



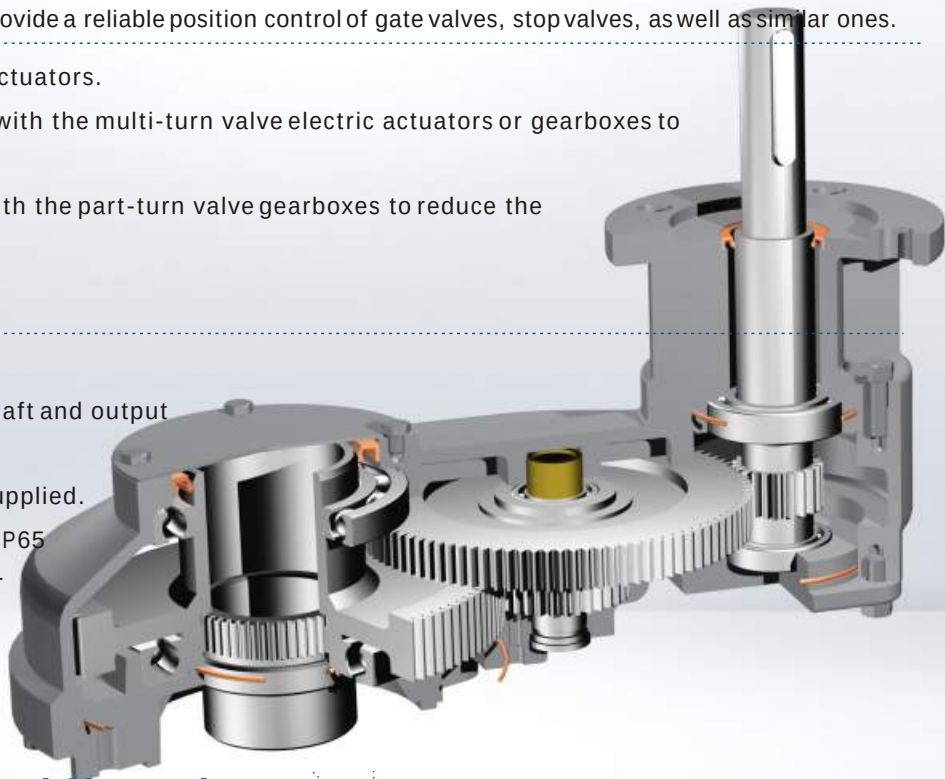
BSG Series Valve Gearbox

► For Multi-turn Application



Summary

- ▶ **Drive train** The drive train consists of multilevel spur gear pairs
- ▶ **Applicability** BSG series can provide a reliable position control of gate valves, stop valves, as well as similar ones.
 - They can be used as the manual actuators.
 - As the output part, they combine with the multi-turn valve electric actuators or gearboxes to achieve bigger output torque.
 - As the input part, they combine with the part-turn valve gearboxes to reduce the input torque.
- ▶ **Torque** 800 ~ 50000 Nm
 - High efficiency
 - The rotation directions of input shaft and output shaft are same.
 - A variety of reduction ratios are supplied.
 - The structure is water tightness. IP65 enclosure is standard, and IP67 or IP68 (GB4208) enclosure can be provided if need.



Model and specification

BSG6	-	15	/	36	P	:	F35-T10	:	F14-08	
										Input connection code (If it is a handwheel, omit the code.)
										Connection code for valve (Refer to page 2)
										Structural and configuration
										Null Standard
										G With input flange
										P With mechanical position indicator
										The turns (It is necessary to be supplied for type "P")
										Reduction ratio
										Model



About us

Tianjin Beifang Valve Actuator Co., Ltd. (BF for short) always focus on the design and manufacture of excellent valve actuator and control equipment.

BF attaches great importance to product design, and the design team has strong product design and innovation ability. BF has complete intellectual property rights and a number of technical patents. Over the years, our products have been annual exported in batches and were widely and successfully used in water treatment, oil, electricity, chemical and other industries.

