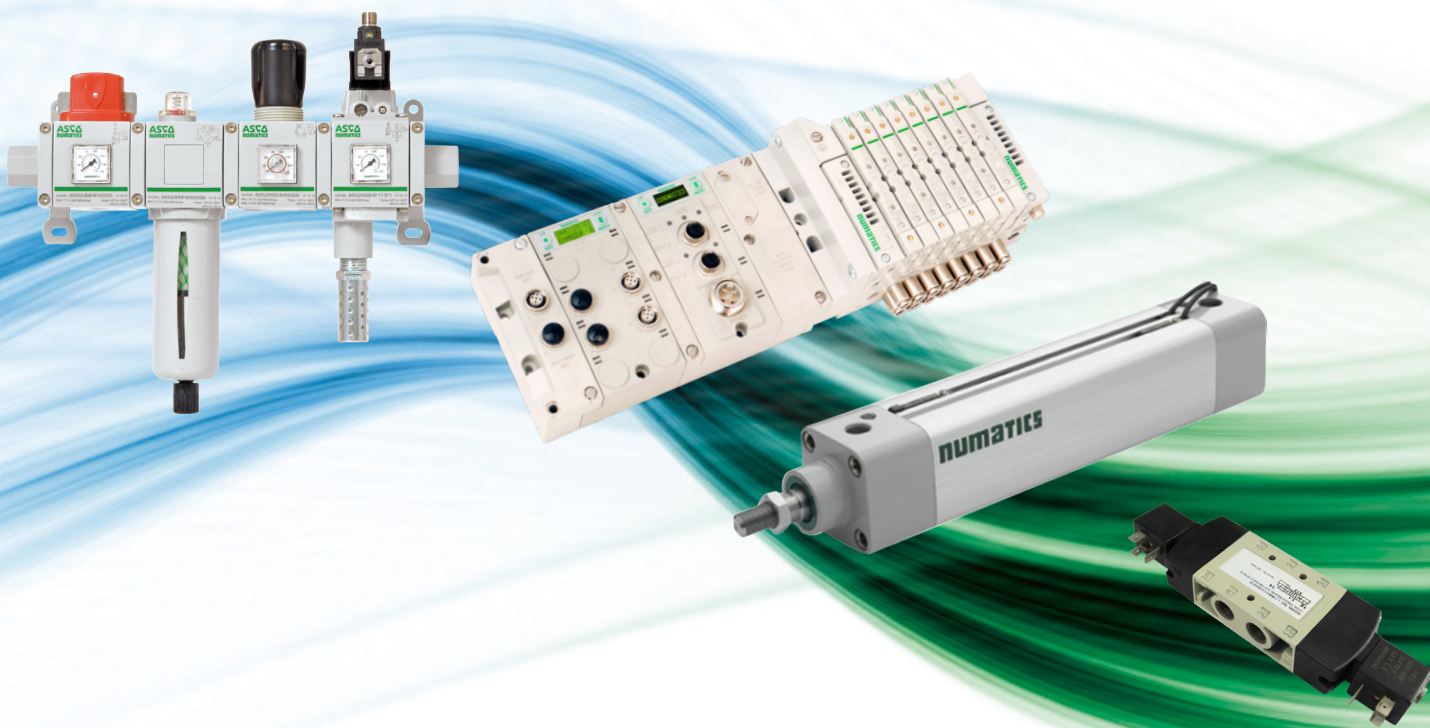


ASCO EXPRESS™

Asia Pacific Express Catalog

Machine Automation



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The lead time is business 10 days for any items in this catalogue with quantity equal to or less than 10 pieces for each part number. Over quantity of 10 pieces, please contact with ASCO.

FEATURES

• The 450 Series is an aluminum body with stainless steel tie rod air cylinder line that is designed to meet all ISO 15552 requirements. The 450 Series offers an extensive range of accessories allowing easy installation for virtually every application. This durable tie rod cylinder design allows customers to achieve maximum productivity desired with low friction.



GENERAL

Detection	Equipped for magnetic position detectors
Fluid	Air or inert gas, filtered, lubricated or not
Operating Pressure	10 bar, max. [1 bar = 100 kPa]
Ambient Temperature	-20°C to +70°C
Optimal Max. Speed	≤ 1 m/s
Standards	ISO 15552

CONSTRUCTION

Barrel	Hard anodized aluminium alloy	
Tie Rods	Stainless steel (Ø32-100), steel (Ø125-200)	
Front and Rear Ends	Aluminium alloy	
Bearing	Self-lubricating metal	
Cushioning Seals	PUR (polyurethane)	
Cushioning	Pneumatic, adjustable from both sides with captive screw	
Rod	Hard chromed steel	
Rod Nut	Galvanised steel	
Piston	Ø 32 to 80 mm	POM (polyacetal)
	Ø 100 to 200 mm	Light alloy
	Fitted with an annular reed magnet	
Piston Seals	PUR (polyurethane)	

HOW TO ORDER

15-DIGIT PRODUCT CODE

G 450 A - S K - - - - A00

Thread connection
G = ISO 16030

Product series
450

Revision letter
A = Initial release

Diameter (mm)

3 = 32	1 = 100
4 = 40	P = 125
5 = 50	Q = 160
6 = 63	R = 200
8 = 80	

Options
A00 = Without

Recommended standard strokes (mm) ⁽¹⁾

Rod options 2
K = No option

Rod options 1
S = Chromed single rod
2 = Through rod

Ø mm	Connect. Ø (G)	25	50	80	100	125	160	200	250	320	400	500	630	700	800	900	1000	1500	Max. Stroke	
32	G1/8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	2000
40	G1/4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	2000
50	G1/4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	2000
63	G3/8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	2000
80	G3/8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	2000
100	G1/2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	2000
125	G1/2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	2000
160	G3/4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	2000
200	G3/4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	2000

■ Strokes range available up to "max. stroke" column on the right.
Please note strokes marked in grey exceed the maximum recommended.
(1) Other strokes on request. / Min. stroke: 5 mm

FEATURES

- The 453 Series is an aluminum body air cylinder that is designed to meet all ISO 15552 requirements. The 453 Series is a lighter and modern-looking cylinder with a sturdy tie rod design inside for optimal technical performance.



GENERAL

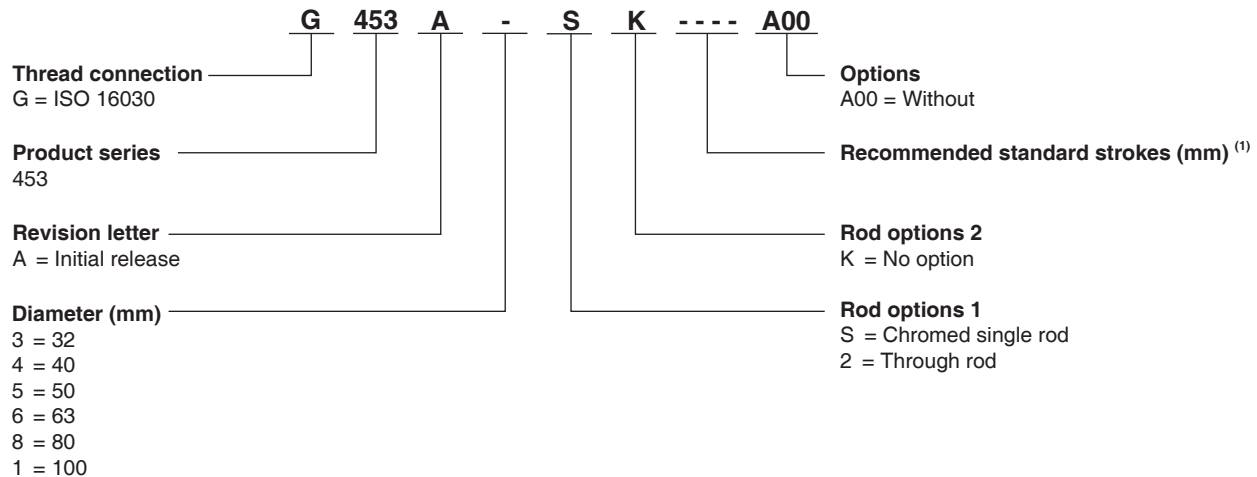
Detection	Equipped for magnetic position detectors
Fluid	Air or inert gas, filtered, lubricated or not
Operating Pressure	10 bar, max. [1 bar = 100 kPa]
Ambient Temperature	-20°C to +70°C
Optimal Max. Speed	≤ 1 m/s
Standards	ISO 15552

CONSTRUCTION

Barrel	Hard anodized aluminium alloy	
Front and Rear Ends	Aluminium alloy	
Bearing	Self-lubricating metal	
Cushioning Seals	PUR (polyurethane)	
Cushioning	Pneumatic, adjustable from both sides with captive screw	
Rod	Hard chromed steel	
Rod Nut	Galvanised steel	
Piston	Ø 32 to 80 mm	POM (polyacetal)
	Ø 100	Light alloy
	Fitted with an annular permanent magnet	
Piston Seals	PUR (polyurethane)	

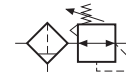
HOW TO ORDER

15-DIGIT PRODUCT CODE



Ø mm	Connect. Ø (G)	25	50	80	100	125	160	200	250	320	400	500	630	700	800	900	1000	1500	Max. Stroke	
32	G1/8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	2000
40	G1/4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	2000
50	G1/4	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	2000
63	G3/8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	2000
80	G3/8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	2000
100	G1/2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	2000

■ Strokes range available up to "max. stroke" column on the right.
Please note strokes marked in grey exceed the maximum recommended.
(1) Other strokes on request. / Min. stroke: 5 mm



FEATURES

- Stainless steel filter, regulator and filter regulator intended for corrosive environment and suitable for use in potentially explosive atmosphere caused by gases, vapours, mists and / or dust according to: (ATEX directive 2014/34/EU).

SAFETY CODE:

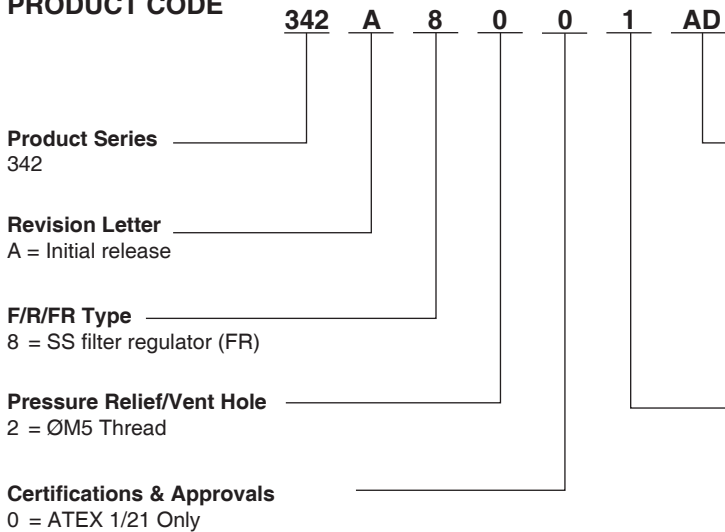
- II 2GD IIC T100°C (T5), with 90°C ambient temperature
- II 2GD IIC T85°C (T6), with 75°C ambient temperature (ZONE 1-21) Explosion group IIC
- Functional safety: IEC 61508, SIL certified
- Comply with the European essential health and safety requirements (EN13643-1)
- All internal metal parts made of 316 / 316L stainless steel
- Built-in overpressure relieving function, non-relieving option available
- 316L Stainless steel body, bonnet and bowl
- Internal springs made of INCONEL® to suit sour gas environment complying to NACE MR0175 / ISO 15156*

* Available for High Flow SSFR as an option

INCONEL is trademark of the Special Metals Corporation group of companies



PRODUCT CODE



Options

- AD = Automatic drain
- AN = Automatic drain with 1/8" NPT Adapter
- G = 316 SS pressure gauge ^{(1) (2)}
- MB = 316L SS mounting bracket ⁽²⁾
- AD + AN is not a possible combination

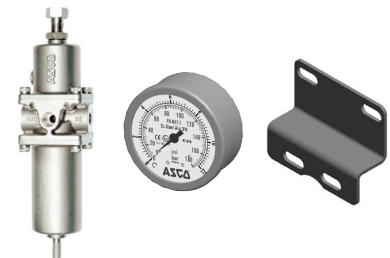
⁽¹⁾ For Compact SSFR, a 316 SS pressure gauge with Ø50mm dial and 1/8" NPT gauge port will be delivered.
⁽²⁾ Not mounted onto the product. Separate packaging.

