

Actuator Experts

# Engineering Precision For Global Flow Control

Discover GREATORK



Intelligent Control. Precise Every Degree



Pipeline Gas In. Hydraulic Force Out



Hydraulic Power. Electric Precision



# COMPLETELY REPLACABLE

- Non-Intrusive Setting
- Protection & Safety
- Communication & Control
- Pipeline control
- Emergency Shutdown (ESD)





Discover GREATORK 

# ABOUT US

## Tefulong Group Co., Ltd

Tefulong Group Co., Ltd. is a leading intelligent electric valve actuator manufacturer in China with the brand name of Greatork.

Tefulong Group Co., Ltd., established in 1987, covers an area of 40,000 square meters, and owns modern management style, first-class factory and advanced production equipments. With more than 300 employees, Tefulong produces about 50,000 pcs of electric actuators per year. At present, actuators have been supplied GREATORK into more than 20 countries. The intelligent electric actuators are our key products and widely applied in oil & gas, petrochemical, refinery, power plant, water process, wastewater treatment, pulp & paper, and other major industries. THE WORLD LEADER IN ACTUATION SOLUTION

Tefulong has obtained many certificates for international market, such as **CE, ATEX, IP68, GOST, ISO14001, ISO9001, GB/T 28001**, Profibus communication certificate and so on.

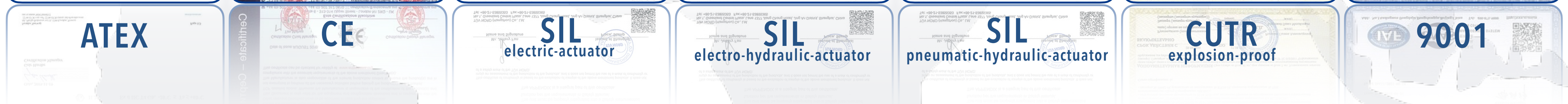
Meanwhile, Greatork has unique Industrial Design Patent which is recognized and protected around the world. We have a team of qualified, experienced and talented researchers & engineers with wide variety of backgrounds in R&D centre. We are committed to keeping efforts to ensure that our actuators are the simplest to operate and the highest reliable to work with.

Our mission is to provide the industry with high-quality and cost-effective electric actuators and maximize customer's value. We persist on continuous improvement and product innovation to keep our competitiveness.



# Quality First, Users First

GREATORKPARTNERS



At present, products have been supplied into more than **80** countries



# GREATORK TECHNOLOGY

## INNOVATION IN AUTOMATION

Start Exploring >

**30+**

Engineers  
Full Lifecycle  
Technical Support

**300+**

Professional Employees  
Efficient Production  
& Close Collaboration

**50000+**

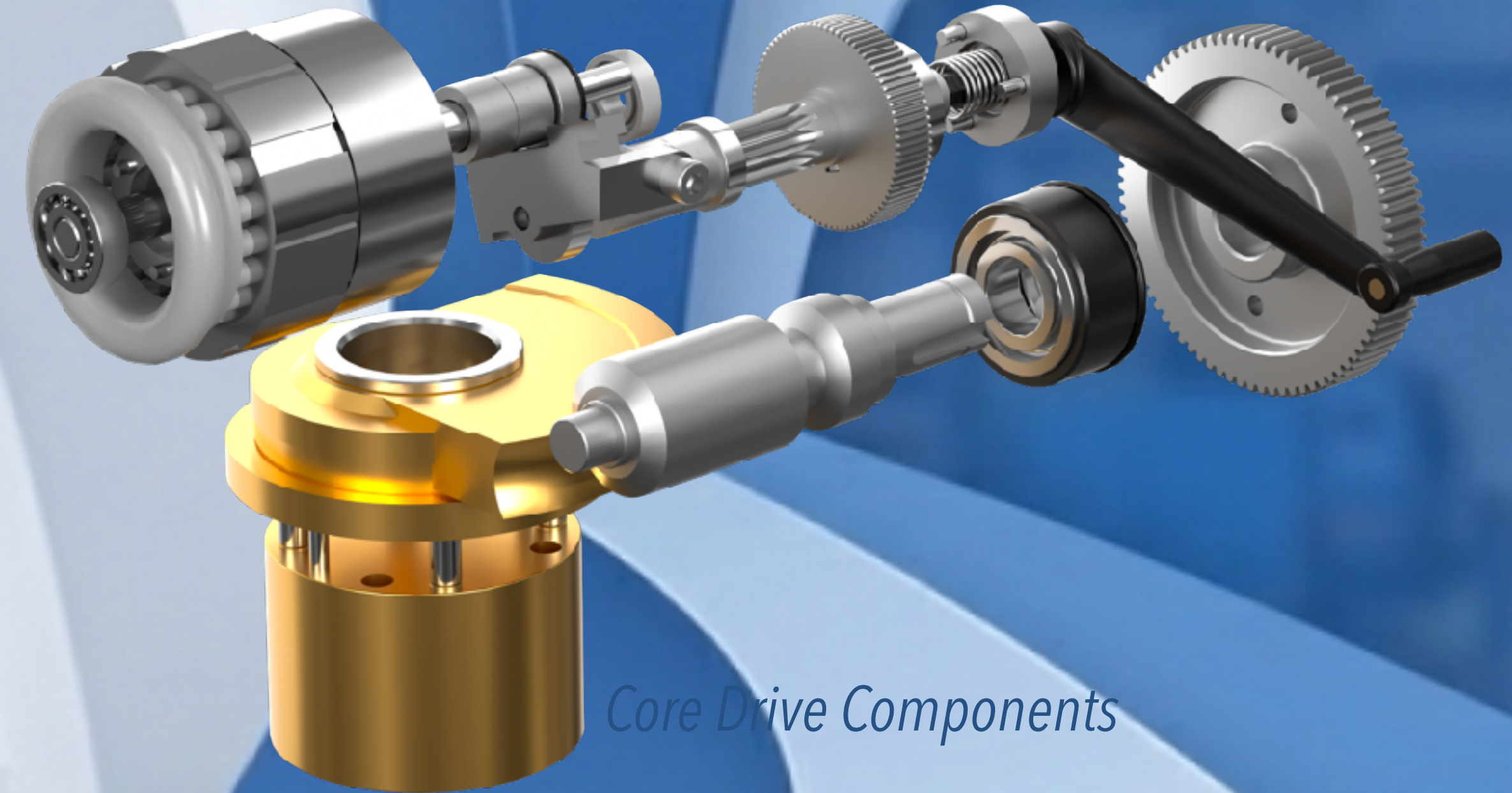
Annual Production Capacity  
Strict Quality Control System

**80+**

Global Market  
Coverage in 80+ Countries

GREATORK Electric Actuator Product Family

# Intelligent Control Precise Every Degree



Core Drive Components

AVAMD Linear



AVA Multi-turn



AVAT Quarter-turn



AVAR Smart Quarter-turn



# Industry-Specific Solutions

## GREATORK Products are Widely Applied in Major Industries:

Oil & Gas, Petrochemical, Refinery, Power Plants, Water Process, Wastewater Treatment, Pulp & Paper, and Other Critical Sectors.



## Key Automation Control Scenarios:

Pipeline Transportation, Station Protection, Emergency Shutdown, Remote Monitoring.

**Specific Applications Include Long-Distance Pipelines, Compressor Load/Unload Protection, Station Blowdown, Line Break Protection, River Crossing Valve Rooms.**

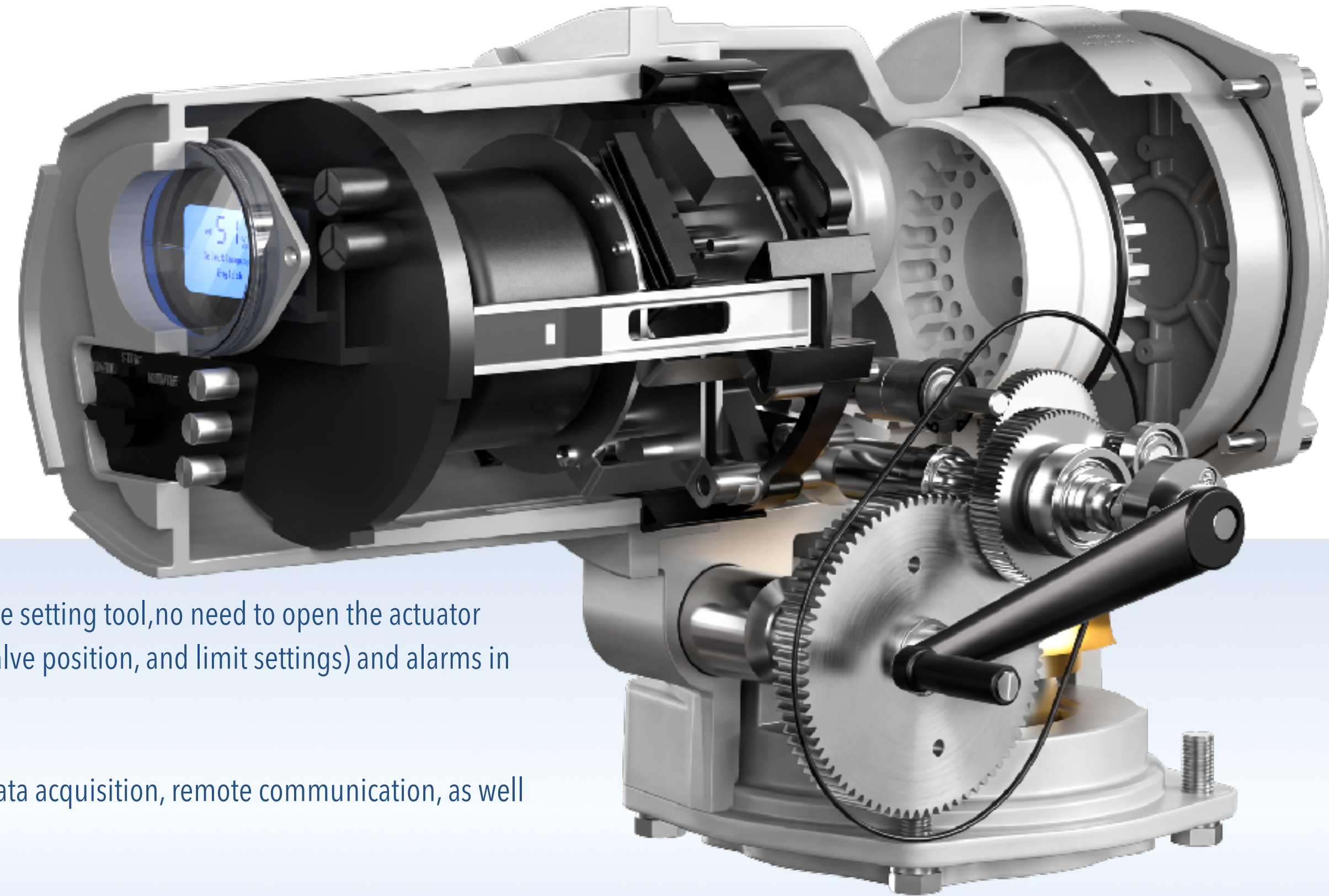
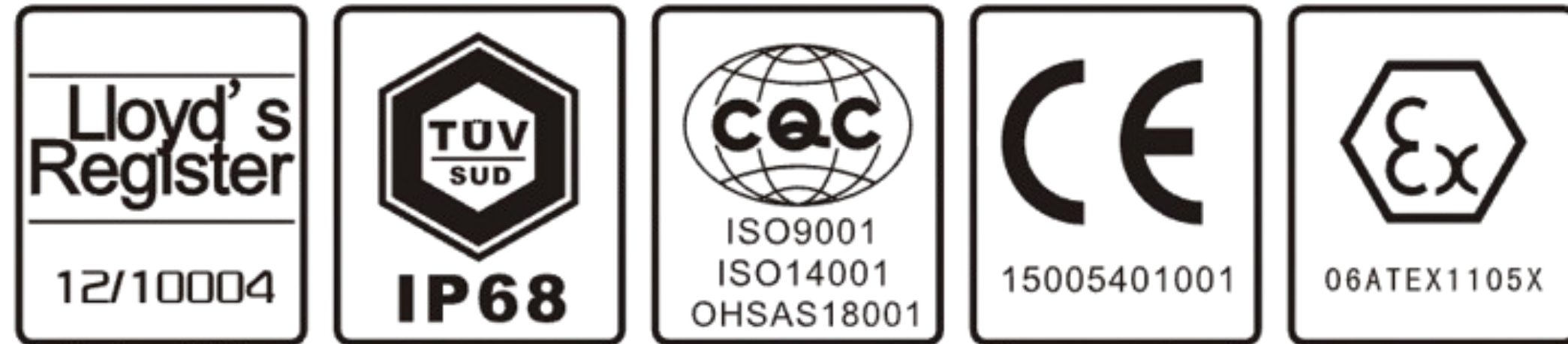
## Core Performance Attributes:

Reliable Performance in Harsh Environments, High Precision Control, Advanced Communication Capabilities.



# GREATORK Electric Actuator Product Series

## Core Product Series AVA/AVAT/AVAR/AVAMD



**AVAT**  
**Quarter-turn**  
**Electric Valve Actuator**

The AVA/AVAT/AVAR series electric actuators can be quickly configured, inspected, and queried non-intrusively via a standalone setting tool, no need to open the actuator cover. These actuators are equipped with a graphic dot-matrix LCD display, which shows operating statuses (such as torque, valve position, and limit settings) and alarms in text, numeric, and graphic formats. This significantly facilitates user operation and usage.

With a fieldbus communication card, they can form a fully distributed computer cooperative work system, enabling remote data acquisition, remote communication, as well as remote diagnosis and maintenance.

The actuators feature automatic protection and flame proof functions. Actuator has IECEx/ ATEX explosion-proof certificate and SIL functional safety certificate, suitable for hazardous areas. The actuator is widely used in industries such as petroleum, power, metallurgy, and water treatment, and is a reliable choice for global industrial applications.

# Intelligent Electric Valve Actuator Internal Structure

## Torque measurement

Greatork actuator, which adopts precise pressure sensor, can have fast and accurate detecting of output shaft torque.

## Motor and Drive

Greatork three-phase squirrel-cage asynchronous motor designed by advanced special software can work in extreme environments with F class insulation. The motor shaft and worm shaft are separate in order to facilitate rapid replacement. Worm and worm shaft are immersed in lubricant to fit temperature change.

## Terminal Compartment

Separately sealed terminal compartment can make sure of the integrity of the electrical control part even when the terminal compartment cover is removed for site wiring.

## Thrust Base

Models below AVA06 are fitted with lubricated, removable type 'A' thrust base. Actuators can be removed without changing valve position. AVA07 and above models' thrust bases are integrated with enclosure. Simple and removable drive bushing can be machined to fit valve stem.

## Manual operation

The handwheel (or independently geared handwheel on larger size) can be directly driven with low speed padlockable hand/ auto clutch to provide reliable emergency manual operation in the event of a power supply failure. Manual operation has lost motion "hammerblow" effect, which will facilitate easy valve operation.

## Valve position Control

Greatork discards traditional potentiometer to measure valve position and introduce hall incremental encoder to improve the position accuracy. Optical absolute encoder as the option can record the valve position accurately without battery when the power is off.

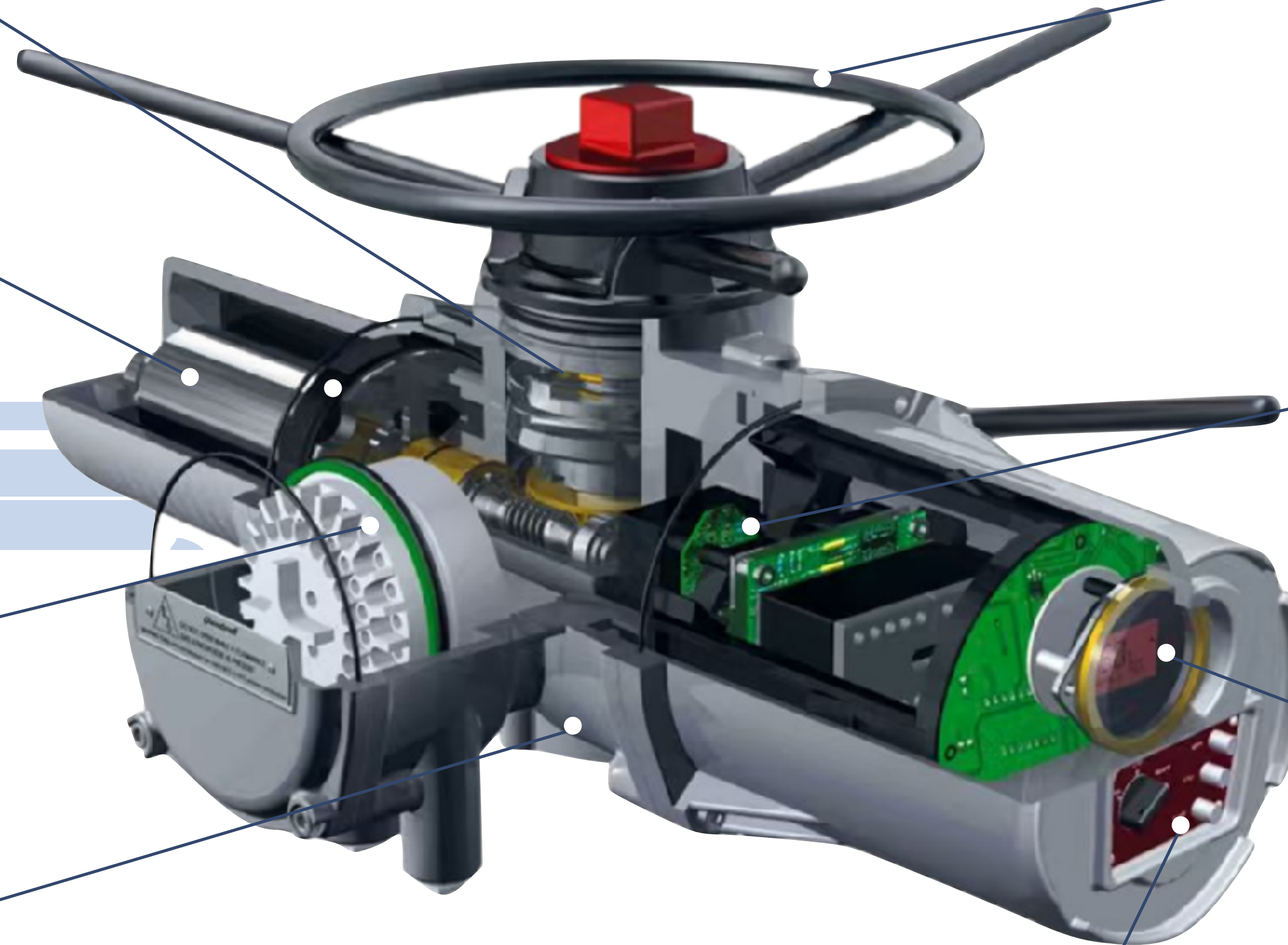
## Infrared setting

Infrared setting tool can set and diagnose actuator through sealed indication window without removing the electric cover. The communication distance between setting tool and window is within 0.75 meter.

