

Diaphragm Valve, Plastic **2/2 way, pneumatically operated**

Construction

- Corrosion-resistant all plastic construction
- Maintenance-free diaphragm actuator which can be controlled by any inert gas or liquid
- Control functions "normally closed", "normally open" and "double acting" are available

Features

- Suitable for inert and corrosive liquid and gaseous media
- Valve body and diaphragm are available in various materials
- The valve is insensitive to highly contaminated abrasive media
- Optional flow direction and mounting position



Advantages

- Body and diaphragm sizes have coordinated diameters hence the fitting time is reduced because the pipe and fixing centres remain the same. Spares inventory is also reduced.
- Optional accessories
 - Electrical remote indication
 - Electrical position indicator with microswitches or proximity sensors
 - Mounting bracket according to NAMUR
 - Pneumatic or electro-pneumatic positioner
 - Stroke limiter (DN 65-100 with metal actuator cover 3/1 only, K-ref. no. 6255)



Working medium

Suitable for any inert or corrosive liquid or gas, subject to the correct choice of body and diaphragm material.

Max. perm. temperature of working medium:
See datasheet "Technical Information on Plastic Materials"

Control medium

Min. required control pressure see diagram page 8

Max. permiss. control pressure 6 bar

Max. permiss. temperature of control medium 40°C

| Nominal size | Control function 1 (bar) | | Control functions 2 + 3 (bar) | | K _v value | Weight |
|--------------|--------------------------|------------------|-------------------------------|--------------------|----------------------|--------|
| (mm) | Working pressure* | Control pressure | Working pressure | Control pressure | (m³/h) | (kg) |
| 15 | 0 - 10** | 5-6 bar | 0 - 10 | See diagram page 8 | 5.6 | 1.8 |
| 20 | 0 - 10** | | 0 - 10 | | 8.2 | 1.8 |
| 25 | 0 - 10** | | 0 - 10 | | 10.5 | 1.8 |
| 32 | 0 - 10** | | 0 - 10 | | 18.0 | 4.0 |
| 40 | 0 - 10** | | 0 - 10 | | 25.0 | 4.0 |
| 50 | 0 - 10** | | 0 - 10 | | 46.0 | 7.4 |
| 65 | 0 - 6 | | 0 - 10 | | 78.0 | 16.3 |
| 80 | 0 - 6 | | 0 - 10 | | 120.0 | 16.3 |
| 100 | 0 - 6 | | 0 - 10 | | 189.0 | 24.5 |

* Working pressure applied upstream only; ** Working pressure with PTFE diaphragm (ref.no. 52): 0-6 bar - further designs on enquiry.
All pressures are given as gauge pressures.

Body configuration

Ref. no.

Straight through D

Connection

Ref. no.

Spigot ends for solvent / butt welding - DIN, (PVC-U, PP, PVDF) 0

Loose flange, PN 10, for stub flange DIN 16962 T 12 4

Loose flange for short stub ends DIN 16962 T3 04

Union ends with metric sockets - DIN 7

Spigots for infrared butt welding (IR) for pipes acc. to DIN 8077 series 4 20

Spigots for butt welding BCF (PVDF-HP DN 15-50) 28

Spigot ends for solvent / butt welding - inch 30

Union ends with imperial sockets - inch 33

Union ends with metric butt weld spigots acc. to DIN 16962 T 13 series 4 78

Valve body material

Ref. no.

PVC-U 1

ABS 4

PP 5

PVDF 20

Lining PPH natural 70

Lining PPH grey acc. RAL 7032 71

Diaphragm material

Ref. no.

Hypalon CSM 1

Perbunan NBR 2

Viton® FPM 4

Ethylene-Propylene EPDM 14

PTFE/EPDM PTFE laminated 52

Control function

Ref. no.

