

Modular distribution valve

Construction

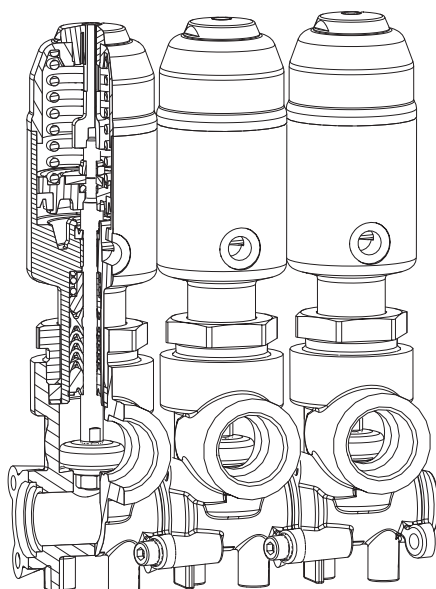
The modular GEMÜ 553 distribution valve comprises various globe valve modules. These can be equipped with manual or pneumatic operators. The downstream media is isolated using a PTFE seal. The valve spindle is sealed by a self-adjusting gland packing. This provides a low-maintenance and reliable valve spindle seal even after an extended period of operation. The wiper ring that is installed upstream of the gland packing also protects this against contamination and damage. The individual modules can be easily connected using screws. The seal on the connection flange and between the individual valve bodies has an FPM O-ring.

Advantages

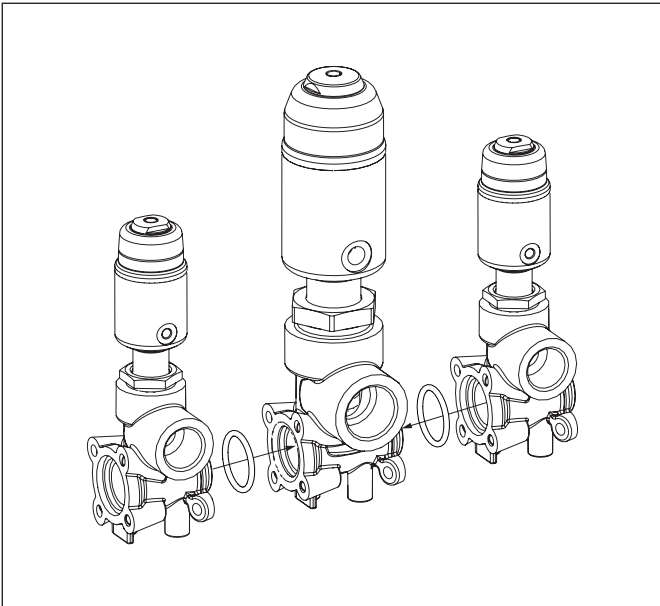
- Modular valve for distribution, mixing and collection applications
- Freely extendable
- Simple adaptation options
- Versatile range of accessories
- Simple integration of sensors
- Outlets can be arranged in 90° steps
- Compact design
- Operators can be easily replaced
- Filters or separation of media can be easily integrated



