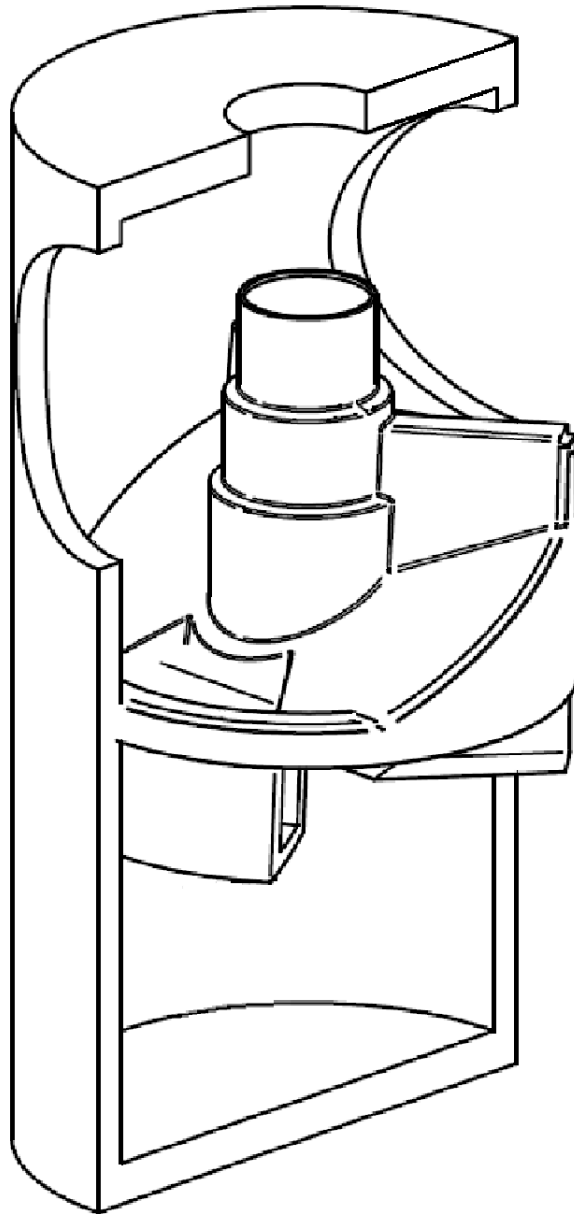
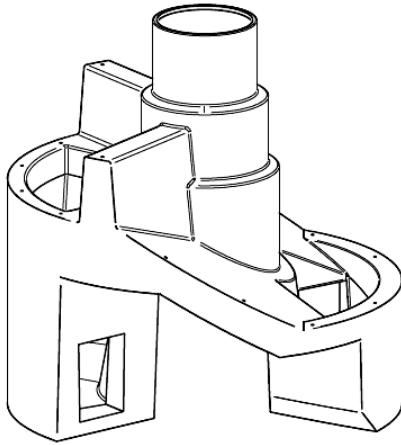


## 4 ft. First Defense HC<sup>®</sup> Handling, Storage and Pre-Assembly Instructions

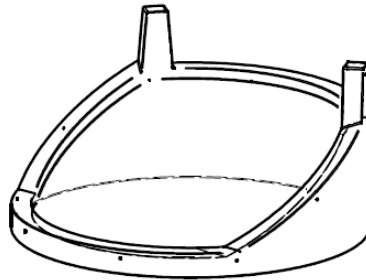


Before assembling the First Defense HC<sup>®</sup> make sure you have the following items:

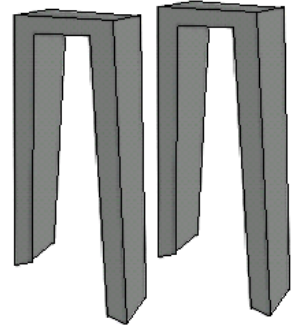
### Materials Supplied By Hydro International



4 ft. **First Defense HC<sup>®</sup>**  
Separation Module\*



4 ft. **First Defense HC<sup>®</sup>**  
Ledger Support\*



4 ft. **First Defense HC<sup>®</sup>**  
Foam Gasket (x2)



