

Weir Type Diaphragm Valves with Pneumatic Actuator

Main Features

- For DIAVAL manufactured valves in weir and straight through type, with rubber diaphragms and PTFE / rubber backed diaphragms.
- Rugged & compact design, long life span at the plant. Favourable size / performance ratio.
- Rolling diaphragm design, allowing long cycle operations.
- Single acting (Direct and reverse actions).
- High quality spring, large thrust.
- Visual position indicator for open / close.
- Burnished stem protected by bellow.
- Maintenance-free O-ring sealing with flexible guiding.
- Possibility of assembly of additional devices / accessories.
- Operating ambient temperatures -40°C to +100°C.
- Fully traceable at the manufacture facility, identified by aluminum riveted plates.
- Optional top mounted emergency hand wheels for manual operation.
- Compliant with Machinery Directive 2006/42/EC



Working Principle

Direct Acting actuator is designed to operate from a normally open position. Air pressure on the top side of actuator diaphragm closes the valve and the spring opens the valve when the air is released from the actuator.

Reverse Acting actuator is designed to operate from a normally closed position. Air pressure on the bottom side of the actuator diaphragm opens the valve. When air is released spring closes the valve.

Control Accesories

There is a number of control accessories available to be assembled on to the ARI actuators. These accessories are comprehensive of limit switches (mechanical or inductive type), proximity sensors, solenoid valves, air speed regulators, positioners, air gauge sets... and many other customized solutions.

Control accessories may be specified and provided by the customer or by DIAVAL, however, only those accessories installed and tested at any DIAVAL facilities are covered by a performance guarantee.

Tests - After Market

All actuators are tested after assembly and before dispatch. Tests are comprehensive of visual and functional tests as per EN-12266-1/DIN 3230 P.3 - EN.10.204/2.2

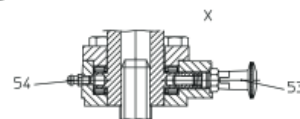
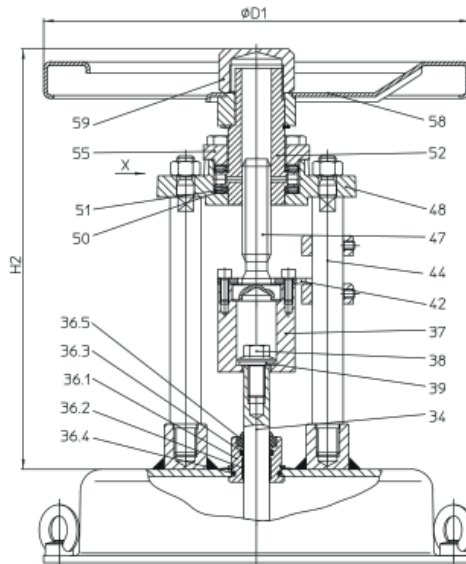
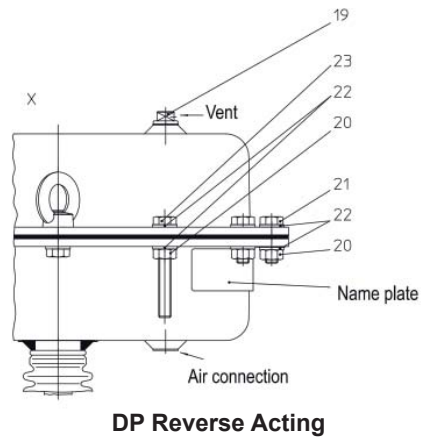
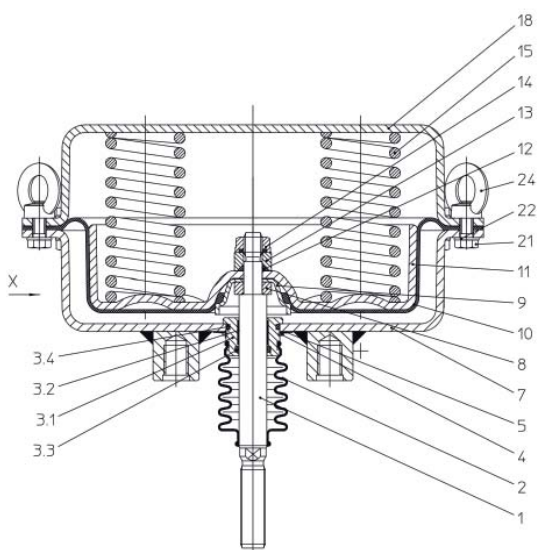
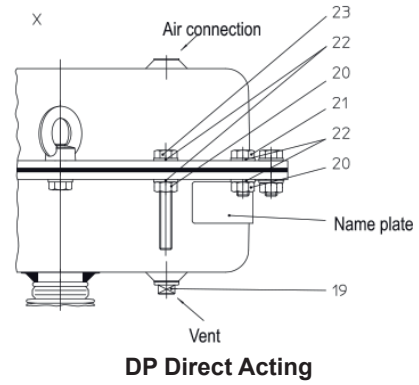
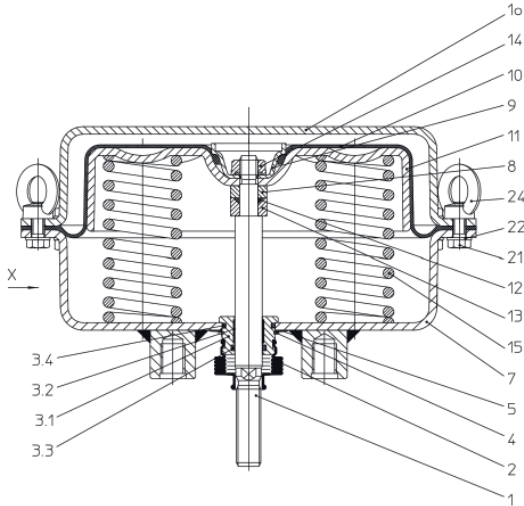
Actuators can be serviced at DIAVAL facilities where a stock of common spares is permanently available. Off site service engineers are available on demand and against usual service rates.

