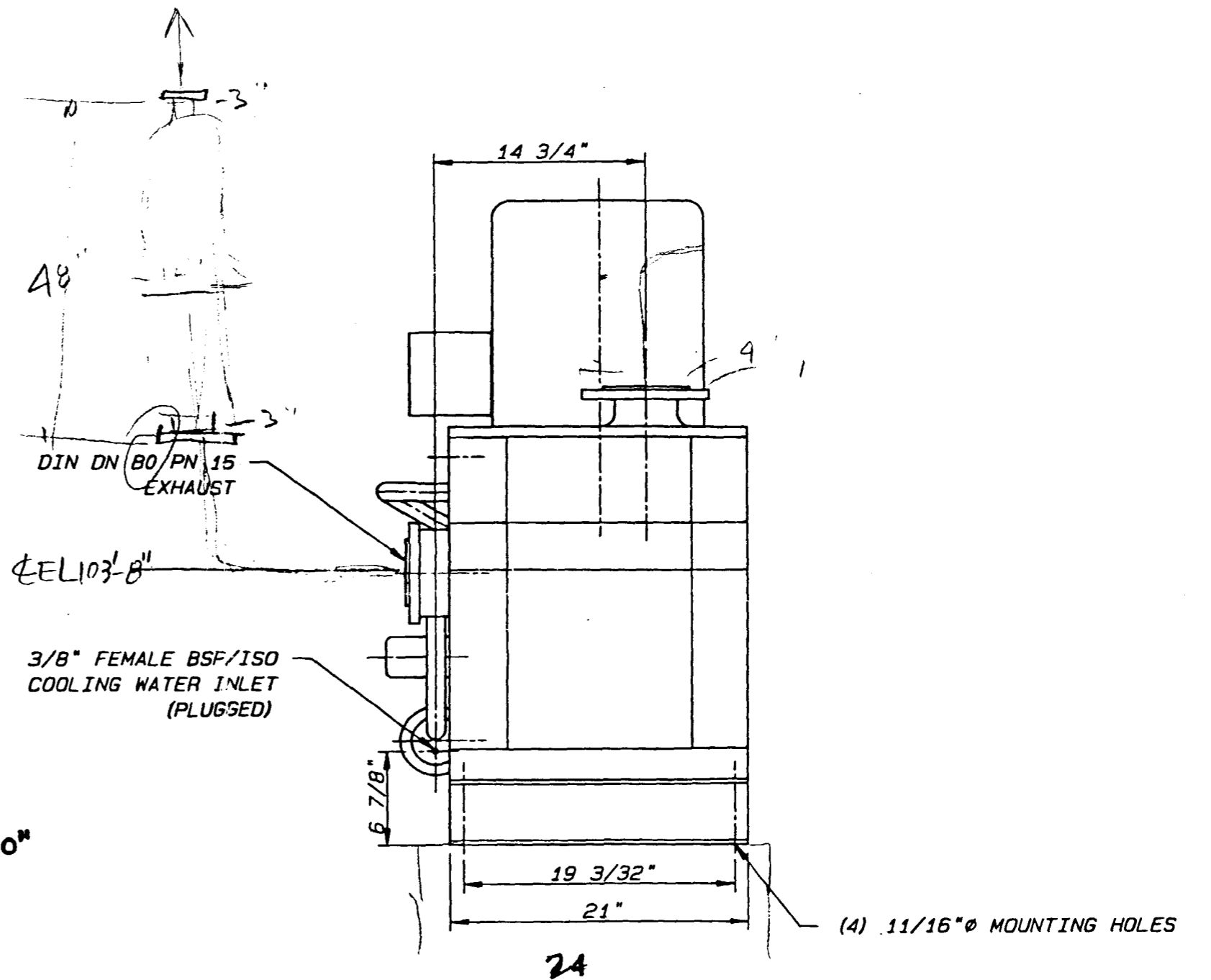
