

# Engineered Valves

## Installation, Operation, and Maintenance Manual

Sample Valves



Provided by:

**Holland**<sup>®</sup>  
**APPLIED TECHNOLOGIES**  
[www.hollandapt.com](http://www.hollandapt.com)  
Phone: 800-800-8464



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# Table of Contents

<b>Introduction and Safety</b> .....	2
Safety message levels .....	2
User health and safety .....	2
<b>Transportation and Storage</b> .....	4
Handling and unpacking guidelines .....	4
Storage, disposal, and return requirements .....	4
<b>Installation</b> .....	5
Install the valve .....	5
<b>Operation</b> .....	6
Operate the valve .....	6
<b>Maintenance</b> .....	7
Inspection .....	7
Disassemble the valve .....	7
Assemble the valve .....	7
<b>Parts Listings and Cross-Sectional Drawings</b> .....	8
Sample valve .....	8

# Introduction and Safety

## Safety message levels

### Definitions

Safety message level	Indication
 <b>DANGER:</b>	A hazardous situation which, if not avoided, will result in death or serious injury
 <b>WARNING:</b>	A hazardous situation which, if not avoided, could result in death or serious injury
 <b>CAUTION:</b>	A hazardous situation which, if not avoided, could result in minor or moderate injury
 <b>Electrical Hazard:</b>	The possibility of electrical risks if instructions are not followed in a proper manner
<b>NOTICE:</b>	<ul style="list-style-type: none"> <li>• A potential situation which, if not avoided, could result in an undesirable result or state</li> <li>• A practice not related to personal injury</li> </ul>

## User health and safety

### General precautions

This product is designed and manufactured using good workmanship and materials, and meets all applicable industry standards. This product should be used only as recommended by an ITT engineer.



#### **WARNING:**

- Misapplication of the valve can result in injury or property damage. Select valves and valve components of the proper materials and make sure that they are consistent with your specific performance requirements. Incorrect application of this product includes but is not limited to:
  - Exceeding the pressure or temperature rating
  - Failing to maintain this product according to the recommendations
  - Using this product to contain or control media that is incompatible with the materials of construction
  - Proper containment or protection from hazardous media must be provided by the end user to protect employees and the environment from valve discharge.

### Qualifications and training

The personnel responsible for the assembly, operation, inspection, and maintenance of the valve must be appropriately qualified. The operating company must do the following tasks:

- Define the responsibilities and competency of all personnel handling this equipment.
- Provide instruction and training.

- Ensure that the contents of the operating instructions have been fully understood by the personnel.

Instruction and training can be carried out by either ITT or the reseller of the valve by order of the operating company.

### **Non-compliance risks**

Failure to comply with all safety precautions can result in the following conditions:

- Death or serious injury due to electrical, mechanical, and chemical influences
- Environmental damage due to the leakage of dangerous materials
- Product damage
- Property damage
- Loss of all claims for damages

### **Operational safety precautions**

Be aware of these safety precautions when operating this product:

- Do not hang items from the product. Any accessories must be firmly or permanently attached.
- Do not use the product as a step or hand hold.
- Do not paint over the identification tag, warnings, notices, or other identification marks associated with the product.

### **Maintenance safety precautions**

Be aware of these safety precautions when performing maintenance on this product:

- You must decontaminate the product if it has been exposed to harmful substances such as caustic chemicals.
- You must immediately fit or reactivate all safety and protective equipment upon completion of work.

### **Use of unauthorized parts**

Reconstruction or modification of the product is only permissible after consultation with ITT. Genuine spare parts and accessories authorized by ITT serve to maintain safety. Use of non-genuine ITT parts can annul liability of the manufacturer for the consequences. ITT parts are not to be used in conjunction with products not supplied by ITT as this improper use can annul all liability for the consequences.

### **Unacceptable modes of operation**

The operational reliability of this product is only guaranteed when it is used as designated. The operating limits given on the identification tag and in the data sheet may not be exceeded under any circumstances. If the identification tag is missing or worn, contact ITT for specific instructions.

# Transportation and Storage

## Handling and unpacking guidelines



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**CAUTION:**

Always observe the applicable standards and regulations regarding the prevention of accidents when handling the product.

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### Handling guidelines

Follow these guidelines when handling the product to prevent damage:

- Use care when handling the product.
- Leave protective caps and covers on the product until installation.

### Unpacking guidelines

Follow these guidelines when unpacking the product:

1. Inspect the package for damaged or missing items upon delivery.
2. Note any damaged or missing items on the receipt and freight bill.
3. If anything is out of order, file a claim with the shipping company.

## Storage, disposal, and return requirements

### Storage

If you are not immediately installing the product after delivery, store it as follows:

- Store the product in a dry room that maintains a constant temperature.
- Make sure that the products are not stacked on top of one another.

### Disposal

Dispose of this product and associated components in compliance with federal, state, and local regulations.

