

# NUTORK®

Actuators & Valves



## NTE Series Quarter Turn Electric Actuator



Approved by:

SIL3 Approval

LVD - Low Voltage Directive 2006/95/EC

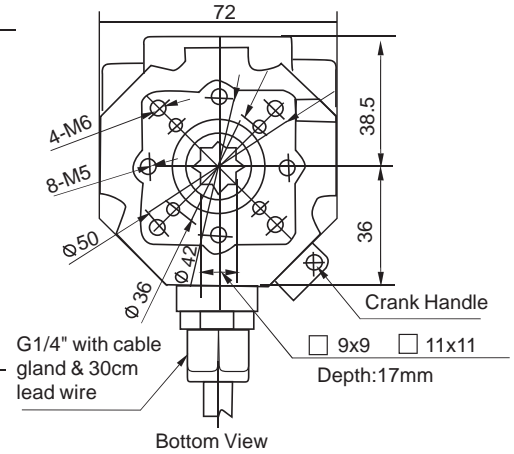
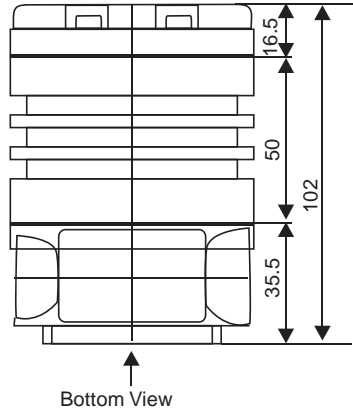
MD - Machinery Directive 2006/42/EC

EMC – Electromagnetic Compatibility Directive 2004/108/EC

## NUTORK CORPORATION

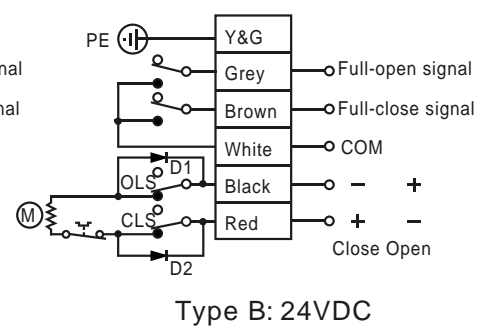
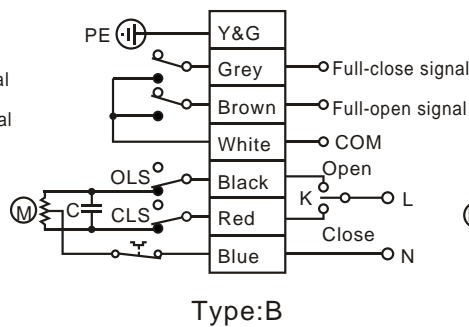
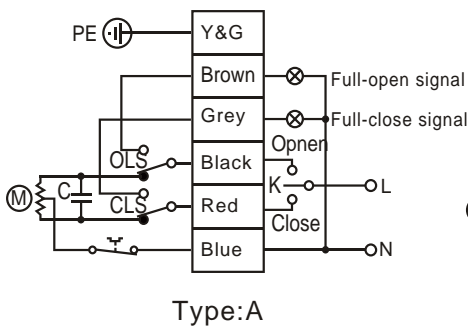


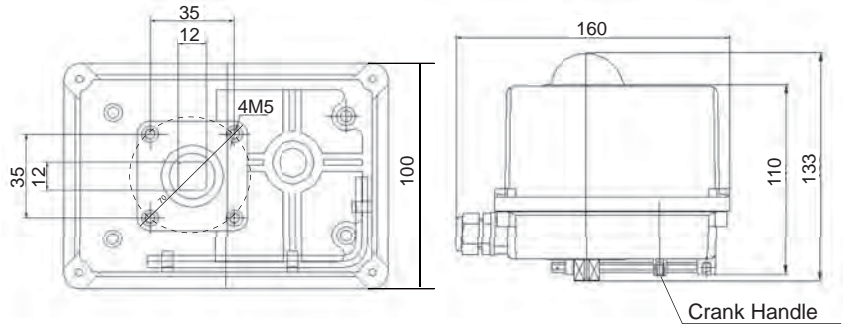
1. Due to characteristics of valve, the electric actuator must be able to provide high start up torque with full load whenever the valve is at open, closed or any other position. NUTORK NTE series electric actuators are designed for such working requirement.
2. Gear driving unit is made of alloy steel with heat treatment featuring high strength, excellent wear resistance and long term fatigue load impact.
3. The crank handle is designed as detachable to minimize the dimension of the actuator.
4. The integral construction of the wormgear and drive shaft provides long term dependable operation with high output torque.
5. The captive cover bolt prevents bolt from dropping when cover is opened.
6. The stainless steel stroke bolt and cam provide 0 - 90° adjustability.
7. The tempered glass visual position indicator provides anti-aging, temperature resistance and anti-deformation.
8. The epoxy encapsulated control servo unit provides heat insulation, moisture and dust proofing, thus suitable for various industrial process requirements.



