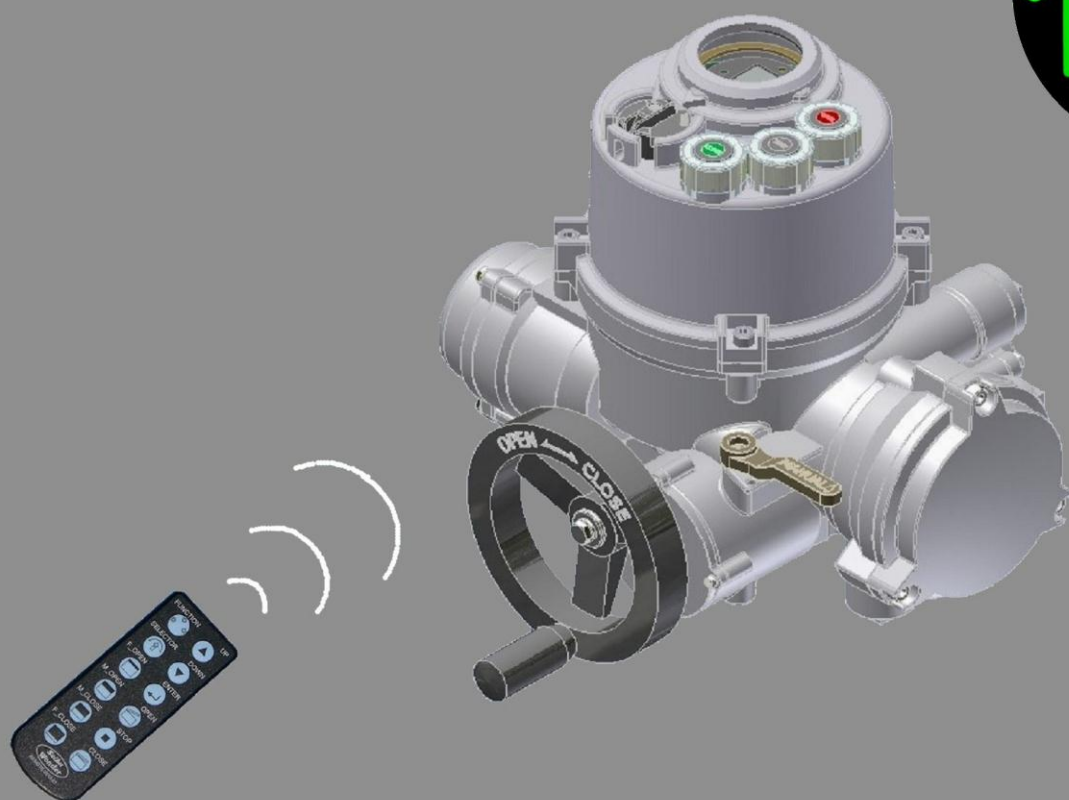


# TKe SERIES

QUARTER TURN ACTUATOR

Smart Type



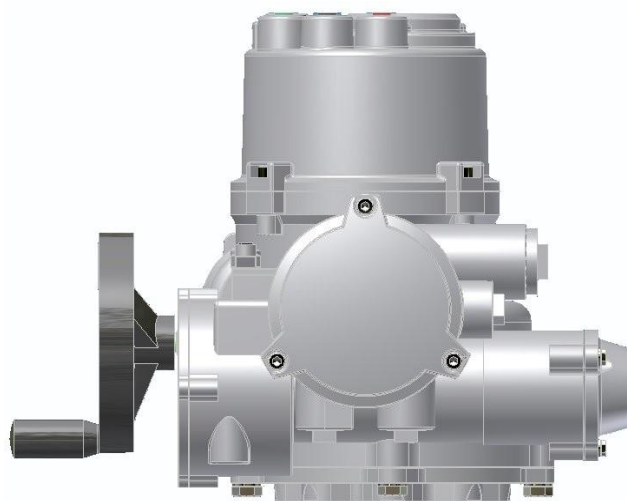
**WONDER CHANCE MACHINERY  
INDUSTRIAL CO.,LTD.**

# Tke Series

Smart type

Quarter turn actuator

**TK Series quarter turn actuator is a new products, Result accumulated technology over 20 years of experience in the valve actuation. Offering customers the reliable and economical product quality.**



# Feature

1. **Light, Small** compact and corrosion resistant Aluminum ally enclosure.
2. **Double sealed** with O Ring to ensure IP68, 6 meter 48 hours.
3. **Explosion proof** Exd II B+H2 T4
4. **Independent hand wheel** shaft all side mounted.
5. **Mechanically and electrically interlocked Reversing Contactor or 3phase "SSR"** for high speed ON/OFF control to enhance the motor starting.
6. **Infrared remote control or setting** by 12 key infrared remote control unit easy ,quick and safe .
7. **Multi language message display** –Chinese ,English , Japanese.....etc.
8. **Profibus DP or Modbus RTU** 2-wire communication protocols.

