

### INTRODUCTION

Hand wheel gear operators are specially designed used for butterfly valve, ball valve and plug valve together with ALPHA series pneumatic actuator. This device allows for manual operation during installation, system testing and in the event of a supply air failure.

The HIC series mount directly to many of the most popular rack and pinion style actuators on the market, and does not require a bracket between the pneumatic actuator and declutch override. The units come complete with a coupler that connect the pneumatic actuator to the valve.

### FEATURE

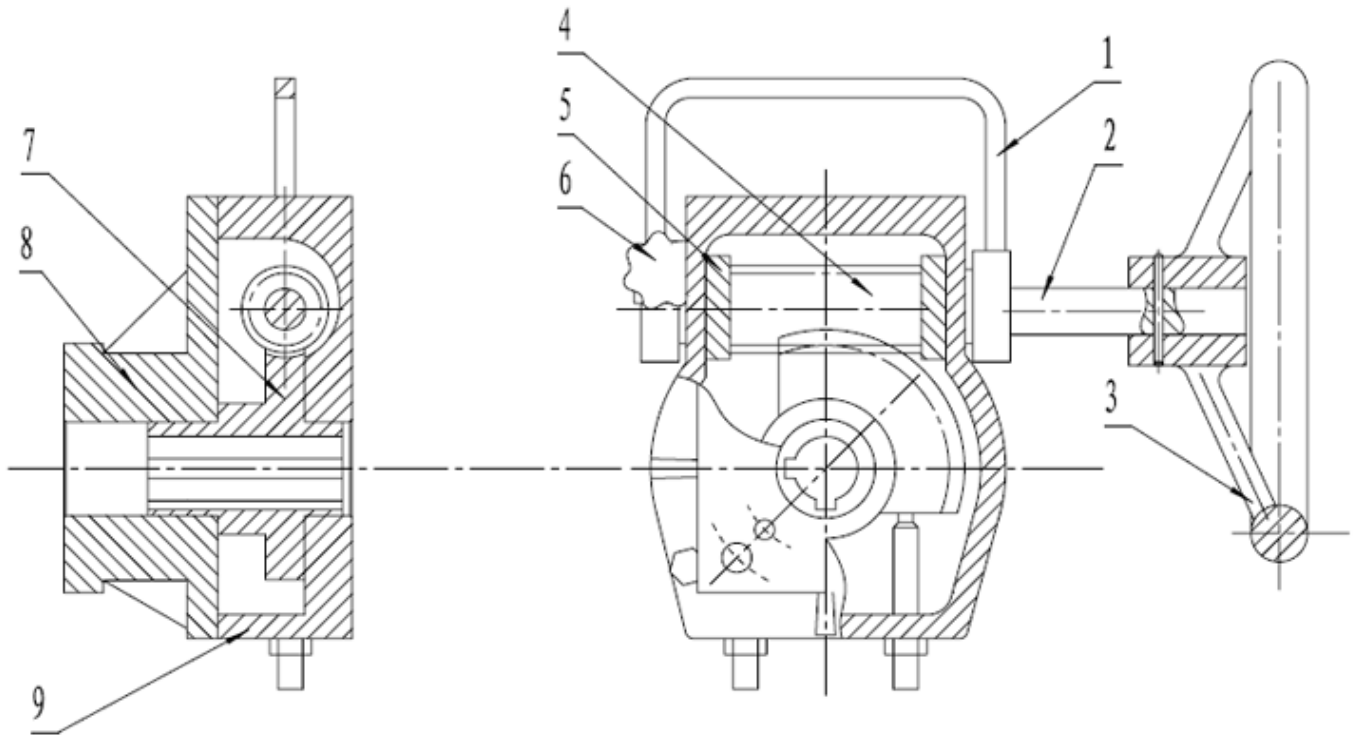
- Compact and simple design, light in weight
- Manufactured with case iron housing (HT200 GB9439-88)
- ISO5211 direct mount patterns
- Easy for customer to choose relative position between gear operator and valve, with two key way a part 90° in the inner hole of worm gear.
- Filled with special lubricant before leaving the factory.
- Weatherproof is IP 65.
- Output torque ranges from 300 to 22100 Nm

### Operating principle

1, Assembling procedures: The bottom of gear operator should be connected with valve, bracket surface connected with cylinder (actuator), valve stem go through the inner hole of worm gear and the square on the end of stem matches with square hole of cylinder (actuator).

