

### Application

Butterfly valves for increased industrial requirements in process engineering and in industrial applications

Suitable for liquids, vapors and gases

**Nominal size** DN 100 to 400 · NPS 4 to 16

**Nominal pressure** PN 10 to 40 · ISO PN 20 and 50  
Class 150 and 300

**Medium temperature** -10 to +400 °C · 14 to 752 °F

Type 3331 Butterfly Valve with

- Type 31a Pneumatic Piston Rotary Actuator (see Data Sheet ▶ T 9929)

Alternatively, as special version with

- Type 3278 Pneumatic Rotary Actuator (see Data Sheet ▶ T 8321)

Body made of

- Cast steel
- Cast stainless steel

Butterfly disk

- Swing-through design
- Angle-seated (low-noise)

### Special features

- Butterfly valve can be clamped between DIN or ANSI flanges
- Wafer-type body in various versions depending on the nominal size and pressure (see Fig. 3 and Table 9)

Attachment of control valve accessories such as pneumatic or electropneumatic positioners, electric or pneumatic limit switches or solenoid valves according to VDI/VDE 3845.

### Versions

#### Standard version

Type 3331 Butterfly Valve with swing-through or angle-seated (low-noise) disk for medium temperatures from -10 to +220 °C (14 to 428 °F), spring-loaded PTFE packing

- **Type 3331/31a** (Fig. 1) · Butterfly valve and single-acting Type SRP Pneumatic Rotary Piston Actuator

#### Special version

- **Type 3331/3278** (Fig. 2) · Butterfly valve and single-acting Type 3278 Pneumatic Rotary Diaphragm Actuator

#### Further versions

- **Graphite packing** · Suitable for medium temperature from -10 to +400 °C (14 to 752 °F)
- **DN 50 and 80 with angle-seated disk** · Without noise reduction, made of bar stock (steel) or cast stainless steel

