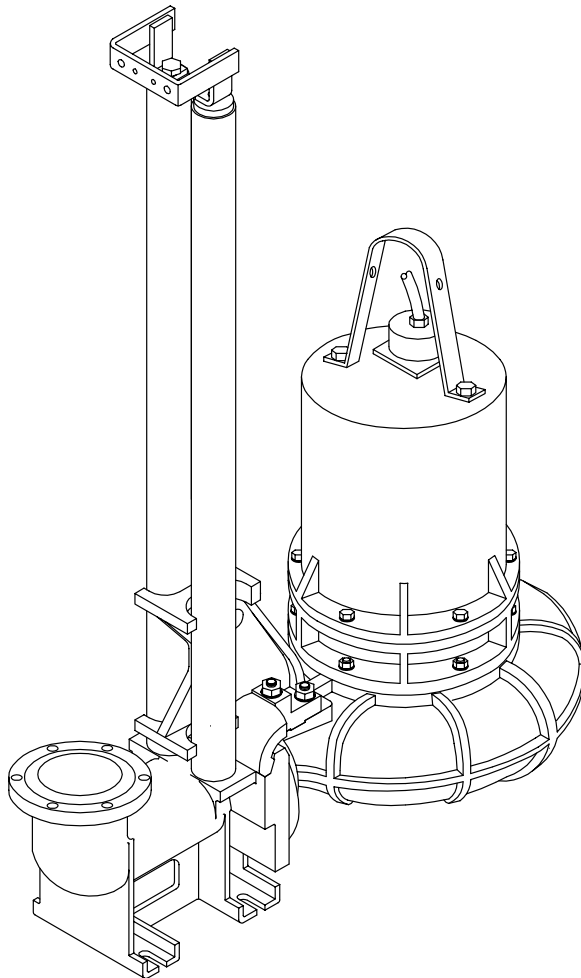


# DEMING<sup>®</sup>

## INSTALLATION MANUAL

### Break Away Fitting for Demersible<sup>®</sup> Pumps



Models: BAF-8  
P/N: 082110A

**IMPORTANT!**

*Read all instructions in this manual before operating pump.  
As a result of Crane Pumps & Systems, Inc., constant product improvement program,  
product changes may occur. As such Crane Pumps & Systems reserves the right to  
change product without prior written notification.*

**CRANE**<sup>®</sup>

A Crane Co. Company

**PUMPS & SYSTEMS**

420 Third Street  
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Phone: (937) 778-8947  
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www.cranepumps.com

83 West Drive, Bramton  
Ontario, Canada L6T 2J6  
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Fax: (905) 457-2650



Form No. 133727 Rev. A

# SAFETY FIRST!

Please Read This Before Installing Or Operating Pump. This information is provided for **SAFETY** and to **PREVENT EQUIPMENT PROBLEMS**. To help recognize this information, observe the following symbols:



**IMPORTANT!** Warns about hazards that can result in personal injury or indicates factors concerned with assembly, installation, operation, or maintenance which could result in damage to the machine or equipment if ignored.

**CAUTION!** Warns about hazards that **can or will cause minor** personal injury or property damage if ignored. Used with symbols below.

**WARNING!** Warns about hazards that can or will cause serious personal injury, death, or major property damage if ignored. Used with symbols below.



Hazardous fluids can cause fire or explosions, burns or death could result.



Extremely hot - Severe burns can occur on contact.



Biohazard can cause serious personal injury.



Hazardous fluids can Hazardous pressure, eruptions or explosions could cause personal injury or property damage.

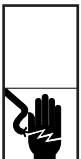


Rotating machinery Amputation or severe laceration can result.



Hazardous voltage can shock, burn or cause death.

Only qualified personnel should install, operate and repair pump. Any wiring of pumps should be performed by a qualified electrician.



**WARNING !** To reduce risk of electrical shock, pumps and control panels must be properly grounded in accordance with the National Electric Code (NEC) or the Canadian Electrical Code (CEC) and all applicable state, province, local codes and ordinances. Improper grounding voids warranty.



**WARNING!** To reduce risk of electrical shock, always disconnect the pump from the power source before handling or servicing. Lock out power and tag.



**WARNING!** Operation against a closed discharge valve will cause premature bearing and seal failure on any pump, and on end suction and self priming pump the heat build may cause the generation of steam with resulting dangerous pressures. It is recommended that a high case temperature switch or pressure relief valve be installed on the pump body.



**CAUTION !** Never operate a pump with a plug-in type power cord without a ground fault circuit interrupter.



**CAUTION !** Pumps build up heat and pressure during operation-allow time for pumps to cool before handling or servicing.



**WARNING !** Do not pump hazardous materials (flammable, caustic, etc.) unless the pump is specifically designed and designated to handle them.



**CAUTION !** Do not block or restrict discharge hose, as discharge hose may whip under pressure.



**WARNING !** Do not wear loose clothing that may become entangled in moving parts.



**WARNING !** Keep clear of suction and discharge openings. **DO NOT** insert fingers in pump with power connected.



Always wear eye protection when working on pumps.



Make sure lifting handles are securely fastened each time before lifting. **DO NOT** operate pump without safety devices in place. Always replace safety devices that have been removed during service or repair. Secure the pump in its operating position so it can not tip over, fall or slide.

