



Industrie Service

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 05/03/14/001
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-05-03-14-001

EC Type Examination Certificate No.:

Zertifikat Nummer der EG Baumusterprüfung

USA 05/02/14/005

Scope of Approval:

Geltungsbereich

Aluminum Plate Fin Heat Exchanger,
Drawing No. 15773A
Serial No. 509.3-4
same as above

Location of Manufacture:

Fertigungsstätte

Schaumburg, IL, March 08, 2005

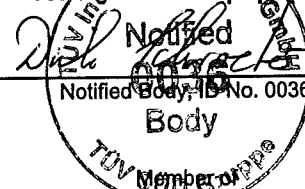
Place, Date

Please see remarks on second page.

TÜV America, Inc.
Industrie 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



CONFÉDÉRATION EUROPÉEN

CEOC

D'ORGANISMES DE CONTROLE



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.



Industrie Service

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 05/02/14/005

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-05-03-14-001

Abnahmeprüfbericht Nr.

EC Type Examination Report No.:

P-USA-05-02-14-006

EG-Baumusterprüfbericht Nr.

Scope of Approval:

Geltungsbereich

Aluminum Plate Fin Heat Exchanger,
Drawing No. 15773A

Location of Manufacture:

Fertigungsstätte

same as above

The Validity of this Certificate expires

February 01, 2015.

It may be extended upon request.

Schaumburg, IL, March 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
0036
Notified Body, ID No. 0036
Body

CONFÉDÉRATION EUROPÉEN

CEOC

D'ORGANISMES DE CONTROLE



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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.

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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 05/03/14/001, and EC Type Examination Certificate USA 05/02/14/005.

Product Description	Aluminum Plate Fin Heat Exchanger
Product Reference	15773A
Serial Number	509.3-4
Design Code	ASME Section VIII, Division 1, 2001 Edition and 2003 Addenda
Other Applied Standards	EN 288, EN 287, ASME Section IX / PED 97/23/EC
Other Applicable Directives	None

Signed:

Name:

Kenneth L. Rupp

Position:

Senior Principal Quality Engineer & Traffic Manager

Date:

March 2, 2005

Anlage enclosure	2	zum Bericht to report
Prüf-Nr.	PUSA-05-03-14-001	
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Reviewed by:

TÜV SÜD (Notified Body No. 0036) München GmbH

Notified Body No. 0036 to PED Pressure

Equipment Directive 97/23/EC

Testing Laboratory: MAY 10 2005

February 01, 2005

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

Report No. P-USA-05-02-14-006 on EC Type Examination (Module B) of:
Plate Fin Heat Exchanger, Sales Order 509.3, Drawing No. 15773A

Dear Mr. Goethel:

In accordance with your application from January 05, 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 the requirements of the Particular Material Appraisal P-USA-05-02-14-007
- Deviations from Particular Material Appraisals P-USA-05-02-14-007 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

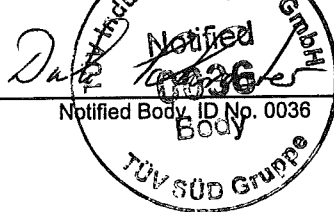


Appeals Process:

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. 15773A Rev. B, 15773B Rev. A, 15773C Rev. 0, and 15773NPCE Rev. 0
Design Calculations SDP54 ver. 2004.09.30 dated 17 Dec 04 drw 15773A Rev. A
Bill of Material Drw 15773A
EC Type Examination Report P-USA-05-02-14-006
Particular Material Appraisal P-USA-05-02-14-007



Industrie Service

P-USA-05-02-14-006

EC Type Examination Report
Plate Fin Heat Exchanger, Drawing No. 15773A,
Sales Order 509.3

Contractor & Manufacturer: CHART Heat Exchangers
2191 Ward Ave.
La Crosse, WI 54601, USA

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

Drawing No.: 15773A Rev. B,
15773B Rev. A,
15773C Rev. 0,
15773NPCE Rev. 0
Bill of Material Drw. 15773A

Design Calculation: SDP54 ver. 2004.09.30 dated 17 Dec 04
drw 15773A Rev. A

Joint Eff.: 0,70 max.

