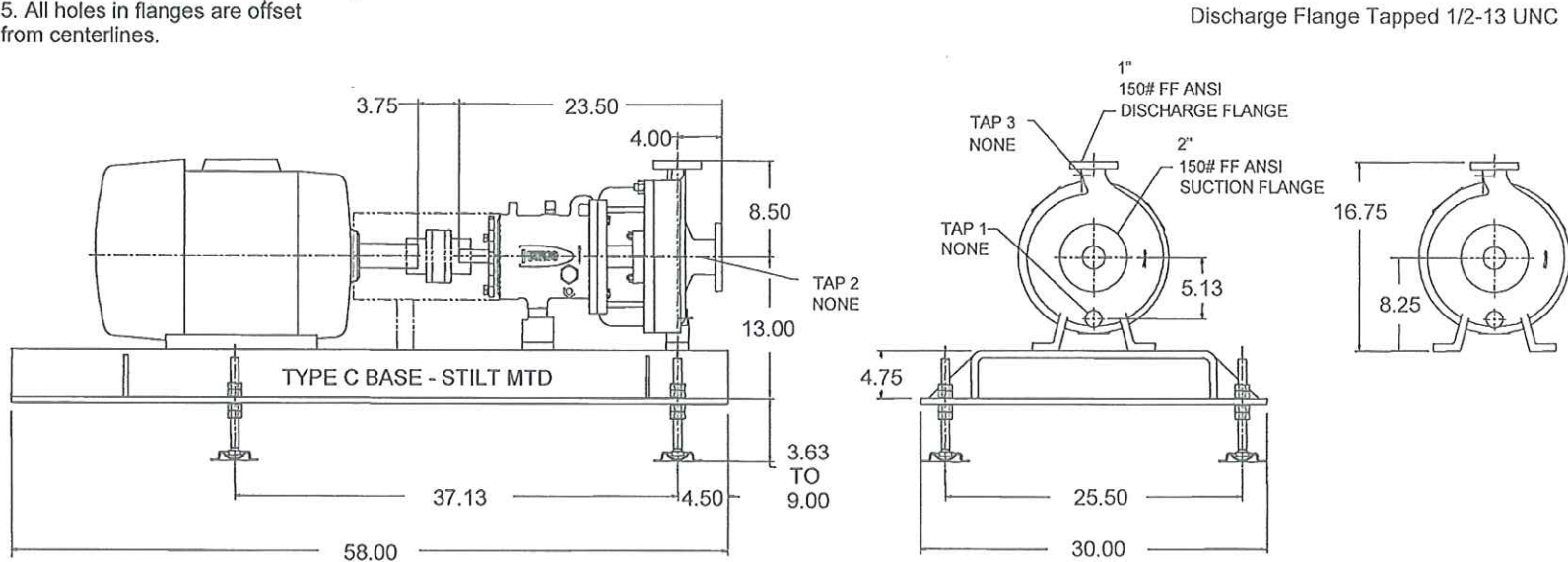


Dimensions certified for construction when properly endorsed below. Refer to factory for any "M" dimensions. DO NOT SCALE DRAWING

NOTES:

1. Consult pump I.O.M. before installing the pump.
2. Installation dimensions are +/- .13" (3mm), unless otherwise noted.
3. Foundation bolts and piping should not be set rigidly before receipt of equipment.
4. Allow a minimum of .75" (19mm) under baseplate for adjustment and grouting.
5. All holes in flanges are offset from centerlines.

6. Piping, foundations, and systems are the responsibility of others. Flowserve Pump Division data and comments are offered as an aid, but Flowserve Pump Division cannot assume responsibility for the system design or operation. It is recommended that a specialist skilled in this area be consulted to ensure a successful installation.
7. Dimension shown from bottom of base to centerline of pump includes any blocks under pump, as necessary.



