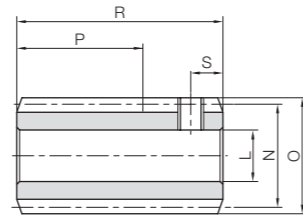




Specifications	
Precision grade	KHK W 001 grade 4
Reference section of gear	Normal plane
Gear teeth	Standard full depth
Normal pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating



W2

Catalog Number	Normal module	Number of Starts	Nominal lead angle	Direction of helix	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width (right)	Hub width (left)
						L _{H8}	M	N	O	P	Q	Q'
SW0.5-R1 SW0.5-R2	m0.5	1 2	2°36' 5°13'	R	W2	5	—	11	12	(10)	—	—
SW0.8-R1 SW0.8-R2	m0.8	1 2	3°17' 6°34'	R	W2	6	—	14	15.6	(18)	—	—

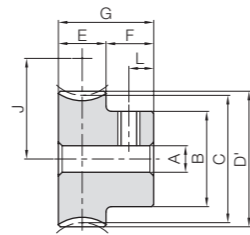
Total length	Socket head screw		Weight (kg)	Catalog Number
	R	S		
18	M3	3	0.010	SW0.5-R1 SW0.5-R2
30	M4	5	0.029	SW0.8-R1 SW0.8-R2

BG Module 0.5, 0.8
Worm Wheels

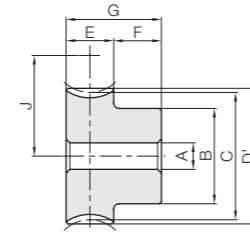
Bronze Worm Wheels



Specifications	
Precision grade	KHK W 002 grade 4
Reference section of gear	Normal plane
Gear teeth	Standard full depth
Normal pressure angle	20°
Material	CAC502 (old JIS PBC2)
Heat Treatment	—
Tooth hardness	—



HAT



HA



Catalog Number	Reduction ratio	Normal module	No. of teeth	No. of starts of mating worm	Lead angle	Direction of helix	Shape	Bore	Hub dia.	Pitch dia.	Throat dia.	Outside dia.	Face width
								A _{H7}	B	C	D	D'	E
BG0.5-20R1 BG0.5-20R2 BG0.5-30R1 BG0.5-30R2 BG0.5-40R1	20 10 30 15 40	m0.5	20 20 30 30 40	1 2 1 2 1	2°36' 5°13' 2°36' 5°13' 2°36'	R	HAT	4 4 4 4 5	9 9 12 12 15	10.01 10.04 15.02 15.06 20.02	—	11 11 16 16 21	5
BG0.5-50R1 BG0.5-60R1	50 60		50 60	1 1	2°36' 2°36'			5 5	20 25	25.03 30.03		26 31	

Catalog Number	Reduction ratio	Normal module	No. of teeth	No. of starts of mating worm	Lead angle	Direction of helix	Shape	Bore	Hub dia.	Pitch dia.	Throat dia.	Outside dia.	Face width
								A _{H7}	B	C	D	D'	E
BG0.8-20R1 BG0.8-20R2 BG0.8-30R1 BG0.8-30R2 BG0.8-40R1	20 10 30 15 40	m0.8	20 20 30 30 40	1 2 1 2 1	3°17' 6°34' 3°17' 6°34' 3°17'	R	HA	5 5 5 5 6	12 12 18 18 20	16.03 16.11 24.04 24.16 32.05	—	17.6 17.6 25.6 25.6 33.6	9
BG0.8-50R1 BG0.8-60R1	50 60		50 60	1 1	3°17' 3°17'			8 8	25 25	40.06 48.08		41.6 49.6	

NOTE 1: Allowable torque based on worm speed (rpm)

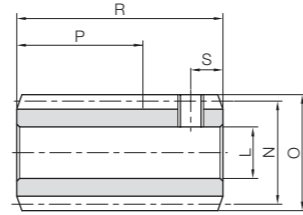
Hub width	Total length	Mounting distance	Socket head screw		Allowable torque (N·m) <small>NOTE 1</small>						Backlash (mm)	Weight (kg)	Catalog Number
			Size	L	30 _{rpm}	100 _{rpm}	300 _{rpm}	600 _{rpm}	900 _{rpm}	1200 _{rpm}			
7	12	10.5	M3	3.5	0.27	0.23	0.19	0.15	0.14	0.13	0~0.16	0.0061	BG0.5-20R1 BG0.5-20R2 BG0.5-30R1 BG0.5-30R2 BG0.5-40R1
			M3		0.28	0.23	0.18	0.15	0.13	0.12		0.0061	
			M3		0.58	0.50	0.41	0.34	0.30	0.28		0.014	
			M3		0.59	0.49	0.39	0.32	0.29	0.26		0.014	
			M4		0.99	0.85	0.71	0.60	0.54	0.50		0.023	
			M4		1.50	1.28	1.08	0.92	0.83	0.77		0.039	
7	12	18	M4	3.5	1.50	1.28	1.08	0.92	0.83	0.77	0~0.16	0.039	BG0.5-50R1 BG0.5-60R1
			M4		2.10	1.80	1.52	1.31	1.19	1.09		0.059	
			M4		2.10	1.80	1.52	1.31	1.19	1.09		0.059	

NOTE 1: Allowable torque based on worm speed (rpm)

Hub width	Total length	Mounting distance	Allowable torque (N·m) <small>NOTE 1</small>						Backlash (mm)	Weight (kg)	Catalog Number
			30 _{rpm}	100 _{rpm}	300 _{rpm}	600 _{rpm}	900 _{rpm}	1200 _{rpm}			
9	18	15	1.05	0.88	0.71	0.58	0.52	0.48	0.04~0.22	0.023	BG0.8-20R1 BG0.8-20R2 BG0.8-30R1 BG0.8-30R2 BG0.8-40R1
			1.06	0.86	0.66	0.54	0.48	0.44		0.023	
			1.23	1.89	1.53	1.29	1.15	1.06		0.055	
			1.24	1.87	1.46	1.20	1.07	0.98		0.055	
			1.24	1.87	1.46	1.20	1.07	0.98		0.055	
			3.81	3.24	2.67	2.26	2.02	1.87		0.087	
9	18	27	5.76	4.90	4.07	3.47	3.13	2.90	0.04~0.22	0.13	BG0.8-50R1 BG0.8-60R1
			8.06	6.88	5.73	4.90	4.46	4.12		0.18	
			8.06	6.88	5.73	4.90	4.46	4.12		0.18	



Specifications	
Precision grade	KHK W 001 grade 4
Reference section of gear	Normal plane
Gear teeth	Standard full depth
Normal pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating

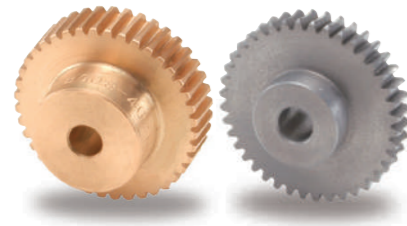


W2

Catalog Number	Normal module	Number of Starts	Nominal lead angle	Direction of helix	Shape	Bore		Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width (right)	Hub width (left)
						L _{H7(H8)}	M						
SW1-R1 SW1-R2	m1	1 2	3°35' 7°11'	R	W2	6 ^{H8}	—	—	16	18	(20)	—	—
SW1.25-R1 SW1.25-R2	m1.25	1 2	3°25' 6°50'	R	W2	8	—	—	21	23.5	(25)	—	—

