

numatics **EXPRESS**TM

SHIPPING PROGRAM



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EMERSON[™]
Industrial Automation



Numatics, Inc. is a leading manufacturer of pneumatic products and motion control products. Our broad spectrum of standard, custom developed products and application components, have made a significant impact on pneumatic innovation as well as pneumatic and motion control technology. Our company has an extensive history of generating innovative concepts and technological breakthroughs. Many of today's standard features in pneumatic technology were industry firsts from Numatics. We continue our innovative approach to product development by developing electric motion control solutions and enhancing our embedded Fieldbus and I/O products to continually meet and solve our customer's application requirements.



Today Numatics is proud to be a part of the Industrial Automation Division of Emerson Electric Co.

Emerson (NYSE:EMR), based in St. Louis, Missouri (USA), is a global leader in bringing technology and engineering together to provide innovative solutions for customers in industrial, commercial, and consumer markets through its network power, process management, industrial automation, climate technologies, and appliance and tools businesses. For more information, visit www.Emerson.com.



Welcome to the World of Fluid Automation...

Since 1945, Numatics has emerged as the prominent specialist in developing and manufacturing pneumatic and fluid power components for a widely diverse field of automated industry. From idea to implementation, leading engineers choose Numatics as their single source for:

- Quality Fluid Power components
- Technologically advanced design resources
- Quick response time in delivery and service from around the world

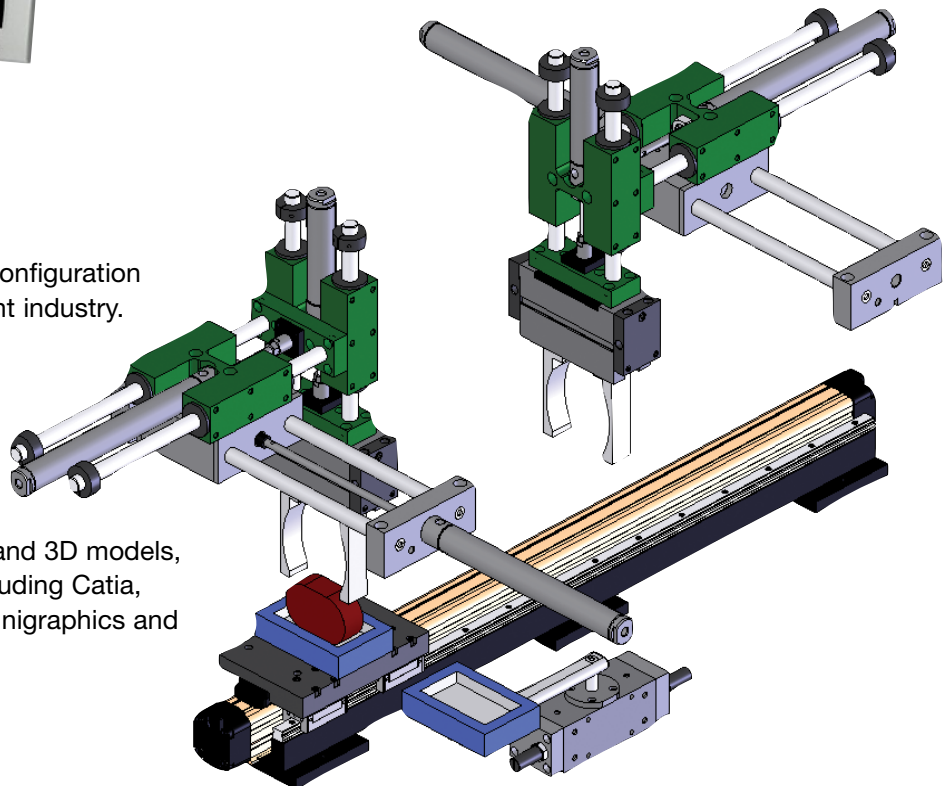


Numasizing

Developed by Numatics, Numasizing offers a whole new level of fluid power system optimization. Compare large amounts of component and process data against user objectives and industry benchmarks for the best possible size, pneumatic pressure, actuator stroke velocities and other part and process variable determinations.

CAD Modeling

Save critical development time with the most innovative CAD configuration program in the pneumatic component industry. Numatics in 3D eliminates the time consuming process associated with designing components from scratch based on information found in conventional paper catalog. The models are available in 85 different native CAD formats in 2D drawings and 3D models, including all the popular formats including Catia, I-DEAS, Pro/Engineer, SolidWorks, Unigraphics and more.





three business days. Unlike most traditional quick ship programs, the Numatics Express Shipping Program includes the most comprehensive offering in the industry. This program encompasses the range and options that you require!

Numatics is committed to offering you the highest level of customer service, quality and performance.

Numatics Express 2Day and 3Day Shipping Program guarantees[†] product shipment in two or

The logo for the 2Day shipping program, featuring a large, bold, blue "2" followed by the word "DAY" in a grey, sans-serif font.

Numatics Express 2 Day shipping program guarantees[†] product shipment in two business days. The program includes the most popular configurations of the 2000, Mark and L Series valves, including individual bases, manifold blocks, sandwich regulators, particulate filters, coalescing filters, regulators, lubricators, filter-regulators, solenoid soft start quick exhaust valves, shut-off valves, and diverter blocks. Additionally, A Series N.F.P.A. Interchange cylinders, M Series Round Body Interchangeable air cylinders, SH Series Linear Slides, and applicable switches and mounting accessories are offered in the Numatics 2 Day shipping program.

Numatics guarantees[†] to ship any order received before 3 pm EST for up to 10 of the valve assemblies, and air preparation components, cylinders configured from this catalog in two business days. Saturdays, Sundays, and Holidays are excluded. Numatics Express orders cannot be cancelled or adjusted once entered.

The logo for the 3Day shipping program, featuring a large, bold, blue "3" followed by the word "DAY" in a grey, sans-serif font.

In addition the Numatics Express shipping program offers a 3Day shipping program that guarantees[†] product shipment of a fully assembled and tested valve manifold in 3 business days. The program includes the most popular manifold configurations of the 2000 and Mark series valves:

- Sub D, Terminal Strip and Device Net Electronic Options
- Can be configured for Din Rail Mounting and Muffled Exhaust
- Shipped complete and 100% tested

The 3Day Express shipping program enables you to create a 2 to 8 station manifold assembly complete with any combination of valves, regulators, and blank stations that can be configured from the valve model charts in this catalog.

Numatics guarantees[†] to ship any order received before 3 pm EST for up to 5 manifold assemblies configured from this catalog in three business days or Numatics pays the shipping cost. Saturdays, Sundays, and Holidays are excluded. Numatics Express orders cannot be cancelled or adjusted once entered.

We are committed to providing you with an unmatched level of customer service, quality, and reliability. If you cannot locate the specific product for your application or need additional product specifications, visit www.numatics.com or call 888-686-2842.

[†]As industry requirements change, Numatics reserves the right to modify the contents of this catalog and program without notification. Updates on this program can be obtained from the Numatics website www.numatics.com or by calling 888-686-2842, or by contacting your local Numatics representative or distributor and referencing the Numatics Express program.

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Cylinders (Actuators)



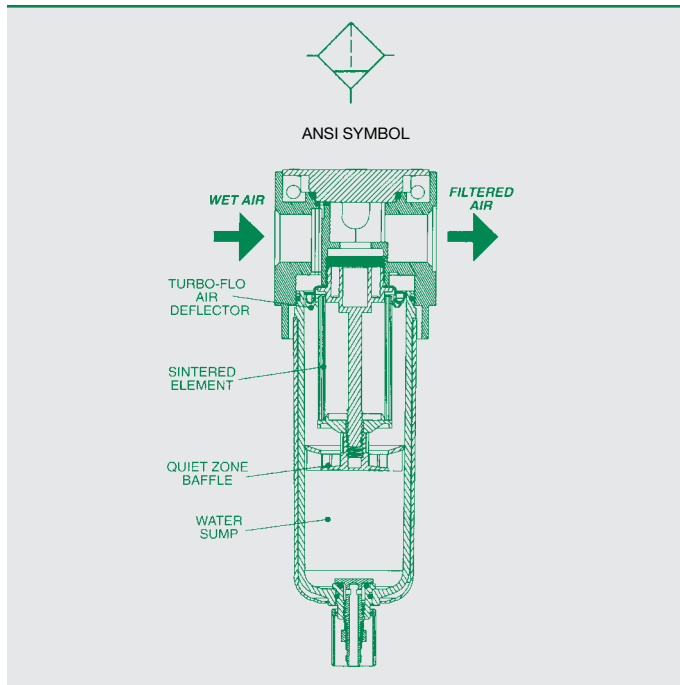
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F14B, F22B, F32B, F42B Series

- Four convenient sizes
- 5 micron sintered elements standard
- Can be installed as modular or individual unit
- Includes screws and o-rings for modular connection
- Manual or automatic drain
- Polycarbonate bowl standard
- Optional metal bowl (sight glass available on 22, 32 and 42 Series)
- Bowl seal held captive (22, 32 and 42 Series)

Specifications

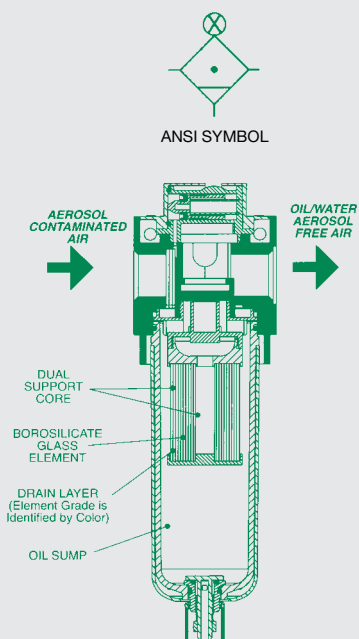
BOWL	POLYCARBONATE BOWL	METAL BOWL
Temperature Range °F (°C)	40-120 (4-50)	40-120 (4-50)
Max. Pressure PSIG (BAR)	150 (10)	200 (14)
14 Series Weight lbs. (kg)	0.60 (0.28)	0.65 (0.30)
22 Series Weight lbs. (kg)	0.65 (0.30)	1.25 (.57)
32 Series Weight lbs. (kg)	1.3 (0.59)	2.5 (1.14)
42 Series Weight lbs. (kg)	3.70 (1.68)	4.80 (2.18)

How to Order

2DAY - Particulate Filters

Model	F	22	B	-	04	A	Options
F = Filter							A = Auto Drain (22, 32 and 42 Series)
Series							J = External Pulse Drain (14 Series)
14 = 1.5 oz Bowl							M = Metal Bowl with Sight Glass
22 = 3.8 oz Bowl							Q = Metal Manual Drain
32 = 8.5 oz Bowl							
42 = 8.5 oz Bowl							
Element							Port Size
B = 5 Micron Element							02 = 1/4 (14 or 22 Series)
							03 = 3/8 (22 Series)
							04 = 1/2 (22 or 32 Series)
							06 = 3/4 (32 Series)
							08 = 1 (42 Series)
Threads							
- = NPTF							

For detailed dimensional information and technical specifications, please visit www.numatics.com



F14D, F22D, F32D, F42D Series

- Four convenient sizes
- Cartridge element design
- Inner and outer support cores prevent element from crushing in either flow direction
- Optional metal bowl (sight glass available on 22, 32 and 42 Series)
- Manual or automatic drain
- ΔP indicator standard on 14, 22, 32 and 42 Series

Recommended Uses

D grade element, identified by its green drain layer, is a fine filter for cylinder or valves - especially when the circuit is being run without lubrication ('dry'). Excellent filter for desiccant or regenerative style dryers.

Specifications

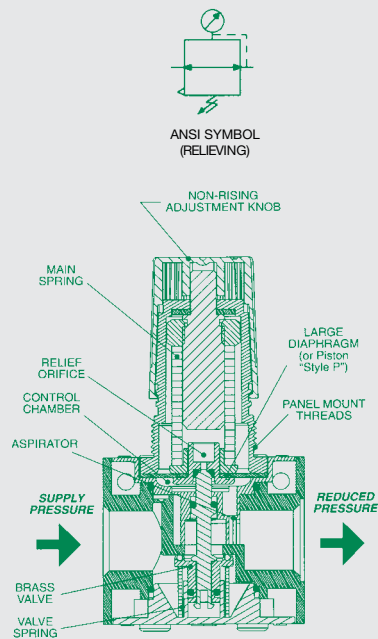
BOWL	POLYCARBONATE BOWL	METAL BOWL
Temperature Range °F (°C)	40-120 (4-50)	40-120 (4-50)
Max. Pressure PSIG (BAR)	150 (10)	200 (14)
14 Series Weight lbs. (kg)	0.65 (0.28)	0.70 (0.30)
22 Series Weight lbs. (kg)	0.66 (0.30)	1.28 (0.58)
32 Series Weight lbs. (kg)	1.42 (.65)	2.56 (1.16)
42 Series Weight lbs. (kg)	3.70 (1.68)	4.80 (2.18)

How to Order

2DAY - Coalescing Filters

Model	F 22 D - 04 A	Options
F = Filter		A = Auto Drain (22, 32 and 42 Series)
Series		D = 3 Micron, Internal Pleated Prefilter
14 = 1.5 oz Bowl		J = External Pulse Drain (14 Series)
22 = 3.8 oz Bowl		M = Metal Bowl With Sight Glass
32 = 8.5 oz Bowl		Q = Metal Manual Drain
42 = 8.5 oz Bowl		Port Size
Element		02 = 1/4 (14 or 22 Series)
D = 0.3 Micron Fine Coalescer		03 = 3/8 (22 Series)
Threads		04 = 1/2 (22 or 32 Series)
- = NPTF		06 = 3/4 (32 Series)
		08 = 1 (42 Series)

For detailed dimensional information and technical specifications, please visit www.numatics.com



R14, R22, R32, R42 Series

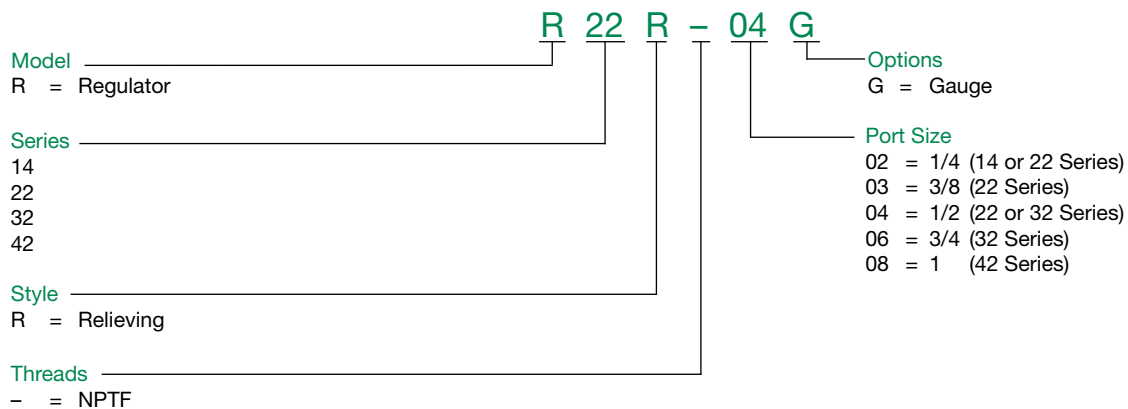
- Four convenient sizes
- High flow in compact size
- Locking non-rising adjustment
- Can be installed as modular or individual unit
- Standard output pressure 0-125 PSIG

Specifications

	14 SERIES	22 SERIES	32 SERIES	42 SERIES
Temperature Range °F (°C)	40-120 (4-50)	40-120 (4-50)	40-120 (4-50)	40-120 (4-50)
Max. Pressure PSIG (BAR)	250 (17)	200 (14)	250 (17)	250 (17)
Weight lbs. (kg)	0.65 (0.30)	0.69 (0.31)	1.37 (0.62)	4.30 (1.95)
Body Material	Zinc	Aluminum	Aluminum	Aluminum

How to Order

2DAY - Regulators



For detailed dimensional information and technical specifications, please visit www.numatics.com

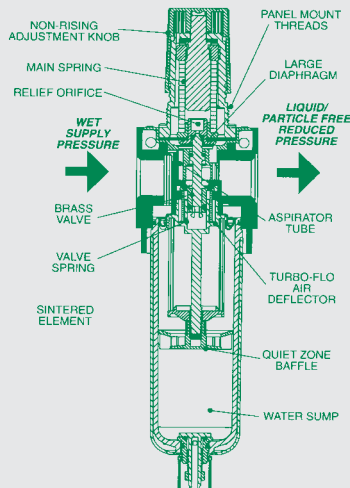
Information subject to change without notice.



