

Fisher™ CS800 Series Stabilizer Cartridge



FISHER™

Solving Regulator Harmonic Instability Challenges

Introduction

In certain commercial and industrial applications, regulators may exhibit excessive noise, even in situations with small pressure reductions. This noise is often caused by a harmonic instability condition in the system which manifests itself in the regulator. The repercussions of such conditions could range from a minor inconvenience due to excess noise to additional service calls and unsatisfied gas customers.

Instability Drawbacks

Noise and Vibration

A noisy or vibrating regulator may cause a significant inconvenience for end users and their customers.

Additional Costs

The noise or vibration may be so problematic that the end user may have to redesign or move the system.

Potential Damage and Downtime

Although the operation of the regulator is not affected in an unstable condition, if the condition is not addressed, the excess vibration may fatigue and eventually damage the regulator.

Affected Applications

Harmonic Humming / Buzzing

Caused by a collection of system characteristics which results in a “humming” or “buzzing” sound emitting from the regulator.

Meter Feedback

Occurs when a regulator is installed in series with and in close proximity to a meter, most often 5M and larger rotary meters.

High-Efficiency Boiler Feedback

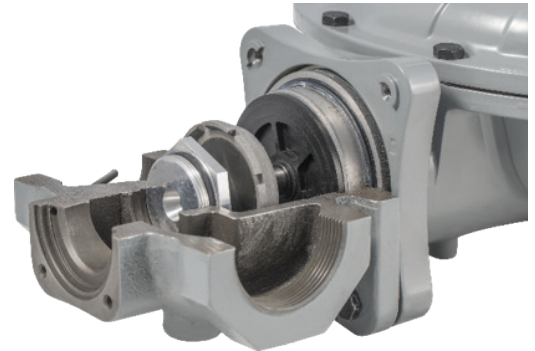
In certain boiler applications, most notably in “pulse-type” combustion models, feedback can occur causing excessive regulator vibration.

For more details on these applications and instability affecting natural gas regulators, refer to our white paper.



Performance / Features: Fisher™ CS800 Series with Stabilizer Cartridge Solution

Emerson has developed a stabilizer cartridge to eliminate harmonic instability in such applications. This device is a compact assembly that is installed in the throat of a Type CS800 regulator. It increases system stability with no piping and/or minimal specification changes and can be installed quickly and without using any special tools.



Type CS800 Stabilizer Cartridge Cutaway

- **Noise Reduction:**
The stabilizer cartridge greatly reduces or completely eliminates harmonic instability of the regulator in most applications
- **Fewer End User Complaints:**
A noisy regulator can be problematic for end users. Eliminating the instability condition leads to fewer customer complaints and service calls.
- **Ease of Installation:**
In addition to a factory-installed option, the stabilizer cartridge can also be purchased as a kit. It can be installed quickly and without using any special tools.
- **Same Footprint:**
Since the stabilizer cartridge is installed in the throat of the regulator, the footprint of the unit does not change.
- **No Additional Training:**
The stabilizer cartridge is installed in the current Type CS800 model available today. It will not be necessary to train personnel on new regulators.

CS800 Series Features

- **Operation:** Direct-Operated, Pressure Reducing
- **Body Sizes and End Connections:**
 - 1-1/4, 1-1/2, 2 NPT, Rp 2;
 - NPS 2 / DN 50 (CL125 FF, CL150 FF, CL150 RF, PN 10/16)
- **Maximum Inlet Pressure:** up to 175 psig / 12.1 bar
- **Maximum Outlet Pressure:** up to 15 psig / 1.0 bar
- **Outlet Pressure Range:** 3.5 in. w.c. to 10 psig / 9 to 690 mbar
- **Temperature Capabilities:** -20 to 150°F / -30 to 66°C
- **Spring Case Vent Connection:** 1 or 2-1/2 NPT
- **Pressure Registration:** Internal and External
- **Body Material:** Gray Cast Iron, Ductile Iron and Steel
- **Overpressure Protection Options:**
 - Internal Relief
 - High Capacity Relief
 - Secondary Seat Protection
 - Integral True-Monitor Protection
 - Slam-Shut Protection

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