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Cologne, 11 October 2011

Type test certificate

Dear Sirs,

We have measured the total oil content (aerosols, liquids and vapours) in the outlet air stream of an oil-free VM screw compressor. The measurements were done in accordance with the following guidelines and standards:

ISO 8573-1: 2010 Part 1: Contaminants and purity classes

ISO 8573-2: 2007 Part 2: Test methods for aerosol oil content, method B2 (Partial-flow sampling)

ISO 8573-5: 2001 Part 5: Test methods for oil vapor and organic solvent content

This being a type test, covering the entire range of oil-free screw compressors VM between VM 8 and VM 140 and a power range between 10 and 800 kW a model was randomly selected for the tests. The tests were carried out at the outlet of the air compressor without any oil removal devices in between the compressor and the measurement point. The conditions of the test were:

Temperature at the measurement point: ambient temperature (ca. 19 °C)

Pressure at the outlet of the compressor: ca. 3.5 bar (e)

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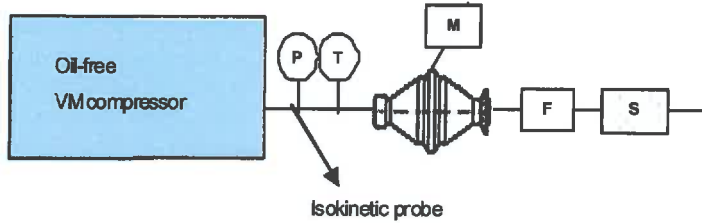
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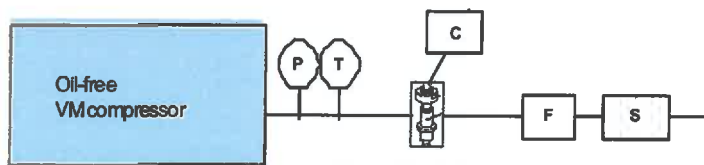
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Principle diagram for full flow measurement of Aerosols and liquids as per ISO 8573 Part 2, method B2



Principle diagram for measurement of oil vapour and organic solvent content as per ISO 8573 Part 5



Legend :

- P : Pressure indicator
- T : Temperature indicator
- M : Measurement point with membrane
- F : Flow meter
- S : Silencer
- C : Measurement point for oil vapour

It is to certify that at the test conditions, no oil (<math><0.01 \text{ mg/m}^3</math>) deriving from the compressor (including all hydrocarbons C6 and above) could be detected in the compressed air stream. On the basis of this test, we can certify the results to be applicable for all oil-free screw compressors VM between VM 8 and VM 140 and a power range between 10 and 800 kW.

It is to certify that the quality of air from the above compressors qualifies to be in the category 'Class 0' in terms of total oil content, as defined in the standard ISO 8573-1 : 2010 Part 1.

A detailed report with all conditions of the tests and results is available.

Best Regards

i. V.

Dr. rer. nat. Walter Dormagen

i. A.

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