Normally closed 1

Normally open 2

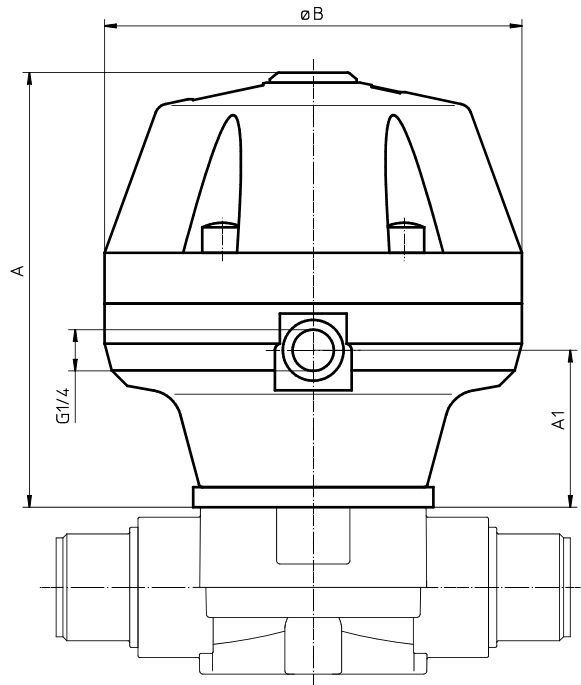
Double acting 3

Order example

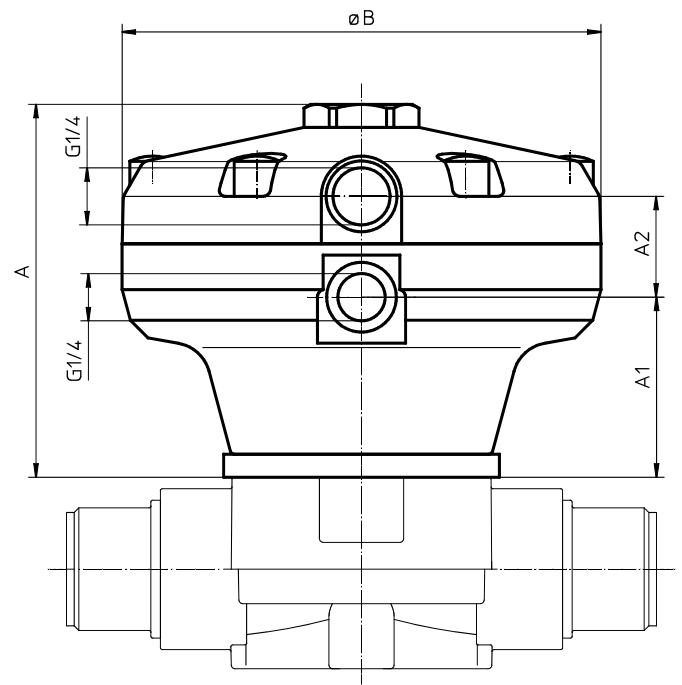
| | | | | | | | |
|--|-----|----|---|---|---|----|---|
| | 690 | 25 | D | 7 | 1 | 14 | 1 |
| Type | 690 | | | | | | |
| Nominal size (mm) | | 25 | | | | | |
| Body configuration (D) | | | D | | | | |
| Connection (reference number) | | | | 7 | | | |
| Valve body material (reference number) | | | | | 1 | | |
| Diaphragm material (reference number) | | | | | | 14 | |
| Control function (reference number) | | | | | | | 1 |

Actuator dimensions control function 1 (mm)

