

SALES ACKNOWLEDGEMENT

SULZER

Print Date 12/22/2000

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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 # 052	Order Date 12/04/2000
		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 310-1140-054/M94348		
		Serial Number	Currency USD	Net Amount 6751.00
		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 02/09/2001
Marks and Tagging PUMP, DISC THICKENER REPULPER DILUTION 310-1140-054 / M94348 445014 4121001112 CAE2000 075 52		Order Contact SALAH ATTIE		
		Sales Contact TONY GEDEON		
		Document Requirements 4 Copies in English		
Pump Size APT33-4C	N.Am. Pump Size 6X4C-16	Casing Material A890 3A	Consistency 0.04 % BD	Pumped liquid WHITE WATER
Capacity Q 1750 USGPM	Head H 135 ft	NPSH av 26 ft	NPSH req 20.5 ft	pH 7-9
Capacity in alternative units	Efficiency 65 %	Temperature 125 F	Dimensional drawing P20031	Characteristic curve K00817
Impeller Type Special open	Impeller No. 284495	Impeller diameter 370 mm	Pump power P 94.7 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 444TS	Power 125 HP	Rotational Speed 1770 RPM	Manufacturer TOSHIBA	Future motor IEC/NEMA code 445TS
Frequency 60 Hz	Voltage 460 V	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

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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 6016 (TURQUOISE BLUE) COLOR & GUARDS IN RAL 1021 (SAFETY YELLOW) AT NO EXTRA CHARGE

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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
=====

JACKING SCREWS:

MOTOR JACKING SCREWS (SET OF 4) ARE INCLUDED IN
THE SCOPE OF SUPPLY OF EVERY PUMP.
=====

PRODUCT SPECIFICATION	Description	APT33-4C
	Serial Number	
	Time of delivery/EXW	01/26/2001
	Date printed	12/22/2000
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 310-1140-054/M94348

PROCESS DATA

Mill	13	Capacity Q	1750 USGPM
Process	270	Head H	135 ft
Application	DISK THICKENER	Characteristic curve	K00817
Pumped liquid	WHITE WATER	Pump power P	94.7 HP
Temperature	125 F	Motor power	125 HP
pH	7-9	Efficiency	65 %
Consistency	0.04 % BD	Pump rotational speed	1770 RPM
Min head on suction side	1 ft	Variable speed	No
Max head on suction side	13 (STATIC) ft	NPSH req	20.5 ft
NPSH av	26 ft		

PUMP

Supplier	Easley	Casing Material	A890 3A
Dimensional drawing	P20031	Gasket Material	Klinger SIL-4430
Conformity	89/392/EEC machinery /US	O-ring Material	NBR
Version	09	Bearing Unit Lubrication	Oil lubrication
Pump Size	APT33-4C	Bearing unit model	01 52/33/NoSS/NotSpec
Impeller Type	Special open	Constant level oiler 638	Yes
Impeller No.	284495	Shaft Seal Fitting	P02
Impeller diameter	370 mm	Customer documents lang./q	EN/04
Impeller turning angle	0 °	Component documents lang./	EN/04
Impeller max.diameter	400 mm	Special parts	METCO 16 SLEEVE
Flange Drilling	ASME B16.5 CLASS 150		

D R I P P A N

DRIVE MOTOR

Motor Supplied by	Customer	Power	125 HP
Motor IEC/NEMA code	444TS	Frequency	60 Hz
Manufacturer	TOSHIBA	Voltage	460 V

SULZER PROCESS PUMPS (CANADA) INC.

5055, rue Levy
Saint-Laurent, Québec
H4R 2N9
Canada

Contact Person TONY GEDEON
LBU Order # CAE2000075
LBU Position 052
Telephone 514 - 333-7760
Telefax 514 - 333-6324

(bomcust1)

PRODUCT SPECIFICATION	Description	APT33-4C	
	Serial Number		
	Time of delivery/EXW	01/26/2001	
	Date printed	12/22/2000	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	310-1140-054/M94348

Motor Type	NEMA	Enclosure	TEFC
Rotational Speed	1770 RPM	Motor mounting	IPU production unit

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	445TS		

MOTOR ALIGNMENT BLOCK

ORDER REMARKS

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 90% UPON DELIVERY OF EACH PUMP THAT HAS BEEN
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 BY BUYER

PRICING:

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

Contact Person	TONY GEDEON
LBU Order #	CAE2000075
LBU Position	052
Telephone	514 - 333-7760
Telefax	514 - 333-6324 (bomcust1)

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THE RAL 6016 (TURQUOISE BLUE) COLOR & GUARDS IN
RAL 1021 (SAFETY YELLOW) AT NO EXTRA CHARGE

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5055, rue Levy
Saint-Laurent, Québec
H4R 2N9
Canada

Contact Person

TONY GEDEON

LBU Order #

CAE2000075

LBU Position

052

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MOTOR JACKING SCREWS (SET OF 4) ARE INCLUDED IN
THE SCOPE OF SUPPLY OF EVERY PUMP.

