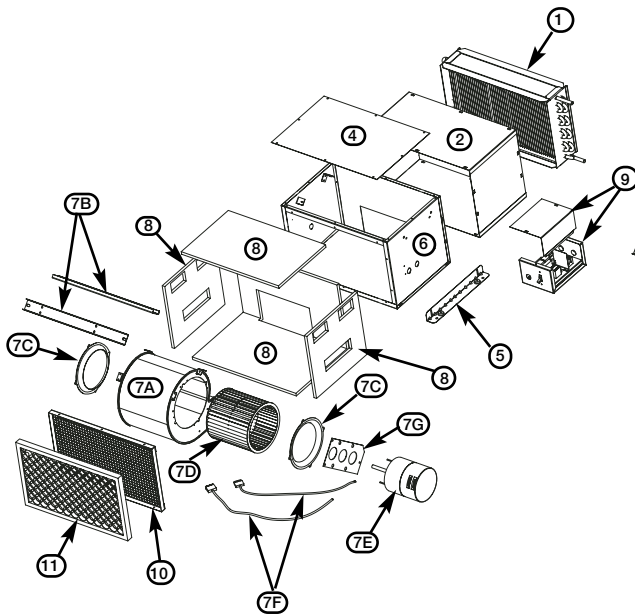




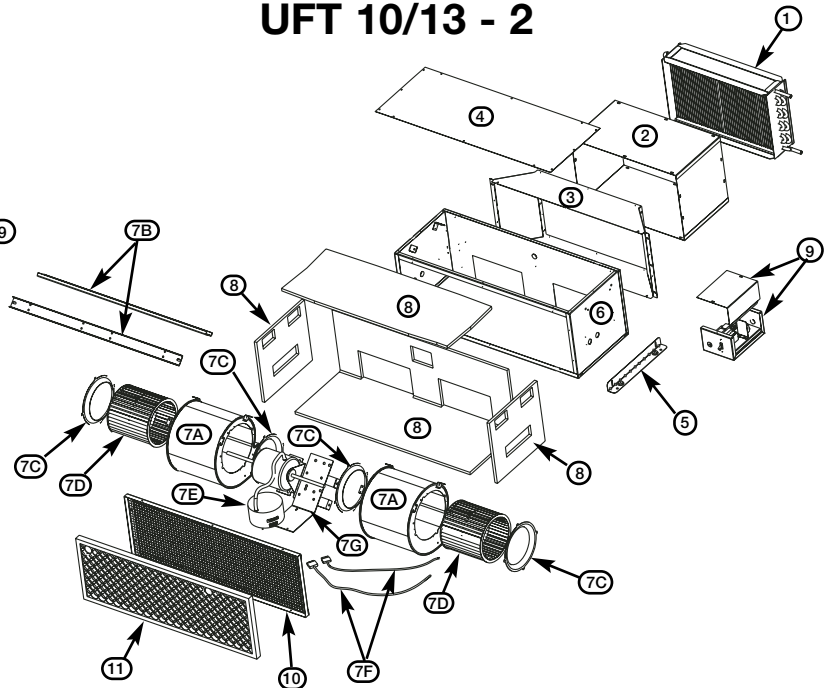
Model UFT Underfloor Fan Terminal

Installation, Operation and Maintenance Manual

UFT 10/13 - 1



UFT 10/13 - 2



Parts List

1. Hot Water, Electric, or No Coil
2. Outlet Duct
3. Outlet Transition (Size 10/13-2)
4. Top Access Panel
5. Mounting Angle
6. Housing
7. Power Assembly:
 - A. Scroll
 - B. Scroll Mounting Bracket
 - C. Venturi
 - D. Wheel
 - E. Motor w/ Controller
 - F. Motor Control Cables
 - G. Drive Frame
8. Insulation
9. Electrical Control Box and Cover
10. Inlet Guard/Filter Bracket
11. Filter

Tools Required - Phillips head screwdriver and wrenches.

WARNING!

