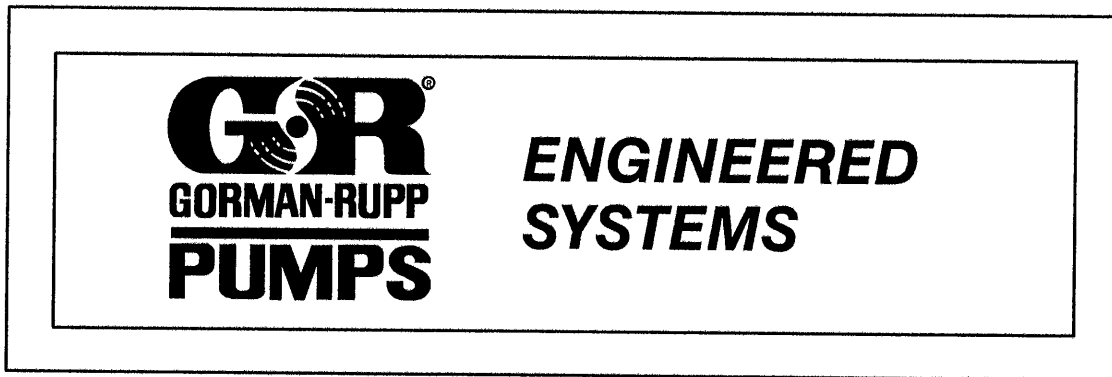


STATION ENCLOSURE INSTALLATION PROCEDURES



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INSTALLATION PROCEDURES FOR STATION ENCLOSURES

This manual provides information for personnel responsible for the installation of the Gorman-Rupp Station Enclosure.

This enclosure has been operated and thoroughly tested at the factory to insure that it meets your requirements and is ready for installation.

Please read this manual completely before installing the station enclosure. The installation instructions are keyed to the illustrations at the end of this manual. If the procedures in this manual are followed carefully, your Gorman-Rupp enclosure will provide years of continuous service.

The following are used to alert maintenance personnel to procedures which require special attention, to those which could damage equipment, and to those which could be dangerous to personnel:

NOTE

Instruction to aid in installation, operation, or maintenance or which clarify a procedure



Instructions which must be followed to avoid causing damage to the product or other equipment incidental to the installation. These describe the procedure required and the damage which could result from failure to follow the procedure.



Instructions which must be followed to avoid causing injury which could result from failure to follow the procedure.



This equipment is designed for automatic control. It can start without warning unless precautions are taken to de-energize electrical circuits. The equipment contains more than one source of power. More than one disconnect is required to completely de-energize the equipment for servicing.

Always make sure that circuits are de-energized to prevent starting when performing maintenance or repair on operating parts. Tag and padlock controls to prevent accidental startup during maintenance or repair.



Install and operate this station in accordance with the National Electrical Code and local codes. Ground the unit before applying line potential. Failure to comply can result in serious injury or death.



The electrical power applied to this station is high enough to cause injury or death. Always check to insure circuits are de-energized before making physical contact with current-carrying parts. If circuits cannot be de-energized when performing maintenance, troubleshooting, or repair, use extreme caution to prevent contact with electrical circuits.



This pumping station is usually used to pump sewage which could result in illness and disease through personal contact. Wear protective clothing and equipment before performing maintenance or repairs that could result in contact with the material being pumped.

SITE PREPARATION



In the event of conflict between the instructions contained in this section and The National Electric Code or local codes, The National Electric Code or local codes shall take precedence.

Electrical

Electrical power furnished to the site must be in accordance with the electrical wiring diagram, and maintained within $\pm 10\%$.

Notify the local power company in advance to insure that suitable electric power will be available at the site when the pump station is delivered.

Where local codes permit, Gorman-Rupp strongly recommends that power lines to the station terminate in a service entrance disconnect outside the station.

