

 **MAKISHINKO**

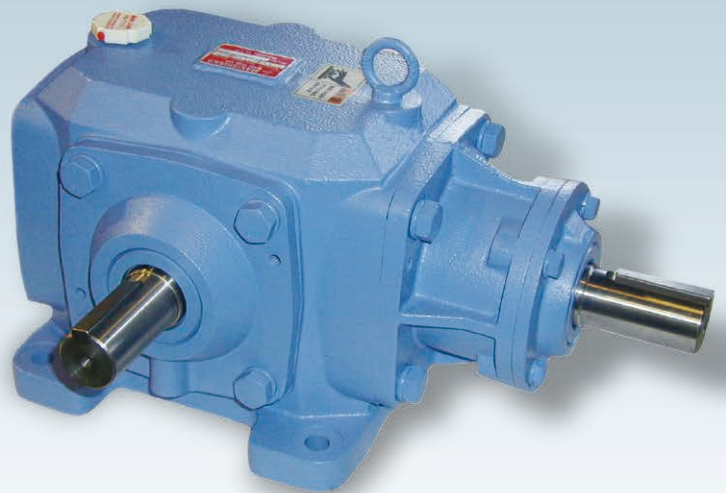
# **BEVEL GEAR BOXES**

# BEVEL GEAR BOXES

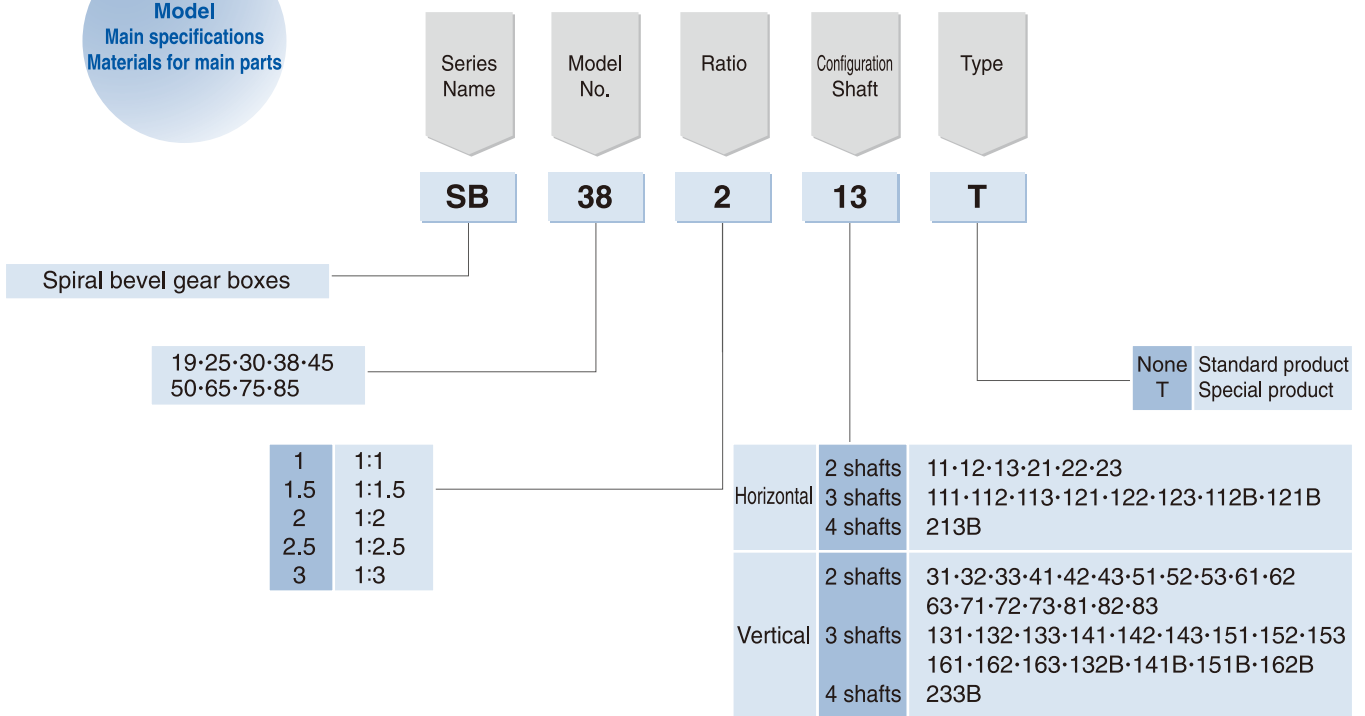
## TYPE SB Bevel gear boxes (Spiral bevel gear)

