

NOTE: Gas appliances located more than 2000 feet above sea level must be derated 4% per 1000 feet of total elevation and that variance in gas heating value and specific gravity require change in manifold pressure to obtain rating, it is mandatory that the input be adjusted at the installation site. All installations should be made as outlined in the latest edition of the National Fuel Gas Code ANSI Z223.1, section "Procedures To Be Followed To Place An Appliance in Operation". Refer also to the "User's Information Manual" supplied with the unit for additional information on the gas furnace.

GAS SUPPLY AND MANIFOLD CHECK

Gas supply pressure and manifold pressure with the burners operating must be as specified on the rating plate.

GAS INLET PRESSURE CHECK

Gas inlet pressure must be checked and adjusted in accordance to the type of fuel being consumed.

WITH POWER AND GAS OFF:

1. Connect a manometer to the inlet pressure tap of the gas valve.
 - Remove inlet pressure tap plug on the gas valve using 3/16" Allen wrench.
 - Install 1/8" NPT hose barb fitting into the pressure tap.
 - Connect the manometer to the fittings. The manometer must have a scale range of at least 0" to 20" w.c..

Inlet gas pressure can also be measured by removing the cap from the dripleg and installing a predrilled cap with a hose fitting.

WITH POWER AND GAS ON:

2. Put unit into heating cycle and turn on all other gas consuming appliances.

INLET GAS PRESSURE	
NATURAL	Min. 5.0" W.C., Max. 10.0" W.C.
PROPANE	Min. 11.0" W.C., Max. 13.0" W.C.

NOTE: Inlet gas pressure must be within limits shown above.

If operating pressures differ from above, make necessary pressure regulator adjustments, check piping size, etc., and/or consult with local utility.

3. To remove manometer from the inlet pressure tap of the gas valve:
 - Turn off the gas and electrical supply to the unit.
 - Remove the manometer and hose barb fitting from the pressure tap of the gas valve.
 - Reinstall the pressure tap plug using pipe joint compound.

- With supply gas ON, using leak detection solution, check for gas leaks around pressure tap. Bubbles forming indicate a leak. SHUT OFF GAS AND FIX ALL LEAKS IMMEDIATELY.

Gas Input (Natural Gas Only) Check

It is the responsibility of the contractor to adjust the gas input to the unit. To measure the gas input use a gas meter and proceed as follows:

1. Turn off gas supply to all other appliances except the unit.
2. With the unit operating, time the smallest dial on the meter for one complete revolution. If this is a 2 cubic foot dial, divide the seconds by 2; if it is a 1 cubic foot dial, use the seconds as is. This gives the seconds per cubic foot of gas being delivered to the unit.
3. $INPUT = GAS\ HTG\ VALUE \times 3600 / SEC.\ PER\ CUBIC\ FOOT$

Example: Natural gas with a heating value of 1000 BTU per cubic foot and 34 seconds per cubic foot as determined by Step 2, then:

Input = $1000 \times 3600 / 34 = 106,000$ BTU per Hour.

NOTE: BTU content of the gas should be obtained from the gas supplier. This measured input must not be greater than shown on the unit rating plate.

Adjust input rate by varying the adjustment of the gas pressure regulator on the gas valve. All adjustments must be made with furnace operating at high fire and at normal operating temperature. A manometer should be connected to the gas valve to verify pressure is within the specified range.

Clockwise rotation of the pressure regulator screw increases pressure and gas flow rate. Turn screw counterclockwise to decrease pressure and gas flow rate. After adjustment the furnace temperature rise must be within the range specified on the unit data plate.

NOTE: Thermal efficiency of the furnace is a product efficiency rating determined under continuous operating conditions independent of any installed system.

MANIFOLD PRESSURE CHECK AND ADJUSTMENT

The gas valve has a pressure tap to facilitate measurement of the manifold pressure. The manifold pressure must be measured with the burners operating.

1. With disconnect switch open, remove field connected thermostat wire from terminal R, W1 and W2 on TB1. Place jumper wire between R, W1 and W2 to engage high stage heat.
2. See Figure in gas input check section for gas valve adjustment.

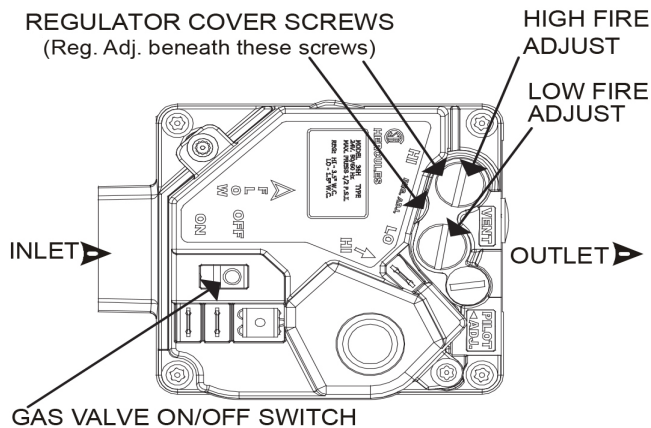
To adjust the pressure regulator, remove the adjustment screw cover on the gas valve. Turn the adjustment screw out (counterclockwise) to decrease pressure, turn in (clockwise) to increase pressure. Only small variations in gas flow should be made by means of the pressure regulator adjustment.

The measured input rate to the furnace must not exceed the rating specified on the unit rating plate.

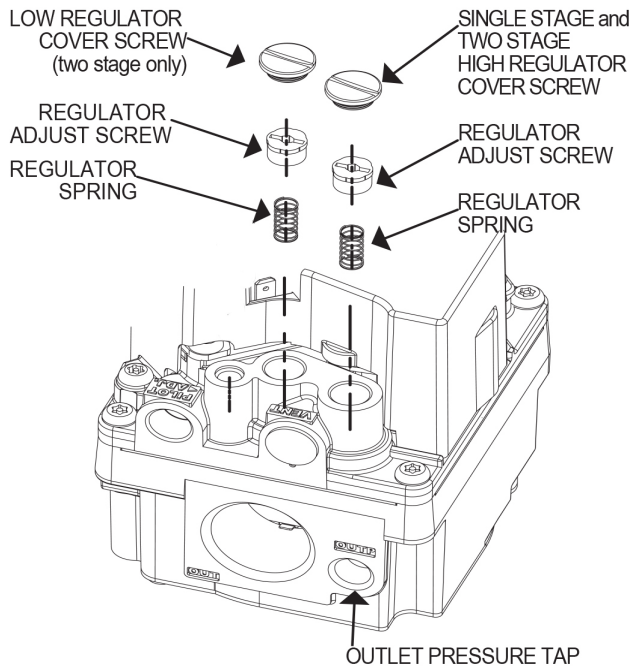
For natural gas, the high stage manifold pressure must be between 3.2 and 3.8 inches water column (3.5 nominal). Low stage manifold pressure must be between 1.7 to 2.3 inches water column (2.0 nominal).

3. To set low fire rate, open disconnect switch and remove jumper from R to W2. To set low fire manifold pressure, repeat steps above. Refer to Figure in gas input check section for location of high and low stage pressure adjustment.

For propane gas, the manifold pressure must be between 9.7 and 10.3 inches water column (10.0 nominal). Low stage manifold must be between 5.7 and 6.3 inches water column (6.0 nominal).



36H valve features



36H two-stage valve pressure regulator

WHITE-RODGERS 2 STAGE GAS CONTROL VALVE

To connect a manometer to the outlet pressure tap of the gas valve:

1. Turn off the gas and electrical supply to the unit
2. Remove outlet pressure tap plug on the gas valve using 3/16" Allen wrench
3. Install 1/8" NPT hose barb fitting into the pressure tap.
4. Connect the manometer to the fitting with a hose.

To remove manometer from gas valve:

1. Turn off the gas and electrical supply to the unit.
2. Remove the manometer and hose barb fitting from the pressure tap of the gas valve.
3. Reinstall the pressure tap plug using pipe joint compound
4. Turn on electrical power and gas supply to the system.
5. Turn on system power and energize valve.
6. Using leak detection solution, check for gas leaks around pressure tap. Bubbles forming indicate a leak. SHUT OFF GAS AND FIX ALL LEAKS IMMEDIATELY



CAUTION

TO PREVENT UNRELIABLE OPERATION OR EQUIPMENT DAMAGE, THE GAS MANIFOLD PRESSURE MUST BE SPECIFIED ON THE UNIT RATING PLATE. ONLY MINOR ADJUSTMENTS SHOULD BE MADE BY ADJUSTING THE GAS VALVE PRESSURE REGULATOR.

MAIN BURNER FLAME CHECK

Flames should be stable, soft and blue (dust may cause orange tips but they must not be yellow) and extending directly outward from the burner without curling, floating or lifting off.

TEMPERATURE RISE CHECK

Check the temperature rise through the unit by placing thermometers in supply and return air registers as close to the unit as possible. Thermometers must not be able to sample temperature directly from the unit heat exchangers, or false readings could be obtained.

1. All registers must be open; all duct dampers must be in their final (fully or partially open) position and the unit operated for 15 minutes before taking readings
2. The temperature rise must be within the range specified on the rating plate.

NOTE: Air temperature rise is the temperature difference between supply and return air.

With a properly designed system, the proper amount of temperature rise will normally be obtained when the unit is operated at rated input with the recommended blower speed.

If the correct amount of temperature rise is not obtained, it may be necessary to change the blower speed. A higher blower speed will lower the temperature rise. A slower blower speed will increase the temperature rise.

NOTE: Blower speed **MUST** be set to give the correct air temperature rise through the unit as marked on the rating plate.

NORMAL SEQUENCE OF OPERATION

HEATING

NOTE: On units with DDC controls option installed, refer to the DDC controller user manual for sequence of operation details.

1. With electricity and gas turned on, the system switch in the "HEAT" or "AUTO" position and the fan switch in the "AUTO" position, the thermostat will close the circuit between unit terminals R and W (R-W) when the temperature falls below the thermostat setting.
2. D1 on IIC energizes Induced Draft Motor contactor.
3. Relay IDMR energizes the Induced Draft Motor IDM.
4. Operation of the Induced Draft Motor closes the pressure switch PS located in the burner compartment. Unless excessive temperatures have opened high limit control ALS, power is fed to the integrated ignition control, which then initiates a 15-second pre-purge time delay. During this period, the venter fan will clear the combustion chamber of any residual gas.
5. After the pre-purge period, the ignition control energizes the WI-C gas valve and simultaneously initiates a "three (3)-try" spark ignition sequence.
6. When the burners are ignited, a minimum four (4) micro-amp DC current will flow through the flame between the sensor electrode and the grounded burner.
7. When the controller proves that the flame has been established, it will keep the gas valve energized and discontinue the ignition spark.
8. If the control is unable to ignite the burners after its initial attempt, it will initiate another purge and spark sequence. A third purge and spark sequence will be initiated if the second attempt is unsuccessful. If the third attempt is unsuccessful, the controller will close the gas valve and lock itself out. It may be reset by momentarily interrupting power. This may be accomplished by briefly lowering the room thermostat set-point below room temperature, or by shutting off the main power to the unit.
9. Integrated ignition control will close its normally open contacts after a delay of approximately 30 seconds. This action energizes the blower motor contactor and starts the blower motor. Operation of the supply fan circulates air across the heat exchanger and delivers heated air to the conditioned space.

10. When the space temperature rises, the thermostat will open R-W. Opening R-W will cause the gas valve to close, and the furnace to shut down.
11. The furnace has three high temperature limit controls, which can shut down the burner. They do not shut down the vent motor.

This unit is equipped with an ignition control that automatically lights the main burner. **DO NOT** attempt to light the main burners by any other method.

12. R and W thermostat contacts close, initiating a call for heat.
13. Integrated control module performs safety circuit checks.
14. Inducer draft blower is energized for 30 second prepurge period causing pressure sensor contacts to close.
15. At the end of pre-purge period, integrated control module transitions the induced draft blower to light-off setting.
16. Once the light-off pressure setting is verified by the integrated control module, the spark igniter and gas valve are energized for 4 seconds.

NOTE: The igniter produces a very intense electrical spark that ignites the gas.

17. Integrated control module monitors flame presence. Gas valve will remain open only if the flame is detected.
18. The 30-second HEAT FAN ON delay time begins after main burner lights.
19. The unit delivers heat to the conditioned space until the thermostat temperature setting is reached. The integrated control module monitors the safety circuits continuously.
20. R and W thermostat contacts open, completing the call for heat; gas valve de-energizes.
21. Induced draft blower keeps operating for 30-seconds post purge.
22. Ignition control begins timing the HEAT FAN OFF delay. There is an adjustable HEAT FAN OFF delay of approximately 90/120/150/180 seconds (factory set at 150).

NOTE: This delay allows any additional heat in the heat exchanger to be transferred to the conditioned space. After the HEAT FAN OFF delay time has elapsed, the blower will de-energize.

UNIT SHUTDOWN

1. Set the room heating set point to lowest setting.
2. Turn off the electrical power supply to the unit.
3. Remove the heat exchanger door on the side of the unit by removing screws.
4. Move the gas control valve switch to the OFF position.
5. Close manual gas shut off valve external to the unit.

6. Replace the heat exchanger door on the unit.
7. If cooling and/or air circulation are still desired, turn ON the electrical power supply to the unit.

