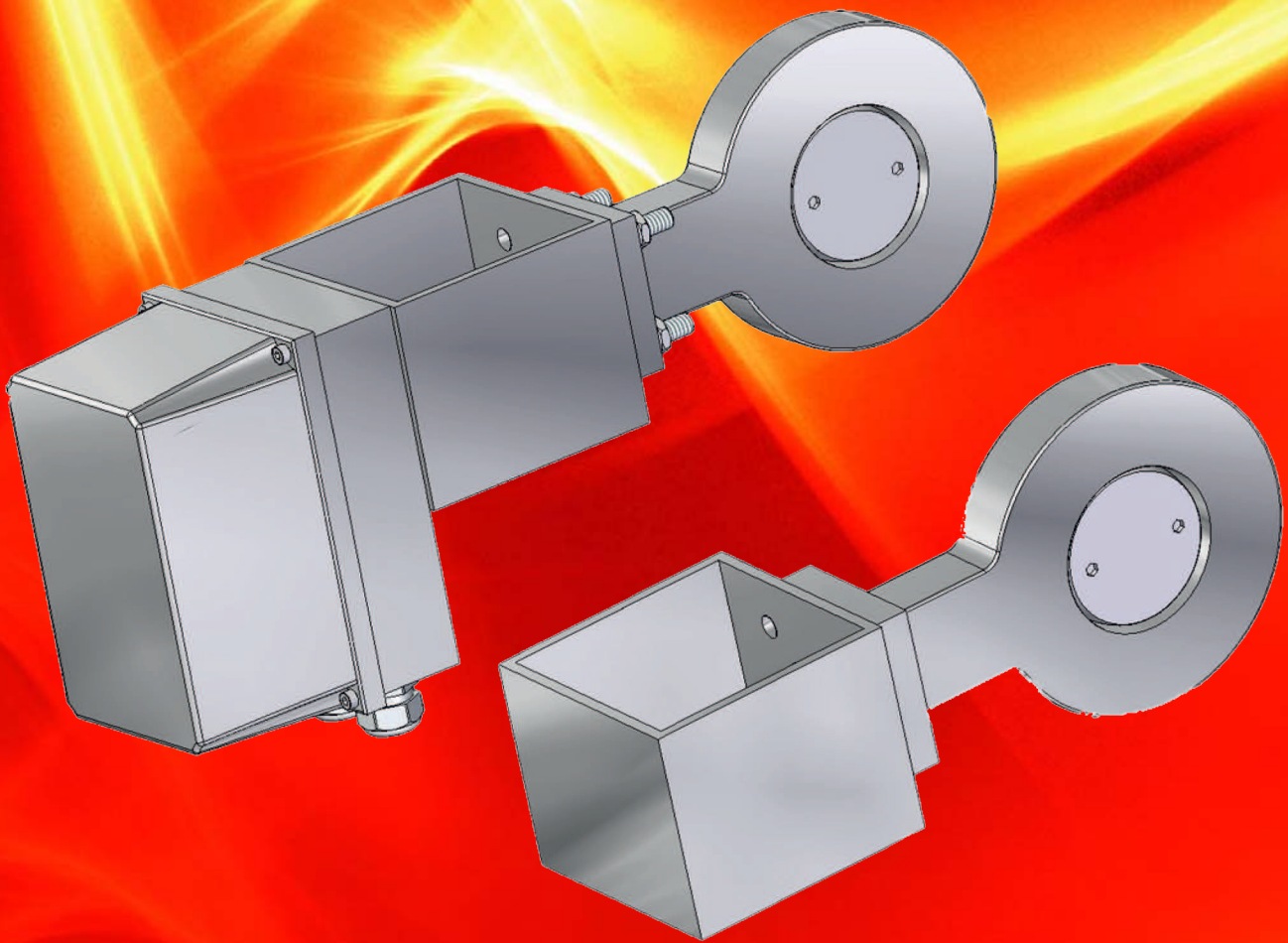


**Flow Control Butterfly Valve
for Gas 662R23
(-20 °C ... +60 °C / -4 °F ... +140 °F)**



1 Technical Data

1 Technical Data

1.1 Butterfly Data

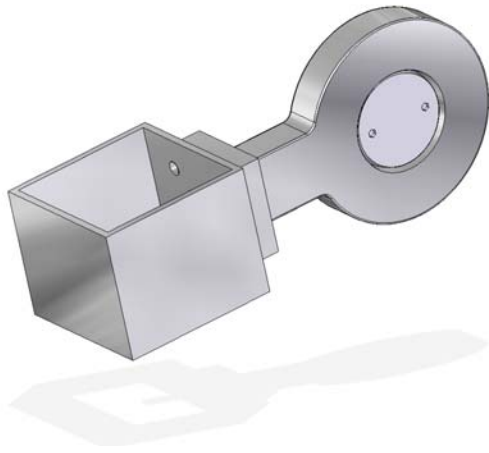


Fig. 1-1 Flow control butterfly valves with console

| Description | Actuator for control without zero flow, in the complete combustion technology |
|---|--|
| Test specification | type approval according to 90/396/EWG Prod. ID. No. CE-0085-AR0408 DIN 3394-1 Class R _O DIN 3391 (for medium temperature of: -20 °C ... +60 °C/ -4 °F ... +140 °F) |
| Operating pressure | 0 to 4 bar |
| Type of control | for electrical actuators |
| Mounting position | optional |
| Design | butterfly disc without limit-stop |
| Differential pressure delta P _{max.} | DN25-DN50 4 bar DN65-DN100 2 bar |
| Leakage rate without stop bar | 1 % of K _{VS} -value 90° |
| Mounting | intermediate flange butterfly - clamp design |
| Explosion protection | the control dampers are not covered by the directive 2014/34/EU, because with the loads occurring in practice, no effective ignition source occurs even in the event of a fault. The damper must be grounded. |
| Flow Control Butterfly Valve 662R23 | |
| Housing material | grey cast iron |
| Material control disk / shaft | stainless steel |
| Shaft seal | NBR- O-ring |

1 Technical Data

| Type | Ambient Temperature | Medium | Flow Rate |
|---------|---|---|------------|
| 662R23V | -20 °C ... +60 °C/ -4 °F ... +140 °F | gases of 1 st , 2 nd and 3 rd gas families and air | non-linear |

NOTICE

The Flow Control Butterfly Valves are not suitable for hydrogen or pure oxygen.

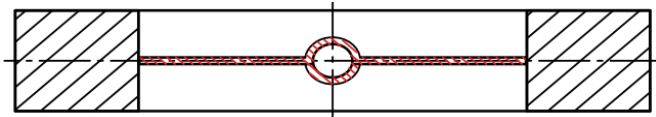


Fig. 1-2 Butterfly disc (non-linear flow rate)

| | | |
|---------------------------|---------------|------------------------------------|
| Suitable pressure stages: | DN25 - DN80 | PN10 - PN40, ANSI 300 lbs |
| | DN100 | PN10 - PN40, ANSI 150 lbs, 300 lbs |
| | DN125 - DN150 | PN10 - PN16, ANSI 150 lbs, 300 lbs |
| | DN200 | PN10 - PN16, ANSI 150 lbs |
| | DN250 | PN10, ANSI 150 lbs |
| | DN300 | PN6 - PN10 |
| | DN350 - DN400 | PN6 - PN16 |

1 Technical Data

1.2 Flow Control Butterfly Valve with Console and Coupling

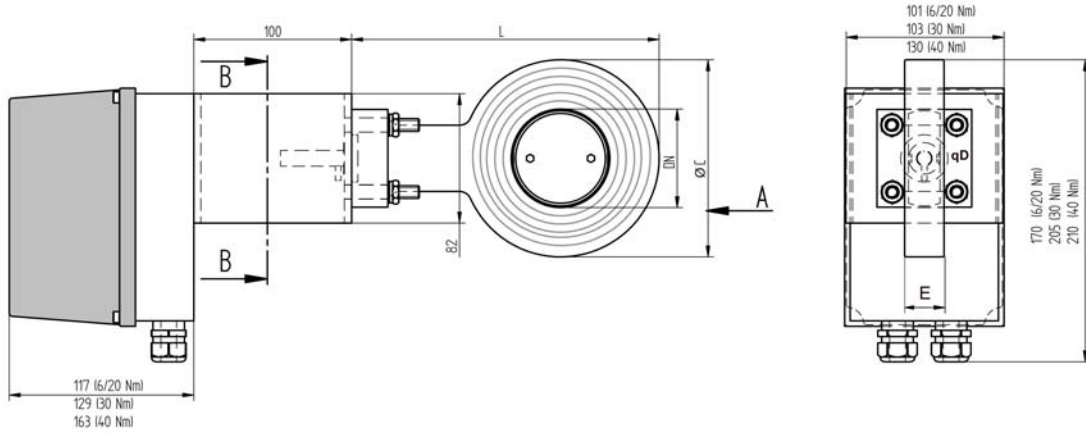


Fig. 1-3 Butterfly valve with console and coupling mounted on actuator controlled by ETAMATIC/FMS/VMS

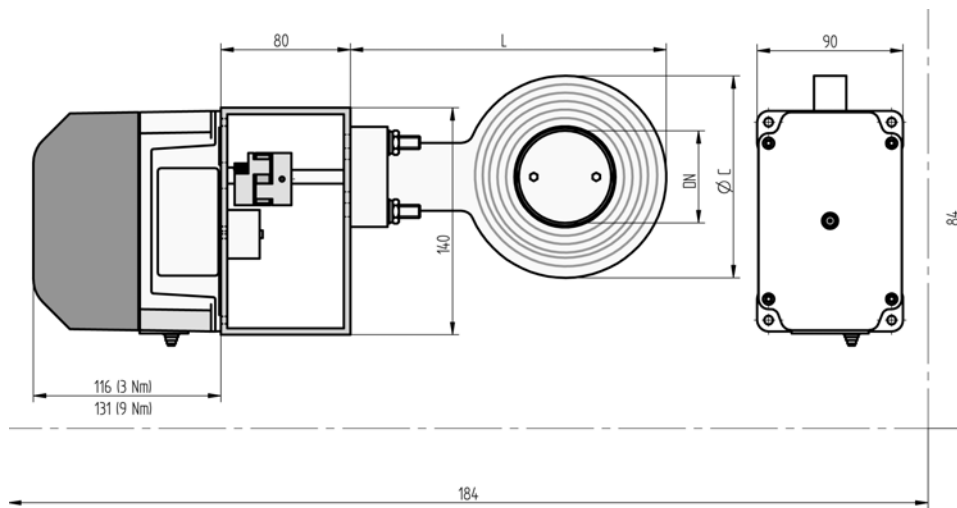


Fig. 1-4 Butterfly valve with console and coupling mounted on a motor controlled by BT300

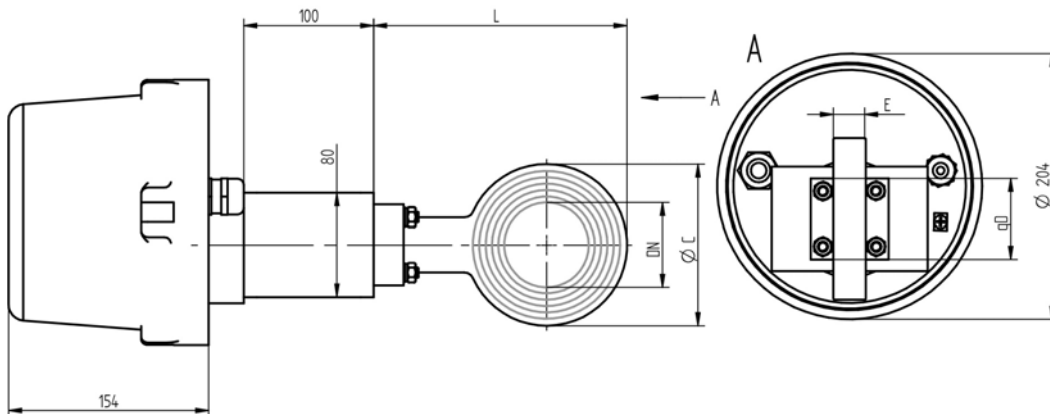


Fig. 1-5 Butterfly valve with console and coupling mounted on Ex-actuator controlled by ETAMATIC/FMS/VMS

1 Technical Data

| Non-linear type standard | DN | L | Ø C | q D | E | weight in kg |
|---------------------------------|-----------|----------|------------|------------|----------|---------------------|
| 662R23V/025/000 | 25=32 | 153 | 70 | 60 | 25 | 2,2 |
| 662R23V/032/000 | 32 | 153 | 70 | 60 | 25 | 2,2 |
| 662R23V/040/000 | 40 | 166 | 90 | 60 | 25 | 2,5 |
| 662R23V/050/000 | 50 | 183 | 104 | 60 | 25 | 2,7 |
| 662R23V/065/000 | 65 | 195 | 124 | 60 | 25 | 3,1 |
| 662R23V/080/000 | 80 | 211 | 139 | 60 | 30 | 3,8 |
| 662R23V/100/000 | 100 | 231 | 161 | 60 | 30 | 4,4 |
| 662R23V/125/000 | 125 | 258 | 191 | 60 | 35 | 5,9 |
| 662R23V/150/000 | 150 | 283 | 214 | 60 | 35 | 6,3 |
| 662R23V/200/000 | 200 | 344 | 270 | 80 | 40 | 12,7 |
| 662R23V/250/000 | 250 | 394 | 320 | 80 | 40 | 13,7 |
| 662R23V/300/000 | 300 | 444 | 370 | 80 | 45 | 16,2 |
| 662R23V/350/000 | 350 | 523 | 428 | 80 | 45 | 27,7 |
| 662R23V/400/000 | 400 | 561 | 465 | 80 | 45 | 39 |

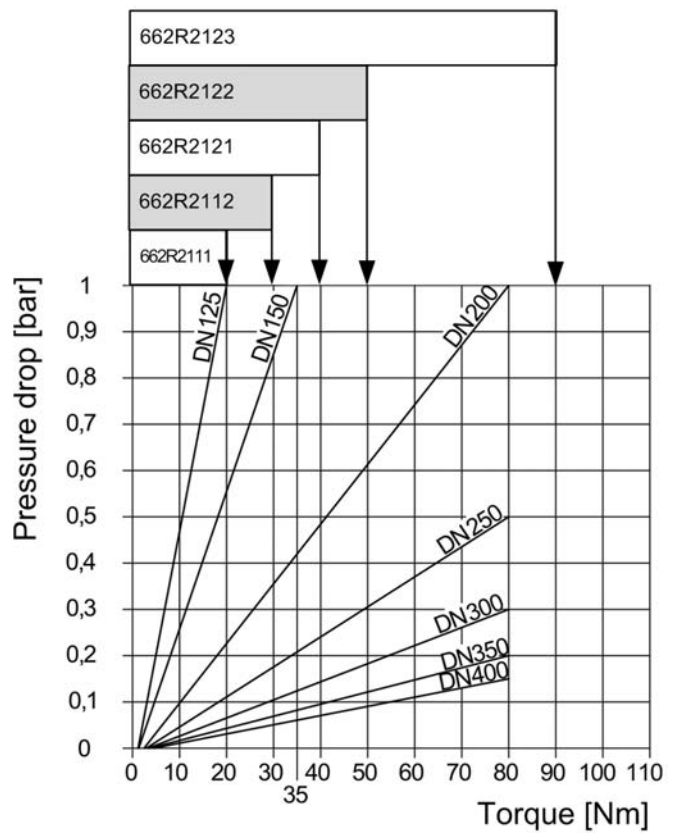
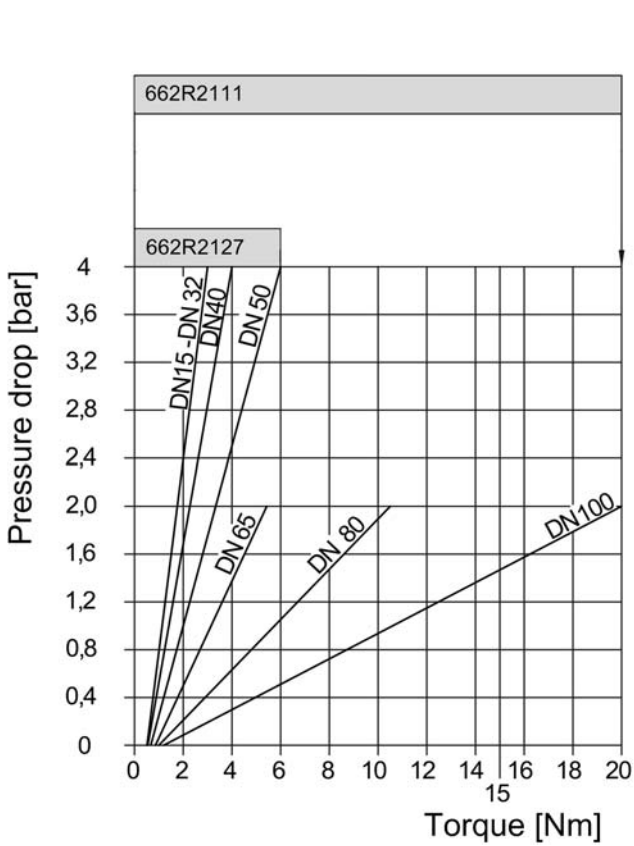
All mentioned nominal diameters are available with reduction!

Ordering example for reduction DN100 to DN80: 662R23V/100/080

1 Technical Data

1.3 Selection Electrical Servomotor

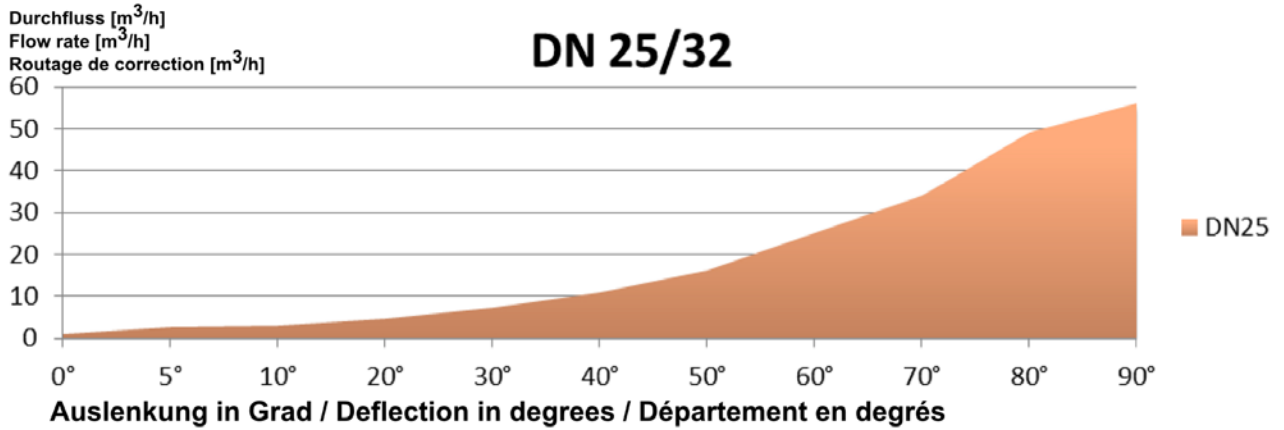
- The total torque of the butterfly valve is the results of the addition of the diagram and spindle sealing torque.
- The max. permitted differential pressure ($p_e - p_a$) must not exceed during operation. The limits can be taken from the diagram.



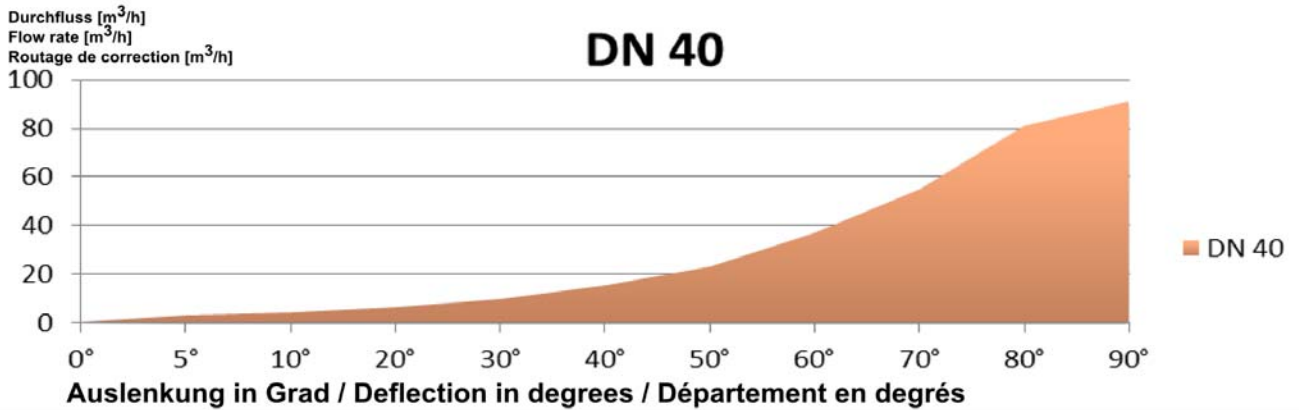
1 Technical Data

1.4 KV-Values of Butterfly Valves

1.4.1 KV-Values of Butterfly Valves, non-linear



| 0° | 0° | 5° | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h |
| 0,8 | 1 | 2,5 | 3,1 | 4,7 | 7,2 | 11 | 16 | 25 | 34 | 49 | 56 |

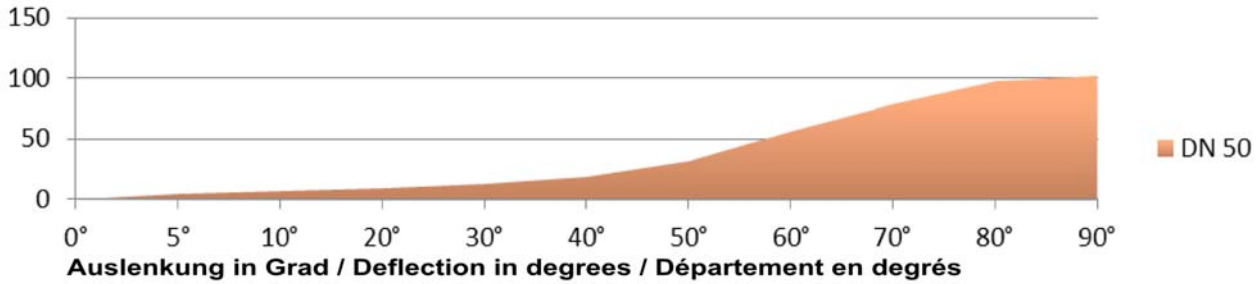


| 0° | 5° | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h |
| 0,8 | 3 | 3,8 | 6,1 | 9,5 | 15 | 23 | 37 | 55 | 81 | 91 |

1 Technical Data

Durchfluss [m³/h]
Flow rate [m³/h]
Routage de correction [m³/h]

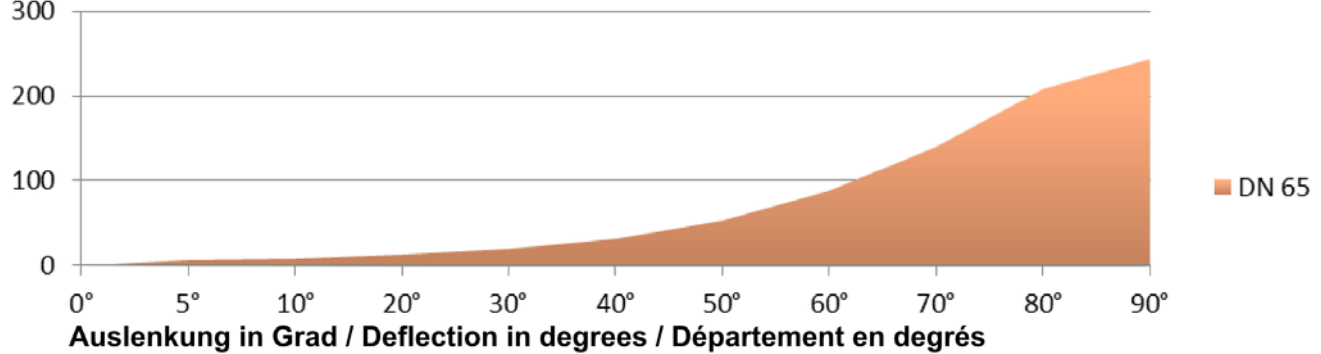
DN 50



| 0° | 0° | 5° | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h |
| 2 | 2,7 | 5,1 | 6,4 | 9 | 13 | 19 | 32 | 56 | 78 | 97 | 102 |

Durchfluss [m³/h]
Flow rate [m³/h]
Routage de correction [m³/h]

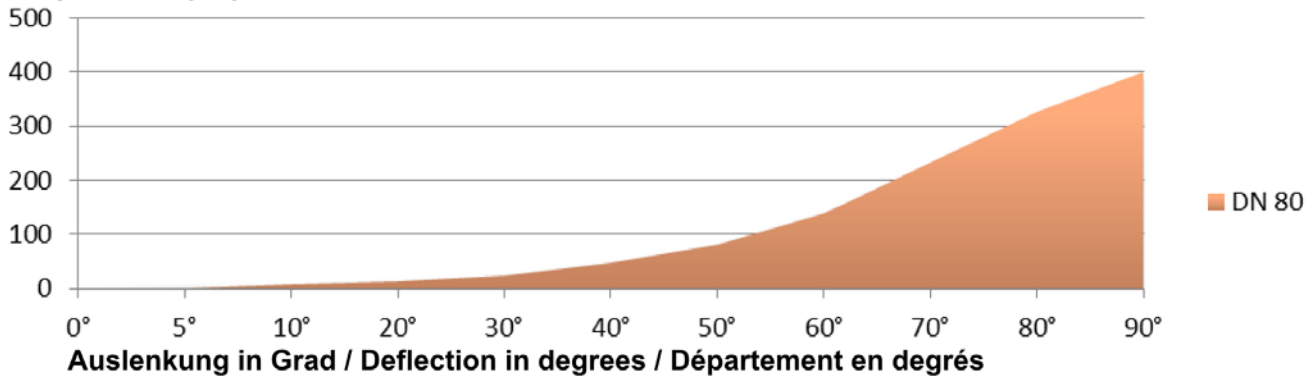
DN 65



| 0° | 0° | 5° | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h |
| 2 | 3 | 6,7 | 8,4 | 13 | 20 | 32 | 54 | 89 | 141 | 209 | 244 |

Durchfluss [m³/h]
Flow rate [m³/h]
Routage de correction [m³/h]

DN 80

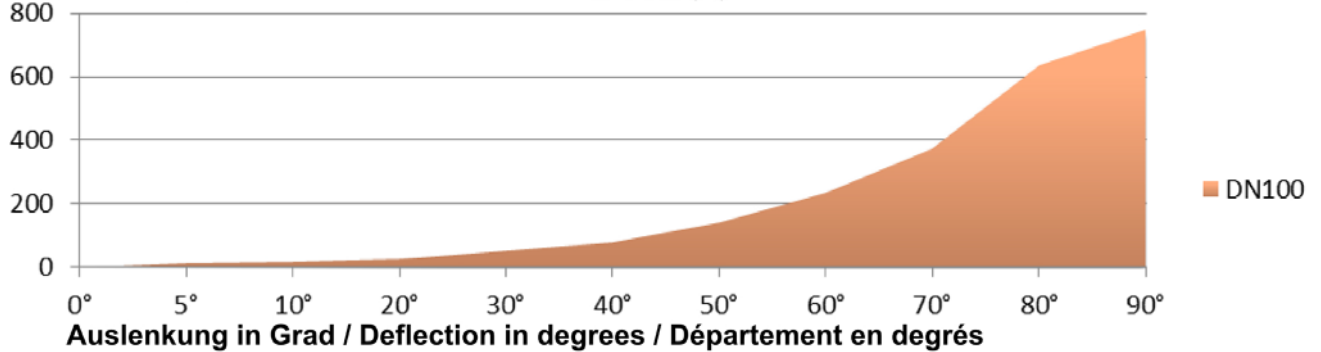


| 0° | 0° | 5° | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h |
| 2,5 | 3,3 | 7,5 | 9,6 | 15 | 26 | 50 | 83 | 141 | 234 | 328 | 401 |

1 Technical Data

Durchfluss [m³/h]
Flow rate [m³/h]
Routage de correction [m³/h]

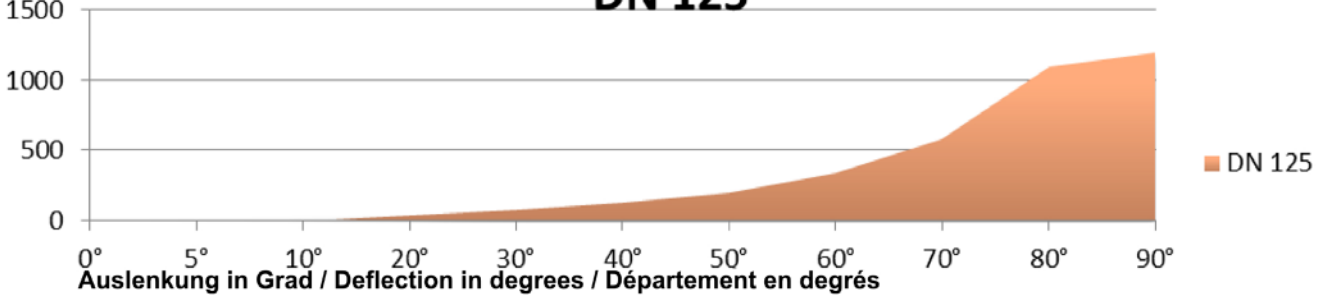
DN100



| 0° | 0° | 5° | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h |
| 3,7 | 5 | 13 | 18 | 28 | 51 | 79 | 141 | 237 | 376 | 636 | 749 |

Durchfluss [m³/h]
Flow rate [m³/h]
Routage de correction [m³/h]

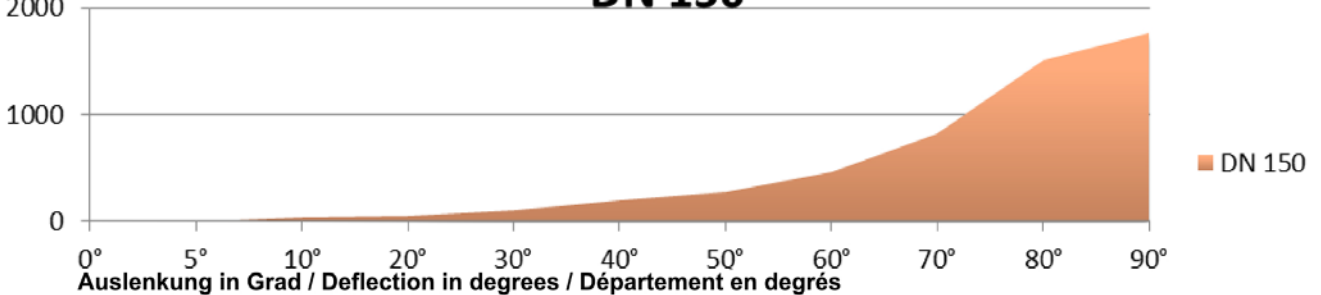
DN 125



| 0° | 0° | 5° | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h |
| 3,8 | 5,1 | 15 | 21 | 38 | 74 | 127 | 202 | 340 | 576 | 1090 | 1195 |

Durchfluss [m³/h]
Flow rate [m³/h]
Routage de correction [m³/h]

DN 150

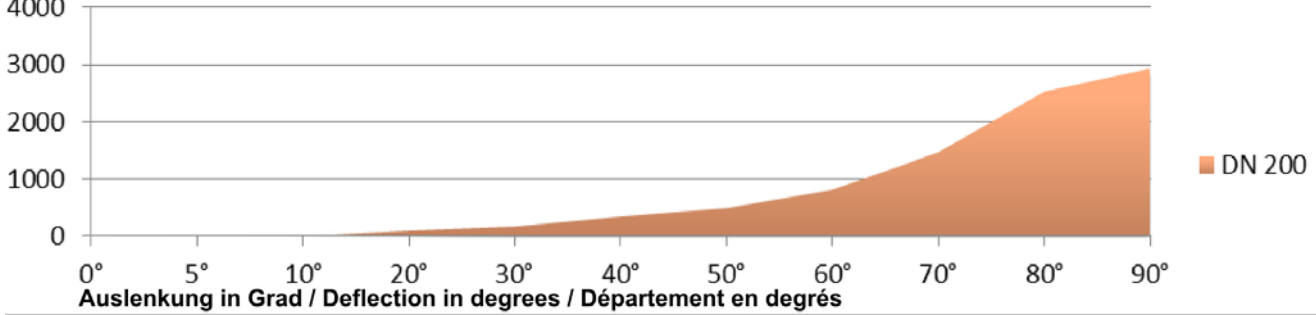


| 0° | 0° | 5° | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h |
| 3,9 | 5,3 | 18 | 26 | 50 | 100 | 188 | 270 | 456 | 813 | 1500 | 1759 |

1 Technical Data

Durchfluss [m³/h]
Flow rate [m³/h]
Routage de correction [m³/h]

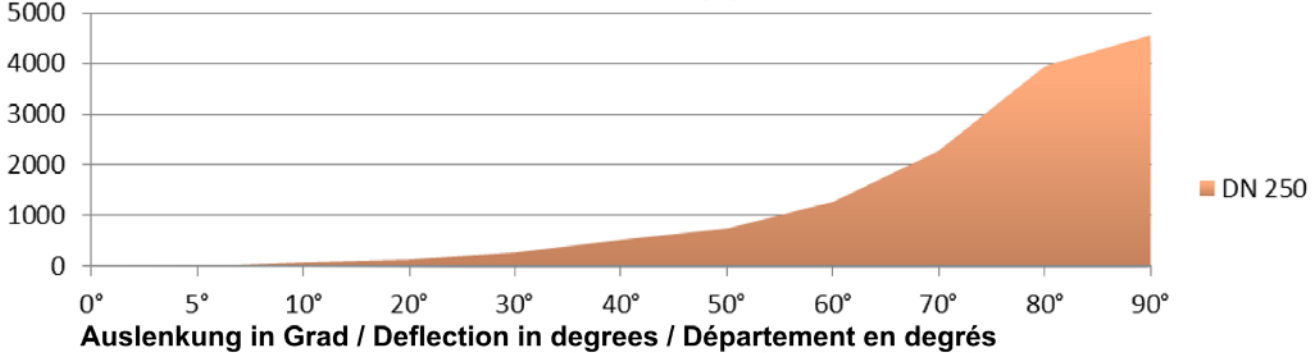
DN 200



| 0° | 0° | 5° | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h |
| 11 | 9,3 | 31 | 46 | 88 | 178 | 334 | 480 | 810 | 1460 | 2529 | 2920 |

Durchfluss [m³/h]
Flow rate [m³/h]
Routage de correction [m³/h]

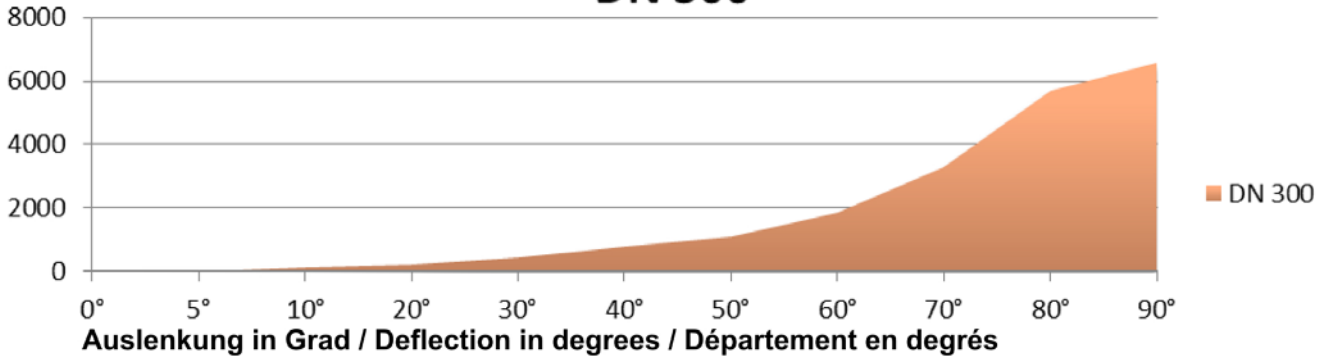
DN 250



| 0° | 0° | 5° | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h |
| 14 | 18 | 49 | 72 | 138 | 278 | 522 | 750 | 1266 | 2281 | 3952 | 4563 |

Durchfluss [m³/h]
Flow rate [m³/h]
Routage de correction [m³/h]

DN 300

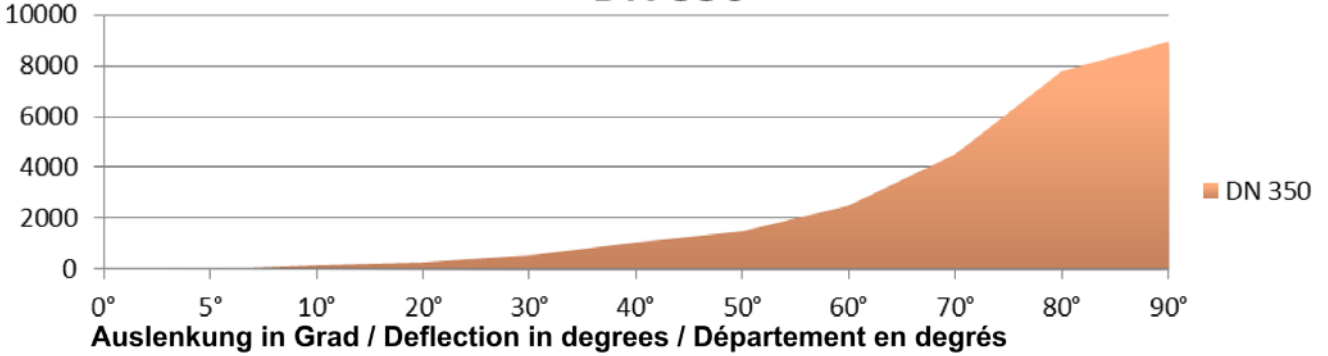


| 0° | 0° | 5° | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h |
| 19 | 25 | 71 | 104 | 198 | 400 | 752 | 1080 | 1822 | 3285 | 5690 | 6570 |

1 Technical Data

Durchfluss [m³/h]
Flow rate [m³/h]
Routage de correction [m³/h]

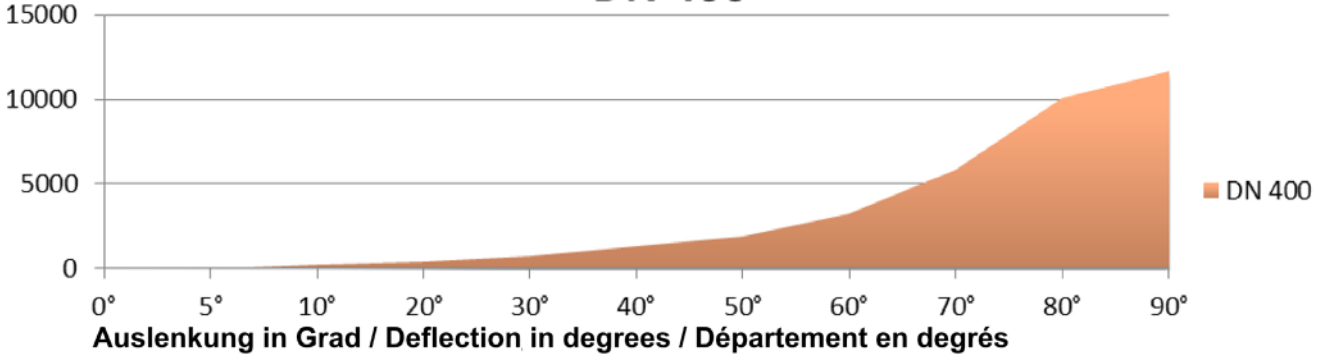
DN 350



| 0° | 0° | 5° | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h |
| 24 | 30 | 96 | 141 | 270 | 544 | 1024 | 1470 | 2480 | 4472 | 7745 | 9843 |

Durchfluss [m³/h]
Flow rate [m³/h]
Routage de correction [m³/h]

DN 400

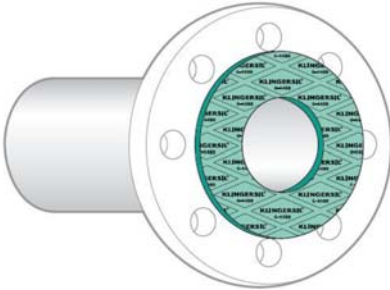


| 0° | 0° | 5° | 10° | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h | m ³ /h |
| 40 | 50 | 126 | 184 | 352 | 710 | 1337 | 1920 | 3240 | 5840 | 10116 | 11680 |

1 Technical Data

1.5 Gasket of the flange

Recommended flange gasket Klingersil C4400 - a universal suitable high-pressure gasket



KLINGERSIL C-4400

Aramid fibres, bounded with NBR

Resistant to oils, water, steam, gases, salt solutions, fuels, alcohols, moderate organic and inorganic acids, hydrocarbons, lubricants and refrigerants.

Fig. 1-6 Flange gasket Klingersil C-44000

Tests and certifications:

- BAM U W 28 for use with oxygen 100 °C/ 212 °F or 80 bar
- Approved for gas supply in accordance with DIN 3535/6.
- DIN-DVGW-permit NG-5123AT0251
- HTB tested, SVGW-permit, ÖVGW-permit, TÜV-Poland.
- KTW-recommended.
- Food toleration Austria, Germanischer Lloyd, BS 7531 Grade Y, TA-Luft (clean air) approval, tested in accordance with VDI2440 with 200 °C/392 °F.

Ensure all remains of old gasket materials are removed and the flanges are clean, in good condition and parallel. The gasket materials are generally furnished with surfaces of low adhesion. In difficult

installation conditions, separating agents can be used, but only in minimal quantities. Make sure, that the solvents and propellants are completely evaporated.

Ensure all gaskets are installed in a dry state. The use of gasket compounds is not recommended as this has a detrimental effect on the stability and load bearing characteristic of the material. Ensure gasket dimensions are correct. The gasket should not intrude into the bore of the pipework and should be installed centrally. For safety reasons never re-use a gasket

When torquing, tighten bolts in three states to the required torque as follows:

- Finger tighten nuts
- Carry out tightening, making at least three complete diagonal tightening sequences i.e. 30 %, 60 % and 100 % of final torque value.
- In the final pass torque the bolts with 100% of the torque value in a clockwise sequence again.

Provided that the above guidelines are followed, retightening of the gasket is not necessary.

2 Order Information

2 Order Information

Gas butterfly valve, up to 60 °C, DVGW proofed, non-linear
 – Configuration incl. console, coupling and assembly to Actuator *

| Description/Type | Order no. |
|---|------------|
| Gas butterfly valve, DVGW proofed, incl. console and coupling, pre assembled as set, including: | 662R23V... |

Set position 1

| Description/Type | Order no. - Selection |
|---|-----------------------|
| Gas butterfly valve for clamping between flanges, permitted up to max. 60 °C, DVGW approved CE-0085AS0134, flow not linear, valve without stop bar, leakage appr. 1% of Kvs-value 90°, Operation pressure: max. 6 bar | 662R23... |

| A10 "INTERNAL DIAMETER" | | | Selection |
|-------------------------|--------------------------------|----------------------------------|-----------|
| INTERNAL DIAMETER DN15 | 0 ... 4 bar, Δ P max. 4 bar | PN10 - PN40, ANSI 300lbs | 015 |
| INTERNAL DIAMETER DN20 | 0 ... 4 bar, Δ P max. 4 ar | PN6 - PN40, ANSI 150lbs, 300lbs | 020 |
| INTERNAL DIAMETER DN25 | 0 ... 4 bar, Δ P max. 4 bar | PN10 - PN40, ANSI 300lbs | 025 |
| INTERNAL DIAMETER DN32 | 0 ... 4 bar, Δ P max. 4 bar | PN6 - PN40, ANSI 150lbs, 300lbs | 032 |
| INTERNAL DIAMETER DN40 | 0 ... 4 bar, Δ P max. 4 bar | PN10 - PN40, ANSI 300lbs | 040 |
| INTERNAL DIAMETER DN50 | 0 ... 4 bar, Δ P max. 4 bar | PN10 - PN40, ANSI 300lbs | 050 |
| INTERNAL DIAMETER DN65 | 0 ... 4 bar, Δ P max. 2 bar | PN10 - PN40, ANSI 300lbs | 065 |
| INTERNAL DIAMETER DN80 | 0 ... 4 bar, Δ P max. 2 bar | PN10 - PN40, ANSI 300lbs | 080 |
| INTERNAL DIAMETER DN100 | 0 ... 4 bar, Δ P max. 2 bar | PN10 - PN40, ANSI 150lbs, 300lbs | 0100 |
| INTERNAL DIAMETER DN125 | 0 ... 4 bar, Δ P max. 1 bar | PN10 – PN16, ANSI 150lbs, 300lbs | 0125 |
| INTERNAL DIAMETER DN150 | 0 ... 4 bar, Δ P max. 1 bar | PN10 – PN16, ANSI 150lbs, 300lbs | 0150 |
| INTERNAL DIAMETER DN200 | 0 ... 4 bar, Δ P max. 1 bar | PN10 – PN16, ANSI 150lbs | 0200 |
| INTERNAL DIAMETER DN250 | 0 ... 4 bar, Δ P max. 0,5 bar | PN10, ANSI 150lbs | 0250 |
| INTERNAL DIAMETER DN300 | 0 ... 4 bar, Δ P max. 0,3 bar | PN6 – PN10 | 0300 |
| INTERNAL DIAMETER DN350 | 0 ... 4 bar, Δ P max. 0,2 bar | PN10 – PN16 | 0350 |
| INTERNAL DIAMETER DN400 | 0 ... 4 bar, Δ P max. 0,15 bar | PN6 – PN16 | 0400 |

| A20 "REDUCTION" | Selection |
|--------------------------------------|-----------|
| WITHOUT REDUCTION | 000 |
| REDUCED TO SPECIFICATION BY CUSTOMER | - |

2 Order Information

Set position 2

| Description/Type | Order no. - Selection |
|--|-----------------------|
| Assembling unit of the valve for actuator | Montage1... |
| A10 "ASSEMBLY UNIT" | Selection |
| UP TO DN150, FOR ASSEMBLING TO MOTOR WITH SHAFT \varnothing d=10 mm AND PARALLEL KEY 3x3 mm ** | 11 |
| UP TO DN150, FOR ASSEMBLING TO MOTOR WITH SHAFT \varnothing d=12 mm AND PARALLEL KEY 4x4 mm ** | 12 |
| FROM DN200, FOR ASSEMBLING TO MOTOR WITH SHAFT \varnothing d=12 mm AND PARALLEL KEY 4x4 mm ** | 21 |
| FROM DN200, FOR ASSEMBLING TO MOTOR WITH SHAFT \varnothing d=20 mm AND PARALLEL KEY 6x6 mm ** | 22 |
| FOR ASSEMBLING TO EX-MOTOR *** | 3 |
| FOR ASSEMBLING TO BT-MOTOR **** | 4 |

