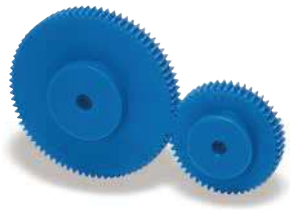
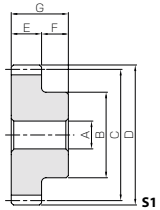


Specifications	
Precision grade	JIS grade N9 (JIS B1702-1: 1998) * JIS grade 5 (JIS B1702: 1976)
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC901
Heat treatment	—
Tooth hardness	(115 ~ 120HRR)
Face width (E)	10
Hub width (F)	10
Total length (G)	20
Screw offset (J)	5

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



S1

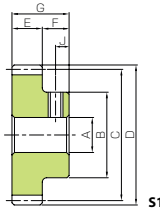
Catalog No.	No. of teeth	Shape	Bore A_{H7}	Hub dia. B	Pitch dia. C	Outside dia. D	Allowable torque (N-m) Bending strength	Allowable torque (kgf-m) Bending strength	Backlash (mm)	Weight (kg)
PS1-15	15	S1	6	12	15	17	0.41	0.042	0~0.32	0.0027
PS1-16	16			12	16	18	0.45	0.046		0.0030
PS1-18	18			14	18	20	0.53	0.054		0.0041
PS1-20	20			16	20	22	0.61	0.063		0.0053
PS1-22	22		8	18	22	24	0.69	0.071	0~0.34	0.0062
PS1-24	24			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			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		10	35	40	42	1.48	0.15		0.024
PS1-45	45			35	45	47	1.71	0.17		0.028
PS1-48	48			35	48	50	1.86	0.19		0.030
PS1-50	50				50	52	1.96	0.20		0.032
PS1-55	55				55	57	2.18	0.22	0~0.36	0.037
PS1-60	60				60	62	2.41	0.25		0.042
PS1-65	65				65	67	2.64	0.27		0.048
PS1-70	70			40	70	72	2.87	0.29		0.057
PS1-75	75				75	77	3.11	0.32		0.064
PS1-80	80				80	82	3.34	0.34		0.071
PS1-85	85				85	87	3.57	0.36		0.079
PS1-90	90				90	92	3.80	0.39		0.087
PS1-95	95			40	95	97	4.03	0.41		0.095
PS1-100	100				100	102	4.27	0.44		0.10

[Caution on Product Characteristics]
① Significant variations in temperature or humidity can cause dimensional changes in plastic gears (MC Nylon gears), including bore size (H8 when produced), tooth diameter, and backlash. Please see the section "Design of Plastic Gears" in separate technical reference book. (Page 101).
② The allowable torques shown in the table are calculated values according to the assumed usage conditions. Please see Page 31 for more details.
③ Without lubrication, using plastic gears in pairs may generate heat and dilation. It is recommended to mate them with steel gears.
④ The backlash values shown in the table are the theoretical values for the backlash in the normal direction of a pair of identical gears in mesh.

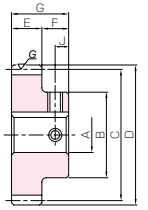
[Caution on Secondary Operations]
①Please read "Caution on Performing Secondary Operations" (Page 32) when performing modifications and/or secondary operations for safety concerns. KHK Quick-Mod Gears, the KHK's system for quick modification of KHK stock gears is also available.
②Plastic gears are susceptible to the effects of temperature and moisture. Dimensional changes may occur while performing secondary operations and during post-machining operations.

* In regards to MC Nylon gears, other materials are available for plastic gears, including Ultra High Molecular Weight Polyethylene (UHMW-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. For details on quotations and orders please see page 8.

