

SALES ACKNOWLEDGEMENT

SULZER

Print Date 10/16/2000

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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 # 024	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 310-1140-035/M94251		
		Serial Number	Currency USD	Net Amount 8379.00
		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 01/19/2001
Marks and Tagging PUMP, TERTIARY CLEANERS FEED 310-1140-035 / M94251 445014 4121001112 CAE2000 075 24		Order Contact TONY LIANE Sales Contact TONY GEDEON Document Requirements 4 Copies in English		
Pump Size	N.Am. Pump Size	Casing Material	Consistency	Pumped liquid
APT42-8	10X8-14	A890 3A	0.67 % BD	DEINKED STOCK
Capacity Q	Head H	NPSH av	NPSH req	pH
3100 USGPM	105 ft	26 ft	14.7 ft	7-9
Capacity in alternative unit	Efficiency	Temperature	Dimensional drawing	Characteristic curve
	79 %	125 F	P20037	K01986
Impeller Type	Impeller No.	Impeller diameter	Pump power P	Base plate type
Open	283887	325 mm	110 HP	Pump Motor/Steel/Zinc
Coupling Type	Mechanical seal type	Coupling Guard material	Dynamic seal power	Shaft Seal Fitting
Rex-Omega ES		S + Z EN10025		P02
Motor IEC/NEMA code	Power	Rotational Speed	Manufacturer	Future motor IEC/NEMA code
444T	125 HP	1800 RPM	TOSHIBA	445T
Frequency	Voltage	Enclosure	Motor Supplied by	Bearing Unit Lubrication
60 Hz	460 V	TEFC	Customer	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

SULZER

Print Date 10/16/2000

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SULZER PROCESS PUMPS (CANADA) INC. 5055, rue Levy, Saint-Laurent, Québec H4R 2N9, Canada Phone 514 - 333-7750 Fax 514 - 333-6324	Sulzer Order No. CAE2000075	Item # 024	Order Date 10/12/2000
	Customer P.O. No 445014		P.O Date 09/22/2000
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Marks and Tagging PUMP, TERTIARY CLEANERS FEED 310-1140-035 / M94251 445014 4121001112 CAE2000 075 24	Way of Delivery Truck		Onsite Date 01/19/2001
	Order Contact TONY LIANE		
	Sales Contact TONY GEDEON		
	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	APT42-8
		Serial Number	
		Time of delivery/EXW	01/12/2001
		Date printed	10/16/2000
		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	310-1140-035/M94251

PROCESS DATA

Mill	13	NPSH av	26 ft
Process	270	Capacity Q	3100 USGPM
Application	TER. CLEANERS FEED	Head H	105 ft
Pumped liquid	DEINKED STOCK	Characteristic curve	K01986
Temperature	125 F	Pump power P	110 HP
pH	7-9	Motor power	150 HP
Consistency	0.67 % BD	Efficiency	79 %
Gas content	0-1 %	Pump rotational speed	1780 RPM
Min head on suction side	1 ft	Variable speed	No
Max head on suction side	16 (STATIC) ft	NPSH req	14.7 ft

PUMP

Supplier	Easley
Dimensional drawing	P20037
Conformity	89/392/EEC machinery /US
Version	09
Pump Size	APT42-8
Impeller Type	Open
Impeller No.	283887
Impeller diameter	325 mm
Impeller turning angle	10 °
Impeller max.diameter	350 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

Motor Supplied by	Customer	Rotational Speed	1800 RPM
Motor IEC/NEMA code	444T	Power	125 HP
Manufacturer	TOSHIBA	Motor mounting	IPU production unit

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

Contact Person	TONY GEDEON
LBU Order #	CAE2000075
LBU Position	024
Telephone	514 - 333-7760
Telefax	514 - 333-6324 (bomcust1)

PRODUCT SPECIFICATION	Description		APT42-8
	Serial Number		
	Time of delivery/EXW	01/12/2001	
	Date printed	10/16/2000	Page 2
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		
Cust. order #	445014		
Cust. PO Line #	ZOR		
Country code	US	Equipment No	310-1140-035/M94251

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
Future motor IEC/NEMA code 445T

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
=====

SULZER PROCESS PUMPS (CANADA) INC.	Contact Person	TONY GEDEON
5055, rue Levy	LBU Order #	CAE2000075
Saint-Laurent, Québec	LBU Position	024
H4R 2N9	Telephone	514 - 333-7760
Canada	Telefax	514 - 333-6324 (bomcust1)

PRODUCT SPECIFICATION	Description	APT42-8
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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
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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
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=====

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 LBU Order # LBU Position Telephone Telefax	TONY GEDEON CAE2000075 024 514 - 333-7760 514 - 333-6324 (bomcust1)
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AHLSTROM

