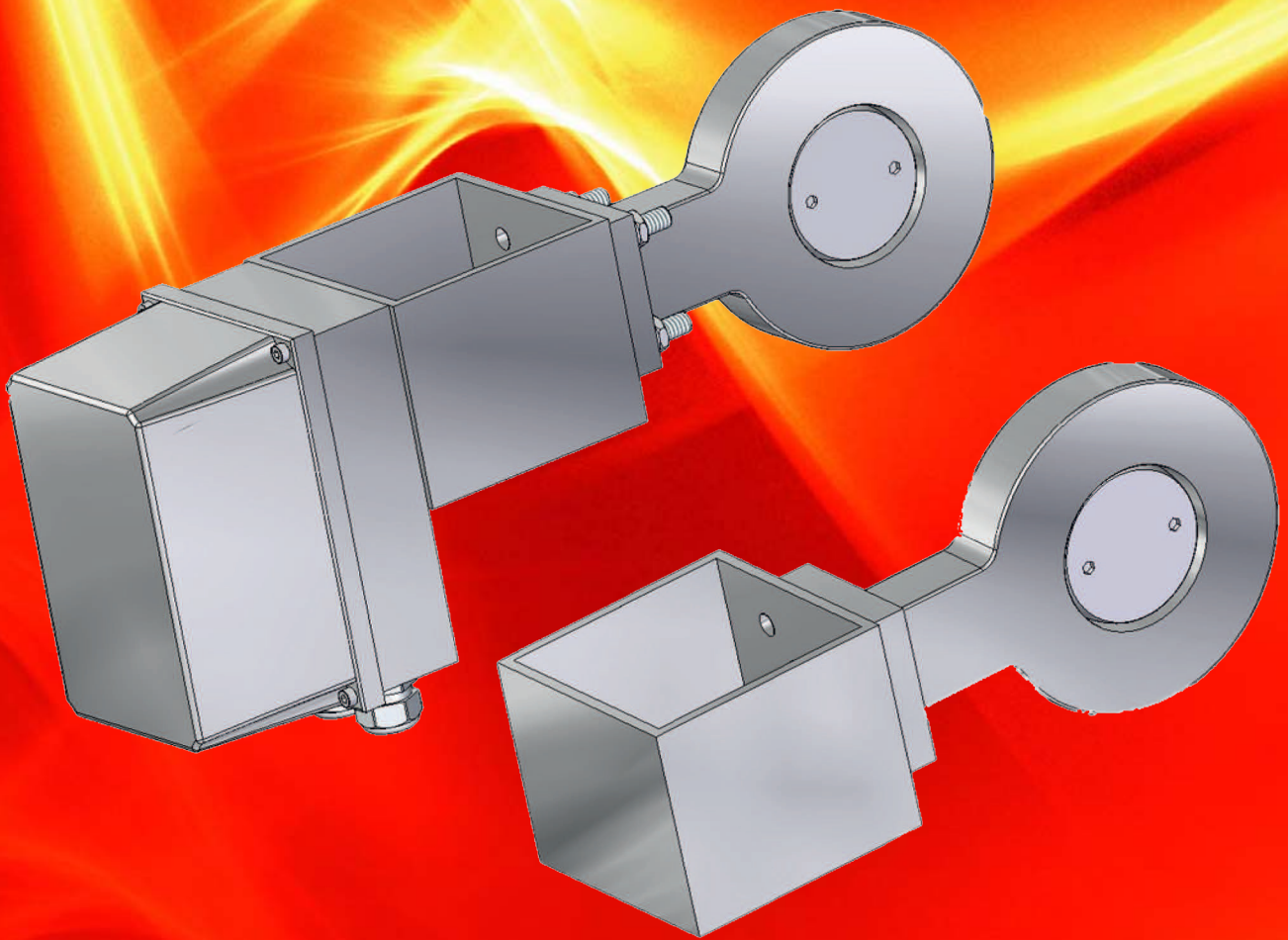


**Flow Control Butterfly Valve, Stainless Steel
for Biogas/Hydrogen 662R24
(-20 °C ... +60 °C / -4 °F ... +140 °F)**



1 Technical Data

1 Technical Data

1.1 Butterfly Data

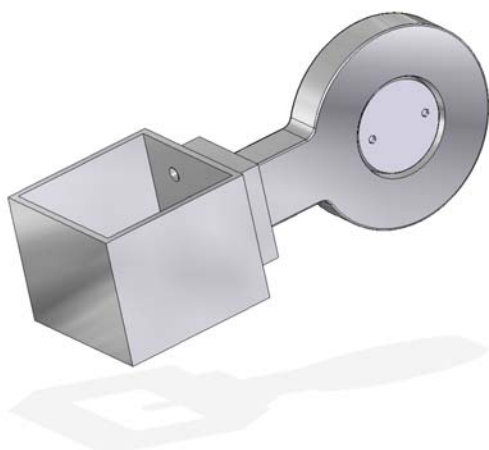


Fig. 1-1 Flow control butterfly valves with console

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 662R24	
Housing material	stainless steel 1.4301
Material control disk / shaft	stainless steel
Shaft seal	NBR- O-ring

1 Technical Data

Type	Ambient Temperature	Medium	Flow Rate
662R24V	-20 °C ... +60 °C / -4 °F ... +140 °F	aggressive gases (biogas and hydrogen)	non-linear

