

Three-way Valve Type 3260

Application

Control valves available as mixing or diverting valves for use in industrial applications as well as heating, ventilation and air-conditioning systems

DN 15 to 150 · PN 16 · Version up to 150 °C



Special features

- Type 3260 Three-way Valve (mixing or diverting valve) combined with electric or pneumatic actuators
- Type 3260 Three-way Valve combined with Types 5857 and 5757-7 (with special spring)
- Connection between valve and actuator:
 - DN 15 to 50: Force-locking connection
 - DN 65 to 150: Form-fit connection
- Type 3260 Three-way Valve in special version for oils

Versions

Electric control valves		
Type 3260/5857	PN 16	DN 15 to 25
Type 3260/5824	PN 16	DN 15 to 80
Type 3260/5825 ¹⁾	PN 16	DN 15 to 50
Type 3260/3374	PN 16	DN 65 to 150
Type 3260/3274 ¹⁾	PN 16	DN 65 to 150
Electric control valves/controllers with electric actuators for heating and cooling applications		
Type 3260/5757-7	PN 16	DN 15 to 25
Type 3260/5725-7 ¹⁾	PN 16	DN 15 to 50
Pneumatic control valves		
Type 3260/2780-1	PN 16	DN 15 to 50
Type 3260/2780-2 ²⁾	PN 16	DN 15 to 50
Type 3260/3372	PN 16	DN 65 to 80
Type 3260-1	PN 16	DN 65 to 150
Type 3260-7 ²⁾	PN 16	DN 65 to 150

¹⁾ Electric actuators with fail-safe action:
Types 5825, 3274-21/-22 and 5725-7

²⁾ Pneumatic actuator suitable for integrated positioner attachment

Also available:

- Type 3260 Globe Valve, refer to Data Sheet ▶ T 5862 EN
- Three-way valve with male thread connection for welding ends or threaded ends or with female thread connection, refer to Data Sheet ▶ T 5863 EN

