

November 2021

Spence Noise Suppressor



WARNING

Failure to follow these instructions or to properly install and maintain this equipment could result in property damage and personal injury or death.

Noise Suppressor must be installed, operated and maintained in accordance with federal, state and local codes, rules and regulations and Emerson instructions.

If leak develops in the system, service to the unit may be required. Failure to correct trouble could result in a hazardous condition.

Installation, operation and maintenance procedures performed by unqualified personnel may result in improper adjustment and unsafe operation. Either condition may result in equipment damage or personal injury. Only a qualified person shall install or service the Noise Suppressor.

Introduction

Scope of the Manual

This manual provides instructions for installation, operation and maintenance information for the Noise Suppressor.

Product Description

The Noise Suppressor is designed to attenuate the noise generated by a pressure reducing station. These devices are particularly effective in limiting the propagation of valve-generated noise into the downstream piping. Being of the dissipative reactive type, they are effective over a broad frequency band (up to 12,000 Hz). Depending upon the flow and piping configuration, noise attenuation of up to 20 decibels is obtainable.



Figure 1. Noise Suppressor

Noise Suppression equipment is a dissipative reactive type. Suppressors do not induce back pressure. It has expanded outlet flange for attachment to downstream piping. Equipment provides a minimum of 10 dBA reduction in noise.

Principle of Operation

Noise Suppressor reduces pipeline carried noise by 10 to 20 dBA. Installed at the regulator outlet, the suppressor absorbs noise generated by the pressure regulator and limits its propagation through the piping system.

Noise Suppressor

Specifications

The Specifications section gives some general specifications for the Noise Suppressor.

Standard Sizes

3/8 to 8 in. / 9.53 to 203 mm

Temperature Rating⁽¹⁾

500°F / 260°C

Frequency band

Up to 12,000 Hz

Noise Attenuation

Up to 26 dBA

Suppressor Ends

NPT x NPT

NPT x CL150 FF

NPT x CL300 RF

CL150 FF x CL150 FF

CL300 RF x CL150 FF

CL300 RF x CL300 RF

Maximum Outlet Velocity

17,000 ft/min. / 5182 m/min.

Construction

Pressure Shell: Welded steel components

Acoustic Material: Stainless steel

Approximate Weights

See Table 1

1. The pressure/temperature limits in this Instruction Manual or any applicable standard limitation should not be exceeded.

Installation (Figure 2)



WARNING

Personal injury or system damage may result if this equipment is installed where service conditions could exceed the limits given in the Specifications section.

Install the noise suppressor at the reducing valve outlet. Ensure that it is insulated to reduce condensation formation in the acoustic material.

Note

The required pipeline expansion takes place .outlet feature eliminates the expense and noise often associated with separate expansion fittings.

The straight through design minimizes pressure drop, permitting normal valve sizing.

Maintenance



WARNING

To avoid personal injury, property damage or equipment damage caused by sudden release of pressure or explosion of accumulated gas, do not attempt any maintenance or disassembly without first isolating the noise suppressor from system pressure and return lines.

Due to normal wear or damage that may occur from external sources, this noise suppressor should be inspected and

maintained periodically. The frequency of inspection and replacement of parts depends upon the severity of service conditions or the requirement of local, state and federal rules and regulations.

If a leak develops, service to the unit may be required. Failure to correct trouble could result in a hazardous condition. Only a qualified person must install or service the unit.

The suppressor has no serviceable parts. However, during routine maintenance intervals it is important to do the following:

- Inspect the suppressor for damaged or cracked ends.
- The suppressor is either flanged or threaded in line. Remove only when it requires cleaning or replacement due to damage or wear.
- In the event the suppressor is not performing as expected, use a bore scope to examine the flow passages for blockages. Disassembly and removal is not needed.
- If blockages are present, clean the suppressor by removing it and using a pressurized water stream to clear any blockages.
- If blockages are still present after cleaning, replace the unit.

