

Reliable®

Product Features

- Nominal size DN80 (3") BSPT male thread or grooved connection
- Measuring range up to 2100lpm
- Hazard classification OH1, OH2, OH3, OH3 special
- Easy to install with threaded or grooved connection
- Horizontal, vertical or any other flow direction possible

Product Description

The RASCO Proving Pipe is a water supply proving device designed to measure the flow provided by a fire protection water supply. Available with DN80 (3") BSPT threaded or grooved end connections, the RASCO proving pipe is LPCB certified. The bypass meter is specifically calibrated with the delivered RASCO Proving Pipe orifice plate. Please make sure that the serial number of the orifice plate and the bypass meter are matching before installation. The bypass meter is plugged with screwed caps (not shown). Before loosening the cap installed on the bypass meter outlet, the piping must be emptied. It must always be mounted vertically so that the float can move freely in the tube. Attempt to avoid water hammer by slowly filling the tube with water. Tightening the nut on the bypass meter or the cap on the outlet when the meter is not installed should be hand tightened. The threads must be lubricated for either installation.

Installation Instructions

Installation of the RASCO Proving Pipe Orifice Plate

If a fitting which causes a change in flow direction is installed upstream of the proving pipe, then a straight section of pipe of the same diameter as the orifice plate with a minimum length 5x the nominal diameter of the proving pipe is required to be installed on the suction side of bypass meter and a straight section of pipe with a minimum length 2x the nominal diameter of the proving pipe is required to be installed on the discharge side of bypass meter. (see fig. 1)

Fittings installed on supply pipe

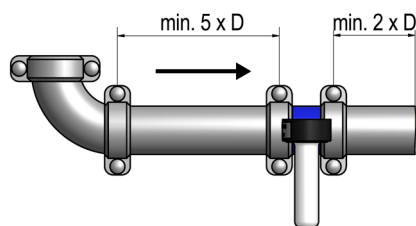


Figure 1

If a device or assembly is installed upstream of the proving pipe, then a straight section of pipe of the same diameter as the orifice plate with a minimum length 10x the nominal diameter of the proving pipe is required to be installed on the suction side of bypass meter and a straight section of pipe with a minimum length 2x the nominal diameter of the proving pipe is required to be installed on the discharge side of bypass meter. (see fig. 2)

RASCO Proving Pipe

LPCB Certificate Number 1385Ab



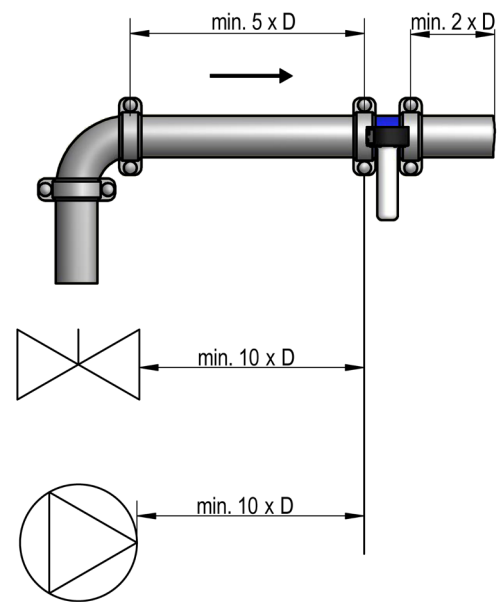
Proving Pipe Threaded



Proving Pipe Grooved

Devices installed on supply pipe

Figure 2



RASCO Proving Pipe

Technical Specifications

Measuring Principle:

Orifice plate flowmeter

Nominal Size:

DN80 (3")

Pressure Limit:

PN16 (232psig)

Hydrostatic Strength Test:

40bar (580psig) for 5min.

