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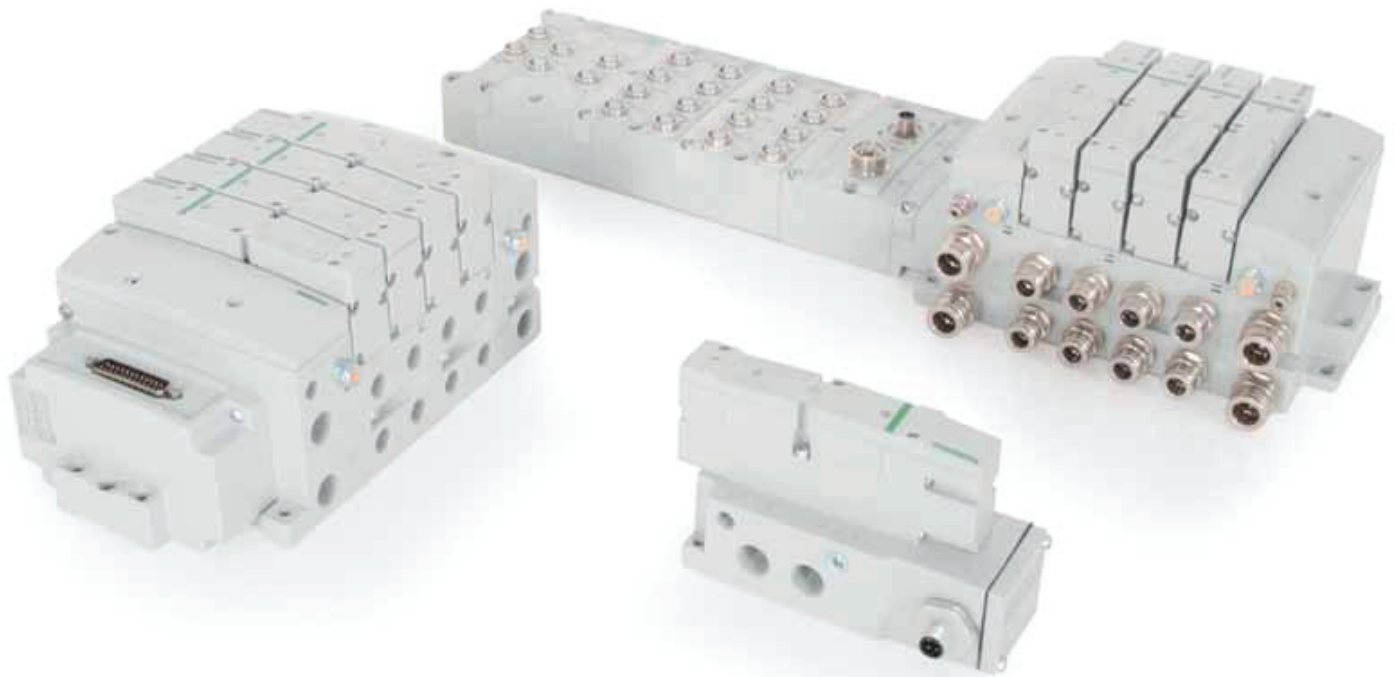
An O'Keefe Controls Company

Specialists in Valves, Controls, Pneumatics and Fluid Measurement

numatics®

503 Series

Solenoid Pilot Actuated Valves



503 SERIES

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5 Ported, 2 and 3 position, 4-way, Spool & Sleeve and Rubber Seal, Cv: 1.2 - 1.4

- 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
- G3 Fieldbus electronics
- IP65 Certified



503 Series

Performance Data

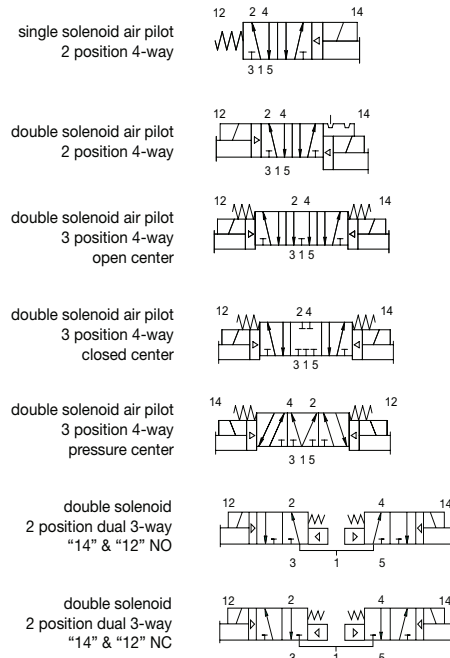
Valve Data	Min.	Max.
Pilot Pressure Range	29 PSI (2 Bar)	115 PSI (8 Bar)
Valve Operating Pressure Range	28" HG Vacuum	115 PSI (8 Bar)
Ambient Temperature Range	- 10°C (- 14°F)	50 °C (122 °F)

Valve Flow Data	ISO		Proprietary	
	Cv	NL/m (6 - 5 Bar)	Cv	NL/m (6 - 5 Bar)
5/2, Double Solenoid & Single Solenoid, Spring Return (Spool & Sleeve)	1.1	1100	1.2	1200
5/2, Double Solenoid & Single Solenoid, Spring Return (Rubber Seal)	1.2	1200	1.4	1400
2X 3/2 NC-NC	0.9	900	1.0	1000
2X 3/2 NO-NO	0.9	900	1.0	1000
Double Solenoid, 3 pos. 4 way, Spring Centered- Open to 4 and 2 in center	0.6	600	0.6	600
Double Solenoid, 3 pos. 4 way, Spring Centered - Open Center	1.1	100	1.3	1300
Double Solenoid, 3 pos. 4 way, Spring Centered - Closed Center	1.2	1200	1.4	1400

Operating Data

All Solenoids Are Continuous Duty Rated	24 VDC
Power (Watts)	1.7
Holding Current (Amps.)	0.10

Response Time (ms)	Spool & Sleeve		Rubber Seal	
	Energize	Deenergize	Energize	Deenergize
5/2, Single Solenoid, Spring Return	20	60	20	60
5/2, Double Solenoid	15	N/A	20	N/A
5/3 Spring Centered	-	-	15	20
2x3/2 NC	-	-	15	25
2 X3/2 NO	-	-	15	20



