

# INSTALL AN ELECTRIC SHOWER

## SKILL LEVEL



The plumbing and wiring involved in installing an electric shower requires sound basic skills in both areas of expertise.

## SAFETY FIRST

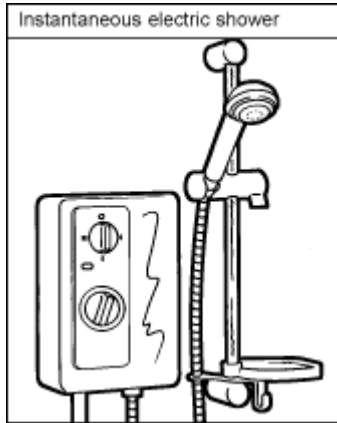
Ensure that wiring and plumbing are properly installed. It pays to have a professional electrician connect the wiring at the consumer unit. Always turn off the electricity when making connections to the mains.

## INTRODUCTION

Electric showers are economical to run and provide hot water on demand.

Using an electric shower could save you up to a third of the water you would use for a bath and, because a shower heats the water instantaneously, you do not waste energy heating stored water. Electric showers are rated in kilowatts (kW) - the higher the wattage, the better the performance of the shower. An electric shower is relatively easy to install, requiring only a connection to mains electricity and a single cold-water pipe running from the rising main.

## 2 - Planning the work



If you plan to install a shower over an existing bath, your primary consideration is where you can tap into the rising main. The most convenient location is often an airing cupboard close to the bathroom. If that is not possible, make the connection in the loft and run the branch pipe through the bathroom ceiling to the shower.

If you are building a new shower cubicle, you will need to consider drainage:

- The waste pipe must have the correct fall (slope) - this may entail raising the shower tray on a platform.
- When connecting to a two-pipe waste system, you can run the waste pipe to an exterior hopper head. Alternatively, connect the waste pipe to the soil stack of a one-pipe system.

Provide access to the trap beneath the shower tray, or it may become difficult to service a blocked waste pipe.

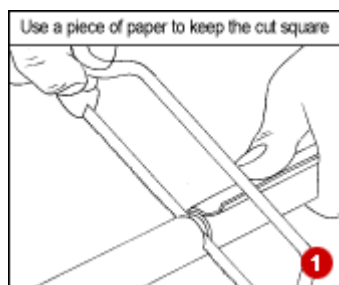
### 3 - Plumbing

Step 1: Start by mounting the shower unit in the required position. Mark the fixing points using the template supplied by the manufacturer or use the backplate if there is no template.

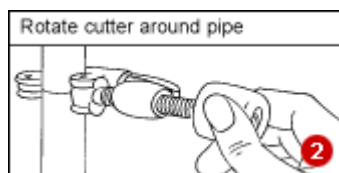
Step 2: Using a power drill fitted with a masonry bit of the appropriate size, drill holes to receive the wall plugs for the mounting screws.

When drilling holes in ceramic tiles, stick a piece of masking tape on the glazed surface to prevent the masonry bit slipping.

Step 3: Before you finally mount the shower unit, cut a piece of 15mm (1/2in) copper pipe long enough to pass through the ceiling or sideways into the airing cupboard. Try to make neat clearance holes through the wall or ceiling to minimise the amount of making good. Connect the pipe to the shower inlet.



Cut copper pipe with a hacksaw - wrap a piece of paper around the pipe as a guide to keep the cut square. Alternatively, use a pipe cutter. File the cut ends to remove burrs.



Ideally pipe runs should be concealed and, in some instances, it may be possible to make the connection at the back of the shower unit so that you can run the pipe into the walls.

- If the wall is a stud partition, it should be possible to run the pipework (and electrical supply) between the studs.
- In a solid masonry wall, you could cut a channel in

order to bury the pipe under the plaster. This type of work should be carried out before you fit the shower unit and tile the wall. Use soldered joints in this situation, to minimise the possibility of a leak.

Step 4: Inside the airing cupboard or loft, take the new branch pipe up to the rising main but stop just short of it. Fit a stopcock (not a gate valve) to the end of the branch pipe, with the flow arrow pointing away from the rising main.

Alternatively, fit a miniature isolating valve to the branch pipe, close to the shower unit, so that you can turn off the water for servicing.

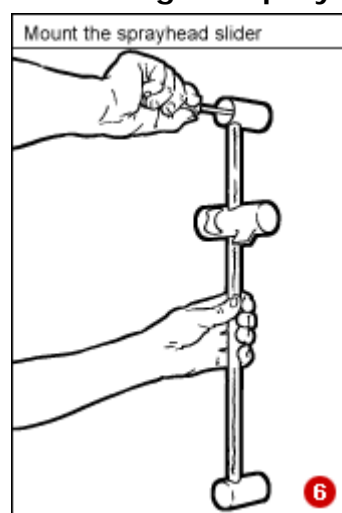
Step 5: Turn off the main stopcock and drain the water from the pipe by opening the kitchen tap.

