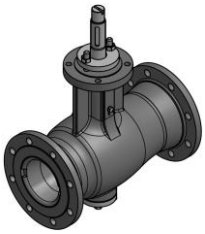
DATA SHEET

TY005.069 EN

Max. permissible Differential Pressures (Δp)
for Standard Configurations Valve with Actuator

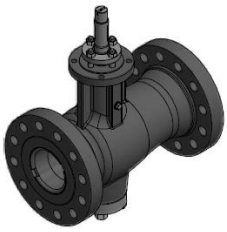
Double eccentric rotary plug valves



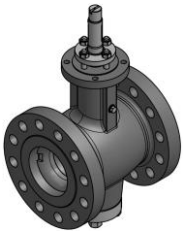
Type 72.3

Type 72.4

Type 82.7



Type 73.3
(high pressure)

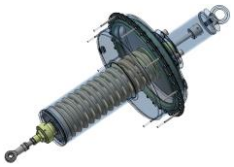


Type 73.7
(high pressure)

Pneumatic rotary actuators

Type AT (SC/SO)
Type BR31a

Type R



Type MZ

Type MD

Type MN

Rotary Plug Valves Series 72, 82, 73
for Combination with Pneumatic Actuators Type AT, BR31a, R, M (MN, MZ, MD)

Edition April 2020 (Rev.05)

Content

1 Selection criteria for differential pressures

→ The differential pressures indicated refer to the working range.

→ The ***differential pressure values apply*** to adjustable and non-adjustable stuffing boxes made of **PTFE/Graphite** with ***O-rings made of FPM 80*** (TA-Luft stuffing box) or without (standard stuffing box).

→ The differential pressure values apply to ***standard shafts made of 1.4542 (17-4PH®),*** in the temperature range: -29… +315 °C.

→ Outside this temperature range, shafts made of 1.4980 have to be used.

→ Differential pressures for other packings and designs with double stuffing box (DSB) must be calculated using the VETEC configurator.

→ In the case of accessories (e.g. quick exhauster) with a minimum supply pressure, it must be ensured during control operation that the minimum supply pressure is above the initial value of the working range.

The differential pressure tables show the standard configurations of valve with actuator. Other configurations are possible on request!

NOTICE

The maximum permissible differential pressure (Δp) must not exceed the permissible pressure (temperature-dependent) of the valve body!

NOTICE

The differential pressures given serve as an overview for different valve designs and were calculated taking into account the parameters mentioned above. This summary sheet and the data given in it do not replace the exact calculation of the differential pressures, which are calculated in each individual case using SAMSON VETEC's valve sizing program.

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2 Technical information of SAMSON VETEC rotary plug valves

→ Valve (plug) closes counter clockwise and has an opening angle of 75°.

→ Body sizes und pressure rating:

	Body size		**Pressure rating**	
	DIN	ANSI	DIN	ANSI
Series 82				
Type 82.7(-01/02)	DN 350/	NPS 14	PN 10, 16, 25, 40	CL 150, 300
Series 72				
Type 72.3	DN 500/	NPS 20	PN 10, 16, 25, 40	CL 150, 300
Type 72.4	DN 300/	NPS 12		
Series 73 high pressure				
Type 73.3	DN 250/	NPS 10	PN 61 to 160	CL 600, 900
Type 73.7	DN 500/	NPS 20		

→ The flow direction is bidirectional: **FTC**=flow to close or **FTO**=flow to open

→ In combination with pneumatic rotary actuators, the control valve has two fail-safe actions, which become effective when the piston is relieved of pressure or when the supply air fails.

- **FC** (fail close) = Valve closes (spring force closes)
- **FO** (fail open) = Valve opens (spring force opens)

3 Max. permissible Differential Pressures (Δp) for Valves of Series 72, 82

3.1 Max. Δp • Series 72, 82 • Rotary Actuators Type AT (SC/SO) and BR 31a.

Legend

FO=fail open • FC=fail close • FTO=flow to open • FTC=flow to close • **ZL**=supply air pressure
The differential pressure value of < **51.7 bar** results from the permissible valve body pressure for the material A216 WCC, CL 300 at 20 °C.

Table 1 • Series 72, 82 with double-piston rotary actuator, single-acting Type AT (SC/SO) and BR 31a

DN/NPS	Actuator	No. of springs	FTO+FC FTC+FO At least 1 bar of supply air is required per spring *	FTO+FO / FTC+FC			
				ZL 3 bar	ZL 4 bar	ZL 5 bar	ZL 6 bar
25 / 1 (Typ 72.3, 72.4, 8 2.7)	AT 60	3	—	5.6	39.0	51.7 <4.4	—
		4	15.9	—	19.0	51.7 <4.9	—
		5	28.4	—	—	32.7	51.7 <5.6
		6	41.0	—	—	—	46.1
	AT 100	3	28.2	23.3	51.7 <3.5	—	—
		4	49.0	—	42.7	51.7 <4.2	—
		5	<51.7	—	—	51.7 <4.8	—
		6	—	—	—	—	—
	AT 150	3	<51.7	51.7 <2.9	—	—	—
		4	—	—	51.7 <3.5	—	—
		5	—	—	—	—	—
		6	—	—	—	—	—
40 / 1½ (Typ 72.3. 72.4. 8 2.7)	AT 60	3	—	—	14.3	29.9	45.7
		4	—	—	4.8	20.5	36.3
		5	9.3	—	—	11.3	27.0
		6	15.2	—	—	—	17.7
	AT 100	3	9.2	6.9	31.6	51.7 <4.8	—
		4	19.0	—	16.0	40.7	51.7 <5.4
		5	29.0	—	—	25.2	49.9
		6	38.8	—	—	—	34.0
	AT 150	3	20.5	23.3	51.7 <3.8	—	—
		4	34.1	—	38.0	51.7 <4.4	—
		5	47.9	—	—	51.7 <5.0	—
		6	<51.7	—	—	—	51.7 <5.6
	AT 220	3	45.9	47.2	51.7 <3.1	—	—
		4	<51.7	—	51.7 <3.7	—	—
		5	—	—	—	—	—
		6	—	—	—	—	—
	AT 300	3	<51.7	51.7 <2.8	—	—	—
		4	—	—	51.7 <3.4	—	—
		5	—	—	—	—	—
		6	—	—	—	—	—
50 / 2 (Typ 72.3, 72.4, 8 2.7)	AT 60	3	—	—	6.9	14.6	22.3
		4	—	—	—	10.0	17.6
		5	4.5	—	—	5.5	13.1
		6	7.4	—	—	—	8.6
	AT 100	3	4.4	—	15.3	27.4	39.4
		4	9.2	—	7.8	19.8	31.9
		5	14.1	—	—	12.3	24.3
		6	18.9	—	—	—	16.5
	AT 150	3	10.0	11.3	28.8	46.3	51.7 <5.3
		4	16.6	—	18.5	36.0	51.7 <5.9
		5	23.3	—	—	25.7	43.2
		6	29.9	—	—	—	32.6

* Number of springs corresponds to min. supply air pressure → e.g. 3 springs = min. 3 bar supply air

DN/NPS	Actuator	No. of springs	FTO+FC FTC+FO At least 1 bar of supply air is required per spring *	FTO+FO / FTC+FC			
				ZL 3 bar	ZL 4 bar	ZL 5 bar	ZL 6 bar
50 / 2 (Typ 72.3, 72.4, 8 2.7)	AT 220	3	22.3	23.0	51.2	51.7 <4.0	—
		4	33.1	—	34.0	51.7 <4.6	—
		5	43.9	—	—	45.0	—
		6	<51.7	—	—	—	51.7 <5.8
	AT 300	3	31.4	34.2	51.7 <3.5	—	—
		4	45.2	—	48.8	51.7 <4.1	—
		5	<51.7	—	—	51.7 <4.7	—
		6	—	—	—	—	—
	AT 450	3	<51.7	51.7 <2.9	—	—	—
		4	—	—	51.7 <3.4	—	—
		5	—	—	—	51.7 <4.0	—
		6	—	—	—	—	51.7 <4.6
80 / 3 (Typ 72.3, 72.4, 8 2.7)	AT 100	3	—	—	4.4	9.0	13.7
		4	—	—	—	6.1	10.8
		5	—	—	—	—	7.8
		6	5.7	—	—	—	4.8
	AT 150	3	—	—	9.6	16.4	23.1
		4	4.9	—	5.6	12.4	19.1
		5	7.5	—	—	8.4	15.1
		6	10.0	—	—	—	11.1
	AT 220	3	7.1	7.3	18.3	29.2	40.2
		4	11.3	—	11.6	22.5	33.5
		5	15.4	—	—	15.9	26.8
		6	19.6	—	—	—	20.2
	AT 300	3	10.6	11.7	25.8	40.0	51.7 <5.8
		4	15.9	—	17.3	31.5	45.7
		5	21.3	—	—	23.0	37.2
		6	26.6	—	—	—	29.0
	AT 450	3	19.8	21.6	43.7	51.7 <4.3	—
		4	28.2	—	30.7	51.7 <4.9	—
		5	36.6	—	—	39.5	51.7 <5.5
		6	45.0	—	—	—	48.8
	AT 600	3	28.9	30.4	51.7 <3.7		—
		4	40.4	—	42.3	51.7 <4.3	—
		5	51.6	—	—	51.7 <4.9	—
		6	—	—	—	—	—
	AT 900	3	42.9	39.0	51.7 <3.3	—	—
		4	<51.7	—	51.7 <3.9	—	—
		5	—	—	—	51.7 <4.6	—
		6	—	—	—	—	51.7 <5.2
100 / 4 (Typ 72.3, 72.4, 8 2.7)	AT 150	3	—	—	4.3	7.9	11.4
		4	—	—	—	5.8	9.3
		5	—	—	—	—	7.2
		6	4.5	—	—	—	5.1
	AT 220	3	—	—	8.9	14.6	20.4
		4	5.2	—	5.4	11.1	16.9
		5	7.4	—	—	7.6	13.4
		6	9.6	—	—	—	9.9
	AT 300	3	4.8	5.4	12.8	20.3	27.7
		4	7.6	—	8.4	15.8	23.3
		5	10.5	—	—	11.4	18.8
		6	13.3	—	—	—	14.5
	AT 450	3	9.6	10.6	22.2	33.9	45.5
		4	14.1	—	15.4	27.0	38.7
		5	18.5	—	—	20.0	31.7
		6	22.9	—	—	—	24.9

