

# Fisher™ Whisper Trim™ III Cages

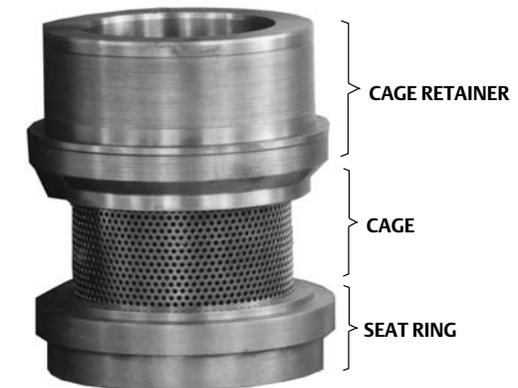
Whisper Trim III cages provide effective attenuation of aerodynamic noise in vapor, gas, or steam applications involving high pressure drops or high pressure drop ratios. Using a Whisper Trim III cage in conjunction with a properly-sized valve body can substantially reduce the noise level of the control application.

Aerodynamic noise is generated by the turbulence created in the flow of vapor, gas, or steam as the fluid passes through a control valve. To achieve effective noise attenuation, a Whisper Trim III cage utilizes multiple orifices of a special shape, size, and spacing. These orifices break up turbulent fluid streams, reducing noise-producing interactions.

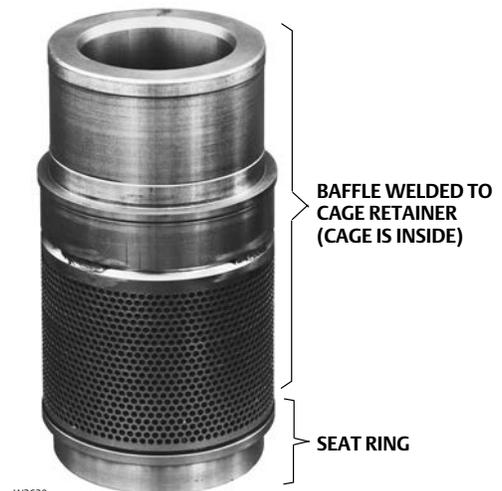
Whisper Trim III cages are available for a variety of valve body types (see table 1). Please refer to the appropriate valve body bulletin for additional construction details.

## Features

- **Outstanding Noise Control**—Use of a Whisper Trim III cage in a properly sized valve can result in a noise reduction up to 30 dBA compared to the same valve with standard trim. Such a reduction would be similar to the reduction in noise level noticed when moving away from the noise source 94m (308 feet).
- **Optimum Performance**—Use of a Whisper Trim III cage provides excellent noise reduction and high flow capacity with the proven control and durability offered by standard Fisher valve trims. The result: optimum overall performance at a minimum investment.
- **Easy Maintenance**—Quick change trim allows fast and easy inspection of the cage without taking the valve body out of the pipeline. Whisper Trim III is interchangeable with standard control valve trim.
- **Long Trim Life**—Hardened materials of construction are standard to provide exceptional wear resistance. For more information about trim materials, see the appropriate valve body bulletin.



LEVELS A1 THROUGH C3



LEVEL D1 OR D3

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**Specifications**

|   |  |
|---|--|
| <p><b>Availability</b><br/>See table 1</p> <p><b>Trim Material and Selection</b><br/>See appropriate valve body bulletin</p> <p><b>Pressure/Temperature Capability</b><br/>See appropriate valve body bulletin</p> <p><b>Maximum Pressure Drops</b><br/>As shown in appropriate valve body bulletin</p> <p><b>Flow Characteristic<sup>(1)</sup></b><br/>Linear (restricted linear cages, modified parabolic cages, and special, characterized cages are</p> | <p>available--consult your <a href="#">Emerson sales office</a> or Local Business Partner)</p> <p><b>Flow Direction</b><br/>Up--through the seat ring and out through the cage orifices</p> <p><b>Noise Attenuation</b><br/>See Catalog 12, section 3 for calculation procedure</p> <p><b>Sizing Coefficients<sup>(1)</sup></b><br/>See Catalog 12, section 1 for actual values</p> <p><b>Shutoff Classification</b><br/>See appropriate valve body bulletin</p> |
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1. For additional sizing information, contact your Emerson sales office.