### Features

- **High quality**  
With low noise and high-speed rotation, the smooth operation is possible.
- **Compact and lightweight**  
The large capacity can be achieved with compact structure.
- **Powerful and tough**  
In addition to the gears and bearings, the body case is also designed with enough strength.
- **A wide range of line up**
  - ★Model No. 19~85.....8 types
  - ★Shaft Configuration 11~83.....2 shafts / 24 types  
111~163.....3 shafts / 24 types  
213B~233B...4 shafts / 2 types
  - ★Horizontal and vertical .....2 types



**Model**  
Main specifications  
Materials for main parts



SB-type Rated Transmission Capacity Table

Ratio	A-shaft Speed rpm	SB19					SB25					SB30				
		Input Power kW	Output Torque N·m		OHL KN		Input Power kW	Output Torque N·m		OHL KN		Input Power kW	Output Torque N·m		OHL KN	
			A-shaft	B-shaft	A-shaft	B-shaft		A-shaft	B-shaft	A-shaft	B-shaft		A-shaft	B-shaft	A-shaft	B-shaft
1:1	10	0.07	67	67	2.1	2.1	0.16	149	149	3.3	3.1	0.07	226	226	7.7	8.2
	100	0.71	65	65	2.1	2.1	1.58	143	143	3.3	3.1	0.71	217	217	7.7	8.2
	200	1.40	64	64	2.1	2.1	3.08	140	140	3.3	3.1	1.40	212	212	6.9	7.3
	400	2.73	62	62	1.9	1.8	5.99	136	136	2.7	3.1	2.73	205	205	5.6	5.8
	600	4.01	61	61	1.6	1.5	8.79	133	133	2.1	2.5	4.01	200	200	4.8	4.9
	1000	6.49	59	59	1.4	1.3	14.18	129	129	1.6	2.1	6.49	194	194	4.1	4.1
	1200	7.70	58	58	1.3	1.2	16.79	127	127	1.4	2.0	7.70	191	191	3.8	3.8
	1500	9.47	57	57	1.2	1.1	20.62	125	125	1.3	1.8	9.47	187	187	3.6	3.6
1800	11.21	57	57	1.1	1.0	24.37	123	123	1.1	1.7	11.21	184	184	3.2	3.3	
1:1.5	10	0.06	59	88	2.1	2.1	0.11	99	148	3.3	3.2	0.16	145	218	7.6	6.9
	100	0.63	57	86	2.1	2.1	1.05	95	143	3.3	3.2	1.55	140	210	7.6	6.9
	200	1.24	56	84	2.1	2.1	2.06	93	140	3.3	3.2	3.03	137	206	6.7	6.9
	400	2.42	55	82	1.9	2.0	4.01	91	137	3.1	3.2	5.89	134	200	5.4	5.9
	600	3.57	54	81	1.7	2.0	5.90	89	134	2.7	3.2	8.65	131	196	4.7	5.1
	1000	5.79	53	79	1.5	2.0	9.56	87	130	2.3	3.2	13.98	127	190	4.1	4.3
	1200	6.88	52	78	1.3	2.0	11.34	86	129	2.2	3.0	16.57	125	188	3.8	3.8
	1500	8.48	51	77	1.3	1.8	13.95	84	127	2.0	2.8	20.37	123	185	3.5	3.4
1800	10.04	51	76	1.2	1.7	16.51	83	125	1.9	2.6	24.10	121	182	3.3	3.3	
1:2	10	0.03	24	48	2.1	2.1	0.07	60	120	3.2	3.2	0.10	92	184	6.8	6.9
	100	0.26	24	47	2.1	2.1	0.64	58	116	3.2	3.2	0.99	89	179	6.8	6.9
	200	0.51	23	47	2.1	2.1	1.26	57	114	3.2	3.2	1.93	88	176	6.8	6.9
	400	1.01	23	46	2.1	2.1	2.46	56	112	3.2	3.2	3.78	86	171	5.5	6.9
	600	1.49	23	45	1.9	2.1	3.63	55	110	2.8	3.2	5.56	84	168	4.6	6.1
	1000	2.43	22	44	1.6	2.1	5.90	54	107	2.4	3.2	9.02	82	164	4.1	5.1
	1200	2.89	22	44	1.5	2.1	7.01	53	106	2.3	3.2	10.71	81	162	3.7	4.8