Total length R	Socket head screw		Weight (kg)	Catalog Number
	Size	S		
32	M4	5	0.043	SW1-R1 SW1-R2
37	M5	5	0.085	SW1.25-R1 SW1.25-R2

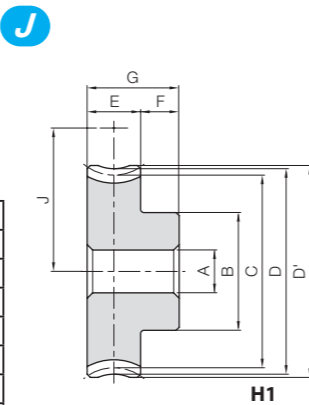
BG/CG Module 1, 1.25
Worm Wheels



Specifications	
Catalog Number	BG CG
Precision grade	KHK W 002 grade 4*
Reference section of gear	Normal plane
Gear teeth	Standard full depth
Normal pressure angle	20°
Material	CAC502 (old JIS PBC2) FC200**
Heat treatment	—
Tooth hardness	—

* The precision grade of J Series products is equivalent to the value shown in the table.
** FC200's tensile strength (200N/mm²) is derived from test specimens and differs according to the product shape.

A _{H7}	Bore
B	Hub dia.
C	Pitch dia.
D	Throat dia.
D'	Outside dia.
E	Face width
F	Hub width
G	Total length
J	Mounting distance



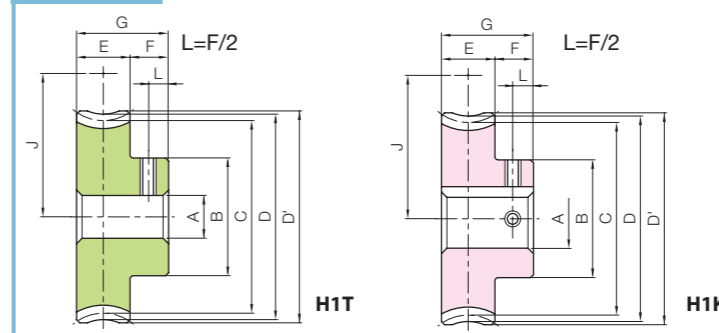
H1

NOTE 1: Allowable torque based on worm speed (rpm)

Catalog Number	Reduction ratio	No. of teeth	No. of starts of mating worm	Lead angle helix direction	Shape	A _{H7}	B	C	D	D'	E	F	G	J	Allowable torque (N·m) NOTE 1						Backlash (mm)	Weight (kg)	
															30 rpm	100 rpm	300 rpm	600 rpm	900 rpm	1200 rpm			
BG1-20R1	20	20	1	3°35'	R	H1	6	16	20.05	22	23			18	1.89	1.58	1.26	1.04	0.92	0.85	0.06~0.24	0.043	
BG1-20R2	10	20	2	7°11'			6	16	20.16	22	23				18	1.90	1.54	1.18	0.97	0.85			0.78
BG1-30R1	30	30	1	3°35'			6	20	30.07	32	33	10	10	20	23	4.00	3.38	2.74	2.29	2.05			1.87
BG1-30R2	15	30	2	7°11'			6	20	30.24	32	33				23	4.03	3.35	2.62	2.14	1.91			1.74
BG1-40R1	40	40	1	3°35'			8	26	40.08	42	43				28	6.85	5.79	4.76	4.03	3.61			3.31
BG1-50R1	50	50	1	3°35'	8	30	50.10	52	53				33	10.3	8.76	7.27	6.18	5.58	5.14				
BG1.25-20R1	20	20	1	3°25'	R	H1	6	20	25.04	27.5	28.75			23	3.19	2.65	2.10	1.72	1.53	1.40	0.08~0.26	0.070	
BG1.25-20R2	10	20	2	6°50'			6	20	25.18	27.5	28.75				23	3.19	2.58	1.96	1.60	1.40			1.27
BG1.25-30R1	30	30	1	3°25'			6	25	37.57	40	41.25	11	9	20	29.25	6.75	5.67	4.56	3.81	3.40			3.09
BG1.25-30R2	15	30	2	6°50'			6	25	37.77	40	41.25				29.25	6.77	5.60	4.33	3.54	3.16			2.85
BG1.25-40R1	40	40	1	3°25'			8	30	50.09	52.5	53.75				35.5	11.5	9.71	7.92	6.70	5.98			5.47
BG1.25-50R1	50	50	1	3°25'	8	40	62.61	65	66.25				41.75	17.4	14.7	12.1	10.3	9.25	8.49				
CG1-60R1	60	60			R	H1	10	30	60.12	62	63			38	8.69	7.39	6.14	5.24	4.78	4.39	0.06~0.24	0.25	
CG1-80R1	80	80	1	3°35'			10	35	80.16	82	83	10	10	20	48	14.7	12.6	10.5	9.11	8.30			7.72
CG1-100R1	100	100					10	40	100.20	102	103				58	21.9	19.0	16.0	13.9	12.7			11.9
CG1-120R1	120	120					10	40	120.24	122	123				68	30.5	26.7	22.5	19.6	18.0			16.7

Bronze Worm Wheels & Gray Iron Worm Wheels

J Series



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

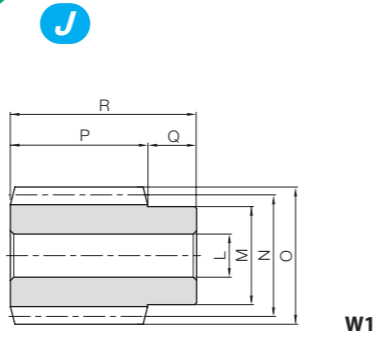
Bore H7	* The product shapes of J Series items are identified by background color.											
	6	8	10	12	14	15	16	17	18	19	20	22
Keyway J _{S9}	—											
Screw size	4×1.8			5×2.3					6×2.8			
Catalog Number	M4	M5	M4					M5				
BG1-20R1 J BORE	H1T											
BG1-20R2 J BORE	H1T											
BG1-30R1 J BORE	H1T	H1T										
BG1-30R2 J BORE	H1T	H1T										
BG1-40R1 J BORE		H1T	H1K	H1K								
BG1-50R1 J BORE		H1T	H1K	H1K	H1K	H1K	H1K	H1K				
BG1.25-20R1 J BORE	H1T	H1T										
BG1.25-20R2 J BORE	H1T	H1T										
BG1.25-30R1 J BORE	H1T	H1T	H1K	H1K								
BG1.25-30R2 J BORE	H1T	H1T	H1K	H1K								
BG1.25-40R1 J BORE		H1T	H1K	H1K	H1K	H1K	H1K	H1K				
BG1.25-50R1 J BORE		H1T	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K
CG1-60R1 J BORE			H1K	H1K	H1K	H1K	H1K	H1K				
CG1-80R1 J BORE			H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K
CG1-100R1 J BORE			H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K
CG1-120R1 J BORE			H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K





