



# Electronically Enhanced Solenoid Valves (Next Generation)

**RedHat Next Generation is the future of solenoid valve technology, designed and manufactured to provide new capabilities. The Next Generation of solenoid valves provides lower operating cost, and represents an advancement in the performance, reliability, and ruggedness that you have come to expect from ASCO.**

RedHat Next Generation valves use electronics technology to manage power, providing a new standard of operation. The solenoid incorporates a power management circuit providing lower power consumption, enhanced pressure and flow ratings, and electrical surge suppression to both the solenoid and electronic controls.

The new solenoid draws only 1.2 watts of power for 12-24V DC and 1.5 watts for 24-120V AC/DC, 100-240V AC/DC. A conventional solenoid with the same performance can draw as high as 17 watts of power. The savings in power usage over the installed life of the valve will lower the total cost of ownership up to 14%.

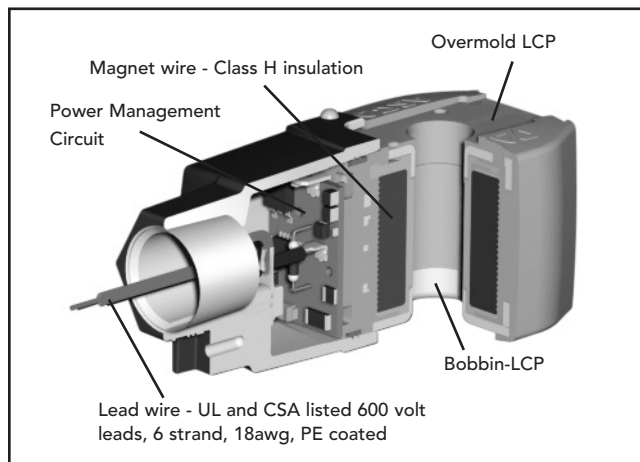
The new technology accepts both AC and DC voltages without sacrificing flow or pressure specifications. DC performance has been increased by 150% to 500% from today's

industry standards, making the valves' DC characteristics equivalent to AC pressure and flow values. This simplifies your control by eliminating the need for AC output cards, reduces wiring costs, and provides safer working environments for users operating on DC.

RedHat Next Generation coils are offered in three voltage ranges covering most electrical requirements – 100-240/AC or DC, 24-120/AC or DC, or 12-24/DC. Each coil has built-in electrical surge suppression that protects the coil from external voltage spikes and eliminates inductive voltage spikes associated with conventional solenoids. An optional solenoid is available for use in Class I, Division 2 hazardous locations.

ASCO RedHat Next Generation addresses many other operating characteristics that will further improve the life of your solenoid valves. These include a much lower temperature rise, and an increase in valve ambient temperature rating to 140°F/60°C. Because of our confidence in the rugged design of the RedHat Next Generation solenoids, ASCO is pleased to extend a 3-year warranty on the coils.

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### Features

- Increase in DC pressure ratings to AC levels on all products (up to a 500% improvement)
- Lower power operation
- Voltage ranging
- Built-in surge suppression
- Elimination of AC hum
- Increase in AC and DC operating temperatures
- Low solenoid temperature rise
- Longer coil life due to lower operating temperatures and electrical surge suppression
- Solenoid approvals to UL, CSA, and CE directives
- Available with Class I, Division 2 coils (EE prefix)
- RoHS 2 Compliant

### Nominal Ambient Temp. Ranges

14°F to 140°F (-10°C to 60°C)

For 8262/8263/8314 Series: -13°F to 140°F (-25°C to 60°C)

### How to order

Find the valve that you are looking for in the provided specifications tables.

The tables contain the following information designed to help you in making your selection:

| Pipe Size<br>(in) | Orifice Dia.<br>(in) | Cv Flow | Operating Pressure Differential (psi) |               |       |                     | Max Fluid Temp. °F | Brass<br>① | Const. Ref. | Agency | Stainless Steel | Const. Ref. | Agency | Wattage |       | Approx. Shipping Weight (lbs.) |
|-------------------|----------------------|---------|---------------------------------------|---------------|-------|---------------------|--------------------|------------|-------------|--------|-----------------|-------------|--------|---------|-------|--------------------------------|
|                   |                      |         | Min.                                  | Max.          |       |                     |                    |            |             |        |                 |             |        | DC      | AC/DC |                                |
|                   |                      |         |                                       | Air-Inert Gas | Water | Light Oil @ 300 SSU |                    |            |             | UL     |                 |             |        |         |       |                                |
| 1/2               | 5/8                  | 4       | 0                                     | 150           | 150   | -                   | 180                | 8210P094   | 4           | ○      | -               | -           | -      | 1.2     | 1.5   | 3.2                            |

① When ordering a valve product, specify the ASCO base catalog number (Ex. **8210P094**). This number will always be 8 digits long.

Choose one of the three operating voltage ranges (100-240V/50-60Hz/DC, 24-120V/50-60Hz/DC or 12-24/DC) and add it to the base catalog number (Ex. 8210P094 **24-120V/50-60Hz/DC**).

If you want to enhance the product with one or more of the options allowed in the Optional Features Chart for that catalog number, please add the appropriate prefix or suffix (as shown):

| Pipe Size (in) | Orifice Dia. (in) | Solenoid Options ②       | Base Catalog Number |                 | Resilient Materials ③ |     |      |    |                |      |          |        | Other ③         |                  | Standard Rebuild Kit ④ |                 |
|----------------|-------------------|--------------------------|---------------------|-----------------|-----------------------|-----|------|----|----------------|------|----------|--------|-----------------|------------------|------------------------|-----------------|
|                |                   | Class I, Division 2 Coil | Brass               | Stainless Steel | MBR                   | FKM | EPDM | CR | Oxygen Service | PTFE | Urethane | Vacuum | Manual Operator | Mounting Bracket | Brass                  | Stainless Steel |
| 1/2            | 5/8               | EE                       | 8210P094            | -               | ●                     | V   | E    | J  | N              | -    | -        | VH     | MO              | MB               | 322670                 | -               |

② Optional Class I, Division 2 solenoid (Ex. **EE8210P094** 24-120V/50-60Hz/DC)

③ If an FKM elastomer and manual operator are required, add VMO to the back of the base catalog number. (Ex. 8210P094**VMO** 24-120V/50-60Hz/DC)

④ When ordering a rebuild kit for a valve, supply the rebuild kit number as shown in the table. (Ex. 322670) When ordering a rebuild kit for a valve with a suffix, add the suffix to the appropriate standard rebuild kit. (Ex. The rebuild kit for the above valve with FKM is 322670-V)

All constructions are available with prefix EE for Class I, Division 2 requirements.

When ordering a replacement coil, select from the following:

| Voltage Range       | Valve Prefix | Replacement Coil Part Number |
|---------------------|--------------|------------------------------|
| 100-240V/50-60Hz/DC | -            | 250404-605-*                 |
| 24-120V/50-60Hz/DC  | -            | 250404-606-*                 |
| 12-24/DC            | -            | 250404-607-*                 |
| 100-240V/50-60Hz/DC | EE           | 250504-605-*                 |
| 24-120V/50-60Hz/DC  | EE           | 250504-606-*                 |
| 12-24/DC            | EE           | 250504-607-*                 |

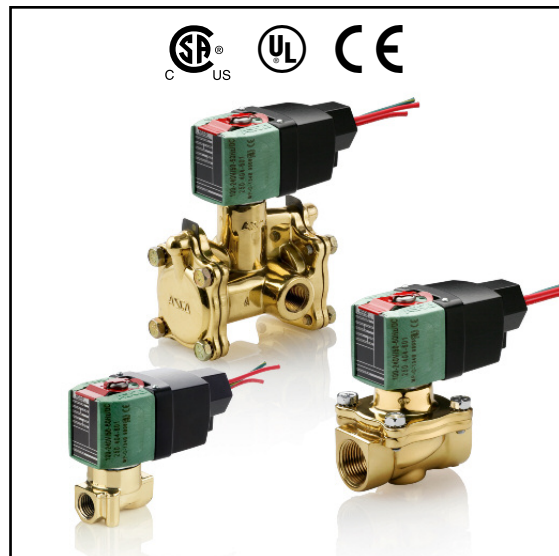
### Solenoid Enclosures

**Standard:** Watertight, Types 1, 2, 3, 3S, 4, and 4X.

**Optional:** Class I, Division 2 for Hazardous Locations and Watertight, Types 3, 3S, 4, 4X. (To order, add prefix "EE" to catalog number.)

### Construction & Electrical

See Engineering Section for valve parts in contact with fluids and additional electrical information.



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## 2-Way Features

- Two-way (2/2) Next Generation solenoid valves have one inlet port and one outlet port
- Control of air, water, light oil, and non-corrosive media
- Normally closed (opens when energized) and normally open (closed when energized) operation
- Pipe sizes – 1/8 to 2 inch

| Pipe Size<br>(in)                 | Orifice<br>Dia.<br>(in) | Cv<br>Flow | Operating Pressure Differential (psi) |                  |       |                        | Max<br>Fluid<br>Temp. °F | Brass      | Const.<br>Ref. | Agency | Stainless Steel | Const. Ref. | Agency | Wattage  |          |
|-----------------------------------|-------------------------|------------|---------------------------------------|------------------|-------|------------------------|--------------------------|------------|----------------|--------|-----------------|-------------|--------|----------|----------|
|                                   |                         |            | Min.                                  | Max.             |       |                        |                          |            |                | UL     |                 |             | UL     | DC       | AC/DC    |
|                                   |                         |            |                                       | Air-Inert<br>Gas | Water | Light Oil<br>@ 300 SSU |                          |            |                |        |                 |             |        |          |          |
| General Service - Normally Closed |                         |            |                                       |                  |       |                        |                          |            |                |        |                 |             |        |          |          |
| 1/8                               | 3/64                    | 0.06       | 0                                     | 2200             | 2200  | 1700                   | 140                      | -          | -              | -      | 8262R175 ⑤      | 1           | ●      | 1.2<br>® | 1.5<br>® |
| 1/8                               | 3/64                    | 0.06       | 0                                     | 1500             | 1500  | 1500                   | 140                      | 8262R099 ⑤ | 1              | ●      | -               | -           | -      |          |          |
| 1/8                               | 3/32                    | 0.21       | 0                                     | 720              | 410   | 410                    | 180                      | 8262R277   | 1              | ○      | 8262R178        | 1           | ○      |          |          |
| 1/8                               | 1/8                     | 0.35       | 0                                     | 540              | 395   | 360                    | 180                      | 8262R105   | 1              | ○      | 8262R174        | 1           | ○      |          |          |
| 1/8                               | 1/8                     | 0.35       | 0                                     | 200              | -     | -                      | 167                      | 8262R077 ⑥ | 1              | ○      | -               | -           | -      |          |          |
| 1/4                               | 3/64                    | 0.06       | 0                                     | 1500             | 1500  | 1500                   | 140                      | 8262R107 ⑤ | 2              | ●      | -               | -           | -      |          |          |
| 1/4                               | 3/64                    | 0.06       | 0                                     | 2200             | 2200  | 1700                   | 140                      | -          | -              | -      | 8262R181 ⑤      | 2           | ●      |          |          |
| 1/4                               | 3/32                    | 0.21       | 0                                     | 720              | 410   | 410                    | 180                      | 8262R109   | 2              | ○      | 8262R183        | 2           | ○      |          |          |
| 1/4                               | 1/8                     | 0.35       | 0                                     | 540              | 395   | 360                    | 180                      | 8262R232   | 2              | ○      | 8262R185        | 2           | ○      |          |          |
| 1/4                               | 5/32                    | 0.52       | 0                                     | 300              | 225   | 225                    | 180                      | 8262R202   | 2              | ○      | 8262R220        | 2           | ○      |          |          |
| 1/4                               | 7/32                    | 0.73       | 0                                     | 125              | 125   | 125                    | 180                      | 8262R208   | 2              | ○      | 8262R226        | 2           | ○      |          |          |
| 1/4                               | 9/32                    | 0.88       | 0                                     | 105              | 105   | 105                    | 180                      | 8262R212   | 2              | ○      | 8262R230        | 2           | ○      |          |          |
| 1/4                               | 9/32                    | 1.0        | 0                                     | 50               | -     | -                      | 167                      | 8262R078 ⑥ | 2              | ○      | -               | -           | -      |          |          |
| 1/4                               | 5/16                    | 1.5        | 10                                    | 1500             | 1500  | 1500                   | 180                      | 8223P025   | 18             | -      | -               | -           | -      |          |          |
| 3/8                               | 1/8                     | 0.35       | 0                                     | 540              | 395   | 360                    | 180                      | 8263R115   | 3              | ○      | 8263R191        | 3           | ○      |          |          |
| 3/8                               | 5/32                    | 0.52       | 0                                     | 300              | 225   | 225                    | 180                      | 8263R200   | 3              | ○      | 8263R193        | 3           | ○      |          |          |
| 3/8                               | 7/32                    | 0.73       | 0                                     | 125              | 125   | 125                    | 180                      | 8263R124   | 3              | ○      | 8263R332        | 3           | ○      |          |          |
| 3/8                               | 9/32                    | 0.88       | 0                                     | 105              | 85    | 85                     | 180                      | 8263R210   | 3              | ○      | 8263R333        | 3           | ○      |          |          |
| 3/8                               | 5/16                    | 1.5        | 10                                    | 1500             | 1500  | 1500                   | 180                      | 8223P027   | 18             | -      | -               | -           | -      |          |          |
| 3/8                               | 5/8                     | 3          | 0                                     | 150              | 150   | -                      | 180                      | 8210P093   | 4              | ○      | -               | -           | -      |          |          |
| 3/8                               | 5/8                     | 3          | 5                                     | 300              | 300   | 300                    | 180                      | 8210P006   | 4              | ●      | -               | -           | -      |          |          |
| 1/2                               | 3/8                     | 3.2        | 25                                    | 1500             | 1500  | 1500                   | 180                      | 8223P003   | 5              | -      | 8223P010        | 6           | -      |          |          |
| 1/2                               | 5/8                     | 4          | 0                                     | 150              | 150   | -                      | 180                      | 8210P094   | 4              | ○      | -               | -           | -      |          |          |
| 1/2                               | 5/8                     | 4          | 0                                     | 150              | 150   | 125                    | 180                      | -          | -              | -      | 8210P087        | 7           | ●      |          |          |
| 1/2                               | 5/8                     | 4          | 5                                     | 300              | 300   | 300                    | 180                      | 8210P007   | 4              | ○      | -               | -           | -      |          |          |
| 3/4                               | 5/8                     | 4.5        | 0                                     | 150              | 150   | 125                    | 180                      | -          | -              | -      | 8210P088        | 7           | ●      |          |          |
| 3/4                               | 3/4                     | 5          | 0                                     | 150              | 150   | -                      | 180                      | 8210P095   | 7              | ○      | -               | -           | -      |          |          |
| 3/4                               | 3/4                     | 5          | 0                                     | 3                | 3     | -                      | 180                      | 8030P003   | 8              | ○      | -               | -           | -      |          |          |
| 3/4                               | 3/4                     | 7.8        | 25                                    | 750              | 750   | 750                    | 180                      | 8223P005   | 9              | -      | -               | -           | -      |          |          |
| 1                                 | 1                       | 13         | 5                                     | 150              | 150   | 100                    | 180                      | 8210P004   | 10             | ○      | -               | -           | -      |          |          |
| 1 1/4                             | 1 1/8                   | 15         | 5                                     | 150              | 150   | 100                    | 180                      | 8210P008   | 10             | ○      | -               | -           | -      |          |          |
| 1 1/2                             | 1 1/4                   | 22.5       | 5                                     | 150              | 150   | 100                    | 180                      | 8210P022   | 11             | ○      | -               | -           | -      |          |          |
| 2                                 | 1 3/4                   | 43         | 5                                     | 150              | 125   | 90                     | 180                      | 8210P100   | 12             | ●      | -               | -           | -      |          |          |
| General Service - Normally Open   |                         |            |                                       |                  |       |                        |                          |            |                |        |                 |             |        |          |          |
| 1/8                               | 3/64                    | 0.06       | 0                                     | 1150             | 900   | 800                    | 140                      | 8262R155 ⑤ | 1              | ●      | 8262R168 ⑤      | 1           | ●      | 1.2<br>® | 1.5<br>® |
| 1/8                               | 3/64                    | 0.06       | 0                                     | 750              | 750   | 750                    | 180                      | 8262R156   | 1              | ●      | 8262R169        | 1           | ●      |          |          |
| 1/8                               | 3/32                    | 0.21       | 0                                     | 275              | 230   | 180                    | 180                      | 8262R128   | 1              | ●      | 8262R236        | 1           | ●      |          |          |
| 1/8                               | 1/8                     | 0.35       | 0                                     | 160              | 145   | 125                    | 180                      | 8262R129   | 1              | ●      | 8262R237        | 1           | ●      |          |          |
| 1/4                               | 3/64                    | 0.06       | 0                                     | 1150             | 900   | 800                    | 140                      | 8262R161 ⑤ | 2              | ●      | 8262R199 ⑤      | 2           | ●      |          |          |
| 1/4                               | 3/64                    | 0.06       | 0                                     | 750              | 750   | 750                    | 180                      | 8262R260   | 2              | ●      | 8262R130        | 2           | ●      |          |          |
| 1/4                               | 3/32                    | 0.21       | 0                                     | 275              | 230   | 180                    | 180                      | 8262R261   | 2              | ●      | 8262R134        | 2           | ●      |          |          |
| 1/4                               | 1/8                     | 0.35       | 0                                     | 160              | 145   | 125                    | 180                      | 8262R262   | 2              | ●      | 8262R138        | 2           | ●      |          |          |
| 1/4                               | 5/32                    | 0.54       | 0                                     | 90               | 90    | 70                     | 180                      | 8262R263   | 2              | ●      | 8262R142        | 2           | ●      |          |          |
| 1/4                               | 7/32                    | 0.83       | 0                                     | 45               | 45    | 40                     | 180                      | 8262R264   | 2              | ●      | 8262R148        | 2           | ●      |          |          |
| 1/4                               | 9/32                    | 0.96       | 0                                     | 30               | 30    | 30                     | 180                      | 8262R265   | 2              | ●      | 8262R152        | 2           | ●      |          |          |
| 3/8                               | 1/8                     | 0.35       | 0                                     | 160              | 145   | 125                    | 180                      | 8263R070   | 3              | ●      | 8263R080        | 3           | ●      |          |          |
| 3/8                               | 5/32                    | 0.54       | 0                                     | 90               | 90    | 70                     | 180                      | 8263R071   | 3              | ●      | 8263R081        | 3           | ●      |          |          |
| 3/8                               | 7/32                    | 0.83       | 0                                     | 45               | 45    | 40                     | 180                      | 8263R072   | 3              | ●      | 8263R082        | 3           | ●      |          |          |
| 3/8                               | 9/32                    | 0.96       | 0                                     | 30               | 30    | 30                     | 180                      | 8263R073   | 3              | ●      | 8263R083        | 3           | ●      |          |          |
| 3/8                               | 5/8                     | 3          | 0                                     | 150              | 150   | 125                    | 180                      | 8210P033   | 15             | ●      | -               | -           | -      |          |          |
| 1/2                               | 5/8                     | 4          | 0                                     | 150              | 150   | 125                    | 180                      | 8210P034   | 15             | ●      | -               | -           | -      |          |          |
| 3/4                               | 3/4                     | 5.5        | 0                                     | 150              | 150   | 125                    | 180                      | 8210P035   | 16             | ●      | -               | -           | -      |          |          |
| 3/4                               | 3/4                     | 5.5        | 0                                     | 2                | 2     | -                      | 180                      | 8030P083   | 17             | ●      | -               | -           | -      |          |          |