Model	NTE-02S			
Power	110/220VAC		24VDC	
Output Torque(Nm/in.lbs)	18/160	9/80	18/160	9/80
Operation Speed(sec.)	12	6	12	6
Power Consumption(W)	6		8	
Rated Current(A)	0.28	0.15	1.10	
Insulation Resistance	100MΩ@500VDC		100MΩ@250VDC	
Withstand Voltage	1500VAC@1 Min.		550VAC@1 Min.	
Thermal Protection	standard accessory, built-in, auto-reset type			
Mounting Direction	All directions			
Ambient Temp.	-30°C ~ +60°C			
Valve Connection	ISO5211, □9/11mm x F03/F04/F05			
Dimension(mm)	72(W) x 75(L) x 120(H)			
Enclosure	IP68			
Housing Material	Die-casting aluminum alloy			
Weight(Kg/Lbs)	1.2/2.65			

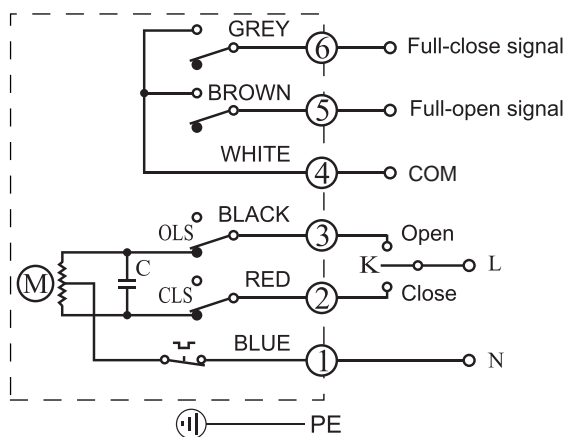
### Wiring Diagram



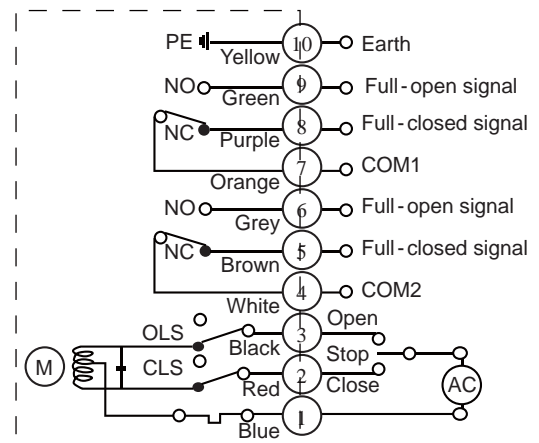


Model	NTE-02L		
Power	24VAC	110VAC	220VAC
Output Torque	25Nm(222in.lbs)		
Operation Speed(sec.)	10 sec.		
Power Consumption(W)	20W	18W	18W
Rated Current(A)	1.1	0.2	0.1
Insulation Resistance	100MΩ@500VDC		
Withstand Voltage	1500VAC @ 1 min		
Thermal Protection	Standard accessory , built-in ,auto-reset type		
Mounting Direction	All Direction		
Ambient Temperature	-30°C ~ +60°C		
Valve Connection	12x12x12mm square drive shaft x F05		
Dimension(LxWxH),mm	160(L)x100(W)x133(H)mm		
Enclosure	IP65		
Housing Material	ABS		
Weight(Kg)	1.4Kg		

