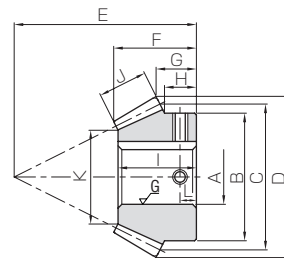
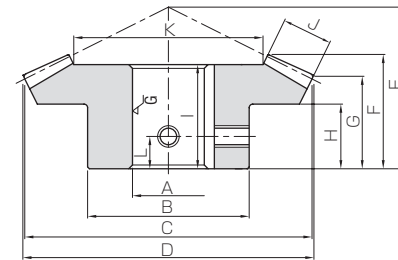




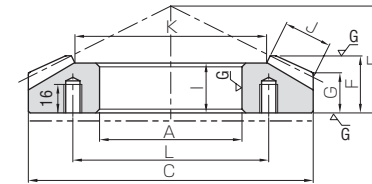
Specifications	
Precision grade	JIS B 1704 : 1978 grade 4
Gear teeth	Gleason
Pressure angle	20°
Helix angle	35°
Material	SCM415
Heat treatment	Overall carburizing
Tooth hardness	55 ~ 60HRC



BK



B4



B7

Catalog No.	Gear ratio	Module	No. of teeth	Direction of spiral	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Mounting distance	Total length	Crown to back length	Hub width	Length of bore
						A _{H7}	B	C	D	E	F	G	H	I
MBSA2-3020R MBSB2-3020R MBSA2-2030L MBSB2-2030L	1.5	m2	30	R	B4	20 22	40	60	61.36	40	26.8	21.02	14	23
		m2	20	L	BK	15 18	35	40	43.49	45	24.96	16.16	13.33	23
MBSA2.5-3020R MBSB2.5-3020R MBSA2.5-2030L MBSB2.5-2030L		m2.5	30	R	B4	22 25	48	75	76.74	50	33.6	26.31	18	30
		m2.5	20	L	BK	18 20	43	50	54.43	55	30.08	18.98	15.17	28
MBSA3-3020R MBSB3-3020R MBSA3-2030L MBSB3-2030L		m3	30	R	B4	25 30	60	90	92.21	60	40.34	31.66	21	36
		m3	20	L	BK	22 25	53	60	65.58	65	35.17	21.86	17.67	32.5
MBSA4-3020R MBSB4-3020R MBSA4-2030L MBSB4-2030L		m4	30	R	B4	35 40	75	120	122.91	70	43.99	32.18	21	39
		m4	20	L	BK	30 35	70	80	87.34	85	45.53	27.45	21.67	42
MBSA5-3020R MBSA5-2030L MBSB5-2030L		m5	30	R	B7	80	—	150	—	70	35.53	23.8	—	31
		m5	20	L	BK	35 40	87	100	109.2	105	55.05	33.07	25.67	51
MBSA6-3020R MBSA6-2030L MBSB6-2030L		m6	30	R	B7	90	—	180	—	80	38.86	24.37	—	33
		m6	20	L	BK	45 50	105	120	130.48	125	65.57	38.49	30	60
MBSA2-4020R MBSB2-4020R MBSA2-2040L MBSB2-2040L	2	m2	40	R	B4	20 22	45	80	81.06	45	31.83	26.06	18	29
		m2	20	L	BK	15 18	35	40	44.2	55	28.16	16.05	13.75	27
MBSA2.5-4020R MBSB2.5-4020R MBSA2.5-2040L MBSB2.5-2040L		m2.5	40	R	B4	25 28	55	100	101.29	50	33.35	26.29	16	30
		m2.5	20	L	BK	20 22	43	50	55.12	65	31.01	16.28	13.25	29
MBSA3-4020R MBSB3-4020R MBSA3-2040L MBSB3-2040L		m3	40	R	B4	30 35	65	120	121.57	60	39.81	31.57	21	35
		m3	20	L	BK	22 25	53	60	66.03	80	38.9	21.51	18.25	36.5
MBSA4-4020R MBSA4-2040L MBSB4-2040L		m4	40	R	B7	80	—	160	—	60	32.08	22.53	—	28
		m4	20	L	BK	30 35	70	80	88.46	100	45.38	22.12	17.5	43
MBSA5-4020R MBSA5-2040L MBSB5-2040L		m5	40	R	B7	90	—	200	—	70	35.2	22.98	—	30
		m5	20	L	BK	40 45	87	100	109.91	125	57.11	27.48	21.75	53.5
MBSA6-4020R MBSA6-2040L MBSB6-2040L		m6	40	R	B7	110	—	240	—	80	37.89	23.62	—	32
		m6	20	L	BK	50 55	105	120	132.04	150	67.8	33.01	26.25	64

