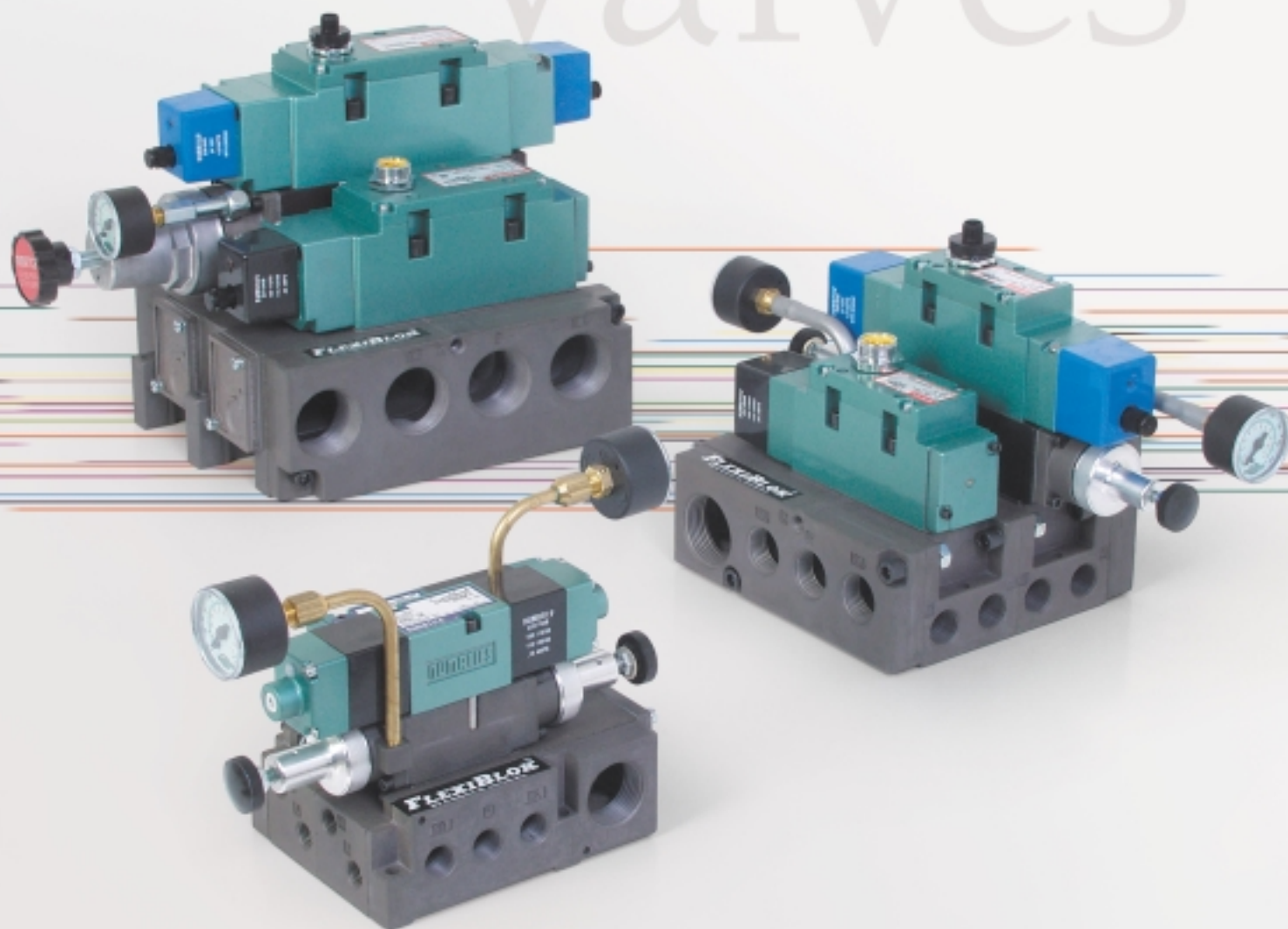


numatics®

Valves

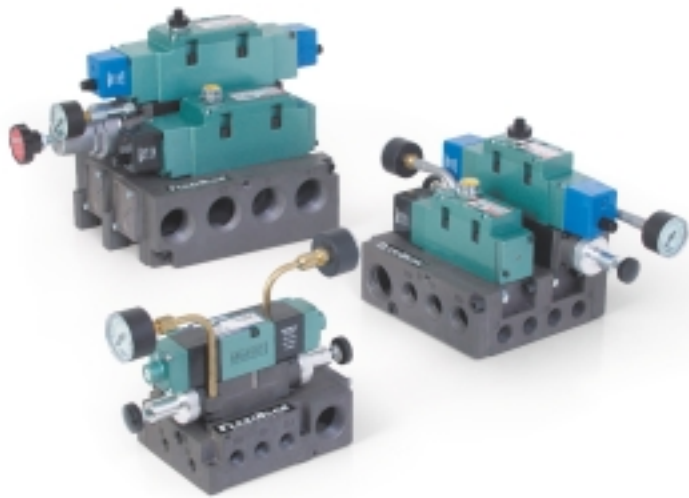


075, 125 & 250 Series
Automotive Interchangeable Mounting

We're everywhere you need us to be!



numatics®



From its founding in 1945, Numatics has distinguished itself from its competitors by consistently leading the industry in innovation and technology. The objective of this quest for new and better designs is, and always has been, superior performance and reliability. This drive to deliver greater performance to our customers is reflected in our designs, our worldwide sales and services capabilities, and the very culture of the company itself.

With the introduction of the billion cycle, lapped spool and sleeve valve in 1952; Numatics established its reputation for design excellence

We're everywhere you need us to be!



and raised the industry standards for performance and value. In the same manner, the introduction of the 2005 and 2012 Series valves with integral advanced fieldbus electronics continues the momentum and establishes yet another standard for the world to set its sights on.

At Numatics, the pursuit of excellence in everything we do is routine. When you order Numatics' products, we expect that you will have very high expectations for their quality, performance and value. Our objective is to insure that you are not disappointed.



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Air Preparation

Numatics Air Preparation Group designs and builds an extensive line of air preparation components including particulate and coalescing filters, pressure regulators, lubricators, and air dryers. The dryer line includes refrigerated, regenerative, membrane, and deliquescent dryers from 5 CFM to 40,000 CFM ratings for point of use or power house applications.

In addition, a complete line of solenoid and manually operated quick exhaust and slow start valves are available to help users comply with OSHA safety regulations.

Numatics is available to assist in the proper application of these components to maximize system performance and safety.



Valves

Numatics Incorporated manufactures a complete line of directional control valves for both domestic and international markets.

After years of experience and expertise gained in providing solutions to specific customer needs, we have established our position as the innovative leader in the International Fluid Power Marketplace.

Numatics has always made quality the top priority while pursuing the development of new and innovative products and technologies to meet all your pneumatic requirements.



Actuators

At Numatics Actuator Group, our diverse product range includes large bore, miniature, NFPA, ISO/VDMA, non-repairable, rodless, magnetically coupled, and air bellows – all custom manufactured to meet the demands of your design requirements.



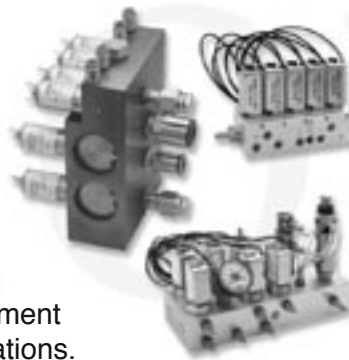
Motion Control

Numatics Motion Control Group specializes in modular automation products including grippers, rotary actuators, gantry slides, ball screw gantries, and linear slides. In addition, we offer a complete line of servo motors, amplifiers, controllers, belt drive actuators, stepper motors and drives. These components have great potential for use in robotics, assembly machines, and any other kind of automatic equipment requiring repeatable motion and pinpoint accuracy.



Miniature Pneumatics

Numatics Miniature Pneumatic Group designs, manufactures, and markets miniature elastomeric sealed pneumatic products for high technology OEM applications. The many unique features of these valves make them ideal for applications in analytical instrumentation, chromatography, biomedical, medical diagnostics, semiconductor, HVAC, gas sampling equipment and many other industrial and OEM applications.



Numatics Accessories

Numatics manufactures and stocks a complete line of fluid power accessories including everything required downstream of the compressor. Numatics provides our customers with a single point source for all their pneumatic, automation, and motion control components to meet application requirements.

Design, Engineering and Product Performance

In the world of highly automated manufacturing, the words failure and downtime are unacceptable.

Numatics' founding was predicated on the premise that the failure of pneumatic components was not inevitable or acceptable. For over 58 years, our objective has always been continuous product evolution and improvement by the refinement of existing designs, as well as the implementation of new design concepts and technology.

Design and process methods are developed using the latest empirical, analytical and statistical techniques including FMEA, MTBF and reliability/maintainability data. This assures maximum productivity, performance and value. These techniques are utilized throughout all Numatics divisions and our strength is in our ability to integrate a complete pneumatic system with every component designed to the same stringent international standards. The benefit: extraordinary reliability with single source responsibility.

Training Programs

Training at Numatics is a service offered to our customers to enhance the value and efficiency of pneumatic systems in their facilities. Numatics has been conducting training through sales and engineering since the start of the company in 1945. This training has been serving our customers' quest for knowledge of pneumatic products and the expertise to most effectively use the products and accessories Numatics sells.

Currently, Numatics offers several pneumatic schools in a seminar format with plenty of interactive and hands-on learning opportunities. Some of these schools are designed specifically for our employees and distributor personnel and others are available for all Numatics' customers and pneumatic users.

Numasizing®

What is "Numasizing"?

Compressed air, like electricity and gas, is an energy medium and therefore must also be conserved and used wisely. Numatics has developed a technique called Numasizing, which enables the resource, compressed air, to be used more efficiently by sizing all the pneumatic components of an air system as well as selecting pressures to optimize its usage. Numasizing negates the need to speculate on the stroke time of an actuator even when subjected to two different loads under two distinct pressures. In addition to predicting these performance times, Numasizing determines the HP (horsepower) requirements, terminal velocity stroke times, air usage, individual and system Cv (Pneumatic Conductance) to establish the weakest link in the chain of components, etc.

The technique not only takes into account all the necessary physical specifications, pressures and components, but objectives such as energy utilization, increased productivity, minimum size components, etc. or blending of several. What ensues is a tailor made circuit designed to the customer's targets. You must keep in mind that even though it is the same circuit, different valves, components, pressures etc. are necessary to satisfy the varied objectives of the OEM, end-user, facilities, conservationists, etc.

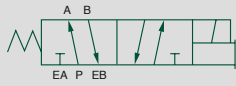
Numasizing is not based on a theoretical approach or a mathematical model, but on actual results of over 250,000 test firings of cylinders. They ranged from 3/8" to 14" bores, in conjunction with different diameter/length conductors and valve sizes. The cylinders were subjected to every conceivable dual pressure/load combination feasible. Consequently, it allows us to predict and recommend components and pressures with confidence.

See your local Numatics' Distributor for a demonstration of this invaluable engineering tool for your application.

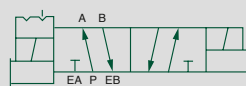


075 Series

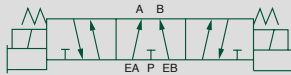
single solenoid,
spring return
2 position 4-way



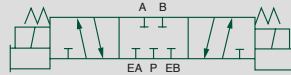
double solenoid,
detented
2 position 4-way



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: 1.0

- Direct solenoid actuated
- 1/8 NPTF and 1/4 NPTF port sizes available
- Comply with automotive interchangeable standards
- Sub-base mounted
- Plug in solenoid with indicator light
- For lubricated or unlubricated service
- Integral regulators available
- Integral speed control available
- NEMA 4/IP65



Technical Data

VALVE DATA	ENGLISH	METRIC
Cv	1/8 NPTF = 0.8 1/4 NPTF = 1.0	
Flow Capacity	46 SCFM @ 80 PSIG upstream pressure to atmosphere	985 NI/m @ 6 bar upstream to 5 bar downstream
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	12 VDC	24 VDC	110-120 VAC / 50/60 Hz.	
Power (Watts)	6.0	6.0	N/A	
Holding Current (Amps)	0.50	0.25	0.09	
Inrush Current (amps)	N/A	N/A	0.38	

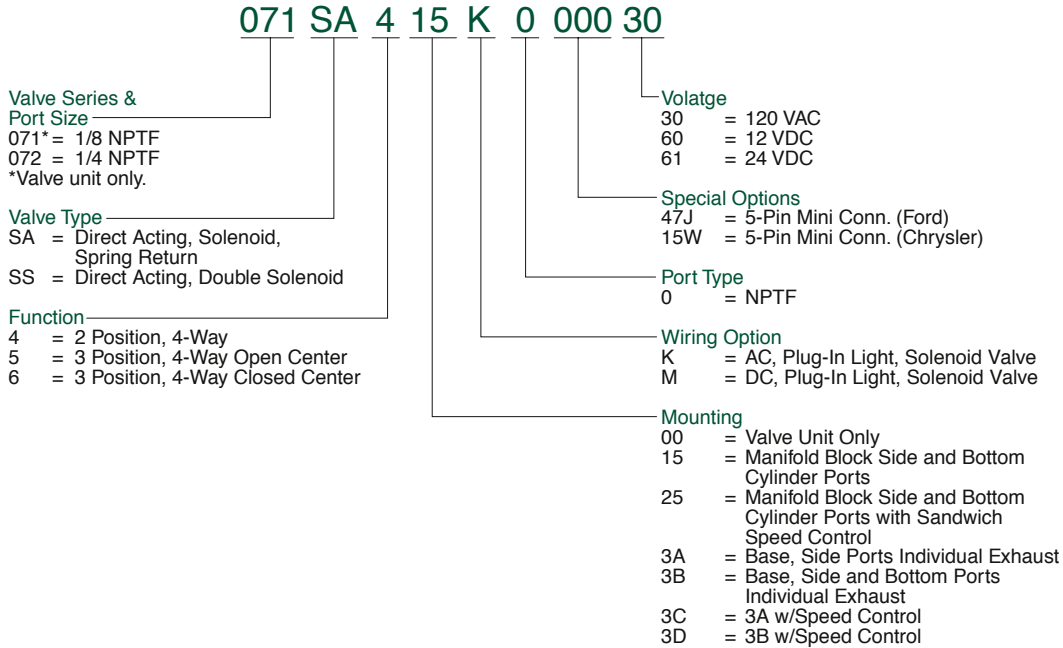
RESPONSE TIME IN SECONDS	ENERGIZE	DE-ENERGIZE	ENERGIZE	DE-ENERGIZE
2 - Position, Single, Spring Return	0.032	0.010	0.012	0.011
2 - Position, Double, Detented	0.028	N/A	0.012	N/A
3 - Position, Spring Centered	0.028	0.028	0.012	0.018



