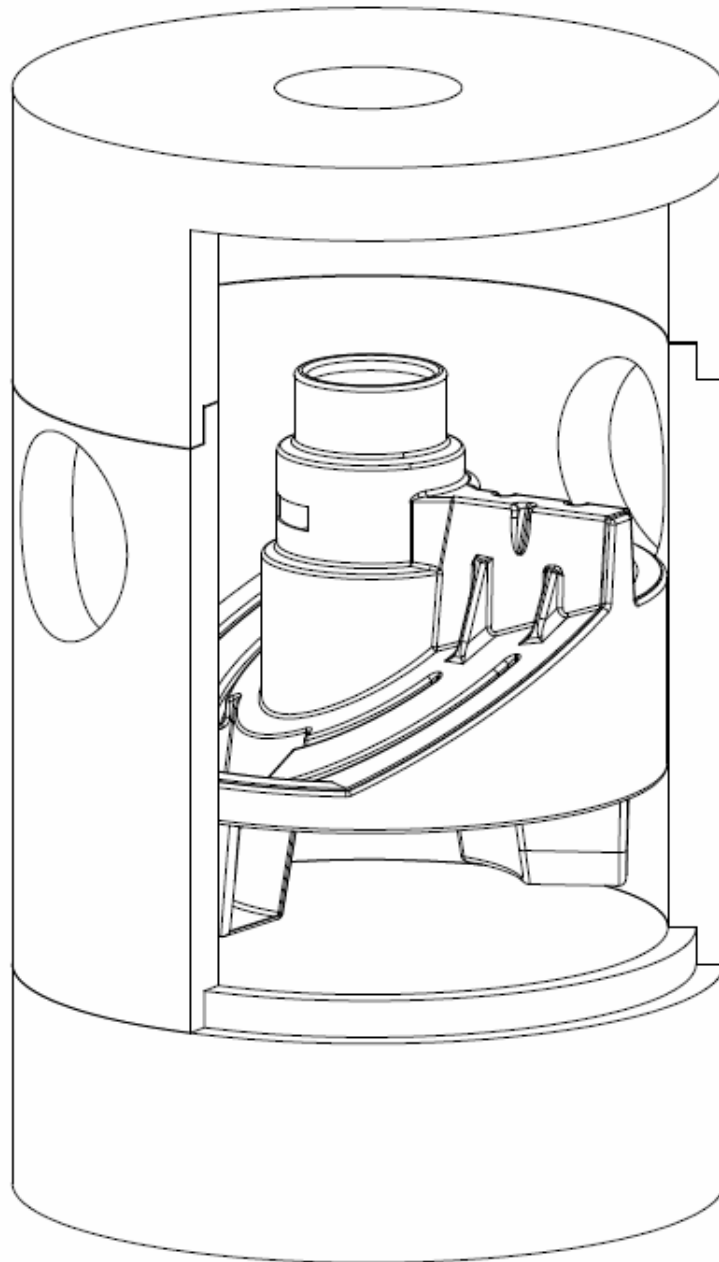
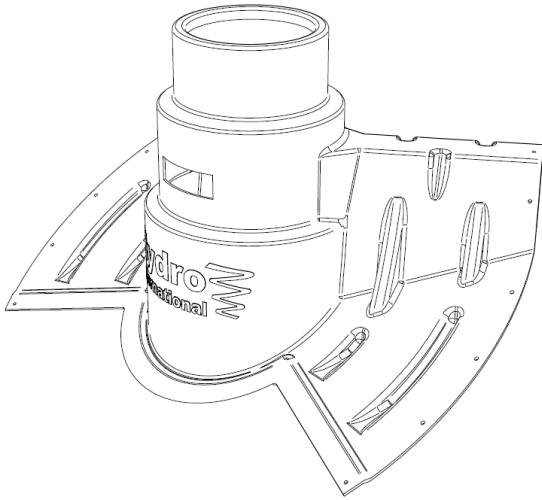


8 ft. First Defense HC[®] Handling, Storage and Pre-Assembly Instructions

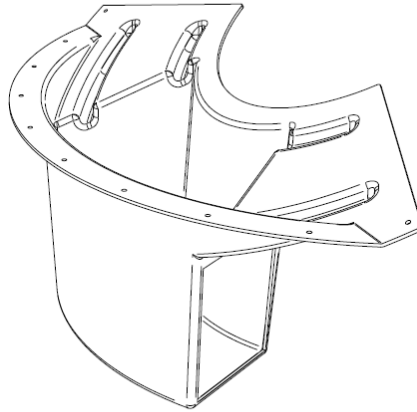


Before assembling the First Defense HC[®] make sure you have the following items:

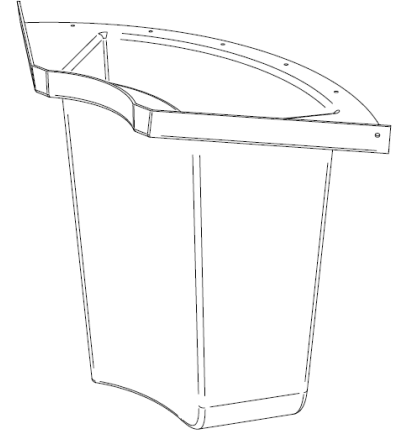
Materials Supplied By Hydro International



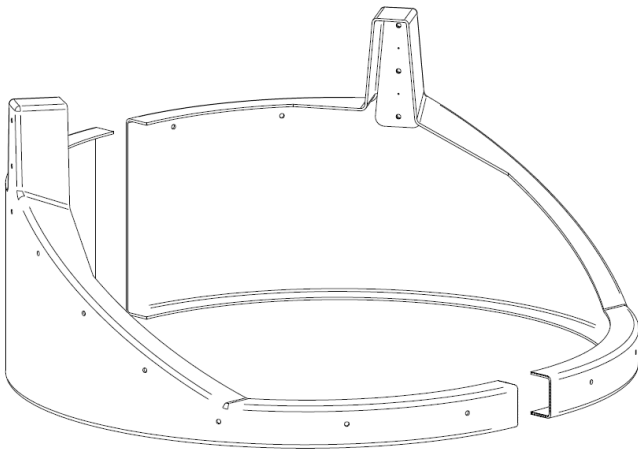
8 ft. **First Defense HC[®]**
Center Shaft