NUMATICS®

503 SERIES

How to Order

Valves

R 503 A 2 B 4 0 M A00 F1

Product Series

503 = 26 mm Valve

Revision

A = Initial Release

Actuation

1 = Spool and Sleeve*
2 = Rubber Packed

Valve Type

B = Solenoid Pilot with Flush Non-Locking Override

Function

1 = 2 Position 4-Way (5/2), Spring Return
4 = 2 Position 4-Way (5/2), Dual Solenoid
5 = 3 Position 4-Way (5/3), Open Center
6 = 3 Position 4-Way (5/3), Blocked Center
7 = 3 Position 4-way (5/3), Open to A & B in Center
A = Dual 3-way (2 x 3/2), A normally open - B normally open
D = Dual 3-way (2 x 3/2), A normally closed - B normally closed
N = 2 Position 4-Way (5/2), Differential Air Return w/o Spring

Voltage

F1 = 24 VDC

Options

A00 = Standard (No Options)
11B = Flush Locking Manual Override
11M = Without Manual Override

Electrical

M = Plug-in, w/ Light, VDC
N = M12 Connector Pin#1=unused, #2=Coil 12, #3=Common, #4=Coil 14

Port Size

0 = No Port Size

*Available with Functions 1 + 4 only

503 Series

Regulators

R 503 A R S 1 1 J A00 1 0

Product Series

503 = 26 mm Valve

Revision

A = Initial Release

Product Type

R = Regulator

Regulator Type

S = Single Reg. - Pressure to Port 1
D = Double Reg. - Pressure to Ports 5 & 3
E = Double Reg. - Pressure to Ports 4 & 2, w/o Valve*
T = Double Reg. - Pressure to Ports 1 & 3, 2 Pressure Selector

Pressure Range

1 = 10 - 130 PSIG (0.7 - 9 bar)
3 = 3 - 30 PSIG (0.2 - 2 bar)
4 = 5 - 60 PSIG (0.3 - 4.1 bar)

Reserved

Interface

1 = Proprietary
2 = ISO 15407-2
0 = No Interface*

Options

A00 = Standard (No Options)
16N = Jumper for Supply Pressure to Valve, 14 End
16P = Jumper for Supply Pressure to Valve, 12 End

Wiring Option

J = Plug-in, Receptacle Assembly
0 = Non-Plug-in*

Gauge Type

1 = PSI
2 = bar

*For Regulator Type "E" must select 'O' wiring option + 'O' Interface

503 SERIES

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Sandwich Pressure Regulators

