Designed constructed and stamped in accordance with 2004 ASME Code and latest Addendum.

SIGN. TLO	SUPPLIER	REF. 2746-10
	AGENT/REF. Alfa Laval Inc. / ESE05-0592	
	CUSTOMER NAME / REF. NO. CPE Systems Inc / 17860-G	
RISKCATEGORY N/A		MP NO.

REMARKS	SIDE1	SIDE2
DESIGN PRESSURE	150 psig	150 psig
TEST PRESSURE	195 psig	195 psig
MAX TEMPERATURE	250 °F	250 °F
MIN TEMPERATURE	221 °F	104 °F
MAWP	150 psig	150 psig
MDMT	-20 °F	

CRN M1742.54

GASKET	EPDM/FF CLIP-ON
PLATE MATERIAL	ALLOY 316
PLATE THICKNESS	0.50 mm
HEATING SURFACE	33.2 ft²
PLATE GROUPING	1*7L/1*8L
OPERATING WEIGHT	852 lb
NET WEIGHT	833 lb

PLATE HEAT EXCHANGER

M10-MFG

ASME

SERIAL NO. 30109-73919

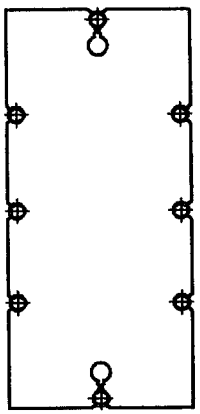
DATE 2006-01-20

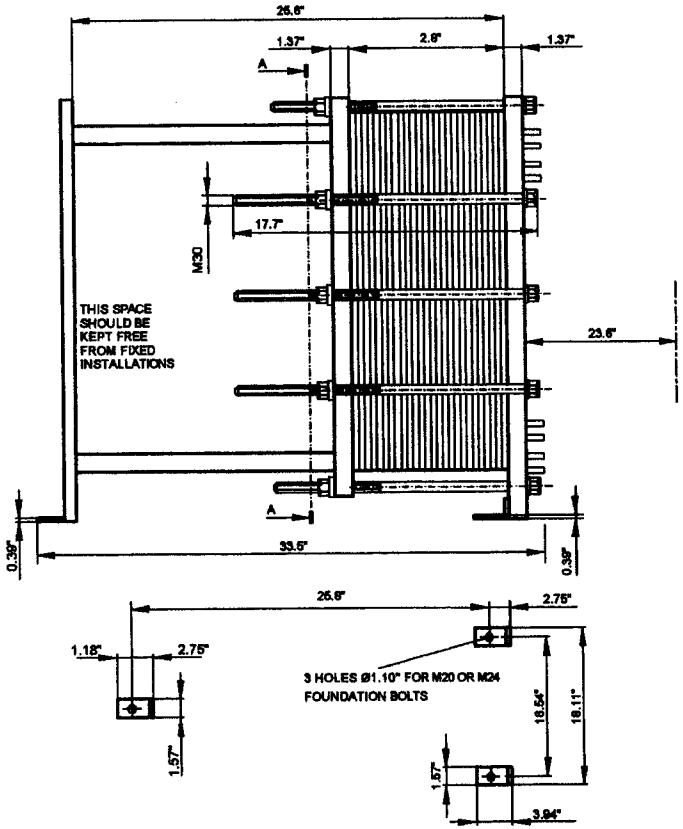
REV NO. 1

PRESSURE PLATE

(MOVABLE)

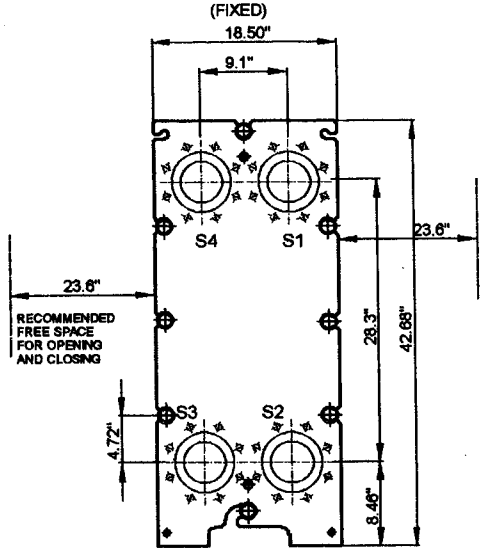
SECTION A-A

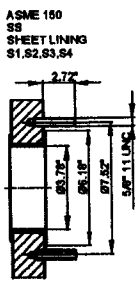




FRAME PLATE

(FIXED)





TOTAL LENGTH	33.5"
TOTAL WIDTH	18.5"
TOTAL HEIGHT	42.7"

