

## Modular distribution valve

### Construction

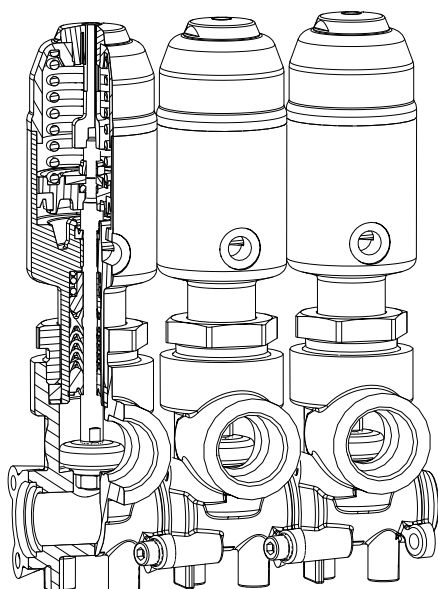
The modular GEMÜ 553 distribution valve comprises various globe valve modules. These can be equipped with manual or pneumatic operators. The downstream media is isolated using a PTFE seal. The valve spindle is sealed by a self-adjusting gland packing. This provides a low-maintenance and reliable valve 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

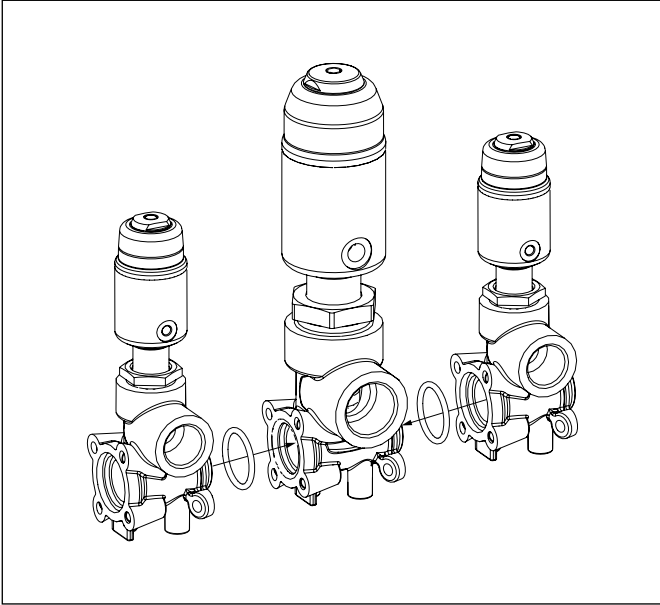
- Modular valve for distribution, mixing and collection applications
- Freely extendable
- Simple adaptation options
- Versatile range of accessories
- Simple integration of sensors
- Outlets can be arranged in 90° steps
- Compact design
- Operators can be easily replaced
- Filters or separation of media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