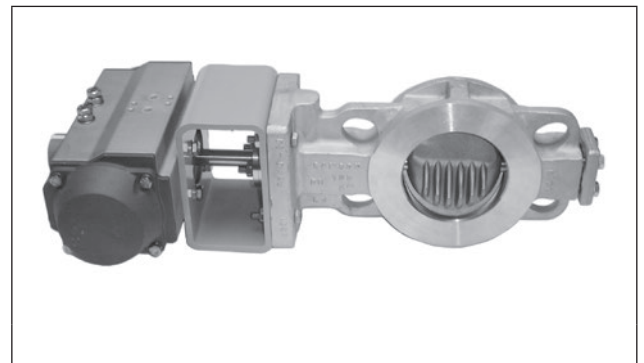


Fig. 1: Type 3331/31a Pneumatic Control Butterfly Valve

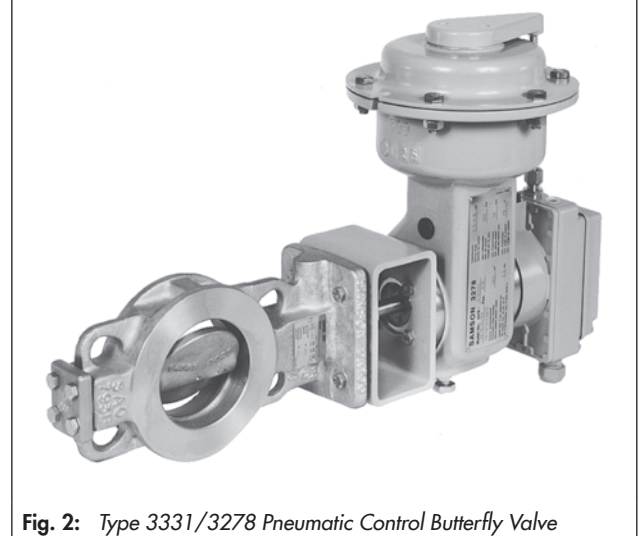


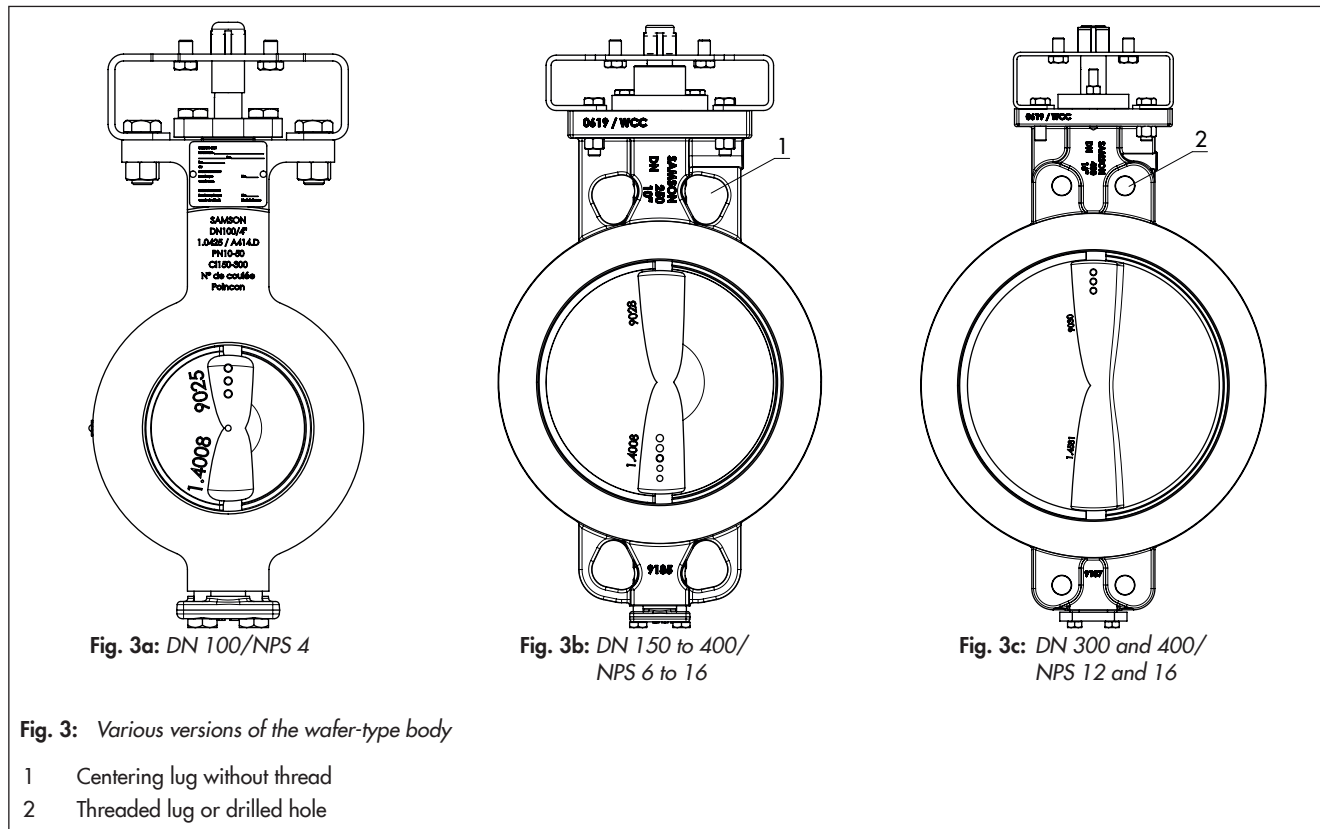
Fig. 2: Type 3331/3278 Pneumatic Control Butterfly Valve

- **Double packing**
- **Can be clamped between form-fit flanges** · On request
- **Handwheel**
- **Extension for low temperatures**
- **Hand-operated or electric actuator** · On request
- **Double-acting rotary actuator** · On request
- **Step-seated butterfly disk** · On request

### Note on various versions available

The butterfly valve is available in the following versions (see Fig. 3 and Table 9):

- Fig. 3a: DN 100/NPS 4 as wafer-type body without centering lugs or drilled holes
- Fig. 3b: DN 150 to 400/NPS 6 to 16 as wafer-type body with centering lugs without threads to aid installation into the pipeline
- Fig. 3c: DN 300 and 400/NPS 12 and 16 (depending on nominal pressure) as wafer-type body with threaded lugs or drilled holes



### Principle of operation

The medium flows through the butterfly valve. The flow coefficient depends on the opening angle of the butterfly disk.

In Type 3331/31a, the actuator motion is transmitted using a square drive. In Type 3331/3278, a single key drive is used to transmit the motion from the actuator to the shaft.

The shaft is sealed by a packing.

### Fail-safe position

Depending on how the actuator (see Data Sheets ► T 9929 and ► T 8321) is mounted on the valve, the valve has two different fail-safe positions:

#### Fail-close valve

The valve is closed upon air supply failure.

#### Fail-open valve

The valve is opened upon air supply failure.

