

P.O.#48781
C-301

#93664

FORM U-1A MANUFACTURERS' DATA REPORT FOR PRESSURE VESSELS
(Alternate 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 by Expert Industries, Inc. 80-19th St., Brooklyn, N.Y. 11232
2. Manufactured by Koch Engineering Co., Inc. 161 E. 42nd Street, New York, N.Y. 10011
3. Location of Installation Singmaster & Breyer, Inc. FMC Corp. 1701 E. Patapsco Av. Balt MD
4. Type Vertical (Horiz. or vert. tank) 4156 (Mfg's Serial No.) - (CRN) D4156 (Drawing No.) 225 (Nat'l Brd No.) (Year Built) 1980
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 1977 and Addenda to Winter '79 and Code Case Nos. NA
(Year) (Date)
Special Service per UG-120(d) NA
Manufacturers' Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: NA

6. Shell: Matl. SA240T316 (Spec. No., Grade) Nom. .187 in. Allow. 0 in. Diam. 3'-0" in. Lgth. 16 ft 0 in.
7. Seams: Long Welded Dbl. Butt (Welded, Dbl. Sngl. Lap, Butt) R.T. Spot (Spot or Full) Efficiency 85 % H.T. Temp. NA F Time NA hr
Girth Welded Dbl. Butt (Welded, Dbl. Sngl. Lap, Butt) R.T. Spot (Spot, Partial, or Full) No. of Courses 4
8. Heads: (a) Material SA240T316 (Spec. No., Grade) (b) Material SA240T316 (Spec. No., Grade)

Location (Top, Bottom, Ends)	Min. Thk.	Corr. Allow.	Crown Radius	Knuckle Radius	Ellipse Ratio	Conical Apex Angle	Hemiph. Radius	Flat Diam.	Side to Pressure (Convex or Concave)
(a) Top	.187	0	36"	-	-	-	-	-	Concave
(b) Bottom	.187	0	36"	-	-	-	-	-	Concave

If removable, bolts used (describe other fastenings) (40) 3/4x3-3/4" L Studs SA193GRB7
(Material, Spec. No., Gr., Size, No.)

9. Constructed for max. allowable working pressure 15 psi at max. temp. 300 F. Min. temp. (when less than -20 F) NA F. Hydrostatic, pneumatic, or combination test pressure 23 psi.
10. Safety Valve Outlets: Number NA Size NA Location to be installed by other

11. Nozzles and Inspection Openings:

Purpose (Inlet, Outlet, Drain)	No.	Diam. or Size	Type	Matl.	Nom. Thk.	Reinforcement Matl.	How Attached	Location
Misc.	2	1"	SORF	SA479T316	#150	-	Welded	
"	5	1 1/2"	SORF	SA479T316	#150	-	Welded	
"	1	4"	LJ	SA105	#150	-	Welded	
"	1	6"	LJ	SA105	#150	-	Welded	
"	3	10"	LJ	SA105	#150	-	Welded	
"	2	18"	SORF	SA240T316	5/8"	-	Welded	

