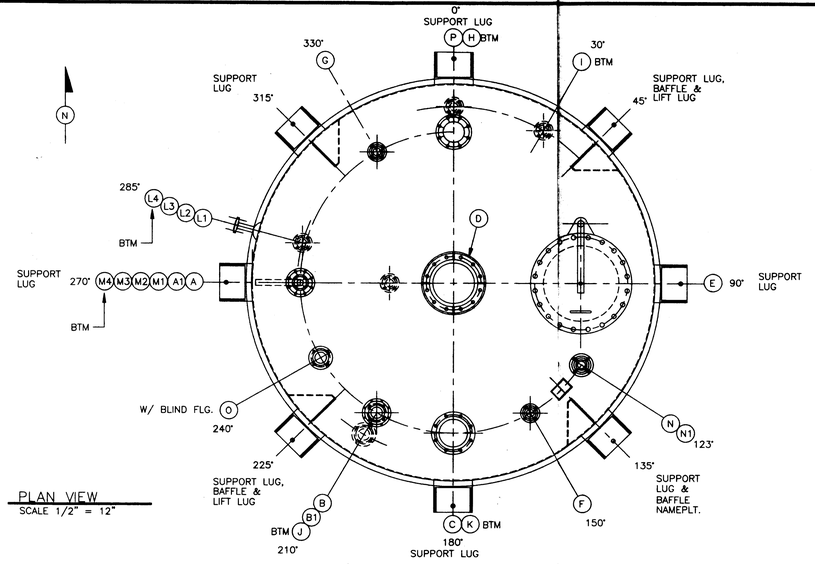
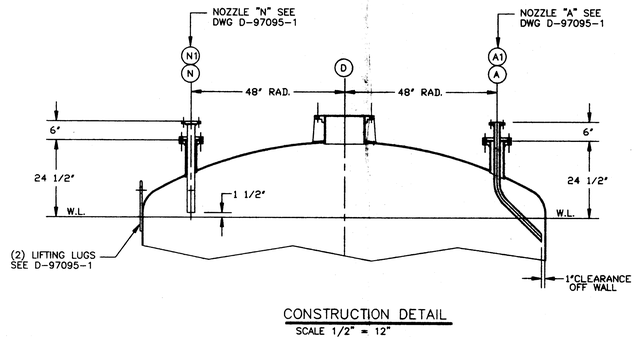
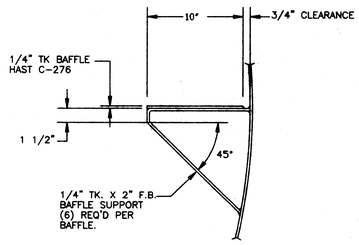


PLAN VIEW
SCALE 1/2" = 12"



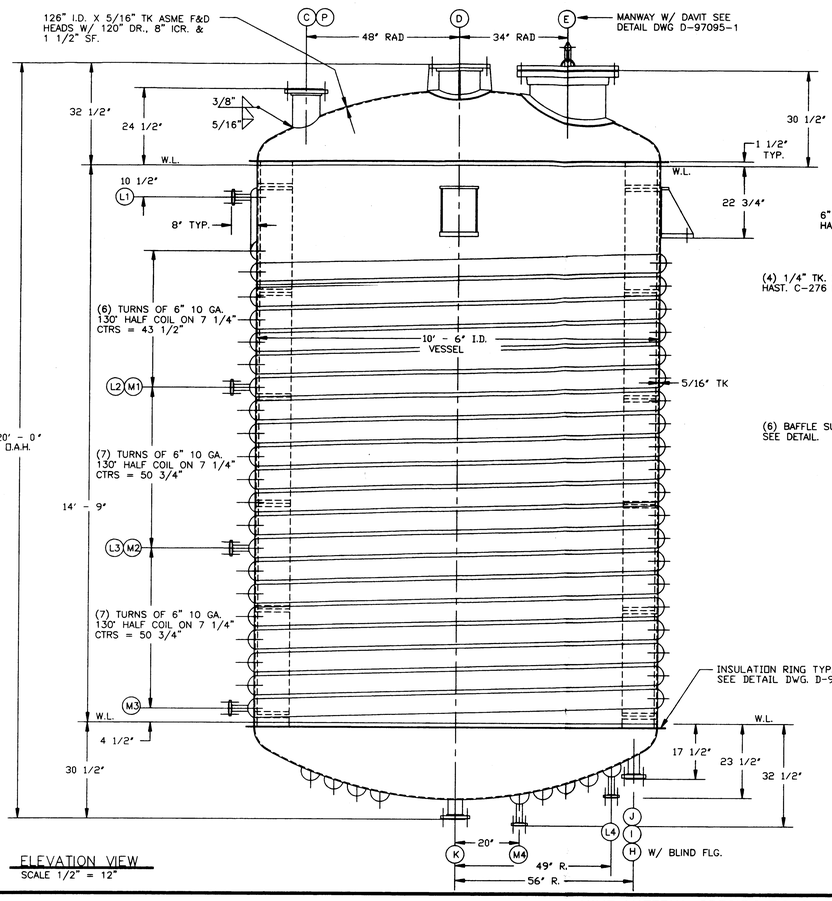
CONSTRUCTION DETAIL
SCALE 1/2" = 12"



