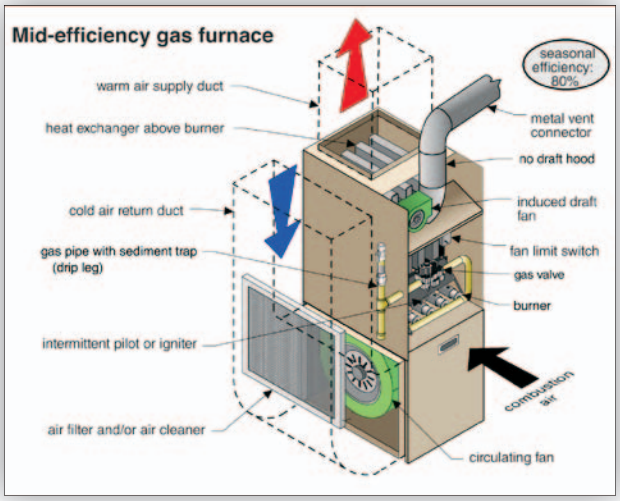
Mid-efficiency systems are not much more efficient when operating than conventional systems. However, their seasonal efficiency is much higher – typically 80%. This is a 20% improvement over conventional systems. We are only losing 20% of the heat from the fuel. Mid-efficiency sytems are being replaced with high efficiency systems in the first part of the 21st century.



DESCRIPTION

5.9.3 High Efficiency Systems: High efficiency furnaces go a step further. They are also known as condensing furnaces because the exhaust gases are so cool they condense water. (One of the main products of combustion of burning natural gas is water.) These furnaces can withstand the slightly corrosive condensate and have a drainage system to collect it and carry it away.

While a conventional furnace has a single heat exchanger, high efficiency units may have two or three heat exchangers. High efficiency systems keep the hot exhaust gases in contact with the heat exchanger longer so that more heat is transferred to the house air or water.

High efficiency systems also limit the off-cycle losses, just like mid-efficiency systems. They have a seasonal efficiency in the 90% range, with some over 95%.

Since there are more components in a high efficiency system, there is more to go wrong and repair and maintenance costs are typically higher than a conventional furnace. At the very least, annual servicing is required. Many believe their life expectancy is also shorter.