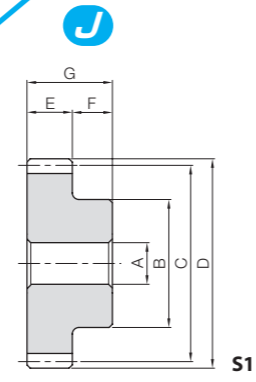
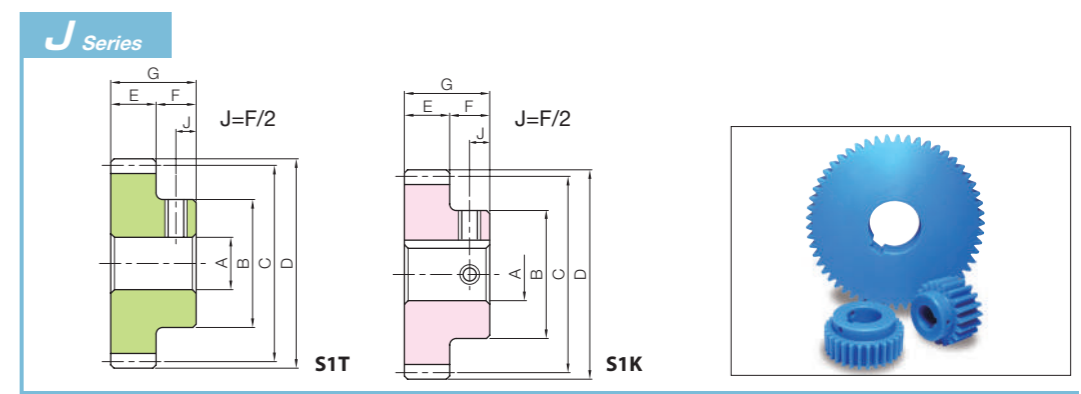


Specifications	
Precision grade	JIS grade N9 (JIS B1702-1: 1999)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC901
Heat treatment	—
Tooth hardness	(115 to 120HRR)

\* The precision grade is equivalent to the value shown in the table.

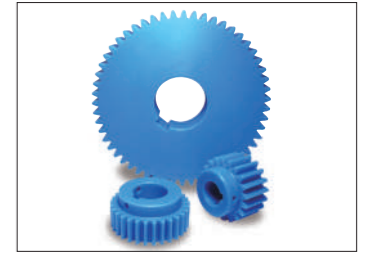


S1



S1T

S1K



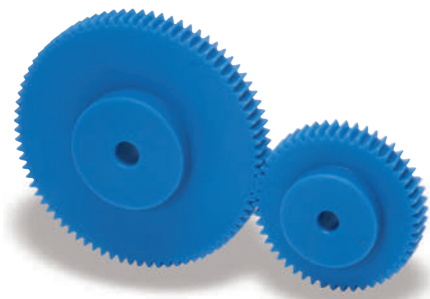
To order J Series products, please specify: **Catalog No. + J + BORE.**

Catalog Number	No. of teeth	Shape	Bore		Pitch dia. C	Outside dia. D	Face width E	Hub width F	Total length G	Allowable torque (N·m) Bending strength	Allowable torque (kgf·m) Bending strength	Backlash (mm)	Weight (kg)
			A	B									
PS1-15	15	S1	6	12	15	17	10	10	20	0.41	0.042	0~0.32	0.0027
PS1-16	16			12	16	18				0.45	0.046		0.0030
PS1-18	18			14	18	20				0.53	0.054		0.0041
PS1-20	20			16	20	22				0.61	0.063		0.0053
PS1-22	22			18	22	24				0.69	0.071		0.0062
PS1-24	24		8	20	24	26				0.77	0.079	0.0077	
PS1-25	25			20	25	27				0.82	0.083	0.0082	
PS1-26	26			20	26	28				0.86	0.088	0.0086	
PS1-28	28			22	28	30				0.94	0.096	0.010	
PS1-30	30			25	30	32				1.03	0.10	0.013	
PS1-32	32	10	35	26	32	34	1.11	0.11	0.014				
PS1-35	35			26	35	37	1.25	0.13	0.016				
PS1-36	36			28	36	38	1.30	0.13	0.018				
PS1-40	40			35	40	42	1.48	0.15	0.024				
PS1-45	45			35	45	47	1.71	0.17	0.028				
PS1-48	48		40	48	50	52	1.86	0.19	0.030				
PS1-50	50			50	52	54	1.96	0.20	0.032				
PS1-55	55			55	57	59	2.18	0.22	0.037				
PS1-60	60			60	62	64	2.41	0.25	0.042				
PS1-65	65			65	67	69	2.64	0.27	0.048				
PS1-70	70	100	70	72	74	2.87	0.29	0.057					
PS1-75	75		75	77	79	3.11	0.32	0.064					
PS1-80	80		80	82	84	3.34	0.34	0.071					
PS1-90	90		90	92	94	3.80	0.39	0.087					
PS1-95	95		95	97	99	4.03	0.41	0.095					
PS1-100	100		100	102	104	4.27	0.44	0.10					