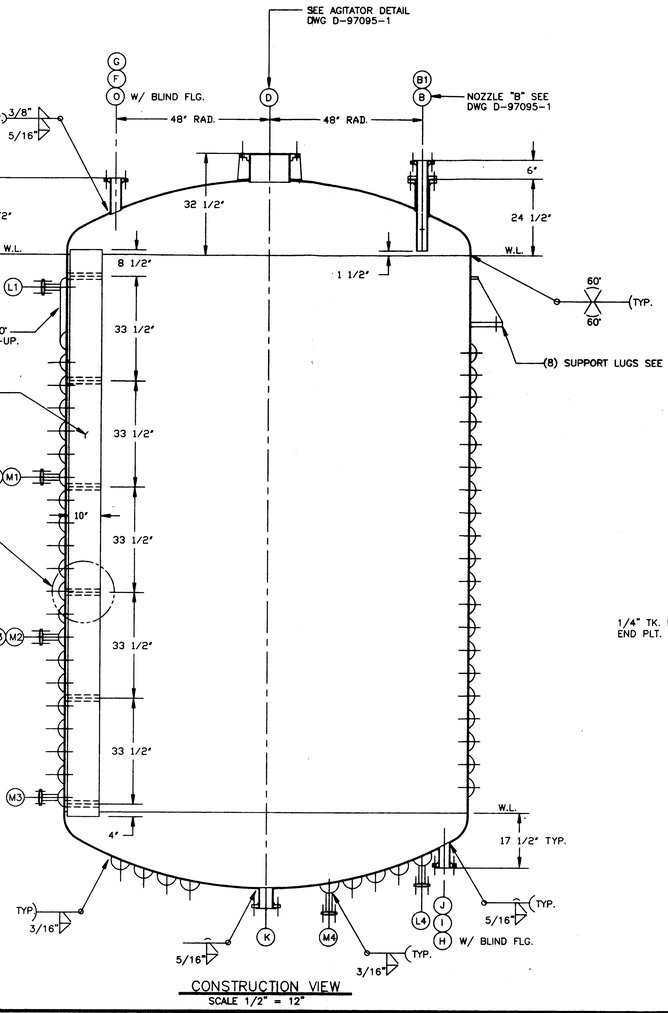
BAFFLE SUPPORT DETAIL
SCALE 1 1/2" = 12"

MARK	QUAN.	SIZE	ASA RATING	SCH	SERVICE
A	1	4"	150# LAP JOINT	40	COND. RETURN W/ 1 1/2" DIP PIPE
A1	1	1 1/2"	150# LAP JOINT	40	DIP PIPE
B	1	4"	150# LAP JOINT	40	INLET W/ 3" DIP PIPE
B1	1	3"	150# LAP JOINT	40	DIP PIPE
C	1	8"	150# LAP JOINT	1/4"	RELIEF / VENT
D	1	12"	150# SLIP-ON W/ RF	1/4"	AGITATOR
E	1	24"	150# SLIP-ON	1/4"	MANWAY W/ DAVIT
F	1	2"	150# LAP JOINT	80	CONS. VENT
G	1	1 1/2"	150# LAP JOINT	80	LEVEL SW
H	1	1 1/2"	150# LAP JOINT	80	SPARE W/ BLIND FLG
I	1	1 1/2"	150# LAP JOINT	80	TEMP. TRANS
J	1	3"	150# LAP JOINT	80	LEVEL TRANS.
K	1	4"	150# LAP JOINT	40	BTM OUTLET
L1 TO L4	4	1 1/2"	150# LAP JOINT	10	JACKET INLETS
M1 TO M4	4	1 1/2"	150# LAP JOINT	10	JACKET OUTLETS
N	1	3"	150# LAP JOINT	40	RECIRC. W/ 2" DIP PIPE
N1	1	2"	150# LAP JOINT	40	DIP PIPE
O	1	3"	150# LAP JOINT	40	SPARE W/ BLIND FLG
P	1	6"	150# LAP JOINT	1/4"	LEVEL INDICATOR

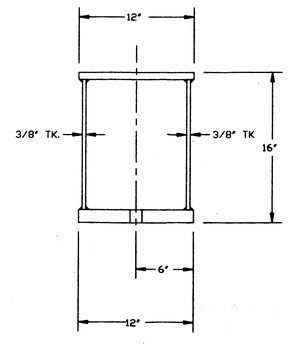
★ SUPPIED W/ BLIND FLG , GASKET & BOLTING

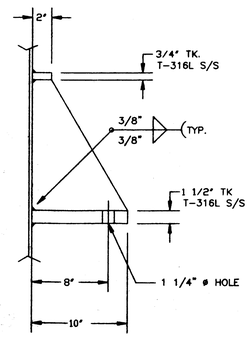


ELEVATION VIEW
SCALE 1/2" = 12"

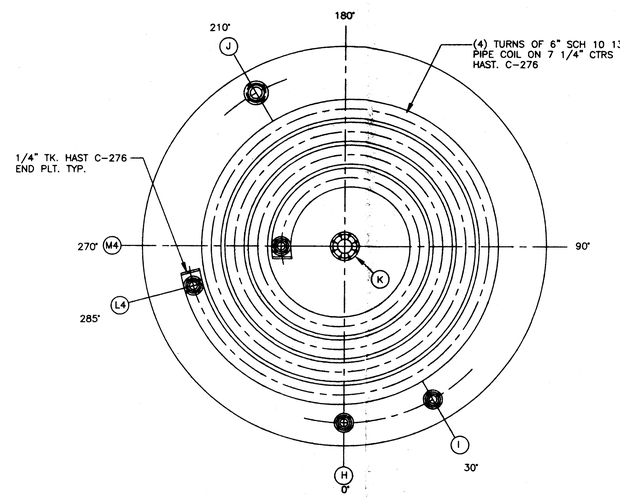


CONSTRUCTION VIEW
SCALE 1/2" = 12"





