



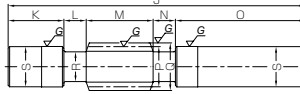
KWG Ground Worm Shafts



Module 3, 4



Specifications	
Precision grade	KHK W 001 grade 2
Reference section of gear	Axial
Gear teeth	Standard full depth
Normal pressure angle	20°
Material	SCM440
Heat treatment	Thermal refined, tooth surface induction hardened
Tooth hardness	50 ~ 60HRC



W6

Catalog No.	Axial module	Number of starts	Lead angle	Hand thread	Shape	Total length		Shaft length (L)		Neck length (L)		Face width		Neck length (R)		Shaft length (R)		Pitch dia.	
						J	K	L	M	N	O	P							
KWG3-R1	m3	1	4°31'	R	W6	300	55	30	60	30	125	38							38
KWG3-R2		2	8°58'	R	W6	300	55	30	60	30	125	38							38
KWG4-R1	m4	1	5°43'	R	W6	360	70	32.5	75	32.5	150	40							40
KWG4-R2		2	11°19'	R	W6	360	70	32.5	75	32.5	150	40							40

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

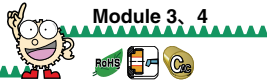
Outside dia.	Neck dia.	Shaft dia.	Weight (kg)	Catalog No.
44	30	40.2	2.66	KWG3-R1
44	30	40.2	2.66	KWG3-R2
48	29	45.2	3.85	KWG4-R1
48	29	45.2	3.85	KWG4-R2

[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 Due to the gear teeth being induction hardened, no secondary operations can be performed on tooth areas including the bottom land (approx. 2 to 3 mm). Use carbide tools for the modification of the shaft area near the bottom land.



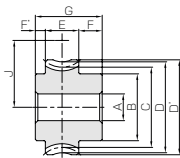
AGF Worm Wheels



Module 3, 4



Specifications	
Precision grade	KHK W 002 grade 2
Reference section of gear	Rotating plane
Gear teeth	Standard full depth
Normal pressure angle	20°
Material	CACT02 (formerly JIS A1/BC2) *
Heat treatment	—
Tooth hardness	—



H6

* H8, H9 shape have a hub made from FC200 cast iron.

Catalog No.	Reduction ratio	Transverse module	No. of teeth	Number of starts	Profile shift coefficient	Helix angle	Hand thread	Shape	Bore		Hub dia.	Pitch dia.	Throat dia.	Outside dia.	Face width	Hub width(R)
									A _{H7}	B						
AGF3-20R1	20	m3	20	1	+0.333	4°31'	R	H6	20	50	60	68	71	25	17.5	
AGF3-20R2	10		20	2	+0.333	8°58'	R	H6	20	50	60	68	71	25	17.5	
AGF3-25R1	25		25	1	0	4°31'	R	H6	20	55	75	81	84	25	17.5	
AGF3-30R1	30		30	1	+0.333	4°31'	R	H8	20	55	90	98	101	25	17.5	
AGF3-30R2	15		30	2	+0.333	8°58'	R	H8	20	55	90	98	101	25	17.5	
AGF3-36R1	36		36	1	+0.333	4°31'	R	H8	20	60	108	116	119	25	17.5	
AGF3-40R1	40	40	1	+0.333	4°31'	R	H8	20	70	120	128	131	25	17.5		
AGF3-48R1	48	48	1	+0.333	4°31'	R	H9	20	70	144	152	155	25	17.5		
AGF3-50R1	50	50	1	+0.333	4°31'	R	H9	20	75	150	158	161	25	17.5		
AGF3-60R1	60	60	1	+0.333	4°31'	R	H9	20	80	180	188	191	25	17.5		
AGF4-20R1	20	m4	20	1	0	5°43'	R	H6	20	60	80	88	92	30	20	
AGF4-20R2	10		20	2	0	11°19'	R	H6	20	60	80	88	92	30	20	
AGF4-25R1	25		25	1	0	5°43'	R	H6	20	65	100	108	112	30	20	
AGF4-30R1	30		30	1	0	5°43'	R	H8	20	65	120	128	132	30	20	
AGF4-30R2	15		30	2	0	11°19'	R	H8	20	65	120	128	132	30	20	
AGF4-36R1	36		36	1	0	5°43'	R	H9	20	70	144	152	156	30	20	
AGF4-40R1	40	40	1	0	5°43'	R	H9	20	80	160	168	172	30	20		
AGF4-48R1	48	48	1	0	5°43'	R	H9	20	90	192	200	204	30	20		
AGF4-50R1	50	50	1	0	5°43'	R	H9	20	90	200	208	212	30	20		
AGF4-60R1	60	60	1	0	5°43'	R	H0	160	—	240	248	252	30	7		

