FORM U-1 MANUFACTURERS' DATA REPORT FOR PRESSURE VESSELS

as required by the provisions of the ASME Code rules, Section VIII, Division 1

	\$		Alfa-I.a	val Th	ermal Co	Amer	ican Heat			
Manue	factured and	certified by			4	-				
	185(U193 6110	certified by					diddress of man	· · ·		
Manul	factured for_	Ciba-	Geigy Cor	porati				Mc Intos	sh, Alab	ana
	4			_	1.1	name and addre	ses of purchaser)	M. Tobac	L 41.L	100
Locati	ion of install	tion Cil	ba-Geigy	Corpor	ation		e and address)	Mc Into	sn, Alab	ana
	12 1		105/7			•	7, Rev.1	14043		1987
Type:	Horiz. or vert.	, tenk)	18547 (mfr's, serial no.	.)	(CRN)	10.74	(drawing no.)	(Nat'l. Bd.	no.)	(year built)
The of	h milani sad i	abueical aca	nerties of all	narte mes	t the require	aments of m	aterial specifi	cations of the A	SME ROILE	R AND PRESSUR
								n VIII, Division 1		986
									-,-	(year)
	A86	·				~~~			W/40	
,	(addenda (Da		,	Case no.)				cial service per UG-12		•
18 6-1	1 inclusive to	be comple	ted for single	wall vess	els, jackets	of jacketed	i vessels, or s	hells of heat ex	changers.	er en sammerik
	GA 040 3	14	.312	511		NA	۸ ۱	10-1/2" 0.1	D .	71 4"
Snell:	SA-240.3 (mat'l. (spec.	no., grade))	(nom. thi	ckness (in.))		(corr. allow. (in.))	10-1/2" 0.1 (dia. ID (ft. & in.))	(leng	th (overall) (ft. & in.))
Seam	ıs:	t i	NA (RT (spot or full))	55	· .					e englegte
	(long. (dbl.,	=		(eff. (%			·· -	angi.)) (PT(apot,	4.4	(no. of courses)
Head	s: (a) SA-	-516,70/	Faced wit	th SA-2	40,316	(b)	SA-516,	70/Faced w	ith SA-2	240,316
,	Maria de la compania	T	(mat'l. (spec. n						c. no., grade))	
	ocation (top. octrom, ends)	Minimum , nickness	Corrosion Allowance	Crown Redius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or conceve
	A 4 3	2.78"	NA NA						60"	Flat
	C-End H-End	2.78"	NA NA						60"	Flat
	A-F.III		13621					·		
If rem	of jacket:	used (desc	ribe other fast	Proof	test:	-193 B7		ea.hd.	-	describe or sket
Type Jacks	of jacket: et closure:	used (desc	jee & weld, bar, et	Proof	test: par, give din	nensions:	(mat1., s	pec. no., gr., síze, no	If boited,	
Type Jacks	of jacket: et closure:	used (desc	jee & weld, bar, et	Proof	test: par, give din	nensions:	(mat1., s	pec. no., gr., size, no	If boited,	
Type Jacks MAW	of jacket:et closure: pt closure: pp 150 (pel)	(describe as og_at max. ter	jee & weld, bar, et	Proof If to	test: par, give din	nensions:	(mat1., s	pec. no., gr., síze, no	If boited,	
Type Jacks MAW	of jacket:et closure: pt closure: pp 150 (pel)	(describe as og_at max. ter	ne & weld, bar, et mp. 100° (*F)	Proof If to	test: par, give din	nensions:	(mat1., s	pec. no., gr., síze, no	If boited,	
Type Jack MAW ms 12	of jacket:	(describe as og_at max. ter	ne & weld, bar, et mp. 100° (*F)	Proof If to Min. ter	test: par, give dim np.: (*F)	nensions: when less than	(mat*1. s	pec. no., gr., síze, no	If bolted,	press: 225
Type Jack MAW ms 12	of jacket:	(describe as og_at max. ter	ne & weld, ber, et np. 100° (°F) for tube sect	Proof If to Min. ter	test: par, give dim np.: (*F)	nensions: when less than	(mat*1. s	pec. no., gr., síze, no	If bolted,	press: 225