○ = Safety Shut-off Valve. ● = General Purpose Valve.

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## 2-Way Specifications (Metric units)

| Pipe<br>Size<br>(in)                                 | Orifice<br>Dia.<br>(mm) | Kv Flow<br>Factor<br>(m³/h) | Operating Pressure<br>Differential (bar) |                  |       |                        | Max<br>Fluid<br>Temp. °C | Brass      | Const.<br>Ref. | Agency | Stainless<br>Steel | Const. Ref. | Agency | Wattage  |          |       |  |  |
|------------------------------------------------------|-------------------------|-----------------------------|------------------------------------------|------------------|-------|------------------------|--------------------------|------------|----------------|--------|--------------------|-------------|--------|----------|----------|-------|--|--|
|                                                      |                         |                             | Min.                                     | Max.             |       |                        |                          |            |                |        |                    |             |        | UL       | DC       | AC/DC |  |  |
|                                                      |                         |                             |                                          | Air-Inert<br>Gas | Water | Light Oil<br>@ 300 SSU |                          |            |                |        |                    |             |        |          |          |       |  |  |
| General Service - Normally Closed                    |                         |                             |                                          |                  |       |                        |                          |            |                |        |                    |             |        |          |          |       |  |  |
| 1/8                                                  | 1.2                     | 0.05                        | 0                                        | 152              | 152   | 117                    | 60                       | -          | -              | -      | 8262R175 ⑤         | 1           | ●      | 1.2<br>® | 1.5<br>® |       |  |  |
| 1/8                                                  | 1.2                     | 0.05                        | 0                                        | 103              | 103   | 103                    | 60                       | 8262R099 ⑤ | 1              | ●      | -                  | -           | -      |          |          |       |  |  |
| 1/8                                                  | 2.4                     | 0.18                        | 0                                        | 50               | 28    | 28                     | 82                       | 8262R277   | 1              | ○      | 8262R178           | 1           | ○      |          |          |       |  |  |
| 1/8                                                  | 3.2                     | 0.30                        | 0                                        | 37               | 27    | 25                     | 82                       | 8262R105   | 1              | ○      | 8262R174           | 1           | ○      |          |          |       |  |  |
| 1/8                                                  | 3.2                     | 0.30                        | 0                                        | 14               | -     | -                      | 75                       | 8262R077 ⑥ | 1              | ○      | -                  | -           | -      |          |          |       |  |  |
| 1/4                                                  | 1.2                     | 0.05                        | 0                                        | 103              | 103   | 103                    | 60                       | 8262R107 ⑤ | 2              | ●      | -                  | -           | -      |          |          |       |  |  |
| 1/4                                                  | 1.2                     | 0.05                        | 0                                        | 152              | 152   | 117                    | 60                       | -          | -              | -      | 8262R181 ⑤         | 2           | ●      |          |          |       |  |  |
| 1/4                                                  | 2.4                     | 0.18                        | 0                                        | 50               | 28    | 28                     | 82                       | 8262R109   | 2              | ○      | 8262R183           | 2           | ○      |          |          |       |  |  |
| 1/4                                                  | 3.2                     | 0.30                        | 0                                        | 37               | 27    | 25                     | 82                       | 8262R232   | 2              | ○      | 8262R185           | 2           | ○      |          |          |       |  |  |
| 1/4                                                  | 4.0                     | 0.45                        | 0                                        | 21               | 16    | 16                     | 82                       | 8262R202   | 2              | ○      | 8262R220           | 2           | ○      |          |          |       |  |  |
| 1/4                                                  | 5.6                     | 0.63                        | 0                                        | 9                | 9     | 9                      | 82                       | 8262R208   | 2              | ○      | 8262R226           | 2           | ○      |          |          |       |  |  |
| 1/4                                                  | 7.1                     | 0.76                        | 0                                        | 7                | 7     | 7                      | 82                       | 8262R212   | 2              | ○      | 8262R230           | 2           | ○      |          |          |       |  |  |
| 1/4                                                  | 7.1                     | 0.74                        | 0                                        | 3                | -     | -                      | 75                       | 8262R078 ⑥ | 2              | ○      | -                  | -           | -      |          |          |       |  |  |
| 1/4                                                  | 7.9                     | 1.3                         | .7                                       | 103              | 103   | 103                    | 82                       | 8223P025   | 18             | -      | -                  | -           | -      |          |          |       |  |  |
| 3/8                                                  | 3.2                     | 0.30                        | 0                                        | 37               | 27    | 25                     | 82                       | 8263R115   | 3              | ○      | 8263R191           | 3           | ○      |          |          |       |  |  |
| 3/8                                                  | 4.0                     | 0.45                        | 0                                        | 21               | 16    | 16                     | 82                       | 8263R200   | 3              | ○      | 8263R193           | 3           | ○      |          |          |       |  |  |
| 3/8                                                  | 5.6                     | 0.63                        | 0                                        | 9                | 9     | 9                      | 82                       | 8263R124   | 3              | ○      | 8263R332           | 3           | ○      |          |          |       |  |  |
| 3/8                                                  | 7.1                     | 0.76                        | 0                                        | 7                | 6     | 6                      | 82                       | 8263R210   | 3              | ○      | 8263R333           | 3           | ○      |          |          |       |  |  |
| 3/8                                                  | 7.9                     | 1.3                         | .7                                       | 103              | 103   | 103                    | 82                       | 8223P027   | 18             | -      | -                  | -           | -      |          |          |       |  |  |
| 3/8                                                  | 16                      | 2.6                         | 0                                        | 10               | 10    | -                      | 82                       | 8210P093   | 4              | ○      | -                  | -           | -      |          |          |       |  |  |
| 3/8                                                  | 16                      | 2.6                         | 0.3                                      | 21               | 21    | 21                     | 82                       | 8210P006   | 4              | ●      | -                  | -           | -      |          |          |       |  |  |
| 1/2                                                  | 9.5                     | 2.7                         | 1.7                                      | 103              | 103   | 103                    | 82                       | 8223P003   | 5              | -      | 8223P010           | 6           | -      |          |          |       |  |  |
| 1/2                                                  | 16                      | 3.4                         | 0                                        | 10               | 10    | -                      | 82                       | 8210P094   | 4              | ○      | -                  | -           | -      |          |          |       |  |  |
| 1/2                                                  | 16                      | 3.4                         | 0                                        | 10               | 10    | 9                      | 82                       | -          | -              | -      | 8210P087           | 7           | ●      |          |          |       |  |  |
| 1/2                                                  | 16                      | 3.4                         | 0.3                                      | 21               | 21    | 21                     | 82                       | 8210P007   | 4              | ○      | -                  | -           | -      |          |          |       |  |  |
| 3/4                                                  | 16                      | 3.9                         | 0                                        | 10               | 10    | 9                      | 82                       | -          | -              | -      | 8210P088           | 7           | ●      |          |          |       |  |  |
| 3/4                                                  | 19                      | 4.3                         | 0                                        | 10               | 10    | -                      | 82                       | 8210P095   | 7              | ○      | -                  | -           | -      |          |          |       |  |  |
| 3/4                                                  | 19                      | 4.3                         | 0                                        | 0.2              | 0.2   | -                      | 82                       | 8030P003   | 8              | ○      | -                  | -           | -      |          |          |       |  |  |
| 3/4                                                  | 19                      | 6.7                         | 1.7                                      | 52               | 52    | 52                     | 82                       | 8223P005   | 9              | -      | -                  | -           | -      |          |          |       |  |  |
| 1                                                    | 25                      | 11                          | 0.3                                      | 10               | 10    | 7                      | 82                       | 8210P004   | 10             | ○      | -                  | -           | -      |          |          |       |  |  |
| 1 1/4                                                | 29                      | 13                          | 0.3                                      | 10               | 10    | 7                      | 82                       | 8210P008   | 10             | ○      | -                  | -           | -      |          |          |       |  |  |
| 1 1/2                                                | 32                      | 19                          | 0.3                                      | 10               | 10    | 7                      | 82                       | 8210P022   | 11             | ○      | -                  | -           | -      |          |          |       |  |  |
| 2                                                    | 44                      | 37                          | 0.3                                      | 10               | 9     | 6                      | 82                       | 8210P100   | 12             | ●      | -                  | -           | -      |          |          |       |  |  |
| General Service - Normally Open                      |                         |                             |                                          |                  |       |                        |                          |            |                |        |                    |             |        |          |          |       |  |  |
| 1/8                                                  | 1.20                    | 0.05                        | 0                                        | 79               | 62    | 55                     | 60                       | 8262R155 ⑤ | 1              | ●      | 8262R168 ⑤         | 1           | ●      | 1.2<br>® | 1.5<br>® |       |  |  |
| 1/8                                                  | 1.20                    | 0.05                        | 0                                        | 52               | 52    | 52                     | 82                       | 8262R156   | 1              | ●      | 8262R169           | 1           | ●      |          |          |       |  |  |
| 1/8                                                  | 2.40                    | 0.18                        | 0                                        | 19               | 16    | 12                     | 82                       | 8262R128   | 1              | ●      | 8262R236           | 1           | ●      |          |          |       |  |  |
| 1/8                                                  | 3.20                    | 0.30                        | 0                                        | 11               | 10    | 9                      | 82                       | 8262R129   | 1              | ●      | 8262R237           | 1           | ●      |          |          |       |  |  |
| 1/4                                                  | 1.20                    | 0.05                        | 0                                        | 79               | 62    | 55                     | 60                       | 8262R161 ⑤ | 2              | ●      | 8262R199 ⑤         | 2           | ●      |          |          |       |  |  |
| 1/4                                                  | 1.20                    | 0.05                        | 0                                        | 52               | 52    | 52                     | 82                       | 8262R260   | 2              | ●      | 8262R130           | 2           | ●      |          |          |       |  |  |
| 1/4                                                  | 2.40                    | 0.18                        | 0                                        | 19               | 16    | 12                     | 82                       | 8262R261   | 2              | ●      | 8262R134           | 2           | ●      |          |          |       |  |  |
| 1/4                                                  | 3.20                    | 0.30                        | 0                                        | 11               | 10    | 9                      | 82                       | 8262R262   | 2              | ●      | 8262R138           | 2           | ●      |          |          |       |  |  |
| 1/4                                                  | 3.90                    | 0.47                        | 0                                        | 6                | 6     | 5                      | 82                       | 8262R263   | 2              | ●      | 8262R142           | 2           | ●      |          |          |       |  |  |
| 1/4                                                  | 5.60                    | 0.72                        | 0                                        | 3                | 3     | 3                      | 82                       | 8262R264   | 2              | ●      | 8262R148           | 2           | ●      |          |          |       |  |  |
| 1/4                                                  | 7.10                    | 0.83                        | 0                                        | 2                | 2     | 2                      | 82                       | 8262R265   | 2              | ●      | 8262R152           | 2           | ●      |          |          |       |  |  |
| 3/8                                                  | 3.20                    | 0.30                        | 0                                        | 11               | 10    | 9                      | 82                       | 8263R070   | 3              | ●      | 8263R080           | 3           | ●      |          |          |       |  |  |
| 3/8                                                  | 3.90                    | 0.47                        | 0                                        | 6                | 6     | 5                      | 82                       | 8263R071   | 3              | ●      | 8263R081           | 3           | ●      |          |          |       |  |  |
| 3/8                                                  | 5.60                    | 0.72                        | 0                                        | 3                | 3     | 3                      | 82                       | 8263R072   | 3              | ●      | 8263R082           | 3           | ●      |          |          |       |  |  |
| 3/8                                                  | 7.10                    | 0.83                        | 0                                        | 2                | 2     | 2                      | 82                       | 8263R073   | 3              | ●      | 8263R083           | 3           | ●      |          |          |       |  |  |
| 3/8                                                  | 16                      | 2.6                         | 0                                        | 10               | 10    | 9                      | 82                       | 8210P033   | 15             | ●      | -                  | -           | -      |          |          |       |  |  |
| 1/2                                                  | 16                      | 3.5                         | 0                                        | 10               | 10    | 9                      | 82                       | 8210P034   | 15             | ●      | -                  | -           | -      |          |          |       |  |  |
| 3/4                                                  | 19                      | 4.8                         | 0                                        | 10               | 10    | 9                      | 82                       | 8210P035   | 16             | ●      | -                  | -           | -      |          |          |       |  |  |
| 3/4                                                  | 19                      | 4.8                         | 0                                        | .14              | .14   | -                      | 82                       | 8030P083   | 17             | ●      | -                  | -           | -      |          |          |       |  |  |
| ○ = Safety Shut-off Valve. ● = General Purpose Valve |                         |                             |                                          |                  |       |                        |                          |            |                |        |                    |             |        |          |          |       |  |  |