Types: RS / RD / RE / RT

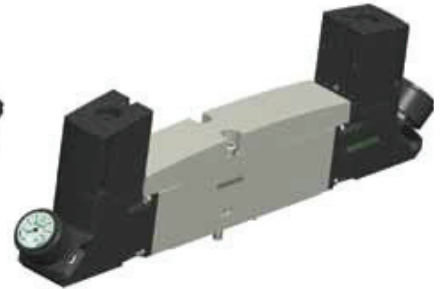
503 Series



ISO 15407-2 Interface

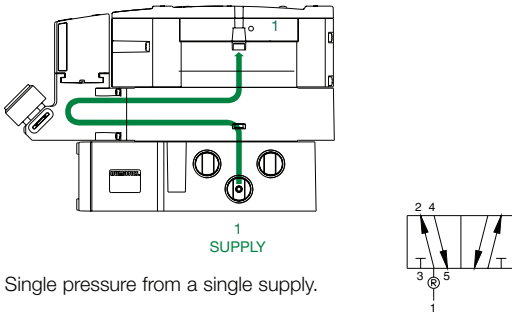


Proprietary Interface

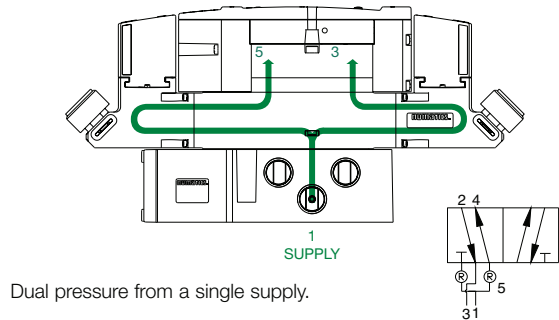


External Outlet Regulator

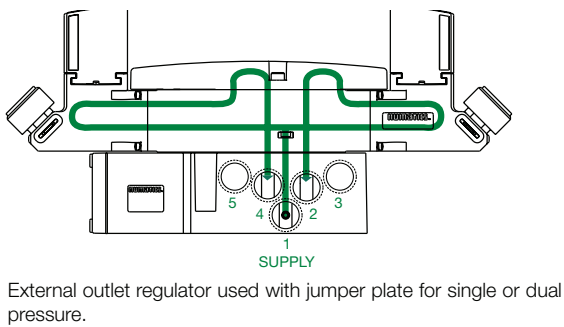
Type RS



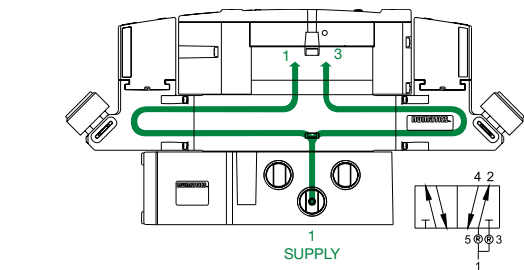
Type RD



Type RE



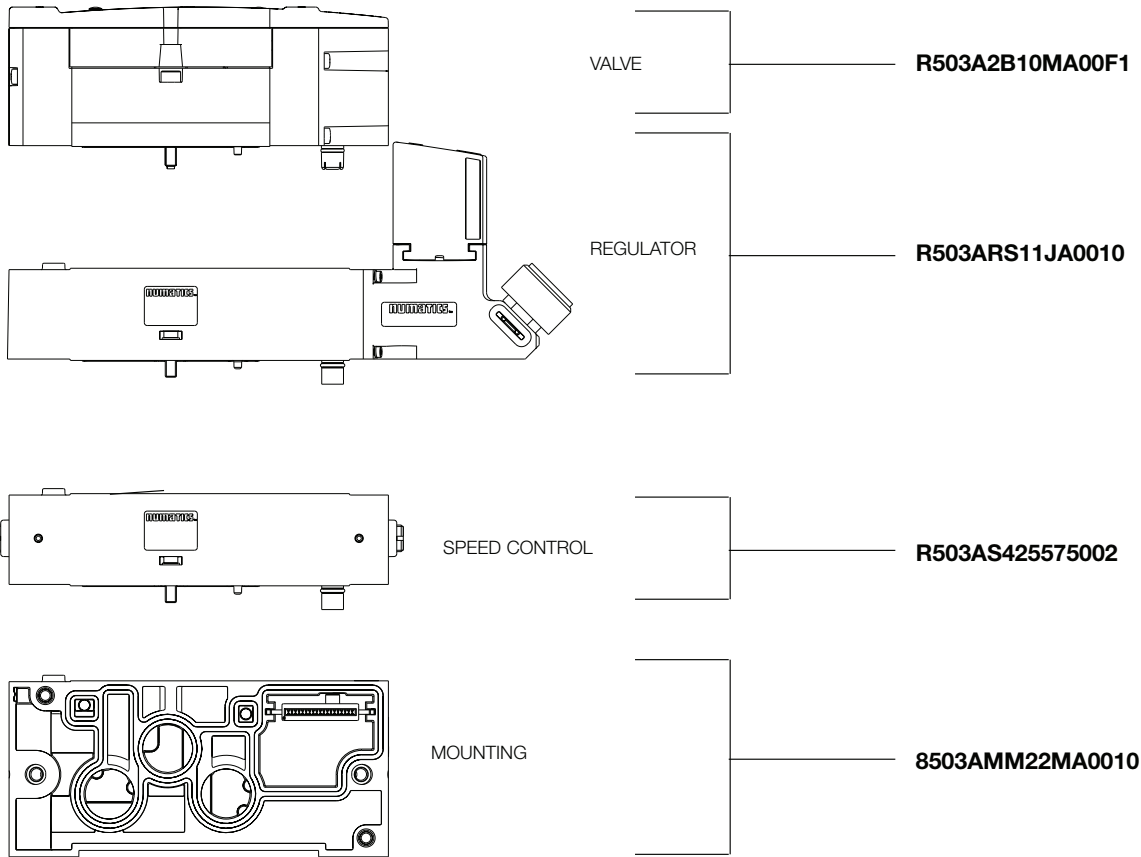
Type RT



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503 SERIES

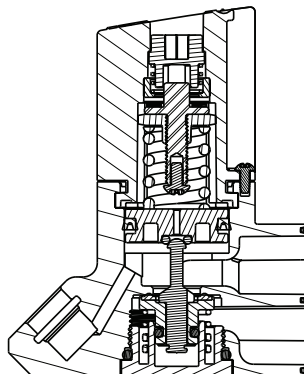
Valve Regulator / Speed Control Plug-in Assembly



503 Series

Regulator Kits and Service Parts

Regulator Service Kit



Regulator Unit Kits

(includes regulator assembly, gaskets, screws)

Part Number	Description
M503AR428759001	3-30 PSIG Regulator Kit
M503AR428759002	5-60 PSIG Regulator Kit
M503AR428759003	10-130 PSIG Regulator Kit
M503AR428759004	0.2-2.0 Bar Regulator Kit
M503AR428759005	0.3-4.0 Bar Regulator Kit
M503AR428759006	0.7-9.0 Bar Regulator Kit

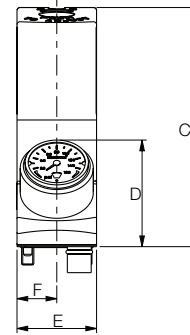
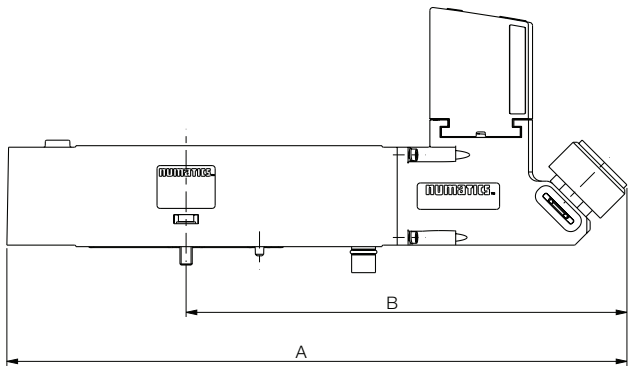
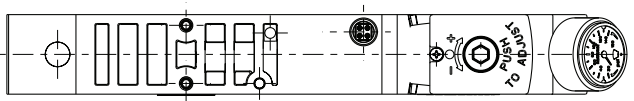
**503
SERIES**

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Sandwich Pressure Regulator

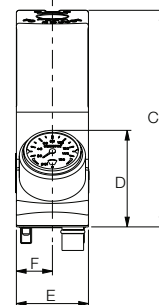
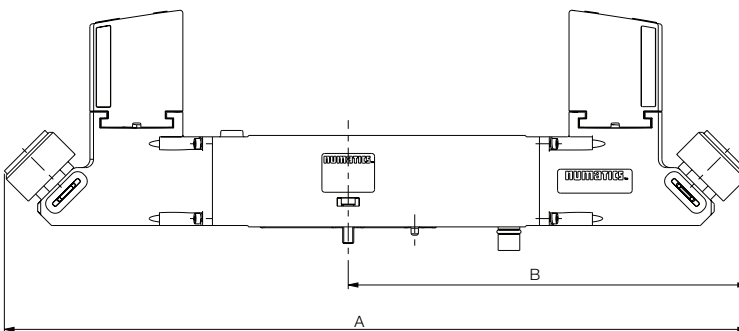
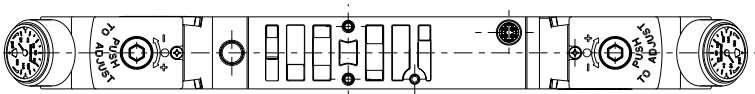
Dimensions: mm (Inches)

