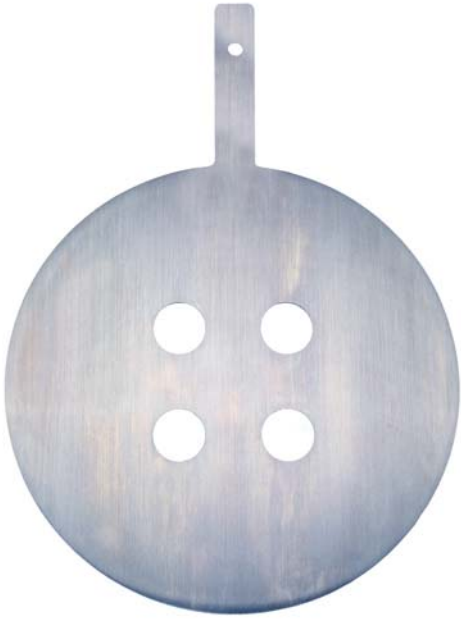
Quick Start Guide
00825-0100-4828, Rev DC
July 2014

Rosemount 1595 Conditioning Orifice Plate



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NOTICE

This installation guide provides basic guidelines for Rosemount 1595 Conditioning Orifice Plate. It does not provide instructions for configuration, diagnostics, maintenance, service, troubleshooting, Explosion-proof, Flame-Proof, or intrinsically safe (I.S.) installations. Refer to the 1595 reference manual (document number 00809-0100-4828) for more instruction. This manual is also available electronically on www.rosemount.com.

WARNING

Process leaks may cause harm or result in death.

To avoid process leaks, only use gaskets designed to seal with the corresponding flange and o-rings to seal process connections.

Contents

Step 1: Primary element location

Install the 1595 in the correct location within the piping branch to prevent inaccurate measurement caused by flow disturbances.

Table 1. 1595 Straight Pipe Requirements[1]

	Beta	0.20	0.40	0.50	0.65
Upstream (inlet) side of primary	Single 90° bend or tee	2	2	2	2
	Two or more 90° bends in the same plane	2	2	2	2
	Two or more 90° bends in different plane	2	2	2	2
	Up to 10° of swirl[2]	2	2	2	2
	Reducer (1 line size)[2]	2	2	2	2
	Butterfly valve (75% to 100% open)[2]	2	2	5	5
Downstream (outlet) side of primary		2	2	2	2

1. Consult an Emerson Process Management representative if disturbance is not listed.

2. Not applicable in line sizes greater than 24-in. (600 mm).

Pressure tap orientation

Orient the 1595 Conditioning Orifice Plate so the pressure taps are centered between any two (of four) orifice bore holes. In addition, the pressure taps should be located at 90° to the plane of the last elbow.

Centering requirements

The 1595 should be installed so that it is centered in the pipe as recommended by ISO-5167.

Step 2: Primary element orientation

The following drawings show paddle style conditioning orifice plate, but orientation pertains to both paddle and universal plate styles.

Horizontal pipe installation

Figure 1. Gas in Horizontal Pipes

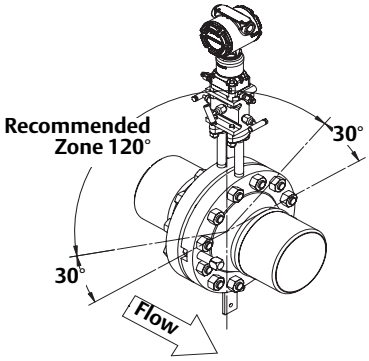
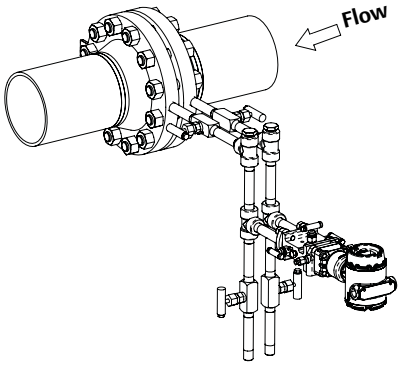


