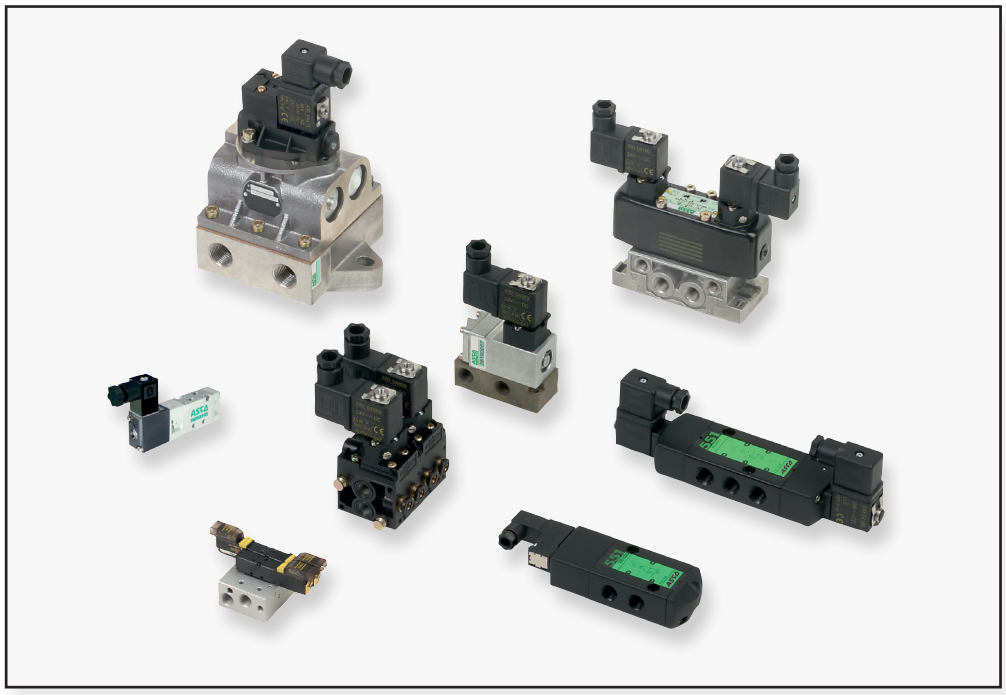
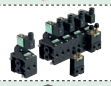
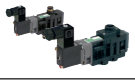
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SOLENOID AIR OPERATED POPPET VALVES AND SPOOL VALVES

Product Index



ISO 5599-1 standards	ports/positions	function NC	function NO	pipe connections: 4 (instant fittings O.D. mm)	6 (instant fittings O.D. mm)	ØG: M3	M5	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	⊥ (pad mount)	valve technology	stainless steel screws	max. pressure (bar)	flow at 6 bar l/min (ANR)	solenoid pilot valve	Type	Illustration	Series	Page
Poppet valves (1)																									
	3/2	●							▦	▦						⊥	rubber packed		10	700 1750	C30	DM		261 262	13
	3/2	●	●							▦	▦	▦	▦	▦	▦		rubber packed		12	4500 35000	C30	DH		284 285 286	15
	3/2	●									▦		▦		▦	⊥	rubber packed		12	3000 31500	C30	DP		266 267 268	17
ISO	3/2	●	●								▦	▦					rubber packed		10	5675	C30	pilot (190 series) ISO 3		G34	19
	4/2				▯			▦	▦								rubber packed		10	210 840	C30			263 264	21
	4/2								▦	▦						⊥	rubber packed		10	700 1750	C30	DM		261 262	23
	4/2										▦		▦		▦	⊥	rubber packed		12	3000 31500	C30	DP		266 267 268	25
Spool valves (1)																									
	3/2 5/2 5/3	●	●			▦	▦									⊥	rubber packed		8	100 100 80	integrated pilot	Micro 10		518	27
	3/2	●			▯			▦								⊥	rubber packed		8	400	integrated pilot	Mini-spool valve		520	31

(1) See "COILS AND ACCESSORIES" on www.asco.com

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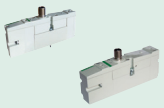
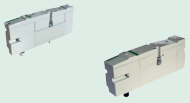
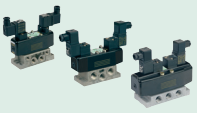
ISO 5599-1 standards	ports/positions	function		pipe connections: ⊐ - instant fittings O.D. (mm); ▦ - internal thread ØG; ⊥ - pad mount; ⊥15 - pad mount, CNOMO size15; ⊥30 - pad mount, CNOMO size 30; ⊥N - NAMUR interface												valve technology	stainless steel screws	max. pressure (bar)	flow at 6 bar l/min (ANR)	solenoid pilot valve	Type	Illustration	Series	Page
		NC	NO	⊐ 4	⊐ 6	M3	M5	1/8	1/4	3/8	1/2	3/4	1	1 1/4	⊥								
Spool valves (1)																							
	5/2 5/3						▦	▦	▦						⊥	rubber packed		8	175 600 1050	integrated pilot	Mini-spool valve		519 520 521	34
																					Joinable subbases: 519-520-521		355	36
																					519		355	37
	5/2 5/3							▦	▦	▦						spool & sleeve		10	1090 1860				L1 L2	39 41
	5/2								▦							spool & sleeve		7	500		Quick acting		92280	45
	3/2	●							▦							rubber packed		10	860				551	1
	5/2 5/3																						551	47
	3/2	●							▦		▦					rubber packed		10	860/3800		High reliability in humid exterior environments		551/553	5
									▦								●		860				551	3
	5/2 5/3								▦		▦								860/3800				551/553	51
									▦								●		860				551	49
	3/2	●							▦		▦					rubber packed		10	860/3800	M12 ⊥15	pilot (302 series)		551 553	7
	5/2																						551 553	53
	3/2	●							▦		▦					rubber packed		10	860/3800	⊥15	pilot (630 series)		551 553	55
	5/2																							
	3/2-5/2 5/3	●							▦		▦				⊥N			10	700/3000	integrated pilot	NAMUR		551/553	57
	3/2-5/2								▦						⊥N	rubber packed	●		700				551	61
	3/2-5/2	●							▦		▦				⊥N			10	700/3000	M12 ⊥15	pilot (302 series)		551 553	59

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standards: VDMA/ISO15407-1	standards: ISO 15407-2	standards: ISO 5599-1	ports/positions	function: NC	function: NO	pipe connections: ØG 6	ØG 8	ØG 1/8	ØG 1/4	ØG 3/8	ØG 1/2	ØG 3/4	ØG 1	pipe connections: pad mount	valve technology	stainless steel screws	max. pressure (bar)	flow at 6 bar l/min (ANR)	solenoid pilot valve	Type	Illustration	Series	Page
Spool valves (1)																							
VDMA			5/2 5/3					●						●	spool & sleeve		16	440	integrated pilot	ISO02		CL18	65
ISO			2x3/2 5/2 5/3	●	●				●					●	rubber packed / spool & sleeve		10	500	M12	ISO 15407-1 (18 mm)		502	64
										●								1200		ISO 15407-1 (26 mm)		503	
	ISO		2x3/2 5/2 5/3						●					●	rubber packed / spool & sleeve		8	500	M12 subbases	ISO 15407-2 (18 mm)		502	
										●								1200		ISO 15407-2 (26 mm)		503	
		ISO	5/2						●	●				●	rubber packed		10	1050		ISO1 Compact		541	69
		ISO	5/2 5/3						●	●				●	rubber packed		10/12	1400	C 30	ISO1		541 (ATEX)	75
										●	●			●				2800	C 30	ISO2		542 (ATEX)	77 (ATEX)
											●	●		●				4200	C 30	ISO3		543 (ATEX)	
																					Subbases	355	81
		ISO	5/2 5/3						●	●				●	rubber packed		10/12	1200	M12	ISO1		503	79
										●	●			●				2800	M12	ISO2		542	
											●	●		●				4200	M12	ISO3		543	
		ISO	5/2 5/3						●	●				●	spool & sleeve		10	1400	C 30	ISO1		C12	93
										●	●			●				2400	C 30	ISO2		C23	
											●	●		●				4800	C 30	ISO3		C34	
		ISO	5/2 5/3						●	●				●	spool & sleeve		10	1400	M12	ISO1		C12	95
										●	●			●				2400	M12	ISO2		C23	
		ISO	5/2 5/3									●	●	●	rubber packed		10/12	6300/ 7000	C 30	ISO4		544	99
Accessories																							
Supply rail for mounting of monostable/bistable spool valves (1/4 - 3/8 - 1/2)																						881	9
Supply rail with pressure isolation valves for mounting of monostable/bistable spool valves (1/4)																						881	11
Padlockable pressure isolating plate																				ISO 5599/1 size 1		881	91
Coils and solenoid operators																							
																				  	400 430	IV

(1) See "COILS AND ACCESSORIES" on www.asco.com

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COIL CHARACTERISTICS

All coils are designed to operate at 15% or 10% below the nominal voltage (Un) and at 10% above the nominal voltage (Un). [Applicable standards: IEC 335, EN 60730- 1, UL 429]

The coils are rated for continuous duty within the maximum ambient temperature limits (100% ED).

CATALOGUE NUMBERS OF REPLACEMENT COILS

solenoid valve series	coil type	alternating current , AC (~) 50 Hz					direct current , DC (=)			
		24V	**48V**	**115V**	**230V**	240V	12V	**24V**	**48V**	110V
189	C22A - 2,5 W	**43004416** (❖)	**43004417** (❖)	**43004419** (❖)	**43004422** (❖)	**43004423** (❖)	**43004149**	**43004166**	**43004167**	**43004168**
	C22 - 2,5 W (**M12**)	-	-	-	-	-	-	**43005523**	-	-
551	CM22(1)- 2,5/3W	**400127-081** (❖)	**400127-085** (❖)	**400127-098** (115V/50-120V/60)	**400127-097** (❖)	**400127-091**(❖)	**400904-541**	**400904-542**	**400904-544**	**400904-548**
553	CM25(1)- 5/5W	**400727-181** (❖)	**400727-185** (❖)	**400727-118** (115V/50)	**400727-117** (130V/50)	-	**400727-181**	**400727-185**	**400727-118**	**400727-117**
190	C25A - 3W	**43004469**	**43004473**	**43004471**	**43004472**	-	**43004469**	**43004473**	**43004471**	**43004472**
	C25 - 3 W (**M12**)	-	-	-	-	-	-	**43005525**	-	-
192	C30A	**43005604** (❖)	**43005611**	**43005617** (115V/50-120V/60)	**43005627**	-	-	**43005642**	-	-
	C30 (M12)	-	-	-	-	-	-	**43005664**	-	-

(1) For high reliability in humid exterior environments

(❖)Bifrequency 50/60 Hz.

CM22-2,5/3W COIL with connector Example: series 551	**C22 COIL with M12 connection** Example: series 189	**CM25-5/5W COIL with connector** Example: series 553	**C25 COIL with M12 connection** Example: series 190	**C30A COIL with connector** Example: series 192	**C30 COIL with M12 connector** Example: series 192
					

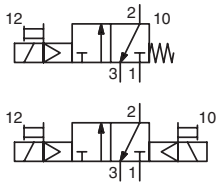
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SPOOL VALVES

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



3/2
Series
551



FEATURES

- *The valves offer environmental protection against the ingress of liquids, dusts or other foreign matter (environmentally protected construction)*
- *For high reliability in very humid outside environments, the versions on following pages should preferably be used.*

GENERAL

Fluids	Air or neutral gas, filtered, lubricated or not
Operating pressure	2 to 10 bar
Ambient temperature	-25°C to +60°C
Flow (Qv to 6 bar)	860 l/min (ANR) - Kv : 12,5

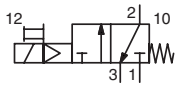
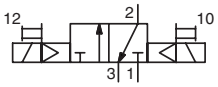
CONSTRUCTION

SPOOL VALVE	
Body	Aluminium, black anodized
Internal parts	Zinc diecast, stainless steel, POM (polyacetal), aluminium
Seals	NBR (nitrile) and PUR (polyurethane)
PILOT VALVE	
Seals	NBR (nitrile) and PUR (polyurethane)
Electrical safety	IEC 335
Coil and magnetic circuit	Encapsulated monobloc design
Exhaust	Tapped M5 exhaust port, equipped with exhaust protection

ELECTRICAL CHARACTERISTICS

voltage		consumption		insulation class	protection degree	electrical connection
		inrush	holding			
~	24V - 48V - 115V - 230V / 50Hz	6 VA	3,5 VA (2,5 W)	F	IP 65	spade plug connector size 22 EN 175301-803, industry standard form B (11 mm)
=	24V - 48V	2,5 W				

SPECIFICATIONS

symbol	operators solenoid air pilot (14) return (12)	catalogue number with connector	 without connector	(M)
	spring	**55102005**	**55102006**	●
	solenoid air	**55102007**	**55102008**	●

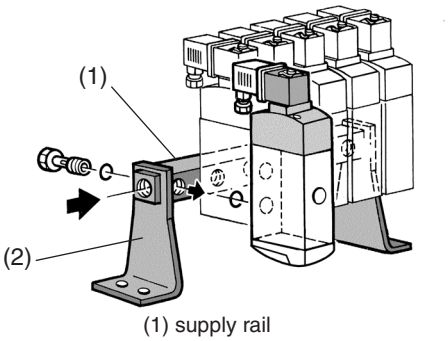
(M) Type of manual operator on pilot(s): ● : maintained
Note: do not connect the pressure supply to the exhaust port 3. For a "distributing" function or use in NO function, contact us.

ACCESSORIES

• Supply rails

	supply rail supplied with seals and banjo bolts (without mounting brackets) (1)	supply rail with isolation valves - allows isolation of one or more spool valves from the main pressure supply
supply rail for «n» valves	G 1/4	G 1/4
2	**88100034**	**88100915**
3	**88100035**	**88100916**
4	**88100036**	**88100917**
5	**88100037**	**88100918**
6	**88100038**	**88100919**
7	**88100039**	**88100920**
8	**88100040**	**88100921**

• Set of 2 mounting brackets (2) for supply rail - catalogue number: **88100049**



(1) supply rail
(2) mounting brackets (x2)

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OPTIONS

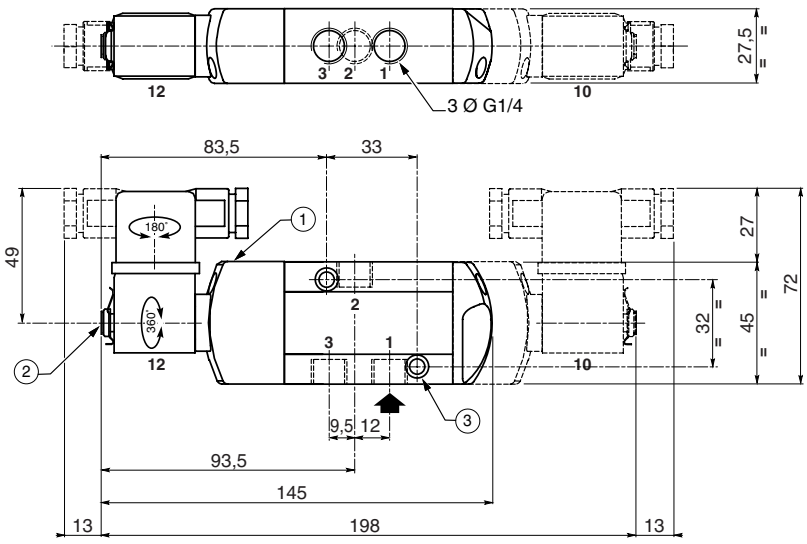
- Other voltages and 60 Hz on request
- ATEX compliant coil and connector for use in potentially explosive dust environments (**SG**), zone 22
- Connector size 22, cable length 2 m: **88122413**
- Electrovalve with connector equipped with visual indicator and built-in electrical protection:

catalogue number of spool valve without connector + **cata**logue number of connector with visual indicator and built-in electrical protection (~ / =)

24V	48V	115V	230V
88122405	**88122406**	**88122407**	**88122410**

DIMENSIONS (mm), WEIGHT (kg)

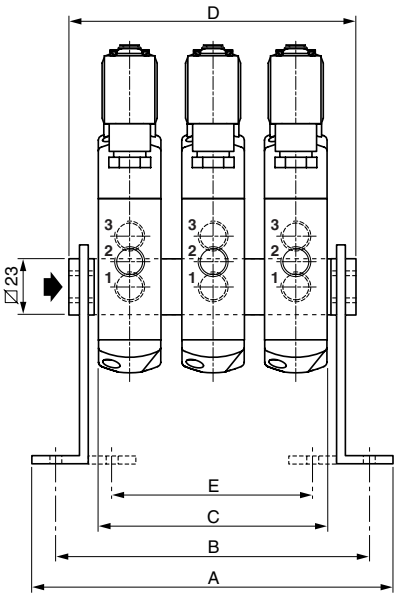
Weight: Spool valve + 1 pilot = 0,316 kg
Spool valve + 2 pilots = 0,436 kg



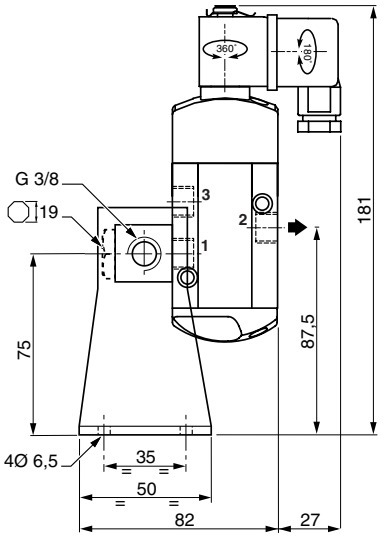
3/2 NC connection
1 = Pressure
2 = Outlet
3 = Exhaust
10 = Return
12 = Pilot

① Maintained manual operator
② Connectable M5 exhaust with protection
③ 2 mounting holes: Ø 5,3 spotfacing: Ø 9, depth 5

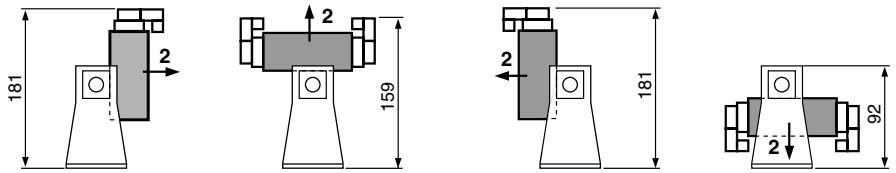
ASSEMBLY WITH COMMON SUPPLY RAIL



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	**weight** (kg)						
with 1 pilot	0,9	1,3	1,7	2,0	2,4	2,9	3,3
with 2 pilots	1,2	1,7	2,1	2,6	3,1	3,6	4,1



This mounting arrangement allows valves to be mounted in any of 4 positions



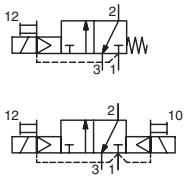
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SPOOL VALVES

pilot operated, spool type
single/dual solenoid (mono/bistable function)
aluminium body, 1/4, **stainless steel screws**



3/2
Series
551



FEATURES

- *Spool valve protected against food and beverage environment thanks to stainless steel screws*
- *The valves offer environmental protection against the ingress of liquids, dusts or other foreign matter (environmentally protected construction)*
- *A reliable actuator pilot with the holes facing downwards and a moisture resistance*

GENERAL

Fluids	Air or neutral gas, filtered, lubricated or not
Operating pressure	2 to 10 bar
Ambient temperature	-25°C to +60°C
Flow (Qv to 6 bar)	860 l/min (ANR) - Kv : 12,5

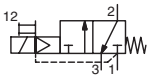
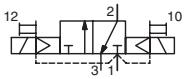
CONSTRUCTION

SPOOL VALVE	
Body	Aluminium, black anodized
Internal parts	Zinc diecast, stainless steel, POM (polyacetal), aluminium
Seals	NBR (nitrile) and PUR (polyurethane)
Screws	Stainless steel 316L
PILOT VALVE	
Seals	NBR (nitrile) and PUR (polyurethane)
Electrical safety	IEC 335
Coil and magnetic circuit	Encapsulated monobloc design
Exhaust	Tapped M5 exhaust port, equipped with exhaust protection

ELECTRICAL CHARACTERISTICS

voltage		consumption		insulation class	protection degree	electrical connection
		inrush	holding			
~	24V - 48V - 115V - 230V / 50Hz	6 VA	3,5 VA (2,5 W)	F	IP 65	spade plug connector size 22 EN 175301-803, industry standard form B (11 mm) with cable lenght of 2m
=	24V - 48V	2,5 W				

SPECIFICATIONS

symbol	operators solenoid air pilot (14) return (12)	catalogue number with connector	(M)
	spring	**SCG551A091MS**	●
	solenoid air	**SCG551A093MS**	●

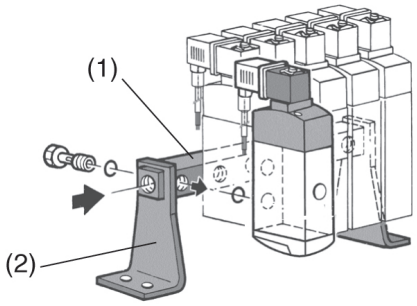
(M) Type of manual operator on pilot(s): ● : maintained

ACCESSORIES

• Supply rails

	supply rail supplied with seals and banjo bolts (without mounting brackets) (1)	supply rail with isolation valves - allows isolation of one or more spool valves from the main pressure supply
supply rail for «n» valves	G 1/4	G 1/4
2	**88100034**	**88100915**
3	**88100035**	**88100916**
4	**88100036**	**88100917**
5	**88100037**	**88100918**
6	**88100038**	**88100919**
7	**88100039**	**88100920**
8	**88100040**	**88100921**

• Set of 2 mounting brackets (2) for supply rail - catalogue number : **88100049**



(1) supply rail
(2) mounting brackets (x2)

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OPTIONS

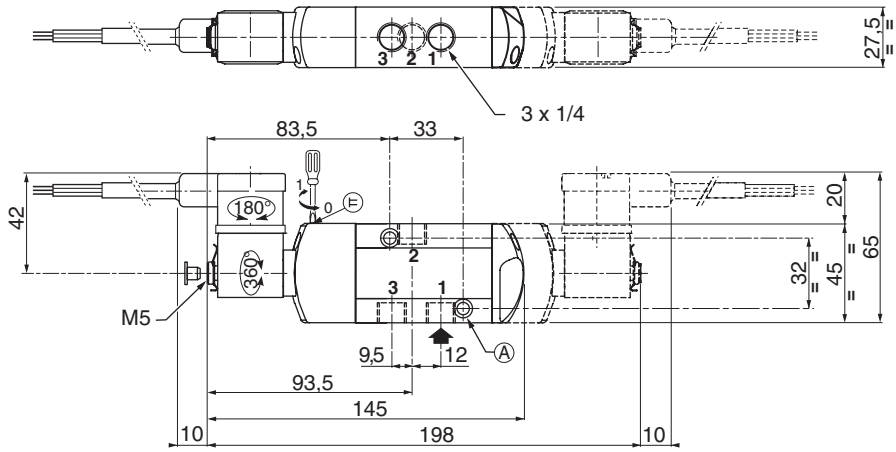
- Other voltages and 60 Hz on request
- Spade connector size 22, IP67 with integrated visual LED and varistor protection with PVC 0,75mm² cable lenght of 2 m : **88100937**
- Solenoid valve with connector equipped with visual indicator and built-in electrical protection:

catalogue number of spool valve without connector + catalogue number of connector with visual indicator and built-in electrical protection (~ / =)

24V	48V	115V	230V
88122405	**88122406**	**88122407**	**88122410**

DIMENSIONS (mm), WEIGHT (kg)

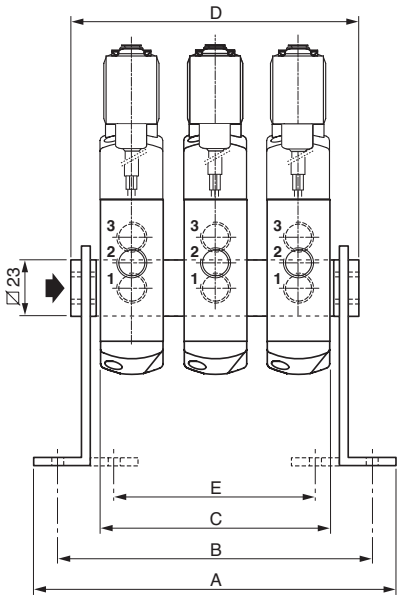
Weight: Spool valve + 1 pilot = 0,33 kg
Spool valve + 2 pilots = 0,47 kg



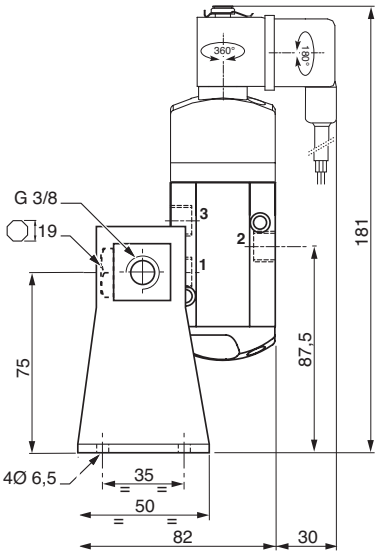
3/2 NC connection
1 = Pressure
2 = Outlet
3 = Exhaust
10 = Return
12 = Pilot

2 mounting holes:
Ⓐ 5,3 mm dia. (Spotfacing: 9 mm dia., depth 5 mm)

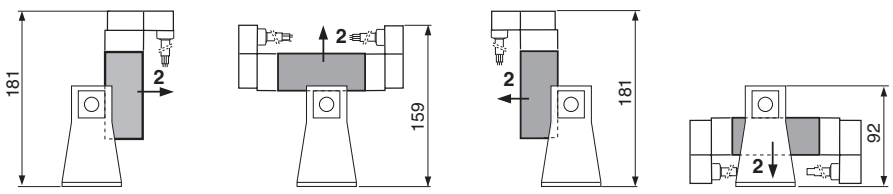
ASSEMBLY WITH COMMON SUPPLY RAIL



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	**weight** (kg)						
with 1 pilot	1,0	1,4	1,8	2,1	2,5	3,0	3,4
with 2 pilots	1,3	1,8	2,2	2,7	3,2	3,7	4,2



This mounting arrangement allows valves to be mounted in any of 4 positions



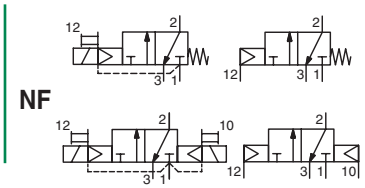
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SPOOL VALVES

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



3/2
Séries
551
553

FEATURES

- *All the exhaust ports of the 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 valves offer environmental protection against the ingress of liquids, dusts or other foreign matter (environmentally-protected construction)*
- *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 solenoid valves satisfy all relevant EU directives*

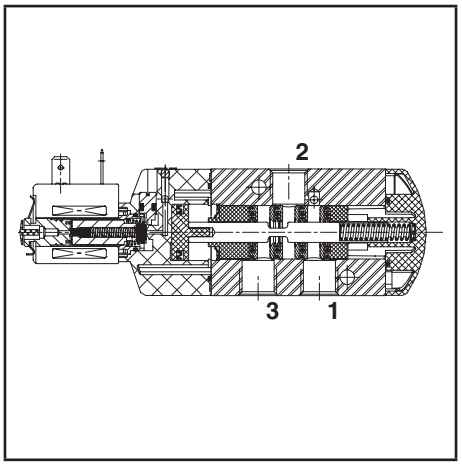


GENERAL

Differential pressure 2 - 10,4 bar [1 bar = 100 kPa]
Flow (Qv at 6 bar) l/min (ANR)

1/4	1/2
860	3800

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, end cover Aluminium, black anodized
End cover (spring return) Glass fibre filled PA
Spool valve internal parts Zamak, stainless steel, POM, aluminium
Seals NBR + PUR
Core tube Brass
Core and plugnut Stainless steel
Shading coil Copper

ELECTRICAL CHARACTERISTICS

Coil insulation class F
Connector Spade plug (cable Ø 6-8 mm or Ø 6-10 mm)
Connector specification EN 175301-803, 11 mm, industry standard form B (type 01) or ISO 4400 / EN 175301-803, form A (type 02)
Electrical safety IEC 335
Electrical enclosure protection Moulded IP65 (EN 60529)
Standard voltages DC (=) : 24V - 48V
(Other voltages and 60 Hz on request) AC (~) : 24V - 48V - 115V - 230V / 50 Hz

prefix option	power ratings inrush ~ (VA)	holding ~ (VA)	holding ~ (W)	hot/cold = (W)	operator ambient temperature range (TS) (C°)	replacement coil ~ 230 V/50 Hz	replacement coil = 24 V DC	type (1)
SC	6	3,5	2,5	2,5 / 3	-25 to + 60	400127-097	400904-542	01
SC	15	7	5	4 / 5	-25 to + 60	400727-117	400727-185	02

(1) Refer to the dimensional drawings on the following page.

SPECIFICATIONS

Configurator - CAD Files

pipe size	orifice size	flow coefficient Kv		operating pressure differential (bar) min.	max. (PS) air (*)		power coil (W)		catalogue number	options maintained man. operator		
G	(mm)	(m^3/h)	(l/min)		~	=	~	=	~/=			
NC - Normally closed, solenoid air pilot operated - spring return (monostable)												
1/4	6	0,75	12,5	2	10	10	2,5	3	**SCG551A005**	MS	-	-
1/2	13	3,15	52,5	2	10	10	5	5	**SCG553A005**	MS	-	-
NC - Normally closed, solenoid air pilot operated and return (bistable)												
1/4	6	0,75	12,5	2	10	10	2,5	3	**SCG551A006**	MS	-	-
1/2	13	3,15	52,5	2	10	10	5	5	**SCG553A006**	MS	-	-
NC - Solenoid air pilot operated - spring return (monostable), certified IEC 61508 Functional Safety data												
1/4	6	0,75	12,5	2	10	10	2,5	3	**SCG551A005SL**	-	-	-
1/2	13	3,15	52,5	2	10	10	5	5	**SCG553A005SL**	-	-	-

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AIR OPERATED AND OPTIONS

- Versions (Type 03): - pilot air operated, spring return, catalogue numbers: **G551A105** / **G551A105SL** (1/4); **G553A105** / **G553A105SL** (1/2)
  - pilot air operated and return, catalogue numbers: **G551A106** (1/4); **G553A106** (1/2)
- Suffix "**GD**" (air operated only, ATEX 2GD c)
- Explosionproof enclosures for use in zones 1/21-2/22, categories 2-3 to ATEX Directive 2014/34/EU (www.asco.com)
- Supply rail (www.asco.com)
- Other pipe connections are available on request
- Connector with visual indication and peak voltage suppression or with cable length of 2 m (www.asco.com)

INSTALLATION

- 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
- It is necessary to connect pipes or fittings to the exhaust ports to protect the internal parts of the spool valve and its pneumatic operator if used outside or in harsh environments (dusts, liquids etc.)
- IEC 61508 Functional Safety (suffix SL). Check temperature range of valve body and solenoid for suitability. For probability of failure, contact us
- Valves with suffix "SL" are supplied with specific exhaust protectors
- Threaded pipe connection is standard: G = G (ISO 228/1)
- Installation/maintenance instructions are included with each valve

ACCESSORIES

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

(1) Supplied with suffix "SL".

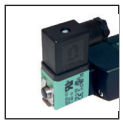
ORDERING EXAMPLES:

SC	G	551 **A** 005	**MS**	230V / 50 Hz
SC	G	551 **A** 005	**SL**	24V / DC
SC	G	553 **A** 006		115V / 50 Hz
	G	551 **A** 105	**SL**	

prefix
pipe thread
basic number
voltage
suffix

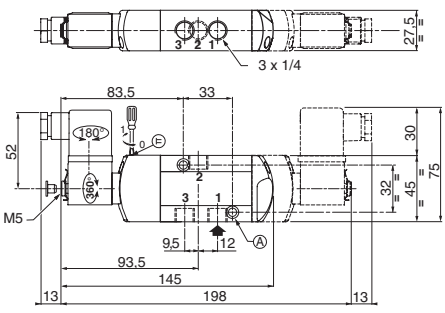
DIMENSIONS (mm), WEIGHT (kg)

Configurator - CAD Files



TYPE 01
Prefix "SC" Solenoid
Epoxy moulded
IEC 335 / DIN 43650
IP65

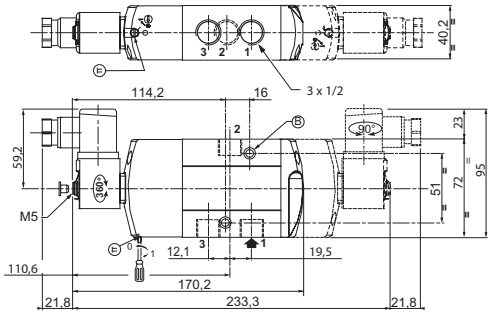
551A005 / A005MS / A005SL / A006 / A006MS





TYPE 02
Prefix "SC" Solenoid
Epoxy moulded
IEC 335 / ISO 4400
IP65

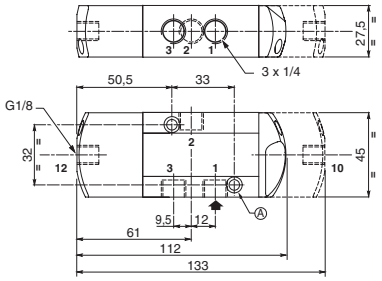
553A005 / A005MS / A006 / A006MS



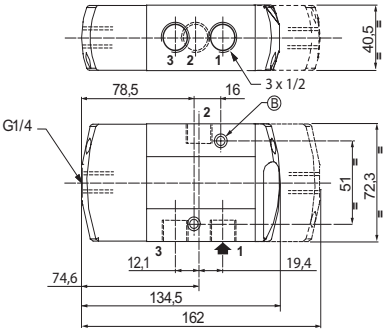


TYPE 03
No Prefix
Air operated version

551A105 / A105SL / A106



553A105 / A105SL / A106



2 mounting holes:

(A) 5,3 mm dia. (Spotfacing: 9 mm dia., depth 5 mm)

(B) 6,5 mm dia. (Spotfacing: 11 mm dia., depth 6 mm)

type	prefix option	weight monostable	weight bistable
01 (551)	SC	0,35 (2)	0,43 (2)
02 (553)	SC	0,69 (2)	0,99 (2)
03 (551)	-	0,28	0,36
03 (553)	-	0,80	1,06

(2)Incl. coil(s) and connector(s).

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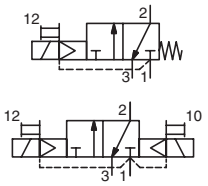
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SOLENOID VALVES

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

NC



3/2
Series
551
553

FEATURES

- *All the exhaust ports of the 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 valves offer environmental protection against the ingress of liquids, dusts or other foreign matter (environmentally-protected construction)*
- *Solenoid pilot valve with spade-plug connector type EN 175301-803, industry standard form C, with 9,4 mm spacing. Versions with M12 connection*
- *Solenoid pilot valve, CNOMO size 15 interface, with or without integral LED and electrical protection. LED indicator visible from 3 sides*
- *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 solenoid valves satisfy all relevant EU directives*



GENERAL

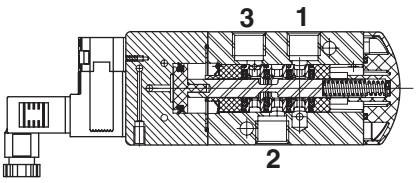
Differential pressure 2 - 10,4 bar [1 bar = 100 kPa]

Flow (Qv at 6 bar) l/min (ANR)

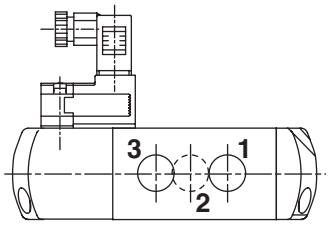
1/4	1/2
860	3800

Pilot mounting interface surface ISO 15218 (CNOMO E06.36.120N, size 15)

fluids (∗)	temperature range (TS)	seal materials (∗)
air, inert gas, filtered	- 25°C to + 40°C	NBR (nitrile) + PUR (polyurethane)



551 (prefix CFSC)



553 (prefix CFSC)

MATERIALS IN CONTACT WITH FLUID

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

Body, end cover Aluminium, black anodized
End cover (spring) Glass fibre filled PA
Spool valve internal parts Zamak, stainless steel, POM, aluminium
Pilot body PARA
Pilot internal parts POM, PET, stainless steel and brass
Pneumatic interface seal TPE

ELECTRICAL CHARACTERISTICS

Coil insulation class F
Connector (type 05) Spade plug (cable Ø 4-6 mm)
Connector specification Type 05: DIN 43650, 9,4 mm, form C
Connection Type 07: M12 (CNOMO E03.62.520.N)
Electrical safety IEC 335
Electrical enclosure protection Moulded IP65 [05] or IP67 [07] (EN 60529)
Standard voltages DC (=): 24V
(Other voltages and 60 Hz on request) AC (~): 24V-115V-230V / 50 Hz (prefix CFSC)

prefix option	power ratings inrush ~ (VA)	power ratings holding ~ (VA)	power ratings holding ~ (W)	power ratings hot/cold = (W)	operator ambient temperature range (TS) (C°)	voltage ~ (V)	voltage = (V)	type (1)
CFSC	1,4	1,2	1,1	1/1,2	-25 to + 60	24-115	24	05
	1,8 (2)	1,6 (2)	1,5 (2)	1,15/1,35(2)				
	2,1	1,6	1,5	-	-25 to + 60	230	-	
	2,5 (2)	2 (2)	1,9 (2)	-	-25 to + 50			
CFVT (3)	-	-	-	1,15/1,35	-25 to + 60	-	24	07

(1) Refer to the dimensional drawings on the following page.
(2) Values with LED indicator and protection, use TPL 20674.
(3) Supplied with LED indicator and protection.

SPECIFICATIONS

Configurator - CAD Files

pipe size	orifice size	flow coefficient Kv		operating pressure differential (bar) min.	max. (PS) air (*) ~	max. (PS) air (*) =	power coil (W) ~	power coil (W) =	catalogue number connector EN 175301-803 (9,4 mm) (type 05) ~/=	catalogue number M12 (type 07) =	options maintained man. operator	options impulse man. operator	
G	(mm)	(m³/h)	(l/min)										
NC - Normally closed, solenoid air pilot operated - spring return (monostable)													
1/4	6	0,75	12,5	2	10	10	1,1..1,5	1,2	**CFSCG551C505**	-	MS	MO	-
							-	1,35	-	**CFVTG551C505**	MS	MO	-
1/2	13	3,15	52,5	2	10	10	1,1..1,5	1,2	**CFSCG553A505**	-	MS	MO	-
							-	1,35	-	**CFVTG553A505**	MS	MO	-
NC - Normally closed, solenoid air pilot operated and return (bistable)													
1/4	6	0,75	12,5	2	10	10	1,1..1,5	1,2	**CFSCG551C506**	-	MS	MO	-
							-	1,35	-	**CFVTG551C506**	MS	MO	-
1/2	13	3,15	52,5	2	10	10	1,1..1,5	1,2	**CFSCG553A506**	-	MS	MO	-
							-	1,35	-	**CFVTG553A506**	MS	MO	-

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SPECIFICATIONS

pipe size	orifice size	flow coefficient Kv		operating pressure differential (bar)			power coil (W)		catalogue number		options		
				min.	max. (PS) air (*)				connector EN 175301-803 (9,4 mm) (type 05)	M12 (type 07)	maintained man. operator	impulse man. operator	
G	(mm)	(m^3/h)	(l/min)		~	=	~	=	~/=	=			
NC - Solenoid air pilot operated - spring return (monostable), certified IEC 61508 Functional Safety data													
1/4	6	0,75	12,5	2	10	10	1,1..1,5	1,2	**CFSCG551C505SL**	-	-	MO	-
							-	1,35	-	**CFVTG551C505SL**	-	MO	-
1/2	13	3,15	52,5	2	10	10	1,1..1,5	1,2	**CFSCG553A505SL**	-	-	MO	-
							-	1,35	-	**CFVTG553A505SL**	-	MO	-

OPTIONS

- Explosionproof enclosures for use in zones 0/20-1/21-2/22, categories 1-2-3 to ATEX-Directive 2014/34/EU (www.asco.com)
- LED and protection, prefix CFSC, use TPL number: TPL 20674 (e.g.: CFSCXG551C505TPL20674)
- Straight M12 connector: with 5 m cable length (catalogue number **88130212**)
- Supply rail (www.asco.com)
- Versions with spade-plug connector type ISO 15217/DIN 43650 form C with 8 mm spacing or with cable ends: contact us
- Other pipe connections are available on request
- Connector with visual indication and peak voltage suppression or with cable length of 2 m (www.asco.com)

INSTALLATION

- 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
- It is necessary to connect pipes or fittings to the exhaust ports to protect the internal parts of the spool valve and its pneumatic operator if used outside or in harsh environments (dusts, liquids etc.)
- IEC 61508 Functional Safety (suffix SL). Check temperature range of valve body and solenoid for suitability. For probability of failure, contact us
- Threaded pipe connection is standard: G = G (ISO 228/1)
- Valves with suffix “SL” are supplied with specific exhaust protectors
- Installation/maintenance instructions are included with each valve

ACCESSORIES

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

(1) Supplied with suffix “SL”.

ORDERING EXAMPLES:

CFSC	G	551 **C** 505		230V / 50 Hz
CFSC	G	551 **C** 505	**SL**	115V / 50 Hz
CFVT	G	553 **A** 506	**MS**	24V / DC
CFSC	G	553 **A** 505	**SLMO**	230V / 50 Hz

prefix — pipe thread — basic number — voltage — suffix

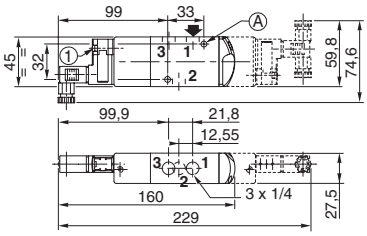
Configurator - CAD Files

DIMENSIONS (mm), WEIGHT (kg)

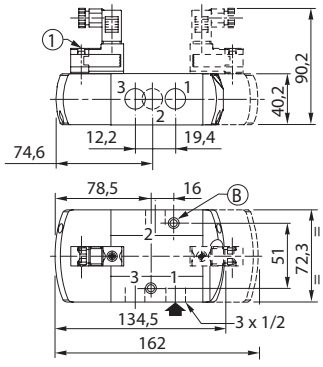


TYPE 05
Prefix "CFSC"
Polyarilamide
IEC 335 / IP65
DIN 43650, 9,4 mm

551



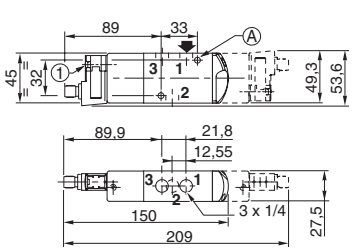
553



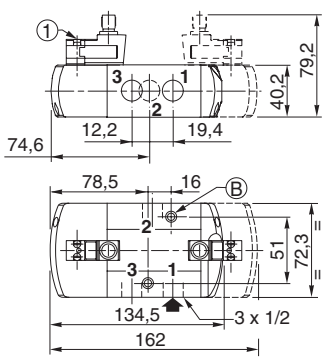


TYPE 07
Prefix "CFVT"
Polyarilamide
IEC 335 / IP67
M12

551



553



type	prefix option	weight (2) monostable 551	monostable 553	bistable 551	bistable 553
05	CFSC	0,33	1,03	0,46	2,08
07	CFVT	0,35	1,04	0,5	2,12

(2) Prefix CFSC: including connector(s).

(1) Manual operator location

2 mounting holes:

(A) 5,3 mm dia. (Spotfacing: 9 mm dia., depth 5 mm)

(B) 6,5 mm dia. (Spotfacing: 11 mm dia., depth 6 mm)

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SUPPLY RAIL

for mounting of
monostable/bistable spool valves
1/4 - 3/8 - 1/2

Series
881

FEATURES

- *Supply rail 1/4 (for valve series 551, L1), 3/8 (for valve series L2) and 1/2 (for valve series 553, L8)*
- *Easy, quick and cost-effective installation*
- *Orientable rail mounting for easy adaption to specific machine arrangement*
- *Available with up to 8 outlets*



GENERAL

Max. inlet pressure 0 - 16 bar [1 bar = 100 kPa]
Differential pressure 0 - 10 bar
Ambient temperature -20°C to + 60°C

fluids (∗)	temperature range (TS)	seal materials (∗)
air, inert gas, filtered	-20°C to + 60°C (1)	NBR (nitrile)

(1) -20°C to +90°C when using valves other than those of series 551/521/LI/L2/553/L8.

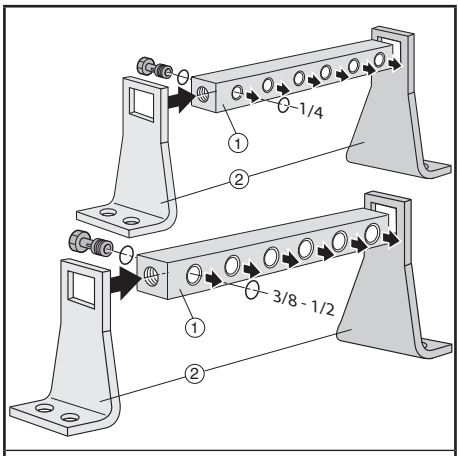
MATERIALS IN CONTACT WITH FLUID

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

Supply rail Aluminium
Banjo bolts Brass nickel plated
O-rings NBR

OTHER MATERIALS

Mounting brackets Steel



① Supply rail
② Set of 2 mounting brackets

SPECIFICATIONS

supply inlet size	orifice size	flow coefficient Kv		operating pressure differential (bar)			number of outlets	catalogue number (supply rail for «n» valves)		
				min.	max. (PS) air inert gas (∗)			for valves G 1/4 (series 521, 551, L1, L2,...)	for valves G 3/8 (series L2,...)	for valves G 1/2 (series 553, L8,...)
G	(mm)	(m^3/h)	(l/min)		~	=				
Supply rail with seals and banjo bolts, without mounting brackets										
3/8 (outlets 2..8 x 1/4)	7	1,2	20	0	10	10	2	**88100034**	-	-
							3	**88100035**	-	-
							4	**88100036**	-	-
							5	**88100037**	-	-
							6	**88100038**	-	-
							7	**88100039**	-	-
							8	**88100040**	-	-
3/4 (outlets 2..8 x 3/8 or 1/2)	12 (3/8) 13 (1/2)	2,7 (3/8) 3 (1/2)	45 (3/8) 50 (1/2)	0	10	10	2	-	**88100800**	**88100759**
							3	-	**88100801**	**88100760**
							4	-	**88100802**	**88100761**
							5	-	**88100803**	**88100762**
							6	-	**88100804**	**88100763**
							7	-	**88100805**	**88100764**
							8	-	**88100806**	**88100765**
Set of 2 mounting brackets										
-	-							**88100049**	**88100773**	

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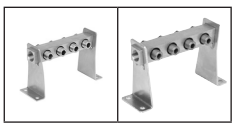
OPTIONS

- Other pipe connections are available on request

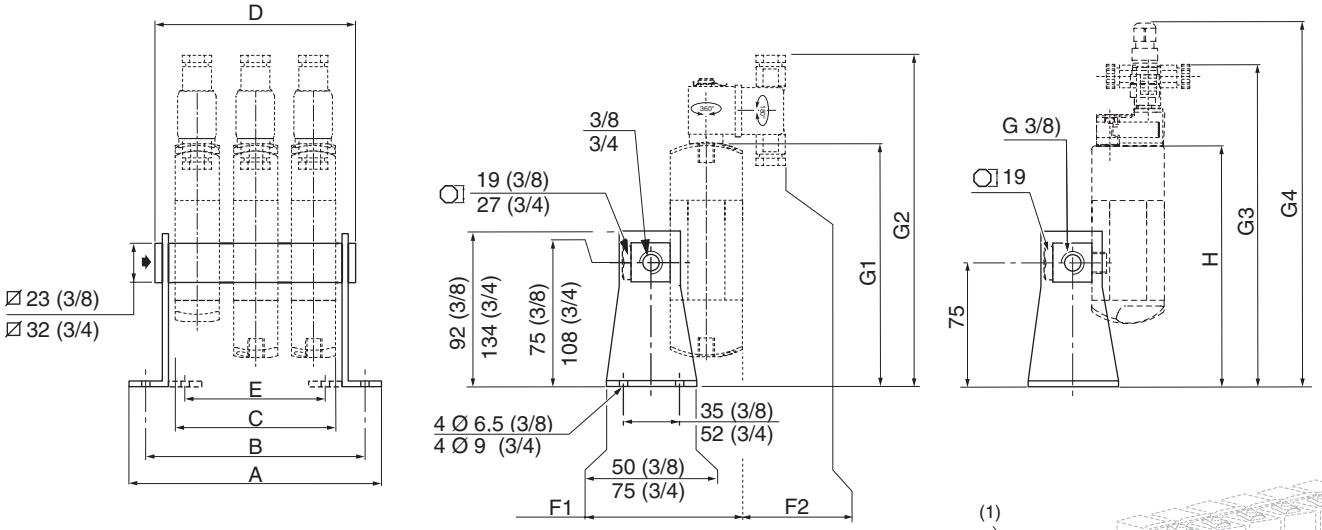
INSTALLATION

- The supply rails can be mounted in any position without affecting operation
- Threaded pipe connection is standard: G = G (ISO 228/1)
- Installation/maintenance instructions are included with each supply rail

DIMENSIONS (mm), WEIGHT (kg)

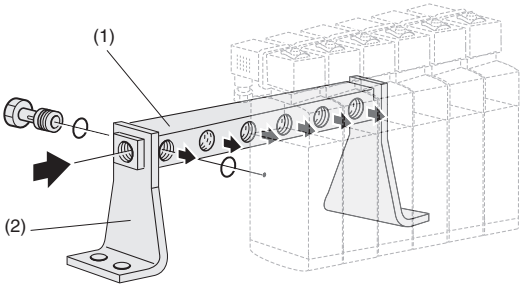


TYPE 01- 02
Supply rails
Aluminium
Type 01 = Inlet G 3/8, outlets G 1/4
Type 02 = Inlet G 3/4, outlets G 3/8 or G 1/2



type	supply inlet size	number of valves	A	B	C	D	E	weight (2)		
								1/4	3/8	1/2
01	3/8	2	108	92	55	78	42	0,125	-	-
		3	136	120	83	106	70	0,176	-	-
		4	164	148	111	134	98	0,225	-	-
		5	192	176	139	162	126	0,276	-	-
		6	220	204	167	190	154	0,326	-	-
		7	248	232	195	218	182	0,374	-	-
		8	276	260	223	246	210	0,424	-	-
02	3/4	2	136	116	81	117	-	-	0,322	0,350
		3	177	157	122	158	-	-	0,454	0,497
		4	218	198	163	199	-	-	0,591	0,648
		5	259	239	204	240	-	-	0,719	0,791
		6	300	280	245	281	-	-	0,844	0,930
		7	341	321	286	322	-	-	0,990	1,091
		8	382	362	327	363	-	-	1,115	1,230

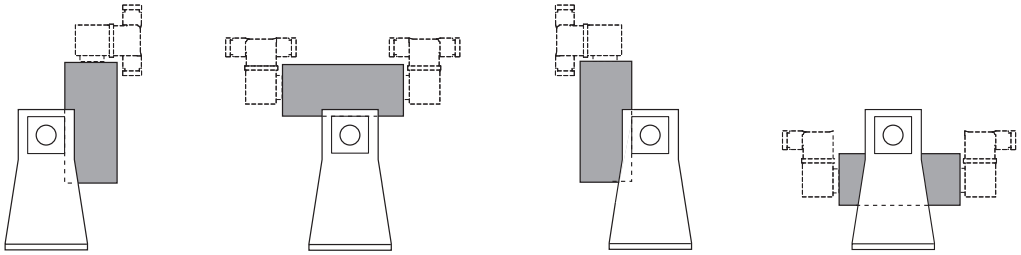
(2) Supply rail with banjo bolts and seals
Additional weight per set of 2 mounting brackets: G 3/8 outlets 1/4 = 0,186 , G 3/4 outlets 3/8 or 1/2 = 0,416



(1) Supply rail
(2) Set of 2 mounting brackets

adaptable valves	F1	F2	G1	G2	G3	G4	H
551	82	27	148	194	197	232	147
521	68	26	-	166	-	-	-
L1	78	22	78	160	-	-	-
552	126	20	202	260	-	-	-
L2	88	22	88	168	-	-	-
553	126	20	202	260	-	-	-
L8	111	22	111	256	-	-	-

This mounting arrangement allows valves to be mounted in any of 4 positions.



