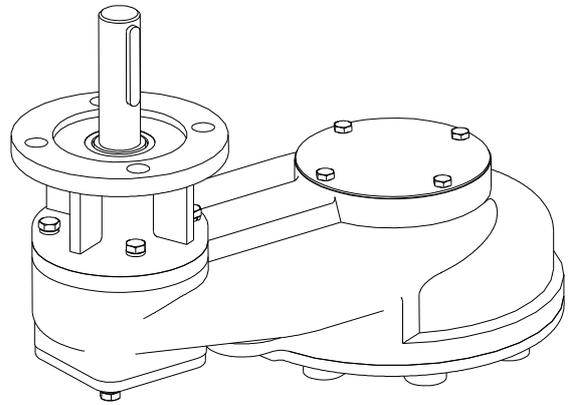


BFSEBSG01-2007

# BSG SERIES VALVE GEAR BOX

## INSTRUCTION MANUAL



Tianjin Beifang Valve Actuator Co., Ltd.

Issue 200709

Thanks for purchasing and using our BSG series valve gear box. Before you do anything, be sure to read through this booklet at least once and then keep it handy for ready reference.

## 1. SUMMARIZE

- 1.1 Range of application      BSG series valve gear box can provide a reliable position control of gate, stop valves, as well as similar ones. They are used as the manual operator attached with a handwheel. They also can be electric controlled when combined with multi-turn electric actuators.
- 1.2 Brief      For the adoption of double spur gear pair, the compact profiles provide BSG series higher strength and watertightness. All units fully O-ringed sealed and the driving members in the main house are permanently lubricated with molybdenum disulfide grease.
- Varies reduction ratio are supplied for choosing.
- Ball bearings are used for supporting the gear shafts, which provides BSG series higher efficiency.
- Varies output drive types could transmit torque, such as plug sleeve and bore with keyway. The stem nut could also bear thrust.
- BSG series have varies input mechanism for combining with multi-turn electric actuator.

## 2. TECHNICAL DATA

Ambient temperature:      Standard :  $-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$

Enclosure protection:      Standard : IP65 (IEC 529: 1989)  
Option: IP67/IP68 (IEC 529: 1989)

Performance parameter:

Unit size	BSG2		BSG3		BSG4		BSG5		BSG6		BSG7		BSG8	
Rated output torque Nm	800		1500		3000		6000		12000		25000		50000	
Output flange	F10	F14	F14	F16	F16	F25	F25	F30	F30	F35	F35	F40	F40	F48
Allowable thrust (stem nut) kN	54	170	170	350	350	440	440	670	670	1100	1100	1500	1500	2200
Max-dia. of stem mm	Stem nut		Bore with keyway		Stem nut		Bore with keyway		Stem nut		Bore with keyway		Stem nut	
	45	55	55	70	70	85	85	90	100	100	120	120	150	150
	40	52	52	65	65	75	75	80	90	90	110	110	130	170
Weight kg	30	34	38	45	80	90	100	125	225	380	400	425	735	790

### 3. LUBRICATION

603 series utilize a totally sealed case. The driving members in the main case are lubricated with 2# molybdenum disulfide grease, and it is not need to refresh the grease periodically.

Please use the grease with the same trademark or the same performance if replacement of grease is necessary.

### 4. STORAGE

Actuators should be stored in a clean, dry, protected warehouse.

Actuators should be stored on wooden skids to protect the machined mounting flange, and input shafts should be coated with rust proof oil to prevent from corrosion.

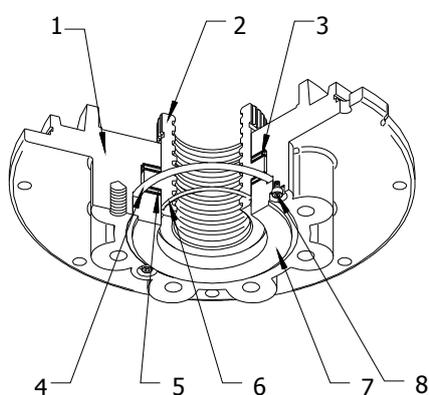
Input shafts should be rotated every two or three months to mix the lubricant.

### 5. INSTALLATION AND DISASSEMBLY

#### 1.1 Connection of plug sleeve

1. Place valve in closed position.
2. Mount the actuator on the valve mounting flange, locating the valve shaft and the actuator drive sleeve correctly.
3. Turn actuator input shaft until the unit is in correct position.
4. Bolt the actuator securely to the mounting flange.

#### 1.2 Connection of stem nut



1	Mounting flange
2	Stem nut
3	Thrust bearing
4	O-ring
5	Thrust bearing
6	O-ring
7	Thrust bearing race
8	Bolts and washers

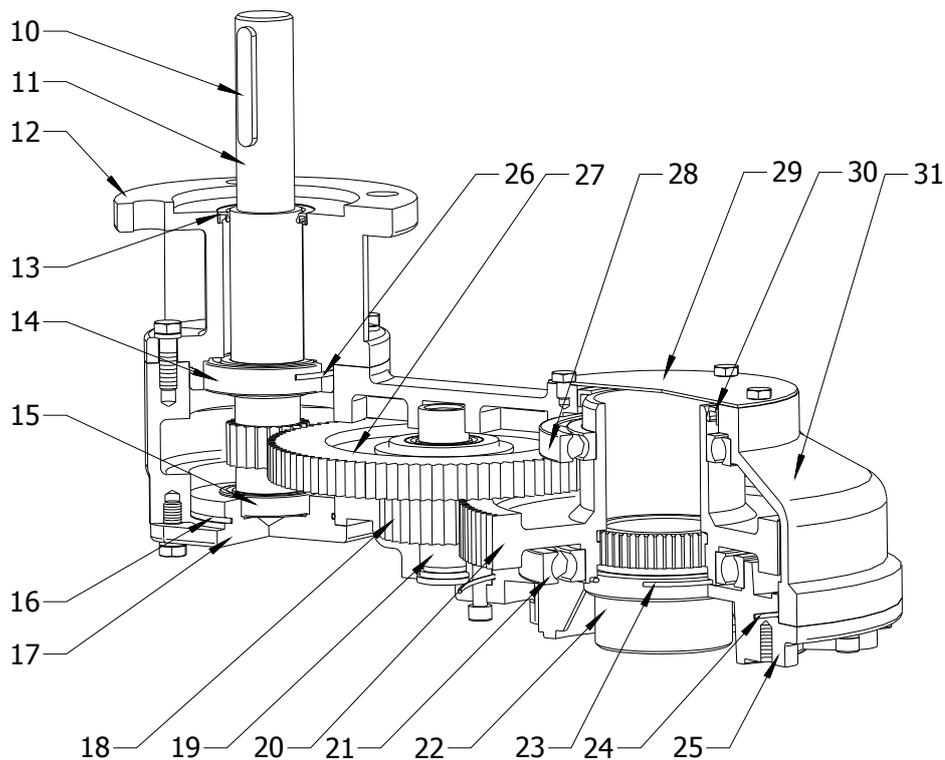
1. The stem nut will be supplied with a pilot hole. The consumer should take off it and cut thread.
  - a) Dismount the bolts and washers.
  - b) Dismount thrust bearing race, thrust bearing and stem nut.
2. Mount the stem nut as follows:
  - a) Ensure that the thrust bearing and O-ring is clean.
  - b) Check and ensure that the mounting flange is clean.
  - c) Apply the incidental grease to O-rings mounted on the stem nut and the thrust bearing race.
  - d) Re-insert thrust bearing, stem nut, thrust bearing and thrust bearing race in turn.
  - e) Mount the bolts and washers.
3. Place valve in closed position.
4. Clockwise rotate the input shaft (the valve stem is left-hand thread) and mount the unit on the valve mounting flange.
5. Turn actuator input shaft until the unit is in correct position.
6. Bolt the actuator securely to the mounting flange.



If the electric actuator combined with BSG series has self locking characteristics, do not attempt to remove the unit from a valve on a pressurized line. Removal of the gear box may cause imbalance of the system.

If the gear box is mounted on valve, attach ropes or hooks for the purpose of lifting by hoist to valve and not to the gear box.

### 6. CONSTRUCTION



10	Key	21	Bearing
11	Input shaft	22	Drive sleeve
12	Input flange	23	O-ring
13	Oil seal	24	O-ring
14	Bearing	25	Mounting flange
15	Bearing	26	O-ring
16	O-ring	27	Drive gear
17	End cap	28	Bearing
18	Drive gear	29	Blind plate
19	Gear shaft	30	Oil seal
20	Output gear	31	Main house

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