Operating and Maintenance Instructions

Please ensure that the DIAVAL Operating and Maintenance Instructions are provided by your supplier along with the valves. Do not try to start maintenance without having read and understood the Essential Safety Guidelines. Please consult us for further information.

Standard Materials

Only the best quality materials are incorporated to the DIAVAL manufacturing process and are subject to a strict quality control by our DIAVAL engineers at the assembly plant.



Top Handwheel (Optional)

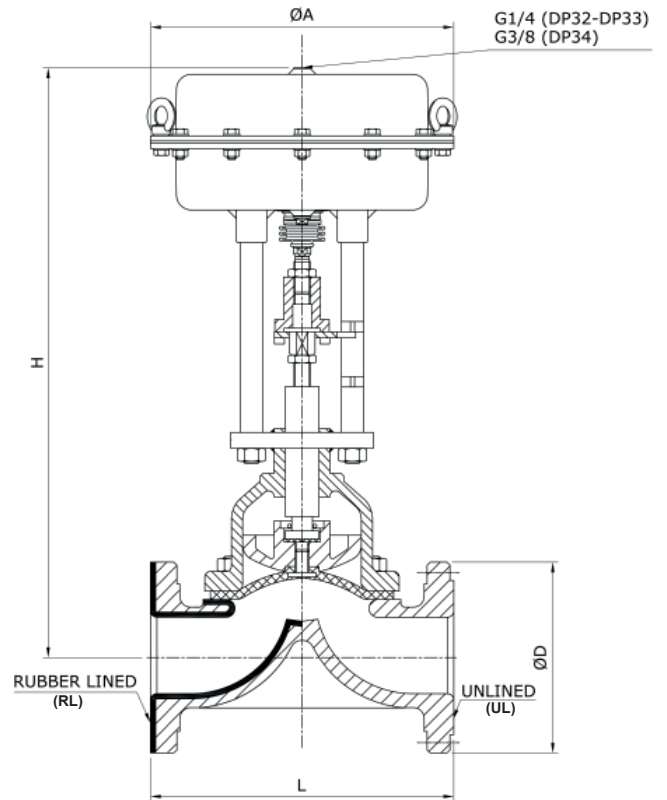
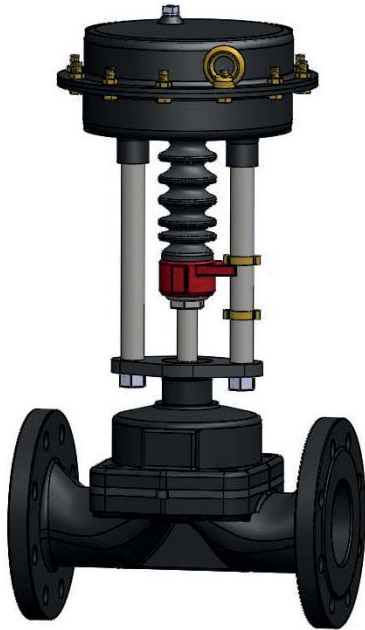
Standard Materials