J Series



S1T



S1K

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

Bore H7	* The product shapes of J Series items are identified by background color.														
Keyway Js9	6	8	10	12	14	15	16	17	18	19	20	22	25	28	30
Screw size	—		4 × 1.8		5 × 2.3				6 × 2.8				8 × 3.3		
Catalog No.	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															
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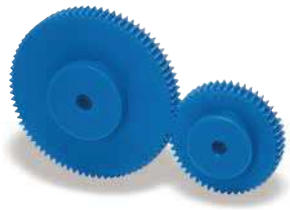
PS1-85 J BORE															
PS1-90 J BORE															
PS1-95 J BORE															
PS1-100 J BORE															

[Caution on J series]
① As available-on-request products, requires a lead-time for shipping within 2 working-days (excludes the day ordered), after placing an order. Please allow additional shipping time to get to your local distributor.
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 Keyways are made according to JIS B1301 standards, Js9 tolerance.
④ Certain products which would otherwise have a very long tapped hole are conterbored to reduce the length of the tap.
⑤ For products having a tapped hole, a set screw is included.
⑥ Since tapped holes of plastic products are easily broken, avoid too much tightening when fastening screws. For products which have a short tapped hole (Products marked with " ** " are the tap size), fasten with torques less than 0.12N・m for M4, and 0.38N・m for M5.

GCU-S Spur Gear Kit

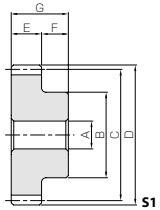
Installment : Parallel axes gears (Two-stage)
Gear Type : Spur Gears
Gears : 2 units of SS1.5-16
2 units of PS1.5-22
Gear Ratio : 1.89
Weight : Approx. 1kg

The Gear Kit contains two-stage spur gears and allows speed increases / reductions, and includes the most commonly used combinations of gears.



Specifications	
Precision grade	JIS grade N9 (JIS B1702-1: 1998) * JIS grade 5 (JIS B1702: 1976)
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC901
Heat treatment	—
Tooth hardness	(115 ~ 120HRR)
Face width (E)	15
Hub width (F)	10
Total length (G)	25
Screw offset (J)	5

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



S1

Catalog No.	No. of teeth	Shape	Bore A_{H7}	Hub dia. B	Pitch dia. C	Outside dia. D	Allowable torque (N-m) Bending strength	Allowable torque (kgf-m) Bending strength	Backlash (mm)	Weight (kg)
PS1.5-15	15	S1	8	18	22.5	25.5	1.39	0.14	0~0.38	0.0084
PS1.5-16	16			20	24	27	1.53	0.16		0.010
PS1.5-18	18			22	27	30	1.79	0.18		0.013
PS1.5-20	20			24	30	33	2.07	0.21		0.016
PS1.5-22	22			26	33	36	2.34	0.24		0.020
PS1.5-24	24			28	36	39	2.61	0.27		0.023
PS1.5-25	25			30	37.5	40.5	2.76	0.28		0.026
PS1.5-26	26			32	39	42	2.91	0.3		0.029
PS1.5-28	28			36	42	45	3.18	0.32		0.034
PS1.5-30	30			38	45	48	3.46	0.35		0.039
PS1.5-32	32			40	48	51	3.76	0.38		0.045
PS1.5-35	35			42	52.5	55.5	4.22	0.43		0.052
PS1.5-36	36			45	54	57	4.38	0.45		0.057
PS1.5-40	40		10	45	60	63	5.00	0.51		0.065
PS1.5-45	45			45	67.5	70.5	5.79	0.59		0.078
PS1.5-48	48			45	72	75	6.27	0.64	0~0.40	0.087
PS1.5-50	50			45	75	78	6.60	0.67		0.093
PS1.5-55	55			45	82.5	85.5	7.36	0.75		0.11
PS1.5-60	60			50	90	93	8.14	0.83		0.13
PS1.5-65	65		12	50	97.5	100.5	8.91	0.91		0.15
PS1.5-70	70			50	105	108	9.69	0.99		0.17
PS1.5-75	75			50	112.5	115.5	10.5	1.07		0.19
PS1.5-80	80			55	120	123	11.3	1.15		0.22
PS1.5-85	85			55	127.5	130.5	12.0	1.23	0~0.42	0.25
PS1.5-90	90			55	135	138	12.8	1.31		0.27
PS1.5-95	95			60	142.5	145.5	13.6	1.39		0.31
PS1.5-100	100			60	150	153	14.4	1.47		0.34