Pad Preparation

The pad provided for the pump station must be in accordance with specifications. For best installation results the slab upon which the enclosure sits must be true and level. The pad itself must be poured flat and level equal to or greater than FF38 and FL25 values established by the American Concrete Institute. The slab immediately surrounding

the enclosure shall be sloped away at a pitch of 1/2" (12,7 mm) per foot to promote proper drainage and eliminate the potential of standing water around the enclosure. At the time of installation the slab shall be clean and dry.

The pad should be fitted with piping holes in accordance with the pad engineering drawing.

The piping holes must be approximately 2 inches (51 mm) larger in diameter than the outside diameter of the suction and discharge pipes if flange adaptors are used, or 2 inches (51 mm) larger in diameter than the outside diameter of the flanges if flange-to-flange connections are used.

The pad surface and surrounding area should be free of all debris before the pump station is set on the pad. Even a small amount of debris on the pad can affect piping installation and the station level.

This pump station as shipped from the factory varies in weight. Check the bill of lading accompanying the shipment. **All lifting equipment must be of sufficient capacity, plus an appropriate safety factor (a minimum of 4 times the weight of the station), to support the station at the angle of lift required.** The lifting equipment must be capable of lifting the station enclosure 10 feet (3 m) above the carrier deck in order to clear equipment shipped within the enclosure.

A four-point lift, employing a four-point sling is necessary to lift the station safely from the carrier. The sling must be rated for at least the load of the station, plus an appropriate safety factor (a minimum of 4 times the weight of the station), and must be long enough to accommodate the lift configuration.

PREINSTALLATION INSPECTION

This Gorman-Rupp pump station was thoroughly inspected before leaving the factory, and was complete and operational when shipped.

Loading and tie down were supervised by Gorman-Rupp personnel, and the bed of the carrier was padded, if necessary, to protect the station.

In spite of all precautions however, damage may have occurred in transit, and the station should be inspected before being offloaded.

Check to see that all parts are present and undamaged.

OFFLOADING

Lifting



Make certain that the lifting equipment and sling are of an adequate capacity, plus an appropriate safety factor (a minimum of 4 times the weight of the station), to support the weight of the station.

Do not attempt a lift until the station pad has been inspected and is in condition to receive the station. Remove all construction debris from the pad and the surrounding area.

Do not attempt to push or slide the station from the carrier bed.

If possible, position the lifting equipment so that the station can be lifted and set on the station pad without moving the lifting equipment. Make certain that the lifting equipment is on a solid surface and stabilizers are in position.

Check that the angle of lift will not de-rate the lifting equipment below the required capacity.



Do not attempt to lift the station with cables making contact with the station. Serious damage to the station could result.



Do not use a sling that will have an angle of less than 30° between cables and the station enclosure when lifting the enclosure. Serious damage to station lifting eyes could result.



When the pump station is suspended, keep personnel from beneath it at all times.

Make all lifts as smoothly as possible. The station equipment includes control panels with sensitive electrical components, and care should be taken to avoid shocks and rough handling.



Lift all separate pieces of equipment individually. Failure to do so may result in serious damage to the station equipment.

ENCLOSURE INSTALLATION

Locate all equipment to be mounted inside the enclosure on the station pad in proper position. This equipment should be installed in accordance with the manufacturers' recommendations. Be sure to allow enough room around equipment to anchor the station enclosure to the pad.



Leave all temporary reinforcements in place during shipping and handling to prevent stress and damage to the enclosure while handing (see Figure 2).

Install the fiberglass enclosure as follows:

1. Move the station enclosure unit by lifting it with the four (4) lifting eyes located on each

corner of the station (see Figure 1), unless another method has been approved by Gorman-Rupp engineering. Position the fiberglass enclosure on the station pad, carefully aligning it with the pump unit. Remove the temporary wood reinforcement. Check to ensure that the enclosure is square and the walls are straight.