Corr. Allowance: None

Content: Fluid Group 1

Design Temp: -196°C to 65°C

Properties:

Stream	Design Pressure [bar]	Capacity [liter]	Pneu. Test Pressure [bar]	Fluid Group	Category
A	0 / 3.1	2098	4.6	1	IV

Materials of Construction: Aluminum Alloys 3003, 5083

TÜV Project #: CS500136

Inspector/Engineer: Dipl.-Ing. Thomas Reiners
TÜV Industrie Service GmbH TÜV Süd Gruppe /
TÜVAmerica Inc.
Notified Body ID# 0036

1.0 Remarks

Chart Heat Exchangers has been contracted to design and fabricate a Heat exchanger (Plate Fin Heat Exchanger) to PED requirements for application in a European Community Member State. The organization intends to provide the equipment with CE marking. The manufacturer has identified Modules B + F as Conformity Assessment Modules of choice. The manufacturer has identified the use of ASME Code Section VIII Div. 1 as the technical standard for the design and construction of the equipment, and for compliance with PED Annex I requirements.

Notified Body services for Conformity Assessment Modules B + F (EC Type-Examination and Product Verification) have been requested from and contracted to TÜV Industrie Service GmbH TÜV Süd Gruppe (Notified Body – NB ID# 0036).

2.0 Basis for Type Examination

- Manufacturer's Request to provide NB services for Conformity Assessment Module B
- The manufacturer's written declaration to the effect, that a similar application has not been lodged with another NB.
- Technical Documentation consisting of
 - description and hazard analysis of the heat exchanger
 - design / manufacturing drawings (15773A)
 - Bill of Material Drw. 15773A
 - information on the operation of the equipment,
 - the identification of standard(s) applied to meet the essential requirements of the PED,
 - design calculations and supplement calculations (both dated 17 Dec 2004)
 - Fin Pressure Rating Abstract DWK10/13/00

The compliance of pressure boundary materials (main pressure bearing parts) with PED requirements is achieved by application of a Particular Material Appraisal (PMA). The manufacturer has simultaneously requested this PMA.

3.0 Applicable Requirements

- EU Pressure Equipment Directive 97/23/EC
- ASME Code Sect. VIII Div. 1 – 2001 ED, 2003 AD identified by the manufacturer as the technical design and construction code to meet PED Annex I requirements
- Particular Material Appraisal – P-USA-05-02-14-007

The Particular Material Appraisal (P-USA-05-02-14-007) serve as an integral part of this evaluation / examination.

4.0 Design Data

Design Temperature:	-196°C to 65°C
Design Pressure:	Stream A 3.1 bar
Capacity:	Stream A 2098.0 liter
Test Pressure:	Stream A 4.6 bar
Joint Efficiency:	0,70 max.
Corrosion Allowance:	None
Heat exchanger Content:	Fluid Group 1

5.0 Materials of Construction and Material Characteristics

Item	Material Specification	Allow. Stresses / Characteristics	PMA
Header	ASME SB-209-5083- O	11400 psi	P-USA-05-02-14-007
Nozzle	ASME SB-241-5083 - O	10700 psi	P-USA-05-02-14-007
Outside Sheet	ASME SB-209-3003 - H112	3400 psi (allow. tensile stress) 2720 psi (allow. shear stress)	P-USA-05-02-14-007
Core Block Bar	ASME SB-221-3003 - O or H112 (see Dwg.)	3400 psi (allow. tensile stress)	P-USA-05-02-14-007
Parting Sheet	ASME SB-209-Alclad 3003 - H14	3400 psi	P-USA-05-02-14-007
Fin Material	ASME SB-209-3003 - O or H12	Fin Rating Method was applied for core block (ASME Code Sect. VIII Div. 1, U-2(g))	P-USA-05-02-14-007

All above identified materials used in the construction of this equipment, must meet the specifics of the Particular Material Appraisal (see document P-USA-05-02-14-007).