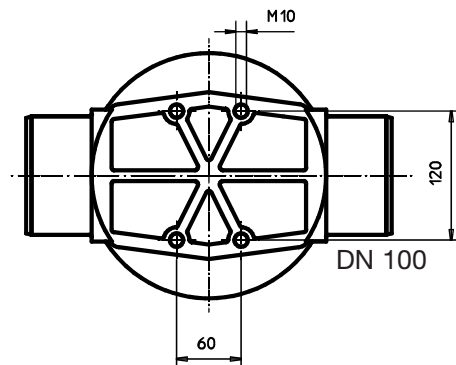
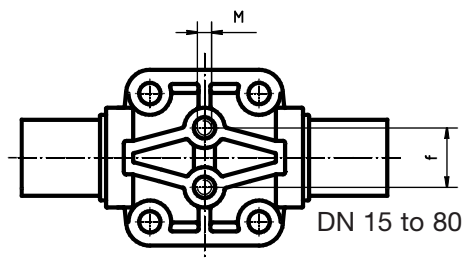
| DN | ø B | A | A1 |
|-------|-----|-----|-----|
| 15-25 | 125 | 131 | 47 |
| 32-40 | 155 | 177 | 75 |
| 50 | 210 | 215 | 90 |
| 65-80 | 260 | 270 | 125 |
| 100 | 260 | 323 | 174 |


Actuator dimensions control functions 2 and 3 (mm)

| DN | ø B | A | A1 | A2 |
|-------|-----|-----|-----|----|
| 15-25 | 125 | 98 | 47 | 27 |
| 32-40 | 155 | 135 | 75 | 27 |
| 50 | 210 | 164 | 90 | 29 |
| 65-80 | 260 | 232 | 125 | 41 |
| 100 | 260 | 288 | 174 | 46 |


Mounting dimensions (mm)

| DN | M | f |
|-----|-------------|-------|
| 15 | M6 | 25.0 |
| 20 | M6 | 25.0 |
| 25 | M6 | 25.0 |
| 32 | M8 | 44.5 |
| 40 | M8 | 44.5 |
| 50 | M8 | 44.5 |
| 65 | M12 | 100.0 |
| 80 | M12 | 100.0 |
| 100 | see drawing | |

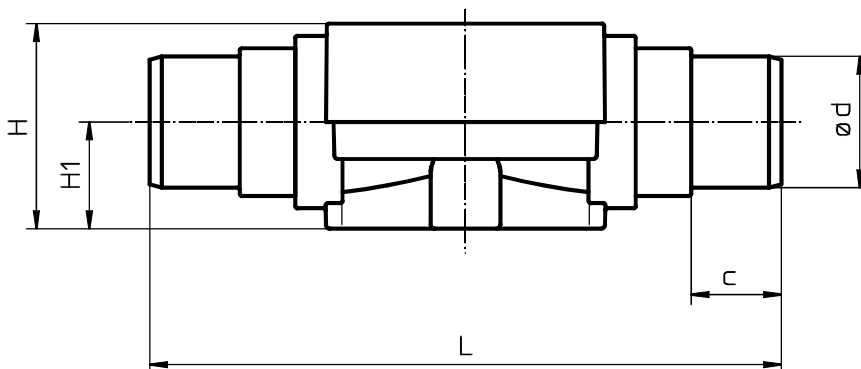


Body dimensions - Solvent cement and butt weld spigots DIN ref. no. 0 (mm)