[Caution on Product Characteristics]

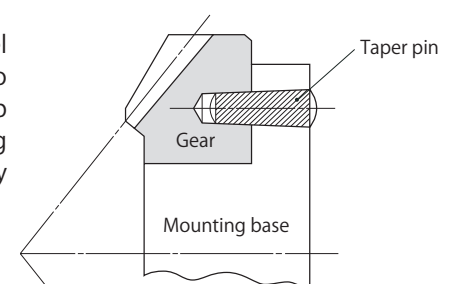
- ① The allowable torques shown in the table are the calculated values according to the assumed usage conditions. Please see page 303 for more details.
- ② Dimensions of the outside diameter, the overall length and crown to back length are all theoretical values, and some differences will occur due to the corner chamfering of the gear tips.
- ③ These gears produce axial thrust forces. See Page 304 for more details.
- ④ Although the dimensions of the keyway are made to the JIS (Js9) tolerance, there may be some deviations due to the effects of heat treatment.
- ⑤ For products having a tapped hole (Except for B7-shaped products), a set screw is attached as an accessory.

[Caution on Secondary Operations]

- ① These products which are hardened by carburizing allow no secondary machining. However, for B7 type gears, the area surrounded with ---- line (in the illustration) is masked during the carburization process and can be modified. Care should be exercised since the hardness is high (approx. HRC40, maximum).