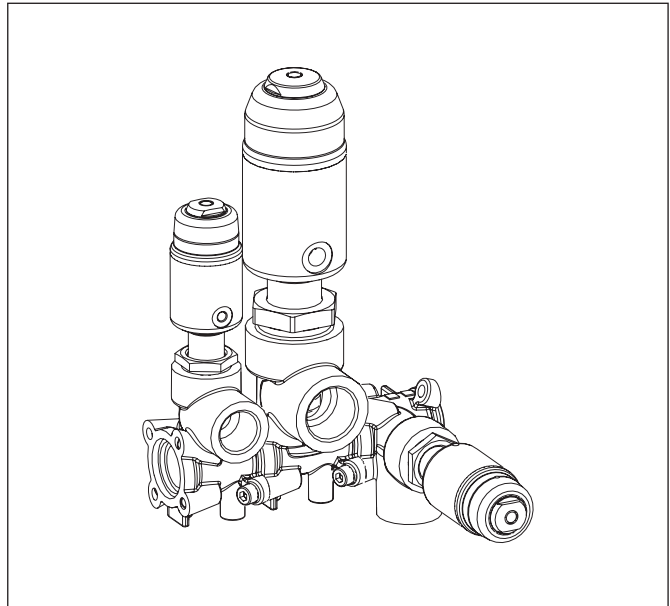
Sectional view



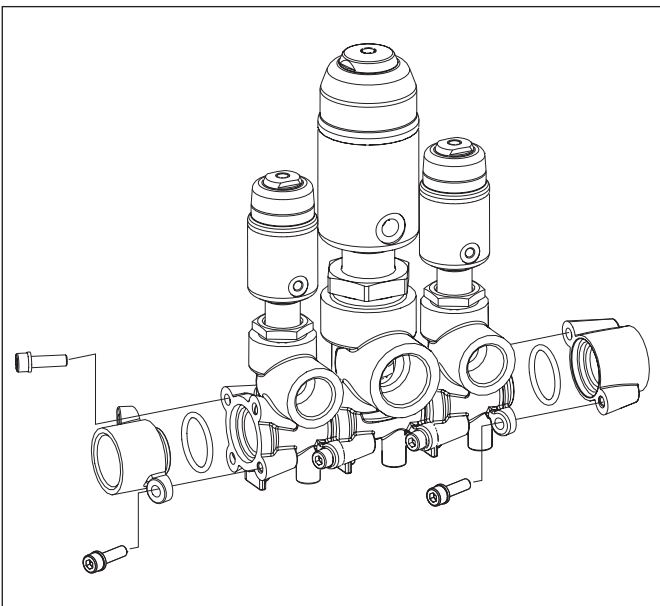
Functional description



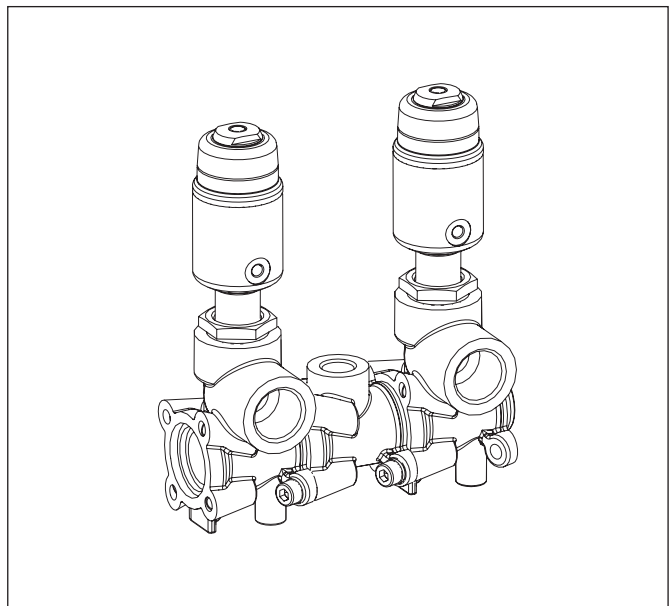
The GEMÜ 553 modular distribution valve comprises various globe valves which are mounted to form a single unit.



The position of the valves can be changed in 90° steps.

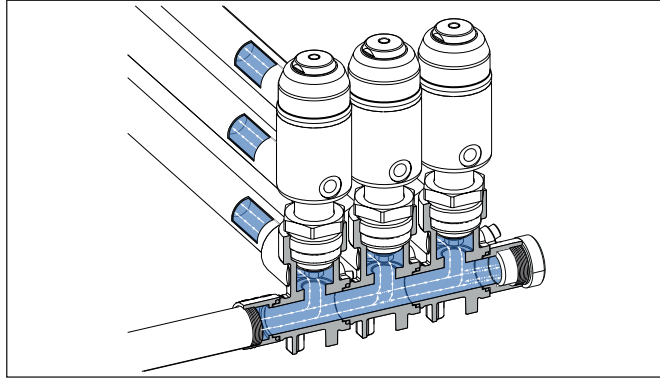


Connection modules are available for integration into the plant.



Additional sensor systems can also be integrated into the block. An extensive range of accessories for the valves is available for automation (see chapter on accessories).

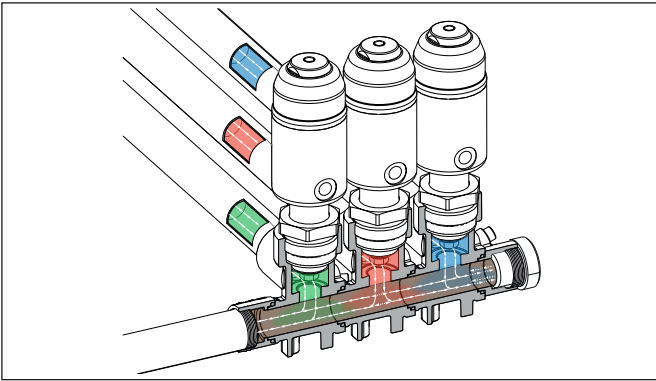
Functions



Distributing function:

Medium from the supply can be distributed to several consumers.

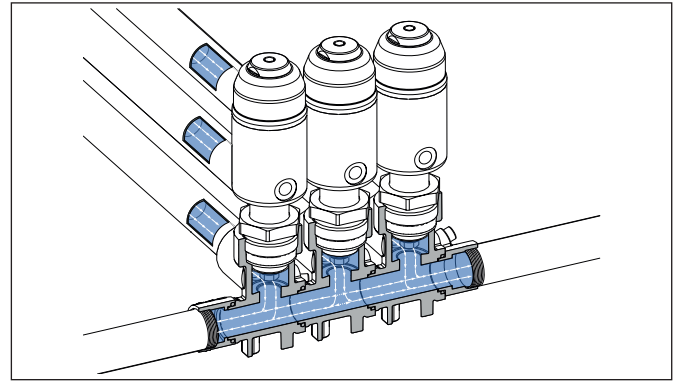
To be used: Operator version 0GS, 0GM, 1GS, 1GP, 2GS



Mixing function:

Media can be mixed together (e.g. hot and cold water).

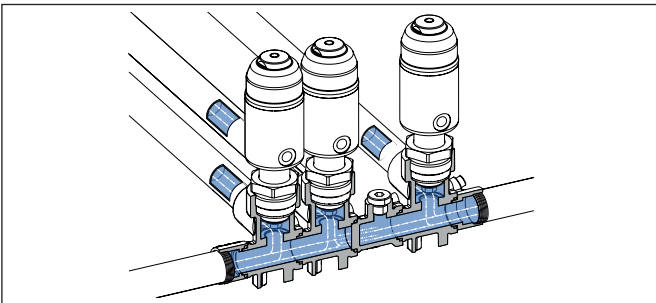
To be used: Operator version 0MS, 0MM, 1MS, 1MP



Collecting function:

The medium of several consumers can be collected as a back flow.

To be used: Operator version 0MS, 0MM, 1MS, 1MP

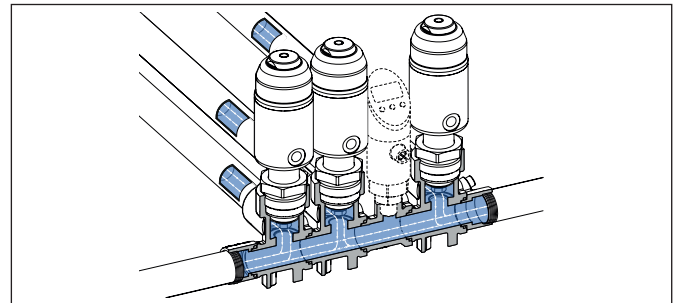


Separation of media:

The distribution valve can be interrupted at one or more optional points to separate out media.

