

Chart Heat Exchangers L.P.
Inspection & Test Report

Stacking & Brazing

Cell 4

Sales Order # 509.5-C Module # _____ Manufacturing # 15774B-1

| Operation | Instruction | Operator Clock # | Date & Inspector Initials | W/H Points Int & Date |
|-----------|-------------|---------------------|---------------------------------|--------------------------|
|-----------|-------------|---------------------|---------------------------------|--------------------------|

1. STACKING ASSEMBLY

WI9-040-002

| | | | |
|-------------|---------|--------------------|-------------------|
| Layer 1 - A | WI10-02 | <u>75345 46469</u> | <u>EJO 3-7-05</u> |
| Layer 2 - B | WI10-02 | <u>↓ ↓</u> | <u>EJO 3-7-05</u> |
| Layer | WI10-02 | _____ | _____ |
| Layer | WI10-02 | _____ | _____ |
| Layer | WI10-02 | _____ | _____ |
| Layer | WI10-02 | _____ | _____ |
| Layer | WI10-02 | _____ | _____ |
| Layer | WI10-02 | _____ | _____ |
| Layer | WI10-02 | _____ | _____ |
| Layer | WI10-02 | _____ | _____ |

| | | | |
|---|----------------------|----------------------|---------------------|
| Half Primary Stacking & Squareness | WI10-02 | <u>75345 46469</u> | <u>03-07-05 EJO</u> |
| Primary Stacking & Squareness | WI10-02 | <u>75345 46469</u> | <u>03-07-05 EJO</u> |
| Compression & Dimensional Record | | <u>46463 / 77544</u> | |
| Braze Core / Module | Date <u>03/09/05</u> | <u>46394</u> | |
| Fixture Removal / Dimensional After Brazing | Date <u>03/09/05</u> | <u>46394</u> | |

| Header Inspection Log | | | | | | | | | |
|-----------------------|-----------------------|-------------------|-----------------|----------------|----------------------|-----------------------------|-----------------------|---------|-----------------------------|
| | | | Sales Order # | | | 509.5-6 | | | |
| Header Assy. Item # | Stream Identification | Header Body Trace | End Piece Trace | Nozzle Trace | Misc. Material Trace | Final Insp. Initials & Date | X-Ray Initials & Date | X-Ray # | A.I. Review Initials & Date |
| 8076 | A-IN | S466C | S461C | T187C | | JL 3-17-05 | | | HAL 3-17-05 |
| 8077 | A-OUT | S466C | S461C | T129C | | JL 3-17-05 | | | HAL 3-17-05 |
| 8078 | B-IN | S472C | S167C | T187C | | JL 3-17-05 | | | HAL 3-17-05 |
| 8079 | B-OUT/VENT | S472C | S546C | T138C T062C | | JL 3-17-05 | | | HAL 3-17-05 |

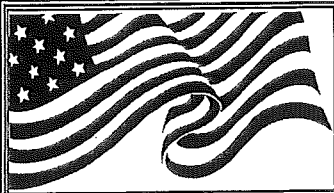


Chart Heat Exchangers

Post Braze

Inspection and Test Report

National Board Number:

5131

Job Number/Serial Number 509.5-6

Drawing Number: 15774A

Mfg. Number: 15774B-1

Review of Design Calculations, Assembly Drawings and I&T Report

QC Review and approval of ITR: KIKDate: 1/24/05AI Review and acceptance of ITR: [Signature]Date: 1-24-05

General Documentation

Nameplate Verification

| QC Inspection | Date | Authorized Inspector | Date |
|------------------|---------------|-------------------------|----------------|
| <u>PJ</u> | <u>4-4-05</u> | <u>[Signature]</u> | <u>4/21/05</u> |

General Operations

| | Emp # | Date | QC Insp | Date | AI Init & Date |
|-------------------------------|-------|---------|---------|------|----------------|
| Centerline Layout | 75519 | 3-11-05 | | | |
| Weld and Inspect Port Posting | 10 | 3-21-05 | | | 3-21-05 |