Filtration/Port Size

- 1 = High flow 1/4" NPT 25 µm or regulator only
- 3 = High flow 1/2" NPT 25 µm or regulator only
- 5 = High flow 1/4" NPT 5 µm
- 7 = High flow 1/2" NPT 5 µm
- 9 = Compact basic flow 1/4" NPT 25 µm
- B = Compact basic flow 1/4" NPT 5 µm

ORDERING EXAMPLE

1. High-Flow stainless steel filter regulator (1/4 NPT, 25 µm filtration) with auto drain, pressure gauge & mounting bracket
 - Product Code: 342A8201ADGMB
2. Compact low temperature stainless steel filter regulator (1/4 NPT, 25 µm filtration) with low temperature pressure gauge & mounting bracket
 - Product Code: 342A8209GLTMB



MAXIMUM FLOW VALUES

Construction Type	Maximum Flow Values Following ISO Standards 5782, 6358 and 6953	Compact		High Flow			
		Litres Per Minute (ANR)					
		1/4 NPT		1/4 NPT		1/2 NPT	
		5 µm	25 µm	5 µm	25 µm	5 µm	25 µm
Filter	Inlet pressure = 6.3 bar and Δ P = 1 bar	-	-	1780	2600	1800	3300
Regulator	Inlet pressure = 10 bar, setpoint = 6.3 bar and Δ P = 1 bar	-	-	3120		7800	
Filter Regulator	Inlet pressure = 10 bar, setpoint = 6.3 bar and Δ P = 1 bar	1280	1400	2380	2450	3920	4430

FEATURES

- Solenoid air pilot actuated
- Low wattage .8 wall for DC application
- DC solenoids polarity insensitive with surge suppression
- Plug together circuit boards eliminate internal wiring
- Integral recessed gaskets
- In fittings to accommodate various tube sizes
- Simple conversion from internal to external pilot
- IP65 Certified
- Shut off block for individual valve to be isolated from pressure supply during operation and repair
- G3/580 Fieldbus capability



STANDARD VOLTAGES

DC (=) : 24V

SPECIFICATIONS

Port Type	Product Series	Product Type	Mounting	Port Size	Wiring Option	Options	Interface	Catalog Number
Metric Thread	501	Manifold Sub Base	Manifold Sub Base, 4 Stations, Side Ports, Double Z-Board	M7 (Threaded only)	Plug-In, Receptacle Assembly	Standard	Proprietary	H501AMM4BMA0010
Push-In Fittings	501	Manifold Sub Base	Manifold Sub Base, 4 Stations, Side Ports, Double Z-Board	6 mm (Push-In Fittings only)	Plug-In, Receptacle Assembly	Standard	Proprietary	K501AMM4FMA0010
No Port Size	501	Sandwich function	Proprietary Sandwich Shut Off Kit	No Port Size	Plug-In	Standard	Proprietary	R501AY428501001

Product Series	Actuation	Valve Type	Function	Port Size	Electrical	Options	Catalog Number
501	n/a	Blank Station Plate	Blank Station Plate Kit	No Port Size	Plug-in	Standard	P501AB429685001
501	Rubber Packed	Solenoid Pilot with Flush Non-Locking Override	2 Position 4-Way (5/2), Spring Return	No Port Size	Plug-in, w/ Light, VDC	Flush Locking Manual Override	R501A2B10M11BF1
501	Rubber Packed	Solenoid Pilot with Flush Non-Locking Override	2 Position 4-Way (5/2), Dual Solenoid	No Port Size	Plug-in, w/ Light, VDC	Flush Locking Manual Override	R501A2B40M11BF1
501	Rubber Packed	Solenoid Pilot with Flush Non-Locking Override	Dual 3-way, A normally closed - B normally closed	No Port Size	Plug-in, w/ Light, VDC	Flush Locking Manual Override	R501A2BD0M11BF1

MANIFOLD ASSEMBLY HOW TO ORDER

K 501 A V 3 D 1 0 0 V A00

<p>Port Type _____ G = ISO228/1-G K = Push-In fittings</p> <p>Product Series _____ 501 = 11 mm Valve</p> <p>Revision _____ A = Initial release</p> <p>Product Type _____ V = Valve manifold assembly</p> <p>Electronics _____ 3 = G3 Fieldbus 8 = 580 Fieldbus</p> <p>Number of Valve Stations _____ D = 4 H = 8 L = 12 P = 16</p>	<p>Options MUF = Muffler in end plates DWM = DIN rail with MUF</p> <p>End Plate Style V = Vertical</p> <p>Second Valve Series 0 = No second valve series</p> <p>Second Valve Series Port Size 0 = No second valve series</p> <p>End Plate Port Size - Supply and Exhaust 1 = 1/8 (NPTF and G thread only) H = 8mm (5/16) (Push in fittings only)</p>
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Note: Manifold assembly maximum 3 pcs order quantity for express delivery, if more than 3 pcs please contact factory for lead time confirmation.

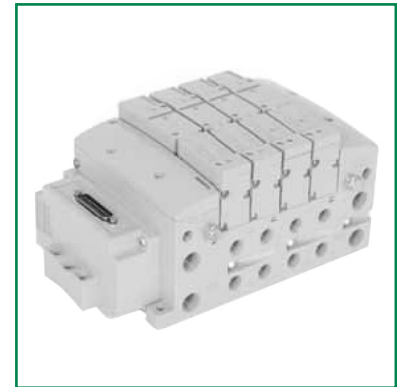
SOLENOID VALVES

air pilot actuated / spool & sleeve and rubber
G1/4 & 8mm push-in fitting with 26mm wide
G3/580 fieldbus capability

5/2-5/3
Series
503

FEATURES

- Solenoid air pilot actuated
- Low wattage - 1.7 watt for DC application
- DC solenoids polarity insensitive with surge suppression
- Plug together circuit boards eliminate internal wiring
- Integral recessed gaskets
- In fittings to accommodate various tube sizes
- Simple conversion from internal to external pilot
- IP65 Certified
- Shut off block for individual valve to be isolated from pressure supply during operation and repair
- G3/580 fieldbus capability



STANDARD VOLTAGES

DC (=) : 24V

SPECIFICATIONS

Port Type	Product Series	Product Type	Mounting	Port Size	Wiring Option	Options	Interface	Catalog Number
ISO228/1-G	503	Manifold Base	Manifold Base, 2 Stations, Side Ports, Double Z-Board	1/4	Plug-in, Receptacle Assembly	Standard	Proprietary	G503AMM22MA0010
Push-in Fittings	503	Manifold Base	Manifold Base, 2 Stations, Side Ports, Double Z-Board	8 mm	Plug-in, Receptacle Assembly	Standard	Proprietary	K503AMM2HMA0010

Product Series	Actuation	Valve Type	Function	Port Size	Electrical	Options	Catalog Number
503	n/a	Blank Station Plate	Blank Station Plate Kit	No Port Size	Plug-in	Standard	P503AB428359001
503	Spool and Sleeve	Solenoid Pilot with Flush Non-Locking Override	2 Position 4-Way (5/2), Spring Return	No Port Size	Plug-in, w/ Light, VDC	Flush Locking Manual Override	R503A1B10M11BF1
503	Spool and Sleeve	Solenoid Pilot with Flush Non-Locking Override	2 Position 4-Way (5/2), Dual Solenoid	No Port Size	Plug-in, w/ Light, VDC	Flush Locking Manual Override	R503A1B40M11BF1
503	Rubber Packed	Solenoid Pilot with Flush Non-Locking Override	2 Position 4-Way (5/2), Spring Return	No Port Size	Plug-in, w/ Light, VDC	Flush Locking Manual Override	R503A2B10M11BF1
503	Rubber Packed	Solenoid Pilot with Flush Non-Locking Override	2 Position 4-Way (5/2), Dual Solenoid	No Port Size	Plug-in, w/ Light, VDC	Flush Locking Manual Override	R503A2B40M11BF1
503	Rubber Packed	Solenoid Pilot with Flush Non-Locking Override	3 Position 4-Way (5/3), Blocked Center	No Port Size	Plug-in, w/ Light, VDC	Flush Locking Manual Override	R503A2B60M11BF1
503	n/a	Sandwich function	Proprietary Sandwich Shut Off Kit	No Port Size	Plug-in	Standard	R503AY426707002

MANIFOLD ASSEMBLY HOW TO ORDER

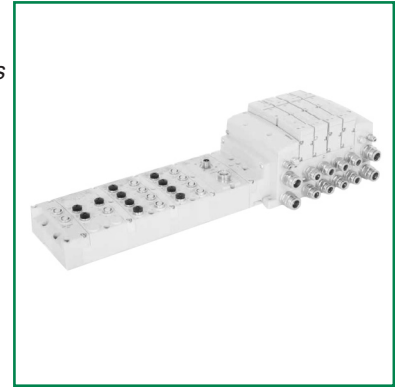
G 503 A V 3 B 3 0 0 V A00

<p>Port Type</p> <p>G = ISO228/1-G K = Push-In fittings</p> <p>Product Series</p> <p>503 = 26 mm valve</p> <p>Revision</p> <p>A = Initial release</p> <p>Product Type</p> <p>V = Valve manifold assembly</p> <p>Electronics</p> <p>3 = G3 Fieldbus electronics 8 = 580 Fieldbus</p>	<p>Options</p> <p>MUF = Muffler in end plates DWM = DIN rail with MUF</p> <p>End Plate Style</p> <p>V = Vertical</p> <p>End Plate Port Size</p> <p>3 = 3/8 K = 10 mm</p> <p>Number of Valve Stations</p> <table style="width: 100%; border: none;"> <tr> <td>B = 2</td> <td>J = 10</td> </tr> <tr> <td>D = 4</td> <td>L = 12</td> </tr> <tr> <td>F = 6</td> <td>N = 14</td> </tr> <tr> <td>H = 8</td> <td>P = 16</td> </tr> </table>	B = 2	J = 10	D = 4	L = 12	F = 6	N = 14	H = 8	P = 16
B = 2	J = 10								
D = 4	L = 12								
F = 6	N = 14								
H = 8	P = 16								

Note: Manifold assembly maximum 3 pcs order quantity for express delivery, if more than 3 pcs please contact factory for lead time confirmation.

FEATURES

- Innovative graphic display is used for easy commissioning, visual status & diagnostics
No internal wiring simplifies assembly
- SPEEDCON M12 connector technology allows for fast and efficient ½ turn I/O connector attachment
- Power connector allows output power to be removed while inputs and communication are left active
- IP65 protection
- Up to 1200 Input/1200 Output capability with one communication node!
(Present physical I/O combinations allows 1200 I/544 O)
- 32 valve solenoids per manifold, up to 17 manifolds/branch per communication node!
- One node supports 16 I/O modules – Analog I/O, Digital I/O (NPN & PNP) and specialty
- Innovative clip design allows easy module removal/replacement without dismantling manifold
- Auto Recovery Module (ARM) protects configuration information during a critical failure. Allows configuration information to be saved and reloaded to replacement module automatically
- CE Mark



STANDARD VOLTAGES

DC (=) : 24V

SPECIFICATIONS

Product Series	Product Type	Protocol	Connector Type	Description	Catalog Number
G3	Electronics	PROFIBUS DP	5 pin M12 type (1 male and 1 female)	Replacement Code	240-239
G3	Electronics	PROFINET	Two D-coded 4 pin M12 type (female)	Replacement Code	240-240
G3	Electronics	SUB-BUS	5 pin M12 type (male)	Replacement Code	240-241
G3	Electronics	POWERLINK	Two D-coded 4 pin M12 type (female)	Replacement Code	240-309
G3	Connector	POWERLINK SUB-BUS	M12 4 Pin, Male, 90°	Power Port, PG9	MD04F20000000000
G3	Connector	PROFINET PROFIBUS DP	M12 5 Pin, Male ,90°	Power Port, PG9	MD05F20000000000
G3	Connector	POWERLINK PROFINET	M12 Straight 4 Pin Male	Communication Port, PG 9, Screw Terminal	QA04F20000000000
G3	Connector	PROFIBUS DP	M12 Straight 5 Pin, Male	Communication Port, Bus Out, PG7	RA05F200P0000000
G3	Terminating Resistor	PROFIBUS DP	M12 Straight 5 Pin, Male	Communication Port	RA05TR0000000000
G3	Connector	PROFIBUS DP	M12 Straight 5 Pin, Female	Communication Port, Bus In, PG7	RC05F200P0000000
G3	Connector	SUB-BUS	M12 90° 5 Pin, Male	Communication Port, Bus Out, PG9	TB05F2000000071V
G3	Connector	SUB-BUS	M12 90° 5 Pin, Female	Communication Port, Bus In, PG9	TD05F2000000071V

Product Series	Product Type	Signal type	Connector Type	Remark	Catalog Number
G3	I/O Moduel	16 PNP Digital Inputs	Terminal Strip	Assembly/Replacement Code	240-203
G3	I/O Moduel	16 NPN Digital Inputs	Terminal Strip	Assembly/rReplacement Code	240-204
G3	I/O Moduel	16 PNP Digital Inputs	5-pin M12 * 8 port	Assembly/Replacement Code	240-205
G3	I/O Moduel	16 NPN Digital Inputs	5-pin M12 * 8 port	Assembly/Replacement Code	240-209

MANIFOLD ASSEMBLY HOW TO ORDER

G3 EP1 00 R 0 STD

Electronics Protocols

PL1 = Ethernet POWERLINK®
PT1 = PROFIBUS-DP
PN1 = PROFINET
DS2 = Sub-Bus valve manifold

Number of I/O Modules

00 = 0 09 = 9
01 = 1 10 = 10
02 = 2 11 = 11
03 = 3 12 = 12
04 = 4 13 = 13
05 = 5 14 = 14
06 = 6 15 = 15
07 = 7 16 = 16
08 = 8

Special Options

STD = Standard
DRM = DIN rail mounting

Modification

0 = Initial release

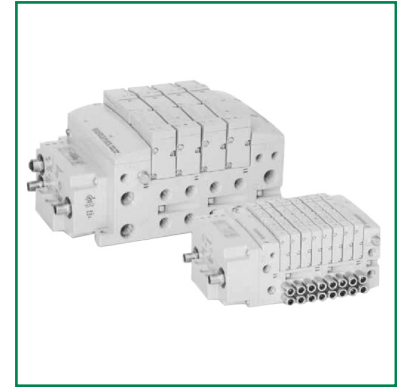
Left Mounting

D = w/ Sub-Bus out
R = w/ Terminating resistor

Note: Manifold assembly maximum 3 pcs order quantity for express delivery, if more than 3 pcs please contact factory for lead time confirmation.