| | Material ref. no. 1 | | | | | Material ref. no. 5 | | | | | Material ref. no. 20 | | | | | Material ref. no. 70, 71 | | | | |
|-----|---------------------|-----|----|-----|----|---------------------|-----|----|-----|----|----------------------|-----|----|-----|----|--------------------------|----|----|----|----|
| DN | L | H | H1 | ød | c | L | H | H1 | ød | c | L | H | H1 | ød | c | L | H | H1 | ød | c |
| 15 | 124 | 45 | 24 | 20 | 16 | 124 | 45 | 24 | 20 | 16 | 124 | 45 | 24 | 20 | 16 | 124 | 50 | 26 | 20 | 16 |
| 20 | 144 | 45 | 24 | 25 | 19 | 144 | 45 | 24 | 25 | 19 | 144 | 45 | 24 | 25 | 19 | 144 | 50 | 26 | 25 | 19 |
| 25 | 154 | 45 | 24 | 32 | 22 | 154 | 45 | 24 | 32 | 22 | 154 | 45 | 24 | 32 | 22 | 154 | 50 | 26 | 32 | 22 |
| 32 | 174 | 74 | 40 | 40 | 26 | 174 | 68 | 40 | 40 | 24 | 174 | 68 | 40 | 40 | 24 | 174 | 74 | 40 | 40 | 24 |
| 40 | 194 | 74 | 40 | 50 | 31 | 194 | 68 | 40 | 50 | 27 | 194 | 68 | 40 | 50 | 26 | 194 | 74 | 40 | 50 | 26 |
| 50 | 224 | 78 | 40 | 63 | 39 | 224 | 75 | 40 | 63 | 40 | 224 | 75 | 40 | 63 | 29 | 224 | 82 | 40 | 63 | 29 |
| 65 | 284 | 117 | 55 | 75 | 44 | 284 | 117 | 55 | 75 | 44 | 284 | 117 | 55 | 75 | 44 | - | - | - | - | - |
| 80 | 300 | 117 | 55 | 90 | 51 | 300 | 117 | 55 | 90 | 51 | 300 | 117 | 55 | 90 | 51 | - | - | - | - | - |
| 100 | 340 | 140 | 65 | 110 | 61 | 340 | 140 | 65 | 110 | 61 | 340 | 140 | 65 | 110 | 61 | - | - | - | - | - |

Body dimensions - Solvent cement and butt weld spigots INCH ref. no. 30, material ref. no. 1 (mm)

| DN | L | H | H1 | ød | c |
|-----|--------|-----|-----|----|-------|
| 15 | 1/2" | 141 | 45 | 24 | 21.4 |
| 20 | 3/4" | 145 | 45 | 24 | 26.7 |
| 25 | 1" | 154 | 45 | 24 | 33.6 |
| 32 | 1 1/4" | 174 | 68 | 40 | 42.2 |
| 40 | 1 1/2" | 194 | 68 | 40 | 48.3 |
| 50 | 2" | 224 | 75 | 40 | 60.3 |
| 65 | 2 1/2" | 284 | 117 | 55 | 75.2 |
| 80 | 3" | 300 | 117 | 55 | 88.9 |
| 100 | 4" | 340 | 140 | 65 | 114.3 |

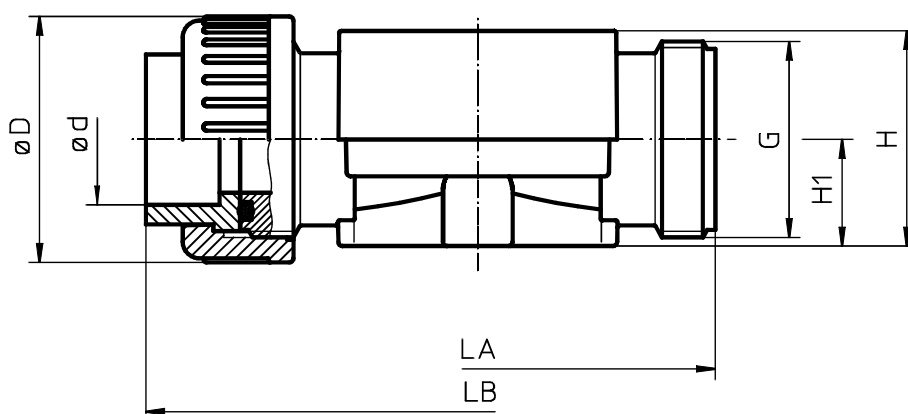


Body dimensions - Union ends with metric sockets
DIN ref. no. 7 (mm)

