



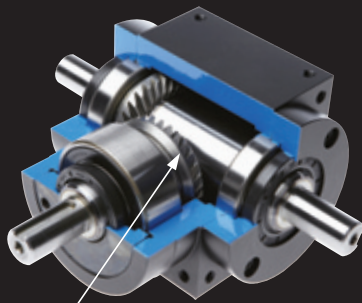
Spiral Bevel Gearboxes



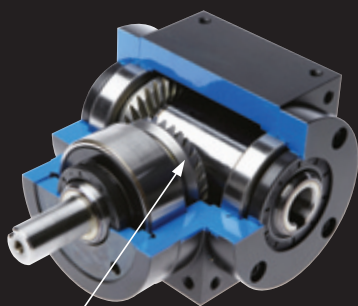
Spiral Bevel Gearbox is a high precision product developed by SPG that specializes in the manufacturing of Precision Geared Motor **SBT series**



SPG Precision **Bevel Gearbox**, which is used widely in various industrial machines as a high precision and high strength structure's power dividing equipment, provides a robust **function** and **performance** to meet the customer's requirement.



Spiral Bevel Gear



Spiral Bevel Gear

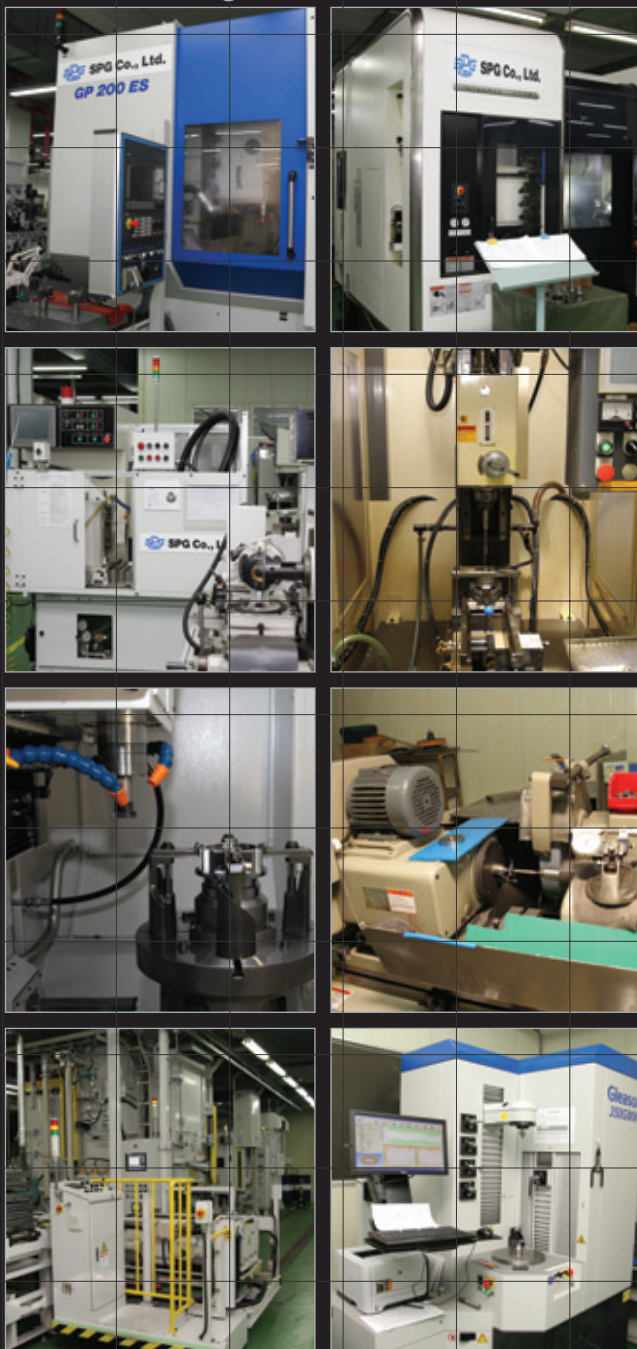
- ◆ **Compact Size and Lightweight Design**
Allows the use of smaller servo & stepping motors
- ◆ **High Torque Transmission Capacity**
Offers higher torque compared with conventional models and can even be downsized to improve cost efficiency
- ◆ **Diverse Model Lineup**
The various high stiffness shaft layout gives customers the option to select the proper model based on their application.
- ◆ **Low Moment of Inertia**
Enhances control capacity by low inertia moment design
- ◆ **High Efficiency**
High transmission efficiency 90–98%
- ◆ **High Precision**
Realize low backlash (\leq around 15 arcmin) by adopting precision and spiral bevel gear
- ◆ **Low Noise**
Approximately less than 75dB(A)
- ◆ **Long Life**
Enhanced anti-abrasion and anti-shock capability by using spiral bevel gear whose material has undergone Furnace and Process Technology in Vacuum Carburizing from special steel
- ◆ **Excellent Seal Structure**
Secured stability with high grade of protection (IP65) to use product by adopting oil seal for input shaft, O-ring for case commissure and non-contacting seal bearing for input shaft
- ◆ **Free Mounting Direction and Compatibility**
All directional mountings such as horizontal, vertical and sloped area are available. Enhanced mounting convenience by compatible design with other competitive models!
- ◆ **Simple Mounting to Various Servo and Stepping Motor**
This is adoptable for each manufacturer by introducing motor mounting adapter flange and three-branched collet clamp and adapter busing. Simple mounting! (M, P series)
- ◆ **Convenience for Maintenance**
No need for maintenance to add grease thanks to special grease injection!