	1500	3.56	22	43	1.4	2.0	8.64	52	105	2.1	3.2	13.19	80	160	3.5	3.4
1800	4.23	21	43	1.3	1.9	10.25	52	103	2.0	3.1	15.62	79	158	3.1	3.2	
1:2.5	10	0.03	28	69	2.1	2.1	0.07	67	167	3.6	3.8	0.08	77	193	6.8	6.9
	100	0.30	27	68	2.1	2.1	0.72	65	163	3.6	3.8	0.82	75	187	6.8	6.9
	200	0.59	27	67	2.1	2.1	1.41	64	160	3.6	3.8	1.62	74	184	6.8	6.9
	400	1.16	26	66	2.1	2.1	2.76	63	157	3.3	3.8	3.17	72	180	5.5	6.9
	600	1.71	26	65	2.0	2.1	4.08	62	154	2.9	3.7	4.68	71	177	4.6	6.1
	1000	2.79	25	63	1.7	2.1	6.64	60	151	2.4	3.6	7.60	69	172	4.1	5.1
	1200	3.32	25	63	1.6	2.1	7.88	60	149	2.3	3.5	9.02	68	170	3.7	4.8
	1500	4.10	25	62	1.5	2.0	9.73	59	147	2.2	3.3	11.12	67	168	3.5	3.7
1800	4.87	25	61	1.4	1.9	11.54	58	145	2.0	3.2	13.18	66	166	3.4	3.5	
1:3	10	0.02	20	60	2.1	2.1	0.05	41	124	3.8	3.9	0.06	56	169	6.8	6.9
	100	0.22	20	59	2.1	2.1	0.45	40	121	3.8	3.9	0.60	55	164	6.8	6.9
	200	0.43	19	58	2.1	2.1	0.88	40	120	3.8	3.9	1.19	54	162	6.8	6.9
	400	0.84	19	57	2.1	2.1	1.72	39	117	3.4	3.9	2.33	53	158	5.5	6.9
	600	1.24	19	56	2.0	2.1	2.55	39	116	3.0	3.8	3.44	52	156	4.6	6.3
	1000	2.03	18	55	1.7	2.1	4.16	38	113	2.5	3.7	5.60	51	152	4.0	5.8
	1200	2.42	18	55	1.6	2.1	4.94	37	112	2.4	3.6	6.65	50	151	3.7	5.4
	1500	2.99	18	54	1.5	2.0	6.10	37	111	2.3	3.4	8.21	50	149	3.5	3.8
1800	3.56	18	54	1.4	1.9	7.25	37	110	2.1	3.3	9.74	49	147	3.4	3.7	
1:1	10	0.70	633	633	11.0	11.2	1.04	940	940	12.2	14.2	1.76	1593	1593	19.7	21.3
	100	6.65	603	603	10.0	8.1	9.84	893	893	12.2	13.1	16.60	1506	1506	19.7	21.3
	200	12.93	586	586	7.8	5.8	19.12	868	868	10.8	9.8	32.16	1459	1459	17.5	18.7
	400	24.93	565	565	6.2	4.4	36.82	835	835	7.6	7.6	61.73	1400	1400	13.6	14.8
	600	36.41	551	551	5.2	3.5	53.74	813	813	5.6	6.4	89.90	1359	1359	10.1	12.3
	1000	58.35	529	529	4.3	2.8	86.00	780	780	3.8	5.1	143.46	1301	1301	7.2	10.1
	1200	68.93	521	521	4.0	2.5	101.54	768	768	3.2	4.7	-	-	-	-	-
	1500	84.40	511	511	3.7	2.4	-	-	-	-	-	-	-	-	-	-
1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1:2	10	0.22	201	402	8.9	10.7	0.34	307	614	14.2	14.4	0.62	565	1131	21.1	23.3
	100	2.14	194	388	8.9	10.7	3.26	296	591	14.2	14.4	5.98	542	1085	21.1	23.3
	200	4.19	190	380	8.9	10.7	6.38	289	579	12.7	14.4	11.68	530	1060	21.1	23.3
	400	8.15	185	370	7.2	8.3	12.39	281	562	10.4	14.4	22.63	513	1027	17.2	23.3
	600	11.98	181	362	6.2	7.2	18.19	275	550	9.0	12.8	33.18	502	1004	14.9	23.3
	1000	19.37	176	351	5.3	5.9	29.36	266	533	7.6	10.7	53.45	485	970	12.6	19.4
	1200	22.95	174	347	4.9	5.6	34.78	263	526	7.2	10.1	63.25	478	956	11.9	18.5
	1500	28.23	171	341	4.7	5.0	42.74	259	517	6.8	9.3	77.65	470	939	11.1	17.1
1800	33.39	168	337	4.3	4.8	50.53	255	509	6.3	8.8	91.71	462	925	10.3	16.2	

