



# VIBRATION ABSORBERS SERIES 7690

## APPLICATIONS

The vibration absorbers are designed for installation on commercial refrigerating systems and on civil and industrial air conditioning plants. The function of this item is to avoid the transmission of compressor's vibrations to the refrigerating system pipes, reducing the risk of damage and the noise level. The vibration absorbers can also compensate small thermal expansion of the piping. The vibration absorbers are classified "Pressure vessels" according to Article 1, Section 2.1.4 of the Directive 97/23/EC and are subject to Article 3, Section 1.3 of the same Directive. They are designed to be used with refrigerant fluids belonging to Group 2 (as per Article 9, Section 2.2 of Directive 97/23/EC referring to Directive 67/548/EC).

## CONSTRUCTION MATERIALS

All welding between various parts, including the copper/stainless steel connections are TIG welded (figure 1). This solution makes the Castel Vibration Absorbers particularly resistant to the overheating during brazing to the tubing.

The main parts of Castel Vibration Absorbers are manufactured with the following materials:

- Copper tube EN 12735-1 – Cu-DHP for copper end
- Stainless steel EN 10088-1 – 1.4305/1.4301 for fitting
- Stainless steel EN 10028-7 – 1.4541/1.4404 for corrugated flexible
- Stainless steel EN 10028-7 – 1.4301 for net holder
- Stainless steel EN 10088-3 – 1.4301 for wire "braid"

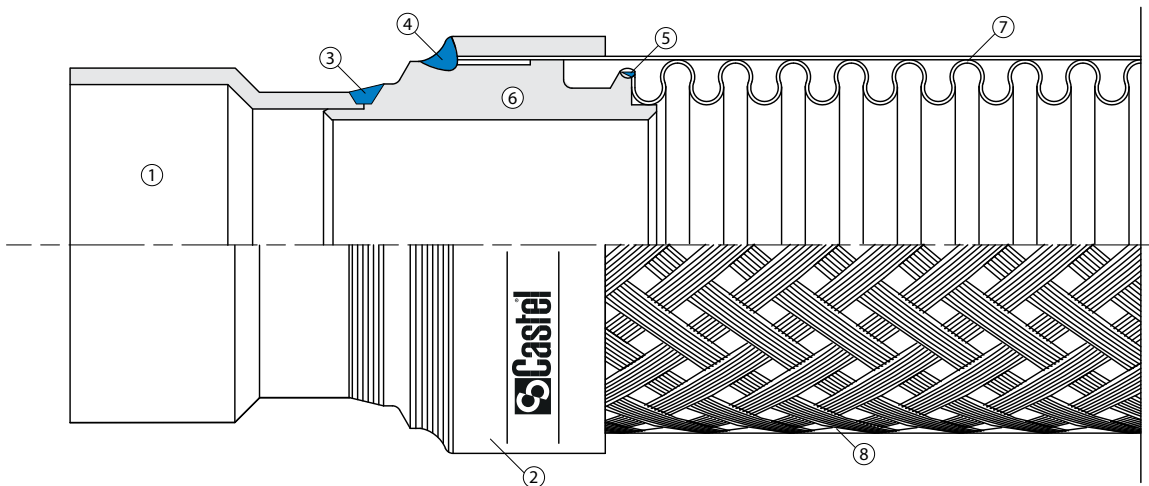


Figure 1

- |                         |                                 |
|-------------------------|---------------------------------|
| 1 - Copper Connections  | 5 - Corrugated flexible welding |
| 2 - Net holder          | 6 - Fitting                     |
| 3 - Copper ends welding | 7 - Corrugated flexible         |
| 4 - Wire braid welding  | 8 - Stainless steel wire braid  |



## INSTALLATION

Vibration absorbers can be installed both on suction and discharge lines of a refrigerating system, as close as possible to the compressor. The vibration absorbers are not designed to compensate possible piping misalignment.

Vibration absorbers should be installed perpendicularly to the direction of vibrations. When vibrations exist on two planes, two vibration absorbers should be used, as shown on fig 2 and 3. For the maximum absorption of vibrations, the refrigerant line should be anchored at the end of the vibration absorber, as shown on fig 2 and 3.

Castel vibration absorbers can be installed vertically too, because they are designed to avoid the retention of condensing water in the wavy zone near to the connections. So there are no problems to install them with temperatures lower than 0°C.

Vibration absorbers are not designed to absorb axial or torsion

stress. Care should be taken to allow sufficient space for the vibration to avoid static compression or tension, after brazing on place.

High speed of the refrigerant fluid can produce vibration and noise phenomena. In this case it's advisable to install a larger size of Vibration Absorber.

The connection of the vibration absorbers to the piping is normally performed by a brazing process. The specific design and construction of vibration absorbers allows welding without particular protections to prevent overheating.

**WARNING!** Ensure a gap corresponding to the 2% of the total length of the vibration absorber device to compensate for possible thermal expansion.

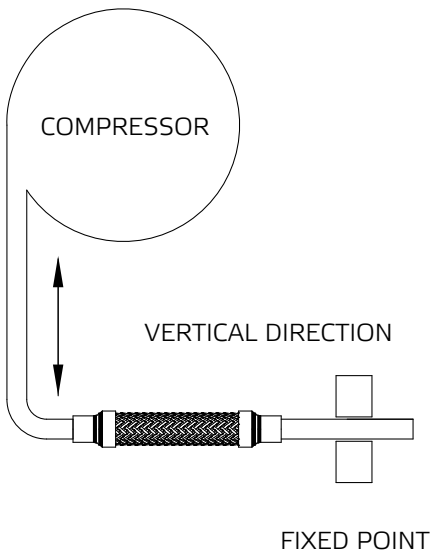


Figure 2

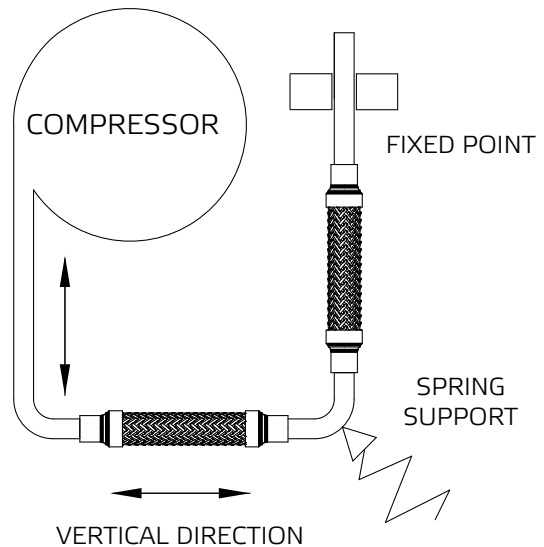


Figure 3



## VIBRATION ABSORBERS SERIES 7690

| Catalogue Nr. | Connections |        | Length | Working pressure (PS), depending on temperature [bar] |              |         |         |          | Media  | Risk Category according to PED |
|---------------|-------------|--------|--------|---|--------------|---------|---------|----------|--|--------------------------------|
|               | ODS         |        |        | [mm]  | -40 / +50 °C | + 80 °C | +100 °C | + 120 °C |  |                                |
|               | [mm]        | [inch] |        |   |              |         |         |          |  |                                |
| 7690/3        | -           | 3/8    | 230    | 45  | 40.5         | 37.5    | 36      | 35       | Refrigerant fluids proper to Group 2 according to 97/23/EC Directive, Art.9, section 2.2 | Art. 3.3                       |
| 7690/M10      | 10          | -      |        |   |              |         |         |          |  |                                |
| 7690/M12      | 12          | -      |        |   |              |         |         |          |  |                                |
| 7690/4        | -           | 1/2    | 255    |   |              |         |         |          |  |                                |
| 7690/5        | 16          | 5/8    |        |   |              |         |         |          |  |                                |
| 7690/M18      | 18          | -      |        |   |              |         |         |          |  |                                |
| 7690/6        | -           | 3/4    | 290    |   |              |         |         |          |  |                                |
| 7690/7        | 22          | 7/8    |        |   |              |         |         |          |  |                                |
| 7690/M28      | 28          | -      |        |   |              |         |         |          |  |                                |
| 7690/9        | -           | 1.1/8  | 330    |   |              |         |         |          |  |                                |
| 7690/11       | 35          | 1.3/8  |        |   |              |         |         |          |  |                                |
| 7690/13       | -           | 1.5/8  |        |   |              |         |         |          |  |                                |
| 7690/M42      | 42          | -      | 430    |   |              |         |         |          |  |                                |
| 7690/17       | 54          | 2.1/8  |        |   |              |         |         |          |  |                                |
| 7690/M64      | 64          | -      |        |   |              |         |         |          |  |                                |
| 7690/21       | 67          | 2.5/8  | 690    | 35  | 31.5         | 29      | 28      | 27       | I  |                                |
| 7690/24       | 76          | 3      |        |   |              |         |         |          |  |                                |
| 7690/25       | 80          | 3.1/8  |        |   |              |         |         |          |  |                                |
| 7690/28       | 89          | 3.1/2  | 710    |   |              |         |         |          |  |                                |
| 7690/34       | 108         | 4.1/4  |        |   |              |         |         |          |  |                                |
|               |             |        |        | 25  | 22.5         | 21      | 20      | 19.5     |  |                                |