To reduce the risk of fire, electric shock, or injury to persons, observe the following:

- Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer.
- Maximum inlet air temperature is 100°F.
- Maximum inlet water temperature is 200°F.
- Allowable distance from combustibles is 0 inches.
- Before servicing or cleaning unit, switch power off at control box with the provided disconnect switch to prevent fan from accidentally starting while servicing is being performed.
- Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards.

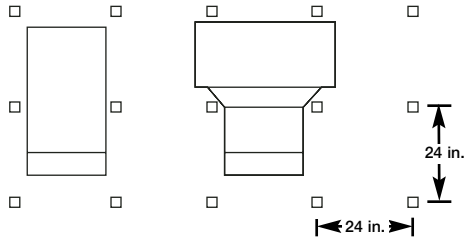
CAUTION!

For general ventilating and reheat use only.
Do not use near or around hazardous or explosive materials and vapors.

GENERAL

Greenheck's Underfloor Fan Terminal (UFT) with tempering, is thoroughly inspected and test run at the factory. However, damage may occur during handling and shipping. Consequently, it is important to inspect the unit for visible and concealed damage before beginning installation. Report any damage to the shipper immediately.

INSTALLATION RECOMMENDATIONS



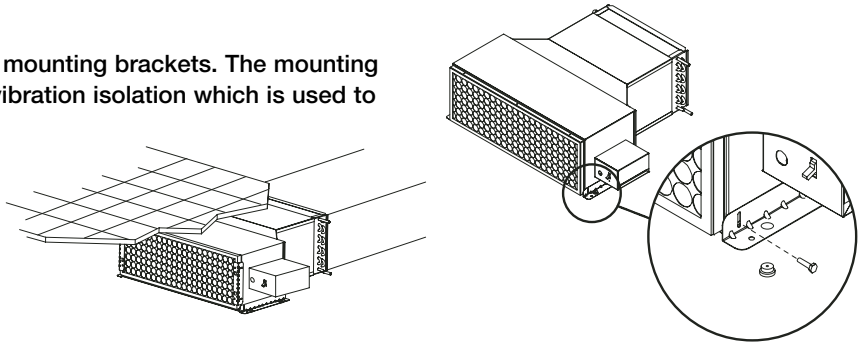
Fan Design and Mounting Placement

The UFT has a unique shape which allows it to maximize performance while staying within the restrictions of the underfloor pedestals. Pictured are the UFT fans mounted between the raised floor support pedestals. The floor pedestals are 24 in. on center.

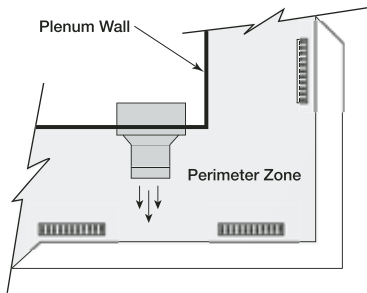
Mounting and Vibration Isolation

Greenheck's UFT ships standard with attached mounting brackets. The mounting brackets are adjustable and contain neoprene vibration isolation which is used to mount the inlet side of the fan.

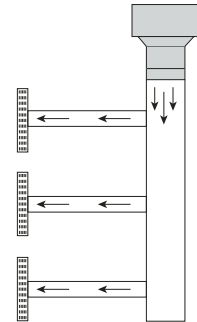
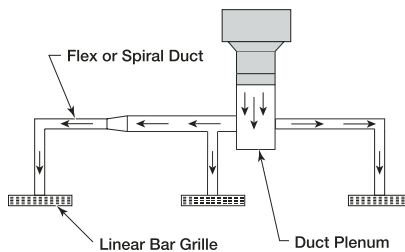
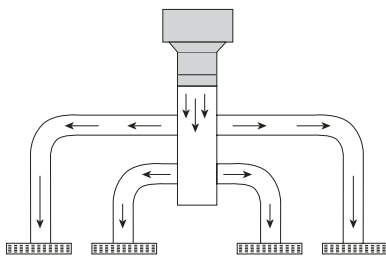
Fan mounting is accomplished by screwing or nailing into the floor through the holes in the neoprene isolators.