DN/NPS	Actuator	No. of springs	FTO+FC FTC+FO At least 1 bar of supply air is required per spring *	FTO+FO / FTC+FC			
				ZL 3 bar	ZL 4 bar	ZL 5 bar	ZL 6 bar
100 / 4 (Typ 72.3, 72.4, 8 2.7)	AT 600	3	14.5	15.3	30.5	45.6	51.7 <5.4
		4	20.5	—	21.5	36.7	51.7 <6.0
		5	26.4	—	—	27.9	43.1
		6	32.4	—	—	—	34.1
	AT 900	3	21.8	19.8	40.3	51.7 <4.5	—
		4	30.2	—	27.8	48.3	51.7 <5.2
		5	38.7	—	—	35.5	51.7 <5.8
		6	47.1	—	—	—	43.3
	AT 1200	3	30.5	31.1	51.7 <3.7	—	—
		4	41.9	—	42.8	51.7 <4.3	—
		5	53.3	—	—	51.7 <4.9	—
		6	—	—	—	—	—
150 / 6 (Typ 72.3, 72.4, 8 2.7)	AT 220	3	—	—	4.1	6.8	9.6
		4	—	—	—	5.2	7.9
		5	—	—	—	—	6.2
		6	4.4	—	—	—	4.6
	AT 300	3	—	—	6.0	9.6	13.2
		4	—	—	—	7.4	11.0
		5	4.8	—	—	5.3	8.9
		6	6.2	—	—	—	6.8
	AT 450	3	4.4	4.9	10.5	16.1	21.8
		4	6.6	—	7.2	12.8	18.5
		5	8.7	—	—	9.5	15.1
		6	10.8	—	—	—	11.8
	AT 600	3	6.8	7.2	14.5	21.8	29.2
		4	9.7	—	10.2	17.5	24.8
		5	12.5	—	—	13.2	20.6
		6	15.4	—	—	—	16.3
	AT 900	3	10.3	9.3	19.2	29.1	39.0
		4	14.4	—	13.2	23.1	33.0
		5	18.5	—	—	17.0	26.9
		6	22.5	—	—	—	20.7
	AT 1200	3	14.5	14.8	28.5	42.3	51.7 <5.7
		4	20.0	—	20.4	34.2	47.9
		5	25.5	—	—	26.1	39.8
		6	31.0	—	—	—	31.7
	AT 2000	3	26.0	26.9	50.0	51.7 <4.1	—
		4	35.3	—	36.6	51.7 <4.6	—
		5	44.6	—	—	46.3	51.7 <5.2
		6	<51.7	—	—	—	51.7 <5.8
	AT 3000	3	40.4	36.6	51.7 <3.4	—	—
		4	<51.7	—	49.3	51.7 <4.1	—
		5	—	—	—	—	—
		6	—	—	—	—	—
	AT 4000	3	<51.7	51.7 <3.0	—	—	—
		4	—	—	51.7 <3.6	—	—
		5	—	—	—	51.7 <4.2	—
		6	—	—	—	—	51.7 <4.8

* Number of springs corresponds to min. supply air pressure → e.g. 3 springs = min. 3 bar supply air

DN/NPS	Actuator	No. of springs	FTO+FC FTC+FO At least 1 bar of supply air is required per spring *	FTO+FO / FTC+FC			
				ZL 3 bar	ZL 4 bar	ZL 5 bar	ZL 6 bar
200 / 8 (Typ 72.3, 72.4, 8 2.7)	AT 300	3	—	—	—	5.1	7.0
		4	—	—	—	4.0	5.9
		5	—	—	—	—	4.7
		6	—	—	—	—	—
	AT 450	3	—	—	5.6	8.6	11.6
		4	—	—	—	6.8	9.9
		5	4.6	—	—	5.0	8.0
		6	5.8	—	—	—	6.3
	AT 600	3	—	—	7.7	11.7	15.6
		4	5.2	—	5.4	9.3	13.3
		5	6.7	—	—	7.1	11.0
		6	8.2	—	—	—	8.7
	AT 900	3	5.5	5.0	10.3	15.6	20.9
		4	7.7	—	7.0	12.3	17.6
		5	9.9	—	—	9.1	14.3
		6	12.0	—	—	—	11.1
	AT 1200	3	7.8	21.0	28.3	35.7	43.0
		4	10.7	—	28.3	35.7	43.0
		5	13.6	—	—	35.7	43.0
		6	16.6	—	—	—	43.0
	AT 2000	3	13.9	14.4	26.7	39.1	51.4
		4	18.9	—	19.6	31.9	44.3
		5	23.9	—	—	24.7	37.1
		6	28.8	—	—	—	29.8
	AT 3000	3	21.6	19.6	37.5	51.7 <4.8	—
		4	29.1	—	26.4	44.3	51.7 <5.4
		5	36.7	—	—	33.2	51.1
		6	44.2	—	—	—	40.0
	AT 4000	3	29.3	28.2	51.7 <3.9	—	—
		4	39.4	—	37.9	51.7 <4.5	—
		5	49.5	—	—	47.6	51.7 <5.2
		6	<51.7	—	—	—	51.7 <5.8
	AT 5000	3	37.1	41.0	51.7 <3.3	—	—
		4	49.8	—	51.7 <3.8	—	—
		5	<51.7	—	—	51.7 <4.4	—
		6	—	—	—		51.7 <5.0
250 / 10 (Typ 72.3, 72.4, 8 2.7)	AT 450	3	—	—	3.1	4.8	6.5
		4	—	—	—	3.8	5.5
		5	—	—	—	—	4.5
		6	—	—	—	—	—
	AT 600	3	—	—	4.3	6.5	8.7
		4	—	—	—	5.2	7.4
		5	—	—	—	—	6.1
		6	4.6	—	—	—	4.8
	AT 900	3		—	5.7	8.7	11.7
		4	4.3	—	—	6.9	9.9
		5	5.5	—	—	5.0	8.0
		6	6.7	—	—	—	6.2
	AT 1200	3	4.3	11.8	16.0	20.1	24.3
		4	6.0	—	16.0	20.1	24.3
		5	7.6	—	—	20.1	24.3
		6	9.3	—	—	—	24.3

* Number of springs corresponds to min. supply air pressure → e.g. 3 springs = min. 3 bar supply air

DN/NPS	Actuator	No. of springs	FTO+FC FTC+FO At least 1 bar of supply air is required per spring *	FTO+FO / FTC+FC			
				ZL 3 bar	ZL 4 bar	ZL 5 bar	ZL 6 bar
250 / 10 (Typ 72.3, 72.4, 8 2.7)	AT 2000	3	7.8	8.0	15.1	22.1	29.1
		4	10.6	—	11.0	18.0	25.0
		5	13.4	—	—	13.9	20.9
		6	16.3	—	—	—	16.8
	AT 3000	3	12.1	11.0	21.2	31.3	41.5
		4	16.4	—	14.9	25.0	35.2
		5	20.7	—	—	18.7	28.9
		6	25.0	—	—	—	22.6
	AT 4000	3	16.5	15.9	30.0	44.1	51.7 <5.5
		4	22.2	—	21.4	35.5	49.6
		5	28.0	—	—	26.9	41.0
		6	33.7	—	—	—	32.4
	AT 5000	3	20.9	23.1	40.8	51.7 <4.6	—
		4	28.2	—	31.1	48.7	51.7 <5.2
		5	35.4	—	—	39.0	51.7 <5.7
		6	42.6	—	—	—	47.0
	AT 10000	3	39.2	39.2	51.7 <3.4	—	—
		4	<51.7	—	51.7 <4.0	—	—
		5	—	—	—	—	—
		6	—	—	—	—	—
300 / 12 (Typ 72.3, 72.4, 8 2.7)	AT 600	3	—	—	—	4.0	5.4
		4	—	—	—	—	4.5
		5	—	—	—	—	—
		6	—	—	—	—	—
	AT 900	3	—	—	—	5.3	7.2
		4	—	—	—	4.2	6.1
		5	—	—	—	—	4.9
		6	4.1	—	—	—	—
	AT 1200	3	—	—	9.8	12.4	14.9
		4	—	—	—	12.4	14.9
		5	4.7	—	—	12.4	14.9
		6	5.7	—	—	—	14.9
	AT 2000	3	4.8	4.9	9.2	13.5	17.9
		4	6.5	—	6.7	11.0	15.4
		5	8.2	—	—	8.5	12.9
		6	10.0	—	—	—	10.3
	AT 3000	3	7.4	6.7	13.0	19.2	25.5
		4	10.1	—	9.1	15.4	21.6
		5	12.7	—	—	11.5	17.7
		6	15.3	—	—	—	13.9
	AT 4000	3	10.1	9.8	18.4	27.1	35.7
		4	13.7	—	13.1	21.8	30.5
		5	17.2	—	—	16.5	25.2
		6	20.7	—	—	—	19.9
	AT 5000	3	12.9	14.2	25.1	35.9	46.8
		4	17.3	—	19.1	30.0	40.8
		5	21.7	—	—	24.0	34.9
		6	26.2	—	—	—	28.9
	AT 10000	3	24.1	24.1	44.3	51.7 <4.4	—
		4	32.3	—	32.2	51.7 <5.0	—
		5	40.4	—	—	40.4	51.7 <5.5
		6	48.6	—	—	—	48.7

