What's included: 1 KeepTheHeatä Air-To-Air Heat Exchanger
20" of metal duct work (shipped in 4' sections)
All connectors for duct work assembly
8 x 4″ to 4″ Corrugated Tubing Couplers
56 Plastic ring spacers

What you need to provide:

Eight pieces of 4 inch solid corrugated tubing 20 feet long. It is best to buy the tubing in 10 foot sticks if available. If you must buy a coiled roll of corrugated tubing; buy a 200 foot roll and cut into 25 foot pieces. For best results if you buy rolled corrugated tubing, cut tubing a couple of days before you start installation. Leave tubing inside to help straighten tubes (the straighter the tubes, the better the airflow).
Approximately 750 feet of 4 inch sewer and drain Solid PVC (Schedule 20)**.**
Fittings for 4 inch PVC. Typical installation requires 2 to 4 90°'s and 1 45° per air drop. Approx. 30 to 40 90°'s and 15 45°'s
Support hangers. These are to support the 20 foot duct work and hangers for the 8 air delivery tubes. Angle iron and thread-all work best.
Flange for unit entrance into building. Picture included below.
Two Pints of PVC Cement
Self-tapping screws (lengths will vary)
Approximately installation time is 40 labor hours

Installation Instructions:

1.**Choose the best location for installation of both the head of the system and the location of the 8 air-drops.** It is best if the end of duct work is as close to your biggest problem creation source as possible. Here are a few other factors to consider:

What is the exterior wall made of and is a mounting hole going to compromise the structural integrity of the building?
What can you hang the duct work from? Metal studs in ceiling work well or anything that is solid enough to support 250lbs. of weight.
Where do I need fresh air? Air-drops should be routed to areas where employees are working the most. You have 8 different places you can route these air-drops to.
The more times you have to twist and turn the PVC, the more air volume you lose. The straighter you make the PVC, the more air you can bring into the building.

2. Construct flange to mount in the side of your building.(Use galvanized metal – see pictures below)

Flange

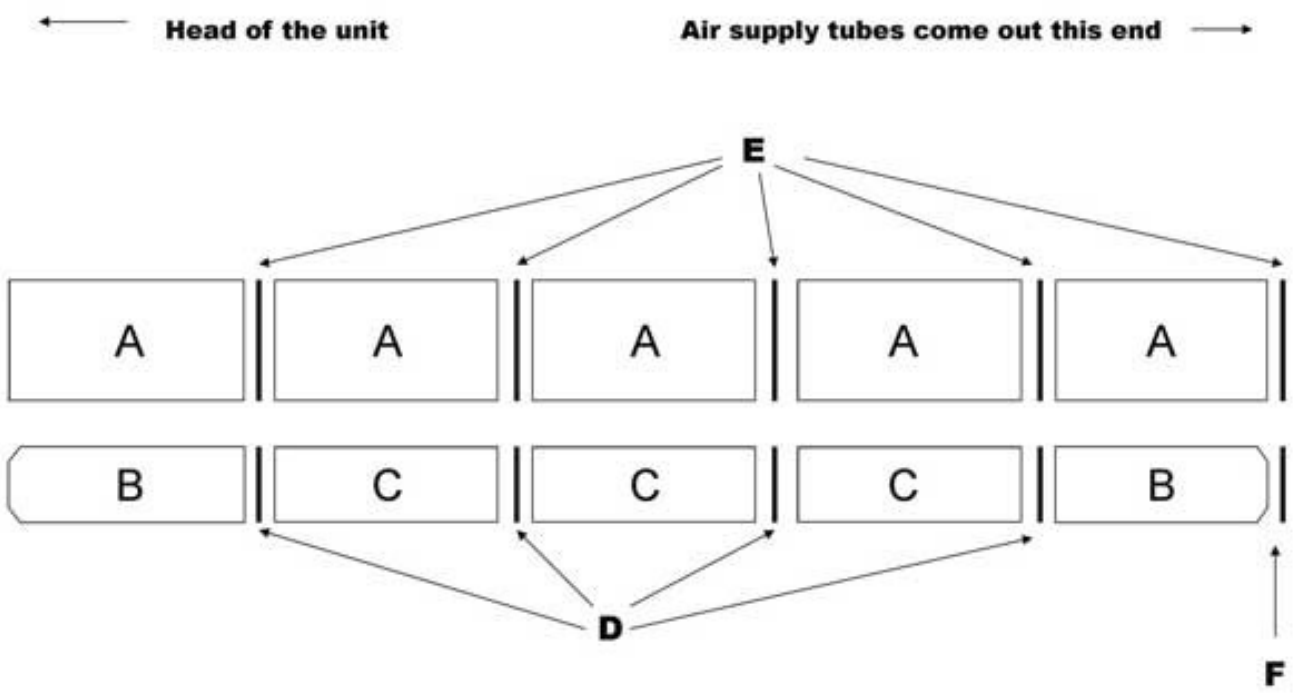
3. Cut hole in your building (21.5" high, 22.5" wide), insert flange and attach to your building.
Self-tapping screws are ufficient to hold flange in place until head of system is installed.