12. Supports: Skirt NA (Yes or no) Lugs 4 (No.) Legs NA (No.) Other NA (Describe) Attached Welded (Where and how)

13. Remarks: Step III Reaction column tag #C301

#D-20-C454 4017 27

CERTIFICATE OF COMPLIANCE

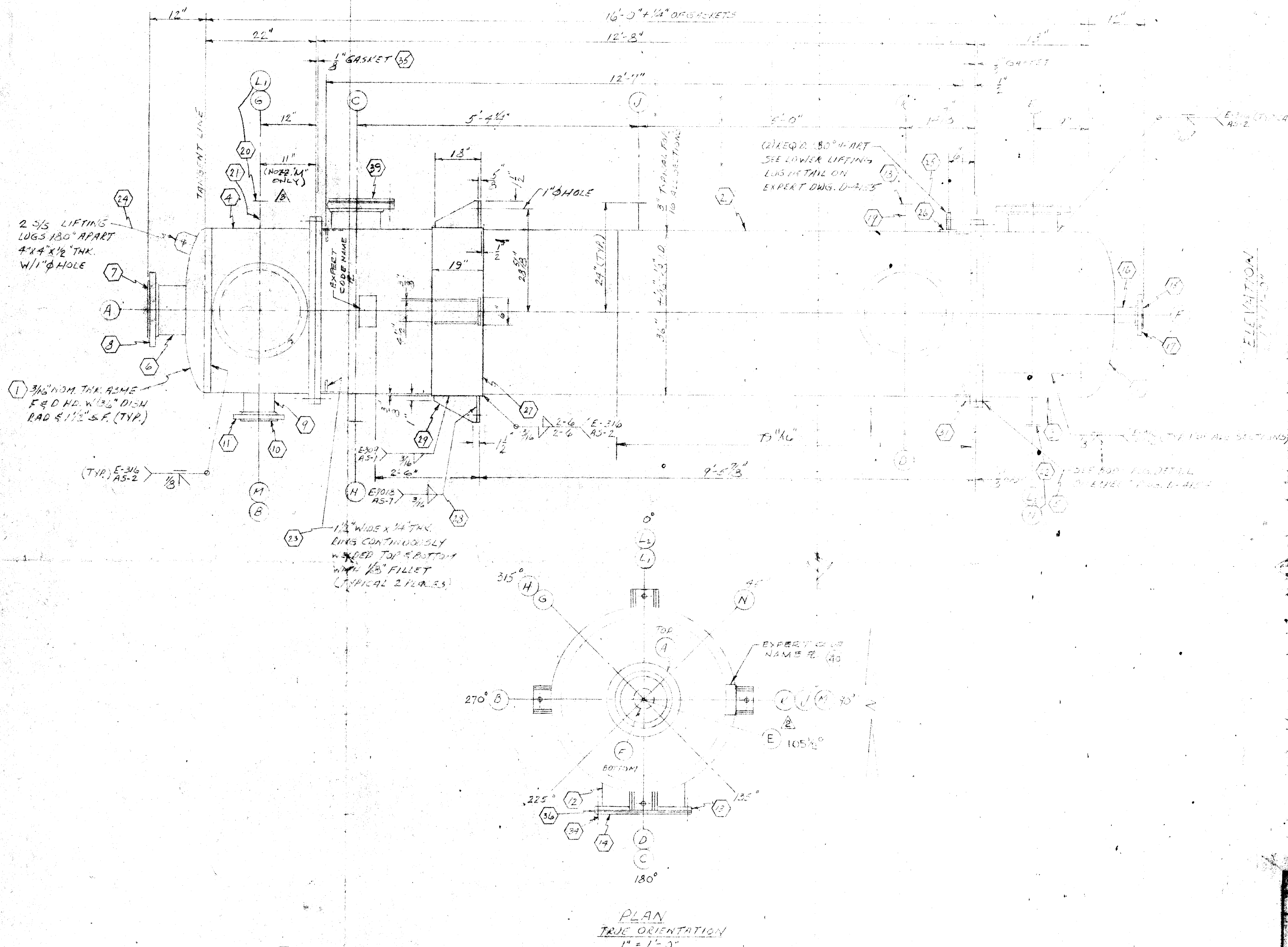
We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1.

Date 3-28-80 Signed Expert Industries, Inc. (Manufacturer) by [Signature] (Representative)
"U" Certificate of Authorization No. 11158 expires May 26, 19 80

CERTIFICATE OF SHOP INSPECTION

Vessel made by Expert Industries, Inc. at Brooklyn, N. Y.

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 New York and employed by Comm. Union Ins. Co. inspected this pressure vessel described in this Manufacturers' Data Report on 3-28-80 19 80, 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 the Manufacturers' 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.
Signed [Signature] (Inspector) Date 3-28-80 Commissions NA 6058 (Nat'l Board, State, Province and No.)



DESIGN DATA	VESSEL	JACKET	COIL
OPERATING PRESSURE	ATM.		
OPERATING TEMPERATURE	130°F		
DESIGN PRESSURE	24.45 PSIA		
DESIGN TEMPERATURE	300°F		
RADIOGRAPH (SEE NOTE 9)	SPOT		
JOINT EFFICIENCY	85%		
HYDROSTATIC TEST PRESS.	23.2513		
FREON TEST PRESSURE			
CODE STAMP REQ'D.	YES		

SPECIFIC GRAVITY	1.0
CAPACITY (GALS.)	850
WEIGHT (EMPTY) (LBS.)	6500
WEIGHT (FULL OF WATER)	15000
WEIGHT (OPERATING)	13300