### Wiring Diagram



Type: B



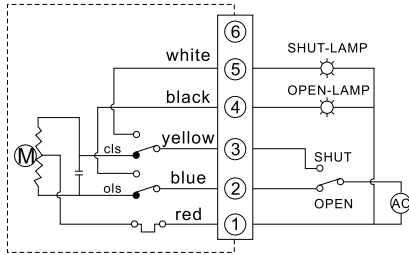
Type: B1

### Technical Data(NTE Series Electric Actuator)

Model	NTE-03	NTE-05	NTE-10	NTE-20	NTE-40	NTE-60	NTE-100	NTE-160	NTE-200	NTE-400	NTE-600	
Output Torque(Nm)	30	15/30/50	50/60/100	80/100/150/200	150/250/300/400	600	300/800/1000	1600	2000	4000	6000	
Operation Speed (Sec.)@0-90°/ 50Hz	20	10/20/30(std.)	15/20/30(std.)	9/15/20/30(std.)	9/15/20/30(std.)	30	15/30/50(std.)	88	100	100	150	
Operation Angel(Max.)	0-360°	0-360°	0-90°	0-90°	0-90°	0-90°	0-90°	0-90°	0-90°	0-90°	0-90°	
Valve Conn./ ISO5211	9/11-F03/F05 or 14-F05/F07		14/17-F05/F07	17/22-F07/F10	17/22/27-F07/F10		22/27 - F10/F12 or 36 - F14/F16			Bare Shaft		
Power (Watts)	DC motor	20	20	40	40	90	90	.....	.....	.....	.....	.....
	AC motor	10	10	23	40	90	90	100	100	100	200	200
Rated Current 50HZ(A)	24VDC	2	2	2.4	8.5	11.5	11.8	11.5	.....	.....	.....	.....
	110VAC	0.48	0.48	0.64	0.9	2	2.06	2.2	2.2	2.2	4.10	4.10
	220VAC	0.24	0.24	0.32	0.48	0.92	0.95	1.20	1.20	1.20	2.10	2.10
	380VAC	0.15	0.15	0.19	0.25	0.45	0.46	0.48	0.48	0.48	0.90	0.90
Weight-(Kg)	2.2	2.2	4	7	7.8	7.8	11.2	11.5	11.8	31	31	
Duty Cycle (ON/OFF)	S2 : 35%,10min. ~ 30min.											
Duty Cycle (Modulating)	S4 : 30~50%, 300~1200 Start/Hour											
Power Supply	1 Phase:110/220VAC±10%@50/60Hz, 3 Phase:380/440VAC±10%@50/60Hz, 12VDC.24VDC/VAC											
Stall Protection	standard accessory , built-in , auto-reset type											
Anti-Vibration	XYZ 10g , 0.2~34Hz , 10 minutes											
Ambient Humidity	90%RH Max.(non-condensing)											
Ambient Temperature	-30°C ~ +60°C											
Enclosure Rating	IP67(standard), IP68(option)											
Mounting Direction	All Directions											
Electrical Conduit	M20x1.5 with cable gland for standard type(2 - M20x1.5 with cable gland for modulating type)											
Manual Operation	Detachable Crank Allen-Key (standard accessory)											
Stopper	In operation : limit switches at full & closed position ; manual operation:mechanical stopper											
Housing Material	Die-casting aluminum alloy											
Various Option	1. Type A standard type											
	2. Type B additional limit switches ( 2xSPST) or Type B1 additional limit switches(2xSPDT)											
	3. Type C potentiometer unit ( 1KΩ or 5KΩ)											
	4. Type D potentiometer unit ( 1KΩ or 5KΩ) with additional limit switches ( 2xSPST)											
	5. Type E modulating controller ( input signal : 4-20mA or 1-5VDC.output signal : 4-20mA)											
	6. Type F current position transmitter(output signal : 4-20mA)											
	7. H : Space heater											
	8. Torque switches(2 units)											
	9. Various mounting brackets											

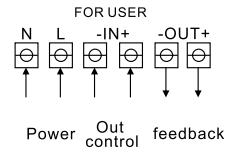
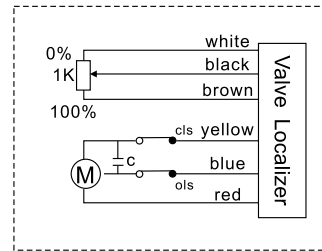
### Type A: Standard Type

