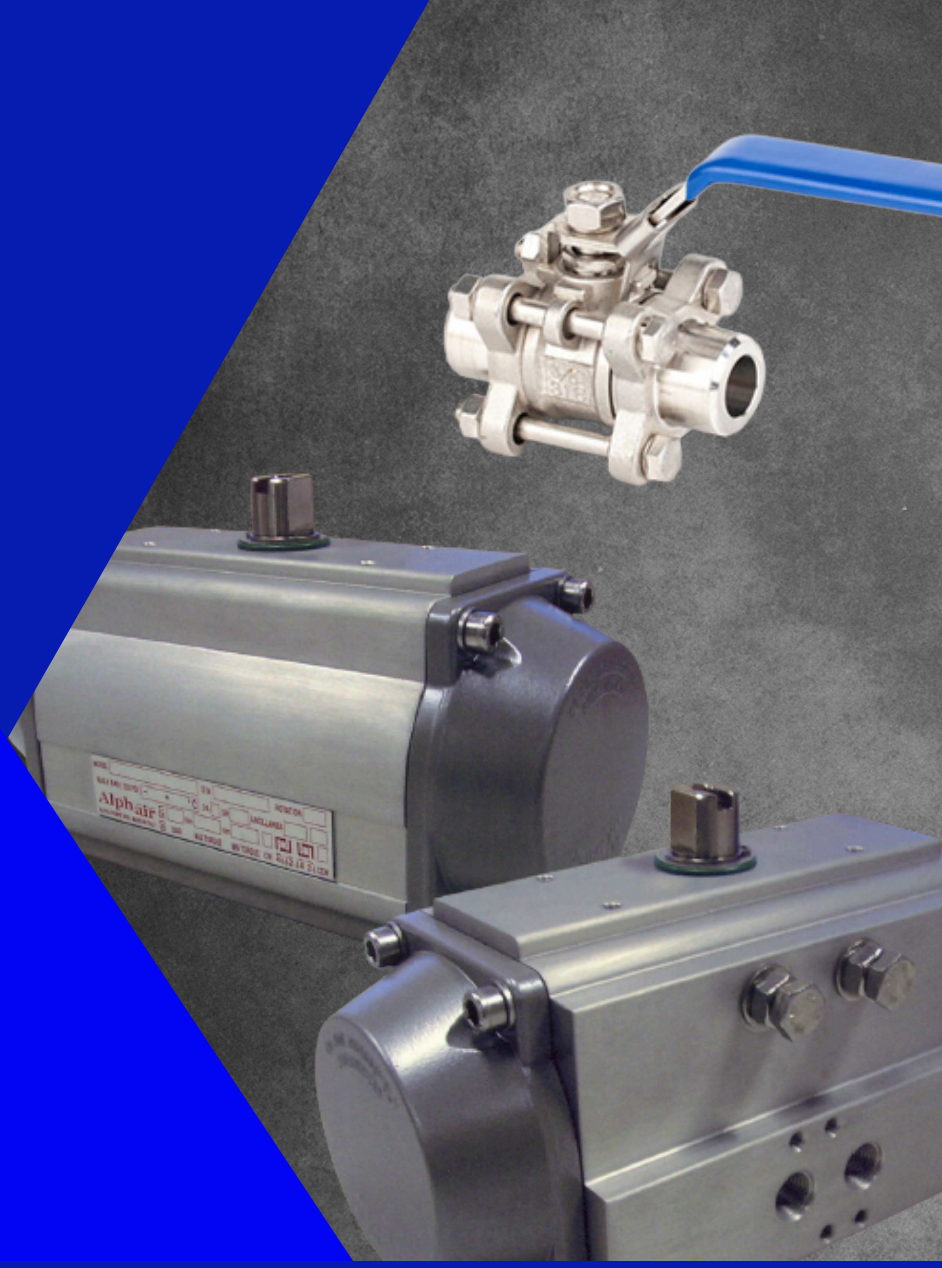


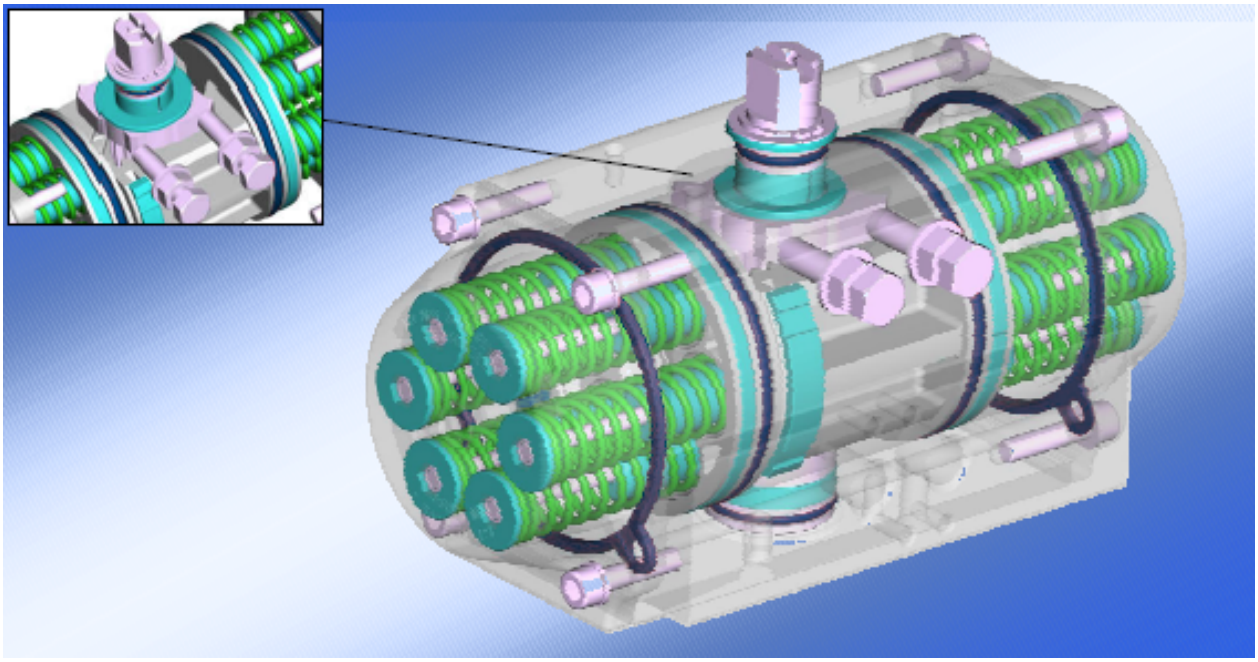
ROTARY ACTUATORS AND BALL VALVES

90° Pneumatic Actuators

ATS PNEUMATICS

Compressed Air Solutions

PNEUMATIC ACTUATORS
EXTERNAL ADJUSTMENT
New "RE" SERIES



Introducing the New ATS Pneumatics Actuators with “External Adjustment” System
The latest series of ATS Pneumatics Actuators, featuring a unique “External Adjustment” system, meets all standards for quality and precision.

Key Features

- **Enhanced Precision:** The innovative “External Adjustment” system ensures optimal rotation adjustments, suitable for both standard and demanding conditions across various applications.
- **Versatile Design:** The ATS Pneumatics Actuators are crafted to meet a wide range of requirements, maximizing torque ratings and extending their operational lifespan.
- **Compact and Robust:** These actuators are compact, durable, and dependable, making them easy to install on any type of valve.

