BROWNSVILLE
PUBLIC UTILITIES BOARD

Date: November 15, 2022
To: All Vendors
Subject: Addendum #1

REFERENCE: **B009-23 20-Inch Backwash Waste Pump with 125 HP Motor**

This Addendum forms part of the contract and clarifies, corrects or modifies original bid document.

NOTE: There will be a site visit held on November 18, 2022 at 10:00 AM. Interested vendors shall meet at Brownsville PUB Water Treatment Plant No. 2, 1455 Robinhood Drive, Brownsville, Texas 78521.

See attached detailed pump specifications.

The signature of the company agent, for the acknowledgement of this addendum, shall be required. **Complete information below and return via e-mail to: dsolitaire@brownsville-pub.com.**

I hereby acknowledge receipt of this addendum.

Company: _____

Agent Name: _____

Agent Signature: _____

Address: _____

City: _____ **State:** _____ **Zip:** _____

Phone Number: _____ **E-mail address:** _____

If you have any further questions about the Bid, call 956-983-6366.

BY: *Diane Solitaire*
Purchasing

FAIRBANKS MORSE PUMP CORPORATION

INCLUDED FEATURES

- NON-WITNESS CERTIFIED PERFORMANCE TEST. EACH PUMP TO BE SUPPLIED WITH (5) COPIES OF TEST RESULTS AND DATA.
- DYNAMIC BALANCE
- BRONZE BOWL LINER
- 1 QUART SOLINOID OILER
- HOT DIPPED GALVANIZED SOLEPLATE 48 X 48
- 24-1/2 X 24 TYPE 'F' DISCHARGE HEAD
- GENERAL ELECTRIC 125 HP, 900 RPM, 3/60/460 VOLT, VHS MOTOR

Refer also to vendor clarifications that may be included on the vendor submittal.

1. Lineshaft will be 1-11/16 in lieu of 1-15/16 as specified. 1-11/16 is adequate to transmit horsepower supplied.

2. Propeller adjustment can be made with the adjusting nut located at the top of the hollow shaft motor. Therefore, a flanged adjustable coupling nor additional head height for an adjustable coupling are required.

3. The performance test will be performed on the actual bowl assembly for the job with test column, discharge head and driver. Head losses for job column and discharge head will be added back to the head readings and a expected field performance will be plotted on the curve. Guaranteed bowl efficiencies will be based on the actual bowl head readings, not including losses for column and discharge head.

4. All plates, piping or related equipment required for future pumping units are not supplied by Fairbanks Morse.

5. Contractor is to verify all baseplates and discharge heads are adequately sized to cover existing openings.

Fairbanks Morse complies with Section 15165, vertical propeller pumps within our scope of supply, as noted below.

General:

1:01 Scope:
FMPC complies within our scope of responsibility.
1.02 Conditions of service:
FMPC complies.

Pump Construction:

2.01 Bowl Assembly:
FMPC complies.
2.02 Column:
FMPC complies.
2.03 Enclosing Tube and Lineshaft:
FMPC complies.
2.04 Discharge Head and Construction:
See clarification # 2
2.05 Required Options:
See clarification # 3

Specific Requirements:

3.01 Pump Construction:
See clarification # 1

3.02 Installation:
By others than FMPC

Fairbanks Morse
Pump Corporation

SUBMITTAL CURVE

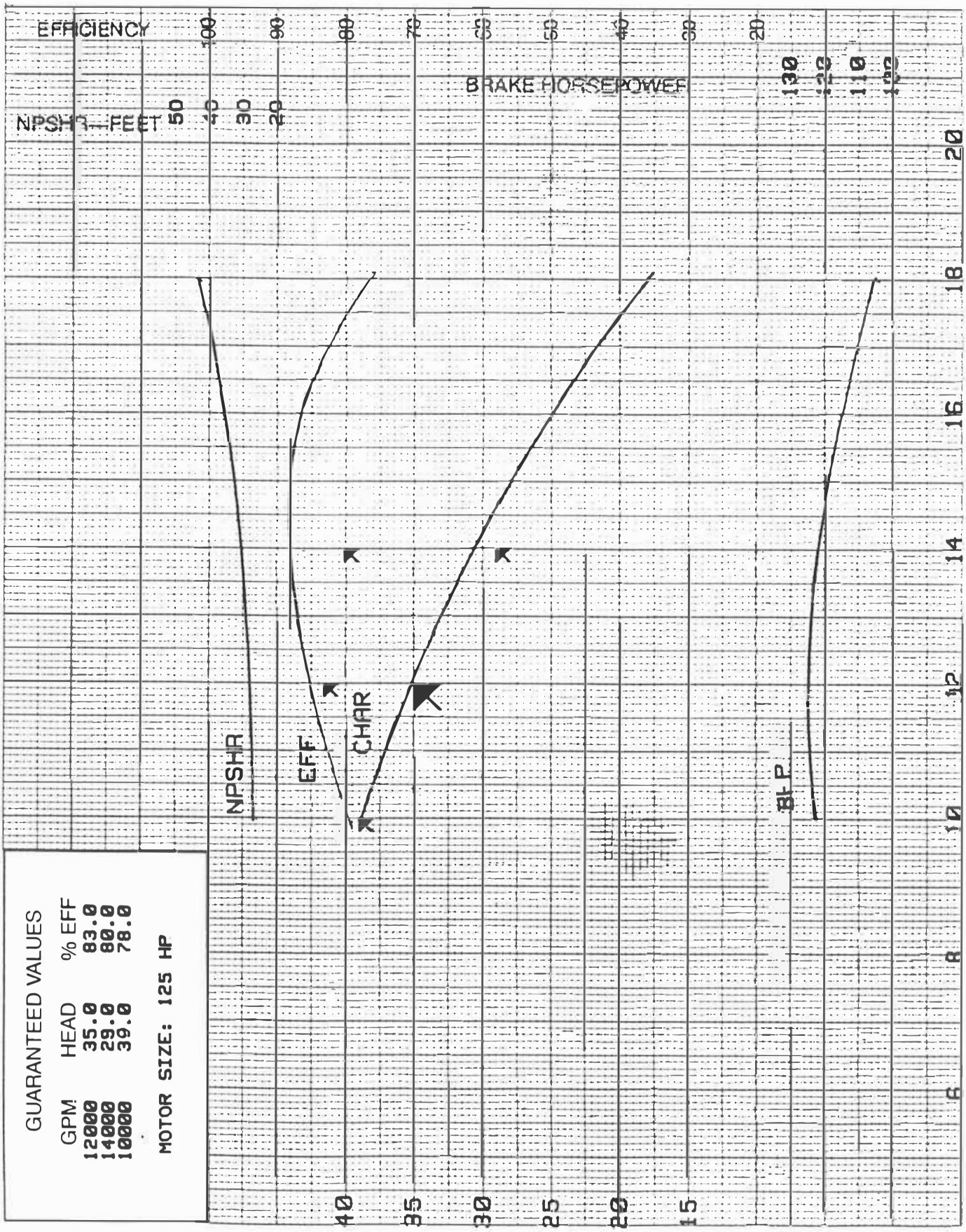
THIS CURVE IS BASED ON ACTUAL TEST PERFORMANCE OF A SIMILAR PUMP. ONLY THE INDICATED POINT(S) IS GUARANTEED.

