

Installation Instructions

In the past it has been *IMPOSSIBLE* to install an air and water tight underground system. AKDUCT® has produced a user friendly system that will reduce the amount of time and labor necessary for installation. We are confident after you have designed and installed our system, AKDUCT® will always be your first choice. To ensure an air and water tight system, carefully adhere to the following instructions (please note that AKDUCT AIRTITE Sealant caulk must be used as directed).

TOOLS NEEDED:

1. Circular Saw, Reciprocating Saw, or Jig Saw
2. Drill with 1/4" & 5/16" Hex Driver
3. Utility Knife
4. Caulking Gun

TRENCHING & BACKFILL:

After the excavation has been made, no special bedding needs to be used for AKDUCT®. It can be a direct burial with onsite compaction fill, sand, pea gravel, light aggregate or material taken from the trench if equivalent. Spread the backfill material evenly around the duct making sure there are no gaps. Plate tamping equipment is the recommended practice. No cement is needed to fill in around the duct, since the tamped fill holds the duct in place. AKDUCT® is resistant to any minerals or salt that may be in the backfilled soil. AKDUCT® will not "float" when backfilled to within 2" to the top of the duct. Your concrete slab is then poured so that all "tie-down" work is eliminated. In case of open site construction and possible rain storm it is recommended to flood the system with water to half of the depth of the pipe. After concrete is poured, sump the water and wipe with clean rag.

CAUTION: When backfilling or grading, care should be taken to not push heavy loads directly on the duct, nor should heavy equipment be allowed to run over the duct. It can be crushed under thoughtless abuse. AQC Industries LLC is responsible for materials only. (See warranty) AQC Industries, LLC is not responsible for design or installation of AKDUCT® products.

CUTTING THE PIPE:

AKDUCT® Pipe can be easily cut using a Circular Saw or Reciprocal Saw. Trim all edges as necessary.

CONNECTING 6" – 18" PIPE AND FITTINGS:

1. **You will need: Clamp (with screws), Gasket & Drill**
2. **Included on the 6", 8" & 10" Clamp are three 3" aggressive stainless screws**
3. **Included on the 12", 14", 16" & 18" Clamp are eight 3" aggressive stainless steel screws**
 - a. All Pipe and Fittings are manufactured with male ends.
 - b. **Place** two sections of pipe (or pipe and fitting) end to end.
 - c. **MAX SEAL** wrap MAXSEAL around pipe with your thumb, apply pressure to overlap. This will provide an airtight and water resistant seal.
4. **CAUTION: To prevent clamp damage from occurring during installation make sure the clamp and gasket temperature is between 32° and 120° Fahrenheit. When above 90° Fahrenheit use 6-3/4" x 1/4" self tapping sheet metal screws on each side of the clamp to stop slippage from heat.**
 - a. **Place** the clamp around the gasket, lining up the clamp with the gasket.
 - b. **Tighten** the clamp to 25" to 30" pounds then setting screw gun to match. (Tightening the screws too fast may cause galling). If more pressure is needed to create a seal you can tighten appropriately.
 - c. **Clamps** do not have to meet each other to be air tight.



Peel off wrap



Tack half around



Tack down with pressure



Slide over clamp

*Special care should be taken with the large diameter ducts. Temporary interior bracing or exterior bridging (over the duct) is required when equipment has to drive over the pipe. Backfilling and tamping should be done with plate tamper (no jumper jack tamper on top of pipe) which will cause damage to the ducts. Pea gravel and concrete slurry cap is an acceptable alternative to bridging or when heavy traffic is unavoidable.

INSTALLING THE SADDLE:

1. **Center** the saddle on top of the pipe at your chosen location for your air supply register and trace around with a Sharpie. Use a template to provide a quick & easy guide for cutting the pipe.
2. **Using** the Sharpie outline as a pattern, draw another line 1 ½" inside first outline. Cut out inner drawing and remove any loose material from inside the pipe.
3. **Use** a ¼" bead of caulk on saddle and pipe surfaces.
4. **Set** the saddle on plumb and level.
5. **Apply** the screws provided in the locations pre-marked on the saddle. All the screws must be used to provide the seal.
6. **Caulk** around the saddle after the screws have been applied.
7. **Once** the concrete has been poured, cut off the protruding caps and install 4"x12" floor register.



