

**Pump Specification**

SUCT.FLANGE SIZE	1.5"	DRILLING	ANSI 150#	FACING	FF	FINISH	SERRATED
DISCH.FLANGE SIZE	1"	DRILLING	ANSI 150#	FACING	FF	FINISH	SERRATED
PUMP ROTATION ( LOOKING AT PUMP FROM MOTOR )				CW			
TYPE OF LUBRICATION	FLOOD OIL			COOLED	NO		
TYPE OF STUFFING BOX	BIG BORE			COOLED	NO		
TYPE OF SEALING	MECHANICAL SEAL						

**Weights and Measurements**

PUMP	38 kg
MOTOR/CPLG	43/1 kg
BASEPLATE	67 kg
TOTAL	149 kg
GR.VOLUME w/BOX	0.513 m <sup>3</sup>
GR.WEIGHT w/BOX	190 kg

**Motor Specification**

MOTOR BY	DISTRIBUTOR	MOUNT BY	DISTRIBUTOR	MFG.	DISTRIBUTOR'S CHOICE
FRAME	184T	POWER	5.0 hp	RPM	3600
PHASE	3	FREQUENCY	60 HZ	VOLTS	460
INSULATION	F	S.F.	1.15		
ENCLOSURE	IEEE841 SEVERE DUTY PREMIUM EFFICIENT				

**Notes and References**

- MTR DIMENSIONS ARE APPROXIMATE
  - INSTALL FOUNDATION BOLTS IN PIPE SLEEVES
  - ALLOW FROM 19 to 38mm FOR GROUTING. SEE INSTRUCTION BOOK FOR DETAILS.
  - \*Tolerance is +0 -13
  - FOUNDATION HOLES (CENTER) THROUGH DRIP PAN HEIGHT APPROX.71mm ABOVE BOTTOM
  - \*\* Foundation bolt grip thickness
- FOR PUMP TAPPED OPENINGS REFER TO DWG.: A783F277T

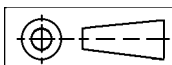
**Auxiliary Specification**

COUPLING BY	PUMP MFG	CPLG TYPE	REXNORD OMEGA REX ELASTOMER- ES-2 (STANDARD ORANGE)
CPL GUARD BY	PUMP MFG	CPLG GUARD MATL.	ALUMINUM (NON SPARKING)
BASEPLATE	FEATURE FABRICATED STEEL TO ANSI B73.1M 1991 D06710A		
MECH.SEAL	JOHN CRANE 5611Q X(1)O(58)IXO(58)I (SILICON CARBIDE VS SILICON CARBIDE WITH VITON)		

DIMENSIONS ARE CERTIFIED FOR CONSTRUCTION BY:  
**Ashraf Salehin** DATE May 9, 2012

Customer: CNRL c/o Equinox Engineering  
Goulds Serial No: A783F277  
Customer P.O. No: 201-01-35-0013  
Item No: P-912 A

**DRAWING NO** A783F277O

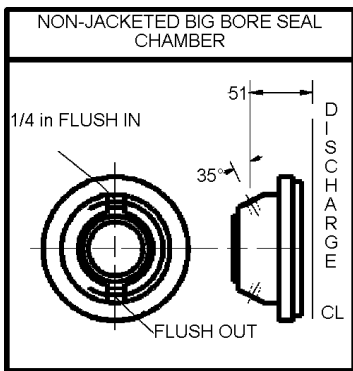
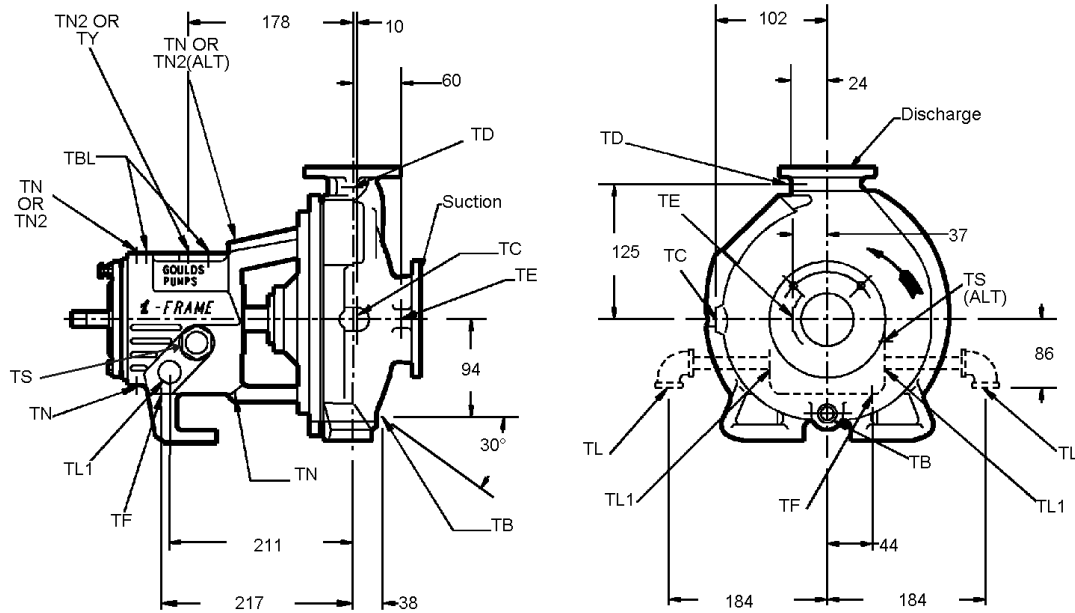