Single Regulator



A	B	C	D	E	F
202.7 (7.98)	144.1 (5.673)	78.2 (3.08)	34.8 (1.37)	26 (1.02)	13 (0.51)

Double Regulator



A	B	C	D	E	F
268.2 (10.56)	144.1 (5.673)	78.2 (3.08)	34.8 (1.37)	26 (1.02)	13 (0.51)

503 Series

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503 SERIES

How to Order

Manifold Assemblies and Individual Bases

8 503 A M S2 2 M A00 1 0

Port Type

- 8 = NPTF*1
- G = ISO228/1-G*1
- K = Push-in Fittings

Product Series

- 503 = 26 mm Valve

Revision

- A = Initial Release

Product Type

- M = Manifold Base
- A = Individual Base
- Z = Mid Station Supply*4

Mounting

- S2 = Manifold Base, 2 Stations, Side Ports, Single Z-Board
- M2 = Manifold Base, 2 Stations, Side Ports, Double Z-Board
- V2 = Manifold Base, 2 Stations, Side Ports*2
- 3A = Individual Base, Side Ports, Individual Exhaust*6

*1 Port Type '8' + 'G' only available in 1/4 size

*2 Only available with ISO 15407-1 Interface

*3 Available with 3A mounting only

Reserved

Interface

- 1 = Proprietary
- 2 = ISO 15407-2
- 3 = ISO 15407-1

Options

- A00 = Standard (No Options)
- 14X = External Pilot Supply from Port # 14*3
- 56Y = 4-Pin Straight M12 Connector in Mounting*3
Pin 1 = Not Used; 2 = 12+(B+); 3 = COM; 4 = 14+(A+)
- 59W = 14X + 56Y*3

Wiring Option

- M = Plug-in, Receptacle Assembly*5
- 0 = Non-Plug-in*2

Port Size

- 2 = 1/4
- 3 = 3/8
- H = 8 mm
- K = 10 mm

*4 Only available with M2 and V2 mountings

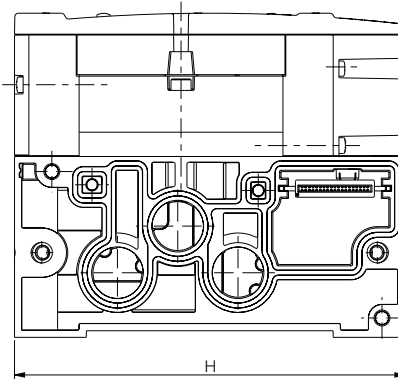
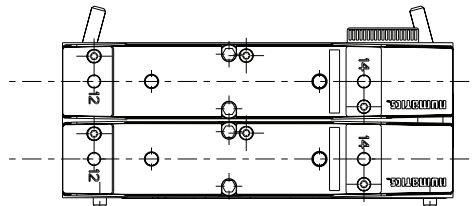
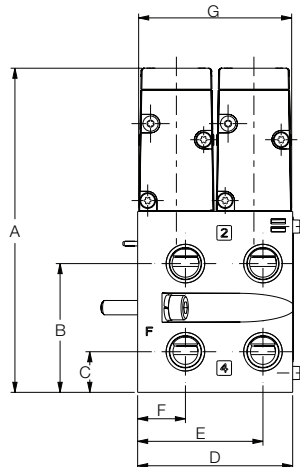
*5 Not available with V2 mounting

*6 Not available with proprietary mounting

503 Series

Dimensions: mm (Inches)

Plug in Valve Mounted



A	B	C	D	E	F	G	H
112.9 (4.445)	44.9 (1.768)	14.2 (0.56)	54 (2.13)	43.7 (1.72)	16.7 (0.66)	53.3 (2.098)	136 (5.35)

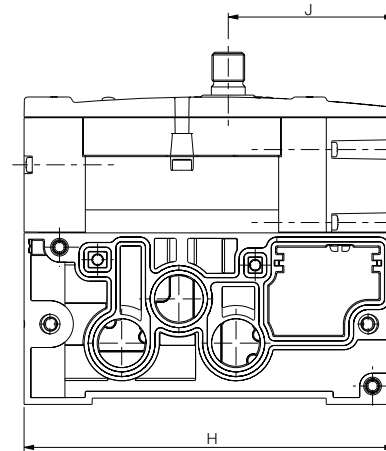
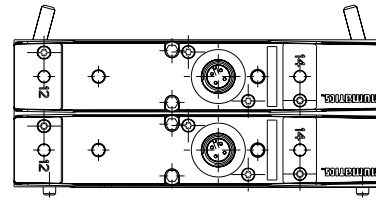
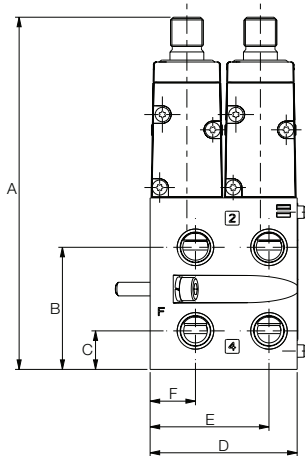
503 SERIES

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Dimensions: mm (Inches)

M12 Valve Mounted

503 Series



A	B	C	D	E	F	G	H	J
129.4 (5.094)	44.9 (1.768)	14.2 (0.56)	54 (2.13)	43.7 (1.72)	16.7 (0.66)	53.3 (2.098)	136 (5.35)	61 (2.4)

Individual Base Assembly Kit



Internal/External Pilot Selection

Note: Base assemblies are supplied set up for internal pilot supply. To convert to external pilot supply install plug P.N. 127-691 (sold separately) in the pressure port (1). Remove the 1/8 pipe plug from port 14 to supply pilot pressure.