| Pos. | Description | Material |
|-------|-------------------------------------|----------------------------------------------|
| 1 | Stem | X20Cr13+QT, 1.4021+QT |
| 2 | Bellow seal | EPDM50 or 42CR |
| 3 | Stem guiding * | X20Cr13+QT, 1.4021+QT |
| 3.1 | Stem guiding * | X20Cr13+QT, 1.4021+QT |
| 3.2 | Guiding band * | PTFE + 25%C |
| 3.3 | O-ring (stem) * | NBR |
| 3.4 | O-ring (guiding) * | NBR |
| 3.5 | Scraper * | NBR |
| 4 | Retaining ring | FSt - A3B |
| 5 | Spring plate | FSt (Fe/Zn12B) |
| 6 / 7 | Lower diaphragm casing (DP32-34Tri) | DD13+QT, 1.0335+QT (powder coated) |
| 7 | Lower diaphragm casing (DP35) | P265GH, 1.0425 / S235JR, 1.0037 |
| 8 | Bushing | X20Cr13+QT, 1.4021+QT |
| 9 | Diaphragm lange | DD13+QT, 1.0335+QT (Fe/Zn12B) or X20Cr13+QT, |
| 10 | Rolling diaphragm * | 1.4021+QT |
| 11 | Diaphragm plate (DP32-34Tri) | NBR + webbing |
| 11 | Diaphragm plate (DP35) * | DD13+QT, 1.0335+QT (Fe/Zn12B) |
| 12 | O-ring | St 52-3 G 03 g, 1.0570 G 03 g |
| 13 | Bushing | NBR |
| 14 | Flange nut | X20Cr13+QT, 1.4021+QT |
| 15 | Compression spring * | 8 - A4G |
| 16 | Spring centring | FDSiCr |
| 17 | Spring centring | DC01, 1.0330 (Fe/Zn12B) |
| 18 | Upper diaphragm casing (DP32-34Tri) | St 52-3 G 03 g, 1.0570 G 03 g |
| 18 | Upper diaphragm casing (DP35) | DD13+QT, 1.0335+QT (powder coated) |
| 19 | Screwed cap | P265GH, 1.0425 / S235JR, 1.0037 |
| 20 | Hexagon nut (DP32-34Tri) 1) | Polyäthylen |
| 20 | Hexagon nut (DP35) 1) | 8 - A4G |

| Pos. | Description | Material |
|------|-------------------------------|-----------------------------------------|
| 21 | Hexagon screw (DP32-34Tri) 1) | C35E, 1.1181 |
| 21 | Hexagon screw (DP35) 1) | 8.8 - A4G |
| 22 | Washer | 8.8 - A4G |
| 23 | Hexagon screw (DP32-34Tri) 1) | St - A4G |
| 23 | Hexagon screw (DP35) 1) | 8.8 - A4G |
| 24 | Eye nut 1) | 10.9 - A2G |
| 34 | Stem extension | 8-A4G |
| 36.1 | Bellow seal * | X20Cr13+QT, 1.4021+QT |
| 36.2 | Guiding band * | X14CrMoS17+QT, 1.4104+QT |
| 36.3 | O-ring * | PTFE +25%C |
| 36.4 | O-ring * | NBR |
| 36.5 | Scraper * | NBR |
| 37 | Bushing | NBR |
| 38 | Hexagon screw | X20Cr13+QT, 1.4021+QT |
| 39 | Washer | 8.8 - A4G |
| 42 | Torsion lock | X20Cr13+QT, 1.4021+QT |
| 44 1 | Distance column | 8.8 - A4G |
| 47 | Stem | 1SMn30+C, 1.0715+C (Fe/Zn12B) |
| 48 | Traverse | X20Cr13+QT, 1.4021+QT |
| 50 | Axial-washer | EN-JS1049, EN-GJS-400-18U-LT (Fe/Zn12B) |
| 51 | Axial-dial ring | St |
| 52 | Threaded bush | St |
| 53 | Catch pin | CuZn35Ni3Mn2Al-Pb-R490, CW710RR490 |
| 54 | Lubricating nipple | St, Cu |
| 55 | Covering for traverse | 5.8 - A4G |
| 58 | Handwheel | S235JR, 1.0037 (Fe/Zn12B) |
| 59 | Safety cap | Fe P01, 1.0330 (epoxy coating) |

Weir Type Diaphragm Valves with Direct Acting Pneumatic Actuator- Rubber Diaphragm

Main Dimensions



| DN | L | | | H | ØD | ØA |
|-----|-------------------------|-----|---------------------|-----|-----|-----|
| | EN 558 S1 (DIN 3202 F1) | | EN 558 S7 (BS 5156) | | | |
| | UL/RL | UL | RL | | | |
| 15 | 130 | 108 | 114 | 415 | 95 | 250 |
| 20 | 150 | 117 | 123 | 427 | 105 | 250 |
| 25 | 160 | 127 | 133 | 434 | 115 | 250 |
| 32 | 180 | 146 | 152 | 444 | 140 | 250 |
| 40 | 200 | 159 | 165 | 476 | 150 | 250 |
| 50 | 230 | 190 | 196 | 471 | 165 | 250 |
| 65 | 290 | 216 | 222 | 503 | 185 | 250 |
| 80 | 310 | 254 | 260 | 520 | 200 | 250 |
| 100 | 350 | 305 | 313 | 736 | 220 | 405 |
| 125 | 400 | 356 | 364 | 786 | 250 | 405 |
| 150 | 480 | 406 | 414 | 856 | 285 | 405 |

Dimensions in mm subject to manufacturing tolerance.

