## **Ducting Requirements**

- 1. The ductwork is to be sealed with aluminum tape or painted with waterproof duct sealant
- 2. The ductwork must be wrapped with a minimum of 2" insulation with a suitable vapor barrier. Use of joist spaces and flex duct is not acceptable for return air ducts. Flex duct is acceptable for supply ducts only and must be sized appropriately. See the chart and notes below.
- 3. More insulation may be required on systems located in attics, garages or other areas with excessive temperatures and uncontrolled humidity. Consider using lined duct, then wrap with insulation. The unit jacket may need additional insulation to prevent condensation from forming on the air handler.
- 4. Use 6" x 14" boot sizes at a minimum for duct up to 8" in diameter. Larger diffusers should be used for ducts greater than 8" in diameter.
- 5. We recommend using filter grilles for returns, and removal of the filter slot included with the unit. If the unit filter slot is used, it must be sealed to prevent air from outside the cellar entering the return air.
- 6. There should be at least three feet of straight ductwork preceding the coil inlet. When the connecting return air duct is smaller than the coil inlet opening, the transition should be constructed so that the vertical and horizontal dimensions of the transition piece do not increase more than one inch for every seven inches of the length of the transition piece.

Unit- Air Handler	CFM- Fan Speed	Supply Trunk	Return Air Trunk	Round Supply Pipe to Metal Register	Metal Supply Register	Metal Return Air Filter Grille	Metal or Wood Return Air Grille	Round Supply Pipe to Wooden Register	Wooden Register Number- Size
WZAH4600- DVA04JAS	405- MED	12 X 8	14 X 8	2-8"	14 x 6	20 x 16	16 x 14 Or 30 x 8	7	4- 14 x 6
WZAH5800- DVA06JAS	585- MED	16 X 8	20 X 8	3-7" & 1-8"	14 x 6	20 x 20	18 x 18 Or 30 x 12	7	5- 14 x 6
WZAH8300- DVA08JAS	865- MED	20 X 8	26 X 8	5-8"	14 x 6	25 x 20	24 x 22 Or 30 x 18	8	5- 16 x 8
WZAH9500- DVA10JAS	1100- MED	24 X 8	30 X 8	4-9"	16 x 8	24 x 24	24 x 24 Or 30 x 20	8	6- 16 x 8

For non-standard duct sizes, choose supply ducts based on .08 ESP and return air ducts on .05 ESP. For flex duct, increase the round pipe size by 1". If 7" rigid duct is indicated, use 8" flex, and so on.

The above table shows minimum guidelines only. Insufficient or poorly installed ductwork is the most common cause of poor system performance. Symptoms include, but are not limited to, reduced capacity, excessive noise, uncontrolled humidity, and nuisance freeze ups. It is the installer's responsibility to ensure the ductwork, boots, registers and grilles are sized to adequately and quietly deliver the necessary air volume.

This is a generic guide to registers and grilles. The manufacturer's specifications should be consulted to determine the number and size of supply registers and return air grilles. First decide if the supply registers and grilles will be metal or wooden before determining the number and size of the supply registers. Wooden registers are restrictive and often require more and larger registers be used. Refer to the chart above.

All ductwork must be sealed, insulated, and surrounded by a suitable vapor barrier, including the unit filter slot. Avoid facing the evaporator coil directly into the cellar through a sidewall. This allows undesirable mechanical noise directly into the cellar. We recommend facing the unit away from the cellar and attaching properly sized ductwork including a minimum of one 90° turn in the return air. Keep any turns or transitions at least 3 ft. upstream of the coil. Every measure must be taken to ensure even airflow across the entire face of the evaporator coil. Use of turning vanes may be necessary. Flexible duct connectors also effectively reduce noise transmitted by the unit.