

**FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS**  
 (Alternative Form for Single Chamber, Completely Shop -Fabricated Vessels Only)  
 As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by AMERCOOL Manufacturing, Inc., 12783 FM 346 East, Whitehouse, Texas 75791  
(Name and address of manufacturer)

2. Manufactured for UCI Calgary Calgary, Alberta T2  
(Name and address of purchaser)

Location of installation UNIVERSAL COMPRESSION unknown  
(Name and address)

4. Type Horiz(Non-Cir) 2001C-4552-A P4283.231 2001C-4552 1283 2001  
(Honz or vert. tank) (Mfg's serial No.) (CRN) (Drawing No.) (Nat'l Bd. No.) (Year built)

5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE.  
 The design, construction, and workmanship conform to ASME Rules, Section VIII, Division 1 1998  
Year  
 to A00 2157  
Addenda (Date) Code Case Nos.

6. Shell: Tube & Plug Sheets: SA-516 GR-70 Fr 1.125/Bk 1.125 .1250 Fr 0' 4.2500"/Bk 0' 4.2500" 1' 0.1250"  
Mat'l (Spec. No., Grade) Nom. Thk. (in.) Corr. Allow. (in.) Diam. I.D. (ft. & in.) Length (overall) (ft. & in.)

7. Seams: Corner Joint 100  
Long (Welded, Dbl. Spot, Lap, Butt) R.T. (Spot or Full) ERT (%) H.T. Temp. (F) Time (hr) Girth (Welded, Dbl. Spot, Lap, Butt) R.T. (Spot, Partial or Full) No. of Courses

8. Heads: (a) Mat'l. (a) Covers: SA-516 GR-70 b) Mat'l. (b) Ends: SA-516 GR-70  
(Spec. No., Grade) (Spec. No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	Fr/Bk	0.500/0.500	0.1250	--	--	--	--	--	2.5000/2.5000 x 12.1250	Flat
(b)	Fr/Bk	0.500/0.500	0.1250	--	--	--	--	--	2.5000/2.5000 x 3.7500/3.7500	Flat

If removable, bolts used (describe other fastenings) N/A  
(Mat'l. Spec No. Gr. Size. No.)

9. MAWP 655 psi at max. temp 300 °F  
 Min. design metal temp. -20 °F at 655 psi. Hydro., pneu., or comb. test pressure 983 psi

10. Nozzles, inspection and safety valve openings: Safety valves by others per UG-125 Note (a).

Purpose (Inlet, Outlet, Drain)	No	Diameter or Size	Type	Material	Nominal Thickness	Reinforcement Material	How Attached	Location
Outlet	1/1	3"300/160	RFWN	SA-105/SA-106B	0.438	Integral	UW-16.1(a)	Front Head

11. Supports: Skirts No Lugs (No) Legs 4 Other (Describe) Attached Welded to covers  
(Yes or No) (No) (No) (Where and how)

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report:

(Name of part, item number, Mfg's name and identifying stamp)

Impact testing exempt per: UG-20(f) Item: IC-1 Service: NATURALGAS CLR-1

Tubes: SA-214 WLD- 20 x 0.63" x .060" x 8.0000'-Straight

Constructed in conformance with appendix 28

**CERTIFICATE OF SHOP COMPLIANCE**

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1. "U" Certificate of Authorization No. 23.329 expires March 20th 2004  
 Date 05-14-2001 Co. name AMERCOOL Manufacturing, Inc. Signed [Signature]  
(Manufacturer) (Representative)

**CERTIFICATE OF SHOP INSPECTION**

Vessel constructed by AMERCOOL Manufacturing, Inc. at Whitehouse, Texas  
 I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State of Province of Texas and employed by H.S.B.I. & I Co. of Hartford CT.  
 have inspected the component described in this Manufacturer's Data Report on 5-9-2001 and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Code, Section VIII, Division 1. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.  
 Date 5-15-01 Signed [Signature] Commissions NB104913 TX1346  
(Authorized Inspector) (Nat'l Board (incl. endorsements), State, Prov. and No.)

**FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS**  
 (Alternative Form for Single Chamber, Completely Shop-Fabricated Vessels Only)  
 As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by AMERCOOL Manufacturing, Inc., 12783 FM 346 East, Whitehouse, Texas 75791  
(Name and address of manufacturer)

2. Manufactured for UCI Calgary Calgary, Alberta T2  
(Name and address of purchaser)

Location of installation UNIVERSAL COMPRESSION unknown  
(Name and address)

4. Type Horiz(Non-Cir) 2001C-4553-A P4282.231 2001C-4553 1284 2001  
(Honz or vert tank) (Mfg's serial No) (CRN) (Drawing No) (Nat'l Bd No) (Year built)

5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE.  
 The design, construction, and workmanship conform to ASME Rules, Section VIII, Division 1 1998  
Year

to A00 2157  
Addenda (Date) Code Case Nos. Special Service per UG-120(d)

6. Shell: Tube & Plug Sheets: SA-516 GR-70 Fr 1.250/Bk 1.250 .1250 Fr 0' 4.2500"/Bk 0' 4.2500" 1' 5.1875"  
Mat'l (Spec. No., Grade) Nom. Thk. (in) Cor. Allow (in) Diam. I.D. (ft. & in.) Length (overall) (ft. & in.)

7. Seams: Corner Joint 100  
Long (Welded, Dbl., Singl. Lap, Butt) R.T. (Spot or Full) ERT(%) H.T. Temp. (°F) Time (hr) Girth (Welded, Dbl., Spot, Lap, Butt) R.T. (Spot, Partial or Full) No. of Courses

8. Heads: (a) Mat'l. (a) Covers: SA-516 GR-70 b) Mat'l. (b) Ends: SA-516 GR-70  
(Spec. No., Grade) (Spec. No., Grade)

	Location (Top Bottom Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	Fr/Bk	0.625/0.625	0.1250	--	--	--	--	--	1.9375/1.9375 x 17.1875	Flat
(b)	Fr/Bk	0.500/0.500	0.1250	--	--	--	--	--	1.9375/1.9375 x 3.7500/3.7500	Flat

If removable, bolts used (describe other fastenings) N/A  
(Mat'l. Spec. No., Gr. Size, No)

9. MAWP 1315 psi at max. temp 300 °F  
 Min. design metal temp. -20 °F at 1315 psi. Hydro., pneu., or comb. test pressure 1973 psi

10. Nozzles, inspection and safety valve openings: Safety valves by others per UG-125 Note (a).

Purpose (Inlet, Outlet, Drain)	No	Diameter or Size	Type	Material	Nominal Thickness	Reinforcement Material	How Attached	Location
/Outlet	1/1	2"600/160	RFWN	SA-105/SA-106B	0.344	Integral	UW-16.1(a)	Front Head

11. Supports: Skirts No Lugs (No) Legs 4 Other (Describe) Attached Welded to covers  
(Yes or No) (No) (No) (Where and how)

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report:  
(Name of part, item number, Mfg's name and identifying stamp)

Impact testing exempt per: UG-20(f) Item: IC-2 Service: NATURALGAS CLR-2  
 Tie Bar: Front(4)SA-516 GR-70 0.3750 x 0.1250 x 1.9375 x 2.7500 Tie Bar: Back(4)SA-516 GR-70 0.3750 x 0.1250 x 1.9375 x  
 Tubes: SA-214 WLD- 29 x 0.63" x .060" x 8.0000'-Straight  
 Constructed in conformance with appendix 28

**CERTIFICATE OF SHOP COMPLIANCE**

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1. "U" Certificate of Authorization No. 23,329 expires March 20th 2004  
 Date 05-14-2001 Co. name AMERCOOL Manufacturing, Inc. Signed [Signature]  
(Manufacturer) (Representative)

**CERTIFICATE OF SHOP INSPECTION**

Vessel constructed by AMERCOOL Manufacturing, Inc. at Whitehouse, Texas  
 I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State of Province of Texas and employed by H.S.B.I. & I Co. of Hartford CT.  
 have inspected the component described in this Manufacturer's Data Report on 5-14 20 01, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Code, Section VIII, Division 1. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.  
 Date 5-15-01 Signed [Signature] Commissions NB104918 TX1346  
(Authorized Inspector) (Nat'l Board (incl. endorsements) State, Prov and No.)

