

SALES ACKNOWLEDGEMENT

SULZER

Print Date 10/13/2000

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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 # 027	Order Date 10/12/2000
		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 310-1140-038/M94267			
		Serial Number	Currency USD	Net Amount 33302.00	
		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 PRIMARY FINE SCREENS FEED 310-1140-0378 / M94267 445014 4121001112 CAE2000 075 27		Order Contact TONY LIANE			
		Sales Contact TONY GEDEON			
		Document Requirements 4 Copies in English			
Pump Size APT61-24	N.Am. Pump Size 24X24-28	Casing Material A890 3A	Consistency 0.8 % BD	Pumped liquid DEINKED STOCK	
Capacity Q 22400 USGPM	Head H 115 ft	NPSH av 26 ft	NPSH req 15.7 ft	pH 7-9	
Capacity in alternative unit 88 %	Efficiency 88 %	Temperature 125 F	Dimensional drawing P20058	Characteristic curve K02323	
Impeller Type Open	Impeller No. 286875	Impeller diameter 685 mm	Pump power P 739 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 400-1120	Power 800 HP	Rotational Speed 900 RPM	Manufacturer TOSHIBA	Future motor IEC/NEMA code 400-1120	
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 APT61-24
		Serial Number
		Time of delivery/EXW 02/09/2001
		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 310-1140-038/M94267

PROCESS DATA

Mill	13	Capacity Q	22400 USGPM
Process	270	Head H	115 ft
Application	PRI. FINE SCREENS <i>FED</i>	Characteristic curve	K02323
Pumped liquid	DEINKED STOCK	Pump power P	739 HP
Temperature	125 F	Motor power	800 HP
pH	7-9	Efficiency	88 %
Consistency	0.8 % BD	Pump rotational speed	890 RPM
Min head on suction side	1 ft	Variable speed	No
Max head on suction side	13 (STATIC) ft	NPSH req	15.7 ft
NPSH av	26 ft		

PUMP

Supplier	Easley
Dimensional drawing	P20058
Conformity	89/392/EEC machinery /US
Version	09
Pump Size	APT61-24
Impeller Type	Open
Impeller No.	286875
Impeller diameter	685 mm
Impeller turning angle	15 °
Impeller max.diameter	700 mm
Flange Drilling	ASME B16.5 CLASS 150

*IMPELLER MATERIAL A890 3A
SHAFT MATERIAL SS 2324*

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	900 RPM
Manufacturer	TOSHIBA	Power	800 HP

Motor selection 445-100

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

Contact Person	TONY GEDEON
LBU Order #	CAE2000075
LBU Position	027
Telephone	514 - 333-7760
Telefax	514 - 333-6324 (bomcust1)

PRODUCT SPECIFICATION	Description APT61-24 Serial Number Time of delivery/EXW 02/09/2001 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 310-1140-038/M94267

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

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:

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

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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:

MUST BE PROVIDED SIX (6) WEEKS PRIOR TO DELIVERY

EXCEPT FOR APT6, APT54 & APT55 WHICH WILL REQUIRE

THEM NINE (9) WEEKS PRIOR TO DELIVERY

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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

=====

PAINTING

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

027

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514 - 333-7760

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(bomcust1)