Bore H8	* The product shapes of J Series items are identified by background color.														
	6	8	10	12	14	15	16	17	18	19	20	22	25	28	30
Keyway JS9	—		4x1.8			5x2.3			6x2.8			8x3.3			
Screw size	—		M4			M4			M5			M6			
Catalog Number	M4	M5	M4			M5			M6						
PS1-15 J BORE															
PS1-16 J BORE															
PS1-18 J BORE															
PS1-20 J BORE															
PS1-22 J BORE															
PS1-24 J BORE															
PS1-25 J BORE															
PS1-26 J BORE															
PS1-28 J BORE															
PS1-30 J BORE															
PS1-32 J BORE															
PS1-35 J BORE															
PS1-36 J BORE															
PS1-40 J BORE															
PS1-45 J BORE															
PS1-48 J BORE															
PS1-50 J BORE															
PS1-55 J BORE															
PS1-60 J BORE															
PS1-65 J BORE															
PS1-70 J BORE															
PS1-75 J BORE															
PS1-80 J BORE															
PS1-90 J BORE															
PS1-95 J BORE															
PS1-100 J BORE															

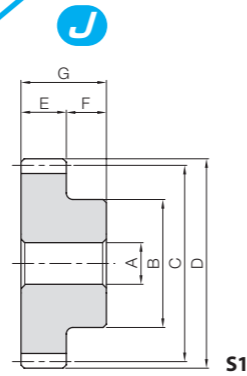
[Caution on J series] ① Cancellation is not possible for made-to-order products. See page 42 for lead times and allowable order quantities. See page 44 for other precautions.  
 ② Since tapped holes of plastic products are easily damaged, avoid overtightening when fastening screws. For products with a short tapped hole, tighten screws to a torque of less than 0.12 N·m for M4 threads, and 0.38 N·m for M5 threads.

\* In regard to MC Nylon gears, other materials are available for plastic gears, including Ultra High Molecular Weight Polyethylene (U-PE), which has excellent abrasion resistance and resin conforming to the Plastic Implementation Measure (PIM). A single piece order is acceptable and will be produced as a custom-made gear. Please see Page 26 for more details on quotations and orders.

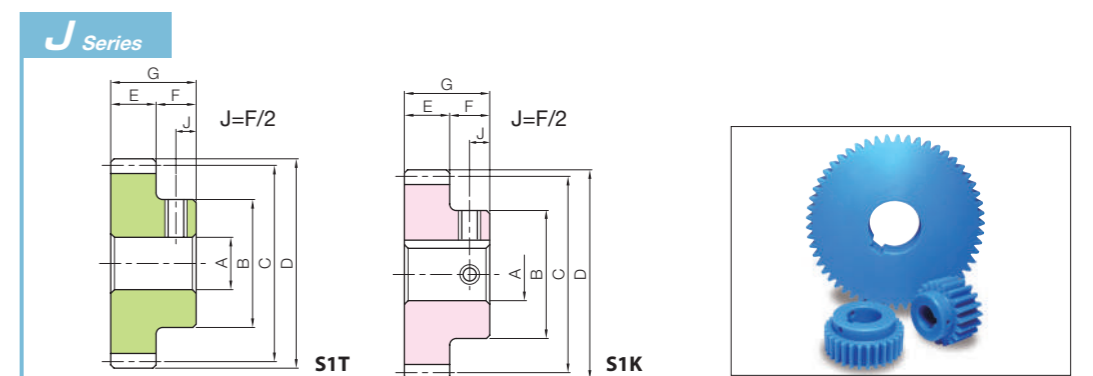


Specifications	
Precision grade	JIS grade N9 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC901
Heat treatment	—
Tooth hardness	(115 to 120HRR)

\* The precision grade is equivalent to the value shown in the table.