This enables two media to be controlled independently of each other.

Module to be used: Media separator plate



Process value measurement (pressure / temperature):

One or more sensors can be integrated into the distribution valve at an optional point.

Module to be used: Sensor mounting

Technical data

Working medium

Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the body and seal material.

Media temperature	
PTFE seat, FPM O-ring code 5F	14 to 356 °F
PTFE seat, EPDM O-ring code 5E	14 to 212 °F
Max. permissible viscosity	600 mm ² /s (cSt)

Control medium (only for pneumatic actuators)

Inert gases		
Max. permissible temperature of control medium		140 °F
Operator version	Piston diameter	Filling volume
0GS / 0MS	ø 1.1 in	0.37 cu in
1GS / 1MS	ø 1.65 in	1.53 cu in
1GP / 1MP	ø 1.97 in	3.05 cu in
2GS	ø 2.36 in	5.13 cu in

Ambient conditions

Ambient temperature	max. 140 °F
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Maximum permissible seat leakage rate / Open-Closed-Valve

Seat seal	Standard	Test procedure	Leakage rate	Test medium
PTFE	DIN EN 12266-1	P12	A	air

Control pressure (only for pneumatic actuators) [psi]

C.f. 1 Normally closed (NC) / Flow direction: under the seat

Operator version	
0GS	58 - 116
1GS, 2GS	58 - 116
1GP	70 - 102

C.f. 1 Normally closed (NC) / Flow direction: over the seat

OMS, 1MS, 1MP	max. 102 psi
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C.f. 2 Normally open (NO) / C.f. 3 Double acting (DA)

Flow direction: under the seat

For values see diagram page 3

Maximum operating pressure [psi]

Operator version	Seat diameter E	Seat diameter G
C.f. 0 Manually operated / Flow direction: optional		
0GM / 0MM	25	-
C.f. 1 Normally closed (NC) / Flow direction: under the seat		
0GS	150	-
1GS	-	150
1GP	-	174
2GS	-	319
C.f. 1 Normally closed (NC) / Flow direction: over the seat		
OMS	150	-
1MS	-	150
1MP	-	150

All pressures are gauge pressures. When the flow is over the seat (M), there may be the danger of water hammer with liquid media!

Cv values [gpm]

	Seat diameter E	Seat diameter G
Cv values [gpm]	2.3	5.9

Cv values determined with 1 psi pressure drop across valve. The Cv value data refers to control function 1 (NC) and the largest actuator for each nominal size.

The Cv values for other product configurations (e.g. other connections or body materials) may differ.

Pressure / temperature correlation for angle seat globe valve bodies

Connection code	Material code	Max. allowable pressure (psi) at temperature °F *			
		RT	212	302	356
1, 3D	37	363	345	310	289

* The valves can be used down to 14 °F

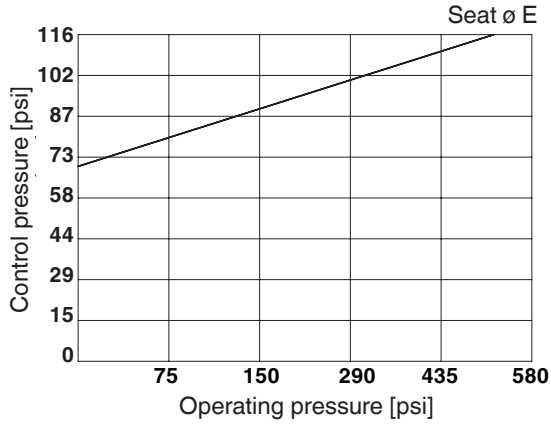
RT = room temperature

All pressures are gauge pressures.

Operating pressure / Control pressure characteristics (only for pneumatic actuators)

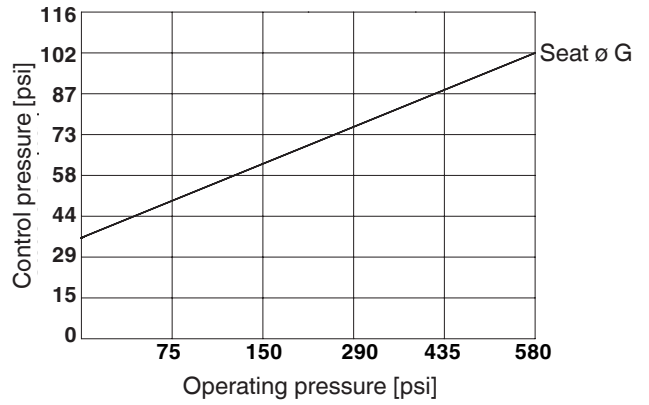
Operator version 0GS C.f. 2 Normally open (NO) C.f. 3 Double acting (DA)

Min. control pressure dependent on operating pressure
(Flow direction: under the seat)



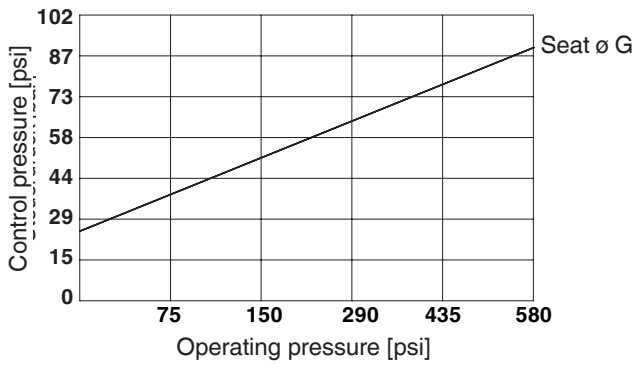
Operator version 1GS C.f. 2 Normally open (NO) C.f. 3 Double acting (DA)

