

# CERTIFICATE OF CONFORMITY ZERTIFIKAT

**Product Verification (Module F) according to Directive 97/23/EC**  
*Prüfung des Produktes (Modul F) nach Richtlinie 97/23/EG*

**Certificate No.:** USA 05/04/14/001  
*Zertifikat-Nr.*

**Name and Address  
of the Manufacturer:**  
*Name und Anschrift  
des Herstellers*

CHART Heat Exchangers  
2191 Ward Ave.  
La Crosse, WI 54601, USA

**We herewith certify that the results of the examinations of the pressure equipment described below meet the requirements of Directive 97/23/EC. The pressure equipment complies with the EC Type-Examination and carries the mark as illustrated:**

*Hiermit wird bescheinigt, daß die Ergebnisse der an dem unten genannten Druckgerät vorgenommenen Prüfungen die Anforderungen der Richtlinie 97/23/EG erfüllen. Das Druckgerät entspricht dem Baumuster und ist mit dem abgebildeten Zeichen gekennzeichnet:*

**CE 0036**

**Final Assessment Report No.:**  
*Abnahmeprüfbericht Nr.*

P-USA-05-03-14-008

**EC Type Examination Certificate No.:**  
*Zertifikat Nummer der EG Baumusterprüfung*

USA 05/03/14/021

**Scope of Approval:**  
*Geltungsbereich*

Aluminum Plate Fin Heat Exchanger,  
Drawing No. 15770A  
Serial Nos. 509.8-9, 509.8-10, 509.8-11, 509.8-12  
same as above

**Location of Manufacture:**  
*Fertigungsstätte*

Schaumburg, IL, April 08, 2005  
**Place, Date**

Please see remarks on second page.

TÜV America, Inc.  
Industry Service  
5 Cherry Hill Drive  
Danvers, MA 01923, USA

Phone: 978-739-7000  
Fax: 978-777-7634  
E-Mail: info\_ics@tuvam.com

TÜV Industrie Service GmbH  
TÜV SÜD Gruppe  
TÜV-CERT Certification Body  
for Pressure Equipment

*Notified Body*  
**0036**

Notified Body No. 0036

TÜV SÜD Gruppe  
Member of  
CONFÉDÉRATION EUROPÉENNE  
**CEOC**  
D'ORGANISMES DE CONTRÔLE



## **Information regarding the TÜV CERT Certificate**

This certificate is only valid for the referenced company and its facilities stated on the certificate. Only the Certification Body is allowed to transfer (assign) it to a third party.

The right to use the marking depicted on the certificate covers solely products, which match with the type approval and the specifications within the test report or within its complementary (additional) agreements.

Each product has to contain (be accompanied by) the necessary operating and assembly instructions.

Each product must bear the clearly visible identification of the manufacturer or importer as well as a type plate, in order to identify the compliance of the type approval with the product placed on the market.

The holder of the TÜV CERT certificate is obliged to continuously observe if the manufacture of the marked products complies with the test requirements; he is obliged to perform the control tests defined within the test requirements or by the Certification Body in an orderly manner.

Aside from the conditions referenced above, the conditions within the General Contract are effective for the TÜV CERT certificate. It is valid as long as the state of the art requirements on which the test (approval) was based, are effective, if it was not withdrawn prior on conditions within the General Contract.

If this certificate expires or is withdrawn it has to be returned to the Certification Body immediately.



Energy & Chemicals  
Chart Industries, Inc.

2191 Ward Avenue  
La Crosse, WI 54601, USA  
Phone: 608.787.3333 Fax: 608.787.2141  
www.chart-ind.com

## EC DECLARATION OF CONFORMITY

Issued in accordance with the

### **PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC**

**Chart Heat Exchangers L.P.**  
2191 Ward Avenue  
La Crosse, WI 54601 USA

We hereby declare that in accordance with the above directive, the product detailed below has been manufactured in accordance with conformity assessment modules B and F "EC Type Examination and Product Verification" as approved by TÜV Industrie Service GmbH TÜV Süd Gruppe (Notified Body No. 0036) of Westendstrasse 199, 80686 München, Germany under EC Certificate of Conformity USA 05/04/14/001, and EC Type Examination Certificate USA 05/03/14/021.