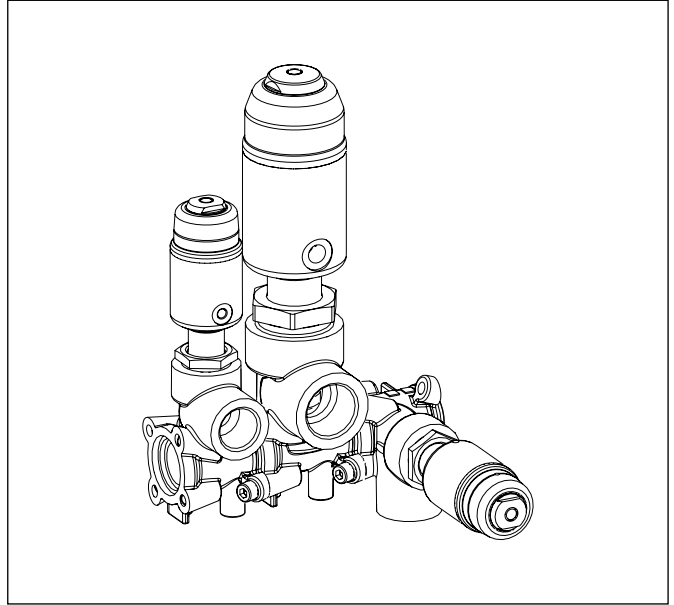
Sectional view



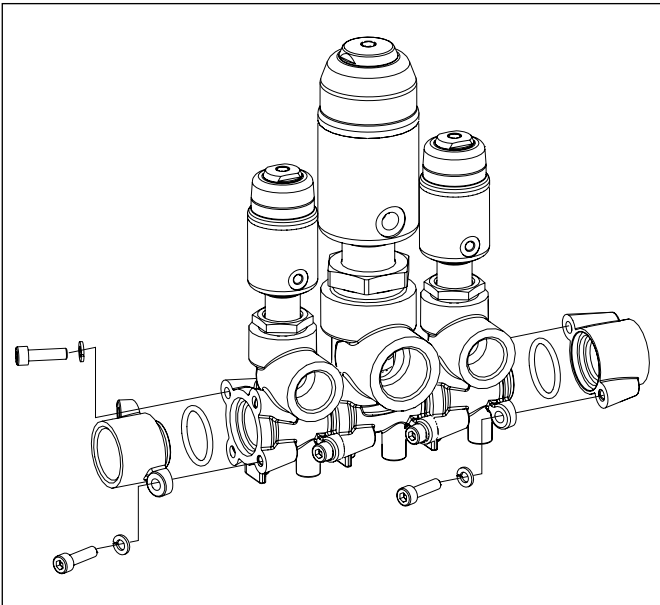
## Functional description



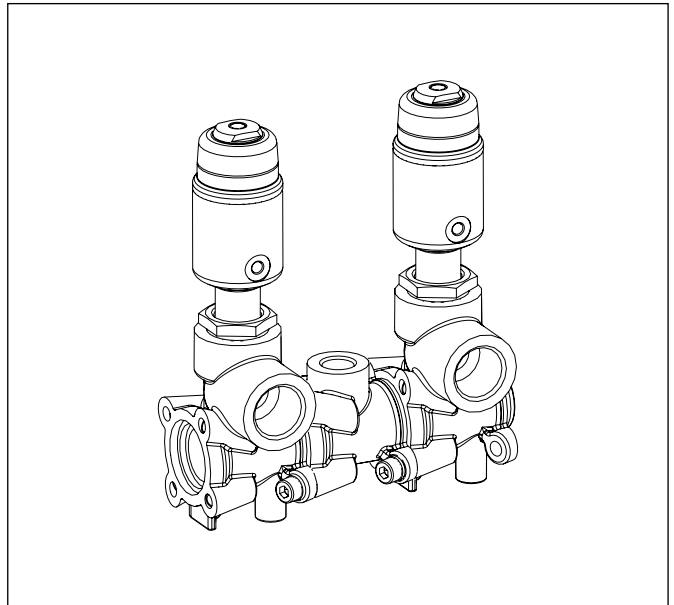
The GEMÜ 553 modular distribution valve comprises various globe valves which are mounted to form a single unit.



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

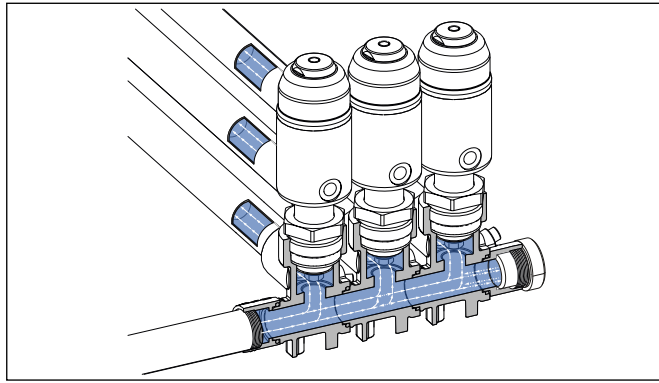


Connection modules are available for integration into the plant.



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).

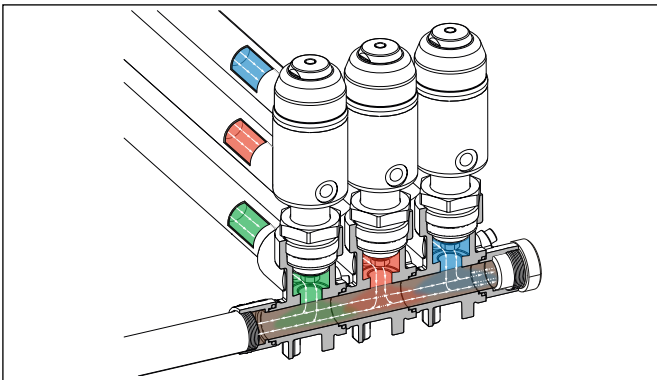
## Functions



### Distributing function:

Medium from the supply can be distributed to several consumers.