FLEXIBLOK® Particulate Filter/Regulator



ANSI SYMBOL



P14B, P22B, P32B, P42B Series

- Four convenient sizes
- 5 micron element standard
- Can be installed as individual or modular unit
- Locking non-rising adjustment
- Polycarbonate bowl standard
- Optional metal bowl (sight glass available on 22, 32 and 42 Series)
- Standard output pressure 0-125 PSIG
- Bowl seal held captive (22, 32, and 42 Series)

Specifications

BOWL	POLYCARBONATE BOWL	METAL BOWL
Temperature Range °F (°C)	40-120 (4-50)	40-120 (4-50)
Max. Pressure PSIG (BAR)	150 (10)	200 (14)
14 Series Weight lbs. (kg)	0.75 (0.34)	0.80 (0.37)
22 Series Weight lbs. (kg)	0.91 (0.41)	1.50 (0.68)
32 Series Weight lbs. (kg)	1.81 (0.82)	2.94 (1.34)
42 Series Weight lbs. (kg)	5.05 (2.29)	6.15 (2.79)

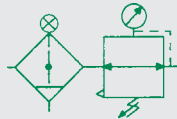
How to Order

2DAY - Particulate Filter/Regulator

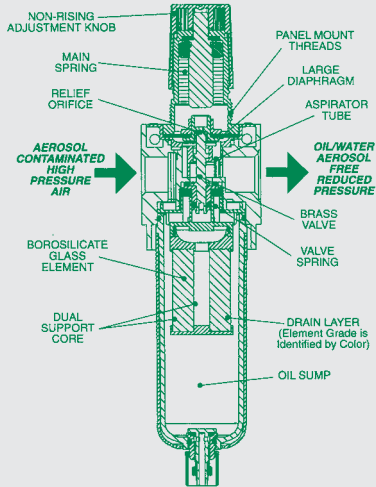
Model	P	22	B	-	04	G	Options
P =	Particulate Filter/Regulator						A = Auto Drain (22, 32, and 42 Series)
Series							G = Gauge
14 =	1.5 oz Bowl						J = External Pulse Drain (14 Series)
22 =	3.8 oz Bowl						M = Metal Bowl with Sight Glass
32 =	8.5 oz Bowl						Q = Metal Manual Drain
42 =	8.5 oz Bowl						
Style							Port Size
B =	5 Micron Element						02 = 1/4 (14 or 22 Series)
Threads							03 = 3/8 (22 Series)
- =	NPTF						04 = 1/2 (22 or 32 Series)
							06 = 3/4 (32 Series)
							08 = 1 (42 Series)

For detailed dimensional information and technical specifications, please visit www.numatics.com

Information subject to change without notice.



ANSI SYMBOL



C14D, C22D, C32D, C42D Series

- Four convenient sizes
- Cartridge element design
- Inner/outer support cores prevent element from crushing in either flow direction
- Manual or automatic drain
- Polycarbonate bowl standard
- Optional metal bowl (sight glass available on 22, 32 and 42 Series)
- Standard output pressure 0-125 PSIG

Recommended Uses

D grade element, identified by its green drain layer, is a fine filter for cylinder or valves - especially when the circuit is being run without lubrication ('dry'). Excellent filter for desiccant or regenerative style dryers.

Specifications

BOWL	POLYCARBONATE BOWL	METAL BOWL
Temperature Range °F (°C)	40-120 (4-50)	40-120 (4-50)
Max. Pressure PSIG (BAR)	150 (10)	200 (14)
14 Series Weight lbs. (kg)	0.80 (0.35)	0.85 (0.38)
22 Series Weight lbs. (kg)	0.92 (0.42)	1.60 (0.73)
32 Series Weight lbs. (kg)	1.82 (0.83)	2.95 (1.34)
42 Series Weight lbs. (kg)	5.05 (2.29)	6.15 (2.79)

How to Order

2DAY - Coalescing Filter/Regulators

Model C 22 D - 04 ADG

C = Coalescing Filter/Regulators

Series

- 14 = 1.5 oz Bowl
- 22 = 3.8 oz Bowl
- 32 = 8.5 oz Bowl
- 42 = 8.5 oz Bowl

Element

D = 0.3 Micron Fine Coalescer

Threads

- = NPTF

Options

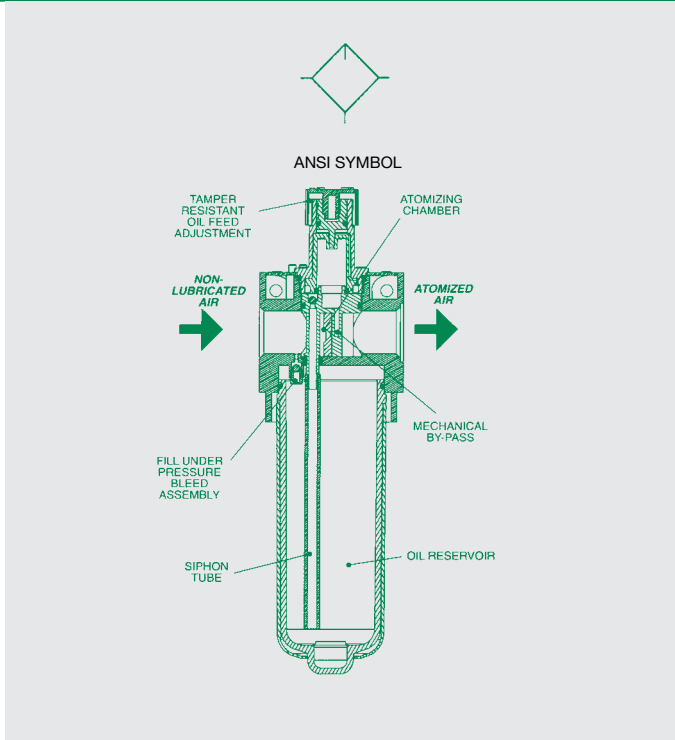
- A = Auto Drain (22, 32, and 42 series)
- D = 3 Micron, Internal Pleated Prefilter
- G = Gauge
- J = External Pulse Drain (14 Series)
- M = Metal Bowl with Sight Glass
- Q = Metal Manual Drain

Port Size

- 02 = 1/4 (14 or 22 Series)
- 03 = 3/8 (22 Series)
- 04 = 1/2 (22 or 32 Series)
- 06 = 3/4 (32 Series)
- 08 = 1 (42 Series)

For detailed dimensional information and technical specifications, please visit www.numatics.com

Information subject to change without notice.



L14L, L22L, L32L, L42L Series

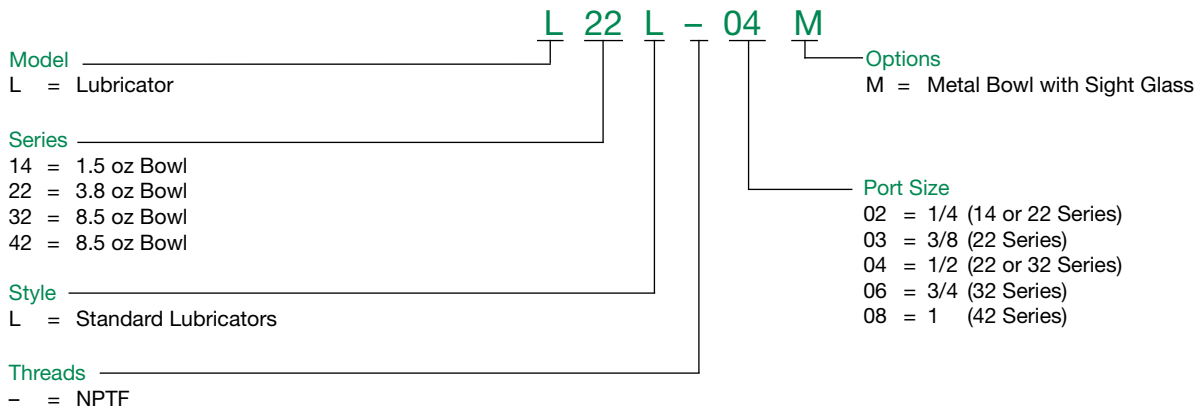
- Four convenient sizes
- Lubrication to begin at 2 SCFM
- Can be filled under pressure (22, 32 and 42 series)
- Tamper-resistant knob standard
- Polycarbonate bowl standard
- Optional metal bowl (sight glass available on 22, 32 and 42 Series)
- Can be mounted as individual or modular unit

Specifications

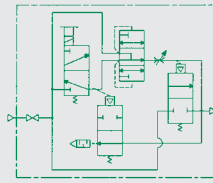
	14 SERIES	22 SERIES	32 SERIES	42 SERIES
Temperature Range °F (°C)	40-120 (4-50)	40-120 (4-50)	40-120 (4-50)	40-120 (4-50)
Max. Pressure PSIG (BAR)	200 (14)	200 (14)	200 (14)	200 (14)
Weight lbs. (kg)	0.60 (0.27)	0.69 (0.31)	1.37 (0.62)	4.15 (2.18)
Body Material	Zinc	Aluminum	Aluminum	Aluminum

How to Order

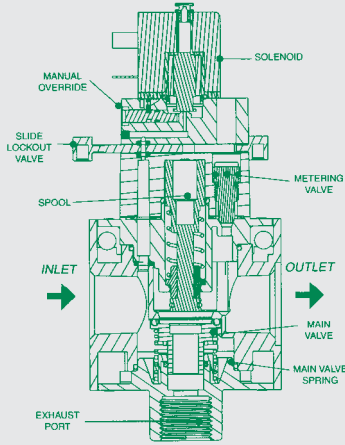
2DAY - Lubricators



For detailed dimensional information and technical specifications, please visit www.numatics.com



ANSI SYMBOL



S22C, S32C, S42C Series

- Three convenient sizes
- Lockout feature prevents unauthorized pressurization of system
- High exhaust capacity for quick depletion of downstream pressure
- High inlet to outlet flow capability
- Connects easily to **FLEXIBLOK®** Modular system
- Incorporated metering valve controls how quickly downstream pressure is reached, which controls the slow start feature

Specifications

	22 SERIES	32 SERIES	42 SERIES
Exhaust Ports NPTF	1/2	1/2	3/8 (3 exh. ports)
Gauge Ports NPTF	1/8	1/4	1/4
Temperature Range °F (°C)	40-120 (4-50)	40-120 (4-50)	40-120 (4-50)
Min. Pressure PSI (BAR)	60 (4)	60 (4)	20 (1.38)
Max. Pressure PSI (BAR)	150 (10)	150 (10)	150 (10)
Weight lbs. (kg)	0.94 (0.43)	1.56 (0.71)	4.35 (1.97)
Body Material	Aluminum	Aluminum	Aluminum

		CV
SERIES	IN/OUT	OUT/EXHAUST
22 Series 1/4	2.0	1.2
22 Series, 3/8	2.87	1.38
22 Series, 1/2	3.62	1.32
32 Series, 1/2	5.24	3.01
32 Series, 3/4	6.47	3.14
42 Series, 1	8.0	5.0

How to Order

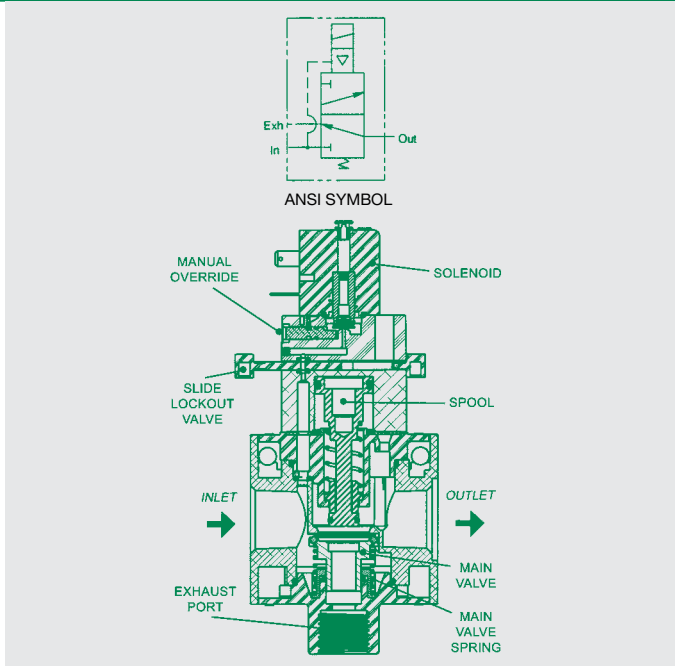
2DAY - Solenoid Soft Start Quick Exhaust Valve

Model	S	22	C	-	04	B	EGLM	Options
S = Solenoid Soft Start								E = 110V AC 50/60 Hz
Series		22						G = Gauge
22								K = 24V DC Coil
32								L = Plug with Light
42								M = Muffler
Element			C					Revision Level
C = Solenoid Soft Start								B
Threads				-	04			Port Size
- = NPTF								02 = 1/4 (22 Series)
								03 = 3/8 (22 Series)
								04 = 1/2 (22 or 32 Series)
								06 = 3/4 (32 Series)
								08 = 1 (42 Series)

For detailed dimensional information and technical specifications, please visit www.numatics.com



FLEXIBLOK® Solenoid Quick Exhaust Valve



S14E, S22E, S32E, S42E Series

- Four convenient sizes
- Lockout feature (located in slide valve) prevents unauthorized pressurization of system (22, 32, and 42 Series)
- Standard manual override
- Low-wattage coil
- High exhaust capacity for quick depletion of pressure
- High inlet to outlet flow capability
- Connects easily to **FLEXIBLOK®** Modular system

Specifications

	14 SERIES	22 SERIES	32 SERIES	42 SERIES
Exhaust Ports NPTF	1/2	1/2	1/2	3/8 (3 exh. ports)
Gauge Ports NPTF	1/8	1/8	1/4	1/4
Temperature Range °F (°C)	40-120 (4-50)	40-120 (4-50)	40-120 (4-50)	40-120 (4-50)
Min. Pressure PSI (BAR)	60 (4)	60 (4)	60 (4)	20 (1.38)
Max. Pressure PSI (BAR)	150 (10)	150 (10)	150 (10)	150 (10)
Weight lbs. (kg)	0.94 (0.43)	0.94 (0.43)	1.56 (0.71)	4.35 (1.97)
Body Material	Zinc	Aluminum	Aluminum	Aluminum

SERIES	IN/OUT	CV
		OUT/EXHAUST
14 Series 1/4	1.55	1.10
22 Series, 1/4	2.0	1.2
22 Series, 3/8	2.87	1.38
22 Series, 1/2	3.62	1.32
32 Series, 1/2	5.24	3.01
32 Series, 3/4	6.47	3.14
42 Series, 1	8.0	5.0

How to Order

2DAY - Solenoid Quick Exhaust Valve

<p>Model _____</p> <p>S = Solenoid Quick Exhaust</p> <p>Series _____</p> <p>14 22 32 42</p> <p>Style _____</p> <p>E = Solenoid Quick Exhaust Valve</p> <p>Threads _____</p> <p>- = NPTF</p>	<p>S 22 E - 04 B EGLM</p> <p>Options</p> <p>E = 110V AC 50/60 Hz</p> <p>G = Gauge</p> <p>K = 24V DC Coil</p> <p>L = Plug with Light</p> <p>M = Muffler</p> <p>Revision Level</p> <p>B</p> <p>Port Size</p> <p>02 = 1/4 (14 and 22 Series)</p> <p>03 = 3/8 (22 Series)</p> <p>04 = 1/2 (22 or 32 Series)</p> <p>06 = 3/4 (32 Series)</p> <p>08 = 1 (42 Series)</p>
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For detailed dimensional information and technical specifications, please visit www.numatics.com



2DAY - Shut-Off Valve

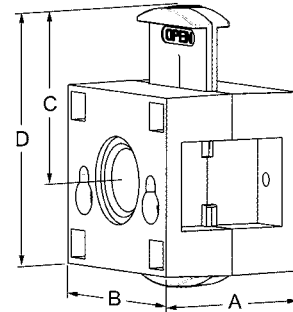
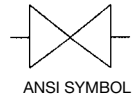
VS14, VS22, VS32, VSL42 Series

The **FLEXIBLOK®** Shut-Off Valve is an easy and inexpensive way to add shut off capability to an FRL. The valve includes a lockout feature designed for a padlock to prevent unauthorized downstream pressurization during maintenance. The shut off valve is usually mounted first in the assembly.

