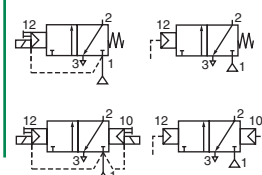




SPOOL VALVES

pilot operated or air operated, spool type
single/dual solenoid or air (mono/bistable function)
aluminium body, 1/4 - 1/2



3/2
Series
551
553

FEATURES

- The monostable spool valves in conformity with IEC 61508 Standard (2010 route 2_H version) have TÜV (551 series) and EXIDA (551-553 series) certified with integrity levels: SIL 2 for HFT = 0 / SIL 3 for HFT = 1
- The spool valves 3/2 NC have threaded port connections
- All the exhaust ports of this spool valve are connectable, providing better environmental protection, particularly recommended for sensitive areas such as clean rooms, and applications in the pharmaceutical and food processing sectors
- The valve offers environmental protection against the ingress of liquids, dusts or any other foreign matter (environmentally-protected construction)
- Epoxy moulded coil for general service applications
- The solenoid valves satisfy all relevant EC Directives

GENERAL

Differential pressure
Flow (Qv at 6 bar)

2 - 10,4 bar [1 bar = 100 kPa]
1/4 = 860 l/min (ANR)
1/2 = 3800 l/min

fluids (*)	temperature range (TS)	seal materials (*)
air, inert gas, filtered	- 25°C to + 60°C	NBR (nitrile) + PUR (polyurethane)

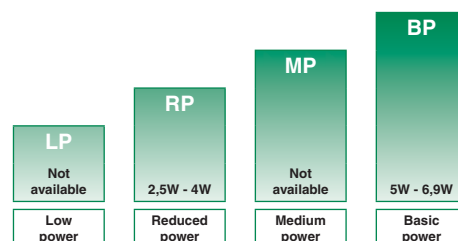
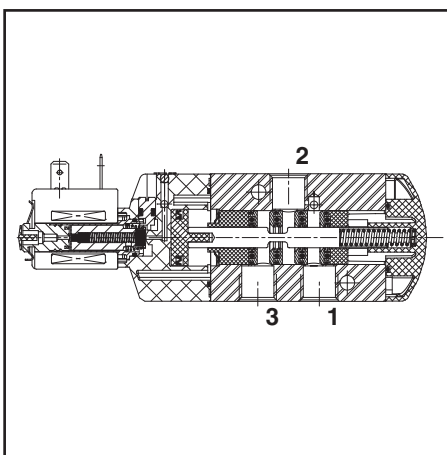
MATERIALS IN CONTACT WITH FLUID

(*) Ensure that the compatibility of the fluids in contact with the materials is verified

Body	Aluminium, black anodised
End covers	Glass-filled PA
Internal parts	Zamak, stainless steel, POM, aluminium
Seals	NBR + PUR
Core tube	Brass
Core and plugnut	Stainless steel
Shading coil	Copper

AIR OPERATED SPECIFICATIONS

pipe size	orifice size	flow coefficient kv		operating pressure differential (bar)			prefix option	basic catalogue number
				min.	max. (PS)			
					air (★)			
(❖)	(mm)	(m³/h)	(l/min)		~	=		
Air pilot operated - spring return (monostable)								
1/4	6	0,75	12,5	2	10	10	-	❖551A105 ⁽²⁾
1/2	13	3,15	52,5	2	10	10	-	❖553A105 ⁽²⁾
Air pilot operated and return (bistable)								
1/4	6	0,75	12,5	2	10	10	-	❖551A106
1/2	13	3,15	52,5	2	10	10	-	❖553A106



POWER LEVELS - cold electrical holding values (watt)

PILOT OPERATED SPECIFICATIONS

pipe size	orifice size	flow coefficient kv		operating pressure differential (bar)			power level	prefix optional solenoids					basic catalogue number
				min.	max. (PS)			ATEX / IECEx				IP65	
					air (*)			-	Ex e mb	Ex mb	-		
(✧)	(mm)	(m³/h)	(l/min)		~	=	~/=	-	WBLP	PV	-	SC	
Solenoid air pilot operated - spring return (monostable)													
1/4	6	0,75	12,5	2	10	10	RP	-	●	-	-	●	✧551A005 ⁽²⁾
1/4	6	0,75	12,5	2	10	10	RP	-	-	●	-	-	X✧551A005 20787 ⁽²⁾
1/2	13	3,15	52,5	2	10	10	RP-BP	-	●	●	-	●	✧553A005 ⁽²⁾
Solenoid air pilot operated and return (bistable)													
1/4	6	0,75	12,5	2	10	10	RP	-	●	-	-	●	✧551A006
1/4	6	0,75	12,5	2	10	10	RP	-	-	●	-	-	X✧551A006 20787
1/2	13	3,15	52,5	2	10	10	RP-BP	-	●	●	-	●	✧553A006