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SUPPLY RAIL
WITH PRESSURE ISOLATION VALVES
for mounting of monostable/bistable valves
1/4

Series
881



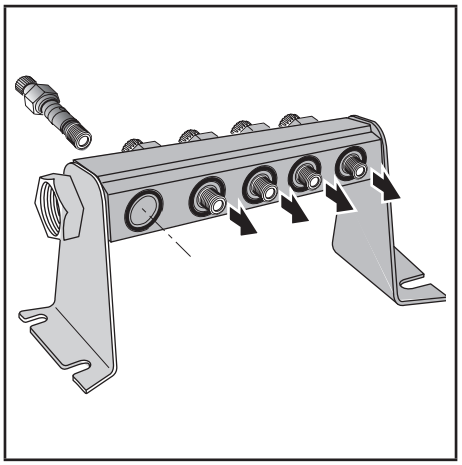
FEATURES

- *Supply rail allowing for easy installation of isolation valves during operation without having to cut the general pressure supply*
- *Supply rail designed for a large variety of 1/4" valves (521, 551, L1, L2)*
- *Isolation valves, mounting brackets and hardware included for immediate installation*
- *Large range of optional accessories to allow the rail to be adapted to different uses: 1/8" isolation valve, supply pressure isolation valve, shut-off valve etc.*

GENERAL

Max. inlet pressure 0 - 16 bar [1 bar = 100 kPa]
Differential pressure 0 - 10 bar
Ambient temperature -20°C to +90°C

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



MATERIALS IN CONTACT WITH FLUID

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

Supply rail Aluminium
End pieces Stainless steel
Screw/isolation valve Stainless steel
O-rings NBR

OTHER MATERIALS

Low mounting brackets (65 mm) Stainless steel

SPECIFICATIONS

supply inlet size	orifice size	flow coefficient Kv		operating pressure differential (bar)			number of outlets	catalogue number (supply rail for «n» valves with end pieces and low 65 mm mounting brackets)
				min.	max. (PS) air inert gas (⁎)			
G	(mm)	(m^3/h)	(l/min)		~	=		
Supply rail with isolation valves, end pieces and low mounting brackets								
1/2 (outlets 2..12 x 1/4)	6,8	1,1	18,3	0	10	10	2	**88100915**
							3	**88100916**
							4	**88100917**
							5	**88100918**
							6	**88100919**
							7	**88100920**
							8	**88100921**
							9	**88100922**
							10	**88100923**
							11	**88100924**
							12	**88100925**

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OPTIONS

- High mounting brackets (120 mm) for lateral and bottom mounting of bistable valves
- Isolation valve with G 1/8 thread for valve type L1
- Supply pressure isolation valve
- Shut-off valve 1/4
- Other pipe connections are available on request

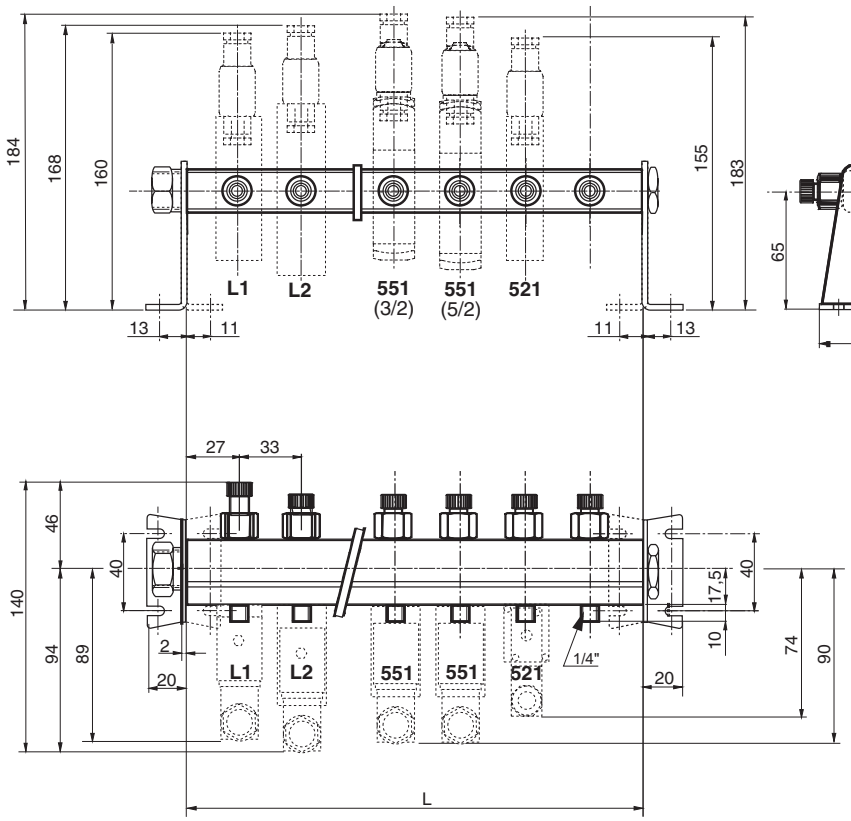
INSTALLATION

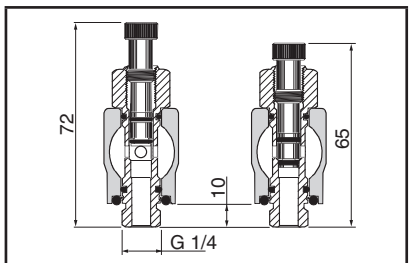
- The supply rails can be mounted in any position without affecting operation
- Threaded pipe connection is standard: G = G (ISO 228/1)
- Installation/maintenance instructions are included with each supply rail

DIMENSIONS (mm), WEIGHT (kg)



TYPE 01
Supply rails
Aluminium
Inlet G 1/2, outlets G 1/4



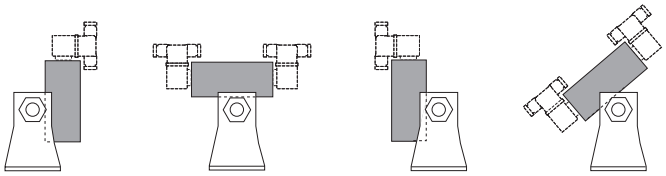


isolation valve

type	supply inlet size	number of valves	L	weight (2) 1/4
01	1/2	2	87	0,125
		3	120	0,176
		4	153	0,225
		5	186	0,276
		6	219	0,326
		7	252	0,374
		8	285	0,424
		9	318	-
		10	351	-
		11	384	-
		12	417	-

(2) Supply rail with plugging screws, mounting brackets and seals.

This mounting arrangement allows valves to be mounted in any of several positions.



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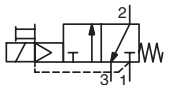
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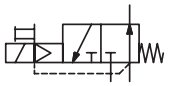
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POPPET VALVES

solenoid air operated
single solenoid (monostable function)
pad mounting body, 1/4 - 3/8 subbases

NC


NO


3/2
Series
261-262
Type
DM

FEATURES

- *CNOMO pad-mount version for valve piloting applications*
- *Flexible installation on joinable subbases*
- *The solenoid air poppet valves satisfy all relevant EU directives*

GENERAL

Operating pressure 2 - 10 bar [1 bar =100 kPa]
Pilot pressure In external supply, the pilot pressure must be equal to or greater than the pressure in the valve

fluids (✳)	temperature range (TS)	seal materials (✳)
air, inert gas, lubricated or not	- 10°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

	Poppet valves	189/190 pilots
Body	Light alloy, treated	PA, glass-filled
Disc	PUR	NBR
Core, core tube and plugnut	-	Stainless steel
Internal parts, springs	Steel, light alloy, POM	Stainless steel
Seals	NBR	NBR
Shading coil	-	Copper

CONSTRUCTION

Mounting pad (189/190 pilots) ISO 15218 (CNOMO 06-05-80 / NF E 49066, size 30)
(subbases) CNOMO 05-05-81/05-05-82 / NF E 49066

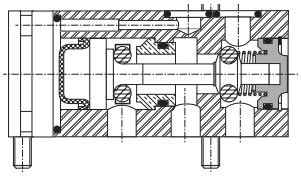
ELECTRICAL CHARACTERISTICS (PILOTS)

Coil insulation class F
Connector 189 pilot Spade plug (cable Ø 6-8 mm)
190 pilot Spade plug (cable Ø 6-10 mm)
Connector specification
189 pilot EN 175301-803, industry standard form B (11 mm)
190 pilot ISO 4400 / EN 175301-803, form A
Electrical safety IEC 335
Electrical enclosure protection Moulded IP65 (EN 60529)
Standard voltages DC (=): 24V - 48V
(Other voltages and 60 Hz on request) AC (~): 24V - 48V - 115V - 230V / 50 Hz

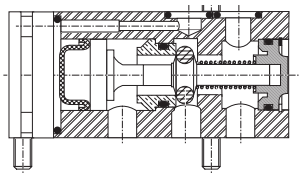
pilot	power ratings inrush ~ (VA)	power ratings holding ~ (VA)	power ratings holding ~ (W)	power ratings hot/cold = (W)	operator ambient temperature range (TS) (C°)	replacement coil ~ 230 V/50 Hz	replacement coil = 24 V DC	type (1)
189	6	3,5	2,5	2,5 / 3	-10 to + 60	43004422	43004166	01..04
190	9	4	3	3 / 3	-10 to + 60	43004472	43004473	

(1) Refer to the dimensional drawings on the following page.





NC function

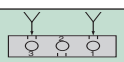


NO function

SPECIFICATIONS

pipe size (G)	orifice size (mm)	flow at 6,3 bar l/min (ANR)	flow coefficient Kv (l/min)	operating pressure (bar) min.	operating pressure (bar) max. (PS) air (✳) ~	operating pressure (bar) max. (PS) air (✳) =	catalogue number (2 catalogue numbers) poppet valve (without pilot)	+	pilot (with connector) ~/=	without man. operator	maintained man. operator	impulse man. operator	power coil (pilot) (W) ~	power coil (pilot) (W) =	reference
NC - Normally closed															
pad mounting (2) 1/4	8	700	10	2	10		**26190067**	+	**18900001**		●		2,5	3	G/DMP 301/O
									19000005	×			3	3	
pad mounting (2) 3/8	12	1750	25	2	10		**26290352**	+	**19000006**		●		3	3	G/DMP 302/O
									19000017			▼	3	3	
NO - Normally open															
pad mounting (2) 1/4	8	700	10	2	10		**26190068**	+	**18900001**		●		2,5	3	G/DMP 301/F
									19000005	×			3	3	
pad mounting (2) 3/8	12	1750	25	2	10		**26290353**	+	**19000006**		●		3	3	G/DMP 302/F
									19000017			▼	3	3	

SUBBASES

pipe size		designation	composition	catalogue number
Zamak subbases				
tapped (G) (3)	1/4	laterally-connected single subbase (3 connectable lateral ports)		**35300049**
		laterally-connected joinable subbase (3 connectable lateral ports)		**35300057**
	3/8	laterally-connected single subbase (3 connectable lateral ports)		**35700002**
		laterally-connected joinable subbase (3 connectable lateral ports)		**35700010**

(2) Port 3: M5 (189/190 pilots).

(3) The subbases can be mounted on omega rail to EN 50022 using 2 clips (clips sold in packs of 10, catalogue number: **33400036**).

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OPTIONS

- Explosionproof enclosures for use in zones 1/21-2/22, categories 2-3 to ATEX Directive 2014/34/EU (see "Explosionproof solenoids" section): Ex mb (**PV**), **PV18901001 / PV19000005/6/17** / Potentially explosive atmospheres (**SG**), zone 22
- External solenoid valve supply plate, catalogue number: **88122201** (1/8)
- Plug with visual indication and peak voltage suppression or with cable length of 2 m (see Solenoids, Coils & Accessories section)

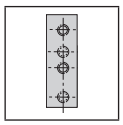
INSTALLATION

- The solenoid valves can be mounted in any position without affecting operation
- Mounting on single or joinable subbases
- ATEX 2014/34/EU versions (options "SG" and "PV") can be installed on single (all versions) or joinable zink diecast subbases
- Pipe connections (G) have standard thread according to ISO 228/1
- Installation/maintenance instructions are included with each valve

ORDERING EXAMPLES:

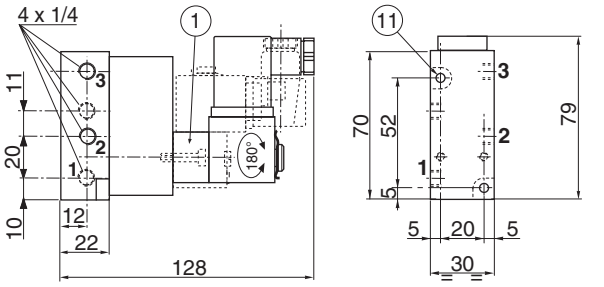
basic number		voltage
26190067	18900001	230V / 50 Hz
26290352	19000006	24V / DC

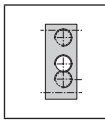
DIMENSIONS (mm), WEIGHT (kg)



TYPE 01
Single subbase
1/4 - Zamak

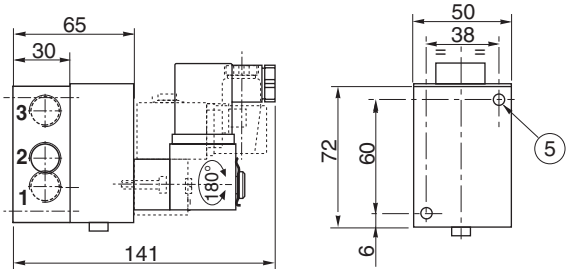
35300049

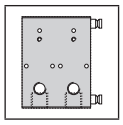




TYPE 02
Single subbase
3/8- Zamak

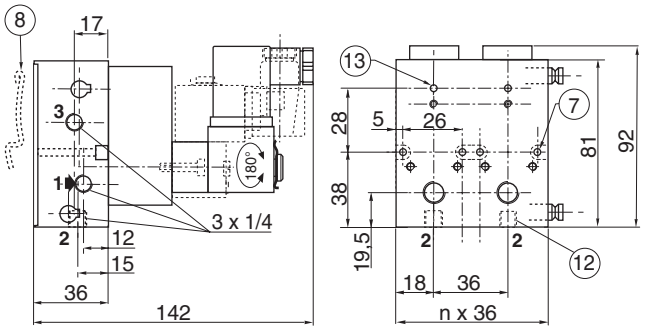
35700002

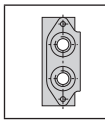




TYPE 03
Joinable subbase
1/4 - Zamak

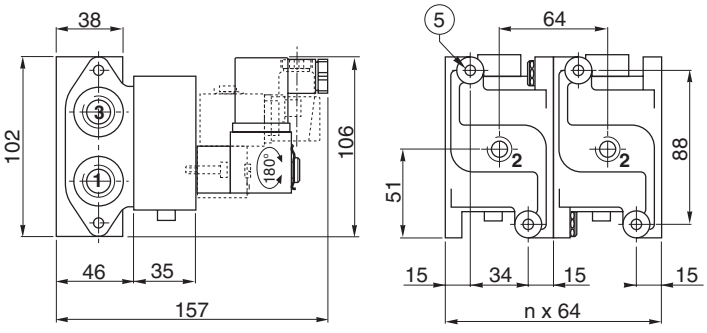
35300057





TYPE 04
Joinable subbase
3/8 - Zamak

35700010



type	weight
01	0,45
02	0,80
03	0,50
04	0,80

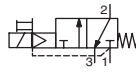
(1) Manual operator location
(7) Mounting: two dia. 4,5 mm securing holes
(8) Adaptable clips
(11) Mounting: two dia. 4,5 mm securing holes, dia. 8 mm counter-bores, depth 6 mm
(12) Port 2: Accessible by removing cap
(13) Mounting: two dia. 4,5 mm securing holes, dia. 7,5 mm counter-bores, depth 6 mm

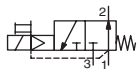
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POPPET VALVES
solenoid air operated
G3/8 to G1 1/2 tapped body

NC 

NO 

3/2
Series
284-285-286
Type
DH

GENERAL

FLUID	: air or neutral gas, filtered, lubricated or not
PRESSURE	: 2 to 10 bar (Pilot 190) 2 to 12 bar (Pilot 192)
MAX. ALLOW. TEMPERATURE	: -10°C to +60°C
FLOW (Qv at 6 bar)	: see table below
PILOT PRESSURE	: In external supply, the pressure of the pilot fluid **must be at least** equal to the fluid pressure



CONSTRUCTION

Series284
Body: die-casting zinc alloy
Sealing: nitrile (NBR)
and polyurethane (PUR)
Internal parts: light alloy
and acetal resin (POM)

Series 285/286
Body and internal parts : light alloy
Sealing : nitrile (NBR)

ELECTRICAL CHARACTERISTICS OF PILOTS

Type of sol. valve		Voltages	Consumption Inrush	Consumption Hold	Insulation class	Protection degree	Electrical connection
Series 190	~	24V - 48V - 115V - 230V / 50 Hz	9VA	4VA (3W)	F	IP 65	spade plug size 30 connector, ISO4400/EN175301-803, form A, rotatable by 90°
	=	24V - 48V	3 W				
Series 192	~	24V - 48V - 115V - 230V / 50 Hz	12VA	6VA(4W)	F	IP 65	
	=	24V - 48V	5 W				

The solenoid valve 190 is dual voltage (24 V~,12 V=) (48V~, 24V=) (115 V~, 48 V=) (230 V~, 115 V=)

SPECIFICATIONS
NC FUNCTION

Pipe size 1 and 2	Pipe size 3	Orifice size (mm)	Flow at 6 bar l/min (ANR)	Flow Coeff. KV	2 catalogue numbers VALVE	+	PILOT with standard connector	(M)	Reference
G 3/8	G 1/2	12	4500	64	**28490040**	+	**19000005**	×	-
G 1/2	G 1/2	15	6000	85	**28490041**	+	**19000006**	●	-
G 3/4	G 1	26	12500	180	**28590238**	+	**19000017**	▼	G/DH 304/O
G 1	G 1	26	12500	180	**28590239**	+	-	×	G/DH 305/O
G 1 1/4	G 1 1/2	40	35000	500	**28690025** *	+	**19201001**	●	GDM/DH 306/O
G 1 1/2	G 1 1/2	40	35000	500	**28690026** *	+	**19201002** **19201003**	▼	GDM/DH 307/O

NO FUNCTION

G 3/8	G 1/2	12	4500	64	**28490042**	+	**19000005**	×	-
G 1/2	G 1/2	15	6000	85	**28490043**	+	**19000006**	●	-
G 3/4	G 1	26	12500	180	**28590240**	+	**19000017**	▼	G/DH 304/F
G 1	G 1	26	12500	180	**28590241**	+	-	×	G/DH 305/F
G 1 1/4	G 1 1/2	40	35000	500	**28690027** *	+	**19201001**	●	GDM/DH 306/F
G 1 1/2	G 1 1/2	40	35000	500	**28690028** *	+	**19201002** **19201003**	▼	GDM/DH 307/F

(M) Type of manual operator on pilot(s): × : without ● : maintained ▼ : impulse
*This equipment is always supplied with an intermediate amplifier for valves 3/2 - Ø 8 mm, Series 261 (**26190067**)

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OPTIONS

- Other voltages or 60Hz frequency on request
- Applications as a valve 2/2 (NC or NO), 3/2 with an amplifier, 3/2 or with pressure selection (can be used with vacuum - cat no. **28490027**)
- Solenoid pilot 190 with solenoid head for dusty explosive atmospheres (**SG**), zone 22 (www.asco.com)
- Connector with cable outlet, 2 m long: cat no. **88122612** (www.asco.com)
- Connector with transil protection (see "Coils and Accessories" section) (www.asco.com)
- Solenoid valve with connector and built-in visual indicator and protection :

Solenoid valve **without** connector ——— **+** ———Connector with built-in visual indicator and RC protection

Type of solenoid valve	(M)	**catalogue number** of solenoid valve without connector
190 NC	×	**19000013**
	●	**19000014**
	▼	**19000018**
192 NC (1)	×	**19201022**
	●	**19201023**
	▼	**19201024**

+

catalogue number			
24 V (~/=)	48 V (~/=)	115 V (~/=)	230 V (~/=)
88122603	**88122604**	**88122605**	**88122608**

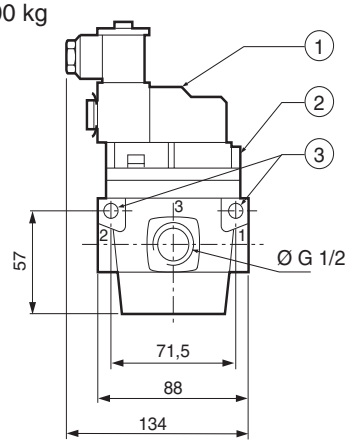
(M) Type of manual operator on pilot(s) : × : without ● : maintained ▼ : impulse

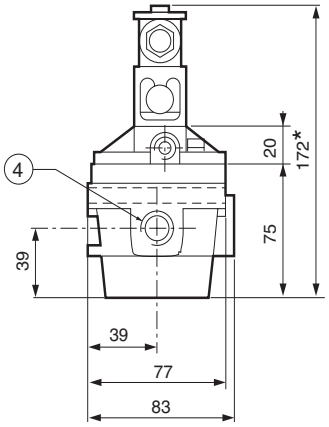
(1) Solenoid valve series 192 - 3/2 NC - Ø 2.1mm with exhaust in subbase

DIMENSIONS AND WEIGHTS

VALVE **Series 284**

Weight : 1,t700 kg

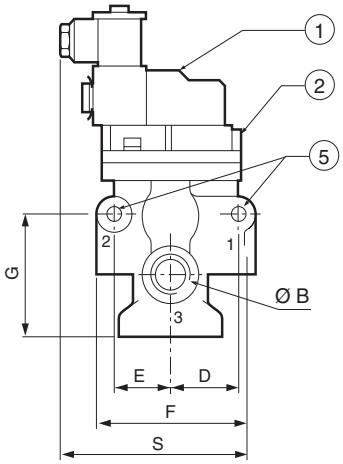


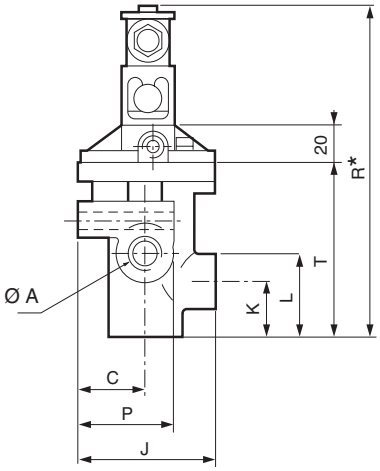


1 Manual operator
2 Orifice G 1/8 for external supply
3 Side mounting : 2 Ø 9
4 2 Ø G 3/8 or G 1/2
5 Side mounting : 2 Ø N

* + 15 mm for plug removal

VALVE **Series 285 - 286**





Orifices 1 & 2 Ø A	Orifices 3 Ø B	C	D	E	F	G	J	K NC	K NO	L	ØN	P	R	S	T	(kg)
G 3/4 G 1	G1	39	43,5	39	113	91	92	88	45	67	9	62	223	149	126	1,450
G 1 1/4 G 1 1/2	G1 1/2	46	66,5	52	165	130	124	124	64	94	13	78	333	176	207	4,150

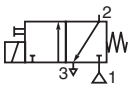
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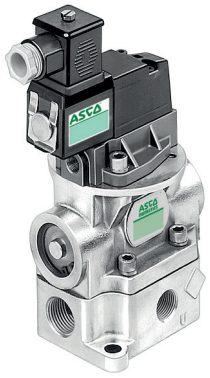
POPPET VALVES
solenoid air operated
G1/2 to G1 1/2 subbase-mounted body

3/2
Series
266-267-268
Type
DP

NC 

GENERAL

FLUID	:	Air or neutral gas, filtered, lubricated or not
PRESSURE	:	2 to 10 bar (pilot 190) 2 to 12 bar (pilot 192)
TEMPERATURE	:	- 10 °C, + 60 °C
FLOW (Qv at 6 bar)	:	see table below
PILOT PRESSURE	:	In external supply, the pressure of the pilot fluid **must be at least** equal to the fluid pressure



CE

CONSTRUCTION
Body in light alloy
Internal parts in stell and light alloy
Sealing in nitrile (NBR)
Subbases in light alloy

ELECTRICAL CHARACTERISTICS OF PILOTS

Type of sol. valve		Voltages	Consumption Inrush	Consumption Hold	Insulation class	Protection degree	Electrical connection
Series 190	~	24V - 48V - 115V - 230V / 50 Hz	9VA	4VA (3W)	F	IP 65	spade plug size 30 connector, ISO4400/EN175301-803, form A, rotatable by 90°
	=	24V - 48V	3 W				
Series 192	~	24V - 48V - 115V - 230V / 50 Hz	12VA	6VA(4W)	F	IP 65	
	=	24V - 48V	5 W				

The solenoid valve 190 is dual voltage (24 V~,12 V=) (48V~, 24V=) (115V~, 48 V=) (230V ~, 115V=)

SPECIFICATIONS

Pipe size	Orifice size (mm)	Flow at 6 bar l/min (ANR)	Flow coef. KV	Fluid pressure(1) (bar) min.	Fluid pressure(1) (bar) max.	2 catalogue numbers VALVE	+	PILOT with standard connector	(M)	Reference
G 1/2	14	3000	42	2	10/12	**26690018**	+	**19000005** **19000006** **19000017**	× ● ▼	G/DP 303/O
G 1	22	9100	130	2	10/12	**26790014**	+	**-** **19201001**	× ●	G/DP 305/O
G 1 1/2	40	31500	450	2	10/12	**26890298** (2)	+	**19201002** **19201003**	● ▼	GDM/DP 307/O

(M) Type of manual operator on pilot(s): × : without ● : maintained ▼ : impulse
(1) 10 bar (with pilot 190), 12 bar (with pilot 192)
(2) Valve always delivered with an intermediary amplifier valve 3/2 - Ø 8 mm, series 261 (cat no. **26190067)**

SUBBASES

For a valve with mounting face	CHARACTERISTICS Subbase type	Pipe size	Connection type	**catalogue number**	References
CNOMO 06.05.82/83 AFNOR E49068/69 **G 1/2**	SINGLE	G 1/2	Side ports	**35700014**	P/DP 303
	JOINABLE	G 1/2	Side ports	**35700034**	PJ/DP 303
CNOMO 06.05.84 AFNOR E49070 **G 1**	SINGLE	G 1	Side ports	**35700016**	P/DP 305
	JOINABLE	G 1	Side ports	**35700036**	PJ/DP 305
CNOMO 06.05.85 AFNOR E49071 **G 1 1/2**	SINGLE	G 1 1/2	Bottom ports	**35700030**	P/DP 307

OPTIONS
- Other voltages or frequency 60 Hz, on request
- Solenoid pilot 190 with solenoid head for dusty explosive atmospheres (**SG**), zone 22
- Solenoid valve, intrinsically safe (contact us)
- Connector with cable outlet, 2 m: cat no. **88122612**
- Solenoid valve 190 - 192 with connector and built-in visual indicator and protection
- Valve function NO (normally open to rest)

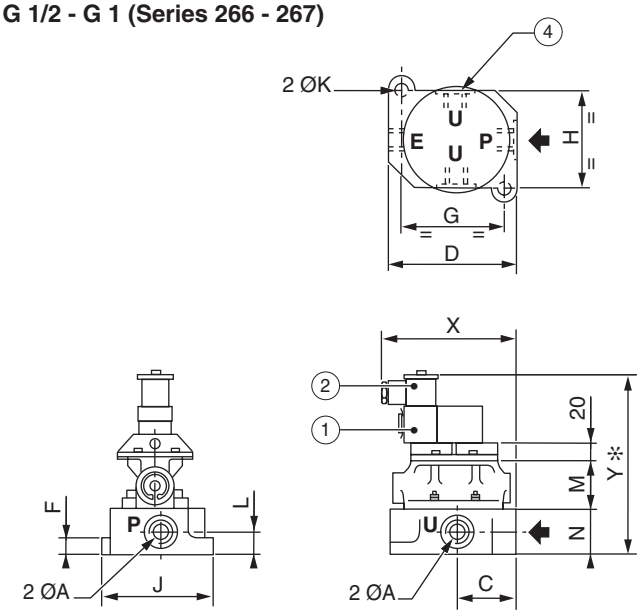
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DIMENSIONS AND WEIGHTS OF SUBBASE MOUNTED POPPET VALVES

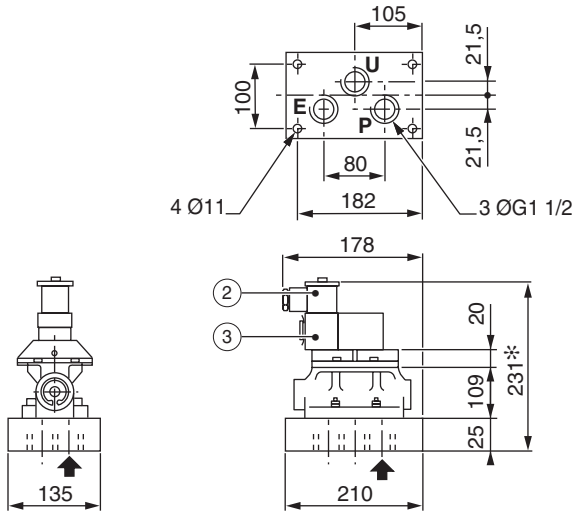
VALVE ON **SINGLE** SUBBASES
G 1/2 - G 1 (Series 266 - 267)



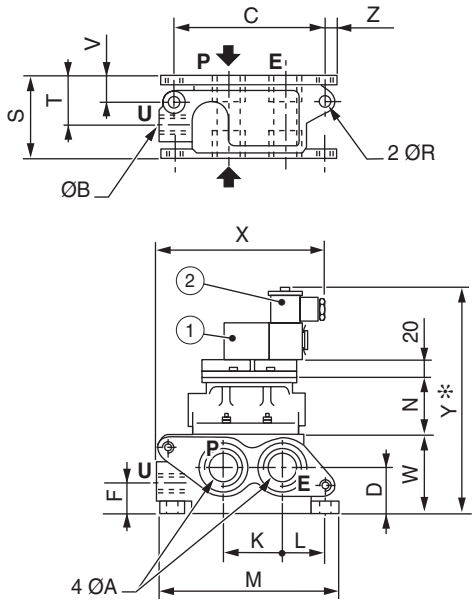
Series	266	267
ØA	G 1/2	G 1
C	49	93,5
D	92	164
F	9	12
G	76	144
H	62	68
J	78	88
K	9	11
L	18	25
M	58	74
N	34	55
X	115	155
Y	189	226
Weight (kg)	1,500	2,300

① Pilot series 190 or 192
② Connector rotatable by 90°
③ Pilot series 192
④ "U" connectable on 2 ports
* +15 mm for connector clearance

VALVE ON **SINGLE** SUBBASES
G 1 1/2 (Series 268)
Weight : 3 kg



VALVE ON **JOINABLE** SUBBASES
G 1/2 - G 1 (Series 266 - 267)



Series	266	267
ØA	G 3/4	G 1 1/4
ØB	G 1/2	G 1
C	130	172
D	36	56
F	25	37
L	34	45
M	152	203
N	58	74
R	11	14
S	85	104
T	56	63
V	28	32
W	65	95
X	149	176
Y	220	266
Z	11	14
Weight (kg)	2,100	3,700

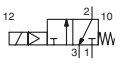
① Pilot series 190 or 192
② Connector rotatable by 90°
* +15 mm for connector clearance

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POPPET VALVES
solenoid air operated
ISO 5599/1 subbase-mounting body



3/2
Series
G34
Type
ISO size 3



FEATURES
- *Modular assembly with joinable subbases*
- *Subbases with side or bottom ports*

GENERAL

Fluid	Air or neutral gas, filtered, lubricated or not
Operating pressure	+1 to +10 bar (with internal supply to pilot) -0,950 to +21 bar (with external supply to pilot)
Ambient temperature	-10°C to +60°C
Flow (Qv at 6 bar)	5675 l/min (ANR)
Response time	See “specification”
Life time	200 millions of cycles
Base	ISO 5599/1 sizes 1-2-3 - AFNOR NF E49080
Subbase	Single subbase ISO/AFNOR NF E49085 Joinable subbase ISO/VDMA 24345 Joinable subbase with integrated functions

CONSTRUCTION

Body	Aluminium
Others parts	Stainless steel, steel, aluminium alloy or plastic
Seals	NBR (nitrile)

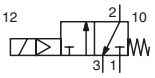
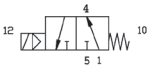
PILOTS
3/2 NC solenoid valves, **190 series**, pad mounting body ISO 15218 (size 30)

ELECTRICAL CHARACTERISTICS

pilot	voltage		consumption inrush	consumption hold	insulation class	protection degree	electrical connection
series 190	~	24V-48V-115V-230V/50 Hz	9 VA	4 VA (3 W)	F	IP 65	spade plug size 30 connector, ISO4400/EN175301-803, form A, rotatable by 90°
	=	24V-48V	3 W				

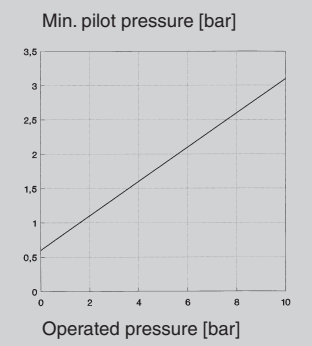
The solenoid valve 190 is dual-voltage (24V~, 12V=) (48V~, 24V=) (115V~, 48V=) (230V~, 110V=)

SPECIFICATIONS

function symbol		operators: pilot (14) solenoid air operated return (12)	taille	response time (ms) energized	response time (ms) de-energized	pilot pressure (bar) min..	pilot pressure (bar) max..	2 catalogue numbers: valve	+ solenoid pilot quantity & catalogue number: with standard connector	(M)
NC		spring return	ISO 3	30	65	0,6	10	**G34BC300-X**	+ 1x **19000005**	×
									+ 1x **19000006**	●
NO		spring return	ISO 3	30	65	0,6	10	**G34BO300-X**	+ 1x **19000017**	▼

(M) Type of manual operator on pilot(s): × : without ● : maintained ▼ : impulse

When ordering, please specify in addition to the basic solenoid valve catalogue number the type of current: voltage / frequency of the solenoid valve
Examples : **G34BC300-X** + *1 x* **19000017** 24V/CC



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OPTIONS

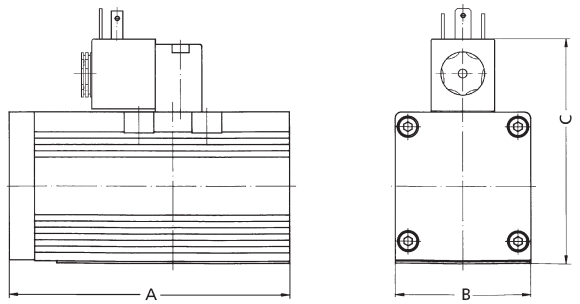
- Solenoid valve pilot 3/2 series 190 with M12 connection
- 16 bar version with solenoid valve pilot series 192
- Material and solenoid pilot valve for use in potentially **explosive atmospheres** caused by gases or dusts - ATEX directive 2014/34/EU (contact us)
- Connector with cable 2 m long ( )
- Connector with transil protection ( )
- Solenoid valve with plug and built-in visual control and protection:

Solenoid valve **without** connector			+	Connector with built-in visual control and VDR/RC protection			
type of valve	(M)	**catalogue number** solenoid valve **without** connector		**catalogue number** (~ / =)			
				24V	48V	115V	230V
190 NF	×	**19000013**	+	**88122603**	**88122604**	**88122605**	**88122608**
	●	**19000014**					
	▼	**19000018**					

(M) Type of manual operator on pilot(s) : × : without ● : maintained ▼ : impulse

SUBBASES AND ACCESSORIES : see “Subbases/ISO sizes 1-2-3”

DIMENSIONS (mm), WEIGHT (kg)



type	A	B	C	weight
G34B.300A...	134,5	64	107,5	1,450

Incl. bolts and gaskets (gaskets of H-NBR)

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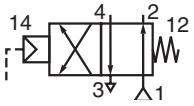
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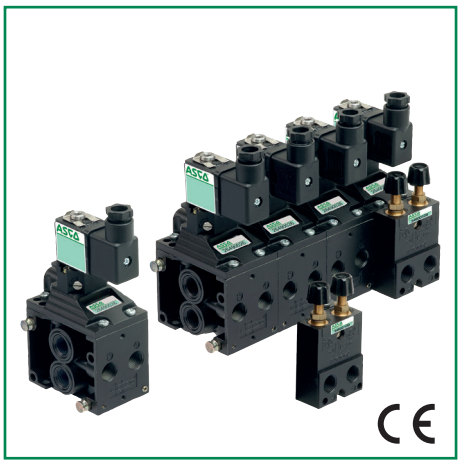
POPPET VALVES

solenoid air operated

instant fittings ø 6 mm O.D. (series 263)
or G1/8 (series 263) - G1/4 (series 264) tapped body

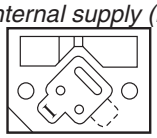


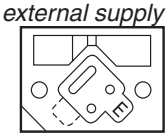
4/2
Series
263-264



FEATURES

- *Unit can be mounted individually or joined together by using diabolos with sunken locking screws*
- *Valves are fitted with pilot seals, which means that valves can be adapted to: internal supply (mark I) or external supply (mark E).*





GENERAL

Fluid	Air or neutral gaz, filtered, lubrificated or not
Operating pressure	2 to 10 bar
Pilot pressure	With external supply, the pilot pressure must be equal or superior to the pressure in the valve
Ambient temperature	-10°C to +60°C
Flow (Qv at 6 bar)	See "specifications"

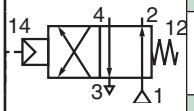
CONSTRUCTION

Body	Zinc diecast
Poppet	Aluminium
Seals	NBR (nitrile)

ELECTRICAL CHARACTERISTICS

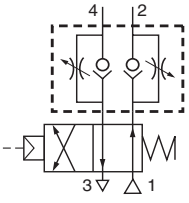
pilot	voltage		consumption inrush	consumption hold	insulation class	degree of protection	electrical connection
series 189	~	24V-48V-115V-230V/50Hz	6 VA	3,5 VA (2,5 W)	F	IP 65	spade plug size 22 connector DIN 43650, 11 mm, industry standard B, rotatable x 180°
	=	24V-48V	2,5 W				

SPECIFICATIONS

symbol	pipe size	orifice size (mm)	flow at 6 bar l/min (ANR)	flow Kv coefficient	fluid pressure (bar) min	fluid pressure (bar) max.	2 catalogue numbers valve	+ pilot (~ / =)	(M)
	ports 2-4 with instant fittings ports 1-3: G1/8	3	210	3	2	10	**26390005**	**18900001**	●
	tapped G1/8	3	210	3	2	10	**26390002**	**18900001**	●
	tapped G1/4	6	840	12	2	10	**26490026**	**18900001**	●

(M) Type of manual operator on pilot(s) : ● : maintained

ACCESSORIES



- Unit consisting of 2 flow regulators, joinable
  - for valve 263 (instant fittings Ø 6 mm) - cat. no.: **34600211**
  - for valve 263 (G 1/8) - cat. no.: **34600209**
  - for valve 264 (G 1/4) - cat. no.: **34600109**
- Transfer unit for association of valves series 263 and 264, allowing communication of pressure feed (1) and exhaust (3) ports (18 mm thick). - cat. no.: **88126303**
- Power supply unit separate from main pressure
  - for valve 263 (G 1/8) - cat. no.: **88126301**
- The valves series 263 can be mounted on EN 50022 - AFNOR NF C63015 rail using mounting clips.
  - 10 clips - cat. no.: **33400036**



OPTIONS

- For equipment and pilot valves for use in potentially **explosive atmospheres** caused by dusts or gases, in accordance with ATEX Directive 2014/34/EU.

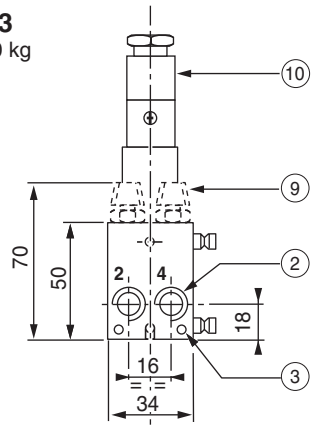
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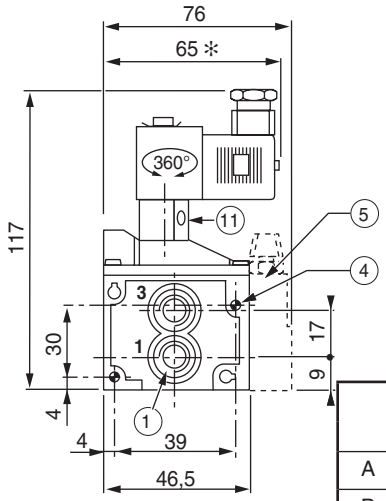
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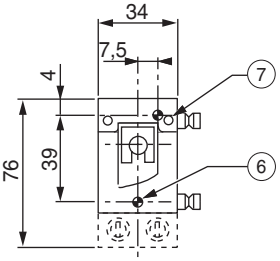
DIMENSIONS (mm), WEIGHT (kg)

VALVE 263
weight: 0,450 kg





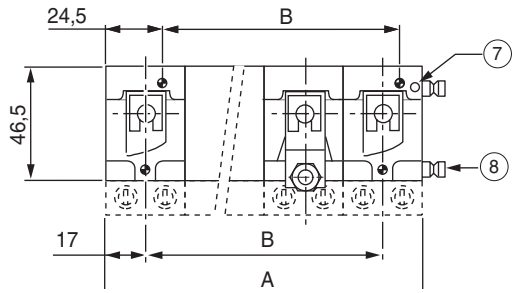
view from above



number of valves								
	2	3	4	5	6	7	8	+ 1
A	68	102	136	170	204	238	272	+ 34
B	34	68	102	136	170	204	238	+ 34

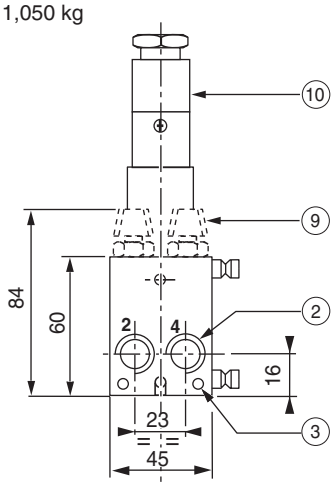
Joinable valves

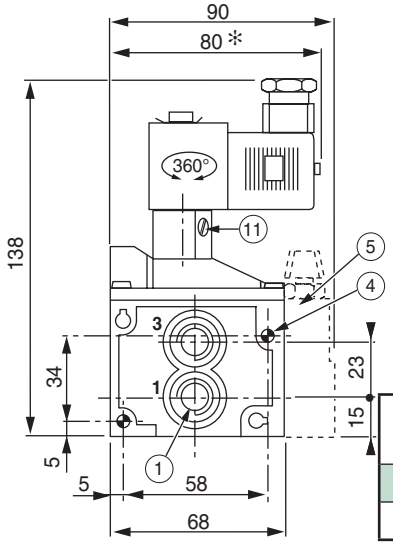
view from above



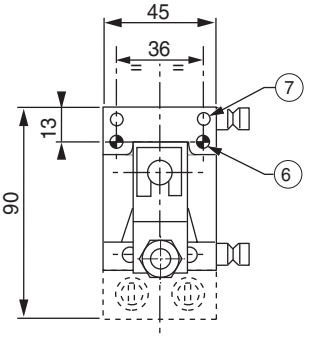
① 4 ports G 1/8
Valve supplied with 1 plug on orifices 1 and 3 seall joints
② 2 ports G 1/8 or instant fittings Ø 6 OD
③ 2 grub screns for joining spindles
④ 2 screws for side mounting Ø 4,2 x 34
⑤ Accessory : Flow regulator
⑥ Top mounting 2 holes Ø 4,2 x 50
⑦ 2 grub screns for joining spindles
⑧ Joining spindles
⑨ Flow rate adjustment buttons
⑩ Pilot series 189
⑪ Manual operator
✻ +15 mm for plug removal

VALVE 264
weight: 1,050 kg





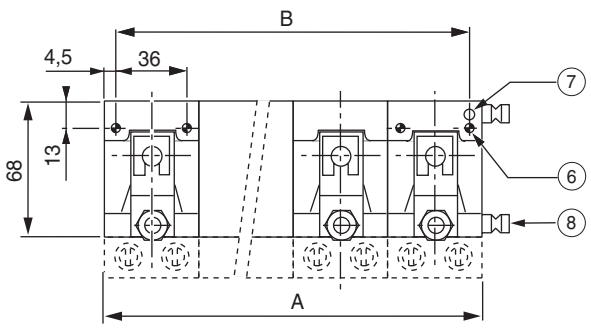
view from above



number of valves								
	2	3	4	5	6	7	8	+ 1
A	90	135	180	225	270	315	360	+45
B	81	126	171	216	261	306	351	+45

Joinable valves

view from above



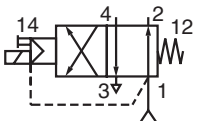
① 4 ports G 1/4
Valve supplied with 1 plug on orifices 1 and 3 seal joints
② 2 ports G 1/4
③ 2 grub screns for joining spindles
④ 2 screws for side mounting Ø 5,5 x 45
⑤ Accessory : Flow rate regulator
⑥ Top mounting 2 holes Ø 5,5 x 60
⑦ 2 grub screns for joining spindles
⑧ Joining spindles
⑨ Flow rate adjustment buttons
⑩ Pilot series 189
⑪ Manual operator
✻ +15 mm for plug removal

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POPPET VALVES
solenoid air operated
G1/4 - G3/8 subbase-mounted body



4/2
Series
261-262
Type
DM



GENERAL

FLUID	: Air or neutral gas, filtered, lubricated or not
PRESSURE	: 2 to 10 bar
TEMPERATURE	: -10°C to +60°C
FLOW (Qv at 6 bar)	: see table below
PILOT PRESSURE	: in external supply, the pilot pressure **must be equal** or superior to the pressure in the valve

CONSTRUCTION
Body: light alloy
Sealings: polyurethane (PUR) and nitrile (NBR)
Mating surface to CNOMO 06-05-71/72 and AFNOR NF E49061/062
Internal parts: steel, light alloy and acetal resin (POM)

ELECTRICAL CHARACTERISTICS OF PILOTS

Type of sol. valve		Voltages	Consumption Inrush	Consumption Hold	Insulation class	Protection degree	Electrical connection
Series 189	~	24V - 48V - 115V - 230V / 50 Hz	6VA	3,5VA(2,5W)	F	IP 65	spade plug connector size 22 EN 175301-803, industry standard form B (11 mm), rotatable by 180°
	=	24V - 48V	2,5W				
Series 190	~	24V - 48V - 115V - 230V / 50 Hz	9VA	4VA(3W)	F	IP 65	spade plug size 30 connector, ISO4400/EN175301-803, form A, rotatable by 90°
	=	24V - 48V	3W				

The solenoid valve 190 is dual-voltage (24V~,12V=) (48V~,24V=) (115V~,48V=) (230V~, 115V=)

SPECIFICATIONS

Pipe size	Orifice size (mm)	Flow at 6 bar l/min (SRA)	Flow KV coefficient	Fluid pressure (in bar) min.	Fluid pressure (in bar) max.	2 **catalogue numbers** VALVE	+	PILOT with standard connector	(M)	Reference
Subbase-mounted 1/4"	8	700	10	2	10	**26190069**	+	**18900001**	●	G/DMP 401
								19000005	×	
								19000006	●	
								19000017	▼	
Subbase-mounted 3/8"	12	1750	25	2	10	**26290354**	+	**18900001**	●	G/DMP 402
								19000005	×	
								19000006	●	
								19000017	▼	

(M) Type of manual operator on pilot(s): × : without ● : maintained ▼ : impulse

SUBBASES

Valve mating surface	DESIGNATION Type of subbase	DESIGNATION Pipe size	DESIGNATION Type of port	**catalogue number**	Reference
CNOMO 06.05.71 AFNOR E49061 **G 1/4**	SINGLE	G 1/4	Side	**35700003**	P/DMP 401
	JOINABLE	G 1/4	Bottom	**35700008**	PJ01/DMP 401
CNOMO 06.05.72 AFNOR E49062 **G 3/8**	SINGLE	G 3/8	Side	**35700004**	P/DMP 402
	JOINABLE	G 3/8	Bottom	**35700011**	PJ02/DMP 401-402