## Local Control

Local control switch (Local/Stop/Remote) and pushbuttons are magnetic switches without penetrating shafts and control the actuator by internal magnetic reed. It can meet the requirements of tight seal and damp-proof.

Note: The switch can be locked at Local/Stop/Remote position by padlock to prohibit unnecessary local control.



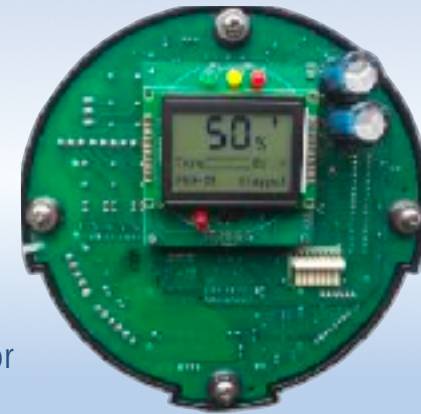
# Electric Actuator Functions and Features

## Double-Sealed structure

The Greatork AVA/AVAT range actuators feature a double - sealed, watertight metallic enclosure that meets IP68 standards (15 meters underwater for 90 hours). Explosion - proof ratings of BT4 and CT4 are optional. The terminal compartment and the internal electrical control parts are entirely separate. Even when the terminal compartment cover is removed for on - site wiring, the internal electrical control parts remain waterproof and dustproof.

## Reliable electronic system

The electronic systems of Greatork actuators use an advanced 32 - bit embedded SOC chip, which provides strong computing power and integrates multifunctional circuits. It integrates all necessary electronic circuits and component parts without complex electrical wiring, ensuring high reliability for electronic control.



## Precise valve position measurement

AVA/AVAT range actuator takes an advanced Hall - effect incremental encoder to measure the valve position. The adoption of a non - contact encoder design can avoid the disadvantages of the traditional potentiometer, which is easy to wear and has a short life. It increases the reliability and lifetime of the actuator. The setting range of the encoder is 2.5~150,000,000 revolutions. For the AVA multi - turn actuator, the output angle resolution of the central axis is 7.5 degrees. For the AVAT part - turn actuator, the output angle resolution of the central axis is 0.05 degrees.

The AVA/AVAT range actuator can take a 24 - bit optical absolute encoder as an option. This kind of encoder uses an optical encoder disk to accurately record the valve position without a battery when the power is off. For the AVA multi - turn actuator, the output angle resolution of the central axis is 0.2° with a maximum of 1024 revolutions. For the AVAT part - turn actuator, the output angle resolution of the central axis is 0.02°.



## Infrared setting

AVA/AVAT series actuators adopt advanced infrared remote control technology (IrDA). The infrared setting tool enables actuator setup and diagnosis via a sealed indicator window—no need to remove the electric cover. The communication distance between the tool and window is within 0.75 meters. The infrared setting tool features intrinsically safe design and can be used in hazardous environments.



## Non-intrusive design

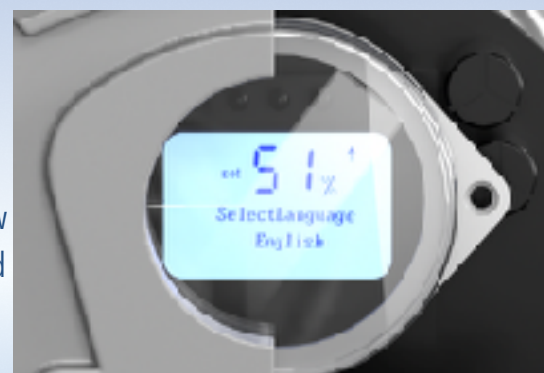
The Greatork AVA/AVAT range actuators adopt a non - intrusive design. Site setting can be done with an infrared setting tool without removing the electric cover, protecting internal electrical control parts from site pollution. Local operation design abandons traditional moving shafts penetrating the control enclosure and uses hall magnetic sensor technology to control the actuator.

## Accurate torque measurement (Patented)

Greatork uses its patented torque measurement system to ensure actuator overload protection and indicate torque variation via LCD. The precise torque value is determined by the electronic signal converted from the reaction force of the motor shaft's thrust (transferred by the torque sensor), solving the problem of calculating torque based on power frequency, voltage and temperature changes.

## High-definition LCD

Greatork actuators integrate a unique high - definition LCD. Its large backlit display window allows users to view valve position, torque and functional status from a long distance.

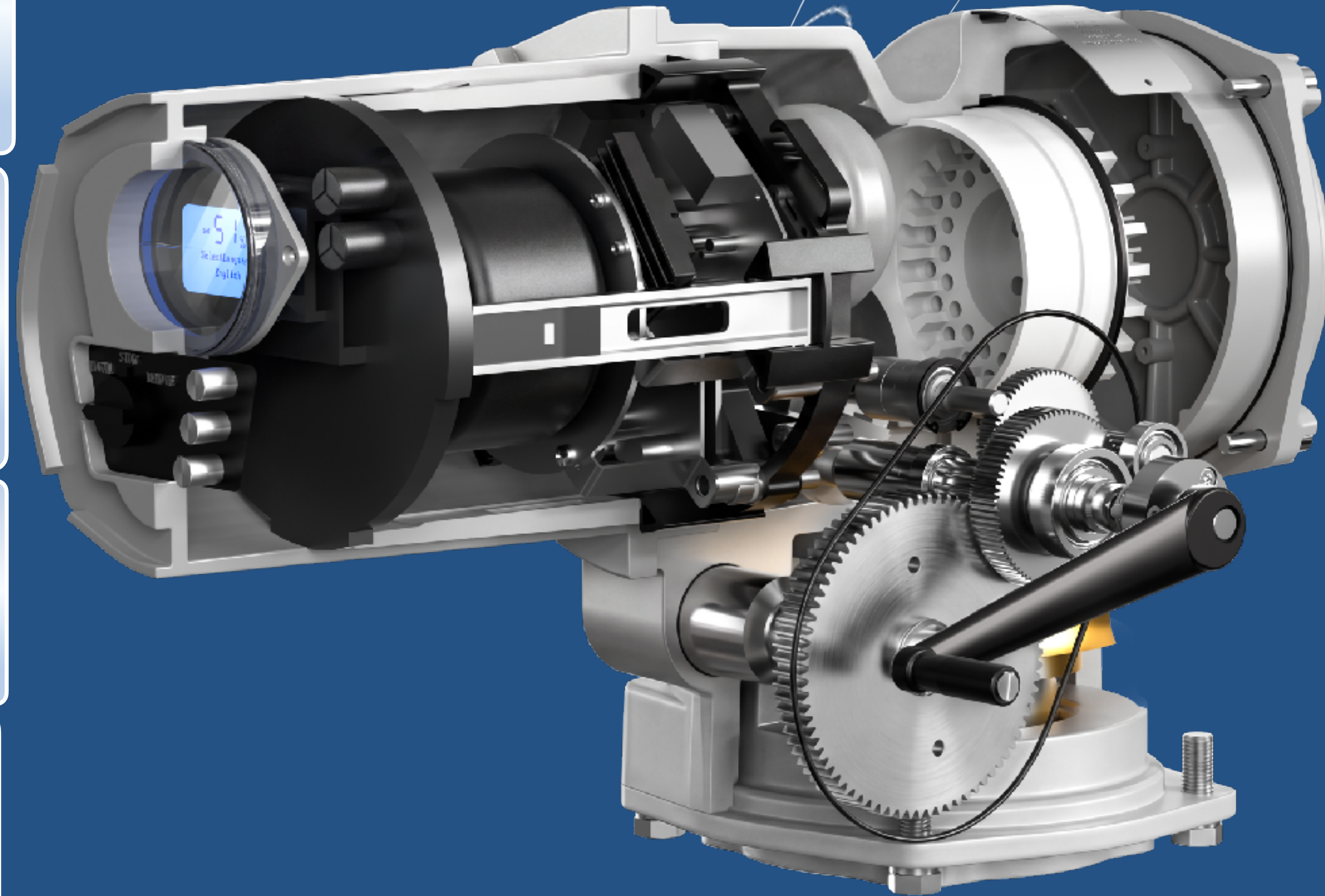


## Duty cycle

Duty cycle covers S2 to S4.

## Noise

Independent tests have shown that the noise did not exceed 61dB (A) within 1M distance.



# GREATORK Electric Actuator Product Series



AVA

## Multi-turn

Electric Valve Actuator

The multi-turn electric actuator is specifically designed for valves requiring multi-turn operation, such as gate valves and globe valves, featuring excellent control performance and reliable operation guarantees. The product adopts a non-intrusive infrared setting method, allowing parameter configuration without opening the cover, which significantly simplifies on-site commissioning procedures. It also integrates a data recording function for easy tracing and analysis of operating status.

The actuator is built with comprehensive protection mechanisms, including multiple fault diagnoses such as over-torque and phase loss, ensuring safe operation of the equipment under harsh working conditions. The core control part is based on high-precision large-scale digital integrated chips, which guarantee the accuracy and stability of output torque and thrust control, and can meet various protection action requirements including power failure or signal loss.

This series of products is widely used in fields such as power plants, metallurgy, coking, petrochemicals, long-distance pipelines, mining, and environmental protection industries, providing highly reliable and intelligent valve control solutions for various harsh working conditions.

## Electric Actuator features:

Output torque:

**25Nm - 3500Nm**

Ambient temperature:

**Regular -30°C ~ 70°C , special  
-60°C~70°C**

Explosion-proof classification: **Ex db II CT4  
Gb**

Protection grade: **IP66/IP68**

Functional safety certification: **SIL2/SIL3**

# GREATORK Electric Actuator Product Series

AVAT

## Quarter-turn

Electric Valve Actuator

The part-turn electric actuator is specifically designed for valves such as ball valves and butterfly valves that require 90° quarter-turn operation. It fully inherits the excellent performance and intelligent features of the AVA series multi-turn actuators, and highly integrates all core components for direct 90° part-turn output into a single, compact integrated mechanical housing.



## Electric Actuator features:

Output torque:

**125Nm - 2000Nm**

Ambient temperature:

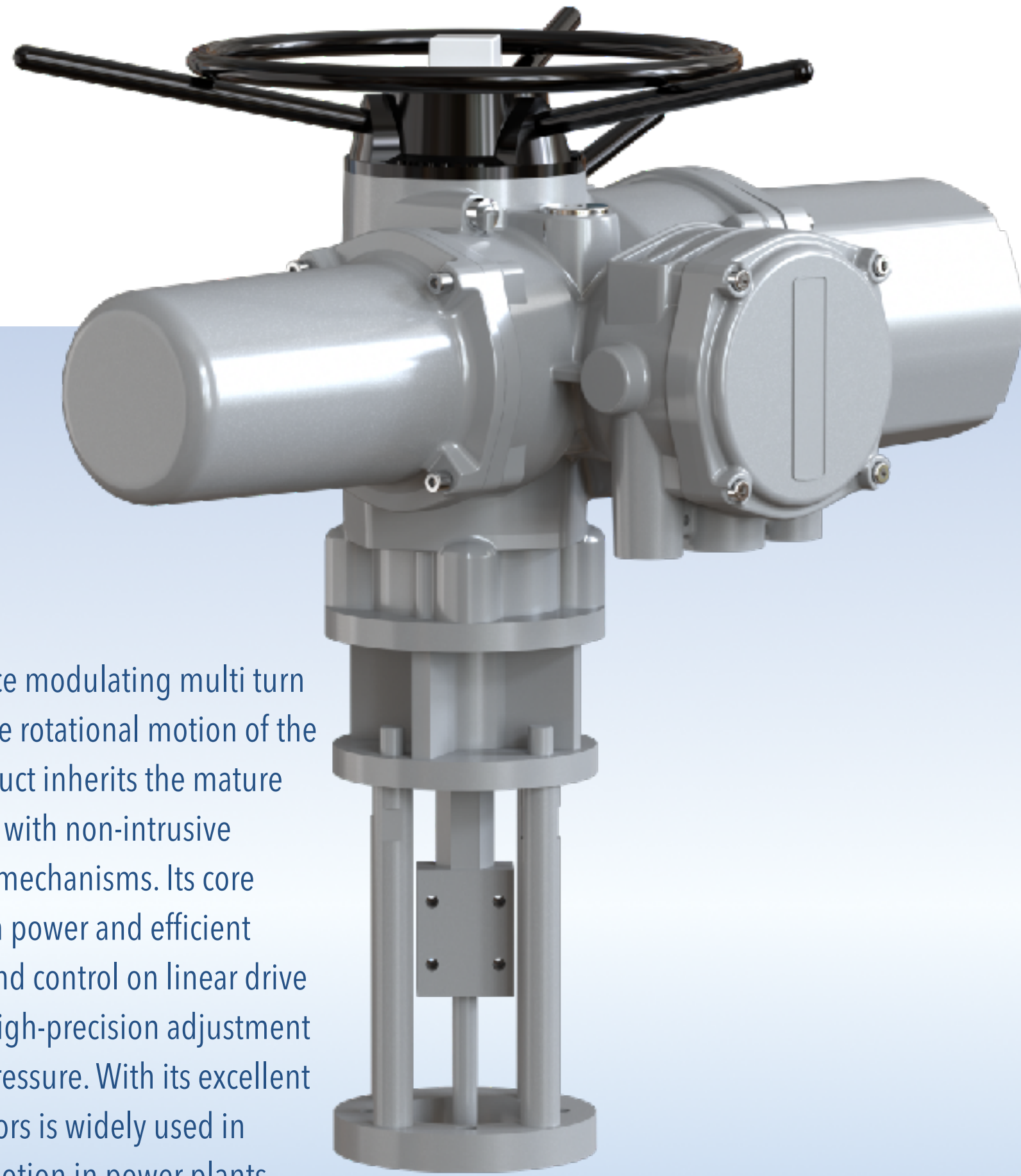
**Regular -30°C ~ 70°C , special  
-60°C~70°C**

Explosion-proof classification: **Ex db II CT4  
Gb**

Protection grade: **IP66/IP68**

Functional safety certification: **SIL2/SIL3**

# GREATORK Electric Actuator Product Series



AVAMD

## Linear

Electric Valve Actuator

The linear electric actuator is composed of a high-performance modulating multi turn actuator and a precision linear output unit, which converts the rotational motion of the motor into stable and accurate linear thrust output. This product inherits the mature intelligent control and protection functions of the AVA series, with non-intrusive settings, data recording, and comprehensive fault diagnosis mechanisms. Its core advantage lies in the close combination of reliable multi turn power and efficient linear conversion structure, ensuring precise displacement and control on linear drive devices such as modulation valves and gates, and meeting high-precision adjustment requirements for process parameters such as flow rate and pressure. With its excellent thrust performance and control accuracy, this series of actuators is widely used in various automation control applications that require linear motion in power plants, petrochemicals, water treatment, and process industries.

## Electric Actuator features:

Output torque:

**8kN - 60kN**

Ambient temperature:

**Regular -30°C ~ 70°C , special  
-60°C~70°C**

Explosion-proof classification: **Ex db II CT4  
Gb**

Protection grade: **IP66/IP68**

Functional safety certification: **SIL2/SIL3**

# GREATORK Electric Actuator Product Series

## AVAR Smart Quarter-turn Electric Valve Actuator

The economical quarter turn electric actuator achieves an ideal balance between outstanding cost-effectiveness and core intelligent functions. This series is optimally designed based on the mature AVAT platform, effectively controlling costs through precise simplification of structure and functions, while retaining key intelligent configurations including non-intrusive commissioning, LCD screen and menu-driven operation.

Its valve position measurement adopts a highly reliable absolute encoder design, ensuring precise position control and long service life, which makes the economical series demonstrate significant performance and technical advantages among products at the same price level. Despite being positioned as an economical type, it is essentially a fully functional intelligent electric actuator.

Relying on its excellent practicality and cost-effectiveness, the economical series has become an ideal choice for large-scale applications in environmental protection and industrial fields such as desulfurization, denitrification, and water treatment.



## Electric Actuator features:

In order to meet the demand of the market, Greatork has developed AVAR series quarter-turn electric actuator on the basis of AVAT series actuator. AVAR series actuator with the torque range from 50Nm to 500Nm, has the characteristics of smart, simple structure, complete function, reliable quality and competitive price.