Quality First! Customer Satisfaction is Our Goal

High Precision Performance & Reliability

Manufacturing a wide range of Automatic Processing Equipment and Comprehensive Quality Control Equipment.

Processing

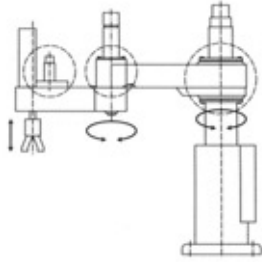


Quality Control

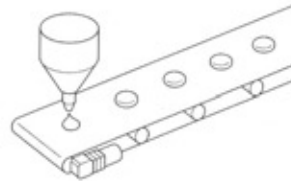


Applications

Scara Robot



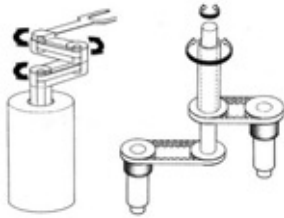
Belt Conveyor



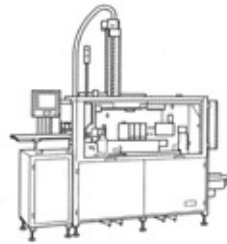
Printing Machine



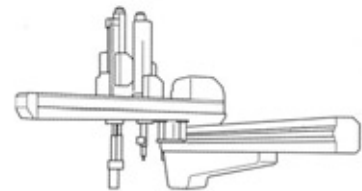
Wafer Transfer Robot



Automated Packing Machine



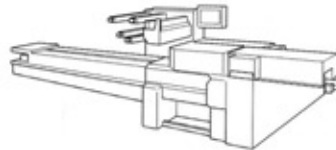
Gantry Robot



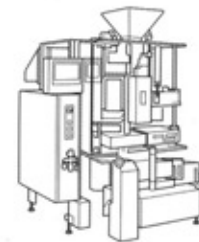
Robot(Rack&Pinion)



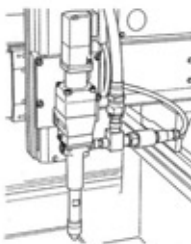
Fill Seal Machine(Horizontal Type)



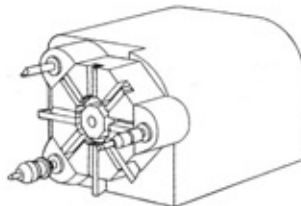
Fill Seal Machine(Vertical Type)



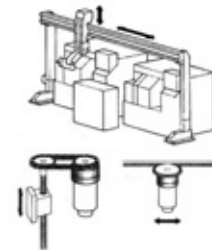
Dispenser Robot



Turret-Head



Loader Robot












- Parts Transfer Robot Systems
- Robot peripherals
- FA units
- Liquid glass return robots
- Semiconductor manufacturing devices
- Machine tools
- Loader drive shafts

- Printing Machinery
- Woodworking machinery
- Laser processing machinery
- Medical devices(CT)
- Monitoring & security cameras
- Bending Machinery
- Testing devices

- Measuring devices
- Pallet stackers
- Conveyors
- Extrusion machinery, blow-down devices etc.
- blow-down device etc.