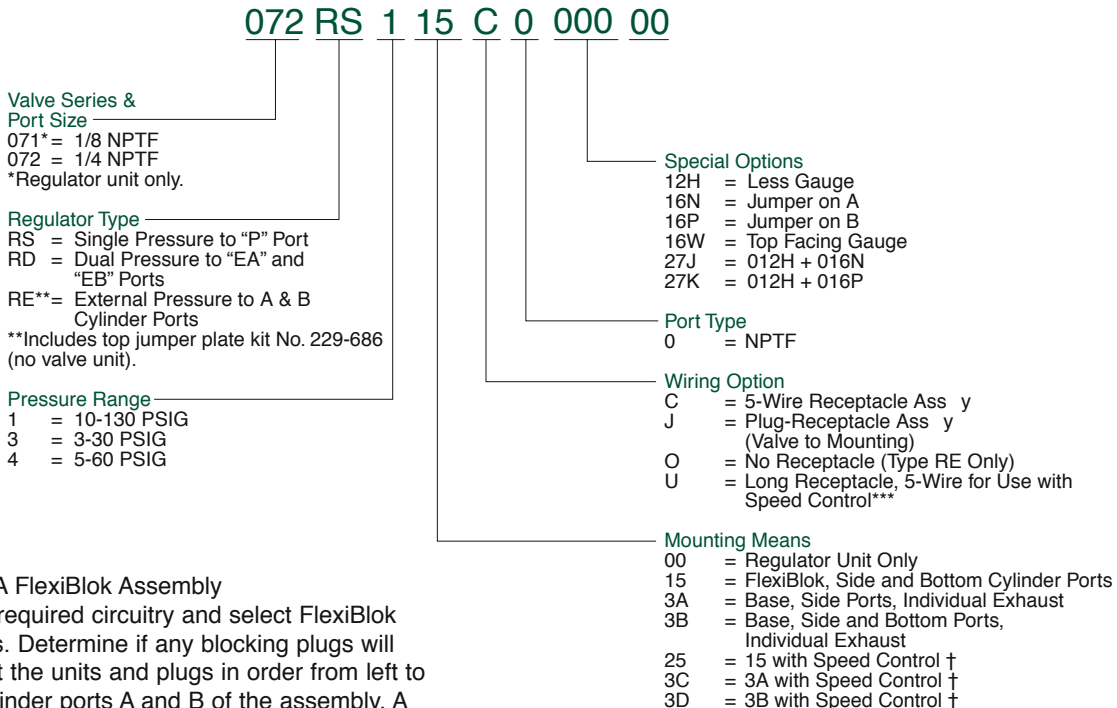
075 Series

How To Order

Valves



Regulators



How To Order A FlexiBlok Assembly

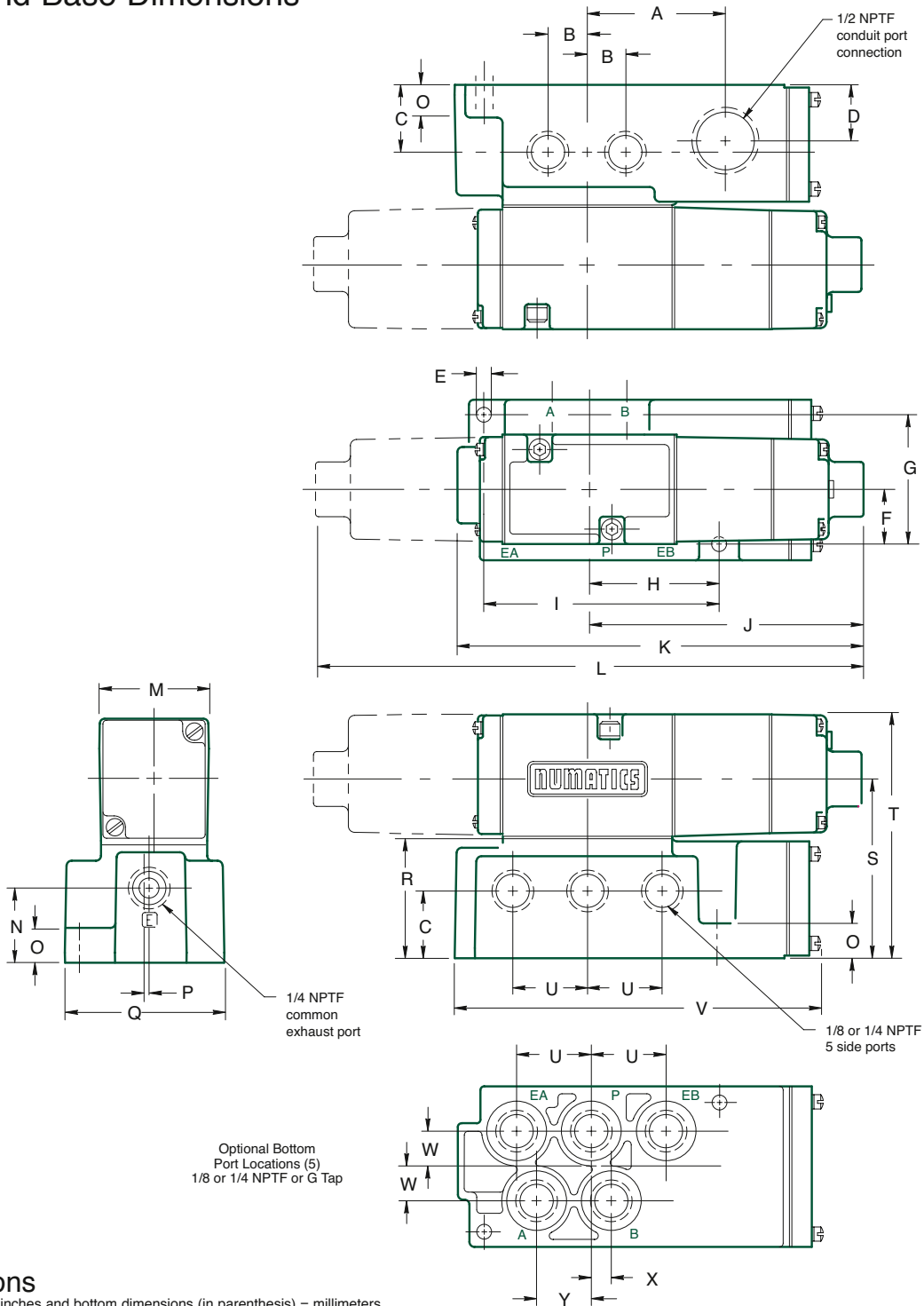
Determine the required circuitry and select FlexiBlok model numbers. Determine if any blocking plugs will be needed. List the units and plugs in order from left to right, facing cylinder ports A and B of the assembly. A typical five station model may be as follows:

Assembly Kit	AK071-5
Station 1	072SS415K000030
Station 2	072SA415K000030
Station 3	072SA425K000030
Blocking Plug	229-994 (Install in P gallery)
Station 4	072SS415K000030
Station 5	072SS415K000030
	ASSEMBLED

***IMPORTANT: Do NOT use "J" option with a speed control. Use option "U" only.
 † The speed control sandwich is available only with single pressure regulators, type RS. It mounts between the valve unit and regulator and adds 0.63 to the overall height.



Valve and Base Dimensions



Dimensions

top dimensions = inches and bottom dimensions (in parenthesis) = millimeters

A	B	C	D	E	F	G	H	I	J (AC)	J (DC)	K (AC)	K (DC)	L (AC)	L (DC)	M	N	O	P
1.75 (44.5)	0.47 (11.9)	0.84 (21.3)	0.69 (17.5)	0.20 (5.1)	0.69 (17.5)	1.63 (41.4)	1.63 (41.4)	2.94 (74.7)	3.44 (87.4)	4.13 (104.9)	5.07 (128.8)	5.75 (146.1)	6.89 (175.0)	8.26 (209.8)	1.37 (34.8)	0.94 (23.9)	0.44 (11.2)	0.06 (1.5)
Q	R	S	T	U	V	W	X	Y										
2.00 (50.8)	1.50 (38.1)	2.23 (56.6)	3.03 (77.0)	0.94 (23.9)	4.57 (116.1)	0.45 (11.4)	0.25 (6.4)	0.69 (17.5)										

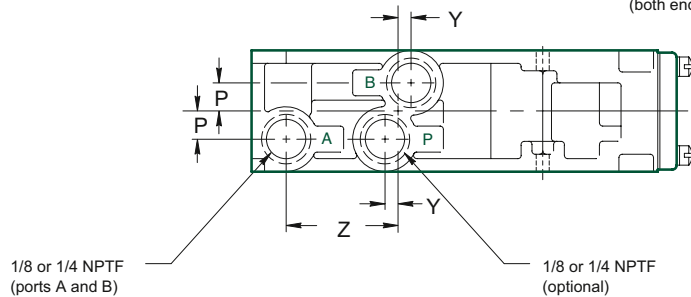
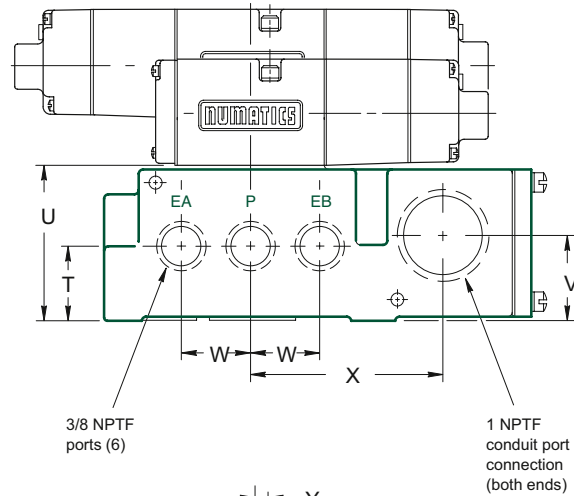
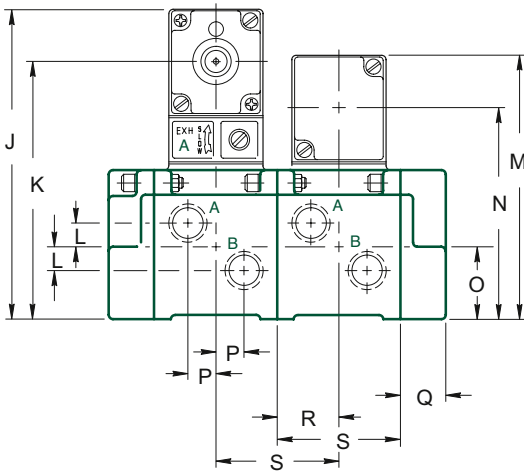
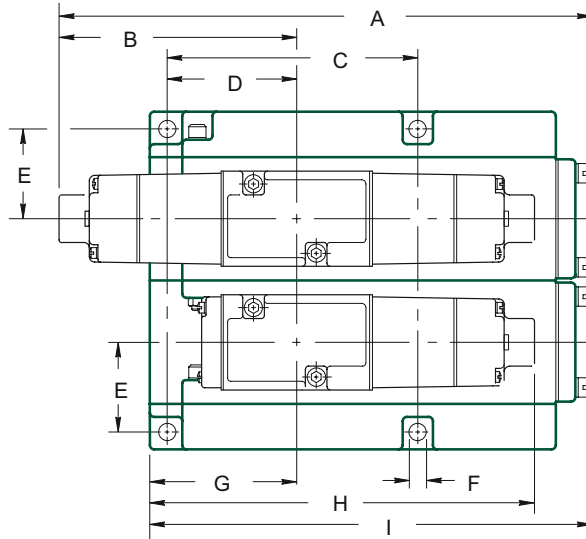


075 Series

Manifold Dimensions

Manifold Block Kit Numbers

DESCRIPTION	1/8 NPTF	1/4 NPTF
Block with Standard Plug	229-773	229-774
Block with S.C. Plug	229-775	229-776
Block without Plug	229-771	229-772



Dimensions

top dimensions = inches and bottom dimensions (in parenthesis) = millimeters

A (AC)	A (DC)	B (AC)	B (DC)	C	D	E	F	G	H (AC)	H (DC)	I	J	K	L	M	N	O	P
7.73 (196.3)	8.42 (213.9)	3.44 (87.4)	4.13 (104.9)	3.59 (91.2)	1.84 (46.7)	1.23 (31.2)	0.258 (6.55)	2.13 (54.1)	5.57 (141.5)	6.26 (159)	6.40 (162.6)	4.35 (110.5)	3.55 (90.2)	0.34 (8.64)	3.72 (94.5)	2.92 (74.2)	1.03 (26.2)	0.40 (10.2)
Q	R	S	T	U	V	W	X	Y	Z									
0.64 (16.3)	0.84 (21.3)	1.68 (42.7)	1.03 (26.2)	2.19 (55.6)	1.16 (29.5)	1.00 (25.4)	2.80 (71.1)	0.20 (75.1)	1.63 (41.4)									



075 Series

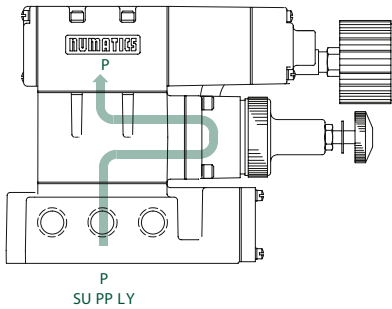
Sandwich Pressure Regulator

Types: RS / RD / RE / RT / RC / RQ

When ordering a valve plus regulator mounted on a base or manifold, list the valve unit only model number and include the mounting requirements only with the regulator. Specify "Assembled."

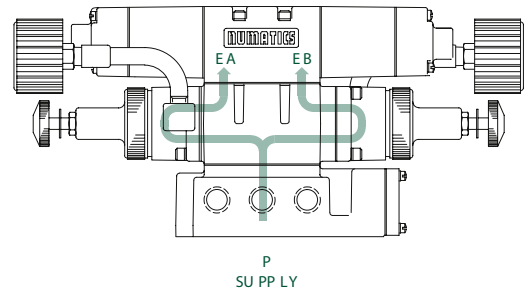
Example orders:	TYPE RS	TYPE RD
Valve unit only:	071SA400K000030	071SA400K000030
Regulator	072RS115J000000 ASSEMBLED	072RD115J000000 ASSEMBLED

Type RS



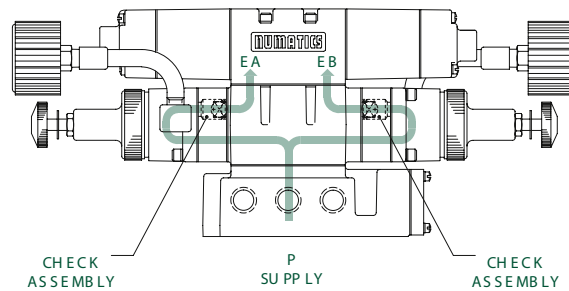
Single pressure from a single supply.

Type RD



Dual pressure from a single supply.

Type RC

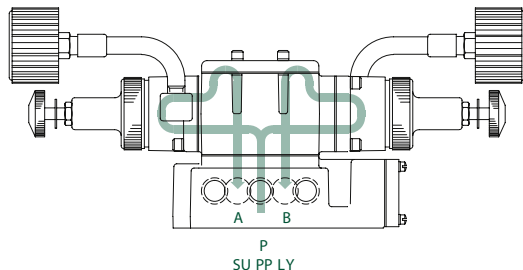


Type RC is Non-Relieving: traps downstream pressure if upstream pressure is exhausted.

Type RQ

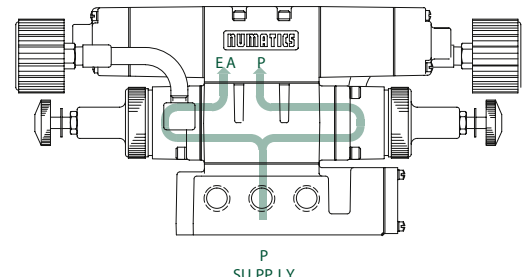
Type RQ is Relieving: exhaust pressure in cylinder if upstream pressure is exhausted.

Type RE



External outlet regulator used with jumper plate for single or dual pressure.

Type RT

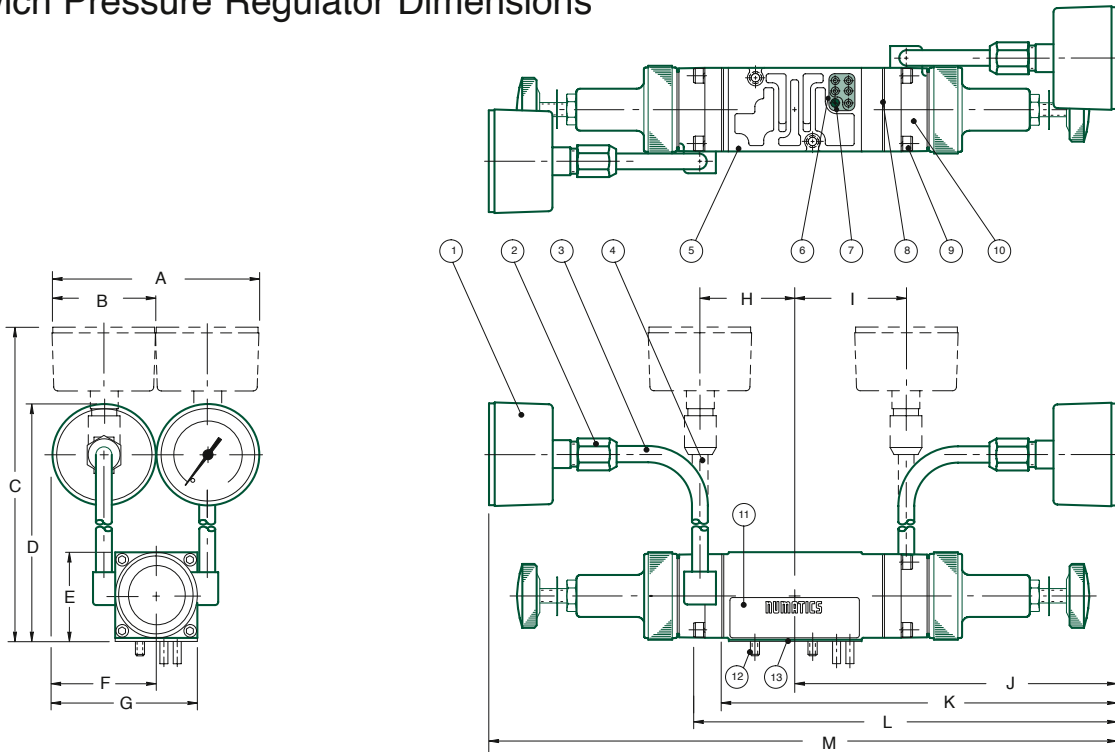


Two-pressure selector used for multi-pressure applications.

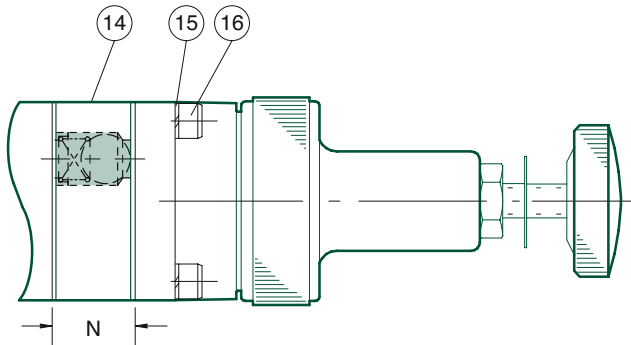


075 Series

Sandwich Pressure Regulator Dimensions



Dual Check Assembly: RC / RQ



- * RS models require (1).
- ** (1) for RS;
(2) for RD, RE, RT;
(4) for RC, RQ.
- ~ RS models require (4).
- *** For converting RD into RC or RQ.
- † Secure studs to the mounting with a 7/64 hex drive wrench.

Parts List

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	2*	Gauge (See chart on page 11)	
2	2*	Adaptor Fitting	134-302
3	2*	90° Tube Fitting (Std.)	134-303
4	2*	Straight Fitting (optional)	134-304
5		Regulator Block:	RS 125-338 RD, RC, RQ 125-339 RT 125-340 RE 125-344
6	1	Plug Receptacle	RD 230-286 RS, RT, RC, RQ 230-286 (not req'd for RE)
		Plug for Speed Control	230-276
7	1	Screw	127-318
8	**	Gasket	113-281
9	8~	Screw	127-144
10	2*	Regulator Assembly (not sold Separately)	
11	1	Nameplate	122-551
12	2	Stud†	127-313
13	1	Gasket	113-278
14	2	Check Assembly Kit***	RC 239-541 RQ 239-536
15	8	Hi-Collar Lockwasher (RC, RQ only)	128-116
16	8	Screw (RC, RQ only)	127-606

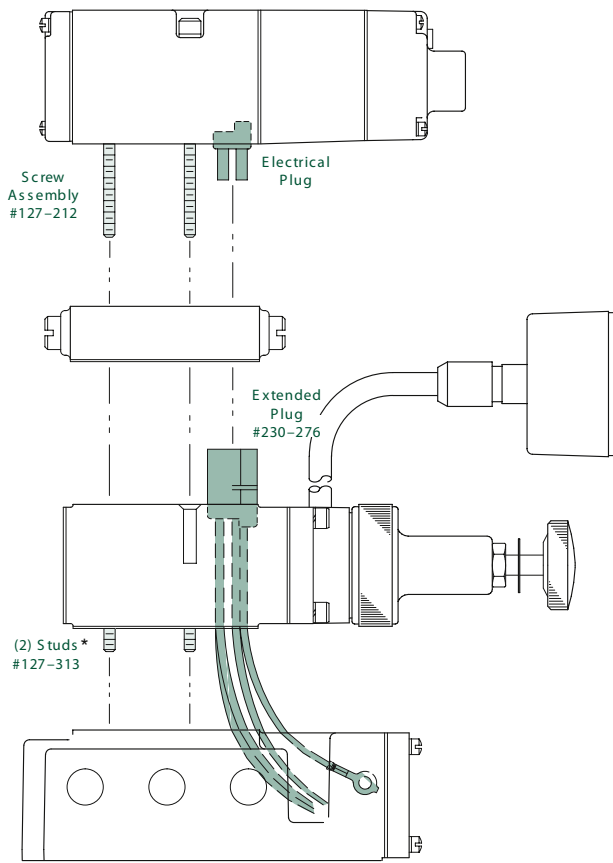
Dimensions

top dimensions = inches and bottom dimensions (in parenthesis) = millimeters

A	B	C	D	E	F	G	H	I	J	K	L	M	N
3.22 (82.0)	1.62 (41.0)	6.07 (154.0)	4.91 (125.0)	1.39 (35.3)	1.61 (41.0)	2.27 (58.0)	1.50 (38.0)	1.76 (45.0)	5.19 (132.0)	6.31 (160.0)	6.76 (172.0)	10.11 (257.0)	0.53 (13.5)



Speed Control and Regulator Assembly



EXAMPLE

071SA402K000030

Single solenoid valve unit with plugs and extra long mounting screws for use with speed control

072R S13 5U 000000

1/4 NPTF single pressure regulator (10–130 PSIG) with extended plug receptacle and speed control sandwich mounted on an individual base with side ports and common exhaust

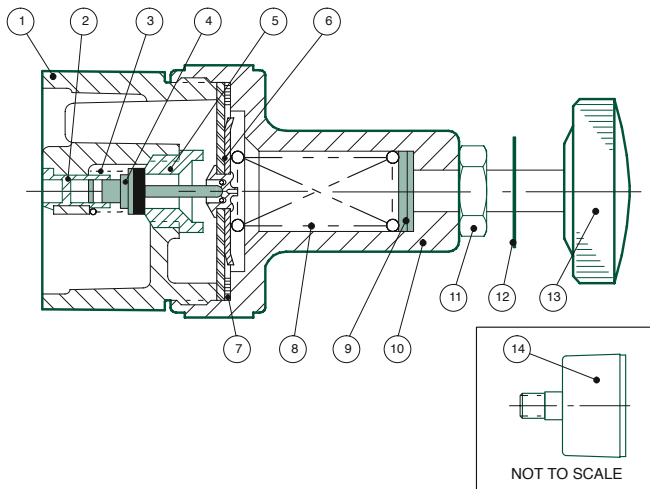
EXAMPLE ORDER:

Valve: 071S A402K000030
 Regulator: 072R S135U000000
 ASSEMBLED

*Secure studs to the mounting with a 7/64 hex drive wrench.

Regulator Service Kit

229-668



Parts List

DET. NO.	NO. REQ'D	PART NAME	PRESSURE RANGE PSIG		
			3-30	5-60	10-130
1	1	Regulator Assembly** (not sold separately)			
2 *	1	Retainer	116-310	116-310	116-310
3 *	1	Spring	115-226	115-226	115-226
4 *	1	Poppet Assembly	221-123	221-123	221-123
5 *	1	Poppet Seat	124-148	124-148	124-148
6 *	1	Diaphragm Assembly	213-302	213-302	213-302
7 *	1	Washer	116-312	116-312	116-312
8	1	Bonnet Spring	115-211	115-211	115-211
9 *	1	Spring Guide	116-293	116-293	116-293
10	1	Bonnet	125-342	125-342	125-342
11	1	Locknut	128-177	128-177	128-177
12	1	Pressure Label	122-508	122-509	122-510
13	1	Knob Assembly	213-284	213-284	213-284
14	1	Regulator Gauges (with PSIG of...)	214-116 (0-60)	214-117 (0-100)	214-103 (0-160)

**Regulator Unit Kits 229-696 229-697 229-698
 (includes regulator assembly, gaskets, screws)

*Indicates parts included in kit.



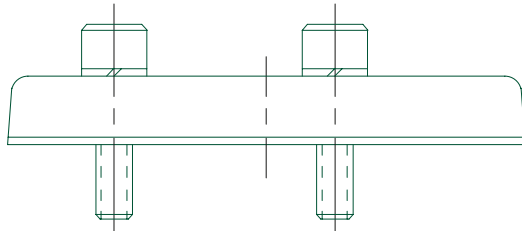
075 Series

Base Assembly Kit

BASE SELECTION CHART				
WIRING OPTION	TAP SIZE		TAP SIZE	
	1/8 NPTF	1/4 NPTF	1/8 NPTF	1/4 NPTF
	BASE ASS'Y SIDE PORTS ONLY		BASE ASS'Y SIDE AND BOTTOM PORTS	
No Plug	203-506	203-510	203-507	203-511
Std. Plug	203-508	203-512	203-509	203-513
Long Plug (for speed control)	203-514	203-516	203-515	203-517

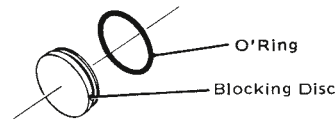
Blank Station Kit

229-686



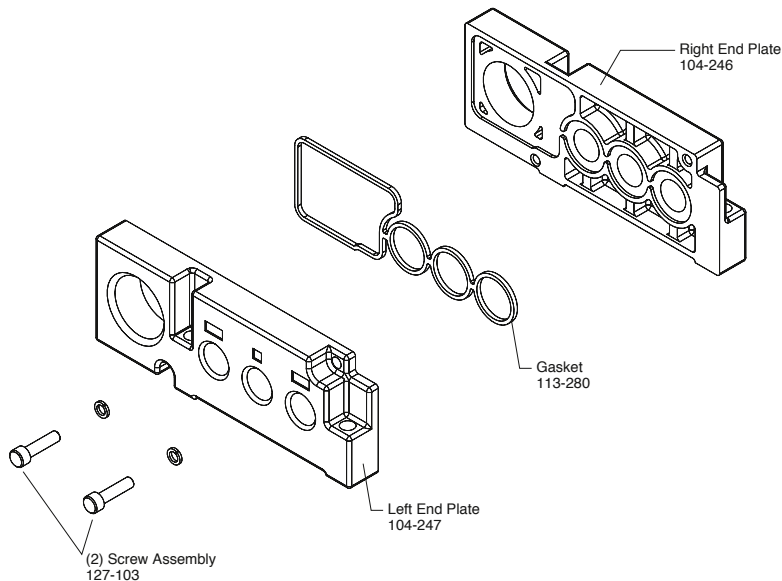
Blocking Disc

229-994



End Plate Kit

229-770

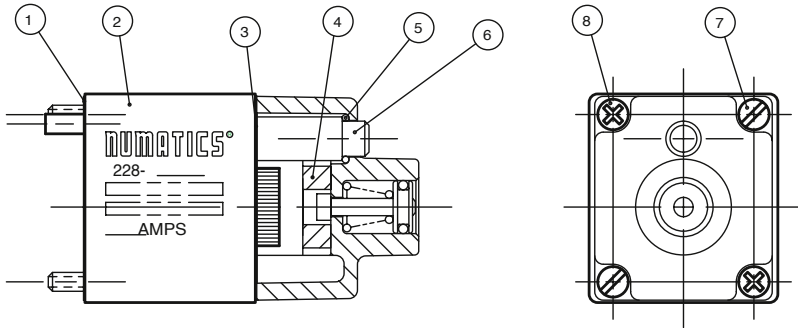


Parts List

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Right End Plate	104-246
2	1	Gasket	113-280
3	1	Left End Plate	104-247
4	2	Screw Assembly	127-103



Solenoid Assemblies



FLUSH NON-LOCKING OVERRIDE
W/ LIGHT STANDARD

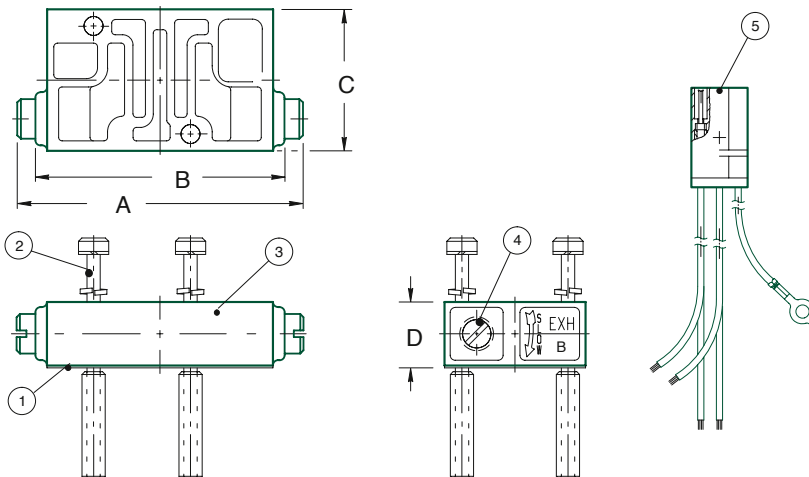
DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Gasket Solenoid/Valve	113-276
2	1	Solenoid Assembly	See Chart
3	1	Gasket End Cap/Solenoid	113-277
4	1	Bumper Black for 2-position: Red for 3-position:	114-138 114-139
5	1	O-Ring Seal	126-144
6	1	Light Assembly 100-115/50: 110-120/60: 200-230/50: 220-240/60: 12V DC: 24V DC:	230-235 230-235 230-236 230-236 230-283 230-284
7	2	Solenoid Screw AC Solenoid Screw DC	127-314 127-316
8	2	End Cap Screws	127-315

		VALVE FUNCTION	PLUG-IN STYLE	VOLTAGE				
				AC		DC		
				100-115/50 110-120/60	200-230/50 220-240/60	24/50-60	12 VDC	24 VDC
Solenoid Capsule Assembly	Includes End Cap, Solenoid, Screws and Gaskets	2 position	Std. w/Light	237-325	237-326	237-426	226-800	226-801
		3 position	Std. w/Light	237-331	237-332	237-425	226-804	226-805
Solenoid Assembly	*Solenoids Only		Std. Plug-in	228-702	228-707	228-692	225-371	225-372

*End cap, screws and gaskets not included

Speed Control

229-769



DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Gasket	113-278
2	2	Screw Assembly	127-212
3	1	Speed Control Assembly (not sold separately)	
4	2	Metering Screw	213-219
5	1	Extended Plug Harness Assembly	230-276

Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

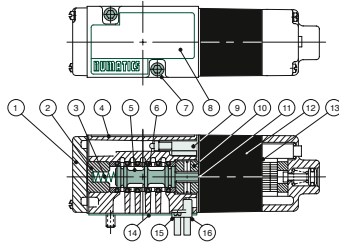
A	B	C	D
2.75 (70.0)	2.35 (59.7)	1.33 (33.8)	0.60 (15.3)



075 Series

Service Kits and Parts

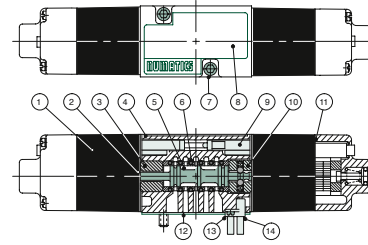
Kit No. MK8-K1 (For Models 075SA4)



Parts List

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Spring Cover Assembly	204-258
2 *	1	Spring Retainer	116-305
3 *	1	Spring	115-117
4	1	Valve Body (not sold separately)	
5	1	Sleeve Assembly w/seals	209-263
6 *	6	Seals	126-202
7	2	Screw	127-211
8	1	Nameplate	122-936
9	1	Receptacle Housing	125-331
10 *	1	Detented Body	110-114
11 *	1	Gasket solenoid/valve	113-276
12	1	Solenoid Capsule	See p.13
13 *	1	Gasket solenoid/end cap	113-277
14 *	1	Gasket valve/base	113-278
15	1	Screw	127-318
16	1	3-Wire Plug Assembly	230-267

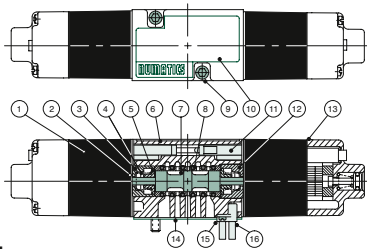
Kit No. MK8-K2 (For Models 075SS4)



Parts List

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	2	Solenoid Assembly	See p.13
2 *	2	Gasket solenoid/valve	113-276
3 *	1	Spacer	116-306
4	1	Valve Body (not sold separately)	
5	1	Sleeve Assembly w/seals	209-264
6 *	6	Seals	126-202
7	2	Screw	127-211
8	1	Nameplate	122-936
9	2	Receptacle Housing	125-331
10 *	1	Detented Assembly	210-118
11 *	2	Gasket solenoid/end cap	113-277
12 *	1	Gasket valve/base	113-278
13	1	Screw	127-318
14	1	5-Wire Plug Assembly	230-268

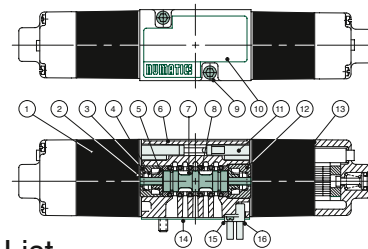
Kit No. MK8-K3 (For Models 075SS5)



Parts List

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	2	Solenoid Assembly	See p.13
2 *	2	Gasket solenoid/valve	113-276
3 *	1	Spacer	116-307
4 *	2	Spring	115-221
5 *	2	Spring Retainer	116-309
6	1	Valve Body (not sold separately)	
7	1	Sleeve Assembly w/seals	209-265
8 *	6	Seals	126-202
9	2	Screw	127-211
10	1	Nameplate	122-936
11	2	Receptacle Housing	125-331
12 *	1	Spacer	116-308
13 *	2	Gasket solenoid/end cap	113-277
14 *	1	Gasket valve/base	113-278
15	1	Screw	127-318
16	1	5-Wire Plug Assembly	230-268

Kit No. MK8-K (For Models 075SS6)



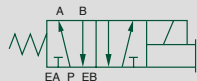
Parts List

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	2	Solenoid Assembly	See p.13
2 *	2	Gasket solenoid/valve	113-276
3 *	1	Spacer	116-307
4 *	2	Spring	115-221
5 *	2	Spring Retainer	116-309
6	1	Valve Body (not sold separately)	
7	1	Sleeve Assembly w/seals	209-266
8 *	6	Seals	126-202
9	2	Screw	127-211
10	1	Nameplate	122-936
11	2	Receptacle Housing	125-331
12 *	1	Spacer	116-308
13 *	2	Gasket solenoid/end cap	113-277
14 *	1	Gasket valve/base	113-278
15	1	Screw	127-318
16	1	5-Wire Plug Assembly	230-268

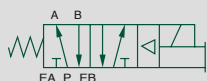
*Indicates parts included in service kit. Spool and sleeve assemblies sold as precision matched set; spools are not interchangeable; and assemblies include (6) #126-202 seals.



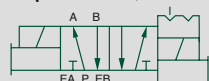
single direct solenoid,
spring return
2 position, 4-way



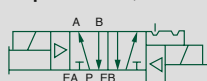
single solenoid air pilot,
spring return
2 position, 4-way



double direct solenoid,
detented
2 position, 4-way



double solenoid air pilot,
detented
2 position, 4-way



double direct solenoid
3 position, 4-way
open center



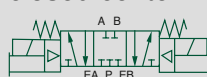
double solenoid air pilot,
3 position, 4-way
open center



double direct solenoid
3 position, 4-way
closed center



double solenoid air pilot,
3 position, 4-way
closed center



5 Ported, 2 and 3 position, 4-way, Spool & Sleeve
Cv: 1.8 - 2.3

- Plug in solenoid with indicator light
- Comply with automotive interchangeable standards
- For lubricated or unlubricated service
- Solenoid air pilot or direct acting
- Low watt 24 VDC coils
- Color identified solenoids for AC or DC
- Surge protecting bridge rectifier in coil standard for DC application



Technical Data

VALVE DATA		ENGLISH			METRIC
Port Size		1/4"	3/8"	1/2"	
Cv		1.8	2.1	2.3	
Flow Capacity	Direct Acting Solenoid Pilot	97 SCFM @ 80 PSIG upstream pressure to atmosphere		2066 NI/m @ 6 bar upstream to 5 bar downstream	
Operating Pressure Range	Direct Acting Solenoid Pilot	28" Hg. Vacuum to 150 PSIG			Vacuum to 10 bar
Pilot Pressure Range	Solenoid Pilot	14.5 to 125 PSIG			1 to 8.6 bar
Temperature Range (Ambient)	Direct Acting Solenoid Pilot	-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)	Direct Acting Solenoid Pilot	6.0	4.0	N/A	N/A
Holding Current (Amps)	Direct Acting Solenoid Pilot	0.25	0.17	0.09	0.06

RESPONSE TIME IN SECONDS		ENERGIZE	DE-ENERGIZE	ENERGIZE	DE-ENERGIZE
2 - Position, Single, Spring Return	Direct Acting	0.038	0.012	0.012	0.012
	Solenoid Pilot	0.014	0.038	0.009	0.040
2 - Position, Double, Detented	Direct Acting	0.012	N/A	0.012	N/A
	Solenoid Pilot	0.014	N/A	0.009	N/A
3 - Position, Spring Centered	Direct Acting	0.012	0.012	0.012	0.012
	Solenoid Pilot	0.014	0.038	0.012	0.040



125 Series

How To Order

Valves

A12 SA 4 00 R 0 000 61

Valve Series & Port Size

- A12 = Automotive 125 1/4" NPTF
- A13 = Automotive 125 3/8" NPTF
- A14 = Automotive 125 1/2" NPTF

Valve Type

- SA = Single Solenoid, Spring Return
- SS = Double Solenoid
- BA = Single Solenoid Air Pilot Spring Return
- BB = Double Solenoid Air Pilot

Function

- 4 = 2-Position, 4-way
- 5 = 3-Position, 4-way open center
- 6 = 3-Position, 4-way closed center

Mounting Means

- 00 = Valve Unit Only, No Mounting
- 15 = Manifold Block, Sides & Bottom Cylinder Ports
- 3A = Base, Side Ports, Individual Exhaust

Volatge

- 30 = 120 VAC
- 61 = 24 VDC

Special Options

- 13S = Right Angle Mini Plug
- 47E = 5-Pin B.H. Micro Conn. Chrysler
- 56Y = 4-Pin Micro Conn. Pin 1-N/02-12, 3C, 4-14
- 60C = 5-Pin Single Key Way Micro Conn. Chrysler
- 61E = 4-Pin Micro Ford
- 62B = 61E plus internal pilot form "P" port

Port Type

- 0 = NPTF (direct acting)
- T = NPTF (air pilot)

Wiring Option

- 8 = Chrysler (DCX) AC with Light 5-Pin Mini Brad Harrison
- 9 = Chrysler (DCX) DC with Light 5-Pin Brad Harrison
- L = Special Wiring, Standard AC
- R = Special Wiring, Standard DC
- S = Ford AC, with Light 5-Pin Mini Brad Harrison Conn.