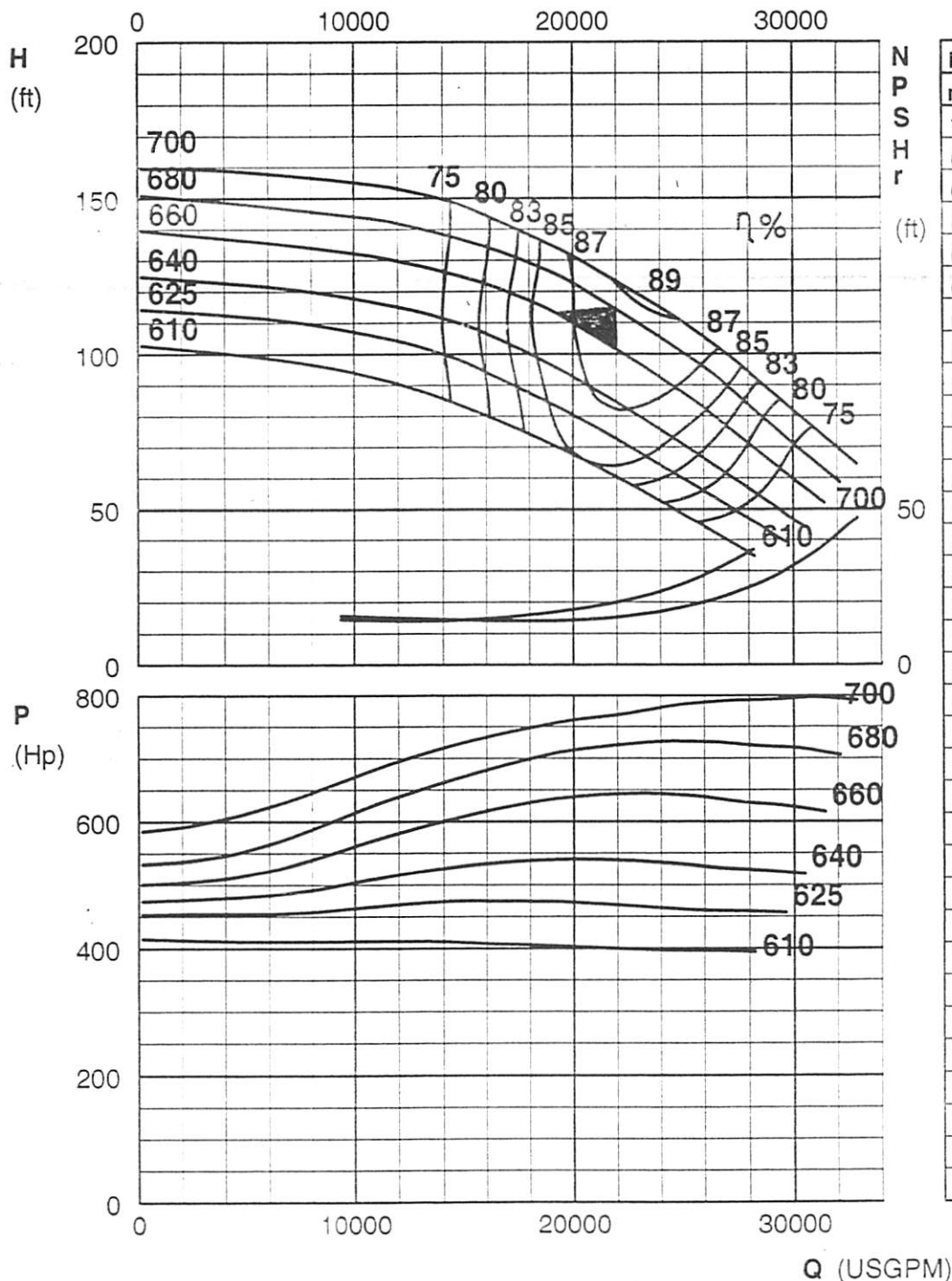
APT Process pumps Characteristic curve K02323



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Version 01> / en / 920821 / Replaces 901101 / K02323

APT61-24 (24x24-28)
Impeller 286875 OPEN B5.24 Z6
890 rpm



IMPELLER DIA		
mm	in	deg
700	27.6	15
695	27.4	15
690	27.2	15
685	27.0	15
680	26.8	15
675	26.6	16
670	26.4	16
665	26.2	16
660	26.0	17
655	25.8	17
650	25.6	18
645	25.4	18
640	25.2	19
635	25.0	19
630	24.8	20
625	24.6	20
620	24.4	21
615	24.2	22
610	24.0	23

SERVICE:	A Line Pri. Fine Screens Feed P.	FLOW (USGPM)	TDH (ft)
EQUIP. No.:	310-1140-038 / M94267	2040, 22, 400	115.00
CUST. P.O. No.:	445014	EFF. (%)	Power (HP)
API-C JOB No.:	CAE2000 075 27	88	800.0
DATE / REV.:	OCT-16-2000 / R. 0	NEMA PR.	NEMA FUT.
		BY OWNER	BY OWNER