■ SB-type Horizontal 13, 23

**SB38**

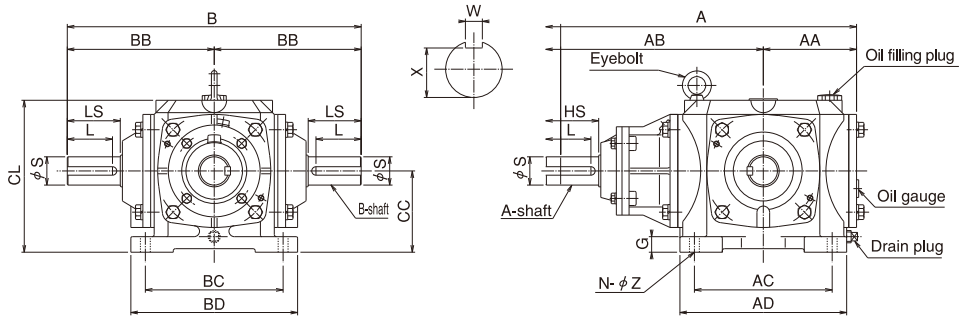
Input Power kW	Output Torque N·m		OHL KN	
	A-shaft	B-shaft	A-shaft	B-shaft
0.41	374	374	8.8	9.0
3.95	358	358	8.4	8.6
7.70	349	349	7.2	7.3
14.89	338	338	5.8	5.8
21.80	330	330	5.0	4.9
35.03	318	318	4.2	4.1
41.43	313	313	3.8	3.8
50.80	307	307	3.6	3.6
59.96	302	302	3.1	3.3

0.22	199	299	9.1	8.7
2.11	192	288	9.1	8.7
4.13	188	281	7.7	8.7
8.03	182	273	6.2	7.2
11.78	178	267	5.4	6.3
19.01	172	259	4.6	5.3
22.52	170	255	4.3	5.0
27.66	167	251	4.0	4.6
32.70	165	247	3.7	4.3

0.14	128	255	9.3	9.3
1.36	124	247	9.3	9.3
2.67	121	242	7.8	8.9
5.21	118	236	6.4	7.9
7.66	116	232	5.5	7.0
12.41	113	225	4.7	5.8
14.72	111	223	4.4	5.5
18.12	110	219	4.1	5.0
21.45	108	216	3.8	4.8

0.11	95	238	9.5	9.6
1.02	93	231	9.5	9.6
2.01	91	227	8.2	9.6
3.92	89	222	6.6	9.6
5.78	87	219	5.8	8.4
9.39	85	213	4.9	7.2
11.15	84	211	4.6	6.8
13.74	83	208	4.3	6.4
16.29	82	205	4.1	6.0

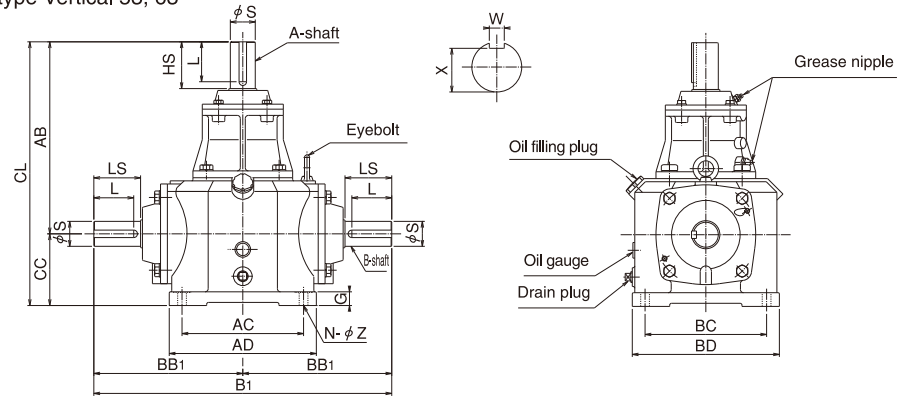
0.09	79	238	9.3	9.8
0.85	77	231	9.3	9.8
1.67	76	227	8.1	9.8
3.27	74	222	6.5	9.7
4.83	73	219	5.7	8.7
7.85	71	214	4.8	7.3
9.32	70	211	4.6	6.9
11.49	70	209	4.3	6.6
13.63	69	206	3.6	6.1



