

# Shafts

## One End Stepped, One End Tapped Hollow

Type	Material	Hardness	Surface Treatment
SPJA			
PSPJA	SUJ2	Effective Hardened Depth of Induction Hardening	Hard Chrome Plating Plating Hardness: HV750 ~ Plating Thickness: 5μ or More
RSPJA		58HRC~	Low Temp. Black Chrome Plating

Features of Low Temp. Black Chrome Plating **P.128**  
 L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness **P.111**  
 Low temp. black chrome plating is not applied to the inside of hollow shafts, taps, bored holes and lateral holes, and may rust.  
 Shaft End Machined Area (Effective Thread Length + Approx. 10mm) Annealing may lower hardness.

About Hollow Shaft Wall Thickness Deviations See **P.111**

Part Number	1mm Increment			M (Coarse) Selection	(Y) Max.	d	R	C
	Type	Dg6	L					
SPJA	6	-0.004	25~598	5 ≤ P < D	3	600	2	0.5 or Less
	8	-0.005	25~798	6 ≤ P < D	4 5	800	3	
	10	-0.014	25~798	7 ≤ P < D	5 6	800	4	
	12	-0.006	25~998	10 ≤ P < D	8 T1 (RC1/8)	1000	6	
PSPJA	13	-0.017	25~998	10 T1 (RC1/8)	1000	7	10	0.3 or Less
	16	-0.017	25~1198	12 T2 (RC1/4)	1200	10	12	
RSPJA (D ≤ 30, L ≤ 500)	20	-0.007	25~1198	13 ≤ P < D	16 T3 (RC3/8)	1200	14	1.0 or Less
	25	-0.020	25~1198	16 ≤ P < D	20	1200	16	
	30	-0.009	25~1498	20 ≤ P < D	20	1500	17	
	35	-0.009	25~1498	24 ≤ P < D	24	1500	19	
	40	-0.025	25~1498	25 ≤ P < D	24 30	1500	20	
	50	-0.025	25~1498	32 ≤ P < D	30	1500	26	

When T1, T2 or T3 is selected as M, tapered thread machining is applied. (Ordering Code: MT1)  
 Overall length L requires Mx3 ≤ L.

Ordering Example: Part Number - L - F - P - M  
 SPJA20 - 277 - F25 - P16 - M16

Alterations Example: Part Number - L - F - P - M - (DKC, LKC, SC)  
 SPJA20 - 277 - F25 - P16 - M16 - LKC

Alterations	DKC	LKC	SC
Code	DKC	LKC	SC
Spec.	O.D. tolerance is altered to h5. Ordering Code DKC D h5 Tolerance 6 0 -0.005 8, 10 0 -0.006 12-16 0 -0.008 20-30 0 -0.009 35-50 0 -0.011 Low Temp. Black Chrome Plating	Changes L tolerance. Ordering Code LKC L < 200 → L ± 0.03 200 ≤ L < 500 → L ± 0.05 L ≥ 500 → L ± 0.1 For use of LKC L dimensions can be specified in 0.1mm increment. Not applicable when D-P ≤ 2.	Adds wrench flats. Ordering Code SC5 SC=1mm Increment SC+±1 ≤ L-Mx2 SC ≥ 0 D W ±1 6 5 8 7 8 10 8 12 10 13 11 16 14 10 20 17 25 22 30 27 35 30 40 36 50 41 20

Alterations may lower hardness. See **P.112**

Part Number	Type	D	Unit Price																		
			Min. L - 50	L51-100	L101-150	L151-200	L201-300	L301-400	L401-500	L501-600	L601-800	L801-1000	L1001-1200	L1201-1498							
SPJA RSPJA	6																				
	8																				
	10																				
	12																				
	13																				
	16																				
	20																				
	25																				
	30																				
	35																				
PSPJA	6																				
	8																				
	10																				
	12																				
	13																				
	16																				
	20																				
	25																				
	30																				
	35																				

Low Temp. Black Chrome Plating Additional Charge	D	Additional Price						
		Min. L - 50	L51-100	L101-150	L151-200	L201-300	L301-400	L401-500
6								
8								
10								
12								
13								
16								
20								
25								
30								

For Low Temp. Chrome Plated Shafts, please add Low Temp. Black Chrome Plating Additional Charge on the left to the non-plated shaft Unit Price above.  
 Features of Low Temp. Black Chrome Plating **P.128**

# Shafts

## Continuous Support - Pre-Drilled and Tapped

Type	Material	Hardness	Surface Treatment
SFAE	SUJ2	Effective Hardened Depth of Induction Hardening	
SSFAE	SUS440C Equivalent		
PSFAE	SUJ2	58HRC~	Hard Chrome Plating Plating Hardness: HV750 ~ Plating Thickness: 5μ or More
PSSFAE	SUS440C Equivalent	SUS440C Equivalent 58HRC~	

Features of Low Temp. Black Chrome Plating **P.128**  
 L Dimension Tolerance, Circularity, Straightness, Perpendicularity, Concentricity and Changes in Hardness **P.111**

Part Number	L specified in 1mm Increment		M (Coarse)	P	h	C	A	F
	Type	Dg6						
SFAE PSFAE	10	-0.005 -0.014	200~ 800	M4	100	0.5 or Less	4.3	2.0
	12	-0.006 -0.017	200~ 1000					
	13	-0.006 -0.017	200~ 1000					
SFAE SSFAE PSFAE PSSFAE	16	-0.007 -0.020	200~ 1200	M5	150	1.0 or Less	6.8	2.5
	20	-0.007 -0.020	200~ 1200					
	25	-0.007 -0.020	300~ 1200	M6	200	Mx2	9	3.0
	30	-0.007 -0.020	300~ 1500					
	35	-0.007 -0.020	300~ 1500					
	40	-0.009 -0.025	400~ 1500	M8	300	1.0 or Less	11	3.5
	50	-0.009 -0.025	400~ 1500					

Ordering Example: Part Number - L  
 SFAE10 - 300

Pitch	Correlation between L Dimension and Number of Taps					N
	P=100	P=150	P=200	P=300	Number of Taps (K)	
200~219	200~319	300~419	400~619	2	1	N = L-PxK 2
220~319	320~469	420~619	620~919	3	2	
320~419	470~619	620~819	920~1219	4	3	
420~519	620~769	820~1019	1220~	5	4	
520~619	770~919	1020~1219	-	6	5	
620~719	920~1069	1220~1419	-	7	6	
720~819	1070~	1420~	-	8	7	
820~919	-	-	-	9	8	
920~	-	-	-	10	9	

Part Number	Type	D	Unit Price											
			L200~300	L301~400	L401~500	L501~600	L601~800	L801~1000	L1001~1200	L1201~1500				
SFAE	10													
	12													
	13													
	16													
	20													
	25													
	30													
	35													
	40													
	50													
SSFAE	16													
	20													
	25													
	30													
	35													
	40													
	50													
	PSFAE	10												
		12												
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50														
PSSFAE	16													
	20													
	25													
	30													
	50													