

SULZER**SALES ACKNOWLEDGEMENT**

Print Date 10/13/2000

Page 1

SULZER PROCESS PUMPS (CANADA) INC. 5055, rue Levy, Saint-Laurent, Québec H4R 2N9, Canada Phone 514-333-7760 Fax 514-333-6324		Sulzer Order No. CAE2000075	Item # 004	Order Date 10/11/2000
		Customer P.O. No. 445014		P.O. Date 09/22/2000
Bill to ALLIANCE FOREST PRODUCTS U.S. CORP. 17589 PLANT ROAD COOSA PINES, AL 35044-0555		Equipment Number 310-1140-004/M94060		
		Serial Number	Currency USD	Net Amount 14878.00
Ship to ALLIANCE FOREST PRODUCTS U.S. CORP. 17589 PLANT ROAD COOSA PINES, AL 35044-0555		Terms of Payment SPECIAL TERMS, SEE NOTE		
		Terms of Delivery DDP (INCOTERMS 2000) COOSA PINES, AL, PREPAID		
Marks and Tagging PUMP, B-LINE H.D. CLEANERS FEED 310-1140-004 / M94060 445014 4121001112 CAE2000 075 04		Way of Delivery Truck		Onsite Date 02/16/2001
		Order Contact TONY LIANE		
		Sales Contact TONY GEDEON		
		Document Requirements 4 Copies in English		
Pump Size APT55-10	N.Am. Pump Size 12X10-25	Casing Material A890 3A	Consistency 3.5 % BD	Pumped liquid ONP/OMG REP. STOCK
Capacity Q 4707 USGPM	Head H 225 ft	NPSH av 26 ft	NPSH req 16.2 ft	pH 7-9
Capacity in alternative unit	Efficiency 82 %	Temperature 125 F	Dimensional drawing P20055	Characteristic curve K00893
Impeller Type Open	Impeller No. 283939	Impeller diameter 590 mm	Pump power P 330 HP	Base plate type Pump Motor/Steel/Zinc
Coupling Type Rex-Omega ES	Mechanical seal type	Coupling Guard material S + Z EN10025	Dynamic seal power	Shaft Seal Fitting P02
Motor IEC/NEMA code 5010 US	Power 400 HP	Rotational Speed 1200 RPM	Manufacturer TOSHIBA	Future motor IEC/NEMA code 5010 US
Frequency 60 Hz	Voltage 2.3KV	Enclosure TEFC	Motor Supplied by Customer	Bearing Unit Lubrication Oil lubrication

Order Remarks:

TERMS OF PAYMENT:

ALL PAYMENTS ARE DUE NET THIRTY (30) DAYS AFTER COMPLETION OF EACH EVENT AND RECEIPT OF INVOICE COMPLETE WITH SUPPORTING DOCUMENTATION, WHICHEVER OCCURS LAST

90% UPON DELIVERY OF EACH PUMP THAT HAS BEEN RELEASED AND THE CORRESPONDING CHANGE ORDER ISSUED 10% HOLD BACK UNTIL COMMISSIONING AND ACCEPTANCE BY BUYER

PRICING:

FOR NON-MENA MOTORS, FINAL PRICES ARE SUBJECT TO CONFIRMATION AFTER RECEIPT OF CERTIFIED MOTOR PRINTS

=====

INSPECTION LOCATION:

FOR INSPECTION PURPOSES PLEASE CONTACT:
 MR. SAM SEWELL
 SULZER PROCESS PUMPS (US)
 155 AHLSTROM WAY (PUE FACTORY)
 EASLEY, SC, USA, 29640
 TEL: (864) 855-9090, FAX: (864) 855-9095

PAINTING:

SULZER STANDARD FACTORY APPLIED PAINTING WITH THE RAL 5019 (CAPRI BLUE) COLOR & GUARDS IN RAL 1021 (SAFETY YELLOW) AT NO EXTRA CHARGE

FINAL IMPELLER TRIMS:

SULZER**SALES ACKNOWLEDGEMENT**

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Remarks Continued ----- MUST BE PROVIDED SIX (6) WEEKS PRIOR TO DELIVERY EXCEPT FOR APT6, APT54 & APT55 WHICH WILL REQUIRE THEM NINE (9) WEEKS PRIOR TO DELIVERY =====			
MOTOR MOUNTING: ----- SULZER WILL DRILL BASE PLATES AS PER CERTIFIED MOTOR PRINTS BY CUS. SULZER WILL MOUNT CUS. SUPPLIED NEMA MOTORS AT EASLEY, SC FACTORY CUS. RESPONSABLE FOR MOUNTING NON-NEMA MOTORS =====			

PRODUCT SPECIFICATION		Description APT55-10	
		Serial Number	
		Time of delivery/EXW	02/02/2001
		Date printed	10/13/2000
		Page 1	
Customer ALLIANCE FOREST PRODUCTS U.S. CORP. 17589 PLANT ROAD COOSA PINES, AL 35044-0555 UNITED STATES Cust. order # 445014 Cust. PO Line # ZOR Country code US		ALLIANCE FOREST PRODUCTS U.S. CORP. 17589 PLANT ROAD COOSA PINES, AL 35044-0555 UNITED STATES Equipment No 310-1140-004/M94060	

PROCESS DATA

Mill	13	Capacity Q	4707 USGPM
Process	270	Head H	225 ft
Application	HD CLEANERS FEED	Characteristic curve	K00893
Pumped liquid	ONP/CMG REP. STOCK	Pump power P	330 HP
Temperature	125 F	Motor power	400 HP
pH	7-9	Efficiency	82 %
Consistency	3.5 % BD	Pump rotational speed	1190 RPM
Min head on suction side	1 ft	Variable speed	No
Max head on suction side	20 (STATIC) ft	NPSH req	16.2 ft
NPSH av	26 ft		

PUMP

Supplier	Easley
Dimensional drawing	P20055
Conformity	89/392/EEC machinery /US
Version	09
Pump Size	APT55-10
Impeller Type	Open
Impeller No.	283939
Impeller diameter	590 mm
Impeller turning angle	0 °
Impeller max.diameter	625 mm
Flange Drilling	ASME B16.5 CLASS 150

IMPELLER MATERIAL A890 3A
SHAFT MATERIAL SS2324

Casing Material	A890 3A
Gasket Material	Klinger SIL-4430
O-ring Material	NBR
Bearing Unit Lubrication	Oil lubrication
Bearing unit model	01 SS2324/NotSpec
Constant level oiler 638	Yes
Shaft Seal Fitting	P02
Customer documents lang./q	EN/04
Component documents lang./	EN/04
Special parts	METCO 16 SLEEVE

DRIVE MOTOR For Information Only

Motor Supplied by	Customer	Rotational Speed	1200 RPM
Manufacturer	TOSHIBA	Power	400 HP

SULZER PROCESS PUMPS (CANADA) INC.
5055, rue Levy
Saint-Laurent, Québec
H4R 2N9
Canada

Contact Person	TONY GEDEON
LBU Order #	CAE2000075
LBU Position	004
Telephone	514 - 333-7760
Telefax	514 - 333-6324 (bomcust1)

PRODUCT SPECIFICATION	Description APT55-10 Serial Number Time of delivery/EXW 02/02/2001 Date printed 10/13/2000 Page 2
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COUPLING

Coupling Type Rex-Omega ES

COUPLING GUARD

Coupling Guard material S+Z EN10025

BASE PLATE

Base plate type Pump Motor/Steel/Zinc Foundation screw type Grouted

MOTOR ALIGNMENT BLOCK

ORDER REMARKS

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SULZER

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 EXCEPT FOR APT6, APT54 & APT55 WHICH WILL REQUIRE
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P A I N T I N G

Painting E180/3-Fe Sa2 1/2 SFS4962
 Color Shade RAL-5019

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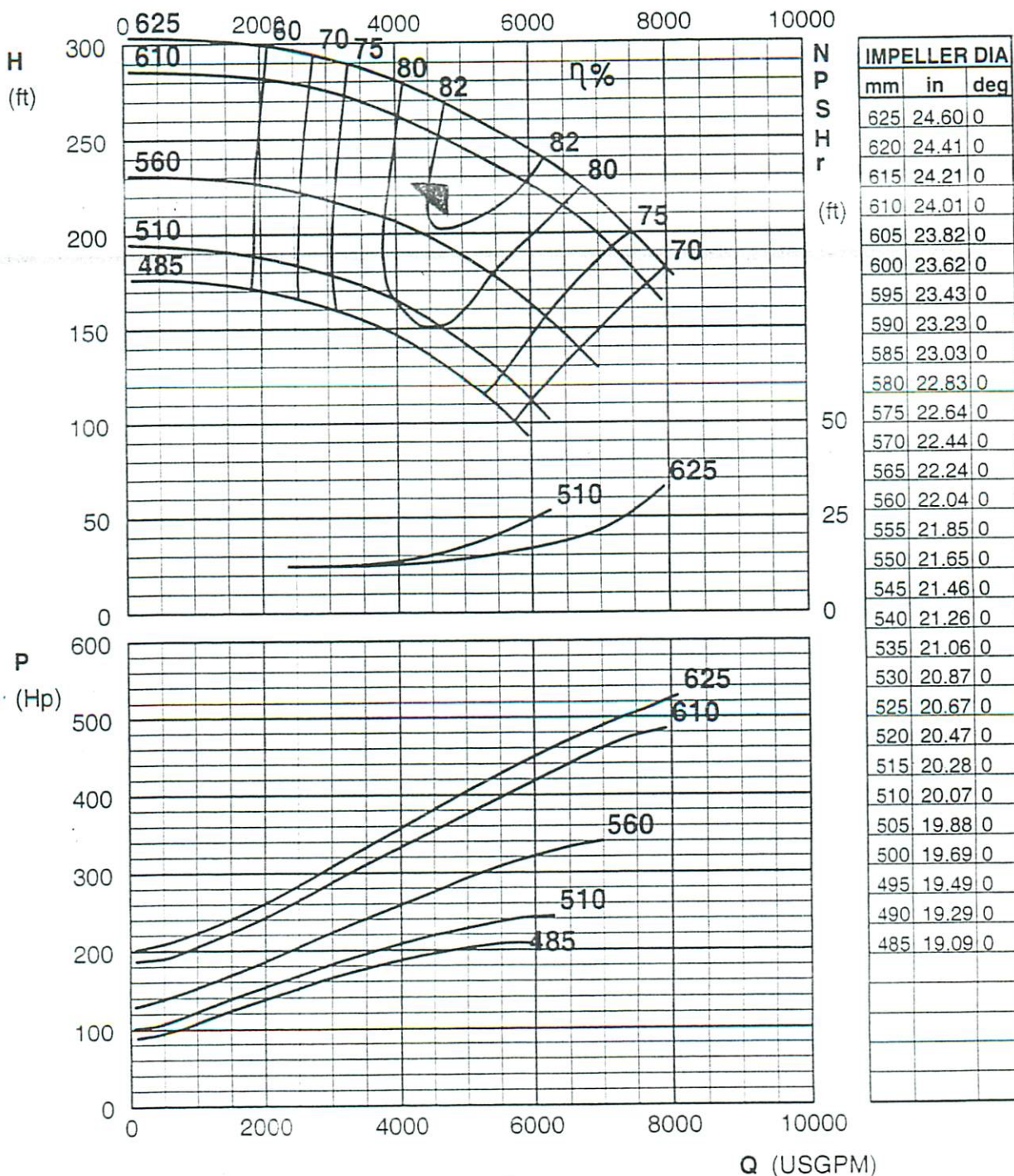
APT Process pumps Characteristic curve K00893



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Version 01> / en / 920703 / Replaces 870301 / K00893

APT55-10 (12x10-25)
Impeller 283939 OPEN B1.69 Z5
1190 rpm



SERVICE:	B Line HD Cleaners Feed P.	FLOW (USGPM)	TDH (ft)
EQUIP. No.:	310-1140-004 / M94060	4707.00	225.00
CUST. P.O. No.:	445014	EFF. (%)	Power (HP)
API-C JOB No.:	CAE2000 075 04	82	400.0
DATE / REV.:	OCT-16-2000 / R. 0	NEMA PR.	NEMA FUT.
		BY OWNER	BY OWNER

