



Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat Treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coated except for portions given secondary operation

* The precision grade of F Series products is equivalent to the value shown in the table.

Catalog Number	Module	No. of teeth	Pitch dia.			Face width	
			C	D	E		
SSA2-24	m2	24	48	52	20		
SSA2-25		25	50	54			
SSA2-28		28	56	60			
SSA2-30		30	60	64			
SSA2-32		32	64	68			
SSA2-35		35	70	74			
SSA2-36		36	72	76			
SSA2-40		40	80	84			
SSA2-45		45	90	94			
SSA2-48		48	96	100			
SSA2-50	m2.5	50	100	104	25		
SSA2-55		55	110	114			
SSA2-56		56	112	116			
SSA2-60		60	120	124			
SSA2-70		70	140	144			
SSA2-80		80	160	164			
SSA2-100		100	200	204			
SSA2.5-24		m2.5	24	60		65	25
SSA2.5-25			25	62.5		67.5	
SSA2.5-28			28	70		75	
SSA2.5-30	30		75	80			
SSA2.5-32	32		80	85			
SSA2.5-35	35		87.5	92.5			
SSA2.5-36	36		90	95			
SSA2.5-40	40		100	105			
SSA2.5-45	45		112.5	117.5			
SSA2.5-48	48		120	125			
SSA2.5-50	50	125	130				
SSA2.5-55	55	137.5	142.5				
SSA2.5-56	56	140	145				
SSA2.5-60	60	150	155				
SSA2.5-70	70	175	180				
SSA2.5-80	80	200	205				

* For the permitted torque and backlash of each product, please refer to the dimensional table of the original product.

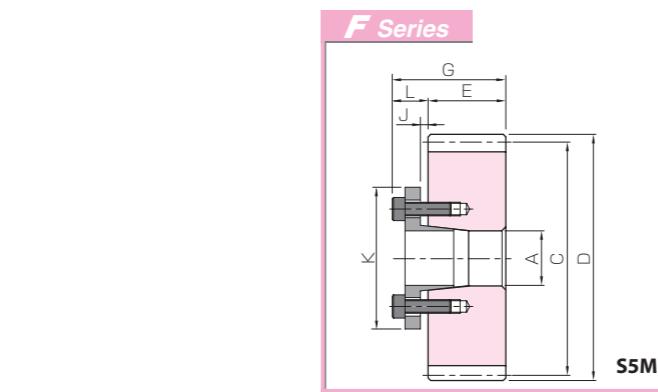
Features of F Series

- No rattling of shaft and gear when fastening
- Freely positionable mounting for easy meshing of teeth
- Easily mounted and removed for repeated use
- The bushing slides when overloaded to reduce damage to the gears.



Mounting Method and Precautions

- ① Shaft diameter recommended tolerance is h7. The limit is h8, but we recommend h6 when minimizing runout. Use 1.6a as reference for the surface roughness of the shaft diameter.
- ② Wipe away any debris, dirt or oil on the shaft surface and hole of the fastened section with thinner or the like, and lightly apply hydraulic oil #68. Do not apply molybdenum-based oil or oil with additives, as this may cause reduced fastening torque or slippage.
- ③ Pass completely through the shaft while pressing the bushing flange against the gear before tightening. Removal will not be possible, so be sure to leave a clearance of 1mm or more on the gear rear surface side. (Fig.1)
- ④ Use a torque wrench to fasten bolts on opposite sides when tightening. First tighten at 1/4 of the regulated torque, then at 1/2 of the regulated torque, before finally tightening up to the regulated torque. Do not tighten without passing through the shaft, or fasten the bolts after insertion on the draft tap side. (Fig.2)
- ⑤ If the shaft has a keyway, the fastened section contact area is reduced and the transmission rate is decreased by 15 to 20%.



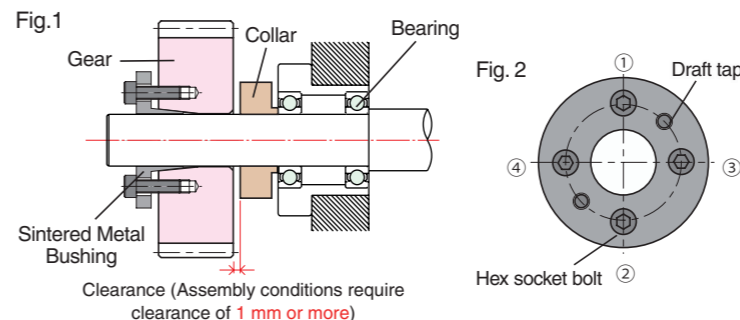
To order F Series products, please specify: **Catalog Number + F + BORE.**