All dimensions are in mm.  
Drawing is not to scale  
Weights (kg) are approximate

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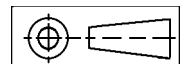
TAPPED OPENINGS MODEL 3196 STi 1x1.5-6 ANSI NO. AA

NO.	SIZE	QTY.	PURPOSE	FURNISHED		NO.	SIZE	QTY.	PURPOSE	FURNISHED	
				YES	NO					YES	NO
TB	1/2	1	CASING DRAIN	YES		TL1	---	2	FRAME COOLER ACCESS	YES	
TC	1/4	1	BY-PASS CONNECTION	NO		TN	1/4	4	GREASE FITTING	NO	
TD	1/4	1	DISCH. GAUGE CONNECTION	NO		TN2	1/4	2	OIL MIST INJECTION PORT	NO	
TE	1/4	1	SUCTION GAUGE CONNECTION	NO		TY	3/4	1	OIL FILL	YES	
TF	3/8	1	BEARING FRAME DRAIN	YES		TS	1	2	SIGHT GLASS/OILER CONN.	YES	
TL	1/2	2	FRAME COOLING CONNECTION	NO		TBL	1/4	2	VIB./TEMP. CONNECTION	YES	



DIMENSIONS ARE CERTIFIED FOR CONSTRUCTION BY:  
**Ashraf Salehin** DATE May 9, 2012

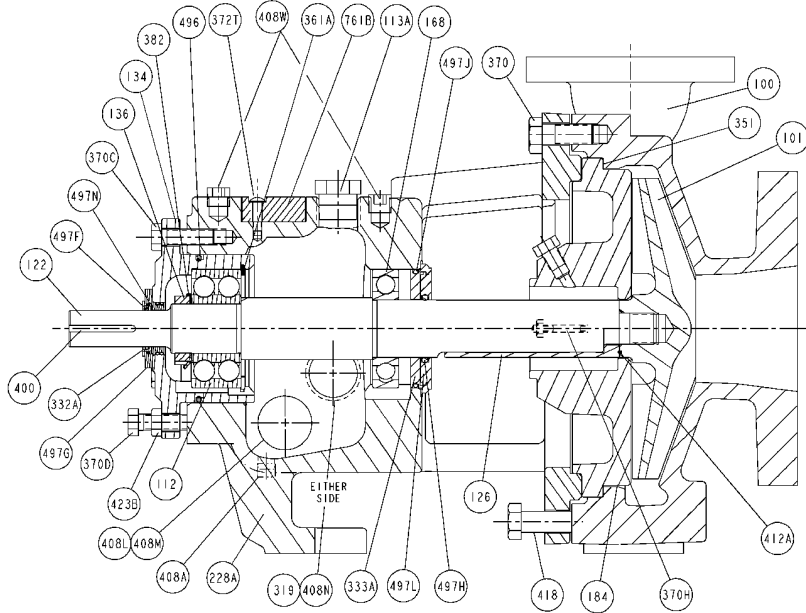
Customer: CNRL c/o Equinox Engineering  
 Goulds Serial No: A783F277  
 Customer P.O. No: 201-01-35-0013  
 Item No: P-912 A