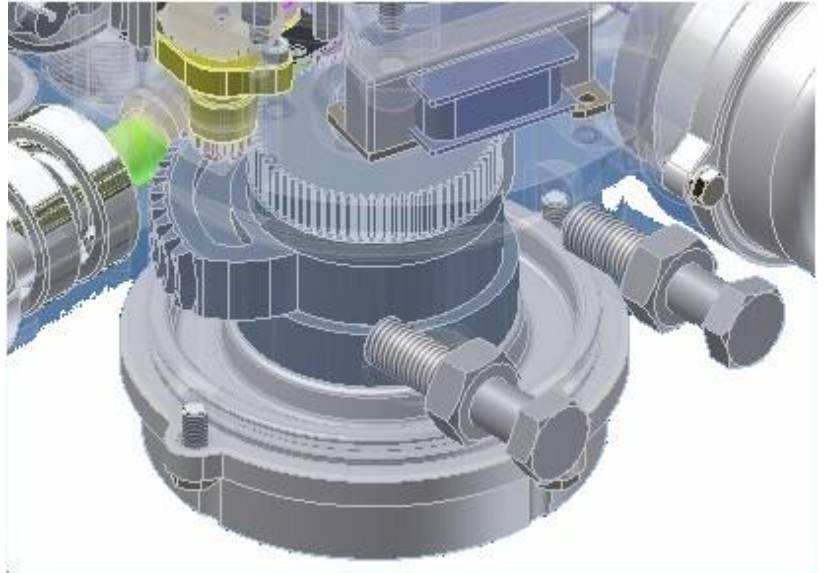


**Infrared  
Remote control**



**Multi language  
message display**

# TKe Series



## Construction

**1. Motor and Power Transmission System:** The low-inertial/high-torque motor is used to achieve the maximum torque after Hand wheel thus, exhibiting very little overrun after being issued a stop command. the Local Operation Switch can be used to change the opening/closing speed without disassembly or replacement of parts. Because the Thermostat mounted on the ambient temperature will not affect the Motor Coil and the motor temperature can be directly detected, it can easily demonstrate the designed function effectively until reaching the upper temperature limit. Further, a jammed valve body can also be pulled out easily using the Hammer Blow effect during start up ◦

**2. Gear reduction** Double gear reduction device. Easy to maintain .The major gears has been heat treatment . Power driven device assembled by worm gear set and worm gear ◦

**3. Terminal Unit:** An independently sealed construction for the Terminal Board is provided. Even if the Terminal Box cover is opened for wire connection, the internal electronic parts will not be exposed to the external atmosphere (Double Sealed). with Fuse holder & spare fuse holder easy to maintain ◦