Min. control pressure dependent on operating pressure
(Flow direction: under the seat)



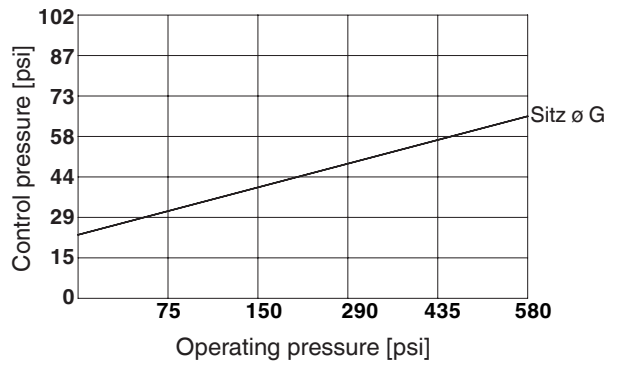
Operator version 1GP C.f. 2 Normally open (NO) C.f. 3 Double acting (DA)

Min. control pressure dependent on operating pressure
(Flow direction: under the seat)

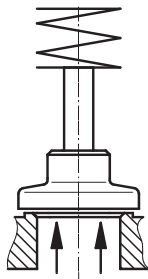


Operator version 2GS C.f. 2 Normally open (NO) C.f. 3 Double acting (DA)

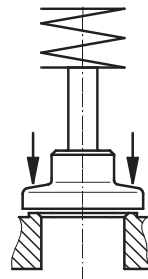
Min. control pressure dependent on operating pressure
(Flow direction: under the seat)



Flow direction



Distributing function
Flow under the seat



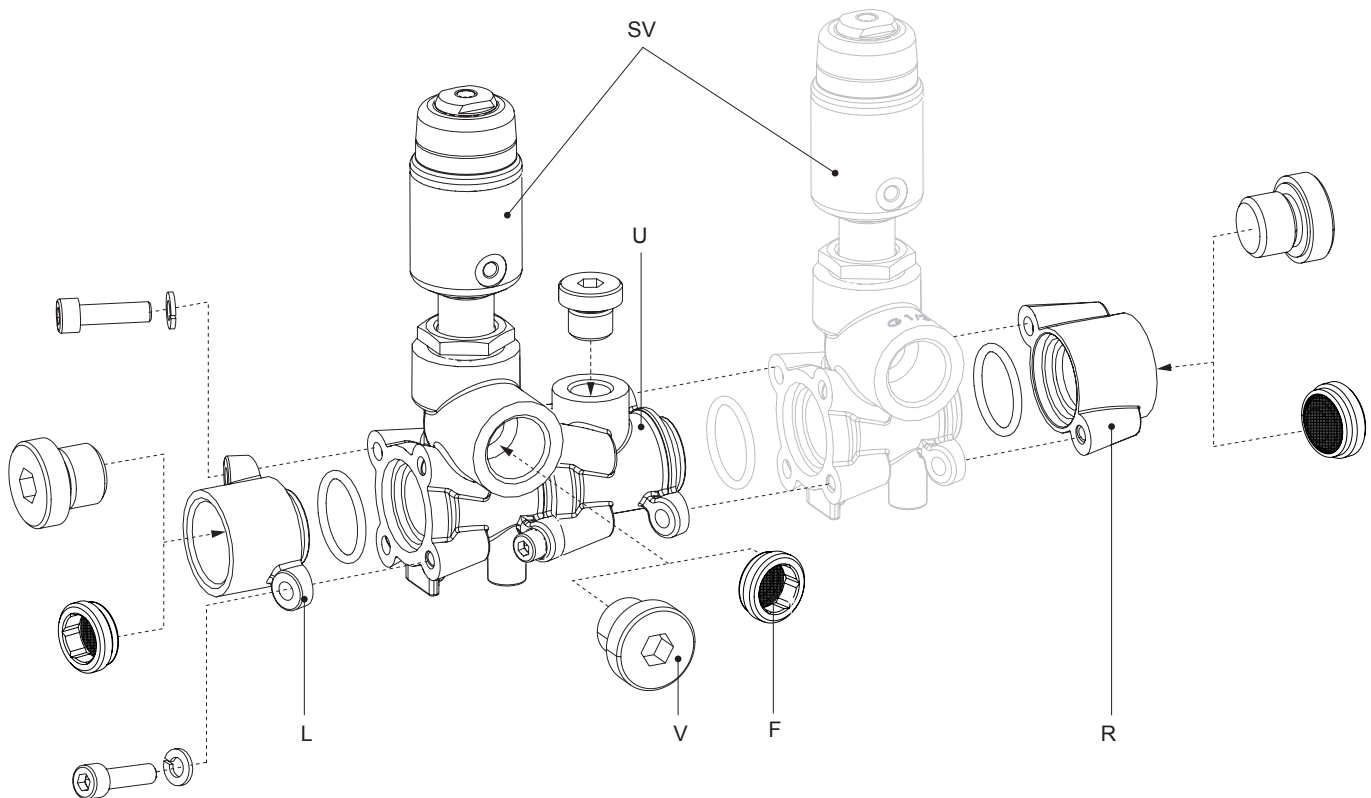
Collecting or mixing function
Flow over the seat

Availability table for GEMÜ 553

	DN	Connection size	Operator size	Control function	Flow direction	Seat diameter	Length
Pneumatic stainless steel actuator design code S	15	1/2" NPT, G 1/2	0	1, 2, 3 1	G M	E E	S S
	20	3/4" NPT, G 3/4	1	1, 2, 3 1	G M	G G	S, L* S, L*
Pneumatic plastic actuator design code P	20	3/4" NPT, G 3/4	1	1, 2, 3	G	G	L
				1	M	G	L
Manual operator design code M	15	1/2" NPT, G 1/2	0	0, L	G, M	E	S
Pneumatic stainless steel actuator design code S	20	3/4" NPT, G 3/4	2	1, 2, 3	G	G	L