AVAR Smart

## Quarter-turn

Electric Valve Actuator



### ***AVAR reserved functions of AVAT as listed:***

- Non-intrusive design
  - Auto phase correction
  - Instantaneous reversal protection
  - Motor overheating protection
  - 4 sets of indication contacts
  - Analogue position control (option)
  - Fieldbus (option)
- 1. Button setting of parameters  
AVAR actuator changes the parameter setting mode – it uses push buttons to set parameters, replacing the infrared setting tool used by AVAT.
  - 2. High-brightness industrial LCD display  
AVAR series adopts a high-brightness, large-screen LCD display that clearly shows Chinese or English menus.
  - 3. Absolute encoder measurement of valve position  
AVAR range actuator uses an advanced 12-bit Hall magnetic absolute encoder. It can accurately record valve position without battery when power is off. The valve position measurement accuracy reaches 0.08°.

# The Internal Structure of **AVAR** Actuator

## 1. Liquid crystal Display

Dot Matrix LCD with blue backlight can clearly show Chinese or English menu. Real-time valve position, torque value, actuator current status and fault information will also be shown. At the bottom of the screen, there are three high brightness diodes which can indicate open, close and middle position of valve.

## 2. Mainboard

The adoption of SOC chip and high - integrated circuit design provide actuator with multiple functions such as fault detection, self - protection and alarm. Therefore, the reliability of actuator is improved.

## 3. Valve position control

Hall absolute encoder driven by mainshaft can measure the valve position accurately.

## 4. Button

There are four buttons called local/remote/menu button, open/plus button, close/minus button and stop/enter button on the actuator. User can set up various functions of actuator easily with these buttons.

## 5. Motor

Greatork uses high torque, low inertia squirrel cage motor with F class enamel-insulated wire and two internal thermal switches.

## 6. Power supply board

The electronic components used to control motor, power supply and other parts are integrated on the power supply board.

## 8. Handle

Turning the handle can switch the actuator to manual status when manual operation is needed. The handle can be locked by padlock to prohibit unnecessary manual setting.

## 9. Worm and worm shaft

Two-stage worm reducer has large transmission ratio, low noise (50dB is the highest) and self-lock functions.

## 7. Handwheel

Actuator has a handwheel, which can operate the valve by user when power is off. The dimension of the handwheel is designed for labor saving.

## 12. Terminal Compartment

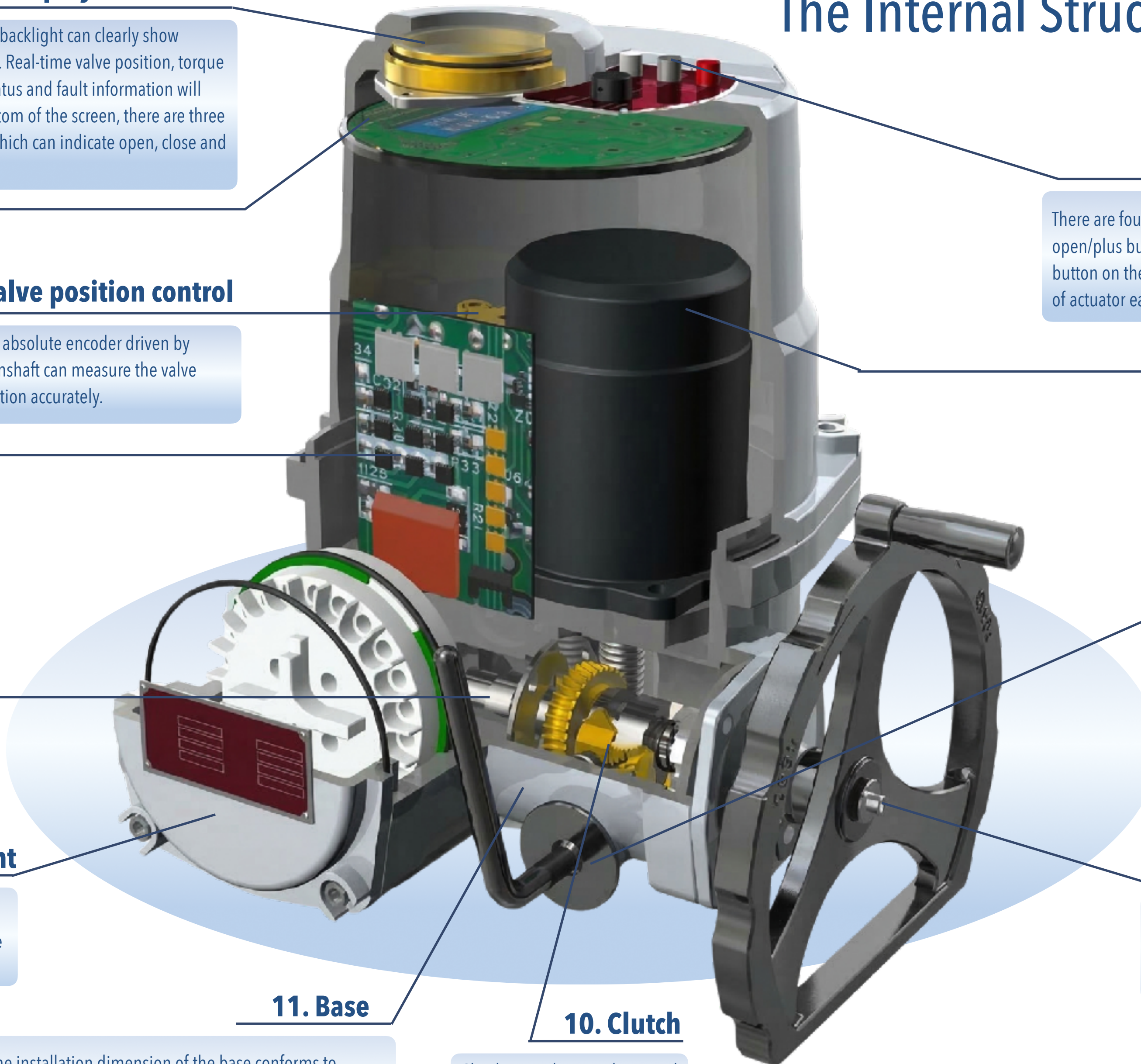
The double-seal design of the terminal compartment can protect the internal electric components from the outside hazardous gas during site wiring.

## 11. Base

The installation dimension of the base conforms to ISO5211 standard and the drive bush can be machined according to the requirement of user.

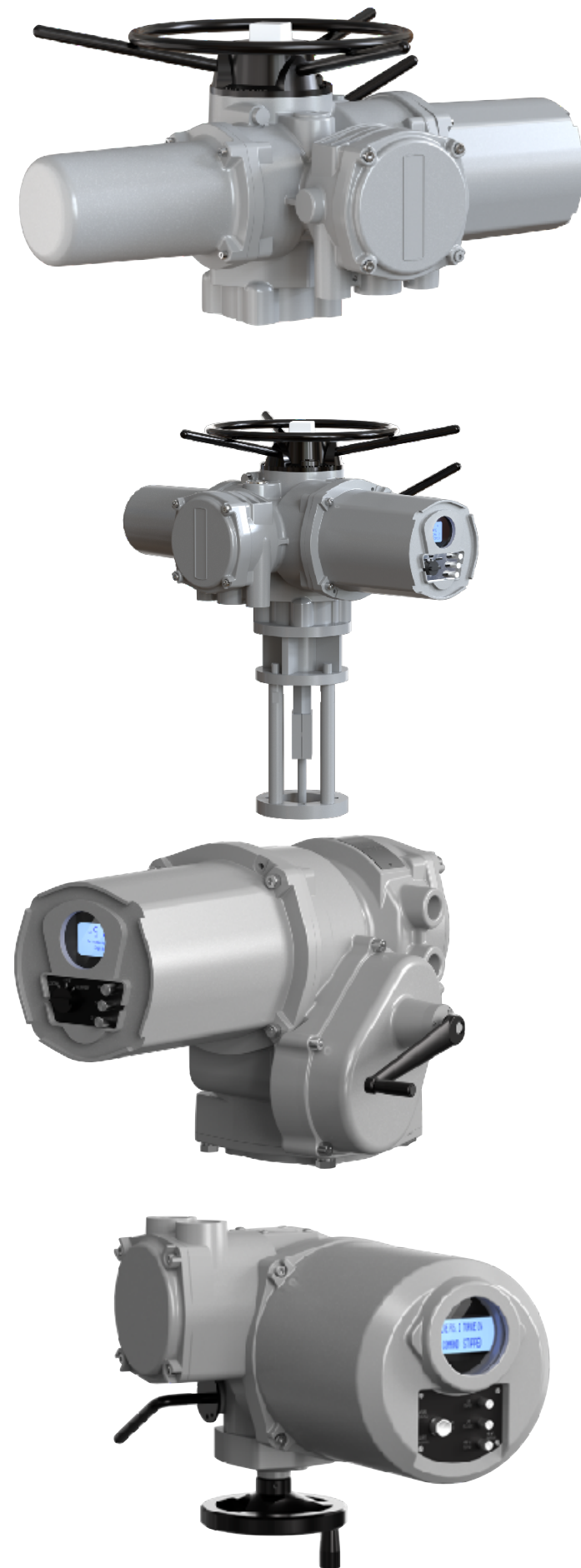
## 10. Clutch

Clutch is used to switch manual and electric operation.



# GREATORK Electric Actuator Customization Capabilities

Based on Proven Technical Assets From our R&D Center



Custom Product

The Engineering Process | A reliable roadmap from concept to delivery

01



## Requirement Discovery

Technical consultation and site analysis.

02



## R&D & Simulation

3D modeling and stress testing.

03



## Bespoke Manufacturing

Flexible assembly in our 53,000 sqm factory.

04



## Quality Assurance

Certification testing and global delivery

Customization Capabilities , Please visit our support website



<https://www.greatorkpartners.com/customization>

Technical Support



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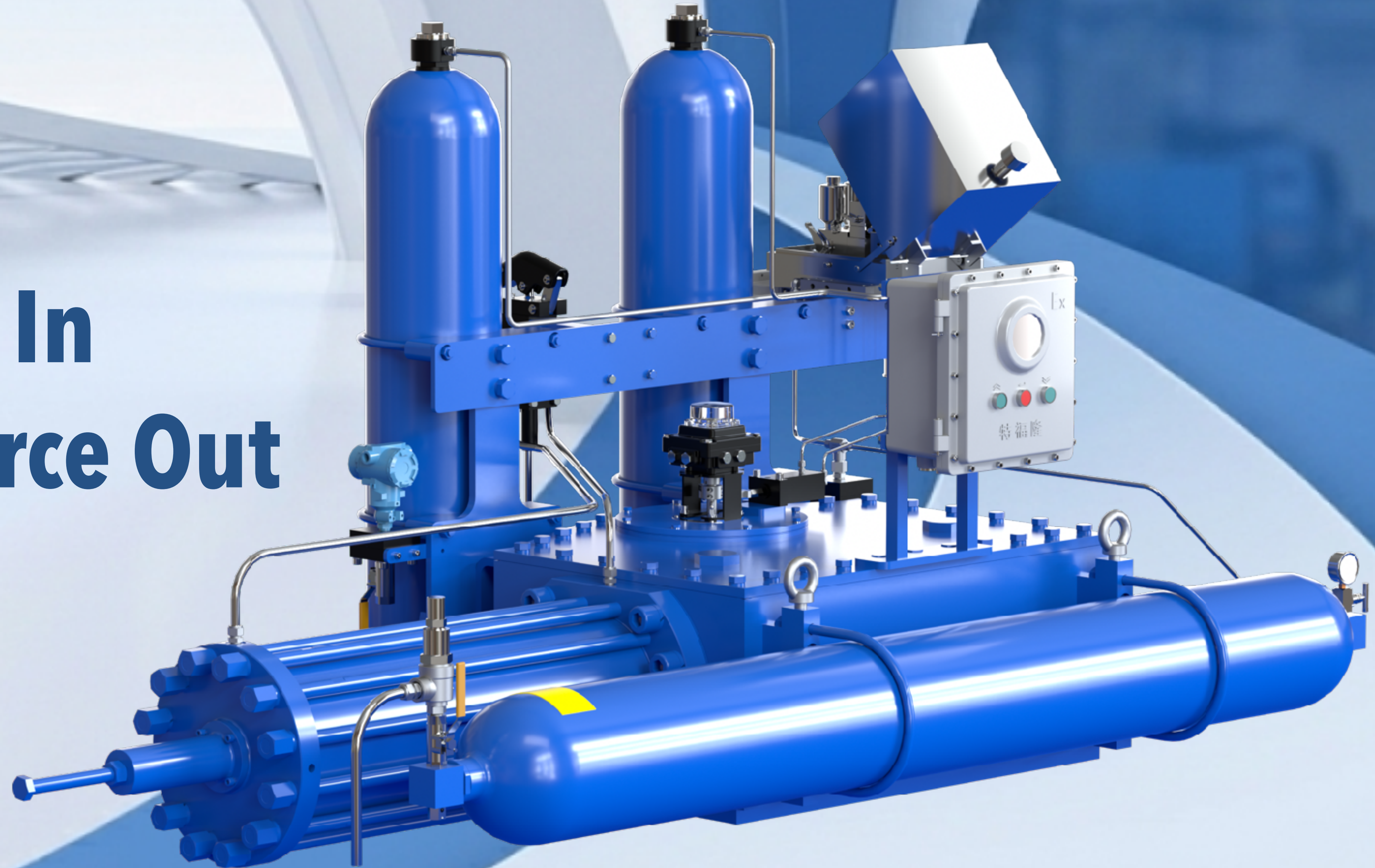


GREATORK Gas over oil Actuator

# Pipeline Gas In Hydraulic Force Out

**GP**

GREATORK<sup>®</sup> Partner



# GREATORK Gas Over Oil Actuator Product Overview

This Product Is Specifically Designed for Working Conditions Such as Long-Distance Natural Gas Pipelines, Inlet/Outlet of Stations, Emergency Venting Systems, LNG Storage Stations, and Mainline Ball Valves, and Is Suitable for Various Types of Quarter-Turn Control Valves. The System Uses Natural Gas From the Pipeline or External Nitrogen Cylinders as the Power Source, and Hydraulic Oil as the Transmission Medium to Efficiently Convert Air Pressure Into Hydraulic Power, Driving the Scotch Yoke Mechanism To Operate. This in Turn Converts the Linear Motion of the Piston Cylinder Into the Quarter-Turn Motion of the Valve, Achieving Reliable Control of the Valve.

The Product Features Functions of Local Pneumatic Opening/Closing, Remote Pneumatic Opening/Closing, and Local Manual Hydraulic Pump Operation, Meeting Various Control Requirements. It Also Integrates Safety Mechanisms Such as Line Break Protection for Emergency Shutdown, ESD Power Failure Emergency Shutdown, and Abnormal Shutdown Self-Locking, Ensuring Rapid Response in Emergency Situations and Safeguarding Pipeline Safety. After an Abnormal Shutdown, the System Automatically Maintains a Locked State and Can Be Safely Reset Locally or Remotely, Offering Convenient, Safe, and Reliable Operation.



## Gas over oil Actuator features:

Output Torque: **200Nm - 450kNm**

Supply Pressure of Power Gas: **0.6MPa ~ 12MPa**

Ambient Temperature: **Regular -30 °C ~ 70°C, Special -60 °C ~ 70°C**

Explosion-proof classification: **Ex db II BT4 Gb**

Protection grade: **IP65**

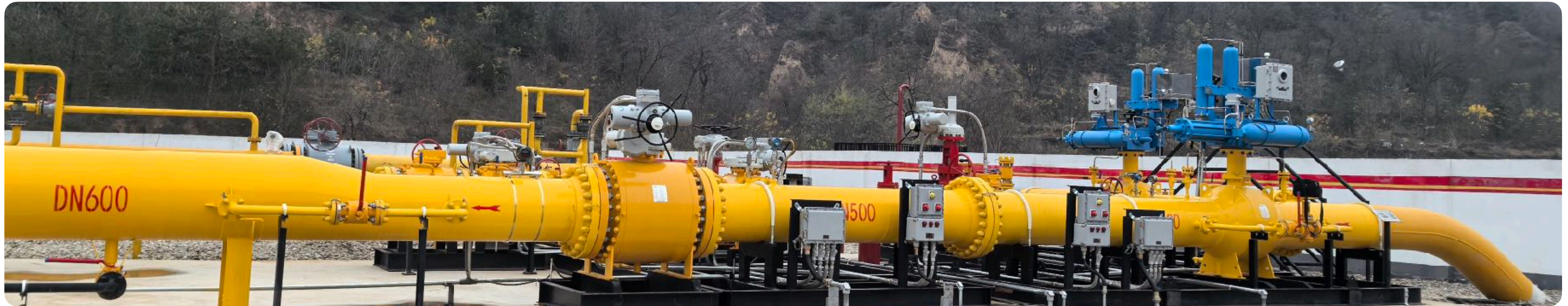
Functional Safety Certification: **SIL2/SIL3**

## Key Features

- It adopts natural gas in the pipeline (or external nitrogen cylinder) as the power source.
- An optional pipeline protection unit can close the valve in time when the pipeline pressure drops sharply and the pressure drop rate increases greatly.
- The external adjustable stroke stop absorbs all stroke torque and protects the valve.
- The high-pressure actuator does not need a pressure reducing valve or pressure relief valve, which can prevent the gas from shrinking and blocking the pipeline due to decompression and expansion.
- OLED display with Chinese and English menu display.
- Low power design, electronic unit power consumption less than 3W.
- Solar power supply technology can ensure the stable operation of the system without external power.
- It can store over 1 million pieces of data, including high voltage, low voltage, pressure drop rate, alarm information, and login information.
- Fieldbus: Modbus-RTU



# GREATORK Gas Over Oil Actuator Product Applications



- **LNG storage stations**
- **Inlet and outlet stations**
- **Emergency venting stations**
- **Long-distance natural gas transmission pipelines**
- **Mainline ball valves and other quarter-turn control valves**

# GREATORK Gas Over Oil Actuator Product Series

## Standard Function Descriptions

▷ **Local Pneumatic Open/Close (Active Control)**

*Local pneumatic operation: the actuator can be opened or closed by operating the pneumatic selector handle.*

▷ **Remote Pneumatic Open/Close (Active Control)**

*Remote operation: the station control system sends open/close commands to the actuator for remote operation.*

▷ **Local Manual Hydraulic Pump Operation (Active Control)**

*Manual hydraulic pump operation: the actuator can be opened or closed locally by operating the manual hydraulic pump.*

▷ **Line Break Protection Shutdown (Automatic Control)**

*Line break protection: when abnormal pipeline pressure is detected, the actuator automatically closes the valve*

▷ **ESD Fail-Close Shutdown (Active Control)**

*ESD shutdown: in emergency conditions, the ESD button triggers the station interlock, and the actuator usually performs a closing action.*

▷ **Self-Locking After Emergency Shutdown**

▷ **Local or Remote Reset**



Typical operating conditions include: with gas and power, with gas but no power, and without gas source.