=====

P A I N T I N G

Painting E180/3-Fe Sa2 1/2 SFS4962
Color Shade RAL-6016

SULZER PROCESS PUMPS (CANADA) INC.
5055, rue Levy
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Telephone 514 - 333-7760
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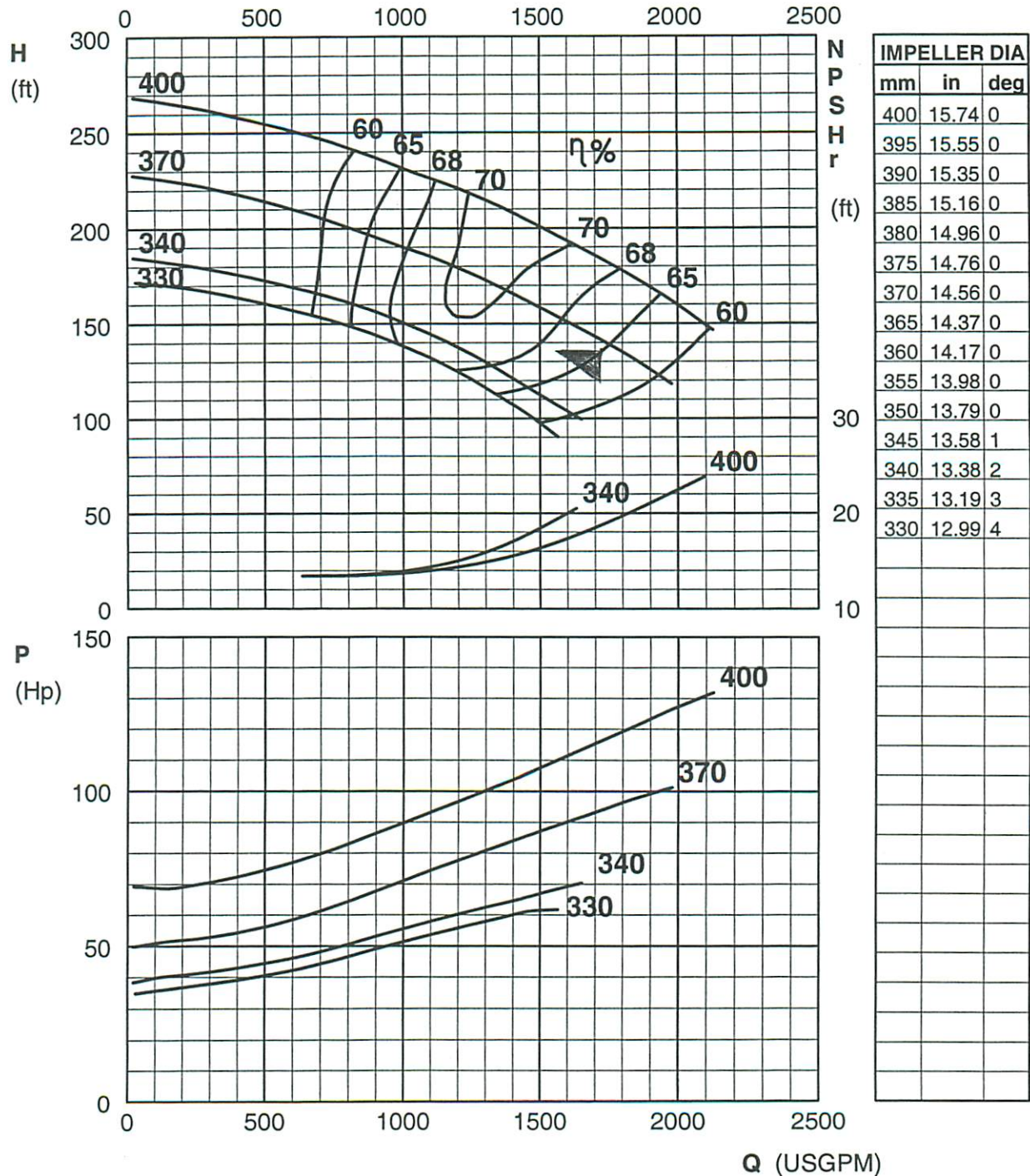
APT Process pumps Characteristic curve K00817