NO. STAGES ONE
REFERENCE 057107
PLOTTED BY TR
DATE 1-27-94

SIZE-MODEL 20-8312
IMPELLER DES. A-341-T
IMPELLER DIA. STD (R1)
RPM(S) 885

PUMP PERFORMANCE CURVE

CURVE NO. CK4C2-061953



GUARANTEED VALUES

GPM	HEAD	% EFF
12000	35.0	83.0
14000	29.0	80.0
10000	39.0	78.0

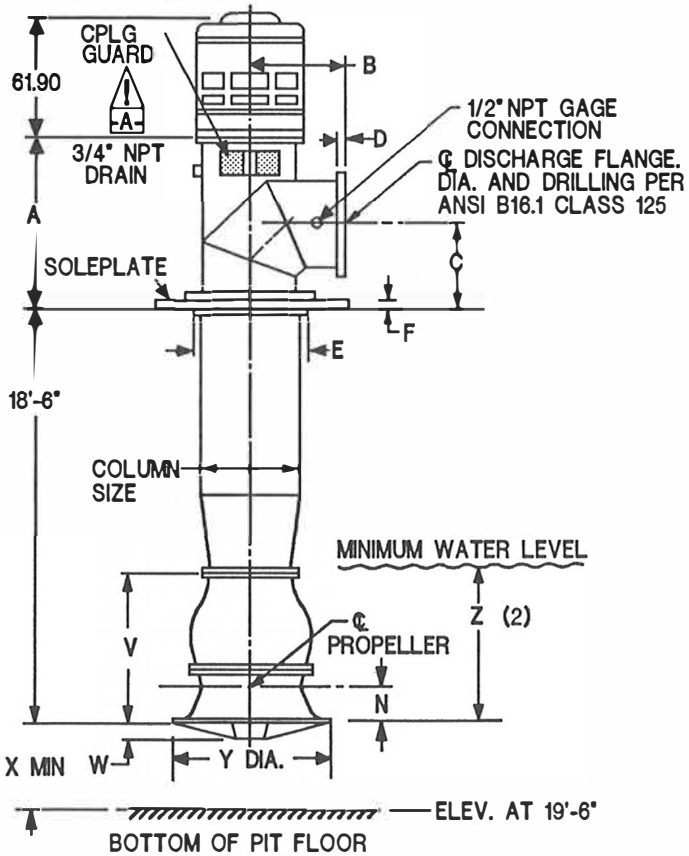
MOTOR SIZE: 125 HP

FM143B/0292

DISCH SIZE	COL SIZE	A MOTOR BASE DIAMETER					B	C	D	E	F	G	H	K	L
24	24	12	16-1/2	20	24-1/2	30-1/2	29	29 7/8	1-7/8	28	1	48	1	22	2
		---	47-7/8	53 7/8	54 7/8	62 7/8									

FLANGE DIMENSIONS 150 LB ANSI STANDARD				
SIZE	DIAMETER	NO. BOLTS	SIZE BOLTS	BOLT CIRCLE
24	32	20	1-1/4	29-1/2

DRIVER IS SHIPPED SEPARATELY FOR FIELD INSTALLATION

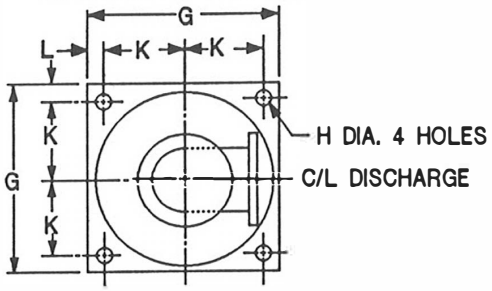


⚠ WARNING

DO NOT OPERATE THIS MACHINE WITHOUT PROTECTIVE GUARDS IN PLACE. ANY OPERATION OF THIS MACHINE WITHOUT PROTECTIVE GUARDS CAN RESULT IN SEVERE BODILY INJURY.

