

## INSTALLATION, OPERATION AND MAINTENANCE MANUAL

### Manual Gear Operator

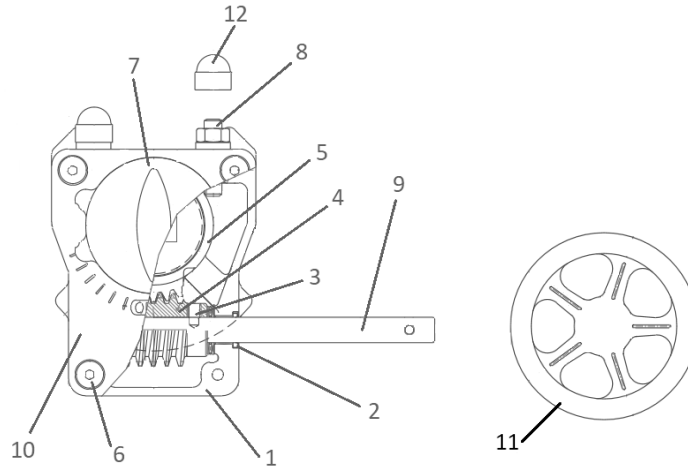


GENEBRE Ref.: 5984

## Installation, operation and maintenance instructions

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## 1. Assembly drawing



### 1.1 Parts list

Nº	Name	Material	Surface Treatment
1	HOUSING	ALUMINUM	PAINTED
2	SEALING RING	NBR	-----
3	PIN	STEEL	-----
4	WORM	STEEL	-----
5	WORM GEAR	DUCTILE IRON	-----
6	SCREW	STEEL	ZINC PLATED
7	INDICATOR	ALUMINUM	ZINC PLATED
8	REGULATION SCREW	STEEL	BROWNING
9	STEM	STEEL	ZINC PLATED
10	HOUSING COVER	ALUMINUM	PAINTED
11	HANDWHEEL	CAST IRON	PAINTED
12	PROTECTOR	PLASTIC	-----

## 2. Storage

During storage it is recommended to keep the Gear Operator in the same position as delivered, with the included protective wrapping to avoid damages or dirt accumulation. The wrap must not be removed until the operator is to be installed. As far as possible, store in a dry and clean environment.

### 3. Installation instructions

#### 3.1 Preparation

Remove any wrapping material from the product.

The Gear Operator is delivered in the closed position.

It is recommended to put the *Handwheel* (part. 11) together with the *Shaft* (part. 9) before assembling the Gear Operator to the valve. The included *Pin* will be used for this purpose.

#### 3.2 Assembling to the valve

1- Check if the bolt circle on top flange and stem dimensions of the valve coincide with the bolt circle and square hole of the gear operator, respectively (connection according to ISO 5211 standard).

2- Make sure that both valve and gear operator are in fully closed position.

3- Mount the gear box with its shaft perpendicular to the valve (or pipeline) by means of the attached four screws and washers. Apply "cross method" for tightening.

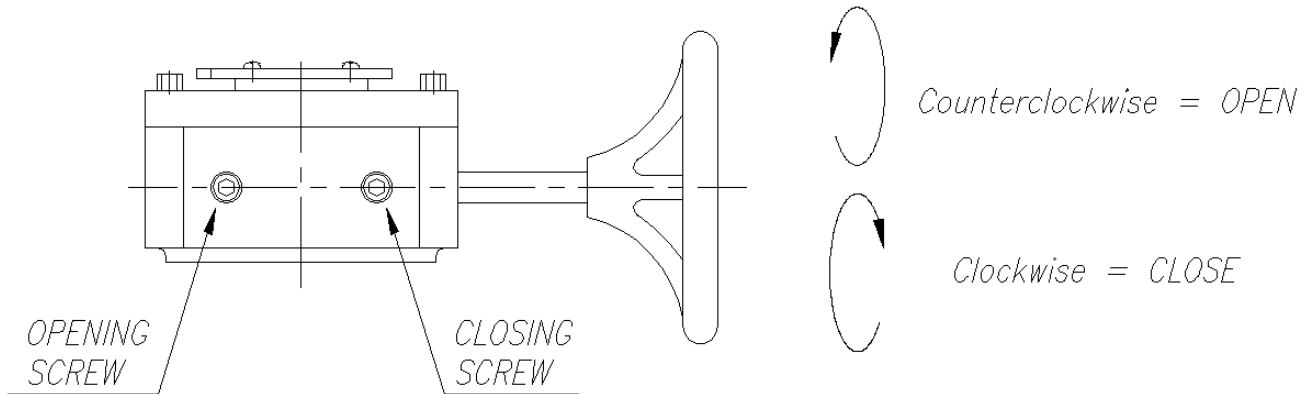
4- The assembly is ready for adjustment (see below).