All dimensions are in inches unless otherwise specified

DUPONT DANISCO
CELLULOSIC ETHANOL
CUSTOMER PO: DDCE110098
TAG NO.: P2300
SERVICE: RECYCLE NH4OH PUMP
PUMP MODEL: MK3 2K2X1LF-100P
PUMP SERIAL NO: 0709-7793
FLOWSERVE ORDER: 034-01430-16

Pump size & type	: 2K2x1LF-10 M3 LF
Pump speed / Stages	: 3560 rpm / 1
Flow / Head	: 12.0 USgpm / 439.00 ft
Driver power / Frame	: 25.0 hp / 18.6 kW / 284TS
Volts / Phase / Hz	: - 460 / 3 / 60

Drawing number	:
Date	: July 22, 2009
Certified by / Date:	: <i>[Signature]</i>
Seal type	: -
Seal flush plan	: Plan 53

109460

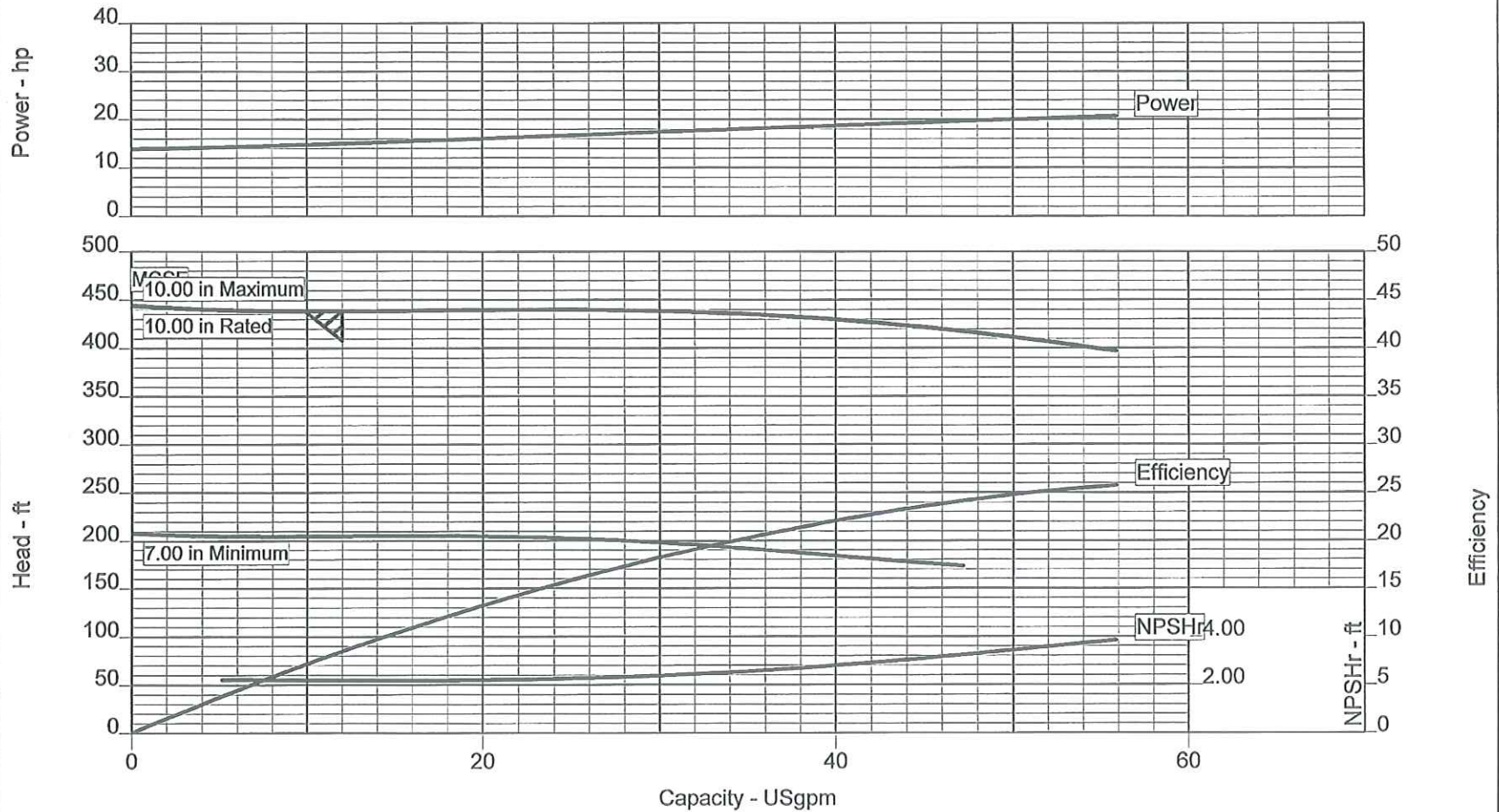
DUPONT DANISCO
 CELLULOSE ETHANOL
 CUSTOMER PO: DDCE110099
 TAG NO. : P2300
 SERVICE : RECYCLE NH4OH PUMP
 PUMP MODEL: MK3 2K2X1LF-100P
 PUMP SERIAL NO: 0709-7793
 FLOWSERVE ORDER: 034-01430-16