* Number of springs corresponds to min. supply air pressure → e.g. 3 springs = min. 3 bar supply air

DN/NPS	Actuator	No. of springs	FTO+FC FTC+FO At least 1 bar of supply air is required per spring *	FTO+FO / FTC+FC			
				ZL 3 bar	ZL 4 bar	ZL 5 bar	ZL 6 bar
350 / 14 (Typ 72.3)	AT 2000	3	—	—	5.7	8.4	11.1
		4	4.0	—	4.1	6.8	9.5
		5	5.1	—	—	5.3	8.0
		6	6.2	—	—	—	6.4
	AT 3000	3	4.6	4.1	8.1	12.0	15.9
		4	6.2	—	5.6	9.5	13.5
		5	7.9	—	—	7.1	11.0
		6	9.5	—	—	—	8.6
	AT 4000	3	6.2	6.0	11.5	16.9	22.3
		4	8.5	—	8.1	13.6	19.0
		5	10.7	—	—	10.3	15.7
		6	12.9	—	—	—	12.4
	AT 5000	3	8.0	8.8	15.6	22.5	29.3
		4	10.8	—	11.9	18.7	25.5
		5	13.5	—	—	15.0	21.8
		6	16.3	—	—	—	18.0
	AT 10000	3	15.0	15.0	27.7	40.3	51.7 <5.9
		4	20.2	—	20.1	32.7	45.4
		5	25.3	—	—	25.3	37.9
		6	30.4	—	—	—	30.5
400 / 16 (Typ 72.3)	AT 3000	3	—	—	5.5	8.2	10.9
		4	4.2	—	—	6.5	9.2
		5	5.4	—	—	4.8	7.5
		6	6.5	—	—	—	5.9
	AT 4000	3	4.3	4.1	7.8	11.6	15.3
		4	5.8	—	5.6	9.3	13.0
		5	7.3	—	—	7.0	10.8
		6	8.8	—	—	—	8.5
	AT 5000	3	5.4	6.0	10.7	15.4	20.1
		4	7.4	—	8.1	12.8	17.5
		5	9.3	—	—	10.2	14.9
		6	11.2	—	—	—	12.4
	AT 10000	3	10.3	10.3	19.0	27.7	36.4
		4	13.8	—	13.8	22.5	31.2
		5	17.3	—	—	17.3	26.0
		6	20.9	—	—	—	20.9
500 / 20 (Typ 72.3)	AT 4000	3	—	—	4.5	6.7	8.8
		4	—	—	—	5.3	7.5
		5	4.2	—	—	4.0	6.2
		6	5.1	—	—	—	4.9
	AT 5000	3	—	—	6.2	8.9	11.6
		4	4.2	—	4.7	7.4	10.1
		5	5.3	—	—	5.9	8.6
		6	6.4	—	—	—	7.1
	AT 10000	3	5.9	5.9	11.0	16.0	21.1
		4	8.0	—	7.9	13.0	18.1
		5	10.0	—	—	10.0	15.1
		6	12.1	—	—	—	12.1

* Number of springs corresponds to min. supply air pressure → e.g. 3 springs = min. 3 bar supply air

3.2 Max. Δp • Series 72, 82 • Rotary Actuator Type R

Legend

FO=fail open • FC=fail close • FTO=flow to open • FTC=flow to close • **ZL**=supply air pressure
The differential pressure value of < 51.7 bar results from the permissible valve body pressure for the material A216 WCC, CL 300 at 20 °C.

Table 2 • Series 72, 82 with rolling diaphragm rotary actuator, single-acting Type R

DN/NPS	Actuator	Spring range		FTO+FC FTC+FO	FTO+FO / FTC+FC						
		min	max		ZL 1,7 bar	ZL 2,0 bar	ZL 3,0 bar	ZL 3,5 bar	ZL 4,0 bar	ZL 5,0 bar	ZL 6,0 bar
25 / 1 (Typ 72.3, 72.4, 82.7)	**R 110**	0.4	1.2	45.3	51.7 <1.6	—	—	—	—	—	—
	R 110v	1.16	2.76	<51.7	—	—	—	51.7 <3.2	—	—	—
40 / 1½ (Typ 72.3, 72.4, 82.7)	**R 110**	0.4	1.2	17.3	27.3	51.7 <1.9	—	—	—	—	—
	R 110v	1.16	2.76	<51.7	—	—	—	51.7 <3.5	—	—	—
	R 150	0.4	1.2	<51.7	51.7 <1.5	—	—	—	—	—	—
50 / 2 (Typ 72.3, 72.4, 82.7)	**R 110**	0.4	1.2	8.4	13.3	27.3	51.7 <2.5	—	—	—	—
	R 110v	1.16	2.76	43.9	—	—	—	24.5	47.8	51.7 <4.1	—
	R 150	0.4	1.2	40.6	51.7 <1.7	—	—	—	—	—	—
	R 150v	0.92	2.76	<51.7	—	—	—	51.7 <3.2	—	—	—
80 / 3 (Typ 72.3, 72.4, 82.7)	**R 110v**	1.16	2.76	15.5	—	—	—	7.9	17.0	35.0	51.7 <5.9
	R 150	0.4	1.2	14.2	19.3	34.2	51.7 <2.3	—	—	—	—
	R 150v	0.92	2.76	39.9	—	—	—	31.2	51.7 <3.9	—	—
	R 200	0.4	1.2	33.3	43.2	51.7 <1.8	—	—	—	—	—
	R 200v	1.25	2.65	<51.7	—	—	—	51.7 <3.2	—	—	—
	R 250	0.4	1.2	<51.7	51.7 <1.6	—	—	—	—	—	—
100 / 4 (Typ 72.3, 72.4, 82.7)	**R 110v**	1.16	2.76	7.4	—	—	—	—	8.2	17.7	27.2
	R 150	0.4	1.2	6.8	9.4	17.2	37.6	—	—	—	—
	R 150v	0.92	2.76	20.3	—	—	—	15.7	28.7	51.7 <4.9	
	R 200	0.4	1.2	16.8	22.0	37.3	51.7 <2.3	—	—	—	—
	R 200v	1.25	2.65	51.7	—	—	—	39.9	51.7 <3.7	—	—
	R 250	0.4	1.2	28.7	36.8	51.7 <1.9	—	—	—	—	—
	R 250v	1.30	2.40	<51.7	—	—	44.8	51.7 <3.1	—	—	—
150 / 6 (Typ 72.3, 72.4, 82.7)	**R 150v**	0.92	2.76	9.6	—	—	—	7.4	13.7	26.2	38.7
	R 200	0.4	1.2	7.9	10.4	17.8	37.3	—	—	—	—
	R 200v	1.25	2.65	28.9	—	—	—	19.1	31.4	51.7 <4.8	
	R 250	0.4	1.2	13.7	17.6	29.2	51.7 <2.6	—	—	—	—
	R 250v	1.30	2.40	48.7	—	—	21.5	40.9	51.7 <3.8	—	—
	R 250vv	1.70	3.30	< 51.7	—	—	—	5.9	25.3	51.7 <4.7	—
200 / 8 (Typ 72.3, 72.4, 82.7)	**R 150v**	0.92	2.76	5.1	—	—	—	4.0	7.3	14.0	20.7
	R 200	0.4	1.2	4.2	5.6	9.5	20.0	—	—	—	—
	R 200v	1.25	2.65	15.5	—	—	—	10.2	16.8	30.0	43.2
	R 250	0.4	1.2	7.3	9.4	15.7	32.3	—	—	—	—
	R 250v	1.30	2.40	26.1	—	—	11.5	21.9	32.3	51.7 <4.9	—
	R 250vv	1.70	3.30	34.4	—	—	—	—	13.6	34.4	51.7 <5.8

DN/NPS	Actuator	Spring range		FTO+FC FTC+FO	FTO+FO / FTC+FC						
		min	max		ZL 1,7 bar	ZL 2,0 bar	ZL 3,0 bar	ZL 3,5 bar	ZL 4,0 bar	ZL 5,0 bar	ZL 6,0 bar
250 / 10 (Typ 72.3, 72.4, 82.7)	**R 200**	0.4	1.2	—	—	5.3	11.2	—	—	—	—
	R 200v	1.25	2.65	8.7	—	—	—	5.7	9.4	16.9	24.4
	R 250	0.4	1.2	4.1	5.2	8.8	18.2	—	—	—	—
	R 250v	1.70	2.40	14.7	—	—	6.4	12.3	18.2	30.1	41.9
	R 250vv	1.70	3.30	19.4	—	—	—	—	7.6	19.4	31.2
300 / 12 (Typ 72.3, 72.4, 82.7)	**R 200**	0.4	1.2	—	—	—	6.9	—	—	—	—
	R 200v	1.25	2.65	5.3	—	—	—	—	5.8	10.4	15.0
	R 250	0.4	1.2	—	—	5.4	11.2				
	R 250v	1.30	2.40	9.0	—	—	4.0	7.6	11.2	18.5	25.8
	R 250vv	1.70	3.30	11.9	—	—	—	—	4.7	11.9	19.2
350 / 14 (Typ 72.3)	**R 200v**	1.25	2.65	—	—	—	—	—	—	6.5	9.3
	R 250	0.40	1.20	—	—	—	6.9	—	—	—	—
	R 250v	1.30	2.40	5.6	—	—	—	4.7	7.0	11.5	16.1
	R 250vv	1.70	3.30	7.4	—	—	—	—	—	7.4	12.0

3.3 Max. Δp • Series 72, 82 • Rotary Actuators Type M (MZ, MD, MN)

Legend

FO=fail open • FC=fail close • FTO=flow to open • FTC=flow to close • **ZL**=supply air pressure
The differential pressure value of < 51.7 bar results from the permissible valve body pressure for the material A216 WCC, CL 300 at 20 °C.

