

# 2-Way

## Anti-Water Hammer & Slow Closing Valves 3/8" - 2" NPT



2-Way

### General Description:

2-way Anti-Water Hammer and Slow Closing valves are designed for liquid applications where the installation is susceptible to shock waves caused by the abrupt closing of the valves. Anti-water hammer valves have integral speed control so that the valve closes in a more controlled and slower manner, thus eliminating the shock to the system piping. Pilot operated valves require the minimum pressure differential specified for proper valve operation.

#### Installation

Valves should be mounted with solenoid coils vertical and upright.

#### Standard Materials of Construction

Please refer to page A80

#### Compatible Fluids

Water, hydraulic fluids and other non-compressible media.

### Electrical Characteristics:

#### Standard Voltages:

AC -24/60

120/60-110/50

240/60-220/50

DC -12, 24 & 120

For other voltages - consult factory



#### Coil Classification:

Class F standard

Class H available

#### Agency Approvals:

Standard valves with NEMA 4X or explosion proof solenoid enclosures are UL Listed and CSA Certified. For additional details, consult factory

#### Maximum Ambient Temperature

150°F

Please refer to page A80 for details.

### Applications:

- Used in applications on water or other non-compressible liquids where normal operation may cause a 'water hammer' effect which results in shockwaves to the system that can damage the piping or other components.

## 2-Way Pilot Operated - Anti-Water Hammer - Normally Closed - Brass

| Port Size<br>NPT                   | Orifice Size<br>in. | Flow Factor<br>Cv | Operating Pressure Differential (MOPD) PSI |  | Watt | Max. Media Temp.<br>°F | Seal | Pressure Vessel Number** | Reference |       |
|------------------------------------|---------------------|-------------------|--|--|------|------------------------|------|--------------------------|-----------|-------|
|                                    |                     |                   | Min.                                       | Water and other non-compressible media |      |                        |      |                          | Coil      | Valve |
| <b>AC TECHNICAL SPECIFICATIONS</b> |                     |                   |  |  |      |                        |      |                          |           |       |
| 3/8                                | 7/16                | 2.5               | 3  | 150                                    | 10   | 185                    | NBR  | 7321KBN3SNW0             | 7         | A66   |
| 1/2                                | 7/16                | 2.5               | 3  | 150                                    | 10   | 185                    | NBR  | 7321KBN4SNW0             | 7         | A66   |
| 3/4                                | 19/32               | 5.5               | 0  | 230                                    | 10   | 185                    | NBR  | 7221GBN51NC0*            | 7         | A67   |
| 3/4                                | 25/32               | 9.6               | 5  | 230                                    | 10   | 185                    | NBR  | 7321GBN53NMC             | 7         | A68   |
| 1                                  | 1                   | 12.5              | 5  | 230                                    | 10   | 185                    | NBR  | 7321GBN64NMC             | 7         | A68   |
| 1                                  | 1                   | 11.7              | 0  | 230                                    | 10   | 185                    | NBR  | 7221GBN64NC0*            | 7         | A67   |
| 1 1/4                              | 1 1/8               | 19.3              | 5  | 230                                    | 10   | 185                    | NBR  | 7321GBN76NMC             | 7         | A68   |
| 1 1/2                              | 1 9/16              | 29.0              | 5  | 230                                    | 10   | 185                    | NBR  | 7321GBN88NMC             | 7         | A68   |
| 2                                  | 1 9/16              | 38.6              | 5  | 230                                    | 10   | 185                    | NBR  | 7321GBN99NMC             | 7         | A68   |
| <b>DC TECHNICAL SPECIFICATIONS</b> |                     |                   |  |  |      |                        |      |                          |           |       |
| 3/8                                | 7/16                | 2.5               | 3  | 150                                    | 22   | 185                    | NBR  | 7321KBN3SNW0             | 8         | A66   |
| 3/8                                | 7/16                | 2.5               | 3  | 60                                     | 10   | 185                    | NBR  | 7321KBN3SNW0             | 7         | A66   |
| 1/2                                | 7/16                | 2.5               | 3  | 150                                    | 22   | 185                    | NBR  | 7321KBN4SNW0             | 8         | A66   |
| 1/2                                | 7/16                | 2.5               | 3  | 60                                     | 10   | 185                    | NBR  | 7321KBN4SNW0             | 7         | A66   |
| 3/4                                | 3/4                 | 9.6               | 5  | 230                                    | 10   | 185                    | NBR  | 7321GBN53NMC             | 7         | A68   |
| 3/4                                | 19/32               | 5.5               | 0  | 100                                    | 22   | 185                    | NBR  | 7221GBN51NC0*            | 8         | A67   |
| 1                                  | 1                   | 12.5              | 5  | 230                                    | 10   | 185                    | NBR  | 7321GBN64NMC             | 7         | A68   |
| 1                                  | 1                   | 11.7              | 0  | 85                                     | 22   | 185                    | NBR  | 7221GBN64NC0*            | 8         | A67   |
| 1 1/4                              | 1 1/8               | 19.3              | 5  | 230                                    | 10   | 185                    | NBR  | 7321GBN76NMC             | 7         | A68   |
| 1 1/2                              | 1 9/16              | 29.0              | 5  | 230                                    | 22   | 185                    | NBR  | 7321GBN88NMC             | 8         | A68   |
| 1 1/2                              | 1 9/16              | 29.0              | 5  | 200                                    | 10   | 185                    | NBR  | 7321GBN88NMC             | 7         | A68   |
| 2                                  | 1 9/16              | 38.6              | 5  | 230                                    | 22   | 185                    | NBR  | 7321GBN99NMC             | 8         | A68   |
| 2                                  | 1 9/16              | 38.6              | 5  | 200                                    | 10   | 185                    | NBR  | 7321GBN99NMC             | 7         | A68   |