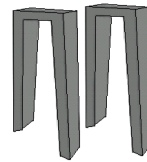
8ft. **First Defense HC[®]**
Inlet Chute



8ft. **First Defense HC[®]**
Outlet Chute



8ft. **First Defense HC[®]**
Right and Left Ledger Supports



First Defense HC[®]
Foam Gasket (x2)



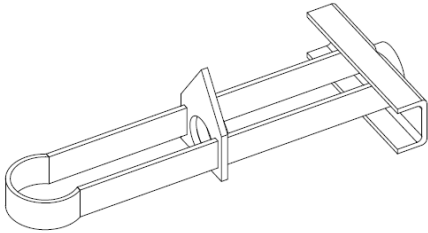
Stencil Kit



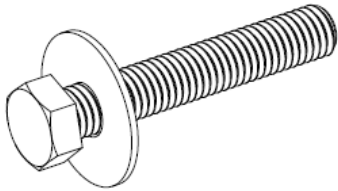
30 in. Frame and
Lid/Grate

* All 8' ft. First Defense FC[®] plastic components are molded from Yellow HDPE

Hardware Supplied By Hydro International



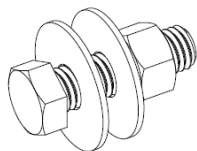
- 1/2 in.-13 Toggle Bolt Anchor Plastic Straps with Stainless Steel Channel
- 29 ea. supplied for securing **Separation Module** to **Ledger Support**



- 18-8 Stainless Steel 1/2 in.-13 x 3-in. Fully Threaded Hex. Head Cap Screw
- Type 18-8 Stainless Steel Oversized Flat Washer, 1/2-in. ID x 2-in. OD.
- As pictured x 29 to be used with toggle bolt anchors in securing **Separation Module** to **Ledger Support**



- Type 18-8 Stainless Steel Oversized Flat Washer, 1/2-in. ID x 2-in. OD
- 22 ea. to be used with precaster supplied expansion anchors in securing the **Ledger Support** to the concrete

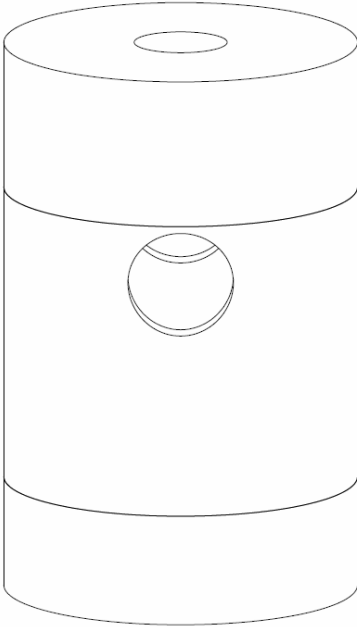


- 18-8 Stainless Steel 1/2-in.-13 x 2-in. Fully Threaded Hex Head Cap Screw
- Type 18-8 Stainless Steel Oversized Flat Washer, 1/2-in. ID x 2-in. OD
- 1/2-in.-13 Hex. Nut
- As pictured x 24 to be used with toggle bolt anchors in securing **Inlet/Outlet Chutes** to **Center Shaft**



- Thread Lubricant

Materials Supplied By Precaster



8 ft. Diameter Precast Concrete Manhole*:

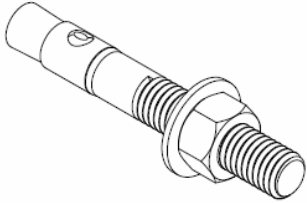
- Top slab cored for corresponding frames and covers
- Bottom Slab/Base
- Risers with cored inlet and outlet



Mastic Sealant

***NOTE: ALL PICK HOLES IN THE PRECAST MUST BE LOCATED ON THE OUTSIDE OF THE STRUCTURE TO ENSURE SYSTEM MAY BE LOADED, OFFLOADED AND INSTALLED ONSITE UPON COMPLETED PREASSEMBLY**

Hardware Supplied By Precaster



- A-304 SS 1/2 in.-13 UNC x 3 3/4 in. Expansion Anchor*
- A-304 SS 1/2 in. I.D. Flat Washer
- A-304 SS 1/2 in.-13 UNC Hex Nut
- Pictured assembly x22 needed for Ledger Support

*** Minimum embedment depth of the 3 1/2 in expansion anchors is 2 1/2 in.**

Required Tools and Equipment

- Measuring Tape
- Ladder
- Hammer
- Hammer Drill and 1/2 in. masonry bit
- Adjustable Wrench or Ratchet with Deep Sockets
- Crane or Forklift with Lifting Gear
- Wood Blocking
- 3/4 in. drill bit (for mounting holes in plastic internals)
- **Approved Shop Drawings (Contact Hydro to obtain if necessary)**

