

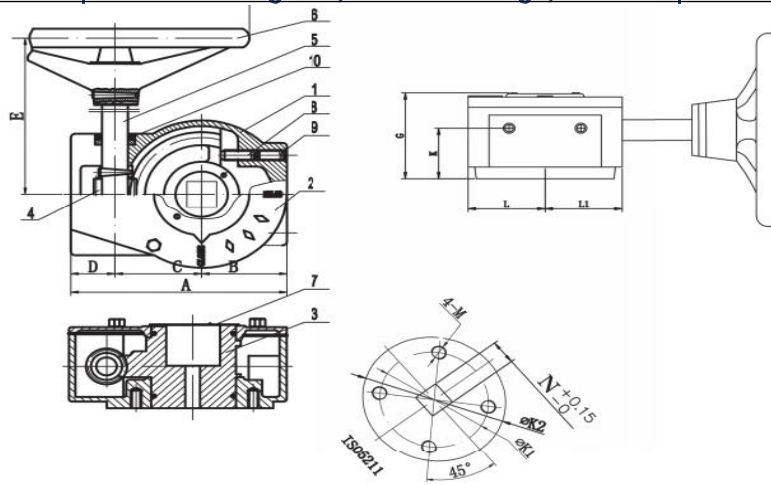
Installation, Operation, and Maintenance Manual Series CGO Gear Operator



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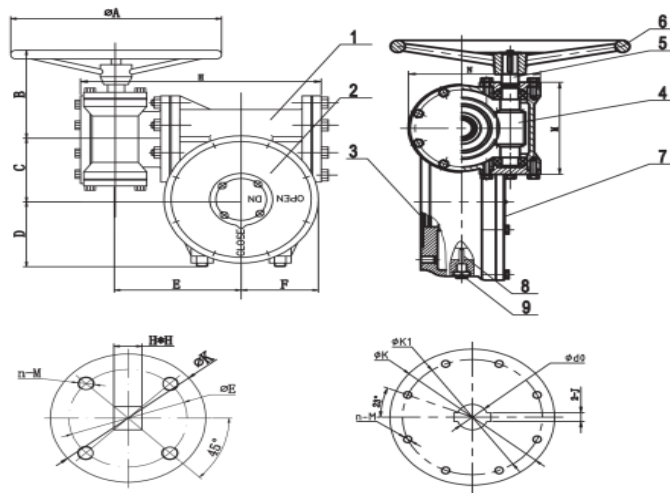
Chicago Valves & Controls

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PARTS & MATERIAL

PART NO.	PART NAME	QTY.	MATERIAL
1	Body	1	Cast Iron ASTM A126 Class B
2	Body Cover	1	Cast Iron ASTM A126 Class B
3	Worm Gear	1	Cast Iron
4	Worm	1	Steel #45
5	Shaft	1	Stainless Steel 410
6	Hand Wheel	1	Cast Iron ASTM A126 Class B
7	Indicator	1	Aluminum
8	Adjusting Screw	1	Steel #45
9	Locking Screw	2	Steel #45
10	O-Ring	1	NBR



PARTS & MATERIAL

PART NO.	PART NAME	QTY.	MATERIAL
1	Body	1	Cast Iron ASTM A126 Class B
2	Body Cover	1	Cast Iron ASTM A126 Class B
3	Worm Gear	1	Cast Iron GGG40
4	Worm	1	Steel #45
5	Shaft	1	Stainless Steel 410
6	Hand Wheel	1	Cast Iron ASTM A126 Class B
7	Indicator	1	Aluminum
8	Adjusting Screw	1	Steel #45
9	Locking Screw	2	Steel #45

Chicago Valves & Controls brand CGO gear operators have been designed and engineered to provide long lasting and trouble-free service when used in accordance with the instructions and specifications herein.

General

- The following instructions only refer to the Chicago Valve product as described in this document
- Keep all the protective covering in place until the moment of installation. For long term storage keep in a cool dry place away from the weather and humidity

Safety Precautions

- o It is suggested that at least the following safety precautions should be taken when handling and installing a CGO gear operator. More precautions may be required, refer to your company's safety requirements.
 1. Always wear eye shields
 2. Always wear gloves and overalls
 3. Wear protective footwear
 4. Wear protective headgear
 5. Ensure that running water is easily available
 6. Have suitable fire extinguisher ready if the media is flammable.
- Always make sure the CGO gear operator is properly sized to accommodate the torque of the valve that it will be attached to.
- Never use excessive force or a cheater bar on the handwheel to operate it. Doing so may cause damage or bodily harm.

