

# Considerations When Specifying a Solenoid Valve



# Valve Considerations

Solenoid valves control the flow of liquid or gas media in all types of systems and products by allowing media flow when electrically energized or de-energized. These direct acting valves are used to shut off, release, dose, distribute or mix fluids or gasses and may have two or more ports to accomplish the task. Two-way solenoid valves have one inlet and one outlet port and a single orifice while three-way valves have three port connections and two valve orifices.



## Valve Functions

**Do you need a 2-Way on/off or a multi-port (3 way) valve?**

**Is it normally closed or normally open?**

**Will the valve operate on short or long cycle times?**

## Media Type

**What type of gas or liquid is moving through the valve?**

Air or inert gas systems may have traces of oils or other chemicals that might affect valve components like seals and body alloy.

## Flow Rate

**What is the approximate desired flow rate of the media?**

Calculate the Flow Coefficient (Cv). Formulas are available online. Flow rates can be achieved through the combination of valve components including port and orifice size, applied pressure and more.

## Available Power

**Does the valve need to operate at a specific wattage?**

**Does it run off battery power?**

**Is energy conservation an imperative?**

Conserving energy can be accomplished through a variety method including the selection of orifice size and pressures as well as using magnetic latching.

## Operating Environments

**Will the valve operate in high temperature, a corrosive or high vibration environment, with limited energy availability or limited space, or will it require specific agency approvals?**

Environmental issues directly affect the selection of valve's components.

## Connections

**What is the inlet size (port) and type?**

**What type of electrical connection is required... spades, leads, DIN, conduit?**

## Other Considerations

### Multiple Lines

**Does your system incorporate more than one line?**

**Are there multiple controls or operations needing valves?**

Incorporating a manifold systems may be the most efficient solution to controlling multiple lines.



### Valve Assembly

**Based on the requirements of your system, might it be beneficial to outsource some subassembly operations?**

Having your valves ship complete with all its components clocked to precise angle to fit your space, connections sealed and torqued properly, and electrical leads are terminated ready for finished assembly.

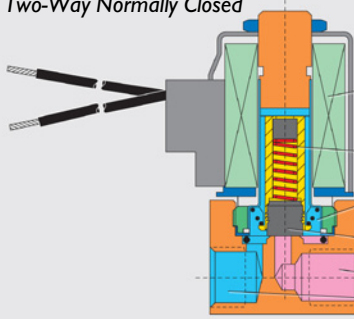
### Supply Options

**Need your valves delivered every two weeks, all at once or to have your inventory managed?**

An almost unlimited number of supply options are available to ease your initial investment or maximize your available space. Whatever you need.

# Valve Components and Configurations

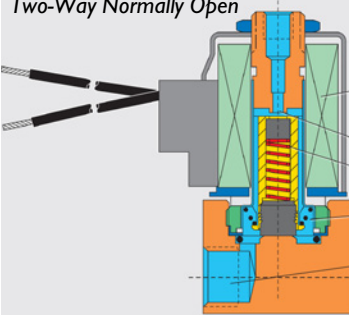
## Two-Way Normally Closed



### General Information

- Conserves Energy** – Low wattage coil results in less current drain. Available for both AC and DC service.
- Compact Size** – Fits in tight compartment areas.
- Coil Construction** – Molded is standard for all voltages (Nema 4/4x). A full wave rectifier is standard on AC voltages for 3-way valves.
- Compensated Plunger** – Spring loaded top seal for greater cycle life.
- Plunger Return Spring** – Stainless steel, provides positive plunger return regardless of mounting position.
- Body Orifice Seat** is machined as part of body, guaranteeing leakproof internal structure.
- Orifice Port** – (under seat)
- Cavity Port** – (over seat)

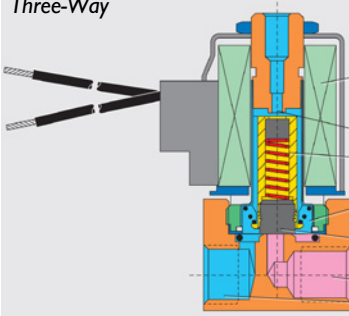
## Two-Way Normally Open



### General Information

- Conserves Energy** – Low wattage coil results in less current drain. Available for both AC and DC service.
- Compact Size** – Fits in tight compartment areas.
- Coil Construction** – Molded is standard for all voltages (Nema 4/4x). A full wave rectifier is standard on AC voltages for 3-way valves.
- Stop Orifice**
- Compensated Plunger** – Spring loaded top seal for greater cycle life.
- Plunger Return Spring** – Stainless steel, provides positive plunger return regardless of mounting position.
- Cavity Port**

## Three-Way



### General Information

- Conserves Energy** – Low wattage coil results in less current drain. Available for both AC and DC service.
- Compact Size** – Fits in tight compartment areas.
- Coil Construction** – Molded is standard for all voltages (Nema 4/4x). A full wave rectifier is standard on AC voltages for 3-way valves.
- Stop Orifice**
- Compensated Plunger** – Spring loaded top seal for greater cycle life.
- Plunger Return Spring** – Stainless steel, provides positive plunger return regardless of mounting position.
- Body Orifice Seat** is machined as part of body, guaranteeing leakproof internal structure.
- Orifice Port** – (under seat)
- Cavity Port** – (over seat)

### ! WARNING !

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH. PERSONAL INJURY AND/OR PROPERTY DAMAGE.

This document and other information from Solenoid Solutions, Inc. provides product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current catalog. Due to the variety of operation conditions and applications for these products or systems, the user, through his own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

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