○ = Safety Shut-off Valve. ● = General Purpose Valve

## 2-Way Optional Features Chart

| Pipe Size (in) | Orifice Dia. (in) | Base Catalog Number |                 | Resilient Materials and Suffix Options |               |         |     |        |     |      |    |                |        |          |        | Other           |                  | Standard Rebuild Kit |                 |
|----------------|-------------------|---------------------|-----------------|----------------------------------------|---------------|---------|-----|--------|-----|------|----|----------------|--------|----------|--------|-----------------|------------------|----------------------|-----------------|
|                |                   | Brass               | Stainless Steel | Ammonia ⑦                              | Silicone Free | Dry Air | NBR | LT NBR | FKM | EPDM | CR | Oxygen Service | PTFE ② | Urethane | Vacuum | Manual Operator | Mounting Bracket | Brass                | Stainless Steel |
| 1/8            | 3/64              | 8262R099 ⑤          | 8262R175 ⑤      | -                                      | SF            | -       | -   | -      | -   | -    | -  | -              | -      | ●        | -      | -               | MB               | 323593-W             | 323595-W        |
| 1/8            | 3/64              | 8262R155 ⑤          | 8262R168 ⑤      | -                                      | SF            | -       | -   | -      | -   | -    | -  | -              | -      | ●        | -      | -               | MB               | 323986-W             | 323988-W        |
| 1/8            | 3/64              | 8262R156            | 8262R169        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | -               | MB               | 323986               | 323988          |
| 1/8            | 3/32              | 8262R277            | 8262R178        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | MS              | MB               | 323593               | 323595          |
| 1/8            | 3/32              | 8262R128            | 8262R236        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | -               | MB               | 323987               | 323989          |
| 1/8            | 1/8               | 8262R105            | 8262R174        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | VH     | MS              | MB               | 323593               | 323595          |
| 1/8            | 1/8               | 8262R077 ⑥          | -               | -                                      | SF            | -       | -   | ●      | -   | -    | -  | -              | -      | -        | -      | -               | MB               | 325039               | -               |
| 1/8            | 1/8               | 8262R129            | 8262R237        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | VH     | -               | MB               | 323987               | 323989          |
| 1/4            | 3/64              | 8262R107 ⑤          | 8262R181 ⑤      | -                                      | SF            | -       | -   | -      | -   | -    | -  | -              | -      | ●        | -      | -               | MB               | 323593-W             | 323595-W        |
| 1/4            | 3/64              | 8262R161 ⑤          | 8262R199 ⑤      | -                                      | SF            | -       | -   | -      | -   | -    | -  | -              | -      | ●        | -      | -               | MB               | 323986-W             | 323988-W        |
| 1/4            | 3/64              | 8262R260            | 8262R130        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | -               | MB               | 323986               | 323988          |
| 1/4            | 3/32              | 8262R109            | 8262R183        | NH                                     | SF            | P       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | MS              | MB               | 323593               | 323595          |
| 1/4            | 3/32              | 8262R261            | 8262R134        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | -               | MB               | 323987               | 323989          |
| 1/4            | 1/8               | 8262R232            | 8262R184        | NH                                     | SF            | P       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | MS              | MB               | 323593               | 323595          |
| 1/4            | 1/8               | 8262R262            | 8262R138        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | -               | MB               | 323987               | 323989          |
| 1/4            | 5/32              | 8262R202            | 8262R220        | NH                                     | SF            | P       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | MS              | MB               | 323593               | 323595          |
| 1/4            | 5/32              | 8262R263            | 8262R142        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | -               | MB               | 323987               | 323989          |
| 1/4            | 7/32              | 8262R208            | 8262R226        | NH                                     | SF            | P       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | MS              | MB               | 323593               | 323595          |
| 1/4            | 7/32              | 8262R264            | 8262R148        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | -               | MB               | 323987               | 323989          |
| 1/4            | 9/32              | 8262R212            | 8262R230        | NH                                     | SF            | P       | ●   | A      | V   | E    | J  | N              | T      | -        | VH     | MS              | MB               | 323593               | 323595          |
| 1/4            | 9/32              | 8262R265            | 8262R152        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | VH     | -               | MB               | 323987               | 323989          |
| 1/4            | 9/32              | 8262R078 ⑥          | -               | -                                      | SF            | -       | -   | ●      | -   | -    | -  | -              | -      | -        | -      | -               | MB               | 325039               | -               |
| 1/4            | 5/16              | 8223P025 ④          | -               | -                                      | -             | -       | ●   | A      | -   | -    | -  | -              | -      | -        | -      | -               | -                | 322815               | -               |
| 3/8            | 1/8               | 8263R115            | 8263R191        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | MS              | MB               | 323593               | 323595          |
| 3/8            | 1/8               | 8263R070            | 8263R080        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | -               | MB               | 323987               | 323989          |
| 3/8            | 5/32              | 8263R200            | 8263R193        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | MS              | MB               | 323593               | 323595          |
| 3/8            | 5/32              | 8263R071            | 8263R081        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | -               | MB               | 323987               | 323989          |
| 3/8            | 7/32              | 8263R124            | 8263R332        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | MS              | MB               | 323593               | 323595          |
| 3/8            | 7/32              | 8263R072            | 8263R082        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | -               | MB               | 323987               | 323989          |
| 3/8            | 9/32              | 8263R210            | 8263R333        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | MS              | MB               | 323593               | 323595          |
| 3/8            | 9/32              | 8263R073            | 8263R083        | NH                                     | SF            | -       | ●   | A      | V   | E    | J  | N              | T      | -        | -      | -               | MB               | 323987               | 323989          |
| 3/8            | 5/16              | 8223P027 ④          | -               | -                                      | -             | -       | ●   | -      | -   | -    | -  | -              | -      | -        | -      | -               | -                | 322815               | -               |
| 3/8            | 5/8               | 8210P093            | -               | -                                      | -             | -       | ●   | -      | V   | E    | J  | N              | -      | -        | VH     | MO              | MB               | 322670               | -               |
| 3/8            | 5/8               | 8210P033            | -               | -                                      | -             | -       | ●   | -      | V   | E    | J  | N              | -      | -        | VH     | -               | MB               | 322770               | -               |
| 3/8            | 5/8               | 8210P006            | -               | -                                      | -             | -       | ●   | -      | V   | E    | J  | N              | -      | -        | -      | MO              | MB               | 322654               | -               |
| 1/2            | 3/8               | 8223P003 ④          | 8223P010 ①      | -                                      | -             | -       | ●   | -      | -   | -    | -  | -              | -      | -        | -      | -               | -                | 322816               | 322817          |
| 1/2            | 5/8               | 8210P094            | -               | -                                      | -             | -       | ●   | -      | V   | E    | J  | N              | -      | -        | VH     | MO              | MB               | 322670               | -               |
| 1/2            | 5/8               | 8210P034            | -               | -                                      | -             | -       | ●   | -      | V   | E    | J  | N              | -      | -        | VH     | -               | MB               | 322770               | -               |
| 1/2            | 5/8               | -                   | 8210P087        | -                                      | -             | -       | ●   | -      | V   | E    | J  | N              | -      | -        | -      | MO              | MB               | -                    | 322676          |
| 1/2            | 5/8               | 8210P007            | -               | -                                      | -             | -       | ●   | -      | V   | E    | J  | N              | -      | -        | -      | MO ③            | MB               | 322654               | -               |
| 3/4            | 5/8               | -                   | 8210P088        | -                                      | -             | -       | ●   | -      | V   | E    | J  | N              | -      | -        | -      | MO              | MB               | -                    | 322676          |
| 3/4            | 3/4               | 8210P095            | -               | -                                      | -             | -       | ●   | -      | V   | E    | J  | N              | -      | -        | VH     | MO              | MB               | 322673               | -               |
| 3/4            | 3/4               | 8030P003            | -               | -                                      | -             | -       | ●   | -      | V   | E    | J  | N              | -      | -        | -      | MO              | MB               | 322758               | -               |
| 3/4            | 3/4               | 8210P035            | -               | -                                      | -             | -       | ●   | -      | V   | E    | J  | N              | -      | -        | VH     | -               | MB               | 322771               | -               |
| 3/4            | 3/4               | 8030P083            | -               | -                                      | -             | -       | ●   | -      | V   | E    | J  | N              | -      | -        | -      | -               | MB               | 322763               | -               |
| 3/4            | 3/4               | 8223P005 ④          | -               | -                                      | -             | -       | ●   | -      | -   | -    | -  | -              | -      | -        | -      | -               | -                | 322818               | -               |
| 1              | 1                 | 8210P004            | -               | -                                      | -             | -       | ●   | -      | V   | E    | J  | N              | -      | -        | -      | MO              | -                | 322677               | -               |
| 1 1/4          | 1 1/8             | 8210P008            | -               | -                                      | -             | -       | ●   | -      | V   | E    | J  | N              | -      | -        | -      | MO              | -                | 322680               | -               |
| 1 1/2          | 1 1/4             | 8210P022            | -               | -                                      | -             | -       | ●   | -      | V   | E    | J  | N              | -      | -        | -      | MO              | -                | 322680               | -               |
| 2              | 1 3/4             | 8210P100            | -               | -                                      | -             | -       | ●   | -      | V   | E    | J  | N              | -      | -        | -      | MO              | -                | 322682               | -               |

● = Standard. Other options may be available. All option combinations may not be available. Please consult your local ASCO contact.

① Valve contains PTFE main disc; ② Pressure rating reduced by 25%; ③ Pressure rating limited to 250 psi; ④ Valve contains Nylon 11 piston.

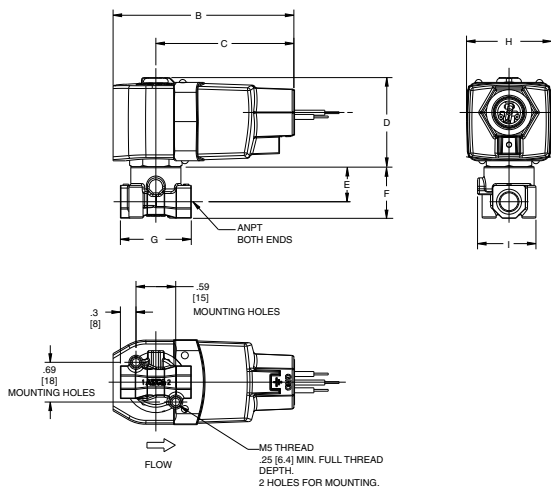
⑤ Cast UR disc supplied as standard, limits min. ambient temp. to 32°F (0°C). ⑥ Fuel gas service only; Ambient Temp. -40°F to 140°F, Fluid Temp. -40°F to 167°F; Gas capacity for 8262R077 is 18,700 Btu/hr, for 8262R078 53,500 Btu/hr based on 1" W.C. Drop @ 2" W.C. Inlet Pressure, 1000 Btu/cu.ft. or more, 0.64 Specific Gravity Gas.

⑦ NH suffix only available for Stainless Steel constructions. ⑧ 12-24V DC. ⑨ 24-120V AC/DC, 100-240V AC/DC.

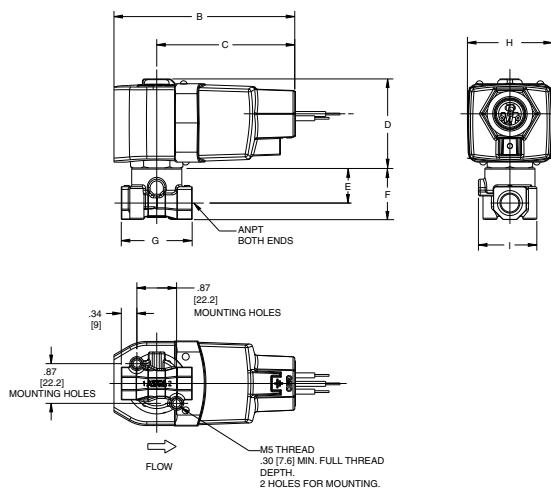
## Dimensions: inches (mm)

| Const. Ref. |    | B    | C    | D    | E    | F    | G    | H    | I    |
|-------------|----|------|------|------|------|------|------|------|------|
| 1           | in | 3.98 | 3.04 | 2.00 | 0.69 | 1.00 | 1.19 | 1.87 | 1.24 |
|             | mm | 101  | 77   | 51   | 18   | 25   | 30   | 48   | 32   |
| 2           | in | 3.98 | 3.04 | 2.00 | 0.78 | 1.11 | 1.56 | 1.87 | 1.29 |
|             | mm | 101  | 77   | 51   | 20   | 29   | 40   | 48   | 33   |
| 3           | in | 3.98 | 3.04 | 2.00 | 0.77 | 1.20 | 1.88 | 1.87 | 1.25 |
|             | mm | 101  | 77   | 51   | 20   | 30   | 48   | 48   | 32   |
| 4           | in | 3.98 | 3.04 | 2.00 | 1.28 | 1.84 | 2.75 | 1.87 | 2.28 |
|             | mm | 101  | 77   | 51   | 33   | 47   | 70   | 48   | 58   |
| 5           | in | 3.98 | 3.04 | 2.00 | 1.05 | 2.31 | -    | 1.87 | 3.03 |
|             | mm | 101  | 77   | 51   | 27   | 59   | -    | 48   | 77   |
| 6           | in | 3.98 | 3.04 | 2.00 | 1.13 | 2.31 | -    | 1.87 | 3.13 |
|             | mm | 101  | 77   | 51   | 29   | 59   | -    | 48   | 80   |
| 7           | in | 3.98 | 3.04 | 2.00 | 1.46 | 2.19 | 2.81 | 1.87 | 2.28 |
|             | mm | 101  | 77   | 51   | 37   | 56   | 71   | 48   | 58   |
| 8           | in | 3.98 | 3.04 | 2.00 | 1.44 | 2.13 | 2.81 | 1.87 | 2.28 |
|             | mm | 101  | 77   | 51   | 37   | 54   | 71   | 48   | 58   |
| 9           | in | 3.98 | 3.04 | 2.00 | 1.61 | 3.03 | -    | 1.87 | 3.6  |
|             | mm | 101  | 77   | 51   | 41   | 77   | -    | 48   | 91   |
| 10          | in | 3.98 | 3.04 | 2.00 | 2.21 | 3.67 | 3.75 | 1.87 | -    |
|             | mm | 101  | 77   | 51   | 56   | 93   | 95   | 48   | -    |
| 11          | in | 3.98 | 3.04 | 2.00 | 2.36 | 4.14 | 4.38 | 1.87 | 3.92 |
|             | mm | 101  | 77   | 51   | 60   | 105  | 111  | 48   | 100  |
| 12          | in | 3.98 | 3.04 | 2.00 | 2.75 | 5.52 | 5.06 | 1.87 | 4.72 |
|             | mm | 101  | 77   | 51   | 70   | 140  | 129  | 48   | 120  |
| 15          | in | 3.98 | 3.04 | 2.00 | 1.72 | 2.18 | 2.75 | 1.87 | 2.28 |
|             | mm | 101  | 77   | 51   | 44   | 55   | 70   | 48   | 58   |
| 16          | in | 3.98 | 3.04 | 2.00 | 1.88 | 2.57 | 2.81 | 1.87 | 2.28 |
|             | mm | 101  | 77   | 51   | 48   | 65   | 71   | 48   | 58   |
| 17          | in | 3.98 | 3.04 | 2.00 | 0.85 | 1.81 | 2.81 | 1.87 | 2.28 |
|             | mm | 101  | 77   | 51   | 22   | 46   | 71   | 48   | 58   |
| 18          | in | 3.98 | 3.04 | 2.00 | 0.77 | 1.20 | 1.88 | 1.87 | 1.25 |
|             | mm | 101  | 77   | 51   | 20   | 30   | 48   | 48   | 32   |