S1



S1T

S1K

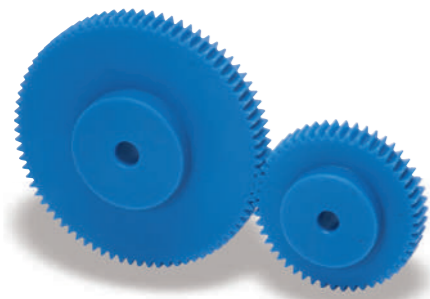
To order J Series products, please specify: **Catalog No. + J + BORE.**

Catalog Number	No. of teeth	Shape	Bore		Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Allowable torque (N·m)	Allowable torque (kgf·m)	Backlash (mm)	Weight (kg)
			A <sub>H8</sub>	B										
PS1.5-15	15	S1	8	18	22.5	25.5	15	10	25	1.39	0.14	0~0.38	0.0084	
PS1.5-16	16			20	24	27				1.53	0.16			
PS1.5-18	18			22	27	30				1.79	0.18			
PS1.5-20	20			24	30	33				2.07	0.21			
PS1.5-22	22			26	33	36				2.34	0.24			
PS1.5-24	24			28	36	39				2.61	0.27			
PS1.5-25	25			30	37.5	40.5				2.76	0.28			
PS1.5-26	26			32	39	42				2.91	0.3			
PS1.5-28	28			36	42	45				3.18	0.32			
PS1.5-30	30			38	45	48				3.46	0.35			
PS1.5-32	32	S1	10	40	48	51	15	10	25	3.76	0.38	0~0.40	0.045	
PS1.5-35	35			42	52.5	55.5				4.22	0.43			
PS1.5-36	36			45	54	57				4.38	0.45			
PS1.5-40	40			45	60	63				5.00	0.51			
PS1.5-45	45			45	67.5	70.5				5.79	0.59			
PS1.5-48	48			45	72	75				6.27	0.64			
PS1.5-50	50			45	75	78				6.60	0.67			
PS1.5-55	55			45	82.5	85.5				7.36	0.75			
PS1.5-60	60			50	90	93				8.14	0.83			
PS1.5-65	65			50	97.5	100.5				8.91	0.91			
PS1.5-70	70	S1	12	50	105	108	15	10	25	9.69	0.99	0~0.42	0.17	
PS1.5-75	75			50	112.5	115.5				10.5	1.07			
PS1.5-80	80			55	120	123				11.3	1.15			
PS1.5-90	90			55	135	138				12.8	1.31			
PS1.5-100	100			60	150	153				14.4	1.47			

Bore H8	* The product shapes of J Series items are identified by background color.																								
	8	10	12	14	15	16	17	18	19	20	22	25	28	30											
Keyway JS9	—	4x1.8	5x2.3				6x2.8				8x3.3														
Screw size	M5			M4				M5				M6													
Catalog Number	PS1.5-15 J BORE	PS1.5-16 J BORE	PS1.5-18 J BORE	PS1.5-20 J BORE	PS1.5-22 J BORE	PS1.5-24 J BORE	PS1.5-25 J BORE	PS1.5-26 J BORE	PS1.5-28 J BORE	PS1.5-30 J BORE	PS1.5-32 J BORE	PS1.5-35 J BORE	PS1.5-36 J BORE	PS1.5-40 J BORE	PS1.5-45 J BORE	PS1.5-48 J BORE	PS1.5-50 J BORE	PS1.5-55 J BORE	PS1.5-60 J BORE	PS1.5-65 J BORE	PS1.5-70 J BORE	PS1.5-75 J BORE	PS1.5-80 J BORE	PS1.5-90 J BORE	PS1.5-100 J BORE