### Return

Ensure these requirements are met before you return a product to ITT:

- Contact ITT for specific instructions on how to return the product.
- Clean the valve of all hazardous material.
- Complete a Material Safety Data Sheet or Process Data Sheet for any process fluid that could remain on the valve.
- Obtain a Return Material Authorization from the factory.

# Installation

## Install the valve

1. Sample valves may be installed in any orientation.
2. In order for the sample valve to fully drain, install the valve in a horizontal orientation with the sample outlet pointing down.
3. Prior to pressurization, ensure that the stem retaining nut is tight  
The stem retaining nut can be found by removing the valve handle closure cap.

# Operation

## Operate the valve



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**CAUTION:**

1. This unit is to be operated by hand. Use of a wrench may yield excessive torque levels, which could damage the valves.
  2. When the process fluid is hazardous or corrosive, extra precautions should be taken. The user should employ appropriate safety devices and should be prepared to control the flow of material through the outlet port.
  3. This valve was not intended for continuous exposure to steam, metering of steam may cause rapid erosion of the seat o-ring seal, leading to shut-off failure. Check regularly for seal wear and replace when necessary.
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**NOTICE:** Maximum temperature/pressure rating is 275°F (135°C) at 100 psi (6.9 bar).

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1. The valve is closed by turning the valve handle in a clockwise rotation until it stops.
2. Rotate the valve handle counter-clockwise to open. This will allow fluid flow through the outlet port  
The valve is fully open after 2 turns.

# Maintenance

## Inspection

Inspection area	What to look for	Action if problem is found
Internal and external valve parts	Excessive wear, corrosion or cracking	Replace the affected parts
Around the valve handle	Leakage	Replace the stem o-ring

## Disassemble the valve

1. Remove the handle closure cap and unscrew the stem retaining nut clockwise.
2. Remove the handle washer.
3. Unscrew handle counter-clockwise and remove it and the stem washer.
4. Remove the retaining ring using snap ring pliers.
5. Pull the sample valve stem out of the valve body and remove the stem and seat o-rings

## Assemble the valve

1. Place the stem o-ring (item 3) and the seat o-ring (item 2) on the valve stem (item 4).  
Use deionized water to aid o-ring insertion.
2. Push stem completely into the sample valve body (item 1) and using snap ring pliers, place a 1/2" stainless steel retaining ring (item 5) into the groove within the valve body.  
Use deionized water to aid stem insertion in the body.




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**CAUTION:** It is important that the retaining ring fits securely within this groove.

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3. Place the stem washer (item 6) on the sample valve stem and screw the valve handle (item 7) on the body clockwise until the valve is completely closed.
4. Place the handle washer (item 8) onto the stem and then screw the stem retaining nut counter-clockwise.  
This is a left handed thread
5. Tighten the retaining nut (item 9) snug with a socket wrench approximately 5 in/lbs.
6. Open and close the valve to ensure smooth operation.

# Parts Listings and Cross-Sectional Drawings

## Sample valve

### List of parts

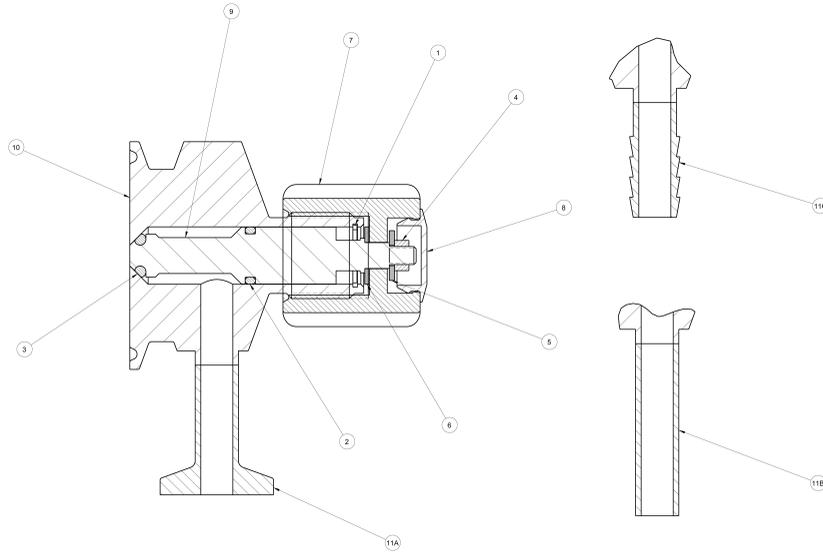


Table 1:

Item	Description	Quantity
1	Circlip/retaining ring	1
2	O-ring 2-012	1
3	O-ring 2-105	1
4	Nut M4 LH	1
5	Sample valve handle washer	1
6	Sample valve stem washer	1
7	Sample valve handle	1
8	Sample valve handle cap	1
9	Sample valve stem	1
10	Sample valve body	1
11a	Ferrule end connection	1
11b	Buttweld end connection	1
11c	Hosebarb end connection	1



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ITT Pure-Flo  
Richards Street, Kirkham  
Lancashire PR4 2HU  
England  
Tel. +44-1772-682696  
Fax +44-1772-686006