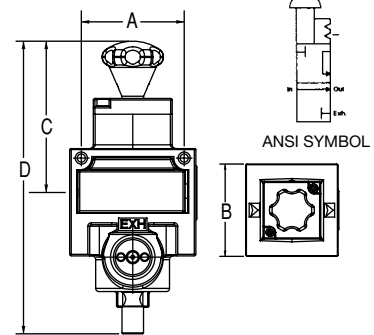
Max. inlet pressure: 200 PSI (13.7 bar)
250 PSI (17 bar) - 42 Series

- Relieves downstream pressure when closed
- Lockout feature prevents unauthorized pressurization of system

14, 22, 32 Series



42 Series



DIMENSIONS						
	NPTF	A	B	C	D	PORTS
14	VS14-02	1.63 (41)	1.6 (41)	1.6 (41)	3 (76)	1/4
22	VS22-02	2.0 (50)	2.16 (55)	1.86 (47)	3.1 (79)	1/4
	VS22-03	2.0 (50)	2.16 (55)	1.86 (47)	3.1 (79)	3/8
	VS22-04	2.0 (50)	2.16 (55)	1.86 (47)	3.1 (79)	1/2
32	VS32-04	2.25 (57)	3.0 (76)	2.57 (65)	4.2 (107)	1/2
	VS32-06	2.25 (57)	3.0 (76)	2.57 (65)	4.2 (107)	3/4
42	VSL42-08	3.2 (83)	4.0 (102)	4.8 (122)	9.3 (236)	1

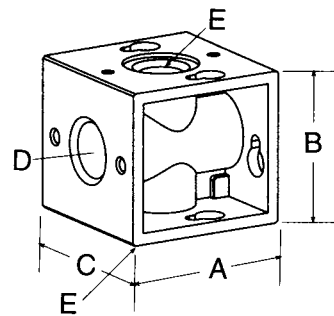
2DAY - Diverter Block and Gauges



DK14, DK22, DK32, DK42 Series

Designed to give **FLEXIBLOK®** components total versatility, the diverter block mounts directly inline with the FRL combination. Additional components can then be manifold mounted in a compact manner that doesn't cause excessive pressure drop. There are two available tapped ports per unit.

Max. inlet pressure: 200 PSI (13.7 bar) (14, 22, 32 Series)
250 PSI (17 bar) (42 Series)



DIMENSIONS						
SERIES	NPTF	A	B	C	D	E
14	DK14-02	1.72 (44)	1.54 (39)	1.6 (41)	1/4	1/8
22	DK22-03	2.16 (55)	2.00 (50)	2.16 (55)	1/2	3/8
32	DK32-04	3.00 (76)	2.70 (69)	3.00 (76)	3/4	1/2
42	DK42-08	4.00 (102)	3.40 (87)	4.00 (102)	1	1

Gauges

MODEL	FACE DIAMETER	THREAD SIZE	PRESSURE RANGE PSI (BAR)
214-103	1.5	1/8 NPT	0-160 (0-11)
201-188	2.0	1/4 NPT	0-160 (0-11)



For detailed dimensional information and technical specifications, please visit www.numatics.com

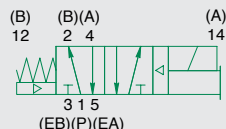


2002 Series

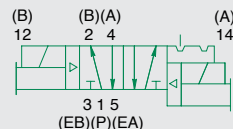


02 Series and R2 Series:

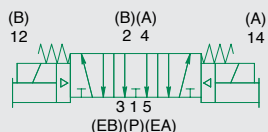
single solenoid air pilot
2 position 4-way



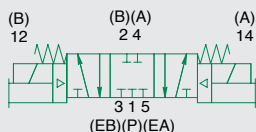
double solenoid air pilot
2 position 4-way



double solenoid 3 position
4-way open center

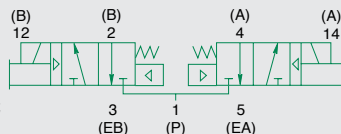


double solenoid 3 position
4-way closed center



R2 Series Only:

double solenoid
air pilot dual 3-way
"12(B)" & "14(A)" NC



02 Series

5 Ported, 2 and 3 position, 4-way, Spool & Sleeve
Cv: 0.20

R2 Series

5 Ported, 2 and 3 position, 4-way and dual 3-way,
Packed Spool
Cv: 0.25 (4-way) 0.20 (Dual 3-way)

- Solenoid air pilot actuated
- Low wattage plug-in - 0.5 watt for DC application
- Elimination of internal wiring
- Pusher piston - high spool shifting force
- Compact/modular Fieldbus electronics
- Interchangeable Push-in fittings to accommodate various tube sizes



02 Series - Technical Data

VALVE DATA	ENGLISH	METRIC
Cv	0.20	0.20
Flow Capacity	9.2 SCFM @ 80 PSIG upstream pressure to atmosphere	197 NL/m @ 6 bar upstream to 5 bar downstream
Operating Pressure Range	28" Hg. Vacuum to 150 PSIG	Vacuum to 10 bar
Pilot Pressure Range	35 to 100 PSIG	2.5 to 7 bar
Temperature Range (Ambient)	-10°F to +115°F	-23°C to +46°C

02 Series - Operating Data

ALL SOLENOIDS ARE CONTINUOUS DUTY RATED		24 VDC
Power (Watts)		0.50
Holding Current (Amps)		0.02
RESPONSE TIME IN SEC.	ENERGIZE	DE-ENERGIZE
2 - Position, Single, Spring Return	0.014	0.020
2 - Position, Double, Detented	0.010	N/A
3 - Position, Spring Centered	0.009	0.057

R2 Series - Technical Data

VALVE DATA	ENGLISH	METRIC
Cv	0.25	0.25
Flow Capacity	11.5 SCFM @ 80 PSIG upstream pressure to atmosphere	246 NL/m @ 6 bar upstream to 5 bar downstream
Operating Pressure Range: 4 way	28" Hg. Vacuum to 100 PSIG	Vacuum to 7 bar
Dual 3 Way	0 to 100 PSIG	0 to 7 bar
Pilot Pressure Range	35 to 100 PSIG	2.5 to 7 bar
Temperature Range (Ambient)	-10°F to +115°F	-23°C to +46°C

R2 Series - Operating Data

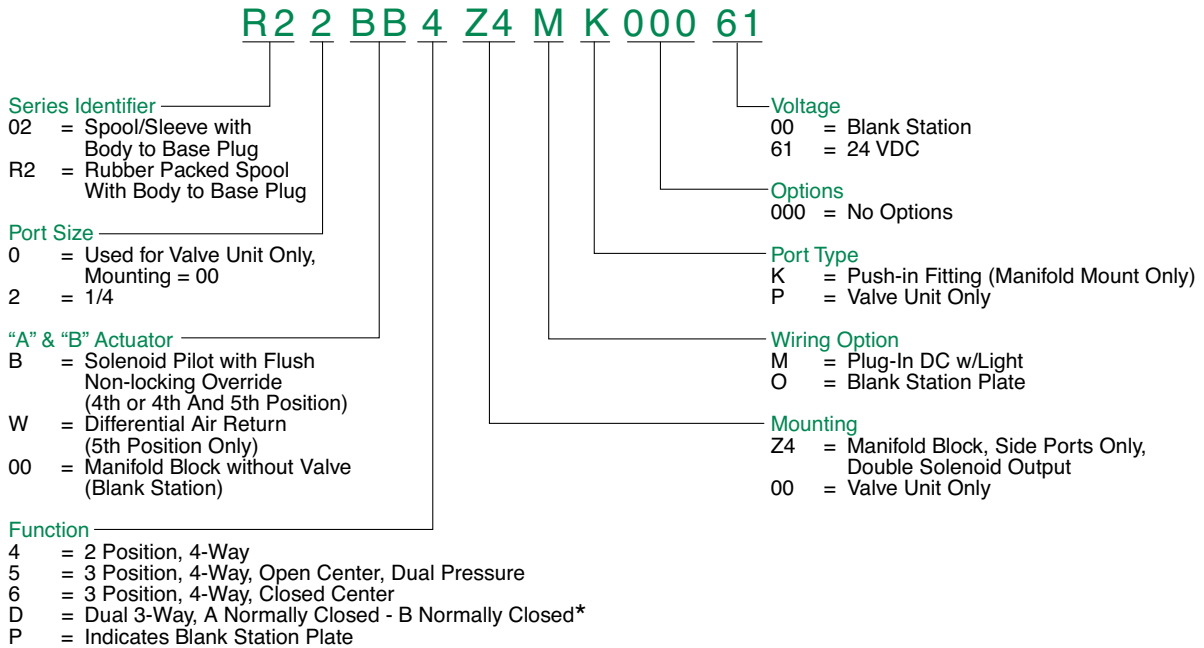
ALL SOLENOIDS ARE CONTINUOUS DUTY RATED		24 VDC
Power (Watts)		0.50
Holding Current (Amps)		0.02
RESPONSE TIME IN SEC.	ENERGIZE	DE-ENERGIZE
2 - Position, Single, Spring Return	0.017	0.013
2 - Position, Double, Detented	0.010	N/A
3 - Position, Spring Centered	0.009	0.022
Dual 3-way	0.018	0.010

For detailed dimensional information and technical specifications, please visit www.numatics.com



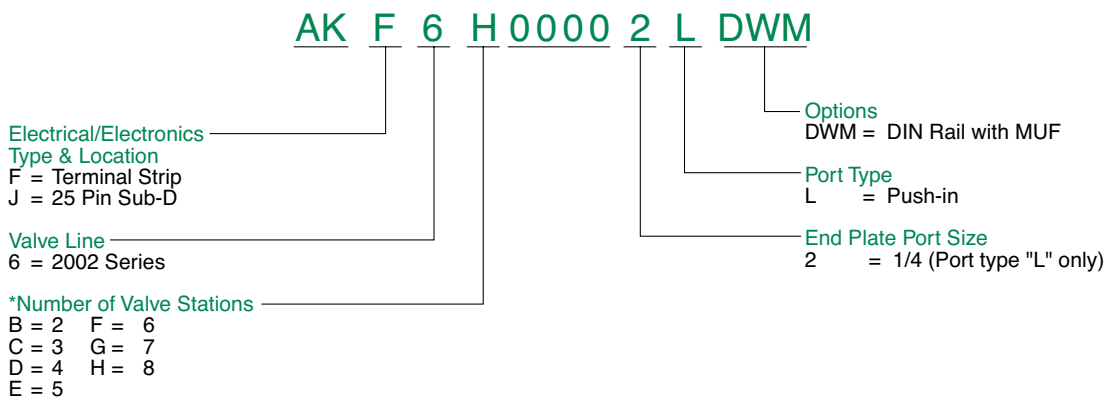
How to Order

2DAY Valves



*Valve Functions for use in Pressure Applications Only

3DAY Manifold Assemblies



See How To Order Manifolds (pg 30-31) for Ordering Details

For detailed dimensional information and technical specifications, please visit www.numatics.com

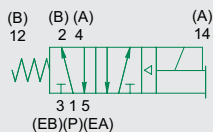
Information subject to change without notice.



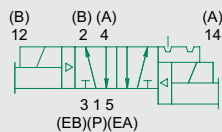
2005 Series



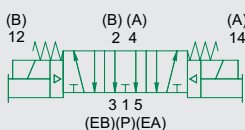
single solenoid air pilot 2 position 4-way



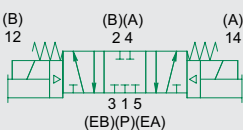
double solenoid air pilot 2 position 4-way



double solenoid air pilot 3 position 4-way open center



double solenoid air pilot 3 position 4-way closed center



5 Ported, 2 and 3 position, 4-way, Spool & Sleeve
Cv: 0.56

Dual 3-Way Pack Spool Cv: 0.56

- Solenoid air pilot actuated
- Low wattage plug-in - 1.0 watt for DC application
- DC solenoids polarity insensitive with surge suppression
- Plug together circuit boards eliminate internal wiring
- Integral recessed gaskets
- Interchangeable Push-in fittings to accommodate various tube sizes
- Simple conversion from internal to external pilot supply
- Modular plug-together Fieldbus electronics
- NEMA 4/IP65



Technical Data

VALVE DATA	ENGLISH	METRIC
Cv	0.56	0.56
Flow Capacity	26 SCFM @ 80 PSIG upstream pressure to atmosphere	552 NL/m @ 6 bar upstream to 5 bar downstream
Operating Pressure Range	28" Hg. Vacuum to 150 PSIG	Vacuum to 10 bar
Operating Pressure Range – 3 Way	22" Hg. Vacuum to 100 PSIG	Vacuum to 7 bar
Pilot Pressure Range	26 to 120 PSIG	1.8 to 8.2 bar
Pilot Pressure Range – 3 Way	26 to 100 PSIG	1.8 to 7 bar
Pilot Pressure Vacuum	50 to 100 PSIG	3.5 to 7 bar
Temperature Range (Ambient)	-10°F to +115°F	-23°C to +46°C

Operating Data

ALL SOLENOIDS ARE CONTINUOUS DUTY RATED		24 VDC	110-120 VAC / 50/60 Hz.	
Power (Watts)		1.35	4.2	
Holding Current (Amps)		0.04	0.04	
RESPONSE TIME IN SECONDS	ENERGIZE	DE-ENERGIZE	ENERGIZE	DE-ENERGIZE
2 - Position, Single, Spring Return	0.014	0.016	0.014	0.016
2 - Position, Double, Detented	0.013	N/A	0.013	N/A
3 - Position, Spring Centered	0.014	0.016	0.014	0.016
Dual 3 Way	0.014	0.016	0.014	0.016

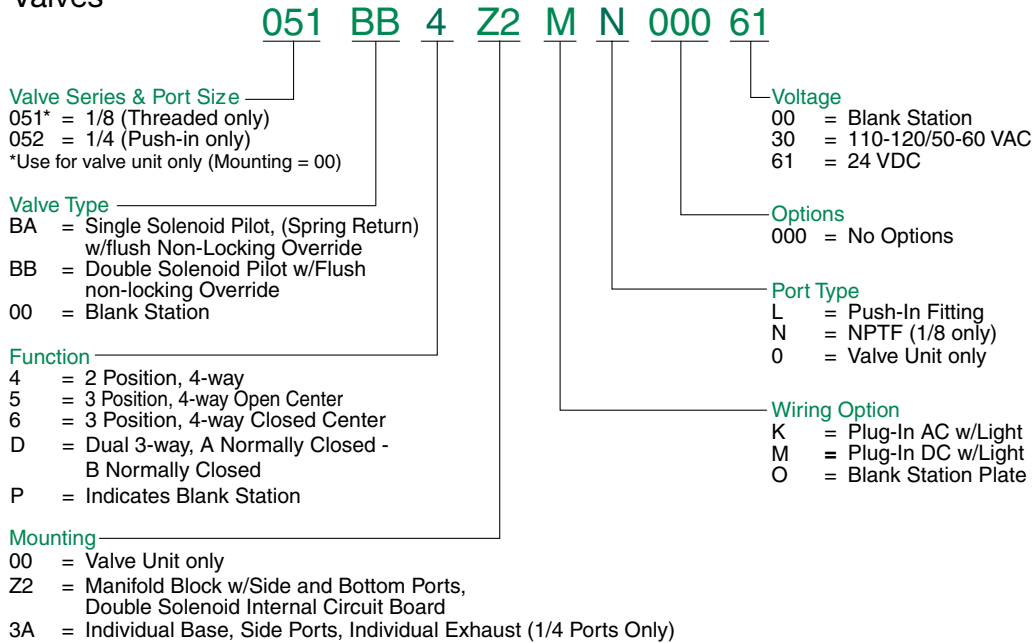
For detailed dimensional information and technical specifications, please visit www.numatics.com

Information subject to change without notice.