Type Jack MAW ms 12	of jacket:et closure:et closure:et closure:et closure:_et	(describe as og_at max. ter	np. 100° (°F) for tube sector. no., gr.)) (dia.	Proof If to Min. ter	test:	when less than	(mat*1. s	pec. no., gr., síze, no	Lif boiled,	press: 225
Type Jacks MAW ms 12	of jacket:et closure:et closure:et closure:et closure:_et	(describe as og _at max. ter completed	re & weld, ber, et mp. 100° (*F) for tube sect ic. no., gr.)) (dia.	Proof It is: Min. ter Vions. (in.) (subject	test: par, give dim np.: (*F)	(when less than	- 20°F)) kness (in.))	Hydro., pried. of	Lif bolted,	press.: 225 (psl) schment (welded, both (attachment)
Type Jacks MAW ms 12 Tube	of jacket:et closure:et closure:et closure:et closure:et closure:_et	(describe as og_at max. ter completed mary mat'l. (specing mat	ree & weld, ber, et mp. 100° (°F) for tube section, no., gr.)) (dia.	Proof if t ic.) Min. ter lions. (in.) (subject (dia. (i.)	test: par, give dim np.: (*F	when less than (nom. thic	- 20°F)) kness (in.)) kness (in.))	Hydro., pried. of (corr. allow. (inc.)	Lif boiled,	press.: 225 (psi)
Type Jacks MAW ms 12 Tube	of jacket:et closure:et closure:et closure:et closure:et closure:_et	(describe as og_at max. ter completed mary mat'l. (specing mat	ree & weld, ber, et mp. 100° (°F) for tube section, no., gr.)) (dia.	Proof if t ic.) Min. ter lions. (in.) (subject (dia. (i.)	test: par, give dim np.: (*F	when less than (nom. thic	- 20°F)) kness (in.)) kness (in.))	Hydro., pried. of	Lif boiled,	press.: 225 (psl) schment (welded, both (attachment)
Type Jacks MAW ms 12 Tube Tube	of jacket:et closure:et closure:et closure:et closure:et closure:_et	(describe as og_at max. ter completed mary mat'l. (specing mat	ree & weld, ber, et mp. 100° (°F) for tube section, no., gr.)) (dia.	Proof if t ic.) Min. ter lions. (in.) (subject (dia. (i.)	test: par, give dim np.: (*F	when less than (nom. thic	- 20°F)) kness (in.)) kness (in.))	Hydro., pried. of (corr. allow. (inc.)	Lif boiled,	press.: 225 (psl) schment (welded, both (attachment)
Type Jacks MAW ms 12 Tube Tube	of jacket:et closure:et closure:et closure:et closure:et closure:et closure:_et closure:_e	(describe as og_at max. ter completed mary mat'l. (specing mat	ree & weld, ber, et mp. 100° (°F) for tube sect rc. no., gr.)) (dia. c. no., gr.))	Proof if t ic.) Min. ter lions. (in.) (subject (dia. (i.)	test: par, give dim np.: (*F) to pressure)) n.)) (non	when less than (nom. thic	(mat1s -20°F)) kness (in.)) or g = 49a)) or channels o	Hydro., pried. of (corr. allow. (inc.)	Lif bolted,	press.: 225 (pal) schment (welded, both
Type Jacks MAW ms 12 Tube Tube Shell	of jacket:et closure:et closure:et closure:et closure:et closure:et closure:_et closure:_e	(describe as og_at max. ter completed mary mat'l. (specing mat	ree & weld, ber, et mp. 100° (°F) for tube sect rc. no., gr.)) (dia. c. no., gr.))	Proof if to Min. ter lions. (in.) (subject (dia. (ii	test: par, give dim np.: (*F) to pressure)) n.)) (non	(nom. thic	(mat1s -20°F)) kness (in.)) or g = 49a)) or channels o	Hydro., pred. of (corr. allow. (in (no.))	Lif bolted,	press.: 225 (psi) schment (welded, built (attechment)
