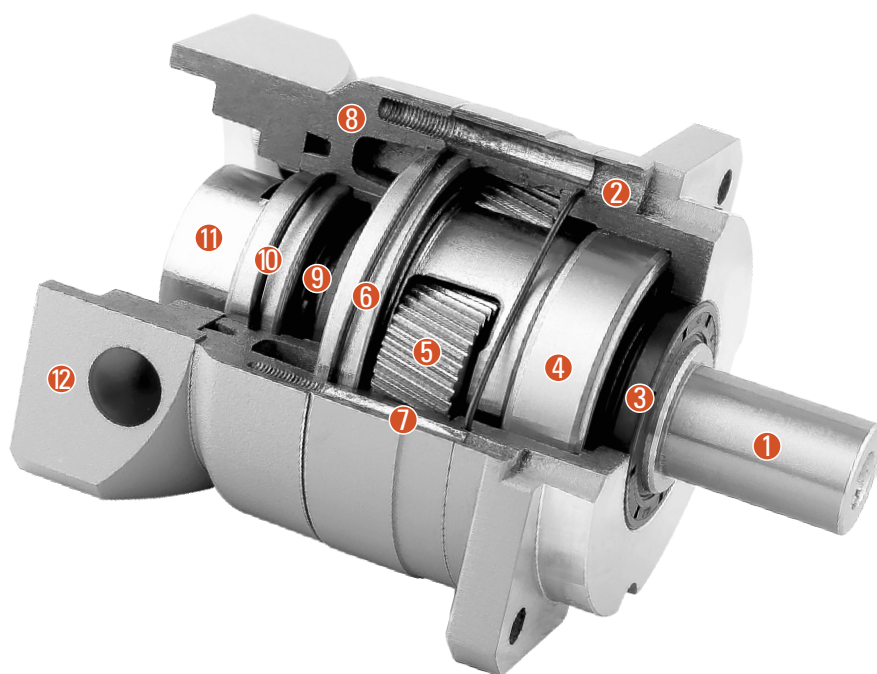


SBF SERIES GEAR BOX

Sectional drawing



- ① Output shaft
- ② Front cover
- ③ Oil seal
- ④ Output shaft front bearing
- ⑤ Planetary gear
- ⑥ Output shaft rear bearing
- ⑦ Inner ring gear
- ⑧ Rear cover
- ⑨ Solar wheel
- ⑩ Coupling bearing
- ⑪ Coupling
- ⑫ Flange

Type and model number

SBF Reducers					Servo motor	
60	SBF	10	()	(S)	-	400 T1
①	②	③	④	⑤	⑥	⑦

① Gear head frame size: 060/090/115/142/180

② Gear head series code:
SBF: Square mounting flange series

③ Gear ratio: Single stage 10

	Cabin seat	Stage	Precise P1	Standard P2
④ Accuracy Output shaft load value at $\pm 3\%$ of allowable output torque	060SBF	1	3	5
		2	5	7
	090SBF	1	3	5
		2	5	7
	115SBF	1	3	5
		2	5	7
	142SBF	1	3	5
		2	5	7
	180SBF	1	3	5
		2	5	7

Input shaft type

S: Overall locking (Omitted) (Can be used regardless of whether the motor has a keyway)

⑤ S1: Locking with locking ring (Can be used regardless of whether the motor has a keyway)

S2: Lock with keyway (Input shaft with key)

K: With keyway

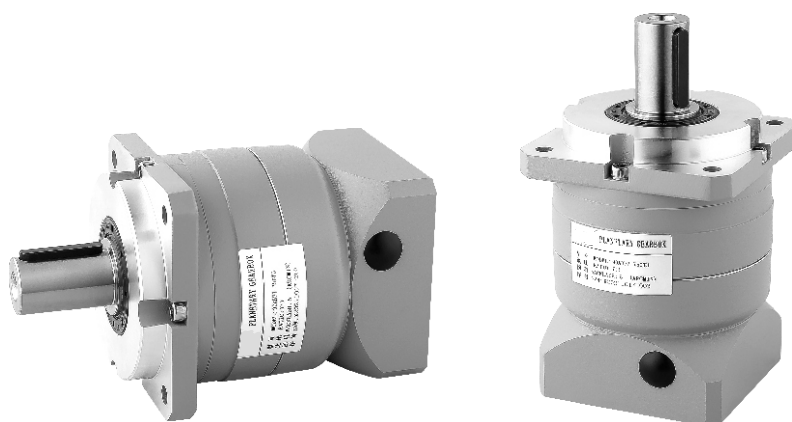
A: Other adapters (Please contact us)