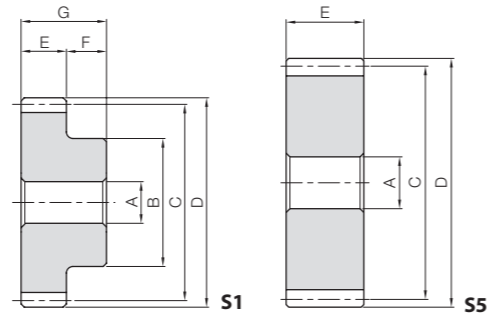
- [Caution on J series] ① Cancellation is not possible for made-to-order products. See page 42 for lead times and allowable order quantities. See page 44 for other precautions.  
 ② Since tapped holes of plastic products are easily damaged, avoid overtightening when fastening screws. For products with a short tapped hole, tighten screws to a torque of less than 0.12 N·m for M4 threads, and 0.38 N·m for M5 threads.

\* In regard to MC Nylon gears, other materials are available for plastic gears, including Ultra High Molecular Weight Polyethylene (U-PE), which has excellent abrasion resistance and resin conforming to the Plastic Implementation Measure (PIM). A single piece order is acceptable and will be produced as a custom-made gear. Please see Page 26 for more details on quotations and orders.

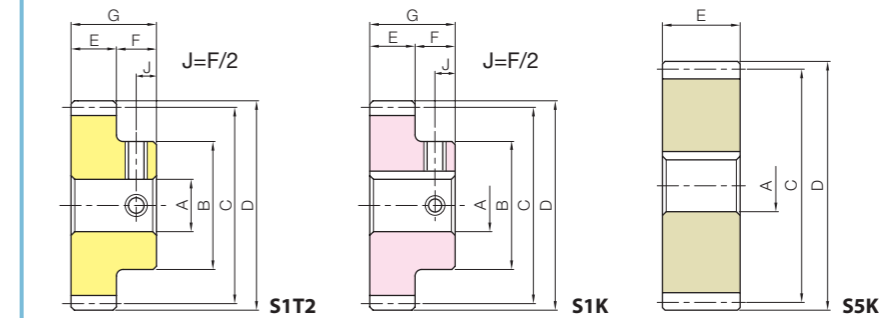


Specifications	
Precision grade	JIS grade N9 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC901
Heat treatment	—
Tooth hardness	(115 to 120HRR)

\* The precision grade is equivalent to the value shown in the table.



J Series



To order J Series products, please specify: **Catalog No. + J + BORE.**

Catalog Number	No. of teeth	Shape	Bore A <sub>H8</sub>	Hub dia. B	Pitch dia. C	Outside dia. D	Face width E	Hub width F	Total length G	Allowable torque (N·m) Bending strength	Allowable torque (kgf·m) Bending strength	Backlash (mm)	Weight (kg)
PS2-12	12	S1	10	18	24	28	10	30		2.25	0.23	0~0.42	0.011
PS2-13	13			20	26	30				2.59	0.26		
PS2-14	14			20	28	32				2.96	0.30		
PS2-15	15			24	30	34				3.29	0.34		
PS2-16	16			26	32	36				3.63	0.37		
PS2-18	18			30	36	40				4.24	0.43		
PS2-20	20			32	40	44				4.91	0.50		
PS2-22	22			35	44	48				5.55	0.57		
PS2-24	24			38	48	52				6.19	0.63		
PS2-25	25			40	50	54				6.54	0.67		
PS2-26	26	S5	12	42	52	56	20			6.90	0.70	0~0.44	0.063
PS2-28	28			45	56	60				7.54	0.77		
PS2-30	30			50	60	64				8.20	0.84		
PSA2-32	32			64	68	72				8.91	0.91		
PSA2-35	35			70	74	78				10.0	1.02		
PSA2-36	36			72	76	80				10.4	1.06		
PSA2-40	40			80	84	88				11.9	1.21		
PSA2-45	45			90	94	98				13.7	1.40		
PSA2-48	48			96	100	104				14.9	1.52		
PSA2-50	50			100	104	108				15.7	1.60		
PSA2-55	55	15	—	110	114	118	—	—		17.5	1.78	0~0.46	0.22
PSA2-60	60			120	124	128				19.3	1.97		
PSA2-65	65			130	134	138				21.1	2.15		
PSA2-70	70			140	144	148				23.0	2.34		
PSA2-75	75			150	154	158				24.9	2.54		
PSA2-80	80			160	164	168				26.7	2.72		
PSA2-85	85			170	174	178				28.5	2.91		
PSA2-90	90			180	184	188				30.4	3.10		
PSA2-95	95			190	194	198				32.3	3.29		
PSA2-100	100			200	204	208				34.2	3.48		