* Special length for attaching extended accessories (see pages 14 and 15)

Connection designations / Construction



L	Connection module left
V	Threaded plug
F	Filter
R	Connection module right
U	Universal module
SV	Globe valve

Order data - Globe valve (SV)

Body configuration	Code
Multi-port	M

Nominal size	Code
DN 15 NPS 1/2"	15
DN 20 NPS 3/4"	20

Connection	Code
Threaded sockets DIN ISO 228	1
Threaded sockets NPT	3D

Valve body material	Code
1.4408, Investment casting	37

Seal material	Code
PTFE seat, EPDM O-ring	5E
PTFE seat, FPM O-ring	5F
Other seal materials on request	

Control function	Code
Manually operated	0
Normally closed (NC)	1
Normally open (NO)	2
Double acting (DA)	3
Manually operated with handwheel lock nut	L

Operator version	Code
Operator size	Code
Operator size 0	0
Operator size 1	1
Operator size 2	2
Flow direction	Code
Under the seat	G
Over the seat	M
Version	Code
Pneumatically operated, stainless steel	S
Pneumatically operated, plastic	P
Manually operated, plastic handwheel	M

Pipe train diameter	Code
0.79 in	20

Seat diameter	Code
0.39 in	E
0.59 in	G

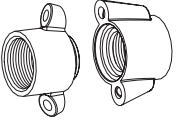
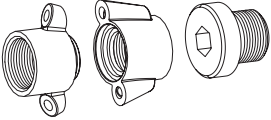
Length	Code
Short	S
Long	L

Order example (Single valve)	553	20	M	1	37	5F	1	1GS	20	G	S
Type	553										
Nominal size		20									
Body configuration (code)			M								
Connection (code)				1							
Valve body material (code)					37						
Seal material (code)						5F					
Control function (code)							1				
Operator version (code)								1GS			
Pipe train diameter (code)									20		
Seat diameter (code)										G	
Length (code)											S

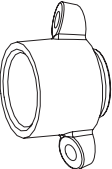
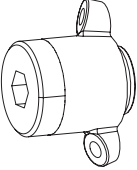

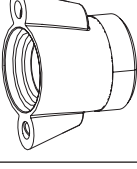
Ordering note: Valves are supplied as single valves due to the versatile modular options.
All globe valves are supplied with connecting components (O-ring and screws).

Accessories

Order data - Connection kits

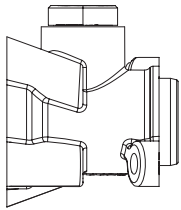
Connection kit for double-sided feed		Order description
	Connection flange L and connection flange R with threaded socket G 3/4 to DIN ISO 228, without threaded plug	553 20SAT 1 37 F 20
	Connection flange L and connection flange R with threaded socket 3/4" NPT, without threaded plug	553 20SAT 3D 37 F 20
Connection kit for one-sided feed		
	Connection flange L and connection flange R with threaded socket G 3/4 to DIN ISO 228, with threaded plug (with FPM seal)	553 20SAV 1 37 F 20
	Connection flange L and connection flange R with threaded socket 3/4" NPT, with threaded plug (without sealing material)	553 20SAV 3D 37 F 20

Order data - Connection modules (L, R)

Single modules		Order description
	Connection module L with threaded socket G 3/4 to DIN ISO 228, without threaded plug	553 20AFL 1 37 F 20
	Connection module L with threaded socket 3/4" NPT, without threaded plug	553 20AFL 3D 37 F 20
	Blanking flange L with threaded socket G 3/4 to DIN ISO 228, with threaded plug (sealed with FPM gasket)	553 20BFL 1 37 F 20
	Blanking flange L with threaded socket 3/4" NPT, with threaded plug (without sealing material)	553 20BFL 3D 37 F 20
	Connection module R with threaded socket G 3/4 to DIN ISO 228, without threaded plug	553 20AFR 1 37 F 20
	Connection module R with threaded socket 3/4" NPT, without threaded plug	553 20AFR 3D 37 F 20
	Blanking flange R with threaded socket G 3/4 to DIN ISO 228, with threaded plug (sealed with FPM gasket)	553 20BFR 1 37 F 20
	Blanking flange R with threaded socket 3/4" NPT, with threaded plug (without sealing material)	553 20BFR 3D 37 F 20

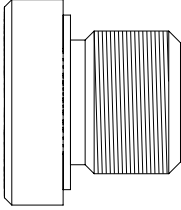
All connection modules and kits are supplied with connecting components (O-ring and screws).

Order data - Universal module (U)

Universal module		Order description
 <p>For function see page 3</p>	Media separator plate design with threaded plug (sealed with FPM gasket)	553 MT 1 37 F 20
	Sensor mounting design with G 1/4 adaption thread, with threaded plug (sealed with FPM gasket)	553 SA 1 37 F 20

All universal modules are supplied with connecting components (O-ring and screws).

Order data - Threaded plugs (V)

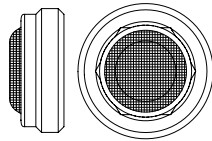
Threaded plugs		Order description
	G 1/4 for universal module (including FPM gasket)	553 8VS 1 37 F
	G 1/2 for valves with operator size 0 (including FPM gasket)	553 15VS 1 37 F
	1/2" NPT for valves with operator size 0 (without sealing material)	553 15VS 3D 37
	G 3/4 for connection modules L or R and valves with operator size 1 (including FPM gasket)	553 20VS 1 37 F
	3/4" NPT for connection modules L or R and valves with operator size 1 (without sealing material)	553 20VS 3D 37

Note! It is not possible to use a filter and a threaded plug at the same connection.

