

BJ

Byron Jackson Pump Division
BORG-WARNER CORPORATION

INSTRUCTION MANUAL

OCT - 7 1970

FLUOR CORP.

FW-123-4-628-1-90-0

ITEM P-005-02 A&B

Customer SUN OIL COMPANY

Cust. Order No. FW-12300-4-6028-01

Pump Ser. No: 701-H-0605/6

Pump Size 17HQ-H 1 STG

Type V T P



APPROVED FOR CONSTRUCTION SUN OIL COMPANY CENTRIFUGAL PUMP DATA SHEET

Rev. 4 10-2-70

Table with 2 columns: Vendor (Byron Jackson), Shop Order (701-H-0605), MFR's Serial No. (701-H-0605), MFR's Outline Dwg. No. (SK-701-H-0605), Sun Drawing No. (5-0-5/73002), Refinery Pump No., P.O. No. (FW-123-4-628), Item No. (P-005-02A), Plant (Yabucoa, Puerto Rico), Service (Storm Water Sep. Water Pump (High)), Issued By (RLC), App. By, Date (12-1-69), Rev. By (EWP), App. By, Date (10-2-70), Job No. (6419), Sheet No. (1)

OPERATING CONDITIONS

Table with 2 columns: Liquid (Storm Water), P.T. (70 °F), S.G. at P.T., Visc. at P.T., Vap. Pr. at P.T., NPSH Available (Flooded 20+), Suct. Pr. (0 PSIG), Diff. Pr. (45 PSIG), Corr. or Eros. Due to (Some Solid Particles), Water Slightly Brackish at Times pH 6-11

PERFORMANCE

Table with 2 columns: Curve No. (005-02), NPSH Required (Water) (25 FT.), NPSH Required (Liq. Pumped) (25 FT.), Max. BHP w/Actual Impeller (190), Max. BHP w/Max. Impeller (200), BHP at Rating (173), Max. Cap. at Available NPSH, Max. Cap. w/Max. Imp. at Rated Hd. (5250 GPM), Max. Head w/Max. Imp. at Rated GPM (115 FT), Shutoff Head w/Actual Impeller (186 FT), Efficiency at Rating (80%), Best Eff. (84% at 6250 GPM)

CONSTRUCTION

MATERIALS

Table with 2 columns: Size and Type (17 HOH), Shaft Arrgt. (Vertical Sump), Imp. Dia. (10 13/16 MAX. 16 1/2"), Imp. Suct. (Single), Suct. Flg. (15"), Disch. Flg. (12"), Case Hydrostatic Test Pressure (400 PSIG), Max. Allow. Casing Press. (250 PSIG at 100F), Cplg. (MFR/Size) (BJ), Mech. Seal (MFR/Size/Type) (None), Bearing Type (Radial Sleeve Thrust Ball), Bearing Lubrication (SLV-Product: Ball Oil), Shaft Max. Dia. (1 11/16 INS.), Packing (No. Rings) (6), Weight (Pump) (2500 LBS.), Water Cooled (Stuffing Box, Brg. Housing, Pedestal, Gland), Impeller (Bowl: CI/Porcelain Emam. I.D., Case Wear Rings CI, Column: Steel, Throat Bushing CI, Interstage Bushings CI, Impeller CI Porcel. Emam., Impeller Wear Rings CI, Shaft 12 CR/1020/12CR, Shaft Sleeve 12 CR, Case Gasket, Gland Steel, Strainer: Galv. Stl., Stationary Ring, Rotating Ring, Internal Parts, Throttle Bushing, Base Plate, Open Lineshaft Construction, CI is Meehanite)

OTHER PIPING:

Min. Submergence Required: 30"

Table with 2 columns: Motor (By Fluor, 200 HP, 3 Phase, 60 Cycle, 2300 Volts, 1800 RPM, 80 °C Temperature Rise, MFR./Type Continental High Thr. TEFC, Frame No. 586P, Full Load Amp. 44, Bearings Ball, Lubric. Oil, Weight (LBS) 3800), Turbine (Rated BHP, Max. BHP, Inlet Steam, Exhaust Steam, PSIG, Water Rate (LBS/BHP/HR), Rated, MFR./Type, Weight (LBS)), P.O. No. (FW-123-4-612), Sheet No. (Sup. 54), P.O. No., Sheet No.