Regulators

A12 RS 1 15 O 0 000 00

Valve Series & Port Size

- A12 = Automotive 125 1/4 NPTF
- A13 = Automotive 125 3/8 NPTF
- A14 = Automotive 125 1/2 NPTF

Regulator Type

- RS = Single Pressure to "P" Pilot
- RD = Double Pressure to "EA" & "EB" Ports
- RC = Regulator with Non-Relieving Check
- RQ = Regulator with Relieving Checks

Pressure Range

- 1 = 10-130 PSIG
- 3 = 3-30 PSIG
- 4 = 5-60 PSIG

Volatge

- 00 = N/A

Special Options

- 12H = Less Gauge
- 16N = Jumper on "A"
- 16P = Jumper on "B"

Port Type

- 0 = NPTF

Wiring Option

- O = No Receptacle

Mounting Means

- 00 = Regulator Unit Only, No Mounting
- 15 = Manifold Block, Sides & Bottom Cylinder Ports
- 3A = Base, Side Ports

How To Order A Manifold Assembly

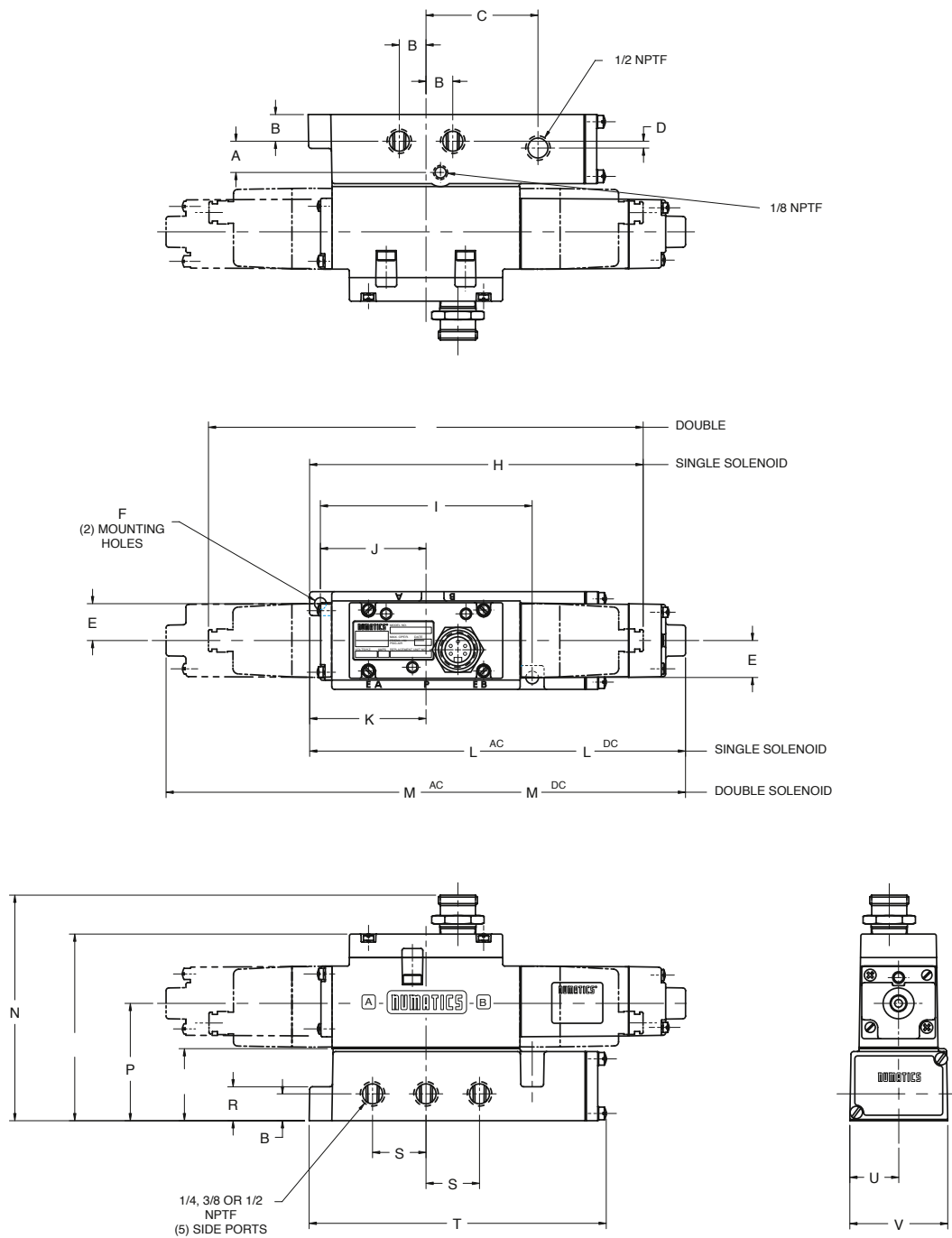
A typical five-station assembly may be as follows:

- Assembly Kit AK125-5
- Station 1 A14BA415RT61E61
- Station 2 A14BA415RT61E61
- Station 3 A14BA415RT61E61
- Blocking Plug (Install in P Gallery)
- Station 4 A14BB415RT61E61
- Station 5 A14BB615RT61E61
- ASSEMBLED

NOTE: BA4, BB4, and BB6 valves are internally piloted from Port P. BB5 valves are internally piloted from Port EA unless ordered with 62B special option.



Valve and Base Dimensions



Dimensions

top dimensions = inches and bottom dimensions (in parenthesis) = millimeters

A	B	C	D	E	F	G	H	I	J	K	L (AC)	L (DC)	M (AC)
0.69 (17.5)	0.59 (15.0)	2.47 (62.7)	0.15 (3.8)	0.82 (20.8)	0.28 (7.1)	9.59 (243.6)	7.36 (186.9)	4.67 (118.6)	2.33 (59.2)	2.58 (65.6)	7.58 (192.5)	8.31 (211.1)	10.00 (254.0)
M (DC)	N	O	P	Q	R	S	T	U	V				
11.46 (291.0)	4.74 (120.4)	4.12 (104.7)	2.59 (65.7)	1.59 (40.4)	0.75 (19.0)	1.18 (30.0)	6.54 (166.2)	1.08 (27.4)	2.16 (54.9)				

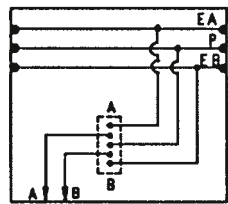
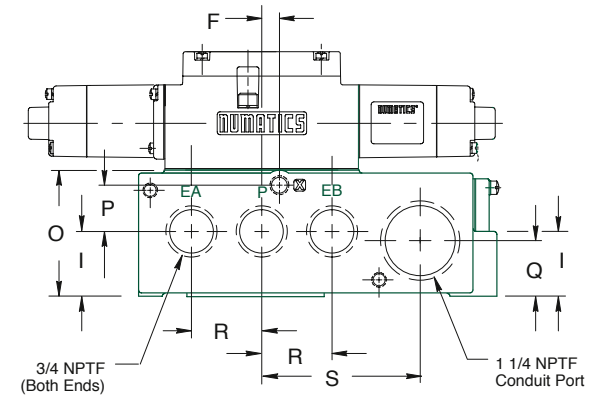
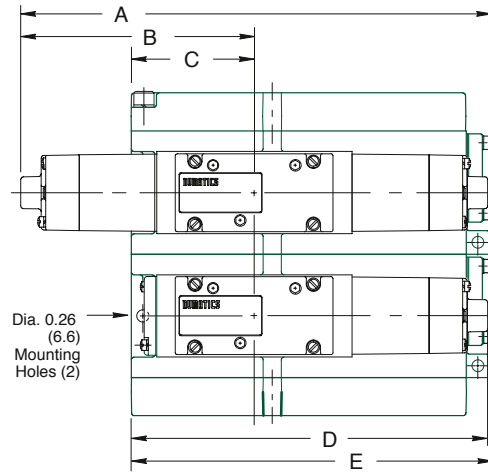
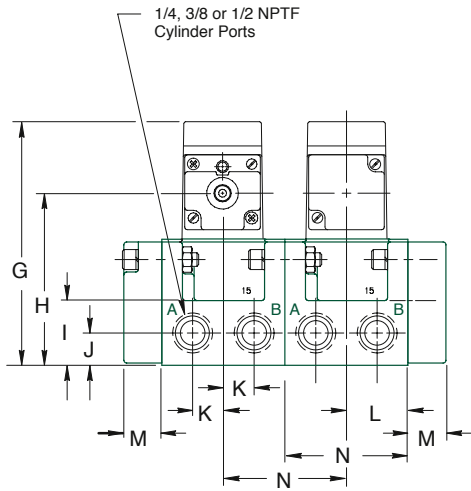


125 Series

Manifold Dimensions

Manifold Block Kit Numbers

DESCRIPTION	1/4 NPTF	3/8 NPTF	1/2 NPTF
Block without Plug	239-559B	239-560B	239-561B
Block with Plug	239-562B	239-563B	239-564B



Flexiblok Diagram - 15 Block

Top Dimension = Inches
Bottom Dimension (In Parentheses) = Millimeters

Dimensions

top dimensions = inches and bottom dimensions (in parenthesis) = millimeters

A (AC)	A (DC)	B	C	D (AC)	D (DC)	E	F	G	H	I	J	K	L
11.53 (293.0)	10.07 (256.0)	5.00 (127.0)	2.62 (66.5)	7.62 (194.0)	8.35 (212.0)	7.69 (195.0)	0.38 (9.7)	5.22 (133.0)	3.68 (93.5)	1.38 (35.0)	0.69 (17.5)	0.66 (17.0)	1.31 (33.3)
M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
0.81 (20.6)	2.62 (66.5)	2.69 (68.3)	0.99 (25.0)	1.19 (30.2)	1.50 (38.0)	3.38 (86.0)	7.13 (181.0)	2.38 (60.4)	0.47 (12.0)	1.06 (27.0)	0.69 (17.5)	0.71 (18.0)	0.45 (11.4)



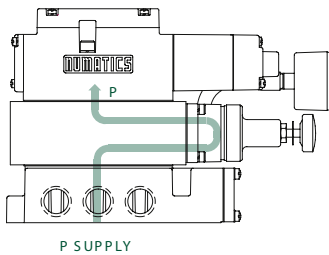
Sandwich Pressure Regulator

Types: RS / RD / RC / RQ

When ordering a valve plus regulator mounted on a base or manifold, list the valve unit only model number and include the mounting requirements only with the regulator. Specify "Assembled."

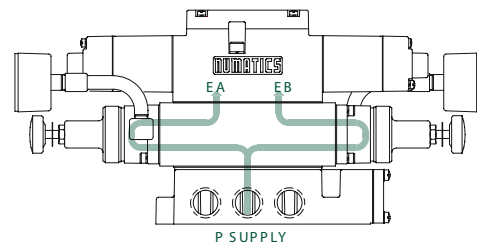
Example orders:	TYPE RS	TYPE RD
Valve unit only:	A12SA400S000030	A12SA400S000030
Regulator	A13RS1150000000 ASSEMBLED	A13RD1150000000 ASSEMBLED

Type RS



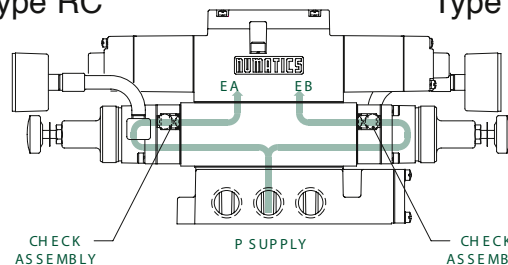
Single pressure from a single supply.

Type RD



Dual pressure from a single supply.

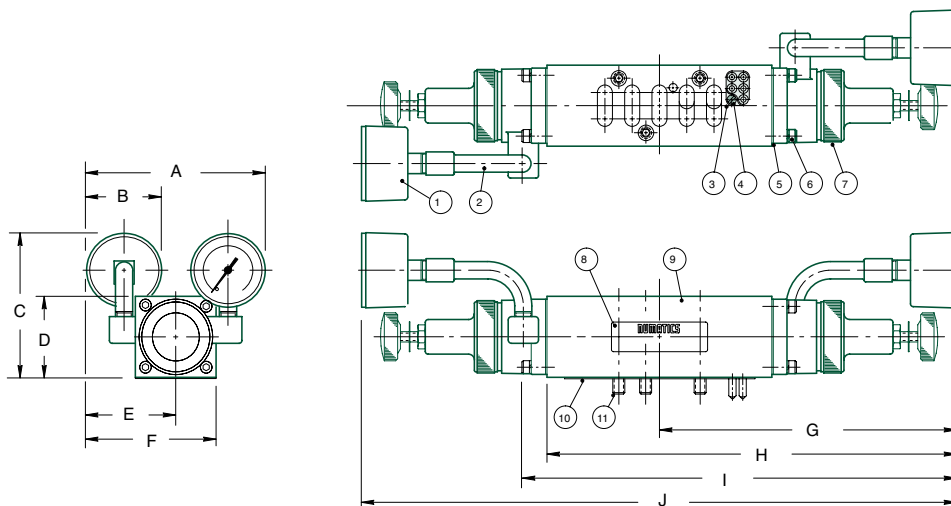
Type RC



Type RC is Non-Relieving:
traps downstream pressure if
upstream pressure is exhausted.

Type RQ

Type RQ is Relieving:
exhaust pressure in cylinder if
upstream pressure is exhausted.



NOTE: For parts list see the chart on page 20.

Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

A	B	C	D	E	F	G	H	I	J
3.87 (98.0)	1.62 (41.2)	5.72 (145.3)	1.76 (44.7)	1.94 (49.3)	2.80 (71.1)	6.42 (163.1)	8.86 (226.0)	9.26 (235.2)	12.85 (326.4)

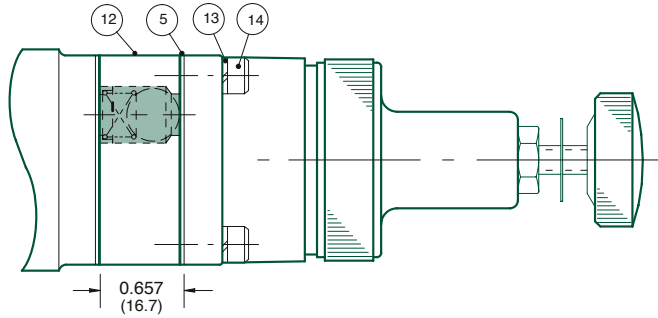


125 Series

Dual Check Assembly Kits RC: 239-533

(for converting RD into RC and RQ)

RQ: 239-537



Parts List

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	2*	Gauge	See Chart Below
2	2*	Fitting (90 standard)	134-289
3	1	Plug-In Assembly	230-324
4	1	Screw	127-342
5	**	Gasket (to regulator body)	113-272
6	8~	Screw	127-325
7	2*	Reg. Assembly (not sold separately)	
8	1	Nameplate	122-551
9	1	Regulator Block: RS	125-581
		RD, RC, RQ	125-578
10	1	Gasket body/base	113-417
11	3	Studs†	127-329
12	2	Check Assembly (not sold separately)	
13	2	Hi-Collar Lockwasher (RC, RQ only)	128-144
14	8	Screw (RC, RQ only)	127-227

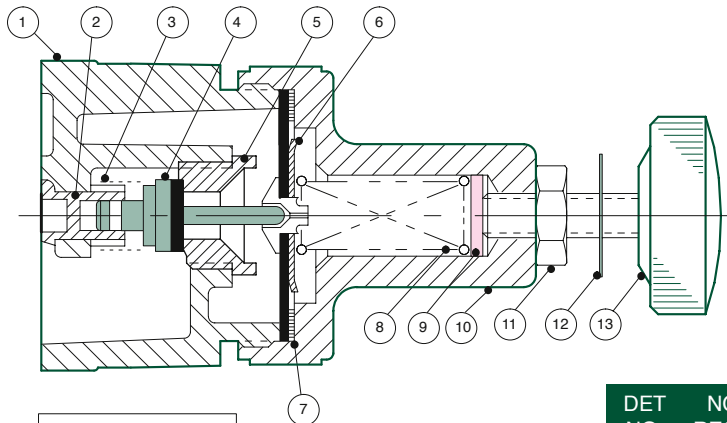
*RS models require (1)

** (1) for RS; (2) for RD; (4) for RC, RQ

~(4) for RS

†Secure studs to the mounting with a 5/32 hex drive wrench.