Parts Ordering

When ordering parts, it is essential that the type and serial number be stated.

Select part by item number, but order by part number. Specify complete part number when ordering.

Noise Suppressor

Table 1. Approximate Weights

NOMINAL PIPE SIZE						APPROXIMATE WEIGHT											
Inlet		Outlet		Shell		NPT x NPT		NPT x CL150 FF		NPT x CL300 RF		CL150 FF x CL150 FF		CL300 RF x CL150 FF		CL300 RF x CL300 RF	
In.	mm	In.	mm	In.	mm	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg
3/8	9.53	3/4	19.1	2	50.8	8	4	9	4	10	5	----	----	----	----	----	----
		12.7	25.4	2	50.8	8	4	10	5	11	5	----	----	----	----	----	----
		19.1	38.1	2 1/2	63.5	12	5	15	7	18	8	----	----	----	----	----	----
1/2	12.7	1	25.4	2	50.8	8	4	10	5	11	5	12	5	12	5	13	6
		31.8	31.8	2 1/2	63.5	12	5	13	6	16	7	15	7	15	7	17	8
		38.1	38.1	2 1/2	63.5	12	5	15	7	18	8	16	7	16	7	19	9
3/4	19.1	1 1/4	31.8	2 1/2	63.5	12	5	14	6	16	7	15	7	16	7	18	8
		63.5	50.8	3	76.2	16	7	21	10	23	10	22	10	23	10	25	11
1	25.4	1 1/2	38.1	2 1/2	63.5	13	6	16	7	19	9	18	8	19	9	22	10
		102	50.8	3	76.2	16	7	21	10	23	10	23	10	24	11	26	12
1 1/4	31.8	2	50.8	3	76.2	16	7	21	10	23	10	23	10	25	11	27	12
		152	76.2	4	102	----	----	40	18	47	21	42	19	45	20	51	23
1 1/2	38.1	3	76.2	4	102	----	----	39	18	44	20	43	20	46	21	52	24
2	50.8	3	76.2	4	102	----	----	40	18	46	21	45	20	47	21	53	24
		4	102	5	127	----	----	66	30	76	34	72	33	74	34	84	38
2 1/2	63.5	4	102	6	152	----	----	----	----	----	----	97	44	----	----	109	49
		5	127	6	152	----	----	----	----	----	----	99	45	----	----	115	52
3	76.2	4	102	6	152	----	----	----	----	----	----	99	45	----	----	103	47
		5	127	6	152	----	----	----	----	----	----	101	46	----	----	119	54
		6	152	8	203	----	----	----	----	----	----	150	68	----	----	181	82
4	102	5	127	6	152	----	----	----	----	----	----	105	48	----	----	129	59
		6	152	8	203	----	----	----	----	----	----	162	73	----	----	178	81
		8	203	10	254	----	----	----	----	----	----	256	116	----	----	299	136
5	127	6	152	8	203	----	----	----	----	----	----	180	82	----	----	167	76
		8	203	10	254	----	----	----	----	----	----	289	131	----	----	247	112
		10	254	12	305	----	----	----	----	----	----	455	206	----	----	428	194
6	152	8	203	10	254	----	----	----	----	----	----	295	134	----	----	299	136
		10	254	12	305	----	----	----	----	----	----	451	205	----	----	490	222
8	203	10	254	12	305	----	----	----	----	----	----	468	212	----	----	507	230