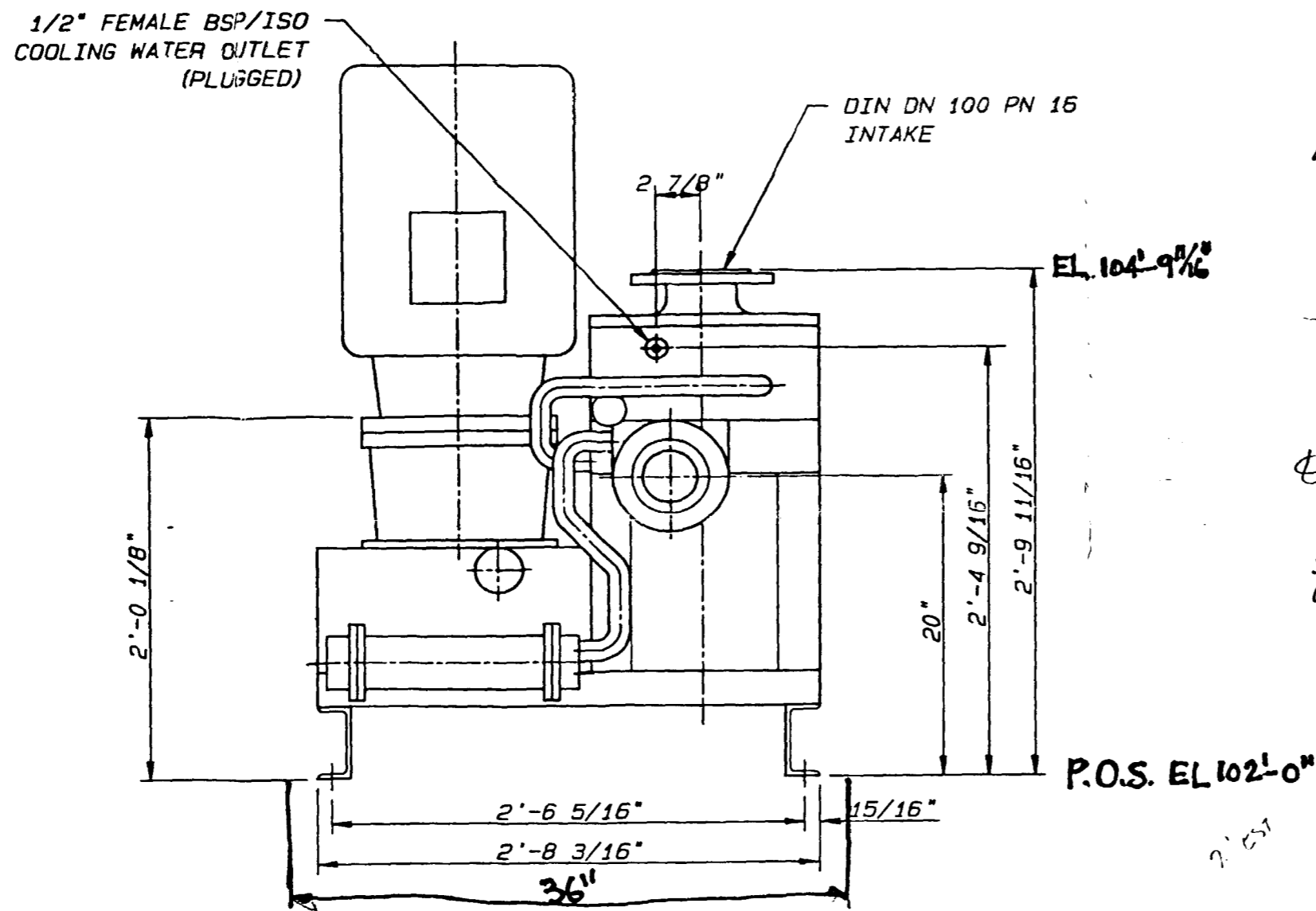