# GREATORK Gas Over Oil Actuator Product Series

## Optional Functions

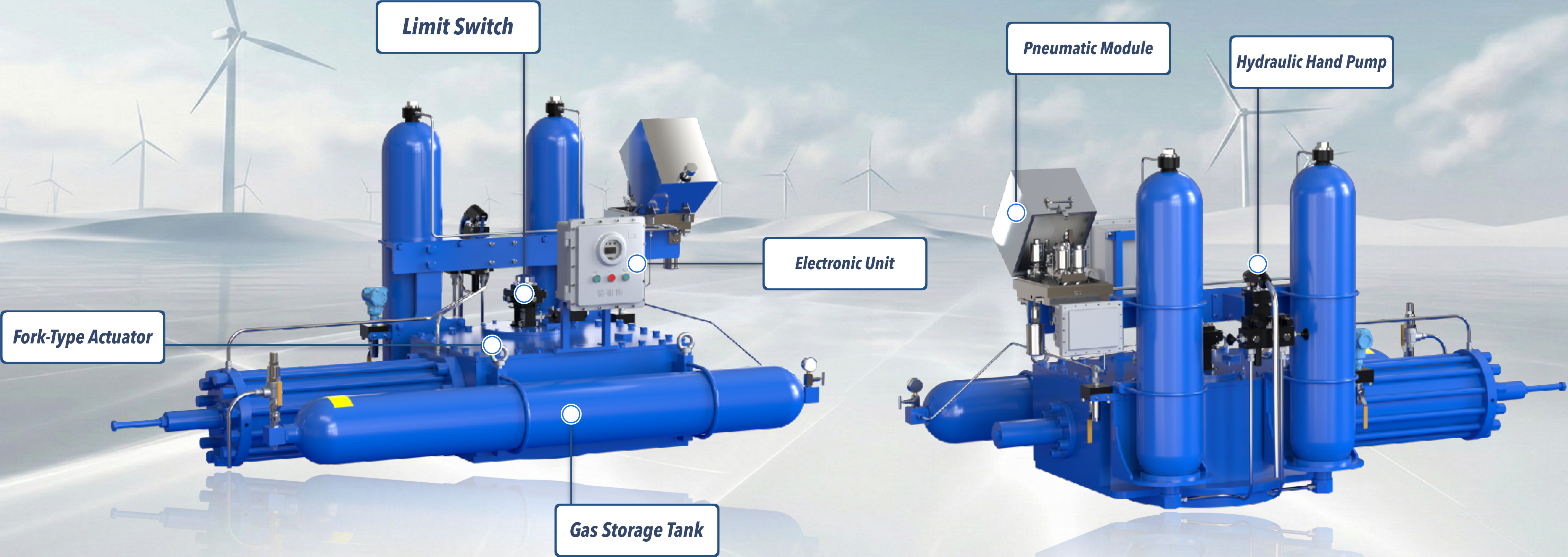
- ▷ **Nitrogen Cylinder Supply.** When on-Site Gas Pressure Is Insufficient, Unsuitable as Power Gas, Contains High Moisture, or Contains Sulfur, Nitrogen Supply Is Recommended
- ▷ **Solar Power Supply.** Solar Power Is Used When Line Power Is Inconvenient, Unstable, or Too Costly To Install
- ▷ **Partial Stroke Test (PST).** This Online Test Function Periodically Moves the Valve To Avoid Sticking During Long Idle Periods
- ▷ **Redundant ESD Function.** Used To Enhance the Reliability and Safety Redundancy of the ESD Control Loop
- ▷ **Booster Pump.** Used To Supplement Driving Pressure Under Specific Operating Conditions



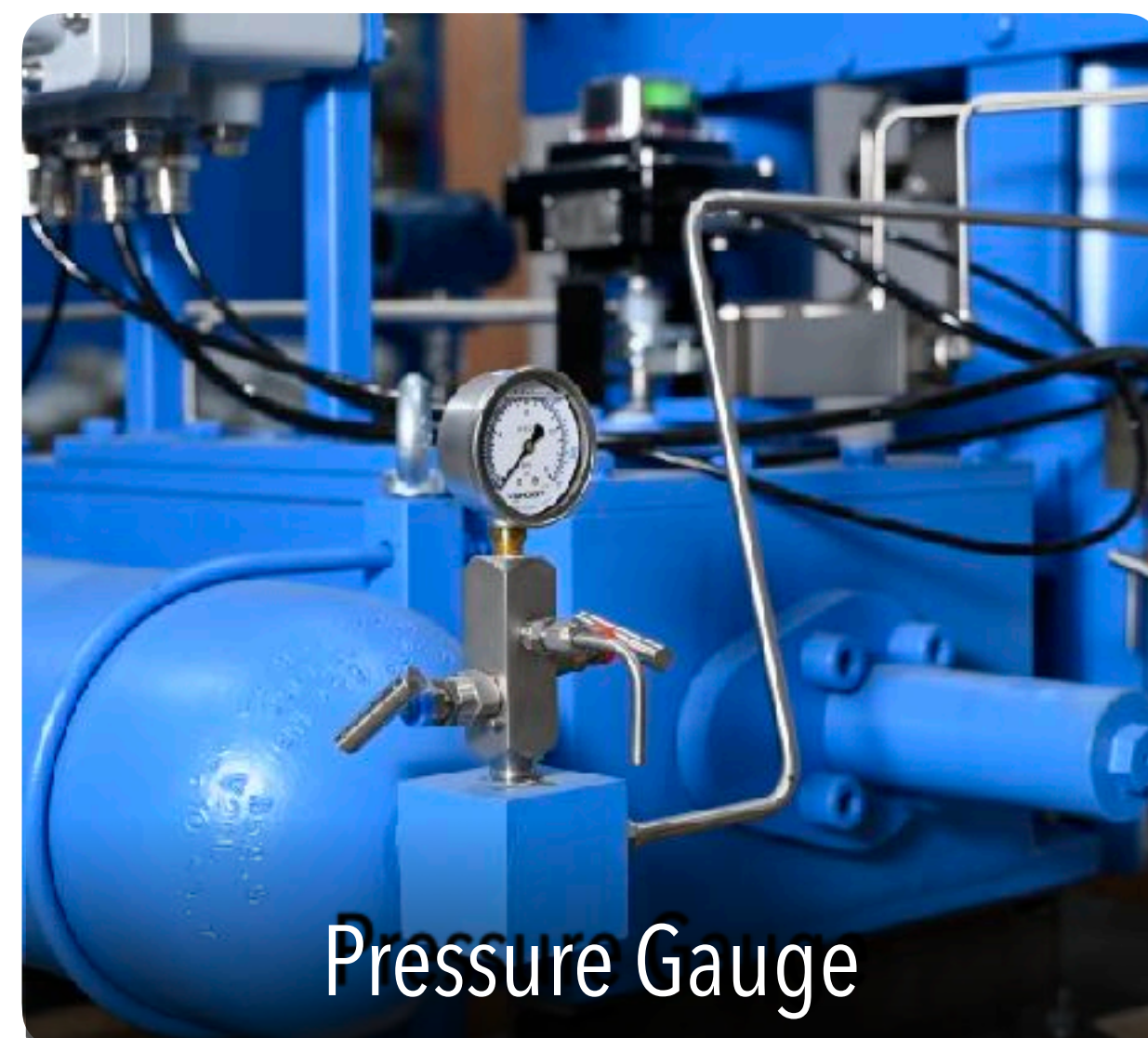
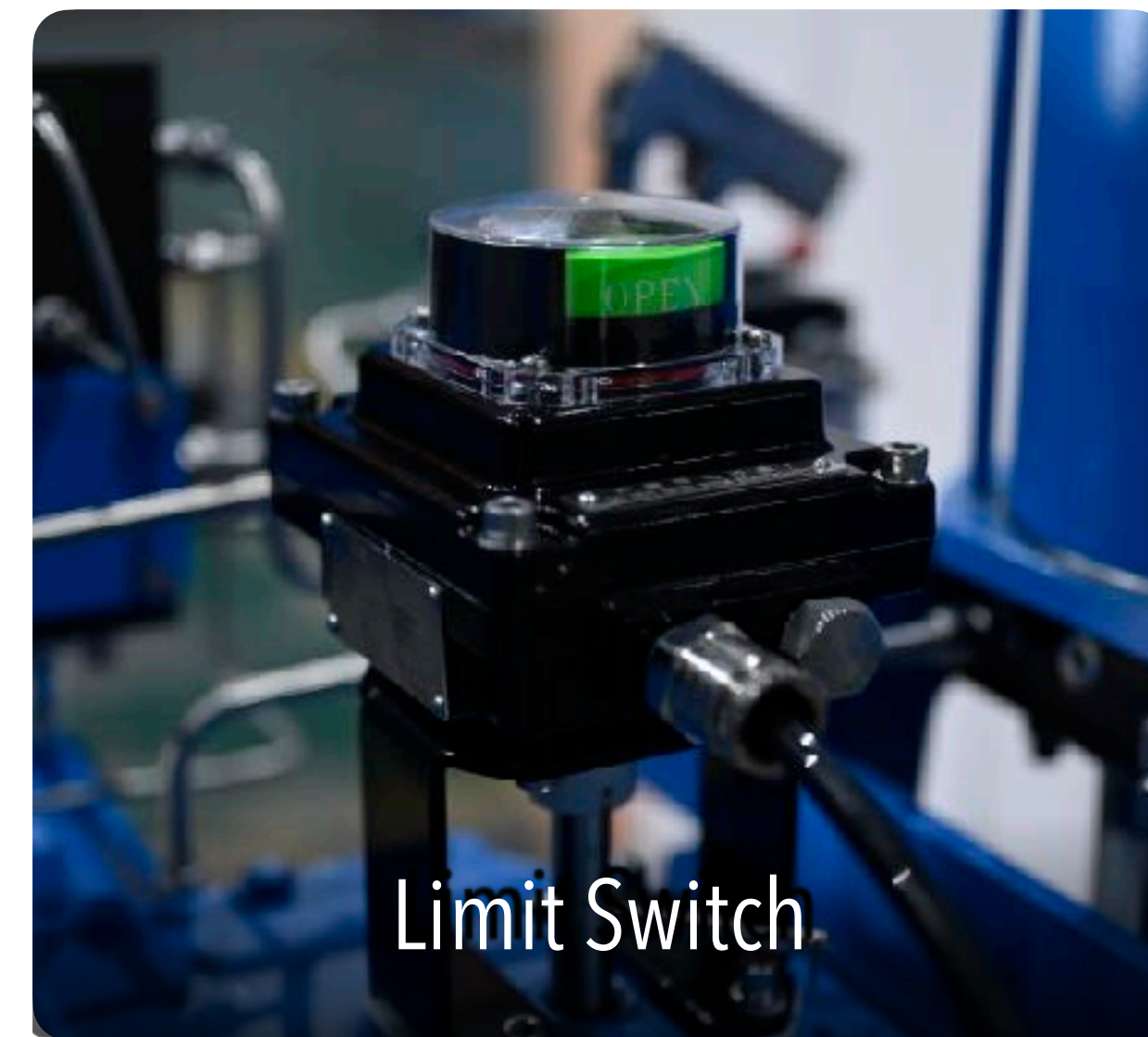
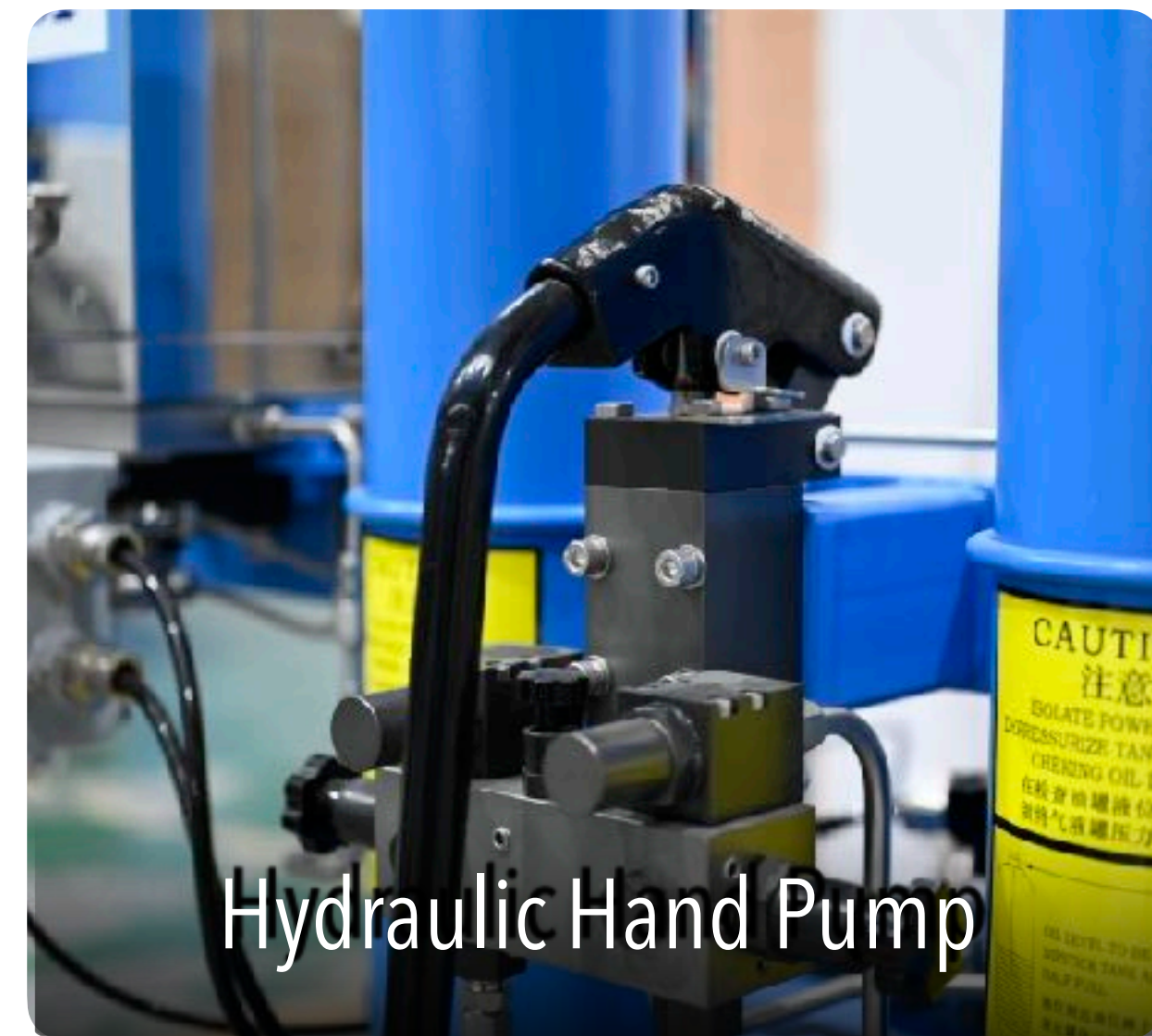
Typical operating conditions include: with gas and power, with gas but no power, and without gas source.

# GREATORK Gas Over Oil Actuator Product Series

## Main Functions



# GREATORK Gas Over Oil Actuator Product Structure



# GREATORK Gas Over Oil Actuator Product Series

## Key Structure Descriptions



Typical operating conditions include: with gas and power, with gas but no power, and without gas source.

- ▶ **Gas-Oil Conversion Tank:** the Upper Chamber Stores the Driving Gas and the Lower Chamber Stores Hydraulic Oil. It Converts Gas Pressure Into Hydraulic Force To Drive Smooth Linear Piston Motion
- ▶ **Gas Storage Tank:** Stores Power Gas So That Valve Opening and Closing Can Still Be Completed When Medium Pressure Is Low or Unavailable; the Capacity Supports Two Full-Stroke Actions.
- ▶ **Manual Hydraulic Pump:** When no Driving Gas Is Available, the Valve Can Be Operated Locally by Hand; After Manual Operation, the System Can Automatically Reset During Pneumatic Operation.
- ▶ **Valve Position Switch:** Mounted on Top of the Scotch Yoke Mechanism, It Indicates OPEN/ CLOSE Position Locally and Transmits Position Information to the Electronic Unit or RTU.
- ▶ **Pneumatic Control Unit:** Composed of Pneumatic Valves, Solenoid Valves, Shuttle Valves and Control Modules, Enabling Line Break Protection, ESD Automatic Shutdown, and Local/Remote Control Logic.
- ▶ **Flameproof Junction Box:** Used for Electrical Wiring and Local/Remote Selector Switching of the Actuator.
- ▶ **Gas Inlet Port:** Consists of a Ball Valve, Filter and Check Valve, Connected to the Natural Gas Pipeline Through an Impulse Tube, With Filtering, Non-Return and Shutoff Functions.