-A- SUPPLIED BY FMPC

PLAN VIEW OF SOLEPLATE



SOLEPLATE IS DESIGNED TO BE IN FULL CONTACT WITH GROUTED SURFACE

PUMP SIZE	MODEL	N	V 1 STG	V 2 STG	W	X	Y	Z
20	8312	16	38 1/2	66	6	12	35	60

● SEE PERFORMANCE CURVE

1. DIMENSIONS SHOWN ARE TYPICAL AND MAY VARY DUE TO TOLERANCES. TO ACHIEVE EXACT DIMENSIONS, FIELD ADJUSTMENTS MAY BE REQUIRED
2. MINIMUM REQUIRED AT MAXIMUM FLOW
3. NOT FOR CONSTRUCTION, INSTALLATION, OR APPLICATION PURPOSES UNLESS CERTIFIED
4. BASEPLATE MUST BE SUPPORTED ON ALL 4 SIDES.

REV	DATE								
		CUSTOMER: CRAIG, SHEFFIELD & AUSTIN, INC.			P.O		NO UNITS: 2	Fairbanks Morse Pump Corporation	
		JOB NAME: CITY OF BROWNSVILLE, TX			TAG NAME: WTP 1 BACKWASH WASTE PUMPS			SETTING PLAN FOR MODEL 8312 PUMPS	
		PUMP SIZE & MODEL: 20" 8312AE	STGS: 1	GPM: ●	TDH: ●		RPM: ●		
2	10/3194	MOTOR: GENERAL ELEC.	HP: 125	FRAME: L449TP	ELEC. CHAR: 3/60/460 VOLT		ENCL: TEFC		
1	10/21/94	CERTIFIED FOR: K4C2-061953			CERTIFIED BY: J. FINE		DATE: 1/94	SIZE: C	DWG. NO.: SK4C2-061953

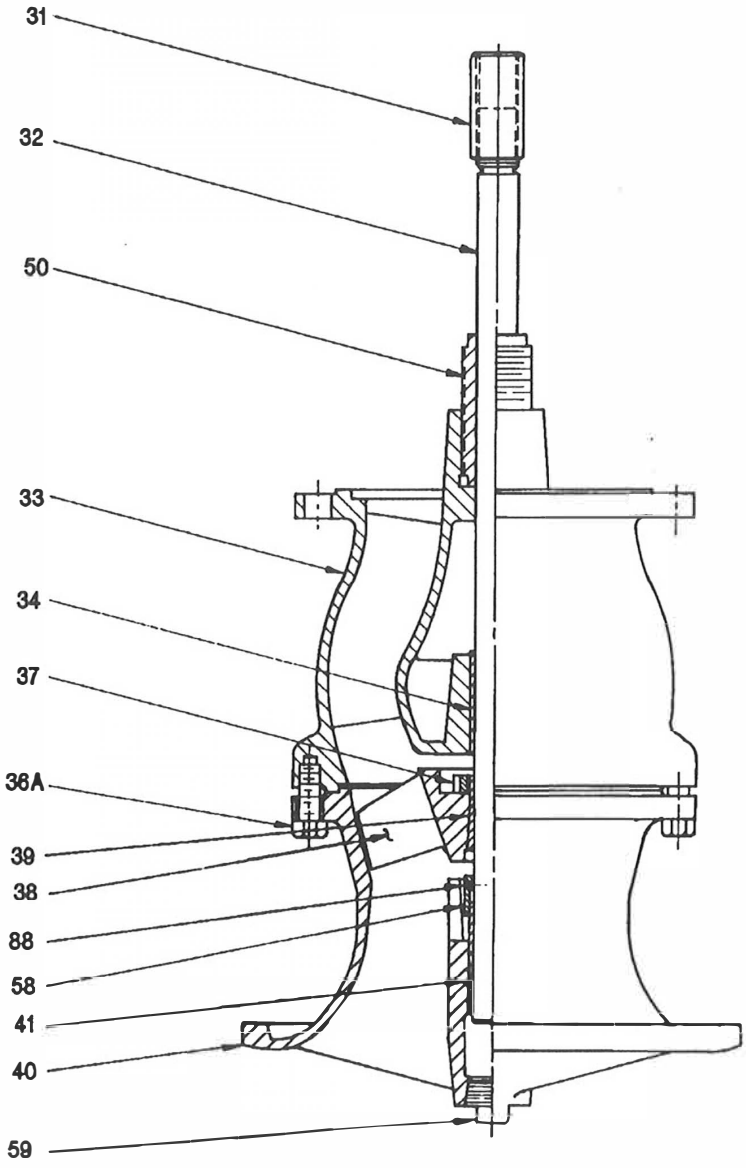
D:/8312A-FL/SPF.PIC

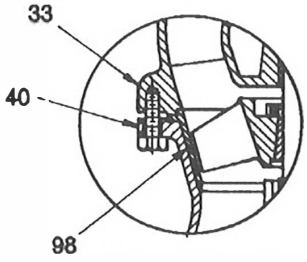
FAIRBANKS MORSE PUMP CORPORATION
MATERIAL LIST
MODEL 8312 ENLCLOSED LINESHAFT & FABRICATED HEAD