❖ Select **B** for NPT ANSI 1.20.3 or select **G** for ISO G (228/1) ● Available feature - Not available
(2) Certified IEC 61508 Functional Safety data, use suffix "SL".



**THORNE &
DERRICK
INTERNATIONAL**

Thorne & Derrick
+44 (0) 191 490 1547
www.heatingandprocess.com

PREFIX TABLE

prefix							description	power level			
1	2	3	4	5	6	7		LP	RP	MP	BP
P	V						Encapsulated epoxy moulded (EN/IEC 60079-18)*	-	●	-	●
W	B	L	P				I.S./encapsulation with PBT IP67 enclosure (EN/IEC 60079-7+18+31)*	-	●	-	-
S	C						Solenoid with spade plug connector (EN/IEC 60730)	-	●	-	●
						X	Other special constructions	-	●	-	●

SUFFIX TABLE

suffix					description	power level			
1	2	3	4	5		LP	RP	MP	BP
	G	D			Non-electrical, 2 GD c, construction safety, gas/dust (EN 13463-5)	-	-	-	-
			M	S	Screw type manual operator	-	●	-	●
	S	L			Certified IEC 61508 Functional Safety data ⁽¹⁾	-	●	-	●

● Available feature

- Not available

* ATEX/IECEX valves using these solenoids are approved according to EN 13463-1 (non electrical)

⁽¹⁾ Not to use with MS suffix

PRODUCT SELECTION GUIDE

STEP 1

Select the fluid temperature range and seal material from the general table on page 1. Select basic catalogue number, including pipe thread identification letter. Refer to the specifications table on page 1.

Example : G551A005

STEP 2

Select prefix (combination). Select the appropriate operator from the specifications table on page 1 and the prefix table on page 2. Select for this operator in the electrical characteristics table on page 3: the power level (RP, MP, BP), the type of electrical enclosure protection and the desired temperature class. The air operated version is without prefix.

Warning: The ambient temperature range of your application may not exceed the temperature range of your operator.

Do not use prefixes for air operated versions.

Example : SC

STEP 3

Select suffix (combination) if required. Suffix GD only applies for the air operated versions, do not use suffix MS.

Example : MS

STEP 4

Select voltage. Refer to standard voltages on page 3.

Example : 230V / 50Hz

STEP 5

Final catalogue / ordering number.

Example :

SC G551A005MS 230 V / 50 Hz

OPTIONS & ACCESSORIES

series	pipe size	exhaust protector (stainless steel)		
		(G)	(NPT)	(M)
551	1/4	34600419 ⁽²⁾	34600483 ⁽²⁾	-
553	1/2	34600479 ⁽²⁾	34600481 ⁽²⁾	-
551/553	M5	-	-	34600484 ⁽²⁾

⁽²⁾ Provided with "SL" suffix.

ORDERING EXAMPLES:

SC	G	551	A	005	MS	230V / 50 Hz
PV	X8	551	A	006	20787	115V / 50 Hz
WBLP	G	553	A	005	MS	24V / DC
		G	553	A	106	
		G	551	A	106	GD
		G	551	A	105	GD SL
SC	G	551	A	005	SL	

prefix — pipe thread — basic number — voltage — suffix

EXPLANATION OF TEMPERATURE RANGES OF SOLENOID VALVES

Valve temperature range	The valve temperature range (TS) is determined by the selected seal material, the temperature range for proper operation of the valve and sometimes by the fluid (e.g. steam)
Operator ambient temperature range	The operator ambient temperature range is determined by the selected power level and the safety code
Total temperature range	The temperature range of the complete solenoid valve is determined by the limitations of both temperature ranges above