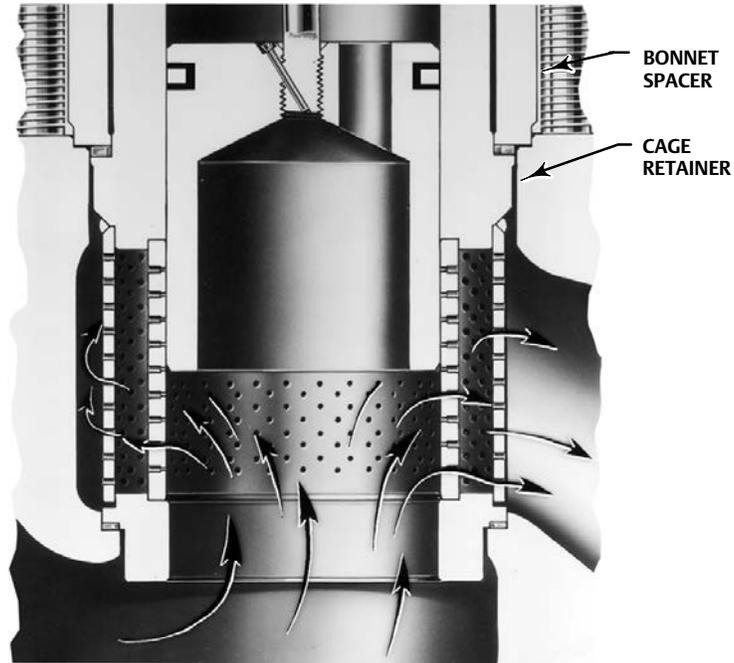
## Installation

In any installation, the valve must be oriented so the flow complies with the arrow on the side of the valve body. Flow is always up through the seat ring.

Because the Whisper Trim III cage design utilizes a multiple-orifice design, a strainer should be installed upstream of any Whisper Trim III application.

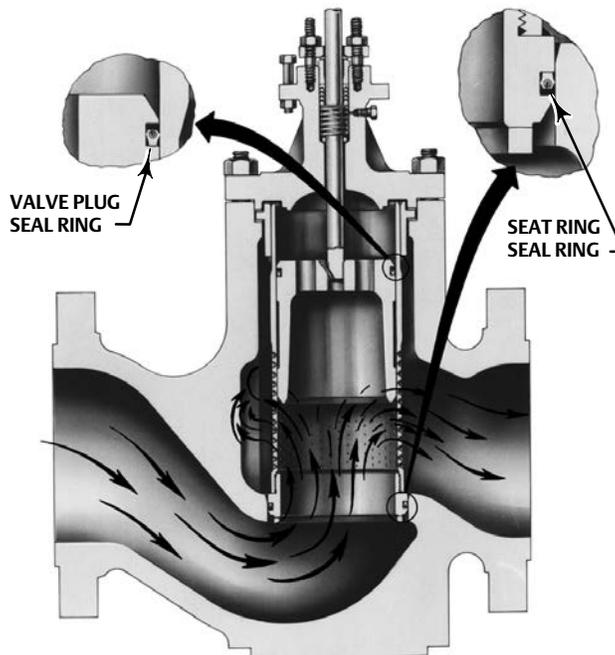
The level A1 through D1 cages have 3.2 mm (0.125 inch) diameter orifices. The level A3 through D3 have 1.6 mm (0.0625 inch) diameter orifices.