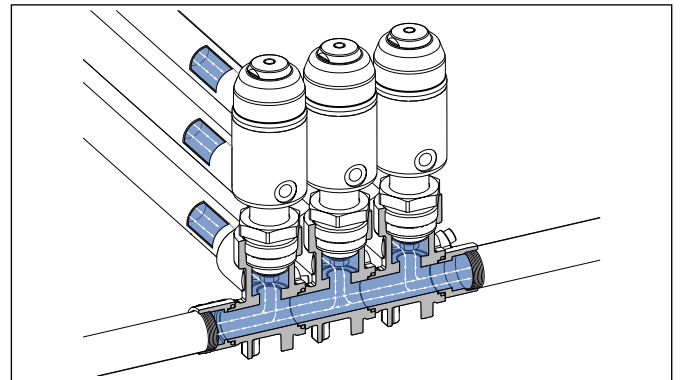
To be used: Operator version 0GS, 0GM, 1GS, 1GP



### Mixing function:

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

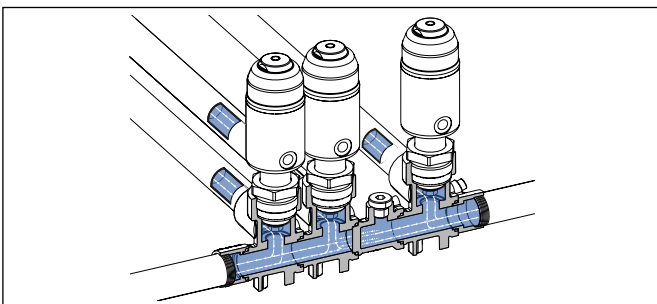
To be used: Operator version 0MS, 0MM, 1MS, 1MP



### Collecting function:

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

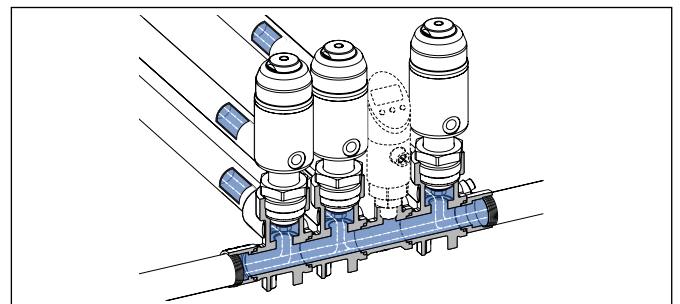
To be used: Operator version 0MS, 0MM, 1MS, 1MP



### 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	-10 to 180 °C
Max. permissible viscosity	600 mm <sup>2</sup> /s (cSt)

### Control medium (only for pneumatic actuators)

Inert gases

Max. permissible temperature of control medium 60 °C

Operator version	Piston diameter	Filling volume
0GS / 0MS	ø 28 mm	0.006 dm <sup>3</sup>
1GS / 1MS	ø 42 mm	0.025 dm <sup>3</sup>
1GP / 1MP	ø 50 mm	0.05 dm <sup>3</sup>

### Ambient conditions

Ambient temperature	max. 60 °C
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### Leakage rate

Leakage rate A to P11/P12 EN 12266-1

### Control pressure (only for pneumatic actuators) [bar]

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

Operator version	
0GS	4 - 8
1GS	4 - 8
1GP	4.8 - 7

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

0MS, 1MS, 1MP	max. 7 bar
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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 [bar]

Operator version	Seat diameter E	Seat diameter G
<b>C.f. 0 Manually operated / Flow direction: optional</b>		
0GM / 0MM	25	-
<b>C.f. 1 Normally closed (NC) / Flow direction: under the seat</b>		
0GS	10	-
1GS	-	10
1GP	-	12
<b>C.f. 1 Normally closed (NC) / Flow direction: over the seat</b>		
0MS	10	-
1MS	-	10
1MP	-	10

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

### Kv values [m<sup>3</sup>/h]

	Seat diameter E	Seat diameter G
Kv values [m <sup>3</sup> /h]	2.0	5.0

### Pressure / temperature correlation for angle seat globe valve bodies

Connection code	Material code	Max. allowable pressure (barg) at temperature °C *			
		RT	100	150	180
1, 3D	37	25.0	23.8	21.4	19.9

\* The valves can be used down to -10 °C

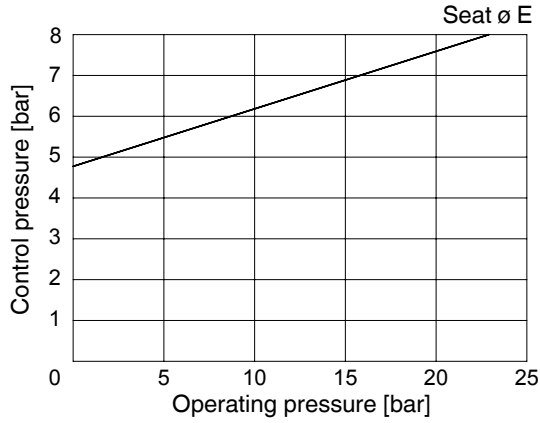
RT = room temperature

All pressures are gauge pressures.