Bore H8	* The product shapes of J Series items are identified by background color.																					
	10	12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	45	50				
Keyway J <sub>S9</sub>	4x1.8																					
Screw size	4x1.8				5x2.3				6x2.8				8x3.3				10x3.3		12x3.3		14x3.8	
Catalog Number	M4				M5				M6				M8				—					
PS2-12 J BORE	Yellow																					
PS2-13 J BORE	Yellow																					
PS2-14 J BORE	Yellow																					
PS2-15 J BORE	Pink																					
PS2-16 J BORE	Pink																					
PS2-18 J BORE	Pink																					
PS2-20 J BORE	Pink																					
PS2-22 J BORE	Pink																					
PS2-24 J BORE	Pink																					
PS2-25 J BORE	Pink																					
PS2-26 J BORE	Pink																					
PS2-28 J BORE	Pink																					
PS2-30 J BORE	Pink																					
PSA2-32 J BORE	Yellow																					
PSA2-35 J BORE	Yellow																					
PSA2-36 J BORE	Yellow																					
PSA2-40 J BORE	Yellow																					
PSA2-45 J BORE	Yellow																					
PSA2-48 J BORE	Yellow																					
PSA2-50 J BORE	Yellow																					
PSA2-55 J BORE	Yellow																					
PSA2-60 J BORE	Yellow																					
PSA2-65 J BORE	Yellow																					
PSA2-70 J BORE	Yellow																					
PSA2-75 J BORE	Yellow																					
PSA2-80 J BORE	Yellow																					
PSA2-85 J BORE	Yellow																					
PSA2-90 J BORE	Yellow																					
PSA2-95 J BORE	Yellow																					
PSA2-100 J BORE	Yellow																					

[Caution on J series] ① Cancellation is not possible for made-to-order products. See page 42 for lead times and allowable order quantities. See page 44 for other precautions.  
 ② Since tapped holes of plastic products are easily damaged, avoid overtightening when fastening screws. For products with a short tapped hole, tighten screws to a torque of less than 0.12 N·m for M4 threads, and 0.38 N·m for M5 threads.

\* In regard to MC Nylon gears, other materials are available for plastic gears, including Ultra High Molecular Weight Polyethylene (U-PE), which has excellent abrasion resistance and resin conforming to the Plastic Implementation Measure (PIM). A single piece order is acceptable and will be produced as a custom-made gear. Please see Page 26 for more details on quotations and orders.

**Stainless Steel Hubs for PSA Now Available!**  
 Standardized sectional stainless steel hubs. They create a secure method for fastening to the shaft.

Knockdown style  
 Please see Page 182 for more details.

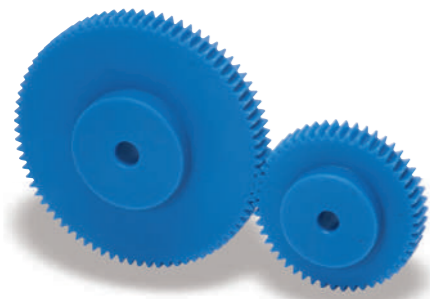
**How to attach gears to shafts**

To attach gears to shafts, in case of light loads, methods include using keys, taper pins, spring pins, and press fitting after mounting the setscrews. Since loosening tends to occur in the conditions below, plastic gears are better fastened by using a steel hub.

1. When the circumferential temperature is high
2. For large diameter gears
3. If forward-reverse motion impacts keys

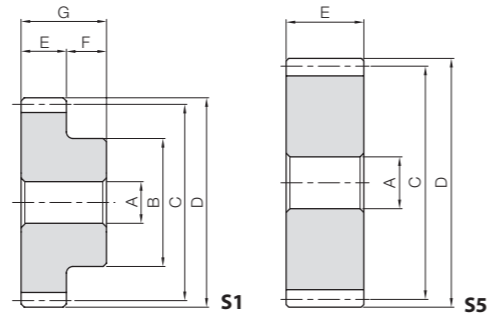
For fastening steel hubs into plastic gears with bolts, see right for various methods.

