• This manual provides general design and installation information for use of Arc plastic leaching chambers in the State of Ohio.

• All Arc chamber configurations and installations must comply with applicable state and local rules.

• This manual contains a brief description for each chamber model and general design and installation procedures. For more detailed information please contact ADS/Hancor customer service at 1-800-821-6710.

• For CAD drawings refer to our website at: www.ads-pipe.com.

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INCLUDED SYSTEMS

Arc 18 System
- 16" Wide Chamber
- New Lightweight Design with Articulating Joints
- H–10 load rated with proper installation
- See Pages 8-9

Arc 24 System
- 22" Wide Chamber
- New Lightweight Design with Articulating Joints
- H–10 load rated with proper installation
- See Pages 8-9
Before beginning installation, please note the following engineered features of the Arc 18 model chambers and end caps.

Arc 18 System

- Each chamber end is either marked “Dome” or “Post” on the round observation/vent knockout ports. These indicate direction of assembly, dome over post.

**Arc 18 Chamber**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>67”</td>
</tr>
<tr>
<td>Repeat Length</td>
<td>60”</td>
</tr>
<tr>
<td>Overall Width</td>
<td>16”</td>
</tr>
<tr>
<td>Sidewall Height</td>
<td>7.7”</td>
</tr>
<tr>
<td>Overall Height</td>
<td>12”</td>
</tr>
<tr>
<td>Capacity</td>
<td>3.42 cu ft (25.6 gal)</td>
</tr>
</tbody>
</table>

Calculations and dimensions are nominal.

Arc 18 Chamber — Top, Side, and End Views (not to scale)

Arc 18 End Cap — Side, and End Views (not to scale)
ARC 18 SYSTEM

Arc 18 Features
• Base flanges on the chambers ends over lock during final engagement to form a very strong joint.
• The Arc 18 chamber feet are designed with an extra large surface area to provide support particularly in sandy soils.
• Sidewall louvers are designed to allow effluent to exit the chamber sidewalls in high flow situations, while preventing soils from migrating into the chamber void.
• Observation/venting knockout ports provide for inspection of system performance as well as a convenient location for drain field ventilation pipes.
• Each chamber end has small knockouts on the roof positioned in the "Post" end joint. When removed, these knockouts are for the use of zip ties to support piping in dosing systems.

Arc 18 End Cap
• Upper and lower knockouts accommodate both Schedule 40 and SDR 35 piping. Dimples are also offered for the positioning of hole saw pilot drills.
• End caps are designed to attach the chamber’s dome or post end.

Arc 18 Swivel Feature
• Each chamber’s post end has swivel lockout tabs at either base flange. When removed, the incoming chamber will turn up to ten degrees in the direction of the removed lockout tab. Without removal of the swivel lockout tab, the chambers will align in a straight pattern.
• Swivel lockout tabs may be removed carefully with a utility knife.

Arc 18 System Configurations
• Trench Installation: Page 10
• Pressure Dosing System: Page 11
• Bed Configuration: Page 12
• Pump Systems: Page 13
• Shallow Cover Trench Configuration: Page 14
• Serial Configuration: Page 15
ARC 24 SYSTEM

Before beginning installation, please note the following engineered features of the Arc 24 model chambers and end caps.

Arc 24 System

- Each chamber end is either marked "Dome" or "Post" on the round observation/vent knockout ports. These indicate direction of assembly, dome over post.

Arc 24 Chamber

<table>
<thead>
<tr>
<th>Feature</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>67&quot;</td>
</tr>
<tr>
<td>Repeat Length</td>
<td>60&quot;</td>
</tr>
<tr>
<td>Overall Width</td>
<td>22&quot;</td>
</tr>
<tr>
<td>Overall Height</td>
<td>12&quot;</td>
</tr>
<tr>
<td>Capacity</td>
<td>5.02 cu ft (37.5 gal)</td>
</tr>
</tbody>
</table>

Calculations and dimensions are nominal

Arc 24 Chamber — Top, Side, and End Views (not to scale)

Arc 24 End Cap — Side, and End Views (not to scale)
**ARC 24 SYSTEM**

**Arc 24 Features**
- Base flanges on the chambers ends over lock during final engagement to form a very strong joint.
- The Arc 24 chamber feet are designed with an extra large surface area to provide support particularly in sandy soils.
- Sidewall louvers are designed to allow effluent to exit the chamber sidewalls in high flow situations, while preventing soils from migrating into the chamber void.
- Observation/venting knockout ports provide for inspection of system performance as well as a convenient location for drain field ventilation pipes.
- Each chamber end has small knockouts on the roof positioned in the "Post" end joint. When removed, these knockouts all for the use of zip ties to support piping in dosing systems.