Figure 2. Liquid or Steam in Horizontal Pipes



Vertical pipe installation

Figure 3. Gas in Vertical Pipes

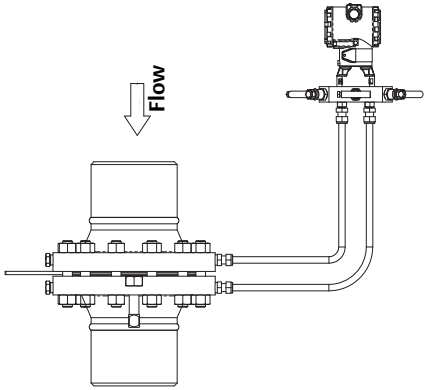
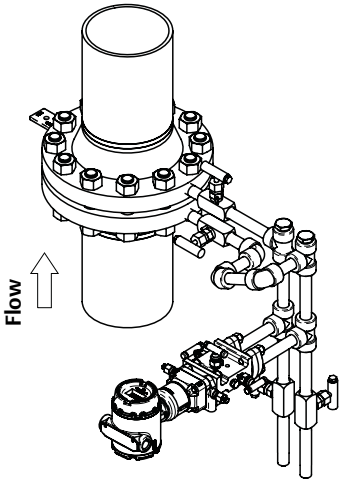


Figure 4. Liquid or Steam in Vertical Pipes



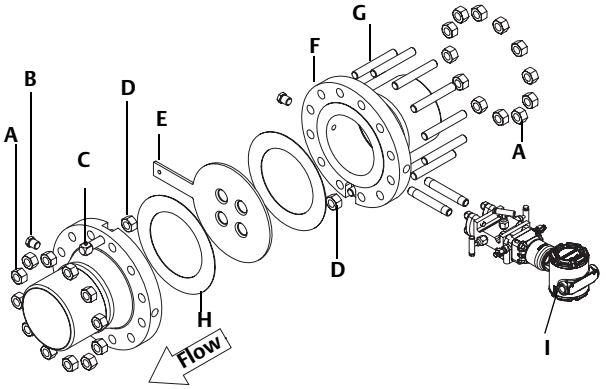
Step 3: Primary element installation

Use the following steps to install the 1595 Conditioning Orifice Plate (paddle or universal plate style).

1. Determine location and orientation (see page 4).
2. Install the orifice plate.
   a. Depressurize the line using site-specific requirements.
   b. Loosen all studs and nuts.
   c. Remove the studs in one-half of the flange union.
   d. Spread flange union by turning jackscrews clockwise.
   e. For line sizes > 24-in (600 mm), refer to Figure 7 and instructions using alignment tool.
   f. Install the new plate or remove the existing plate for replacement or inspection.
   g. Install the new gaskets when installing the plate. It is recommended that new gaskets be installed each time the orifice flange union is separated.
   h. Center the plate in the pipe I.D.
   i. Release the flange union by turning the jackscrews counter-clockwise.
   j. Replace the studs.
   k. Tighten studs in a star pattern.

Note
Standard $^{1}/_{16}$-in. thick fiber gaskets are recommended for use with the 1595. Using other gaskets could potentially affect the measurement.

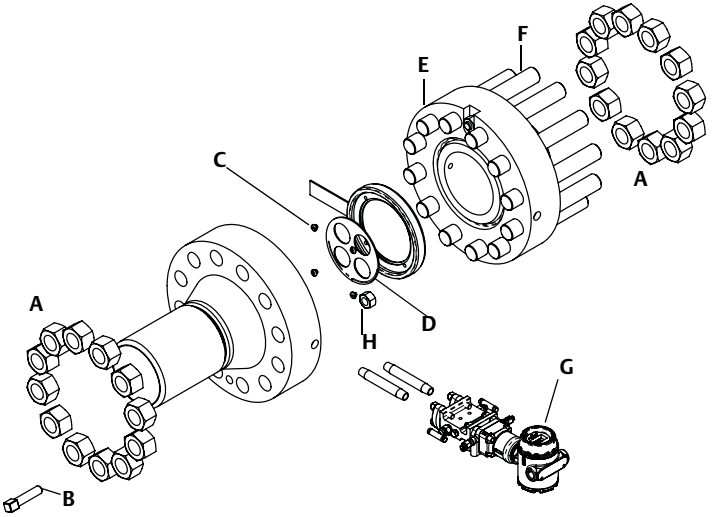
Figure 5. Rosemount 1595P Installation



A. Nuts
B. Plug
C. Jackscrew
D. Jackscrew Nut
E. Rosemount 1595(1)
F. Pipe Section
G. Stud
H. Gasket
I. Transmitter

1. The installation drawings applies when using the Rosemount 2051C, Rosemount 3051C, Rosemount 3051S and Rosemount 3051SMV. See the following documents for quick installation instruction of the transmitters.
Rosemount 2051C: document number 00825-0100-4101
Rosemount 3051C: document number 00825-0100-4001
Rosemount 3051S: document number 00825-0100-4801
Rosemount 3051SMV: document number 00825-0100-4803