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

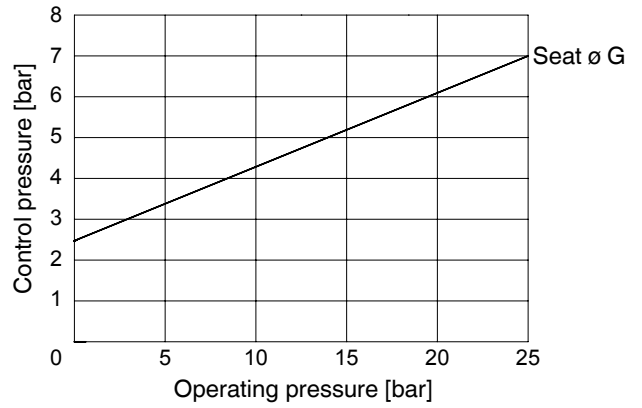
### Operator version 0GS C.f. 2 Normally open (NO) C.f. 3 Double acting (DA)

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



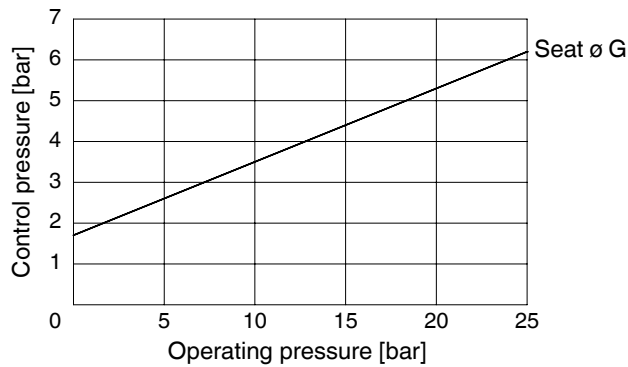
### Operator version 1GS C.f. 2 Normally open (NO) C.f. 3 Double acting (DA)

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

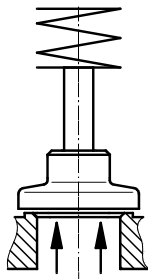


### Operator version 1GP C.f. 2 Normally open (NO) C.f. 3 Double acting (DA)

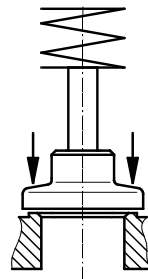
Min. control pressure dependent on operating pressure  
(Flow direction: under the seat)



## Flow direction



Distributing function  
Flow under the seat



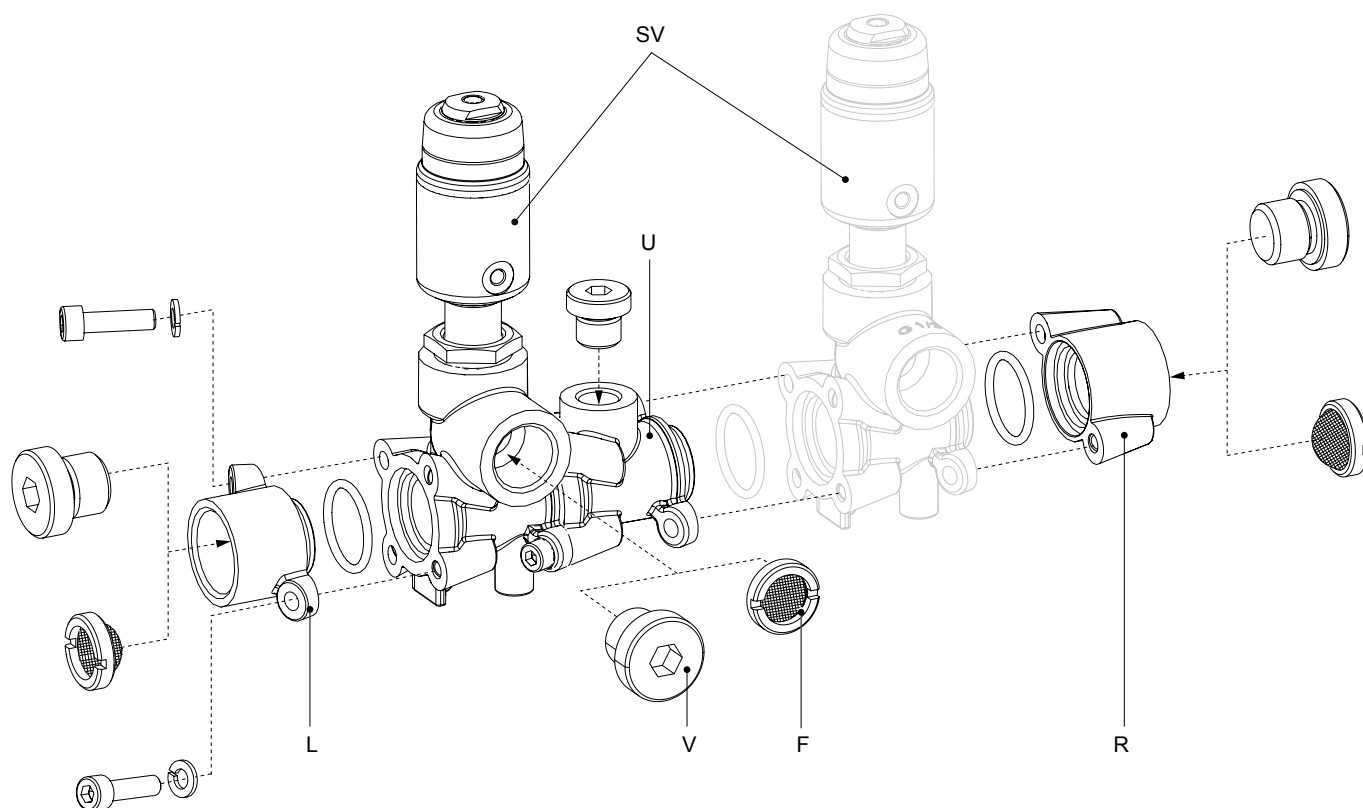
Collecting or mixing function  
Flow over the seat

