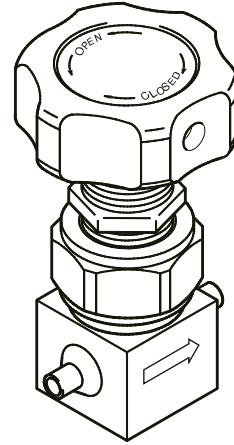


DL Series (Lever Handle) Valve



DS Series (Round Handle) Valve

Valves are shown with tube butt weld ends. These instructions also apply to DL or DS series valves with any end connection.

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## Contents

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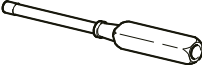

## Definitions

**⚠ CAUTION**  
Statements that identify conditions or practices that could result in damage to the equipment or other property.

**⚠ WARNING**  
Statements that identify conditions or practices that could result in personal injury or loss of life.

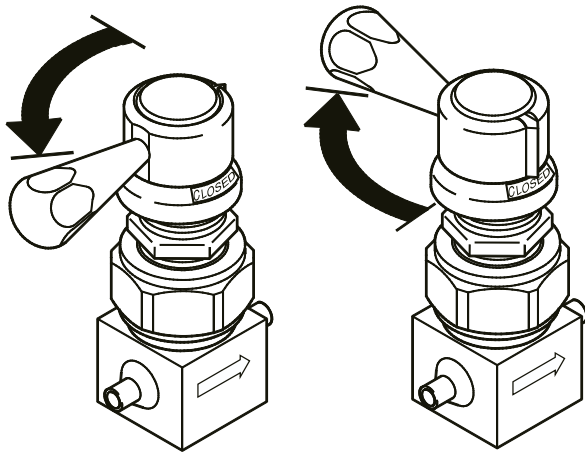


## Tool Requirements

| Part         | Tool  | Size                          |
|--------------|---|-------------------------------|
| Bonnet nut   | Crow's foot      | 1 1/8 in.                     |
|              | Torque wrench    | 0 to 600 in.-lb (0 to 67 N·m) |
| Bonnet nut   | Open-end wrench  | 1 1/8 in.                     |
| VCR fittings |   | 3/4 in.                       |
| Panel nut    |   | 7/8 in.                       |
| Cap insert   | Screwdriver      | 1/8 in. blade                 |
| Lock nut     | Nut driver       | 11/32 in.                     |
| Set screw    | Hex wrench       | 1/16 in.                      |

