

DOCUMENT NUMBER:

CLIENT DOCUMENT NUMBER:

ROTARY PUMP (API 676-3RD) DATA SHEET U.S. CUSTOMARY		REVISION	0	1	2	3	4
		DATE					
		BY					
		REVIAPPR					
		JOB NO.		ITEM NO.			
		PAGE 1		OF 3		REC'D NO.	
1 APPLICABLE TO: <input checked="" type="checkbox"/> PROPOSAL <input checked="" type="checkbox"/> PURCHASE <input type="checkbox"/> AS BUILT		PO NO.					
2 FOR CEYLON PETROLEUM CORPORATION		UNIT BITUMEN FILLING					
3 SITE REFINERY		NO. OF PUMPS REQUIRED ONE					
4 SERVICE BITUMEN TRANSFERING		SIZE AND TYPE DOUBLE HEATING JACKETED ROTARY TWIN SCREW					
5 MANUFACTURER		SERIAL NO.					
7 NOTE: <input type="checkbox"/> INDICATES INFORMATION TO BE COMPLETED BY PURCHASER <input type="checkbox"/> BY MANUFACTURER <input checked="" type="checkbox"/> BY MANUFACTURER OR PURCHASER							
GENERAL							
9 NO. MOTORS DRIVEN ONE		OTHER DRIVER TYPE					
10 PUMP ITEM NO'S 10P1D		PUMP ITEM NO'S					
11 MOTOR ITEM NO'S		DRIVER ITEM NO'S				GEAR ITEM NO'S	
12 MOTOR PROVIDED BY PUMP MANUFACTURER		DRIVER PROVIDED BY				GEAR PROVIDED BY	
13 MOTOR MOUNTED BY PUMP MANUFACTURER		DRIVER MOUNTED BY				GEAR MOUNTED BY	
14 MOTOR DATA SHEET NO.		DRIVER DATA SHEET NO.				GEAR DATA SHEET NO.	
16 <input type="checkbox"/> OPERATING CONDITIONS							
18 CAPACITY: (gpm)		MIN	NORMAL	RATED	MAX (†)		
19 OTHER OPER. CONDITIONS: (gpm)			258				
20 DISCHARGE PRESSURE: (psia)			66.2				
21 SUCTION PRESSURE: (psia)			11.2		34.7		
22 DIFFERENTIAL PRESSURE: (psi)			55				
23 NPSH AVAILABLE (Oil) 12 (ft)							
24 NPSH AVAILABLE (psia)							
25 NPSH _{aa} / NPSH _{DATUM} :		<input type="checkbox"/> C.L. SUCTION NOZZLE <input checked="" type="checkbox"/> TOP OF FOUNDATION					
27 DUTY CYCLE:		<input checked="" type="checkbox"/> CONTINUOUS <input type="checkbox"/> INTERMITTENT					
28 (†) Maximum - mechanical design							
16 <input type="checkbox"/> PUMPED FLUID							
17 TYPE OR NAME OF PUMPED FLUID		BITUMEN					
18 TEMPERATURE: (°F)		MIN	NORMAL	RATED			
19 VAPOR PRESS.: (psia)			210	300	355		
20 RELATIVE DENSITY (SG):		NEGLIGIBLE					
21 VISCOSITY: (cst)		0.935					
22 SPECIFIC HEAT:		500					
23 CORROSIVE/EROSIVE AGENTS DESCRIPTION:		Cp (BTU/lb °F)					
24 EROSION:		<input type="checkbox"/> EROSION <input checked="" type="checkbox"/> CORROSIVE SULPHUR					
25 CHLORIDE CONCENTRATION (ppm)							
26 H ₂ S CONCENTRATION (ppm)							
27 FLUID:		<input type="checkbox"/> HAZARDOUS <input checked="" type="checkbox"/> FLAMMABLE <input type="checkbox"/> OTHER					
28 GAS:		<input type="checkbox"/> ENTRAINED <input type="checkbox"/> SLUG FLOW % BY VOLUME or GVF					
29 SOLIDS:		PARTICLE SIZE DISTRIBUTION & MIN/MAX (µ)					
30 SHAPE:		<input type="checkbox"/> CONCENTRATION <input type="checkbox"/> HARDNESS					
31 <input type="checkbox"/> SITE AND UTILITY DATA							
32 LOCATION:		<input type="checkbox"/> INDOOR <input checked="" type="checkbox"/> OUTDOOR					
33 HEATED:		<input type="checkbox"/> UNHEATED <input type="checkbox"/> UNDER ROOF					
34 ELECTRICAL AREA:		CLASS		GROUP		DIV	
35 ZONE 2		GROUP IIB		TEMP CLASS T3			
36 WINTERIZATION RECD:		<input checked="" type="checkbox"/> TROPICALIZATION RECD					
37 SITE DATA:		ELEVATION (°F)		BAROMETER		1.013 (bar)	
38 RANGE OF AMBIENT TEMPS:		MIN/MAX		15.5 / 40 (°C)			
39 UNUSUAL CONDITIONS							
40 DUST:		<input type="checkbox"/> DUST <input type="checkbox"/> FUMES <input type="checkbox"/> SALT ATMOSPHERE					
41 OTHER:		<input type="checkbox"/> OTHER					
42 UTILITY CONDITIONS							
43 ELECTRICITY:		DRIVERS		HEATING		CONTROL SHUTDOWN	
44 VOLTAGE:		400 V					
45 HERTZ:		50 Hz					
46 PHASE:		3 Phase					
47 COOLING WATER:		INLET		RETURN		DESIGN MAX	
48 TEMP (°C):		32		MAX			
49 PRESS. (psig):		38		MIN			
50 SOURCE:							
51 INSTRUMENT AIR:		MAX		MIN			
52 PRESSURE (barg):		5		4			
APPLICABLE SPECIFICATIONS:							
53 API-676 POSITIVE DISPLACEMENT PUMPS - ROTARY							
<input type="checkbox"/> GOVERNING SPECIFICATION (IF DIFFERENT):							
<input type="checkbox"/> NACE MR0103 (S.13.2.13) <input type="checkbox"/> NACE MR0175							
<input type="checkbox"/> OTHER							
58 REMARKS:							
59							
60							
61							