DUCTWORK AND NOISE

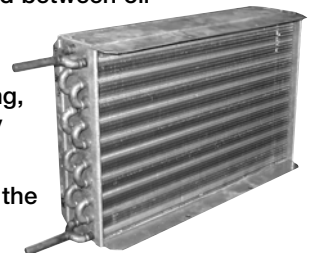


Duct connection is critical for best sound performance. Connect rectangular duct to the outlet of the fan (produce a plenum). Near the end of the duct plenum attach flexible or spiral duct leading to the linear bar grilles near the base of the windows or walls. Flex duct will reduce noise better than metal ductwork and it is easier to work with. Where metal duct is used, sound transmission can be reduced with flexible duct connections between the fan and the metal duct.



WATER COILS

1. Piping should be in accordance with accepted industry standards. Pipe-work should be supported independently of the coils. Water pipes are copper with sweat connections. When installing coupling, do not apply undue stress to the connection extending through the unit. Use a back-up pipe wrench to avoid breaking the weld between oil connection and header.
2. Connect the WATER SUPPLY TO THE BOTTOM CONNECTION on the air-leaving side and the WATER RETURN TO THE TOP CONNECTION on the air-entering side. To ensure proper venting, an external air vent in the piping is recommended. Connecting the supply and/or return in any other manner will result in very poor performance.
3. Pipe sizes for the system must be selected on the basis of the head (pressure) available from the circulation pump. Piping should be in accordance with accepted industry standards.



ELECTRIC COILS

The requirements and practices described below are based on the National Electric Code and The Space Heating Standard of the Underwriters Laboratories Inc. (UL). Although UL requirements are uniform throughout the country, local electrical codes may deviate from the National Electrical Code; therefore, local inspection authorities should be consulted regarding local requirements.



WARNING:

Electrical Shock Hazard! Disconnect all power sources before doing any work on the unit.

ELECTRICAL WIRING INSTRUCTIONS:

1. Use the wiring diagram supplied with the heater as a guide in correlating field wiring with the heater internal wiring.
2. All field wiring to the heater must meet the requirements of the National Electric Code (NEC) and any other applicable local or state codes.
3. Wiring to the heater must be rated for 75°C minimum.

CALCULATION OF LINE CURRENTS:

$$\text{(Amps) Single Phase Current} = \frac{\text{Watts}}{\text{Volts}}$$

Example: Single Phase 5 KW, 208 Volt

$$\frac{5000 \text{ Watts}}{208 \text{ Volts}} = 24 \text{ Amps}$$

ELECTRIC HEATER OPERATION:

Electric heaters are divided in to equally sized steps. For example, a 5 KW heater with 2 steps will have 2.5 KW per step.

TROUBLESHOOTING:

For most up to date troubleshooting information please visit Indeeco's website at www.INDEECO.COM.

The troubleshooting document can be found under:

- Technical data • IO&M's • Duct Heaters
- Trouble Shooting Guides for Duct Heaters

Affect of Low Voltage on Wattage and B.T.U.:

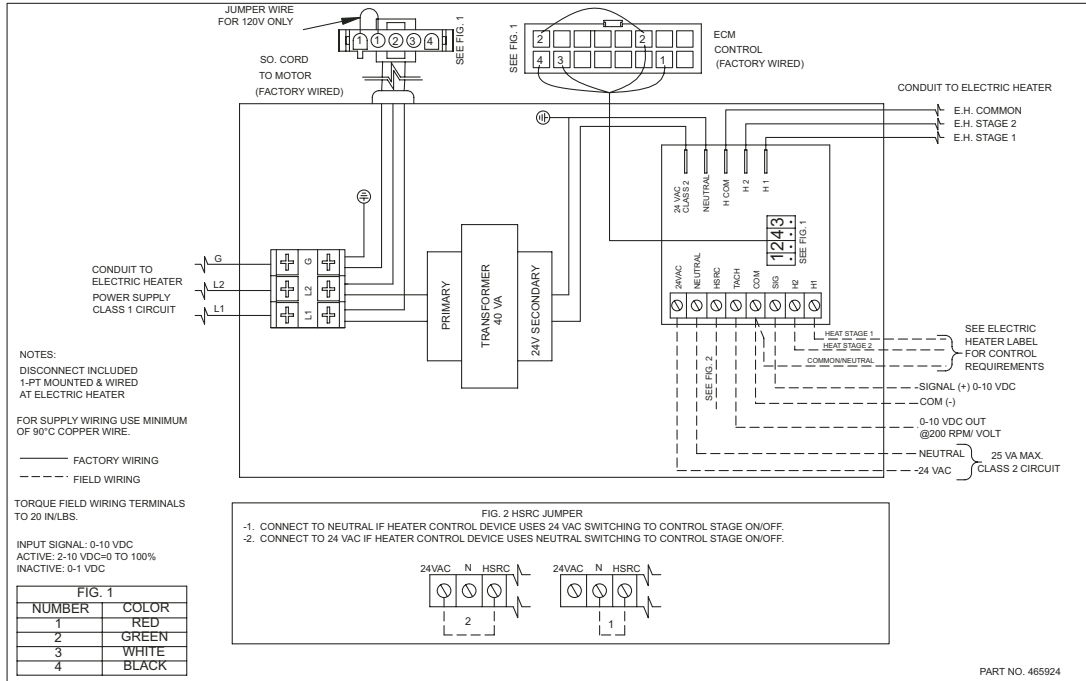
The heating elements may be used on voltages lower than the design voltage of the heater; however, the wattage and B.T.U. output will be reduced to the percentages listed in the table below.

De-rated Wattage For Low Voltage					
Heater Voltage	Line Voltage	% of Heater Wattage and BTU	Heater Voltage	Line Voltage	% of Heater Wattage and BTU
277	265	92	208	200	92
	254	84		190	83
240	230	92	120	115	92
	220	84		110	84
	208	75			
	200	69			

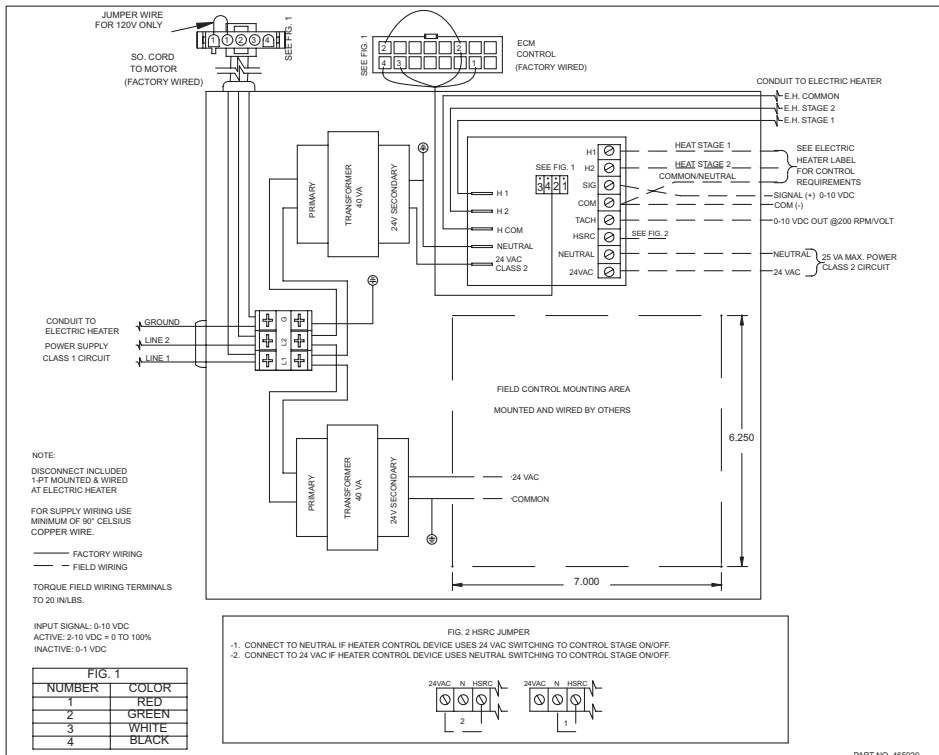
ELECTRICAL CONNECTIONS

All internal electrical components are pre-wired at the factory. Field electrical connections only need to be made inside the control box to the main disconnect and the 24 volt control circuit. The electric coil shall be factory wired to the control box and main power need to be connected in the electric coil control box. A safety disconnect is provided as a standard feature with model UFT units. Wiring diagram is provided on back side of control box cover. Mil amp control signal requires a field installed 512Ω resistor.

