



# PNEUMATIC ACTUATOR



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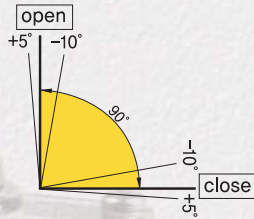


### Design and Construction

- AUTOMA Actuator is designed for rotary type valve.
- AUTOMA provides various size of actuator, including heavy-duty actuator, to meet the customer's needs.
- AUTOMA is in accordance with NAMUR and ISO Standard which enable us to fit with valves & accessories easily & simply.
- AUTOMA is specialized in providing a wide range of industrial solutions such as petrochemical, power generation, atomic power plant, steel mill, shipyard, refining, wastewater disposal, automation facilities and building air conditioner.

### Specification

- **Operating Pressure Range**  
Double Acting : 4~7kg/cm<sup>2</sup>  
Single Acting : 4.5~7kg/cm<sup>2</sup>
- **Operating Temperature Range**  
Standard : -20°C ~ 80°C  
Option : -40°C ~ 200°C
- **Cycle Life**  
1,300,000 Operating
- **Rotating angle range**



### Model Selection Guide



- 1 **AD Actuator Type**  
AD : Double Acting (Scotch-Yoke Type)  
AS : Single Acting (Scotch-Yoke Type)  
ADR : Double Acting (Rack&Pinion Type)  
ASR : Single Acting (Rack&Pinion Type)

- 2 **50 Actuator Size**  
AD : 50/65/80/100/125/140/160/185/200/250/300  
AS : 50/65/80/100/125/140/160/185/200/250/300  
ADR : 32/40/50/65/80/90/100/115/125/140/160/185/200  
ASR : 40/50/65/80/90/100/115/125/140/160/185/200

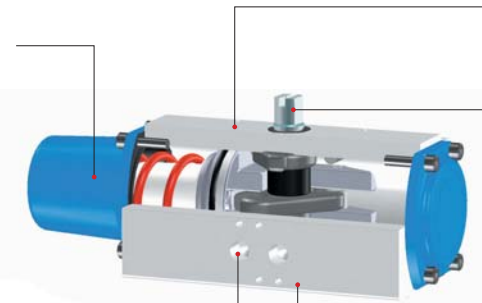
### INDEX

- 03 SCOTCH YOKE TYPE ACTUATOR  
- AD SERIES (DOUBLE ACTING)  
- AS SERIES (SINGLE ACTING)  
- TECHNICAL DATA
- 07 RACK&PINION TYPE ACTUATOR  
- ADR SERIES (DOUBLE ACTING)  
- ASR SERIES (SINGLE ACTING)  
- TECHNICAL DATA
- 11 HEAVY-DUTY ACTUATOR

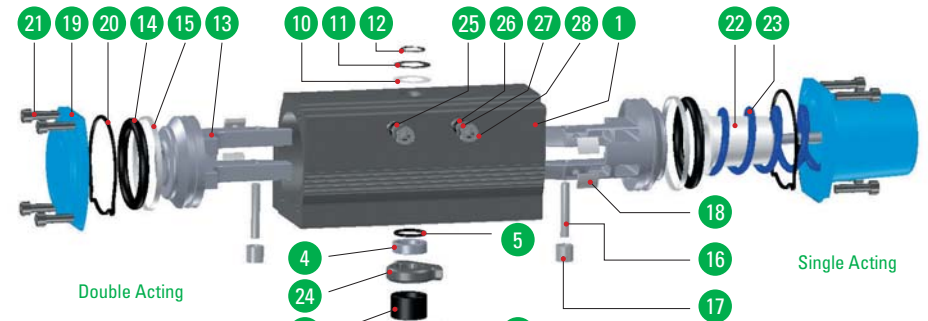
## SCOTCH YOKE TYPE ACTUATOR

### Features

- The Side Direction  
- Side Handle  
- Middle Torque Spring  
- Strong Torque Spring
- The Back Direction  
- Stopper Bolt  
- 5° ~ 95° Stopper
- The Top Direction  
- Position Indicator  
- Limit Switch Box  
- Proximity Sensor  
- E/P Positioner  
- Position Transmitter  
- Manual Lever
- The Front Direction  
- Solenoid Valve (NAMUR)  
- Lock Up Valve  
- Volume Booster  
- Direct Fitting Assembler
- The Bottom Direction  
- Valve Mounting  
- Manual Handle  
- ISO 5211 DIN 3337 Square & Holes