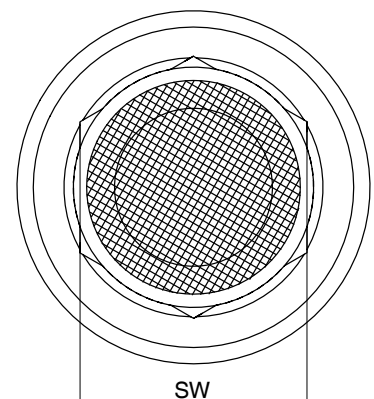
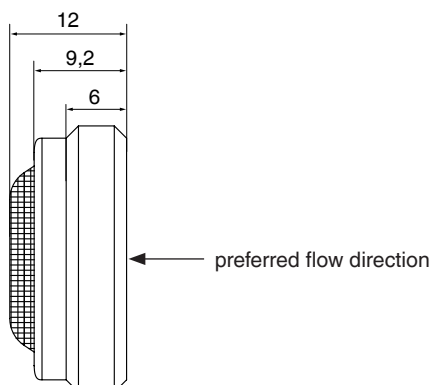
Order data - Filter (F)

For highly polluted media, the valves must be protected against large particles by suitable filters. Screw-in basket filters can be used in this instance, for example.

Caution! Available thread length is shortened accordingly, and Cv values are reduced. The max. pressure differential is 150 psi.

Filter (mesh size 100 µm)		Order description
	G 1/2 for valves with operator size 0 SW 12	553 15FS 1 37*
	G 3/4 for connection modules L or R and valves with operator size 1 SW 17	553 20FS 1 37*

* on request

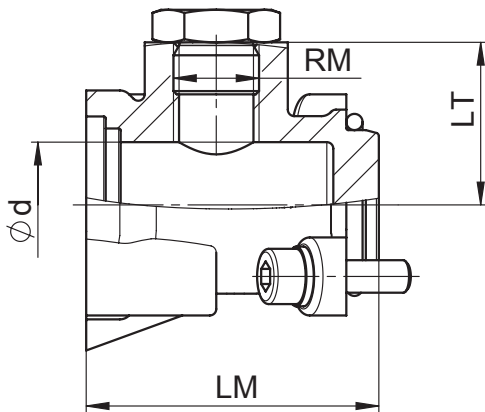


Dimensions [inch]

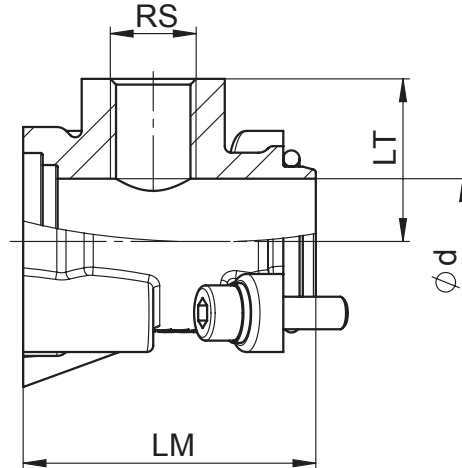
Universal module

Universal module	RM	RS	ϕd	LM	LT	Weight [lbs]
Media separator plate	G 1/4	-	0.760	1.77	0.98	0.5
Sensor mounting bracket	-	G 1/4	0.760	1.77	0.98	0.5

Media separator plate

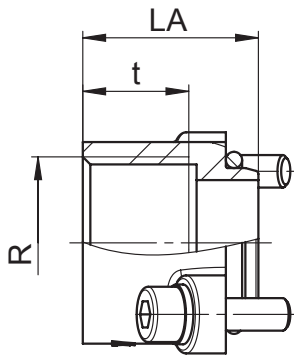


Sensor mounting

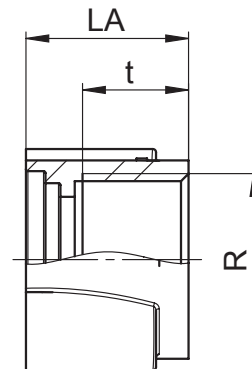


Unions

Union	Connection	R	t	LA	Weight [lbs]
left	L	G 3/4	3/4" NPT	0.64	0.87
right	R	G 3/4	3/4" NPT	0.64	0.98