#### 3.3 Adjustment of the regulation screws

The unit is already adjusted in the factory at 0° and 90°, however it could be necessary a later adjustment in Open and/or Close position of the valve. The range of adjustment is +/- 10° for both positions.

Before regulating the *Screws* (part. 8) must remove protectors (part. 12) to provide access.

The procedure simply consists on checking that the valve is fully open in Open position and fully closed in Close position. Adjust the Regulating Screws as much as necessary (between the range of adjustment) and put the protectors (part. 12).



## **REMARKS:**

- degrease completely the contact surface between valve and gear box.
- it could be necessary the addition of square adapters for a proper coupling.
- in butterfly valves it is recommended assembling and adjustment with the valve closed.
- however, in ball valves it is recommended assembling and adjustment with the valve open.
- gear box can be installed in any position, however, in outdoors it is recommended to be installed vertical (with handwheel parallel to the floor) to avoid water inside.

## **4. Operation instructions**

### **4.1 Manual operation**

The gear operator provides the valve a smooth and slow operation, reduces the effort required to open or close especially on large valves.

It prevents water hammer by opening or closing fast on the valve.

The gear boxes are manually operated by handwheel. Turn clockwise for closing or turn counterclockwise for opening the valve. The position is shown by the indicator plate (part.7) on top of the gear box.

In case the valve can't completely achieve Open or Close positions, first try to find out the reason of malfunction to prevent further damage. Do not attempt to force the handwheel beyond the stop limits.

For the valves operated with gear box, the quantity of turns to be done for a complete operation cycle 90° will be conditioned by the transmission ratio of the gear box. See table below:

Ref.	Transfer Ratio
5984 04	40 : 1
5984 05	37 : 1
5984 06	45 : 1

## 4.2 Torques

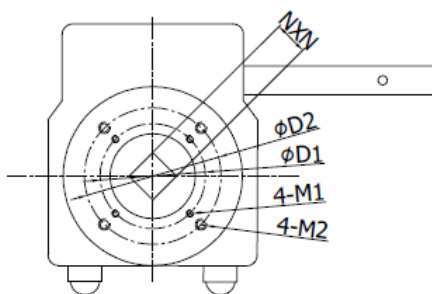
The maximum allowable output torque of the gear operator is as listed below:

Ref.	Torque (Nm)
5984 04	150
5984 05	250
5984 06	750

It is recommended not to overpass the 90% of the maximum allowable torque for a longer life of the product.

## 4.3 Connections Dimensions

The gear operator are designed for mounting on the valve according to ISO 5211 standard.



Ref.	Dimensions (mm)				
	N x N	ØD1	ØD2	4-M1	4-M2
5984 04	14 X 14	F 05	F 07	M6	M8
5984 05	22 X 22	--	F 07	--	M8
5984 06	27 X 27	--	F 10	--	M10

## **5. Maintenance operations**

Gear operators are designed so that they do not need any lubrication and/or periodical maintenance during their life cycle. However, periodical checks will be useful to extend the service life of the product. Verify all locks and threaded ends to check if they are loose or with rust. Tighten them if necessary.

## **6. Hygiene and Safety Instructions**

6.1) Fluids that go through the valve can be corrosive, toxic, flammable or pollutant. When operating valves, you must follow the security instructions and it is recommended to use personal protection gadgets:

- 1) Protect your eyes.
- 2) Wear gloves and appropriate working clothes.
- 3) Wear safety footwear.
- 4) Wear a helmet.
- 5) Have running water at hand.
- 6) To operate flammable fluids, make sure you have an extinguisher at hand.

6.2) Before removing a valve from a pipe, check always if the line is completely drained and depressurized.