Model No.	A	AA	AB	B	BB	CL	CC	AD	BD	AC	BC	G	N	Z	S	HS/LS	W	X	L
19	268	88	180	232	116	141	76	156	156	125	125	17	4	11	19	37	6	15.5	31
25	330	108	222	314	157	170	90	190	190	152	152	20	4	14	25	51	8	21	44
30	385	120	265	350	175	187	100	210	210	174	174	20	4	14	32	62	10	27	50
38	440	132	308	416	208	215	115	236	236	195	195	22	4	14	40	75	12	35	64
45	502.5	142.5	360	480	240	280	140	285	285	240	240	25	4	16	45	90	14	39.5	79
50	605	190	415	550	275	346	175	340	340	290	290	32	4	21	50	100	14	44.5	88
65	685	220	465	650	325	420	215	394	394	330	330	38	4	21	65	105	18	58	91
75	805	245	560	750	375	480	245	490	410	430	330	32	8	21	75	120	20	67.5	105
85	950	290	660	860	430	540	290	580	480	520	390	35	8	24	85	130	22	76	114

The dimensional tolerance of diameter of the input shaft adopts h7 (JIS B 0401) and that of the key adopts B 1301-1976 (new JIS)(Parallel key, Ordinary grade).

■ SB-type Vertical 53, 63



Model No.	B1	BB1	CL	AB	CC	AD	BD	AC	BC	G	N	Z	S	HS/LS	W	X	L
19	274	137	256	180	76	156	156	125	125	17	4	11	19	37	6	15.5	31
25	374	187	312	222	90	190	190	152	152	20	4	14	25	51	8	21	44
30	414	207	365	265	100	210	210	174	174	20	4	14	32	62	10	27	50
38	478	239	423	308	115	236	236	195	195	22	4	14	40	75	12	35	64
45	480	240	500	360	140	285	285	240	240	25	4	16	45	90	14	39.5	79
50	620	310	590	415	175	340	340	290	290	32	4	21	50	100	14	44.5	88
65	708	354	680	465	215	394	394	330	330	38	4	21	65	105	18	58	91
75	750	375	805	560	245	490	410	430	330	32	8	21	75	120	20	67.5	105
85	860	430	950	660	290	580	480	520	390	35	8	24	85	130	22	76	114

The dimensional tolerance of diameter of the input shaft adopts h7 (JIS B 0401) and that of the key adopts B 1301-1976 (new JIS)(Parallel key, Ordinary grade).

**SB75**

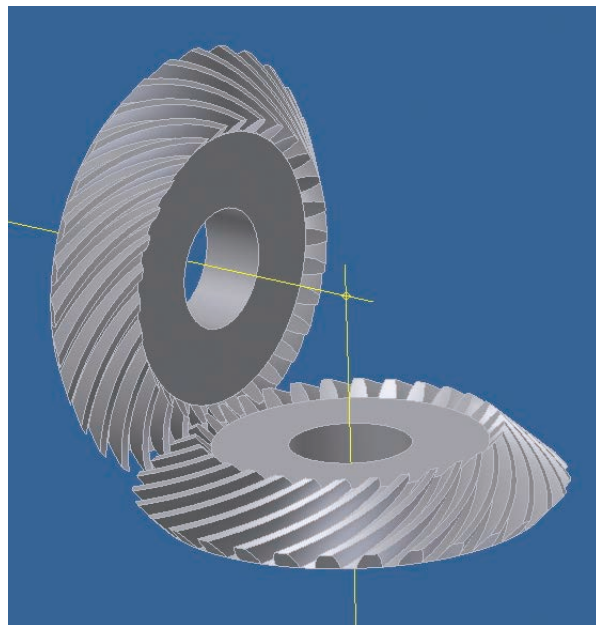
Input Power kW	Output Torque N·m		OHL KN	
	A-shaft	B-shaft	A-shaft	B-shaft
2.74	2489	2489	30.0	34.0
25.81	2342	2342	30.0	34.0
49.92	2264	2264	23.0	25.6
95.55	2167	2167	17.2	20.3
138.90	2100	2100	12.8	17.1
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