[Caution on Product Characteristics] ① The allowable torques shown in the table are the calculated values according to the assumed usage conditions. Please see Page 342 for more details.

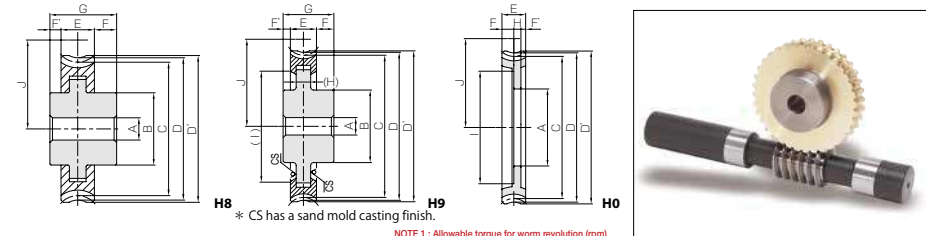
② There may be space in the casting between the two materials, but it will not affect the joint strength.

KWG

Ground Worm Shafts

AGF

Worm Wheels



* CS has a sand mold casting finish.

NOTE 1: Allowable torque for worm revolution (rpm)

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	900 rpm	1200 rpm	1800 rpm			
7.5	50	—	—	50	59.7	49.1	38.3	31.5	27.5	25.1	21.5	0.16~0.29	0.88	AGF3-20R1
7.5	50	—	—	50	60.2	48.2	36.1	29.5	25.4	23.0	19.4	0.16~0.29	0.88	AGF3-20R2
7.5	50	—	—	56.5	90.2	74.3	58.8	48.9	42.6	39.0	33.5	0.16~0.29	1.24	AGF3-25R1
7.5	50	—	—	65	126	105	83.1	69.6	61.0	55.4	48.2	0.16~0.29	1.63	AGF3-30R1
7.5	50	—	—	65	128	105	79.8	65.2	57.2	51.6	44.3	0.16~0.29	1.63	AGF3-30R2
7.5	50	—	—	74	178	148	118	99.7	87.5	79.4	69.1	0.16~0.29	2.25	AGF3-36R1
7.5	50	—	—	80	216	180	145	122	108	98.0	84.9	0.16~0.29	2.52	AGF3-40R1
7.5	50	(15)	(120)	92	303	252	204	174	153	141	121	0.16~0.29	3.28	AGF3-48R1
7.5	50	(15)	(125)	95	326	272	220	188	166	152	132	0.16~0.29	3.62	AGF3-50R1
7.5	50	(15)	(155)	110	457	383	310	265	237	217	188	0.16~0.29	4.76	AGF3-60R1
10	60	—	—	60	123	101	78.8	64.6	56.3	51.5	43.8	0.19~0.32	1.77	AGF4-20R1
10	60	—	—	60	127	101	76.0	61.9	53.2	48.3	40.5	0.19~0.32	1.77	AGF4-20R2
10	60	—	—	70	186	153	121	100	87.3	79.9	68.5	0.19~0.32	2.56	AGF4-25R1
10	60	—	—	80	260	216	171	143	125	114	98.4	0.19~0.32	3.28	AGF4-30R1
10	60	—	—	80	270	220	168	137	120	108	92.2	0.19~0.32	3.28	AGF4-30R2
10	60	(20)	(113)	92	366	304	243	204	179	164	141	0.19~0.32	4.10	AGF4-36R1
10	60	(20)	(128)	100	445	370	297	251	220	201	173	0.19~0.32	5.25	AGF4-40R1
10	60	(20)	(160)	116	624	519	420	356	314	288	248	0.19~0.32	6.95	AGF4-48R1
10	60	(20)	(168)	120	673	560	454	385	340	312	269	0.19~0.32	7.35	AGF4-50R1
15	30	8	204	140	941	788	638	544	486	444	385	0.19~0.32	3.60	AGF4-60R1