Figure 1. Whisper Trim III Cage in Fisher ED Valve



W3332-2

Figure 2. Whisper Trim III Cage in NPS 12 x 8 Fisher EWNT-2 Valve with Seat Ring Threaded Into the Cage



W3290\*

Table 1. Valve Body Constructions with Whisper Trim III Cages

| VALVE DESIGN        | VALVE SIZE, NPS <sup>(3)</sup>   | PRESSURE RATING            | PORT DIAMETER     |                    | VALVE PLUG, TRAVEL |       | PERFORMANCE LEVEL, MAX 0.999 Δ P/P <sub>1</sub> <sup>(4)</sup> |    |    |    |    |    |    |    |   |
|---------------------|--|----------------------------|-------------------|--------------------|--------------------|-------|--|----|----|----|----|----|----|----|---|
|                     |  |                            | mm                | Inch               | mm                 | Inch  | A1   | A3 | B1 | B3 | C1 | C3 | D1 | D3 |   |
| GX                  | DN 80 (NPS 3)  | PN 10 - PN 40 (CL150, 300) | 70                | ---                | 40                 | ---   | X  |    |    |    |    |    |    |    |   |
|                     | DN 100 (NPS 4)   |                            | 90                |                    | 40                 |       | X  |    |    |    |    |    |    |    |   |
|                     |  |                            | 70 <sup>(5)</sup> |                    | 40                 |       | X  |    |    |    |    |    |    |    |   |
|                     |  |                            | 136               |                    | 60                 |       | X  |    |    |    |    |    |    |    |   |
|                     | DN 150 (NPS 6)   |                            | 90 <sup>(5)</sup> |                    | 40                 |       | X  |    |    |    |    |    |    |    |   |
| ED, ES, ET, ET-C(6) | 1  | CL150, CL300, CL600        | 33.3              | 1 5/16             | 19                 | 3/4   | X  |    |    |    |    |    |    |    |   |
|                     | 1 1/2  |                            | 47.6              | 1 7/8              | 19                 | 3/4   | X  |    |    |    |    |    |    |    |   |
|                     |  |                            | 33.3              | 1 5/16             | 19                 | 3/4   |  | X  | X  | X  |    |    |    |    |   |
|                     | 2  |                            | 19.1              | 3/4 <sup>(7)</sup> | 29                 | 1 1/8 |  |    |    |    | X  | X  | X  | X  |   |
|                     |  |                            | 58.7              | 2 5/16             | 35                 | 1 3/8 | X  |    |    |    |    |    |    |    |   |
|                     | 2 1/2  |                            | 33.3              | 1 5/16             | 29                 | 1 1/8 |  | X  | X  | X  | X  | X  | X  | X  | X |
|                     |  |                            | 73.0              | 2 7/8              | 38                 | 1 1/2 | X  |    |    |    |    |    |    |    |   |
|                     | 47.6   |                            | 1 7/8             |                    |                    |       | X  | X  | X  | X  | X  | X  | X  | X  |   |
|                     | 3  |                            | 87.3              | 3 7/16             | 38                 | 1 1/2 | X  |    |    |    |    |    |    |    |   |
|                     |  |                            | 58.7              | 2 5/16             |                    |       |  | X  | X  | X  | X  | X  | X  | X  | X |
|                     | 4  |                            | 111.1             | 4 3/8              | 51                 | 2     | X  |    |    |    |    |    |    |    |   |
|                     |  |                            | 87.3              | 3 7/16             |                    |       |  | X  | X  | X  | X  | X  | X  | X  | X |
|                     | 6 <sup>(1)</sup>   |                            | 177.8             | 7                  | 51                 | 2     | X  |    |    |    |    |    |    |    |   |
|                     |  |                            | 136.5             | 5 3/8              | 76                 | 3     | X  | X  | X  | X  | X  | X  | X  | X  | X |
|                     | 8  |                            | 203.2             | 8                  | 76                 | 3     | X  |    |    |    |    |    |    |    |   |
| 102                 |  | 4                          |                   |                    | X                  | X     | X  | X  | X  | X  |    |    |    |    |   |
| 12 and larger       | Consult Fisher bulletin 51.1:ET/ED Large ( <a href="#">D103554X012</a> ) |                            |                   |                    |                    |       |  |    |    |    |    |    |    |    |   |
| EAD, EAS, EAT       | 1  | CL150, CL300, CL600        | 33.3              | 1 5/16             | 19                 | 3/4   | X  |    |    |    |    |    |    |    |   |
|                     | 2  |                            | 47.6              | 1 7/8              | 19                 | 3/4   | X  |    |    |    |    |    |    |    |   |
|                     |  |                            | 33.3              | 1 5/16             | 19                 | 1     |  | X  | X  | X  |    |    |    |    |   |
|                     | 3  |                            | 19.1              | 3/4                | 29                 | 1 1/8 |  |    |    |    | X  | X  | X  | X  |   |
|                     |  |                            | 73.0              | 2 7/8              | 38                 | 1 1/2 | X  |    |    |    |    |    |    |    |   |
|                     | 47.6   |                            | 1 7/8             |                    |                    |       | X  | X  | X  | X  | X  | X  | X  | X  |   |
|                     | 4  |                            | 87.3              | 3 7/16             | 38                 | 1 1/2 | X  |    |    |    |    |    |    |    |   |
|                     |  |                            | 58.7              | 2 5/16             |                    |       |  | X  | X  | X  | X  | X  | X  | X  | X |
|                     | 6  |                            | 111.1             | 4 3/8              | 51                 | 2     | X  |    |    |    |    |    |    |    |   |
|                     |  |                            | 87.3              | 3 7/16             |                    |       |  | X  | X  | X  | X  | X  | X  | X  | X |