ITEM	DESCRIPTION	MATERIAL	SPECIFICATION
1	ADJUSTING NUT	STEEL	A108 GR 12L14
6	WATER SLINGER	RUBBER	COMMERCIAL
7	DISCHARGE HEAD	STEEL	A53 GR B & A283 GR D (2)
16	COLUMN FLG GASKET	SHEET PACKING	F104
19	TOP SHAFT	STEEL	AISI 1045
21	TOP COLUMN	STEEL	A53 GR B & A283 GR D (2)
23	LINESHAFT	STEEL	AISI 1045
30	BOTTOM COLUMN	STEEL	A53 GR B & A283 GR D (2)
31	SHAFT COUPLING	STEEL	A108 GR 12L14
32	PUMP SHAFT	STAINLESS STEEL	A582-416
33	DISCHARGE BOWL	CAST IRON	A48 CL 30
34	DISCHARGE BOWL BRG	BRONZE	B505 ALLOY 932
37	PROPELLER LOCK NUT	ALUM BRONZE	B505 C95200
38	PROPELLER	BRONZE	B584 AL836/875 (3)
39	PROP LOCK COLLET	STEEL	A108 GR12L14
40	SUCTION BELL	CAST IRON	A48 CLASS 30
41	SUCTION BELL BEARING	BRONZE	B505 ALLOY 932
50	CONNECTOR BEARING	BRONZE	B505 ALLOY 932
51	ENCLOSING TUBE	STEEL	A120 SCH. 80
51A	TOP ENLOSING TUBE	STEEL	A120 SCH 80
53	TUBE ADAPTER (4)	BRONZE	B505 C93200
58	SAND COLLAR	STEEL	A519 GR 1018
59	SUCTION BOWL PLUG	CAST IRON	COMMERCIAL
63	TENSION NUT	BRONZE	B584 C83600
63A	TENSION NUT GASKET	COPPER	B152 ALLOY 110
88	SET SCREW	STEEL	SAE BOLT STEEL
95	SOLEPLATE	STEEL/GALVANIZED	A283 GR. D / COMMERCIAL
98	BOWL LINER	BRONZE	B505 ALLOY 932

1. Material specifications shown are ASTM unless otherwise specified and are for description of chemistry only.
2. Circular sections are A53 GR B & flat sections are A283 GR D.
3. Manufacturer's option
4. Required only when tube size is different than bowl connection.

ML-8000





BOWL LINER

Fairbanks Morse
Pump Corporation

ASSEMBLY DRAWING
FOR
MODEL 8312 PUMPS

SIZE	DWG. NO.
C	24LYA2365J

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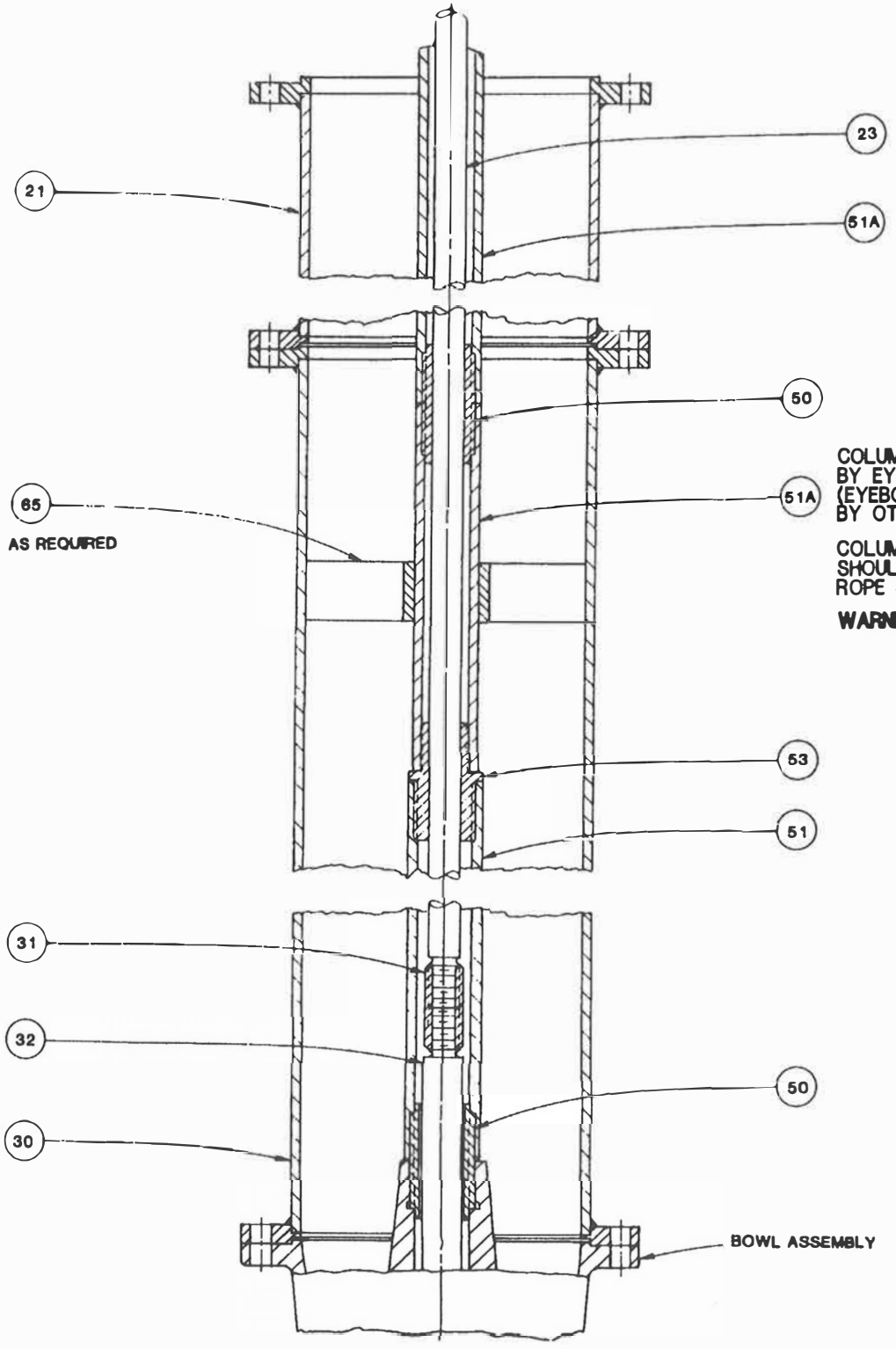
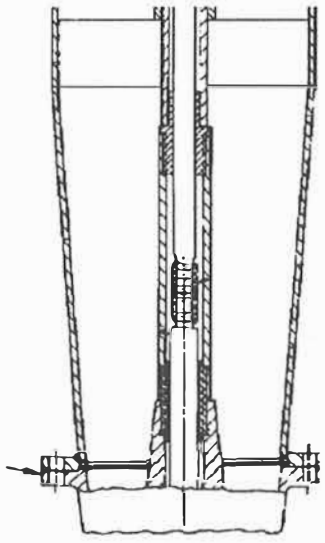


