

SHORE DISTRIBUTORS INC. 807 Brown St. Salisbury MD 21804 PH# 410-749-3121

Gas Furnace Diagnostic Form Contractor: _____ Job Name: _____

Manufacturer _____
Unit M/N _____
Unit Serial Number _____

<p>Unit completed full operating cycle? Y <input type="checkbox"/> N <input type="checkbox"/> Combustion Ventilation Air Test Pass / Fail Furnace <input type="checkbox"/> 60% <input type="checkbox"/> 70% <input type="checkbox"/> 80% <input type="checkbox"/> 90 %</p> <p>Venting Vent proper size Y <input type="checkbox"/> N <input type="checkbox"/> Correct vent pitch Y <input type="checkbox"/> N <input type="checkbox"/> Blockages/restrictions Y <input type="checkbox"/> N <input type="checkbox"/> Corrosion/pin holes Y <input type="checkbox"/> N <input type="checkbox"/> Condition of liner Good <input type="checkbox"/> Poor <input type="checkbox"/> Number of elbows _____ Established draft within 5 minutes Y <input type="checkbox"/> N <input type="checkbox"/></p> <p>3 Part Heat Exchanger Test Type _____</p> <p>Visual Inspection <i>Pass / Fail</i> Blower Test <i>Pass / Fail</i> Chemical Test <i>Pass / Fail</i></p> <p>Thermostat Type _____ Model # _____ Location _____ Anticipator Setting _____ Level Y <input type="checkbox"/> N <input type="checkbox"/></p> <p>Filter Size _____ Good <input type="checkbox"/> Poor <input type="checkbox"/> Replaced <input type="checkbox"/> Perm <input type="checkbox"/> Filter door in place</p> <p>Blower Voltage _____ Amps _____ Clean <input type="checkbox"/> Aligned <input type="checkbox"/> Bearings Good <input type="checkbox"/> Poor <input type="checkbox"/> Belt Good <input type="checkbox"/> Poor <input type="checkbox"/></p>	<p>Burner Compartment Btu input _____ Burners clean Y <input type="checkbox"/> N <input type="checkbox"/> Carry over clean Y <input type="checkbox"/> N <input type="checkbox"/> Incoming Pressure _____"WC Manifold Pressure _____"WC Pilot Clean Y <input type="checkbox"/> N <input type="checkbox"/> Flame Rod μ amps _____ T-couple/PP MV _____</p> <p>Operation Temperature Rise Range _____ to _____ Actual Temperature Rise _____ Measured Heating CFM _____ Calculated Btuh Output _____ Total External Static Pressure _____"wc Supply Static _____"wc Return Static _____"wc</p> <p>Limit Circuit High Limit C/O _____°F _____°F Actual C/O _____°F C/I _____°F Pressure Switch C/O _____"WC Actual C/O _____"WC Auxiliary Pressure Switch G <input type="checkbox"/> P <input type="checkbox"/> Spill Switch G <input type="checkbox"/> P <input type="checkbox"/> C/O _____Min Roll Out Switch s G <input type="checkbox"/> P <input type="checkbox"/></p> <p>Combustion Analysis Ambient CO _____ Stack CO _____ Combustion air temperature _____ CO₂ _____ O₂ _____ Excess Air _____ % Stack Temperature _____°F Combustion Efficiency _____ % Draft _____"wc</p>
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CO/Combustion Measurements [] Vent Pipe Size [] ft. Length [] LP
 Draft [] "wc. Oxygen [] % Flue Temp. [] F. Plenum Temp. [] F
 Light off CO [] ppm Run CO [] ppm Shutdown CO [] ppm

COMBUSTION ANALYSIS REPORT CONDENSING FURNACE

	LIGHT OFF	DESIGN	TEST 1	TEST 2	TEST 3	SHUT OFF	FINAL TEST
Carbon Monoxide		0-99					
Oxygen		6%-9%					
Flue Gas Temp		120-140					
Supply Air Temp		130-140					

