

The 10 Most commonly Asked Questions About the Unico System®

1. Q: Where is the *Unico System* best suited and what are its benefits?

A: The *Unico System* can be used to cool or heat homes or buildings that have no ductwork, inadequate ductwork, or little space for ductwork; or in any application where superior indoor comfort and humidity control is desired. The *Unico System* adapts perfectly to residential applications such as homes, condominiums, or apartments. It also adapts to many commercial and industrial applications.

The *Unico System* operates like any other central air system, but with the following important differences and benefits:

1. Air is distributed through small flexible ducts that fit almost anywhere.
2. Aspirating the stagnant room air with small jets of air eliminates drafts and hot/cold spots.
3. The ductwork is optimized for low noise – no more popping and banging of the duct.
4. Increased moisture removal during cooling. Our coils are designed specifically to remove significantly more humidity for a drier home during cooling.
5. Our heat pumps are truly warm air systems – no more “cold blow”. We deliver the air at substantially higher temperatures than a conventional system.
6. Minimal duct loss. The small ducts are factory insulated and easily sealed. With approximately 1/3 the surface area of a conventional system, duct losses are kept to a minimum when installation in an unconditioned space is unavoidable. All the connections include gaskets which reduces air leakage to 2 percent or less when properly installed.
7. Options. Unico, Inc. has the largest number of accessories and options of any high velocity system on the market.

2. Q: With high velocity air, will the system be noisy?

A: *Unico System* is extremely quiet because of its special sound-absorbing insulation. We insulate our air handler and use vibration pads on the system to reduce vibration and add extra sound absorption.

3. Q: How many sizes of units do you have?

A: Currently, there are 5 basic system sizes available; a 1218 model with a nominal cooling capacity of 1 to 1.5 tons (3.5 to 5.3 kW) system, a 2430 model with a nominal capacity of 2 to 2.5 tons (7 to 9 kW), 3036 model with a nominal capacity of 2.5 to 3 tons (9kw to 10kw) a 3642 model with a nominal capacity of 3 to 4 tons (10 to 14 kW), and a 4860 model with a nominal capacity of 4 to 5 tons (14 to 17 kW).

4. Q: What condensing unit must be used with the *Unico System*?

A: One of the best-selling features of the *Unico System* is that it can be used with almost any condensing unit of proper capacity. There are hundreds of matches listed in the AHRI Unitary Directory. More than likely, you can use the condensing unit you are most familiar with.

5. Q: How many BTUs are there per outlet?

A: The following table shows the average capacity of an outlet for an air-conditioning system with hot water heating. We recommend that a minimum of 6 outlets per nominal ton be installed. However, this will vary depending on the design of your system, your load requirements, and sound expectations.

Outlet Size	Nominal Airflow	Cooling Capacity	Heating Capacity
2 inch (50 mm)	35 CFM (17 L/s)	1400 Btu/hr (0.4 kW)	3000 Btu/hr (0.9 kW)
2.5 inch (63 mm)	44 CFM (21 L/s)	1800 Btu/hr (0.5 kW)	4000 Btu/hr (1.2 kW)

6. Q: What are the types of outlets, and where should they be placed?

A: There are two sizes to choose from – 2 or 2.5 inch (50 or 63 mm). There are two types of outlets – a round supply outlet or a slotted outlet (2-inch duct only). These come in paintable white or with unstained wood to match the décor. Ideally the outlets should be located in the ceiling close to the wall or corner. If conditions prohibit this, they can be placed in the floor or high sidewall.

7. Q: What types and sizes of ductwork are there?

A: The system requires only three types of duct – the main plenum and the aluminum supply tubing, and sound attenuator. The supply tubing is a 2-inch (51 mm) or 2.5-inch (62-mm) inside diameter flexible duct, wrapped with fiberglass insulation and an outer reinforced aluminized Mylar^{®1} vapor-seal jacket. The main plenum is either a 7-inch (178 mm), 9-inch (229 mm), or 10-inch (254 mm) inside diameter duct, depending on the design and capacity of the system. In some cases, you can use a rectangular or square duct of equivalent size.

8. Q: How long can my main plenum and supply runs be?

A: The main plenum should be run as far as possible to keep supply runs as short as possible. The supply runs may be virtually as long as you need for them to be. However, there will be reduced cooling & heating capacity in long runs. We provided a detailed chart in our application guide to explain this.

9. Q: How do I balance the system?

A: When possible, balance the system at the take-off. Placing the orifice at the take-off allows the sound attenuator duct to remove any noise caused by its restriction. When the take-off is in a hard to get to area, add a balancing orifice at the outlet. Use balancing orifices sparingly to maximize the airflow.

10. Q: Can I heat as well as cool with the *Unico System*?

A: Yes, there are several ways to heat with our system:

1. Hydronic (hot water) coil. Unico, Inc. has available hot water coils for use as auxiliary heat or the main heat source with the *Unico System* heat pump or AC air handlers. The hot water coil can be used with a boiler, or even a domestic hot water heater if permitted by local codes.
2. Add-on heat pump. The *Unico System* heat pump can be used as a between-season heating system to knock off the chill in the spring and fall and avoid starting up the primary heating system.
3. Electric furnace. Unico, Inc. has available electric duct furnaces that will match to the *Unico air handlers*.
4. And, of course, the system can be a hybrid of any of these systems, such that it operates in the most advantageous mode.

¹ Mylar[®] is a registered trademark of E.I. Dupont for BoPET (biaxially-oriented polyethylene terephthalate) film.