FEATURES

- Innovative graphic display is used for easy commissioning, visual status & diagnostics no internal wiring simplifies assembly
- No internal wiring simplifies assembly
- Power connector allows output power to be removed while inputs and communication are left active
- IP65 protection
- 32 valve solenoids per manifold
- CE mark



STANDARD VOLTAGES

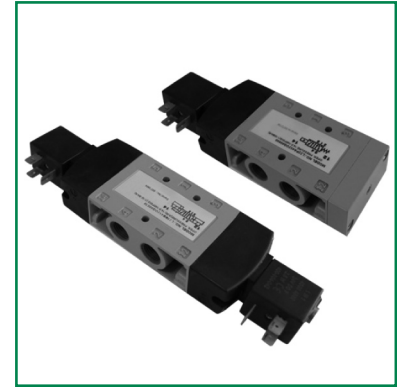
DC (=) : 24V

SPECIFICATIONS

Product Series	Product Type	Protocol	Connector Type	Description	Catalog Number
580	Electronics	PROFIBUS DP	5 pin M12 (1 male and 1 female)	No Options	P580AEPT1010A00
580	Electronics	PROFIBUS DP	5 pin M12 (1 male and 1 female)	DIN Rail Mount	P580AEPT1010DRM
580	Electronics	PROFINET	Two D-coded 4 pin M12 (female)	No Options	P580AEPN1010A00
580	Electronics	PROFINET	Two D-coded 4 pin M12 (female)	DIN Rail Mount	P580AEPN1010DRM
580	Connector	PROFINET	M12 Straight 4 Pin, Male	Communication Port, PG7	QA04F200R000071N
580	Terminating Resistor	PROFIBUS DP	M12 Straight 5 Pin, Male	Communication Port	RA05TR0000000000
580	Connector	PROFIBUS DP	M12 Straight 5 Pin, Male	Communication Port, Bus Out, PG7	RA05F200P00000000
580	Connector	PROFIBUS DP	M12 Straight 5 Pin, Female	Communication Port, Bus In, PG7	RC05F200P00000000
580	Connector	PROFINET PROFIBUS DP	M12 Straight 5 Pin, Male ,90°	Power Port, PG9	TD05F20000000000

FEATURES

- Solenoid pilot
- DIN plug-in solenoid indicator light
- Unlubricated or lubricated service
- In-line or manifold mounted



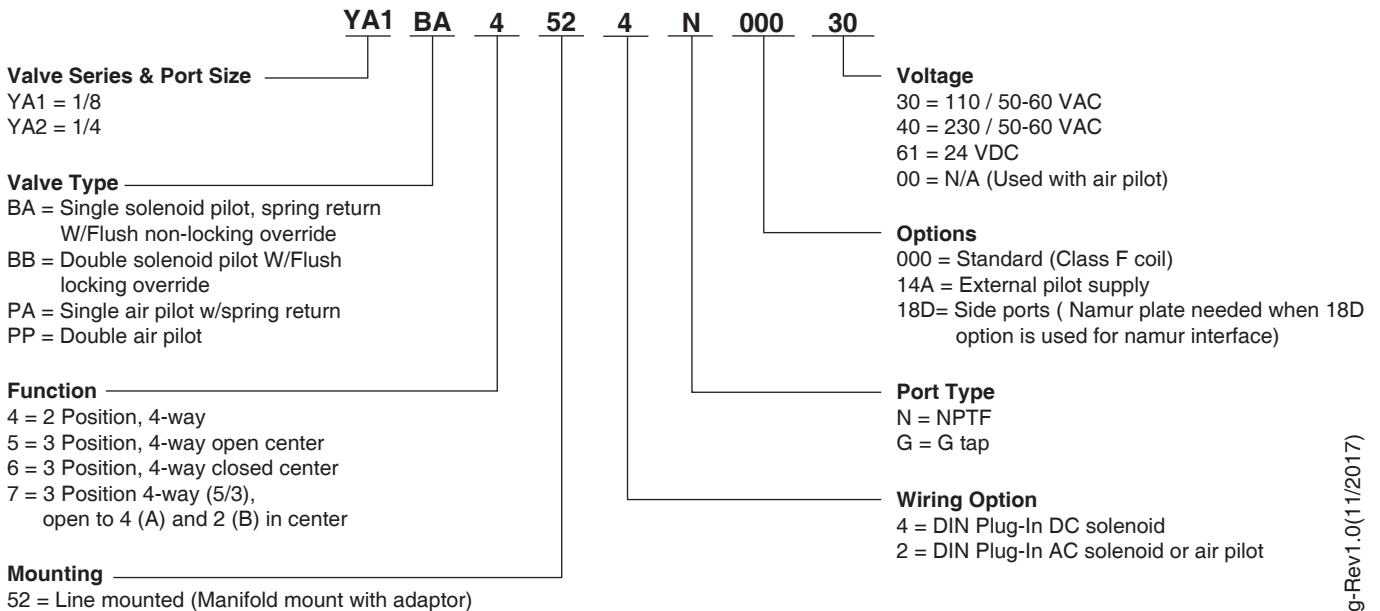
STANDARD VOLTAGES

DC (=) : 24V
 AC (-) : 110V-230V/50-60Hz

TECHNICAL DATA (YA)

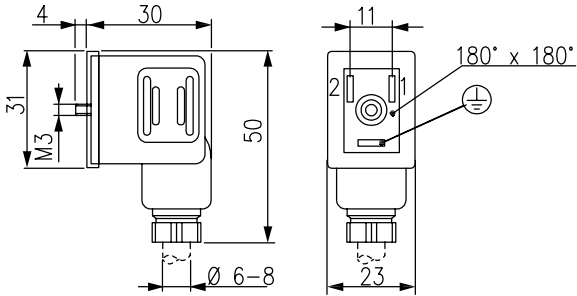
Valve Data	English		Metric	
Cv	1/8 = 1.0	1/4 = 1.0	1/8 = 1.0	1/4 = 1.0
Flow Capacity	46 SCFM upstream pressure to atmosphere @ 80 PSIG		985 NI/m @ 6 bar upstream/5 bar downstream	
Main Valve Operating Pressure Range	28" HG. Vacuum to 150 PSIG		Vacuum to 10 bar	
Pilot Pressure Range: Internal and External	14.5 to 150 PSIG		1 to 10 bar	
Temperature Range: Solenoid Pilot (ambient)	-10°F to +115°F		-23°C to +46°C	

HOW TO ORDER



Note: Plug connector is included with DIN solenoid

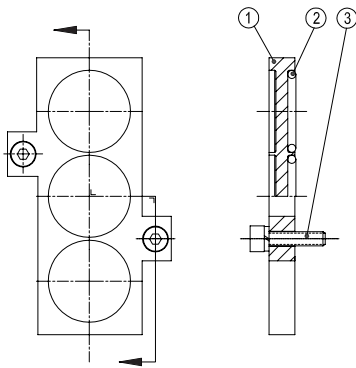
PLUG CONNECTOR ASSEMBLIES



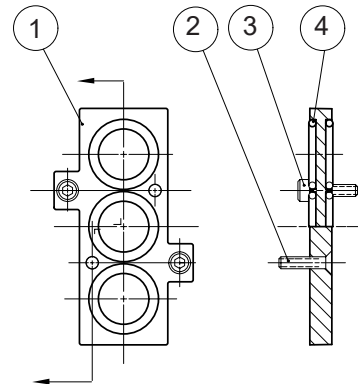
Plug Connector Description	Part No.
Black Plug Assembly	88122404

# Of Stations	Manifold Kit No	# Of Stations	Manifold Kit No
	G 1/4		G 1/4
2 Stations	106-1096	8 Stations	106-1102
3 Stations	106-1097	9 Stations	106-1103
4 Stations	106-1098	10 Stations	106-1104
5 Stations	106-1099	11 Stations	106-1105
6 Stations	106-1100	12 Stations	106-1106
7 Stations	106-1101	Adaptor Kit	Order (1) adaptor kit for each station on the manifold Includes all seals and screw

BLANK STATION PLATE KIT 239-288-SJ*



ADAPTOR KIT 239-311*



SOLENOID ASSEMBLIES*

STANDARD VOLTAGES	110/50-60 VAC	230/50-60 VAC	24 VDC
Part No.	43005069	43004886	43004869

* To be sold separately

FEATURES

- Solenoid pilot
- DIN plug-in solenoid indicator light
- Unlubricated or lubricated service
- In-line or manifold mounted



STANDARD VOLTAGES

DC (=) : 24V
 AC (-) : 110V-230V/50-60Hz

TECHNICAL DATA (YA)

Valve Data	English		Metric	
Cv	1/8 = 1.0	1/4 = 1.0	1/8 = 1.0	1/4 = 1.0
Flow Capacity	46 SCFM upstream pressure to atmosphere @ 80 PSIG		985 NI/m @ 6 bar upstream/5 bar downstream	
Main Valve Operating Pressure Range	28" HG. Vacuum to 150 PSIG		Vacuum to 10 bar	
Pilot Pressure Range: Internal and External	14.5 to 150 PSIG		1 to 10 bar	
Temperature Range: Solenoid Pilot (ambient)	-10°F to +115°F		-23°C to +46°C	

HOW TO ORDER

YB2 BA 4 52 4 G 000 30

Valve Series & Port Size

YB2 = 1/4
 YB3 = 3/8

Valve Type

BA = Single solenoid pilot, spring return
 W/Flush locking override
 BB = Double solenoid pilot W/Flush
 locking override
 PA = Single air pilot w/spring return
 PP = Double air pilot

Function

4 = 2 Position, 4-way
 5 = 3 Position, 4-way open center
 6 = 3 Position, 4-way closed center
 7 = 3 Position 4-way (5/3),
 open to 4 (A) and 2 (B) in center

Mounting

52 = Line mounted (Manifold mount with adaptor)

Voltage

30 = 110 / 50-60 VAC
 40 = 230 / 50-60 VAC
 61 = 24 VDC
 00 = N/A (Used with air pilot)

Options

000 = Standard (Class F coil)
 14A = External pilot supply
 12B = Dry assembly

Port Type

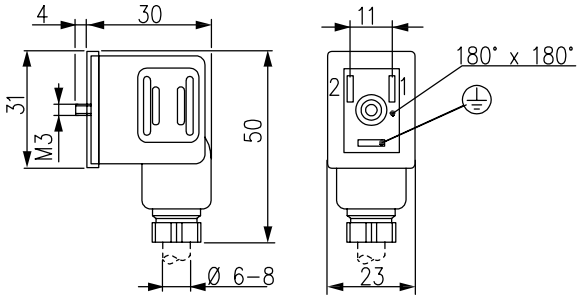
G = G tap

Wiring Option

4 = DIN Plug-In DC solenoid
 2 = DIN Plug-In AC solenoid or air pilot

Note: Plug connector is included with DIN solenoid

PLUG CONNECTOR ASSEMBLIES



Plug Connector Description	Part No.
Black Plug Assembly	88122404

SOLENOID ASSEMBLIES*

Standard Voltages	110/50-60 VAC	230/50-60 VAC	24 VDC
Part No.	43005069	43004886	43004869

* To be sold separately

MANIFOLD

Manifold Stations	G3/8 Part No.	Manifold Stations	G3/8 Part No.
2 Stations	106-715	8 Stations	106-721
3 Stations	106-716	9 Stations	106-722
4 Stations	106-717	10 Stations	106-723
5 Stations	106-718	11 Stations	106-724
6 Stations	106-719	12 Stations	106-725
7 Stations	106-720	-	-