Dimensions are based on the serialized manufacture and should be taken as preliminary.

Please, bear in mind the service clearance area when planning a skid or when installation happens in a very tight area.

Actuation Selection Chart

Direct Acting (actuator opens at air failure, springs to open/air to close).

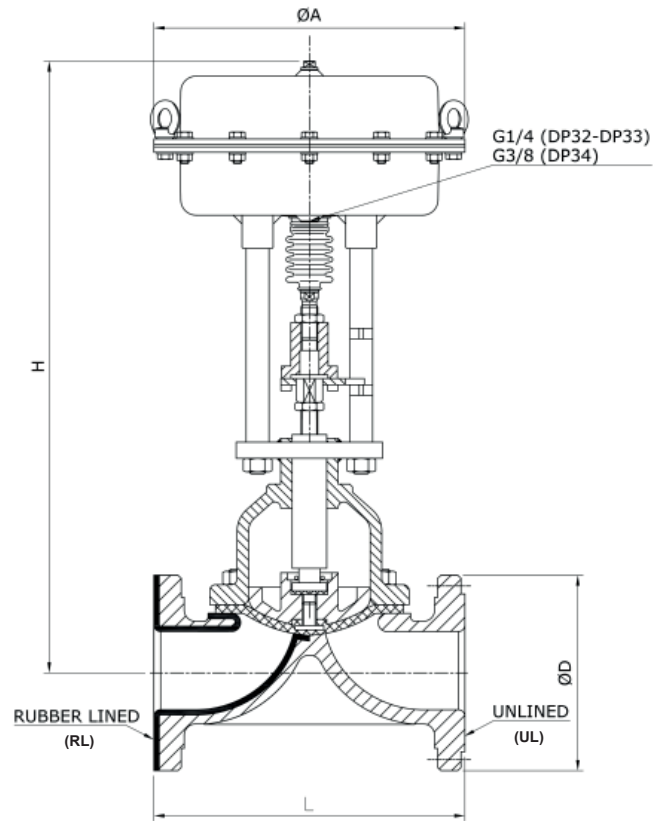
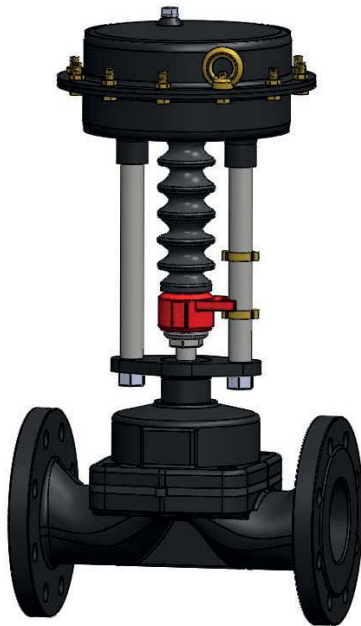
| Valve Size | Actuator Type | Max. Closing Pressure 100% ΔP (bar) | Max. Closing Pressure 0% ΔP (bar) | Air Supply to Close (bar) |
|------------|---------------|-------------------------------------|-----------------------------------|---------------------------|
| DN15 | DP32021020NA | 10 | 10 | 1,5-2,0 |
| DN20 | DP32021020NA | 10 | 10 | 1,5-2,0 |
| DN25 | DP32021020NA | 10 | 10 | 2,0-2,5 |
| DN32 | DP32021020NA | 10 | 10 | 2,0-2,5 |
| DN40 | DP32021020NA | 10 | 10 | 2,0-2,5 |
| DN50 | DP32021020NA | 10 | 10 | 2,0-2,5 |
| DN65 | DP32021020NA | 8 | 8 | 3,0-3,5 |
| DN80 | DP32021030NA | 8 | 8 | 3,5-4,0 |
| DN100 | DP34021050NA | 8 | 8 | 2,5-3,5 |
| DN125 | DP34021050NA | 8 | 8 | 3,5-4,5 |
| DN150 | DP34021065NA | 6 | 6 | 4,0-5,0 |

Information / restriction of technical rules need to be observed! Installation, Operating and Maintenance Manual can be downloaded at www.comeval.es

The engineer, designing a system or a plant, is responsible for the selection of the correct valve Product suitability must be verified, contact manufacturer for information

Weir Type Diaphragm Valves with Reverse Acting Pneumatic Actuator- Rubber Diaphragm