AUTOMATIC RESET HIGH LIMIT CONTROL (LS)

Located on the heat exchanger side of the partition panel, the primary limit switch senses the discharge air temperature. It will cycle the furnace off if the discharge air temperature exceeds 200°F.

BLOCKED INLET LIMIT CONTROL

The Blocked Inlet Limit Control is located in the burner compartment at the top of the burner assembly and senses high temperature that could occur if the burner inlet is blocked.

AUXILIARY HIGH LIMIT CONTROL (ALS)

Located in the blower compartment on the blower housing, it senses air temperature within the blower compartment and protects the filters from excessive temperature. It will shut down the furnace if it senses excessive temperatures.

Elevated temperatures at the control are normally caused by blower failure. The reason for the shut down should be determined and repaired prior to resetting.

MANUAL RESET FLAME ROLLOUT CONTROL (RS)

Located in the burner compartment at the top of the burner assembly, it senses high temperature that could occur if the heat exchanger tubes were plugged and the flame was rolling out instead of entering the tubes. It has a manual push-button reset that cannot be actuated until the limit control has cooled.

The reason for elevated temperatures at the control should be determined and repaired prior to resetting this manual reset control.



WARNING

TO AVOID PROPERTY DAMAGE, PERSONAL INJURY OR DEATH DUE TO FIRE OR EXPLOSION, A QUALIFIED SERVICER MUST INVESTIGATE THE REASON FOR THE ROLLOUT PROTECTION DEVICE TO OPEN BEFORE MANUALLY RESETTING THE ROLLOUT PROTECTION DEVICE.

RDS FUNCTION

The mitigation system is a stationary device that detects the presence of R-32 refrigerant above 25% LFL using refrigerant sensors and then initiates mitigation actions. The mitigation system's primary function is to reduce the concentration of leaked R-32 refrigerant to prevent serious safety hazards. The mitigation actions are accomplished by halting HVAC operation and continuing indoor blower operation to provide airflow. Once refrigerant concentration reaches below a safe threshold, the unit will remain in mitigation mode for five minutes to evacuate any remaining R-32 refrigerant within the unit. Upon completion, the unit will resume its normal operation.

RDS OPERATION

The mitigation system is controlled by a refrigerant sensor(s), which is secured to a designated location(s) for active monitoring. If a leak is detected, HVAC operation is disabled and the indoor blower fan is activated, providing airflow at or above minimum required airflow to evacuate excess concentration. If a Zone Control system is installed in the ductwork attached to this system, the Zone controller must be powered through a Daikin Zoning/Accessory PCB to ensure that the Zoning Dampers open during mitigation mode to provide ventilation throughout all ducting. If the unit is installed with a communicating thermostat, the thermostat will display relevant alerts/information concerning mitigation mode. Once sensors read concentration levels below a safe threshold, a five-minute timer will initiate. Once the time is over, the unit will resume back to its normal operation. If the sensors detect another concentration excess, the unit will go back into mitigation mode and will repeat the same process.

REFRIGERATION SYSTEM CHECKS

This unit is equipped with thermal expansion valves.

Ensure the hold-down bolts on the compressor are secure and have not vibrated loose during shipment. Check that the vibration grommets have been installed and visually check all piping for damage and leaks and repair if necessary. The entire system has been factory charged and tested, making it unnecessary to field charge. Factory refrigerant charge is shown on the unit's nameplate.

To confirm charge levels or, if a leak occurs and charge needs to be added to the system, it is recommended to evacuate the system and recharge refrigerant to the unit's nameplate specifications. This unit has been rated in the cooling mode at the AHRI rated conditions of: indoor (80°F db/67°F wb) and outdoor (95°F db). While operating at this condition, the superheat should range from 9°F to 11°F for each refrigeration circuit measured at the suction service port located near the compressor.

START-UP PROCEDURE AND CHECKLIST

Begin with power turned off at all disconnects.

1. Turn thermostat system switch to "Cool," and fan switch to "Auto" and turn temperature setting as high as it will go. On units with DDC controls installed, use Test/Balance Menu to force the unit to OFF MODE.
2. Inspect all registers and set them to the normal open position.
3. Turn on the electrical supply at the disconnect.
4. Turn the fan switch to the "ON" position. The blower should operate after a 7 second delay. On units with DDC controls installed, use Test/Balance Menu to force the unit to VENT MODE. This test bypasses internal delays.
5. Turn the fan switch to "Auto" position. The blower should stop after a 60 second delay. On units with DDC controls installed, use Test/Balance Menu to force the unit to OFF MODE. This test bypasses internal delays.

6. Slowly lower the cooling temperature until the unit starts. The compressor, blower and fan should now be operating. Allow the unit to run 10 minutes, make sure cool air is being supplied by the unit. On units with DDC controls installed, use Test/Balance Menu to force the unit to Low Cool Mode or High Cool Mode. This test bypasses internal delays.
7. Turn the temperature setting to the highest position, stopping the unit. The indoor blower will continue to run for 60 seconds. On units with DDC controls installed, use Test/Balance Menu to force the unit to VENT MODE. This test bypasses internal delays.
8. Turn the thermostat system switch to "OFF" and disconnect all power when servicing the unit. On units with DDC controls installed, use Test/Balance Menu to disable FORCE MODE operation and allow the unit to return to normal operation.

REFRIGERATION SEQUENCE CHECK

With the disconnect switch open, remove the field connected thermostat wire from terminal R on TB1 terminal block. Place a jumper across terminals R and G, and across R and Y on TB1 terminal block. Close the disconnect switch. The following operational sequence should be observed. On units with DDC controls installed, use TEST/Balance Menu to force the unit to Cool Mode. This test bypasses internal delays.

1. Current through primary winding of transformer TR1 energizes the 24-volt control circuit.
2. To simulate a mechanical call for cooling from the wall thermostat, place a jumper across terminals R and Y1 of terminal block TB1. The cooling is energized when the room temperature is above the thermostat set-point for cooling. The thermostat makes R to Y.
3. **UNIT WITH ECONOMIZER OPTION:** The compressor circuit is interlocked through the economizer module. If the outdoor air enthalpy (temperature and humidity) is not suitable for cooling, the economizer will permit the compressor to be energized.
4. The blower contactor closes its contacts providing power to the blower motor.
5. Blower rotation should not be used to identify proper phasing of the unit. For phasing, please refer to step 7 below. If the blower is rotating in the wrong direction, please contact your local distributor or tech services for instructions.
6. Compressor contactor closes its contacts L1, L2 and L3 to T1, T2 and T3 to provide power to the compressor motor COMP. 1 and to COMP. 2 if conditions are correct. In addition, contactor C1 closes its contact L3 to T3 energizing the condenser fan motor.



WARNING

BURN HAZARD!
DO NOT TOUCH! DISCHARGE LINE MAY BE HOT!

7. Check that each compressor is operating correctly. The scroll compressors in these units MUST operate in the proper rotation. To ensure the compressors are operating in the correct direction, check the compressor discharge line pressure or temperature after the compressor is started. The discharge pressure and discharge line temperature should increase. If this does not occur and the compressor is producing an exceptional amount of noise, perform the following checks.
 - If a single compressor is operating backwards, check the power wiring for that compressor and correct any leads that have been interchanged at the contactor.
 - If both of the compressors are operating backward, disconnect the unit power supply and lockout-tagout in the "OFF" position. Switch two leads of the power supply at the unit Single Point Power Block. Reconnect power and check for compressor operation.
8. With all safety devices closed, the system will continue cooling operation until the thermostat is satisfied.
9. Disconnecting the jumper wire between R and Y1 and Y2 and between R and G on TB1 terminal block will simulate a satisfied thermostat. The compressor and the condenser fans will cycle off and IIC (pin 12) will initiate its time delay cycle. At the end of the time delay the indoor blower will cycle off.
10. After a time delay of approximately 3 minutes, the compressor control circuits will be ready to respond to a subsequent call for cooling from the wall thermostat.
11. Open disconnect switch. Reconnect the field thermostat wire at terminal R on terminal block TB1.
12. On units with DDC controls installed, use Test/Balance Menu to force the unit to Vent Mode. Use Test/Balance Menu to disable Force Mode operation and allow the unit to return to normal operation.

REFRIGERATION PERFORMANCE CHECK

Check that compressor RLA corresponds to values shown in Appendix B. RLA draw can be much lower than values listed at low load conditions and low ambient condensing temperatures. Values maybe slightly higher than those shown in Appendix B at high load conditions and high ambient condensing temperatures.

CHECKING SUBCOOLING

NOTE: MAKE SURE THE AIR FLOW IS CORRECT BEFORE MAKING ANY ADJUSTMENTS. UNITS WITH A TXV SHOULD BE CHARGED TO SUBCOOLING ONLY.

SUBCOOLING FORMULA = SATURATED LIQUID LINE TEMPERATURE - LIQUID LINE TEMPERATURE

EXAMPLE:

- Liquid Line Pressure = 417 PSI
- Corresponding Temp. = 120°F
- Thermometer on Liquid line = 109°F.

To obtain the amount of subcooling, subtract 109°F from 120°F. The difference is 11° subcooling. The appropriate range for each model is available in the Unit Subcooling and Superheat table.

CHECKING SUPERHEAT

EXAMPLE:

- Suction Pressure = 143 PSI
- Corresponding Temp. = 50°F
- Thermometer on Suction Line = 59°F

To obtain the degrees temperature of superheat, subtract 50.0 from 59.0°F. The difference is 9° Superheat. The 9° Superheat would fall in the ± range of allowable superheat.

SUPERHEAT = SUCTION LINE TEMP - SAT. SUCTION TEMP.

SUPERHEAT ADJUSTMENT

NOTE: SUPERHEAT ADJUSTMENTS SHOULD NOT BE MADE UNTIL INDOOR AMBIENT CONDITIONS HAVE STABILIZED. THIS COULD TAKE UP TO 24 HOURS DEPENDING ON INDOOR TEMPERATURE AND HUMIDITY. BEFORE CHECKING SUPERHEAT, RUN THE UNIT IN COOLING FOR 15-20 MINUTES OR UNTIL REFRIGERANT PRESSURES STABILIZE. USE THE FOLLOWING GUIDELINES AND METHODS TO CHECK UNIT OPERATION AND ENSURE THAT THE REFRIGERANT CHARGE IS WITHIN LIMITS.

For TXV systems, to adjust superheat, unscrew the cover from the expansion valve, locate the adjustment screw, and turn it clockwise (in) to increase superheat or counterclockwise (out) to decrease superheat. It is recommended to make small adjustments at a time, 1/8-1/4 turn increments. Replace adjustment cap. Wait a minimum of 15 minutes between adjustments to allow time for the TXV and pressures to stabilize.

SEE THE SPECIFICATION SHEET OR TECHNICAL INFORMATION MANUAL FOR THE DESIGN SUBCOOLING RANGE FOR YOUR UNIT.

REFRIGERANT CHARGE CHECK

NOTE: FOR OPTIMAL PERFORMANCE, FOLLOW CHARGING INSTRUCTIONS BELOW.

(UNITS WITH EXPANSION VALVE (TXV))

Run unit on High Stage cooling and refer to Design Superheat & Subcooling table

- Purge gauge lines. Connect service gauge manifold to access fittings. Run system at least 10 minutes to allow pressure to stabilize.
- Temporarily install thermometer on liquid (small) line near liquid line access fitting with adequate contact and insulate for best possible reading.
- Check subcooling and superheat. System should have a subcooling and superheat within the range listed on the Design Superheat and Subcooling table.
 - If subcooling and superheat are low, adjust TXV superheat, then check subcooling.
NOTE: To ADJUST SUPERHEAT, TURN THE VALVE STEM CLOCKWISE TO INCREASE AND COUNTERCLOCKWISE TO DECREASE.
 - If subcooling is low and superheat is high, add charge to raise subcooling then check superheat.
 - If subcooling and superheat are high, adjust TXV valve superheat, then check subcooling.
 - If subcooling is high and superheat is low, adjust TXV valve superheat and remove charge to lower the subcooling.

NOTE: Do NOT adjust the charge based on suction pressure unless there is a gross undercharge. If an under charge is suspected recover the charge, re-evacuate the system and recharge per data plate. No adjustments should be made if suspecting a charge issue.

- Disconnect manifold set, installation is complete.

Design Superheat and Subcooling					
Model	Superheat ±2°F (Circuit 1/2)	Subcooling ±1°F (Circuit 1/2)	Expansion Device	Cooling Stage	Outdoor ambient (°F)
DHG090*	17/18	9/10	TXV	High	95
DHG102*	23/19	10/8	TXV	High	95
DHG120*	15/17	10/11	TXV	High	95
DHG150*	19/18	9/9	TXV	High	95

RECOVERY

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labeled for that refrigerant (i.e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of the flammable refrigerant. If in doubt, the manufacturer should be consulted. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition.

The recovered refrigerant shall be processed according to local legislation in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The compressor body shall not be heated by an open flame or other ignition sources to accelerate this process. When oil is drained from a system, it shall be carried out safely.

CHARGING PROCEDURES

In addition to conventional charging procedures, the following requirements shall be followed.

- Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.
- Cylinders shall be kept in an appropriate position according to the instructions.
- Ensure that the REFRIGERATING SYSTEM is grounded prior to charging the system with refrigerant.
- Label the system when charging is complete (if not already).
- Extreme care shall be taken not to overfill the REFRIGERATING SYSTEM.

NOTE: "GROUNDING" IS DEFINED AS ACHIEVING AN EARTH GROUND BY CONNECTING THE EQUIPMENT'S SUPPLIED GROUNDING LUG TO THE EARTH. THIS SHOULD BE VERIFIED BY A CERTIFIED TECHNICIAN.

Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

IMPORTANT: REFER TO THE STANDING PRESSURE TEST / LEAK DETECTION METHOD REFERENCED LATER IN THIS MANUAL.

THE FOLLOWING INSTRUCTIONS ARE MANDATORY FOR A2L SYSTEMS AND SUPERSEDE OTHER INSTRUCTIONS

WARNING

ONLY BRAZING TECHNIQUES AND APPROVED MECHANICAL JOINTS SHOULD BE USED TO CONNECT REFRIGERANT TUBING CONNECTIONS. NON-APPROVED MECHANICAL CONNECTORS AND OTHER METHODS ARE NOT PERMITTED IN THIS SYSTEM CONTAINING A2L REFRIGERANT. APPROVED MECHANICAL JOINTS WILL BE DETAILED IN THE PRODUCT'S SPECIFICATION SHEETS.

STANDING PRESSURE TEST/ LEAK DETECTION METHOD

Using dry nitrogen or dry helium, pressurize the system to 450 PSIG. Allow the pressure to stabilize and hold for 15 minutes (minimum). The system is considered leak-free if the pressure does not drop below 450 PSIG. If, after 15 minutes, the pressure drops below 450 PSIG, it implies a leak in the system. Proceed with identifying and sealing the leak and repeating the Standing Pressure Test. Leak test the system using dry nitrogen or dry helium and soapy water to identify leaks. **No refrigerant shall be used for pressure testing to detect leaks.** Proceed to system evacuation using the Deep Vacuum Method.

DEEP VACUUM METHOD

The Deep Vacuum Method requires a vacuum pump rated for 500 microns or less. This method effectively and efficiently ensures the system is free of non-condensable air and moisture. The Triple Evacuation Method is detailed in the Service Manual for this product model as an alternative. To expedite the evacuation procedure, it is recommended that the Schrader Cores be removed from the service valves using a core-removal tool.

1. Connect the vacuum pump, micron gauge, and vacuum-rated hoses to both service valves. Evacuation must use both service valves to eliminate system mechanical seals.
2. Evacuate the system to less than 500 microns.
3. Isolate the pump from the system and hold the vacuum for 10 minutes (minimum). Typically, pressure will rise slowly during this period. If the pressure rises to less than 1000 microns and remains steady, the system is considered leak-free; proceed to system charging and startup.
4. If pressure rises above 1000 microns but holds steady below 2000 microns, non-condensable air or moisture may remain, or a small leak may be present. Return to step 2: If the same result is achieved, check for leaks and repair. Repeat the evacuation procedure.
5. If pressure rises above 2000 microns, a leak is present. Check for leaks and repair them. Then, repeat the evacuation procedure.

ACCESSORY INSTALLATION

WARNING

ALL ACCESSORIES THAT MAY BECOME A POTENTIAL IGNITION SOURCE IF INSTALLED, SUCH AS ELECTRONIC AIR CLEANERS, MUST ONLY BE POWERED THROUGH OUR ACCESSORY CONTROL BOARD KIT. IF AN ELECTRONIC AIR CLEANER IS ALREADY INSTALLED IN THE DUCT WORK AND NOT CONNECTED TO THE ACCESSORY CONTROL BOARD, IT WILL HAVE TO BE DISABLED OR REMOVED. ENSURE THAT ANY ADDITIONAL WIRING FROM THE INDOOR UNIT TO THE ACCESSORY CONTROL BOARD IS ROUTED AND PROTECTED FROM DAMAGE AND WEAR, AVOIDING THE FLUE PIPE AND ANY JOINTS THAT MAY NEED BRAZED OR DISCONNECTED FOR SERVICE. REFER TO THE PRODUCT SPECIFICATION SHEET FOR THE ACCESSORY CONTROL BOARD KIT PART NUMBER

ALTITUDE ADJUSTMENT FACTOR TO CALCULATE MINIMUM ROOM AREA

The Indoor equipment mitigation requirements are calculated at sea level. For higher altitudes adjust the minimum room area specified on or near the Serial Plate by the corresponding altitude adjustment factor shown below. This table is provided as a reference.

Adjusted room area ($A_{\min \text{ adj}}$) is the product of the minimum room area specified in the serial plate and the adjustment factor AF, as shown in below formula

$$A_{\min \text{ adj}} = A_{\min} (\text{serial plate}) * AF$$

Height in meters	Height in feet	Altitude Adjustment Factor (AF)
At sea level	At sea level	1.00
1~200	1~660	1.02
200~400	660~1320	1.03
400~600	1320~1970	1.05
600~800	1970~2630	1.07
800~1000	2630~3290	1.09
1000~1200	3290~3940	1.11
1200~1400	3940~4600	1.13
1400~1600	4600~5250	1.15
1600~1800	5250~5910	1.17
1800~2000	5910~6570	1.19
2000~2200	6570~7220	1.21
2200~2400	7220~7880	1.24
2400~2600	7880~8540	1.26
2600~2800	8540~9190	1.29
2800~3000	9190~9850	1.31
3000~3200	9850~10500	1.34

FINAL SYSTEM CHECKS

1. Check to see if all supply and return air grilles are adjusted and the air distribution system is balanced for the best compromise between heating and cooling.
2. Check for air leaks in the ductwork. See Sections on Air Flow Adjustments.
3. Make sure the unit is free of "rattles", and the tubing in the unit is free from excessive vibration. Also make sure tubes or lines are not rubbing against each other or sheet metal surfaces or edges. If so, correct the trouble.
4. Set the thermostat at the appropriate setting for cooling and heating or automatic changeover for normal use.
5. Be sure the Owner is instructed on the unit operation, filter, servicing, correct thermostat operation, etc.

MAINTENANCE



WARNING

ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD
FAILURE TO FOLLOW SAFETY WARNINGS EXACTLY COULD RESULT IN DANGEROUS OPERATION, SERIOUS INJURY, DEATH OR PROPERTY DAMAGE.

IMPROPER SERVICING COULD RESULT IN DANGEROUS OPERATION, SERIOUS INJURY, DEATH OR PROPERTY DAMAGE.

- **BEFORE SERVICING, DISCONNECT ALL ELECTRICAL POWER TO FURNACE.**
- **WHEN SERVICING CONTROLS, LABEL ALL WIRES PRIOR TO DISCONNECTING. RECONNECT WIRES CORRECTLY.**
- **VERIFY PROPER OPERATION AFTER SERVICING.**



WARNING

HIGH VOLTAGE!

DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



WARNING

TO PREVENT PERSONAL INJURY OR DEATH DUE TO IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE OR MAINTENANCE, REFER TO THIS MANUAL. FOR ADDITIONAL ASSISTANCE OR INFORMATION, CONSULT A QUALIFIED INSTALLER, SERVICER AGENCY OR THE GAS SUPPLIER.



CAUTION

SHEET METAL PARTS, SCREWS, CLIPS AND SIMILAR ITEMS INHERENTLY HAVE SHARP EDGES, AND IT IS NECESSARY THAT THE INSTALLER AND SERVICE PERSONNEL EXERCISE CAUTION.

Preventive maintenance is the best way to avoid unnecessary expense and inconvenience. Have this system inspected at regular intervals by qualified service personnel, at least twice a year. Routine maintenance should cover the following items:

1. Tighten all set screws, and wire connections.
2. Clean evaporator and condenser coils mechanically or with cold water, if necessary. Usually any fouling is only matted on the entering air face of the coil and can be removed by brushing.
3. Replace filters as needed (see below).
4. Check for blockage of condensate drain.
5. Check power and control voltages.
6. Check running amperage.
7. Check operating temperatures and pressures.
8. Check and adjust temperature and pressure controls.
9. Check and adjust damper linkages.
10. Check operation of all safety controls.
11. Examine gas furnaces (see below and the User's Information Manual).
12. Check condenser fans and tighten set screws.

FILTERS



CAUTION

TO PREVENT PROPERTY DAMAGE DUE TO FIRE AND LOSS OF EQUIPMENT EFFICIENCY OR EQUIPMENT DAMAGE DUE TO DUST AND LINT BUILD UP ON INTERNAL PARTS, NEVER OPERATE UNIT WITHOUT AN AIR FILTER INSTALLED IN THE RETURN AIR SYSTEM.

Every application may require a different frequency of replacement of dirty filters. Filters must be replaced at least every three (3) months during operating seasons.

Dirty filters are the most common cause of inadequate heating or cooling performance. Filter inspection should be made at least every two months; more often if necessary because of local conditions and usage.

Dirty throwaway filters should be discarded and replaced with a new, clean filter.

Disposable return air filters are supplied with this unit. See the unit Specification Sheet or Technical Manual for the correct size and part number. To remove the filters, remove the filter access panel on return side of the unit.

CABINET FINISH MAINTENANCE

Use a fine grade automotive wax on the cabinet finish to maintain the finishes original high luster. This is especially important in installations with extended periods of direct sunlight.

CLEAN INDOOR COIL (QUALIFIED SERVICER ONLY)

Before cleaning the indoor coil, A2L sensor must be removed from the unit to avoid damage and contamination. Air filters should also be removed before performing maintenance. The coil with the filtered air flowing over it should be inspected and cleaned as frequently as necessary to keep the finned areas free of debris. Any air blowing or water rinsing should be performed from inside-out (opposite operating airflow direction) to prevent damage to the tube, fin coil and any other components.

CLEAN OUTSIDE COIL (QUALIFIED SERVICER ONLY)

The coil with the outside air flowing over it should be inspected annually and cleaned as frequently as necessary to keep the finned areas free of lint, hair and debris.

CONDENSER AND INDUCED DRAFT MOTORS

Bearings on the condenser fan motors and the combustion fan motor are permanently lubricated. No additional oiling is required.

FLAME SENSOR (QUALIFIED SERVICER ONLY)

A drop in the flame current can be caused by a nearly invisible coating on the flame sensor. This coating, created by the fuel or combustion air supply, can be removed by carefully cleaning the flame sensor with steel wool.

NOTE: After cleaning, the microamp signal should be stable and in the range of 4 - 6 microamps DC.

FLUE PASSAGES (QUALIFIED SERVICER ONLY)

At the start of each heating season, inspect and, if necessary, clean the unit flue passage.

LUBRICATION

The fan shaft bearings, the blower motor, the condenser fan motors and compressors are permanently lubricated.

INSPECTION & CLEANING

All flue product carrying areas of the furnace, its vent system, and main burners should be examined by a qualified service agency, and cleaned if necessary, before the start of each heating season. This examination is necessary for continued safe operation. Particular attention should be given to deterioration from corrosion or other sources. This examination is accomplished in the following manner.

1. Disconnect power to the unit, close the manual gas shut off valve external to the unit, and remove furnace section access panel.
2. Remove burner assembly:
 - a. Disconnect the wires from the gas valve after noting which wires are connected to each terminal.

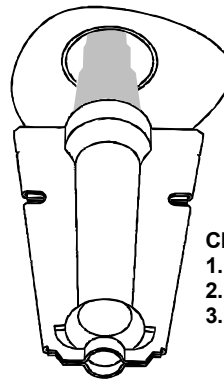
- b. Disconnect wires from the flame rod and ignition electrode.
- c. Disconnect the gas piping at the union.
- d. The entire burner assembly can now be removed from the unit.

NOTE: Use all screws that were removed; they are necessary for safe and proper operation of the unit.

3. Inspect and periodically clean the vent outlet (bird screen) on the access panel.

NOTE: Periodic observation of the flame and a log of CO₂ measurements are recommended. This will aid in determining whether the furnace is operating efficiently or if the furnace requires cleaning.

Flames should be stable, soft and blue (dust may cause orange tips but must not be yellow). The flames must extend directly outward from the burner without curling, floating or lifting off.



Check the burner flames for:

1. Good adjustment
2. Stable, soft and blue
3. Not curling, floating, or lifting off.

Burner Flame



WARNING

TO AVOID PERSONAL INJURY OR DEATH DUE TO ELECTRIC SHOCK, DO NOT REMOVE ANY INTERNAL COMPARTMENT COVERS OR ATTEMPT ANY ADJUSTMENT. CONTACT A QUALIFIED SERVICER AT ONCE IF AN ABNORMAL FLAME SHOULD DEVELOP.

At least once a year, prior to or during the heating season, make a visual check of the burner flames.

NOTE: This will involve removing and reinstalling the heat exchanger door on the unit, which is held by two screws. If you are uncertain about your ability to do this, contact a qualified servicer.

If a strong wind is blowing, it may alter the airflow pattern within the unit enough that an inspection of the burner flames is not possible.

FUNCTIONAL PARTS

Refer to the unit Parts Catalog for a list of functional parts. Parts are available from your distributor.