left
L



right
R

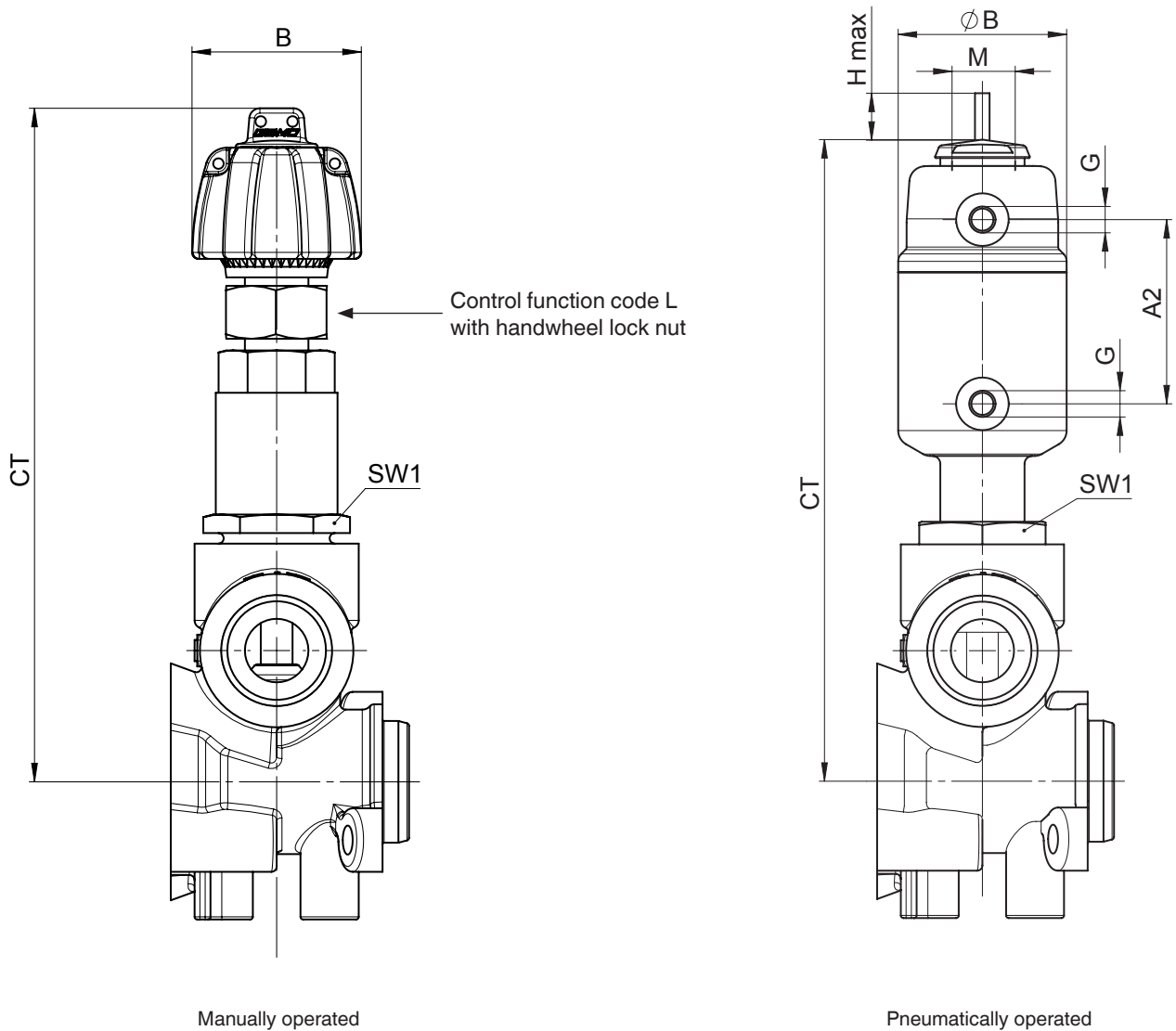
Dimensions

Operator dimensions - Manually operated valve

Operator version	ø B [in]	CT [in]		SW1 [mm]	Weight [lbs]
		Control function code 0	Control function code L		
0GM / 0MM	1.26	4.88	5.28	24	0.7

Operator dimensions - Pneumatically operated valve

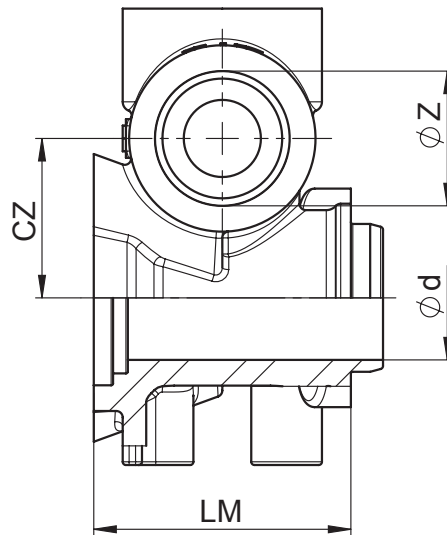
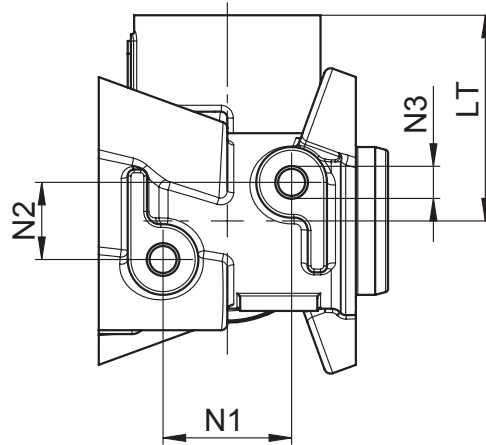
Operator version	ø B [in]	M [in]	H max [in]	G	A2 [in]	CT [in]	SW1 [mm]	Weight [lbs]
0GS / 0MS	1.26	M12x1	0.24	M5	1.39	4.80	24	0.5
1GS / 1MS	1.81	M16x1	0.47	G 1/8	2.09	6.89	36	1.5
1GP / 1MP	2.83	M16x1	0.55	G 1/4	2.76	8.15	36	2.0
2GS	2.48	M16x1	0.87	G 1/8	-	-	36	2.1



Body dimensions [inch]