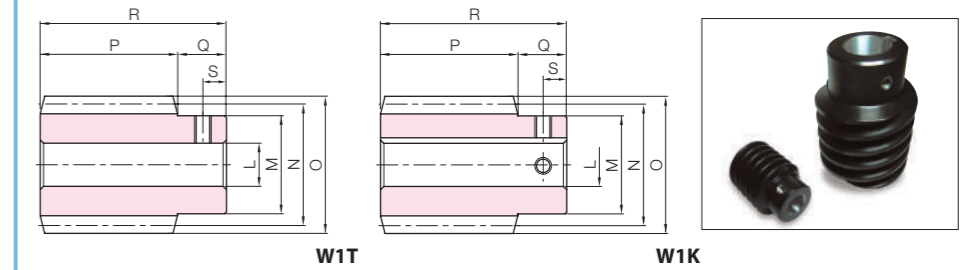
Specifications	
Precision grade	KHK W 001 grade 4*
Reference section of gear	Normal plane
Gear teeth	Standard full depth
Normal pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating

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



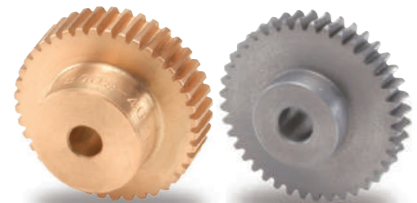
Catalog Number ● : J Series (Available-on-request)	Normal module	Number of Starts	Nominal lead angle	Direction of helix	Shape	Bore		Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width (right)	Hub width (left)
						L _{H7}	M						
SW1.5-R1 ● SW1.5-R1J8 ● SW1.5-R1J10	m1.5	1	3°26'	R	W1	8	20	25	28	30	10	—	
W1T					8								
SW1.5-R2 ● SW1.5-R2J8 ● SW1.5-R2J10	m1.5	2	6°54'	R	W1	8	20	25	28	30	10	—	
W1T					8								
					W1K	10							

J Series



Total length R	Keyway Width × Depth	Socket head screw		Weight (kg)	Catalog Number ● : J Series (Available-on-request)
		Size	S		
40	—	—	—	0.12	SW1.5-R1
		M5	5	0.12	● SW1.5-R1J8
	4 x 1.8	M4	5	0.11	● SW1.5-R1J10
		—	—	0.12	SW1.5-R2
	—	M5	5	0.12	● SW1.5-R2J8
	4 x 1.8	M4	5	0.11	● SW1.5-R2J10

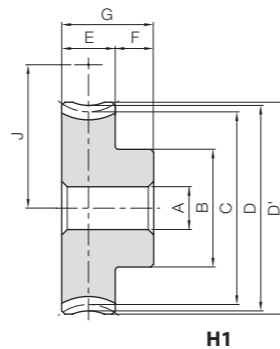
BG/CG Module 1.5
Worm Wheels



Specifications	
Catalog Number	BG CG
Precision grade	KHK W 002 grade 4*
Reference section of gear	Normal plane
Gear teeth	Standard full depth
Normal pressure angle	20°
Material	CAC502 (old JIS PBC2) FC200**
Heat treatment	—
Tooth hardness	—

* The precision grade of J Series products is equivalent to the value shown in the table.
** FC200's tensile strength (200N/mm²) is derived from test specimens and differs according to the product shape.

A _{H7}	Bore
B	Hub dia.
C	Pitch dia.
D	Throat dia.
D'	Outside dia.
E	Face width
F	Hub width
G	Total length
J	Mounting distance

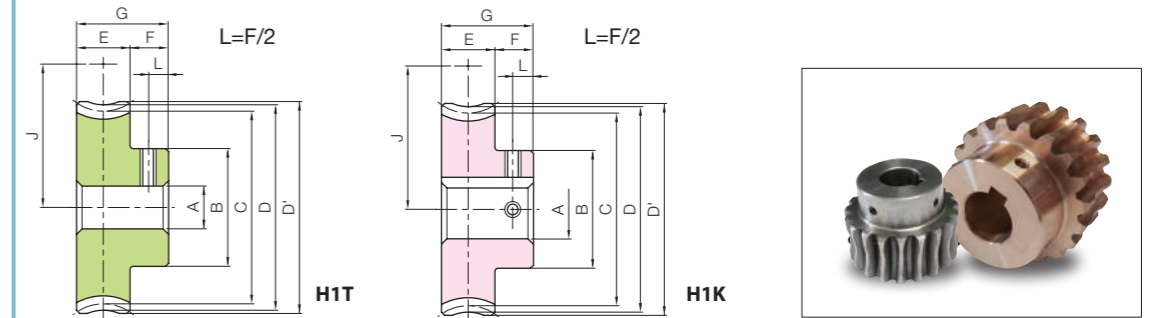


Catalog Number	Reduction ratio	No. of teeth	No. of starts of mating worm	Lead angle helix direction	Shape	A _{H7}	B	C	D	D'	E	F	G	J	Allowable torque (N·m) NOTE 1							Backlash (mm)	Weight (kg)
															30 rpm	100 rpm	300 rpm	600 rpm	900 rpm	1200 rpm			
BG1.5-20R1	20	20	1	3°26'	R	H1	8	22	30.05	33	34.5	12	22	27.5	4.76	3.96	3.10	2.56	2.27	2.06	0.08~0.26	0.10	
BG1.5-20R2	10	20	2	6°54'			8	22	30.22	33	34.5	12	22	27.5	4.75	3.85	2.89	2.38	2.08	1.87			
BG1.5-30R1	30	30	1	3°26'			10	30	45.08	48	49.5	12	22	35	10.1	8.47	6.72	5.67	5.03	4.55			
BG1.5-30R2	15	30	2	6°54'			10	30	45.33	48	49.5	12	22	35	10.1	8.37	6.40	5.26	4.67	4.20			
BG1.5-40R1	40	40	1	3°26'			12	30	60.11	63	64.5	12	22	42.5	17.2	14.5	11.7	9.96	8.86	8.04			
BG1.5-50R1	50	50	1	3°26'			12	40	75.13	78	79.5	14	24	50	30.4	25.6	20.8	17.8	16.0	14.6			
CG1.5-30R1	30	30			R	H1	10	30	45.08	48	49.5	12	22	35	6.04	5.08	4.03	3.40	3.02	2.73	0.08~0.26	0.18	
CG1.5-40R1	40	40					12	30	60.11	63	64.5	12	22	42.5	10.3	8.71	7.01	5.98	5.31	4.83			
CG1.5-50R1	50	50					12	40	75.13	78	79.5	14	24	50	18.2	15.4	12.5	10.7	9.59	8.74			
CG1.5-60R1	60	60					12	40	90.16	93	94.5	14	24	57.5	25.5	21.6	17.6	15.1	13.7	12.4			