APT Process Pumps

Dimensional drawing P20058

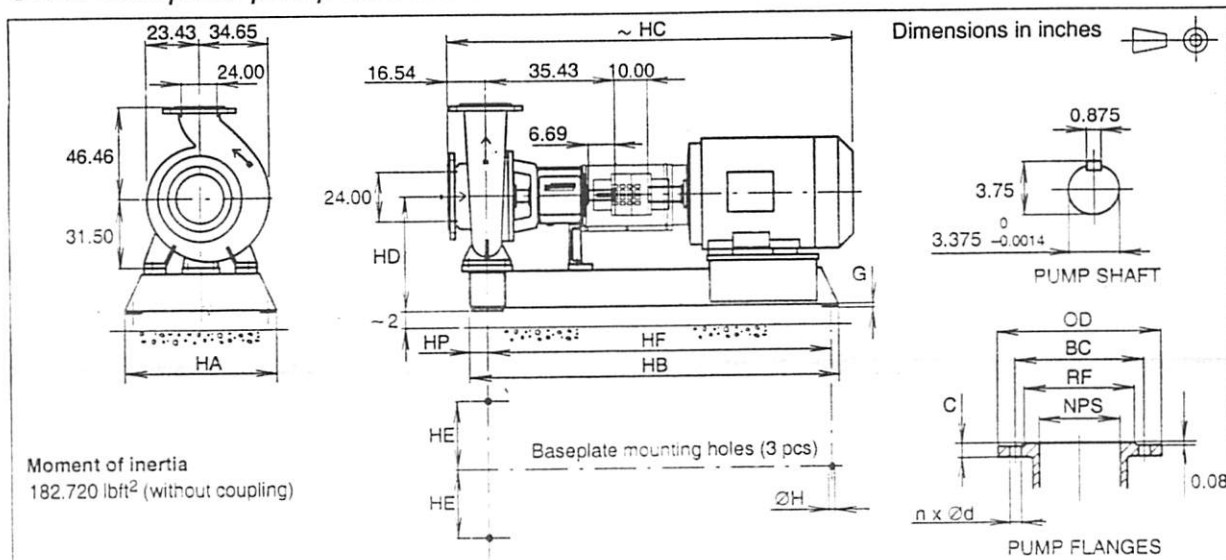


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Version 04 > / 940221 / en / P20058

APT61-24 (24x24-28)

Steel baseplate pump and motor



DIMENSIONS													
Primary motor frame	Max motor frame		Baseplate	HD	HC	HB	HP	HF	HA	HE	H	G	Weight lbs ¹³
	(1)	(2)											
447T	5011LL	449T	13	43.20	110.00	117.25	5.00	110.00	52.75	24.00	1.50	0.69	5710
449T	5011LL	—	13	43.20	116.00	117.25	5.00	110.00	52.75	24.00	1.50	0.69	5710
449TS	509LS	—	12	43.20	113.00	106.25	5.00	99.00	52.75	24.00	1.50	0.69	5580

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⁾
24.00	33.27	26.97	1.88	29.50	1.42	20	29.50	1.42	20

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.

REFERENCE

SERVICE:	A Line Pri: Fine Screens Feed P.
EQUIP. No.:	310-1140-038 / M94267
CUST. P.O. No.:	445014
API-C JOB No.:	CAE2000 075 27
HP / RPM / FRAME:	739.0 / 890 / BY OWNER

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

400-1120

APT Process Pumps

Design data



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

Table 7 *Bearing unit size 6*

Pump type	61-20	61-24	62-16
Shaft diameters			
At impeller		2.953	
Under sleeve		3.543	
Between bearings		4.80	
At coupling		3.375	
Bearings			
Radial bearing type		NUP 320	
Thrust bearing type		2x7322 BECB	
Radial brg. life (HRS. x 10 ³) ¹	1000	500	500
Thrust brg. life (HRS. x 10 ³) ⁽¹⁾	150	100	100
Bearing span		13.20	
Shaft overhang		11.80	
Stuffing box			
Bore		5.197	
Depth		3.937	
Shaft sleeve dia.			
Packing		3.947	
Mechanical seal, general		3.750	
Mech. seal, ready-fitted ⁽²⁾		3.543	
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			
		-	
Impeller			
Front clearance (open impeller)		0.020	
Back clearance		0.040	
Eye area (in ²)			
Closed		-	
Open	302.0	308.0	308.0
Special open	302.0	308.0	308.0
Max. diameter solids (in)			
Closed		-	
Open	3.39	5.19	5.19
Special open	4.21	5.19	5.19
Max. shaft deflection at st. box		0.002	
Casing			
Type (single or dual)	DV	DV	DV
Casing thickness (iron)	0.95	0.95	0.95
Casing thickness (steel)	0.93	0.71	0.71
Bearing unit weight (LBS)		333	
HP/100 rpm (shaft SS2324)		120	

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

Handwritten: Pump A-Line Pump Fine Screens Feed P.

SERVICE:	A-Line Pnt. Fine Screens Feed P.
EQUIP. No.:	310-1140-038 / M94267
CUST. P.O. No.:	445014
MODEL / SIZE:	APT61-24 / 24x24-28
API-C JOB No.:	CAE2000 075 27

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.

Imp. A-Line Primary Fine Screens Feed

SERVICE:	A-Line Pri. Fine Screens Feed P.
EQUIP. No.:	310-1140-038 / M94267
CUST. P.O. No.:	445014
MODEL / SPEED:	APT61-24 / 890
API-C JOB No.:	CAE2000 075 27