Header Fit-up and Inspection

| Header | AI Hold (H) | Clean Check / Header Fit-up (Stamp # & Date) | | | | | | |
|--------|-------------|--|--|--|--|--|--|--|
| | | Visual Inspection before fit up | | | | | | |
| A-In | 76 | 3/21/05 | | | | | | |
| A-Out | 76 | 3/21/05 | | | | | | |
| B-In | 10 | 3-21-05 | | | | | | |
| B-Out | 10 | " | | | | | | |

n¹ AI to review header welds prior to fit-up of inactive vent or pan headers. LPT header welds if specified on assembly drawings

Pre-hydro Inspection and Tests

| | Emp # | Date | QC Insp | Date | AI Init & Date |
|---|-------|----------------|---------|---------|----------------|
| 1st Air Test | 10 | 1 o.k. 3-22-05 | | | |
| Support angle fit-up | 10 | 3-22-05 | | | |
| Visual Inspection, final welds (Weld Check) | | | | 3-22-05 | 3/25/05 |
| Dimension Check | | | | 3-22-05 | |

Pneumatic and Leak Test

| Stream Identification | Pneumatic Test Pressure (PSIG) | Leak Test Pressure (PSIG) | Testor Emp # and Date | Inspector or 2nd Testor Emp# and Date | Internal Leak Test Emp # and Date | External Leak Test Emp# and Date | AI Hold Point Init & Date |
|-----------------------|--------------------------------|---------------------------|-----------------------|---------------------------------------|-----------------------------------|----------------------------------|---------------------------|
| A | 164 | 109 | 46353 | 4632505 | VOID | VOID | 4/22/05 |
| B | 110 | 73 | 46353 | 4632505 | VOID | VOID | 4/22/05 |

Final Inspection

| Emp # | Date | QC Insp | Date |
|-------|---------|---------|---------|
| 46424 | 3/25/05 | | |
| 46424 | 4/4/05 | PS | 4/4/05 |
| | | 240 | 4-22-05 |
| | | | |

Helium leak test

Header clean check inspection

Final inspection

ITR review and return to QC Office

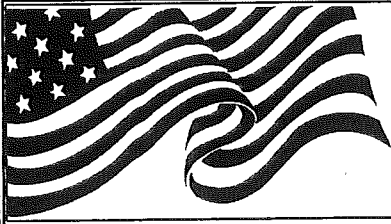


Chart Heat Exchangers

Post Braze Inspection and Test Report For Battery Assemblies

Job/Serial Number: **509.6-7**

Drawing Number: **15774Z**

Review of Assembly Drawings and I&T Report

QC Review and approval of ITR: KIR

Date: 4/5/05

General Operations

Emp #

Date

QC Insp

Date

AI Init & Date

Header Fit-up and Inspection

| Manifold | Clean Check / Header (Stamp # & Date) | Oxygen Service (QC Inspection) | Flange Fit-up | Header Clean Check & Confirm Bolt Torque | Trace code |
|-----------------|---|-----------------------------------|---------------|--|------------|
| NDE | Visual Inspection before fit up | Black Light Inspect | | | |
| A-Liq Piping | 51 | | | | |
| A Return Piping | 24/28 | | | | |

Pre-Pneumatic Inspection and Tests

Emp #

Date

QC Insp

Date

AI Init & Date

Visual Inspection, final welds (Weld Check)

16364

4/13/05

QA

4/30/05

4/24-13-05

Dimension Check

Ref. Dim. Worksheet

QA

4/30/05

Pneumatic and Leak Test

| Stream Identification | Pneumatic Test Pressure (PSIG) | Leak Test Pressure (PSIG) | Testor Emp # and Date | Inspection Emp# and Date | External Leak Test Emp# and Date | AI Hold Point Init & Date |
|-----------------------|--------------------------------|---------------------------|-----------------------|--------------------------|----------------------------------|--------------------------------------|
| A | 120 | 109 | 46424 | Shay 4/13/05 | ✓OK | RAA 4/13/05 |
| A | 120 | 109 | 46353 | PJ 4-21-05 | ✓OK | TUV RAA TR 04/21/05 |