TROUBLESHOOTING

IGNITION CONTROL ERROR CODES

The following presents probable causes of questionable unit operation. Refer to *Diagnostic Indicator Chart* for an interpretation of the signal and to this section for an explanation.

Remove the control box access panel and note the number of diagnostic LED flashes.

INTERNAL CONTROL FAILURE

If the integrated ignition control in this unit encounters an internal fault, it will go into a "hard" lockout and turn off the diagnostic LED. If diagnostic LED indicates an internal fault, check power supply to unit for proper voltage, check all fuses, circuit breakers and wiring. Disconnect electric power for five seconds. If LED remains off after restoring power, replace control.

ABNORMAL OPERATION - HEATING CODES

EXTERNAL LOCKOUT (1 FLASH CODE)

An external lockout occurs if the integrated ignition control determines that a measurable combustion cannot be established within three (3) consecutive ignition attempts. If flame is not established within the seven (7) second trial for ignition, the gas valve is deenergized, 15 second inter-purge cycle is completed, and ignition is reattempted. The control will repeat this routine three times if a measurable combustion is not established. The control will then shut off the induced draft blower and go into a lockout state.

If flame is established but lost, the control will energize the circulator blower at the heat speed and then begin a new ignition sequence. If flame is established then lost on subsequent attempts, the control will recycle for four (4) consecutive ignition attempts (five attempts total) before locking out.

The diagnostic fault code is 1 flash for a lockout due to failed ignition attempts or flame dropouts. The integrated control will automatically reset after one hour, or it can be reset by removing the thermostat signal or disconnecting the electrical power supply for over five seconds. If the diagnostic LED indicates an external lockout, perform the following checks:

- *Check the supply and manifold gas pressures*
- *Check the gas orifices for debris*
- *Check gas valve for proper operation*
- *Check secondary limit*

A dirty filter, excessive duct static, insufficient air flow, a faulty limit, or a failed circulator blower can cause this limit to open. Check filters, total external duct static, circulator blower motor, blower motor speed tap (see wiring diagram) and limit. An interruption in electrical power during a heating cycle may also cause the auxiliary limit to open. The automatic reset secondary limit is located on top of the circulator blower assembly.

- *Check rollout limit*

If the burner flames are not properly drawn into the heat exchanger, the flame rollout protection device will open. Possible causes are restricted or blocked flue passages, blocked or cracked heat exchanger, a failed induced draft blower, or insufficient combustion air. The rollout protection device is a manual reset limit located on the burner bracket. The cause of the flame rollout must be determined and corrected before resetting the limit.

- *Check flame sensor*

A drop in flame signal can be caused by nearly invisible coating on the sensor. Remove the sensor and carefully clean with steel wool.

- *Check wiring*

Check wiring for opens/shorts and miswiring.

IMPORTANT: IF YOU HAVE TO FREQUENTLY RESET YOUR GAS/ELECTRIC PACKAGE UNIT, IT MEANS THAT A PROBLEM EXISTS THAT SHOULD BE CORRECTED. CONTACT A QUALIFIED SERVICER FOR FURTHER INFORMATION.

PRESSURE SWITCH STUCK OPEN (2 FLASH CODE)

A stuck open pressure switch can be caused by a faulty pressure switch, faulty wiring, a disconnected or damaged hose, a blocked or restricted flue, or a faulty induced draft blower. If the control senses an open pressure switch during the pre-purge cycle, the induced draft blower only will be energized.

If the pressure switch opens after ignition has begun the gas valve is deenergized, the circulator blower heat off cycle begins, and the induced draft blower remains on. The diagnostic fault code is two (2) flashes.

PRESSURE SWITCH STUCK CLOSED (3 FLASH CODE)

A stuck closed pressure switch can be caused by a faulty pressure switch or faulty wiring. If the control encounters a pressure switch stuck closed, the induced draft blower remains off. The diagnostic LED code for this fault is three (3) flashes.

OPEN THERMAL PROTECTION DEVICE (4 FLASH CODE)

If the primary limit switch opens, the gas valve is immediately deenergized, the induced draft and air circulating blowers are energized. The induced draft and air circulator blowers remain energized until the limit switch recloses. The diagnostic fault code for an open limit is four (4) flashes.

A primary limit will open due to excessive supply air temperatures. This can be caused by a dirty filter, excessive duct static, insufficient air flow, or a faulty limit. Check filters, total external duct static, blower motor, blower motor speed tap (see wiring diagram), and limit. This limit will automatically reset once the temperature falls below a preset level.

FLAME DETECTED WITH GAS VALVE CLOSED (5 FLASH CODE)

If flame is detected with the gas valve deenergized, the combustion and air circulator blowers are energized. The diagnostic fault code is five (5) flashes for this condition. The control can be reset by removing the power supply to the unit or it will automatically reset after one hour. Miswiring is the probable cause for this fault.

ABNORMAL OPERATION - COOLING CODES

SHORT CYCLE COMPRESSOR DELAY (6 FLASH CODE)

The automatic ignition control has a built-in feature that prevents damage to the compressor in short cycling situations. In the event of intermittent power losses or intermittent thermostat operation, the ignition control will delay output to the compressor contactor for three minutes from the time power is restored. (Compressor is off a total of three minutes). The diagnostic LED will flash six (6) times to indicate the compressor contactor output is being delayed.

NOTE: Some electronic thermostats also have a built-in compressor short cycle timer that may be longer than the three minute delay given above. If you are using an electronic thermostat and the compressor has not started after three minutes, wait an additional five minutes to allow the thermostat to complete its short cycle delay time.

SERVICING MEASURES FOR THE REFRIGERANT DETECTION SYSTEM:

Before servicing, identify the mode of operation of the system by reading the LED flashing pattern on the PCB within the control box and matching the LED flashing pattern with mode of operation in the REFRIGERANT DETECTION SYSTEM TROUBLESHOOTING GUIDE on the wiring diagram which is attached on the back side of the control box panel (RDS PCB Fault Code table). After identifying the mode of operation, take recommended actions as specified in the Recommended Actions for PCB LED Flashing Codes table.

REFRIGERANT SENSORS for REFRIGERANT

DETECTION SYSTEMS shall only be replaced with sensors specified by the manufacturer. If REFRIGERANT SENSOR requires replacement, please replace with Sensata R32 Sensor PN#RGD-00ML12 (Daikin PN#SER2A08011).

LED STATUS	
MODE	LED FLASHING PATTERN
NORMAL OPERATION	SLOW LED FLASHING PATTERN (2 SECONDS ON 2 SECONDS OFF)
R-32 LEAK ALARM	FAST LED FLASHING PATTERN
DELAY MODE	LED WILL BE ON CONTINUOUSLY
SYSTEM VERIFICATION MODE	FAST LED FLASHING PATTERN
CONTROL BOARD INTERNAL FAULT	LED WILL FLASH 2 TIMES AND THEN BE OFF FOR 5 SECONDS
R32 SENSOR COMMUNICATION FAULT	LED WILL FLASH 3 TIMES AND THEN BE OFF FOR 5 SECONDS
R32 SENSOR FAULT	LED WILL FLASH 4 TIMES AND THEN BE OFF FOR 5 SECONDS

RDS PCB Fault Code Table

APPENDIX A BLOWER PERFORMANCE TABLES

7.5 Ton
130 MBH Gas Heat Exchanger
Standard Static Direct Drive
Models: DHG0903DL, DHG0904DL, DHG0907DL

Down Flow					Horizontal Flow				
Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP
T1	0.2	1882	544	0.38	T1	0.2	2029	488	0.34
	0.4	-	-	-		0.4	-	-	-
	0.6	-	-	-		0.6	-	-	-
	0.8	-	-	-		0.8	-	-	-
T2	0.2	2589	629	0.67	T2	0.2	2748	571	0.61
	0.4	2410	681	0.73		0.4	2554	627	0.67
	0.6	2216	734	0.79		0.6	2337	697	0.75
	0.8	2038	782	0.84		0.8	2148	750	0.80
T3	0.2	3144	708	1.01	T3	0.2	3289	649	0.93
	0.4	2961	753	1.08		0.4	3133	690	0.99
	0.6	2802	799	1.14		0.6	2972	745	1.06
	0.8	2651	841	1.20		0.8	2802	792	1.13
T4	0.2	3413	753	1.23	T4	0.2	3539	693	1.13
	0.4	3222	794	1.29		0.4	3419	726	1.18
	0.6	3070	836	1.36		0.6	3282	773	1.26
	0.8	2940	875	1.43		0.8	3132	816	1.33
T5	0.2	3622	793	1.43	T5	0.2	3724	732	1.32
	0.4	3422	830	1.50		0.4	3647	757	1.37
	0.6	3268	868	1.57		0.6	3525	797	1.44
	0.8	3160	904	1.64		0.8	3401	836	1.51
T6	0.2	1901	546	0.38	T6	0.2	2048	490	0.34
	0.4	1713	605	0.42		0.4	1853	561	0.39
	0.6	1453	667	0.47		0.6	1559	646	0.45
	0.8	-	-	-		0.8	1374	707	0.49
T7	0.2	2107	569	0.46	T7	0.2	2260	513	0.41
	0.4	1922	627	0.50		0.4	2061	580	0.47
	0.6	1684	686	0.55		0.6	1791	660	0.53
	0.8	1495	738	0.59		0.8	1602	719	0.58
T8	0.2	2301	592	0.54	T8	0.2	2458	535	0.49
	0.4	2119	648	0.59		0.4	2259	598	0.54
	0.6	1900	704	0.64		0.6	2011	674	0.61
	0.8	-	-	-		0.8	1820	731	0.66
T9	0.2	2920	674	0.86	T9	0.2	3074	616	0.79
	0.4	2740	722	0.92		0.4	2897	663	0.85
	0.6	2569	771	0.98		0.6	2715	724	0.92
	0.8	2405	816	1.04		0.8	2534	774	0.99
T10	0.2	3427	756	1.24	T10	0.2	3552	696	1.14
	0.4	3236	797	1.31		0.4	3435	728	1.20
	0.6	3084	838	1.38		0.6	3299	774	1.27
	0.8	2955	877	1.44		0.8	3151	817	1.34

7.5 Ton
130 MBH Gas Heat Exchanger
Medium Static Direct Drive
Models: DHG0903LL, DHG0904LL, DHG0907LL

Down Flow					Horizontal Flow				
Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP
T1	0.2	1882	544	0.38	T1	0.2	2029	488	0.34
	0.4	-	-	-		0.4	-	-	-
	0.6	-	-	-		0.6	-	-	-
	0.8	-	-	-		0.8	-	-	-
	1.0	-	-	-		1.0	-	-	-
	1.2	-	-	-		1.2	-	-	-
	1.4	-	-	-		1.4	-	-	-
T2	0.2	3059	695	0.95	T2	0.2	3208	636	0.87
	0.4	2877	741	1.01		0.4	3043	680	0.93
	0.6	2714	788	1.08		0.6	2874	737	1.01
	0.8	2558	831	1.14		0.8	2699	785	1.07
	1.0	2412	870	1.19		1.0	2519	829	1.13
	1.2	2218	922	1.26		1.2	2312	884	1.21
	1.4	2028	965	1.32		1.4	2103	948	1.30
T3	0.2	3144	708	1.01	T3	0.2	3289	649	0.93
	0.4	2961	753	1.08		0.4	3133	690	0.99
	0.6	2802	799	1.14		0.6	2972	745	1.06
	0.8	2651	841	1.20		0.8	2802	792	1.13
	1.0	2493	880	1.26		1.0	2632	836	1.19
	1.2	2307	930	1.33		1.2	2436	889	1.27
	1.4	-	-	-		1.4	-	-	-
T4	0.2	-	-	-	T4	0.2	-	-	-
	0.4	3622	874	1.77		0.4	-	-	-
	0.6	3458	907	1.83		0.6	-	-	-
	0.8	3380	940	1.90		0.8	3693	861	1.74
	1.0	3265	975	1.97		1.0	3575	905	1.83
	1.2	3138	1008	2.04		1.2	3461	941	1.90
	1.4	2994	1043	2.11		1.4	3345	991	2.00
T5	0.2	-	-	-	T5	0.2	-	-	-
	0.4	3725	901	1.94		0.4	-	-	-
	0.6	3549	931	2.00		0.6	-	-	-
	0.8	3492	961	2.07		0.8	-	-	-
	1.0	3423	996	2.15		1.0	3737	920	1.98
	1.2	3307	1026	2.21		1.2	3633	952	2.05
	1.4	3180	1059	2.28		1.4	3524	999	2.15
T6	0.2	2139	573	0.47	T6	0.2	2293	516	0.42
	0.4	1955	630	0.52		0.4	2093	583	0.48
	0.6	1720	689	0.57		0.6	1827	663	0.54
	0.8	1531	741	0.61		0.8	1637	721	0.59
	1.0	1623	782	0.64		1.0	-	-	-
	1.2	1351	849	0.70		1.2	-	-	-
	1.4	-	-	-		1.4	-	-	-
T7	0.2	2691	642	0.73	T7	0.2	2849	584	0.66
	0.4	2512	693	0.78		0.4	2659	638	0.72
	0.6	2325	745	0.84		0.6	2453	705	0.80
	0.8	2152	792	0.90		0.8	2265	757	0.86
	1.0	2079	832	0.94		1.0	2034	801	0.91
	1.2	1854	890	1.01		1.2	1777	864	0.98
	1.4	1662	937	1.06		1.4	1511	932	1.05
T8	0.2	3162	711	1.02	T8	0.2	3307	652	0.94
	0.4	2979	756	1.09		0.4	3152	692	1.00
	0.6	2820	801	1.15		0.6	2993	747	1.08
	0.8	2671	843	1.22		0.8	2824	794	1.14
	1.0	2511	882	1.27		1.0	2657	837	1.21
	1.2	2326	931	1.34		1.2	2463	891	1.28
	1.4	2139	974	1.40		1.4	2269	952	1.37
T9	0.2	3681	805	1.50	T9	0.2	3774	744	1.39
	0.4	3477	842	1.57		0.4	3713	767	1.43
	0.6	3322	878	1.64		0.6	3594	804	1.50
	0.8	3220	913	1.70		0.8	3478	843	1.57
	1.0	3066	950	1.77		1.0	3356	886	1.65
	1.2	2925	987	1.84		1.2	3226	927	1.73
	1.4	2765	1024	1.91		1.4	3096	980	1.83
T10	0.2	-	-	-	T10	0.2	-	-	-
	0.4	3811	927	2.12		0.4	-	-	-
	0.6	3620	954	2.18		0.6	-	-	-
	0.8	3586	983	2.25		0.8	-	-	-
	1.0	3578	1017	2.32		1.0	3881	936	2.14
	1.2	3471	1043	2.38		1.2	3786	964	2.20
	1.4	3363	1074	2.45		1.4	3680	1008	2.30

Note:

- Taps T1 and T2 are for first stage of cooling only. Taps T6 and T7 are for first stage of heating only. Refer to page 11 for speed tap selection.
- Shaded area are not recommended for cooling or heating operation.
- Airflow table includes resistance for base unit only with 2" clean air filters in place.
Any Additional air resistance caused by factory or field installed options or accessories must be added to the ESP in order to select the correct speed tap.