BLANK STATION PLATE KIT
239-417-SJ

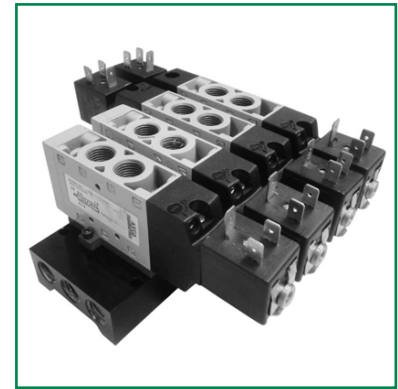
ADAPTOR KIT
239-312

FEATURES

- Solenoid pilot
- DIN plug-in solenoid
- Unlubricated or lubricated service
- In-line or manifold mounted

STANDARD VOLTAGES

DC (=) : 12V-24V
 AC (-) : 230V/50-60Hz

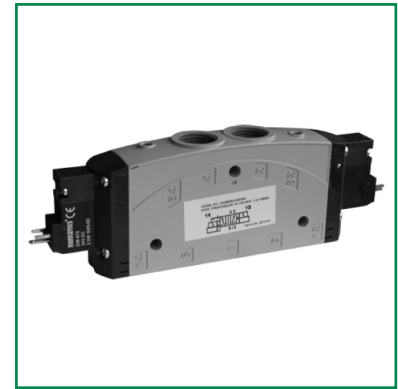


SPECIFICATIONS

Port Size	Valve Type	Function	Catalog Number DC Solenoid	Catalog Number AC Solenoid
G1/8	Single Solenoid Pilot, Sping Return W/Flush Locking Override	2 Position, 4-Way	HV434441-001	HV434441-004
G1/8	Double Solenoid Pilot W/Flush Locking Override	2 Position, 4-Way	HV434441-002	HV434441-005
G1/8	Double Solenoid Pilot W/Flush Locking Override	3 Position, 4-Way Closed Center	HV434441-003	HV434441-006
G1/4	Single Solenoid Pilot, Sping Return W/Flush Locking Override	2 Position, 4-Way	HV434441-101	HV434441-104
G1/4	Double Solenoid Pilot W/Flush Locking Override	2 Position, 4-Way	HV434441-102	HV434441-105
G1/4	Double Solenoid Pilot W/Flush Locking Override	3 Position, 4-Way Closed Center	HV434441-103	HV434441-106
G1/4	Double Solenoid Pilot W/Flush Locking Override	3 Position, 4-Way Open Center	HV434441-107	HV434441-108

FEATURES

- Solenoid-pilot actuated valves
- DIN plug-in solenoid and plug connector with or without indicator light available
- Housing made from aluminium alloy
- Lubricated or unlubricated operation
- In-line (pressure ports in valve body)



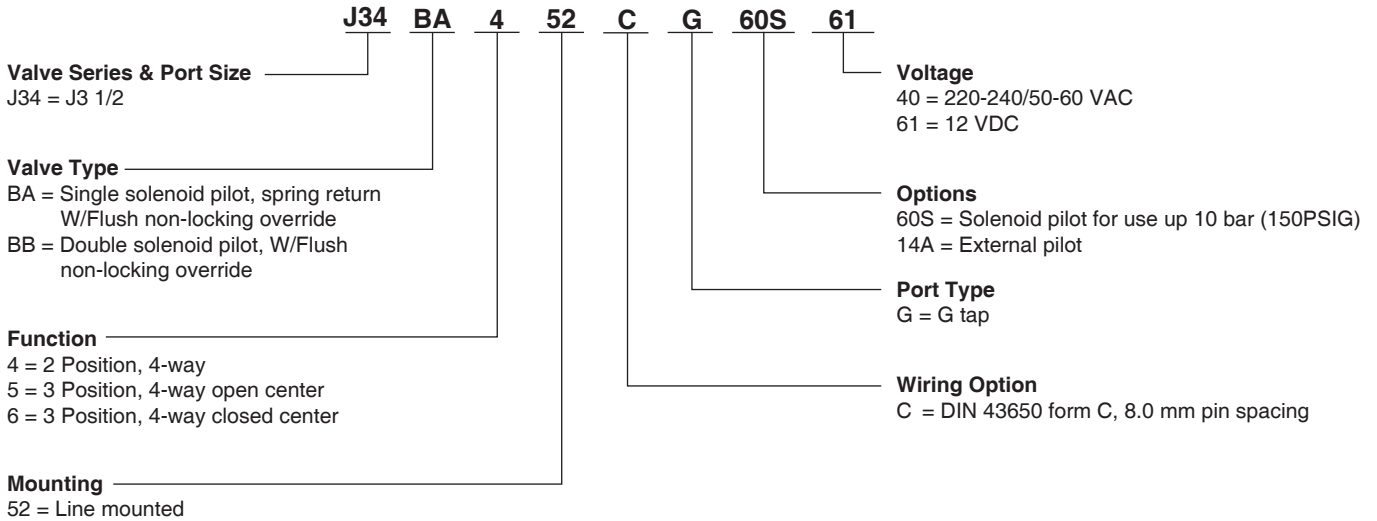
STANDARD VOLTAGES

DC (=) : 24V
 AC (-) : 220V-240V/50-60Hz

TECHNICAL DATA

Valve Data	English	Metric
Cv	2.5	2.5
Flow Capacity	115 SCFM @ 80 PSIG upstream pressure to atmosphere	2362 NI/m @ 6 bar upstream/ 5 bar downstream
Pressure Range	60S Option: Vacuum to 150 PSIG	Vacuum to 10 bar
	000 Option: Vacuum to 116 PSIG	Vacuum to 8 bar
Pilot Pressure	26 to 145 PSIG	1.8 to 10 bar
Temperature Range	-10°F to 115°F	-23°C to 46°C

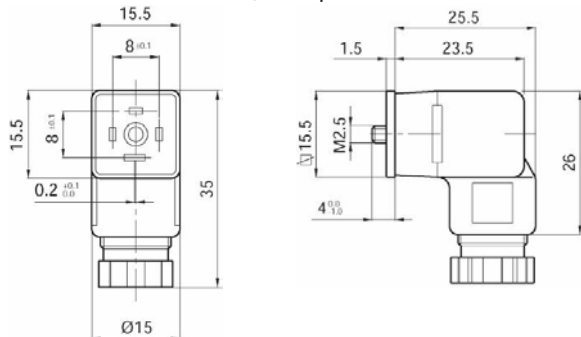
HOW TO ORDER



Note: Plug connector is NOT included with DIN solenoid. Order plug-in connector assembly separately (see ordering information below)

PLUG-IN CONNECTOR ASSEMBLIES

Per DIN 43650 Form C, Accepts cable diameter 4 to 6 mm.*



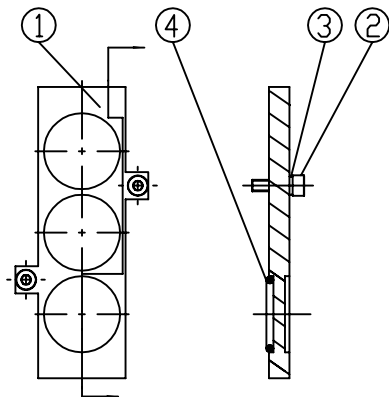
Plug Connector Description**	Part No.
Black Plug Assembly w/o Light	230-1140

* To be sold separately
 ** Connectors includes screw and gasket

MANIFOLD ASSEMBLY

# STATIONS	Part No.
2 Stations	106-1443
3 Stations	106-1444
4 Stations	106-1445
5 Stations	106-1446
6 Stations	106-1447
7 Stations	106-1448
8 Stations	106-1449
9 Stations	106-1450
10 Stations	106-1451
11 Stations	106-1452
12 Stations	106-1453

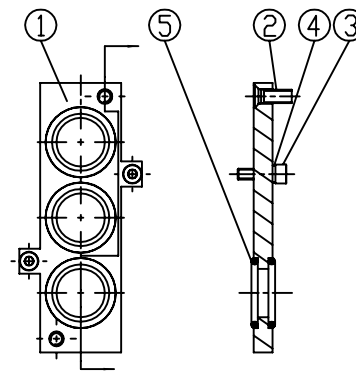
BLANK STATION PLATE KIT: 245-127



Det. No.	No. Req'd	Part Name
1	1	Blank Station Plate
2	2	Screw
3	2	Washer Spring
4	3	O-ring

* To be sold separately

ADAPTOR KIT: 244-132

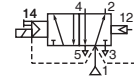


Det. No.	No. Req'd	Part Name
1	1	Blank Station Plate
2	2	Screw
3	2	Washer Spring
4	3	O-ring

* To be sold separately

MINI SPOOL VALVES

solenoid air operated
 G1/4 tapped body
 adaptable on joinable subbases



5/2
 Series
521

FEATURES

- Mini spool valve, ideal for piloting pneumatic cylinders
- Can be mounted on joinable subbase for manifold applications
- G1/4 tapped body

STANDARD VOLTAGES

DC (=) : 24V
 AC (-) : 230V/50Hz



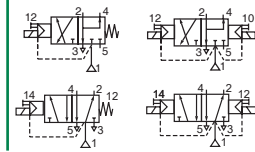
SPECIFICATIONS

Operators	Voltages	Response Time (ms)		Catalog Number
		Energized	De-energized	
Differential Return	24VDC	20	30	52100001
Differential Return	230V / 50 Hz	20	30	52100004



SOLENOID VALVES

Spool type
single/dual solenoid
aluminium body, 1/4", Namur and Threaded style



3/2
5/2
Series
531

FEATURES

- The "Namur" style spool valve have threaded port connection and Namur interface, and "Threaded" style spool valve have threaded port connections
- All the exhaust ports of this spool valve are connectable, providing better environmental protection, particularly recommended for sensitive areas such as clean rooms, and applications in the pharmaceutical and food processing sectors
- The valve offers environmental protection against the ingress of liquids, dusts or any other foreign matter (environmentally-protected construction)
- Can be externally piloted (external air pilot supply) to convert valve to zero minimum operation by flipping a gasket
- Stainless steel manual operator as standard



STANDARD VOLTAGES

DC (=) :	24V
AC (-) : SC, VC, EF/VCEF, EV/VCEV, Redhat II	110V/50Hz-120V/60Hz; 220V/50Hz-240V/60Hz
NF/WSNF	115V/50Hz; 120V/60Hz; 230V/50Hz
WBLP	115V/50Hz; 230V/50Hz

SPECIFICATIONS

Pipe Size	Orifice Size (mm)	Flow Coefficient Kv (m ³ /h) (l/min)		Operating Pressure Differential (bar)			Prefix										No Prefix	Catalog Number
				Min.	Max. (PS)		SC	VC	WBLP	EF/VCEF ⁽¹⁾	JKF/JKH	NF	NFET	JPIS	HT	WP		
					~	=												
NAMUR 3/2 NC - 5/2 - Solenoid air pilot operated - spring return (Single solenoid)																		
1/4	6	0.95	15.5	2	10	10	•	-	•	-	-	-	-	-	-	-	♣531C001MS	
1/4	6	0.95	15.5	2	10	10	-	-	-	-	-	-	-	•	-	•	8531B301MO ⁽²⁾	
1/4	6	0.95	15.5	2	10	10	-	•	-	•	-	-	-	-	-	-	8531G301MO ⁽²⁾	
1/4	6	0.95	15.5	2	10	10	-	•	-	•	-	-	-	-	-	-	G531H301MO ⁽²⁾	
1/4	6	0.95	15.5	2	10	10	-	•	-	•	-	-	-	•	-	•	8531B401MO	
1/4	6	0.95	15.5	2	10	10	-	•	-	•	-	-	-	•	-	•	8531G401MO	
1/4	6	0.95	15.5	2	10	10	-	•	-	•	-	-	-	•	-	•	G531H401MO	
NAMUR 3/2 NC - 5/2 - Solenoid air pilot operated - spring return (Double solenoid)																		
1/4	6	0.95	15.5	2	10	10	•	-	•	-	-	-	-	-	-	-	♣531C002MS	
THREADED 5/2 - Solenoid air pilot operated - spring return (Single solenoid)																		
1/4	6	0.95	15.5	2	10	10	•	-	•	-	-	-	-	-	-	-	♣531C017MS	
1/4	6	0.95	15.5	2	10	10	-	-	-	•	-	-	-	-	-	-	G531H317MO ⁽²⁾	
1/4	6	0.95	15.5	2	10	10	-	-	-	-	•	•	-	•	•	-	8531B417MO	
1/4	6	0.95	15.5	2	10	10	-	•	-	•	•	-	-	•	-	•	G531H417MO	
THREADED 5/2 - Solenoid air pilot operated and return (Double solenoid)																		
1/4	6	0.95	15.5	2	10	10	•	-	•	-	-	-	-	-	-	-	♣531C018MS	
1/4	6	0.95	15.5	2	10	10	-	•	-	•	-	-	-	-	-	-	G531H318MO ⁽²⁾	