### Part List



- |                         |                       |
|-------------------------|-----------------------|
| 1. Body                 | 15. Piston Guide-ring |
| 2. Shaft                | 16. Piston Pin        |
| 3. Crank                | 17. Piston Roller     |
| 4. Bushing(Top)         | 18. Piston Pad        |
| 5. Body O-ring(Top)     | 19. Cover             |
| 6. Shaft Roller(Top)    | 20. Cover O-ring      |
| 7. Bushing(Bottom)      | 21. Cover Bolt        |
| 8. Body O-ring(Bottom)  | 22. Spring Cap        |
| 9. Shaft Roller(Bottom) | 23. Spring            |
| 10. Body Washer(Bottom) | 24. Stopper           |
| 11. Body Washer(Top)    | 25. Stopper Bolt      |
| 12. Body Snap-ring      | 26. Stopper O-ring    |
| 13. Piston              | 27. Stopper Washer    |
| 14. Piston O-ring       | 28. Stopper Nut       |

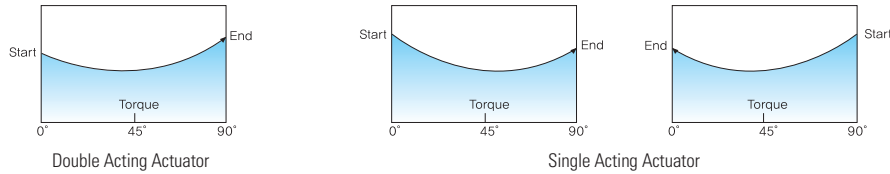


# TECHNICAL DATA

## Scotch-Yoke Type

- Upon air supply, pistons move horizontally, turning the shaft by the arm connected to the pistons.
- Smooth On/Off with the torque curve synchronized with valves.
- Relatively higher torque than the same model in Rack&Pinion Type.

### Torque Diagram

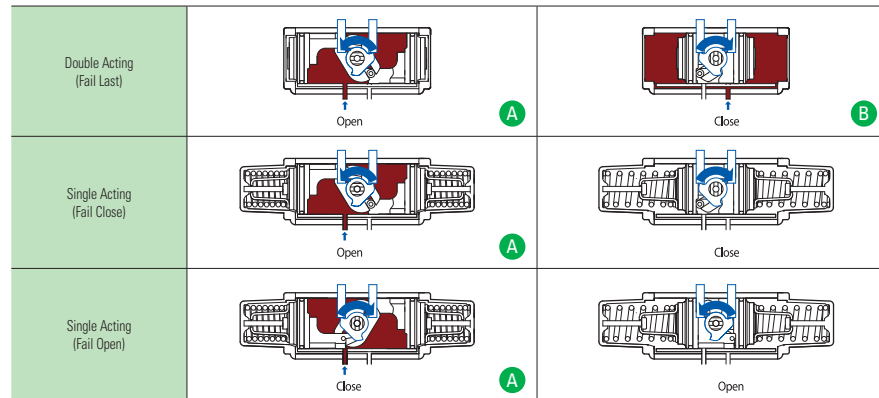


### Air Consumption

- The air consumption of actuator is calculated by below.
- The air consumption is based on 1 action of used valve and do calculate the consumption per an hour.

Double Acting Actuator (AD Series)	V = Air Consumption (Liter) A = Volume "A" (Liter) B = Volume "B" (Liter) P = Supply Air Pressure (Bar) N = Number of Operating
$V = (A+B)(P+1.013) \times N$	
Single Acting Actuator (AS Series)	
$V = A \times (P+1.013) \times N$	

### Operating Mechanism

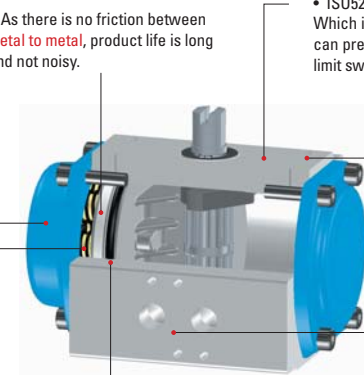


Double Acting			Single Acting		
Model	A	B	Model	A (Fail Close)	A (Fail Open)
AD50	0.2	0.2	AS50	0.2	0.2
AD65	0.3	0.3	AS65	0.3	0.3
AD80	0.6	0.5	AS80	0.6	0.5
AD100	1.2	1.1	AS100	1.2	1.0
AD125	2.5	2.2	AS125	2.5	2.1
AD140	3.9	3.5	AS140	3.9	3.3
AD160	4.8	4.3	AS160	4.8	4.0
AD185	5.8	7.5	AS185	5.8	6.1
AD200	6.2	9.9	AS200	6.2	7.6
AD250	8.0	12.8	AS250	8.0	9.9

