

SULZER**SALES ACKNOWLEDGEMENT**

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 # 006	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 310-1140-006/M94101		
		Serial Number	Currency USD	Net Amount 9762.00
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 SEC. COARSE SCREEN FEED 310-1140-006 / M94101 445014 4121001112 CAE2000 075 06		Way of Delivery Truck		Onsite Date 01/19/2001
		Order Contact TONY LIANE		
		Sales Contact TONY GEDEON		
		Document Requirements 4 Copies in English		
Pump Size APT53-8	N.Am. Pump Size 10X8-21	Casing Material A890 3A	Consistency 2.95 % BD	Pumped liquid ONP/OMG REP. STOCK
Capacity Q 1560 USGPM	Head H 105 ft	NPSH av 26 ft	NPSH req 5.6 ft	pH 7-9
Capacity in alternative unit	Efficiency 68 %	Temperature 125 F	Dimensional drawing P20048	Characteristic curve K01965
Impeller Type Special open	Impeller No. 286099	Impeller diameter 415 mm	Pump power P 56 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 405T	Power 75 HP	Rotational Speed 1200 RPM	Manufacturer TOSHIBA	Future motor IEC/NEMA code 444T
Frequency	Voltage	Enclosure	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

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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
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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
=====

PRODUCT SPECIFICATION	Description	APT53-8
	Serial Number	
	Time of delivery/EXW	01/12/2001
	Date printed	10/16/2000
Customer		Page 1
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		310-1140-006/M94101

PROCESS DATA

Mill	13	Capacity Q	1560 USGPM
Process	270	Head H	105 ft
Application	SEC. COARSE SCREEN	Characteristic curve	K01965
Pumped liquid	ONP/OMG REP. STOCK	Pump power P	56 HP
Temperature	125 F	Motor power	75 HP
pH	7-9	Efficiency	68 %
Consistency	2.95 % BD	Pump rotational speed	1185 RPM
Min head on suction side	1 ft	Variable speed	No
Max head on suction side	20 (STATIC) ft	NPSH req	5.6 ft
NPSH av	26 ft		

PUMP

Supplier	Easley
Dimensional drawing	P20048
Conformity	89/392/EEC machinery /US
Version	09
Pump Size	APT53-8
Impeller Type	Special open
Impeller No.	286099
Impeller diameter	415 mm
Impeller turning angle	0 °
Impeller max.diameter	530 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

Motor Supplied by	Customer	Rotational Speed	1200 RPM
Motor IEC/NEMA code	405T	Power	75 HP
Manufacturer	TOSHIBA	Motor mounting	IPU production unit
Motor Type	NEMA		

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

Contact Person TONY GEDEON
 LBU Order # CAE2000075
 LBU Position 006
 Telephone 514 - 333-7760
 Telefax 514 - 333-6324 (bomcust1)

PRODUCT SPECIFICATION	Description APT53-8	
	Serial Number Time of delivery/EXW Date printed	01/12/2001 10/16/2000 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 310-1140-006/M94101	

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 444T			

MOTOR ALIGNMENT BLOCK

ORDER REMARKS

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PRODUCT SPECIFICATION	Description - APT53-8	
	Serial Number	01/12/2001
	Time of delivery/EXW	10/16/2000
	Date printed	Page 3
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	310-1140-006/M94101

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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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AHLSTROM

Version 01> / en / 920907 / Replaces 890401 / K01965

IMPELLER DIA		
mm	in	deg
530	20.87	0
525	20.67	0
520	20.47	0
515	20.28	0
510	20.08	0
505	19.88	0
500	19.69	0
495	19.49	0
490	19.29	0
485	19.09	0
480	18.9	0
475	18.7	0
470	18.5	0
465	18.31	0
460	18.11	0
455	17.91	0
450	17.72	0
450	17.72	0
445	17.52	0
440	17.32	0
435	17.13	0
430	16.93	0
425	16.73	0
420	16.54	0
415	16.34	0
410	16.14	0
405	15.94	0
400	15.75	0
395	15.55	0
390	15.35	0

SERVICE:	8 Line Sec. Coarse Screen Feed P.	FLOW (USGPM)	TDH (ft)
EQUIP. No.:	310-1140-006 / M94101	1560.00	105.00
CUST. P.O. No.:	445014	EFF. (%)	Power (HP)
API-C JOB No.:	CAE2000 075 06	68	75.0
DATE / REV.:	OCT-16-2000 / R. 0	NEMA PR.	NEMA FUT.
		405T	444T

