

SALES ACKNOWLEDGEMENT

SULZER

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 # 003	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 310-1140-003/M94050		
		Serial Number	Currency USD	Net Amount 14878.00
		Terms of Payment SPECIAL TERMS, SEE NOTE		
Ship to ALLIANCE FOREST PRODUCTS U.S. CORP. 17589 PLANT ROAD COOSA PINES, AL 35044-0555		Terms of Delivery DDP (INCOTERMS 2000) COOSA PINES, AL, PREPAID		
		Way of Delivery Truck		Onsite Date 02/16/2001
Marks and Tagging PUMP, A-LINE H.D. CLEANERS FEED 310-1140-003 / M94050 445014 4121001112 CAE2000 075 03		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 82 %	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 5810 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:				

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	Document Requirements 4 Copies in English		

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	17589 PLANT ROAD	
COOSA PINES, AL 35044-0555	COOSA PINES, AL 35044-0555	
UNITED STATES	UNITED STATES	
Gust. order #	445014	
Cust. PO Line #	ZOR	
Country code	US	Equipment No 310-1140-003/M94050

PROCESS DATA

Mill	13	Capacity Q	4707 USGPM
Process	270	Head H	225 ft
Application	HD CLEANERS FEED	Characteristic curve	K00893
Pumped liquid	ONP/OMG 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 AB90 3A
SHAFT MATERIAL SS2324

Casing Material	AB90 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
MOTOR IEC/NEMA CODE 50/10US			

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

Contact Person	TONY GEDEON
LBU Order #	CAE2000075
LBU Position	003
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
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 310-1140-003/M94050

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

FLANGE MOTOR EQUIPMENT CODE 5210 US

MOTOR ALIGNMENT BLOCK

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

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INSPECTION LOCATION:

SULZER PROCESS PUMPS (CANADA) INC. 5055, rue Levy Saint-Laurent, Québec H4R 2N9 Canada	<table> <tr> <td>Contact Person</td> <td>TONY GEDEON</td> </tr> <tr> <td>LBU Order #</td> <td>CAE2000075</td> </tr> <tr> <td>LBU Position</td> <td>003</td> </tr> <tr> <td>Telephone</td> <td>514 - 333-7760</td> </tr> <tr> <td>Telefax</td> <td>514 - 333-6324 (bomcust1)</td> </tr> </table>	Contact Person	TONY GEDEON	LBU Order #	CAE2000075	LBU Position	003	Telephone	514 - 333-7760	Telefax	514 - 333-6324 (bomcust1)
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		Serial Number	
		Time of delivery/EXW	02/02/2001
		Date printed	10/13/2000
		Page 3	
Customer			
ALLIANCE FOREST PRODUCTS U.S. CORP.		ALLIANCE FOREST PRODUCTS U.S. CORP.	
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COOSA PINES, AL 35044-0555		COOSA PINES, AL 35044-0555	
UNITED STATES		UNITED STATES	
Cust. order #	445014		
Cust. PO Line #	ZOR		
Country code	US	Equipment No	310-1140-003/M94050

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

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FINAL IMPELLER TRIMS:

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EXCEPT FOR APT6, APT54 & APT55 WHICH WILL REQUIRE

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SUPPLIED NEMA MOTORS AT EASLEY, SC FACTORY

CUS. RESPONSABLE FOR MOUNTING NON-NEMA MOTORS

=====

P A I N T I N G

Painting

E180/3-Fe Sa2 1/2 SFS4962

Color Shade

RAL-5019

SULZER PROCESS PUMPS (CANADA) INC.

5055, rue Levy

Saint-Laurent, Québec

H4R 2N9

Canada

Contact Person

TONY GEDEON

LBU Order #

CAE2000075

LBU Position

003

Telephone

514 - 333-7760

Telefax

514 - 333-6324

(bomcust1)

AHLSTROM

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

Figure 1 is a line graph showing the relationship between pressure (P in Hp) on the y-axis and flow rate (Q in USGPM) on the x-axis. The y-axis ranges from 0 to 600 Hp, and the x-axis ranges from 0 to 10,000 USGPM. Five curves are plotted, representing different pump models: 625, 610, 560, 510, and 485. The curves show that pressure increases with flow rate, and higher pump models (larger numbers) generally provide higher pressure for a given flow rate.