ALL DIMENSIONS IN INCHES

SIDE	MEDIA	INLET	TEMP.	OUTLET	TEMP.	FLOW RATE	PRESSURE DROP	LIQUID VOL.
1	Water/Steam	S1	226.6 °F	S2	219.2 °F	2103 lb/h	2.560 psi	0.27 ft³
2	Water	S3	110.0 °F	S4	180.0 °F	29730 lb/h	0.7580 psi	0.3 ft³

30109-73919

Alfa Laval, Plate Heat Exchanger
Channel Plate Installation Description

2006-01-20

Customer:	CPE Systems Inc	SU Order No:	2746-10
Model :	M10-MFG	Serial No:	30109-73919
Customer PO:	17860-G		

Plate material and Thickness:	ALLOY 316 0.50 mm	
A Dimension:	71 mm	
	Hot side	**Cold side**
Grouping:	1*7L	1*8L
Sealing material:	EPDMFF CLIP-ON	EPDMFF CLIP-ON
Port Locations:	S1 -> S2	S3 -> S4
Connection material:	Stainless steel	Stainless steel

Port hole with flow on the gasketed side: U
Port hole sealed with O-ring: O
Plates are assembled with the gasket side facing the frame plate.

Duty data

	Hot side	**Cold side**	
Inlet connection:	S1	S3	
Outlet connection:	S2	S4	
Grouping:	1*7L	1*8L	
Design pressure:	150	150	psig
Test pressure:	195	195	psig
Design temperature:	250.0	250.0	F
Min temperature:	221.0	104.0	F
Fluid:	Water/Steam	Water	
Fluid danger code: Gaseous or liquid with vapour pressure > 0.5 bar at design temperature:	No	No	

A-measure max: 71 mm
A-measure min: 71 mm
Connection standard: ASME

Plate no.	Plate code no.	Plate Pattern		Punched corner of the plate upper left	lower left	lower right	upper right	Flow direction on the gasket side of the plate
				S1	S2	S3	S4	
	FRAME PLATE			=>=	=<=	=<=	=>=	
1	369940 7683	M10 M2	B	O	O	O	O	
2	369940 7003	M10 M1	A	O	O	U ---->--	U	Up
3	369940 7003	M10 M1	B	U ---->--	U	O	O	Down
4	369940 7003	M10 M1	A	O	O	U ---->--	U	Up
5	369940 7003	M10 M1	B	U ---->--	U	O	O	Down
6,	8, ... , 10	369940 7003	M10 M1 A					
7,	9, ... , 11	369940 7003	M10 M1 B					

ESE05-0592

12	369940 7003	M10 M1	A	O		O	U	--->--	U	Up
13	369940 7003	M10 M1	B	U	--->--	U	O		O	Down
14	369940 7003	M10 M1	A	O		O	U	--->--	U	Up
15	369940 7003	M10 M1	B	U	--->--	U	O		O	Down
16	369940 7676	M10 M2	A					--->--		Up
	PRESSURE PLATE									
				T1		T2	T3		T4	

Article No:	Quantity:
369940 7683	1
369940 7003	14
369940 7676	1
	16

Manufacturing Order: 5408

M10-MFG 16PL ALLOY 316

Order No Alfa: 2746-5408
MO No: 5408
SO No: 2746

Start Date: 060127
Finish Date: 060203
SO Lev Date: 060203 -

Fabric No (from): 30109-73919

Unit Type: M10-MFG
Quantity: 1
Operation Time: 4.00

Flow Group: SU1
Responsible: TLO

Cust Ordern No: ESE05-0592
Company: ALFA LAVAL INC. - CANADA
Company No: 10043
Customer Ref: Dawn Anne Benoit
Delivery City: , CANADA

M10 FG CF105 S4 S1 S3 S2
A-measure = 2.811
PVcode:ASME

HE-1

Pos:	Item Number:	Description:	Qty:
230	369940 7683	M10MK2-HT-316-0.6-EPDMFF/C END PLATE II	1
240	*369940 7003*	CHANNEL PLATE	14
250	369940 7676	M10MK2-HT-316-0.6-EPDMFF/C END PLATE I	1
260	M10 FG BA02	650mm CS/ZP BARS	1
270	M10 FG NP99	ASME UM SS NAME PLATE	1
280	M10 FG CF105	LNR SS CONNECTIONS FRAME PLATE	4
290	M10 MFG FX01	FIXED ITEMS	1
300	M10 FG TB117	450MM SA193B7 TIGHTENING BOLT	1
310	M10 FG SC102	CARBON STEEL ZINC PLATED SUPPORT COLUMN	1
320	M10 FG YP02	SKID LC=650mm PACKING	1
330	M10 FG PP203	0PORT PRESSURE PLATE	1
340	M10 FG FP178	4PORT STUD FRAME PLATE	1