Control : 30 Points with M4 screw .rating AC250V 5A ◦

Power : 3 Points with M4 screw. rating AC660V 30A ◦

Earth : 1Point with M4 screw ◦

**4. Handwheel** The side-mounted hand wheel is for TK series actuator to allow easy manual operation ◦

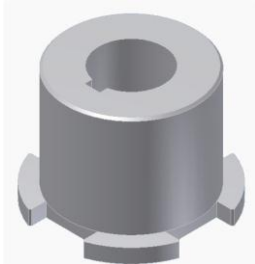
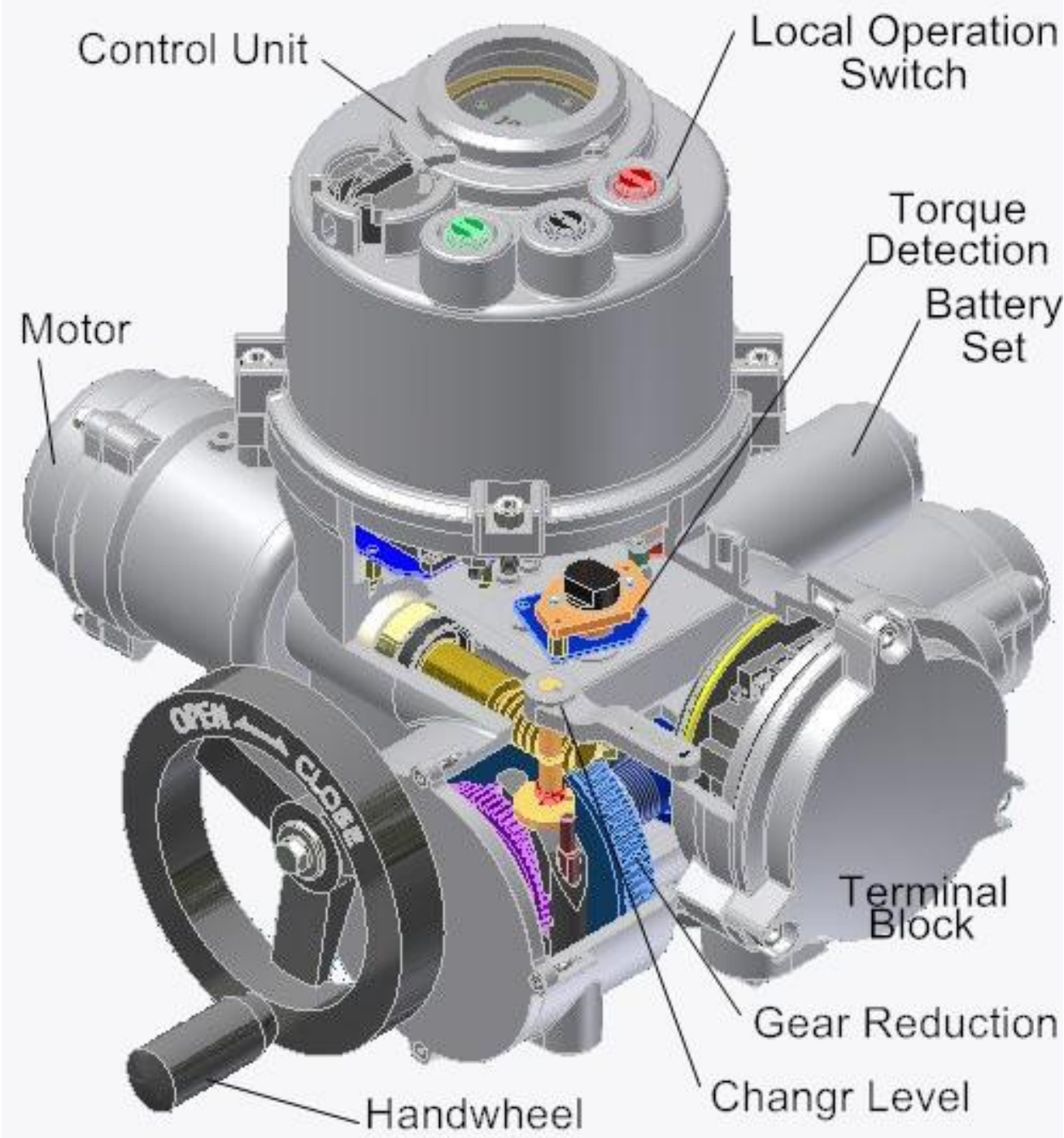
**5. Handwheel shaft** engaged with the worm through an intermediate spur gear to prevent the manual drive parts from the changes may occur during manual operation ◦

**6. Change level** operation easily shift the power operation to manual operation even when the motor is running break between first gear reduction and second worm reduction transmitting ◦

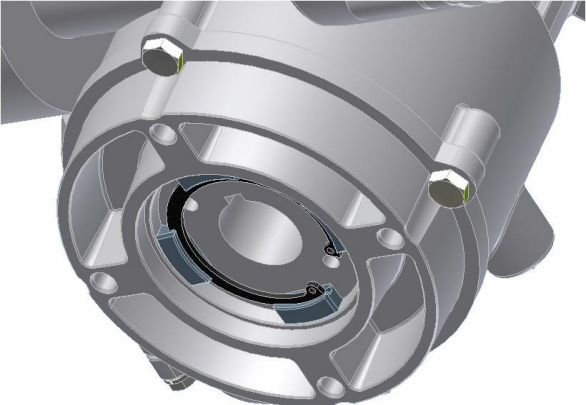
**7. Chargeable battery Set**

To memorize actuator current position and message LCD display when power is failure ◦

# Construction



**TK Stem Drive Bush**



## SPECIFICATION

The series is an integral type of Actuator in which a circuit is provided to carry out local and remote electrical operation; it also includes an electric motor, reducing gear, reversible magnet contactor, electricity position limit and torque limit as well as monitoring function in IP68 IEC-529(6m deep for 48 hours) Double-sealed waterproofing container.