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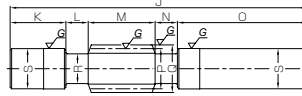
② The tooth and the hub areas, fastened by casting, are designed to have higher hardness than other parts of the gear. However, please avoid areas other than the hub. Also, the strength may decrease if secondary operations are performed.



KWG Ground Worm Shafts



Specifications	
Precision grade	KHK W 001 grade 2
Reference section of gear	Axial
Gear teeth	Standard full depth
Normal pressure angle	20°
Material	SCM440
Heat treatment	Thermal refined, tooth surface induction hardened
Tooth hardness	50 ~ 60HRC



W6

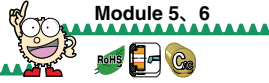
Catalog No.	Axial module	Number of starts	Lead angle	Hand thread	Shape	Total length		Shaft length (L)		Neck length (L)		Face width		Neck length (R)		Shaft length (R)		Pitch dia.	
						J	K	L	M	N	O	P							
KWG5-R1	m5	1	5°43'	R	W6	400	75	30	90	30	175	50							
KWG6-R1	m6	1	5°43'	R	W6	400	60	40	100	40	160	60							

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

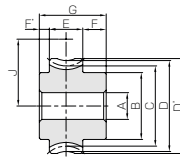
* For products not categorized in our KHK Stock Gear series, custom gear production services with **short lead times** is available. For details see Page 8.



AGF Worm Wheels



Specifications	
Precision grade	KHK W 002 grade 2
Reference section of gear	Rotating plane
Gear teeth	Standard full depth
Normal pressure angle	20°
Material	CAC702 (formerly JIS A&BC2) *
Heat treatment	—
Tooth hardness	—



H6

* H8, H9 shape have a hub made from FC200 cast iron.

Catalog No.	Reduction ratio	Transverse module	No. of teeth	Number of starts	Profile shift coefficient	Helix angle	Hand thread	Shape	Bore		Hub dia.		Pitch dia.		Throat dia.		Outside dia.		Face width		Hub width(R)	
									A _{H7}	B	C	D	D'	E	F							
AGF5-20R1	20	m5	20	1	0	5°43'	R	H6	22	75	100	110	115	35	23							
AGF5-25R1	25		25	1	0	5°43'	R	H6	22	75	125	135	140	35	23							
AGF5-30R1	30		30	1	0	5°43'	R	H8	22	75	150	160	165	35	23							
AGF5-36R1	36		36	1	0	5°43'	R	H9	22	90	180	190	195	35	23							
AGF5-40R1	40		40	1	0	5°43'	R	H9	22	110	200	210	215	35	23							
AGF5-48R1	48	m6	48	1	0	5°43'	R	H0	140	—	240	250	255	35	7.5							
AGF5-50R1	50		50	1	0	5°43'	R	H0	150	—	250	260	265	35	7.5							
AGF5-60R1	60		60	1	0	5°43'	R	H0	200	—	300	310	315	35	7.5							
AGF6-20R1	20	m6	20	1	0	5°43'	R	H6	25	85	120	132	138	40	23							
AGF6-25R1	25		25	1	0	5°43'	R	H6	25	90	150	162	168	40	23							
AGF6-30R1	30		30	1	0	5°43'	R	H8	25	100	180	192	198	40	23							
AGF6-36R1	36		36	1	0	5°43'	R	H9	25	110	216	228	234	40	23							
AGF6-40R1	40		40	1	0	5°43'	R	H0	130	—	240	252	258	40	8							
AGF6-48R1	48	m6	48	1	0	5°43'	R	H0	180	—	288	300	306	40	8							
AGF6-50R1	50		50	1	0	5°43'	R	H0	190	—	300	312	318	40	8							
AGF6-60R1	60		60	1	0	5°43'	R	H0	250	—	360	372	378	40	8							

[Caution on Product Characteristics] ① The allowable torques shown in the table are the calculated values according to the assumed usage conditions. Please see Page 342 for more details.