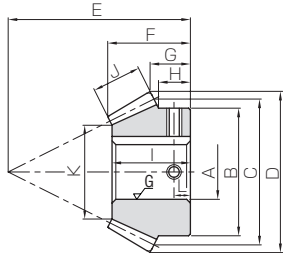
Face width	Holding surface dia.	Keyway	Set Screw		Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash	Weight	Catalog No.
J	K	Width×Depth	Size	L	Bending strength	Surface durability	Bending strength	Surface durability	(mm)	(kg)	
11	37.56	6 × 2.8 6 × 2.8	2-M5 2-M5	7	34.4	38.4	3.51	3.91	0.06~0.16	0.26 0.24	MBSA2-3020R MBSB2-3020R
11	24.34	5 × 2.3 6 × 2.8	2-M4 2-M5	6.5	23.5	25.6	2.39	2.61		0.14 0.13	MBSA2-2030L MBSB2-2030L
14	48.01	6 × 2.8 8 × 3.3	2-M5 2-M6	9	68.0	76.8	6.93	7.84	0.07~0.17	0.52 0.49	MBSA2.5-3020R MBSB2.5-3020R
14	31.02	6 × 2.8 6 × 2.8	2-M5 2-M5	7.5	46.4	51.2	4.73	5.22		0.26 0.25	MBSA2.5-2030L MBSB2.5-2030L
17	57.14	8 × 3.3 8 × 3.3	2-M6 2-M6	11	118	135	12.1	13.8	0.08~0.18	0.96 0.90	MBSA3-3020R MBSB3-3020R
17	36.2	6 × 2.8 8 × 3.3	2-M5 2-M6	9	80.7	90.1	8.23	9.19		0.46 0.43	MBSA3-2030L MBSB3-2030L
23	76.72	10 × 3.3 12 × 3.3	2-M8 2-M8	10	283	328	28.9	33.5	0.12~0.27	1.77 1.68	MBSA4-3020R MBSB4-3020R
23	48.07	8 × 3.3 10 × 3.3	2-M6 2-M8	11	193	219	19.7	22.3		1.03 0.95	MBSA4-2030L MBSB4-2030L
28	97.36	—	6-M10	110	544	637	55.4	64.9	0.14~0.34	2.80	MBSA5-3020R
28	62.04	10 × 3.3 12 × 3.3	2-M8 2-M8	13	371	425	37.8	43.3		2.01 1.89	MBSA5-2030L MBSB5-2030L
34	115.61	—	6-M10	120	927	1120	94.6	114	0.16~0.36	4.55	MBSA6-3020R
34	72.41	14 × 3.8 14 × 3.8	2-M10 2-M10	15	633	745	64.5	76.0		3.56 3.38	MBSA6-2030L MBSB6-2030L
14	52.7	6 × 2.8 6 × 2.8	2-M5 2-M5	9	59.6	69.6	6.08	7.09	0.06~0.16	0.53 0.51	MBSA2-4020R MBSB2-4020R
14	25.39	5 × 2.3 6 × 2.8	2-M4 2-M5	7	29.9	34.8	3.05	3.55		0.16 0.14	MBSA2-2040L MBSB2-2040L
17	66.99	8 × 3.3 8 × 3.3	2-M6 2-M6	8	114	135	11.7	13.8	0.07~0.17	0.93 0.90	MBSA2.5-4020R MBSB2.5-4020R
17	29.97	6 × 2.8 6 × 2.8	2-M5 2-M5	7	57.3	67.6	5.84	6.89		0.26 0.25	MBSA2.5-2040L MBSB2.5-2040L
20	80.28	8 × 3.3 10 × 3.3	2-M6 2-M8	11	195	233	19.9	23.7	0.08~0.18	1.47 1.40	MBSA3-4020R MBSB3-4020R
20	36.56	6 × 2.8 8 × 3.3	2-M5 2-M6	9.5	97.7	116	9.97	11.9		0.51 0.48	MBSA3-2040L MBSB3-2040L
27	107.63	—	6-M10	110	466	564	47.5	57.5	0.12~0.27	3.11	MBSA4-4020R
27	51.25	8 × 3.3 10 × 3.3	2-M6 2-M8	9	234	282	23.8	28.8		1.05 0.96	MBSA4-2040L MBSB4-2040L
34	133.97	—	6-M10	120	915	1120	93.3	114	0.14~0.34	5.59	MBSA5-4020R
34	61.95	12 × 3.3 14 × 3.8	2-M8 2-M10	11	458	559	46.7	57.0		1.96 1.82	MBSA5-2040L MBSB5-2040L
40	162.56	—	6-M10	140	1530	1920	156	196	0.16~0.36	8.48	MBSA6-4020R
40	77.11	14 × 3.8 16 × 4.3	2-M10 2-M10	14	766	961	78.1	97.9		3.33 3.11	MBSA6-2040L MBSB6-2040L

When installing B7 type (ring type) Spiral Bevel Gears to the base, always secure the gears onto the mounting base with taper pins to absorb the rotational loads. Fastening and securing with only mounting screws could possibly cause the screws to snap due to heavy loads.

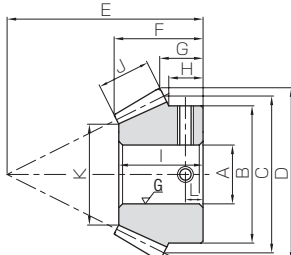




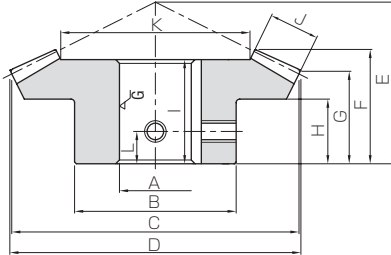
Specifications	
Precision grade	JIS B 1704 : 1978 grade 4
Gear teeth	Gleason
Pressure angle	20°
Helix angle	35°
Material	SCM415
Heat treatment	Overall carburizing
Tooth hardness	55 ~ 60HRC