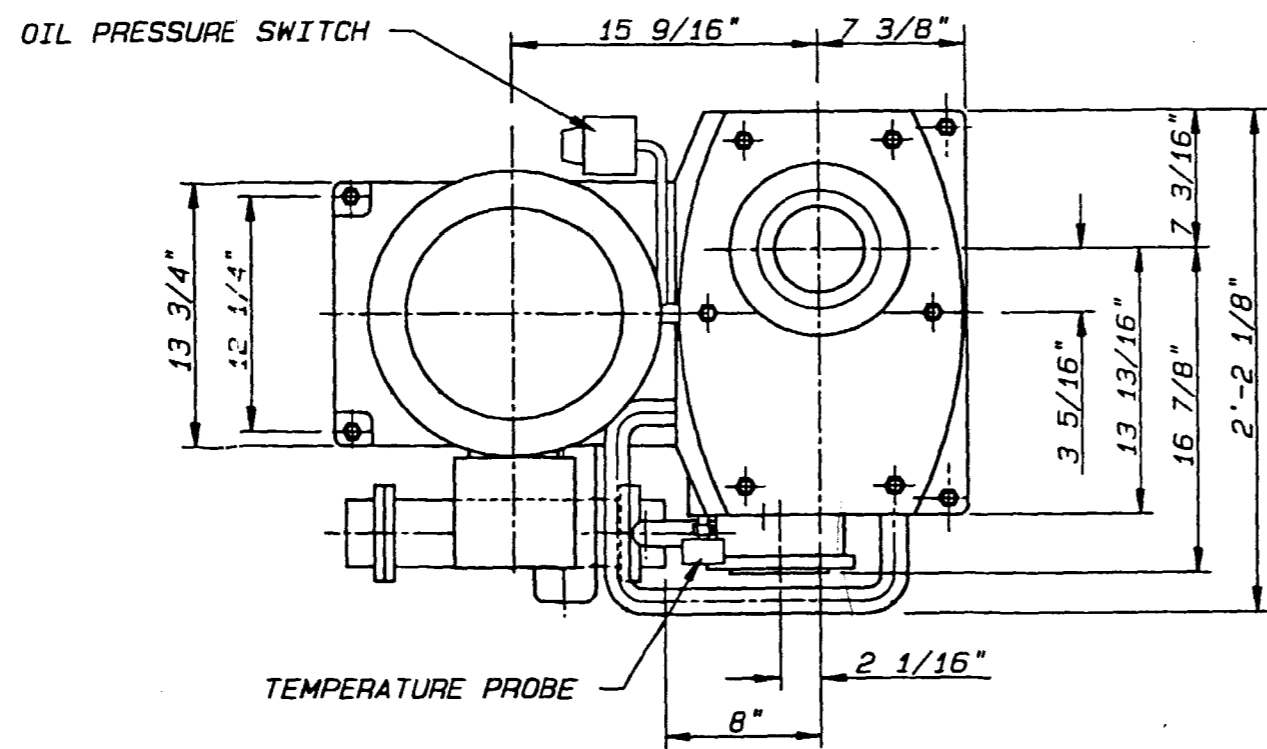


