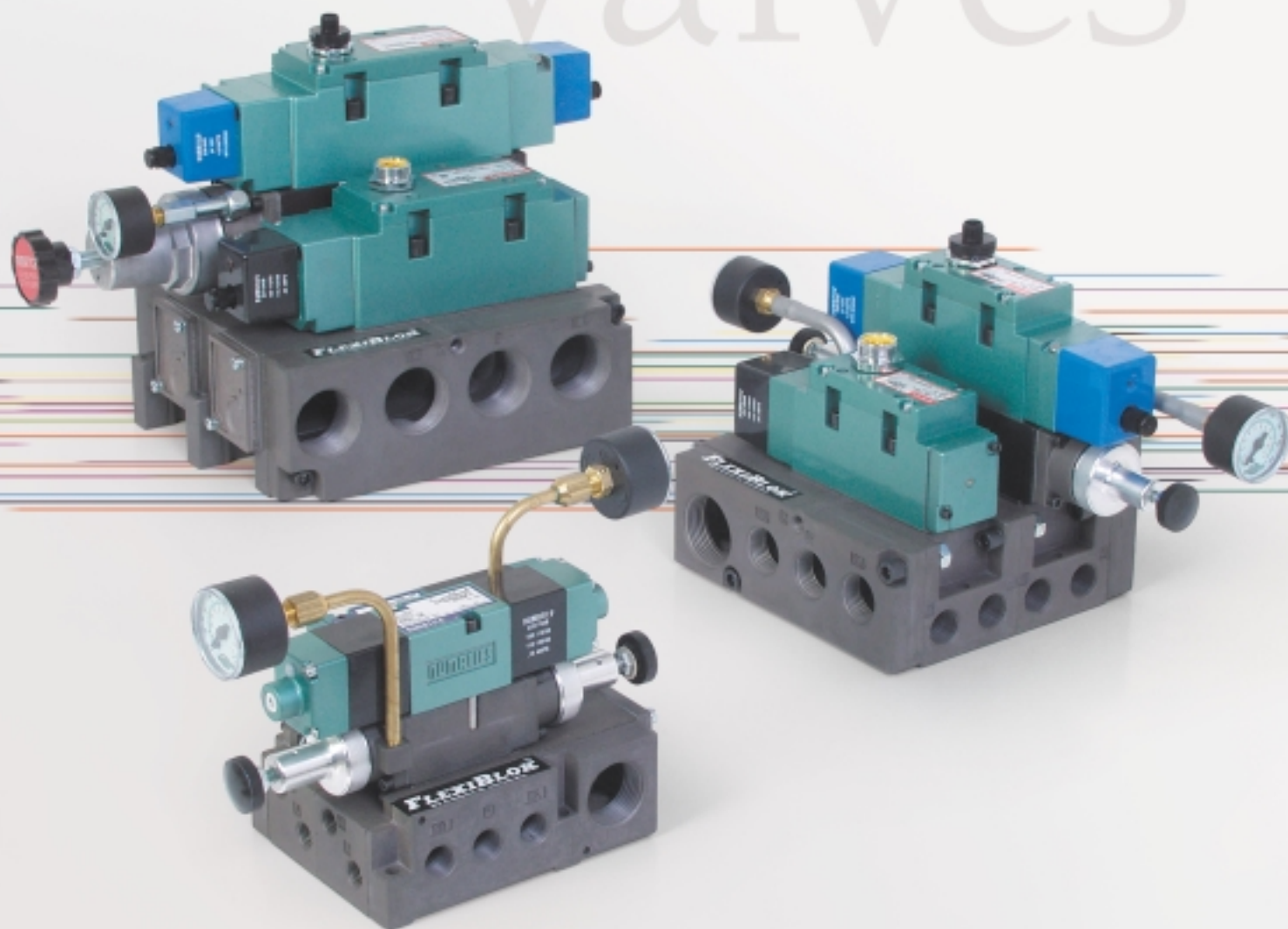


numatics®

Valves

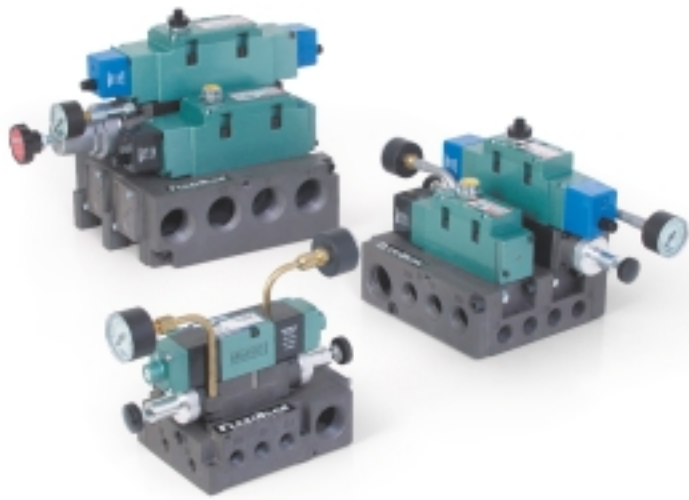


075, 125 & 250 Series
Automotive Interchangeable Mounting

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.

| | |
|---|-------|
| 075 Series | 5-14 |
| Technical and Operating Data | 5 |
| How To Order | 6 |
| Valve and Base Dimensions | 7 |
| Manifold Dimensions | 8 |
| Sandwich Pressure Regulator | 9 |
| Regulator Dimensions | 10 |
| Speed Control and Regulator Assembly | 11 |
| Regulator Service Kit | 11 |
| Base Assembly Kit | 12 |
| Blank Station Kit | 12 |
| Blocking Disc | 12 |
| End Plate Kit | 12 |
| Solenoid Assemblies | 13 |
| Speed Control | 13 |
| Service Kits and Parts | 14 |
| 125 Series | 15-25 |
| Technical and Operating Data | 15 |
| How To Order | 16 |
| Valve and Base Dimensions | 17 |
| Manifold Dimensions | 18 |
| Sandwich Pressure Regulator | 19 |
| Regulator Dimensions | 19 |
| Regulator Kits and Service Parts | 20 |
| Blank Station Kit | 21 |
| Blocking Disc | 21 |
| End Plate Kit | 21 |
| Wiring Options | 22 |
| Pilot Port Plugging Arrangement | 22 |
| Solenoid Assembly | 23 |
| Base Assembly Kit | 23 |
| Service Kits and Parts | 24 |
| NEW 125 Series Special 3-Position Valve | 25 |
| 250 Series | 26-36 |
| Technical and Operating Data | 26 |
| How To Order | 27 |
| Valve and Base Dimensions | 28 |
| Manifold Dimensions | 29 |
| Regulators | 30 |
| Regulator Kits and Service Parts | 31 |
| Blank Station Kit | 32 |
| Blocking Disc | 32 |
| End Plate Kit | 32 |
| Wiring Options | 33 |
| Pilot Port Plugging Arrangement | 33 |
| Solenoid Assembly | 34 |
| Base Assembly Kit | 34 |
| Service Kits and Parts | 35 |
| NEW 250 Series Special 3-Position Valve | 36 |

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.



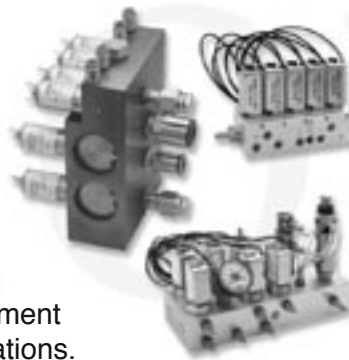
Motion Control

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.

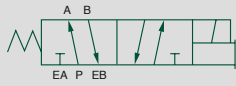
Numasizing is not based on a theoretical approach or a mathematical model, but on actual results of over 250,000 test firings of cylinders. They ranged from 3/8" to 14" bores, in conjunction with different diameter/length conductors and valve sizes. The cylinders were subjected to every conceivable dual 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.

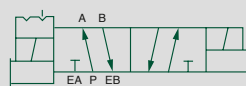


075 Series

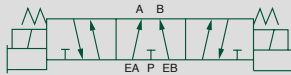
single solenoid,
spring return
2 position 4-way



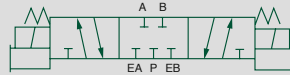
double solenoid,
detented
2 position 4-way



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 | |

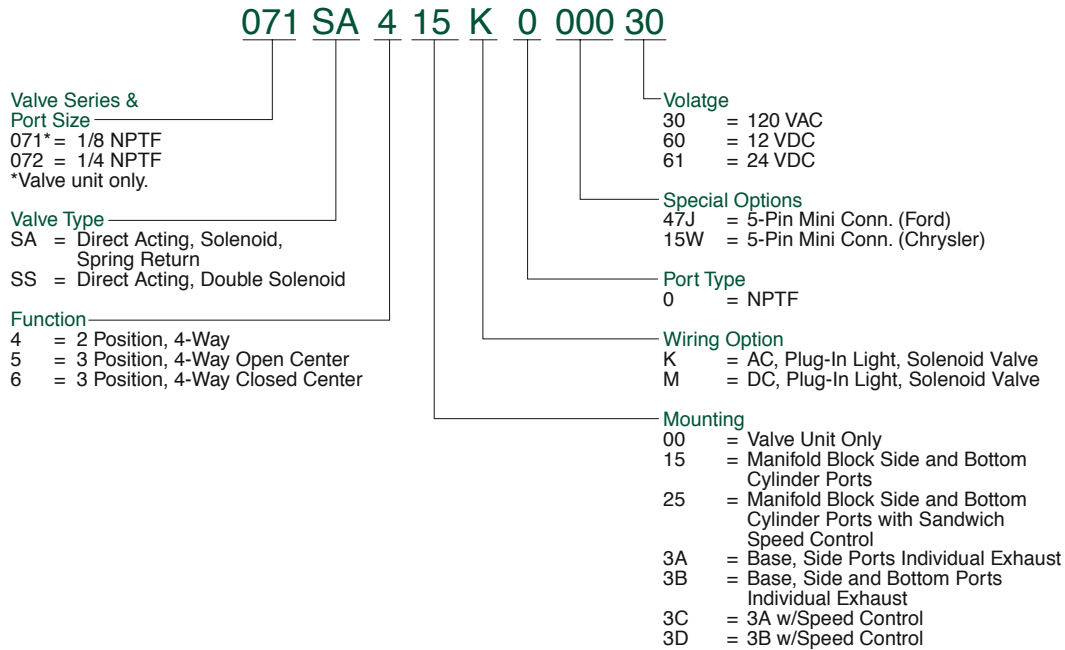
| RESPONSE TIME IN SECONDS | ENERGIZE | DE-ENERGIZE | ENERGIZE | DE-ENERGIZE |
|-------------------------------------|----------|-------------|----------|-------------|
| 2 - Position, Single, Spring Return | 0.032 | 0.010 | 0.012 | 0.011 |
| 2 - Position, Double, Detented | 0.028 | N/A | 0.012 | N/A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