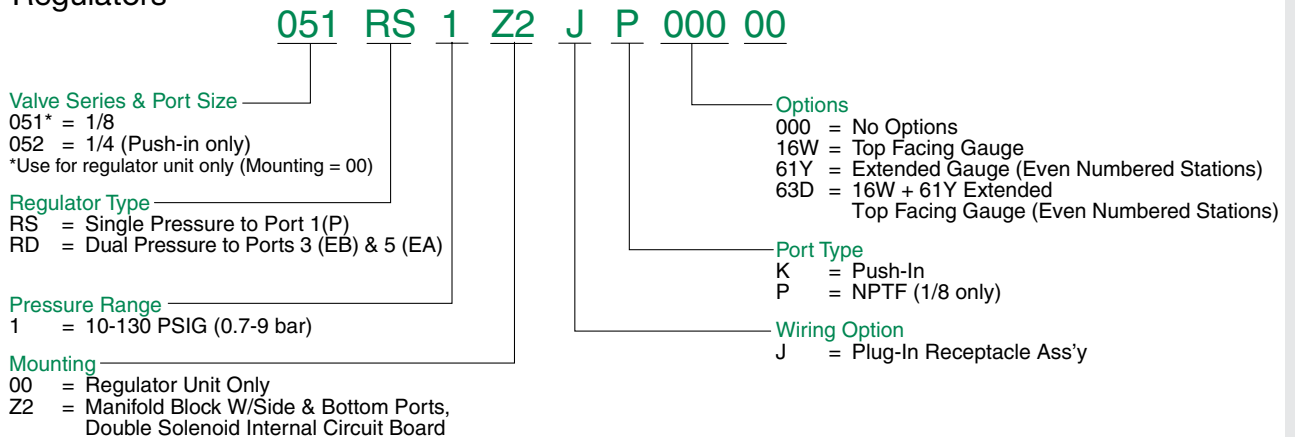


How to Order

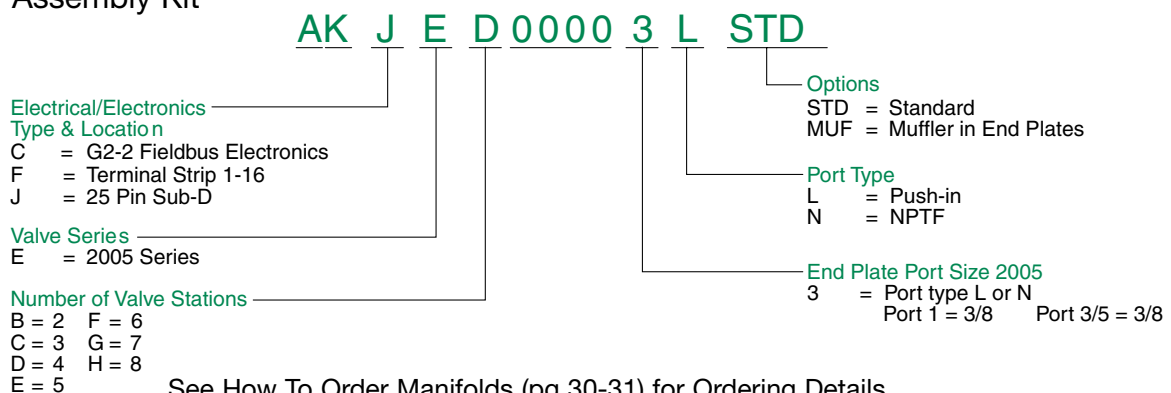
2DAY Valves



2DAY Regulators



3DAY Assembly Kit



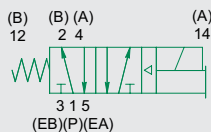
For detailed dimensional information and technical specifications, please visit www.numatics.com



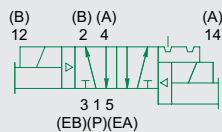
2012 Series



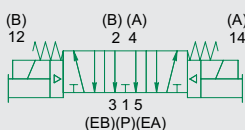
single solenoid air pilot
2 position 4-way



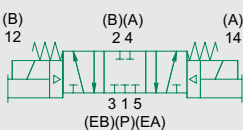
double solenoid air pilot
2 position 4-way



double solenoid air pilot
3 position 4-way
open center



double solenoid air pilot
3 position 4-way
closed center



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

- Solenoid air pilot actuated
- Low wattage plug-in – 2.5 watt for DC application
- DC solenoids polarity insensitive with surge suppression
- Plug together circuit boards eliminate internal wiring
- Integral recessed gaskets
- Interchangeable push-in fittings to accommodate various tube sizes
- Simple conversion from internal to external pilot
- Modular plug-together Fieldbus electronics
- NEMA 4/IP65



Technical Data

VALVE DATA	ENGLISH	METRIC
Cv	1.20	1.20
Flow Capacity	56 SCFM @ 80 PSIG upstream pressure to atmosphere	1180 NI/m @ 6 bar upstream to 5 bar downstream
Operating Pressure Range	28"Hg Vacuum to 150 PSIG	Vacuum to 10 bar
Pilot Pressure Range	26 to 120 PSIG	1.8 to 8.2 bar
Temperature Range (Ambient)	-10°F to +115°F	-23°C to +46° C

Operating Data

ALL SOLENOIDS ARE CONTINUOUS DUTY RATED		24 VDC	110 - 120 VAC 50/60 Hz.	
Power (Watts)		2.5	4.2	
Holding Current (Amps.)		0.10	0.05	
RESPONSE TIME IN SECONDS	ENERGIZE	DE-ENERGIZE	ENERGIZE	DE-ENERGIZE
2-Position, Single, Spring Return	0.010	0.020	0.010	0.020
2-Position, Double, Detented	0.010	N/A	0.010	N/A
3-Position, Spring Centered	0.010	0.020	0.010	0.020

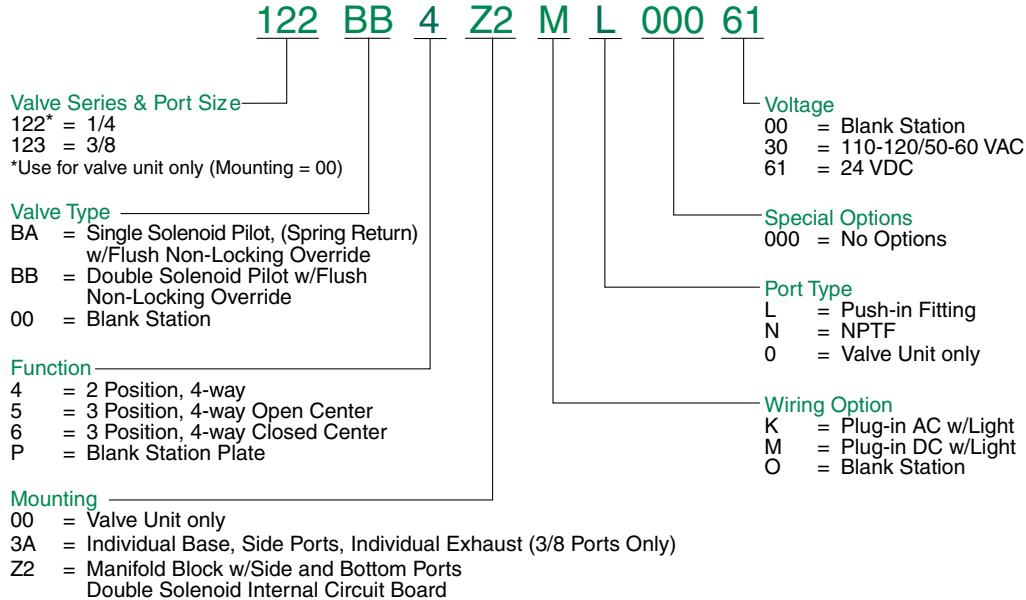
For detailed dimensional information and technical specifications, please visit www.numatics.com

Information subject to change without notice.

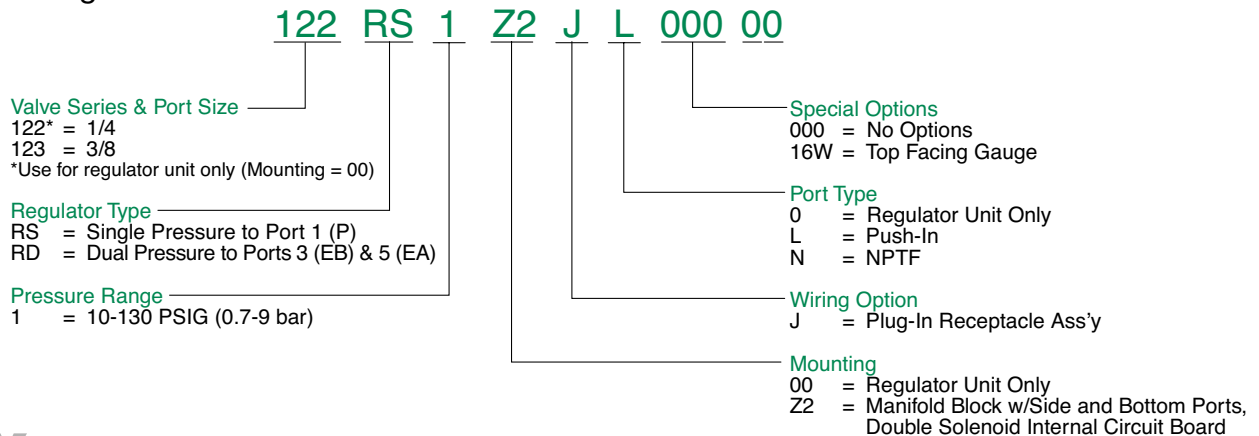


How to Order

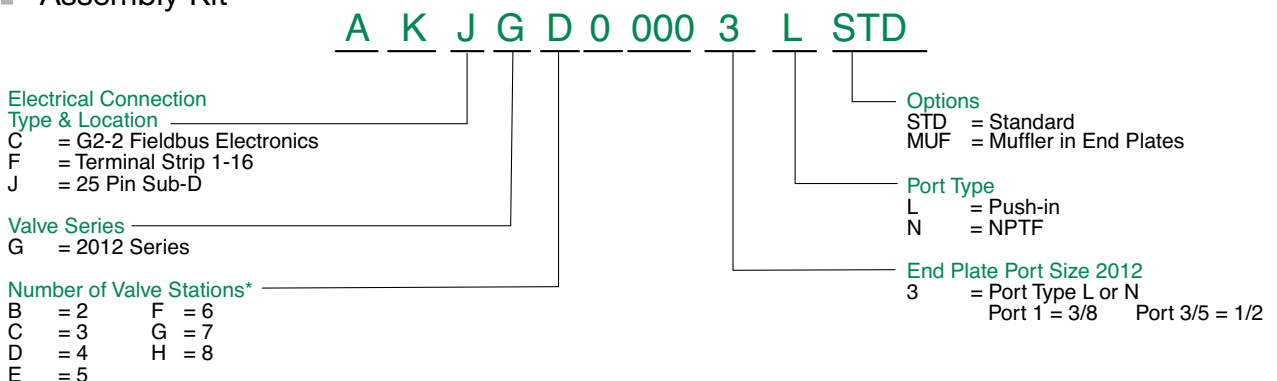
2DAY Valves



2DAY Regulators



3DAY Assembly Kit



See How To Order Manifolds (pg 30-31) for Ordering Details

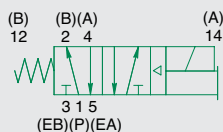
For detailed dimensional information and technical specifications, please visit www.numatics.com



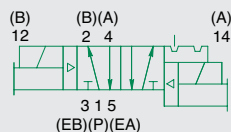
2035 Series



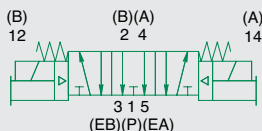
single solenoid air pilot 2 position 4-way



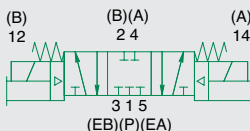
double solenoid air pilot 2 position 4-way



double solenoid air pilot 3 position 4-way open center



double solenoid air pilot 3 position 4-way closed center



5 Ported, 2 and 3 position, 4-way, Spool & Sleeve
Cv: 3.5

- Solenoid air pilot actuated
- Low wattage plug-in - 2.5 watt for DC application
- DC solenoids polarity insensitive with surge suppression
- Plug together circuit boards eliminate internal wiring
- Integral recessed gaskets
- Simple conversion from internal to external pilot supply
- Modular plug-together fieldbus electronics
- Designed to meet NEMA4/IP65
- Manifold connection allows disassembly at any station



Technical Data

VALVE DATA	ENGLISH	METRIC
Cv*	3.5*	3.5*
Flow Capacity	161 SCFM @ 80 PSIG upstream pressure to atmosphere	3500 NI/m @ 6 bar upstream pressure to 5 bar atmosphere
Operating Pressure Range	28" Hg. Vacuum to 145 PSIG	Vacuum to 10 bar
Pilot Pressure Range	26.1 to 120 PSIG	1.8 to 8.2 bar
Temperature Range (Ambient)	-10°F to +115°F	-23°C to +46°C

Operating Data

ALL SOLENOIDS ARE CONTINUOUS DUTY RATED		24 VDC	110-120 VAC / 50/60 Hz.	
Power (Watts)		2.5	4.2	
Holding Current (Amps)		0.10	0.03	
RESPONSE TIME IN SECONDS**	ENERGIZE	DE-ENERGIZE	ENERGIZE	DE-ENERGIZE
2 - Position, Single, Spring Return	.021	.067	.015	.070
2 - Position, Double, Detented	.017	N/A	.015	N/A
3 - Position, Spring Centered	.021	.072	.018	.080

* Valve on 1/2 NPTF Sub-Plate

** Per ISO12238 Standard

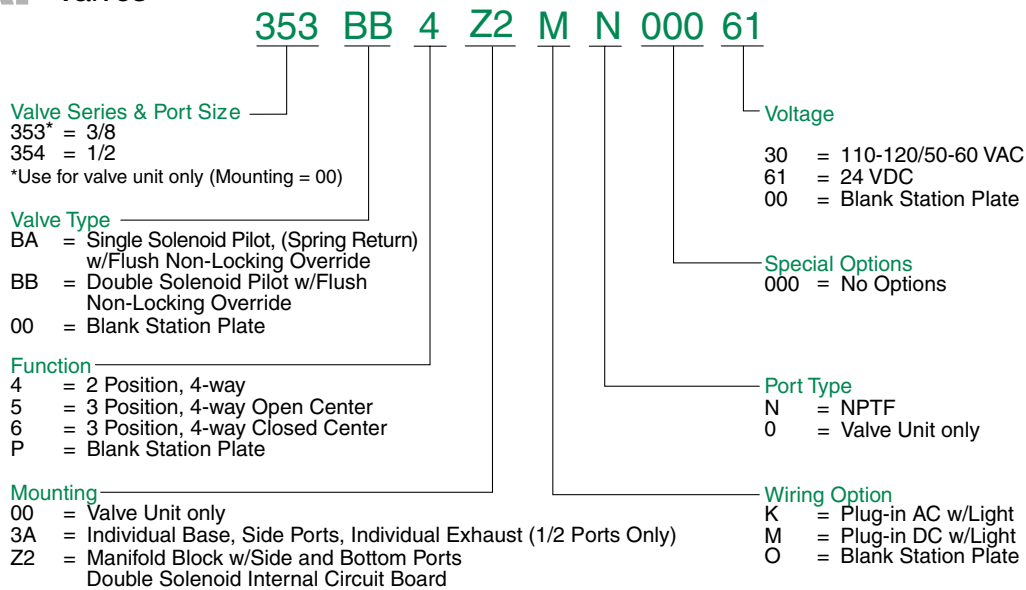
For detailed dimensional information and technical specifications, please visit www.numatics.com

Information subject to change without notice.