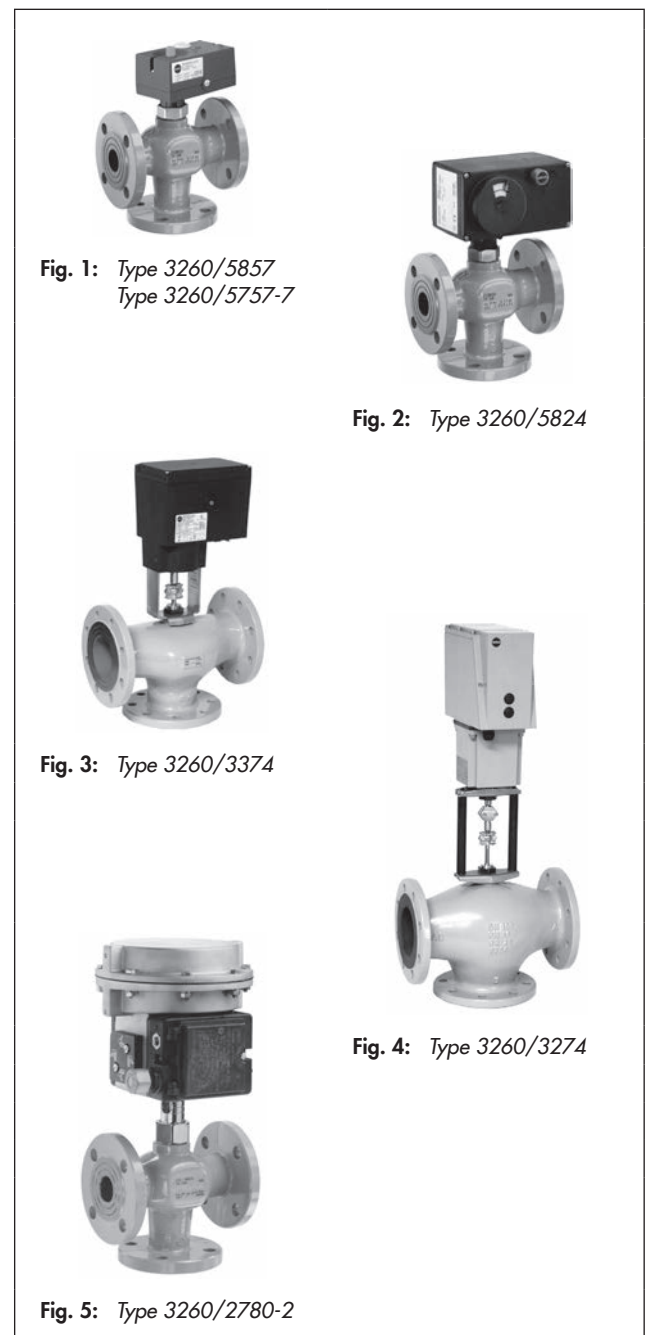


Fig. 1: Type 3260/5857
Type 3260/5757-7

Fig. 2: Type 3260/5824

Fig. 3: Type 3260/3374

Fig. 4: Type 3260/3274

Fig. 5: Type 3260/2780-2

Principle of operation (Fig. 6)

The three-way valve is primarily used as a mixing valve. The media to be mixed enter the valve at ports A and B. The combined flow exits the valve at port AB. Flow-diverting valves are also available on request. The medium enters the valve at port AB and the partial flows exit at ports A and B.

The cross-sectional area of flow between the seat (2) and plug (3) is determined by the position of the plug stem (6). The plug is moved by changing the control signal applied to the actuator.

The valve (1) and actuator have a force-locking connection up to DN 50 and a form-fit connection for sizes DN 65 and larger.

An intermediate insulating piece is available for insulated pipes.

Fail-safe action

For three-way valves mounted to an actuator with fail-safe action, the control valve has two different positions which become effective upon power supply failure:

Actuator stem extends

- Port B of the mixing valve closes upon power supply failure
- Port A of the diverting valve closes upon power supply failure

Actuator stem retracts

- Port A of the mixing valve closes upon power supply failure
- Port B of the diverting valve closes upon power supply failure

Electric actuators

The Types 5857, 5824, 5825 and 3374 Electric Actuators as well as the Type 3274 Electrohydraulic Actuator can either be controlled using a three-stepping point signal or, in the version with positioner, with continuous signals from 0(4) to 20 mA or 0(2) to 10 V. Various electrical accessories can be optionally installed.

Types 5825, 3274-21 and 3274-22 Actuators are able to perform a fail-safe action. Refer to Table 4.

Refer to the data sheets for more details on the electric actuators:

- ▶ **T 5857 EN:** Type 5857 Electric Actuator
- ▶ **T 5824 EN:** Types 5824 and 5825 Electric Actuators
- ▶ **T 8331 EN:** Type 3374 Electric Actuator
- ▶ **T 8340 EN:** Type 3274 Electrohydraulic Actuator

Controllers with electric actuators

The actuator consists of a digital controller which is integrated into the electric actuator housing. Types 5757-7 and 5725-7 Controllers with Electric Actuators are suited for heating and cooling applications.

Type 5725-7 Actuator is able to perform a fail-safe action. Refer to Table 4.

Refer to the data sheets for more details on the controllers with electric actuators:

- ▶ **T 5757-7 EN:** Type 5757-7 Controller with Electric Actuator for heating and cooling applications
- ▶ **T 5725-7 EN:** Type 5725-7 Controller with Electric Actuator for heating and cooling applications

Pneumatic actuators

The Types 2780, 3271 and 3277 Pneumatic Actuators as well as the Type 3372 Electropneumatic Actuator work with various

control signals. Types 2780, 3271 and 3277 Pneumatic Actuators require a supply pressure of at least 0.2 bar above the maximum bench range. A supply pressure of at least 3.7 bar is required for Type 3372. All actuators are available for fail-safe action "Actuator stem extends (FA)" or "Actuator stem retracts (FE)".

The Types 2780-2 and 3277 Pneumatic Actuators are suitable for integral positioner attachment. Various optional accessories can be mounted onto the Type 3277 Actuator. Types 3271 and 3277 Actuator are also available with manual override (handwheel).

Refer to the data sheets for more details on the pneumatic actuators:

- ▶ **T 5840 EN:** Types 2780-1 and 2780-2 Pneumatic Actuators
- ▶ **T 8310-1 EN:** Types 3271 and 3277 Pneumatic Actuators

Installation of the control valve

The control valves can be mounted in any position. However, the electric actuators and the controllers with electric actuators must not be suspended downwards.

Make sure that the ambient temperature at the point of installation does not exceed or fall below the permissible temperature limits specified for each actuator. Make sure that the inlet and outlet flows of the plant are correctly assigned to ports A, B and AB. Fig. 7 schematically illustrates a few typical applications.