NOTICE

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

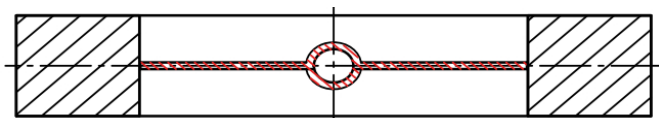


Fig. 1-2 Butterfly disc (non-linear flow rate)

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

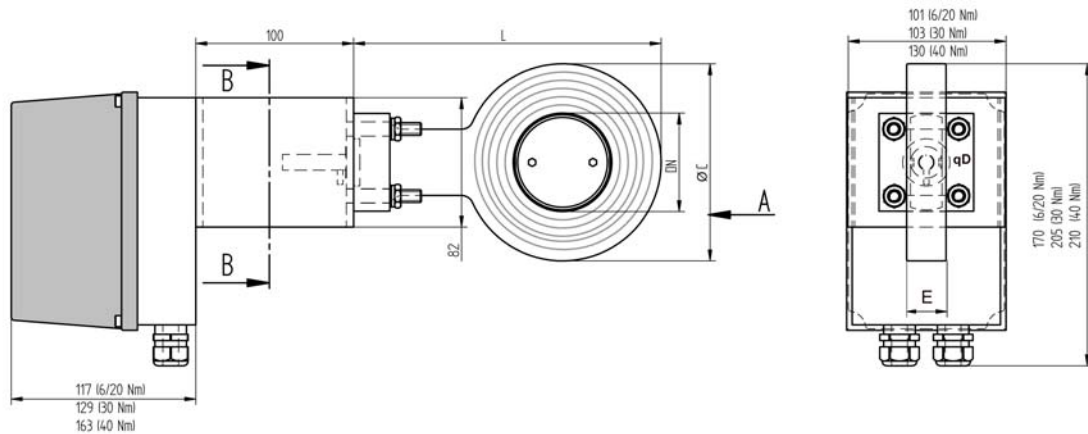


Fig. 1-3 Butterfly valve with console and coupling mounted on actuator controlled by ETAMATIC/FMS/VMS

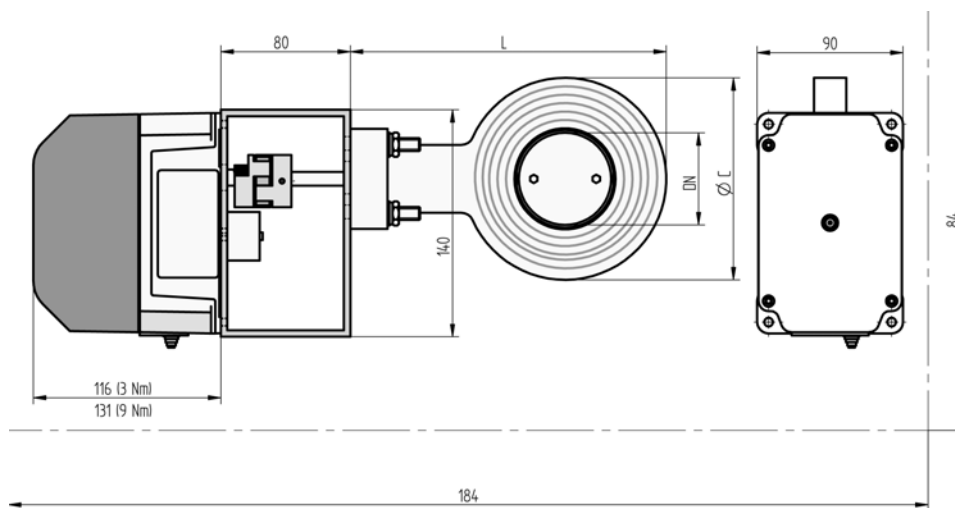


Fig. 1-4 Butterfly valve with console and coupling mounted on a motor controlled by BT300

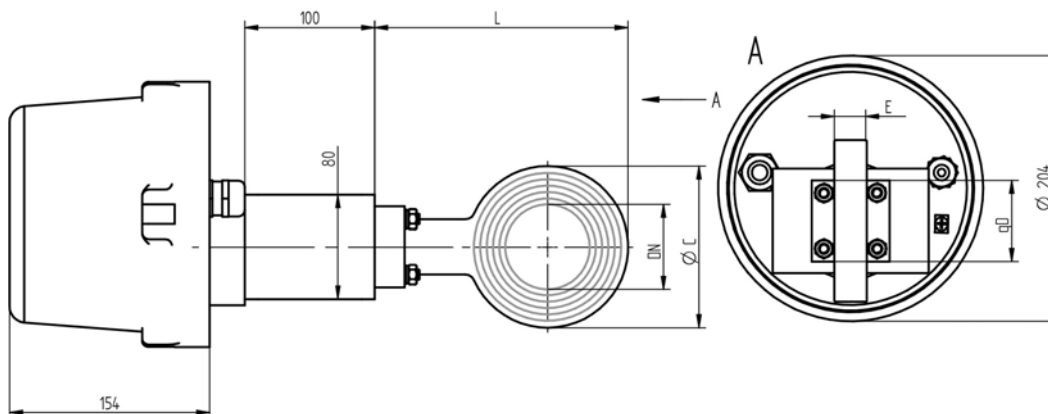


Fig. 1-5 Butterfly valve with console and coupling mounted on Ex-actuator controlled by ETAMATIC/FMS/VMS