Main Dimensions



| DN | L | | | H | ØD | ØA |
|-----|-------------------------|-----|---------------------|-----|-----|-----|
| | EN 558 S1 (DIN 3202 F1) | | EN 558 S7 (BS 5156) | | | |
| | UL/RL | UL | RL | | | |
| 15 | 130 | 108 | 114 | 415 | 95 | 250 |
| 20 | 150 | 117 | 123 | 427 | 105 | 250 |
| 25 | 160 | 127 | 133 | 434 | 115 | 250 |
| 32 | 180 | 146 | 152 | 444 | 140 | 250 |
| 40 | 200 | 159 | 165 | 476 | 150 | 250 |
| 50 | 230 | 190 | 196 | 471 | 165 | 250 |
| 65 | 290 | 216 | 222 | 503 | 185 | 250 |
| 80 | 310 | 254 | 260 | 520 | 200 | 250 |
| 100 | 350 | 305 | 313 | 736 | 220 | 405 |
| 125 | 400 | 356 | 364 | 786 | 250 | 405 |
| 150 | 480 | 406 | 414 | 856 | 285 | 405 |

Dimensions in mm subject to manufacturing tolerance.

Dimensions are based on the serialized manufacture and should be taken as preliminary.

Please, bear in mind the service clearance area when planning a skid or when installation happens in a very tight area.

Actuation Selection Chart

Reverse Acting (actuator closes at air failure, air to open/spring to close).

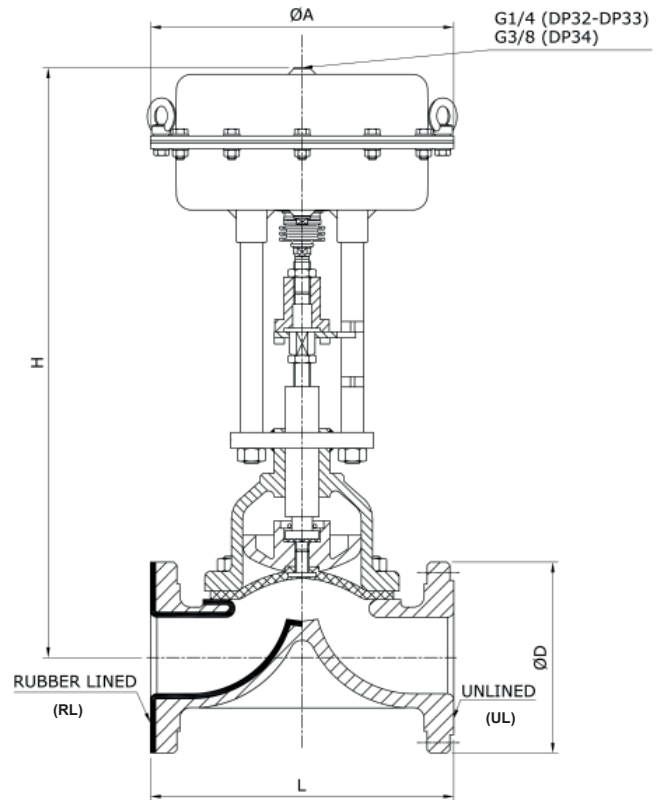
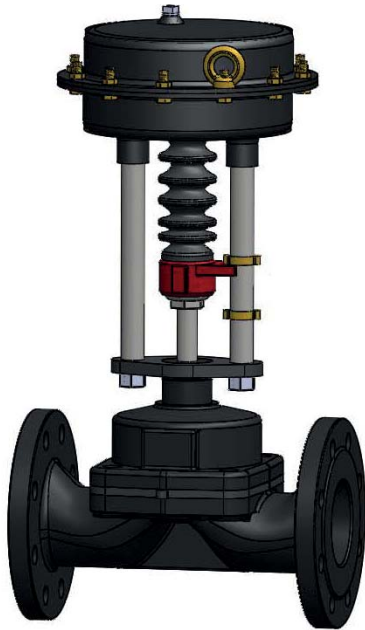
| Valve Size | Actuator Type | Max. Closing Pressure 100% ΔP (bar) | Max. Closing Pressure 0% ΔP (bar) | Air Supply to Open (bar) |
|------------|---------------|-------------------------------------|-----------------------------------|--------------------------|
| DN15 | DP32041220NC | 10 | 9 | 2,0-2,5 |
| DN20 | DP32041220NC | 10 | 9 | 2,0-2,5 |
| DN25 | DP32082420NC | 10 | 9 | 3,0-3,5 |
| DN32 | DP32082420NC | 10 | 9 | 3,0-3,5 |
| DN40 | DP32082420NC | 9 | 7 | 3,0-3,5 |
| DN50 | DP32082420NC | 8 | 6 | 3,0-3,5 |
| DN65 | DP32152520NC | 8 | 6 | 3,0-3,5 |
| DN80 | DP33153030NC | 8 | 6 | 4,0-4,5 |
| DN100 | DP34153050NC | 8 | 6 | 4,0-4,5 |
| DN125 | DP34204050NC | 7 | 4 | 5,0-5,5 |
| DN150 | DP34204065NC | 6 | 3 | 5,0-5,5 |