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Version 01> / en / 920825 / Replaces 870301 / K00817

APT33-4C (6x4C-16)
Impeller 284495 OPEN B1.14 Z3
1770 rpm



SERVICE:	PUMP, DISK. THICKENER	FLOW (USGPM)	TDH (ft)
	REPULPER DILUTION	1750.00	135.00
EQUIP. No.:	310-1140-054 / M94348	EFF. (%)	Power (BHP)
CUST. P.O. No.:	445014	65	95.0
SULZER JOB No.:	CAE2000 075 52	NEMA PR.	NEMA FUT.
DATE / REV.:	JAN-03-2001 / R. 0	444TS	445TS

APT Process Pumps

Dimensional drawing P20033

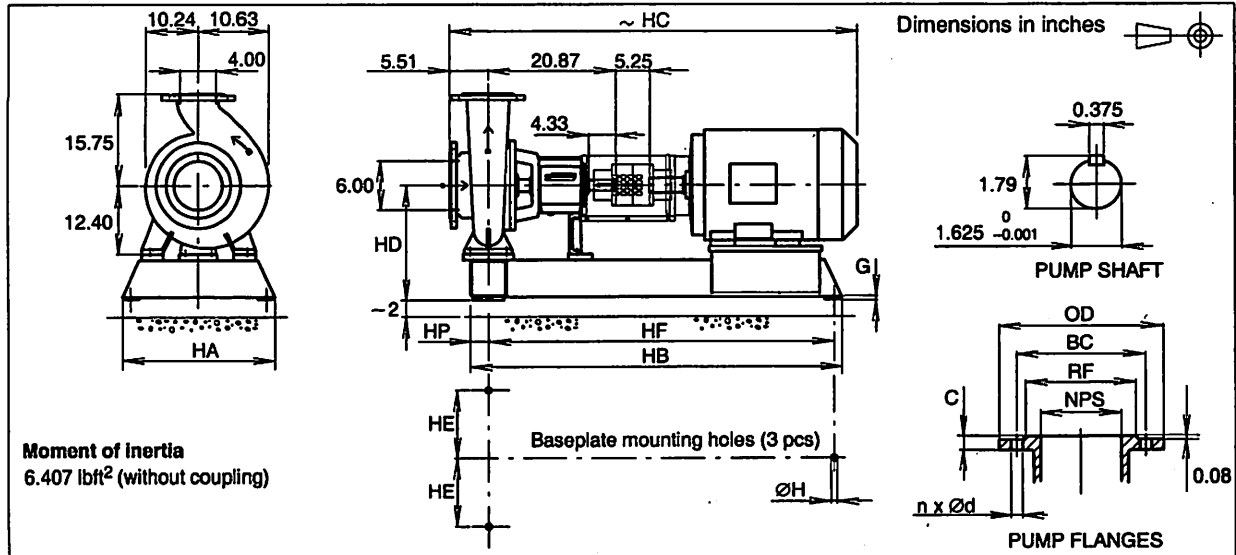


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Version 04 > / 940221 / en / P20033

APT33-4C (6x4C-16)