Force-locking connection: If the control valve is to be insulated, the actuator and the coupling nut must not be insulated as well. Additionally, it must be ensured that the temperature does not exceed the maximum permissible ambient temperature. If necessary, an intermediate insulating piece must be used. Do not insulate it over 25 mm.

Ordering text

Control Valve Type:

- 3260/5857, 3260/5824-..., 3260/5825-...,
 3260/3374-..., 3260/3274-...,
 3260/5757-7, 3260/5725-7-...,
 3260/2780-1, 3260/2780-2, 3260/3372,
 3260-1 (Type 3271 Actuator), 3260-7 (Type 3277)

- Valve type: mixing valve, diverting valve
- Nominal size: DN ...
- Kvs coefficient: ...
- Medium temperature: ...
- Special version for oils: yes, no

Further specifications on the electric actuator

- Control signal: three-stepping point, continuous (positioner)
- Power supply ...
- Electric additional equipment ...

Further specifications on the pneumatic actuator

- Effective area: ...
- Bench range: ...
- Pressure connection for Type 2780-1: G 1/8, 1/8 NPT
- Fail-safe action: stem extends (FA), stem retracts (FE)

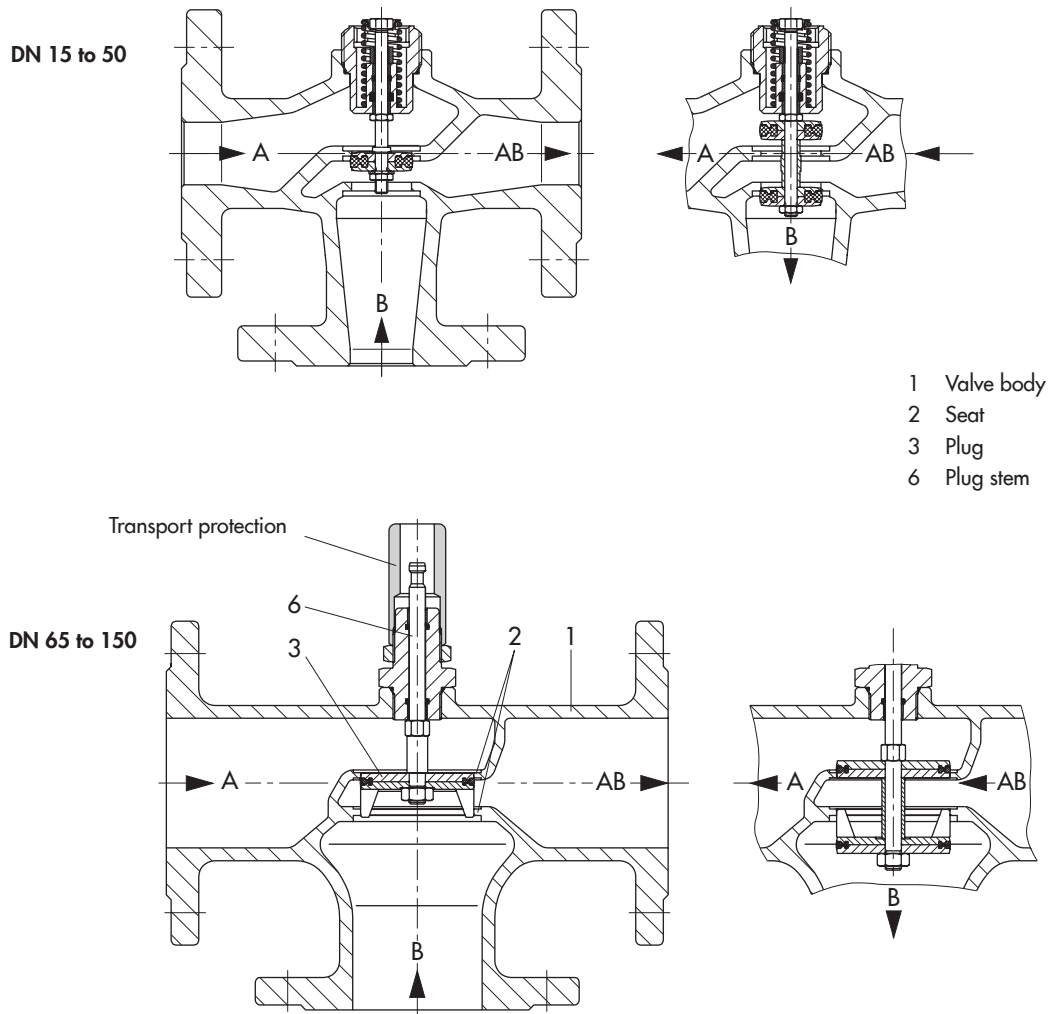


Fig. 6: Functional drawing of Type 3260 as a mixing valve (left) and diverting valve (right)