BF acquired the authentication of quality management system standards ISO9000 of DNV in 1998. Strict quality control in all stages and constantly improving the product quality control standards is the consensus of the staff.

BF believes that only solid the software and hardware foundation to achieve long-term stable development. We have set up some advanced computer-aided system, such as product design, resource management, production management, and soon. And we have set up the platform of precision machining mainly based on CNC machining center. We also continue to establish and improve a documented management system.

BF will design and manufacture products solidly and continue our efforts to create more value for customers.

Where to find information

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Main parameters

Drive parameters

Model	Max. output torque Nm	Reduction ratio	Drive efficiency	Input torque Nm
BSG2	800	2	0.9	444
		3	0.9	296
		4	0.9	222
		6	0.9	148
BSG3	1500	2	0.9	833
		3	0.9	555
		4	0.9	416
		6	0.9	277
BSG4	3000	4	0.9	846
		6	0.9	551
		8	0.9	418
		10	0.9	335
BSG5	6000	12	0.9	277
		15	0.9	223
		4	0.9	1673
		6	0.9	1140
BSG6	12000	8	0.9	848
		10	0.9	672
		12	0.9	548
		15	0.9	437
BSG7	25000	8	0.9	1685
		10	0.9	1354
		12	0.9	1123
		15	0.9	868
BSG8	50000	10	0.9	2783
		12	0.9	2291
		15	0.9	1851
		20	0.9	1381
BSG8	50000	12	0.9	4630
		15	0.9	3704
		20	0.9	2778
		24	0.9	2315

Mechanical parameters

Two kind of output drive type are available. One is stem nut type, and the other is transmission of torque-only type.

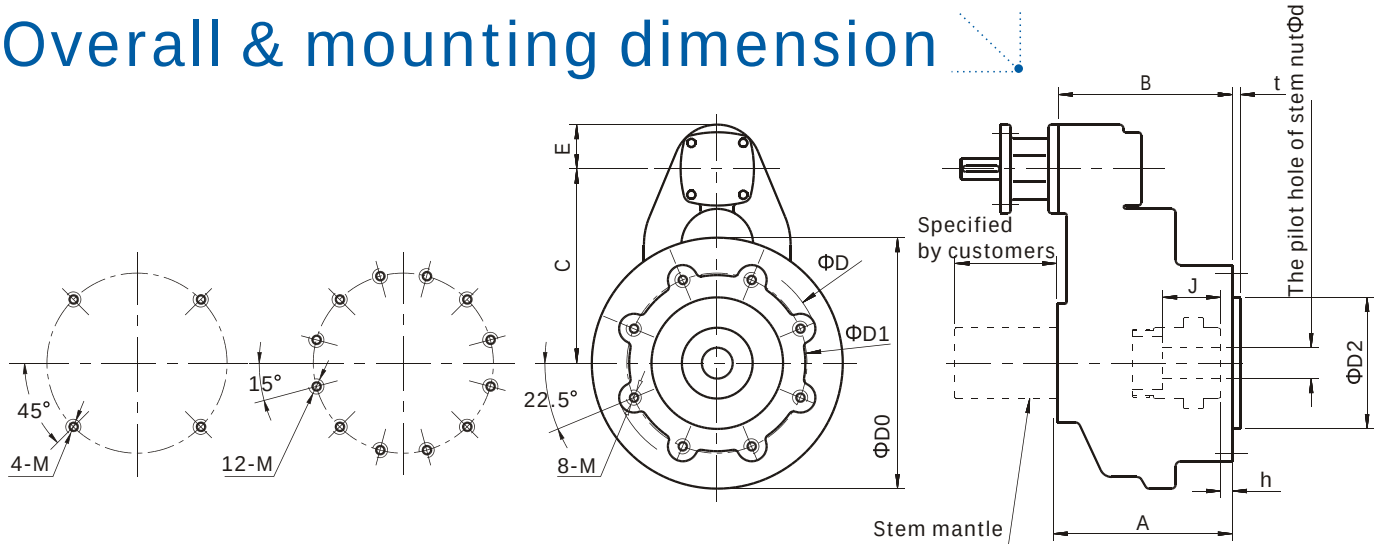
Stem nut type: The copper alloy stem nut and the thrust component of BSG series can accept the double direction thrust from valve stem.