59262

Kvaerner		DRY VACUUM PUMP				DOCUMENT NO											
		DATA SHEET				PROJECT NO N98172-00											
		CLIENT: American Cyanamid				REQ NO 2302											
		LOCATION: CAPRI Plant - Manati, Puerto Rico				Sheet No. 1 of 5											
Total Number	1	Number Working	1	Number Standby	0	SERVICE:	2nd Stage Distillation	ITEM NUMBER:	150-052	1							
Manufacturer:		Graham / Leybold		Size & Type:		Dryflo GDP-150		Serial No.		2	1						
Motors Req'd		One Provided by		Graham		Mounted by		Graham		Item/Spec. No.		3	1				
Req'd		Provided by		Mounted by		Item/Spec. No.				4							
OPERATING CONDITIONS						RATED PERFORMANCE											
X	Wt %	Mole %			Proposal Curve No.		E61706					6	1				
COMPONENT		Mol. Wt.	Case 1	Case 2	Case 3	No. Stages	2		Rev./Min.		3000		7	1			
Air		29	96.06	93.59	50.4	X Single Suction		Double Suction				8	1				
Acetic Acid		60.05	0.15	0.71	7.4	Efficiency		% Rated Power		EP		9	1				
Ethanol		46.07	0.24	0.29	0	Capacity at Dry Air Cond.		4440		ft ³ /hr		10	1				
Methanol		32.04	1.38	0.91	0	Cooling Water Inlet Flow		1-4		gpm		11	1				
Toluene		92.14	2.17	4.5	42.2	Make-Up/Purge Liquid Flow		N/A		lb/hr		12	1				
Nitrogen		28	0	0	0	Make-Up/Purge Liquid Pressure		N/A		psig		13	1				
Suot Flow : Norm./Rated (scfm)		1.9 / 2.1		4 / 4.4		67 / 74		Discharge Temperature		150		°F		14	1		
Suot Temp: Norm., Rated: [°C]		-5		-5		-5		Rotation Facing Coupling		CCW				15	1		
Suot Press: Rated [mmHgA]		638		298		23		Ejector Incorporated		Yes X No				16	1		
Mol. Wt. of Suction Gas		30.04		29.67		42.5		DP Ejector		N/A		psi		17	1		
Ratio Specific Heats Suot Gas		1.38		1.08		1.07								18			
Design Dish Press [mmHgA]:		760		760		760								19			
SERVICE LIQUID:						SHOP TESTS											
N/A		Analysis Attached		Yes X No		Test		Test Code		Witness				20	1		
Inlet Temp.		°C		Inlet Pressure		psia		X Performance						21	1		
Density:		N/A		Specific Heat		N/A		Btu/lb-F		X Pneumatic				22	1		
Viscosity at Inlet Temp.		cP		Vap Press at Inlet Temp		N/A		psia		X Shop Inspection				23	1		
Fouling Factor		N/A		Corrosive/Erosive due to		Organic acid		Dismantle & Inspect After Test						24			
Duty:		Continuous X Intermit		Service Liq Sys		Closed		Open						25			
CONSTRUCTION						MATERIALS											
Connections		Size		Rating		Facing		Location		Center Body		D.I.		27	1		
Suction		4"		150#		RF				Body Liner		NA		28	1		
Discharge		3"		150#		RF				End Covers		D.I.		29	1		
Service Liquid Circ.										Port Plate/Conn		NA		30	1		
Service Liquid Inlet										Valves		NA		31	1		
										Rotor		D.I.		32	1		
Case: Mounting		X Foot		Centerline		Split:		Radial		Axial		Shaft		Duplex SS		33	1
Shape		Circular		Double Lobe						Shaft Sleeves		NA		34	1		
Max. Allow. Press.		190 psia		at 100 °F		Hydro Test				Gaskets		Viton		35	1		
Vent-plug/valve		Drain-plug/valve		Gauge						Interconnecting Pipe				36	1		
Rotor: Dia.		in.		Width(s)		in.		Axial Clearances		in.		Ejector		NA		37	1
Blades		Straight		Radial		Tangential		Curved		Baseplate/Frame		Structural Steel		38	1		
Mount		Between Bearings		Overhung						Coupling		C.I.		39	1		
Ports:		Port Plates		Cones		Port Plate Valves				Coupling Guard		NA		40	1		
Bearings Type:		Radial X		Thrust		X				Silencer / Separator		Stainless Steel		41	1		
Lube:		Grease		X Oil										42	1		
Coupling: Mfr./Model		TB Woods or Eq		Driver Half Mtd. By		Graham								43	1		
Seal Type:		Packing		X Mechanical		X Single		Double		See SCOPE OF SUPPLY Sheet 2				44	1		
Mfr.		Burgmann		Mfr. Code		155								45	1		
Size and No. of Rings														46	1		
Seal Flush		Service Liquid		Incorp. in Pump		External Piping								47	1		
External Seal Fluid Flow				lb/hr at Press.		psig								48	1		
Baseplate:		X Combined												49	1		
Drive Type:		X Gear		V-Belt		Direct								50	1		
DRIVER (See Motor Data Sheet)						SEPPING											
HP		RPM		Frame		Manufacturer:		Weights: Unit Incl. Access		2450 lb				51	1		
Volt/pH/Hz		Elec. Hazard Area Class:						Motor		500 lb Gear		500 lb		52	1		
								Total Shipping Volume:		ft ³				53	1		
REVISION No.		0		1		2											
PREPD. BY/DATE		PRF / 12 Nov 98		PRF / 15 Jan 99		PRF / 03 Feb. 99											
CHKD. BY/DATE																	
AUTH. BY/DATE																	