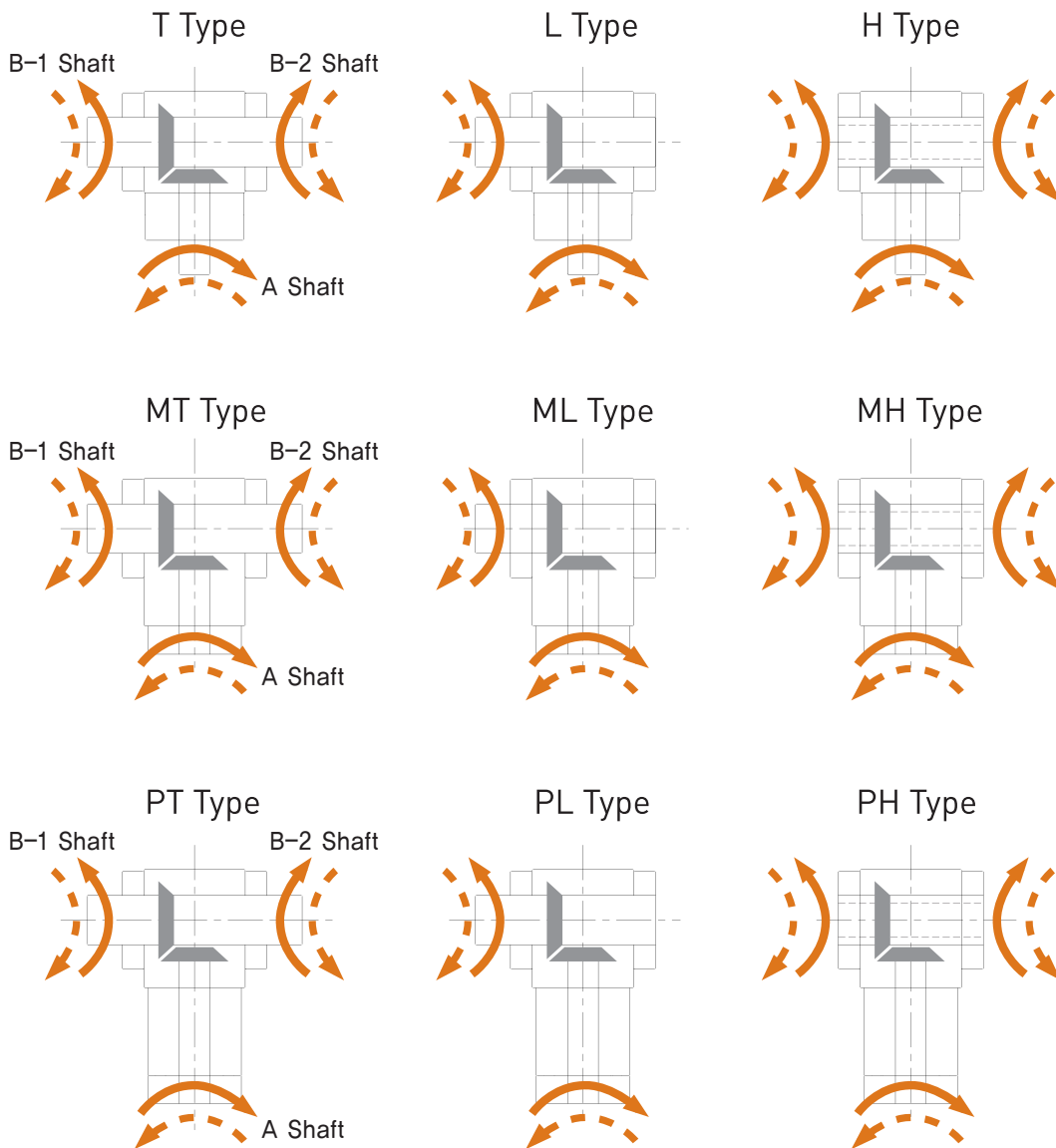
The Spiral Bevel Gearbox **SBT series** meet most of the specifications required by servo applications.