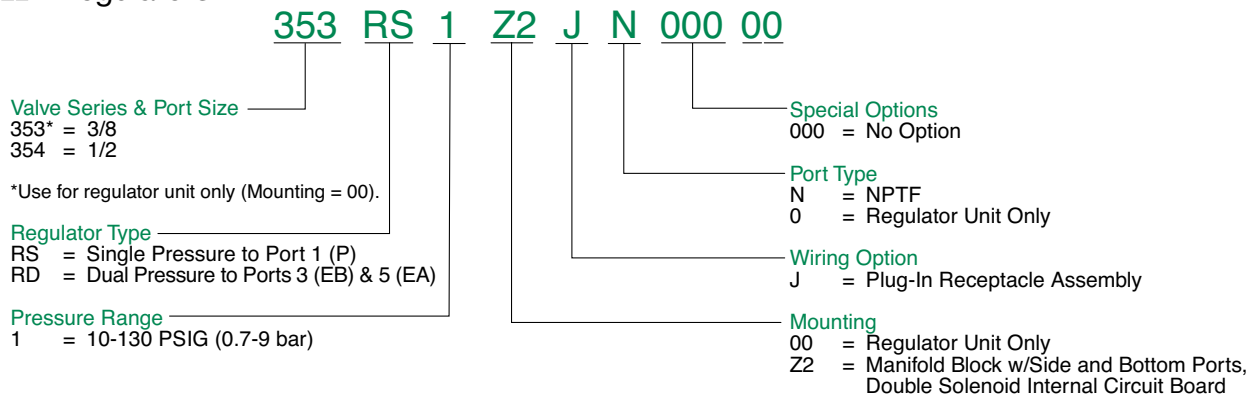


How to Order

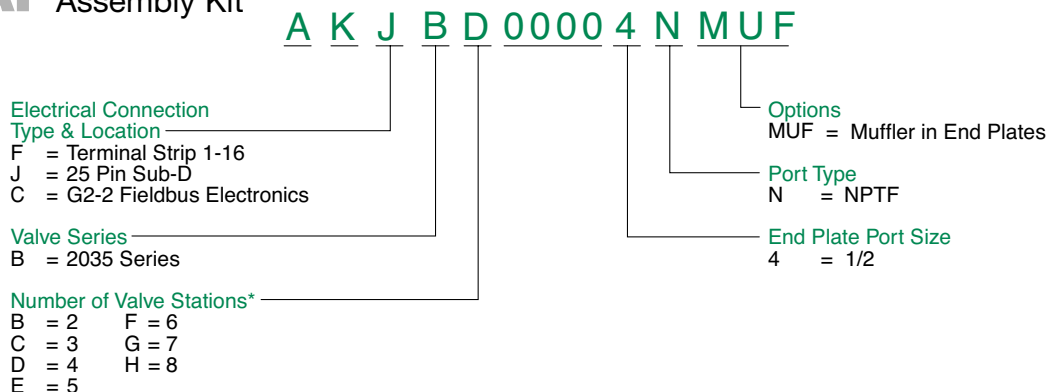
2DAY Valves



2DAY Regulators



3DAY Assembly Kit



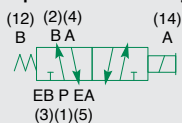
See How To Order Manifolds (pg 30-31) for Ordering Details

For detailed dimensional information and technical specifications, please visit www.numatics.com

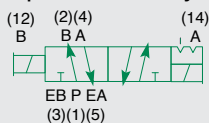


Mark 3 Series

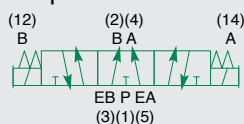
single solenoid 2 position 4-way



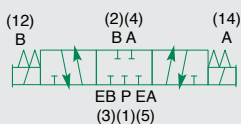
double solenoid 2 position 4-way



double solenoid 3 position 4-way open center



double solenoid 3 position 4-way closed center



5 Ported, 2 and 3 position, 4-way, Spool & Sleeve,
Cv: 0.35

- Direct solenoid actuated
- DIN plug-in solenoid with indicator light
- Unlubricated or lubricated service
- Integral regulators available
- NEMA 4 / IP 65



Technical Data

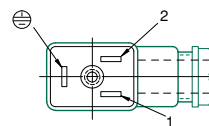
VALVE DATA	ENGLISH		METRIC	
Cv	1/8 NPTF = 0.35	10-32 UNF = 0.18	1/8 = 0.35	M5 = .018
Flow capacity	16.21 SCFM	8.34 SCFM	345 NI/m	177 NI/m
	Upstream pressure to atmosphere @80 PSIG		@ 6 bar upstream/5 bar downstream	
Operating Pressure Range	28" HG. Vacuum to 150 PSIG		Vacuum to 10 Bar	
Temperature Range (ambient)	Direct Solenoid	-10°F to +115°F	-23°C to +46°C	

Operating Data - Mark 3

ALL SOLENOIDS ARE CONTINUOUS DUTY RATED		24 VDC	115 VAC 50 Hz.	120 VAC 60 Hz.
Power (Watts)		6.0	5.5	4.0
Holding Current (Amps.)		0.250	0.063	0.052
Inrush Current (Amps.)		N/A	0.093	0.090
Energize in seconds	2-Position, Single, Spring Return	0.012	0.008	0.008
	2-Position, Double, Detented	0.012	0.008	0.008
	3-Position, Spring Centered	0.012	0.008	0.008
De-energize in seconds	2-Position, Single, Spring Return	0.008	0.012	0.012
	2-Position, Double, Detented	N/A	N/A	N/A
	3-Position, Spring Centered	0.008	0.012	0.012

Plug Connector Assemblies

Per DIN Spec. NO 43650. Accepts cable
diameter 0.240 to 0.310
11mm Industry Standard DIN Form B



Normal Polarity
1 = (+) Positive, High
2 = (-) Negative, Neutral
⊕ = Chassis Ground

PLUG CONNECTOR DESCRIPTION	PART NO.
Grey (14 end solenoid) Plug Assembly	230-363
Black (12 end solenoid) Plug Assembly	230-364
Plug Assembly with 24 V Light	230-365
Plug Assembly with 110 V Light	230-366

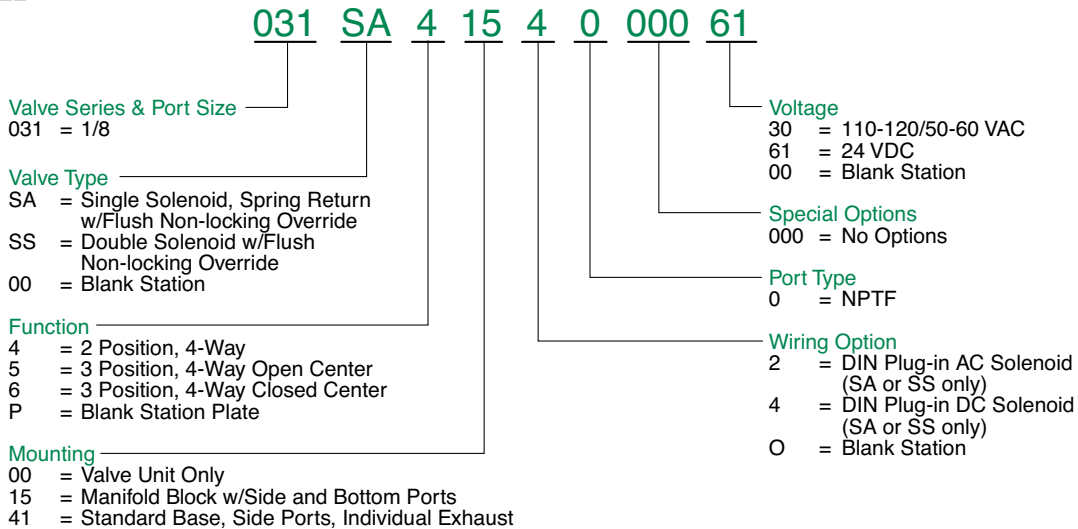
For detailed dimensional information and technical specifications, please visit www.numatics.com

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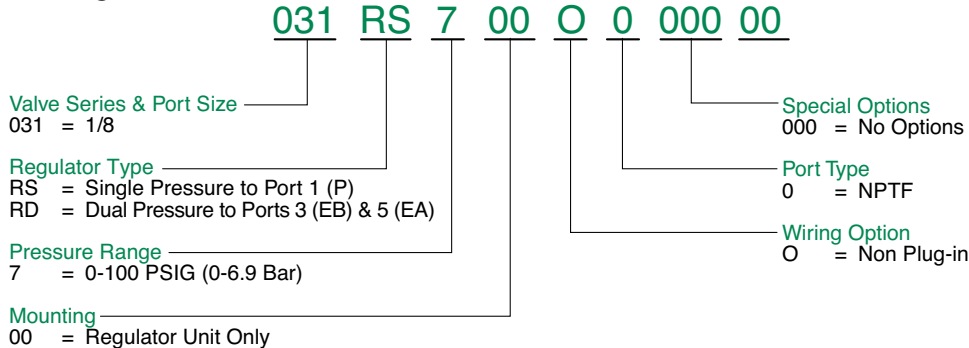


How to Order

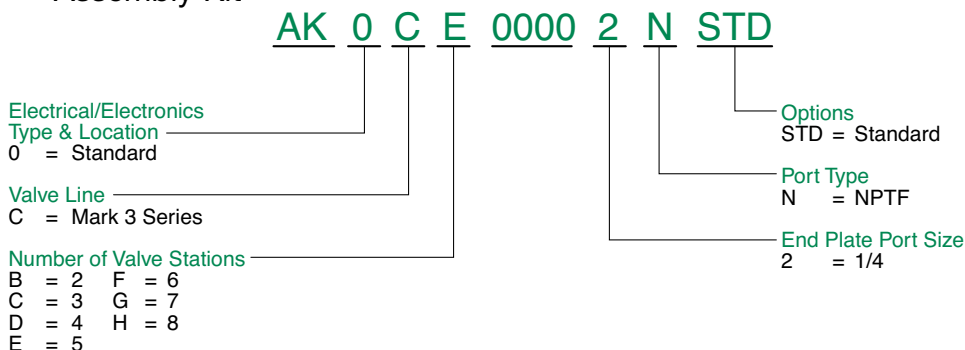
2DAY Valves



2DAY Regulators



3DAY Assembly Kit



See How To Order Manifolds (pg 30-31) for Ordering Details

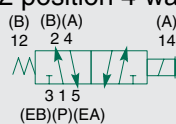
For detailed dimensional information and technical specifications, please visit www.numatics.com



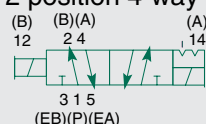
Mark 8 Series



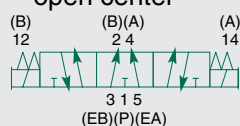
single solenoid 2 position 4-way



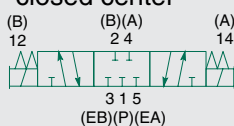
double solenoid 2 position 4-way



double solenoid 3 position 4-way open center



double solenoid 3 position 4-way closed center



5 Ported, 2 and 3 position, 4-way, Spool & Sleeve
Cv: 0.8 - 1.0

- Direct solenoid actuated
- Plug-in solenoid with indicator light
- Unlubricated or lubricated service
- Integral regulators available
- NEMA 4 / IP 65



Technical Data

VALVE DATA	ENGLISH		METRIC	
Cv	1/8 NPTF = 0.80	1/4 NPTF = 1.0	1/8 G Tap = 0.80	1/4 G Tap = 1.0
Flow capacity	37 SCFM Upstream pressure to atmosphere @80 PSIG	46 SCFM	790 NI/m @ 6 bar upstream/5 bar downstream	985 NI/m
Operating Pressure Range	28" Hg. Vacuum to 150 PSIG		Vacuum to 10 Bar	
Temperature Range (ambient)	-10°F to +115°F		-23°C to +46°C	

Operating Data

ALL SOLENOIDS ARE CONTINUOUS DUTY RATED		24 VDC	115 VAC 50 Hz.	120 VAC 60 Hz.
Power (Watts)		6.0	N/A	N/A
Holding Current (Amps.)		0.25	0.15	0.09
Inrush Current (Amps.)		N/A	0.41	0.38
Energize in seconds	2-Position, Single, Spring Return	0.032	0.011	0.011
	2-Position, Double, Detented	0.028	0.012	0.012
	3-Position, Spring Centered	0.028	0.012	0.012
De-energize in seconds	2-Position, Single, Spring Return	0.010	0.011	0.011
	2-Position, Double, Detented	N/A	N/A	N/A
	3-Position, Spring Centered	0.008	0.018	0.018

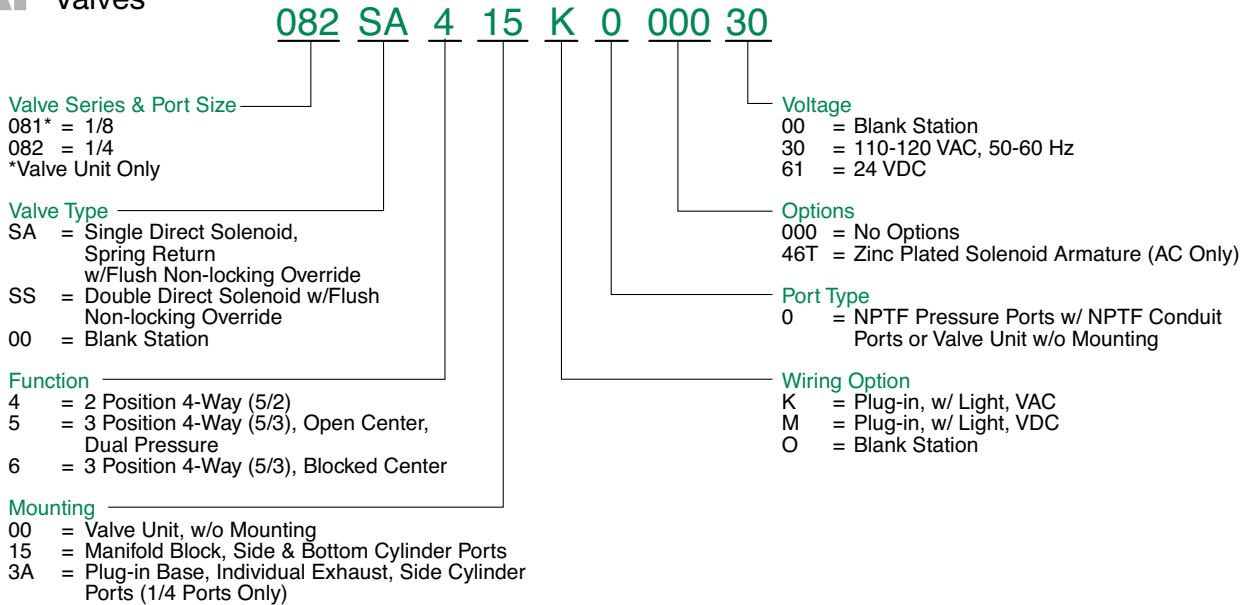
For detailed dimensional information and technical specifications, please visit www.numatics.com

Information subject to change without notice.

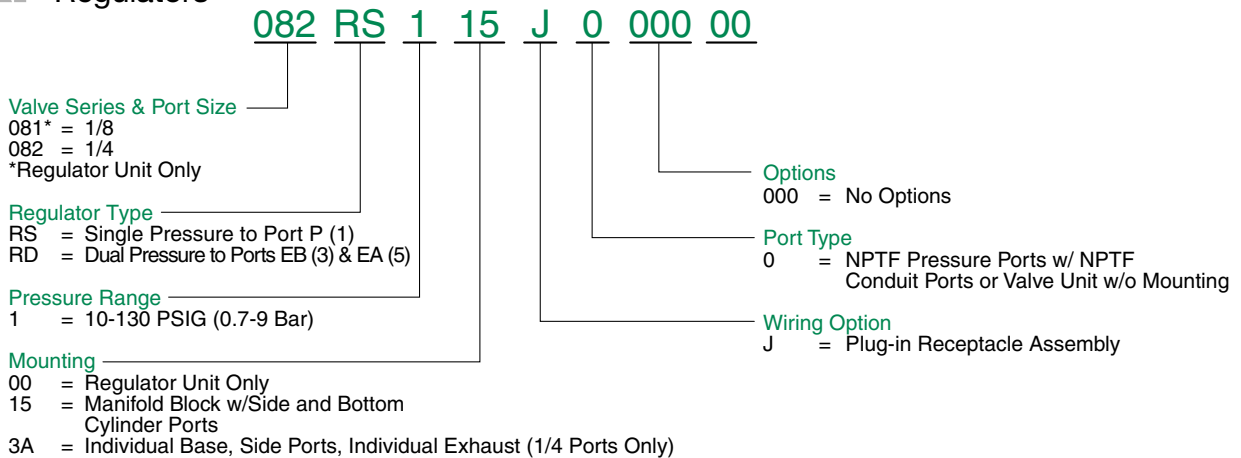


How to Order

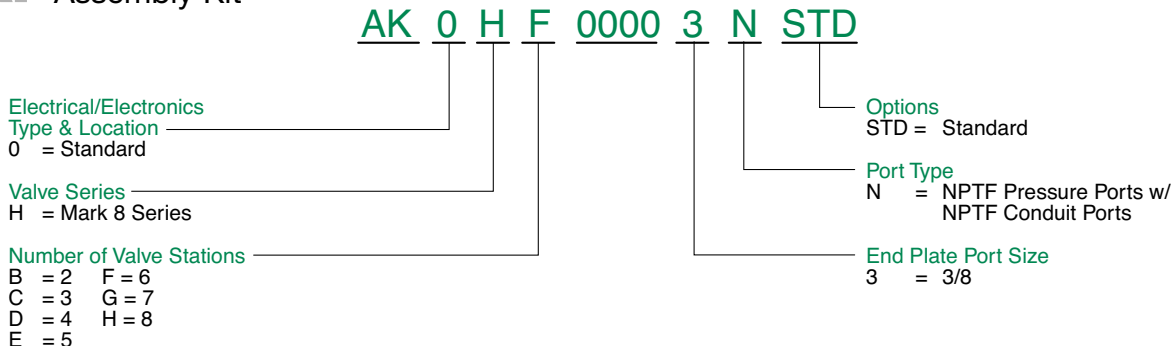
2DAY Valves



2DAY Regulators



3DAY Assembly Kit



See How To Order Manifolds (pg 30-31) for Ordering Details

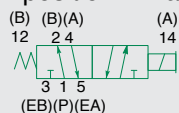
For detailed dimensional information and technical specifications, please visit www.numatics.com



