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TECHNICAL SERVICE BULLETIN

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SUBJECT: SUFFICIENT DRAFT IS A NECESSITY

Draft depends on filling the chimney with hot gases (from 400° to 700° F) which flow upwards because they weigh less than a corresponding column of air outside the chimney. In essence, draft is the thermal effect created by the difference in density of the vertical column of warm gases inside the stack, as opposed to the column of cold air outside the stack.

It is an absolute necessity to have sufficient draft to exhaust the products of combustion from the heating unit and chimney. There are many items to check when insufficient draft occurs. The items listed below will serve as a useful check. These things are:

1. Clean chimneys.
2. Clean smoke pipes.
3. Clean tubes (in the case of boilers).
4. Check to see that the smoke pipe is not inserted into the chimney too far. It should not go beyond the inner wall of the flue. Make sure flue opening has been cut into chimney.
5. Seal air leaks found in heating unit, chimney, smoke pipes, etc.
6. Top of chimney should be at least 3 feet over top of the highest point of the roof.
7. Filling base of chimney up to the point of smoke, pipe entrance with sand, vermiculite or some other such material will help poor draft conditions.
8. Smoke pipe should always rise toward the chimney.
9. When possible, keep draft control the same size as smoke pipe.
10. Check draft control to make sure it is working properly. Inconsistent draft will cause a fluctuating flame front or a positive pressure over the fire which could cause pulsation.

11. Use a good draft gauge to be sure you always have negative draft over the fire.

12. When possible, keep heating unit as close as possible to chimney.

13. Make sure that the draft control is plumb and level.

14. If downdraft or insufficient draft still occurs after checking the above conditions, a draft inducer installed into the smoke pipe should help correct the condition. Another alternative would be to try a downdraft hood on top of the chimney.

The general procedure on setting draft is that .02" water column negative pressure be held over the fire. Many units can be run successfully and efficiently with less draft. It is up to THE SERVICE PERSON to determine the best conditions.