MATERIAL SPECIFICATIONS	
SHELL	SA-240 F304
HEADS	SA-240 F304
FLANGES	SA-479 T-316
PIPE	SA-312 T316
COUPLINGS	
NOZZLE FACINGS	SA-240 F304
GASKETS	TEFLON ENVELOPE (15) 3/8" x 3/8" BOLTS
BOLTS	SA-193 A193
NUTS	SA-193 A193
SUPPORTS	
SUPPORT RING	SA-312 T316
LIFTING LOGS	SA-312 T316
WELD RODS	SA-312 T316
WELD FILLER	SA-312 T316
WELD UP TO 1/2"	SA-312 T316

FINISH SPECIFICATIONS	INTERNAL	EXTERNAL
MATERIAL	WIRE BRUSH	WIRE BRUSH
WELDS	SMOOTH	SMOOTH
SAND BLASTING		
PAINTING		SEE NOTE 7

- GENERAL NOTES
- FABRICATION TO BE IN ACCORDANCE WITH ASME SECT. VIII DIV. 1
 - ALL WELDING TO BE IN ACCORDANCE WITH ASME CODE SECTION VIII.
 - ALL WELDING PROCEDURES & QUALIFICATIONS CONFORM TO ASME CODE SECTION IX
 - ALL BOLT HOLES TO STRADDLE VESSEL MAJOR CENTERLINES
 - ALL THE OPENINGS SHALL BE PLUGGED OR COVERED DURING SHIPMENT
 - TOLERANCES AS PER ASME CODE SECTION VIII.
 - USE ONLY WITH GLIDDEN EPOXY No. 15256/5257 TO DRY FILM THK. OF 7.0 MILS.
 - NOZZLES TO BE FLUSH WITH INSIDE OF VESSEL.
 - X-RAY ONE SPOT FOR EACH LONG & CIRCUMFERENTIAL BEAM OF MAIN BODY SECTIONS.

93664
CERTIFIED AS BUILT

FABRICATED BY EXPERT IND., B'KLYN, N.Y.

REFERENCE DRAWINGS
EXPERT DWS. D-4155
SUMMARY SHEET No. 4140

NOZZ. SIZE	RATING	PIPE SCH.	TYPE	SERVICE	REMARKS
(1) A 10"	150#	SCH. 40	SMOOTH	VAPOR OUT	
(1) B 8"				REFLUX IN	
(1) C 10"				INSPECTION	W/ 3/8" THK. COVER & 3/8" THK. 10" 150# ASBESTOS GASKET W/ TEFLON ENVELOPE (15) 3/8" x 3/8" BOLTS INSTEAD
(1) D 10"				CLEAN OUT	IDENTICAL TO MANWAY ON EXPERT DWS. D-4155
(1) E 10"	150#	SCH. 40	SMOOTH	VAPOR IN	
(1) F 10"				LIQUID OUT	
(1) G 10"				TEMP.	
(1) H 10"				THERMOWELL	
(1) I 10"				PRESSURE	
(1) J 10"				HANWAY	IDENTICAL TO NOZZ. "D"
(1) K 10"	150#	SCH. 40	SMOOTH	TEMP.	WITH BLIND FLANGE AND (4) 1/2" x 8" BOLTS WITH EACH & 1/2" 150# GASKET

ISSUE DATE	3	R.H.	M.R.	3-15-80	CHANGE NO. 22	WAS 18"
FOR APPROVAL	2	V.T.	M.R.	2-15-80	REV'D NOZZ. E & REMOVE CLIP PER CLIENT	
APPROVED FOR CONSTRUCTION	1	G.A.	M.R.	10-20-79	REVISED PER CUSTOMER COMMENTS	
APPROVED FOR CONSTRUCTION	0	G.A.	M.R.	11-27-79	FOR APPROVAL	

REVISIONS

TAG NO. (C-301)
STEP III REACTION COLUMN

SHIGMASTEER & BREYER
FMC CORP. 100 # 9006
BALTIMORE, MD.

SCALE: 1/4" = 1'-0"

DATE: 12/30/79

DR: G.A.

CKD: M.R.

CUSTOMER ORDER NO. P.O. # 9731

WORLD LEADER IN HEAVY TRANSPORT EQUIPMENT

APP. M.L.