APPENDIX A BLOWER PERFORMANCE TABLES

7.5 Ton
130 MBH Gas Heat Exchanger
High Static Direct Drive
Models: DHG0903WL, DHG0904WL, DHG0907WL

Down Flow					Horizontal Flow					Down Flow					Horizontal Flow				
Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP
T1	0.2	1882	544	0.38	T1	0.2	2029	488	0.34	T6	0.2	2457	612	0.61	T6	0.2	2616	554	0.55
	0.4	-	-	-		0.4	-	-	-		0.4	2277	665	0.66		0.4	2418	613	0.61
	0.6	-	-	-		0.6	-	-	-		0.6	2072	720	0.72		0.6	2188	686	0.68
	0.8	-	-	-		0.8	-	-	-		0.8	1891	769	0.77		0.8	1997	741	0.74
	1.0	-	-	-		1.0	-	-	-		1.0	1881	810	0.81		1.0	1729	785	0.78
	1.2	-	-	-		1.2	-	-	-		1.2	1636	872	0.87		1.2	1439	852	0.85
	1.4	-	-	-		1.4	-	-	-		1.4	1447	921	0.92		1.4	-	-	-
	1.6	-	-	-		1.6	-	-	-		1.6	-	-	-		1.6	-	-	-
	1.8	-	-	-		1.8	-	-	-		1.8	-	-	-		1.8	-	-	-
	2.0	-	-	-		2.0	-	-	-		2.0	-	-	-		2.0	-	-	-
T2	0.2	3527	774	1.34	T2	0.2	3642	714	1.23	T7	0.2	-	-	-	T7	0.2	-	-	-
	0.4	3332	814	1.40		0.4	3544	743	1.28		0.4	2838	735	0.99		0.4	-	-	-
	0.6	3180	853	1.47		0.6	3415	786	1.36		0.6	2672	783	1.05		0.6	2828	733	0.98
	0.8	3061	891	1.54		0.8	3278	827	1.43		0.8	2514	827	1.11		0.8	2651	782	1.05
	1.0	2889	927	1.60		1.0	3147	870	1.50		1.0	2374	866	1.16		1.0	2466	825	1.11
	1.2	2735	969	1.67		1.2	2998	915	1.58		1.2	2177	918	1.23		1.2	2253	882	1.18
	1.4	2563	1008	1.74		1.4	2852	971	1.68		1.4	1986	962	1.29		1.4	2038	946	1.27
	1.6	2392	1050	1.81		1.6	2666	1010	1.74		1.6	1815	1006	1.35		1.6	1869	991	1.33
	1.8	2237	1086	1.87		1.8	2482	1060	1.83		1.8	1667	1046	1.40		1.8	1668	1038	1.39
	2.0	2077	1119	1.93		2.0	2323	1096	1.89		2.0	1522	1077	1.44		2.0	1495	1074	1.44
T3	0.2	3144	708	1.01	T3	0.2	3289	649	0.93	T8	0.2	3482	766	1.29	T8	0.2	3601	706	1.19
	0.4	2961	753	1.08		0.4	3133	690	0.99		0.4	3289	806	1.36		0.4	3495	736	1.24
	0.6	2802	799	1.14		0.6	2972	745	1.06		0.6	3137	846	1.43		0.6	3363	780	1.32
	0.8	2651	841	1.20		0.8	2802	792	1.13		0.8	3014	884	1.49		0.8	3221	822	1.39
	1.0	2493	880	1.26		1.0	2632	836	1.19		1.0	2840	921	1.55		1.0	3086	866	1.46
	1.2	2307	930	1.33		1.2	2436	889	1.27		1.2	2682	964	1.63		1.2	2932	912	1.54
	1.4	-	-	-		1.4	-	-	-		1.4	2507	1003	1.69		1.4	2780	969	1.63
	1.6	-	-	-		1.6	-	-	-		1.6	2335	1045	1.76		1.6	2594	1008	1.70
	1.8	-	-	-		1.8	-	-	-		1.8	2182	1082	1.83		1.8	2408	1058	1.78
	2.0	-	-	-		2.0	-	-	-		2.0	2022	1115	1.88		2.0	2247	1094	1.85
T4	0.2	-	-	-	T4	0.2	-	-	-	T9	0.2	-	-	-	T9	0.2	-	-	-
	0.4	-	-	-		0.4	-	-	-		0.4	3783	918	2.06		0.4	-	-	-
	0.6	-	-	-		0.6	-	-	-		0.6	3598	946	2.12		0.6	-	-	-
	0.8	-	-	-		0.8	-	-	-		0.8	3556	976	2.19		0.8	-	-	-
	1.0	3620	1023	2.37		1.0	-	-	-		1.0	3525	1010	2.26		1.0	3833	930	2.08
	1.2	3514	1048	2.43		1.2	-	-	-		1.2	3415	1037	2.32		1.2	3735	960	2.15
	1.4	3412	1078	2.50		1.4	3718	1010	2.34		1.4	3300	1069	2.39		1.4	3629	1005	2.25
	1.6	3263	1117	2.59		1.6	3610	1040	2.41		1.6	3146	1108	2.48		1.6	3503	1036	2.32
	1.8	3081	1148	2.66		1.8	3473	1094	2.54		1.8	2969	1139	2.55		1.8	3358	1089	2.44
	2.0	2915	1184	2.75		2.0	3351	1130	2.62		2.0	2802	1175	2.63		2.0	3229	1125	2.52
T5	0.2	-	-	-	T5	0.2	-	-	-	T10	0.2	-	-	-	T10	0.2	-	-	-
	0.4	-	-	-		0.4	-	-	-		0.4	-	-	-		0.4	-	-	-
	0.6	-	-	-		0.6	-	-	-		0.6	-	-	-		0.6	-	-	-
	0.8	-	-	-		0.8	-	-	-		0.8	-	-	-		0.8	-	-	-
	1.0	-	-	-		1.0	-	-	-		1.0	-	-	-		1.0	3659	998	2.50
	1.2	3728	1071	2.68		1.2	-	-	-		1.2	3653	1072	2.68		1.2	3638	1008	2.52
	1.4	3656	1100	2.75		1.4	-	-	-		1.4	3550	1101	2.75		1.4	3585	1022	2.56
	1.6	3519	1137	2.84		1.6	3825	1049	2.62		1.6	3452	1131	2.83		1.6	3500	1052	2.63
	1.8	3325	1166	2.91		1.8	3707	1104	2.76		1.8	3353	1163	2.91		1.8	3382	1091	2.73
	2.0	3161	1203	3.01		2.0	3599	1140	2.85		2.0	3247	1196	2.99		2.0	3286	1124	2.81

Note:

- Taps T1 and T2 are for first stage of cooling only. Taps T6 and T7 are for first stage of heating only. Refer to page 11 for speed tap selection.
 - Shaded area are not recommended for cooling or heating operation.
 - Airflow table includes resistance for base unit only with 2" clean air filters in place.
- Any Additional air resistance caused by factory or field installed options or accessories must be added to the ESP in order to select the correct speed tap.

APPENDIX A BLOWER PERFORMANCE TABLES

7.5 Ton
180 MBH Gas Heat Exchanger
Standard Static Direct Drive

Models: DHG0903DM, DHG0904DM, DHG0907DM

Down Flow					Horizontal Flow				
Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP
T1	0.2	1954	552	0.40	T1	0.2	2030	500	0.36
	0.4	-	-	-		0.4	-	-	-
	0.6	-	-	-		0.6	-	-	-
	0.8	-	-	-		0.8	-	-	-
T2	0.2	2589	629	0.67	T2	0.2	2675	594	0.64
	0.4	2410	681	0.73		0.4	2487	642	0.69
	0.6	2216	734	0.79		0.6	2336	698	0.75
	0.8	2038	782	0.84		0.8	2089	777	0.83
T3	0.2	3017	730	1.06	T3	0.2	3161	679	0.99
	0.4	2897	773	1.13		0.4	3068	713	1.04
	0.6	2760	818	1.19		0.6	2899	768	1.12
	0.8	2633	859	1.25		0.8	2776	809	1.18
T4	0.2	3251	774	1.26	T4	0.2	3413	704	1.15
	0.4	3095	813	1.33		0.4	3244	742	1.21
	0.6	2954	853	1.39		0.6	3108	785	1.28
	0.8	2827	893	1.46		0.8	2963	823	1.34
T5	0.2	3417	815	1.47	T5	0.2	3563	693	1.25
	0.4	3274	846	1.53		0.4	3526	771	1.39
	0.6	3126	887	1.60		0.6	3402	814	1.47
	0.8	2988	923	1.66		0.8	3317	858	1.55
T6	0.2	1416	213	0.21	T6	0.2	1604	448	0.25
	0.4	-	-	-		0.4	-	-	-
	0.6	-	-	-		0.6	-	-	-
	0.8	-	-	-		0.8	-	-	-
T7	0.2	1975	554	0.41	T7	0.2	2056	505	0.37
	0.4	-	-	-		0.4	1832	582	0.43
	0.6	-	-	-		0.6	-	-	-
	0.8	-	-	-		0.8	-	-	-
T8	0.2	2156	579	0.54	T8	0.2	2434	558	0.52
	0.4	1956	637	0.59		0.4	2251	616	0.57
	0.6	-	-	-		0.6	-	-	-
	0.8	-	-	-		0.8	-	-	-
T9	0.2	2936	677	0.87	T9	0.2	2975	642	0.83
	0.4	2756	724	0.93		0.4	2799	680	0.88
	0.6	2586	773	0.99		0.6	2585	734	0.94
	0.8	-	-	-		0.8	-	-	-
T10	0.2	3427	756	1.24	T10	0.2	3413	704	1.15
	0.4	3236	797	1.31		0.4	3244	742	1.21
	0.6	3084	838	1.38		0.6	3108	785	1.28
	0.8	2955	877	1.44		0.8	2963	823	1.34

