

FEATURES

- High flow due to angled seat design
- Anti-waterhammer design (fluid entry under the disc)
- Vacuum operation up to 10⁻² mbar
- Wide range of piston-type operators (32 - 50- 63 - 90 - 125 mm dia.) rotatable through 360°, for maximum performance at different minimum pilot pressures
- High performance, maintenance-free stuffing box
- The valves satisfy Pressure Equipment Directive 97/23/EC, category 1 (DN > 25) or article 3.3 (DN ≤ 25)

GENERAL

| | |
|----------------------------|--|
| Differential pressure | See «SPECIFICATIONS» [1 bar = 100 kPa] |
| Maximum allowable pressure | 16 bar |
| Ambient temperature range | -10°C to +60°C |
| Maximum viscosity | 5000 cSt (mm ² /s) |
| Pilot fluid | Filtered air or water ⁽¹⁾ |
| Max. pilot pressure | 10 bar |
| Min. pilot pressure | See below and following page |
| Pilot fluid temperature | -10°C to +60°C |
| Response time | See page V402-7 |



| fluids (*) | temperature range | disc seal (*) |
|---|-------------------|---------------|
| DN ≤ 50: air and gas groups 1 & 2 DN 65: air and gas group 2 all DN: water, oil, liquids groups 1 & 2 and steam | - 10°C to + 184°C | PTFE |

MATERIALS IN CONTACT WITH FLUID

(*) Ensure that the compatibility of the fluids in contact with the materials is verified

| | Bronze body | Stainless steel body |
|----------------------|-----------------|----------------------|
| Valve body | Bronze | AISI 316L |
| Stuffing box housing | Brass | AISI 316L |
| Stem | Stainless steel | Stainless steel |
| Disc | Brass | Stainless steel |
| Stuffing box packing | PTFE chevrons | PTFE chevrons |
| Wiper seal | FPM | FPM |
| Disc seal | PTFE | PTFE |
| Valve body seal | PTFE | PTFE |

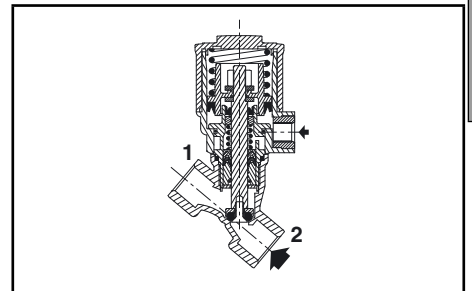
OTHER MATERIALS

| | |
|----------------------------|---|
| Operator | Glass fibre filled PA |
| Optical position indicator | PA 12, supplied standard on valves with 63, 90 and 125 mm operators |

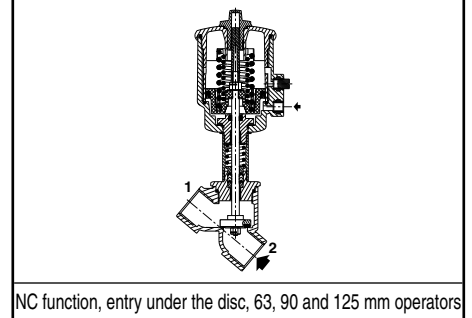
⁽¹⁾ For dia. 32, 50, 63, 90 and 125 mm operators: At service fluid temperatures inside the valve body above 100°C, it is prohibited to pilot the valve with water.