Type Jacks MAW ms 12 Tube Tube Shell	of jacket:et closure:et closure:et closure:et closure:et closure:et closure:_et closure:_e	(describe as og_at max. ter completed mary mat'l. (specing mat	ree & weld, ber, et mp. 100° (°F) for tube sect rc. no., gr.)) (dia. c. no., gr.))	Proof ic.) if t ic.) Min. ter lions. (in.) (subject (dia. (i.) (OD (in.)) or chambe hickness (in.)	test: par, give dim np.: (*F) to pressure)) n.)) (non	(nom. thic (nom. thic not thickness (in.	(mat*ls - 20°F)) kness (in.)) or g ⊬/ge)) or channels o	(corr. allow. (in (no.))	Lif bolted,	press.: 225 (psi) schment (welded, both (attechment) (type (straight or U))
Type Jacks MAW ms 12 Tube	of jacket:	(describe as og_at max. ter completed mary mat'l. (specing mat	for tube sect ic. no., gr.)) (dis. (nom. ti	Proof ic.) Min. ter lions. (in.) (subject (dia. (i.) (OD (in.)) er chambs hickness (in.	test: par, give dim np.: (*F (non ins) (non ins)	(nom. thic (nom. thic not thickness (in.	(mat*1s - 20°F)) kness (in.)) or g = 49e)) or channels o n.))	(corr. allow. (in (no.) f heat exchange (dia. ID (ft. & in.))	Lif bolted, Conto. test	press.: 225 (psi) schment (welded, both (attechment) (type (straight or U))
Type Jacks MAW ms 12 Tube Tube Seen	of jacket:	(describe as og_at max. ter completed mary mat'l. (specing mat	re & weld, ber, et rp. 100° (*F) for tube sect ic. no., gr.)) (dia. c. no., gr.))	Proof ic.) Min. ter lions. (in.) (subject (dia. (i.) (OD (in.)) er chambs hickness (in.	test: par, give dim np.: (*F (non ins) (non ins)	(nom. thic (nom. thic n. thickness (in. ed vessels (corr. allow (i	(mat*1. s - 20°F)) kness (in.)) kness (in.)) or g > (genth (db	(corr. allow. (in (no.)) f heat exchange (dia. ID (ft. & in.)) (mat'i. (spo	Lif boited, Como test	press: 225 (pel) schment (welded, built (attechment) (type (straight or U)) ngth (overall) (ft. & in.)
Type Jacks MAW ms 12 Tube Tube Shell Sean	of jacket:et closure:et clo	(describe as og_at max. ter completed mary mat'l. (specing mat	ree & weld, ber, et mp. 100° (*F) for tube sect (c. no., gr.)) (dis. c. no., gr.)) cleted for inne (nom. ti (RT (spot or fu (mat'), (spec.)	Proof ic.) Min. ter lions. (in.) (subject (dia. (i.) (OD (in.)) er chambs hickness (in.	test: par, give dim np.: (*F (non ins) (non ins)	(nom. thic (nom. thic n. thickness (in. ed vessels (corr. allow (i	(mat*1s - 20°F)) kness (in.)) or g = 49e)) or channels o n.))	(corr. allow. (in (no.) f heat exchange (dia. ID (ft. & in.))	Lif bolted, Conto. test	press: 225 (pai) acronent (welded, bolt) (attechment) (type (straight or U)) (no. of courses) Side to Pressur
Type Jacks MAW ms 12 Tube Tube Shell Seen	of jacket: et closure: pt 150 (pei) and 13 to be sheets: (station (float -17 inclusive i: (mat'l. (station (station	(describe as og_at max. ter completed mary mat'l. (specing mat	ree & weld, ber, et mp. 100° (*F) for tube sect ic. no., gr.)) (dia. c. no., gr.)) ileted for inne (nom. ti (RT (spot or fu	Proof if t ic.) Min. ter lions. (in.) (subject (dia. (i.) (OD (in.)) or chambs hickness (in. iii)) (eff.	test: par, give dim np.: (*F) to pressure)) (nom (rs of jacket) (%)) (HT tem	(mom. thic (nom. thic	(mat*1s -20°F)) kness (in.)) or g = uge)) or channels o n.)) (girth (db	(corr. allow. (in (no.)) f heat exchange (dia. ID (ft. & (n.)) (matt. (sp	Lif boited, Control test (i.)) (attr (i.)) (i.)) (i.) (i.) (i.) (i.) (i.) (i	press: 225 (psi) acronent (welded, bolt) (attachment) (type (straight or U)) (no. of courses) Side to Pressur