| | Material ref. no. 1 | | | | | | | Material ref. no. 70, 71 | | | | | | |
|----|---------------------|-----|----|----|-----|----|----|--------------------------|-----|----|----|-----|----|----|
| DN | LA | LB | H | H1 | øD | ød | G | LA | LB | H | H1 | øD | ød | G |
| 15 | 108 | 146 | 51 | 26 | 43 | 20 | 1 | 108 | 144 | 50 | 26 | 43 | 20 | 1 |
| 20 | 108 | 152 | 51 | 26 | 53 | 25 | 1¼ | 108 | 146 | 50 | 26 | 53 | 25 | 1¼ |
| 25 | 116 | 166 | 51 | 26 | 60 | 32 | 1½ | 116 | 162 | 50 | 26 | 60 | 32 | 1½ |
| 32 | 134 | 192 | 74 | 40 | 74 | 40 | 2 | 134 | 186 | 74 | 40 | 74 | 40 | 2 |
| 40 | 154 | 222 | 74 | 40 | 83 | 50 | 2¼ | 154 | 210 | 74 | 40 | 83 | 50 | 2¼ |
| 50 | 182 | 264 | 82 | 40 | 103 | 63 | 2¾ | 182 | 248 | 82 | 40 | 103 | 63 | 2¾ |

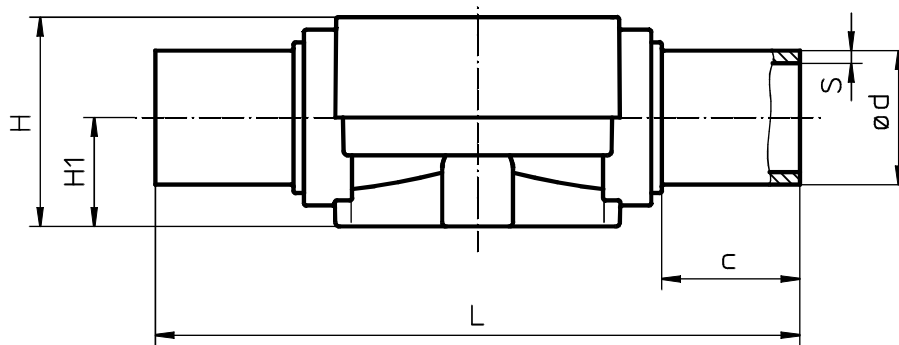
**Body dimensions -
Union ends with imperial sockets**
INCH ref. no. 33, material ref. no. 1 (mm)

| DN | | LA | LB | H | H1 | øD | ød | G |
|----|-----|-----|-----|----|----|-----|------|----|
| 15 | ½" | 108 | 150 | 51 | 26 | 43 | 21,4 | 1 |
| 20 | ¾" | 108 | 156 | 51 | 26 | 53 | 26,7 | 1¼ |
| 25 | 1" | 116 | 170 | 51 | 26 | 60 | 33,6 | 1½ |
| 32 | 1¼" | 134 | 198 | 74 | 40 | 74 | 42,2 | 2 |
| 40 | 1½" | 154 | 220 | 74 | 40 | 83 | 48,3 | 2¼ |
| 50 | 2" | 182 | 262 | 82 | 40 | 103 | 60,3 | 2¾ |



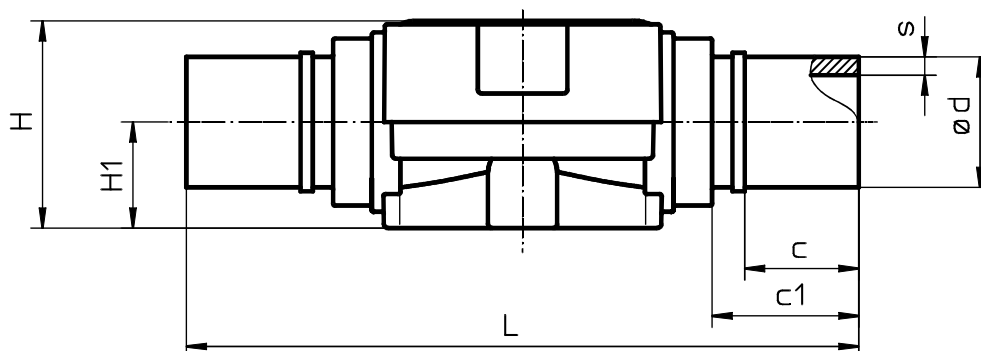
Body dimensions - Spigots for infrared butt welding (IR) ref. no. 20 (mm)

