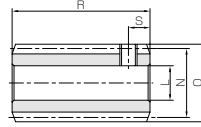


# SW Steel Worms

Module 0.5, 0.8



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)



W2

Catalog No.	Normal module	Number of starts	Lead angle	Hand thread	Shape	Bore L <sub>H8</sub>	Hub dia. M	Pitch dia. N	Outside dia. O	Face width P	Hub width (R) Q	Hub width (L) Q'
SW0.5-R1	m0.5	1	2°36'	R	W2	5	—	11	12	—	—	—
SW0.5-R2		2	5°13'	R	W2	5	—	11	12	—	—	—
SW0.8-R1	m0.8	1	3°17'	R	W2	6	—	14	15.6	—	—	—
SW0.8-R2		2	6°34'	R	W2	6	—	14	15.6	—	—	—

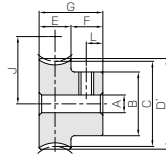
[Caution on Product Characteristics] ① For W2-shaped products, a set screw is included. When setting up the mating wheel, make sure no friction occurs within the set screw.  
② These worms produce axial thrust forces. See Page 344 for more details.

# BG Bronze Worm Wheels

Module 0.5, 0.8



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 (formerly JIS PBC2)
Heat treatment	—
Tooth hardness	—



HAT

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

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

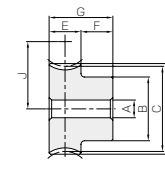
[Caution on Product Characteristics] ① Worm Wheels are profile shifted to create the proper center distance.  
② For products with a tapped hole, a set screw is included.  
③ The allowable torques shown in the table are the calculated values according to the assumed usage conditions. Please see Page 342 for more details.  
④ If bore size is less than φ 4, the diameter tolerance is H8. If bore size is φ 5 or φ 6, and the hole length exceeds 3 times the diameter, the tolerance is also H8.

\* For products not categorized in our KHK Stock Gear series, custom gear production services with short lead times is available. For details see Page 8.

Total length R	Set Screw		Weight (kg)	Catalog No.
	Size	S		
18	M3	3	0.010	SW0.5-R1
18	M3	3	0.010	SW0.5-R2
30	M4	5	0.029	SW0.8-R1
30	M4	5	0.029	SW0.8-R2

[Caution on Secondary Operations] ① Please read "Caution on Performing Secondary Operations" (Page 344) 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.  
② Gear tooth hardening of the worm reduces the precision (introduces errors in the lead and pressure angles). Avoid heat hardening as it will create bad tooth contact causing abrasion of the wheel.

# BG Bronze Worm Wheels



HA



NOTE 1 : Allowable torque for worm revolution (rpm)

Hub width F	Total length G	Mounting distance J	Set Screw Size	Allowable torque (N·m) NOTE 1						Backlash (mm)	Weight (kg)	Catalog No.	
				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
7	12	10.5	M3	3.5	0.28	0.23	0.18	0.15	0.13	0.12	0-0.16	0.0061	BG0.5-20R2
7	12	13	M3	3.5	0.58	0.50	0.41	0.34	0.30	0.28	0-0.16	0.014	BG0.5-30R1
7	12	13	M3	3.5	0.59	0.49	0.39	0.32	0.29	0.26	0-0.16	0.014	BG0.5-30R2
7	12	15.5	M4	3.5	0.99	0.85	0.71	0.60	0.54	0.50	0-0.16	0.023	BG0.5-40R1
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
7	12	20.5	M4	3.5	2.10	1.80	1.52	1.31	1.19	1.09	0-0.16	0.059	BG0.5-60R1

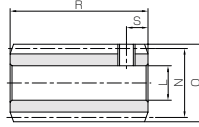
NOTE 1 : Allowable torque for worm revolution (rpm)

Hub width F	Total length G	Mounting distance J	Allowable torque (N·m) NOTE 1						Backlash (mm)	Weight (kg)	Catalog No.
			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
9	18	15	1.06	0.86	0.66	0.54	0.48	0.44	0.04-0.22	0.023	BG0.8-20R2
9	18	19	2.23	1.89	1.53	1.29	1.15	1.06	0.04-0.22	0.055	BG0.8-30R1
9	18	19	2.24	1.87	1.46	1.20	1.07	0.98	0.04-0.22	0.055	BG0.8-30R2
9	18	23	3.81	3.24	2.67	2.26	2.02	1.87	0.04-0.22	0.087	BG0.8-40R1
9	18	27	5.76	4.90	4.07	3.47	3.13	2.90	0.04-0.22	0.13	BG0.8-50R1
9	18	31	8.06	6.88	5.73	4.90	4.46	4.12	0.04-0.22	0.18	BG0.8-60R1

[Caution on Secondary Operations] ① Please read "Caution on Performing Secondary Operations" (Page 344) 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.



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)



W2

Catalog No.	Normal module	Number of starts	Lead angle	Hand thread	Shape	Bore L <sub>H7</sub>	Hub dia. M	Pitch dia. N	Outside dia. O	Face width P	Hub width (R) Q	Hub width (L) Q'
SW1-R1	m1	1	3°35'	R	W2	6	—	16	18	—	—	—
SW1-R2		2	7°11'	R	W2	6	—	16	18	—	—	—
SW1.25-R1	m1.25	1	3°25'	R	W2	8	—	21	23.5	—	—	—
SW1.25-R2		2	6°50'	R	W2	8	—	21	23.5	—	—	—

[Caution on Product Characteristics] ① For W2-shaped products, a set screw is included. When setting up the mating wheel, make sure no friction occurs within the set screw.  
② These worms produce axial thrust forces. See Page 344 for more details.  
③ If bore size is less than φ 4, the diameter tolerance is H8. If bore size is φ 5 or φ 6, and the hole length exceeds 3 times the diameter, the tolerance is also H8.

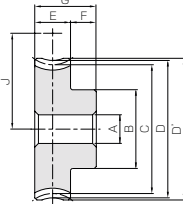
\* For products not categorized in our KHK Stock Gear series, custom gear production services with **short lead times** is available. For details see Page 8.