<b>Product Description</b>	Aluminum Plate Fin Heat Exchanger
<b>Product Reference</b>	15770A
<b>Serial Number</b>	509.8-10
<b>Design Code</b>	ASME Section VIII, Division 1, 2001 Edition and 2003 Addenda
<b>Other Applied Standards</b>	EN 288, EN 287, ASME Section IX / PED 97/23/EC
<b>Other Applicable Directives</b>	None

Signed:

Name:

Kenneth L. Rupp

Position:

Senior Principal Quality Engineer & Traffic Manager

Date:

April 12, 2005

**Reviewed**

TÜV Süddeutschland Bau und Betrieb GmbH

Notified

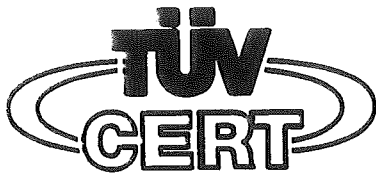
Pressure

Equipment Directive 97/23/EC

Testing Laboratory

APR 18 2005

Anlage enclosure	2	zum Bericht to report
Prüf-Nr.	P-USA-05-03-14-001	
Inspect.-Nr.	P-USA-05-03-14-001	
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# CERTIFICATE ZERTIFIKAT

**EC Type-Examination (Module B) according to Directive 97/23/EC**  
*EG-Baumusterprüfung (Modul B) nach Richtlinie 97/23/EG*

**Certificate No.:** USA 05/03/14/021  
**Zertifikat-Nr.**

**Name and Address  
of the Manufacturer:**  
*Name und Anschrift  
des Herstellers*

CHART Heat Exchangers  
2191 Ward Ave.  
La Crosse, WI 54601, USA

**We herewith certify that the type mentioned below meets the requirements of  
Directive 97/23/EC.**

*Hiermit wird bescheinigt, daß das unten genannte EG-Baumuster die Anforderungen der Richtlinie 97/23/EG erfüllt.*

**Final Assessment Report No.:** P-USA-05-03-14-008  
*Abnahmeprüfbericht Nr.*

**EC Type Examination Report No.:** P-USA-05-03-14-006  
*EG-Baumusterprüfbericht Nr.*

**Scope of Approval:** Aluminum Plate Fin Heat Exchanger,  
*Geltungsbereich* Drawing No. 15770A

**Location of Manufacture:** same as above  
*Fertigungsstätte*

**The Validity of this Certificate expires  
March 01, 2015.  
It may be extended upon request.**

Schaumburg, IL, March 29, 2005

Place, Date

Please see remarks on second page.

TÜV America, Inc.  
Industry Service  
5 Cherry Hill Drive  
Danvers, MA 01923, USA

Phone: 978-739-7000  
Fax: 978-777-7634  
E-Mail: info\_ics@tuvam.com

TÜV Industrie Service GmbH  
TÜV SÜD Gruppe  
TÜV CERT-Certification Body  
for Pressure Equipment

Notified Body, ID No. 0036

TÜV SÜD Gruppe  
Member of  
CONFÉDÉRATION EUROPÉENNE  
**CEOC**  
D'ORGANISMES DE CONTRÔLE



Industrie Service

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If this certificate expires or is withdrawn it has to be returned to the Certification Body immediately.