Regulator Service Kit



DET. NO.	NO. REQ'D	PART NAME	PRESSURE RANGE PSIG		
			3-30	5-60	10-130
1	1	Regulator Assembly	Not Sold Separately		
2 *	1	Retainer	116-291	116-291	116-291
3 *	1	Spring	115-210	115-210	115-210
4 *	1	Poppet Assembly	221-121	221-121	221-121
5 *	1	Poppet Seat	124-142	124-142	124-142
6 *	1	Diaphragm Assembly	213-285	213-285	213-285
7 *	1	Washer	116-292	116-292	116-292
8	1	Bonnet Spring	115-211	115-212	115-213
9 *	1	Spring Guide	116-293	116-293	116-293
10	1	Bonnet	125-314	125-314	125-314
11	1	Locknut	128-177	128-177	128-177
12	1	Pressure Label	122-508	122-509	122-510
13	1	Knob Assembly	213-284	213-284	213-284
14	1	Regulator Gauges (with PSIG of...)	214-116 (0-60)	214-117 (0-100)	214-103 (0-160)

End Jumper Plate Kit 229-644

For type RD regulators: add options "016N" or "016P" to regulator model number.

Regulator Unit Kits

(includes regulator assembly, gaskets, screws)

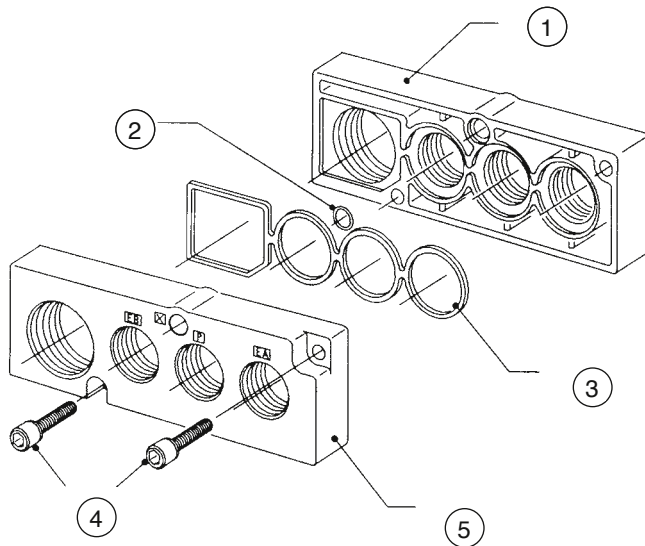
229-641	229-642	229-643
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*Indicates all parts included in regulator service kit.



End Plate Kit

239-565

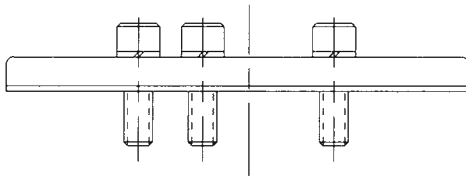


Parts List

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Right End PLate	104-479
2	1	O-Ring	126-107
3	1	Gasket	113-298
4	2	Screw Assembly	127-222
5	1	Left End Plate	104-478

Blank Station Plate Kit

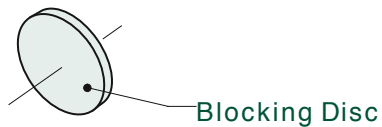
239-576



Blocking Disc

124-160

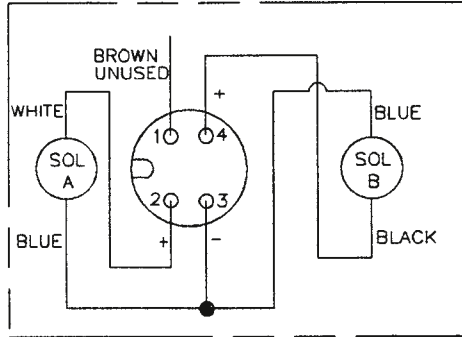
Used for blocking any gallery in the 125 FlexiBlok system.



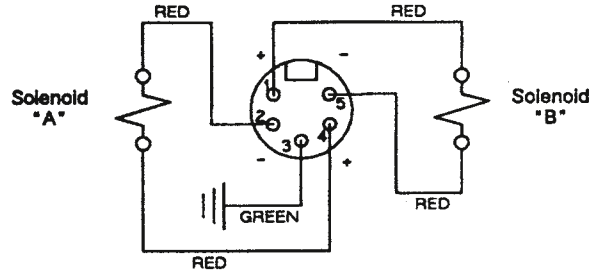


125 Series

Wiring Diagram for Option 61E & 62B



Wiring Diagram for Option S & V (Ford)

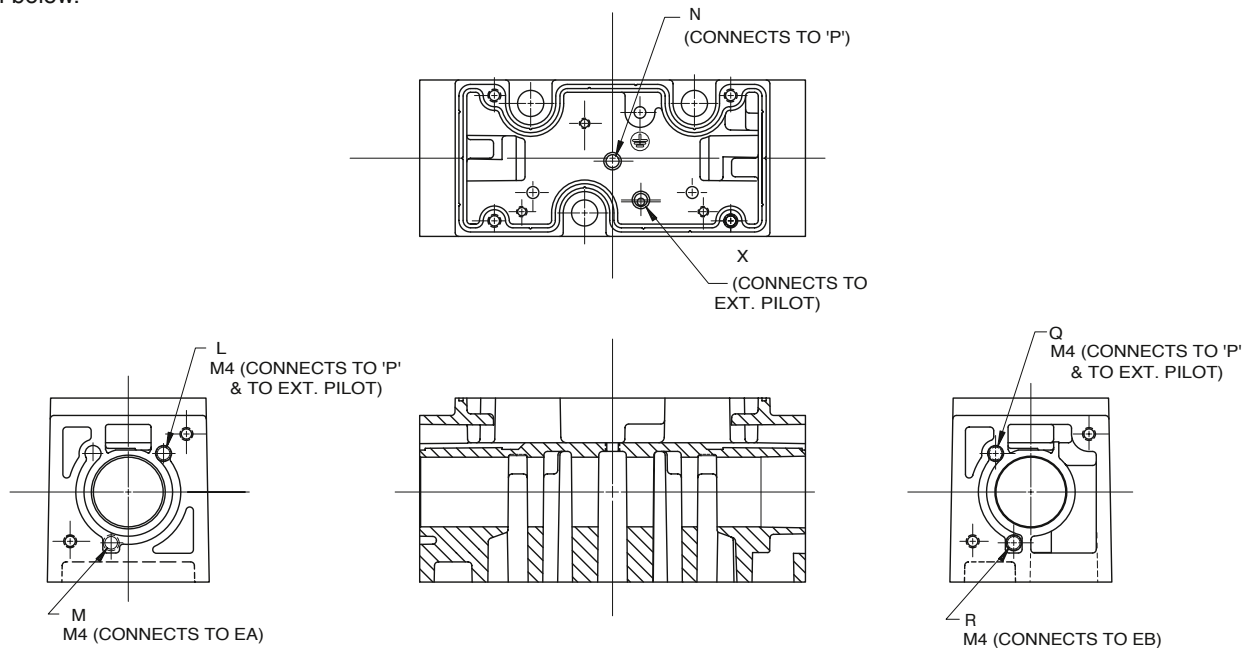


Pilot Port Plugging Arrangements For SPA 125 Series

The Numatics valve bodies used for the 125 Series have a number of pilot passages. Simply by opening or plugging certain passages, a number of different pilot supply options are available.

These views show the location of all passages. The letters do not appear on the casting. They are used only to identify the ports and the locations on the valve body. Pilot ports X and N use a nylon plug assembly while ports L, M, Q, and R all take a screw set, part # 127-691.

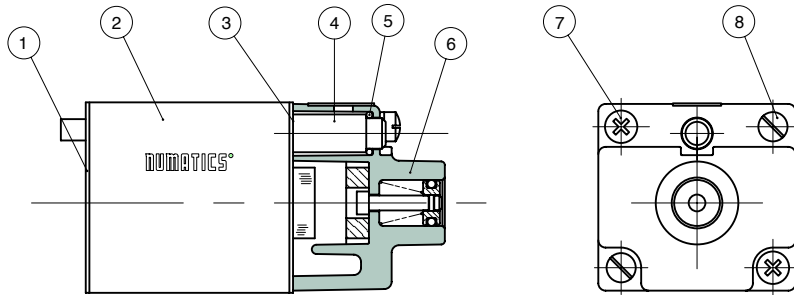
A cross section of the valve body and both end views are shown below.



PILOT PORT	INTERNAL FROM PORT "P"		INTERNAL FROM PORT "EA"		INTERNAL FROM PORT "EB"		INTERNAL FROM PORT "X"	
	SINGLE SOLENOID-PILOT	DOUBLE SOLENOID-PILOT	SINGLE SOLENOID-PILOT	DOUBLE SOLENOID-PILOT	SINGLE SOLENOID-PILOT	DOUBLE SOLENOID-PILOT	SINGLE SOLENOID-PILOT	DOUBLE SOLENOID-PILOT
L	Plug	Open		Open	Plug	Open	Plug	Open
M	Plug	Plug		Open	Plug	Plug	Plug	Plug
N	Open	Open	NOT AVAILABLE	Plug	Plug	Plug	Plug	Plug
X	Plug	Plug		Plug	Plug	Plug	Open	Open
Q	Open	Open		Open	Plug	Open	Open	Open
R	Plug	Plug		Plug	Open	Open	Plug	Plug



Solenoid Capsule Assembly

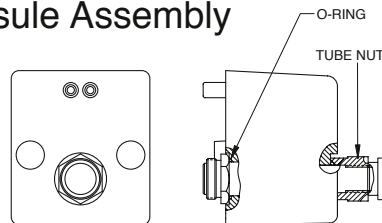


DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Gasket	113-268
2	1	Solenoid Assembly	See Chart Below
3	1	Gasket	113-267
4	1	Light Assembly	See Chart Below
5	1	O-Ring Seal	126-144
6	1	End Cap Assembly	204-602
7	2	End Cap Screws	127-297
8	2	Solenoid Screw AC Solenoid Screw DC	127-298 127-302
9	1	Bumper	Blk. 2 Position 114-134 Red 3 Position 114-133

	VALVE FUNCTION	PLUG-IN STYLE	VOLTAGE					
			100-115/50 110-120/60	AC 200-230/50 220-240/60	24/50-60	DC 12 VDC	24 VDC	
Solenoid Capsule Assembly	Includes End Cap, Solenoid, Screws and Gaskets	2 position	Std. w/Light	237-325	237-326	237-426	226-800	226-801
		3 position	Std. w/Light	237-331	237-332	237-425	226-804	226-805
Solenoid Assembly	* Solenoids Only	Std. Plug-in		228-702	228-707	228-692	225-371	225-372
	Light Only			230-235	230-236	230-284	230-283	230-284

*End cap, screws and gaskets not included

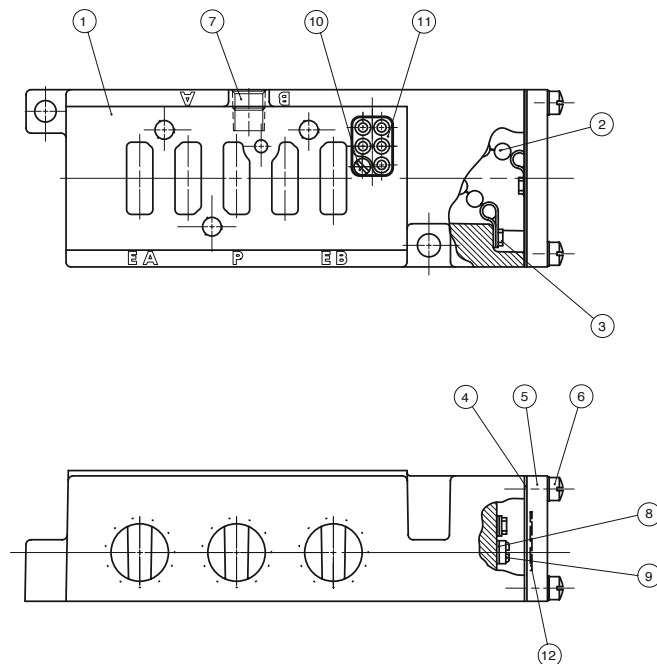
Solenoid - Pilot Capsule Assembly



VOLTAGE	PART NUMBER
24 VDC	236-384
120/60 VDC	237-1045

Includes core tube plunger and solenoid diffusion nut.

Base Assembly Kit



Base Assemblies, Side Ports

PORT SIZE	PART NUMBER
1/4 NPTF	203-793
3/8 NPTF	203-795
1/2 NPTF	203-797

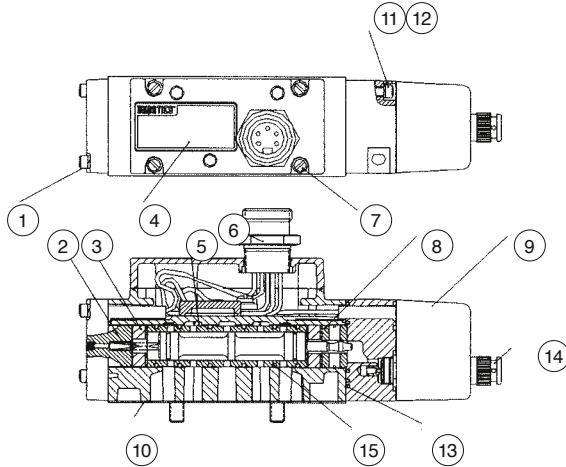
DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Base 1/4 NPTF Base 3/8 NPTF Base 1/2 NPTF	103-699 103-700 103-701
2	1	Cover Chain	125-185
3	2	Screw	127-180
4	1	Gasket	113-265
5	1	Conduit Cover	105-240
6	2	Screw Assembly	127-296
7	1	Pipe Plug	129-100
8	1	Washer	128-162
9	1	Screw	127-176
10	1	Screw	127-342
11	1	Receptacle Assembly	230-615
12	1	Label	122-355



125 Series

Service Kits and Parts

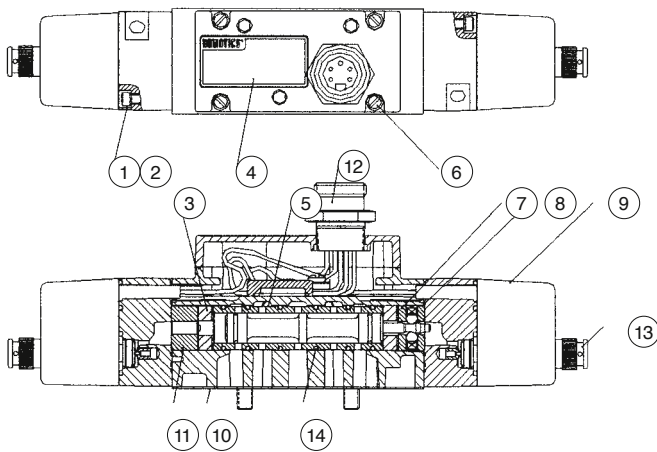
Kit No. A12SPA-K1 (For Models A12, A13, A14, BA4)



DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	2	Screw Assembly	127-320
2	1	Spring	115-248
3	2	Bumper	114-170
4	1	Nameplate	122-945
5	1	Sleeve Assembly w/seals	209-505
6	1	Connector 5 Pin AC	230-533
6	1	Connector 4 Pin DC	230-972
7	4	Screw Assembly	127-296
8	1	Detented Body	110-113
9	1	Pilot Assembly DC Blue	See p. 23
*9	1	Pilot Assembly AC Black	See p. 23
10	1	Gasket	113-417
11	2	Screw	127-606
12	2	Lockwasher	128-116
13	2	Gasket	113-495
14	1	Diffusion Nut	128-317
15	6	O-Ring	126-204

* Includes core tube, plunger, solenoid diffusion nut

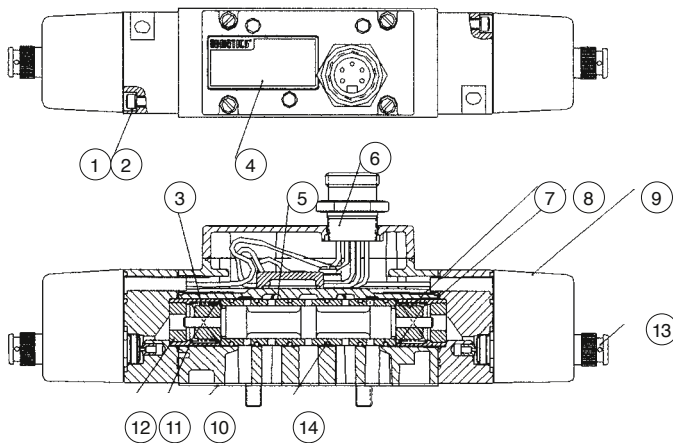
Kit No. A12SPA-K2 (For Models A12, A13, A14, BB4)



DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	4	Soc. HD. Cap Screw	127-606
2	4	Hi-Collar Lockwasher	128-116
3	2	Bumper	114-170
4	1	Nameplate	122-945
5	1	Sleeve Assembly w/seals	209-505
6	4	Screw Assembly	127-296
7	1	Detent Assembly	210-116
8	2	Gasket	113-495
*9	2	Pilot Assembly DC Blue	See p. 23
*9	2	Pilot Assembly AC Black	See p. 23
10	1	Gasket	113-417
11	1	Spacer	116-420
12	1	Connector 4 Pin DC	230-972
13	1	Connector 5 Pin AC	230-533
13	2	Diffusion Nut	128-317
14	6	O-Ring	126-204

* Includes core tube, plunger, solenoid diffusion nut

Kit No. A12SPA-K3 (For Models A12, A13, A14, BB5, BB6)



DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	4	Soc. HD. Cap Screw	127-606
2	4	Hi-Collar Lockwasher	128-116
3	2	Spring	115-289
4	1	Nameplate	122-945
5	1	Sleeve Assembly Open	209-524
5	1	Sleeve Assembly Blocked	209-525
6	1	Connector 5 Pin DC	230-533
6	1	Connector 4 Pin DC	230-972
7	2	Spring Retainer	116-391
8	2	Gasket	113-495
*9	2	Pilot Assembly DC Blue	See p. 23
*9	2	Pilot Assembly AC Black	See p. 23
10	1	Gasket	113-417
11	2	Spacer	116-482
12	2	Bumper	114-146
13	2	Diffusion Nut	128-317
14	6	O-Ring	126-204

