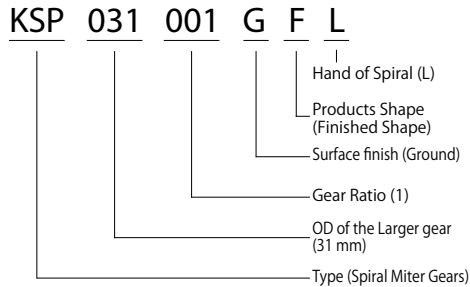




■ Catalog Number of NISSE Spiral Bevel Gears

The catalog number systems of KSP Ground Spiral Bevel Gears differs from other miter and bevel gears.

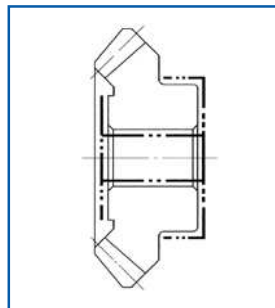


■ The Characteristics of KSP Spiral Bevel Gears

1. JIS Grade 0, high strength, high precision products
2. Superior performance with regard to high speed, low noise, and low vibration.
3. Module range from 1.5 to 6
4. Three gear ratios: 1, 1.5 and 2

■ Products Style

Type F - Finished Style
 Type U - Hub masked to Allow Secondary Operations
 ※ The heavy lines in the figure below indicate the masked areas during carburizing.



■ Notes about the Transmission Capability Table

1. The values given in the table are for a service factor of 1. Using the table on the right, please modify the value according to the actual conditions. Load torque compensation is calculated from the load torque at the output shaft x service factor (Sf).
2. For speed increaser applications (where the gear is the driver and the pinion is driven), the torque on the pinion is the value in the table multiplied by the speed ratio.

NOTE 1: For speed ratio of 1/1.5, the torque on the pinion is 1/1.5 times the value given in the table.

■ Service Factor Sf

Impact from Prime Mover	Impact from Load Side of Machine		
	Uniform Load	Medium Impact Load	Heavy Impact Load
Uniform Load (Motor, Turbine, Hydraulic Motor)	1.0	1.25	1.75
Light Impact Load (Multicylinder Engine)	1.25	1.5	2.0
Medium Impact Load (Single Cylinder Engine)	1.5	1.75	2.25

■ Transmission Capability Table (Speed Ratio: 1)

Model	Rotation (rpm)	Upper Transmission Capability (kw) Lower Torque (N·m)						
		50	100	300	600	900	1200	1800
KSP031001	0.035	0.068	0.195	0.375	0.548	0.716	1.04	1.65
	6.65	6.51	6.20	5.98	5.82	5.69	5.51	5.25
KSP040001	0.092	0.179	0.511	0.980	1.43	1.86	2.69	4.25
	17.6	17.2	16.3	15.6	15.2	14.8	14.3	13.5
KSP053001	0.211	0.412	1.17	2.23	3.25	4.22	6.08	9.55
	40.4	39.3	37.3	35.6	34.5	33.6	32.3	30.4
KSP066001	0.367	0.715	2.02	3.85	5.59	7.26	10.4	16.3
	70.2	68.3	64.4	61.4	59.3	57.8	55.4	52.0
KSP078001	0.577	1.12	3.16	6.00	8.68	11.2	16.1	25.1
	109.8	106.9	101.0	95.5	92.2	89.5	85.5	79.8
KSP092001	0.901	1.75	4.91	9.31	13.5	17.4	24.9	38.6
	172.6	166.7	156.9	148.1	143.2	138.3	132.4	122.6
KSP105001	1.44	2.78	7.80	14.7	21.2	27.4	39.1	60.3
	274.6	265.8	248.1	234.4	225.6	218.7	207.9	192.2
KSP132001	2.33	4.50	12.6	23.6	34.0	43.7	62.0	95.0
	445.2	430.5	400.1	376.6	360.9	348.1	329.5	302.0
KSP157001	3.68	7.10	19.7	37.0	53.0	68.1	96.2	146
	704.1	678.6	628.6	589.4	562.9	542.3	510.9	466.8
KSP184001	5.31	10.2	28.3	52.8	75.5	96.8	136	206
	1010	976.7	901.2	841.4	801.2	770.8	722.8	656.1

■ Transmission Capability Table (Speed Ratio: 1.5)