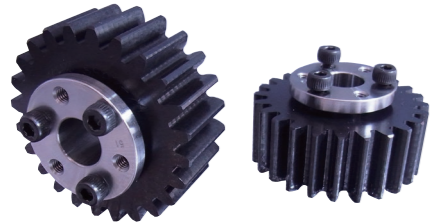
Bore A	* The product shapes of F Series items are identified by background color.														
	Catalog Number	12	14	15	16	17	18	19	20	22	25	28	30	32	35
SSA2-24 F Bore	S5M														
SSA2-25 F Bore	S5M	S5M	S5M												
SSA2-28 F Bore			S5M	S5M	S5M	S5M	S5M								
SSA2-30 F Bore			S5M	S5M	S5M	S5M	S5M								
SSA2-32 F Bore			S5M	S5M	S5M	S5M	S5M								
SSA2-35 F Bore			S5M	S5M	S5M	S5M	S5M	S5M	S5M						
SSA2-36 F Bore			S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M					
SSA2-40 F Bore						S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-45 F Bore						S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-48 F Bore						S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-50 F Bore						S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-55 F Bore						S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-56 F Bore						S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-60 F Bore						S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-70 F Bore						S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-80 F Bore						S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-100 F Bore						S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-24 F Bore			S5M	S5M	S5M	S5M	S5M								
SSA2.5-25 F Bore			S5M	S5M	S5M	S5M	S5M								
SSA2.5-28 F Bore						S5M	S5M								
SSA2.5-30 F Bore						S5M	S5M	S5M	S5M						
SSA2.5-32 F Bore						S5M	S5M	S5M	S5M	S5M					
SSA2.5-35 F Bore						S5M	S5M	S5M	S5M	S5M	S5M				
SSA2.5-36 F Bore						S5M	S5M	S5M	S5M	S5M	S5M	S5M			
SSA2.5-40 F Bore									S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-45 F Bore									S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-48 F Bore									S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-50 F Bore									S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-55 F Bore									S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-56 F Bore									S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-60 F Bore									S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-70 F Bore									S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-80 F Bore									S5M	S5M	S5M	S5M	S5M	S5M	S5M

- [Caution on F Series]
- ① As available-on-request products, these require a lead-time for shipping within 2 working days (excludes the day ordered), after placing an order.
 - ② Number of products we can process for one order is 1 to 20 units. For quantities of 21 or more pieces, we need to quote price and lead time.
 - ③ Additionally the machined parts of the fastener components and gears are not black oxide coated.

Removal Method and Precautions

- ① Turn off the power source (supply), check that no load is applied to the gear, and confirm that there is no danger due to falling, etc.
- ② Insert removed bolts into all draft taps, and gradually and evenly tighten each bolt in diagonal order until removal is complete.
- ③ The washer and thread surfaces will be roughened, compromising tightening strength, if the bolts are reused. Consequently, we recommend using new bolts of the same size.





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Precision grade	JIS grade N8 (JIS B1702-1: 1998)*
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			C	D	E	
SSA3-20	m3	20	60	66	30	
SSA3-24		24	72	78		
SSA3-25		25	75	81		
SSA3-28		28	84	90		
SSA3-30		30	90	96		
SSA3-32		32	96	102		
SSA3-35		35	105	111		
SSA3-36		36	108	114		
SSA3-40		40	120	126		
SSA3-45		45	135	141		
SSA3-48		48	144	150		
SSA3-50		50	150	156		
SSA3-55		55	165	171		
SSA3-56		56	168	174		
SSA3-60		60	180	186		
SSA3-70		70	210	216		
SSA3-80		80	240	246		

Bore A	Sintered Metal Bushings		Clearance	Total Length	Hex socket bolt		Ref. thrust load	Ref. slipping torque	Bolt tightening torque	Bushings weight
	L	K			Qty	Size				
15	12	37	3	42	4	M4×15	5.10	39	3.9	40
16		38					5.17	42		41
17		39					5.23	45		43
18		40					5.28	48		45
19		42					5.12	49		49
20	14	46	44	6	M5×18	9.68	97	7.8	71	
22		47				9.98	110		71	
25		51				9.90	124		81	
28		53				10.0	141		84	
30		56				9.89	149		93	
32		58				10.1	163		97	
35		61				9.88	173		106	
40		71				12.3	725		13.7	237

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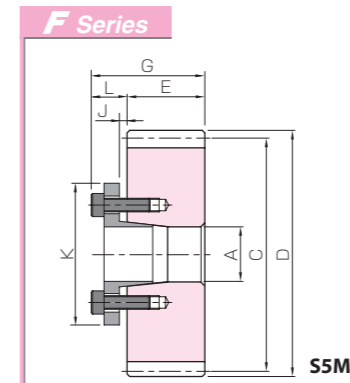
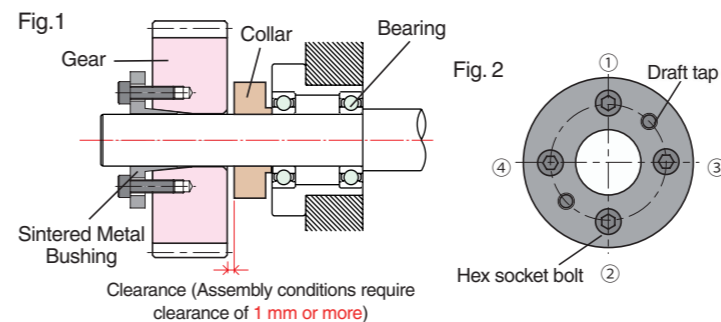
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SSA3-25 F Bore	S5M	S5M	S5M	S5M	S5M									
SSA3-28 F Bore						S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	
SSA3-30 F Bore						S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	
SSA3-32 F Bore						S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	
SSA3-35 F Bore						S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA3-36 F Bore						S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA3-40 F Bore								S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA3-45 F Bore								S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA3-48 F Bore								S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA3-50 F Bore								S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA3-55 F Bore								S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA3-56 F Bore								S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA3-60 F Bore								S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA3-70 F Bore								S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA3-80 F Bore								S5M	S5M	S5M	S5M	S5M	S5M	S5M

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