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1. Manufactured and certified by AMERCOOL Manufacturing, Inc., 12783 FM 346 East, Whitehouse, Texas 75791  
(Name and address of manufacturer)

2. Manufactured for UCI Calgary Calgary, Alberta T2  
(Name and address of purchaser)

Location of installation UNIVERSAL COMPRESSION unknown  
(Name and address)

4. Type Horiz(Non-Cir) 2001C-4554-A P4279.231 2001C-4554 1285 2001  
(Honz. or vert. tank) (Mfg's serial No.) (CRN) (Drawing No.) (Natl Bd. No.) (Year built)

5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE.  
 The design, construction, and workmanship conform to ASME Rules, Section VIII, Division 1 1998  
Year

to A00 2157  
Addenda (Date) Code Case Nos. Special Service per UG-120(d)

6. Shell: Tube & Plug Sheets: SA-516 GR-70 Fr 1.250/Bk 1.250 .1250 Fr 0' 4.2500"/Bk 0' 4.2500" 1' 1.8125"  
Mat. (Spec. No., Grade) Nom. Thk (in) Corr. Allow. (in) Diam. I.D. (ft. & in.) Length (overall) (ft. & in.)

7. Seams: Corner Joint 100  
Long (Welded, Dbl. Spot, Lap, Butt) R.T. (Spot or Full) Eff. (%) H.T. Temp. (°F) Time (hr) Girth (Welded, Dbl. Spot, Lap, Butt) R.T. (Spot, Partial or Full) No. of Courses

8. Heads: (a) Mat. (a) Covers: SA-516 GR-70 (b) Mat. (b) Ends: SA-516 GR-70  
(Spec. No., Grade) (Spec. No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	Fr/Bk	0.625/0.625	0.1250	--	--	--	--	--	1.9375/1.9375 x 13.8125	Flat
(b)	Fr/Bk	0.500/0.500	0.1250	--	--	--	--	--	1.9375/1.9375 x 3.7500/3.7500	Flat

If removable, bolts used (describe other fastenings) N/A  
(Matl. Spec. No., Gr., Size, No.)

9. MAWP 1315 psi at max. temp 300 °F  
 Min. design metal temp. -20 °F at 1315 psi. Hydro., pneu., or comb. test pressure 1973 psi

10. Nozzles, inspection and safety valve openings: Safety valves by others per UG-125 Note (a).

Purpose (Inlet, Outlet, Drain)	No.	Diameter or Size	Type	Material	Nominal Thickness	Reinforcement Material	How Attached	Location
Outlet	1/1	2"600/160	RFWN	SA-105/SA-106B	0.344	Integral	UW-16.1(a)	Front Head
Vent	2	1.0	6000CPLG	SA-105		Integral	UW-16.1(a)	Fr/Bk Head

11. Supports: Skirts No Lugs (No) Legs 4 Other (Describe) Attached Welded to covers  
(Yes or No) (No) (No) (Describe) (Where and how)

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report:

(Name of part, item number, Mfg's name and identifying stamp)

Impact testing exempt per: UG-20(f) Item: AC Service: NATURALGAS CLR-3

Tie Bar: Front(4)SA-516 GR-70 0.3750 x 0.1250 x 1.9375 x 2.7500 Tie Bar: Back(4)SA-516 GR-70 0.3750 x 0.1250 x 1.9375 x

Tubes: SA-214 WLD- 23 x 0.63" x .060" x 8.0000'-Straight

Constructed in conformance with appendix 28

**CERTIFICATE OF SHOP COMPLIANCE**

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1. "U" Certificate of Authorization No. 23.329 expires March 20th 2004  
 Date 05-14-2001 Co. name AMERCOOL Manufacturing, Inc. Signed [Signature]  
(Manufacturer) (Representative)

**CERTIFICATE OF SHOP INSPECTION**

Vessel constructed by AMERCOOL Manufacturing, Inc. at Whitehouse, Texas  
 I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State of Province of Texas and employed by H.S.B.I. & I Co. of Hartford CT.  
 have inspected the component described in this Manufacturer's Data Report on 5-9-2001, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Code, Section VIII, Division 1. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.  
 Date 5-15-01 Signed [Signature] Commissions NB104913 TX1346  
(Authorized Inspector) (Nat'l Board (incl. endorsements), State, Prov. and No.)



NAT'L BD. [REDACTED]

CERTIFIED BY AMERCOOL MANUFACTURING, INC.

MAX. ALLOW. PRESS. 1430 PSI @ 300 °F

MIN. DESIGN MTL. TEMP. 220 °F @ 1315 PSI

MFG'R SERIAL NO. 200104551A

HYDRO TEST PRESS. 1210 PSI YEAR 2001

[REDACTED]



P.O. BOX 620

WHITEHOUSE, TEXAS 75791

NAT'L BD. 1283

CERTIFIED BY AMERCOOL MANUFACTURING, INC.

