

Electric Control Valves/Controller with Electric Actuator Types 3222/5757, 3222/5724, 3222/5725



Single-seated Type 3222 Globe Valve

Application

Globe valves for heating, ventilation, and air-conditioning.
DN 15 to DN 50, G ½ to G 1 · PN 25 · Version up to 150 °C
(for water, oil and other liquids) · Version up to 200 °C (for
water and steam)



The control valves consist of a single-seated Type 3222 Globe Valve and either a Type 5757, Type 5724 or Type 5725 Controller with Electric Actuator (Type 5725 with safety function).

Special features

- Single-seated globe valves partly available with balanced valve plugs
- Single-seated globe valves optionally available with welding ends, threaded ends, flanges or screwed ends with female thread as well as with flanged valve body
- Force-locking connection between valve and actuator

Versions

For DHW heating in instantaneous heating systems and mechanical engineering applications		
Type 3222/5757 · Fig. 1	PN 25	DN 15 to 25 G ½ to G 1
Type 3222/5724	PN 25	DN 15 to 50 G ½ to G 1
Type 3222/5725 ¹⁾ · Fig. 2	PN 25	DN 15 to 50 G ½ to G 1
For heating applications		
Type 3222/5757-7	PN 25	DN 15 to 25 G ½ to G 1

¹⁾ Electric control valve with safety function

Register number

The valves mounted on Type 5725 Actuator for fail-safe action "Actuator stem extends" are typetested according to DIN EN 14597 by the German technical inspectorate TÜV. The register number is available on request.

Also available:

- Single-seated Type 3222 Globe Valve with electric or pneumatic actuator (refer to Data Sheet T 5866 EN)



Fig. 1 · Type 3222/5757
(version with welding ends)



Fig. 2 · Type 3222/5725
(version with flanged valve body)

Principle of operation (Figs. 3 and 4)

The medium flows through the single-seated globe valve in the direction indicated by the arrow.

The position of the valve plug determines the cross-sectional area of flow released between the plug (3) and seat (2). The plug stem (4) with the plug is attached to the connecting rod of the actuator (10) over a force-locking connection. The valve is opened by the valve spring (5) when the actuator stem retracts. The plug is positioned by changes in the control signal which act on the actuator.

The electric actuator contains a digital controller integrated into the actuator. The controlled variable is recorded over the directly connected Pt 1000 sensor. The output signal of the digital controller acts as a three-point stepping signal on the synchronous motor of the actuator and is transferred over the connected gear as a positioning force onto the actuator stem.

The **Type 5725 Controller with Electric Actuator with safety function** is fitted with a spring assembly and an electromagnet that can be connected to a safety control circuit. When the control circuit is interrupted or the power supply fails, the magnet disengages the gear from the self-locking motor and releases the spring assembly. The actuator is available with fail-safe action "Actuator stem extends". The valve is closed in case of emergency.

Refer to Data Sheet for details

Type 5757-7 → Data Sheet T 5757-7 EN

Type 5757 → Data Sheet T 5757 EN

Type 5724/5725 → Data Sheet T 5724 EN

Installation

The control valve can be mounted in any desired position for applications for liquids up to 150 °C; however, the actuator must not be suspended downwards. The version for temperatures up to 200 °C must only be installed with the actuator in the upright position.

In case the valve is to be insulated, the actuator and coupling nut to connect the stems should not be insulated as well. In addition, check whether the permissible ambient temperature cannot be exceeded. If necessary, an intermediate insulating piece must be used; it should only be insulated up to 25 mm.

Ordering text

Electric control valve/Controller with electric actuator
Type 3222/5757-7, Type 3222/5757, Type 3222/5724,
Type 3222/5725)

DN ..., G ..., K_{VS} ..., PN 25

With/without intermediate insulating piece (for insulated pipes)

Type 3222 Valve with welding ends, threaded ends, flanges,
female thread or flanged valve body