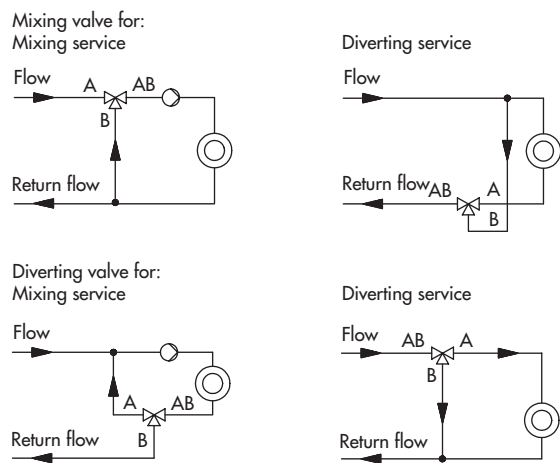


Fig. 7: Typical installations

Table 1: Technical data

Type 3260 Three-way Valve													
Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150	
Nominal pressure	PN	16											
Permissible temperature range	°C	5 ¹⁾ to 150 ¹⁾											
Seat/plug sealing		Soft seal											
Rated travel	mm	6			12			15			30		
Mixing valve		•			•			•			•		
Diverting valve		•			•			•			•		
Leakage class according to IEC 60534-4		Class I (≤ 0.01 % of K_{VS} coefficient)											

¹⁾ Use an intermediate insulating piece (1990-1712).

- for medium temperatures between -10 and +5 °C (actuators according to Table 4)
- in networks with constant medium temperatures > 130 °C (Types 5724, 5725, 5725-7, 5824 and 5825 Actuators)
- for DN 15 to 25 with Types 5757-7 and 5857 Actuators for liquids > 120 °C

Table 2: Materials · Material numbers according to DIN EN

Type 3260 Three-way Valve													
Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150	
Valve body and seat		Cast iron EN-JL1040 (GG-25)											
Plug		Brass · CuZn37Pb											
Plug stem		Stainless steel · 1.4305											
Seat/plug sealing		EPDM (standard) · FPM (special version)											
Stem seal		EPDM seal ring											
Special version for oils		FPM seal											
Yoke		-						See actuator					

Table 3: Nominal sizes, K_{VS} coefficients and seat diameters

Type 3260 Three-way Valve															
Nominal size	DN	15				20	25	32	40	50	65	80	100	125	150
K_{VS} coefficient		1	1.6	2.5	4	6.3	10	16	25	40	60	80	160	250	320/ 250 ¹⁾
Seat Ø	mm	16	16	16	16	20	24	32	40	40	70	70	100	130	130
Rated travel	mm	6	6	6	6	6	6	12	12	12	15	15	30	30	30

- ¹⁾ Direction of flow B -> AB with maximum K_{VS} coefficient
 A -> AB with reduced K_{VS} coefficient

Table 4: Possible combinations

Type 3260 Three-way Valve/actuator														
Type	Fail-safe action: Actuator stem		Refer to Data Sheet	Nominal size DN										
	extends	retracts		15	20	25	32	40	50	65	80	100	125	150
Electric actuators														
5857 ¹⁾	–	–	▶ T 5857 EN	•	•	•								
5824-10 ²⁾	–	–	▶ T 5824 EN	•	•	•								
5825-10 ²⁾	•	–		•	•	•								
5825-15 ²⁾	–	•		•	•	•								
5824-20 ²⁾	–	–		–	–	–	•	•	•					
5825-20 ²⁾	•	–		–	–	–	•	•	•					
5825-25 ²⁾	–	•		–	–	–	•	•	•					
5824-30 ^{2) 4)}	–	–		–	–	–				•	•			
3374-11	–	–	▶ T 8331 EN							•	•			
3374-10	–	–		–	–	–				•	•	•	•	•
3274-11 ³⁾	–	–	▶ T 8340 EN							•	•	•	•	•
3274-15 ³⁾	–	–		–	–	–				•	•	•	•	•
3274-21 ³⁾	•	–		–	–	–				•	•	•	•	•
3274-22 ³⁾	–	•		–	–	–				•	•	•	•	•
Controllers with electric actuators for heating and cooling applications														
5757-7 ¹⁾	–	–	▶ T 5757-7 EN	•	•	•								
5725-710	•	–	▶ T 5725-7 EN	•	•	•								
5725-715	–	•		•	•	•								
5725-720	•	–		–	–	–	•	•	•					
5725-725	–	•		–	–	–	•	•	•					
Pneumatic actuators														
2780-1	•	•	▶ T 5840 EN	•	•	•	•	•	•					
2780-2	•	•		•	•	•	•	•	•					
3372	•	•	▶ EB 8313 EN							•	•			
3271 ³⁾	•	•	▶ T 8310-1 EN							•	•	•	•	
3277 ³⁾	•	•	▶ T 8310-1 EN							•	•	•	•	