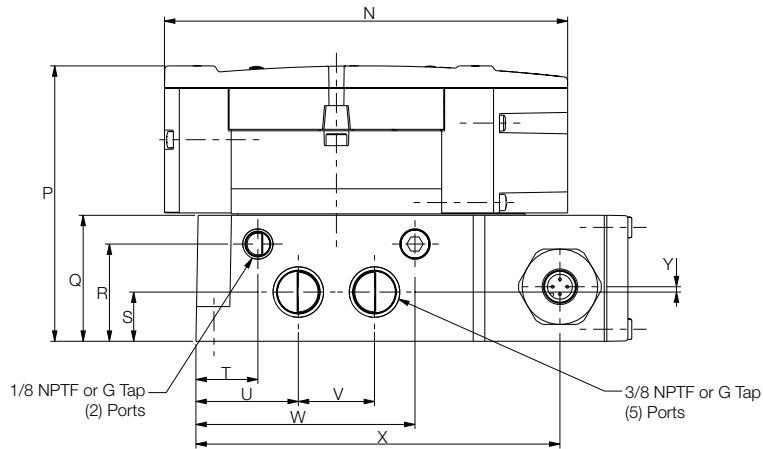
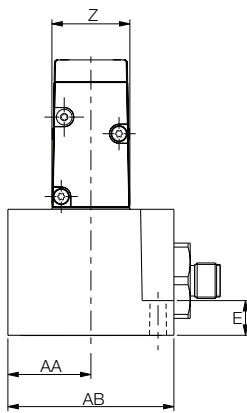
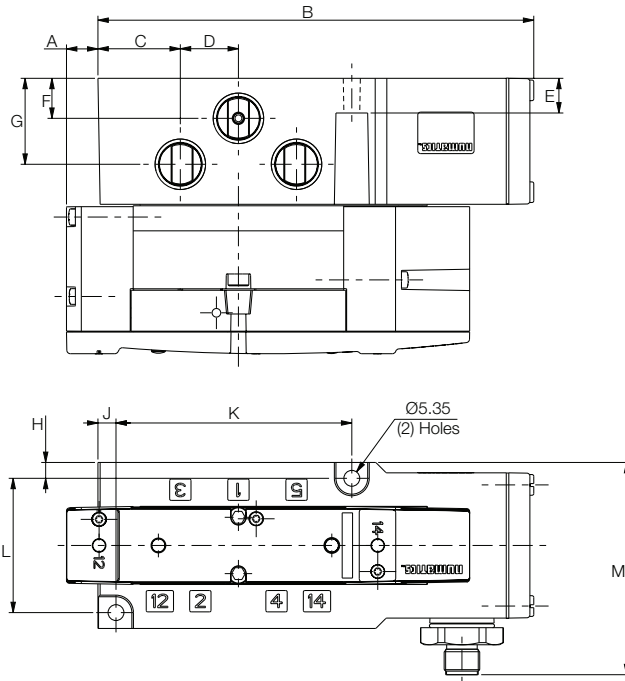
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Valve on Individual Base

Dimensions: mm (Inches)

Individual Base with M12



A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
10.6 (0.417)	147 (5.787)	27.8 (1.09)	19.6 (0.77)	11.7 (0.46)	13.5 (0.53)	29 (1.142)	5.4 (0.21)	6.1 (0.24)	79.6 (3.13)	45.3 (1.78)	71.6 (2.819)	136 (5.35)	92.9 (3.657)	42.5 (1.67)	32.8 (1.29)

S	T	U	V	W	X	Y	Z	AA	AB
16.6 (0.65)	20.9 (0.82)	34.5 (1.36)	25.7 (1.01)	73.9 (2.91)	122.8 (4.835)	1.8 (0.071)	26.3 (1.04)	28 (1.1)	56 (2.2)

503 Series

503 SERIES

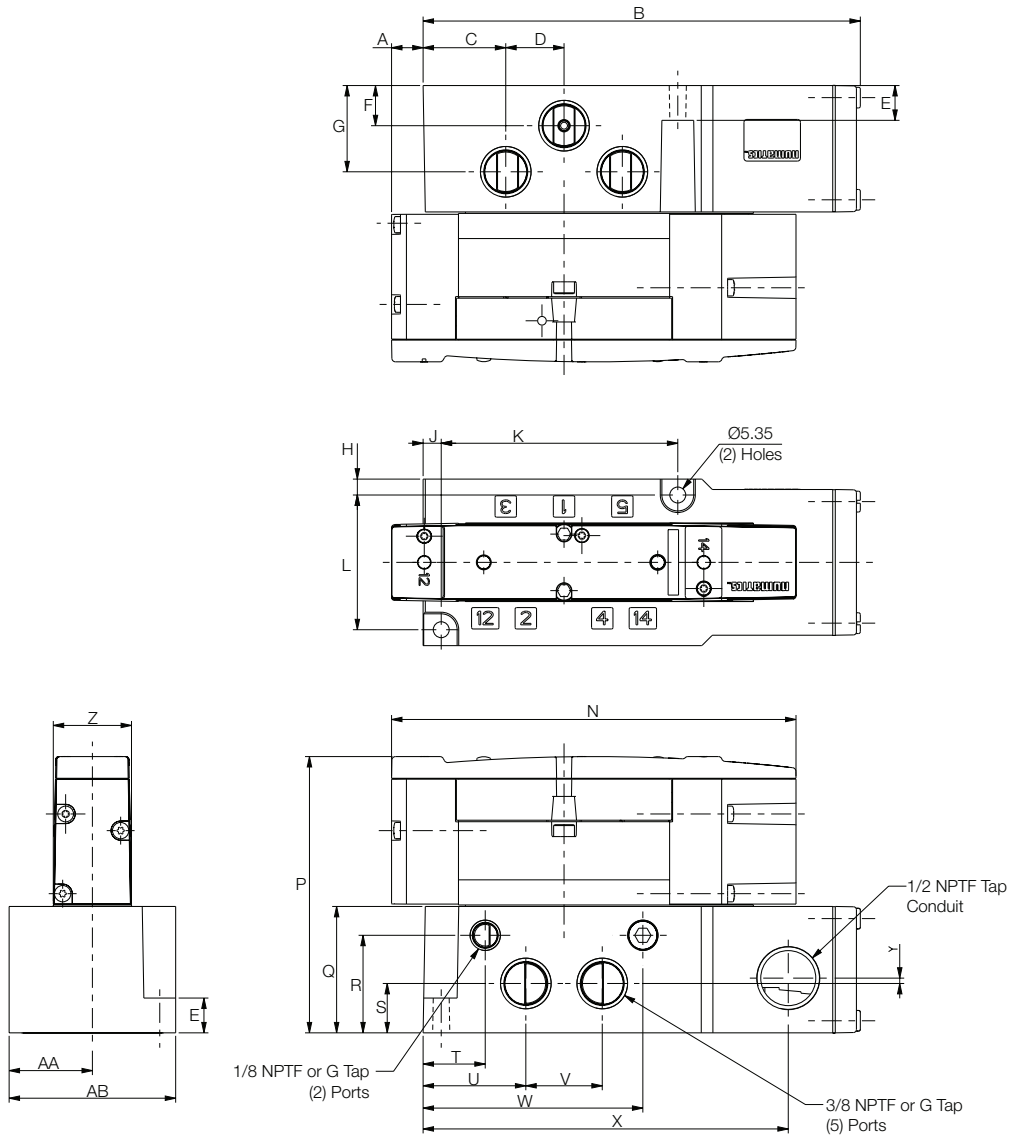
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Valve on Individual Base