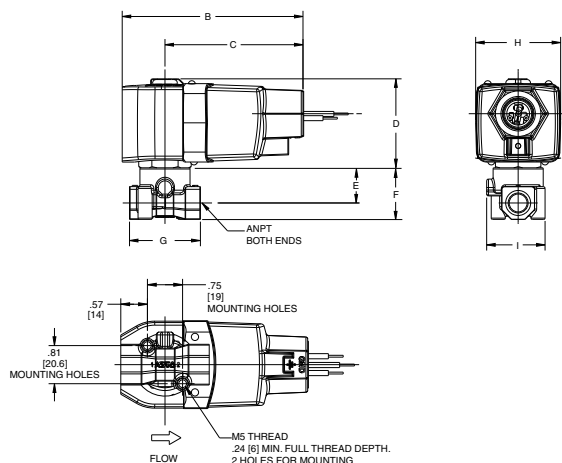
**Const. Ref. 1**



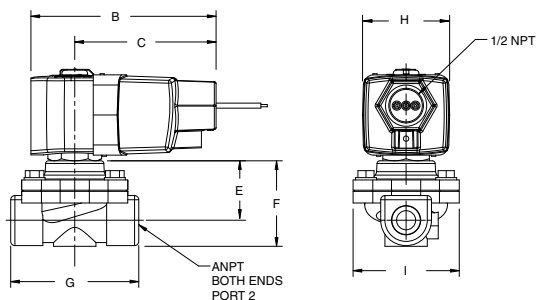
**Const. Ref. 2**



**Const. Ref. 3**

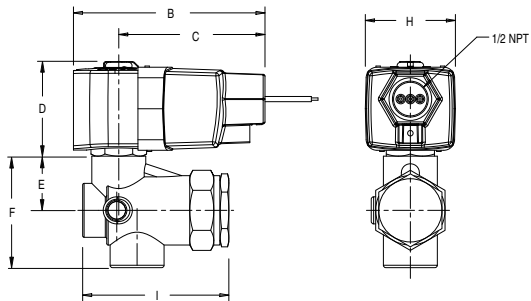


**Const. Ref. 4, 7, 15, 16, 17**

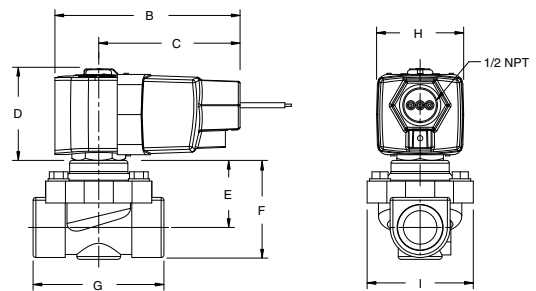


Dimensions: inches (mm)

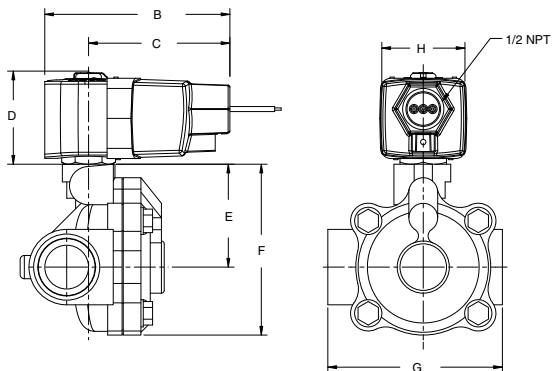
Const. Ref. 5, 6, 9



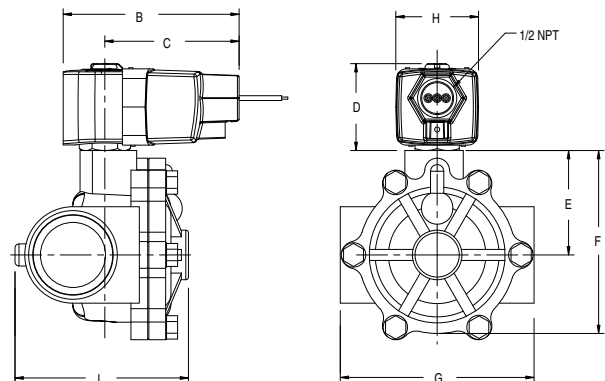
Const. Ref. 8



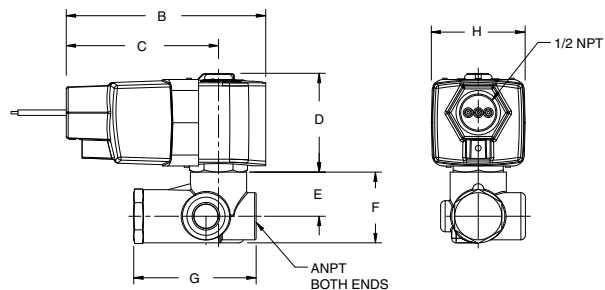
Const. Ref. 10



Const. Ref. 11, 12



Const. Ref. 18



## 3-Way Features

- Three-way (3/2) Next Generation solenoid valves have three ports and two orifices. When one orifice is open, the other is closed
- Control of air, water, light oil, and other non-corrosive media
- Normally closed (pressure to cylinder port when energized) operation
- Normally open (cylinder port exhausts when energized) operation
- Universal operation (can function as normally open, normally closed, diverter of fluid flow, or selector of 2 fluid sources configurable by piping)
- Pipe sizes – 1/4 to 3/4 inch

## 3-Way Specifications (English units)

| Pipe Size<br>(in)                     | Orifice<br>Dia. (in) | Cv<br>Flow | Operating Pressure<br>Differential (psi) |                  |       |       | Max.<br>Fluid<br>Temp. °F | Brass    | Const.<br>Ref. | Agency | Stainless<br>Steel | Const.<br>Ref. | Agency | Wattage  |                        | Approx.<br>Shipping<br>Weight (lbs.) |
|---------------------------------------|----------------------|------------|------------------------------------------|------------------|-------|-------|---------------------------|----------|----------------|--------|--------------------|----------------|--------|----------|------------------------|--------------------------------------|
|                                       |                      |            | Min.                                     | Max.             |       | DC    |                           |          |                |        |                    |                |        | AC/DC    |                        |                                      |
|                                       |                      |            |                                          | Air-Inert<br>Gas | Water |       |                           |          |                |        |                    |                |        |          | Light Oil<br>@ 300 SSU |                                      |
| General Service - Normally Closed     |                      |            |                                          |                  |       |       |                           |          |                |        |                    |                |        |          |                        |                                      |
| 1/8                                   | 3/64                 | 0.05 ③     | 0                                        | 300              | 300   | 300 ⑦ | 200 ⑥                     | 8314R031 | 1              | ●      | 8314R037           | 1              | ●      | 1.2<br>® | 1.5<br>®               | 1.7                                  |
| 1/8                                   | 3/32                 | 0.15 ④     | 0                                        | 205              | 205   | 190 ⑦ | 200 ⑥                     | 8314R032 | 1              | ●      | 8314R038           | 1              | ●      |          |                        | 1.7                                  |
| 1/8                                   | 1/8                  | 0.25 ④     | 0                                        | 145              | 145   | 100 ⑦ | 200 ⑥                     | 8314R033 | 1              | ●      | 8314R039           | 1              | ●      |          |                        | 1.7                                  |
| 1/4                                   | 3/64                 | 0.05 ③     | 0                                        | 300              | 300   | 300 ⑦ | 200 ⑥                     | 8314R034 | 2              | ●      | 8314R068           | 2              | ●      |          |                        | 1.8                                  |
| 1/4                                   | 3/32                 | 0.15 ④     | 0                                        | 205              | 205   | 190 ⑦ | 200 ⑥                     | 8314R035 | 2              | ●      | 8314R121           | 2              | ●      |          |                        | 1.8                                  |
| 1/4                                   | 1/8                  | 0.25 ④     | 0                                        | 145              | 145   | 100 ⑦ | 200 ⑥                     | 8314R036 | 2              | ●      | 8314R126           | 2              | ●      |          |                        | 1.8                                  |
| 1/4                                   | 5/32                 | 0.50 ④     | 0                                        | 75               | 75    | 75 ⑦  | 200 ⑥                     | 8314R130 | 2              | ●      | 8314R230           | 2              | ●      |          |                        | 1.8                                  |
| 1/4                                   | 7/32                 | 0.70 ④     | 0                                        | 40               | 40    | 40 ⑦  | 200 ⑥                     | 8314R131 | 2              | ●      | 8314R231           | 2              | ●      |          |                        | 1.8                                  |
| 1/4                                   | 9/32                 | 0.85 ④     | 0                                        | 25               | 25    | 25 ⑦  | 200 ⑥                     | 8314R132 | 2              | ●      | 8314R232           | 2              | ●      |          |                        | 1.8                                  |
| 1/4                                   | 1/32                 | 0.05       | 0                                        | 750              | 750   | 750   | 194                       | 8320R180 | 3              | ●      | -                  | -              | -      |          |                        | 2.5                                  |
| 1/4                                   | 1/16                 | 0.09       | 0                                        | 255              | 255   | 255   | 194                       | 8320R182 | 3              | ●      | -                  | -              | -      |          |                        | 2.5                                  |
| 1/4                                   | 7/64                 | 0.23       | 0                                        | 190              | 190   | 190   | 194                       | 8320R184 | 3              | ●      | -                  | -              | -      |          |                        | 2.5                                  |
| 1/4                                   | 1/8                  | 0.25       | 0                                        | 90               | 90    | 90    | 194                       | 8320R186 | 3              | ●      | -                  | -              | -      |          |                        | 2.5                                  |
| 1/4                                   | 11/64                | 0.35       | 0                                        | 55               | 55    | 55    | 194                       | 8320R188 | 3              | ●      | -                  | -              | -      |          |                        | 2.5                                  |
| 1/4                                   | 3/32 ①               | 0.2 ①      | 5 ⑤                                      | 150              | 150   | 100   | 180                       | 8317P035 | 4              | ●      | -                  | -              | -      |          |                        | 2.7                                  |
| 1/4                                   | 9/32 ②               | 0.8 ②      | 10                                       | 200              | 200   | 200   | 180                       | 8321P001 | 5              | ●      | -                  | -              | -      |          |                        | 3.8                                  |
| 3/8                                   | 9/32 ②               | 0.8 ②      | 10                                       | 200              | 200   | 200   | 180                       | 8321P002 | 5              | ●      | -                  | -              | -      |          |                        | 3.8                                  |
| 3/8                                   | 5/8                  | 2.5        | 10                                       | 250              | 250   | -     | 180                       | 8316P054 | 6              | ●      | -                  | -              | -      |          |                        | 4.9                                  |
| 1/2                                   | 5/8                  | 3.2        | 10                                       | 250              | 250   | -     | 180                       | 8316P064 | 6              | ●      | -                  | -              | -      |          |                        | 4.9                                  |
| 3/4                                   | 11/16                | 4.8        | 10                                       | 250              | 250   | -     | 180                       | 8316P074 | 7              | ●      | -                  | -              | -      |          |                        | 5.1                                  |
| NAMUR Mount - 3/2 Normally Closed     |                      |            |                                          |                  |       |       |                           |          |                |        |                    |                |        |          |                        |                                      |
| 1/4                                   | 3/32                 | 0.12       | -                                        | 150              | -     | -     | 194                       | 8320R704 | 9              | ●      | 8320R714           | 9              | ●      | 1.2 ⑧    | 1.5 ⑧                  | 3.2                                  |
| General Service - Normally Open       |                      |            |                                          |                  |       |       |                           |          |                |        |                    |                |        |          |                        |                                      |
| 1/8                                   | 3/64                 | 0.05 ③     | 0                                        | 300              | 300   | 300 ⑦ | 200 ⑥                     | 8314R049 | 1              | ●      | 8314R055           | 1              | ●      | 1.2<br>® | 1.5<br>®               | 1.7                                  |
| 1/8                                   | 3/32                 | 0.15 ④     | 0                                        | 175              | 175   | 175 ⑦ | 200 ⑥                     | 8314R050 | 1              | ●      | 8314R056           | 1              | ●      |          |                        | 1.7                                  |
| 1/8                                   | 1/8                  | 0.25 ④     | 0                                        | 160              | 160   | 160 ⑦ | 200 ⑥                     | 8314R051 | 1              | ●      | 8314R057           | 1              | ●      |          |                        | 1.7                                  |
| 1/4                                   | 3/64                 | 0.05 ③     | 0                                        | 300              | 300   | 300 ⑦ | 200 ⑥                     | 8314R052 | 2              | ●      | 8314R069           | 2              | ●      |          |                        | 1.8                                  |
| 1/4                                   | 3/32                 | 0.15 ④     | 0                                        | 175              | 175   | 175 ⑦ | 200 ⑥                     | 8314R053 | 2              | ●      | 8314R122           | 2              | ●      |          |                        | 1.8                                  |
| 1/4                                   | 1/8                  | 0.25 ④     | 0                                        | 160              | 160   | 160 ⑦ | 200 ⑥                     | 8314R054 | 2              | ●      | 8314R070           | 2              | ●      |          |                        | 1.8                                  |
| 1/4                                   | 5/32                 | 0.50 ④     | 0                                        | 150              | 150   | 150 ⑦ | 200 ⑥                     | 8314R133 | 2              | ●      | 8314R233           | 2              | ●      |          |                        | 1.8                                  |
| 1/4                                   | 7/32                 | 0.70 ④     | 0                                        | 100              | 100   | 100 ⑦ | 200 ⑥                     | 8314R134 | 2              | ●      | 8314R234           | 2              | ●      |          |                        | 1.8                                  |
| 1/4                                   | 9/32                 | 0.85 ④     | 0                                        | 65               | 65    | 65 ⑦  | 200 ⑥                     | 8314R135 | 2              | ●      | 8314R235           | 2              | ●      |          |                        | 1.8                                  |
| 1/8                                   | 3/64                 | 0.06       | 0                                        | 350              | 350   | 350   | 194                       | 8320R136 | 8              | ●      | 8320R146           | 8              | ●      |          |                        | 2.5                                  |
| 1/4                                   | 1/32                 | 0.05       | 0                                        | 790              | 825   | 825   | 194                       | 8320R190 | 3              | ●      | -                  | -              | -      |          |                        | 2.5                                  |
| 1/4                                   | 1/16                 | 0.09       | 0                                        | 255              | 255   | 255   | 194                       | 8320R192 | 3              | ●      | -                  | -              | -      |          |                        | 2.5                                  |
| 1/4                                   | 3/32                 | 0.12       | 0                                        | 200              | 200   | 200   | 194                       | 8320R194 | 3              | ●      | -                  | -              | -      |          |                        | 2.5                                  |
| 1/4                                   | 1/8                  | 0.25       | 0                                        | 95               | 95    | 95    | 194                       | 8320R196 | 3              | ●      | -                  | -              | -      |          |                        | 2.5                                  |
| 1/4                                   | 11/64                | 0.35       | 0                                        | 60               | 60    | 60    | 194                       | 8320R198 | 3              | ●      | -                  | -              | -      |          |                        | 2.5                                  |
| General Service - Universal Operation |                      |            |                                          |                  |       |       |                           |          |                |        |                    |                |        |          |                        |                                      |
| 1/8                                   | 3/64                 | 0.05 ③     | 0                                        | 200              | 200   | 200 ⑦ | 200 ⑥                     | 8314R041 | 1              | ●      | 8314R042           | 1              | ●      | 1.2<br>® | 1.5<br>®               | 1.7                                  |
| 1/8                                   | 3/32                 | 0.15 ④     | 0                                        | 105              | 85    | 60 ⑦  | 200 ⑥                     | 8314R043 | 1              | ●      | 8314R044           | 1              | ●      |          |                        | 1.7                                  |
| 1/8                                   | 1/8                  | 0.25 ④     | 0                                        | 70               | 70    | 40 ⑦  | 200 ⑥                     | 8314R045 | 1              | ●      | 8314R040           | 1              | ●      |          |                        | 1.7                                  |
| 1/4                                   | 3/64                 | 0.05 ③     | 0                                        | 200              | 200   | 200 ⑦ | 200 ⑥                     | 8314R006 | 2              | ●      | 8314R123           | 2              | ●      |          |                        | 1.8                                  |
| 1/4                                   | 3/32                 | 0.15 ④     | 0                                        | 105              | 85    | 60 ⑦  | 200 ⑥                     | 8314R007 | 2              | ●      | 8314R120           | 2              | ●      |          |                        | 1.8                                  |
| 1/4                                   | 1/8                  | 0.25 ④     | 0                                        | 70               | 70    | 40 ⑦  | 200 ⑥                     | 8314R008 | 2              | ●      | 8314R124           | 2              | ●      |          |                        | 1.8                                  |
| 1/4                                   | 5/32                 | 0.50 ④     | 0                                        | 35               | 35    | 35 ⑦  | 200 ⑥                     | 8314R127 | 2              | ●      | 8314R227           | 2              | ●      |          |                        | 1.8                                  |
| 1/4                                   | 7/32                 | 0.70 ④     | 0                                        | 18               | 18    | 18 ⑦  | 200 ⑥                     | 8314R128 | 2              | ●      | 8314R228           | 2              | ●      |          |                        | 1.8                                  |
| 1/4                                   | 9/32                 | 0.85 ④     | 0                                        | 10               | 10    | 10 ⑦  | 200 ⑥                     | 8314R129 | 2              | ●      | 8314R229           | 2              | ●      |          |                        | 1.8                                  |
| 1/4                                   | 1/32                 | 0.05       | 0                                        | 395              | 395   | 395   | 194                       | 8320R170 | 3              | ●      | -                  | -              | -      |          |                        | 2.5                                  |
| 1/4                                   | 1/16                 | 0.09       | 0                                        | 160              | 160   | 160   | 194                       | 8320R172 | 3              | ●      | -                  | -              | -      |          |                        | 2.5                                  |
| 1/4                                   | 3/32                 | 0.12       | 0                                        | 100              | 100   | 100   | 194                       | 8320R174 | 3              | ●      | -                  | -              | -      |          |                        | 2.5                                  |
| 1/4                                   | 1/8                  | 0.25       | 0                                        | 50               | 50    | 50    | 194                       | 8320R176 | 3              | ●      | -                  | -              | -      |          |                        | 2.5                                  |
| 1/4                                   | 11/64                | 0.35       | 0                                        | 30               | 30    | 30    | 194                       | 8320R178 | 3              | ●      | -                  | -              | -      |          |                        | 2.5                                  |