NOTE 1: Allowable torque based on worm speed (rpm)

Bronze Worm Wheels & Gray Iron Worm Wheels

J Series



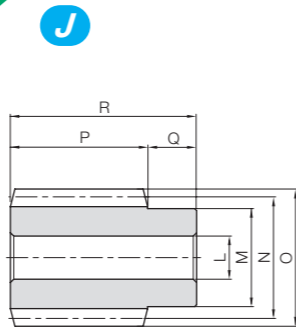
To order J Series products, please specify: **Catalog No. + J + BORE.**

Bore H7	* The product shapes of J Series items are identified by background color.																																									
	8	10	12	14	15	16	17	18	19	20	22	25	28	30																												
Keyway Js9	8			10			12			14			15			16			17			18			19			20			22			25			28			30		
Screw size	—					4x1.8					5x2.3					6x2.8					8x3.3																					
Catalog Number	M5					M4					M5					M6																										
BG1.5-20R1 J BORE	H1T	H1K																																								
BG1.5-20R2 J BORE	H1T	H1K																																								
BG1.5-30R1 J BORE		H1K	H1K	H1K	H1K	H1K	H1K																																			
BG1.5-30R2 J BORE		H1K	H1K	H1K	H1K	H1K	H1K																																			
BG1.5-40R1 J BORE			H1K	H1K	H1K	H1K	H1K																																			
BG1.5-50R1 J BORE				H1K	H1K	H1K	H1K	H1K	H1K	H1K																																
CG1.5-30R1 J BORE		H1K	H1K	H1K	H1K	H1K	H1K																																			
CG1.5-40R1 J BORE			H1K	H1K	H1K	H1K	H1K																																			
CG1.5-50R1 J BORE				H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K																															
CG1.5-60R1 J BORE				H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K																															



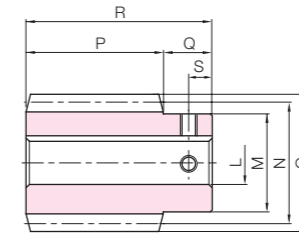
Specifications	
Precision grade	KHK W 001 grade 4*
Reference section of gear	Normal plane
Gear teeth	Standard full depth
Normal pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating

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



W1

J Series

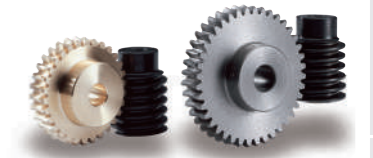


W1K

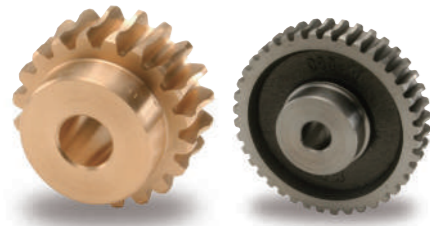


Catalog Number ● : J Series (Available-on-request)	Normal module	Number of Starts	Nominal lead angle	Direction of helix	Shape	Bore		Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width (right)		Hub width (left)	
						LH7	M					N	O	P	Q
SW2.5-R1 ● SW2.5-R1J15 ● SW2.5-R1J16 ● SW2.5-R1J17	m2.5	1	3°52'	R	W1	15	30	37	42	45	18	—	—	—	—
W1K					15										
W1K					16										
W1K					17										
SW2.5-R2 ● SW2.5-R2J15 ● SW2.5-R2J16 ● SW2.5-R2J17		2	7°46'	R	W1	15									
W1K					15										
W1K					16										
W1K					17										
SW2.5-L1 ● SW2.5-L1J15 ● SW2.5-L1J16 ● SW2.5-L1J17	1	3°52'	L	W1	15										
W1K				15											
W1K				16											
W1K				17											
SW2.5-L2 ● SW2.5-L2J15 ● SW2.5-L2J16 ● SW2.5-L2J17	2	7°46'	L	W1	15										
W1K				15											
W1K				16											
W1K				17											

Total length R	Keyway Width × Depth	Socket head screw Size	S	Weight (kg)	Catalog Number ● : J Series (Available-on-request)		
					Width × Depth	Size	
63	—	—	—	0.39	SW2.5-R1		
					● SW2.5-R1J15		
					● SW2.5-R1J16		
					● SW2.5-R1J17		
	5 × 2.3	M4	9	9	0.39	SW2.5-R2	
						● SW2.5-R2J15	
						● SW2.5-R2J16	
						● SW2.5-R2J17	
	5 × 2.3	M4	9	9	0.37	SW2.5-L1	
						● SW2.5-L1J15	
						● SW2.5-L1J16	
						● SW2.5-L1J17	
5 × 2.3	M4	9	9	0.36	SW2.5-L2		
					● SW2.5-L2J15		
					● SW2.5-L2J16		
					● SW2.5-L2J17		

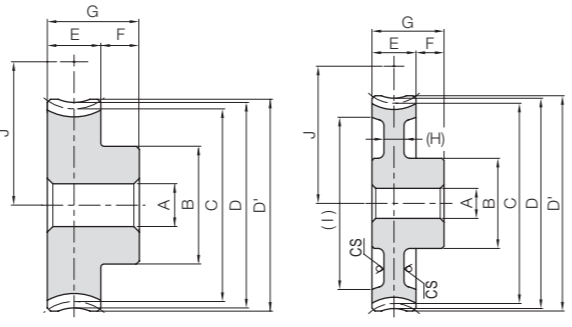


BG/CG Module 2.5
Worm Wheels



Specifications	
Catalog Number	BG CG
Precision grade	KHK W 002 grade 4*
Reference section of gear	Normal plane
Gear teeth	Standard full depth
Normal pressure angle	20°
Material	CAC502 (old JIS PBC2) FC200*
Heat treatment	—
Tooth hardness	—

* The precision grade of J Series products is equivalent to the value shown in the table.
** FC200's tensile strength (200N/mm²) is derived from test specimens and differs according to the product shape.