6.0 Design Calculation Method

The manufacturer applied in principle the calculation method 'design by formula'. The formulas used are ASME Code Sect. VIII Div. 1 formulas – various sections – identified in the manufacturer's calculations. The equipment is calculated for internal and external pressure (as specified on the drawings), taken the specified design temperatures (min. & max.) and static loading conditions into consideration. For core block components, a supplementary Fin Rating Method was used in full compliance with ASME Code Sect. VIII, Div. 1 U-2(g). This, in principle, satisfies PED Annex I, Section 2.2.2 requirements.

The NB performed crosscheck calculations using the formulas provided. The NB confirms experience with this type of Plate Fin Heat Exchanger design. The manufacturer confirmed experience with approx. 10,000 exchangers that collectively contain well over a billion fin legs for the validation of the core design.

7.0 Type Examination Conclusion and Obligations

The calculations and supplied documentation revealed that the heat exchanger is adequately designed for its intended use and for reasonably foreseeable operating conditions. Requirements of the Pressure Equipment Directive 97/23/EC Annex I Section 2 are fulfilled.

In all cases, the PED maximum permissible general membrane stress is greater than the ASME Code maximum allowable stress, which was used by the manufacturer in his calculation.

The specified pressure for the pneumatic pressure tests (see section 4.0 of this report) are in conformance with ASME Code Sect. VIII Div. 1. The streams receive pneumatic pressure tests. The provisions of section 7.4 do not apply to pneumatic pressure testing. The pressure test margins comply in general to ASME Code Section VIII Div. 1 and similar pressure vessel code (e.g. AD-2000 Guideline HP30) requirements. The manufacturer (Chart) has taken appropriate measures to satisfy Annex I Sections 3.2.2 and 7.4 in full.

Information pertaining to

- the overall and fully equipped pressure equipment assembly
- wear during operation
- provisions for filling and discharge
- the protection of the heat exchanger against the allowable limits

was not provided by the manufacturer (or was inconclusive) and, therefore, could not be evaluated by the NB against requirements of the PED Annex I Sections 2.7, 2.8, 2.9 and 2.10. These issues must

be assessed in connection with the evaluation of the pressure equipment overall assembly prior to operation [PED Article 3 (2.)].

The heat exchanger must be fitted with suitable protection against the allowable limits. This device(s) may be a safety accessory as defined in PED Article 1 Section 2.1.3 or a monitoring device such as indicators and/or alarms which enable adequate action to be taken either automatically or manually to keep the heat exchanger within the allowable limits, or a combination of the above.

The organization responsible for the overall pressure equipment assembly must apply appropriate protection measures against residual hazards (where applicable) and warn for unintended use and equipment alteration. Installation and/or operating instructions (see PED Annex I Section 3.4) must be drawn up in the official language of the country of destination / equipment operation or in a language mutually agreed upon between the purchaser and supplier.



Industrie Service

P-USA-05-02-14-006

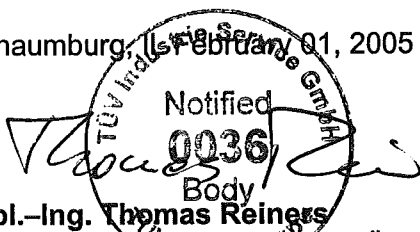
8.0 Manufacturing Requirements

The manufacturer is obligated to fulfill all appropriate requirements of PED Annex I Section 3. This includes the Marking and Labeling of the equipment as identified in PED Annex I Section 3.3. The NB must perform the heat exchanger's final shop inspection & witness the pressure tests identified in PED Annex I Sections 3.2.1 and 3.2.2 respectively. A Certificate of Conformity for PED Module F will be drawn up and provided by the NB upon completion. The manufacturer, or his authorized representative established within the Community, must keep a copy of the declaration of conformity for a period of ten years after the last of the pressure equipment has been manufactured.

9.0 Scope of Validity

This type examination is valid only for the pressure equipment, its application & application parameters, materials & data, and legal and technical requirements identified in this report. This examination may need to be reevaluated and revised by this Notified Body if a change(s) related to above-mentioned issues and data is made.

