

# PPRA

## PNEUMATIC ROTARY ACTUATOR



### DESCRIPTION :

Pennant Pneumatic Rotary Actuators are spring loaded Diaphragm Actuators used with high performance Rotary Valves suitable for wide range of industrial applications such as high pressure and low-pressure steam, clean liquids, fine particle slurry media, sandy media and corrosive liquids gasses and erosive and abrasive slurries. These actuators can be used in industrial applications with appropriate surface protection for regulating and on/off control applications.

### FEATURES :

- Broad array of travel and spring range
- Rapid response
- Smooth operation, constant linearity
- Negligible hysteresis
- Sturdy design
- Simple on-site fail action change without any additional parts

### DESIGN FLEXIBILITY :

Split coupling for simple attachment to plug stem. Unique design of the actuator enables it to be field reversible. Compatible with a range of valve sizes and accessories

### RANGE AVAILABLE :

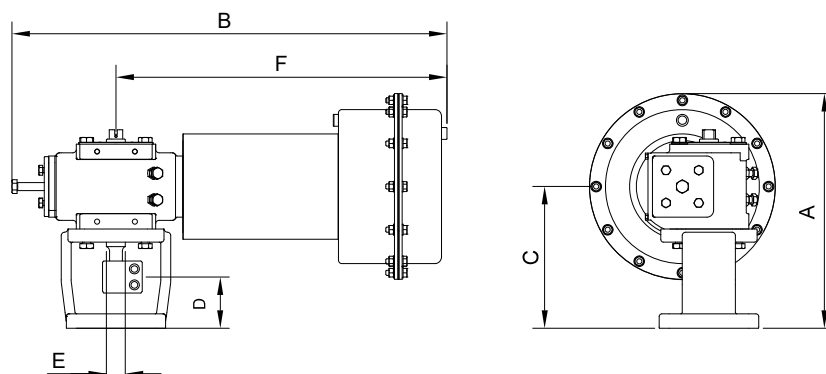
R1-260 cm<sup>2</sup>,  
R2-350 cm<sup>2</sup>,  
R3-550 cm<sup>2</sup>

### AIR CONNECTION :

R1-1/4" NPT  
R2-1/4" NPT  
R3-1/2" NPT

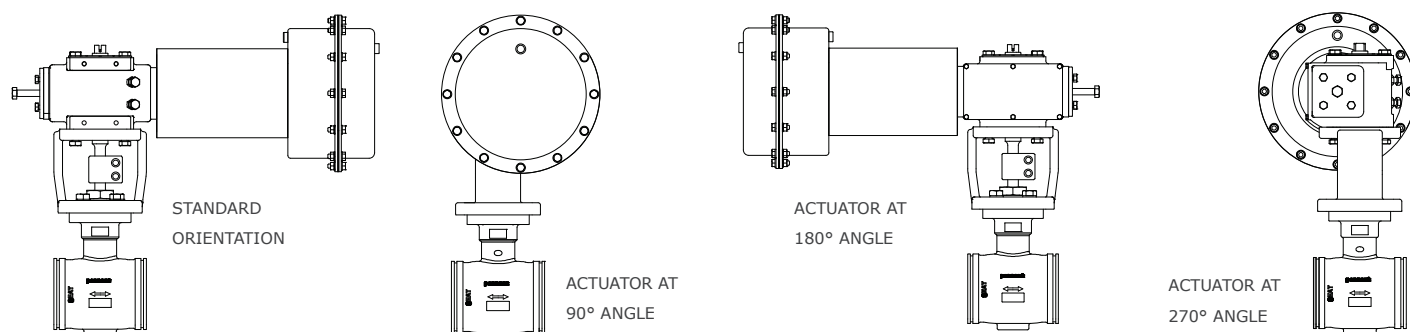
### ACTUATOR DIMENSIONS :

Nominal in mm



| ACTUATOR SIZE | YOKE | VALVE SIZES       | DIAPHRAGM AREA cm <sup>2</sup> | A   | B   | C   | D   | E  | F   | WEIGHT (KG) |
|---------------|------|-------------------|--------------------------------|-----|-----|-----|-----|----|-----|-------------|
| R1            | Y1   | DN25, DN40 & DN50 | 260                            | 270 | 420 | 140 | 54  | 20 | 352 | 13.2        |
| R2            | Y2   | DN80 & DN100      | 350                            | 354 | 645 | 214 | 76  | 28 | 490 | 36.2        |
| R3            | Y3   | DN80 & DN100      | 550                            | 420 | 690 | 228 | 76  | 36 | 544 | 49.9        |
|               | Y4   | DN150 & DN200     |                                | 493 |     | 301 | 130 |    |     | 52.2        |