OPTIONS
- Other voltages and 60 Hz on request
- Solenoid pilot valves 189-190-192 with connector and built-in visual indicator and protection
- Solenoid pilot valve 189 with explosion-proof Ex **mb** coil
- Solenoid pilot valves 189/190 with solenoid head for dusty explosive atmospheres (**SG**), zone 22
- External solenoid valve supply plate, code : **88122201** (G 1/8)

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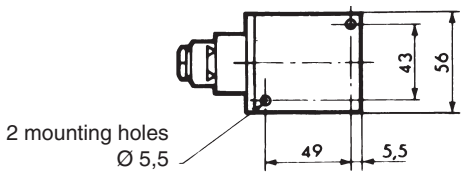
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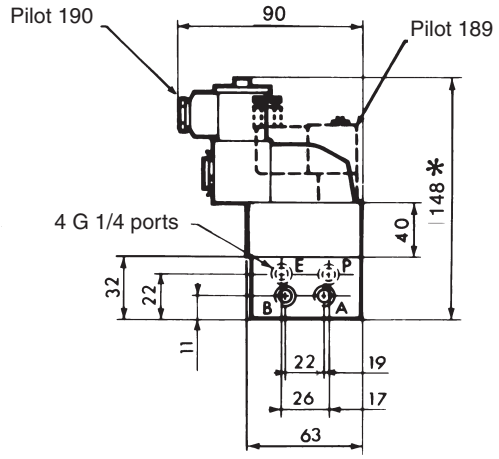
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DIMENSIONS AND WEIGHTS

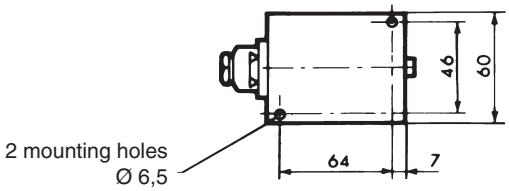
VALVE ON **SINGLE** SUBBASE

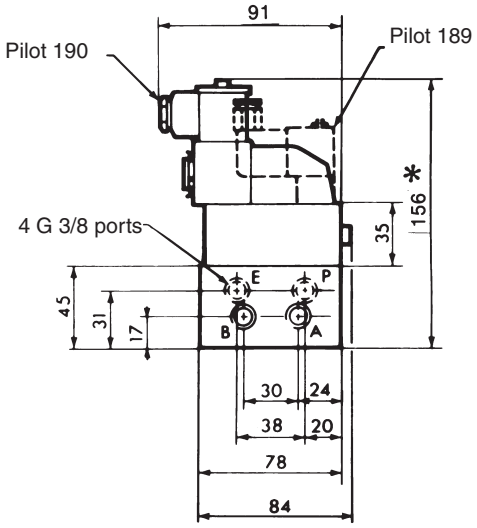
G 1/4 ports
Subbase: cat no. **35700003**
Weight: 0,750 kg





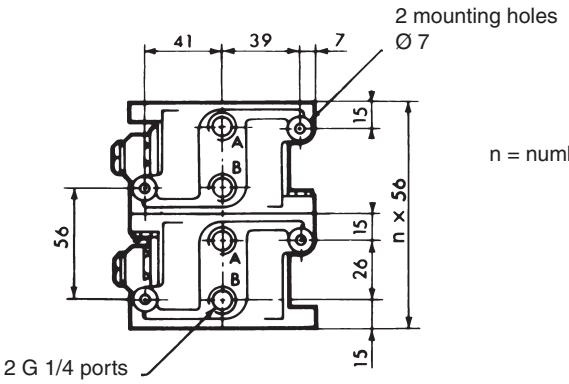
G 3/8 ports
Subbase: cat no. **35700004**
Weight: 1,050 kg





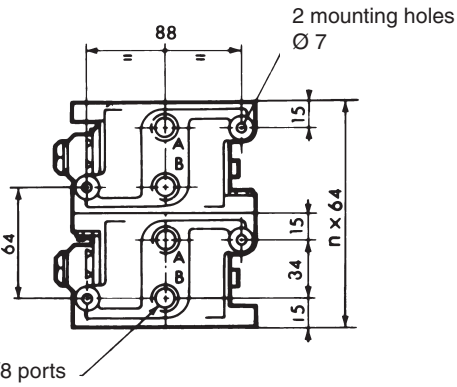
VALVE ON **JOINABLE** SUBBASE

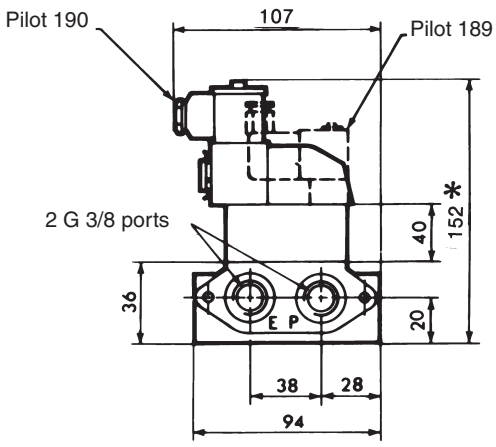
G 1/4 ports
Subbase: cat no. **35700008**
Weight: 0,700 kg

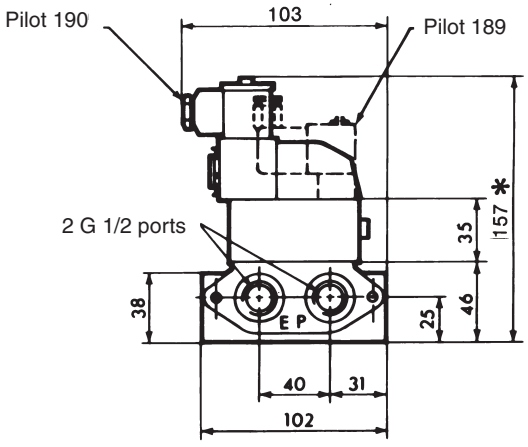


n = number of subbases

G 3/8 ports
Subbase: cat no. **35700011**
Weight: 0,950 kg







* + 15 mm for connector removal

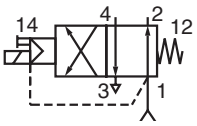
+ 16 mm for external solenoid valve supply plate

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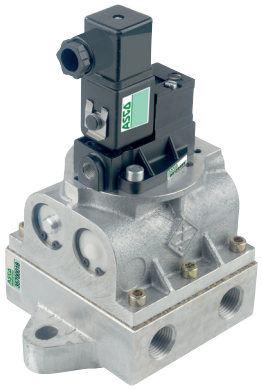
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POPPET VALVES
solenoid air operated
G1/2 to G1 1/2 subbase-mounted body



4/2
Series
266-267-268
Type
DP



GENERAL
FLUID : Air or neutral gas, filtered, lubricated or not
PRESSURE : 2 to 10 bar (190 pilot)
2 to 12 bar (192 pilot)
AMBIENT TEMPERATURE : -10°C to +60°C
FLUID TEMPERATURE : -10°C to +60°C
FLOW (Qv at 6 bar) : see table below
PILOT PRESSURE : In external supply, the pressure of the pilot fluid **must be at least** equal to the fluid pressure

CONSTRUCTION
Body in light alloy
Internal parts in stell and light alloy
Sealing in nitrile (NBR)
Subbases in light alloy

ELECTRICAL CHARACTERISTICS OF PILOTS

Type of sol. valve		Voltages	Consumption Inrush	Consumption Hold	Insulation class	Protection degree	Electrical connection
Series 190	~	24V - 48V - 115V - 230V / 50 Hz	9VA	4VA (3W)	F	IP 65	spade plug size 30 connector, ISO4400/EN175301-803, form A, rotatable by 90°
	=	24V - 48V	3 W				
Series 192	~	24V - 48V - 115V - 230V / 50 Hz	12VA	6VA(4W)	F	IP 65	
	=	24V - 48V	5 W				

The solenoid valve 190 is dual voltage (24V ~, 12V =) (48V ~, 24V =) (115V ~, 48V =) (230V ~, 115V =).

SPECIFICATIONS

Pipe size	Orifice size (mm)	Flow at 6 bar l/min (ANR)	Flow coeff. KV	Fluid pressure(1) (bar) mini	Fluid pressure(1) (bar) maxi	2 catalogue numbers VALVE	+ PILOT with standard connector	(M)	References
G 1/2	14	3000	42	2	10/12	**26690017**	**19000005**	×	G/DP 403
							19000006	●	
							19000017	▼	
G 1	22	9100	130	2	10/12	**26790013***	**19201001**	×	GDM/DP 405
							19201002	●	
							19201003	▼	
G 1 1/2	40	31500	450	2	10/12	**26890297***			GDM/DP 407

(M) Type of manual operator on pilot(s): × : without ● : maintained ▼ : impulse
(1) 10 bar (with pilot 190) - 12 bar (with pilot 192)
✶ This equipment is always supplied with an intermediate amplifier for valves 3/2 - Ø 8 mm, series 261 (cat no. **26190067**)

SUBBASES

For a valve with mounting face	Subbase type	Pipe size	Connection type	catalogue number	References
CNOMO 06.05.72/73	SINGLE	G 1/2	Side ports	**35700018**	P/DP 403
AFNOR E49062/63	JOINABLE			**35700038**	PJ/DP 403
CNOMO 06.05.74	SINGLE	G 1	Side ports	**35700020**	P/DP 405
AFNOR E49064	JOINABLE			**35700040**	PJ/DP 405
CNOMO 06.05.75 AFNOR E49065	SINGLE	G 1 1/2	Bottom ports	**35700032**	P/DP 407

OPTIONS : See overleaf

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OPTIONS

- Other voltages or frequency 60 Hz, on request
- 190 series solenoid pilot valve with solenoid head for dusty explosive atmospheres (**SG**), zone 22
- Solenoid valve, intrinsically safe (contact us)
- Connector with cable outlet, 2 m: cat no. **88122612**
- Solenoid valve with connector and built-in visual indicator and protection

ORDERING

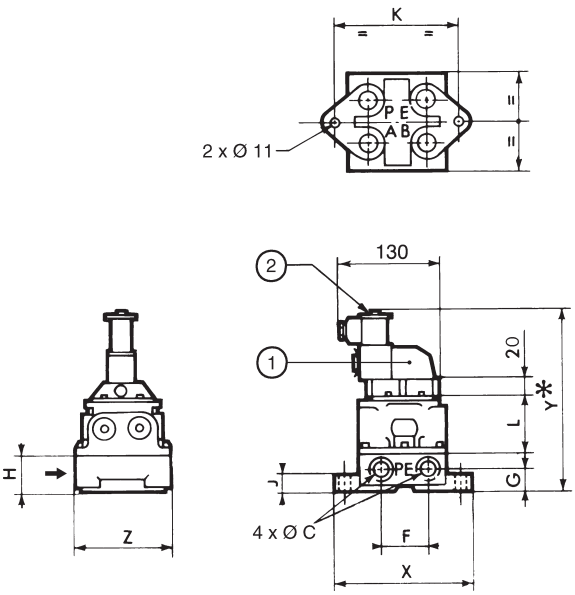
The valve, solenoid pilot and subbase must be ordered separately and the quantity and code of each component must be indicated. These items are delivered disassembled.

DIMENSIONS AND WEIGHTS OF SUBBASE MOUNTED POPPET VALVES

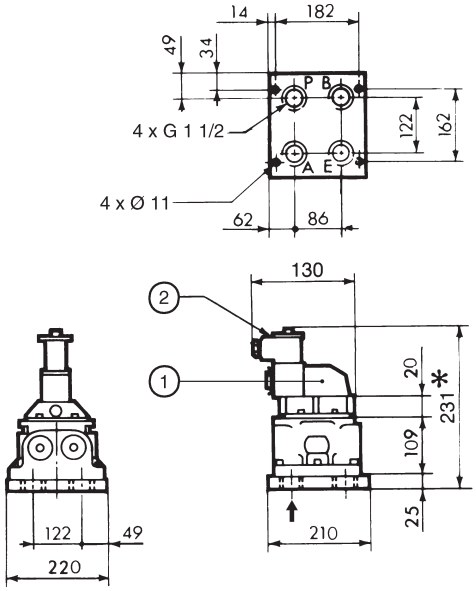
VALVE ON **SINGLE** SUBBASES

G 1/2 - G 1 **(series 266 - 267)**

series	266	267
Ø C	G 1/2	G 1
F	57	82
G	26	35
H	45	63
J	20	20
K	133	170
L	63	78
X	162	198
Y	205	238
Z	111	130
Weights (kg)	2,5	4,3

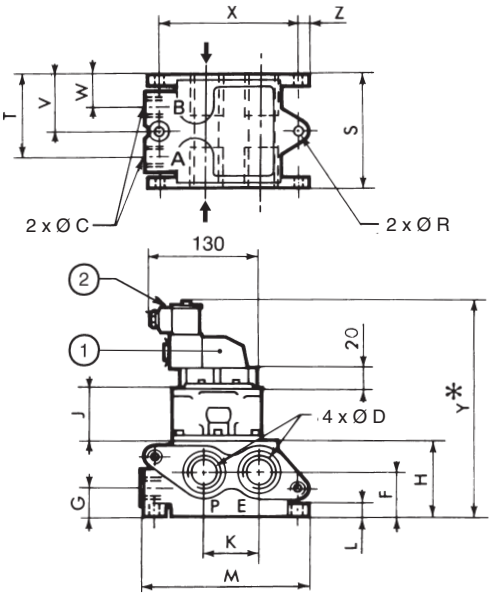


G 1 1/2 **(series 268)**
Weight : 8,160 kg



VALVE ON **JOINABLE** SUBBASES **(Series 266 - 267)**

series	266	267
Ø C	G 1/2	G 1
Ø D	G 3/4	G 1 1/4
F	36	56
G	25	37
H	65	95
J	63	78
K	49	66
L	14	20
M	152	203
R	11	14
S	114	149
T	85	108
V	57	77
W	29	46
X	130	172
Y	225	270
Z	11	14
Weights (kg)	3	5,9



① Pilot 190 or 192
② Connector rotatable by 90°
✻ + 15 mm for connector clearance

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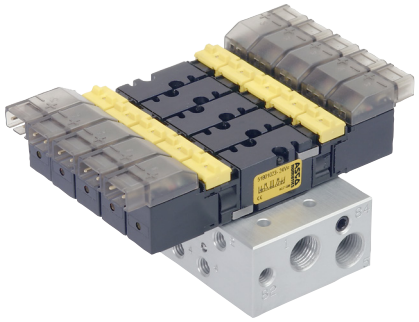
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MICRO SPOOL VALVES

solenoid air operated

Ø M5 subbase-mounted body with side outlets

3/2-5/2-5/3
Series
518
Type
Micro 10



CE

GENERAL

Fluid	Air or neutral gas, non-lubricated, filtered at 25 µm
Operating pressure	2 to 8 bar
Ambient temperature	+5°C to +50°C
Flow (Qv at 6 bar)	See "specifications"
Manual override	Impulse-type and maintained

CONSTRUCTION

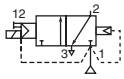
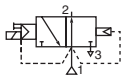
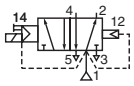
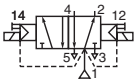
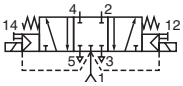
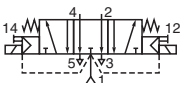
Body	Light alloy, PA (polyamide)
Internal parts	Light alloy, brass, stainless steel
Seals	NBR (nitrile)

ELECTRICAL CHARACTERISTICS

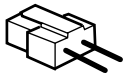
voltage (other voltages on request)	consumption	insulation class	protection degree	electrical connection
24V = 12 V = 5 V = (+10%, -15%)	1 W	F	IP 40	connector with two 0.5 mm² lead wires + built-in LED and electrical protection or cable ends, 0,5 m long

The solenoid valves are designed for continuous operation within the maximum ambient temperature limits.

SPECIFICATIONS

function symbol		operators pilot (14) solenoid air operated return (12)	flow at 6 bar l/min (ANR)	flow coeff. Kv	response time (ms) ener-gized	response time (ms) de-ener gized	consumption (W)	type of electrical connection (✻)	catalogue number (1)
3/2	NC 	differential return	100	1,43	9	25	1,3	1	51801002
								2	51801150
								3	51801151
								4	51801152
							1	5	51801153
	NO 	differential return			9	25	1,3	1	51801004
								2	51801154
								3	51801155
								4	51801156
							1	5	51801157
5/2		differential return	100	1,43	9	25	1,3	1	51801021
								2	51801158
								3	51801159
								4	51801160
							1	5	51801161
		solenoid air operated return			6	-	1,3	1	51801023
								2	51801162
								3	51801163
								4	51801164
							1	5	51801165
5/3		pressure held **W1**	80	1,15	8	15	1,3	1	51801031
								2	51801166
								3	51801167
								4	51801168
							1	5	51801169
		pressure release **W3**			8	15	1,3	1	51801033
								2	51801170
								3	51801171
								4	51801172
							1	5	51801173

(✻) Type 1, 2, 3, 4 with LED and electrical protection
1 = horizontal, width 5,08 mm
2 = vertical, width 5,08 mm
3 = horizontal, width 2,54 mm
4 = vertical, width 2,54 mm
5 = Cable ends 0,5 m long, 0,25 mm²



(1) The connectors must be ordered **separately** indicating the quantity and one of the following codes:
Connectors with 2 lead wires
Pin spacing 5,08 mm - Length 0,5 m - **cat.no.: 88118801**
- Length 1,5 m - **cat.no.: 88118802**
- Length 3 m - **cat.no.: 88118803**

Pin spacing 2,54 mm - Length 0,5 m - **cat.no.: 88118806**
- Length 1,5 m - **cat.no.: 88118807**
- Length 3 m - **cat.no.: 88118808**

SUBBASES : see overleaf

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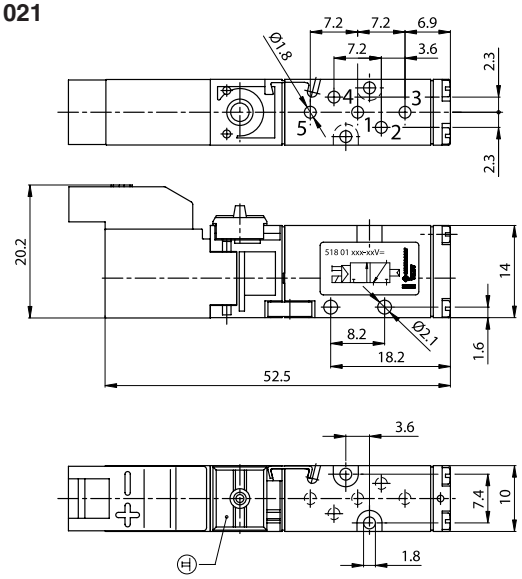
DIMENSIONS (mm), WEIGHT (kg)

ELECTRICAL CONNECTION

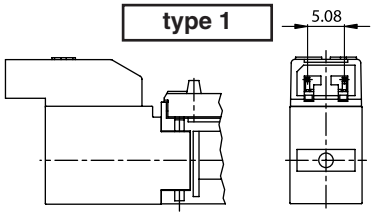
MICRO SPOOL-VALVES 3/2 - 5/2
cat.no. 51801002, 51801004, 51801021

weight	
spool-valve	1 connector
0,023	0,005

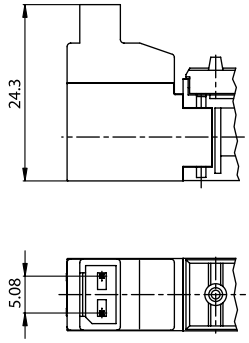
1 = pressure
2,4 = outlets
3,5 = exhausts



type 1



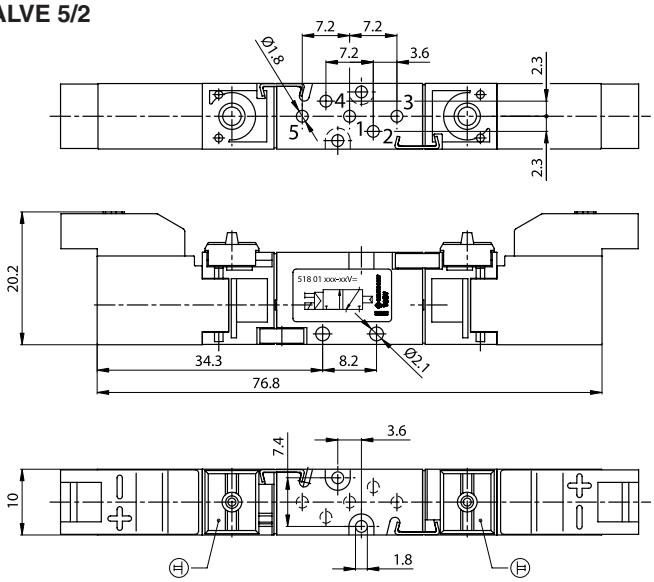
type 2



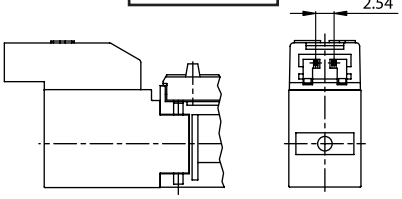
IMPULSE MICRO SPOOL-VALVE 5/2
cat.no. 51801023

weight	
spool-valve	2 connectors
0,037	0,010

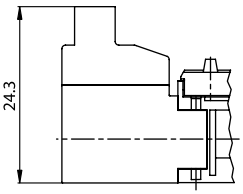
1 = pressure
2,4 = outlets
3,5 = exhausts



type 3



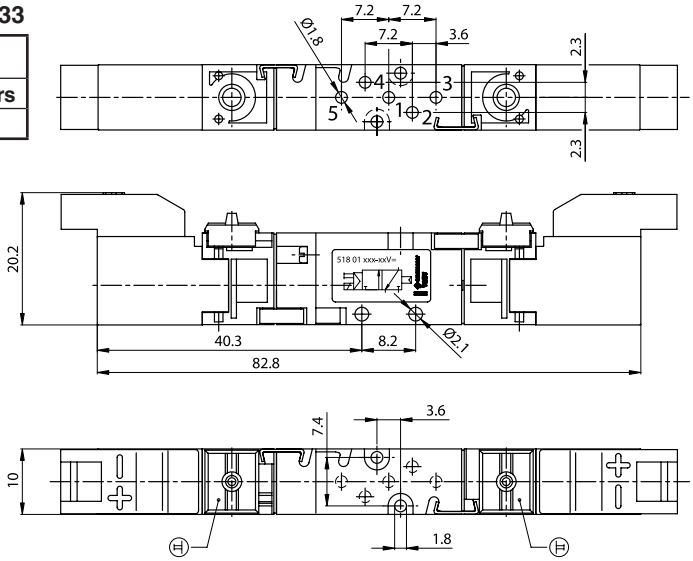
type 4

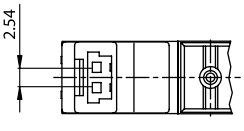


MICRO SPOOL-VALVES 5/3
cat.no. 51801031, 51801033

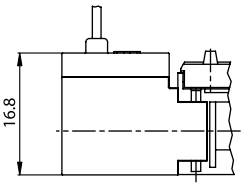
weight	
spool-valve	2 connectors
0,040	0,010

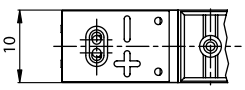
1 = pressure
2,4 = outlets
3,5 = exhausts





type 5





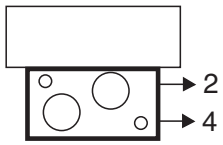
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SUBBASES

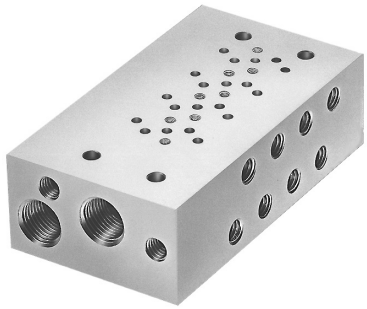
for solenoid air operated spool valves
with subbase-mounted body,
Ø M5 side ports



Series
355
Type
Micro 10

CONSTRUCTION

Utilization connector (2-4) ØM5 (on sides)
Material Light alloy



SUBBASES IDENTIFICATION - WEIGHT (kg)

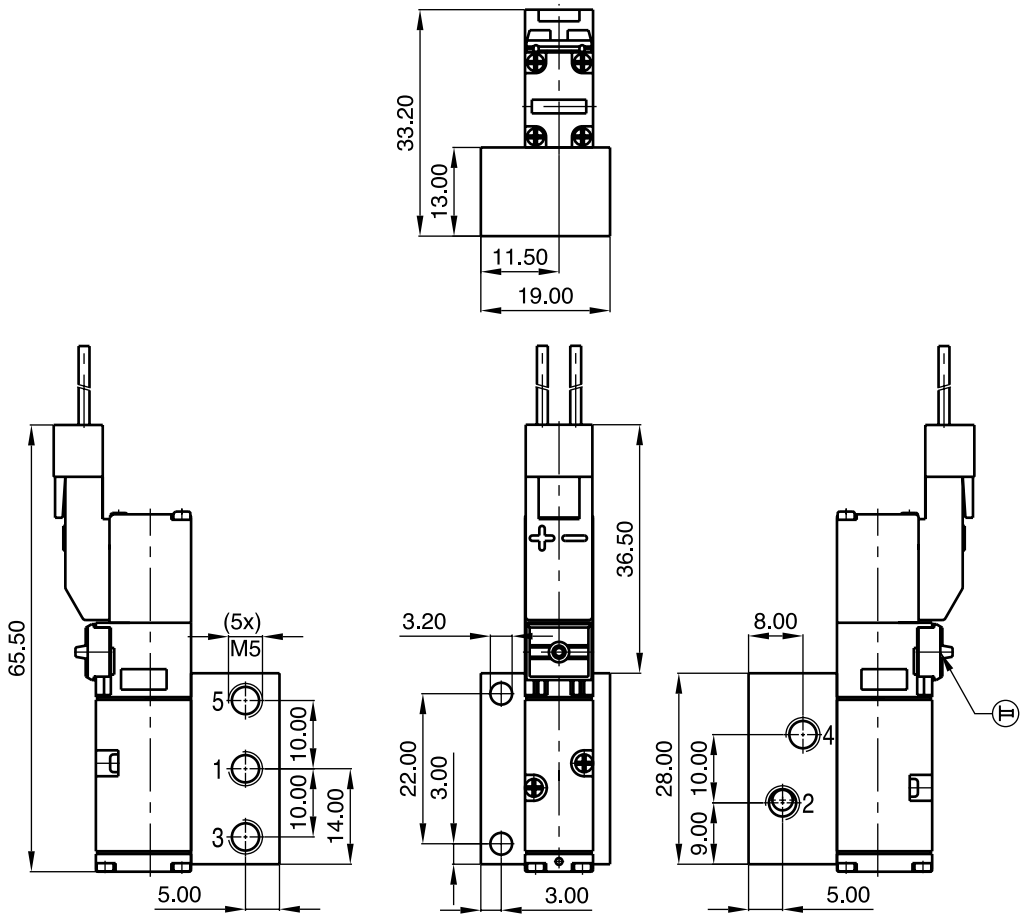
subbase type	no. of spool valves	subbase code	subbase weight	port connection				
				1	3	5	2-4	82-84
single subbase	1	**35500251**	0,016	M5	M5	M5	M5	M3
multiple subbases	2	**35500252**	0,092	G 1/8	-	G 1/8	M5	M5
	3	**35500253**	0,120					
	4	**35500254**	0,142					
	5	**35500255**	0,165					
	6	**35500256**	0,190					
	7	**35500257**	0,213					
	8	**35500258**	0,236					
	9	**35500259**	0,260					
	10	**35500260**	0,284					

Blanking plate: **cat.no. 88135533**

82-84 : Pilot exhaust
Multiple subbases :
The 1-5-82-84 ports can be connected at both ends. Subbases are delivered with sealing plugs.

DIMENSIONS (mm)

3/2 - 5/2 - 5/3 SPOOL-VALVES ON **SIMPLE** SUBBASE **(cat.no. 35500251)**



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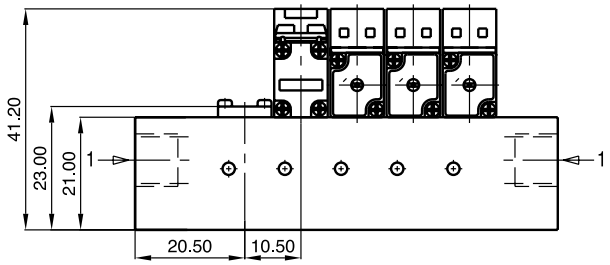
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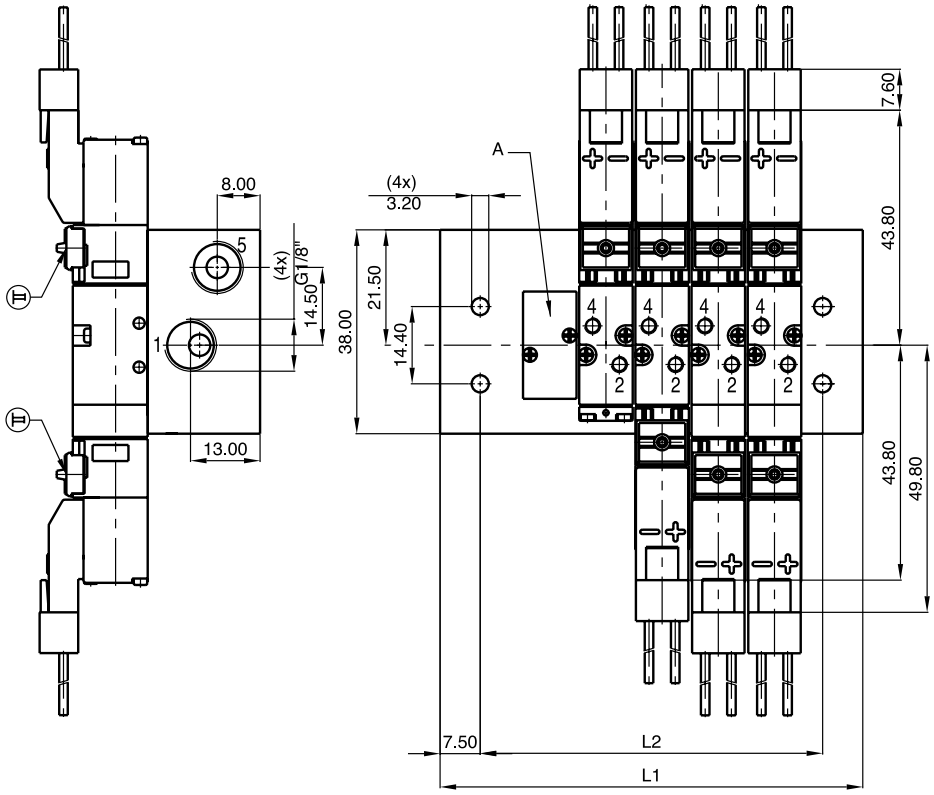
DIMENSIONS (mm), WEIGHT (kg)

3/2 - 5/2 - 5/3 SPOOL-VALVES ON **MULTIPLE** SUBBASE
Solenoid operated micro spool valves subbase

subbase catalogue number	no. of spool valves	length		subbase weight
		L1	L2	
35500252	2	47,5	32,5	0,092
35500253	3	58	43	0,120
35500254	4	68,5	53,5	0,142
35500255	5	79	64	0,165
35500256	6	89,5	74,5	0,190
35500257	7	100	85	0,213
35500258	8	110,5	95,5	0,236
35500259	9	121	106	0,260
35500260	10	131,5	116,5	0,284

A: Blanking plate: **cat.no. 88135533**



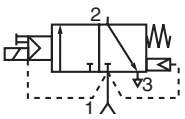


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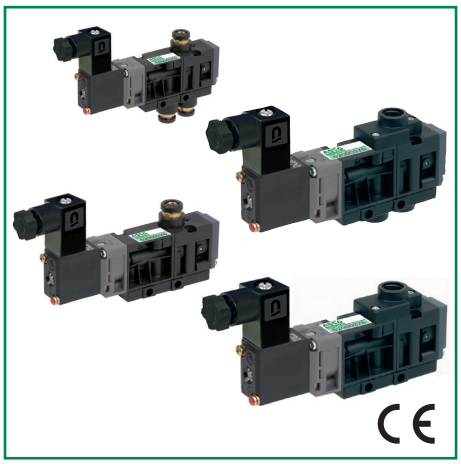
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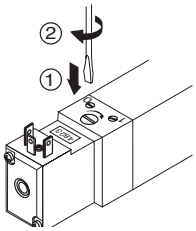
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MINI SPOOL VALVES
solenoid air operated
plastic body
individual mounting or joinable subbase
G1/8 tapped body or 6 mm O.D instant fittings



3/2
Series
520





GENERAL

Fluid	Air or neutral gaz, filtered, lubricated or not
Operating pressure	1,5 to 8 bar
Ambient temperature	+5°C to +50°C
Flow (Qv at 6 bar)	400 l/min (ANR) - Kv : 5,7
Response time	
energized	15 ms
de-energized	45 ms
Connection	Instant fittings Ø 6 O.D. or G 1/4 subbases
Mounting	individual or joinable subbases

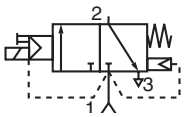
CONSTRUCTION

SPOOL VALVES	
Body	POM (polyacetal)
Cover	POM (polyacetal)
Internal parts	POM (polyacetal) and brass
Seals	NBR (nitrile)
Manual operator	Maintained, impulse Latchable in hold position (push-turn)
PILOT	
Seals	NBR (nitrile)
Electrical equipment	Conforming to NF C79300 standard
Coil and iron circuit	Encapsulated

ELECTRICAL CHARACTERISTICS

voltages		consumption	insulation class	protection degree	electrical connection
~	24V, 115V, 230V - 50/60Hz	2 VA (1,5 W)	F	IP 65	spade plug size 15 connector, DIN 43650, 9,4 mm, industry standard B, rotatable by 90°
=	24V	1,6 W			

SPECIFICATIONS

function symbol		operators solenoid air operated pilot (14) return (12)	connection		catalogue number			
			port 2	ports 1-3	24V ~	115V ~	230V ~	24V =
3/2 NC		differential return	instant fitting 6 mm O.D.	inst. fitting 6mm O.D.	**52000214**	**52000215**	**52000216**	**52000213**
				subbase mounted	**52000210**	**52000211**	**52000212**	**52000209**
			tapped G 1/8	tapped G 1/8	**52000194**	**52000195**	**52000196**	**52000193**
				subbase mounted	**52000190**	**52000191**	**52000192**	**52000189**

3/2 NO version (operating pressure 2,5 to 8 bar) : on request

ACCESSORIES

visual indicator (LED) and electrical protection ( )	24V =/~	**88130401**
	115V ~	**88130402**
	230V ~	**88130403**
connector size 15 with cable, 2 m long		**88143567**
connector size 15 with built-in visual indication and protection, with cable outlet, 2 m long ( )	24V =/~	**88143580**

SUBBASES
possible mounting on joinable subbases. Fixing screws and seals are supplied with subbases

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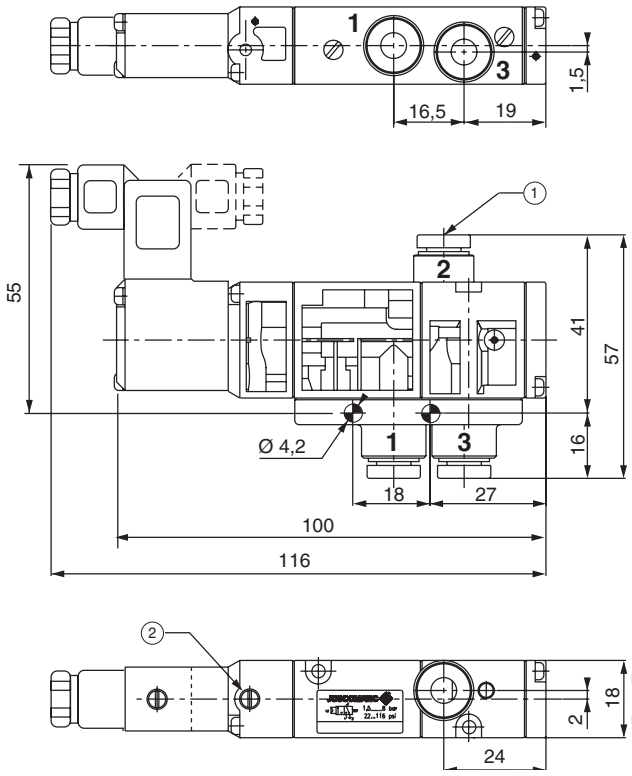
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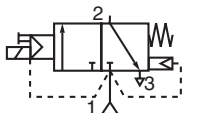
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DIMENSIONS (mm), **WEIGHT** (kg)

Individual mounting version

Connection with instant fitting
Weight : 0,102

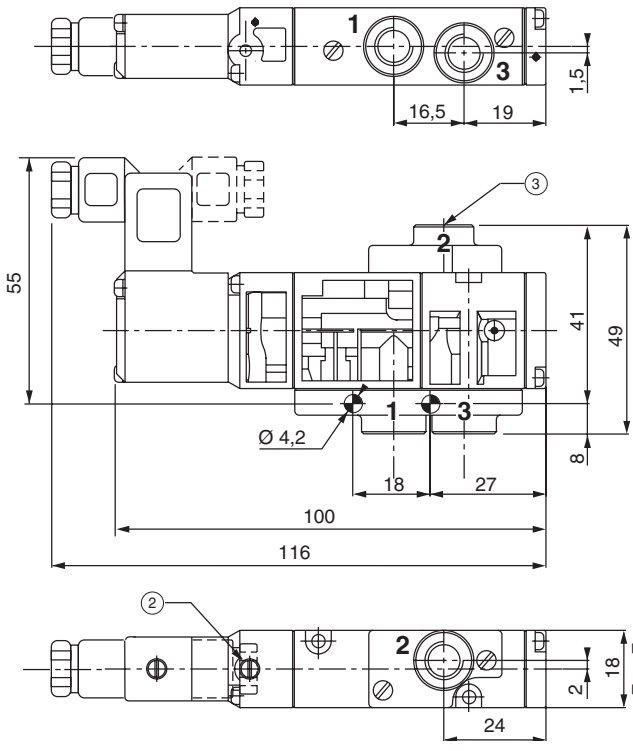


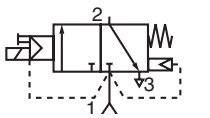


1 = Pressure
2 = Outlet
3 = Exhaust

① 3 instant fittings Ø6 mm O. D. tube
② Manual operator

Tapped G 1/8 connection
Weight : 0,094





1 = Pressure
2 = Outlet
3 = Exhaust

② Manual operator
③ 3 x ports tapped G 1/8

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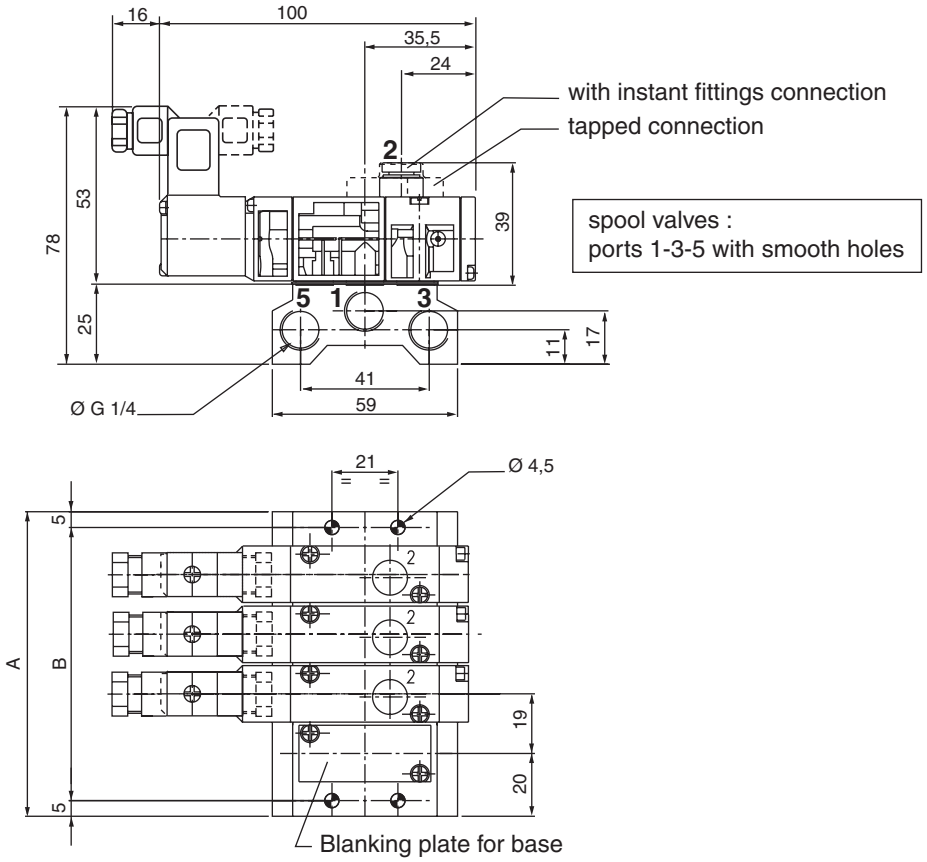
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DIMENSIONS (mm), WEIGHT (kg)

Subbase mounted version

Weight, valve only : 0,086



number of spool valves	A	B	weight*
2	59	49	0,145
3	78	68	0,195
4	97	87	0,240
5	116	106	0,290
6	135	125	0,340
7	154	144	0,385
8	173	163	0,435
9	192	182	0,485
10	211	201	0,530

* subbases only

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MINI SPOOL VALVES

solenoid air operated

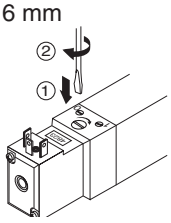
Ø M5 - G1/8 - G1/4 tapped body
adaptable on joinable subbases

5/2-5/3
Series
519-520-521



GENERAL

Fluid		Air or neutral gaz, filtered, lubricated or not
Operating pressure		1,5 to 8 bar
Ambient temperature		+5°C to +50°C
Orifice size		519 : 2,5 mm; 520 : 4 mm; 521 : 6 mm
Flow (Qv at 6 bar)	series 519	175 l/min (ANR) - Kv : 2,5
	series 520	600 l/min (ANR) - Kv : 8,5
	series 521	1050 l/min (ANR) - Kv : 15



CONSTRUCTION

SPOOL VALVES

Body	Anodised white aluminium
Cover	POM (polyacetal)
Internal parts	Stainless steel, light alloy and POM (polyacetal)
Seals	NBR (nitrile)
Manual operator	Maintained, impulse Latchable in hold position (push-turn)

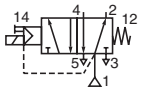
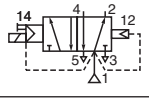
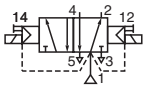
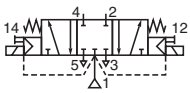
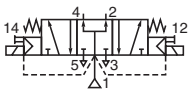
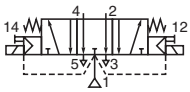
PILOT

Seals	NBR (nitrile)
Electrical equipment	Conforming to NF C79300 standard
Coil and iron circuit	Encapsulated

ELECTRICAL CHARACTERISTICS

voltages		consumption	insulation class	protection degree	electrical connection
~	24V, 115V, 230V - 50/60Hz	2 VA (1,5 W)	F	IP 65	spade plug size 15 connector, DIN 43650, 9,4 mm, industry standard B, rotatable by 90°
=	24V	1,6 W			

SPECIFICATIONS

function symbol		operators solenoid air operated pilot (14) return (12)	response time (ms) energized	 de-energized	voltages	catalogue number serie 519	 serie 520	 serie 521
5/2		spring return	20	30	24V ~	-	52000386	-
					115V ~	-	52000387	-
					230V ~	-	52000388	-
					24V =	-	52000380	52100401
		differential return	20	30	24V ~	51900002	52000002	52100002
					115V ~	51900003	52000003	52100003
					230V ~	51900004	52000004	52100004
					24V =	51900001	52000001	52100001
		solenoid air return	20	-	24V ~	51900006	52000006	52100006
					115V ~	51900007	52000007	52100007
					230V ~	51900008	52000008	52100008
					24V =	51900005	52000005	52100005
5/3		pressure held **W1**	20	50	24V ~	51900010	52000010	52100010
					115V ~	51900011	52000011	52100011
					230V ~	51900012	52000012	52100012
					24V =	51900009	52000009	52100009
		pressure applied **W2**	20	50	24V ~	51900126	52000126	52100126
					115V ~	51900127	52000127	52100127
					230V ~	51900128	52000128	52100128
					24V =	51900129	52000129	52100129
		pressure release **W3**	20	50	24V ~	51900087	52000087	52100087
					115V ~	51900088	52000088	52100088
					230V ~	51900089	52000089	52100089
					24V =	51900090	52000090	52100090

OPTIONS AND ACCESSORIES

UR approval « UL Recognized »		24V =/~	**612102**
visual indicator (LED) and electrical protection ( )		24V =/~	**88130401**
		115V ~	**88130402**
		230V ~	**88130403**
connector size 15 with cable, 2 m long			**88143567**
connector size 15 with built-in visual indication and protection, with cable outlet, 2 m long	( )	24V =/~	**88143580**
flange for ports 2 - 4 with instant fittings for flexible tube 6 mm O.D. (series 520)			**88135532**

SUBBASES : possible mounting on joinable subbases ( ). Fixing screws and seals are supplied with subbases

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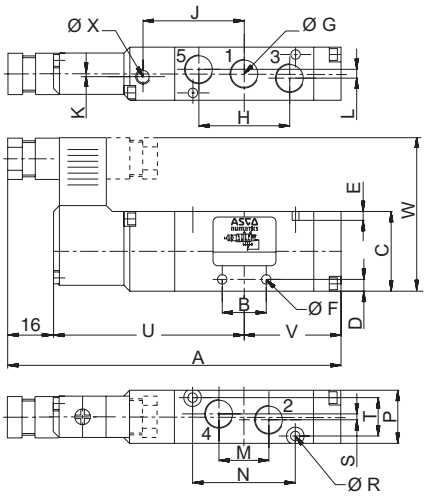
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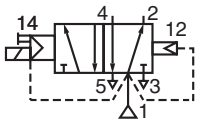
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DIMENSIONS (mm), WEIGHT (kg)

5/2 differential return and spring return

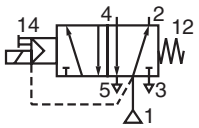




series	A	V
519	97,5	25
520	114	33,2
521	131,3	41,6

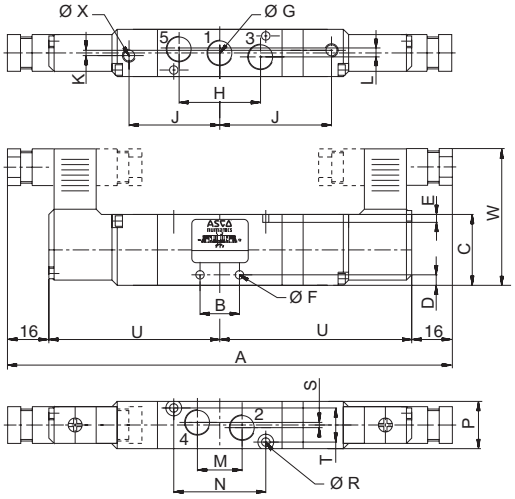
weight	
519	0,085
520	0,095
521	0,155

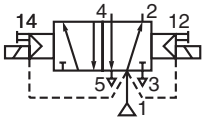
	series	B	C	D	E	ØF	ØG	H	J	K	L	M	N	P	ØR	S	T	U	W	ØX
5/2	519	11	26	4	4	3,3	M5	21,6	26	-	-	11	19	15	2,7	6	11	56,5	52	4
	520	15	27	6	3	3,3	G1/8	32,4	34,3	1	3	16,2	35	18	3,2	-	13	64,8	54,5	4
	521	22	31	6,5	4	4,3	G1/4	44	43,2	-	4	22	50	22	4,2	4	16	73,7	56,5	3



series	A	V
519	97,5	-
520	123,3	42,5
521	131,3	-

5/2 solenoid air return

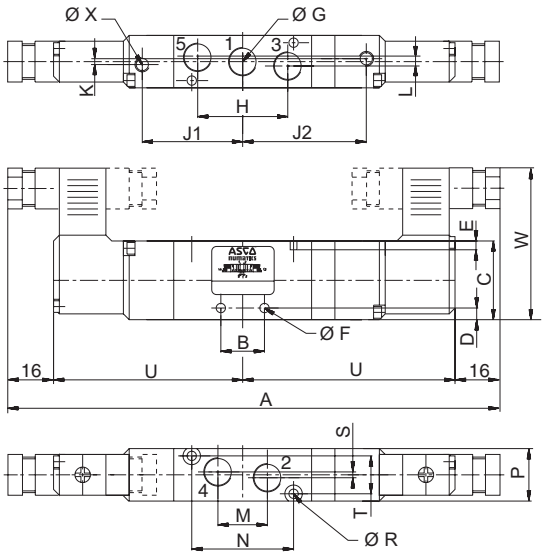


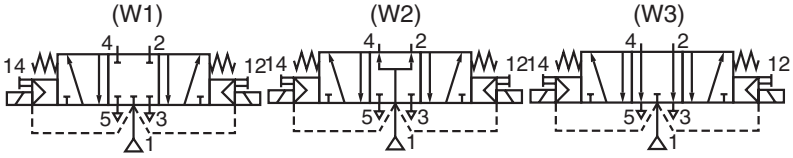


weight	
519	0,135
520	0,160
521	0,200

	series	A	B	C	D	E	ØF	ØG	H	J	K	L	M	N	P	ØR	S	T	U	W	ØX
5/2	519	145	11	26	4	4	3,3	M5	21,6	26	-	-	11	19	15	2,7	6	11	56,5	52	4
	520	161,5	15	27	6	3	3,3	G1/8	32,4	34,3	2	3	16,2	35	18	3,2	-	13	64,8	54,5	4
	521	179,5	22	31	6,5	4	4,3	G1/4	44	43,2	-	4	22	50	22	4,2	4	16	73,7	56,5	3

5/3 solenoid air return





	series	A	B	C	D	E	ØF	ØG	H	J1	J2	K	L	M	N	P	ØR
5/3	519	153	11	26	4	4	3,3	M5	21,6	26	34	-	-	11	19	15	2,7
	520	170,3	15	27	6	3	3,3	G1/8	32,4	34,3	43,3	1	3	16,2	35	18	3,2
	521	188,3	22	31	6,5	4	4,3	G1/4	44	43,2	52,1	-	4	22	50	22	4,2

	series	S	T	U	V	W	ØX	weight
5/3	519	6	11	56,5	64,5	52	4	0,140
	520	-	13	64,8	73,7	54,5	4	0,170
	521	4	16	73,7	82,6	56,5	3	0,210

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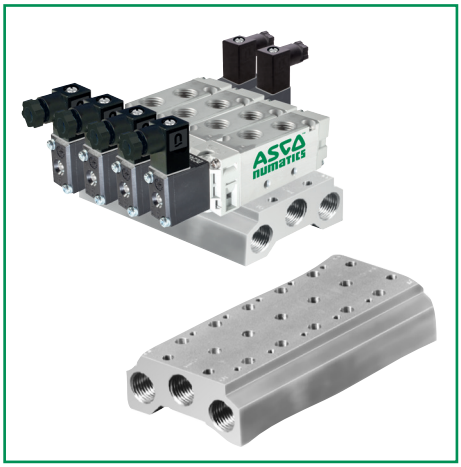
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JOINABLE SUBBASES
for spool valves series 519 - 520 - 521

Series **355**

SPECIFICATIONS

number of valves	catalogue number		
	519 (M5)	520 (G 1/8)	521 (G 1/4)
2	**35500324**	**35500333**	**35500342**
3	**35500325**	**35500334**	**35500343**
4	**35500326**	**35500335**	**35500344**
5	**35500327**	**35500336**	**35500345**
6	**35500328**	**35500337**	**35500346**
7	**35500329**	**35500338**	**35500347**
8	**35500330**	**35500339**	**35500348**
9	**35500331**	**35500340**	**35500349**
10	**35500332**	**35500341**	**35500350**
flange (1)	**-**	**88135532**	**-**
blanking plate (2)	**88135526**	**88135527**	**88135528**



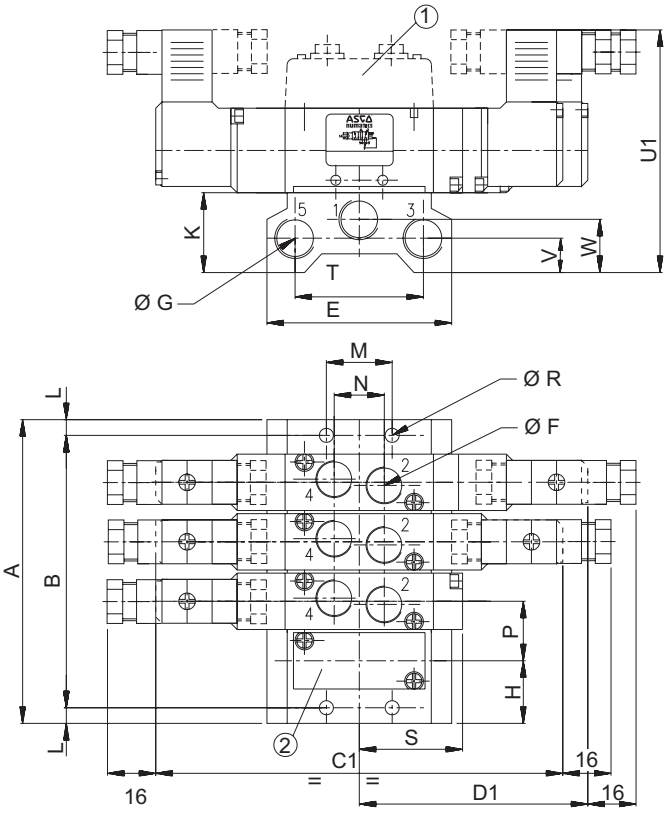
Subbases in light alloy are supplied with screws and seals for valve adaptation.
Ports 1-3-5 can be connected at the 2 subbase ends.
These subbases come with 3 plugs for ports 1-3-5.