Transmission of torque-only type: The plug sleeve or drive sleeve with keyhole of BSG series can only transmit torque, but can not bear thrust, when it joints with the gearbox or the valve.

Model	Code of output flange	Allowable max. Thrust kN		Allowable max-dia. of stem mm		Weight kg
		Manual operation	Motor operation	Transmitting torque-only type	Stem nut type	
BSG2	F10	54	40	52	30	30
	F14	170	130	52	50	34
BSG3	F14	170	130	70	50	38
	F16	350	260	70	65	45
BSG4	F16	350	260	85	65	80
	F25	440	330	85	80	90
BSG5	F25	440	330	95	80	100
	F30	670	500	95	90	125
BSG6	F30	670	500	105	100	225
	F35	1100	825	105	100	380
BSG7	F35	1100	825	130	110	400
	F40	1500	1125	130	130	425
BSG8	F40	1500	1125	155	140	735
	F48	2200	1650	155	150	790



Overall & mounting dimension



Model	Connection code for valve	Output flange						Overall dimension				Dimensions of stem nut		
		D	D1	D2(f9)	t	-M	A	B	C	D0	E	d	J	h
BSG2	F10-T04	125	102	70	3	4-M10	118	112	202	262	54	20	45	0
	F14-T05	175	140	100	4	4-M16	135	129				25	55	5
BSG3	F14-T05	175	140	100	4	4-M16	140	134	289	330	76	25	55	5
	F16-T06	210	165	130	5	4-M20	144	138				30	70	10
BSG4	F16-T06	210	165	130	5	4-M20	201	193	328	330	86	30	70	10
	F25-T08	300	254	200	5	8-M16	208	200				40	90	15
BSG5	F25-T08	300	254	200	5	8-M16	230	222	356	412	88	40	90	15
	F30-T10	350	298	230	5	8-M20	242	234				50	110	18
BSG6	F30-T10	350	298	230	5	8-M20	297	285	384	496	88	50	110	18
	F35-T12	415	356	260	5	8-M30	356	344				60	120	20
BSG7	F35-T12	415	356	260	5	8-M30	372	360	456	580	88	60	120	20
	F40-T15	475	406	300	8	8-M36	419	393				75	150	20
BSG8	F40-T15	475	406	300	8	8-M36	596	584	610	705	95	75	150	20
	F48-T19	560	483	370	8	12-M36	632	620				95	200	25

Note: 1.The dimensions A, B of the products transmitting torque-only may be smaller than the value in the table.
2. The mounting dimensions in the table are common. If special mounting dimension is required, please contact us.

Input mounting dimension

(The mounting dimensions in the table are common. If require special mounting dimensions, please contact us)

Model	Input connection code	Input flange							Input shaft		
		N	N1	N2(H9)	h1	-	K	L	R	S	T*
BSG2	F10-06	125	102	70	4	4-	12	85	30	50	8
	F14-06	175	140	100	5	4-	18	85	30	50	8
BSG3	F14-06	175	140	100	5	4-	18	85	30	50	8
	F16-06	210	165	130	6	4-	22	85	30	50	8
BSG4	F14-06	175	140	100	5	4-	18	115	30	50	8
	F16-08	210	165	130	6	4-	22	115	40	60	12
BSG5	F16-08	210	165	130	6	4-	22	115	40	60	12
	F25-10d	300	254	200	6	8-	18	80	50	60	14
BSG6	F16-08	210	165	130	6	4-	22	115	40	60	12
	F25-10d	300	254	200	6	8-	18	80	50	60	14
BSG7	F25-10e	300	254	200	6	8-	18	80	50	60	2-14
	F30-10e	350	298	230	7	8-	22	80	50	60	2-14
BSG8	F30-12	350	298	230	7	8-	22	80	60	80	2-18
	F30-12	415	356	260	7	8-	34	80	60	80	2-18

*When two keys are adopted, their distribution is symmetrical.