Schaumburg, Germany 01, 2005


Notified
0036
Body
Dipl.-Ing. Thomas Reiners
TÜV Industrie Service GmbH TÜV Süd Gruppe
Notified Body ID# 0036

ENC.: Particular Material Appraisals - P-USA-05-02-14-007

P-USA-04-11-14-001.doc



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-05-03-14-001
	2191 Ward Ave	Certificate No.:	USA 05/02/14/005
	La Crosse, WI 54601, USA		USA 05/03/14/001
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: 509.3-4
 - Intended Use: Cryogenic Gas Service

Other identification information:

Chamber Designation:	A	B	--
Min./Max. allowable pressure PS [bar]:	0 / 3.1	atmospheric	
Min./Max. allowable temperature TS [°C]:	-196/65	-196/65	
Volume V [Liter]:	2098	1538	
Fluid:	Group 1	--	

EC-Type-examination on: February 01, 2005

by: Inspection Body of TÜV Industrie Service GmbH TÜV Süd Gruppe, Report No. P-USA-05-02-14-006

Module: B

Drawing / Document number or similar designation: 15773A Rev. B
15773B Rev. A
15773C Rev. 0
15773NPCE 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 01, 2005

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-05-03-14-001	Page:	2 of 3
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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 01, 2005
by: Inspection Body of TÜV Industrie Service GmbH TÜV Süd Gruppe

Chamber Designation:	A	B	--
Test Pressure (bar):	4.6	--	
Pressure Test Medium:	Air/N ₂	--	

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.

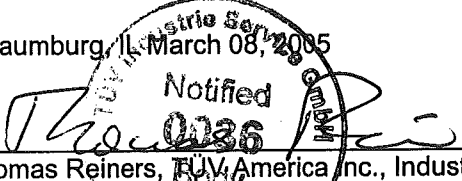


America

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-05-03-14-001	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 08, 2005</p> <p> (Thomas Reiners, TÜV America Inc., Industry Service)</p> <p>Annexes:</p> <ul style="list-style-type: none">• 1: Copy of the material certificates for the main pressure bearing parts• 2: Copy of the manufacturer's Declaration of Conformity			



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-05-03-14-001
	2191 Ward Ave	Certificate No.:	USA 05/02/14/005
	La Crosse, WI 54601, USA		USA 05/03/14/001
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: 509.3-4
 - Intended Use: Cryogenic Gas Service

Other identification information:

Chamber Designation:	A	B	--
Min./Max. allowable pressure PS [bar]:	0 / 3.1	atmospheric	
Min./Max. allowable temperature TS [°C]:	-196/65	-196/65	
Volume V [Liter]:	2098	1538	
Fluid:	Group 1	--	

EC-Type-examination on: February 01, 2005

by: Inspection Body of TÜV Industrie Service GmbH TÜV Süd Gruppe, Report No. P-USA-05-02-14-006

Module: B

Drawing / Document number or similar designation:

- 15773A Rev. B
- 15773B Rev. A
- 15773C Rev. 0
- 15773NPCE 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 01, 2005

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-05-03-14-001	Page:	2 of 3
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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 01, 2005
by: Inspection Body of TÜV Industrie Service GmbH TÜV Süd Gruppe

Chamber Designation:	A	B	--
Test Pressure (bar):	4.6	--	
Pressure Test Medium:	Air/N ₂	--	

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.

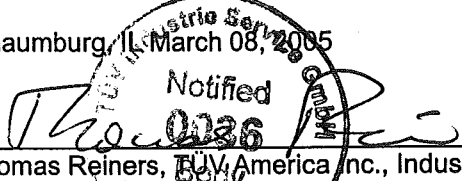


America

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



Industrie Service

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<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 08, 2005</p> <p> Notified 0036 (Thomas Reiners, TÜV America Inc., Industry Service)</p> <p>Annexes:</p> <ul style="list-style-type: none">• 1: Copy of the material certificates for the main pressure bearing parts• 2: Copy of the manufacturer's Declaration of Conformity			