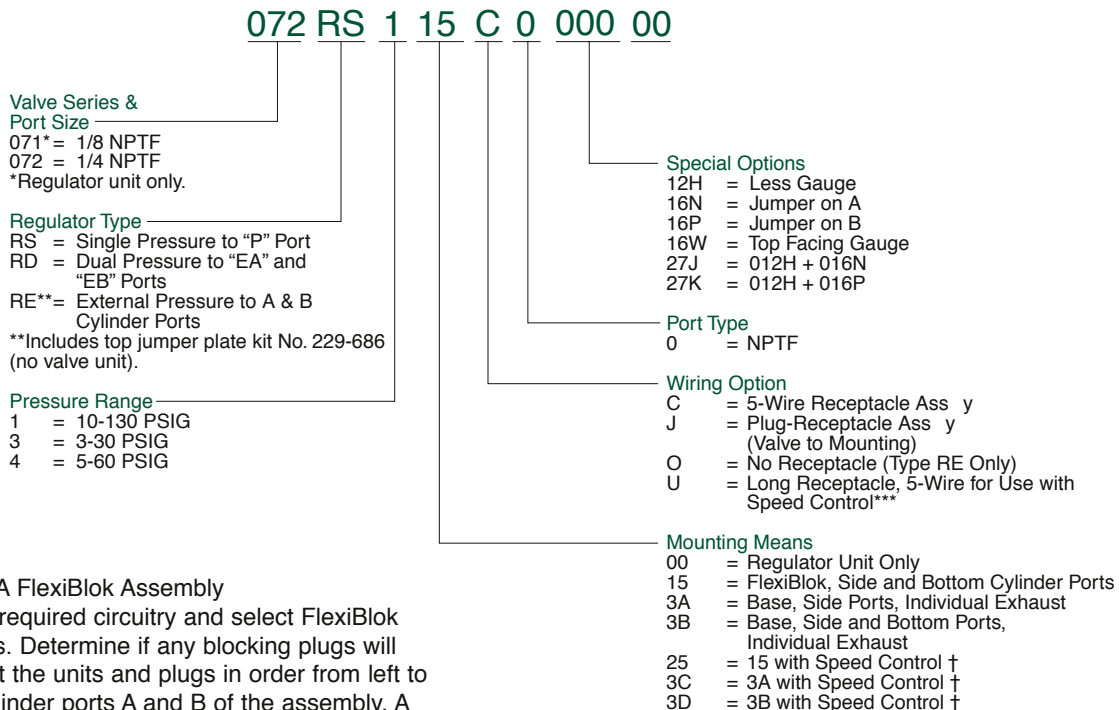
075 Series

How To Order

Valves



Regulators



How To Order A FlexiBlok Assembly

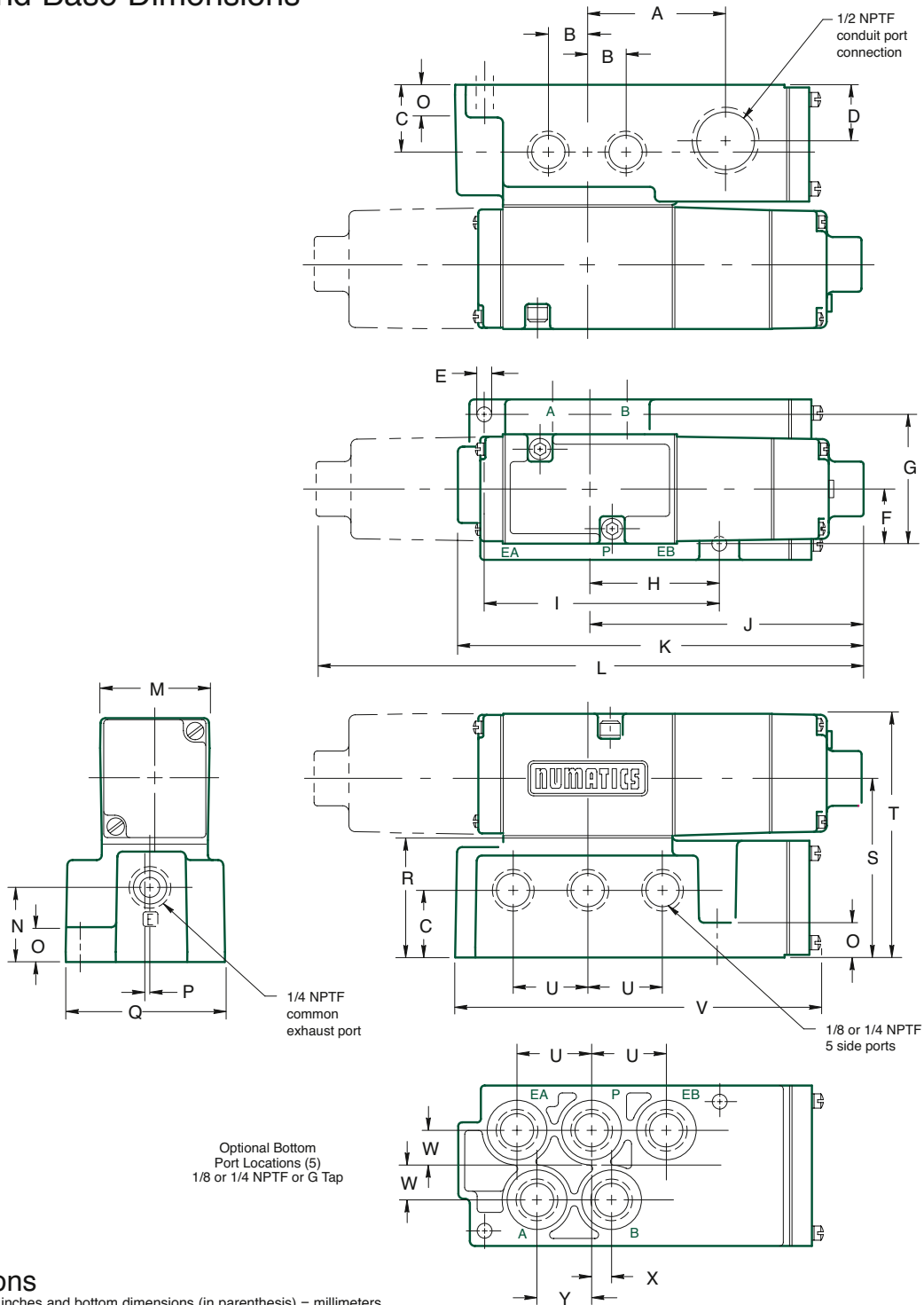
Determine the required circuitry and select FlexiBlok model numbers. Determine if any blocking plugs will be needed. List the units and plugs in order from left to right, facing cylinder ports A and B of the assembly. A typical five station model may be as follows:

| | |
|---------------|--------------------------------|
| 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 | 0.47 | 0.84 | 0.69 | 0.20 | 0.69 | 1.63 | 1.63 | 2.94 | 3.44 | 4.13 | 5.07 | 5.75 | 6.89 | 8.26 | 1.37 | 0.94 | 0.44 | 0.06 |
| (44.5) | (11.9) | (21.3) | (17.5) | (5.1) | (17.5) | (41.4) | (41.4) | (74.7) | (87.4) | (104.9) | (128.8) | (146.1) | (175.0) | (209.8) | (34.8) | (23.9) | (11.2) | (1.5) |

| Q | R | S | T | U | V | W | X | Y |
|--------|--------|--------|--------|--------|---------|--------|-------|--------|
| 2.00 | 1.50 | 2.23 | 3.03 | 0.94 | 4.57 | 0.45 | 0.25 | 0.69 |
| (50.8) | (38.1) | (56.6) | (77.0) | (23.9) | (116.1) | (11.4) | (6.4) | (17.5) |

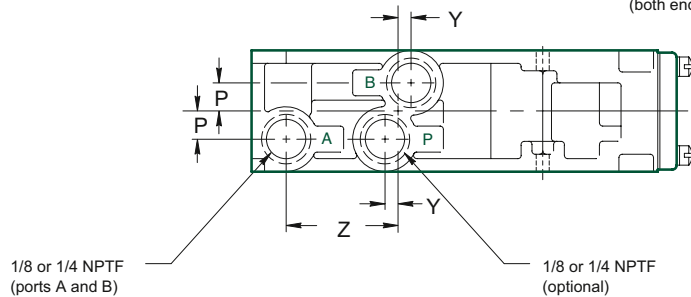
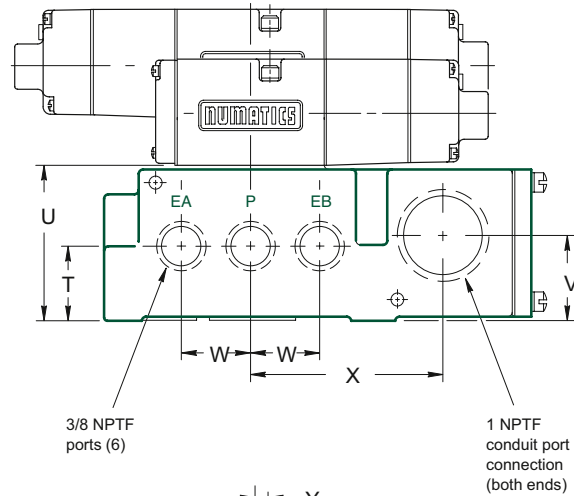
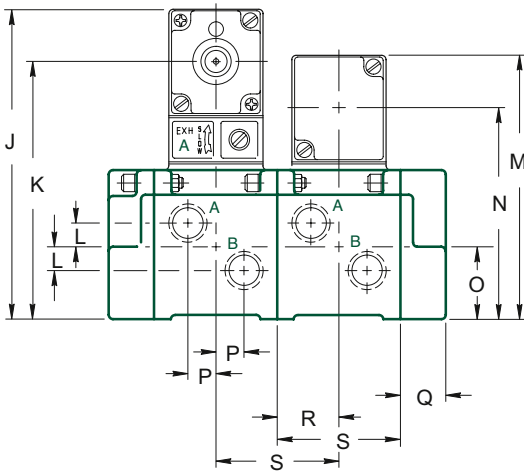
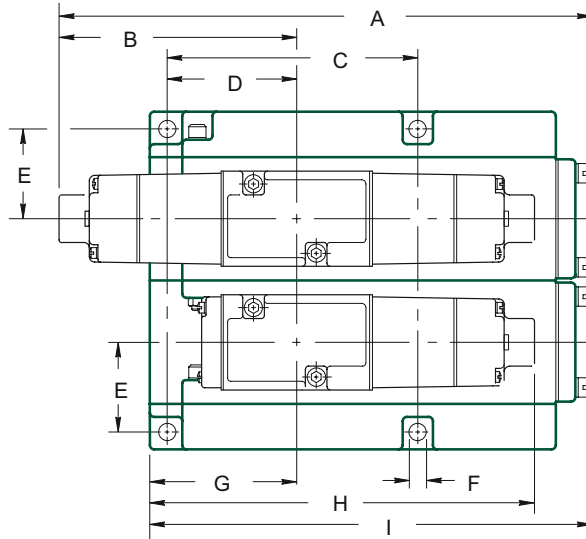


075 Series

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

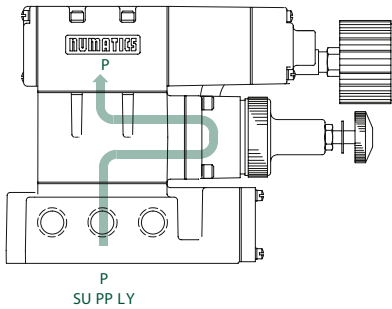
Sandwich Pressure Regulator

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."

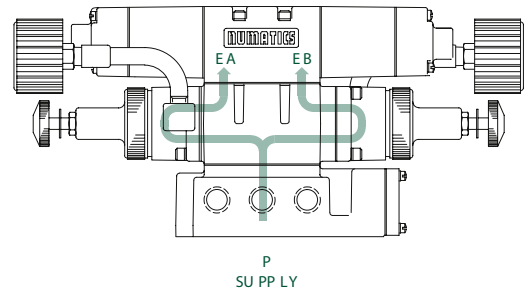
| | | |
|------------------|------------------------------|------------------------------|
| Example orders: | TYPE RS | TYPE RD |
| Valve unit only: | 071SA400K000030 | 071SA400K000030 |
| Regulator | 072RS115J000000 ASSEMBLED | 072RD115J000000 ASSEMBLED |

Type RS



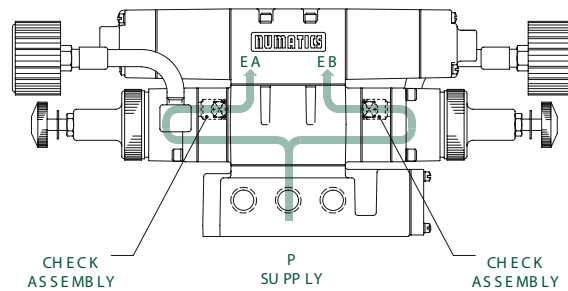
Single pressure from a single supply.

Type RD



Dual pressure from a single supply.

Type RC

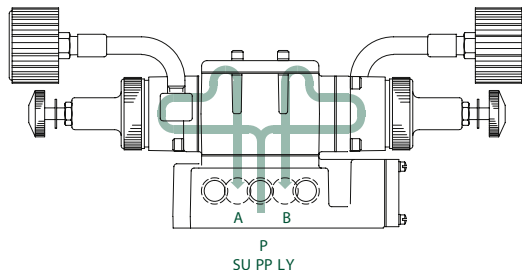


Type RC is Non-Relieving:
traps downstream pressure if
upstream pressure is exhausted.

Type RQ

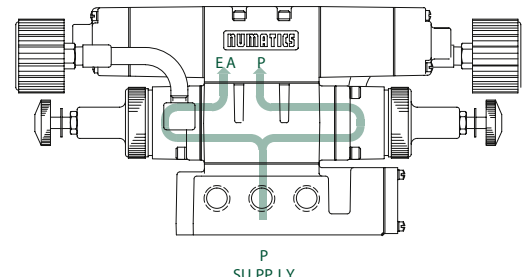
Type RQ is Relieving:
exhaust pressure in cylinder if
upstream pressure is exhausted.

Type RE



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

Type RT

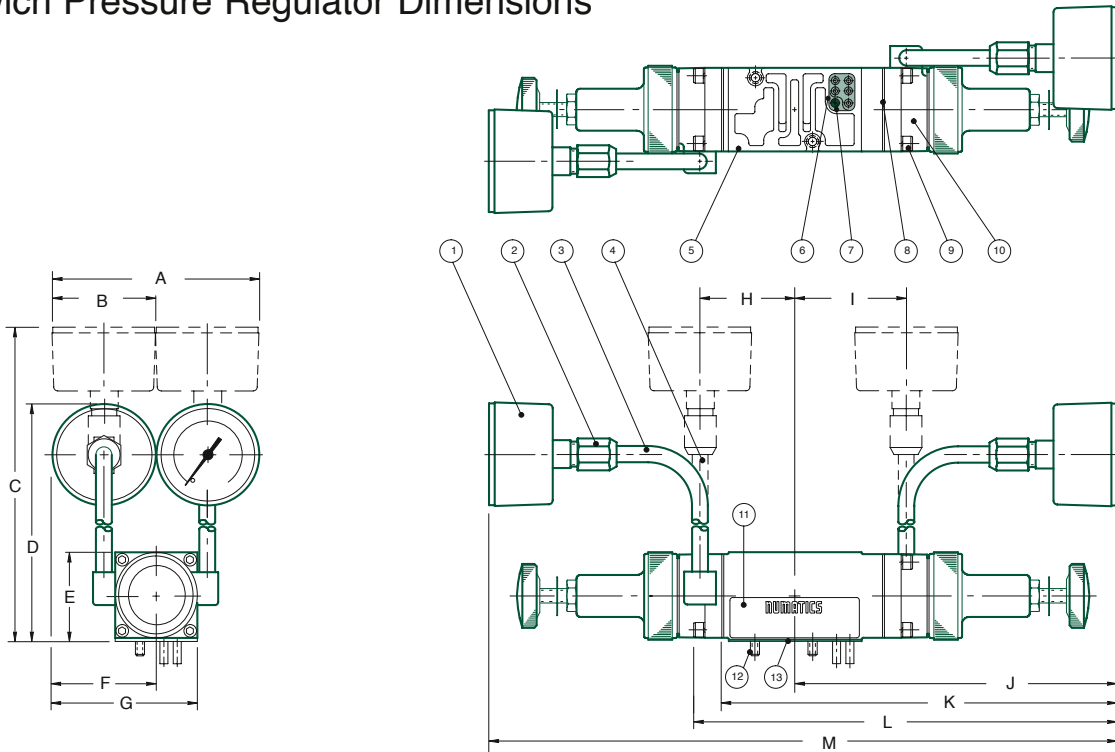


Two-pressure selector used for multi-pressure
applications.

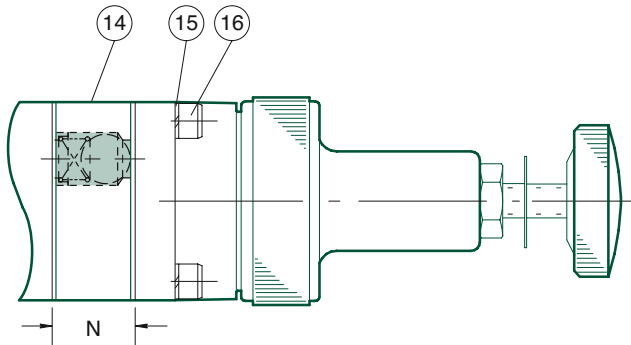


075 Series

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 |

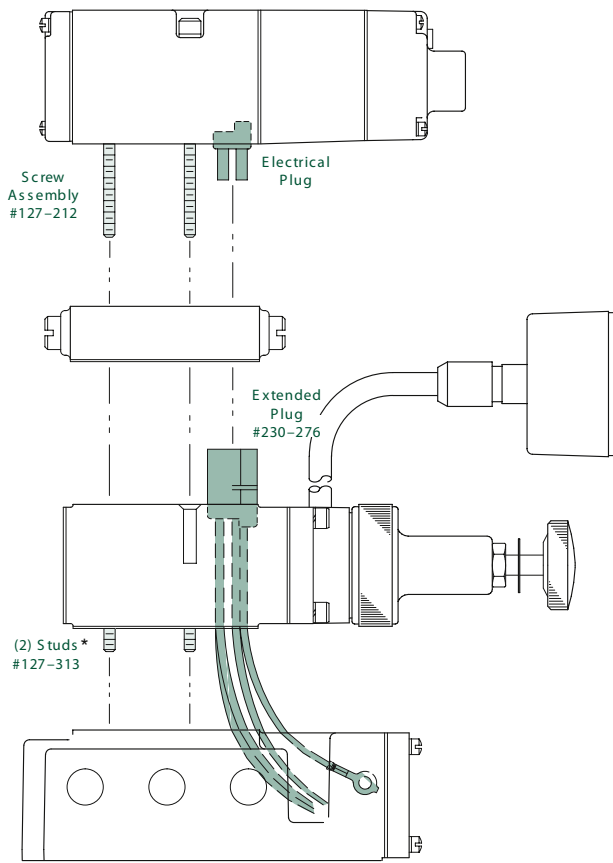
Dimensions

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

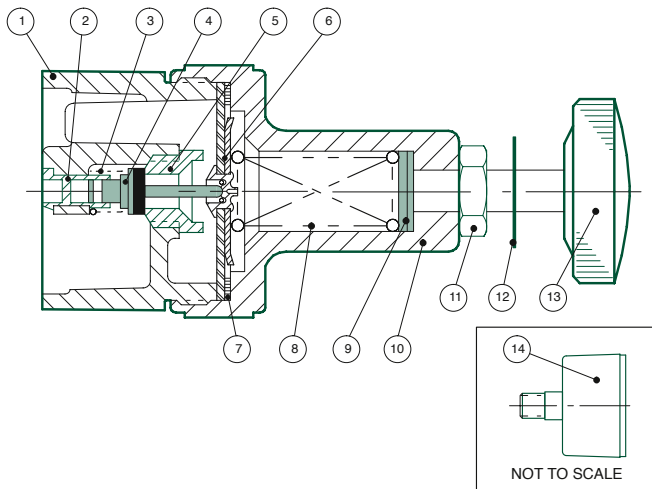
EXAMPLE ORDER:

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.

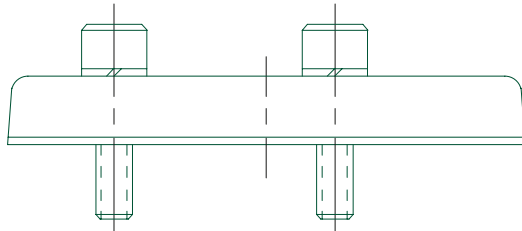


075 Series

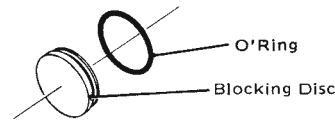
Base Assembly Kit

| 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 |

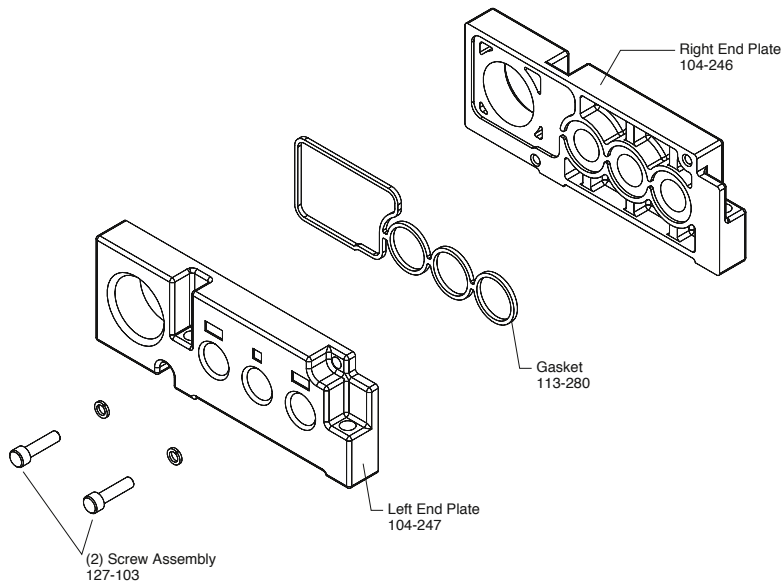
Blank Station Kit 229-686



Blocking Disc 229-994



End Plate Kit 229-770

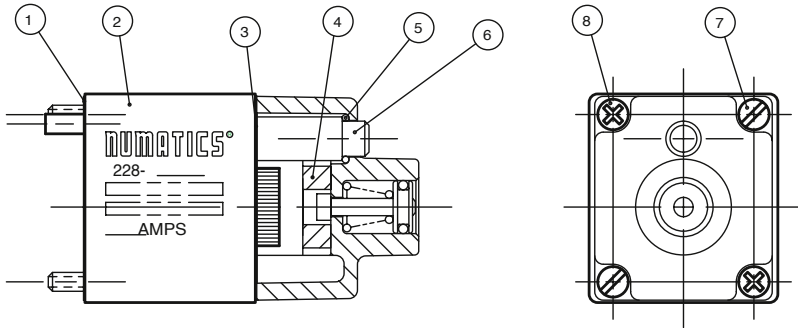


Parts List

| 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

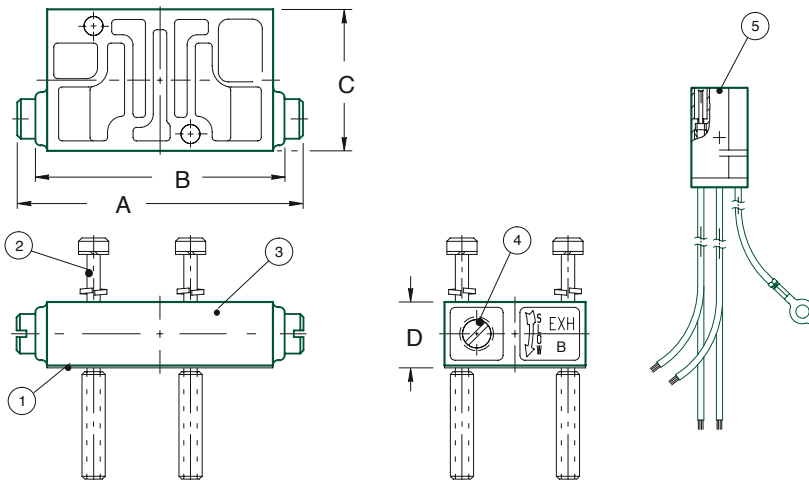
| DET. NO. | NO. REQ'D | PART NAME | PART NO. |
|----------|-----------|--|--------------------|
| 1 | 1 | Gasket Solenoid/Valve | 113-276 |
| 2 | 1 | Solenoid Assembly | See Chart |
| 3 | 1 | Gasket End Cap/Solenoid | 113-277 |
| 4 | 1 | Bumper Black for 2-position: Red for 3-position: | 114-138 114-139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

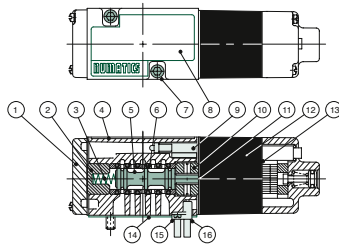
| A | B | C | D |
|----------------|----------------|----------------|----------------|
| 2.75 (70.0) | 2.35 (59.7) | 1.33 (33.8) | 0.60 (15.3) |



075 Series

Service Kits and Parts

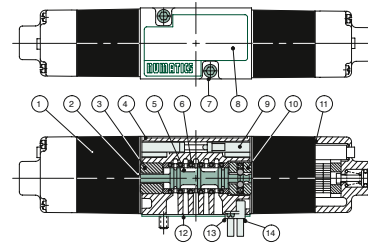
Kit No. MK8-K1 (For Models 075SA4)



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 |

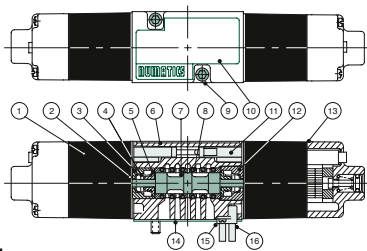
Kit No. MK8-K2 (For Models 075SS4)



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 |

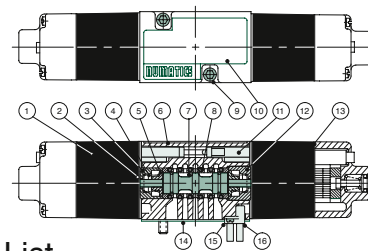
Kit No. MK8-K3 (For Models 075SS5)



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

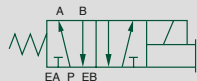
| DET. NO. | NO. REQ'D | PART NAME | PART NO. |
|----------|-----------|----------------------------------|----------|
| 1 | 2 | Solenoid Assembly | See p.13 |
| 2 * | 2 | Gasket solenoid/valve | 113-276 |
| 3 * | 1 | Spacer | 116-307 |
| 4 * | 2 | Spring | 115-221 |
| 5 * | 2 | Spring Retainer | 116-309 |
| 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.

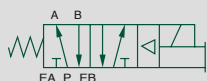


125 Series

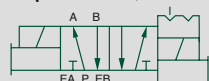
single direct solenoid,
spring return
2 position, 4-way



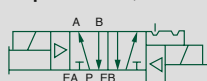
single solenoid air pilot,
spring return
2 position, 4-way



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



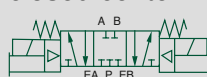
double solenoid air pilot,
3 position, 4-way
open center



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

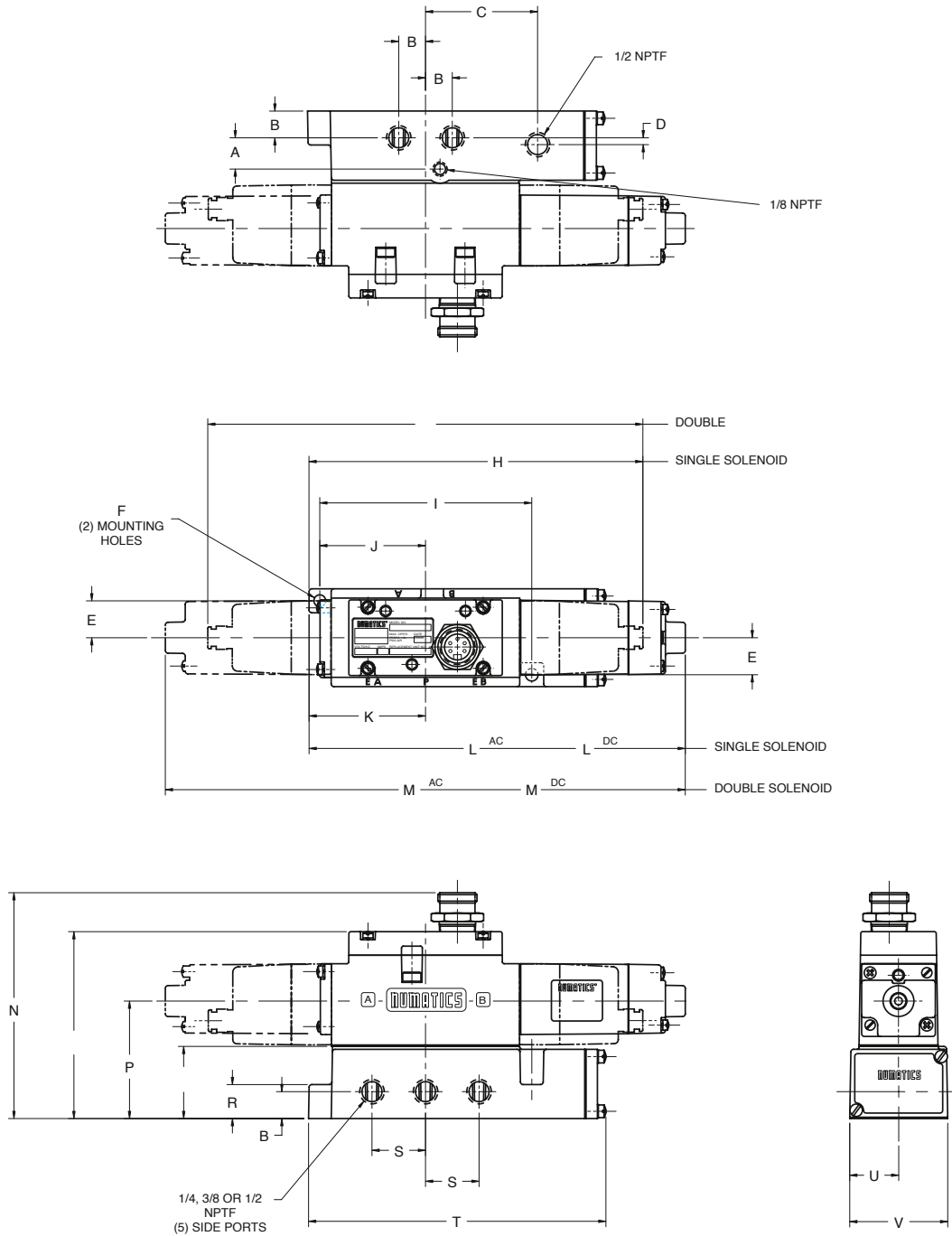
A typical five-station assembly may be as follows:

- 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

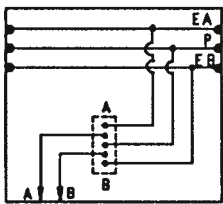
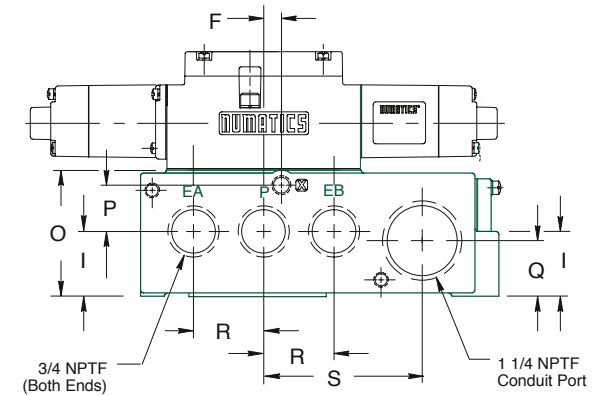
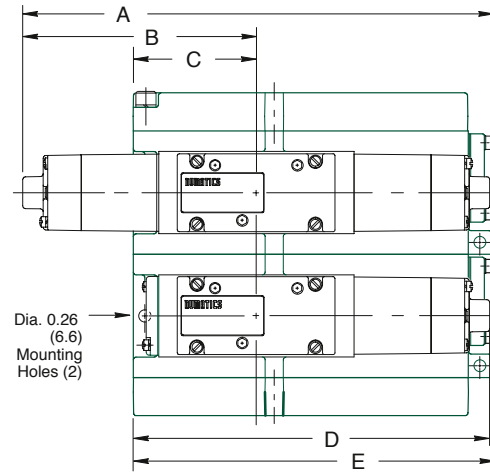
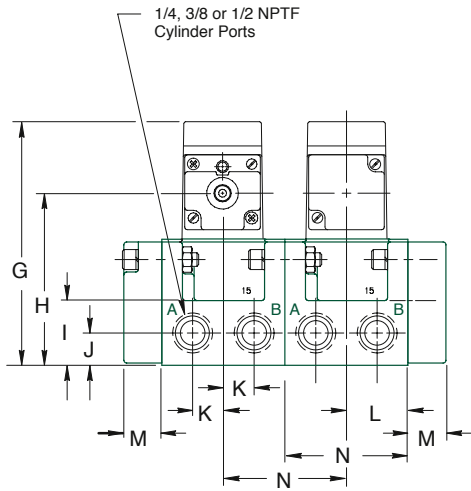
| A | B | C | D | E | F | G | H | I | J | K | L (AC) | L (DC) | M (AC) |
|------------------|-----------------|-----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|----------------|----------------|-----------------|-----------------|------------------|
| 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) | | | | |



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) |



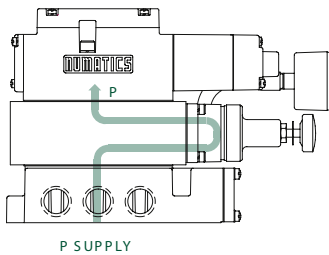
Sandwich Pressure Regulator

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."

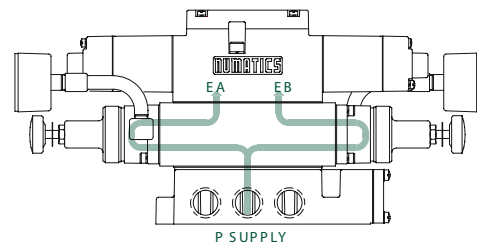
| | | |
|------------------|------------------------------|------------------------------|
| Example orders: | TYPE RS | TYPE RD |
| Valve unit only: | A12SA400S000030 | A12SA400S000030 |
| Regulator | A13RS1150000000 ASSEMBLED | A13RD1150000000 ASSEMBLED |

Type RS



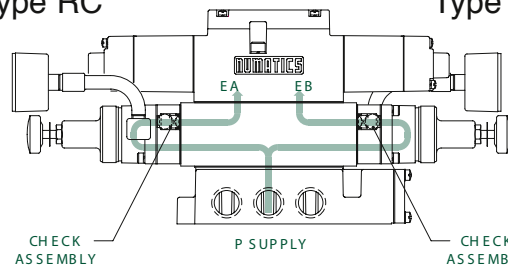
Single pressure from a single supply.

Type RD



Dual pressure from a single supply.

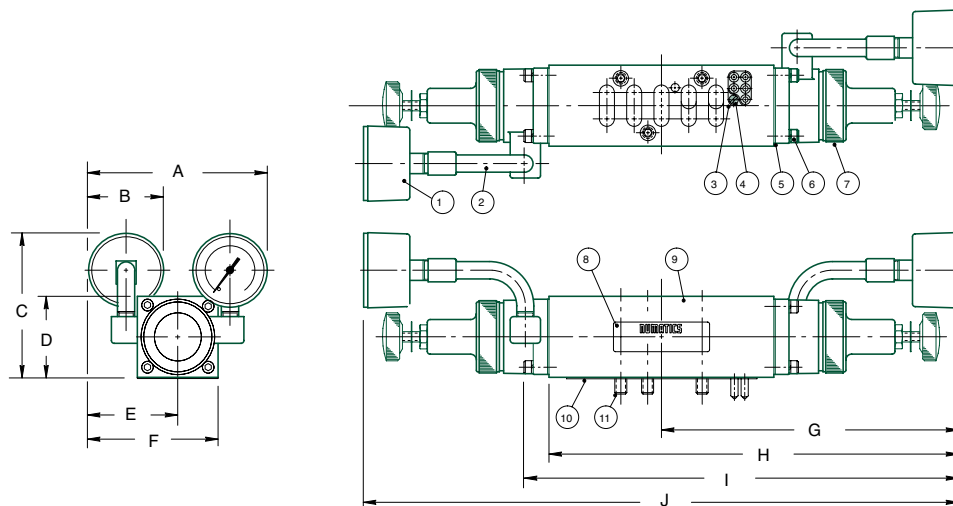
Type RC



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 | 1.62 | 5.72 | 1.76 | 1.94 | 2.80 | 6.42 | 8.86 | 9.26 | 12.85 |
| (98.0) | (41.2) | (145.3) | (44.7) | (49.3) | (71.1) | (163.1) | (226.0) | (235.2) | (326.4) |

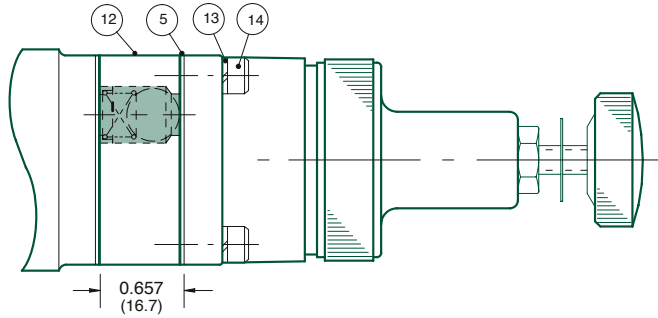


125 Series

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 |

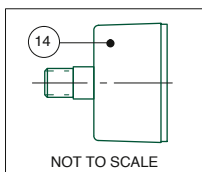
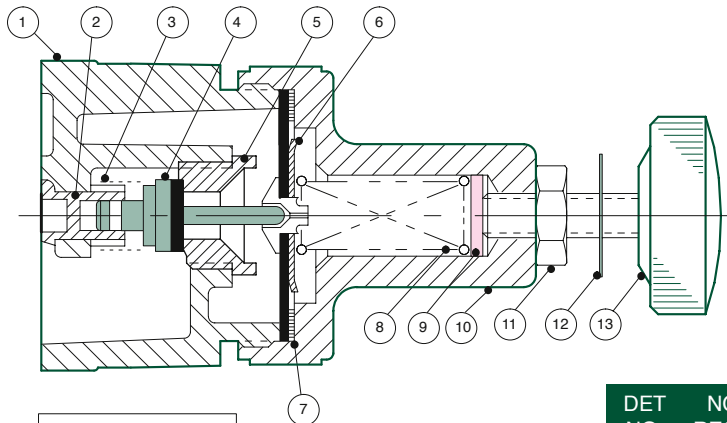
*RS models require (1)

** (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)

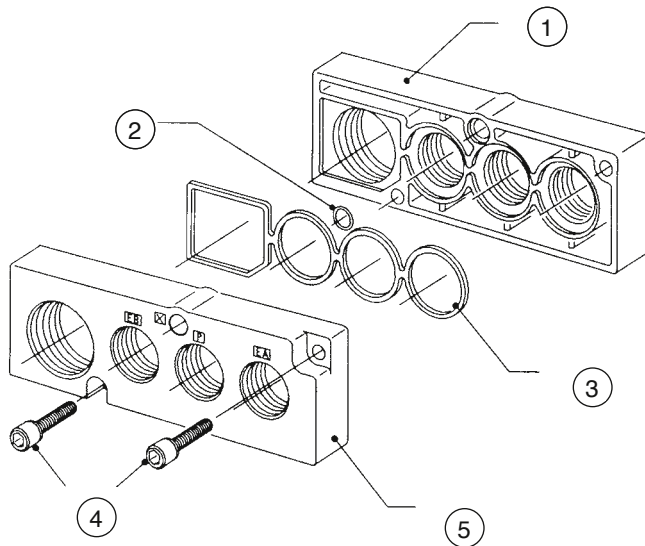
| | | |
|---------|---------|---------|
| 229-641 | 229-642 | 229-643 |
|---------|---------|---------|

*Indicates all parts included in regulator service kit.



End Plate Kit

239-565

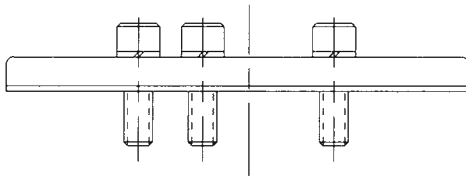


Parts List

| 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

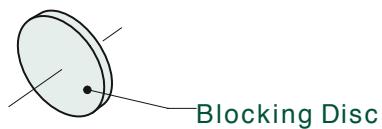
239-576



Blocking Disc

124-160

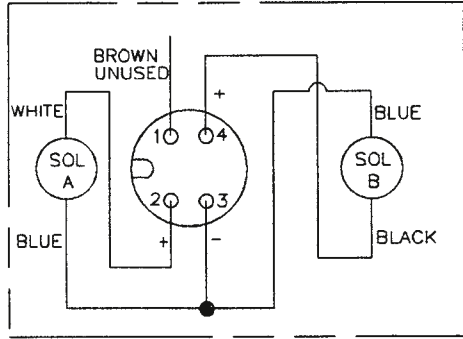
Used for blocking any gallery in the 125 FlexiBlok system.



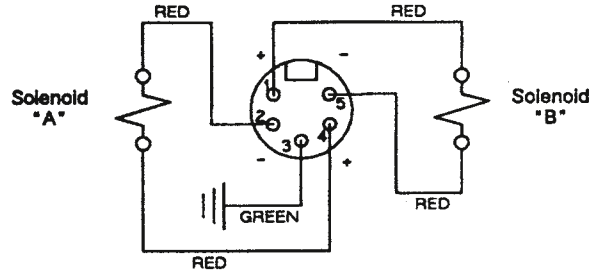


125 Series

Wiring Diagram for Option 61E & 62B



Wiring Diagram for Option S & V (Ford)

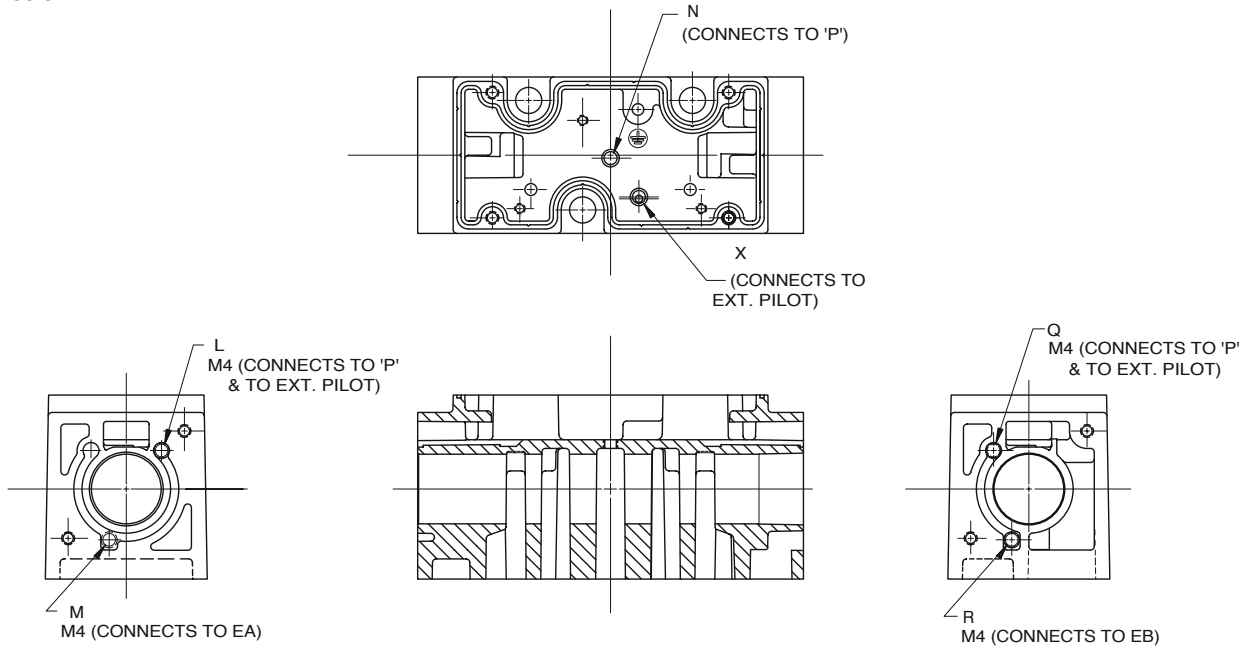


Pilot Port Plugging Arrangements For SPA 125 Series

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.

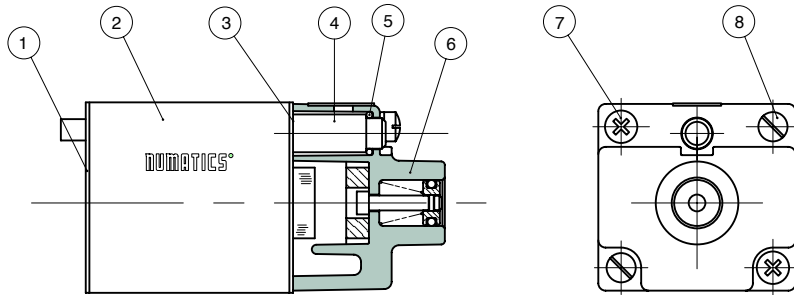
A cross section of the valve body and both end views are shown below.



| 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 | | 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 |



Solenoid Capsule Assembly

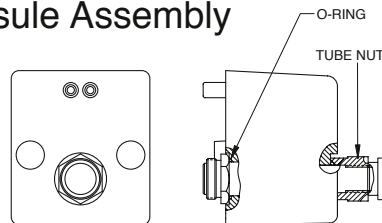


| DET. NO. | NO. REQ'D | PART NAME | PART NO. |
|----------|-----------|--|---|
| 1 | 1 | Gasket | 113-268 |
| 2 | 1 | Solenoid Assembly | See Chart Below |
| 3 | 1 | Gasket | 113-267 |
| 4 | 1 | Light Assembly | See Chart Below |
| 5 | 1 | O-Ring Seal | 126-144 |
| 6 | 1 | End Cap Assembly | 204-602 |
| 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

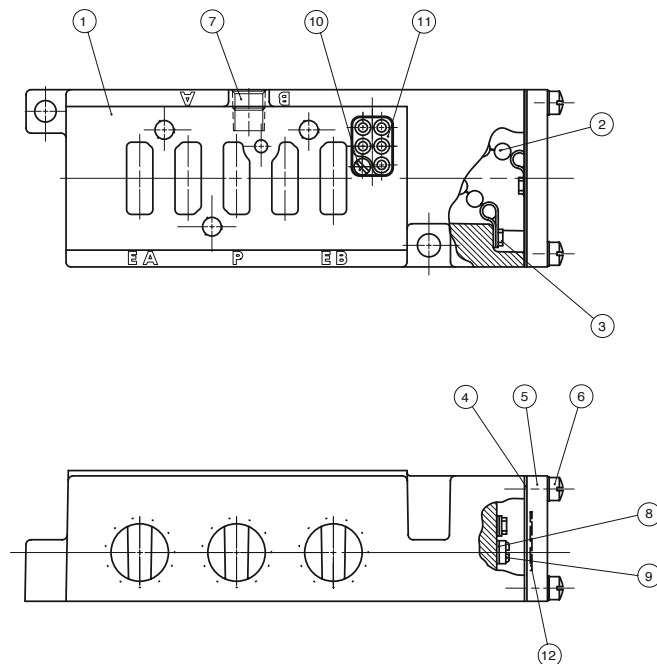
Solenoid - Pilot Capsule Assembly



| 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 |

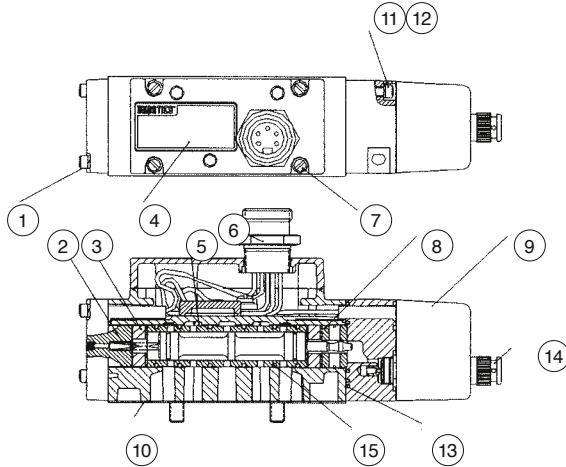
| DET. NO. | NO. REQ'D | PART NAME | PART NO. |
|----------|-----------|---|-------------------------------|
| 1 | 1 | Base 1/4 NPTF Base 3/8 NPTF Base 1/2 NPTF | 103-699 103-700 103-701 |
| 2 | 1 | Cover Chain | 125-185 |
| 3 | 2 | Screw | 127-180 |
| 4 | 1 | Gasket | 113-265 |
| 5 | 1 | Conduit Cover | 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

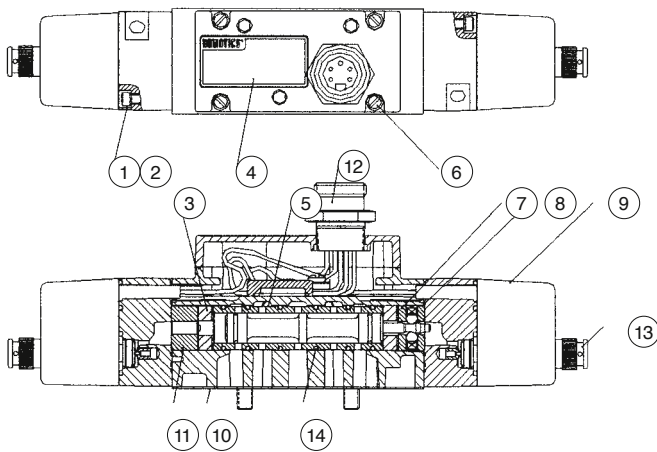
Kit No. A12SPA-K1 (For Models A12, A13, A14, BA4)



| 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

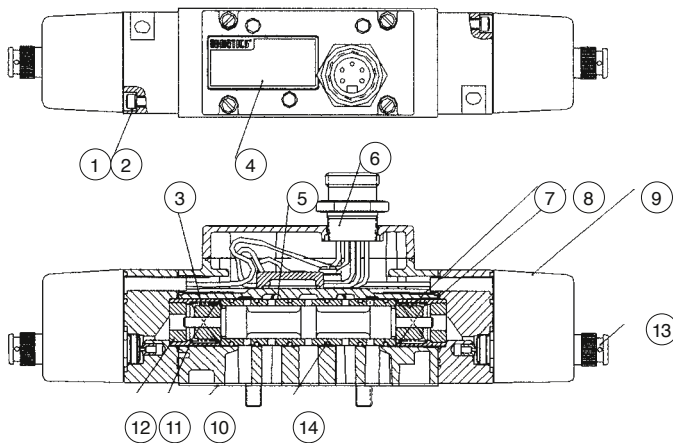
Kit No. A12SPA-K2 (For Models A12, A13, A14, BB4)