2. Refer to the anchors to be used to secure the station enclosure for the appropriate size and depth of the mounting holes to be drilled (1/2" x 6" [12,7mm x 152 mm] minimum anchor size). The flange on the bottom of the enclosure has been pre-drilled, use these holes to drill the required holes in slab.
3. After drilling the anchor holes, lift the enclosure off the pad high enough to clean the bottom of the enclosure flange. Clean **all** of the drilled material from the surface of the pad. Wipe the bottom of the enclosure flange with lacquer thinner or other solvent-based cleaner to remove any mold wax and debris. The enclosure flange bottom was sanded at the factory to prepare the surface for application of the "Butyl Sealant". **Both the pad and the bottom of the flange must be clean to ensure adhesion and prevent leakage.**
4. Apply "Butyl Sealant" (1/2" by 1-1/2" [12,7 by 38,1 mm] tape supplied with the enclosure) to the underside of the enclosure mounting flange (see Figure 1). Apply the tape 3/4" (19 mm) from the outside edge of the flange.
5. Carefully set the enclosure back in place, using caution to avoid damaging the "Butyl Sealant" and making sure the holes in the flange align with the holes in the pad. A steel rod placed in two opposite corners will help to align the holes.
6. Anchor the enclosure to the pad with "Red Head" type stainless steel expansion anchors. **Do not over-tighten the fasteners;**

damage to the flanges and/or sealing tape will occur.

7. Connect the conduit from station enclosure to the control panel. Field wire the enclosure to the control panel per the Gorman-Rupp wiring diagram.



If the enclosure wall is penetrated the opening must be carefully sealed with the caulking provided (use no substitutes) to prevent the entrance of moisture. Failure to seal may result in the enclosure wall delaminating.

If your pump station enclosure is wider than 12 feet (3,7 m), the enclosure will come in two (2) or more sections. The enclosure was pre-fabricated at the factory to assure proper fit and alignment. All materials needed to assemble the enclosure in the field have been shipped with the enclosures. The package should include:

- Stainless steel nuts, bolts, and washers.
- "Butyl Sealant"
- Fiberglass caulking (use no substitutes)



Leave all temporary reinforcements in place during shipping and handling to prevent stress and damage to the enclosure while handling (see Figure 2).

Install this type of enclosure by following these instructions:

1. Move the station enclosure units by lifting them with the four (4) lifting eyes located on each corner (see Figure 1), unless another method has been approved by Gorman-Rupp engineering. Position one enclosure section on the station pad, carefully aligning it with the pump unit. Remove the temporary