COLUMN SECTIONS ARE TO BE LIFTED BY EYEBOLTS OR "COLUMN CLAMPS". (EYEBOLTS OR CLAMPS TO BE SUPPLIED BY OTHERS)

COLUMN, TUBE AND SHAFT ASSEMBLIES SHOULD BE SECURED TOGETHER BY ROPE SLINGS OR OTHER SIMILAR MEANS.

WARNING: ALWAYS MAKE SURE LIFTING EQUIPMENT IS OF ADEQUATE SIZE TO PREVENT POSSIBLE PERSONAL INJURY OR DAMAGE TO THE EQUIPMENT.



TAPER COLUMN SUPPLIED AS REQUIRED TO MATCH BOWL ASSEMBLY

BEARING CENTERS; TOP (MAX) ..... 6.5 FT.
BEARING CENTERS; INTERMEDIATE (MAX) ..... 5 FT.
COLUMN & SHAFT LENGTH (MAX) ..... 10 FT.
SHAFT PROJECTION ..... 17-1/2 IN.
REFER TO TECHNICAL DATA PAGE FOR DIMENSIONS & WEIGHTS.

Fairbanks Morse
Pump Corporation

ASSEMBLY DRAWING FOR FLANGED COLUMN ENCLOSED LINESHAFT

SIZE	DWG. NO.
C	24LYA2363BB