Flow Rate (Q in USGPM)	Pressure (P in Hp) - Model 625	Pressure (P in Hp) - Model 610	Pressure (P in Hp) - Model 560	Pressure (P in Hp) - Model 510	Pressure (P in Hp) - Model 485
0	200	190	130	100	90
2000	280	260	190	150	130
4000	380	350	260	210	180
6000	480	440	330	250	210
8000	540	500	360	270	220

IMPELLER DIA		
mm	in	deg
625	24.60	0
620	24.41	0
615	24.21	0
610	24.01	0
605	23.82	0
600	23.62	0
595	23.43	0
590	23.23	0
585	23.03	0
580	22.83	0
575	22.64	0
570	22.44	0
565	22.24	0
560	22.04	0
555	21.85	0
550	21.65	0
545	21.46	0
540	21.26	0
535	21.06	0
530	20.87	0
525	20.67	0
520	20.47	0
515	20.28	0
510	20.07	0
505	19.88	0
500	19.69	0
495	19.49	0
490	19.29	0
485	19.09	0

SERVICE:	A Line HD Cleaners Feed P.	FLOW (USGPM)	TDH (ft)
EQUIP. No.:	310-1140-003 / M94050	4707.00	225.00
CUST. P.O. No.:	445014	EFF. (%)	Power (HP)
API-C JOB No.:	CAE2000 075 03	82	400.0
DATE / REV.:	OCT-16-2000 / R. 0	NEMA PR.	NEMA FUT.
		BY OWNER	BY OWNER

APT Process Pumps

Dimensional drawing P20055

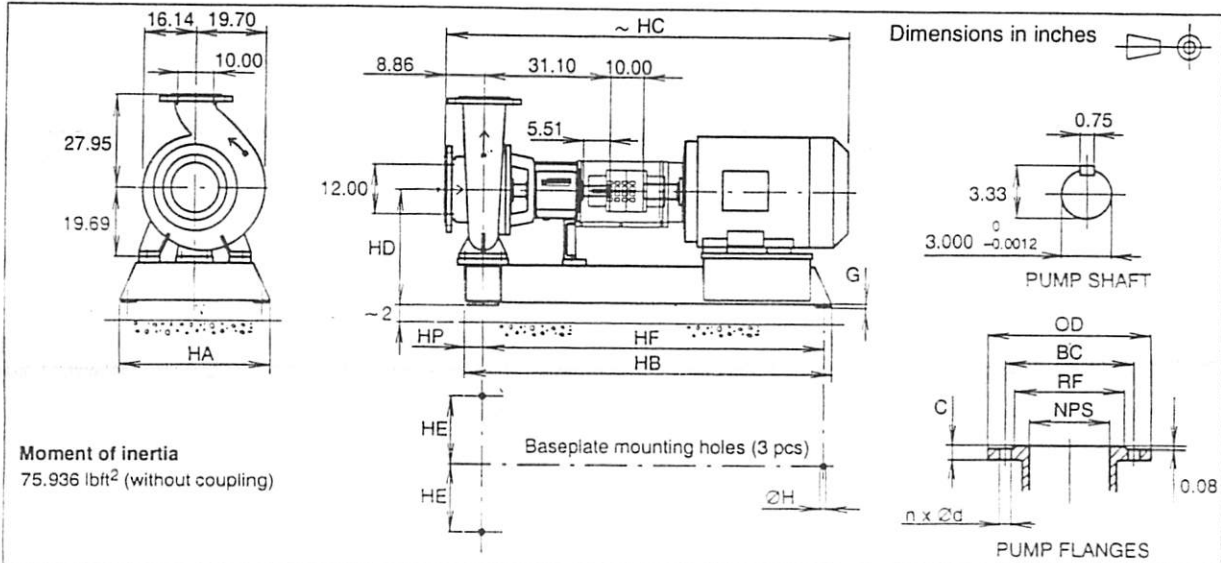


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Version 04 > / 940221 / en / P20055

APT55-10 (12x10-25)

Steel baseplate pump and motor



DIMENSIONS

Primary motor frame	Max motor frame (1)	(2)	Baseplate	HD	HC	HB	HP	HF	HA	HE	H	G	Weight lbs ¹³
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⁾
10.00	16.93	12.60	1.19	14.25	1.00	12
12.00	18.90	14.57	1.25	17.00	1.00	12

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

Please Refer To 120 Frame 5010US

FOR REFERENCE

SERVICE:	A Line HD Cleaners Feed P.
EQUIP. No.:	310-1140-003 / M94050
CUST. P.O. No.:	445014
API-C JOB No.:	CAE2000 075 03
HP / RPM / FRAME:	330.0 / 1190 / BY OWNER

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

330/1190/5010US

APT Process Pumps

Design data



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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) ⁽¹⁾	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 (in²)						
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

PUMP A-Line HD Cleaners Feed P.

SERVICE:	A-Line HD Cleaners Feed P.
EQUIP. No.:	310-1140-003 / M94050
CUST. P.O. No.:	445014
MODEL / SIZE:	APT55-10 / 12x10-25
API-C JOB No.:	CAE2000 075 03

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 x 2 3/8 x 3/8	2 x 2 3/4 x 3/8	2 3/8 x 3 3/8 x 1/2	2 3/4 x 3 3/4 x 1/2	3 1/2 x 4 3/4 x 5/8	3.937 x 5.198 x 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.

Run A-Line A.D. Cleaners Feed P.

SERVICE:	A-Line HD Cleaners Feed P.
EQUIP. No.:	310-1140-003 / M94050
CUST. P.O. No.:	445014
MODEL / SPEED:	APT55-10 / 1190
API-C JOB No.:	CAE2000 075 03