All dimensions are in mm.  
 Drawing is not to scale

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**DRAWING NO** A783F277T



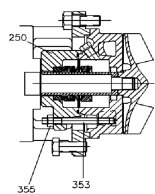
\* Recommended spare parts  
# Items not illustrated

**BILL OF MATERIAL**

ITEM	QTY	PART NAME	MATERIAL	ASTM#
100	1 *	CASING	DUCTILE IRON	DI A395-88
100A	1 *	CASING W/DRN	DUCTILE IRON	DI A395-88
101	1	IMPELLER W/O-RING	316SS	316SS A743, A744
112	1 *	BALL BEARING OUTBOARD		
113A	1 *	PIPE,PLUG OIL FILL		
122	1	SHAFT	ALLOY STL 4140	A434
126	1 *	SHAFT SLEEVE		
134	1 *	BEARING HOUSING	CAST IRON	CI A48
136	1	BEARING LOCK NUT		
168	1 *	BALL BEARING (INBOARD)		
183	1 *	BEDPLATE	CARBON STEEL	
184	1	ST BOX COVER		
228A	1 *	FRAME	DUCTILE IRON	DI A536-84
252	1 *	RESTRICTING DEVICE (ST.BOX)		
319	1 *	SIGHT WINDOW		
332A	1	LAB SEAL OB		
333A	1	LAB SEAL IB		
351	1 *	CASE GASKET	ARAMID FIBER W/EPDM RUBBER	
353	4	GLAND STUD QTY 4		
354	*	GLAND WASHER		
355	*	HEX NUT (GLAND STUD)		
357K	2 *	NUT,HEX (COVER TO ADAPT)	304SS	A276-95
358A	1 *	PLUG,PIPE (FLUSH CONN ST B)		
358N	*	GLAND PLUG		
361A	1	RETAINING RING BRG HSG		
370	4 *	H CAP SCREW (FRAME-CASE)	CARBON STEEL	A307
370C	3 *	H CAP SCREW (BRG HSG-FRA)	CARBON STEEL	A307
370D	3 *	H CAP SCREW (IMPLR ADJ)	CARBON STEEL	A307
370H	2 *	STUD (COVER TO FRAME)	304SS	A276-95
372T	1	SCREW,BUTTON HEAD (MONIT)	304SS	A276-95
382	1	BEARING LOCKWASHER		
400	1	SQ END KEY (CPLG)	CARBON STEEL	A108
408A	1 *	PIPE PLUG (OIL DRAIN)		
408L	1 *	PIPE PLUG (COOLING INLET)		
408M	1 *	PIPE PLUG (COOLING OUTLET)		
408N	1 *	PIPE PLUG (SIGHT WINDOW)		
408W	2 *	PIPE PLUG, PRO-SMART CONN		
412A	1 *	O-RING IMPLR	TEFLON	A3651
418	2 *	H TAP BOLT	304SS	A276-95
423B	3 *	JAM NUT (BRG HSG)	CARBON STEEL	A307
496	1 *	O-RING BRG HOUSING	BUNA-N	
497F	1 *	O-RING LAB SEAL	VITON	
497G	1 *	O-RING LAB SEAL	BUNA-N	
497H	1 *	O-RING LAB SEAL	VITON	
497J	1 *	O-RING LAB SEAL	BUNA-N	
497L	1 *	O-RING	VITON	
497N	1 *	O-RING	VITON	
501	1 *	CPLG GUARD ASSY	ALUM/CBN STL	B209
501D	1 *	SPLASH GUARD	316 STN STL	A240-87
761B	1 *	MONITOR,LCCM		
902	1 *	KIT,MAINTENANCE		
906	1 *	KIT, REPAIR		

**SEAL CHAMBER**

BIG BORE-TM STD FLUSH  
NON-JACKETED



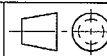
REFER TO SEAL DRAWING NO. (TO FOLLOW):

Customer: CNRL c/o Equinox Engineering  
Goulds Serial No: A783F277  
Customer P.O. No: 201-01-35-0013  
Item No: P-912 A