Version 01> / en / 961205 / Replaces 950317 / K01986

Head vs. Flow Performance

Flow (USGPM)	Head (ft) at 280 RPM	Head (ft) at 290 RPM	Head (ft) at 310 RPM	Head (ft) at 330 RPM	Head (ft) at 350 RPM
0	95	105	125	150	180
1000	90	100	120	145	175
2000	80	90	110	135	165
3000	65	75	95	115	145
4000	45	55	75	95	125
5000	30	40	60	80	110

Power vs. Flow Performance

Flow (USGPM)	Power (Hp) at 280 RPM	Power (Hp) at 290 RPM	Power (Hp) at 310 RPM	Power (Hp) at 330 RPM	Power (Hp) at 350 RPM
0	50	60	75	85	110
1000	55	65	80	90	115
2000	60	70	85	95	130
3000	65	75	90	100	150
4000	60	70	85	95	160
5000	55	65	80	90	165

[illegible]

SERVICE:	Test. Cleaners Feed P.	FLOW (USGPM)	TDH (R)
EQUIP. No.:	310-1140-035 / M94251	3100.00	105.00
CUST. P.O. No.:	445014	EFF. (%)	Power (HP)
API-C JOB No.:	CAE2000 075 24	79	150.0
DATE / REV.:	OCT-16-2000 / R. 0	NEMA PR.	NEMA FUT.
		444T	445T

APT Process Pumps

Dimensional drawing P20037

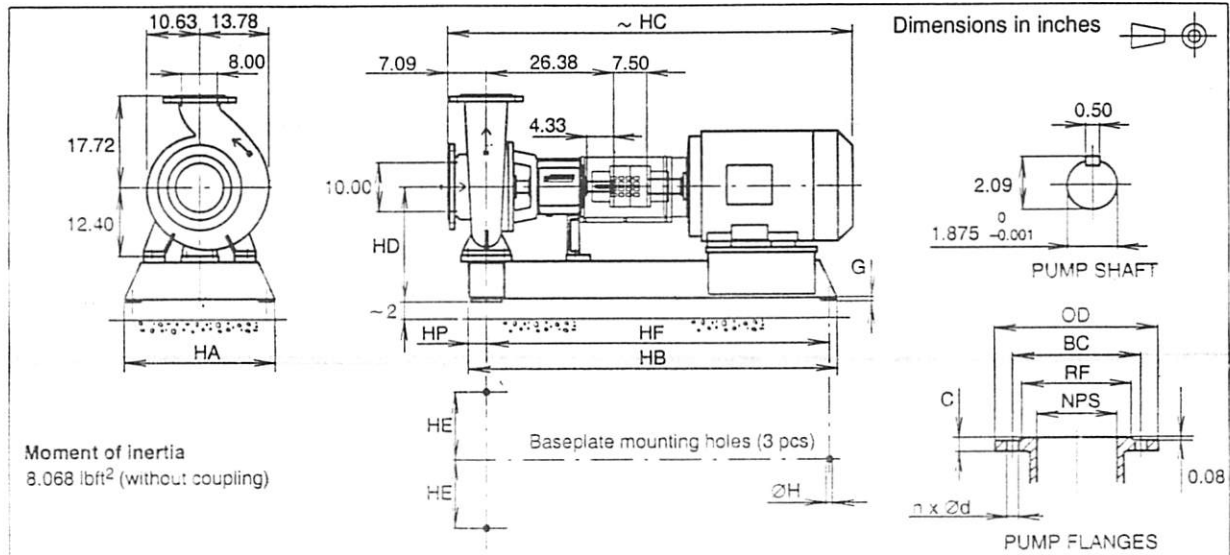


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Version 04 > / 940221 / en / P20037

APT42-8 (10x8-14)