Model	Pinion Rotation (rpm)	Upper Transmission Capability (kw) Lower Torque (N·m)						
		50	100	300	600	900	1200	1800
KSP0481.5	0.077	0.151	0.432	0.830	1.21	1.58	2.29	3.64
	22.2	21.6	20.6	19.8	19.3	18.9	18.2	17.4
KSP0611.5	0.159	0.309	0.882	1.69	2.46	3.21	4.64	7.33
	45.4	44.3	42.2	40.4	39.2	38.3	37.0	35.0
KSP0741.5	0.277	0.540	1.53	2.93	4.27	5.55	8.00	12.6
	79.4	77.4	73.4	70.1	68.0	66.3	63.7	60.1
KSP0901.5	0.466	0.908	2.57	4.90	7.12	9.24	13.3	20.8
	133.4	130.4	122.6	116.7	113.8	110.8	105.9	99.0
KSP1051.5	0.700	1.36	3.84	7.31	10.6	13.7	19.7	30.7
	201.0	195.2	183.4	174.6	168.7	163.8	156.9	147.1
KSP1241.5	1.03	2.00	5.63	10.7	15.5	20.0	28.6	44.5
	295.2	286.4	268.7	255.0	246.1	239.3	227.5	212.8
KSP1411.5	1.56	3.03	8.51	16.1	23.2	30.1	42.9	66.4
	448.2	434.4	406.0	384.4	370.7	358.9	341.3	317.7
KSP1631.5	2.27	4.39	12.3	23.2	33.4	43.1	61.4	94.6
	650.2	628.6	587.4	554.1	532.5	514.8	489.4	452.1
KSP1811.5	2.92	5.64	15.8	29.7	42.7	55.1	78.3	120
	836.5	809.0	754.1	710.0	680.6	658.0	623.7	574.7

■ Transmission Capability Table (Speed Ratio: 2)

Model	Pinion Rotation (rpm)	Upper Transmission Capability (kw) Lower Torque (N·m)						
		50	100	300	600	900	1200	1800
KSP039002	0.025	0.049	0.142	0.275	0.404	0.528	0.770	1.23
	9.63	9.45	9.07	8.76	8.57	8.41	8.17	7.83
KSP056002	0.075	0.147	0.423	0.814	1.19	1.55	2.26	3.59
	28.8	28.1	27.0	26.0	25.3	24.8	23.9	22.8
KSP075002	0.185	0.361	1.03	1.98	2.89	3.76	5.45	8.61
	70.7	69.0	65.7	63.1	61.3	59.9	57.9	54.8
KSP096002	0.364	0.710	2.02	3.86	5.62	7.31	10.5	16.6
	139.3	135.3	128.5	122.6	119.6	116.7	111.8	105.9
KSP119002	0.649	1.26	3.58	6.82	9.90	12.9	18.5	29.0
	248.7	241.2	227.5	217.7	209.9	205.0	196.1	184.4
KSP145002	1.07	2.08	5.87	11.2	16.2	21.0	30.1	46.9
	408.9	397.2	373.6	356.0	343.2	333.4	319.7	298.1
KSP172002	1.78	3.45	9.72	18.4	26.6	34.5	49.3	76.5
	680.6	660.0	618.8	587.4	565.8	549.2	523.7	487.4

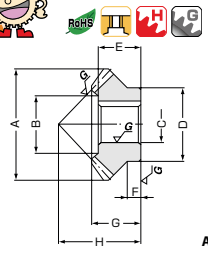
KSP Nissei Ground Spiral Miter Gears

Module 1.5 ~ 6



Specifications	
Precision grade	JIS B 1704 : 1978 grade 0
Gear teeth	Gleason
Pressure angle	20°
Helix angle	35°
Material	SCM415 *
Heat treatment	Overall carburizing
Tooth hardness	60 ~ 63HRC **

* Module 3.5 and larger are made of SCM420.
** * Tooth Hardness for module 2 and 2.5 is between 80 to 83 HRA.



Catalog No.	Gear ratio	Module	No. of teeth	Direction of spiral	Pitch dia.	Face width	Shape	Outside dia.			Hub dia.		Length of bore
								A	B	C _{H7}	D	E	
KSP031001GF L KSP031001GF R	1	m1.5	20	L R	30	7	A	30.5	16.2	12	22	13	
KSP040001GF L KSP040001GF R		m2	20	L R	40	9	B	40	22.5	14	31	14	
KSP053001GF L KSP053001GF R		m2.5	21	L R	52.5	12	B	53	31	19	38	20	
KSP066001GF L KSP066001GF R		m3	21	L R	63	15	B	65	33.6	23	47	25	
KSP078001GF L KSP078001GF R		m3.5	22	L R	77	18	B	78	43.1	27	54	27	
KSP092001GF L KSP092001GF R		m4	22	L R	88	21	B	91	48.6	30	63	32	
KSP105001GF L KSP105001GF R		m4.5	23	L R	103.5	25	C	105	50	32	70	35	
KSP132001GF L KSP132001GF R		m5	26	L R	130	29	C	132	64	36	82	41	
KSP157001GF L KSP157001GF R		m5.5	28	L R	154	34	C	157	76	40	92	47	
KSP184001GF L KSP184001GF R		m6	30	L R	180	38	C	184	84	48	101	51	

[Caution on Product Characteristics] ① The allowable torque is calculated by converting the output torque (600 rpm) on Page 317 to kgf/m, according to assumed usage conditions.
② These gears produce axial thrust forces. See Page 254 for more details.