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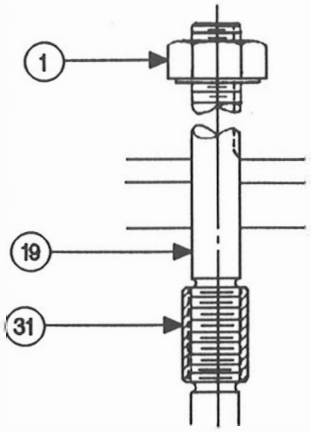
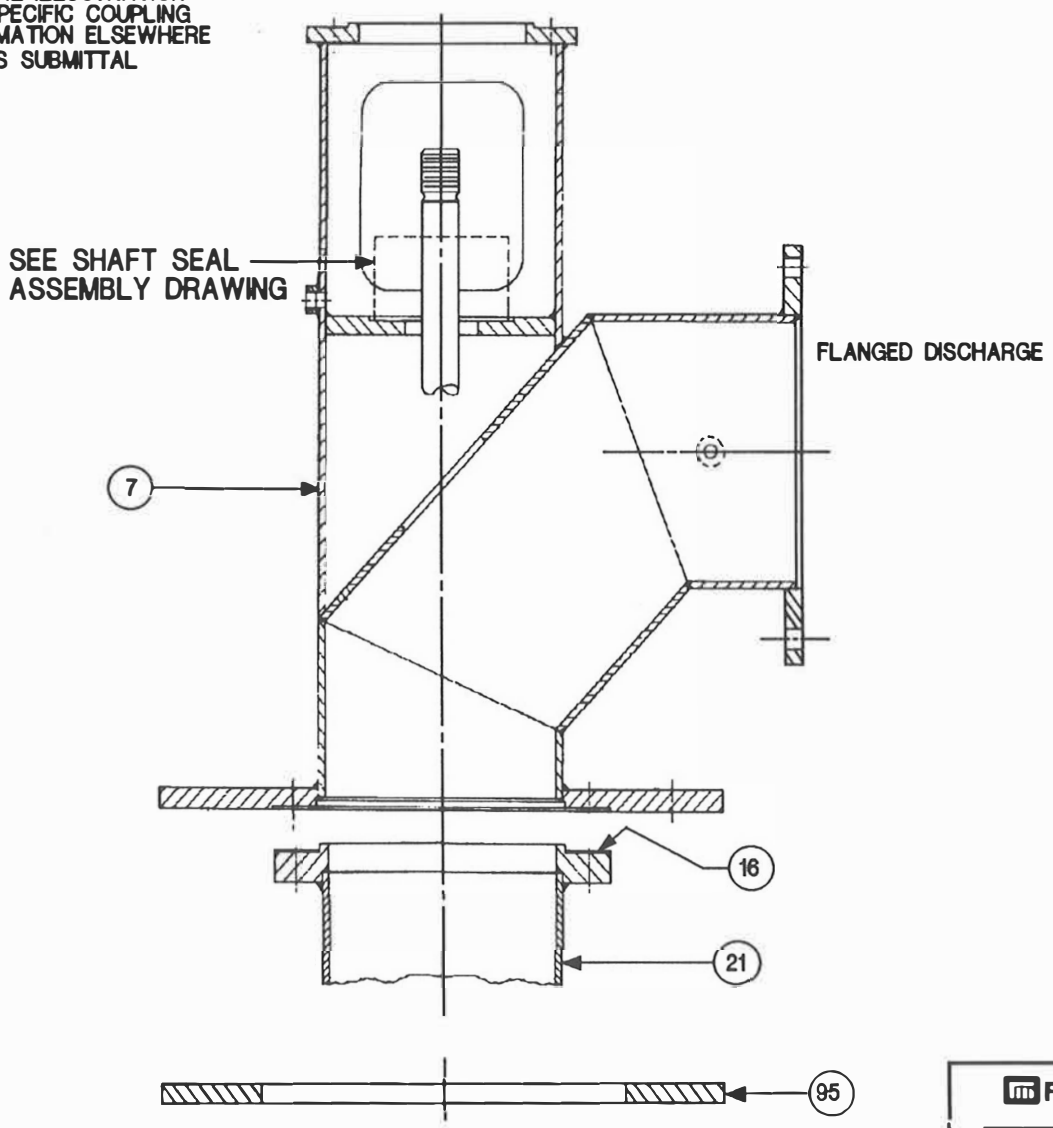


VERTICAL HOLLOW SHAFT
DRIVER

NOTE:
TYPICAL ILLUSTRATION
SEE SPECIFIC COUPLING
INFORMATION ELSEWHERE
IN THIS SUBMITTAL



Fairbanks Morse
Pump Corporation

ASSEMBLY DRAWING
FOR
TYPE "F"
DISCHARGE HEAD

SIZE	DWG. NO.
C	24LYA2363BV

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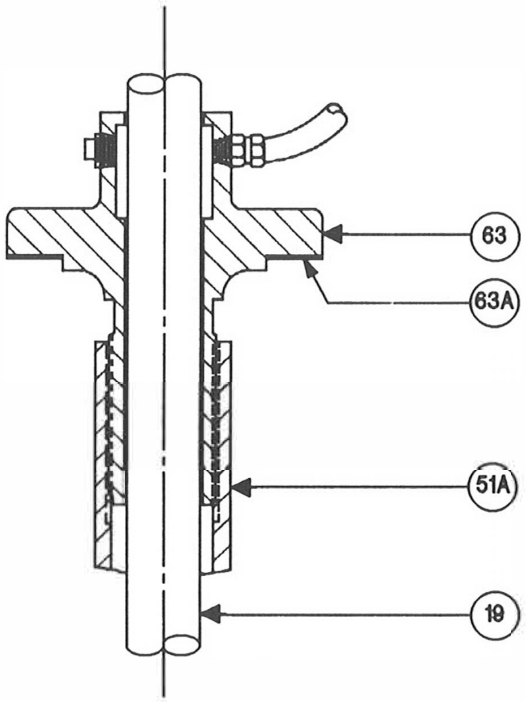
D:/HEAD/F-XS.PIC



OIL LUBRICATED
TENSION NUT

Fairbanks Morse
Pump Corporation

ASSEMBLY DRAWING
FOR
TENSION NUT
ENCLOSED LINESHAFT

SIZE	DWG. NO.
C	24LYA3463A

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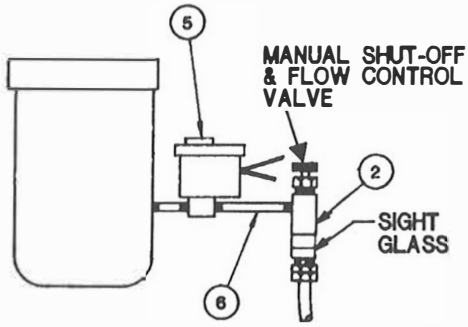
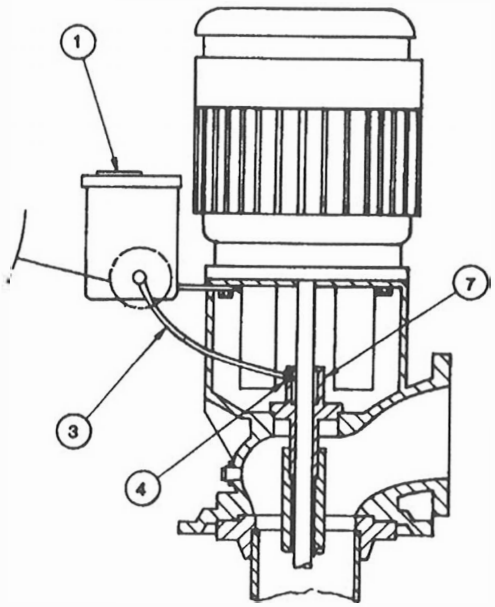


