

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 # 023	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 310-1140-032/M94226		
		Serial Number	Currency USD	Net Amount 33302.00
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 PRIMARY CLEANERS FEED 310-1140-032 / M94226 445014 4121001112 CAE2000 075 23		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 APT61-24	N.Am. Pump Size 24X24-28	Casing Material A890 3A	Consistency 0.95 % BD	Pumped liquid DEINKED STOCK
Capacity Q 18700 USGPM	Head H 120 ft	NPSH av 26 ft	NPSH req 14.6 ft	pH 7-9
Capacity in alternative unit	Efficiency 85 %	Temperature 125 F	Dimensional drawing P20058	Characteristic curve K02323
Impeller Type Open	Impeller No. 286875	Impeller diameter 670 mm	Pump power P 667 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 700 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:

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 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.		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	
Cust. order #	445014		
Cust. PO Line #	ZOR		
Country code	US	Equipment No	310-1140-032/M94226

PROCESS DATA

Mill	13	NPSH av	26 ft
Process	270	Capacity Q	18700 USGPM
Application	PRI. CLEANERS FEED	Head H	120 ft
Pumped liquid	DEINKED STOCK	Characteristic curve	K02323
Temperature	125 F	Pump power P	667 HP
pH	7-9	Motor power	700 HP
Consistency	0.95 % BD	Efficiency	85 %
Gas content	0-1 %	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	14.6 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	670 mm
Impeller turning angle	16 °
Impeller max.diameter	700 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	900 RPM
Manufacturer	TOSHIBA	Power	700 HP

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

Contact Person	TONY GEDEON
LBU Order #	CAE2000075
LBU Position	023
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
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UNITED STATES	UNITED STATES		
Cust. order #	445014		
Cust. PO Line #	ZOR		
Country code	US	Equipment No	310-1140-032/M94226

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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INSPECTION LOCATION:

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5055, rue Levy	LBU Order #	CAE2000075
Saint-Laurent, Québec	LBU Position	023
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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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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 NCM-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

023

Telephone

514 - 333-7760

Telefax

514 - 333-6324

(bomcust1)

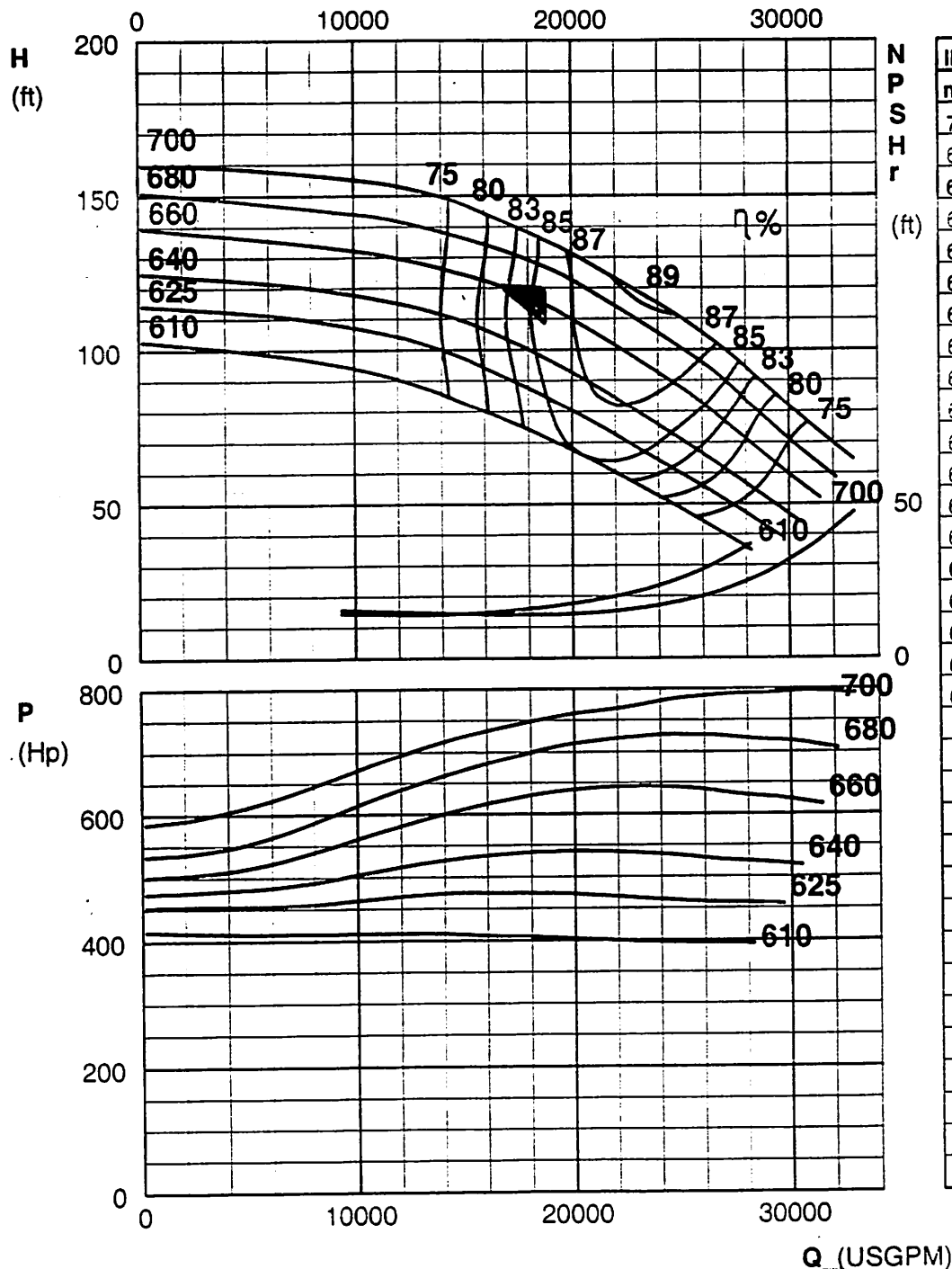
APT Process pumps Characteristic curve K02323