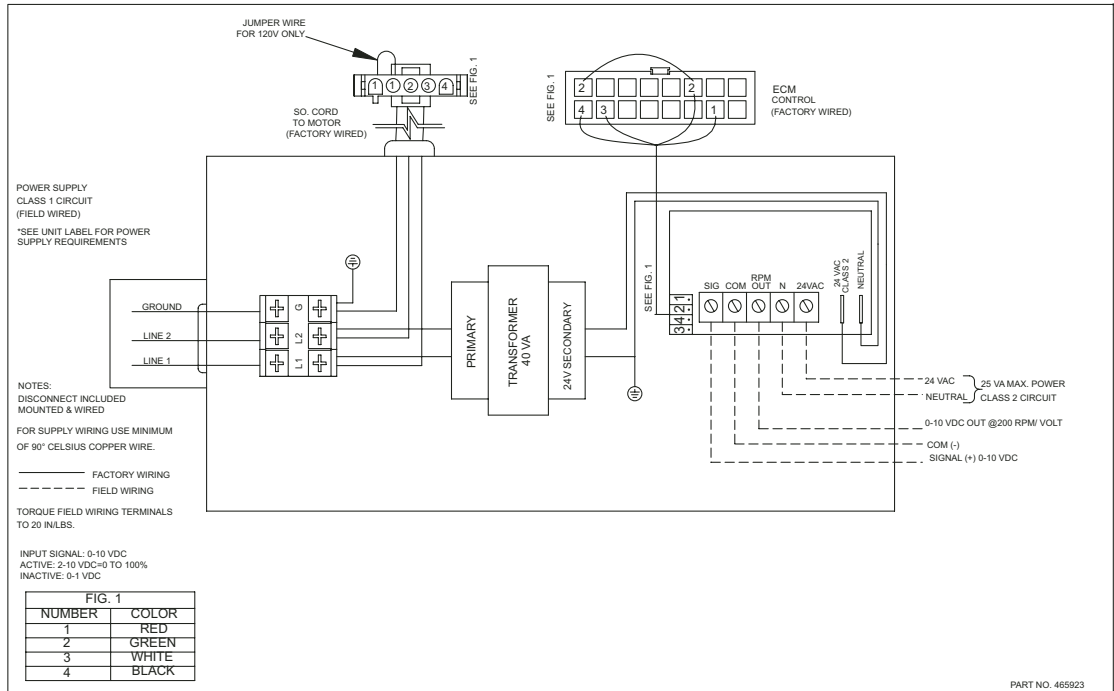
UFT 120, 208, 240, 277 Volt Electrical Coil (EC)