MOUNTING RECOMMENDATIONS

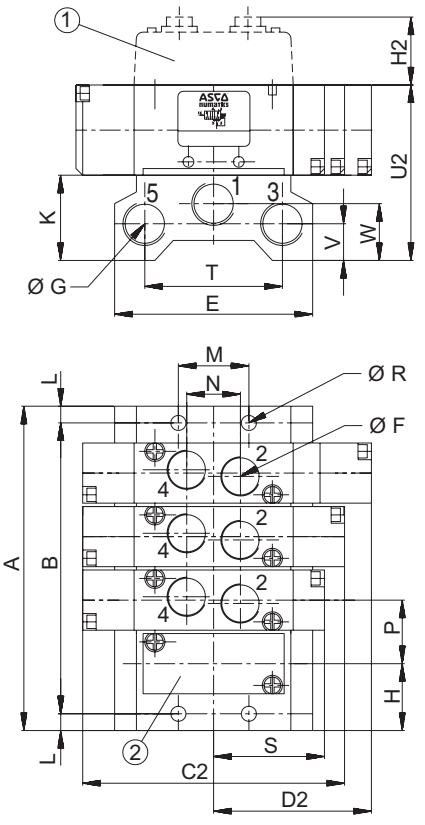
5 spool valves at most can be **simultaneously** operated witnout pressure loss. To operated more valves, pressure must be supplied through appropriate inlets on each side of the subbase.

DIMENSIONS (mm), WEIGHT (kg)

Solenoid air operator



Air operator



* subbases only

number of valves	A			B			weight*		
	519	520	521	519	520	521	519	520	521
2	59	59	77	41	49	63	105	145	300
3	75	78	100	57	68	86	035	195	390
4	91	97	123	73	87	109	165	240	485
5	107	116	146	89	106	132	195	290	575
6	123	135	169	105	125	155	225	340	670
7	139	154	192	121	144	178	250	385	760
8	155	173	215	137	163	201	280	435	855
9	171	192	238	153	182	224	310	485	945
10	187	211	261	169	201	247	340	530	1040

① Flange for ports 2-4 with instant fittings for flexible tube 6 mm O.D. (520), and with pressure indicators
② Blanking plate for base

series	C1	C2	D1	D2	E	ØF	ØG	H	H2	K	L	M	N	P	ØR	S	T	U1	U2	V	W
519	113	61	64,5	38,5	46	M5	G1/8	21,5	15	20	9	16	11	16	4,5	25	32	72	46	8	13
520	129,5	85	73,2	51,5	59	G1/8	G1/4	20	23	25	5	21	16,2	19	4,5	33,5	41	80	52,5	11	17
521	143,7	100	82,6	59	74	G1/4	G3/8	27	-	30	7	26	22	23	5,5	41,5	52	87,5	62	13	19

Series 520 spring return, dimension S = 51

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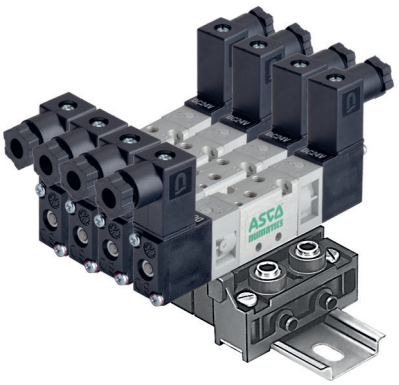
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JOINABLE SUBBASES
for spool valves series 519

Series
355

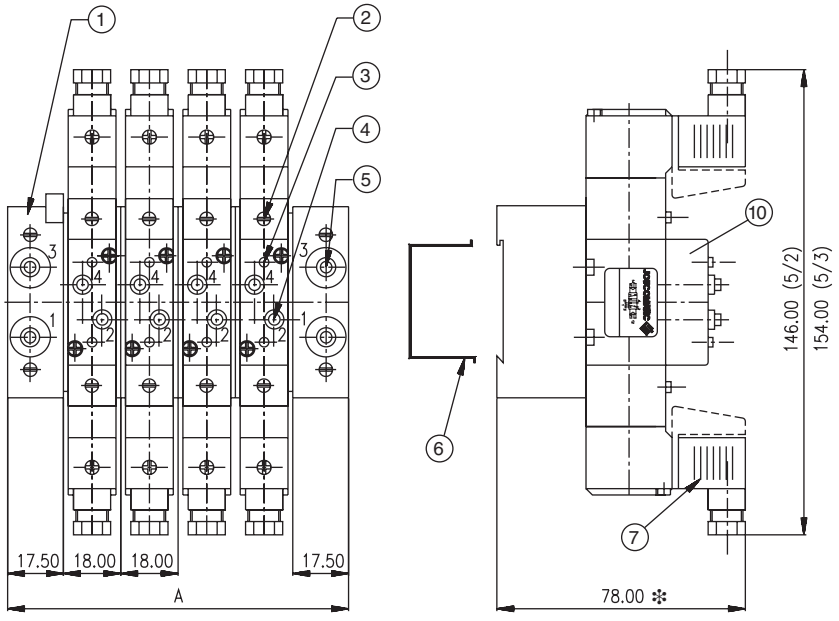
CONSTRUCTION
Subbase and flange in glass filled polyamide 6/6 (PA + FG)
Pressure indicator for ports 2 and 4, on flange, in polyether



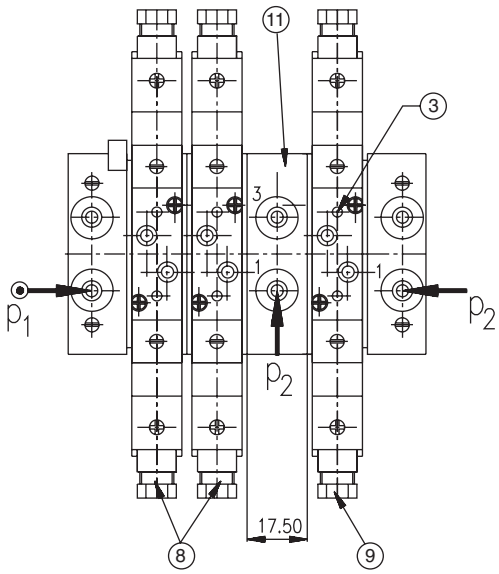
SPECIFICATIONS

description		cat. number
joinable subbase + 1 flange (with instant fittings for tube 4 mm O.D.) + locking screw		**35500149**
set of 2 ends (with instant fittings for tube 6 mm O.D.)		**30400001**
intermediate supply module (with instant fittings for 6 mm O.D.)		**30400004**
flange for ports 2 - 4, with pressure indicators and instant fittings for flexible tube 4 mm O.D.		**88135525**
blanking plate for base series 519		**88135526**
visual indicator (LED) and electrical protection (see section "Coils and Accessories")	24V =/~ 115V~ 230V~	**88130401** **88130402** **88130403**

DIMENSIONS (mm)



MOUNTING WITH 2 DIFFERENT PRESSURE SUPPLIES



number of valves	3	4	5	6	7	8
A ❊ ❊	89	107	125	143	161	179

NOTE : Pressure supply (1) and exhaust (3) ports can be connected to the left or to the right side [plug unused port (1)]
For pressure supply in P2, plug the port left unused
❊ + 15 mm for plug removal
❊ ❊ When mounting with an intermediate supply module, add 17,5 mm to dimension A

1. End plate
2. Manual operator (Push - Turn)
3. Pressure indicator on ports 2 and 4 (on flange)
4. Instant fittings for flexible tube 4 mm O.D.
5. Instant fittings for flexible tube 6 mm O.D.
6. Symmetrical rail EN 50 022
7. Connector rotatable x 180°
8. Valves with pressure supply in P1
9. Valve(s) with pressure supply in P2
10. Flange for ports 2 - 4
11. Intermediate supply module for 2 different pressure supplies

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SPOOL & SLEEVE VALVES

solenoid air operated
monostable / bistable function
threaded ports G 1/8-G 1/4

5/2-5/3
Series
L1



FEATURES

- *Reliability: steel spool & sleeve technology with long service life*
- *Robust valve design, particularly recommended for use in high-temperature or dirty environments*

GENERAL

Fluids	Air or neutral gas, filtered, lubricated or not
Operating pressure	1 to 10 bar (with internal supply to pilot) -0,950 to 15 bar (with external supply to pilot)
Ambient temperature	-20°C to +80°C
Flow (Qv at 6 bar)	See "SPECIFICATIONS"

CONSTRUCTION

Body	Aluminium, anodised, painted grey
Internal parts	Stainless steel, POM (polyacetal), aluminium
Static seals	NBR (nitrile)

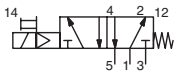
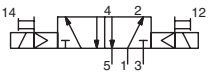
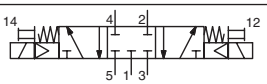
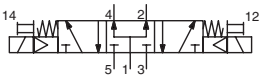
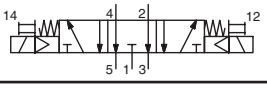
INTEGRATED PILOT

Seals	NBR (nitrile)
Electrical equipment	Conforming to VDE 0580
Solenoid coil	Encapsulated
Exhaust	Over brass exhaust protector

ELECTRICAL CHARACTERISTICS

voltage		consumption		insulation class	protection degree	electrical connection
		inrush	hold			
~	24V - 48V - 115V - 230V / 50Hz	10 VA	7 VA	F	IP 65	spade plug size 22 connector DIN 43650, 11 mm industry standard B
=	24V - 48V	3,35 W				

SPECIFICATIONS

function symbol		operators pilot (14) solenoid air operated return (12)	port size	débit at 6 bar (l/min)	débit Kv (m^3/h)	catalogue number without connector (1)	(M)
5/2		spring return	G 1/8	1000	0,87	**L11BA452XG000YY**	●
			G 1/4			**L12BA452XG000YY**	
		solenoid air operated return	G 1/8			**L11BB452XG000YY**	●
			G 1/4			**L12BB452XG000YY**	
5/3		pressure held **W1**	G 1/8			**L11BB652XG000YY**	●
			G 1/4			**L12BB652XG000YY**	
		pressure applied **W2**	G 1/8			**L11BB752XG000YY**	●
			G 1/4			**L12BB752XG000YY**	
		pressure released **W3**	G 1/8			**L11BB552XG000YY**	●
			G 1/4			**L12BB552XG000YY**	

(M) Type of manual operator on pilot(s): ● : maintained

(1) For connectors:

type of current	X
AC (alternating current)	0
DC (direct current)	B

voltage	YY
24V DC	61
115 VAC - 50/60 Hz	30
24 VAC - 50/60 Hz	20
230 VAC - 50/60 Hz	40

OPTIONS (on request)

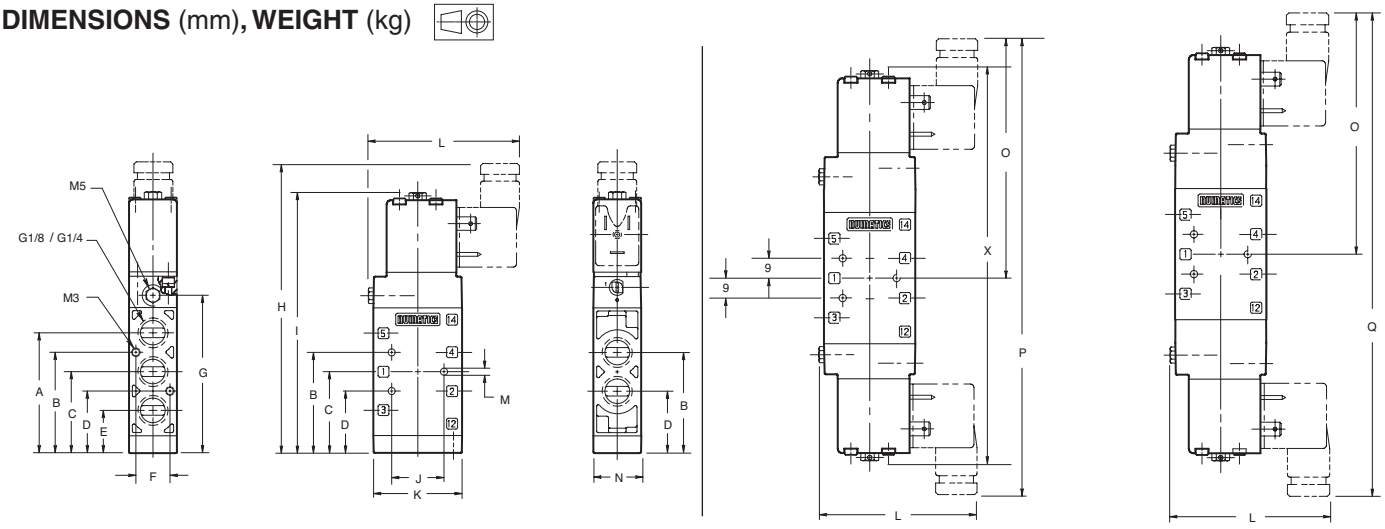
- Low power consumption 1,4 W (only in DC)
- Version for higher pressures up to 15 bar
- Version for higher temperatures up to 150 °C
- Stainless steel body
- Equipment for use in potentially explosive gas or dust atmospheres (ATEX directive 2014/34/EU)

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DIMENSIONS (mm), WEIGHT (kg)



L11 / L12 BA4..

L11 / L12 BB4/5/6/7..

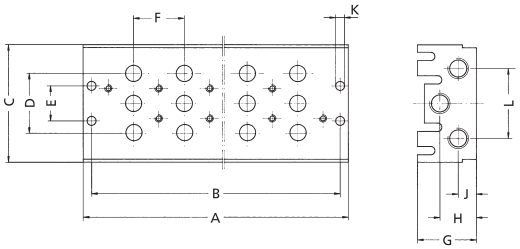
External air supply in M5

catalogue number	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	weight
L11BA4.. L12BA4..	56,1	47,0	38,1	29,0	19,8	15,7	73,6	137,4	123,2	24,4	41,1	70,4	3,3	22,4	109,7	209,0	219,5	0,270
L11BB4/5/6/7.. L12BB4/5/6/7..																		0,420

SUBBASES



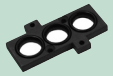
Multiple subbase
front mounting
threaded ports G 1/4



number of valves	A	B	C	D	E	F	G	H	J	K	L	weight	catalogue number
2	88,5	78,5	70,6	36	21	30,5	35,5	22	11	5,3	42	0,410	**106-540**
3	119,0	109,0	70,6	36	21	30,5	35,5	22	11	5,3	42	0,550	**106-541**
4	149,5	139,5	70,6	36	21	30,5	35,5	22	11	5,3	42	0,690	**106-542**
5	180,0	170,0	70,6	36	21	30,5	35,5	22	11	5,3	42	0,830	**106-543**
6	210,5	200,5	70,6	36	21	30,5	35,5	22	11	5,3	42	0,970	**106-544**
7	241,0	231,0	70,6	36	21	30,5	35,5	22	11	5,3	42	1,120	**106-545**
8	271,5	261,5	70,6	36	21	30,5	35,5	22	11	5,3	42	1,260	**106-546**
9	302,0	292,0	70,6	36	21	30,5	35,5	22	11	5,3	42	1,400	**106-547**
10	332,5	322,5	70,6	36	21	30,5	35,5	22	11	5,3	42	1.540	**106-548**
11	363,0	353,0	70,6	36	21	30,5	35,5	22	11	5,3	42	1,680	**106-549**
12	393,5	383,5	70,6	36	21	30,5	35,5	22	11	5,3	42	1,820	**106-550**

Note: Valves can only be mounted on subbase with adapter plate **239-311**

ACCESSORIES

illustration	designation	application	dimensions			weight	catalogue number
			length	width	height		
	Adapter plate*	1 plate per station	59,2	22,1	5,6	0,020	**239-311**
	Blanking plate**	only for multiple subbase, front mounting	59,2	22,1	11,9	0,040	**239-288**
-	Blocking plugs	to separate channels "1", "3" & "5"	-	-	-	-	**20.5499**
-	Blocking screws G 1/4	to close ports "1" and/or "3" & "5"	-	-	-	-	**AJ233.03-N**

* Including screws and seals
** Blanking plate inclusive of adapter plate **239-311**

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SPOOL & SLEEVE VALVES

solenoid air operated
monostable / bistable function
threaded ports G 1/4-G 3/8

5/2-5/3
Series
L2



FEATURES

- *Reliability: steel spool & sleeve technology with long service life*
- *Robust valve design, particularly recommended for use in high-temperature or dirty environments*

GENERAL

Fluids	Air or neutral gas, filtered, lubricated or not
Operating pressure	1 to 10 bar (with internal supply to pilot) -0,950 to 15 bar (with external supply to pilot)
Ambient temperature	-20°C to +80°C
Flow (Qv at 6 bar)	See "SPECIFICATIONS"

CONSTRUCTION

Body	Aluminium, anodised, painted grey
Internal parts	Stainless steel, POM (polyacetal), aluminium
Static seals	NBR (nitrile)

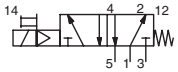
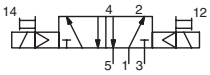
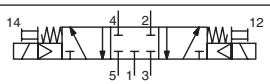
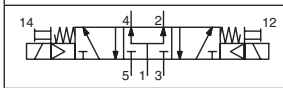
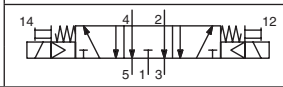
INTEGRATED PILOT

Seals	NBR (nitrile)
Electrical equipment	Conforming to VDE 0580
Solenoid coil	Encapsulated
Exhaust	Over brass exhaust protector

ELECTRICAL CHARACTERISTICS

voltage		consumption		insulation class	protection degree	electrical connection
		inrush	hold			
~	24V - 48V - 115V - 230V / 50Hz	10 VA	7 VA	F	IP 65	spade plug size 22 connector DIN 43650, 11 mm industry standard B
=	24V - 48V	3,35 W				

SPECIFICATIONS

function symbol		operators pilot (14) solenoid air operated return (12)	Anschluss	débit at 6 bar (l/min)	débit Kv (m^3/h)	catalogue number without connector (1)	(M)
5/2		spring return	G 1/4	1700	1,48	**L22BA452XG000YY**	●
			G 3/8			**L23BA452XG000YY**	
		solenoid air operated return	G 1/4			**L22BB452XG000YY**	●
			G 3/8			**L23BB452XG000YY**	
5/3		pressure held **W1**	G 1/4			**L22BB652XG000YY**	●
			G 3/8			**L23BB652XG000YY**	
		pressure applied **W2**	G 1/4			**L22BB752XG000YY**	●
			G 3/8			**L23BB752XG000YY**	
		pressure released **W3**	G 1/4			**L22BB552XG000YY**	●
			G 3/8			**L23BB552XG000YY**	

(M) Type of manual operator on pilot(s): ● : maintained

(1) For connectors:

type of current	X
AC (alternating current)	0
DC (direct current)	B

voltage	YY
24V DC	61
115 VAC - 50/60 Hz	30
24 VAC - 50/60 Hz	20
230 VAC - 50/60 Hz	40

OPTIONS (upon request)

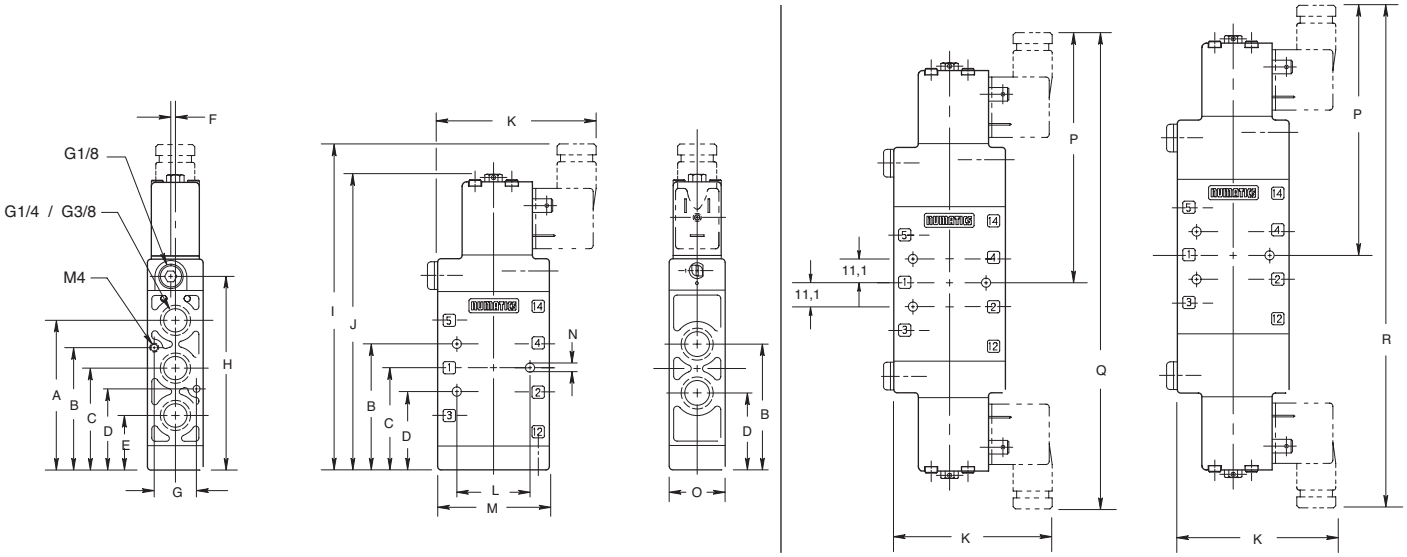
- Low power consumption 1,4 W (only in DC)
- Version for higher pressures to 15 bar (21 bar).
- Version for higher temperatures up to 150 °C.
- Stainless steel body
- Equipment for use in potentially explosive gas or dust atmospheres (ATEX directive 2014/34/EU)

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DIMENSIONS (mm), WEIGHT (kg)



L22 / L23 BA4..

L22 / L23 BB4/5/6/7..

External air supply in G 1/8

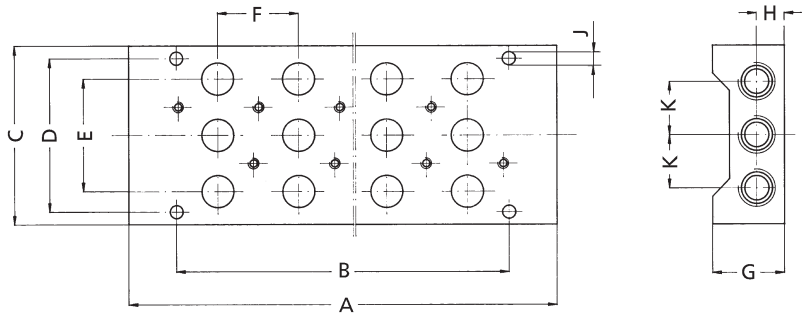
catalogue number	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	weight
L22BA4.. L23BA4..	69,1	57,9	47,0	35,8	24,6	2,0	19,1	89,7	152,1	136,7	72,9	32,3	50,8	4,3	25,4	118,4	223,0	236,7	0,390
L22BB4/5/6/7.. L23BB4/5/6/7..																			0,550

SUBBASES



Multiple subbase

Front mounting
Threaded ports G 3/8



number of valves	dimensions										weight	catalogue number
	A	B	C	D	E	F	G	H	J	K		
2	105,4	67,0	70,5	63,4	44,4	32,0	30,6	212,4	4,1	22,2	0,410	**106-715**
3	137,4	99,4	70,5	63,4	44,4	32,0	30,6	212,4	4,1	22,2	0,540	**106-716**
4	169,4	131,4	70,5	63,4	44,4	32,0	30,6	212,4	4,1	22,2	0,670	**106-717**
5	201,4	163,4	70,5	63,4	44,4	32,0	30,6	212,4	4,1	22,2	0,800	**106-718**
6	233,4	195,4	70,5	63,4	44,4	32,0	30,6	212,4	4,1	22,2	0,939	**106-719**
7	265,4	255,4	70,5	63,4	44,4	32,0	30,6	212,4	4,1	22,2	1,060	**106-720**
8	297,4	259,4	70,5	63,4	44,4	32,0	30,6	212,4	4,1	22,2	1,190	**106-721**
9	329,4	291,4	70,5	63,4	44,4	32,0	30,6	212,4	4,1	22,2	1,320	**106-722**
10	361,4	323,4	70,5	63,4	44,4	32,0	30,6	212,4	4,1	22,2	1,450	**106-723**
11	393,4	355,4	70,5	63,4	44,4	32,0	30,6	212,4	4,1	22,2	1,580	**106-724**
12	425,4	387,4	70,5	63,4	44,4	32,0	30,6	212,4	4,1	22,2	1,710	**106-725**

Note: Valves can only be mounted on subbase with adapter plate **239-312**

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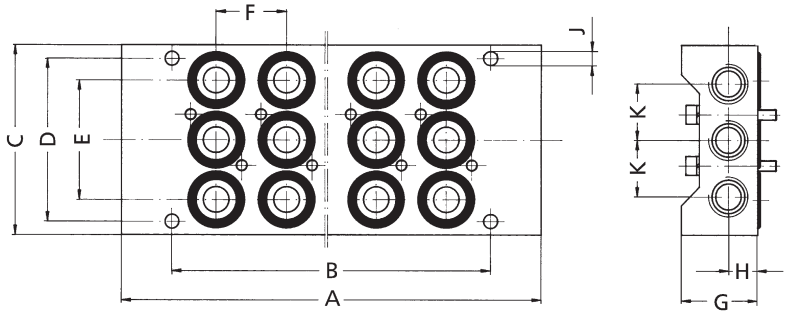
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SUBBASES



Multiple subbase

Rear mounting
Threaded ports G 3/8



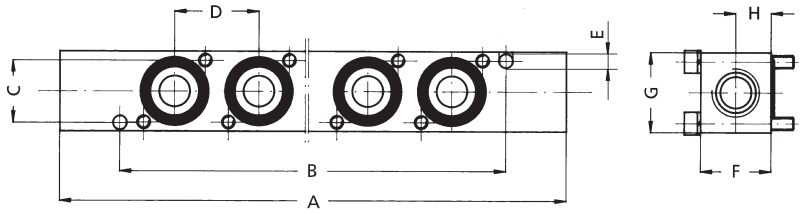
number of valves	dimensions										weight	catalogue number
	A	B	C	D	E	F	G	H	J	K		
2	99,6	61,0	70,5	63,4	44,4	26,2	28,7	11,4	4,1	22,2	0,360	**229-979**
3	127,7	87,1	70,5	63,4	44,4	26,2	28,7	11,4	4,1	22,2	0,460	**229-980**
4	151,9	113,3	70,5	63,4	44,4	26,2	28,7	11,4	4,1	22,2	0,560	**229-981**
5	178,1	139,4	70,5	63,4	44,4	26,2	28,7	11,4	4,1	22,2	0,660	**229-982**
6	204,2	165,6	70,5	63,4	44,4	26,2	28,7	11,4	4,1	22,2	0,750	**229-983**
7	230,4	191,8	70,5	63,4	44,4	26,2	28,7	11,4	4,1	22,2	0,850	**229-984**
8	256,5	217,9	70,5	63,4	44,4	26,2	28,7	11,4	4,1	22,2	0,950	**229-985**
9	282,7	244,1	70,5	63,4	44,4	26,2	28,7	11,4	4,1	22,2	1,050	**229-986**
10	308,9	270,3	70,5	63,4	44,4	26,2	28,7	11,4	4,1	22,2	1,140	**229-987**
11	335,0	296,4	70,5	63,4	44,4	26,2	28,7	11,4	4,1	22,2	1,240	**229-988**
12	361,2	322,6	70,5	63,4	44,4	26,2	28,7	11,4	4,1	22,2	1,340	**229-989**

Including screws and seals
NPTF thread upon request



P supply rail

Threaded ports G 3/8



number of valves	dimensions								weight	catalogue number
	A	B	C	D	E	F	G	H		
2	99,6	61,0	19,0	26,2	4,1	22,9	24,6	11,4	0,110	**229-957**
3	127,7	87,1	19,0	26,2	4,1	22,9	24,6	11,4	0,140	**229-958**
4	151,9	113,3	19,0	26,2	4,1	22,9	24,6	11,4	0,170	**229-959**
5	178,1	139,4	19,0	26,2	4,1	22,9	24,6	11,4	0,200	**229-960**
6	204,2	165,6	19,0	26,2	4,1	22,9	24,6	11,4	0,230	**229-961**
7	230,4	191,8	19,0	26,2	4,1	22,9	24,6	11,4	0,260	**229-962**
8	256,5	217,9	19,0	26,2	4,1	22,9	24,6	11,4	0,290	**229-963**
9	282,7	244,1	19,0	26,2	4,1	22,9	24,6	11,4	0,330	**229-964**
10	308,9	270,3	19,0	26,2	4,1	22,9	24,6	11,4	0,360	**229-965**
11	335,0	296,4	19,0	26,2	4,1	22,9	24,6	11,4	0,390	**229-966**
12	361,2	322,6	19,0	26,2	4,1	22,9	24,6	11,4	0,420	**229-967**

Including screws and seals
NPTF thread upon request

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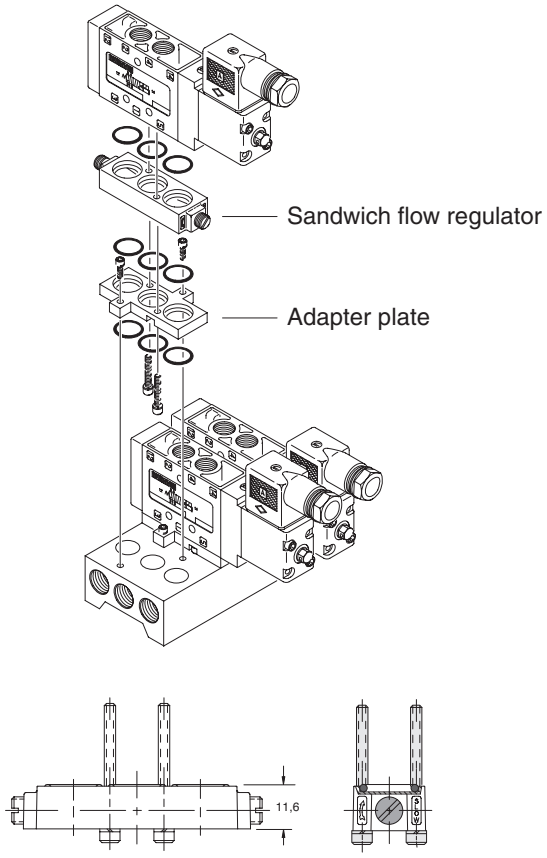
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ACCESSORIES

illustration	designation	application	dimensions			weight	catalogue number
			length	width	height		
	Valve isolating plate*	to block supply channel 1 for valve replacement without system depressurisation	70,1	25,4	20,0	0,150	**10.6445**
	Adapter plate*	1 plate per station only for multiple subbase, front mounting	70,1	25,4	7,14	0,020	**239-312**
	Blanking plate*	only for multiple subbase, front mounting	70,1	25,4	13,5	0,050	**239-471**
	Blanking plate*	only for multiple subbase, rear mounting	71,1	25,4	6,35	0,030	**229-991**
	Blanking plate*	only for P supply rail	25,4	24,6	6,35	0,020	**229-990**
	Sandwich flow regulator*	only for multiple subbase, front and rear mounting	—	—	—	0,080	**239-209**
—	Blocking plugs	to separate channels "1", "3" & "5"	—	—	—	—	**20.5499**
—	Blocking screws G 3/8	to close ports "1" and/or "3" & "5"	—	—	—	—	**AJ233.04-N**

* Including screws and seals

MOUNTING ARRANGEMENT



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QUICK-ACTING SPOOL & SLEEVE VALVES

solenoid air operated

monostable function, threaded ports NPTF 1/4

5/2
Series
92280



FEATURES

- *Reliability: steel spool & sleeve technlogy with long service life*
- *Switching time of 6 ms.*
- *Suitable for repeatable applications, e.g. demanding gluing applications or in sorting systems*
- *Robust valve design, particularly recommended for use in high-temperature or dirty environments*

GENERAL

Fluids	Air or neutral gas, filtered, lubricated or not
Operating pressure	2,7 to 7 bar
Ambient temperature	-25°C to +90°C
Flow (Qv at 6 bar)	See "SPECIFICATIONS"
Response time	< 6 ms (ON), < 6 ms (OFF)

CONSTRUCTION

Body	Aluminium, anodised, painted grey
Internal parts	Stainless steel, POM (polyacetal), aluminium
Static seals	NBR (nitrile)

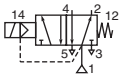
INTEGRATED PILOT

Seals	NBR (nitrile)
Electrical equipment	Conforming to VDE 0580
Solenoid coil	Encapsulated

ELECTRICAL CHARACTERISTICS

voltage		consumption		insulation class	protection degree	Connector specification
		inrush	hold			
DC =	24V	3,5 W		F	IP 65	size 15, 9,4 mm pin spacing EN 175301-803, industry standard form C

SPECIFICATIONS

function symbol		operators pilot (14) solenoid air operated return (12)	Anschluss	flow at 6 bar l/min	flow Kv m³/h	catalogue number without connector (1)
5/2		spring return	NPTF 1/4 (Exhaust NPTF 1/8)	500	0,47	**92280-1**

(1) For connectors: see catalogue page

OPTIONS (upon request)

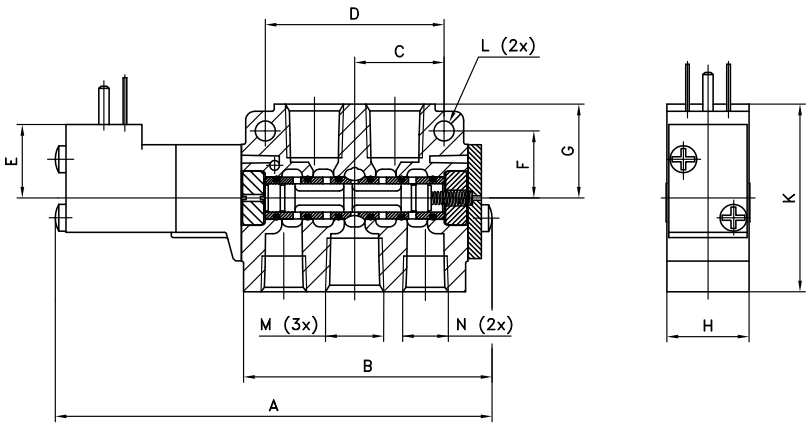
- Solenoid coil voltage of 115 VAC.

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DIMENSIONS (mm), **WEIGHT** (kg)



A	B	C	D	E	F	G	H	K	L Ø	M NPTF	N NPTF	weight approx.
97	55,5	20	40	16	15	21	18	42	4,5	1/4	1/8	0,122

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SPOOL VALVES

pilot operated, spool type
single/dual solenoid
aluminium body, 1/4

5/2-5/3
Series
551



FEATURES

- *The valves offer environmental protection against the ingress of liquids, dusts or other foreign matter (environmentally protected construction)*
- *For high reliability in very humid outside environments, the versions on following pages should preferably be used.*

GENERAL

Fluids		Air or neutral gas, filtered, lubricated or not
Operating pressure		2 to 10 bar
Ambient temperature		-25°C to +60°C
Flow (Qv to 6 bar)	5/2	860 l/min (ANR) - Kv : 12,5
	5/3	760 l/min (ANR) - Kv : 11

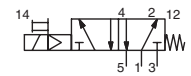
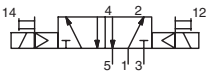
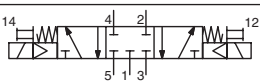
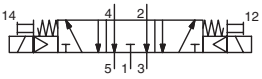
CONSTRUCTION

SPOOL VALVE	
Body	Aluminium, black anodized
Internal parts	Zinc diecast, stainless steel, POM (polyacetal), aluminium
Seals	NBR (nitrile) and PUR (polyurethane)
PILOT VALVE	
Seals	NBR (nitrile) and PUR (polyurethane)
Electrical safety	IEC 335
Coil and magnetic circuit	Encapsulated monobloc design
Exhaust	Tapped M5 exhaust port, equipped with exhaust protection

ELECTRICAL CHARACTERISTICS

voltage		consumption inrush	consumption holding	insulation class	protection degree	electrical connection
~	24V - 48V - 115V - 230V / 50Hz	6 VA	3,5 VA (2,5 W)	F	IP 65	spade plug connector size 22 EN 175301-803, industry standard form B (11 mm)
=	24V - 48V	2,5 W				

SPECIFICATIONS

fonction	symbol	operators: solenoid air / pilot (14) / return (12)	catalogue number: with connector	catalogue number: without connector	(M)
5/2		spring return	**55102009**	**55102010**	●
		solenoid air return	**55102011**	**55102012**	●
5/3		pressure held **W1**	**55102118**	**55102119**	●
		pressure release **W3**	**55102120**	**55102121**	●

(M) Type of manual operator on pilot(s): ● : maintained

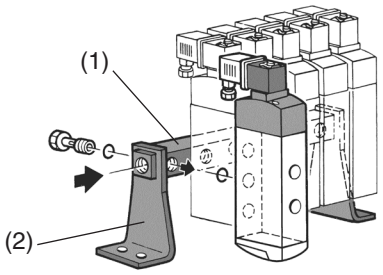
Note: do not connect the pressure supply to the exhaust port 3. For a "distributing" function or use in NO function, contact us.

ACCESSORIES

• Supply rails

	supply rail supplied with seals and banjo bolts (without mounting brackets) (1)	supply rail with isolation valves - allows isolation of one or more spool valves from the main pressure supply
supply rail for «n» valves	G 1/4	G 1/4
2	**88100034**	**88100915**
3	**88100035**	**88100916**
4	**88100036**	**88100917**
5	**88100037**	**88100918**
6	**88100038**	**88100919**
7	**88100039**	**88100920**
8	**88100040**	**88100921**

• Set of 2 mounting brackets (2) for supply rail - catalogue number : **88100049**



(1) supply rail
(2) mounting brackets (x2)

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OPTIONS

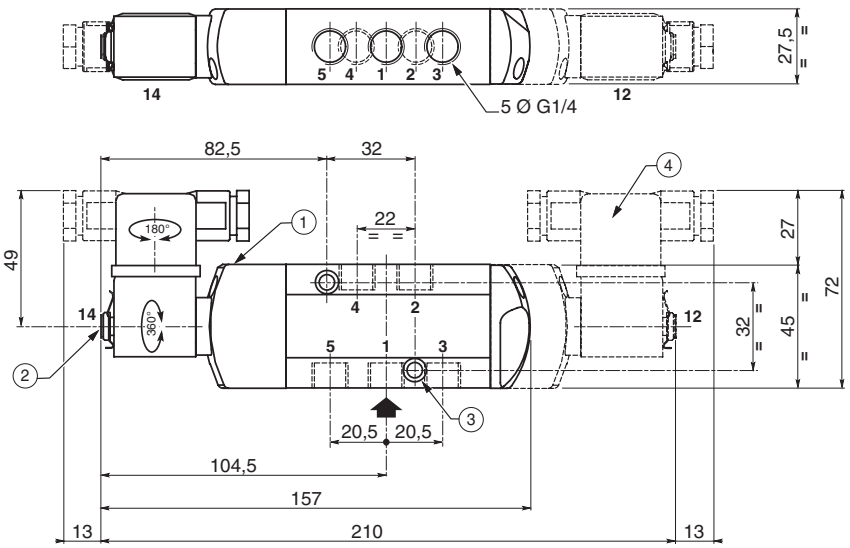
- Other voltages and 60 Hz on request
- ATEX compliant coil with connector for use in potentially explosive dust environments (**SG**), zone 22
- Connector size 22, cable length 2 m: **88122413**
- Electrovalve with connector equipped with visual indicator and built-in electrical protection:

catalogue number of spool valve without connector +

catalogue number of connector with visual indicator and built-in electrical protection (~ / =)			
24V	48V	115V	230V
88122405	**88122406**	**88122407**	**88122410**

DIMENSIONS (mm), WEIGHT (kg)

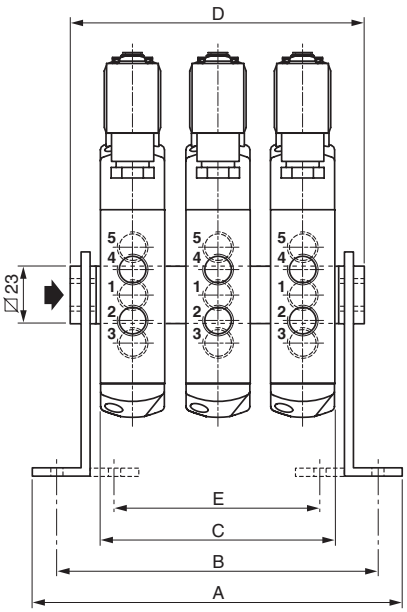
Weight: Spool valve + 1 pilot = 0,350 kg
Spool valve + 2 pilots = 0,470 kg



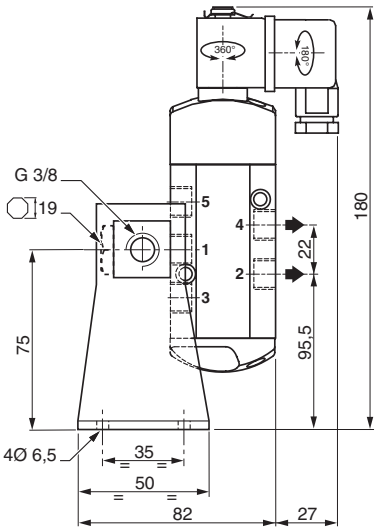
5/2-5/3 connection
1 = Pressure
2,4 = Outlets
3,5 = Exhausts
12 = Return
14 = Pilot

① Maintained manual operator
② Connectable M5 exhaust with protection
③ 2 mounting holes: Ø 5,3 spotfacing: Ø 9, depth 5
④ Pilot side 12 for 5/2 bistable or 5/3 versions

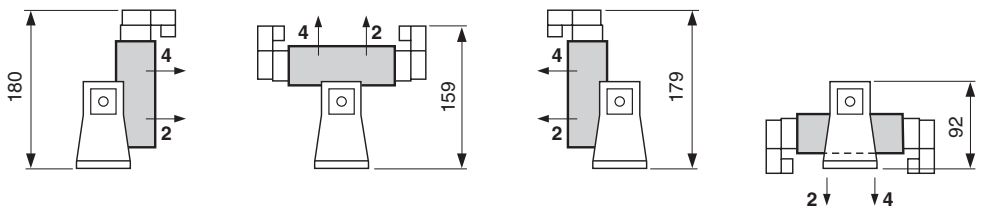
ASSEMBLY WITH COMMON SUPPLY RAIL



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	**weight** (kg)						
with 1 pilot	1	1,4	1,8	2,2	2,6	3	3,4
with 2 pilots	1,3	1,8	2,3	2,8	3,3	3,8	4,3



This mounting arrangement allows valves to be mounted in any of 4 positions



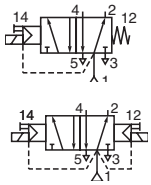
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SPOOL VALVES

pilot operated, spool type
single/dual solenoid, aluminium body, 1/4
stainless steel screws



5/2
Series
551



FEATURES

- *Spool valve protected against food and beverage environment thanks to stainless steel screws and IP67 protection*
- *The valves offer environmental protection against the ingress of liquids, dusts or other foreign matter (environmentally protected construction)*
- *A reliable actuator pilot with the holes facing downwards and a moisture resistance*

GENERAL

Fluids		Air or neutral gas, filtered, lubricated or not
Operating pressure		2 to 10 bar
Ambient temperature		-25°C to +60°C
Flow (Qv to 6 bar)	5/2	860 l/min (ANR) - Kv : 12,5

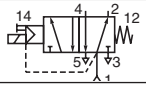
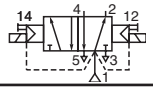
CONSTRUCTION

SPOOL VALVE	
Body	Aluminium, black anodized
Internal parts	Zinc diecast, stainless steel, POM (polyacetal), aluminium
Seals	NBR (nitrile) and PUR (polyurethane)
Srews	Stainless steel 316L
PILOT VALVE	
Seals	NBR (nitrile) and PUR (polyurethane)
Electrical safety	IEC 335
Coil and magnetic circuit	Encapsulated monobloc design
Exhaust	Tapped M5 exhaust port, equipped with exhaust protection

ELECTRICAL CHARACTERISTICS

voltage		consumption		insulation class	protection degree	electrical connection
		inrush	holding			
~	24V - 48V - 115V - 230V / 50Hz	6 VA	3,5 VA (2,5 W)	F	IP 65	spade plug connector size 22 EN 175301-803, industry standard form B (11 mm) with cable lenght of 2m
=	24V - 48V	2,5 W				

SPECIFICATIONS

fonction symbol		operators solenoid air pilot (14) return (12)	catalogue number with coil & connector	(M)
5/2		spring return	**SCG551A097MS**	●
		solenoid air return	**SCG551A098MS**	●

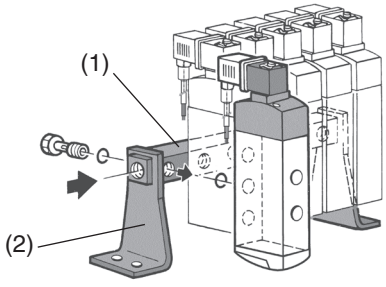
(M) Type of manual operator on pilot(s): ● : maintained

ACCESSORIES

• Supply rails

	supply rail supplied with seals and banjo bolts (without mounting brackets) (1)	supply rail with isolation valves - allows isolation of one or more spool valves from the main pressure supply
supply rail for «n» valves	G 1/4	G 1/4
2	**88100034**	**88100915**
3	**88100035**	**88100916**
4	**88100036**	**88100917**
5	**88100037**	**88100918**
6	**88100038**	**88100919**
7	**88100039**	**88100920**
8	**88100040**	**88100921**

• Set of 2 mounting brackets (2) for supply rail - catalogue number : **88100049**



(1) supply rail
(2) mounting brackets (x2)