APT Process Pumps

Dimensional drawing P20055

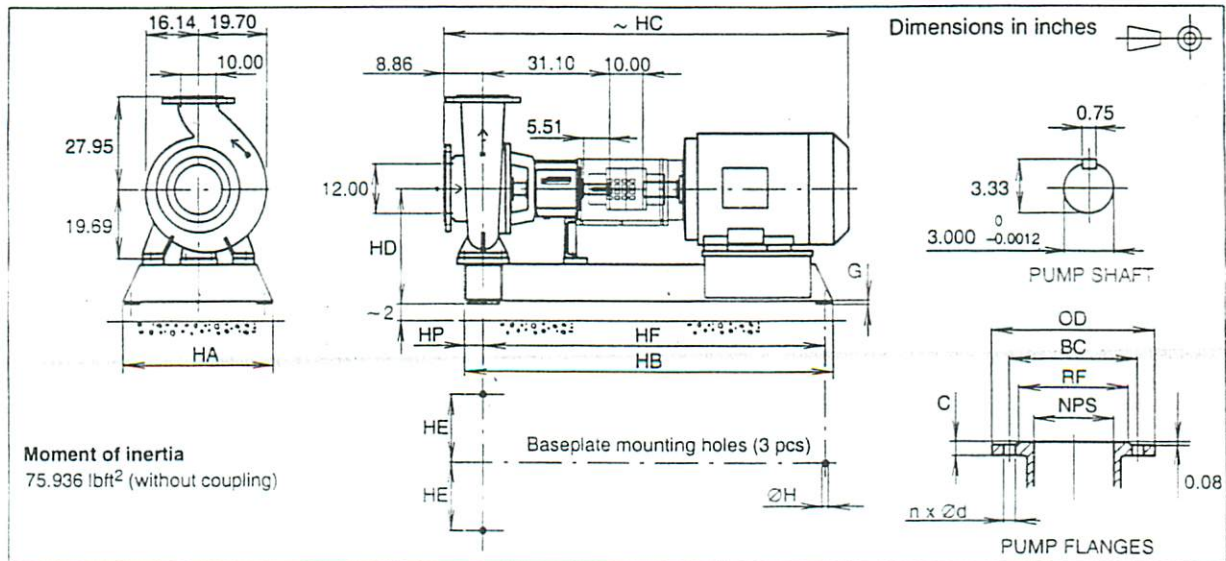


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Version 04 > / 940221 / en / P20055

APT55-10 (12x10-25)

Steel baseplate pump and motor



DIMENSIONS													
Primary motor frame	Max motor frame		Baseplate	HD	HC	HB	HP	HF	HA	HE	H	G	Weight lbs ⁽³⁾
	(1)	(2)											
445T	509LL	449T	9	31.90	94.50	101.75	5.00	94.50	45.63	20.50	1.50	0.69	2960
447T	5011LL	449T	10	31.90	98.00	112.25	5.00	105.00	45.63	20.50	1.50	0.69	3075
447TS	509LS	449TS	9	31.90	96.00	101.75	5.00	94.50	45.63	20.50	1.50	0.69	2960
449T	5011LL	—	10	31.90	104.00	112.25	5.00	105.00	45.63	20.50	1.50	0.69	3075
449TS	509LS	—	9	31.90	101.00	101.75	5.00	94.50	45.63	20.50	1.50	0.69	2960

DRILLING OF FLANGES									
				ANSI B 16.1 Class 125			ANSI B 16.5 Class 150		
NPS	OD	RF	C	BC	d	n ⁽⁴⁾	BC	d	n ⁽⁴⁾
10.00	16.93	12.60	1.19	14.25	1.00	12	14.25	1.00	12
12.00	18.90	14.57	1.25	17.00	1.00	12	17.00	1.00	12

1. Max. NEMA motor frame, which can be installed onto the baseplate.	3. Weight without coupling and motor.
2. Max. NEMA motor frame with the same shaft height as primary motor.	4. Flange bolting straddles centerline.

Please leave 3 to 5 mm for 5011 US

FOR REFERENCE

SERVICE:	B Line HD Cleaners Feed P.
EQUIP. No.:	310-1140-004 / M94060
CUST. P.O. No.:	445014
API-C JOB No.:	CAE2000 075 04
HP / RPM / FRAME:	330.0 / 1190 / BY OWNER

CERTIFIED FOR CONSTRUCTION	
DATE / REV.:	OCT-16-2000 / R. 0
SIGNED:	

15010 US

APT Process Pumps

Design data



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Version 09 > / 960801 / en / N12851 / Page 6 (7)

