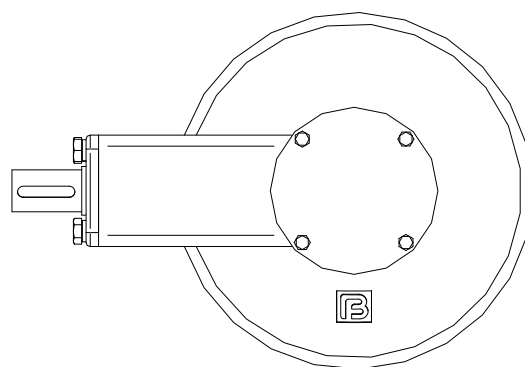


603 SERIES VALVE GEAR BOX

INSTRUCTION MANUAL



Tianjin Beifang Valve Actuator Co., Ltd.

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Thanks for purchasing and using our 603 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

603 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 the bevel gear pair, the compact profiles provide 603 series higher reliability and watertightness. All units fully O-ringed sealed and permanently lubricated with molybdenum disulfide grease.

The thrust will be accepted by the thrust groupware, which provides 603 series high reliability.

The drive sleeve can be dismounted independently. It transmit torque in the type of plug sleeve and bore with keyway. It also bear thrust in the type of copper alloy stem nut.

603 series have varies input mechanism for combining with multi-turn electric actuator.

Sizes 6032~6034 could be furnished with spur gear attachments to reduce manual operating force.

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		6030	6031	6032	6033	6034
Rated output torque	Nm	300	600	1200	2500	5000
Allowable thrust (stem nut)	kN	54	170	350	440	670
Ratio		3:1	3:1	4:1	6:1	6:1
Efficiency		0.8	0.8	0.8	0.8	0.8
Spur gear attachment	Ratio	N/A	N/A	3:1	3.56:1	7.16:1
	Efficiency	N/A	N/A	0.9	0.9	0.9
Max-dia. of stem mm	Stem nut	45	55	65	85	130
	Bore with keyway	40	52	60	75	115
Weight kg	Standard	12	24	41	56	80
	With spur gear attachment	N/A	N/A	56	79	110

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

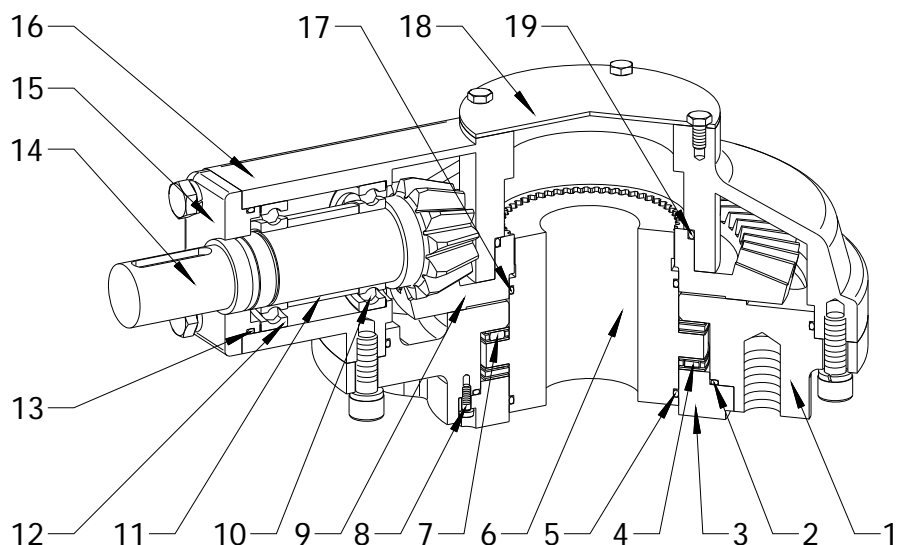
1. The stem nut will be supplied with a pilot hole. The consumer should take off it and cut thread.
 - a) Dismount the bolts.
 - b) Dismount thrust bearing race, thrust bearing and stem nut.
2. Mount the stem nut as follows:
 - a) Ensure that the thrust bearing and O-ring is clean.
 - b) Check and ensure 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.
3. Place valve in closed position.
4. Clockwise rotate the input shaft (the valve stem is left-hand thread) and mount the actuator 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 603 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



1	Mounting flange
2	O-ring
3	Seal retainer plate or thrust bearing race
4	Thrust bearing (only for the type of stem nut)
5	O-ring
6	Stem nut
7	Thrust bearing (only for the type of stem nut)
8	Bolt
9	Drive bevel gear

10	Bearing
11	Bushing
12	Bearing
13	O-ring
14	Input bevel gear
15	Through cap (could be replaced by input flange)
16	Main house
17	O-ring
18	Blind plate
19	O-ring



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