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 1	G M	G G	L L
Manual operator design code M	15	1/2" NPT, G 1/2	0	0	G, M	E	S

\* 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

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

Valve body material	Code
1.4408, cast stainless steel	37

Seal material	Code
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

Operator version	Code
Operator size 0	0
Operator size 1	1

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
20 mm	20

Seat diameter	Code
10 mm	E
15 mm	G

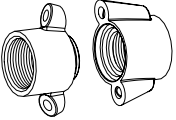
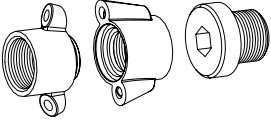
Length	Code
Short	S
Long	L

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

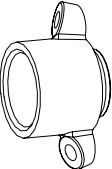
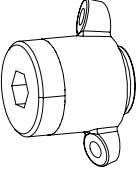

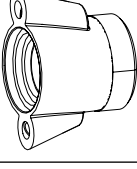
**Ordering note:** Valves are supplied as single valves due to the versatile modular options.  
All globe valves are supplied with connecting components (O-ring and screws).

## 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 (mit FPM Dichtung)	553 20SAV 1 37 F 20
	Connection flange L and connection flange R with threaded socket 3/4" NPT, with threaded plug (ohne Dichtmittel)	553 20SAV 3D 37 F 20

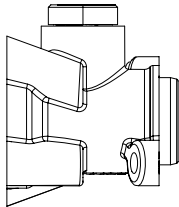
### Order data - Connection modules (L, R)

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 (mit FPM Dichtring gedichtet)	553 20BFL 1 37 F 20
	Blanking flange L with threaded socket 3/4" NPT, with threaded plug (ohne Dichtmittel)	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 (mit FPM Dichtring gedichtet)	553 20BFR 1 37 F 20
	Blanking flange R with threaded socket 3/4" NPT, with threaded plug (ohne Dichtmittel)	553 20BFR 3D 37 F 20

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

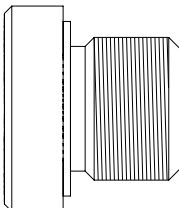


## Order data - Universal module (U)

Universal module		Order description
 <p>For function see page 3</p>	Media separator plate design with threaded plug (mit FPM Dichtring gedichtet)	553 MT 1 37 F 20
	Ausführung als Sensoraufnahme mit G 1/4 Adaptionsgewinde, mit Verschlusschraube (mit FPM Dichtring gedichtet)	553 SA 1 37 F 20

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

## Order data - Threaded plugs (V)

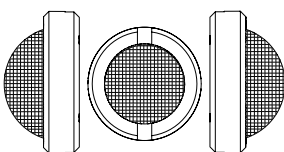
Threaded plugs		Order description
	G 1/4 for universal module (including FPM - sealing ring)	553 8VS 1 37 F
	G 1/2 for valves with operator size 0 (including FPM - sealing ring)	553 15VS 1 37 F
	1/2" NPT for valves with operator size 0 (ohne Dichtmittel)	553 15VS 3D 37
	G 3/4 for connection modules L or R and valves with operator size 1 (including FPM - sealing ring)	553 20VS 1 37 F
	1/2" NPT for connection modules L or R and valves with operator size 1 (ohne Dichtmittel)	553 20VS 3D 37