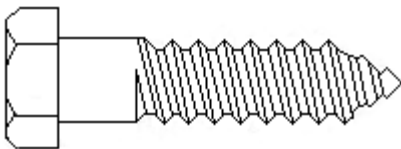
30 in. Frame and Lid/Grate



Stencil Kit

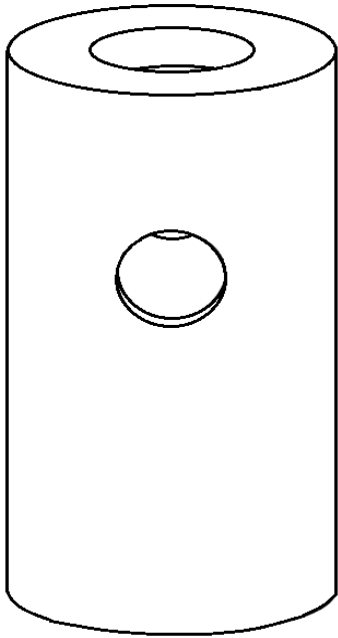
\* All 4' First Defense FC<sup>®</sup> plastic components are molded from blue HDPE

### Hardware Supplied By Hydro International



•A-304 SS 3/8 in.. x 1 1/2 in. Lag Bolt (x14)

## Materials Supplied By Precaster



### **4 ft. Diameter Precast Concrete Manhole\*:**

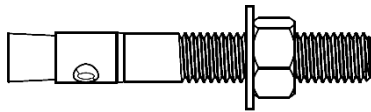
- Top slab cored for corresponding frames and covers
- Bottom Slab
- Risers with cored inlet and outlet



**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 3/8 in.-16 UNC x 3 1/2 in. Expansion Anchor\*
- A-304 SS 3/8 in. I.D. Flat Washer
- A-304 SS 3/8 in.-16 UNC Hex Nut
- Pictured assembly x10 needed for Ledger Support

**\* Minimum embedment depth of the 3 3/4 in expansion anchors is 2 1/2 in.**

## Required Tools and Equipment

- Measuring Tape
- Ladder
- Hammer
- Hammer Drill and Concrete Bits
- Adjustable Wrench or Ratchet with Deep Sockets
- Crane or Forklift with Lifting Gear
- Wood Blocking
- **Approved Shop Drawings (Contact Hydro to obtain if necessary)**

## Handling and Storage

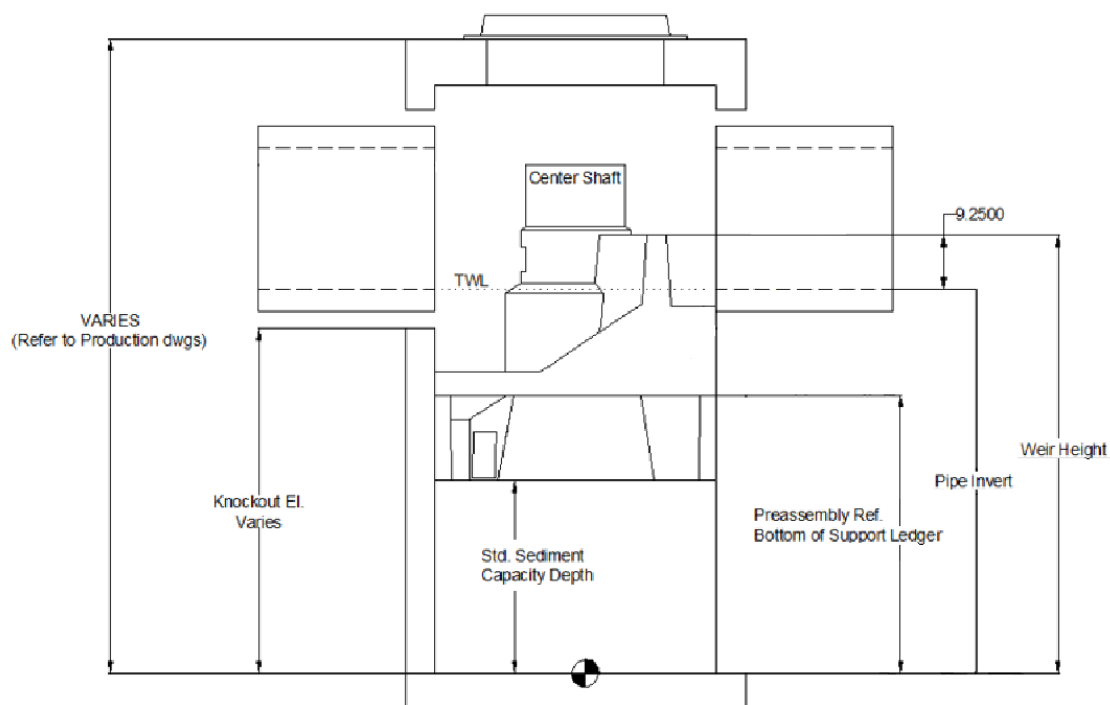
Hydro International's **First Defense HC®** internal components are manufactured utilizing highly durable thermoplastics; however, improper handling can result in damage to components and accessories. Failure to comply with handling, storage, and pre-assembly instructions voids all warranties.