**BG · CG**  
**Bronze Worm Wheels & Gray Iron Worm Wheels**



Specifications	
Catalog No.	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 (formerly JIS PBC2) FC200
Heat treatment	—
Tooth hardness	—
Module	m1 m1.25 m1
Face width (E)	10 11 10
Hub width (F)	10 9 10
Total length (G)	20 20 20
Screw offset (L)	5 4.5 5

A <sub>H7</sub>	Bore
B	Hub dia.
C	Pitch dia.
D	Throat dia.
D'	Outside dia.
(H)	Web thickness
(I)	Web O.D.
J	Mounting distance



H1

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

NOTE 1: Allowable torque for worm revolution (rpm)

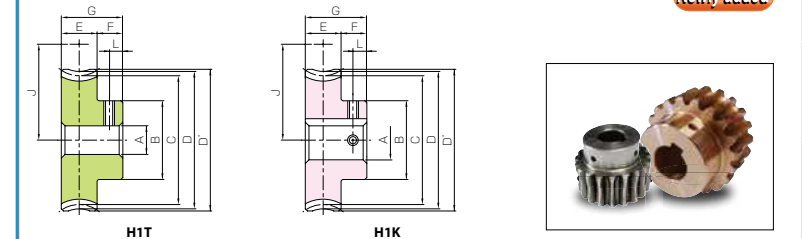
Catalog No.	Production ratio	No. of teeth	Number of starts	Helix angle Hand thread	Shape	A <sub>H7</sub>	B	C	D	D'	J	Allowable torque (N·m) NOTE 1						Backlash (mm)	Weight (kg)		
												30 <sub>rpm</sub>	100 <sub>rpm</sub>	300 <sub>rpm</sub>	600 <sub>rpm</sub>	900 <sub>rpm</sub>	1200 <sub>rpm</sub>				
BG1-20R1	20	20	1	3°35'	R H1	10	16	20.05	22	23	18	1.89	1.58	1.26	1.04	0.92	0.85	0.043	0.06~0.24	0.043	
BG1-20R2	10	20	2	7°11'			16	20.16	22	23	18	1.90	1.54	1.18	0.97	0.85	0.78	0.043			
BG1-30R1	30	30	1	3°35'			20	30.07	32	33	23	4.00	3.38	2.74	2.29	2.05	1.87	0.089			
BG1-30R2	15	30	2	7°11'			20	30.24	32	33	23	4.03	3.55	2.62	2.14	1.91	1.74	0.089			
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			0.15
BG1-50R1	50	50	1	3°35'			8	30	50.1	52	53	33	10.3	8.76	7.27	6.18	5.58	5.14			0.23
BG1.25-20R1	20	20	1	3°25'			6	20	25.04	27.5	28.75	23	3.19	2.65	2.10	1.72	1.53	1.40			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			0.070
BG1.25-30R1	30	30	1	3°25'			6	25	37.57	40	41.25	29.25	6.75	5.67	4.56	3.81	3.40	3.09			0.15
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			0.15
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			0.24
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			0.40
CG1-60R1	60	60	1	3°35'	30	60.12	62	63	38	8.69	7.39	6.14	5.24	4.78	4.39	0.25					
CG1-80R1	80	80	1	3°35'	35	80.16	82	83	48	14.7	12.6	10.5	9.11	8.30	7.72	0.43					
CG1-100R1	100	100	1	3°35'	40	100.2	102	103	58	21.9	19.0	16.0	13.9	12.7	11.9	0.66					
CG1-120R1	120	120	1	3°35'	40	120.24	122	123	68	30.5	26.7	22.5	19.6	18.0	16.7	0.91					

[Caution on Product Characteristics] ① Worm Wheels are profile shifted to create the proper center distance.  
② The allowable torques shown in the table are the calculated values according to the assumed usage conditions. Please see Page 342 for more details.  
③ If bore size is less than φ 4, the diameter tolerance is H8. If bore size is φ 5 or φ 6, and the hole length exceeds 3 times the diameter, the tolerance is also H8.

[Caution on Secondary Operations] ① Please read "Caution on Performing Secondary Operations" (Page 344) 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.

**J Series**  
**Bronze Worm Wheels & Gray Iron Worm Wheels**

Newly added



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
Screw size	4 x 1.8				5 x 2.3				6 x 2.8			
Catalog No.	M4		M5		M4				M5			
BG1-20R1 J Bore												
BG1-20R2 J Bore												
BG1-30R1 J Bore												
BG1-30R2 J Bore												
BG1-40R1 J Bore												
BG1-50R1 J Bore												
BG1.25-20R1 J Bore												
BG1.25-20R2 J Bore												
BG1.25-30R1 J Bore												
BG1.25-30R2 J Bore												
BG1.25-40R1 J Bore												
BG1.25-50R1 J Bore												
CG1-60R1 J Bore												
CG1-80R1 J Bore												
CG1-100R1 J Bore												
CG1-120R1 J Bore												

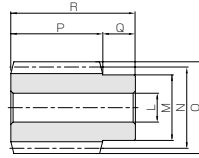
[Caution on J series] ① As available-on-request products, requires a lead-time for shipping within 2 working-days (excludes the day ordered), after placing an order. Please allow additional shipping time to get to your local distributor.  
② Number of products we can process for one order is 1 to 20 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 counterbored to reduce the length of the tap.  
⑤ For products having a tapped hole, a set screw is included.  
⑥ The use of H11 shaped Set Screws for fastening gears to a shaft is a method only applicable to the usage for light loads. For secure fastening, please use dowel pins in combination.

# SW Steel Worms

## Module 1.5



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)



W1

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

Catalog No.	Normal module	Number of starts	Lead angle	Hand thread	Shape	Bore L <sub>H7</sub>	Hub dia. M	Pitch dia. N	Outside dia. O	Face width P	Hub width (R) Q	Hub width (L) Q'
● J Series (Available-on-request) <b>SW1.5-R1</b> ● <b>SW1.5-R1J8</b> ● <b>SW1.5-R1J10</b>	m1.5	1	3°26'	R	W1 W1T W1K	8 8 10	20	25	28	30	10	—
● <b>SW1.5-R2</b> ● <b>SW1.5-R2J8</b> ● <b>SW1.5-R2J10</b>		2	6°54'	R	W1 W1T W1K	8 8 10	20	25	28	30	10	—

[Caution on Product Characteristics] ① These worms produce axial thrust forces. See Page 344 for more details.

[Caution on Secondary Operations] ① Please read "Caution on Performing Secondary Operations" (Page 344) 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.  
 ② Gear tooth hardening of the worm reduces the precision (introduces errors in the lead and pressure angles). Avoid heat hardening as it will create bad tooth contact causing abrasion of the wheel.

