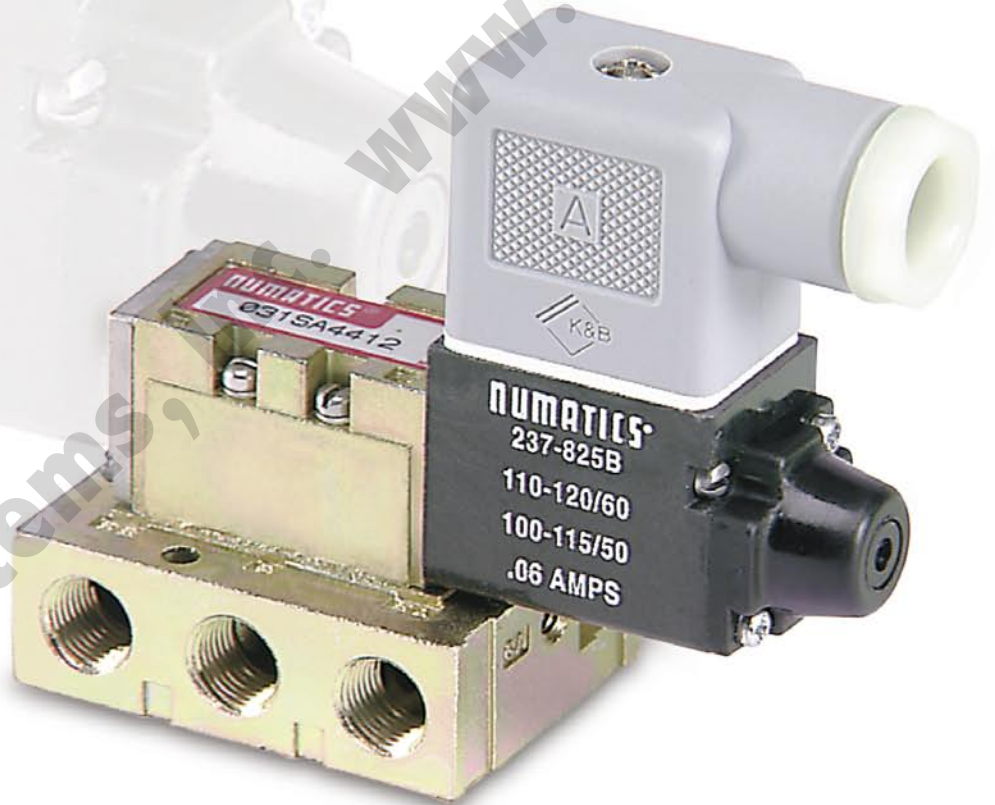


valves

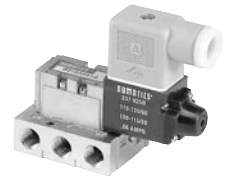
# Mark 3, PA 3 and SPA 3 Series

*Direct Solenoid, Air Pilot, or Solenoid Pilot Actuated Valves*

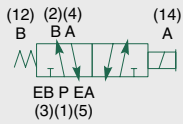


# numatics®

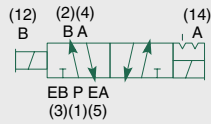
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|-------------------------------------------------------------|-------|
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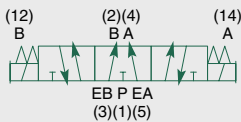
single solenoid  
2 position 4-way



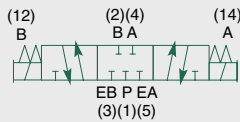
double solenoid  
2 position 4-way



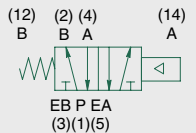
double solenoid  
3 position 4-way  
open center



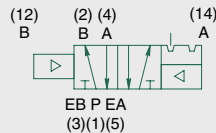
double solenoid  
3 position 4-way  
closed center



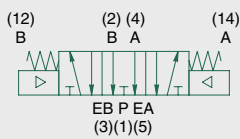
single air pilot  
2 position 4-way



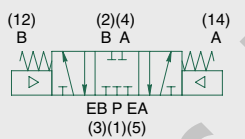
double air pilot  
2 position 4-way



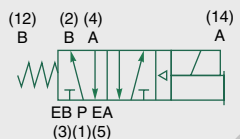
double air pilot  
3 position 4-way  
open center



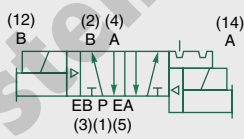
double air pilot  
3 position 4-way  
closed center



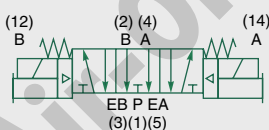
single solenoid pilot  
2 position 4-way



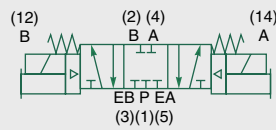
double solenoid pilot  
2 position 4-way



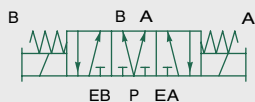
double solenoid pilot  
3 position 4-way  
open center



double solenoid pilot  
3 position 4-way  
closed center



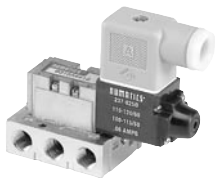
double solenoid  
3 Position 4-Way (5/3),  
open to 4 (A) and  
2 (B) in center



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

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





## Mark 3, SPA 3 & PA 3 Series

### Technical Data

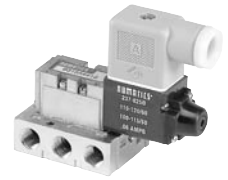
| VALVE DATA                  | ENGLISH                                  |                  | METRIC                            |           |
|-----------------------------|------------------------------------------|------------------|-----------------------------------|-----------|
| Cv                          | 1/8 NPTF = 0.35                          | 10-32 UNF = 0.18 | 1/8 = 0.35                        | M5 = .018 |
| Flow capacity               | 16.21 SCFM                               | 8.34 SCFM        | 345 NI/m                          | 177 NI/m  |
|                             | Upstream pressure to atmosphere @80 PSIG |                  | @ 6 bar upstream/5 bar downstream |           |
| Operating Pressure Range    | 28" HG. Vacuum to 150 PSIG               |                  | Vacuum to 10 Bar                  |           |
| Pilot Pressure Range        | 2-Position, Spring Return                | 20-100 PSIG      |                                   |           |
|                             | 2-Position, Detented                     | 15-100 PSIG      |                                   |           |
|                             | 3-Position                               | 20-100 PSIG      |                                   |           |
| Temperature Range (ambient) | Direct Solenoid                          | -10°F to +115°F  | -23°C to +46°C                    |           |
|                             | Air Pilot                                | -10°F to +200°F  | -23°C to +93°C                    |           |
|                             | Solenoid Air Pilot                       | -10°F to +115°F  | -23°C to +16°C                    |           |

### Operating Data - Mark 3

| ALL SOLENOIDS ARE CONTINUOUS DUTY RATED | 12 VDC                            | 24 VDC | 24 VAC<br>50 Hz. | 24 VAC<br>60 Hz. | 115 VAC<br>50 Hz. | 120 VAC<br>60 Hz. | 230 VAC<br>50 Hz. | 240 VAC<br>60 Hz. |
|-----------------------------------------|-----------------------------------|--------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| Power (Watts)                           | 6.0                               | 6.0    | 4.0              | 3.0              | 5.5               | 4.0               | 5.2               | 4.6               |
| Holding Current (Amps.)                 | 0.500                             | 0.250  | 0.290            | 0.234            | 0.063             | 0.052             | 0.025             | 0.021             |
| Inrush Current (Amps.)                  | N/A                               | N/A    | 0.490            | 0.450            | 0.093             | 0.090             | 0.042             | 0.041             |
| Energize in seconds                     | 2-Position, Single, Spring Return | 0.012  | 0.012            | 0.008            | 0.008             | 0.008             | 0.008             | 0.008             |
|                                         | 2-Position, Double, Detented      | 0.012  | 0.012            | 0.008            | 0.008             | 0.008             | 0.008             | 0.008             |
|                                         | 3-Position, Spring Centered       | 0.012  | 0.012            | 0.008            | 0.008             | 0.008             | 0.008             | 0.008             |
| De-energize in seconds                  | 2-Position, Single, Spring Return | 0.008  | 0.008            | 0.012            | 0.012             | 0.012             | 0.012             | 0.012             |
|                                         | 2-Position, Double, Detented      | N/A    | N/A              | N/A              | N/A               | N/A               | N/A               | N/A               |
|                                         | 3-Position, Spring Centered       | 0.008  | 0.008            | 0.012            | 0.012             | 0.012             | 0.012             | 0.012             |

### Operating Data - SPA 3

|                         | 12 VDC                            | 24 VDC |       |
|-------------------------|-----------------------------------|--------|-------|
| Power (Watts)           | 1.2                               | 1.2    |       |
| Holding Current (Amps.) | 0.100                             | 0.050  |       |
| Energize in Seconds     | 2-Position, Single, Spring Return | 0.009  | 0.009 |
|                         | 2-Position, Double, Detented      | 0.010  | 0.010 |
|                         | 3-Position, Spring Centered       | 0.010  | 0.010 |
| De-Energize in Seconds  | 2-Position, Single, Spring Return | 0.015  | 0.015 |
|                         | 2-Position, Double, Detented      | N/A    | N/A   |
|                         | 3-Position, Spring Centered       | 0.040  | 0.040 |



### How to Order

#### Valves

**031 SA 4 15 4 0 000 61**

#### Valve Series & Port Size

030 = 10-32

031\* = 1/8

\*Valve Unit Only (Mounting = 00)