SOLENOID OILER

SIZE: 1 QUART
ELECTRICAL DATA:
PHASE: SINGLE
HERTZ: 60
VOLTAGE: 230-460
NORMALLY CLOSED-ENERGIZE OPEN



TYPICAL INSTALLATION

BILL OF MATERIAL LIST			
REF	DESCRIPTION	MATERIAL	SPECIFICATION
1	OILER, RESERVOIR & BRACKET	ALUMINUM	COMMERCIAL
2	OIL DRIPPER ASSEMBLY	PURCHASED	COMMERCIAL
3	COPPER TUBING 1/4 X 24" LG.	COPPER	ASTM B280
4	COMPRESSION FITTING, 1/4"	BRASS	COMMERCIAL
5	SOLENOID VALVE	PURCHASED	COMMERCIAL
6	PIPE NIPPLE 1/8 X 3/4	STEEL	ASTM A120
7	PIPE PLUG, 1/4"	MALLEABLE IRON	COMMERCIAL

Fairbanks Morse
Pump Corporation

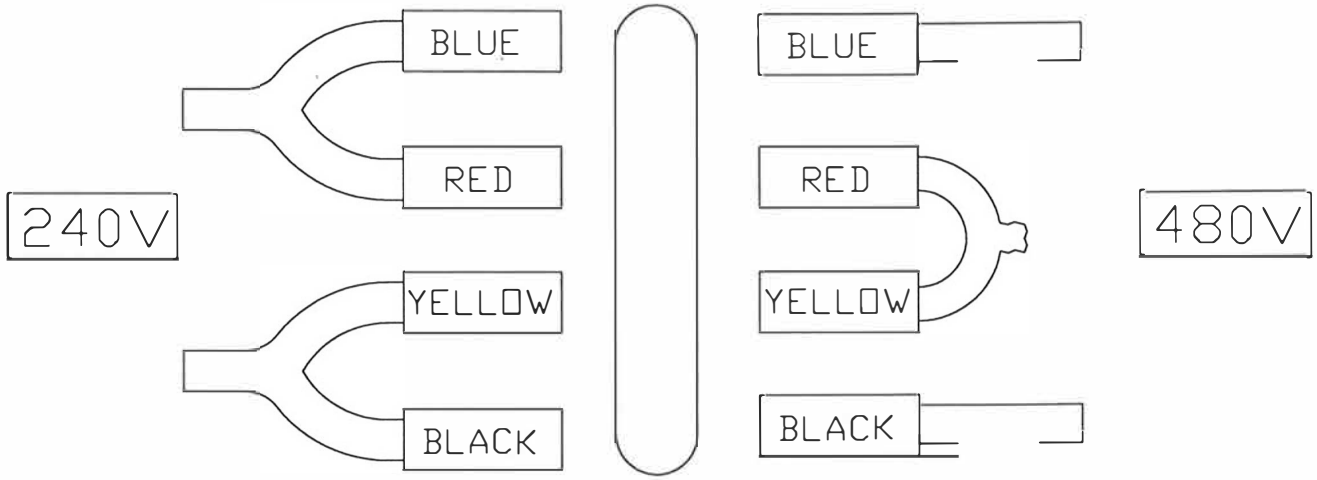
ASSEMBLY DRAWING FOR OILER ASSEMBLY WITH ENCLOSED LINESHAFT

SIZE C | DWG. NO. 25LYA2918L

D:/HEAD/OILER.PIC

DRAWN BY	DATE	CHECKED BY	DATE	ENGINEERING APPROVAL	DATE	MARKETING APPROVAL	DATE	ECN
S. HORNER	11/22/93	JES	11/22/93					PUMP

MULTI-VOLT COIL WIRING



USE SUPPLY WIRE SUITABLE FOR AT LEAST 90 C
EMPLOYER DES FILS D'ALIMENTATION ADEQATS POUR AU MOINS 90 C

REFERENCE PARKER DRAWING SA99-030

MULTI-VOLT COIL WIRE DIAGRAM

Fairbanks Morse Pump Corporation

DWG NO 7000-WIRE | REV NO

Gold Ring™ Solenoid Valve Installation and Maintenance Instructions

General Purpose Solenoids
NEMA 1 Enclosures
G, R, S, & T

Parker Hannifin Corporation
Fluidex Division

Bulletin 7240 Effective 15Jun86
Revision F Revised 31Oct91

Warnings

1. If you purchase a Unit Valve and a Unit Solenoid, be sure the last two digits of the Unit Valve number match the first two digits of the Unit Solenoid number. If they do not match, do not install.

   04F30U2106AAF Unit Valve
   AFGC15 Unit Solenoid

2. Check data label for correct catalog number, pressure, voltage and service. Do not install if unsuitable.

3. For protection and proper operation of the solenoid valve, install a strainer or filter suitable for the service involved as close to the valve inlet as possible.