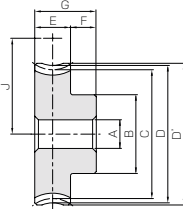
# BG · CG Bronze Worm Wheels & Gray Iron Worm Wheels

## Module 1.5



Specifications	
Catalog No.	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 (formerly JIS PBC2) FC200
Heat treatment	—
Tooth hardness	—
Hub width (F)	10
Screw offset (L)	5

Bore	
A <sub>H7</sub>	Bore
B	Hub dia.
C	Pitch dia.
D	Throat dia.
D'	Outside dia.
E	Face width
G	Total length
(H)	Web thickness
(I)	Web O.D.
J	Mounting distance



H1

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

NOTE 1 : Allowable torque for worm revolution (rpm)

Catalog No.	Production ratio	No. of teeth	Number of starts	Helix angle Hand thread	Shape	A <sub>H7</sub>	B	C	D	D'	E	G	Allowable torque (N·m) <sup>NOTE 1</sup>					Backlash (mm)	Weight (kg)		
													30 rpm	100 rpm	300 rpm	600 rpm	900 rpm			1200 rpm	
<b>BG1.5-20R1</b>	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	0.10	0.10
<b>BG1.5-20R2</b>	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	0.10	0.10
<b>BG1.5-30R1</b>	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	0.22	0.22
<b>BG1.5-30R2</b>	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	0.22	0.22
<b>BG1.5-40R1</b>	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	0.35	0.35
<b>BG1.5-50R1</b>	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	0.65	0.65
<b>CG1.5-30R1</b>	30	30	1	3°26'		10	30	45.08	48	49.5	12	22	35	6.04	5.08	4.03	3.40	3.02	2.73	0.18	0.18
<b>CG1.5-40R1</b>	40	40	1	3°26'		12	30	60.11	63	64.5	12	22	42.5	10.3	8.71	7.01	5.98	5.31	4.83	0.28	0.28
<b>CG1.5-50R1</b>	50	50	1	3°26'		12	40	75.13	78	79.5	14	24	50	18.2	15.4	12.5	10.7	9.59	8.74	0.53	0.53
<b>CG1.5-60R1</b>	60	60	1	3°26'		12	40	90.16	93	94.5	14	24	57.5	25.5	21.6	17.6	15.1	13.7	12.4	0.73	0.73
<b>CG1.5-80R1</b>	80	80	1	3°26'	15	50	120.22	123	124.5	14	24	72.5	43.1	36.8	30.1	26.3	23.8	21.9	1.28	1.28	
<b>CG1.5-100R1</b>	100	100	1	3°26'	15	50	150.27	153	154.5	14	24	87.5	64.4	55.6	45.8	40.1	36.4	33.6	1.93	1.93	

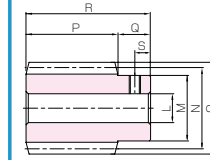
[Caution on Product Characteristics] ① Worm Wheels are profile shifted to create the proper center distance.  
 ② The allowable torques shown in the table are the calculated values according to the assumed usage conditions. Please see Page 342 for more details.

[Caution on Secondary Operations] ① Please read "Caution on Performing Secondary Operations" (Page 344) 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.

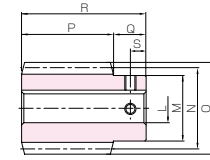
# SW

## Steel Worms

### J Series



W1T



W1K



Total length R	Keyway WidthxDepth	Set Screw Size		Weight (kg)	Catalog No.
		M	S		
40	4 x 1.8	M5	5	0.12	● J Series (Available-on-request) <b>SW1.5-R1</b> ● <b>SW1.5-R1J8</b> ● <b>SW1.5-R1J10</b>
		M4	5	0.11	
40	4 x 1.8	M5	5	0.12	● <b>SW1.5-R2</b> ● <b>SW1.5-R2J8</b> ● <b>SW1.5-R2J10</b>
		M4	5	0.11	

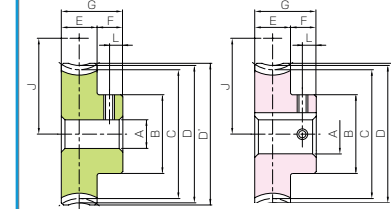
[Caution on J series] ① As available-on-request products, requires a lead-time for shipping within 2 working-days (excludes the day ordered), after placing an order. Please allow additional shipping time to get to your local distributor.  
 ② Number of products we can process for one order is 1 to 20 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 Areas of products which have been re-worked will not be black oxide coated.  
 ⑤ For products having a tapped hole, a set screw is included.

## BG · CG

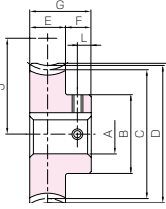
### Bronze Worm Wheels & Gray Iron Worm Wheels

Newly added

### J Series



H1T



H1K



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	8	10	12	14	15	16	17	18	19	20	22	25	28	30															
Screw size	4 x 1.8				5 x 2.3				6 x 2.8				8 x 3.3																
Catalog No.	M5				M4				M5				M6																
<b>BG1.5-20R1 J BORE</b>																													
<b>BG1.5-20R2 J BORE</b>																													
<b>BG1.5-30R1 J BORE</b>																													
<b>BG1.5-30R2 J BORE</b>																													
<b>BG1.5-40R1 J BORE</b>																													
<b>BG1.5-50R1 J BORE</b>																													
<b>CG1.5-30R1 J BORE</b>																													
<b>CG1.5-40R1 J BORE</b>																													
<b>CG1.5-50R1 J BORE</b>																													
<b>CG1.5-60R1 J BORE</b>																													
<b>CG1.5-80R1 J BORE</b>																													
<b>CG1.5-100R1 J BORE</b>																													

[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 counterbored to reduce the length of the tap.  
 ⑤ For products having a tapped hole, a set screw is included.  
 ⑥ The use of H1T shaped Set Screws for fastening gears to a shaft is a method only applicable to the usage for light loads. For secure fastening, please use dowel pins in combination.

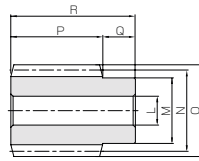


# SW Steel Worms

## Module 2.5



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)



W1

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

Catalog No.	Normal module	Number of starts	Lead angle	Hand thread	Shape	Bore L <sub>H7</sub>	Hub dia. M	Pitch dia. N	Outside dia. O	Face width P	Hub width (R) Q	Hub width (L) Q'
<b>SW2.5-R1</b> <b>SW2.5-R1J15</b> <b>SW2.5-R1J16</b> <b>SW2.5-R1J17</b>	m2.5	1	3°52'	R	W1 W1K W1K W1K	15 15 16 17	30	37	42	45	18	—
<b>SW2.5-R2</b> <b>SW2.5-R2J15</b> <b>SW2.5-R2J16</b> <b>SW2.5-R2J17</b>		2	7°46'	R	W1 W1K W1K W1K	15 15 16 17	30	37	42	45	18	—
<b>SW2.5-L1</b> <b>SW2.5-L1J15</b> <b>SW2.5-L1J16</b> <b>SW2.5-L1J17</b>		1	3°52'	L	W1 W1K W1K W1K	15 15 16 17	30	37	42	45	18	—
<b>SW2.5-L2</b> <b>SW2.5-L2J15</b> <b>SW2.5-L2J16</b> <b>SW2.5-L2J17</b>		2	7°46'	L	W1 W1K W1K W1K	15 15 16 17	30	37	42	45	18	—

[Caution on Product Characteristics] ① These worms produce axial thrust forces. See Page 344 for more details.