7.5 Ton
180 MBH Gas Heat Exchanger
Medium Static Direct Drive

Models: DHG0903LM, DHG0904LM, DHG0907LM

Down Flow					Horizontal Flow				
Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP
T1	0.2	1954	552	0.40	T1	0.2	2030	500	0.36
	0.4	-	-	-		0.4	-	-	-
	0.6	-	-	-		0.6	-	-	-
	0.8	-	-	-		0.8	-	-	-
	1.0	-	-	-		1.0	-	-	-
	1.2	-	-	-		1.2	-	-	-
T2	0.2	2908	718	0.98	T2	0.2	3067	653	0.89
	0.4	2754	759	1.04		0.4	2922	693	0.95
	0.6	2608	806	1.10		0.6	2711	750	1.03
	0.8	2473	845	1.16		0.8	2551	794	1.09
	1.0	2322	892	1.22		1.0	2396	837	1.15
	1.2	2105	945	1.29		1.2	2121	908	1.24
T3	0.2	3017	730	1.06	T3	0.2	3161	679	0.99
	0.4	2897	773	1.13		0.4	3068	713	1.04
	0.6	2760	818	1.19		0.6	2899	768	1.12
	0.8	2633	859	1.25		0.8	2776	809	1.18
	1.0	2499	900	1.31		1.0	2647	851	1.24
	1.2	2280	957	1.40		1.2	2405	922	1.35
T4	0.2	3629	851	1.72	T4	0.2	-	-	-
	0.4	3548	882	1.79		0.4	3730	803	1.62
	0.6	3484	917	1.86		0.6	3644	845	1.71
	0.8	3375	955	1.93		0.8	3566	881	1.78
	1.0	3293	989	2.00		1.0	3473	921	1.86
	1.2	3185	1020	2.06		1.2	3374	946	1.91
T5	0.2	3765	876	1.89	T5	0.2	-	-	-
	0.4	3676	902	1.94		0.4	-	-	-
	0.6	3614	937	2.02		0.6	3776	862	1.86
	0.8	3386	980	2.11		0.8	3699	898	1.94
	1.0	3274	1020	2.19		1.0	3616	938	2.02
	1.2	3153	1049	2.25		1.2	3502	964	2.08
T6	0.2	2730	647	0.75	T6	0.2	2782	575	0.63
	0.4	2551	698	0.81		0.4	2589	631	0.69
	0.6	2367	749	0.87		0.6	2376	699	0.76
	0.8	2195	796	0.92		0.8	2187	753	0.82
	1.0	2113	836	0.97		1.0	1946	796	0.87
	1.2	1891	894	1.03		1.2	-	-	-
T7	0.2	3108	758	1.17	T7	0.2	3284	678	1.05
	0.4	3019	797	1.23		0.4	3187	726	1.12
	0.6	2932	835	1.29		0.6	3081	772	1.19
	0.8	2818	876	1.36		0.8	2988	814	1.26
	1.0	2696	916	1.42		1.0	2876	857	1.32
	1.2	2538	949	1.47		1.2	2770	907	1.40
T8	0.2	3541	835	1.62	T8	0.2	3730	746	1.44
	0.4	3458	868	1.68		0.4	3640	790	1.53
	0.6	3391	903	1.75		0.6	3549	833	1.61
	0.8	3282	941	1.82		0.8	3470	869	1.68
	1.0	3195	976	1.89		1.0	3372	909	1.76
	1.2	3078	1007	1.95		1.2	3288	935	1.81
T9	0.2	3712	865	1.83	T9	0.2	3902	774	1.63
	0.4	3634	896	1.89		0.4	3813	815	1.72
	0.6	3571	930	1.96		0.6	3732	857	1.81
	0.8	3463	968	2.04		0.8	3655	893	1.88
	1.0	3384	1002	2.12		1.0	3569	932	1.97
	1.2	3284	1033	2.18		1.2	3458	958	2.02
T10	0.2	3869	893	2.04	T10	0.2	4056	799	1.83
	0.4	3795	921	2.11		0.4	3968	839	1.92
	0.6	3736	956	2.18		0.6	3899	879	2.01
	0.8	3628	994	2.27		0.8	3821	915	2.09
	1.0	3552	1029	2.35		1.0	3751	955	2.18
	1.2	3468	1058	2.42		1.2	3643	984	2.25
	1.4	3405	1089	2.49		1.4	3582	1025	2.34

Note:

- Taps T1 and T2 are for first stage of cooling only. Taps T6 and T7 are for first stage of heating only. Refer to page 11 for speed tap selection.
 - Shaded area are not recommended for cooling or heating operation.
 - Airflow table includes resistance for base unit only with 2" clean air filters in place.
- Any Additional air resistance caused by factory or field installed options or accessories must be added to the ESP in order to select the correct speed tap.

APPENDIX A BLOWER PERFORMANCE TABLES

7.5 Ton
180 MBH Gas Heat Exchanger
High Static Direct Drive
Models: DHG0903WM, DHG0904WM, DHG0907WM

Down Flow					Horizontal Flow					Down Flow					Horizontal Flow				
Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP
T1	0.2	1954	552	0.40	T1	0.2	2030	500	0.36	T6	0.2	2792	701	0.91	T6	0.2	2957	628	0.82
	0.4	-	-	-		0.4	-	-	-		0.4	2699	745	0.97		0.4	2854	681	0.89
	0.6	-	-	-		0.6	-	-	-		0.6	2597	786	1.02		0.6	2743	730	0.95
	0.8	-	-	-		0.8	-	-	-		0.8	2478	831	1.08		0.8	2634	776	1.01
	1.0	-	-	-		1.0	-	-	-		1.0	2319	878	1.14		1.0	2523	823	1.07
	1.2	-	-	-		1.2	-	-	-		1.2	2112	912	1.18		1.2	2193	915	1.19
	1.4	-	-	-		1.4	-	-	-		1.4	1921	957	1.24		1.4	1969	950	1.23
	1.6	-	-	-		1.6	-	-	-		1.6	-	-	-		1.6	-	-	-
	1.8	-	-	-		1.8	-	-	-		1.8	-	-	-		1.8	-	-	-
	2.0	-	-	-		2.0	-	-	-		2.0	-	-	-		2.0	-	-	-
T2	0.2	3316	796	1.37	T2	0.2	3316	796	1.23	T7	0.2	3464	822	1.53	T7	0.2	3652	734	1.37
	0.4	3230	831	1.43		0.4	3544	743	1.28		0.4	3380	855	1.59		0.4	3562	778	1.45
	0.6	3153	868	1.50		0.6	3415	786	1.36		0.6	3309	891	1.66		0.6	3467	822	1.53
	0.8	3042	907	1.57		0.8	3278	827	1.43		0.8	3200	929	1.73		0.8	3386	859	1.60
	1.0	2939	943	1.63		1.0	3147	870	1.50		1.0	3108	964	1.80		1.0	3284	899	1.67
	1.2	2800	976	1.68		1.2	2998	915	1.58		1.2	2984	996	1.85		1.2	3212	927	1.73
	1.4	2676	1017	1.76		1.4	2852	971	1.68		1.4	2881	1035	1.93		1.4	3090	977	1.82
	1.6	2500	1044	1.80		1.6	2666	1010	1.74		1.6	2717	1062	1.98		1.6	2966	1013	1.89
	1.8	2336	1113	1.92		1.8	2482	1060	1.83		1.8	2550	1130	2.10		1.8	2649	1112	2.07
	2.0	2209	1162	2.01		2.0	2323	1096	1.89		2.0	2357	1171	2.18		2.0	2521	1147	2.14
T3	0.2	3017	730	1.06	T3	0.2	3161	679	0.99	T8	0.2	3983	912	2.21	T8	0.2	4167	817	1.98
	0.4	2897	773	1.13		0.4	3068	713	1.04		0.4	3912	940	2.28		0.4	4077	857	2.08
	0.6	2760	818	1.19		0.6	2899	768	1.12		0.6	3855	974	2.36		0.6	4019	895	2.17
	0.8	2633	859	1.25		0.8	2776	809	1.18		0.8	3748	1014	2.46		0.8	3939	931	2.26
	1.0	2499	900	1.31		1.0	2647	851	1.24		1.0	3671	1051	2.55		1.0	3885	973	2.36
	1.2	2280	957	1.40		1.2	2405	922	1.35		1.2	3598	1079	2.62		1.2	3827	1008	2.44
	1.4	-	-	-		1.4	-	-	-		1.4	3538	1107	2.68		1.4	3723	1040	2.52
	1.6	-	-	-		1.6	-	-	-		1.6	3446	1136	2.75		1.6	3622	1070	2.59
	1.8	-	-	-		1.8	-	-	-		1.8	3326	1183	2.87		1.8	3569	1108	2.69
	2.0	-	-	-		2.0	-	-	-		2.0	3210	1213	2.94		2.0	3472	1139	2.76
T4	0.2	-	-	-	T4	0.2	-	-	-	T9	0.2	4119	935	2.44	T9	0.2	4296	839	2.19
	0.4	-	-	-		0.4	-	-	-		0.4	4054	962	2.51		0.4	4205	878	2.29
	0.6	3767	961	2.23		0.6	-	-	-		0.6	3998	997	2.60		0.6	4163	915	2.39
	0.8	3660	1000	2.32		0.8	-	-	-		0.8	3890	1039	2.71		0.8	4077	952	2.49
	1.0	3496	1042	2.42		1.0	3786	959	2.23		1.0	3806	1079	2.82		1.0	4047	996	2.60
	1.2	3398	1073	2.49		1.2	3674	995	2.31		1.2	3747	1106	2.89		1.2	3954	1041	2.72
	1.4	3293	1099	2.55		1.4	3566	1035	2.40		1.4	3686	1130	2.95		1.4	3894	1058	2.76
	1.6	3065	1137	2.64		1.6	3459	1067	2.48		1.6	3625	1160	3.03		1.6	3827	1088	2.84
	1.8	2958	1163	2.70		1.8	3361	1097	2.55		1.8	3541	1195	3.12		1.8	3735	1123	2.93
	2.0	2810	1208	2.80		2.0	3261	1134	2.63		2.0	3456	1222	3.19		2.0	3680	1154	3.01
T5	0.2	-	-	-	T5	0.2	-	-	-	T10	0.2	-	-	-	T10	0.2	-	-	-
	0.4	-	-	-		0.4	-	-	-		0.4	-	-	-		0.4	-	-	-
	0.6	-	-	-		0.6	-	-	-		0.6	-	-	-		0.6	-	-	-
	0.8	-	-	-		0.8	-	-	-		0.8	-	-	-		0.8	-	-	-
	1.0	3728	1062	2.66		1.0	-	-	-		1.0	4156	1104	3.08		1.0	-	-	-
	1.2	3662	1090	2.73		1.2	-	-	-		1.2	4032	1128	3.14		1.2	-	-	-
	1.4	3602	1116	2.79		1.4	3795	1047	2.62		1.4	3908	1151	3.21		1.4	4040	1074	2.99
	1.6	3523	1145	2.86		1.6	3706	1077	2.69		1.6	3784	1175	3.27		1.6	4023	1106	3.08
	1.8	3416	1188	2.97		1.8	3641	1114	2.79		1.8	3660	1198	3.34		1.8	3859	1138	3.17
	2.0	3317	1217	3.04		2.0	3565	1145	2.86		2.0	3536	1222	3.40		2.0	3812	1167	3.25

Note:

- Taps T1 and T2 are for first stage of cooling only. Taps T6 and T7 are for first stage of heating only. Refer to page 11 for speed tap selection.
- Shaded area are not recommended for cooling or heating operation.
- Airflow table includes resistance for base unit only with 2" clean air filters in place.
Any Additional air resistance caused by factory or field installed options or accessories must be added to the ESP in order to select the correct speed tap.

APPENDIX A BLOWER PERFORMANCE TABLES

7.5 Ton
225 MBH Gas Heat Exchanger
Standard Static Direct Drive
Models: DHG0903DH, DHG0904DH, DHG0907DH

7.5 Ton
225 MBH Gas Heat Exchanger
Medium Static Direct Drive
Models: DHG0903LH, DHG0904LH, DHG0907LH

Down Flow					Horizontal Flow				
Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP
T1	0.2	1954	552	0.40	T1	0.2	2102	495	0.36
	0.4	-	-	-		0.4	1906	566	0.41
	0.6	-	-	-		0.6	-	-	-
	0.8	-	-	-		0.8	-	-	-
T2	0.2	2589	629	0.67	T2	0.2	2748	571	0.61
	0.4	2410	681	0.73		0.4	2554	627	0.67
	0.6	2216	734	0.79		0.6	2337	697	0.75
	0.8	2038	782	0.84		0.8	2148	750	0.80
T3	0.2	3194	716	1.05	T3	0.2	3336	657	0.96
	0.4	3010	760	1.11		0.4	3185	696	1.02
	0.6	2852	805	1.18		0.6	3029	750	1.10
	0.8	2705	847	1.24		0.8	2862	796	1.17
T4	0.2	3413	753	1.23	T4	0.2	3539	693	1.13
	0.4	3222	794	1.29		0.4	3419	726	1.18
	0.6	3070	836	1.36		0.6	3282	773	1.26
	0.8	2940	875	1.43		0.8	3132	816	1.33
T5	0.2	3622	793	1.43	T5	0.2	3724	732	1.32
	0.4	3422	830	1.50		0.4	3647	757	1.37
	0.6	3268	868	1.57		0.6	3525	797	1.44
	0.8	3160	904	1.64		0.8	3401	836	1.51
T6	0.2	2098	568	0.45	T6	0.2	2251	512	0.41
	0.4	1913	626	0.50		0.4	2052	579	0.46
	0.6	-	-	-		0.6	-	-	-
	0.8	-	-	-		0.8	-	-	-
T7	0.2	2625	633	0.69	T7	0.2	2784	576	0.63
	0.4	2446	685	0.75		0.4	2591	631	0.69
	0.6	2255	738	0.81		0.6	2379	699	0.76
	0.8	2079	786	0.86		0.8	2190	753	0.82
T8	0.2	3081	698	0.97	T8	0.2	3230	639	0.88
	0.4	2900	744	1.03		0.4	3066	682	0.94
	0.6	2737	791	1.09		0.6	2900	739	1.02
	0.8	2582	834	1.15		0.8	2726	787	1.09
T9	0.2	3263	728	1.10	T9	0.2	3401	668	1.01
	0.4	3078	771	1.17		0.4	3259	705	1.07
	0.6	2923	815	1.23		0.6	3109	757	1.15
	0.8	2780	856	1.30		0.8	2947	802	1.22
T10	0.2	3427	756	1.24	T10	0.2	3552	696	1.14
	0.4	3236	797	1.31		0.4	3435	728	1.20
	0.6	3084	838	1.38		0.6	3299	774	1.27
	0.8	2955	877	1.44		0.8	3151	817	1.34

