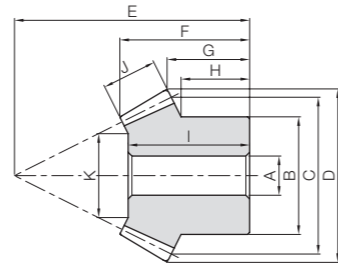


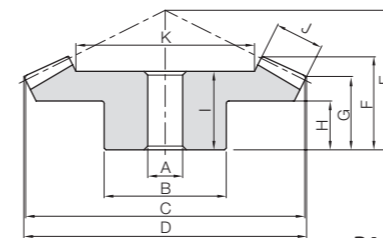


Specifications	
Precision grade	JIS B 1704: 1978 grade 4
Gear teeth	Gleason
Pressure angle	20°
Helix angle	35°*
Material	S45C
Heat treatment	Gear teeth induction hardened **
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coating

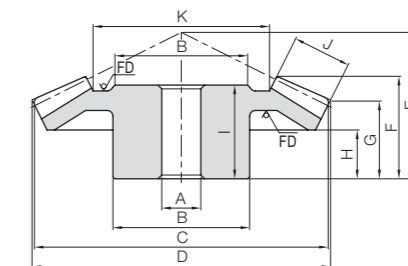
* 6015R and 1560L of SBS1.5 and 2 are 39°.
 ** Due to the gear teeth being induction hardened, no secondary operations can be performed on tooth areas including the bottom land (approx. 2 to 3 mm).



B3



B4



B5

* FD has a forged finish surface.

Catalog Number	Gear Ratio	Module	No. of teeth	Direction of spiral	Shape	Bore		Pitch dia.	Outside dia.	Mounting distance	Total length		Crown to back			
						A	B				C	D		E	F	G
SBS2-4515R SBS2-1545L	3	m2	45	R	B4	12	40	90	90.67	40	30.29	26.01				
			15	L	B3	10	24	30	34.78	60	29.66	15.8				
		m2.5	45	R	B4	15	50	112.5	113.32	50	38.25	32.47				
			15	L	B3	12	30	37.5	43.36	75	38.27	19.73				
		SBS3-4515R SBS3-1545L	3	m3	45	R	B4	20	60	135	135.99	55		40.59	33.98	
					15	L	B3	15	38	45	52.08	90		44.98	23.68	
SBS4-4515R SBS4-1545L	3	m4	45	R	B5	20	80	180	181.3	70	50.62	41.95				
			15	L	B3	16	50	60	69.3	115	54.37	26.55				
SBS5-4515R SBS5-1545L	3	m5	45	R	B5	30	90	225	226.61	75	50.05	39.92				
			15	L	B3	20	60	75	86.55	145	66.89	34.43				
SBS1.5-6015R SBS1.5-1560L	4	m1.5	60	R	B4	12	60	90	90.36	32	24.08	21.48				
			15	L	B3	8	18	22.5	26.09	56	22.95	11.45				
		m2	60	R	B4	15	80	120	120.46	42	31.5	27.91				
			15	L	B3	10	24	30	34.68	75	30.94	15.58				
		SBS2.5-6015R SBS2.5-1560L	4	m2.5	60	R	B4	20	100	150	150.5	53		39.68	35.24	
					15	L	B3	12	30	37.5	44.16	94		38.9	19.83	
SBS3-6015R SBS3-1560L	4	m3	60	R	B4	20	120	180	180.57	64	47.61	42.64				
			15	L	B3	15	38	45	52.64	112	44.01	22.96				

[Caution on Product Characteristics] ① The bore may slightly vary due to the effect of heat treatment. When using with the listed bore diameter, you may need to ream the bore prior to use.

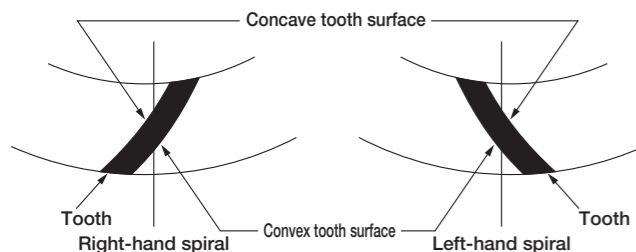
Hub width	Hole length	Face width	Holding surface dia.	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)	Catalog Number
				Bending strength	Surface durability	Bending strength	Surface durability			
H	I	J	K							
17	26	15	59.04	31.7	18.8	3.23	1.92	0.06~0.16	0.60	SBS2-4515R SBS2-1545L
14	29		19.13	10.1	6.27	1.03	0.64			
22	35	20	72.82	64.3	38.7	6.56	3.94	0.07~0.17	1.21	SBS2.5-4515R SBS2.5-1545L
17.5	37		20.51	20.6	12.9	2.10	1.31			
20	35	23	88.18	108	65.8	11.1	6.71	0.08~0.18	1.99	SBS3-4515R SBS3-1545L
21.33	44		28.54	34.7	21.9	3.54	2.24			
24	45	30	118.08	253	156	25.8	15.9	0.12~0.27	4.04	SBS4-4515R SBS4-1545L
23.33	52		32.26	81.1	52.0	8.27	5.30			
20	44	35	152.88	473	295	48.3	30.0	0.14~0.34	6.08	SBS5-4515R SBS5-1545L
30	65		48.64	152	98.2	15.5	10.0			
12	21	12	65.39	17.9	12.9	1.83	1.31	0.05~0.15	0.70	SBS1.5-6015R SBS1.5-1560L
10.43	22.5		15.55	4.22	3.21	0.43	0.33			
16	27	16	87.02	42.5	30.9	4.33	3.15	0.06~0.16	1.59	SBS2-6015R SBS2-1560L
14.25	30		18.06	10.0	7.73	1.02	0.79			
20	34	20	108.64	96.1	58.4	9.79	5.95	0.07~0.17	3.13	SBS2.5-6015R SBS2.5-1560L
18.06	37.5		20.58	22.6	14.6	2.31	1.49			
25	41	22	134.4	156	95.7	15.9	9.76	0.08~0.18	5.38	SBS3-6015R SBS3-1560L
21.12	43		31.58	36.8	23.9	3.75	2.44			

Product Precautions

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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 NOTE 1	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 NOTE 1	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 $\alpha_n = 20^\circ$ 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	82.9	82.5	81.5	80.5	78.7	77.4
	-18.1	-1.9	8.4	15.2	20.0	26.1	29.8
Convex tooth surface	-18.1	-33.6	-42.8	-48.5	-52.4	-57.2	-59.9
	80.9	75.8	71.1	67.3	64.3	60.1	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	75.8	71.1	67.3	64.3	60.1	57.3
	-18.1	-33.6	-42.8	-48.5	-52.4	-57.2	-59.9
Convex tooth surface	-18.1	-1.9	8.4	15.2	20.0	26.1	29.8
	80.9	82.9	82.5	81.5	80.5	78.7	77.4