MAX. ALLOW. PRESS. 655 PSI @ 300 °F

MIN. DESIGN MTL. TEMP. -20 °F @ 655 PSI

MFG'R SERIAL NO. 200104552A

HYDRO TEST PRESS. 983 PSI YEAR 2001

CRN P 4293.231



P.O. BOX 620

WHITEHOUSE, TEXAS 75791

NAT'L BD. 1284

CERTIFIED BY AMERCOOL MANUFACTURING, INC.

MAX. ALLOW. PRESS. 1315 PSI @ 300 °F

MIN. DESIGN MTL. TEMP. -20 °F @ 1315 PSI

MFG'R SERIAL NO. 200104553A

HYDRO TEST PRESS. 1973 PSI YEAR 2001

CRN P 4282.23



P.O. BOX 620

WHITEHOUSE, TEXAS 75791

NAT'L BD. 1285

CERTIFIED BY AMERCOOL MANUFACTURING, INC.

MAX. ALLOW. PRESS. 1315 PSI @ 300 °F

MIN. DESIGN MTL. TEMP. -20 °F @ 1315 PSI

MFG'R SERIAL NO. 200104554A

HYDRO TEST PRESS. 1973 PSI YEAR 2001

CRN P 4273.231



P.O. BOX 620

WHITEHOUSE, TEXAS 75791



# AMERCOOL Manufacturing Inc.

P.O. Box 9310 • Tulsa, OK 74157

Phone: (918) 445-5366 • FAX (918) 445-0400

## AIR COOLED EXCHANGER SPECIFICATION SHEET

Date	Wed* 1:22 pm*30-MAY-2001
Proposal/Job No.	2001C-455-01
Reference	EH10435
Item No.	EJW

1	Customer	UCI Calgary		
2	Plant Location	unknown		
	Service	ANTIFREEZ COOLER		
4	Model	60VCI	Type	INDUCED
5	Surface per Unit-Finned Tube	1,310	Ft <sup>2</sup>	No. of Bays 1
6	Heat Exchanged	621,000	BTU/Hr	Bare Tubes 55.02 Ft <sup>2</sup>
7	Transfer Rate-Finned Tube	7.47	Bare Tube, Service	178.00 BTU/Hr. Ft <sup>2</sup> °F

### PERFORMANCE DATA-TUBE SIDE

9	Fluid Name	EGLY 50%		Lethal Service	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	IN	OUT
10	Total Fluid Entering	Lb/Hr	47,810	Density	Lb/Ft <sup>3</sup>	63.6	64.0
11		IN	OUT	Specific Heat (Liq/Vap)	BTU/Lb°F	.869 /	.862 /
12	Temperature	°F	190.0	175.0	Cond. (Liq/Vap)	BTU/HrFt <sup>2</sup> °F	.233 /
13	Liquid	Lb/Hr	47,810	47,810	Pour/Freeze Point	°F	
14	Vapor	Lb/Hr (MW)			Bubble Point	°F	
15	Nocond	Lb/Hr (MW)			Latent Heat	BTU/Lb	
16	Steam	Lb/Hr			Pressure	Psia	10.00
17	Water	Lb/Hr			Pressure Drop Allow/Calc	Psi	5.00 / 2.54
18	Viscosity (Liq/Vap)	Cp	.8238 /	.8914 /	Fouling resist, Inside	ft <sup>2</sup> hr °F/BTU	0.00050

### PERFORMANCE DATA-AIR SIDE

20	Air Quantity	SCFM	13,410	Lb/Hr	60,330	Altitude	Ft	2,500
21	Air Quantity/Fan	ACFM	42,260			Temperature In	°F	95.0
22						Temperature Out	°F	137.7