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

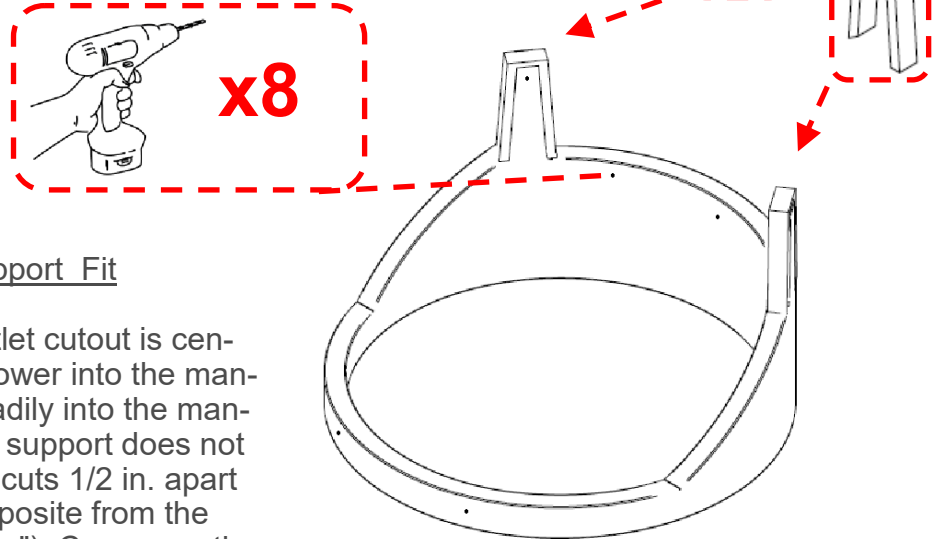
### Step 1: Take Inventory of all **First Defense HC®** Components