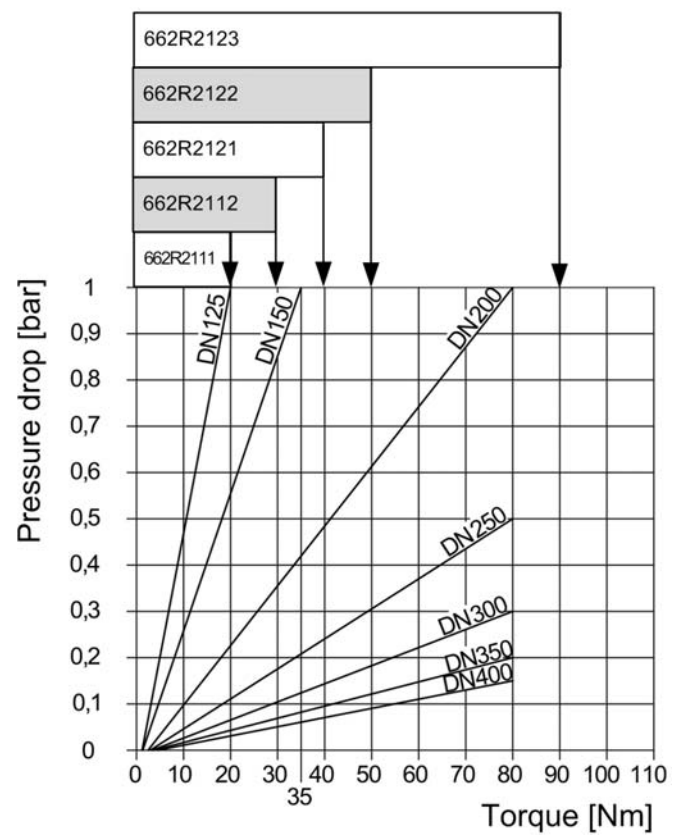
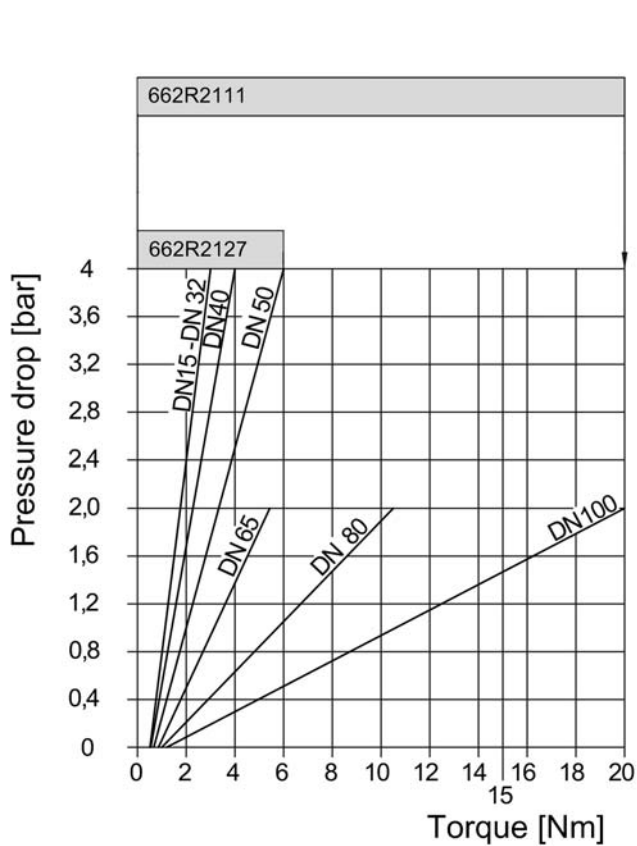
1 Technical Data

Non-linear type stainless steel	DN	L	Ø C	q D	E
662R24V/025/000	25=30	153	70	60	25
662R24V/032/000	32	153	70	60	25
662R24V/040/000	40	166	90	60	25
662R24V/050/000	50	183	104	60	25
662R24V/065/000	65	195	124	60	25
662R24V/080/000	80	211	139	60	30
662R24V/100/000	100	231	161	60	30
662R24V/125/000	125	258	191	60	35
662R24V/150/000	150	283	214	60	35
662R24V/200/000	200	344	270	80	40
662R24V/250/000	250	394	320	80	40
662R24V/300/000	300	444	370	80	45
662R24V/350/000	350	523	428	80	45
662R24V/400/000	400	561	465	80	45

1 Technical Data

1.3 Selection Electrical Servomotor

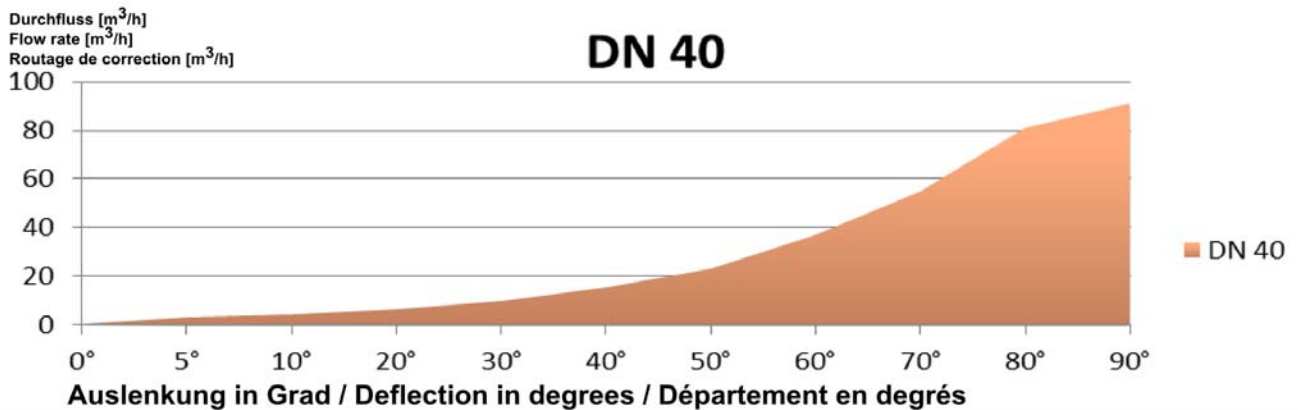
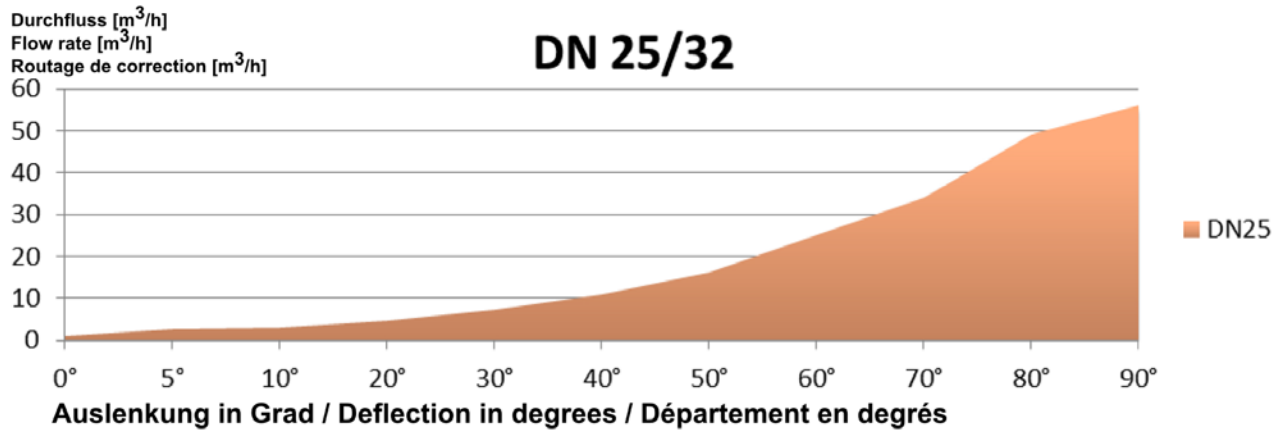
- The total torque of the butterfly valve is the results of the addition of the diagram and spindle sealing torque.
- The max. permitted differential pressure ($p_e - p_a$) must not exceed during operation. The limits can be taken from the diagram.



1 Technical Data

1.4 KV-Values of Butterfly Valves

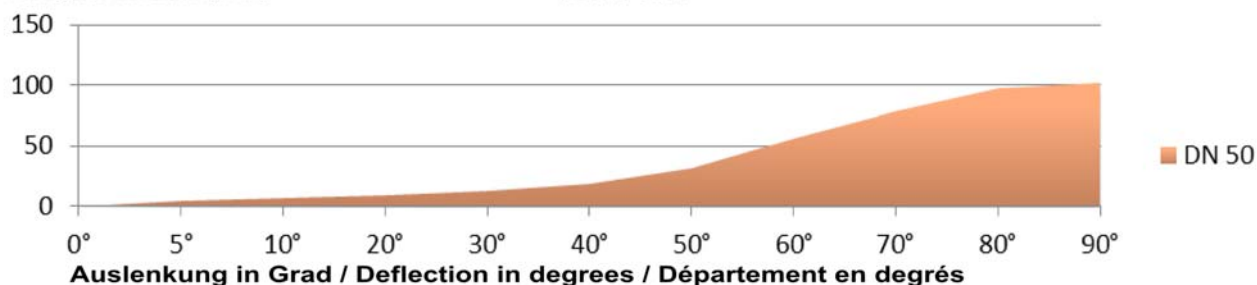
1.4.1 KV-Values of Butterfly Valves, non-linear



1 Technical Data

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

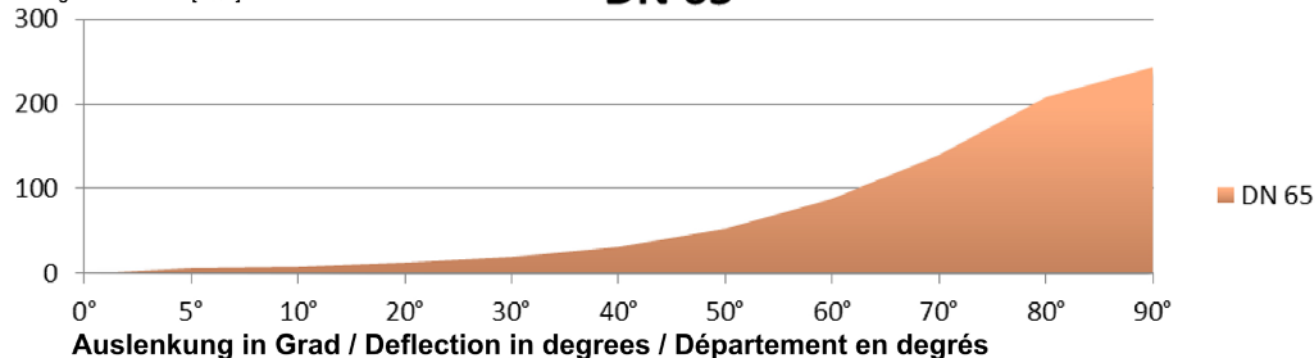
DN 50



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]

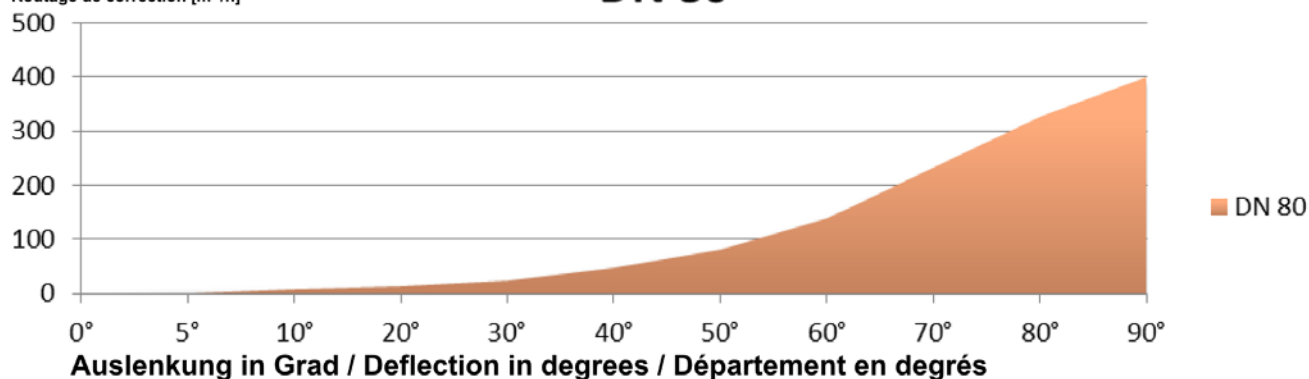
DN 65



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

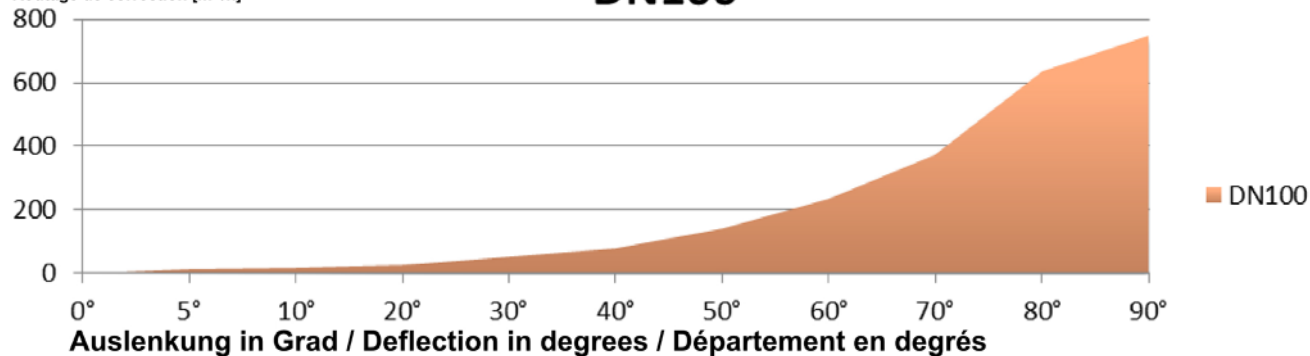


0°	0°	5°	10°	20°	30°	40°	50°	60°	70°	80°	90°
m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h
2,5	3,3	7,5	9,6	15	26	50	83	141	234	328	401

1 Technical Data

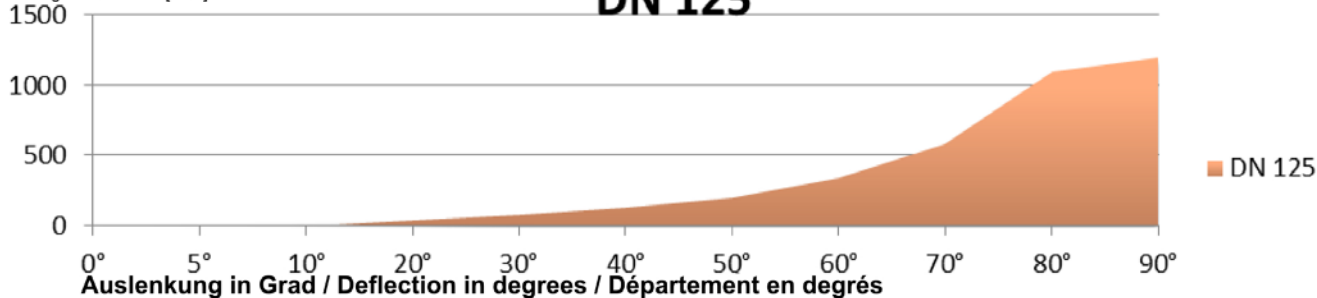
Durchfluss [m³/h]
Flow rate [m³/h]
Routage de correction [m³/h]

DN100



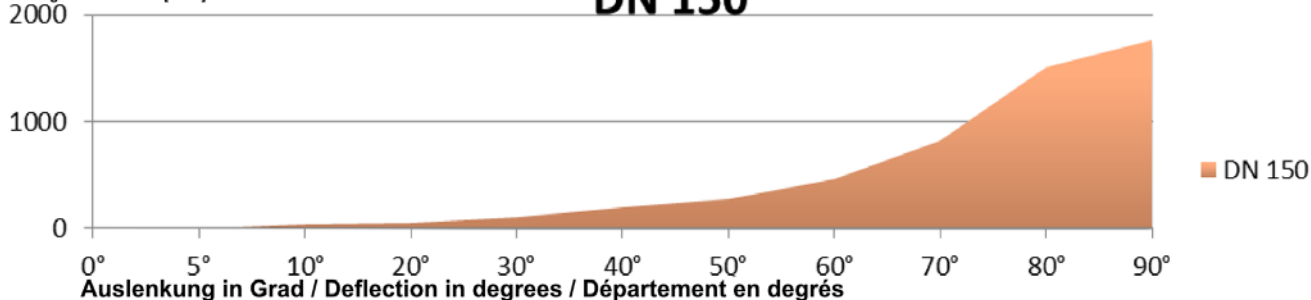
Durchfluss [m³/h]
Flow rate [m³/h]
Routage de correction [m³/h]

DN 125



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

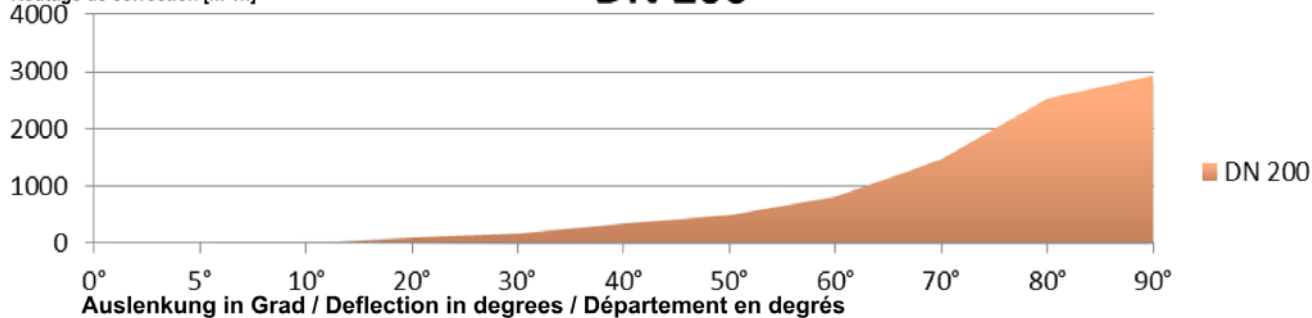
DN 150



1 Technical Data

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

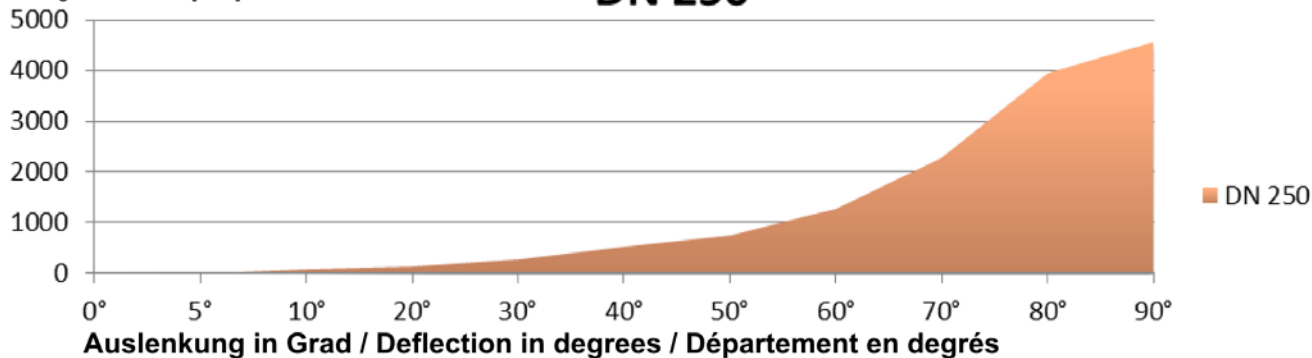
DN 200



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]

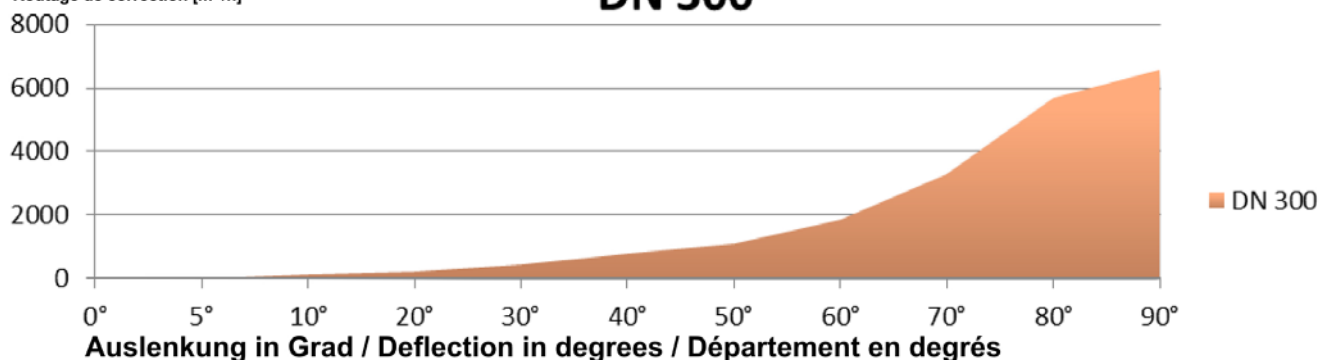
DN 250



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

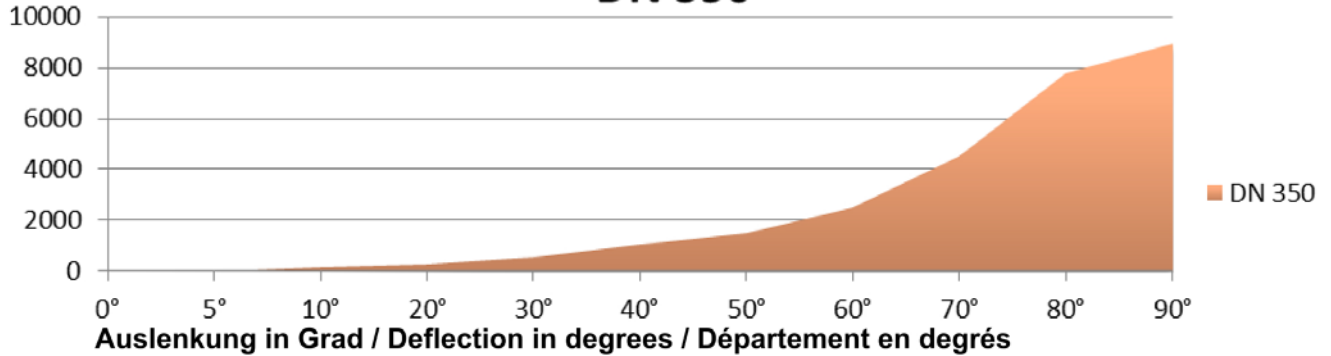


0°	0°	5°	10°	20°	30°	40°	50°	60°	70°	80°	90°
m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h	m ³ /h
19	25	71	104	198	400	752	1080	1822	3285	5690	6570

1 Technical Data

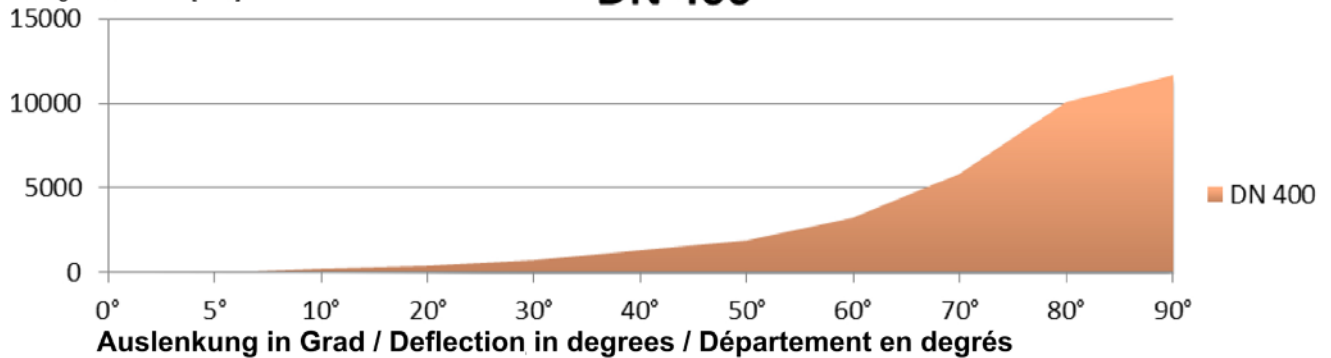
Durchfluss [m³/h]
Flow rate [m³/h]
Routage de correction [m³/h]

DN 350



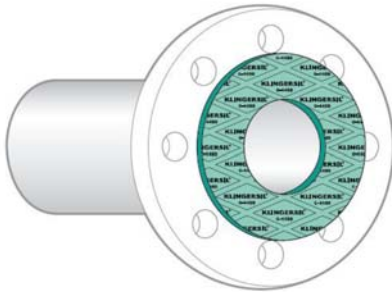
Durchfluss [m³/h]
Flow rate [m³/h]
Routage de correction [m³/h]

DN 400



1.5 Gasket of the flange

Recommended flange gasket Klingsil 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 Klingsil 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 for biogas, up to 60 °C, stainless steel, non-linear, without DVGW-proof – Configuration incl. console, coupling and assembly to Actuator *

Description/Type	Order no.
Gas butterfly valve, stainless steel, DVGW proofed, incl. console and coupling, pre assembled as set, including:	662R24V...