Final Inspection

Shipping pressure and labeling

Crate check

Loose parts verification

Final inspection

ITR review and return to QC Office

| Emp # | Date | QC Insp | Date | AI Init & Date |
|-------|---------|---------|---------|----------------|
| 46488 | 4-21-05 | EAO | 4-22-05 | |
| 46488 | 4-21-05 | EAO | 4-22-05 | |
| 46488 | 4-21-05 | EAO | 4-22-05 | |
| 46488 | 4-21-05 | EAO | 4-22-05 | |
| | | | | |



Chart Heat Exchangers
Post Braze
Inspection and Test Report For Tanks.

National Board Number:

5151

Serial Number: 509.7-8

Drawing Number: 15774Y

Review of Design Calculations, Assembly Drawings and I&T Report

QC Review and approval of ITR: *EJR*

Date: 4/5/05

AI Review and acceptance of ITR: *[Signature]*

Date: 4-5-05

General Documentation

Nameplate Verification

| QC Inspection | Date | Authorized Inspector | Date |
|------------------|----------------|---------------------------|----------------|
| <u>SV</u> | <u>4/12-05</u> | <u><i>[Signature]</i></u> | <u>4/12/05</u> |

General Operations

| | Emp # | Date | QC Insp | Date | AI Init & Date |
|-------------------|-------|--------|---------|------|----------------|
| Centerline Layout | 46379 | 4-6-05 | | | |

Nozzle Fit-up and Inspection

| Nozzels | AI Hold (H) Internal inspection B/4 close up | Clean Check / Nozzle Fit-up (Stamp # & Date) | |
|--------------|--|--|--|
| NDE | | Visual Inspection before fit-up | |
| A-In | | 42 4-7-05 | |
| Liq Out | | 42 4-7-05 | |
| Vap Out | | 42 4-7-05 | |
| Return | | 42 4-7-05 | |
| Balloon 1 LS | | 42 4-6-05 | |
| Balloon 1 LS | | 42 4-6-05 | |
| Balloon 1-1 | | 42- 42 4-6-05 | |
| Balloon 1-3 | | 79 4-8-05 | |
| Balloon 1-4 | | 58 4-7-05 38 | |

Pre-hydro Inspection and Tests

| | Emp # | Date | QC Insp | Date | AI Init & Date |
|---|-------|---------------------|---------|---------|----------------|
| Support angle fit-up | | | K/L | 7/22/05 | |
| Visual Inspection, final welds (Weld Check) | | | K/L | 4-9-05 | 4-22-05 |
| Dimension Check | | Ref. Dim. Worksheet | K/L | 4-9-05 | |

| Pre-Test with Water Test | | | | | |
|---|-----------------------------|-----------------------------|--------------------------|---|---------------------------|
| Stream Identification | Stream Test Pressure (PSIG) | Supervisor Initial and Date | Tester Employee # & Date | Inspector or 2nd Tester Employee # and Date | AI Hold Point Init & Date |
| A | 142 | DB 4/11/05 | 46447 4-11-05 | SV 4-11-05 | |
| Tank Drain and Dry | | | | | |
| Drying Procedure: Manual (M) or Automatic (A) | | | Emp # | | Date |
| Verification of tank dryness. | | | V/M FIC | | 4/22/05 |
| Helium Leak Test, Final Inspection | | | | | |
| | Emp # | Date | QC Insp | Date | AI Init & Date |
| Nozzle clean check inspection | 46448 | 4-21-05 | EJD | 4-22-05 | |
| Final inspection | 46448 | 4-21-05 | EJD | 4-22-05 | |
| hold for Battery Assembly | | | | | |