Output Signal:  
2xSPST(NO) with  
line power switch



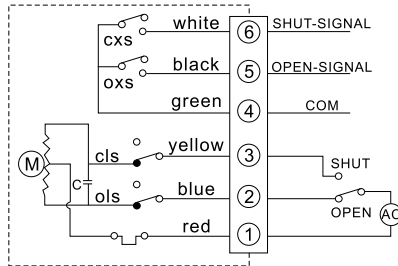
### Type E: Modulating Control

Input Signal:  
4-20mDC or 0-5VDC  
Output Signal:  
4-20mADC



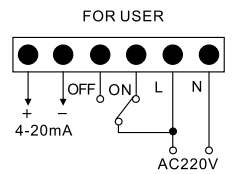
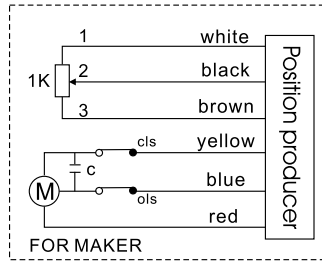
### Type B: 2xSPST(NO)

Output Signal:  
1xSPST(NO)  
micro-switch each at  
open & close position.



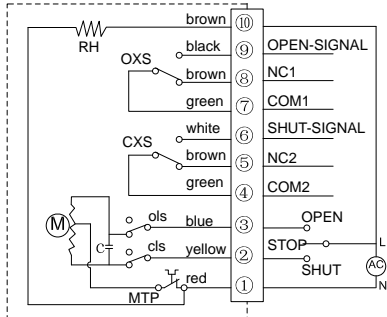
### Type F: R/I Converter

Output Signal:  
4-20mADC



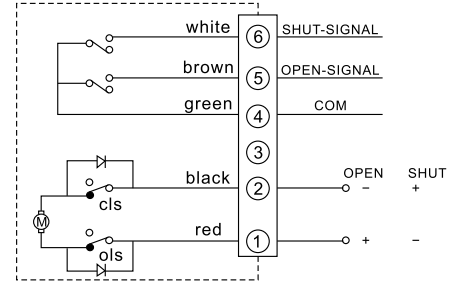
### Type B1: 2xSPDT(NO/NC)

Output Signal:  
1xSPDT(NC/NO)  
micro-switch each at  
open & close position



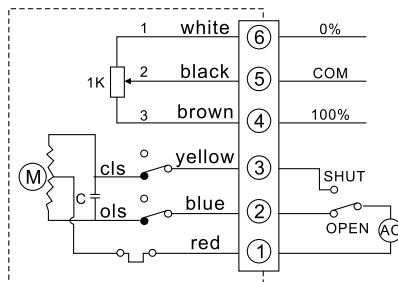
### DC Motor with 2xSPST(NO)

Output Signal:  
1xSPST(NO)  
micro-switch each at  
open & close position.



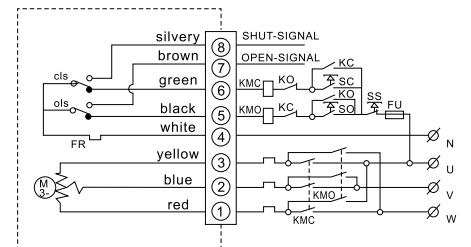
### Type C: Potentiometer

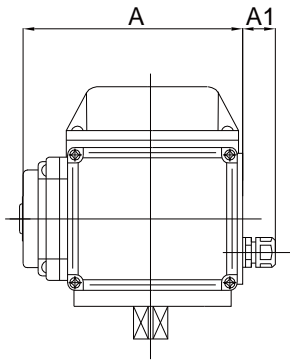
Output Signal:  
0-500Ω or 0-1000Ω



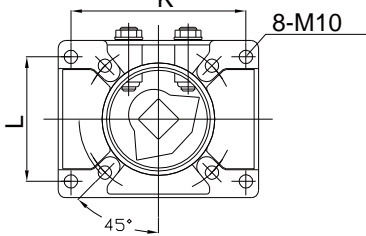
### 3 Phase, 380/415/440VAC Motor with 2xSPST(NO)

Output Signal:  
1xSPST(NO)  
micro-switch each at  
open & close position.