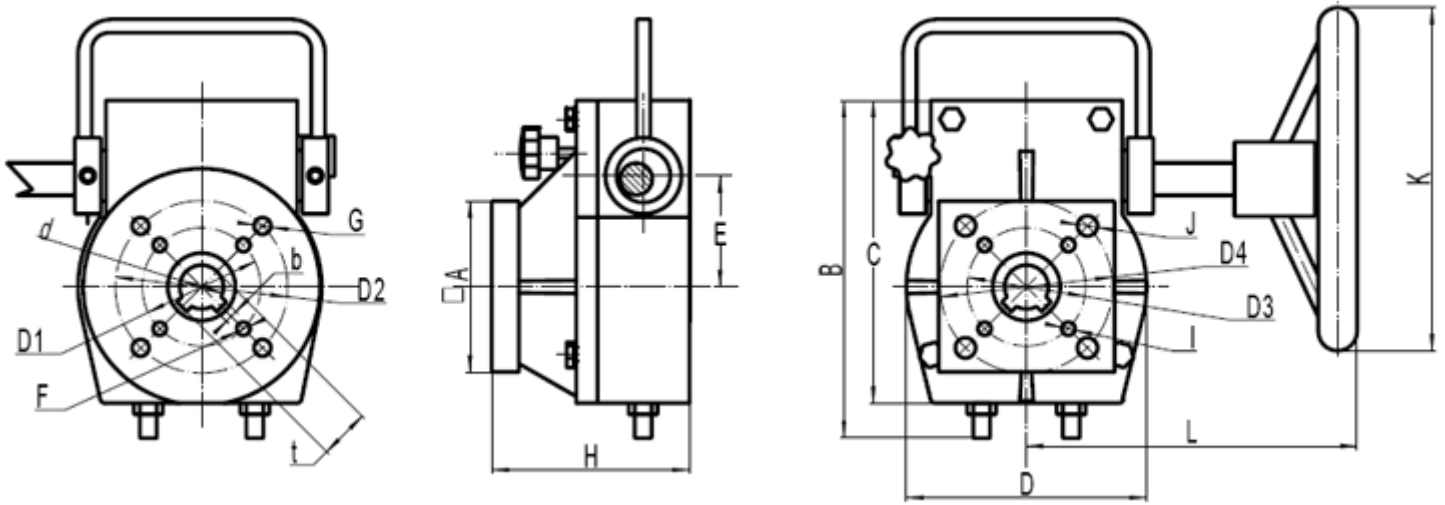
2, Operating procedures: The cylinder (actuator) drives valve stem and worm gear rotating together when pneumatic drive and worm shaft meshes with worm gear to drive valve stem rotating along with piston of cylinder (actuator) moving when manual drive. When pneumatic drive, pull out the pneumatic drive by worm gear rotating following with pneumatic valve stem. Just make the worm shaft mesh to realize manual drive.

## Material and Parts



| No | Part                           | Qty | Material          | Optional material |
|----|--------------------------------|-----|-------------------|-------------------|
| 1  | Handle                         | 1   | Carbon steel      |                   |
| 2  | Worm shaft                     | 1   | 45 GB699-88       |                   |
| 3  | Hand wheel                     | 1   | HT200 GB9439-88   | WCB GB12229-88    |
| 4  | Worm                           | 1   | 45 GB699-88       |                   |
| 5  | Off-center sleeve sub-assembly | 1   | Carbon steel      |                   |
| 6  | Positioning screw              | 1   | Carbon steel      |                   |
| 7  | Worm gear                      | 1   | QT500-7 GB1348-88 |                   |
| 8  | Bracket cap                    | 1   | HT200 GB9439-88   | WCB GB12229-88    |
| 9  | Body                           | 1   | HT200 GB9439-88   | WCB GB12229-88    |