#### Valve Type

BA = Single Solenoid Pilot, Spring Return w/Flush Non-Locking Override

BB = Double Solenoid Pilot w/Flush Non-Locking Override

PA = Single Air Pilot, Spring Return

PP = Double Air Pilot

SA = Single Solenoid, Spring Return w/Flush Non-locking Override

SS = Double Solenoid w/Flush Non-locking Override

#### Function

4 = 2 Position, 4-Way

5 = 3 Position, 4-Way Open Center

6 = 3 Position, 4-Way Closed Center

7\* = 3 Position 4-Way (5/3), Open to 4 (A) and 2 (B) in Center

\*available with SS only

#### Mounting

00 = Valve Unit Only

01 = Valve Unit Only w/Speed Control

15 = Manifold Block w/Side and Bottom Ports

25 = 15 w/Speed Control

41 = Standard Base, Side Ports, Individual Exhaust

46 = 41 w/Speed Control

56\*\* = Standard Base, Bottom Ports, Individual Exhaust

58\*\* = 56 w/Speed Control

\*\*10-32 Ports Only

#### Voltage

20 = 24/50-60 VAC

30 = 110-120/50-60 VAC

40 = 220-240/50-60 VAC

60 = 12 VDC

61 = 24 VDC

00 = No Voltage (PA/PP only)

#### Special Options

11B = Flush Locking Override

11Z = Extended Locking Override

13A = 48" Leads

17N = DC Solenoid w/Surge Suppression Diode

#### Port Type

0 = NPTF

G = G Tap

P = NPTF (Solenoid Pilot Valves)

Q = G-Tap (Solenoid Pilot Valves)

#### Wiring Option

B = DC Hardwired w/15" Leads

C = Proprietary AC Plug-In

E = Proprietary DC Plug-In

M = DC Straight 2-Pin Plug-in w/Light (BA or BB only)

O = AC Hardwired w/15" Leads (SA, SS or Air Pilot)

2 = DIN Plug-in AC Solenoid (SA or SS only)

4 = DIN Plug-in DC Solenoid (SA or SS only)

### Plug Connector

M Wiring Option (SPA only)



| LEAD LENGTH | PART NO. |
|-------------|----------|
| 12" Lead    | 230-443  |
| 48" Lead    | 230-476  |
| 120" Lead   | 230-486  |

| PART NAME | PART NO. |
|-----------|----------|
| Housing   | 140-384  |
| Terminal  | 140-385  |

Plug connector is not included with solenoid assemblies or valve models. Must order separately.

Note: Wire Gage = 22 AWG

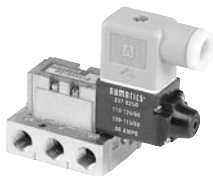
### Cable Assemblies

C and E Wiring Option



| CORD LENGTH | PART NO. |
|-------------|----------|
| 4' Cord     | 230-214  |
| 6' Cord     | 230-260  |
| 10' Cord    | 230-348  |
| 16' Cord    | 230-432  |
| 20' Cord    | 230-434  |
| 40' Cord    | 230-843  |

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



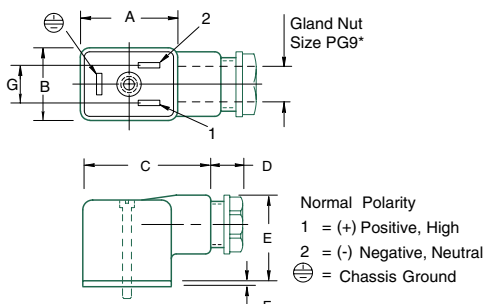
## Mark 3, SPA 3 & PA 3 Series

### Plug-in Connector Assemblies for DIN Plug-In Valves

2 and 4 Wiring Option

Per DIN Spec. NO 43650. \*Accepts cable diameter 0.240 to 0.310.

11mm Industry Standard DIN Form B



| CONNECTOR ASSEMBLY                   | PART NO. |
|--------------------------------------|----------|
| Grey (A end solenoid) Plug Assembly  | 230-363  |
| Black (B end solenoid) Plug Assembly | 230-364  |
| Plug Assembly with 24 V Light        | 230-365  |
| Plug Assembly with 110 V Light       | 230-366  |
| Plug Assembly with 220 V Light       | 230-367  |

### Dimensions

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

| A              | B              | C              | D              | E              | F             | G              |
|----------------|----------------|----------------|----------------|----------------|---------------|----------------|
| 1.12<br>(28.4) | 0.83<br>(21.1) | 1.57<br>(39.9) | 0.40<br>(10.2) | 1.10<br>(27.9) | 0.06<br>(1.5) | 0.43<br>(11.0) |

### How to Order continued

#### Regulators

**031 RS 7 00 O 0 000 00**

Valve Series & Port Size

031 = 1/8

Regulator Type

RS = Single Pressure to Port 1 (P)

RD = Dual Pressure to Ports 3 (EB) & 5 (EA)

Pressure Range

3 = 3-30 PSIG (0.2 - 2 Bar)

7 = 0-100 PSIG (0-6.9 Bar)

Mounting

00 = Regulator Unit Only

02\*\* = Regulator Unit for Use w/Speed Control

\*\*Speed control can only be used with type RS.

These model numbers include regulator with

extra long screws #127-332. For complete

information on ordering with speed control,

see page 13.

Special Options

16N = Jumper on (A) 14 End

16P = Jumper on (B) 12 End

Port Type

0 = NPTF

Wiring Option

O = Non Plug-in

#### Assembly Kit

**AK 0 C E 0000 1 N STD**

Electrical/Electronics

Type & Location

0 = Standard

Valve Line

C = Mark 3 Series

Number of Valve Stations

A = 1 E = 5 I = 9 M = 13

B = 2 F = 6 J = 10 N = 14

C = 3 G = 7 K = 11 O = 15

D = 4 H = 8 L = 12 P = 16

Options

STD = Standard

Port Type

N = NPTF

G = G tap

End Plate Port Size

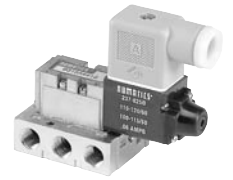
1 = 1/8

2 = 1/4

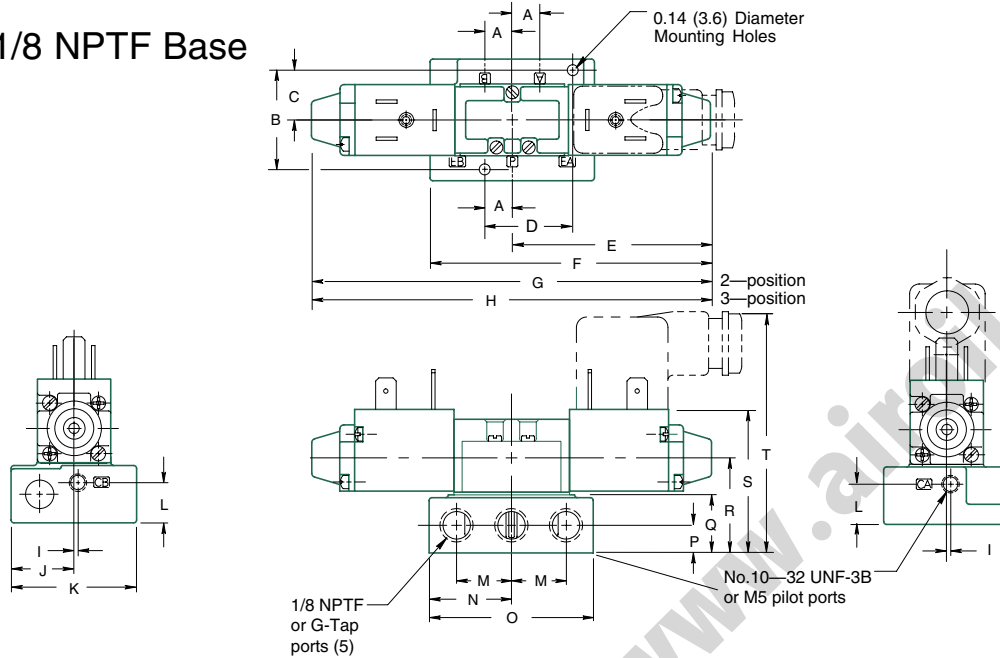
#### Example order

List in order, left to right, facing cylinder ports

Assembly Kit AK0CD00002NSTD  
 Station 1 031SA4152000030  
 Station 2 031SS4252000030  
 Station 3 031SA4152000030  
 Station 4 031SA4152000030  
 ASSEMBLED