Table 6 Bearing unit size 5, continued

Pump type	54-16	54-20	55-4	55-8	55-10	55-12
Shaft diameters						
At impeller				2.559		
Under sleeve				3.150		
Between bearings				4.09		
At coupling				3.000		
Bearings						
Radial bearing type				NUP 317		
Thrust bearing type				2x7318 BECB		
Radial brg. life (HRS. x 10 ³)	1000 -	1000 +	1000 +	1000 +	1000 -	1000 +
Thrust brg. life (HRS. x 10 ³) ⁽¹⁾	50	100	23	120	100	50
Bearing span				11.10		
Shaft overhang				11.75		
Stuffing box						
Bore				4.750		
Depth				3.937		
Shaft sleeve dia.						
Packing				3.500		
Mechanical seal, general				3.375		
Mech. seal, ready-fitted ⁽²⁾				3.150		
Packing size				0.625		
No. of packing rings				4		
Lantern ring width				0.79		
Neck bush clearance				0.042		
Distance to nearest obstruction				3.94		
Wear ring clearance	0.034	0.036	0.027	0.029	0.029	0.032
Impeller						
Front clearance (open impeller)				0.020		
Back clearance				0.040		
Eye area (in ²)						
Closed	220.9	263.00	50.6	90.0	113.2	162.1
Open	220.9	263.00	50.6	90.0	113.2	162.1
Special open	220.9	263.00	-	-	113.2	162.1
Max. diameter solids (in)						
Closed	2.95	4.45	1.18	1.34	1.69	2.64
Open	2.91	4.45	1.18	1.81	1.69	2.68
Special open	3.62	4.45	-	-	1.69	2.68
Max. shaft deflection at st. box				0.002		
Casing						
Type (single or dual)	DV	DV	SV	SV	DV	DV
Casing thickness (iron)	0.75	0.79	0.79	0.75	0.75	0.79
Casing thickness (steel)	0.63	0.63	0.79	0.63	0.63	0.67
Bearing unit weight (LBS)				333		
HP/100 rpm (shaft SS2324)				74		

- 1) Min. L10h-life, full impeller dia., max. speed, direct coupled and 50 - 100 % BEP
- 2) Installed on the pump shaft

Handwritten note: Pump 5-115 H.D. Cleaners Feed P.

SERVICE:	B-Line HD Cleaners Feed P.
EQUIP. No.:	310-1140-004 / M94060
CUST. P.O. No.:	445014
MODEL / SIZE:	APT55-10 / 12x10-25
API-C JOB No.:	CAE2000 075 04

APT Process Pumps

Shaft sealing



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Version 09 > / 960601 / en / N12559

Gland packings

Fitting P02

2 braids + lantern ring + 2 braids. Standard casing cover. Installed onto the shaft wearing sleeve.

Characteristics of fitting

E	External flushing that prevents pumped liquid from precipitating in the sealing housing. Flushing liquid is mixed with the pumped liquid.
Pumped liquid	Impure liquids, stock, lye
Temperature (°F)	max 250
Stuffing box pressure p_T (psi)	Positive or negative
Sealing waters	
Connection No.	020
Size (NPT)	3/8 - 18
Quality	External clean water, maximum particle size 0.002 in, maximum solid material content (PPM-value) 0.00027 lb/in ³ .
Flow rate (USGPM)	0.5 - 0.8
Pressure (psi)	$p_T + 7$ psi min. 7 psi

Seal size (Ø in)

Bearing unit					
1	2	3	4	5	6
1 5/8 × 2 3/8 × 3/8	2 × 2 3/4 × 3/8	2 3/8 × 3 3/8 × 1/2	2 3/4 × 3 3/4 × 1/2	3 1/2 × 4 3/4 × 5/8	3.937 × 5.198 × 5/8

Pressure behind the impeller can approximately be calculated from the formula

$$p_T = p_0 - 0.725 \text{ psi}$$

Where p_T = pressure behind the impeller (psi)
 p_0 = inlet pressure (psi)

Atmospheric pressure used as reference pressure = 0 psi.

PUMP, B-Line A.P. Cleaner Feed

SERVICE:	B-Line HD-Cleaners Feed.P.
EQUIP. No.:	310-1140-004 / M94060
CUST. P.O. No.:	445014
MODEL / SPEED:	APT55-10 / 1190
API-C JOB No.:	CAE2000 075 04