0.96	872	1743	30.9	35.9
9.19	834	1667	30.9	35.9
17.92	813	1626	27.7	35.9
34.67	786	1573	22.6	35.9
50.75	767	1535	19.5	31.9
81.58	740	1480	16.6	27.1
96.48	729	1459	15.5	25.9
-	-	-	-	-
-	-	-	-	-

**SB85**

Input Power kW	Output Torque N·m		OHL KN	
	A-shaft	B-shaft	A-shaft	B-shaft
4.36	3956	3956	39.2	42.1
40.84	3705	3705	39.2	41.9
78.78	3574	3574	27.6	31.4
150.36	3410	3410	19.0	24.6
218.18	3299	3299	13.3	20.4
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

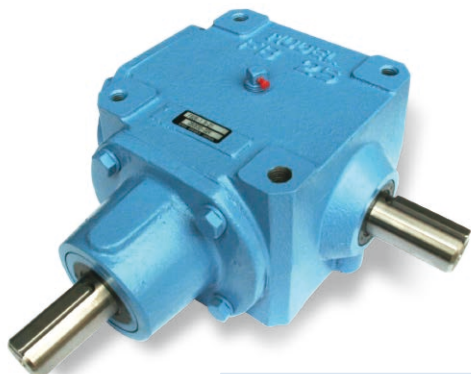
1.58	1436	2872	41.3	45.4
15.08	1368	2736	41.3	45.4
29.34	1331	2662	37.0	45.4
56.60	1284	2568	30.2	45.4
82.72	1251	2502	26.2	41.5
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-



# TYPE FB Bevel gear boxes

(Spiral bevel gear)

By use of many years of the company's technologies and achievements, FB-type spiral bevel gear box is developed as a product used in industrial machinery with severe applications such as agricultural equipment.



## Features

### Tough design

Used in industrial machinery with severe applications such as agricultural equipment, it is designed with enough strength.

### Compact and lightweight

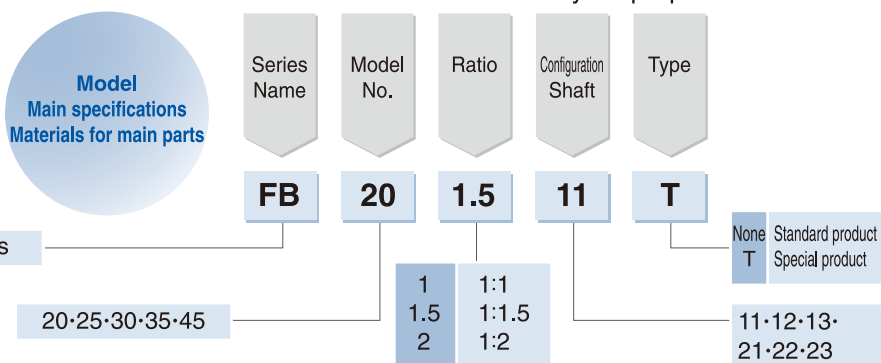
Lightweight and compact design.

### Wide variety

Shaft Configuration .....6 types

Model No. ....5 types

Speed Ratio .....3 types: 1:1, 1:1.5, 1:2 Please select in accordance with your purpose.

