TÜVRheinland®

Certificate

ET 314 2008 C2

Under the supervision of TÜV Rheinland the company

Atlas Copco Airpower n.v.

Oil-free division

Boomsesteenweg 957

B-2610 Wilrjik (Belgium)

made a type test of the
oil free screw compressor series ZR 55 – 750, equipped with built-in energy recovery systems.

The aim was to compare the electric energy consumption with the heat energy recovered

Results:

The tests demonstrated that 100% of the electric energy consumed by the compressors could be recovered by the built-in Atlas Copco energy recovery systems, when working at specific design conditions (see below) and an outlet pressure of 10 bar(e) / 145 psig.

Based on the results and the calculations it can be confirmed that the net power (energy) consumption of the ZR compressors with built-in energy recovery at specific design conditions is zero.

For detailed results see page 2 of the certificate and test report no. ET-314-2008-I-1.

This certificate is valid until 31.12.2011.

Cologne, 17. June 2009

Test Centre for Energy Technology

TÜV Rheinland Immissionsschutz und Energiesysteme GmbH, Am Grauen Stein, D-51105 Cologne

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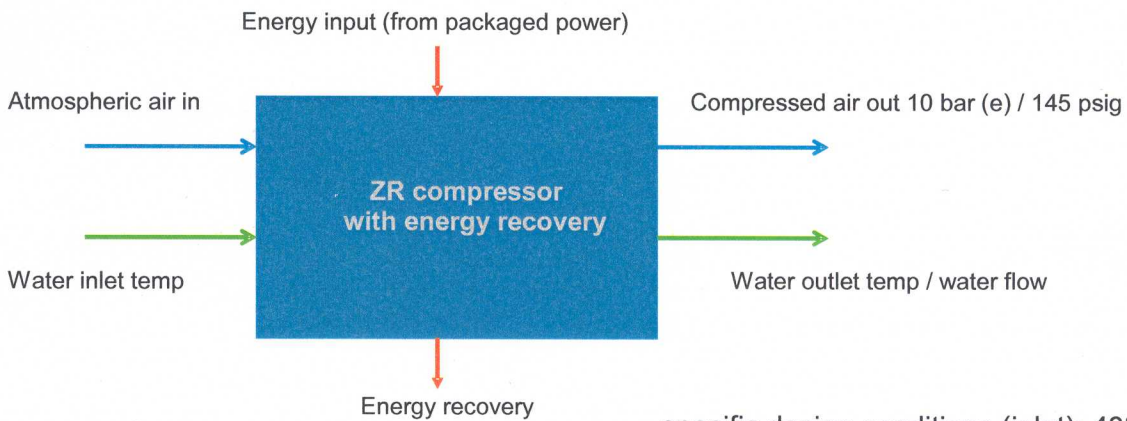
Extract from test report ET 314 2008 I 1

Measurements were performed to calculate the energy balance of the Atlas Copco ZR oil-free air compressor series, equipped with a built-in energy recovery system. Based on the measured recovered heat and the electric energy consumption of the package the net energy consumption of the package was calculated.

The following methodology was adopted for this type test covering the whole ZR-series from 55 to 750 kW:

- Two representative models (ZR 55 and ZR 275) were randomly chosen for the tests. The test results were calculated to the standard specifications provided by Atlas Copco, to verify the correctness of the specified data.
- The total packaged power consumption, including all electrical and mechanical losses of the machines, was measured in accordance with International Standard ISO 1217: 1996, third edition, Annex C, using calibrated instruments and a certified test setup (block diagram of the setup see below).
- The power recovered in the form of hot water was measured during the same period and calculated on the basis of the cooling water flow and the temperature rise of the water.
- The net power consumption of the system at design conditions was derived as the difference between the electric power input of the package and the recovered heat energy.



specific design conditions (inlet): 40°C / 70% r.h.