Paddock Modular Deck Drain + Evacuator™ Installation

Upon receiving the shipment, please unpack all components and check for damage during shipping. If any damage is present, please notify shipper and contact Paddock Pool Equipment Company (PPEC) immediately. Confirm all parts are accounted for according to Packing List. If any parts are missing, or if you have any questions or concerns, please contact PPEC. Please read complete installation manual before beginning installation.

Contractor Suggested Materials for Deck Drain + Evacuator Installation

- Laser Leveling Device
- Level(s)
- Measuring Tape(s)
- Cordless / Impact Drill
- 9/16" Wrench
- 9/16" Deep Socket
- Caulk Gun
- Lumber: 1x4s, 2x4s, 2x6s
- Painter's Tape
- Surface Protection Tape / Sheeting
- Rebar

Deck Drain + Evacuator Installation:

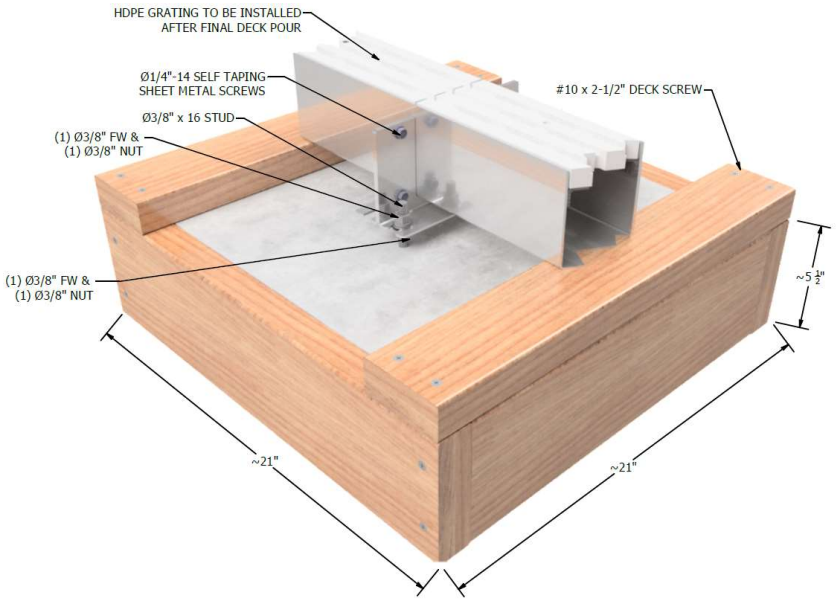
- **Coordination**:

  Coordination with all disciplines, including mechanical, electrical, and plumbing, is imperative to a successful installation. Installation contractor should be familiar with the facility's plans, including those of other disciplines, to avoid any unforeseen issues during installation. Communication between all parties will be imperative to prevent potential conflicts and facilitate any changes that may be caught prior to installation. Paddock is not responsible for any field-related challenges.

- **Assembling Concrete Footer Boxes**

  The material required for a Footer Box consist of 2x4 and 2x6 lumber, assembled per the detail below. Assemble footer boxes in a way that facilitates easy stripping of the forms after concrete is poured and set. Deck screws (#10 x 2-1/2" with star-drive head recommended) should be used to fasten the 2x4 to the top of the Footer Box, which will be used to set the Deck Drain Couplings in place for spacing and alignment. *Note: Corners and any offsets of the Deck Drain may require larger Footer Boxes. Refer to PPEC project drawings for a suggested footer layout.*

  1. Assemble the Footer Boxes using the following materials:
     - 2x6 Lumber: *Footer Box frame*
     - 2x4 Lumber: *Deck Drain Coupling support*
  2. Each DD & DD+E connection will need to be supported by (2) Ø3/8"-16 x 8" studs:
     - Each all-thread stud assembly requires (all components are included):
       - (1) Ø3/8"-16 x 8" long all-thread stud
       - (2) Ø3/8" washers
       - (2) Ø3/8"-16 nut



DECK DRAIN FOOTING DETAIL
(NO EVACUATOR)

a. *Paddock recommends leaving ±6" of all-thread stud below flange.*

3. Build Footer Box frame(s) using 2x6 lumber. Size and/or shape of the Footer Boxes can be determined by installing contractor while referring to construction documents and/or drawings, which recommends a size and location of footers.
4. Two (2) 2x4s should be placed across each end of the Footer Box, and secured to the Footer Box frame with recommended screws. Multiple 2x4s may be required for Corner assemblies.