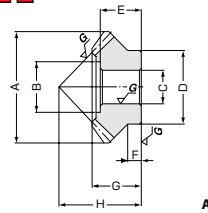
KSP Nissei Ground Spiral Miter Gears

Module 1.5 ~ 6



Specifications	
Precision grade	JIS B 1704 : 1978 grade 0
Gear teeth	Gleason
Pressure angle	20°
Helix angle	35°
Material	SCM415 *
Heat treatment	Carburizing (bore & hubs are masked)
Tooth hardness	60 ~ 63HRC **

* Module 3.5 and larger are made of SCM420.
** * Tooth Hardness for module 2 and 2.5 is between 80 to 83 HRA.

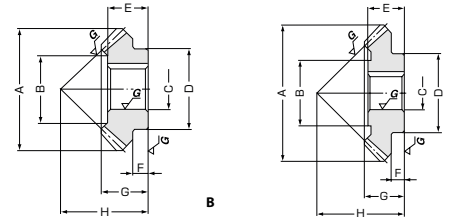


Catalog No.	Gear ratio	Module	No. of teeth	Direction of spiral	Pitch dia.	Face width	Shape	Outside dia.			Hub dia.		Length of bore
								A	B	C _{H7}	D	E	
KSP031001GU L KSP031001GU R	1	m1.5	20	L R	30	7	A	30.5	16.5	10	22	13	
KSP040001GU L KSP040001GU R		m2	20	L R	40	9	B	40	22.5	12	31	14	
KSP053001GU L KSP053001GU R		m2.5	21	L R	52.5	12	B	53	31	14	38	20	
KSP066001GU L KSP066001GU R		m3	21	L R	63	15	B	65	33.5	16	47	25	
KSP078001GU L KSP078001GU R		m3.5	22	L R	77	18	B	78	43	20	54	27	
KSP092001GU L KSP092001GU R		m4	22	L R	88	21	B	91	49	22	63	32	
KSP105001GU L KSP105001GU R		m4.5	23	L R	103.5	25	C	105	50	26	70	35	
KSP132001GU L KSP132001GU R		m5	26	L R	130	29	C	132	64	30	82	41	
KSP157001GU L KSP157001GU R		m5.5	28	L R	154	34	C	157	76	32	92	47	
KSP184001GU L KSP184001GU R		m6	30	L R	180	38	C	184	84	40	101	51	

[Caution on Product Characteristics] ① The allowable torque is calculated by converting the output torque (600 rpm) on Page 317 to kgf/m, according to assumed usage conditions.
② These gears produce axial thrust forces. See Page 254 for more details.

KSP

Ground Spiral Miter Gears

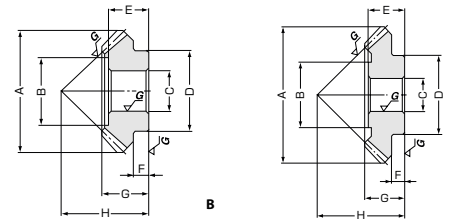


Hub width	Total length	Mounting distance	Keyway	Allowable torque (kgf·m)	Backlash (mm)	Weight (kg)	Catalog No.
6	15	25	4 x 1.8	0.61	0 ~ -0.05	0.04	KSP031001GF L KSP031001GF R
7	16.5	30	5 x 2.3	1.59	0 ~ -0.05	0.08	KSP040001GF L KSP040001GF R
8	22.8	40	6 x 2.8	3.63	0.05 ~ -0.10	0.18	KSP053001GF L KSP053001GF R
13	29.5	50	7 x 3	6.26	0.05 ~ -0.10	0.34	KSP066001GF L KSP066001GF R
12	32	57	8 x 3.3	9.74	0.05 ~ -0.10	0.54	KSP078001GF L KSP078001GF R
14	38	66	8 x 3.3	15.1	0.05 ~ -0.10	0.88	KSP092001GF L KSP092001GF R
14	39	72	10 x 3.3	23.9	0.05 ~ -0.10	1.25	KSP105001GF L KSP105001GF R
14	45	88	10 x 3.3	38.4	0.05 ~ -0.10	2.39	KSP132001GF L KSP132001GF R
20	53.5	105	12 x 3.3	60.1	0.05 ~ -0.10	3.71	KSP157001GF L KSP157001GF R
17	56.5	118	14 x 3.8	85.8	0.05 ~ -0.10	5.55	KSP184001GF L KSP184001GF R

[Caution on Secondary Operations] ① No secondary operations can be performed on these precision finished gears due to the applied carburizing process.