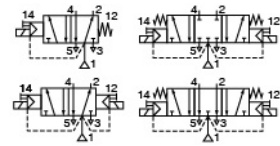
- Available Express
- (1) Please refer to the page 69 for VCEF installation
- (2) DC only
- ♣ Stands for options "8" for NPT port thread and "G" for BSP port thread





SOLENOID VALVES

pilot operated, spool type
single solenoid
aluminium body, 1/2"



5/2
Series
553

FEATURES

- The monostable spool valves have TÜV-EXIDA certified IEC 61508 functional safety data and can be used up to SIL 4 (551/TÜV)-SIL 3 (552-553/EXIDA)
- All the exhaust ports of this spool valve are connectable, providing better environmental protection, particularly recommended for sensitive areas such as clean rooms, and applications in the pharmaceutical and food processing sectors
- The valve offers environmental protection against the ingress of liquids, dusts or any other foreign matter (environmentally-protected construction)
- Can be externally piloted (external air pilot supply) to convert valve to zero minimum operation by flipping a gasket
- The solenoid valves satisfy all relevant EC Directives



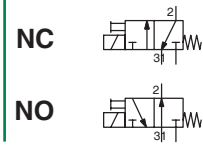
STANDARD VOLTAGES

DC (=) : 24V; 125V(HC)
 AC (-) : SC, VC, EF/VCEF, EV/VCEV, Redhat II 110V/50Hz-120V/60Hz; 220V/50Hz-240V/60Hz
 NF/WSNF 115V/50Hz; 120V/60Hz; 230V/50Hz

SPECIFICATIONS

Pipe Size	Orifice Size	Flow Coefficient Kv		Operating Pressure Differential (bar)			Power Level	Prefix					No Prefix	Catalog Number	Options
				Min. ⁽¹⁾	Max. (PS)			SC	PV	EF/VCEF ⁽²⁾⁽³⁾	NF/WSNF	NFET/WSNFET			
					~	=								Aluminium	
1/2	13	3.15	52.5	0/2	10	10	BP	-	•	-	•	•	-	❖553A417	SL
1/2	13	3.15	52.5	0/2	10	10	BP	•	-	•	-	-	•	❖553G417	-
1/2	13	3.15	52.5	0/2	10	10	LP	•	•	-	•	•	-	❖553A317 ⁽²⁾	SL
1/2	13	3.15	52.5	0/2	10	10	LP	-	-	•	-	-	•	❖553G317 ⁽²⁾	-
1/2	13	3.15	52.5	0/2	10	10	LP	-	-	•	-	-	•	❖553H317 ⁽²⁾	-

- Available Express
- ❖ Stands for options "8" for NPT port thread and "G" for BSP port thread
- (1) Zero minimum is only achieved if external pressure is applied
- (2) DC only



FEATURES

- CNOMO pad-mount version for valve piloting applications
- Compact size and low weight for easy installation on single or joinable subbases
- AC/DC interchangeability of the solenoid operator without any need for disassembly of the valve
- Flexible installation on joinable subbases
- Manual operator as standard
- The solenoid valves satisfy all relevant EC directives



STANDARD VOLTAGES

DC (=) : 12V-24V-48V
AC (-) : 115V/50-60Hz; 230V/50-60Hz

SPECIFICATIONS

Pipe Size	Orifice Size		Flow at 6 bar l/min (ANR)		Flow Coefficient Kv		Operating Pressure Differential (bar)			Power Coil (W)		Catalog Number	
	1→2	2→3	1→2	2→3	1→2	2→3	Min.	Max. (PS)		~	=	with Connector	without Connector
	(mm)	(mm)			(l/min)	(l/min)		Air					
NC - Normally closed													
pad mounting	1.2	1.5	50	56	0.7	0.8	0	10	10	2.5	3	X18900001 TPL 24065	X18900002 TPL 24065

FEATURES

- Size 30 CNOMO pilot adapted for the piloting of actuators or spool valves
- Version with M12 connection, integrated Led and protection
- Manual operator as standard

STANDARD VOLTAGES

DC (=) : 24V



SPECIFICATIONS

Orifice Size (mm)	Flow				Allowable Differential Pressure (bar)		Catalog Number
	at 6 bar l/min (ANR)		Coefficient Kv		Min.	Max.	
	1→2	2→3	1→2	2→3			with DIN Connector
1.6	70	84	1	1.2	0	10	19000006

FEATURES

- Compact designed valves to standard ISO 5599/1
- Solenoid pilot and air pilot actuated
- Solenoid operator with standard epoxy encapsulated coil
- 5-ported, 2 and 3 position
- Lapped spool and sleeve assembly
- Housing made from aluminium alloy
- Lubricated or unlubricated operation
- AC or DC voltage
- Electrical: IP65 w/plug-in connector
- With locking manual overrides



HOW TO ORDER

C12 BA 4 00 4 0 11B 61

Valve Series & Port Size
 C12* = ISO1 1/4"(Joinable base)
 C13 = ISO1 3/8"(Single base)
 C23* = ISO2 3/8"(Single base)
 C24 = ISO2 1/2"(Joinable base)

Valve Type
 BA = Single solenoid pilot, spring return
 BB = Double solenoid pilot

Function
 4 = 2 Position, 4-Way
 5 = 3 Position, 4-Way open center
 6 = 3 Position, 4-Way closed center
 7 = 3 Position, 4 Way-(5/3), open to 4 (A)
 and 2 (B) in center

Mounting
 00 = Valve only
 41 = Valve with side ported single base

Voltage
 30 = 110/50-60 VAC
 40 = 230/50-60 VAC
 61 = 24 VDC

Options
 11B** = Standard
 (With locking manual override on solenoid operator)

Port Type
 0 = Valve only
 G = G Thread

Voltage Option
 2 = AC
 4 = DC

NOTE: Order plug-in connector assembly separately (see ordering information below)
 * Code use when supply valve unit only **BA & BB only

SOLENOID PILOT ASSEMBLIES*

X18990001 TPL 24065



REPLACEMENT COILS*

Voltage	Order Code
24 VDC	43004869
115/50-60 VAC	43004884
230/50-60 VAC	43004886

Plug Connector Description	Part No.
Standard Connector	88122404

JOINABLE BASES WITH SIDE PORTS

Size	Description	Part No.
ISO 1	Joinable subbase with side ports	355 00 088
	Set of 2 end plates	355 00 087
ISO 2	Joinable subbase with side ports	355 00 102
	Set of 2 end plates	355 00 101

SINGLE BASES WITH SIDE PORTS

Type	Port Size	Part No.
ISO 1	G 1/4	35500076
	G 3/8	35500382
ISO 2	G 3/8	35500560
	G 1/2	35500562

FEATURES

- Compact designed valves to standard ISO 5599/1
- Solenoid pilot and air pilot actuated
- Solenoid operator with standard epoxy encapsulated coil
- 5-ported, 2 and 3 position
- Lapped spool and sleeve assembly
- Housing made from aluminium alloy
- Lubricated or unlubricated operation
- AC or DC voltage
- Electrical: IP65 w/plug-in connector
- With locking manual overrides



STANDARD VOLTAGES

DC (=) : 24V

AC (-) : 115V/50-60Hz; 230V/50-60Hz

SPECIFICATIONS

Port Size	Valve Type	Function	Mounting	Catalog Number DC Solenoid	Catalog Number AC Solenoid
ISO1 1/4	Single Solenoid Pilot, Spring Return	2 Position, 4-Way	Valve only	HV434442-001	HV434442-002
ISO2 3/8	Double Solenoid Pilot	2 Position, 4-Way	Valve only	HV434442-101	HV434442-102

FEATURES

- Reliability: long service life of 30 million cycles
- Choice of internal / external supply with selector seals (vacuum to -0.95 bar)
- Modular assembly with joinable subbases
- High flow to control large actuators
- Flow rate (ISO 1- 1400L/min; ISO 2-2800L/min; ISO 3-4200L/min)



SPECIFICATIONS

Function	Operator	Size	Pilot Pressure (bar)		Valve Body Catalog Number
			Min.	Max.	
	2/5 Single Pilot(14) Spring return (12)	ISO 1	3	10	54191023
		ISO 2	2.5		54292023
		ISO 3	3		54391023
	2/5 Single Pilot(14) Air return (12)	ISO 1	1.5		54191025
		ISO 2	1.5		54292025
		ISO 3	1.5		54391025
	2/5 Double Double Pilot(14) - (12) Air return (12)	ISO 1	1.5	54191027	
		ISO 2	1.5	54292027	
		ISO 3	1.5	54391027	

Pilot Solenoid Valve	Code	Power	Manual Opreator	Air Opreator Interface	88100074
189 series	X18900001 TPL 24065	24VDC, 115/50-60 VAC, 230/50-60VAC	Maintained	Blanking Plate	88100073
190 series	19000006	24CDC			

JOINABLE BASES WITH SIDE PORTS

Size	Description	Part No.
ISO 1	Joinable subbase with side ports	355 00 088
	Set of 2 end plates	355 00 087
ISO 2	Joinable subbase with side ports	355 00 102
	Set of 2 end plates	355 00 101
ISO 3	Joinable subbase with side ports	355 00 173
	Set of 2 end plates	355 00 174

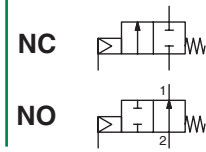
SINGLE BASES WITH SIDE PORTS

Type	Port Size	Part No.
ISO 1	G 1/4"	35500076
	G 3/8"	35500382
ISO 2	G 3/8"	35500560
	G 1/2"	35500562
ISO 3	G 1/2"	35500171
	G 3/4"	35500192



ANGLE SEATED VALVES

stainless steel body
3/8" - 2 1/2"



2/2
Series
E290

FEATURES

- High flow due to angled seat design
- Anti-waterhammer design (fluid entry under the disc)
- Vacuum operation up to 10-2 mbar
- Wide range of piston-type operators (32 - 50- 63 - 90 -125 mm dia.) rotatable through 360°, for maximum performance at different minimum pilot pressures
- High performance, maintenance-free stuffing box
- The valves satisfy Pressure Equipment Directive 97/23/EC, category 1 (DN > 25) or article 3.3(DN ≤ 25)



SPECIFICATIONS

Piping (ISO 6708)		Flow Coefficient Kv		Pilot Pressure (bar)		Operating Pressure Differential (bar)				Operator Diameter (mm)	Catalog Number	Suffix
Pipe Size (G°)	DN	(m³/h)	(l/min)	Min.	Max.	Min.	Max.					
								Air, Inert gas, Aggressive Fluids	Water, Oil, Liquids, Aggressive Liquids	Steam (≤184°C)		Stainless steel
NC - Normally closed, entry under the disc⁽¹⁾												
3/8	10	2.8	47	4	10	0	16	16	10	32	E290A791	VI
1/2	15	4.1	68	4	10	0	12	12	10	32	E290A792	VI
1/2	15	4.9	82	4	10	0	16	16	10	50	E290A393	VI
1/2	15	4.9	82	2.5	10	0	16	16	10	63	E290B045	-
3/4	20	6.5	108	4	10	0	6	6	6	32	E290A793	VI
3/4	20	9.4	157	4	10	0	10	10	10	50	E290A394	VI
3/4	20	9.4	157	4	10	0	16	16	10	63	E290B048	-
3/4	20	9.4	157	2.5	10	0	12	12	10	63	E290B047	-
1	25	12.8	213	4	10	0	6	6	6	50	E290A395	VI
1	25	16.5	275	4	10	0	10	10	10	63	E290B053	-
1	25	16.5	275	4	10	0	16	16	10	90	E290B054	-
1	25	16.5	275	2.5	10	0	6	6	6	63	E290B051	-
1	25	16.5	275	2.5	10	0	12	12	10	90	E290B052	-
1 1/4	32	27	450	2.5	10	0	3	3	3	63	E290A057	-
1 1/4	32	27	450	2.5	10	0	7	7	7	90	E290A058	-
1 1/4	32	27	450	4	10	0	6	6	6	63	E290A059	-
1 1/4	32	27	450	4	10	0	12	12	10	90	E290A060	-
1 1/2	40	45	750	4	10	0	4	4	4	63	E290A063	-
1 1/2	40	45	750	4	10	0	8	8	8	90	E290A064	-
1 1/2	40	45	750	2.5	10	0	4	4	4	90	E290A062	-
2	50	59	983	4	10	0	2.5	2.5	2.5	63	E290A067	-
2	50	59	983	4	10	0	6	6	6	90	E290A068	-
2 1/2	65	94	1567	4	10	0	2	2	2	90	E290A500	-
NO - Normally open, entry under the disc												
3/8	10	2.8	47	IX (*)	10	0	16	16	10	32	E290A794	VI
1/2	15	4.1	68	IX (*)	10	0	16	16	10	32	E290A795	VI
1/2	15	4.9	82	I (*)	10	0	16	16	10	50	E290A396	VI
1/2	15	4.9	82	II (*)	10	0	16	16	10	63	E290B069	-
3/4	20	6.5	108	IX (*)	10	0	16	16	10	32	E290A796	VI
3/4	20	9.4	157	I (*)	10	0	16	16	10	50	E290A397	VI
3/4	20	9.4	157	II (*)	10	0	16	16	10	63	E290B070	-
1	25	16.5	275	II(*)	10	0	16	16	10	63	E290B071	-
1	25	16.5	275	III(*)	10	0	16	16	10	90	E290B072	-
1 1/4	32	27	450	II (*)	10	0	16	16	10	63	E290A073	-
1 1/4	32	27	450	III (*)	10	0	16	16	10	90	E290A074	-
1 1/2	40	45	750	II (*)	10	0	11	11	10	63	E290A075	-
1 1/2	40	45	750	III (*)	10	0	16	16	10	90	E290A076	-
2	50	59	983	II (*)	10	0	7	7	7	63	E290A077	-
2	50	59	983	III (*)	10	0	13	13	10	90	E290A078	-
2 1/2	65	94	1567	III (*)	10	0	7	7	7	90	E290A504	-