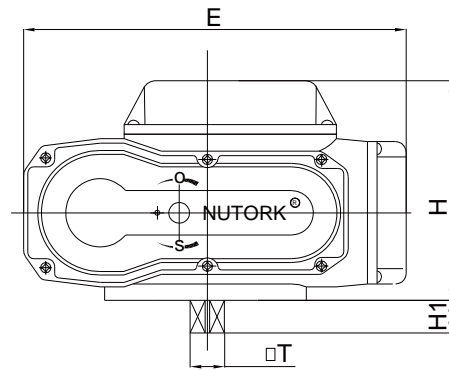




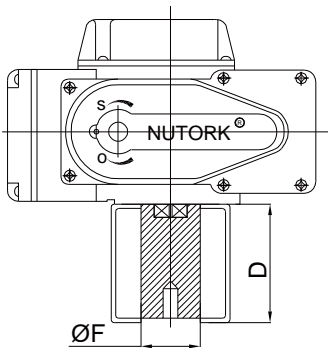
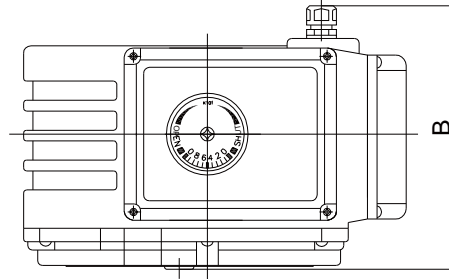
Bare Shaft



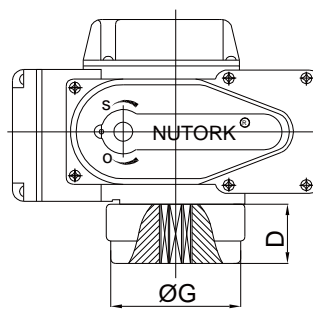
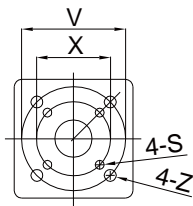
Bare Shaft



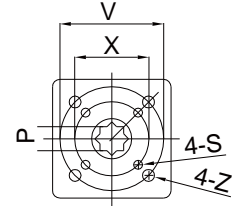
Bare Shaft



Bracket + Coupler



ISO5211



MM

Model	A	A1	E	H	H1	T	K	L	B	X	V	◇P	S	Z	ØG	ØF	D
NTE-03	115	22	160	103	12	12*12	68	60	138	36	50	9/11/14	4-M5	4-M6	70	28	Followed by Valve
NTE-05	115	22	160	103	12	12*12	68	60	138	36	50	9/11/14	4-M5	4-M6	70	28	
NTE-10	123	22	208	124	19	15*15	82	70	105	50	70	9/11/14	4-M6	4-M8	90	35	
NTE-20	148	22	258	148	22	23*23	118	84	178	70	102	14/17	4-M8	4-M10	125	48	
NTE-40	148	22	258	148	22	23*23	118	84	178	70	102	17/22	4-M8	4-M10	125	48	
NTE-60	148	22	258	148	22	23*23	118	84	178	70	102	17/22	4-M8	4-M10	125	48	
NTE-100	156	27.5	280	159	25	30*30	148	84	187	102	125	22/27	—	4-M10	135	65	
NTE-160	156	27.5	280	159	25	30*30	148	84	187	102	125	22/27	—	4-M10	135	65	
NTE-200	156	27.5	280	159	25	30*30	148	84	187	140	165	36	—	4-M16	175	65	
NTE-400	266	—	439	179	48	52*52	180	180	266	159	254	52	—	4-M18	—	—	
NTE-600	266	—	439	179	48	52*52	180	180	266	159	254	52	—	4-M18	—	—	

## Ordering Information

NTE	Output Torque	Control Type	Power	Accessories	Enclosure
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- A. Output Torque / Operation Time**
- |                           |   |
|---------------------------|---|
| 1.Code:02S,(18Nm)-12 sec. | 8.Code:60,(600Nm)- 30 sec.                            |
| 2.Code:02L,(22Nm)-15 sec. | 9.Code:100,(1000Nm)-50 sec.                           |
| 3.Code:03,(30Nm)-20 sec.  | 10.Code:160,(1600Nm)-88 sec.                          |
| 4.Code:05,(50Nm)-30 sec.  | 11.Code:200,(2000Nm)-100 sec.                         |
| 5.Code:10,(100Nm)-30 sec. | 12.Code:400,(4000Nm)-100 sec.                         |
| 6.Code:20,(200Nm)-30 sec. | 13.Code:600,(6000Nm)-150 sec.                         |
| 7.Code:40,(400Nm)-30 sec. | 14.Code:XX (the other output Torque & Operation Time) |