Measuring Accuracy:

±5.0% of measured value

Temperature Limit:

+4°C to +50°C (+39°F to +122°F)

Medium:

Water

Dimensions and Weight

Installation Length:

100mm (4")

Diameter Size:

88.9mm (3-1/2")

Packing Size:

380mm x 270mm x 250mm

(15" x 10-5/8" x 9-13/16")

Weight (average) incl. packing:

2.4kg (5.3lb)

Material Specifications

Housing: Stainless steel

Orifice plate: Brass ASTM B584

Differential pressure tube: Brass

Float: Stainless steel

Bypass orifice: Stainless steel

Filter: Stainless steel

Seal: NBR

End Connections

DN80 (3") BSPT Male Thread

DN80 (3") Groove

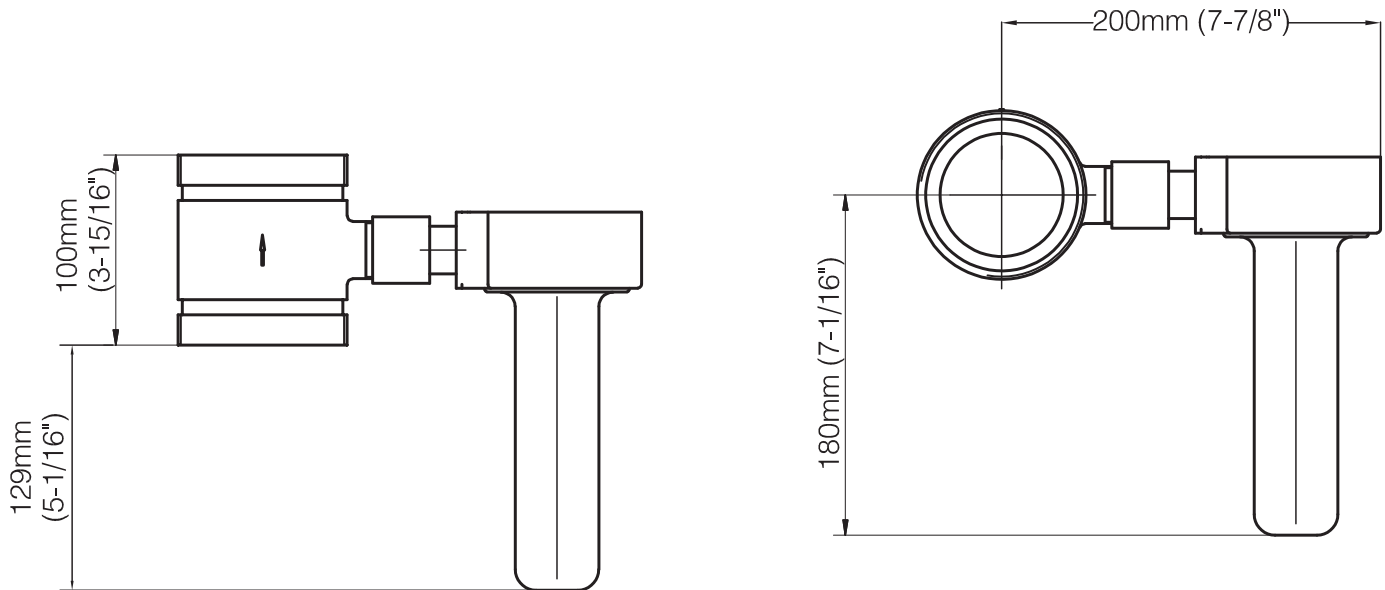
Listings and Approvals

LPCB Certificate Number 1385Ab



RASCO Proving Pipe Dimensions

Figure 3

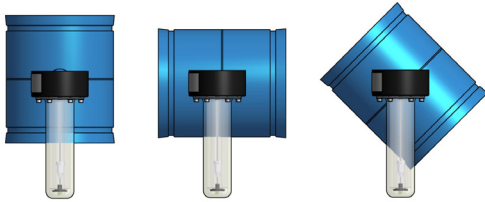


Installation Instructions (cont.)

For attachment of the bypass meter, sufficient clearance must be provided. The installation can be in any line routing - horizontal to vertical - place (see fig. 4). However, it is important to ensure that the flow direction of the arrow marked on the device which corresponds to the differential pressure sampling tube is installed in the horizontal position. Mounting the device into the center of the pipeline is important for the compliance of the measuring tolerance. The center offset must not exceed 0.5 mm.