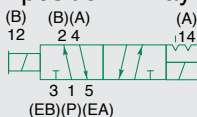
Mark 15 Series



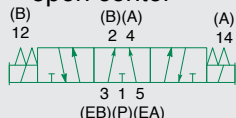
single solenoid 2 position 4-way



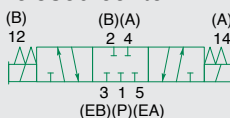
double solenoid 2 position 4-way



double solenoid 3 position 4-way open center



double solenoid 3 position 4-way closed center



5 Ported, 2 and 3 position, 4-way, Spool & Sleeve
Cv: 1.5

- Direct solenoid actuated
- Plug-in solenoid with indicator light
- Unlubricated or lubricated service
- Integral regulators available
- NEMA 4 / IP65
- Body to base plug-in



Technical Data

VALVE DATA	ENGLISH		METRIC MARK 15 ONLY	
Cv	1/4 NPTF = 1.4	3/8 NPTF = 1.5	1/4 G Tap = 1.4	3/8 G Tap = 1.5
Flow Capacity	65 SCFM Upstream pressure to atmosphere @80 PSIG	69 SCFM	1379 NI/m @ 6 bar upstream/5 bar downstream	1477 NI/m
Operating Pressure Range	28" Hg. Vacuum to 150 PSIG		Vacuum to 10 Bar	
Temperature Range (ambient)	-10°F to +115°F		-23°C to +46°C	

Operating Data

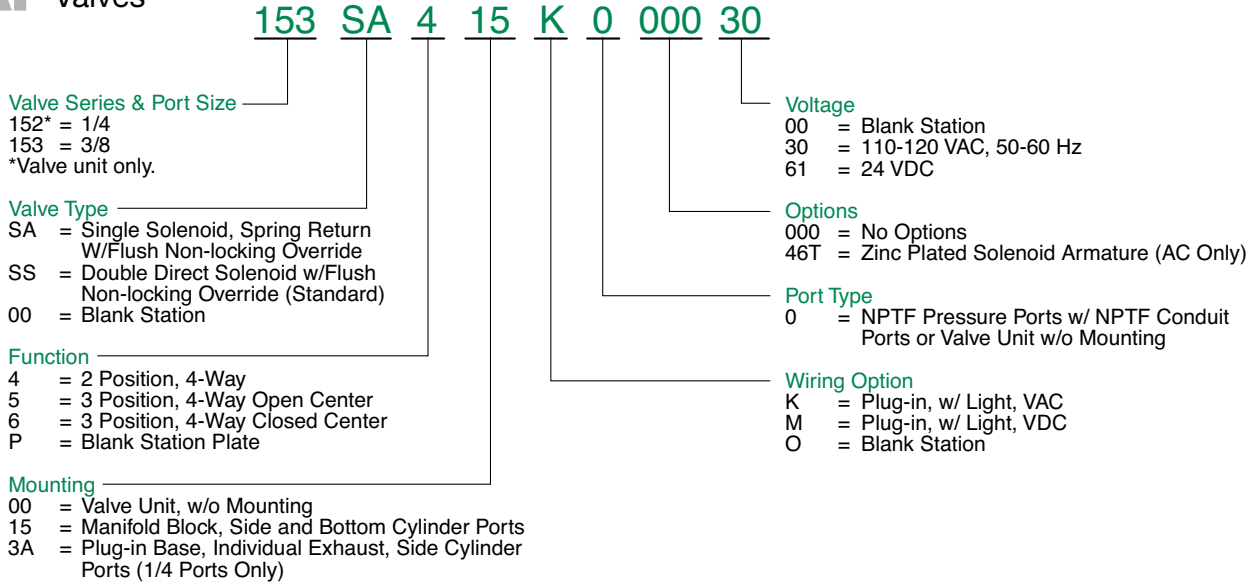
ALL SOLENOIDS ARE CONTINUOUS DUTY RATED		24 VDC	115 VAC 50 Hz.	120 VAC 60 Hz.
Power (Watts)		6.0	N/A	N/A
Holding Current (Amps.)		0.250	0.110	0.090
Inrush Current (Amps.)		N/A	0.630	0.580
Energize in seconds	2-Position, Single, Spring Return	0.034	0.010	0.010
	2-Position, Double, Detented	0.035	0.010	0.010
	3-Position, Spring Centered	0.040	0.010	0.010
	2-Position, Single, Spring Return	0.011	0.015	0.015
De-energize in seconds	2-Position, Double, Detented	N/A	N/A	N/A
	3-Position, Spring Centered	0.010	0.012	0.012

For detailed dimensional information and technical specifications, please visit www.numatics.com

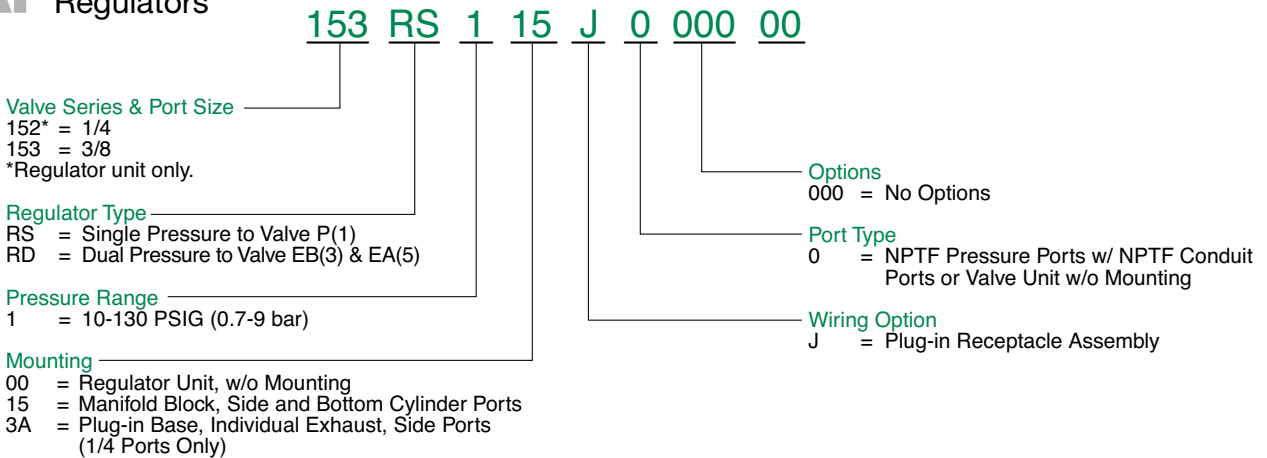


How to Order

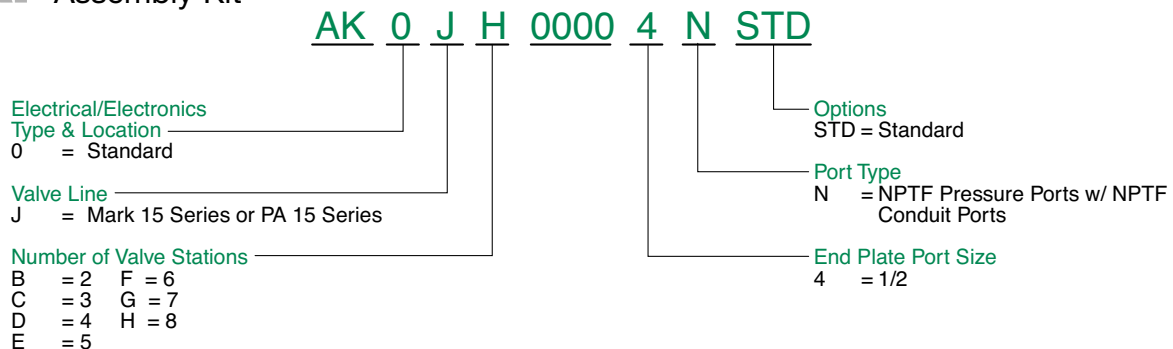
2DAY Valves



2DAY Regulators



3DAY Assembly Kit



See How To Order Manifolds (pg 30-31) for Ordering Details

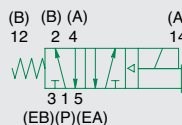
For detailed dimensional information and technical specifications, please visit www.numatics.com



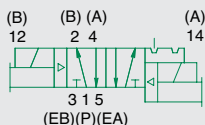
L1 Series



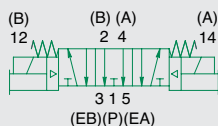
single solenoid pilot 2 position 4-way



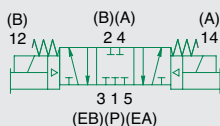
double solenoid pilot 2 position 4-way



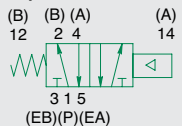
double solenoid pilot 3 position 4-way open center



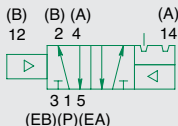
double solenoid pilot 3 position 4-way closed center



single air pilot 2 position 4-way



double air pilot 2 position 4-way

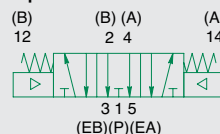


5 Ported, 2 and 3 position, 4-way, Spool & Sleeve
Cv: 1.0

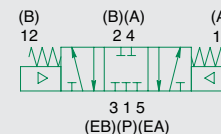
- Solenoid pilot or air pilot actuated
- DIN plug-in solenoid and plug connector with indicator light
- Unlubricated or lubricated service
- In-line or manifold mounted



double air pilot 3 position 4-way open center



double air pilot 3-position 4-way closed center



Technical Data

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	
Temperature Range: Air Pilot (ambient)	-10°F to +150°F		-23°C to +66°C	

Operating Data

ALL SOLENOIDS ARE CONTINUOUS DUTY RATED		24 VDC	115 VAC 50 Hz.	120 VAC 60 Hz.
*Power (Watts)		3.5	4.8	4.0
Holding Current (Amps.)		0.15	0.064	0.054
Inrush Current (Amps.)		N/A	0.087	0.082
Energize in seconds	2-Position, Single, Spring Return	0.010	0.007	0.007
	2-Position, Double, Detented	0.010	0.007	0.007
	3-Position, Spring Centered	0.010	0.007	0.007
De-energize in seconds	2-Position, Single, Spring Return	0.035	0.035	0.035
	2-Position, Double, Detented	N/A	N/A	N/A
	3-Position, Spring Centered	0.035	0.035	0.035

*A 1.4 Watt DC solenoid is available.
Add "17G" to the model number.

EXAMPLE: L12BA400B017G61.

Maximum pilot pressure is reduced to 116 PSIG (8 bar).

For detailed dimensional information and technical specifications, please visit www.numatics.com



How to Order

2DAY Valves

L12 PA 4 52 O 0 000 00

Valve Series & Port Size
 L11 = 1/8
 L12 = 1/4

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

Mounting
 52 = Line Mounted

Voltage
 30 = 110-120/50-60 VAC
 61 = 24 VDC
 00 = N/A (Used with Air Pilot)

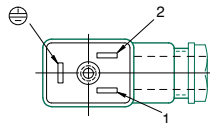
Options
 000 = No Options
 17G = Low Watt Solenoid 1.42 Watt

Port Type
 0 = NPTF

Wiring Option
 B = DIN Plug-In DC Solenoid
 O = DIN Plug-In AC Solenoid or Air Pilot

Plug Connector Assemblies

Per DIN Spec. NO 43650. Accepts cable diameter 0.240 to 0.310
 11mm Industry Standard DIN Form B



Normal Polarity
 1 = (+) Positive, High
 2 = (-) Negative, Neutral
 ⊕ = Chassis Ground

PLUG CONNECTOR DESCRIPTION	PART NO.
Grey (14 end solenoid) Plug Assembly	230-363
Black (12 end solenoid) Plug Assembly	230-364
Plug Assembly with 24 V Light	230-365
Plug Assembly with 110 V Light	230-366

3DAY Assembly Kit

AK 0 2 D 0000 2 N STD

Electrical/Electronics Type & Location
 0 = Standard

Valve Line
 2 = L1 Series

Number of Valve Stations
 B = 2
 D = 4
 F = 6
 H = 8

Options
 STD = Used with Line Mounted Valves, Includes Adaptor Kits (valve mounting = 52)

Port Type
 N = NPTF

End Plate Port Size
 2 = 1/4

Example order:

Assembly Kit: AK02D00002NSTD
 Station 1: L12BB552O0000030
 Station 2: L12BA452O0000030
 Station 3: L12PP452O0000000
 Station 4: L12PA452O0000000
 ASSEMBLED

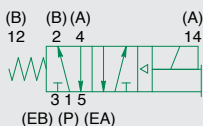
For detailed dimensional information and technical specifications, please visit www.numatics.com



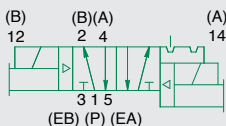
L2 Series



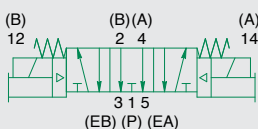
single solenoid 2 position 4-way



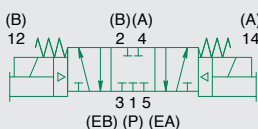
double solenoid pilot 2 position 4-way



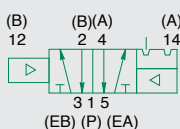
double solenoid pilot 3 position 4-way open center



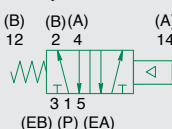
double solenoid pilot 3 position 4-way closed center



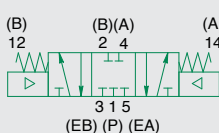
single air pilot 2 position 4-way no override



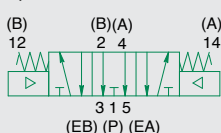
single air pilot 2 position 4-way no override



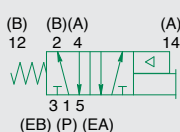
double air pilot 3 position 4-way closed center no override



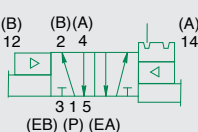
double air pilot 3 position 4-way open center no override



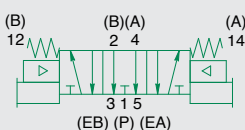
single air pilot 2 position 4-way w/override



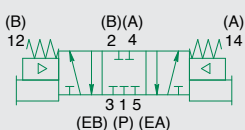
double air pilot 2 position 4-way w/override



double air pilot 3 position 4-way open center w/override



double air pilot 3 position 4-way closed center w/override

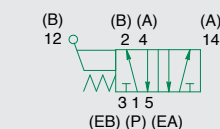


5 Ported, 2 and 3 position, 4-way, Spool & Sleeve
Cv: 1.7

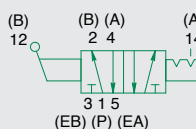
- Solenoid pilot or air pilot actuated
- Hand-lever valves available
- DIN plug-in solenoid and plug connector with indicator light
- Unlubricated or lubricated service
- In-line or manifold mounted



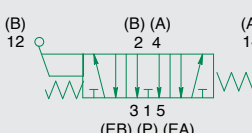
hand lever 2 position 4-way w/spring return



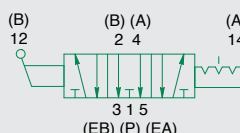
hand lever 2 position 4-way w/detent



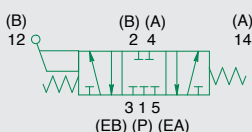
hand lever 3 position 4-way open center w/spring center



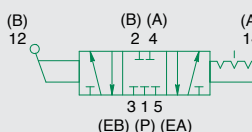
hand lever 3 position 4-way open center w/detent



hand lever 3 position 4-way closed center w/spring center



hand lever 3 position 4-way closed center w/detent



Technical Data

VALVE DATA	ENGLISH		METRIC	
Cv	1/4 = 1.7	3/8 = 1.7	1/4 = 1.7	3/8 = 1.7
Flow capacity	79 SCFM @ 80 PSIG upstream pressure to atmosphere		1674 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	
Temperature Range: Air Pilot (ambient)	-10°F to +150°F		-23°C to +66°C	

For detailed dimensional information and technical specifications, please visit www.numatics.com



Operating Data

ALL SOLENOIDS ARE CONTINUOUS DUTY RATED		24 VDC	115 VAC 50 Hz.	120 VAC 60 Hz.
Power (Watts)*		3.5	4.8	4.0
Holding Current (Amps.)		0.15	0.064	0.054
Inrush Current (Amps.)		N/A	0.087	0.082
Energize in seconds	2-Position, Single, Spring Return	0.010	0.007	0.007
	2-Position, Double, Detented	0.010	0.007	0.007
	3-Position, Spring Centered	0.010	0.007	0.007
De-energize in seconds	2-Position, Single, Spring Return	0.035	0.035	0.035
	2-Position, Double, Detented	N/A	N/A	N/A
	3-Position, Spring Centered	0.035	0.035	0.035

*A 1.4 Watt DC solenoid is available.