**Arc 24 End Cap**
- Upper and lower knockouts accommodate both Schedule 40 and SDR 35 piping. Dimples are also offered for the positioning of hole saw pilot drills.
- End caps are designed to attach the chamber’s dome or post end.

**Arc 24 Swivel Feature**
- Each chamber’s post end has swivel lockout tabs at either base flange. When removed, the incoming chamber will turn up to ten degrees in the direction of the removed lockout tab. Without removal of the swivel lockout tab, the chambers will align in a straight pattern.
- Swivel lockout tabs may be removed with a striking blow to the tab and then peeling off the remaining piece of plastic.

**Arc 24 Side Port Coupler (SPC)**
- SPC component snaps in place to allow side entry at any joint throughout the trench line. This accessory provides a variety of design and installation options. Refer to page 10 for design configurations.

**Arc 24 System Configurations**
- Trench Installation: Page 10
- Pressure Dosing System: Page 11
- Bed Configuration: Page 12
- Pump Systems: Page 13
- Shallow Cover Trench Configuration: Page 14
- Serial Configuration: Page 15
Arc Leaching Systems: Installation Procedures

Preparation
- Excavate to proper width and depth as described in the system design or permit and as required by state and local codes.
- Smooth irregularities in the excavation and clear any large rocks or debris from the bottom surface area. The slope of the bottom area shall be determined by the system design, as well as state and local codes. Absorption bed installations require 4 to 6 inches of soil separation between chamber lines.

Installation
- Installation of any ADS/Hancor Arc leaching system begins with laying the first chamber onto the prepared bottom surface area dome end first. Each additional chamber is then laid dome over post by raising the post end of the incoming chamber and slightly pulling the chamber back until the dome stops at the underlying post. As the incoming chamber is laid flat on the excavation bottom, slide the lower base flanges under the raised base flanges of the previously-installed chamber.

- As the incoming chamber is lowered down onto the excavation bottom, the two chambers fully engage in a straight-line pattern creating a very strong joint.

(Note: if the following chamber is simply laid onto the preceding chamber the joint will not be fully engaged.)

Turns
- The Arc 24 chamber is designed with an articulating joint which allows up to 20° of movement, with a maximum of 10° in either direction.

Installation of End Caps & Pipe Connections
- Prior to installing end caps, remove the appropriate knockout for pipe connections. Snap an end cap on each end of the drain lines with the product or company logo facing out (knockouts can be removed with a knife or a 4” hole saw).

- Upper end cap 4” knockouts - always used as inlet for each line.
- Lower endcap 4” knockouts are always used for return lines or continuous circuit piping for bed or mound systems. These lower knockouts should also be used to create turns in the drain lines greater than the ten degrees provided by the chamber swivel feature.

Splash Plates
- Splash plates must be installed on each inlet end cap.
- Splash plates are provided with Arc system end caps.
- Knockout material may be used if screwed to the base flange of the end cap with a stainless steel screw.

Low Pressure Dosed Piping (If Required)
- Choose a hole saw that matches the outside diameter of the specified PVC distribution pipe. Use the provided dimple on the upper knockout as a drill guide to drill the hole.
- Small knockouts or openings are provided on the roof of each chamber’s post end to accommodate heavy duty black zip ties.
Arc Leaching Systems: Installation Procedures (Continued)

for the hanging of distribution pipes under the roof of the chamber lines.
• Pressure pipes should be installed with holes facing upward. (Additional information and drawings for low pressure dosing systems can be found on pp 11.)

Filter Fabric
Under certain conditions, filter fabric is recommended to drape over the sidewalls to prevent sand intrusion while allowing water and air to pass through.

The following single or combination of conditions warrant the use of filter fabric:
• The backfill material is uncompactable and subject to sloughing, e.g., single-grain sand and very fine sand.
• The drain field will be left uncovered for an extended period of time (over 5 days or during rainy season).
• The drain field will not be sodded.
• The bottom of the drain field will be less than 12” from seasonal high water level.
Filter fabric should meet the following specifications and can be purchased from your ADS/Hancor Arc distributors:
• Fabric: Spun bonded, made up of nylon fibers, hydrophilic in nature.
• Weight: 0.4 - 0.6 oz/yd2

Ventilation
Drain field ventilation is recommended, but not required, to allow oxygen to access the drain field especially when cover soil quality is questionable.
• The dome/post feature of the Arc 24 chamber acts as a knock-out for observation/vent ports. Here a PVC pipe may be introduced into the chamber and vented to atmosphere.
• Make certain the vent is assembled in such a fashion as to prevent rainwater from entering, effluent water from exiting, and possible odors from causing issues.
• Several outlet products are available for this purpose.