REMARKS:

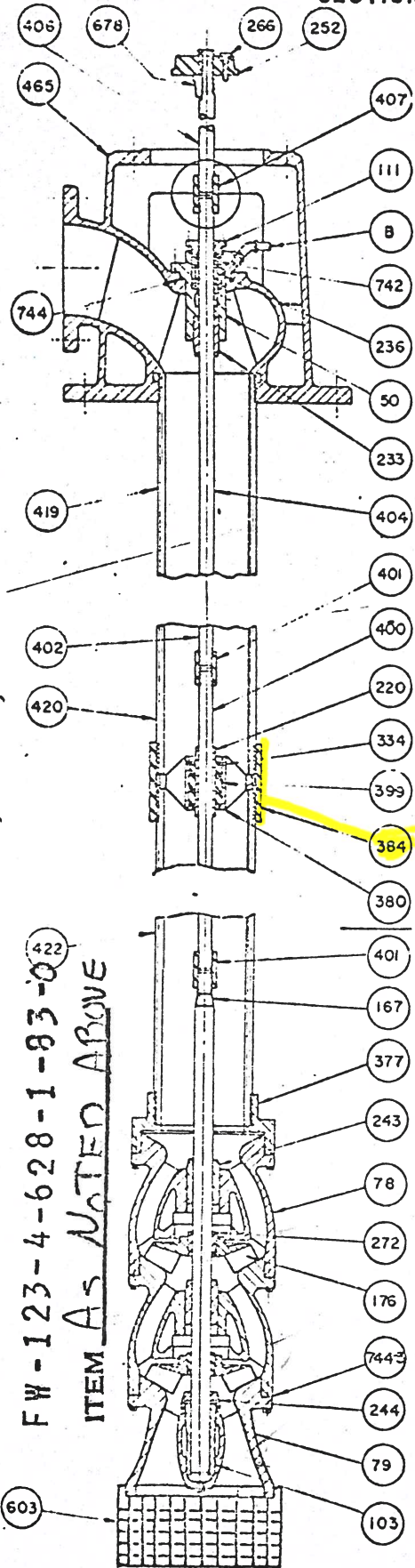
Vendor to furnish on-off float switch. Elevation of baseplate = 21'-4". Elevation of HLL = 12'-6"; Elevation of LLL = 10'-0". Pit Depth From Bottom of Sole Pl.: 15'-10". Pump Length Less Strainer: 14'-7 -3/8"

RECEIVED FLUOR WESTERN INC. YABUCOA FIELD OFFICE DEC 02 1970

SUMPMASTER

SECTIONAL DRAWING - SELF LUBRICATED

FOR PARTS I.D. ONLY



REF. NO.	NAME OF PARTS	STD. METALLURGY
50	STUFFINGBOX	MEEHANITE
* 78	SERIES CASE	MEEHANITE
79	BOTTOM CASE	MEEHANITE
* 103	BOTTOM CASE BRG.	BRONZE
111	GLAND	BRONZE
* 167	PUMP SHAFT	STAINLESS STEEL
* 176	IMPELLER	BRONZE
* 220	SLEEVE, COL. SHAFT	STAINLESS STEEL
* 233	BUSHING, STUFFINGBOX	BRONZE
235	CAGE RING	BRONZE
* 243	BEARING, SERIES CASE	BRONZE
244	SAND CAP	BRONZE
252	NUT, HEAD SHAFT	BRONZE
* 266	LOCK SCREW, SHAFT NUT	STEEL
* 272	IMPELLER LOCK COLLET	STAINLESS STEEL
334	RETAINING RING	STAINLESS STEEL
377	TOP CASE FLANGE	MEEHANITE
380	COLUMN SPIDER	BRONZE
384	COUPLING, OUTER COL.	STEEL
* 399	BEARING, COLUMN	RUBBER
400	COL. SHAFT, BOTTOM	STEEL
401	COUPLING, COL. SHAFT	STEEL
402	COL. SHAFT, INTER.	STEEL
* 404	HEAD SHAFT	STAINLESS STEEL
406	MOTOR SHAFT	STEEL
407	COUPLING MOTOR SHAFT	STEEL
419	OUTER COL., TOP	STEEL
420	OUTER COL., INTER.	STEEL
422	OUTER COL., BOTTOM	STEEL
465	DISCHARGE HEAD	MEEHANITE
603	STRAINER	GALV. STEEL
678	GIB KEY, HD. SHAFT	STEEL
* 742	PACKING	GARLOCK
744	GASKET, STUFFINGBOX	COPPER
744-3	GASKET - SERIES CASE	FISH PAPER

* RECOMMENDED SPARE PARTS.

(B) BLEED OFF OR GREASE LINE.