SPECIFICATIONS

| piping (ISO 6708) | | flow coefficient Kv | | pilot pressure (bar) | | operating pressure differential (bar) | | | | operator diameter (mm) | catalogue number | | | |
|--|----|---------------------|---------|----------------------|------|---------------------------------------|---------------------------------------|---|--------------------|------------------------|------------------|-----------------|----------|----------|
| pipe size (G*) | DN | (m ³ /h) | (l/min) | min. | max. | min. | max. | | | | bronze | stainless steel | | |
| | | | | | | | air, inert gas, aggressive fluids (*) | water, oil, liquids, aggressive liquids (*) | steam (*) (≤184°C) | | | | | |
| NC - Normally closed, entry under the disc ⁽¹⁾ | | | | | | | | | | | | | | |
| 3/8 | 10 | 2,8 | 47 | 4 | 10 | 0 | 16 | 16 | 10 | 32 | - | E290A791 | | |
| | | 4,1 | 68 | 4 | 10 | 0 | 12 | 12 | 10 | 32 | - | E290A792 | | |
| 1/2 | 15 | 4,9 | 82 | 4 | 10 | 0 | 16 | 16 | 10 | 50 | E290A384 | E290A393 | | |
| | | | | 2,5 | 10 | 0 | 16 | 16 | 10 | 63 | E290B002 | E290B045 | | |
| 3/4 | 20 | 6,5 | 108 | 4 | 10 | 0 | 6 | 6 | 6 | 32 | - | E290A793 | | |
| | | | | 10 | 10 | 0 | 10 | 10 | 10 | 50 | E290A385 | E290A394 | | |
| | | | | 16 | 16 | 10 | 63 | E290B005 | E290B048 | | | | | |
| | | | | 2,5 | 10 | 0 | 12 | 12 | 10 | 63 | E290B004 | E290B047 | | |
| 1 | 25 | 12,8 | 213 | 4 | 10 | 0 | 6 | 6 | 6 | 50 | E290A386 | E290A395 | | |
| | | | | 10 | 10 | 0 | 10 | 10 | 10 | 63 | E290B010 | E290B053 | | |
| | | | | 16,5 | 275 | 4 | 10 | 0 | 16 | 16 | 10 | 90 | E290B011 | E290B054 |
| | | | | 2,5 | 10 | 0 | 6 | 6 | 6 | 63 | E290B008 | E290B051 | | |
| 1 1/4 | 32 | 27 | 450 | 4 | 10 | 0 | 12 | 12 | 10 | 63 | E290A016 | E290A059 | | |
| | | | | 10 | 10 | 0 | 12 | 12 | 10 | 90 | E290A017 | E290A060 | | |
| | | | | 2,5 | 10 | 0 | 3 | 3 | 3 | 63 | E290A014 | E290A057 | | |
| | | | | 7 | 7 | 7 | 90 | E290A015 | E290A058 | | | | | |
| | | | | 4 | 10 | 0 | 16 | 16 | 10 | 125 | E290A642 | E290A646 | | |
| | | | | 2,5 | 10 | 0 | 16 | 16 | 10 | 125 | E290A641 | E290A645 | | |



