

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 # 026	Order Date 10/12/2000
Bill to ALLIANCE FOREST PRODUCTS U.S. CORP. 17589 PLANT ROAD COOSA PINES, AL 35044-0555		Customer P.O. No. 445014		P.O. Date 09/22/2000	
		Equipment Number 310-1140-037/M94261			
		Serial Number	Currency USD	Net Amount 4725.00	
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			
		Way of Delivery Truck		Onsite Date 01/19/2001	
Marks and Tagging PUMP, QUINTERARY CLEANERS FEED 310-1140-037 / M94261 445014 4121001112 CAE2000 075 26		Order Contact TONY LIANE			
		Sales Contact TONY GEDEON			
		Document Requirements 4 Copies in English			
Pump Size APT32-2B	N.Am. Pump Size 4X2.5-13	Casing Material A890 3A	Consistency 0.43 % BD	Pumped liquid DEINKED STOCK	
Capacity Q 330 USGPM	Head H 105 ft	NPSH av 26 ft	NPSH req 4.6 ft	pH 7-9	
Capacity in alternative unit 55 %	Efficiency 55 %	Temperature 125 F	Dimensional drawing P20028	Characteristic curve K00787	
Impeller Type Open	Impeller No. 283878	Impeller diameter 300 mm	Pump power P 16 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 256T 284T	Power 20 HP 25 HP	Rotational Speed 1800 RPM	Manufacturer TOSHIBA	Future motor IEC/NEMA code 284T 286T	
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:

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	APT32-2B
Customer		Serial Number	
ALLIANCE FOREST PRODUCTS U.S. CORP.		Time of delivery/EXW	01/12/2001
17589 PLANT ROAD		Date printed	10/16/2000
COOSA PINES, AL 35044-0555			Page 1
UNITED STATES			
Cust. order #	445014		
Cust. PO Line #	ZCR		
Country code	US	Equipment No	310-1140-037/M94261

PROCESS DATA

Mill 13
 Process 270
 Application *QUART. CLEANERS FEED*
 Pumped liquid DEINKED STOCK
 Temperature 125 F
 pH 7-9
 Consistency 0.43 % BD
 Gas content 0-1 %
 Min head on suction side 1 ft
 Max head on suction side 13 (STATIC) ft

NPSH av 26 ft
 Capacity Q 330 USGPM
 Head H 105 ft
 Characteristic curve K00787
 Pump power P 16 HP
 Motor power 20 HP
 Efficiency 55 %
 Pump rotational speed 1740 RPM
 Variable speed No
 NPSH req 4.6 ft

PUMP

Supplier Easley
 Dimensional drawing P20028
 Conformity 89/392/EEC machinery /US
 Version 09
 Pump Size APT32-2B
 Impeller Type Open
 Impeller No. 283878
 Impeller diameter 300 mm
 Impeller turning angle 0 °
 Impeller max.diameter 330 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
 Motor IEC/NEMA code 2567 *2547*
 Manufacturer TOSHIBA

Rotational Speed 1800 RPM
 Power 20-HP *25HP*
 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 026
 Telephone 514 - 333-7760

Telefax 514 - 333-6324 (bomcust1)

PRODUCT SPECIFICATION	Description APT32-28	
	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	
Gust. order # 445014		
Cust. PO Line # ZOR		
Country code US	Equipment No	310-1140-037/M94261

COUPLING

Coupling Type Rex-Omega ES

COUPLING GUARD

Coupling Guard material S-2 EN10025

BASE PLATE

Base plate type Pump Motor/Steel/Zinc Foundation screw type Grouted
 Future motor IEC/NEMA code ~~284T~~ 286T

MOTOR ALIGNMENT BLOCK

ORDER REMARKS

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

Contact Person	TONY GEDEON
LBU Order #	CAE2000075
LBU Position	026
Telephone	514 - 333-7760
Telefax	514 - 333-6324 (bomcust1)

PRODUCT SPECIFICATION	Description		APT32-2B
	Serial Number		
	Time of delivery/EXW		01/12/2001
	Date printed		10/16/2000
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	
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Country code		US	
		Equipment No	310-1140-037/M94261