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Table 1. Valve Body Constructions with Whisper Trim III Cages (continued)

| VALVE DESIGN            | VALVE SIZE, NPS <sup>(3)</sup>         | PRESSURE RATING  | PORT DIAMETER       |        | VALVE PLUG, TRAVEL |       | PERFORMANCE LEVEL, MAX 0.999 Δ P/P <sub>1</sub> <sup>(4)</sup> |    |    |    |    |    |    |    |   |
|-------------------------|--|--|---------------------|--------|--------------------|-------|--|----|----|----|----|----|----|----|---|
|                         |  |  |                     |        |                    |       | A1   | A3 | B1 | B3 | C1 | C3 | D1 | D3 |   |
| EHD, EHS, EHT           | 2, 3 x 2<br>3, 4x3<br>6, 6x4<br>6, 8x6 | CL2500   | 38.1                | 1.5    | 38                 | 1.5   | X  |    |    |    |    |    |    |    |   |
|                         |  |  | 58.7                | 2.3125 | 38                 | 1.5   | X  |    | X  |    |    |    |    |    |   |
|                         |  |  | 73                  | 2.875  | 51                 | 2     | X  |    | X  | X  |    |    |    |    |   |
|                         |  |  | 111.1               | 4.375  | 76                 | 3     | X  |    |    | X  |    | X  |    | X  |   |
|                         | 8, 10<br>12, 14                        | CL1500<br>CL2500<br>CL1500<br>CL2500                                     | 178                 | 7      | 178                | 7     |  |    |    |    |    |    |    |    |   |
|                         |  |  | 136                 | 5.375  | 146                | 5.75  | X  | X  | X  | X  | X  | X  | X  | X  |   |
|                         |  |  | 254                 | 10     | 184                | 7.25  |  |    |    |    |    |    |    |    |   |
|                         |  |  | 178                 | 7      | 178                | 7     |  |    |    |    |    |    |    |    |   |
| EWD, EWS, EWT, EWT-C(6) | 4X2                                    | CL150, CL300, CL600  | 58.7                | 2.3125 | 34.9               | 1.375 | X  |    |    |    |    |    |    |    |   |
|                         |  |  | 33.3                | 1.3125 | 31.8               | 1.25  |  | X  | X  | X  | X  |    | X  |    |   |
|                         |  |  |                     |        | 28.6               | 1.125 |  |    |    |    |    |    | X  |    | X |
|                         | 6X4                                    |  | CL150, CL300, CL600 | 111.1  | 4.375              | 50.8  | 2  | X  | X  | X  | X  |    |    |    |   |
|                         |  |  |                     | 87.3   | 3.4375             | 50.8  | 2  |    |    |    |    | X  | X  |    |   |
|                         |  |  |                     |        |                    | 76.2  | 3  |    |    |    |    |    |    | X  | X |
|                         | 8X4                                    | CL150, CL300, CL600  | 111.1               | 4.375  | 50.8               | 2     | X  |    | X  |    |    |    |    |    |   |
|                         |  |  | 87.3                | 3.4375 | 50.8               | 2     |  | X  |    | X  | X  | X  | X  | X  |   |