KSP

Ground Spiral Miter Gears

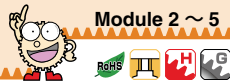


Hub width	Total length	Mounting distance	Machinable max. bore	Allowable gear torque (kgf·m)	Backlash (mm)	Weight (kg)	Catalog No.
6	15	25	12	0.61	0 ~ -0.05	0.04	KSP031001GU L KSP031001GU R
7	16.5	30	16	1.59	0 ~ -0.05	0.09	KSP040001GU L KSP040001GU R
8	22.8	40	22	3.63	0.05 ~ -0.10	0.21	KSP053001GU L KSP053001GU R
13	29.5	50	25	6.26	0.05 ~ -0.10	0.39	KSP066001GU L KSP066001GU R
12	32	57	32	9.74	0.05 ~ -0.10	0.59	KSP078001GU L KSP078001GU R
14	38	66	38	15.1	0.05 ~ -0.10	0.96	KSP092001GU L KSP092001GU R
14	39	72	40	23.9	0.05 ~ -0.10	1.33	KSP105001GU L KSP105001GU R
14	45	88	48	38.4	0.05 ~ -0.10	2.49	KSP132001GU L KSP132001GU R
20	53.5	105	55	60.1	0.05 ~ -0.10	3.90	KSP157001GU L KSP157001GU R
17	56.5	118	62	85.8	0.05 ~ -0.10	5.79	KSP184001GU L KSP184001GU R

[Caution on Secondary Operations] ① Please read "Caution on Performing Secondary Operations" (Page 284) 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.

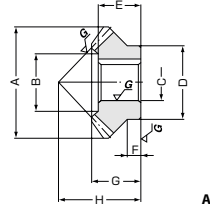


KSP Nissei Ground Spiral Bevel Gears



Specifications	
Precision grade	JIS B 1704 : 1978 grade 0
Gear teeth	Gleason
Pressure angle	20°
Helix angle	35°
Material	SCM415 *
Heat treatment	Overall carburizing
Tooth hardness	60 ~ 63HRC **

* Module 3.5 and larger are made of SCM420.
** * Tooth Hardness for module 2 and 2.5 is between 80 to 83 HRA.

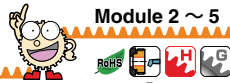


Catalog No.	Gear ratio	Module	No. of teeth	Direction of spiral	Pitch dia.	Face width	Shape	Outside dia.			Hub dia.	Length of bore
								A	B	C _{H7}		
KSP0481.5GF P KSP0481.5GF G		m2	16	L	32	9	A	34	17.5	12	24	13
			24	R	48	B	48	30.4	15	30	17	
KSP0611.5GF P KSP0611.5GF G		m2.25	18	L	40.5	12	A	42	22.4	15	30	17
			27	R	60.75	B	61	36.3	20	40	20	
KSP0741.5GF P KSP0741.5GF G		m2.75	18	L	49.5	15	A	52	28.8	20	40	20
			27	R	74.25	B	74	44.5	25	50	25	
KSP0901.5GF P KSP0901.5GF G		m3	20	L	60	18	B	63	34.1	22	44	24
			30	R	90	B	90	54.7	27	56	29	
KSP1051.5GF P KSP1051.5GF G		m3.5	20	L	70	21	B	74	37.8	25	50	25
			30	R	105	C	105	53	30	63	32	
KSP1241.5GF P KSP1241.5GF G		m3.75	22	L	82.5	24	B	87	46.6	27	56	29
			33	R	123.75	C	124	64	33	69	35	
KSP1411.5GF P KSP1411.5GF G		m4.25	22	L	93.5	28	B	99	52.9	30	63	32
			33	R	140.25	C	141	68	36	73	41	
KSP1631.5GF P KSP1631.5GF G		m4.5	24	L	108	32	B	113	64.6	33	69	35
			36	R	162	C	163	76	40	82	47	
KSP1811.5GF P KSP1811.5GF G		m5	24	L	120	35	B	126	71.8	36	73	41
			36	R	180	C	181	86	45	90	48	

[Caution on Product Characteristics] ① The allowable torque is calculated by converting the output torque (600 rpm) on Page 317 to kgf/m, according to assumed usage conditions.
② These gears produce axial thrust forces. See Page 284 for more details.