Table 3 • Series 72, 82 with diaphragm rotary actuators, single-acting Type M (MZ, MD, MN)

DN / NPS	Actuator	Spring range		FTO+FC FTC+FO	FTO+FO / FTC+FC						
		min	max		ZL 1,7 bar	ZL 2,0 bar	ZL 3,0 bar	ZL 3,5 bar	ZL 4,0 bar	ZL 5,0 bar	ZL 6,0 bar
25 / 1 (Type 72.3, 72.4 82.7)	**MN 200**	0.4	1.3	<51.7	51.7 <1.6	—	—	—	—	—	—
40 / 1½ (Type 72.3, 72.4 82.7)	**MN 300**	0.4	1.3	<51.7	51.7 <1.6	—	—	—	—	—	—
50 / 2 (Type 72.3, 72.4 82.7)	**MN 300**	0.4	1.3	39.3	39.4	51.7 <1.8	—	—	—	—	—
80 / 3 (Type 72.3, 72.4 82.7)	**MN 300**	0.4	1.3	19.3	19.5	38.1	51.7 <2.2	—	—	—	—
	MN 300v	0.6	2.2	31.8	—	—	44.4	51.7 <3.1	—	—	—
100 / 4 (Type 72.3, 72.4 82.7)	**MN 300**	0.4	1.3	9.4	9.5	19.3	48.3	—	—	—	—
	MN 300v	0.6	2.2	16.0	—	—	22.6	38.9	51.7 <3.9	—	—
150 / 6 (Type 72.3, 72.4 82.7)	**MN 300v**	0.6	2.2	7.5	—	—	10.7	18.6	26.5	—	—
	MZ 450	0.45	1.3	28.5	25.1	45.4	51.7 <2.1	—	—	—	—
	MZ 450v	0.88	2.10	<51.7	—	—	51.7 <2.9	—	—	—	—
	MD 450	0.65	1.10	42.0	38.6	51.7 <1.9		—	—	—	—
	MD 450	1.15	2.01	<51.7	—	—	51.7 <2.8	—	—	—	—
	MD 450	1.56	2.72	—	—	—	17.0	50.8	51.7 <3.5	—	—
	MD 450	1.71	3.13	—	—	—	—	23.1	51.7 <3.9	—	—
	MZ 700	0.40	1.28	<51.7	51.7 <1.6	—	—	—	—	—	—
200 / 8 (Type 72.3, 72.4 82.7)	**MN 300v**	0.6	2.2	4.0	—	—	5.7	10.0	14.2	—	—
	MZ 450	0.45	1.3	15.2	13.4	24.3	51.7 <2.7	—	—	—	—
	MZ 450v	0.88	2.10	30.8	—	—	31.5	49.6	51.7 <3.5	—	—
	MD 450	0.65	1.10	22.5	20.7	31.5	51.7 <2.5	—	—	—	—
	MD 450	1.15	2.01	40.5	—	—	34.8	51.7 <3.5	—	—	—
	MD 450	1.56	2.72	<51.7	—	—	9.1	27.2	45.2	51.7 <4.2	—
	MD 450	1.71	3.13	<51.7	—	—	—	12.4	30.4	51.7 <4.6	—
	MZ 700	0.40	1.28	38.6	40.6	51.7 <1.8	—	—	—	—	—
	MZ 700v	0.69	2.05	<51.7	—	—	51.7 <2.6	—	—	—	—
	MD 700	0.70	1.30	<51.7	38.6	51.7 <1.8	—	—	—	—	—
250 / 10 (Type 72.3, 72.4 82.7)	**MZ 450**	0.45	1.3	8.6	7.5	13.7	34.2	44.4	51.7 <3.9	—	—
	MZ 450v	0.88	2.10	17.4	—	—	17.8	28.0	38.3	—	—
	MD 450	0.65	1.10	12.7	11.6	17.8	38.3	48.5	51.7 <3.6	—	—
	MD 450	1.15	2.01	22.9	—	—	19.6	29.9	40.1	51.7 <4.6	—
	MD 450	1.56	2.72	31.3	—	—	5.1	15.3	25.6	46.1	51.7 <5.3
	MD 450	1.71	3.13	34.4	—	—	—		17.2	37.7	51.7 <5.7
	MZ 700	0.40	1.28	21.8	22.9	39.8	51.7 <2.2	—	—	—	—
	MZ 700v	0.69	2.05	38.1	—	—	51.7 <2.6	—	—	—	—

DN / NPS	Actuator	Spring range		FTO+FC FTC+FO	FTO+FO / FTC+FC						
		min	max		ZL 1,7 bar	ZL 2,0 bar	ZL 3,0 bar	ZL 3,5 bar	ZL 4,0 bar	ZL 5,0 bar	ZL 6,0 bar
250 / 10 (Type 72.3, 72.4 82.7)	MD 700	0.70	1.30	38.6	38.6	68.3	—	—	—	—	—
	MD 700	1.51	2.80	<51.7	—	—	18.8	51.7 <3.3	—	—	—
	MD 700	1.74	3.10	—	—	—	—	38.6	51.7 <3.6	—	—
	MD 700	2.10	3.75	—	—	—	—	—	—	51.7 <4.3	—
	MD 700	2.51	4.07	—	—	—	—	—	—	51.7 <4.6	—
300 / 12 (Type 72.3, 72.4 82.7)	MZ 450	0.45	1.3	5.3	4.6	8.4	21.0	22.2	—	—	—
	MZ 450v	0.88	2.10	10.7	—	—	10.9	17.2	23.5	—	—
	MD 450	0.65	1.10	7.8	7.2	10.9	23.5	29.8	32.3	—	—
	MD 450	1.15	2.01	14.1	—	—	12.1	18.4	24.7	37.3	49.9
	MD 450	1.56	2.72	19.3	—	—	—	9.4	15.7	28.3	40.9
	MD 450	1.71	3.13	21.1	—	—	—	4.3	10.6	23.2	35.8
	MZ 700	0.40	1.28	13.4	14.1	24.5	51.7 <2.8	—	—	—	—
	MZ 700v	0.69	2.05	23.4			32.4	49.7	51.7 <3.6	—	—
	MD 700	0.70	1.30	23.8	13.4	23.8	51.7 <2.8			—	—
	MD 700	1.51	2.80	51.7	—	—	—	—	—	—	—
	MD 700	1.74	3.10	—	—	—	—	—	—	—	—
	MD 700	2.10	3.75	—	—	—	—	—	—	—	—
	MD 700	2.51	4.07	—	—	—	—	—	—	—	—
350 / 14 (Type 72.3)	MZ 450v	0.88	2.10	6.6	—	—	6.8	10.7	14.7	—	—
	MD 450	0.65	1.10	4.8	4.4	6.8	14.7	18.7	20.2	—	—
	MD 450	1.15	2.01	8.8	—	—	7.5	11.5	15.4	23.3	31.3
	MD 450	1.56	2.72	12.0	—	—	—	5.8	9.8	17.7	25.6
	MD 450	1.71	3.13	13.2	—	—	—	—	6.5	14.5	22.4
	MZ 700	0.40	1.28	8.3	8.8	15.3	34.3	—	—	—	—
	MZ 700v	0.69	2.05	14.6	—	—	20.3	31.1	42.0	—	—
	MD 700	0.70	1.30	14.8	8.3	14.8	36.5	47.4	51.7 <3.7	—	—
	MD 700	1.51	2.80	32.4	—	—	4.0	14.8	25.7	47.4	51.7 <5.2
	MD 700	1.74	3.10	37.4	—	—	—	8.3	19.2	40.9	51.7 <5.5
	MD 700	2.10	3.75	45.2	—	—	—	—	—	26.8	48.5
	MD 700	2.51	4.07	54.1	—	—	—	—	—	19.8	41.5
	MD 700	2.88	4.66	—	—	—	—	—	—	—	—
400 / 16 (Type 72.3)	MZ 450v	0.88	2.10	4.5	—	—	4.6	7.4	10.1	—	—
	MD 450	0.65	1.10	—	—	4.6	10.1	12.8	13.8	—	—
	MD 450	1.15	2.01	6.0	—	—	5.1	7.8	10.6	16.0	21.5
	MD 450	1.56	2.72	8.2	—	—	—	4.0	6.7	12.2	17.6
	MD 450	1.71	3.13	9.0	—	—	—	—	4.5	9.9	15.4
	MZ 700	0.40	1.28	5.7	6.0	10.5	23.5	—	—	—	—
	MZ 700v	0.69	2.05	10.0	—	—	13.9	21.4	28.8	—	—
	MD 700	0.70	1.30	10.2	5.7	10.2	25.1	32.6	40.0	41.5	—
	MD 700	1.51	2.80	22.3				10.2	17.6	32.6	47.5