## Dimension



| Model    | d   | b  | t    | D1  | F   | D2  | G   | A    | H   | E   | D3  | I    | D4 | J  | K     | L   | B    | C   | D   |
|----------|-----|----|------|-----|-----|-----|-----|------|-----|-----|-----|------|----|----|-------|-----|------|-----|-----|
| HIC26:1  | 22  | 6  | 25.4 |     |     | 70  | M8  | 70   | 99  | 51  |     |      | 70 | Ø9 | Ø200  | 155 | 160  | 145 | 110 |
| HIC38:1  | 26  | 8  | 29.3 | 70  | M8  |     |     | 100  | 117 | 65  | 70  | Ø9   |    |    | Ø200  | 195 | 195  | 175 | 140 |
|          | 38  | 10 | 41.3 |     |     | 102 | M10 | 110  |     |     |     |      |    |    |       |     |      |     |     |
| HIC54:1  | 38  | 10 | 41.3 | 125 | M12 |     |     | 130  | 118 | 85  | 125 | Ø14  |    |    | Ø300  | 205 | 235  | 215 | 180 |
|          | 48  | 14 | 51.8 |     |     | 140 | M16 |      |     |     |     |      |    |    |       |     |      |     |     |
| HIC80:1  | 48  | 14 | 51.8 | 140 | M16 |     |     | 156  | 148 | 124 | 140 | Ø18  |    |    | Ø400  | 245 | 320  | 298 | 250 |
|          | 60  | 18 | 64.4 |     |     | 165 | M20 |      |     |     |     |      |    |    |       |     |      |     |     |
| HIC78:1  | 60  | 18 | 64.4 | 165 | M20 |     |     | 220  | 150 | 142 | 165 | Ø22  |    |    | Ø600  | 265 | 360  | 340 | 285 |
|          | 80  | 18 | 84.4 |     |     |     |     |      |     |     |     |      |    |    |       |     |      |     |     |
| HIC98:1  | 80  | 18 | 84.4 | 165 | M20 |     |     | 230  | 195 | 229 | 165 | Ø22  |    |    | Ø800  | 410 | 550  | 530 | 460 |
| HIC100:1 | 100 | 20 | 105  | 254 | M16 |     |     | 300  | 195 | 258 | 254 | Ø18  |    |    | Ø800  | 430 | 605  | 585 | 520 |
| HIC118:1 | 120 | 32 | 129  | 356 | M30 |     |     | Ø445 | 250 | 391 | 356 | Ø362 |    |    | Ø1000 | 550 | 900  | 870 | 800 |
| I        |     |    |      |     |     |     |     |      |     |     |     |      |    |    |       |     |      |     |     |
| HIC118:1 | 180 | 45 | 196  | 483 | M36 |     |     | Ø600 | 275 | 390 | 483 | Ø399 |    |    | Ø600  | 600 | 1050 | 900 | 850 |
| II       |     |    |      |     |     |     |     |      |     |     |     |      |    |    |       |     |      |     |     |

## Specification and output torque

| No | Model  | Gear Ratio | Input Torque(Nm) | Output Torque(Nm) | Weight(Kg) |
|----|--------|------------|------------------|-------------------|------------|
| 1  | HIC26  | 26:01:00   | 70               | 300               | 7.3        |
| 2  | HIC38  | 38:01:00   | 60               | 550               | 11.8       |
| 3  | HIC54  | 54:01:00   | 120              | 1200              | 17.3       |
| 4  | HIC80  | 80:01:00   | 140              | 2000              | 35         |
| 5  | HIC78  | 78:01:00   | 200              | 3600              | 48.2       |
| 6  | HIC98  | 98:01:00   | 300              | 9000              | 156        |
| 7  | HIC100 | 100:01:00  | 400              | 13000             | 190        |
| 8  | HIC118 | 118:01:00  | 900              | 22100             | 540        |

**ALtech A.S**


Valves & Process Equipment

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