Drawing No. 265605

B-1 PUMP S/N 701-4-0605/6, 0607, 0609/10, 0612, 0613, 0614/15, 0616/17, 0618/19, 0620/21

2-OFF

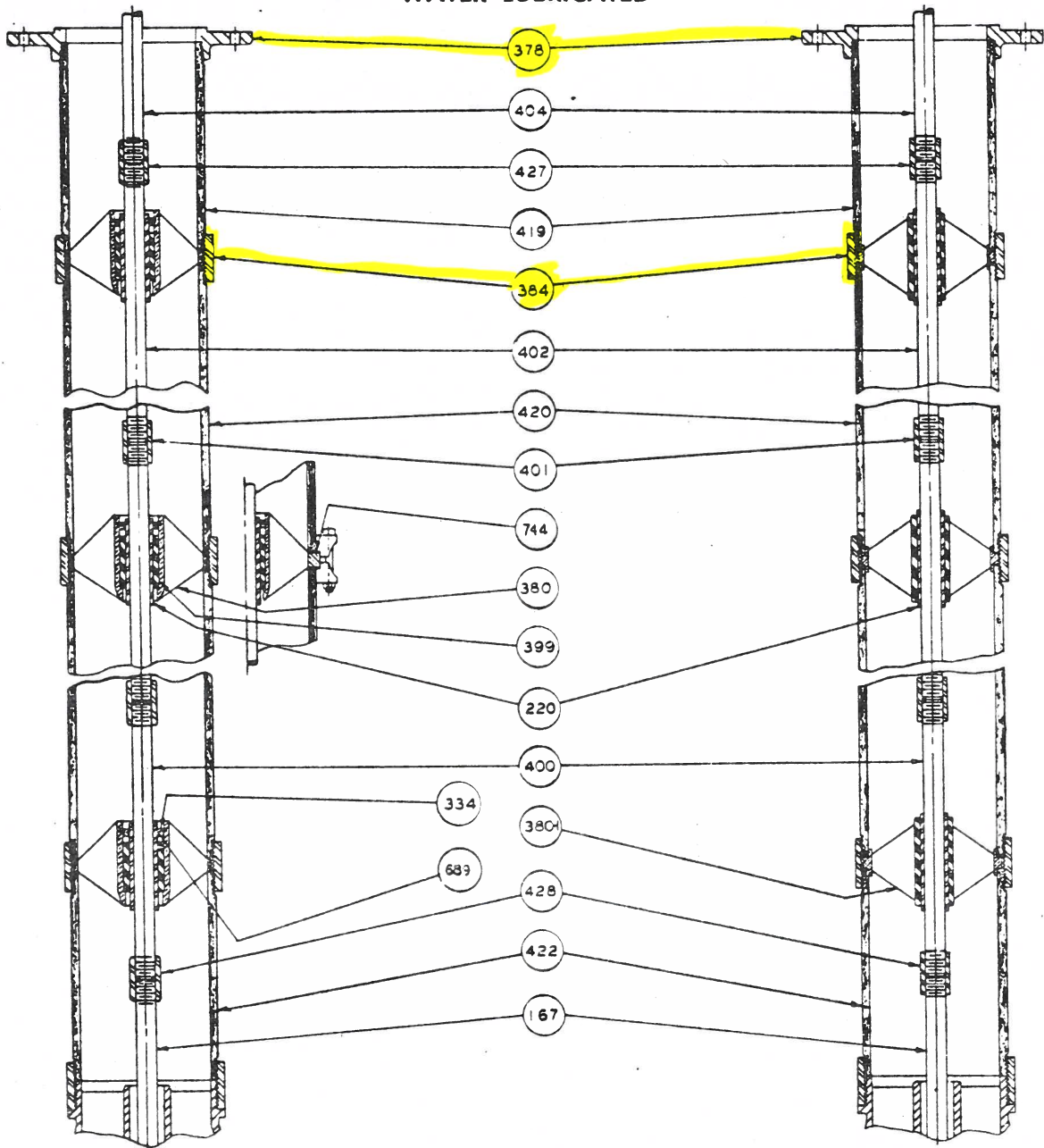
head shaft IS 5"

below motor mounting flange.

QTY	PART NO. & MATERIAL	PART DESCRIPTION	SIZE	REMARKS FROM	PATTERN NO.	TEST REQ.
1	327921 JX	Discharge Head SM # 6	12 x 24		21932-6A1	NO
1	117043 JX	Head Flange	12" Col.			YES
1	117043 JX	Head Flange PER SM # 8	12" Col.		21937-2A1	YES
1	750419 QK	Downwell	Type "U" #6 x 5/16" Lg.			NO
4		Metallic Drive Screws	5/8-11 UNC-3A x 3 3/4 Lg.			NO
1	11020	STUDS (Motor to Head)	7/8-SUNC-3A x 2 1/2 Lg.			NO
12		Coll. Pls. Semi-Fin. Reg. Hex Hd.	19" O.D. x 13" I.D.			NO
1		Cap Screws	x 16 mm (12.1) holes on 17" B.C.			NO
1		Socket Head Flange	3/4 DIA			NO
1		Pipe Flange Sq. Head Solid	5-11UNC-3B			NO
4		STL HEX HD. NUTS				NO
		Flange following only when required on order.				NO
						NO
						NO
						NO
						NO
						NO
1	752231 JX	Sole Plate	27 1/2 O.D. x 22" I.D.		21924-1A1	NO
1		Socket Semi-Fin. Reg. Hex. Hd.	x 1/16 mm (4.1) holes on 21" B.C.			NO
1		Cap Screws	1 1/8 x 7 mm (3.1) x 2 1/2 Lg.			NO
1	753625-EH1020	RAISING RING				NO
		ESTIMATE				NO
		5000TH 110' RM 1770' RAISE NO. 1/4				NO
		CONTINENTAL				NO
		TR 200' RM 5862' RM NO.				NO
		ESTIMATE				NO
		5000TH 110' RM 1770' RAISE NO. 1/4				NO
		CONTINENTAL				NO
		TR 200' RM 5862' RM NO.				NO
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		ESTIMATE				NO
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		CONTINENTAL				NO
		TR 200' RM 5862' RM NO.				NO
		ESTIMATE				