### DESIGN - MATERIAL - CONSTRUCTION

25	Design Pressure	14	Psig	Test Pressure	21	Psig	Design Temperature	300 / MDMT -20	°F			
26	<b>TUBE BUNDLE</b>	<b>HEADER, Type PLUG BOX</b>				<b>TUBE Material SA-214 WLD</b>						
27	Size	2.1 x 8.0		Material	SA-516 GR-70							
28	No. 1	No. Tube Rows	3	No. Passes	2	Slope	0.0000	In/Ft	OD 0.750 In			
29	Bays	1	In Parallel	In Series	Plug	A1051818						
30	Bundles	1	In Parallel	In Series	Gasket	CS1813						
31	Pass Arrangement (Top to Bottom)					Corrosion Allowance	0.0000	In	FIN Type	L-TENSION		
32	Rows / Pass	3 / 2		Size In Nozzle ( 1)	3.00	SCH XS	SA-106B	In	Material	ALUM		
33		Size Out Nozzle ( 1)	3.00	SCH XS	SA-106B	In	OD	2.000	In	Stock Thick	0.016	In
34	Steam Coil	NO		Rating & Facing	150 -RF SA-105		No./In	10	Support	Chan. / Staple		
35	Hailscreens	NO		Bugscreens	YES		Vent ( 0 )	Drain ( 0 )	Code-ASME VIII, Div 1	YES	Stamp	NONE
36	Louvers	ALUM ( 1 ) VCI MANUAL		TI	PI		Radiograph	N Heat Treat N				
37	Frame Finish	HTC 1 Coat Shop Primer		Header Finish	HTC 1 Coat Shop Primer		Tube Hole Grooving	YES				

### MECHANICAL EQUIPMENT

39	FAN Mfg & Model	MOORE 27 5000	DRIVER Type			SPEED REDUCER Type		
40	No./Bay	1	RPM	597	S.F.	Insul/TR		
41	Dia.	5.0	Ft.	No. Blades	4	No./Bay	Frame	HP
42	Pitch	ADJUSTABLE		Angle°	8.	RPM	Duty	HP Rating
43	Mall, Blade	ALUMINUM		Hub	CATALUM	Enclosure	V & D	
44	HP/Fan, Des.	8.3	DBA	88.	V/P/C	Space Heater	Vibration Switch	

### STRUCTURE

45	Mounting	GRADE			Inlet Header	in. None		
46	Windload - PSF	30.0	Seismic	None	Outlet/Return	in. None		
47	Finish	HTC 1 Coat Shop Primer			Drive Access	in. None		

### WALKWAYS

### NOTES

48	Items combined:	EJW	IC-1	IC-2	AC				
49	Coil Volume (ft <sup>3</sup> ):	1.							
50	Hertz Band:	63	125	250	500	1K	2K	4K	8K
51		102	101	98	93	90	83	79	73

Assembled Drive, Structure & Bundles (Within Shipping Restrictions)

55	Plot Area	ft	Weight Bundle	706.0	Lbs	Total Shipping	4,903	Lbs
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# AMERCOOL Manufacturing Inc.

P.O. Box 9310 • Tulsa, OK 74157

Phone: (918) 445-5366 • FAX (918) 445-0400

## AIR COOLED EXCHANGER SPECIFICATION SHEET

Date Wed\* 1:22 pm\*30-MAY-2001

Proposal/Job No. 2001C-455-02

Reference EHI0435

Item No. IC-1

1	Customer	UCI Calgary	
2	Plant Location	unknown	
	Service	NATURALGAS CLR-1	
	Model	Type	INDUCED
5	Surface per Unit-Finned Tube	495.0	Fl <sup>2</sup> Bare Tubes 26.20 Fl <sup>2</sup>
6	Heat Exchanged	73.580	BTU/Hr MTD (Eff.) 50.74 (Crossflow) °F
7	Transfer Rate-Finned Tube	2.93	Bare Tube, Service 55.35 BTU/Hr. Fl <sup>2</sup> °F

### PERFORMANCE DATA-TUBE SIDE

9	Fluid Name	0.65 SG		Lethal Service	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	IN	OUT
10	Total Fluid Entering	Lb/Hr	2,069	Density	Lb/Ft <sup>3</sup>		.545	.613
11				Specific Heat (Liq/Vap)	BTU/Lb°F		/.551	/.551
12	Temperature	°F	184.5	Cond. (Liq/Vap)	BTU/HrFt°F			.0230
13	Liquid	Lb/Hr		Pour/Freeze Point	°F			
14	Vapor	Lb/Hr (MW)	2,069 (18.8)	Bubble Point	°F			
15	Nocond	Lb/Hr (MW)		Latent Heat	BTU/Lb			
16	Steam	Lb/Hr		Pressure	Psi		197.80	
17	Water	Lb/Hr		Pressure Drop Allow/Calc	Psi		3.00 / 0.50	
18	Viscosity (Liq/Vap)	Cp	/.013	Fouling resist, Inside	ft <sup>2</sup> hr °F/BTU		0.00200	