Dimensions: mm (Inches)

Plug In Base

503 Series



A	B	C	D	E	F	G	H	J	K	L	N	P	Q	R
10.6 (0.417)	147 (5.787)	27.8 (1.09)	19.6 (0.77)	11.7 (0.46)	13.5 (0.53)	29 (1.142)	5.4 (0.21)	6.1 (0.24)	79.6 (3.13)	45.3 (1.78)	136 (5.35)	92.9 (3.657)	42.5 (1.67)	32.8 (1.29)

S	T	U	V	W	X	Y	Z	AA	AB
16.6 (0.65)	20.9 (0.82)	34.5 (1.36)	25.7 (1.01)	73.9 (2.91)	1.8 (0.071)	26.3 (1.04)	28 (1.1)	56 (2.2)	56

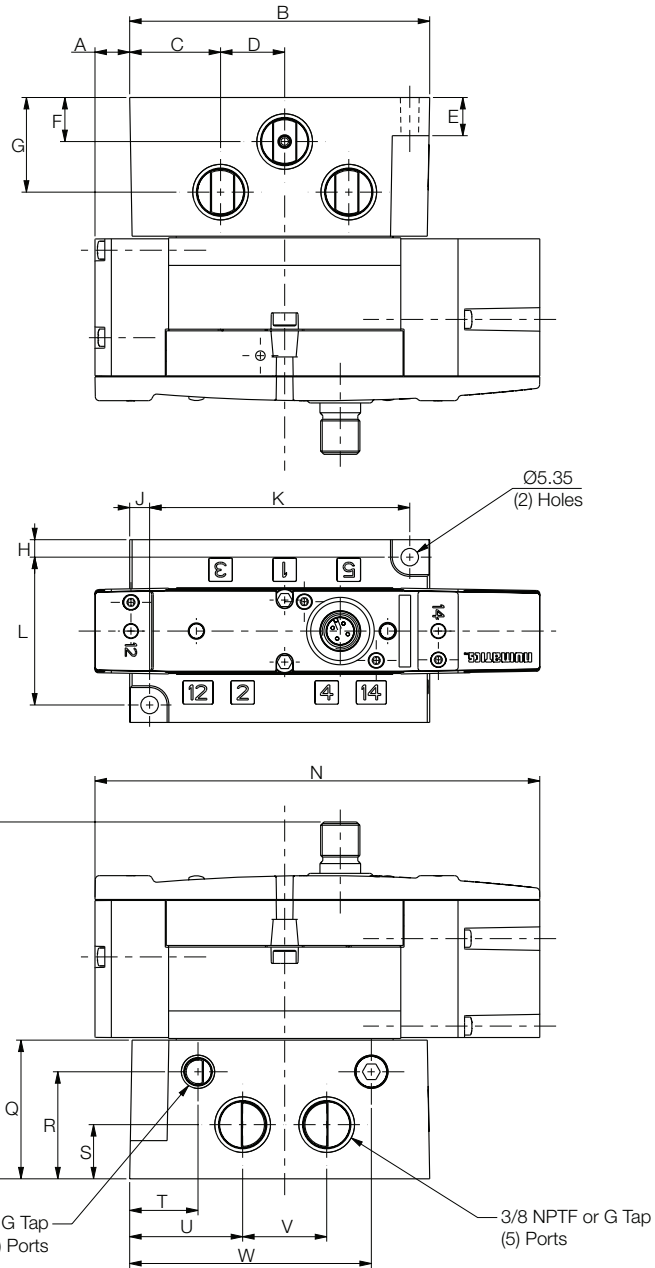
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Valve on Individual Base

Dimensions: mm (Inches)

Non Plug In Base



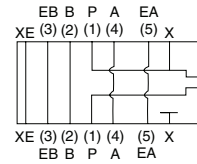
A	B	C	D	E	F	G	H	J	K	L	N	P	Q	R	S	T	U	V	W	Z	AA	AB
10.6 (0.417)	91.7 (3.61)	27.8 (1.09)	19.6 (0.77)	11.7 (0.46)	13.5 (0.53)	29 (1.142)	5.4 (0.21)	6.1 (0.24)	79.6 (3.13)	45.3 (1.78)	136 (5.35)	109.4 (4.307)	42.5 (1.67)	32.8 (1.29)	16.6 (0.65)	20.9 (0.82)	34.5 (1.36)	25.7 (1.01)	73.9 (2.91)	26.3 (1.04)	28 (1.1)	56 (2.2)

503 SERIES

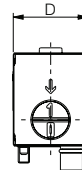
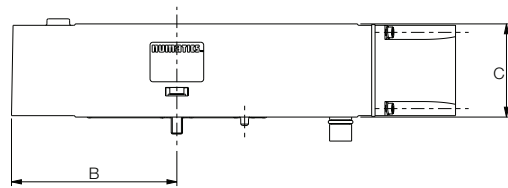
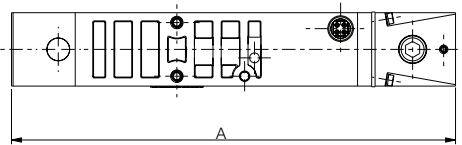
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Sandwich Shut Off Block

- Used to shut-off pressure when mounted below valve.
- Allows easy maintenance without the need to shut-off pressure to the entire manifold.