Figure 6. Rosemount 1595U with Plate Holder (PH) Installation



A. Nuts
B. Jackscrew
C. Universal Plate Screw
D. Rosemount 1595[1]
E. Pipe Section
F. Stud
G. Transmitter
H. Jackscrew Nut

1. The installation drawings applies when using the Rosemount 2051C, Rosemount 3051C, Rosemount 3051S and Rosemount 3051SMV. See the following documents for quick installation instruction of the transmitters.
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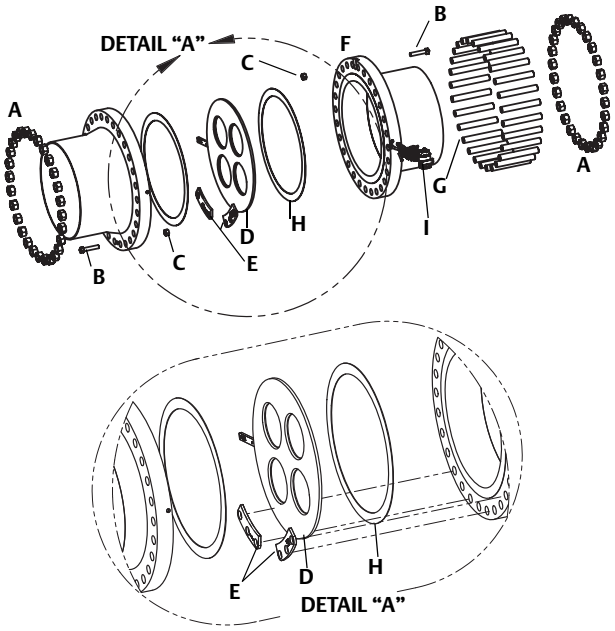
Rosemount 3051S: document number 00825-0100-4801
Rosemount 3051SMV: document number 00825-0100-4803

Note
For 1595U Universal Conditioning Orifice Plate style, refer to manufacturer's orifice fitting installation manual for installation details.

For sizes > 24-in. (600 mm) and use with alignment tool

1. When an alignment tool is provided, install the alignment tool on the flange studs shown in Figure 7.
2. For horizontal installation, use the horizontal lift hole (stamped HLH on paddle) to lift the conditioning orifice plate from a horizontal position and guide into location between the flanges.
3. For vertical installation, first use the horizontal lift hole (HLH) to lift the conditioning orifice plate from a horizontal position to vertical, then use the vertical lift hole (stamped VLH on paddle) to lift the conditioning orifice plate vertically and guide into location between the flanges.

Figure 7. Rosemount 1595P (sizes > 24-in (600 mm)) Installation



A. Nuts
B. Jackscrew
C. Jackscrew Nut
D. Rosemount 1595[1]
E. Alignment Tools
F. Pipe Section
G. Stud
H. Gasket
I. Transmitter

1. The installation drawings applies when using the Rosemount 2051C, Rosemount 3051C, Rosemount 3051S and Rosemount 3051SMV. See the following documents for quick installation instruction of the transmitters.
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Rosemount 3051S: document number 00825-0100-4801
Rosemount 3051SMV: document number 00825-0100-4803

Note

To ensure the best possible flow measurement accuracy, Rosemount provides an Official DP Calculation Sheet with every 1595 Conditioning Orifice Plate. The Official DP Calculation sheet uses the calibration factor which is unique to that device and is also stamped on the orifice plate. The Official DP Calculation Sheet displays the expected full scale flow value and the calculated full scale DP value and is corrected for the unique calibration factor which is also displayed on the sheet. This full scale DP value should be used to range a DP transmitter for the referenced application. Or, the calibration factor should be used as a correction factor when configuring a flow computer for the Rosemount Conditioning Orifice Plate.

Product Certifications

Approved Manufacturing Locations

Rosemount Inc. — Chanhassen, Minnesota USA

European Directive Information

The EC declaration of conformity for all applicable European directives for this product can be found on the Rosemount website at www.rosemount.com. A hard copy may be obtained by contacting our local sales office.

