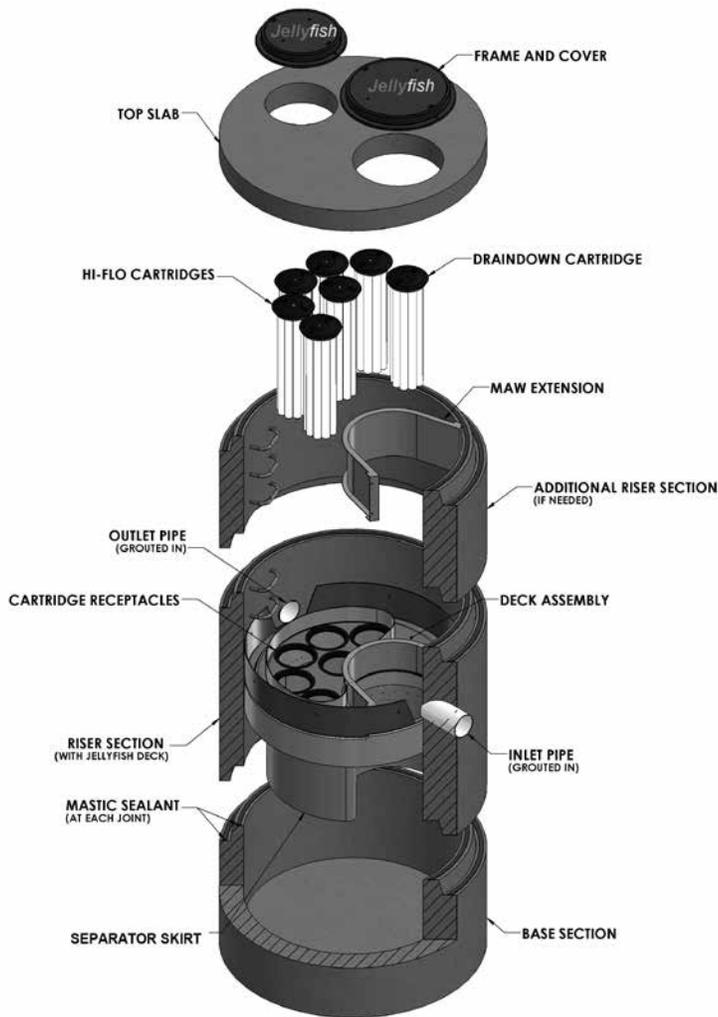


JellyFish[®] Filter Manhole Installation Guide



Jellyfish Filter Manhole Installation Guide



WARNINGS / CAUTION

1. **FALL PROTECTION** may be required
2. **WATCH YOUR STEP** if standing on the Jellyfish Deck at any time. Great care and safety must be taken while walking or maneuvering on the Jellyfish Filter Deck to prevent stepping into or through a cartridge hole or slipping.
3. The Jellyfish Deck can be **SLIPPERY WHEN WET**.
4. If the Top Slab, Covers, or Hatches have not yet been installed, or are removed for any reason, great care must be taken to **NOT DROP ANYTHING ONTO THE JELLYFISH FILTER DECK**. The Jellyfish Filter Deck and Cartridge Receptacle Rings may be damaged under high impact loads. This type of activity voids all warranties.

Safety Notice

Jobsite safety is a topic and a practice addressed comprehensively by others. The inclusions here are merely reminders to whole areas of Safety Practice that are the responsibility of the Owner(s), Manager(s) and Contractor(s). OSHA and Canadian OSH, and Federal, State/Provincial, and Local Jurisdiction Safety Standards apply on any given site or project. The knowledge and applicability of those responsibilities is the Contractor's responsibility and outside the scope of Contech Engineered Solutions.

Confined Space Entry

Secure all equipment and training to meet applicable local and OSHA regulations regarding confined space entry. It is the Contractor's or entry personnel's responsibility to proceed safely at all times.

Personal Safety Equipment

Contractor is responsible to provide and wear appropriate personal protection equipment as needed. Make sure all trained staff and certified personnel are equipped and all equipment is checked for proper operation and safety features prior to use.

- Fall protection equipment
- Safety boots
- Gloves
- Hard hat
- Eye protection
- Ear protection
- Ventilation and Respiratory protection
- Maintenance and Protection of Traffic Plan



Unloading and Handling

Any unloading/handling guidance of the Jellyfish® Filter unit and precast sections is beyond the scope of work of Contech, but can be obtained from the precaster. Contact Contech to obtain contact information from a precaster. Handle Jellyfish Filter components with care. Special lift gear and rigging may be necessary to unload and handle any precast components, which is the responsibility of the site Contractor.