# GREATORK Gas Over Oil Actuator Technical Support



Comparing Contents	Greatork	Chinese Domestic Brand	Similar Products Abroad
Ambient Temperature Range	-40°C ~ 85°C	-40°C ~ 85°C	-30°C ~ 85°C
Power Supply	+12VDC/+24VDC	+24VDC	+24VDC
Drive mode	Scotch Yoke	Scotch Yoke	Scotch Yoke/blade
Gas control and electronic control unit layout	Separated	Separated	Separated
Gas hydraulic Tank and gas storage tank	Seamless steel tube hot spinning forming without welding	Welding	Welding
Storage Battery	Solid state lithium iron phosphate battery, has a long service life, no maintenance	Lead-acid Battery	Lead-acid Battery
Power Consumption	0.24W	0.42W	-----
Continuous Use in Rainy Day	55 days( a year as option)	35 days	About 10 days
Solenoid Valve	20Mpa solenoid valve, SIL3, <3W	15Mpa self-made solenoid valve	10Mpa solenoid valve
Display	OLED Low Temperature all-weather Display	OLED Low Temperature all-weather Display	LCD Display
Main interface display	Selectable	-----	Not Selectable
Setting Method	Infra-red Setting Tool and non-penetrating type Button Setting	Penetrating Type Button Setting	Penetrating Type Button Setting
Pressure Sensor	3 groups	1 group	1 group
Language	Chinese/English	Chinese/English	English
Protection and explosion proof classification of electronic control box	IP65/ExdIIBT4	IP65/ExdIIBT4	IP65/ExdIIBT4
Explosion-proof power switch	The control case can be opened in maintenance occasion	No	No
Memory capacity	6MB( max. 4000 events)	More than one million data <512KB	512KB(max. 1000 events)
Pressure Variate Record	Valve Position, Pressure, Pressure Drop Rate, Pressure Fluctuation, Temperature, Login info	Valve Position, Pressure, Pressure Drop Rate, Temperature, Time	Valve Position, Pressure, Pressure Drop Rate, Temperature, Time
Real Time Data Record	Dynamic memory, real time record 256 data	No instruction	Dynamic memory, real time record 256 data
Data Download	Infra-red and RS485 interface	Infra-red and RS485 interface	RS485 interface
Data communication	Wireless communication data transmission, Monitoring by service management system, App real time query	GSM alarm	No
Data Fluctuation Record	Pressure fluctuation $\pm 0.01\text{MPa} \sim 20\text{MPa}$ , pressure drop rate $0.01\text{MPa} \sim 20\text{MPa/m}$ , parameter can be set	Pressure fluctuation $0.5\text{Mpa}$ record data, Pressure drop rate $0.2\text{MPa} \sim 20\text{MPa/m}$ , parameter can be set	Pressure drop rate $0.2\text{MPa} \sim 20\text{MPa/m}$ , parameter can be set

# GREATORK Gas Over Oil Actuator Customization Capabilities

Based on Proven Technical Assets From our R&D Center



The Engineering Process | A reliable roadmap from concept to delivery

01



### Requirement Discovery

Technical consultation and site analysis.

02



### R&D & Simulation

3D modeling and stress testing.

03



### Bespoke Manufacturing

Flexible assembly in our 53,000 sqm factory.

04



### Quality Assurance

Certification testing and global delivery

Customization Capabilities , Please visit our support website



<https://www.greatorkpartners.com/customization>

Technical Support



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GREATORK Electro-Hydraulic Actuator

# Hydraulic Power Electric Precision



GREATORK® Partner



# GREATORK Electro-Hydraulic Actuator Product Overview

The intelligent electro-hydraulic actuator is an integrated smart device combining a hydraulic source and control components. With a compact structure and small size, no need of external hydraulic station. This series of products offers two action modes: on-off type and modulating type, suitable for various control valves, including those with linear and quarter-turn actuation requirements. It is widely applied to multiple control valves such as ball valves and butterfly valves.



Equipped with a large-screen OLED display, the actuator intuitively shows valve opening, operating status, and fault alarm information in real time, facilitating monitoring and operation. In case of power failure, it supports effective control of valve opening through a manual pump or accumulator, ensuring continuous and stable operation of the system.

Intelligent electro-hydraulic actuators have been widely used in fields such as power plants, metallurgy, coking, petrochemicals, pipeline transportation, mining, and environmental protection industries, providing high-quality actuation and control solutions for various automation systems.

## Electro-Hydraulic Actuator features:

Torque Range: **150Nm - 450000Nm, (3kN - 700kN).**

Speed Range: **0.5s - 240s.**

Control Signals: **On-off control, 4-20mA analog, bus.**

**Control Precision: < 0.5%**

Repeatability: **0.5%**

Power: **500W(24V)/1kW(220V)/2kW(380V)**

Temperature Range: **-50 °C ~ 70°C.**

Protection Grade: **IP66/IP68**, the highest grade for waterproof and dustproof performance.

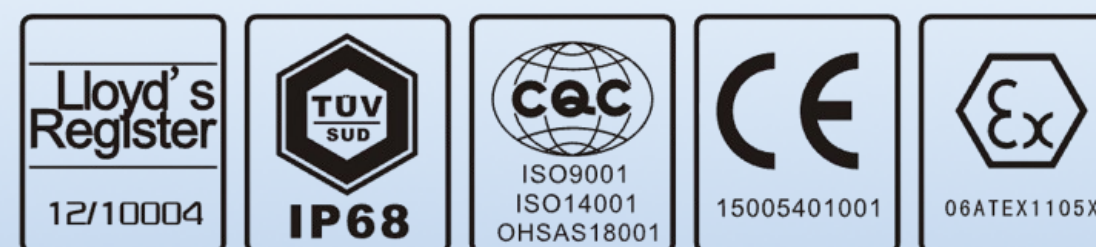
Explosion-proof classification: **ExdIIBT4 Gb / ExdIICT4 Gb.**

## Key Features

Fault Safety: Open, close or hold position.

SIL2 Safety Integrity Level Certification.

Anti-pipeline Electric Leakage Performance: For applications of valves in pipelines with cathodic protection, all internal electrical component wirings and grounding wires are insulated from the outer shell. Two grounding terminals are provided on the wiring terminals, and a dedicated grounding cable entry is set in the terminal compartment box.



# GREATORK Electro-Hydraulic Actuator Product Applications



## ▷ Finished Oil Pipeline

*Valve actuation for finished oil pipelines*

## ▷ Long Distance Pipeline

*Long-distance pipelines, valve chambers, and station control*

## ▷ Sea Port Oil Storage

*Terminal and tank farm storage/transfer applications*

## ▷ Petrochemical

*Valve automation for petrochemical units and hazardous services*

## ▷ Terminal Oil Tank

*Tank terminal loading/unloading and isolation valve control*

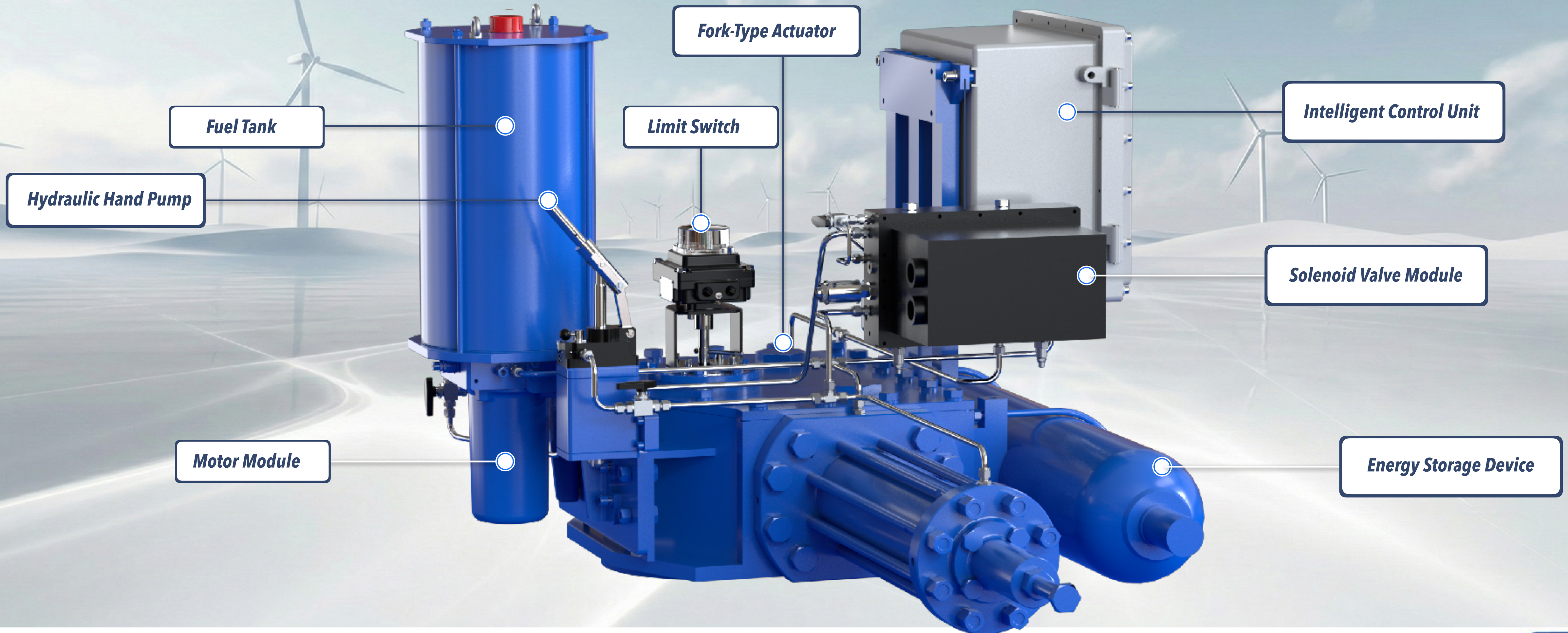
## ▷ Oil Storage and Transportation

*On-off and emergency action requirements in oil storage and transportation systems*

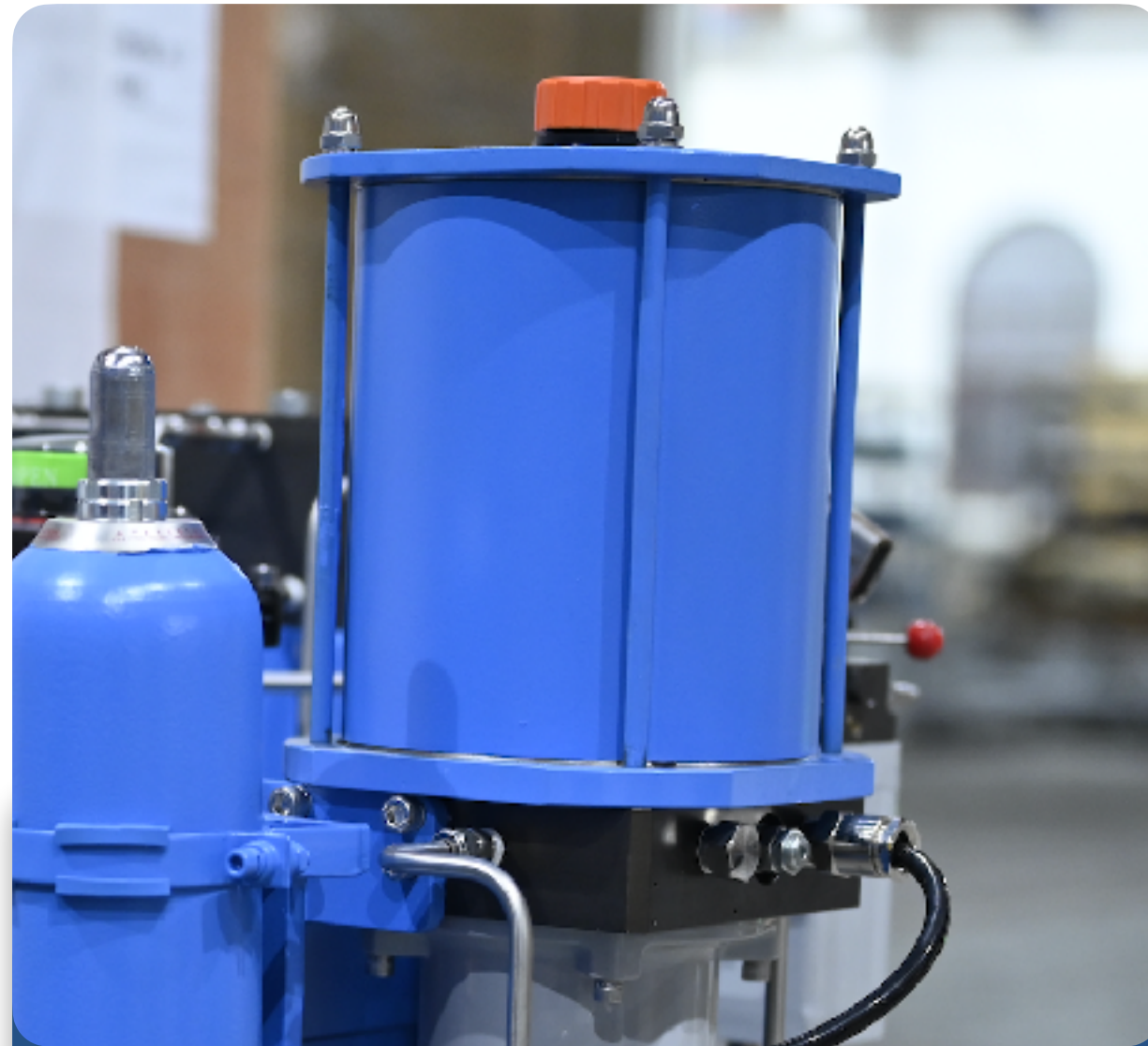


# GREATORK Electro-Hydraulic Actuator Product Series

## Main Functions



# GREATORK Electro-Hydraulic Actuator Product Structure



## Fuel Tank



*Stores Hydraulic Oil With the Hydraulic Unit Immersed Inside; the Oil and Air Are Separated by a Piston To Reduce Oxidation and Acidification and Extend Service Life.*



## Fork-Type Actuator



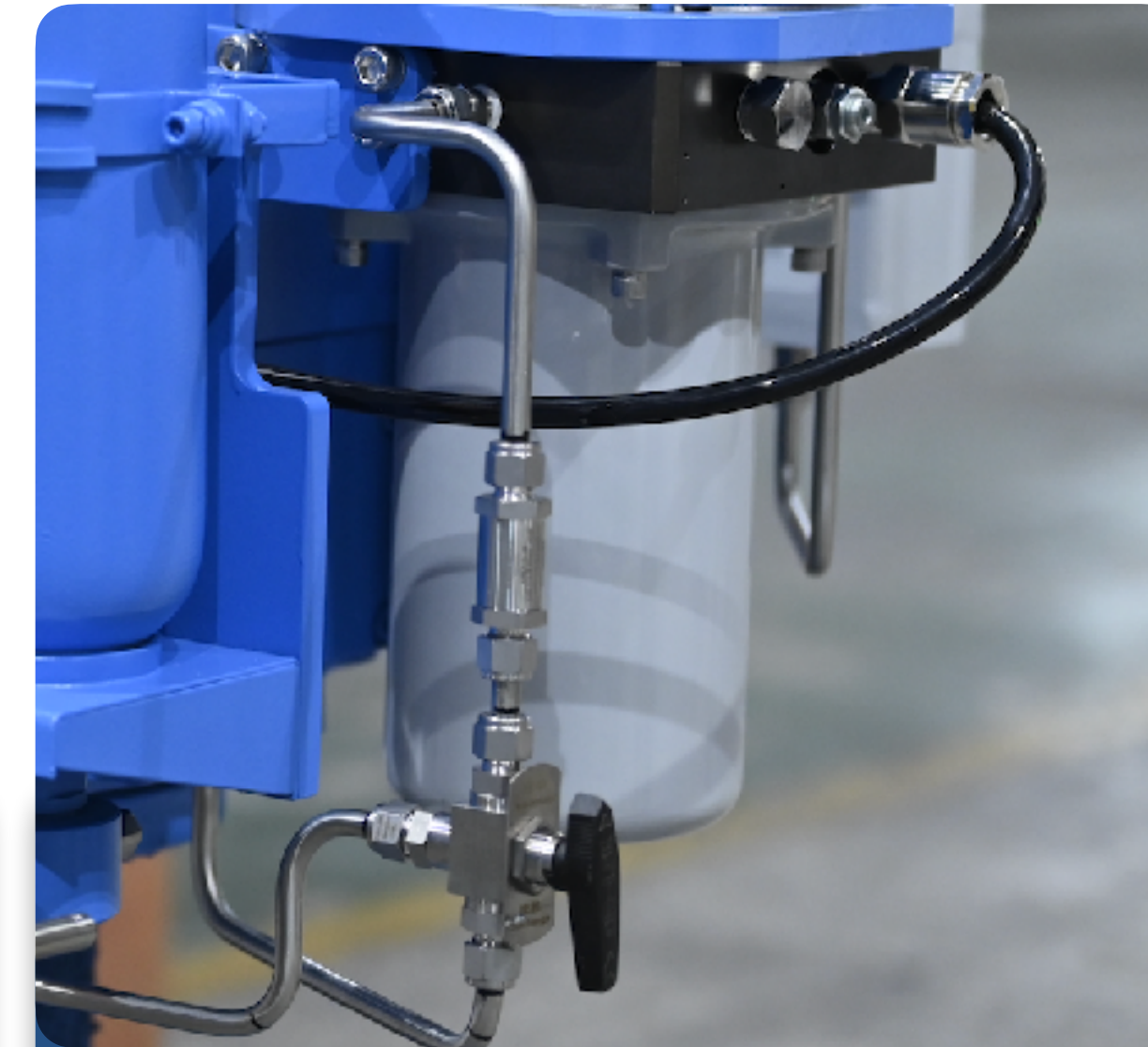
*Scotch Yoke Mechanism: Converts the Linear Thrust of the Hydraulic Cylinder Into Rotary Torque on the Valve Stem for Quarter-Turn Valve Operation.*