¹⁾ Type 3260 Three-way Valve combined with this actuator as version with special spring

²⁾ Versions with half transit time on request

³⁾ Type 3260 Three-way Valve in combination with these actuators with rod-type yoke:

DN 65 to 80: Order no. 1890-8696; for Types 3271/3277 with 240 cm² diaphragm area additionally order no. 0250-1450

DN 100 to 150: Order no. 1400-8822

⁴⁾ Type 3260 Three-way Valve in combination with this actuator with rod-type yoke: Order no. 1400-7414

Permissible differential pressures (all pressures stated in bar)

The specified differential pressure may be restricted by the pressure-temperature diagram.

Table 5.1: Electric Control Valves Type 3260/...

Type	5857, 5757-7		5824, 5825, 5725-7		3374		3274	
					-11	-10	-11/-15/-21/-22	
K_{VS} coefficients	Δp when $p_2 = 0$ bar							
1 · 1.6 · 2.5 · 4	4	4	-					
6.3	2.6	4	-					
10	1.8	4	-					
16	-	1.7	-					
25	-	1.1	-					
40	-	1.1	-					
60	-	1.3 ¹⁾	4	4	4	4	4	
80	-	1.3 ¹⁾	4	4	4	4	4	
160	-		2.8		1.9			
250	-		1.7		1.1			
320	-		1.7		1.1			

¹⁾ Only with Type 5824-30 Electric Actuator

Table 5.2: Pneumatic Control Valves Type 3260/...

Type		2780-1	2780-2	3372		3271 and 3277				
Diaphragm area	cm ²	120	120	120	120	240	240	350	350	700
Bench range	min. bar	0.4	0.4	1.4	2.1	0.4	0.6	0.4	0.6	0.4
	max. bar	1.0	2.0	2.3	3.3	2.0	3.0	2.0	3.0	2.0
Maximum supply pressure	bar	1.4 ¹⁾	2.4 ¹⁾	4	5	2.5	3.7	2.5	3.7	2.4
K_{VS} coefficients	Δp when $p_2 = 0$ bar									
1 · 1.6 · 2.5 · 4	4	4	-							
6.3	4	4	-							
10	4	4	-							
16	1.7	1.7	-							
25	1.1	1.1	-							
40	1.1	1.1	-							
60	-		3.8	4	1.9	3.1	3	4	-	
80	-		3.8	4	1.9	3.1	3	4	-	
160	-									3.1
250	-									1.8
320	-									1.8

¹⁾ Only with spring-to-open, max. 4 bar with spring-to-close

Dimensions and weights

Table 6.1: Type 3260 Three-way Valve

Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150
Overall length L1	mm	130	150	160	180	200	230	290	310	350	400	480
Overall length L2	mm	70	80	85	100	105	120	130	140	150	200	210
Height H	mm	51	51	51	61	61	61	71	71	112	112	112
Height H2	mm	168	168	168	178	178	178	265	265	306	306	306
Weight, approx. kg		4.0	5.0	5.5	8.5	10	12	20	23	38	50	65

Table 6.2: Electric actuators

Type	5857	5824	5825	3374	3274
Weight kg (approx.)	0.7	0.75	1.0	3.2	1)