NC function, entry under the disc, 32 and 50 mm operators



NC function, entry under the disc, 63, 90 and 125 mm operators

SPECIFICATIONS

| piping (ISO 6708) | | flow coefficient Kv | | pilot pressure (bar) | | operating pressure differential (bar) | | | operator diameter (mm) | catalogue number | | | |
|--|----|---------------------|---------|----------------------|------|---------------------------------------|---|--------------------|------------------------|------------------|-----------------|----------|----------|
| pipe size (G*) | DN | (m³/h) | (l/min) | min. | | max. | | | | bronze | stainless steel | | |
| | | | | min. | max. | air, inert gas, aggressive fluids (*) | water, oil, liquids, aggressive liquids (*) | steam (*) (≤184°C) | | | | | |
| NC - Normally closed, entry under the disc ⁽¹⁾ | | | | | | | | | | | | | |
| 1 1/2 | 40 | 45 | 750 | 4 | 10 | 0 | 4 | 4 | 4 | 63 | E290A020 | E290A063 | |
| | | | | 2,5 | 10 | 0 | 8 | 8 | 8 | 90 | E290A021 | E290A064 | |
| | | 48 | 800 | 4 | 10 | 0 | 4 | 4 | 4 | 90 | E290A019 | E290A062 | |
| | | | | 2,5 | 10 | 0 | 16 | 16 | 10 | 125 | E290A482 | E290A495 | |
| 2 | 50 | 59 | 983 | 4 | 10 | 0 | 2,5 | 2,5 | 2,5 | 63 | E290A024 | E290A067 | |
| | | | | 2,5 | 10 | 0 | 6 | 6 | 6 | 90 | E290A025 | E290A068 | |
| | | 66 | 1100 | 4 | 10 | 0 | 2,5 | 2,5 | 2,5 | 90 | E290A023 | E290A066 | |
| | | | | 2,5 | 10 | 0 | 10 | 10 | 10 | 125 | E290A485 | E290A498 | |
| | | 2 1/2 | 65 | 94 | 1567 | 4 | 10 | 0 | 5 | 5 | 125 | E290A484 | - |
| | | | | 111 | 1850 | 4 | 10 | 0 | 2 | 2 | 90 | E290A487 | E290A500 |
| | | | | 4 | 10 | 0 | 6 | 6 | 125 | E290A488 | E290A501 | | |
| NO - Normally open, entry under the disc | | | | | | | | | | | | | |
| 3/8 | 10 | 2,8 | 47 | IX (*) | 10 | 0 | 16 | 16 | 10 | 32 | - | E290A794 | |
| 1/2 | 15 | 4,1 | 68 | IX (*) | 10 | 0 | 16 | 16 | 10 | 32 | - | E290A795 | |
| | | 4,9 | 82 | I (*) | 10 | 0 | 16 | 16 | 10 | 50 | E290A387 | E290A396 | |
| 3/4 | 20 | 6,5 | 108 | II (*) | 10 | 0 | 16 | 16 | 10 | 63 | E290B026 | E290B069 | |
| | | | | IX (*) | 10 | 0 | 16 | 16 | 10 | 32 | - | E290A796 | |
| | | 9,4 | 157 | I (*) | 10 | 0 | 16 | 16 | 10 | 50 | E290A388 | E290A397 | |
| | | | | II (*) | 10 | 0 | 16 | 16 | 10 | 63 | E290B027 | E290B070 | |
| 1 | 25 | 12,8 | 213 | I (*) | 10 | 0 | 16 | 16 | 10 | 50 | E290A389 | - | |
| | | 16,5 | 275 | II (*) | 10 | 0 | 16 | 16 | 10 | 63 | E290B028 | E290B071 | |
| | | | | III (*) | 10 | 0 | 16 | 16 | 10 | 90 | E290B029 | E290B072 | |
| 1 1/4 | 32 | 27 | 450 | II (*) | 10 | 0 | 16 | 16 | 10 | 63 | E290A030 | E290A073 | |
| | | | | III (*) | 10 | 0 | 16 | 16 | 10 | 90 | E290A031 | E290A074 | |
| | | 29 | 483 | IV (*) | 10 | 0 | 16 | 16 | 10 | 125 | E290A643 | E290A647 | |
| 1 1/2 | 40 | 45 | 750 | II (*) | 10 | 0 | 11 | 11 | 10 | 63 | E290A032 | E290A075 | |
| | | | | III (*) | 10 | 0 | 16 | 16 | 10 | 90 | E290A033 | E290A076 | |
| | | 48 | 800 | IV (*) | 10 | 0 | 16 | 16 | 10 | 125 | E290A489 | E290A502 | |
| 2 | 50 | 59 | 983 | II (*) | 10 | 0 | 7 | 7 | 7 | 63 | E290A034 | E290A077 | |
| | | | | III (*) | 10 | 0 | 13 | 13 | 10 | 90 | E290A035 | E290A078 | |
| | | 66 | 1100 | IV (*) | 10 | 0 | 16 | 16 | 10 | 125 | E290A490 | E290A503 | |
| 2 1/2 | 65 | 94 | 1567 | III (*) | 10 | 0 | 7 | 7 | 7 | 90 | E290A491 | E290A504 | |
| | | 111 | 1850 | IV (*) | 10 | 0 | 16 | 16 | 10 | 125 | E290A492 | E290A505 | |
| NC - Normally closed, entry above the disc (version recommended for rapid-cycling steam applications) | | | | | | | | | | | | | |
| 3/8 | 10 | 2,8 | 47 | X (*) | 10 | 0 | 10 | - | 10 | 32 | - | E290A797 | |
| 1/2 | 15 | 4,1 | 68 | X (*) | 10 | 0 | 10 | - | 10 | 32 | - | E290A798 | |
| | | 4,9 | 82 | V (*) | 10 | 0 | 10 | - | 10 | 50 | E290A390 | E290A399 | |
| 3/4 | 20 | 6,5 | 108 | VI (*) | 10 | 0 | 10 | - | 10 | 63 | E290B036 | E290B079 | |
| | | | | X (*) | 10 | 0 | 10 | - | 10 | 32 | - | E290A799 | |
| | | 9,4 | 157 | V (*) | 10 | 0 | 10 | - | 10 | 50 | E290A391 | E290A400 | |
| | | | | VI (*) | 10 | 0 | 10 | - | 10 | 63 | E290B037 | E290B080 | |
| 1 | 25 | 12,8 | 213 | V (*) | 10 | 0 | 10 | - | 10 | 50 | E290A392 | E290A401 | |
| | | 16,5 | 275 | VI (*) | 10 | 0 | 10 | - | 10 | 63 | E290B038 | E290B081 | |
| 1 1/4 | 32 | 27 | 450 | VI (*) | 10 | 0 | 10 | - | 10 | 63 | E290A039 | E290A082 | |
| 1 1/2 | 40 | 45 | 750 | VII (*) | 10 | 0 | 10 | - | 10 | 90 | E290A136 | E290A137 | |
| | | | | VI (*) | 10 | 0 | 10 | - | 10 | 63 | E290A040 | E290A083 | |
| 2 | 50 | 59 | 983 | VI (*) | 10 | 0 | 9 | - | 9 | 63 | E290A042 | E290A085 | |
| | | | | VII (*) | 10 | 0 | 10 | - | 10 | 90 | E290A043 | E290A086 | |
| 2 1/2 | 65 | 94 | 1567 | VII (*) | 10 | 0 | 10 | - | 10 | 90 | E290A623 | E290A625 | |
| | | 111 | 1850 | VIII (*) | 10 | 0 | 10 | - | 10 | 125 | E290A624 | - | |