Information / restriction of technical rules need to be observed! Installation, Operating and Maintenance Manual can be downloaded at www.comeval.es

The engineer, designing a system or a plant, is responsible for the selection of the correct valve Product suitability must be verified, contact manufacturer for information

Weir Type Diaphragm Valves with Direct Acting Pneumatic Actuator- PTFE Diaphragm

Main Dimensions



| DN | L | | | H | ØD | ØA |
|-----|-------------------------|-----|---------------------|-----|-----|-----|
| | EN 558 S1 (DIN 3202 F1) | | EN 558 S7 (BS 5156) | | | |
| | UL/RL | UL | RL | | | |
| 15 | 130 | 108 | 114 | 415 | 95 | 250 |
| 20 | 150 | 117 | 123 | 427 | 105 | 250 |
| 25 | 160 | 127 | 133 | 434 | 115 | 250 |
| 32 | 180 | 146 | 152 | 444 | 140 | 250 |
| 40 | 200 | 159 | 165 | 476 | 150 | 250 |
| 50 | 230 | 190 | 196 | 471 | 165 | 250 |
| 65 | 290 | 216 | 222 | 503 | 185 | 250 |
| 80 | 310 | 254 | 260 | 520 | 200 | 250 |
| 100 | 350 | 305 | 313 | 736 | 220 | 405 |
| 125 | 400 | 356 | 364 | 786 | 250 | 405 |
| 150 | 480 | 406 | 414 | 856 | 285 | 405 |

Dimensions in mm subject to manufacturing tolerance.

Dimensions are based on the serialized manufacture and should be taken as preliminary.

Please, bear in mind the service clearance area when planning a skid or when installation happens in a very tight area.

Actuation Selection Chart

Direct Acting (actuator opens at air failure, springs to open/air to close).

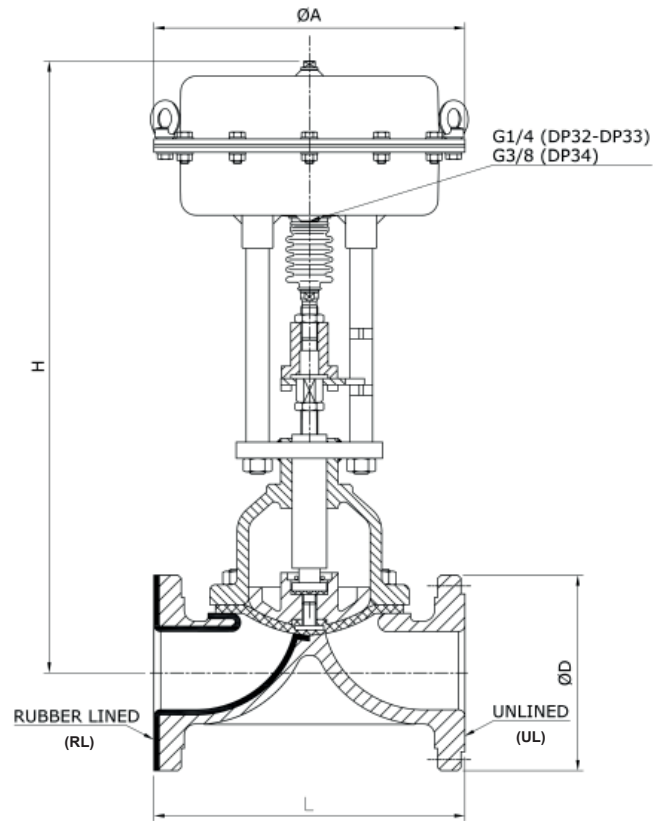
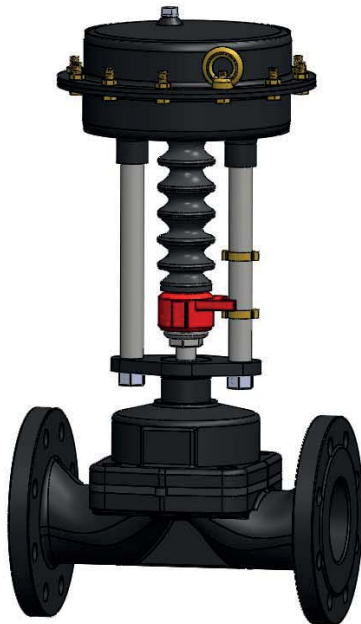
| Valve Size | Actuator Type | Max. Closing Pressure 100% ΔP (bar) | Max. Closing Pressure 0% ΔP (bar) | Air Supply to Close (bar) |
|------------|---------------|-------------------------------------|-----------------------------------|---------------------------|
| DN15 | DP32021020NA | 6 | 6 | 2,0-2,5 |
| DN20 | DP32021020NA | 6 | 6 | 2,0-2,5 |
| DN25 | DP32021020NA | 6 | 6 | 2,5-3,0 |
| DN32 | DP32021020NA | 6 | 6 | 2,5-3,0 |
| DN40 | DP32021020NA | 6 | 6 | 3,0-3,5 |
| DN50 | DP32021020NA | 6 | 6 | 3,5-4,0 |
| DN65 | DP32021020NA | 6 | 5 | 4,5-5,0 |
| DN80 | DP32021030NA | 6 | 4 | 5,0-5,5 |
| DN100 | DP34021050NA | 6 | 4 | 4,5-5,0 |
| DN125 | DP34021065NA | 6 | 4 | 4,5-5,0 |
| DN150 | DP34021065NA | 5 | 3 | 5,0-5,5 |

Information / restriction of technical rules need to be observed!
Installation, Operating and Maintenance Manual can be downloaded at www.comeval.es

The engineer, designing a system or a plant, is responsible for the selection of the correct valve
Product suitability must be verified, contact manufacturer for information

Weir Type Diaphragm Valves with Reverse Acting Pneumatic Actuator- PTFE Diaphragm

Main Dimensions



| DN | L | | | H | ØD | ØA |
|-----|-------------------------|-----|---------------------|-----|-----|-----|
| | EN 558 S1 (DIN 3202 F1) | | EN 558 S7 (BS 5156) | | | |
| | UL/RL | UL | RL | | | |
| 15 | 130 | 108 | 114 | 415 | 95 | 250 |
| 20 | 150 | 117 | 123 | 427 | 105 | 250 |
| 25 | 160 | 127 | 133 | 434 | 115 | 250 |
| 32 | 180 | 146 | 152 | 444 | 140 | 250 |
| 40 | 200 | 159 | 165 | 476 | 150 | 250 |
| 50 | 230 | 190 | 196 | 471 | 165 | 250 |
| 65 | 290 | 216 | 222 | 503 | 185 | 250 |
| 80 | 310 | 254 | 260 | 520 | 200 | 250 |
| 100 | 350 | 305 | 313 | 736 | 220 | 405 |
| 125 | 400 | 356 | 364 | 786 | 250 | 405 |
| 150 | 480 | 406 | 414 | 856 | 285 | 405 |

Dimensions in mm subject to manufacturing tolerance.

Dimensions are based on the serialized manufacture and should be taken as preliminary.

Please, bear in mind the service clearance area when planning a skid or when installation happens in a very tight area.

Actuation Selection Chart

Reverse Acting (actuator closes at air failure, air to open/spring to close).

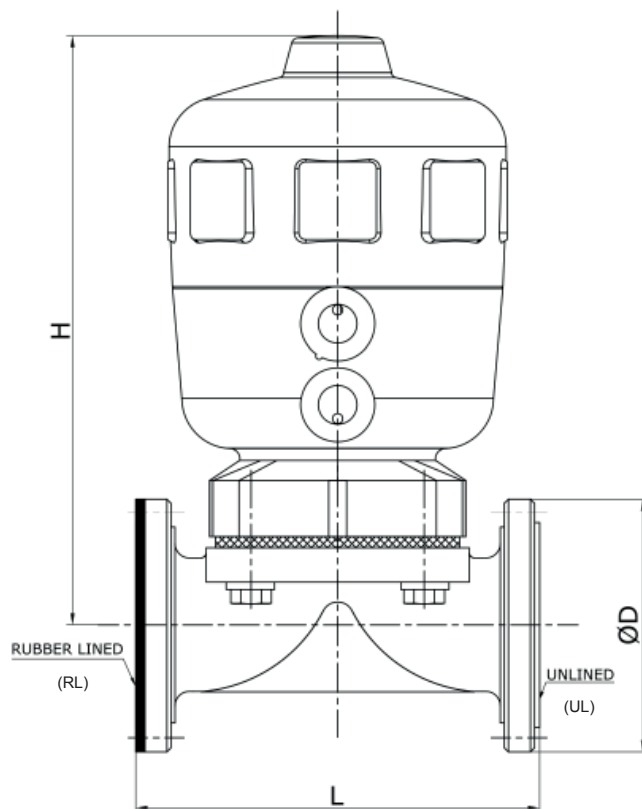
| Valve Size | Actuator Type | Max. Closing Pressure 100% ΔP (bar) | Max. Closing Pressure 0% ΔP (bar) | Air Supply to Open (bar) |
|------------|---------------|-------------------------------------|-----------------------------------|--------------------------|
| DN15 | DP32041220NC | 6 | 6 | 2,0-2,5 |
| DN20 | DP32041220NC | 6 | 6 | 2,0-2,5 |
| DN25 | DP32082420NC | 6 | 6 | 3,0-3,5 |
| DN32 | DP32082420NC | 6 | 6 | 3,0-3,5 |
| DN40 | DP32082420NC | 6 | 4 | 3,0-3,5 |
| DN50 | DP32082420NC | 6 | 4 | 3,5-4,0 |
| DN65 | DP32152520NC | 6 | 4 | 4,0-4,5 |
| DN80 | DP33153030NC | 6 | 4 | 4,5-5,0 |
| DN100 | DP34153050NC | 6 | 4 | 5,0-5,5 |
| DN125 | DP34204050NC | 6 | 4 | 5,0-5,5 |
| DN150 | DP34204065NC | 5 | 3 | 5,0-5,5 |