SUPPORT LUG DETAIL
SCALE 1 1/2" = 12" (8) REQ'D



BOTTOM VIEW
SCALE 1/2" = 12"

- NOTES -

1. CONSTRUCTION TO COMPLY WITH ASME CODE SECTION VIII DIV. 1 1995 ED. A96 INCLUDING CERT. & STAMP FOR INSTALLATION IN STATE OF MD.
2. NAME PLATE STAMPING:

U CERTIFIED BY: NAT'L. BOARD 939L
W RT-3
ROBEN MFG. CO. INC.
LAKEWOOD, N.J. 08701

VESSEL MAWP -2.5/25 PSI AT 331 °F
MIN DESIGN METAL TEMP 0 °F AT -2.5/25 PSI
JACKET MAWP -14.7/90 PSI AT 331 °F
MIN DESIGN METAL TEMP 0 °F AT -14.7/90 PSI
TUBE MAWP — PSI AT — °F
MIN DESIGN METAL TEMP — °F AT — PSI
SERIAL NO. 97095 YEAR 1998
P.O. NO. 44012555
TAG NO. T-17030

DETAIL DWGS
VARIOUS DETAILS — D-97095-1

3.	SHELL SIDE	JACKET SIDE
TEST PRESSURE	40	140
CORROSION ALLOWANCE	1/32"	NONE

4. WEIGHTS:
EMPTY (APPROX.) 16100 LBS.

5. PAINT: REFER TO NOTE 4 & 5
SANDBLAST: YES – EXT. C/S & S/S SURFACES PER SSPC-SP5
6.
7. STRESS RELIEVE: NO
8. RADIOGRAPHY: YES SPOT X-RAY LONG SEAM
9. SPECIAL TESTS: LIQUID PENETRANT CHECK ALL WELDS
10. CUSTOMER'S INSPECTION: YES

-GENERAL NOTES-

1. ALL BOLT HOLES TO STRADDLE MAIN CENTER LINES.
2. VESSEL TO BE FREE OF ALL WELD SPLATTER, DIRT, OIL, AND GREASE.
3. COVER & PLUG ALL OPENINGS FOR SHIPMENT.
4. PAINT ALL EXTERNAL C/S SURFACES W/ ① COAT OF BRINER SILICONE ACRYLIC BLACK (4900-7038)
5. PAINT ALL EXTERNAL STAINLESS STEEL SURFACES W/ ① COAT OF BRINER SILICONE RUBBER 2954.
6. GRIND ALL INTERNAL WELDS SMOOTH.
7. TANK TO BE BUILT PER THE FOLLOWING FMC SPECS: D-251,D-211, W-201, 8004 & 8004A

CUSTOMER FMC CORP.
P.O. NO. 44012555 #935-33
UNITS REQ'D. (1) ONE

ASME MATERIAL SPECIFICATIONS

SHELLS			FACINGS			COILS			FACINGS		
PIPE			EXPANSION JOINT			WELD CAPS			VORTEX BREAKER	–	–
ROLLED PLATE	HAST C-276	SB-575	HAND HOLES			BTM HEAD COIL	HAST C-276	SB-619	COVERS ☐ FACED		
BAFFLES	HAST C-276	SB-575	PIPE			PIPE			TUBE SHEETS		
TIE RODS			FORMED HEADS	HAST C-276	SB-575	SHELL COIL	HAST C-276	SB-575	TUBES ☐ SEAMLESS ☐ WELDED		
SPACERS			UNIT FLANGES			UNIT FLANGES			LIFT LUGS	316L	SA-240
NOZZLE FLG'S LJ	GALV. STL.	SA-105	FITTINGS			NOZZLE FLG'S LJ	GALV. STL.	SA-105	REINF. PADS	316L	SA-240
NOZZLE NECKS	HAST C-276	SB-619	SUPPORTS	316L	SA-240	NOZZLE NECKS	HAST C-276	SB-619	MANWAY	HAST C-276	SB-575

BOLTING	ZINC PLTD	GASKETS	1/8" THK
■	SA-193 GR B7	☐	COMPRESSED ASBESTOS
☐	SA-325	■	TEFLON ENV. W/ GARLOCK
☐	SA-320		8326 FILLER
NUTS	ZINC PLTD	☐	
■	SA-194 GR 2H	☐	
☐	SA-325	☐	O-RINGS
☐	SA-320	☐	

REV.	DESCRIPTION	By	CKD	DATE
B	REV. NOZZLE SCH. FOR "C,D,P" TO 1/4"	RED	GRH	12-30-97
A	REV PER CUSTOMERS DWG 11-19-97	RED	GRH	12-9-97

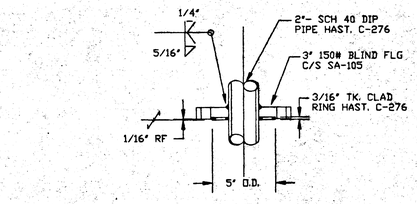
ROBEN Manufacturing Company, Inc.
Steel and Alloy Fabrication