H1

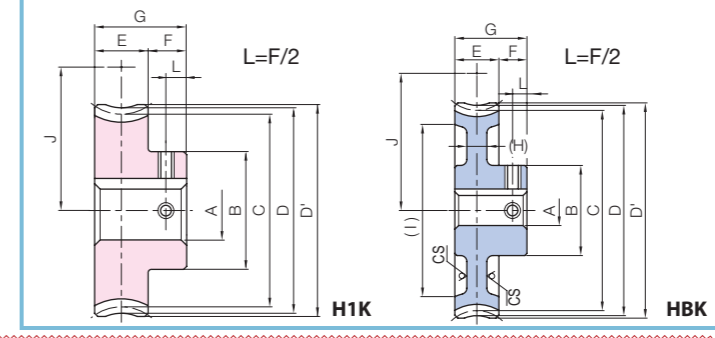
HB

** CS has a forged finish surface.

Catalog Number	Reduction ratio	No. of teeth	No. of starts of mating worm	Lead angle helix direction	Shape	AH7	B	C	D	D'	E	F	G	(H)	(I)	J	Allowable torque (N·m) NOTE 1						Backlash (mm)	Weight (kg)
																	30 rpm	100 rpm	300 rpm	600 rpm	900 rpm	1200 rpm		
																	30 rpm	100 rpm	300 rpm	600 rpm	900 rpm	1200 rpm		
BG2.5-20R1	20	10	1	3°52'	R	12	35	50.11	55	57.5	22	14	36	—	—	43.5	21.5	17.7	13.8	11.4	9.94	9.07	0.13~0.31	0.49
BG2.5-20R2	20	10	2	7°46'	H1	12	35	50.46	55	57.5	22	14	36	—	—	43.5	21.5	17.3	13.0	10.6	9.14	8.27	0.13~0.31	0.49
BG2.5-20L1	20	10	1	3°52'	L	12	35	50.11	55	57.5	22	14	36	—	—	43.5	21.5	17.7	13.8	11.4	9.94	9.07	0.13~0.31	0.49
BG2.5-20L2	20	10	2	7°46'	L	12	35	50.46	55	57.5	22	14	36	—	—	43.5	21.5	17.3	13.0	10.6	9.14	8.27	0.13~0.31	0.49
CG2.5-20R1	20	20	1	3°52'	R	12	35	50.11	55	57.5	22	14	36	—	—	43.5	12.9	10.6	8.30	6.83	5.97	5.44	0.13~0.31	0.40
CG2.5-20R2	20	20	2	7°46'	H1	12	35	50.46	55	57.5	22	14	36	—	—	43.5	12.9	10.4	7.78	6.36	5.49	4.96	0.13~0.31	0.40
CG2.5-30R1	30	30	1	3°52'	R	12	40	75.17	80	82.5	22	14	36	—	—	43.5	56	27.3	22.8	18.0	15.1	13.2	0.13~0.31	0.82
CG2.5-30R2	30	30	2	7°46'	H1	12	40	75.68	80	82.5	22	14	36	—	—	43.5	56	27.5	22.5	17.2	14.1	12.3	0.13~0.31	0.82
CG2.5-40R1	40	40	1	3°52'	R	15	45	100.23	105	107.5	22	14	36	—	—	68.5	46.7	39.0	31.3	26.5	23.3	21.2	0.13~0.31	1.39
CG2.5-50R1	50	50	1	3°52'	HB	15	50	125.29	130	132.5	22	14	36	(9)	(110)	81	70.6	59.0	47.8	40.7	36.1	33.0	0.13~0.31	1.54
CG2.5-60R1	60	60	1	3°52'	HB	15	55	150.34	155	157.5	22	14	36	(9)	(136)	93.5	98.8	82.9	67.3	57.6	51.5	47.0	0.13~0.31	2.02
CG2.5-20L1	20	20	1	3°52'	L	12	35	50.11	55	57.5	22	14	36	—	—	43.5	12.9	10.6	8.30	6.83	5.97	5.44	0.13~0.31	0.40
CG2.5-20L2	20	20	2	7°46'	L	12	35	50.46	55	57.5	22	14	36	—	—	43.5	12.9	10.4	7.78	6.36	5.49	4.96	0.13~0.31	0.40
CG2.5-40L1	40	40	1	3°52'	L	15	45	100.23	105	107.5	22	14	36	—	—	68.5	46.7	39.0	31.3	26.5	23.3	21.2	0.13~0.31	1.39

NOTE 1: Allowable torque based on worm speed (rpm)

J Series



H1K

HBK



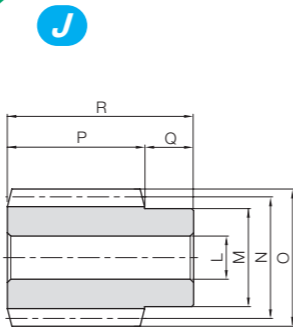
Bronze Worm Wheels & Gray Iron Worm Wheels

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.															
	12	14	15	16	17	18	19	20	22	25	28	30	32	35		
Keyway Js9	12	14	15	16	17	18	19	20	22	25	28	30	32	35		
Screw size	4x1.8	5x2.3					6x2.8				8x3.3		10x3.3			
Catalog Number	M4					M5				M6		M8				
BG2.5-20R1 J BORE	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K								
BG2.5-20R2 J BORE	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K								
BG2.5-20L1 J BORE	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K								
BG2.5-20L2 J BORE	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K								
CG2.5-20R1 J BORE	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K								
CG2.5-20R2 J BORE	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K								
CG2.5-30R1 J BORE	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K						
CG2.5-30R2 J BORE	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K						
CG2.5-40R1 J BORE			H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K					
CG2.5-50R1 J BORE			HBK	HBK	HBK	HBK	HBK	HBK	HBK	HBK	HBK	HBK	HBK	HBK		
CG2.5-60R1 J BORE			HBK	HBK	HBK	HBK	HBK	HBK	HBK	HBK	HBK	HBK	HBK	HBK		
CG2.5-20L1 J BORE	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K								
CG2.5-20L2 J BORE	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K								
CG2.5-40L1 J BORE			H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K	H1K					

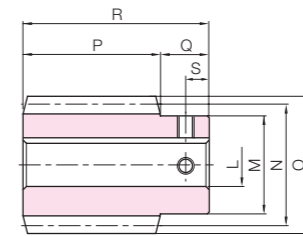


Specifications	
Precision grade	KHK W 001 grade 4*
Reference section of gear	Normal plane
Gear teeth	Standard full depth
Normal pressure angle	14°30'
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating



W1

J Series



W1K



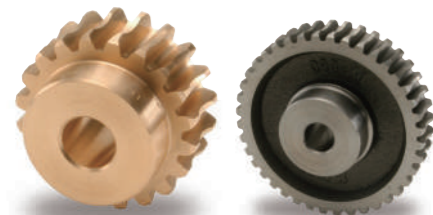
* The precision grade of J Series products is equivalent to the value shown in the table.

Catalog Number ● : J Series (Available-on-request)	Normal module	Number of Starts	Nominal lead angle	Direction of helix	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width (right)	Hub width (left)
						LH7	M	N	O	P	Q	Q'
SW3-R1 ● SW3-R1J17 ● SW3-R1J18 ● SW3-R1J19 ● SW3-R1J20	m3	1	3°55'	R	W1	16	35	44	50	50	20	—
					W1K	17						
					W1K	18						
					W1K	19						
SW3-R2 ● SW3-R2J17 ● SW3-R2J18 ● SW3-R2J19 ● SW3-R2J20	m3	2	7°50'	R	W1	16	35	44	50	50	20	—
					W1K	17						
					W1K	18						
					W1K	19						
SW3-L1 ● SW3-L1J17 ● SW3-L1J18 ● SW3-L1J19 ● SW3-L1J20	m3	1	3°55'	L	W1	16	35	44	50	50	20	—
					W1K	17						
					W1K	18						
					W1K	19						
SW3-L2 ● SW3-L2J17 ● SW3-L2J18 ● SW3-L2J19 ● SW3-L2J20	m3	2	7°50'	L	W1	16	35	44	50	50	20	—
					W1K	17						
					W1K	18						
					W1K	19						

Total length R	Keyway Width × Depth	Socket head screw		Weight (kg)	Catalog Number ● : J Series (Available-on-request)
		Size	S		
70	5 × 2.3	M4	10	0.64	SW3-R1
				0.62	● SW3-R1J17
				0.60	● SW3-R1J18
				0.58	● SW3-R1J19
	6 × 2.8	M5	10	0.56	● SW3-R1J20
				0.64	SW3-R2
				0.62	● SW3-R2J17
				0.60	● SW3-R2J18
	6 × 2.8	M5	10	0.58	● SW3-R2J19
				0.56	● SW3-R2J20
				0.64	SW3-L1
				0.62	● SW3-L1J17
6 × 2.8	M5	10	0.60	● SW3-L1J18	
			0.58	● SW3-L1J19	
			0.56	● SW3-L1J20	
			0.64	SW3-L2	
6 × 2.8	M5	10	0.62	● SW3-L2J17	
			0.60	● SW3-L2J18	
			0.58	● SW3-L2J19	
			0.56	● SW3-L2J20	

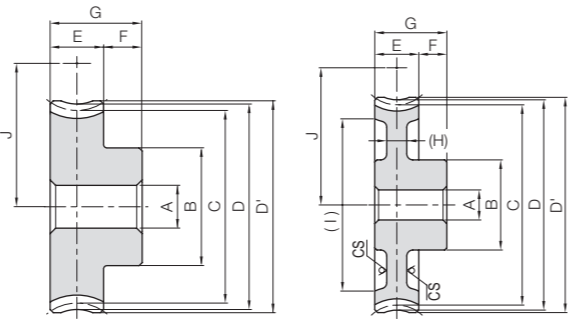


BG/CG Module 3
Worm Wheels



Specifications	
Catalog Number	BG CG
Precision grade	KHK W 002 grade 4*
Reference section of gear	Normal plane
Gear teeth	Standard full depth
Normal pressure angle	14°30'
Material	CAC502 (old JIS PBC2) FC200**
Heat treatment	—
Tooth hardness	—

AH7	Bore
B	Hub dia.
C	Pitch dia.
D	Throat dia.
D'	Outside dia.
E	Face width
F	Hub width
G	Total length
(H)	Web thickness
(I)	Web O.D.
J	Mounting distance



H1

HB

** CS has a forged finish surface.

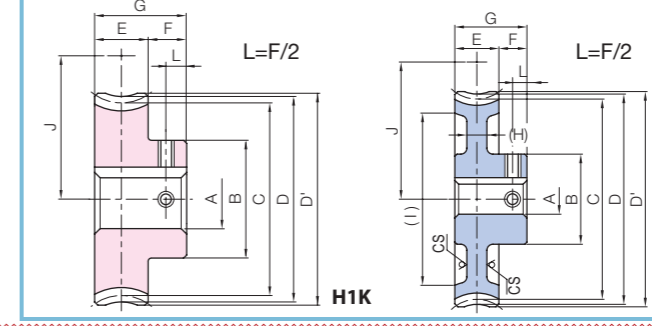
* The precision grade of J Series products is equivalent to the value shown in the table.
** FC200's tensile strength (200N/mm²) is derived from test specimens and differs according to the product shape.

NOTE 1: Allowable torque based on worm speed (rpm)

Catalog Number	Reduction ratio	No. of teeth	No. of starts of mating worm	Lead angle helix direction	Shape	AH7	B	C	D	D'	E	F	G	(H)	(I)	J	Allowable torque (N·m) NOTE 1						Backlash (mm)	Weight (kg)						
																	30 rpm								100 rpm					
																	30 rpm	100 rpm	300 rpm	600 rpm	900 rpm	1200 rpm			30 rpm	100 rpm	300 rpm	600 rpm	900 rpm	1200 rpm
BG3-20R1	20	10	1	3°55'	R	20	50	60.14	66	69	28	15	43	—	—	52	36.8	30.1	23.5	19.1	16.7	15.2	0.15~0.33	0.89						
BG3-20R2	20	10	2	7°50'	R	20	50	60.57	66	69	28	15	43	—	—	52	37.0	29.5	22.1	17.9	15.4	14.0								
BG3-20L1	20	10	1	3°55'	L	20	50	60.14	66	69	28	15	43	—	—	52	36.8	30.1	23.5	19.1	16.7	15.2	0.15~0.33	0.89						
BG3-20L2	20	10	2	7°50'	L	20	50	60.57	66	69	28	15	43	—	—	52	37.0	29.5	22.1	17.9	15.4	14.0								
CG3-20R1	20	20	1	3°55'	R	20	50	60.14	66	69	28	15	43	—	—	52	22.1	18.1	14.1	11.5	10.0	0.15~0.33	0.73							
CG3-20R2	20	20	2	7°50'	R	20	50	60.57	66	69	28	15	43	—	—	52	22.2	17.7	13.3	10.7	9.24									
CG3-30R1	30	30	1	3°55'	R	20	50	90.21	96	99	30	45	(9)	(107)	(138)	82	46.6	38.7	30.6	25.4	22.2	0.15~0.33	1.50							
CG3-30R2	30	30	2	7°50'	R	20	50	90.85	96	99	30	45	(9)	(138)	(166)	97	47.2	38.5	29.3	23.7	20.8									
CG3-40R1	40	40	1	3°55'	R	20	50	120.28	126	129	30	45	(9)	(107)	(138)	82	79.8	66.3	53.2	44.6	39.1	0.15~0.33	1.93							
CG3-50R1	50	50	1	3°55'	R	20	50	150.35	156	159	30	45	(9)	(138)	(166)	97	121	100	81.1	68.4	60.5									
CG3-60R1	60	60	1	3°55'	R	20	50	180.42	186	189	30	45	(9)	(138)	(166)	112	169	141	114	96.7	86.3	0.15~0.33	3.58							
CG3-20L1	20	20	1	3°55'	L	20	50	60.14	66	69	28	43	—	—	52	22.1	18.1	14.1	11.5	10.0										
CG3-20L2	20	20	2	7°50'	L	20	50	60.57	66	69	28	43	—	—	52	22.2	17.7	13.3	10.7	9.24										
CG3-30L1	30	30	1	3°55'	L	20	50	90.21	96	99	30	45	—	—	52	22.2	17.7	13.3	10.7	9.24										
CG3-50L1	50	50	1	3°55'	L	20	50	150.35	156	159	30	45	(9)	(138)	(166)	97	121	100	81.1	68.4	60.5	0.15~0.33	2.67							
CG3-60L1	60	60	1	3°55'	L	20	50	180.42	186	189	30	45	(9)	(138)	(166)	112	169	141	114	96.7	86.3									