Version for temperatures up to 150 °C/up to 200 °C

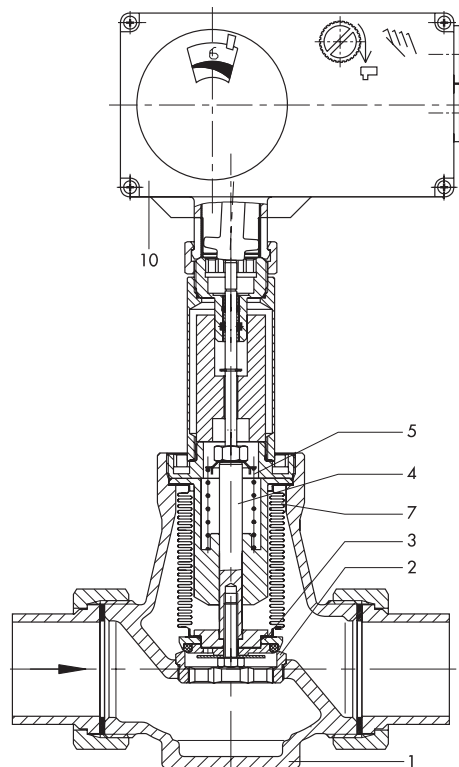


Fig. 3 · Functional diagram of Type 3222/5724

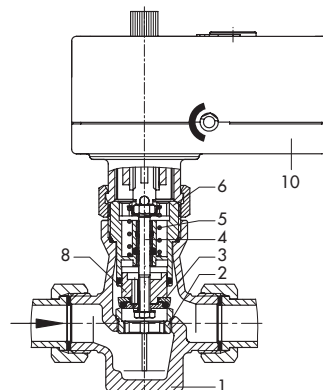


Fig. 4 · Functional diagram of Type 3222/5757

Legend

- | | | | |
|---|--------------|----|-------------------|
| 1 | Valve body | 6 | Guide nipple |
| 2 | Seat | 7 | Balancing bellows |
| 3 | Plug | 8 | Balancing piston |
| 4 | Plug stem | 10 | Actuator |
| 5 | Valve spring | | |

Table 1 · Technical data

Nominal size	DN	15	20	25	32	40	50
Version with threaded ends		•	•	•	•	•	•
Version with flanges		•	•	•	•	•	•
Flanged valve body version		•	•	•	•	•	•
Thread size	G	½	¾	1	–	–	–
Version with female thread		•	•	•	–	–	–
Nominal pressure	PN	25					
Seat/plug sealing		Metal sealing for $K_{VS} \leq 2.5$ · Soft sealing for $K_{VS} \geq 3.6$					
Rated travel	mm	6			12		
Rangeability		50 : 1					
Leakage class acc. to DIN EN 1349		Class I (< 0.05 % of K_{VS})					
Version for water, oil, and other liquids							
Max. permissible temperature		150 °C ^{1, 2)}					
Max. permissible differential pressure Δp in bar							
Types 5724 and 5725		20			12		
Type 5757		20			–		
Version for water and steam							
Max. permissible temperature		200 °C					
Max. permissible differential pressure Δp in bar							
Types 5724 and 5725		20 · 10 for $3.6 \leq K_{VS} \leq 8$			8		
Type 5757		20 ³⁾ · 5 ⁴⁾	5		–		

1) For temperatures above 130 °C, use an intermediate insulating piece to protect the actuator.

2) Use an intermediate insulating piece to protect the actuator, if necessary, for temperatures above 110 °C with DN 15 to 25 valves together with Type 5757 Actuator.

3) Differential pressure with $K_{VS} = 1$ and 1.6

4) Differential pressure with $K_{VS} = 2.5$ and 4

Table 2 · Materials

Nominal size	DN	15	20	25	32	40	50
Thread size	G	½	¾	1	–	–	–
Valve body		Red brass CC491K (G-CuSn5ZnPb)					
Flanged valve body version		EN-JS1049 (GGG-40.3)					
Seat		Stainless steel 1.4104					
Plug		1.4104/CW509L (CuZn40) with soft sealing · 1.4104 for $0.1 \leq K_{VS} \leq 2.5$					
Valve spring		Stainless steel 1.4310 K					
Packing		EPDM/FPM (FKM) · Oil-resistant version: FPM					
Welding ends		St 37					
Threaded ends		CC491K (red brass)					
Screwed-on flanges		St 37.2					

Table 3 · Overview: Nominal sizes and K_{V5} coefficients

Nominal size	DN	15	20	25	32	40	50
Thread size	G	½	¾	1	–	–	–
K _{V5} coefficients		4 ¹⁾ · 3.6 ²⁾	6.3 ¹⁾ · 5.7 ²⁾	8 ¹⁾ · 7.2 ²⁾	16 ¹⁾	20 ¹⁾	25 ¹⁾
Reduced K _{V5} coefficients		0.1 · 0.16 · 0.25 · 0.4 · 0.63 · 1.0 · 1.6 · 2.5	1.0 · 1.6 · 2.5 · 4 ¹⁾ · 3.6 ²⁾		–	–	–
Rated travel	mm	6			12		

1) Version with male thread and flanged valve body version

2) Version with female thread

Table 4 · Possible combinations for Type 3222 Globe Valves/controllers with electric actuators

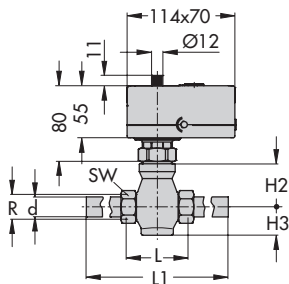
Type	Refer to Data Sheet for details	Nominal size DN/Thread size G						
		DN	15	20	25	32	40	50
		G	½	¾	1	–	–	–
5757	T 5757 EN		•	•	•	–	–	–
5757-7	T 5757-7 EN		•	•	•	–	–	–
5724-10	T 5724 EN		•	•	•	–	–	–
5724-13			•	•	•	–	–	–
5724-20			–	–	–	•	•	•
5724-23			–	–	–	•	•	•
5725-10			•	•	•	–	–	–
5725-13			•	•	•	–	–	–
5725-20			–	–	–	•	•	•
5725-23			–	–	–	•	•	•