**DO NOT** exceed manufacturers recommendation for maximum performance, as this could cause the motor to overheat.

**DO NOT** remove cord and strain relief. **DO NOT** connect conduit to pump.



**WARNING !** Cable should be protected at all times to avoid punctures, cut, bruises and abrasions. Inspect frequently. Never handle connected power cords with wet hands.



**WARNING !** To reduce risk of electrical shock, all wiring and junction connections should be made per the NEC or CEC and applicable state or province and local codes. Requirements may vary depending on usage and location.



**WARNING!** Submersible Pumps are not approved for use in swimming pools, recreational water installations decorative fountains or any installation where human contact with the pumped fluid is common.



**WARNING!** Products returned must be cleaned, sanitized, or decontaminated as necessary prior to shipment, to insure that employees will not be exposed to health hazards in handling said material. All Applicable Laws And Regulations Shall Apply.



Bronze/brass and bronze/brass fitted pumps may contain lead levels higher than considered safe for potable water systems. Lead is known to cause cancer and birth defects or other reproductive harm. Various government agencies have determined that leaded copper alloys should not be used in potable water applications. For non-leaded copper alloy materials of construction, please contact factory.



Crane Pumps & Systems, Inc. is not responsible for losses, injury, or death resulting from a failure to observe these safety precautions, misuse or abuse of pumps or equipment.

Other brand and product names are trademarks or registered trademarks of their respective holders.

® Deming is a registered trademark of Crane Pumps & Systems, Inc.

1998, 2002, 4/06, 9/06

## SPECIFICATIONS: BAF-8 (082110A)

<b>STATIONARY ELBOW</b> .....	Cast Iron, ASTM A48, Class 30.
<b>MOVABLE FITTING:</b> .....	Cast Iron, ASTM A48, Class 30.
<b>GUIDE RAIL CAP:</b>	
<i>Bracket</i> .....	304 stainless steel.
<i>Plugs</i> .....	Rubber and Steel
<b>HARDWARE</b> .....	300 series stainless steel.
<b>GASKETS</b> .....	Rubber
<b>PAINT</b> .....	Air Dry Enamel

### OPTIONAL

#### INTERMEDIATE SUPPORT:

<i>Bracket</i> .....	304 stainless steel.
<i>Plugs</i> .....	Rubber and Steel
<i>Hardware</i> .....	300 Series stainless steel.

### SECTION B: GENERAL INFORMATION

#### B-1) Introduction:

Deming Break Away Fittings (BAF) are precision engineered and manufactured of the highest quality castings. Each one is individually inspected by a Quality Assurance Program to allow years of continuous service. Through proper installation this unit will provide superior service. This manual will provide basic information for installation, maintenance, and repair.

#### B-2) Receiving:

Upon receiving this unit, inspect it for damage or shortages. If damage has occurred, file a claim immediately with the delivery company that delivered your equipment. If the manual is removed from the crating, do not lose or misplace it.

#### B-3) Storage:

This unit has been packaged and protected for shipping and indoor storage. If it is to be stored outside for an extended period, additional protection must be added.

Short Term - For best results, retain BAF factory assembled, in a dry atmosphere with constant temperature for up to six (6) months.

Long Term - Any length of time exceeding six (6) months, but not more than twenty four (24) months. The units should be stored in a temperature controlled area, a roofed over walled enclosure that provides protection from the elements (rain, snow, wind blown dust, etc.), and whose temperature can be maintained between +40 deg. F and +120 deg. F. If extended high humidity is expected to be a problem, all exposed parts should be inspected before storage and all surfaces that have the paint scratched, damaged, or worn should be recoated. All surfaces should then be sprayed with a rust-inhibiting oil.

#### B-4) Service Centers:

For the location of the nearest Service Center, check your representative or Crane Pumps & Systems, Inc., Service Department in Piqua, Ohio, telephone (937) 778-8947 or Crane Pumps & Systems Canada Inc., Bramton, Ontario (905) 457-6223.

### SECTION: C INSTALLATION

#### C-1) Location:

The Break Away Fitting Model BAF-8, when used in conjunction with Deming 8" Submersible Sewage Pumps (Series 8SE-HL and 8SE-HA) is recommended for operation in a wet well, tank, or lift station. The Non-Sparking Break-A-Way Fitting Model BAF-E8 when used in conjunction with Deming 8" Explosion Proof Submersible Sewage Pumps (Series 8XSE-HA) is recommended for operation in a non-hazardous or Class 1, Group D, Division 1 hazardous location wet well, basin, or lift station.

#### C-2) Design Layout:

Models BAF-8 and BAF-E8 assembled with pumps listed in Section C-1 can be installed through access covers with size of 36" (914mm) x 48" (1219mm) opening, for each pump.

Figures 1 through 4 provide clearance dimensions, guide pipe locations, and proposed anchor bolt locations at the access cover opening. It is recommended that the upper guide rail cap be installed with 5/8 inch stainless steel anchors. Figures 1 thru 4 also provide the required anchor bolt locations for the stationary elbow to be installed with four anchor bolts set in a metal sleeve and accurately set into concrete. Hook bolts can be used, however, they are more difficult to locate in concrete. Use required shims under the stationary elbow base to level the horizontal flange and then grout under the base as required. A 30 day concrete cure is required before a full load can be applied to the anchor bolts. Design the anchor bolts for 1.6 kip uplift per bolt.