4. Solenoid valves require periodic cleaning and inspection depending on the service. This should be done at least once every 12 months or every 500,000 cycles, whichever occurs first.

5. Turn off electrical power supply and line pressure to the valve. Bleed trapped pressure from the lines before inspecting, cleaning, servicing, or repairing the valve.

Description:

These solenoids are equipped with a general purpose NEMA Type 1 enclosure. Valves with watertight NEMA Type 4 or explosion-proof NEMA Type 7 enclosures are further covered by I & M Instructions, Bulletin 7220.

Operation:

When the solenoid is energized the plunger is attracted to the pole piece. For specific valve operation, refer to the specific valve I & M Instructions.

Installation:

1. Application

   Refer to Parker Gold Ring ™ catalog for application information.

2. Positioning

   Unit valves may be mounted in any position. It is recommended that unit valves be mounted vertical and upright to prevent accumulation of debris in plunger tube.

3. Piping

   Connect piping to valve according to markings on valve body. Apply pipe compound or sealing material sparingly to male pipe threads only. If applied to valve thread, it may enter valve and cause operational difficulties. Pipe strain should be avoided by proper support and alignment of piping. Do not use valve as a lever when tightening pipe.

FAIRBANKS MORSE PUMP CORPORATION
TECHNICAL DATA FOR
20" MODEL 8312 VERTICAL MIXED FLOW PUMP

BOWL ASSEMBLY	
PUMP SIZE	20
MAX NO STAGES	2
PUMP SHAFT DIA	1-15/16
MAXIMUM SPHERE DIA.	3-3/8
K_T (THRUST FACTOR) LBS/FT.	101
K_A (ROTOR WEIGHT/STAGE)	125
WK^2/STAGE (LBS-FT^2)	43
BOWL ASSEMBLY WEIGHT (LBS)	
FIRST STAGE	1300
ADDITIONA STAGE	850
NUMBER VANES & EYE AREA (SQ-IN)	
A-341-T	3 / 203.0
COLUMN	
NOMINAL SIZE	24
OUTSIDE DIAMETER)	24.000
WALL THICKNESS	.375
WEIGHT PER FOOT	103 (LBS./FT.)
FLANGE OD & WEIGHT (PER PAIR)	28.50, 86.7 LBS
SHAFT	
DIAMETER	1-11/16
WEIGHT PER FOOT	7.6 (LBS./FT.)
SHAFT COUPLING WEIGHT)	2.3 LBS.
ENCLOSING TUBE SIZE	2-1/2
TUBE SCHEDULE	80
TUBE WEIGHT	7.66 LBS/FT
CONNECTOR BEARING WEIGHT	5 LBS EACH
TENSION NUT	
SIZE	2-1/2
TYPE OIL	MINERAL
TENSIONING TORQUE	600 FT-LBS
LUBRICATION RATE	6 DROPS PER MINUTE
BEARING CLEARANCE	
LINESHAFT	.016
TENSION NUT	.016
DISCHARGE HEAD	
FLANGE SIZE & TYPE	24" TYPE F
MAXIMUM DISCHARGE PRESSURE	
125 LB. FLANGE	175 PSI
WEIGHT ((LBS.)	1800

1. All dimensions in inches unless otherwise noted.
2. All values shown are for standard materials.

TD-8000

SERIES 20 POTA-POX

Description & Typical Use:

A Epoxy-Polyamide Potable Water Tank System. Used as a coating system for steel tank interiors, exteriors and concrete reservoirs for potable water storage. Acceptable to the U.S. Environmental Protection Agency for contact with potable water

Surface Preparation:

Immersion Service	SSPC-SP10
Non-Immersion Service	SSPC-SP6

Technical Specifications

Number of coats:	1
Colors:	(Customer to specify)
20-1211	Red
20-1255 (Primer)	Beige
20-2000 (Finish)	White
Dry Film Thickness:	
20-1211 & 20-1255	3.0 to 5.0 mils per coat
20-2000	4.0 to 6.0 mils per coat

SURFACES TO BE COATED

Interior and exterior of bowl assembly, interior and exterior of column, exterior of enclosing tube, interior of discharge head (including wetted portions of packing box).

TNEMEC 66 HI-BUILD EPOXOLINE

Description & Use:

Chemical and corrosion resistant coating system for protection against abrasion, moisture, corrosive fumes, chemical contact and immersion.

TYPICAL USE: Coating structural steel, tank interiors and exteriors, pipes, machinery and equipment, concrete floors, shower and locker rooms, corridors, food preparation areas, operating rooms and laboratories.

Meets the requirements of the United States Department of Agriculture for application to structural surfaces or surfaces where there is a possibility of incidental food contact in official establishments operating under the Federal Meat and Poultry Products Inspection Program

Surface Preparation:

Prepare surfaces by method suitable for exposure and service.

Non-immersion Service:	Commercial Blast Cleaning (SSPC-SP10)

Technical Specifications

Number of coats:	1
Colors:	****Gray-ANSI BK 66**
Theoretical Coverage:	896 mil sq. ft. per gallon
Dry Film Thickness:	4.0 TO 6.0 mils per coat

Clarification

** Unless otherwise specified the equipment supplied on this order will be painted the color shown above.

Surfaces To Be Coated

Exterior of discharge head.