

SPECIFICATION SHEET

CUSTOMER	ITS	DATE	May 2, 2002
REFERENCE NUMBER	99170 REV. 1	ITEM NUMBER	2 OF 2
MODEL	HL 93 - 14	NUMBER REQUIRED	1
PERFORMANCE OF ONE UNIT			
1 FLUID	HEAT MED CLR	HEAT MED CLR	
2 FLOW	69120 #/hr	11000 #/hr	
3	AC-630A	AC-630B	
4	THERMINOL 66	THERMINOL 66	
5 TEMPERATURE IN, °F	600	400	
6 TEMPERATURE OUT, °F	400	250	
7 INLET PRESSURE, PSIA	39.63	39.62	
8 PRESSURE DROP, PSI	9.7	3.3	
9 DUTY, BTU/HOUR	8051099	824835	
10 CORRECTED MTD	301.21	181.39	
11 BARE TUBE RATE	83.18	51.84	
12 FOULING	.002	.002	
13 BARE TUBE SURFACE, SQ. FT.	359.19	106.29	
14 TOTAL SURFACE, SQ. FT.	7687	2275	
CONSTRUCTION			
15 NUMBER OF SECTIONS	1	1	
16 TUBES / SECTIONS	98	29	
17 LENGTH	14	14	
18 ROWS - PASSES	3-6	3-6	
19 TUBE O.D. AND BWG	1X14	1X14	
20 TUBE MATERIAL	SA179	SA179	
21 INSERTS	-	-	
22 DESIGN PRESSURE, PSI	100	100	
23 DESIGN TEMPERATURE, °F	650	650	
24 NOZZLES	3-150RF	3-150RF	
25 HEADERS	<input checked="" type="checkbox"/> BOX TYPE WITH REMOVABLE PLUGS, CARBON STEEL		
26 ASME STAMP & NB	YES	YES	
27 PLUGS, TYPE	SHOULDER	SHOULDER	
28 PLUGS, MATERIAL	STEEL	STEEL	
29 FINS	<input checked="" type="checkbox"/> ALUMINUM, ANGLE BASE, MECHANICALLY BONDED		
30 CORROSION ALLOWANCE	0.125	0.125	
31			
32			
AIR DATA			
33 INLET AIR, °F	105	ELEVATION, FT.	120
34 OUTLET AIR, °F	221.9	TOTAL SCFM	70006
MECHANICAL EQUIPMENT			
35 FAN	DRIVE	DRIVER	
36 NUMBER 1	<input checked="" type="checkbox"/> V-BELT <input type="checkbox"/> DIRECT	TYPE	ELECTRIC
37 HP / FAN 11.89	SIZE 3VX850	MAKE	TOSHIBA
38 RPM 411	NUMBER 4	SIZE	254T
39 DIAMETER 93 *	LARGE SHV. 4.50 OD, 4 GRV. 1 5/8"	HP / DRIVER	15.0
40 BLADES 5	SMALL SHV. 19.0 OD, 4 GRV. 1 15/16"	RPM	1800
41 PITCH 10.3° CLEVIS		ENCLOSURE	XP
42 MAKE MOORE 5000 33 W/VT TIPS	<input type="checkbox"/> GEAR		
43 MATERIAL ALUMINUM	RATIO		
44 * 82.3 dBA/FAN @ 1m	AGMA HP	VOLTAGE	230/460
45 BORE 1 15/16 INCHES	COUPLING	PHASE	3
46 ROTATION RIGHT		CYCLES	60
47 FAN SHAFT - 1 15/16" X 33" CRS, WITH 4" STD. KEYS BOTH ENDS.			
48			
49 BEARINGS - TWO 1 15/16 DODGE SCM.			
50 REMARKS	LOUVERS W/FISHER AIR ACTUATOR ON EACH. HAILScreens. IADDER & WALKWAY EACH END. BUGScreens. ROBERTSHAW 365D8 VIBRATION SWITCHES.		
		WEIGHT 8,500#	

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 FIN-X, INC., 402 West Second Avenue, Owasso, Oklahoma 74055
(Name and address of manufacturer)

2. Manufactured for ITS ENGINEERED SYSTEMS, INC., 6818 FM 2855, Katy, TX 77493
(Name and address of purchaser)

3. Location of installation Unknown
(Name and address)

4. Type Horiz. R 594.1 R 594 2174 2002
(Mount. or type, tank) (Mfg.'s serial No.) (CAN) (Drawing No.) (Part. 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 2001
Year

to 2002
Addenda (Date) Code Case Nos. Section VIII per UG-120(d)

6. Shell: No Shell
Matl. (Spec. No., Grade) Nom. Thk. (in.) Corr. Allow. (in.) Diam. I.D. (ft. & in.) Length (overall) (ft. & in.)