Do not damage the parts in handling or unloading. If parts are damaged prior to off-loading, please immediately call Contech.

The Contractor is responsible for the inspection of all Jellyfish Filter unit components shipped and all components shall be inspected at time of delivery by the site Engineer/Inspector and the Contractor. Any nonconformance to approved drawings or damage to any part of the system shall be documented on the shipping ticket. Contech should be contacted immediately. Damage to the unit during and after unloading shall be corrected at the expense of the Contractor. Any necessary repairs shall be made to the acceptance of the Engineer/Inspector.

Crane Selection

The Contractor is responsible for selecting the appropriate equipment to safely rig, lift, unload, and set-in-place the Jellyfish Filter Manhole system, as well as provide a safe environment at the jobsite for the safe offloading and installation/assembly of the structure. Contech or the precast producer will provide the Contractor with the maximum lift weight of the heaviest precast component. Safety considerations of crane size, placement, ground support, stability, distance to excavation, swing and lifting radius, overhead conflicts, permits, or traffic control and other items must be carefully addressed but are outside the responsibility of Contech.

Excavation Safety

Any site excavation and shoring is beyond the scope of work of Contech. **This is the responsibility of the Contractor, and all OSHA, Canadian OSH, Federal, State/Provincial, and Local Jurisdiction Safety Standards shall apply on all sites.**

Jellyfish Filter Manhole System Components List

The Jellyfish Filter Manhole system will arrive on-site with the internal Jellyfish Filter Deck pre-installed, secured, and sealed to a precast riser. The components per the shop drawings (plans) typically include:

- Manhole Base Slab or Monolithic Section (dimensions per plans)
- Manhole Riser section with Jellyfish Filter Deck, pre-installed (per plans)
- Maintenance Access Wall (MAW) Extension (as needed, per plans)
- Manhole Riser sections (as needed, per plans)
- Manhole Top Slab (per plans)
- Risers to grade (per plans)
- Rubber connecting boots for inlet/outlet pipes (per plans)
- Frame(s) and Cover(s) or Hatch (per plans)
- Butyl mastic sealant



Contractor Supplied Material

- All Personal Safety Equipment
- Crane and Structure Lifting and Rigging Gear for off-loading and setting
- Grout — Non-shrink grout to connect the inlet/outlet pipe, bring castings to grade, and fill any holes for lifting points
- Inlet and Outlet pipe plugs

Base Preparation

Compact undisturbed sub-grade materials to 95% of maximum density at +/- 2% of optimum moisture content prior to placement of crushed rock. Crushed rock base material shall be six-inch minimum layer of ¾-inch minus rock. Unsuitable material below sub-grade shall be replaced per site engineer's approval.



Setting the Jellyfish Filter Manhole

Contractor is responsible to safely rig and unload the Jellyfish Filter structure and associated components. Note: All Jellyfish Filter elevations are based on the outlet pipe invert elevation (assuming the outlet pipe is centered in the hole provided). The Jellyfish Filter was designed and fabricated around the outlet elevation, unless otherwise stated. Elevations shall be verified by the Contractor using precise survey techniques.



Step 2



Step 3



Step 4

1. Obtain a copy of the final approved shop drawing and site plan to orient and verify all components are correctly placed. Ensure the inlet(s) and outlet are oriented per the plans.
2. Set the base section of the Jellyfish Filter on solid sub-grade.
3. Verify the level and elevation of the base section. Manhole floor shall slope $\frac{1}{4}$ inch (6mm) maximum across the "width" and slope downstream 1-inch (25mm) per 12-foot (3.7m) of "length" ("Length" is defined by a line running from the invert of the outlet through the center of the manhole and "width" is the perpendicular to the "length").
4. Place sealant on each of the precast sections.



Step 5



Step 7



Step 9

- 5.
6. Set riser section(s) on the base section. When setting the riser section that contains the Jellyfish Filter deck, use caution and care to protect the flexible separator skirt that will be hanging down from the deck.
7. Verify inlet and outlet pipe invert elevations and confirm pipes are centered.
8. Once the riser section with the Jellyfish Filter Deck has been installed, place the sealant and then the next riser section, checking to be sure any steps present are correctly aligned. If Maintenance Access Wall (MAW) Extension(s) are required, they should be added at this stage, prior to placing the Top Slab.
9. Set Top Slab. Note the Top Slab's orientation: The manhole access opening must be oriented over both the Maintenance Access Wall (MAW) and steps (if provided) according to the approved shop drawing. Manhole top finish grade shall be even with surrounding finish grade surface per the plans and approved shop drawing top elevation unless otherwise directed by the site engineer.
10. Contractor is responsible for sealing and making all joints, line entry, and exit points watertight, and for sealing any holes used for lift points.