# Test Plan for EC Type Examination of Pressure Equipment

<b>Module:</b> B	<b>Test plan No:</b> P-USA-05-03-14-023																																
<b>Manufacturer/Person responsible for putting the equipment on the market:</b> CHART Heat Exchangers 2191 Ward Ave. La Crosse, WI 54601, USA																																	
<b>Factory:</b> same																																	
<b>Technical data of type/type family:</b>																																	
<b>Category:</b>	IV																																
<b>Description of type/typefamily:</b>	Plate Fin Heat Exchanger, Drawing No. 15770A, Sales Order 509.8																																
<b>Intended use:</b>	Cryogenic Gas Service																																
<b>Type identification:</b>	serial no. 509.8-x (x tbd)																																
<b>Manufacturer logo:</b>	CHART																																
<b>Service pressure (max) PS [bar]</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <thead> <tr> <th>Stream</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>F</th> <th>G</th> </tr> </thead> <tbody> <tr> <td>Pressure [bar]</td> <td>7.5</td> <td>63.0</td> <td>63.0</td> <td>40.0</td> <td>30.0</td> <td>2.0</td> <td>2.0</td> </tr> </tbody> </table>	Stream	A	B	C	D	E	F	G	Pressure [bar]	7.5	63.0	63.0	40.0	30.0	2.0	2.0																
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<b>Test pressure pneumatic PH [bar]</b>	serial no. 509.8-x (x tbd)																																
<b>Test pressure hydrostatic PH [bar]</b>																																	
<b>Identification:</b>																																	
<b>(Additional data relevant for the type/type family, add if needed)</b> — 13786 gross 7982																																	
<b>Safety device: Set pressure [bar]</b>																																	
<b>Maximum filling mass [kg]</b>																																	
<b>Tare mass [kg]</b>																																	
<b>(delete non-applicable items)</b>																																	

## Test Plan for EC Type Examination of Pressure Equipment

### Testing based on:

Directive: EU Pressure Equipment Directive 97/23/EC (PED), Annex I

Standards: ASME Section VIII Div. 1, 2001 Edition, 2003 Addenda  
AD-2000 Guideline HP30

Deviations: —

### Intended tests and examinations:

1. Design examination: ☒
2. Final assessment: ☒
3. Proof test: ☒ Test pressure PT      see above      Fluid: Air/N<sub>2</sub>  
[bar]:
4. Tests according to checklist test report: ☒

Measurements/examinations and results (CHECKLIST)		
1.	Qualifications of personnel for permanent joining	X
2.	Qualifications of procedures	X
3.	Certificates for base metal and filler materials	X
4.	Traceability of materials	X
5.	Certificates for heat treatments	n/a
6.	Production tests	X
7.	Qualifications for NDT personnel	X
8.	Certificates for non-destructive tests	X
9.	Calibration of measuring and test equipment	X
10.	Visual inspections	X
11.	Dimensional inspections	X
12.	Identification	X
13.	Certificates for repair and deviations	X
14.	Hazard analysis	
15.	Drawing	X
16.	Operation manual	

5. Tests of safety devices : ☐
6. Validation of measurement criteria, calibration ☒

### Previously performed tests:



## Test Plan for EC Type Examination of Pressure Equipment

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### Selection of test sample(s):

Quantity: --

Type: --

<b>Comments:</b>	--
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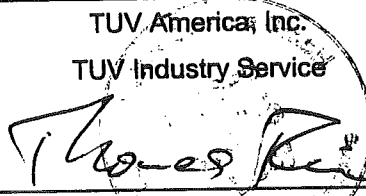


# **Test Plan for EC Type Examination of Pressure Equipment**

The sample(s) is (are) representative for the type (type family). The tests listed above will be performed in compliance with the test requirements of the standards/regulations quoted in this test plan.

The tests will be performed to establish whether the solutions/standards adopted by the manufacturer meet the essential requirements of the Directive.

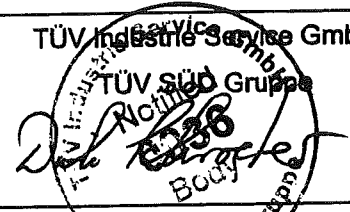
## **Inspection Body**

Location:	Date:	TUV America, Inc. TUV Industrie Service 
Schaumburg, IL, USA	March 29, 2005	

## **Manufacturer:**

Location:	Date:	CHART Heat Exchangers
La Crosse, WI, USA		

## **Certification Body for Pressure Equipment:**

Location:	Date:	TUV Industrie Service GmbH TUV SUD Gruppe 
Schaumburg, IL, USA	March 29, 2005	

March 29, 2005

Pat Goethel  
CHART Heat Exchangers  
2191 Ward Ave.  
La Crosse, WI 54601, USA

**Report No. P-USA-05-03-14-006 on EC Type Examination (Module B) of:**  
Plate Fin Heat Exchanger, Sales Order 509.8, Drawing No. 15770A

Dear Mr. Goethel:

In accordance with your application from March 21, 2005 we have examined the submitted documentation according to Module B of the Pressure Equipment Directive 97/23/EC based on the code / standard ASME Section VIII Div. 1, 2001 Edition 2003 Addenda as specified in your submittal. The standards referred to in Article 5 of Directive 97/23/EC were not applied in full.  
**Result of the Examination:**

- No objections were noted.
- The comments made in the pertaining documentation have to be observed.
- A re-submittal of the documentation is not required.
- Materials of construction must comply with the requirements of the Particular Material Appraisal P-USA-05-03-14-007
- Deviations from Particular Material Appraisals P-USA-05-03-14-007 should not occur.  
**All material documentation has to be submitted to TÜV prior to final assessment.**
- Suitable, non-standardized test processes and procedures that are used: none
- Suitable test / measurement results, and/or examinations and their results that are used: none

**Other Remarks:**

- The design / equipment for external fire was not part of this examination.
- Evidence of the approval of permanent joining procedures was submitted.
- Evidence of the approval of joining personnel was submitted.
- We have retained one copy each for our files.
- The examination results relate to the documents listed below only.
- A partial duplication of this report / approval without the written consent of the Notified Body is not permitted.

TÜV America Inc.  
1821 Walden Office Square  
Suite 316  
Schaumburg, IL 60173

Phone: (847) 397-9847  
Fax: (847) 397-9849  
E-mail: info@tuvam.com  
www.TUVamerica.com



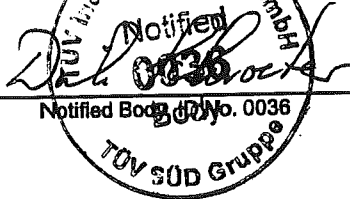
America

**Appeals Process:**

An appeal against the results of this design examination can be filed verbally or in writing any time with TÜV America Inc., Industry Service, at above address.

Sincerely,

**TÜV Industrie Service GmbH  
TÜV SÜD Gruppe  
TÜV-CERT Certification Body  
for Pressure Equipment**



**Annex:**

Drawing Nos. 15770A Rev. B, 15770B Rev. A, 15770C Rev. A, and 15770NPCE Rev. 0  
Design Calculations SDP54 ver. 2004.12.23 dated 28 Jan 05 drw 15770A Rev. A  
Bill of Material Drw 15770A  
EC Type Examination Report P-USA-05-03-14-006  
Particular Material Appraisal P-USA-05-03-14-007



America

**Inspection Body of TÜV Industrie Service  
GmbH TÜV Süd Gruppe  
Notified Body ID No. 0036,  
to Directive 97/23/EC**



Industrie Service

**Report on the Final Assessment  
in accordance with Annex I, Section 3.2 of Directive 97/23/EC**

Customer:	Chart Heat Exchangers	Page:	1 of 3
Manufacturer:	Chart Heat Exchangers	Report No.:	P-USA-05-03-14-008
	2191 Ward Ave	Certificate No.:	USA 05/03/14/021
	La Crosse, WI 54601, USA		USA 05/04/14/001
Equipment Type:	Aluminum Plate Fin Heat Exchanger		

**Test / Inspection Specification:** Directive 97/23/EC for Pressure Equipment, Module B+F  
**Applied code / standard:** ASME Section VIII Div. 1, 2001 edition, 2003 addenda

**Marking / Labeling of the pressure equipment:**

**Marking on:** Nameplate

- Manufacturer's name and / or identification: Chart Heat Exchangers L. P.
- Year of manufacture: 2005
- Type / Serial number: 509.8-9, 509.8-10, 509.8-11, 509.8-12
- Intended Use: Cryogenic Gas Service

**Other identification information:**

Chamber Designation:	A	B	C	D	E	F	G
Min./Max. allowable pressure PS [bar]:	7.5	63.0	63.0	40.0	30.0	2.0	2.0
Min./Max. allowable temperature TS [°C]:	-196/65	-196/65	-196/65	-196/65	-196/65	-196/65	-196/65
Volume V [Liter]:	1408	272	178	224	147	1597	1968
Fluid:	Gr. 1	Gr. 1	Gr. 1	Gr. 1	Gr. 1	Gr. 1	Gr. 1

**EC-Type-examination on:** March 23, 2005

**by:** Inspection Body of TÜV Industrie Service GmbH TÜV Süd Gruppe, Report No. P-USA-05-03-14-006

**Module:** B

**Drawing / Document number or similar designation:**

- 15770A Rev. B
- 15770B Rev. A
- 15770C Rev. A
- 15770NPCE Rev. 0

The documents were presented and are valid.