503 Series



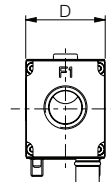
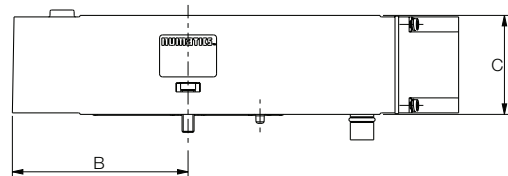
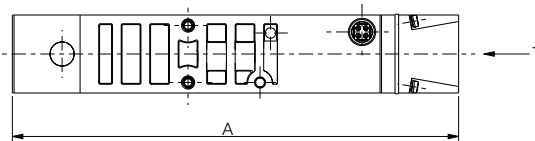
Part Number	Description
R503AY426707002	Proprietary Sandwich Shut Off Kit
R503AY426707001	ISO 15407-2 Sandwich Shut Off Kit

Dimensions: mm (Inches)

A	B	C	D
157.3 (6.193)	58.6 (2.307)	33 (1.3)	26.5 (1.04)

Sandwich Pressure Block

- Used to supply a separate pressure to a single valve station without needing blocking disks.



Sandwich Pressure Block Kit

Part Number	Port Type	Description
8503AW428300004	1/4 NPTF	Proprietary Sandwich Pressure Block
G503AW428300004	G 1/4	Proprietary Sandwich Pressure Block
8503AW428300003	1/4 NPTF	ISO 15407-2 Sandwich Pressure Block
G503AW428300003	G 1/4	ISO 15407-2 Sandwich Pressure Block

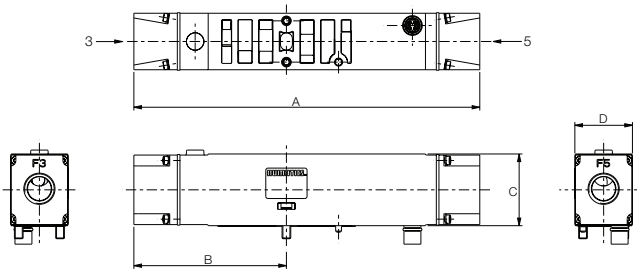
Dimensions: mm (Inches)

A	B	C	D
148.8 (5.858)	58.6 (2.307)	33 (1.3)	26.5 (1.04)

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SERIES

Sandwich Exhaust Block



- Used to isolate the exhaust of a single valve station from the manifold.
- Allows faster exhaust response by re-routing exhaust externally to the manifold.

Sandwich Exhaust Block Kit

Part Number	Port Type	Description
8503AX428300002	1/4 NPTF	Proprietary Sandwich Exhaust Block
G503AX428300002	G 1/4	Proprietary Sandwich Exhaust Block
8503AX428300001	1/4 NPTF	ISO 15407-2 Sandwich Exhaust Block
G503AX428300001	G 1/4	ISO 15407-2 Sandwich Exhaust Block

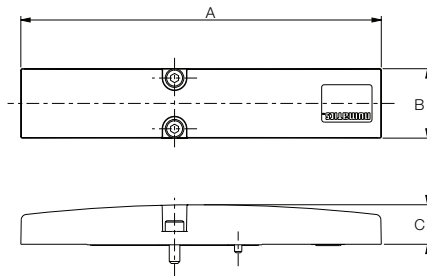
Dimensions: mm (Inches)

A	B	C	D
159.2 (6.268)	70.2 (2.764)	33 (1.3)	26.5 (1.04)

503 Series

Blank Station Plate Kit

P503AB428359001

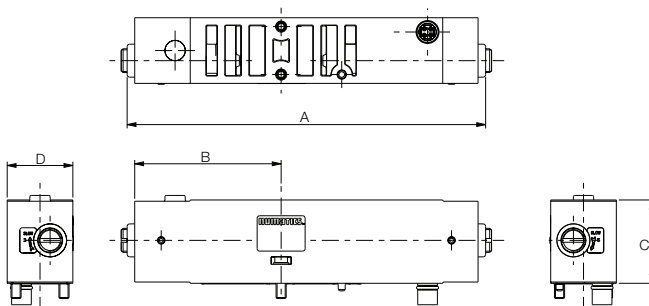


- Used to block off a manifold station block for future use

Dimensions: mm (Inches)

A	B	C
136 (5.354)	26 (1.024)	14.8 (0.58)

Speed Control Kit



Part Number	Description
R503AS425575002	Proprietary Sandwich Speed Control
R503AS425575001	ISO 15407-2 Sandwich Speed Control

Dimensions: mm (Inches)

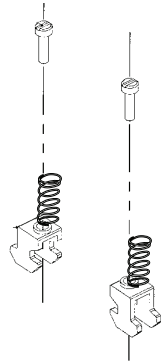
A	B	C	D
142 (5.591)	58 (2.283)	33 (1.3)	26 (1.02)

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DIN Rail Clamp Kit

239-980



Blocking Disc Kits

(Includes tag to label ports blocked)

Ports	Part
1	P503A431191001
3	P503A431191002
5	P503A431191003
1 + 3	P503A431191004
1 + 5	P503A431191005
3 + 5	P503A431191006
1, 3, 5	P503A431191007