ELECTRICAL CHARACTERISTICS

Coil insulation class	F
Electrical safety	IEC 335
Standard voltages	DC (=) 24V - 48V AC (~) 24V - 48V - 115V - 230V/50Hz; other voltages and 60Hz are available on request

prefix option	power ratings				operator ambient temperature range (TS)	safety code	electrical enclosure protection (EN 60529)	replacement coil		type ⁽³⁾
	inrush ~	holding ~		hot/ cold =				~	=	
	(VA)	(VA)	(W)	(W)				(C°)	230 V / 50 Hz	
Basic power (BP)										
SC	15	7	5	4/5	-25 to +60	EN 60730	moulded IP65	400727-117	400727-185	02
PV	-	-	6,3	-	-40 to +65	II2G Ex mb IIC T3 Gb, II 2D Ex mb IIIC Db	moulded IP67	- ⁽⁴⁾	- ⁽⁴⁾	04
PV	-	-	-	6,9	-40 to +40	II2G Ex mb IIC T3 Gb, II 2D Ex mb IIIC Db	moulded IP67	- ⁽⁴⁾	- ⁽⁴⁾	04
Reduced power (RP)										
SC	6	3,5	2,5	2,5/3	-25 to +60	EN 60730	moulded IP65	400127-097	400904-542	01
PV	-	-	4	-	-40 to +60/65	II2G Ex mb IIC T4-T3 Gb, II2D Ex mb IIIC Db	moulded IP67	- ⁽⁴⁾	- ⁽⁴⁾	03
PV	-	-	-	3	-40 to +40/60/60	II2G Ex mb IIC T5-T4-T3 Gb, II2D Ex mb IIIC Db	moulded IP67	- ⁽⁴⁾	- ⁽⁴⁾	03
WBLP	-	-	3.5	-/4	-40 to +65	II2G Ex e mb IIC T4 Gb, II2D Ex tb IIIC Db	IP67 PBT	- ⁽⁴⁾	- ⁽⁴⁾	05-06

⁽³⁾ Refer to the dimensional drawings on pages 3 and 4 (Air operated versions, see page 6 for types 7 and 8).

⁽⁴⁾ Multiple coil kits are available under ATEX/IECEx, contact us

ELECTRICAL CONNECTIONS

prefix	connection
SC	Spade plug connector with cable gland DIN 43650, 11 mm, industry standard B, for cables with an outer diameter from 6 to 8 mm (type 01) or EN175301-803A (ISO 4400) for cables with an outer diameter from 6 to 10 mm (type 02).
PV	Moulded-in cable, standard length 2 m
WBLP	M20 cable gland for cables with an outer diameter from 7 to 8,5 mm. With an internal and external facility for an earthing or bonding conductor

ADDITIONAL OPTIONS

- Other pipe threads are available on request
- Ex mb (prefix "PV") solenoid can be supplied with various cable lengths

INSTALLATION

- Installation/maintenance instructions are included with each valve
- The valves can be mounted in any position without affecting operation
- Do not connect the pressure supply to the exhaust port 3. The "environmentally-protected" construction is not adapted for a "distributing" function or use in NO function. Contact us for functions available in specific versions
- IEC 61508 Functional Safety (suffix SL). Check temperature range of valve body and solenoid for suitability. For probability of failure, contact us
- It is necessary to connect pipes or fittings to the exhaust ports to protect the internal parts of the valve if used outside or in harsh environments (dusts, liquids etc.)
- Threaded pipe connection identifier is: 8 = NPT (ANSI 1.20.3); G = G (ISO 228/1)

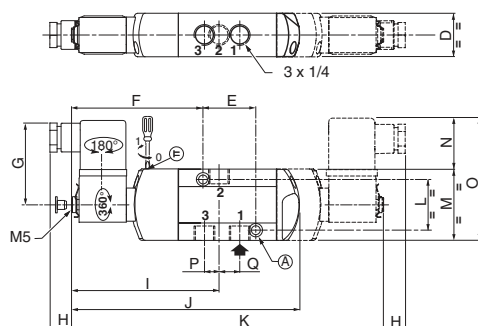
DIMENSIONS (mm), WEIGHT (kg)



TYPE 01:

SC
Epoxy moulded
IEC 335 / DIN 43650

551A005 / A005MS / A006 / A006MS



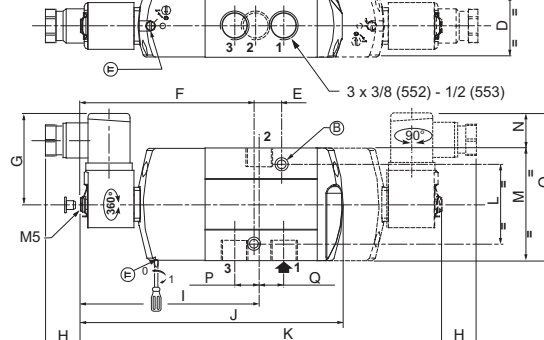
① 2 mounting holes dia. 5,3; spotfacing: dia. 9, depth 5 mm