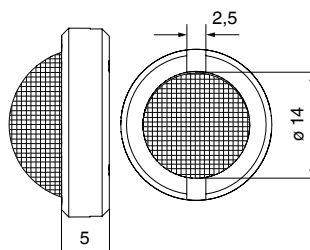
**Note!** It is not possible to use a filter and a threaded plug at the same connection.

## 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.**

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

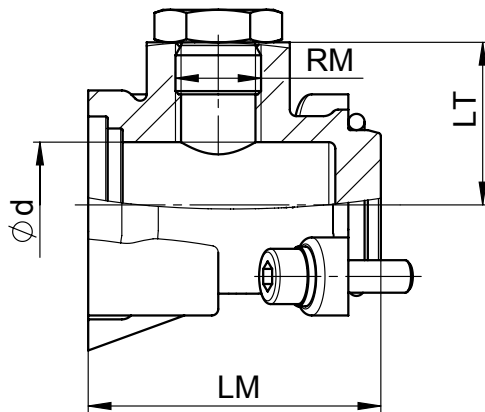


## Dimensions [mm]

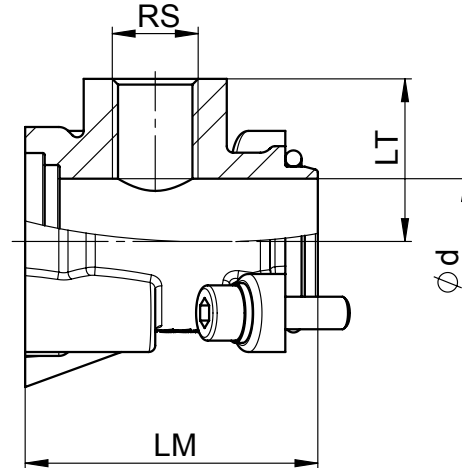
### Universal module

Universal module	RM	RS	ø d	LM	LT	Weight [kg]
Media separator plate	G 1/4	-	19.3	45	25	0.25
Sensor mounting bracket	-	G 1/4	19.3	45	25	0.23

Media separator plate

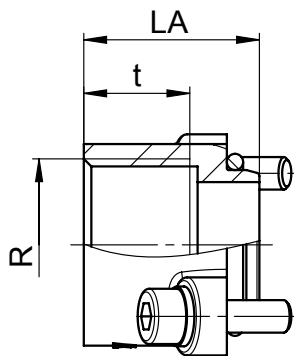


Sensor mounting

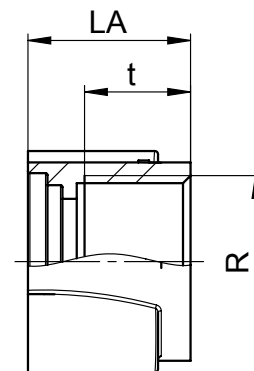


### Unions

Union	Connection	R		t	LA	Weight [kg]
left	L	G 3/4	3/4" NPT	16.3	22	0.11
right	R	G 3/4	3/4" NPT	16.3	25	0.11