- wood reinforcement. Check to ensure that the enclosure is square and the walls are flat.
2. Refer to the anchors to be used to secure the station enclosure for the appropriate size and depth of the mounting holes to be drilled (1/2" x 6" [12,7mm x 152 mm] minimum anchor size). The flange on the bottom of the enclosure has been pre-drilled, use these holes to drill the required holes in slab.
 3. After drilling the anchor holes, lift the enclosure off the pad high enough to clean the bottom of the enclosure flange. Clean **all** of the drilled material from the surface of the pad. Wipe the bottom of the enclosure flange with lacquer thinner or other solvent-based cleaner to remove any mold wax and debris. The enclosure flange bottom was sanded at the factory to prepare the surface for application of the "Butyl Sealant". **Both the pad and the bottom of the flange must be clean to ensure adhesion and prevent leakage.**
 4. Apply "Butyl Sealant" (1/2" by 1-1/2" [12,7 by 38,1 mm] tape supplied with the enclosure) to the underside of the enclosure mounting flange (see Figure 1). Apply the tape 3/4" (19 mm) from the outside edge of the flange.
 5. Carefully set the enclosure back in place, using caution to avoid damaging the "Butyl Sealant" and making sure the holes in the flange align with the holes in the pad. A steel rod placed in two opposite corners will help to align the holes.
 6. Anchor the enclosure to the pad with "Red Head" type stainless steel expansion anchors. **Do not over-tighten the fasteners;** damage to the flanges and/or sealing tape will occur.
 7. Position the second enclosure section on the pad carefully aligning it with the pump unit and the first enclosure section. Remove the temporary wood reinforcement (Figure 2). Check to ensure that the enclosure is square and the walls are flat.
 8. Check the alignment of the pre-drilled flanges, using the stainless steel hardware provided, temporary bolt the enclosures together.
 9. If enclosure was supplied with "jack post(s)" they should be installed at equal spacing to support the roof flange to prevent sagging.
 10. Using the pre-drilled holes in the flange on the bottom of the enclosure, drill the required holes in slab.
 11. After drilling the anchor holes, un-bolt the enclosure halves and carefully lift the second enclosure section high enough to clean the bottom of the enclosure flange. Clean **all** of the drilled material from the surface of the pad. Wipe the bottom and both mating flanges with lacquer thinner or other solvent-based cleaner to remove any mold wax and debris. **All flanges must be clean to ensure adhesion and prevent leakage.**
 12. Place two rolls of "Butyl Sealant" (1/8" by 1/2" [3,2 by 12,7 mm] supplied with enclosure) on the mating flange of one enclosure section. Mounting hardware should be between the two rolls of sealant (see Figure 4).
 13. Apply "Butyl Sealant" (1/2" by 1-1/2" [12,7 by 38,1 mm] tape supplied with the enclosure) to the underside of the enclosure mounting flange (see Figure 1). Apply the tape 3/4" (19 mm) from the outside edge of the flange.
 14. Carefully lower second enclosure into place aligning both mating flange holes and the mounting flange holes. Use caution to avoid damaging the "Butyl Sealant".
 15. Next, bolt the top and vertical side flanges, using the stainless steel hardware provided.
 16. Anchor the enclosure to the pad with "Red Head" type stainless steel expansion anchors. **Do not over-tighten the fasteners;** damage to the flanges and/or sealing tape will occur.

17. Using the caulking provided (use no substitutes), carefully caulk the entire seam on exterior between the enclosure halves (see Figure 5).
18. Connect the two enclosure lighting conduit loops at the access boxes per the wiring diagram. Connect the conduit from the station enclosure to the control panel. Field wire the enclosure to the control panel per the Gorman-Rupp wiring diagram.



If the enclosure wall is penetrated the opening must be carefully sealed with the caulking (use no substitutes) provided to prevent the entrance of moisture. Failure to seal may result in the enclosure wall delaminating.

If the pump unit is a standby autostart, install the engine exhaust assembly through the roof exhaust thimble from the outside of the enclosure. Install flexible exhaust tubing between the engine exhaust silencer and the exhaust assembly using stainless steel band clamps.

OPERATION

Clean out all debris in the control panel, pump station, and wet well before initiating any phase of pump station operation.

Refer to the pump station Operation and Maintenance Manual, and follow startup and operation instructions.

If the pump station will operate unattended, make a final alarm system check, and secure the station against vandalism.