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⁾
286T	324T	-	4	20.15	59.00	60.25	3.00	56.00	24.75	11.00	1.00	0.44	770
324T	364T	326T	4	20.15	60.50	60.25	3.00	56.00	24.75	11.00	1.00	0.44	780
326T	364T	-	4	20.15	62.00	60.25	3.00	56.00	24.75	11.00	1.00	0.44	785
364T	405T	365T	5	20.15	65.00	68.25	3.00	63.75	28.38	12.75	1.00	0.44	815
365T	405T	-	5	20.15	66.00	68.25	3.00	63.75	28.38	12.75	1.00	0.44	815
365TS	405TS	365TS	4	20.15	64.00	60.25	3.00	56.00	24.75	11.00	1.00	0.44	800
404T	444T	405T	5	20.15	69.00	68.25	3.00	63.75	28.38	12.75	1.00	0.44	875
404TS	444TS	405TS	5	20.15	66.00	68.25	3.00	63.75	28.38	12.75	1.00	0.44	870
405T	444T	-	5	20.15	70.50	68.25	3.00	63.75	28.38	12.75	1.00	0.44	875
405TS	444TS	-	5	20.15	67.50	68.25	3.00	63.75	28.38	12.75	1.00	0.44	870
444T	509LL	449T	7	21.25	74.50	85.00	3.50	80.00	32.63	15.00	1.25	0.56	1125
444TS	509LS	449TS	7	21.25	70.50	85.00	3.50	80.00	32.63	15.00	1.25	0.56	1125
445T	509LL	449T	7	21.25	76.50	85.00	3.50	80.00	32.63	15.00	1.25	0.56	1125
445TS	509LS	449TS	7	21.25	73.00	85.00	3.50	80.00	32.63	15.00	1.25	0.56	1125
447T	5011LL	449T	8	24.25	80.00	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1370
447TS	509LS	449TS	7	21.25	78.00	85.00	3.50	80.00	32.63	15.00	1.25	0.56	1125

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⁾
4.00	9.02	6.10	0.94	7.50	0.75	8	7.50	0.75	8
6.00	12.01	8.35	1.00	9.50	0.88	8	9.50	0.88	8

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

SERVICE:	PUMP, DISK THICKENER
EQUIP. No.:	310-1140-054 / M94348
CUST. P.O. No.:	445014
SULZER JOB No.:	CAE2000 075 52
HP / RPM / FRAME:	125.0 / 1770 / 444TS

CERTIFIED FOR CONSTRUCTION	
DATE / REV.:	JAN-03-2001 / R. 0
SIGNED:	S. A. Wic

2 Bearing types and lubrication connections

Table 1 Bearing units and bearing types

Pump types	Pump size	Bearing unit size	B e a r i n g t y p e	
			Inboard	Outboard
APP/APT, ARP/ART, ASP/AST	11–	1	NUP 307	2×7308 BECB
APP/APT, ARP/ART, NPP/NPT, ASP/AST, WPP/WPT	21–	2	NUP 309	2×7310 BECB
APP/APT, ARP/ART, NPP/NPT, ASP/AST, WPP/WPT	22–			
APP/APT, ARP/ART, ASP/AST	23–			
APP/APT, ARP/ART, ASP/AST, EPP/EPT, NPP/NPT	31–	3	NUP 311	2×7312 BECB
APP/APT, ARP/ART, ASP/AST, EPP/EPT, NPP/NPT, ASP/AST, WPP/WPT	32–			
APP/APT, ARP/ART, ASP/AST, NPP/NPT, WPP/WPT	33–			
APP/APT, ARP/ART, ASP/AST, EPP/EPT	41–	4	NUP 313	2×7314 BECB
APP/APT, ARP/ART, ASP/AST, EPP/EPT, NPP/NPT	42–			
APP/APT, ARP/ART, ASP/AST, EPP/EPT	43–			
APP/APT, ARP/ART, ASP/AST, NPP/NPT, WPP/WPT	44–			
APP/APT, ARP/ART, ASP/AST	51–	5	NUP 317	2×7318 BECB
APP/APT, ARP/ART, ASP/AST, EPP/EPT	52–			
APP/APT, ARP/ART, ASP/AST, EPP/EPT, NPP/NPT, WPP/WPT	53–			
APP/APT, ARP/ART, ASP/AST, EPP/EPT	54–			
APP/APT, ARP/ART, ASP/AST, EPP/EPT, WPP/WPT	55–			
APP/APT, ARP/ART, EPP/EPT, WPP/WPT	61–	6	NUP 320	2×7322 BECB
APP/APT, ARP/ART	62–			

SERVICE:	PUMP, DISK, THICKENER REPULPER DILUTION
EQUIP. No.:	310-1140-054 / M94348
CUST. P.O. No.:	445014
MODEL / SIZE:	APT33-4C / 6x4C-16
SULZER JOB No.:	CAE2000 076 52

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.
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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.

SERVICE:	PUMP, DISK, THICKENER REPULPER DILUTION
EQUIP. No.:	310-1140-054 / M94348
CUST. P.O. No.:	445014
MODEL / SPEED:	APT33-4C / 1770
SULZER JOB No.:	CAE2000 075 52