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OPTIONS

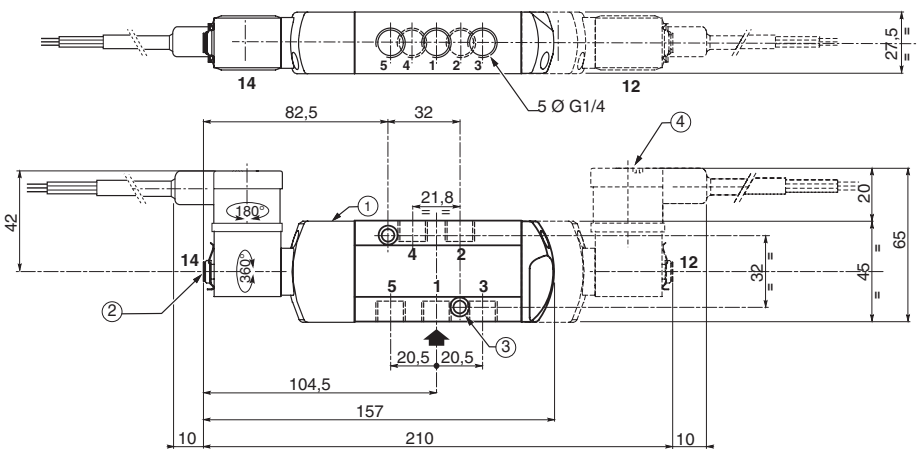
- Other voltages and 60 Hz on request
- Spade connector size 22, IP67 with integrated visual LED and varistor protection with PVC 0,75mm² cable lenght of 2 m: **88100937**
- Electrovalve with connector equipped with visual indicator and built-in electrical protection:

catalogue number of spool valve without connector + catalogue number of connector with visual indicator and built-in electrical protection (~ / =)

24V	48V	115V	230V
88122405	**88122406**	**88122407**	**88122410**

DIMENSIONS (mm), WEIGHT (kg)

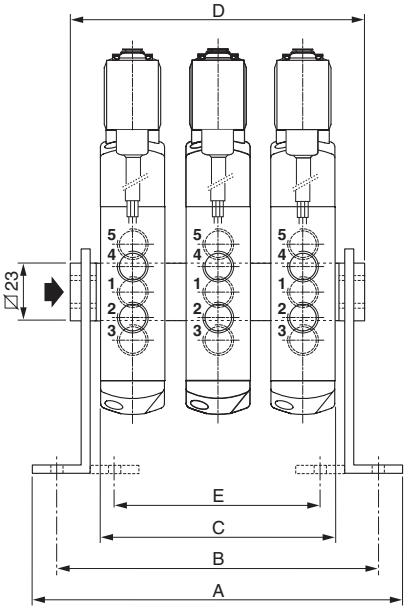
Weight: Spool valve + 1 pilot = 0,67 kg
Spool valve + 2 pilots = 0,73 kg



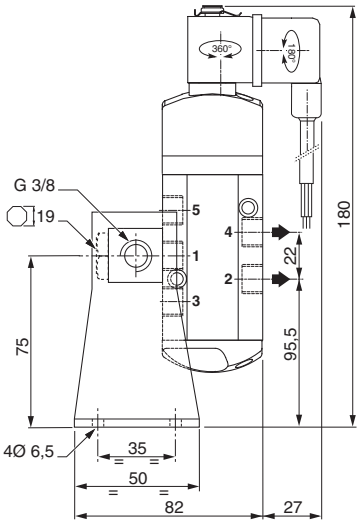
5/2-5/3 connection
1 = Pressure
2,4 = Outlets
3,5 = Exhausts
12 = Return
14 = Pilot

2 mounting holes:
(1) 5,3 mm dia. (Spotfacing: 9 mm dia., depth 5 mm)

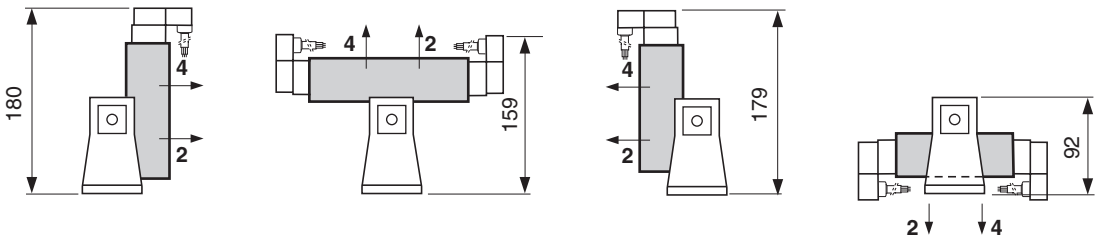
ASSEMBLY WITH COMMON SUPPLY RAIL



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	**weight** (kg)						
with 1 pilot	1,1	1,5	1,9	2,3	2,7	3,1	3,5
with 2 pilots	1,4	1,9	2,4	2,9	3,4	3,9	4,4



This mounting arrangement allows valves to be mounted in any of 4 positions



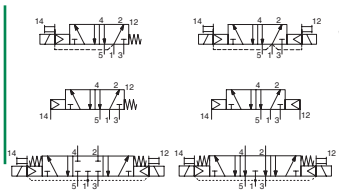
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SPOOL VALVES

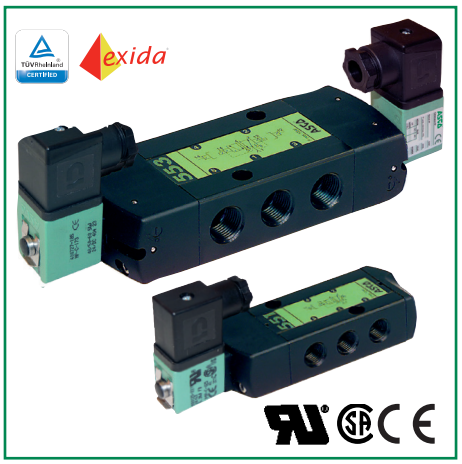
pilot operated or air operated, spool type
single/dual solenoid or air
aluminium body, 1/4 - 1/2



5/2-5/3
Series
551
553

FEATURES

- *All the exhaust ports of the 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 valves offer environmental protection against the ingress of liquids, dusts or other foreign matter (environmentally-protected construction)*
- *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 solenoid valves satisfy all relevant EU directives*



GENERAL

Differential pressure 2 - 10 bar [1 bar = 100 kPa]

Flow (Qv at 6 bar) l/min (ANR)

1/4	1/2
860	3800

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**

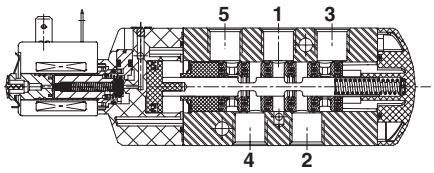
Body, end cover Aluminium, black anodized
End cover (spring return) Glass fibre filled PA
Spool valve internal parts Zamak, stainless steel, POM, aluminium
Seals NBR + PUR
Core tube Brass
Core and plugnut Stainless steel
Shading coil Copper

ELECTRICAL CHARACTERISTICS

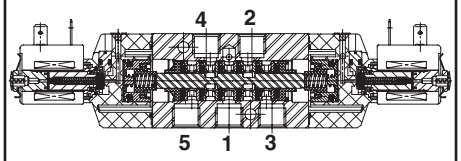
Coil insulation class F
Connector Spade plug (cable Ø 6-8 mm or Ø 6-10 mm)
Connector specification EN 175301-803, 11 mm, industry standard form B (type 01) or ISO 4400 / EN 175301-803, form A (type 02)
Electrical safety IEC 335
Electrical enclosure protection Moulded IP65 (EN 60529)
Standard voltages DC (=) : 24V - 48V
(Other voltages and 60 Hz on request) AC (~) : 24V - 48V - 115V - 230V / 50 Hz

prefix option	power ratings: inrush ~ (VA)	power ratings: holding ~ (VA)	power ratings: holding ~ (W)	power ratings: hot/cold = (W)	operator ambient temperature range (TS) (C°)	replacement coil ~ 230 V/50 Hz	replacement coil = 24 V DC	type (1)
SC	6	3,5	2,5	2,5 / 3	-25 to +60	400127-097	400904-542	01
SC	15	7	5	4 / 5	-25 to +60	400727-117	400727-185	02

(1) Refer to the dimensional drawings on the following page



5/2 function



5/3 function

SPECIFICATIONS

Configurator - CAD Files

pipe size	orifice size	flow coefficient Kv		operating pressure differential (bar) min.	max. (PS) air (*)		power coil (W)		catalogue number	options: maintained man. operator		
G	(mm)	(m³/h)	(l/min)		~	=	~	=	~/=			
5/2 - Solenoid air pilot operated - spring return (monostable)												
1/4	6	0,75	12,5	2	10	10	2,5	3	**SCG551A017**	**MS**	-	-
1/2	13	3,15	52,5	2	10	10	5	5	**SCG553A017**	**MS**	-	-
5/2 - Solenoid air pilot operated and return (bistable)												
1/4	6	0,75	12,5	2	10	10	2,5	3	**SCG551A018**	**MS**	-	-
1/2	13	3,15	52,5	2	10	10	5	5	**SCG553A018**	**MS**	-	-
5/3 - W1 - pressure held, solenoid air pilot and return												
1/4	6	0,75	12,5	2	10	10	2,5	3	**SCG551A067**	**MS**	-	-
1/2	13	3,15	52,5	2	10	10	5	5	**SCG553A067**	**MS**	-	-
5/3 - W3 - pressure released, solenoid air pilot and return												
1/4	6	0,75	12,5	2	10	10	2,5	3	**SCG551A068**	**MS**	-	-
1/2	13	3,15	52,5	2	10	10	5	5	**SCG553A068**	**MS**	-	-
5/2 - Solenoid air pilot operated spring return (monostable), certified IEC 61508 Functional Safety data												
1/4	6	0,75	12,5	2	10	10	2,5	3	**SCG551A017SL**	-	-	-
1/2	13	3,15	52,5	2	10	10	5	5	**SCG553A017SL**	-	-	-

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AIR OPERATED AND OPTIONS

- Versions (Type 03): - pilot air operated, spring return, catalogue numbers: **G551A117** / **G551A117SL** (1/4); **G553A117** / **G553A117SL** (1/2)
  - pilot air operated and return, catalogue numbers: **G551A118** (1/4); **G553A118** (1/2)
- Suffix "**GD**" (air operated only, ATEX 2GD c)
- Explosionproof enclosures for use in zones 1/21-2/22, categories 2-3 to ATEX Directive 2014/34/EU (www.asco.com)
- Supply rail (www.asco.com)
- Other pipe connections are available on request
- Connector with visual indication and peak voltage suppression or with cable length of 2 m (www.asco.com)

INSTALLATION

- The valves can be mounted in any position without affecting operation
- It is necessary to connect pipes or fittings to the exhaust ports to protect the internal parts of the spool valve and its pneumatic operator if used outside or in harsh environments (dusts, liquids etc.)
- IEC 61508 Functional Safety (suffix SL). Check temperature range of valve body and solenoid for suitability. For probability of failure, contact us
- Valves with suffix "SL" are supplied with specific exhaust protectors
- Threaded pipe connection is standard: G = G (ISO 228/1)
- Installation/maintenance instructions are included with each valve

ACCESSORIES

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

(1) Supplied with suffix "SL"

ORDERING EXAMPLES:

SC G 551 **A** 017 **MS** 230V / 50 Hz
SC G 551 **A** 017 **SL** 24V / DC
SC G 553 **A** 018 115V / 50 Hz
G 551 **A** 117 **SL**

prefix
pipe thread
basic number
voltage
suffix

DIMENSIONS (mm), WEIGHT (kg)

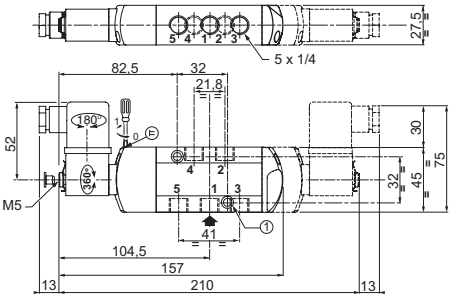
Configurator - CAD Files



TYPE 01

Prefix "SC" Solenoid
Epoxy moulded
IEC 335 / DIN 43650
IP65

551A017 / **A017MS** / **A017SL** / **A018** / **A018MS**
551A067 / **A067MS** / **A068** / **A068MS**

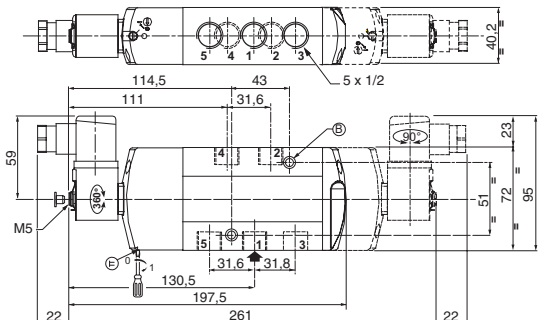




TYPE 02

Prefix "SC" Solenoid
Epoxy moulded
IEC 335 / ISO 4400
IP65

553A017 / **A017MS** / **A018** / **A018MS** / **A067** / **A067MS** / **A068** / **A068MS**
553A017SL

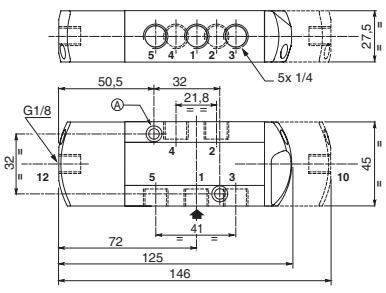




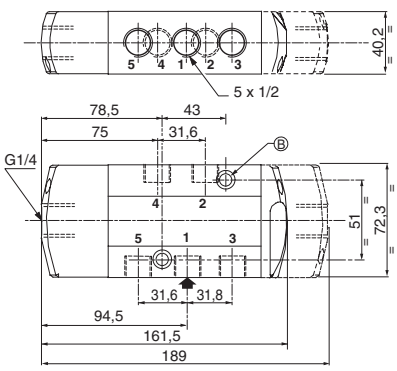
TYPE 03

No prefix
Air operated version

551A117 / **A117SL** / **A118**



553A117 / **A117SL** / **A118**



2 mounting holes:
(A) 5,3 mm dia. (Spotfacing: 9 mm dia., depth 5 mm)
(B) 6,5 mm dia. (Spotfacing: 11 mm dia., depth 6 mm)

type	prefix option	weight (2) monostable.	bistable	W1-W3
01 (551)	SC	0,48	0,60	0,60
02 (553)	SC	0,84	1,14	1,14
03 (551)	-	0,32	0,40	0,40
03 (553)	-	0,79	1,24	1,24

(2) Incl. coil(s) and connector(s).

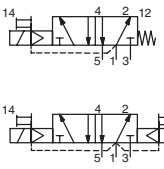
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SOLENOID VALVES

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



5/2
Series
551
553

FEATURES

- *All the exhaust ports of the 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 valves offer environmental protection against the ingress of liquids, dusts or other foreign matter (environmentally-protected construction)*
- *Solenoid pilot valve with spade-plug connector type EN 175301-803, industry standard form C, with 9,4 mm spacing. Versions with M12 connection*
- *Solenoid pilot valve, CNOMO size 15 interface, with or without integral LED and electrical protection. LED indicator visible from 3 sides*
- *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 solenoid valves satisfy all relevant EU directives*



GENERAL

Differential pressure 2 - 10 bar [1 bar = 100 kPa]

Flow (Qv at 6 bar) l/min (ANR)

1/4	1/2
860	3800

Pilot mounting interface surface ISO 15218 (CNOMO E06.36.120N, size 15)

fluids (∗)	temperature range (TS)	seal materials (∗)
air, inert gas, filtered	-25°C to +40°C	NBR (nitrile) + PUR (polyurethane)

MATERIALS IN CONTACT WITH FLUID

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

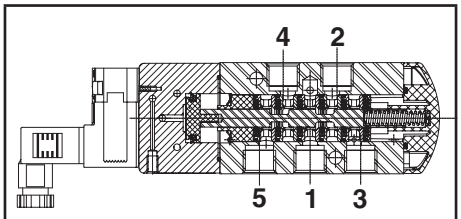
Body Aluminium, black anodized
End cover (spring) Glass fibre filled PA
Spool valve internal parts Zamak, stainless steel, POM, aluminium
Pilot body PARA
Pilot internal parts POM, PET, stainless steel and brass
Pneumatic interface seal TPE

ELECTRICAL CHARACTERISTICS

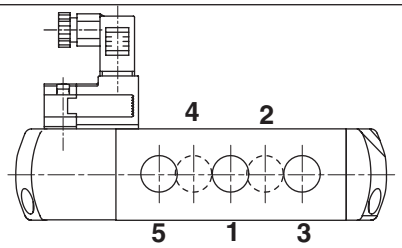
Coil insulation class F
Connector (type 05) Spade plug (cable Ø 4-6 mm)
Connector specification Type 05: DIN 43650, 9,4 mm, form C
Connection Type 07: M12 (CNOMO E03.62.520.N)
Electrical safety IEC 335
Electrical enclosure protection Moulded IP65 [05] or IP67 [07] (EN 60529)
Standard voltages DC (=): 24V
(Other voltages and 60 Hz on request) AC (~) : 24V-115V-230V / 50 Hz (prefix CFSC)

prefix option	power ratings inrush ~ (VA)	power ratings holding ~ (VA)	power ratings (W)	power ratings hot/cold = (W)	operator ambient temperature range (TS) (C°)	voltage ~ (V)	voltage = (V)	type (1)
CFSC	1,4	1,2	1,1	1/1,2	-25 to +60	24-115	24	05
	1,8 (2)	1,6 (2)	1,5 (2)	1,15/1,35(2)				
	2,1	1,6	1,5	-	-25 to +60	230	-	
	2,5 (2)	2 (2)	1,9 (2)	-	-25 to +50			
CFVT (3)	-	-	-	1,15/1,35	-25 to +60	-	24	07

(1) Refer to the dimensional drawings on the following page.
(2) Values with LED indicator and protection, use TPL 20674.
(3) Supplied with LED indicator and protection.



551 (prefix CFSC)



553 (prefix CFSC)

SPECIFICATIONS

Configurator - CAD Files

pipe size	orifice size	flow coefficient Kv		operating pressure differential (bar) min.	operating pressure differential (bar) max. (PS) air (*)		power coil (W)		catalogue number connector EN 175301-803 (9,4 mm) (type 05)	catalogue number M12 (type 07)	options maintained man. operator	options impulse man. operator	
G	(mm)	(m³/h)	(l/min)		~	=	~	=	~/=	=			
5/2 - Solenoid air pilot operated - spring return (monostable)													
1/4	6	0,75	12,5	2	10	10	1,1..1,5	1,2	**CFSCG551C517**	-	MS	MO	-
							-	1,35	-	**CFVTG551C517**	MS	MO	-
1/2	13	3,15	52,5	2	10	10	1,1..1,5	1,2	**CFSCG553A517**	-	MS	MO	-
							-	1,35	-	**CFVTG553A517**	MS	MO	-
5/2 - Solenoid air pilot operated and return (bistable)													
1/4	6	0,75	12,5	2	10	10	1,1..1,5	1,2	**CFSCG551C518**	-	MS	MO	-
							-	1,35	-	**CFVTG551C518**	MS	MO	-
1/2	13	3,15	52,5	2	10	10	1,1..1,5	1,2	**CFSCG553A518**	-	MS	MO	-
							-	1,35	-	**CFVTG553A518**	MS	MO	-

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SPECIFICATIONS

pipe size	orifice size	flow coefficient Kv		operating pressure differential (bar)			power coil (W)		catalogue number		options		
				min.	max. (PS) air (*)				connector EN 175301-803 (9,4 mm) (type 05)	M12 (type 07)	maintained man. operator	impulse man. operator	
G	(mm)	(m³/h)	(l/min)		~	=	~	=	~/=	=			
5/2 - Solenoid air pilot operated - spring return (monostable), certified IEC 61508 Functional Safety data													
1/4	6	0,75	12,5	2	10	10	1,1..1,5	1,2	**CFSCG551C517SL**	-	-	**MO**	-
							-	1,35	-	**CFVTG551C517SL**	-	**MO**	-
1/2	13	3,15	52,5	2	10	10	1,1..1,5	1,2	**CFSCG553A517SL**	-	-	**MO**	-
							-	1,35	-	**CFVTG553A517SL**	-	**MO**	-

OPTIONS

- Explosionproof enclosures for use in zones 0/20-1/21-2/22, categories 1-2-3 to ATEX-Directive 2014/34/EU (www.asco.com)
- LED and protection, prefix CFSC, use TPL number: TPL 20674 (e.g.: TPL 20674 (e.g.: CFSCXG551C505TPL20674)
- Straight M12 connector: with 5 m cable length (catalogue number **88130212**)
- Supply rail (www.asco.com)
- Versions with spade-plug connector type ISO 15217/DIN 43650 form C with 8 mm spacing or with cable ends: contact us
- Other pipe connections are available on request
- Connector with visual indication and peak voltage suppression or with cable length of 2 m (www.asco.com)

INSTALLATION

- The valves can be mounted in any position without affecting operation
- It is necessary to connect pipes or fittings to the exhaust ports to protect the internal parts of the spool valve and its pneumatic operator if used outside or in harsh environments (dusts, liquids etc.)
- IEC 61508 Functional Safety (suffix SL). Check temperature range of valve body and solenoid for suitability. For probability of failure, contact us
- Threaded pipe connection is standard: G = G (ISO 228/1)
- Valves with suffix “SL” are supplied with specific exhaust protectors
- Installation/maintenance instructions are included with each valve

ACCESSORIES

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

(1) Supplied with suffix “SL”

ORDERING EXAMPLES:

CFSC	G	551 **C** 517		230V / 50 Hz
CFSC	G	551 **C** 517	**SL**	115V / 50 Hz
CFVT	G	553 **A** 518	**MS**	24V / DC
CFSC	G	553 **A** 517	**SLMO**	230V / 50 Hz

prefix
pipe thread
basic number
voltage
suffix

DIMENSIONS (mm), WEIGHT (kg)

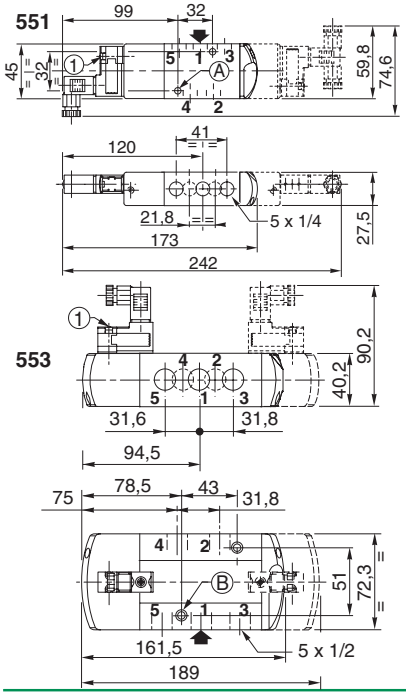
Configurator - CAD Files

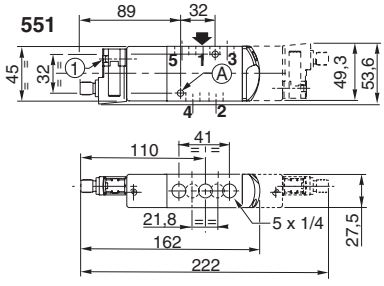


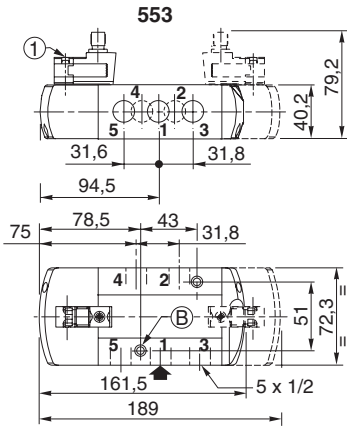
TYPE 05
Prefix "CFSC"
Polyarilamide
IEC 335 / IP65
DIN 43650, 9,4 mm



TYPE 07
Prefix "CFVT"
Polyarilamide
IEC 335 / IP67
M12







type	prefix option	weight (2) monostable 551	monostable 553	bistable 551	bistable 553
05	CFSC	0,36	1	0,41	2,08
07	CFVT	0,38	1,02	0,45	2,12

(2) Prefix CFSC: including connector(s).

(1) Manual operator location

2 mounting holes:

(A) 5,3 mm dia. (Spotfacing: 9 mm dia., depth 5 mm)

(B) 6,5 mm dia. (Spotfacing: 11 mm dia., depth 6 mm)

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SPOOL VALVES
solenoid air operated
G1/4 to G1/2 tapped body
with CNOMO size 15 low power pilot

3/2-5/2
Series
551-553

FEATURES
- *The valves offer environmental protection against the ingress of liquids, dusts or other foreign matter (environmentally-protected construction)*



CNOMO
pilot
size 15
series 630

CE

GENERAL

Fluid		Air or neutral gaz, filtered, lubricated or not
Operating pressure		2 to 10 bar
Ambient temperature		0°C to +60°C (with pilot series 630)
Flow (Qv at 6 bar)	series 551	860 l/min (ANR) - Kv : 12,5
	series 553	3800 l/min (ANR) - Kv : 52,5
Base	size 15	ISO 15218 (CNOMO E06.36.120N)

CONSTRUCTION

SPOOL VALVES	
Body, end covers	Black anodised aluminium
Internal parts	Stainless steel, POM (polyacetal), aluminium
Seals	NBR (nitrile), PUR (polyurethane)
PILOTS	

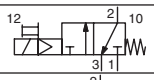
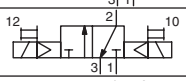
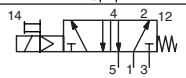
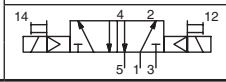
Solenoid pilot valve series 630 ( )

ELECTRICAL CHARACTERISTICS

pilot			voltages	consumption		insulation class	protection degree	electrical connection
				inrush	hold			
size 15	series 630	~	24V to 70V (1)	0,6VA	0,007W	F	IP 65	spade plug size 15 connector, DIN 43650, 9,4 mm, industry standard B, rotatable by 90°
		=		0,007W				

(1) max. current : 80 mA, current of max. maintenance : 1 mA

SPECIFICATIONS

function symbol		operators		pipe size	catalogue number with standard connector	
		pilot (14)	return (12)		pilot 630 CNOMO size 15	(M) ▼
3/2		solenoid air	spring	G1/4	**PISCG551A505**	**MO**
				G1/2	**PISCG553A505**	**MO**
		solenoid air	solenoid air	G1/4	**PISCG551A506**	**MO**
				G1/2	**PISCG553A506**	**MO**
5/2		solenoid air	spring	G1/4	**PISCG551A517**	**MO**
				G1/2	**PISCG553A517**	**MO**
		solenoid air	solenoid air	G1/4	**PISCG551A518**	**MO**
				G1/2	**PISCG553A518**	**MO**

(M) Type of manual operator on pilot(s) ▼ : impulse
Note: do not connect the pressure supply to the exhaust port 3. For a "distributing" function or use in NO function, contact us.

When ordering, please specify:

PISC G 551 **A** 517 **MO** 24V CC
PISCX G 553 **A** 505 **MO** 24V CC **TPL 17777**

prefix
pipe thread
basic number
TPL n°
voltage
suffix

How to order a version without connector :
Use the TPL 17777.
The TPL number (Temporary Parts List) indicates special construction. In this case, the spool valve catalogue number contains **the prefix "X"** and **the TPL number must always be mentioned** following the spool valve catalogue number.
Example : PISC**X**G553A505MO 24V DC **TPL17777**

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OPTIONS

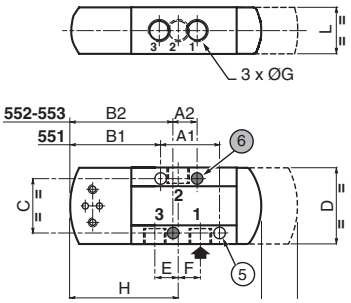
- Other pipe threads are available on request

ACCESSORIES

series	pipe size	stainless steel exhaust protector
551	G 1/4	**34600419**
551-553	M5	**34600484**

DIMENSIONS (mm), WEIGHT (kg)

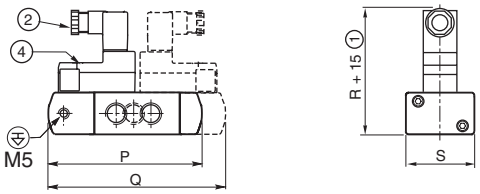
3/2 NC SPOOL VALVES



1. Extra length for disassembly, depending on model
2. Connector size 15, rotatable by 90°
4. Manual operator
5. Series 551: 2 mounting holes Ø 5,3 - spotfacing Ø 9, depth 5
6. Series 553: 2 mounting holes Ø 6,5 - spotfacing Ø 11, depth 6

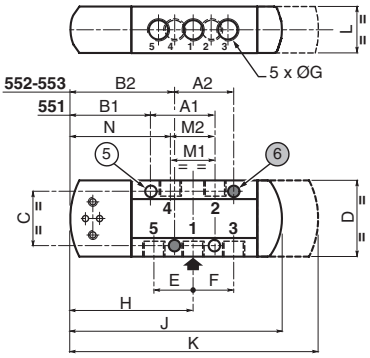
weight 3/2 NC		
series	pilot 630	
	monost.	bistable
551	0,36	0,41
553	1,00	2,08

With pilot 630



series	A1	A2	B1	B2	C	D	E	F	ØG	H	J	K	L	P	Q	R	S
551	33	-	51,5	-	32	45	11	11	G1/4	61,5	113	134	27,5	113	134	75	45
553	-	16	-	78,5	51	72,3	12,2	19,4	G1/2	62,7	135	162	40,2	135	162	87	72,3

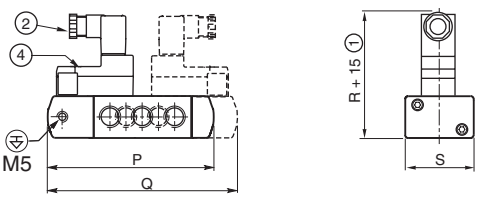
5/2 SPOOL VALVES



1. Extra length for disassembly, depending on model
2. Connector size 15, rotatable by 90°
4. Manual operator
5. Series 551: 2 mounting holes Ø 5,3 - spotfacing Ø 9, depth 5
6. Series 553: 2 mounting holes Ø 6,5 - spotfacing Ø 11, depth 6

weight 5/2		
series	pilot 630	
	monost.	bistable
551	0,51	0,56
553	1,15	2,23

With pilot 630



series	A1	A2	B1	B2	C	D	E	F	ØG	H	J	K	L	M1	M2	N	P	Q	R	S
551	32	-	51	-	32	45	20,5	20,5	G1/4	72	125	146	27,5	22	-	-	125	146	75	45
553	-	43	-	78,5	51	72,3	31,6	31,8	G1/2	94,5	162	189	40,2	-	31,6	75	162	189	87	72,3

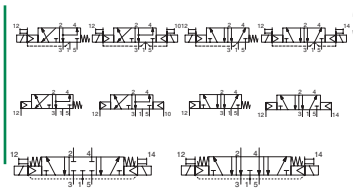
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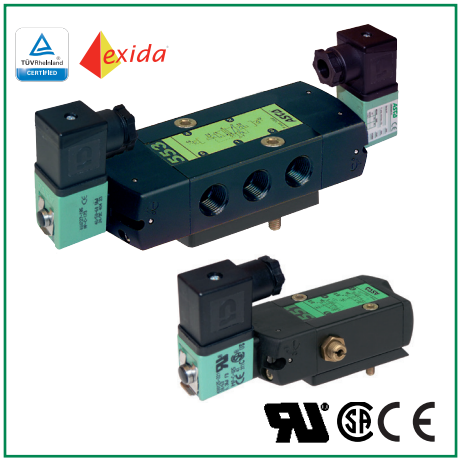
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SPOOL VALVES

pilot operated or air operated, spool type
single/dual solenoid or air
aluminium body, “NAMUR” style, 1/4 - 1/2



3/2-5/2
5/3
Séries
551
553



FEATURES

- *The solenoid operated spool valves have threaded port connections and NAMUR interface*
- *The same spool valve can be adapted for 3/2 NC or 5/2 functions for controlling double-acting and single-acting actuators*
- *All the exhaust ports of the 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 valves offer environmental protection against the ingress of liquids, dusts or other foreign matter (environmentally-protected construction)*
- *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 solenoid valves satisfy all relevant EU directives*

GENERAL

Differential pressure 2 - 10 bar [1 bar = 100 kPa]

Flow (Qv at 6 bar) l/min (ANR)

1/4	1/2
700	3000

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

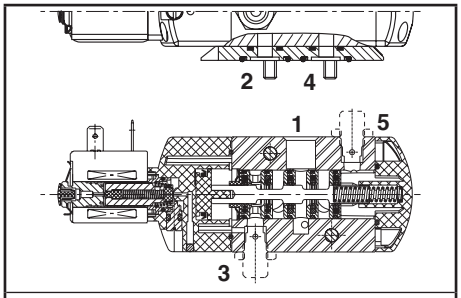
Body, end cover	Aluminium, black anodized
End cover (spring return)	Glass fibre filled PA
Spool valve internal parts	Zamak, stainless steel, POM, aluminium
Seals	NBR + PUR
Core tube	Brass
Core and plugnut	Stainless steel
Shading coil	Copper

ELECTRICAL CHARACTERISTICS

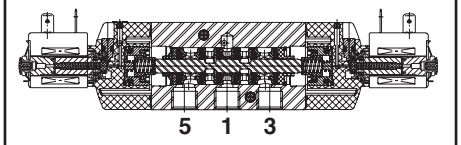
Coil insulation class	F
Connector	Spade plug (cable Ø 6-8 mm or Ø 6-10 mm)
Connector specification	EN 175301-803, 11 mm, industry standard form B (type 01) or ISO 4400 / EN 175301-803, form A (type 02)
Electrical safety	IEC 335
Electrical enclosure protection	Moulded IP65 (EN 60529)
Standard voltages	DC (=): 24V - 48V
(Other voltages and 60 Hz on request)	AC (~): 24V - 48V - 115V - 230V / 50 Hz

prefix option	power ratings inrush ~ (VA)	holding ~ (VA)	holding ~ (W)	hot/cold = (W)	operator ambient temperature range (TS) (C°)	replacement coil ~ 230 V/50 Hz	replacement coil = 24 V DC	type (1)
SC	6	3,5	2,5	2,5 / 3	-25 to +60	400127-097	400904-542	01
SC	15	7	5	4 / 5	-25 to +60	400727-117	400727-185	02

(1) Refer to the dimensional drawings on the following page



3/2 NC - 5/2 function



5/3 function

SPECIFICATIONS

Configurator - CAD Files

pipe size G	orifice size (mm)	flow coefficient Kv (m³/h)	flow coefficient Kv (l/min)	operating pressure differential (bar) min.	operating pressure differential (bar) max. (PS) air (*) ~	operating pressure differential (bar) max. (PS) air (*) =	power coil (W) ~	power coil (W) =	catalogue number ~/=	options maintained man. operator	options	options
3/2 NC - 5/2 - Solenoid air pilot operated - spring return (monostable)												
1/4	6	0,6	10	2	10	10	2,5	3	**SCG551A001**	**MS**	-	-
1/2	13	2,49	41,5	2	10	10	5	5	**SCG553A001**	**MS**	-	-
3/2 NC - 5/2 - Solenoid air pilot operated and return (bistable)												
1/4	6	0,6	10	2	10	10	2,5	3	**SCG551A002**	**MS**	-	-
1/2	13	2,49	41,5	2	10	10	5	5	**SCG553A002**	**MS**	-	-
5/3 - W1 - pressure held, solenoid air pilot and return												
1/4	6	0,6	10	2	10	10	2,5	3	**SCG551A065**	**MS**	-	-
1/2	13	2,49	41,5	2	10	10	5	5	**SCG553A065**	**MS**	-	-
5/3 - W3 - pressure released, solenoid air pilot and return												
1/4	6	0,6	10	2	10	10	2,5	3	**SCG551A066**	**MS**	-	-
1/2	13	2,49	41,5	2	10	10	5	5	**SCG553A066**	**MS**	-	-
3/2 NC - 5/2 - Solenoid air pilot operated spring return (monostable), certified IEC 61508 Functional Safety data												
1/4	6	0,6	10	2	10	10	2,5	3	**SCG551A001SL**	-	-	-
1/2	13	2,49	41,5	2	10	10	5	5	**SCG553A001SL**	-	-	-

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AIR OPERATED AND OPTIONS

- Versions (Type 03): - pilot air operated, spring return, catalogue numbers: **G551A101** / **G551A101SL** (1/4); **G553A101** / **G553A101SL** (1/2)
  - pilot air operated and return, catalogue numbers: **G551A102** (1/4); **G553A102** (1/2)
- Suffix "**GD**" (air operated only, ATEX 2GD c)
- Explosionproof enclosures for use in zones 1/21-2/22, categories 2-3 to ATEX Directive 2014/34/EU (www.asco.com)
- Valves equipped with exhaust reducers G 1/8 (3/2 NC-5/2, series 551), suffix **M**MS
- Set of stainless steel mounting screws (series 551), catalogue number **97802212**
- Set of two G 1/8 exhaust reducers (series 551), catalogue number **88100344**
- Other pipe connections are available on request
- Connector with visual indication and peak voltage suppression or with cable length of 2 m (www.asco.com)

INSTALLATION

- The valves can be mounted in any position without affecting operation
- 3/2 NC-5/2 spool valve supplied with one or two interface plates with NAMUR mating surfaces. Depending on function (3/2 NC or 5/2), position the plate (series 551) or one of the two plates (series 553) on the spool valve body before installing on actuator
- Do not connect the pressure supply to the exhaust port 3. The "environmentally-protected" construction is not adapted for NO function. Contact us for function available in specific version
- Dowel pin (if necessary), bolts and gaskets are standard supplied
- It is necessary to connect pipes or fittings to the exhaust ports to protect the internal parts of the spool valve and its pneumatic operator if used outside or in harsh environments (dusts, liquids etc.)
- IEC 61508 Functional Safety (suffix SL). Check temperature range of valve body and solenoid for suitability. For probability of failure, contact us
- Threaded pipe connection is standard: G = G (ISO 228/1)
- Valves with suffix "SL" are supplied with specific exhaust protectors
- Installation/maintenance instructions are included with each valve

ACCESSORIES

series	pipe size	exhaust protector (stainless steel)
551	G 1/8	**34600418** (1)
551 (W1/W3)	G 1/4	**34600419**
553	G 1/2	**34600479** (1)
551-553	M5	**34600484** (1)

(1) Supplied with suffix "SL"

ORDERING EXAMPLES:

SC	G	551 **A** 001	**MS**	230V / 50 Hz
SC	G	551 **A** 001	**SL**	24V / DC
SC	G	553 **A** 002		115V / 50 Hz
	G	551 **A** 101	**SL**	

prefix — pipe thread — basic number — voltage suffix

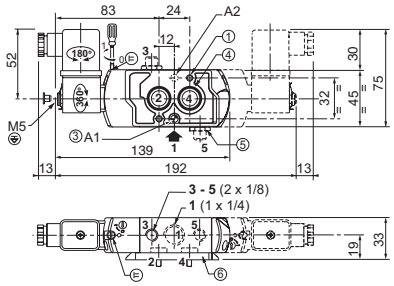
DIMENSIONS (mm), WEIGHT (kg)

Configurator - CAD Files

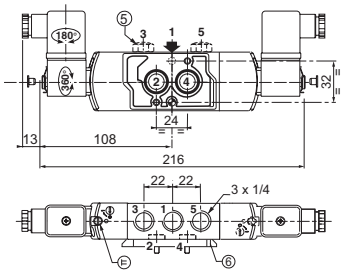


TYPE 01
Prefix "SC" Solenoid
Epoxy moulded
IEC 335 / DIN 43650
IP65

551A001/A001MS/A001SL/A002/A002MS



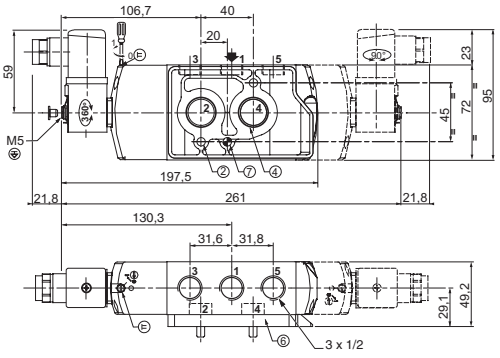
551A065/A065MS/A066/A066MS (W1 - W3)





TYPE 02
Prefix "SC" Solenoid
Epoxy moulded
IEC 335 / ISO 4400
IP65

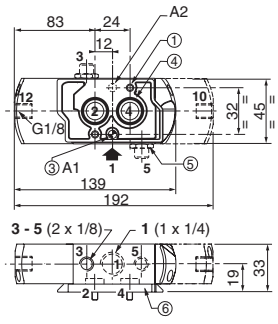
553A001/A001MS/A001SL/A002/A002MS
553A065/A065MS/A066/A066MS



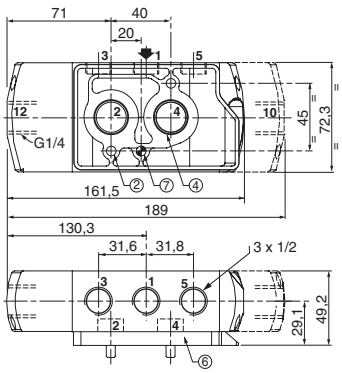


TYPE 03
No prefix
Air operated version

G551A101/A102



G553A101/A101SL/A102



(1) 2 mounting holes: 5,3 mm dia. (Spotfacing: 9 mm dia., depth 5 mm)
(2) 2 mounting holes: 6,5 mm dia. (Spotfacing: 11 mm dia., depth 6 mm)
(3) One 5 mm dia. hole for dowel pin:
- in position A1: 3/2 NC function plate
- in position A2: 5/2 function plate

(4) 2 O-ring seals (supplied)
(5) Exhaust reducer (G 1/8, 3/2 NC-5/2, series 551) or exhaust protector
(6) Interface plate

weight (2) (kg)	type 01		type 02	type 03	
	3/2-5/2	5/3	553	551	553
monostable.	0,34	-	0,90	0,31	0,85
bistable	0,46	0,45	1,20	0,41	1,11

(2) Incl. coil(s) and connector(s).

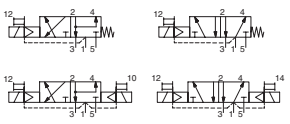
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SOLENOID VALVES

pilot operated, spool type
single/dual solenoid (mono/bistable function)
aluminium body, “NAMUR” style, 1/4 - 1/2



3/2-5/2

Series
551
553

FEATURES

- *The solenoid operated spool valves have threaded port connections and NAMUR interface*
- *The same spool valve can be adapted for 3/2 NC or 5/2 functions for controlling double-acting and single-acting actuators*
- *All the exhaust ports of the 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 valves offer environmental protection against the ingress of liquids, dusts or other foreign matter (environmentally-protected construction)*
- *Solenoid pilot valve with spade-plug connector type EN 175301-803, industry standard form C, with 9,4 mm spacing. Versions with M12 connection*
- *Solenoid pilot valve, CNOMO size 15 interface, with or without integral LED and electrical protection. LED indicator visible from 3 sides*
- *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 solenoid valves satisfy all relevant EU directives*



GENERAL

Differential pressure 2 - 10 bar [1 bar = 100 kPa]
Flow (Qv at 6 bar) l/min (ANR)

1/4	1/2
700	3000

Pilot mounting interface surface ISO 15218 (CNOMO E06.36.120N, size 15)

fluids (∗)	temperature range (TS)	seal materials (∗)
air, inert gas, filtered	-25°C to +40°C	NBR (nitrile) + PUR (polyurethane)

MATERIALS IN CONTACT WITH FLUID

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

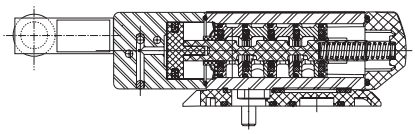
Body Aluminium, black anodized
End cover (spring) Glass fibre filled PA
Interface plates Glass fibre filled PA
Spool valve internal parts Zamak, stainless steel, POM, aluminium
Pilot body PARA
Pilot internal parts POM, PET, stainless steel and brass
Pneumatic interface seal TPE

ELECTRICAL CHARACTERISTICS

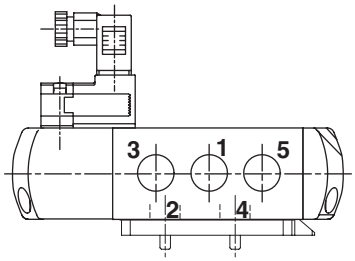
Coil insulation class F
Connector (type 05) Spade plug (cable Ø 4-6 mm)
Connector specification Type 05: DIN 43650, 9,4 mm, form C
Connection Type 07: M12 (CNOMO E03.62.520.N)
Electrical safety IEC 335
Electrical enclosure protection Moulded IP65 [05] or IP67 [07] (EN 60529)
Standard voltages DC (=): 24V
(Other voltages and 60 Hz on request) AC (~): 24V-115V-230V / 50 Hz (prefix CFSC)

prefix option	power ratings inrush ~ (VA)	power ratings holding ~ (VA)	power ratings holding ~ (W)	power ratings hot/cold = (W)	operator ambient temperature range (TS) (C°)	voltage ~ (V)	voltage = (V)	type (1)
CFSC	1,4	1,2	1,1	1/1,2	-25 to +60	24-115	24	05
	1,8 (2)	1,6 (2)	1,5 (2)	1,15/1,35(2)				
	2,1	1,6	1,5	-	-25 to +60	230	-	
	2,5 (2)	2 (2)	1,9 (2)	-	-25 to +50			
CFVT (3)	-	-	-	1,15/1,35	-25 to +60	-	24	07

(1) Refer to the dimensional drawings on the following page.
(2) Values with LED indicator and protection, use TPL 20674.
(3) Supplied with LED indicator and protection.



551 (prefix CFSC)



553 (prefix CFSC)

SPECIFICATIONS

Configurator - CAD Files

pipe size	orifice size	flow coefficient Kv		operating pressure differential (bar) min.	operating pressure differential (bar) max. (PS) air (*) ~	operating pressure differential (bar) max. (PS) air (*) =	power coil (W) ~	power coil (W) =	catalogue number connector EN 175301-803 (9,4 mm) (type 05) ~/=	catalogue number M12 (type 07) =	options maintained man. operator	options impulse man. operator	
G	(mm)	(m³/h)	(l/min)										
3/2 NC - 5/2 - Solenoid air pilot operated - spring return (monostable)													
1/4	6	0,6	10	2	10	10	1,1..1,5	1,2	**CFSCG551C501**	-	MS	MO	-
							-	1,35	-	**CFVTG551C501**	MS	MO	-
1/2	13	2,49	41,5	2	10	10	1,1..1,5	1,2	**CFSCG553A501**	-	MS	MO	-
							-	1,35	-	**CFVTG553A501**	MS	MO	-
3/2 NC - 5/2 - Solenoid air pilot operated and return (bistable)													
1/4	6	0,6	10	2	10	10	1,1..1,5	1,2	**CFSCG551C502**	-	MS	MO	-
							-	1,35	-	**CFVTG551C502**	MS	MO	-
1/2	13	2,49	41,5	2	10	10	1,1..1,5	1,2	**CFSCG553A502**	-	MS	MO	-
							-	1,35	-	**CFVTG553A502**	MS	MO	-

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SPECIFICATIONS

pipe size	orifice size	flow coefficient Kv		operating pressure differential (bar)			power coil (W)		catalogue number		options		
				min.	max. (PS) air (*)				connector EN 175301-803 (9,4 mm) (type 05)	M12 (type 07)	maintained man. operator	impulse man. operator	
G	(mm)	(m^3/h)	(l/min)		~	=	~	=	~/=	=			
3/2 NC - 5/2 - Solenoid air pilot operated spring return (monostable), certified IEC 61508 Functional Safety data													
1/4	6	0,6	10	2	10	10	1,1..1,5	1,2	**CFSCG551C501SL**	-	-	**MO**	-
							-	1,35	-	**CFVTG551C501SL**	-	**MO**	-
1/2	13	2,49	41,5	2	10	10	1,1..1,5	1,2	**CFSCG553A501SL**	-	-	**MO**	-
							-	1,35	-	**CFVTG553A501SL**	-	**MO**	-

OPTIONS

- Explosionproof enclosures for use in zones 0/20-1/21-2/22, categories 1-2-3 to ATEX-Directive 2014/34/EU (www.asco.com)
- LED and protection, prefixes CFSC / CFSD, use TPL number: TPL 20674 (e.g.: CFSDXG551C505TPL20674)
- Straight M12 connector: with 5 m cable length (catalogue number **88130212**)
- Valves equipped with exhaust reducers G 1/8 (3/2 NC-5/2, series 551), suffix **M**MS
- Set of stainless steel mounting screws (series 551), catalogue number **97802212**
- Set of two G 1/8 exhaust reducers (series 551), catalogue number **88100344**
- Versions with spade-plug connector type ISO 15217/DIN 43650 form C with 8 mm spacing or with cable ends: contact us
- Other pipe connections are available on request
- Connector with visual indication and peak voltage suppression or with cable length of 2 m (www.asco.com)

INSTALLATION

- The valves can be mounted in any position without affecting operation
- 3/2 NC-5/2 spool valve supplied with one or two interface plates with NAMUR mating surfaces. Depending on function (3/2 NC or 5/2), position the plate (series 551) or one of the two plates (series 553) on the spool valve body before installing on actuator
- Do not connect the pressure supply to the exhaust port 3. The “environmentally-protected” construction is not adapted for NO function. Contact us for function available in specific version
- Dowel pin (if necessary), bolts and gaskets are standard supplied
- It is necessary to connect pipes or fittings to the exhaust ports to protect the internal parts of the spool valve and its pneumatic operator if used outside or in harsh environments (dusts, liquids etc.)
- IEC 61508 Functional Safety (suffix SL). Check temperature range of valve body and solenoid for suitability. For probability of failure, contact us
- Threaded pipe connection is standard: G = G (ISO 228/1)
- Valves with suffix “SL” are supplied with specific exhaust protectors
- Installation/maintenance instructions are included with each valve

ACCESSORIES

series	pipe size	exhaust protector (stainless steel)
551	G 1/8	**34600418** (1)
553	G 1/2	**34600479** (1)
551-553	M5	**34600484** (1)

(1) Supplied with suffix “SL”

ORDERING EXAMPLES:

CFSC	G	551 **C** 501		230V / 50 Hz
CFSC	G	551 **C** 501	**SL**	115V / 50 Hz
CFVT	G	553 **A** 502	**MS**	24V / DC
CFSC	G	551 **C** 501	**SLMO**	230V / 50 Hz

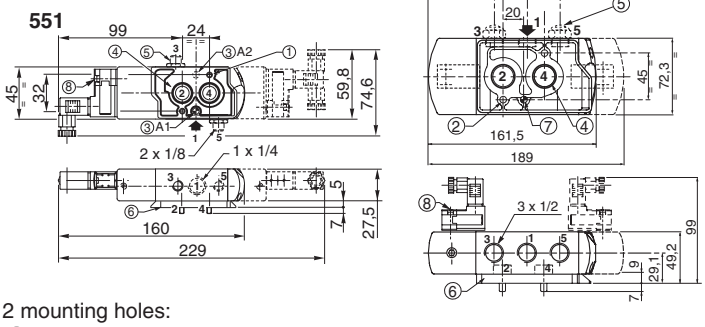
prefix — pipe thread — basic number — voltage — suffix

DIMENSIONS (mm), WEIGHT (kg)

Configurator - CAD Files

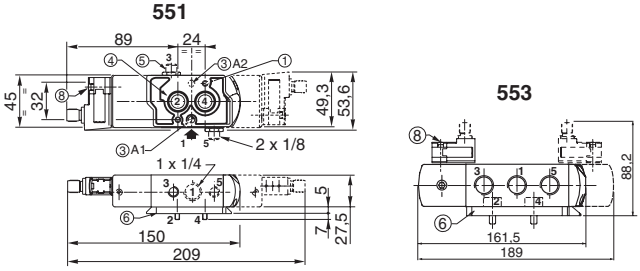


TYPE 05
Prefix "CFSC"
Polyarilamide
IEC 335 / IP65
DIN 43650, 9,4 mm





TYPE 07
Prefix "CFVT"
Polyarilamide
IEC 335 / IP67
M12



2 mounting holes:
1. 5,3 mm dia. (Spotfacing: 9 mm dia., depth 5 mm)
2. 6,5 mm dia. (Spotfacing: 11 mm dia., depth 6 mm)
3. One 5 mm dia. hole for dowel pin:
   - in position A1: 3/2 NC function plate
   - in position A2: 5/2 function plate
4. 2 O-ring seals (supplied)
5. Exhaust reducer (G 1/8, series 551) or exhaust protector
6. Interface plate
7. One 6,5 mm dia. hole for dowel pin, position for 3/2 NC or 5/2 function plate
8. Manual operator location

type	prefix option	weight (2) monostable 551	monostable 553	bistable 551	bistable 553
05	CFSC	0,34	1	0,39	2,08
07	CFVT	0,36	1,02	0,43	2,12

(2) Prefix CFSC: including connector(s).