### PERFORMANCE DATA-AIR SIDE

20	Air Quantity	SCFM	6,425	Lb/Hr	28,910	Allitude	Ft	2,500
21	Air Quantity/Fan	ACFM	.0			Temperature In	°F	90.0
22						Temperature Out	°F	100.6
23								

### DESIGN - MATERIAL - CONSTRUCTION

25	Design Pressure	655	Psig	Test Pressure	983	Psig	Design Temperature	300 / MDMT -20	°F
26	<b>TUBE BUNDLE</b>			<b>HEADER, Type</b> PLUG BOX			<b>TUBE Material</b> SA-214 WLD		
27	Size	1.1 x 8.0		Material	SA-516 GR-70				
	No. I	No. Tube Rows	3	No. Passes	1	Slope	0.0000	In/Ft	OD 0.625 In
	Bays	1	In Parallel	In Series	Plug	A1051222	No./Bundle	20	Min. Thick 0.0600 In
30	Bundles	1	In Parallel	In Series	Gasket	CS1213	Pitch	1.6875	Length 8.0 Ft
31	Pass Arrangement (Top to Bottom)				Corrosion Allowance	0.1250	In	FIN Type	L-TENSION
32	Rows / Pass	3 / 1		Size In Nozzle (1)	3.00	SCH 160 SA-106B	In	Material	ALUM
33				Size Out Nozzle (1)	3.00	SCH 160 SA-106B	In	OD 1.625 In	Stock Thick 0.015 In
34	Steam Coil	NO		Rating & Facing	300 -RF SA-105		No/In	10	Support Chan. / Staple
35	Hailscreens	NO		Vent (0)	Drain (0)		Code-ASME VIII, Div 1	YES	Stamp CRN
36	Louvers	ALUM	(1) VCI MANUAL	TI	PI		Radiograph	N	Heat Treat NO
37	Frame Finish	HTC 1 Coat Shop Primer		Header Finish	HTC 1 Coat Shop Primer		Tube Hole Grooving	YES	

### MECHANICAL EQUIPMENT

39	<b>FAN Mfg &amp; Model</b>			<b>DRIVER Type</b>			<b>SPEED REDUCER Type</b>		
40	No./Bay	RPM		S.F.	Insul/TR				
41	Dia.	Ft.	No. Blades	No./Bay	Frame	HP	No./Bay		
42	Pitch	Angle°		RPM	Duty		HP Rating	Ratio	
43	Matt, Blade	Hub		Enclosure	V & D		Support:		
44	HP/Fan, Des.	DBA		V/P/C	Space Heater		Vibration Switch		

### STRUCTURE

45	Mounting				Inlet Header	in.
46	Windload - PSF	Seismic			Outlet/Return	in.
47	Finish				Drive Access	in.

### WALKWAYS

### NOTES

48	Coil Volume (ft <sup>3</sup> ):	0.	
49			
50			
51			
52			
53			
54			
55	Plot Area	ft	Weight Bundle 479.0
		Lbs	Total Shipping 4,903
			Lbs

# AMERCOOL Manufacturing Inc.

P.O. Box 9310 • Tulsa, OK 74157

Phone: (918) 445-5366 • FAX (918) 445-0400

## AIR COOLED EXCHANGER SPECIFICATION SHEET

Date Wed\* 1:22 pm\*30-MAY-2001

Proposal/Job No. 2001C-455-03

Reference EH10435

Item No. IC-2

1	Customer	UCI Calgary	
2	Plant Location	unknown	
	Service	NATURALGAS CLR-2	
	Model	Type	INDUCED
5	Surface per Unit-Finned Tube	717.8	Fl <sup>2</sup> Bare Tubes 37.99 Fl <sup>2</sup>
6	Heat Exchanged	182,700	BTU/Hr MTD (Eff.) 61.85 (Crossflow) °F
7	Transfer Rate-Finned Tube	4.11	Bare Tube, Service 77.74 BTU/Hr. Fl <sup>2</sup> °F