J Series

Bronze Worm Wheels & Gray Iron Worm Wheels



H1K

HBK

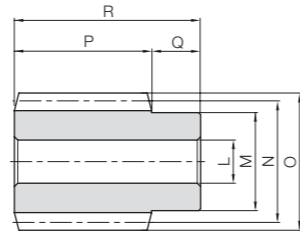


To order J Series products, please specify: **Catalog No. + J + BORE.**

Bore H7	* The product shapes of J Series items are identified by background color.							
	20	22	25	28	30	32	35	40
Keyway JS9	20	22	25	28	30	32	35	40
Screw size	6×2.8		8×3.3			10×3.3		12×3.3
Catalog Number	M5		M6			M8		
BG3-20R1 J BORE	H1K	H1K	H1K	H1K	H1K			
BG3-20R2 J BORE	H1K	H1K	H1K	H1K	H1K			
BG3-20L1 J BORE	H1K	H1K	H1K	H1K	H1K			
BG3-20L2 J BORE	H1K	H1K	H1K	H1K	H1K			
CG3-20R1 J BORE	H1K	H1K	H1K	H1K	H1K			
CG3-20R2 J BORE	H1K	H1K	H1K	H1K	H1K			
CG3-30R1 J BORE	H1K	H1K	H1K	H1K	H1K	H1K		
CG3-30R2 J BORE	H1K	H1K	H1K	H1K	H1K	H1K		
CG3-40R1 J BORE	HBK	HBK	HBK	HBK	HBK	HBK		
CG3-50R1 J BORE	HBK	HBK	HBK	HBK	HBK	HBK	HBK	
CG3-60R1 J BORE	HBK	HBK	HBK	HBK	HBK	HBK	HBK	HBK
CG3-20L1 J BORE	H1K	H1K	H1K	H1K	H1K			
CG3-20L2 J BORE	H1K	H1K	H1K	H1K	H1K			
CG3-30L1 J BORE	H1K	H1K	H1K	H1K	H1K	H1K		
CG3-50L1 J BORE	HBK	HBK	HBK	HBK	HBK	HBK	HBK	
CG3-60L1 J BORE	HBK	HBK	HBK	HBK	HBK	HBK	HBK	HBK



Specifications	
Precision grade	KHK W 001 grade 4
Reference section of gear	Normal plane
Gear teeth	Standard full depth
Normal pressure angle	14°30'
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating



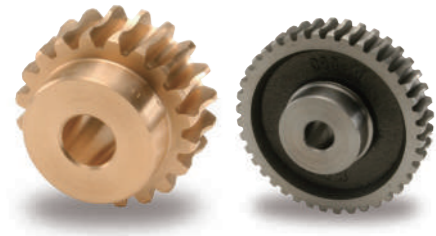
W1

Catalog Number	Normal module	Number of Starts	Nominal lead angle	Direction of helix	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width (right)	Hub width (left)
						L _{H7}	M	N	O	P	Q	Q'
SW4-R1 SW4-R2	m4	1 2	3°42' 7°25'	R	W1	22	50	62	70	70	25	—

Total length	Socket head screw		Weight (kg)	Catalog Number
R	Size	S		
95	—	—	1.76	SW4-R1 SW4-R2

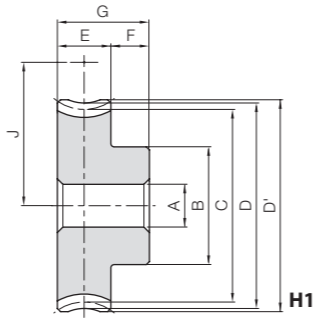
BG/CG Module 4
Worm Wheels

Bronze Worm Wheels & Gray Iron Worm Wheels



Specifications	
Catalog Number	BG CG
Precision grade	KHK W 002 grade 4 KHK W 002 grade 4
Reference section of gear	Normal plane Normal plane
Gear teeth	Standard full depth Standard full depth
Normal pressure angle	14°30' 14°30'
Material	CAC502 (old JIS PBC2) FC200*
Heat Treatment	— —
Tooth hardness	— —

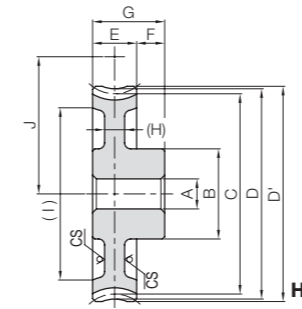
* FC200's tensile strength (200N/mm²) is derived from test specimens and differs according to the product shape.



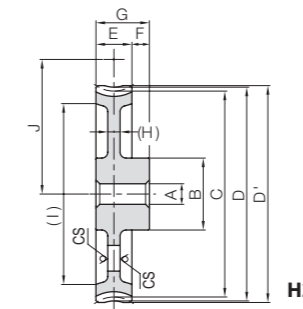
H1

Catalog Number	Reduction ratio	Normal module	No. of teeth	No. of starts of mating worm	Lead angle	Direction of helix	Shape	Bore	Hub dia.	Pitch dia.	Throat dia.	Outside dia.	Face width
								A _{H7}	B	C	D	D'	E
BG4-20R1 BG4-20R2	20 10	m4	20	1 2	3°42' 7°25'	R	H1	20	60	80.17 80.67	88	90	35

Catalog Number	Reduction ratio	Normal module	No. of teeth	No. of starts of mating worm	Lead angle	Direction of helix	Shape	Bore	Hub dia.	Pitch dia.	Throat dia.	Outside dia.	Face width
								A _{H7}	B	C	D	D'	E
CG4-20R1 CG4-20R2	20 10	m4	20	1 2	3°42' 7°25'	R	H1	20	60	80.17	88	90	35
CG4-30R1 CG4-30R2	30 15		30	1 2	3°42' 7°25'				60	80.67	88	90	
CG4-40R1	40		40	1	3°42'				60	120.25	128	130	
CG4-50R1 CG4-50R2	50 25		50	1 2	3°42' 7°25'				70	200.42	208	211	
CG4-60R1	60		60	1	3°42'				70	201.69	208	211	
									80	240.5	248	251	



HB



H2

* CS has a forged finish surface. NOTE 1: Allowable torque based on worm speed (rpm)

Hub width	Total length	Mounting distance	Allowable torque (N·m) NOTE 1						Backlash (mm)	Weight (kg)	Catalog Number
			30 _{rpm}	100 _{rpm}	300 _{rpm}	600 _{rpm}	900 _{rpm}	1200 _{rpm}			
F	G	J	75.9	61.7	47.9	38.4	33.7	30.1	0.17~0.37	1.91	BG4-20R1 BG4-20R2
17	52	71	75.9	60.0	44.8	35.7	30.9	27.5			

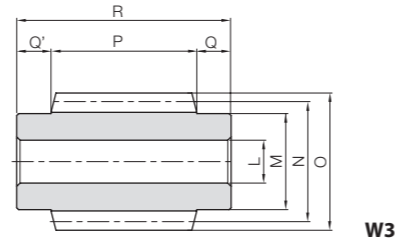
NOTE 1: Allowable torque based on worm speed (rpm)