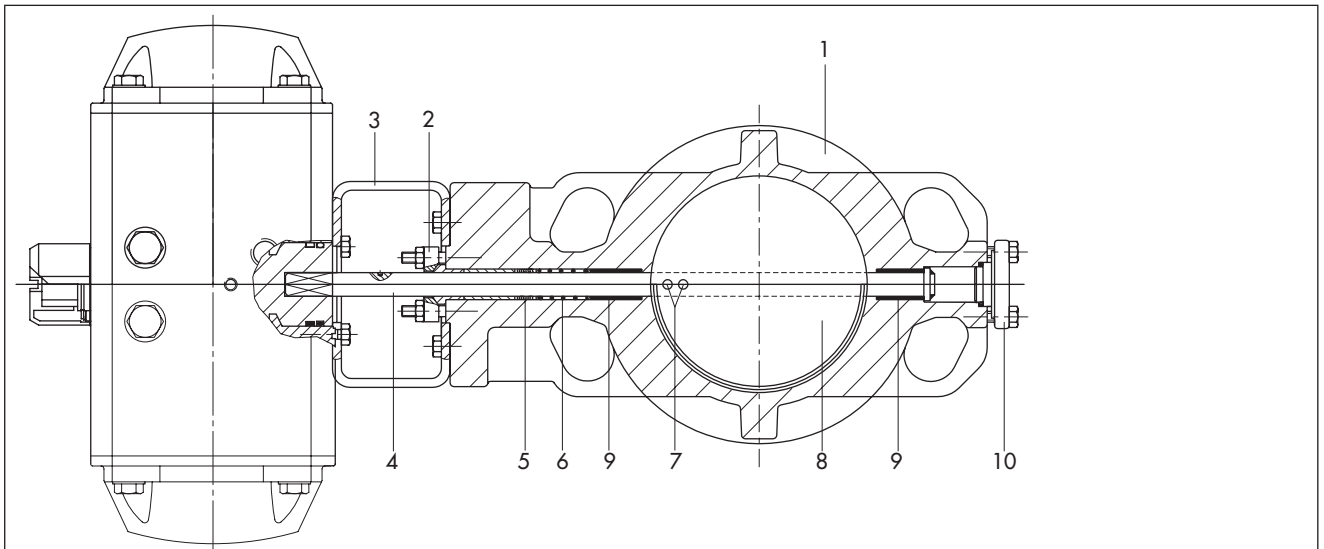


Fig. 4: Type 3331/31a Pneumatic Control Butterfly Valve

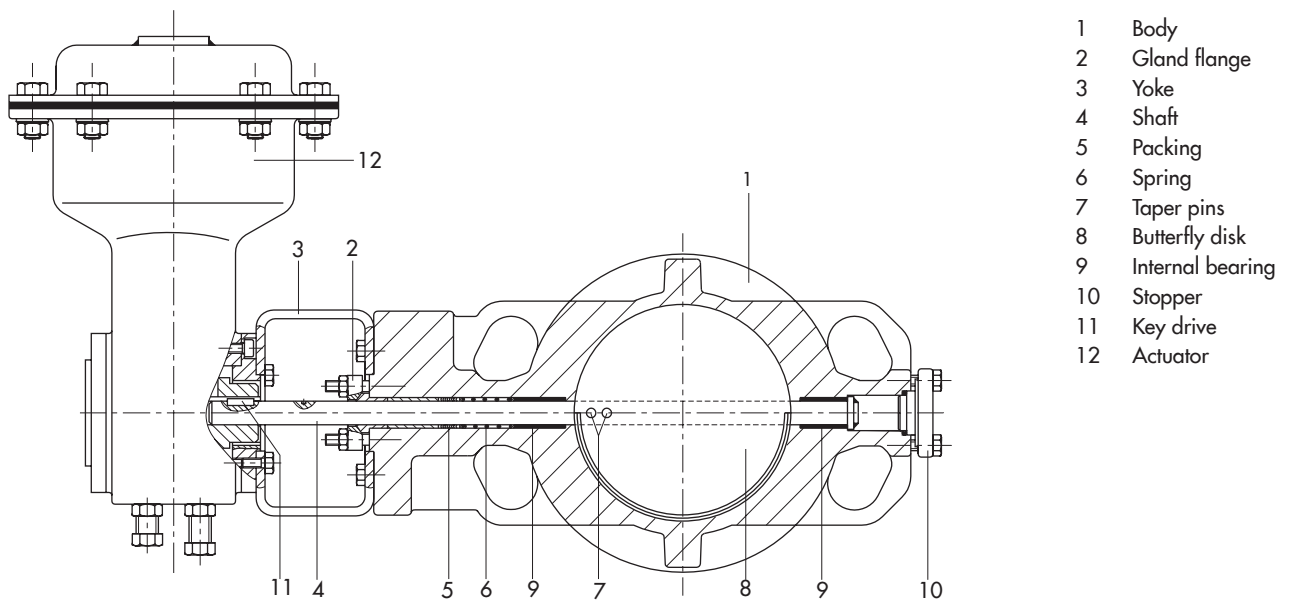


Fig. 5: Type 3331/3278 Pneumatic Control Butterfly Valve

**Table 1: Technical data for Type 3331 Butterfly Valve**

Nominal size	DN 100 to 150 - NPS 4 to 6	DN 200 to 400 - NPS 8 to 16
Nominal pressure	PN 10 to 40 (DIN) · PN 20 and 50 (ISO) · Class 150 and 300 (ANSI)	
Temperature range		
Standard version	-10 to +220 °C · 14 to 428 °F	
With graphite packing and insulating section <sup>1)</sup>	-10 to +400 °C · 14 to 752 °F	
Opening angle		
On/off service	90° · 70° with angle-seated (noise-reduced) butterfly disk	
Throttling service	70°	
Leakage rate, in relation to $K_V$ coefficient at the opening angle		
Swing-through design	≤ 1 % ( $K_V$ 90°)	≤ 0.5 % ( $K_V$ 90°)
Angle-seated (low-noise)	≤ 1 % ( $K_V$ 70°)	≤ 0.5 % ( $K_V$ 70°)
Rangeability with $\phi_{100} = 70^\circ$	50:1	

<sup>1)</sup> Taking into account material-specific temperature limits down to -50 °C (-58 °F) · See Information Sheet ► T 8000-2

