

Consumers Digest

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HOME-HEATING GUIDE

HIGH-EFFICIENCY

House Warming

Best Buys in Furnaces, Boilers, Heat Pumps, Fireplaces & Portable Heaters

Whether it's a central unit for your entire house or a portable heater that you can move from room to room, today's newest units are better than ever at warming the cockles of your heart (and other parts) and keeping the heat off your monthly bills.

By James J. Hodl

Unless you're a penguin or a polar bear, the thought of bitter temperatures during the upcoming winter season can make you shiver. But you can mitigate the cold by switching on a central heating unit that's more efficient than ever before and achieve extra toastiness next to a fireplace that delivers better realism along with the heat, or a portable heater.

And, as we enter "flue" season, it's comforting to know that the broad selection of home-heating equipment that is available to warm you won't burn a hole in your wallet.

HEAT CENTER. The primary unit in any home-heating strategy is, obviously, the central system—furnace, boiler or heat pump. The good news is that the top units in all three categories continue to gain in efficiency, which translates into reduced utility bills.

Two years ago (when we last reviewed heating equipment), the highest annual fuel utilization efficiency (AFUE) rating for a gas furnace was 96.7; today models by Nordyne and York top that figure. York achieves an industry-leading AFUE rating of 98.0 for models that are sold under the Coleman, Luxaire and York brands. And nearly every brand that's on the market has at least one model that is in the super-high-efficient range, which means that it has an AFUE rating of 95.0 or above.

The improvement among gas boilers has been more dramatic. In 2008, only 11 boiler brands reached an AFUE rating of 95.0, with a top rating of 96.0. Today, 18 brands hit 95.0 and six beat 96.0. A Heat Transfer model is the new leader at 98.0. (Unfortunately, the main problem that affects oil furnaces and boilers—too much sulfur in the fuel oil—hasn't been solved. So efficiencies remain about where they were 2 years ago and continue to lag those of gas models.)

And heat pumps finally broke through the long-standing efficiency ceiling of 19 SEER (seasonal energy efficiency ratio). Nordyne in 2009 brought to market heat pumps that achieve 22 SEER. (They're sold under the Broan, Frigidaire, Maytag, NuTone, Tappan and Westinghouse brands.)

How? Nordyne brought the same technology that it uses in its super-high-efficiency air conditioners to its heat pumps: It replaced a heat pump's traditional compressor with an inverter-driven compressor that varies its operating speed according to indoor temperature. Energy is saved because, instead of running only full speed or off, the speed varies, so only the amount of electricity that is required to maintain the set temperature is consumed. This is similar to the modulating technology that is used in furnaces and boilers—and it's expensive. Nordyne's heat

pumps start at the high end of the price scale—around \$6,000.

CLEARING THE AIR. With efficiency in furnaces, boilers and heat pumps just about maxed out, manufacturers are touting new features as a way to stand out from the crowd. For example, the variable-speed blower that is in four Lennox furnace models is programmed to build slowly to full speed as it starts to deliver warmth and then slowly wind down when the furnace cycles off. This process minimizes the cold drafts that some people feel at the end of cycles, Ken Ely of Lennox explains. You'll pay at least \$2,700 for a furnace that has this feature.

**prime
the
pump**

Heat pumps broke through their long-standing efficiency ceiling of 19 SEER.

Meanwhile, manufacturers increasingly are adding LCD display modules to gas and oil boilers. These useful panels not only trim the time that it takes a contractor to install the boiler—and, theoretically, reduce installation cost—but they also display status reports on operation and provide fault codes that will help with service if something goes wrong. You can expect to spend at least \$1,700 for a boiler that has this diagnostic/service-alert feature.

And are you ready for solar-powered heating? Systems that add solar panels to power heat pumps and air conditioners have been around for years, but Lennox is attempting to bring these systems out of the hobbyist category with its SunSource Home Energy System, which was introduced in May. Roof-mounted solar panels (\$700 per panel) are linked to the compressor of a heat pump (the XP17, and also the new XP21 that is due this fall). On sunny days, Lennox says, the panels generate enough electricity to run not only the heat pump but also other household appliances if they are connected to the home's electrical system. However, de-

pending on the local climate, you might need as many as three panels to power your heat pump, which would make solar power a \$2,100 option on top of a roughly \$4,000 purchase.

FANNING THE FLAMES. As good as furnaces, boilers and heat pumps are at warming a house, they don't match the feeling that you get when you put your feet up by the fire after a long, cold day. And you'll be happy to know that fireplace manufacturers are striving to bring energy efficiency to their products. A growing number of gas fireplaces can reduce heat output in less chilly weather, like a furnace or boiler, through the use of three-part burners.

To save energy when maximum heating ability isn't needed in cool but not cold winter periods, you can shut down a burner's two side ports. You now can find burners that can be turned off to boost energy savings on gas log models that cost as little as \$300.