Hub width	Total length	Web thickness	Web O.D.	Mounting distance	Allowable torque (N·m) NOTE 1				Backlash (mm)	Weight (kg)	Catalog Number	
					30 _{rpm}	100 _{rpm}	300 _{rpm}	600 _{rpm}				
17	52	—	—	71	45.6	37.0	28.7	23.0	0.17~0.37	1.56	CG4-20R1	
		—	—	71	45.5	36.0	26.9	21.4			CG4-20R2	
		—	—	91	96.3	79.1	62.3	50.9			CG4-30R1	
		—	—	91	96.8	78.3	59.4	47.3			CG4-30R2	
		(11)	(136)	111	165	136	108	89.4			4.02	CG4-40R1
		(12)	(176)	131	249	205	165	137			4.97	CG4-50R1
(12)	(176)	131	250	204	160	130	4.97	CG4-50R2				
(12)	(218)	151	348	288	233	194	6.58	CG4-60R1				





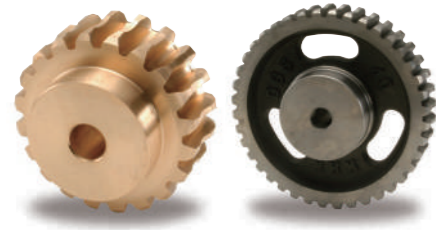
Specifications	
Precision grade	KHK W 001 grade 4
Reference section of gear	Normal plane
Gear teeth	Standard full depth
Normal pressure angle	14°30'
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating



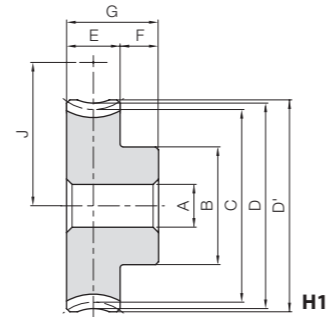
Catalog Number	Normal module	Number of Starts	Nominal lead angle	Direction of helix	Shape	Bore		Pitch dia.	Outside dia.	Face width	Hub width (right)		Hub width (left)	
						L _{H7}	M				N	O	P	Q
SW5-R1 SW5-R2	m5	1 2	4°06' 8°13'	R	W3	25	56	70	80	85	20	20		
SW6-R1 SW6-R2	m6	1 2	4°18' 8°38'	R	W3	30	64	80	92	100	25	25		

Total length R	Socket head screw		Weight (kg)	Catalog Number
	Size	S		
125	—	—	2.86	SW5-R1 SW5-R2
150	—	—	4.38	SW6-R1 SW6-R2

BG/CG Module 5, 6
Worm Wheels



Specifications	
Catalog Number	BG CG
Precision grade	KHK W 002 grade 4
Reference section of gear	Normal plane
Gear teeth	Standard full depth
Normal pressure angle	14°30'
Material	CAC502 (old JIS PBC2) FC200*
Heat Treatment	—
Tooth hardness	—

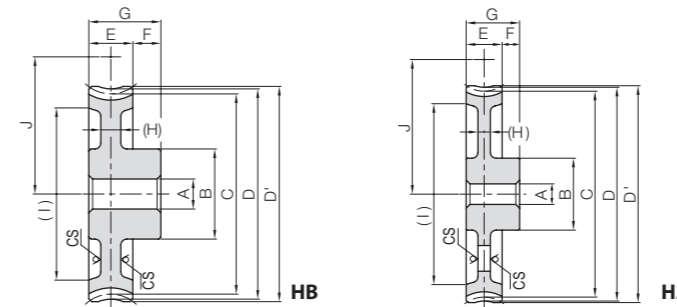


* FC200's tensile strength (200N/mm²) is derived from test specimens and differs according to the product shape.

Catalog Number	Reduction ratio	Normal module	No. of teeth	No. of starts of mating worm	Lead angle	Direction of helix	Shape	Bore		Pitch dia.	Throat dia.	Outside dia.	Face width
								A _{H7}	B				
BG5-20R1 BG5-20R2	20 10	m5	20	1 2	4°06' 8°13'	R	H1	22	75	100.26 101.04	110	113	45
BG6-20R1 BG6-20R2	20 10	m6	20	1 2	4°18' 8°38'	R	H1	25	100	120.34 121.38	132	136	52

Catalog Number	Reduction ratio	Normal module	No. of teeth	No. of starts of mating worm	Lead angle	Direction of helix	Shape	Bore		Pitch dia.	Throat dia.	Outside dia.	Face width
								A _{H7}	B				
CG5-20R1 CG5-30R1 CG5-30R2 CG5-40R1	20 30 15 40	m5	20 30 30 40	1 1 2 1	4°06' 4°06' 8°13' 4°06'	R	H1 HB H2	22	75	100.26 150.38 151.56 200.51	110 160 160 210	113 163 163 213	45
CG5-50R1 CG5-60R1	50 60		50 60	1 1	4°06' 4°06'		H2		90 100	250.61 300.77	260 310	263 313	
CG6-20R1 CG6-30R1 CG6-40R1	20 30 40	m6	20 30 40	1 1 1	4°18' 4°18' 4°18'	R	H1 HB H2	25	100	120.34 180.51 240.68	132 192 252	136 196 256	52
CG6-50R1 CG6-60R1	50 60		50 60	1 1	4°18' 4°18'		H2		100 120	300.85 361.02	312 372	316 376	

Bronze Worm Wheels & Gray Iron Worm Wheels



* CS has a forged finish surface.

NOTE 1: Allowable torque based on worm speed (rpm)

Hub width F	Total length G	Mounting distance J	Allowable torque (N·m) ^{NOTE 1}						Backlash (mm)	Weight (kg)	Catalog Number
			30 _{rpm}	100 _{rpm}	300 _{rpm}	600 _{rpm}	900 _{rpm}	1200 _{rpm}			
20	65	85	146 146	117 115	91.2 85.8	73.0 68.4	63.7 58.8	56.9 52.2	0.20~0.40	3.89	BG5-20R1 BG5-20R2
20	72	100	232 235	185 183	144 136	115 109	99.2 92.3	88.8 82.0	0.22~0.42	6.60	BG6-20R1 BG6-20R2

NOTE 1: Allowable torque based on worm speed (rpm)

Hub width F	Total length G	Web thickness (H)	Web O.D. (I)	Mounting distance J	Allowable torque (N·m) ^{NOTE 1}				Backlash (mm)	Weight (kg)	Catalog Number
					30 _{rpm}	100 _{rpm}	300 _{rpm}	600 _{rpm}			
20	65	—	—	85	87.4	70.3	54.7	43.8	0.20~0.40	3.18 5.07 5.07 7.75	CG5-20R1 CG5-30R1 CG5-30R2 CG5-40R1
		(13)	(127)	110	185	150	119	96.8			
		(13)	(127)	110	187	150	114	90.6			
		(16)	(172)	135	316	258	206	170			
20	72	(16)	(223)	160	477	390	315	261	0.22~0.42	10.1 12.3	CG5-50R1 CG5-60R1
		(14)	(276)	185	668	548	443	369			
		—	—	100	139	111	86.2	—			
		(15)	(155)	130	294	237	187	—			
20	72	(15)	(213)	160	502	407	325	—	0.22~0.42	11.4	CG6-20R1 CG6-30R1 CG6-40R1
		(16)	(275)	190	760	615	496	—			
				220	1060	865	698	—		20.3	CG6-50R1 CG6-60R1