European Pressure Equipment Directive (PED) (97/23/EC)

Rosemount 1595 Conditioning Orifice Plate
— Sound Engineering Practice (SEP)
Pressure Transmitter
— See appropriate Pressure Transmitter QIG

Hazardous Locations Certifications

For information regarding the electronics product certification, see the appropriate transmitter QIG:

- Rosemount 3051SF Series Flowmeter Electronics with HART Protocol (document number 00825-0100-4801)
- Rosemount 3095MF Mass Flowmeter Electronics (document number 00825-0100-4716)

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EC Declaration of Conformity

No: DSI 1000 Rev. I

We,

Emerson Process Management
Heath Place - Bognor Regis
West Sussex PO22 9SH
England

declare under our sole responsibility that the products,

Primary Element Models 405 / 1195 / 1595 & Annubar® Models 485 / 585

manufactured by,

Rosemount / Dieterich Standard, Inc.
5601 North 71st Street
Boulder, CO 80301
USA

to which this declaration relates, is in conformity with the provisions of the European Community Directives as shown in the attached schedule.

Assumption of conformity is based on the application of the harmonized standards and, when applicable or required, a European Community notified body certification, as shown in the attached schedule.

As permitted by 97/23/EC, Annex 7, the authorized signatory for the legally binding declaration of conformity for Rosemount/Dieterich Standard, Inc. is Vice President of Quality, Timothy J. Layer.

(signature)

Timothy J. Layer

Vice President, Quality

20-Oct-2011

(date of issue)

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File ID: DSI CE Marking *Page 1 of 3* DSI 1000I-DoC

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Schedule

EC Declaration of Conformity DSI 1000 Rev. I

Summary of Classifications		
Model/Range	PED Category	
	Group 1 Fluid	Group 2 Fluid
585M - 2500# All Lines	N/A	SEP
585S - 1500# & 2500# All Lines	III	SEP
MSL46 - 2500# All Lines	N/A	SEP
MSR: 1500# & 2500# All Lines	III	SEP
1195, 3051SFP, 3095MFP: 150# 1-1/2"	I	SEP
1195, 3051SFP, 3095MFP: 300# & 600# 1-1/2"	II	I
1195, 3051SFP, 3095MFP: 1-1/2" Threaded & Welded	II	I
DNF - 150# 1-1/4", 1-1/2" & 2"	I	SEP
DNF - 300# 1-1/4", 1-1/2" & 2"	II	I
DNF, DNT, & DNW: 600# 1-1/4", 1-1/2" & 2"	II	I
Flanged - 485/3051SFA/3095MFA: 1500# & 2500# All Lines	II	SEP
FloTap - 485/3051SFA/3095MFA: Sensor Size 2 150# 6" to 24" Line	I	SEP
FloTap - 485/3051SFA/3095MFA: Sensor Size 2 300# 6" to 24" Line	II	I
FloTap - 485/3051SFA/3095MFA: Sensor Size 2 600# 6" to 16" Line	II	I
FloTap - 485/3051SFA/3095MFA: Sensor Size 2 600# 18" to 24" Line	III	II
FloTap - 485/3051SFA/3095MFA: Sensor Size 3 150# 12" to 44" Line	II	I
FloTap - 485/3051SFA/3095MFA: Sensor Size 3 150# 46" to 72" Line	III	II
FloTap - 485/3051SFA/3095MFA: Sensor Size 3 300# 12" to 72" Line	III	II
FloTap - 485/3051SFA/3095MFA: Sensor Size 3 600# 12" to 48" Line	III	II
FloTap - 485/3051SFA/3095MFA: Sensor Size 3 600# 60" to 72" Line	IV*	III

PED Directive (97/23/EC)

Models: 405 / 485 / 585/ 1195 / 1595

QS Certificate of Assessment – CE-0041-H-RMT-001-10-USA

IV* *Flo Tap - 485/3051SFA/3095MFA: Sensor Size 3 600# 60" to 72" Line (Category IV Flo Tap will require a B1 Certificate for design examination and H1 Certificate for special surveillance)*

All other models:

Sound Engineering Practice

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Schedule

EC Declaration of Conformity DSI 1000 Rev. I

Pressure Equipment Directive (93/27/EC) Notified Body:

Bureau Veritas UK Limited [Notified Body Number: 0041]
Parklands, Wilmslow Road, Didsbury
Manchester M20 2RE
United Kingdom

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00825-0100-4828, Rev DC, 07/14

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