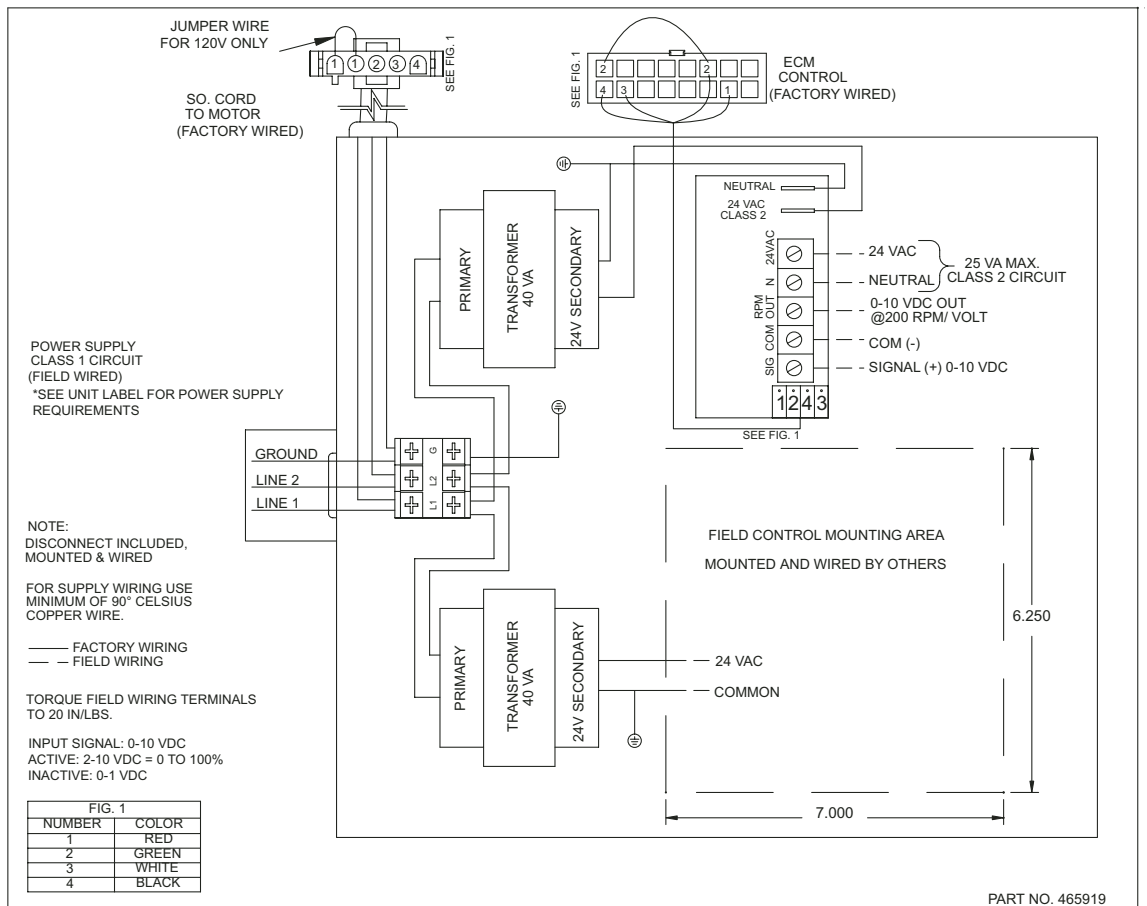
UFT Dual Transformer Electrical Coil (EC)



UFT 120, 208, 240, 277 Volt No Coil/Hot Water Coil (NC/HW)

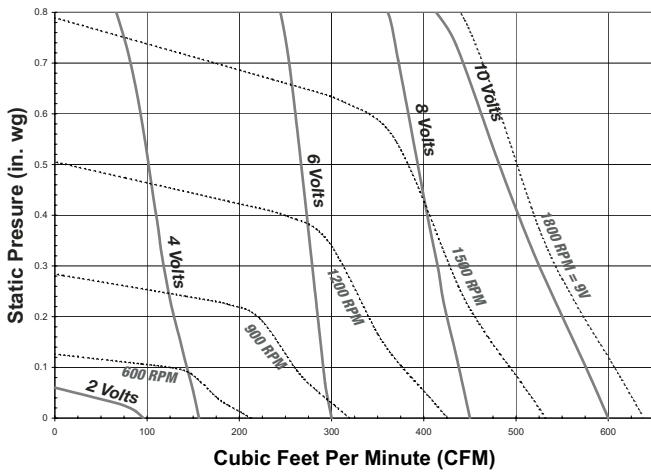


UFT Dual Transformer No Coil/Hot Water Coil (NC/HW)

