



DOWNSTREAM DEFENDER® HANDLING AND INSTALLATION INSTRUCTIONS

Hydro International's **DOWNSTREAM DEFENDER®** internal components are manufactured utilizing highly durable thermoplastics; however, improper handling may result in damage to components and accessories. Failure to comply with handling, and installation instructions voids all warranties.

1. Upon delivery of the **DOWNSTREAM DEFENDER®** components, inspect immediately for defects or shipping damage. If any discrepancies are found, notify Hydro International prior to unloading to initiate corrective action. Unloading of a damaged unit without notifying Hydro International voids all warranties and releases liability of costs to repair or replace from Hydro International and places onto the contractor.
2. At all times during unloading and installation, avoid unnecessary and extreme impacts to the internal components. All components shall be handled with firm and complete support. At no time shall anyone step, stand, or otherwise place an unnecessary load, on the components.
3. The **DOWNSTREAM DEFENDER®** shall be installed as soon after delivery as practical. Pending installation, all components shall be protected from ultraviolet light, vandalism, and impact.

INSTALLATION – reference engineering drawings.

1. Excavation shall be properly prepared in advance and shall meet all applicable specifications for standards of construction. A sufficient sub-base of compacted stone, level and at correct elevation, is required as a minimum.

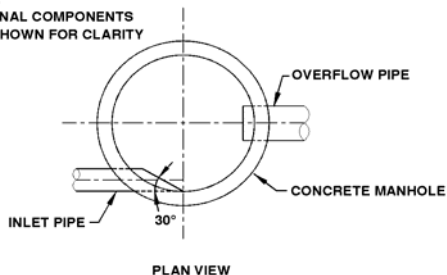


2. Install the **DOWNSTREAM DEFENDER®** pre-cast base containing benching skirt in properly prepared excavation. Base must be level prior to installation of successive risers.

3. Install successive risers, cleaning joints and place supplied joint sealant per specifications. Ensure the riser(s) containing the inlet and overflow pipe knockouts is/are orientated per alignment shown on the engineering drawings. Do not install pre-cast lid. Grout pick holes, if applicable, with watertight non-shrink grout.



NOTE:
INTERNAL COMPONENTS
NOT SHOWN FOR CLARITY



4. Cut off the end of the inlet pipe (by others) at a 30° angle and connect so that the inlet pipe i.d. is tangent to the pre-cast i.d. as shown on the engineering drawings. Grout inlet knockout with watertight non-shrink grout (by others). Inlet pipe shall not protrude further into the unit than indicated on the engineering drawings. On the interior, grout must be finished to a uniform, smooth surface flush

with the pre-cast wall. No grout shall spill inside the unit. If required, plug inlet pipe and overflow pipe knockouts and test for watertightness. The cause of any leaks must be determined and corrected prior to backfilling. Failure to properly perform and pass test if required, releases Hydro from liability ensuing from such failure.



5. Center Shaft & Cone (10' units): If not bolted, attach shaft to dip plate using supplied 304 ss bolts, flat washers, lock washers and nuts. Install hardware so bolt heads are to the interior of the center shaft.



6. Place approved pipe coupling (by others) onto overflow stub. Using the lifting points on the support frame, carefully lower the dip plate assembly onto the stainless steel ledger angles attached to the interior wall of the pre-cast chamber. Orientate assembly so that overflow pipe stub aligns with overflow pipe knockout.

7. Attach the support frame to the ledger angles using supplied number of 304 ss bolts, flat washers, lock washers and nuts. On 10 foot units, square plate washers (supplied) are to be used in place of flat washers on top of support frame at the connection points to the four ledger angles.



8. Connect the outlet pipe to the overflow stub using the previously installed pipe coupling. Grout manhole outlet knockout with watertight non-shrink grout (by others). On the interior, grout must be finished to a uniform, smooth surface flush with pre-cast wall. No grout shall spill inside the unit.

9. Prepare the upper most riser joint with supplied joint sealant. Install pre-cast lid using match lines to correctly orientate the floatables access. The floatables access shall be located to the influent flow receiving side of the overflow pipe.
10. Install cast frame(s) and cover(s) using accepted construction standards of adjusting to grade. Carefully backfill around unit.