DN / NPS	Actuator	Spring range		FTO+FC FTC+FO	FTO+FO / FTC+FC						
		min	max		zL 1,7 bar	zL 2,0 bar	zL 3,0 bar	zL 3,5 bar	zL 4,0 bar	zL 5,0 bar	zL 6,0 bar
	MD 700	1.74	3.10	25.7	—	—	—	5.7	13.2	28.1	43.0
	MD 700	2.10	3.75	31.1	—	—	—	—	—	18.4	33.3
	MD 700	2.51	4.07	37.2	—	—	—	—	—	13.6	28.5
	MD 700	2.88	4.66	42.7	—	—	—	—	—	4.8	19.7
500 / 20 (Type 72.3)	**MD 450**	1.56	2.72	4.7	—	—	—	—	—	7.0	10.2
	MD 450	1.71	3.13	5.2	—	—	—	—	—	7.0	10.2
	MZ 700	0.40	1.28		—	6.0	13.6	—	—	—	—
	MZ 700v	0.69	2.05	5.8	—		8.0	12.4	16.7	—	—
	MD 700	0.70	1.30	5.9	—	5.9	14.6	18.9	23.2	24.0	—
	MD 700	1.51	2.80	12.9	—	—	—	5.9	10.2	18.9	27.6
	MD 700	1.74	3.10	14.9	—	—	—	—	7.6	16.3	25.0
	MD 700	2.10	3.75	18.0	—	—	—	—	—	10.6	19.3
	MD 700	2.51	4.07	21.6	—	—	—	—	—	7.9	16.5
	MD 700	2.88	4.66	24.8	—	—	—	—	—	—	11.4
600 / 24 (Type 72.3)	**MD 700**	1.51	2.80	7.6	—	—	—	—	6.0	11.2	16.3
	MD 700	1.74	3.10	8.8	—	—	—	—	4.5	9.6	14.8
	MD 700	2.10	3.75	10.7	—	—	—	—	—	6.3	11.4
	MD 700	2.51	4.07	12.8	—	—	—	—	—	4.7	9.8
	MD 700	2.88	4.66	14.7	—	—	—	—	—	—	6.8

4 Max. permissible Differential Pressures (Δp) for Valves of Series 73 (High Pressure)

4.1 Max. Δp • Series 73 (high pressure) • Rotary Actuators Type AT (SC/SO) and BR 31a

Legend

FO=fail open • FC=fail close • FTO=flow to open • FTC=flow to close • **ZL**=supply air pressure
The differential pressure value of < 160 bar results from the permissible valve body pressure for the material 1.0619, PN 160 at 20 °C.

Table 4 • Series 73 with double-piston rotary actuator, single-acting Type AT (SC/SO) and BR 31a

DN/NPS	Actuator	No. of springs	FTO+FC FTC+FO At least 1 bar of supply air is required per spring *	FTO+FO / FTC+FC			
				ZL 3 bar	ZL 4 bar	ZL 5 bar	ZL 6 bar
25 / 1 (Type 73.3, 73.7)	AT 60	3	—	—	30.2	63.3	96.6
		4	7.1	—	10.3	43.3	76.6
		5	19.7	—	—	23.9	57.0
		6	32.2	—	—	—	37.3
	AT 100	3	19.4	14.5	66.7	118.8	160 <5.8
		4	40.2	—	33.9	86.0	138.2
		5	61.3	—	—	53.3	105.4
		6	82.1	—	—	—	71.8
	AT 150	3	—	49.3	125.1	160 <4.4	—
		4	72.1	—	80.3	156.1	160 <5.1
		5	101.1	—	—	111.4	160 <5.6
		6	129.9	—	—	—	141.6
	AT 220	3	96.9	99.7	160 <3.4	—	—
		4	143.6	—	147.6	160 <4.1	—
		5	< 160	—	—	160 <4.7	—
		6	—	—	—	—	160 <5.3
40 / 1½ (Type 73.3, 73.7)	AT 60	3	—	—	14.3	29.9	45.7
		4	—	—	4.8	20.5	36.3
		5	9.3	—	—	11.3	27.0
		6	15.2	—	—	—	17.7
	AT 100	3	9.2	6.9	31.6	56.3	80.9
		4	19.0	—	16.0	40.7	65.4
		5	29.0	—	—	25.2	49.9
		6	38.8	—	—	—	34.0
	AT 150	3	20.5	23.3	59.2	95.1	131.0
		4	34.1	—	38.0	73.9	109.8
		5	47.9	—	—	52.7	88.6
		6	61.5	—	—	—	67.0
	AT 220	3	45.9	47.2	105.2	160 <4.9	—
		4	68.0	—	69.9	127.8	160 <5.6
		5	90.1	—	—	92.4	150.4
		6	112.3	—	—	—	115.6
	AT 300	3	64.5	70.3	145.3	160 <4.2	—
		4	92.8	—	100.2	160 <4.8	—
		5	121.2	—	—	130.3	160 <5.4
		6	149.5	—	—	—	160 <5.9
	AT 450	3	113.1	122.6	160 <3.3	—	—
		4	157.6	—	160 <3.9	—	—
		5	< 160	—	—	160 <4.5	—
		6	—	—	—	—	160 <5.1

* Number of springs corresponds to min. supply air pressure → e.g. 3 springs = min. 3 bar supply air

DN/NPS	Actuator	No. of springs	FTO+FC FTC+FO At least 1 bar of supply air is required per spring *	FTO+FO / FTC+FC			
				ZL 3 bar	ZL 4 bar	ZL 5 bar	ZL 6 bar
50 / 2 (Type 73.3, 73.7)	AT 60	3	—	—	6.9	14.6	22.3
		4	—	—	—	10.0	17.6
		5	4.5	—	—	5.5	13.1
		6	7.4	—	—	—	8.6
	AT 100	3	4.4	—	15.3	27.4	39.4
		4	9.2	—	7.8	19.8	31.9
		5	14.1	—	—	12.3	24.3
		6	18.9	—	—	—	16.5
	AT 150	3	10.0	11.3	28.8	46.3	63.8
		4	16.6	—	18.5	36.0	53.5
		5	23.3	—	—	25.7	43.2
		6	29.9	—	—	—	32.6
	AT 220	3	22.3	23.0	51.2	79.5	107.7
		4	33.1	—	34.0	62.2	90.5
		5	43.9	—	—	45.0	73.3
		6	54.7	—	—	—	56.3
	AT 300	3	31.4	34.2	70.8	107.3	143.9
		4	45.2	—	48.8	85.4	121.9
		5	59.0	—	—	63.5	100.0
		6	72.8	—	—	—	78.8
	AT 450	3	55.1	59.7	116.9	160 <4.7	—
		4	76.8	—	83.2	140.4	160 <5.3
		5	98.5	—	—	106.1	160 <5.9
		6	120.1	—	—	—	130.1
	AT 600	3	78.7	82.6	157.3	160 <4.1	—
		4	108.3	—	113.2	160 <4.6	—
		5	137.2	—	—	144.6	160 <5.2
		6	< 160	—	—	—	160 <5.8
	AT 900	3	114.9	104.8	160 <3.5	—	—
		4	156.3	—	144.1	160 <4.15	—
		5	< 160	—	—	160 <4.8	—
		6	—	—	—	—	160 <5.4
80 / 3 (Type 73.3, 73.7)	AT 150	3	—	—	9.6	16.4	23.1
		4	4.9	—	5.6	12.4	19.1
		5	7.5	—	—	8.4	15.1
		6	10.0	—	—	—	11.1
	AT 220	3	7.1	7.3	18.3	29.2	40.2
		4	11.3	—	11.6	22.5	33.5
		5	15.4	—	—	15.9	26.8
		6	19.6	—	—	—	20.2
	AT 300	3	10.6	11.7	25.8	40.0	54.2
		4	15.9	—	17.3	31.5	45.7
		5	21.3	—	—	23.0	37.2
		6	26.6	—	—	—	29.0
	AT 450	3	19.8	21.6	43.7	65.9	88.0
		4	28.2	—	30.7	52.8	75.0
		5	36.6	—	—	39.5	61.7
		6	45.0	—	—	—	48.8

* Number of springs corresponds to min. supply air pressure → e.g. 3 springs = min. 3 bar supply air

DN/NPS	Actuator	No. of springs	FTO+FC FTC+FO At least 1 bar of supply air is required per spring *	FTO+FO / FTC+FC			
				ZL 3 bar	ZL 4 bar	ZL 5 bar	ZL 6 bar
80 / 3 (Type 73.3, 73.7)	AT 600	3	28.9	30.4	59.4	88.3	117.2
		4	40.4	—	42.3	71.2	100.1
		5	51.6	—	—	54.5	83.4
		6	63.1	—	—	—	66.3
	AT 900	3	42.9	39.0	78.0	117.1	156.1
		4	59.0	—	54.2	93.3	132.3
		5	75.0	—	—	69.1	108.1
		6	91.1	—	—	—	83.9
	AT 1200	3	59.5	60.6	114.8	160 <4.8	—
		4	81.1	—	82.8	137.0	160 <5.4
		5	102.8	—	—	105.0	159.2
		6	124.4	—	—	—	127.2
	AT 2000	3	104.8	108.3	160 <3.6	—	—
		4	141.5	—	146.5	160 <4.15	—
		5	< 160	—	—	160 <4.7	—
		6	—	—	—	—	160 <5.3
100 / 4 (Type 73.3, 73.7)	AT 150	3	—	—	4.3	7.9	11.4
		4	—	—	—	5.8	9.3
		5	—	—	—	—	7.2
		6	4.5	—	—	—	5.1
	AT 220	3	—	—	8.9	14.6	20.4
		4	5.2	—	5.4	11.1	16.9
		5	7.4	—	—	7.6	13.4
		6	9.6	—	—	—	9.9
	AT 300	3	4.8	5.4	12.8	20.3	27.7
		4	7.6	—	8.4	15.8	23.3
		5	10.5	—	—	11.4	18.8
		6	13.3	—	—	—	14.5
	AT 450	3	9.6	10.6	22.2	33.9	45.5
		4	14.1	—	15.4	27.0	38.7
		5	18.5	—	—	20.0	31.7
		6	22.9	—	—	—	24.9
	AT 600	3	14.5	15.3	30.5	45.6	60.8
		4	20.5	—	21.5	36.7	51.9
		5	26.4	—	—	27.9	43.1
		6	32.4	—	—	—	34.1
	AT 900	3	21.8	19.8	40.3	60.8	81.2
		4	30.2	—	27.8	48.3	68.8
		5	38.7	—	—	35.5	56.0
		6	47.1	—	—	—	43.3
	AT 1200	3	30.5	31.1	59.5	88.0	116.4
		4	41.9	—	42.8	71.2	99.6
		5	53.3	—	—	54.4	82.9
		6	64.6	—	—	—	66.1