● = General Purpose Valve. ① 1/4" exhaust orifice with 0.73 Cv flow; ② 11/32" exhaust orifice with 1.20 Cv flow; ③ 3/64" exhaust orifice with 0.06 Cv flow. ④ 3/32" exhaust orifice with 0.20 Cv flow.  
 ⑤ 10 psi minimum for light oils. ⑥ Max. fluid temp. 180°F for light oil @ 45 SSU. ⑦ Pressure rating for light oil @ 45 SSU. ⑧ 12-24V DC. ⑨ 24-120V AC/DC, 100-240V AC/DC.

### 3-Way Specifications (Metric units)

| Pipe Size<br>(in)                     | Orifice<br>Dia. (mm) | Kv Flow<br>Factor<br>(m <sup>3</sup> /h) | Operating Pressure<br>Differential (bar) |               |       |                        | Max. Fluid<br>Temp. C | Brass    | Const. Ref. | Agency | Stainless Steel | Const. Ref. | Agency | Wattage |       | Approx.<br>Shipping<br>Weight (kgs.) |       |      |
|---------------------------------------|----------------------|------------------------------------------|------------------------------------------|---------------|-------|------------------------|-----------------------|----------|-------------|--------|-----------------|-------------|--------|---------|-------|--------------------------------------|-------|------|
|                                       |                      |                                          | Min.                                     | Max.          |       |                        |                       |          |             |        |                 |             |        | DC      | AC/DC |                                      |       |      |
|                                       |                      |                                          |                                          | Air-Inert Gas | Water | Light Oil<br>@ 300 SSU |                       |          |             |        |                 |             |        |         |       |                                      |       |      |
| General Service - Normally Closed     |                      |                                          |                                          |               |       |                        |                       |          |             |        |                 |             |        |         |       |                                      |       |      |
| 1/8                                   | 1.2                  | 0.04 ③                                   | 0                                        | 21            | 21    | 21 ⑦                   | 93 ⑥                  | 8314R031 | 1           | ●      | 8314R037        | 1           | ●      | 1.2 ⑧   | 1.5 ⑨ | 0.77                                 |       |      |
| 1/8                                   | 2.4                  | 0.13 ④                                   | 0                                        | 14            | 14    | 13 ⑦                   | 93 ⑥                  | 8314R032 | 1           | ●      | 8314R038        | 1           | ●      |         |       | 0.77                                 |       |      |
| 1/8                                   | 3.2                  | 0.22 ④                                   | 0                                        | 10            | 10    | 7 ⑦                    | 93 ⑥                  | 8314R033 | 1           | ●      | 8314R039        | 1           | ●      |         |       | 0.77                                 |       |      |
| 1/4                                   | 1.2                  | 0.04 ③                                   | 0                                        | 21            | 21    | 21 ⑦                   | 93 ⑥                  | 8314R034 | 2           | ●      | 8314R068        | 2           | ●      |         |       | 0.81                                 |       |      |
| 1/4                                   | 2.4                  | 0.13 ④                                   | 0                                        | 14            | 14    | 13 ⑦                   | 93 ⑥                  | 8314R035 | 2           | ●      | 8314R121        | 2           | ●      |         |       | 0.81                                 |       |      |
| 1/4                                   | 3.2                  | 0.22 ④                                   | 0                                        | 10            | 10    | 7 ⑦                    | 93 ⑥                  | 8314R036 | 2           | ●      | 8314R126        | 2           | ●      |         |       | 0.81                                 |       |      |
| 1/4                                   | 4.0                  | 0.43 ④                                   | 0                                        | 5.2           | 5.2   | 5.2 ⑦                  | 93 ⑥                  | 8314R130 | 2           | ●      | 8314R230        | 2           | ●      |         |       | 0.81                                 |       |      |
| 1/4                                   | 5.6                  | 0.60 ④                                   | 0                                        | 3             | 3     | 3 ⑦                    | 93 ⑥                  | 8314R131 | 2           | ●      | 8314R231        | 2           | ●      |         |       | 0.81                                 |       |      |
| 1/4                                   | 7.1                  | 0.73 ④                                   | 0                                        | 2             | 2     | 2 ⑦                    | 93 ⑥                  | 8314R132 | 2           | ●      | 8314R232        | 2           | ●      |         |       | 0.81                                 |       |      |
| 1/4                                   | 0.8                  | 0.04                                     | 0                                        | 51            | 51    | 51                     | 90                    | 8320R180 | 3           | ●      | -               | -           | -      |         |       | 1.1                                  |       |      |
| 1/4                                   | 1.9                  | 0.08                                     | 0                                        | 18            | 18    | 18                     | 90                    | 8320R182 | 3           | ●      | -               | -           | -      |         |       |                                      |       |      |
| 1/4                                   | 2.7                  | 0.10                                     | 0                                        | 13            | 13    | 13                     | 90                    | 8320R184 | 3           | ●      | -               | -           | -      |         |       |                                      |       |      |
| 1/4                                   | 3.9                  | 0.21                                     | 0                                        | 6             | 6     | 6                      | 90                    | 8320R186 | 3           | ●      | -               | -           | -      |         |       |                                      |       |      |
| 1/4                                   | 4.4                  | 0.30                                     | 0                                        | 4             | 4     | 4                      | 90                    | 8320R188 | 3           | ●      | -               | -           | -      |         |       |                                      |       |      |
| 1/4                                   | 2.3 ①                | 0.17 ①                                   | 0.3 ④                                    | 10            | 10    | 7                      | 82                    | 8317P035 | 4           | ●      | -               | -           | -      |         |       | 1.2                                  |       |      |
| 1/4                                   | 7.1 ②                | 0.7 ②                                    | 0.7                                      | 14            | 14    | 14                     | 82                    | 8321P001 | 5           | ●      | -               | -           | -      |         |       | 1.7                                  |       |      |
| 3/8                                   | 7.1 ②                | 0.7 ②                                    | 0.7                                      | 14            | 14    | 14                     | 82                    | 8321P002 | 5           | ●      | -               | -           | -      |         |       | 1.7                                  |       |      |
| 3/8                                   | 3.3                  | 2.1                                      | 0.7                                      | 17            | 17    | -                      | 82                    | 8316P054 | 6           | ●      | -               | -           | -      |         |       | 2.2                                  |       |      |
| 1/2                                   | 3.3                  | 2.7                                      | 0.7                                      | 17            | 17    | -                      | 82                    | 8316P064 | 6           | ●      | -               | -           | -      |         |       | 2.2                                  |       |      |
| 3/4                                   | 17                   | 4.1                                      | 0.7                                      | 17            | 17    | -                      | 82                    | 8316P074 | 7           | ●      | -               | -           | -      |         |       | 2.3                                  |       |      |
| NAMUR Mount - 3/2 Normally Closed     |                      |                                          |                                          |               |       |                        |                       |          |             |        |                 |             |        |         |       |                                      |       |      |
| 1/4                                   | 2.4                  | 0.1                                      | -                                        | 10            | -     | -                      | 90                    | 8320R704 | 9           | ●      | 8320R714        | 9           | ●      | 1.2 ⑧   | 2     | 1.5                                  |       |      |
| General Service - Normally Open       |                      |                                          |                                          |               |       |                        |                       |          |             |        |                 |             |        |         |       |                                      |       |      |
| 1/8                                   | 1.2                  | 0.04 ③                                   | 0                                        | 21            | 21    | 21 ⑦                   | 93 ⑥                  | 8314R049 | 1           | ●      | 8314R055        | 1           | ●      | 1.2 ⑧   | 1.5 ⑨ | 0.77                                 |       |      |
| 1/8                                   | 2.4                  | 0.13 ④                                   | 0                                        | 12            | 12    | 12 ⑦                   | 93 ⑥                  | 8314R050 | 1           | ●      | 8314R056        | 1           | ●      |         |       | 0.77                                 |       |      |
| 1/8                                   | 3.2                  | 0.22 ④                                   | 0                                        | 11            | 11    | 11 ⑦                   | 93 ⑥                  | 8314R051 | 1           | ●      | 8314R057        | 1           | ●      |         |       | 0.77                                 |       |      |
| 1/4                                   | 1.2                  | 0.04 ③                                   | 0                                        | 21            | 21    | 21 ⑦                   | 93 ⑥                  | 8314R052 | 2           | ●      | 8314R069        | 2           | ●      |         |       | 0.81                                 |       |      |
| 1/4                                   | 2.4                  | 0.13 ④                                   | 0                                        | 12            | 12    | 12 ⑦                   | 93 ⑥                  | 8314R053 | 2           | ●      | 8314R122        | 2           | ●      |         |       | 0.81                                 |       |      |
| 1/4                                   | 3.2                  | 0.22 ④                                   | 0                                        | 11            | 11    | 11 ⑦                   | 93 ⑥                  | 8314R054 | 2           | ●      | 8314R070        | 2           | ●      |         |       | 0.81                                 |       |      |
| 1/4                                   | 4.0                  | 0.43 ④                                   | 0                                        | 10            | 10    | 10 ⑦                   | 93 ⑥                  | 8314R133 | 2           | ●      | 8314R233        | 2           | ●      |         |       | 0.81                                 |       |      |
| 1/4                                   | 5.6                  | 0.60 ④                                   | 0                                        | 6.8           | 6.8   | 6.8 ⑦                  | 93 ⑥                  | 8314R134 | 2           | ●      | 8314R234        | 2           | ●      |         |       | 0.81                                 |       |      |
| 1/4                                   | 7.1                  | 0.73 ④                                   | 0                                        | 4.5           | 4.5   | 4.5 ⑦                  | 93 ⑥                  | 8314R135 | 2           | ●      | 8314R235        | 2           | ●      |         |       | 0.81                                 |       |      |
| 1/8                                   | 1.2                  | 0.05                                     | 0                                        | 24            | 24    | 24                     | 90                    | 8320R136 | 8           | ●      | 8320R146        | 8           | ●      |         |       | 1.1                                  |       |      |
| 1/4                                   | 0.8                  | 0.04                                     | 0                                        | 54            | 57    | 57                     | 90                    | 8320R190 | 3           | ●      | -               | -           | -      |         |       | 1.1                                  |       |      |
| 1/4                                   | 1.6                  | 0.08                                     | 0                                        | 18            | 18    | 18                     | 90                    | 8320R192 | 2           | ●      | -               | -           | -      |         |       | 1.1                                  |       |      |
| 1/4                                   | 2.4                  | 0.10                                     | 0                                        | 14            | 14    | 14                     | 90                    | 8320R194 | 2           | ●      | -               | -           | -      |         |       | 1.1                                  |       |      |
| 1/4                                   | 3.2                  | 0.21                                     | 0                                        | 6.5           | 6.5   | 6.5                    | 90                    | 8320R196 | 2           | ●      | -               | -           | -      |         |       | 1.1                                  |       |      |
| 1/4                                   | 4.4                  | 0.30                                     | 0                                        | 4             | 4     | 4                      | 90                    | 8320R198 | 2           | ●      | -               | -           | -      |         |       | 1.1                                  |       |      |
| General Service - Universal Operation |                      |                                          |                                          |               |       |                        |                       |          |             |        |                 |             |        |         |       |                                      |       |      |
| 1/8                                   | 1.2                  | 0.04 ③                                   | 0                                        | 14            | 14    | 14 ⑦                   | 93 ⑥                  | 8314R041 | 1           | ●      | 8314R042        | 1           | ●      |         |       | 1.2 ⑧                                | 1.5 ⑨ | 0.77 |
| 1/8                                   | 2.4                  | 0.13 ④                                   | 0                                        | 7             | 6     | 4 ⑦                    | 93 ⑥                  | 8314R043 | 1           | ●      | 8314R044        | 1           | ●      |         |       |                                      |       | 0.77 |
| 1/8                                   | 3.2                  | 0.22 ④                                   | 0                                        | 5             | 5     | 3 ⑦                    | 93 ⑥                  | 8314R045 | 1           | ●      | 8314R040        | 1           | ●      |         |       |                                      |       | 0.77 |
| 1/4                                   | 1.2                  | 0.04 ③                                   | 0                                        | 14            | 14    | 14 ⑦                   | 93 ⑥                  | 8314R006 | 2           | ●      | 8314R123        | 2           | ●      |         |       |                                      |       | 0.81 |
| 1/4                                   | 2.4                  | 0.13 ④                                   | 0                                        | 7             | 6     | 4 ⑦                    | 93 ⑥                  | 8314R007 | 2           | ●      | 8314R120        | 2           | ●      |         |       |                                      |       | 0.81 |
| 1/4                                   | 3.2                  | 0.22 ④                                   | 0                                        | 5             | 5     | 3 ⑦                    | 93 ⑥                  | 8314R008 | 2           | ●      | 8314R124        | 2           | ●      | 0.81    |       |                                      |       |      |
| 1/4                                   | 4.0                  | 0.43 ④                                   | 0                                        | 2.5           | 2.5   | 2.5 ⑦                  | 93 ⑥                  | 8314R127 | 2           | ●      | 8314R227        | 2           | ●      | 0.81    |       |                                      |       |      |
| 1/4                                   | 5.6                  | 0.60 ④                                   | 0                                        | 1.5           | 1.5   | 1.5 ⑦                  | 93 ⑥                  | 8314R128 | 2           | ●      | 8314R228        | 2           | ●      | 0.81    |       |                                      |       |      |
| 1/4                                   | 7.1                  | 0.73 ④                                   | 0                                        | 0.7           | 0.7   | 0.7 ⑦                  | 93 ⑥                  | 8314R129 | 2           | ●      | 8314R229        | 2           | ●      | 0.81    |       |                                      |       |      |
| 1/4                                   | 0.8                  | 0.04                                     | 0                                        | 27            | 27    | 27                     | 90                    | 8320R170 | 3           | ●      | -               | -           | -      | 1.1     |       |                                      |       |      |
| 1/4                                   | 1.6                  | 0.08                                     | 0                                        | 11            | 11    | 11                     | 90                    | 8320R172 | 3           | ●      | -               | -           | -      | 1.1     |       |                                      |       |      |
| 1/4                                   | 2.4                  | 0.10                                     | 0                                        | 7             | 7     | 7                      | 90                    | 8320R174 | 3           | ●      | -               | -           | -      | 1.1     |       |                                      |       |      |
| 1/4                                   | 3.2                  | 0.21                                     | 0                                        | 3             | 3     | 3                      | 90                    | 8320R176 | 3           | ●      | -               | -           | -      | 1.1     |       |                                      |       |      |
| 1/4                                   | 4.4                  | 0.30                                     | 0                                        | 2             | 2     | 2                      | 90                    | 8320R178 | 3           | ●      | -               | -           | -      | 1.1     |       |                                      |       |      |

● = General Purpose Valve. ① 6.3 mm exhaust orifice with 0.63 Kv flow; ② 8.7 mm exhaust orifice with 1.0 Kv flow; ③ 1.3 mm exhaust orifice with 0.05 Kv flow.  
④ 2.5 mm exhaust orifice with 0.17 Kv flow. ⑤ 0.7 bar minimum for light oils. ⑥ Max. fluid temp. 82°C for light oil @ 45 SSU. ⑦ Pressure rating for light oil @ 45 SSU.  
⑧ 12-24V DC. ⑨ 24-120V AC/DC, 100-240V AC/DC.