(*) Minimum pilot pressure varies with differential pressure, see page V402-7.

⁽¹⁾ Calculation of the minimum pilot pressure at a ΔP of max. 10 bar with allowable backpressure (backpressure not recommended with liquids as waterhammer may occur).

- 32 and 50 mm operators, 4 bar minimum pilot pressure version: add 2 bar to the minimum pilot pressure of chart V or X, page V402-7.

- 63, 90 and 125 mm operators, 4 bar minimum pilot pressure version: add 1,5 bar to the minimum pilot pressure of chart VI, VII or VIII, page V402-7.

OPTIONS AND ACCESSORIES (see page V435/V436)

- Signaling box or compact signaling unit
- Stroke limiter for opening
- Manual safety device
- Optical position indicator on 32-50 mm operators, NC function
- Adapter plate for NAMUR pad mounting pilot (63-90-125 mm operators only)
- Oxygen service (except DN 65), pressure limited to 15 bar, temperature limited to + 60°C
- Vacuum applications up to $1,33 \cdot 10^{-3}$ mbar
- NET-INOX passivation treatment on stainless steel body valve
- ATEX 94/9/EC versions for potentially explosive atmospheres
- Pilot operated drain valve assembly with electronic timer (see Solenoids, Coils & Accessories section)
- Other pipe connections are available on request

INSTALLATION

- The valves can be mounted in any position without affecting operation
- Compatible with ASTM 1, 2 and 3 oils
- Pipe connections (G*) have standard combination thread according to ISO 228/1 and ISO 7/1
- Installation/maintenance instructions are included with each valve

SPARE PARTS KITS

| DN | spare parts kit no. | |
|----|---------------------|-------------------------------|
| | Ø 32 mm | Ø 50-63-90-125 mm |
| 10 | C140100 | - |
| 15 | C140101 | C131204 ⁽¹⁾ |
| 20 | C140102 | C131205 ⁽¹⁾ |
| 25 | - | C131206 ⁽¹⁾ |
| 32 | - | C131207 ⁽¹⁾ |
| 40 | - | C131208 ⁽¹⁾ |
| 50 | - | C131209 ⁽¹⁾ |
| 65 | - | C131622 ⁽¹⁾ |

⁽¹⁾ Standard suffix VM also applies to kits (see V435).

- Not available

ORDERING EXAMPLES:

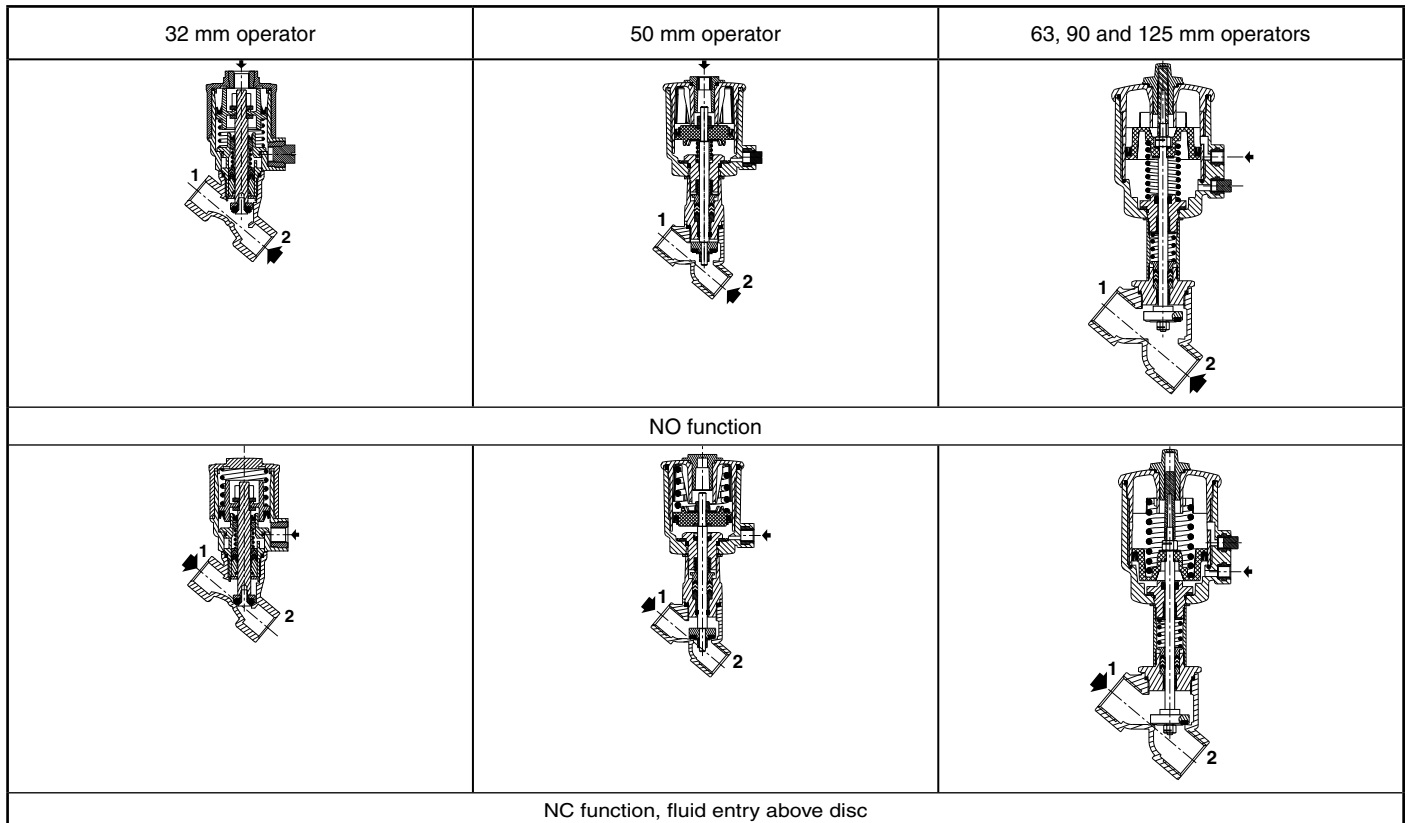
| | | | | |
|---|-----|---|-----|-----|
| E | 290 | A | 792 | |
| E | 290 | B | 002 | SM2 |
| E | 290 | A | 791 | SU |
| E | 290 | A | 082 | |

pipe thread _____
 basic number _____ suffix _____

ORDERING EXAMPLES KITS:

| | |
|---------|----|
| C140100 | |
| C140205 | |
| C140205 | VM |

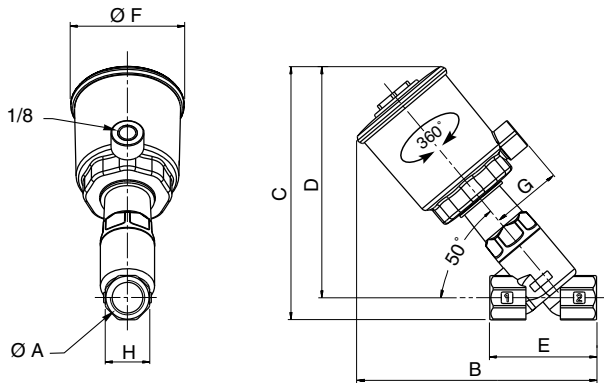
basic number _____ suffix _____



DIMENSIONS (mm), WEIGHT (kg)



TYPE 01-02
32 and 50 mm operators
Fluid entry:
under the disc at 2
above the disc at 1