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**DRAWING NO A783F277C**

DRAWING No. HSP-38062-2  
 ISSUE B  
 REVISIONS:  
 A REV. 10-06-EC97-03225  
 B 00057495 APR05



ITEM	COMPONENT	DESCRIPTION	MATERIAL	SPARES
QTY				QTY
1	H 1375 872 9221	MATING RING	SILICON CARBIDE	1 X
2	0000 030 9549	O-RING	FLUOROELASTOMER	1 X
3	D 1501 270 9221	PRIMARY RING	SILICON CARBIDE	1 X
4	D 1500 278 9850	BELLOWS	FLUOROELASTOMER	1 X
5	D 1500 725 0560	DISC	316 S.S.	1
6	D 1500 714 0560	RETAINER	316 S.S.	1
7	D 1500 088 0560	DRIVE BAND	316 S.S.	1
8	D 1502 364 0560	SPRING ADAPTER	316 S.S.	1
9	2468	SPRING	316 S.S.	1 X
10	H 1375 950 7510	GASKET	G.F. CHEMLON	1 X
11	4US1 43XX XX2 0500	SNAP RING	18-8 S.S.	1 X
12	0000 220 9549	O-RING	FLUOROELASTOMER	1 X
13	H 1375 905 0560	SLEEVE	316 S.S.	1 X
14	H 1375 888 0560	COLLAR	316 S.S.	1
15	1710 3206 000 0650	SET SCREW	HARDENED 416 S.S.	4 X
16	H 1375 954 7854	GLAND PLATE ASS'Y **	316 S.S./CARBON	1
17	D 0002 684 0570	SPACER	SINTERED 316 S.S.	4 X
18	2108 3206 000 0550	SOCKET HEAD CAP SCREW	316 S.S.	4 X
19				
20				
21				
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33				
34				
35				

\*\* H 1376 001 (MACHINED GLAND PLATE ASS'Y)  
 \*\*\* 3196 STX BIG BORE, TAPER BORE VPE, TAPER BORE AXIAL RIBS

SEAL ASS'Y NO.	BILL OF MATERIALS NUMBER
IN- D 1502 471	COMPLETE 1-18 M59938
OUT- SEAL HD.	
WTG.RG. ASS'Y NO.	
IN- WTG.RG.	
OUT- ASS'Y.	ITEMS NUMBER

EQUIPMENT REFERENCE:	CUSTOMER INFORMATION:
UNIT BY: GOULDS PUMPS	CUSTOMER:
EQUIPMENT TYPE:	P.O. NO.
<input checked="" type="checkbox"/> PUMP <input type="checkbox"/> AGITATOR	END USER:
<input type="checkbox"/> COMPRESSOR <input type="checkbox"/> OTHER	LOCATION:
MODEL/SIZE ***	REQ. NO.
SERIAL NO.	INSTALLED AT:

SEAL DESCRIPTION	MATERIAL CODE
A853	X1 058 1 X 058 1 316/316
A.P.I. CODE	A.P.I. PLAN

SERVICE DATA	
FLUID	BARRIER FLUID
SEAL PRESS.	SUCT. PRESS. VISC. AT P.T.
TEMPERATURE	DISCH. PRESS. V.P. AT P.T.
SHAFT SPEED	SP. GR. HAZARD CODE
REFERENCE DATA	DRAWN DATE CHK'D APP'D SCALE INST CODE
E. P. #2270-9702	LFK 021897 DSC MGK 2:1
FILE REFERENCE	CAT
MG-01	DRAWING No. ISSUE
	H-SP-38062-2 B