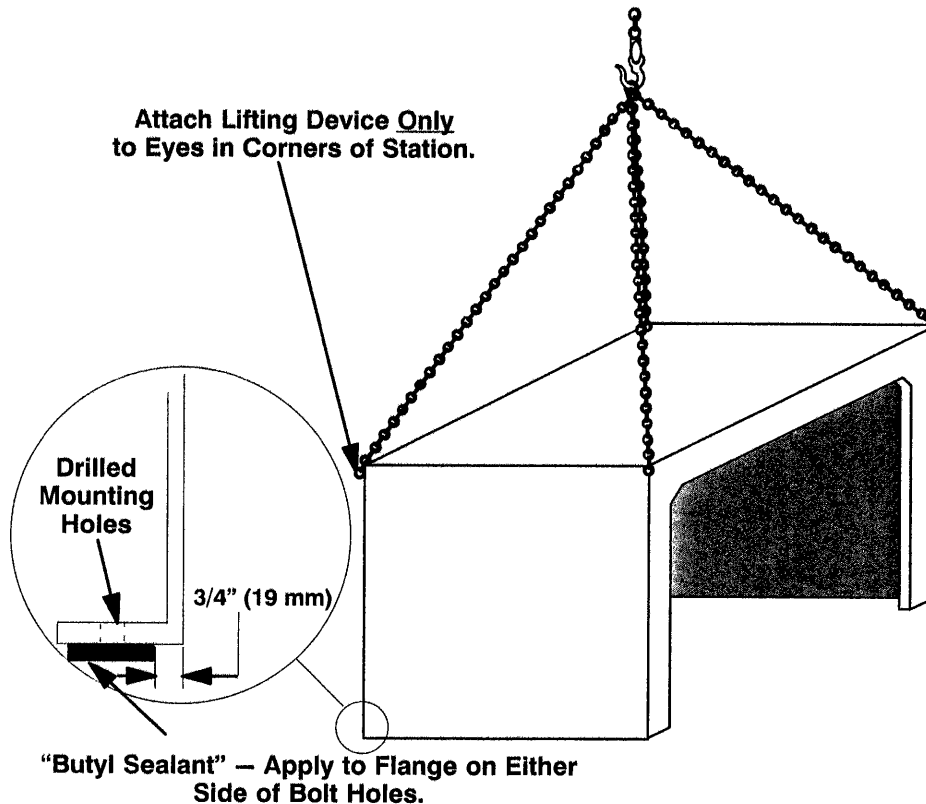
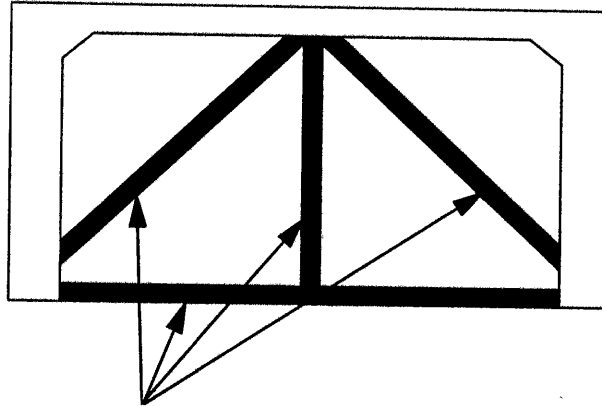


Figure 1.



Temporary Wood Reinforcement – Leave in Place During Shipping and Handling.

Figure 2.