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



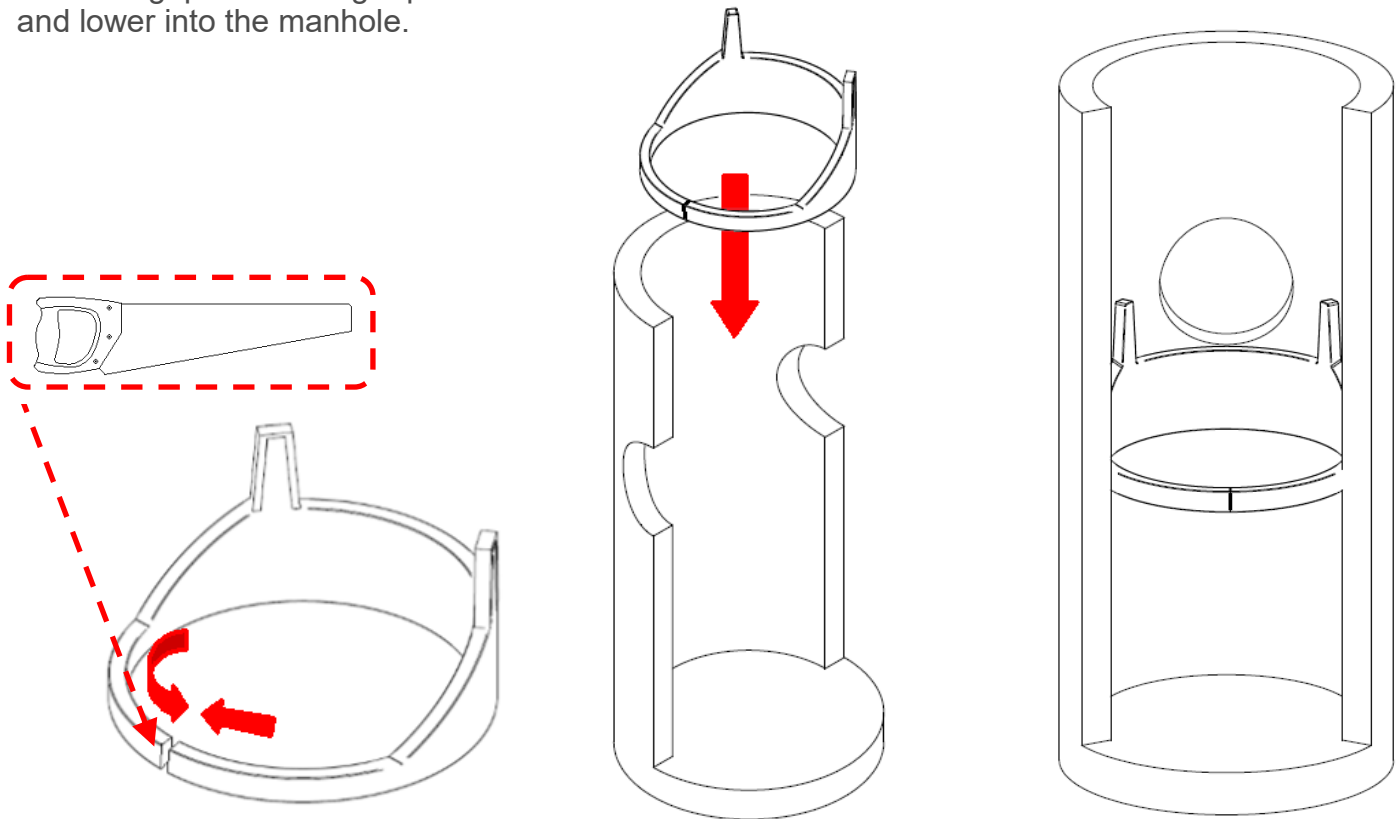
### Step 2: Adhere Gaskets to Ledger Support

Before installing the Ledger Support install self-adhering gasket over weir wall "ears". Using the markers (small indents) found on the inside of the Ledger Support drill  $\frac{3}{8}$ " holes for the Anchor bolts



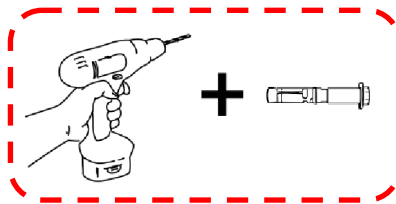
### Step 3: Check Ledger Support Fit

Align the Ledger Support so that outlet cutout is centered between the weir "ears" then lower into the man-hole. If the ledger support slides readily into the man-hole proceed to Step 4. If the ledger support does not slide into position make two parallel cuts  $\frac{1}{2}$  in. apart in the front of the ledger support (opposite from the centerline between the two weir "ears"). Compress the resultant gap in the Ledger piece and lower into the manhole.