Information / restriction of technical rules need to be observed! Installation, Operating and Maintenance Manual can be downloaded at www.comeval.es

The engineer, designing a system or a plant, is responsible for the selection of the correct valve Product suitability must be verified, contact manufacturer for information

Piston Pneumatic Actuator

Main Dimensions



Actuator shell material:
PA Polyamide (PPS Polyphenylene sulfide on request)

| DN | L | | | H | ØD |
|----|----------------------------|------------------------|-----|-----|-----|
| | EN 558 S1 (DIN 3202 F1) | EN 558 S7 (BS 5156) | | | |
| | UL/RL | UL | RL | | |
| 15 | 130 | 108 | 114 | 155 | 95 |
| 20 | 150 | 117 | 123 | 175 | 105 |
| 25 | 160 | 127 | 133 | 250 | 115 |
| 32 | 180 | 146 | 152 | 250 | 140 |
| 40 | 200 | 159 | 165 | 250 | 150 |
| 50 | 230 | 190 | 196 | 250 | 165 |
| 65 | 290 | 216 | 222 | 265 | 185 |

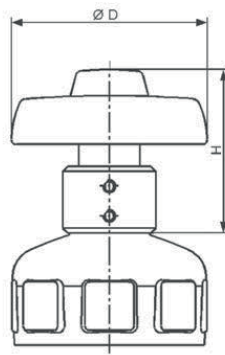
Dimensions in mm subject to manufacturing tolerance.

Dimensions are based on the serialized manufacture and should be taken as preliminary.

Please, bear in mind the service clearance area when planning a skid or when installation happens in a very tight area.

Accessories

Manual Override



| VALVE SIZE | ØD | H |
|------------|-----|-----|
| DN 15-25 | 108 | 114 |
| DN 32-50 | 117 | 123 |

Other accessories: position indicator, positioner, proximity switches, stroke limitation, NAMUR-adapter for solenoid valves.



Actuation Selection Chart - Single Acting - Rubber Diaphragm

Reverse Acting (actuator closes at air failure, air to open/spring to close).

| Valve Size | Actuator Type | Max. Closing Pressure 100% ΔP (bar) | Max. Closing Pressure 0% ΔP (bar) | Air Supply to Open (bar) |
|------------|---------------|----------------------------------------|--------------------------------------|-----------------------------|
| DN15 | BNC142492N015 | 8 | 7 | 5 |
| DN20 | BNC142494Q020 | 10 | 8 | 5.5 |
| DN25 | BNC142497K025 | 10 | 8.5 | 5.5 |
| DN32 | BNC142499V032 | 10 | 9 | 5.5 |
| DN40 | BNC142500A040 | 6 | 5 | 5.5 |
| DN50 | BNC142502Y050 | 4 | 3.5 | 5.5 |
| DN65 | BNC142730F065 | 7 | 4.5 | 5.5 |

Direct Acting (actuator opens at air failure, springs to open/air to close).

| Valve Size | Actuator Type | Max. Closing Pressure (bar) | Air Supply to Close (bar) |
|------------|---------------|--------------------------------|------------------------------|
| DN15 | BNA1692680015 | 10 | 4,5 |
| DN20 | BNA1437710020 | 10 | 4,5 |
| DN25 | BNA1437740025 | 10 | 5,5 |
| DN32 | BNA1437750032 | 10 | 5 |
| DN40 | BNA1437760040 | 10 | 6,5 |
| DN50 | BNA1437780050 | 5,5 8 | 6 8 |
| DN65 | BNA1650240065 | 8 10 | 6 7 |

Actuation Selection Chart - Double Acting - Rubber Diaphragm

| Valve Size | Actuator Type | Max. Closing Pressure (bar) | Air Supply to Close (bar) |
|------------|---------------|--------------------------------|------------------------------|
| DN15 | BDE1414350015 | 10 | 3,5 |
| DN20 | BDE1414370020 | 10 | 2,5 |
| DN25 | BDE1414390025 | 10 | 2,5 |
| DN40 | BDE1465920040 | 10 | 4,5 |
| DN50 | BDE1414460050 | 6 8 | 6 8 |
| DN65 | BDE1618540065 | 8 10 | 6 7 |