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MDS-026/1 US REV 1



THE FOLLOWING ITEMS ARE INCLUDED:			
ITEM	QUAN	DESCRIPTION	REMARKS
SILENCER	1	BURGESS MANNING BE0-3 (3" MALE NPT) 304 STAINLESS STEEL	SHIPPED L.G. LOOSE
TEMPERATURE PROBE	1	UNITED ELECTRIC RTP1/17/7/1/1/-/L7 WITH PF73 COMP. FITTING & 1/S260/L6/-/- THERMOWELL	
OIL PRESSURE SWITCH	1	UNITED ELECTRIC H105-156	
PRESSURE CONTROL VALVE	1	FISHER 1 1/2" EZ (150# FLG'D.) 667/30 ACTUATOR	SHIPPED L.G. LOOSE
PRESSURE CONTROL VALVE	1	FISHER 1" EZ (150# FLG'D.) 667/30 ACTUATOR	SHIPPED L.G. LOOSE

NOTES:

- CAUTION: EXTERNAL SURFACES OF PIPING ARE HOT.
- SAFETY DEVICES OR OVER-PRESSURE PROTECTION SHALL BE PROVIDED PRIOR TO PLACING PACKAGE IN SERVICE.
- DIMENSIONAL TOLERANCES UNLESS OTHERWISE NOTED: TEMA STD.
- IF SUPPLIED, INLET FILTER, BOOSTER, AND SILENCER ARE SHIPPED LOOSE.
- JOG MOTOR BEFORE INITIAL START-UP TO CHECK ROTATION.
- JACKET COOLING LIQUID MUST BE ON BEFORE START-UP.
- CHECK OIL LEVEL IN GEARBOX BEFORE START-UP.
- BOLT HOLES STRADDLE CL'S.
- ALL BSP/ISO CONNS. ARE ISO 228/1.

P & I DIAGRAM: A-50719-11
 CATALOG CUTOUTS: A-50719-21

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EST'D. WGTs.
(LBS.)

EMPTY----- 1765

CERTIFIED CORRECT
 GRAHAM MFG. CO. INC.
J.D. Luker
 J.D. LUKER

CUSTOMER - AMERICAN CYANAMID/ KVAERNER PROCESS
 CUSTOMER ORDER NO. - 66707076
 GRAHAM JOB NO. - 99-37557 VP
 DESIGN - GRAHAM STD.
 CONSTRUCTION - GRAHAM STD.
 INSPECTION - GRAHAM STD.
 STAMPING - NONE
 TAG - 150-052
 PAINTING (CARBON STEEL COMPONENTS)
 SURFACE PREPARATION - GRAHAM STD.
 PAINT: PRIME- INDURACOTE IC-9252 RED OXIDE PRIMER
 PAINT: FINISH- INDURACOTE IC-7837 QUICK DRY ALKYD ENAMEL
 GRAHAM BLUE (2 MILS DFT)

DESIGN PRESSURE	DESIGN TEMP.	HYDRO TEST PRESS.	CORR. ALLOW.
DRY PUMP	175 PSIG	160° F	NONE

REV.	DESCRIPTION	MADE	CHKD	DATE
0	ORIGINAL ISSUE			

GRAHAM CORPORATION						
20 FLORENCE AVE. BATAVIA, NEW YORK						
GRAHAM DRYFLO VACUUM PUMP SYSTEM						
MODEL: GDP 150 BASIC						
SCALE	DSGN	DRWN	CHKD	APPD	DATE	REV.
1:10	CWY	CWY	CWY		01/25/99	0