   Notes:

   - *Do not nail the 2x4 to the Footer Box, as disassembly of Footer Boxes may be very difficult.*
   - *Footer Boxes may be pre-assembled ahead of placing around pool per construction documents and/or drawings as installing contractor sees fit.*
   - *Deck Drain Evacuators should be supported by a full-length footer (to prevent the weldments from floating when pouring the final floor). The footers will be broken at each HVAC connection.*

- **Re-Check Finished Deck Elevation of Deck Drain**

When setting the Modular Deck Drain for final pour, it is critical for the installer to verify the established "finished deck elevation." The installer should cross check existing pool walls to established benchmark used for pool construction and establish its present wall elevation in relation to finished deck.

- ## Installation Methods of Modular Deck Drain + Evacuator

Paddock strongly recommends the installing contractor have access to a survey instrument, a tripod level, or laser level for establishing elevations of concrete footer boxes. The survey equipment will be used to verify that the Modular Deck Drain + Evacuator System is at the proper elevation when locating Footer Boxes to ensure proper slope drainage upon completion. String lines, in conjunction with survey equipment, are critical to the success of installation. String lines will be discussed in more detail later in the installation guide.

Notes:

- *In the event the deck drain Footer Boxes settle or elevate slightly during the footer pouring process, the Coupling Assemblies can be adjusted up or down by way of the all-thread studs after the pour is complete.*
- *Installing Contractor should be familiar with local health codes and/or other regulations pertaining to the pool deck slopes. Most deck slopes call for ¼" minimum to ½" maximum per foot slope. It is imperative to confirm your local health codes and/or regulations prior to pouring the deck.*

- ## Installation Process

Locating Deck Drain + Evacuator System

1. Establish the location of Modular Deck Drain in relation to pool walls and existing walls of building (indoor only) as indicated on drawings. Dimensions from the pool are typically established from the finished face, pool wall, or stainless-steel recirculation system.
   Note: The term centerline is used throughout this document as a general term to describe the location used to measure the distance from the finished face of the pool to the Deck Drain + Evacuator system. Whether the actual centerline of the Deck Drain system is used, or the inside edge of the Deck Drain, for example, is dependent upon installing contractor's preference.

Coordination with General Contractor and Other Trades

2. Before placing Footer Boxes, installer should facilitate or coordinate with the general contractor the backfilling around the pool area to ensure a smooth and level surface for footer placement.
   a. Grade should be a *minimum* of 12" below finished floor elevation for Deck Drain, 24" below finished floor elevation for Deck Drain + Evacuator.
   b. Any remaining electrical conduit for pool lights, timing boxes, or the like should be completed in conjunction with Deck Drain work. Installer and electrical contractor should coordinate placement of Footer Boxes and conduit to minimize overlaps.
   c. Before placement of the Footer Boxes, installer should ensure that all plumbing has been run from the pool to the pump room, or, at minimum, beyond the area of the deck where the Deck Drain is to be located.
   d. Coordination with the contractor responsible for the placement of the PVC drainage lines to be connected to the Deck Drain is critical for a smooth installation. PVC drain lines should be clear of Deck Drain Footer Box locations and have connection points located near Deck Drain ø2" dropout attachment points as specified in project drawings.
   e. Installer needs to be aware of job specifications in regards to sub-deck gravel requirements. Installer should determine if gravel ought to be placed to grade ahead of Deck Drain + Evacuator footer placement. Using a bobcat or other grading equipment may be difficult once the Deck Drain footers are placed, and may result in the footers being inadvertently knocked out of place.
   f. In an ideal installation, all plumbing and electrical work, backfilling of pool perimeter, and sub-deck gravel brought up to grade should be completed before proceeding.

Establishing Batter Boards and String Lines

3. Locate centerline points of Deck Drain Corner assemblies and establish batter boards to pull strings to help align deck drain around the perimeter of the pool.
    a. String should be set at least 1” higher than the established deck drain elevation. This provides clearance for the placement of the footer boxes and deck drain sections.
    b. While the primary function of the string line is alignment of the Deck Drain, it can be used to establish rough elevations. However, final elevation set points must be checked with a survey instrument, level, or laser level as string lines can sag significantly over long distances. Final elevation will be set after the footers are poured and prior to the deck pour.
    Note: Ensure string lines are pulled tight, as sagging in the string line may cause incorrect measurements if not using a laser measuring device to establish elevation.

Placement of Footer Boxes

4. With strings run the length and width of the pool off of batter boards and set to at least 1” above desired elevation, placement of Footer Boxes can begin.