### PERFORMANCE DATA-TUBE SIDE

9	Fluid Name	0.65 SG		Lethal Service	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	IN	OUT
10	Total Fluid Entering	Lb/Hr	2,768	Density	Lb/Ft <sup>3</sup>		1.49	1.80
11		IN		Specific Heat (Liq/Vap)	BTU/Lb°F		/ .594	/ .594
12	Temperature	°F	231.0	Cond. (Liq/Vap)	BTU/HrFt°F			.0280
13	Liquid	Lb/Hr		Pour/Freeze Point	°F			
14	Vapor	Lb/Hr (MW)	2,768 (18.8)	Bubble Point	°F			
15	Nocond	Lb/Hr (MW)		Latent Heat	BTU/Lb			
16	Steam	Lb/Hr		Pressure	Psia		581.20	
17	Water	Lb/Hr		Pressure Drop Allow/Calc	Psi		5.00 / 1.27	
18	Viscosity (Liq/Vap)	Cp	/ .013	Fouling resist, Inside	ft <sup>2</sup> hr °F/BTU		0.00200	

### PERFORMANCE DATA-AIR SIDE

20	Air Quantity	SCFM	9,142	Lb/Hr	41,140	Altitude	Ft	2,500
21	Air Quantity/Fan	ACFM	.0	Temperature In	°F	90.0		
22				Temperature Out	°F	108.4		

### DESIGN - MATERIAL - CONSTRUCTION

25	Design Pressure	1,315	Psig	Test Pressure	1,973	Psig	Design Temperature	300 / MDMT -20	°F
26	<b>TUBE BUNDLE</b>	<b>HEADER, Type</b> PLUG BOX				<b>TUBE Material</b> SA-214 WLD			
27	Size	1.5 x 8.0		Material	SA-516 GR-70				
	No. 1	No. Tube Rows	3	No. Passes	2	Slope	0.0000	In/Ft	
	Bays	1	In Parallel	In Series	Plug	A1051222	No./Bundle	29	
30	Bundles	1	In Parallel	In Series	Gasket	CS1213	Length	8.0	
							Pitch	1.6875	
31	Pass Arrangement (Top to Bottom)	Corrosion Allowance				0.1250	In	FIN Type	L-TENSION
32	Rows / Pass	3 / 2		Size In Nozzle ( 1 )	2.00	SCH 160 SA-106B	In	Material	ALUM
33				Size Out Nozzle ( 1 )	2.00	SCH 160 SA-106B	In	OD	1.625
				Rating & Facing	600 -RF	SA-105	No./In	10	Support
34	Steam Coil	NO		Vent ( 0 )	Drain ( 0 )		Code-ASME VIII, Div 1	YES	Stamp
35	Hailscreens	NO		TI	PI		Heat Treat	NO	
36	Louvers	ALUM	( 1 ) VCI MANUAL	Header Finish	HTC 1	Coat Shop Primer	Tube Hole Grooving	YES	
37	Frame Finish	HTC 1 Coat Shop Primer							

### MECHANICAL EQUIPMENT

39	<b>FAN Mfg &amp; Model</b>	<b>DRIVER Type</b>			<b>SPEED REDUCER Type</b>		
40	No./Bay	RPM	S.F.	Insul/TR			
41	Dia.	Ft.	No. Blades	No./Bay	Frame	HP	No./Bay
42	Pitch	Angle°	RPM	Duty			HP Rating
43	Matl, Blade	Hub	Enclosure	V & D			Ratio
44	HP/Fan, Des.	DBA	V/P/C	Space Heater			Support:
							Vibration Switch

### STRUCTURE

### WALKWAYS

45	Mounting	Inlet Header	in.
46	Windload - PSF	Seismic	Outlet/Return
47	Finish	Drive Access	in.

### NOTES

48	Coil Volume (ft <sup>3</sup> ):	0.	
49			
50			
51			
52			
53			
54			
55	Plot Area	ft	Weight Bundle 608.0
		Lbs	Total Shipping 4,903
		Lbs	



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## AIR COOLED EXCHANGER SPECIFICATION SHEET

Date Wed\* 1:22 pm\*30-MAY-2001

Proposal/Job No. 2001C-455-04

Reference EH10435

1	Customer	UCI Calgary			Item No.	AC
2	Plant Location	unknown				
3	Service	NATURALGAS CLR-3				
4	Model	Type	INDUCED		No. of Bays	1
5	Surface per Unit-Finned Tube	569.3	Ft <sup>2</sup>	Bare Tubes	30.13	Ft <sup>2</sup>
6	Heat Exchanged	155.300	BTU/Hr	MTD (Eff.)	59.42 (Crossflow) °F	
7	Transfer Rate-Finned Tube	4.94	Bare Tube, Service	86.74	BTU/Hr. Ft <sup>2</sup> °F	