All position limit, torque limits and connections can be set from the Local Operation Switch without opening the Outer Cover. Please refer to the following instructions for details on standard or optional specifications. Should you need optional specifications, please inform us when inquiring about the price.

## Standard

**Power Source:** single phase 110/220V or 3Phase 200, 220, 380, 400, 440, 460,480, ◦ 60Hz(50Hz)

**Motor:** F Class Insulation, and 15 minutes rating and workable  $\pm 10\%$  of the rated power source with High Torque/Low Inertial Motor is used. Thoro encapsulation non-venting construct (TENV). Over 60 times per hour inch operation at the rated value. The Thermostat mounted on the ambient temperature will not affect the Motor Coil and the motor temperature can be directly detected, it can easily demonstrate the designed function effectively until reaching the upper temperature limit.

**Enclosures:**

Water proof : IP68

**Manual Operation:**Auto-return is standard. Power to manual operation by change lever shifting ◦

**Signal output:** with 6 Relays (Max expand to 8 Relays ---- Option) Full Open/Close Position signal output with each 1a1b Contactor Output. Rating AC250V 5A/DC125V 0.4A ◦

Alarm (Fault) signal output with 1a1b contactor output .Rating AC250V 5A/DC125V 0.4A ◦

(Power Fault, Torque Fault , Motor Over Heat....etc.)

**Operation Temperature:** -25°~+80° Other temperature refer to us ◦

**Space Heater:** Embedded inside the circuit PCB fix up electrical resistance replaced emission of heat (about 5~40W) ◦

**LCD Display.**

0~100% continue LCD Display ◦ For status display and setup. Multi language message display – Chinese ,English , Japanese.....etc.

**Transmitter.**

Signal output DC 4~20mA Accuracy  $\pm 0.5\%$  FS. Adjust range: Zero:  $\pm 20\%$ ,Span:  $\pm 20\%$  ◦

**Analogous Percentage Control**

The Percentage Control is used to adjust the open state of the Valve Door through analog current or voltage signal.

Signal Type: DC4-20mA, DC1-5V.

**Conduit entry:** 3-1"NPT for wiring. other required refer to us ◦

**Standard Coat:** Vinyl resin wash primer plus polyurethane resin paint for final coat ◦

**Vibration:** Max applicable levels :In the frequency range of 2mm 13.2~100Hz 0.7G 90 minutes ◦

Shock:30G/11ms X.Y.Z with each 3 times ◦

**Design Life:** Under designed operating conditions (usage conditions: Maximum set torque at the travel end and 70% of allowable torque at the middle position), the service life of the ON-OFF specification is 10,000 times .

## Option

- 1.Power Source:** Single phase ◦
- 2.Motor:**Class H insulation .Option rating 30minutes or with brake ◦ 8 pole motor ◦
- 3.Signal input:** Input signal standard for NPN , Option signal input PNP can be select.
- 4.Signal output:** Standard with 6 Relays Can support addition to Max 8 Relays for specifying ◦ Example: Middle position, open torque and close torque contact point independence, etc.... Contactor Output. Rating AC250V 5A DC125V 0.4A ◦
- 5. SSR Noncontactor reverse able switch motor drive.** For high speed ON-OFF motor control 60 times per min ◦
- 6.Infrared remote control .** Setting by 12 key infrared remote control unit easy ,quick and safe ◦
- 7.Fielbus .** Easy addition of the 2-wire communications network "PROFIBUS-DP" or "MODBUS RTU" for remote control ◦ One set PC (Master) Operation and monitoring of 124 Valve control unit possible ◦
- 8.Self-diagnosis function.** It is possible to control the longevity and the condition of actuator and the valve being managed of various data (torque value, current value of the motor , and operation frequency [opening and closing count of each operation] etc ) ◦
- 9.Explosion proof :**  
[Exd II B+H2 T4]
- 10.Optional Coat.** For the polluted area , extra coat ,on top of the standard coat, may be required refer to us ◦