Handling and Storage

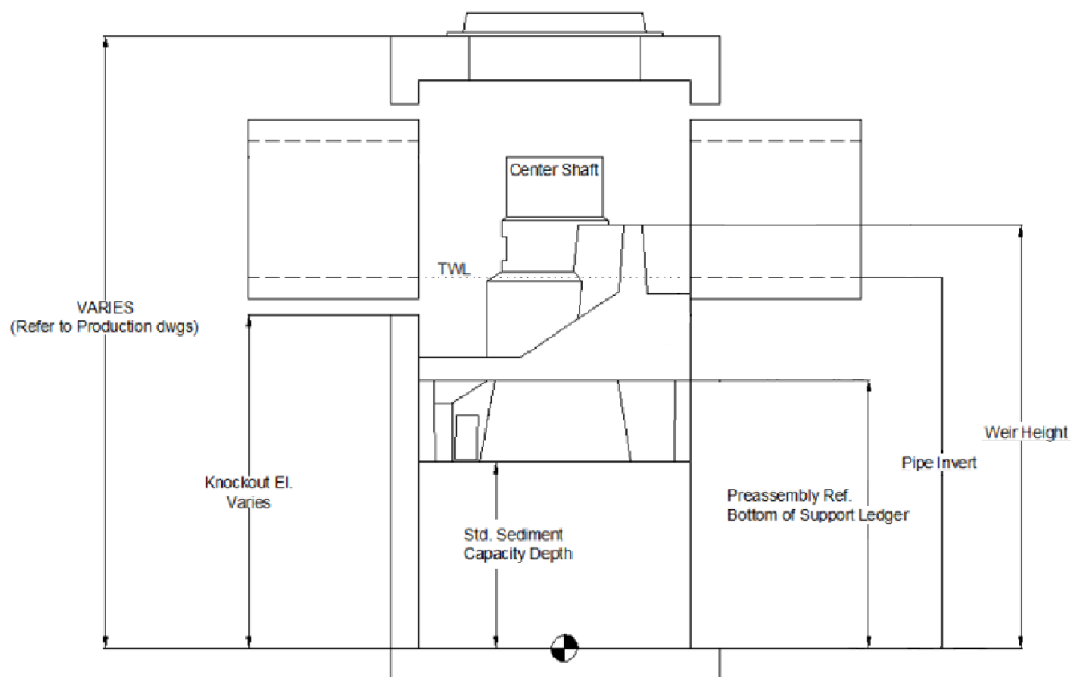
Hydro International's **First Defense HC®** internal components are manufactured utilizing highly durable thermoplastics; however, improper handling can result in damage to components and accessories. Failure to comply with handling, storage, and pre-assembly instructions voids all warranties.

1. Upon delivery of the **First Defense HC®** components, inspect immediately for defects or shipping damage. If any discrepancies or missing components are identified, notify Hydro International prior to unloading to initiate corrective action.
2. At all times, avoid unnecessary and extreme impacts to the internal components. At no time shall anyone step, stand, or otherwise place an unnecessary load, on the components.
3. The **First Defense HC®** shall be pre-assembled inside and delivered as soon after as possible. Pending pre-assembly, the internal components shall be stored inside in an area protected from dirt, ultraviolet light, and impact. Post pre-assembly, the unit may be stored outside provided it is adequately protected from unit from uv light, vandalism, and the elements until delivery.

Pre-Assembly

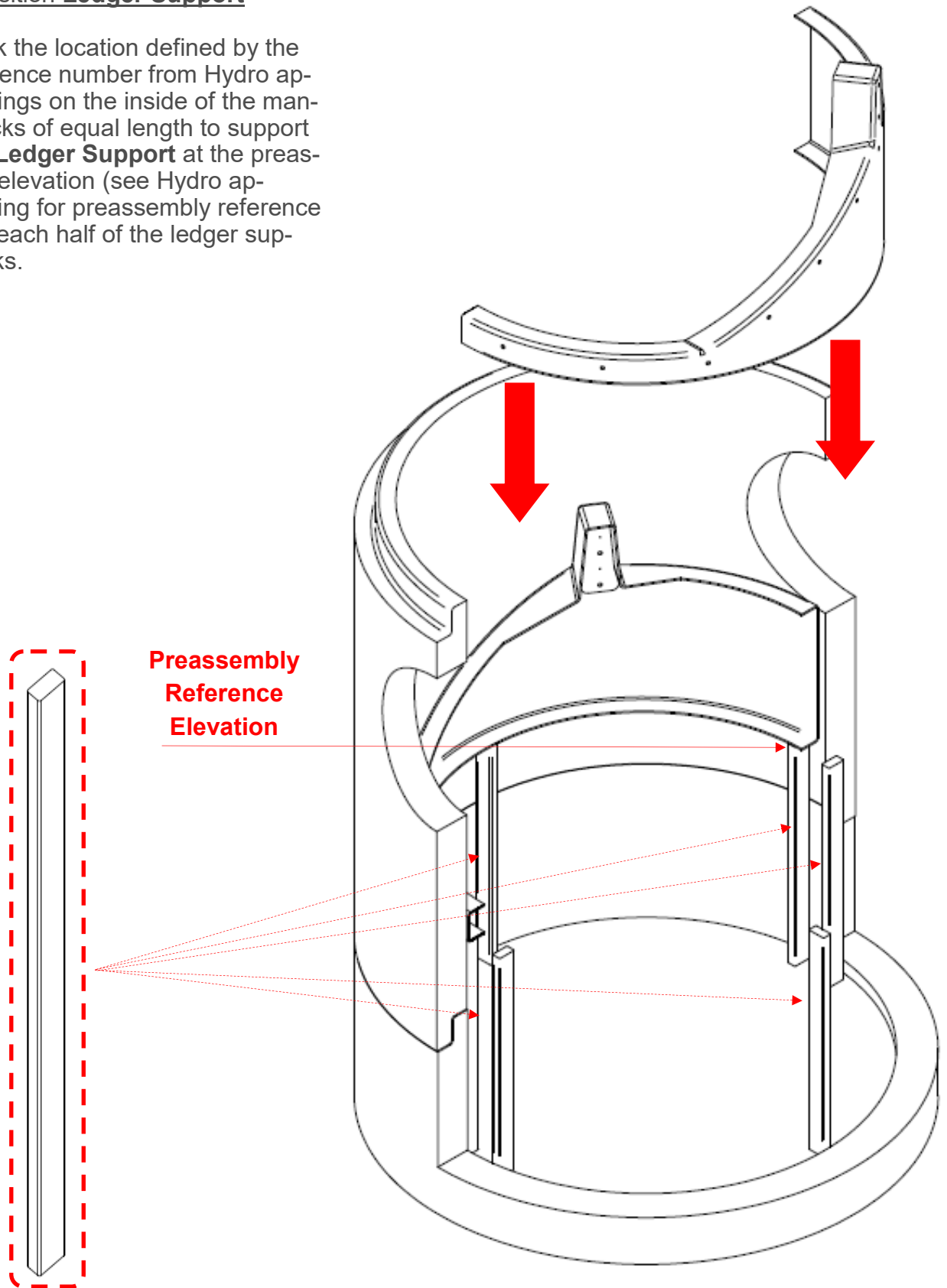
Step 1: Take Inventory of all **First Defense HC®** Components

Ensure that all hardware and components have been received prior to assembly. Reference Hydro approved shop drawings to inspect precast. Verify pipe invert elevations, structure height, ledger elevation and preassembly reference (elevation of the bottom of the ledger support)



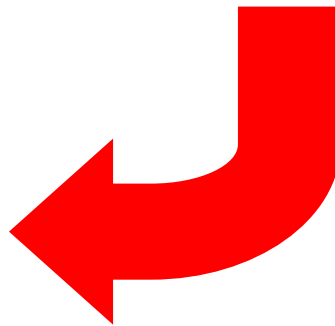
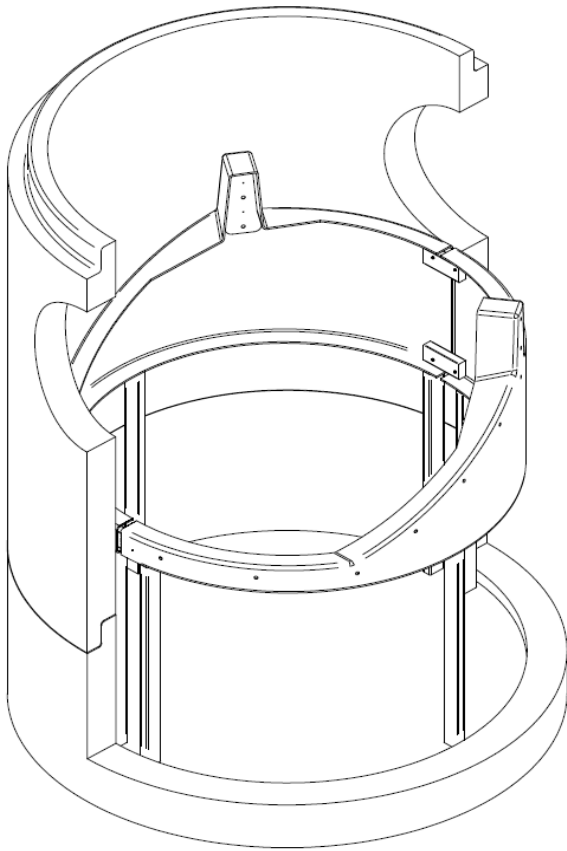
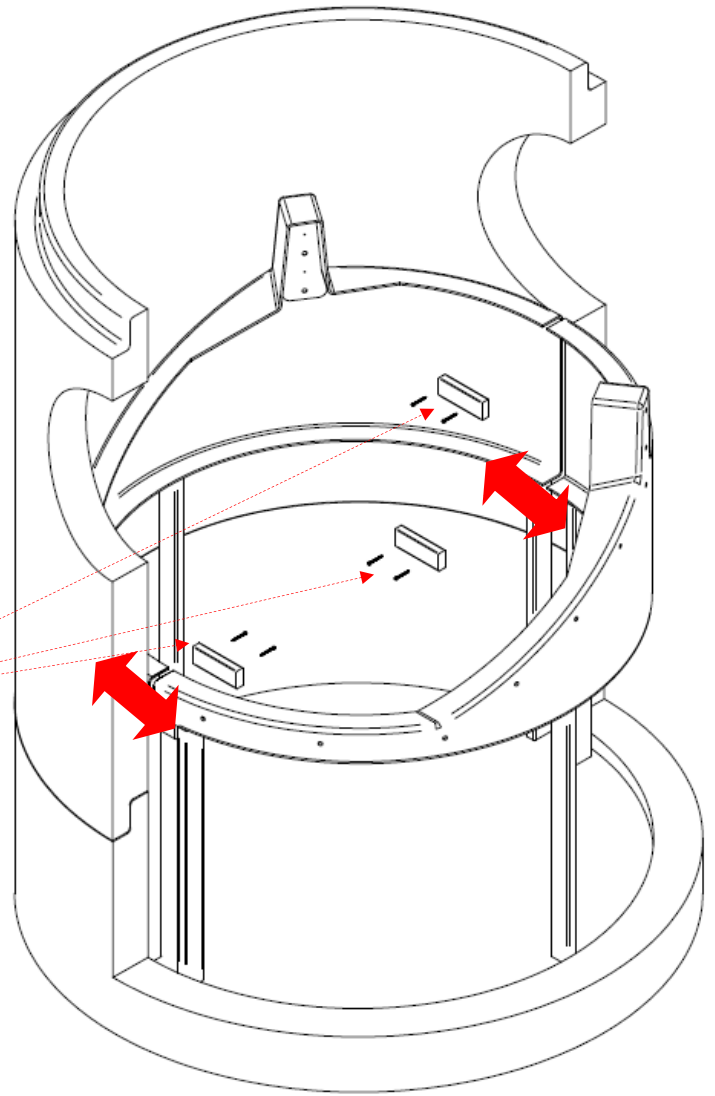
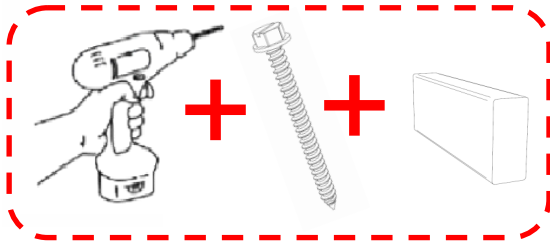
Step 1: Position **Ledger Support**

Measure and mark the location defined by the preassembly reference number from Hydro approved shop drawings on the inside of the man-hole wall. Cut blocks of equal length to support the bottom of the **Ledger Support** at the preassembly reference elevation (see Hydro approved shop drawing for preassembly reference elevation). Lower each half of the ledger support onto the blocks.



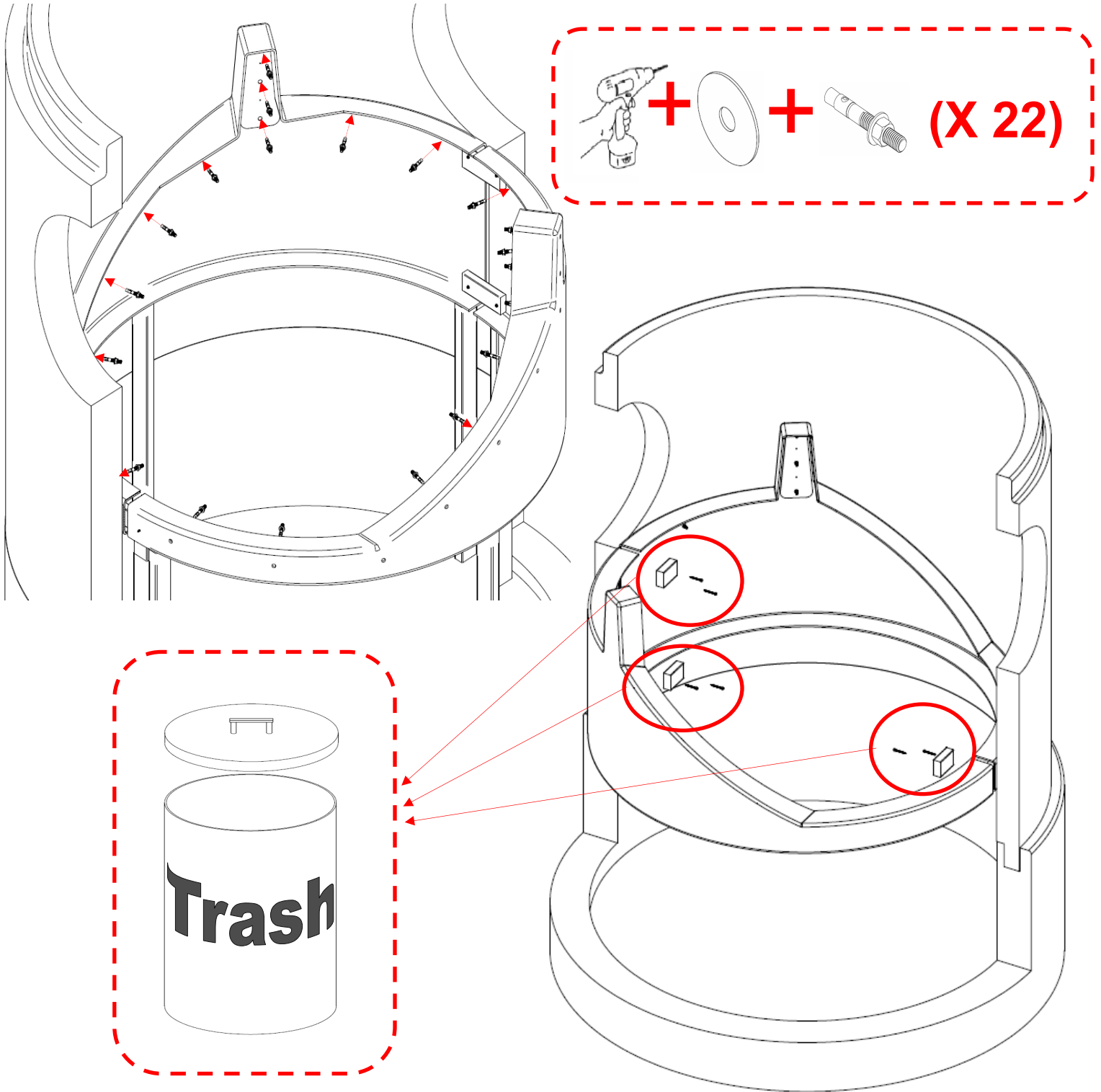
Step 2: Fit Ledger Support

Expand the ledger support sections to tightly meet the inside diameter of the manhole. Use small sections of blocking and screws to temporarily connect the two sections. Rotate alignment of the ledger so that outlet opening is between the weir “ears” (as configured in the Hydro shop drawing).



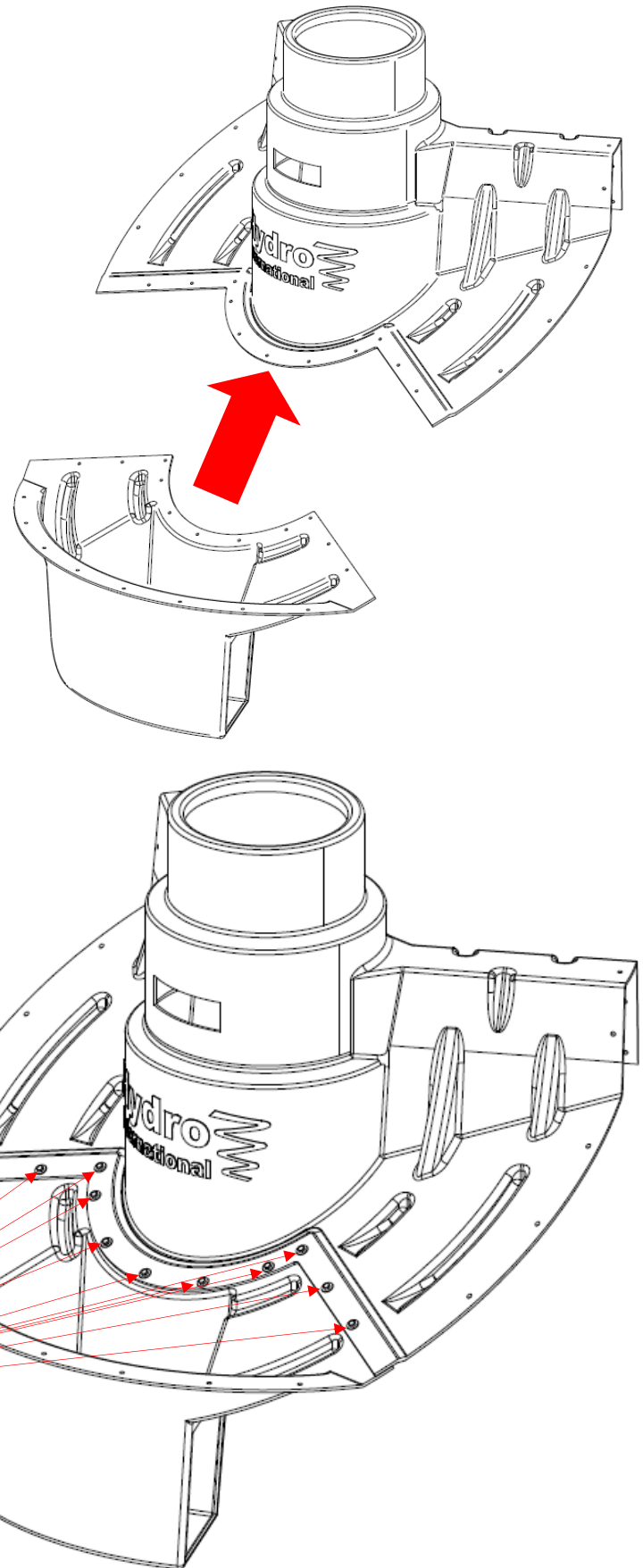
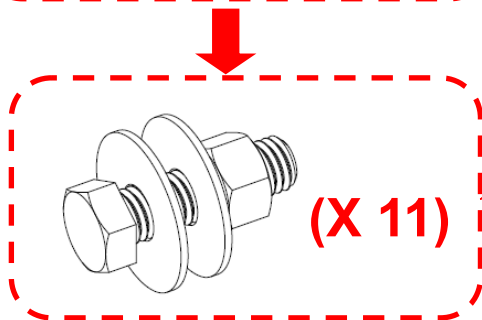
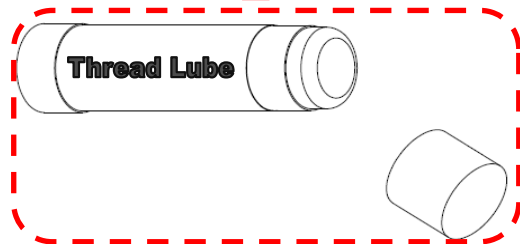
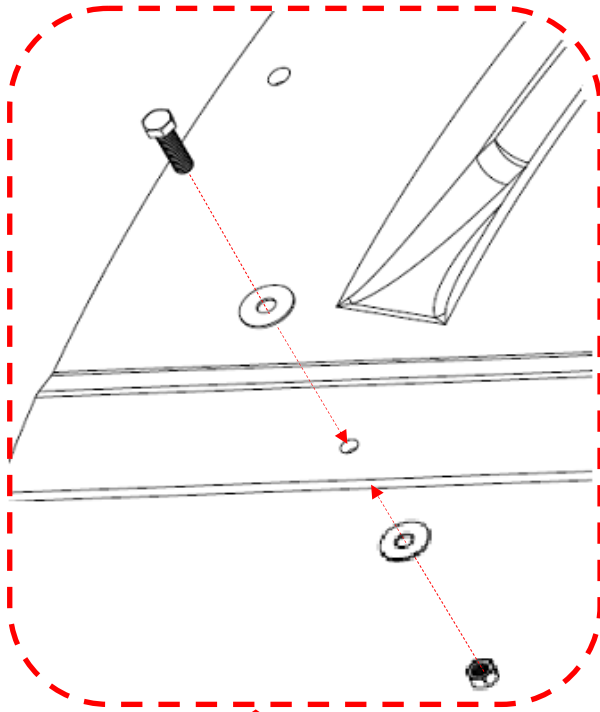
Step 3: Secure Ledger Support

Install anchors beginning beneath the outlet and continue installing them directionally away from outlet evenly on both sides. Continue the until entire perimeter is secured. Use provided oversized fender washers with the washers included with the anchor bolts. Once ledger support is anchored remove and discard screws and blocking.



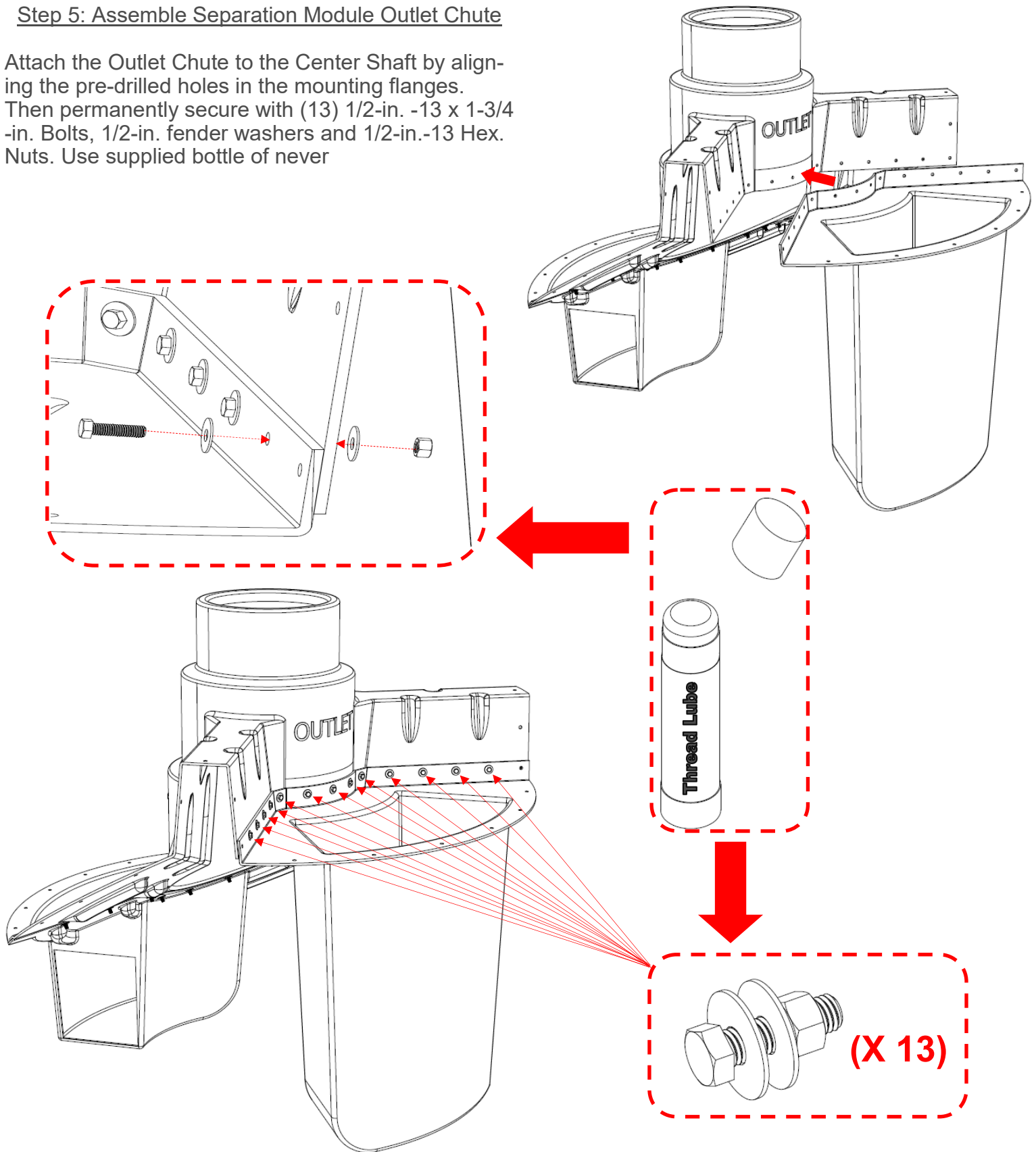
Step 4: Assemble Separation Module Inlet Chute

Attach the Inlet chute to the Center Shaft by aligning the pre-drilled holes in the mounting flanges. Then permanently secure with (11) 1/2-in. -13 x 1-3/4-in. Bolts, 1/2-in. fender washers and 1/2-in.-13 Hex. Nuts. Use provided thread lubricant to ensure all surfaces are secured thoroughly and that hardware does not cross-thread



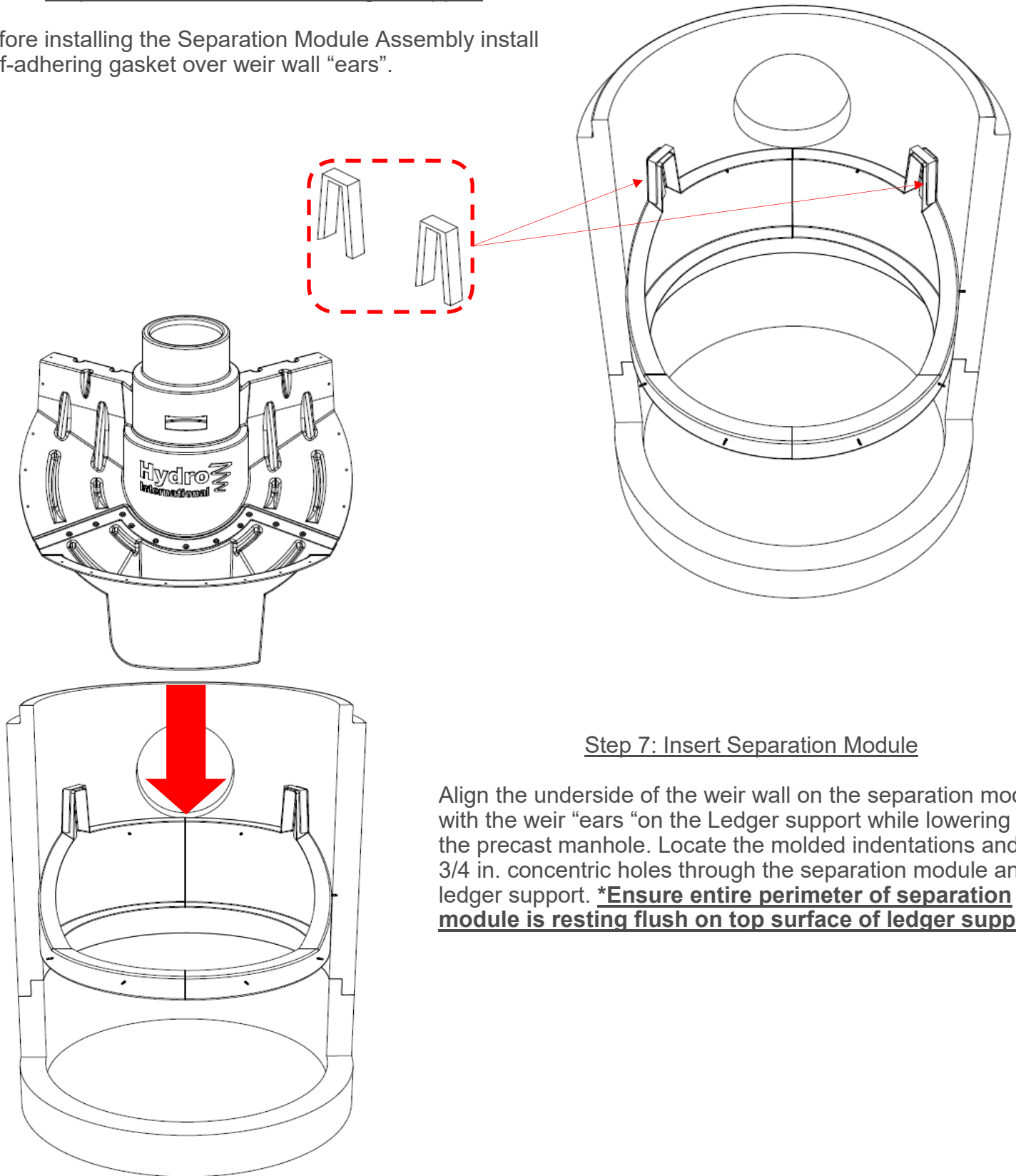
Step 5: Assemble Separation Module Outlet Chute

Attach the Outlet Chute to the Center Shaft by aligning the pre-drilled holes in the mounting flanges. Then permanently secure with (13) 1/2-in. -13 x 1-3/4-in. Bolts, 1/2-in. fender washers and 1/2-in.-13 Hex. Nuts. Use supplied bottle of never



Step 6: Adhere Gaskets to Ledger Support

Before installing the Separation Module Assembly install self-adhering gasket over weir wall “ears”.

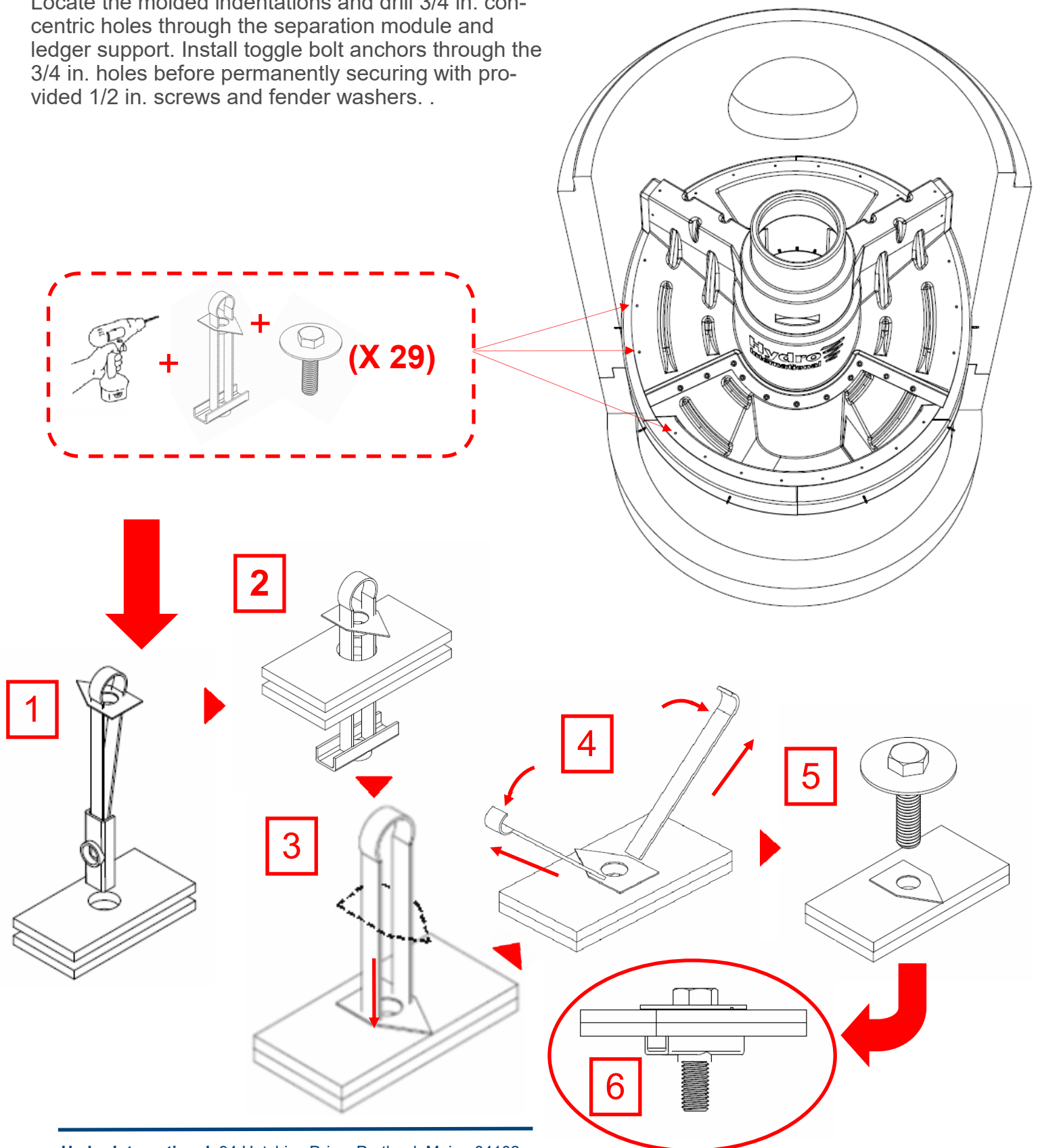


Step 7: Insert Separation Module

Align the underside of the weir wall on the separation module with the weir “ears” on the Ledger support while lowering into the precast manhole. Locate the molded indentations and drill 3/4 in. concentric holes through the separation module and ledger support. ***Ensure entire perimeter of separation module is resting flush on top surface of ledger support**

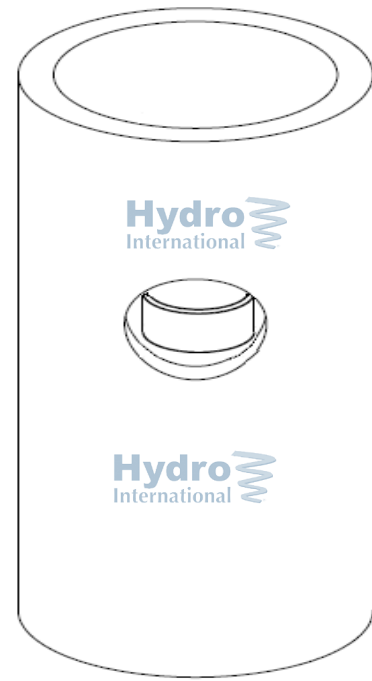
Step 8: Secure Separation Module to Ledger

Locate the molded indentations and drill 3/4 in. concentric holes through the separation module and ledger support. Install toggle bolt anchors through the 3/4 in. holes before permanently securing with provided 1/2 in. screws and fender washers. .



Step 9: Preparing for Shipment

Stencil Hydro Logo on each precast riser. Ship base, risers, top slab, frames and covers, and mastic sealant to the jobsite. Ensure the bottom of the Separation Module is not extending beyond the bottom of the riser. If so place sufficient blocking beneath the riser to prevent damage to the plastic internals. Take pictures of final components as shipped. Be sure to include picture of internal components in final installed position. Send pictures via e-mail to astevens@hydro-int.com.



First Defense HC® Components as shipped to Jobsite