Draw outside



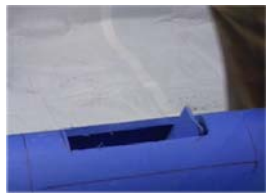
Draw inside



Cut along inside



Cut square to edges



Step on cut panel



No gap 1/4 bead



Same with saddle



Secure both ends first

INSTALLING THE INLINE TEE:

- **Locate** the desired register location.
- **Plumb** and level the Inline Tee and connect to your pipe using a clamp and gasket.
- See page 1 for Instructions "Connecting the Pipe and Fittings".
- **After** the concrete is poured, cut off the protruding caps and install 4"x12" registers.

INSTALLING THE OFFSET FOOTER BOOT:

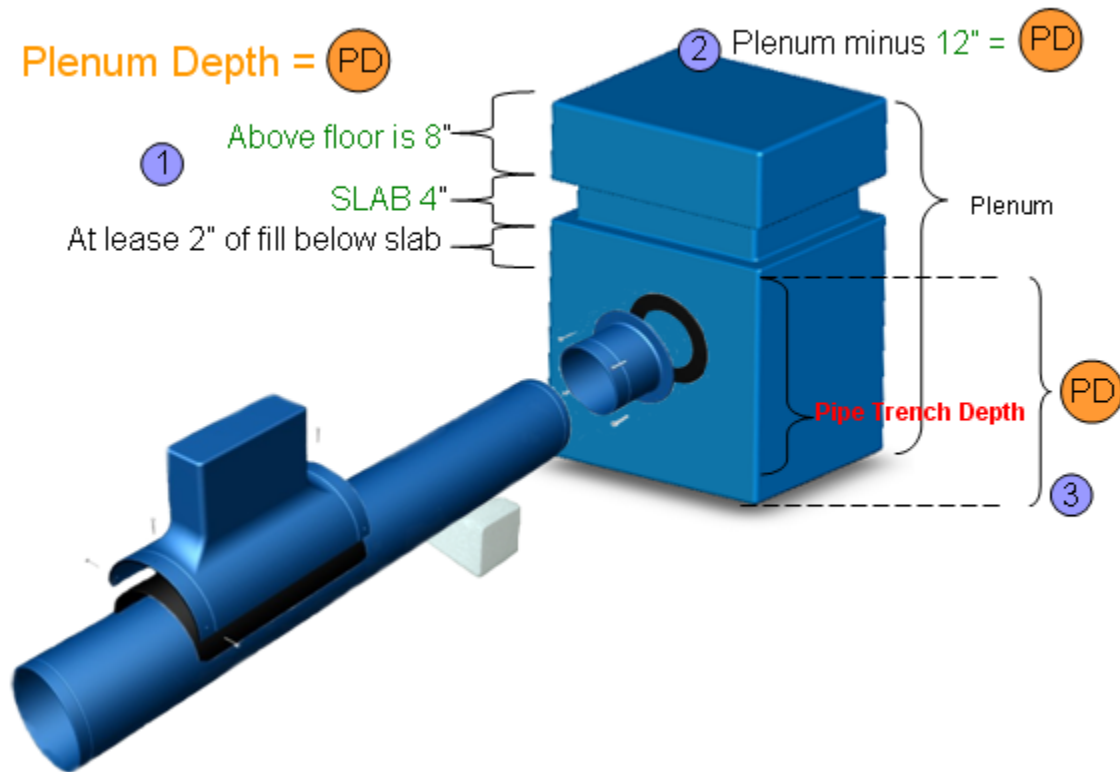
The Offset Footer Boot allows you to use the A.K. Duct underground system with wall registers (verses floor registers). Wall registers may be cut as much as 8" above the floor and can be used in a basement outside wall that is framed with 2x4 or 2x6" OC, or in the slab application. Above the ground registers and plenum provide added security against water seepage into the duct system due to backed up plumbing systems or minor flooding.

Locate the desired register location. **Plumb** and level the Offset Footer Boot and connect to your pipe using a clamp. See page one for Instructions "Connecting the Pipe and Fittings" **Mark and Cut** an opening to fit your wall register.

INSTALLING THE PLENUM:

To ensure easy installation, the AKDUCT® Plenum is constructed as a complete unit. **Dig** a hole in the appropriate location and insert the plenum. **Mark** the take-off location and cut your holes at the desired elevation. Each 4”x 12” Boot is a legal clean out. Pipe does not need to be sloped back to the Plenum. If a water problem should occur, drill a hole in the side of the protruding Plenum. (8” above the concrete) and use a shop-vac to remove any water. You can then place a rubber plumbing test plug in the hole according to the size drilled. Nothing else has to be done with the plenum until after the floor has been poured.