STANDARD VERSION FEATURES

ASTM 6063 extruded Aluminium Body, inside surface finishing Ra= 0,4-0,6. 25 Hard Anodizing.
EN AB 46100 die-cast Aluminium alloy Pistons, 15 micron Anodizing.
EN AB 46100 die-cast Aluminium alloy Covers, painted with 60-80 polyester powder.
Carbon steel Shaft, 20 nickel-plated. Stainless Steel AISI 304 (A2) or AISI 316 (A4) as Optional.
External adjusting gear, in Stainless Steel AISI 316 (A4).
Screws in Stainless Steel AISI 304 (A2).
Seals in nitrile nubber NBR.
Optional HIGH Temperature = FPM/FKM. Optional LOW Temperature = SILICONE.
Bearings in low friction LAT-LUB acetalic resin, easily replaceable for maintenance.
Optional HIGH/LOW Temperature = PA 66. Optional VERY LOW Temperature = LEXAN.
Pre-compressed Spring Cartridges, easily replaceable for maintenance, 25-30 micron polyester painted.
Standard grease: High performances Syntetic Grease. Optional: special grease for HIGH/LOW Temperature.
Several special protections available for chemical, pharmaceutical, food and industrial environments.
Rotation adjustment +\-5° in both opening and closing position. Assembly precision +\-1°, made by electronic devices.
Double lower drilling for valve fastening and centering, according to ISO 5211-DIN 3337 Standards.
Double square lower female shaft key (starlike), according to ISO 5211-DIN 3337 Standards for assembly on valves with square key on line (0°) and diagonal key (45°).
Solenoid connections according to NAMUR VDI\VDE-3845 Standards.
Top drilling for accessories fastening, and upper shaft end according to NAMUR VDI\VDE-3845 Standards.
Position indicator on request, enabling switch-box assembly on top.
Aluminium adhesive nameplates, with progressive serial number punched.
Lubrication carried out by the manufacturer, guaranteed for min. 1.000.000 operations.
Running test and 100% seal test carried out with electronic equipment and certification of every individual product.
Standard execution for temperatures from –20°C to +80°C (optional, special execution for extreme temperatures).
Conformity for use in explosive environment; Ex II 2 GD “c” protection type.
According to EN 15714-3 design and manufacture standard requirements.
AIR SUPPLY TEMPERATURE RANGE FEEDING

AIR SUPPLY	TEMPERATURE RANGE	FEEDING PRESSURE	ROTATION ADJUSTING
Dry or lubricated filtered compressed air.	Standard -20° +80°C (-4 +175°F) HIGH Temperature -20° +150°C (-4 + 300°F) LOW Temperature -40° +80°C (-40 + 175°F) VERY LOW Temperature -60° +80°C (-76 + 175°F)	CONTINUOUS 8 bar/120 psi MAXIMUM 10 bar/142 psi	+/- 5°

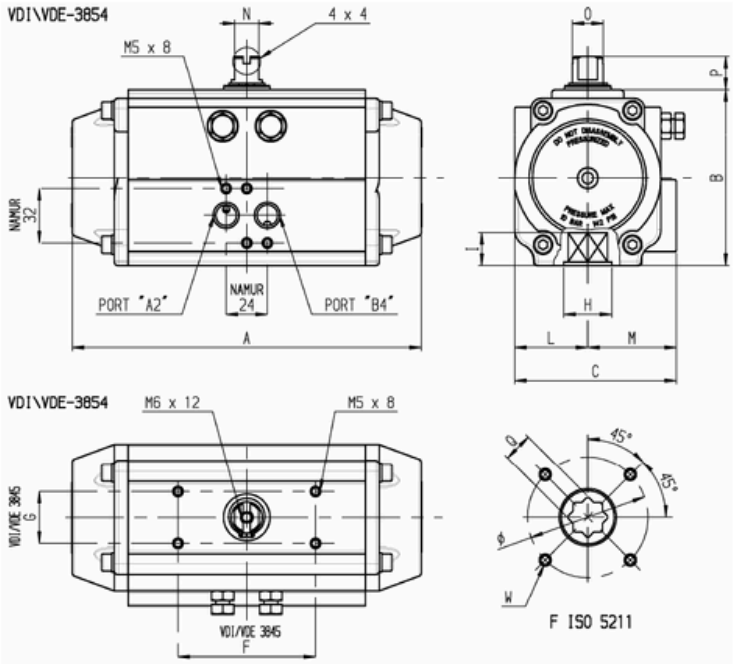
Double ACTING TORQUES IN Nm

TYPE	AIR SUPPLY IN BAR									
	1	2	3	4	5	6	7	8	9	10
RE 051	3,3	6,7	10,0	13,4	16,7	**20,1**	23,4	26,8	30,1	33,5
RE 064	5,9	11,8	17,8	23,7	29,6	**35,5**	41,4	47,4	53,3	59,2
RE 076	11,8	23,5	35,3	47,1	58,9	**70,6**	82,4	94,2	105,9	117,7
RE 086	17,2	34,5	51,7	68,9	86,1	**103,4**	120,6	137,8	155,0	172,3