## Operation

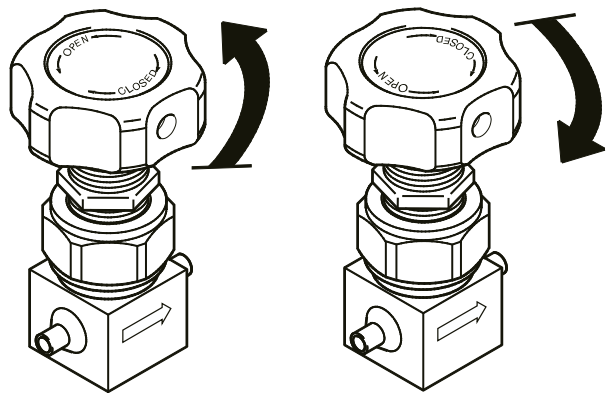
### DL Series (Lever Handle) Valve



Turn counterclockwise  
one quarter turn to OPEN

Turn clockwise  
one quarter turn to CLOSE

### DS Series (Round Handle) Valve



Turn counterclockwise one  
and one half turns to OPEN

Turn clockwise one and one  
half turns to CLOSE

## Installation

### Panel Mounting

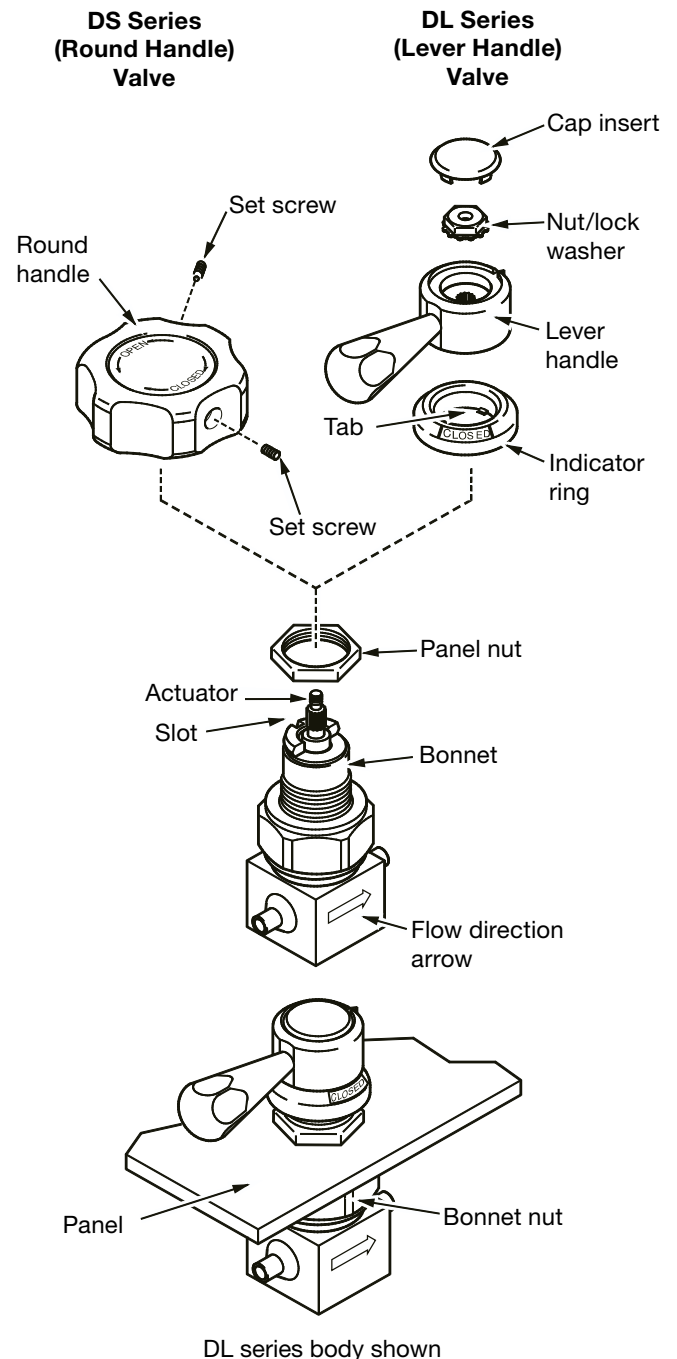
#### DL Series (Lever Handle) Valve

1. Actuate the valve to the OPEN position.
2. Remove the **cap insert** from the **lever handle**.
3. Remove the **nut/lock washer**.
4. Remove the **lever handle**, **indicator ring**, and the **panel nut**.
5. Insert the valve through the **panel**.
6. Orient the valve in the proper flow direction.
9. Install and tighten the **panel nut**.
10. Install the **indicator ring** by aligning the tab on the ring with the slot in the **bonnet**.
11. Invert the **lever handle** onto the **actuator** to prevent the handle stop from engaging. Turn the handle clockwise until it stops to close the valve.
12. Invert the **handle** right side up onto the **actuator** with the arrow pointing near the letter D of the CLOSED marking.
13. Install the **nut/lock washer** and tighten to 20 in.-lb (2.3 N-m) of torque.
14. Install the **cap insert**.
15. See **Testing**.

#### DS Series (Round Handle) Valve

1. Actuate the valve to the OPEN position.
2. Loosen the two **set screws** in the round handle.
3. Remove the **round handle** and **panel nut**.
4. Insert the valve through the **panel**.
5. Orient the valve in the proper flow direction.
6. Install and tighten the **panel nut**.
7. Install the round handle and tighten the **set screws**.
8. See **Testing**.