**Table 2: Materials**

Body	DN 100/NPS 4	Cast steel 1.0425 (H II) · A414 Gr D	Cast stainless steel 1.4404/316L
	DN 150/NPS 6 and larger	1.0619 (GP240GH) · A216 WCB (216 WCC)	1.4581 (1.4408)
Butterfly disk	1.4581		
Shaft	CrNiMo steel 1.4021 with $\varnothing = 36$ mm		CrNiMo steel
Taper pins	Heat-treated stainless steel		
Internal bearing	Carbon		
Packing	PTFE V-ring packing with carbon with 16 and 25 mm shaft diameter PTFE/silk cord and compound for -10 to +220 °C (14 to 428 °F) with 36 mm shaft diameter Graphite/carbon for -10 to +400 °C (14 to 752 °C)		
Gland flange	1.4305	1.4571	
Spring	1.4310		
Yoke	St 37-2		
Stopper	1.0460 (C 22.8) · A 105	1.4571 · A182 F316	

**Table 3: Parameters for control valve sizing and noise level calculation****Table 3.1: Swing-through butterfly disk**

Opening angle	10°	20°	30°	40°	50°	60°	70°	80°	90°
$F_L$	0.95	0.95	0.92	0.83	0.73	0.65	0.58	0.53	0.50
$x_T$	0.75	0.75	0.73	0.58	0.46	0.36	0.29	0.24	0.21
$x_{Fz}$	0.35	0.30	0.25	0.20	0.17	0.14	0.12	0.11	0.10

**Table 3.2: Angle-seated (noise-reduced) butterfly disk**

Opening angle	10°	20°	30°	40°	50°	60°	70°
$F_L$	0.79	0.78	0.77	0.75	0.73	0.70	0.66
$x_T$	0.54	0.53	0.51	0.48	0.45	0.42	0.37
$x_{Fz}$	0.32	0.26	0.22	0.19	0.17	0.15	0.13

**Table 4:**  $K_{VS}$  coefficients**Table 4.1:** *Swing-through butterfly disk*

DN	Opening angle								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
100	8	25	40	80	140	220	320	420	440
150	10	35	80	160	290	450	700	1000	1200
200	40	120	260	460	720	1100	1500	1800	2000
250	50	190	410	730	1200	1700	2400	2900	3200
300	70	230	590	990	1600	2400	3400	4100	4500
400	125	450	1000	1700	2800	4200	5900	7200	7800

**Table 4.2:** *Angle-seated (noise-reduced) butterfly disk*

DN	Opening angle						
	10°	20°	30°	40°	50°	60°	70°
100	20	45	85	120	180	240	330
150	50	100	180	275	375	500	600
200	60	150	300	530	870	1080	1200
250	80	210	390	615	970	1250	2150
300	140	350	650	1025	1480	2100	3090
400	180	470	870	1380	1990	2830	4830

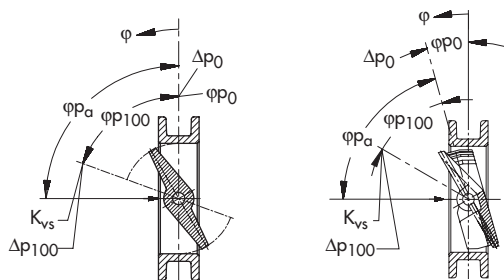
**Table 5:**  $C_V$  coefficients**Table 5.1:** *Swing-through butterfly disk*

DN	Opening angle								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
100	9	30	45	90	160	255	370	485	510
150	12	40	90	185	335	520	810	1160	1390
200	45	140	300	530	830	1270	1740	2080	2310
250	55	220	470	845	1390	1970	2780	3350	3700
300	80	265	680	1150	1850	2780	3930	4740	5200
400	145	520	1160	1970	3240	4860	6820	8320	9020

**Table 5.2:** *Angle-seated (noise-reduced) butterfly disk*

DN	Opening angle						
	10°	20°	30°	40°	50°	60°	70°
100	23	50	100	140	210	275	380
150	58	115	210	320	435	580	700
200	70	175	350	615	1005	1250	1400
250	93	245	450	710	1120	1445	2490
300	160	405	750	1185	1710	2430	3570
400	210	540	1005	1600	2300	3270	5505

### Schematic drawings, opening angle and flow coefficients



Left: Swing-through butterfly disk

Right: Angle-seated (noise-reduced) butterfly disk

Fig. 6: Disk versions for DN 100

### Notes on the differential pressure tables

The specified  $K_V$  coefficients apply to a nominal opening angle of  $\varphi_{100} = 70^\circ$ .

The following also applies:

$\Delta p_0$ : Permissible differential pressure with closed butterfly valve

$\Delta p_{100}$ : Permissible differential pressure at nominal opening angle  $\varphi_{100}$  (open position  $70^\circ$ )

The permissible differential pressures are restricted by the nominal pressure (see Information Sheet ▶ T 8000-2).

Only butterfly valves for on/off service can be used without a positioner. A positioner is required in all other cases.

Table 6: Permissible differential pressures · All pressures stated in bar

Table 6.1: Type SRP Actuator (fail-open or fail-close)

Values in parentheses for supply pressure only apply to body of 1.0619 and shaft of 1.4021.

Use a graphite/carbon packing for temperatures above 220 °C.