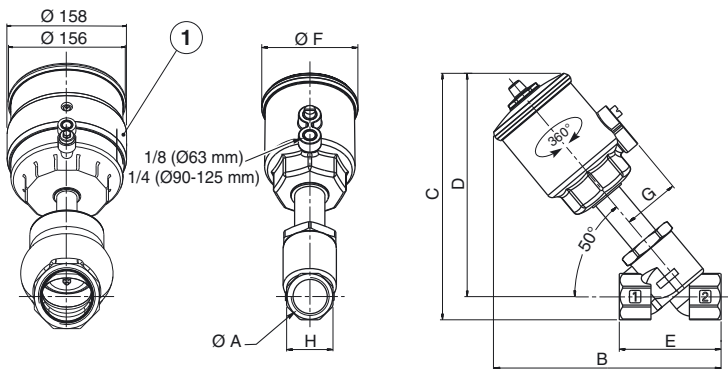
| type | operator diameter | ØA | B | C | D | E | ØF | G | ØH | weight ⁽¹⁾ |
|------|-------------------|-----|-------|-------|------|----|------|----|------|-----------------------|
| 01 | 32 mm | 3/8 | 92 | 93 | 81,5 | 55 | 43,5 | 27 | 23,5 | 0,35 |
| | | 1/2 | 99 | 97 | 83,5 | 65 | 43,5 | 27 | 28 | 0,4 |
| | | 3/4 | 107 | 104,5 | 88 | 75 | 43,5 | 27 | 30 | 0,45 |
| 02 | 50 mm | 1/2 | 142 | 154,5 | 141 | 65 | 69 | 43 | 27 | 0,9 |
| | | 3/4 | 150,5 | 159 | 143 | 75 | 69 | 43 | 32 | 1 |
| | | 1 | 155 | 165 | 145 | 90 | 69 | 43 | 41 | 1,4 |

⁽¹⁾ Weight of valve without pilot.

Solenoid pilot valves: see V440 (32 and 50 mm operators).



TYPE 03-04-05
63, 90 and 125 mm operators
Fluid entry:
under the disc at 2
above the disc at 1



① Operator dia. 125 mm, NO function

| type | operator diameter | ØA | B | C | D | E | ØF | G | ØH | weight ⁽¹⁾ |
|------|-------------------|-------|-----|-------|-------|-----|-----|------|----|-----------------------|
| 03 | 63 mm | 1/2 | 170 | 182 | 169 | 65 | 85 | 50,5 | 27 | 1,2 |
| | | 3/4 | 175 | 185 | 170 | 75 | 85 | 50,5 | 32 | 1,3 |
| | | 1 | 179 | 192 | 172 | 90 | 85 | 50,5 | 41 | 1,7 |
| | | 1 1/4 | 217 | 229 | 204 | 110 | 85 | 50,5 | 50 | 2,1 |
| | | 1 1/2 | 224 | 245 | 215 | 120 | 85 | 50,5 | 60 | 2,9 |
| | | 2 | 249 | 259 | 224 | 150 | 85 | 50,5 | 70 | 3,7 |
| 04 | 90 mm | 1 | 197 | 209 | 189 | 90 | 118 | 67 | 41 | 2,3 |
| | | 1 1/4 | 236 | 246 | 221 | 110 | 118 | 67 | 50 | 2,7 |
| | | 1 1/2 | 243 | 262 | 232 | 120 | 118 | 67 | 60 | 3,5 |
| | | 2 | 267 | 276 | 241 | 150 | 118 | 67 | 70 | 4,3 |
| | | 2 1/2 | 299 | 300 | 257 | 190 | 118 | 67 | 86 | 6,3 |
| 05 | 125 mm | 1 1/4 | 284 | 298 | 273 | 110 | 156 | 86 | 50 | 5,2 |
| | | 1 1/2 | 291 | 313,5 | 283,5 | 120 | 156 | 86 | 60 | 6 |
| | | 2 | 315 | 328 | 293 | 150 | 156 | 86 | 70 | 6,8 |
| | | 2 1/2 | 347 | 352 | 308 | 190 | 156 | 86 | 86 | 8,9 |

⁽¹⁾ Weight of valve without pilot. Add 0,2 for dia. 125 mm operator NO.

Solenoid pilot valves: see V439 (63 mm operator) / V444 (90 and 125 mm operators).