⑥ Applicable servo motor power (W)

⑦ Corresponding dimension table of input flange and servo motor ()

SBF PLANETARY GEAR BOX

Product diagram



Technical information

Product type		060	090	115	142	180	Reduction ratio	Stage
Rated output torque	N.M	45	120	198	332	578	3	1
		40	130	280	532	1040	4	
		50	150	320	650	1190	5	
		40	130	290	540	1090	7	
		35	110	250	490	990	8	
		30	90	220	440	890	10	
		45	120	198	332	578	15	2
		40	130	280	532	1040	20	
		50	150	320	640	1190	25	
		40	130	290	540	1190	35	
		35	110	250	490	990	40	
		50	150	320	640	1190	50	
		45	140	300	-	-	64	
		40	130	290	540	1090	70	
		35	110	250	490	990	80	
		30	90	220	440	890	100	
Life	Hour	20000						
Instant emergency stop torque	N.M	3 times rated output torque						

Product type	060	090	115	142	180	Unit	Stage
Radial force	1100	3000	6023	9230	13500	N	-
Axial force	630	1230	2550	4200	7000	N	-
Full load efficiency	≥ 97					%	1
	≥ 94						2
Weight	1.055	2.680	6.32	18.30	26.80	Kg	1
	1.065	3.135	7.20	22.14	33.55		2
Operating temperature	-10~+90					℃	-
Protection level	IP65						
Lubrication method	Lifetime lubrication						
Installation method	Any						

Maximum radial force and maximum axial force, when the output is 100RPM, it acts on the center position (L/2) of the output shaft.

SBF PLANETARY GEAR BOX

Technical information

Product type		060	090	115	142	180	Reduction ratio	Stage
Moment of inertia	Kgcm ²	0.16	0.61	3.25	9.21	28.98	3	1
		0.14	0.48	2.74	7.54	23.67	4	
		0.13	0.47	2.71	7.42	23.29	5	
		0.13	0.45	2.62	7.14	22.48	7	
		0.13	0.44	2.58	7.07	22.59	8	
		0.13	0.44	2.57	7.03	22.51	10	
		0.03	0.13	0.47	2.71	7.42	15	2
		0.03	0.13	0.47	2.71	7.42	20	
		0.03	0.13	0.47	2.71	7.42	25	
		0.03	0.13	0.47	2.71	7.42	35	
		0.03	0.13	0.47	2.71	7.42	40	
		0.03	0.13	0.44	2.57	7.03	50	
		0.03	0.13	0.44	-	-	64	
		0.03	0.13	0.44	2.57	7.03	70	
		0.03	0.13	0.44	2.57	7.03	80	
		0.03	0.13	0.44	2.57	7.03	100	