DISCHARGE COLUMN

WATER LUBRICATED



CONSTRUCTION FOR
6-8-10-12&14 COLUMN

CONSTRUCTION FOR
3-4&5 COLUMN

PART NO.	PART NAME	PART NO.	PART NAME
167	PUMP SHAFT	401	COUPLING-COLUMN SHAFT
220	SHAFT SLEEVE	402	COLUMN SHAFT-INTERMEDIATE
378	FLANGE-TOP COLUMN	404	HEAD SHAFT
380	SPIDER	419	OUTER COLUMN-TOP
380-1	SPIDER-RUBBER	420	OUTER COLUMN-INTERMEDIATE
744	GASKET-SPIDER	422	OUTER COLUMN-BOTTOM
384	COUPLING-OUTER COLUMN	427	SHAFT COUPLING-HEAD END
399	RUBBER BEARING-COLUMN	428	SHAFT COUPLING-PUMP END
400	COLUMN SHAFT-BOTTOM	689	WASHER
334	RETAINING RING		

Drawing No. L-1B-14



QUALITY PUMPS SINCE 1872

2-OFF

REF. QUAN. NO.	PART NO. & MATERIAL	PART DESCRIPTION	SIZE	REMARKS FROM	PATTERN NO.	USER EACH
167	166093-CC 416	PUMP SHAFT-1 1/2 COL. SHAFT	3" x 4'-6" LG.			152.00
79	753620-JX MEEH	BOTTOM CASE	FLEXKOTE 707 ON OUTSIDE ONLY	328346-JX	26079-4AI	
103	118034-FA BRZ	BOTTOM CASE BEARING			20363-1AI	52.30
244	750236-JX MEEH	SAND CAP			23969-2AI	
176	267610-LY MEEH	IMPELLER 6Y (H)	FULL DIA. STD. FLEXKOTE 707 ON OUTSIDE ONLY		26077-4BI	400.00
78	328348-LY MEEH	SERIES CASE		CHART No. 169955	26076-7AI	19.50
243	169962-ZZ BER	SERIES CASE BEARING				
76	169938-LY MEEH	FLOW ADAPTOR	12" FLEXKOTE 707 ON OUTSIDE ONLY		26080	
76	267612-LY MEEH	BYPASS PORT BODY				
	165292-JX MEEH	TOP CASE FLANGE	12"		OUTSIDE ONLY 24296	
397	169788-EH STL	TOP CASE BRG. SHELL				197.6
397	752652-ZZ BER	RUBBER BRG.-TOP CASE	3" x 1" x 3/8" x 6" LG.		1970	
	753621-JX MEEH	CASE WEAR RING				65.00
428	751874-CB 416	PUMP SHAFT COUPLING	1 1/2" FW-12-4-620-1-45-0			
272	750022-CC 416	IMPELLER LOCK COLLET	2 1/2" ITEM 2005-02 NFB			2.00
744	568280-6S RILE	O-RING GASKET				2.00
744	568282-6S RILE	O-RING GASKET SET SCREW SOC. HEAD				2.00
791	18-8 CAPR	ALLEN CUP POINT SEMI-FIN REG. HEX HP.	1/4-20UNC-3AX 1/2 LG.		J.A.D.	
454	3685 CAP	SCREW	5/8-11UNC-3A x 1 1/2 LG.		JUN 26 1970	
					TULSA ESTIMATING	

ASSEMBLY DRG. YES NO SUB. TO OUTSIDE INSP. YES NO PERF. TEST REQ'D. YES NO HYDROTEST REQ'D. YES NO

SHEET OF 1 SHEETS 7 17 HQ-ONE STG. MADE BY HOISE . CHECKED BY BYRON JACKSON ORDER DATE