Table 5 · Dimensions and weights

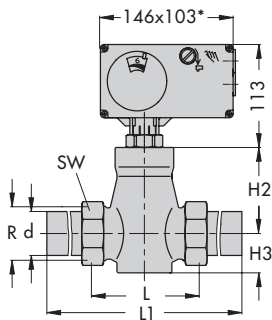
Table 5.1 · Type 3222 Globe Valve									
Nominal size	DN	15	20	25	32	40	50		
Thread size	G	½	¾	1	–	–	–		
Version with welding ends									
Pipe	Ød	mm	21.3	26.8	33.7	42	48	60	
Thread size	R	G	¾	1	1¼	1¾	2	2½	
Width across flats	SW		30	36	46	59	65	82	
Length	L	mm	65	70	75	100	110	130	
Length with welding ends	L1	mm	210	234	244	268	294	330	
Height	H2	mm	45.5	45.5	45.5	94	94	94	
			Versions for temperatures up to 200 °C and with intermediate insulating piece	140	140	140	185	185	185
Height	H3	mm	30	30	30	55	55	55	
Weight (without actuator)		approx. kg	1.4	1.8	2.3	4.0	4.4	6.8	
			Versions for temperatures up to 200 °C and with intermediate insulating piece	1.9	2.3	2.8	4.5	4.9	7.3
Version with threaded ends (male thread)									
Length	L2	mm	129	144	159	180	196	228	
Male thread	A	G	½	¾	1	1¼	1½	2	
Weight (without actuator)		approx. kg	1.4	1.8	2.3	4.0	4.4	6.8	
			Versions for temperatures up to 200 °C and with intermediate insulating piece	1.9	2.3	2.8	4.5	4.9	7.3
Version with flanges									
Length	L3	mm	130	150	160	180	200	230	
Weight (without actuator)		approx. kg	2.5	3.4	4.1	6.9	7.7	10.7	
			Versions for temperatures up to 200 °C and with intermediate insulating piece	3.0	3.9	4.6	7.4	8.2	11.2
Version with female thread									
Length	L4	mm	65	75	90	–	–	–	
Female thread		G	½	¾	1	–	–	–	
Weight (without actuator)		approx. kg	1.2	1.4	1.5	–	–	–	
			Versions for temperatures up to 200 °C and with intermediate insulating piece	1.7	1.9	2.0	–	–	–
Flanged valve body version									
Height	H2	mm	45.5	45.5	45.5	94	94	94	
Length	L3	mm	130	150	160	180	200	230	
Weight (without actuator)		approx. kg	2.5	3.4	4.1	6.9	8.4	11.6	
			Versions for temperatures up to 200 °C and with intermediate insulating piece	3.0	3.9	4.6	7.4	8.9	12.1

Table 5.2 · Controller with electric actuator				
	Type	5724	5725	5757
Weight (without valve)	approx. kg	1.1	1.3	0.7

Dimensions in mm

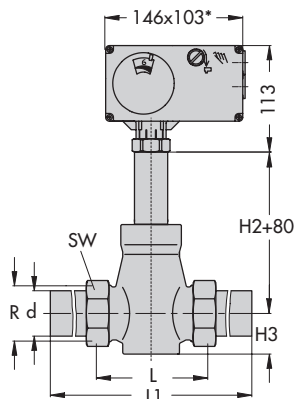


Type 3222/5757: DN 15 to 25
 Type 3222/5757-7: DN 15 to 25
 Version with welding ends



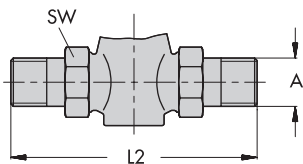
Type 3222/5724-xx: DN 15 to 50
 Type 3222/5725-xx: DN 15 to 50

* Dimensions for Type 572x-x3
 Actuators: 146 x 136

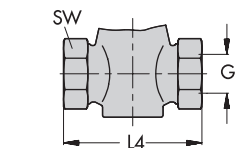


Version for water and steam
 up to 200 °C
 Type 3222/5724-xx: DN 15 to 50
 Type 3222/5725-xx: DN 15 to 50

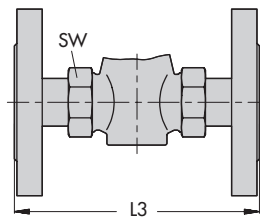
* Dimensions for Type 572x-x3
 Actuators: 146 x 136



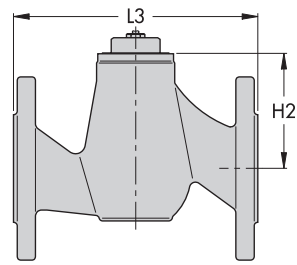
Version with threaded ends



Version with female threads



Version with flanges



Flanged valve body version

Specification subject to change without notice.