| DN | Material ref. no. 20 | | | | | | Material ref. no. 70 and 71 | | | | | |
|-----|----------------------|-----|----|-----|-----|----|-----------------------------|----|----|----|-----|----|
| | L | H | H1 | ød | S | c | L | H | H1 | ød | S | c |
| 15 | - | - | - | - | - | - | 154 | 50 | 26 | 20 | 1.9 | 33 |
| 20 | - | - | - | - | - | - | 154 | 50 | 26 | 25 | 2.3 | 33 |
| 25 | - | - | - | - | - | - | 154 | 50 | 26 | 32 | 3.0 | 33 |
| 32 | - | - | - | - | - | - | 194 | 74 | 40 | 40 | 3.7 | 33 |
| 40 | - | - | - | - | - | - | 194 | 74 | 40 | 50 | 4.6 | 33 |
| 50 | - | - | - | - | - | - | 224 | 82 | 40 | 63 | 5.8 | 33 |
| 65 | 284 | 117 | 55 | 75 | 3.6 | 43 | - | - | - | - | - | - |
| 80 | 300 | 117 | 55 | 90 | 4.3 | 51 | - | - | - | - | - | - |
| 100 | 340 | 140 | 65 | 110 | 5.3 | 59 | - | - | - | - | - | - |



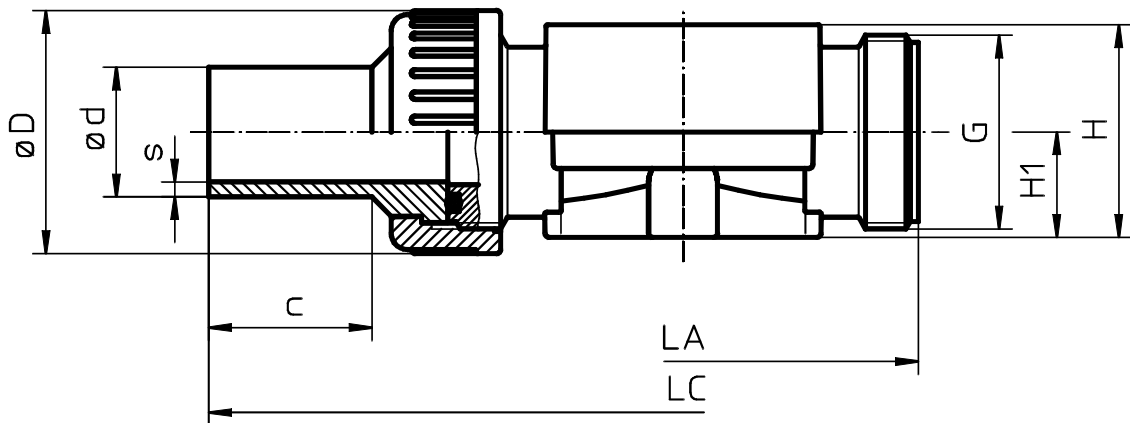
Body dimensions - PVDF IR weld spigots (BCF) ref. no. 28, material ref. no. 30 (mm)

| DN | L | H | H1 | ød | c | c1 | s |
|-----|-----|----|----|----|----|----|-----|
| 15 | 165 | 45 | 24 | 20 | 28 | 36 | 1.9 |
| 20 | 165 | 45 | 24 | 25 | 28 | 36 | 1.9 |
| 25 | 165 | 45 | 24 | 32 | 28 | 36 | 2.4 |
| 32 | 209 | 68 | 40 | 40 | 37 | 46 | 2.4 |
| 40 | 209 | 68 | 40 | 50 | 37 | 46 | 3.0 |
| 500 | 235 | 75 | 40 | 63 | 37 | 46 | 3.0 |