[Caution on Product Characteristics]
① Significant variations in temperature or humidity can cause dimensional changes in plastic gears (MC Nylon gears), including bore size (H8 when produced), tooth diameter, and backlash. Please see the section "Design of Plastic Gears" in separate technical reference book. (Page 101).
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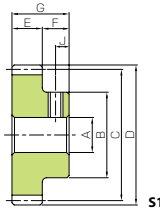
J Series



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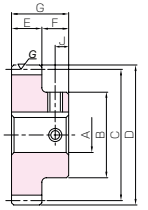

S1K

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

Bore H7	* The product shapes of J Series items are identified by background color.														
Keyway Js9	6	8	10	12	14	15	16	17	18	19	20	22	25	28	30
Screw size	—		4 × 1.8		5 × 2.3				6 × 2.8				8 × 3.3		
Catalog No.	M4	M5	M4						M5				M6		
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															
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PS1.5-95 J BORE															
PS1.5-100 J BORE															

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③ Keyways are made according to JIS B1301 standards, Js9 tolerance.
④ Certain products which would otherwise have a very long tapped hole are conterbored to reduce the length of the tap.
⑤ For products having a tapped hole, a set screw is included.
⑥ Since tapped holes of plastic products are easily broken, avoid too much tightening when fastening screws. For products which have a short tapped hole (Products marked with " ** " are the tap size), fasten with torques less than 0.12N・m for M4, and 0.38N・m for M5.

GCU-S Spur Gear Kit

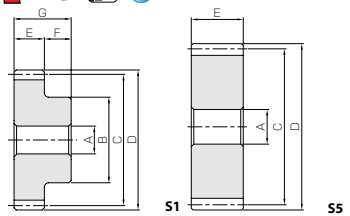
Installment : Parallel axes gears (Two-stage)
Gear Type : Spur Gears
Gears : 2 units of SS1.5-16
2 units of PS1.5-22
Gear Ratio : 1.89
Weight : Approx. 1kg

The Gear Kit contains two-stage spur gears and allows speed increases / reductions, and includes the most commonly used combinations of gears.

Plastic Spur Gears

Specifications	
Precision grade	JIS grade N9 (JIS B1702-1: 1998) * JIS grade 5 (JIS B1702: 1976)
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC901
Heat treatment	—
Tooth hardness	(115 ~ 120HRR)
Face width (E)	20
Hub width (F)	10 (Shape S1)
Total length (G)	30 (Shape S1)
Screw offset (J)	5 (Shape S1)

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



Catalog No.	No. of teeth	Shape	Bore A_{H7}	Hub dia. B	Pitch dia. C	Outside dia. D	Allowable torque (N-m) Bending strength	Allowable torque (kgf-m) Bending strength	Backlash (mm)	Weight (kg)
PS2-12	12	S1	10	18	24	28	2.25	0.23	0~0.42	0.011
PS2-13	13			20	26	30	2.59	0.26		0.013
PS2-14	14			20	28	32	2.96	0.30		0.015
PS2-15	15			24	30	34	3.29	0.34		0.019
PS2-16	16			26	32	36	3.63	0.37		0.022
PS2-18	18			30	36	40	4.24	0.43		0.029
PS2-20	20			32	40	44	4.91	0.50		0.036
PS2-22	22			35	44	48	5.55	0.57		0.044
PS2-24	24			38	48	52	6.19	0.63		0.052
PS2-25	25			40	50	54	6.54	0.67		0.057
PS2-26	26			42	52	56	6.90	0.70	0~0.44	0.063
PS2-28	28			45	56	60	7.54	0.77		0.073
PS2-30	30			50	60	64	8.20	0.84		0.086
PSA2-32	32	S5	12	—	64	68	8.91	0.91		0.075
PSA2-35	35				70	74	10.0	1.02		0.089
PSA2-36	36				72	76	10.4	1.06		0.094
PSA2-40	40				80	84	11.9	1.21		0.12
PSA2-45	45				90	94	13.7	1.40		0.15
PSA2-48	48				96	100	14.9	1.52		0.17
PSA2-50	50				100	104	15.7	1.60		0.18
PSA2-55	55				110	114	17.5	1.78	0~0.46	0.22
PSA2-60	60				120	124	19.3	1.97		0.26
PSA2-65	65				130	134	21.1	2.15		0.31
PSA2-70	70				140	144	23.0	2.34		0.36
PSA2-75	75				150	154	24.9	2.54		0.41
PSA2-80	80				160	164	26.7	2.72		0.47
PSA2-85	85				170	174	28.5	2.91		0.53
PSA2-90	90				180	184	30.4	3.10		0.59
PSA2-95	95				190	194	32.3	3.29		0.66
PSA2-100	100				200	204	34.2	3.48		0.73