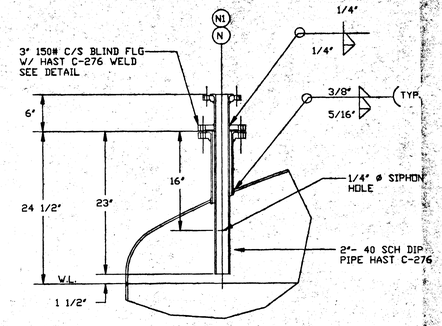
126" I.D HASTELLOY C-276
STEP 6 PRODUCT TANK
TAG NO. T-17030

SCALE	MADE	CKD	DATE	DRAWING
AS SHOWN	RED	GH	11-6-97	D-97095

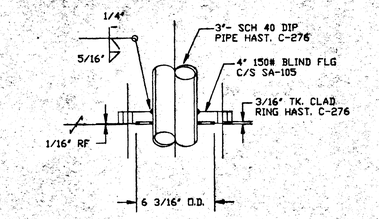
11081

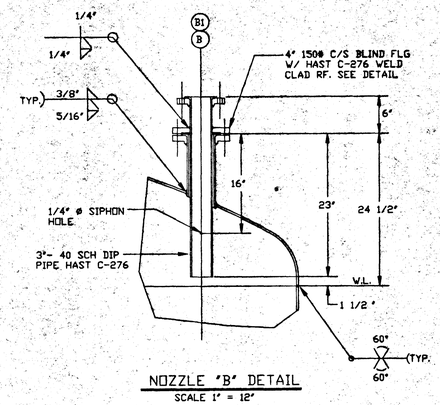
T-17030



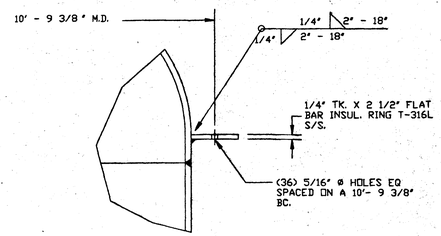


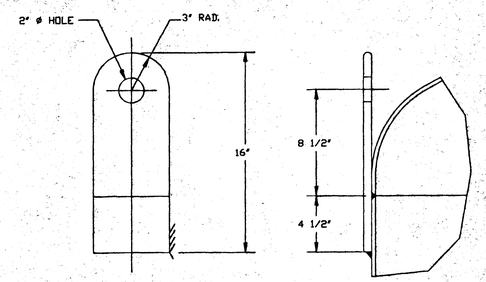
NOZZLE 'N' DETAIL
SCALE 1" = 12"





NOZZLE 'B' DETAIL
SCALE 1" = 12"





#93533

ROBEN Manufacturing Company, Inc. Steel and Alloy Fabrication				
126" I.D. HASTELLOY C-276 STEP 6 PRODUCT TANK DETAILS TAG NO. T-17030				
SCALE	MADE	CKD	DATE	DRAWING
AS SHOWN	RED	GH	12-11-97	D-97095-1

MANUFACTURER'S PARTIAL DATA REPORT (ALTERNATIVE FORM)

A Part of a Pressure Vessel Fabricated by One Manufacturer for Another Manufacturer

As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by Trinity Industries Inc. Head Division 11861 Mosteller Rd. Cinti,OH 45241 (Name and address of Manufacturer)
2. Manufactured for HAYNES INTL,12241 FM 529,HOUSTON TX 77041-2805, PO# 1072243 (Name and address of Purchaser)
3. Location of installation Unknown
4. Type: ASME(2PC)HEADS 126"ID X .3125 NOM THK (Description of vessel part (shell, two-piece head, tube bundle)) 2-25906-1 (Mfg's. serial No.) #93533 (CRN)
   (Nat'l. Bd. No.) (Drawing No.) (Drawing prepared by) 1997 (Year built)
5. ASME Code, Section VIII, Div. 1 1995 Edition 1996 ADD (Edition and Addenda (date)) (Code Case No.) (Special Service per UG-120(d))
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) SB 575 HAST C276, UNS# N10276 (Mat'l Spec. No., Grade or Type) H.T.—Time & Temp. (b) (Mat'l Spec. No., Grade or Type) H.T.—Time & Temp.

	Location (Top, Bottom, Ends)	Thickness Min.	Thickness Corr.	Radius Crown	Radius Knuckle	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure Convex	Side to Pressure Concave	Category A Type	Category A Full, Spot, None	Category A Eff.
(a)		.298		120	8.0							1	FULL	
(b)														

If removable, bolts used (describe other fastening)

8. MAWP (internal) (external) psi at max. temp. (internal) (external) °F. Min. design metal temp. °F at psi. (Mat'l Spec. No., Grade, Size, No.)
9. Impact test (Indicate yes or no and the component(s) impact tested)
10. Hydro., pneu., or comb. test press. Proof test
11. Nozzles, Inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Flange Type	Material Nozzle	Material Flange	Nozzle Thickness Nom.	Nozzle Thickness Corr.	Reinforcement Material	How Attached Nozzle	How Attached Flange	Location (Insp. Open.)

12. Supports: Skirt (Yes or no) Lugs (No.) Legs (No.) Others (Describe) Attached (Where and how)
13. Remarks: No design functions performed by Trinity Industries Inc. Head Division
Customer is responsible for specifying minimum design metal temp.