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CONSTRUCTION		MATERIALS																																																																																																																	
2 CASING <input type="checkbox"/> MAX. ALLOWABLE CASING PRESS. (6.3.1): _____ (psig) @ _____ (°F) <input type="checkbox"/> MAXIMUM ALLOWABLE SUCTION PRESSURE: _____ (psig) @ _____ (°F) <input type="checkbox"/> HYDROSTATIC TEST PRESSURE - Suct / Disch: _____ / _____ (psig)		<input type="checkbox"/> MIN DESIGN METAL TEMP (6.13.6.1) _____ (°F) <input type="checkbox"/> CASING CARBON STEEL <input type="checkbox"/> STATOR / LINER _____ <input type="checkbox"/> END PLATES CARBON STEEL <input type="checkbox"/> ROTOR (S) STAINLESS STEEL <input type="checkbox"/> VANES _____ <input type="checkbox"/> SHAFT STAINLESS STEEL <input type="checkbox"/> SLEEVE (S) _____ <input type="checkbox"/> GLAND (S) MECHANICAL SEAL <input type="checkbox"/> BEARING HOUSING _____ <input type="checkbox"/> TIMING GEARS _____ <input type="checkbox"/> ELASTOMERS / GASKETS _____																																																																																																																	
6 ROTATING ELEMENTS ROTOR MOUNT <input checked="" type="checkbox"/> BTWN BEARINGS <input type="checkbox"/> OVERHUNG TIMING GEARS <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> TYPE BEARING TYPE: <input type="checkbox"/> RADIAL <input type="checkbox"/> THRUST BEARING NUMBER: <input type="checkbox"/> RADIAL <input type="checkbox"/> THRUST LUBRICATION TYPE: <input checked="" type="radio"/> CONSTANT LEVEL OILERS <input type="radio"/> PUMPED FLUID <input checked="" type="radio"/> RING OIL <input checked="" type="radio"/> OIL MIST <input type="radio"/> EXTERNAL <input type="radio"/> OIL FLOOD <input type="radio"/> GREASE <input type="checkbox"/> LUBRICANT Info (Visc. etc) _____		QA INSPECTION AND TEST <input type="checkbox"/> SPECIAL MATERIAL TESTS (See design codes + work + inspection sheet) <input type="checkbox"/> LOW AMBIENT TEMP. MATERIALS TESTS (6.13.6.5) <input checked="" type="checkbox"/> COMPLIANCE WITH INSPECTORS CHECK LIST <input checked="" type="checkbox"/> CERTIFICATION OF MATERIALS (user to define affected components in remarks) <input checked="" type="checkbox"/> SURFACE / SUBSURFACE EXAMS (user to define affected components in remarks) <input type="checkbox"/> RADIOGRAPHY _____ <input type="checkbox"/> ULTRASONIC _____ <input type="checkbox"/> MAGNETIC PARTICLE _____ <input type="checkbox"/> LIQUID PENETRANT _____ <input type="checkbox"/> COMPONENT PMI _____ <input checked="" type="checkbox"/> HARDNESS OF PARTS, WELDS & HEAT AFFECTED ZONES <input checked="" type="checkbox"/> VENDOR SUBMIT TEST PROCEDURES (8.3.1.2) <input type="checkbox"/> SUPPLIER TO KEEP REPAIR AND HT RECORDS (8.2.1.1)																																																																																																																	
15 MECHANICAL SEALS <input type="checkbox"/> MANUFACTURER AND MODEL _____ <input type="checkbox"/> MANUFACTURER CODE _____ <input checked="" type="checkbox"/> API 682 AND DATA SHEETS BY PUMP MANUFACTURER <input checked="" type="checkbox"/> API 682 SEAL FLUSH PLAN BY PUMP MANUFACTURER <input type="checkbox"/> API 682 SEAL CODE _____		<input type="checkbox"/> SHOP INSPECTION (8.1) <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">NON-WIT</td><td style="text-align: center;">WIT</td><td style="text-align: center;">OBSERV</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input type="checkbox"/> HYDROSTATIC (8.3.2) <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input type="checkbox"/> PERFORMANCE (8.3.4) <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input type="checkbox"/> RETEST ON SEAL LEAKAGE <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input type="checkbox"/> NPSH / NPIP (8.3.7.1) <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input type="checkbox"/> TRUE PEAK VELOCITY DATA <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input type="checkbox"/> COMPLETE UNIT TEST (8.3.7.2) <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input type="checkbox"/> SOUND LEVEL TEST (8.3.7.3) <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input type="checkbox"/> CLEANLINESS PRIOR TO FINAL ASSEMBLY (8.2.3.3) <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input type="checkbox"/> HIGH DISCHARGE PRESSURE @ PLY <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input type="checkbox"/> CHECK FOR CO-PLANAR AT MOUNTING PAD SURFACES (7.4.7) <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input type="checkbox"/> 1 HR MECHANICAL RUN TEST AFTER OIL TEMP STABLE (8.3.5.1) <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input type="checkbox"/> 4 HR. MECH RUN AFTER OIL TEMP STABLE (8.3.5.2) <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input type="checkbox"/> AUXILIARY EQUIPMENT TEST (8.3.4.3) <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input type="checkbox"/> OTHER <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input type="checkbox"/> TEST WITH SUBSTITUTE SEAL (8.3.5.3) <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input type="checkbox"/> SUPPLIER SUBMIT TEST DATA WITHIN 24 HOURS <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input type="checkbox"/> INCLUDE PLOTTED VIBRATION SPECTRA <table style="display: inline-table; border: none;"><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr><tr><td style="text-align: center;">○</td><td style="text-align: center;">○</td><td style="text-align: center;">○</td></tr></table> <input checked="" type="checkbox"/> RECORD FINAL ASSEMBLY RUNNING CLEARANCES (8.2.1.1f) <input checked="" type="checkbox"/> PERFORMANCE CURVE & DATA APPROVAL PRIOR TO SHIPMENT (8.3.9)						NON-WIT	WIT	OBSERV	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
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22 DRIVER TYPE <input checked="" type="radio"/> INDUCTION MOTOR <input type="radio"/> STEAM TURBINE <input type="radio"/> GEAR <input type="radio"/> OTHER																																																																																																																			
24 DRIVE MECHANISM <input checked="" type="radio"/> DIRECT-COUPLED <input type="radio"/> ASD <input type="radio"/> OTHER <input checked="" type="checkbox"/> COUPLING MANUFACTURER _____ <input checked="" type="checkbox"/> COUPLING TYPE FLEXIBLE LAMINATED COUPLING <input type="checkbox"/> RATING (MAX TORQUE) _____ <input type="checkbox"/> MODEL _____ <input checked="" type="checkbox"/> SPACER LENGTH _____ (IN) <input type="checkbox"/> S.F. _____ <input type="checkbox"/> COUPLING BALANCED <input type="radio"/> MANF STD <input type="radio"/> AGMA 9000 CLASS 10 (7.2.3) <input checked="" type="radio"/> COUPLING PER API 671 (7.2.4) <input type="checkbox"/> COUPLING HUB ATTACHMENT <input type="radio"/> STRAIGHT <input type="radio"/> KEYED <input type="radio"/> TAPERED																																																																																																																			
34 COUPLING GUARD TYPE <input type="radio"/> STEEL <input type="radio"/> BRASS <input type="radio"/> NON-METALLIC <input type="radio"/> OTHER <input checked="" type="checkbox"/> NON SPARK COUPLING GUARD (7.2.15)																																																																																																																			
<input type="radio"/> MOTOR DRIVER (SEE MOTOR DATA SHEET) <input type="radio"/> IEEE 841 <input type="radio"/> API 541 <input type="radio"/> API 546 <input type="radio"/> OTHER <input type="checkbox"/> ASD SUPPLIED BY <input type="radio"/> PURCHASER <input checked="" type="radio"/> MOTOR SUPPLIER <input type="checkbox"/> MANUFACTURER _____ <input type="checkbox"/> TYPE _____ <input type="checkbox"/> FRAME <input checked="" type="checkbox"/> ENCLOSURE <input checked="" type="checkbox"/> HORIZONTAL <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> (HP) _____ (rpm) <input checked="" type="radio"/> VOLTS 400 PHASE 3 HERTZ 50 SERVICE FACTOR <input type="checkbox"/> VARIABLE SPEED RANGE _____ (rpm) <input type="checkbox"/> MINIMUM STARTING VOLTAGE (7.1.2.2) _____ <input checked="" type="checkbox"/> INSULATION CLASS F <input type="radio"/> TEMP. RISE <input checked="" type="checkbox"/> FULL LOAD AMPS _____ <input checked="" type="checkbox"/> LOCKED ROTOR AMPS _____ <input checked="" type="checkbox"/> STARTING METHOD DOL <input checked="" type="checkbox"/> LUBE _____																																																																																																																			
53 BEARINGS (TYPE/NUMBER): <input type="checkbox"/> RADIAL _____ <input type="checkbox"/> THRUST _____																																																																																																																			