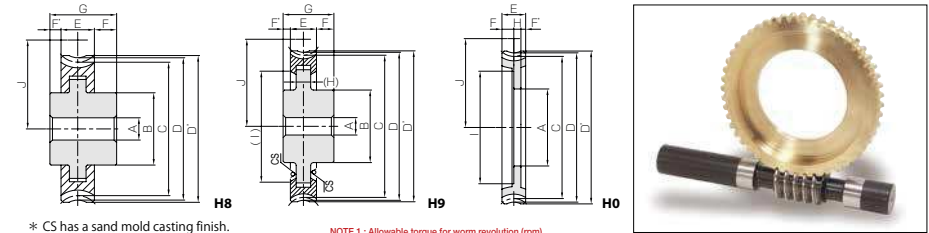
- ② There may be space in the casting between the two materials, but it will not affect the joint strength.
- ③ For H0-shaped products with a bore size of φ 190 or more, the bore tolerance is H8.

Ground Worm Shafts

Outside dia.	Neck dia.	Shaft dia.	Weight (kg)	Catalog No.
Q	R	S		
60	36	50.2	5.75	KWG5-R1
72	44	60.2	8.09	KWG6-R1

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② Due to the gear teeth being induction hardened, no secondary operations can be performed on tooth areas including the bottom land (approx. 2 to 3 mm). Use carbide tools for the modification of the shaft area near the bottom land.

Worm Wheels



* CS has a sand mold casting finish.

NOTE 1 : Allowable torque for worm revolution (rpm)

Hub width (L)	Total length	Web thickness (H)	Web O.D. (I)	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				1800 rpm
F'	G	(H)	(I)	J	30 rpm	100 rpm	300 rpm	600 rpm	900 rpm	1200 rpm	1800 rpm			
12	70	—	—	75	211	172	134	108	95.0	86.2	72.7	0.22~0.35	3.26	AGF5-20R1
12	70	—	—	87.5	319	261	206	168	147	134	114	0.22~0.35	4.48	AGF5-25R1
12	70	(25)	(115)	100	446	369	291	239	211	191	164	0.22~0.35	5.37	AGF5-30R1
12	70	(25)	(140)	115	627	519	414	343	302	274	234	0.22~0.35	7.70	AGF5-36R1
12	70	(26)	(162)	125	763	632	506	421	371	337	288	0.22~0.35	9.97	AGF5-40R1
17.5	35	10	195	145	1070	886	715	598	530	483	411	0.22~0.35	5.04	AGF5-48R1
17.5	35	10	205	150	1150	956	772	646	574	523	446	0.22~0.35	5.28	AGF5-50R1
17.5	35	10	255	175	1610	1340	1090	913	820	744	639	0.22~0.35	6.48	AGF5-60R1
12	75	—	—	90	329	268	208	167	146	131	110	0.24~0.37	4.95	AGF6-20R1
12	75	—	—	105	497	405	319	259	227	204	173	0.24~0.37	7.14	AGF6-25R1
12	75	(30)	(135)	120	696	572	451	368	325	290	248	0.24~0.37	9.21	AGF6-30R1
12	75	(30)	(172)	138	978	806	641	528	466	417	355	0.24~0.37	12.5	AGF6-36R1
20	40	12	190	150	1190	981	784	648	572	513	436	0.24~0.37	6.20	AGF6-40R1
20	40	12	240	174	1670	1380	1110	920	816	735	628	0.24~0.37	7.58	AGF6-48R1
20	40	12	250	180	1800	1480	1200	994	885	796	676	0.24~0.37	8.00	AGF6-50R1
20	40	12	310	210	2520	2090	1680	1410	1260	1130	969	0.24~0.37	10.0	AGF6-60R1

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