[Caution on Product Characteristics]
① Significant variations in temperature or humidity can cause dimensional changes in plastic gears (MC Nylon gears), including bore size (H8 when produced), tooth diameter, and backlash. Please see the section "Design of Plastic Gears" in separate technical reference book. (Page 101).
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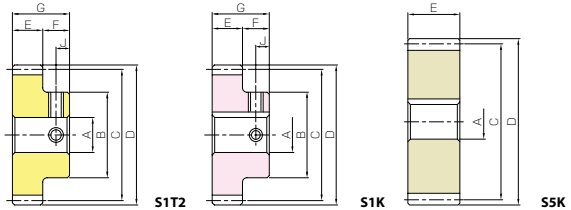
Plastic Spur Gears

J Series



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

Bore H7	* The product shapes of J Series items are identified by background color.																		
Keyway Js9	10	12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	45	50	
Screw size	4 × 1.8		5 × 2.3				6 × 2.8				8 × 3.3			10 × 3.3		12 × 3.3	14 × 3.8		
Catalog No.	M4						M5				M6			M8		—			
PS2-12 J BORE																			
PS2-13 J BORE																			
PS2-14 J BORE																			
PS2-15 J BORE																			
PS2-16 J BORE																			
PS2-18 J BORE																			
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PSA2-75 J BORE																			
PSA2-80 J BORE																			
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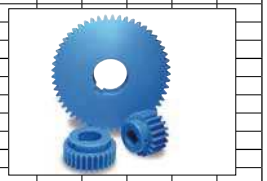
PSA2-90 J BORE																			
PSA2-95 J BORE																			
PSA2-100 J BORE																			



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⑥ Since tapped holes of plastic products are easily broken, avoid too much tightening when fastening screws. For products which have a short tapped hole (Products marked with " ** " are the tap size), fasten with torques less than 0.12N・m for M4, and 0.38N・m for M5.

Stainless Steel Hubs for PSA are now available!
Standardized sectional stainless steel hubs. It enhances a secure fastening to the shaft.

For details, please see Page 150.

■ How to attach gears to shafts

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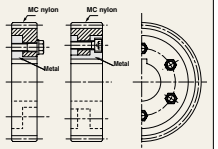
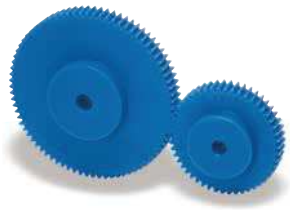


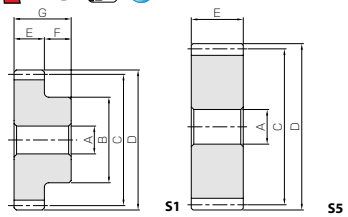
Fastening with a steel hub bolt

Plastic Spur Gears



Specifications	
Precision grade	JIS grade N9 (JIS B1702-1: 1998) * JIS grade 5 (JIS B1702: 1976)
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC901
Heat treatment	—
Tooth hardness	(115 ~ 120HRR)
Face width (E)	20
Hub width (F)	12 (Shape S1)
Total length (G)	37 (Shape S1)
Screw offset (J)	6 (Shape S1)