● = General Purpose Valve. ① 6.3 mm exhaust orifice with 0.63 Kv flow; ② 8.7 mm exhaust orifice with 1.0 Kv flow; ③ 1.3 mm exhaust orifice with 0.05 Kv flow.  
④ 2.5 mm exhaust orifice with 0.17 Kv flow. ⑤ 0.7 bar minimum for light oils. ⑥ Max. fluid temp. 82°C for light oil @ 45 SSU. ⑦ Pressure rating for light oil @ 45 SSU.  
⑧ 12-24V DC. ⑨ 24-120V AC/DC, 100-240V AC/DC.

## 3-Way Optional Features Chart

| Pipe Size (in) | Orifice Dia. (in) | Base Catalog Number |                 | Resilient Materials and Suffix Options |     |     |      |    |                |        |          |        |                   | Other            |        | Standard Rebuild Kit |  |
|----------------|-------------------|---------------------|-----------------|----------------------------------------|-----|-----|------|----|----------------|--------|----------|--------|-------------------|------------------|--------|----------------------|--|
|                |                   | Brass               | Stainless Steel | Silicone Free                          | NBR | FKM | EPDM | CR | Oxygen Service | PTFE ① | Urethane | Vacuum | Manual Operator ③ | Mounting Bracket | Brass  | Stainless Steel      |  |
| 1/8            | 3/64              | 8314R031            | 8314R037        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323957 | 323959               |  |
| 1/8            | 3/64              | 8314R041            | 8314R042        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323961 | 323963               |  |
| 1/8            | 3/64              | 8314R049            | 8314R055        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323969 | 323971               |  |
| 1/8            | 3/32              | 8314R032            | 8314R038        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323958 | 323960               |  |
| 1/8            | 3/32              | 8314R043            | 8314R044        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323966 | 323968               |  |
| 1/8            | 3/32              | 8314R050            | 8314R056        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323970 | 323972               |  |
| 1/8            | 1/8               | 8314R033            | 8314R039        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323958 | 323960               |  |
| 1/8            | 1/8               | 8314R045            | 8314R040        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323966 | 323968               |  |
| 1/8            | 1/8               | 8314R051            | 8314R057        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323970 | 323972               |  |
| 1/8            | 3/64              | 8320R136            | 8320R146        | SF                                     | ●   | V   | E    | J  | N              | -      | -        | -      | MO/MS             | MB               | 326062 | 326062               |  |
| 1/4            | 1/32              | 8320R190            | -               | SF                                     | ●   | V   | E    | J  | N              | -      | -        | -      | MO/MS             | MB               | 326060 | -                    |  |
| 1/4            | 3/64              | 8314R006            | 8314R123        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323961 | 323963               |  |
| 1/4            | 3/64              | 8314R034            | 8314R068        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323957 | 323959               |  |
| 1/4            | 3/64              | 8314R052            | 8314R069        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323969 | 323971               |  |
| 1/4            | 1/32              | 8320R170            | -               | SF                                     | ●   | V   | E    | J  | N              | -      | -        | -      | MO/MS ④           | MB               | 326061 | -                    |  |
| 1/4            | 1/16              | 8320R172            | -               | SF                                     | ●   | V   | E    | J  | N              | -      | -        | -      | MO/MS ④           | MB               | 326061 | -                    |  |
| 1/4            | 1/8               | 8320R176            | -               | SF                                     | ●   | V   | E    | J  | N              | -      | -        | -      | MO/MS ④           | MB               | 326061 | -                    |  |
| 1/4            | 11/64             | 8320R178            | -               | SF                                     | ●   | V   | E    | J  | N              | -      | -        | -      | MO/MS ④           | MB               | 326061 | -                    |  |
| 1/4            | 1/32              | 8320R180            | -               | SF                                     | ●   | V   | E    | J  | N              | -      | -        | -      | MO/MS             | MB               | 326059 | -                    |  |
| 1/4            | 1/16              | 8320R182            | -               | SF                                     | ●   | V   | E    | J  | N              | -      | -        | -      | MO/MS             | MB               | 326059 | -                    |  |
| 1/4            | 11/64             | 8320R188            | -               | SF                                     | ●   | V   | E    | J  | N              | -      | -        | -      | MO/MS             | MB               | 326059 | -                    |  |
| 1/4            | 1/16              | 8320R192            | -               | SF                                     | ●   | V   | E    | J  | N              | -      | -        | -      | MO/MS ④           | MB               | 326060 | -                    |  |
| 1/4            | 3/32              | 8314R007            | 8314R120        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323966 | 323968               |  |
| 1/4            | 3/32              | 8314R035            | 8314R121        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323958 | 323960               |  |
| 1/4            | 3/32              | 8314R053            | 8314R122        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323970 | 323972               |  |
| 1/4            | 3/32              | 8317P035            | -               | SF                                     | ●   | V   | -    | -  | N              | -      | -        | -      | -                 | -                | 322919 | -                    |  |
| 1/4            | 3/32              | 8320R704            | 8320R714        | SF                                     | ●   | V   | E    | J  | N              | -      | -        | -      | MO/MS             | -                | 326059 | 326059               |  |
| 1/4            | 3/32              | 8320R174            | -               | SF                                     | ●   | V   | E    | J  | N              | -      | -        | -      | MO/MS ④           | MB               | 326061 | -                    |  |
| 1/4            | 7/64              | 8320R184            | -               | SF                                     | ●   | V   | E    | J  | N              | -      | -        | -      | MO/MS ④           | MB               | 326059 | -                    |  |
| 1/4            | 3/32              | 8320R194            | -               | SF                                     | ●   | V   | E    | J  | N              | -      | -        | -      | MO/MS ④           | MB               | 326060 | -                    |  |
| 1/4            | 1/8               | 8320R196            | -               | SF                                     | ●   | V   | E    | J  | N              | -      | -        | -      | MO/MS ④           | MB               | 326060 | -                    |  |
| 1/4            | 1/8               | 8320R186            | -               | SF                                     | ●   | V   | E    | J  | N              | -      | -        | -      | MO/MS ④           | MB               | 326059 | -                    |  |
| 1/4            | 11/64             | 8320R198            | -               | SF                                     | ●   | V   | E    | J  | N              | -      | -        | -      | MO/MS ④           | MB               | 326060 | -                    |  |
| 1/4            | 1/8               | 8314R008            | 8314R124        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323966 | 323968               |  |
| 1/4            | 1/8               | 8314R036            | 8314R126        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323958 | 323960               |  |
| 1/4            | 1/8               | 8314R054            | 8314R070        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323970 | 323972               |  |
| 1/4            | 5/32              | 8314R127            | 8314R227        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323966 | 323968               |  |
| 1/4            | 5/32              | 8314R130            | 8314R230        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323958 | 323960               |  |
| 1/4            | 5/32              | 8314R133            | 8314R233        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323970 | 323972               |  |
| 1/4            | 7/32              | 8314R128            | 8314R228        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323966 | 323968               |  |
| 1/4            | 7/32              | 8314R131            | 8314R231        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323958 | 323960               |  |
| 1/4            | 7/32              | 8314R134            | 8314R234        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323970 | 323972               |  |
| 1/4            | 9/32              | 8314R129            | 8314R229        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323966 | 323968               |  |
| 1/4            | 9/32              | 8314R132            | 8314R232        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323958 | 323960               |  |
| 1/4            | 9/32              | 8314R135            | 8314R235        | SF                                     | ●   | V ② | -    | -  | N              | -      | -        | -      | MS                | MB               | 323970 | 323972               |  |
| 1/4            | 9/32              | 8321P001            | -               | ⑤                                      | ●   | V   | E    | -  | -              | -      | -        | -      | MO/MS             | -                | 322688 | -                    |  |
| 3/8            | 9/32              | 8321P002            | -               | ⑤                                      | ●   | V   | E    | -  | -              | -      | -        | -      | MO/MS             | -                | 322688 | -                    |  |
| 3/8            | 5/8               | 8316P054            | -               | ⑤                                      | ●   | V   | E    | J  | N              | -      | -        | -      | MO                | MB               | 322690 | -                    |  |
| 1/2            | 5/8               | 8316P064            | -               | ⑤                                      | ●   | V   | E    | J  | N              | -      | -        | -      | MO                | MB               | 322690 | -                    |  |
| 3/4            | 11/16             | 8316P074            | -               | ⑤                                      | ●   | V   | E    | J  | N              | -      | -        | -      | MO                | MB               | 322692 | -                    |  |

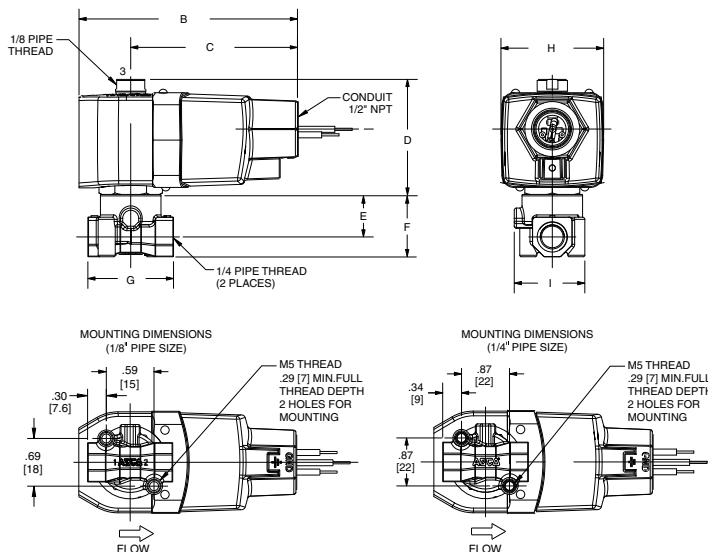
● = Standard. Other options may be available. All option combinations may not be available. Please consult your local ASCO contact. ① Pressure rating reduced by 25%. ② Upper disc is FKM. ③ Not available with PTFE resilient materials. ④ Pressure rating limited to 100 psi (6.9 bar) for MO constructions. ⑤ Consult factory.

ELECTRONICALLY  
ENHANCED

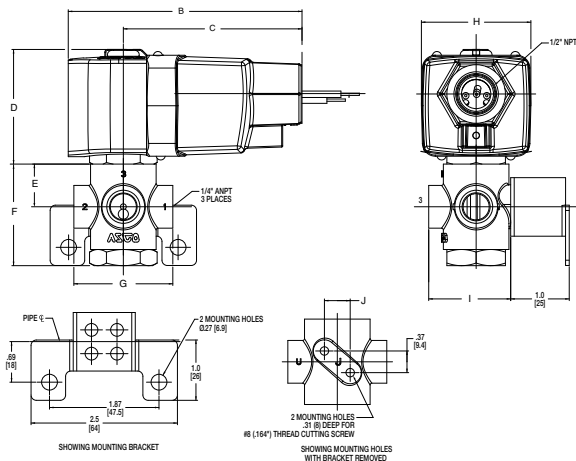
Dimensions: inches (mm)

| Const. Ref. |    | B    | C    | D    | E    | F    | G    | H    | I    | J    |
|-------------|----|------|------|------|------|------|------|------|------|------|
| 1           | in | 3.98 | 3.04 | 2.09 | 0.69 | 1.00 | 1.19 | 1.87 | 1.24 | -    |
|             | mm | 101  | 77   | 53   | 18   | 25   | 30   | 48   | 32   | -    |
| 2           | in | 3.98 | 3.04 | 2.09 | 0.79 | 1.19 | 1.56 | 1.87 | 1.29 | -    |
|             | mm | 101  | 77   | 53   | 20   | 30   | 40   | 48   | 33   | -    |
| 3           | in | 3.98 | 3.04 | 2.00 | 1.02 | 2.02 | 1.69 | 1.87 | 1.45 | 0.44 |
|             | mm | 101  | 77   | 51   | 26   | 51   | 43   | 48   | 37   | 11   |
| 4           | in | 3.98 | 3.04 | 2.00 | 0.57 | 1.07 | 2.00 | 1.87 | 2.05 | -    |
|             | mm | 101  | 77   | 51   | 14   | 27   | 50   | 48   | 52   | -    |
| 5           | in | 3.98 | 3.04 | 2.00 | 1.00 | 2.03 | 1.31 | 1.87 | 3.12 | 1.00 |
|             | mm | 101  | 77   | 51   | 25   | 52   | 33   | 48   | 79   | 25   |
| 6           | in | 3.98 | 3.04 | 2.00 | 2.12 | 3.77 | 2.76 | 1.87 | 4.29 | -    |
|             | mm | 101  | 77   | 51   | 54   | 96   | 70   | 48   | 109  | -    |
| 7           | in | 3.98 | 3.04 | 2.00 | 2.5  | 4.19 | -    | 1.87 | 3.38 | -    |
|             | mm | 101  | 77   | 51   | 64   | 106  | -    | 48   | 86   | -    |
| 8           | in | 3.98 | 3.04 | 2.00 | 0.67 | 1.64 | 1.19 | 1.87 | -    | 1.81 |
|             | mm | 101  | 77   | 51   | 17   | 42   | 30   | 48   | -    | 46   |