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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 TONY GEDEON
LBU Order # CAE2000075
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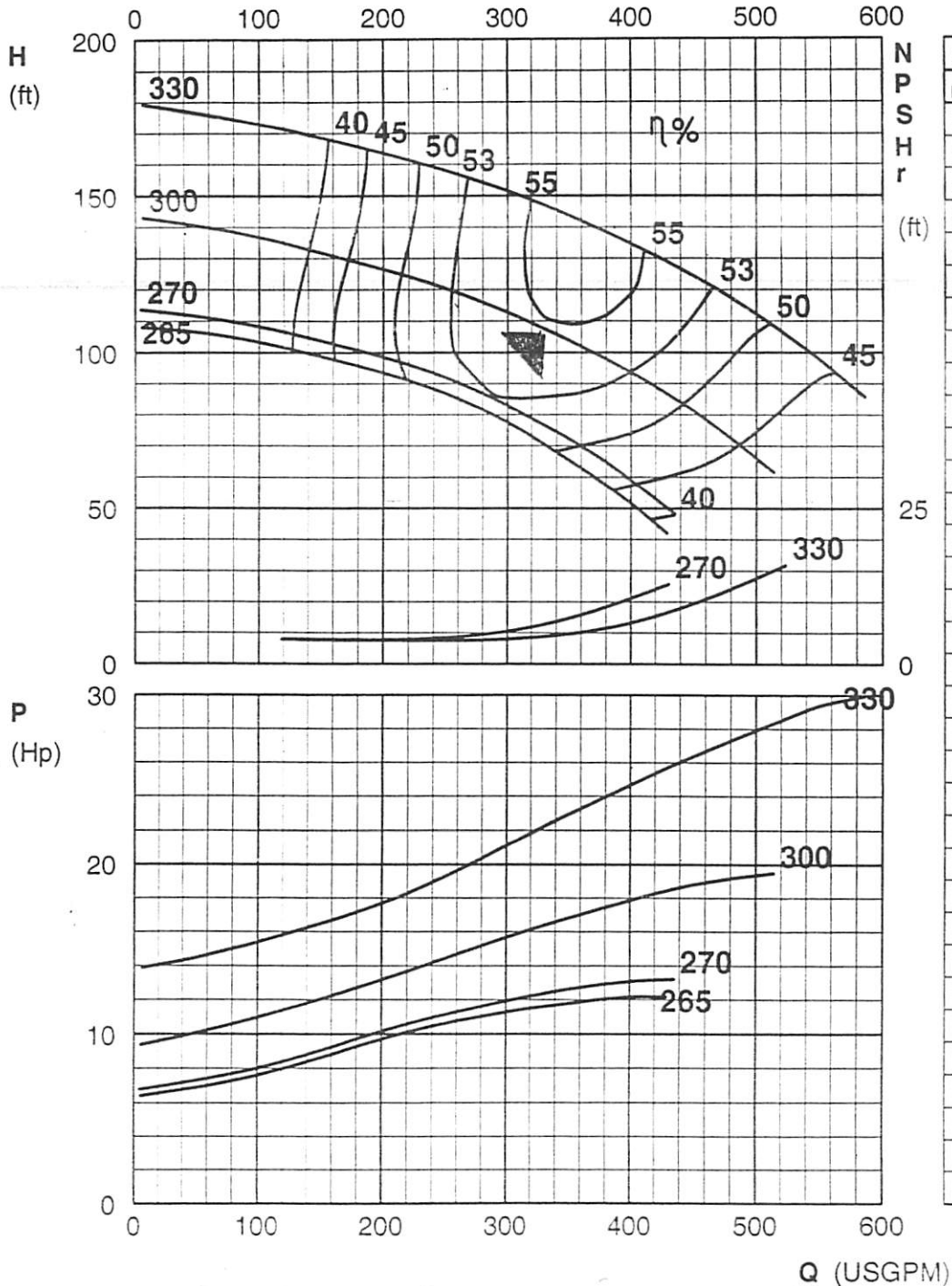
APT Process pumps Characteristic curve K00787



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Version 01> / en / 920629 / Replaces 870301 / K00787

APT32-2B (4x2.5-13)
Impeller 283878 OPEN B0.63 Z3
1740 rpm



IMPELLER DIA		
mm	in	deg
330	12.99	0
325	12.80	0
320	12.60	0
315	12.40	0
310	12.20	0
305	12.01	0
300	11.81	0
295	11.61	0
290	11.42	0
285	11.22	0
280	11.02	0
275	10.83	0
270	10.63	0
265	10.43	0