Express delivery



SPECIFICATIONS

Piping (ISO 6708)		Flow Coefficient Kv		Pilot Pressure (bar)		Operating Pressure Differential (bar)				Operator Diameter (mm)	Catalog Number	Suffix
Pipe Size (G*)	DN	(m ³ /h)	(l/min)	Min.	Max.	Min.	Max.					
							Air, Inert gas, Aggressive Fluids	Water, Oil, Liquids, Aggressive Liquids	Steam (≤184°C)			
NC - Normally closed, entry above the disc (version recommended for rapid-cycling steam applications)												
3/8	10	2.8	47	X (*)	10	0	10	-	10	32	E290A797	VI
1/2	15	4.1	68	X (*)	10	0	10	-	10	32	E290A798	VI
1/2	15	4.9	82	V (*)	10	0	10	-	10	50	E290A399	VI
1/2	15	4.9	82	VI (*)	10	0	10	-	10	63	E290B079	-
3/4	20	6.5	108	X (*)	10	0	10	-	10	32	E290A799	VI
3/4	20	9.4	157	V (*)	10	0	10	-	10	50	E290A400	VI
3/4	20	9.4	157	VI (*)	10	0	10	-	10	63	E290B080	-
1	25	12.8	213	V (*)	10	0	10	-	10	50	E290A401	VI
1	25	16.5	275	VI (*)	10	0	10	-	10	63	E290B081	-
1 1/4	32	27	450	VI (*)	10	0	10	-	10	63	E290A082	-
1 1/4	32	27	450	VII (*)	10	0	10	-	10	90	E290A137	-
1 1/2	40	45	750	VI (*)	10	0	10	-	10	63	E290A083	-
1 1/2	40	45	750	VII (*)	10	0	10	-	10	90	E290A084	-
2	50	59	983	VI (*)	10	0	9	-	9	63	E290A085	-
2	50	59	983	VII (*)	10	0	10	-	10	90	E290A086	-
2 1/2	65	94	1567	VII (*)	10	0	10	-	10	90	E290A625	-

Express delivery

FEATURES

- Precise, quick-acting and robust valve suitable for use in outdoor industrial environments
- Exceptional long service life
- Variable flow proportional to the control signal
- Real-time control
- Ready-to-use valve
- The positioner can be directly connected to an external sensor (double loop control)
- Power saving function and no air consumption when position is reached
- Manual valve operator
- LED indicators for valve status display
- External exhausting



POSITIONER D CONTROLLER SPECIFICATIONS (NC valves, fluid entry under the disc)

Analog Setpoint	Suffix for Proportional Valve and Positioner ⁽¹⁾ Delivered Assembled			
	Fail Position Maintained ⁽²⁾		Fail Close ⁽³⁾	
	2 Way			
	Cable Gland	M12	Cable Gland	M12
Positioner^D, Single Loop				
0 - 10 V DC	PDB76	PDB82	PDB78	PDB84
4 - 20 mA	PDB77	PDB83	PDB79	PDB85
Positioner^D, Double Loop				
0 - 10 V DC	-	-	PDB80	PDB86
4 - 20 mA	-	-	PDB81	PDB87

■ Express delivery

- (1) Place the indicated suffix after the catalog number of the valve selected
 (2) Fail position of the valve disc maintained on loss of power
 (3) Fail Close: Valve returns to closed position on loss of power

VALVE SPECIFICATIONS

Threaded E290

Pipe Size		Flow Coefficient Kv		Pilot Pressure (bar)		Operating Pressure Differential (bar)				Operator Diameter	Catalog Number
						Min.	Max.				
(G*)	DN	(m ³ /h)	(l/min)	Min.	Max.		Air, Inert Gas, Aggressive Fluids	Water, Oil, Liquids, Aggressive Liquids	Steam (≤184°C)	(mm)	Stainless Steel
NC - Normally closed, entry under the disc											
1/2	15	4.6	77	2.5	8	0	16	16	10	63	E290B045PD
1/2	15	4.9	82	4	10	0	16	16	10	50	E290A393PD
3/4	20	7.1	118	4.5	8	0	16	16	10	63	E290B048PD
3/4	20	9.4	157	4	10	0	10	10	10	50	E290A394PD
3/4	20	9.4	157	2.5	10	0	12	12	10	63	E290B047PD
1	25	15	250	4.5	8	0	10	10	10	63	E290B053PD
1	25	15	250	4.5	8	0	16	16	10	90	E290B054PD
1 1/4	32	21	350	4.5	8	0	6	6	6	63	E290A059PD
1 1/4	32	21	350	4.5	8	0	12	12	10	90	E290A060PD
1 1/2	40	29	483	4.5	8	0	4	4	4	63	E290A063PD
1 1/2	40	29	483	4.5	8	0	8	8	8	90	E290A064PD
2	50	40	667	4.5	8	0	2.5	2.5	2.5	63	E290A067PD
2	50	40	667	4.5	8	0	6	6	6	90	E290A068PD
2 1/2	65	68	1133	4.5	8	0	2	2	2	90	E290A500PD

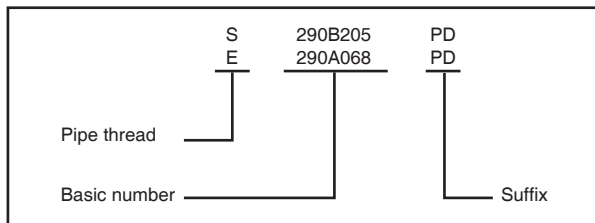
■ Express delivery

VALVE SPECIFICATIONS
Butt Weld & Tri Clamp S290

Pipe Size		Flow Coefficient Kv		Pilot Pressure (bar)		Operating Pressure Differential (bar)				Operator Diameter (mm)	Catalog Number	
						Min.	Max.				Stainless Steel Clamp Connection ⁽⁴⁾	Stainless Steel Butt Weld Connection
(G°)	DN	(m³/h)	(l/min)	Min.	Max.		Air, Inert Gas, Aggressive Fluids	Water, Oil, Liquids, Aggressive Liquids	Steam (≤184°C)			
NC - Normally closed, entry under the disc												
1/2	15	4.6	77	2.5	8	0	16	16	10	63	XS290B137PD	S290B205PD
3/4	20	7.1	118	4.5	8	0	16	16	10	63	XS290B140PD	S290B208PD
1	25	15	250	4.5	8	0	10	10	10	63	XS290B145PD	S290B211PD
1	25	15	250	4.5	8	0	16	16	10	90	XS290B146PD	S290B212PD
1 1/4	32	21	350	4.5	8	0	6	6	6	63	XS290A151PD	S290A215PD
1 1/4	32	21	350	4.5	8	0	12	12	10	90	-	S290A216PD
1 1/2	40	29	483	4.5	8	0	4	4	4	63	XS290A155PD	S290A217PD
1 1/2	40	29	483	4.5	8	0	8	8	8	90	XS290A156PD	S290A218PD
2	50	40	667	4.5	8	0	2.5	2.5	2.5	63	XS290A687PD	S290A719PD
2	50	40	667	4.5	8	0	6	6	6	90	XS290A688PD	S290A720PD
2 1/2	65	68	1133	4.5	8	0	2	2	2	90	XS290A691PD	S290A722PD

Express delivery

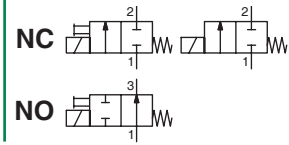
(4) SS clamp connection without NET-INOX treatment with TPL 24045

ORDERING EXAMPLES




SOLENOID VALVES

direct operated
brass or stainless steel bodies
1/8" - 1/4"



2/2
Series
256

FEATURES

- Wide range of flow and pressure ratings
- Quick disassembly of core tube for easy maintenance of internal parts
- Standard disc seal made of FPM suitable for a wide range of operating temperatures and compatible with many fluids
- Standard manual operator allows an easy installation (Except 4 and 5 mm orifice sizes)
- AC/DC interchangeability of the solenoid without disassembly of the valve
- Compact and low weight valve



STANDARD VOLTAGES

DC (=) : 24V

AC (-) : 115V/50Hz-120V/60Hz; 230V/50-60Hz

SPECIFICATIONS

Pipe Size	Orifice Size	Flow Coefficient Kv		Operating Pressure Differential (bar)								Power Coil (W)		Prefix			Catalog Number		Options
				Min.	Max. (PS)						Brass						Stainless Steel		
					Air	Water	Oil	~	=	~								=	
G	(mm)	(m³/h)	(l/min)		~	=	~	=	~	=	~	=	SC	PV	U	~/=	~/=		
NC - Normally closed																			
1/8	1.2	0.05	0.8	0	28	20	28	20	28	20	4	6.9	•	-	-	G256B001V	-	MS	
1/8	1.6	0.08	1.33	0	20	12	20	12	20	12	4	6.9	•	-	•	-	8256B014V	-	
1/8	1.6	0.08	1.33	0	20	12	20	12	20	12	4	6.9	•	-	-	G256B002V	G256B014V	MS	
1/8	2	0.11	1.83	0	15	6	15	6	15	6	4	6.9	•	-	-	G256B003V	-	-	
1/8	2	0.11	1.83	0	15	6	15	6	15	6	4	6.9	•	-	-	-	G256B015V	MS	
1/8	2.4	0.13	2.16	0	12	4	12	4	12	4	4	6.9	•	-	-	G256B004V	-	-	
1/8	2.4	0.13	2.16	0	12	4	12	4	12	4	4	6.9	•	-	•	-	8256B016V	-	
1/8	2.4	0.13	2.16	0	12	4	12	4	12	4	4	6.9	•	-	-	-	G256B016V	MS	
1/4	1.6	0.08	1.33	0	20	12	20	12	20	12	4	6.9	•	•	-	-	G256A414V ⁽¹⁾	-	
1/4	1.6	0.08	1.33	0	20	12	20	12	20	12	4	6.9	•	-	-	-	8256B414V	-	
1/4	1.6	0.08	1.33	0	20	12	20	12	20	12	4	6.9	•	-	-	G256B402V	G256B414V	MS	
1/4	1.6	0.08	1.33	0	20	15	20	15	20	15	5	6.9	•	-	-	G256B466V	-	MS	
1/4	1.6	0.08	1.33	0	20	15	20	15	20	15	5	6.9	•	-	-	-	8256B434V	-	
1/4	1.6	0.08	1.33	0	20	15	20	15	20	15	5	6.9	•	-	-	-	G256B434V	MS	
1/4	2.4	0.16	2.67	0	12	4	12	4	12	4	4	6.9	•	-	-	G256B404V	G256B416V	MS	
1/4	2.4	0.16	2.67	0	15	8	15	8	15	8	5	6.9	•	-	-	G256B470V	G256B436V	MS	

• Available Express

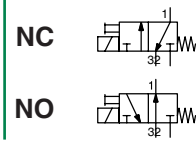
(1) TPL 24071: 256 series with lower rating PV coil 3 watt





SOLENOID VALVES

direct operated
brass or stainless steel bodies
1/8" - 1/4"



2/2
Series
356

FEATURES

- Compact design for the control of single-acting actuators or filling and draining cycles
- Wide range of flow and pressure ratings
- Quick disassembly of core tube for easy maintenance of internal parts
- Standard disc seal made of FPM suitable for a wide range of operating temperatures and compatible with many fluids
- Standard manual operator allows an easy installation
- AC/DC interchangeability of the solenoid without disassembly of the valve
- Compact and low weight valve



