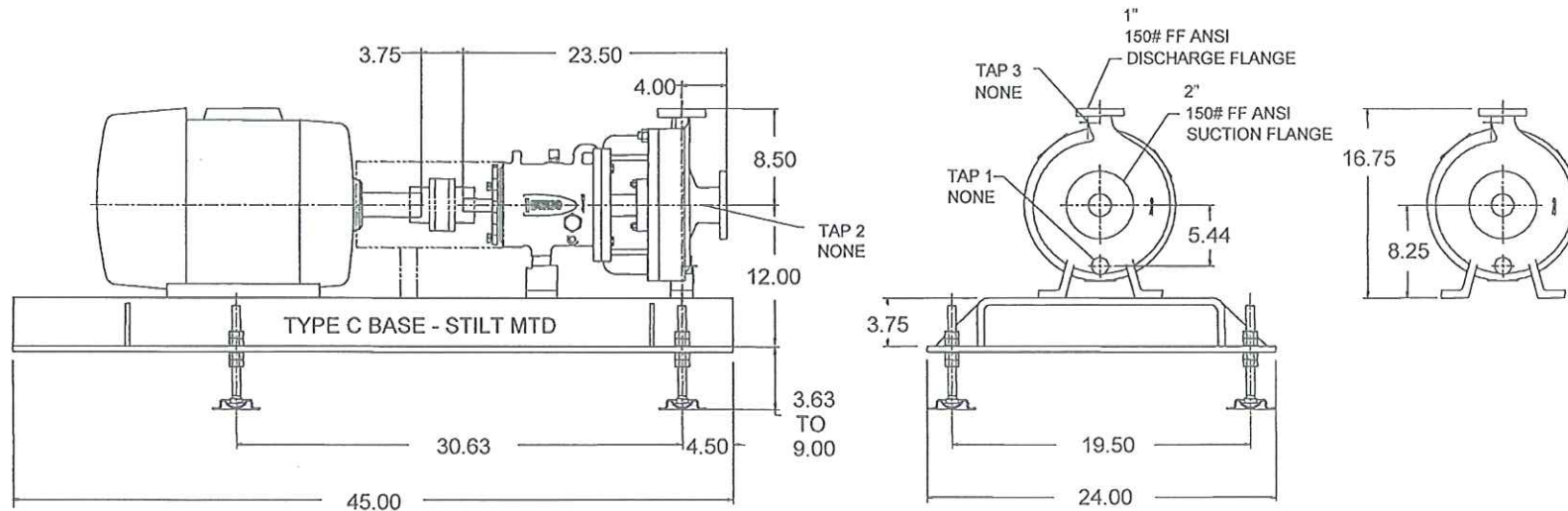


Dimensions certified for construction when properly endorsed below. Refer to factory for any "M" dimensions. **DO NOT SCALE DRAWING**

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.: P9011
 SERVICE: CENTRATE PUMP
 PUMP MODEL: MK3 2K2X1-10AOP
 PUMP SERIAL NO: 0709-7810
 FLOWERVE ORDER: 034-01430-16

Pump size & type	: 2K2x1-10AOP M3 ST
Pump speed / Stages	: 1750 rpm / 1
Flow / Head	: 20.0 USgpm / 75.20 ft
Driver power / Frame	: 5.00 hp / 3.73 kW / L184T
Volts / Phase / Hz	: 460 / 3 / 60

Drawing number	
Date	: July 22, 2009
Certified by / Date:	<i>Jenith</i>
Seal type	: -
Seal flush plan	: -