The 3" schedule 40 guide rail pipes must be plumbed after mounting on the stationary base elbow plugs. Pipe material may be galvanized steel or stainless steel (optional from manufacturer or supplied by customer).

#### C-3) Intermediate Support Assembly:

Whenever the guide pipe lengths exceed 13 feet, an optional intermediate guide rail support bracket should be used (see Figure 5 and 6). The intermediate guide rail support brackets may be supported from the vertical discharge pipe.

#### C-4) Installing Pump To Break Away Fitting:

inches  
(mm)

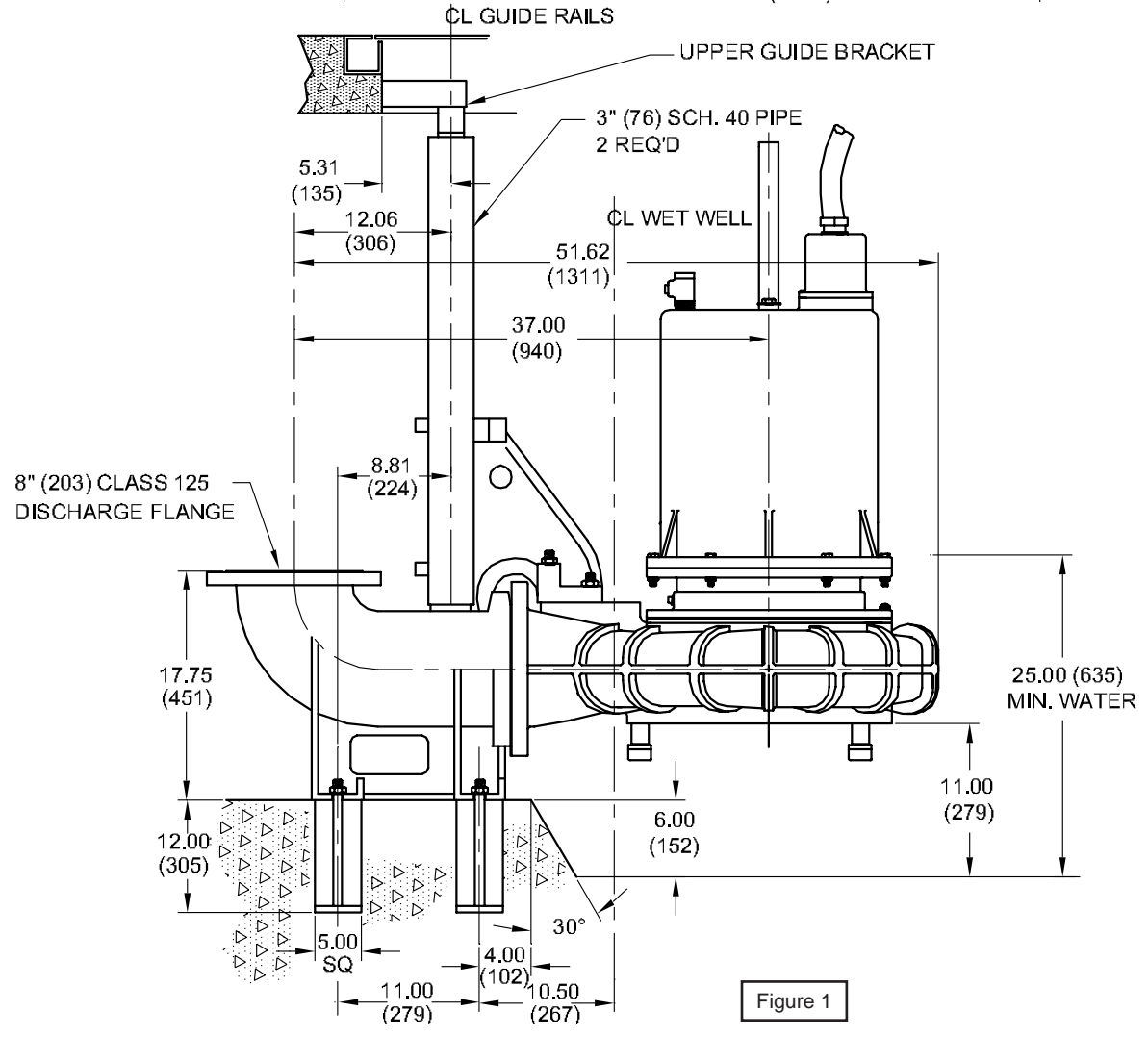
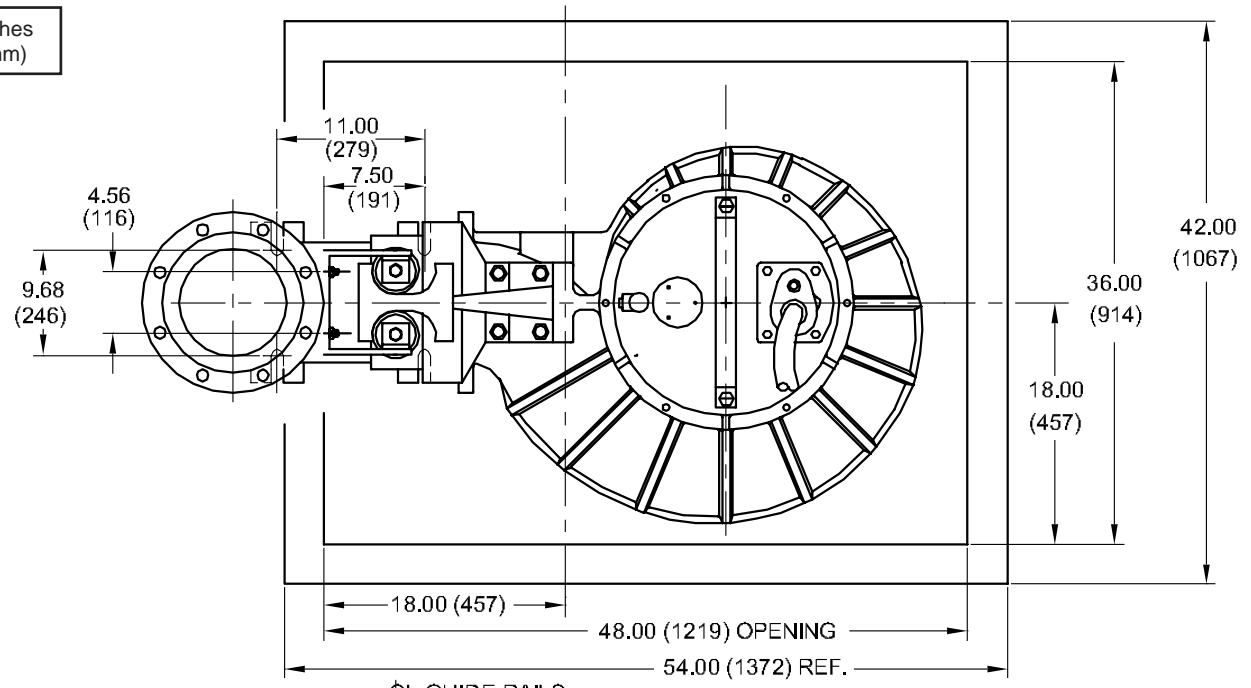