Pipe Connections

Inlet pipe(s) shall be stubbed in and connected to the vault according to Engineer's requirements and specifications. Contractor to grout all inlet pipes flush with or protruding up to 2 inches into interior of vault per plan and specifications.

Outlet pipe shall be stubbed in and connected to the vault according to Engineer's requirements and specifications. Contractor to grout all inlet pipes flush with or protruding up to 2 inches into interior of vault per plan and specifications

Most Jellyfish Filter units have an above deck inlet pipe. If the Inlet Pipe has a below deck entry, this watertight step becomes even more important and is complicated by the Deflector Plate location. In the case of a below deck inlet pipe, the connection to the Jellyfish unit and the pipe connection to the upstream structure must all be watertight. In effect, the inlet pipe and the upstream structure become a part of this standing wet-pool that confines and contains the pollutants trapped in the system. All water tightening measures are to be specified by the Engineer and installed by the contractor.



Once the pipes are connected, carefully backfill around them, compacting in "lifts" that will not deflect, disturb or damage the pipes.

Ballast

When required, the Contractor shall place ballast to the dimensions specified by the Engineer and noted on the plans. Ballast shall not encase the inlet and/or outlet piping and 12-inches (300mm) of clearance should be provided between the ballast and the inlet/outlet pipes.

Risers, Covers, and Closing the System

The Jellyfish Filter is delivered with the necessary risers and covers to bring the unit to grade. It is the Contractor's responsibility to assemble the Jellyfish Filter per the plans and as directed by the Engineer.

- Place a layer of butyl mastic sealant between the top slab, riser sections, and riser rings
- The top slab's Manhole access opening **must** be oriented over both the Maintenance Access Wall (MAW) and steps (if provided) according to the shop drawing.
- Place riser sections and riser rings with steps oriented as shown on plans
- Install the ladder (if provided) per plans
- Install frames and covers per plans



Backfill

Backfill material and placement method should be performed in accordance with the construction plans and specifications and as directed by the Engineer.

Protecting the Jellyfish from Construction Run-Off

The Jellyfish Filter is a Post-Construction Best Management Practice for stormwater treatment and was selected by the Engineer for post-construction stormwater quality treatment. It is the responsibility of the Contractor to ensure appropriate erosion and sediment control (ESC) measures and construction BMPs are in place to protect the Jellyfish Filter from construction runoff, sediment, and other debris until the site is fully stabilized post-construction. Methods to assist in maintaining cleanliness of the Jellyfish Filter during construction:

1. Plug the inlet and outlet of an upstream flow splitter or bypass structure and downstream junction manhole to prevent construction run-off from reaching the Jellyfish Filter.
2. Cartridges shall not be installed until the unit has been fully cleaned, post-construction, and the site stabilized.

The method ultimately selected shall be at the Contractor's discretion and the Contractor's risk, knowing the Jellyfish Filter shall be clean and free of sediment and debris prior to cartridge installation.

Activating the System

Once construction is complete and the site has been fully stabilized (i.e. landscaping is in place, grass growing, and top course of pavement laid), the Jellyfish Filter system can be activated.

Contractor is responsible to inspect and clean the Jellyfish Filter system to keep it clean and free of debris and sediment prior to cartridge installation. **The site shall be stabilized (non-erodible soil surfaces) and unit been confirmed to be clean and free of debris prior to cartridge installation and being placed in service for proper operation and performance.** This delay avoids the potential of a large rainfall/runoff event that could load (and/or overload) the filters prematurely and shorten the service life for the owner.

Care should be taken in project site-maintenance of erosion control practices and barriers to prevent an influx of sediment that would require vacuum truck maintenance costs prior to commissioning a new system. Even with care, some jobsite debris can enter the Jellyfish Filter system. All debris **MUST** be cleaned from both the top of the Jellyfish Deck and from the sump inside the system **PRIOR** to Cartridge installation. Keeping the system clean is the Contractor's responsibility.

Depending on the methods used to protect the Jellyfish Filter from construction runoff, the Contractor should:

1. Inspect the system to ensure maintenance is not required (refer to the Jellyfish Filter Owner's Manual).
2. Call the number on the Jellyfish cartridge activation kits.
3. Complete and return the activation checklist. Note: Make sure the clean, dry cartridge kits are located near the Jellyfish system and maintenance is conducted, if needed, prior to the activation team's scheduled arrival.
4. Remove all upstream and downstream pipe plugs that were used to prevent construction runoff from reaching the structure. (Standing water should be pumped out and the Contractor shall conform with all confined space requirements prior to entering any underground structure).



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