Single ACTING TORQUES IN Nm

TYPE	SPRINGS for each piston side	AIR SUPPLY IN BAR												SPRINGS TORQUE	
		3		4		5		6		7		8			
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°
RE 051	3	**5,8**	**4,3**	9,1	7,6	12,5	10,9	15,8	14,3	19,2	17,6	22,5	21,0	**5,8**	**4,3**
	4	4,4	2,3	**7,8**	**5,7**	11,1	9,0	14,4	12,3	17,8	15,7	21,1	19,0	**7,8**	**5,7**
	5			6,3	3,7	**9,7**	**7,1**	13,0	10,4	16,4	13,8	19,7	17,1	**9,7**	**7,1**
	6					8,2	5,1	**11,6**	**8,5**	14,9	11,8	18,3	15,2	**11,6**	**8,5**
RE 064	3	**10,7**	**7,1**	16,6	13,0	22,5	18,9	28,5	24,8	34,4	30,8	40,3	36,7	**10,7**	**7,1**
	4	8,4	3,5	**14,3**	**9,4**	20,2	15,4	26,1	21,3	32,0	27,2	38,0	33,1	**14,3**	**9,4**
	5			11,9	5,9	**17,8**	**11,8**	23,8	17,7	29,7	23,6	35,6	29,6	**17,8**	**11,8**
	6					15,5	8,2	**21,4**	**14,1**	27,3	20,1	33,2	26,0	**21,4**	**14,1**
RE 076	3	**21,1**	**14,3**	32,8	26,0	44,6	37,8	56,4	49,6	68,1	61,3	79,9	73,1	**21,1**	**14,3**
	4	16,3	7,2	**28,1**	**19,0**	39,8	30,8	51,6	42,5	63,4	54,3	75,2	66,1	**28,1**	**19,0**
	5			23,3	12,0	**35,1**	**23,8**	46,9	35,5	58,6	47,3	70,4	59,1	**35,1**	**23,8**
	6					30,3	16,7	**42,1**	**28,5**	53,9	40,3	65,6	52,0	**42,1**	**28,5**
RE 086	3	**33,8**	**17,8**	51,1	35,1	68,3	52,3	85,5	69,5	102,7	86,7	120,0	104,0	**33,8**	**17,8**
	4	27,9	6,6	**45,1**	**23,8**	62,3	41,0	79,6	58,2	96,8	75,5	114,0	92,7	**45,1**	**23,8**
	5			39,2	12,5	**56,4**	**29,7**	73,6	47,0	90,8	64,2	108,1	81,4	**56,4**	**29,7**
	6					50,4	18,5	**67,7**	**35,7**	84,9	52,9	102,1	70,1	**67,7**	**35,7**

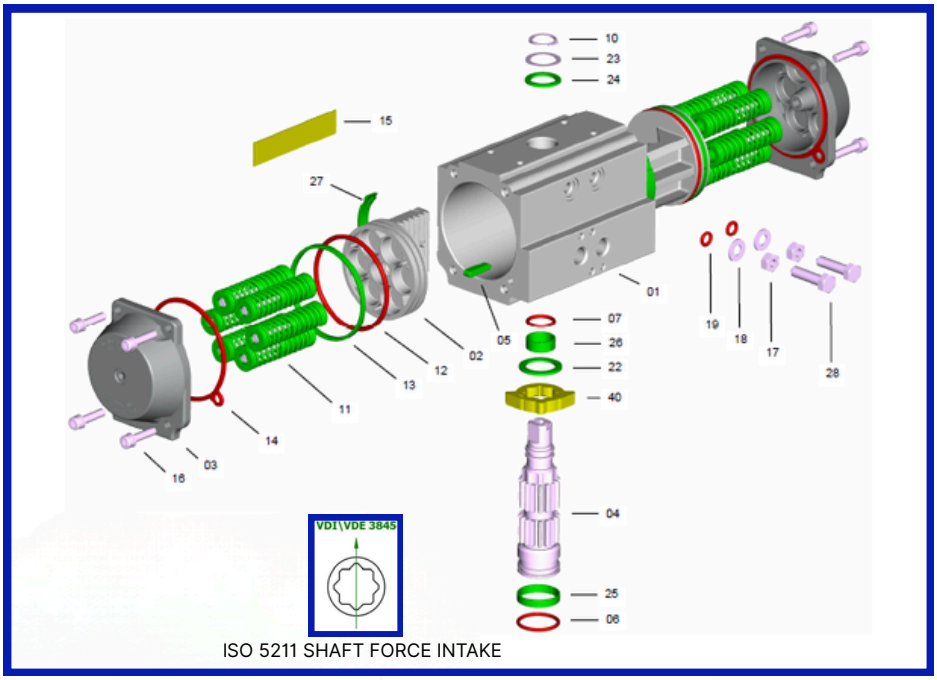
DIMENSIONS – European Sizes in millimetres