Set position 1

Description/Type	Order no. - Selection
Gas butterfly valve stainless steel 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	662R24...

A10 "INTERNAL DIAMETER"			Selection
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

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 "MONTAGEAUFBAU"	Selection
UP TO DN150, FOR ASSEMBLING TO MOTOR WITH SHAFT Ø d=10 mm MIT PASSFEDER 3x3 mm **	11
UP TO DN150, FOR ASSEMBLING TO MOTOR WITH SHAFT Ø d=12 mm AND PARALLEL KEY 4x4 mm **	12
FROM DN200, FOR ASSEMBLING TO MOTOR WITH SHAFT Ø d=12 mm AND PARALLEL KEY 4x4 mm **	21
FROM DN200, FOR ASSEMBLING TO MOTOR WITH SHAFT Ø 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 motor type 662R2111...662R2127 / 668M2006...668M2040
- *** Assembly unit for motor type 662R2140 / 662R2141
- **** Assembly unit for motor 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

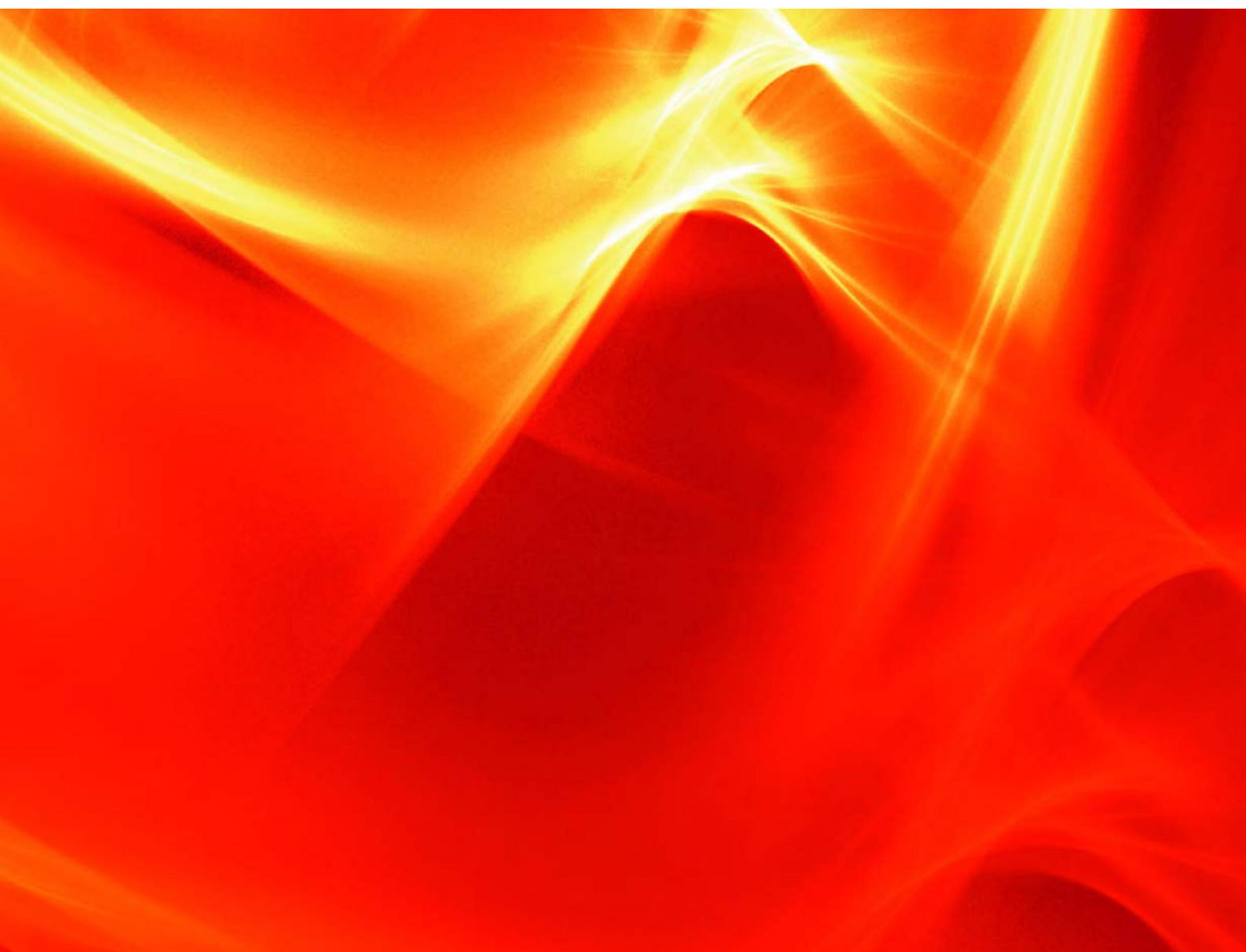
Electrical Actuator for BT300

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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