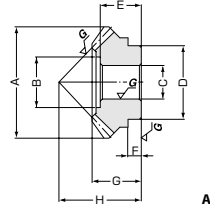


KSP Nissei Ground Spiral Bevel Gears



Specifications	
Precision grade	JIS B 1704 : 1978 grade 0
Gear teeth	Gleason
Pressure angle	20°
Helix angle	35°
Material	SCM415 *
Heat treatment	Carburizing (bore & hubs are masked)
Tooth hardness	60 ~ 63HRC **

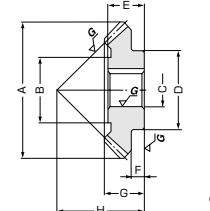
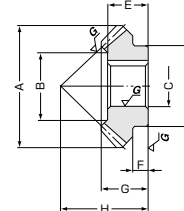
* Module 3.5 and larger are made of SCM420.
** * Tooth Hardness for module 2 and 2.5 is between 80 to 83 HRA.



Catalog No.	Gear ratio	Module	No. of teeth	Direction of spiral	Pitch dia.	Face width	Shape	Outside dia.			Hub dia.	Length of bore
								A	B	C _{H7}		
KSP0481.5GU P KSP0481.5GU G		m2	16	L	32	9	A'	34	17.5	10	24	13
			24	R	48	B	48	30	12	30	17	
KSP0611.5GU P KSP0611.5GU G		m2.25	18	L	40.5	12	A'	42	22	12	30	17
			27	R	60.75	B	61	36	14	40	20	
KSP0741.5GU P KSP0741.5GU G		m2.75	18	L	49.5	15	A'	52	27	14	40	20
			27	R	74.25	B	74	44.5	20	50	25	
KSP0901.5GU P KSP0901.5GU G		m3	20	L	60	18	B	63	34	20	44	24
			30	R	90	B	90	54.5	16	56	29	
KSP1051.5GU P KSP1051.5GU G		m3.5	20	L	70	21	B	74	38	20	50	25
			30	R	105	C	105	53	22	63	32	
KSP1241.5GU P KSP1241.5GU G		m3.75	22	L	82.5	24	B	87	46.5	20	56	29
			33	R	123.75	C	124	64	26	69	35	
KSP1411.5GU P KSP1411.5GU G		m4.25	22	L	93.5	28	B	99	53	22	63	32
			33	R	140.25	C	141	68	30	73	41	
KSP1631.5GU P KSP1631.5GU G		m4.5	24	L	108	32	B	113	64.5	26	69	35
			36	R	162	C	163	76	32	82	47	
KSP1811.5GU P KSP1811.5GU G		m5	24	L	120	35	B	126	71.5	30	73	41
			36	R	180	C	181	86	38	90	48	

[Caution on Product Characteristics] ① The allowable torque is calculated by converting the output torque (600 rpm) on Page 317 to kgf/m, according to assumed usage conditions.
② These gears produce axial thrust forces. See Page 284 for more details.

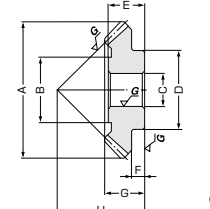
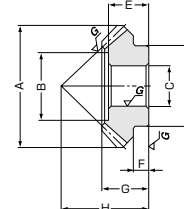
Ground Spiral Bevel Gears



Hub width	Total length	Mounting distance	Keyway	Allowable gear torque (kgf-m)	Backlash (mm)	Weight (kg)	Catalog No.
4.3	14.5	31	4 x 1.8	2.02	0 ~0.05	0.05	KSP0481.5GF P KSP0481.5GF G
7	19	30	5 x 2.3		0.13	0.13	
5.1	19	39	5 x 2.3	4.12	0.05~0.10	0.09	KSP0611.5GF P KSP0611.5GF G
10	23.5	37	6 x 2.8		0.25	0.25	
5.7	22	46	6 x 2.8	7.15	0.05~0.10	0.17	KSP0741.5GF P KSP0741.5GF G
12	29	45	7 x 3		0.45	0.45	
8	26.5	56	6 x 2.8	11.9	0.05~0.10	0.29	KSP0901.5GF P KSP0901.5GF G
13	33	53	8 x 3.3		0.79	0.79	
7	28.5	63	7 x 3	17.8	0.05~0.10	0.43	KSP1051.5GF P KSP1051.5GF G
13	34	57	8 x 3.3		1.09	1.09	
7	33	74	8 x 3.3	26.0	0.05~0.10	0.76	KSP1241.5GF P KSP1241.5GF G
14	36.5	64	10 x 3.3		1.59	1.59	
7	36	82	8 x 3.3	39.2	0.05~0.10	1.07	KSP1411.5GF P KSP1411.5GF G
17	43.5	74	10 x 3.3		2.35	2.35	
7	38.5	92	10 x 3.3	56.5	0.05~0.10	1.50	KSP1631.5GF P KSP1631.5GF G
19	49.5	85	12 x 3.3		3.70	3.70	
10	45.5	105	10 x 3.3	72.4	0.05~0.10	2.12	KSP1811.5GF P KSP1811.5GF G
19	50.5	90	14 x 3.8		4.65	4.65	

[Caution on Secondary Operations] ① No secondary operations can be performed on these precision finished gears due to the applied carburizing process.