\* These are direct lift valves that will open at zero pressure differential, but not fully open until approximately 5 psi differential is achieved.

\*\* Mechanical Options indicated in pressure vessel catalog number (eleventh and twelfth digits) are as follows:  
C0=four-step adjustable closing, MC>manual override with four-step adjustable closing, W0=non-adjustable control



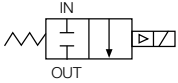
**2-Way Pilot Operated - Anti-Water Hammer - Normally Open - Brass**

| Port Size<br>NPT                   | Orifice Size<br>in. | Flow Factor<br>Cv | Operating Pressure Differential (MOPD) PSI |  | Watt | Max. Media Temp.<br>°F | Seal | Pressure Vessel Number** | Reference |       |  |
|------------------------------------|---------------------|-------------------|--|--|------|------------------------|------|--------------------------|-----------|-------|--|
|                                    |                     |                   | Min.                                       | Water and other non-compressible media |      |                        |      |                          | Coil      | Valve |  |
| <b>AC TECHNICAL SPECIFICATIONS</b> |                     |                   |  |  |      |                        |      |                          |           |       |  |
| 3/4                                | 25/32               | 9.6               | 5  | 230                                    | 10   | 185                    | NBR  | 7322GBN53NC0             | 7         | A68   |  |
| 1                                  | 1                   | 12.5              | 5  | 230                                    | 10   | 185                    | NBR  | 7322GBN64NC0             | 7         | A68   |  |
| 1 1/4                              | 1 1/8               | 19.3              | 5  | 230                                    | 10   | 185                    | NBR  | 7322GBN76NC0             | 7         | A68   |  |
| 1 1/2                              | 1 9/16              | 29.0              | 5  | 170                                    | 10   | 185                    | NBR  | 7322GBN88NC0             | 7         | A68   |  |
| 2                                  | 1 9/16              | 38.6              | 5  | 170                                    | 10   | 185                    | NBR  | 7322GBN99NC0             | 7         | A68   |  |
| <b>DC TECHNICAL SPECIFICATIONS</b> |                     |                   |  |  |      |                        |      |                          |           |       |  |
| 3/4                                | 25/32               | 9.6               | 5  | 230                                    | 10   | 185                    | NBR  | 7322GBN53NC0             | 7         | A68   |  |
| 1                                  | 1                   | 12.5              | 5  | 230                                    | 10   | 185                    | NBR  | 7322GBN64NC0             | 7         | A68   |  |
| 1 1/4                              | 1 1/8               | 19.3              | 5  | 230                                    | 10   | 185                    | NBR  | 7322GBN76NC0             | 7         | A68   |  |
| 1 1/2                              | 1 9/16              | 29.0              | 5  | 170                                    | 10   | 185                    | NBR  | 7322GBN88NC0             | 7         | A68   |  |
| 2                                  | 1 9/16              | 38.6              | 5  | 170                                    | 10   | 185                    | NBR  | 7322GBN99NC0             | 7         | A68   |  |

