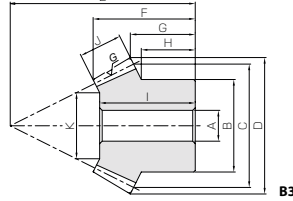




Specifications	
Precision grade	JIS B 1704 : 1978 grade 2
Gear teeth	Gleason
Pressure angle	20°
Material	S45C
Heat treatment	Teeth induction hardened
Tooth hardness	50 ~ 60HRC

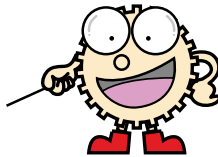


Catalog No.	Gear ratio	Module	No. of teeth	Helix angle	Direction of spiral	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Mounting distance	Total length	Crown to back length
							A	B	C	D	E	F	G
SBZG2-3020R SBZG2-2030L	1.5	m2	30	7°	R	B4	10	35	60	62.16	40	26.48	21.62
B3			10			30	40	44.18	45	25.05	16.39		
SBZG2.5-3020R SBZG2.5-2030L		m2.5	30	7°	R	B4	15	45	75	77.77	50	33.69	27.08
B3			12			35	50	55.23	55	31.05	19.24		
SBZG3-3020R SBZG3-2030L	2	m3	30	7°	R	B4	15	50	90	93.27	55	35.01	27.45
B3			15			45	60	66.32	70	40.50	27.11		
SBZG2-4020R SBZG2-2040L		m2	40	9°	R	B4	12	40	80	81.58	45	31.91	26.58
B3			12			32	40	44.76	60	34.15	21.19		
SBZG2.5-4020R SBZG2.5-2040L	m2.5	40	9°	R	B4	15	50	100	102.01	55	39.16	32.01	
B3		12			40	50	55.99	75	43.77	26.50			
SBZG3-4020R SBZG3-2040L	m3	40	9°	R	B4	20	60	120	122.31	65	45.30	37.31	
B3		16			50	60	67.21	90	50.81	31.80			

- [Caution on Product Characteristics]
- ① Allowable torques shown in the table are the calculated values according to the assumed usage conditions. Please see page 283 for more details.
 - ② Dimensions of the outside diameter, the overall length and crown to back length are all theoretical values, and some differences will occur due to the corner chamfering of the gear tips.
 - ③ It produces an axial thrust force, which has the same direction as straight bevel gears. For details, see separate technical reference book (Page 108).

■ Features of Zerol Bevel Gears

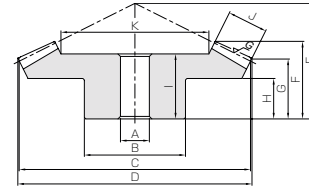
- Zerol Bevel Gears are spiral Bevel gears with a helix angle of less than 10 degree. Balanced, and superior performance as they combine the features of straight / spiral bevel gears.
- Allows compact design as no inward thrust force (* Reference to the figure) is produced, which causes problems when using spiral Bevel gears.
 - Unlike straight Bevel gears, Zerol Bevel Gears can be ground finished, allowing higher precision, wear-resistance and are quieter, compared with straight Bevel gears.
 - Drop in replacement for SB Bevel Gears can easily be made due to the gears have similar dimensions for the mounting distance. When replacing, please use a set of zerol Bevel gears with opposite spiral hands, one right-hand and the other left-hand.



■ Performance Comparison

Gear Type	Bearing Design *	Interchangeability	Precision	Strength	Durability	Noise/Vibration	Price
		Mounting Distance	JIS B 1704 : 1978	Bending Strength	Surface Durability	Surface Roughness/Total Contact Ratio	for single item
Bevel Gears 	 No thrust force produced inward	Many SUB, PB, SBZG	Normal grade 3	Normal 24.2N · m / 12.2N · m	Bad 2.92N · m / 1.46N · m	Normal 3.2a/1.63	Low
Ground Zerol Bevel Gears 	 No thrust force produced inward	Many SB, SUB, PB	Good grade 2	Normal 26.0N · m / 13.1N · m	Good 18.4N · m / 9.18N · m	Low 0.4a/1.84	Normal
Ground Spiral Bevel Gears 	 Thrust force produced inward	None	Good grade 2	Strong 56.5N · m / 28.2N · m	Good 94.2N · m / 47.1N · m	Low 0.4a/3.13	Normal

NOTE: The above evaluations were based on a comparison of 3 products.



Hub width	Length of bore	Face width	Holding surface dia.	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)	Catalog No.
				Bending strength	Surface durability	Bending strength	Surface durability			
H	I	J	K							
15	23	11	37.56	14.3	8.88	1.46	0.91	0.05~0.11	0.27	SBZG2-3020R SBZG2-2030L
11.67	22	11	21.34	9.89	5.92	1.01	0.60			
18	30	15	45.61	29.4	18.8	3.00	1.92	0.06~0.12	0.55	SBZG2.5-3020R SBZG2.5-2030L
12.5	28	15	27.42	20.4	12.5	2.08	1.28			
17	31	17	57.14	51.7	31.6	5.27	3.22	0.07~0.13	0.84	SBZG3-3020R SBZG3-2030L
20	37	17	34.71	35.8	21.1	3.65	2.15			
18	27	15	48.46	26.0	18.4	2.66	1.87	0.05~0.11	0.52	SBZG2-4020R SBZG2-2040L
18	32	15	20.92	13.1	9.18	1.33	0.94			
20	35	20	60.28	55.6	38.5	5.67	3.92	0.06~0.12	1.10	SBZG2.5-4020R SBZG2.5-2040L
22.5	41	20	24.56	27.9	19.2	2.85	1.96			
24	38	22	73.81	96.3	62.8	9.82	6.40	0.07~0.13	1.69	SBZG3-4020R SBZG3-2040L
27.5	47	22	29.61	48.4	31.4	4.93	3.20			

- [Caution on Secondary Operations]
- ① Please read "Cautions on Performing Secondary Operations" (Page 284) when performing modification 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 gear teeth induction hardened, no secondary operations can be performed on tooth areas including the bottom land (approx. 1to 2 mm).

* 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.

GCU-M Miter Gear Kit



Installation : Intersecting axes gears
 Gear Type : Miter Gears
 Gears : SM2-25
 PM2-25
 Gear Ratio : 1
 Weight : Approx. 1kg

Use of bevel gears allows the changing of the shaft angle by 90 degrees. Applications include the changing of the direction of power.