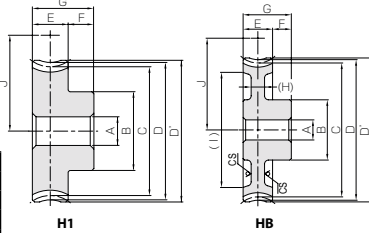
# BG · CG Bronze Worm Wheels & Gray Iron Worm Wheels

## Module 2.5



Specifications	
Catalog No.	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 (formerly JIS PBC2) FC200
Heat treatment	—
Tooth hardness	—
Face width (E)	22
Hub width (F)	14
Total length (G)	36
Screw offset (L)	7

A <sub>H7</sub>	Bore
B	Hub dia.
C	Pitch dia.
D	Throat dia.
D'	Outside dia.
(H)	Web thickness
(I)	Web O.D.
J	Mounting distance



H1

HB

\*\*CS has a sand mold casting finish.

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

NOTE 1: Allowable torque for worm revolution (rpm)

Catalog No.	Reduction ratio	No. of teeth	Number of starts	Helix angle	Shape	Hand	A <sub>H7</sub>	B	C	D	D'	(H)	(I)	J	Allowable torque (N·m) <sup>NOTE 1</sup>						Backlash (mm)	Weight (kg)
															30 <sub>rpm</sub>	100 <sub>rpm</sub>	300 <sub>rpm</sub>	600 <sub>rpm</sub>	900 <sub>rpm</sub>	1200 <sub>rpm</sub>		
BG2.5-20R1	20	20	1	3°52'	R	—	—	50.11	—	—	—	—	—	43.5	21.5	17.7	13.8	11.4	9.94	9.07	0.49	—
BG2.5-20R2	10	20	2	7°46'	R	—	—	50.46	—	—	—	—	—	43.5	21.5	17.3	13.0	10.6	9.14	8.27		
BG2.5-20L1	20	20	1	3°52'	L	—	—	50.11	—	—	—	—	—	43.5	21.5	17.7	13.8	11.4	9.94	9.07	0.49	—
BG2.5-20L2	10	20	2	7°46'	L	—	—	50.46	—	—	—	—	—	43.5	21.5	17.3	13.0	10.6	9.14	8.27		
CG2.5-20R1	20	20	1	3°52'	R	H1	12	35	50.11	55	57.5	—	—	43.5	12.9	10.6	8.30	6.83	5.97	5.44	0.40	—
CG2.5-20R2	10	20	2	7°46'	R	H1	12	35	50.46	55	57.5	—	—	43.5	12.9	10.4	7.78	6.36	5.49	4.96		
CG2.5-30R1	30	30	1	3°52'	R	H1	12	40	75.17	80	82.5	—	—	56	27.3	22.8	18.0	15.1	13.2	12.0	0.82	—
CG2.5-30R2	15	30	2	7°46'	R	H1	12	40	75.68	80	82.5	—	—	56	27.5	22.5	17.2	14.1	12.3	11.1		
CG2.5-40R1	40	40	1	3°52'	R	HB	15	45	100.23	105	107.5	(9)	(86)	68.5	46.7	39.0	31.3	26.5	23.3	21.2	1.02	—
CG2.5-50R1	50	50	1	3°52'	R	HB	15	50	125.29	130	132.5	(9)	(110)	81	70.6	59.0	47.8	40.7	36.1	33.0		
CG2.5-50R2	25	50	2	7°46'	R	HB	15	50	126.16	130	132.5	(9)	(110)	81	71.1	58.6	46.4	38.6	33.6	30.7	1.46	—
CG2.5-60R1	60	60	1	3°52'	R	HB	15	55	150.34	155	157.5	(136)	(93.5)	98.8	82.9	67.3	57.6	51.5	47.0	1.93		
CG2.5-20L1	20	20	1	3°52'	L	H1	12	35	50.11	55	57.5	—	—	43.5	12.9	10.6	8.30	6.83	5.97		5.44	0.40
CG2.5-20L2	10	20	2	7°46'	L	H1	12	35	50.46	55	57.5	—	—	43.5	12.9	10.4	7.78	6.36	5.49	4.96		
CG2.5-30L1	30	30	1	3°52'	L	H1	12	40	75.17	80	82.5	—	—	56	27.3	22.8	18.0	15.1	13.2	12.0	0.82	—
CG2.5-30L2	15	30	2	7°46'	L	H1	12	40	75.68	80	82.5	—	—	56	27.5	22.5	17.2	14.1	12.3	11.1		
CG2.5-40L1	40	40	1	3°52'	L	HB	15	45	100.23	105	107.5	(9)	(86)	68.5	46.7	39.0	31.3	26.5	23.3	21.2	1.02	—
CG2.5-50L1	50	50	1	3°52'	L	HB	15	50	125.29	130	132.5	(9)	(110)	81	70.6	59.0	47.8	40.7	36.1	33.0		
CG2.5-50L2	25	50	2	7°46'	L	HB	15	50	126.16	130	132.5	(9)	(110)	81	71.1	58.6	46.4	38.6	33.6	30.7	1.46	—
CG2.5-60L1	60	60	1	3°52'	L	HB	15	55	150.34	155	157.5	(136)	(93.5)	98.8	82.9	67.3	57.6	51.5	47.0	1.93		

[Caution on Product Characteristics]

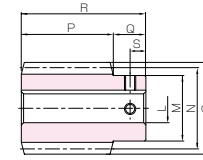
- ① Worm Wheels are profile shifted to create the proper center distance.
- ② The allowable torques shown in the table are the calculated values according to the assumed usage conditions. Please see Page 342 for more details.

# SW

## Steel Worms

Newly added

### J Series



W1K



Total length R	Keyway WidthxDepth	Set Screw		Weight (kg)	Catalog No.
		Size	S		
63	5 x 2.3	M4	9	0.39	<b>SW2.5-R1</b> <b>SW2.5-R1J15</b> <b>SW2.5-R1J16</b> <b>SW2.5-R1J17</b>
	5 x 2.3	M4	9	0.37	
	5 x 2.3	M4	9	0.36	
63	5 x 2.3	M4	9	0.39	<b>SW2.5-R2</b> <b>SW2.5-R2J15</b> <b>SW2.5-R2J16</b> <b>SW2.5-R2J17</b>
	5 x 2.3	M4	9	0.39	
	5 x 2.3	M4	9	0.36	
63	5 x 2.3	M4	9	0.39	<b>SW2.5-L1</b> <b>SW2.5-L1J15</b> <b>SW2.5-L1J16</b> <b>SW2.5-L1J17</b>
	5 x 2.3	M4	9	0.37	
	5 x 2.3	M4	9	0.36	
63	5 x 2.3	M4	9	0.39	<b>SW2.5-L2</b> <b>SW2.5-L2J15</b> <b>SW2.5-L2J16</b> <b>SW2.5-L2J17</b>
	5 x 2.3	M4	9	0.37	
	5 x 2.3	M4	9	0.36	

[Caution on Secondary Operations]

- ① Please read "Caution on Performing Secondary Operations" (Page 344) 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.
- ② Gear tooth hardening of the worm reduces the precision (introduces errors in the lead and pressure angles). Avoid heat hardening as it will create bad tooth contact causing abrasion of the wheel.