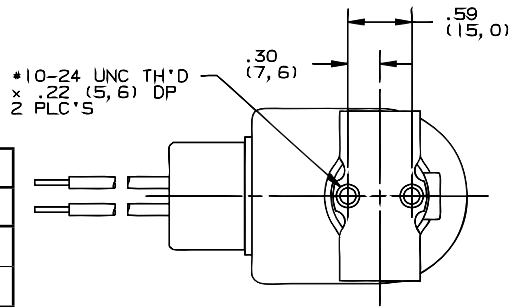
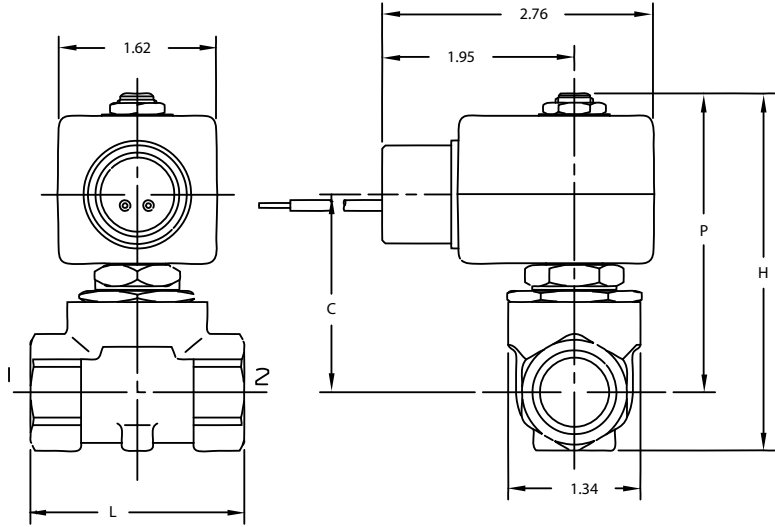
**\*\*Mechanical Options indicated in pressure vessel catalog number (eleventh and twelfth digits) are as follows: C0=four-step adjustable closing, MC>manual override with four-step adjustable closing, W0=non-adjustable control**

| Response Time |                              |                              |
|---------------|------------------------------|------------------------------|
| Valve Type    | Opening Time Range (Seconds) | Closing Time Range (Seconds) |
| 7221GBN51NC0  | 0.03                         | 0.2-1.7                      |
| 7221GBN64NC0  | 0.07-0.17                    | 0.5-4.0                      |
| 7321KBN3SNW0  | 0.015                        | 0.85                         |
| 7321KBN4SNW0  | 0.015                        | 0.85                         |
| 7321GBN53NMC  | 0.1 - 0.25                   | 0.6-4.5                      |
| 7321GBN64NMC  | 0.1 - 0.25                   | 0.6-4.5                      |
| 7321GBN76NMC  | 0.2 - 0.5                    | 0.8-5.8                      |
| 7321GBN88NMC  | 0.2 - 0.4                    | 1.5-9.0                      |
| 7321GBN99NMC  | 0.25 - 0.45                  | 1.5-9.5                      |
| 7322GBN53NC0  | 0.1 - 0.25                   | 0.6-4.5                      |
| 7322GBN64NC0  | 0.1 - 0.25                   | 0.6-4.5                      |
| 7322GBN76NC0  | 0.2 - 0.5                    | 0.8-5.8                      |
| 7322GBN88NC0  | 0.2 - 0.4                    | 1.5-9.0                      |
| 7322GBN99NC0  | 0.25 - 0.45                  | 1.5-9.5                      |

## Valve Reference A66

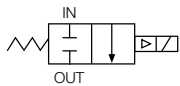


2-Way Normally Closed  
 Port Identification:  
 Flow arrow on body  
 indicates flow direction  
 ports are not marked