Ground Spiral Bevel Gears



Hub width	Total length	Mounting distance	Machinable max. bore	Allowable gear torque (kgf-m)	Backlash (mm)	Weight (kg)	Catalog No.
4.5	14.5	31	10	2.02	0 ~0.05	0.05	KSP0481.5GU P KSP0481.5GU G
7	19	30	20		0.14	0.14	
5.5	19	39	16	4.12	0.05~0.10	0.10	KSP0611.5GU P KSP0611.5GU G
10	23.5	37	27		0.28	0.28	
5.6	22	46	20	7.15	0.05~0.10	0.20	KSP0741.5GU P KSP0741.5GU G
12	29	45	35		0.49	0.49	
8	26.5	56	25	11.9	0.05~0.10	0.34	KSP0901.5GU P KSP0901.5GU G
13	33	53	42		0.84	0.84	
7	28.5	63	28	17.8	0.05~0.10	0.47	KSP1051.5GU P KSP1051.5GU G
13	34	57	42		1.18	1.18	
7	33	74	36	26.0	0.05~0.10	0.80	KSP1241.5GU P KSP1241.5GU G
14	36.5	64	48		1.71	1.71	
7	36	82	42	39.2	0.05~0.10	1.15	KSP1411.5GU P KSP1411.5GU G
17	43.5	74	50		2.46	2.46	
7	38.5	92	48	56.5	0.05~0.10	1.64	KSP1631.5GU P KSP1631.5GU G
19	49.5	85	55		3.84	3.84	
10	45.5	105	55	72.4	0.05~0.10	2.21	KSP1811.5GU P KSP1811.5GU G
19	50.5	90	60		4.85	4.85	

[Caution on Secondary Operations] ① Please read "Caution on Performing Secondary Operations" (Page 284) 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.

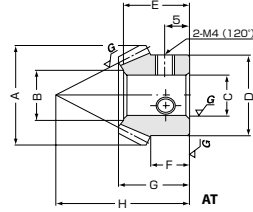
KSP Nissei Ground Spiral Bevel Gears

Module 1.5 ~ 4.5



Specifications	
Precision grade	JIS B 1704 : 1978 grade 0
Gear teeth	Gleason
Pressure angle	20°
Helix angle	35°
Material	SCM415 *
Heat treatment	Overall carburizing
Tooth hardness	60 ~ 63HRC * *

* Module 3.5 and larger are made of SCM420.
* * Tooth Hardness for module 2 and 2.5 is between 80 to 83 HRA.



Catalog No.	Gear ratio	Module	No. of teeth	Direction of spiral	Pitch dia.	Face width	Shape	Outside dia.			Hub dia.			Length of bore
								A	B	CH7	D	E	F	
KSP039002GC P KSP039002GF G	2	m1.5	13	L	19.5	7	AT	21	10.2	8	16	14	13	
26			R	39	B	38.5	24.1	12	24	13				
KSP056002GF P KSP056002GF G		m2	14	L	28	10	B	30	15.3	10	20	12	18	
28			R	56	B	56	35.6	16	30	18				
KSP075002GF P KSP075002GF G		m2.5	15	L	37.5	14	B	40	16.9	14	30	17	24	
30			R	75	B	75	36	22	44	24				
KSP096002GF P KSP096002GF G		m3	16	L	48	18	B	53	23.5	17	36	19	29	
32			R	96	B	96	46	27	56	29				
KSP119002GF P KSP119002GF G		m3.5	17	L	59.5	22	A	65	31.1	22	44	25	34	
34			R	119	C	119	54	33	63	34				
KSP145002GF P KSP145002GF G		m4	18	L	72	27	A	78	31.3	26	54	28	39	
36			R	144	C	145	60	36	73	39				
KSP172002GF P KSP172002GF G	m4.5	19	L	85.5	32	A	93	44.4	32	69	34	46		
38		R	171	C	172	70	43	79	46					

[Caution on Product Characteristics] ① The allowable torque is calculated by converting the output torque (600 rpm) on Page 317 to kgf/m, according to assumed usage conditions.
② These gears produce axial thrust forces. See Page 284 for more details.

