

CERTIFICATE

EC type-examination (Module B)

Certificate No: 2.3.13/B/012

Name of manufacturer:	Eko Air, SIA
Legal address:	11A Ūnijas Street, Rīga, LV-1039, Latvia
Address of manufacturing plant:	30D Miera Street, Salaspils, LV-2169, Latvia
Description of pressure equipment: Type:	Stainless steel brazed plate heat exchangers NB754; NB755; NB756; NB757; NB758
Category:	III
Maximum allowable pressure, bar:	25.0
Maximum allowable temperature, °C:	-200...+130
Fluid group:	II
Drawing No:	NB000.000.00; NB75x.000.00
Test report No:	2.3.13/B/012-PZ

We hereby certify, that the pressure equipment mentioned above are manufactured in accordance with the essential safety requirements of the Pressure Equipment Directive 97/23/EC and Regulations of the Cabinet of Ministers of the Republic of Latvia No 165 of 2 May 2000 „Regulations regarding Pressure Equipment and Assemblies thereof”.

Standards applied: EN13445-3; EN13445-5; EN10028-7

Test report and the conditions for the use of the certificate are integral part of the certificate.

Date of issue: **02 December 2013**

Expiry date: **02 December 2023**

Engineer:  Aleksandrs Braslis



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Test report

Internal manufacturing check							Burst test	
Module:	A1	B	B1	C1	F	G	Test report No: 2.3.13/B/012-PZ	
Manufacturer: Eko Air, SIA						Address of manufacturing plant: 30D Miera Street, Salaspils, LV-2169, Latvia		

DESCRIPTION OF STAINLESS STEEL BRAZED PLATE HEAT EXCHANGERS	
Type of heat exchanger	NB754; NB755; NB756; NB757; NB758
Maximum number of plates	200
Maximum volume, L	52,14
Maximum allowable pressure, bar:	25,0
Maximum/minimum allowable temperature, °C:	+130/-200
Fluid group	II (liquids, gases)

MANUFACTURED ACCORDING TO THE FOLLOWING DIRECTIVE AND STANDARDS:	
Directive 97/23/EC (Pressure equipment)	
Regulations of the Cabinet of Ministers of the Republic of Latvia No 165 of 2 May 2000 „Regulations regarding Pressure Equipment and Assemblies thereof”	
EN 13445-3:2009	Unfired pressure vessels - Part 3: Design. Annex T. Design by experimental methods
EN 13445-5:2009	Unfired pressure vessels - Part 5: Inspection and testing
EN 10028-7:2008	Flat products made of steels for pressure purposes - Part 7: Stainless steels

INTERNAL MANUFACTURING CHECK AND BURST TEST:			
Conformity of manufacturing documentation:	Acceptable	Not acceptable	Viena pieņemama
Conformity of the pressure equipment with the design No: NB000.000.00	Acceptable	Not acceptable	Viena pieņemama
Traceability of the materials used	Acceptable	Not acceptable	Viena pieņemama
Marking of equipment	Acceptable	Not acceptable	Experimental samples were not intended for labeling
Draft Declaration of conformity	Acceptable	Not acceptable	A draft Declaration of conformity will be examined during the monitoring of the final assessment

Heat exchanger:	NB758 H30 rūpn.nr. 0409130003	NB758 H30 rūpn.nr. 0409130026	NB758 H30 rūpn.nr. 0409130027
Visual inspection before burst test	Acceptable	Acceptable	Acceptable
Dimensional check before burst test	Acceptable	Acceptable	Acceptable
Required burst pressure, bar	101,6	101,6	101,6
Test medium	oil	oil	oil
Date of burst test	12.09.2013	12.09.2013	12.09.2013
Measured burst pressure, bar	104,63	109,72	108,56
Visual inspection after burst test	Internal rupture between the flow channels. Visible small deformation against connectors.	Internal rupture between the flow channels. Visible small deformation against connectors.	Internal rupture between the flow channels. Visible small deformation against connectors. Rupture in the outer layer of the soldered corner.
Procedure of burst test:			

Conclusion: The maximum allowable working pressure of pressure equipment was determined by experimental design method as provided in the Annex T to the standard EN13445-3: 2009. All acceptance criteria were met. Since, the heat exchangers withstood the pressure of 101,6 bar, then their maximum allowable pressure is determined 25,0 bar.
Requirements of Directive 97/23/EC and Regulations of the Cabinet of Ministers of the Republic of Latvia No 165 of 2 May 2000 "Regulations regarding Pressure Equipment and Assemblies thereof" have been met.

Notes:

1. The test results relate exclusively to the described test object. Partial reproduction of and extraction from the test report without a written authorization are not permitted.
2. Before placing of the heat exchangers on the market in addition to the EC type-examination (module B) requires conformity to type assessment according module C1.
3. The details of the changes shall be submitted to the Centre of Product Certification, if changes are made to the design of the certified heat exchangers, manufacturing technology or material used.

Place: Riga

Date: 29/11/2013

**"LRTDEA" TUV Rheinland Group
Centre of Product Certification**

The test has been performed
and the report has been drawn up by:

Jānis Gurtiņš

Notified body No 1407

The certification data will be stored in the archive of the Centre of Product Certification of "LRTDEA" TUV Rheinland Group.

Data protection guaranteed.