Pos:	Operation Descriptio	Setup Time:	Run Time:
230	CLIP PLATE	0,00	0,03
240	CLIP PLATE	0,00	0,35
250	CLIP PLATE	0,00	0,03
260	ASSEMBLY AND TEST	0,00	2,90
270	ASME UM/QUALITY	0,00	0,59
			3,89

Pos:	Item Number:	Description	Qty:	Shelf:	PO/MO
230	367317 0098	CHANNEL PLATE PRESSED M10M 316.6 HT 4	1 (196)	SU1E	
230	39005616 26	GASKET M10M EPDMFF CO	2 (311)	REFI	
240	367217 4098	CHANNEL PLATE PRESSED M10M 316.5 LT 4	14 (694)	SU1H	
240	39005616 26	GASKET M10M EPDMFF CO	14 (311)	REFI	
250	367317 0076	CHANNEL PLATE PRESSED M10M 316.6 HT 0	1 (69)	SU1H	
250	39005616 26	GASKET M10M EPDMFF CO	1 (311)	REFI	
260	221736 05	BOLT, SOCKET HEAD M20 30MML CS ZP	2 (0)		
260	221736 31	BOLT, SOCKET HEAD M20 55MML CS ZP	2 (0)		
260	223101 51	WASHER, FLAT 3/4" CS ZP	2 (0)		
260	32323 2044 2	CARRYING BAR M10 650MM CS/ZP	2 (105)	AUFLR	
260	PALLET C1	PALLET L=42"	1 (31)	RYARD	
270	32380175 01	NAME PLATE Alfa Laval/ Standard	1 (566)	QA	
270	66169	DRIVE SCREW	4 (0)		
280	1620868 01	DISTANCE SHEET M10 1P A240,316 SS	4 (321)	SU1O	
280	32324 7381 10	PORT LINER 4"CVR+19MM SS L=54MM	4 (206)	SU1Q	
290	2210462 10	BOLT, HEX HEAD M16 40MML CS ZP	1 (0)		
290	2210462 32	BOLT, HEX HEAD M16 80MML CS ZP	2 (0)		
290	221803 34	NUT, HEX HEAD M16 CS ZP	3 (0)		
290	32323 0069 1	FOOT M6/M10 CS zinc	3 (722)	auflr	
290	32380097 01	MANUALS PHE I&M INDUSTRIAL EXCHANGEI	2 (448)	RSTCK	
290	70490	WASHER FLAT M16 or 5/8" CS ZP	6 (0)		
300	32239 1143 1	THRUST LOCK WASHER TB M30 CS ZP	8 (1672)	AUFLR	
300	32239 1145 1	THRUST WASHER TB M30 BRASS	8 (1749)	AUFLR	
300	32324 1102 1	TIGHTENING BOLT M30 x SA193B7 450MM	8 (374)	SU1J	
300	32324 2003 1	TIGHTENING NUT M30 Staking/Running	8 (1397)	AUFLR	
300	32324 2900 1	GUIDE WASHER TB M30 DIA CS ZP	8 (2001)	AUFLR	
300	PLASTIC TUBE,30	POLY 34MM/32MM, RED-LDPE	1 (0)		
310	32322 0030 3	SUPPORT COLUMN M10 FD CS ZINC	1 (118)	AUFLR	
320	GHOST	GHOST PART	1 (0)		

330	1621537 04	PRESSURE PLATE COMPLETE M10FG 35mm	1 (7)	ANBAN
340	1621535 07	FRAME PLATE COMPLETE M10FG 35mm"T S	1 (4)	ANBAN
340	1644181 01	STUD 5/8"D SA193B7 ZP 3 3/4"L	32 (2641)	SU1R

Richmond Heat Exchanger Traveler

Customer: *ALFA LAVAL INC. - CANAD* **Model Type:** *M10-MFG*

ASME Stamping (circle one): [redacted] U NC

National Board No.: **Fabric. (Serial) No. :** *30109-73919*

Alfa Laval MO No.: *2746-5408* **Purchase Order No.:** *ESE05-0592*

Drawing Revision Level: 1 **QA Prefab Review:** LK 11/26/06

NOTE: All identification markings and heat numbers will be recorded on the Traveler related to a specific job by the person performing the operation.