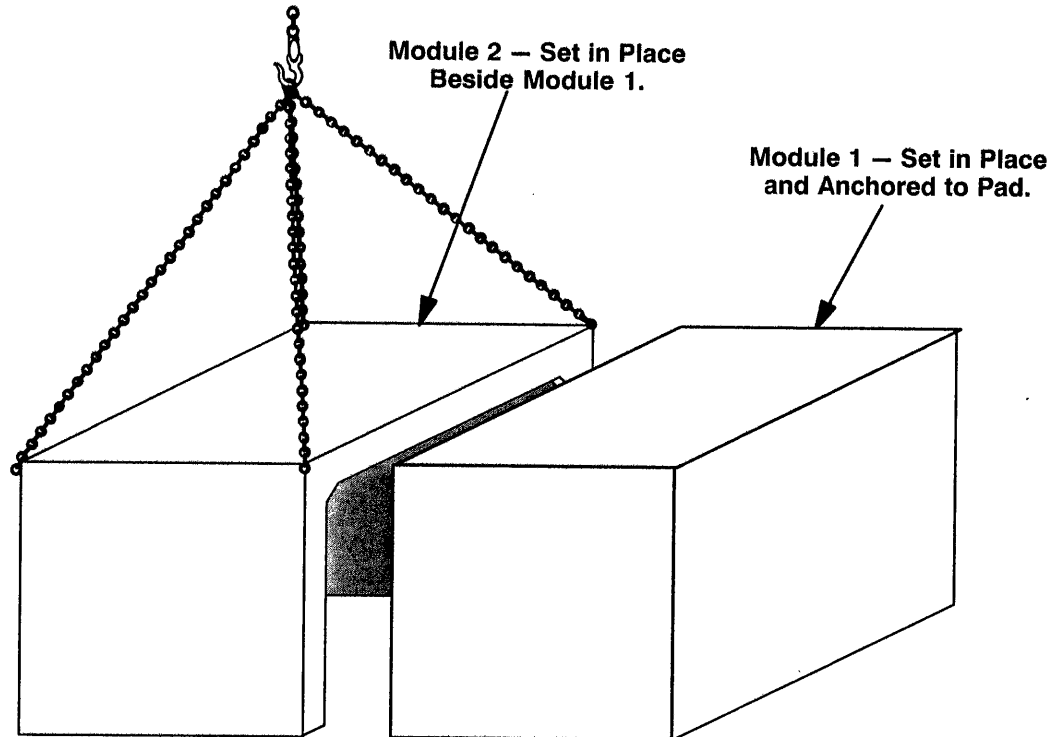


Figure 3.

"Butyl Sealant" – Apply to Flange.

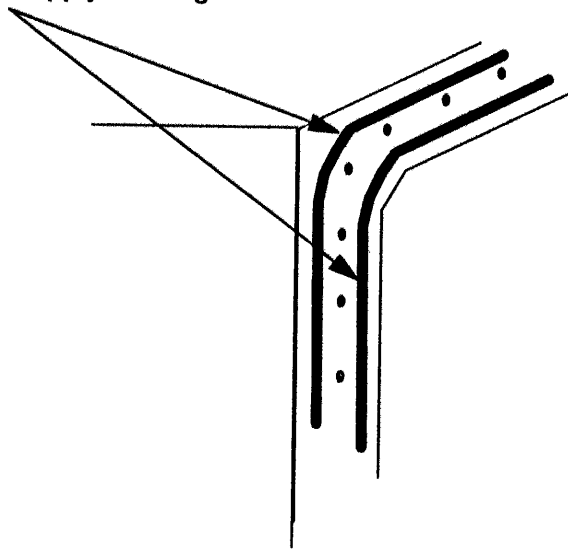


Figure 4.

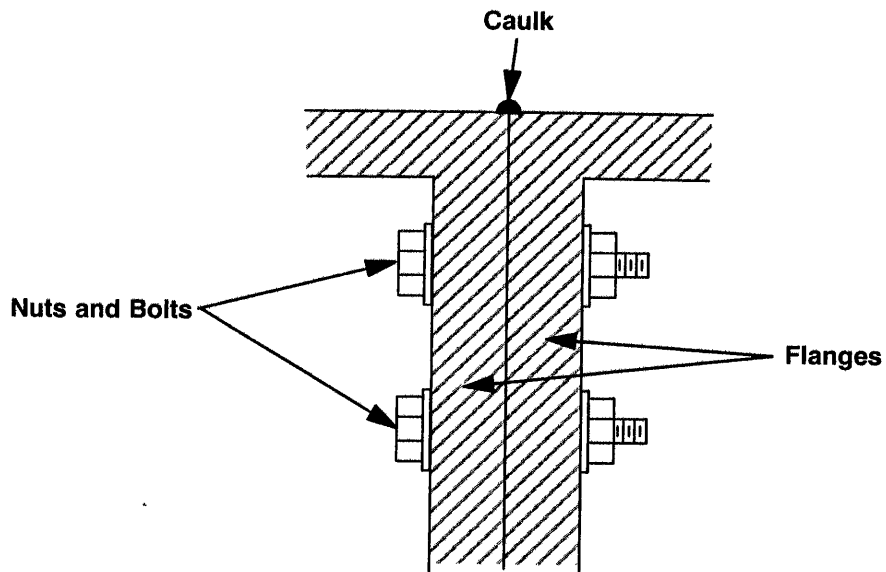


Figure 5.

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