Nominal size	Shaft Ø in mm	Type SRP Actuator	Springs n =	Required supply pressure to open the valve	Max. perm. supply pressure at			Differential pressure with packing			
					20 °C (68 °F)	220 °C (428 °F)	400 °C (752 °F)	PTFE		Graphite	
								$\Delta p_0$	$\Delta p_{100}$	$\Delta p_0$	$\Delta p_{100}$
DN 100 NPS 4	16	100	2/3	2.5	6	6	6	7.7	1.20	3.7	0.50
		100	4	4	6	6	6	12.7	2.10	8.7	1.40
		100	5/6	5.5	6	6	6	17.8	2.9	13.8	2.20
DN 150 NPS 6	16	150	2/3	2.5	6	5.9	5.1	5.9	0.60	3.9	0.45
		100	4	4	6	6	6	6.3	0.60	4.3	0.45
		100	5/6	5.5	6	6	6	8.9	0.90	6.9	0.75
	25	450	2/3	2.5	6	6	5.7	11.3	1.90	9.2	1.53
		450	4	4	6	6	6	18.4	3.1	16.3	2.73
		450	5/6	5.5	6	6	6	25.4	4.30	23.3	3.93
DN 200 NPS 8	16	150	2/3	2.5	6	5.9	5.1	3.4	0.25	2.3	0.19
		150	4	4	6	6	5.7	5.5	0.40	4.4	0.34
		100	5/6	5.5	6	6	6	5.0	0.35	3.9	0.29
	25	450	2/3	2.5	6	6	5.8	7.2	0.85	5.8	0.69
		450	4	4	6	6	6	11.7	1.40	10.3	1.24
		450	5/6	5.5	6	6	6	16.1	1.90	14.7	1.74
DN 250 NPS 10	25	600	2/3	2.5	6	5.4	4.7	6.4	0.60	5.5	0.50
		450	4	4	6	6	6	7.6	0.70	6.7	0.60
		450	5/6	5.5	6	6	6	10.5	1.00	9.6	0.90
DN 300 NPS 12	25	600	2/3	2.5	6	5.4	4.7	4.3	0.35	3.7	0.30
		600	4	4	6	6	5.3	7.0	0.60	6.4	0.55
		600	5/6	5.5	6	6	5.9	9.7	0.80	9.1	0.75
	36	1200	2/3	2.5	5.8 (6)	4.5 (6)	3.9 (6)	5.7	0.65	4.9	0.55
		1200	4	4	6	5.1 (6)	4.5 (6)	9.2	1.00	8.4	0.90
		1200	5/6	5.5	6	5.7 (6)	– (6)	12.8	1.50	12.0	1.40
DN 400 NPS 16	25	600	2/3	2.5	6	5.4	4.7	2.6	0.15	2.3	0.13
		600	4	4	6	6	5.3	4.2	0.25	3.9	0.23
		600	5/6	5.5	6	6	5.9	5.8	0.35	5.5	0.33
	36	1200	2/3	2.5	5.8 (6)	4.5 (6)	3.9 (6)	3.4	0.30	2.9	0.25
		1200	4	4	6	5.1 (6)	4.5 (6)	5.4	0.50	4.9	0.45
		1200	5/6	5.5	6	5.7 (6)	– (6)	7.5	0.65	7.0	0.60

**Table 6.2:** Type 3278 Actuator (fail-close)

Nominal size	Shaft Ø in mm	Actuator area in cm <sup>2</sup>	Signal pressure range 90°	Operating range 70°	Required supply pressure to open the valve	Max. perm. supply pressure at			Differential pressure with packing			
						20 °C (68 °F)	220 °C (428 °F)	400 °C (752 °F)	PTFE		Graphite	
									Δp <sub>0</sub>	Δp <sub>100</sub>	Δp <sub>0</sub>	Δp <sub>100</sub>
DN 100 NPS 4	16	160	0.8 to 1.6	0.8 to 1.5	2.5	6.0	4.7	4.0	9.0	2.4	5	1.70
			1.2 to 2.4	1.2 to 2.2	3.5	6.0	5.2	4.7	14	3.0	10	2.30
			1.7 to 3.4	1.7 to 3.1	5.5	6.0	5.9	–	20	5.7	16	5.00
DN 150 NPS 6	16	160	0.8 to 1.6	0.8 to 1.5	2.5	6.0	4.7	4.0	4.5	0.7	2.5	0.55
			1.2 to 2.4	1.2 to 2.2	3.5	6.0	5.2	4.7	7.0	0.9	5	0.75
			1.7 to 3.4	1.7 to 3.1	5.5	6.0	5.9	–	10	1.7	8	1.55
	25 <sup>1)</sup>	320	0.8 to 1.6	0.8 to 1.5	2.5	6.0	4.7	4.0	8.5	2.5	6.4	2.12
			1.2 to 2.4	1.2 to 2.2	3.5	6.0	5.3	4.8	13	3.2	10.9	2.82
1.7 to 3.4			1.7 to 3.1	5.5	6.0	6.0	–	19	5.8	16.9	5.42	
DN 200 NPS 8	16	160	0.8 to 1.6	0.8 to 1.5	2.5	6.0	4.7	4.0	2.5	0.3	1.4	0.24
			1.2 to 2.4	1.2 to 2.2	3.5	6.0	5.2	4.7	4.0	0.4	2.9	0.34
			1.7 to 3.4	1.7 to 3.1	5.5	6.0	5.9	–	5.5	0.7	4.4	0.64
	25 <sup>1)</sup>	320	0.8 to 1.6	0.8 to 1.5	2.5	6.0	4.7	4.0	5.5	1.1	4.1	0.94
			1.2 to 2.4	1.2 to 2.2	3.5	6.0	5.3	4.8	8.5	1.4	7.1	1.24
			1.7 to 3.4	1.7 to 3.1	5.5	6.0	6.0	–	12	2.6	10.6	2.44
DN 250 NPS 10	25	320	0.8 to 1.6	0.8 to 1.5	2.5	6.0	4.7	4.0	3.5	0.6	2.6	0.50
			1.2 to 2.4	1.2 to 2.2	3.5	6.0	5.3	4.8	5.5	0.7	4.6	0.60
			1.7 to 3.4	1.7 to 3.1	5.5	6.0	6.0	–	7.5	1.3	6.6	1.20
DN 300 NPS 12	25	320	0.8 to 1.6	0.8 to 1.5	2.5	6.0	4.7	4.0	2.4	0.3	1.8	0.25
			1.2 to 2.4	1.2 to 2.2	3.5	6.0	5.3	4.8	3.5	0.4	2.9	0.35
			1.7 to 3.4	1.7 to 3.1	5.5	6.0	6.0	–	5.3	0.8	4.7	0.75
DN 400 NPS 16	25	320	0.8 to 1.6	0.8 to 1.5	2.5	6.0	4.7	4.0	1.5	0.15	1.15	0.12
			1.2 to 2.4	1.2 to 2.2	3.5	6.0	5.3	4.8	2.2	0.2	1.85	0.17
			1.7 to 3.4	1.7 to 3.1	5.5	6.0	6.0	–	3.2	0.3	2.85	0.27

<sup>1)</sup> Only with swing-through butterfly disk.

**Table 6.3:** Type 3278 Actuator (fail-open)

Nominal size	Shaft Ø in mm	Actuator area in cm <sup>2</sup>	Signal pressure range 90°	Operating range 70°	Required supply pressure to close the valve	Max. perm. supply pressure at			Differential pressure with packing			
						20 °C (68 °F)	220 °C (428 °F)	400 °C (752 °F)	PTFE		Graphite	
									Δp <sub>0</sub>	Δp <sub>100</sub>	Δp <sub>0</sub>	Δp <sub>100</sub>
DN 100 NPS 4	16	160	0.5 to 1.0	0.6 to 1.0	2.5	5.5	4.1	3.5	10.0	1.4	6	0.70
			0.8 to 1.6	0.9 to 1.6	3.5	6.0	4.6	4.1	20	2.4	16	1.70
			1.2 to 2.4	1.4 to 2.4	5.0	6.0	5.3	–	30	3.6	26	2.90
DN 150 NPS 6	16	160	0.5 to 1.0	0.6 to 1.0	2.5	5.5	4.1	3.5	5.5	0.4	3.5	0.25
			0.8 to 1.6	0.9 to 1.6	3.5	6.0	4.6	4.1	10	0.7	8	0.55
			1.2 to 2.4	1.4 to 2.4	5.0	6.0	5.3	–	15	1.1	13	0.95
	25 <sup>1)</sup>	320	0.5 to 1.0	0.6 to 1.0	2.5	5.8	4.4	3.8	11.5	1.4	9.4	1.02
			0.8 to 1.6	0.9 to 1.6	3.5	6.0	4.9	4.3	18	2.3	15.9	1.92
1.2 to 2.4			1.4 to 2.4	5.0	6.0	5.4	–	28	3.5	25.9	3.12	
DN 200 NPS 8	16	160	0.5 to 1.0	0.6 to 1.0	2.5	5.5	4.1	3.5	3.0	0.2	1.9	0.14
			0.8 to 1.6	0.9 to 1.6	3.5	6.0	4.6	4.1	5.5	0.3	4.4	0.24
			1.2 to 2.4	1.4 to 2.4	5.0	6.0	5.3	–	8.5	0.4	7.4	0.34
	25 <sup>1)</sup>	320	0.5 to 1.0	0.6 to 1.0	2.5	5.8	4.4	3.8	7.5	0.6	6.1	0.44
			0.8 to 1.6	0.9 to 1.6	3.5	6.0	4.9	4.3	11.5	1	10.1	0.84
			1.2 to 2.4	1.4 to 2.4	5.0	6.0	5.4	–	17.5	1.5	16.1	1.34
DN 250 NPS 10	25	320	0.5 to 1.0	0.6 to 1.0	2.5	5.8	4.4	3.8	4.8	0.3	3.9	0.20
			0.8 to 1.6	0.9 to 1.6	3.5	6.0	4.9	4.3	7.5	0.5	6.6	0.40
			1.2 to 2.4	1.4 to 2.4	5.0	6.0	5.4	–	11.5	0.8	10.6	0.70
DN 300 NPS 12	25	320	0.5 to 1.0	0.6 to 1.0	2.5	5.8	4.4	3.8	3.3	0.2	2.7	0.15
			0.8 to 1.6	0.9 to 1.6	3.5	6.0	4.9	4.3	5	0.3	4.4	0.25
			1.2 to 2.4	1.4 to 2.4	5.0	6.0	5.4	–	7.5	0.45	6.9	0.40
DN 400 NPS 16	25	320	0.5 to 1.0	0.6 to 1.0	2.5	5.8	4.4	3.8	2.0	0.1	1.65	0.07
			0.8 to 1.6	0.9 to 1.6	3.5	6.0	4.9	4.3	3.1	0.13	2.75	0.10
			1.2 to 2.4	1.4 to 2.4	5.0	6.0	5.4	–	4.7	0.2	4.35	0.17

<sup>1)</sup> Only with swing-through butterfly disk.

**Table 7: Permissible shaft, opening and dynamic torques in Nm**

Nominal size	Shaft Ø in mm	Perm. shaft torque at			Opening torques at differential pressure $\Delta p_0$ (in bar) <sup>2) 3)</sup>				Dynamic torques at differential pressure $\Delta p_{100}$ (in bar) <sup>2) 4)</sup>		
		20 °C (68 °F)	220 °C (428 °F)	400 °C (752 °F)	3.5	5	10	20	0.5	1	2
DN 100 NPS 4	16	180	130	110	8	12	22	42	8	14	26
DN 150 NPS 6	16	180	130	110	15	22	42	–	22	42	82
	25 <sup>1)</sup>	690	500	420	27	38	73	143	24	44	85
DN 200 NPS 8	16	180	130	110	26	37	–	–	48	95	–
	25 <sup>1)</sup>	690	500	420	40	58	113	223	50	96	189
DN 250 NPS 10	25	690	500	420	60	88	173	–	92	181	359
DN 300 NPS 12	25	690	500	420	90	128	–	–	153	303	–
	36 <sup>1)</sup>	1030	750	630	130	186	366	–	162	318	–
		2060 <sup>5)</sup>	1500 <sup>5)</sup>	1260 <sup>5)</sup>							
DN 400 NPS 16	25	690	500	420	150	213	–	–	348	–	–
	36 <sup>1)</sup>	1030	750	630	220	311	–	–	352	698	–
		2060 <sup>5)</sup>	1500 <sup>5)</sup>	1260 <sup>5)</sup>							

1) Only with swing-through butterfly disk

2) Values apply to PTFE packing. Add the following values when a graphite packing is used: 8 Nm for a 16 mm shaft diameter; 15 Nm for a 25 mm shaft diameter; 30 Nm for a 36 mm shaft diameter

3) Permissible differential pressure [bar] with closed butterfly valve

4) Permissible differential pressure [bar] with open butterfly valve (70°)

5) Applies to shaft material 1.4021 with body of 1.0619

**Table 8: Dimensions and weights for Type 3331/31a and Type 3331/3278**

Type 3331 Butterfly Valve											
Nominal size	DN/NPS	100/4	150/6		200/8		250/10	300/12		400/16	
L	mm	52	56		60		68	78		102	
A	mm	168	209		234		267	343		388	
B	mm	136	175		202		241	267		338	
C	mm	80	80	90	80	90	90	90	100	90	100
Ø W – Shaft with key drive	mm	16	16	25	16	25	25	25	36	25	36
SW – Shaft with square drive/adapter for actuator	mm	12/17	12/17	19/27	12/17	19/27	19/27	19/27	27/36	19/27	27/36
Flange connecting yoke		F07	F07	F12	F07	F12	F12	F12	F14	F12	F14
ØD <sub>i</sub>	mm	97	146		194		242	290		380	
ØD <sub>e</sub>	mm	158	216		270		320	376		486	
Weight	kg	13	19		25		35	55		98	

Type SRP Rotary Actuator		100	150	450	600	900	1200
F	mm	248	269	409	438	487	543
G	mm	135	147	207	226	271	295
H	mm	107	123	172	187	204	222
Connecting flange DIN 3337		F07		F12		F14	
AF	mm	17		27		36	
Weight							
Type SRP	kg (approx.)	4.5	6.5	18.5	24	32	46