CERTIFICATE OF SHOP/FIELD COMPLIANCE

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

U Certificate of Authorization No. 25,479 Expires March 25, 2000

Date 12-22-97 Name Trinity Industries Inc. Head Division (Manufacturer) Signed (Representative)

CERTIFICATE OF SHOP/FIELD 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 Ohio and employed by Commercial Union Insurance Companies of Boston, MA have inspected the pressure vessel part described in this Manufacturer's Data Report on 12-22, 19 97, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel part 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 part 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 122297 Signed (Authorized Inspector) Commissions (Nat'l Board incl. endorsement, State, Province and No.)

(12/91)

This form (E00121) may be obtained from the ASME Order Dept., 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300

REPRINT 2/92

1. Manufactured and certified by ROBEN MFG. CO., INC. 760 Vassar Ave., Lakewood, NJ, 08701 (Name and address of Manufacturer)

2. Manufactured for FMC CORPORATION 1701 E. PATAPSCO AVE. BALTIMORE MD. (Name and address of Purchaser)

3. Location of installation FMC CORPORATION 1701 E. PATAPSCO AVE. BALTIMORE MD. (Name and address) #99533

4. Type: Vertical (Horiz., vert., or sphere) Jacketed Tank (Tank, separator, jkt. vessel, heat exh., etc.) 97095 (Mfg's serial No.) (CRN) D-97095 REV B (Drawing No.) 9391 (Nat'l. Bd. No.) 199 (Year bu

5. ASME Code, Section VIII, Div. 1 1995, A96 (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): 3 (b) Overall length (ft & in.): 691'-10 7/8"

Course(s) No.	Diameter, in.	Length (ft. & in.)	Material Spec./Grade or Type	Thickness Nom.	Thickness Corr.	Long Joint (Cat. A) Type	Long Joint (Cat. A) Full, Spot, None	Long Joint (Cat. A) Eff.	Circum. Joint (Cat. A, B & C) Type	Circum. Joint (Cat. A, B & C) Full, Spot, None	Circum. Joint (Cat. A, B & C) Eff.	Heat Treatment Temp.	Heat Treatment Time
1	6"	238'-0 1/8"	SB575 C276	.135"	.0312								
1	6"	238'-0 1/8"	SB575 C276	.135"	.0312								
1	6"	215'-10 5/8"	SB575 C276	.135"	.0312								

7. Heads: (a) (Mat'l Spec. No., Grade or Type) H.T.-Time & Temp (b) SB575 C276 (Mat'l Spec. No., Grade or Type) H.T.-Time & Temp

	Location (Top, Bottom, Ends)	Thickness Min.	Thickness Corr.	Radius Crown	Radius Knuckle	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure Convex	Side to Pressure Concave	Category A Type	Category A Full, Spot, None	Category A Eff.
(a)														
(b)	BTM	.135"	.062"											

If removable, bolts used (describe other fastening)

8. Type of jacket Type 1 & Type 3 130° 3" Half Pipe Coil (Mat'l Spec. No., Grade, size, No.) Jacket closure Welded (Describe as ogee & weld, bar, etc.)

If bar, give dimensions If bolted, describe or sketch

9. MAWP 90 (internal) -14.7 (external) psi at max. temp. 331 (internal) 331 (external) °F Min. design metal temp. 0 °F at -14.7 psi.

10. Impact test No as per paragraph UG-20(f), UHA-51, UCS-66 & UNF-65 (Indicate yes or no and the component(s) impact tested)

11. Hydro., pneu., or comb. test press. 140 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): 2 (b) Overall length (ft & in.): 14'-9"

Course(s) No.	Diameter, in.	Length (ft. & in.)	Material Spec./Grade or Type	Thickness Nom.	Thickness Corr.	Long Joint (Cat. A) Type	Long Joint (Cat. A) Full, Spot, None	Long Joint (Cat. A) Eff.	Circum. Joint (Cat. A, B & C) Type	Circum. Joint (Cat. A, B & C) Full, Spot, None	Circum. Joint (Cat. A, B & C) Eff.	Heat Treatment Temp.	Heat Treatment Time
1	10'-6"	7'-4 1/4"	SB575 C276	.3125"	.0312	1	Spot	85%	1	None	70%	–	–
1	10'-6"	7'-4 3/4"	SB575 C276	.3125"	.0312	1	Spot	85%	1	None	70%	–	–

15. Heads: (a) SB575 C276 (Mat'l Spec. No., Grade or Type) H.T.-Time & Temp (b) SB575 C276 (Mat'l Spec. No., Grade or Type) H.T.-Time & Temp

Location (Top, Bottom, Ends)	Thickness Min.	Thickness Corr.	Radius Crown	Radius Knuckle	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure Convex	Side to Pressure Concave	Category A Type	Category A Full, Spot, None	Category A Eff.
Top	.2198"	.062"	120"	8"	—	—	—	—	—	—	–	—	—
Bottom	.2802"	.062"	120"	8"	—	—	—	—	—	—	–	—	—

Removable, bolts used (describe other fastening)

(Mat'l Spec. No., Grade, Size, No.)