Figure 1

These instructions apply to all Deming pumps with a 125 lb. flange horizontal discharge on volute. All parts for standard and non-sparking BAF's are the same except for moveable assembly. BAF-8 standard assemblies use a Cast Iron moveable assembly and BAF-E8 non-sparking assemblies use a bronze face moveable assembly.

Insert and tighten studs (7) and (11) into pump volute as shown in Figure 5. Position moveable (2) onto pump volute over studs and apply lockwashers (9) and hex nuts (8) onto studs and torque each to 75/85 ft. lbs.

#### **C-5) Installation Descent Speed:**

When lowering pump into wet well on the guide rails, do not exceed a descent speed of 3.2 inches per second or 16 feet per minute.

### **SECTION D: MAINTENANCE AND REPAIR.**

#### **D-1) Maintenance:**

Whenever the pump is lifted for inspection, it is recommended any foreign material be flushed from moveable fitting, guide plugs, and stationary base elbow face before replacement in wet well.

#### **D-2) Repair:**

**NOTE:** All item numbers in ( ) refer to Figure 5.

#### **D-2.1) Guide Rail Cap:**

To replace Guide Plug(s) (3A) on Upper Guide Bracket (3), remove cotter pin (3D) and cap screw (3C) from disk (3B). Inspect plug (3A) for damage or cuts and replace if required. Reassemble by placing plug (3A) on tab of bracket (3), place disk (3B) on other end and insert screw (3C), screw into disk and tighten. Place cotter pin (3D) into capscrew (3C).

#### **D-2.2) Intermediate Support :**

To replace Guide Plug(s) on Intermediate support (reference Figure 5), remove cotter pin (3D) and cap screw (3C) from disk (3B). Inspect plug (3A) for damage or cuts and replace if required. Reassemble by placing plug (3A) on tab of bracket (3), place disk (3B) on other end and insert screw (3C), screw into disk and tighten. Place cotter pin (3D) into capscrew (3C).

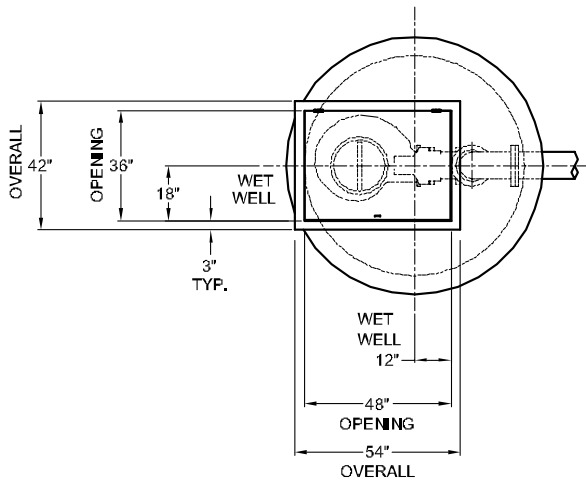
### **SECTION E: REPLACEMENT PARTS**

#### **E-1) Ordering Replacement Parts:**

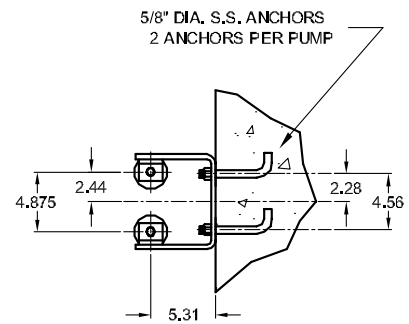
When ordering replacement parts, always furnish the following information:

1. Product Model
2. Part Description
3. Part Number
4. Quantity Required
5. Shipping Instructions
6. Billing Instructions

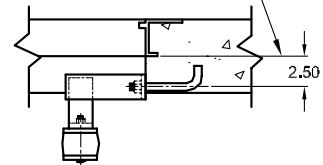
Product improvements are made from time to time. The latest part design will be furnished if it is interchangeable with the old part.



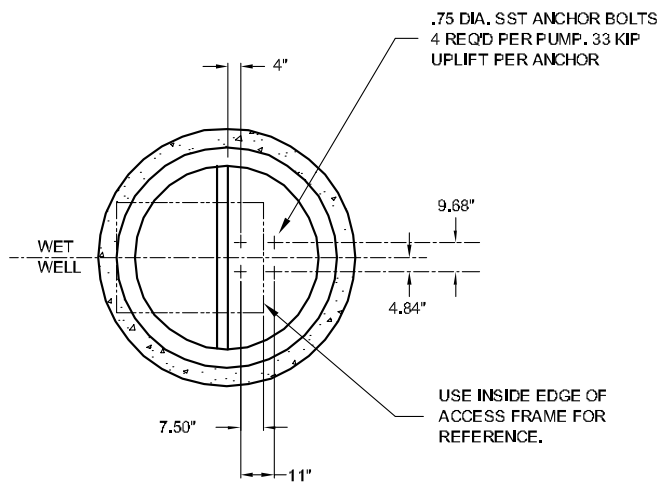
**COVER LOCATIONS**



BOTTOM OF ACCESS DOOR

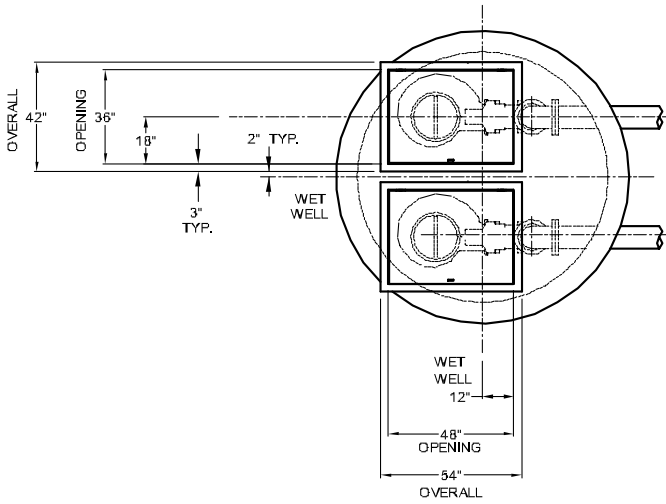


**UPPER GUIDE RAIL  
 HOLDER MOUNTING**

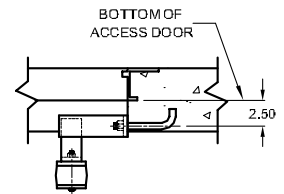
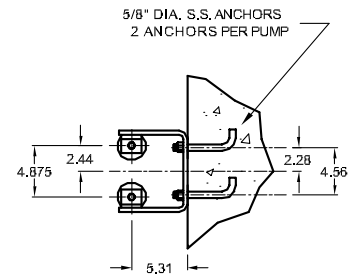