* Includes core tube, plunger, solenoid diffusion nut



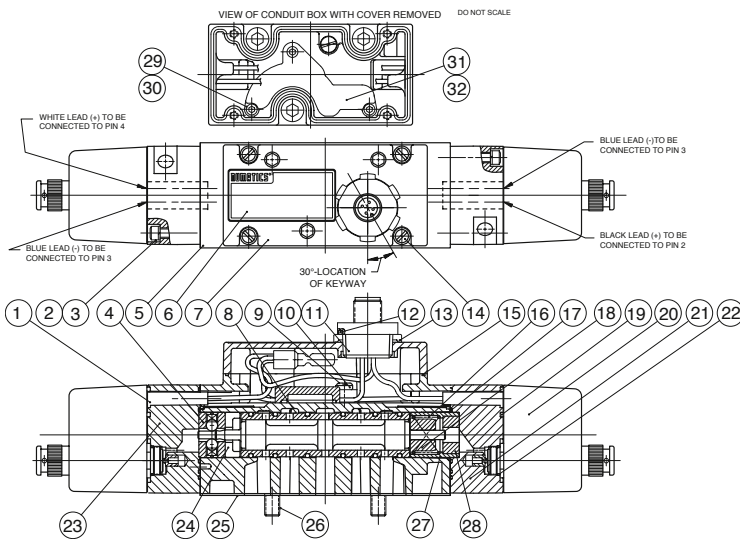
Special 125 - 3 Position

solenoid air pilot
3 position, open center
spring center "B" end
detented on "A" end



125 Series

92271U-DC



DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	2	Receptacle Housing	125-309
2	4	Soc. Hd. Cap Screw	127-606
3	4	Hi-Collar Lockwasher	128-116
4	1	Detent Assembly	210-116
5	1	Body	101-622
6	1	Nameplate	122-945
7	1	Conduit Cover	105-315
8	1	Sleeve Assembly w/Seals	209-612
9	1	Screw	127-176
10	1	Terminal Washer	128-162
11	1	Connector Assembly	230-972
12	1	O-Ring Seal	126-206
13	1	Locknut	128-342
14	4	Screw Assembly	127-296
15	1	Gasket	113-418
16	1	Spring	115-289
17	2	Gasket	113-495
18	1	Spring Retainer	116-391
19	2	O-Ring Seal	126-204
20	2	Pilot Assembly	236-384
21	1	Pilot Adaptor Assembly	219-325
22	2	O-Ring	126-133
23	1	Pilot Adaptor Assembly	219-278
24	1	Spacer	116-523
25	1	Gasket	113-417
26	3	Screw Assembly	127-120
27	1	Spacer	116-482
28	1	Bumper	114-146
29	3	Lockwasher	128-186
30	3	Screw	127-778
31	1	Gasket	113-462
32	1	Circuit Plate	119-452
33	2	Screw	127-691
34	1	Blocking Disc Assembly	213-496

Technical Data

VALVE DATA		ENGLISH	METRIC
Cv	Direct Acting Solenoid Pilot	1.8 - 2.3	
Flow Capacity	Direct Acting Solenoid Pilot	97 SCFM @ 80 PSIG upstream pressure to atmosphere	2066 NI/m @ 6 bar upstream to 5 bar downstream
Operating Pressure Range	Direct Acting Solenoid Pilot	28" Hg. Vacuum to 150 PSIG	Vacuum to 10 bar
Pilot Pressure Range	Solenoid Pilot	14.5 to 125 PSIG	1 to 8.6 bar
Temperature Range (Ambient)	Direct Acting Solenoid Pilot	-10°F to +115°F	-23°C to +46°C

Operating Data

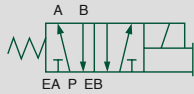
ALL SOLENOIDS ARE CONTINUOUS DUTY RATED		24 VDC	110-120 VAC / 50/60 Hz.
Power (Watts)	Direct Acting Solenoid Pilot	6 4	N/A N/A
Holding Current (Amps)	Direct Acting Solenoid Pilot	0.25 0.17	0.09 0.06

RESPONSE TIME IN SECONDS		ENERGIZE	DE-ENERGIZE	ENERGIZE	DE-ENERGIZE
2 - Position, Single, Spring Return	Direct Acting	0.038	0.012	0.012	0.012
	Solenoid Pilot	0.014	0.038	0.009	0.040
2 - Position, Double, Detented	Direct Acting	0.012	N/A	0.012	N/A
	Solenoid Pilot	0.014	N/A	0.009	N/A
3 - Position, Spring Centered	Direct Acting	0.012	0.012	0.012	0.012
	Solenoid Pilot	0.014	0.038	0.012	0.040



250 Series

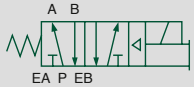
single direct solenoid,
spring return
2 position, 4-way



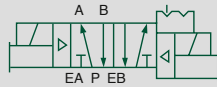
double direct solenoid,
detented
2 position, 4-way



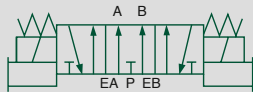
single solenoid air pilot,
spring return
2 position, 4-way



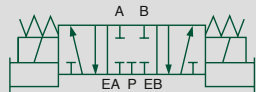
double solenoid air pilot,
detented
2 position, 4-way



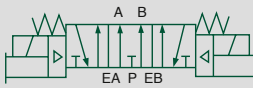
double direct solenoid
3 position, 4-way
open center



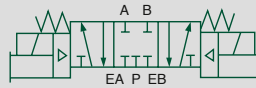
double direct solenoid
3 position, 4-way
closed center



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 and Sleeve
Cv: 4.4 - 5.8

- Plug in solenoid with indicator light
- Comply with automotive interchangeable standards
- For lubricated or unlubricated service
- Solenoid air pilot or direct acting
- Low watt 24 VDC coils
- Color coded solenoids for AC or DC
- Surge protecting bridge rectifier in coil standard for DC application



Technical Data

VALVE DATA		ENGLISH	METRIC
Cv	Direct Acting Solenoid Pilot	4.4 - 5.8	
Flow Capacity	Direct Acting Solenoid Pilot	260 SCFM @ 80 PSIG upstream pressure to atmosphere	5510 NI/m @ 6 bar upstream to 5 bar downstream
Operating Pressure Range	Direct Acting Solenoid Pilot	28" Hg. Vacuum to 150 PSIG	Vacuum to 10 bar
Pilot Pressure Range	Solenoid Pilot	14.5 to 125 PISG	1 to 8.6 bar
Temperature Range (Ambient)	Direct Acting Solenoid Pilot	-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)	Direct Acting Solenoid Pilot	N/A 4	N/A N/A
Holding Current (Amps)	Direct Acting Solenoid Pilot	N/A 0.17	0.28 single / 0.24 double 0.06

RESPONSE TIME IN SECONDS		ENERGIZE	DE-ENERGIZE	ENERGIZE	DE-ENERGIZE
2 - Position, Single, Spring Return	Direct Acting Solenoid Pilot	N/A 0.019	N/A 0.079	0.015 0.015	0.030 0.090
2 - Position, Double, Detented	Direct Acting Solenoid Pilot	N/A 0.019	N/A N/A	0.015 0.015	N/A N/A
3 - Position, Spring Centered	Direct Acting Solenoid Pilot	N/A 0.019	N/A 0.079	0.015 0.015	0.030 0.090



How to Order

Valve

A23 SA 4 00 S 0 000 30

Valve Series & Port Size

A23 = Automotive 250
3/8" NPTF
A24 = Automotive 250
1/2" NPTF
A25 = Automotive 250
3/4" NPTF
A26 = Automotive 250
1" NPTF

Valve Type

SA = Single Solenoid, Spring Return
SS = Double Solenoid
BA = Single Solenoid, Air Pilot
Spring Return
BW = Single Solenoid, Air Pilot
Air/Spring Return
BB = Double Solenoid, Air Pilot

Function

4 = 2-Position, 4-way
5 = 3-Position, 4-way Open Center
6 = 3-Position, 4-way closed Center

Mounting Means

00 = Valve Unit Only, No Mounting
15 = Manifold Block, Sides and Bottom Cylinder Ports
3A = Base, Side Ports, Individual Exhaust

Volatge

30 = 120 VAC
61 = 24 VDC

Special Options

13S = Right Angle Mini Plug
47E = 5-Pin B.H. Micro
Conn. Chrysler
56Y = 4-Pin Micro Conn.
Pin 1-N/02-12, 3C, 4-14
60C = 5-Pin Single Key Way
Micro Conn. Chrysler
61E = 4-Pin Micro Ford
62B = 61E Plus Internal Pilot
from Port P

Port Type

0 = NPTF (direct acting)
T = NPTF (air pilot)

Wiring Option

F = AC with light Hardwired
K = AC with Light Plug-In
S = 5-Pin Mini with Light (Ford) AC
8 = 5-Pin Mini with Light (Chrysler) AC
R = Special Wiring, Standard DC

Regulator

A23 RS 1 15 O P 000 00

Valve Series & Port Size

A23 = Automotive 250 3/8" NPTF
A24 = Automotive 250 1/2" NPTF
A25 = Automotive 250 3/4" NPTF
A26 = Automotive 250 1" NPTF

Regulator Type

RS = Single Pressure to "P" Pilot
RD = Double Pressure to "EA" and
"EB" Ports
RC = Regulator with Non-Relieving
Check
RQ = Regulator with Relieving Checks

Pressure Range

1 = 10-130 PSIG
3 = 3-30 PSIG
4 = 5-60 PSIG

Volatge

00 = N/A

Special Options

12H = Less Gauge
16N = Jumper on "A"
16P = Jumper on "B"

Port Type

P = NPTF

Wiring Option

O = No Receptacle

Mounting Means

00 = Regulator Unit Only, No Mounting
15 = Manifold Block, Sides and Bottom
Cylinder Ports
3A = Base, Side Ports

How To Order A Manifold Assembly

A typical five-station assembly may be as follows:

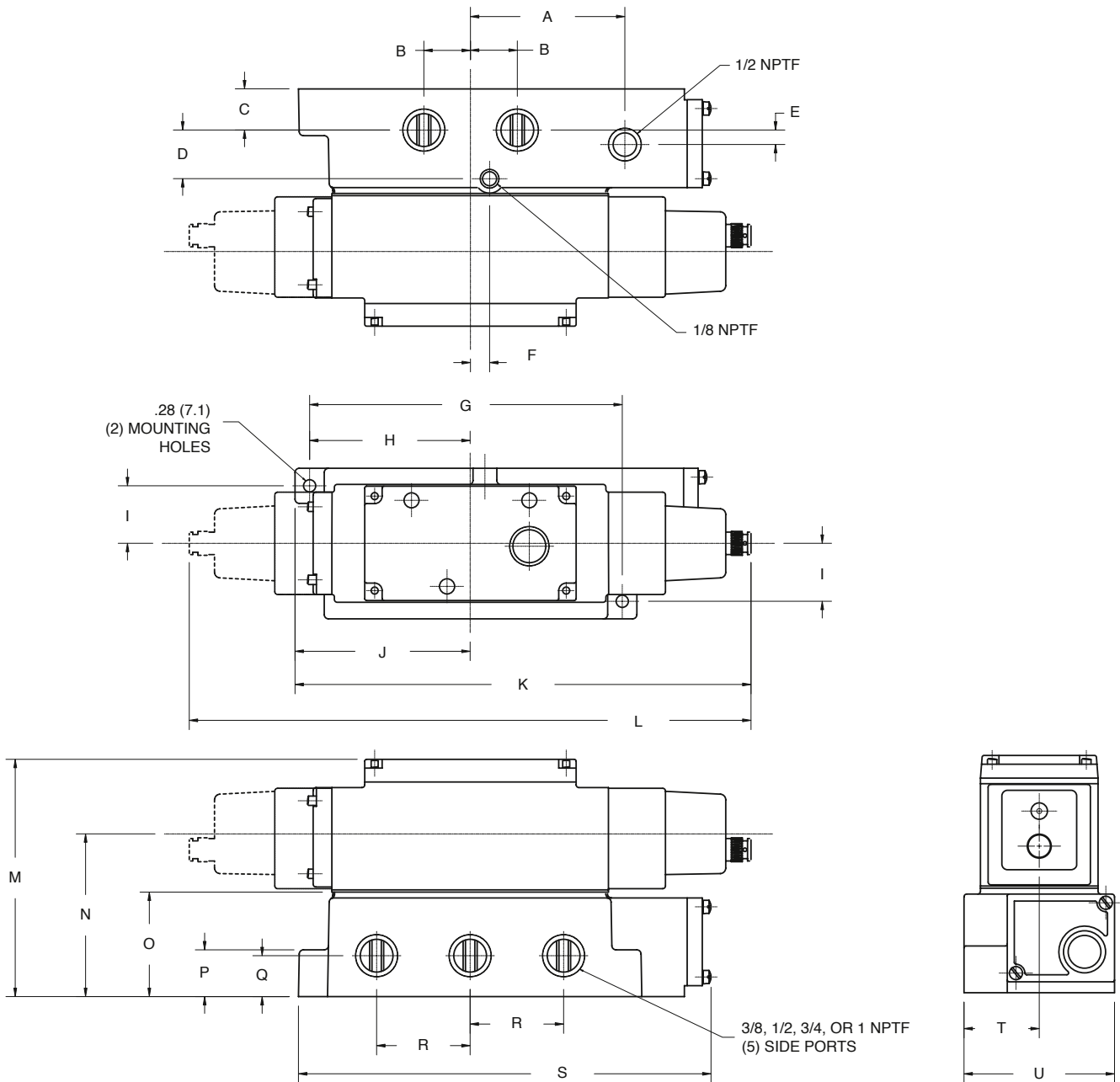
Assembly Kit	AK250-5
Station 1	A24BA415RT61E61
Station 2	A24BA415RT61E61
Station 3	A24BA415RT61E61
Blocking Plug	(Install in P Gallery)
Station 4	A24BB415RT61E61
Station 5	A24BB615RT61E61
	ASSEMBLED

NOTE: BA4, BW4, BB4, and BB6 valves are internally piloted from Port P. BB5 valves are internally piloted from Port EA unless ordered with 62B special option.



250 Series

Valve and Base



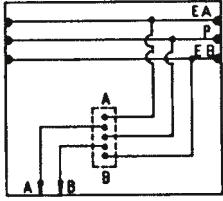
Dimensions

top dimensions = inches and bottom dimensions (in parenthesis) = millimeters

A	B	C	D	E	F	G	H	I	J	K	L	M
3.30 (83.8)	1.00 (25.4)	0.88 (22.3)	1.04 (26.4)	0.31 (7.9)	0.41 (10.4)	6.69 (170.0)	3.44 (87.4)	1.23 (31.2)	3.75 (95.3)	9.75 (247.7)	12.02 (305.3)	5.05 (128.3)
N	O	P	Q	R	S	T	U	U	V	W	X	Y
3.48 (88.4)	2.32 (58.6)	1.00 (25.4)	0.88 (22.4)	2.00 (50.8)	8.80 (223.5)	1.61 (40.9)	3.22 (81.8)					



Manifold Dimensions

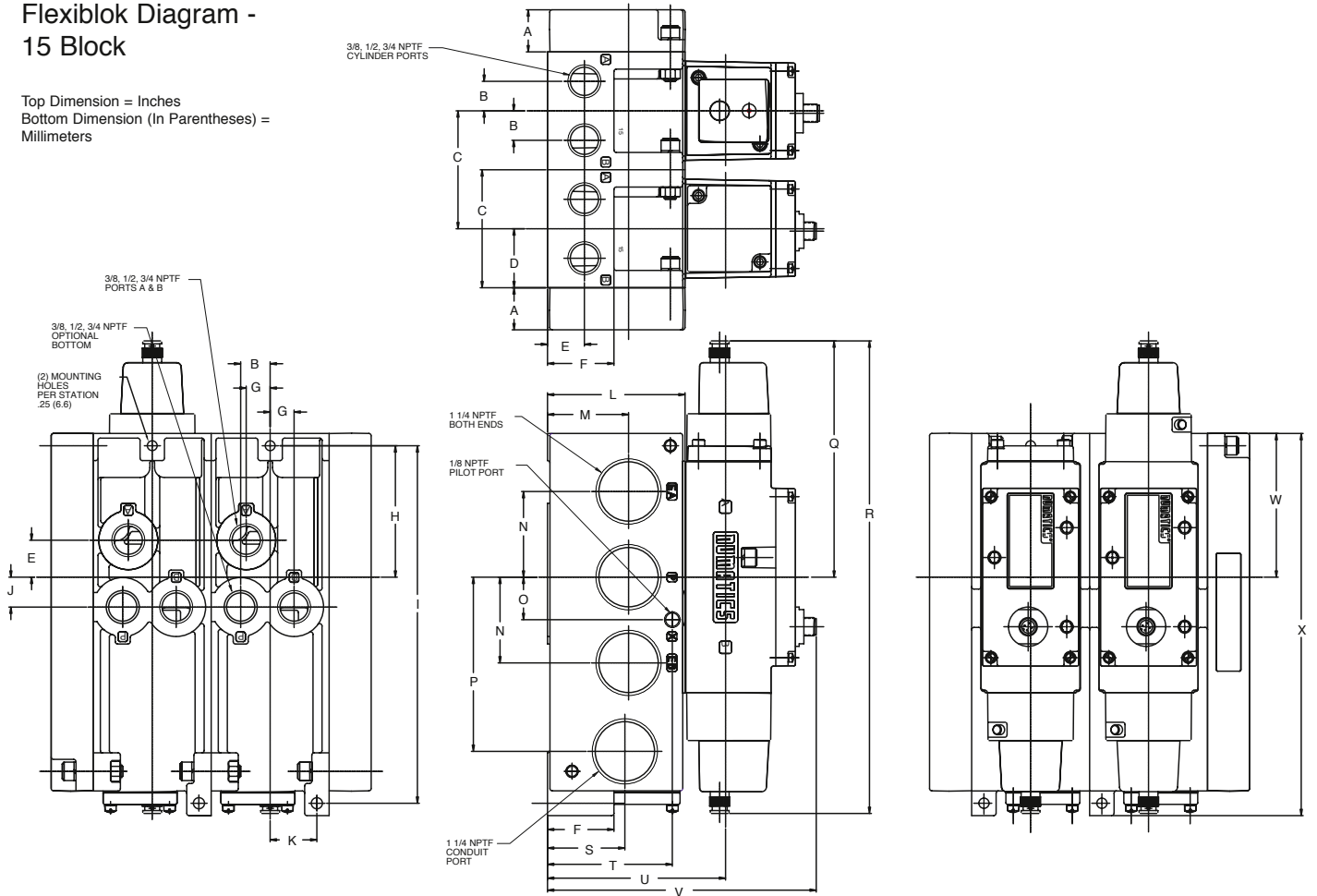


Flexiblok Diagram - 15 Block

Top Dimension = Inches
Bottom Dimension (In Parentheses) = Millimeters

Manifold Block Kit Numbers

DESCRIPTION	3/8 NPTF	1/2 NPTF	3/4 NPTF
Block with Plug	239-570	239-571	239-572
Block without Plug	239-573	239-574	239-575



Dimensions

top dimensions = inches and bottom dimensions (in parenthesis) = millimeters

A	B	C	D	E	F	G	H	I	J	K	L	M
1.07 (27.2)	0.75 (19.0)	3.00 (76.2)	1.50 (38.1)	0.94 (23.9)	1.69 (42.9)	0.61 (15.5)	3.34 (84.8)	9.09 (230.9)	0.76 (19.3)	1.19 (30.2)	3.50 (88.9)	2.06 (52.3)
N	O	P	Q	R	S	T	U	V	W	X	X	Y
2.18 (27.4)	1.08 (27.4)	4.43 (112.5)	6.01 (152.7)	12.02 (305.3)	1.97 (50.0)	3.18 (80.8)	4.53 (115.1)	6.84 (173.7)	3.66 (93.0)	9.72 (246.9)		



250 Series

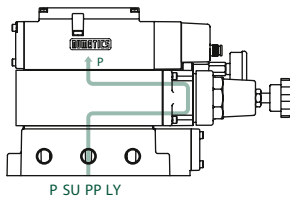
Sandwich Pressure Regulator

Types: RS / RD / RC / RQ

When ordering a valve plus regulator mounted on a base or manifold, list the valve unit only model number and include the mounting requirements only with the regulator. Specify "Assembled."

