Installation of Ceramic Filter Elements – Product Data

How The Elements Are Installed

Ceramic filter elements (1) hang from a header plate in a filter vessel (2). The elements are sealed to the header plate so that gases passing through the filter vessel must pass through the wall of the ceramic filter element. Solid particles are retained on the filter element so that only the cleaned gas goes through the filter vessel. From time to time the accumulated solids are removed from the filter elements by on-line reverse pulse cleaning (3)

The flange at the top of the element is pressed onto the header plate by a clamp plate. Typically one clamp plate covers 8 – 16 elements. A gasket, called the **element gasket**, is compressed between the underside of the flange on the element and the header plate. A **spacer ring** maintains the correct distance between the clamp plate and the header plate.

How The Element Gasket and Spacer Ring Work

The filter element is machined during manufacture to give a flange depth of 20 ± 0.5 mm. The element gasket is nominally 10 mm thick, but in use it is compressed to about 3.5 mm in thickness to give a leak-proof seal. However, if the gasket is over-compressed it cannot go thinner and, instead, the flange of the element is crushed.

The spacer ring is 24.0 mm deep and sits around the element flange, directly on the header plate. When the clamp plate is tightened down it compresses the gasket until it is stopped by the spacer ring at exactly the correct height for optimum compression of the gasket.

Materials

Spacer ring	either mild steel or stainless steel, cut from tube
Gaskets	10mm ceramic fibre paper, die cut to size

Dimensions

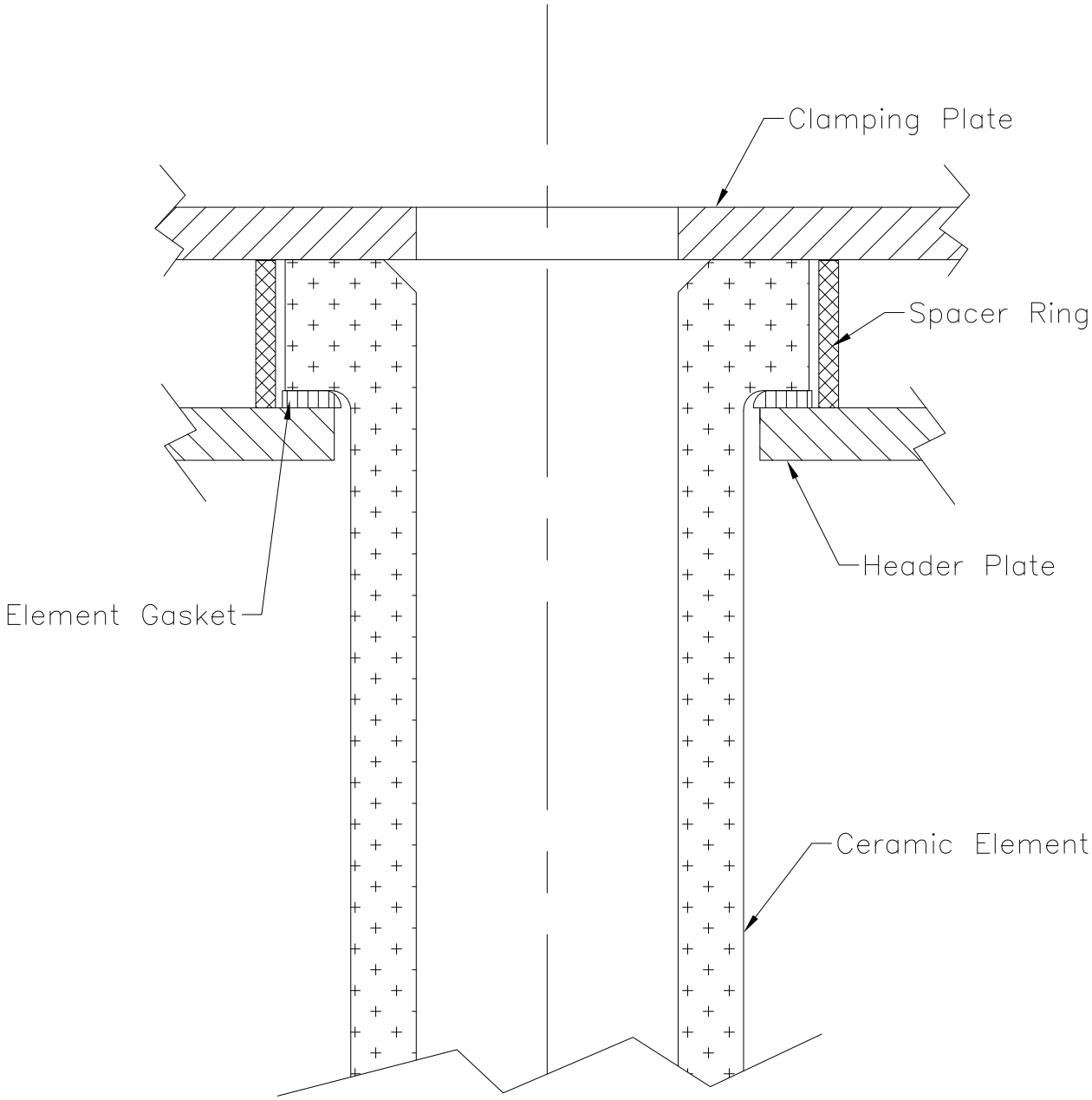
Spacer ring	83 mm i.d. x 24.0 mm long
Hole in header plate	64 mm diameter minimum
Element barrel	60.5 mm diameter maximum
Element flange	80 mm diameter maximum, 20 mm deep
Element gasket	80 mm o.d., 63 mm i.d.

Temperature Limits

Spacer ring	450 ^{o}C for mild steel, 800 ^{o}C for type 304 s/steel
Gaskets	950 ^{o}C

References

1. Caldo data sheet DS002 ‘Ceramic Filter Elements – Product Data’
2. Caldo data sheet DS001 ‘Ceramic Filters – Product Data’
3. Caldo data sheet DS004 ‘Reverse Pulse Cleaning – Product Data’



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		Project Data Sheets	
		Drawn By CJW	Drawing No DS003
		Date Revised 08.12.16	