**ANCHOR BOLT LAYOUT**

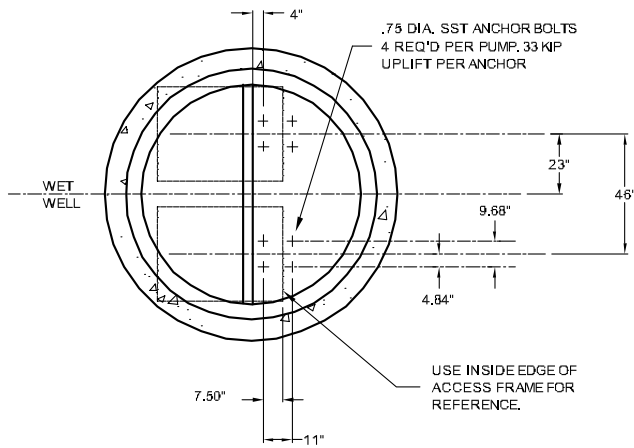
Figure 2



**COVER LOCATIONS**

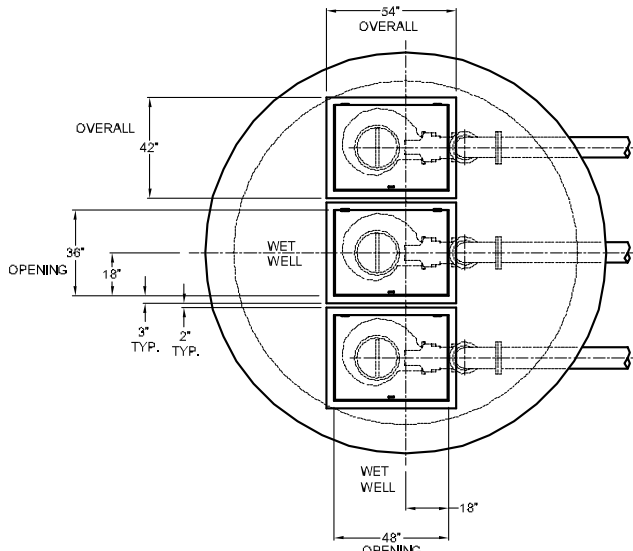


**UPPER GUIDE RAIL  
HOLDER MOUNTING**

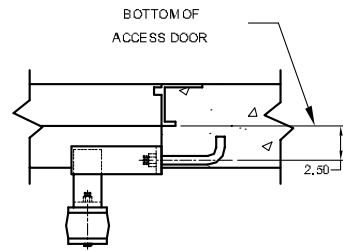
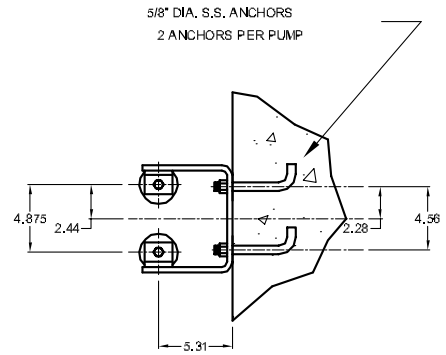