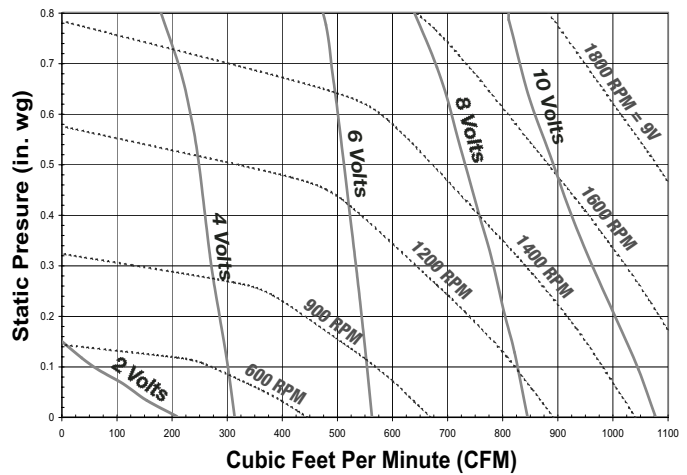


Approximate Fan Performance at Specified Static Pressure

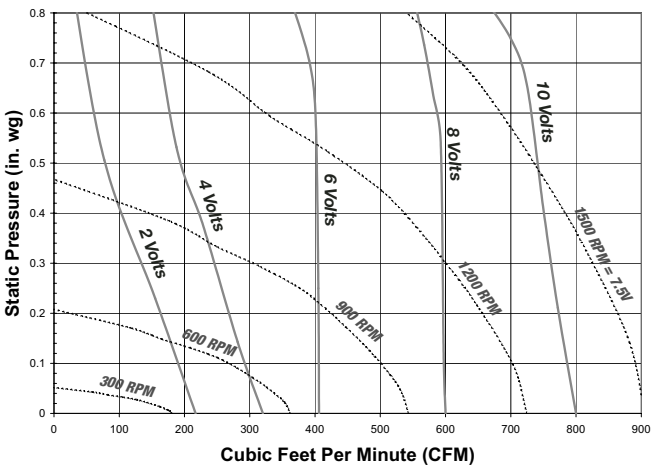
UFT 10-1 Constant Volume



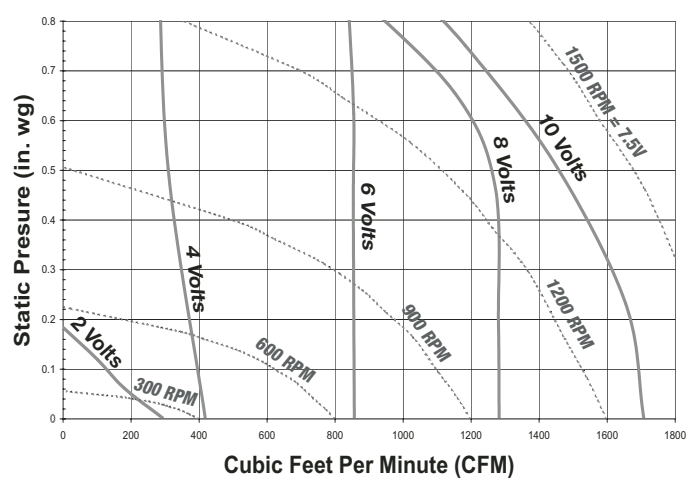
UFT 10-2 Constant Volume



UFT 13-1 Constant Volume



UFT 13-2 Constant Volume



GENERAL MAINTENANCE SUGGESTIONS

Model UFT reheat fans require very little maintenance. However, since small problems over time left unchecked, could lead to loss of performance or early motor failure. We do recommend that the unit be inspected periodically (once or twice a year).

The fan motor, wheel(s), and coil should be checked for dust and dirt accumulations. (See Filters above). Dirt build up can lead to loss of performance and motor overheating. Cleaning can be accomplished by brushing or vacuuming off any dust that may have accumulated. Even filtered units can accumulate build up and should be checked when cleaning filters.

The motor should be checked for lubrication at this time. Lubricate only those motors which have an oil hole provided. A few drops of all-purpose oil (SAE 20) will be sufficient.

Warranty

Greenheck warrants this equipment to be free from defects in material and workmanship for a period of one year from the purchase date. Any units or parts which prove to be defective during the warranty period will be replaced at our option when returned to our factory, transportation prepaid.

The motor is warranted by the motor manufacturer for a period of one year. Should the motor prove defective during this period, it should be returned to the nearest authorized motor service station.

The coils are warranted by the coil manufacturer for a period of one year.

Greenheck will not be responsible for any installation or removal costs.

As a result of our commitment to continuous research, Greenheck reserves the right to change specifications without notice.



CONTROL #58310
Conforms to ANSI/UL
STD 1995
Certified to CAN/CSA
C22.2 NO.236



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