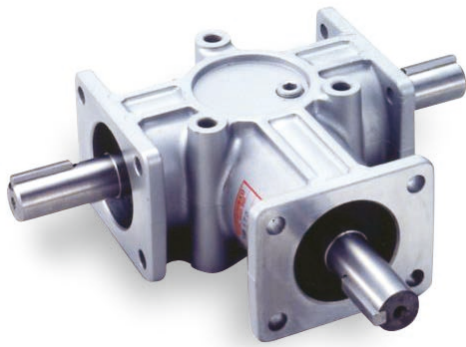


FB-type Rated Transmission Capacity Table

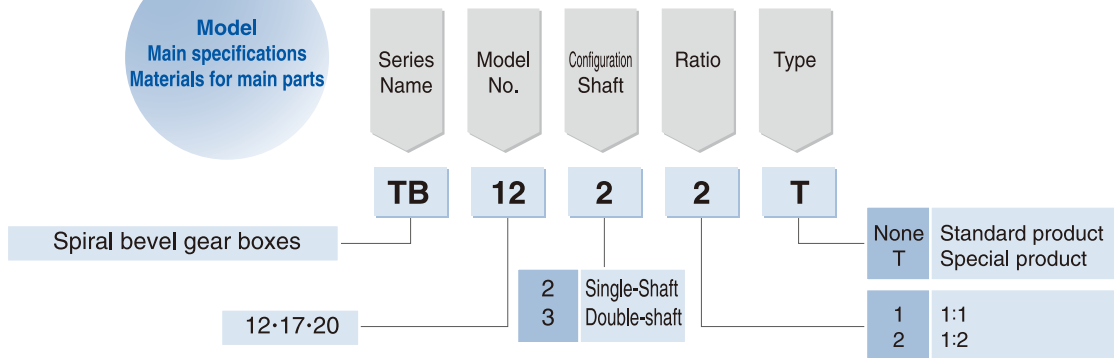
Ratio	Model No.	20				25				30				35				45								
		A-Shaft speed rpm	Input Power kW	Output Torque N·m	OHL N	A-shaft	B-shaft	Input Power kW	Output Torque N·m	OHL N	A-shaft	B-shaft	Input Power kW	Output Torque N·m	OHL N	A-shaft	B-shaft	Input Power kW	Output Torque N·m	OHL N	A-shaft	B-shaft				
1:1	10	0.04	34	980	880	0.08	74	1700	1400	0.13	123	2200	2200	0.21	196	3300	2800	0.36	343	6500	5700					
	100	0.36	34	980	880	0.77	74	1700	1400	1.28	123	2200	2200	2.05	196	3300	2800	3.59	343	6500	5700					
	200	0.72	34	980	880	1.54	74	1700	1400	2.57	123	2200	2200	4.11	196	3300	2800	7.19	343	3300	4000					
	400	1.44	34	980	880	3.08	74	1700	1400	5.13	123	2200	2200	8.21	196	2600	2700	14.4	343	2500	2600					
	600	2.16	34	980	880	4.62	74	1400	1300	7.70	123	1300	1900	12.3	196	1800	2100	20.1	320	1800	2100					
	900	3.23	34	980	880	6.93	74	800	1000																	
	1000	3.59	34	980	880																					
	1300	4.46	32	980	880																					
	A-shaft permissible speed	1300				900				800				700				600								
1:1.5	10	0.02	19	27	1100	900	0.05	48	69	1900	1400	0.07	69	98	2500	2300	0.12	117	167	3700	3000	0.16	151	216	7100	6100
	100	0.20	19	27	1100	900	0.50	48	69	1900	1400	0.72	69	98	2500	2300	1.22	117	167	3700	3000	1.58	151	216	6800	6100
	200	0.40	19	27	1100	900	1.00	48	69	1900	1400	1.44	69	98	2500	2300	2.45	117	167	3500	3000	3.16	151	216	5200	6100
	400	0.80	19	27	1100	900	2.00	48	69	1900	1400	2.88	69	98	2400	2300	4.90	117	167	2800	3000	6.32	151	216	3700	4700
	600	1.20	19	27	1100	900	3.00	48	69	1200	1400	4.32	69	98	2000	2300	7.35	117	167	2400	3000	9.49	151	216	2100	3900
	900	1.80	19	27	1100	900	4.50	48	69	600	1400	6.48	69	98	1200	2300	11.1	117	167	1400	2600	14.2	151	216	1100	3100
	1000	2.00	19	27	1100	900	5.00	48	69	500	1400	7.20	69	98	1100	2300	12.1	116	163	1200	2500					
	1300	2.55	19	27	1100	900	6.13	45	63	400	1300															
	1500	2.83	18	25	1100	900																				
	A-shaft permissible speed	1500				1300				1200				1000				900								
1:2	10	0.01	11	22	1200	1000	0.03	29	54	2000	1500	0.04	41	78	2500	2400	0.07	69	132	3800	3100	0.11	97	186	7200	6200
	100	0.12	11	22	1200	1000	0.30	29	54	2000	1500	0.43	41	78	2500	2400	0.72	69	132	3800	3100	1.02	97	186	7200	6200
	200	0.22	10	20	1200	1000	0.54	26	49	2000	1500	0.81	39	74	2500	2400	1.30	62	120	3700	3100	1.86	89	171	5800	6200
	400	0.39	9	18	1200	1000	0.95	23	44	2000	1500	1.43	34	65	2500	2400	2.30	55	105	3000	3100	3.30	79	150	4800	6200
	600	0.54	9	17	1200	1000	1.32	21	40	1900	1500	1.99	32	60	2200	2400	3.18	51	97	2600	3100	4.58	73	139	4200	5600
	900	0.76	8	15	1200	1000	1.83	19	37	1700	1500	2.76	29	56	1900	2400	4.43	47	89	2300	3100	6.37	68	128	3600	4900
	1000	0.82	8	15	1200	1000	2.00	19	36	1600	1500	3.02	29	55	1900	2400	4.84	46	88	2200	3100	6.95	66	124	3500	4700
	1300	1.00	7	14	1200	1000	2.42	18	34	1500	1500	3.64	27	50	1700	2400	5.84	43	81	2000	3100					
	1600	1.16	7	13	1200	1000	2.82	17	32	1300	1500	4.26	25	48	1600	2400										
	1800	1.27	7	13	1200	1000	3.09	16	31	1300	1500															
	A-shaft permissible speed	1800				1800				1600				1300				1100								