* Actuator must be ordered separately, following information are indicative at a difference pressure of 0,1 bar:

DN25...DN125 → 6 Nm Typ 662R2127, 668M2006 DN150...DN250 → 20 Nm Typ 662R2111, 668M2020

DN300 → 30 Nm Typ 662R2112, 668M2040 DN350 → 40 Nm Typ 662R2121, 668M2040

** Assembly unit for actuator type 662R2111...662R2127 / 668M2006...668M2040

*** Assembly unit for actuator type 662R2140 / 662R2141

**** Assembly unit for actuator type 662R500X-0 →

2 Order Information

Order Information Electrical Actuator

Electrical Actuator for ETAMATIC/FMS/VMS

| Description/Type | Order no. |
|---|-----------|
| Electrical Actuator for ETAMATIC/FMS/VMS - 6 Nm | 662R2127 |
| Electrical Actuator for ETAMATIC/FMS/VMS - 20 Nm | 662R2111 |
| Electrical Actuator for ETAMATIC/FMS/VMS - 30 Nm | 662R2112 |
| Electrical Actuator for ETAMATIC/FMS/VMS - 40 Nm | 662R2121 |
| Electrical Actuator for ETAMATIC/FMS/VMS - 50 Nm | 662R2122 |
| Electrical Actuator for ETAMATIC/FMS/VMS - 90 Nm | 662R2123 |
| Electrical Actuator for ETAMATIC/FMS/VMS - 140 Nm | 662R2124 |
| Electrical Actuator for ETAMATIC/FMS/VMS - 180 Nm | 662R2125 |

EX-actuator for ETAMATIC/FMS/VMS

| Description/Type | Order no. |
|---|-----------|
| EX-actuator for ETAMATIC/FMS/VMS - 6 Nm/20 Nm/30 Nm/40 Nm/50 Nm (EX-Zone 1, II2G Ex d IIC T6 Gb) | 662R2140 |
| EX-actuator for ETAMATIC/FMS/VMS - 6 Nm/20 Nm/30 Nm/40 Nm/50 Nm (EX-Zone 1, II2G Ex d IIC T6 Gb) stainless steel type | 662R2141 |

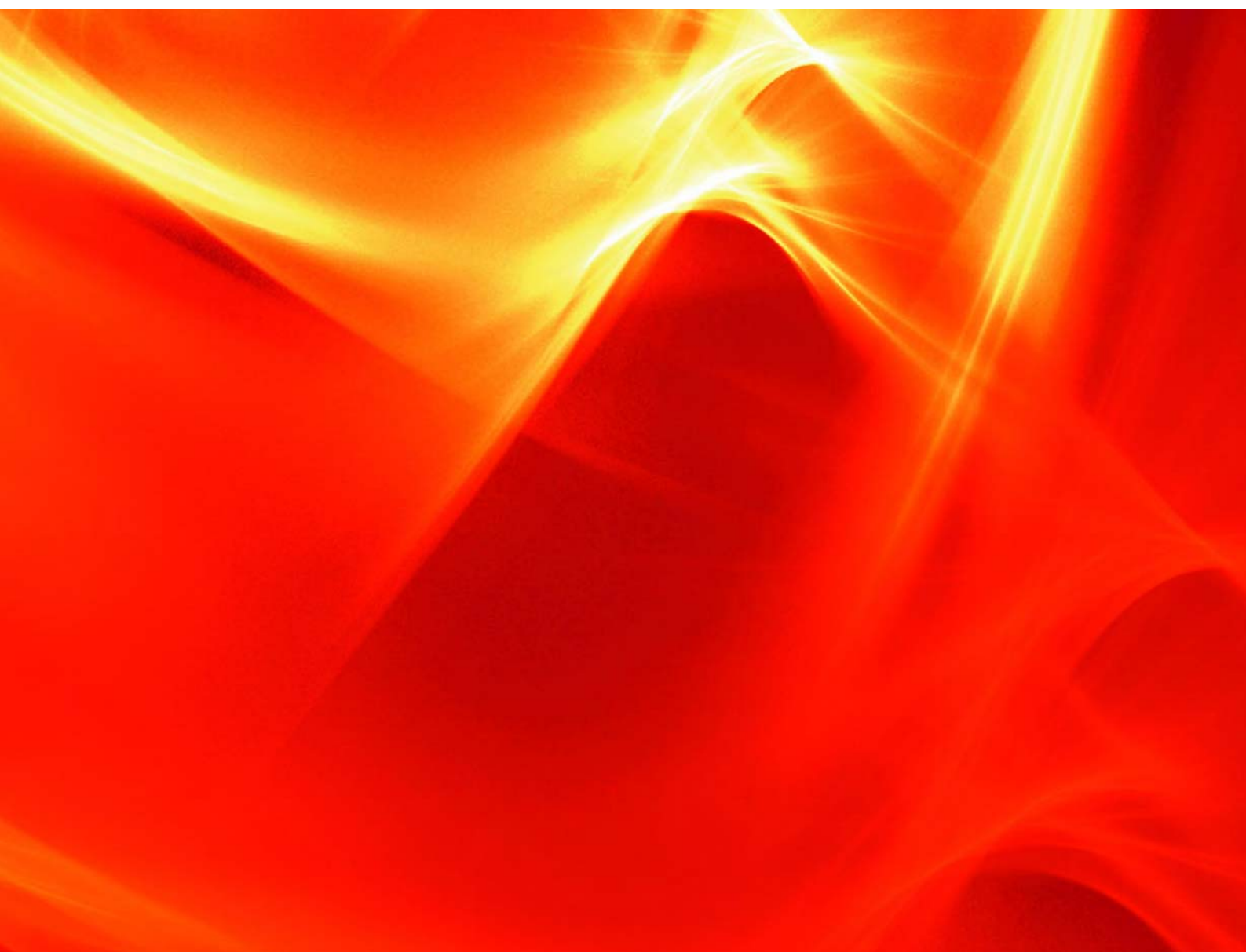
Electrical Actuator for BT300

| Description/Type | Order no. |
|--|------------|
| Electrical Actuator for BT300 - 1,2 Nm | 662R5001-0 |
| Electrical Actuator for BT300 - 3 Nm | 662R5003-0 |
| Electrical Actuator for BT300 - 9 Nm | 662R5009-0 |
| connecting piping for 1,2 Nm/ 3 Nm/ 9 Nm | 662R5591 |

Electrical Actuator for CMS

| Description/Type | Order no. |
|-------------------------------------|-----------|
| Electrical Actuator for CMS - 6 Nm | 668M2006 |
| Electrical Actuator for CMS - 20 Nm | 668M2020 |
| Electrical Actuator for CMS - 40 Nm | 668M2040 |

Complete price list for actuator and butterfly valves see DLT6002...



The information in this publication is subject to technical changes.



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