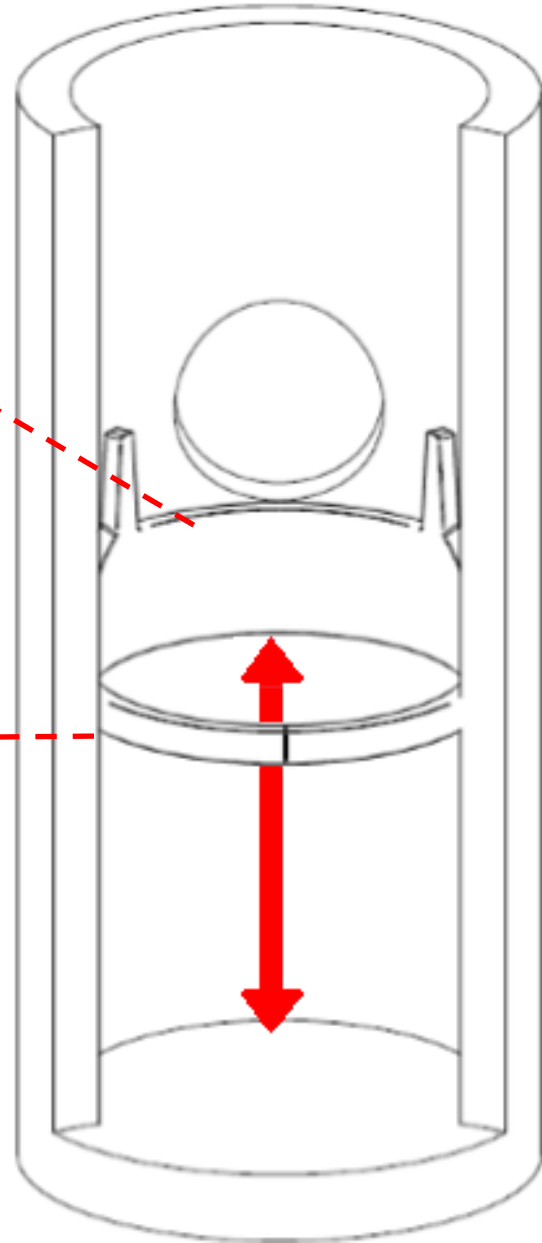


#### Step 4: Attach Ledger Support

Measure and mark the location defined by the Preassembly Reference number from Hydro approved shop drawings on the inside of the manhole wall. Adjust the Ledger Support so that the bottom is level with the marked Preassembly Reference elevation. Using the Anchor Holes, mark drill-hole locations on the precast. Remove the Ledger Support and drill Anchor bolt holes. Re-insert the Ledger Support and position to align holes in the plastic with anchor bolt holes in the precast. Insert expansion anchors and secure Ledger Support to the precast wall using washers and nuts.