Modulating technology—another loan from the furnace and boiler industry—also is invading the fireplace market. Premium models from Empire Comfort Systems, Enviro, Fireplace Xtordinaire, Kozy Heat, Napoleon and Valor have modulating gas valves that automatically adjust the fire and heat output to provide a constant room temperature while still presenting a beautiful fire display.

And the look of the fire that is produced by today's fireplaces continues to improve. For example, gas log manufacturers have made great strides in producing artificial logs that look realistic, even up close. Numerous types of wood now are represented, and the "logs" often are stacked in different ways—neatly, randomly or even piled up like a campfire.

However, realism continues to be an issue for electric fireplaces. These glori-

fied space heaters typically attempt to simulate a fire through the use of fan-blown reflective strips and lights. One novel solution consisted of video (complete with audio) of a fire that was projected onto a screen in front of the firebox. That unit, which cost \$2,200, was discontinued by Lennox.

Nevertheless, Dimplex stepped into the breach in March when it introduced the OptiMyst electric fireplace (\$2,000), which uses water vapor to simulate the smoke that a wood fireplace creates. Users can control the intensity of the “smoke,” and in winter,

the mist adds humidity to the room.

But if you really want the look of a wood-burning fire, nothing beats a wood-burning fireplace. In fact, wood-burning fireplaces are making a bit of a comeback in terms of available models. And today’s models are a far cry from the open hearths of old. New wood-burning fireplaces have catalytic devices that promote a more thorough burn to minimize the particulate that flies up the flue. This innovation came about after numerous communities tried to douse wood-burning by enacting pollution regulations, and it makes it possible—along with other

tweaks in firebox design—for today’s fireplaces to meet Environmental Protection Agency particulate emission limits of 7.3 grams per hour (gph).

That standard will be lowered to 5.1 gph in February 2012, but compliance is only voluntary, so we don’t know how much incentive manufacturers will have to fuel further fireplace improvements. ◆

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✓ Best Buys in Heat Pumps

Best Buy Categories

- [P]=Premium selection
- [M]=Midrange selection
- [E]=Economy selection



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Best Buys in heat pumps were selected based on efficiency, ease of use, ease of maintenance, and the manufacturer’s reputation for quality and reliability.

Peak efficiency is rated in SEER (seasonal energy efficiency ratio) for cooling efficiency and HSPF (heating seasonal performance factor) for heating efficiency. The ratings are taken from Air-Conditioning, Heating and Refrigeration Institute.

All Best Buys are for a series of units, thus the range of prices and inputs. All Best Buys meet requirements to qualify for the federal government’s 30 percent tax credit, which runs through 2010.

Because manufacturers typically do not disclose prices, MSRPs are based on input from contractors, distributors and installer price books. MSRPs do not include installation.

HEAT PUMPS

[P] Broan/Frigidaire/NuTone/Tappan/Westinghouse FT4BI

MSRP: \$5,900 to \$7,400

>> The FT4BI is the most efficient heat pump that is on the market. Its inverter-driven compressor—a unique feature among central heat pumps—can modulate operating speeds to match ambient heating (and cooling) needs, so this model uses only the energy that is needed to heat or cool your living space. It also is one of the quietest heat pumps that is available; it operates at as low as 59 decibels.



Westinghouse FT4BI

Features:

- * Peak efficiency: 22.0 SEER / 10.0 HSPF
- * Inputs: 2 to 4 tons
- * Warranty: 10-yr. compressor, parts

[M] Carrier Infinity/Bryant Evolution 289B

MSRP: \$4,100 to \$4,800

>> The Infinity/Evolution 289B is not only the most efficient heat pump that is in this price range but also one of the most efficient at any price. And no other model that is in this price range can match this model’s reliability and quiet operation.

Features:

- * Peak efficiency: 19.0 SEER / 9.5 HSPF
- * Inputs: 2 to 5 tons
- * Warranty: 10-yr. compressor, parts

[E] Goodman SSZ14/Amana SSX14

MSRP: \$2,206 to \$3,005

>> We couldn’t find a more efficient unit in this price range than the SSZ14/SSX14. We like this mod-



Goodman SSZ14

el’s galvanized steel exterior, which helps the unit stand up to the elements better than other economy models can. It carries the best warranty protection of any model that we could find. However, the warranty requires a new indoor coil (an \$800 purchase) to activate the maximum lengths.

Features:

- * Peak efficiency: 15.0 SEER / 9.0 HSPF
- * Inputs: 1.5 to 5 tons
- * Warranty: Lifetime compressor; 10-yr. parts

For more information on the above Best Buys, contact the manufacturers directly. See page 68.

Innovation has its rewards. **iQ Drive**

Find out more about the award-winning iQ Drive® air conditioner and iQ Drive heat pump. Contact your Westinghouse dealer or visit www.westinghousevac.com.



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MSRP stated in article does not include installation or system components.
Costs will vary based on the needs of an individual home and complete system costs.

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