

SALES ORDER	509.1-1
NATIONAL BOARD NO.	
ITEM NO.	W 2100 5060
CHART RECORDER NO.	
OPER./INSPECTOR NO.	6
DATE	02/03/2005

Pneumatic test



Chart Heat Exchangers
Chart Industries, Inc.

2191 Ward Avenue, La Crosse, WI 54601 USA
Phone: 608.787.3333 Fax: 608.787.2226
www.chart-ind.com

HELIUM LEAK TEST REPORT

SALES ORDER NO. 509-1-1

DRAWING NO. 15772A REV A

1. STREAM UNDER VACUUM A

2. STREAM VACUUM VALUE 31 MICRONS

3. STREAM WITH HELIUM By EXTERNAL BACKGROUND 2.35×10^{-8} STD CC/SEC

FOR EXTERNAL TESTS, HELIUM CONCENTRATION START 28.6%

END 33%

4. ACCEPTABLE LEAK RATE
(FROM ASSY. DRAWING) 1.0×10^{-3} STD CC/SEC

5. TEST TIME: 30 MINUTES

6. RESULT: A STREAM = 3.48×10^{-5} STD - CC/SEC

7. TEST COMPLETION DATE: 2-4-05 OPERATOR: 46359

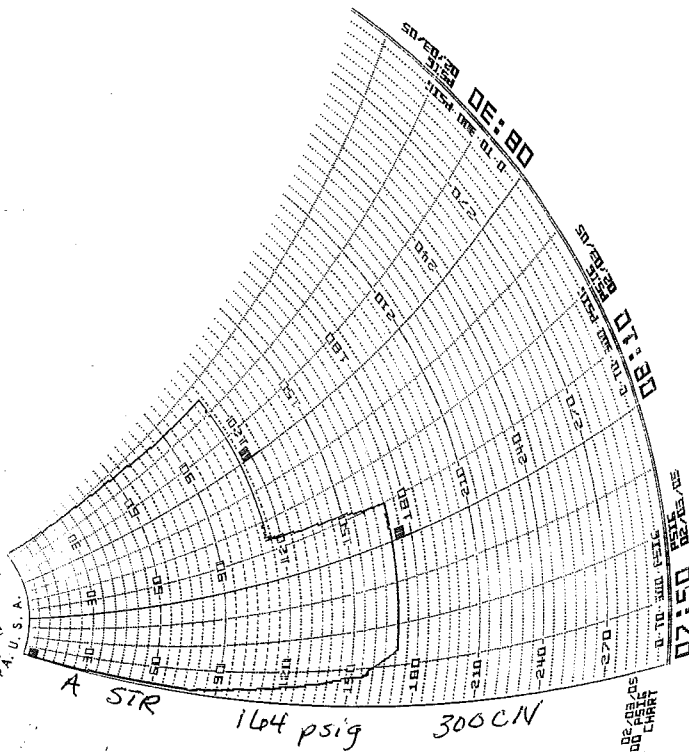
8. MASS SPECTROMETER, IDENTIFICATION #: EDWARDS I

CALIBRATED LEAK, SERIAL #: 711289 LEAK RATE OF STD: 1.6×10^{-7} std cc/sec

RECALIBRATION DATE: 7-15-05 DISPLAYED LEAK: 1.45×10^{-7} std cc/sec

@ 80 °F

© HONEYWELL
30755317
Truline
FT. WASHINGTON, PA, U.S.A.