    Placement of Deck Drain Corner Assembly Footer Boxes

    a. Locate Deck Drain Corner Weldments and temporarily block weldments to the Footer Boxes with small pieces of 2x material. Place Footer Boxes with pre-fabricated Deck Drain Corner Assembly attached under the crosshairs of string.
    b. Align so strings are centerline of Deck Drain Corner Weldment(s) in each direction and check elevation.
    c. Once the Footer Box with Deck Drain Corner Coupling are set to proper elevation and strings are centerline, drive two ±18” pieces of rebar in opposite corners of the Footer Box. The rebar will help stabilize the box before and after filling with concrete.
    Note: At this point, elevation is temporary but should be checked to ensure it is not higher than final elevation. Final elevation will be set after the footers are poured.
    d. When driving rebar into the backfill, installer should be mindful of any conduit or plumbing located below the Footer Boxes. If unable to drive the rebar into opposite corners due to these or some other factor, rebar should be driven in another location and gravel should be used to help secure the Footer Box during pouring. Rebar is required to stabilize the Footer Boxes prior to deck pour.
    e. Double check elevation and alignment after driving rebar to ensure the Footer Box has not moved during placement.
    f. Continue placing each of the Footer Boxes with Deck Drain Corner assemblies as noted on project drawings, securing in place with rebar, and ensuring elevation.
    g. At this point, per project drawings, Deck Drain Corner Couplings with Footer Boxes should be located and secured in place with rebar.

    Placement of Deck Drain Coupling Assembly Footer Boxes

    h. Next, layout of the Modular Deck Drain assemblies with Footer Boxes can begin.
    i. Layout Modular Deck Drain sections (120”, 60”, or custom length if applicable) according to plans around the pool to help the following steps go quickly and smoothly.
    j. Locate each Footer Box according to project drawings, centered on each Modular Deck Drain connection.
    k. Continue this process around the perimeter of the pool, laying out all Footer Boxes according to project drawings until placement of all Footer Boxes is complete.

l. At this time, the Modular Deck Drain sections with Footer Boxes should be located but not secured (this will take place in the next few steps). Proper alignment and elevation should be verified as well.

m. Starting in one corner and working your way toward the center of the Deck Drain, locate the next piece of Deck Drain according the specified drawings, as laid out around the perimeter in the above step.

n. Attach one end of the Deck Drain to the Deck Drain Corner assembly and set the other end on the next Footer Box proceeding down the side/end of the pool. The sections should be fastened together as you proceed around the pool.
Note: This is a temporary step, only to ensure proper alignment & establish elevation.

o. While maintaining proper alignment, make any necessary adjustments to achieve correct elevation. *As noted above, final elevation will be set after footers are poured.*

p. After alignment and elevation are verified, tap rebar in opposite corners of Footer Box.
Note: Ensure installer does not puncture any buried pipes during this process.

q. Proceed in this fashion down the remaining length of the pool, repeating above steps, until Modular Deck Drain run is complete from corner to corner. Follow this pattern for remaining sides/ends of pool until all sections are in place and loosely secured.

r. If any Footer Boxes have gaps between the lumber and ground, please surround to ensure poured concrete stays within Footer Box – preferably with gravel if available.

Final adjustments prior to pouring.

5. After all Footer Boxes are secured in place, with rebar set in corners and gravel built up around form, installer must re-verify elevations and alignment of Deck Drain. Any alignment deviations from centerline will be noticeable once the deck is poured.
Note: Once footers are poured, minor adjustments in elevation can still be made but alignment will be permanent.

   a. Should the Deck Drain alignment have deviated while setting the Footer Boxes, adjust the section on the 2x4 that spans the Footer Box. Lock in alignment with blocking on each side to hold proper alignment.

   b. Ensure all-thread studs are secured tight to coupling flanges with a minimum of 1” protruding above the top nut. If not properly secured, problems can occur with adjusting elevation after Footer Boxes are poured due to the all-thread studs not being perpendicular to Coupling Flange.

   c. Use masking tape to protect the threads and nuts 1” above and below the coupling flange during the concrete pouring process. This ensures the ability to make final adjustments in elevation once the Footer Boxes are poured prior to the deck pour.