1) Types 3274-11/-21/-22: 12 kg · Type 3274-15: 15 kg

Table 6.3: Controllers with electric actuators

Type	5757-7	5725-7
Weight kg (approx.)	0.7	1.3

Dimensions in mm

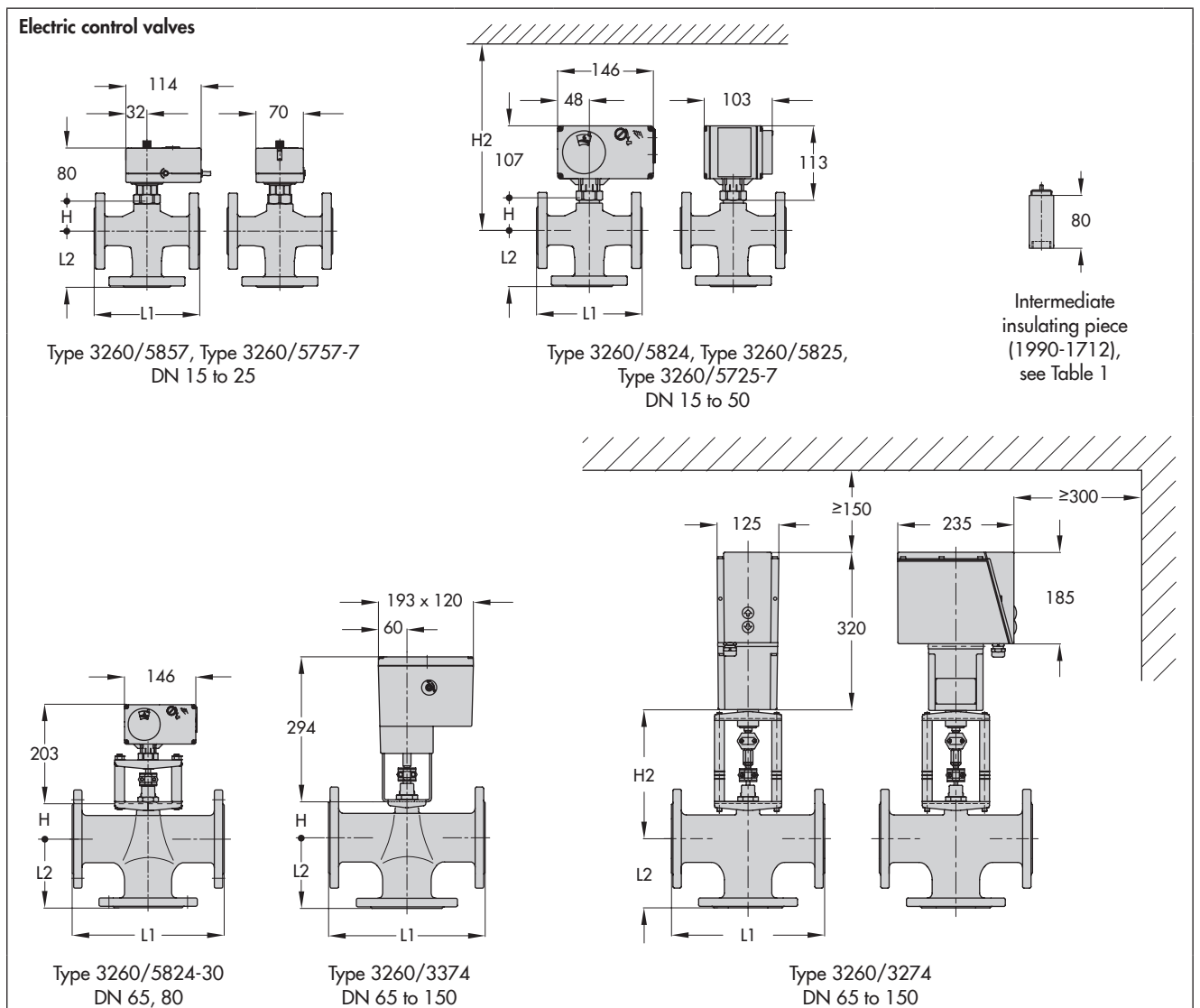


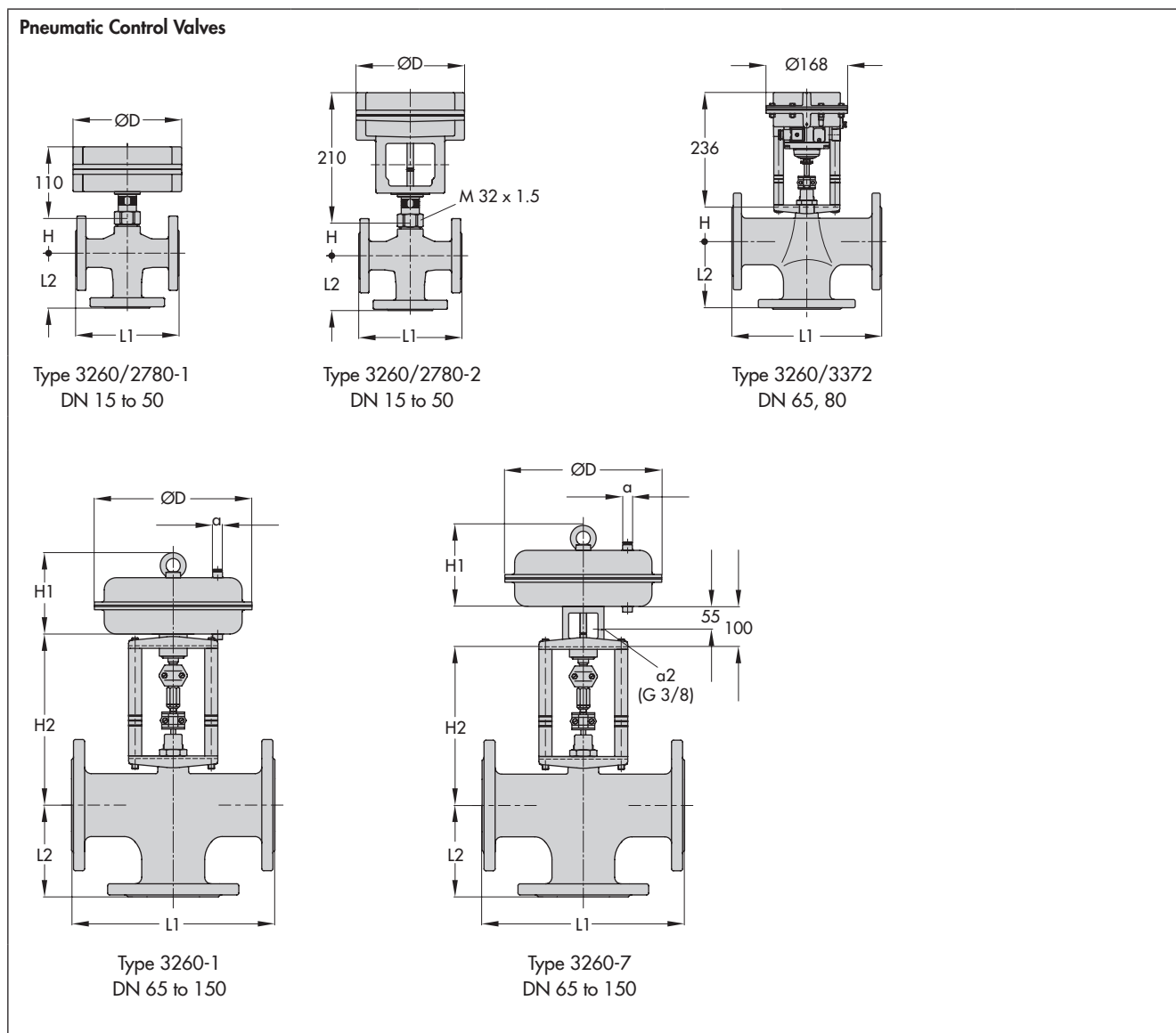
Table 6.4: Type 3260 Three-way Valve

Nominal size	DN	15	20	25	32	40	50	65	80	100	125	150
Overall length L1	mm	130	150	160	180	200	230	290	310	350	400	480
Overall length L2	mm	70	80	85	100	105	120	130	140	150	200	210
Height H	mm	51	51	51	61	61	61	71	71	112	112	112
Height H2	mm	168	168	168	178	178	178	265	265	306	306	306
Weight, approx. kg		4.0	5.0	5.5	8.5	10	12	20	23	38	50	65

Table 6.5: Pneumatic Actuator

	Type	2780	3372	3271			3277		
Effective area	cm ²	120	120	240	350	700	240	350	700
Height H1	mm	-	-	65	80	199	65	65	199
Diaphragm ØD	mm	170	168	240	280	390	240	240	390
Load pressure connection	α	G 1/8	G 3/8	G 1/4	G 3/8	G 3/8	G 1/4	G 3/8	G 3/8
Weight, approx. kg		2	3.7	5	8	22	9	12	26

Dimensions in mm



Specifications subject to change without notice



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