**ANCHOR BOLT LAYOUT**

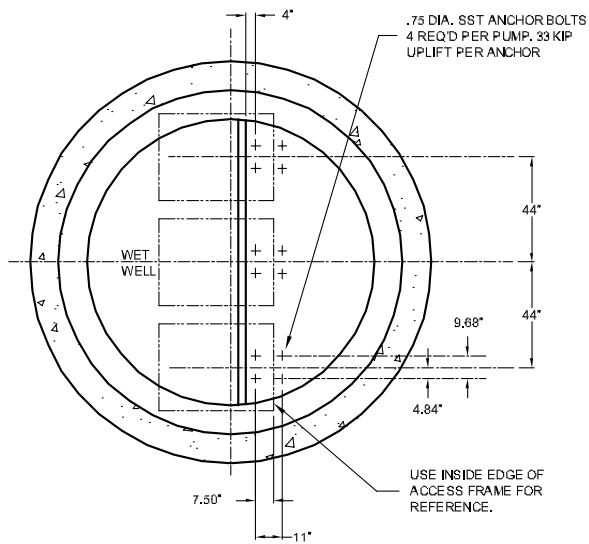
Figure 3



COVER LOCATIONS



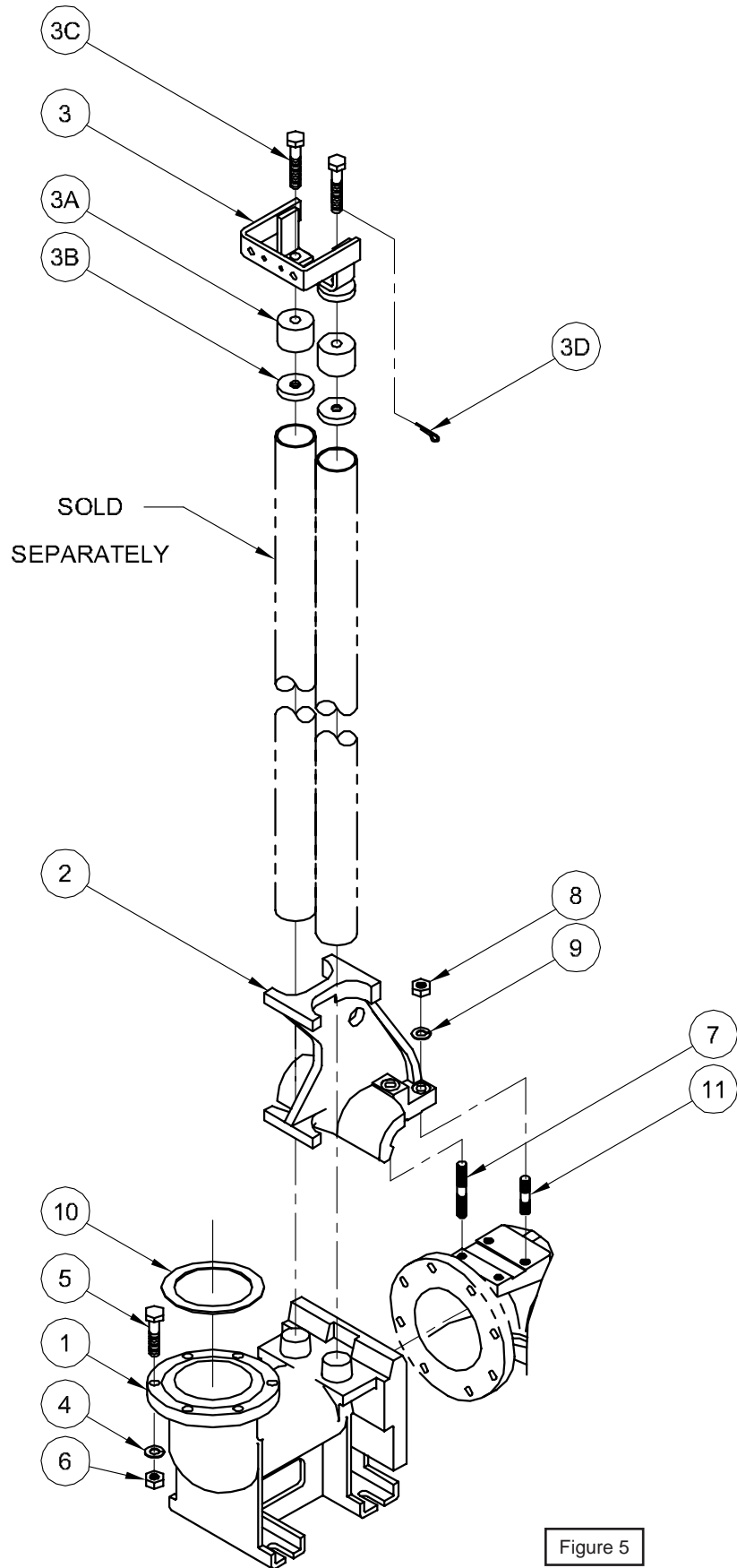
UPPER GUIDE RAIL  
HOLDER MOUNTING



ANCHOR BOLT LAYOUT

Figure 4





**PARTS LIST**  
**BAF-8 p/n 082110A**

ITEM	QTY.	PART NO.	DESCRIPTION	
1	1	079680A	Stationary Elbow Assembly	
2	1	079326A	Slide, Moveable Assembly	
3	1	079907	Upper Guide Bracket	
3A	2	079909	Plug, 2.88" O.D. x 2.00" Lg	Rubber
3B	2	079910	Threaded Disk, 2.88" x .38"	Steel
3C	2	079911	Hex Hd Screw, 7/16-14 x 3.25" Lg	Steel
3D	2	002917	Cotter Pin, 1.25" Dia. x 1.00" Lg	
4	8	028864	Lock Washer, 7/8"	Stainless
5	8	002310	Hex Hd. Screw, 7/8-9 x 3" Lg	
6	8	028285	Hex Nut, 7/8-9	
7	2	079859	Stud, 3/4-10 x 4-3/4" Lg	18-8 SS
8	4	15-7-1	Hex Nut, 3/4-10	18-8 SS
9	4	20-16-1	Lock Washer, 3/4	18-8 SS
10	2	082114	Gasket, 13.50"	Rubber
11	2	079861	Stud, 3/4-10 x 3-1/8" Lg	18-8 SS

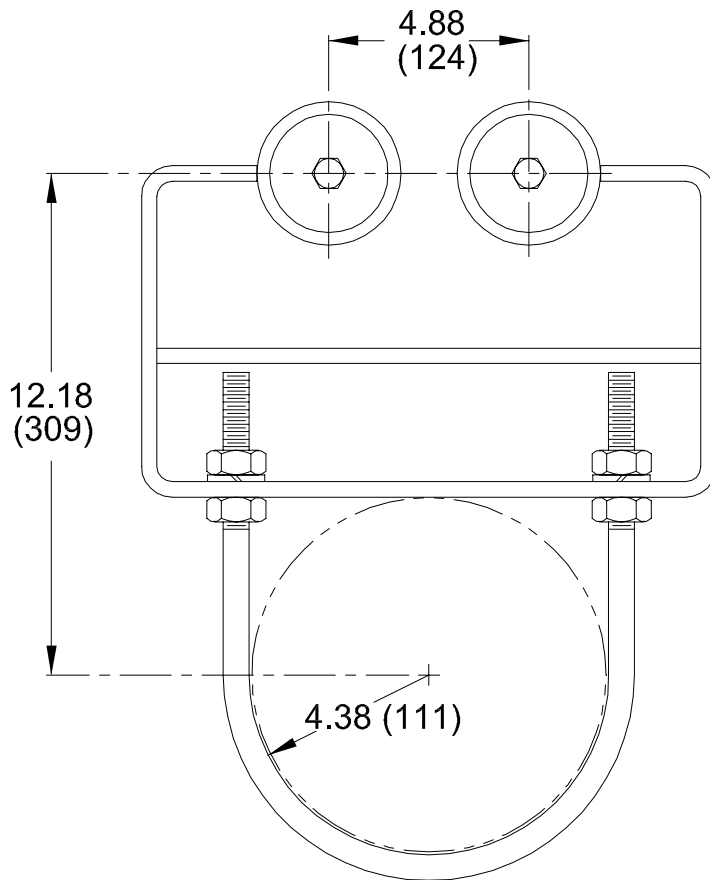


Figure 6

**8" Intermediate Support Bracket  
p/n 085034G**

ITEM	QTY.	PART NO.	DESCRIPTION	
	1	085134F	Intermediate Support Assembly	
	1	079906G	Guide Rail Bracket Assembly	Stainless
	4	079909	Guide Plug, 2.88" O.D. x 2.00" Lg.	Rubber
	4	1-169-6	Hex Hd. Screw, .437-14 x 3.25" Lg.	18-8 SS
	1	085136F	Bolt, U, 5/8-11, 12.00" Lg.	18-8 SS
	2	20-24-1	Split, Lock Washer, 5/8"	18-8 SS

