

FORCES & MOMENTS		
API 610 FORCES & MOMENTS	SUCT	DISCH
F=FORCE IN (LBS)	FX 200	160
M=MOMENTS IN (FT-LBS)	FY 160	130
R=RESULTANT	FZ 130	200
	FR 280	290
	MX 340	340
	MY 170	170
	MZ 260	260
	MR 460	460

APPROXIMATE WEIGHTS	POUNDS	KILOGRAMS
PUMP -----	289	
DRIVER -----	145	
BASEPLATE -----	1250	
AUX. EQUIP. -----		
ROTOR -----		
UPPER HALF CASE -----		
TOTAL WEIGHT -----	1684	

REFERENCE DRAWINGS	
400RLCB02298	SEAL FLUSH PIPING PLAN 13
420RLCB02298	AUXILIARY PIPING PLAN 52
500RLCB02298	PUMP ASSY
1158RLCB02298	COUPLING
1747RLCB02298	MECHANICAL SEAL
1921RLCB02298	RESERVOIR

DRIVER			
MFGR: RELIANCE, CL 1, DIV 2, GP BCD, T3			
HP: 10	RPM: 3600		
ENCL/FRAME: TEFC / 215T			
PHASE: 3	HZ: 60	VOLTS: 460	

MECHANICAL SEAL	
MFGR: FLOWERVE	
TYPE & SIZE:	2375

COUPLING
MFGR: THOMAS
TYPE & SIZE: SERIES 71 / 175
GUARD: ALUMINUM, 1/16" MIN.THK., NO LEGS

CUSTOMER DATA	
CUSTOMER:	LINDE BOC PROCESS PLANTS LLC
CUSTOMER PO.:	PQ7053748
END USER:	GIANT INDUSTRIES, INC.
LOCATION:	YORKTOWN, VA

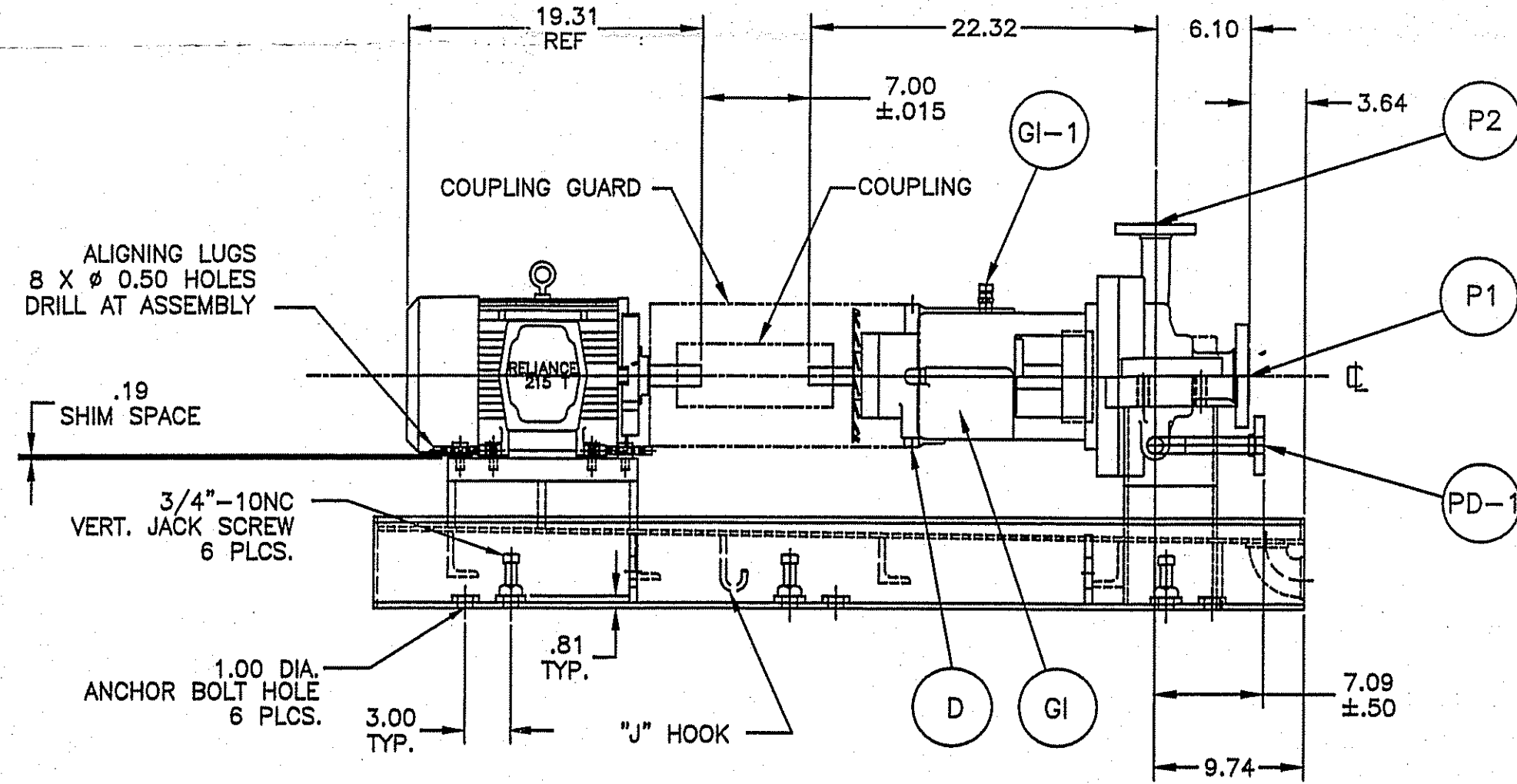
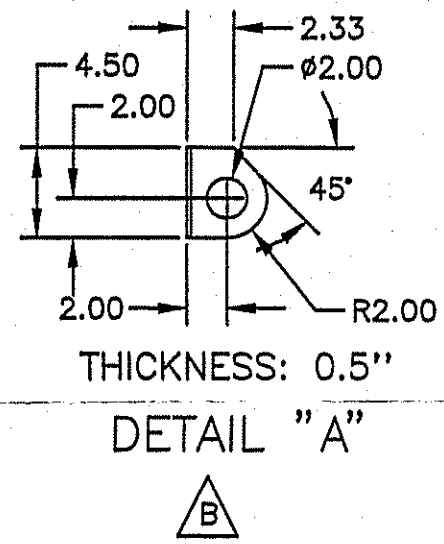
PROJECT: ULSD HYDROTREATER
TAG: G-545 A/B