[Caution on J series]

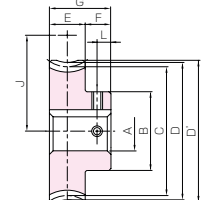
- ① As available-on-request products, requires a lead-time for shipping within 2 working days (excludes the day ordered), after placing an order. Please allow additional shipping time to get to your local distributor.
- ② Number of products we can process for one order is 1 to 20 units. For quantities 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 Areas of products which have been re-worked will not be black oxide coated.
- ⑤ For products having a tapped hole, a set screw is included.

## BG · CG

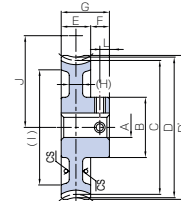
### Bronze Worm Wheels & Gray Iron Worm Wheels

Newly added

### J Series



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.															
	Keyway JS9	12	14	15	16	17	18	19	20	22	25	28	30	32	35	
Screw size	4 x 1.8	5 x 2.3					6 x 2.8					8 x 3.3		10 x 3.3		
Catalog No.	M4				M5				M6				M8			
BG2.5-20R1 J BORE																
BG2.5-20R2 J BORE																
BG2.5-20L1 J BORE																
BG2.5-20L2 J BORE																
CG2.5-20R1 J BORE																
CG2.5-20R2 J BORE																
CG2.5-30R1 J BORE																
CG2.5-30R2 J BORE																
CG2.5-40R1 J BORE																
CG2.5-50R1 J BORE																
CG2.5-50R2 J BORE																
CG2.5-60R1 J BORE																
CG2.5-20L1 J BORE																
CG2.5-20L2 J BORE																
CG2.5-30L1 J BORE																
CG2.5-30L2 J BORE																
CG2.5-40L1 J BORE																
CG2.5-50L1 J BORE																
CG2.5-50L2 J BORE																
CG2.5-60L1 J BORE																

[Caution on Secondary Operations]

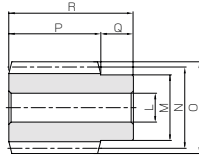
- ① Please read "Caution on Performing Secondary Operations" (Page 344) when performing modifications and/or secondary operations for safety concerns. KHK Quick-Mod Gears, the KHK's system for quick modification of KHK stock gears is also available.

# SW Steel Worms

## Module 3



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)



W1

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

Catalog No.	Normal module	Number of starts	Lead angle	Hand thread	Shape	Bore L <sub>H7</sub>	Hub dia. M	Pitch dia. N	Outside dia. O	Face width P	Hub width (R)	Hub width (L)
● J Series (Available-on-request)												
SW3-R1 ● SW3-R1J17 ● SW3-R1J18 ● SW3-R1J19 ● SW3-R1J20	m3	1	3°55'	R	W1 W1K W1K W1K	16 17 18 19 20	35	44	50	50	20	—
SW3-R2 ● SW3-R2J17 ● SW3-R2J18 ● SW3-R2J19 ● SW3-R2J20		2	7°50'	R	W1 W1K W1K W1K	16 17 18 19 20	35	44	50	50	20	—
SW3-L1 ● SW3-L1J17 ● SW3-L1J18 ● SW3-L1J19 ● SW3-L1J20		1	3°55'	L	W1 W1K W1K W1K	16 17 18 19 20	35	44	50	50	20	—
SW3-L2 ● SW3-L2J17 ● SW3-L2J18 ● SW3-L2J19 ● SW3-L2J20		2	7°50'	L	W1 W1K W1K W1K	16 17 18 19 20	35	44	50	50	20	—

[Caution on Product Characteristics]

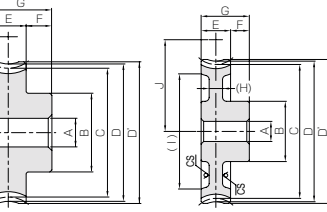
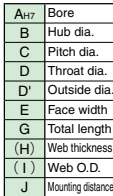
# BG · CG Bronze Worm Wheels & Gray Iron Worm Wheels

## Module 3



Specifications		
Catalog No.	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 (formerly JIS PBC2)	FC200
Heat treatment	—	
Tooth hardness	—	
Hub width (F)	15	
Screw offset (L)	7.5	

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



H1

H8

\*\*CS has a sand mold casting finish.

NOTE 1: Allowable torque for worm revolution (rpm)

Catalog No.	Reduction ratio	No. of teeth	Number of starts	Helix angle Hand thread	Shape	A <sub>H7</sub>	B	C	D	D'	E	G	(H)	(I)	J	Allowable torque (N·m) <small>NOTE 1</small>						Backlash (mm)	Weight (kg)
																30 rpm	100 rpm	300 rpm	600 rpm	900 rpm	1200 rpm		
BG3-20R1 BG3-20R2	20/10	20	2	1 3°55' 2 7°50'	R	H1	50	60.14 60.57	66	69	28	43	—	—	52	36.8 37.0	30.1 29.5	23.5 22.1	19.1 17.9	16.7 15.4	15.2 14.0	0.89	
BG3-20L1 BG3-20L2	20/10	2	2	1 3°55' 2 7°50'	L	H1	50	60.14 60.57	66	69	28	43	—	—	52	36.8 37.0	30.1 29.5	23.5 22.1	19.1 17.9	16.7 15.4	15.2 14.0	0.89	
CG3-20R1 CG3-20R2	20/20	20	2	1 3°55' 2 7°50'	R	H1	50	60.14 60.57	66	69	28	43	—	—	52	22.1 22.2	18.1 17.7	14.1 13.3	11.5 10.7	10.0 9.24	0.73		
CG3-30R1 CG3-30R2	30/15	30	2	1 3°55' 2 7°50'	R	H1	55	90.21 90.85	96	99	28	43	—	—	67	46.6 47.2	38.7 38.5	30.6 29.3	25.4 23.7	22.2 20.8	1.50		
CG3-40R1 CG3-40R2	40/20	40	2	1 3°55' 2 7°50'	R	H1	55	120.28 126	129	129	30	45	(9)	(107)	82	79.8 79.8	66.3 66.3	53.2 53.2	44.6 44.6	39.1 39.1	1.79		
CG3-50R1 CG3-50R2 CG3-60R1	50/25 25/50 60/60	50 25 60	2	1 3°55' 2 7°50' 3 3°55'	R	HB	63 63 70	150.35 151.41 180.42	156 159 186	159 159 189	30	45	(9)	(138) (138) (166)	97 122 112	121 100 141	100 79.1 114	81.1 65.1 96.7	68.4 56.7 86.3	60.5 56.7 86.3	2.50 2.50 3.40		
CG3-20L1 CG3-20L2	20/20	20	2	1 3°55' 2 7°50'	L	H1	50	60.14 60.57	66	69	28	43	—	—	52	22.1 22.2	18.1 17.7	14.1 13.3	11.5 10.7	10.0 9.24	0.73		
CG3-30L1 CG3-30L2	30/30	30	2	1 3°55' 2 7°50'	L	H1	55	90.21 90.85	96	99	28	43	—	—	67	46.6 47.2	38.7 38.5	30.6 29.3	25.4 23.7	22.2 20.8	1.50		
CG3-40L1 CG3-40L2	40/40	40	2	1 3°55' 2 7°50'	L	HB	55	120.28 126	129	129	30	45	(9)	(107)	82	79.8 79.8	66.3 66.3	53.2 53.2	44.6 44.6	39.1 39.1	1.79		
CG3-50L1 CG3-50L2 CG3-60L1	50/50 25/50 60/60	50 25 60	2	1 3°55' 2 7°50' 3 3°55'	L	HB	63 63 70	150.35 151.41 180.42	156 159 186	159 159 189	30	45	(9)	(138) (138) (166)	97 122 112	121 100 141	100 79.1 114	81.1 65.1 96.7	68.4 56.7 86.3	60.5 56.7 86.3	2.50 2.50 3.40		