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## Limited 24 Month Warranty

Crane Pumps & Systems warrants that products of our manufacture will be free of defects in material and workmanship under normal use and service for twenty-four (24) months after manufacture date, when installed and maintained in accordance with our instructions. This warranty gives you specific legal rights, and there may also be other rights which vary from state to state. In the event the product is covered by the Federal Consumer Product Warranties Law (1) the duration of any implied warranties associated with the product by virtue of said law is limited to the same duration as stated herein, (2) this warranty is a LIMITED WARRANTY, and (3) no claims of any nature whatsoever shall be made against us, until the ultimate consumer, his successor, or assigns, notifies us in writing of the defect, and delivers the product and/or defective part(s) freight prepaid to our factory or nearest authorized service station. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply. **THE SOLE AND EXCLUSIVE REMEDY FOR BREACH OF ANY AND ALL WARRANTIES WITH RESPECT TO ANY PRODUCT SHALL BE TO REPLACE OR REPAIR AT OUR ELECTION, F.O.B. POINT OF MANUFACTURE OR AUTHORIZED REPAIR STATION, SUCH PRODUCTS AND/OR PARTS AS PROVEN DEFECTIVE. THERE SHALL BE NO FURTHER LIABILITY, WHETHER BASED ON WARRANTY, NEGLIGENCE OR OTHERWISE.** Unless expressly stated otherwise, guarantees in the nature of performance specifications furnished in addition to the foregoing material and workmanship warranties on a product manufactured by us, if any, are subject to laboratory tests corrected for field performance. Any additional guarantees, in the nature of performance specifications must be in writing and such writing must be signed by our authorized representative. Due to inaccuracies in field testing if a conflict arises between the results of field testing conducted by or for user, and laboratory tests corrected for field performance, the latter shall control. **RECOMMENDATIONS FOR SPECIAL APPLICATIONS OR THOSE RESULTING FROM SYSTEMS ANALYSES AND EVALUATIONS WE CONDUCT WILL BE BASED ON OUR BEST AVAILABLE EXPERIENCE AND PUBLISHED INDUSTRY INFORMATION. SUCH RECOMMENDATIONS DO NOT CONSTITUTE A WARRANTY OF SATISFACTORY PERFORMANCE AND NO SUCH WARRANTY IS GIVEN.**

This warranty shall not apply when damage is caused by (a) improper installation, (b) improper voltage (c) lightning (d) excessive sand or other abrasive material (e) scale or corrosion build-up due to excessive chemical content. Any modification of the original equipment will also void the warranty. We will not be responsible for loss, damage or labor cost due to interruption of service caused by defective parts. Neither will we accept charges incurred by others without our prior written approval.

This warranty is void if our inspection reveals the product was used in a manner inconsistent with normal industry practice and/or our specific recommendations. The purchaser is responsible for communication of all necessary information regarding the application and use of the product. **UNDER NO CIRCUMSTANCES WILL WE BE RESPONSIBLE FOR ANY OTHER DIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO TRAVEL EXPENSES, RENTED EQUIPMENT, OUTSIDE CONTRACTOR FEES, UNAUTHORIZED REPAIR SHOP EXPENSES, LOST PROFITS, LOST INCOME, LABOR CHARGES, DELAYS IN PRODUCTION, IDLE PRODUCTION, WHICH DAMAGES ARE CAUSED BY ANY DEFECTS IN MATERIAL AND/OR WORKMANSHIP AND/OR DAMAGE OR DELAYS IN SHIPMENT. THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER EXPRESS OR IMPLIED WARRANTY, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

No rights extended under this warranty shall be assigned to any other person, whether by operation of law or otherwise, without our prior written approval.

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PUMPS & SYSTEMS

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Brampton, Ont. Canada L6T 2J6  
(905) 457-6223  
Fax (905) 457-2650

**IMPORTANT!  
WARRANTY REGISTRATION**

Your product is covered by the enclosed Warranty.  
To complete the Warranty Registration Form go to:

<http://www.cranepumps.com/ProductRegistration/>

If you have a claim under the provision of the warranty, contact your local  
Crane Pumps & Systems, Inc. Distributor.

**RETURNED GOODS**

**RETURN OF MERCHANDISE REQUIRES A "RETURNED GOODS AUTHORIZATION".  
CONTACT YOUR LOCAL CRANE PUMPS & SYSTEMS, INC. DISTRIBUTOR.**



**Products Returned Must Be Cleaned, Sanitized,  
Or Decontaminated As Necessary Prior To Shipment,  
To Insure That Employees Will Not Be Exposed To Health  
Hazards In Handling Said Material. All Applicable Laws  
And Regulations Shall Apply.**