STANDARD VOLTAGES

DC (=) : 24V

AC (-) : 115V/50Hz-120V/60Hz; 230V/50-60Hz

SPECIFICATIONS

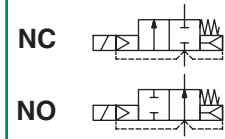
Pipe Size	Orifice Size	Flow Coefficient Kv				Operating Pressure Differential (bar)			Power Coil (W)		Prefix		Catalog Number		Options
		2 → 1		3 → 1		Min.	Max. (PS)		~	=	SC	U	Brass	Stainless Steel	
		(m³/h)	(l/min)	(m³/h)	(l/min)		Air, Water, Oil	~							
G	(mm)	(m³/h)	(l/min)	(m³/h)	(l/min)		~	=	~	=	SC	U	-/=	-/=	
NC - Normally closed															
1/8	1.2	0.05	0.8	0.05	0.8	0	15	15	4	6.9	•	-	8356B001V	-	-
1/8	1.2	0.05	0.8	0.05	0.8	0	15	15	4	6.9	•	-	G356B001V	-	MS
1/8	1.6	0.08	1.33	0.05	0.8	0	10	10	4	6.9	•	-	G356B002V	-	MS
1/8	2	0.1	1.66	0.05	0.8	0	5	5	4	6.9	•	-	G356B003V	-	MS
1/8	1.2	0.05	0.8	0.05	0.8	0	15	15	4	6.9	•	-	-	8356B013V	-
1/8	2	0.1	1.66	0.05	0.8	0	5	5	4	6.9	•	-	-	G356B015V	MS
1/8	2.4	0.13	2.1	0.05	0.8	0	4	4	4	6.9	•	-	G356B004V	-	-
1/8	2.4	0.13	2.1	0.05	0.8	0	4	4	4	6.9	•	•	-	8356B016V	-
1/8	2.4	0.13	2.1	0.05	0.8	0	4	4	4	6.9	•	-	-	G356B016V	MS
1/4	1.6	0.08	1.33	0.05	0.8	0	10	10	5	6.9	•	-	-	8356B434V	-
1/4	1.6	0.08	1.33	0.05	0.8	0	10	10	5	6.9	•	-	G356B466V	G356B434V	MS
1/4	2.4	0.16	2.67	0.05	0.8	0	4	4	5	6.9	•	-	G356B470V	G356B436V	MS
NO - Normally open															
1/8	1.2	0.05	0.8	0.05	0.8	0	8.5	8.5	4	6.9	•	-	8356B005V	-	-
1/8	1.6	0.096	1.6	0.05	0.8	0	8.5	8.5	4	6.9	•	-	G356B006V	-	MS
U - Universal															
1/8	1.2	0.05	0.8	0.05	0.8	0	7	7	4	6.9	•	•	8356B009V	-	-

- Available Express



SOLENOID VALVES

pilot operated, floating diaphragm
brass body
3/8" - 2"



2/2
Series
238

FEATURES

- Minimum operating pressure differential ΔP 0.3/0.5 bar
- Two way valves for automatic control of water, air and inert gas and other gases/liquids compatible with the sealing materials used
- Interchangeability of magnetic heads, AC and DC
- The solenoid valves satisfy all relevant EC Directives



STANDARD VOLTAGES

DC (=) : 24V

AC (-) : 115V/50Hz-120V/60Hz; 230V/50-60Hz

SPECIFICATIONS

Pipe Size	Orifice Size	Flow Coefficient Kv		Operating Pressure Differential (bar)			Power Coil (W)		Prefix	Catalog Number		Option	
				Max. (PS)	Air / Water	~	=	~		=	SC	Brass	Stainless Steel
Min.	~	=	~						=				
NC - Normally closed													
3/8	12.5	2.1	35	0	10	10	6	15.3	•	G238A044 ⁽¹⁾	-	-	V
1/2	12.5	2.1	35	0	10	10	6	15.3	•	G238A046 ⁽¹⁾	-	-	V
3/4	19	4.5	75	0	10	10	6	15.3	•	G238A048 ⁽¹⁾	-	-	V
1	25	10	166	0	10	10	9	15.3	•	G238A050 ⁽¹⁾	-	-	V
3/8	12	2.4	40	0.3	10	10	4	6.9	•	E238D001	-	-	V
3/8	13.5	2.5	41.7	0.35	12	12	4	6.9	•	-	G238D101V	MO	E
1/2	12	2.4	40	0.3	10	10	4	6.9	•	E238D002	-	-	V
1/2	13.5	3.8	63.3	0.35	12	12	4	6.9	•	-	G238D102V	MO	E
1/2	15	4.2	70	0.3	10	10	4	6.9	•	E238D003	-	-	V
3/4	20	6.6	110	0.3	10	10	4	6.9	•	E238D004	-	-	V
3/4	18	5	83.3	0.35	10	10	4	6.9	•	-	G238D103V	MO	E
1	25	9.9	165	0.3	10	10	4	6.9	•	E238D005	-	-	V
1	24	12	200	0.35	10	10	4	6.9	•	-	G238D104V	MO	E
3/8	12	2.4	40	0.3	16	16	5	6.9	•	E238D006	-	-	V
1/2	12	2.4	40	0.3	16	16	5	6.9	•	E238D007	-	-	V
1/2	15	4.2	70	0.3	16	16	5	6.9	•	E238D008	-	-	V
3/4	20	6.6	110	0.3	16	16	5	6.9	•	E238D009	-	-	V
1	25	9.9	165	0.3	16	16	5	6.9	•	E238D010	-	-	V
1 1/4	30	15	250	0.5	10	10	8	9	•	G238F016 ⁽²⁾	-	-	V
1 1/2	45	27	450	0.5	10	10	8	9	•	G238F017 ⁽²⁾	-	-	V
2	45	34	566	0.5	10	10	8	9	•	G238F018 ⁽²⁾	-	-	V
NO - Normally open													
3/8	13.5	2.5	41.7	0.35	12	12	4	6.9	•	-	G238D105V	MO	E
1/2	13.5	3.8	63.3	0.35	12	12	4	6.9	•	-	G238D106V	MO	E
3/4	18	5	83.3	0.35	10	10	4	6.9	•	-	G238D107V	MO	E
1	24	12	200	0.35	10	10	4	6.9	•	-	G238D108V	MO	E
1 1/4	30	15	250	0.5	10	10	12.5	9	•	G238E019 ⁽²⁾	-	-	-
1 1/2	45	27	450	0.5	9	9	12.5	9	•	G238E020 ⁽²⁾	-	-	-
2	45	34	566	0.5	9	9	12.5	9	•	G238E021 ⁽²⁾	-	-	-

• Available Express

(1) In case of AC, the standard voltage will be 115/50 Hz; 120V/60 Hz; 230V/50 Hz

(2) In case of AC, the standard voltage will be 220V/50 - 240V/60 Hz

SPECIFICATIONS

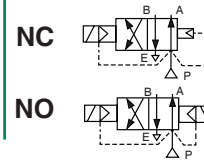
Pipe Size	Orifice Size	Flow Coefficient Kv		Operating Pressure Differential (bar)						Prefix								No Prefix	Catalog Number		Option					
				Max. (PS)						SC	PV	VC	EF/VCEF ⁽³⁾	NF/NFET	JKF/JKH	HT	HB		HC	WP	Brass	Stainless Steel	FPM	EPDM		
				Air		Water		Oil																		
NC - Normally closed																										
1 1/4	28	12.8	213	0	9	6	9	6	9	6	●	-	-	-	●	-	-	-	-	●	-	◇210B155	-	V	-	
1 1/4	29	13	216	0.3	10	9	10	9	7	9	●	-	●	-	●	●	-	-	-	●	-	8210G008	-	V	-	
1 1/4	28	12.8	213	0	9	9	9	9	9	9	●	-	-	-	●	-	-	-	-	●	-	E210D008	-	V	-	
1 1/2	32	19.5	325	0	10	7	9	7	9	6	-	-	●	●	-	-	●	-	-	●	-	8210G056 ⁽²⁾	-	V	-	
1 1/2	32	19.5	325	0	10	7	9	7	9	6	●	-	-	-	●	-	-	-	-	●	-	◇210B156	-	V	-	
1 1/2	32	19.5	325	0.3	10	9	10	9	7	9	●	-	●	-	●	●	-	-	-	●	-	8210G022	-	V	-	
1 1/2	32	19.3	322	0.35	9	9	9	9	9	9	●	-	-	-	●	-	●	-	-	●	-	◇210D022	-	V	-	
1 1/2	32	19.3	322	0.7	20	16	20	14	20	14	●	-	-	-	●	-	●	-	-	●	-	◇210B082	-	V	-	
1 1/2	32	19.3	322	0.35	9	9	9	9	9	9	●	-	-	-	●	-	●	-	-	●	-	-	◇210A127	V	-	
2	44	37	617	0.35	9	3	9	3	6	3	●	-	-	-	●	-	●	-	-	●	-	◇210-100	-	V	-	
2	44	37	617	0.3	10	6	9	3	3	3	●	-	●	-	●	●	-	-	-	●	-	8210G100	-	V	-	
Gas shut-off - Normally closed																										
1/2	16	3.1	52	0.3	17	-	-	-	-	-	-	-	●	●	-	-	-	-	-	●	-	8210G106B	-	-	-	
1/2	16	3.1	52	0	3.4	-	-	-	-	-	●	-	●	●	-	-	●	-	-	●	-	8210G075	-	-	-	
3/4	16	4.3	72	0	3.4	-	-	-	-	-	●	-	●	●	-	-	●	-	-	●	-	8210G076	-	-	-	
NO - Normally open																										
1/2	16	3.4	57	0	10	9	10	9	9	6	●	-	●	●	-	●	●	-	●	-	●	-	8210G034	-	V	-
1/2	16	3.4	57	0	9	9	9	9	9	5	●	-	-	-	●	-	●	-	-	●	-	◇210C034	-	V	-	
1/2	16	2.6	43	0	10	9	10	9	7	6	-	-	-	-	●	-	●	-	-	●	-	-	◇210B030	V	-	
3/4	16	2.6	43	0	10	9	10	9	7	6	●	-	●	●	-	●	●	-	-	●	-	8210G038	-	V	-	
3/4	16	2.6	43	0	10	9	10	9	7	6	-	-	-	-	●	-	●	-	-	●	-	◇210B038	-	V	-	
3/4	19	4.7	79	0	10	9	0	9	9	6	●	-	●	●	-	●	●	-	●	-	●	-	8210G035	-	V	-
3/4	19	4.7	79	0	10	9	10	9	9	6	●	-	-	-	●	-	●	-	-	●	-	◇210C035	-	V	-	
1	25	11.2	185	0	9	-	9	-	9	-	●	-	-	-	●	-	●	-	-	●	-	◇210B057	-	-	-	
1	25	11.1	185	0.35	9	9	9	9	9	9	-	-	-	-	●	-	-	-	-	●	-	8210D014	-	-	-	
1 1/2	32	19.5	325	0.3	10	-	10	-	9	-	●	-	●	●	-	-	-	-	-	●	-	8210G032	-	-	-	

- Available Express
- (1) DC only
- (2) In case of AC, the standard voltage will be 110V/50 Hz; 120V/60 Hz; 220V/50 Hz; 240V/60 Hz
- (3) Please refer to the page 69 for VCEF installation
- (4) 0.3 bar on Air; 0.0 bar on Water
- (5) Additional Express model: 8210G094HW, ◇210D002MO, 8210G009MO, 8210G009HW & 8210G034VM
- ◇ Stands for options of "B or 8" for NPT port thread and "E" for BSP port thread



SOLENOID VALVES

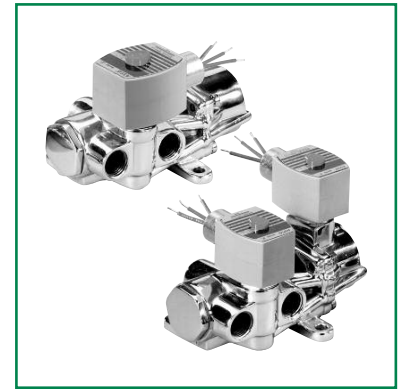
piston / poppet
brass body
1/2"



4/2
Series
344

FEATURES

- Sturdy, robust construction
- Piston-operated poppet design provides high flow
- For use with air or water
- Wide range of sizes and flow rates
- Single or dual solenoid constructions
- Dual solenoid can be shifted with a momentary signal and remain in position even if electrical power is lost
- Mountable in any position



STANDARD VOLTAGES

DC (=) : 24V; 125V(HC)
AC (-) : VC, EF/VCEF, Redhat II 110V/50Hz-120V/60Hz; 220V/50Hz-240V/60Hz
SC, NF/WSNF, WP/WS 115V/50Hz; 120V/60Hz; 230V/50Hz