|                         |  |  |                     |        | 76.2               | 3     |  |    |    |    |    |    | X  | X  |   |
|                         | 8X6, 10X6 <sup>(1)</sup>               | CL150, CL300, CL600  | 177.8               | 7      | 76.2               | 3     | X  |    |    |    |    |    |    |    |   |
|                         |  |  | 136.5               | 5.375  | 101.6              | 4     | X  | X  |    |    |    |    |    |    |   |
|                         |  |  |                     |        | 127.0              | 5     |  | X  | X  | X  | X  | X  | X  | X  |   |
|                         | 12X6 <sup>(1)</sup>                    | CL150, CL300, CL600  | 136.5               | 5.375  | 165.1              | 6.5   | X  | X  | X  | X  | X  | X  | X  |    |   |
|                         | 10X8                                   | CL150, CL300, CL600  | 203.2               | 8      | 152.4              | 6     | X  | X  | X  | X  | X  | X  |    |    |   |
|                         |  |  | 177.8               | 7      | 152.4              | 6     |  |    |    |    |    |    | X  | X  |   |
| 203.2                   |  |  |                     |        | 8                  | 152.4 | 6  | X  | X  | X  | X  | X  | X  |    |   |
| 12X8                    | CL150, CL300, CL600, CL900             | 177.8  | 7                   | 152.4  | 6                  |       |  |    |    |    |    | X  | X  |    |   |
| 12 and larger           | CL150, CL300, CL600                    | Consult Fisher bulletin 51.1:ET/ED Large ( <a href="#">D103554X012</a> ) |                     |        |                    |       |  |    |    |    |    |    |    |    |   |
| EWD-1, EWT-1            | 12 x 8                                 | CL900  | 197                 | 7.75   | 146                | 5.75  | X  | X  | X  | X  | X  | X  |    |    |   |
|                         |  |  | 172                 | 6.75   | 146                | 5.75  |  |    |    |    |    |    | X  | X  |   |
| EWND-1, EWNT-1          | 8 x 6                                  | CL900  | 136                 | 5.375  | 127                | 5     | X  | X  |    | X  |    | X  | X  |    |   |
|                         | 12 x 8                                 | CL900  | 197                 | 7.75   | 203                | 8     | X  | X  | X  | X  | X  |    |    |    |   |
| EWND-1, EWNT-2          | 12 x 8                                 | CL300, 600   | 172                 | 6.75   | 203                | 8     |  |    |    |    |    |    | X  | X  |   |
|                         |  |  | 197                 | 7.75   | 203                | 8     | X  | X  | X  | X  | X  | X  |    |    |   |
| FBD, FBT                | 8 x 12 thru 24 x 24                    | Consult Fisher bulletin 51.1:FB ( <a href="#">D100195X012</a> )          |                     |        |                    |       | X  | X  | X  | X  | X  | X  | X  |    |   |
|                         | 16 x 30 thru 36 x 36                   | Consult Fisher bulletin 51.1:FB ( <a href="#">D100195X012</a> )          |                     |        |                    |       | X  |    | X  | X  | X  | X  | X  |    |   |