POSITION	RE 043	RE 051	RE 064	RE 076	RE 086
A-90°	141	138	155	203	239
B	62	69	86	102	112
C	63,5	75	86	94	104
VDI/VDE 3845 F x G	50 x 25	80 x 30			
L	27	33,5	38	42,5	49
M	36,5	41,5	48	51,5	55
Port A Port B DIN 259	1/8" GAS-NPT		1/4" GAS-NPT		
N x O	8 x 12			14 x 18	
P	20				
Q x I	9 x 10 11 x 13	9 x 10 11 x 13	9 x 10 11 x 13 14 x 16	11 x 13 14 x 16 17 x 20	14 x 16 17 x 20
F ISO 5211	F04	F04	F05/07	F05/07	F05/07
Optional	F03/05	F03/05	F3/5/7 F04		

POSITION	F03	F04	F03/05	F05	F05/07
Ø (W)	Ø 36 (M5x8)	Ø 42 (M5x8)	Ø 36 (M5x8) Ø 50 (M6x9)	Ø 50 (M6x9)	Ø 50 (M6x9) Ø 70 (M8x12)
H	25	30	25	35	35 (RE 086=40)

CONSTRUCTION PARTS - SPECIFICATIONS



ISO 5211 SHAFT FORCE INTAKE

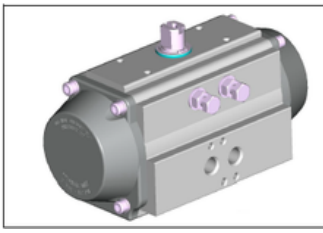
PART	QUANTITY	DESCRIPTION	MATERIAL	SPECIFICATION	PROTECTION
1	1	Body	Extruded aluminium alloy	EN AW 6063 T6	A - N - TF
2	2	Piston	Aluminium alloy	EN AB 46100 T6	A
3	2	Cover	Aluminium alloy	EN AB 46100 T6	N - V - TF
4	1	Shaft	Carbon steel optional S.S. AISI 304 (A2) optional S.S. AISI 316 (A4)	ASTM A105	N
5 *	2	Antiejection key	Acetalic resin - PA66 - PA66 - LEXAN		
6 *	1	Lower shaft O-Ring	NBR - FPM\FKM - Silicone		
7 *	1	Upper shaft O-Ring	NBR - FPM\FKM - Silicone		
10 *	1	Seeger ring	Carbon steel		N
11	0-12	Spring cartridge	Carbon steel, PA 66, S.S.	C-98	V
12 *	2	Piston O-Ring	NBR - FPM\FKM - Silicone		
13 *	2	Piston head bearing	Acetalic resin - PA66 - PA66 - LEXAN		
14 *	2	Cover gasket	NBR - FPM\FKM - Silicone		
15	1	Nameplate	Aluminium		
16	4+4	Cover fastening screw	Stainless Steel	AISI 304 (A2)	
17	2	Nut	Stainless Steel	AISI 304 (A2)	
18	2	Washer	Stainless Steel	AISI 304 (A2)	
19 *	2	O-Ring	NBR - FPM\FKM - Silicone		
22 *	1	Gear antifriction washer	Acetalic resin - PA66 - PA66 - LEXAN		
23 *	1	Shaft thrust washer	Stainless Steel	AISI 304 (A2)	
24 *	1	Shaft antifriction washer	Acetalic resin - PA66 - PA66 - LEXAN		
25 *	1	Lower shaft pilot ring	Acetalic resin - PA66 - PA66 - LEXAN		
26 *	1	Upper shaft pilot ring	Acetalic resin - PA66 - PA66 - LEXAN		
27 *	2	Piston bearing	Acetalic resin - PA66 - PA66 - LEXAN		
28	2	Adjusting gear screw	Stainless Steel	AISI 304 (A2)	
40	1	Adjusting gear	Stainless Steel	AISI 316 (A4)	

*** SPARE PARTS SET: Standard, Special HIGH Temperatures, Special LOW Temperatures, Special EXTRA LOW Temperatures**

Protections

A = Anodizing **N** = chemical Nickel-plating **V** = Painting **TF** = Anodizing+PTFE