COMBUSTION DIAGNOSTIC CHART - CONDENSING FURNACE

DEFECTIVE CONDITION	CO PPM	CO ACTION	OXYGEN ACTION	SUPPLY PLENUM TEMP	FLUE GAS TEMP	FLUE DRAFT	BURNERS AFFECTED	FINAL ASSESS METHOD
OVERFIRED	Over 100ppm	Rising	Falling	Over 140°	Over 140°		Selective	Measure
UNDERFIRED	+100 or 0-10	Stable	Over 9%	Under 130°	Under 120°		Selective	Measure
VENTING	Rising	Rising	Falling			High	Selective	Measure
COMBUSTION AIR	Rising	Rising	Falling			Low	All	Measure
DIRT OR RUST	Over 100	Stable	6%-9%				Selective	Visual
ALIGNMENT	Over 100	Stable	6%-9%				Selective	Visual
MECHANICAL	Over 100	Stable	6%-9%				Selective	Visual
HEAT TRANSFER	11-99 ppm	Stable	6%-9%	Over 140°	Over 140°		All	Test/Visual

All recommended temperatures are based on a return air temperature of 70 Degrees
 Airflow should be 150 CFM for every 10,000 BTU input. Low rise =High CFM. High rise = Low CFM.
 Flue gas temperature should be near supply plenum air temperature.
 Supply plenum temperature should be return air temperature plus 60° - 70°.

FOLLOWING TEST ARE NEEDED: LIGHT OFF, AND AT LEAST THREE TEST AND AN SHUT DOWN. SEE TOP OF CHART. ONCE REPAIRS ARE COMPLETED DO A FINAL TEST TO PROVE REPAIRS?

READINGS INTERPOLATIONS:

RISING: INDICATES THE VALUES ON ANALYZER ARE GOING HIGHER THAN ORIGINAL READINGS.

FALLING: INDICATES THE VALUES ON ANALYZER ARE GOING LOWER THAN ORIGINAL READINGS.

STABLE: INDICATES THE VALUES HAVE NOT MOVE IN OVER 2 MINUTES WITHIN 2% OF ORGINAL READINGS.

SELECTIVE: USING ONLY ONE CHAMBER TO DO SPECIFIC READINGS. READINGS ARE ALWAYS TAKEN BELOW THE BURNER IN THAT CHAMBER.

STANDARDS FOR SHUT DOWN AND RED TAGGING THE EQUIPMENT

UNVENTED HEATERS PRODUCING MORE THAN 400ppm

VENTED WATER HEATERS PRODUCING MORE THAN 200ppm

UNVENTED APPLIANCES EXCEEDING 200ppm AND VENTING INTO BUILDING, MUST BE DISABLED AND TAGGED.

RISING CO IS ANOTHER REASON FOR RED TAG A UNIT.

MAY REMAIN IF VENTING AND POSING NO IMMEDIATE DANGER AND A LOW LEVEL CO MONITOR IS PRESENT.

NOTE: RED TAGGING WHEN ISSUED THE FOLLOWING MUST BE DONE; ONE ATTACHED TO THE EQUIPMENT OUTLINING THE REASON FOR SHUT DOWN, ONE HANDED TO THE CUSTOMER AND ONE IS RETURNED TO THE SERVICE FILE AT THE OFFICE.

ONLY 9ppm ASHRAE STANDARD FOR ALLOWABLE SPILLAGE FROM VENTED APPLIANCES, INDOORS, FOR 8 HOURS EXPOSURE DAILY. ADVISE OCCUPANTS.

AT 30-35 ppm, MUST VENTILATE BUILDING.

100ppm IMMEDIATE EVACUATION OF THE BUILDING IS A MUST,

“NO CO ppm IS ALWAYS THE BEST, BUT IF THERE CO ALWAYS NOTIFY THE HOMEOWNER OF WHAT THE NUMBER IS AND LOG THOSE NUMBERS ON A INVOICE WITH THE CUSTOMERS INTIALS.