Down Flow					Horizontal Flow				
Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP
T1	0.2	1954	552	0.40	T1	0.2	2102	495	0.36
	0.4	-	-	-		0.4	1906	566	0.41
	0.6	-	-	-		0.6	-	-	-
	0.8	-	-	-		0.8	-	-	-
	1.0	-	-	-		1.0	-	-	-
	1.2	-	-	-		1.2	-	-	-
	1.4	-	-	-		1.4	-	-	-
	1.6	-	-	-		1.6	-	-	-
T2	0.2	3059	695	0.95	T2	0.2	3208	636	0.87
	0.4	2877	741	1.01		0.4	3043	680	0.93
	0.6	2714	788	1.08		0.6	2874	737	1.01
	0.8	2558	831	1.14		0.8	2699	785	1.07
	1.0	2412	870	1.19		1.0	2519	829	1.13
	1.2	2218	922	1.26		1.2	2312	884	1.21
	1.4	2028	965	1.32		1.4	2103	948	1.30
	1.6	-	-	-		1.6	-	-	-
T3	0.2	3194	716	1.05	T3	0.2	3336	657	0.96
	0.4	3010	760	1.11		0.4	3185	696	1.02
	0.6	2852	805	1.18		0.6	3029	750	1.10
	0.8	2705	847	1.24		0.8	2862	796	1.17
	1.0	2542	885	1.30		1.0	2699	840	1.23
	1.2	2360	934	1.37		1.2	2509	893	1.31
	1.4	-	-	-		1.4	2320	954	1.40
	1.6	-	-	-		1.6	-	-	-
T4	0.2	3622	874	1.77	T4	0.2	-	-	-
	0.4	3458	907	1.83		0.4	-	-	-
	0.6	3380	940	1.90		0.6	-	-	-
	0.8	3380	940	1.90		0.8	3693	861	1.74
	1.0	3265	975	1.97		1.0	3575	905	1.83
	1.2	3138	1008	2.04		1.2	3461	941	1.90
	1.4	2994	1043	2.11		1.4	3345	991	2.00
	1.6	-	-	-		1.6	-	-	-
T5	0.2	3725	901	1.94	T5	0.2	-	-	-
	0.4	3549	931	2.00		0.4	-	-	-
	0.6	3492	961	2.07		0.6	-	-	-
	0.8	3492	961	2.07		0.8	-	-	-
	1.0	3423	996	2.15		1.0	3737	920	1.98
	1.2	3307	1026	2.21		1.2	3633	952	2.05
	1.4	3180	1059	2.28		1.4	3524	999	2.15
	1.6	-	-	-		1.6	-	-	-
T6	0.2	2231	516	0.50	T6	0.2	2410	585	0.57
	0.4	2028	649	0.63		0.4	2385	610	0.59
	0.6	1835	696	0.68		0.6	2243	664	0.65
	0.8	-	-	-		0.8	1983	748	0.73
	1.0	-	-	-		1.0	-	-	-
	1.2	-	-	-		1.2	-	-	-
	1.4	-	-	-		1.4	-	-	-
	1.6	-	-	-		1.6	-	-	-
T7	0.2	2987	684	0.90	T7	0.2	3139	625	0.83
	0.4	2806	731	0.96		0.4	2967	671	0.89
	0.6	2639	779	1.03		0.6	2791	730	0.96
	0.8	2479	823	1.09		0.8	2613	779	1.03
	1.0	2344	862	1.14		1.0	2424	823	1.09
	1.2	2144	915	1.21		1.2	2207	880	1.16
	1.4	1953	959	1.27		1.4	1987	944	1.25
	1.6	-	-	-		1.6	-	-	-
T8	0.2	3456	761	1.27	T8	0.2	3578	701	1.17
	0.4	3264	801	1.34		0.4	3467	732	1.22
	0.6	3112	842	1.40		0.6	3333	778	1.30
	0.8	2986	881	1.47		0.8	3188	820	1.37
	1.0	2812	918	1.53		1.0	3051	863	1.44
	1.2	2652	961	1.60		1.2	2894	910	1.52
	1.4	2476	1001	1.67		1.4	2739	967	1.61
	1.6	-	-	-		1.6	-	-	-
T9	0.2	3569	838	1.66	T9	0.2	3868	769	1.52
	0.4	3500	874	1.73		0.4	3839	787	1.55
	0.6	3434	910	1.80		0.6	3727	820	1.62
	0.8	3325	947	1.87		0.8	3631	856	1.69
	1.0	3240	982	1.94		1.0	3513	900	1.78
	1.2	3128	1013	2.00		1.2	3394	937	1.85
	1.4	3040	1049	2.07		1.4	3274	987	1.95
	1.6	-	-	-		1.6	-	-	-
T10	0.2	3893	882	1.99	T10	0.2	4122	792	1.79
	0.4	3766	916	2.07		0.4	4001	828	1.87
	0.6	3687	945	2.14		0.6	3881	865	1.96
	0.8	3584	977	2.21		0.8	3800	910	2.06
	1.0	3501	1006	2.28		1.0	3594	930	2.10
	1.2	3392	1042	2.36		1.2	3519	974	2.20
	1.4	3289	1068	2.42		1.4	3391	1007	2.28
	1.6	-	-	-		1.6	-	-	-

Note:

- Taps T1 and T2 are for first stage of cooling only. Taps T6 and T7 are for first stage of heating only. Refer to page 11 for speed tap selection.
 - Shaded area are not recommended for cooling or heating operation.
 - Airflow table includes resistance for base unit only with 2" clean air filters in place.
- Any Additional air resistance caused by factory or field installed options or accessories must be added to the ESP in order to select the correct speed tap.

APPENDIX A BLOWER PERFORMANCE TABLES

7.5 Ton
225 MBH Gas Heat Exchanger
High Static Direct Drive
Models: DHG0903WH, DHG0904WH, DHG0907WH

Down Flow					Horizontal Flow					Down Flow					Horizontal Flow				
Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP
T1	0.2	1954	552	0.40	T1	0.2	2102	495	0.36	T6	0.2	2569	626	0.66	T6	0.2	2728	568	0.60
	0.4	-	-	-		0.4	1906	566	0.41		0.4	2389	678	0.72		0.4	2533	625	0.66
	0.6	-	-	-		0.6	-	-	-		0.6	2194	732	0.78		0.6	2314	695	0.74
	0.8	-	-	-		0.8	-	-	-		0.8	2015	780	0.83		0.8	2125	749	0.79
	1.0	-	-	-		1.0	-	-	-		1.0	1974	821	0.87		1.0	1875	792	0.84
	1.2	-	-	-		1.2	-	-	-		1.2	-	-	-		1.2	-	-	-
	1.4	-	-	-		1.4	-	-	-		1.4	-	-	-		1.4	-	-	-
	1.6	-	-	-		1.6	-	-	-		1.6	-	-	-		1.6	-	-	-
	1.8	-	-	-		1.8	-	-	-		1.8	-	-	-		1.8	-	-	-
	2.0	-	-	-		2.0	-	-	-		2.0	-	-	-		2.0	-	-	-
T2	0.2	3527	774	1.34	T2	0.2	3642	714	1.23	T7	0.2	-	-	-	T7	0.2	-	-	-
	0.4	3332	814	1.40		0.4	3544	743	1.28		0.4	3048	766	1.14		0.4	-	-	-
	0.6	3180	853	1.47		0.6	3415	786	1.36		0.6	2892	811	1.21		0.6	3074	754	1.13
	0.8	3061	891	1.54		0.8	3278	827	1.43		0.8	2747	852	1.27		0.8	2910	800	1.19
	1.0	2889	927	1.60		1.0	3147	870	1.50		1.0	2581	890	1.33		1.0	2751	843	1.26
	1.2	2735	969	1.67		1.2	2998	915	1.58		1.2	2402	938	1.40		1.2	2566	895	1.34
	1.4	2563	1008	1.74		1.4	2852	971	1.68		1.4	2216	980	1.46		1.4	2382	956	1.43
	1.6	2392	1050	1.81		1.6	2666	1010	1.74		1.6	2043	1023	1.53		1.6	2200	998	1.49
	1.8	2237	1086	1.87		1.8	2482	1060	1.83		1.8	1893	1062	1.58		1.8	2005	1047	1.56
	2.0	2077	1119	1.93		2.0	2323	1096	1.89		2.0	-	-	-		2.0	1836	1083	1.62
T3	0.2	3194	716	1.05	T3	0.2	3336	657	0.96	T8	0.2	3744	819	1.58	T8	0.2	3828	758	1.46
	0.4	3010	760	1.11		0.4	3185	696	1.02		0.4	3536	854	1.64		0.4	3784	778	1.50
	0.6	2852	805	1.18		0.6	3029	750	1.10		0.6	3378	889	1.71		0.6	3669	813	1.57
	0.8	2705	847	1.24		0.8	2862	796	1.17		0.8	3286	924	1.78		0.8	3564	850	1.64
	1.0	2542	885	1.30		1.0	2699	840	1.23		1.0	3144	960	1.85		1.0	3444	894	1.72
	1.2	2360	934	1.37		1.2	2509	893	1.31		1.2	3009	995	1.92		1.2	3320	933	1.80
	1.4	-	-	-		1.4	2320	954	1.40		1.4	2855	1031	1.99		1.4	3197	984	1.89
	1.6	-	-	-		1.6	-	-	-		1.6	2687	1072	2.06		1.6	3023	1020	1.96
	1.8	-	-	-		1.8	-	-	-		1.8	2526	1107	2.13		1.8	2852	1071	2.06
	2.0	-	-	-		2.0	-	-	-		2.0	-	-	-		2.0	2703	1107	2.13
T4	0.2	-	-	-	T4	0.2	-	-	-	T9	0.2	3998	907	2.14	T9	0.2	-	-	-
	0.4	-	-	-		0.4	-	-	-		0.4	3905	939	2.22		0.4	-	-	-
	0.6	3769	961	2.22		0.6	-	-	-		0.6	3812	972	2.29		0.6	4100	872	2.06
	0.8	3645	1000	2.32		0.8	-	-	-		0.8	3693	1005	2.37		0.8	4086	901	2.12
	1.0	3496	1042	2.42		1.0	-	-	-		1.0	3617	1041	2.46		1.0	3955	944	2.23
	1.2	3398	1073	2.49		1.2	3674	995	2.31		1.2	3539	1069	2.52		1.2	3864	970	2.29
	1.4	3293	1099	2.55		1.4	3566	1035	2.40		1.4	3478	1098	2.59		1.4	3758	1013	2.39
	1.6	3065	1137	2.64		1.6	3459	1067	2.48		1.6	3376	1127	2.66		1.6	3659	1042	2.46
	1.8	2958	1163	2.70		1.8	3361	1097	2.55		1.8	3271	1162	2.74		1.8	3525	1096	2.59
	2.0	2810	1208	2.80		2.0	3261	1134	2.63		2.0	3111	1208	2.85		2.0	3406	1132	2.67
T5	0.2	-	-	-	T5	0.2	-	-	-	T10	0.2	-	-	-	T10	0.2	-	-	-
	0.4	-	-	-		0.4	-	-	-		0.4	-	-	-		0.4	-	-	-
	0.6	-	-	-		0.6	-	-	-		0.6	-	-	-		0.6	-	-	-
	0.8	-	-	-		0.8	-	-	-		0.8	-	-	-		0.8	-	-	-
	1.0	3754	1063	2.66		1.0	-	-	-		1.0	4156	1104	3.08		1.0	-	-	-
	1.2	3662	1090	2.73		1.2	-	-	-		1.2	4032	1128	3.14		1.2	-	-	-
	1.4	3578	1115	2.80		1.4	3795	1047	2.62		1.4	3908	1151	3.21		1.4	4040	1074	2.99
	1.6	3519	1137	2.84		1.6	3706	1077	2.69		1.6	3784	1175	3.27		1.6	4023	1106	3.08
	1.8	3325	1166	2.91		1.8	3641	1114	2.79		1.8	3660	1198	3.34		1.8	3859	1138	3.17
	2.0	3161	1203	3.01		2.0	3565	1145	2.86		2.0	3536	1222	3.40		2.0	3812	1167	3.25

Note:

- Taps T1 and T2 are for first stage of cooling only. Taps T6 and T7 are for first stage of heating only. Refer to page 11 for speed tap selection.
- Shaded area are not recommended for cooling or heating operation.
- Airflow table includes resistance for base unit only with 2" clean air filters in place.
Any Additional air resistance caused by factory or field installed options or accessories must be added to the ESP in order to select the correct speed tap.