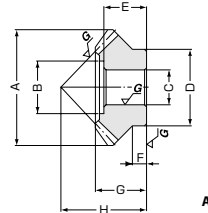
KSP Nissei Ground Spiral Bevel Gears

Module 1.5 ~ 4.5



Specifications	
Precision grade	JIS B 1704 : 1978 grade 0
Gear teeth	Gleason
Pressure angle	20°
Helix angle	35°
Material	SCM415 *
Heat treatment	Carburizing (bore & hubs are masked)
Tooth hardness	60 ~ 63HRC * *

* Module 3.5 and larger are made of SCM420.
* * Tooth Hardness for module 2 and 2.5 is between 80 to 83 HRA.

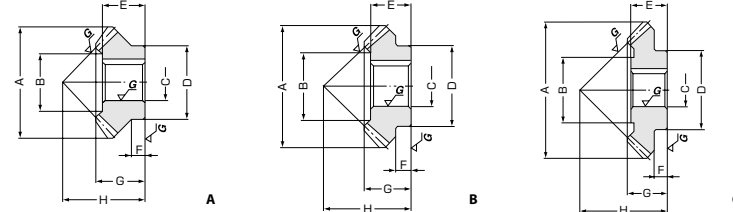


Catalog No.	Gear ratio	Module	No. of teeth	Direction of spiral	Pitch dia.	Face width	Shape	Outside dia.			Hub dia.			Length of bore
								A	B	CH7	D	E	F	
KSP039002GU P KSP039002GU G	2	m1.5	13	L	19.5	7	A	21	10.2	8	16	14	13	
26			R	39	B	38.5	24	10	24	13				
KSP056002GU P KSP056002GU G		m2	14	L	28	10	B	30	15.3	8	20	12	18	
28			R	56	B	56	35.5	12	30	18				
KSP075002GU P KSP075002GU G		m2.5	15	L	37.5	14	A'	40	20	12	30	17	24	
30			R	75	C	75	36	16	44	24				
KSP096002GU P KSP096002GU G		m3	16	L	48	18	B	53	23.5	12	36	19	29	
32			R	96	B	96	46	20	56	29				
KSP119002GU P KSP119002GU G		m3.5	17	L	59.5	22	A	65	34	16	44	25	34	
34			R	119	C	119	54	26	63	34				
KSP145002GU P KSP145002GU G		m4	18	L	72	27	A	78	38	20	54	28	39	
36			R	144	C	145	60	30	73	39				
KSP172002GU P KSP172002GU G	m4.5	19	L	85.5	32	A	93	48	26	69	34	46		
38		R	171	C	172	70	36	79	46					

[Caution on Product Characteristics] ① The allowable torque is calculated by converting the output torque (600 rpm) on Page 317 to kgf/m, according to assumed usage conditions.
② These gears produce axial thrust forces. See Page 284 for more details.

KSP

Ground Spiral Bevel Gears

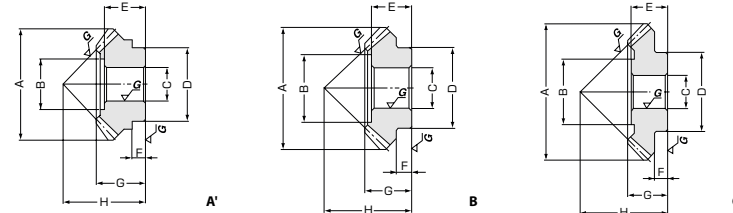


Hub width	Total length	Mounting distance	Keyway	Allowable gear torque (kgf-m)	Backlash (mm)	Weight (kg)	Catalog No.
7.6	14.5	28	-	0.89	0 ~ -0.05	0.02	KSP039002GC P KSP039002GF G
7	15	22	4 x 1.8	0.89	0 ~ -0.05	0.06	
2.5	13	32	3 x 1.4	2.65	0 ~ -0.05	0.03	KSP056002GF P KSP056002GF G
8	20.5	30	5 x 2.3	2.65	0 ~ -0.05	0.18	
4.6	19.5	44	5 x 2.3	6.43	0.05 ~ 0.10	0.09	KSP075002GF P KSP075002GF G
11	25.5	38	6 x 2.8	6.43	0.05 ~ 0.10	0.41	
2.5	21.5	53	5 x 2.3	12.5	0.05 ~ 0.10	0.18	KSP096002GF P KSP096002GF G
12	31	47	8 x 3.3	12.5	0.05 ~ 0.10	0.85	
3.6	27.5	67	6 x 2.8	22.2	0.05 ~ 0.10	0.33	KSP119002GF P KSP119002GF G
15	35.5	55	10 x 3.3	22.2	0.05 ~ 0.10	1.37	
3.5	33	80	8 x 3.3	36.3	0.05 ~ 0.10	0.57	KSP145002GF P KSP145002GF G
16	40.5	64	10 x 3.3	36.3	0.05 ~ 0.10	2.34	
4.4	38	94	10 x 3.3	59.9	0.05 ~ 0.10	0.91	KSP172002GF P KSP172002GF G
20	47	75	12 x 3.3	59.9	0.05 ~ 0.10	3.60	