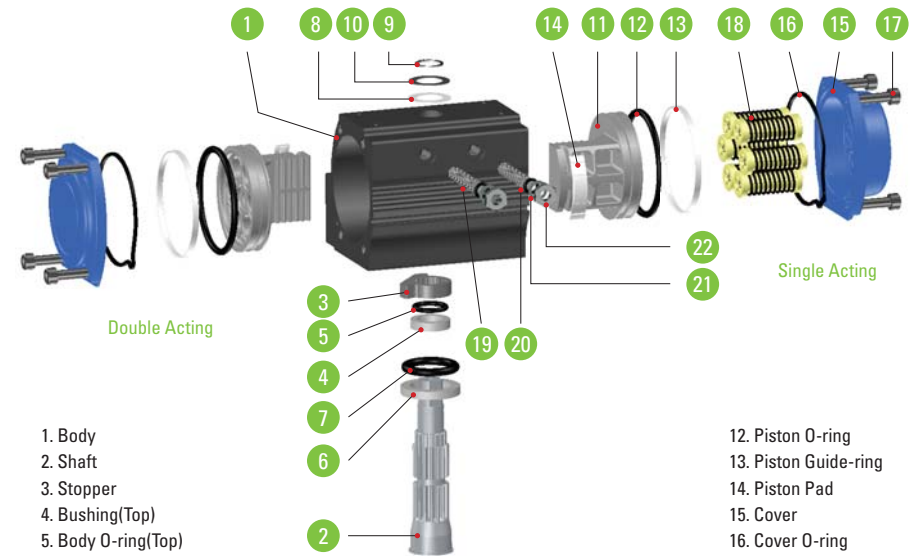
# RACK&PINION TYPE ACTUATOR

## Features

- Aluminum Cover Which is not easily peeled off, and its polish can last long as it is power coated upon special surface treatment.
- Spring Cap Which can enable it to assemble or disassemble safely.
- NBR The products can be used at **Low/High temperature** as the products are available in EPDM and/or VITON in addition to the standard NBR.
- ISO5211/DIN3337 Which is the international standards and thus it can precisely be fitted with accessories such as limit switch box and so on.
- Aluminum Body **anodized** to prevent internal/external scratches and thus securing long term durability.
- NAMUR Which is the international standards and thus the products can be precisely fitted with solenoid valves.



## Part List



1. Body
2. Shaft
3. Stopper
4. Bushing(Top)
5. Body O-ring(Top)
6. Bushing(Bottom)
7. Body O-ring(Bottom)
8. Body Washer(Bottom)
9. Body Washer(Top)
10. Body Snap-ring
11. Piston

12. Piston O-ring
13. Piston Guide-ring
14. Piston Pad
15. Cover
16. Cover O-ring
17. Cover Bolt
18. Spring Unit
19. Stopper Bolt
20. Stopper O-ring
21. Stopper Washer
22. Stopper Nut

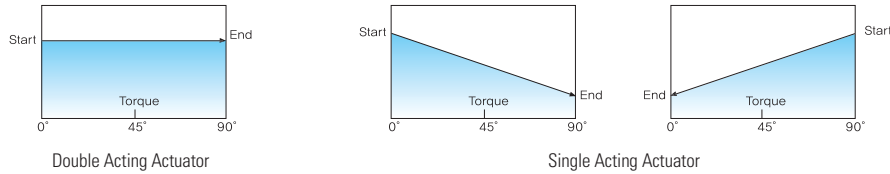


# TECHNICAL DATA

## Rack & Pinion Type

- Upon air supply, pistons move horizontally, turning the shaft that is linked to the piston gear.
- Short body length makes it easier to fit in small spaces.
- The multi-spring structure enables adjustment of number of springs to suit the site requirements.

### Torque Diagram

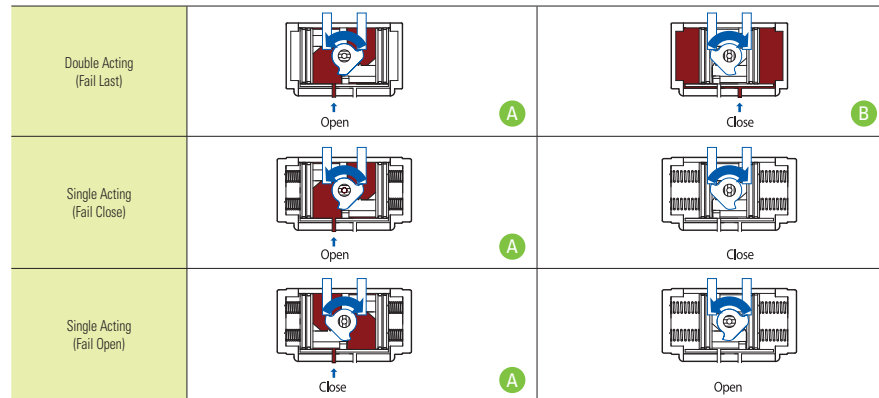


### Air Consumption

- The air consumption of actuator is calculated by below.
- The air consumption is based on 1 action of used valve and do calculate the consumption per an hour.

