

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 # 047	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 310-1140-043/M94311		
		Serial Number	Currency USD	Net Amount 6772.00
		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 01/05/2001
Marks and Tagging PUMP, QUATERNARY FINE SCREEN FEED 310-1140-043 / M94311 445014 4121001112 CAE2000 075 47		Order Contact TONY LIANE		
		Sales Contact TONY GEDEON		
		Document Requirements 4 Copies in English		
Pump Size APT42-6	N.Am. Pump Size 8X6-14	Casing Material A890 3A	Consistency 0.4 % BD	Pumped liquid DEINKED STOCK
Capacity Q 1500 USGPM	Head H 115 ft	NPSH av 26 ft	NPSH req 14.4 ft	pH 7-9
Capacity in alternative unit	Efficiency 78 %	Temperature 125 F	Dimensional drawing P20036	Characteristic curve K00830
Impeller Type Open	Impeller No. 283886	Impeller diameter 305 mm	Pump power P 55.6 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 365T	Power 75 HP	Rotational Speed 1800 RPM	Manufacturer TOSHIBA	Future motor IEC/NEMA code 405T
Frequency 60 Hz	Voltage 460V	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:				

SULZER**SALES ACKNOWLEDGEMENT**

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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 # 047	Order Date 10/12/2000
	Customer P.O. No. 445014		P.O. Date 09/22/2000
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	Way of Delivery Truck		Onsite Date 01/05/2001
	Order Contact TONY LIANE		
Marks and Tagging PUMP, QUATERNARY FINE SCREEN FEED 310-1140-043 / M94311 445014 4121001112 CAE2000 075 47	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	APT42-6
	Serial Number	
	Time of delivery/EXW	12/22/2000
	Date printed	10/13/2000
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	310-1140-043/M94311	

PROCESS DATA

Mill	13	Capacity Q	1500 USGPM
Process	270	Head H	115 ft
Application	<i>Quat.</i> FINE SCREEN FEED	Characteristic curve	K00830
Pumped liquid	DEINKED STOCK	Pump power P	55.6 HP
Temperature	125 F	Motor power	75 HP
pH	7-9	Efficiency	78 %
Consistency	0.4 % 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	14.4 ft
NPSH av	26 ft		

PUMP

Supplier	Easley
Dimensional drawing	P20036
Conformity	89/392/EEC machinery /US
Version	09
Pump Size	APT42-6
Impeller Type	Open
Impeller No.	283886
Impeller diameter	305 mm
Impeller turning angle	17 °
Impeller max.diameter	340 mm
Flange Drilling	ASME B16.5 CLASS 150

<i>IMPELLER MATERIAL</i>	<i>A890 3A</i>
<i>SHAFT MATERIAL</i>	<i>SS 2324</i>
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	365T	Power	75 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	047
Telephone	514 - 333-7760
Telefax	514 - 333-6324 (bomcust1)

PRODUCT SPECIFICATION	Description	APT42-6	
	Serial Number		
	Time of delivery/EXW	12/22/2000	
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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	310-1140-043/M94311

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 405T

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

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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	310-1140-043/M94311

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:

MUST BE PROVIDED SIX (6) WEEKS PRIOR TO DELIVERY
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SUPPLIED NEMA MOTORS AT EASLEY, SC FACTORY
CUS. RESPONSABLE FOR MOUNTING NON-NEMA MOTORS

P A I N T I N G

Painting E180/3-Fe Sa2 1/2 SFS4962
Color Shade RAL-5019

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

Contact Person TONY GEDEON
LBU Order # CAE2000075
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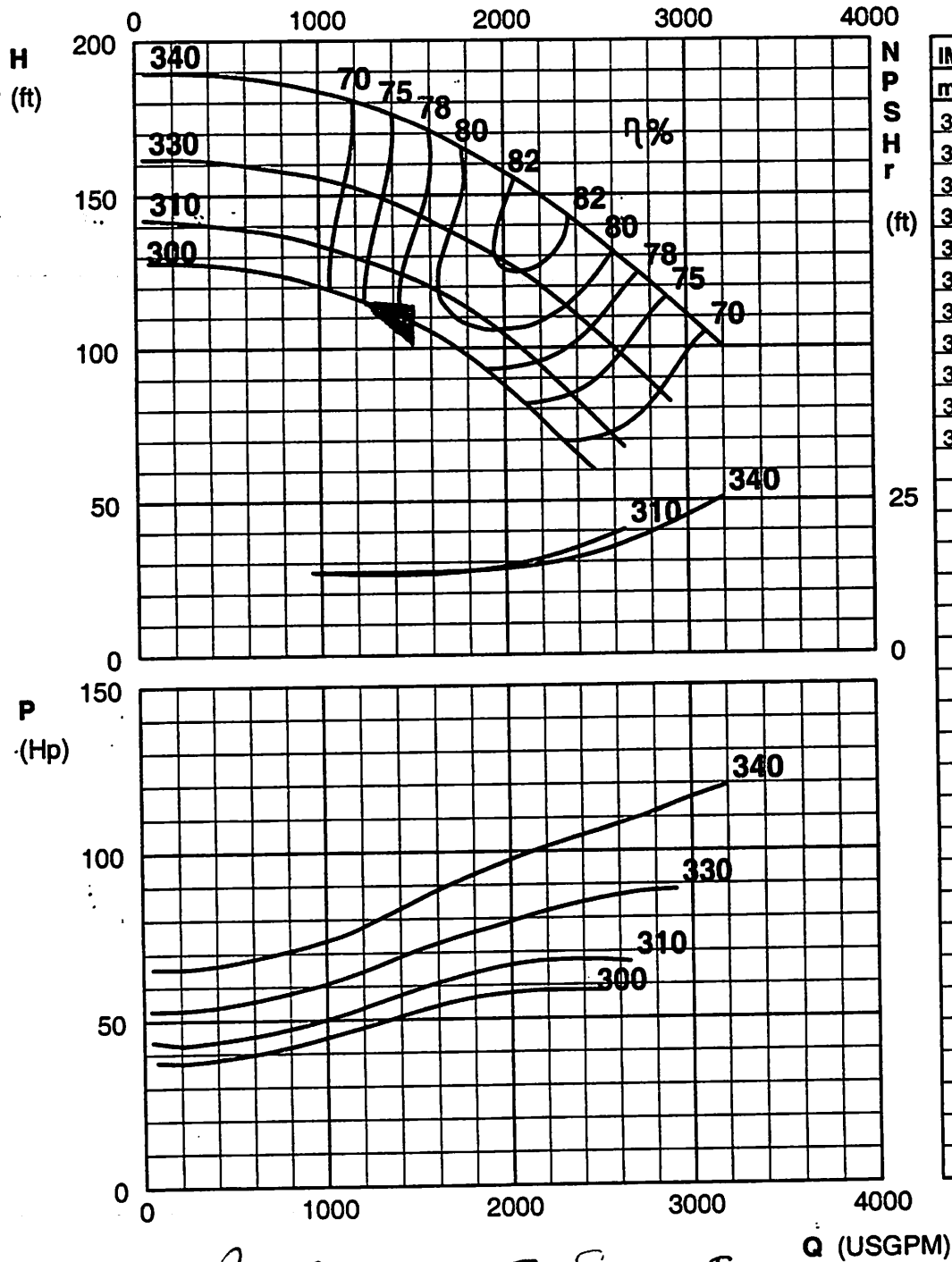
APT Process pumps Characteristic curve K00830



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Version 01> / en / 920630 / Replaces 870301 / K00830

APT42-6 (8x6-14)
Impeller 283886 OPEN B1.50 Z5
1770 rpm



IMPELLER DIA		
mm	in	deg
340	13.38	0
340	13.39	8
340	13.39	15
335	13.19	15
330	12.99	15
325	12.80	15
320	12.60	15
315	12.40	15
310	12.20	16
305	12.01	17
300	11.81	19

PUMP, QUATERNARY FINE SCREEN FEED

SERVICE:	Quat. Fine Screens Feed P.	FLOW (USGPM)	TDH (ft)
EQUIP. No.:	310-1140-043 / M94311	1500.00	115.00
CUST. P.O. No.:	445014	EFF. (%)	Power (HP)
API-C JOB No.:	CAE2000 075 47	78	75.0
DATE / REV.:	OCT-16-2000 / R. 0	NEMA PR.	NEMA FUT.
		365T	405T