APT Process Pumps

Dimensional drawing P20048

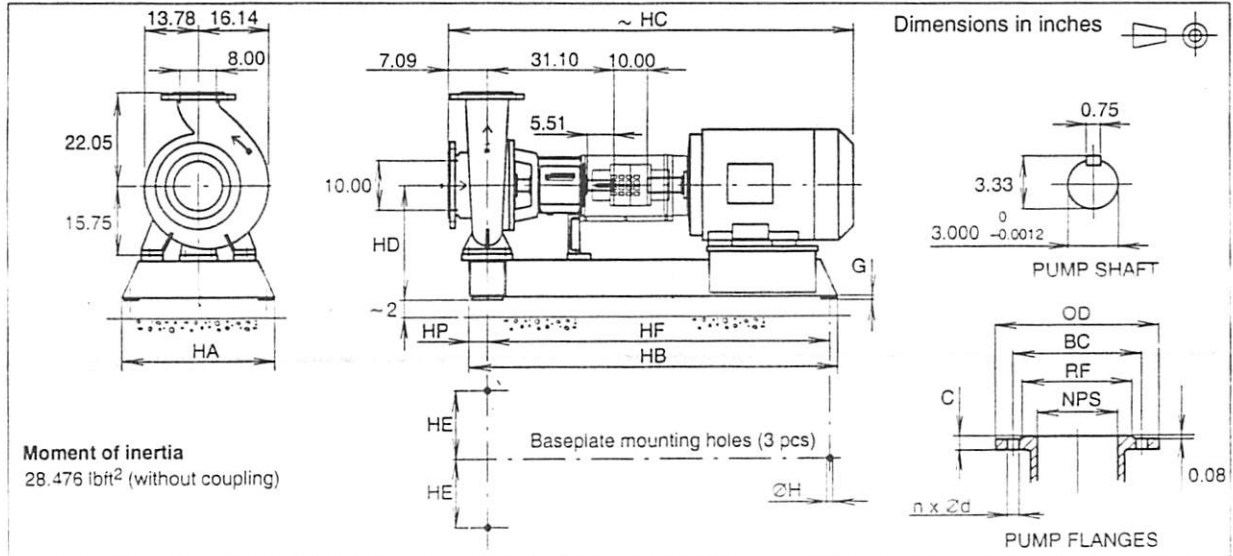


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Version 04 > / 940221 / en / P20048

APT53-8 (10x8-21)

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 (3)
364T	405T	365T	6	24.60	80.50	77.00	3.50	72.00	28.75	13.00	1.25	0.56	1540
365T	405T	-	6	24.60	81.50	77.00	3.50	72.00	28.75	13.00	1.25	0.56	1540
404T	444T	405T	7	24.60	84.50	85.00	3.50	80.00	32.63	15.00	1.25	0.56	1640
405T	444T	-	7	24.60	86.00	85.00	3.50	80.00	32.63	15.00	1.25	0.56	1640
444T	509LL	449T	9	27.60	91.00	101.75	5.00	94.50	45.63	20.50	1.50	0.69	2010
445T	509LL	449T	9	27.60	93.00	101.75	5.00	94.50	45.63	20.50	1.50	0.69	2010
447T	5011LL	449T	10	27.60	96.00	112.25	5.00	105.00	45.63	20.50	1.50	0.69	2115
447TS	509LS	449TS	8	27.60	94.00	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1970
449T	5011LL	-	10	27.60	102.00	112.25	5.00	105.00	45.63	20.50	1.50	0.69	2115
449TS	509LS	-	8	27.60	99.00	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1970

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:	B Line Sec. Coarse Screen Feed P.
EQUIP. No.:	310-1140-006 / M94101
CUST. P.O. No.:	445014
API-C JOB No.:	CAE2000 075 06
HP / RPM / FRAME:	56.0 / 1185 / 405T

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

APT Process Pumps

Design data



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Version 09 > / 960801 / en / N12851 / Page 5 (7)

Table 5 Bearing unit size 5

Pump type	51-10	51-12	52-14	52-16	53-4	53-6	53-8	53-10	53-12
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					2 x 7318 BECB				
Radial brg. life (HRS. x 10 ³) ¹⁾	1000 +	1000 +	1000 +	1000 +	1000 +	1000 +	700	1000 +	1000 +
Thrust brg. life (HRS. x 10 ³) ¹⁾	100	250	340	100	700	520	70	75	80
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	0.029	0.031	0.032	0.034	0.024	0.027	0.027	0.029	0.031
Impeller									
Front clearance (open impeller)					0.020				
Back clearance					0.040				
Eye area (in ²)									
Closed	102.3	132.5	164.8	206.5	44.9	64.9	73.6	102.3	140.7
Open	102.3	132.5	164.8	206.5	44.9	64.9	73.6	102.3	140.7
Special open	117.0	132.5	164.8	206.5	-	-	73.6	102.3	140.7
Max. diameter solids (in)									
Closed	2.05	1.89	2.56	2.87	0.67	1.14	1.38	1.93	2.44
Open	2.13	2.72	2.48	3.74	1.06	1.54	1.38	1.93	2.52
Special open	2.12	2.72	3.31	3.74	-	-	1.38	1.93	2.52
Max. shaft deflection at st. box					0.002				
Casing									
Type (single or dual)	DV	DV	DV	DV	SV	SV	SV	DV	DV
Casing thickness (iron)	0.71	0.71	0.75	0.79	0.63	0.71	0.71	0.71	0.71
Casing thickness (steel)	0.55	0.55	0.59	0.63	0.51	0.55	0.55	0.55	0.59
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 3 - Line 002. Coarse Screen Feed P.

SERVICE:	B Line Sec. Coarse Screen Feed P.
EQUIP. No.:	310-1140-006 / M94101
CUST. P.O. No.:	445014
MODEL / SIZE:	APT53-8 / 10x8-21
API-C JOB No.:	CAE2000 075 06

APT Process Pumps

Shaft sealing



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Version 09 > / 9606C1 / 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.

Imp. 5-115 etc. Sealing water

SERVICE:	B Line Sec. Coarse Screen Feed P.
EQUIP. No.:	310-1140-006 / M94101
CUST. P.O. No.:	445014
MODEL / SPEED:	APT53-8 / 1185
API-C JOB No.:	CAE2000 075 06