SERVICE:	Quint. Cleaners Feed P;	FLOW (USGPM)	TDH (ft)
EQUIP. No.:	310-1140-037 / M94261	330.00	105.00
CUST. P.O. No.:	445014	EFF. (%)	Power (HP)
API-C JOB No.:	CAE2000 075 26	55	20.0
DATE / REV.:	OCT-16-2000 / R. 0	NEMA PR.	NEMA FUT.
		256T	286T

25HP

APT Process Pumps

Dimensional drawing P20028

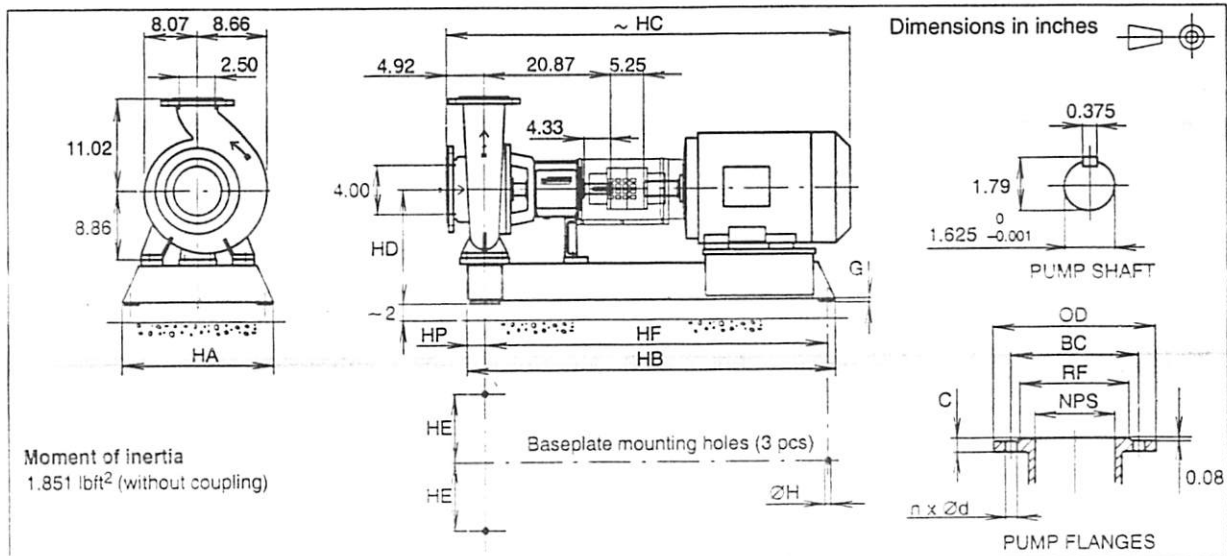


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Version 04 > / 940221 / en / P20028

APT32-2B (4x2.5-13)

Steel baseplate for 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)
213T	254T	215T	3	14.40	49.50	52.50	2.00	49.25	24.75	11.00	0.75	0.44	505
215T	254T	-	3	14.40	51.00	52.50	2.00	49.25	24.75	11.00	0.75	0.44	505
254T	284T	256T	3	14.40	54.00	52.50	2.00	49.25	24.75	11.00	0.75	0.44	525
256T	284T	-	3	14.40	55.50	52.50	2.00	49.25	24.75	11.00	0.75	0.44	525
284T	324T	286T	4	16.40	57.00	60.25	3.00	56.00	24.75	11.00	1.00	0.44	575
286T	324T	-	4	16.40	58.50	60.25	3.00	56.00	24.75	11.00	1.00	0.44	575
324T	364T	326T	4	16.40	60.00	60.25	3.00	56.00	24.75	11.00	1.00	0.44	590
326T	364T	-	4	16.40	61.50	60.25	3.00	56.00	24.75	11.00	1.00	0.44	590
365TS	405TS	-	4	17.25	63.50	60.25	3.00	56.00	24.75	11.00	1.00	0.44	625
404TS	444TS	405TS	5	19.15	65.50	68.25	3.00	63.75	28.38	12.75	1.00	0.44	690
405TS	444TS	-	5	19.15	67.00	68.25	3.00	63.75	28.38	12.75	1.00	0.44	690
444TS	509LS	449TS	7	20.95	70.00	85.00	3.50	80.00	32.63	15.00	1.25	0.56	950
445TS	509LS	449TS	7	20.95	72.50	85.00	3.50	80.00	32.63	15.00	1.25	0.56	950
447TS	509LS	449TS	7	20.95	77.50	85.00	3.50	80.00	32.63	15.00	1.25	0.56	950
449TS	509LS	-	7	20.95	82.50	85.00	3.50	80.00	32.63	15.00	1.25	0.56	950