Double Acting Actuator (ADR Series)	$V = (A+B) \times (P+1.013) \times N$	V = Air Consumption (Liter) A = Volume "A" (Liter) B = Volume "B" (Liter) P = Supply Air Pressure (Bar) N = Number of Operating
Single Acting Actuator (ASR Series)	$V = A \times (P+1.013) \times N$	

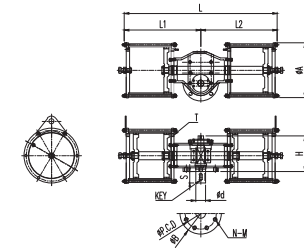
### Operating mechanism



Double Acting			Single Acting		
Model	A	B	Model	A (Fail Close)	A (Fail Open)
ADR32	0.1	0.1			
ADR40	0.1	0.1	ASR40	0.1	0.1
ADR50	0.2	0.1	ASR50	0.2	0.1
ADR65	0.3	0.2	ASR65	0.3	0.2
ADR80	0.4	0.4	ASR80	0.4	0.4
ADR90	0.7	0.6	ASR90	0.7	0.6
ADR100	0.9	0.9	ASR100	0.9	0.8
ADR125	2.0	1.8	ASR125	2.0	1.7
ADR140	3.2	2.8	ASR140	3.2	2.7
ADR160	3.8	3.5	ASR160	3.8	3.3
ADR210	12.5	11.3	ASR210	12.5	10.6

# HEAVY-DUTY ACTUATOR

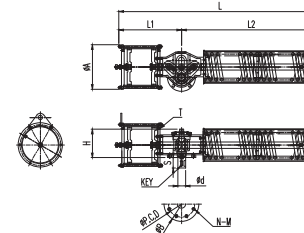
## Double Acting



### Dimension Table

MODEL	ØA	L	L1	L2	H	T	S	KEY	Ød	P.C.D	ØB	N-M
AD250D	313	900	450	450	202	PT 3/8"	65	16x10T	55	165	200	4-M20
AD300D	370	1100	550	550	240	PT 3/8"	85	20x14T	70	254	300	8-M16
AD350D	410	1400	700	700	302	PT 1/2"	85	28x16T	80	298	340	8-M20
AD400D	470	1600	800	800	308	PT 1/2"	85	28x16T	80	298	340	8-M20

## Single Acting



### Dimension Table

MODEL	ØA	L	L1	L2	H	T	S	KEY	Ød	P.C.D	ØB	N-M
AS250D	313	1450	450	1000	202	PT 3/8"	65	16x10T	55	165	200	4-M20
AS300D	370	1650	550	1100	240	PT 3/8"	85	20x14T	70	254	300	8-M16
AS350D	410	1860	700	1160	302	PT 1/2"	85	28x16T	80	298	340	8-M20

### Torque Table

Model	Angle	Supply Air			Model	Angle	Supply Air			
		4bar	5bar	6bar			4bar	5bar	6bar	Spring
AD250D	0°	4,200	5,200	6,300	AS250D	0°	1,170	1,810	2,350	1,300
	45°	3,100	3,800	4,600		45°	590	950	1,340	840
	90°	4,200	5,200	6,300		90°	930	1,800	1,980	1,470
AD300D	0°	11,740	15,000	18,300	AS300D	0°	2,400	3,650	4,800	2,550
	45°	5,600	7,000	8,400		45°	1,180	1,850	2,500	1,500
	90°	10,100	12,400	14,800		90°	1,760	3,160	4,600	3,130
AD350D	0°	16,000	21,600	28,600	AS350D	0°	4,650	6,800	8,900	3,650
	45°	9,600	11,600	13,700		45°	1,450	2,600	3,700	2,730
	90°	14,000	17,800	20,500		90°	1,330	3,200	5,250	5,200
AD400D	0°	21,600	29,100	38,600						
	45°	12,950	15,650	18,500						
	90°	18,900	24,000	27,650						

### Air Consumption

Model	A	B	Model	A (Fail Close)	A (Fail Open)
AD250D	120	120	AS250D	60	58
AD300D	215	215	AS300D	107	104
AD350D	360	360	AS350D	185	180
AD400D	544	544			

### Weight

Model (Double)	Model (Single)
AD250D	AS250D
AD300D	AS300D
AD350D	AS350D
AD400D	