TYPE 02:

SC
Epoxy moulded
IEC 335 / ISO 4400

553A005 / A005MS / A006 / A006MS



② 2 mounting holes dia. 6,5; spotfacing: dia. 11, depth 6 mm

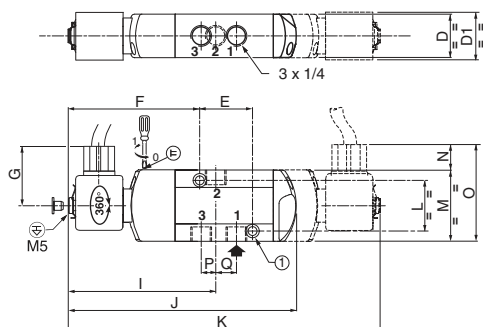
All leaflets are available on: www.asconumatics.eu

DIMENSIONS (mm), WEIGHT (kg)



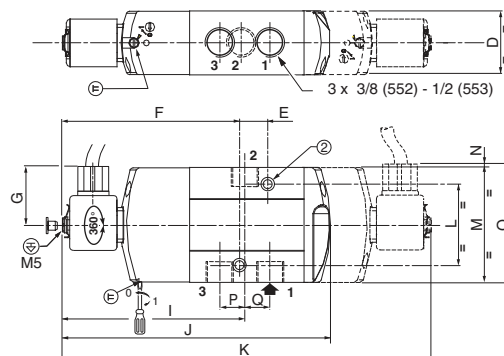
TYPE 03:
PV
Epoxy encapsulated
EN/IEC 60079-18

551A005 20787 / A005MS 20787 / A006 20787 / A006MS 20787



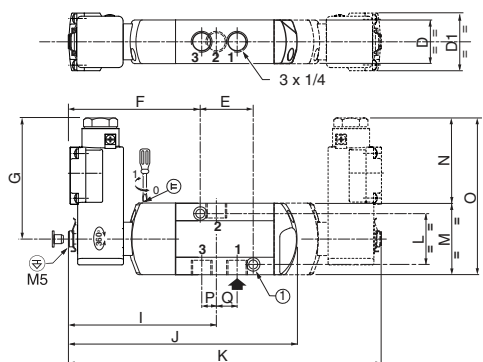
TYPE 04:
PV
Epoxy encapsulated
EN/IEC 60079-18

553A005 / A005MS / A006 / A006MS



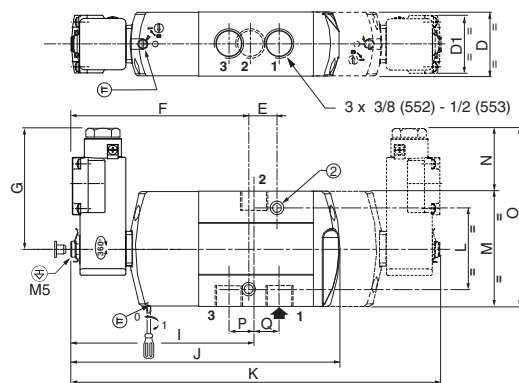
TYPE 05:
WBLP
Metal cap/PBT
EN/IEC 60079-7, EN/IEC 60079-18 and
EN/IEC 60079-31

551A005 / A005MS / A006 / A006MS



TYPE 06:
WBLP
Metal cap/PBT
EN/IEC 60079-7, EN/IEC 60079-18 and
EN/IEC 60079-31

553A005 / A005MS / A006 / A006MS



type	prefix option	power level	D	D1	E	F	G	H	I	J	K	L	M	N	O	P	Q	weight ⁽¹⁾	
																		monost.	bistable
01 (551)	SC	RP	27,5	-	33	83,5	52	13	93,5	145	198	32	45	27	72	9,5	12	0,35	0,43
02 (553)	SC	BP	40,2	-	16	114,2	59,2	21,8	111,6	170,2	233,3	51	72,3	20	92,3	12,1	19,5	0,69	0,99
03 (551)	PV	RP	27,5	29	33	83,5	36,5	13	93,5	145	198	32	45	13	58	9,5	12	0,37	0,49
04 (553)	PV	BP	40,2	-	16	114,2	36,5	21,8	110,6	170,2	233,3	51	72,3	0,3	92,3	12,1	19,5	0,72	1,02
05 (551)	WBLP	RP	27,5	37	33	83,5	81,5	-	93,5	145	198	32	45	59	104	9,5	12	0,44	0,63
06 (553)	WBLP	RP	40,2	37	16	114,2	81,5	-	110,6	170,2	233,3	51	72,3	45,35	117,65	12,1	19,5	0,79	1,16