- **Pouring Footer Boxes**

1. Determine the best way for filling the Footer Boxes, based on site conditions: pumped, wheel barrowed, buckets from the concrete truck, etc.
2. Place 1x4s in the Deck Drain, at a minimum at the junction points above the Footer Boxes if not around the entire Deck Drain, which will need to happen prior to Deck Pour (next step). This will help prevent concrete from being spilled or splashed into the Deck Drain. *When pouring footers, take extreme care to not spill concrete on or in the Deck Drain!*
Note: Prior to pouring the Footer Boxes, we recommend inserting 1X4s into the Deck Drain (in place of the grating) and sealing the edges with Surface Protection Tape / Sheeting to prevent any concrete getting spilled or splashed into the Deck Drain.

3. Fill the Footer Box to 1/2" from the top with concrete. Filling completely may hamper the ability to adjust elevation after footers are poured.
   Note: Ensure there is room for height adjustment via the all-thread studs during pouring of the concrete Footer Boxes, hence leaving at least 1/2" gap from the top of the Footer Boxes.
4. Strip lumber forms once the concrete has set. Remove the screws holding the coupling to the 2x4 and remove screws holding the 2x4 to the 2X6 form. Slide the 2x4 out from under the coupling, and disassemble the footer box.
5. Once again, installer must re-verify elevations and alignment of Deck Drain to ensure no parts or pieces were bumped during pouring of footers.
   Note: It is common for other trades to be working around the pool during this same time, so the Deck Drain may get bumped out of line while installer is off-site. It is critical that the alignment and elevations are checked often to ensure Deck Drain is installed as designed.

- **Plumbing & Duct Connections**

1. Prior to final deck pour, the deck drains waste to drain connections need to be completed and the deck drain evacuator should be tied in to the HVAC system as depicted on the project plans.

- **Preparation for Final Deck Pour / Deck Pour**

1. Deck Drain sections must be sealed at the coupling joints. This is done by running a bead of caulk around the inside perimeter of the Deck Drain connections.
   Note: Ensure any sealant that has leaked through the joint of the Deck Drains to be wiped smooth, as we do not want to create a small dam and promote pooling of water.
2. Deck Drain must now be protected for the final pour. This can be accomplished by using 1X4s or by the provided HDPE Grating.
   Note: This step may have already taken place if installed protected Deck Drain prior to pouring of concrete Footer Boxes.
   - *If using 1X4 lumber*: Insert 1X4s into the Deck Drain (in place of the grating). The 1X4s will need to be removed after Deck Pour and replaced with the Deck Drain Grating.
   - *If using Deck Drain Grating*: Locate the Deck Drain Grating sections based on the drawings provided by Paddock. Once located, wrap the Grating in Surface Protection Tape / Sheeting and place in the appropriate location.
3. Apply Surface Protection Tape / Sheeting along both sides of the Deck Drain and 1X4 or Grating, sealing any concrete from entering the Deck Drain via spilling or splashing. It is essential no concrete enters the drain during the pouring process.
4. ***IMPORTANT!*** *Check, set, and make any adjustments to the final elevations on Deck Drain. Deck Drain elevation CANNOT be adjusted after the deck is poured.*
5. Once elevations and alignment are deemed to be correct, tighten the anchors on each of the Coupling Flanges to set the height. *Repeat this step until all* Coupling Flanges *are set and locked in place.*
6. Installer should warn crews to be careful with any concrete tools near the Deck Drain and remain watchful to ensure they do not tear the protective covering or accidently move the Deck Drain out of alignment or change elevation. Floats, finishing tools, etc. can have sharp edges that may damage the protective covering.

- **Final Step**

1. Grating must be fastened to the Deck Drain using the included HDPE Cam Locks and Stainless Steel Screws. This should be completed after all contractors have completed their work around the pool. Until such time, the protective covering should be left in place.
   Note: Layout all Deck Drain Grating around the pool prior to tightening in place to ensure proper placement and fit. Each sidewall likely comes with a Trim Piece, as noted per the Project Drawings. Installer will need to trim Grating as necessary for proper fit. This will be the last piece per wall to be installed to ensure proper fit. The HDPE grating machines/cuts very well with typical woodworking tools should modifications be required.
2. Once it is safe to remove the protective covering, locate supplied box of Stainless Steel Screws and HDPE Cam Locks. Stainless Steel Screws should be placed into predrilled countersunk holes and loosely attached to the cam lock.
   Note: It may be easiest to put the Stainless Steel Screws in and attach the Cam Locks to each Deck Drain Grating section prior to placing in Deck Drain. If left loose, the Grating can slide into place.
3. After all Deck Drain Grating is set in place, Cam Locks should be tightened to the continuous angle tab in the Deck Drain. ***DO NOT OVER TIGHTEN CAM LOCKS.*** Cam locks should be snug fit. Over-tightening may strip the threads in the Cam Lock.