## DESIGN

- 1.Perfect Protection.** (Water protection /explosion proof) Elimination of water-caused breakdowns through double sealing of terminal section and achieving protection standard IP68 (6 meter 48 Hours) ◦ Protection of the actuator operating in hazardous area through explosion proof feature (Exd II BT-4) ◦
- 2.Easy maintenance.** (Reduction in inspection costs) Reduction of maintenance time through drastic simplicity of structure Eco-design ◦ Improved reliability through reduced numbers of parts ◦
- 3.Immediate operation just by plugging in** ◦ (Built-in control panel is standard) ◦ Superb reliability through all-in-one design ◦ Capable of easy connection to various telecommunication system ◦
- 4.password protect function.** Through built in control panel or optional Remote Control unit finish with setting actuator within data and parameter ◦ settings may be password protect ◦
- 5. Automatic "Phase" Calibration Function.** The automatic phase calibration function can change the orientation of the 3-phase power to prevent valve damage resulting from improper wiring.
- 6. Prevent Phase-failure Operation .**To prevent the motor from overheating, each of the three phases will be monitored at all times. Should a single or multiple phases fail, the Control Unit will stop the operation of the Actuator, This product is also armed with local and remote alarm warning functions.
- 7. Surge absorber join on power circuit PCB.**
- 8. Motor Protection during Valve Jams.** the control unit can detect output shaft if the motor is running but the output shaft is standstill pass through a few second (under 10sec ) ,the control unit automated stop the motor.

### 9. Hold in Water Hammer effect.

If the Valve Door opening and closing time must be extended to prevent a Water Hammer, use an Interrupter Timer (optional). Regardless of the opening and closing direction, it can make the motor run intermittently from any position of the Valve door. As for the operation time and stop time of intermittent valve door, both can be set within 1-99 seconds respectively. Further, the Interrupter Timer can also be controlled locally and remotely.

### 10. Preventing Momentary Reverse.

When the Actuator receives a momentary reverse command, this reverse action can be used to prevent the circuit from generating an impact load to avoid unnecessary friction against the Valve Stem or the Reducer. In addition, this function can also inhibit the Surge produced by the Conductor.

### 11. "ESD" SAFE .

The ESD function can control emergency shutdown/emergency open, and this ESD will be processed before other local or remote signals. In addition, it can also distinguish the Common Line of the ESD signal from that of other control signals.

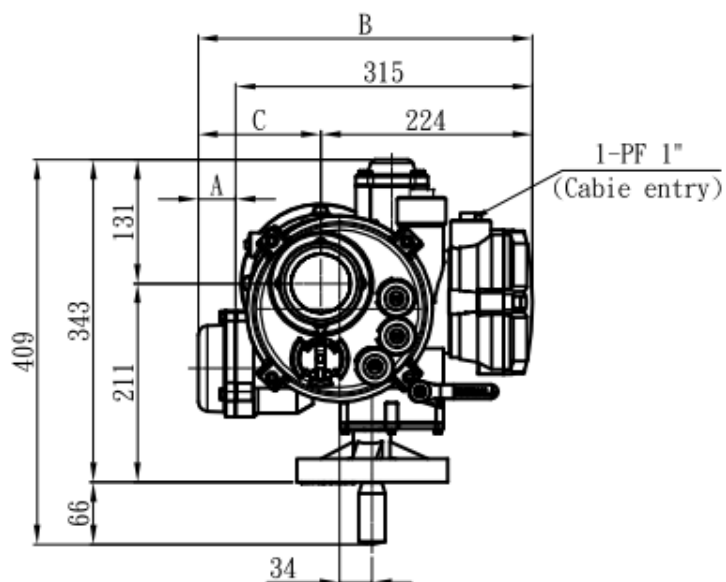
### 9. Muck out Valve Foreign object & Stumbling block remove Function.

At Valve close near the Full Close position, stop the actuator utilize water wallop cleaning the Valve. When the Foreign object get stuck utilize Actuator repetition, open and close operation, exert muck out Valve Foreign object Function.



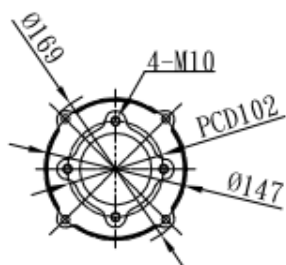
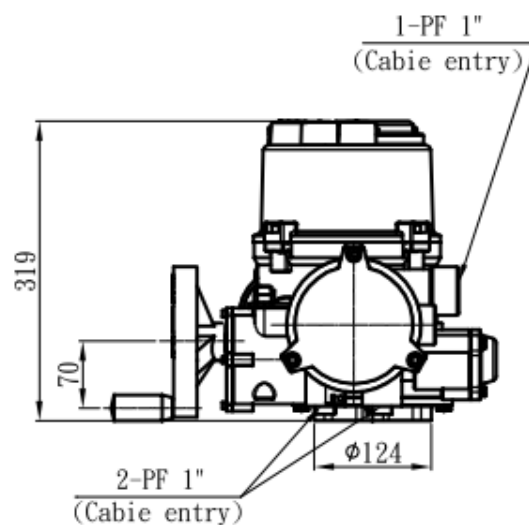
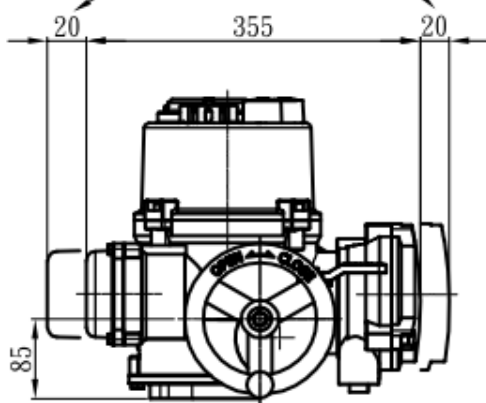