4. Insert head of the unit into the building. Attach unit to building and flange.

You can usually screw directly through the side of the flange into the head of the system. Another option is from the inside of facility; run screws from inside of head into flange.**IMPORTANT – Make sure both fan blades spin unobstructed inside the head of system. Some minor right/left or up/down adjustment may be needed.**

5. Caulk exterior of system.
Caulk both around flange and head of system. This insures that no moisture can enter the facility.

6. Assemble duct work (See diagram below.)
Depending on space limitations, duct work is usually assembled in 2 pieces; one is 12' long while the other is 8' long. If you want to assemble all 20' at one time you can. Make sure that when duct work is assembled you attach the 16" pieces with only one curled end to the head of system. A total of 4 x 16" pieces of duct work with only one curled end are included. These pieces should be located at each end of duct work.



	Qty			Qty	
A	10	Top and Bottom	D	8	Locking slides
B	4	Front and end (sides)	E	10	Long Barlocks
C	6	Center side sections	F	2	Short Barlocks

7. Snap ring spacers on corrugated tubing every three to four feet on each of the eight 4" corrugated tubes.

8. Insert tubing into metal duct work. If you have 10' sticks of tubing, ready one 10' section with spacers, insert into duct work, then raise duct work to ceiling. If you are using 25' lengths of rolled tubing and assembling duct work in multiple pieces, insert all of tubing into duct work after all duct work is hung. If duct work can be installed in one piece, place tubing into duct work before it is raised to the ceiling.

9. Raise first section duct work to ceiling, use couplers to attach corrugated tubing; attach duct work to head of system.
Duct work should be secured to ceiling in at least three places. After duct work is secured to ceiling, attach corrugated tubes inside of duct to the corrugated tubes from head of system. Make sure to use small screws and duct tape to secure tubing inside of couplers. Duct work can be attached to head with 10-15 sheet metal screws and should be caulked to insure air-tightness.

10. Install second section of duct work.
Couple 10' sticks of corrugated tubing the same way tubing is attached to head of system.

11. Begin installing PVC.
It is best to work from juncture of ceiling and side wall or support pole and work back to end of duct work. Make sure PVC does not block the end of duct work. Try to allow some space (2-3') at the end of duct work before attaching to PVC .

12. Fasten PVC to ceiling.
Small gauge wire or plumber's strap work well.

13. Fasten PVC to side walls or poles.
Air drops should end about 3' from the floor.

14. Attach corrugated tubing to 4" PVC.
All pieces should be screwed and taped into 4" PVC; this insures an air-tight seal.

15. Install 45° elbows at the ends of air-drops.
45° elbows help push the air away from the walls and toward the center of the
building. This makes for optimal air flow. It is best to cement the 45's after system is up and running; this way employees can adjust the direction of the air to their preference.

16. Electrician is needed to wire power to system.
Have electrician wire motors to separate switches (one for intake air (left motor lead) and one for exhaust (right motor lead). Each motor is variable speed and speed controls can be installed if desired.

Muffler Instructions:

Muffler Installation Instructions for the Keeptheheat™ Air-to-Air Heat Exchanger Materials needed:

1. 3 1/2” x 1” pipe insulation. The pipe insulation usually comes in 36” lengths.
You will need to put the mufflers on ALL of the air drops in order to see a significant noise reduction. The pipe insulation should have a paper/metal skin. Very important not to rip the paper/metal skin.

2. White Duct Tape 2 rolls of tape per system to be muffled

Tools needed:

1. Reciprocating saw
2. Utility knife

Instructions:

1. Choose location of mufflers.

The best places are usually near the ceiling, where the likelihood of an accidental rip in the paper/metal skin is least likely. Near the floor is not a good location.

2. Mark a 36” section on the PVC where the muffler will be located.

3. Using a reciprocating saw, cut 20, one inch long slits into the pipe.

Make these slits along at least 3 sides of the pipe. All four sides is ideal. Each slit should run the width of the pipe and should be about 3/4” apart.

4. Peel apart pipe insulation.

There is a seam that runs the length of the insulation, peel it back and remove the tape that cover the glue that is already on the insulation.

5. Wrap insulation around pipe, making sure to cover all slits.

6. Secure pipe insulation with adhesive side of seam.

7. Wrap duct tape around ends of insulation.
Both ends must be taped. No insulation should be visible at either end of pipe.