## Hydraulic Hand Pump



*Integrates the Directional Valve and Hand Pump, Allowing Manual Valve Operation During Power Loss or Emergency Conditions.*

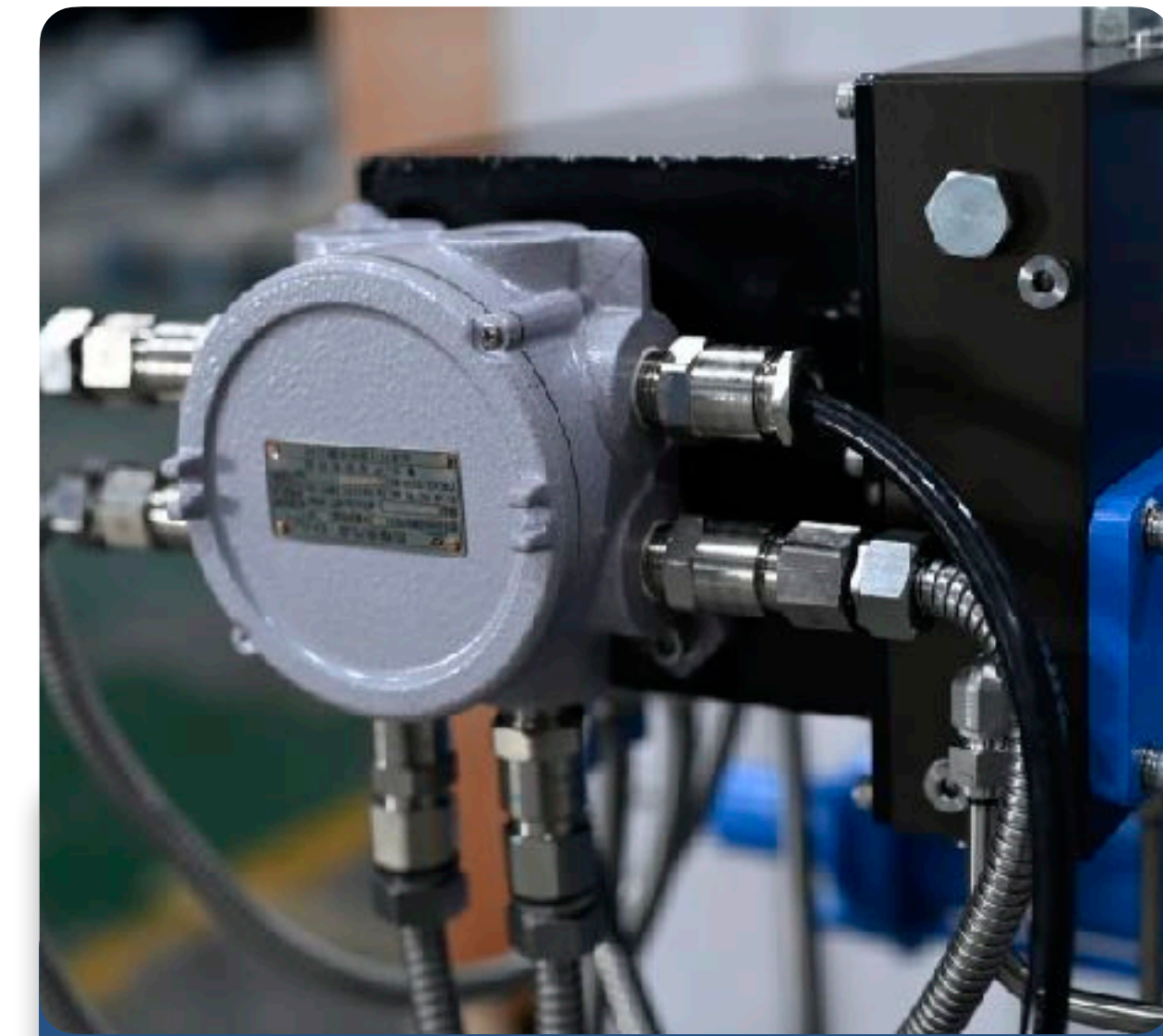


## Motor Module



*On-Off Units Use AC Asynchronous Motors; Modulating Units Use a Servo Control System Including a Servo Controller and Servo Motor.*

# GREATORK Electro-Hydraulic Actuator Product Structure



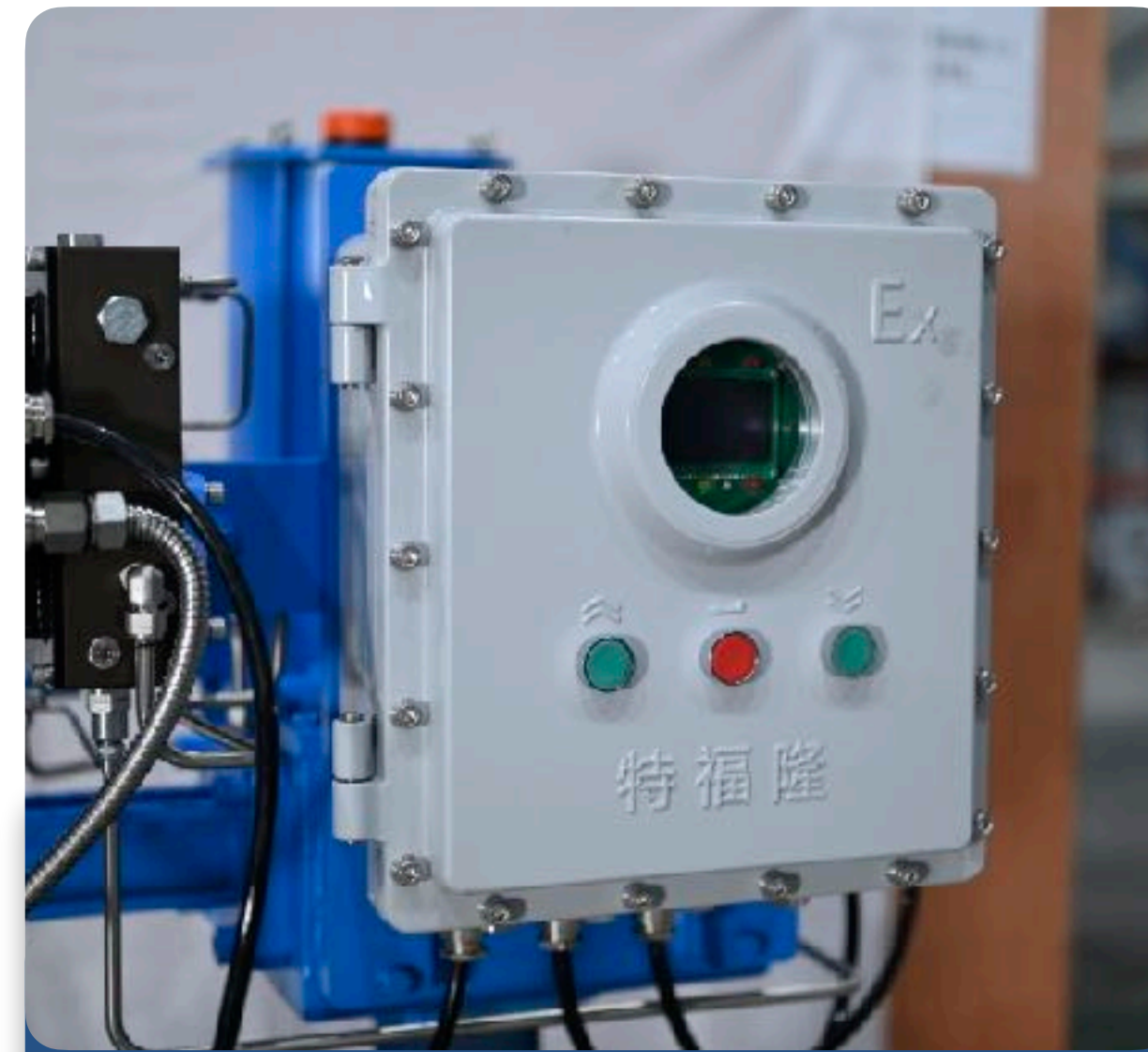
## Solenoid Valve Module

*Integrates Industrial-Grade Zero-Leakage Solenoid Valves; Open/Close Valves Are Non-Energized Type, While the ESD Solenoid Is Energized Type; Working Voltage Is 20.4-28.8 VDC.*



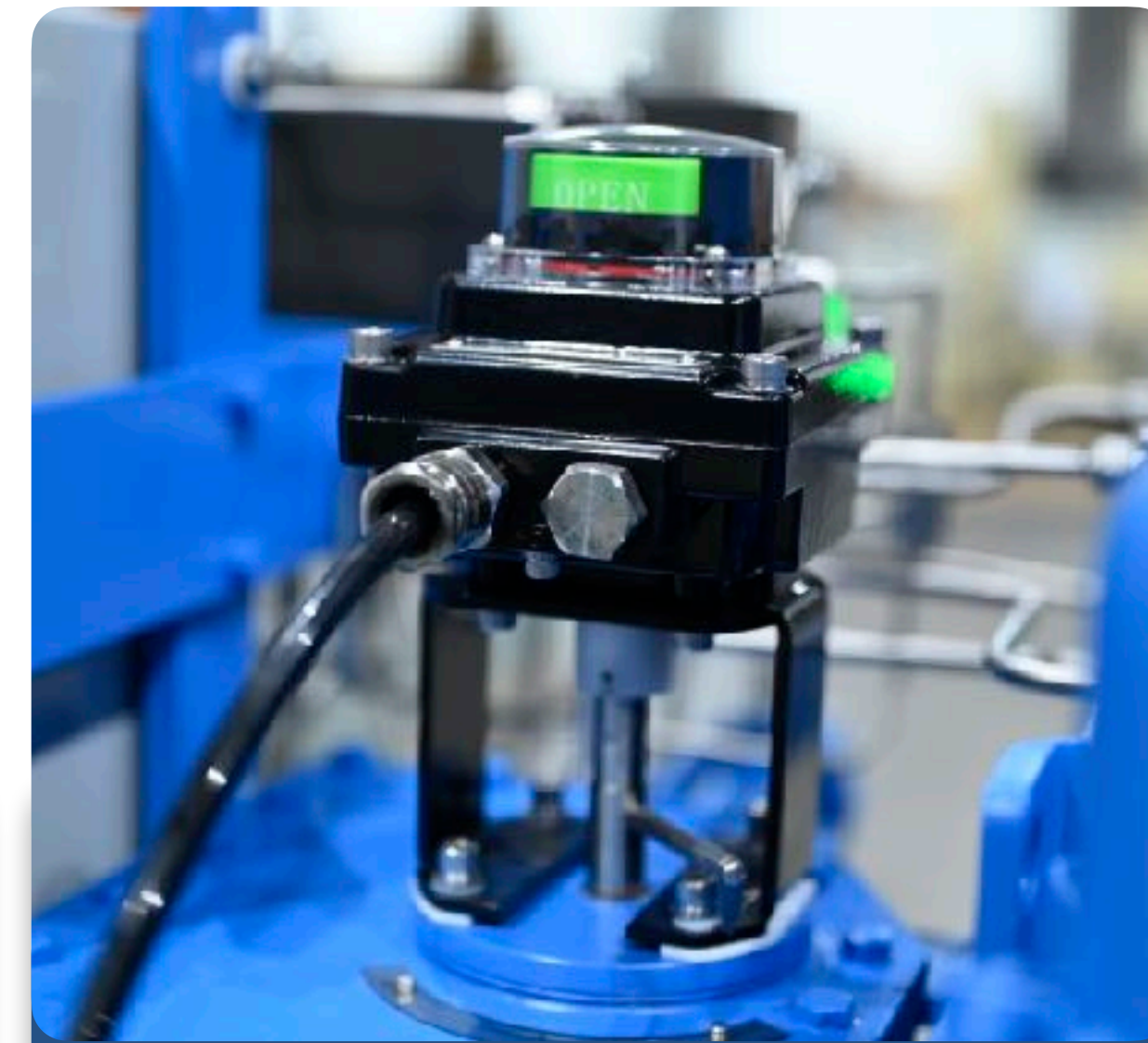
## Energy Storage Device

*Nitrogen-Charged Accumulator Used To Drive the Valve to a Required Position During Emergencies or Provide Supplementary Power; Capacity Supports Two Full Strokes of the Valve (One Open and One Close).*



## Intelligent Control Unit

*Uses a 32-Bit Embedded ARM Controller To Control Motor Direction and Speed, Enabling Valve Open/Close, Energy Storage, and Speed Regulation With High-Precision Position Output.*



## Limit Switch

*Quarter-Turn Units Use OPEN/CLOSE Indication at the Top; Linear Units Use High-Precision Linear Displacement Sensors. Rotary Units Use a 12-Bit Absolute Encoder as Standard, With Optional 24-Bit Photoelectric Absolute Encoder.*

# Technical Comparison: GREATORK vs. Domestic & International

Comparison	GREATORK	Domestic	International
<b>Max Torque (Nm)</b>	Double Acting: 450,000Nm; Spring Start: 150,000Nm; Spring End: 100,000Nm	Double Acting: 450,000Nm; Spring Start: 150,000Nm; Spring End: 100,000Nm	Double Acting: 750,000Nm; Spring Start: 335,000Nm; Spring End: 235,000Nm
<b>Structure Type</b>	Scotch Yoke / Rack & Pinion	Scotch Yoke / Rack & Pinion	Scotch Yoke / Rack & Pinion
<b>Mech. Ambient Temp.</b>	-50°C / +70°C	-40°C / +70°C	-60°C / +70°C
<b>Control Box Ambient</b>	-46°C / +70°C	-40°C / +70°C	-60°C / +70°C
<b>Power Supply</b>	Motor: 380/220VAC, 24VDC; Control/Solenoid: 220VAC, 24VDC	Motor: 380/220VAC, 24VDC; Control/Solenoid: 220VAC, 24VDC	Motor: 380/220VAC, 24VDC; Control/Solenoid: 220VAC, 24VDC
<b>Motor Power</b>	250W ~ 4.0kW	250W ~ 3kW	150W ~ 3.0kW
<b>Hydraulic Pressure</b>	Low: up to 12.0MPa; Medium: up to 16.0MPa	Low: up to 12.0MPa; Medium: up to 16.0MPa	Low: 10.5MPa; Medium: 21.0MPa; High: 35.2MPa
<b>Explosion Proof</b>	ExdIICT4, ExdIIBT4	ExdIICT4, ExdIIBT4	ExdIICT4, ExdIIBT4
<b>IP Rating</b>	IP66; IP68	IP65; IP67; IP68	IP65; IP66; IP68
<b>Accuracy (Full Stroke)</b>	< 1‰	< 1‰	< 1‰
<b>Hydraulic System</b>	Closed / Open Loop	Closed / Open Loop	Closed / Open Loop
<b>Fail-safe Position</b>	DA: Open/Close/Stay; SA: Open/Close	DA: Open/Close/Stay; SA: Open/Close	DA: Open/Close/Stay; SA: Open/Close
<b>Control Signal</b>	Dry Contact / 24VDC / 4-20mA	Dry Contact / 24VDC / 4-20mA	Dry Contact / 24VDC / 4-20mA
<b>Basic Functions</b>	Local/Remote On-off, Pressure monitoring, Alarms (Oil level/Motor protection), Self-diagnosis	Local/Remote On-off, Pressure monitoring, Alarms (Oil level/Motor protection), Self-diagnosis	Local/Remote On-off, Pressure monitoring, Alarms (Oil level/Motor protection), Self-diagnosis
<b>Optional Functions</b>	ESD, PST, Variable speed control, Auto-fail, Line-break, Fire shutdown	ESD, PST, Variable speed, Auto-fail, Line-break (Some), Fire shutdown (Some)	ESD, PST, Variable speed, Auto-fail, Line-break (Some), Fire shutdown (Some)
<b>Functional Safety (Unit)</b>	SIL2	SIL2	SIL2
<b>Functional Safety</b>	SIL2	SIL2	SIL2
<b>Parameter Setting</b>	Infrared Setter & Push Buttons	Push Buttons	Infrared Setter & Push Buttons
<b>Display Technology</b>	OLED All-weather, visible in dark/bright light	OLED All-weather, visible in dark/bright light	LCD, invisible in dark/bright light, requires backlight

# GREATORK Electro-Hydraulic Actuator Customization Capabilities

Based on Proven Technical Assets From our R&D Center



The Engineering Process | A reliable roadmap from concept to delivery

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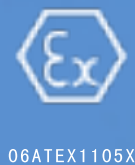
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# GREATORK Gearbox Product Series

BA Multi Turn Gearbox

ZJ Quarter Turn Gearbox



ISO 9001  
GB/T 19001

ISO 9001  
ISO 14001

15885-401001

06ATEX1105X

TYPE APPROVAL PROGRAM

# GREATORK BA Multi Turn Gearbox Product Overview

## BA Multi Turn Gearbox Description

BA Series Bevel Gearbox Is Client Focused Design, It Has Removable Drive Bush Which Is Easily Processed To Connect With Valve Stems.

The Operation Temperature of BA Series Bevel Gearbox Is  $-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$ , for Temperature Out of This Scope, Please Contact Tefulong for Detail. The Input Flange(for Actuator) and Output Flange Is Processed According ISO5210, It Can Also Be Processed Separately According Clients Special Requirement or Drawing.