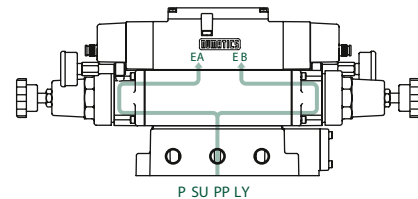
Example orders:	TYPE RS	TYPE RD
Valve unit only:	A23BA400KT00030	A23BA400KT00030
Regulator	A24RS115J000000 ASSEMBLED	A24RD115J000000 ASSEMBLED

Type RS



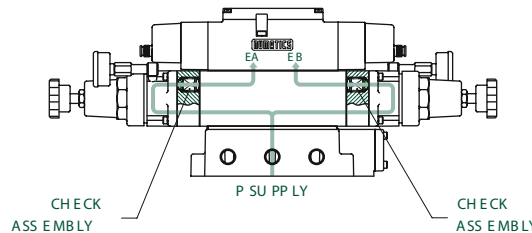
Single pressure from a single supply.

Type RD



Dual pressure from a single supply.

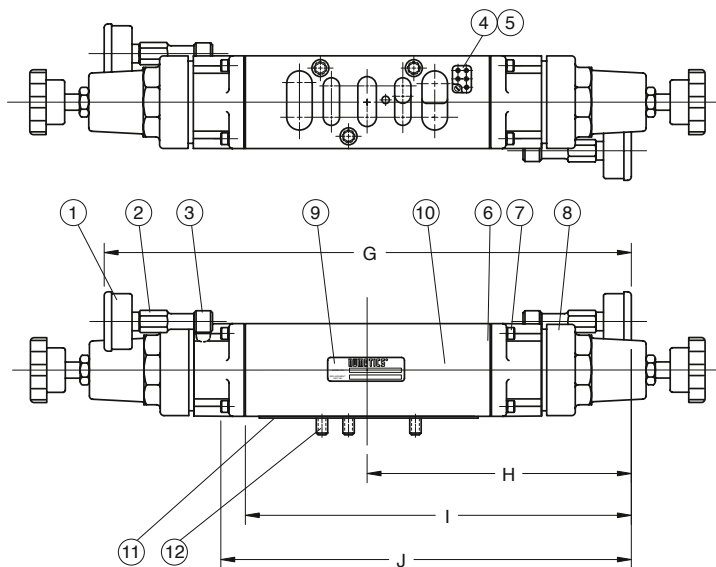
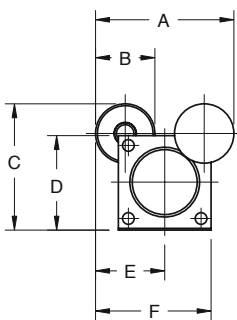
Type RC



Type RC is Non-Relieving: traps downstream pressure if upstream pressure is exhausted.

Type RQ

Type RQ is Relieving: exhaust pressure in cylinder if upstream pressure is exhausted.



Dimensions

Top Dimension = Inches
Bottom Dimension (In Parentheses) = Millimeters

Parts list on page 31.

A	B	C	D	E	F	G	H	I	J
3.73 (94.7)	1.60 (40.6)	3.41 (86.6)	2.55 (64.8)	1.87 (47.5)	3.12 (79.2)	14.68 (372.9)	7.34 (186.4)	10.64 (270.3)	11.30 (287.0)

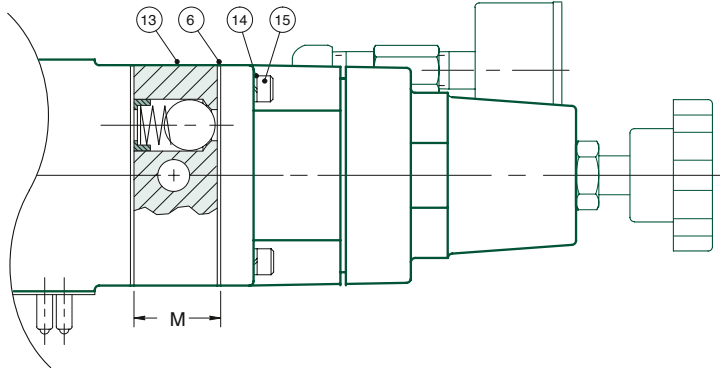


Check Assembly Kits

RC: 239-540

RQ: 239-538

Parts List



DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	2*	Gauge - See Chart Below	
2 *	2*	Fitting	134-221
3 *	2*	Fitting	134-222
4	1	Plug Receptacle (SPA 55)	230-344
5	1	Screw (SPA 55)	127-342
6 *	**	Gasket to Regulator Body	113-234
7	8~	Screw Assembly	127-103
8	2*	Reg. Assembly (not sold separately)	
9 *	1	Nameplate	122-551
10 *	1	Regulator Block	RS 125-360 RD, RC, RQ 125-361 RT 125-363 RE 125-362
11	1	Gasket body/base	113-292
12	3	Studs†	127-339
13 *	2	Check Assembly (not sold separately)	
14	2	Hi-Collar Lockwasher (RC, RQ only)	128-110
15	8	Screw (RC, RQ only)	127-108

*RS models require (1).
 **(1) for RS; (2) for RD; (4) for RC, RQ.
 ~RS models require (4).
 †Secure studs to the mounting with a 5/32 hex wrench.

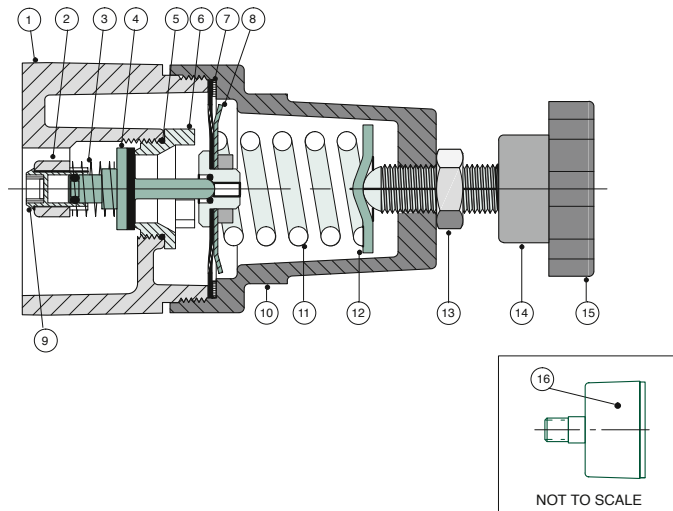
Regulator Service Kit

239-2277

RE Jumper Plate Kit 229-840

Jumper Plate Kit 229-539

Parts List



DET. NO.	NO. REQ'D	PART NAME	3-30	5-60	10-130
1	1	Regulator Assembly** (not sold separately)			
2	1	Retainer	116-257	116-257	116-257
3 *	1	Spring	115-241	115-241	115-241
4 *	1	Poppet Assembly	221-125	221-125	221-125
5 *	1	O-Ring Seal	126-208	126-208	126-208
6 *	1	Poppet Seat	124-155	124-155	124-155
7 *	1	Washer	116-322	116-322	116-322
8 *	1	Diaphragm Assembly	213-330	213-302	213-302
9	1	Spacer	116-338	116-338	116-338
10	1	Bonnet	125-371	125-371	125-371
11	1	Bonnet Spring	115-237	115-238	115-239
12	1	Spring Guide	112-268	112-268	112-268
13	1	Locknut	128-107	128-107	128-107
14	1	Knob Assembly	123-143	123-143	123-143
15	1	Pressure Label	122-611	122-612	122-613
16	1	Regulator Gauges (with PSIG of...)	214-116 (0-60)	214-117 (0-100)	214-103 (0-160)

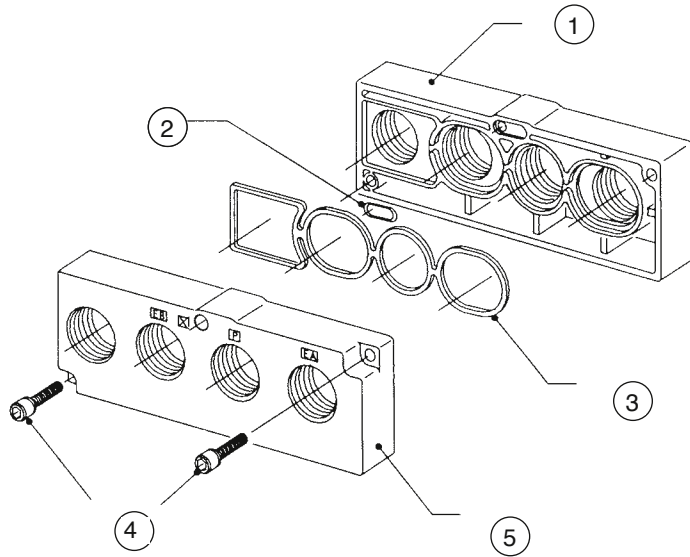
**Regulator Unit Kits (includes regulator assembly, gaskets, and screws) 229-902 229-903 229-904



250 Series

End Plate Kit

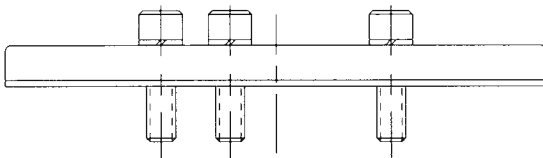
239-569



DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Right End Plate	104-481
2	1	O-Ring	126-205
3	1	Gasket	113-291
4	2	Screw Assembly	127-222
5	1	Left End Plate	104-480

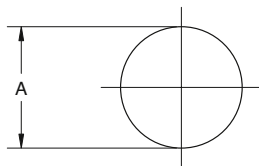
Blank Station Plate Kit

239-577

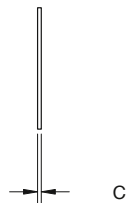
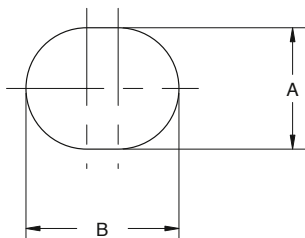


Blocking Disc

Port P



Ports EA and EB

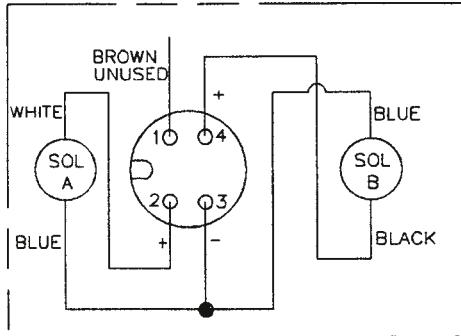


PORT	PART NO.	A	B	C
P	124-153	1.56	1.96	0.05
EA and EB	124-154	(39.6)	(49.8)	(1.3)

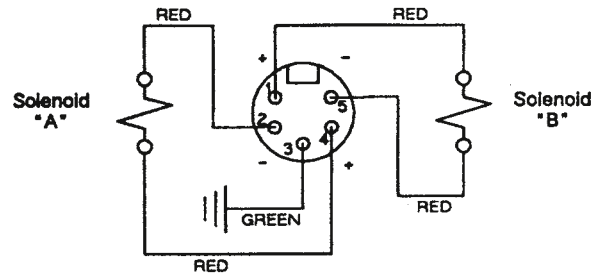


250 Series

Wiring Diagram for Options 8 & 9 (Chrysler)



Wiring Diagram for Options 47E & 47J

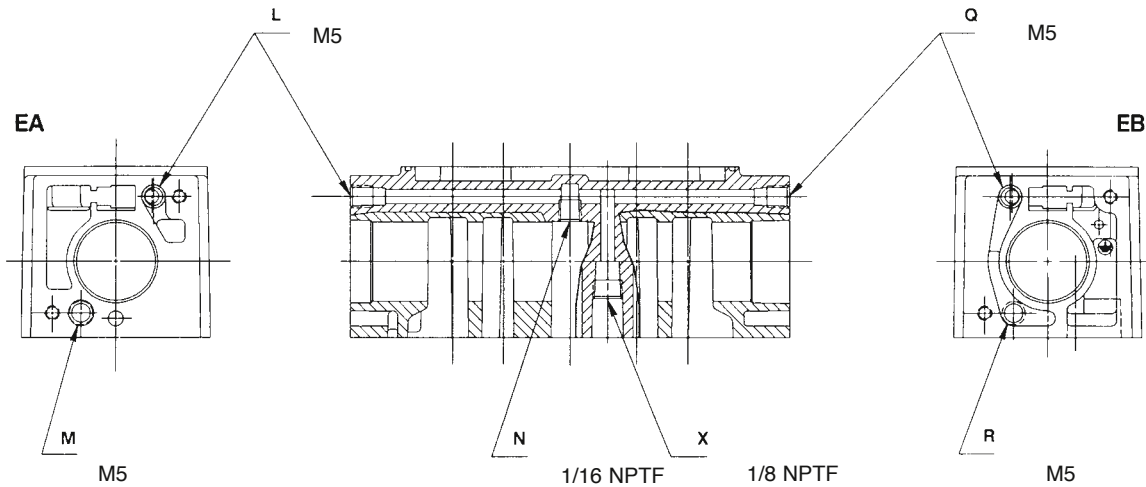


Pilot Port Plugging Arrangements For SPA 250 Series

The Numatics valve bodies used for the 250 Series have a number of pilot passages. Simply by opening or plugging certain passages, a number of different pilot supply options are available.

These views show the location of all passages. The letters do not appear on the casting. They are used only to identify the ports and the locations on the valve body. Pilot port X accepts a 1/8 NPTF pipe plug (129-110). Pilot port N accepts a 1/16 NPTF pipe plug (129-118). Pilot ports L, M, Q, and R accept set screw (127-589).

A cross section of the valve body and both end views are shown below.

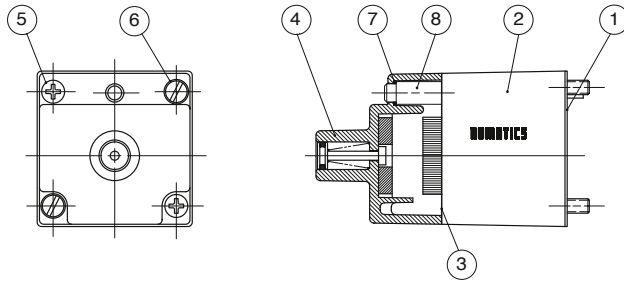


PILOT PLUG	INTERNAL FROM PORT "P"		INTERNAL FROM PORT "EA"		INTERNAL PORT "EB"		Internal From Port "X"	
	SINGLE SOLENOID-PILOT	DOUBLE SOLENOID-PILOT	SINGLE SOLENOID-PILOT	DOUBLE SOLENOID-PILOT	SINGLE SOLENOID-PILOT	DOUBLE SOLENOID-PILOT	Single Solenoid-Pilot	Double Solenoid-Pilot
L	Plug	Open		Open	Plug	Open	Plug	Open
M	Plug	Plug		Open	Plug	Plug	Plug	Plug
N	Open	Open		Plug	Plug	Plug	Plug	Plug
X	Plug	Plug	NOT AVAILABLE	Plug	Plug	Plug	Open	Open
Q	Open	Open		Open	Plug	Open	Open	Open
R	Plug	Plug		Plug	Open	Open	Plug	Plug



250 Series

Solenoid Capsule Assembly

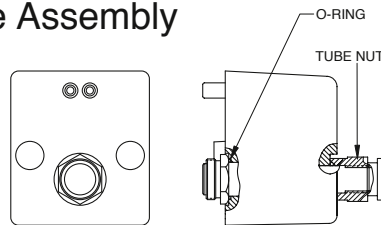


DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Gasket	113-293
2	1	Solenoid Assembly	See Chart Below
3	1	Gasket	113-294
4	1	End Cap Assembly	204-316
5	2	Screw	127-337
6	2	Screw	127-338
7	1	Seal	126-144
8	1	Light Assembly	See Chart Below

				VOLTAGE - AC		
		VALVE FUNCTION	PLUG-IN STYLE	100-115/50 110-120/60	200-230/50 220-240/60	24/50-60
Solenoid Capsule Assembly	Single Solenoid	2 position	Std. w/light	237-475	237-474	237-476
	Double Solenoid	3 position	Std. w/light	237-487	237-486	237-488
	Double Solenoid	Detented	Std. w/light	237-484	237-483	237-485
Solenoid Assembly	*Solenoids Only	Single Solenoid	Std. Plug-in	228-714	228-713	228-715
		Double Solenoid	Std. Plug-in	228-717	228-716	228-718
Indicator	Light Only			230-235	230-236	230-284

*End cap, screws and gaskets not included

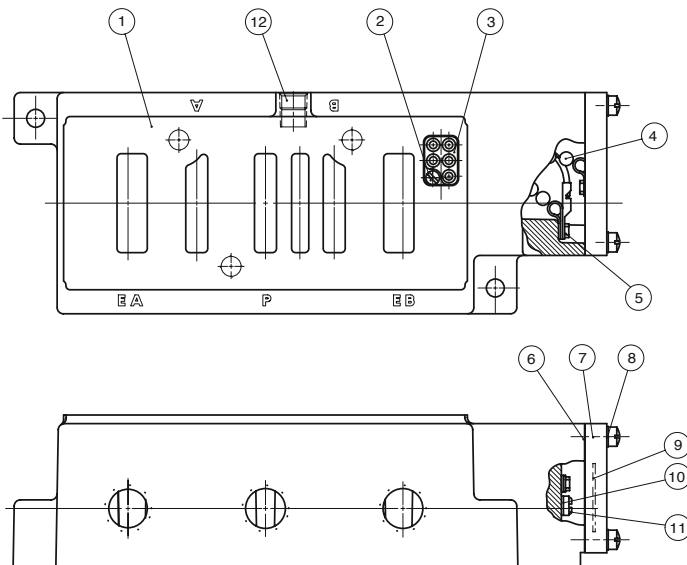
Solenoid - Pilot Capsule Assembly



VOLTAGE	PART NUMBER
24 VDC	236-384
100-115/50 110-120/60	237-1045

Includes core tube plunger and solenoid diffusion nut.