### Mark 3 Valve with 1/8 NPTF Base

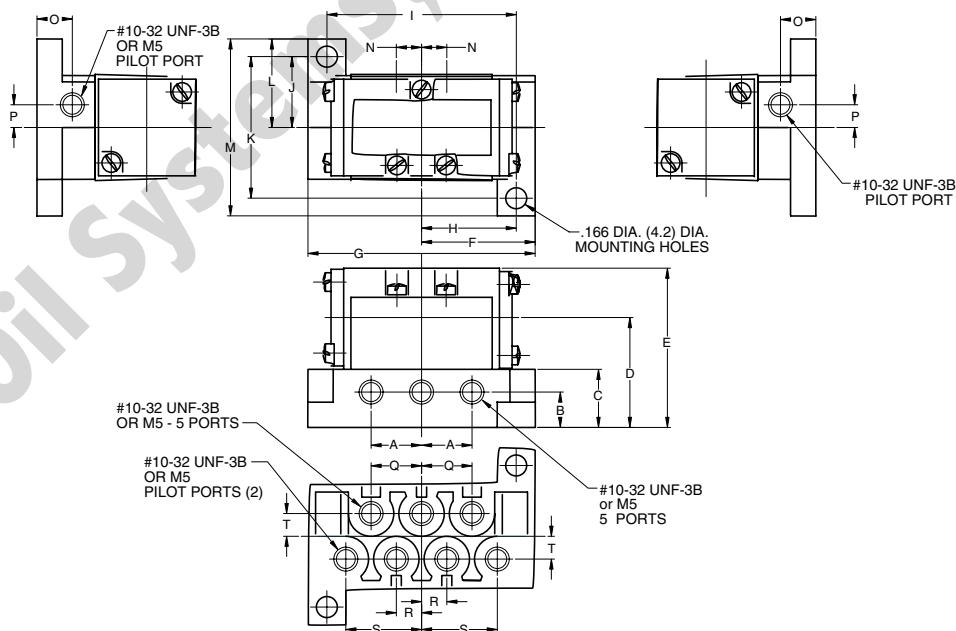


#### Dimensions

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

| A             | B              | C              | D              | E              | F              | G               | H               | I              | J              | K              | L              | M              | N              | O              | P             | Q              | R              | S              | T              |
|---------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|----------------|----------------|----------------|----------------|
| 0.31<br>(7.9) | 1.09<br>(27.7) | 0.55<br>(14.0) | 1.00<br>(25.4) | 2.30<br>(58.4) | 3.24<br>(82.3) | 4.60<br>(116.8) | 4.86<br>(123.4) | 0.03<br>(0.76) | 0.69<br>(17.5) | 1.38<br>(35.0) | 0.44<br>(11.2) | 0.63<br>(16.0) | 0.94<br>(23.8) | 1.88<br>(47.7) | 0.31<br>(7.8) | 0.65<br>(16.5) | 1.06<br>(26.9) | 1.65<br>(41.9) | 2.80<br>(71.1) |

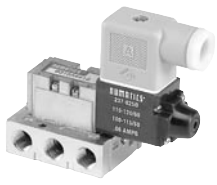
### PA 3 Valve with 10-32 UNF-3B Base



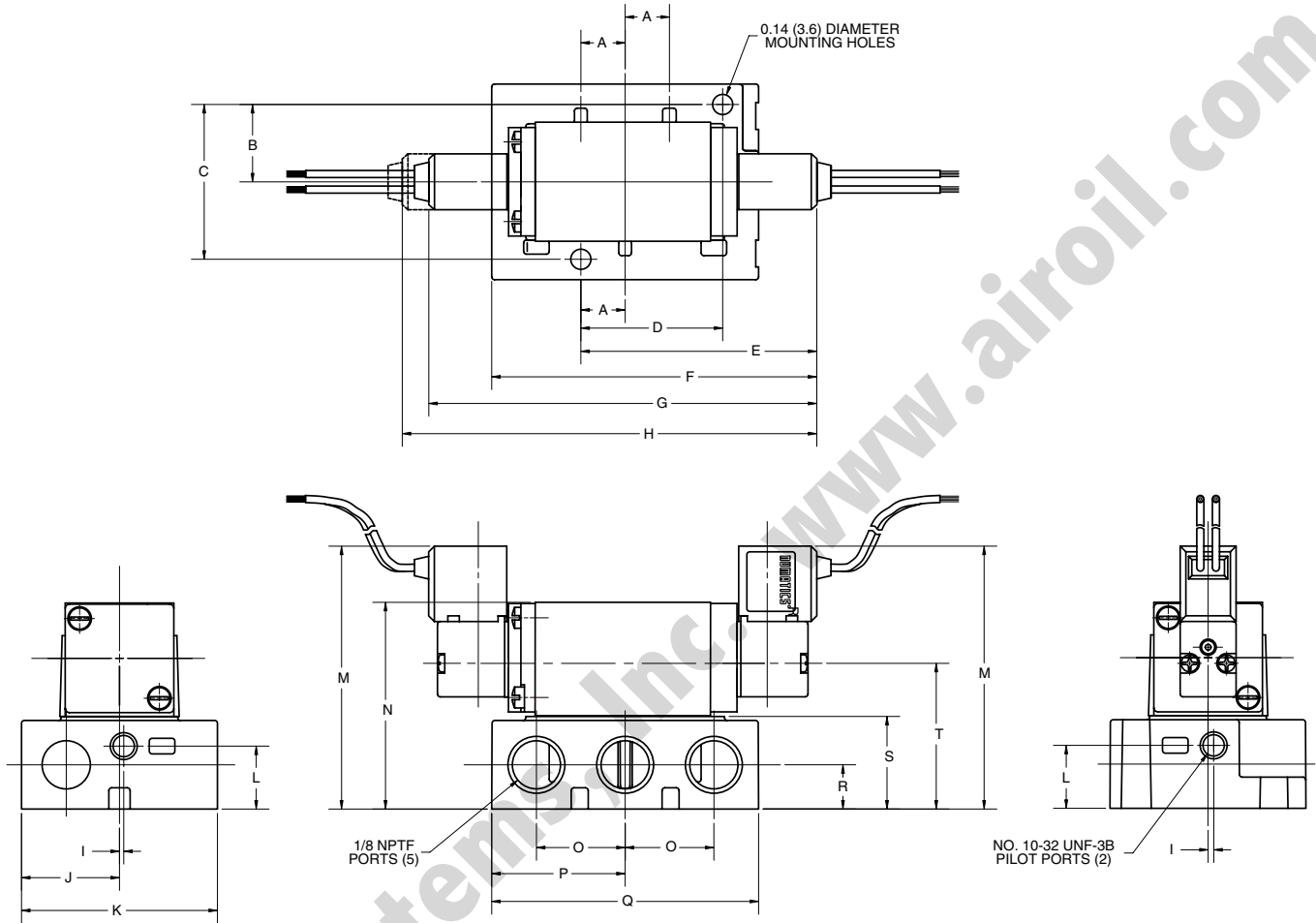
#### Dimensions

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

| A              | B             | C              | D              | E              | F              | G              | H              | I              | J              | K              | L              | M              | N             | O             | P             | Q              | R             | S              | T             |
|----------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|---------------|----------------|---------------|----------------|---------------|
| 0.40<br>(10.2) | 0.28<br>(7.1) | 0.46<br>(11.7) | 0.87<br>(22.1) | 1.26<br>(32.0) | 0.90<br>(22.9) | 1.80<br>(45.7) | 0.75<br>(19.1) | 1.50<br>(38.1) | 0.56<br>(14.2) | 1.12<br>(28.4) | 0.70<br>(17.8) | 1.40<br>(35.6) | 0.20<br>(5.1) | 0.28<br>(7.1) | 0.18<br>(4.6) | 0.40<br>(10.2) | 0.20<br>(5.1) | 0.60<br>(15.2) | 0.18<br>(4.6) |



### SPA 3 Valve with 10-32 UNF-3B Base

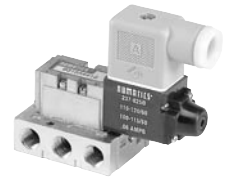


### Dimensions

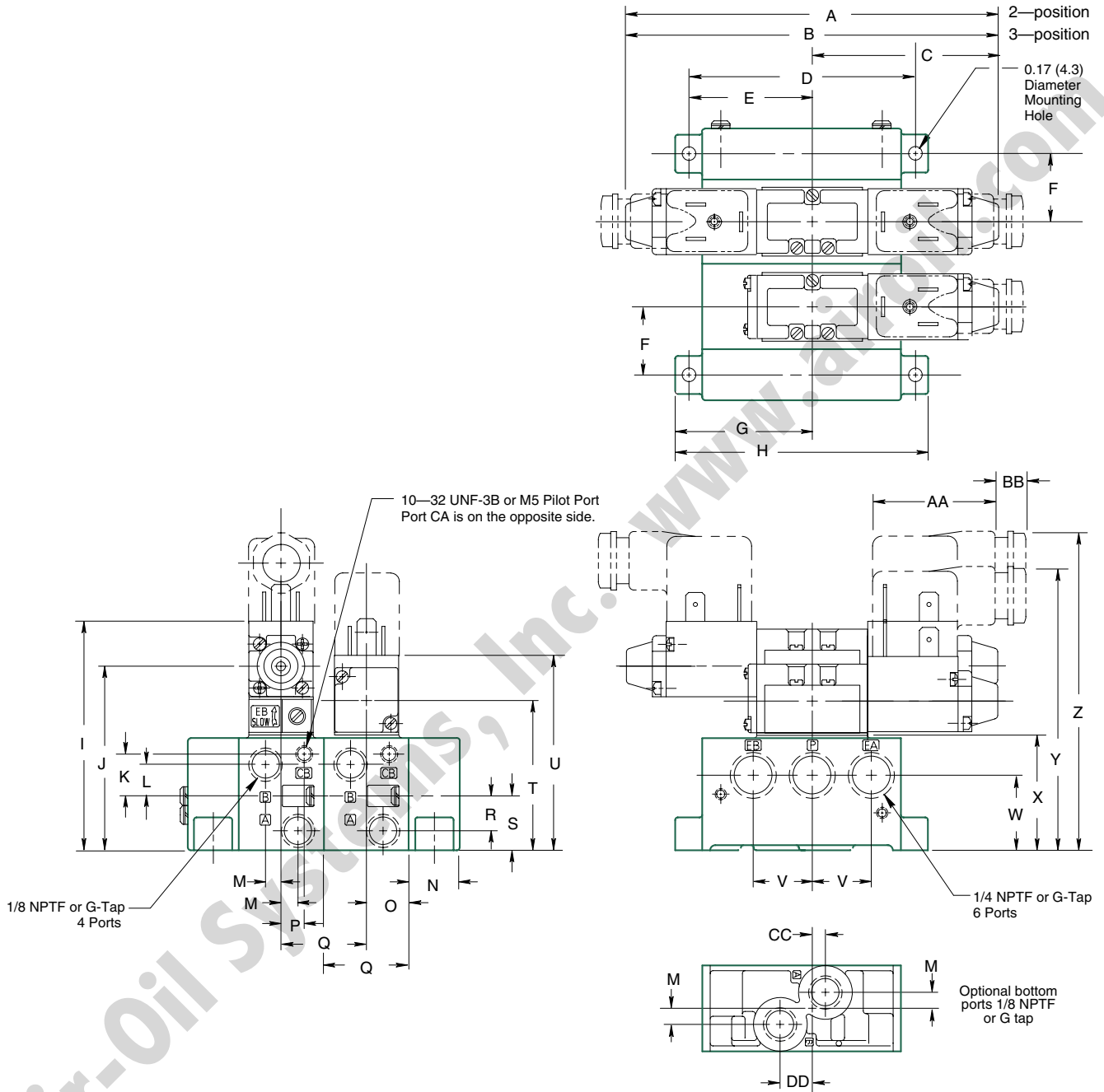
top dimensions = inches and bottom dimensions (in parenthesis) = millimeters