⁽¹⁾ Including coil(s) and connector(s).

ACCESSORIES SERIES 551 and 553

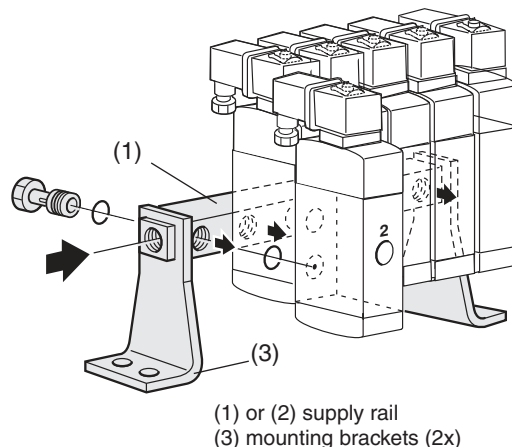
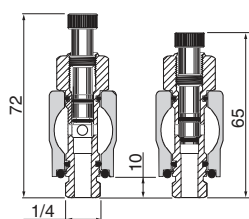
- Supply rail (supplied with seals and banjo bolts, without mounting brackets)

supply rail for "n" valves	catalogue number			
	series 551		series 553	
	G 1/4	NPT 1/4	G 1/2	NPT 1/2
2	88100034	88100053	88100759	88100766
3	88100035	(1)	88100760	88100767
4	88100036	88100054	88100761	88100768
5	88100037	88100058	88100762	88100769
6	88100038	88100055	88100763	88100770
7	88100039	88100059	88100764	88100771
8	88100040	88100060	88100765	88100772

Mounting brackets (set of 2),
for series 551:
catalogue number **88100049**
for series 553:
catalogue number **88100773**

(1) Available on request.

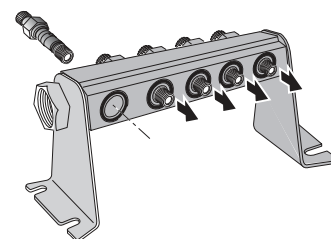
supply rail with isolation valves with mounting brackets (2)		
Allows the isolation of one or more valves from the general pressure supply		
supply rail for "n" valves	catalogue number	
	G 1/4	NPT
2	88100915	-
3	88100916	-
4	88100917	-
5	88100918	-
6	88100919	-
7	88100920	-
8	88100921	-
9	88100922	-
10	88100923	-
11	88100924	-
12	88100925	-



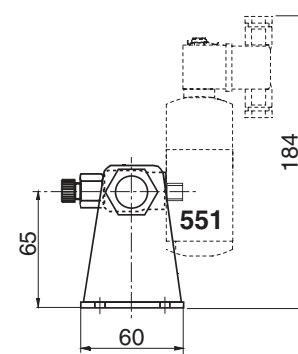
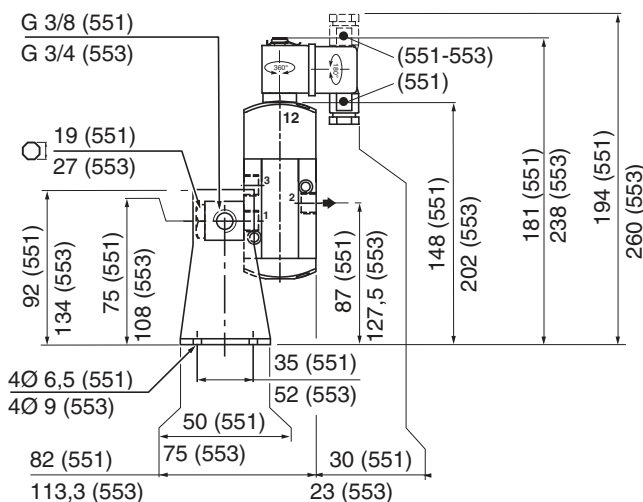
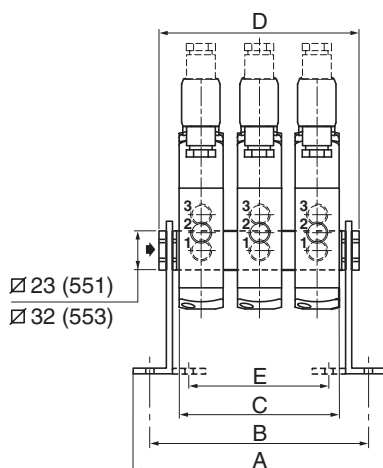
Series 551	number of valves						
	2	3	4	5	6	7	8
A	108	136	164	192	220	248	276
B	92	120	148	176	204	232	260
C	55	83	111	139	167	195	223
D	78	106	134	162	190	218	246
E	42	70	98	126	154	182	210
type 01, monost.*	0,9	1,3	1,7	2,0	2,4	2,9	3,3
type 01, bistable*	1.2	1.7	2.1	2.6	3.1	3.6	4.1