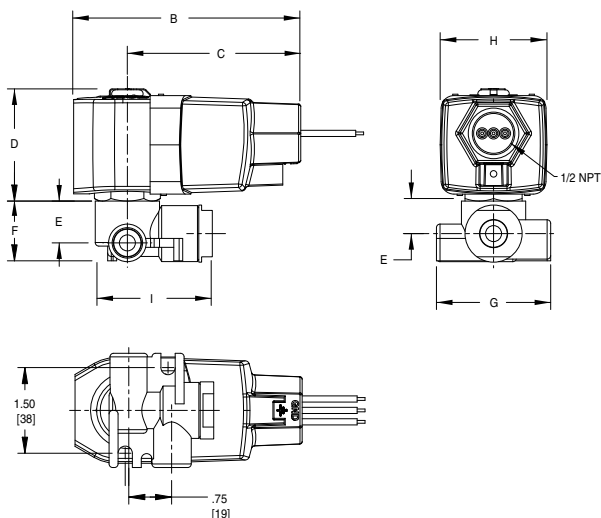
Const. Ref. 1, 2



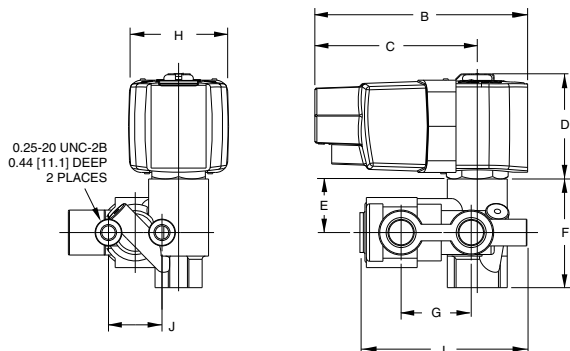
Const. Ref. 3



Const. Ref. 4

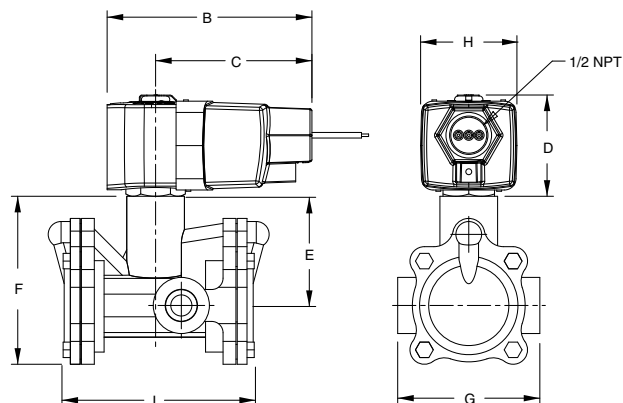


Const. Ref. 5

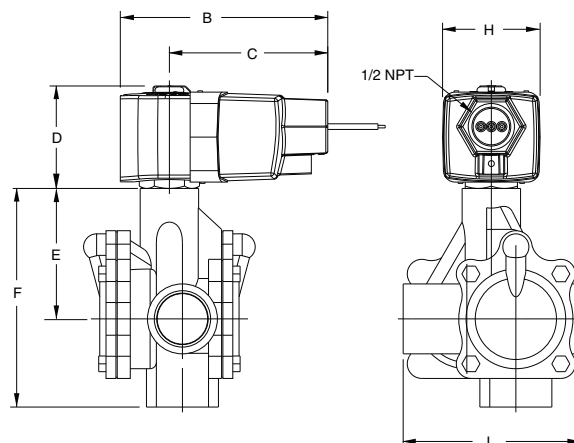


## Dimensions: inches (mm)

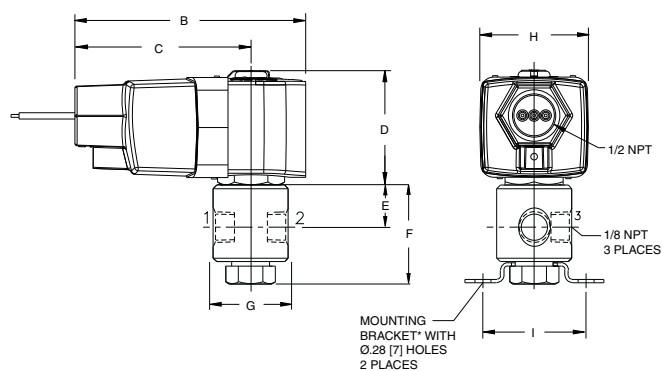
**Const. Ref. 6**



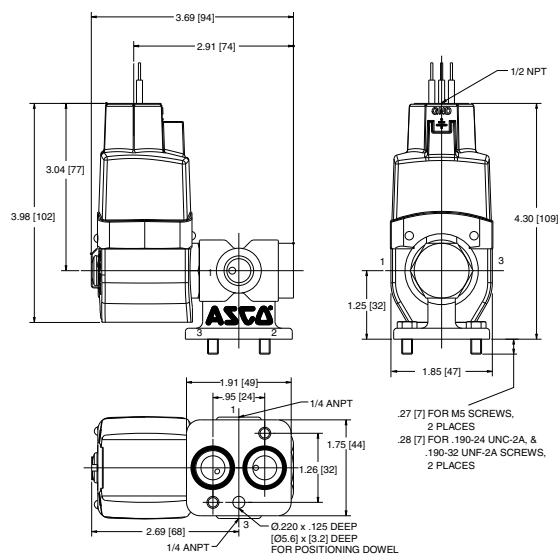
**Const. Ref. 7**



**Const. Ref. 8**



**Const. Ref. 9**



## 4-Way Features

- Four-way, four port (4/2) and five port (5/2) Next Generation solenoid valves have one pressure port, 2 cylinder ports, and either 1 or 2 exhaust ports
- Control of air, water, light oil, and non-corrosive media
- Single solenoid operation (pressure and exhaust ports and cylinder ports alternate connection based on solenoid operation)
- Pipe sizes – 1/4 to 1 inch

## 4-Way Specifications (English units)

| Pipe Size (in)                                                                                                                                                              | Orifice Dia. (in) | Cv Flow  |         | Operating Pressure Differential (psi) |               |       |                     | Max. Fluid Temp. °F | Brass        | Const. Ref. | Agency | 316L Stainless Steel | Const. Ref. | Agency | Wattage |       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------|---------|---------------------------------------|---------------|-------|---------------------|---------------------|--------------|-------------|--------|----------------------|-------------|--------|---------|-------|
|                                                                                                                                                                             |                   |          |         | Min.                                  | Max.          |       |                     |                     |              |             |        |                      |             |        | DC      | AC/DC |
|                                                                                                                                                                             |                   | Pressure | Exhaust |                                       | Air-Inert Gas | Water | Light Oil @ 300 SSU |                     |              |             | UL     |                      |             | UL     |         |       |
| General Service - Single Solenoid                                                                                                                                           |                   |          |         |                                       |               |       |                     |                     |              |             |        |                      |             |        |         |       |
| 1/4                                                                                                                                                                         | 1/16 ②            | 0.09     | 0.09    | 10                                    | 150           | 150   | 150 ③               | 180                 | 8345P001     | 1           | ●      | -                    | -           | -      | 1.2 ⑤   | 1.5 ⑥ |
| 1/4                                                                                                                                                                         | 1/4               | 0.8      | 1.0     | 10 ①                                  | 250           | 250   | 250                 | 180                 | 8344P070     | 2           | ●      | -                    | -           | -      |         |       |
| 3/8                                                                                                                                                                         | 3/8               | 1.4      | 2.2     | 10 ①                                  | 250           | 250   | 250                 | 180                 | 8344P072     | 3           | ●      | -                    | -           | -      |         |       |
| 1/2                                                                                                                                                                         | 3/8               | 1.4      | 2.2     | 10 ①                                  | 250           | 250   | 250                 | 180                 | 8344P074     | 3           | ●      | -                    | -           | -      |         |       |
| 3/4                                                                                                                                                                         | 3/4               | 5.2      | 5.6     | 10 ①                                  | 250           | 250   | 250                 | 180                 | 8344P076     | 4           | ●      | -                    | -           | -      |         |       |
| 1                                                                                                                                                                           | 3/4               | 5.2      | 5.6     | 10 ①                                  | 250           | 250   | 250                 | 180                 | 8344P078     | 4           | ●      | -                    | -           | -      |         |       |
| General Service - 4/2 Dual Solenoid                                                                                                                                         |                   |          |         |                                       |               |       |                     |                     |              |             |        |                      |             |        |         |       |
| 3/8                                                                                                                                                                         | 3/8               | 1.4      | 2.2     | 10 ①                                  | 300           | 300   | 200                 | 180                 | 8344P080     | 5           | ●      | -                    | -           | -      | 1.2 ⑤   | 1.5 ⑥ |
| NAMUR Mount - 3/2, 5/2 Single Solenoid                                                                                                                                      |                   |          |         |                                       |               |       |                     |                     |              |             |        |                      |             |        |         |       |
| 1/4                                                                                                                                                                         | 1/4               | 0.86     | 0.86    | 30                                    | 150           | -     | -                   | 180                 | EE8551P401 ④ | 6           | ●      | -                    | 6           | ●      | 1.2 ⑤   | 1.5 ⑥ |
| 1/4                                                                                                                                                                         | 1/4               | 0.86     | 0.86    | 30                                    | 150           | -     | -                   | 180                 | EE8551P403   | 6           | ●      | EE8551P409           | 6           | ●      | 1.2 ⑤   | 1.5 ⑥ |
| ● = General Purpose Valve. ① 25 psi minimum for light oils. ② 3/32" exhaust orifice. ③ Viscosity 50 SSU max. ④ Aluminum body. ⑤ 12-24V DC. ⑥ 24-120V AC/DC, 100-240V AC/DC. |                   |          |         |                                       |               |       |                     |                     |              |             |        |                      |             |        |         |       |

● = General Purpose Valve. ① 25 psi minimum for light oils. ② 3/32" exhaust orifice. ③ Viscosity 50 SSU max. ④ Aluminum body. ⑤ 12-24V DC. ⑥ 24-120V AC/DC, 100-240V AC/DC.

## 4-Way Specifications (Metric units)

| Pipe Size<br>(in)                                                                                                                                                          | Orifice Dia.<br>(mm) | Kv Flow Factor<br>(m³/h) |       | Operating Pressure Differential (bar) |                        |    |      | Max. Fluid Temp. °C | Brass       | Const. Ref. | Agency<br>UL | 316L Stainless Steel | Const. Ref. | Agency<br>UL | Wattage |       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------|-------|---------------------------------------|------------------------|----|------|---------------------|-------------|-------------|--------------|----------------------|-------------|--------------|---------|-------|
|                                                                                                                                                                            |                      |                          |       | Min.                                  | Max.                   |    |      |                     |             |             |              |                      |             |              | DC      | AC/DC |
|                                                                                                                                                                            |                      | Air-Inert Gas            | Water |                                       | Light Oil<br>@ 300 SSU |    |      |                     |             |             |              |                      |             |              |         |       |
| General Service - Single Solenoid                                                                                                                                          |                      |                          |       |                                       |                        |    |      |                     |             |             |              |                      |             |              |         |       |
| 1/4                                                                                                                                                                        | 1.5 ②                | 0.07                     | 0.07  | 0.7                                   | 10                     | 10 | 10 ③ | 82                  | 8345P001    | 1           | ●            | -                    | -           | -            | 1.2 ⑤   | 1.5 ⑥ |
| 1/4                                                                                                                                                                        | 6.3                  | 0.7                      | 0.86  | 0.7 ①                                 | 17                     | 17 | 17   | 82                  | 8344P070    | 2           | ●            | -                    | -           | -            |         |       |
| 3/8                                                                                                                                                                        | 9.5                  | 1.2                      | 2     | 0.7 ①                                 | 17                     | 17 | 17   | 82                  | 8344P072    | 3           | ●            | -                    | -           | -            |         |       |
| 1/2                                                                                                                                                                        | 9.5                  | 1.2                      | 2     | 0.7 ①                                 | 17                     | 17 | 17   | 82                  | 8344P074    | 3           | ●            | -                    | -           | -            |         |       |
| 3/4                                                                                                                                                                        | 19                   | 4.5                      | 4.8   | 0.7 ①                                 | 17                     | 17 | 17   | 82                  | 8344P076    | 4           | ●            | -                    | -           | -            |         |       |
| 1                                                                                                                                                                          | 19                   | 4.5                      | 4.8   | 0.7 ①                                 | 17                     | 17 | 17   | 82                  | 8344P078    | 4           | ●            | -                    | -           | -            |         |       |
| General Service - 4/2 Dual Solenoid                                                                                                                                        |                      |                          |       |                                       |                        |    |      |                     |             |             |              |                      |             |              |         |       |
| 3/8                                                                                                                                                                        | 9.5                  | 1.2                      | 1.9   | ①                                     | 21                     | 21 | 14   | 82                  | 8344P080    | 5           | ●            | -                    | -           | -            | 1.2 ⑤   | 1.5 ⑥ |
| NAMUR Mount - 3/2, 5/2 Single Solenoid                                                                                                                                     |                      |                          |       |                                       |                        |    |      |                     |             |             |              |                      |             |              |         |       |
| 1/4                                                                                                                                                                        | 6.3                  | 0.74                     | 0.74  | 2.1                                   | 10.3                   | -  | -    | 82                  | EE8551P401④ | 6           | ●            | -                    | -           | -            | 1.2 ⑤   | 1.5 ⑥ |
| 1/4                                                                                                                                                                        | 6.3                  | 0.74                     | 0.74  | 2.1                                   | 10.3                   | -  | -    | 82                  | EE8551P403  | 6           | ●            | EE8551P409           | 6           | ●            | 1.2 ⑤   | 1.5 ⑥ |
| ● = General Purpose Valve. ① 25 psi minimum for light oils. ② 3/32" exhaust orifice. ③ Viscosity 50 SSU max. ④ Aluminum body. ⑤ 12-24V DC. ⑥ 24-120V AC/DC, 100-240V AC/DC |                      |                          |       |                                       |                        |    |      |                     |             |             |              |                      |             |              |         |       |

● = General Purpose Valve. ① 25 psi minimum for light oils. ② 3/32" exhaust orifice. ③ Viscosity 50 SSU max. ④ Aluminum body. ⑤ 12-24V DC. ⑥ 24-120V AC/DC, 100-240V AC/DC.

## Important

A Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and other similar components must be installed in the cylinder lines only.

Refer to Engineering Section for details.

## 4-Way Optional Features Chart

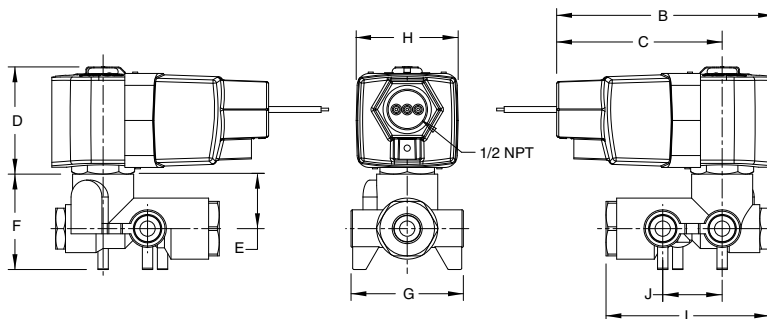
| Pipe Size (in)                 | Orifice Dia. (in) | Base Catalog Number |                 | Resilient Materials and Suffix Options |     |      |    |                |      |          |        | Other           |                  | Standard Rebuild Kit |
|--------------------------------|-------------------|---------------------|-----------------|----------------------------------------|-----|------|----|----------------|------|----------|--------|-----------------|------------------|----------------------|
|                                |                   | Brass               | Stainless Steel | NBR                                    | FKM | EPDM | CR | Oxygen Service | PTFE | Urethane | Vacuum | Manual Operator | Mounting Bracket | Brass                |
| 1/4                            | 1/16              | 8345P001            | -               | ●                                      | V   | -    | -  | -              | -    | -        | -      | MO              | -                | 322925               |
| 1/4                            | 1/4               | EE8551P401*         | -               | ●                                      | -   | -    | -  | -              | -    | -        | -      | MH/MS           | -                | -                    |
| 1/4                            | 1/4               | EE8551P403          | EE8551P409      | ●                                      | -   | -    | -  | -              | -    | -        | -      | MH/MS           | -                | -                    |
| 1/4                            | 1/4               | 8344P070            | -               | ●                                      | V   | -    | -  | -              | -    | -        | -      | MO              | -                | 322696               |
| 3/4                            | 3/4               | 8344P080            | -               | ●                                      | V   | -    | -  | -              | -    | -        | -      | MO              | -                | 322700               |
| 3/8                            | 3/8               | 8344P072            | -               | ●                                      | V   | -    | -  | -              | -    | -        | -      | MO              | -                | 322697               |
| 1/2                            | 3/8               | 8344P074            | -               | ●                                      | V   | -    | -  | -              | -    | -        | -      | MO              | -                | 322697               |
| 3/4                            | 3/4               | 8344P076            | -               | ●                                      | V   | -    | -  | -              | -    | -        | -      | MO              | -                | 322698               |
| 1                              | 3/4               | 8344P078            | -               | ●                                      | V   | -    | -  | -              | -    | -        | -      | MO              | -                | 322698               |
| ● = Standard. * Aluminum body. |                   |                     |                 |                                        |     |      |    |                |      |          |        |                 |                  |                      |