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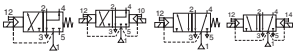
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SPOOL VALVES

pilot operated, spool type
single/dual solenoid, aluminium body,
"NAMUR" style, 1/4, **stainless steel screws**

3/2-5/2

Series **551**



FEATURES

- *Spool valve protected against food and beverage environment thanks to stainless steel screws*
- *The solenoid operated spool valves have threaded port connections and NAMUR interface*
- *The same spool valve can be adapted for 3/2 NC or 5/2 functions for controlling double-acting and single-acting actuators*
- *All the exhaust ports of the 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 valves offer environmental protection against the ingress of liquids, dusts or other foreign matter (environmentally-protected construction)*
- *The solenoid valves satisfy all relevant EU directives*



GENERAL

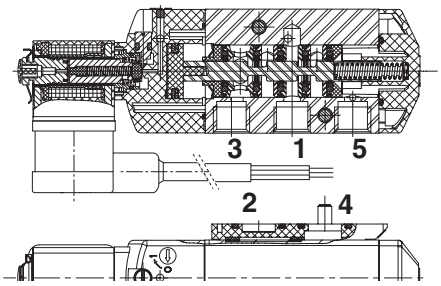
Differential pressure 2 - 10 bar [1 bar = 100 kPa]
Flow (Qv at 6 bar) 700 l/min (ANR)

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, end cover Aluminium, black anodized
End cover (spring return) PBT
Spool valve internal parts stainless steel, POM, aluminium
Seals NBR + PUR
Core and core tube Stainless steel
Shading coil Copper
Screws Stainless steel 316L



ELECTRICAL CHARACTERISTICS

Coil insulation class F
Connector Spade plug connector with cable outlet 2 m long
Connector specification EN 175301-803, 11 mm, industry standard form B (type 01)
Electrical safety IEC 335
Electrical enclosure protection Moulded-in cable IP67 (EN 60529)
Standard voltages DC (=): 24V - 48V
(Other voltages and 60 Hz on request) AC (~): 24V - 48V - 115V - 230V / 50 Hz

prefix option	power ratings				operator ambient temperature range (TS)	replacement coil		type (1)
	inrush ~	holding ~		hot/cold =		~	=	
	(VA)	(VA)	(W)	(W)	(C°)	230 V/50 Hz	24 V DC	
SC	6	3,5	2,5	2,5/3	-25 to +60	400127-097	400904-542	01

(1) Refer to the dimensional drawings on the following page.

SPECIFICATIONS

pipe size	orifice size	flow coefficient Kv		operating pressure differential (bar)			power coil (W)		catalogue number (with maintained manual operator)
				min.	max. (PS) air (*)				
G	(mm)	(m^3/h)	(l/min)		~	=	~	=	~/=
3/2 NC - 5/2 - Solenoid air pilot operated - spring return (monostable)									
1/4	6	0,6	10	2	10	10	2,5	3	**SCG551A082MS**
3/2 NC - 5/2 - Solenoid air pilot operated and return (bistable)									
1/4	6	0,6	10	2	10	10	2,5	3	**SCG551A084MS**

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AIR OPERATED AND OPTIONS

- Valves equipped with exhaust reducers G 1/8 (3/2 NC-5/2, series 551), suffix M
- Set of two G 1/8 exhaust reducers (series 551), catalogue number **88100344**
- Other pipe connections are available on request
- Spade connector size 22, IP67 with integrated visual LED and varistor protection and PVC 0,75 mm² cable lenght of 2 m: **88100937**
- Plug with visual indication and peak voltage suppression or with cable length of 2 m ( )

INSTALLATION

- The valves can be mounted in any position without affecting operation
- 3/2 NC-5/2 spool valve supplied with two interface plates with NAMUR mating surfaces. Depending on function (3/2 NC or 5/2), position one of the two plates on the spool valve body before installing on actuator
- Dowel pin (if necessary), bolts and gaskets are standard supplied
- It is necessary to connect pipes or fittings to the exhaust ports to protect the internal parts of the spool valve and its pneumatic operator if used outside or in harsh environments (dusts, liquids etc.)
- Threaded pipe connection is standard: G = G (ISO 228/1)
- Installation/maintenance instructions are included with each valve

ACCESSORIES

series	pipe size	exhaust protector (stainless steel)
551	G 1/8	**34600418**
551	M5	**34600484**

ORDERING EXAMPLES:

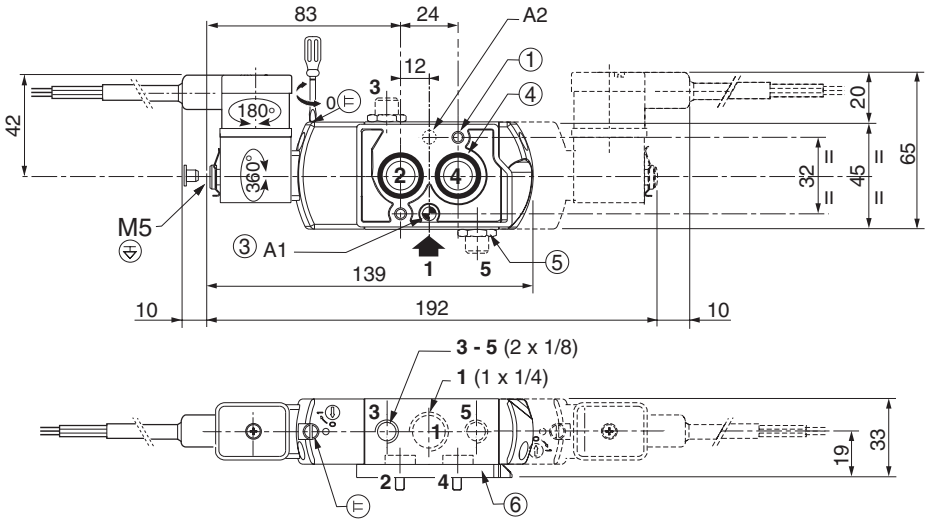
SC G 551 **A** 082 **MS** 230V / 50 Hz

- SC — prefix
- G — pipe thread
- 551 A 082 — basic number
- MS — suffix
- 230V / 50 Hz — voltage

DIMENSIONS (mm), WEIGHT (kg)



TYPE 01
Prefix "SC" Solenoid
Epoxy moulded
IEC 335 / DIN 43650
IP67



type	prefix option	weight (2) monostable	weight (2) bistable
01	SC	0,47	0,59

(2) Incl. coil(s) and connector(s).

1. 2 mounting holes: 5,3 mm dia. (Spotfacing: 9 mm dia., depth 5 mm)
2. 2 mounting holes: 6,5 mm dia. (Spotfacing: 11 mm dia., depth 6 mm)
3. One 5 mm dia. hole for dowel pin:
   - in position A1: 3/2 NC function plate
   - in position A2: 5/2 function plate
4. 2 O-ring seals (supplied)
5. Exhaust reducer (G 1/8, 3/2 NC-5/2, series 551) or exhaust protector
6. Interface plate

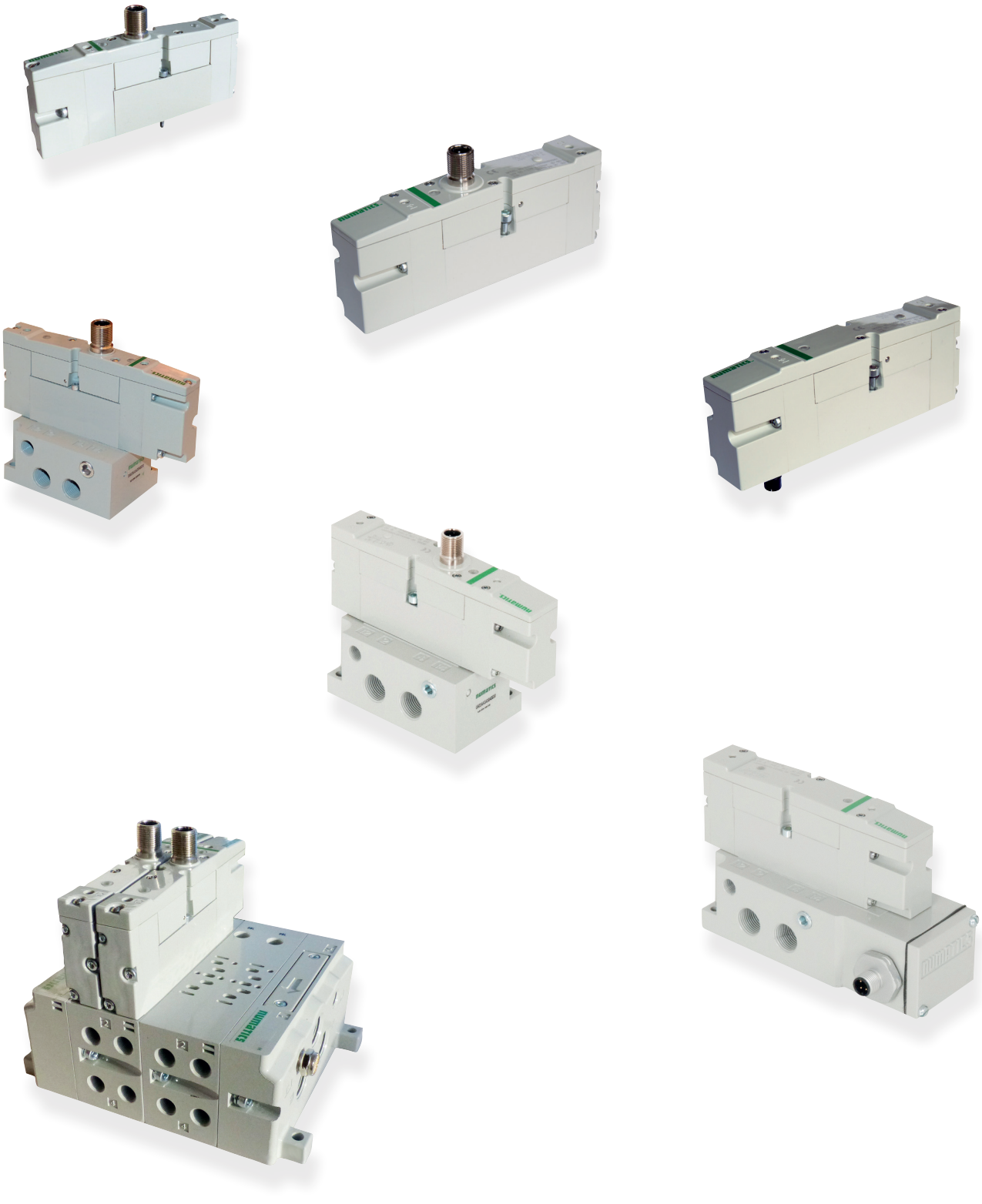
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502 - 503 VALVES
integrated M12 and M12
ISO 15407-01
ISO 15407-02

Series
502
503



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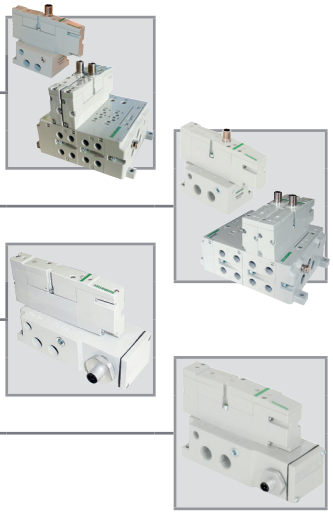
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ISO 15407-1 Valves, 502 Series

ISO 15407-1 Valves, 503 Series

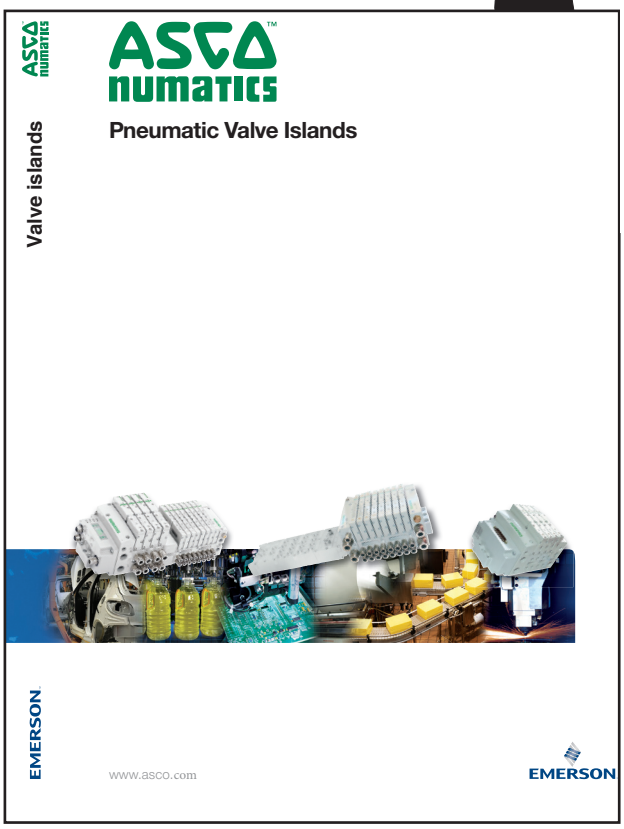
ISO 15407-2 Valves, 502 Series

ISO 15407-2 Valves, 503 Series



Consult the online configurator - CAD files on: **www.asco.com**





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STEEL SPOOL & SLEEVE VALVES

solenoid air operated

ISO 15407-1 - VDMA 24563 subbase-mounted body

integrated pilots

5/2-5/3

Series

CL18

Type

ISO size 02 (18 mm)



FEATURES

- *Reliability: steel spool & sleeve technology with long service life*
- *Robust valve design, particularly recommended for use in high-temperature or dirty environments*

GENERAL

Fluids	Air or neutral gas, filtered, lubricated or not
Operating pressure	1 to 16 bar (with internal supply to pilot) -0,950 to 16 bar (with external supply to pilot)
Ambient temperature	-20°C to +80°C
Flow (Qv at 6 bar)	400 l/min (500 l/min with special subbase)
Base	ISO 15407-1 - VDMA 24563
Subbase	Single or joinable subbases

CONSTRUCTION

Body	Aluminium, anodised, painted grey
Internal parts	Stainless steel, POM (polyacetal), aluminium
Static seals	NBR (nitrile)

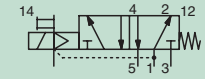
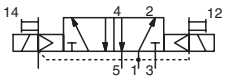
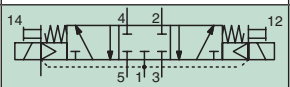
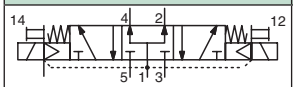
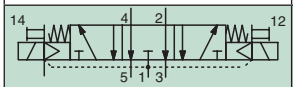
PILOTS

Solenoid coil	Encapsulated
Electrical equipment	Conforming to VDE 0580
Seals	NBR (nitrile)

ELECTRICAL CHARACTERISTICS

voltage		consumption	insulation class	protection degree	electrical connection
~	115V - 50/60Hz	4,3 /3,6 VA	F	IP 65	spade plug size 15 connector, EN 175301-803, industry standard form C (9,4 mm) rotatable by 90°
=	24V	1,9 W			

SPECIFICATIONS

function symbol		operators Pilot (14) solenoid air operated return (12)	port size	flow at 6 bar l/min	flow Kv m³/h	catalogue number without connector (1)	(M)
5/2		spring return	subbase G 1/8	400	0,38	**181BA400A0000YY**	▼
		solenoid air operated return				**181BB400A0000YY**	▼
5/3		pressure held **W1**				**181BB600A0000YY**	▼
		pressure applied **W2**				**181BB700A0000YY**	▼
		pressure released **W3**				**181BB500A0000YY**	▼

(M) Type of manual operator on pilot(s): ▼ : impulse

(1) See page connectors ( )

voltage	**YY**
24VDC	**61**
115 VAC	**30**

OPTIONS (upon request)

- Larger ported manifolds for higher flow rates
- Quick-acting version < 6 ms
- Solenoid coil form C, ISO 15217/DIN 43650, 8 mm

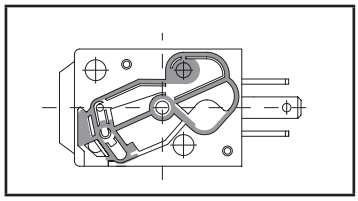
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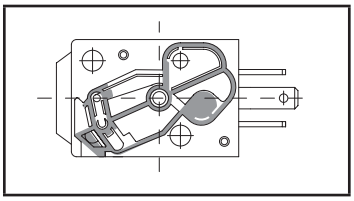
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INTERNAL/EXTERNAL PILOT AIR SUPPLY

The valves are equipped with a selector seal allowing to choose between internal and external pilot air supply



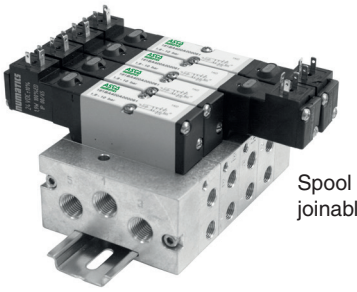
Internal supply



External supply

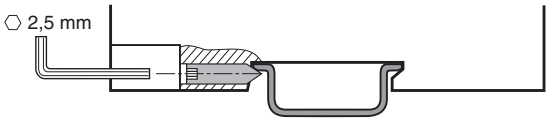
SUBBASES

Subbase	size	type of port	description	port connection 1-3-5	port connection 2-4	port connection 12-14	catalogue number
single subbase	ISO 02	side	subbase	G 1/8	G 1/8	M5	**35500525**
joinable subbase	ISO 02	side	subbase	-	G 1/8	M5	**35500527**
			set of 2 end plates	G 1/4	-	-	**88135539**
			set of 3 plugs on main pressure (1) and exhausts (3-5) for 2 different pressure supplies (see below).				**88135541**
			blanking plate				**88100358**

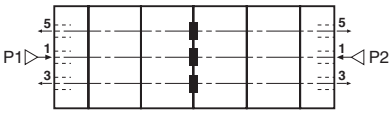


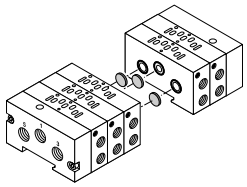
Spool valves mounted on joinable subbases

Joinable subbases ISO 02 can be mounted on symmetric EN 50022 profiles with hexagon screws



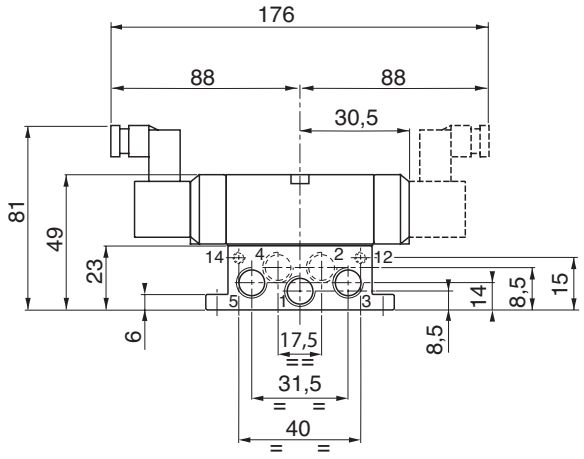
The set of plugs allows subbases to be supplied with 2 different pressure inlets

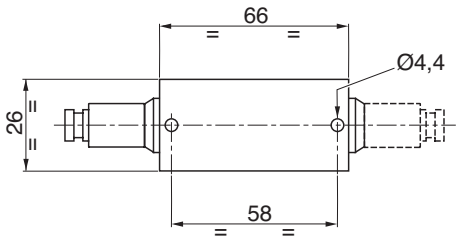




DIMENSIONS (mm), WEIGHT (kg)

Valve with integrated pilot on single subbase





weight valve + subbase	
181BA400A... monostable	181BB 4 / 5 / 6 / 700A... bistable
0,106	0,144

port no.	Ø port
1-3-5	G 1/8
2-4	G 1/8
12-14	M5

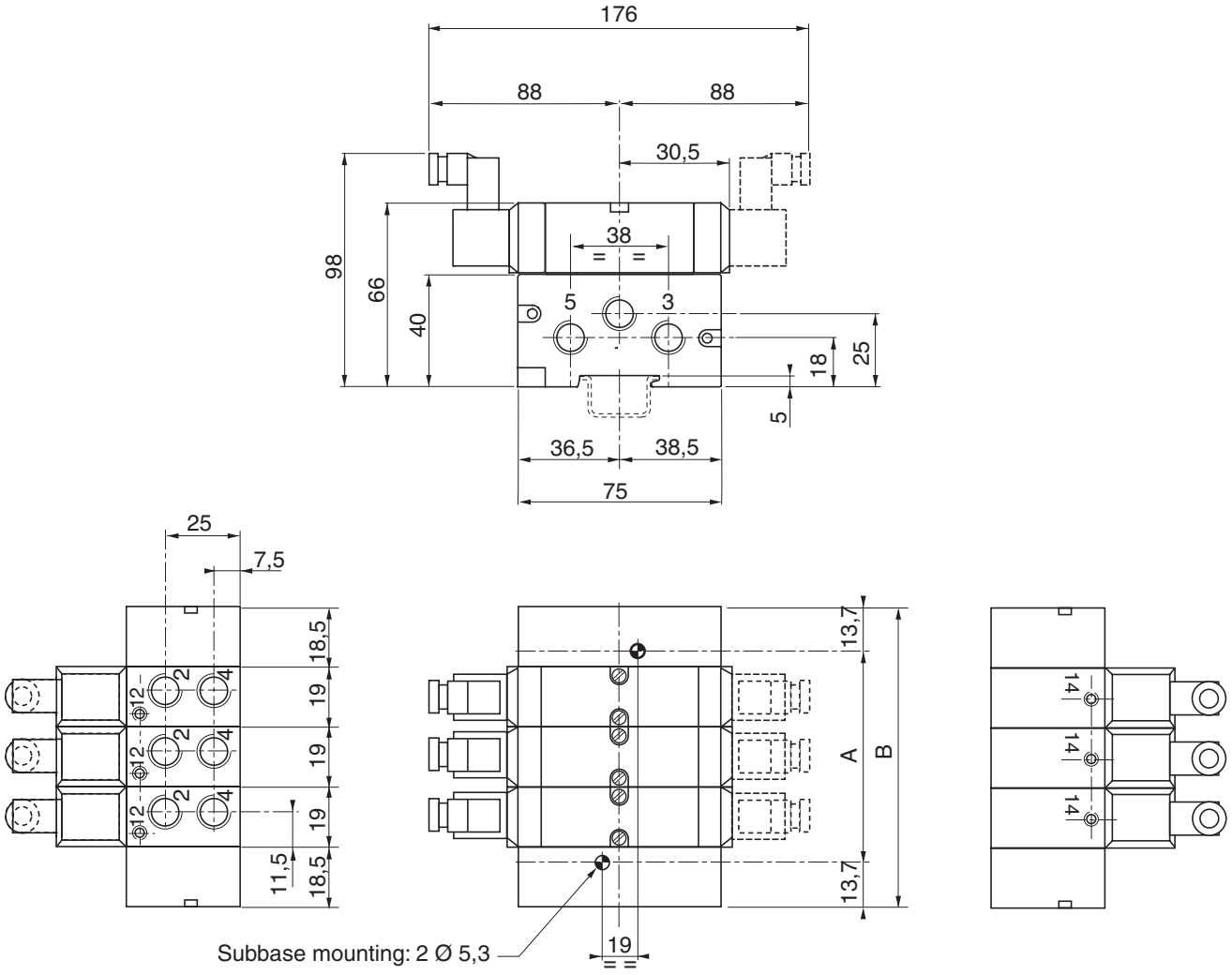
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DIMENSIONS (mm), **WEIGHT** (kg)

Valve with integrated pilot on joinable subbase



number of subbases	A	B	weight valve + subbase + end plates
3	66,5	94	1,100
4	85,5	113	1,390
5	104,5	132	1,680
6	123,5	151	1,970
7	142,5	170	2,260
8	161,5	189	2,550
+1	+19	+19	+ 0,290

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COMPACT SPOOL VALVES

solenoid air operated

G1/4-G3/8 - ISO 5599/1

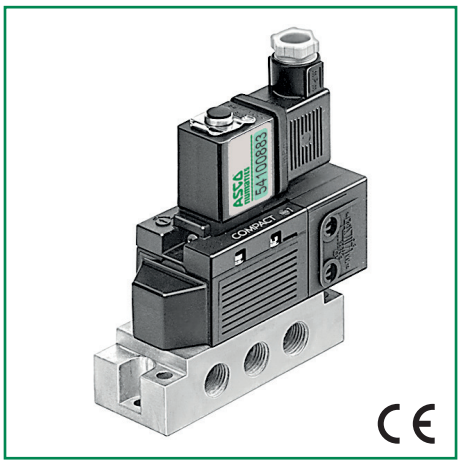
subbase-mounted body

5/2

Series **541**

Type

ISO size 1

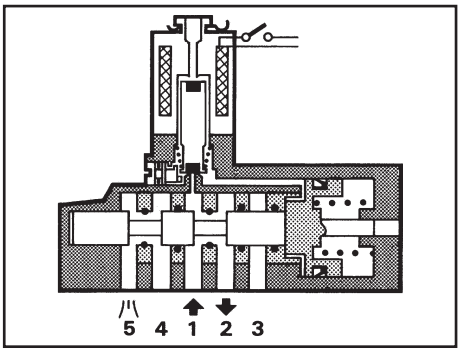


FEATURES

- *Modular assembly with joinable subbases*
- *Subbases with side or bottom ports*
- *Version with manual spool position testers*

GENERAL

Fluid	Air or neutral gas, filtered, lubricated or not
Operating pressure	3 to 10 bar
Ambient temperature	-10°C to +60°C
Flow (Qv at 6 bar)	1050 l/min (ANR)
Flow coefficient	Kv = 15
Life	15 millions of cycles (in normal operating conditions)
Base	ISO 5599/01- Size 1
Subbase	Single subbase ISO/AFNOR NF E49085 Joinable subbase ISO/VDMA 24345 Joinable subbase with integrated functions



CONSTRUCTION

SPOOL VALVE

Body and cover	PA + FG (glass filled polyamide 6/6)
Internal parts	POM (polyacetal), light alloy and brass
Seals	NBR (nitrile) and PUR (polyurethane)

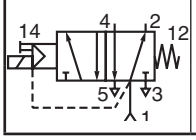
BUILT-IN SOLENOID PILOT

Seals	NBR (nitrile) and PUR (polyurethane)
Electrical devices	Conforming to standard NF-C79300
Coil and iron circuit	Encapsulated monobloc, rotatable x 360°
Exhaust	M5 ports tapped, with exhaust plug
Manual operator	Maintained

ELECTRICAL CHARACTERISTICS

type of coil	voltage		consumption inrush	consumption hold	insulation class	protection degree	electrical connection
standard size 22	~	24V-48V-115V-230V-50Hz	6VA	3,5VA (2,5W)	F	IP 65	spade plug size 22 connector DIN 43650, 11 mm, industry standard B
	=	24V-48V	2,5W				

SPECIFICATIONS

symbol	operators: pilot (14)	operators: return (12)	response time (ms): energized	response time (ms): de-energized	catalogue number: with connector	catalogue number: without connector	manual operator
	solenoid air operated	spring	18	70	**54100883**	**54100884✻**	maintained

✻ Option : connector with built-in visual indicator and electrical protection ( )

SUBBASES

description	type	Ø	catalogue number
single subbase (ISO/AFNOR)	compact - side port	G 1/4	**35500150**
	bottom port	G 1/4	**35500077**
joinable subbase (ISO/VDMA)	bottom port	G 1/4	**35500165**
	1 set of 2 end plates (supply and exhaust side ports)	G 3/8	**35500166**

Other subbases:

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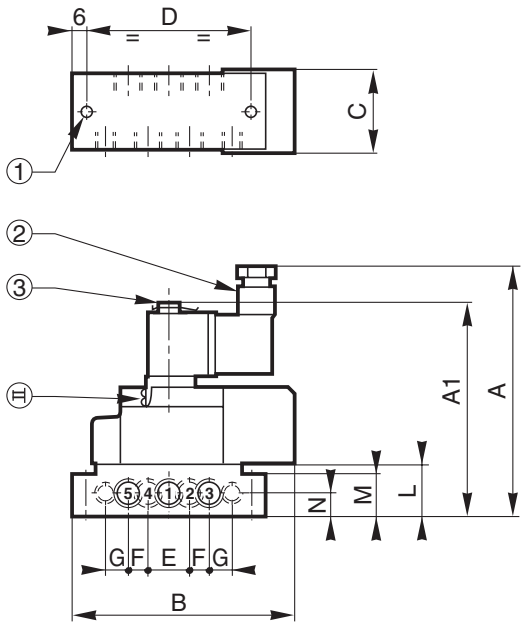
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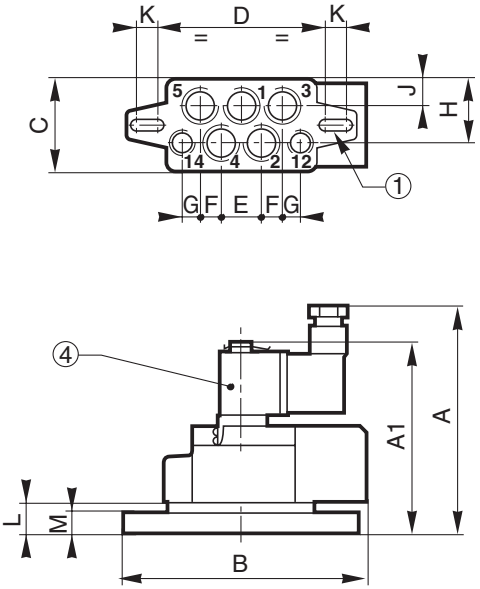
DIMENSIONS (mm), **WEIGHT** (kg)

VALVE ON **SINGLE** SUBBASE

Code of subbase with **side** port : **35500150**



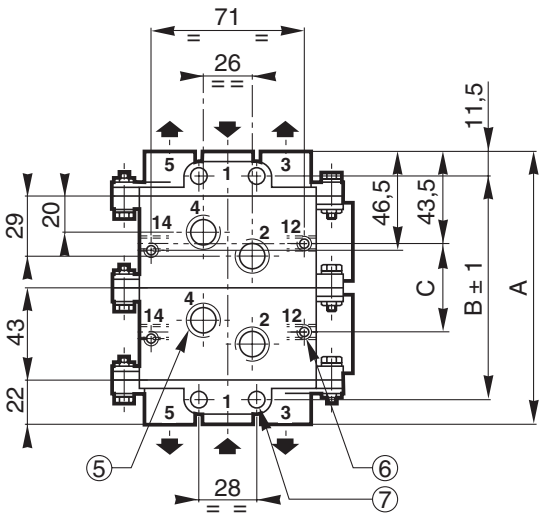
Code of subbase with **bottom** port : **35500077**

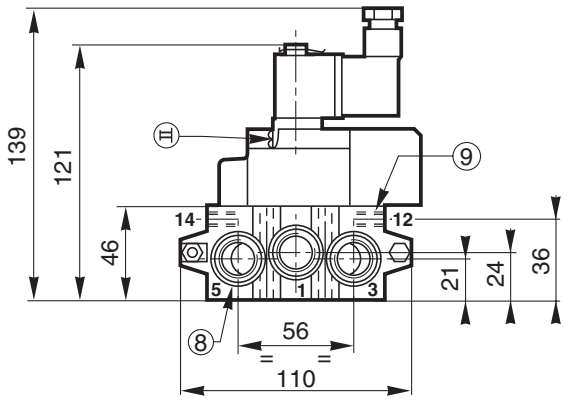


subbase catalogue number	port orifices 12 - 14	2 - 4	1 - 3 - 5	A	A1	B	C	D	E	F	G	H	J	K	L	M	N	weight
35500150	G 1/8	G 1/4	G 1/4	118	100	105	39	80	20	10	9	-	-	-	25	19	11	0,450
35500077	G 1/8	G 1/4	G 1/4	109	91	114	47	80	20	10	8,5	31	13,4	9	16	10	-	0,370

weight of compact monostable valve : 0.230 kg

VALVE ON **JOINABLE** SUBBASES WITH BOTTOM PORT ISO/VDMA





	catalogue number	port orifices 12-14	2-4	1-3-5
subbase	**35500165**	G 1/8	G 1/4	–
2 end plates	**35500166**	–	–	G 3/8

set of end plate supplied with 3 plugs G 3/8 (for 1-3-5)

number of subbases	A	B ±1	C	weight
3	173	150	86	1,600
4	216	193	129	2,050
5	259	236	172	2,500
6	302	279	215	2,950
7	345	322	258	3,400
8	388	365	301	3,850

Weight = valves + subbases + end plates

① Mounting : 2 Ø 5,5
② Size 22 connector
③ Port M5 depth 5.5
④ Coil rotatable x 360°
⑤ 2 ports G 1/4 (2-4)
⑥ Bottom mounting : 2 Ø M5
⑦ Mounting : 4 Ø 7
⑧ 3 ports G 3/8 (1-3-5)
⑨ 2 ports G 1/8 (12-14)
Ⓗ Manual operator

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MULTIFUNCTION SPOOL VALVES

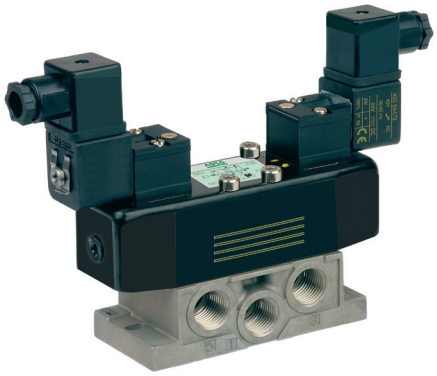
air operated
and solenoid air operated

ISO 5599/1 subbase-mounted body

5/2-5/3
Series
541-542-543
Type
ISO sizes 1-2-3



Spool valve ISO 5599/1 size 1
solenoid air operated



Spool valve ISO 5599/1 size 2
solenoid air operated



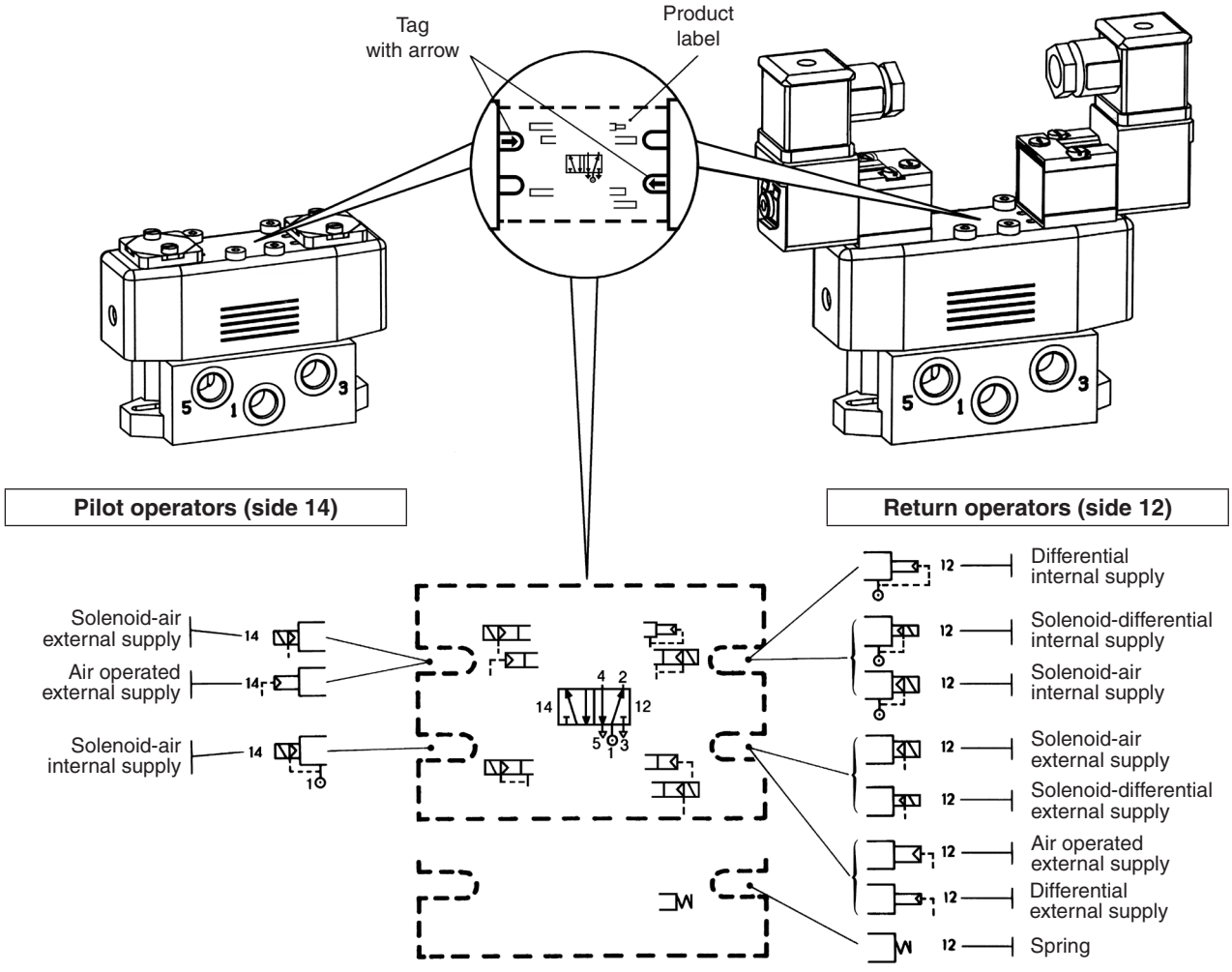
Spool valve ISO 5599/1 size 3
solenoid air operated

MULTIFUNCTION

Multifunction valves are equipped with 2 pilot selector seals on the top face, on both pilot and return sides. Each selector seal can be set on 2 positions, allowing internal or external supply to the pilot or return operators, in both versions (pneumatic and electropneumatic). External supply allows the valves to operate with a supply pressure ranging from 0 to 12 bar and under vacuum pressure.
Each seal includes a tag with an arrow to be set onto the notch corresponding to the required pilot function (see below).
Modifications of the function are very simple. The valves are delivered pre-set according to the valve code selected on your order.

Air operated spool valve

Solenoid air operated spool valve



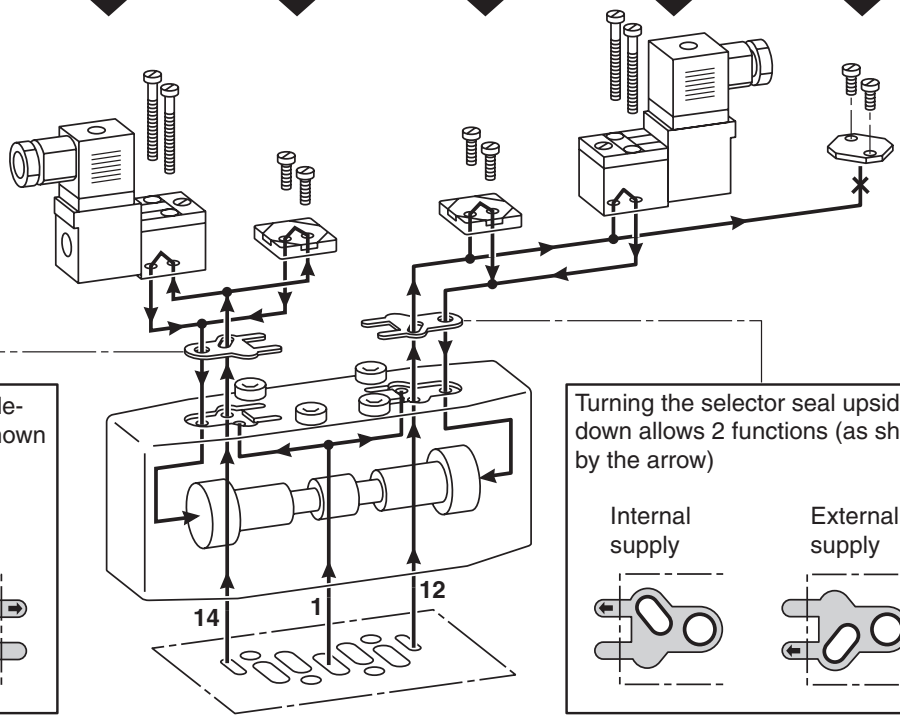
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The diagram below shows the accessories (delivered with the valves) and/or the solenoid valves appropriate for each function. These components may be separately supplied when changing the function of the valve.

	functions		pilot		return		
	symbols	pilot (14) return (12)	14	14	12 12	12 12	12
5/2		Air operated Spring return		●			●
		Air operated Differential return		●	●		
		Air operated Air		●	●		
		Solenoid air operated Spring return	●				●
		Solenoid air operated Differential return	●		●		
		Solenoid air operated Air return	●		●		
		Solenoid air operated Solenoid differential return	●			●	
		Solenoid air operated pilot and return	●			●	
5/3		Air operated W1-W2-W3		●	●		
		Solenoid air operated W1-W2-W3	●			●	
			solenoid valves **189-190** or **192**	interface **88100074**	interface **88100074**	solenoid valves **189-190** or **192**	blanking plate **88100073**



Turning the selector seal upside-down allows 2 functions (as shown by the arrow).

Internal supply

External supply

Turning the selector seal upside-down allows 2 functions (as shown by the arrow)

Internal supply

External supply

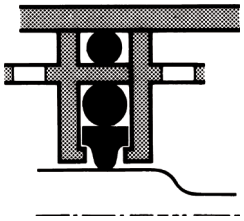
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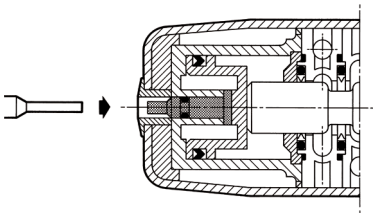
USE WITH NON LUBRICATED AIR

The ISO valves will operate satisfactorily with lubricated or non lubricated air, even with dry air due to a patented sealing system : a "T" seal backed with a cushioning or compensation seal.
This arrangement of seals maintains minimum pilot pressure which remains constant even after the valve has been switched off for a long period of time. When restarting, the performance of the valve will be the same as during continuous operating conditions.
This characteristic ensures good performance in both re-start and continuous operation conditions.

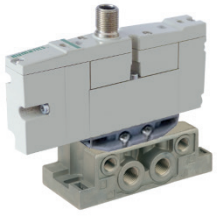


MANUAL TESTERS INDICATING THE POSITION OF THE SPOOL

On request, spool valves can be delivered equipped with manual testers so that the spool position can be checked or moved by manual override.



M12 ELECTRICAL CONNECTION (3-pin)



Spool valve ISO 15407-1 (26 mm), M12 electrical connection, with adapter ISO 5599/1 size 1



Spool valve ISO 5599/1 size 2 with M12 electrical connection



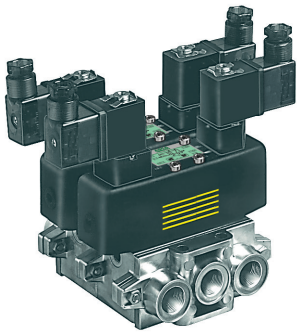
Spool valve ISO 5599/1 size 3 with M12 electrical connection

Pad mounting spool valves with M12 connector by 3-contact. This system has the following advantages:
- Smaller dimensions (503 pilot or mini-solenoid valve - pilot series 302)
- Shorter connection time
- Built-in electrical display and protection
- Instantaneous electrical disconnection

EASY INSTALLATION

ASCO Numatics markets a complementary range of components simplifying the installation of valves ISO:
- Single subbase with side ports or bottom ports
- Joinable subbases with bottom ports (1)

Numerous accessories complete these systems



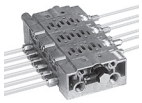
(1)

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SUMMARY

Products	Illustration	Series	Page
Multifonction spool valves		541 542 543	75 77 (ATEX)
Spool valves with M12 electrical connection		503 542 543	79
Single subbases with side ports, ISO sizes 1, 2, 3		541 542 543	81
Single subbases with bottom ports, ISO sizes 1 and 2		541 542 543	81
Metallic joinable subbases with bottom ports ISO sizes 1, 2, 3		541 542 543	81
Metallic joinable subbases with side ports ISO sizes 1 and 2		355	86
Accessories ISO sizes 1, 2, 3		346	90

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MULTIFUNCTION SPOOL VALVES

solenoid air operated

ISO 5599/1 subbase-mounted body

5/2-5/3
Series
541-542-543
Type
ISO sizes 1-2-3



FEATURES

- *Reliability: long service life of 30 million cycles*
- *Choice of internal/external supply with selector seals (vacuum use to –0,950 bar)*
- *Modular assembly with joinable subbases*
- *Subbases with side or bottom ports*

GENERAL

	ISO 1	ISO 2	ISO 3
Fluid	Air or neutral gas, filtered, lubricated or not		
Operating pressure	+3 to +10 bar (with internal supply to pilot)		
	-0,950 to +12 bar (with external supply to pilot)		
	Can be used with vacuum -0,950 bar max.		
Pilot pressure	See specifications tables		
Ambient temperature	-10°C to +60°C		
Flow (Qv at 6 bar)	1400 l/min (ANR)	2800 l/min (ANR)	4200 l/min (ANR)
Flow coefficients			
- conforming to ISO 6358	C = 5,8 x 10^{-8} m^3/s.Pa (sonic conductance)		
	b = 0,28 (absolute static pressure)		
Response time	See tables choice of equipment		
Life	30 millions of cycles		
Base	ISO 5599/1 sizes 1-2-3 - AFNOR NF E49080		
Subbase	Single subbase ISO/AFNOR NF E49085		
	Joinable subbase ISO/VDMA 24345		
	Joinable subbase with integrated functions		

CONSTRUCTION

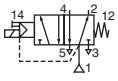
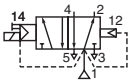
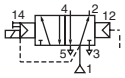
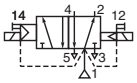
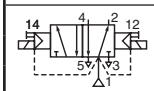
Cover	Painted steel
Pilot and return assembly	POM (polyacetal)
Seals	NBR (nitrile) and PUR (polyurethane)
Internal parts	POM (polyacetal), light alloy

ELECTRICAL CHARACTERISTICS

pilot	voltage		consumption inrush	consumption hold	insulation class	protection degree	electrical connection
series 189	~	24V-48V-115V-230V/50Hz	6 VA	3,5 VA (2,5 W)	F	IP 65	spade plug size 22 connector, DIN 43650, 11 mm, industry standard B, rotatable by 180°
	=	24V-48V	2,5 W				
series 190	~	24V-48V-115V-230V/50 Hz	9 VA	4 VA (3 W)	F	IP 65	spade plug size 30 connector, ISO4400/EN175301-803, form A, rotatable by 90°
	=	24V-48V	3 W				

The solenoid valve 190 is dual-voltage (24V~, 12V=) (48V~, 24V=) (115V~, 48V=) (230V~, 110V=)

SPECIFICATIONS 5/2

function 5/2 symbol	operators pilot (14) solenoid air operated return (12)	size	response time (1) (ms) ener-gized	response time (1) (ms) de-ener gized	pilot pressure (bar) min.	pilot pressure (bar) max.	2 catalogue numbers valve	+ solenoid pilot quantity & catalogue number with standard connector	(M)
	spring return	ISO 1	25	66	3	10	54191023	+ 1x 18900001 - 19000005	●
		ISO 2	19	68	2,5		54292023		×
		ISO 3	45	130	3		54391023	19000006	●
	differential return	ISO 1	41	45	3	10	54191024	19000017	▼
		ISO 2	32	49	2		54292024		
		ISO 3	71	82	3		54391024		
	air return	ISO 1	21	-	1,5	10	54191025		
		ISO 2	16		1,5		54292025		
		ISO 3	28		1,5		54391025		
	solenoid differential return	ISO 1	16	18	3	10	54191026	+ 2x 18900001 - 19000005	●
		ISO 2	15	16	2		54292026		×
		ISO 3	21	23	3		54391026	19000006	●
	Solenoid air operated return	ISO 1	17	16	1,5	10	54191027	19000017	▼
		ISO 2	16	15	1,5		54292027		
		ISO 3	26	25	1,5		54391027		

(M) Type of manual operator on pilot(s): × : without ● : maintained ▼ : impulse

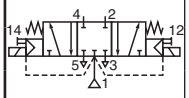
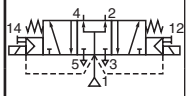
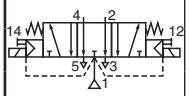
(1) With solenoid valve series 190

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SPECIFICATIONS 5/3

function 5/3 symbol	operators pilot (14) return (12) solenoid air operated	size	response time (1) (ms) ener-gized	response time (1) (ms) de-ener gized	pilot pressure (bar) min.	pilot pressure (bar) max.	2 catalogue numbers valve	+ solenoid pilot quantity & catalogue number with standard connector	(M)
	pressure held **W1**	ISO 1	16	17	3	10	**54191028**	+ 2x **18900001 - 19000005**	●
		ISO 2	16	16			**54292028**		×
		ISO 3	27	26			**54391028**	**19000006**	●
	pressure applied **W2**	ISO 1	44	18	3	10	**54191030**	**19000017**	▼
		ISO 2	54	18			**54292030**		
		ISO 3	93	27			**54391029**		
	pressure release **W3**	ISO 1	17	47	3	10	**54191029**		
		ISO 2	19	61			**54292029**		
		ISO 3	29	28			**54391030**		

(M) Type of manual operator on pilot : × : without ● : maintained ▼ : impulse
(1) With solenoid valve series 190

OPTIONS

- Solenoid valve pilot 3/2 series 192 in 3 versions
- Equipment with manual testers so that the spool position can be checked
- Material and solenoid pilot valve for use in potentially **explosive atmospheres** caused by gases or dusts - ATEX directive 2014/34/EU (See following pages)
- Connector with cable 2m long (see “Coils and accessories” section)
- Connector with transil protection (see “Coils and accessories” section)
- Solenoid valve with plug and built-in visual control and protection :

Solenoid valve **without** connector + Connector with built-in visual control and VDR/RC protection

type of valve	(M)	catalogue number solenoid valve **without** connector	catalogue number (~ / =) 24V	48V	115V	230V
189 NC	●	**18900002**	**88122405**	**88122406**	**88122407**	**88122410**
190 NC	×	**19000013**	**88122603**	**88122604**	**88122605**	**88122608**
	●	**19000014**				
	▼	**19000018**				
192 NC (2)	×	**19200022**				
	●	**19200023**				
	▼	**19200024**				

(M) Type of manual operator on pilot(s) : × : without ● : maintained ▼ : impulse

(2) Solenoid valve series 192 - 3/2 NC - Ø 2,1mm with exhaust in base

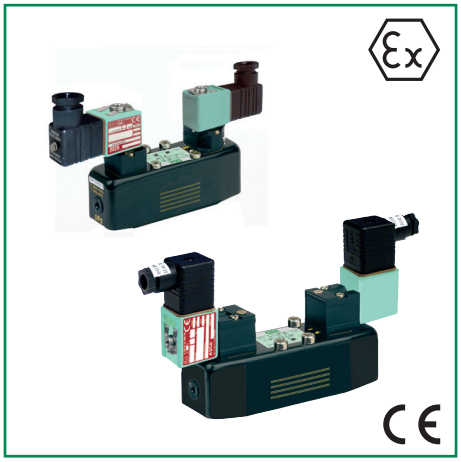
SUBBASES AND ACCESSORIES :

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Spool valves intended for use in potentially explosive atmospheres caused by gases, vapours, mists and/or dusts (ATEX directive 2014/34/EU)



CLASSIFICATION (ISO 1-2-3): II 2 GD IIC Ta 60°C T6 (T85°C)

Temperature range: -10°C ≤ Ta ≤ +60°C
Compliance with the Essential Health and Safety Requirements has been assured by compliance with European Standards EN 13463-1.
Pilots: 189 (PV) / 189 (SG) / 190 (R314/LPKF)

ELECTRICAL CHARACTERISTICS

Standard voltages	DC (=) : 24V - 48V
(Other voltages on request)	AC (~) : 24V - 48V - 115V - 230V/50-60 Hz

COIL TEMPERATURE CLASSIFICATION TABLES

Solenoid operators for potentially explosive atmospheres
Allowable minimum ambient temperature: -10°C.

TYPE 01: PV (189 pilot)

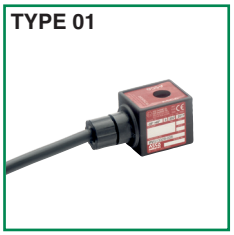
encapsulated, II 2G Ex mb IIC T5..T3 Gb / II 2D Ex mb IIIC T100°C..T200°C Db IP67
moulded enclosure with integrated cable

AC solenoids (~)

Pn (watt)	maximum ambient °C surface temperature T6 85°C	T5 100°C	T4 135°C	T3 200°C
insulation class F (155°C) 100% E.D.				
4,0	-	-	60	-

DC solenoids (=)

Pn (watt)	maximum ambient °C surface temperature T6 85°C	T5 100°C	T4 135°C	T3 200°C
insulation class F (155°C) 100% E.D.				
3,0	-	40	60	60



TYPE 02/03: SG (189/190 pilots)

For dust applications - II 3 D Ex tc IIIC T115°C Dc IP65X
The assembly consisting of the coil and connector has IP65 protection
Spade plug [189 Series: cable Ø 4,5-7 mm / 190 Series: (cable Ø 4,5-10 mm)]

max. AC power (W)	max. DC power (W)
17,1	11,6

	surface temperature	min. ambient temperature	max. ambient temperature	E.D.(1)
SG	115°C	-10°C	+50°C	100%

(1) Duty factor.



TYPE 04: R314/LPKF

flameproof enclosure - II2G Ex d IIB+H2 Gb T6..T4, II2D Ex tb IIIC Db IP66/IP67
aluminium enclosure, ISO 15218 (CNOMO, size 30) interface

AC solenoids (~)

Un (V)	Pn (2)(3) (watt)	solenoid size M6	maximum ambient °C (4) surface temperature T6 85°C	T5 100°C	T4 135°C
insulation class F (155°C) 100% E.D.					
24	5,4	●	40	-	60
48	5,8	●	40	-	60
115	7,1	●	-	40	60
230	7,4	●	-	40	60

DC solenoids (=)

Un (V)	Pn (watt) hot/cold		solenoid size M6	maximum ambient °C (4) surface temperature T6 85°C	T5 100°C	T4 135°C
insulation class F (155°C) 100% E.D.						
24	5,9	7,5 (3)	●	-	40	60
48	6	7,6 (3)	●	-	40	60



(2) Rectified coil construction.
(3) Maximum cold wattage.
(4) For the layout of the control circuit, see the installation and maintenance instructions at: www.asco.com

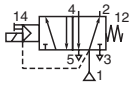
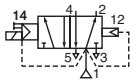
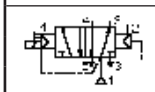
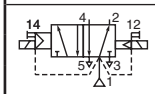
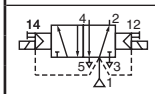
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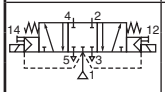
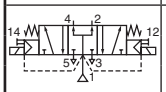
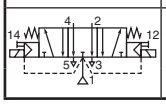
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SPECIFICATIONS

When ordering, please specify: the standard spool valve code and its ATEX option and the solenoid pilot code

5/2 symbols	function solenoid air pilot (14) return (12)	size	response time (ms) energized	response time (ms) de-energized	pilot pressure (bar) min.	pilot pressure (bar) max.	2 codes: spool valve	+	2 codes: solenoid pilot quantity and code	(M)
	spring return	ISO 1	25	66	3	10	**54191023**	+ 1x	**PV18900001**	●
		ISO 2	19	68	2,5		**54292023**		**SG18900001**	●
		ISO 3	45	130	3		**54391023**		**SG19000005**	×
	differential return	ISO 1	41	45	3	10	**54191024**		**SG19000006**	●
		ISO 2	32	49	2		**54292024**		**SG19000017**	▼
		ISO 3	71	82	3		**54391024**		**R314K311GNN00**	×
	air return	ISO 1	21	-	1,5	10	**54191025**		**R314K311GNN01**	●
		ISO 2	16		1,5		**54292025**			
		ISO 3	28		1,5		**54391025**			
	solenoid-differential return	ISO 1	16	18	3	10	**54191026**	+ 2x		
		ISO 2	15	16	2		**54292026**			
		ISO 3	21	23	3		**54391026**			
	solenoid air return	ISO 1	17	16	1,5	10	**54191027**			
		ISO 2	16	15	1,5		**54292027**			
		ISO 3	26	25	1,5		**54391027**			

5/3 symbols	function solenoid air pilot (14) solenoid air return (12)	size	response time (ms) energized	response time (ms) de-energized	pilot pressure (bar) min.	pilot pressure (bar) max.	2 codes: spool valve	+	2 codes: solenoid pilot quantity and code	(M)
	**W1** closed centre position	ISO 1	16	17	3	10	**54191028**	+ 2x	**PV18900001**	●
		ISO 2	16	16			**54292028**		**SG18900001**	●
		ISO 3	27	26			**54391028**		**SG19000005**	×
	**W2** centre open to pressure	ISO 1	44	18	3	10	**54191030**		**SG19000006**	●
		ISO 2	54	18			**54292030**		**SG19000017**	▼
		ISO 3	93	27			**54391029**		**R314K311GNN00**	×
	**W3** centre open to exhaust	ISO 1	17	47	3	10	**54191029**		**R314K311GNN01**	●
		ISO 2	19	61			**54292029**			
		ISO 3	29	28			**54391030**			

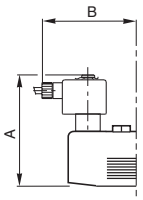
(M) Type of manual operator on pilot(s): × : without ● : maintained ▼ : impulse

OPTIONS

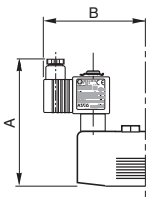
- Equipment with manual testers so that the spool position can be checked.

DIMENSIONS (mm)

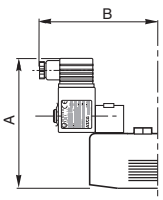
189/PV



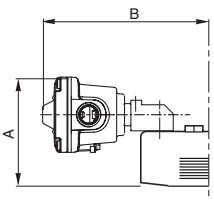
189/SG



190/SG



R314/LPKF



size	A 541	A 542	A 543	B 541	B 542	B 543
PV/189	92	94	109	82	112	-
SG/189	91	93	108	105	135	-
SG/190	118	120	135	108	118	-
R314	93	94	170	137	167	118

543 Series (R314/LPKF pilot):

Intermediate subbase code: **88119104** (required for mounting)

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MONOFUNCTION SPOOL VALVES
solenoid air operated
ISO 5599/1 subbase-mounted body
with M12 electrical connection

5/2-5/3
Series
503-542-543
Type
ISO sizes 1-2-3



FEATURES
- *M12 connection: Prevents wiring errors, reduces installation time and reduces wiring costs*
- *Modular assembly with joinable subbases*

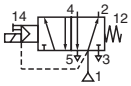
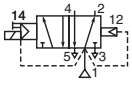
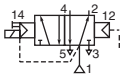
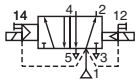
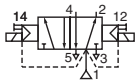
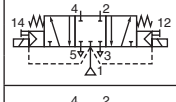
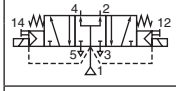
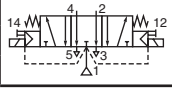
GENERAL

		ISO 1	ISO 2	ISO 3
Fluid		Air or neutral gas, filtered, lubricated or not		
Operating pressure		+3 to +10 bar (with internal supply to pilot)		
	503	-0,950 to +10 bar (with external supply to pilot)		
	542-543	-0,950 to +12 bar (with external supply to pilot)		
		Can be used with vacuum -0,950 bar max.		
Pilot pressure		See tables choice of equipment		
Ambient temperature		-10°C to +50°C (503 pilot)/+60°C (302 pilot)		
Flow (Qv at 6 bar)		1200 l/min (ANR)	2800 l/min (ANR)	4200 l/min (ANR)
Flow coefficients				
- conforming to ISO 6358	503	C = 5,21 x 10^{-8} m^3/s.Pa (sonic conductance)		
		b = 0,34 (critical pressure ratio)		
	302	C = 5,8 x 10^{-8} m^3/s.Pa (sonic conductance)		
		b = 0,28 (critical pressure ratio)		
Response time		See specifications tables		
Life (millions of cycles)		30	30	30
Base		ISO 5599/1 sizes 1-2-3 - AFNOR NF E49080		
Subbase		Single subbase ISO/AFNOR NF E49085		
		Joinable subbase ISO/VDMA 24345		
		Joinable subbase with integrated functions		

CONSTRUCTION

	503	542-543
Body/Cover	Aluminium, E-coating treatment	Painted steel
Pilot and return assembly	POM	POM
Seals	NBR (nitrile) and PUR (polyurethane)	NBR (nitrile) and PUR (polyurethane)
Internal parts	PARA (polyarylamide), steel	POM (polyacetal), light alloy

SPECIFICATIONS (SPOOL VALVE WITH INTERNAL PILOT SUPPLY)

function symbol		operators: pilot (14) solenoid air operated / return (12)	size	response time (ms) energized	response time (ms) de-energized	pilot pressure (bar) min.	pilot pressure (bar) max.	catalogue number: spool valve with pilot series 302 (with internal supply) (M) ×	●	▼
5/2		spring return	ISO 1	20	60	3		R503A2B10Q82KF1	R503A2B10Q81GF1	R503A2B10Q14BF1
			ISO 2	32	65	2,5	10	54202151	54202172	54202193
			ISO 3	62	104	3		54302151	54302172	54302193
		differential return	ISO 1	28	40	3		R503A2BN0Q82KF1	R503A2BN0Q81GF1	R503A2BN0Q14BF1
			ISO 2	51	62	2	10	54202152	54202173	54202194
			ISO 3	97	71	3		54302152	54302173	54302194
		air return	ISO 1	-	-	-		-	-	-
			ISO 2	21	-	1,5	10	54202153	54202174	54202195
			ISO 3	34	-	1,5		54302153	54302174	54302195
		differential return	ISO 1	-	-	-		-	-	-
			ISO 2	17	21	2	10	54202154	54202175	54202196
			ISO 3	29	39	3		54302154	54302175	54302196
		solenoid air operated	ISO 1	20	20	2		R503A2B40Q82KF1	R503A2B40Q81GF1	R503A2B40Q14BF1
			ISO 2	18	20	2	10	54202155	54202176	54202197
			ISO 3	33	38	2		54302155	54302176	54302197
5/3		**W1** closed centre position	ISO 1	15	20	3		R503A2B60Q82KF1	R503A2B60Q81GF1	R503A2B60Q14BF1
			ISO 2	25	26	2,5	10	54202156	54202177	54202198
			ISO 3	37	46	3		54302156	54302177	54302198
		**W2** centre open to pressure	ISO 1	-	-	-		-	-	-
			ISO 2	54	26	2,5	10	54202157	54202178	54202199
			ISO 3	77	50	3		54302157	54302178	54302199
		**W3** centre open to exhaust	ISO 1	18	45	3		R503A2B50Q82KF1	R503A2B50Q81GF1	R503A2B50Q14BF1
			ISO 2	28	59	2,5	10	54202158	54202179	54202200
			ISO 3	40	52	3		54302158	54302179	54302200

(M) Type of manual operator on pilot(s): × : without ● : maintained ▼ : impulse

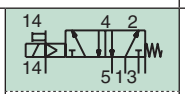
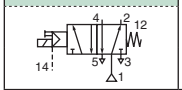
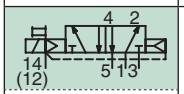
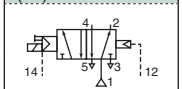
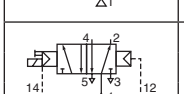
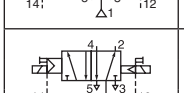
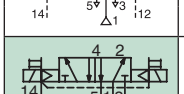
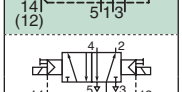
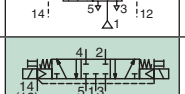
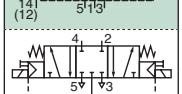
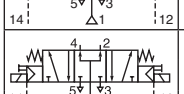
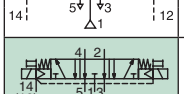
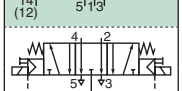
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SPECIFICATIONS (SPOOL VALVE WITH EXTERNAL PILOT SUPPLY)

function symbol		operators pilot (14) solenoid air operated return (12)	size	response time (ms)		pilot pressure (bar)		catalogue number spool valve with pilot series 503 or 302 (with external supply) (1) (M)		
				energized	de-energized	min.	max.	×	●	▼
5/2		spring return	ISO 1	20	60	3	10	R503A2B10Q11MF1	R503A2B10Q11BF1	R503A2B10QA00F1
			ISO 2	32	65	2,5		54202159	54202180	54202201
			ISO 3	62	104	3		54302159	54302180	54302201
		differential return	ISO 1	28	40	3	10	R503A2BN0Q11MF1	R503A2BN0Q11BF1	R503A2BN0QA00F1
			ISO 2	51	62	2		54202160	54202181	54202202
			ISO 3	97	71	3		54302160	54302181	54302202
		air return	ISO 1	-	-	-	10	-	-	-
			ISO 2	21	-	1,5		54202161	54202182	54202203
			ISO 3	34	-	1,5		54302161	54302182	54302203
		differential return	ISO 1	-	-	-	10	-	-	-
			ISO 2	17	21	2		54202162	54202183	54202204
			ISO 3	29	39	3		54302162	54302183	54302204
		solenoid air operated	ISO 1	20	20	2	10	R503A2B40Q11MF1	R503A2B40Q11BF1	R503A2B40QA00F1
			ISO 2	18	20	2		54202163	54202184	54202205
			ISO 3	33	38	2		54302163	54302184	54302205
5/3		**W1** closed centre position	ISO 1	15	20	3	10	R503A2B60Q11MF1	R503A2B60Q11BF1	R503A2B60QA00F1
			ISO 2	25	26	2,5		54202164	54202185	54202206
			ISO 3	37	46	3		54302164	54302185	54302206
		**W2** centre open to pressure	ISO 1	-	-	-	10	-	-	-
			ISO 2	54	26	2,5		54202165	54202186	54202207
			ISO 3	77	50	3		54302165	54302186	54302207
		**W3** centre open to exhaust	ISO 1	18	45	3	10	R503A2B50Q11MF1	R503A2B50Q11BF1	R503A2B50QA00F1
			ISO 2	28	59	2,5		54202166	54202187	54202208
			ISO 3	40	52	3		54302166	54302187	54302208

(M) Type of manual operator on pilot(s): × : without ● : maintained ▼ : impulse

(1) In external pilot version, the spool valve can be used in an air system at pressures between:
503 : -0,950 bar to +10 bar / 542-543 : -0,950 bar to +12 bar

ELECTRICAL CHARACTERISTICS OF PILOTS

size	type of valve	voltage	consumption	insulation class	protection degree	connection
ISO 1	series 503	24 V DC	1,7 W 1,4 W	F	IP 65	for M12 centralised connection IEC 60947.5.2 - ISO/CD20401 CNOMO E03.62.520N on base with 3 male contacts
ISO 2 - 3	series 302	24 V DC	2 W 1 W			

CONNECTORS

Straight M12 connector with 5 female contacts, Ø4 to 6 mm cable entry, code: **88100304**
Straight M12 connector with 5 female contacts, Ø6 to 8 mm cable entry, code: **88100256**
Straight M12 connector with 5 female contacts, cable length 5 m, code: **88130212**
Right-angle M12 connector with 5 female contacts, cable length 5 m, code: **88130213**

SUBBASES AND ACCESSORIES (page: 81): www.asco.com

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SINGLE SUBBASES
with **side** ports / **bottom** ports
METALLIC JOINABLE SUBBASES
with **bottom** ports

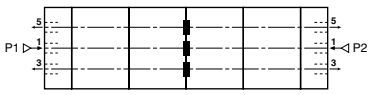
Series **355**
Type
ISO sizes 1-2-3

SPECIFICATIONS

description			port connection				size	catalogue number
type of subbase	type of port		12-14	1	2-4	3-5		
single subbases ISO 5599/1 AFNOR NFE 49080	side 	tapped	G 1/8	G 1/4	G 1/4	G 1/4	**ISO 1**	**35500076**
			G 1/8	G 1/4	G 1/4	G 3/8		**35500061**
			G 1/8	G 3/8	G 3/8	G 3/8		**35500382**
			G 1/8	G 3/8	G 3/8	G 3/8	**ISO 2**	**35500560**
			G 1/8	G 1/2	G 1/2	G 1/2		**35500562**
			G 1/8	G 1/2	G 1/2	G 1/2	**ISO 3**	**35500171**
			G 1/8	G 3/4	G 3/4	G 3/4		**35500192**
	bottom 	tapped	G 1/8	G 1/4	G 1/4	G 1/4	**ISO 1**	**35500077**
			G 1/8	G 3/8	G 3/8	G 3/8	**ISO 2**	**35500085**
		with couplers	Ø 4 mm	for OD Ø 8 mm		G 1/4	**ISO 1**	**35500069**
joinable subbases ISO 5599/1 VDMA 24345	bottom 	subbase	G 1/8	-	G 1/4	-	**ISO 1**	**35500165**
		set of 2 end plates	-	G 3/8	-	G 3/8		**35500166**
		subbase	G 1/8	-	G 3/8	-	**ISO 2**	**35500169**
		set of 2 end plates	-	G 1/2	-	G 1/2		**35500170**
		subbase	G 1/8		G 1/2		**ISO 3**	**35500173**
		set of 2 end plates	-	G 1	-	G 1		**35500174**
		set of 3 plugs on main pressure (1) and exhausts (3-5) for 2 different pressure supplies (see A)					**ISO 1**	**88135521**
							ISO 2	**88135522**
							ISO 3	**88135520**

Set of 2 end plates supplied with 3 plugs (for 1-3-5)

(A) Mounting principle of a plug set : this device allows joinable subbases to be supplied with 2 different pressure inlets.

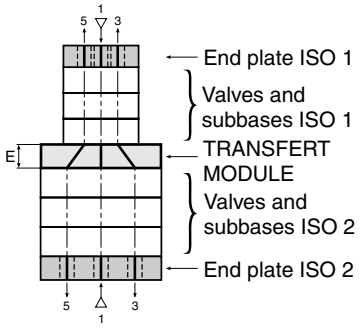


SET OF TRANSFER PLATES AND CONNECTIONS

- **Set of transfer plates and connections to put together different sizes of ISO - VDMA joinable subbases :**

ISO 1 - ISO 2, set including :
- A transfer module to allow connection of ISO-VDMA joinable subbases through ISO 1 and ISO 2 **bottom** ports, and connection of supply pressure (1) and exhausts (3-5) through the unit.
- One end plate ISO 1 (ports 1 - 3 - 5)
- One end plate ISO 2 (ports 1 - 3 - 5)

ISO 1 - ISO 3 set including the same parts as mentionned above, but adapted to the connection of ISO 1 and ISO 3

description	type	catalogue number	E (mm)	
Set of transfer plate and connections for ISO/VDMA joinable subbases with **bottom** ports	**ISO 1 - ISO 2**	**35500199**	20	
	ISO 1 - ISO 3	**35500194**	32	

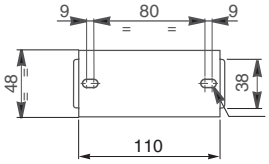
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DIMENSIONS (mm), WEIGHT (kg)

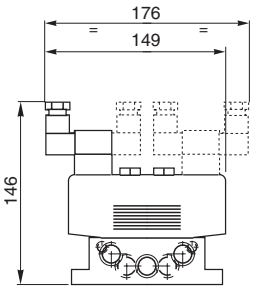
VALVES ON **SINGLE** SUBBASES
Side port **- ISO 1**



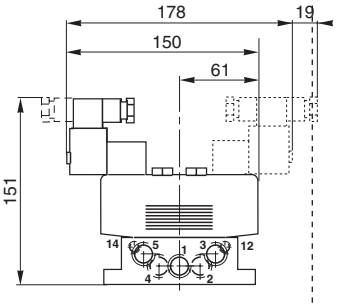
Mounting 2 holes Ø 5,5
counter-bored Ø 14

541 Series

With pilots 189

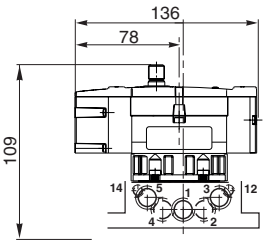


With pilots 190



503 Series

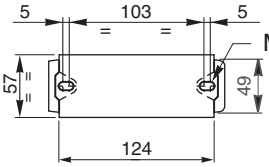
With M12 connection



subbase catalogue number	port connection		
	12-14	1-2-4	3-5
35500076	G 1/8	G 1/4	G 1/4
35500061			G 3/8
35500382		G 3/8	G 3/8

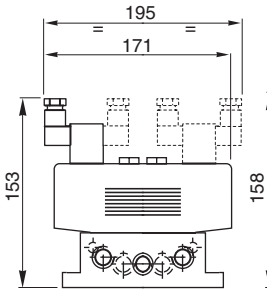
total weight					
with 1 pilot			with 2 pilots		
189	190	M12	189	190	M12
0,725	0,785	0,665?	0,825	0,945	0,695?

542 VALVES ON **SINGLE** SUBBASES
Side port **- ISO 2**

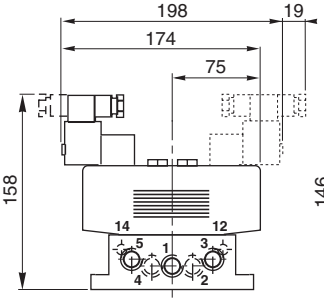


Mounting 2 holes Ø 5,5

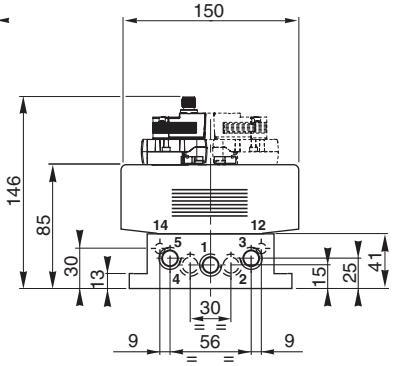
With pilots 189



With pilots 190



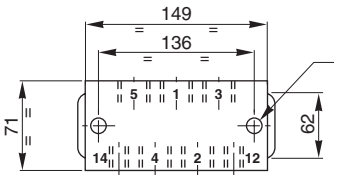
With M12 connection



subbase catalogue number	port connection		
	12-14	1-2-4	3-5
35500560	G 1/8	G 3/8	G 3/8
35500562		G 1/2	G 1/2

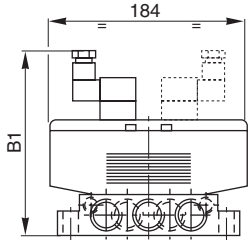
total weight					
with 1 pilot			with 2 pilots		
189	190	M12	189	190	M12
0,950	1,010	0,930	1,080	1,200	0,980

543 VALVES ON **SINGLE** SUBBASES
Side port **- ISO 3**

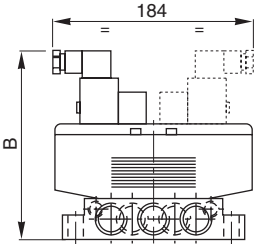


Mounting 2 holes Ø 6,6

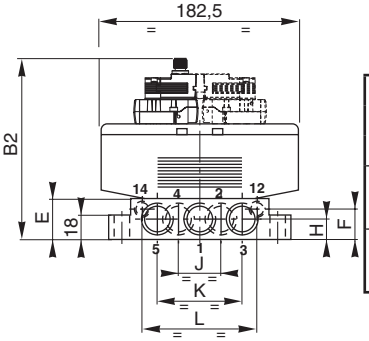
With pilots 189



With pilots 190



With M12 connection



subbase catalogue number	port connection		
	12-14	1-2-4	3-5
35500171	G 1/8	G 1/2	G 1/2
35500192		G 3/4	G 3/4

G	total weight					
	with 1 pilot			with 2 pilots		
	189	190	M12	189	190	M12
1/2	1,585	1,645	1,540	1,685	1,800	1,585
3/4	2,652	2,127	2,022	2,167	2,282	2,067

	B	B1	B2	E	F	H	J	K	L
G 1/2	164	159,5	152	32	22	17	32	68	90
G 3/4	182	177,5	170	50	40	20	36	80	92

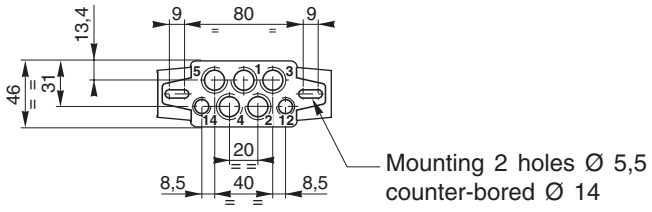
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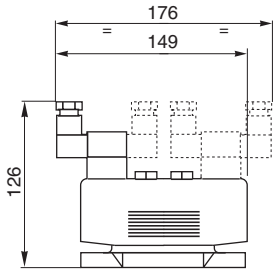
DIMENSIONS (mm), WEIGHT (kg)

VALVES ON **SINGLE** SUBBASES
Bottom port **- ISO 1**

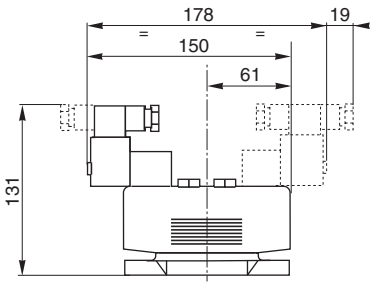


541 Series

With pilots 189

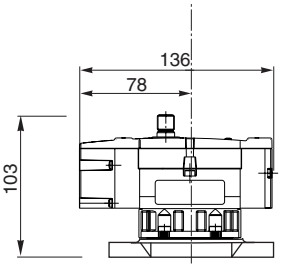


With pilots 190



503 Series

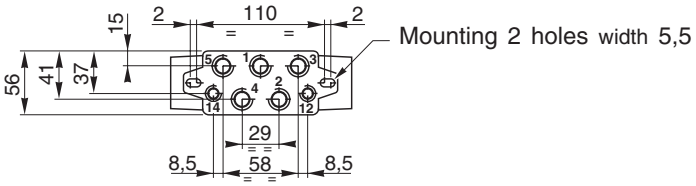
With M12 connection



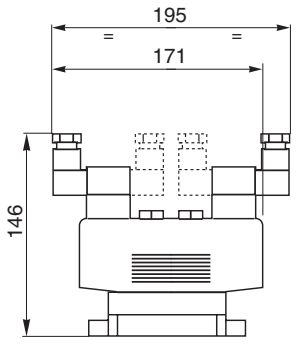
subbase catalogue number	port connection		
	12-14	1-2-4	3-5
35500077	G 1/8	G 1/4	G 1/4
35500069	Instant fittings		G 1/4
	Ø 4 OD	Ø 8 OD	

total weight					
with 1 pilot			with 2 pilots		
189	190	M12	189	190	M12
0,720	0,780	0,660	0,820	0,940	0,690

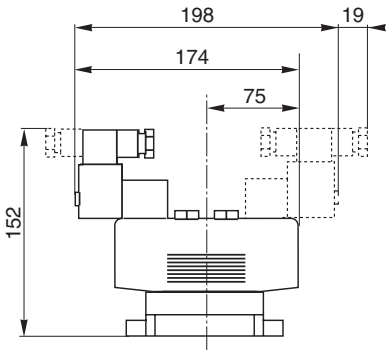
542 VALVES ON **SINGLE** SUBBASES
Bottom port **- ISO 2**



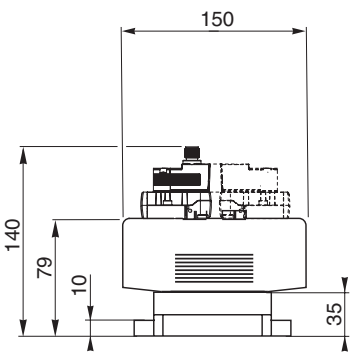
With pilots 189



With pilots 190



With M12 connection



subbase catalogue number	port connection		
	12-14	1-2-4	3-5
35500085	G 1/8	G 3/8	G 3/8

total weight					
with 1 pilot			with 2 pilots		
189	190	M12	189	190	M12
0,670	0,730	0,650	0,800	0,920	0,700

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DIMENSIONS (mm), WEIGHT (kg)

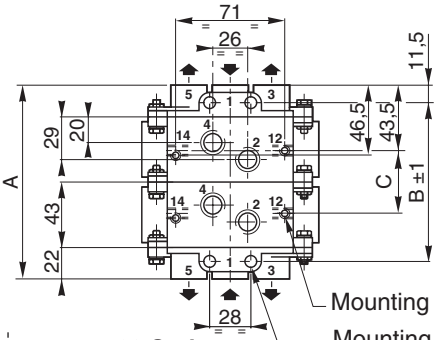
SPOOL VALVES ON **METALLIC JOINABLE SUBBASES**
Bottom port - **ISO 1**

number of subbases	A	B±1	C	weight valves with 2 pilots + subbases + end plates		
				pilot 189	pilot 190	M12
3	173	150	86	2,850	3,200	2,450
4	216	193	129	3,500	4,000	3,000
5	259	236	172	4,100	4,700	3,450
6	302	279	215	4,750	5,500	4,000
7	345	322	258	5,350	6,200	4,450
8	388	365	301	6,000	7,000	5,000

Pilots weight : 1 x 189 = 0,120 kg - 1 x 190 = 0,180 kg
1 x M12 = 0,058 kg - 2 x M12 = 0,110 kg

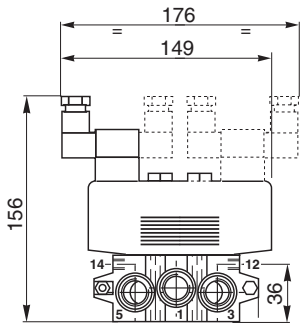
	code	port connection		
		12-14	2-4	1-3-5
subbase	**35500165**	G 1/8	G 1/4	-
2 end plates	**35500166**	-	-	G 3/8

Set of end plates supplied with 3 plugs G 3/8 (for 1-3-5)

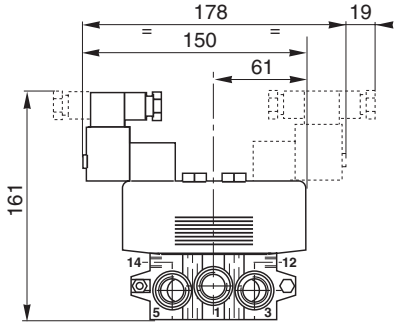


541 Series

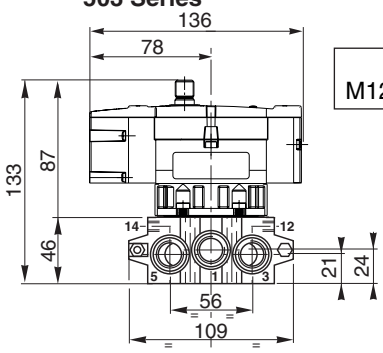
With pilots 189



With pilots 190



503 Series



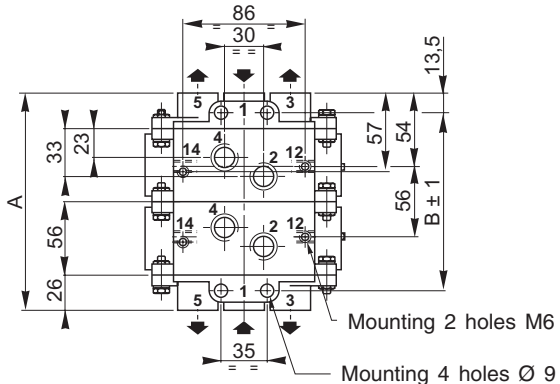
542 SPOOL VALVES ON **METALLIC JOINABLE SUBBASES**
Bottom port - **ISO 2**

number of subbases	A	B±1	C	weight valves with 2 pilots + subbases + end plates		
				pilot 189	pilot 190	M12
3	220	193	112	3,600	3,900	3,240
4	276	249	168	4,600	5,100	4,220
5	332	305	224	5,700	6,300	5,200
6	388	361	280	6,800	7,500	6,180
7	444	417	336	7,800	8,700	7,160
8	500	473	392	9,000	9,900	8,140

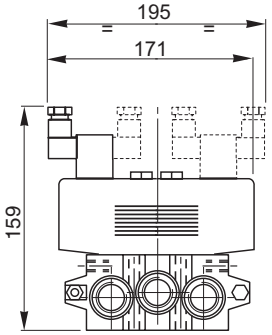
Pilot weight : 1 x 189 = 0,120 kg - 1 x 190 = 0,180 kg
1 x M12 = 0,073 kg - 2 x M12 = 0,140 kg

	catalogue number	port connection		
		12-14	2-4	1-3-5
subbase	**35500169**	G 1/8	G 3/8	-
2 end plates	**35500170**	-	-	G 1/2

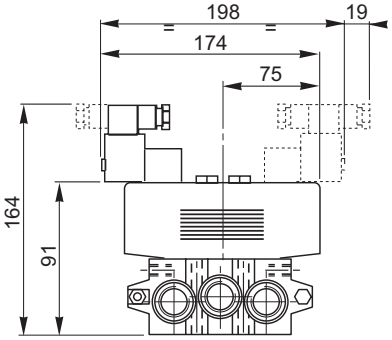
Set of end plates supplied with 3 plugs G 1/2 (for 1-3-5)

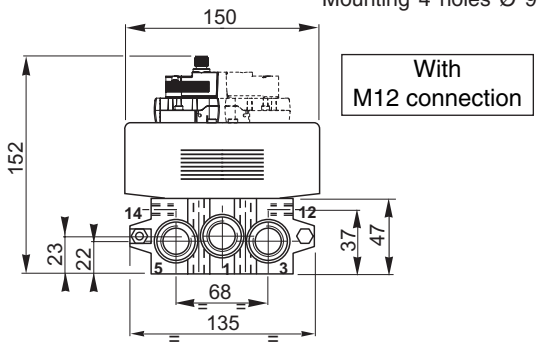


With pilots 189



With pilots 190





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DIMENSIONS (mm), **WEIGHT** (kg)

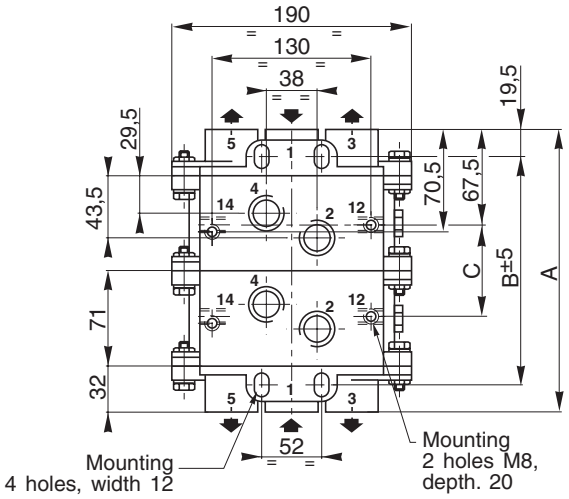
543 SPOOL VALVES ON **METALLIC JOINABLE SUBBASES**
Bottom port - **ISO 3**

	catalogue number	port connection		
		12-14	2-4	1-3-5
subbase	**35500173**	G 1/8	G 1/2	-
2 end plates	**35500174**	-	-	G 1

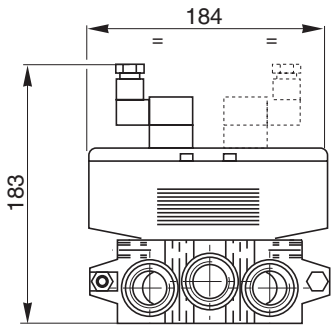
Set of end plates supplied with 3 plugs G 3/8 (for 1-3-5)

number of subbases	A	B±1	C	weight		
				valves with 2 pilots + subbases + end plates		
				pilot 189	pilot 190	M12
2	206	167	71	4,140	4,260	3,820
3	277	238	142	5,740	5,860	5,200
4	348	309	213	7,340	7,460	6,580
5	419	380	284	8,940	9,060	7,960
6	490	451	355	10,540	10,660	9,120
7	561	522	426	12,140	12,140	10,380

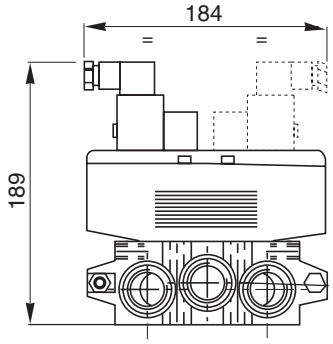
Pilots weight : 1 x 189 = 0,120 kg - 1 x 190 = 0,180 kg
1 x M12 = 0,073 kg - 2 x M12 = 0,141 kg



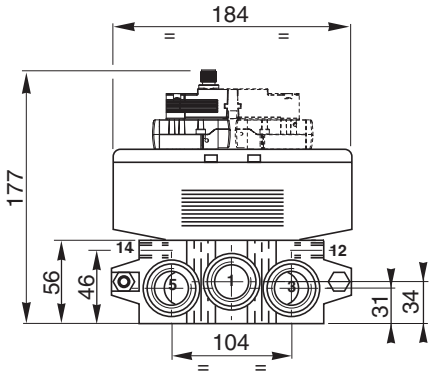
With pilots 189



With pilots 190



With M12 connection



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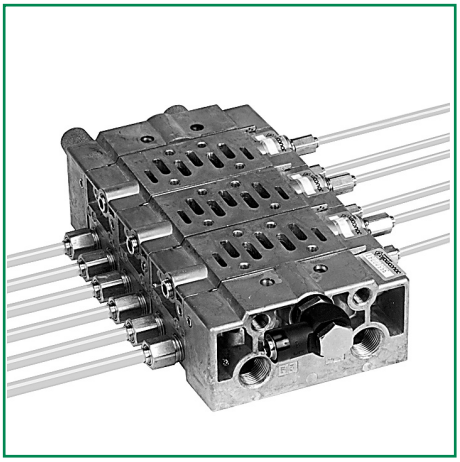
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METALLIC JOINABLE SUBBASES

side ports G 1/4

5/2-5/3
Series
355
Type
ISO sizes 1 and 2



GENERAL

This subbase system comprises joinable subbases and accessories with 3 principal characteristics.

- The equipment has a **standard** interface complying with the international standard ISO 5599/1 - Size 1, so that spool valves series 541 can be fitted.
- Subbases for **side ports**.
- The subbases are fitted with selector plates which mean that various piping arrangements and inter-connections can be selected.

CONNECTION POSSIBILITIES

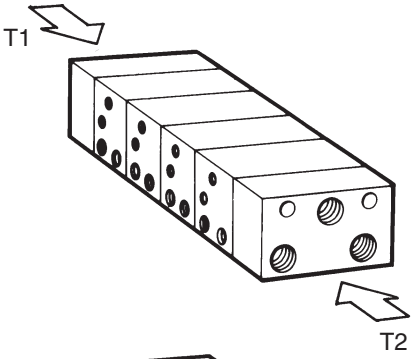
These joinable subbases with side ports offer many advantages:

- Various piping possibilities due to a large number of port connections.
- Simple assembly in panels due to an improved accessibility to the ports.
- Simple maintenance.
- A reduction in costs due to the removal of pivoting mounting chassis and a reduction in the number of fittings.
- Possibility of mounting directly onto the body of the machine.
- A reduction in lengths of tube giving improved flow rates and improved response times.

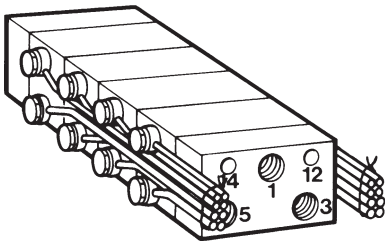
These bases allow piping to outlet ports (2, 4) and pilot ports (12, 14) on both side faces, as shown below.

The end plates allow the piping of the supply (1) and exhausts (3,5), in addition, the pilots (12,14) can be piped into the end plates.

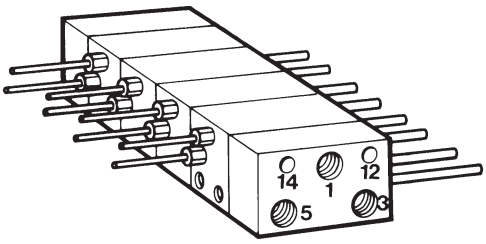
CONNECTION THROUGH THE END PLATES

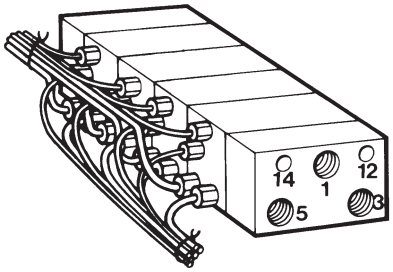


SAMPLE PIPING ARRANGEMENTS



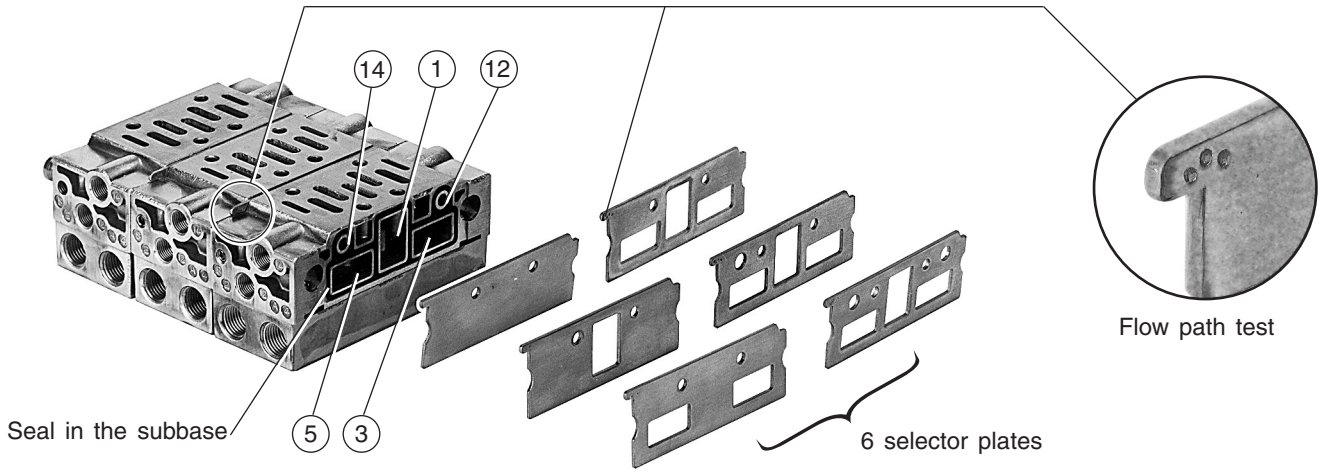
This arrangements allows the use of rotatable fitting





POSSIBLE FLOW PATHS

The subbases include 5 flow paths (1-3-5-12-14), all of which can be connected through the end plates of each manifold assembly.

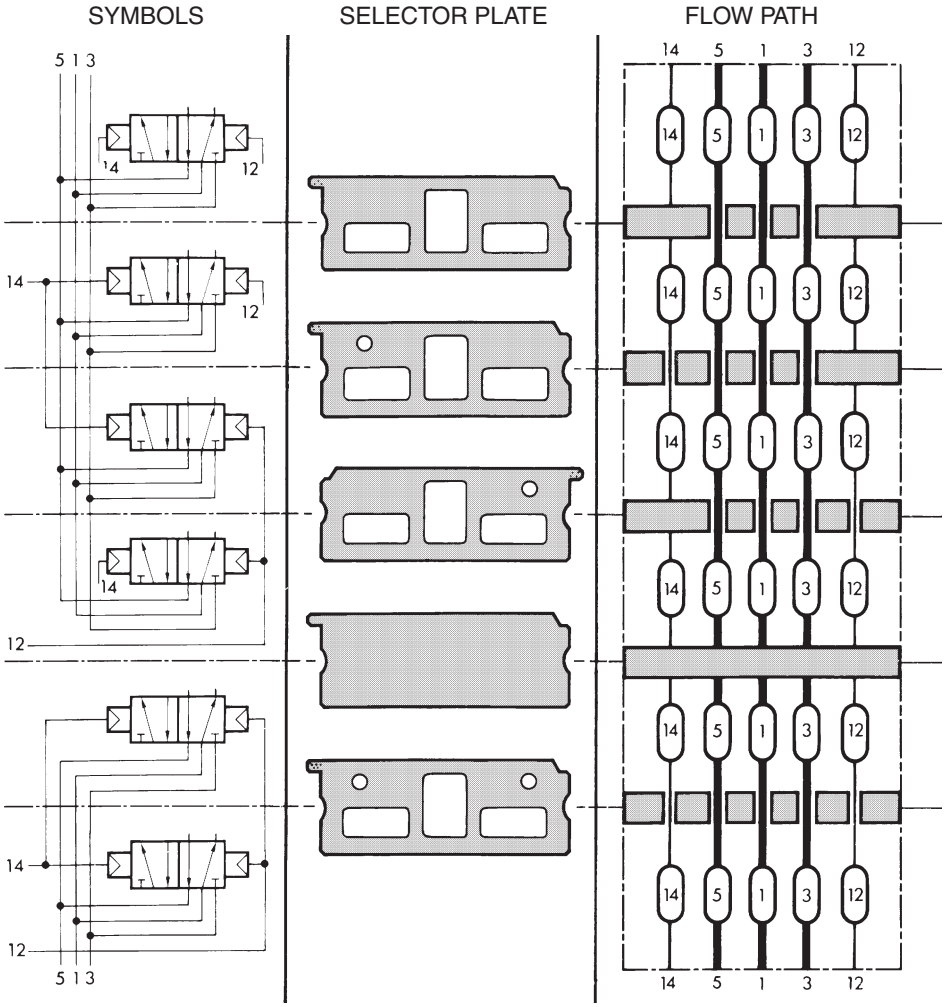


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POSSIBLE FLOW PATHS



The pilots are piped separately to each subbase (plate 1-3-5 supplied with each subbase).

Pilot on side 14 is connected between 2 or more subbases.

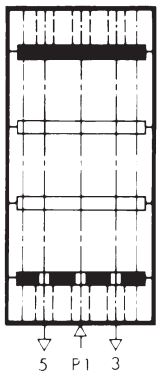
Return on side 12 is connected between 2 or more subbases (uses the same plate as the one above).

Blanking plate (allows a manifold to be used with 2 different supply pressures).

Allows the inter-connection of both pilots 12, 14 between 2 or more valves.

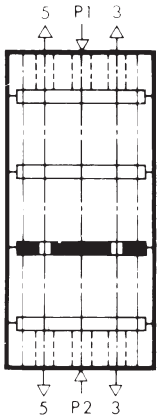
PIPING OF SUPPLY AND EXHAUSTS TO THE END COVERS

STANDARD ASSEMBLY
Supply and exhausts to 1 side plate.