[Caution on Secondary Operations] ① No secondary operations can be performed on these precision finished gears due to the applied carburizing process.

KSP

Ground Spiral Bevel Gears



Hub width	Total length	Mounting distance	Machinable max. bore	Allowable gear torque (kgf-m)	Backlash (mm)	Weight (kg)	Catalog No.
7.6	14.5	28	8	0.89	0 ~ -0.05	0.02	KSP039002GU P KSP039002GU G
7	15	22	20	0.89	0 ~ -0.05	0.07	
2.5	13	32	10	2.65	0 ~ -0.05	0.04	KSP056002GU P KSP056002GU G
8	20.5	30	20	2.65	0 ~ -0.05	0.19	
4.5	19.5	44	14	6.43	0.05 ~ 0.10	0.10	KSP075002GU P KSP075002GU G
11	25.5	38	25	6.43	0.05 ~ 0.10	0.44	
2.5	21.5	53	19	12.5	0.05 ~ 0.10	0.20	KSP096002GU P KSP096002GU G
12	31	47	32	12.5	0.05 ~ 0.10	0.91	
3.6	27.5	67	25	22.2	0.05 ~ 0.10	0.36	KSP119002GU P KSP119002GU G
15	35.5	55	40	22.2	0.05 ~ 0.10	1.45	
3.5	33	80	30	36.3	0.05 ~ 0.10	0.65	KSP145002GU P KSP145002GU G
16	40.5	64	42	36.3	0.05 ~ 0.10	2.44	
4.4	38	94	38	59.9	0.05 ~ 0.10	0.97	KSP172002GU P KSP172002GU G
20	47	75	50	59.9	0.05 ~ 0.10	3.80	

[Caution on Secondary Operations] ① Please read "Caution on Performing Secondary Operations" (Page 284) 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.



■ Adjusting Tooth Contact

Spur
Gears

Helical
Gears

Internal
Gears

Racks

CP Racks
& Pinions

Miter
Gears

Bevel
Gears

Screw
Gears

Worm
Gear Pair

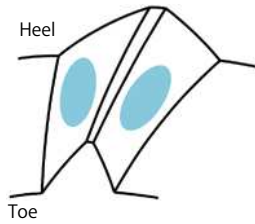
Bevel
Gearboxes

Other
Products

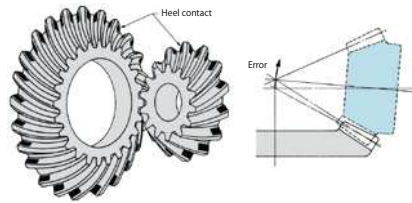
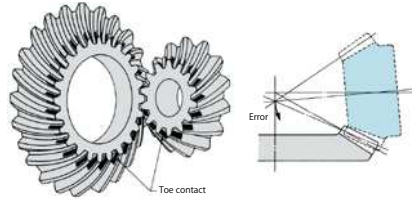
< Centering tooth contact >

- (1) When assembled correctly, the contact will occur in the middle of the tooth flank.
- (2) The contact area along the tooth face should be in the center of the tooth, but somewhat closer to the toe is ideal.

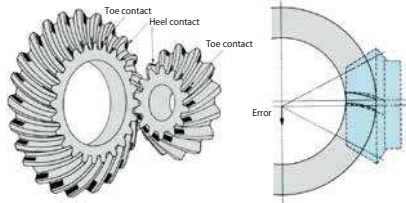
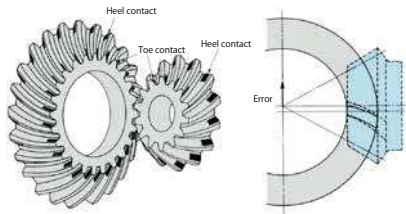
When the gears are assembled in to the gearbox and the backlash is adjusted, adjust the gearbox to obtain the tooth contact as shown below. Inaccurate assembly will lead to irregular noise and uneven wear,



(1) When there is an angular error of the shafts



(2) When the pinion shaft is offset



(3) When the mounting distance of the pinion is incorrect