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



Catalog No.	No. of teeth	Shape	Bore A_{H7}	Hub dia. B	Pitch dia. C	Outside dia. D	Allowable torque (N-m) Bending strength	Allowable torque (kgf-m) Bending strength	Backlash (mm)	Weight (kg)
PS2.5-12	12	S1	10	23	30	35	4.39	0.45	0~0.44	0.023
PS2.5-13	13			25	32.5	37.5	5.06	0.52		0.028
PS2.5-14	14			25	35	40	5.77	0.59		0.031
PS2.5-15	15		12	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			44	55	60	10.8	1.11	0~0.46	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	—	80	85	17.4	1.77	0~0.48	0.15
PSA2.5-35	35				87.5	92.5	19.5	1.99		0.17
PSA2.5-36	36				90	95	20.3	2.07		0.18
PSA2.5-40	40				100	105	23.2	2.36		0.23
PSA2.5-45	45				112.5	117.5	26.8	2.73		0.29
PSA2.5-48	48				120	125	29.0	2.96		0.33
PSA2.5-50	50				125	130	30.6	3.12		0.36
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

[Caution on Product Characteristics]
① Significant variations in temperature or humidity can cause dimensional changes in plastic gears (MC Nylon gears), including bore size (H8 when produced), tooth diameter, and backlash. Please see the section "Design of Plastic Gears" in separate technical reference book. (Page 101).
② The allowable torques shown in the table are calculated values according to the assumed usage conditions. Please see Page 31 for more details.
③ Without lubrication, using plastic gears in pairs may generate heat and dilation. It is recommended to mate them with steel gears.
④ The backlash values shown in the table are the theoretical values for the backlash in the normal direction of a pair of identical gears in mesh.

[Caution on Secondary Operations]
①Please read "Caution on Performing Secondary Operations" (Page 32) when performing modifications and/or secondary operations for safety concerns. KHK Quick-Mod Gears, the KHK's system for quick modification of KHK stock gears is also available.
②Plastic gears are susceptible to the effects of temperature and moisture. Dimensional changes may occur while performing secondary operations and during post-machining operations.

* In regards to MC Nylon gears, other materials are available for plastic gears, including Ultra High Molecular Weight Polyethylene (UHMW-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. For details on quotations and orders please see Page 8.

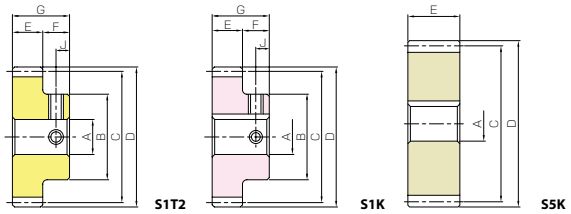
GCU-S Spur Gear Kit

Installment : Parallel axes gears (Two-stage)
Gear Type : Spur Gears
Gears : 2 units of SS1.5-16
2 units of PS1.5-22
Gear Ratio : 1.89
Weight : Approx. 1kg

The Gear Kit contains two-stage spur gears and allows speed increases / reductions, and includes the most commonly used combinations of gears.

J Series

Plastic Spur Gears



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

Bore H7	* The product shapes of J Series items are identified by background color.																	
Keyway Js9	10	12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	45	50
Screw size	4 × 1.8		5 × 2.3				6 × 2.8				8 × 3.3			10 × 3.3		12 × 3.3	14 × 3.8	
Catalog No.	M4						M5				M6			M8		—		
PS2.5-12 J BORE																		
PS2.5-13 J BORE																		
PS2.5-14 J BORE																		
PS2.5-15 J BORE																		
PS2.5-16 J BORE																		
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PSA2.5-32 J BORE																		
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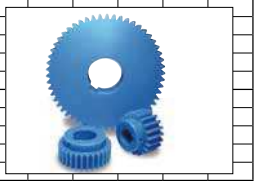
PSA2.5-55 J BORE																		
PSA2.5-60 J BORE																		



