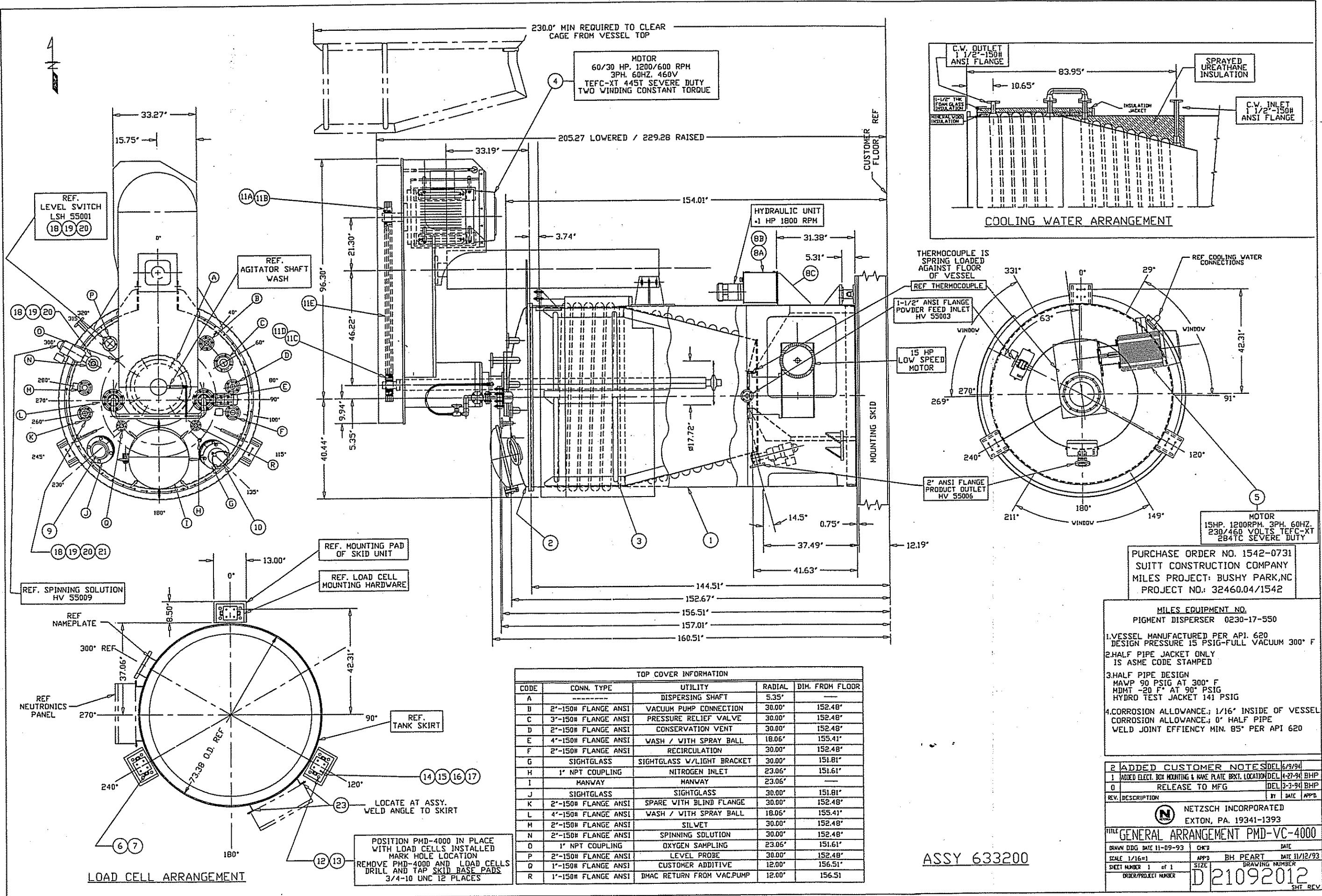


0230-17-550



ASSY 633200

PURCHASE ORDER NO. 1542-0731
 SUITT CONSTRUCTION COMPANY
 MILES PROJECT: BUSHY PARK, NC
 PROJECT NO.: 32460.04/1542

MILES EQUIPMENT NO.
 PIGMENT DISPERSER 0230-17-550

1. VESSEL MANUFACTURED PER API 620
 DESIGN PRESSURE 15 PSIG-FULL VACUUM 300" F

2. HALF PIPE JACKET ONLY
 IS ASME CODE STAMPED

3. HALF PIPE DESIGN
 MAWP 90 PSIG AT 300" F
 MDMT -20 F° AT 90° PSIG
 HYDRO TEST JACKET 141 PSIG

4. CORROSION ALLOWANCE: 1/16" INSIDE OF VESSEL
 CORROSION ALLOWANCE: 0" HALF PIPE
 WELD JOINT EFFICIENCY MIN. 85% PER API 620

REV.	DESCRIPTION	BY	DATE	APP'D.
2	ADDED CUSTOMER NOTES	DEL	6/9/94	
1	ADDED ELECT. BOX MOUNTING & NAME PLATE BRKT. LOCATION	DEL	4-27-94	BHP
0	RELEASE TO MFG	DEL	3-3-94	BHP

NETZSCH INCORPORATED	
EXTON, PA. 19341-1393	
GENERAL ARRANGEMENT PMD-VC-4000	
DRAWN DBG DATE 11-09-93	CHK'3 DATE
SCALE 1/16"=1'	APP'3 BH PEART DATE 11/12/93
SHEET NUMBER 1 of 1	SIZE
ORDER/PROJECT NUMBER	D 21092012

#102416

FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by CRYOCHEM INC., HONEY BROOK, PA.
(Name and address of Manufacturer)

2. Manufactured for NETZSCH, INC., EXTON PA.
(Name and address of Purchaser)

3. Location of installation UNKNOWN
(Name and address)

4. Type: VERTICAL HALF PIPE JACKETED TANK 2498
(HORIZ., VERT., OR SPHER.) (Tank, separator, ht. vessel, heat exch., etc.) (Mfg's serial No.)