| A     | B      | C      | D      | E      | F      | G      | H      | I      | J      | K      | L      | M      | N      | O      | P      | Q      | R     | S      | T      |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| 0.31  | 0.55   | 1.09   | 1.00   | 1.66   | 2.29   | 2.73   | 2.92   | 0.03   | 0.69   | 1.38   | 0.44   | 1.85   | 1.46   | 0.63   | 0.94   | 1.88   | 0.31  | 0.65   | 1.03   |
| (7.8) | (13.9) | (27.7) | (25.4) | (42.2) | (58.2) | (69.3) | (74.2) | (0.76) | (17.5) | (35.0) | (11.2) | (46.9) | (37.1) | (16.0) | (23.8) | (47.7) | (7.8) | (16.5) | (26.2) |





### Manifold Block Assembly

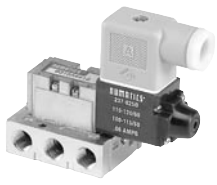


### Dimensions

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

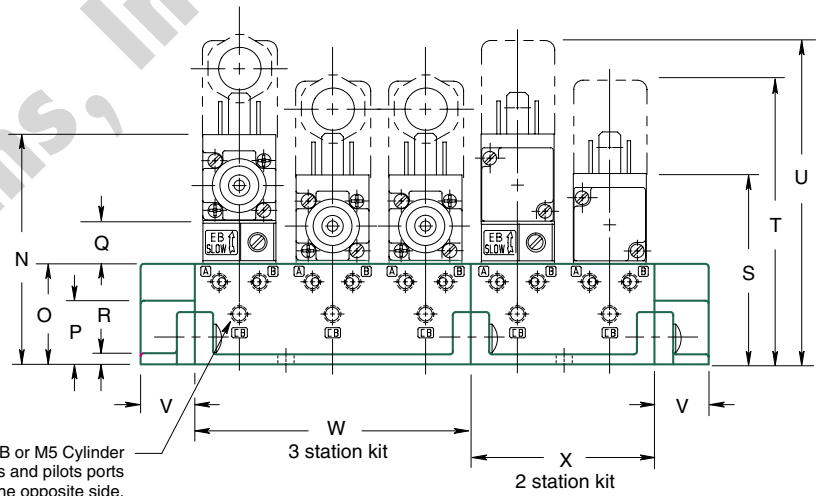
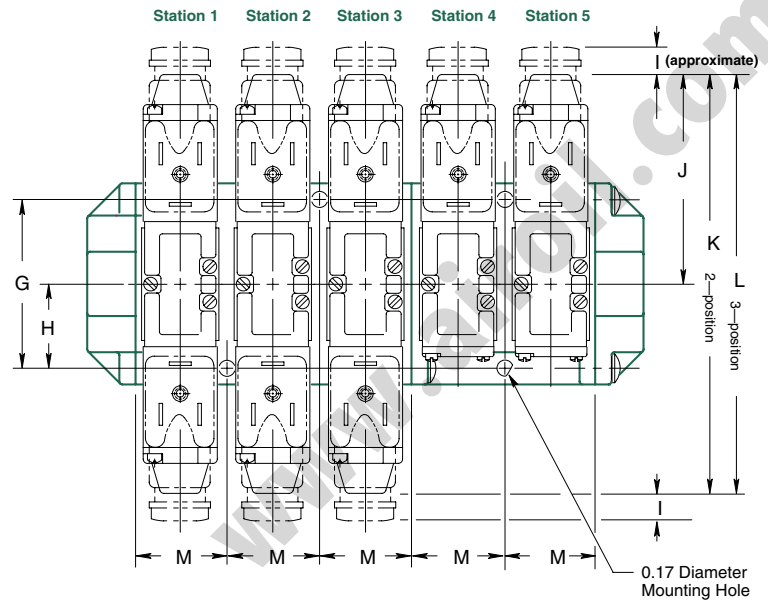
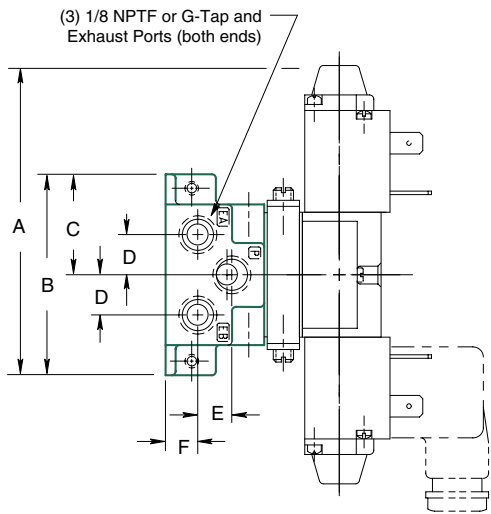
| A               | B               | C              | D              | E              | F              | G              | H              | I              | J              | K              | L             | M             | N              | O              | P             | Q              | R              | S              | T              |
|-----------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|----------------|----------------|---------------|----------------|----------------|----------------|----------------|
| 4.60<br>(116.8) | 4.86<br>(123.4) | 2.30<br>(58.4) | 2.63<br>(66.8) | 1.44<br>(36.5) | 0.81<br>(20.6) | 1.59<br>(40.4) | 2.94<br>(74.6) | 2.77<br>(70.4) | 2.24<br>(56.9) | 0.47<br>(11.9) | 0.34<br>(8.6) | 0.19<br>(4.8) | 0.59<br>(15.0) | 0.48<br>(12.2) | 0.27<br>(6.8) | 1.00<br>(25.4) | 0.41<br>(10.4) | 0.72<br>(18.3) | 1.82<br>(46.2) |

| U              | V              | W              | X              | Y              | Z              | AA             | BB             | CC            | DD            |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|
| 2.40<br>(61.0) | 0.69<br>(17.5) | 0.94<br>(23.9) | 1.41<br>(35.8) | 3.56<br>(90.4) | 3.93<br>(99.8) | 1.57<br>(39.9) | 0.40<br>(10.2) | 0.16<br>(4.1) | 0.38<br>(9.6) |



## Mark 3, SPA 3 & PA 3 Series

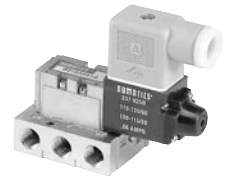
### 10-32 UNF-3B Manifold Assembly



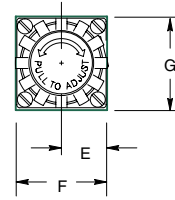
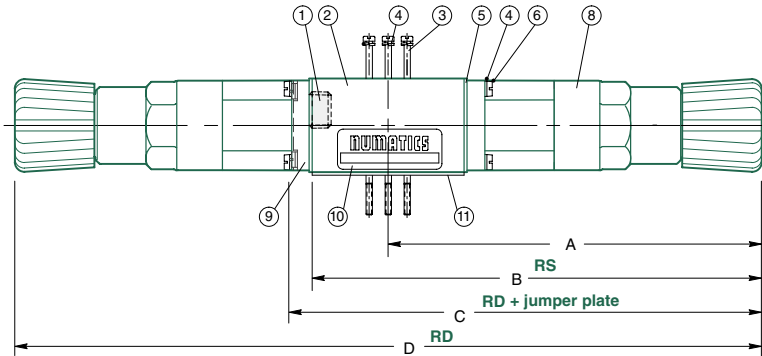
### Dimensions

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

| A              | B              | C              | D              | E              | F              | G              | H              | I             | J              | K               | L               | M              | N              | O              | P              | Q             | R             |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|----------------|-----------------|-----------------|----------------|----------------|----------------|----------------|---------------|---------------|
| 3.30<br>(83.8) | 2.00<br>(50.8) | 1.00<br>(25.4) | 0.40<br>(10.2) | 0.38<br>(9.7)  | 0.32<br>(8.1)  | 1.70<br>(43.2) | 0.85<br>(21.6) | 0.30<br>(7.6) | 2.33<br>(58.4) | 4.60<br>(116.8) | 4.86<br>(123.4) | 0.92<br>(23.4) | 2.36<br>(59.9) | 1.00<br>(25.4) | 0.52<br>(13.2) | 0.37<br>(9.4) | 0.10<br>(2.5) |
| S              | T              | U              | V              | W              | X              |                |                |               |                |                 |                 |                |                |                |                |               |               |
| 1.99<br>(50.5) | 3.15<br>(80.0) | 3.52<br>(89.4) | 0.50<br>(12.7) | 2.76<br>(70.1) | 1.84<br>(46.7) |                |                |               |                |                 |                 |                |                |                |                |               |               |