APT Process Pumps

Dimensional drawing P20036

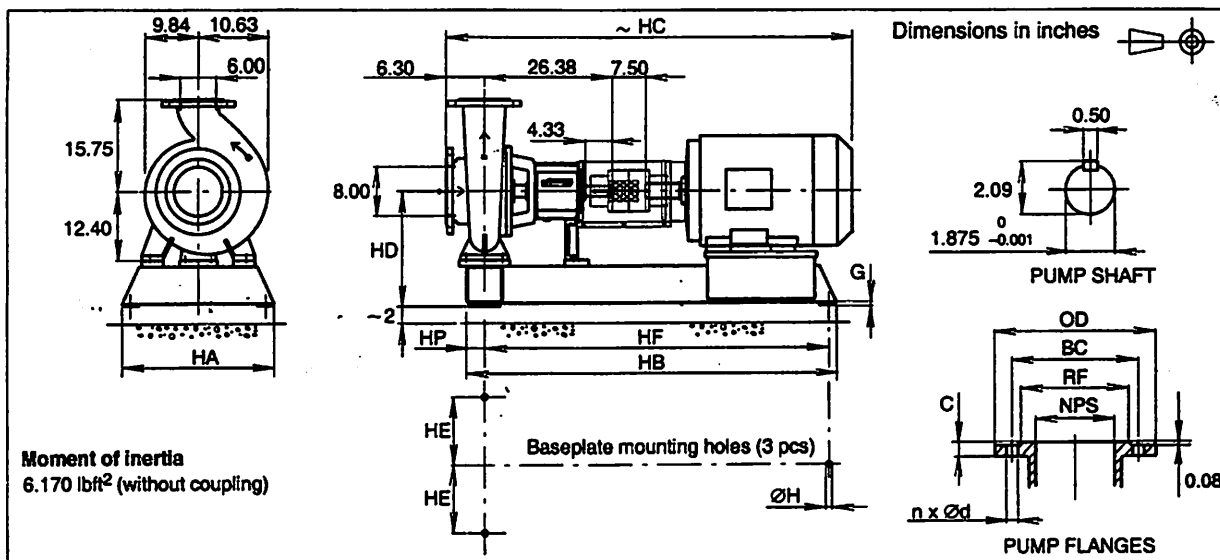


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Version 04 > / 940221 / en / P20036

APT42-6 (8x6-14)

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	66.00	68.25	3.00	63.75	28.38	12.75	1.00	0.44	815
286T	324T	-	5	20.15	67.50	68.25	3.00	63.75	28.38	12.75	1.00	0.44	815
324T	364T	326T	5	20.15	69.00	68.25	3.00	63.75	28.38	12.75	1.00	0.44	830
326T	364T	-	5	20.15	70.50	68.25	3.00	63.75	28.38	12.75	1.00	0.44	830
364T	405T	365T	6	21.25	73.50	77.00	3.50	72.00	28.75	13.00	1.25	0.56	940
365T	405T	-	6	21.25	74.50	77.00	3.50	72.00	28.75	13.00	1.25	0.56	940
365TS	405TS	-	5	20.15	72.50	68.25	3.00	63.75	28.38	12.75	1.00	0.44	850
404T	444T	405T	6	21.25	77.50	77.00	3.50	72.00	28.75	13.00	1.25	0.56	1005
404TS	444TS	405TS	5	20.15	74.50	68.25	3.00	63.75	28.38	12.75	1.00	0.44	910
405T	444T	-	6	21.25	79.00	77.00	3.50	72.00	28.75	13.00	1.25	0.56	1005
405TS	444TS	-	5	20.15	76.00	68.25	3.00	63.75	28.38	12.75	1.00	0.44	910
444T	509LL	449T	8	24.25	83.00	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1340
444TS	509LS	449TS	8	24.25	79.00	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1340
445T	509LL	449T	8	24.25	85.00	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1340
445TS	509LS	449TS	8	24.25	81.50	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1340
447T	5011LL	449T	9	24.25	88.50	101.75	5.00	94.50	45.63	20.50	1.50	0.69	1450
447TS	509LS	449TS	8	24.25	86.50	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1340
449T	5011LL	-	9	24.25	94.50	101.75	5.00	94.50	45.63	20.50	1.50	0.69	1450
449TS	509LS	-	8	24.25	91.50	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1340

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)
6.00	12.01	8.35	1.00	9.50	0.88	8	9.50	0.88	8
8.00	13.78	10.47	1.12	11.75	0.88	8	11.75	0.88	8

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.

PUMP, QUATERNARY FINE SCREEN FEED

SERVICE:	Quat. Fine Screens Feed P.
EQUIP. No.:	310-1140-043 / M94311
CUST. P.O. No.:	445014
API-C JOB No.:	CAE2000 075 47
HP / RPM / FRAME:	56.0 / 1770 / 365T

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

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	2x7314 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	1.81
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

PUMP, QUATERNARY FINE SCREEN FEED

SERVICE:	Quaternary Fine Screen Feed P.
EQUIP. No.:	310-1140-043 / M94311
CUST. P.O. No.:	445014
MODEL / SIZE:	APT42-8 / 8x6-14
APL-C JOB No.:	CAE2000 075 47

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 un					
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, QUATERNARY FINE SCREEN FEED.

SERVICE:	Quat. Fine Screen Feed P.
EQUIP. No.:	310-1140-043 / M94311
CUST. P.O. No.:	445014
MODEL / SPEED:	APT42-6 / 1770
APT-C JOB No.:	CAE2000 075 47