D2109151-G 2498 1994
(CRNO) (Drawing No.) (Mfg's Bd. No.) (Year built)

5. ASME Code, Section VIII, Div. 1 1992
(Edition and Addenda (date)) (Code Case No.) (Special Service per UG-120(d))

Items 6-11 incl. to be completed for single wall vessels, jackets of jacketed vessels, shell of heat exchangers, or chamber of multi-chamber vessels.

6. Shell (a) No. of course(s): 1 SEE REMARKS (b) Overall length (ft & in.): 3'-0"

Course(s)	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
SEE REMARKS				SA240-316L	.105	0	-	-	-	-	-	6	NONE	45	-	-	-	-

7. Heads: (a) 1 SEE REMARKS (b) -
(Mat'l Spec. No., Grade or Type) H.T. - Time & Temp. (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	Side to Pressure		Category A			
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full.	Spot.	None
(a)	BOTTOM	.250	-	-	-	-	-	-	-	-	90	6	-	-	45
(b)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

If removable, bolts used (describe other fastening) -
(Mat'l Spec. No., Grade, size, No.)

8. Type of jacket HALF PIPE 3 1/2" O.D. (3" NOM.) Jacket closure FILLET WELD
(Describe as open & welded bar, etc.)

If bar, give dimensions 90 - 300 - -20 If bolted, describe or sketch.
9. MAWP (Internal) (External) psi at max. temp. (Internal) (External) °F Min. design metal temp. °F at 90 psi.

10. Impact test NO
(Indicate yes or no and the component(s) impact tested)

11. Hydro., presu., or comb. test press. 141 Proof test -

Items 12 and 13 to be completed for tube sections.

12. Tubesheet:
Stationary (Mat'l Spec. No.) Dia., in. (subject to press.) Nom. thk., in. Corr. Allow., in. Attachment (welded or bolted)
Floating (Mat'l Spec. No.) Dia., in. Nom. thk., in. Corr. Allow., in. Attachment

13. Tubes:
Mat'l Spec. No., Grade or Type O.D., in. Nom. thk., in. or gauge Number Type (Straight or U)

Items 14-18 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers.

14. Shell (a) No. of course(s) 1 (b) Overall length (ft & in.): 7'-8 1/8"

Course(s)	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
1	72-3/4"	3'-2 1/4"	SA240-316L	1/4	1/6	1	NONE	70	NONE	-	-	-	-	-	-	-	-	-

15. Heads: (a) SA240-316L (b) -
(Mat'l Spec. No., Grade or Type) H.T. - Time & Temp. (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	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full.	Spot.
(a)	BOTT	1/4	1/16	-	-	-	29	-	-	90	15	1	NONE	70
(b)	-	-	-	-	-	-	-	-	-	-	-	-	-	-

If removable, bolts used (describe other fastening) -
(Mat'l Spec. No., Grade, size, No.)

FORM U-1 (Back)

16. MAWP 90 psi at max. temp. 300 °F. Min design metal temp. -20 °F at 15 psi.

17. Impact test NO (Indicate yes or no and the temperature(s) impact tested)

18. Hydro. test press. STANDING WATER Proof test ---

19. 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 (Shop, Open, etc.)
				SA Nozzle	SA Flange	Nom.	Corr.		Nozzle	Flange	
JKT IN-OUT	4	1 1/2	S.O.	312-316L	182-316L	.145	0	INTEGRAL	WLD	WLD	---

20. Supports: Skirt YES (Yes or no) Lugs --- (No.) Legs --- (No.) Others --- (Describe) Attached WELDED TO SHELL (Where and how)

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

22. Remarks: JACKET ONLY IS CODE. JACKET IS HALF PIPE TYPE SHELL HAS (5) TURNS. BOTTOM CONICAL HEAD HAS (8) TURNS. JACKET IS IN TWO ZONES. IMPACT EXEMPT UHA-51

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. 24,555 Expires JAN. 15, 19 96
Date 4-7-94 Name CRYOCHEM INC. (Manufacturer) Signed J.P. Stair Jr. (Representative)

CERTIFICATE OF SHOP INSPECTION

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 PA and employed by H. S. B. I & I. CO. of HARDFORD, CONN. have inspected the pressure vessel described in this Manufacturer's Data Report on 4-7, 19 94, 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 4-7-94 Signed [Signature] (Authorized Inspector) Commission N.B. 8155 (A) PA. 2214 (N.B. Board Incl. endorsement, State, Province and No.)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements on this report are correct and that the field assembly construction of all parts of this vessel conforms with the requirements of ASME Code, Section VIII, Division 1.
U Certificate of Authorization No. _____ Expires _____, 19 _____
Date _____ Name _____ (Assembler) Signed _____ (Representative)

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

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 _____ and employed by _____ of _____ have compared the statements in this Manufacturer's Data Report with the described pressure vessel and state that parts referred to as data items _____, not included in the certificate of shop inspection, have been inspected by me and to the best of my knowledge and belief, the Manufacturer has constructed and assembled this pressure vessel in accordance with ASME Code, Section VIII, Division 1. The described vessel was inspected and subjected to a hydrostatic test of _____ psi. 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 _____ Signed _____ (Authorized Inspector) Commission _____ (N.B. Board Incl. endorsement, State, Province and No.)