109663

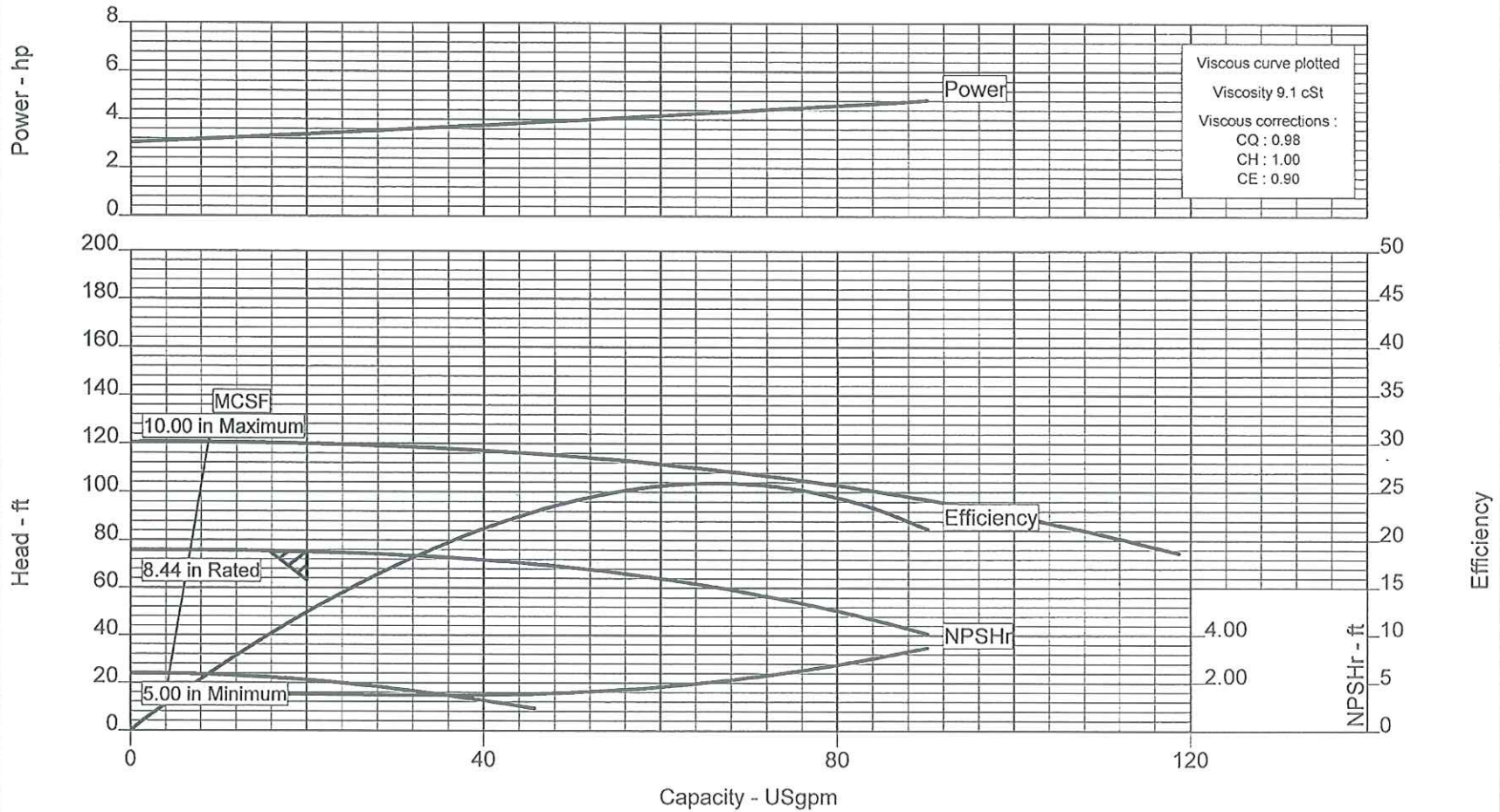
DUPONT DANISCO
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 PUMP SERIAL NO: 0709-7810
 FLOWSERVE ORDER: 034-01430-16



Pump size & type : 2K2x1-10AOP M3 ST
 Based on curve no. : MIII7757AV
 Number of stages : 1

Capacity : 20.0 USgpm Specific gravity : 1.100
 Head : 75.20 ft Pump speed : 1750 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

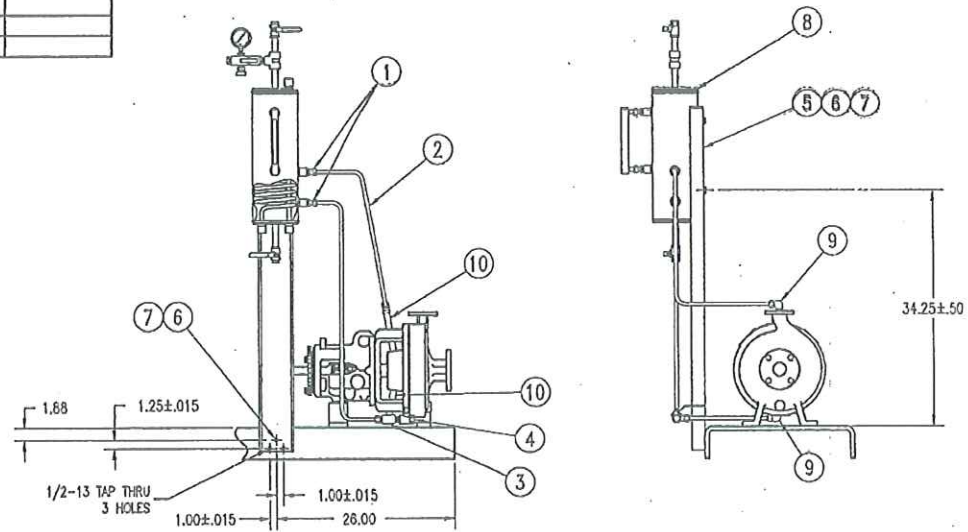
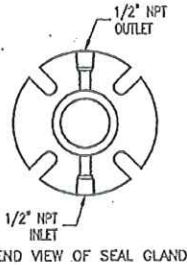