### Sandwich Pressure Regulator



#### Dimensions

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

| A              | B               | C               | D               | E               | F               | G              |
|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|
| 3.73<br>(94.7) | 4.48<br>(113.8) | 4.70<br>(119.4) | 7.47<br>(189.7) | 0.437<br>(11.1) | 0.875<br>(22.2) | 0.92<br>(23.4) |

#### Gauges - RS Regulators only

| PRESSURE GAUGE | PART NO. |
|----------------|----------|
| 0-60 PSIG      | 214-216  |
| 0-150 PSIG     | 214-209  |
| 0-11 Bar       | 214-210  |

#### Parts List

| DET. NO. | NO. REQ'D | PART NAME                                | PART NO.                                      |
|----------|-----------|------------------------------------------|-----------------------------------------------|
| 1        | 1         | Plug (type RS only)                      | 129-100                                       |
| 2        | 2         | Regulator Block                          | RS: 213-319<br>RD: 213-320                    |
| 3        | 3         | Screw                                    | standard: 127-331<br>w/speed control: 127-332 |
| 4        | 7         | Lockwasher                               | 128-172                                       |
| 5        | *         | Gasket (body to reg. ass'y)              | 113-472                                       |
| 6        | **        | Screw                                    | 127-380                                       |
| 8        | *         | Regulator Assembly (not sold separately) |                                               |
| 9        | 1         | Jumper Plate Kit***                      | 229-733                                       |
| 10       | 1         | Nameplate                                | 122-571                                       |
| 11       | 1         | Gasket                                   | 113-403                                       |

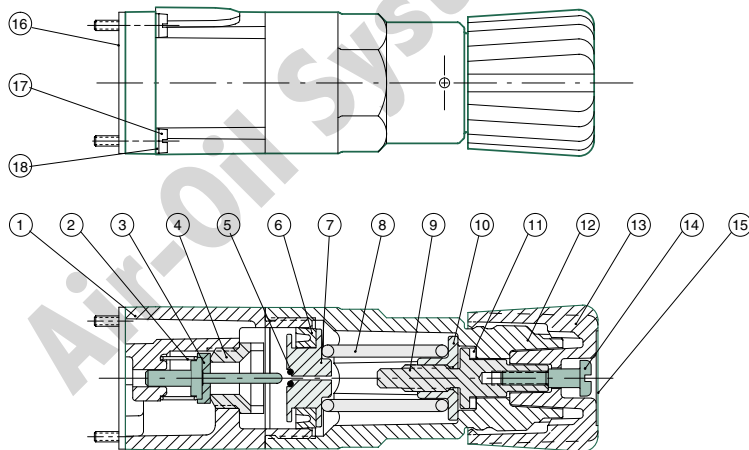
\*(1) required for RS; (2) for RD

\*\* (4) required for RS; (8) for RD

\*\*\*Jumper plate kit (shown in phantom) includes jumper plate (4) screw #127-260; (4) lockwasher #128-172; and (1) gasket #113-290

#### Regulator Service Kits

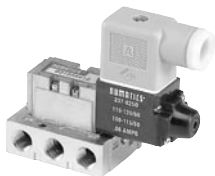
239-708



#### Parts List

| DET. NO. | NO. REQ'D | PART NAME       | PART NO.                                  |
|----------|-----------|-----------------|-------------------------------------------|
| 1        | 1         | Regulator Body  | 101-706                                   |
| 2 *      | 1         | Spring          | 115-226                                   |
| 3 *      | 1         | Poppet Assembly | 221-168                                   |
| 4        | 1         | Poppet Seat     | 124-148                                   |
| 5 *      | 1         | O-Ring          | 126-336                                   |
| 6 *      | 1         | Seal U-Packing  | 124-302                                   |
| 7        | 1         | Piston          | 125-928                                   |
| 8        | 1         | Spring          | 0-30 PSIG: 115-352<br>0-100 PSIG: 115-342 |
| 9        | 1         | Metering Screw  | 118-187                                   |
| 10       | 1         | Spring Guide    | 112-369                                   |
| 11       | 1         | Bearing         | 125-617                                   |
| 12       | 1         | Bonnet          | 125-623                                   |
| 13       | 1         | Knob            | 125-624                                   |
| 14       | 1         | Screw           | 127-706                                   |
| 15       | 1         | Label           | 122-992                                   |
| 16       | 1         | Gasket          | 113-472                                   |
| 17       | 4         | Screw           | 127-380                                   |
| 18       | 4         | Lockwasher      | 128-172                                   |

\*Indicates parts included in kit



### Sandwich Pressure Regulators

Types: RS / RD

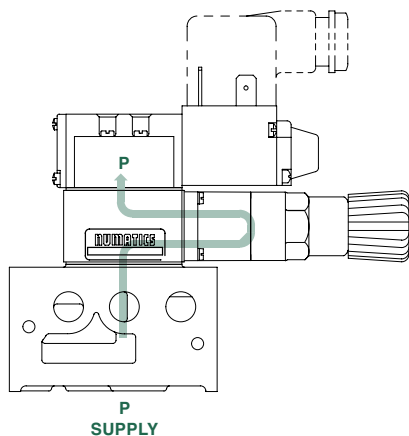
When ordering a valve plus regulator mounted on a base or manifold, list the regulator unit-only model number and include the mounting requirements only within the valve model selection.

Specify "Assembled."

|                          |                 |                 |
|--------------------------|-----------------|-----------------|
| Example orders:          | TYPE RS         | TYPE RD         |
| Valve:<br>+mounting      | 031SA4152000030 | 031SS4152000030 |
| Regulator<br>(unit only) | 031RS700O000000 | 031RD700O000000 |
|                          | ASSEMBLED       | ASSEMBLED       |

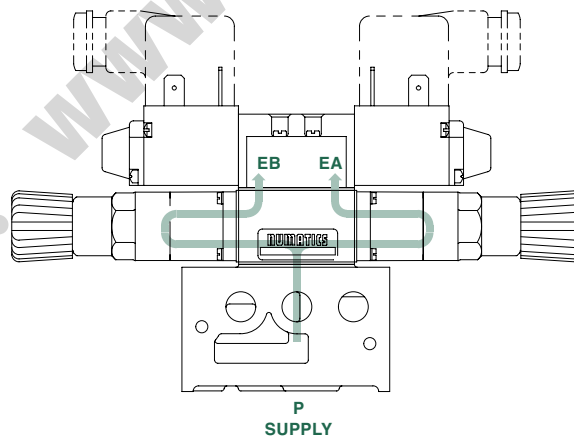
#### Type RS

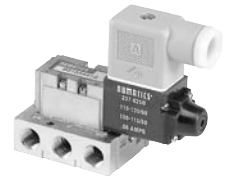
Single pressure from a single supply.



#### Type RD

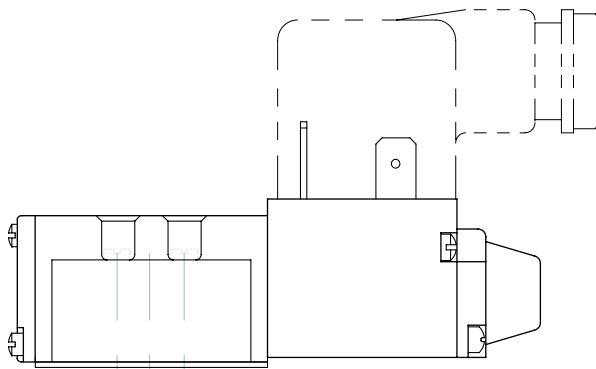
Dual pressure from a single supply.





### Valve, Speed Control, and Regulator Assembly

#### EXAMPLE

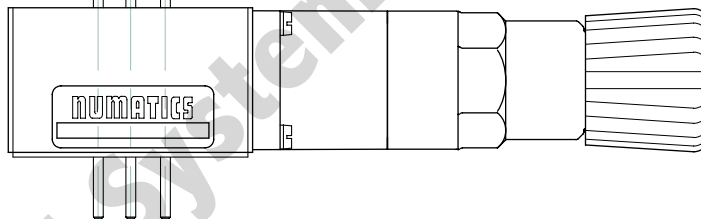


031SA4252000030

1/8 NPTF Mark 3  
single solenoid valve unit +  
speed control sandwich +  
FlexiBlok manifold with  
1/8 NPTF side and bottom  
cylinder ports

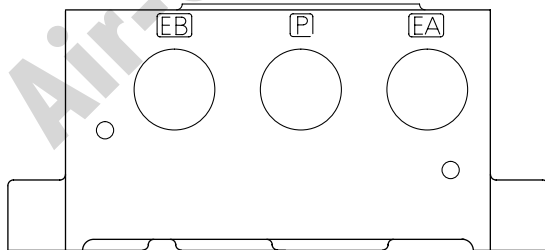


(3) Extra  
long screws  
#127-332  
  
(3) Lockwashers  
#128-172



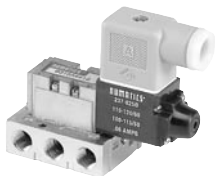
031RS702O000000

Mark 3 single pressure  
regulator (0 – 100 PSIG)  
+ extra long screws



#### EXAMPLE ORDER:

Valve: 031SA4252000030  
Regulator: 031RS702O000000  
ASSEMBLED



## Mark 3, SPA 3 & PA 3 Series

### End Plate Kits

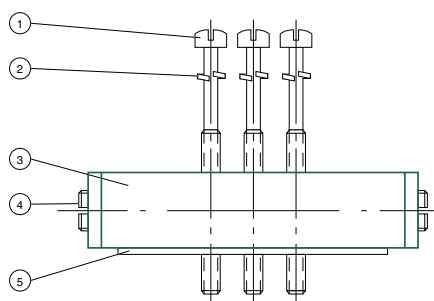
| END PLATE PORTS | MANIFOLD PORT | PART NO. |
|-----------------|---------------|----------|
| 1/8 NPTF        | 10-32 UNF-3B  | 229-526  |
| G 1/8           | M5            | 239-260  |
| 1/4 NPTF        | 1/8 NPTF      | 229-719  |
| G 1/4           | G 1/8         | 239-261  |