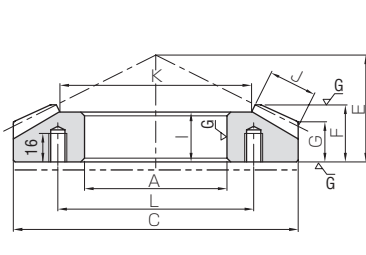
BK



BT



B4



B7

Catalog No.	Gear ratio	Module	No. of teeth	Direction of spiral	Shape	Bore		Hub dia.	Pitch dia.	Outside dia.	Mounting distance	Total length	Crown to back length	Hub width	Length of bore
						AH7	B								
MBSA2-4518R MBSB2-4518R MBSA2-1845L MBSB2-1845L	2.5	m2	45	R	B4	20 25	48	90	90.79	40	27.67	22.98	15	25	
		m2	18	L	BK	12 16	32	36	40.42	60	28.54	15.88	14.2	27.5	
MBSA2.5-4518R MBSB2.5-4518R MBSA2.5-1845L MBSB2.5-1845L		m2.5	45	R	B4	25 30	55	112.5	113.49	50	34.94	28.74	19	31	
		m2.5	18	L	BK	15 20	40	45	50.35	72	33.19	16.82	14.75	31.5	
MBSA3-4518R MBSB3-4518R MBSA3-1845L MBSB3-1845L		m3	45	R	B4	30 35	65	135	136.24	60	41.65	34.55	22	37	
		m3	18	L	BK	20 25	48	54	60.69	85	37.82	18.84	16.3	36	
MBSA4-4518R MBSB4-4518R MBSA4-1845L MBSB4-1845L		m4	45	R	B7	80	—	180	—	55	29.77	21.25	—	25	
		m4	18	L	BK	28 32	63	72	80.86	110	48.03	21.77	18.2	46	
MBSA5-4518R MBSB5-1845L		m5	45	R	B7	100	—	225	—	65	33.37	22.82	—	28	
		m5	18	L	BK	35 42	80	90	101.07	135	57.3	24.71	20.5	54.5	
MBSA6-4518R MBSB6-1845L		m6	45	R	B7	110	—	270	—	75	36.97	24.19	—	30	
		m6	18	L	BK	45 50	95	108	120.55	160	66.73	27.51	22.4	63	
MBSA2-4515R MBSB2-4515R MBSA2-1545L MBSB2-1545L	3	m2	45	R	B4	20 22	48	90	90.66	40	30.01	25.99	18	27	
		m2	15	L	BT BK	10 12	26	30	34.59	55	23.78	10.77	9.33	22.5	
MBSA2.5-4515R MBSB2.5-4515R MBSA2.5-1545L MBSB2.5-1545L		m2.5	45	R	B4	22 25	55	112.5	113.28	45	32.43	27.42	18	28	
		m2.5	15	L	BK	12 15	32	37.5	43.06	70	30.51	14.68	12.84	29	
MBSA3-4515R MBSB3-4515R MBSA3-1545L MBSB3-1545L		m3	45	R	B4	30 32	65	135	136.03	55	39.94	34.05	22	35	
		m3	15	L	BK	18 20	38	45	52	85	38.12	18.67	16.33	36.5	
MBSA4-4515R MBSB4-1545L		m4	45	R	B7	80	—	180	—	50	28.85	22.14	—	25	
		m4	15	L	BK	22 25	52	60	69.24	110	47.51	21.54	18.67	45.5	
MBSA5-4515R MBSB5-1545L		m5	45	R	B7	90	—	225	—	60	33.57	25.16	—	28	
		m5	15	L	BK	28 32	65	75	86.55	135	56.89	24.43	20.83	54	
MBSA6-4515R MBSB6-1545L		m6	45	R	B7	110	—	270	—	70	38.28	28.05	—	32	
		m6	15	L	BK	35 40	78	90	103.13	160	66.39	27.19	23	63	

- [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 303 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 These gears produce axial thrust forces. See Page 304 for more details.
 - ④ Although the dimensions of the keyway are made to the JIS (Js9) tolerance, there may be some deviations due to the effects of heat treatment.
 - ⑤ For products having a tapped hole (Except for B7-shaped products), a set screw is attached as an accessory.
- [Caution on Secondary Operations]

 - ① These products which are hardened by carburizing allow no secondary machining. However, for B7 type gears, the area surrounded with - - - - line (in the illustration) is masked during the carburization process and can be modified. Care should be exercised since the hardness is high (approx. HRC40, maximum).