BP4251BS SH1 1 REV A FPD ENG JBERNING AUG-27-2009 14:22:03

KIT NO.		DESCRIPTION		ORDER NO.
BP4251BS		KIT, ANSI PLAN 7353, GP.2		
ITEM	REQ'D	PART	DESCRIPTION	SOURCE OR
		NUMBER		VENDOR
1	2	AY45236F	FITTING, TUBE, MALE CONNECTOR, 1/2" NPT	
2	108	AY45641A	TUBING, 1/2", .035" WALL	
3	1	AY56517E	FITTING, TUBE COMBINATION, 1/2" TUBE-1/2" NPT	
4	1	AY48895D	VALVE, BALL, 1/2"	
5	1	BY53142D	BRACKET, TANK MTG.	
6	8	Y24863K10	HCS, 1/2-13 x 1", TANK & BRACKET MTG.	
7	6	Y21509A	WASHER, LOCK, 1/2", TANK & BRACKET MTG.	
8	1	PURCH.A.S.	TANK, 3 GALLON	
9	2	AY45240F	FITTING, TUBE, 90° ELBOW, 1/2" TUBE-1/2" NPT	
10	2	Y24888K80	NIPPLE, PIPE, 1/2", PE & THRO., 8" LONG *	

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED
	A	REVISED TO CHANGE PIPING CONFIGURATION	8/27/02	DJC/DJC

TAP B = 1/2" NPT
* CUT & FIT AS REQUIRED.



NOTE: FOR RESERVOIR DETAILS
SEE DWG 09145HP

INITIAL PART NO.	INITIAL MATERIAL

	UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.	NOTES THIS DRAWING CONFORMS TO ANSI STD. Y14.5		UNLESS OTHERWISE SPECIFIED REMOVE ALL BURRS AND SHARP CORNERS AND COUNTERSINK TAPPED HOLES TO BODY SIZE.	I.E. APPVL		FLOWSERVE CORPORATION INDUSTRIAL PUMP DIVISION 3900 COOK BLVD. CHESAPEAKE, VIRGINIA 23323
		UNSPECIFIED TOLERANCES			GEOMETRIC SYMBOLS		
THIS DOCUMENT CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION, IS THE PROPERTY OF FLOWSERVE CORPORATION INDUSTRIAL PUMP DIVISION AND IS LOANED TO THE RECEIVER IN CONFIDENCE. THE RECEIVER BY ACCEPTANCE AND RETURN OF THIS DOCUMENT ACCEPTS THE DOCUMENT IN CONFIDENCE AND AGREES THAT, EXCEPT AS AUTHORIZED IN WRITING BY FLOWSERVE CORPORATION INDUSTRIAL PUMP DIVISION WILL (1) NOT USE THE DOCUMENT OR ANY COPY THEREOF OR THE CONFIDENTIAL OR TRADE SECRET INFORMATION THEREIN, (2) NOT COPY THE DOCUMENT, (3) NOT DISCLOSE TO OTHERS EITHER THE DOCUMENT OR THE CONFIDENTIAL OR TRADE SECRET INFORMATION THEREIN, AND (4) UPON COMPLETION OF THE NEED TO RETURN THE DOCUMENT, OR UPON DEMAND, RETURN THE DOCUMENT, ALL COPIES THEREOF AND ALL MATERIAL DERIVED THEREFROM.		2 FLC. DEC. +/- .02 INT. CORNER .030R ANGULARITY +/- 1° TORCH CUT +/- .08	3 FLC. DEC. +/- .005 EXT. CORNER .015 R. MACH. FIN. 125RMS	GEOMETRY CONCENTRICITY FLATNESS PERPENDICULARITY PARALLELISM CIRCULARITY POSITION TOTAL RUNOUT	PATTERN NO. WEIGHT (RAW) WEIGHT (FINISH)	DRILL DATE ALB 10/19/01 D.K.D. 10/19/01 APP. ENG. APPVL. DJC 10/19/01	KIT-BYPASS PLAN 7353, GP.2
		WARNING: THE EXPORT OR REEXPORT OF THIS DRAWING OR A PRODUCT PRODUCED BY THIS DRAWING IS SUBJECT TO U.S. EXPORT ADMINISTRATION REGULATIONS AND OTHER APPLICABLE GOVERNMENTAL RESTRICTIONS OR REGULATIONS.			BUS UNIT C BP4251BS	REV A	SCALE: NTS DRG SIZE: B SHEET 1 of 1