OPERATION

Handwheel

- Rotate the handwheel clockwise to close the valve
- Rotate the handwheel counterclockwise to open the valve
 - o Make sure to turn the handwheel fully to the stop when opening or closing to avoid damage to the gear

Travel Stops

- Setting the travel stops on the CGO gear operator is required to ensure that the proper 90° travel is achieved. They limit the travel of the gear which controls how far it rotates.

For Gear Operator sizes of CGO 1.5 – CGO 12

- o Using the proper size hex wrench, remove the two outer set screws, one from each of the tapped holes at the end of the gear operator housing. There are inner set screws in the tapped holes that are the actual stops for the CGO gear operator.
 - If the valve is not visually fully closed, alternate loosening the set screw on the RIGHT side of the gear operator housing (facing the tapped holes of the gear operator) and turning the
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handwheel until the valve is visually fully closed. Once the valve visually stops in the fully closed position, replace the outer set screw and tighten it against the inner set screw. (Note that if the set screw is driven in too far it can fall into the gear operator).

- Turn the handwheel of the gear operator to the fully open position and visually check the orientation of the valve.
- o If the valve is not visually fully open, then no further adjustment is required. Replace the outer set screw on the LEFT side (facing the taped holes of the gear operator) and tighten it against the inner set screw.
- o If the valve is not visually fully open, alternate loosening the set screw on the LEFT side of the gear operator housing (facing the tapped holes of the gear operator) and turning the handwheel until the valve is visually fully open. Once the valve visually stops in the fully open position, replace the outer set screw and tighten it against the inner set screw. (Note that if the set screw is driven too far it can fall into the gear operator).
- o The indicator plate should now travel from the OPEN to CLOSED marks on the gear operator. If it doesn't line up perfectly then loosen the two screws holding the plate and align the indicator.

For sizes CGO 25 & 40

- Turn the handwheel of the gearbox operator to the full closed position. Visually check the orientation of the valve in relation to the valve seat.
 - o If the valve is visually fully closed, then no further adjustment is required
 - o If the valve is not visually fully closed, loosen the lock nut on the stop bolt and alternate adjusting the stop bolt on the RIGHT side of the gear operator housing (facing the bolts on the gear operator) and turning the handwheel until the valve is visually fully closed. Once the valve visually stops in the fully closed position tighten the lock nut making sure not to rotate the stop bolt.
- Turn the handwheel of the gear operator to the fully open position. Visually check the orientation of the valve in relation to the valve seat.
 - o If the valve is visually fully open, then no further adjustment is required.
 - o If the valve is not visually fully open, loosen the lock nut on the stop bolt and alternate adjusting the stop bolt on the LEFT side of the gear operator (facing the bolts on the gear operator) and turning the handwheel until the valve is fully open. Once the valve visually stops in the fully open position tighten the lock nut making sure not to rotate the stop bolt.
- The indicator plate should now travel from the OPEN to CLOSED marks on the gear operator. If it doesn't line up perfectly then loosen the two screws holding the plate and align the indicator.

INSTALLATION

- Chicago Valves & Controls cannot anticipate all the situations a user may encounter while installing and using the CGO gear operators.
- The user must know and follow all applicable industry specifications and government regulations for the safe installation and use of these.

- Only qualified personnel or technicians who are trained for maintenance work and have read the instructions are to install these.
- Misapplication of the product may result in injuries or property damage of which Chicago Valves & Controls is not liable for.
- Before installing the CGO gear operator make sure it is properly sized to accommodate the torque of the valve that it will be attached to.
- Verify the bolt patterns and stem size match up between the valve and the CGO gear operator.
- o If the FO patterns or stem sizes are not the same, then a bracket and coupler can be supplied.
- Verify the valve and CGO gear operator are all in the same phase, either open or closed.
- Make sure that all the mating surfaces are clean and do not contain any debris or contaminants.
- Make sure the correct grade of bolts/studs and nut are used that are rated for the torque that they will be used for. Be sure not to use excessive force to tighten the bolts or nuts.
- Ensure the handwheel orientation will not interfere with the pipeline or collide with the actuator of the valve.

MAINTENANCE

General

- Chicago Valve brand products are designed to have a long, trouble-free life.
- Periodic cycling of the CGO gear operator is suggested to ensure all the internal parts remain in working condition and do not freeze up.
- The CGO gear operator comes sealed and pre-lubricated from the supplier so, under normal circumstances, no further lubrication is needed, and no additional greasing is required.
 - In the event additional lubrication is desired use a good brand, #2 consistency, extreme pressure gear grease.
 - Be sure to remove any foreign matter or moisture that may have entered during disassembly from the cavity before re-lubricating.
- Use a suitable liquid gasket or sealant between the housing and cover if a separate fiber gasket was not present.
- Chicago Valves and controls does not offer any repair parts for the CGO gear operator so if anything breaks or wears out beyond the warranty period replacing the CGO gear operator is recommended