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Type Jacks MAW ms 12 Tube Tube Shell Seen Heac	of jacket: et closure: and 13 to be sheets: (float (mat'l. (i -17 inclusive i: (mat'l. (s) (long (i ds: (a) Location (top, bottom, ends)	(describe as og_at max. ter completed mary mat'l. (specing mat	rp. 100° (*F) for tube sect ic. no., gr.)) (dia. c. no., gr.)) leted for inne (nom. ti (mat'l. (spec. Corrosion Allowance	Proof ic.) Min. ter lions. (in.) (subject (dia. (i.) (OD (in.)) er chambs hickness (in. iii) (eff.	test: par, give dim np.: (*F) to pressure)) (nom (so if jacket) (%)) (HT tem Knuckle Radius	(mom. thic (nom. thic	(mat*1s -20°F)) kness (in.)) or g ≥ gel) or channels o n.)) Conical Apex Angle (mat*1s	(corr. allow. (in (no.)) f heat exchange (dia. ID (ft. & in.)) (mat'l. (spo	(le bolted, Control test (le test) (le t	(pal) achment (welded, belt) (attachment) (type (straight or U)) ngth (overall) (ft. & in.)

Note: Each additional sheet shall be signed and dated by the certificate holder and the Al.

Note: Each additional and a signed and deled by the Common Residence of Soller and Pressure Vessel Inspectors, 1065 Crupper Ave., Columbus, OH 49229. No. 3. Rev. 7

Purpose (inlet, outlet, drain, etc.)	Number	Die. or Size	Type	Met'l,	Nom. Thickness	Reinforcement Material	How Atlached	Lucition
Inlc	1 1	6"	Fig.SA-	403,3161	Sch.40	SA-516,70	Welded	
Outlet	1 1	6"	11	17	11	445 AM 1.20	70	
Inlet	1	6"	11	11	11		11	
Outlet	1	6"	"	11	14 2 P. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SA-516,70	11	
Drains	2	1"	Thrd.SA	-312,316	L "	day 400	11	
					7. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3.		ernetaen, m. de skaar van energie energies en respirate de distribution (de 1400 mille).	
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									gangan magan papan kanang dipanan kanan kana	
10 Supporter	Chini	Luce	l ege		Other Br	ackets	Attached	Wel	ded to She	:11
19. Supports:	(yes o	r no)	(no.)	(no.)	VIII0!	(describe)		and a simple of a same state of	(where and how)
			ata Reports prope			4 + 5	21. V 41		have been furn	ished for the
Onowang	IIOMO OI MIO	iopoiti:		(name	of part, item n	umber, mir's ne	me and identifying	g stamp)		
Hyd	ro-teste	d per UG	99(b). Vest	sel is	a Spiral	Heat Ex	changer.	···		nan na popular policy sample definition to the last to
*No	seams i	n outer	shell. Hoo	load	transfer	red by b	races.		a anger anger men sa pangan dan dan dan dan dan dan dan dan dan d	A
Bot	h covers	P.W.H.T	. per Table	UCS-56				· · · · · · · · · · · · · · · · · · ·		
magarah pada da sa										
en franklig	and the second	:			F SHOP CO					
We certify the	at the statem	ents made in	n this report are c	orrect and	that all deta	ils of design	, material, coi	nstructi	on and workma	anship of this
vessel confor	m to the AS	ME Code for	Pressure Vessel	s. Section	VIII. Divisio	n 1.		~	11/11	
"U" Certifica	le of Author	zation no	1793 ×	ires Ma	<u>rch 30,</u>	9 90	inaca na esta		J WAT.	- km -
Date 12-	<u>15-87</u>	Name Alf	1793 (xp a-Laval The	rmal Co	., Ameri	can Heat	Sign	edX	all Divil	MITINGS