**Final Assessments in accordance with Annex I Section 3.2.1 of the Pressure Equipment Directive on:**

March 29, 2005 (units 509.8-9, 509.8-11)

March 30, 2005 (units 509.8-10, 509.8-12)

**by:** Inspection Body of TÜV Industrie Service GmbH TÜV Süd Gruppe.

**Inspections and examinations and their results:**

- The calibration labels showed that the inspection / measuring / test equipment used for the inspections was calibrated.
- The material certificates for the main pressure-bearing parts were presented and comply with the requirement.
- Evidence of the required qualifications of employed joining personnel and NDT-personnel was presented and is valid.
- Evidence of the required qualification of joining procedures was presented and is valid.



America

**Inspection Body of TÜV Industrie Service  
GmbH TÜV Süd Gruppe  
Notified Body ID No. 0036,  
to Directive 97/23/EC**



Industrie Service

Report No.: P-USA-05-03-14-008 Page: 2 of 3

**Final Assessment** in accordance with Annex I Section 3.2.1 of the Pressure Equipment Directive (continued):

- Random visual inspection and dimensional checks were performed by the manufacturer and the Notified Body: Visual inspection of the main weld seams (e.g. header seams); dimensional check of the main components (core, heads). There were no objections.
- Implemented procedures to ensure traceability were reviewed and checked at random. There were no objections.
- Deviations from, amendments to or restrictions of the test / inspection specification: None
- Non-standardized test processes and procedures that were used: None
- Other documentation submitted by the manufacturer (title and/or unique identification): None

**Proof (Pressure) Tests** in accordance with Annex I Section 3.2.2

on: March 29, 2005 (units 509.8-9, 509.8-11)

March 30, 2005 (units 509.8-10, 509.8-12)

by: Inspection Body of TÜV Industrie Service GmbH TÜV Süd Gruppe

Chamber Designation:	A	B	C	D	E	F	G
Pneumatic Test Pressure (bar):	11.3	69.3	69.3	44.0	33.0	3.0	3.0
Pneumatic Pressure Test Medium:	Air/N <sub>2</sub>	Air/N <sub>2</sub>	Air/N <sub>2</sub>	Air/N <sub>2</sub>	Air/N <sub>2</sub>	Air/N <sub>2</sub>	Air/N <sub>2</sub>
Hydrostatic pressure test (water)	—	94.5	94.5	60	45	—	—
Hydrostatic Pressure Test Medium:	—	water	water	water	water	—	—

**Conclusion:** The Final Assessment was performed in compliance with the requirements of the Directive. The performance of the inspections / tests and their results showed no deviations.

**Remarks:**

- The test results cover only the tested equipment described here.
- A partial duplication of the test results without the written consent of the Notified Body is not permitted.

**Based on the performed tests and inspections, and after approval by the Certification Body, there are no objections to affixing the CE marking and the identification number 0036.**


**Additional Notes:**

- The pressure equipment was tested and inspected without constituent parts. Therefore, the testing and inspection of the constituent parts is still necessary.
- The pressure equipment may be subject to inspections prior to putting into service, and to periodic in-service inspections in accordance with the locally applicable rules and regulations.



Inspection Body of TÜV Industrie Service  
GmbH TÜV Süd Gruppe  
Notified Body ID No. 0036,  
to Directive 97/23/EC



Report No.:	P-USA-05-03-14-008	Page:	3 of 3
<p>TÜV Industrie Service GmbH TÜV Süd Gruppe Notified Body, ID No. 0036, to the Pressure Equipment Directive 97/23/EC</p> <p>For the Inspection Body:</p> <p>Schaumburg, IL March 24, 2005</p> <p> (Thomas Reiners, TÜV America Inc., Industry Service)</p> <p><b>Annexes:</b></p> <ul style="list-style-type: none"><li>• 1: Copy of the material certificates for the main pressure bearing parts</li><li>• 2: Copy of the manufacturer's Declaration of Conformity</li></ul>			