Noise Suppressor

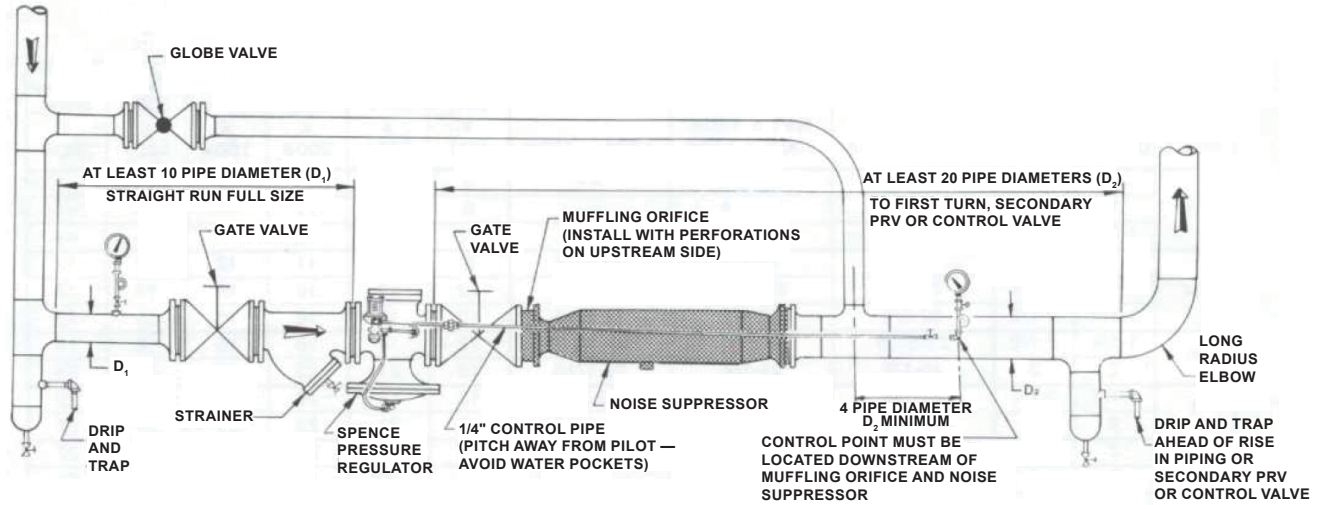


Figure 2. Recommended Installation of Pressure Regulator with Muffling Orifice and Noise Suppressor

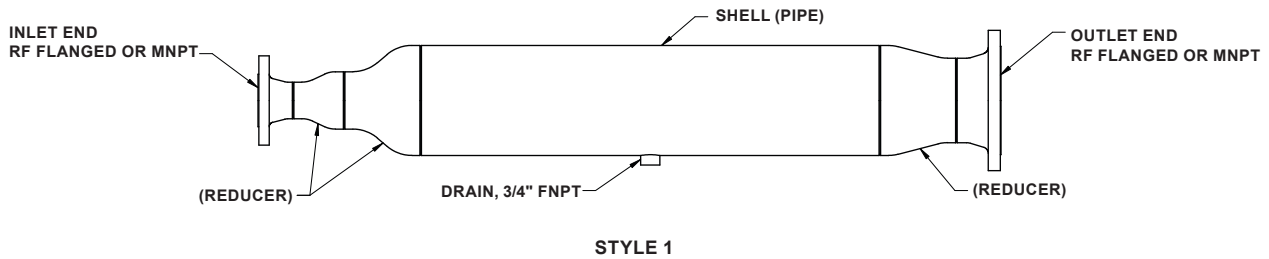


Figure 3. Noise Suppressor Assembly Drawing

SpenceValve.com

Emerson

Americas

McKinney, Texas 75070 USA
T +1 800 558 5853
+1 972 548 3574

Europe

Bologna 40013, Italy
T +39 051 419 0611

Asia Pacific

Singapore 128461, Singapore
T +65 6777 8211

Middle East and Africa

Dubai, United Arab Emirates
T +971 4 811 8100

VCIMD-15748-EN © 2021, 2024 Emerson Electric Co. All rights reserved. 02/24 Spence is a mark owned by one of the companies in the Emerson Automation Solutions business unit of Emerson Electric Co. The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are property of their prospective owners.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available upon request. We reserve the right to modify or improve the designs or specifications of such products at any time without notice.

Emerson Electric Co. does not assume responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use and maintenance of any Emerson Electric Co. product remains solely with the purchaser.