**Note: 1. The quick operation speed is available upon request.**

- B. Type(Control function)**
- Code A: Standard
  - Code B: 1xSPST(NO) micro switch for each at open & close
  - Code B1: 1xSPDT micro switch for each at open & close
  - Code C: 1KΩ potentiometer
  - Code D: 1xSPST,NO micro-switch+ 1KΩ potentiometer
  - Code E: modulating control (input/output signal:4-20mADC)
  - Code F: position transmitter (output signal:4-20mADC)

**Note: 1. 02S only available in type A & B control function**

**2. 02L only available Type B control function**

- C. Power Voltage:**
- |                     |                  |
|---------------------|------------------|
| 1.Code A:24VDC      | 5.Code E:380VAC  |
| 2.Code B:24VAC      | 6.Code F:440VAC  |
| 3.Code C:110~120VAC | 7.Code X: others |
| 4.Code D:220~240VAC |                  |

**Note: 02S only available in 24/120/240VAC, 24VDC**

**02L only available 240VAC**

- D. Accessories:**
- Code: H - Heater(02S is not available)

- E. Enclosure**
- Code:IP67, IP67 enclosure(standard)
  - Code IP68: IP68 enclosure



**NUTORK CORP.** manufactures a wide range of pneumatic actuators, electric actuators and the accessories of pneumatic actuator (limit switchbox, solenoid valve, manual override ---etc.) for quarter turn valves

Nutork Corp. supply the following product range:

	<p><b>NK series rack &amp; pinion type (CE-ATEX certified and PED compliant)</b>          14 models, the output torque from 9Nm(80in.lbs) to 3,920Nm(34,660in.lbs) at 6 bar air supply. ISO5211/DIN3337 for valve connection, VDI/VDE 3845(Namur) standard connection for solenoid valve and shaft top end(limit switchbox or E/P positioner), +/-5 degree stroke adjustment. 25~30um standard hard anodized treatment on actuator body and over 120um epoxy coated on end caps which meet ASTM B117 qualification(salt spread test over 1,000 hours and no corrosion).</p> <p><b>PTFE, Polyester, Nickel, Ceramic and Epoxy coated are available on request.</b></p>
	<p><b>NSF series scotch yoke type pneumatic and hydraulic actuators (CE-ATEX certified and PED compliant)</b>          The output torque from 978Nm(8,656in.lbs) to 226,200Nm (2,001,870in.lbs) at 6 bar air supply. Anti-corrosion painting on outer body and cylinder as standard. VDI/VDE 3845(Namur) standard connection for shaft top end(limit switchbox or E/P positioner), +/-10 degree stroke adjustment. ISO5211 standard for valve connection. PTFE coated on inner cylinder surface. Hydraulic manual override is available for big size actuator.</p>
	<p><b>NTE series electric actuator, CE approval</b>          13 models and the output torque from 18Nm(159in.lbs) to 6000Nm(53,106in.lbs), compact design, die-casting aluminum alloy housing, alloy steel with heat treatment gear driving unit, integral wormgear &amp; drive shaft, 30% duty rating, detachable crank handle, ISO5211(option), IP67 enclosure.IP68 for option.</p>
	<p><b>NTE-02L Quarter Turn Electric Actuator</b>          Output torque 25Nm(222in.lbs),operation time 10Sec;voltage 24VAC,110VAC &amp; 220VAC for option,ABS housing, 30% duty rating,IP65 enclosure.</p>
	<p><b>NTQ electric actuator, CE approval(IP67 &amp; EExdIIBT4 enclosure)</b>          13 models, the output torque from 100Nm(885in.lbs) to 6,000Nm(53,106in.lbs), de-clutchable manual override, 2xSPDT each for open &amp; close, torque switch: 1xSPDT each for open &amp; close. space heater, self-lock, IP67 &amp; EExdIIBT4 enclosure.</p>
	<p><b>The fully range accessories(Limit Switchbox, Solenoid Valve, Declutchable Manual Override, Air Filter regulator, E/P Positioner ---etc).</b></p>

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