SPECIFICATIONS

Pipe Size (in)	Orifice Size (mm)	Kv Flow Factor (m ³ /h)		Operating Pressure Differential (bar)						Max. Fluid Temp. °C		Prefix													No Prefix	Catalog Number		Suffix			
				Max. AC			Max. DC					AC	DC	SC	VC	EF/VCEF ⁽¹⁾	NF/WSNF	NFET/WSNFET	JKF/JKH	HC	HT	WP	WS	WSTIS		Brass	Stainless Steel				
				Min.	Press.	Exh.	Air-Inert Gas	Water	Light Oil @ 300 SSU																				Air-Inert Gas	Water	Light Oil @ 300 SSU
Single solenoid																															
1/4	6	0.69	0.86	0.7	10	9	9	9	9	9	82	65	-	-	•	-	-	•	•	•	•	-	-	•	-	•	8344G070	-	MO	-	
1/4	6.4	0.7	11.6	0.7	9	9	9	9	9	9	82	49	-	-	-	•	•	-	-	•	•	-	-	-	-	-	-	8344A090	-	-	
3/8	10	1.2	1.89	0.7	10	9	9	9	9	9	82	65	•	-	-	•	•	-	-	•	•	-	-	•	-	•	B344A072	-	MO	-	
1/2	10	1.2	1.89	0.7	10	9	9	9	9	9	82	65	•	-	-	•	•	-	-	•	•	-	•	-	•	-	B344A074	-	-	-	
1/2	10	1.2	1.89	0.7	10	9	9	9	9	9	82	65	-	•	•	-	-	•	•	-	-	-	-	•	-	•	8344G074	-	MO	-	
1/2	9.5	1.9	31.6	0.7	9	9	9	9	9	9	82	49	-	-	-	•	•	-	-	•	•	-	-	-	-	-	-	8344A095	-	V	
3/4	19	4.5	4.8	0.7	10	9	9	9	9	9	82	65	•	-	-	•	•	-	-	•	•	-	-	-	-	-	•	344BA076	-	MO	-
Dual solenoid																															
1/4	6.4	0.7	11.6	0.7	17	9	-	9	9	-	82	49	•	-	-	-	-	-	•	•	•	-	-	-	-	-	•	8344-044	-	MO	-
3/8	9.5	1.9	31.6	0.7	17	14	-	9	9	-	82	49	•	-	-	-	-	-	•	•	•	-	-	-	-	-	•	8344-080	-	MO	-
1/2	10	1.4	1.89	0.7	17	14	9	9	9	7	82	49	-	-	•	-	-	-	•	•	-	-	-	-	-	•	8344G082	-	MO	-	
3/4	19	5.2	4.8	0.7	21	21	14	9	9	7	82	49	•	-	-	•	•	-	-	-	-	-	-	-	-	•	344B054	-	MO	-	
1	19	5.2	4.8	0.7	21	21	14	9	9	7	82	49	-	-	-	•	•	-	-	-	-	-	-	-	-	•	B344B056	-	MO	-	

- Available Express
- (1) Please refer to the page 69 for VCEF installation

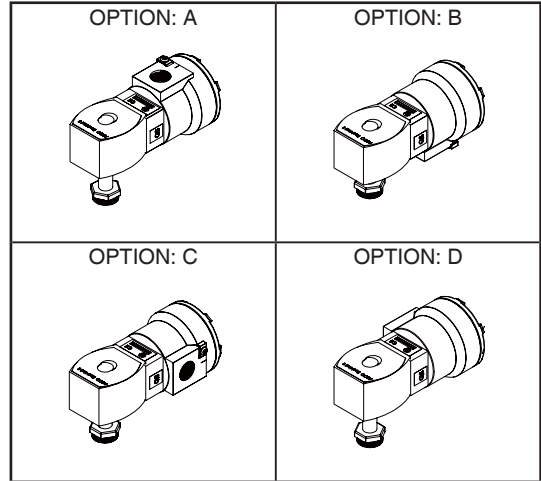
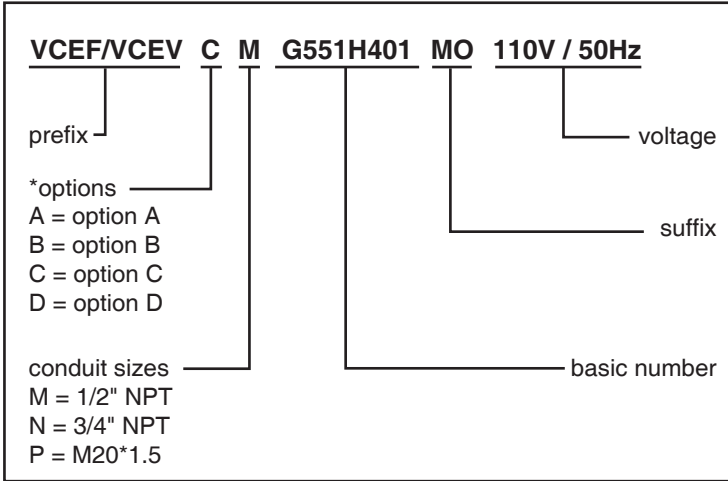


TECHNICAL INFORMATION - VCEF&VCEV INSTALLATION

ORDERING EXAMPLES VALVES

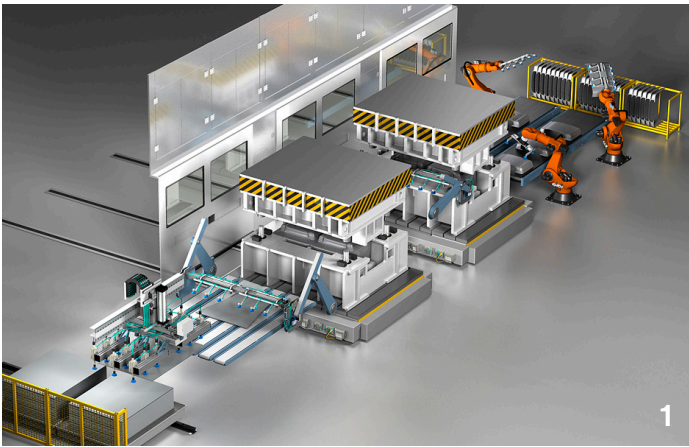
Add prefix corresponding to specific conduit size required to any RedHat II valve catalog number & specify the voltage.

*options

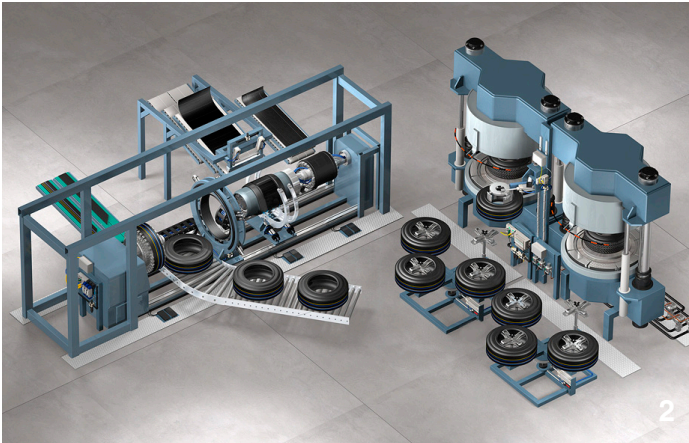


INSTALLATION

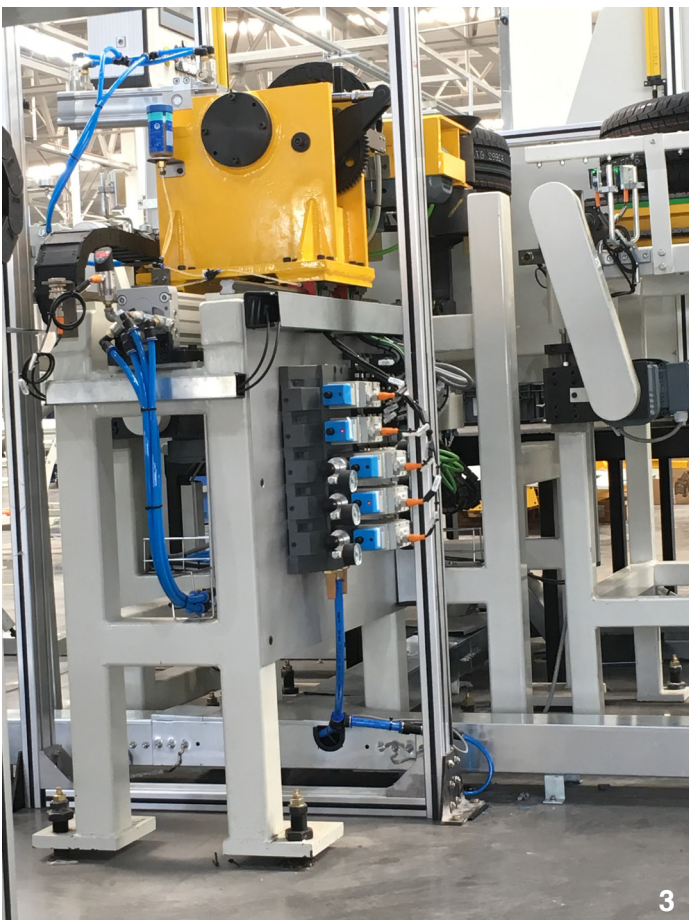
- Installation/Maintenance instructions are included with each valve
- The solenoid operators can be mounted in any position without affecting operation
- For optimum life and performance, the solenoid should be mounted vertically and upright to reduce the possibility of foreign matter accumulating in the solenoid base sub-assembly area
- Internal and external earthing connection



1



2



3



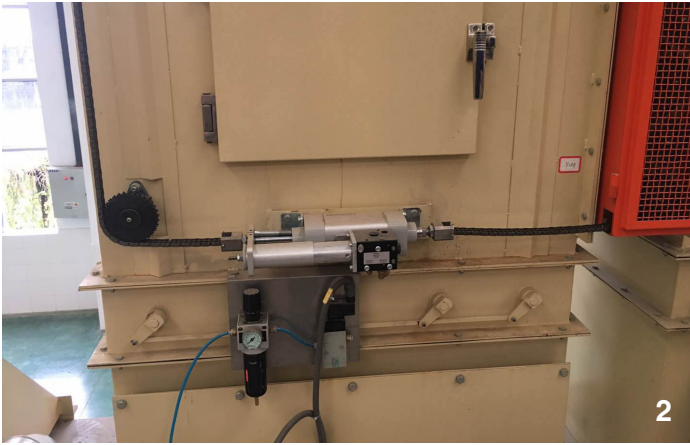
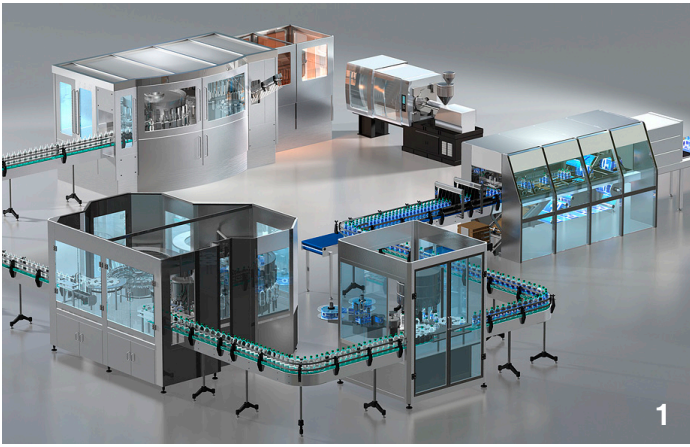
4



5

Pic 1 - Metal-Stamping
Pic 2 - Tire-Manufacturing
• Forming Machine
• Curing Machine
Pic 3 - Tire Assembly Line
Pic 4 - Filling Machine
Pic 5 - Conveyer Line

APPLICATION



- Pic 1 - Bottling-Pack
- Preform Injection
 - FET Blowing
 - Filling
 - Labeling
 - Package
- Pic 2 - Tobacco Machine (Servo Cylinder)
- Pic 3 - Case-Packer
- Pic 4 - Machine-Safety
- Pic 5 - Glass Blowing

APPLICATION



ASCO

Asia Pacific Contacts

Australia	61 - 2 - 9454 - 6400
China	86 - 21 - 3338 - 7300
India	91 - 44 - 6633 - 7300
Japan	81 - 798 - 65 - 6361
South Korea	82 - 234 - 83 - 1570
New Zealand	64 - 9 - 441 - 0870
Singapore	65 - 6556 - 1100
Taiwan	886 - 2 - 8912 - 1233
Thailand	66 - 2962 - 7484
Malaysia	60 - 3 - 7949 - 9228
Philippines	63 - 2 - 479 - 5100
Vietnam	84 - 8 - 6290 - 3034
Indonesia	62 - 21 - 2966 - 6242