(Internal) -2.5 (external) psi at max. temp. 331 (Internal) 331 (external) °F Min. design metal temp. 0 °F at -2.5/25 ps

7. Impact test No, as per paragraph UG-20(f), UCS-66(a) & UHA-51 (Indicate yes or no and the component(s) impact tested)

8. Hydro., pneu., or comb. test press. 40 Proof test

9. 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	
Cond. Return	1	4"	Flange	SB619 C276	SA105	.237"	.0312	None	UW16.1(d)	Fig2-4(1)	
Dip Pipe	1	1 1/2"	Flange	SB619 C276	SA105	.145"	.0312	None	UW16.1(d)	Fig2-4(1)	
Inlet	1	4"	Flange	SB619 C276	SA105	.237"	.0312	None	UW16.1(d)	Fig2-4(1)	
Dip Pipe	1	3"	Flange	SB619 C276	SA105	.216"	.0312	None	UW16.1(d)	Fig2-4(1)	
Relief/Vent	1	8"	Flange	SB575 C276	SA105	.25"	.0312	None	UW16.1(d)	Fig2-4(1)	
Agitator	1	12"	Flange	SB575 C276	*SA105	.25"	.0312	None	UW16.1(d)	Fig2-4(1)	
Manway	1	24"	Flange	SB575 C276	*SA105	.25"	.0312	SA240 T316L	UW16.1(d)	Fig2-4(8a)	Head
						.25"	.0312	SA240 T316L	UW16.1(d)	Fig2-4(8a)	Head

10. Supports: Skirt No (Yes or No) Lugs 2 (No.) Legs (No.) Others (Describe) Attached Welded to Shell (Where and How)

11. 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)

Top Head 2-25906-1 Trinity Industries Inc. "U" 25,479.

Btm Head 2-24941-1 Trinity Industries Inc. "U" 25,479.

12. Remarks: Unit will be used as 126"ID Hastelloy C276 Step 6 product tank. Non-lethal service. Bottom head installed with 130° Half Coil 6" SCH10 SB619 C276 on 7 1/4" center. Total running feet 71'-6".

*Agitator & Manway flanges clad with SB575 C276.

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. 24,584 Expires 1/5 , 19 99

Date JUN 09 1998 Name ROBEN MFG. CO., INC. (Manufacturer) Signed (Representative)

CERTIFICATE OF SHOP INSPECTION

, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the State or Province of NJ and employed by KEMPER INSURANCE COMPANIES of LONG GROVE, IL have inspected he pressure vessel described in this Manufacturer's Data Report on JUN 09 1998 , 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 JUN 09 1998 Signed (Authorized Inspector) Commissions NB 7050AB, NJ 476 (Nat'l 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,

Certificate of Authorization No. Expires , 19

Date Name (Assembler) Signed (Representative)

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

The undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the State or Province of and employed by of

We 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 belief, the Manufacturer has constructed and assembled this pressure vessel in accordance with ASME Code, Section VIII, Division 1. The described vessel inspected and subjected to a hydrostatic test of psi. By signing this certificate neither the Inspector nor his employer makes any warranty, pressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall able in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Signed (Authorized Inspector) Commissions (Nat'l Board incl. endorsement, State, Province and No.)

As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

. Manufactured and certified by ROBEN MFG. CO., INC. 760 Vassar Ave., Lakewood, NJ, 08701
(name and address of manufacturer)

*93533

. Manufactured for FMC CORPORATION 1701 E. PATAPSCO AVE. BALTIMORE MD.
(name and address of purchaser)

. Location of installation FMC CORPORATION 1701 E. PATAPSCO AVE. BALTIMORE MD.
(name and address)

. Type: Vertical (horiz., vert., or sphere) | Jacketed Tank (tank, separator, heat exh., etc.) | 97095 (mfg's serial no.)

(CRN) | D-97095 REV B (drawing no.) | 9391 (Nat'l. Bd. no.) | 1998 (year built)

Data Report Item Number

Remarks

PURPOSE	NO	DIA	FLANGE TYPE	MATERIAL NOZZLE	/ FLANGE	NOZZLE TK NOM	/ CORR	R. MATL	HOW ATTACHED NOZZLE	/ FLANGE
Cons Vent	1	2"	Flange	SB622 C276	SA105	.218"	.0312"	None	UW16.1(d)	Fig2-4(1)
Level Sw	1	1 1/2"	Flange	SB622 C276	SA105	.200"	.0312"	None	UW16.1(d)	Fig2-4(1)
Spare	1	1 1/2"	Flange	SB622 C276	SA105	.200"	.0312"	None	UW16.1(d)	Fig2-4(1)
Temp Trans	1	1 1/2"	Flange	SB622 C276	SA105	.200"	.0312"	None	UW16.1(d)	Fig2-4(1)
Level Trans	1	3"	Flange	SB622 C276	SA105	.300"	.0312"	None	UW16.1(d)	Fig2-4(1)
Btm Outlet	1	4"	Flange	SB622 C276	SA105	.337"	.0312"	None	UW16.1(d)	Fig2-4(1)
Jacket Inlet	4	1 1/2"	Flange	SB619 C276	SA105	.109"	.0312"	None	UW16.1(d)	Fig2-4(1)
Jacket Outlet	4	1 1/2"	Flange	SB619 C276	SA105	.109"	.0312"	None	UW16.1(d)	Fig2-4(1)
Recirc	1	3"	Flange	SB619 C276	SA105	.216"	.0312"	None	UW16.1(d)	Fig2-4(1)
Dip Pipe	1	2"	Flange	SB619 C276	SA105	.154"	.0312"	None	UW16.1(d)	Fig2-4(1)
Spare	1	3"	Flange	SB619 C276	SA105	.216"	.0312"	None	UW16.1(d)	Fig2-4(1)
Level Indicator	1	6"	Flange	SB575 C276	SA105	.25"	.0312"	None	UW16.1(d)	Fig2-4(1)