								····	/ John a	LILLAGS
-1 . No1	eraka eraka ha				if shop in			. U.a.	C+ * *:	rkane DA
Vessei consti	ructed by	Alfa-Lav	al Therma	CO., AM	erican r				na St., L	
I, the undersi	gned, holdin Penna .	g a valid com	imission issued b loyed by <u>Co</u>	y The Natio mmercia	onal Board of 1 Union	f Boiler and Insuranc	Pressure Vesi ce Compan	sel insp Y	ectors and the	state of prov-
			of Bosto	n, Mass.	have inspec	ted the press	sure vessel de	scribed	in this Manufa	ecturers' Data
Report on 1	2-7,12-1	1 19 87	, and state th	at, to the	best of my	knowledge a	nd belief, the	manuf	acturer has co	nstructed this
			SME Code, Section	on VIII, Div	ision 1.				*.	. Agrico de la companya de la compa
By signing th	is certificate	neither the	inspector nor his	employer r	nakes any w	arranty, expr	iqmi ro beser	ied, co	ncerning the pr	essure vessel
described in	the Manufac	turers' Data	Report. Furtherm	ore, neithe	r the igepec	for his e	mployer shall	pe liab	ie in any mann	er for any per-
sonal injury	or property o	tamage or	loss of any kind	erising from	n of corne	jed with this	s inspection.		n 210	,
	·15-87 sig		Sumo -	$\mathcal{A} \times$	2114	Commission	18 NB-94		PA.WC-318 orsements) state. p	
	ta ital		JAMES W			-		(ICACI). WHO	Cipalitation state, p	107 318 110.7
		(LY COMPLI				a - 1
We certify th	at the field a	assembly cor	nstruction of all p	arts of this	s vessel con	forms with t	he requireme	nts of S	ection VIII, Div	vision 1 of the
ASME BOILE										200
"U" Certifica	te of Author	rization no		pires		19	e e servicio			
Date	N	ame	(assembler that			Langambhi	Sign	10cl	(representa	tivati
	والمستعدد المستعدد ا			حدجية لنستؤه اسبيب					\op\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
						BLY INSPEC				3.4
I, the unders	igned, holdir	ng a valid con	nmission issued l	by the Natio	onal Board o	of Boiler and	Pressure Ves	sel insp	ectors and the	state or prov-
ince of		sind emp	oloyed by	 					area and a second consistent and control of the second control of	and the state of t
			<u></u>	of					s in this Manul	
Report with	he describe	d pressure ve	ssel and state the	it parts refe	erred to as d	ata items			, not i	ncluded in the
certificate o	f shop inspe	ction, have	been inspected b	y me and	that to the	best of my i	cnowledge an	d belief	, the manufac	turer has con
structed and	beldmesse	this pressure	e vessel in accord	lance with	ASME Code	, Section VII	II, Division 1.	The des	cribed vessel	was inspected
and subjects	d to a hydro	static test o	<u> </u>	psi.	and the second s	n stands and				
By signing ti	nis certificat	e neither the	inspector nor his	employer	makes any v	varranty, exp	ressed or imp	lied, co	ncerning the p	ressure vesta
described in	the Manufac	cturers' Data	Report. Furtherm	ore, neithe	w the inspec	tor nor his e	imployer shall	be list	le in any mann	er for any per
sonal injury	or property	damage or a	loss of any kind	arising fro	m or conne	cted with thi	is inspection.	Marie de la companya	en de de la companya	
Date	S	igned	(Authorized	1-2-2-1-4	***	.Commissio	ns	find an	corsements) state,	prov. and no.)
1			(AUTHORIUA)	inspector)			i gland for de la faction de 	· (1110) - 111		