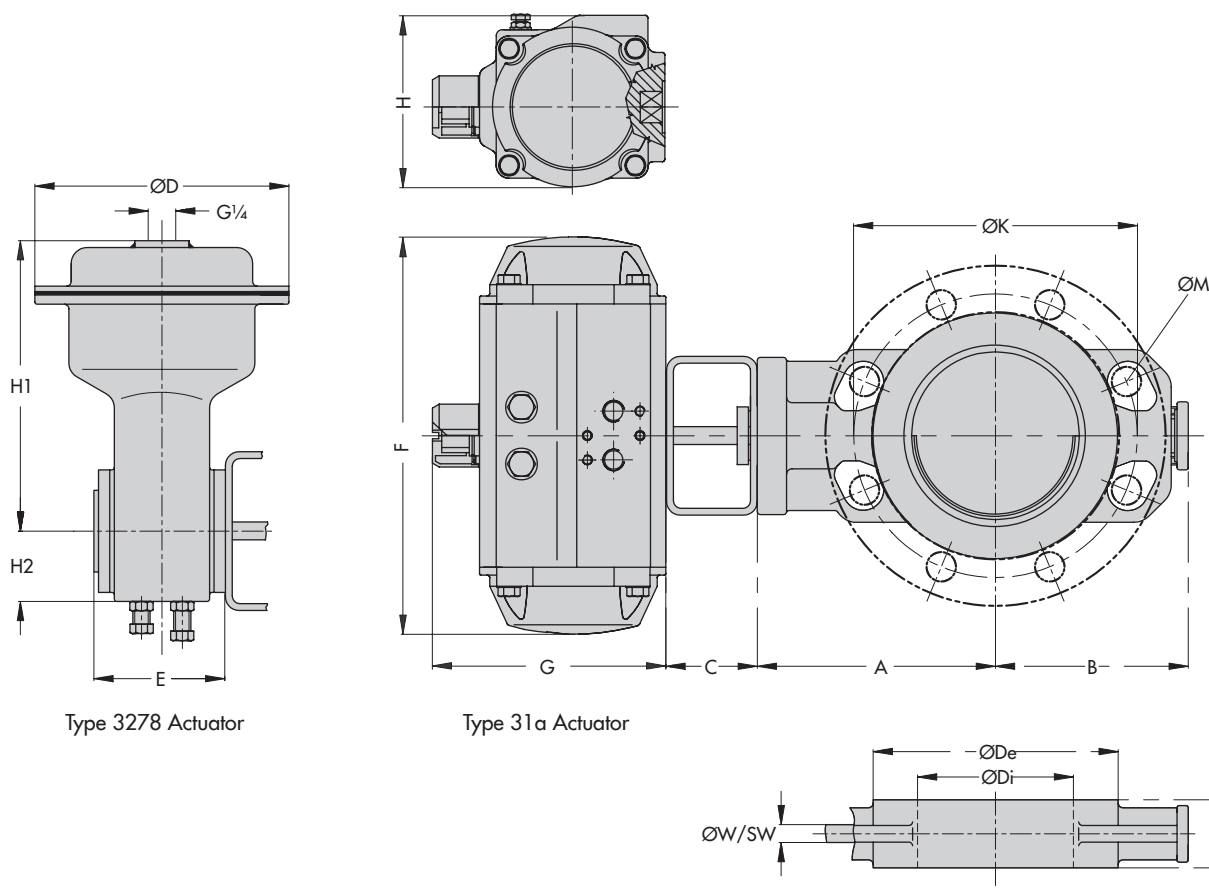
Type 3278 Rotary Actuator		160 cm <sup>2</sup>	320 cm <sup>2</sup>
E	mm	120.5	165.5
H1	mm	260	421
H2	mm	72	95
D	mm	225	295
Connecting flange ISO 5211		<b>F07</b>	<b>F12</b>
Weight	kg	16	50

**Table 9:** Installation dimensions  $\varnothing K$  and  $\varnothing M$  in mm · See Fig. 3 showing various versions

Nominal size	DN	100 to 250	300			400			
Nominal pressure	PN	10 to 50	10 to 20	25	40 to 50	10 to 20	25	40	50
	Class	150 and 300	150	–	300	150	–	–	300
$\varnothing W = 25$	$\varnothing K$	DN 100/NPS 4: without centering lugs (dimension M) (see Fig. 3a)	Dimensions according to PN 10 to 40 ISO PN 20 and 50 Class 150 and 300 (see Fig. 3b)						
	$\varnothing M$								
$\varnothing W = 36$	$\varnothing K$	Dimensions according to PN 10 to 40 ISO PN 20 and 50 Class 150 and 300 (see Fig. 3b)	418 (see Fig. 3c)	430 (see Fig. 3c)	450.8 (see Fig. 3c)	Dimensions according to PN 10 to 40 ISO PN 20 Class 150 (see Fig. 3b)			571.5 (see Fig. 3c)
	$\varnothing M$		40	M27 <sup>1)</sup>	M30 <sup>1)</sup> , 1 1/8", 7 UNC				M33 <sup>1)</sup> , 1 1/4", 7 UNC

<sup>1)</sup> Version without threaded holes

### Dimensional drawings



**Fig. 7:** Dimensions of Type 3331 Butterfly Valve (example in DN 100/NPS 4) with actuator

**Note:** The number of flange bores varies depending on the nominal size and nominal pressure.

## Ordering text

Nominal size	DN .../NPS ...
Nominal pressure	PN .../Class ...
Butterfly valve	Swing-through or angle-seated (noise-reduced) butterfly disk
Body material	According to Table 2
Fail-safe position	Fail-close or fail-open
Process medium and its density in kg/m <sup>3</sup>	
Max. flow rate	kg/h or m <sup>3</sup> /h in standard or operating state
Supply pressure available	
$\Delta p_0$ and $\Delta p_{100}$	
Medium temperature	
Valve accessories	

Specifications subject to change without notice



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