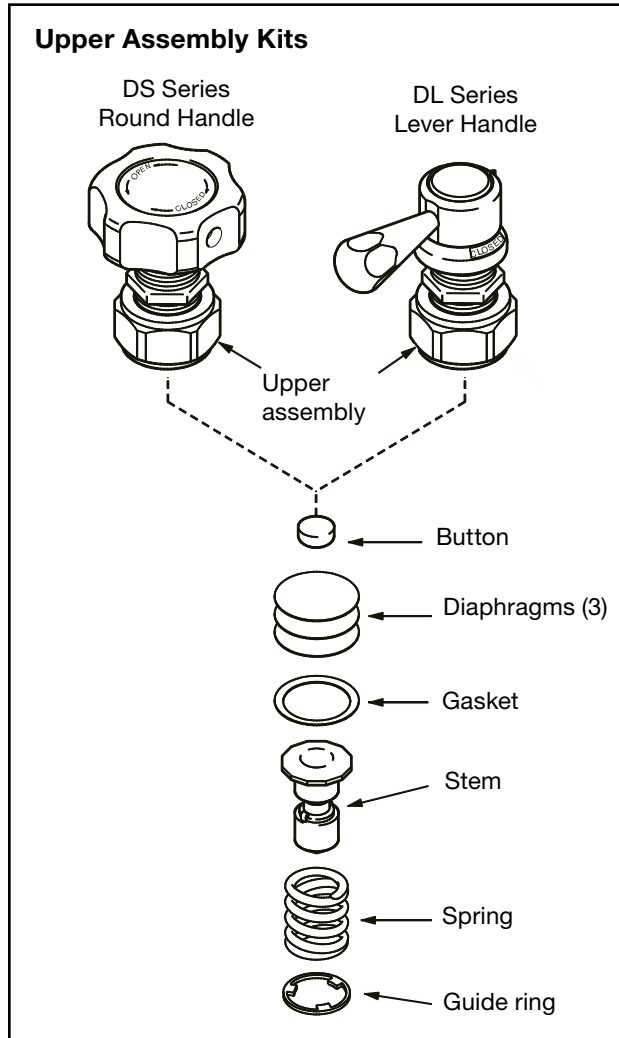
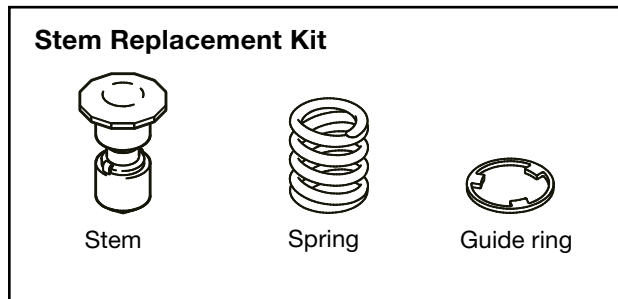
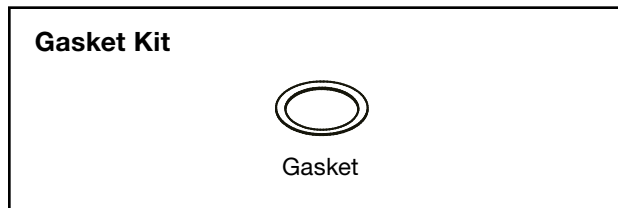
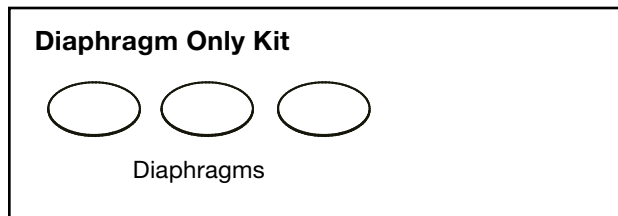
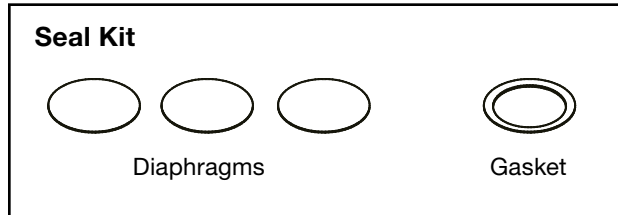
**NOTE: Remove outer bag prior to entering cleanroom. Remove inner bag in cleanroom.**