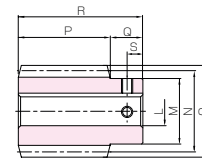
[Caution on Product Characteristics]

- Worm Wheels are profile shifted to create the proper center distance.
- The allowable torques shown in the table are the calculated values according to the assumed usage conditions. Please see Page 342 for more details.

# SW

## Steel Worms Newly added

### J Series



W1K



Total length	Keyway	Set Screw		Weight (kg)	Catalog No.
		WidthxDepth	Size S		
70	5 x 2.3	M4	10	0.64	● SW3-R1
			10	0.62	● SW3-R1J17
			10	0.60	● SW3-R1J18
			10	0.58	● SW3-R1J19
70	6 x 2.8	M5	10	0.64	● SW3-R2
			10	0.62	● SW3-R2J17
			10	0.60	● SW3-R2J18
			10	0.58	● SW3-R2J19
70	6 x 2.8	M5	10	0.64	● SW3-L1
			10	0.62	● SW3-L1J17
			10	0.60	● SW3-L1J18
			10	0.58	● SW3-L1J19
70	6 x 2.8	M5	10	0.64	● SW3-L2
			10	0.62	● SW3-L2J17
			10	0.60	● SW3-L2J18
			10	0.58	● SW3-L2J19

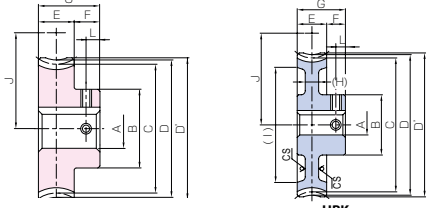
[Caution on Secondary Operations]

- Please read "Caution on Performing Secondary Operations" (Page 344) 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.
- Gear tooth hardening of the worm reduces the precision (introduces errors in the lead and pressure angles). Avoid heat hardening as it will create bad tooth contact causing abrasion of the wheel.

## BG · CG

# Bronze Worm Wheels & Gray Iron Worm Wheels Newly added

### J Series



H1K

H8K



## 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 J <sub>S9</sub>	20	22	25	28	30	32	35	40
Screw size	6 x 2.8		8 x 3.3		10 x 3.3		12 x 3.3	
Catalog No.	M5		M6		M8			
BG3-20R1 J BORE								
BG3-20R2 J BORE								
BG3-20L1 J BORE								
BG3-20L2 J BORE								
CG3-20R1 J BORE								
CG3-20R2 J BORE								
CG3-30R1 J BORE								
CG3-30R2 J BORE								
CG3-40R1 J BORE								
CG3-50R1 J BORE								
CG3-50R2 J BORE								
CG3-60R1 J BORE								
CG3-20L1 J BORE								
CG3-20L2 J BORE								
CG3-30L1 J BORE								
CG3-30L2 J BORE								
CG3-40L1 J BORE								
CG3-50L1 J BORE								
CG3-50L2 J BORE								
CG3-60L1 J BORE								

[Caution on Secondary Operations]

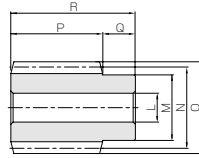
- Please read "Caution on Performing Secondary Operations" (Page 344) when performing modifications and/or secondary operations for safety concerns. KHK Quick-Mod Gears, the KHK's system for quick modification of KHK stock gears is also available.

# SW Steel Worms

## Module 4



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)



W1

Catalog No.	Normal module	Number of starts	Lead angle	Hand thread	Shape	Bore L <sub>H7</sub>	Hub dia. M	Pitch dia. N	Outside dia. O	Face width P	Hub width (R) Q	Hub width (L) Q'
SW4-R1	m4	1	3°42'	R	W1	22	50	62	70	70	25	—
SW4-R2		2	7°25'	R	W1	22	50	62	70	70	25	—
SW4-L1	m4	1	3°42'	L	W1	22	50	62	70	70	25	—
SW4-L2		2	7°25'	L	W1	22	50	62	70	70	25	—

[Caution on Product Characteristics] ① These worms produce axial thrust forces. See Page 344 for more details.

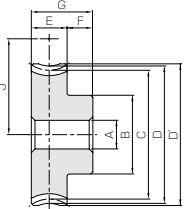
\* For products not categorized in our KHK Stock Gear series, custom gear production services with **short lead times** is available. For details see Page 8.

# BG · CG Bronze Worm Wheels & Gray Iron Worm Wheels

## Module 4



Specifications	
Catalog No.	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 (formerly JIS PBC2) FC200
Heat treatment	—
Tooth hardness	—



H1

Catalog No.	Reduction ratio	Normal module	No. of teeth	Number of starts	Helix angle	Hand thread	Shape	Bore		Hub dia. B	Pitch dia. C	Throat dia. D	Outside dia. D'	Face width E
								A <sub>H7</sub>	B					
BG4-20R1	20	m4	20	1	3°42'	R	H1	20	60	80.17	88	90	35	
BG4-20R2	10		20	2	7°25'	R	H1	20	60	80.67	88	90	35	
BG4-20L1	20	m4	20	1	3°42'	L	H1	20	60	80.17	88	90	35	
BG4-20L2	10		20	2	7°25'	L	H1	20	60	80.67	88	90	35	