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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:	B-Line Sec. Cleaners Feed P.	FLOW (USGPM)	TDH (R)
EQUIP. No.:	310-1140-032 / M94226	18,000	120.00
CUST. P.O. No.:	445014	EFF. (%)	Power (HP)
API-C JOB No.:	CAE2000 075 23	85	700.0
DATE / REV.:	OCT-16-2000 / R. 0	NEMA PR.	NEMA FUT.
		BY OWNER	BY OWNER

APT Process Pumps Dimensional drawing P20058

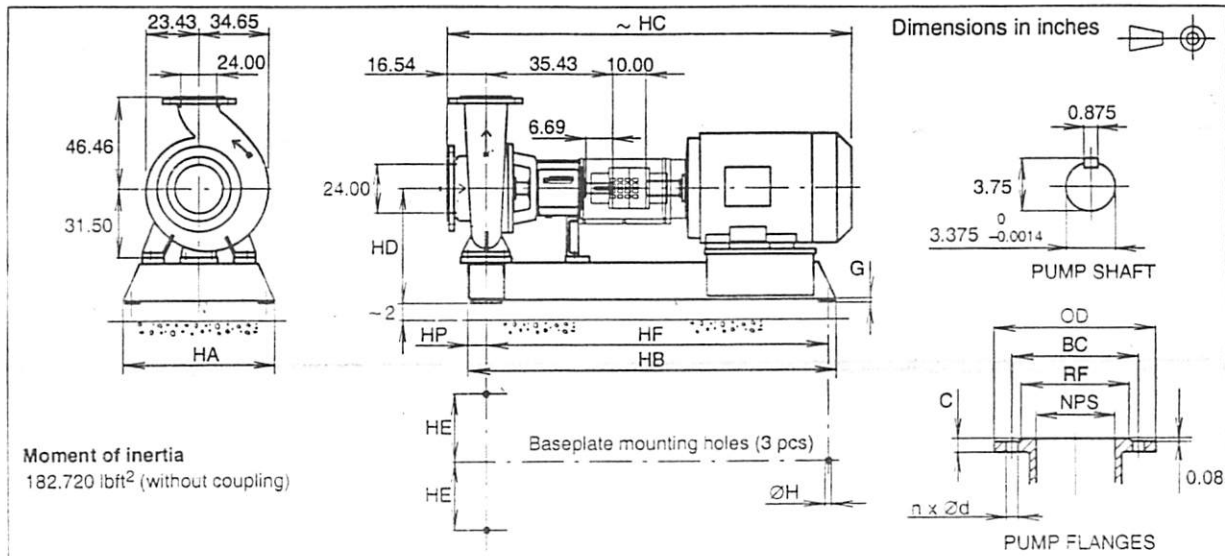


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Version 04 > / 940221 / en / P20058

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 ⁽³⁾
(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	25.97	1.88	29.50	1.42	20	29.50	1.42	20

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

REFERENCE

SERVICE:	B Line Sec. Cleaners Feed P.
EQUIP. No.:	310-1140-032 / M94226
CUST. P.O. No.:	445014
API-C JOB No.:	CAE2000 075 23
HP / RPM / FRAME:	667.0 / 890 / B FLOWER

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 (in²)			
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

PUMP, B-LINE TENDRY CLEANER FEED

SERVICE:	B-Line Sec. Cleaners Feed P.
EQUIP. No.:	310-1140-032 / M94226
CUST. P.O. No.:	445014
MODEL / SIZE:	APT61-24 / 24x24-28
API-C JOB No.:	CAE2000 075 23

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.

PUMP, B-LINE PRIMARY CLEANERS FEED

SERVICE:	B-Line Sec. Cleaners Feed P.
EQUIP. No.:	310-1140-032 / M94226
CUST. P.O. No.:	445014
MODEL / SPEED:	APT61-24 / 890
APT-C JOB No.:	CAE2000 075 23