Certificate of Authorization: Type "U" No. 24,584 Expires 1/5/99 ,19

Date JUN 0 9 1998 Name ROBEN MFG. CO., INC. (manufacturer) Signed Abhilash Mathur (representative)

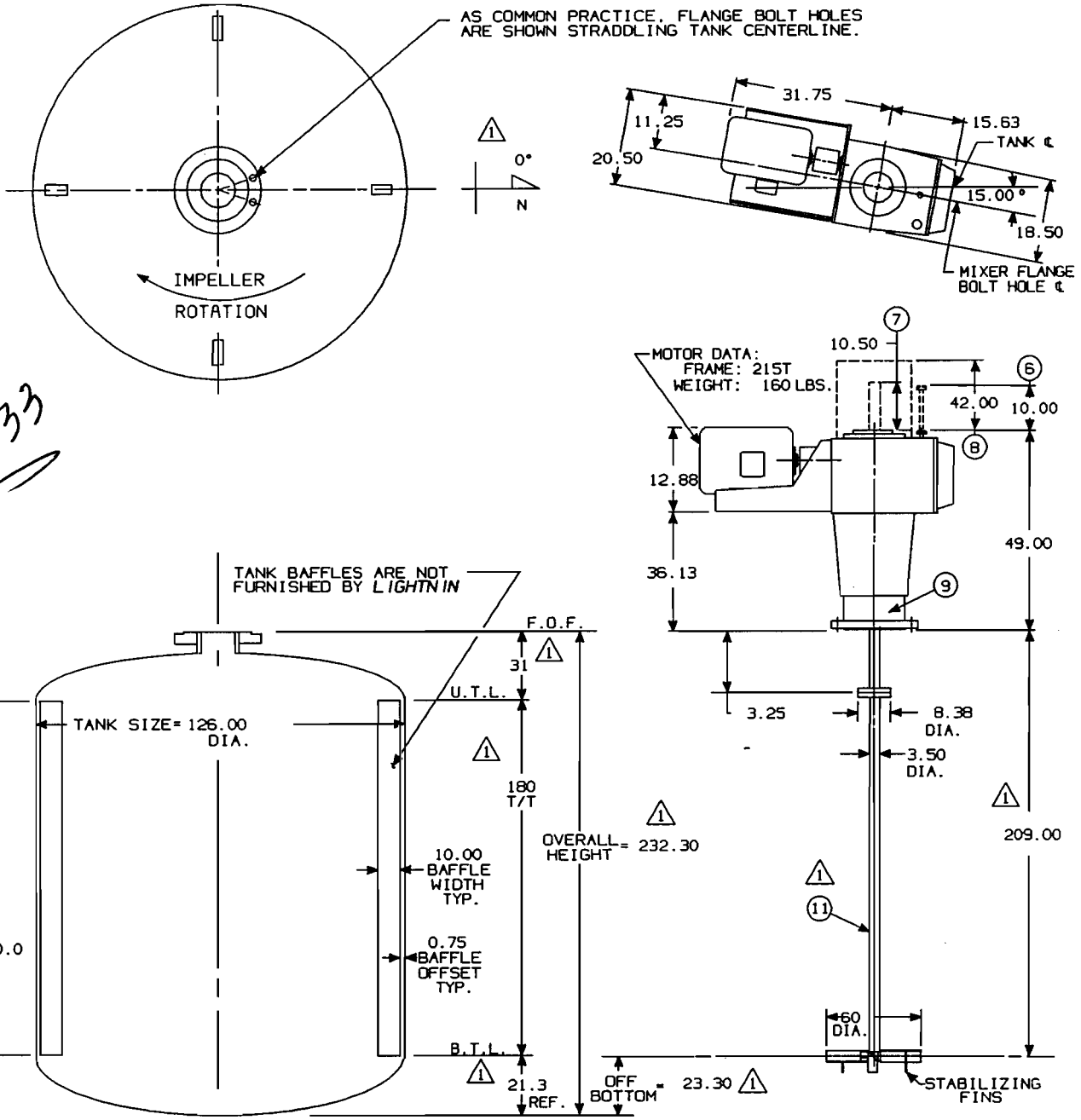
Date JUN 0 9 1998 Name [signature] (Authorized Inspector) Commission NB 7050AB, NJ 476 (Nat'l. Board incl. endorsement, state, province and no.)

