



**For AdEdge Residential Point-Of-Entry Systems
using AD33 Granular Ferric Oxide media**

AdEdge Technologies, Inc. AD33 adsorption products for water treatment are granular, dry, flowable materials designed for easy installation into conventional pressure filtration or adsorption equipment. Most water treatment applications are operated in a down flow manner from top to bottom with the water inlet/outlet at the top of the vessel. Products are supplied in polyethylene or fiber drums, super sacks or other appropriate containers. *These procedures are intended to be guidelines for startup of AdEdge POE treatment units and those containing AD33 (NSF 61 Certified granular ferric oxide) designed or those designed, assembled and sold which are consistent with AdEdge use specifications (i.e., AdVantage Medallion or Sorb-Trol™ units). Details may vary based on the specific application and adsorption media employed. This bulletin is NOT intended to replace operation and installation manuals pertaining to these products nor is intended to provide comprehensive use instructions. Please consult AdEdge Technologies for details. Installation should be performed only by licensed mechanical contractors, plumbers or water treatment professionals familiar with water treatment equipment.*

APPLICABILITY

The following systems are the most common residential configurations:

- AdEdge POE-5 AdVantage Medallion (12"x52"vessel) designed for up to 5 gpm design flow rate
- AdEdge POE-7 AdVantage Medallion (13"x54"vessel) designed for up to 7 gpm design flow rate
- AdEdge POE-10 AdVantage Medallion (14"x65"vessel) designed for up to 10 gpm design flow rate

START-UP

- 1) Before filling operation, inspect the internals of the adsorption vessel(s) to ensure the collection laterals appear securely connected to the outlet port and are in good condition. For non-Medallion Systems, using standard POE fiberglass tanks, an upper distributor basket is strongly recommended to prevent media washout during the backwashing cycle.
- 2) Wear the appropriate safety equipment per the MSDS and Site Health and Safety Plan
- 3) Perform a hydraulic test of the system checking all connections for leaks before connecting the treatment module. Tighten fittings appropriately before proceeding.



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- 4) If potable water is available, fill the vessel with 1/3 full of water before adding underbedding or media. This will reduce the potential for the gravel/media to damage the internal hub/lateral(s) inside the tank.
- 5) Before adding any media, secure or connect the distributor or hub/lateral to the riser tube (joint is typically glued when using SCH 80 PVC) and insert down into the tank, with the cone or laterals resting on the bottom of the tank. Be sure the riser is positioned in the center of the opening of the tank.
- 6) Cover the opening of the riser tube with a piece of duct tape or equivalent to prevent any media from entering into the hollow of the riser tube during filling.
- 7) With the riser tube and bottom hub/lateral(s) in place, first pour in through the top access port (through a funnel or other means), an appropriate amount of the coarse underdrain media; examples of typical media include layers of 1/8-1/16-inch washed gravel (suitable for drinking water contact use), enough to come to the level of the distributor or cone. Over this layer, on top of the coarse aggregate, pour in a finer 1/8 x 1/16 size gravel to approximately 2-3 inches above the laterals or cone.
- 8) ***Once the gravel is in place, be sure the tank is approximately half full of water before adding media.*** Then, using a clean bucket, add the appropriate quantity of the granular ferric oxide adsorption media slowly into the vessel, filling from the bottom up. Use caution during filling.
- 9) Fill the vessel to the appropriate height or design volume with media (consult manual or AdEdge technical support if needed), allowing for the designed headspace in the vessels for backwashing. Backwashing typically requires approx. 40% bed expansion at the prescribed backwashing rate. For example if 30" of the adsorption media is placed in the vessel, the media will expand to approximately 35-40% of this height or approximately to a height of 42" during the backwashing process. Therefore, one must check the amount of available head space in the vessel(s) to ensure that the available space is adequate to avoid losing media during the backwashing cycle.
- 10) Top off the vessel with water; allow the media to stand for a few minutes or longer if possible to wet the material and eliminate entrapped air (which is the most common cause of pressure drop and channeling).



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- 11) Connect / install the control head/valve according to manufacturer's procedures. **Place the valve cycle first into the BACKWASH cycle (mode) before running any water in a downflow manner.** After the automated valve has rotated into backwash mode, it is recommended to unplug (remove power from) the valve, to avoid the valve switching into fast rinse or service modes prematurely. (Supply power to valve again after all initial backwashing has completed). **DO NOT SUPPLY FULL FLOW TO THE VALVE INITIALLY!** Provide water to the unit very slowly in small steps, regulating through an external ball valve or other isolation valve. **Backwash the media very slowly and at a low flow rate (upflow direction at 1/3 recommended backwash flow) until backwash effluent runs clear.** Gradually increase in small increments (about 2 gpm) and allow backwash water to clear up at each increment before finally reaching 8-9 gpm per square foot of tank surface area (which equates to 6 gpm for POE-5, 7 gpm for POE-7, and 9 gpm for POE-10). This process should take more time than a normal backwash cycle. Some initial amber color and turbidity in the backwash water (first few bed volumes) is common due to the presence of GFO fines that are evacuated. Continue to repeat the backwash upflow cycle until the water runs clear. This will usually require more than one 15 minute cycle. Open bleed or sample valves during the initial flushing to also eliminate entrapped air in the vessel. With a rubber mallet, gently tap the side of adsorption vessel in backwash to reduce potential clinging of media to the sides of the vessel. *Note: More than one initial backwash cycle may be needed to complete the conditioning step and obtain clear product water.*
- 12) Once clear backwash water is observed at the appropriate flow rate, turn off water flow and allow the suspended adsorbent media to re-settle. Then place the unit into a rinse cycle (forward flow) with the rinse going to the drain. Check the water for clarity; the water should be free of particulate or color after a short period. The adsorber is now ready to place into service.
- 13) Operate according to the recommended design flow rates and operating conditions. After placing into service, allow forward (service) flow for a few bed volumes before obtaining any effluent samples for testing to ensure steady state conditions are achieved.



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- 14) ***All systems should be equipped with the following components for troubleshooting and monitoring purposes.*** These components would be installed in the field by the designated installer:
- a. a flow meter or totalizer to measure total gallons treated.
 - b. inlet and outlet pressure gauges (0-100 psi) to note any pressure differential across the system.
 - c. sample ports for obtaining raw water samples and treated water samples immediately before and immediately after the system.

MEDIA REPLACEMENT and CHANGEOUT

- 1) Media replacement and changeout is recommended to be performed only by water treatment professionals, dealers, or others familiar with water treatment operations
- 2) At exhaustion, isolate flow into the vessel and drain the vessel of all water; open vessel to atmospheric pressure
- 3) If available at the site, flush the media for a couple bed volumes with potable water (preferably treated and free of target contaminants) to remove interstitial water in the media pores; drain the water from the vessel.
- 4) Use conventional means of removing spent media, either wet or dry methods, e.g., vacuumed out with wet/dry vac equipment, vac truck or equivalent; utilize proper safety equipment and procedures. Alternatively, depending on the service agreement, replacement vessels may be provided in lieu of on-site media replacement.
- 5) Containerize and remove any free liquids from the material if to be land disposed in containers
- 6) Dispose of the media in accordance with federal, state, and local regulations.

CONTACT INFORMATION

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