Base Assembly Kit



Base Assemblies, Side Ports

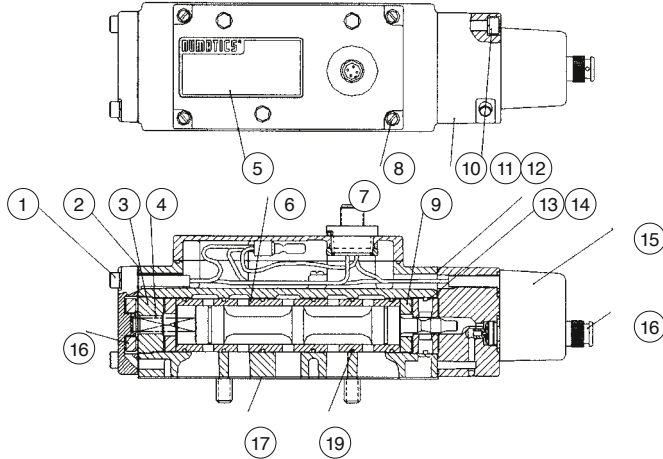
PORT SIZE	PART NUMBER
3/8 NPTF	203-798
1/2 NPTF	203-800
3/4 NPTF	203-802
1 NPTF	203-804

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Base 3/8 NPTF	103-702
		Base 1/2 NPTF	103-703
		Base 3/4 NPTF	103-704
		Base 1 NPTF	103-705
2	1	Screw	127-342
3	1	Recept. Assembly	230-615
4	1	Chain Cover	125-185
5	2	Screw	127-180
6	1	Gasket	113-265
7	1	Conduit Cover	105-240
8	2	Screw Assembly	127-296
9	1	Label	122-355
10	1	Washer	128-162
11	1	Screw	127-176
12	1	Pipe Plug	129-100

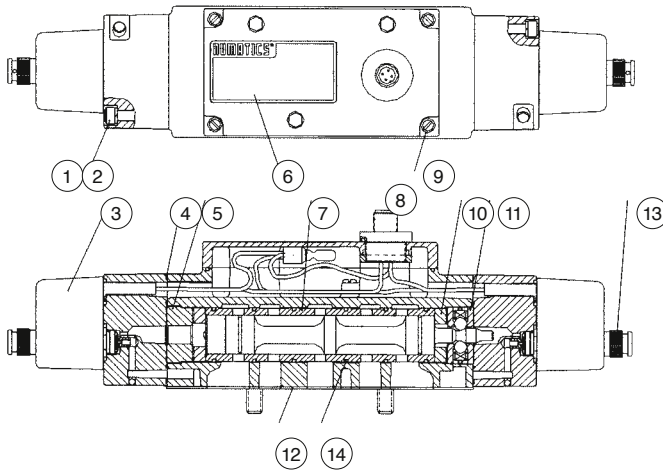


Service Kits and Parts

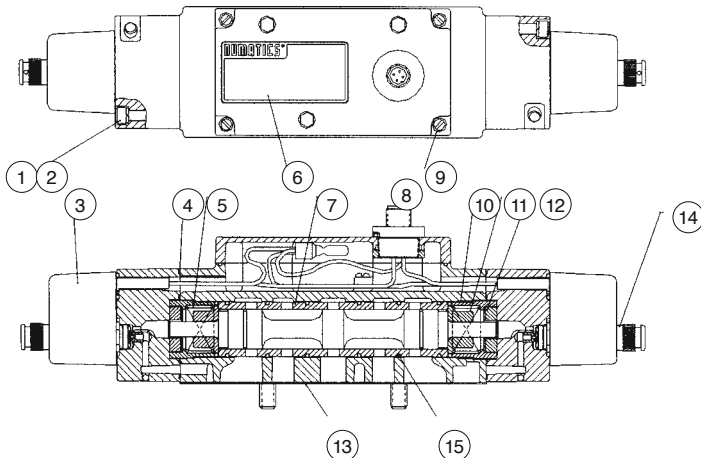
Kit No. A23SPA-K1 (For Models A22, A23, A24, BA4)



Kit No. A23SPA-K2 (For Models A22, A23, A24, BB4)



Kit No. A23SPA-K3 (For Models A22, A23, A24, BB5, BB6)



DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	2	Screw Assembly	127-103
2	1	Gasket	113-293
3	1	Spacer	116-317
4	1	Spring	115-165
5	1	Nameplate	122-944
6	1	Sleeve Assembly w/seals	209-410
7	1	Connector 4 Pin DC	230-972
7	1	Connector 5 Pin AC	230-533
8	4	Screw Assembly	127-296
9	2	Bumper	114-110
10	1	Adaptor Assembly	219-279
11	2	Screw	127-200
12	2	Lockwasher	128-110
13	1	Gasket	113-461
14	1	Detented Body	110-115
*15	1	Pilot Assembly DC Blue	See p. 34
*15	1	Pilot Assembly AC Black	See p. 34
16	1	Spacer	116-423
17	1	Gasket	113-439
18	1	Diffusion Nut	128-317
19	6	O-Ring	126-209

* Includes core tube, plunger, solenoid, diffusion nut

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	4	Screw	127-200
2	4	Lockwasher	128-110
*3	2	Pilot Assembly DC Blue	See p. 34
*3	2	Pilot Assembly AC Black	See p. 34
4	2	Gasket	113-461
5	1	Spacer	116-317
6	1	Nameplate	122-944
7	1	Sleeve Assembly w/seals	209-410
8	1	Connector 4 Pin DC	230-972
8	1	Connector 5 Pin AC	230-533
9	4	Screw Assembly	127-296
10	2	Bumper	114-110
11	1	Detent Assembly	210-119
12	1	Gasket	113-439
13	2	Diffusion Nut	128-317
14	6	O-Ring	126-209

* Includes core tube, plunger, solenoid, diffusion nut

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	4	Screw	127-200
2	4	Lockwasher	128-110
*3	2	Pilot Assembly DC Blue	See p. 34
*3	2	Pilot Assembly AC Black	See p. 34
4	2	Gasket	113-461
5	2	Spring	115-242
6	1	Nameplate	122-944
7	1	Sleeve Assembly Closed	209-408
7	1	Sleeve Assembly Open	230-409
8	1	Connector 4 Pin DC	230-972
8	1	Connector 5 Pin AC	230-533
9	4	Screw Assembly	127-296
10	2	Spacer	116-343
11	2	Spring Retainer	116-333
12	2	Bumper	114-108
13	1	Gasket	113-439
14	2	Diffusion Nut	128-317
15	6	O-Ring	126-209

* Includes core tube, plunger, solenoid, diffusion nut



250 Series

Special 250 - 3 Position

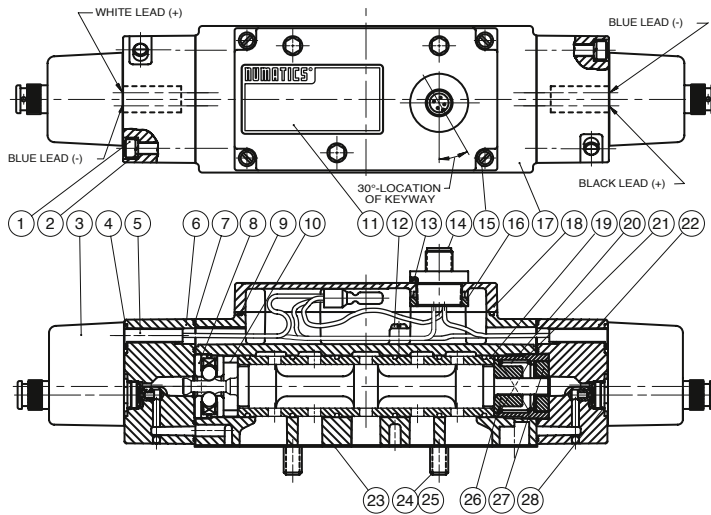
solenoid air pilot
3 position, open center
spring center "B" end
detented on "A" end



DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	4	Screw	127-200
2	4	Lockwasher	128-110
3	2	Pilot Assembly	236-384
4	2	O-Ring Seal	126-204
5	2	Receptacle Housing	125-309
6	1	Adaptor Assembly	219-279
7	2	Gasket	113-461
8	1	Detent Assembly	210-155
9	1	Gasket	113-420
10	1	Spacer	116-486
11	1	Nameplate	122-944
12	1	Screw	127-176
13	1	O-Ring Seal	126-206
14	1	Connector Assembly	230-972
15	4	Screw Assembly	127-296
16	1	Locknut	128-314
17	1	Body	101-566
18	1	Conduit Cover	105-316
19	1	Sleeve Assembly w/Seals	209-613
20	1	Spring	115-242
21	1	Spacer	116-343
22	1	Adaptor Assembly	219-280
23	1	Gasket	113-439
24	3	Screw	127-232
25	3	Lockwasher	128-140
26	1	Spring Retainer	116-333
27	1	Bumper	114-108
28	2	O-Ring Seal	126-133
29	1	Pipe Plug	129-100
30	2	Socket Set Screw	127-589

250 Series

92272U-DC



Technical Data

VALVE DATA	ENGLISH	METRIC
Cv	Direct Acting Solenoid Pilot 1.8 - 2.3	
Flow Capacity	Direct Acting Solenoid Pilot 97 SCFM @ 80 PSIG upstream pressure to atmosphere	2066 NI/m @ 6 bar upstream to 5 bar downstream
Operating Pressure Range	Direct Acting Solenoid Pilot 28" Hg. Vacuum to 150 PSIG	Vacuum to 10 bar
Pilot Pressure Range	Solenoid Pilot 14.5 to 125 PSIG	1 to 8.6 bar
Temperature Range (Ambient)	Direct Acting Solenoid Pilot -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)	Direct Acting Solenoid Pilot 6 4	N/A N/A
Holding Current (Amps)	Direct Acting Solenoid Pilot 0.25 0.17	0.09 0.06

RESPONSE TIME IN SECONDS		ENERGIZE	DE-ENERGIZE	ENERGIZE	DE-ENERGIZE
2 - Position, Single, Spring Return	Direct Acting	0.038	0.012	0.012	0.012
	Solenoid Pilot	0.014	0.038	0.009	0.040
2 - Position, Double, Detented	Direct Acting	0.012	N/A	0.012	N/A
	Solenoid Pilot	0.014	N/A	0.009	N/A
3 - Position, Spring Centered	Direct Acting	0.012	0.012	0.012	0.012
	Solenoid Pilot	0.014	0.038	0.012	0.040

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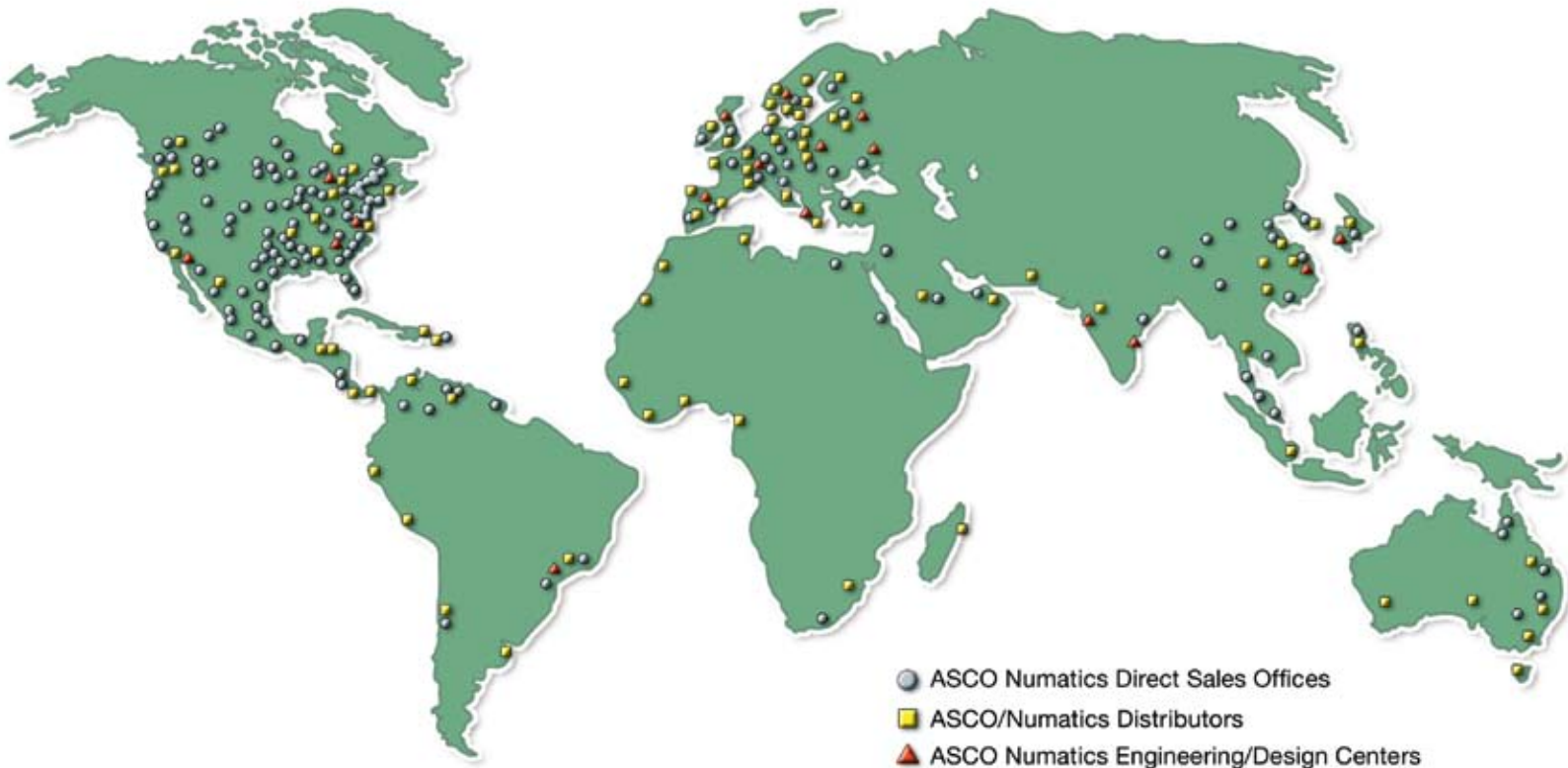
The screenshot displays the Numasizing software interface. On the left, a schematic diagram of a pneumatic system is shown, featuring a central valve assembly connected to two cylinders. The interface includes a menu bar (File, Edit, Tools, Windows, Help), a toolbar, and a main workspace. On the right side, a 'Design Information' table provides key performance indicators for the system.

Design Information	Avg	Extend	Retract
Stroke Time Required (sec)	1.00	0.80	
Stroke Time Predicted (sec)	1.00	0.80	
Cyclic Rate at Required Times (CPM)	30.00		
Cyclic Rate at Predicted Times (CPM)	30.00		
Total Force Required of Actuator (lbf)	286.95	22.95	
Design Pressure (PSI)	71.9	74.4	
Min Recommended Pressure w/Safety Factor (PSI)	38.7	2.8	
Percent of Actuator Capacity Used (75% Max)	31.0	2.8	
Min Cond Air Vol at Predicted Times (100 FPS Max)	91	121	
Max Cond Air Vol at Predicted Times (100 FPS Max)	39	131	
Percent of Delta P at Predicted Times (40% Max)	16.1	25.3	
Delta P at Inhaled Times (PSI)	14.0	22.6	
Delta P at Critical Flow (PSI)	36.5	41.0	
Cost/1000 Pieces at Predicted Times (\$)	14.75		
Total Power Input at Predicted Times (HP)	13.81		
Efficiency at Predicted Times (%)	7.3		
Target System-Cv Required	2.01	2.01	
Actual System-Cv	2.00	2.00	

Numasizing software provides a resource for optimal pneumatic system design. For a demo, pricing and availability contact your local Numatics representative.

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WORLD HEADQUARTERS

USA

Numatics, Incorporated

46280 Dylan Drive
Novi, Michigan 48377

P: 1-888-Numatics
1-888-686-2842

Canada

Numatics, Ltd

P: 519-452-1777

Mexico

Numatics de Mexico S.A. de C.V.

P: 52-222-284-6176

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