Examples of installation

Figure 4



Mounting the Bypass Meter

The bypass meter is specifically calibrated with the delivered RASCO Proving Pipe orifice plate. Please make sure that the serial number of the orifice plate and the bypass meter are matching before installation. The bypass meter outlet is plugged with screwed cap (not shown). Before loosening the cap installed on the bypass meter outlet, the piping must be emptied. It must always be mounted vertically so that the float can move freely in the tube. Attempt to avoid water hammer by slowly filling the tube with water. Tightening the nut on the bypass meter or the cap on the outlet when the meter is not installed should be hand tightened. The threads must be lubricated for either installation.

Mode of Operation

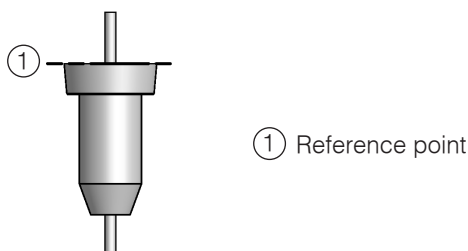
The RASCO Proving Pipe consists of an orifice plate installed in fire protection piping system and a demountable bypass meter. The bypass meter contains a conical glass tube with float. The water flows vertically from top to bottom through the flow tube at the upper end of a side panel. A filter at the inlet largely prevents the ingress of foreign bodies. Inlet and outlet ports for the bypass are designed concentrically for an easy connection to the orifice plate.

Start-up

Read the exact value when a consistent flow has been attained and the float has reached a stable position. The pipeline must always be filled. Read the value at the greatest diameter (upper edge) of the float:

Float

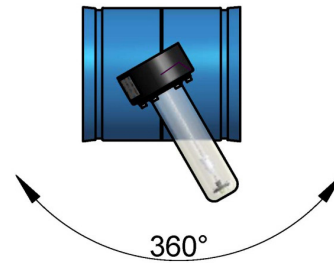
Figure 5



For the bypass meter it is important that when starting up the pump, the shut-off/control valve of the bypass orifice is opened min. 30 % to avoid hydraulic shocks or pressure surges that could damage the bypass meter.

Rotation bypass meter

Figure 6



When the bypass meter is commissioned or set into operation, bubbles of air will initially accumulate at the top part, which must be removed. For this purpose, the union nut must be somewhat loosened during operation and the device must be rotated by 360°, so that the air bubbles can escape. Then the bypass meter has to be positioned vertically and the union nut has to be tightened once again.

Before pressure test in pipes, the bypass meter has to be disassembled and the connection of the orifice plate has to be screwed pressure-tight with the cap.

Read the Exact Value

The RASCO Proving Pipe includes a flow measuring scale printed in liters per minute (lpm). Table A provides additional information on the measuring scale printed on the RASCO Proving Pipe.

Table A

Occupancy Group	Set Value (lpm)
Special	2100
	1800
OH3	1350
	1100
OH2	1000
	725
OH1	540
	375

After Device Usage

After measurements have been taken it is recommended that the measuring tube is either drained by inverting it or removed from the flow meter body. If removed the measurement tube must be drained and stored in the supplied packaging. The open orifice on the flow meter body must be sealed pressure tight with the cap (incl. seal) supplied.

Maintenance

The owner is responsible for maintaining the fire protection system in proper operating condition. Any system maintenance or testing that involves placing a control valve out of service will eliminate the fire protection that is provided by the fire protection system.

The RASCO Proving Pipe and associated equipment shall periodically be given a thorough inspection and test. NFPA 25, "Inspection, Testing and Maintenance of Water Based Fire Protection Systems," provides minimum maintenance requirements.

Guarantee

For Reliable Automatic Sprinkler Co., Inc. guarantee, terms, and conditions, visit www.reliablesprinkler.com.

Ordering Information

Specify the following when ordering:

RASCO Proving Pipe End Connection

- threaded (7U99002542)
- grooved (7U99002543)