### Parts List

| NO. REQ'D | PART NAME       | PART NO. |          |         |         |
|-----------|-----------------|----------|----------|---------|---------|
|           |                 | 1/8 NPTF | 1/4 NPTF | G 1/8   | G 1/4   |
| 1         | Left End Plate  | 104-198  | 104-238  | 104-405 | 104-366 |
| 2         | Screw           | 127-265  | 127-328  | 127-265 | 127-328 |
| 2         | Lockwasher      | 128-109  | 128-116  | 128-109 | 128-116 |
| 3         | Seal            | 126-107  | 126-201  | 126-107 | 126-201 |
| 1         | Right End Plate | 104-197  | 104-237  | 104-404 | 104-365 |

### Speed Control Kit

239-469

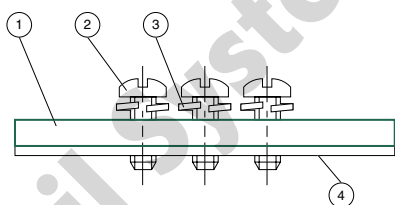


### Parts List

| DET. NO. | NO. REQ'D | PART NAME                           | PART NO. |
|----------|-----------|-------------------------------------|----------|
| 1        | 3         | Screw                               | 127-293  |
| 2        | 3         | Lockwasher                          | 128-242  |
| 3        | 3         | Speed Control (not sold separately) |          |
| 4        | 1         | Metering Screw Assembly             | 213-255  |
| 5        | 2         | Gasket                              | 113-407  |

### Blank Station Plate Kit

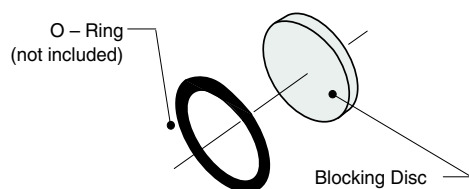
229-538



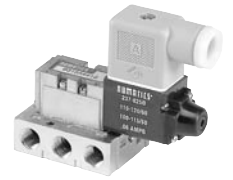
### Parts List

| DET. NO. | NO. REQ'D | PART NAME                                 | PART NO. |
|----------|-----------|-------------------------------------------|----------|
| 1        | 1         | Blank Station Plate (not sold separately) |          |
| 2        | 3         | Lockwasher                                | 127-260  |
| 3        | 3         | Screw                                     | 128-172  |
| 4        | 1         | Gasket                                    | 113-403  |

### Blocking Discs

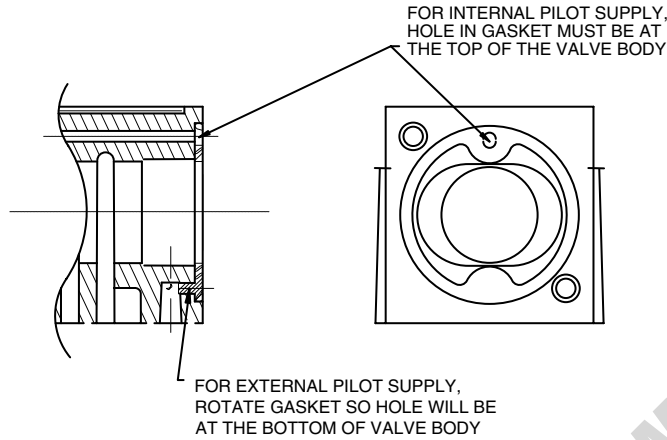


| PORT TYPE    | PART NO. |
|--------------|----------|
| 10-32 UNF-3B | 124-138  |
| 1/8 NPTF     | 124-151  |



### SPA 3

### Internal/External Pilot Selection



BOTH ENDS MUST BE CONVERTED  
FOR DOUBLE SOL. PILOT VALVES,

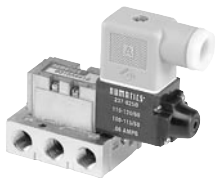
### Direct Solenoid Capsule Assemblies (Flushing Non-Locking Override)

| OVERRIDE TYPE                         | VALVE FUNCTION | WIRING OPTION | B/A END | VOLTAGE                  |                                |          |              |              |
|---------------------------------------|----------------|---------------|---------|--------------------------|--------------------------------|----------|--------------|--------------|
|                                       |                |               |         | 100-115/50<br>110-120/60 | AC<br>200-230/50<br>220-240/60 | 24/50-60 | DC<br>12 VDC | DC<br>24 VDC |
| Flush non-locking override (standard) | 2 position     | Hardwired     | B/A     | 237-952                  | 237-953                        | 237-954  | 236-102      | 236-103      |
|                                       | 2 position     | DIN Plug-in   | B/A     | 237-961                  | 237-962                        | 237-963  | 236-126      | 236-127      |
|                                       | 3 position     | Hardwired     | B End   | 237-993                  | 237-992                        | 237-994  | 236-154      | 236-155      |
|                                       | 3 position     | Hardwired     | A End   | 237-990                  | 237-989                        | 237-991  | 236-108      | 236-109      |
|                                       | 3 position     | DIN Plug-in   | B End   | 237-1011                 | 237-1010                       | 237-1012 | 236-166      | 236-167      |
|                                       | 3 position     | DIN Plug-in   | A End   | 237-1008                 | 237-1007                       | 237-1009 | 236-132      | 236-133      |

Includes solenoid and end cap assembly + screws and gaskets.

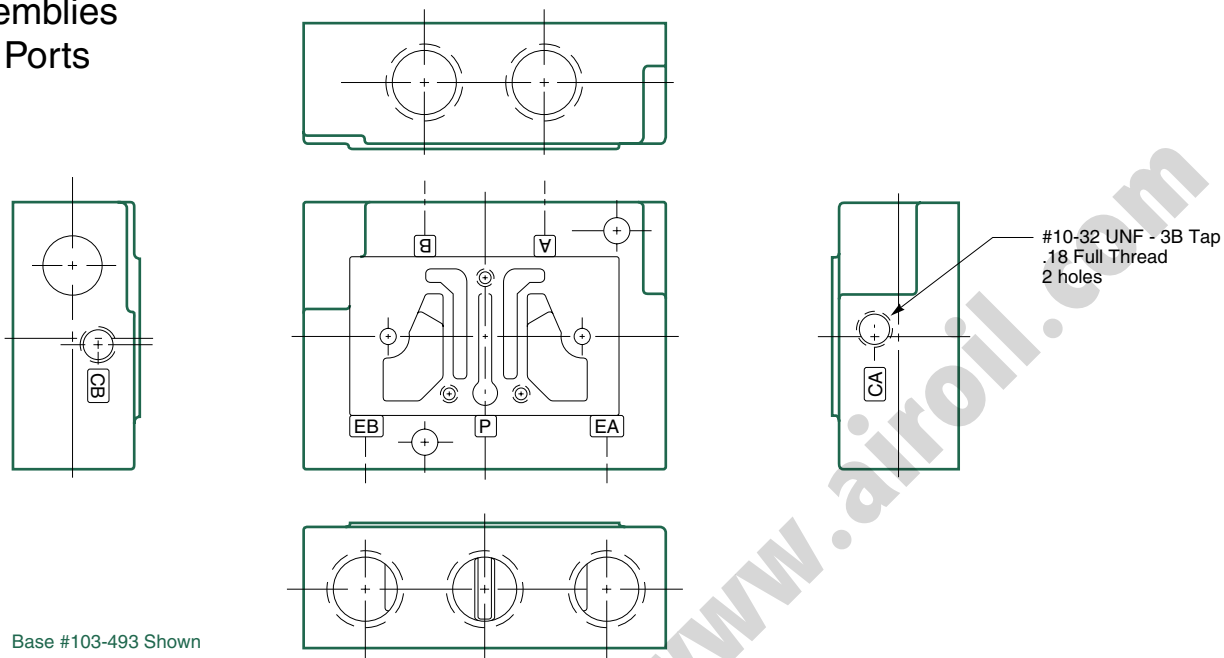
### Solenoid Pilot Capsule Assemblies

|                  | 12 VDC  | 24 VDC  |
|------------------|---------|---------|
| Hardwired        | 236-298 | 236-299 |
| Straight Plug-In | 236-301 | 236-302 |