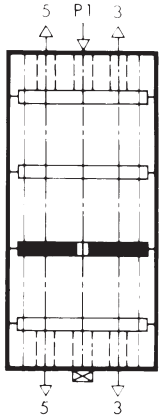
Selector plates supplied as standard allows the assembly as shown above.

Assembly with 2 different pressures and with the exhaust piped to both end plates.



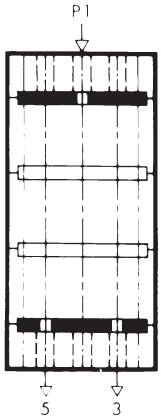
For this assembly a selector plate with connections between 3, 5 is necessary.

Assembly with 1 supply on 1 plate but with exhausts from the 2nd end plate.



For this assembly a selector plate allows flow through port 1 if required. The supply port in the second plate must be plugged.

Assembly with the supply port in 1 end plate and the exhaust from the other end plate.



For this assembly you require 2 selector plates, 1 allowing flow through port 1 and 1 allowing flow through ports 3, 5. With ISO 1 bases this arrangement allows the assembly without plugging any ports.

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CHOICE OF EQUIPMENT

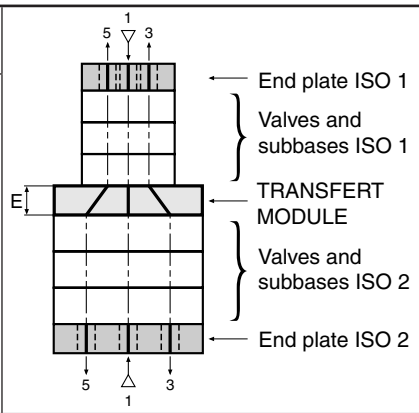
description	parts list	ports					code	
		1-3-5		2-4		12-14	ISO 1	ISO 2
		ISO 1	ISO 2	ISO 1	ISO 2	ISO 1-2		
metallic joinable subbase with side ports	1 subbase + 2 seals 1 selector plate (connects ports 1 - 3 - 5) 2 G 1/4 plugs 1 G 1/8 plug 2 assembly diabolos	-	-	G 1/4	G 1/2	G 1/8	**35500088**	**35500102**
set of 2 end plates	2 end plates + 2 seals 1 blank selector plate (no flow) 1 selector plate (connects ports 1 - 3 - 5) 2 assembly diabolos	G 3/8	G 3/4	-	-	G 1/8	**35500087**	**35500101**
blank selector plate (no flow)							**88135501**	**88135506**
selector plate (connects port 1)							**88135512**	**88135513**
selector plate (connects ports 3 and 5)							**88135510**	**88135511**
selector plate (connects ports 1 - 3 - 5)							**88135502**	**88135507**
selector plate (connects ports 1 - 3 - 5 and 1 pilot 12 or 14)							**88135503**	**88135508**
selector plate (connects ports 1 - 3 - 5 and 2 pilots 12 and 14)							**88135504**	**88135509**

SET OF TRANSFER PLATES AND CONNECTIONS

• Allow connection of ISO 1 and ISO 2 metallic joinable subbases, with side port .

Set including : - A transfer module to allow connection of subbases ISO 1 and ISO 2
- One end plate ISO 2 (ports 1 - 3 - 5 : G 3/4)
- One end plate ISO 1 (ports 1 - 3 - 5 : G 3/8)

SPECIFICATIONS

designation	type	catalogue number	E (mm)	
set of transfer plate and connections for joinable **metallic** subbases with **side port**	**ISO 1 - ISO 2**	**35500390**	30	

ACCESSORIES (see «ACCESSORIES» page)

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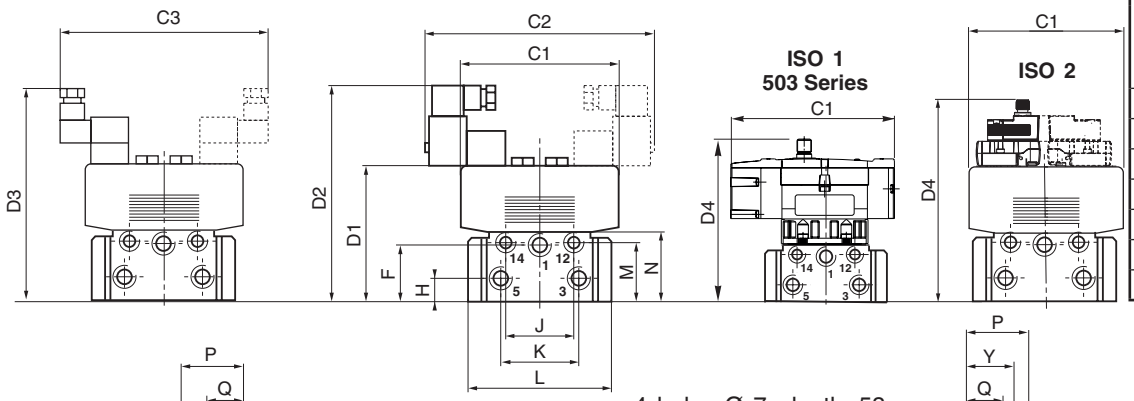
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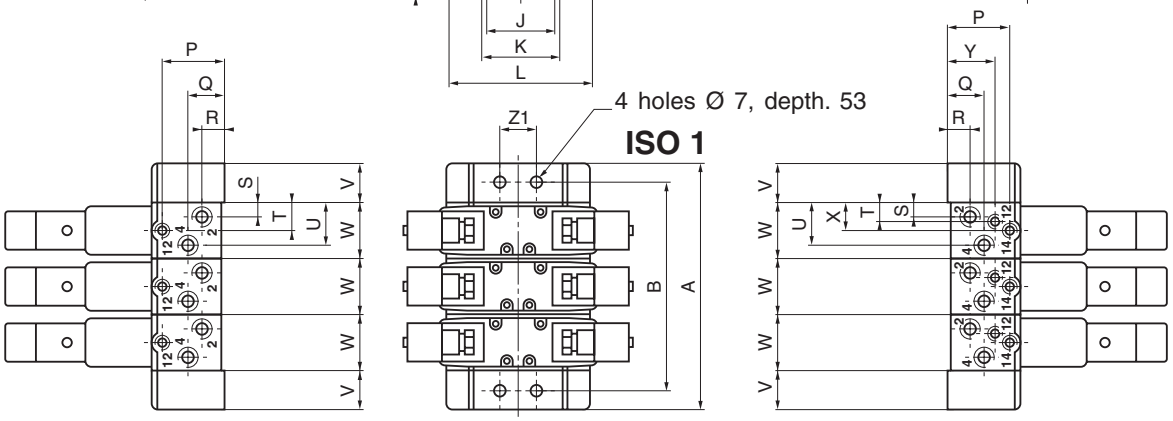
DIMENSIONS (mm), WEIGHT (kg)

SPOOL VALVES ON **METALLIC JOINABLE** SUBBASES
Side ports - **ISO 1-2**

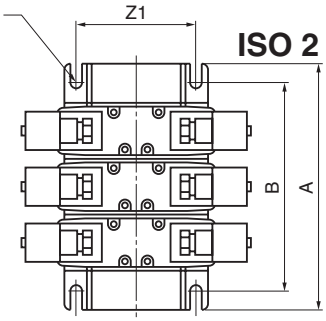
With pilots 189 | With pilots 190 | With M12 connection



number of subbases	ISO 1 A (mm)	ISO 1 B (mm)	ISO 2 A (mm)	ISO 2 B (mm)
2	146	106	192	168
3	189	149	248	224
4	232	192	304	280
5	275	235	360	336
6	318	278	416	392
7	361	321	472	448
8	404	364	528	504



4 holes Ø 8,5, depth. 72



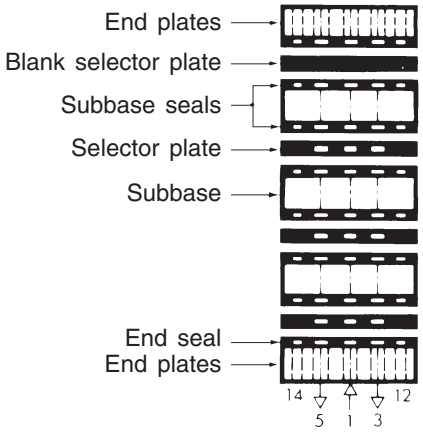
n° ports	connection ports
1-3-5	G 3/8
2-4	G 1/4
12-14	G 1/8

number of subbases	weight (1) ISO 1 189	ISO 1 190	ISO 1 M12	ISO 2 189	ISO 2 190	ISO 2 M12
2	3,66	3,90	3,40	5,196	5,436	4,966
3	4,86	5,22	4,47	6,374	6,734	6,074
4	6,06	6,54	5,54	7,652	8,132	7,252
5	7,26	7,86	6,61	8,930	9,530	8,430
6	8,46	9,18	7,68	10,208	10,928	9,608
7	9,66	10,50	8,75	11,888	12,728	11,188
8	10,86	11,82	9,82	13,166	14,126	12,366

(1) Spool valves with 2 pilots 189 + subbases + end plates
Pilot weight : 1 x 189 = 0,120 kg - 1 x 190 = 0,180 kg
M12 **ISO1** 1 x M12 = 0,058 kg - 2 x M12 = 0,110 kg
M12 **ISO2** 1 x M12 = 0,073 kg - 2 x M12 = 0,140 kg

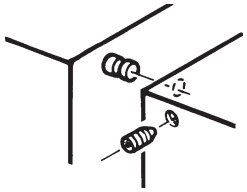
	C1	C2	C3	D1	D2	D3	D4	F	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y	Z1
ISO 1	136	178	176	95	168	163	140	42	16	53	59	106	44	53	44	13	13	11	17,5	32	30	43	26	30	28
ISO 2	150	198	171	126	197	191	185	62	30	62	62	126	72	80	68	36	17	15	18	41	40	58	38	64	104

ASSEMBLY OF SUBBASES



CONNECTION

End plates and subbases are connected together using a system of diabolos and grub screws.



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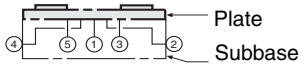
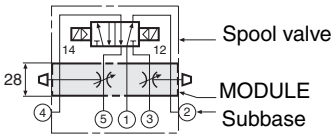
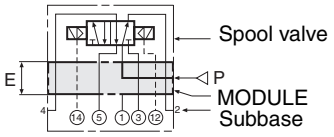
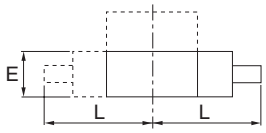
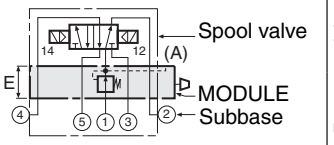
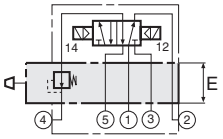
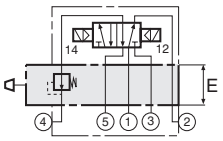
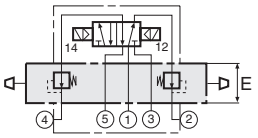
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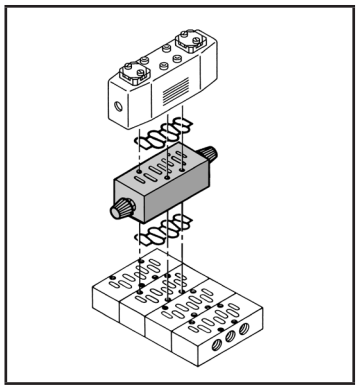
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503 accessories

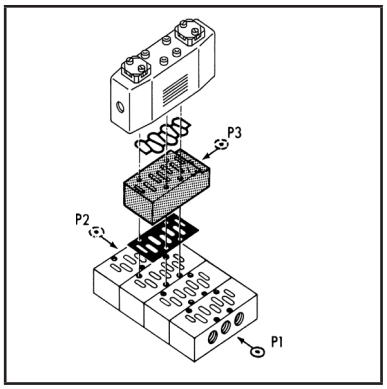
Blank station plate kit	Sandwich pressure block	Sandwich exhaust block
G503AW428300003	G503AW428300003	G503AX428300001
R503AS425575001	R503ARS1GJ14M20	R503ARD1GJ14M20
Sandwich speed control kit	Sandwich Pressure Regulators	

SPECIFICATIONS

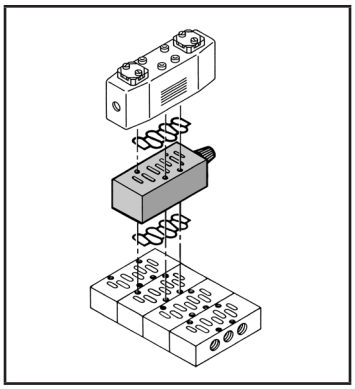
designation			symbol		catalogue number ISO 1	ISO 2	ISO 3
Blanking plate to cover interface This plate allows later assembly with a spool valve.					**88135517**	**88135518**	**88135519**
Flow regulator sandwich This unit, fitted between the subbase and the valve, incorporates 2 flow regulators in the exhaust ports 3 and 5. Flow regulators can be used to control the speed of a double acting cylinder. Weights : **ISO 1** : 0,230 kg - **ISO 2** : 0,440 kg **- ISO 3** : 1 kg					**34600476**	**34600477**	-
Separate pressure supply module This unit, fitted between the subbase and the valve, allows an individual valve to be supplied with a different pressure from that in the main manifold. The pressure feed within the side bases is not blocked by adding this plate. Pressure supply port P : G 1/4					**35500118**	-	-
Sandwich pressure regulator module This module, which is placed between a subbase and a spool valve, is designed to regulate the pressure and the port according to: - Adjustable pressure: 0.5 to 10 bar - G1/8 (A) port on top for pressure gauge connection - Locking adjustment knob of "Pull-Turn-Push" type  ISO 1 : E=45 mm L=146 mm ISO 2 : E=60 mm L=180 mm ISO 3 : E=67 mm L=208 mm	**on port 1** (supply pressure)	regulator flow at 6 bar : **ISO 1** : 550 l/min weight : 0,387 kg **ISO 2** : 1000 l/min weight : 1,680 kg **ISO 3** : 2000 l/min weight : 2,210 kg		Button side 12	**34600474**	-	-
				14	**34600471**	-	-
	on port 2	regulator flow at 6 bar : **ISO 1** : 850 l/min weight : 0,387 kg **ISO 2** : 1400 l/min weight : 1,680 kg **ISO 3** : 2700 l/min weight : 2,210 kg			**34600458**	-	-
	on port 4	regulator flow at 6 bar : **ISO 1** : 850 l/min weight : 0,387 kg **ISO 2** : 1400 l/min weight : 1,680 kg **ISO 3** : 2700 l/min weight : 2,210 kg			**34600459**	-	-
	on ports 2 et 4	regulator flow at 6 bar : **ISO 1** : 850 l/min weight : 0,577 kg **ISO 2** : 1400 l/min weight : 2,400 kg **ISO 3** : 2700 l/min weight : 3,200 kg			**34600460**	-	-
Gauge Ø40 (0 - 12 bar)						**34300014**	
G1/8 bracket connection for pressure gauge mounting						**88100617**	



Sandwich flow regulator module



Separate pressure supply module



Sandwich pressure regulator module

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Padlockable pressure isolating plate

ISO 5599/1 size 1
Exhaust on ports 3 & 5

Series
881

FEATURES

- *Sandwich-type plate for pressure isolation on port 1.*
- *Pressure isolating plate designed to exhaust on ports 3 and 5.*
- *The pressure isolating plate is fitted between the subbase and the valve.*
- *Allows removal of valves without affecting system operation.*
- *Lockable with D6 padlock in open or closed position.*
- *Not suitable for W3-type valves (centre closed).*



GENERAL

Operating pressure	-0,950 to 12 bar
Ambient temperature range	-10°C to +60°C

CONSTRUCTION

MATERIALS IN CONTACT WITH FLUID (✳) Ensure that the compatibility of the fluids in contact with the materials is verified	
Body	Aluminium
Screw	Steel
Seals	NBR

SPECIFICATIONS

size	code
ISO1	**88100963**

Operating diagram

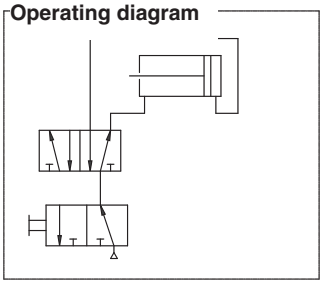
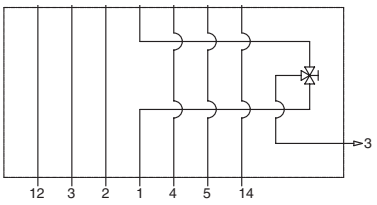
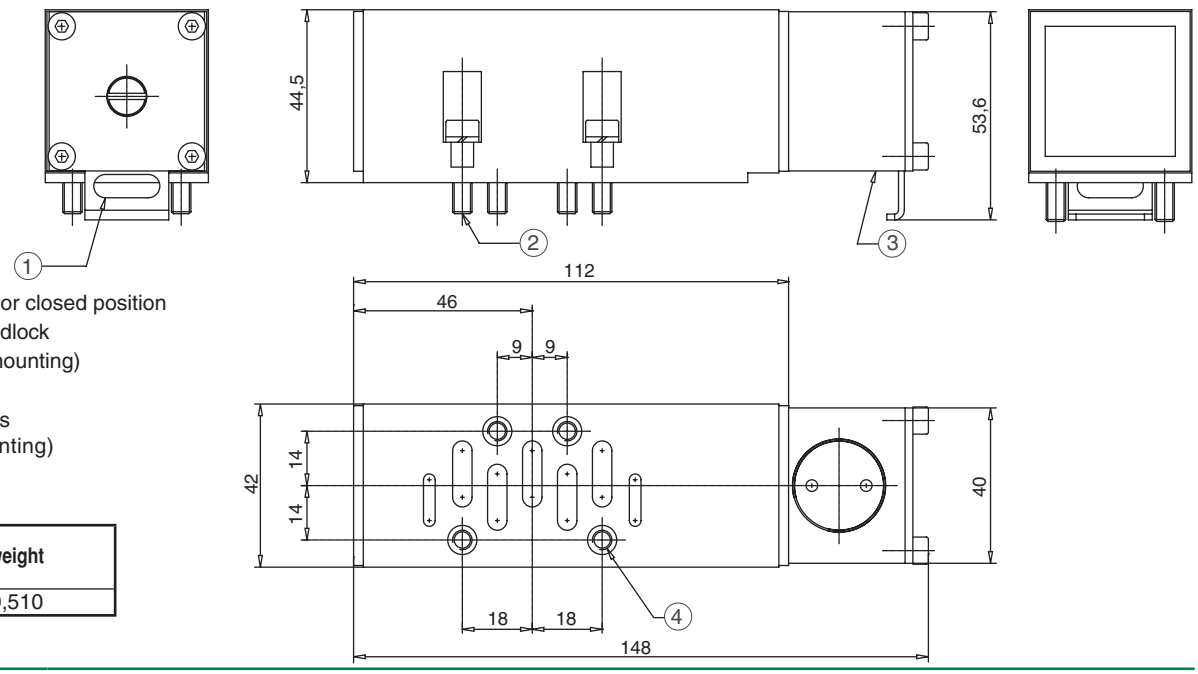


Diagram of pressure isolating plate
Valve side interface



Subbase side interface

DIMENSIONS (mm), WEIGHT (kg)



1. Lockable in open or closed position with dia. 6 mm padlock
2. 4xM5 (subbase mounting)
3. Exhaust port Ø2
4. 4x female threads (ISO1 valve mounting)

series	weight
ISO 1	0,510

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SPOOL VALVES
solenoid air operated
ISO 5599/1 subbase-mounted body

5/2-5/3
Series
C12-C23-C34
Type
ISO sizes 1-2-3



FEATURES
- *Reliability: steel spool & sleeve technology with long service life*
- *Modular assembly with joinable subbases*
- *Subbases with side or bottom ports*

GENERAL

Fluid	Air or neutral gas, filtered, lubricated or not
Operating pressure	+1 to +10 bar (with internal supply to pilot) -0,950 to +12 bar (with external supply to pilot)
Ambient temperature	-10°C to +60°C
Flow (Qv at 6 bar)	ISO 1: 1400 l/min (ANR) ISO 2: 2800 l/min (ANR) ISO 3: 4200 l/min (ANR)
Response time	See tables choice of equipment
Life	200 millions of cycles
Base	ISO 5599/1 sizes 1-2-3 - AFNOR NF E49080
Subbase	Single subbase ISO/AFNOR NF E49085 Joinable subbase ISO/VDMA 24345 Joinable subbase with integrated functions

CONSTRUCTION

Body	Aluminium
Other parts	Stainless steel, steel, aluminium alloy or plastic
Static Seals	NBR (nitrile)

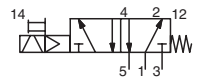
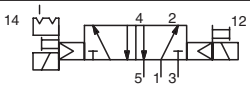
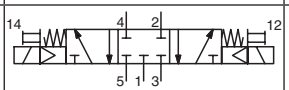
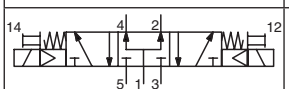
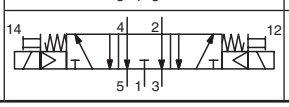
PILOTS
Solenoid valves 3/2 NC, **series190**, pad mounting ISO 15218 (size 30)

ELECTRICAL CHARACTERISTICS

voltage		consumption inrush	consumption hold	insulation class	protection degree	electrical connection
~	24V-48V-115V-230V/50 Hz	9 VA	4 VA (3 W)	F	IP 65	spade plug size 30 connector, ISO4400/EN175301-803, form A, rotatable by 90°
=	24V-48V	3 W				

The solenoid valve 190 is dual-voltage (24V~, 12V=) (48V~, 24V=) (115V~, 48V=) (230V~, 110V=)

SPECIFICATIONS

function symbol		operators pilot (14) solenoid air operated return (12)	size	response time (ms) ener-gized	response time (ms) de-ener gized	pilot pressure (bar) min.	pilot pressure (bar) max.	2 catalogue numbers valve	+ solenoid pilot quantity & catalogue number with standard connector	(M)
5/2		spring return	ISO 1 ISO 2 ISO 3	15 20 20	35 35 90	1	10	**C12BA400-X** **C23BA400-X** **C34BA400-X**	+ 1x **19000005** + 1x **19000006** + 1x **19000017**	× ● ▼
		Solenoid air operated return	ISO 1 ISO 2 ISO 3	15 15	15 15	1	10	**C12BB400-X** **C23BB400-X** **C34BB400-X**		
5/3		pressure hold **W1**	ISO 1 ISO 2 ISO 3	15 20	35 20	1	10	**C12BB600-X** **C23BB600-X** **C34BB600-X**	+ 2x **19000005** + 2x **19000006** + 2x **19000017**	× ● ▼
		pressure applied **W2**	ISO 1 ISO 2 ISO 3	15	35	1	10	**C12BB700-X** - **C34BB700-X**		
		pressure release **W3**	ISO 1 ISO 2 ISO 3	15 20	35 20	1	10	**C12BB500-X** **C23BB500-X** **C34BB500-X**		

(M) Type of manual operator on pilot(s): × : without ● : maintained ▼ : impulse

When ordering, please specify in addition to the basic solenoid valve catalogue number:
the type of current: voltage / frequency of the solenoid valve
Example : **C12BB400-X** + *2 x* **19000017** 24V/DC

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OPTIONS

- 3/2 solenoid valves piloting: series 189, series 190 with M12 connection, series 192
- 16 bar version (wide ambient temperature range: -10°C to +90°C):

type of valve	(M)	catalogue number
190 NF 16 bar	×	**19060016**
	●	**19060019**
	▼	**19060017**

- Material and solenoid pilot valve for use in potentially **explosive atmospheres** caused by gases or dusts - ATEX directive 2014/34/EU (contact us)
- Connector with cable 2 m long
- Connector with transil protection
- Solenoid valve with plug and built-in visual control and protection :

Solenoid valve **without** connector + Connector with built-in visual control and VDR/RC protection

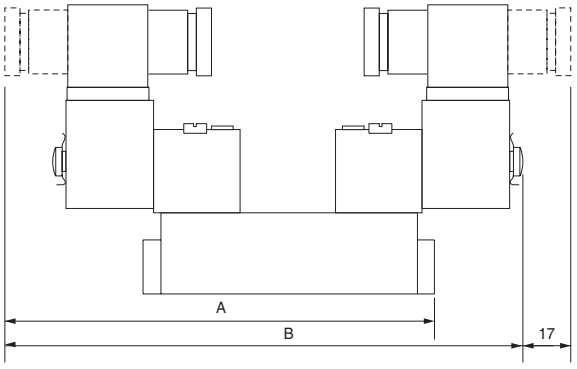
type of valve	(M)	catalogue number solenoid valve **without** connector
190 NF	×	**19000013**
	●	**19000014**
	▼	**19000018**

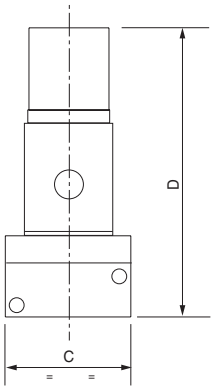
catalogue number (~ / =)			
24V	48V	115V	230V
88122603	**88122604**	**88122605**	**88122608**

(M) Type of manual operator on pilot(s) : × : without ● : maintained ▼ : impulse

SUBBASES AND ACCESSORIES : see preceding pages

DIMENSIONS (mm), WEIGHT (kg)





size	type	A	B	C	D	weight (kg)
ISO1	BA	136,0	—	42,0	102,0	0,50
	BB	—	168,0	42,0	102,0	0,60
ISO2	BA	149,0	—	50,8	104,6	0,70
	BB	—	169,0	50,8	104,6	0,80
ISO3	BA	179,0	—	63,5	114,0	1,10
	BB	—	196,7	63,5	114,0	1,26

incl. bolts and gaskets

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SPOOL VALVES
solenoid air operated
ISO 5599/1 subbase-mounted body
with integrated M12 connection

5/2-5/3
Séries
C12-C23
Type
ISO sizes 1-2



FEATURES
- *M12 connection: Prevents wiring errors, reduces installation time and reduces wiring costs*
- *Modular assembly with joinable subbases*

GENERALITES

Fluid	Air or neutral gas, filtered, lubricated or not
Operating pressure	+1 to +10 bar with internal supply to pilot) -0,950 to +10 bar (with external supply to pilot)
Ambient temperature	-10°C to +50°C
Flow (Qv at 6 bar)	ISO1: 1400 l/min (ANR) ISO2: 2400 l/min (ANR)
Response time	200 millions of cycles
Base	ISO 5599/1 sizes 1-2-3 - AFNOR NF E49080
Subbase	Single subbase ISO/AFNOR NF E49085 Joinable subbase ISO/VDMA 24345 Joinable subbase with integrated functions

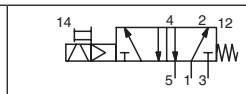
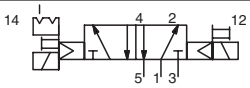
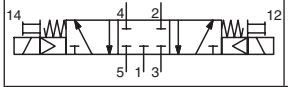
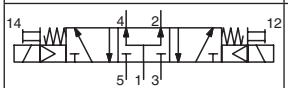
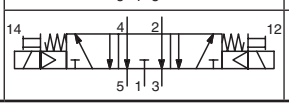
CONSTRUCTION

Body	Aluminium
Other parts	Stainless steel, steel, aluminium alloy or plastic
Static Seals	NBR (nitrile)

ELECTRICAL CHARACTERISTICS

voltage	consumption	insulation class	protection degree	electrical connection
24 VCC (=)	2,5 W	F	IP 65	**centralised M12 connection** to VDMA 24571 (ISO/CD 20401) with integral LED and surge suppression (yellow LED)

SPECIFICATIONS

function symbol		operators pilot (14) solenoid air operated return (12)	size	response time (ms) ener-gized	response time (ms) de-ener gized	pilot pressure (bar) min.	pilot pressure (bar) max.	catalogue numbers	(M)
5/2		rappel ressort	ISO 1 ISO 2	20 15	32 36	1	10	**C12BA400RA26Y61** **C23BA400RA26Y61**	▼
		rappel électropneumatique	ISO 1 ISO 2	20 15	- -	1	10	**C12BB400RA26Y61** **C23BB400RA26Y61**	▼
5/3		centre fermé **W1**	ISO 1 ISO 2	20 15	32 36	1	10	**C12BB600RA26Y61** **C23BB600RA26Y61**	▼
		centre ouvert à la pression **W2**	ISO 1 ISO 2	20 15	32 36	1	10	**C12BB700RA26Y61** -	▼
		centre ouvert à l'échappement **W3**	ISO 1 ISO 2	20 15	32 36	1	10	**C12BB500RA26Y61** **C23BB500RA26Y61**	▼

(M) Type of manual operator on pilot(s): ▼ : impulse

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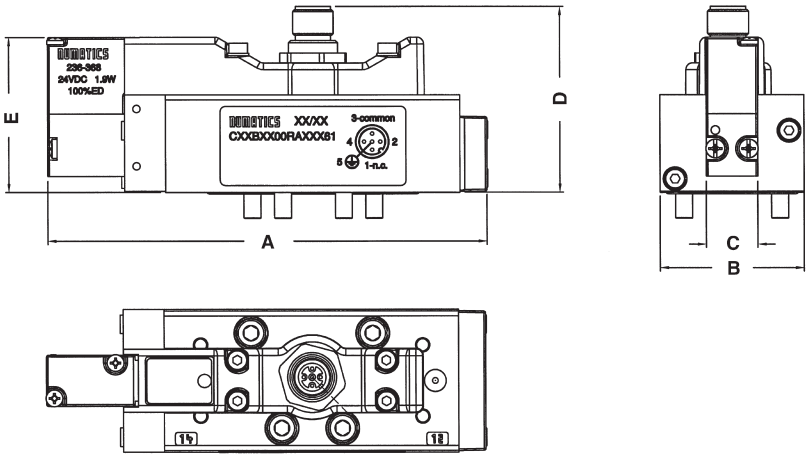
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OPTIONS
- 16 bar, on request

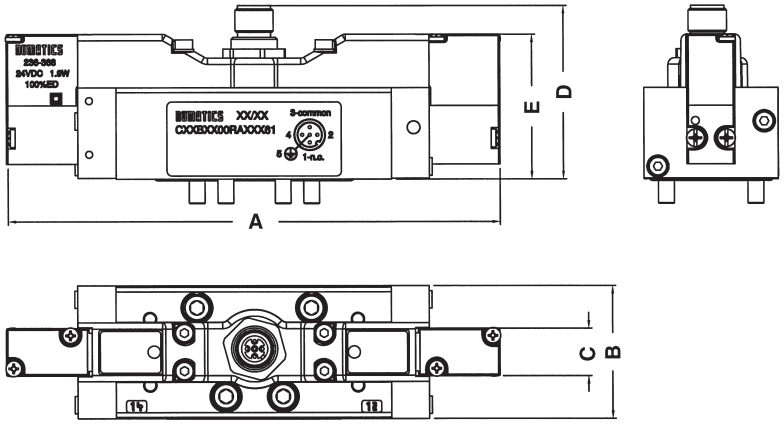
SUBBASES AND ACCESSORIES : see preceding pages

DIMENSIONS (mm), **WEIGHT** (kg)

monostable spool valve
ISO 1 and ISO 2



bistable and 5/3 spool valve
ISO 1 and ISO 2



size	type	A	B	C	D	E	weight (kg)
ISO1	BA	129,4	42,1	15,0	54,8	45,7	0,50
	BB	155,4	42,1	15,0	54,8	45,7	0,55
ISO2	BA	150,2	50,8	15,0	57,6	48,6	0,70
	BB	175,9	50,8	15,0	57,6	48,6	0,80

incl. bolts and gaskets

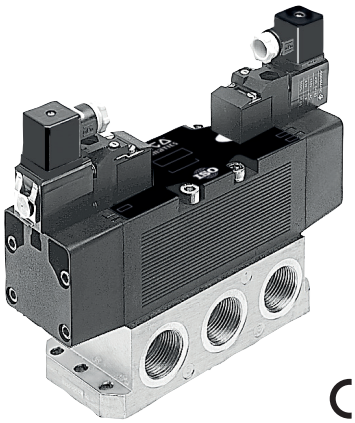
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MULTIFUNCTION SPOOL VALVES
air operated
and solenoid air operated
G3/4-G1 - ISO 5599/1 subbase-mounted body

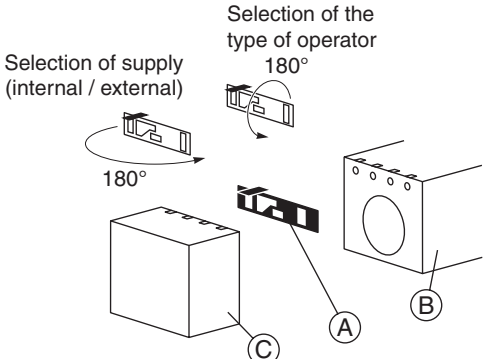
5/2-5/3
Series
544
Type
ISO size 4

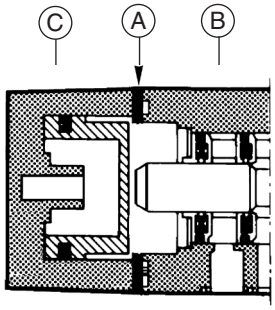


MULTIFUNCTION
• Multifunction selector

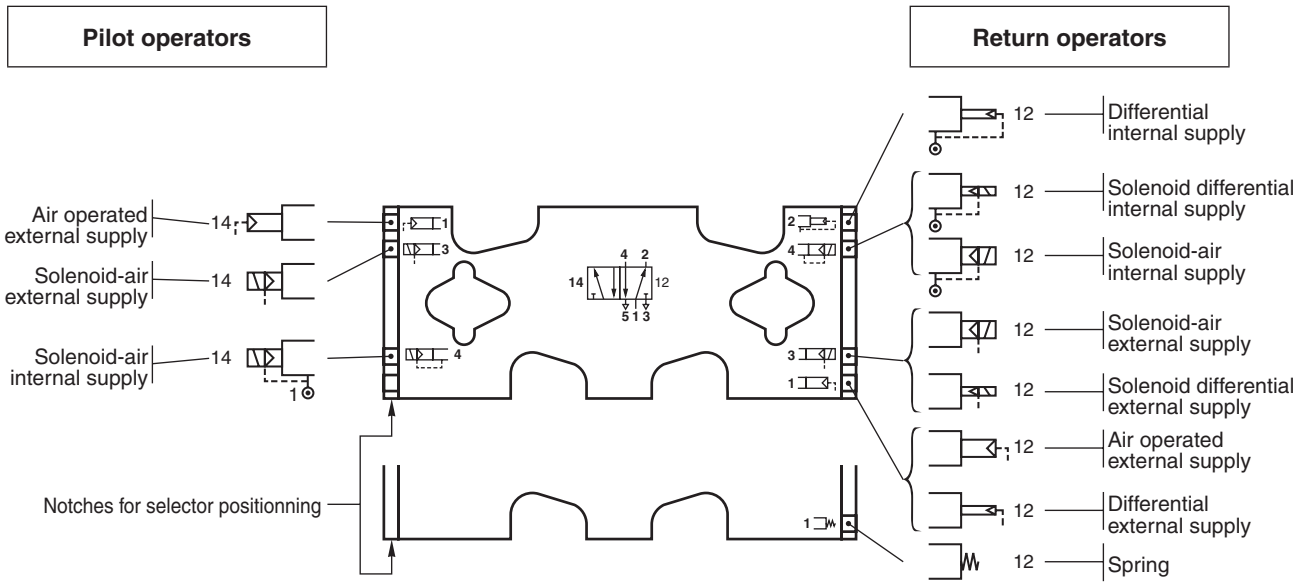
The multifunction selector is equipped with 2 pilot selector seals (A) located between the body (B) and the covers (C), on both sides : pilot and return. Each selector can be set on 3 or 4 positions. Rotating or turning it upside-down allows the following functions :
- internal or external supply to pilot or return operators.
- selection of the type of operator : air operated or solenoid-air pilot or return.

For this, it is only necessary to position one of the arrows of the selector into the notch matching the diagram of the required function (see below). Functions can be modified at will.The valves are delivered with the selector pre-set on the position corresponding to the function requested on order (see table CHOICE OF EQUIPMENT).
External supply enables the valves to be used with a fluid pressure ranging from 0 to 12 bar and with vacuum.





• Pilot function

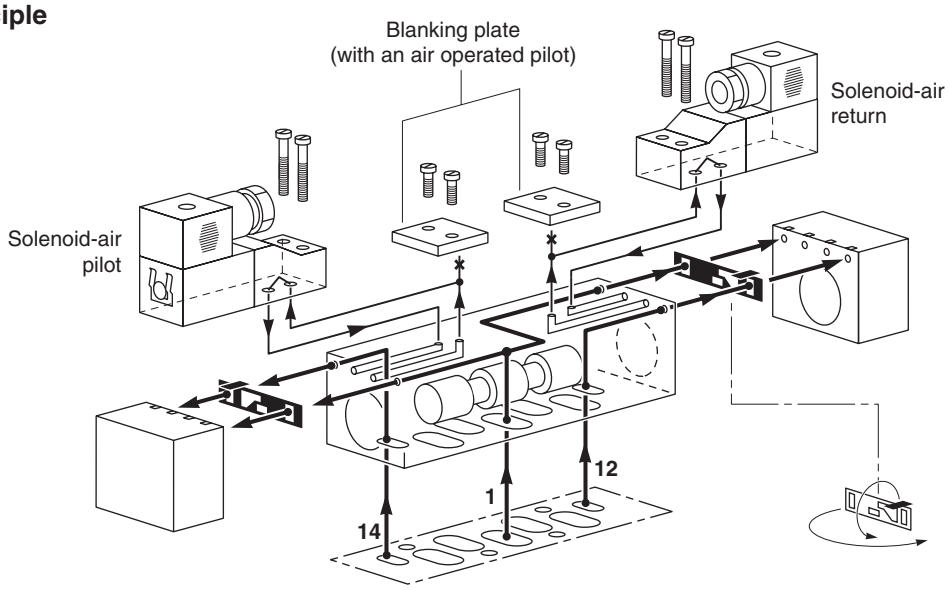


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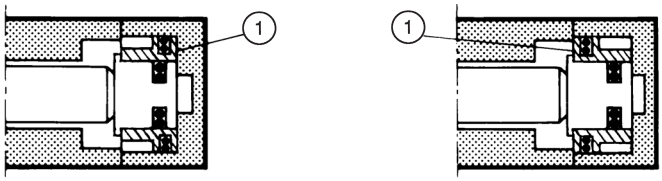
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• Operating principle



• Changing from an air operated return valve to a differential return valve

An air operated return valve can be changed into a differential return valve by turning over the outside piston ring as shown in the diagram below (1).

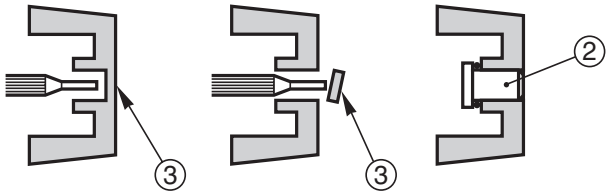


Air operated return

Differential return

• Manual operator using a tester (option)

A manual operator can be equipped with a tester (2) by knocking the knock-out plug (3) out of the end cover.



• An air operated valve can be changed into a solenoid air valve by :

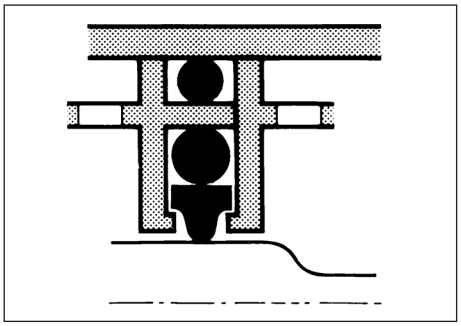
- re-positionning the selector seal,
- removing the upper blanking plate (side 12 or 14),
- fitting a selector seal if lacking,
- adding a solenoid pilot valve on the upper part.

• A solenoid air valve can be changed into an air operated valve by :

- removing the solenoid pilot valve,
- fitting a blanking plate on the pilot base (plate code : **88100073**),
- re-positionning the selector seal.

USE WITH UNLUBRICATED AIR

This range of valves will operate satisfactorily with lubricated air or unlubricated air and even with dry air, due to a sealing device which has been patented. Essentially, a "T" seal backed up by a cushioning or compensation seal.
This arrangement of seals assures a minimum pilot pressure which will remain constant even after the valve has been stopped for a long period of time. When re-starting, the performance of the valve will be the same as during continuous operation. This important "non-stiction" characteristic assures satisfactory performance under all conditions.



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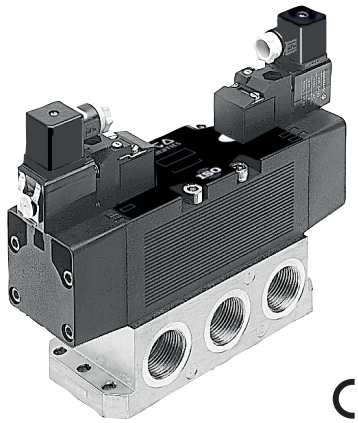
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MULTIFUNCTION SPOOL VALVES

solenoid air operated

G3/4-G1 - ISO 5599/1 subbase-mounted body

5/2-5/3
Series
544
Type
ISO size 4



FEATURES

- *Choice of internal/external supply with selector seals (vacuum use to –0,950 bar)*

GENERAL

Fluid	Air or neutral gas, filtered, lubricated or not
Operating pressure	-0,950 to +12 bar (with external supply to pilot) +2,5 to +10/12 bar (with internal supply to pilot)
Pilot pressure	See specifications tables
Ambient temperature	-10°C to +40°C
Flow (Qv at 6 bar)	6300 l/min (ANR) (with subbase G 3/4) 7000 l/min (ANR) (with subbase G 1)
Flow coefficient	Kv = 90 (with subbase G 3/4) Kv = 100 (with subbase G 1)
Life	5 millions of cycles (in normal operating conditions)
Base	ISO 5599/1 - Size 4
Subbase	Single subbase ISO/AFNOR NF E49085

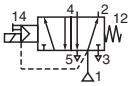
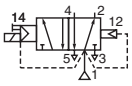
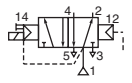
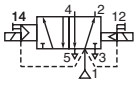
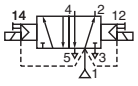
CONSTRUCTION

Body and cover	Die-cast zinc alloy
Seals	NBR (nitrile)
Internal parts	Light alloy and POM (polyacetal), die-cast zinc alloy

ELECTRICAL CHARACTERISTICS

type of coil		voltage	consumption inrush	consumption hold	insulation class	protection degree	electrical connection
series 192	~	24V-48V-115V-230V-50 Hz	12 VA	6 VA (4 W)	F	IP 65	spade plug size 30 connector, ISO4400/EN175301-803, form A, rotatable by 90°
	=	24V-48V	5 W				

SPECIFICATIONS 5/2

function 5/2 symbol	operators pilot (14) solenoid air operated return (12)	response time (ms) ener-gized	response time (ms) de-ener gized	pilot pressure (bar) min.	pilot pressure (bar) max.	2 catalogue numbers valve	+ solenoid pilot quantity & catalogue number with standard connector	(M)
	spring return	60	220	2,5	12	**54490017**	+ 1x: **19201001** / **19201002** / **19201003**	× / ● / ▼
	differential return	90	170	2	12	**54490018**		
	air return	40	-	1,5	12	**54490019**		
	solenoid differential return	40	-	2	12	**54490020**	+ 2x: **19201001** / **19201002** / **19201003**	× / ● / ▼
	solenoid air operated return	40	-	1,5	12	**54490021**		

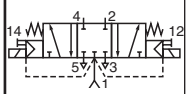
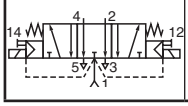
(M) Type of manual operator on pilot(s) : × : without ● : maintained ▼ : impulse

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SPECIFICATIONS 5/3

function 5/3 symbol	operators pilot (14) solenoid air operated return (12)	response time (ms) ener-gized	response time (ms) de-ener gized	pilot pressure (bar) min.	pilot pressure (bar) max.	2 catalogue numbers valve	2 catalogue numbers + solenoid pilot quantity & catalogue number with standard connector	(M)
	Pressure held **W1**	70	250	3	12	**54490022**	+ 2x **19201001** **19201002** **19201003**	× ● ▼
	Pressure release **W3**	70	250	3	12	**54490023**		

(M) Type of manual operator on pilot(s) : × : without ● : maintained ▼ : impulse

OPTIONS

- Equipment with manual testers so that the spool position can be checked
- Connector with cable 2m long - code : **88122612**
- Connector with transil protection (see "Coils and accessories" section)
- Solenoid valve with plug and built-in visual control and protection :

Solenoid valve **without** connector + Connector with built-in visual control and VDR/RC protection

type of valve	(M)	solenoid valve without connector catalogue number
192 NC (1)	×	**19201022**
	●	**19201023**
	▼	**19201024**

+

catalogue number (~ / =) 24V	48V	115V	230V
88122603	**88122604**	**88122605**	**88122608**

(M) Type of manual operator on pilot(s) : × : without ● : maintained ▼ : impulse

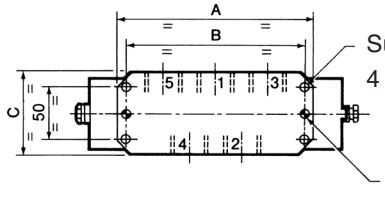
(1) Solenoid valve series 192 - 3/2 NC - Ø 2,1mm with exhaust in base

SUBBASES

type of subbases	subbase catalogue number	port orifices 12-14	1-2-4	3-5
single subbases with side port	**35500144**	G 1/8	G 3/4	G 3/4
	35500082	G 1/8	G 1	G 1

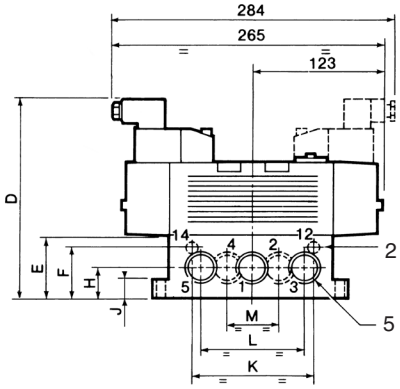
DIMENSIONS (mm), WEIGHT (kg)

VALVE ON **SINGLE SUBBASE** WITH SIDE PORT



Subbase mounting G 1:
4 holes Ø 7

Subbase mounting G 3/4:
2 holes Ø 9



2 Ø G1/8 (12-14)

5 Ø G3/4-G 1 (1-2-3-4-5)

code subbase	dimension A	B	C	D	E	F	H	J	K	L	M	weight with 1 pilot 192	with 2 pilots 192
35500144	195	177	85,5	189	42	32	22	19	116	88	40	4,860	5,120
35500082	186	172	80	207	60	47	30	18	116	106	50	4,960	5,220

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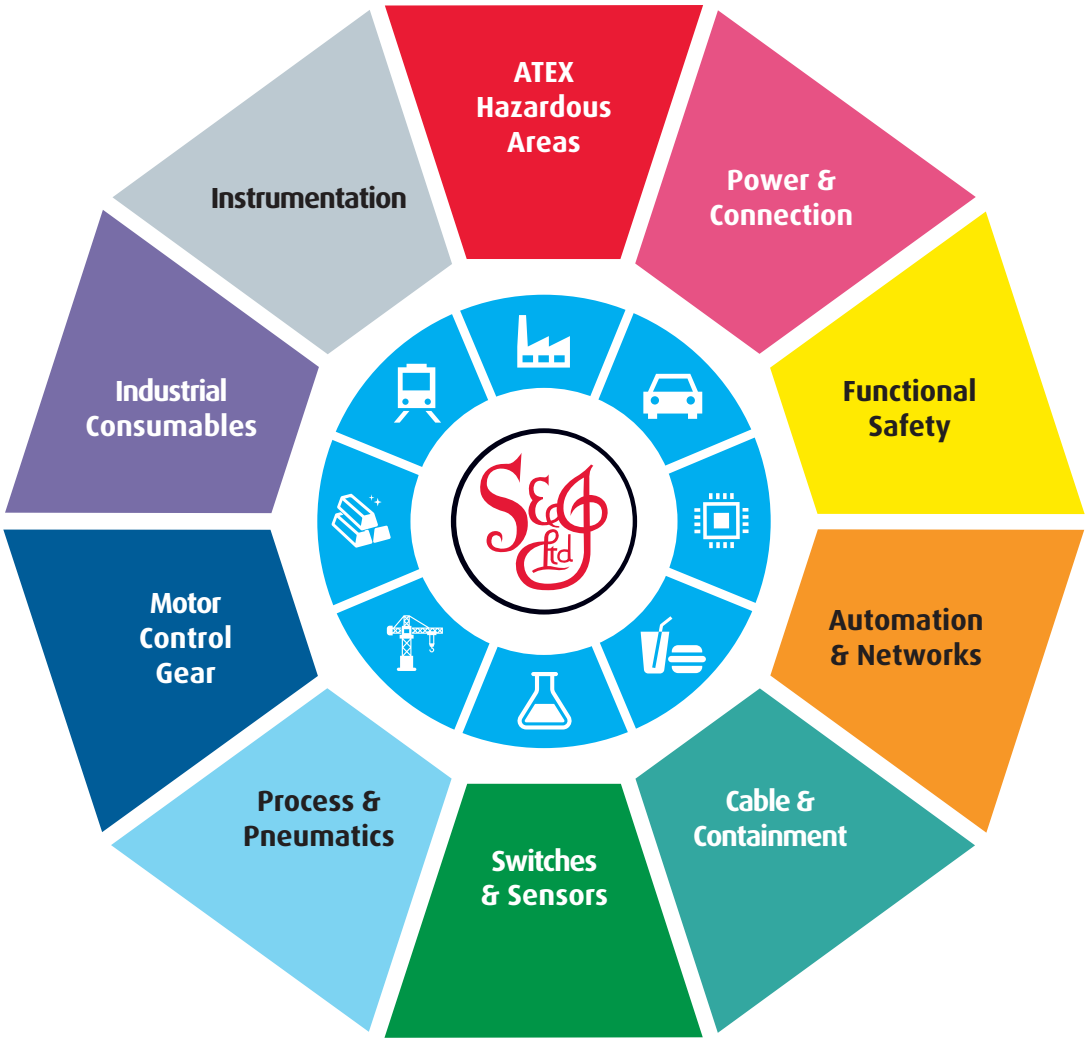
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