# DIMENTION TKe-040~080



Motor overhaul space

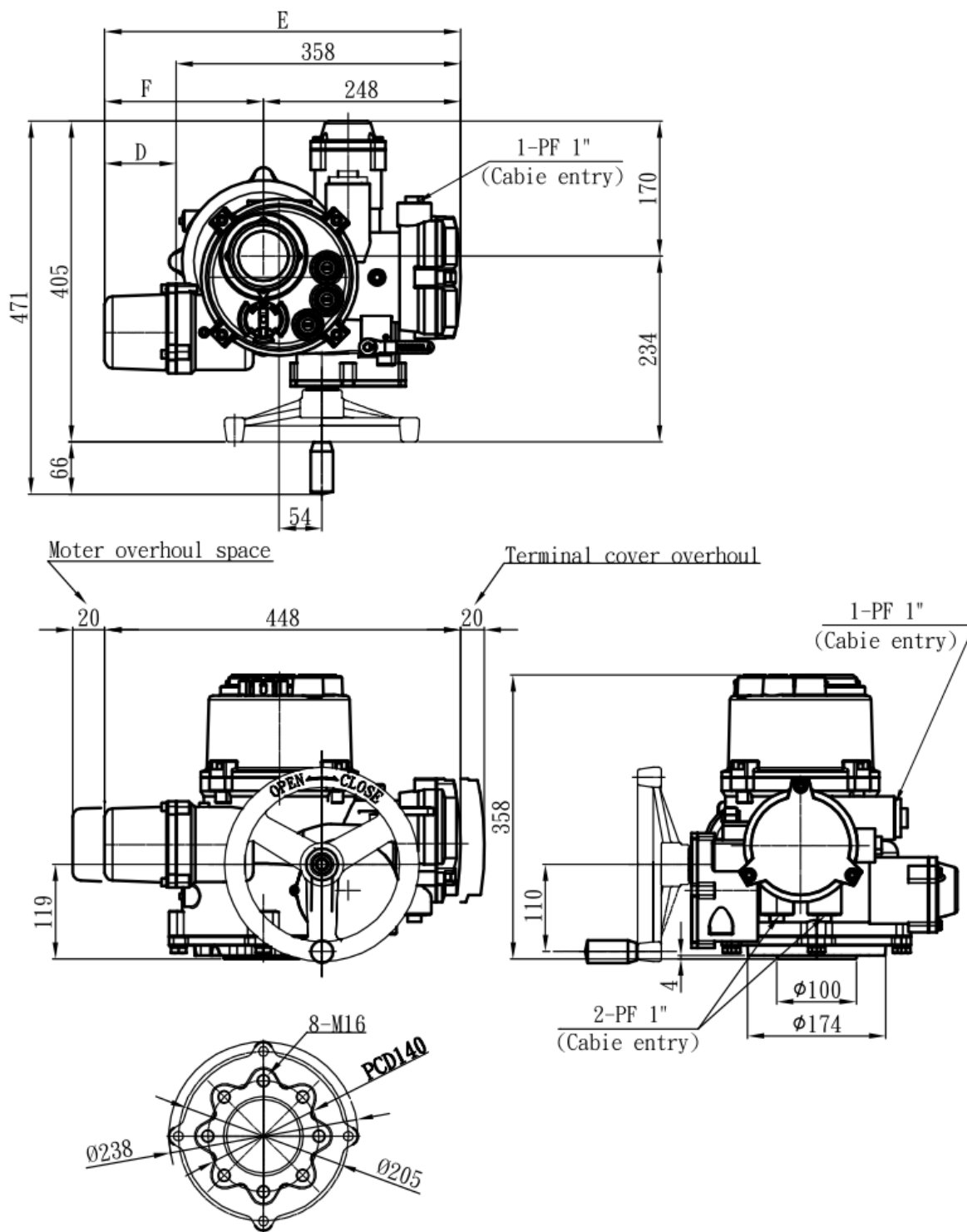
Terminal cover overhaul



**TKe040-080**

Model			A	B	C
TKe-040	60w	4P	40	355	130
		8P	60	375	150
TKe-060	90w	4P	60	375	150
		8P	85	400	175
TKe-080	120w	4P	60	375	150
		8P	85	400	175

# DIMENTION TKe-120~200

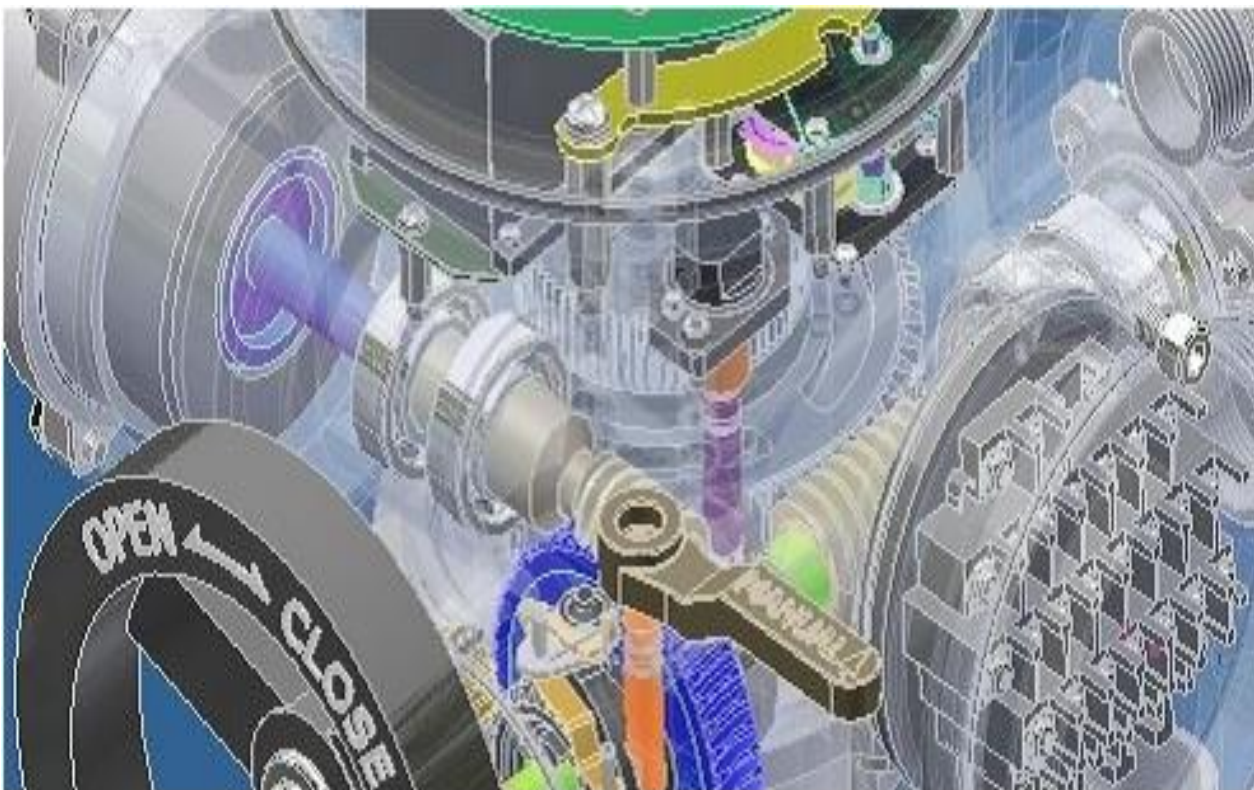


**TKe120-200**

Model		D	E	F	
TKe-120	120w	4P	60	418	170
		8P	85	443	195
TKe-200	200w	4P	85	443	195
		8P	125	483	235