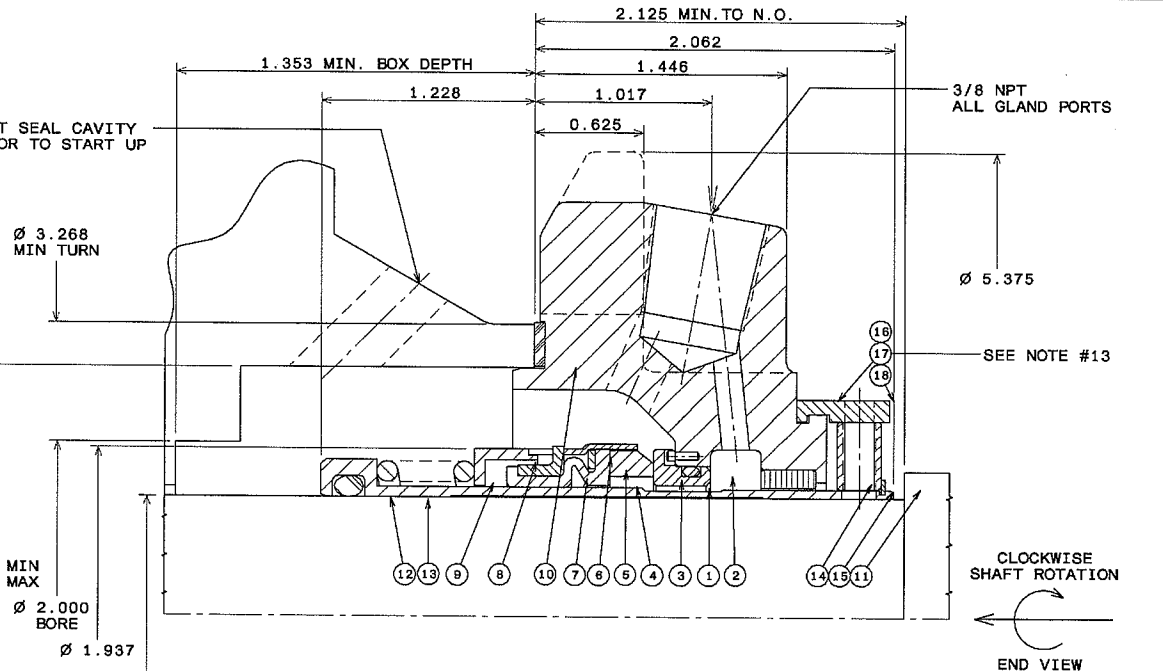
CAD ENGINEERED  
 SEAL SIZE: Ø 1.375  
 SEAL TYPE: T-5611-Q BIG BORE VERSION

**JOHN CRANE INC.**  
 International Sealing Systems  
 6400 Oakton Street  
 Morton Grove, IL 60053, U.S.A.

**METRIC**

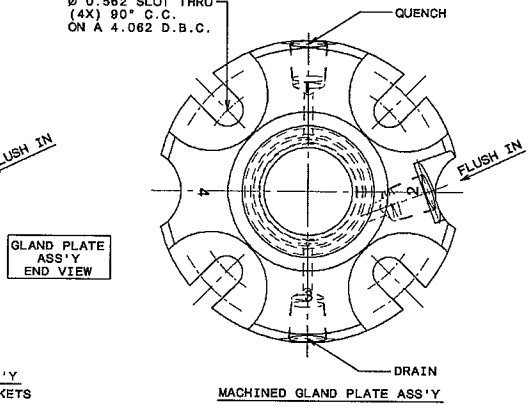
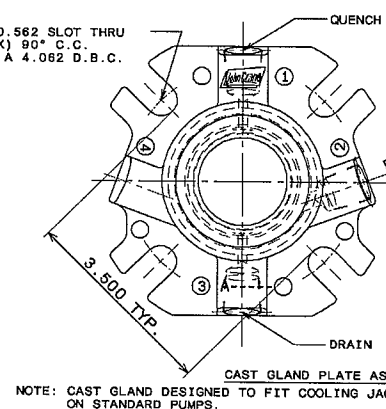
ALL DIMENSIONS ARE IN INCHES

IN.	M.M.
.001	.025
.002	.05
.040	1.02
.375	9.52
.562	14.27
.825	15.87
1.017	25.83
1.228	31.19
1.353	34.37
1.375	34.93
1.448	36.72
1.937	49.20
2.000	50.80
2.082	53.37
2.125	53.97
2.875	73.02
3.023	76.78
3.268	83.00
3.500	88.90
4.062	103.17
5.375	136.52



Ø 2.875 MIN BORE  
 Ø 3.023 MAX BORE  
 Ø 2.000 BORE  
 Ø 1.937

13. SPACER (ITEM #17) IS ONLY FOR THE PURPOSE OF PROPERLY LOCATING SEAL. AFTER GLAND PLATE, BEARING, SHAFT AND SEAL ARE LOCKED IN PLACE, SPACER MUST BE REMOVED BEFORE STARTING UNIT.
14. COOLING RECOMMENDATION: PROVIDE A FLUSH OF SUITABLE LIQUID TO THE SEAL