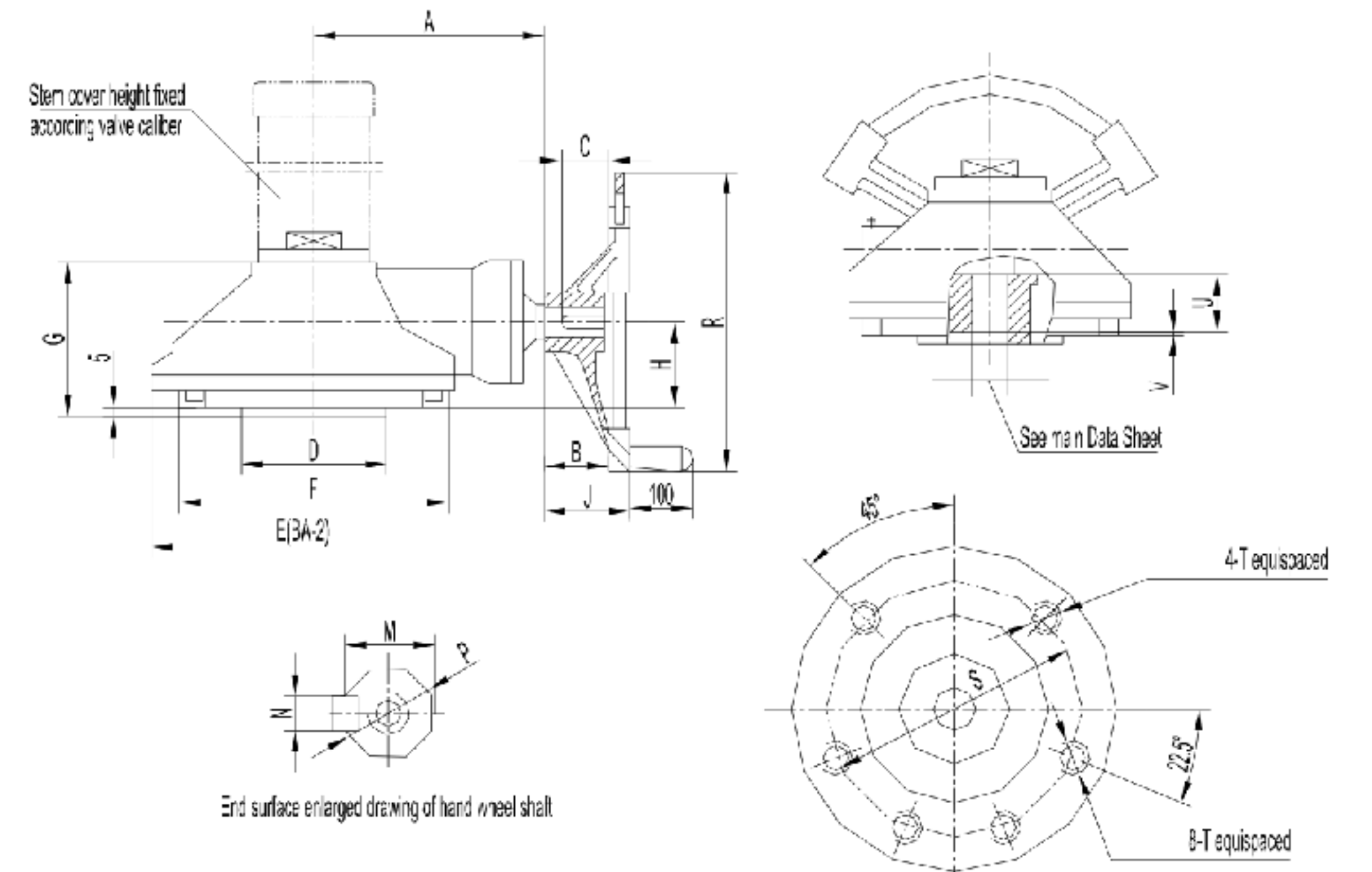
## Application

BA Series Multi Turn Bevel Gearbox Can Be Driven by Hand Wheel or Actuator, It Is Used To Operate Gate Valve, Globe Valve, Sluice and So on.

## Working Environment

Enclosure Protection: IP67

Ambient Temperature:  $-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$



# GREATORK ZJ Quarter Turn Gearbox Product Overview

## ZJ Quarter Turn Gearbox Description

ZJ Series Worm Gearbox Is Client Focused Design, It Has Removable Drive Bush Which Is Easily Processed To Connect With Valve Stems.

The Operation Temperature of ZJ Series Worm Gearbox Is  $-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$ , for Temperature Out of This Scope, Please Contact Tefulong for Detail. The Input Flange(for Actuator) and Output Flange Is Processed According ISO52211, It Can Also Be Processed Separately According Clients Special Requirement or Drawing.

## Application

ZJ Series Quarter Turn Worm Can Be Driven by Hand Wheel or Actuator, It Is Used To Operate Ball Valve, Plug Valve, Butterfly Valve, Damper, Door and So on.

## Feature

Totally Sealed Gear Drive Unit

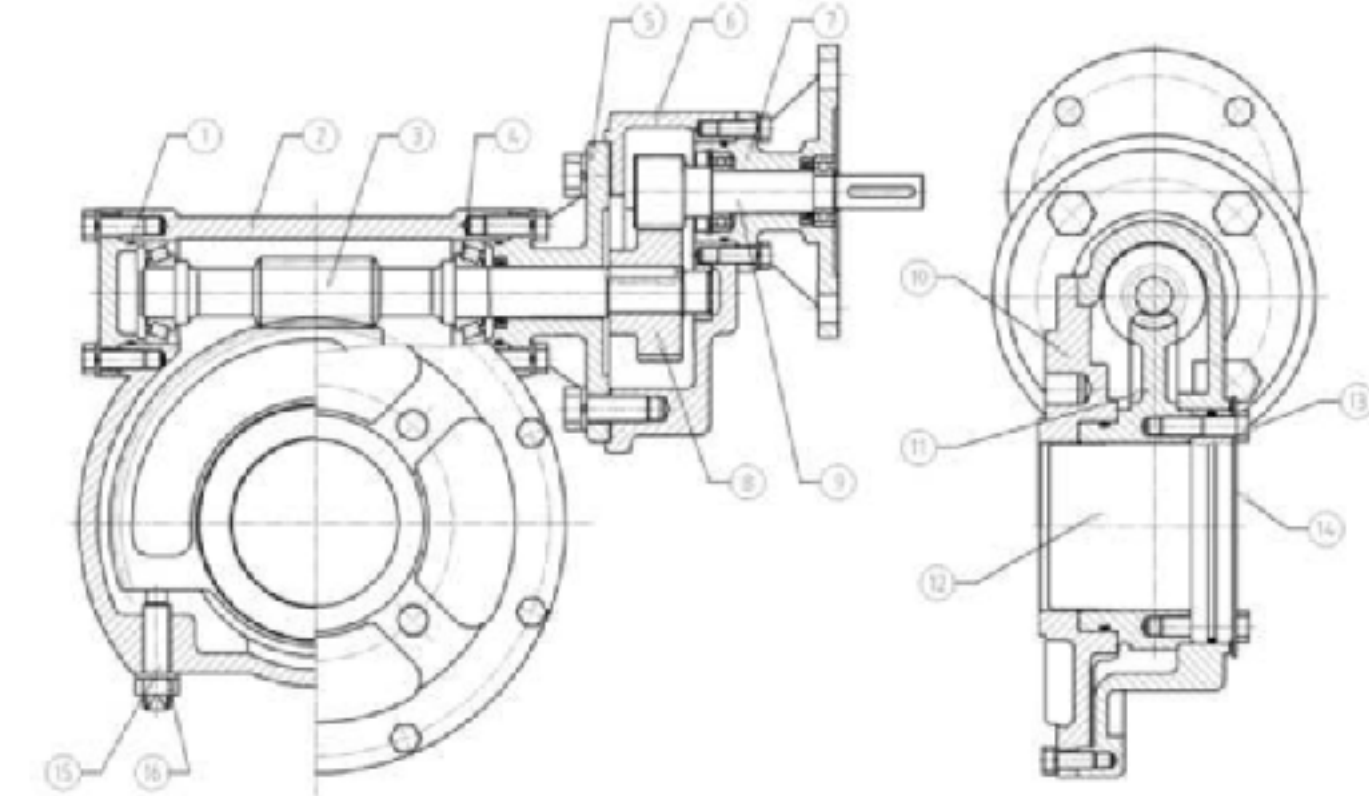
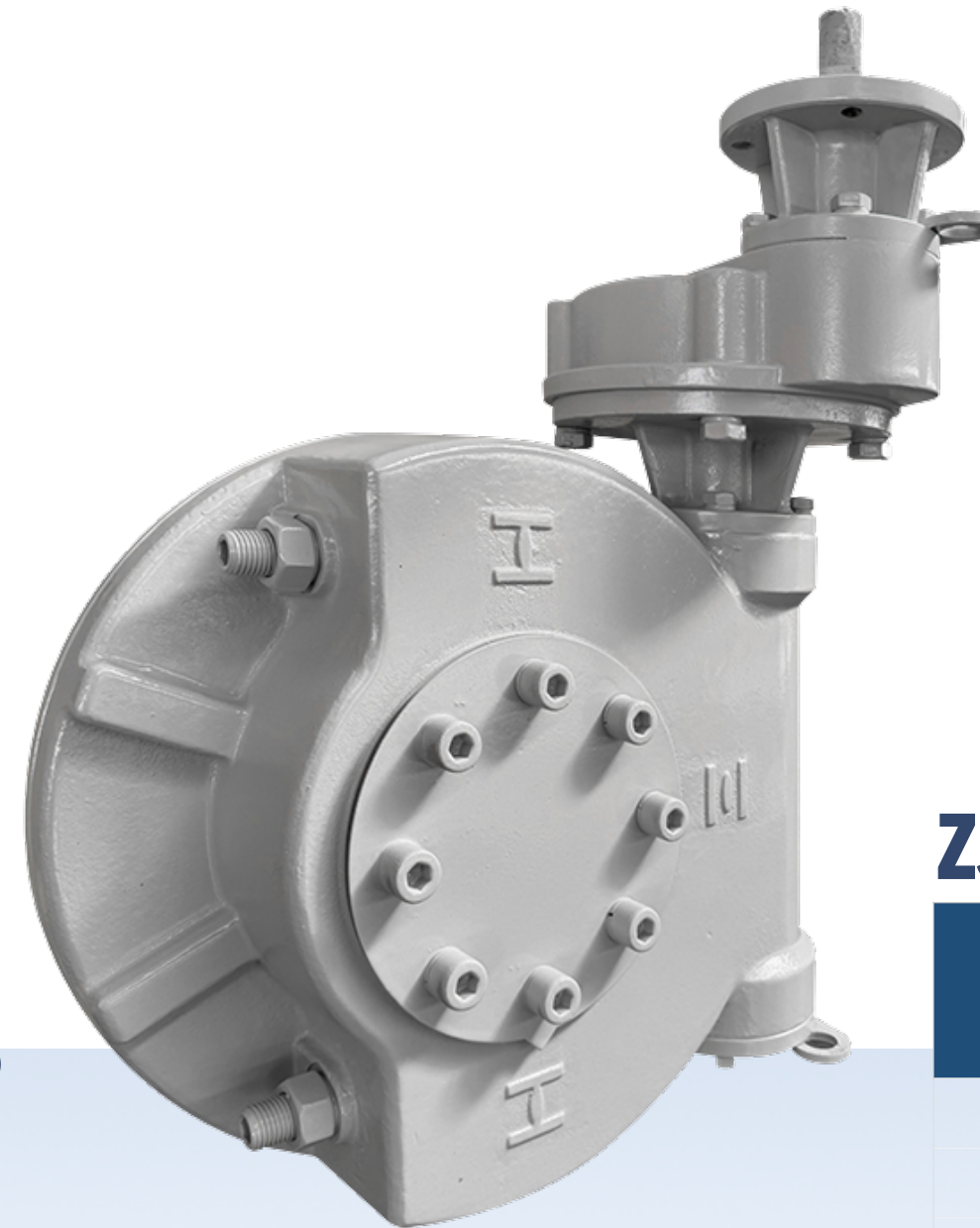
Cast Iron Gearcase Sealed and Grease Lubricant Filled To Extend the Service Life.

Complete With Various Auxiliary Reduction Gear Operator for Various Reducing Ratio.

Tapered Roller Bearing Combined With Worm

Removable Output Bush

Adjustable Mechanical Limit Is  $0^{\circ} \sim 90^{\circ}$  Position ( $\pm 5^{\circ}$  Adjustable)



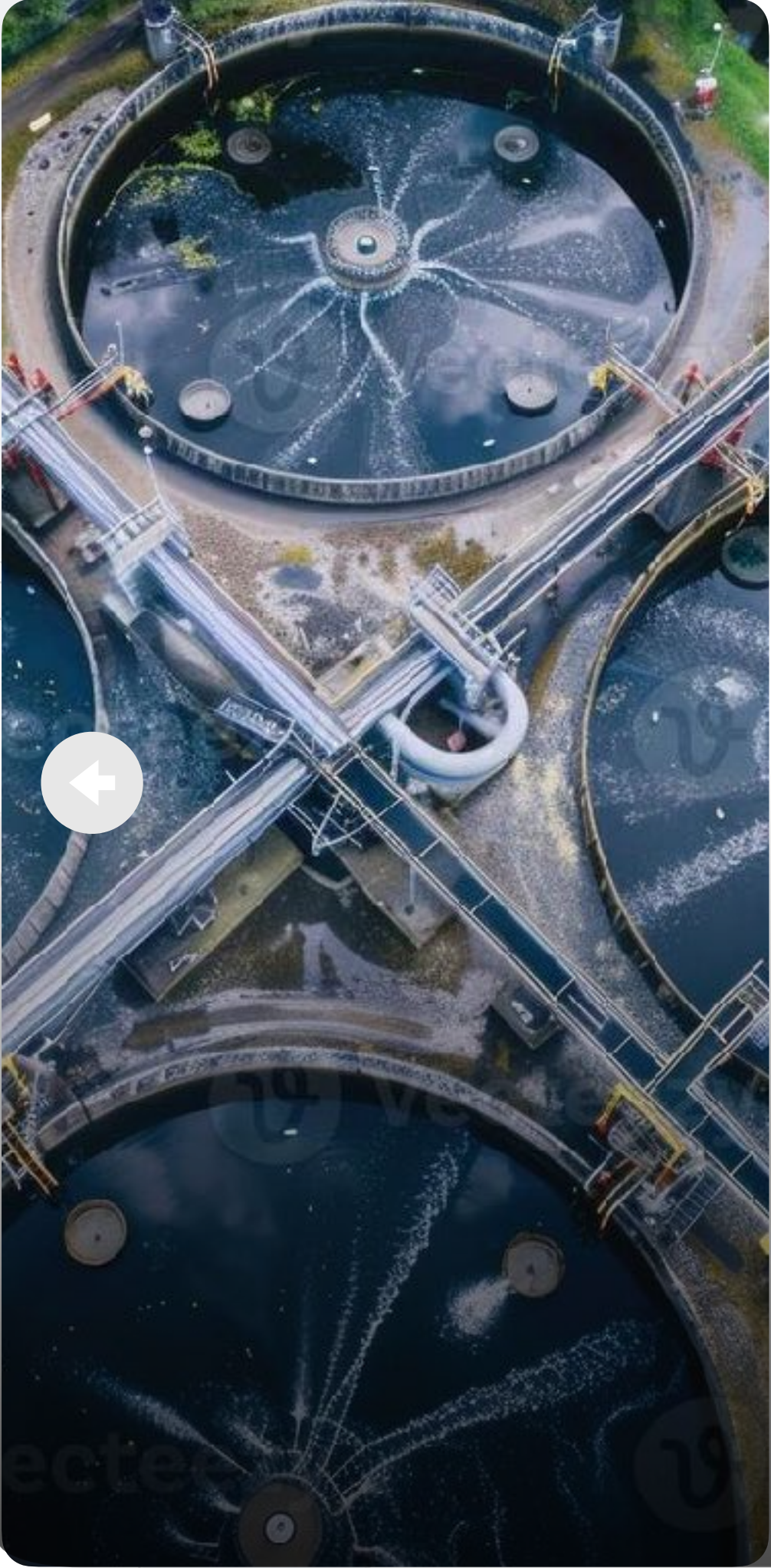
## ZJ Series Structure and Material

Item	Name	Material	National Standard	UK Standard	US Standard	German Standard
1	Sealing Ring			Nitrile Rubber		
2	Gearcase	Cast iron	QT400-18	Cr.370-17	60-40-18	GGG40
3	Worm	Steel	40Cr	530A40	5140	38Cr4
4			Tapered Roller Bearing			
5	Flange	Cast Iron	QT400-18	Cr.370-17	60-40-18	GGG40
6	Gearcase	Cast Iron	QT400-18	Cr.370-17	60-40-18	GGG40
7	Input Flange	Cast Iron	QT400-18	Cr.370-17	60-40-18	GGG40
8	Gear	Steel	45	060A42	1045	C45
9	Input Shaft	Steel	40Cr	530A40	5140	38Cr4
10	Base	Cast iron	QT400-18	Cr.370-17	60-40-18	GGG40
11	WormGear	Cast iron	QT400-18	Cr.370-17	60-40-18	GGG40
12	Drive unit	Steel	45	060A42	1045	C45
13	Drive Screw	Steel	45	060A42	1045	C45
14	Indication Plate	Steel	Q235-A	-	A283GRC	RSt37-2
15	Stop Screw	Steel	45	060A42	1045	C45
16				Washer		



# Engineered to Replace. Built to Outperform

Oil & Gas | Power | Port & Terminal | Water Treatment | Smelting & Building Materials | General Industry



## Partners Project Cases

[More Cases](#)

Trusted across the world's most demanding industries





Project Country : Russia  
 Project Owner : Gazprom (PAO Gazprom)  
 Product(s) Used : Electric Actuators (AVA/AVAT series)  
 Quantity Used : 172 Units (Highest volume in 2022)

### Industry Highlights :

- **Entry into High-Barrier Market:** Gazprom has some of the world's most stringent technical entry barriers. Being selected for their pipeline projects proves that GREATORK meets the rigorous Russian GOST standards and the specific safety requirements of the global oil and gas elite.
- **Extreme Low-Temperature Resilience:** Russian energy infrastructure often operates in sub-zero Arctic and Siberian conditions. GREATORK actuators are designed with specialized low-temperature seals and heating elements to ensure reliable operation at temperatures as low as -50°C.
- **Critical Pipeline Safety:** In high-pressure natural gas transmission, any actuator failure can lead to severe consequences. Our products provide the rapid, fail-safe response necessary to maintain the integrity of long-distance energy corridors.

### Solutions :

- **Explosion-Proof & Flame-Proof (Ex db II CT4 Gb):** Certified for hazardous areas where explosive gases are present, ensuring the highest level of safety for gas compression and valve stations.
- **Non-Intrusive Infrared Setup:** Allows for commissioning and diagnostics without opening the enclosure, which is critical for preventing internal condensation and maintaining the hermetic seal in harsh Russian winters.
- **High-Precision Absolute Encoder:** Provides **0.5% measurement accuracy** without the need for battery backup, ensuring that even after a power outage in remote Siberian regions, the valve position is accurately remembered.





Project Country : China & Russia  
 Project Owner : PipeChina  
 Product(s) Used : Electric Actuators (AVA/AVAT series)  
 Quantity Used : 105 Units

### Industry Highlights :

- **Strategic Energy Corridor:** As one of the world's longest and most significant energy pipelines, the East Route requires the highest level of reliability. GREATORK's 105 units support the automated flow control across diverse terrains, ensuring a steady supply of natural gas between Russia and China.
- **Unmatched Technical Standards:** This project demands compliance with both international and national petroleum standards. GREATORK actuators were selected for their ability to provide precise, fail-safe operation in the high-pressure environments characteristic of major transmission pipelines.
- **Harsh Terrain & Remote Control:** Deployed in remote regions where accessibility for maintenance is limited, our actuators utilize advanced fieldbus communication and self-diagnostic features to allow for reliable remote monitoring and control from centralized dispatch centers.

### Solutions:

- **Advanced Fieldbus Communication (Modbus/Profibus):** Integrated with the pipeline's SCADA system, these actuators enable real-time data acquisition and remote diagnostic capabilities, essential for managing a cross-border network.
- **High-Definition OLED Display & Data Logging:** Features clear status visibility and historical data storage (over 1 million data points), allowing for predictive maintenance and detailed analysis of valve performance without site visits.
- **Robust Non-Intrusive Design:** Infrared setting technology ensures that the flame-proof enclosure remains sealed during setup, preventing any risk of ignition in the high-pressure gas environment and protecting internal electronics from environmental degradation.





Project Country : China- & Russia

Project Owner :

PipeChina (National Oil and Gas Pipeline Network Group)

Product(s) Used : Electro-Hydraulic Actuator | Gas-over-oil (GOA) | Electro Hydraulic Actuator

### Industry Highlights :

- **Extreme Scale:** The China-Russia Eastern Line spans **5,111 km** within China, passing through 9 provinces. Line 4 (Turpan-Zhongwei) stretches **1,745 km**.
- **Technical Benchmarking:** Utilizes **1,422 mm** (Eastern Line) and **1,219 mm** (Line 4) ultra-large diameters with X80M high-grade steel and **12 MPa** high-pressure ratings.
- **Extreme Environment:** Equipment must operate flawlessly in extreme cold reaching **-46°C** (Eastern Line) and harsh desert/mountainous terrains.
- **Localization Milestone:** GREATORK serves as a core supplier for the localization of critical high-end actuation equipment for China's national energy pulse.

### Solutions:

- **Extreme Temperature Resistance:** Customized seals and hydraulic fluids enabling stable operation from **-46°C** to **-60°C**.
- **Fail-Safe Reliability:** For Line 4, GOA units were deployed at 18 valve stations to ensure emergency shutdown (ESD) capabilities using the pipeline's own gas pressure as the power source.
- **Smart Integration:** Electric actuators feature non-intrusive infrared setting and OLED displays for real-time diagnostics in remote valve chambers.
- **Full Lifecycle Service:** Provided high-level coordination with various project management divisions to ensure perfect delivery and ongoing maintenance across 44+ valve chambers.





Project Country : Pakistan  
 Project Owner : Uch Power (Private) Ltd  
 Product(s) Used : Electric Actuators (AVA/AVAT series)  
 Quantity Used : 40 Units

### Industry Highlights :

- **Critical Energy Infrastructure:** Uch Power Plant is a strategic asset for Pakistan's national grid. GREATORK provides essential actuation solutions for its combined cycle operations, ensuring high availability and power stability.
- **Harsh Desert Environment Adaptability:** Located in the Dera Murad Jamali region, the plant faces extreme ambient temperatures and dust. Our actuators' **IP68** sealing and robust thermal design are essential for reliable performance in these conditions.
- **High-End Replacement Strategy:** By supplying actuators and critical spares to a plant previously dominated by international giants, GREATORK reinforces its position as a "Complete Replacement" for premium Western brands.

### Solutions:

- **Strategic Spare Parts Support:** Provided customized electrical and mechanical spares to ensure zero-downtime maintenance for the plant's automated valve systems.
- **Non-Intrusive Smart Diagnostics:** The actuators feature infrared setting and OLED displays, allowing engineers to check status and torque history without opening covers, preventing dust ingress into the electronics.
- **Absolute Encoder Precision:** Ensures 0.5% measurement accuracy for critical steam and water cycle control, with valve position memory retained even during sudden power fluctuations.



UCH Power (Private) Limited





Project Country : India  
Project Owner : Vedanta Group Company / SEPCOIII Electric Power Construction Corporation  
Product(s) Used : Electric Actuators (AVA/AVAT series)  
Quantity Used : 131 Units

### Industry Highlights :

- **Massive Scale Integration:** The JHARSUGUDA project is a giant power complex featuring nine 135MW units. GREATORK's supply of 131 units highlights our capacity to manage complex, large-scale simultaneous deployments across multiple power generation blocks.
- **Strategic Support for Global EPCs:** Being selected by SEPCOIII for their critical Indian projects proves that GREATORK is a Tier-1 actuator supplier capable of meeting the rigorous quality, documentation, and international standard requirements of world-class engineering firms.
- **High-Efficiency Industrial Power:** As a Captive Power Plant (CPP) supporting one of the world's largest aluminum smelters (Vedanta), the reliability of GREATORK actuators is essential for ensuring an uninterrupted power supply to critical industrial production lines.

### Solutions:

- **Precision Measurement in High-Heat Zones:** Utilizing absolute encoders with **0.5% measurement accuracy**, our actuators ensure precise valve control in the plant's steam and water cycles, even in the intense heat characteristic of Indian industrial zones.
- **Non-Intrusive Smart Setup:** The infrared setting technology allows engineers to perform commissioning without opening the electrical cover, protecting the sensitive electronic control units from the pervasive coal dust and fly ash found in thermal plants.
- **Advanced Protection for Unstable Grids:** Features built-in motor overheating, phase loss, and overcurrent protection, which are vital for maintaining equipment integrity in regions where power grid fluctuations are common.





Project Country : China  
 Project Owner : Liaoning Port Group  
 Product(s) Used : Electric Actuators (AVA/AVAT series)  
 Quantity Used : 92 Units

### Industry Highlights :

- **Corrosive Marine Environment:** Yingkou Port is located on the Liaodong Bay. The actuators are exposed to high salinity, sea fog, and moisture. GREATORK's **IP68** double-sealing and specialized marine-grade anti-corrosion coating ensure the internal electronic components are fully protected from salt spray corrosion.
- **Oil & Chemical Safety Standards:** As the terminal handles volatile oil and chemical products, all actuators are required to meet the highest explosion-proof standards (**Ex db II CT4 Gb**). Our products ensure zero-spark operation in hazardous zones.
- **Winter Low-Temperature Resilience:** Northeast China experiences extreme cold in winter. GREATORK actuators are engineered to operate reliably at temperatures as low as **-30°C to -40°C** (with custom options down to -60°C), ensuring the port's energy logistics remain uninterrupted during the freezing months.

### Solutions:

- **Non-Intrusive Infrared Setting:** Maintenance can be performed via an infrared setter without opening any electrical covers, which is vital for maintaining the equipment's seal in the humid, salty air of the port.
- **Precise Absolute Encoder:** Provides 0.5% accuracy for valve position monitoring. This high precision is essential for the automated loading and unloading processes, preventing overfills or leaks during cargo transfer.





Project Country : Thailand

Project Owner : Metropolitan Waterworks Authority

(MWA) Product(s) Used : Electric Actuators (AVA/AVAT series)

Quantity Used : 224 Units

### Industry Highlights :

- **High-Volume Municipal Deployment:** Serving a national-level water authority like Thailand's MWA requires meeting strict public utility standards. Deploying 224 units in a single project framework demonstrates GREATORK's capacity for large-scale municipal automation.
- **Crucial Urban Water Stability:** As the primary water provider for Bangkok's millions of residents, the MWA demands zero-failure performance. GREATORK actuators ensure the precise regulation of flow and pressure, preventing water hammers and ensuring stable water supply 24/7.
- **Tropical Environment Resilience:** Bangkok's humid and high-temperature climate poses challenges to electronic equipment. Our actuators' **IP68** sealing and non-intrusive design are essential for maintaining long-term integrity in damp water plant environments.

### Solutions:

- **IP68 Waterproofing & Anti-Condensation:** Designed to thrive in high-humidity pump rooms and valve pits, ensuring that moisture and condensation do not enter the electrical compartment, which is critical for urban water safety.
- **Absolute Encoder Precision:** Provides **0.5% measurement accuracy**, allowing MWA engineers to monitor and control valve positions remotely via the central control room with high confidence and precision.
- **Non-Intrusive Infrared Commissioning:** Allows for rapid parameter setting and diagnostics without opening the actuator cover, significantly reducing maintenance time and preventing environmental contaminants from affecting the electronics.





### Industry Highlights :

- **Strategic African Infrastructure:** South Africa is a key market for water scarcity management. GREATORK's participation in these projects highlights our ability to provide robust automation solutions for essential water delivery systems in the African region.
- **Adaptability to Remote Locations:** Many water facilities in South Africa are situated in remote areas with limited technical support. The self-diagnostic and high-reliability features of GREATORK actuators ensure long-term operation with minimal on-site intervention.
- **Resilience Against Power Fluctuations:** In regions where power grid stability can be an issue, our actuators' built-in protection (phase loss, motor overheating) and non-battery absolute encoders ensure that valve positions are accurately maintained and monitored.

### Solutions:

- **IP68 Protection for All-Weather Operation:** The highest grade of waterproof and dustproof performance ensures the actuators operate reliably in both underground pits and outdoor exposed locations common in South African water networks.
- **Non-Intrusive Setting for Easy Maintenance:** Parameters are set via an infrared setter without opening the electrical cover, which is critical for protecting sensitive internal electronics from dust and moisture in the field.
- **Precise Flow Control (0.5% Precision):** Using absolute encoders to provide high-accuracy feedback, ensuring the efficient distribution and pressure management required for large-scale water networks.

Project Country : South Africa  
Project Owner : Various Municipal Water Boards / DEMCA (Pty) Ltd  
Product(s) Used : GREATORK Intelligent Electric Actuators  
Quantity Used : 71 Units





Project Country : Malaysia  
 Project Owner : Dostek Engineering Sdn Bhd  
 Product(s) Used : GREATORK Intelligent Electric Actuators  
 Quantity Used : 400 Units

### Industry Highlights :

- **Broad Regional Impact:** Through Dostek, GREATORK actuators have been deployed in numerous water treatment plants across **Penang, Melaka, and Sarawak**. This widespread application reinforces our brand's dominant position in both Peninsular and East Malaysia.
- **Tropical Humidity & Flood Protection:** Malaysia's equatorial climate requires equipment with superior sealing. Our actuators' **IP68** protection (submersible up to 7 meters for 72 hours) is a critical feature for water plants often located in low-lying, flood-prone areas.
- **Standardized Automation Solution:** Dostek utilizes GREATORK as a standardized actuation solution for their turnkey water projects, highlighting the ease of integration and the high compatibility of our products with diverse international valve brands.

### Solutions:

- **Corrosion-Resistant Housing:** Features high-grade powder coating and aluminum alloy housing, providing excellent resistance to the chemical fumes (such as chlorine) commonly found in water disinfection areas.
- **Absolute Encoder Reliability:** The non-battery absolute encoder ensures that valve position data is never lost, even during the frequent tropical thunderstorms and subsequent power outages common in the region.
- **Widespread Local Application through Partnership:** Through the technical expertise and service network of **Dostek**, GREATORK has successfully permeated numerous landmark projects across Malaysia, including:  
 Sungai Pinang WTP (Penang)  
 Long Lama WTP (Sarawak)  
 Spg Bekoh Pumping Station (Melaka)  
 Selanda Booster Station (Melaka)



**Dostek Engineering Sdn. Bhd.**  
 (662419-H)





Project Country : China  
 Project Owner : Baowu Steel Group (Baosteel)  
 Product(s) Used : Electric Actuators (AVA/AVAT series)  
 Quantity Used : 420 Units

### Industry Highlights :

- **Top-Tier Global Endorsement:** Baosteel is the benchmark for the global steel industry. Being integrated into their production lines—which require extremely high stability and precision—serves as a premier technical endorsement, proving that GREATORK products can **completely replace** premium Western brands in high-end metallurgical applications..
- **Smart Manufacturing Integration:** Baosteel leads the "Smart Steel" movement. GREATORK actuators' advanced fieldbus communication and diagnostic capabilities allow for seamless integration into their highly centralized control systems, supporting predictive maintenance and reducing unexpected downtime.
- **High-Temperature & Dust Resistance:** The steel-making process involves intense radiant heat and conductive dust. Our actuators' robust aluminum/cast iron housing and **IP68** double-sealing ensure that internal electronics remain protected even in the harshest areas of the blast furnace or continuous casting sections.

### Solutions:

- **Advanced Communication (Profibus/Modbus):** Fully compatible with the complex automation networks used in Baosteel's modern plants, providing high-speed data transmission for real-time valve status monitoring.
- **Absolute Encoder with 0.5% Precision:** Provides pinpoint accuracy for critical flow control in water treatment and cooling systems, essential for maintaining the steel's metallurgical properties during the cooling phase.
- **Non-Intrusive Setting via OLED Interface:** Allows engineers to adjust limits and torque settings via an infrared tool without opening the electrical box, preventing conductive iron dust from entering the control compartment—a common cause of failure in older systems.





Project Country : Indonesia  
 Project Owner : OKI Pulp & Paper Mills (Asia Pulp & Paper - APP Group)  
 Product(s) Used : Electric Actuators (AVA/AVAT series)  
 Quantity Used : 57 Units

### Industry Highlights :

- **World-Class Scale and Standards:** OKI Pulp & Paper is a flagship project in the global paper industry. Being integrated into such a large-scale facility proves that GREATORK actuators can meet the stringent requirements of international industrial giants for high-capacity, automated production.
- **Corrosive & Humid Environment Resilience:** Pulp and paper manufacturing involves high humidity and exposure to chemicals (such as bleaching agents). GREATORK actuators, with their **IP68** double-sealed enclosure and high-grade anti-corrosion coating, are designed to survive and thrive in these aggressive environments.
- **Complex Flow Control:** The paper-making process requires precise regulation of pulp consistency, chemical dosing, and water treatment. These 57 units provide the necessary accuracy and rapid response to ensure consistent product quality and process efficiency.

### Solutions:

- **Absolute Encoder (0.5% Accuracy):** Provides high-precision valve position measurement without needing battery backup. This is vital for the continuous 24/7 production cycle in paper mills, where even minor positioning errors can affect the final paper grade.
- **Non-Intrusive Setting via Infrared Tool:** Allows parameter adjustment without opening the electrical cover, protecting the sensitive internal electronics from the highly humid and potentially corrosive atmosphere of the mill.
- **Real-Time Monitoring & Protection:** Includes protection functions such as motor overheating, valve jamming, and torque protection. These features, combined with the clear OLED display, allow for rapid troubleshooting and minimize costly production downtime.





Project Country : Ecuador  
Project Owner : HIVIMAR S.A.  
Product(s) Used : GREATORK Intelligent Electric Actuators  
Quantity Used : 152 Units

### Industry Highlights :

- **Entry into the Latin American Market:** This collaboration with HIVIMAR marks GREATORK's successful penetration into the high-standard industrial market of Ecuador, representing our expanding footprint in South America
- **Strategic Brand Replacement:** HIVIMAR typically partners with top-tier global brands. GREATORK being selected for their industrial projects underscores our product's positioning as a "Complete Replacement" for European and American brands.
- **High Reliability in Complex Terrains:** Ecuador's diverse geography requires equipment that can handle varying altitudes and humidity levels, where GREATORK's IP68 protection and robust design excel.

### Solutions:

- **Non-Intrusive Smart Configuration:** Parameters are set via infrared setters, ensuring the internal electronics remain sealed and protected from local environmental contaminants.
- **Precision Valve Control:** Using absolute encoders, the actuators provide 0.5% measurement accuracy, which is essential for the high-efficiency regulation required by HIVIMAR's industrial clients.
- **Intelligent Data Monitoring:** The high-definition OLED display and history logging allow onsite engineers to monitor torque and operating status in real-time, facilitating proactive maintenance.




# All Project Cases


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# GP

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