Fastening with a steel hub bolt

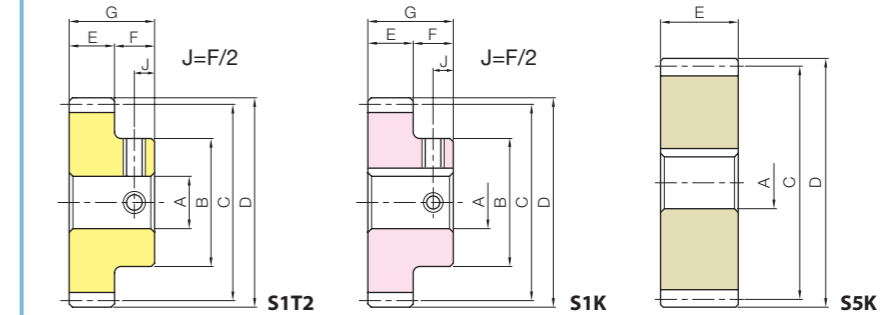


Specifications	
Precision grade	JIS grade N9 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC901
Heat treatment	—
Tooth hardness	(115 to 120HRR)

\* The precision grade is equivalent to the value shown in the table.



## J Series



To order J Series products, please specify: **Catalog No. + J + BORE.**

Catalog Number	No. of teeth	Shape	Bore		Pitch dia.	Outside dia.	Face width	Hub width	Total length	Allowable torque (N·m)	Allowable torque (kgf·m)	Backlash (mm)	Weight (kg)
			A <sub>H8</sub>	B									
PS2.5-12	12	S1	10	23	30	35	12	37	25	4.39	0.45	0~0.44	0.023
PS2.5-14	14			25	35	40				5.77	0.59		0.031
PS2.5-15	15			30	37.5	42.5				6.42	0.65		0.037
PS2.5-16	16		32	40	45	7.09				0.72	0.043		
PS2.5-18	18		38	45	50	8.28				0.84	0.057		
PS2.5-20	20		40	50	55	9.59				0.98	0.070		
PS2.5-22	22	S5	15	12	44	55	60	10.8	1.11	10.8	1.11	0.085	
PS2.5-24	24				48	60	65	12.1	1.23	0.10			
PS2.5-25	25				50	62.5	67.5	12.8	1.30	0.11			
PS2.5-26	26			55	65	70	13.5	1.37	0.12				
PS2.5-28	28			60	70	75	14.7	1.50	0.15				
PS2.5-30	30			65	75	80	16.0	1.63	0.17				
PSA2.5-32	32	S5	15	15	80	85	—	—	17.4	1.77	0.14		
PSA2.5-36	36				90	95	20.3	2.07	0.18				
PSA2.5-40	40				100	105	23.2	2.36	0.22				
PSA2.5-45	45			112.5	117.5	26.8	2.73	0.28					
PSA2.5-48	48			120	125	29.0	2.96	0.32					
PSA2.5-50	50			125	130	30.6	3.12	0.35					
PSA2.5-55	55	137.5	142.5	34.1	3.48	0.43							
PSA2.5-60	60	150	155	37.7	3.84	0.51							

Bore H8	* The product shapes of J Series items are identified by background color.																		
	10	12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	45	50	
Keyway J <sub>S9</sub>	—																		
Screw size	4x1.8			5x2.3				6x2.8			8x3.3			10x3.3		12x3.3		14x3.8	
Catalog Number	M4				M5				M6			M8		—					
PS2.5-12 J BORE	Yellow																		
PS2.5-14 J BORE	Yellow																		
PS2.5-15 J BORE	Yellow																		
PS2.5-16 J BORE	Yellow																		
PS2.5-18 J BORE	Yellow																		
PS2.5-20 J BORE	Yellow																		
PS2.5-22 J BORE	Yellow																		
PS2.5-24 J BORE	Yellow																		
PS2.5-25 J BORE	Yellow																		
PS2.5-26 J BORE	Yellow																		
PS2.5-28 J BORE	Yellow																		
PS2.5-30 J BORE	Yellow																		
PSA2.5-32 J BORE																			
PSA2.5-36 J BORE																			
PSA2.5-40 J BORE																			
PSA2.5-45 J BORE																			
PSA2.5-48 J BORE																			
PSA2.5-50 J BORE																			
PSA2.5-55 J BORE																			
PSA2.5-60 J BORE																			