7. Seams: Single Welded
Long. (Welded, Dbl., Sppl., Lap, Butt) R.T. (Spot or Full) E.H. (in.) H.T. Temp. (°F) Time (hr) Girth (Welded, Dbl., Sppl., Lap, Butt) R.T. (Spot, Partial, or Full) No. of Courses

8. Heads: (a) Matl. SA516-70 (b) Matl. SA516-70
(Spec. No., Grade) (Spec. No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Max. Span	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	T&P Sheet	.75	.125	-----	5.25	-----	-----	-----	-----	Flat
(b)	Wrap&Ends	.375	.125	-----	4.00	-----	-----	-----	-----	Flat

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

9. MAWP 100 psi at max. temp. 650 °F
 Min. design metal temp. _____ °F at 100 psi Hydro. 150 psi.

10. Nozzles, inspection and safety valve openings: Safety Valve Openings Installed By Others.

Purpose (Inlet, Outlet, Drain)	No.	Diam. or Size	Type	Matl.	Nom. Thk.	Reinforcement Matl.	How Attached	Location
INLET/OUTLET	1/1	3"	15ORF	SA105/SA106 B	SCH 160	Weld	Welded	Wrapper
VENT	2	1"	CPLG	SA105	6000#	WELD	WELDED	WRAPPER
DRAIN	1	1"	CPLG	SA105	6000#	WELD	WELDED	WRAPPER

11. Supports: Skirt _____ Lugs _____ Legs _____ Other _____ Attached _____
(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)

6" X 4" X
Rectangular Box Headers: 3 Row 6 Pass, "Constructed in Conformance With Appendix 28" Dimensions: 75.375"
Tubes: 1 OD, 14 BWG 14 Ft. Long 98 Pieces, Material: SA179
No Impact Testing Required Per UG20F [Plugs] SA105 Service: HEAT MED CLR

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. 18,989 expires 11-10, 2004.
 Date 1-14-03 Co. name FIN-X, INC. Signed [Signature]
(Manufacturer) (Inspector)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by FIN-X, INC. at Owasso, Oklahoma
 I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Oklahoma and employed by ONE BEACON AMERICAN INSURANCE GROUP
 have inspected the component described in this Manufacturer's Data Report on 1/16, 03, 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 a loss of any kind arising from or connected with this inspection.
 Date 1/16/03 Signed [Signature] Commissioned [Signature]
(Authorized Inspector) (National Board (Incl. endorsement), State, Prov. and No.)

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1. Manufactured and certified by FIN-X, INC. 402 West Second Avenue, Owasso, Oklahoma 74055
(Name and address of manufacturer)

2. Manufactured for ITS ENGINEERED SYSTEMS, INC., 6818 FM 2855, Katy, TX 77493
(Name and address of purchaser)

3. Location of installation Unknown
(Name and address)

4. Type Horiz. R 594.2 R 594 2175 2002
(Horiz. 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 2001
Year

to 2002
Address (Date) Code Class No. Special Service per UG-120(d)

6. Shell: No Shell
Mat'l. (Spec. No., Grade) Nom. Thk. (in.) Corr. Allow. (in.) Diam. I.D. (ft. & in.) Length (overall) (ft. & in.)

7. Seams: Single Welded
Long. (Welded, Dbl., Sngl., Lap, Butt) R.F. (Spot or Full) E.H. (W) H.T. Temp. (°F) Time (hr) Girth (Welded, Dbl., Sngl., Lap, Butt) R.T. (Spot, Partial, or Full) No. of Courses

8. Heads: (a) Mat'l. SA516-70 (Spec. No., Grade) (b) Mat'l. SA516-70 (Spec. No., Grade)

Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Max. Span	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a) T&P Sheet	.75	.125	-----	5.25	-----	-----	-----	-----	Flat
(b) Wrap&Ends	.375	.125	-----	4.00	-----	-----	-----	-----	Flat

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

9. MAWP 100 psi at max. temp. 650 °F
 Min. design metal temp. _____ °F at 100 psi. Hydro. 150 psi.

10. Nozzles, inspection and safety valve openings: Safety Valve Openings Installed By Others.

Purpose (Inlet, Outlet, Drain)	No.	Diam. or Size	Type	Mat'l.	Nom. Thk.	Reinforcement Mat'l.	How Attached	Location
INLET/OUTLET	1/1	3"	15ORF	SA105/SA106 B	SCH 160	Weld	Welded	Wrapper
VENT	2	1"	CPLG	SA105	6000#	WELD	WELDED	WRAPPER
DRAIN	1	1"	CPLG	SA105	6000#	WELD	WELDED	WRAPPER

11. Supports: Skirt _____ Lugs _____ Legs _____ Other _____ Attached _____
(Type or not) (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)

6" X 4" X

Rectangular Box Headers: 3 Row 6 Pass, "Constructed in Conformance With Appendix 28" Dimensions: 23.625"
Tubes: 1 OD. 14 BWG 14 Ft. Long 29 Pieces, Material: SA179
No Impact Testing Required Per UG20F [Plugs] SA105 Service: HEAT MED CLR

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. 18,989 expires 11-10, 2004.
 Date 1-14-03 Co. name FIN-X, INC. Signed [Signature]
(Manufacturer) (Inspector/Qualifier)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by FIN-X, INC. at Owasso, Oklahoma
 I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Oklahoma and employed by ONE BEACON AMERICAN INSURANCE GROUP
 have inspected the component described in this Manufacturer's Data Report on P16-03, 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 a loss of any kind arising from or connected with this inspection.
 Date 1-16-03 Signed [Signature] Commissioned [Signature]
(Authorized Inspector) (National Board (Incl. endorsements), State, Prov. and No.)