## Testing

1. With the valve in the OPEN position, verify that flow passes through the valve.
2. With the valve in the CLOSED position, verify that no flow passes through the valve.
3. Leak test the diaphragm seal.
4. Leak test the seat seal.

## Kit Contents

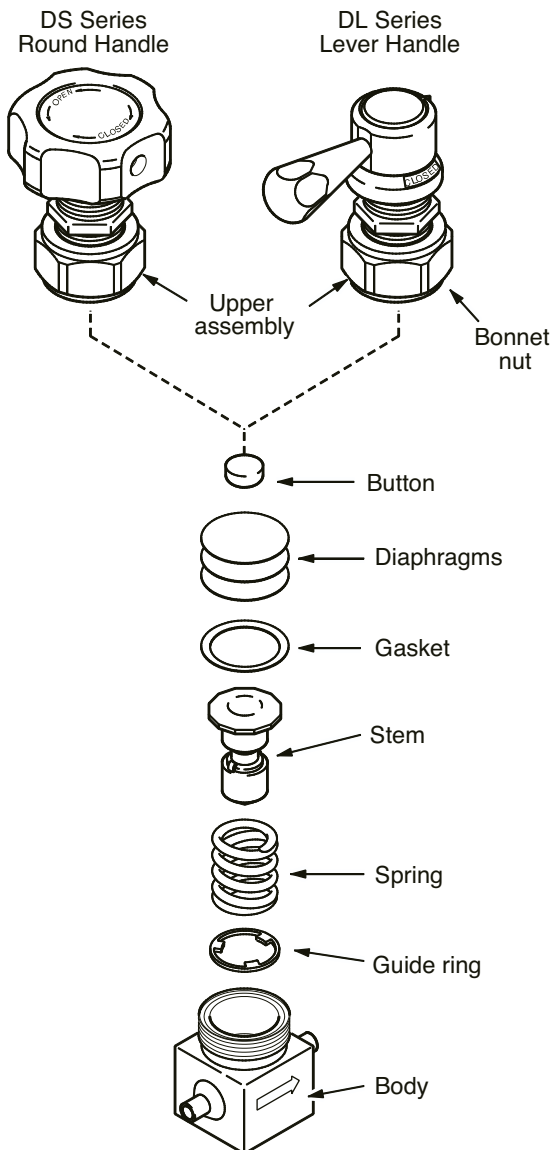


## Replacing Diaphragms, Gasket, Stem, Spring, Body, or Upper Assembly (All Valve Types)

### ⚠ WARNING

Before servicing any installed valve, you must:

- depressurize the system
- cycle the valve
- purge the valve.



**NOTE:** If the valve is disassembled, a new gasket must be installed, and it is recommended new diaphragms be installed.

### Disassembly

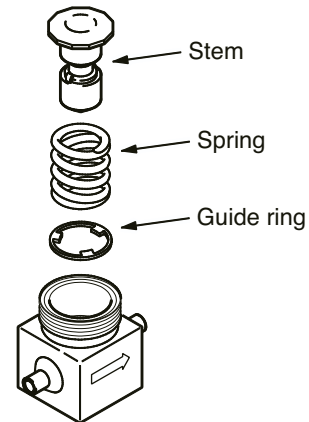
1. If possible, remove the valve from the system.
2. Actuate the valve to the OPEN position.
3. Keeping body stationary, loosen the **bonnet nut** and remove the **upper assembly**.
4. Remove the **button, diaphragms**, and **gasket**.
5. Turn the body upside down and remove the **stem, spring**, and **guide ring**.

