

R-2000 Homes set a new standard

The home of the future is springing up today, all across Canada. It looks very much like any other conventional home, but it's designed and built to cut heating costs by as much as 70 per cent. Called the R-2000 Home, it is gradually changing the face of our building industry.

In 1980 the Government of Saskatchewan, the National Research Council and Energy, Mines and Resources Canada collaborated on the construction of 14 super energy-efficient homes. They featured:

- thicker walls and ceilings to hold more than twice the usual amount of insulation;
- a continuous air-vapour barrier to ensure airtightness, less heat loss and reduced drafts;
- controlled ventilation, mechanically moving stale air out and fresh air in; and
- double- or triple-glazed windows with a minimum of 12.5 mm between the panes. Most windows were placed to catch the sun in winter.

The new houses were met with great enthusiasm and the federal government announced its intention to encourage construction of more super energy-efficient homes.

A year and a half of planning and study between Energy, Mines and Resources and the Canadian Home Builders' Association (CHBA) produced the R-2000 Home Program, carefully tailored to the needs of homebuyers and the industry. It was clear the builders needed information and training. With

RS/R Values

Home insulation is sold by its thermal resistance value — a precise measure of its resistance to heat flow. This measure is represented by an RSI or R value. RSI is metric; R is the imperial measure. Often insulation is marked with both so be careful not to confuse the two. The higher the RSI or R value, the better the material insulates. So even though one brand is thicker than another, if they both have the same RSI or R value, they will perform equally well. To convert R to RSI, divide the R value by 5.7. To convert RSI to R, simply multiply the RSI value by 5.7.

a basic understanding of the principles of how to keep the heat in and familiarity with some innovative building techniques, builders can modify design details of almost any home to meet the R-2000 Home standard of energy efficiency.

The R-2000 Home Program does not insist on specific building techniques, but the homes must meet its energy performance standards. "This approach was chosen because it encourages innovation," explained Henry ten Den, of the CHBA. "Our members have come up with ideas we would never have predicted. Having seen the results, we and our government partners are now even more convinced of

the correctness of our approach."

In addition to the features of earlier designs for super energy-efficient homes, each R-2000 Home must:

- conform to specified space heating requirements based on the size and location of the building;
- have a properly installed vapour barrier to protect the building structure and prevent air leakage;
- have a mechanical ventilation system to ensure that the house air is regularly replaced with fresh outside air at a rate of 0.5 air change per hour;
- be able to control any extra heat gained from

south-facing windows;

- have insulation totalling a minimum of RSI 3.5 in the exterior walls; and
- be constructed so as to permit monitoring of the house and its systems so that the industry can evaluate the performance of each house.

Some 1500 builders have attended R-2000 Home training seminars. They have been introduced to HOT2000, a computer program that can help them assess and improve their designs. It can predict the amount of heat a house will lose through the walls, roof, windows, doors and basement, and estimate the heat gain from the sun, appliances, lights, hot water and the occupants



ULTRAMAX ENERGY EFFICIENT FURNACE

—By DUOMATIC/OLSEN

CONVENTIONAL FURNACES

In conventional furnaces, combustion air passes through a heat exchanger which transfers heat to the house. After heat transfer, the conventional furnace sends those combustion gases up the chimney at about 400-500°F (203-260°C), wasting heat and energy dollars. Even when not operating, the conventional furnace allows warm basement air to escape up the chimney, along with the additional energy wasted through the constantly burning pilot.

THE ADVANCED ULTRAMAX DESIGN

Duomatic/Olsen technology makes ULTRAMAX a compact, high efficiency gas furnace. An electronically-controlled, forced-air purge clears exhaust vent and heat exchangers before ignition, ensuring safe, clean combustion. The electronic-intermittent spark ignition eliminates the constant pilot light (which can consume up to 10% of the annual fuel bill), reducing fuel costs even further. Its superior performance relies on aluminized steel primary and stainless steel secondary heat exchangers, plus a third stainless steel heat exchanger with aluminum fins that transfers so much heat that exhaust gases are reduced as low as 100°F (38°C). ULTRAMAX captures so much of the heat that it only requires a 2" ABS plastic vent. The condensate is filtered and drained off similar to an air conditioning unit.

INSTALL WITH EASE

Duomatic/Olsen kept the installer in mind in designing the compact shape of ULTRAMAX. Only 20 1/4" W x 29 3/4" D x 52" H, the unit is easy to handle and installs almost anywhere.

Because it mates easily to existing ductwork, the ULTRAMAX is an excellent choice for the replacement market as well as new residential construction. There is no need to insulate supply and return air ductwork. Each unit is adaptable to a return air opening on either the left or right side.

SERVICE WITH A SMILE

The simple design of ULTRAMAX saves time and money on routine service calls. Front top panel removal makes all controls visible and accessible. Removal of the blower compartment panel activates a safety switch to stop the complete operation of the furnace. The blower assembly slides easily out of the furnace for cleaning of the aluminum fins. The inside of the coils are easily cleaned from the front of the furnace. ULTRAMAX quality materials and construction are backed by a 20-year limited warranty. (As specified on warranty certificate). Duomatic/Olsen's new inventory and distribution network offers speedy parts delivery throughout North America.

ULTRAMAX... The home furnace system that puts dollars in your pocket - not up the chimney! If you use the "ULTRAMAX" to heat your home, you could save this much in 3 years *

COMPARED TO:	1st year	2nd year	3rd year	TOTAL SAVINGS
Conventional Gas Furnace	\$451	\$516	\$587	\$1554
Oil Furnace	\$779	\$879	\$1047	\$2705
Electric Furnace	\$889	\$979	\$1179	\$3047

* Based on average energy consumption data of selected areas and according to prevailing utility rates. Savings are determined by location, size of dwelling, fuel costs, etc. which could vary from the averages used to tabulate above savings.

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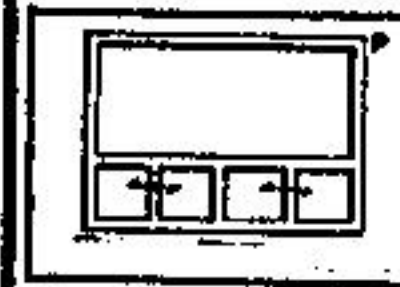
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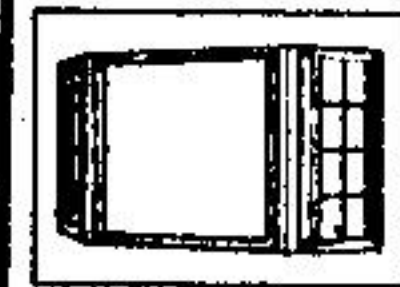
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PICTURE



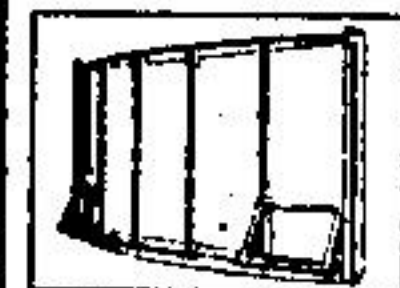
DOUBLE HUNG



BAY



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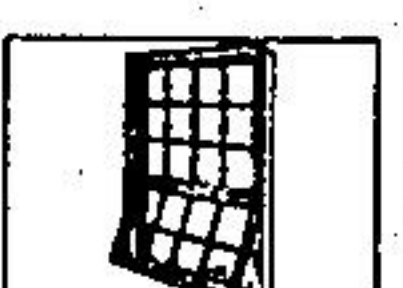
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