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**ROTARY PUMP (API 676-3RD)
DATA SHEET
U.S. CUSTOMARY**

1 PIPING & APPURTENANCES

2 MANIFOLD PIPING FOR PURCHASER CONNECTION

3 VENT DRAIN STEAM & Hot Gas Oil

4 HEATING JACKET REQ'D. (8.3.6) COOLING REQ'D

5 PIPE TUBING; FITTINGS

6 C.S. GALVANIZED S. STEEL

7 VALVES: CARBON STEEL S. STEEL

8 FLANGES REQUIRED IN PLACE OF SOCKET WELD UNIONS

9 MOUNT SEAL POT OFF BASEPLATE

10 CONNECTION BOLTING CADMIUM PLATED BOLTS PROHIBITED

11 PTFE COATING ASTM A153 GALVANIZED

12 PAINTED SS

13 HEATING AND COOLING

14 HEATING MEDIUM: STEAM OTHER **HOT GAS OIL**

15 STEAM JACKET **HOT GAS OIL** 40 (psig) @ 149 (°C)

16 COOLING WATER REQUIREMENTS: 170 (psig) @ 250 °C

17 BEARING HOUSING (gpm) @ (psig)

18 LUBE OIL COOLER (gpm) @ (psig)

19 SEAL OIL COOLER (gpm) @ (psig)

20 OTHER (gpm) @ (psig)

21 TOTAL COOLING WATER (gpm) @ (psig)

22 INSTRUMENTATION

23 ACCELEROMETER

24 PROVISION FOR MFG ONLY

25 FLAT SURFACE REQUIRED

26 RADIAL BEARING TEMP. THRUST BEARING TEMP.

27 TEMP. GAUGES (WITH THERMOWELLS)

28 PRESSURE GAUGE TYPE OTHER

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30 REMARKS:

31 1. The pump shall be double jacketed for heating by steam (40 psig @ 120 °C) and

32 hot Gas Oil (170 psig @ 250 °C) in one through pass.

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PREPARATION FOR SHIPMENT

DOMESTIC EXPORT EXPORT BOXING REQ'D

OUTDOOR STORAGE MORE THAN 6 MONTHS

SURFACE PREPARATION AND PAINT

MANUFACTURER'S STANDARD OTHER (SEE BELOW)

SPECIFICATION NO.

PUMP: (8.4.3.1)

PRIMER

FINISH COAT

BASEPLATE: (8.4.3.1)

PRIMER

FINISH COAT

WEIGHTS (lb)

PUMP BASE GEAR DRIVER

TOTAL WEIGHT

BASEPLATE

BY PUMP MANUFACTURER SUITABLE FOR EPOXY GROUT

EXTENDED FOR

DRAIN-RIM DRAIN-PAN

NON-GROUT CONSTRUCTION (7.4.2)

OTHER PURCHASER REQUIREMENTS

NAMEPLATE UNITS U.S. CUSTOMARY SI

RELIEF VALVES BY PUMP MFRG INTERNAL EXTRNL.

PIPING FOR SEAL FLUSH FURNISHED BY:

PUMP VENDOR OTHERS

PIPING FOR COOLING/HEATING FURNISHED BY:

PUMP VENDOR OTHERS

PROVIDE TECHNICAL DATA MANUAL

INSTALLATION LIST IN PROPOSAL (5.2.3.1)

REMARKS: