

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 # 036	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 310-1140-064/M94124			
		Serial Number	Currency USD	Net Amount 7314.00	
		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 02/16/2001	
Marks and Tagging PUMP, COARSE SCREENS OVERFLOW 310-1140-064 / M94124 445014 4121001112 CAE2000 075 36		Order Contact TONY LIANE Sales Contact TONY GEDEON Document Requirements 4 Copies in English			
Pump Size NPT42-6	N.Am. Pump Size 30x30	Casing Material A890 3A	Consistency 3.5 % BD	Pumped liquid ONP/OMG REP. STOCK	
Capacity Q 1500 USGPM	Head H 70 ft	NPSH av 26 ft	NPSH req 28.5 ft	pH 7-9	
Temperature 125 F	Efficiency 43 %	Density	Dimensional drawing P20122	Characteristic curve K01780	
Impeller Type Vortex	Impeller No. 286246	Impeller diameter 275 mm	Pump power P 64.5 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 100 HP	Rotational Speed 1800 RPM	Manufacturer TOSHIBA	Motor Supplied by Customer	
Frequency 60 Hz	Voltage 460V	Enclosure TEFC	FUTURE MOTOR 444T	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

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 # 036	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 310-1140-064/M94124		
	Serial Number	Currency USD	Net Amount 7314.00
	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 02/16/2001
	Order Contact TONY LIANE		
Marks and Tagging PUMP, COARSE SCREENS OVERFLOW 310-1140-064 / M94124 445014 4121001112 CAE2000 075 36	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 <i>NPT42-6</i> Serial Number Time of delivery/EXW 02/02/2001 Date printed 10/13/2000 Page 1
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 310-1140-064/M94124

PROCESS DATA

Mill	13	Capacity Q	1500 USGPM
Process	270	Head H	70 ft
Application	COARSE SCREENS <i>Feeds</i>	Characteristic curve	K01780
Pumped liquid	CNP/CMG REP. STOCK	Pump power P	64.5 HP
Temperature	125 F	Motor power	100 HP
pH	7-9	Efficiency	43 %
Consistency	3.5 % BD	Pump rotational speed	1780 RPM
Min head on suction side	1 ft	Variable speed	No
Max head on suction side	9 (STATIC) ft	NPSH req	28.5 ft
NPSH av	26 ft		

PUMP

Supplier	Easley
Dimensional drawing	P20122
Conformity	89/392/EEC machinery /US
Version	09
Pump Size	NPT42-6
Impeller Type	Vortex
Impeller No.	286246
Impeller diameter	275 mm
Impeller max.diameter	340 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
Manufacturer	TOSHIBA
Rotational Speed	1800 RPM

Power	100 HP
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	036
Telephone	514 - 333-7760
Telefax	514 - 333-6324 (bomcust1)

PRODUCT SPECIFICATION		Description	NPT42-6
		Serial Number	
		Time of delivery/EXW	02/02/2001
		Date printed	10/13/2000
			Page 2
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	310-1140-064/M94124

COUPLING

Motor IEC/NEMA code 405T

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

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

Contact Person
LBU Order #
LBU Position
Telephone
Telefax

TONY GEDEON
CAE2000075
036
514 - 333-7760
514 - 333-6324

(bomcust1)

PRODUCT SPECIFICATION	Description	NPT42-6
	Serial Number	
	Time of delivery/EXW	02/02/2001
	Date printed	10/13/2000
Page 3		
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 310-1140-064/M94124	

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
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

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
LBU Position 036
Telephone 514 - 333-7760
Telefax 514 - 333-6324 (bomcust1)

AHLSTROM

Version 01> / en / 920910 / Replaces 890401 / K01780

The figure consists of two vertically aligned graphs sharing a common x-axis representing Flow Rate (Q) in USGPM, ranging from 0 to 6000.

Top Graph: Head (H) vs. Flow Rate (Q)
 The y-axis represents Head (H) in feet, ranging from 0 to 200. The graph displays several performance curves:
 - **Efficiency Curves ($\eta\%$):** A series of curves labeled 30, 40, 45, 50, 54, and 55, representing different efficiency levels.
 - **Power Curves:** A series of curves labeled 260, 300, and 340, representing different power levels.
 - **Operating Point:** A specific point is marked on the 30 efficiency curve at approximately 1000 USGPM and 180 feet head.

Bottom Graph: Power (P) vs. Flow Rate (Q)
 The y-axis represents Power (P) in Horsepower (Hp), ranging from 0 to 250. The graph displays three power curves labeled 260, 300, and 340, which correspond to the power levels indicated in the top graph.

[illegible]

SERVICE:	Coarse Screens Overflow P.	FLOW (USGPM)	TDH (R)
EQUIP. No.:	310-1140-064 / M94124	1500.00	70.00
CUST. P.O. No.:	445014	EFF. (%)	Power (HP)
API-C JOB No.:	CAE2000 075 36	43	100.0
DATE / REV.:	OCT-16-2000 / R. 0	NEMA PR.	NEMA FUT.
		405T	444T

NPT Non-clogging Pumps

Dimensional drawing P20122

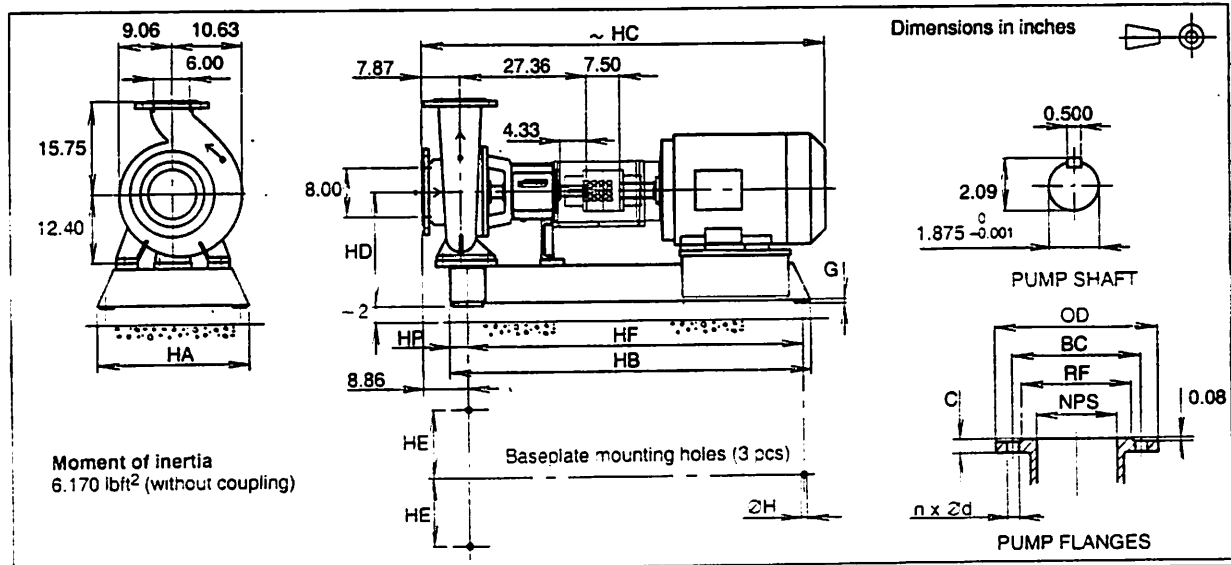


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Version 04 > / 940412 / en / P20122

NPT42-6 (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	68.55	68.25	3.00	63.75	28.38	12.75	1.00	0.44	815
286T	324T	-	5	20.15	70.05	68.25	3.00	63.75	28.38	12.75	1.00	0.44	815
324T	364T	326T	5	20.15	71.55	68.25	3.00	63.75	28.38	12.75	1.00	0.44	830
326T	364T	-	5	20.15	73.05	68.25	3.00	63.75	28.38	12.75	1.00	0.44	830
364T	405T	365T	6	21.25	76.05	77.00	3.50	72.00	28.75	13.00	1.25	0.56	940
365T	405T	-	6	21.25	77.05	77.00	3.50	72.00	28.75	13.00	1.25	0.56	940
365TS	405TS	-	5	20.15	75.05	68.25	3.00	63.75	28.38	12.75	1.00	0.44	850
404T	444T	405T	6	21.25	80.05	77.00	3.50	72.00	28.75	13.00	1.25	0.56	1005
404TS	444TS	405TS	5	20.15	77.05	68.25	3.00	63.75	28.38	12.75	1.00	0.44	910
405T	444T	-	6	21.25	81.55	77.00	3.50	72.00	28.75	13.00	1.25	0.56	1005
405TS	444TS	-	5	20.15	78.55	68.25	3.00	63.75	28.38	12.75	1.00	0.44	910
444T	509LL	449T	8	24.25	85.55	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1340
444TS	509LS	449TS	8	24.25	81.55	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1340
445T	509LL	449T	8	24.25	87.55	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1340
445TS	509LS	449TS	8	24.25	84.05	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1340
447T	5011LL	449T	9	24.25	91.05	101.75	5.00	94.50	45.63	20.50	1.50	0.69	1450
447TS	509LS	449TS	8	24.25	89.05	97.00	5.00	89.75	34.63	15.00	1.50	0.69	1340
449T	5011LL	-	9	24.25	97.05	101.75	5.00	94.50	45.63	20.50	1.50	0.69	1450
449TS	509LS	-	8	24.25	94.05	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

- 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:	Coarse Screens Overflow P.
EQUIP. No.:	310-1140-064 / M94124
CUST. P.O. No.:	445014
API-C JOB No.:	CAE2000 075 36
HP / RPM / FRAME:	65.0 / 1780 / 405T

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

NPT Non-clogging Pumps

Design data



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Version 09 > / 960801 / en / N12855 / Page 3 (3)

Table 3 *Bearing unit sizes 4 and 5*

Pump type	42-6	42-8	44-6	44-8	53-10
Shaft diameters					
At impeller		1.772			2.559
Under sleeve		2.362			3.150
Between bearings		3.15			4.09
At coupling		1.875			3.000
Bearings					
Radial bearing type	NUP 313				NUP 317
Thrust bearing type	2 x 7314 BECB				2 x 7318 BECB
Radial brg. life (HRS. x 10 ³) ⁽¹⁾	437	206	101	26	91
Thrust brg. life (HRS. x 10 ³) ⁽¹⁾	744	385	164	63	167
Bearing span		8.74			11.10
Shaft overhang		10.83			11.75
Stuffing box					
Bore		3.750			4.750
Depth		3.071			3.937
Shaft sleeve dia.					
Packing		2.750			3.500
Mechanical seal, general		2.625			3.375
Mech. seal, ready-fitted ⁽²⁾		2.362			3.150
Packing size		0.500			0.625
No. of packing rings		4			4
Lantern ring width		0.67			0.79
Neck bush clearance		0.023			0.042
Distance to nearest obstruction		4.21			3.94
Impeller					
Front clearance (closed impeller)		0.02			0.02
Back clearance		0.04 ± 0.02			0.04 ± 0.02
Eye area (in ²)					
Closed	39.4	39.4	39.4	39.4	70.1
Vortex	-	-	-	-	-
Max. diameter solids (in)					
Closed	2.95	3.35	2.95	3.35	4.33
Vortex	3.15	3.35	2.95	3.13	4.33
Max. shaft deflection at st. box		0.002			0.002
Casing					
Type (single or dual)	SV	SV	SV	SV	SV
Casing thickness (iron)	0.59	0.63	0.63	0.63	0.94
Casing thickness (steel)	0.47	0.47	0.47	0.47	0.63
Bearing unit weight (LBS)		180			333
HP/100 rpm (shaft SS2324)		28			74

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

Pump, Coarse Screens Overflow

SERVICE:	Coarse Screens Overflow P.
EQUIP. No.:	310-1140-064 / M94124
CUST. P.O. No.:	445014
MODEL / SIZE:	NPT42-6 / 8X6-14
API-C JOB No.:	CAE2000 075 36

NPT Non-clogging Pumps

Shaft sealing



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Version 09 > / 960601 / en / N12623

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, slurries
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			
2	3	4	5
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

Pressure behind the impeller can approximately be calculated from the formula

$$p_T = p_0 + 0.7 \times 10^{-6} \rho g H - 1.1103 \times 10^{-6} \rho n^2 \left[(d_2/2)^2 - (d_b/2)^2 \right] - 4.4413 \times 10^{-6} \rho n^2 \left[(d_b/2)^2 - (d_5/2)^2 \right] \text{ MPa}$$

Where

- p_T = pressure behind the impeller (MPa)
- p_0 = inlet pressure (MPa)
- ρ = density of the liquid being pumped (kg/m³)
- H = pump head at the operating point in question (m)
- n = rotating speed of the pump (r/min)
- d_2 = impeller back plate diameter (m)
- d_b = impeller back vane diameter (m)
- d_5 = impeller hub diameter is in bearing unit no. 2 0.05 m, in bearing unit no. 3 0.06 m, and in bearing unit no. 4 0.07 m.

Atmospheric pressure used as reference pressure = 0 MPa.

PUMP COARSE SCREENS OVERFLOW

SERVICE:	Coarse Screens Overflow P.
EQUIP. No.:	310-1140-064 / M94124
CUST. P.O. No.:	445014
MODEL / SPEED:	NPT42-6 / 1780
API-C JOB No.:	CAE2000 075 38