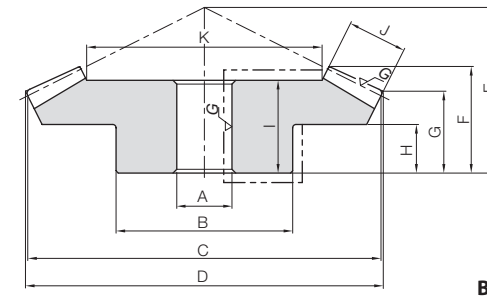
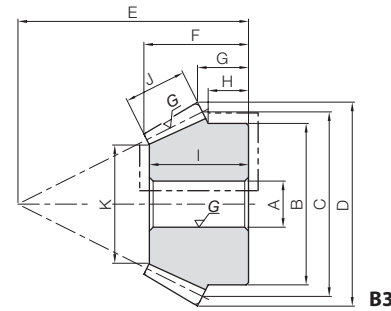




Specifications	
Precision grade	JIS B 1704: 1978 grade 1
Gear teeth	Gleason
Pressure angle	20°
Helix angle	35°
Material	SCM415
Heat treatment	Tooth area carburized
Tooth hardness	55 to 60HRC



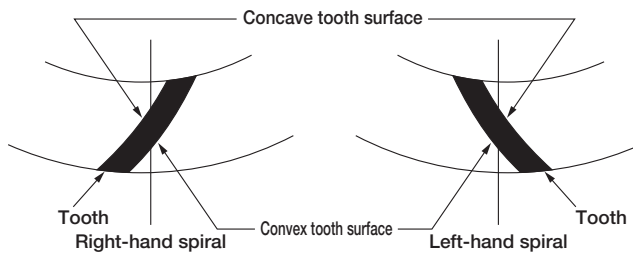
Catalog Number	Gear Ratio	Module	No. of teeth	Direction of spiral	Shape	Bore		Hub dia.	Pitch dia.	Outside dia.	Mounting distance	Total length		Crown to back
						A <sub>H7</sub>	B					C	D	
MBSG2-4020R	2	m2	40	R	B4	15	45	80	81.1	45	31.78	26.1		
MBSG2-2040L			20	L	B3	12	35	40	44.1	55	28.16	16.02		
MBSG2.5-4020R		m2.5	40	R	B4	16	55	100	101.29	50	33.35	26.29		
MBSG2.5-2040L			20	L	B3	12	43	50	55.12	65	31.01	16.28		
MBSG3-4020R		m3	40	R	B4	20	65	120	121.57	60	39.81	31.57		
MBSG3-2040L			20	L	B3	16	52	60	66.03	80	38.9	21.51		
MBSG4-4020R	m4	40	R	B4	25	80	160	162.06	75	48.27	37.06			
MBSG4-2040L		20	L	B3	20	70	80	88.46	100	45.38	22.12			

Hub width	Hole length	Face width	Holding surface dia.	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)	Catalog Number
				Bending strength	Surface durability	Bending strength	Surface durability			
H	I	J	K							
18 13.75	29 27	14	52.7 25.39	56.5 28.2	94.2 47.1	5.76 2.88	9.61 4.80	0.04~0.10	0.57 0.18	MBSG2-4020R MBSG2-2040L
16 13.25	30 29	17	66.99 29.97	108 54.1	184 91.8	11.0 5.52	18.7 9.37	0.05~0.11	1.01 0.31	MBSG2.5-4020R MBSG2.5-2040L
20 18	35 36.5	20	80.28 36.56	185 92.4	318 159	18.8 9.42	32.4 16.2	0.06~0.12	1.64 0.56	MBSG3-4020R MBSG3-2040L
22 17.5	42 43	27	106.63 51.25	441 221	778 389	45.0 22.5	79.3 39.7	0.09~0.15	3.55 1.20	MBSG4-4020R MBSG4-2040L

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### ■ Mating surface of spiral bevel gears

Spiral bevel gears have convex and concave tooth surfaces. If the direction of rotation of the drive gear differs, the meshing tooth surface will also change. The table on the right shows how to view the convex and concave tooth surfaces and the meshing tooth surface with respect to the direction of rotation of the drive gear.



#### For right-hand drive gear

Direction of rotation of drive gear <small>NOTE 1</small>	Meshing tooth surface	
	Right-hand drive gear	Left-hand driven gear
Clockwise	Convex tooth surface	Concave tooth surface
Counterclockwise	Concave tooth surface	Convex tooth surface

#### For left-hand drive gear

Direction of rotation of drive gear <small>NOTE 1</small>	Meshing tooth surface	
	Left-hand drive gear	Right-hand driven gear
Clockwise	Concave tooth surface	Convex tooth surface
Counterclockwise	Convex tooth surface	Concave tooth surface

[NOTE 1] The direction of rotation in the table is as seen from the hub of the gear.

### ■ The force applied to the teeth of the spiral bevel gear

The table below shows, for spiral bevel gears with an axis angle of  $\Sigma = 90^\circ$ , pressure angle of  $an = 20^\circ$  and spiral angle of  $\beta m = 35^\circ$ , the magnitudes of the axial force  $F_x$  and radial force  $F_r$  where the tangential force  $F_t$  at the center of the tooth width is 100.

Thrust force  $F_x$   
Radial force  $F_r$  value

#### (1) Force applied to pinion

Meshing tooth surface	Gear Ratio $z_2/z_1$						
	1.0	1.5	2.0	2.5	3.0	4.0	5.0
Concave tooth surface	80.9 -18.1	82.9 -1.9	82.5 8.4	81.5 15.2	80.5 20.0	78.7 26.1	77.4 29.8
Convex tooth surface	-18.1 80.9	-33.6 75.8	-42.8 71.1	-48.5 67.3	-52.4 64.3	-57.2 60.1	-59.9 57.3

#### (2) Force applied to gear

Meshing tooth surface	Gear Ratio $z_2/z_1$						
	1.0	1.5	2.0	2.5	3.0	4.0	5.0
Concave tooth surface	80.9 -18.1	75.8 -33.6	71.1 -42.8	67.3 -48.5	64.3 -52.4	60.1 -57.2	57.3 -59.9
Convex tooth surface	-18.1 80.9	-1.9 82.9	8.4 82.5	15.2 81.5	20.0 80.5	26.1 78.7	29.8 77.4