503 Series

End Plate Kit - Threaded



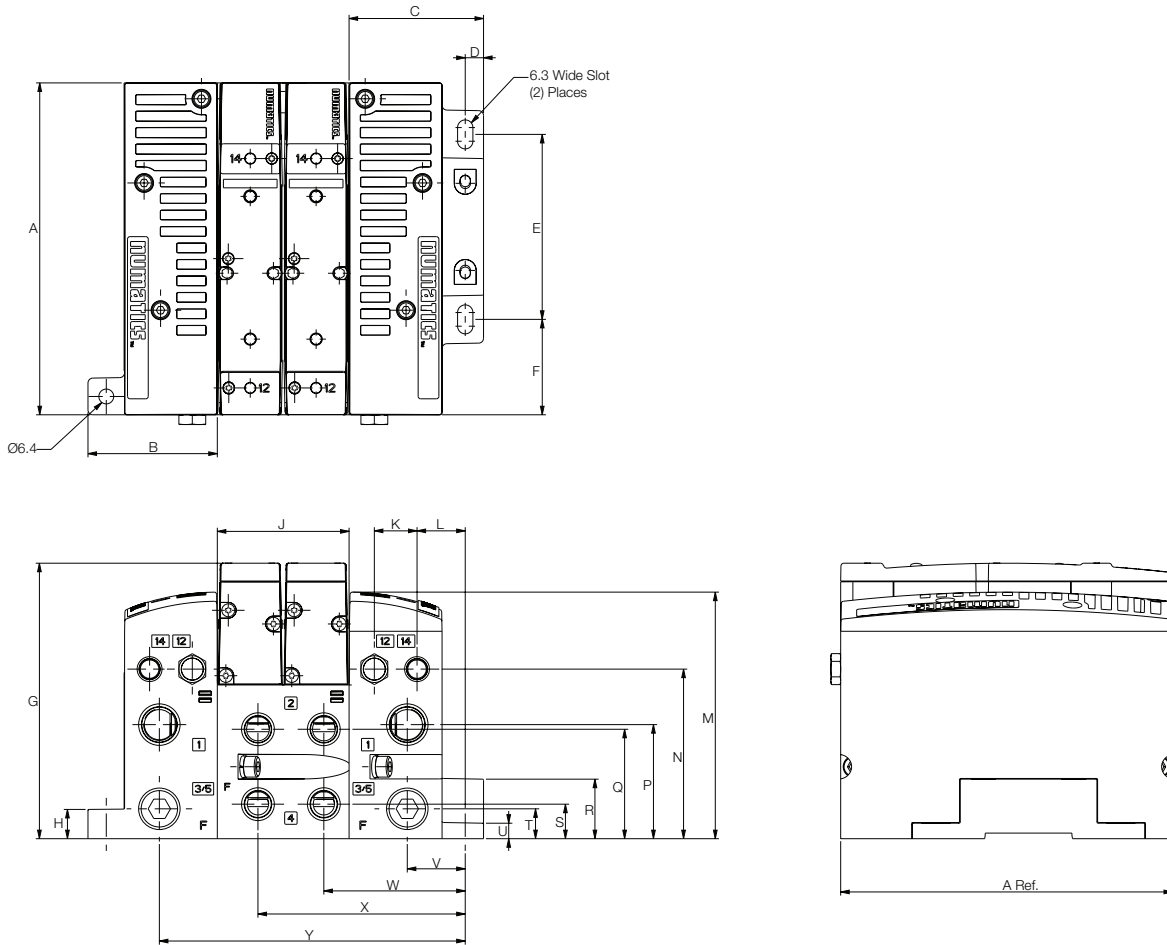
Port Type	NPTF			G			PUSH IN			PUSH IN			PUSH IN			PUSH IN		
	1	3/5	X,XE	1	3/5	X,XE	1	3/5	X,XE	1	3/5	X,XE	1	3/5	X,XE	1	3/5	X,XE
Port Size	3/8	3/8	1/8	3/8	3/8	1/8	3/8	3/8	1/8	1/2	1/2	1/8	10mm	10mm	6 mm	12mm	12mm	6 mm
Vertical w/o muffler, w/o DIN	8503AK428327001			G503AK428327013			K503AK428327003			K503AK428327005			K503AK428327015			K503AK428327017		
Vertical w/o muffler, w/DIN	8503AK428327002			G503AK428327014			K503AK428327004			K503AK428327006			K503AK428327016			K503AK428327018		
Vertical w/muffler, w/o DIN	8503AK428327007			G503AK428327019			K503AK428327009			K503AK428327011			K503AK428327021			K503AK428327023		
Vertical w/muffler, w/DIN	8503AK428327008			G503AK428327020			K503AK428327010			K503AK428327012			K503AK428327022			K503AK428327024		
Horizontal, w/o muffler, w/o DIN	8503AK428304001			G503AK428304004			K503AK428304002			K503AK428304003			K503AK428304005			K503AK428304006		

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Manifold Assembly

Dimensions: mm (Inches)



A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y
136	53	55.1	7.5	75.8	39.1	112.9	12	54	17.5	19.8	101.1	69.5	46.8	44.9	24.4	14.2	12.3	6.4	23.8	58	85	125.4
(5.354)	(2.087)	(2.17)	(0.3)	(2.98)	(1.54)	(4.445)	(0.47)	(2.13)	(0.69)	(0.78)	(3.98)	(2.74)	(1.843)	(1.77)	(0.96)	(0.56)	(0.48)	(0.25)	(0.94)	(2.28)	(3.346)	(4.937)

503
SERIES

numatics®

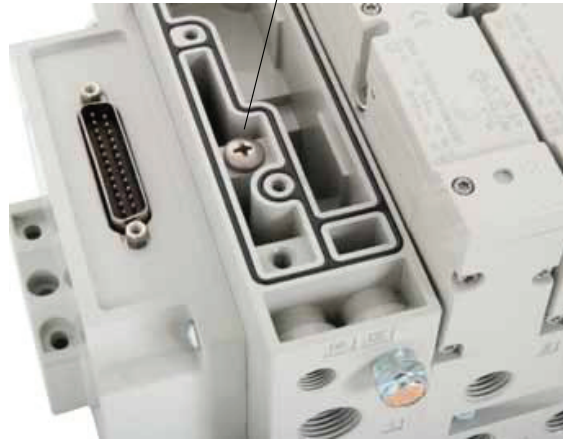
Internal Pilot

Internal Pilot
Supply Plug Location



External Pilot

For External Pilot
Supply Plug Location



503 Series

Internal Muffler

Muffler