Body dimensions - Union ends with metric butt weld spigots ref. no. 78, material ref. no. 70, 71 (mm)

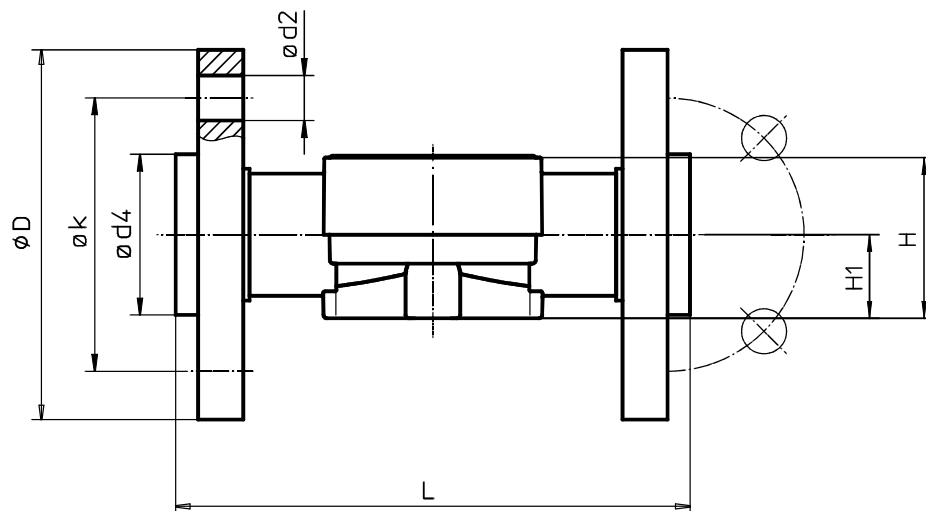
| DN | LA | LC | H | H1 | øD | ød | G | s | c |
|----|-----|-----|----|----|-----|----|----|-----|----|
| 15 | 108 | 214 | 50 | 26 | 43 | 20 | 1 | 1.9 | 37 |
| 20 | 108 | 220 | 50 | 26 | 53 | 25 | 1¼ | 2.3 | 39 |
| 25 | 116 | 234 | 50 | 26 | 60 | 32 | 1½ | 3.0 | 40 |
| 32 | 134 | 258 | 74 | 40 | 74 | 40 | 2 | 3.7 | 41 |
| 40 | 154 | 284 | 74 | 40 | 83 | 50 | 2¼ | 4.6 | 43 |
| 50 | 182 | 318 | 82 | 40 | 103 | 63 | 2¾ | 5.8 | 43 |



Body dimensions with flanges ref. no. 4 and 04 (mm)

| | | | | | | | Connection ref. no. 4 | | Connection ref. no. 04 | |
|-----|-----|----|------|-----|-----|----------------------|-----------------------|------|------------------------|------|
| DN | H | H1 | ø d2 | ø k | ø D | Number of bolt holes | L | ø d4 | L | ø d4 |
| 15 | 50 | 26 | 14 | 65 | 95 | 4 | 150* | 34 | - | - |
| 20 | 50 | 26 | 14 | 75 | 105 | 4 | 150 | 41 | 164 | 58 |
| 25 | 50 | 26 | 14 | 85 | 115 | 4 | 160 | 50 | 182 | 68 |
| 32 | 74 | 40 | 18 | 100 | 140 | 4 | 180 | 61 | 182 | 78 |
| 40 | 74 | 40 | 18 | 110 | 150 | 4 | 200 | 73 | 204 | 88 |
| 50 | 82 | 40 | 18 | 125 | 165 | 4 | 230 | 90 | 238 | 102 |
| 65 | 117 | 55 | 18 | 145 | 185 | 4 | 290 | 106 | 298 | 122 |
| 80 | 117 | 55 | 18 | 160 | 200 | 8 | 310 | 125 | 314 | 138 |
| 100 | 140 | 65 | 18 | 180 | 220 | 8 | 350 | 150 | 348 | 158 |