Mark the furnace opening and cut the plenum .Use a template to provide a quick & easy guide for cutting the plenum. Place gasket around hole and adhere plenum to furnace supply.



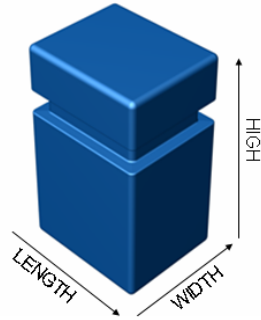
To find Plenum Depth subtract floor 8", slab thickness 4", but not the aggregate fill of 2". From the top it will be plenum length minus 12" to determine plenum depth. For pipe depth add 2" (below slab level) to pipe diameter.

INSTALLING THE PLENUM ADAPTER:

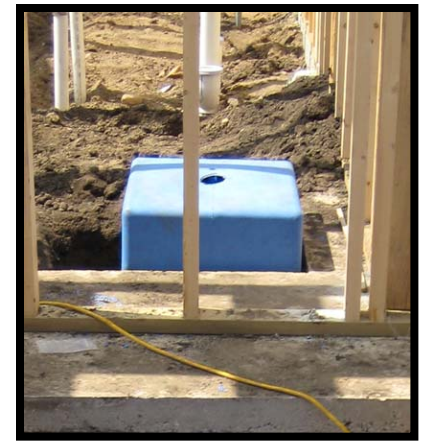
Plenum Size



25" Wide x 30" Length x 48" High
20" Wide x 24" Length x 36" High



Hold plenum adapter up to Plenum at desired location and trace around inside and outside with a Sharpie marker. **Cut** a hole using the smaller circle to fit your plenum adapter. Use a jigsaw or a reciprocating saw. **Caulk** both surfaces with a 1/4" bead of caulk. **Secure** with screws provided and caulk around plenum adapter. **All** screws must be used to ensure your plenum adapter has been sealed. Below diagram shows using a template mark area.



DURABILITY:

AKDUCT® needs no protection in earth from sand, concrete, or plaster. It is not affected by minerals and salts found in normal backfilling materials.

Air and Water Tight System:

There is currently no code requirement for air testing of underground duct work. However, when installed by a manufacturer trained installer per the installation instructions, "The Blue Duct" will be an air and water tight system.

Commercial



This guide is available from distributors.

For best results in sealing and attaching flange pipes, cut down the middle keeping both sides even throughout the entire circumferences of the pipe.

When duct must be cut between flanges there are clamp and gaskets available.



Put two beads of caulk on both ends of the connecting pieces.

Come-along straps and alignment pins are available for all commercial sizes.



Torque setting when ratcheting bolts set between 25 to 30lbs

After bolts are tightened, caulk over both ends of bolts



Drilling guide for flange holes is available from distributors

SPECIFICATIONS for AKDUCT® Underground Air Ducts:

Underground duct systems shall be polyethylene as manufactured by AQC Industries, LLC. Riverton, MN.

All joints and connections shall be clamp and gasket fastened in accordance with manufacturers recommendations to ensure an air and water tight system. All ducts and fittings shall be installed and backfilled according to manufacturers recommendations, using pea gravel, sand or the equivalent with good compaction.

WARRANTY

AQC Industries, LLC warrants that the products shall be free from defects in manufacturing materials and workmanship for a period of TEN YEARS from the date of manufacture set forth on each of the Products (the "Warranty"). The Warranty shall only be applicable if AQC Industries, LLC is given prompt written notice specifying the nature of the warranty claim within the one year warranty term.

Upon confirmation by AQC of a Warranty breach, the exclusive remedy shall be for AQC to, at its option, repair or replace the defective Product or issue a credit or refund. The Warranty does not extend to any Product subjected to misuse, accident or alteration.

THE WARRANTY IS THE ONLY WARRANTY AQC MAKES FOR THE PRODUCTS. EXCEPT AS INDICATED ABOVE, AQC MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED guarantee OF MERCHANT ABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

AQC shall under no circumstances be liable for special, incidental, consequential or exemplary damages of any nature whatsoever, however occasioned (whether by negligence or otherwise), including, but not limited to, commercial loss from any cause, business interruption of any nature or loss of profits, even if AQC shall have been advised of the possibility of such damages. AQC shall under no circumstances be liable for special, incidental, consequential