* Number of springs corresponds to min. supply air pressure → e.g. 3 springs = min. 3 bar supply air

DN/NPS	Actuator	No. of springs	FTO+FC FTC+FO At least 1 bar of supply air is required per spring *	FTO+FO / FTC+FC			
				ZL 3 bar	ZL 4 bar	ZL 5 bar	ZL 6 bar
100 / 4 (Type 73.3, 73.7)	AT 2000	3	54.3	56.1	103.9	151.7	160 <5.2
		4	73.6	—	76.2	124.0	160 <5.7
		5	92.9	—	—	96.3	144.1
		6	112.1	—	—	—	115.9
	AT 3000	3	84.0	76.2	145.6	160 <4.2	—
		4	113.2	—	102.6	160 <4.8	—
		5	142.4	—	—	128.9	160 <5.45
		6	< 160	—	—	—	155.3
	AT 4000	3	113.7	109.7	160 <3.5	—	—
		4	152.9	—	147.2	160 <4.1	—
		5	< 160	—	—	160 <4.7	—
		6	—	—	—	—	160 <5.3
150 / 6 (Type 73.3, 73.7)	AT 300	3	—	—	6.0	9.6	13.2
		4	—	—	—	7.4	11.0
		5	4.8	—	—	5.3	8.9
		6	6.2	—	—	—	6.8
	AT 450	3	4.4	4.9	10.5	16.1	21.8
		4	6.6	—	7.2	12.8	18.5
		5	8.7	—	—	9.5	15.1
		6	10.8	—	—	—	11.8
	AT 600	3	6.8	7.2	14.5	21.8	29.2
		4	9.7	—	10.2	17.5	24.8
		5	12.5	—	—	13.2	20.6
		6	15.4	—	—	—	16.3
	AT 900	3	10.3	9.3	19.2	29.1	39.0
		4	14.4	—	13.2	23.1	33.0
		5	18.5	—	—	17.0	26.9
		6	22.5	—	—	—	20.7
	AT 1200	3	14.5	14.8	28.5	42.3	56.0
		4	20.0	—	20.4	34.2	47.9
		5	25.5	—	—	26.1	39.8
		6	31.0	—	—	—	31.7
	AT 2000	3	26.0	26.9	50.0	73.0	96.1
		4	35.3	—	36.6	59.7	82.7
		5	44.6	—	—	46.3	69.4
		6	53.9	—	—	—	55.7
	AT 3000	3	40.4	36.6	70.1	103.6	137.1
		4	54.4	—	49.3	82.8	116.3
		5	68.5	—	—	62.0	95.5
		6	82.6	—	—	—	74.8
	AT 4000	3	54.7	52.8	99.2	145.5	160 <5.3
		4	73.6	—	70.9	117.3	160 <5.9
		5	92.5	—	—	89.0	135.3
		6	111.4	—	—	—	107.1
	AT 5000	3	69.4	76.6	134.8	160 <4.4	—
		4	93.1	—	102.8	160 <4.9	160 <5.1
		5	116.9	—	—	129.0	160 <5.6
		6	140.6	—	—	—	155.2

* Number of springs corresponds to min. supply air pressure → e.g. 3 springs = min. 3 bar supply air

DN/NPS	Actuator	No. of springs	FTO+FC FTC+FO At least 1 bar of supply air is required per spring *	FTO+FO / FTC+FC			
				ZL 3 bar	ZL 4 bar	ZL 5 bar	ZL 6 bar
200 / 8 (Type 73.3, 73.7)	AT 450	3	—	—	5.3	8.3	11.3
		4	—	—	—	6.5	9.5
		5	4.3	—	—	4.7	7.7
		6	5.5	—	—	—	6.0
	AT 600	3	—	—	7.4	11.3	15.3
		4	4.8	—	5.1	9.0	13.0
		5	6.4	—	—	6.8	10.7
		6	7.9	—	—	—	8.4
	AT 900	3	5.2	4.7	10.0	15.3	20.5
		4	7.4	—	6.7	12.0	17.3
		5	9.5	—	—	8.7	14.0
		6	11.7	—	—	—	10.7
	AT 1200	3	7.4	7.6	14.9	22.3	29.6
		4	10.4	—	10.6	18.0	25.3
		5	13.3	—	—	13.6	21.0
		6	16.3	—	—	—	16.6
	AT 2000	3	13.6	14.1	26.4	38.8	51.1
		4	18.6	—	19.2	31.6	43.9
		5	23.5	—	—	24.4	36.8
		6	28.5	—	—	—	29.5
	AT 3000	3	21.3	19.2	37.2	55.1	73.0
		4	28.8	—	26.1	44.0	61.9
		5	36.3	—	—	32.9	50.8
		6	43.9	—	—	—	39.7
	AT 4000	3	28.9	27.9	52.7	77.6	102.4
		4	39.1	—	37.6	62.4	87.3
		5	49.2	—	—	47.3	72.1
		6	59.3	—	—	—	57.0
	AT 5000	3	36.8	40.7	71.8	103.0	134.1
		4	49.5	—	54.7	85.8	117.0
		5	62.2	—	—	68.7	99.8
		6	74.9	—	—	—	82.7
	AT 10000	3	69.0	69.1	126.8	160 <4.6	—
		4	92.4	—	92.2	149.9	160 <5.2
		5	115.8	—	—	115.8	160 <5.8
		6	139.3	—	—	—	139.5
250 / 10 (Type 73.3, 73.7)	AT 600	3	—	—	4.0	6.3	8.5
		4	—	—	—	5.0	7.2
		5	—	—	—	—	5.9
		6	4.3	—	—	—	4.6
	AT 900	3	—	—	5.5	8.5	11.5
		4	4.0	—	—	6.7	9.7
		5	5.3	—	—	4.8	7.8
		6	6.5	—	—	—	5.9
	AT 1200	3	4.1	4.1	8.3	12.5	16.7
		4	5.7	—	5.9	10.0	14.2
		5	7.4	—	—	7.6	11.7
		6	9.1	—	—	—	9.3

* Number of springs corresponds to min. supply air pressure → e.g. 3 springs = min. 3 bar supply air

DN/NPS	Actuator	No. of springs	FTO+FC FTC+FO At least 1 bar of supply air is required per spring *	FTO+FO / FTC+FC			
				ZL 3 bar	ZL 4 bar	ZL 5 bar	ZL 6 bar
250 / 10 (Type 73.3, 73.7)	AT 2000	3	7.5	7.8	14.8	21.8	28.8
		4	10.4	—	10.8	17.8	24.8
		5	13.2	—	—	13.7	20.7
		6	16.0	—	—	—	16.6
	AT 3000	3	11.9	10.8	20.9	31.1	41.3
		4	16.2	—	14.6	24.8	35.0
		5	20.5	—	—	18.5	28.6
		6	24.7	—	—	—	22.3
	AT 4000	3	16.3	15.7	29.7	43.8	57.9
		4	22.0	—	21.2	35.2	49.3
		5	27.7	—	—	26.7	40.7
		6	33.5	—	—	—	32.1
	AT 5000	3	20.7	22.9	40.6	58.2	75.9
		4	27.9	—	30.9	48.5	66.2
		5	35.1	—	—	38.8	56.5
		6	42.3	—	—	—	46.7
	AT 10000	3	39.0	39.0	71.7	104.5	137.2
		4	52.3	—	52.1	84.8	117.6
		5	65.6	—	—	65.5	98.3
		6	78.9	—	—	—	78.9
300 / 12 (Type 73.7)	AT 1200	3	—	—	5.0	7.6	10.2
		4	—	—	—	6.1	8.6
		5	4.5	—	—	4.6	7.1
		6	5.5	—	—	—	5.6
	AT 2000	3	4.6	4.7	9.0	13.3	17.7
		4	6.3	—	6.5	10.8	15.2
		5	8.0	—	—	8.3	12.7
		6	9.8	—	—	—	10.1
	AT 3000	3	7.2	6.5	12.8	19.0	25.3
		4	9.9	—	8.9	15.2	21.4
		5	12.5	—	—	11.3	17.5
		6	15.1	—	—	—	13.7
	AT 4000	3	9.9	9.6	18.2	26.9	35.5
		4	13.5	—	12.9	21.6	30.3
		5	17.0	—	—	16.3	25.0
		6	20.5	—	—	—	19.7
	AT 5000	3	12.7	14.0	24.9	35.7	46.6
		4	17.1	—	18.9	29.8	40.6
		5	21.5	—	—	23.8	34.6
		6	26.0	—	—	—	28.7
	AT 10000	3	23.9	23.9	44.0	64.2	84.3
		4	32.0	—	32.0	52.1	72.2
		5	40.2	—	—	40.2	60.4
		6	48.4	—	—	—	48.5

* Number of springs corresponds to min. supply air pressure → e.g. 3 springs = min. 3 bar supply air