- FOR ALTERNATE ARRANGEMENTS SEE THE FOLLOWING DRAWINGS
- |                                      |           |
|--------------------------------------|-----------|
| SINGLE O-RING SEAL                   | HSP-38057 |
| RUBBER BELLOWS SEAL                  | HSP-38061 |
| METAL BELLOWS SEAL                   | HSP-38063 |
| O-RING SEAL W/QUENCH                 | HSP-38058 |
| RUBBER BELLOWS W/QUENCH              | HSP-38062 |
| METAL BELLOWS W/QUENCH               | HSP-38064 |
| DUAL O-RING SEAL                     | HSP-38059 |
| DUAL METAL BELLOWS WITH PUMPING RING | HSP-38068 |
| DUAL O-RING SEAL W/PUMPING RING      | HSP-38060 |
| DUAL METAL BELLOWS                   | HSP-38065 |

- THE FOLLOWING NOTES ARE IMPORTANT AND MUST BE OBSERVED FOR CORRECT SEAL INSTALLATION AND OPERATION
- REMOVE ALL SHARP EDGES ON SHAFT &/OR SLEEVE BEFORE INSTALLATION OF SEAL
  - SURFACE OF SHAFT OR SLEEVE ON WHICH SEAL IS INSTALLED MUST BE MACHINED TO  $\text{Ra}$  FINISH OR BETTER.
  - LUBRICATE SHAFT/SLEEVE & SEAL BELLOWS TO ASSIST INSTALLATION OF SEAL WITH COMPATIBLE LUBRICANT.
  - LUBRICATE MATING RING (SEAT), SEALING MEMBER & HOUSING TO ASSIST INSTALLATION.
  - LIQUID MUST BE CIRCULATED AROUND PRIMARY RING (SEAL FACE)/THROUGH MATING RING (SEAT) (AT NOT LESS THAN N/A I) IN ORDER TO REMOVE HEAT GENERATED, OR FAILURE MAY OCCUR.
  - WHEN SHAFT IS SLEEVED THROUGH STUFFING BOX, SLEEVE MUST BE LIQUID TIGHT THROUGH BORE.
  - SHAFT OR SLEEVE MUST BE OF CORROSION RESISTANT MATERIAL WITH A HARDNESS OF 125 BRINELL MINIMUM & BE MACHINED TO DIMENSIONS & TOLERANCES STATED.
  - END OF SEAL CHAMBER & AXIS OF SHAFT MUST BE AT 90° TO EACH OTHER WITHIN .002 F.I.M.
  - BEFORE COMPLETING SEAL INSTALLATION WIDE LAPPED SURFACES OF MATING RING (SEAT) & PRIMARY RING (SEAL FACE) PERFECTLY CLEAN.
  - VENT GAS ENTRAPMENT BEFORE STARTUP.
  - ALL SHOULDERS OVER WHICH SEAL MUST PASS WHEN FITTING, TO BE PREPARED AS DIAGRAM BELOW.
- 

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Job/Inq.No. : 201-01-35-0002  
 Purchaser : Equinox Engineering  
 End User: CNRL  
 Item/Equip.No. : P-912 A- Order (Base Offer)  
 Service :  
 Order No. : 8705  
 Issued by : Meghan Spruill  
 Quotation No. : 10684  
 Date : 04/26/2012  
 Certified By : Meghan Spruill  
 Rev. : 0

**Operating Conditions**

Liquid: Water  
 Temp.: 85.0 deg C  
 S.G./Visc.: 1.014/1.500 cp  
 Flow: 17.60 m³/hr  
 TDH: 23.70 m  
 NPSHa: 4.17 m  
 Solid size:  
 % Susp. Solids (by wtg):  
 Max. Solids Size: 8.74 mm

**Pump Performance**

Published Efficiency: 55.0 %  
 Rated Pump Efficiency: 48.5 %  
 Rated Total Power: 2.36 kW  
 Non-Overloading Power: 2.64 kW  
 Imp. Dia. First 1 Stg(s): 117 mm  
 NPSHr: 1.45 m  
 Shut off Head: 29.55 m  
 Vapor Press:  
 Suction Specific Speed: 8,121 gpm(US) ft  
 Min. Hydraulic Flow: 1.74 m³/hr  
 Min. Thermal Flow: N/A

- Notes:**
1. Power and efficiency losses are not reflected on the curve below.
  2. Elevated temperature effects on performance are not included.