| 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



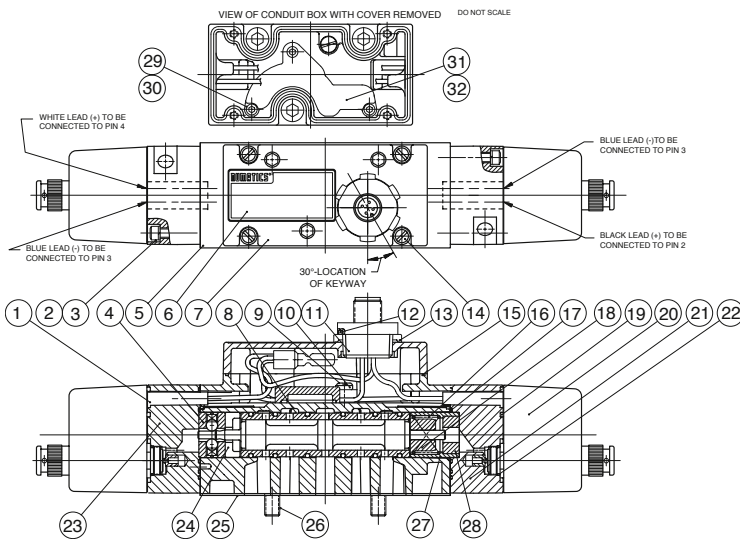
Special 125 - 3 Position

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

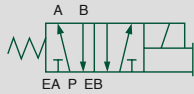
| ALL SOLENOIDS ARE CONTINUOUS DUTY RATED | | 24 VDC | 110-120 VAC / 50/60 Hz. |
|---|------------------------------|--------------|-------------------------|
| Power (Watts) | Direct Acting Solenoid Pilot | 6 4 | N/A N/A |
| Holding Current (Amps) | Direct Acting Solenoid Pilot | 0.25 0.17 | 0.09 0.06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

| 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

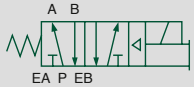
single direct solenoid,
spring return
2 position, 4-way



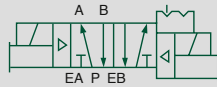
double direct solenoid,
detented
2 position, 4-way



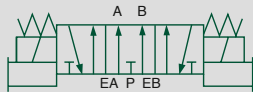
single solenoid air pilot,
spring return
2 position, 4-way



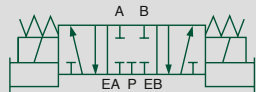
double solenoid air pilot,
detented
2 position, 4-way



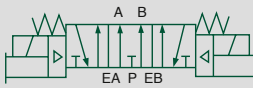
double direct solenoid
3 position, 4-way
open center



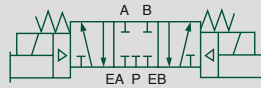
double direct solenoid
3 position, 4-way
closed center



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

| | |
|--|--|
| <p>Valve Series & Port Size</p> <p>A23 = Automotive 250 3/8" NPTF</p> <p>A24 = Automotive 250 1/2" NPTF</p> <p>A25 = Automotive 250 3/4" NPTF</p> <p>A26 = Automotive 250 1" NPTF</p> <p>Valve Type</p> <p>SA = Single Solenoid, Spring Return</p> <p>SS = Double Solenoid</p> <p>BA = Single Solenoid, Air Pilot Spring Return</p> <p>BW = Single Solenoid, Air Pilot Air/Spring Return</p> <p>BB = Double Solenoid, Air Pilot</p> <p>Function</p> <p>4 = 2-Position, 4-way</p> <p>5 = 3-Position, 4-way Open Center</p> <p>6 = 3-Position, 4-way closed Center</p> <p>Mounting Means</p> <p>00 = Valve Unit Only, No Mounting</p> <p>15 = Manifold Block, Sides and Bottom Cylinder Ports</p> <p>3A = Base, Side Ports, Individual Exhaust</p> | <p>Volatge</p> <p>30 = 120 VAC</p> <p>61 = 24 VDC</p> <p>Special Options</p> <p>13S = Right Angle Mini Plug</p> <p>47E = 5-Pin B.H. Micro Conn. Chrysler</p> <p>56Y = 4-Pin Micro Conn. Pin 1-N/02-12, 3C, 4-14</p> <p>60C = 5-Pin Single Key Way Micro Conn. Chrysler</p> <p>61E = 4-Pin Micro Ford</p> <p>62B = 61E Plus Internal Pilot from Port P</p> <p>Port Type</p> <p>0 = NPTF (direct acting)</p> <p>T = NPTF (air pilot)</p> <p>Wiring Option</p> <p>F = AC with light Hardwired</p> <p>K = AC with Light Plug-In</p> <p>S = 5-Pin Mini with Light (Ford) AC</p> <p>8 = 5-Pin Mini with Light (Chrysler) AC</p> <p>R = Special Wiring, Standard DC</p> |
|--|--|

Regulator

A23 RS 1 15 O P 000 00

| | |
|--|---|
| <p>Valve Series & Port Size</p> <p>A23 = Automotive 250 3/8" NPTF</p> <p>A24 = Automotive 250 1/2" NPTF</p> <p>A25 = Automotive 250 3/4" NPTF</p> <p>A26 = Automotive 250 1" NPTF</p> <p>Regulator Type</p> <p>RS = Single Pressure to "P" Pilot</p> <p>RD = Double Pressure to "EA" and "EB" Ports</p> <p>RC = Regulator with Non-Relieving Check</p> <p>RQ = Regulator with Relieving Checks</p> <p>Pressure Range</p> <p>1 = 10-130 PSIG</p> <p>3 = 3-30 PSIG</p> <p>4 = 5-60 PSIG</p> | <p>Volatge</p> <p>00 = N/A</p> <p>Special Options</p> <p>12H = Less Gauge</p> <p>16N = Jumper on "A"</p> <p>16P = Jumper on "B"</p> <p>Port Type</p> <p>P = NPTF</p> <p>Wiring Option</p> <p>O = No Receptacle</p> <p>Mounting Means</p> <p>00 = Regulator Unit Only, No Mounting</p> <p>15 = Manifold Block, Sides and Bottom Cylinder Ports</p> <p>3A = Base, Side Ports</p> |
|--|---|

How To Order A Manifold Assembly

A typical five-station assembly may be as follows:

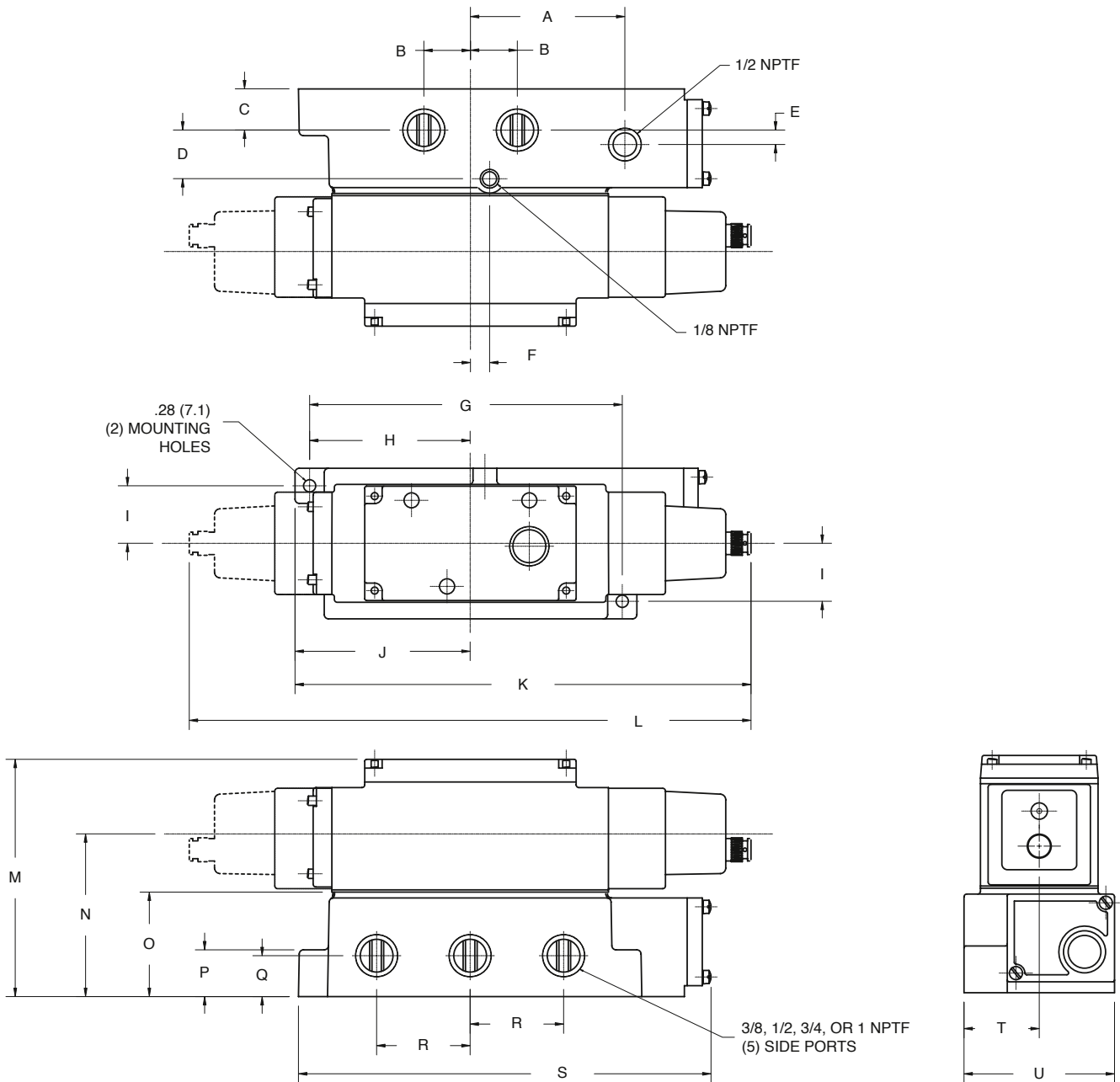
| | |
|---------------|------------------------|
| Assembly Kit | AK250-5 |
| Station 1 | A24BA415RT61E61 |
| Station 2 | A24BA415RT61E61 |
| Station 3 | A24BA415RT61E61 |
| Blocking Plug | (Install in P Gallery) |
| Station 4 | A24BB415RT61E61 |
| Station 5 | A24BB615RT61E61 |
| | ASSEMBLED |