DN/NPS	Actuator	No. of springs	FTO+FC FTC+FO At least 1 bar of supply air is required per spring *	FTO+FO / FTC+FC			
				ZL 3 bar	ZL 4 bar	ZL 5 bar	ZL 6 bar
350 / 14 (Type 73.7)	AT 2000	3	—	—	5.7	8.4	11.1
		4	—	—	4.1	6.8	9.5
		5	5.0	—	—	5.2	7.9
		6	6.1	—	—	—	6.3
	AT 3000	3	4.5	4.1	8.0	11.9	15.9
		4	6.2	—	5.6	9.5	13.4
		5	7.8	—	—	7.1	11.0
		6	9.5	—	—	—	8.6
	AT 4000	3	6.2	6.0	11.4	16.9	22.3
		4	8.4	—	8.1	13.5	19.0
		5	10.6	—	—	10.2	15.7
		6	12.9	—	—	—	12.4
	AT 5000	3	7.9	8.8	15.6	22.4	29.3
		4	10.7	—	11.9	18.7	25.5
		5	13.5	—	—	14.9	21.7
		6	16.3	—	—	—	18.0
	AT 10000	3	15.0	15.0	27.7	40.3	53.0
		4	20.1	—	20.1	32.7	45.4
		5	25.3	—	—	25.2	37.9
		6	30.4	—	—	—	30.4
400 / 16 (Type 73.7)	AT 3000	3	—	—	5.4	8.1	10.8
		4	4.2	—	—	6.4	9.1
		5	5.3	—	—	4.8	7.5
		6	6.4	—	—	—	5.8
	AT 4000	3	4.2	4.0	7.8	11.5	15.2
		4	5.7	—	5.5	9.2	13.0
		5	7.2	—	—	6.9	10.7
		6	8.7	—	—	—	8.4
	AT 5000	3	5.4	5.9	10.6	15.3	20.0
		4	7.3	—	8.0	12.7	17.4
		5	9.2	—	—	10.2	14.9
		6	11.1	—	—	—	12.3
	AT 10000	3	10.2	10.2	18.9	27.6	36.3
		4	13.7	—	13.7	22.4	31.1
		5	17.3	—	—	17.3	26.0
		6	20.8	—	—	—	20.8
500 / 20 (Type 73.7)	AT 4000	3	—	—	4.5	6.6	8.8
		4	—	—	—	5.3	7.5
		5	4.1	—	—	—	6.2
		6	5.0	—	—	—	4.8
	AT 5000	3	—	—	6.1	8.9	11.6
		4	4.2	—	4.6	7.4	10.1
		5	5.3	—	—	5.9	8.6
		6	6.4	—	—	—	7.1
	AT 10000	3	5.9	5.9	11.0	16.0	21.1
		4	7.9	—	7.9	13.0	18.0
		5	10.0	—	—	10.0	15.0
		6	12.0	—	—	—	12.1

* Number of springs corresponds to min. supply air pressure → e.g. 3 springs = min. 3 bar supply air

4.2 Max. Δp • Series 73 (High Pressure) • Rotary Actuator Type R

Legend

FO=fail open • FC=fail close • FTO=flow to open • FTC=flow to close • **ZL**=supply air pressure
The differential pressure value of < 160 bar results from the permissible valve body pressure for the material 1.0619, PN 160 at 20 °C.

Table 5 • Series 73 with rolling diaphragm rotary actuator, single-acting Type R

DN/NPS	Actuator	Pressure range		FTO+FC FTC+FO	FTO+FO / FTC+FC						
		min	max		ZL 1,7 bar	ZL 2,0 bar	ZL 3,0 bar	ZL 3,5 bar	ZL 4,0 bar	ZL 5,0 bar	ZL 6,0 bar
25 / 1 (Type 73.3, 73.7)	**R 110**	0.4	1.2	36.5	57.6	118.2	160 <2.2	—	—	—	—
	R 110v	1.16	2.76	<160	—	—	—	106.1	160 <3.8	—	—
40 / 1,5 (Type 73.3, 73.7)	**R 110**	0.4	1.2	17.3	27.3	56.0	151.6	160 <3.1	—	—	—
	R 110v	1.16	2.76	90.2	—	—	—	50.2	98.0	160 <4.6	—
	R 150	0.4	1.2	83.4	110.5	160 <1.9	—	—	—	—	—
	R 150v	0.92	2.76	<160	—	—	—	160 <3.4	—	—	—
50 /2 (Type 73.3, 73.7)	**R 110**	0.4	1.2	8.4	13.3	27.3	73.8	97.1	120.4	160 <4.9	
	R 110v	1.16	2.76	43.9	—	—	—	24.5	47.8	94.3	140.9
	R 150	0.4	1.2	40.6	53.8	92.1	160 <2.5	—	—	—	—
	R 150v	0.92	2.76	107.0	—	—	—	84.5	148.3	160 <4.1	
80 / 3 (Type 73.3, 73.7)	**R 110v**	1.16	2.76	15.5	—	—	—	7.9	17.0	35.0	53.0
	R 150	0.4	1.2	14.2	19.3	34.2	83.6	108.3	133.1	160 <4.5	—
	R 150v	0.92	2.76	39.9	—	—	—	31.2	55.9	105.4	154.8
	R 200	0.4	1.2	33.3	43.2	72.4	160 <2.9	—	—	—	—
	R 200v	1.25	2.65	116.1	—	—	—	77.2	125.8	160 <4.4	—
	R 250	0.4	1.2	56.0	71.3	117.4	160 <2.3	—	—	—	—
	R 250v	1.30	2.40	<160	—	—	86.7	160 <3.5	—	—	—
100 / 4 (Type 73.3, 73.7)	**R 110v**	1.16	2.76	7.4	—	—	—	—	8.2	17.7	27.2
	R 150	0.4	1.2	6.8	9.4	17.2	37.6	—	—	—	—
	R 150v	0.92	2.76	20.3	—	—	—	15.7	28.7	54.6	80.6
	R 200	0.4	1.2	16.8	22.0	37.3	77.8				
	R 200v	1.25	2.65	60.3	—	—	—	39.9	65.4	116.4	160 <5.9
	R 250	0.4	1.2	28.7	36.8	60.9	141.5	160 <3.2	—	—	—
	R 250v	0.4	1.2	101.2	—	—	44.8	85.1	125.4	160 <4.4	—
	R 250vv	0.4	1.2	133.4	—	—	—	12.6	52.9	133.5	160 <5.3
150 / 6 (Type 73.3, 73.7)	**R 150v**	0.92	2.76	8.9	—	—	—	7.4	13.7	26.2	38.7
	R 200	0.4	1.2	7.3	10.4	17.8	37.3	—	—	—	—
	R 200v	1.25	2.65	26.7	—	—	—	19.1	31.4	56.0	80.7
	R 250	0.4	1.2	12.6	17.6	29.2	60.3	—	—	—	—
	R 250v	1.30	2.40	44.9	—	—	21.5	40.9	60.4	99.3	138.2
	R 250vv	1.70	3.30	59.3	—	—	—	5.9	25.3	64.3	103.2
200 / 8 (Type 73.3, 73.7)	**R 150v**	0.92	2.76	4.8	—	—	—	—	7.0	13.7	20.4
	R 200	0.4	1.2	4.2	5.3	9.2	19.6	—	—	—	—
	R 200v	1.25	2.65	15.5	—	—	—	9.9	16.5	29.7	42.9
	R 250	0.4	1.2	7.3	9.1	15.3	32.0	—	—	—	—
	R 250v	1.30	2.40	26.1	—	—	11.2	21.6	32.0	52.8	73.7
	R 250vv	1.70	3.30	34.4	—	—	—	—	13.3	34.1	54.9
250 / 10 (Type 73.3, 73.7)	**R 200**	0.4	1.2	—	—	5.1	11.0	—	—	—	—
	R 200v	1.25	2.65	8.5	—	—	—	5.5	9.2	16.7	24.2
	R 250	0.4	1.2	—	5.0	8.6	18.0	—	—	—	—
	R 250v	1.70	2.40	14.5	—	—	6.2	12.1	18.0	29.8	41.6
	R 250vv	1.70	3.30	19.2	—	—	—	—	7.4	19.2	31.0
300 / 12 (Type 73.7)	**R 200**	0.4	1.2	—	—	—	6.7	—	—	—	—
	R 200v	1.25	2.65	5.1	—	—	—	—	5.6	10.2	14.8
	R 250	0.4	1.2	—	—	5.2	11.0	—	—	—	—
	R 250v	1.30	2.40	8.8	—	—	—	7.4	11.0	18.3	25.6
	R 250vv	1.70	3.30	11.7	—	—	—	—	4.5	11.7	19.0

DN/NPS	Actuator	Pressure range		FTO+FC FTC+FO	FTO+FO / FTC+FC						
		min	max		ZL 1,7 bar	ZL 2,0 bar	ZL 3,0 bar	ZL 3,5 bar	ZL 4,0 bar	ZL 5,0 bar	ZL 6,0 bar
350 / 14 (Type 73.7)	**R 250**	0.40	1.20	—	—	—	6.9	—	—	—	—
	R 250v	1.30	2.40	5.6	—	—	—	4.6	6.9	11.5	16.1
	R 250vv	1.70	3.30	7.4	—	—	—	—	—	7.4	11.9

4.3 Max. Δp • Series 73 (High Pressure) • Rotary Actuators Type M (MZ, MD, MN)

Legend

FO=fail open • FC=fail close • FTO=flow to open • FTC=flow to close • **ZL**=supply air pressure
The differential pressure value of < 160 bar results from the permissible valve body pressure for the material 1.0619, PN 160 at 20 °C

Table 6 • Series 73 with diaphragm rotary actuators, single-acting Type M (MZ, MD, MN)