Catalog No.	Reduction ratio	Normal module	No. of teeth	Number of starts	Helix angle	Hand thread	Shape	Bore		Hub dia. B	Pitch dia. C	Throat dia. D	Outside dia. D'	Face width E
								A <sub>H7</sub>	B					
CG4-20R1	20	m4	20	1	3°42'	R	H1	20	60	80.17	88	90	35	
CG4-20R2	10		20	2	7°25'	R	H1	20	60	80.67	88	90	35	
CG4-30R1	30	m4	30	1	3°42'	R	HB	20	60	120.25	128	130	35	
CG4-30R2	15		30	2	7°25'	R	HB	20	60	121.01	128	130	35	
CG4-40R1	40	m4	40	1	3°42'	R	HB	20	70	160.33	168	171	35	
CG4-50R1	50		50	1	3°42'	R	H2	20	70	200.42	208	211	35	
CG4-50R2	25	m4	50	2	7°25'	R	H2	20	70	201.69	208	211	35	
CG4-60R1	60		60	1	3°42'	R	H2	20	80	240.5	248	251	35	
CG4-20L1	20	m4	20	1	3°42'	L	H1	20	60	80.17	88	90	35	
CG4-20L2	10		20	2	7°25'	L	H1	20	60	80.67	88	90	35	
CG4-30L1	30	m4	30	1	3°42'	L	HB	20	60	120.25	128	130	35	
CG4-30L2	15		30	2	7°25'	L	HB	20	60	120.01	128	130	35	
CG4-40L1	40	m4	40	1	3°42'	L	HB	20	70	160.33	168	171	35	
CG4-50L1	50		50	1	3°42'	L	H2	20	70	200.42	208	211	35	
CG4-50L2	25	m4	50	2	7°25'	L	H2	20	70	201.69	208	211	35	
CG4-60L1	60		60	1	3°42'	L	H2	20	80	240.5	248	251	35	

[Caution on Product Characteristics] ① Worm Wheels are profile shifted to create the proper center distance.  
 ② H2 Shape Worm Gears have elongated casting holes in the web (H).  
 ③ The allowable torques shown in the table are the calculated values according to the assumed usage conditions. Please see Page 342 for more details.

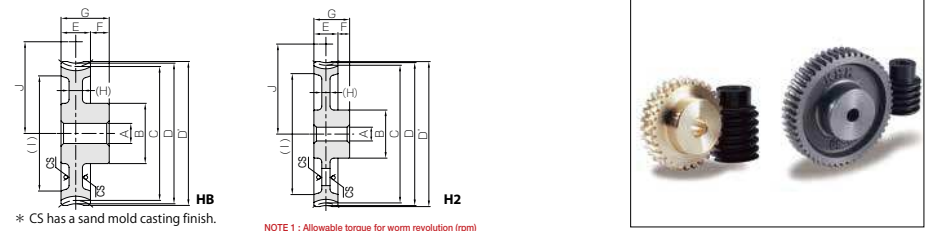
# SW

## Steel Worms

Total length R	Set Screw		Weight (kg)	Catalog No.
	Size	S		
95	—	—	1.76	SW4-R1
95	—	—	1.76	SW4-R2
95	—	—	1.76	SW4-L1
95	—	—	1.76	SW4-L2

[Caution on Secondary Operations] ① Please read "Caution on Performing Secondary Operations" (Page 344) 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.  
 ② Gear tooth hardening of the worm reduces the precision (introduces errors in the lead and pressure angles). Avoid heat hardening as it will create bad tooth contact causing abrasion of the wheel.

# BG · CG Bronze Worm Wheels & Gray Iron Worm Wheels



\* CS has a sand mold casting finish.

NOTE 1 : Allowable torque for worm revolution (rpm)

Hub width F	Total length G	Mounting distance J	Allowable torque (N·m) NOTE 1						Backlash (mm)	Weight (kg)	Catalog No.
			30 rpm	100 rpm	300 rpm	600 rpm	900 rpm	1200 rpm			
17	52	71	75.9	61.7	47.9	38.4	33.7	30.1	0.17~0.37	1.91	BG4-20R1
17	52	71	75.9	60.0	44.8	35.7	30.9	27.5	0.17~0.37	1.91	BG4-20R2
17	52	71	75.9	61.7	47.9	38.4	33.7	30.1	0.17~0.37	1.91	BG4-20L1
17	52	71	75.9	60.0	44.8	35.7	30.9	27.5	0.17~0.37	1.91	BG4-20L2

NOTE 1 : Allowable torque for worm revolution (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 No.
					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
17	52	(12)	(96)	71	45.5	36.0	26.9	21.4	0.17~0.37	1.56	CG4-20R2
17	52	(12)	(96)	91	96.3	79.1	62.3	50.9	0.17~0.37	2.52	CG4-30R1
17	52	(12)	(96)	91	96.8	78.3	59.4	47.3	0.17~0.37	2.52	CG4-30R2
17	52	(11)	(136)	111	165	136	108	89.4	0.17~0.37	3.81	CG4-40L1
17	52	(12)	(176)	131	249	205	165	137	0.17~0.37	4.78	CG4-50R1
17	52	(12)	(176)	131	250	204	160	130	0.17~0.37	4.78	CG4-50R2
17	52	(12)	(218)	151	348	288	233	194	0.17~0.37	6.36	CG4-60R1
17	52	—	—	71	45.6	37.0	28.7	23.0	0.17~0.37	1.56	CG4-20L1
17	52	—	—	71	45.5	36.0	26.9	21.4	0.17~0.37	1.56	CG4-20L2
17	52	(12)	(96)	91	96.3	79.1	62.3	50.9	0.17~0.37	2.52	CG4-30L1
17	52	(12)	(96)	91	96.8	78.3	59.4	47.3	0.17~0.37	2.52	CG4-30L2
17	52	(11)	(136)	111	165	136	108	89.4	0.17~0.37	3.81	CG4-40L1
17	52	(12)	(176)	131	249	205	165	137	0.17~0.37	4.78	CG4-50L1
17	52	(12)	(176)	131	250	204	160	130	0.17~0.37	4.78	CG4-50L2
17	52	(12)	(218)	151	348	288	233	194	0.17~0.37	6.36	CG4-60L1

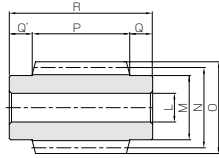
[Caution on Secondary Operations] ① Please read "Caution on Performing Secondary Operations" (Page 344) when performing modifications and/or secondary operations for safety concerns. KHK Quick-Mod Gears, the KHK's system for quick modification of KHK stock gears is also available.

# SW Steel Worms

## Module 5, 6



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)



W3

Catalog No.	Normal module	Number of starts	Lead angle	Hand thread	Shape	Bore L <sub>H7</sub>	Hub dia. M	Pitch dia. N	Outside dia. O	Face width P	Hub width (R) Q	Hub width (L) Q'
SW5-R1	m5	1	4°06'	R	W3	25	56	70	80	85	20	20
SW5-R2		2	8°13'	R	W3	25	56	70	80	85	20	20
SW6-R1	m6	1	4°18'	R	W3	30	64	80	92	100	25	25
SW6-R2		2	8°38'	R	W3	30	64	80	92	100	25	25

[Caution on Product Characteristics] ① These worms produce axial thrust forces. See Page 344 for more details.

