <td>1045 Carbon Steel or Equivalent</td> <td>Black Oxide</td> </tr> <tr> <td>304 Stainless Steel</td> <td>Electroless Nickel Plating</td> </tr> <tr> <td></td> <td>304 Stainless Steel</td> </tr> </tbody> </table>	Cantilever Shafts	Retaining Ring	Material	Material	1045 Carbon Steel or Equivalent	Black Oxide	304 Stainless Steel	Electroless Nickel Plating		304 Stainless Steel
Cantilever Shafts	Retaining Ring																
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1045 Carbon Steel or Equivalent	Black Oxide																
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