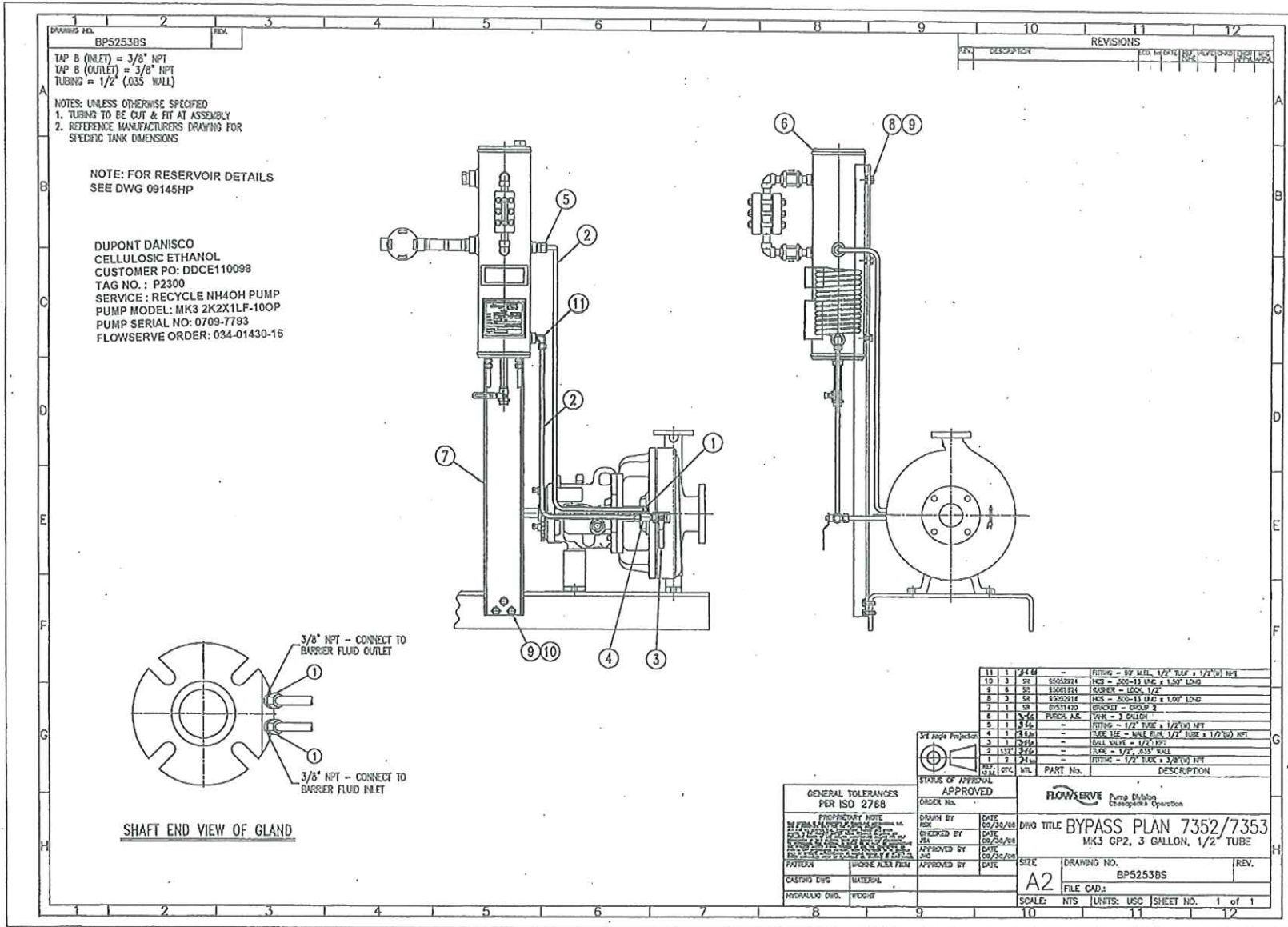
Pump size & type : 2K2x1LF-10 M3 LF
 Based on curve no. : MIII7760V
 Number of stages : 1

Capacity : 12.0 USgpm Specific gravity : 0.950
 Head : 438.00 ft Pump speed : 3054 rpm

CURVES ARE APPROXIMATE, PUMP IS GUARANTEED FOR ONE SET OF CONDITIONS, CAPACITY, HEAD, AND EFFICIENCY.
 MCSF PROVIDES MECHANICAL PROTECTION ONLY. MINIMUM THERMAL FLOW MUST BE CALCULATED FOR THE SPECIFIC FLUID AND OPERATING CONDITIONS.