Shallow Placement
Ohio Department of Health rules allow for the installation of drain field systems in “shallow placement” applications. In these applications, the Arc 18 and Arc 24 chambers may be installed at a minimum of two inches (2”) into the native soil. The remainder of the chamber units in the system (up to 10” in height, as the Arc 18 and Arc 24 are 12” tall) will then be backfilled above grade. Backfill material in this application should be coarse in nature (loamy sand, sandy loam), and only slightly compacted along the chamber sidewall.

Backfilling
• After chamber assembly is complete and any time before or during final covering, modestly compact the sidewall area backfill material by simply walking down the sides of the chambers. Sidewall compaction is important to begin the stabilization process of the soil, to support the chamber sidewalls, and help prevent the migration of fines into the chamber louvers.
• Mound systems require a minimum of six inches of cover. More cover may be required initially to allow for settling.
• Do not drive heavy equipment over chamber installation. Use lightweight or tracked equipment to push the soil onto the system to the proper height set forth by local and state codes.

Final Grade
• Arc leaching system installer is responsible for the final cover of the drainfield.
• Make certain that storm water is diverted away from the drain field. System final grade should be crested or sloped, never left flat or concave. Channel water away from the drain field.
• Final grade material should be slightly to moderately limited soil to help maintain an aerobic state in the drain field.
• Stabilize the drain field area with grass-type vegetation prior to heavy rains if possible.

Cover Requirements
Arc 18 and Arc 24 chambers carry the following minimum cover requirements:
• For H-10 load bearing capability, 12” of compacted cover material;
• For up to 4,400 pounds per axle, 6” of cover material; and
• If less than 6” of cover is specified, the minimum amount of cover shall be 4”. In applications where less than 6” of cover material is installed, only tracked vehicles may be introduced onto the system.
Installation Configurations:
I. Trench Configuration

Typical Trench: Subsurface Cross Section

- Splash Plate Required on Inlet End of Each Chamber Row
- Sewer & Drain and/or Triple Wall or Per Local Regulation (Installed in Upper Knockouts)
- D-Box
  - 12” Min.
  - 22”
  - 24” Typ
- Spacing per local regulation.

Typical Trench: Plan View

- Septic Tank
- D-Box
  - (4” Header Pipe Manifold May Be Used in Lieu of D-Box Distribution)
- Inspection Ports
- End Caps Must be Installed on Both Ends of Every Chamber Row
Installation Configurations:

II. Pressure Dosing System

Pressure dosing systems can be arranged in trench or bed configurations, as subsurface or mound installations.

Pressure Dosing: Plan View with Detail

Pressure Pipe Detail:
Pressure Pipe Must Be Installed With Holes Facing Upward (Per Design or Engineer Spec)

Pressure Dosing, Hung-Pipe:
Installation Cross Section

Pressure Dosing, Valve Box:
Installation Configurations:

III. Bed Configuration

Typical Bed: Subsurface Cross Section

- 12” Min
- 22” Typ
- 4” Min/6” Max Backfill
- Septic Tank
- D-Box
- End Caps Must be Installed on Both Ends of Every Chamber Row
- 4” Min/6” Max Between Chamber Rows
- Splash Plate Required on Inlet End of Each Chamber Row
- Sewer & Drain and/or Triple Wall or Per Local Regulation (Installed in Upper Knockouts)
- (4” Header Pipe Manifold May Be Used in Lieu of D-Box Distribution)
- Backside: Complete 4” Header Pipe Manifold Assembly (Installed in Lower Knockouts)
- Inspection Ports

Typical Bed: Plan View

- 12” Min Backfill
- Septic Tank
- D-Box
- End Caps Must be Installed on Both Ends of Every Chamber Row
Additional Configurations:

IV. Pump Systems: Pump to D-Box

Pump to D-Box: D-Box Section View

- Force Main from Pump Tank
- 1/4” Hole Facing Wall of D-Box
- 3” to 4” Overflow to Top Inlet of End Pipe

Pump to D-Box: Plan View

- Minimum Length 4” and Level
- Determined by State and Local Codes
- Septic Tank
- Pump Tank
- D-Box
- Inspection Ports
Additional Configurations:
V. Shallow Cover Trench Configuration

Shallow Cover Trench Configuration: Cross Section

- 6” Min.
- 4” Diameter Pipe Inlet Invert = 6.24”
- Backfill
- 18-24”

Shallow Cover Trench Configuration: Plan View

- Minimum Length 4” and Level
- Determined by State and Local Codes
- Septic Tank
- D-Box
- Inspection Ports
Installation Configurations:

VI. Serial Configuration
   – Side Port Coupler (SPC) Header Connection, Middle of Row, & Radius Bend Configurations
Innovation in product, process and technology.

That’s ADS and Hancor.