

Heat shifters

Ducting fitted with a fan can be used to transfer warm air from a heated room to unheated parts of a house. This system is called a 'heat shifter'.

Heat shifters are most effective at providing back-up heating for rooms not normally requiring constant heating, such as bedrooms.

By connecting a heated living area with a bedroom, a heat shifter enables residual heat from the heated room to be passed to the bedroom when the heater has been turned off. Alternatively, excess heat from one room can be shifted to another, whilst the heater is still in operation.

Heat shifters can satisfactorily transfer heat to distances of up to 12 metres.

A typical heat shifter would consist of:

- > 150 mm axial fan
- > 150 m insulated aluminium ducting
- > two 150 mm 90° duct elbows
- > low resistance ceiling discharge grille with low spread
- > 150 mm duct joiners (as required)
- > roll of duct tape
- > roll of duct hanging tape.

Heat shifters are available in kit form from a number of companies. Alternatively, you can buy the individual components and install the system yourself.

Before buying equipment, inspect the roof space to ensure sufficient clearance exists between roofing and the ceiling lining, especially at the point where the fan and discharge grilles are to be installed. Minimum clearance of 400 mm is necessary to enable the 90° duct elbows to be installed.

The fan may be located in any section of the heat shifter. An alternative to fitting the fan in the ceiling is to install it in the ductwork or purchase ducting incorporating a suitable fan. This has the advantage of reducing the fan noise. The discharge grille should be installed in the ceiling at the furthest point from the door (to encourage complete air circulation) and near a wall to avoid the effects of down-draughts.

Obstructions to the ducting route must be noted and sufficient ducting purchased to by-pass roof stays and rafters.

Ceiling cuts can be made using a sharp knife or hacksaw blade. Mounting instructions are usually provided with the fan and installation information for the discharge grille is available from the supplier.

Connection and air tightness of the 90° duct elbows and straight ducting is accomplished by using duct tape on the joins.

Duct hanging tape, the ends of which can be nailed to the roof rafters, should be looped under the ducting to provide support.

All electrical work for the fan must be carried out by a licensed electrician.

The cost of operating a heat shifter is only around one cent per hour.

Installation options

Heat shifters can be installed in a number of ways. They are useful in transferring heat from one end of the house to another (as in Figure 1—see over page), and from one room to an adjacent room (as in Figures 2 and 3). In Figure 3 only a fan is needed.

Where warm air from a downstairs heated area collects upstairs, a heat shifter can be used to help bring the warm air back downstairs (as in Figure 4).

Note: When a heat shifter is used in conjunction with a space heater, an opening must be provided to allow air to flow back to the heater. For example, if there is not already a larger, permanent opening, provide a return-air grille of size 600mm x 150mm between the two rooms.

Figure 1

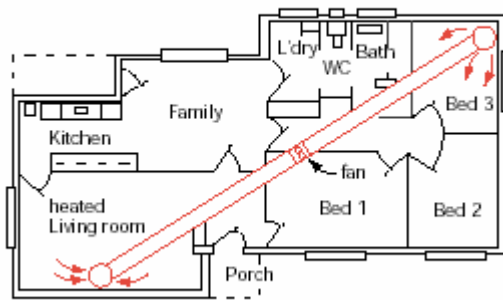


Figure 2

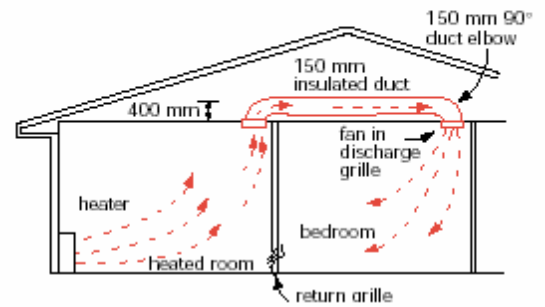


Figure 3

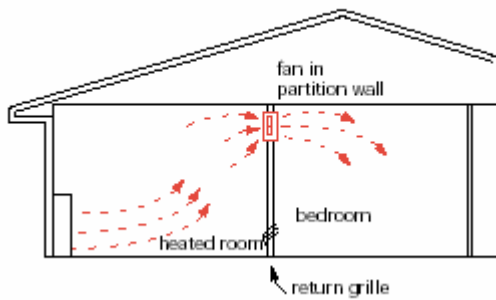
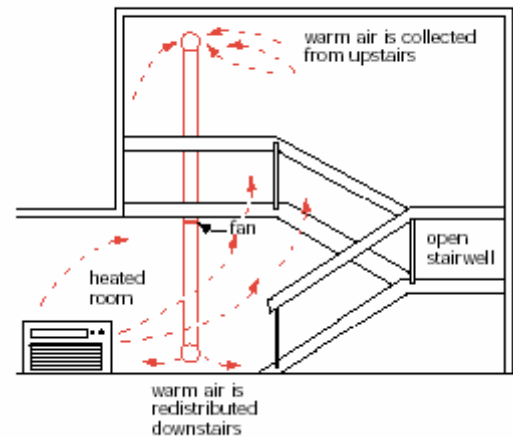


Figure 4



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