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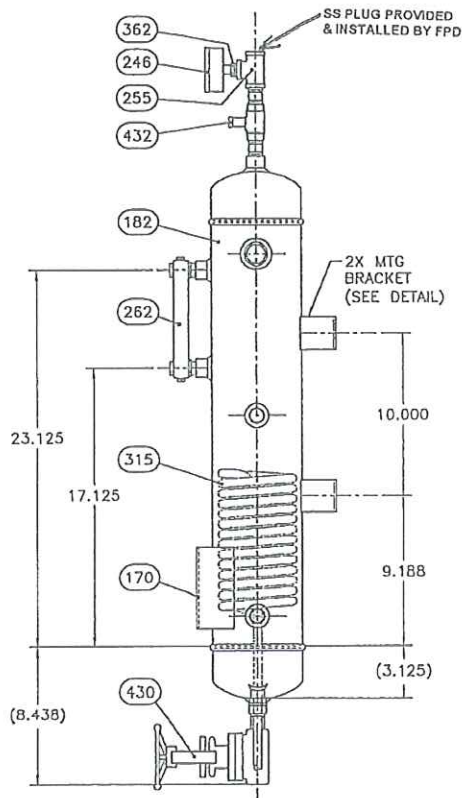
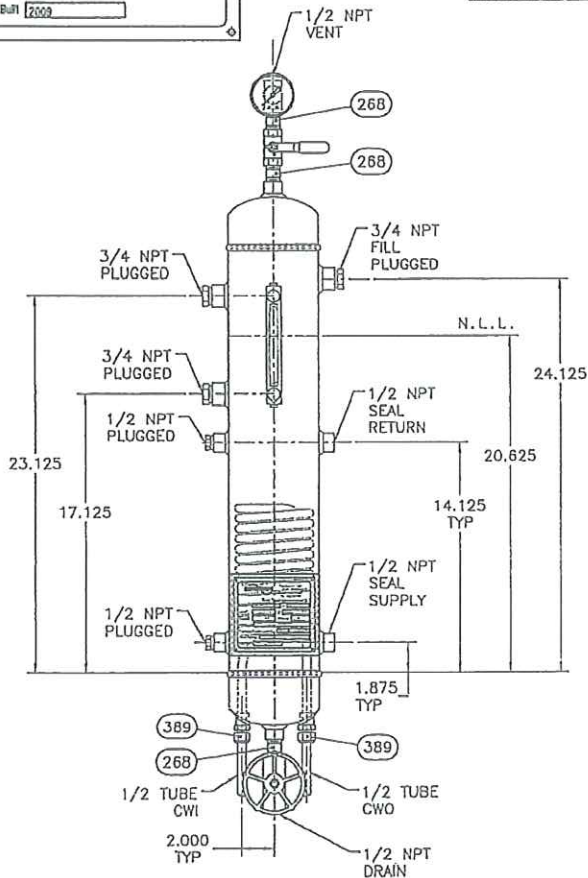
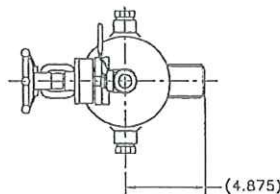
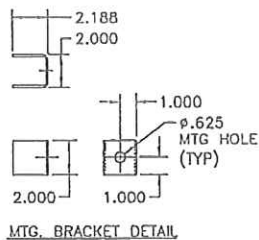
09145HP 1 (IN) REV: P2 KAL ENG DPUZIN AUG-05-2009 09:28:02

NO: 09145HP REV: P2

FLOWSERVE Flow Solutions Division
Tulsa, OK USA
Phone: (918) 583-6153
Fax: (918) 593-1071

Seal Reservoir

MAWP 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 Bull 2009



BILL OF MATERIAL NO: 09145HP

NO	PART CODE	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	38D4004925	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	U3DPU23G600	1	GATE VALVE 1/2" NPT CL800 CONVENTIONAL PORT	316 SS
432	U3DPU23G800	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.
- MAWP 160 PSI @ -20° TO 150° F.
- VESSEL HYDRO @ 1.5 x MAWP (160 PSI) = 240 PSI.
- FOR LEVEL GAUGE (NO. 262) O-RING KIT, USE PART CODE U3DPU17A286.
- CRN OH0B43.3 & OH11516.52671.

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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: _____ SEAL REF: _____

SCALE: TO SCALE PARTS LIST NO: _____

DRAIN: AORTEGA REF DWG: _____

DATE: _____ FORN DTD: _____

CHKD: _____ DRAWING NO: 09145HP SHEET: 1 of 1 REV: P2

APPVD: _____

JOB NO: 09145HP

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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C/A2 JULY 2009

THIRD ANGLE