LIGHTNIN
A UNIT OF GENERAL SIGNAL

DWG. NO.: E25682A REV.: 1
CUSTOMER: JOHN BROWN E & C
P.O. NO.: JB94037-26.01
TAG NO.: G-17030
DRN. BY: AMG DATE: 2-8-95

INSTALLATION DATA FOR MODEL 74S10

#93533



NOZZLE DESIGN DATA	IMPELLER DATA	NOTES
VERTICAL DOWNWARD LOAD (POUNDS): 4,900 TORQUE (INCH-LBS.): 20,700 BENDING MOMENT (INCH-LBS.): 48,400	TYPE: A200 RPM: 46 QUANTITY OF BLADES: 4 LOWER IMPELLER IS REMOVABLE, BUT NOT ADJUSTABLE.	1. REFER TO INSTRUCTIONS FOR START-UP AND MAINTENANCE PROCEDURES, AND SAFE LIFTING PRACTICES. 2. ALL DIMENSIONS ARE IN INCHES. 3. MATERIAL OF MIXER PARTS IN THE TANK IS 316L UNLESS OTHERWISE SPECIFIED. 4. TOTAL MIXER WEIGHT(LESS MOTOR) 2148 POUNDS. 5. TANK MUST HAVE MINIMUM OPENING SIZE OF 13.75 DIAMETER TO PASS DISASSEMBLED MIXER PARTS. 6. CLEARANCE REQUIRED FOR DIPSTICK REMOVAL. 7. CLEARANCE REQUIRED ABOVE MIXER AND ABOVE IMPELLER(S) TO PERMIT REMOVAL OF SEAL CARTRIDGE. 8. CLEARANCE REQUIRED FOR PULLER ASSEMBLY (OPTIONAL) 9. MECHANICAL SEAL: PER DWG: L-16628 STYLE: C CODE: SPECIAL INLET & OUTLET CONNECTIONS TO SEAL LUBRICANT 1/8 NPT - COOLANT 1/4 NPT. 10. UNIT IS FURNISHED WITH A TYPE 4A, DEAD END LUBRICATOR REFER TO L-16841. 11. THE LOWER 72" OF SHAFT IS STEPPED TO 2.5" DIAMETER.
DESIGN LOADS ARE GREATER THAN ACTUAL LOADS BY A SUITABLE FACTOR, CONSISTENT WITH CONSTRUCTION CODES AND *LIGHTNIN* EXPERIENCE.		
WARRANTIES AND GUARANTEES APPLY FOR THOSE ITEMS FURNISHED BY *LIGHTNIN*. ALL OTHER EQUIPMENT AND DESIGNS ARE THE RESPONSIBILITY OF OTHERS.		
UNIT MOUNTING FLANGE DATA 150 LB. ANSI (ASA) SERIES DRILLING SIZE: 12 O.D.: 19.00 NO. OF EQUI-SPACED BOLTS: 12 B.C.: 17.00 FLANGE THICKNESS FOR BOLTING: 3.50 BOLT DIA: .88 (MOUNTING BOLTS NOT FURNISHED BY *LIGHTNIN*)		

PLATE 5102E

0.679

CERTIFIED: _____ DATE: _____

LIGHTNIN
P.O. BOX 1370 • 135 MT. READ BVLD. • ROCHESTER N.Y. 14603
A UNIT OF GENERAL SIGNAL

LIGHTNIN
MIXERS AND AERATORS

SOLD TO	SHIP TO
BROWN JOHN C/O FMC CORP P O BOX 2879 BALTIMORE MD 21225	TO FOLLOW #93533
PURCHASE ORDER NO. JB94037-26.01	CUSTOMER REF NO. G-17030
CHANGE ORDER	DELY WAS 16WKS ADA, SHAFT LENGTH, IMPELLER OFF BOTTOM, TANK OAH
TAG	PLEASE REFER TO THE FOLLOWING PAGE FOR TAGGING INFORMATION.

QTY	MODEL	UNIT SIZE	LIGHTNIN ORDER NO.
001	74-S-10	74	E25682
	SERIAL NO. 95E2568201	EXACT RATIO 38.2	CHANGE DATE 05/02/95 CHANGE ORDER NO. 4

MOTOR OR DRIVE	DESCRIPTION	FRAME SIZE	HORSEPOWER	RPM	VOLTS
	RELIANCE HI-EFF S.D.	215T	10	1750	460

CYCLE	PHASE	SERVICE FACTOR	ENCLOSURE	FURNISHED BY	MOUNTED BY
60	3	1.15	TEFC	LIGHTNIN	LIGHTNIN

WETTED PARTS	
	STAINLESS STEEL - 316L OR ANSI C

IN TANK SHAFT	DIAMETER	LENGTH FROM MOUNTING BASE	COUPLING TYPE
	3.5/2.5 in	209 in	RIGID BELOW BASE

IMPELLER						
	UPPER DIAMETER	TYPE	NO OF BLADES	HUB CONSTRUCTION	DISC CONSTRUCTION	
	MIDDLE DIAMETER	TYPE	NO OF BLADES	HUB CONSTRUCTION	DISC CONSTRUCTION	
	LOWER DIAMETER 60.00in	TYPE A200	NO OF BLADES 4P	HUB CONSTRUCTION STD	DISC CONSTRUCTION	STABILIZER FINS
	NOMINAL SPEED 46.0	OFF BOTTOM 23.30in	SPACING			

SHAFT SEAL	ANSI FLANGE SIZE	CLASS	PRESSURE	TEMPERATURE	PACKING TYPE
	12 in	150	14PSI	166C	
	SEAL TYPE C SPECIAL			STUFFING BOX	

OPTIONAL EQUIP.	LUBRICATION	PULLER	STEADY BEARING TYPE	BUSHING MATERIAL
	TYPE 4A			

INSTALL DATA	TANK SHAPE	DIA/SIZE	MIXER MOUNTING
	ROUND	126.00 in	VERTICAL (ON CENTER)

TANK DATA	NOZZLE/BEAM HEIGHT	TOP	BOTTOM	OVERALL HEIGHT
	10.00 in	21.00in	21.30in	232.30in

	BAFFLES REQUIRED	QUANTITY	OFF WALL DISTANCE	WIDTH	LENGTH
	YES	4	.75in	10.00in	180.00in

DRAWING DATA	

OTHER DATA	
	PEDESTAL MTD. TUNGSTEN CARBIDE STAT.SEAL FACE, DEAD END LUBRICATOR MTR.PER SPEC.