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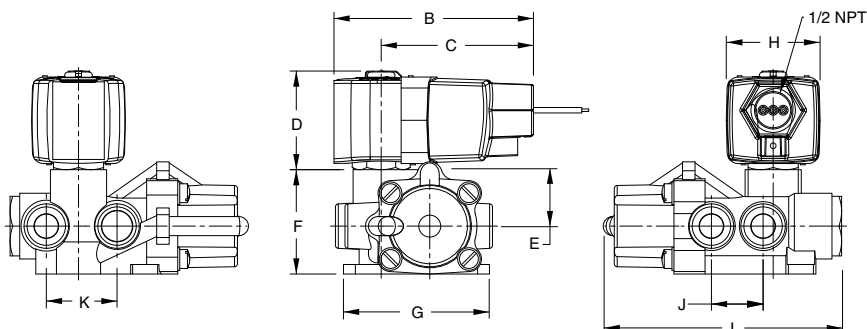
## Dimensions: inches (mm)

| Const. Ref. |    | B    | C    | D    | E    | F    | G    | H    | I    | J    | K    | Exhaust Pipe Size |
|-------------|----|------|------|------|------|------|------|------|------|------|------|-------------------|
| 1           | in | 3.98 | 3.04 | 2.0  | 1.12 | 2.08 | 2.94 | 1.87 | 4.82 | 1.03 | 1.41 | 3/8               |
|             | mm | 101  | 77   | 51   | 28   | 53   | 75   | 48   | 122  | 26   | 112  |                   |
| 2           | in | 3.98 | 3.04 | 2.09 | 1.00 | 1.75 | 2.06 | 1.87 | 3.00 | 1.09 | -    | 1/4               |
|             | mm | 101  | 77   | 53   | 25   | 44   | 52   | 35   | 76   | 28   | -    |                   |
| 3           | in | 3.98 | 3.04 | 2.0  | 0.94 | 2.06 | 3.18 | 1.87 | 6.05 | 1.50 | 1.86 | 1/2               |
|             | mm | 101  | 77   | 51   | 24   | 52   | 81   | 48   | 154  | 38   | 47   |                   |
| 4           | in | 3.98 | 3.04 | 2.0  | 1.31 | 2.86 | 4.12 | 1.87 | 8.25 | 2.10 | 2.12 | 1                 |
|             | mm | 101  | 77   | 51   | 33   | 73   | 105  | 48   | 210  | 53   | 54   |                   |

Const. Ref. 1



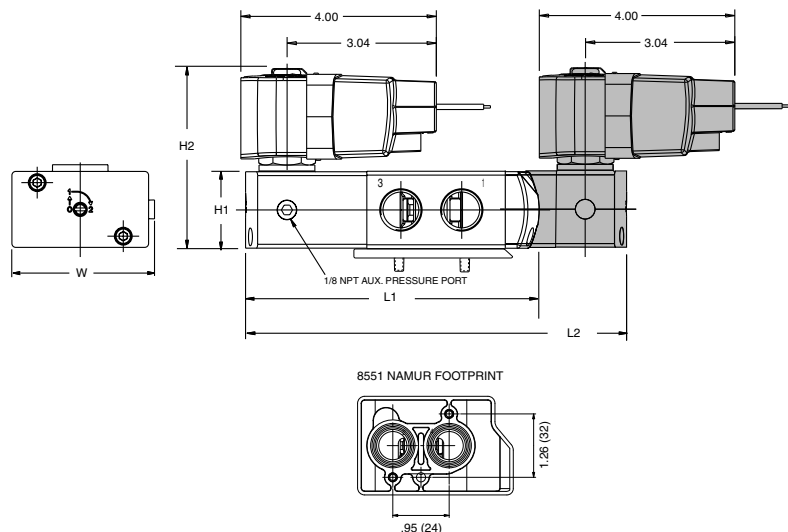
Const. Ref. 2



**ELECTRONICALLY  
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**Const. Ref. 6**

| Optional Manual Operators |  |                                                       |
|---------------------------|--|-------------------------------------------------------|
| Add Suffix                |  | Description                                           |
| MO                        |  | Push and turn to lock with flat head screwdriver slot |
| MI                        |  | Momentary push in with flat head screwdriver slot     |
| MH                        |  | Momentary push in by hand                             |
| MS                        |  | Push and turn to lock by hand                         |



### Electronically Enhanced Solenoids (Next Generation)

All RedHat Next Generation solenoid valves are rated for continuous duty under the operating conditions outlined within this section.

#### Coil Operating Voltage Ranges

All coils are designed for industrial operating voltages and can be used on the following voltage ranges:

| Voltage Range          | Minimum Voltage | Maximum Voltage |
|------------------------|-----------------|-----------------|
| 100-240V/50 or 60Hz/DC | 85              | 264             |
| 24-120V/50 or 60Hz/DC  | 20.4            | 132             |
| 12-24/DC only          | 10.4            | 26.4            |

The coils with voltage ranges of 100-240 and 24-120 have three lead wires, 24 inches long (2 red for power input, and one green lead for grounding where necessary). These two versions are not polarity sensitive.

The coil with a voltage range of 12-24/DC has 3 lead wires, one red, one black, and one green. This coil is polarity sensitive. The red lead is the positive, black is the negative, and green is the ground wire. This solenoid is also polarity protected. Reversing the polarity will not damage the coil, but the coil will not function until the correct polarity is applied.

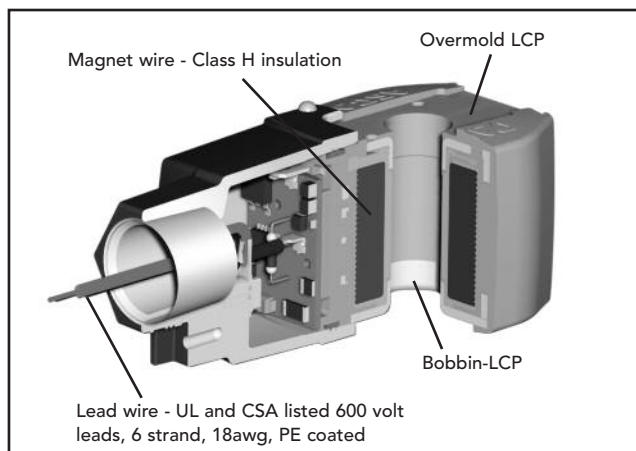
**Note:** The 100-240 voltage range is also suitable for battery charging circuits designed around a 125/DC nominal voltage range.

### Electrical Specifications

| 2 Watt Electronic Coils           | Type                |
|-----------------------------------|---------------------|
| Maximum Ambient Temperature       | 140°F               |
| Maximum Cycle Rate                | 1 Operation/ Second |
| Standard Coil Class of Insulation | H                   |

### Power Consumption

The Next Generation solenoid power rating is 1.2 watt of power for 12-24V DC and 1.5 watts for 24-120V AC/DC, and 100-240V AC/DC.



The advanced technology used in the Next Generation coil includes electronic circuitry which may limit the compatibility with certain control system components. The following issues need to be considered when specifying an output card or device to operate the Next Generation coil. An initial inrush current spike is drawn by the Next Generation coil. This inrush spike is 72 msec in duration, which is sufficient time for the core to reach the plugnut. The electrical requirement then drops to the holding value.

**Inrush Current:** The power source, wiring, and output device used need to have surge ratings equal to or greater than the inrush current value (appropriate to the voltage range) specified in the table below.

| Inrush Current Rating    |                            |
|--------------------------|----------------------------|
| Coil Version             | Peak Inrush Current (Amps) |
| 12-24/DC                 | 3.2                        |
| 24-120/50-60Hz/DC        | 1.4                        |
| 100-240/50-60Hz/DC       | 0.32                       |
| Maximum Duration = 72 ms |                            |

**Holding Current:** The power source, wiring, and output device used need to have continuous current ratings equal to or greater than the holding current value (appropriate to the voltage range) specified in the table below.

| Holding Current Rating |               |                                |                                |
|------------------------|---------------|--------------------------------|--------------------------------|
| Coil Version           | Input Voltage | Average Holding Current (Amps) | Average Holding Volt-Amps (VA) |
| 12-24/DC               | 12            | 0.230                          | 2.8                            |
|                        | 24            | 0.190                          | 4.5                            |
| 24-120/50-60Hz/DC      | 24            | 0.140                          | 3.4                            |
|                        | 120           | 0.070                          | 8.8                            |
| 100-240/50-60Hz/DC     | 100           | 0.044                          | 4.4                            |
|                        | 240           | 0.032                          | 7.8                            |

### Supervisory/Leakage Currents:

The leakage current is defined as a current that is supplied from an output device when the device is in its off or de-activated state.

The Next Generation coil is suitable for systems using supervisory currents that do not exceed the drop-out currents noted in the table below.

| Supervisory/Leakage Current Rating                                                                                                                                                  |                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Coil Version                                                                                                                                                                        | Drop-out Current (mA) |
| 12-24/DC                                                                                                                                                                            | 20                    |
| 24-120/50-60Hz/DC                                                                                                                                                                   | 15                    |
| 100-240/50-60Hz/DC                                                                                                                                                                  | 7                     |
| <b>Important: Supervisory and leakage currents above the drop-out current listed with cause improper operation. Consult your local ASCO Sales office for additional assistance.</b> |                       |

### Solenoid Enclosures

The Next Generation solenoid coil is fully encapsulated using Dupont™ Zenite® Liquid Crystal Polymer resin (LCP). Zenite (LCP) is a thermoplastic polyester resin which exhibits several advantages over other thermoplastics. The advantages include excellent resistance to a wide range of organic solvents and automotive fluids\*, resistance to impact, and long term retention of properties at continuous-use temperatures.

\*Chemical resistance of Zenite LCP may not be suitable for all applications. Zenite LCP is not suitable for caustic solution. *Please consult ASCO for appropriate product solutions.*

Zenite is a registered Trademark of Dupont Co.



### RedHat Next Generation Solenoids are available as:

**General Purpose/Watertight** – Intended for indoor and outdoor use and provides protection classifications from NEMA Types 1 through 4X.

**Class I, Division 2 for Hazardous Locations/Watertight** – Meets Types 1 through 4X and is UL listed and CSA certified for Class I, Division 2, Groups A, B, C, and D and Class II, Division 2, Groups F and G. Operating temperature code T4A (120°C).

### Valve Specifications

#### Maximum Ambient Temperature

The maximum ambient temperature is 140°F (60°C). This limit is based on continuous energization with the maximum fluid temperatures as shown on each catalog page.

#### Response Time

Response time from fully closed to fully open or vice versa depends on valve size, operating mode, fluids, temperature, inlet pressure, and pressure drop. The response times for Next Generation are defined as:

Small direct acting valves – 10 to 60 msec

Large direct acting valves – 25 to 90 msec

#### Internally pilot operated valves:

- Small diaphragm types – 20 to 100 msec
- Large diaphragm types – 80 to 150 msec
- Small piston types – 80 to 150 msec
- Large piston types – 105 to 200 msec

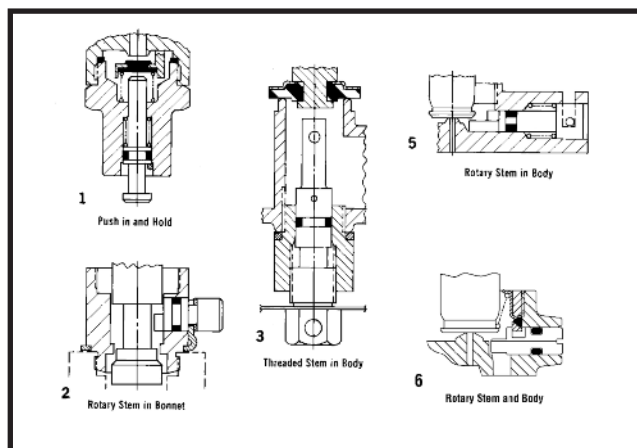
Operation on liquids has relatively little effect on small direct acting valves, however, response times of large direct acting and internally piloted valves may be lengthened by 50% to 100%.

### Manual Operators

Manual operators are provided to operate the valves manually when electric actuation is not provided. There are two basic types of manual operators, momentary and maintained. To determine which type of manual operator is available for your valves, please see the Optional Features Chart on the relevant valve catalog page. Once it is determined that the subject valve can accommodate a manual operator, the chart below will tell you the type of manual operator. The chart also references the relevant cutaway illustration.

| Series Number | Const. Ref.      | Manual Operator Suffix | Manual Operator Type | Illustration Number |
|---------------|------------------|------------------------|----------------------|---------------------|
| 8030          | 8                | MO                     | Maintained           | 3                   |
| 8210          | 4, 7, 10, 11, 12 | MO                     | Maintained           | 2                   |
| 8262          | 1                | MS                     | Maintained           | 6                   |
| 8263          | 1                | MS                     | Maintained           | 6                   |
| 8314          | 1                | MS                     | Maintained           | 6                   |
| 8316          | 5, 6             | MO                     | Maintained           | 2                   |
| 8320          | 2                | MO                     | Momentary            | 1                   |
| 8320          | 2                | MS                     | Maintained           | 6                   |
| 8321          | 4                | MO                     | Momentary            | 1                   |
| 8321          | 4                | MS                     | Maintained           | 3                   |
| 8344          | 1, 3, 4          | MO                     | Maintained           | 2                   |
| 8345          | 2                | MO                     | Maintained           | 5                   |

### Cutaway Illustrations



| Valve Parts in Contact with Fluids |                     |                 |             |            |                              |              |
|------------------------------------|---------------------|-----------------|-------------|------------|------------------------------|--------------|
| Series                             | Body                | Seals and Discs | Disc Holder | Core Guide | Springs                      | Shading Coil |
| 8030                               | Brass               | NBR             | -           | -          | 302 Stainless Steel          | Copper       |
| 8210                               | 304 Stainless Steel | NBR             | -           | -          | 302 Stainless Steel          | Silver       |
|                                    | Brass               | NBR             | ①           | -          | 302 Stainless Steel          | Copper       |
| 8223                               | 304 Stainless Steel | PTFE, NBR       | -           | -          | 302 Stainless Steel          | Silver       |
|                                    | Brass               | NBR, PA, PTFE   | -           | -          | 302 Stainless Steel          | Copper       |
| 8262                               | 304 Stainless Steel | NBR             | -           | -          | 302 Stainless Steel          | Silver       |
| 8262P261                           | 304 Stainless Steel | UR              | -           | -          | 302 Stainless Steel          | Silver       |
| 8262R099                           | 304 Stainless Steel | UR              | -           | -          | 302 Stainless Steel          | Silver       |
| 8262R107                           | 304 Stainless Steel | UR              | -           | -          | 302 Stainless Steel          | Silver       |
| 8262R175                           | 304 Stainless Steel | UR              | -           | -          | 302 Stainless Steel          | Silver       |
| 8262R178                           | 304 Stainless Steel | UR              | -           | -          | 302 Stainless Steel          | Silver       |
| 8262                               | Brass               | NBR             | -           | -          | 302 Stainless Steel          | Copper       |
| 8262R077                           | Brass               | LT NBR          | -           | -          | Inconel                      | Copper       |
| 8262R078                           | Brass               | LT NBR          | -           | POM        | Inconel                      | Copper       |
| 8263                               | 304 Stainless Steel | NBR             | -           | -          | 302 Stainless Steel          | Silver       |
| 8263                               | Brass               | NBR             | -           | -          | 302 Stainless Steel          | Copper       |
| 8314                               | 304 Stainless Steel | NBR, FKM        | -           | POM        | 302 Stainless Steel          | Silver       |
| 8314                               | Brass               | NBR, FKM        | -           | POM        | 302 Stainless Steel          | Copper       |
| 8316                               | Brass               | NBR             | POM         | POM        | 302, 17-7PH Stainless Steels | Copper       |
| 8317                               | Brass               | NBR, FKM, CR    | -           | POM        | 302, 17-7PH Stainless Steels | Copper       |
| 8320                               | 303 Stainless Steel | NBR             | POM         | POM        | 302 Stainless Steel          | Silver       |
| 8320                               | Brass               | NBR             | POM         | POM        | 302 Stainless Steel          | Copper       |
| 8321                               | Brass               | NBR             | POM         | POM        | 302 Stainless Steel          | Copper       |
| 8344                               | Brass               | NBR             | POM         | POM        | 302, 17-7PH Stainless Steels | Copper       |
| 8345                               | Brass               | NBR, PA         | -           | POM        | 302 Stainless Steel          | Copper       |
| 8551                               | 316 Stainless Steel | NBR, PA         | -           | POM        | 302 Stainless Steel          | Copper       |
| 8551                               | Anodized Aluminum   | NBR, PA         | -           | POM        | 302 Stainless Steel          | Copper       |

Note: All core tubes are 305 stainless steel and all cores and plugnuts are 430F stainless steel. ① 8210P033, 8210P034, and 8210P035 with PA Disc Holder