-continued-

**Table 1. Valve Body Constructions with Whisper Trim III Cages (continued)**

| VALVE DESIGN     | VALVE SIZE, NPS <sup>(3)</sup> | PRESSURE RATING | PORT DIAMETER |       | VALVE PLUG, TRAVEL |       | PERFORMANCE LEVEL, MAX 0.999 Δ P/P <sub>1</sub> <sup>(4)</sup> |    |    |    |    |    |    |    |   |
|------------------|--------------------------------|-----------------|---------------|-------|--------------------|-------|--|----|----|----|----|----|----|----|---|
|                  |                                |                 |               |       |                    |       | A1   | A3 | B1 | B3 | C1 | C3 | D1 | D3 |   |
| HPD, HPS, HPT    | 1                              | CL1500, 2500    | 19            | 0.75  | 29                 | 1.125 | X  |    |    |    |    |    |    |    |   |
|                  |                                |                 | 25            | 1     | 19                 | 0.75  | X  |    |    |    |    |    |    |    |   |
|                  | 2                              |                 | 19            | 0.75  | 29                 | 1.125 | X  |    |    |    |    | X  |    |    |   |
|                  |                                |                 | 25            | 1     | 19                 | 0.75  | X  |    |    |    |    | X  |    |    |   |
|                  | 3                              |                 | CL1500        | 48    | 1.875              | 51    | 2  | X  |    | X  |    |    | X  |    | X |
|                  |                                |                 |               | 73    | 2.875              | 51    | 2  | X  |    |    |    |    | X  |    |   |
| 4                | CL1500                         | 73              | 2.875         | 51    | 2                  | X     |  | X  | X  | X  | X  |    | X  |    |   |
|                  |                                | 92              | 3.625         | 51    | 2                  | X     |  | X  | X  | X  | X  |    |    |    |   |
| 6                | CL1500                         | 111             | 4.375         | 76    | 3                  | X     | X  |    | X  |    | X  |    |    |    |   |
|                  |                                | 136             | 5.375         | 76    | 3                  | X     | X  |    | X  |    | X  |    |    |    |   |
| HPAD, HPAS, HPAT | 2                              | CL1500, 2500    | 48            | 1.875 | 38                 | 1.5   | X  |    |    |    |    |    |    |    |   |
|                  |                                |                 | 3             | 1.875 | 38                 | 1.5   | X  |    |    |    |    |    |    |    |   |
|                  | 4                              | CL1500          | 73            | 2.875 | 51                 | 2     | X  |    | X  |    |    |    |    |    |   |
|                  |                                |                 | 73            | 2.875 | 51                 | 2     | X  |    |    |    |    |    |    | X  |   |
|                  | 6                              |                 | 92            | 3.625 | 51                 | 2     | X  |    |    | X  |    | X  |    |    |   |
|                  |                                |                 | 111           | 4.375 | 76                 | 3     | X  |    |    | X  |    | X  |    | X  |   |
| 8                | CL1500                         |                 | 136           | 5.375 | 76                 | 3     | X  |    |    | X  |    | X  |    | X  |   |
|                  |                                |                 | 136           | 5.375 | 76                 | 3     | X  |    |    | X  |    | X  |    |    |   |

1. Please note that the body/bonnet height may be greater after installing a Whisper Trim III cage. A spacer is required for ED, ET, EWD, and EWT configurations.  
 2. Other sizes may be available--consult your [Emerson sales office](#).  
 3. Two-number valve body size designation for EH, EW, and EWN Series valves indicates end connection size by trim size, but for FB Series valves, it indicates inlet size by outlet size.  
 4. The X indicates performance level available for given body-trim configuration. Other cage/body configurations available to meet specific applications.  
 5. CX unbalanced, restricted trim.  
 6. ET-C available for sizes NPS 3-8 and EWT-C available for sizes NPS 6x4 - NPS 10x8  
 7. Available only with ES construction

## Ordering Information

When ordering, please specify:

1. Required C<sub>v</sub>
2. Trim material
3. Valve body design
4. Valve body size
5. Valve materials of construction
6. Service conditions and all other information requested in the valve body bulletin



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**Emerson Automation Solutions**  
Marshalltown, Iowa 50158 USA  
Sorocaba, 18087 Brazil  
Cernay, 68700 France  
Dubai, United Arab Emirates  
Singapore 128461 Singapore

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