### ⚠ CAUTION

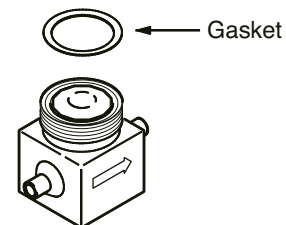
The seal surfaces on the body, stem, and diaphragms must be clean before reassembly. Particles can damage the seat and seal surfaces.

### Reassembly

1. Insert the **guide ring, spring**, and **stem** into the body in the order shown.

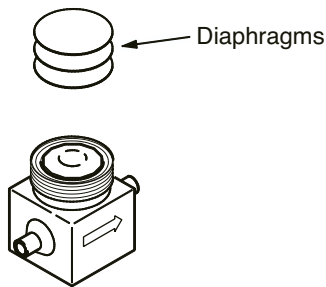


2. Place a new gasket into the body. Hold body in the upright position to keep gasket centered in the body until the bonnet nut has been reassembled and tightened.

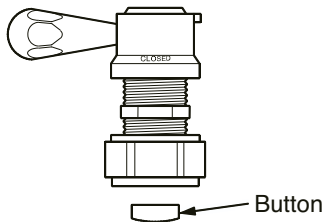


- Center the three **new diaphragms** on top of the stem.

Note: The diaphragms are identical and can be stacked in any order.



- Place the **button** in the cavity of the upper assembly with the round side of the button facing out.

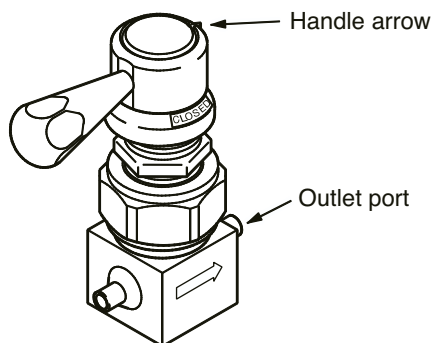


#### ⚠ CAUTION

Use of a PTFE, Polyimide, or PCTFE stem in a valve body previously fitted with a cobalt-based alloy stem can cause seat leakage.

**NOTE:** The upper assembly must be in the **OPEN** position.

- Place the upper assembly on the body. On DL series (lever handle) assemblies only, with the handle in the fully counterclockwise position, align the **handle arrow** with the **outlet port** on the body.



- Hold the upper assembly firmly against the body, and thread the bonnet nut onto the body finger-tight.
- Keeping the body stationary, torque the bonnet nut to 500 in.-lb (56.5 N-m).

**DL series (lever handle) assemblies only (see figure on page 3):**

- Remove the **cap insert** from the **lever handle**.
- Remove the **nut/lock washer**.
- Lift upward on the **lever handle** and remove it.
- Invert the **lever handle** onto the **actuator** to prevent the handle stop from engaging. Turn the **handle** clockwise until it stops to close the valve.
- Invert the **handle** right side up onto the actuator with the arrow pointing near the letter D of the **CLOSED** marking.
- Install the **nut/lock washer** and tighten to 20 in.-lb (2.3 N-m) of torque.
- Install the **cap insert**.
- Turn **handle** clockwise until the valve is **CLOSED** to check for proper handle orientation.
- If repositioning is required, turn the **handle** to the **OPEN** position and loosen **bonnet nut**. Reposition the upper assembly following steps 5, 6, and 7.

**All valves:**

- See **Testing**.

#### Safe Product Selection

When selecting a product the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

#### ⚠ WARNING

Do not mix/interchange Swagelok products or components not governed by industrial design standards, including Swagelok tube fitting end connections, with those of other manufacturers.

Translations available on [www.swagelok.com](http://www.swagelok.com).

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