left  
L

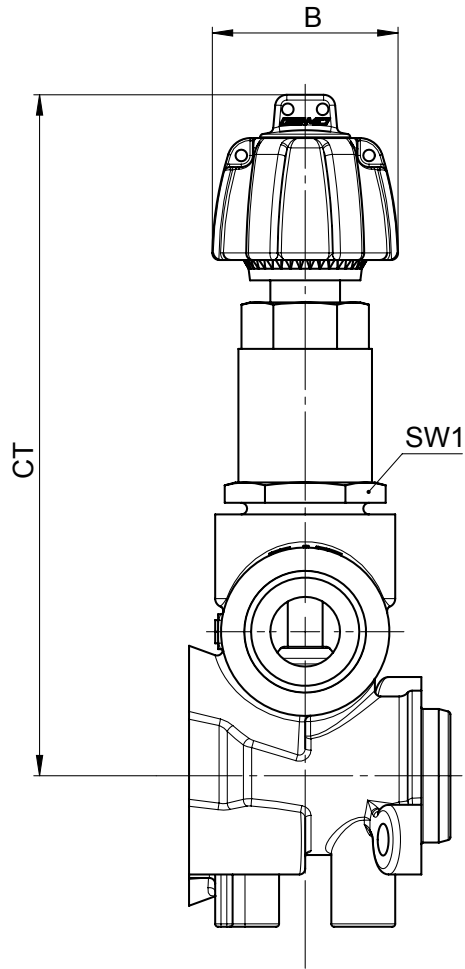


right  
R

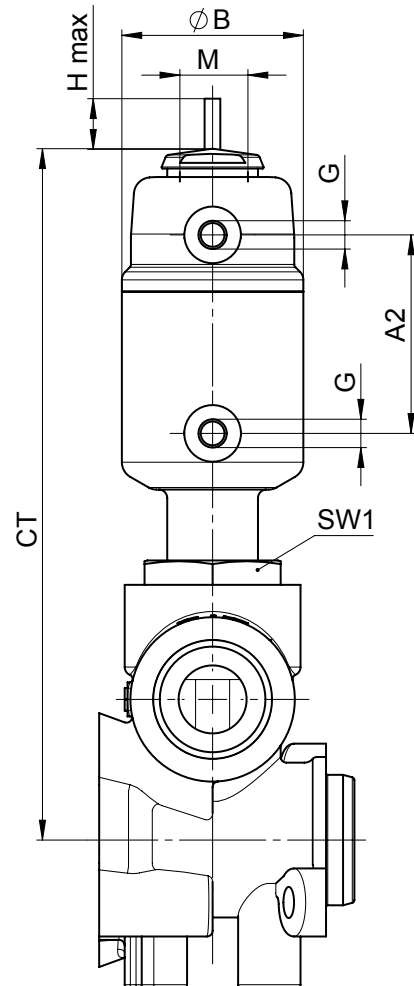
## Dimensions [mm]

### Operator dimensions

Operator version	ø B	M	H max	G	A2	CT	SW1	Weight [kg]
0GM / 0MM	32	-	-	-	-	124	24	0.30
0GS / 0MS	32	M12x1	6	M5	35.4	122	24	0.25
1GS / 1MS	46	M16x1	12	G 1/8	53.0	175	36	0.67
1GP / 1MP	72	M16x1	14	G 1/4	70.0	207	36	0.90



Manually operated

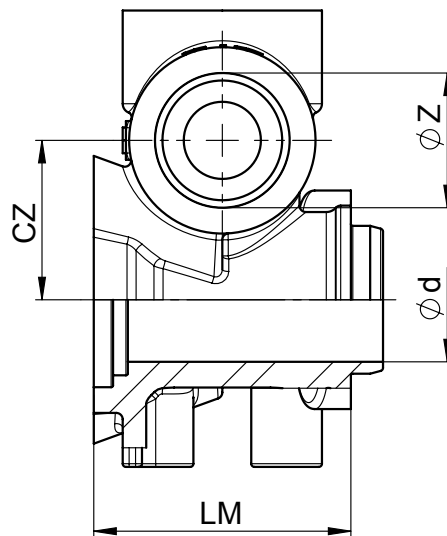
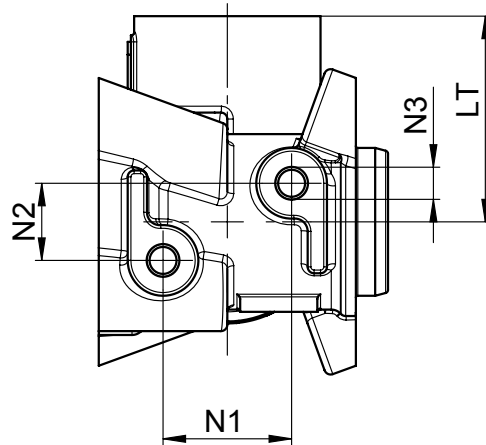