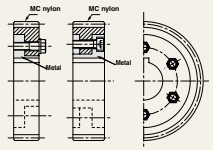
[Caution on J series]
① As available-on-request products, requires a lead-time for shipping within 2 working-days (excludes the day ordered), after placing an order. Please allow additional shipping time to get to your local distributor.
② Number of products we can process for one order is 1 to 20 units. For quantities of 21 or more pieces, we need to quote price and lead time.
③ Keyways are made according to JIS B1301 standards, Js9 tolerance.
④ Certain products which would otherwise have a very long tapped hole are conterbored to reduce the length of the tap.
⑤ For products having a tapped hole, a set screw is included.
⑥ Since tapped holes of plastic products are easily broken, avoid too much tightening when fastening screws. For products which have a short tapped hole (Products marked with " ** " are the tap size), fasten with torques less than 0.12N • m for M4, and 0.38N • m for M5.

■ 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. While looseness tends to occur in the conditions below, plastic gears are fastened by applying 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 below for various methods. For gears, which cannot be fasten with bolts due to their shape; it is recommended to use the method of fusion bonding with metal cores.



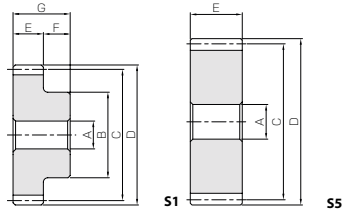
Fastening with a steel hub bolt

Technical information on gears is available on KHK Web Site.

Plastic Spur Gears

Specifications	
Precision grade	JIS grade N9 (JIS B1702-1: 1998) * JIS grade 5 (JIS B1702: 1976)
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC901
Heat treatment	—
Tooth hardness	(115 ~ 120HRR)
Face width (E)	30
Hub width (F)	15 (Shape S1)
Total length (G)	45 (Shape S1)
Screw offset (J)	7.5 (Shape S1)

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



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PS3-12	12	S1	12	28	36	42	7.58	0.77	0~0.52	0.040
PS3-13	13			30	39	45	8.74	0.89		0.048
PS3-14	14			32	42	48	9.97	1.02		0.056
PS3-15	15		14	36	45	51	11.1	1.13		0.065
PS3-16	16			38	48	54	12.3	1.25		0.075
PS3-18	18			40	54	60	14.3	1.46	0~0.54	0.094
PS3-20	20			50	60	66	16.6	1.69		0.12
PS3-22	22			54	66	72	18.7	1.91		0.15
PS3-24	24			58	72	78	20.9	2.13		0.18
PS3-25	25			60	75	81	22.1	2.25		0.19
PS3-26	26			65	78	84	23.3	2.37		0.22
PS3-28	28			70	84	90	25.5	2.60		0.25
PS3-30	30			75	90	96	27.7	2.82		0.29
PSA3-32	32	S5	18	—	96	102	30.1	3.07	0~0.56	0.25
PSA3-35	35				105	111	33.8	3.44		0.30
PSA3-36	36				108	114	35.1	3.57		0.32
PSA3-40	40				120	126	40.0	4.08		0.39
PSA3-45	45				135	141	46.3	4.72		0.50
PSA3-48	48				144	150	50.2	5.12		0.57
PSA3-50	50				150	156	52.8	5.39		0.61
PSA3-55	55				165	171	58.9	6.01		0.74
PSA3-60	60				180	186	65.1	6.64		0.89

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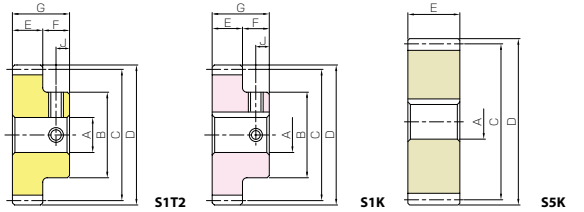

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Stainless Steel Hubs for PSA are now available!
Standardized sectional stainless steel hubs. It enhances a secure fastening to the shaft.

For details, please see Page 150.

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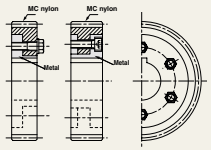

Fastening with a steel hub bolt