BP5253BS SHT 1 REV 0 FPD ENG JBERNING AUG-27-2009 14:16:32



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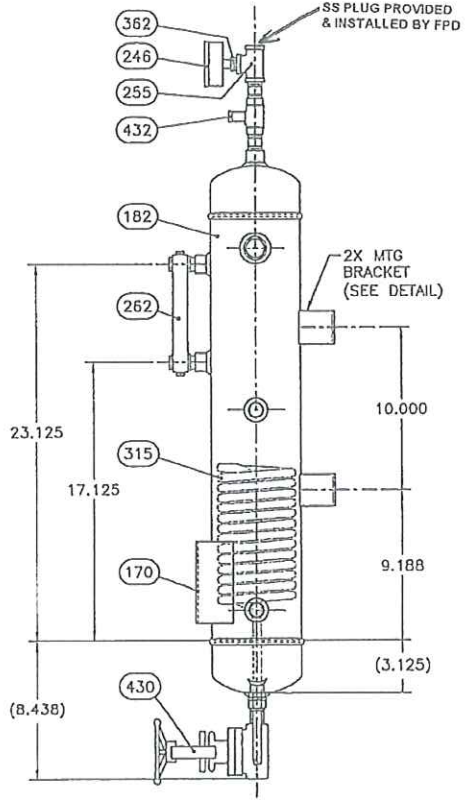
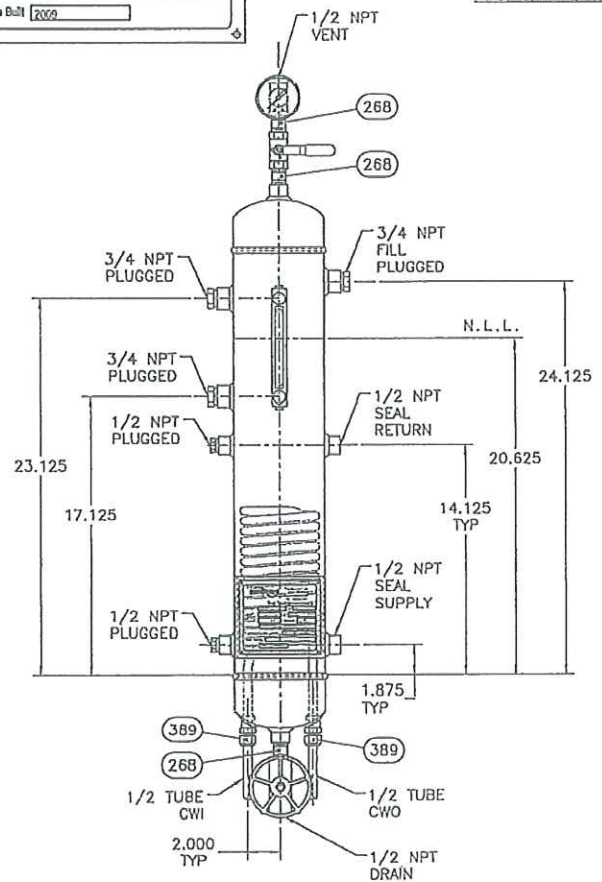
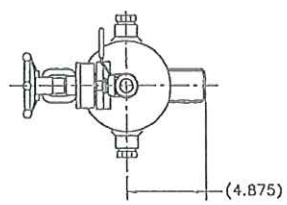
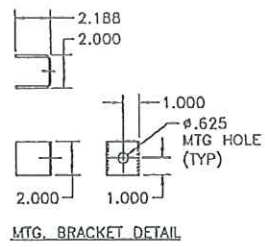
09145HP 1 (IN) REV: P2 KAL ENG DPUZIN AUG-05-2009 09:28:02