DN / NPS	Actuator	Pressure range		FTO+FC FTC+FO	FTO+FO / FTC+FC						
		min	max		zL 1,7 bar	zL 2,0 bar	zL 3,0 bar	zL 3,5 bar	zL 4,0 bar	zL 5,0 bar	zL 6,0 bar
25 / 1 (Type 73.3, 73.7)	**MN 200**	0.4	1.3	59.5	160 <1.7	—	—	—	—	—	—
40 / 1,5 (Type 73.3, 73.7)	**MN 300**	0.4	1.3	80.7	80.9	157.0	—	—	—	—	—
50 / 2 (Type 73.3, 73.7)	**MN 300**	0.4	1.3	39.3	39.4	76.5	160 <2.7	—	—	—	—
80 / 3 (Type 73.3, 73.7)	**MN 300**	0.4	1.3	19.3	19.5	38.1	100.3	131.5	160 <4.0	—	—
	MN 300v	0.6	2.2	31.8	—	—	44.4	75.5	106.6	—	—
100 / 4 (Type 73.3, 73.7)	**MN 300**	0.4	1.3	9.4	9.5	19.3	48.3	48.3	48.3	—	—
	MN 300v	0.6	2.2	16.0	—	—	22.6	38.9	55.3	—	—
150 / 6 (Type 73.3, 73.7)	**MN 300v**	0.6	2.2	7.5	—	—	10.7	18.6	26.5	—	—
	MZ 450	0.45	1.3	28.5	25.1	45.4	112.9	146.7	160 <3.7	—	—
	MZ 450v	0.88	2.10	57.5	—	—	58.9	92.6	126.4	—	—
	MD 450	0.65	1.10	42.0	38.6	58.9	126.4	160 <3.5	—	—	—
	MD 450	1.15	2.01	75.8	—	—	65.0	98.7	132.5	160 <4.4	—
	MD 450	1.56	2.72	103.4	—	—	17.0	50.8	84.5	152.1	160 <5.1
	MD 450	1.71	3.13	113.5	—	—	—	23.1	56.8	124.4	160 <5.5
	MZ 700	0.40	1.28	72.1	75.8	131.3	160 <2.2	—	—	—	—
200 / 8 (Type 73.3, 73.7)	**MN 300v**	0.6	2.2	4.0	—	—	5.7	10.0	14.2	—	—
	MZ 450	0.45	1.3	15.2	13.4	24.3	60.4	78.5	96.6	—	—
	MZ 450v	0.88	2.10	30.8	—	—	31.5	49.6	67.7	—	—
	MD 450	0.65	1.10	22.5	20.7	31.5	67.7	85.7	103.8	139.9	160 <5.6
	MD 450	1.15	2.01	40.5	—	—	34.8	52.8	70.9	107.1	143.2
	MD 450	1.56	2.72	55.3	—	—	9.1	27.2	45.2	81.4	117.5
	MD 450	1.71	3.13	60.8	—	—		12.4	30.4	66.6	102.7
	MZ 700	0.40	1.28	38.6	40.6	70.3	160 <2.9	—	—	—	—
	MZ 700v	0.69	2.05	67.3	—	—	93.1	142.6	160 <3.7	—	—
	MD 700	0.70	1.30	68.3	38.6	68.3	160 <2.9	—	—	—	—
250 / 10 (Type 73.3, 73.7)	**MZ 450**	0.45	1.3	8.6	7.5	13.7	34.2	36.2	—	—	—
	MZ 450v	0.88	2.10	17.4	—	—	17.8	28.0	38.3	—	—
	MD 450	0.65	1.10	12.7	11.6	17.8	38.3	48.5	58.8	79.3	99.8
	MD 450	1.15	2.01	22.9	—	—	19.6	29.9	40.1	60.6	81.1
	MD 450	1.56	2.72	31.3	—	—	5.1	15.3	25.6	46.1	66.6
	MD 450	1.71	3.13	34.4	—	—	—	6.9	17.2	37.7	58.2
	MZ 700	0.40	1.28	21.8	22.9	39.8	95.9	124.0	152.1	—	—
	MZ 700v	0.69	2.05	38.1	—	—	52.7	80.8	108.8	—	—
	MD 700	0.70	1.30	38.6	38.6	68.3	167.3	—	—	—	—
	MD 700	1.51	2.80	84.1	—	—	18.8	68.3	117.8	160 <4.4	—
	MD 700	1.74	3.10	97.0	—	—	—	38.6	88.1	160 <4.7	—
	MD 700	2.10	3.75	117.3	—	—	—	—	—	122.8	160 <5.4
	MD 700	2.51	4.07	140.3	—	—	—	—	—	91.1	160 <5.7

DN / NPS	Actuator	Pressure range		FTO+FC FTC+FO	FTO+FO / FTC+FC						
		min	max		ZL 1,7 bar	ZL 2,0 bar	ZL 3,0 bar	ZL 3,5 bar	ZL 4,0 bar	ZL 5,0 bar	ZL 6,0 bar
300 / 12 (Type 73.7)	MZ 450	0.45	1.3	5.3	4.6	8.4	21.0	22.2	—	—	—
	MZ 450v	0.88	2.10	10.7	—	—	10.9	17.2	23.5	—	—
	MD 450	0.65	1.10	7.8	7.2	10.9	23.5	29.8	32.3	—	—
	MD 450	1.15	2.01	14.1	—	—	12.1	18.4	24.7	37.3	49.9
	MD 450	1.56	2.72	19.3	—	—	—	9.4	15.7	28.3	40.9
	MD 450	1.71	3.13	21.1	—	—	—	4.3	10.6	23.2	35.8
	MZ 700	0.40	1.28	13.4	14.1	24.5	59.0	76.3	93.5	—	—
	MZ 700v	0.69	2.05	23.4	—	—	32.4	49.7	66.9	—	—
	MD 700	0.70	1.30	23.8	13.4	23.8	58.3	75.6	92.8	127.4	161.9
	MD 700	1.51	2.80	51.7	—	—	6.5	23.8	41.0	75.6	110.1
	MD 700	1.74	3.10	59.7	—	—	—	13.4	30.7	65.2	99.8
	MD 700	2.10	3.75	72.1	—	—	—	—	—	42.8	77.3
	MD 700	2.51	4.07	86.3	—	—	—	—	—	31.7	66.3
350 / 14 (Type 73.7)	MZ 450v	0.88	2.10	6.6	—	—	6.8	10.7	14.7	—	—
	MD 450	0.65	1.10	4.8	4.4	6.8	14.7	18.7	20.2	—	—
	MD 450	1.15	2.01	8.8	—	—	7.5	11.5	15.4	23.3	31.3
	MD 450	1.56	2.72	12.0	—	—	—	5.8	9.8	17.7	25.6
	MD 450	1.71	3.13	13.2	—	—	—	—	6.5	14.5	22.4
	MZ 700	0.40	1.28	8.3	8.8	15.3	34.3	—	—	—	—
	MZ 700v	0.69	2.05	14.6	—	—	20.3	31.1	42.0	—	—
	MD 700	0.70	1.30	14.8	8.3	14.8	36.5	47.4	58.2	79.9	101.6
	MD 700	1.51	2.80	32.4	—	—	4.0	14.8	25.7	47.4	69.1
	MD 700	1.74	3.10	37.4	—	—	—	8.3	19.2	40.9	62.6
	MD 700	2.10	3.75	45.2	—	—	—	—	—	26.8	48.5
	MD 700	2.51	4.07	54.1	—	—	—	—	—	19.8	41.5
	MD 700	2.88	4.66	62.1	—	—	—	—	—	—	28.7
400 / 16 (Type 73.7)	MZ 450v	0.88	2.10	4.5	—		4.6	7.4	10.1		
	MD 450	0.65	1.10	—	—	4.6	10.1	12.8	13.8		
	MD 450	1.15	2.01	6.0	—	—	5.1	7.8	10.6	16.0	21.5
	MD 450	1.56	2.72	8.2	—	—	—	4.0	6.7	12.2	17.6
	MD 450	1.71	3.13	9.0	—	—	—	—	4.5	9.9	15.4
	MZ 700	0.40	1.28	5.7	6.0	10.5	23.5	—	—	—	—
	MZ 700v	0.69	2.05	10.0	—	—	13.9	21.4	28.8	—	—
	MD 700	0.70	1.30	10.2	5.7	10.2	25.1	32.6	40.0	41.5	—
	MD 700	1.51	2.80	22.3	—	—	—	10.2	17.6	32.6	47.5
	MD 700	1.74	3.10	25.7	—	—	—	5.7	13.2	28.1	43.0
	MD 700	2.10	3.75	31.1	—	—	—	—	—	18.4	33.3
	MD 700	2.51	4.07	37.2	—	—	—	—	—	13.6	28.5
	MD 700	2.88	4.66	42.7	—	—	—	—	—	4.8	19.7

DN / NPS	Actuator	Pressure range		FTO+FC FTC+FO	FTO+FO / FTC+FC						
		min	max		ZL1,7 bar	ZL 2,0 bar	ZL 3,0 bar	ZL 3,5 bar	ZL 4,0 bar	ZL 5,0 bar	ZL 6,0 bar
500 / 20 (Type 73.7)	**MD 450**	1.56	2.72	4.7	—	—	—	—	—	7.0	10.2
	MD 450	1.71	3.13	5.2	—	—	—	—	—	7.0	10.2
	MZ 700	0.40	1.28	—	—	6.0	13.6	—	—	—	—
	MZ 700v	0.69	2.05	5.8	—	—	8.0	12.4	16.7	—	—
	MD 700	0.70	1.30	5.9	—	5.9	14.6	18.9	23.2	24.0	—
	MD 700	1.51	2.80	12.9	—	—	—	5.9	10.2	18.9	27.6
	MD 700	1.74	3.10	14.9	—	—	—	—	7.6	16.3	25.0
	MD 700	2.10	3.75	18.0	—	—	—	—	—	10.6	19.3
	MD 700	2.51	4.07	21.6	—	—	—	—	—	7.9	16.5
	MD 700	2.88	4.66	24.8	—	—	—	—	—	—	11.4
600 / 24 (Type 73.7)	**MD 700**	1.51	2.80	7.6	—	—	—	—	6.0	11.2	16.3
	MD 700	1.74	3.10	8.8	—	—	—	—	4.5	9.6	14.8
	MD 700	2.10	3.75	10.7	—	—	—	—	—	6.3	11.4
	MD 700	2.51	4.07	12.8	—	—	—	—	—	4.7	9.8
	MD 700	2.88	4.66	14.7	—	—	—	—	—	—	6.8