Add "17G" to the model number.

EXAMPLE: L22BA452B017G61.

Maximum pilot pressure is reduced to 116 PSIG (8 bar).

How to Order

2DAY Valves

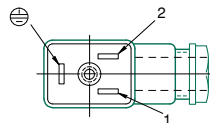
L22 JA 4 52 O 0 000 00

- Valve Series & Port Size**
L22 = 1/4
L23 = 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 Cap w/Spring Return
PP = Double Air Pilot Cap
JA = Single Air Pilot w/Flush Non-locking Override and Spring Return
JJ = Double Air Pilot w/Flush Non-locking Override
LA = Hand Lever w/Spring Return
LD = Hand Lever w/Detent
- Function**
4 = 2 Position, 4-Way
5 = 3 Position, 4-Way Open Center
6 = 3 Position, 4-Way Closed Center
- Mounting**
52 = Line Mounted
- Options**
000 = No Options
17G = Low Watt Solenoid – 1.42 Watt
- Port Type**
0 = NPTF
- Wiring Option**
B = DIN Plug-in DC Solenoid
O = DIN Plug-in AC Solenoid or Air Pilot or Handlever
- Voltage**
30 = 110-120/50-60 VAC
61 = 24 VDC
00 = N/A (Use With Air Pilot or Hand Lever)

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

Plug Connector Assemblies

Per DIN Spec. NO 43650. Accepts cable diameter 0.240 to 0.310
11mm Industry Standard DIN Form B



Normal Polarity
1 = (+) Positive, High
2 = (-) Negative, Neutral
⊖ = Chassis Ground

PLUG CONNECTOR DESCRIPTION	PART NO.
Grey (14 end solenoid) Plug Assembly	230-363
Black (12 end solenoid) Plug Assembly	230-364
Plug Assembly with 24 V Light	230-365
Plug Assembly with 110 V Light	230-366

3DAY Assembly Kit

AK 0 3 D 0000 3 N STD

- Electrical/Electronics Type & Location**
0 = Standard
- Valve Line**
3 = L2 Series
- Number of Valve Stations**
B = 2 F = 6
D = 4 H = 8
- Options**
STD = Standard (Common Supply and Exhaust)
- Port Type**
N = NPTF
- End Plate Port Size**
3 = 3/8

For detailed dimensional information and technical specifications, please visit www.numatics.com



3DAY Manifold Assembly

AKJ 25 Pin Sub-D

- Shaded components described by Assembly Kit (AK) model number designation (**See Valve Series Order Charts**).
- Each valve manifold station is listed in sequential order from left to right when facing the port side of the manifold as indicated.

Example order: (2005)

25 Pin Sub-D

valve station 1

valve station 2

valve station 3

valve station 4

AKJED00003NDWM

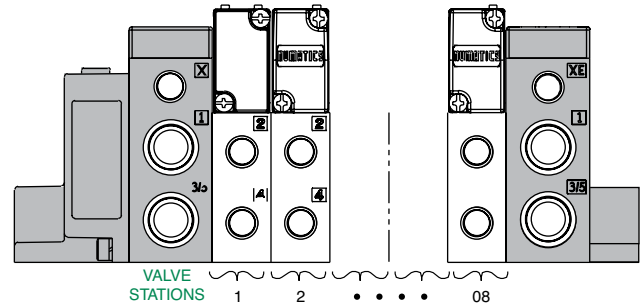
051BA4Z2MN00061

051BA4Z2MN00061

051BB4Z2MN00061

051BB5Z2MN00061

ASSEMBLED



AKF 1-16 Terminal Strip

- Ordered using the same method as Sub-D:

Example order: (2005)

valve station 1

valve station 2

valve station 3

valve station 4

valve station 5

valve station 6

AKFEF00003LDWM

052BA4Z2ML00061

052BA4Z2ML00061

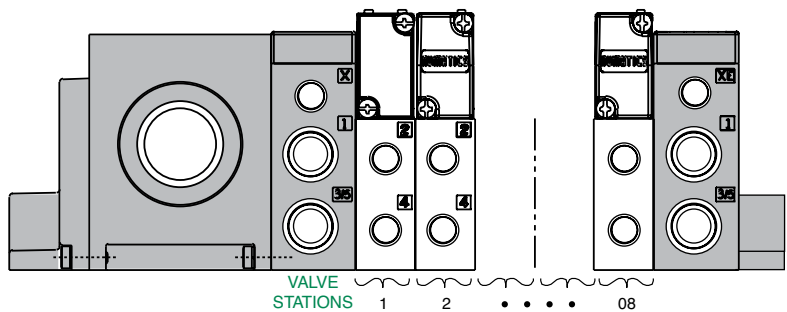
052BB4Z2ML00061

052BB4Z2ML00061

052BB5Z2ML00061

052BB6Z2ML00061

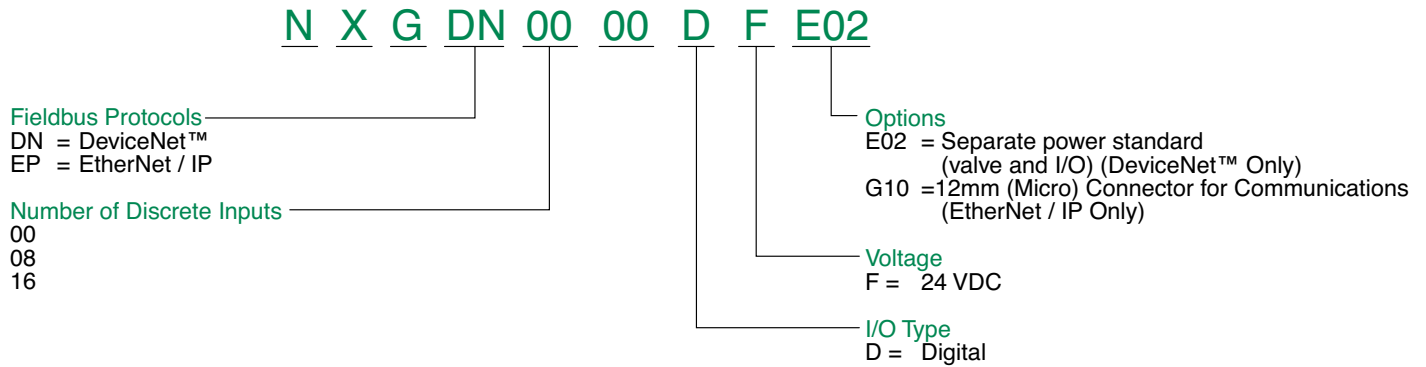
ASSEMBLED





How to Order

3DAY Assembly Kit



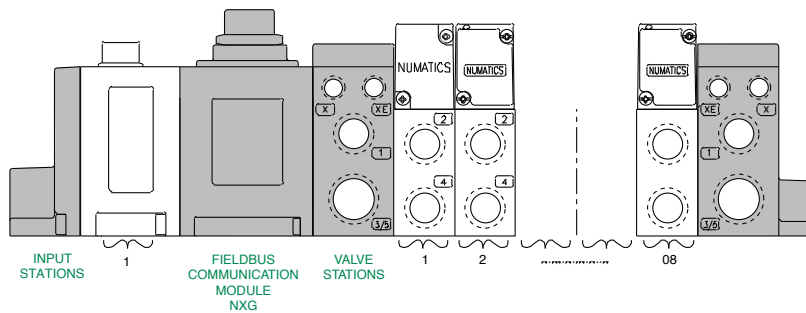
Digital Input with SCP Module Kit 8/16

- These short circuit protected (SCP) I/O modules offer enhanced diagnostics. Sensor and/or cable short circuit conditions are detected and source power to sensor device is disabled while a visual diagnostic created.

	8 INPUTS	16 INPUTS
Sourcing (PNP)	240-131	239-2500

When Ordering:

AKC Manifold Assembly Kit with G2-2 Fieldbus Electronics
 2005, 2012 & 2035 Series



- Shaded components described by Assembly Kit (AK) model number designation, with the exception of the communication module are described by Electronic Interface (NXG) model number designation.
- Each valve manifold station is listed in sequential order from left to right when facing the port side of the manifold as indicated.
- Input station listed as indicated.

Example Order: (2005)

valve station 1
 valve station 2
 valve station 3
 valve station 4
 valve station 5
 valve station 6
 valve station 7
 valve station 8

Input Station

AKCEH00003NDWM
 051BB4Z2MN00061
 051BB4Z2MN00061
 051BB4Z2MN00061
 051BB4Z2MN00061
 051BB4Z2MN00061
 051BB4Z2MN00061
 051BB4Z2MN00061
 051BB4Z2MN00061
 051BB4Z2MN00061
 NXGD16000DFE02
 239-2500
 ASSEMBLED

For detailed dimensional information and technical specifications, please visit www.numatics.com



A Series NFPA Interchangeable



The **A Series** is an aluminum NFPA Interchangeable cylinder line that is designed and built to excel in the most demanding applications. The A Series encompasses many value-added features such as an extra long graphite filled cast iron rod bushing and a standard oversized wear band that is located on the rear of the piston. Additionally, the A Series includes the well-proven "T Seal" piston seal configuration made from carboxilated nitrile with self-lubricating Teflon® compound. These are just a sample of the features that make the A Series the *Superior* NFPA Interchangeable air cylinder line.



Tube

The **tube** is hard coat anodized. The hard coating is an electro-chemical process, which produces a very dense surface of aluminum oxide. This surface has extreme hardness (60 Rc), excellent wear and corrosion resistance, and a low coefficient of friction.

End Caps

The **end caps** are accurately machined from (6061-T6) solid aluminum bar stock. They are anodized for corrosion resistance. Additionally, a recess on the piston-mating surface (at both ends) enables the air to work on a larger piston area for effortless breakaway.

Rod Bushing

The A Series includes a graphite filled, cast iron **rod bushing** that is extra long in length. Graphite filled offers the best bearing surface when using a hard chrome plated steel piston rod. Cast iron provides maximum resistance against wear. The added length adds superior alignment and support of the piston rod as well as provides maximum load bearing support.

Rod Seal

The carboxilated nitrile with Teflon® compound **rod seal** is self-lubricating and durable. The rounded lip design ensures proper sealing and long life.

Rod Wiper

The standard **rod wiper** construction is a highly durable polyurethane.

Piston Rod

High strength steel (100,000 psi minimum yield) **piston rod** has a ground, polished, and chrome plated surface. This surface provides maximum life for both the rod bushing and the seals.

Bushing Retainer

The **bushing retainer** allows cartridge removal (cylinder repair) without complete disassembly.

Tie Rods

The **tie rods** are 100,000 psi minimum yield steel for maximum holding power. The threads are roll formed for superior strength and engagement.

Piston Seal

The **piston seal** is a carboxilated nitrile with Teflon® compound making it self-lubricating. The "T" seal with back-up ring construction prevents rolling and seals at all pressures.

Wear Band

The **wear band** is a stable, lubricating strip located on the piston. We separated the load bearing points by locating the wear band at the rear of the piston. This maximizes column strength at full extension.



Piston

The solid aluminum alloy **piston** is strong and durable.

Cushion Seal

The floating **cushion seal** design enables rapid stroke reversal by providing instantaneous full flow to the piston. Each cushion has a flush, retained adjustment needle.

Tube End Seal

The **tube end seals** are compression type and reusable.

Ports

Our enhanced **port** design enables the cylinder to work more efficiently. Through the use of precise machining depths and tool shape, we are able to smooth the flow path into and out of the cylinder.

Teflon® is a registered trademark of DuPont™.

Standard Specifications:

- Meets NFPA specifications
- Bore sizes from 1-1/2" through 6"
(8" through 14" available, but Express Program does not apply)
- Piston rod diameters from 5/8" to 1-3/4"
- Nominal pressure rating is 250 psi air
- Standard temperature -10°F to 165°F (-23°C to 74°C)
- NPTF ports
- Flexible port and cushion location
- Multitude of mounting options

For detailed dimensional information and technical specifications, please visit www.numatics.com



How to Order

2DAY

P1 A L - 04 A 1 D - C AA 0

Mount

F1 = Front Flange
F2 = Rear Flange
P1 = Fixed Clevis
P2 = Detachable Clevis
P3 = Fixed Eye
P4 = Detachable Eye
S1 = Angle Mount
S2 = Side Lug Mount
S4 = Bottom Tap
SN = Sleeve Nut
X0 = Basic No Mount
X1 = Extended Tie Rods Both Ends
X2 = Extended Tie Rod Cap
X3 = Extended Tie Rod Head

Type

A = A Series
NFPA Interchangeable

Bore

K = 1-1/2" R = 4"
L = 2" T = 5"
M = 2-1/2" U = 6"
P = 3-1/4"

Full Inches of Stroke

00 = 0" Stroke
01 = 1" Stroke
02 = 2" Stroke
03 = 3" Stroke
24" Max. for Fast Ship Program.

Fractional Inches of Stroke

A = 0" I = 1/2"
B = 1/16" J = 9/16"
C = 1/8" K = 5/8"
D = 3/16" L = 11/16"
E = 1/4" M = 3/4"
F = 5/16" N = 13/16"
G = 3/8" O = 7/8"
H = 7/16" P = 15/16"

Rod Code

1 = Style #1 Standard Rod Diameter
2 = Style #2 Standard Rod Diameter
3 = Style #3 Standard Rod Diameter
6 = Style #1 Oversize Rod Diameter
7 = Style #2 Oversize Rod Diameter
8 = Style #3 Oversize Rod Diameter

Magnet

0 = No Magnet
2 = Reed Magnet

Options

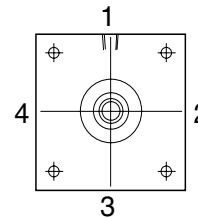
AA = No Options
LB = Low Breakaway Seals
VA = Viton Seals
1A* = Rod Extension
2A* = Thread Extension
12* = Rod and Thread Extension
3A = Studded Rod End
* Specify length.

Cushions

Position	1	2	3	4	Fixed
No Cushion	A	A	A	A	A
Head and Cap	B	C	D	E	Y
Head Only	F	G	H	J	W
Cap Only	K	L	M	N	V

Ports

Position	1/8"	1/4"	3/8"	1/2"	3/4"
1	B	C	D	E	F
2	H	I	J	K	L
3	N	O	P	Q	R
4	T	U	V	W	X



Cylinder Orientation

Ports are normally located in position 1.
Cushions are normally located in position 2.

Rod Diameters by Bore Size

Bore	Standard Dia.
1-1/2"	0.625
2"	0.625
2-1/2"	0.625
3-1/4"	1.000
4"	1.000
5"	1.000
6"	1.375

Rod End Styles, Diameters and Threads

Diameter	Style #1 Standard Male	Style #2 Optional Male	Style #3 Optional Female
0.625	7/16-20	1/2-20	7/16-20
1.000	3/4-16	7/8-14	3/4-16
1.375	1-14	1 1/4-12	1-14
1.750	1 1/4-12	1 1/2-12	1 1/4-12

*Switches and Cylinder Mounting Accessories available to ship with cylinders.

For detailed dimensional information and technical specifications, please visit www.numatics.com



M Series Round Line



The **M Series** is a stainless steel body air cylinder line that is the perfect solution for tight design budgets. This cylinder is reliable and is designed and built to maximize performance. It will exceed all of your light-duty cylinder application requirements. The M Series comes standard with a multitude of value-added features such as stainless steel piston rods, roll-formed threads at both ends of the piston rod, and pre-lubed for non-lube added service. These are just a sample of things that make the M Series the **Superior Interchangeable** round body air cylinder line.



Piston Rod

The type 303 stainless steel **piston rod** is ground, polished, and roller burnished for a mirror finish to ensure corrosion-free longevity.

Rod Thread

Roll-formed **rod threads** (at both ends) ensure a durable customer-end connection as well as piston to rod connection.

Rod Bushing

Oil impregnated sintered bronze **rod bushing** provides excellent wear resistance and anti-friction qualities for smooth operation and long life.

End Caps

The **end caps** are made from a high strength aluminum alloy.