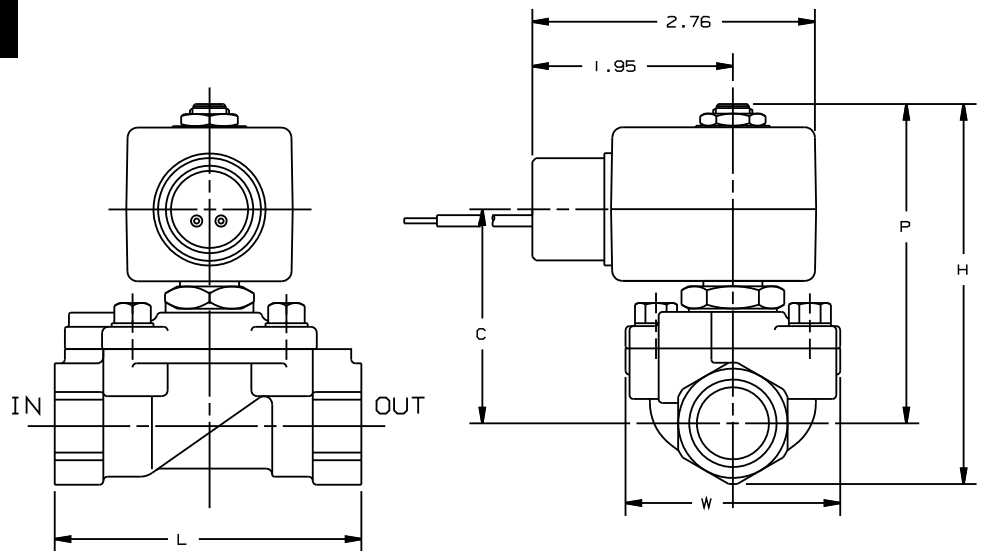


| Valve        | Dimensions |      |      |      |
|--------------|------------|------|------|------|
|              | H          | P    | C    | L    |
| 7321KBN3SNW0 | 3.56       | 2.97 | 1.96 | 2.17 |
| 7321KBN4SNW0 | 3.56       | 2.97 | 1.96 | 1.97 |

## Valve Reference A67



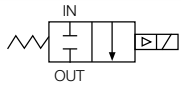
2-Way Normally Closed  
 Port Identification:  
 Flow arrow on body  
 indicates flow direction  
 ports are not marked



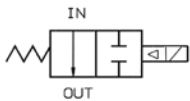
| Valve        | Dimensions |      |      |      |      |
|--------------|------------|------|------|------|------|
|              | H          | P    | C    | L    | W    |
| 7221GBN51XXX | 3.75       | 3.07 | 2.06 | 3.15 | 2.09 |
| 7221GBN64XXX | 4.25       | 3.35 | 2.34 | 3.94 | 2.75 |



# Valve Reference A68

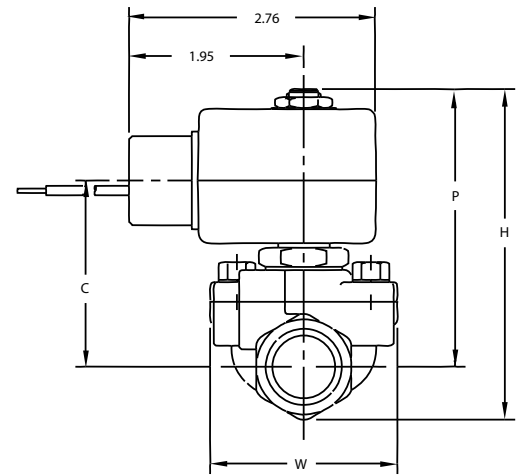
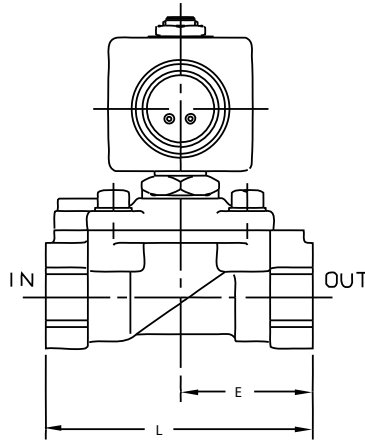


2-Way Normally Closed  
7321GBNxx



2-Way Normally Open  
7322GBNxx

Port Identification:  
Flow arrow on body indicates flow  
direction ports are not marked



2-Way

| Valve                        | Dimensions |      |      |      |      |      |
|------------------------------|------------|------|------|------|------|------|
|                              | H          | P    | C    | L    | E    | W    |
| 7321GBN53NMC<br>7322GBN53NCO | 4.75       | 3.86 | 2.84 | 3.94 | 1.97 | 2.75 |
| 7321GBN64NMC<br>7322GBN64NCO | 5.41       | 4.11 | 3.09 | 4.33 | 2.17 | 2.75 |
| 7321GBN88NMC<br>7322GBN88NCO | 5.66       | 4.37 | 3.35 | 5.51 | 2.95 | 3.90 |
| 7321GBN99NMC<br>7322GBN99NCO | 6.25       | 4.60 | 3.58 | 5.91 | 3.15 | 3.90 |