	Component	Mat'l Spec./Grade/Type	Heat Number or ID	Initial
FRAME PLATES	Frame Plate	SA- 51670	U86 723A	AC
	Pressure Plate	SA- 51670	U5271 3D	
	Studs	SA-193 (B7) B8 B8M	DIA: 5/8 3 3/4	
	Nozzle Sch:			
	Nozzle Sch:			
	Flange LJ WN BL			
	Liner	41 SS	4401	
	Vanstone			
	Stub End			
ASSEMBLY	End Plate 2	R02906	05567661	AC
	HT Plates			
	HT Plates			
	LT Plates	R02905	05698 38	
	LT Plates			
	MT Plates			
	MT Plates			
	End Plate 1	C2906	E41548781	
	Misc. Components			
	Gasket Material	EPDM FF	"A" DIM: 71 mm	
BOLTS	Tightening Bolts	SA-193 (B7) B8 B8M	DIA: M30 450mm	AC
	Tightening Bolts	SA-193 B7 B8 B8M	DIA:	
	Staking Nuts	SA-194 M30 2H	TR	
	Staking Nuts	SA-194		
	Tightening Nuts	SA-194 M30 2H	TR	
	Tightening Nuts	SA-194		

TEST	Assembly Technician:	AC		Hydro Technican:	AC
	Hydro Test Pressure(s)	195 / 130	Gage No(s):	101 / 101 Due Date(s):	5-28-06
	Special Test Procedure No.:			AI/DI Witness:	
	Helium Leak Rate		mbar-1/sec	He Technician:	
INSPECT	Nameplate (circle one)	(UM) U NC		Cleanliness/Paint (initial): AC	01-31-06
	Shipping Prep Complete (initial):	AC		Labels/Manual (initial): AC	4
	Special Instructions/Checklist:				
	***Final Inspection Release (sign):**	A Champeau		**Date:** 01-31-06	
	Final A.I. Acceptance (sign):			**Date:**	
	Notes:				

*** Signature of Final Inspection signifies inspection and acceptance in compliance with WI 24811.**

FORM U-3 MANUFACTURER'S CERTIFICATE OF COMPLIANCE
COVERING PRESSURE VESSELS TO BE STAMPED WITH THE UM SYMBOL. SEE U-1(i)
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by Alfa Laval Inc., 5400 International Trade Dr., Richmond VA 23231
(Name and address of Manufacturer)

2. Manufactured for ALFA LAVAL INC. - CANADA, 101 MILNER AVENUE, , SCARBOROUGH ONTARIO, , M1S 4S6 CA
(Name and address of Purchaser)

3. Location of Installation Unknown
(Name and address)

4. Type Vertical (Horiz., vert., or sphere) | Plate Heat Exchanger (Tank, separator, etc.) | 0.57 Cu. ft (Capacity, all chambers) | 30109-73919 (Mfg's serial No.)

M1742.5C (CRN) | 30109-73919.1 (Drawing No.) | 2006 (Year Built)

5. ASME Code, Section VIII, Div. 1 2004 (Edition Addenda (date)) | Code Case No.

6. Shell (a) No. of course(s): | (b) Overall length (ft + in.):

Course(s)			Material	Thickness		Long Joint (Cat. A)			Circum. Joint (Cat. A, B + C)			Heat Treatment	
No.	Diameter, in.	Length, ft.+in.	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time

7. Heads: (a) SA-516-70 (Mat'l Spec. No. Grade or Type) H.T. - Time + Temp | (b) SA-516-70 (Mat'l Spec. No. Grade or Type) H.T. - Time + Temp

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Radius Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a)	Fixed	1.38"	0"						43 X 19"					
(b)	Movable	1.38"	0"						40 X 19"					

If removable, bolts used (describe other fastening) SA193-B7 (8) 1.18" (M30 actual) BOLTS
(Mat'l Spec. No., Grade, Size, No.)

8. Type of Jacket | Jacket Closure
(Describe as ogee + weld, bar, etc.)

If bar, give dimensions, If bolted describe or sketch

9. MAWP 150 (internal) (external) psi at max. temp. 250 (internal) (external) °F Min. design metal temp. -20 °F at 150 psi

10. Impact Test NO (Impact Exemption UCS-66(a), (b), UHA-51, UNF-65, as applicable)
(Indicate yes or no and the component(s) impact tested)

11. Hydro., pneu., or comb. test press. 195 Hydro Proof test

12. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location (Insp. Open)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Inlet	2	4"	STUDS	SA193-B7		5/8"					
Outlet	2	4"	STUDS	SA193-B7		5/8"					

13. Supports: Skirt (Yes or no) | Lugs (No.) | Legs (No.) | Others FEET (Describe) | Attached BOLTED (Where and how)

14. Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items: (part name, part no., mfg's. name and id no.)

15. Remarks (39) SA-240-316 .02 " Plates Maximum Distance between Heads = 2.80 "

Customer PO #: ESE05-0592

Tag #: HE-1, HE-2, HE-3 Owner to supply Safety Valve/Noncorrosive Service Only

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.

UM Certificate of Authorization No. 25,018 Expires July 5, 2006

Date 2/15/06 Name Alfa Laval, Inc. (Manufacturer)

Signed [signature] (Representative)

Signed [signature] (Certified Individual)