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



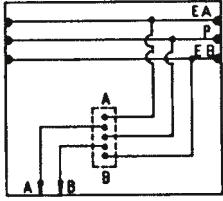
Dimensions

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

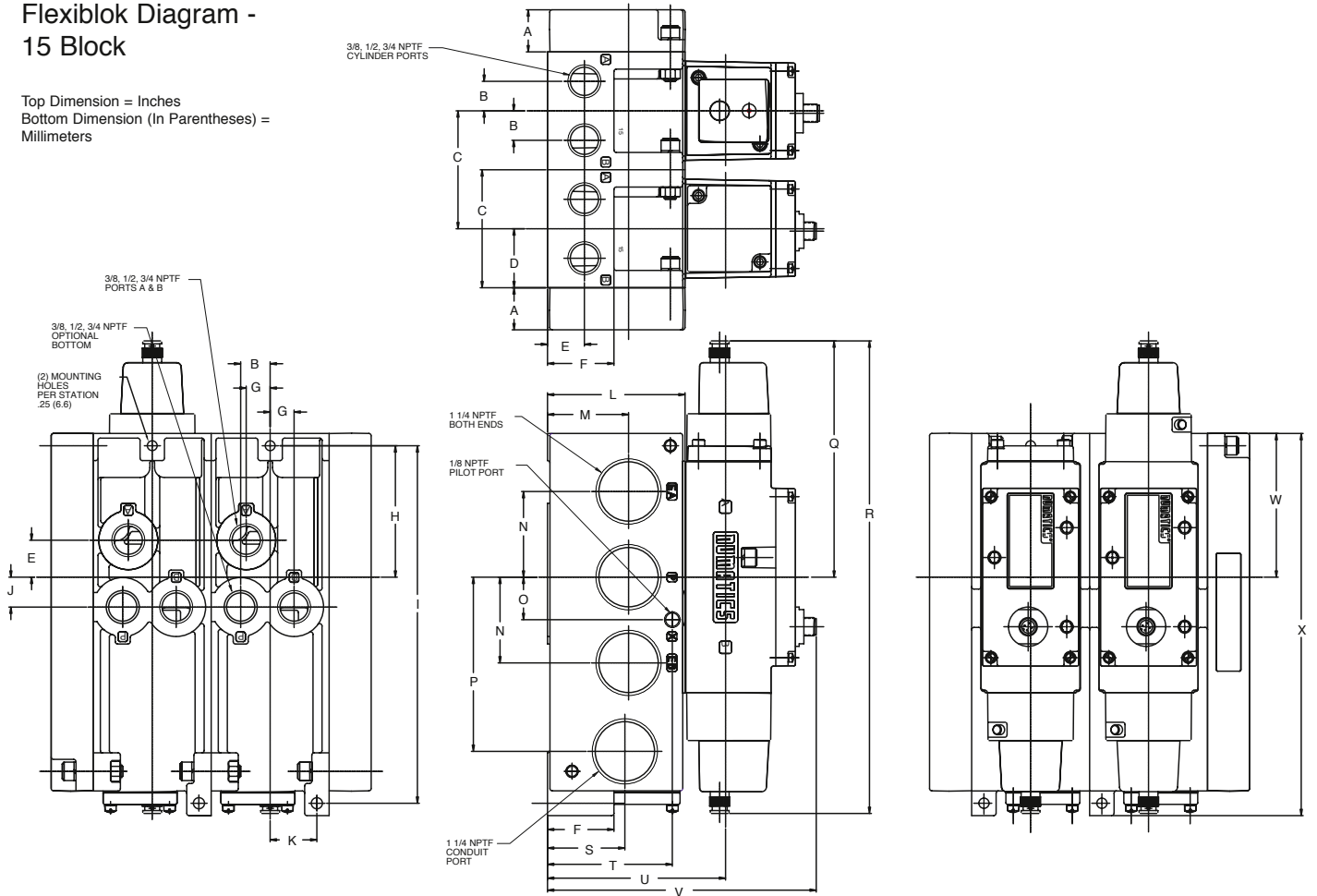


Flexiblok Diagram - 15 Block

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

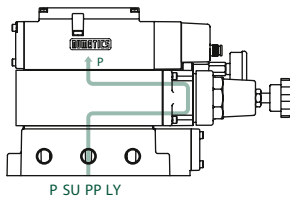
Sandwich Pressure Regulator

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."

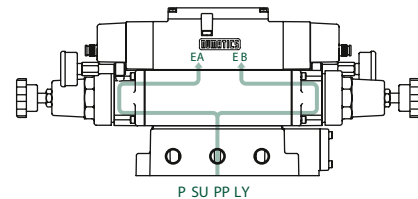
| | | |
|------------------|------------------------------|------------------------------|
| Example orders: | TYPE RS | TYPE RD |
| Valve unit only: | A23BA400KT00030 | A23BA400KT00030 |
| Regulator | A24RS115J000000 ASSEMBLED | A24RD115J000000 ASSEMBLED |

Type RS



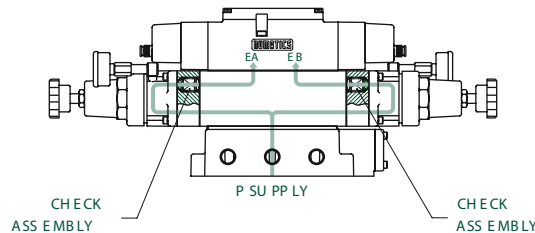
Single pressure from a single supply.

Type RD



Dual pressure from a single supply.

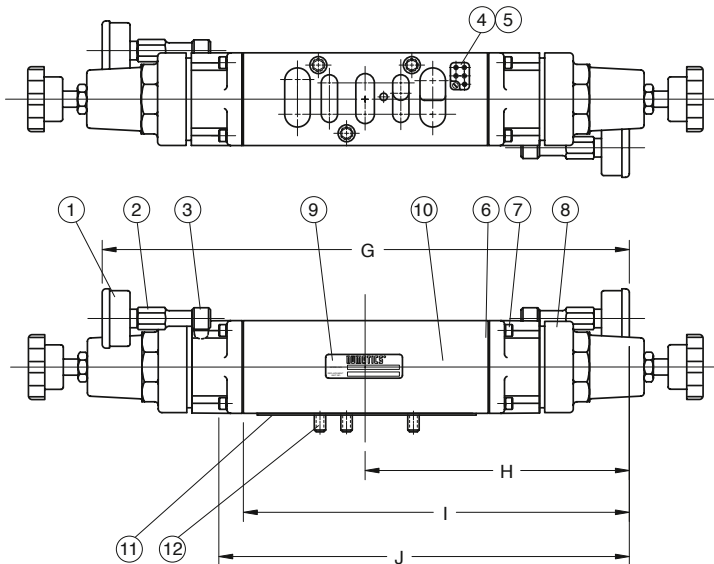
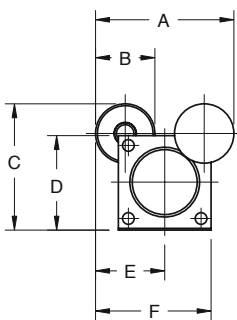
Type RC



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) |

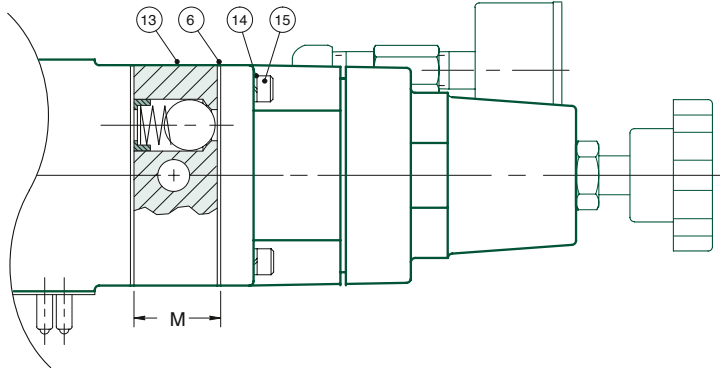


Check Assembly Kits

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.

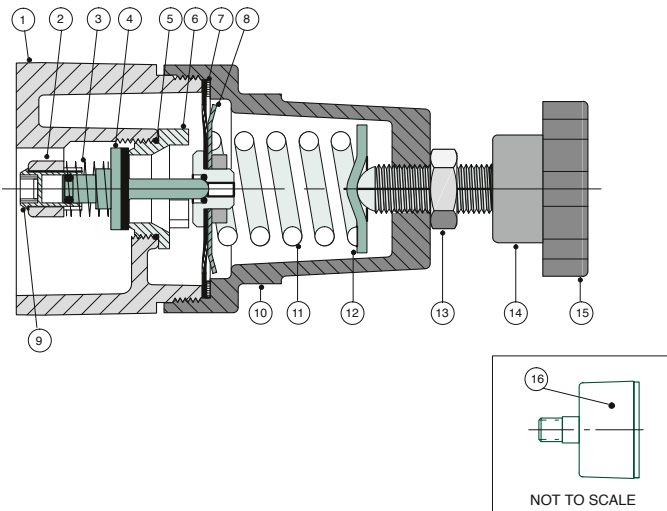
Regulator Service Kit

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) |

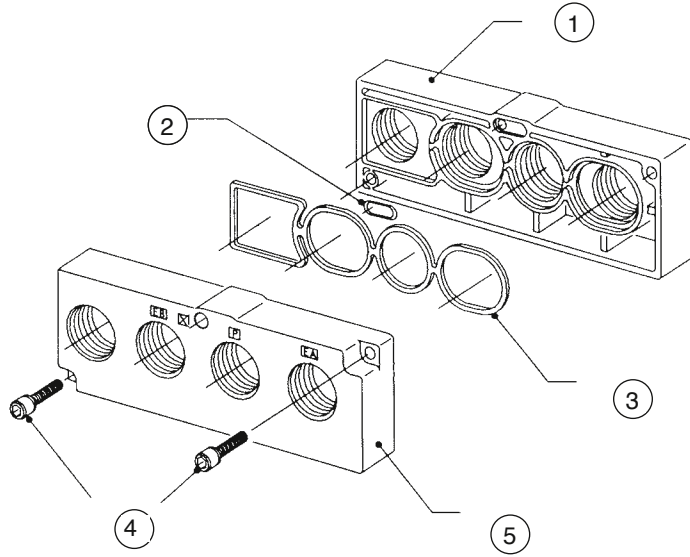
**Regulator Unit Kits (includes regulator assembly, gaskets, and screws) 229-902 229-903 229-904



250 Series

End Plate Kit

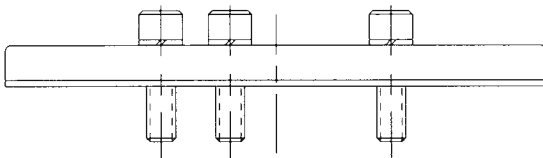
239-569



| 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 |

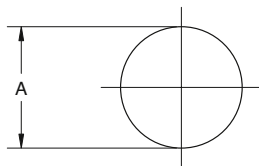
Blank Station Plate Kit

239-577

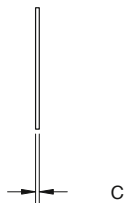
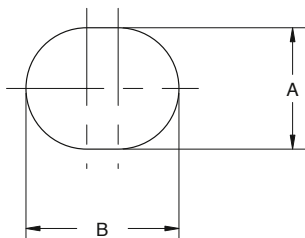


Blocking Disc

Port P



Ports EA and EB

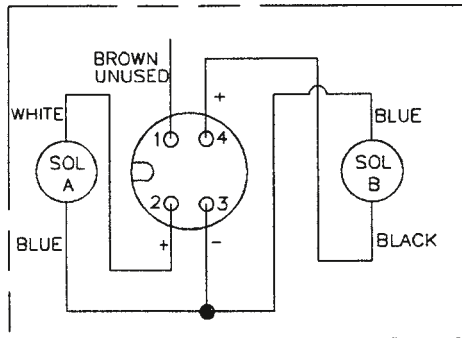


| PORT | PART NO. | A | B | C |
|-----------|----------|--------|--------|-------|
| P | 124-153 | 1.56 | 1.96 | 0.05 |
| EA and EB | 124-154 | (39.6) | (49.8) | (1.3) |

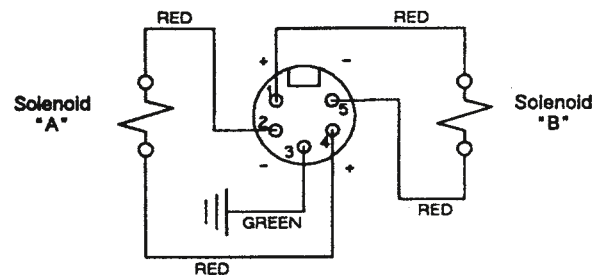


250 Series

Wiring Diagram for Options 8 & 9 (Chrysler)



Wiring Diagram for Options 47E & 47J

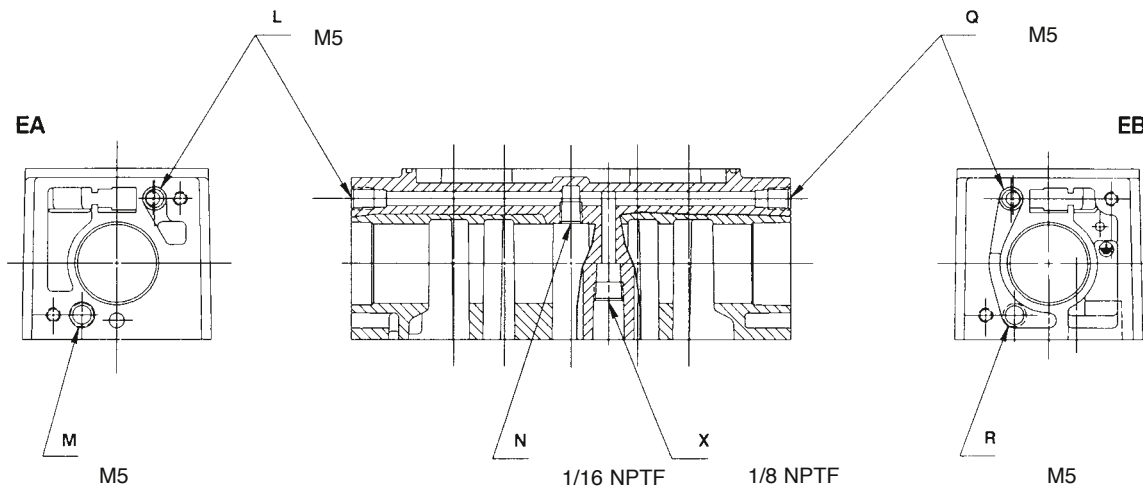


Pilot Port Plugging Arrangements For SPA 250 Series

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.