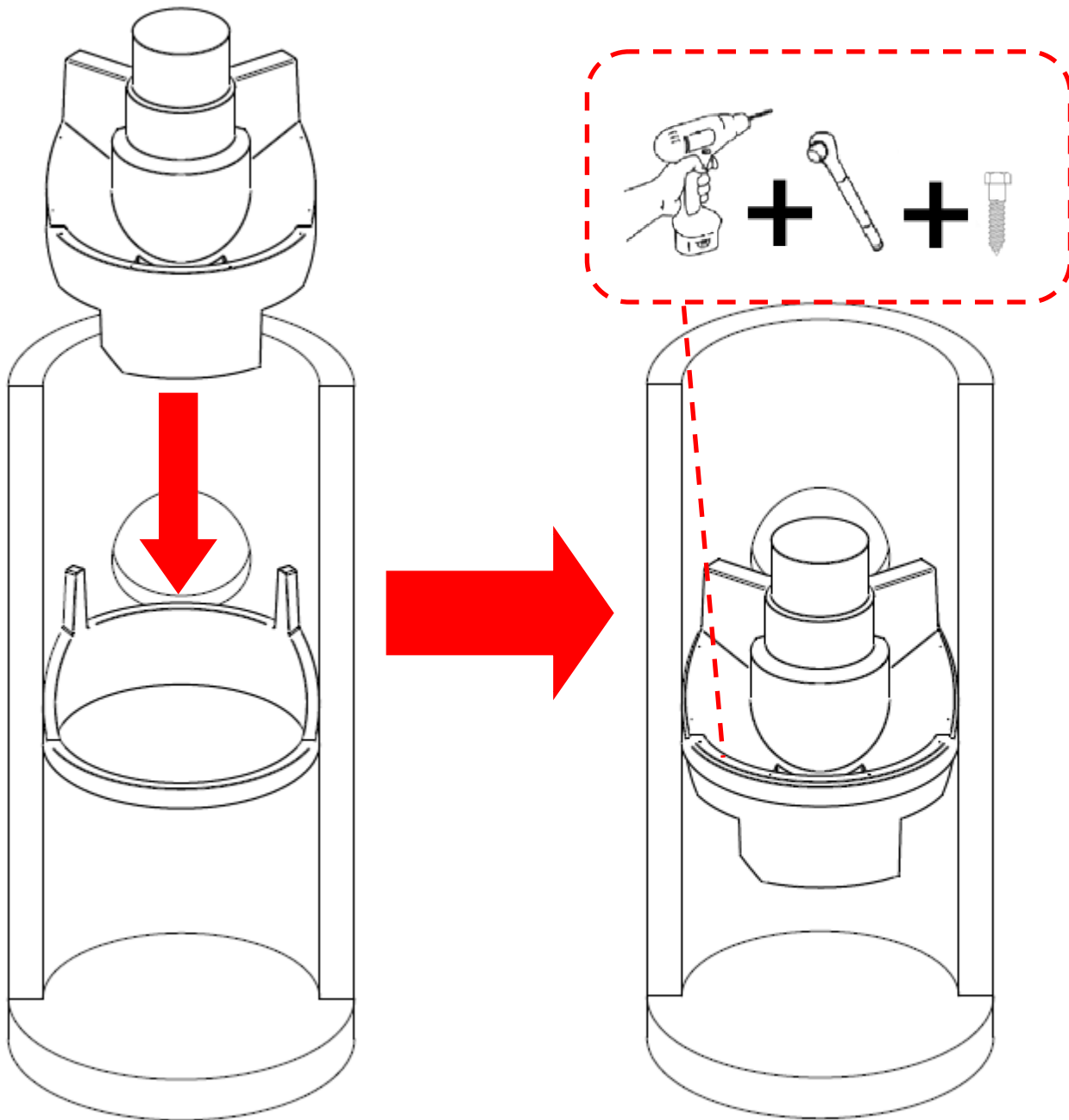


**Preassembly Reference  
Elevation**



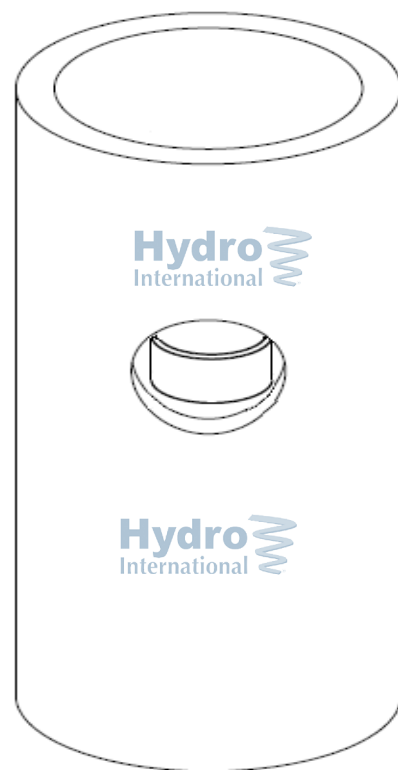
### Step 5: Insert and Attach Separation Module

Align the underside of the weir wall on the separation module with ears on the Ledger support while lowering into the system. Locate the molded indentations and drill 1/8 in. pilot holes for the lag screws. Install lag screws through the pilot holes to permanently secure the Separation Module to the Ledger Support.

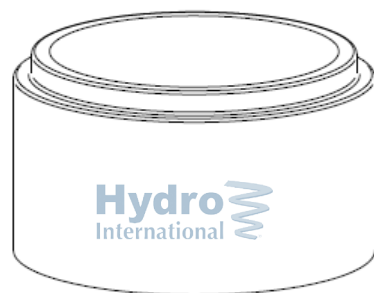


### Step 6: Preparing for Shipment

Stencil Hydro Logo on each precast riser. Ship base, risers, top slab, frame and cover, 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](mailto:astevens@hydro-int.com).



### First Defense HC® Components as shipped to Jobsite



**OR**