* no DIN length

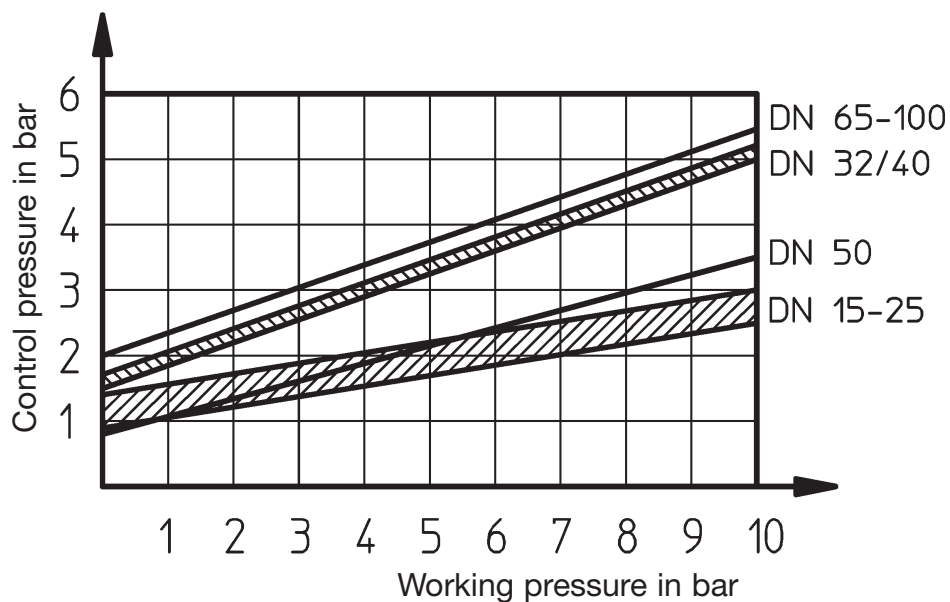


Overview of valve bodies for GEMÜ 690

| Material | PVC-U (ref.no. 1) | | | | PP (ref.no. 5) | | | PP (ref.no. 70, Kz 71) | | | | | | PVDF (ref.no. 20) | | | | | | | ABS (ref.no. 4) |
|-----------------|-------------------|---|----|----|----------------|---|----|------------------------|---|----|---|----|----|-------------------|---|----|---|----|----|----|-----------------|
| Conn. (ref.no.) | 0 | 7 | 30 | 33 | 0 | 4 | 04 | 0 | 4 | 04 | 7 | 20 | 78 | 0 | 4 | 04 | 7 | 20 | 28 | 78 | 30 |
| DN 15 | X | X | X | X | X | X | - | X | X | - | X | X | X | X | X | - | X | - | X | X | X |
| DN 20 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | - | X | X | X |
| DN 25 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | - | X | X | X |
| DN 32 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | - | X | X | X |
| DN 40 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | - | X | X | X |
| DN 50 | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | - | X | X | X |
| DN 65 | X | - | X | - | X | X | X | - | - | - | - | - | - | X | X | X | - | X | - | - | X |
| DN 80 | X | - | X | - | X | X | X | - | - | - | - | - | - | X | X | X | - | X | - | - | X |
| DN 100 | X | - | X | - | X | X | X | - | - | - | - | - | - | X | X | X | - | X | - | - | X |

Control pressure characteristic DN 15-100 (EPDM, Viton®)

Control functions 2 and 3



GEMÜ® VALVES, ACTUATORS
AND CONTROL SYSTEMS