Series 552-553	number of valves						
	2	3	4	5	6	7	8
A	136	117	218	259	300	341	382
B	116	157	198	239	280	321	362
C	81	122	163	204	245	286	327
D	117	158	199	240	281	322	363
type 02, monost.*	2,1	2,9	3,8	4,7	5,6	6,4	7,4
type 02, bistable*	2,5	3,6	4,8	5,9	7,1	8,1	9,3

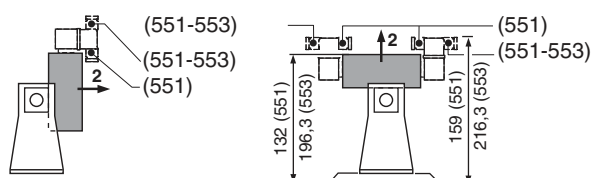
* Weight (kg)



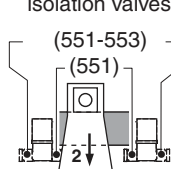
Supply rail with isolation valves for series 551



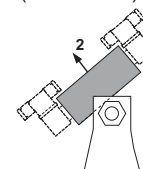
This mounting arrangement allows valves to be mounted in the positions bellow.



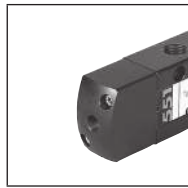
Not possible with supply rail and isolation valves



Only with supply rail with isolation valves (Series 551)

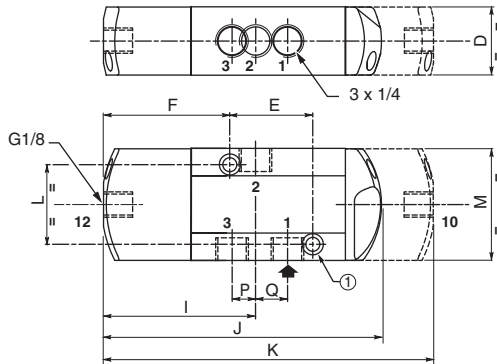


DIMENSIONS (mm), WEIGHT (kg)

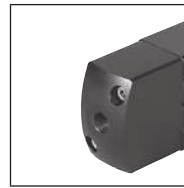


TYPE 07: No prefix, IP65
(suffixes, GD: II 2 GD c, SL: SIL
or GDSL: SIL, II 2 GD c)
Air operated version
(supply rail - see below)

551A105 / 551A106

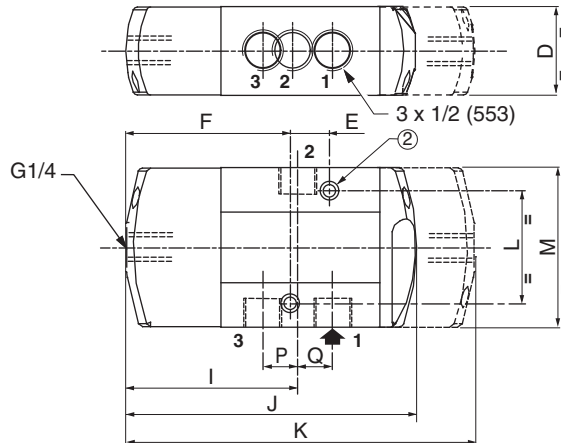


- ① 2 mounting holes dia. 5,3; spotfacing: dia. 9, depth 5 mm
② 2 mounting holes dia. 6,5; spotfacing: dia. 11, depth 6 mm