### PERFORMANCE DATA-TUBE SIDE

9	Fluid Name	0.65 SG		Lethal Service	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	IN	OUT
10	Total Fluid Entering	Lb/Hr	2,505	Density	Lb/Ft <sup>3</sup>		3.01	3.56
11		IN	OUT	Specific Heat (Liq/Vap)	BTU/Lb°F		.639	.639
12	Temperature	°F	217.0	120.0	Cond. (Liq/Vap)	BTU/HrFt°F		.0300
13	Liquid	Lb/Hr			Pour/Freeze Point	°F		
14	Vapor	Lb/Hr (MW)	2,505 (18.8)	2,505 (18.8)	Bubble Point	°F		
15	Nocond	Lb/Hr (MW)			Latent Heat	BTU/Lb		
16	Steam	Lb/Hr			Pressure	Psia		1148.20
17	Water	Lb/Hr			Pressure Drop Allow/Calc	Psi		5.00 / 0.71
18	Viscosity (Liq/Vap)	Cp	.013	.013	Fouling resist, Inside	ft <sup>2</sup> hr °F/BTU		0.00200

### PERFORMANCE DATA-AIR SIDE

20	Air Quantity	SCFM	7,309	Lb/Hr	32,890	Allitude	Ft	2,500
21	Air Quantity/Fan	ACFM	.0			Temperature In	°F	90.0
22						Temperature Out	°F	109.6
23								

### DESIGN - MATERIAL - CONSTRUCTION

25	Design Pressure	1,315	Psig	Test Pressure	1,973	Psig	Design Temperature	300 / MDMT -20 °F				
26	<b>TUBE BUNDLE</b>	<b>HEADER, Type PLUG BOX</b>				<b>TUBE Material SA-214 WLD</b>						
27	Size	1.2 x 8.0		Material	SA-516 GR-70							
28	No.	1	No. Tube Rows	3	No. Passes	2	Slope	0.0000	In/Ft			
29	Bays	1	In Parallel	In Series	Plug	A1051222		No./Bundle	23			
30	Bundles	1	In Parallel	In Series	Gasket	CS1213		Pitch	1.6875			
31	Pass Arrangement (Top to Bottom)					Corrosion Allowance	0.1250	In	FIN Type	L-TENSION		
32	Rows / Pass	3 / 2			Size In Nozzle ( 1 )	2.00	SCH 160 SA-106B	In	Material	ALUM		
33					Size Out Nozzle ( 1 )	2.00	SCH 160 SA-106B	In	OD	1.625		
34	Steam Coil	NO			Rating & Facing	600 -RF SA-105		No./In	10	Support	Chan. / Staple	
35	Hailscreens	NO			Vent ( 2 )	1-6000	Drain ( 0 )		Code-ASME VIII, Div 1	YES	Stamp	CRN
36	Louvers	ALUM ( 1 ) VCI MANUAL			TI	PI			Radiograph	N	Heat Treat	NO
37	Frame Finish	HTC 1 Coat Shop Primer			Header Finish	HTC 1 Coat Shop Primer			Tube Hole Grooving	YES		

### MECHANICAL EQUIPMENT

39	<b>FAN Mfg &amp; Model</b>	<b>DRIVER Type</b>			<b>SPEED REDUCER Type</b>			
40	No./Bay	RPM		S.F.	Insul/TR			
41	Dia.	Ft.	No. Blades	No./Bay	Frame	HP	No./Bay	
42	Pitch	Angle°		RPM	Duty		HP Rating	Ratio
43	Matl, Blade	Hub		Enclosure	V & D		Support:	
44	HP/Fan, Des.	DBA		V/P/C	Space Heater		Vibration Switch	

### STRUCTURE

### WALKWAYS

45	Mounting		Inlet Header	in.
46	Windload - PSF	Seismic	Outlet/Return	in.
47	Finish		Drive Access	in.

### NOTES

48	Coil Volume (ft <sup>3</sup> ):	0.						
49								
50								
51								
52								
53								
54								
55	Plot Area	ft	Weight Bundle	537.0	Lbs	Total Shipping	4,903	Lbs