## Mark 3, SPA 3 & PA 3 Series

### Base Assemblies 1/8 NPTF Ports

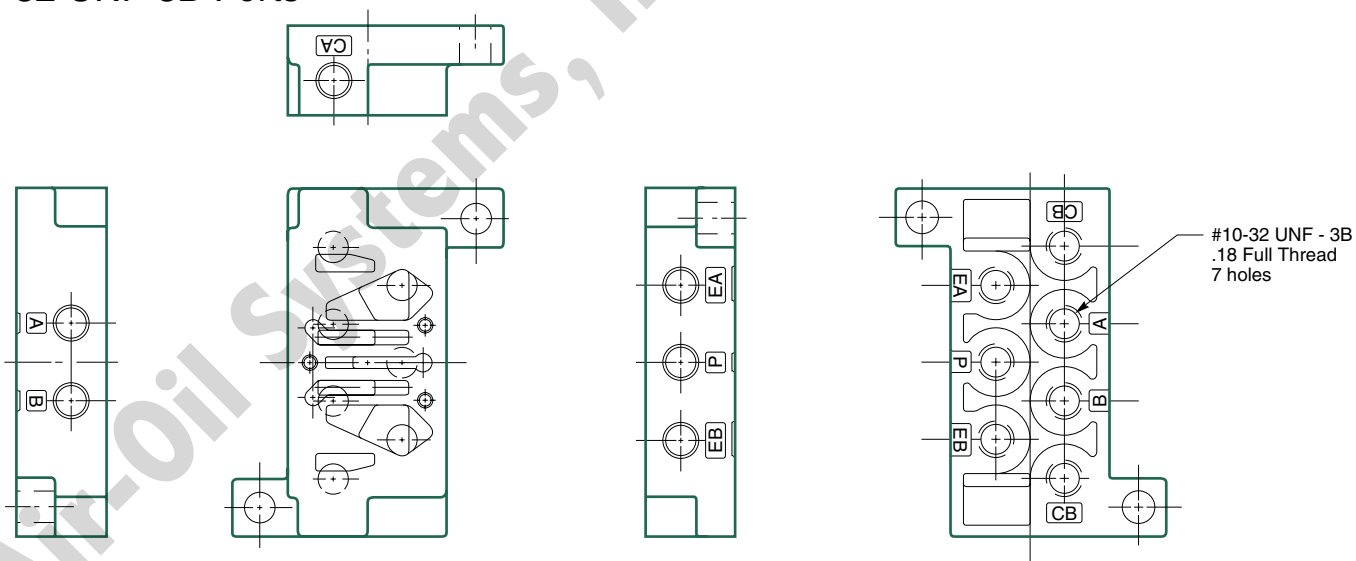


Base #103-493 Shown

41 & 46 Bases: side ports only, individual exhaust.

| BASE DESCRIPTION | PART NO. |
|------------------|----------|
| 1/8 NPTF         | 103-493  |
| G 1/8            | 103-592  |

### Base Assemblies 10-32 UNF-3B Ports



Base #103-396 Shown

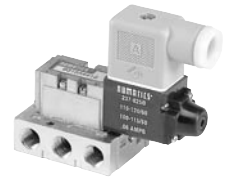
41 & 46 Bases: side ports only, individual exhaust.

| BASE DESCRIPTION | PART NO. |
|------------------|----------|
| 10-32 UNF-3B     | 103-395  |
| M5               | 103-613  |

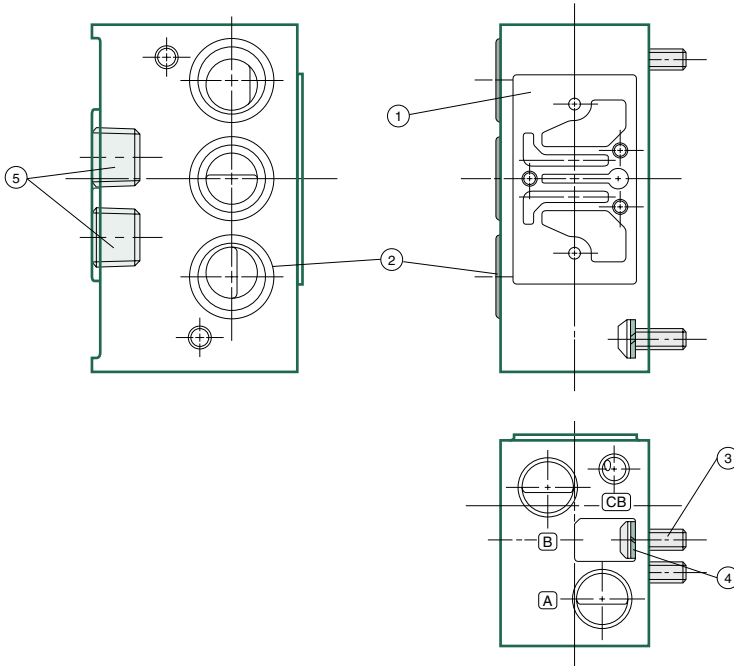
56 & 58 Bases: bottom ports, individual exhaust.

| BASE DESCRIPTION | PART NO. |
|------------------|----------|
| 10-32 UNF-3B     | 103-396  |
| M5               | 103-614  |





### Manifold Kits – Flexiblok



#### Parts List

| DET. NO. | NO. REQ'D | PART NAME                            | PART NO.                            |
|----------|-----------|--------------------------------------|-------------------------------------|
| 1        | 1         | Manifold Block (not sold separately) |                                     |
| 2        | 3         | Seal                                 | 126-201                             |
| 3        | 2         | Screw                                | 127-327                             |
| 4        | 2         | Lockwasher                           | 128-116                             |
| 5        | 2         | Plug                                 | 1/8 NPTF: 129-100<br>G 1/8: 129-160 |

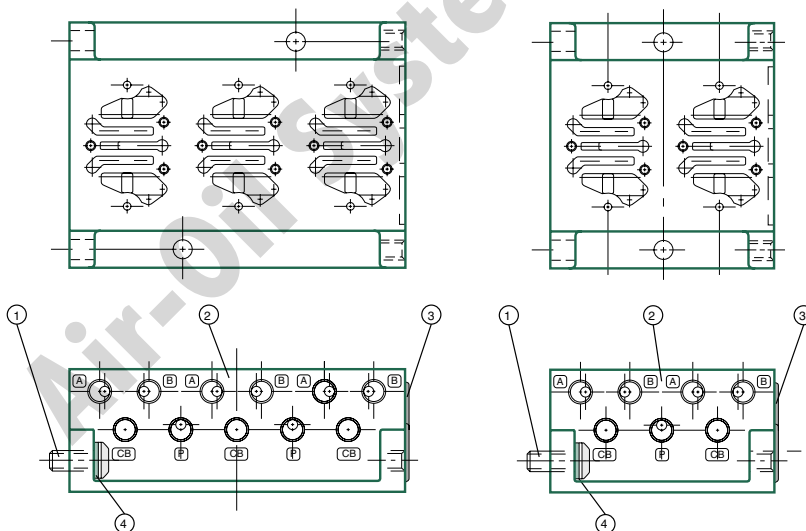
#### Flexiblok #15: side & bottom cylinder ports

| MANIFOLD DESCRIPTION | PART NO. |
|----------------------|----------|
| 1/8 NPTF             | 229-718  |
| G 1/8                | 239-262  |

### Manifold Kits – 10-32 UNF-3B

3 Station Kit

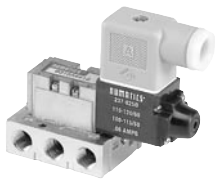
2 Station Kit



#### Parts List

| DET. NO. | NO. REQ'D | PART NAME                            | PART NO. |
|----------|-----------|--------------------------------------|----------|
| 1        | 2         | Screw                                | 127-265  |
| 2        | 1         | Manifold Block (not sold separately) |          |
| 3        | 3         | Seal                                 | 126-107  |
| 4        | 2         | Lockwasher                           | 128-109  |

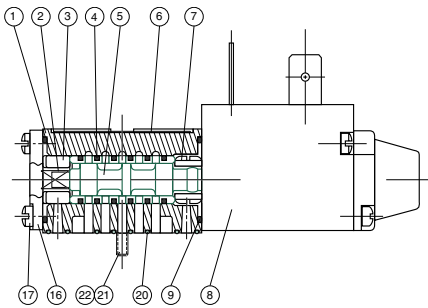
| MANIFOLD DESCRIPTION                  | PART NO. |
|---------------------------------------|----------|
| 10-32 UNF-3B – 2-station manifold kit | 229-524  |
| M5 – 2-station manifold kit           | 239-263  |
| 10-32 UNF-3B – 3-station manifold kit | 229-525  |
| M5 – 3-station manifold kit           | 239-264  |



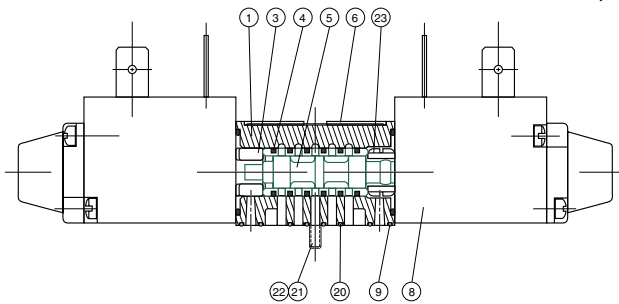
## Mark 3, SPA 3 & PA 3 Series

### Valve Service Kits and Parts - 2 Position

Kit No. MK3-K1 (for models 030SA4, 031SA4)

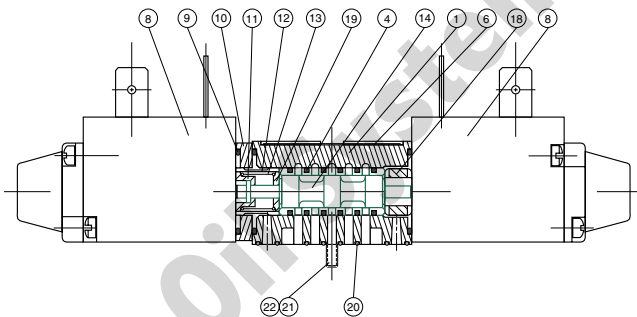


Kit No. MK3-K1 (for models 030PP4, 031PP4)  
030SS4, 031SS4)