# TYPE Bevel gear boxes

## TB (Spiral bevel gear)



Model  
Main specifications  
Materials for main parts



TB-type Rated Transmission Capacity Table

Ratio	Model No.	12					17					20					
		A-shaft Speed rpm	Input Power kW	Output Torque N·m		OHL N		Input Power kW	Output Torque N·m		OHL N		Input Power kW	Output Torque N·m		OHL N	
				A-shaft	B-shaft	A-shaft	B-shaft		A-shaft	B-shaft	A-shaft	B-shaft		A-shaft	B-shaft		
1:1	100	0.02	1.8	350	470	0.08	7.8	420	610	0.18	17.2	880	930				
	200	0.04	1.8	260	350	0.15	7.3	310	450	0.32	15.2	800	850				
	400	0.07	1.8	200	260	0.27	6.5	240	330	0.56	13.3	570	660				
	600	0.11	1.8	160	220	0.38	6.0	190	270	0.78	12.3	400	540				
	900	0.17	1.8	110	180	0.53	5.6	140	240	1.08	11.4	270	450				
	1000	0.18	1.8	100	170	0.58	5.5	130	230	1.18	11.2	260	430				
	1200	0.21	1.7	80	160	0.66	5.2	120	210	1.36	10.8	210	390				
	1600	0.25	1.5	60	140	0.79	4.7	100	180	1.67	9.9	180	350				
	1800	0.26	1.4	50	140	0.85	4.5	100	180	1.83	9.7	160	330				
1:2	100	0.007	0.7	1.3	370	600	0.03	3.1	6.2	490	720	0.06	5.4	10.6	960	960	
	200	0.01	0.7	1.3	270	500	0.06	2.8	5.6	380	720	0.10	4.9	9.6	920	960	
	400	0.03	0.7	1.3	210	380	0.11	2.5	5.0	260	560	0.18	4.3	8.4	740	960	
	600	0.04	0.7	1.3	170	320	0.15	2.4	4.6	210	470	0.25	4.0	7.8	620	900	
	900	0.06	0.7	1.3	140	270	0.21	2.3	4.4	160	400	0.35	3.7	7.3	540	780	
	1000	0.07	0.6	1.1	130	260	0.22	2.2	4.1	150	390	0.38	3.6	7.1	520	760	
	1200	0.08	0.6	1.1	130	250	0.26	2.1	3.9	140	370	0.44	3.5	6.9	480	710	
	1600	0.10	0.6	1.1	110	240	0.33	2.0	3.7	120	340	0.56	3.3	6.5	430	640	
	1800	0.11	0.6	1.1	100	220	0.36	1.9	3.5	120	310	0.62	3.3	6.4	410	600	

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