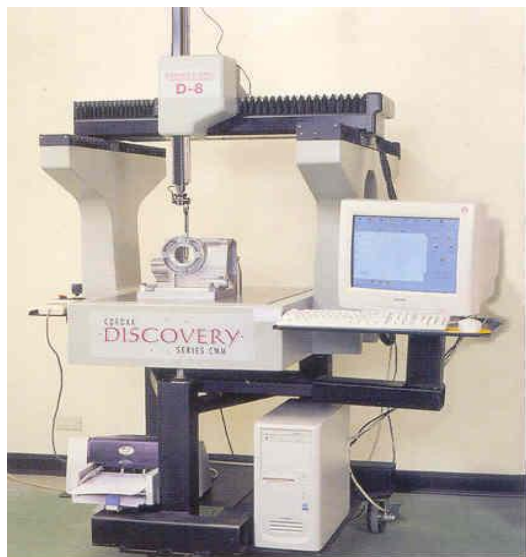
# MECHANICAL DATA

Model	TKe-040	TKe-060	TKe-080	TKe-120	TKe-200
Motor(W)	60	90	120	120	200
Max output Torque (Kg-m)	40	60	80	120	200
Handwheel Diameter (mm)	160	160 / 245	245	245	245
Weight (Kg)	19.5	20	21		
Operating Time 60/50Hz(Option)	26 / 31(46 / 54)			32 / 38(64 / 76)	
Max BoresDiameter (mm)	42			60	
Worm Ratio	1/50 * 1/50			1/72 * 1/50	
Base ISO 5211	F10			F14	
Handwheel turns	26.6			50	
Conduit Entires	3- PF 1"				
Travel Angel	90° ±10° OR 0-110°				




## QUALITY CONTROL

All the process from design through the delivery of actuators, including preinspecting of individual parts or modules, are performed in strict accordance with the Quality Assurance Procedures certified by 2000 years of ISO 9000 and Seibu Electric & Machinery Co.,Ltd technical licensor to Wonder Chance . every actuator is tested finally before delivery and a test certificate is issued. Designed torque values, hand/auto function are checked at the specially developed test console and recorded on the test certificate.



**Certificate of Registration**

 **MOODY**  
INTERNATIONAL

This is to certify that the  
Quality Management System of:

**Wonder Chance Machinery Industrial Co., Ltd.**

No. 16, Lane 822, Kao Shi Road,  
Yangmei,  
Taoyuan,  
Taiwan, R.O.C.

has been assessed and found compliant with the requirements of

**ISO 9001:2008**

Approval is hereby granted for registration providing the  
certification rules and conditions are observed at all times.

**Certification Scope:**

1. Design, Manufacture, Sales of Valves and Actuators;
2. Processing, Manufacture, Sales of Mechanical and Hardware Parts.

Certificate No. 11360 

Original Issue Date: 21st December 2001

Recertification Date: 22nd October 2010

Expiry Date: 21st October 2013

*Iden Wang*  
Authorized Signature

**Moody International Certification Ltd.**  
www.moodyint.com

 **UKAS**  
QUALITY  
MANAGEMENT  
014

The use of the Accreditation Mark indicates accreditation in respect of those activities covered by the Accreditation Certificate 014  
The certificate remains the property of Moody International Certification Limited to whom it must be returned on request.

# PRODUCTS



TME SERIES  
MULTITURN SMART TYPE



TMP SERIES  
PENUMATIC MULTITURN TYPE



TM SERIES  
MULTITURN TYPE



LTJD-W SERIES  
DOUBLE SPINDLE TYPE

**Seibu  
Wonder**

**Wonder Chance Machinery Industrial CO.,LTD.**



Registration No.0110013

NO.16 LANE 822 KAO-SGD ROAD YANGMEI, TADYUAN. TAIWAN R.O.C.

TEL:886-3-4759299 FAX:886-3-4759399

[HTTP://WWW.SEIBU WONDER.COM.TW](http://www.seibu_wonder.com.tw)

E-MAIL:WONDER2K@MS51.HINET.NET