Pneumatically operated

## Body dimensions [mm]

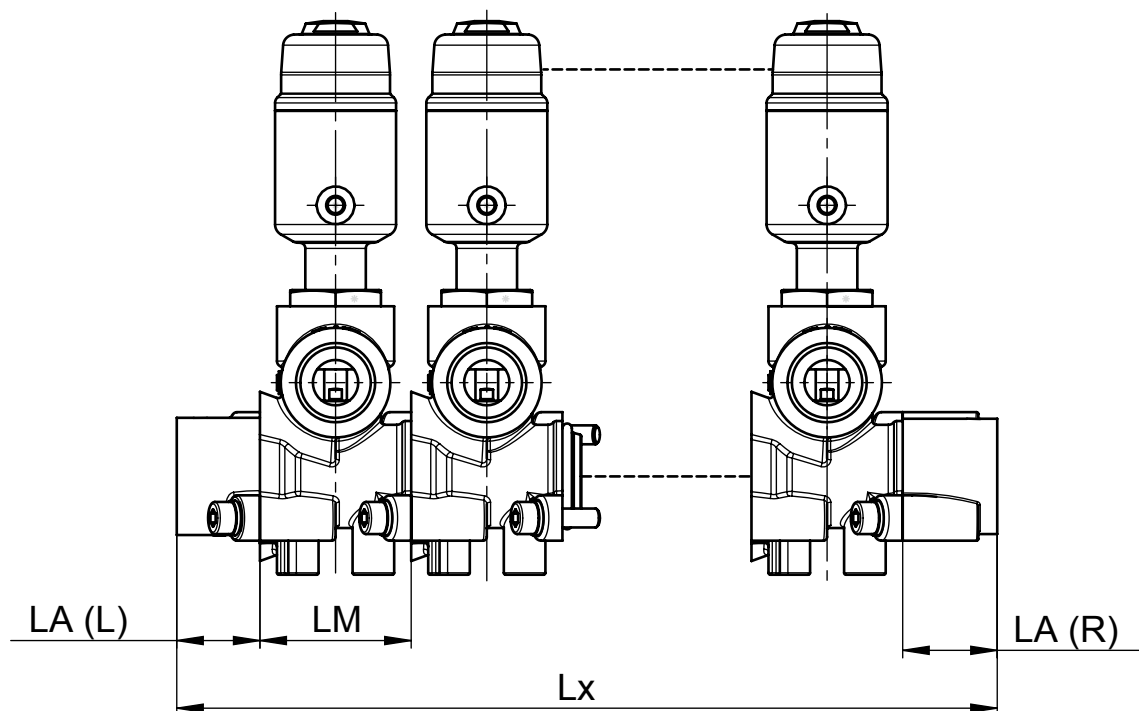
### Body module

Operator version	DN	Length	$\phi d$	CZ	$\phi Z$		LM	N1	N2	N3	LT	Weight [kg]
0GS / 0MS 0GM / 0MM	15	S	19,3	24.8	G 1/2	1/2" NPT	40	20	12	M5	32	0.34
1GS / 1MS	20	S		26.8	G 3/4	3/4" NPT	48				36	0.48
1GP / 1MP 1GS / 1MS	20	L		26.8	G 3/4	3/4" NPT	74				36	0.55



## Body dimensions [mm]

Valve block														
Operator version	Length	LM	LA		Length Lx									
			L	R	1x	2x	3x	4x	5x	6x	7x	8x	9x	10x
0GS / 0MS 0GM / 0MM	S	40	22	25	87	127	167	207	247	287	327	367	407	447
1GS / 1MS	S	48	22	25	95	143	191	239	287	335	383	431	479	527
1GP / 1MP 1GS / 1MS	L	74	22	25	121	195	269	343	417	491	565	639	713	787



### Note:

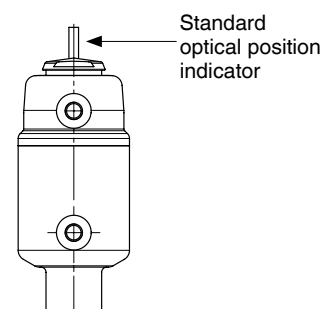
The overall length Lx applies for combination with identical valves.  
For the combination with different valves, the overall length Lx is calculated from LA (L), the respective valve block LM and LA (R).

## 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
Length	S	S	L	L
Add-on dimension of body	40 mm	48 mm	74 mm	74 mm
Actuator housing	Ø 32 mm	Ø 46 mm	Ø 46 mm	Ø 72 mm
Optical position indicators				
1300 	X	X	X	X
Electrical position indicators				
1200	X	X	X	X
1215 	X	X	X	X
1230 	-	-	X	X
1231 	-	-	X	X
1232 	-	-	X	X
1234 	X	-	-	-
1235 	-	-	X	X

Operator version		0GS, 0MS	1GS, 1MS		1GP, 1MP
Length		S	S	L	L
Add-on dimension of body		40 mm	48 mm	74 mm	74 mm
Actuator housing		Ø 32 mm	Ø 46 mm	Ø 46 mm	Ø 72 mm
Electrical position indicators					
1236		-	-	X	X
4242		-	-	X	X
4242 Compact version K1		-	X	X	X
Combi switchboxes					
4222		-	-	-	-
4242		-	-	X	X
4242 Compact version K1		-	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.</p> <p>In this instance, we recommend externally fitted pilot valves which are connected to the individual actuators.</p>			
0326					

X = combination possible

~ = combination only possible with restrictions

- = combination not possible