- [Caution on J series] ① Cancellation is not possible for made-to-order products. See page 42 for lead times and allowable order quantities. See page 44 for other precautions.
- ② Since tapped holes of plastic products are easily damaged, avoid overtightening when fastening screws. For products with a short tapped hole, tighten screws to a torque of less than 0.12 N·m for M4 threads, and 0.38 N·m for M5 threads.

\* In regard to MC Nylon gears, other materials are available for plastic gears, including Ultra High Molecular Weight Polyethylene (U-PE), which has excellent abrasion resistance and resin conforming to the Plastic Implementation Measure (PIM). A single piece order is acceptable and will be produced as a custom-made gear. Please see Page 26 for more details on quotations and orders.

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Standardized sectional stainless steel hubs. They create a secure method for fastening to the shaft.



Knockdown style

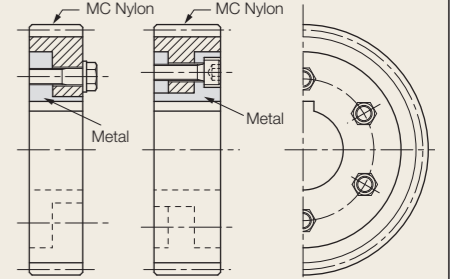
Please see Page 182 for more details.

## How to attach gears to shafts

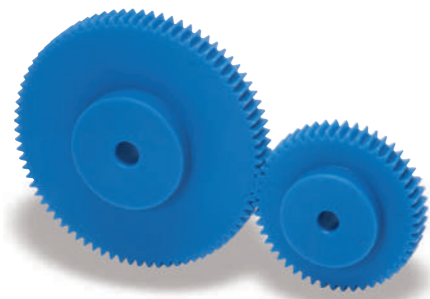
To attach gears to shafts, in case of light loads, methods include using keys, taper pins, spring pins, and press fitting after mounting the setscrews. Since loosening tends to occur in the conditions below, plastic gears are better fastened by using a steel hub.

1. When the circumferential temperature is high
2. For large diameter gears
3. If forward-reverse motion impacts keys

For fastening steel hubs into plastic gears with bolts, see right for various methods.

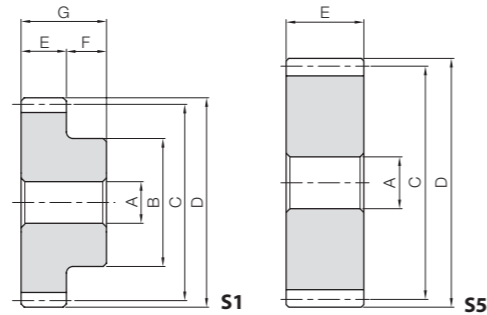


Fastening with a steel hub bolt



Specifications	
Precision grade	JIS grade N9 (JIS B1702-1:1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC901
Heat treatment	—
Tooth hardness	(115 to 120HRR)

\* The precision grade is equivalent to the value shown in the table.



Catalog Number	No. of teeth	Shape	Bore		Pitch dia.	Outside dia.	Face width	Hub width	Total length	Allowable torque (N·m)	Allowable torque (kgf·m)	Backlash (mm)	Weight (kg)
			A <sub>H8</sub>	B									
PS3-13	13	S1	12	30	39	45	15	45	8.74	0.89	0~0.52	0.048	
PS3-14	14			32	42	48							
PS3-15	15			36	45	51							
PS3-16	16		38	48	54								
PS3-18	18		40	54	60								
PS3-20	20		14	14	50	60							66
PS3-22	22	54			66	72							
PS3-24	24	58			72	78							
PS3-25	25	60			75	81							
PS3-26	26	65			78	84							
PS3-28	28	70			84	90							
PS3-30	30	75	90	96									
PSA3-32	32	S5	18	96	102	102	—	—	30.1	3.07	0~0.56	0.24	
PSA3-35	35			105	111	111							
PSA3-36	36			108	114	114							
PSA3-40	40			120	126	126							
PSA3-45	45			135	141	141							
PSA3-48	48			144	150	150							
PSA3-50	50	150	156	156									
PSA3-55	55	165	171	171									
PSA3-60	60	180	186	186									