APPENDIX A BLOWER PERFORMANCE TABLES

8.5 Ton
130 MBH Gas Heat Exchanger
Standard Static Direct Drive
Models: DHG1023DL, DHG1024DL, DHG1027DL

8.5 Ton
130 MBH Gas Heat Exchanger
Medium Static Direct Drive
Models: DHG1023LL, DHG1024LL, DHG1027LL

Down Flow					Horizontal Flow				
Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP
T1	0.2	1714	496	0.32	T1	0.2	1856	423	0.27
	0.4	-	-	-		0.4	-	-	-
	0.6	-	-	-		0.6	-	-	-
	0.8	-	-	-		0.8	-	-	-
T2	0.2	2365	599	0.61	T2	0.2	2671	503	0.51
	0.4	2208	649	0.66		0.4	2492	568	0.57
	0.6	2048	695	0.70		0.6	2335	628	0.64
	0.8	-	-	-		0.8	2027	690	0.70
T3	0.2	2798	671	0.88	T3	0.2	3144	564	0.74
	0.4	2687	713	0.93		0.4	3005	607	0.79
	0.6	-	-	-		0.6	2824	671	0.88
	0.8	-	-	-		0.8	2661	722	0.95
T4	0.2	3522	795	1.51	T4	0.2	3921	655	1.25
	0.4	3389	828	1.58		0.4	3775	700	1.33
	0.6	3240	865	1.65		0.6	3630	745	1.42
	0.8	3083	898	1.71		0.8	3449	786	1.50
T5	0.2	3830	847	1.83	T5	0.2	4210	694	1.49
	0.4	3702	881	1.90		0.4	4071	737	1.59
	0.6	3563	915	1.97		0.6	3942	777	1.67
	0.8	3399	946	2.04		0.8	3746	819	1.76
T6	0.2	1889	528	0.38	T6	0.2	2056	443	0.32
	0.4	1827	589	0.43		0.4	1887	522	0.38
	0.6	1445	667	0.48		0.6	1702	591	0.43
	0.8	-	-	-		0.8	1327	707	0.51
T7	0.2	2193	571	0.53	T7	0.2	2445	487	0.45
	0.4	2090	635	0.59		0.4	2283	556	0.51
	0.6	1959	698	0.64		0.6	2098	617	0.57
	0.8	1704	763	0.70		0.8	1828	688	0.64
T8	0.2	2489	616	0.69	T8	0.2	2760	545	0.61
	0.4	2351	679	0.76		0.4	2630	587	0.66
	0.6	2235	729	0.82		0.6	2487	641	0.72
	0.8	2050	780	0.87		0.8	2264	701	0.79
T9	0.2	2860	679	0.94	T9	0.2	3234	581	0.80
	0.4	2699	735	1.02		0.4	3043	626	0.87
	0.6	2554	774	1.07		0.6	2866	675	0.93
	0.8	2446	817	1.13		0.8	2677	729	1.01
T10	0.2	3182	743	1.22	T10	0.2	3655	604	0.99
	0.4	3041	788	1.30		0.4	3427	663	1.09
	0.6	2953	821	1.35		0.6	3210	714	1.17
	0.8	2797	868	1.43		0.8	3066	759	1.25

Down Flow					Horizontal Flow				
Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP
T1	0.2	1714	496	0.32	T1	0.2	1856	423	0.27
	0.4	-	-	-		0.4	-	-	-
	0.6	-	-	-		0.6	-	-	-
	0.8	-	-	-		0.8	-	-	-
	1.0	-	-	-		1.0	-	-	-
	1.2	-	-	-		1.2	-	-	-
T2	0.2	3114	722	1.12	T2	0.2	3458	603	0.93
	0.4	2977	761	1.18		0.4	3292	658	1.02
	0.6	2825	800	1.24		0.6	3155	700	1.08
	0.8	2634	846	1.31		0.8	3007	747	1.16
	1.0	2474	878	1.36		1.0	2844	797	1.23
	1.2	2236	931	1.44		1.2	2681	836	1.29
T3	0.2	2798	671	0.88	T3	0.2	3144	564	0.74
	0.4	2687	713	0.93		0.4	3005	607	0.79
	0.6	-	-	-		0.6	2824	671	0.88
	0.8	-	-	-		0.8	2661	722	0.95
	1.0	-	-	-		1.0	-	-	-
	1.2	-	-	-		1.2	-	-	-
T4	0.2	3997	874	1.99	T4	0.2	4200	754	1.71
	0.4	3869	909	2.07		0.4	4070	791	1.80
	0.6	3740	942	2.14		0.6	3879	838	1.91
	0.8	3578	975	2.22		0.8	3699	874	1.99
	1.0	3417	1009	2.29		1.0	3535	923	2.10
	1.2	3257	1039	2.36		1.2	3341	946	2.15
T5	0.2	4125	958	2.46	T5	0.2	4194	863	2.22
	0.4	3997	992	2.55		0.4	4012	898	2.31
	0.6	3806	1021	2.63		0.6	3879	955	2.45
	0.8	3701	1056	2.72		0.8	3683	967	2.49
	1.0	3547	1081	2.78		1.0	3535	923	2.10
	1.2	3374	1101	2.83		1.2	3341	946	2.15
T6	0.2	1863	520	0.37	T6	0.2	2029	440	0.31
	0.4	1748	587	0.42		0.4	1855	519	0.37
	0.6	1403	671	0.48		0.6	1666	593	0.42
	0.8	-	-	-		0.8	-	-	-
	1.0	-	-	-		1.0	-	-	-
	1.2	-	-	-		1.2	-	-	-
T7	0.2	2398	602	0.64	T7	0.2	2645	528	0.56
	0.4	2270	665	0.70		0.4	2515	577	0.61
	0.6	2161	719	0.76		0.6	2360	634	0.67
	0.8	1948	774	0.82		0.8	2137	694	0.74
	1.0	1818	821	0.87		1.0	1801	757	0.80
	1.2	1520	901	0.95		1.2	1532	814	0.86
T8	0.2	2398	602	0.64	T8	0.2	2645	528	0.56
	0.4	2270	665	0.70		0.4	2515	577	0.61
	0.6	2161	719	0.76		0.6	2360	634	0.67
	0.8	1948	774	0.82		0.8	2137	694	0.74
	1.0	1818	821	0.87		1.0	1801	757	0.80
	1.2	-	-	-		1.2	-	-	-
T9	0.2	3203	753	1.25	T9	0.2	3664	603	1.01
	0.4	3097	795	1.32		0.4	3429	666	1.11
	0.6	2992	833	1.39		0.6	3240	718	1.20
	0.8	2871	874	1.46		0.8	3088	761	1.27
	1.0	2716	917	1.53		1.0	2883	808	1.35
	1.2	2580	951	1.59		1.2	2651	857	1.43
T10	0.2	3879	753	1.72	T10	0.2	4200	754	1.71
	0.4	3777	802	1.83		0.4	4070	791	1.80
	0.6	3658	823	1.91		0.6	3879	838	1.91
	0.8	3532	860	2.00		0.8	3699	874	1.99
	1.0	3416	898	2.08		1.0	3535	923	2.10
	1.2	3280	938	2.17		1.2	3341	946	2.15

Note:

- Taps T1 and T2 are for first stage of cooling only. Taps T6 and T7 are for first stage of heating only. Refer to page 11 for speed tap selection.
 - Shaded area are not recommended for cooling or heating operation.
 - Airflow table includes resistance for base unit only with 2" clean air filters in place.
- Any Additional air resistance caused by factory or field installed options or accessories must be added to the ESP in order to select the correct speed tap.

APPENDIX A BLOWER PERFORMANCE TABLES

8.5 Ton
130 MBH Gas Heat Exchanger
High Static Direct Drive
Models: DHG1023WL, DHG1024WL, DHG1027WL

Down Flow					Horizontal Flow					Down Flow					Horizontal Flow				
Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP	Speed Tap	ESP	CFM	RPM	BHP
T1	0.2	1714	496	0.32	T1	0.2	1856	423	0.27	T6	0.2	2398	602	0.64	T6	0.2	2645	528	0.56
	0.4	-	-	-		0.4	-	-	-		0.4	2270	665	0.70		0.4	2515	577	0.61
	0.6	-	-	-		0.6	-	-	-		0.6	2161	719	0.76		0.6	2360	634	0.67
	0.8	-	-	-		0.8	-	-	-		0.8	1948	774	0.82		0.8	2137	694	0.74
	1.0	-	-	-		1.0	-	-	-		1.0	1818	821	0.87		1.0	1801	757	0.80
	1.2	-	-	-		1.2	-	-	-		1.2	1520	901	0.95		1.2	1532	814	0.86
	1.4	-	-	-		1.4	-	-	-		1.4	-	-	-		1.4	-	-	-
	1.6	-	-	-		1.6	-	-	-		1.6	-	-	-		1.6	-	-	-
	1.8	-	-	-		1.8	-	-	-		1.8	-	-	-		1.8	-	-	-
T2	0.2	3674	820	1.66	T2	0.2	4061	675	1.37	T7	0.2	-	-	-	T7	0.2	-	-	-
	0.4	3544	853	1.73		0.4	3919	720	1.46		0.4	2729	741	1.06		0.4	-	-	-
	0.6	3402	889	1.80		0.6	3792	761	1.54		0.6	2574	789	1.13		0.6	-	-	-
	0.8	3235	920	1.86		0.8	3610	802	1.62		0.8	2447	824	1.18		0.8	2767	734	1.05
	1.0	3055	956	1.94		1.0	3427	845	1.71		1.0	2310	847	1.21		1.0	2539	781	1.12
	1.2	2891	986	2.00		1.2	3261	894	1.81		1.2	2126	857	1.22		1.2	2280	837	1.20
	1.4	2708	1011	2.05		1.4	3042	919	1.86		1.4	1858	948	1.35		1.4	2083	892	1.27
	1.6	2499	1071	2.17		1.6	2865	962	1.95		1.6	1746	1021	1.46		1.6	1834	946	1.35
	1.8	2307	1103	2.23		1.8	2649	1020	2.06		1.8	1577	1075	1.54		1.8	1477	1014	1.45
T3	0.2	2798	671	0.88	T3	0.2	3144	564	0.74	T8	0.2	2947	695	1.01	T8	0.2	3354	587	0.85
	0.4	2687	713	0.93		0.4	3005	607	0.79		0.4	2787	749	1.09		0.4	3145	635	0.92
	0.6	-	-	-		0.6	2824	671	0.88		0.6	2649	786	1.14		0.6	2952	685	0.99
	0.8	-	-	-		0.8	2661	722	0.95		0.8	2539	829	1.20		0.8	2776	736	1.07
	1.0	-	-	-		1.0	-	-	-		1.0	2287	872	1.26		1.0	2573	785	1.14
	1.2	-	-	-		1.2	-	-	-		1.2	2202	917	1.33		1.2	2318	840	1.22
	1.4	-	-	-		1.4	-	-	-		1.4	1896	972	1.41		1.4	2119	896	1.30
	1.6	-	-	-		1.6	-	-	-		1.6	-	-	-		1.6	1875	950	1.38
	1.8	-	-	-		1.8	-	-	-		1.8	-	-	-		1.8	-	-	-
T4	0.2	4166	907	2.22	T4	0.2	-	-	-	T9	0.2	3704	751	1.59	T9	0.2	-	-	-
	0.4	4029	939	2.30		0.4	-	-	-		0.4	3606	786	1.67		0.4	-	-	-
	0.6	3906	969	2.37		0.6	4261	812	1.99		0.6	3491	903	1.92		0.6	-	-	-
	0.8	3717	1003	2.45		0.8	4051	849	2.08		0.8	3366	951	2.02		0.8	3761	817	1.73
	1.0	3544	1037	2.54		1.0	3857	885	2.17		1.0	3247	981	2.08		1.0	3588	854	1.81
	1.2	3394	1064	2.60		1.2	3718	922	2.25		1.2	3108	1015	2.15		1.2	3342	894	1.90
	1.4	3219	1092	2.67		1.4	3536	957	2.34		1.4	2970	1050	2.23		1.4	3145	938	1.99
	1.6	3060	1121	2.74		1.6	3369	993	2.43		1.6	2833	1082	2.30		1.6	2888	981	2.08
	1.8	2887	1148	2.81		1.8	3199	1028	2.52		1.8	2661	1117	2.37		1.8	2688	1022	2.17
T5	0.2	2721	1176	2.88	T5	0.2	3048	1064	2.60	T10	0.2	2477	1179	2.50	T10	0.2	2433	1065	2.26
	0.4	-	-	-		0.4	-	-	-		0.4	-	-	-		0.4	-	-	-
	0.6	4221	1022	2.85		0.6	-	-	-		0.6	-	-	-		0.6	-	-	-
	0.8	4047	1052	2.93		0.8	-	-	-		0.8	-	-	-		0.8	-	-	-
	1.0	3889	1084	3.02		1.0	-	-	-		1.0	3867	1078	3.00		1.0	-	-	-
	1.2	3734	1109	3.09		1.2	4145	950	2.65		1.2	3743	1109	3.09		1.2	-	-	-
	1.4	3555	1133	3.16		1.4	3925	986	2.75		1.4	3606	1138	3.17		1.4	-	-	-
	1.6	3396	1162	3.24		1.6	3783	1018	2.84		1.6	3474	1165	3.25		1.6	3767	1022	2.85
	1.8	3210	1186	3.30		1.8	3606	1051	2.93		1.8	3340	1193	3.32		1.8	3581	1060	2.95
	2.0	3041	1211	3.37		2.0	3415	1085	3.02		2.0	3204	1219	3.40		2.0	3370	1096	3.05

- Note:**
- Taps T1 and T2 are for first stage of cooling only. Taps T6 and T7 are for first stage of heating only. Refer to page 11 for speed tap selection.
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