SPG Precision Spiral Bevel Gearboxes Classifications

Group	Figure	Series Name	Type	Frame Size	Ratio (i)	Page
Spiral Bevel Gearboxes		SBT-T	Standard	□25 ~ □142	1	8
		SBT-L		□25 ~ □142	1	9
		SBT-H		□65 ~ □142	1	10
		SBT-MT	Motor Mount (M-Series)	□25 ~ □142	1	13
		SBT-ML		□25 ~ □142	1	14
		SBT-MH		□65 ~ □142	1	15
		SBT-PT	Motor Mount (P-Series)	□50 ~ □142	3~10	18
		SBT-PL		□50 ~ □142	3~10	19
		SBT-PH		□65 ~ □142	3~10	20

■ Shaft layout and rotation direction

- Make sure to check the rotation directions for Input and output shafts since the rotation directions for the output shaft are dependent on the assembling location of bevel gear.
- Normal and reversed rotation are all available with the same capacity.
- The rotation directions below indicate the rotation of directional relation for each shaft.
- Key hole location for each shaft is not always matched.
- The reduction gear ratio 1:2 reduces A-shaft (Input) down to B shaft (Output).





Spiral Bevel Gearboxes SBT □ Series (Standard Type)

- ▶ Compact size
- ▶ High precision, High durability
- ▶ High efficiency

Specifications

Description	Unit	Stage	Ratio (1)	Model No.							
				SBT025T SBT025L	SBT030T SBT030L	SBT042T SBT042L	SBT050T SBT050L	SBT065T SBT065L SBT065H	SBT090T SBT090L SBT090H	SBT115T SBT115L SBT115H	SBT142T SBT142L SBT142H
Nominal Output Torque $T_{2N}^{(1)}$	Nm	1	1	0,3	0,7	2,5	3,0	9,0	17	22	50
Max. Acceleration Torque T_{2B}	Nm	1	1	1,5 times of Nominal Output torque							
Nominal Input speed n_1	RPM	1	1	3,000	3,000	3,000	3,000	3,000	3,000	3,000	2,000
Max. Input speed N_1	RPM	1	1	5,000	5,000	5,000	5,000	5,000	5,000	5,000	3,000
Backlash (Standard class)	arcmin	1	1	≤ 25			≤ 20		≤ 15		
Max. Overhang Load Input $F_r \max^{(1)}$	N	1	1	7	12	24	70	140	390	60	400
Max. Overhang Load Output $F_a \max^{(1)}$	N	1	1	38	56	120	88	110	200	600	800
Max. Thrust Load Input $F_a \max^{(1)}$	N	1	1	3,5	6	12	35	70	195	30	200
Max. Thrust Load Output $F_a \max^{(1)}$	N	1	1	19	28	60	44	55	100	300	400
Service Life (1)	hr	1	1	20,000							
Noise Level (2)	dB(A)	1	1	61	63	65	68	70	74	76	77
Weight	kg	1	1	0,2	0,35	0,9	0,8	1,8	4,5	9	18
Moment of Inertia (3)	kg cm ²	1	1	0,01	0,02	0,14	0,13	0,67	3,49	9,4	29,85
Operating Temp. (4)	°C	1	1	-10 ~ +90 °C							
Lubrication		1	1	High temperature & Extreme pressure Lubricant							
Efficiency η	%	1	1	≥ 95%							

(1) Value for this specification table indicates that service factor is 1 at uniformed load for nominal input speed. Make sure to use it within the allowable limit from specification table. In case of data for Torque, Overhang Load and Thrust Load in continuous operation ($S_1 \approx 10,000$ hrs), allowable load location for shaft is the central part of the shaft based on 1-Output Shaft. In case of 2-Output Shaft, it's required to take into account sum of load given to each shaft and its value should be within range of the above data.