SALES ORDER	509-1-2
NATIONAL BOARD NO.	5069
ITEM NO.	W21001
CHART RECORDER NO.	6
OPER/INSPECTOR	46353 REM
DATE	2/3/05

Pneumatic Test

07:18 10 02 20 25
FILED 10 02 20 25
0000 01163 CHART



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www.chart-ind.com

HELIUM LEAK TEST REPORT

SALES ORDER NO. 509.1-2

DRAWING NO. 15772A REV. A

1. STREAM UNDER VACUUM A

2. STREAM VACUUM VALUE 23 MICRONS

3. STREAM WITH HELIUM B, EXTERNAL BACKGROUND 3.1×10^{-9} std cc/sec

FOR EXTERNAL TESTS, HELIUM CONCENTRATION START 22%

END 24.8%

4. ACCEPTABLE LEAK RATE
(FROM ASSY. DRAWING) 1.0×10^{-3} std cc/sec

5. TEST TIME: 45 MINUTES

6. RESULT: A STREAM = 4.1 $\times 10^{-5}$ STD - CC/SEC

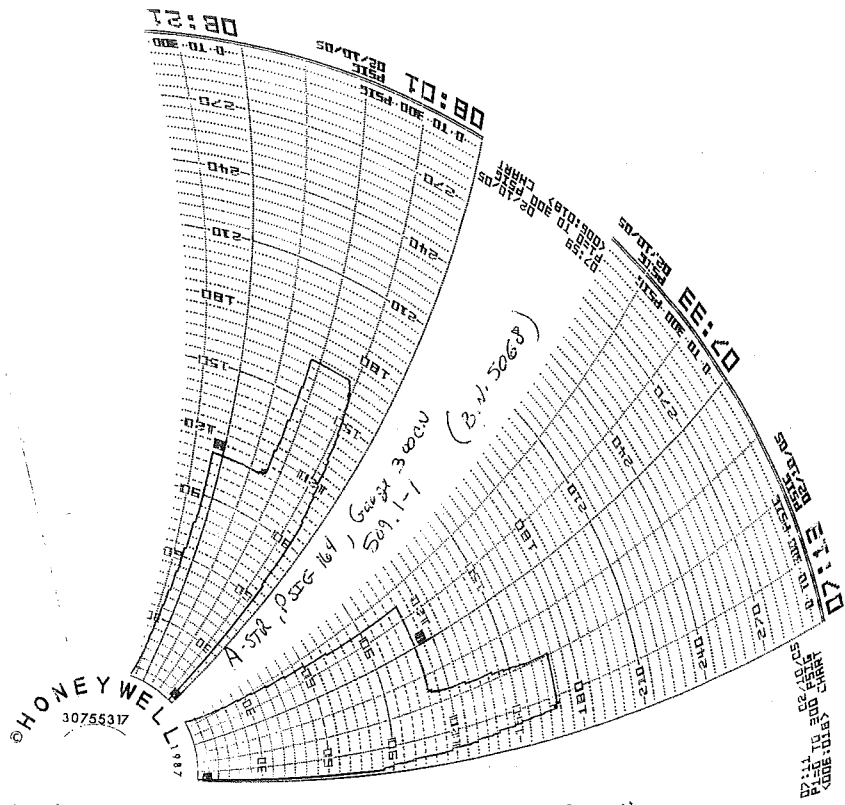
7. TEST COMPLETION DATE: 2-4-05 OPERATOR: 46359

8. MASS SPECTROMETER, IDENTIFICATION #: EDWARDS I

CALIBRATED LEAK, SERIAL #: 710289 LEAK RATE OF STD: 1.6×10^{-7} std cc/sec

RECALIBRATION DATE: 7-15-05 DISPLAYED LEAK: 1.28×10^{-7} std cc/sec

@ 30 °F



HONEYWELL
30755317
Truline
FT. WASHINGTON, PA. U.S.A.

A-STR, PSIG 164, Gauge 300CN
509.1-2 (B.N. 5069)

Pneumatic Test (Battery)

SALES ORDER	509.2-3
NATIONAL BOARD NO.	
ITEM NO.	W21001
CHART RECORDER NO.	6
OPER./INSPECTOR	46348/PO
DATE	2/10/05



Heat Exchangers Division
Chart Industries, Inc.

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

This letter certifies that the Core as identified has been cleaned and inspected for oxygen services per Chart Standard Engineering Specification Section 9 No. 9-14.00.

Sales Order 509.2-3 Core No. _____
National Board No. 5068 Core Serial No. 509.1-1
5069 509.1-2
Chart Inspector ZL H
Date Inspected 2-12-05

CHART HEAT EXCHANGER L.P.

QUALITY DEPARTMENT

- (1) Attach White Original to Core Nameplate
- (1) One Copy to Quality Files