Ports

Unrestricted (full-flow) **ports** in conjunction with **rectangular slots** on the piston-mating surface (at both ends) enable the air to work on a larger piston area for effortless breakaway (even at low pressures).

Tube

The type 304 stainless steel **tube**, drawn and polished to a micro-inch finish on the I.D., enables low friction and longevity.

Crimp

The cylinder body is attached to the end caps using innovative assembly equipment that ensures a consistent and reliable double rolled-in **crimp**.

Piston

High strength aluminum alloy **piston** with blow-by flats (double acting only) ensure proper and rapid seal inflation. Piston rod connections are threaded (roll-formed threads), sealed with Loctite Threadlocker®, torqued, and staked for a solid, leak-proof connection.

Piston Seals

Low friction Buna N "U" cup **pistons seals** (optional low and high temperature seals) are wear compensating for millions of maintenance free cycles.

Magnet

Magnetic band position indication is optional in 9/16" – 3" bore sizes. The **magnet** does not affect the overall length of the cylinder 3/4" – 3" (bore sizes - double acting only) but does add .250" to the overall length of the 9/16" bore cylinders.

Rod Seal

The low friction Buna N "U" cup **rod seal** (optional low and high temperature seals) is wear compensating to ensure longevity.

Pre-Lubricated

Pre-lubricated with our specially formulated oil based compound for extensive maintenance free performance.

Threadlocker® is a registered trademark to the Loctite Corporation.



Standard Specifications:

- 303 stainless steel piston rods are standard
- 304 stainless steel cylinder tube
- Aluminum head and caps
- Nominal pressure rating is 250 psi air
- Twelve bore sizes – 5/16" – 3"
- Standard temperature -10°F to +165°F
- Single and double acting

Optional Specifications:

- Magnetic pistons
- Delrin® end caps
- Double rods
- High and low temperature seals
- Rod wipers

Delrin® is a registered trade mark of Dupont. For detailed information regarding the properties of Delrin, please call 1-800-441-0573.

For detailed dimensional information and technical specifications, please visit www.numatics.com



How to Order



1500 D01-02 A-01-1A01A

Bore Size

0313 = 5/16"
0438 = 7/16"
0563 = 9/16"
0750 = 3/4"
0875 = 7/8"
1062 = 1-1/16"
1250 = 1-1/4"
1500 = 1-1/2"
1750 = 1-3/4"
2000 = 2"
2500 = 2-1/2"
3000 = 3"

Mounting Style

S01 = Single Acting Spring Return Nose Mount
S02 = Single Acting Spring Return Rear Pivot
R01 = Single Acting Spring Extend Nose Mount
R02 = Single Acting Spring Extend Rear Pivot
N01 = Single Acting Spring Return Non-Rotating Nose Mount
N02 = Single Acting Spring Return Non-Rotating Rear Pivot
D01 = Double Acting Nose Mount
D02 = Double Acting Rear Pivot
D03 = Double Acting Through Rod
D04 = Double Acting Double Nose
D05 = Double Acting Front Block
D13 = Interchange Option for 1-1/16" Bore Double Acting, Through Rod
DH3 = Double Acting Through Rod Hollow Rod
D06 = Double Acting Trunnion Mount
DL1 = Double Acting Nose Mount 2" Bore, 1" Rod
DL2 = Double Acting Rear Pivot 2" Bore, 1" Rod
DC1 = Double Acting Delrin Nose Mount
DC2 = Double Acting Delrin Rear Pivot
DC3 = Double Acting Delrin Through Rod
V01 = Nose Mount Volume Chamber
V02 = Rear Pivot Mount Volume Chamber
DM1 = Nose Mount MRS Interchange
DM2 = Rear Pivot Mount MRS Interchange

Rod and/or Thread Extension

Note: Leave blank if rod and/or thread extension is not required.

1A = Rod Extension (must specify extension)
Example: 1A01A (full and fractional length)
2A = Thread Extension (must specify extension)
Example: 2A01A (full and fractional length)
RT = Rod and Thread Extension (must specify extension)
Example: RT01A01A (full and fractional length)

Note: When applying the RT option, rod extension length must be specified first and the thread extension length must be specified last.

Options

00 = No Options (or leave blank)
01 = Bumpers*
02 = Viton Seals
03 = Magnet**
04 = Bumpers with Magnet*
05 = Pivot Bushing***
06 = Pivot Bushing with Bumpers*
07 = Pivot Bushing with Viton Seals
08 = Pivot Bushing with Magnet*
09 = Pivot Bushing with Bumper and Magnet*
20 = Port Rotated with No Options
30 = Rod Wiper with No Options
31 = Rod Wiper with Bumpers
32* = Rod Wiper with Viton® Seals
33 = Rod Wiper with Magnet
34 = Rod Wiper with Bumpers and Magnet
35 = Rod Wiper with Pivot Bushing
36 = Rod Wiper with Bumpers and Pivot Bushing
37 = Rod Wiper with Viton® Seals and Pivot Bushing
38 = Rod Wiper with Magnet and Pivot Bushing
39 = Rod Wiper with Bumpers, Magnet and Pivot Bushing

Available with these mounting styles:
D02, S02, R02, N02

Rod Wiper option available
on 3/4" Bore and Up.
Not available with these mount
styles: S01, S02, N01, N02

Does Not Include Multi-Position, Hole Punch, etc.

Fractional Inch Stroke

A = 0" Stroke
B = 1/16" Stroke
C = 1/8" Stroke
D = 3/16" Stroke
E = 1/4" Stroke
F = 5/16" Stroke
G = 3/8" Stroke
H = 7/16" Stroke
I = 1/2" Stroke
J = 9/16" Stroke
K = 5/8" Stroke
L = 11/16" Stroke
M = 3/4" Stroke
N = 13/16" Stroke
O = 7/8" Stroke
P = 15/16" Stroke

Full Inch Stroke

00 = 0" Stroke
01 = 1" Stroke
02 = 2" Stroke
03 = 3" Stroke

32 = 32" Stroke (maximum)

* Bumpers available on 9/16" through 3" Bore Cylinders. See length adder charts on next page for more information. (N/A on DG1 and DG2 types).

** Magnet available on 9/16" Bore. See length adder charts on next page for more information.

*** Pivot Bushing standard on 5/16", 9/16", 2", 2-21/2", and 3" bore sizes.
Optional on all other Rear Pivot cylinders.

*Switches and Cylinder Mounting Accessories available to ship with cylinders.

For detailed dimensional information and technical specifications, please visit www.numatics.com



SH Series



The **SH Series** is a robust linear pneumatic slide that is designed to excel in the most strenuous applications. The SH Series encompasses a multitude of desirable features, i.e., adjustable shaft collars, alignment coupler, and *NuMate*™ universal mounting pattern, just to mention a few. Additionally, the SH Series includes the well-proven Numatics M Series cylinder as the driving mechanism. These are just a sample of the features that make the SH Series the superior pneumatic linear slide line.

2DAY

Body:

The hard coat anodized aluminum **body** is lightweight yet extremely durable. The body includes standard dowel location holes for precision mounting. Multi-surface mounting holes enable flexible and easy access mounting.

Air Cylinder:

The driving mechanism of all SH Series Slides is the proven Numatics M Series **air cylinder**. The cylinder includes stainless steel end caps and piston rod for corrosion resistance. With the exception of 5/16" bore, all other bore sizes include a cylinder with a magnetic piston for position sensing applications.

Alignment Coupler:

The **alignment coupler** has 360° of rotation. Subsequently, it protects the cylinder piston rod from side loading. This enables maximum cylinder life.

Tooling Plate:

The tooling plate includes the *NuMate*™ universal mounting pattern. *NuMate*™ is a standardized mounting system that is unique to Numatics. The mounting system eliminates the need for custom transition plates. The holes are drilled, tapped and counter bored from the opposite side which enables mounting the unit to be effortless. Standard dowel location holes are standard as well for precision mounting.

Guide Shafts:

Hardened steel (Rc 60 – 65) **guide shafts** are standard with the Linear Ball Bearing and Sintered Bronze bearing units. Hardened stainless steel (Rc 50 – 55) guide rods are standard with the Teflon® bearing units. All guide shafts are precision ground and polished to 15u/RMS for smooth cycling and low breakaway. The large diameters enable increased load capacity. The shaft pilot is mounted directly to the tooling plate for maximum rigidity.

Bearings Options:

Each SH Series Slide includes 4 **bearings**. The SH Series is unique because of the 3 bearing options.

Linear Ball Bearing

This consists of 4 self-aligning bearings that reduce wear while maximizing load capability. It is sealed with rod wipers that protect against dirt and contamination.

Sintered Bronze

This consists of 4 oil impregnated (self-lubricating) sintered bronze sleeves with a high Pv rating that enables long application life.

Teflon®

This has 4 maintenance free, self-lubricating Teflon® bearings that enables long application life and low friction.

Bumper/Wiper

All SH Series Slides include a standard polyurethane **bumper/wiper** combo that is durable and long lasting. The bumper/wiper is integrated into the body of the slide and reduces shock and loading on both the extend and retract stroke. The wiper removes contamination from the guide shafts.

Adjustable Shaft Collars

The adjustable shaft collars enable extend stroke adjustment.

Teflon® is a registered trademark of DuPont™.

Standard Specifications:

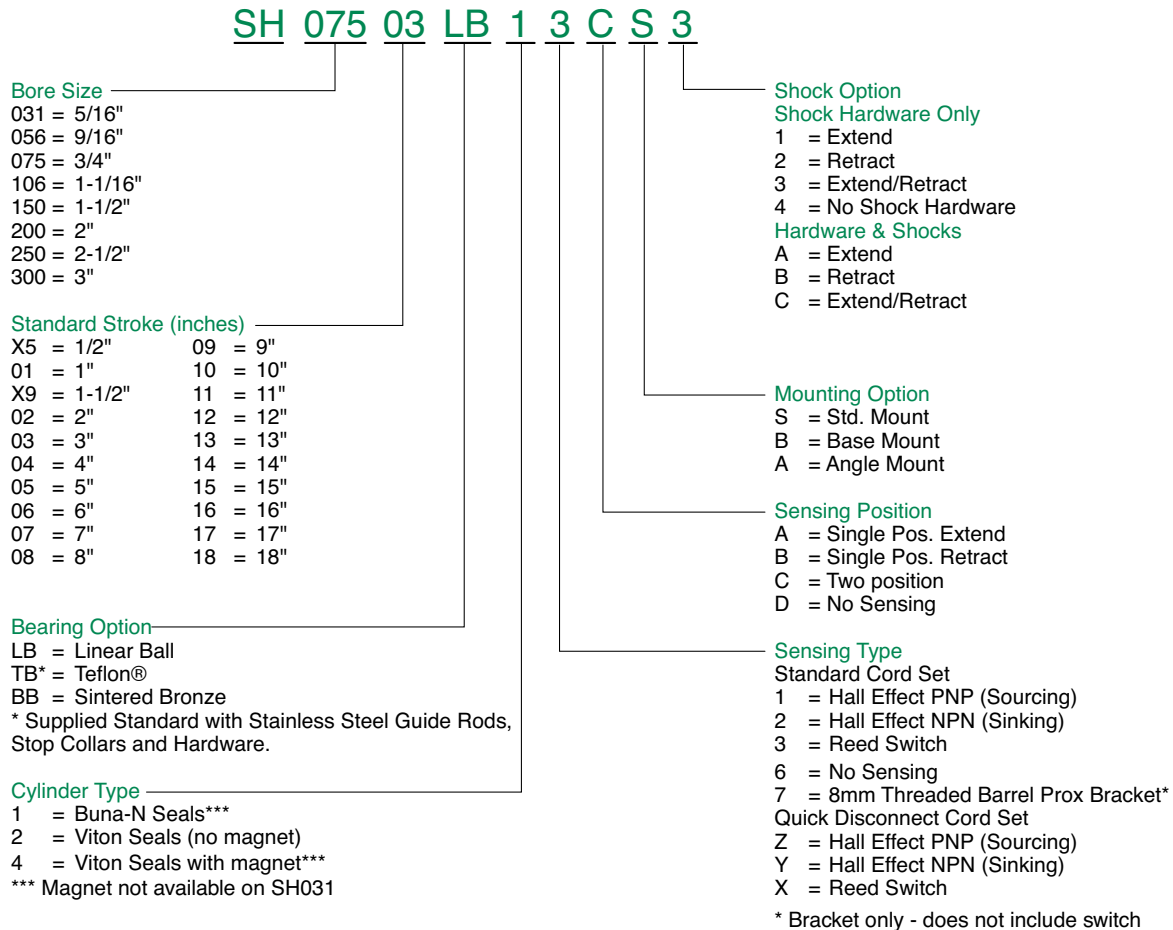
- Bore sizes from 5/16" through 3"
- *NuMate*™ universal mounting pattern
- 3 bearing options
- Nominal pressure rating is 250 psi air
- Alignment coupler standard on all slides
- Standard temperature -10°F to +165°F



For detailed dimensional information and technical specifications, please visit www.numatics.com

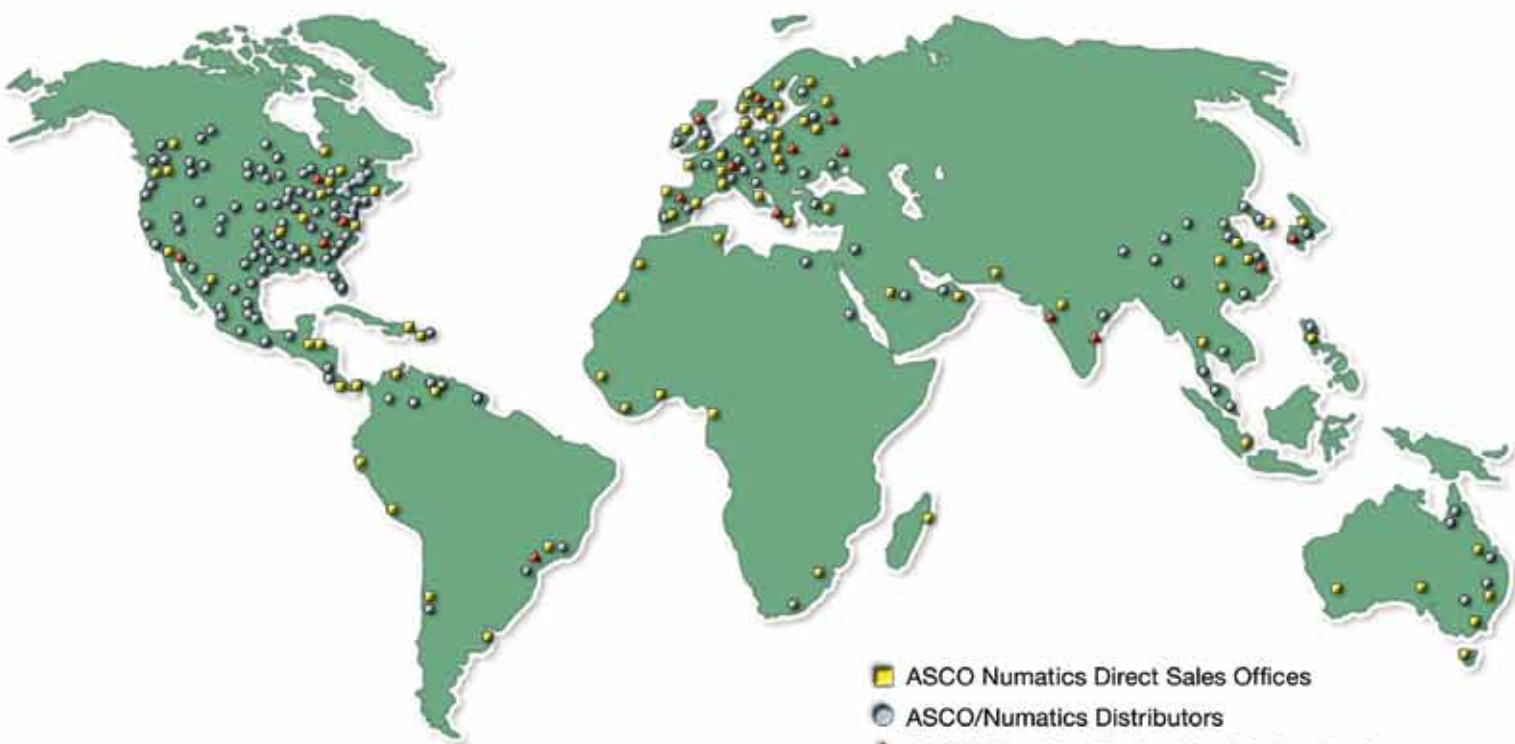


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