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

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).

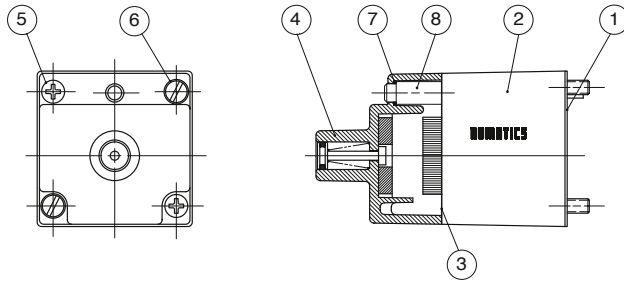


| PILOT PLUG | INTERNAL FROM PORT "P" | | INTERNAL FROM PORT "EA" | | INTERNAL PORT "EB" | | Internal From Port "X" | |
|------------|------------------------|-----------------------|-------------------------|-----------------------|-----------------------|-----------------------|------------------------|-----------------------|
| | 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

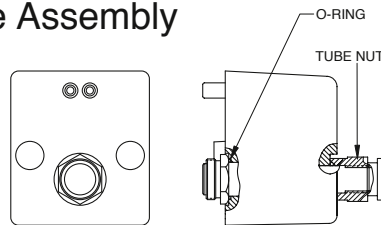


| DET. NO. | NO. REQ'D | PART NAME | PART NO. |
|----------|-----------|-------------------|-----------------|
| 1 | 1 | Gasket | 113-293 |
| 2 | 1 | Solenoid Assembly | See Chart Below |
| 3 | 1 | Gasket | 113-294 |
| 4 | 1 | End Cap Assembly | 204-316 |
| 5 | 2 | Screw | 127-337 |
| 6 | 2 | Screw | 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

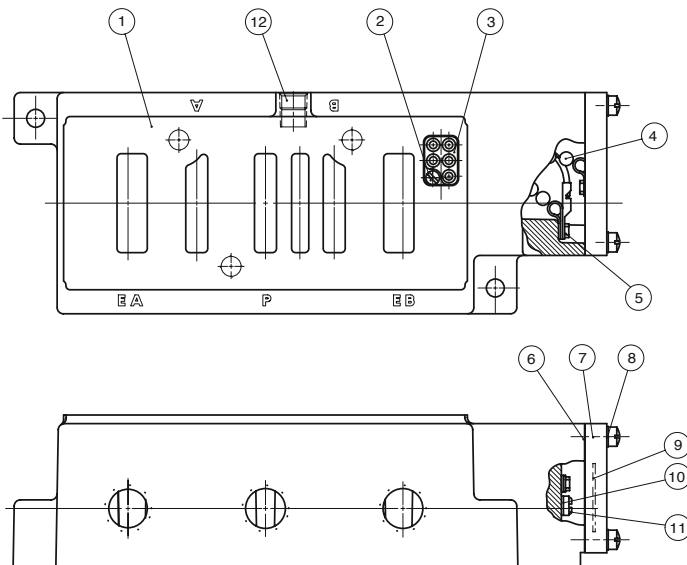
Solenoid - Pilot Capsule Assembly



| 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

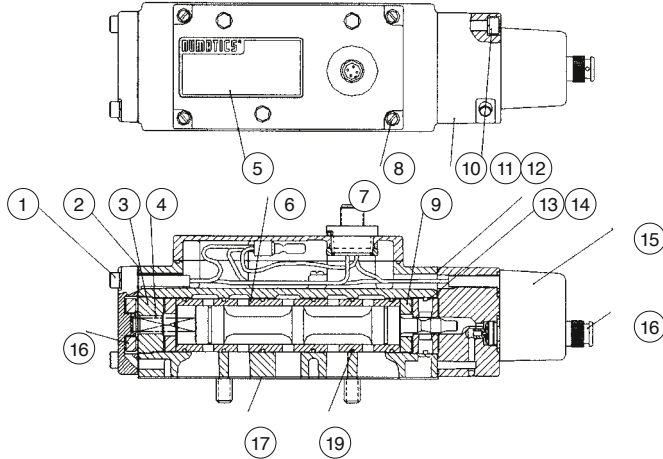
| PORT SIZE | PART NUMBER |
|-----------|-------------|
| 3/8 NPTF | 203-798 |
| 1/2 NPTF | 203-800 |
| 3/4 NPTF | 203-802 |
| 1 NPTF | 203-804 |

| 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

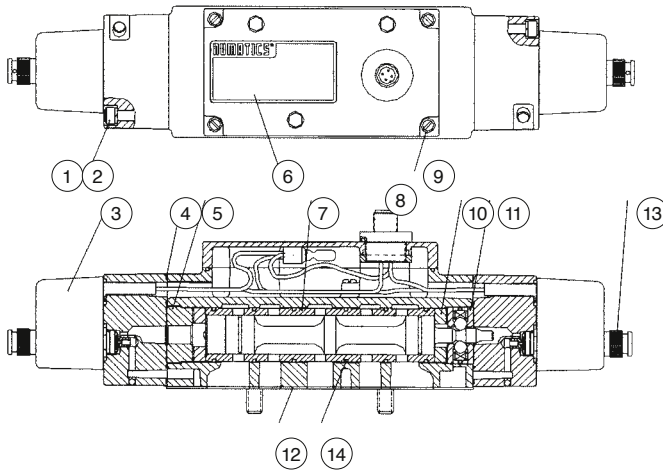
Kit No. A23SPA-K1 (For Models A22, A23, A24, BA4)



| 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

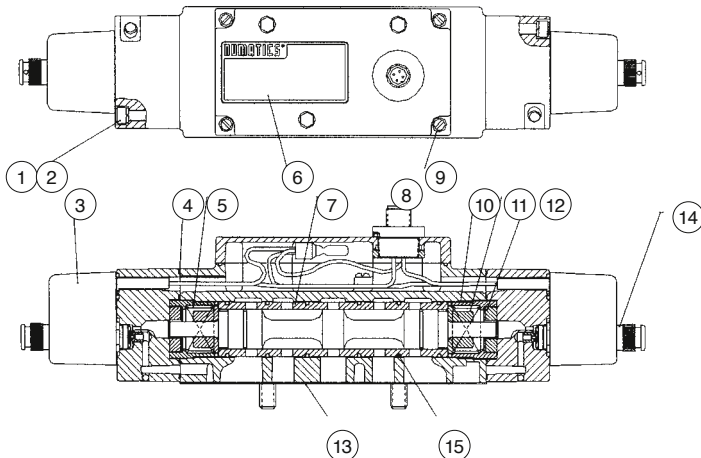
Kit No. A23SPA-K2 (For Models A22, A23, A24, BB4)



| 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

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



| 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

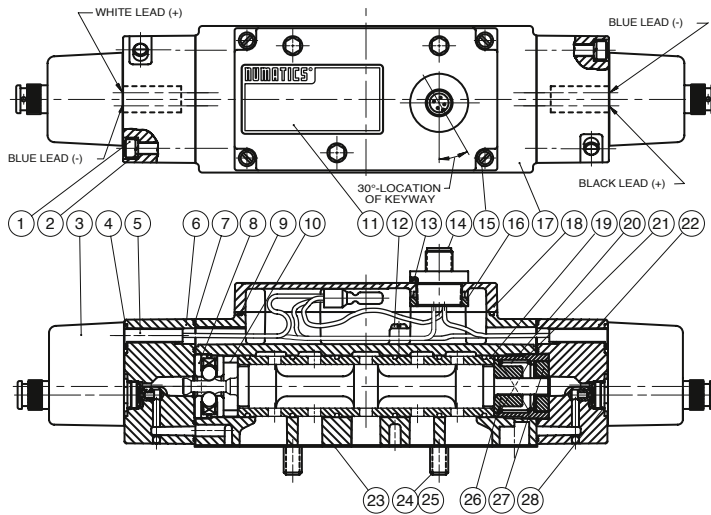
solenoid air pilot
3 position, open center
spring center "B" end
detented on "A" end



| 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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- Imperial or Metric Measurement Systems
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- Multiple Actuator Capability
- Easy to Use Graphical Interface
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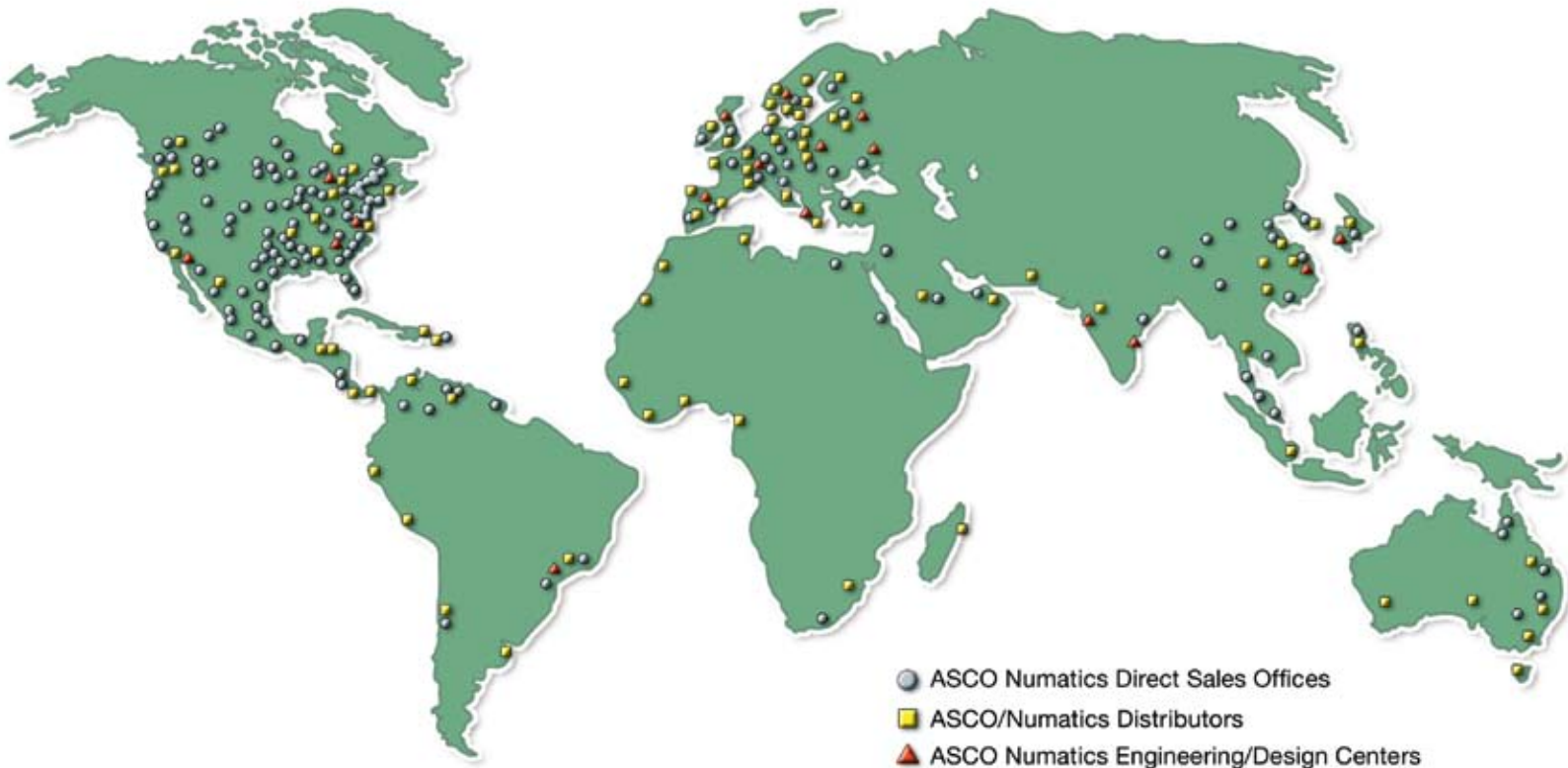
The screenshot displays the Numasizing software interface. On the left, a schematic diagram of a pneumatic system is shown, featuring a central valve assembly connected to two cylinders. The right side of the interface contains a data table with the following information:

| Design Information | Avg | Extnd | Retract |
|---|--------|-------|---------|
| Slide Time Required (sec) | 1.00 | 0.80 | |
| Slide 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 (PSIG) | 71.9 | 74.4 | |
| Min Recommended Pressure w/Safety Factor (PSIG) | 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 In Predicted 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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