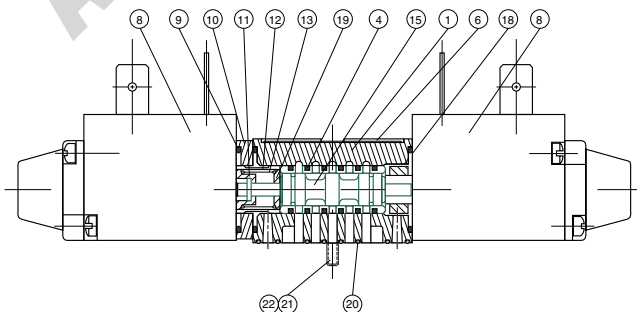


### Valve Service Kits and Parts - 3 Position

Kit No. MK3-K3 (for models 030PP5, 031PP5,  
030SS5, 031SS5)



Kit No. MK3-K3 (for models 030PP6, 031PP6,  
030SS6, 031SS6)

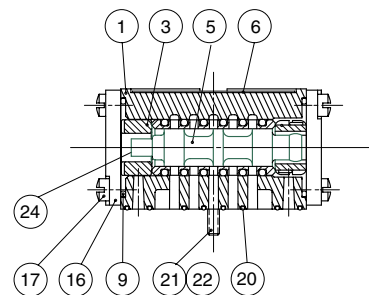


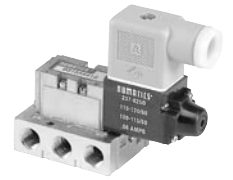
### Parts List

| DET. NO. | SA4 | SS4 & PP4 | SS5 & PP5 | SS6 & PP6 | PA4 | PART NAME                        | PART NO.  |
|----------|-----|-----------|-----------|-----------|-----|----------------------------------|-----------|
| 1        | 1   | 1         | 1         | 1         | 1   | Valve Body (not sold separately) |           |
| 2 *      | 1   | N/A       | N/A       | N/A       | N/A | Spring                           | 115-203   |
| 3 *      | 1   | 1         | N/A       | N/A       | 1   | Bumper                           | 114-130   |
| 4 *      | 6   | 6         | 6         | 6         | 6   | Seal                             | 126-133   |
| 5        | 1   | 1         | N/A       | N/A       | 1   | Sleeve Assembly w/seals          | 209-278   |
| 6        | 1   | 1         | 1         | 1         | 1   | Nameplate                        | 122-571   |
| 7 *      | 1   | N/A       | N/A       | N/A       | N/A | Detent Body                      | 110-109   |
| 8        | 1   | 2         | 2         | 2         | N/A | Solenoid Capsule Assembly        | See p. 15 |
| 9 *      | 2   | 2         | 3         | 3         | 2   | O-Ring                           | 126-134   |
| 10       | N/A | N/A       | 1         | 1         | N/A | Adaptor                          | 119-343   |
| 11 *     | N/A | N/A       | 1         | 1         | N/A | Spring Retainer                  | 116-396   |
| 12 *     | N/A | N/A       | 1         | 1         | N/A | Spacer                           | 116-397   |
| 13 *     | N/A | N/A       | 1         | 1         | N/A | Spring                           | 115-291   |
| 14       | N/A | N/A       | 1         | N/A       | N/A | Sleeve Assembly w/seals          | 209-373   |
| 15       | N/A | N/A       | N/A       | 1         | N/A | Sleeve Assembly w/seals          | 209-374   |
| 16       | 1   | N/A       | N/A       | N/A       | 2   | End Plate                        | 104-199   |
| 17       | 2   | N/A       | N/A       | N/A       | 4   | Screw                            | 127-260   |
| 18 *     | N/A | N/A       | 1         | 1         | N/A | Bumper                           | 101-498   |
| 19 *     | N/A | N/A       | 1         | 1         | N/A | Spring Retainer                  | 116-395   |
| 20 *     | 1   | 1         | 1         | 1         | 1   | Gasket                           | 113-407   |
| 21       | 3   | 3         | 3         | 3         | 3   | Screw                            | 127-292   |
| 22       | 3   | 3         | 3         | 3         | 3   | Lockwasher                       | 128-242   |
| 23 *     | N/A | 1         | N/A       | N/A       | N/A | Detent Assembly                  | 210-111   |
| 24 *     | N/A | N/A       | N/A       | N/A       | 1   | Spring                           | 115-231   |

\*Indicates parts included in repair kit.

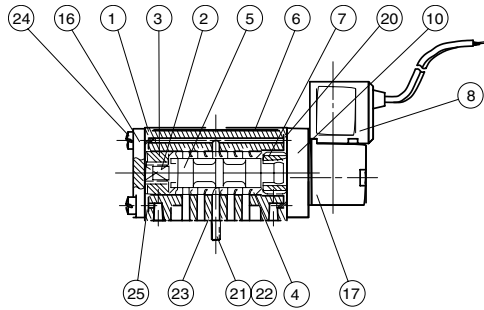
Kit No. PA3-K1 (for model 030PA4, 031PA4)



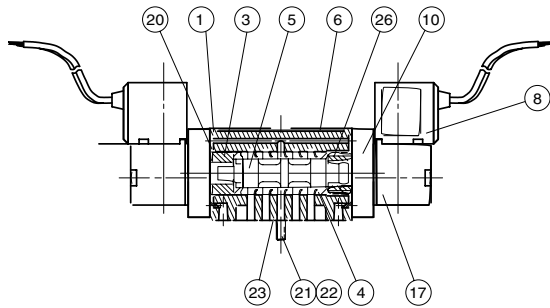


### Valve Service Kits and Parts - 2 Position

Kit No. SPA3P-K1 (for models 030BA4, 031BA4)

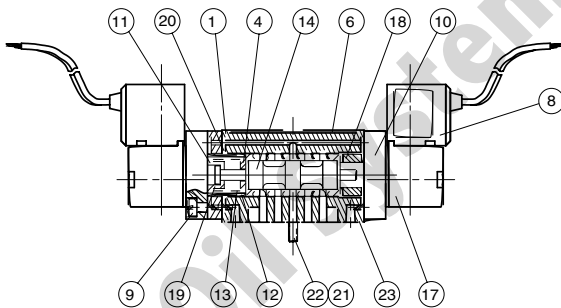


Kit No. SPA3P-K1 (for models 030BB4, 031BB4)

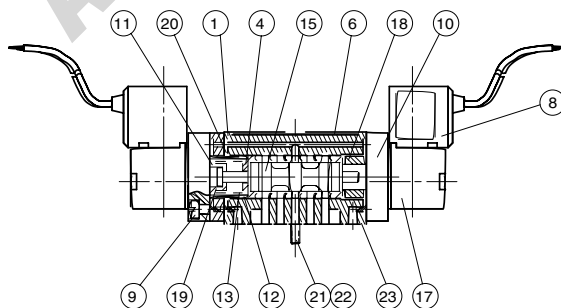


### Valve Service Kits and Parts - 3 Position

Kit No. SPA3P-K3 (for models 030BB5, 031BB5)



Kit No. SPA3P-K3 (for models 030BB6, 031BB6)



### Parts List

| DET. NO. | BA4 | BB4 | BB5 | BB6 | PART NAME                        | PART NO.  |
|----------|-----|-----|-----|-----|----------------------------------|-----------|
| 1        | 1   | 1   | 1   | 1   | Valve Body (not sold separately) |           |
| 2        | 1*  | N/A | N/A | N/A | Spring                           | 115-231   |
| 3        | 1*  | 1*  | N/A | N/A | Bumper                           | 114-130   |
| 4        | 6*  | 6*  | 6*  | 6*  | Seal                             | 126-133   |
| 5        | 1   | 1   | N/A | N/A | Sleeve Assembly w/seals          | 209-278   |
| 6        | 1   | 1   | 1   | 1   | Nameplate                        | 122-571   |
| 7        | 1*  | N/A | N/A | N/A | Detent Body                      | 110-109   |
| 8        | 1   | 2   | 2   | 2   | Solenoid Capsule Assembly        | See p. 15 |
| 9        | N/A | N/A | 3   | 3   | Screw                            | 127-613   |
| 10       | 1   | 2   | 2   | 2   | Adaptor Assembly                 | 219-343   |
| 11       | N/A | N/A | 1*  | 1*  | Spring Retainer                  | 116-395   |
| 12       | N/A | N/A | 1*  | 1*  | Spacer                           | 116-397   |
| 13       | N/A | N/A | 1*  | 1*  | Spring                           | 115-291   |
| 14       | N/A | N/A | 1   | N/A | Sleeve Assembly w/seals          | 209-537   |
| 15       | N/A | N/A | N/A | 1   | Sleeve Assembly w/seals          | 209-538   |
| 16       | 1   | N/A | N/A | N/A | End Plate                        | 104-199   |
| 17       | 1   | 2   | 2   | 2   | Pilot Assembly                   | 219-345   |
| 18       | N/A | N/A | 1*  | 1*  | Bumper                           | 114-171   |
| 19       | N/A | N/A | 1*  | 1*  | Spring Retainer                  | 116-396   |
| 20       | 1*  | 2*  | 3*  | 3*  | Gasket                           | 113-296   |
| 21       | 3   | 3   | 3   | 3   | Screw                            | 127-292   |
| 22       | 3   | 3   | 3   | 3   | Lockwasher                       | 128-242   |
| 23       | 1*  | 1*  | 1*  | 1*  | Gasket                           | 113-407   |
| 24       | 4   | 4   | 2   | 2   | Screw                            | 127-260   |
| 25       | 1*  | N/A | N/A | N/A | Gasket                           | 113-297   |
| 26       | N/A | 1*  | N/A | N/A | Detent Assembly                  | 210-111   |

\*Indicates parts included in kit.

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