Combination application

Combination with the multi-turn electric actuators

BSG series combine with the multi-turn electric actuators, which can be used as electric actuators to achieve bigger output torque. BSG series are the output part of the electric actuators. According to the input torque and the output torque of BSG series, choose the matched electric actuator. Various combination types can be chosen. For example:

BSG			Matched electric actuator	
Model	Output torque	Reduction ratio	Output torque	Model
	Nm		Nm	
BSG2	800	6:1	150	9031,9201
BSG3	1500	6:1	300	9032,9202
BSG4	3000	6:1	600	9033,9203
BSG5	6000	6:1	1200	9034,9204
BSG6	12000	12:1	1200	9034,9204
BSG7	25000	12:1	2500	9035,9205
BSG8	50000	12:1	5000	9036,9206

Combination with the multi-turn valve gearbox

The combination BSG series with the multi-turn valve gearbox can be use as the multiple gearbox to achieve larger reduction ratio or to meet the requirement of special installation position. According to the input torque and the output torque of BSG series, choose the matched valve gearbox. Various combination types can be chosen, e.g. the combination of two gearboxes, the combination of several gearboxes. For example:

BSG as the output part			Matched valve gearbox	
Model	Output torque	Reduction ratio	Output torque	Model
	Nm		Nm	
BSG3	1500	6:1	300	6030
BSG4	3000	6:1	600	6031, BSG2
BSG5	6000	6:1	1200	6032, BSG3
BSG6	12000	12:1	1200	6032, BSG3
BSG7	25000	12:1	2500	6033, BSG4
BSG8	50000	12:1	5000	6034, BSG5

Combination with the part-turn valve gearbox

The typical application is that BSG series combine with the 402 series part-turn valve gearbox. BSG series are used as the input part to effectively reduce the input torque of 402 series. Various combination types can be chosen, such as combination a single BSG series with 402 series, combination multiple gearboxes consisting of several BSG series or 603 series with 402 series. When combining a single BSG series with 402 series, mechanical parameters as follow.

Model	Output torque	Reduction ratio of BSG	Reduction ratio of 402	Total reduction ratio	Input torque
	Nm				Nm
BSG2/4026	10000	2	56	112	344
		3	56	166	230
		4	56	224	172
		6	56	336	115
BSG3/4027	20000	2	56	112	689
		3	56	168	459
		4	56	224	344
		6	56	336	230
BSG4/4028	40000	4	50	200	686
		6	50	300	467
		8	50	400	343
		10	50	500	274
		12	50	600	229
		15	50	750	183
BSG5/4028.5	60000	4	52	208	1058
		6	52	312	705
		8	52	416	529
		10	52	520	423
		12	52	624	353
		15	52	780	282
BSG5/4029	80000	4	52	208	1410
		6	52	312	940
		8	52	416	705
		10	52	520	564
		12	52	624	470
		15	52	780	376
BSG6/4029.5	120000	8	56	448	1048
		10	56	560	838
		12	56	672	699
		15	56	840	559
BSG6/40210	160000	8	58	464	1349
		10	58	580	1079
		12	58	696	899
		15	58	870	720
BSG7/40211	320000	10	66	660	1924
		12	66	792	1603
		15	66	990	1283
		20	66	1320	962
BSG8/40212	640000	12	82	1008	2778
		15	82	1220	2222
		20	82	1640	1667
		24	82	1968	1369