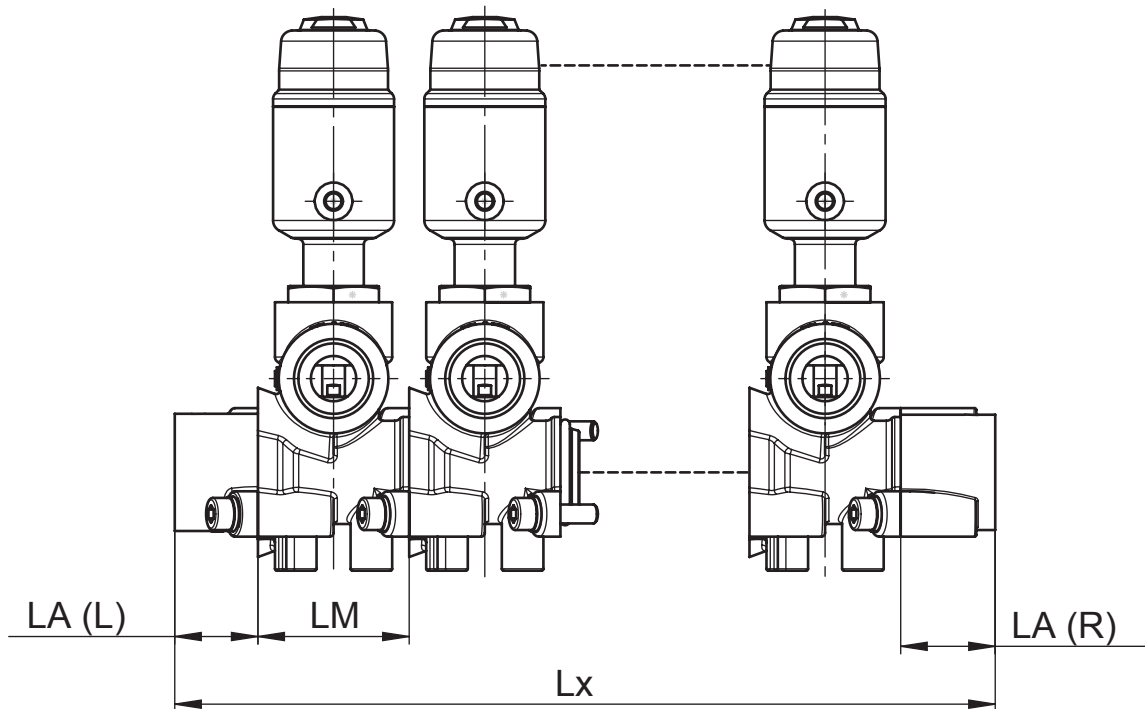
Body module

Operator version	DN	Length	ϕd	CZ	ϕZ		LM	N1	N2	N3	LT	Weight [lbs]
0GS / 0MS 0GM / 0MM	15	S	0.760	0.98	G 1/2	1/2" NPT	1.57	0.79	0.47	M5	1.26	0.7
1GS / 1MS	20	S		1.06	G 3/4	3/4" NPT	1.89				1.42	1.1
1GP / 1MP 1GS / 1MS 2GS	20	L		1.06	G 3/4	3/4" NPT	2.91				1.42	1.2



Body dimensions [inch]

Valve block														
Operator version	Length	LM	LA		Length Lx									
			L	R	1x	2x	3x	4x	5x	6x	7x	8x	9x	10x
OGS / OMS OGM / OMM	S	88.2	48.5	55.1	191.8	280.0	368.2	456.4	544.5	632.7	720.9	809.1	897.3	985.5
1GS / 1MS	S	105.8	48.5	55.1	209.4	315.3	421.1	526.9	632.7	738.5	844.4	950.2	1056.0	1161.8
1GP / 1MP 1GS / 1MS 2GS	L	163.1	48.5	55.1	266.8	429.9	593.0	756.2	919.3	1082.5	1245.6	1408.8	1572.0	1735.1



Note:

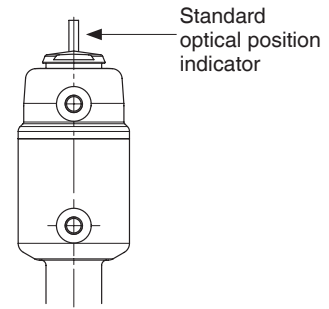
The overall length Lx applies for combination with identical valves.
 For the combination with different valves, the overall length Lx is calculated from LA (L), the respective valve block LM and LA (R).

Accessories

The pneumatically operated valves are equipped with an optical position indicator as standard indicating the OPEN or CLOSED valve position *).

It is possible to use the adaption thread for other directly mounted accessories, too.




*) Only control function 1 Normally closed



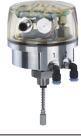


Operator version	0GS, 0MS	1GS, 1MS		1GP, 1MP	2GS
Length	S	S	L	L	L
Add-on dimension of body	1.57 in	1.89 in	2.91 in	2.91 in	2.91 in
Actuator housing	Ø 1.26 in	Ø 1.81 in	Ø 1.81 in	Ø 2.83 in	Ø 2.48 in
Optical position indicators					
1300	X	X	X	X	X
Electrical position indicators					
1200	X	X	X	X	X
1215	X	X	X	X	X
1230	-	-	X	X	X
1231	-	-	X	X	X
1232	-	-	X	X	X
1234	X	-	-	-	-
1235	-	-	X	X	X

Operator version	0GS, 0MS	1GS, 1MS		1GP, 1MP	2GS
Length	S	S	L	L	L
Add-on dimension of body	1.57 in	1.89 in	2.91 in	2.91 in	2.91 in
Actuator housing	Ø 1.26 in	Ø 1.81 in	Ø 1.81 in	Ø 2.83 in	Ø 2.48 in



Electrical position indicators

1236		-	-	X	X	X
4242		-	-	X	X	X
4242 Compact version K1		-	X	X	X	X


Combi switchboxes

4222		-	-	-	-	X
4242		-	-	X	X	X
4242 Compact version K1		-	X	X	X	X

Pilot valve manifolds

0322		<p>Due to the compact design width of the valve block, direct mounting of some pilot valves is restricted. In this instance, we recommend externally fitted pilot valves which are connected to the individual actuators.</p>
0326		

Sensor system (pressure transducer and pressure switch)

3140		In connection with universal module (preferably Electrical connection code M)
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X = combination possible ~ = combination only possible with restrictions - = combination not possible

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Should there be any doubts or misunderstandings, the German version of this data sheet is the authoritative document!

Subject to alteration · 11/2018 · 88723683