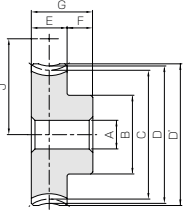
\* For products not categorized in our KHK Stock Gear series, custom gear production services with **short lead times** is available. For details see Page 8.

# BG · CG Bronze Worm Wheels & Gray Iron Worm Wheels

## Module 5, 6



Specifications	
Catalog No.	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 (formerly JIS PBC2) FC200
Heat treatment	—
Tooth hardness	—



H1

Catalog No.	Reduction ratio	Normal module	No. of teeth	Number of starts	Helix angle	Hand thread	Shape	Bore	Hub dia.	Pitch dia.	Throat dia.	Outside dia.	Face width
								A <sub>H7</sub>	B	C	D	D'	E
BG5-20R1	20	m5	20	1	4°06'	R	H1	22	75	100.26	110	113	45
BG5-20R2	10		20	2	8°13'	R	H1	22	75	101.04	110	113	45
BG6-20R1	20	m6	20	1	4°18'	R	H1	25	100	120.34	132	136	52
BG6-20R2	10		20	2	8°38'	R	H1	25	100	121.38	132	136	52

Catalog No.	Reduction ratio	Normal module	No. of teeth	Number of starts	Helix angle	Hand thread	Shape	Bore	Hub dia.	Pitch dia.	Throat dia.	Outside dia.	Face width
								A <sub>H7</sub>	B	C	D	D'	E
CG5-20R1	20	m5	20	1	4°06'	R	H1	22	75	100.26	110	113	45
CG5-20R2	10		20	2	8°13'	R	H1	22	75	101.04	110	113	45
CG5-30R1	30		30	1	4°06'	R	HB	22	75	150.38	160	163	45
CG5-30R2	15		30	2	8°13'	R	HB	22	75	151.56	160	163	45
CG5-40R1	40		40	1	4°06'	R	H2	22	90	200.51	210	213	45
CG5-50R1	50		50	1	4°06'	R	H2	22	90	250.61	260	263	45
CG5-50R2	25	50	2	8°13'	R	H2	22	90	252.59	260	263	45	
CG5-60R1	60	60	1	4°06'	R	H2	22	100	300.77	310	313	45	
CG6-20R1	20	m6	20	1	4°18'	R	H1	25	100	120.34	132	136	52
CG6-20R2	10		20	2	8°38'	R	H1	25	100	121.38	132	136	52
CG6-30R1	30		30	1	4°18'	R	HB	25	100	180.51	192	196	52
CG6-30R2	15		30	2	8°38'	R	HB	25	100	182.06	192	196	52
CG6-40R1	40		40	1	4°18'	R	H2	25	100	240.68	252	256	52
CG6-50R1	50		50	1	4°18'	R	H2	25	100	300.85	312	316	52
CG6-50R2	25	50	2	8°38'	R	H2	25	100	303.44	312	316	52	
CG6-60R1	60	60	1	4°18'	R	H2	25	120	361.02	372	376	52	

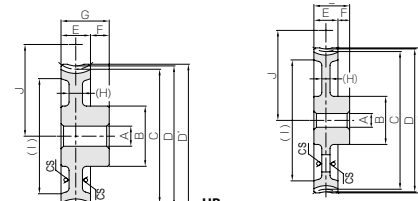
[Caution on Product Characteristics] ① Worm Wheels are profile shifted to create the proper center distance.  
 ② H2 Shape Worm Gears have elongated casting holes in the web (H).  
 ③ The allowable torques shown in the table are the calculated values according to the assumed usage conditions. Please see Page 342 for more details.

# SW Steel Worms

Total length	Set Screw		Weight (kg)	Catalog No.
	R	S		
125	—	—	2.86	SW5-R1
125	—	—	2.86	SW5-R2
150	—	—	4.38	SW6-R1
150	—	—	4.38	SW6-R2

[Caution on Secondary Operations] ① Please read "Caution on Performing Secondary Operations" (Page 344) 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.  
 ② Gear tooth hardening of the worm reduces the precision (introduces errors in the lead and pressure angles). Avoid heat hardening as it will create bad tooth contact causing abrasion of the wheel.

# BG · CG Bronze Worm Wheels & Gray Iron Worm Wheels



HB

H2

\* CS has a sand mold casting finish. NOTE 1 : Allowable torque for worm revolution (rpm)

Hub width	Total length	Mounting distance	Allowable torque (N·m) NOTE 1						Backlash (mm)	Weight (kg)	Catalog No.
			30 rpm	100 rpm	300 rpm	600 rpm	900 rpm	1200 rpm			
F	G	J	30 rpm	100 rpm	300 rpm	600 rpm	900 rpm	1200 rpm			
20	65	85	146	117	91.2	73.0	63.7	56.9	0.20~0.40	3.89	
20	65	85	146	115	85.8	68.4	58.8	52.2	0.20~0.40	3.89	
20	72	100	232	185	144	115	99.2	88.8	0.22~0.42	6.60	
20	72	100	235	183	136	109	92.3	82.0	0.22~0.42	6.60	

Hub width	Total length	Web thickness (H)	Web O.D. (I)	Mounting distance J	Allowable torque (N·m) NOTE 1				Backlash (mm)	Weight (kg)	Catalog No.
					30 rpm	100 rpm	300 rpm	600 rpm			
F	G	(H)	(I)	J	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	
20	65	—	—	85	87.9	68.9	51.5	41.0	0.20~0.40	3.18	
20	65	(13)	(127)	110	185	150	119	96.8	0.20~0.40	4.78	
20	65	(13)	(127)	110	187	150	114	90.6	0.20~0.40	4.78	
20	65	(16)	(172)	135	316	258	206	170	0.22~0.42	7.44	
20	65	(16)	(223)	160	477	390	315	261	0.20~0.40	9.79	
20	65	(16)	(223)	160	483	390	307	249	0.20~0.40	9.79	
20	65	(13)	(276)	185	668	548	443	369	0.20~0.40	12.0	
20	72	—	—	100	139	111	86.2	—	0.22~0.42	5.39	
20	72	—	—	100	141	110	81.8	—	0.22~0.42	5.39	
20	72	(15)	(155)	130	294	237	187	—	0.22~0.42	8.28	
20	72	(15)	(155)	130	299	238	181	—	0.22~0.42	8.28	
20	72	(15)	(213)	160	502	407	325	—	0.22~0.42	10.9	
20	72	(16)	(275)	190	760	615	496	—	0.22~0.42	14.0	
20	72	(16)	(275)	190	774	620	488	—	0.22~0.42	14.0	
20	72	(17)	(336)	220	1060	865	698	—	0.22~0.42	19.8	

[Caution on Secondary Operations] ① Please read "Caution on Performing Secondary Operations" (Page 344) 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.