\* In regard to MC Nylon gears, other materials are available for plastic gears, including Ultra High Molecular Weight Polyethylene (U-PE), which has excellent abrasion resistance. Poly Ether Ether Ketone (PEEK) also has quality properties. A single piece order is acceptable and will be produced as a custom-made gear. Please see Page 26 for more details on quotations and orders.

#### Stainless Steel Hubs for PSA Now Available!

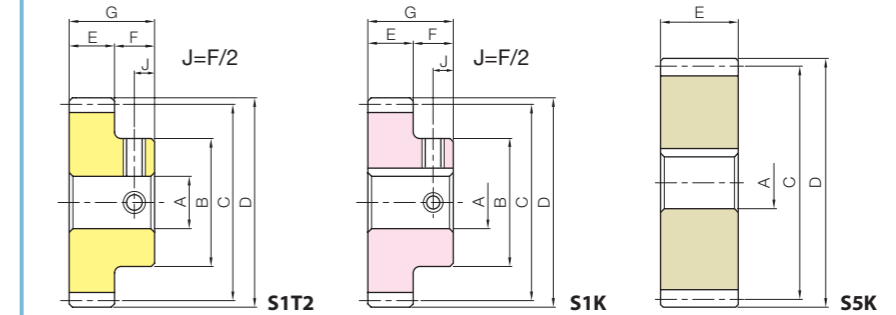
Standardized sectional stainless steel hubs. They create a secure method for fastening to the shaft.



Knockdown style

Please see Page 182 for more details.

#### J Series



To order J Series products, please specify: **Catalog No. + J + BORE.**

Bore H8	* The product shapes of J Series items are identified by background color.																
	12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	45	50
Keyway J <sub>S9</sub>	12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	45	50
Screw size	4x1.8	5x2.3			6x2.8			8x3.3			10x3.3		12x3.3	14x3.8			
Catalog Number	M4			M5			M6		M8								
PS3-13 J BORE																	
PS3-14 J BORE																	
PS3-15 J BORE																	
PS3-16 J BORE																	
PS3-18 J BORE																	
PS3-20 J BORE																	
PS3-22 J BORE																	
PS3-24 J BORE																	
PS3-25 J BORE																	
PS3-26 J BORE																	
PS3-28 J BORE																	
PS3-30 J BORE																	
PSA3-32 J BORE																	
PSA3-35 J BORE																	
PSA3-36 J BORE																	
PSA3-40 J BORE																	
PSA3-45 J BORE																	
PSA3-48 J BORE																	
PSA3-50 J BORE																	
PSA3-55 J BORE																	
PSA3-60 J BORE																	

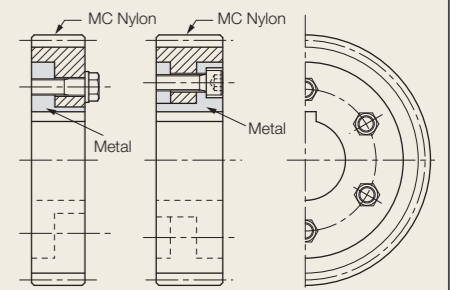
- [Caution on J series] ① Cancellation is not possible for made-to-order products. See page 42 for lead times and allowable order quantities. See page 44 for other precautions.  
 ② Since tapped holes of plastic products are easily damaged, avoid overtightening when fastening screws. For products with a short tapped hole, tighten screws to a torque of less than 0.12 N·m for M4 threads, and 0.38 N·m for M5 threads.

#### How to attach gears to shafts

To attach gears to shafts, in case of light loads, methods include using keys, taper pins, spring pins, and press fitting after mounting the setscrews. Since loosening tends to occur in the conditions below, plastic gears are better fastened by using a steel hub.

1. When the circumferential temperature is high
2. For large diameter gears
3. If forward-reverse motion impacts keys

For fastening steel hubs into plastic gears with bolts, see right for various methods.



Fastening with a steel hub bolt