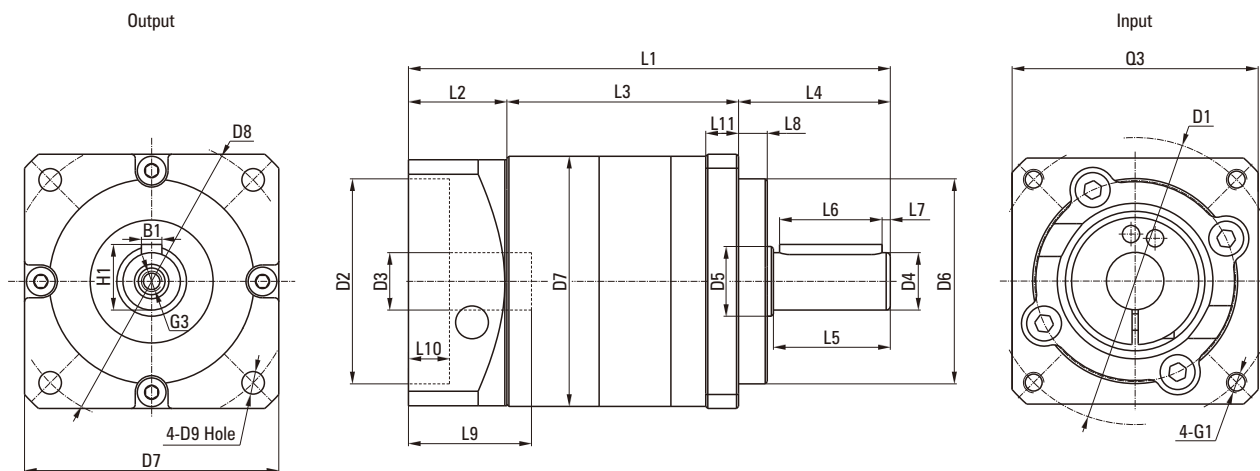
Product type		60	90	115	142	180	Stage
Backlash	arcmin	≤5	≤5	≤5	≤5	≤5	1
		≤7	≤7	≤7	≤7	≤7	2
Torsion resistance	N.M/arcmin	7	14	25	50	145	-
Noise	dB(A)	≤63					-
Output speed	min ⁻¹	6000	6000	6000	6000	6000	-
Recommended input speed	min ⁻¹	3000	3000	3000	3000	3000	-

1. Moment of inertia is related to input shaft.

2. Noise detection standard, distance 1m, measured at input speed of 3000 rpm with no load.

SBF PLANETARY GEAR BOX-MECHANICAL PARAMETER

Dimensional drawing



Dimensional table

Unit: mm

Product type	060SBF		090SBF		115SBF		142SBF		180SBF	
Number of stage	1	2	1	2	1	2	1	2	1	2
L1 overall length	121.5	131.5	153	167.5	208	219	295.3	330.5	295.5	352.5
L3 body length	60.5	70.5	71.3	85.8	95	106	132.3	167.5	141	198
Output										
L4 output shaft length	37		48		65		97		105	
L5 output length to the shaft shoulder	28.5		36		51		79		82	
L6 key length	25		32		40		70		70	
L7 key length to shaft end	2		2		5		4		6	
L8 spigot diameter	7		10		12		15		20	
L11 output flange thickness	8		10		14		15		20	
D4 output shaft diameter	Φ16h7		Φ22h7		Φ32h7		Φ40h7		Φ55h7	
D5 shaft shoulder diameter	Φ20		Φ30		Φ40		Φ50		Φ65	
D6 spigot diameter	Φ50h7		Φ80h7		Φ110h7		Φ130h7		Φ160h7	
D7 body diameter	Φ61		Φ90		Φ115		Φ142		Φ180	
D8 hole circle	Φ70		Φ100		Φ130		Φ165		Φ215	
D9 mounting hole	Φ5.5		Φ6.5		Φ8.5		Φ11		Φ13	
D10 mounting width	□62		□90		□120		□142		□180	
B1 key width	5		6		10		12		16	
H1 key height	18		22.5		35		43		59	
G3 center screw hole	M5X15		M8X18		M12X28		M16X36		M20X42	
Input										
L2 input flange length	24		33.7		48		66		49.5	
L9 motor shaft length	30		40		58		81		81	
L10 spigot depth	10		10		10		12		12	
D1 mounting hole distribution circle	Φ70		Φ90		Φ145		Φ200		Φ200	
D2 spigot diameter	Φ50G7		Φ70G7		Φ110G7		Φ114.3G7		Φ114.3G7	
D3 input shaft diameter	≤Φ14G7		≤Φ19G7		≤Φ24G7		≤Φ35G7		≤Φ35G7	
G1 mounting threads X depth	M4X10		M5X12		M8X21		M12X28		M12X28	
Q3 input flange	□60		□80		□130		□176		□176	