## ACTUATOR MOUNTING POSITIONS :



## ACTUATOR SIZING :

MAXIMUM SHUT OFF DIFFERENTIAL PRESSURE (BARG)

|          |                                |        |             |                       | FULL PORT (FLOW TO OPEN & FLOW TO CLOSE) |       |       |       |        |                        |        |       |       |       |       |        |        |        |
|----------|--------------------------------|--------|-------------|-----------------------|------------------------------------------|-------|-------|-------|--------|------------------------|--------|-------|-------|-------|-------|--------|--------|--------|
| ACTUATOR | DIAPHRAGM AREA cm <sup>2</sup> | STROKE | SPRING USED | CONTROL PRESSURE BARG | DIRECT (AIR TO OPEN)                     |       |       |       |        | REVERSE (AIR TO CLOSE) |        |       |       |       |       |        |        |        |
|          |                                |        |             |                       | DN 25                                    | DN 40 | DN 50 | DN 80 | DN 100 | DN 150                 | DN 200 | DN 25 | DN 40 | DN 50 | DN 80 | DN 100 | DN 150 | DN 200 |
| R1       | 260                            | 60°    | S20         | 1.4                   | 100                                      | 35    | 100   |       |        |                        |        | 83    | 5     | 1     |       |        |        |        |
|          |                                |        | S35         | 3.0                   | 100                                      | 100   | 55    |       |        |                        |        | 100   | 100   | 55    |       |        |        |        |
|          |                                |        | S60         | 4.0                   | 100                                      | 100   | 100   |       |        |                        |        | 100   | 100   | 100   |       |        |        |        |
| R2       | 350                            | 60°    | S20         | 1.4                   |                                          |       |       | 17    | 2      |                        |        |       |       |       | 10    | 1      |        |        |
|          |                                |        | S35         | 3.0                   |                                          |       |       | 53    | 7      |                        |        |       |       |       | 39    | 7      |        |        |
|          |                                |        | S60         | 4.0                   |                                          |       |       | 100   | 37     |                        |        |       |       |       | 100   | 29     |        |        |
| R3       | 550                            | 60°    | S20         | 1.4                   |                                          |       |       | 41    | 7      |                        |        |       |       |       | 41    | 7      |        |        |
|          |                                |        | S35         | 3.0                   |                                          |       |       | 100   | 28     | 2                      |        |       |       |       | 100   | 28     | 2      |        |
|          |                                |        | S60         | 4.0                   |                                          |       |       |       |        | 14                     | 2      |       |       |       |       |        | 14     | 2      |

|          |                                |        |             |                       | 60%, 40%, 20% REDUCED PORT (FLOW TO OPEN & FLOW TO CLOSE) |       |       |       |        |                        |        |       |       |       |       |        |        |        |
|----------|--------------------------------|--------|-------------|-----------------------|-----------------------------------------------------------|-------|-------|-------|--------|------------------------|--------|-------|-------|-------|-------|--------|--------|--------|
| ACTUATOR | DIAPHRAGM AREA cm <sup>2</sup> | STROKE | SPRING USED | CONTROL PRESSURE BARG | DIRECT (AIR TO OPEN)                                      |       |       |       |        | REVERSE (AIR TO CLOSE) |        |       |       |       |       |        |        |        |
|          |                                |        |             |                       | DN 25                                                     | DN 40 | DN 50 | DN 80 | DN 100 | DN 150                 | DN 200 | DN 25 | DN 40 | DN 50 | DN 80 | DN 100 | DN 150 | DN 200 |
| R1       | 260                            | 60°    | S20         | 1.4                   | 100                                                       | 100   | 59    |       |        |                        |        | 100   | 100   | 59    |       |        |        |        |
|          |                                |        | S35         | 3.0                   | 100                                                       | 100   | 100   |       |        |                        |        | 100   | 100   | 100   |       |        |        |        |
|          |                                |        | S60         | 4.0                   | 100                                                       | 100   | 100   |       |        |                        |        | 100   | 100   | 100   |       |        |        |        |
| R2       | 350                            | 60°    | S20         | 1.4                   |                                                           |       |       | 27.5  | 3      |                        |        |       |       |       | 17    | 3      |        |        |
|          |                                |        | S35         | 3.0                   |                                                           |       |       | 100   | 14     |                        |        |       |       |       | 100   | 14     |        |        |
|          |                                |        | S60         | 4.0                   |                                                           |       |       | 100   | 100    |                        |        |       |       |       | 100   | 100    |        |        |
| R3       | 550                            | 60°    | S20         | 1.4                   |                                                           |       |       | 66    | 11     |                        |        |       |       |       | 66    | 11     |        |        |
|          |                                |        | S35         | 3.0                   |                                                           |       |       |       | 44     | 8                      |        |       |       |       |       | 44     | 8      |        |
|          |                                |        | S60         | 4.0                   |                                                           |       |       |       |        | 48                     | 20     |       |       |       |       |        | 48     | 20     |