NO: 09145HP REV: P2

Flowserve Flow Solutions Division
 Tulsa, OK USA
 Phone: (918) 583-6253
 Fax: (918) 583-1071

Seal Reservoir

MAMP: 160 PSI at 150°F
 MDMT: 20°F at 160 PSI
 Capacity: 3 GALLONS Hydro at 240 PSI
 Part Code: _____
 Flowserve Factory Order No: 09145HP
 Serial Number: _____
 Data Ball: 2009



BILL OF MATERIAL NO: 09145HP				1 SUGGESTED SPARE PARTS 2 ODD/ESC(X)/OFF-STD(V)	
NO	PARTCODE	QTY	DESCRIPTION	MATERIAL	
182	W8034Y0000	1	RESERVOIR 5" PIPE SCH 10 (SHELL 26" LG)	304 SS	
170	U3DPU22A209	1	NAMEPLATE FOR RESERVOIR	STAINLESS STEEL	
262	U3DPU17A285	1	LIQUID LEVEL INDICATOR 1/2" NPT, TUBULAR, 6 C-C LUBE DEVICES: 0607-06-A-1-4	ALUMINUM	
315	4R98173X958	1	COOLING COIL 1/2" X .065 WALL X 20' LG. FOR 5" PIPE	SA-249 Gr. 316 / 316L WELDED	
389	U3DPU011985	2	TUBE FITTING (H) CONN. 1/2" TUBE X 1/2" (H) PIPE, BORE THROUGH	316	
246	U3DPU15A791	1	PRESSURE INDICATOR 2.5" DIAL, 0-160 PSI ASHCROFT: 25-1005-02B-160	BRASS	
255	0055004815	1	TEE FITTING 1/2" NPT SCD #150	304/304L SS	
268	3804004925	3	PIPE NIPPLE 1/2" X 2" S/40S SMLS TBE	SA-312 Gr. 304 / 304L SMLS	
362	3765004850	1	PIPE FITTING 1/2" X 1/4" HEX BUSHING	SA-182 Gr. F304 / 304L	
430	U3DPU230600	1	GATE VALVE 1/2" NPT CL800 CONVENTIONAL PORT	316 SS	
432	U3DPU230900	1	BALL VALVE 1/2" NPT 1-PC CL. 800 WOG	316	

NOTES:

- MFG PER FLOWSERVE SPEC 1T-8107.
- ALL DIMENSIONS ARE ±.250 UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS IN () ARE REFERENCE.
- MAMP 160 PSI @ -20° TO 150° F.
- VESSEL HYDRO @ 1.5 x MAMP (160 PSI) = 240 PSI.
- FOR LEVEL GAUGE (NO. 262) O-RING KIT, USE PART CODE U3DPU17A285.
- CRN OH0843.3 & OH11516.52671.

DUPONT DANISCO
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 PUMP SERIAL NO: 0709-7793
 FLOWSERVE ORDER: 034-01430-16

CUSTOMER: FLOWSERVE PUMP DIVISION
 ADDRESS: CHESAPEAKE, VA
 API PLAN: 53A
 PROJECT NO.: 70443
 FPD JOB#

THIS SEAL IS DESIGNED TO OPERATE WITHIN SPECIFIC OPERATING CONDITIONS. REFER TO THE PUBLISHED APPLICATION INFORMATION AVAILABLE FROM YOUR FLOWSERVE SALES REPRESENTATIVE.

AUXILIARY TYPE: RESERVOIR 3 GALLON ANSI PLAN 53A
 AUX CODE: PLAN 53A

REF PART CODE:	SCALE: TO SCALE	SEAL REF:
	DRAWN: AORTEGA	PARTS LIST NO:
	DATE:	REF DWG:
	CHKD:	FORM DWG:
	APP'D:	DRAWING NO: 09145HP
	JOB NO: 09145HP	REV: P2

REVISION: P2 [DATE: 28-JUL-2009] BY: AORTEGA [CHKD: KHICKMAN] [TECH NO: _____]
 REVISION NOTE: BALL VALVE FOR DRAIN REPLACED BY GATE VALVE. RELEASE FOR CUSTOMER APPROVAL

PROPOSAL DRAWING FOR CUSTOMER REVIEW

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DIM'S ARE REF UNLESS SPECIFIED OTHERWISE.
 DIM'S IN: INCHES

C/A2 JULY 2009

THIRD ANGLE