Steel baseplate for pump and motor



DIMENSIONS

Primary motor frame	Max motor frame (1)	Max motor frame (2)	Baseplate	HD	HC	HB	HP	HF	HA	HE	H	G	Weight lbs (3)
284T	324T	286T	5	20.15	66.50	68.25	3.00	63.75	28.38	12.75	1.00	0.44	905
286T	324T	-	5	20.15	68.00	68.25	3.00	63.75	28.38	12.75	1.00	0.44	905
324T	364T	326T	5	20.15	69.50	68.25	3.00	63.75	28.38	12.75	1.00	0.44	920
326T	364T	-	5	20.15	71.00	68.25	3.00	63.75	28.38	12.75	1.00	0.44	920
364T	405T	365T	6	21.25	74.00	77.00	3.50	72.00	28.75	13.00	1.25	0.56	1030
365T	405T	-	6	21.25	75.00	77.00	3.50	72.00	28.75	13.00	1.25	0.56	1030
365TS	405TS	-	5	20.15	73.00	68.25	3.00	63.75	28.38	12.75	1.00	0.44	940
404T	444T	405T	6	21.25	78.00	77.00	3.50	72.00	28.75	13.00	1.25	0.56	1095
404TS	444TS	405TS	5	20.15	75.00	68.25	3.00	63.75	28.38	12.75	1.00	0.44	1000
405T	444T	-	6	21.25	79.50	77.00	3.50	72.00	28.75	13.00	1.25	0.56	1095
405TS	444TS	-	5	20.15	76.50	68.25	3.00	63.75	28.38	12.75	1.00	0.44	1000
444T	509LL	449T	8	24.25	83.50	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1430
444TS	509LS	449TS	8	24.25	79.50	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1430
445T	509LL	449T	8	24.25	85.50	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1430
445TS	509LS	449TS	8	24.25	82.00	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1430
447T	5011LL	449T	9	24.25	89.00	101.75	5.00	94.50	45.63	20.50	1.50	0.69	1540
447TS	509LS	449TS	8	24.25	87.00	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1430
449T	5011LL	-	9	24.25	95.00	101.75	5.00	94.50	45.63	20.50	1.50	0.69	1540
449TS	509LS	-	8	24.25	92.00	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1430

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)
8.00	13.78	10.47	1.12	11.75	0.88	8	11.75	0.88	8
10.00	16.93	12.60	1.19	14.25	1.00	12	14.25	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.

SERVICE:	Tert. Cleaners Feed P.
EQUIP. No.:	310-1140-035 / M94251
CUST. P.O. No.:	445014
API-C JOB No.:	CAE2000 075 24
HP / RPM / FRAME:	110.0 / 1780 / 444T

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

APT Process Pumps

Design data



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Version 09 > / 960801 / en / N12851 / Page 4 (7)

Table 4 Bearing unit size 4

Pump type	41-8	41-12	42-6	42-8	43-10	43-12	44-6	44-8
Shaft diameters								
At impeller	1.772							
Under sleeve	2.362							
Between bearings	3.15							
At coupling	1.875							
Bearings								
Radial bearing type	NUP 313							
Thrust bearing type	2 x 7314 BECB							
Radial brg. life (HRS. x 10 ³) ⁽¹⁾	1000 +	480	200	300	180	1000 +	1000 +	150
Thrust brg. life (HRS. x 10 ³) ⁽¹⁾	500	120	430	100	70	180	220	50
Bearing span	8.74							
Shaft overhang	10.83							
Stuffing box								
Bore	3.750							
Depth	3.071							
Shaft sleeve dia.								
Packing	2.750							
Mechanical seal, general	2.625							
Mech. seal, ready-fitted ⁽²⁾	2.362							
Packing size	10.500							
No. of packing rings	4							
Lantern ring width	0.67							
Neck bush clearance	0.023							
Distance to nearest obstruction	4.21							
Wear ring clearance	0.027	0.029	0.025	0.027	0.029	0.029	0.025	0.027
Impeller								
Front clearance (open impeller)	0.020							
Back clearance	0.040							
Eye area (in ²)								
Closed	70.1	99.5	50.6	71.3	99.5	118.5	43.9	73.6
Open	70.1	99.5	50.6	71.3	99.5	118.5	43.9	73.6
Special open	70.1	99.5	53.7	77.3	108.8	118.5	55.5	77.9
Max. diameter solids (in)								
Closed	1.69	1.81	1.34	1.38	2.13	2.09	1.06	1.61
Open	1.85	2.20	1.50	1.89	2.44	2.13	1.06	1.81
Special open	2.12	2.75	1.50	1.93	2.48	2.79	1.06	1.81
Max. shaft deflection at st. box	0.002							
Casing								
Type (single or dual)	SV	SV	SV	SV	SV	DV	SV	SV
Casing thickness (iron)	0.63	0.75	0.51	0.63	0.71	0.71	0.67	0.63
Casing thickness (steel)	0.51	0.59	0.43	0.51	0.55	0.55	0.47	0.51
Bearing unit weight (LBS)	180							
HP/100 rpm (shaft SS2324)	28							

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

SERVICE:	Leif Cleaners Feed-P.
EQUIP. No.:	310-1140-035 / M94251
CUST. P.O. No.:	445014
MODEL / SIZE:	APT42-8 / 10x8-14
API-C JOB No.:	CAE2000 075 24

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, TERTIARY CLEANER FEED

SERVICE:	Tert. Cleaners Feed-P.
EQUIP. No.:	310-1140-035 / M94251
CUST. P.O. No.:	445014
MODEL / SPEED:	APT42-8 / 1780
API-C JOB No.:	CAE2000 076 24