TYPE 08: No prefix, IP65
(suffixes, GD: II 2 GD c, SL: SIL
or GDSL: SIL, II 2 GD c)
Air operated version
(supply rail - see below)

553A105 / 553A106



type	D	E	F	I	J	K	L	M	P	Q	weight	
											monost.	bistable
07 (551)	27,5	33	50,5	61	112	133	32	45	9,5	12	0,28	0,36
08 (553)	40,2	16	78,5	74,6	134,5	162	51	72,3	12,1	19,4	0,80	1,06

ACCESSORIES SERIES 551 and 553

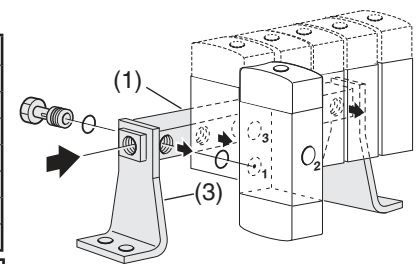
• Supply rails: see catalogue numbers on page 5

Series 551	number of valves						
	2	3	4	5	6	7	8
A	108	136	164	192	220	248	276
B	92	120	148	176	204	232	260
C	55	83	111	139	167	195	223
D	78	106	134	162	190	218	246
E	42	70	98	126	154	182	210
type 07, monost.*	0,9	1,2	1,5	1,9	2,2	2,5	2,8
type 07, bistable*	1,0	1,4	1,9	2,3	2,7	3,1	3,5

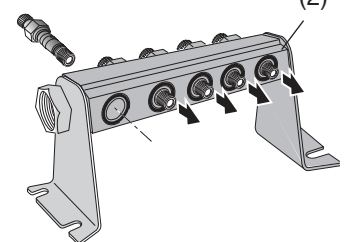
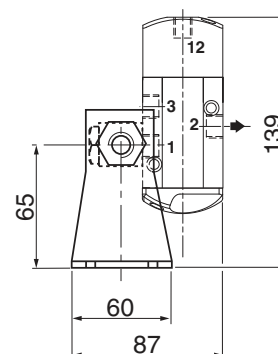
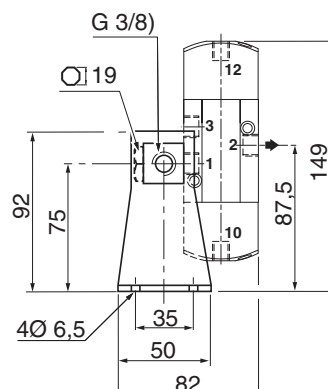
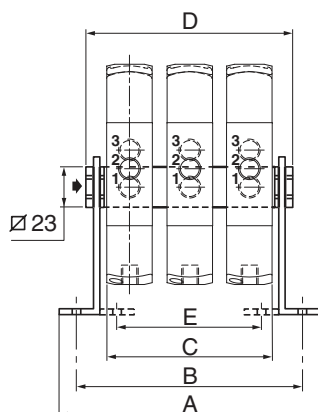
Series 553	number of valves						
	2	3	4	5	6	7	8
A	136	117	218	259	300	341	382
B	116	157	198	239	280	321	362
C	81	122	163	204	245	286	327
D	117	158	199	240	281	322	363
type 08, monost.*	2,3	3,0	3,8	4,7	5,5	6,3	7,2
type 08, bistable*	2,5	3,5	4,6	5,7	6,7	7,7	8,7

* Weight (kg)

équerres support (3)	
série	code
551	88100049

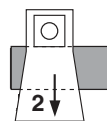
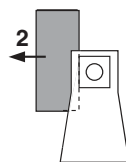
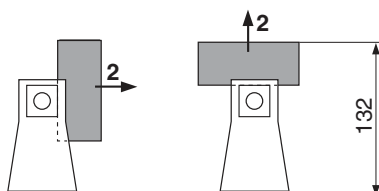


- (1) or (2) supply rail
(3) mounting brackets (2x)



Supply rail with isolation valves
for series 551

This mounting arrangement allows valves to be mounted in the positions bellow.



Not possible with
supply rail and
isolation valves

Only with
supply rail with
isolation valves
(Series 551)