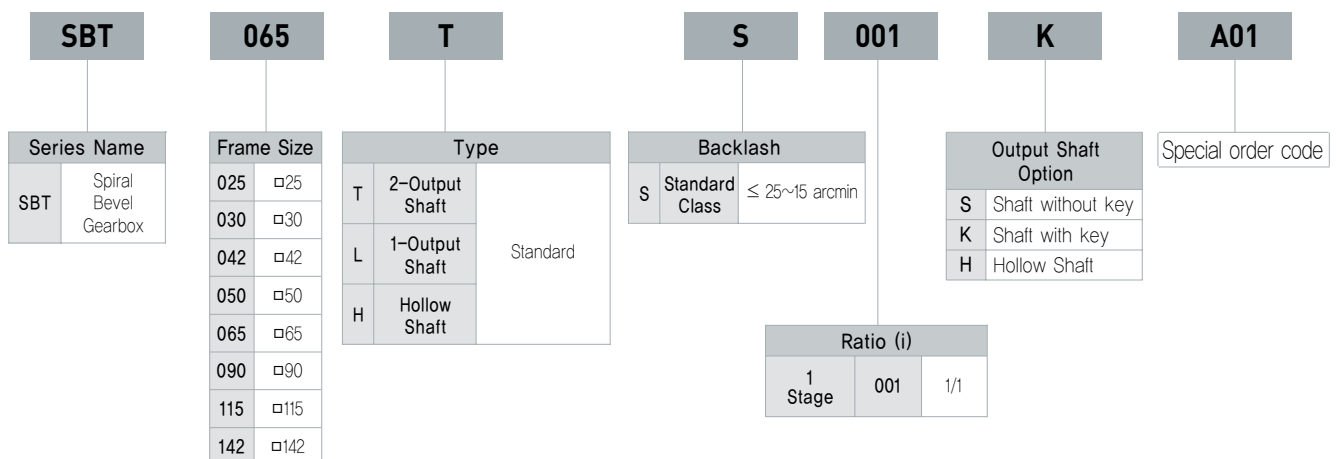
(2) Noise should be measured at 1 m of distance from mounting surface of reducer while a reducer is running at 1,500 rpm without load (Noise 21dB(A))

(3) Based on Input Shaft and representative model (T Type).

(4) Make sure to use reducer at temperature range of -10°C ~ +40°C and within its surface temperature of 90°C.

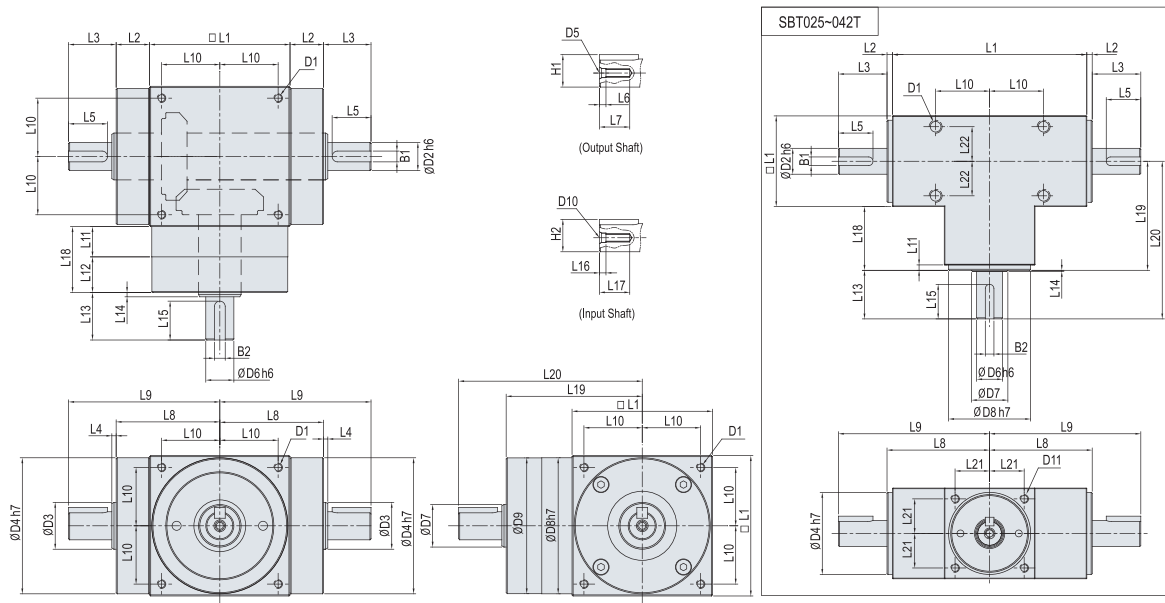
※ Above data in the specification indicates the representative data and the specification may be changed to improve performance without prior notification.