CONSTRUCTION PARTS - SPECIFICATIONS



	DESCRIPTION				USED FOR
	Body	Covers	Pistons	Shaft	
AV standard	Anodizing	Polyester painting	Anodizing	High phosporous nickel-plating (12%) opt. AISI 304 (A2) opt. AISI 316 (A4)	- Industry, general use.
Colour	Grey	Grey	Brown	Polished steel	
Thickness	25 µ	60/80 µ	15 µ	20 µ	

ANODIZING

Anodizing is an electrolytic process that produces anodic coating on aluminum, called alumine, with high thickness. Alumine is one of the most hard known materials, with resistance values up to 400-600 HV (45-65 HRC); properties and features of Anodizing (alumine thickness 25 micron) are well know and appreciated both for mechanical and chemical resistance.

Best friction and corrosion resistance, best surface hardness, good thermic and electrical insulation.

ELECTROLESS NICKEL-PLATING

Chemical nickel-plating is an electroless coating process that gives nickel layers at extremely constant thickness also on sharp angles, blind-holes, threads and grooves recess. During the process, nickel is combined with phospor at a percentage of 12% (hig-phospor). The obtained surface hardness is about 400-480 HV (45-55 HRC).

Best friction and corrosion resistance, best surface hardness, best external appearence similar to S.S., increased resistance to alcali and detergents in sanitary and food applications.

POLYESTER PAINTING

Polyester painting is obtained through powder coatings on polarized parts, by means of light differences in electrical potentials. After applications, parts are baked in order to polymerize and let the painting be spread to avoid micro-porosity. The best elasticity can be obtained at 60/80 micron thickness; a satisfactory adhesion can be assured by sandblasting or brushing, and by special degreasing baths of the rough pieces to be treated.

Better corrosion resistance, protection against crashes, better external appearance and several available colours, resistance to chemicals.

ADAPTORS / ADDITIONAL PARTS

ACTUATOR ADAPTOR

Product Code	Size
RQ0911-A	11-9mm
RQ0914-A	14-9mm
RQ1114-A	14-11mm
RQ1117-A	17-11mm
RQ1417-A	17-14mm

ACTUATOR OVAL ADAPTOR

Product Code	Size
RQDD1408-A	14-8mm
RQDD1710	17-10mm

ACTUATOR POSITIONER BRACKET

Product Code	Size
BKF05/03	F03/F05
BKF07/05	F05/F07

ACTUATOR INDICATOR

Product Code
CAM100A

ACTUATOR SWITCH BOX

Product Code
KN030

BALL VALVES FOR ROTARY ACTUATORS

3 PIECE STAINLESS STEEL BALL VALVES WITH ACTUATOR MOUNTING

AVAILABLE SIZES

Product Code	Size	Mounting
BVA-04-F04/F05	1/2"	F04/F05
BVA-06-F04/F05	3/4"	F04/F05
BVA-08-F04/F05	1"	F04/F05
BVA-10-F04/F05	1 1/4"	F04/F05
BVA-12-F05/F07	1 1/2"	F05/F07
BVA-16-F05/F07	2"	F05/F07
BVA-24-F07/F10	3"	F07/F10

SIZING GUIDE FOR BALL VALVES AND ROTARY ACTUATORS

Understanding Rotary Actuator Sizing
When sizing a pneumatic rotary actuator to a ball valve, the most important factor is torque, the force required to turn the valve open and closed.

Ball valves require the highest torque:

- When opening after sitting closed
- Under higher pressure
- With sticky or contaminated media
- As valve size increases

For reliable operation, the actuator must produce more torque than the valve requires. Oversizing slightly is recommended for safety and long-term reliability.

Ball Valve Size	Double Acting Actuator	Single Acting Actuator
1/2"	RE 51	RE 51
3/4"	RE 51 / RE 64	RE 51 / RE 64
1"	RE 51 / RE 64	RE 64 / RE 76
1 1/4"	RE 64 / RE 76	RE 76 / RE 86
1 1/2"	RE 64 / RE 76	RE 76 / RE 86
2"	RE 76 / RE 86	RE 86
3"	RE 86	RE 86

Double Acting vs Single Acting

Double Acting

- Air to open and air to close
- Higher torque output
- More compact sizing
- Ideal where air supply is constant

Single Acting (Spring Return)

- Air operated one direction
- Spring returns valve automatically
- Used for fail-safe applications
- Requires larger actuator sizing

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