Step 6: Fit the T-joint onto the rising main and hand-tighten the cap nuts. Measure and cut a short length of pipe to connect the T-joint to the stopcock.

Step 7: Assemble the component parts and tighten the nuts to make watertight joints. Test the plumbing.

Showers connected to the rising main must be protected with a double-check non-return valve fitted to the branch pipe - this prevents dirty water being siphoned from the bath or shower tray into the drinking supply. This applies only if the handset can come into contact with used water. Caution must be exercised when inserting double check valves in the water supply. If unsure, contact a professional plumber.

#### 4 - Fitting the sprayhead



Step 1: Mount the sprayhead slider rail on the wall to one side of the shower unit.

Check that there is enough room for the sprayhead to be adjusted up and down to suit all members of the family.

Step 2: Connect the flexible hose to the sprayhead and to the shower unit.

#### 5 - Wiring the shower

An instantaneously heating electric shower requires a dedicated radial circuit running from the consumer unit. We recommend that the circuit should include a 30 milliamp Residual Current Device.

Use 10mm two-core-and-earth cable for the circuit, which must be protected with a 40amp Miniature Circuit Breaker (MCB) or a 45amp fuse in the consumer unit. If there is no room in your consumer unit for a new circuit, have an electrician install a separate 45amp switch fuse unit for the shower.

Electrical Wiring Regulations require all non-electrical metal components such as pipes, baths and basins to be connected, one to another, with earthing cable that then runs to the consumer unit where it is connected to the earthing block. For supplementary bonding, as it is called, use 6mm single-core cable, insulated with green/yellow sheathing.

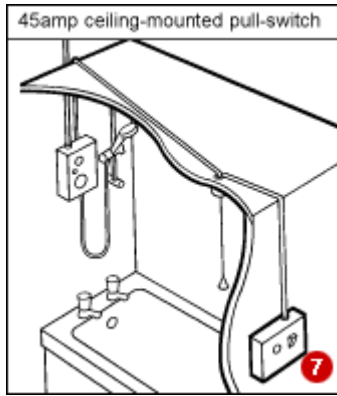
Connect bonding cable to pipework with purpose-made earth clamps and attach it to the special earthing tags on metal baths and basins. Your shower unit must also be bonded to the pipework, using the earth terminal provided in the appliance. Please check the details of your product carefully, as the earth terminals within some showers should not be used for cross bonding.

### **Fitting a pull-switch**

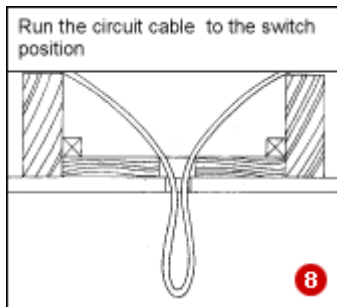
Although an electric shower has its own on/off switch, there must be a separate 45amp double-pole switch to isolate the circuit. The isolating switch must be out of reach from anyone using the shower.

The isolating switch for a shower must have a contact gap of at least 3mm and an indicator, such as a flag which is normally incorporated in the switch to show it is on.

If the isolating switch is to be situated inside the bathroom, use a pull-switch mounted on the ceiling:



Step 1: Make a hole in the ceiling where the pull-switch is to be fitted. Screw a mounting board between the joists above the ceiling on which to fasten the backplate of the switch.



Step 2: Run the circuit cable to the switch position and pass a loop of cable through the hole in the ceiling and mounting board. Then run the cable on to the shower unit.

- You can run electrical cable inside plastic mini-trunking fixed to the surfaces of walls and ceiling.
- Alternatively, bury the cable behind the plaster.
  - One way is to pass the cable down between the studs of a hollow partition wall.
  - For a solid wall, you would have to cut out a channel in which to set the cable. In this case, it is safest to run the cable inside plastic conduit and cover it with plaster ready for tiling.

Step 3: At the switch point, cut the loop of cable and strip the ends of the cable. Fix the backplate of the switch in position. Cover the bare earth wires with green and yellow sleeving and connect them to the 'E' terminal.

Step 4: Connect the wires of the cable from the consumer unit to the 'Mains' terminals of the switch. Connect the wires of the cable to the shower unit of the 'Load' terminals - red to 'L' terminals and black to 'N' terminals.

Step 5: Strip the sheathing from the cable at the shower unit and connect the wires to the terminal block as shown on the instructions - Red 'L' (live), Black 'N' (neutral) and bare 'E' (earth). Cover the bare wires with PVC earth sleeving.

Strip about 100mm (4in) of sheathing from a cable - slit it lengthways, then peel it back and cut off the waste.

Call in an electrician to make the connection to the consumer unit and test the circuit.