Coding System



Spiral Bevel Gearboxes

■ Dimensions (SBT 025/030/042/050/065/090/115/142T)



(Unit : mm)

Dimension \ Model	SBT025T	SBT030T	SBT042T	SBT050T	SBT065T	SBT090T	SBT115T	SBT142T
D1	M4 DP6	M5 DP6	M6 DP7	M4 DP9	M4 DP9	M6 DP12	M8 DP16	M10 DP18
D2 h6	6	8	12	12	13	18	22	32
D3	-	-	-	14,7	21,7	31,8	34,8	49,8
D4 h7	22	27	38	48	63	88	108	135
D5	4	5	6	4,3	4,3	5,5	8,5	12,5
D6 h6	6	8	12	12	13	18	22	32
D7	9,9	11,9	16,9	14,7	19,7	29,8	44,8	54,8
D8 h7	23	28	38	48	63	88	108	135
D9	-	-	-	47,9	62,9	87	107	134
D10	4	5	6	4,3	4,3	5,5	8,5	12,5
D11	M3 DP7	M3 DP7	M4 DP8	-	-	-	-	-
L1	57	65	90	50	65	90	115	142
L2	2	2	2,5	11,5	15,5	16,5	16,5	16,5
L3	13	18	22,5	20	22	37	42	52
L4	-	-	-	1	2	2	2	2
L5	-	-	16	16	18	32	36	47
L6	1,4	1,5	1,6	3	3	4	6	10
L7	M3 DP6	M4 DP7	M5 DP9	M4 DP13	M4 DP14	M5 DP17	M8 DP25	M12 DP28
L8	30,5	34,5	47,5	36,5	48	61,5	74	87,5
L9	43,5	52,5	70	56,5	70	98,5	116	139,5
L10	16,5	17,5	25	20	27	36	44	55
L11	2	2	2,5	11	14	15	15	18
L12	-	-	-	13,5	16,5	18	27	32,5
L13	13	18	22,5	20	22	37	42	52
L14	0,5	0,5	0,5	1	2	2	2	2
L15	-	-	16	16	18	32	36	47
L16	1,4	1,5	1,6	3	3	4	6	10
L17	M3 DP6	M4 DP7	M5 DP9	M4 DP13	M4 DP14	M5 DP17	M8 DP25	M12 DP28
L18	19	20,5	29,5	24,5	30,5	37	42	50,5
L19	31,5	35,5	50,5	49,5	63	78	99,5	121,5
L20	44,5	53,5	73	69,5	85	115	141,5	173,5
L21	9,5	11,5	16	-	-	-	-	-
L22	9	11	16	-	-	-	-	-
B1 h9	-	-	4	4	5	6	6	10
B2 h9	-	-	4	4	5	6	6	10
H1	-	-	13,5	13,5	15	20,5	24,5	35
H2	-	-	13,5	13,5	15	20,5	24,5	35

Note) 1. Specifications are subject to change without notice for improvement.
 2. CAD files are available for download from our website at www.spg.co.kr.