OPERATING CONDITIONS	
SERVICE:	STRIPPER OVERHEAD PUMP
PRODUCT:	NAPHTHA
CAPACITY:	48 GPM
TOTAL DIFF. HEAD:	252 FT
PUMP RPM:	3480
SPECIFIC GRAVITY:	0.767 @ NORMAL TEMP.
TEMPERATURE:	115° NORMAL, 130° MAX, 50° MIN.
HYDROTEST PRESSURE:	900 PSIG

LOWSERVE Pump Division
Vernon Operations

PUMP AND MOTOR OUTLINE

DRAWING NO.		REV.	
300RLCB02298		B	
E	1 / 9	SHEET	1 OF 1



ITEM	SIZE	DESCRIPTION	CONNECTION
* P1	—	PUMP SUCTION, 2" RF FLANGE CL-300	SHIPPING COVER
* P2	—	PUMP DISCHARGE, 1" RF FLANGE CL-300	SHIPPING COVER
* PD-1	.75 SW	PUMPED FLUID DRAIN, 3/4" RF FLG CL-300	SHIPPING COVER
D	.50 NPT	DRAIN, BEARING	PLUGGED
GI-1	.50 NPT	BEARING HOUSING BREATHER	PROVIDED BY FLOWERVE
GI	.25 NPT	OILER, TRICO	PROVIDED BY FLOWERVE
S1	.75 SW	SEAL FLUSH, 3/4" RF FLG CL-300 (PLAN 13)	PIPED BY FLOWERVE
* BD	2.0 NPT	DRAIN, BASEPLATE	OPEN
* VR	—	VENT RESERVOIR, 3/4"NPT RF FLG CL-900	—
GH	—	GROUT HOLE (TYP)	OPEN
VH	—	VENT HOLE (TYP)	OPEN

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED

.X	±	.5
.XX	±	.25
.XXX	±	.125

ALL CUSTOMER CONNECTIONS LOCATIONS DIMENSIONS HAVE A TOLERANCE
OF ± 2.00 EXCEPT FOR THE PUMP SUCTION AND DISCHARGE
NOZZLES WHICH HAVE A TOLERANCE OF $\pm .25$

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2. CORRECTIONS, ALTERATIONS, ADDITIONS AND OR MODIFICATIONS OUTSIDE SCOPE OF CONTRACT OR WAY AFTER FIRST SUBMITTAL MAY REQUIRE AN ADDITIONAL ENGINEERING SERVICE CHARGE.
3. ITEMS CONDITIONALLY APPROVED OR WITH DEFERRED APPROVAL BY PURCHASER, MUST BE SPECIFICALLY STATED OTHERWISE DELIVERY MAY BE AFFECTED.

ORDER NO.	
RLCB02298	
DRAWN BY	DATE
A.LE	05/04/05
CHECKED BY	DATE
A.LE	05/04/05
ENGINEERING APPROVAL	DATE
G.THOMAS	05/04/05

3rd ANGLE PROJECTION

CAD DRAWING
NO MANUAL MODIFICATIONS

FLowsERVE

Pump Division
Vernon Operations

DRAWING TITLE

PUMP AND MOTOR OUTLINE

1HPX9A / HPX

SIZE	DRAWING NO.
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SIZE	DRAWING NO.
D	300RLCB02298

SCALE	1 / 9	SHEET	1	OF	1
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106012