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⁾
2.50	7.28	4.69	0.88	5.50	0.75	4		5.50	0.75	4
4.00	9.02	6.10	0.94	7.50	0.75	8		7.50	0.75	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.

SERVICE:	Quint. Cleaners Feed P...
EQUIP. No.:	310-1140-037 / M94261
CUST. P.O. No.:	445014
API-C JOB No.:	CAE2000 075 26
HP / RPM / FRAME:	16.0 / 1740 / 250T

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

1284T

APT Process Pumps

Design data



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Version 09 > / 960801 / en / N12851 / Page 3 (7)

Table 3 Bearing unit size 3

Pump type	31-4	31-4C	31-6	32-2B	32-3	32-4	32-4C	33-4	33-4C
Shaft diameters									
At impeller					1.575				
Under sleeve					1.969				
Between bearings					2.76				
At coupling					1.625				
Bearings									
Radial bearing type					NUP 311				
Thrust bearing type					2x7312 BECB				
Radial brg. life (HRS. x 10 ³) ⁽¹⁾	34	56	100	1000 +	1000 +	370	75	1000 +	170
Thrust brg. life (HRS. x 10 ³) ⁽¹⁾	32	48	130	1000 +	1000 +	350	120	850	320
Bearing span					5.98				
Shaft overhang					8.50				
Stuffing box									
Bore					3.375				
Depth					3.071				
Shaft sleeve dia.									
Packing					2.375				
Mechanical seal, general					2.250				
Mech. seal, ready-fitted ⁽²⁾					1.969				
Packing size					0.500				
No. of packing rings					4				
Lantern ring width					0.67				
Neck bush clearance					0.02				
Distance to nearest obstruction					2.60				
Wear ring clearance	0.023	0.024	0.025	0.021	0.022	0.023	0.024	0.023	0.024
Impeller									
Front clearance (open impeller)					0.020				
Back clearance					0.040				
Eye area (in ²)									
Closed	23.9	33.6	48.8	12.2	18.1	23.9	33.6	23.9	34.8
Open	23.9	33.6	48.8	12.2	18.1	23.9	33.6	23.9	34.8
Special open	-	-	-	-	25.0	26.7	37.8	32.8	41.3
Max. diameter solids (in)									
Closed	0.98	1.26	1.57	0.35	0.51	0.71	1.02	0.51	0.87
Open	1.26	1.42	1.61	0.63	0.87	0.94	1.26	0.71	1.14
Special open	-	-	-	-	1.30	0.94	1.26	1.14	1.14
Max. shaft deflection at st. box					0.002				
Casing									
Type (single or dual)	SV	SV	SV	SV	SV	SV	SV	SV	SV
Casing thickness (iron)	0.43	0.47	0.55	0.40	0.43	0.51	0.51	0.59	0.59
Casing thickness (steel)	0.36	0.40	0.47	0.32	0.36	0.36	0.40	0.40	0.43
Bearing unit weight (LBS)					112				
HP/100 rpm (shaft SS2324)					16				

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

SERVICE:	Quint. Cleaners Feed P. -
EQUIP. No.:	310-1140-037 / M94261
CUST. P.O. No.:	445014
MODEL / SIZE:	APT32-2B / 4x2.5-13
API-C JOB No.:	CAE2000 075 26

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.

Rep. Counterpart - Service Feed

SERVICE:	Quint. Cleaners Feed P.
EQUIP. No.:	310-1140-037 / M94261
CUST. P.O. No.:	445014
MODEL / SPEED:	APT32-2B / 1740
API-C JOB No.:	CAE2000 075 26