Face width	Holding surface dia.	Keyway	Set Screw		Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)	Catalog No.
			WidthxDepth	Size	Bending strength	Surface durability	Bending strength	Surface durability			
J	K			L							
14	62.24	6 x 2.8 8 x 3.3	2-M5 2-M6	8	69.3	74.3	7.06	7.58	0.06~0.16	0.60 0.56	MBSA2-4518R MBSB2-4518R MBSA2-1845L MBSB2-1845L
14	23.11	4 x 1.8 5 x 2.3	2-M4 2-M4	7	27.2	29.7	2.77	3.03		0.14 0.12	
18	76.53	8 x 3.3 8 x 3.3	2-M6 2-M6	10	138	150	14.1	15.3	0.07~0.17	1.09 1.04	MBSA2.5-4518R MBSB2.5-4518R MBSA2.5-1845L MBSB2.5-1845L
18	26.82	5 x 2.3 6 x 2.8	2-M4 2-M5	8	54.1	59.9	5.52	6.11		0.26 0.22	
21	92.96	8 x 3.3 10 x 3.3	2-M6 2-M8	11	234	256	23.8	26.1	0.08~0.18	1.92 1.84	MBSA3-4518R MBSB3-4518R MBSA3-1845L MBSB3-1845L
21	33.41	6 x 2.8 8 x 3.3	2-M5 2-M6	9	91.8	103	9.36	10.5		0.41 0.36	
29	122.33	—	6-M10	110	567	630	57.8	64.3	0.12~0.27	3.92	MBSA4-4518R MBSB4-1845L
29	45.83	8 x 3.3 10 x 3.3	2-M6 2-M8	10	223	252	22.7	25.7		0.89 0.82	
36	153.85	—	6-M10	130	1100	1240	112	126	0.14~0.34	6.82	MBSA5-4518R MBSB5-1845L
36	56.13	10 x 3.3 12 x 3.3	2-M8 2-M8	11	433	495	44.2	50.5		1.68 1.50	
43	184.57	—	6-M10	140	1860	2150	190	219	0.16~0.36	11.1	MBSA6-4518R MBSB6-1845L
43	66.44	14 x 3.8 14 x 3.8	2-M10 2-M10	12	731	859	74.6	87.6		2.66 2.48	
14	61.82	6 x 2.8 6 x 2.8	2-M5 2-M5	9	67.8	61.3	6.91	6.25	0.06~0.16	0.61 0.60	MBSA2-4515R MBSB2-4515R MBSA2-1545L MBSB2-1545L
14	16.46	— 4 x 1.8	2-M4 2-M4	5	21.7	20.4	2.22	2.08		0.081 0.073	
17	77.83	6 x 2.8 8 x 3.3	2-M5 2-M6	9	130	119	13.3	12.1	0.07~0.17	1.01 0.98	MBSA2.5-4515R MBSB2.5-4515R MBSA2.5-1545L MBSB2.5-1545L
17	21.48	4 x 1.8 5 x 2.3	2-M4 2-M4	7	41.6	39.6	4.24	4.04		0.16 0.15	
21	92.39	8 x 3.3 10 x 3.3	2-M6 2-M8	11	229	211	23.3	21.6	0.08~0.18	1.78 1.75	MBSA3-4515R MBSB3-4515R MBSA3-1545L MBSB3-1545L
21	26.18	6 x 2.8 6 x 2.8	2-M5 2-M5	9	73.3	70.5	7.48	7.18		0.26 0.24	
28	124.3	—	6-M10	110	542	508	55.3	51.8	0.12~0.27	3.93	MBSA4-4515R MBSB4-1545L
28	35.91	6 x 2.8 8 x 3.3	2-M5 2-M6	10	174	169	17.7	17.3		0.63 0.58	
35	154.88	—	6-M10	120	1060	1000	108	102	0.14~0.34	7.38	MBSA5-4515R MBSB5-1545L
35	42.64	8 x 3.3 10 x 3.3	2-M6 2-M8	11	339	334	34.6	34.1		1.16 1.07	
42	186.12	—	6-M10	140	1790	1740	183	178	0.16~0.36	12.0	MBSA6-4515R MBSB6-1545L
42	52.37	10 x 3.3 12 x 3.3	2-M8 2-M8	12	575	581	58.6	59.3		1.90 1.75	

When installing B7 type (ring type) Spiral Bevel Gears to the base, always secure the gears onto the mounting base with taper pins to absorb the rotational loads. Fastening and securing with only mounting screws could possibly cause the screws to snap due to heavy loads.

