

Case Study 3

The art of back feeding softened water

When speaking to potential customers we are sometimes told that a plumber has already looked at the possibility of fitting a water softener and indicated that it could not be done. The usual explanation is that the pipe work would be too difficult to undertake and / or the position of the rising main / stop cock would make it impractical to do so.

This can be the case. Unfortunately, 15% of homes that we visit do have plumbing complications that make fitting a softener exceedingly difficult and sometimes impossible. However, softened water can often be **back fed** into a household supply. This is a technique we employ when a water softener cannot be located close to the incoming water main for technical reasons eg. lack of space or drainage. All softeners require a flow and return and although the former is usually possible a return pipe may not. However, it may be feasible to feed the softened water back into the cold water supply at another point in the property. This sometimes can be at a considerable distance from the original water source / softener location. It's an option often overlooked by plumbers and heating engineers.

This scenario came up when we undertook a site survey in a cottage in Froyle, near Alton. The incoming water main was located in an under stairs cupboard at one end of the kitchen. At this point it divided with a feed going up to the loft tanks, while an independent spur travelled under the floor to the kitchen sink and outside tap. The softener could not be located under the stairs as there was no access to drainage.

Close to the kitchen was a downstairs toilet and utility cupboard containing a washing machine. The cold water supply here was also direct fed off the mains from a point close the stairs. We worked out that a softened water supply could be fed to the utility cupboard from near the kitchen sink where we could locate the water softener in an adjacent larder cupboard (giving us access to drainage). We could use the existing cold supply to input to the softener as well as taking hard water to the outside tap (bylaw requirement) and to a hard water drinking tap at the kitchen sink.

Once softened, the water would be run in a newly installed pipe under the kitchen cupboards, through a kitchen wall, up and over a door and into the utility cupboard with the minimum of upset to the cottage

décor. At this point the softened water supply would be teed into the cold water supply to the downstairs toilet, where it would **back feed** up to the loft tanks. Lastly, we would isolate the original feed to the loft tanks, under the stairs, by cutting and capping off.

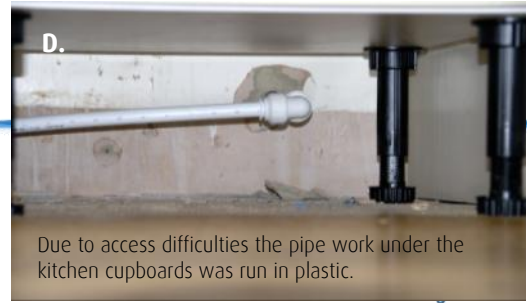
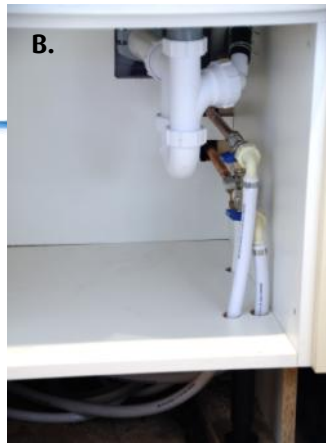
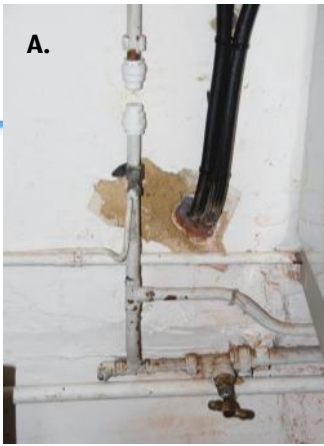
We were delighted that the home owner accepted our proposals to undertake this work which was completed in one day. We would like to thank them for allowing us to publish this project as a case study.

The success of this installation (see layout and pictures overleaf) is testimony to the value of obtaining advice from a professional water treatment company. Unlike the general plumbing fraternity we do have the specific knowledge of how water systems can be manipulated, to gain the very best from specialised equipment, in complex circumstances.

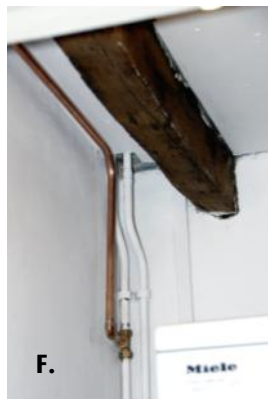


The water softener was installed in a larder cupboard close to the kitchen sink

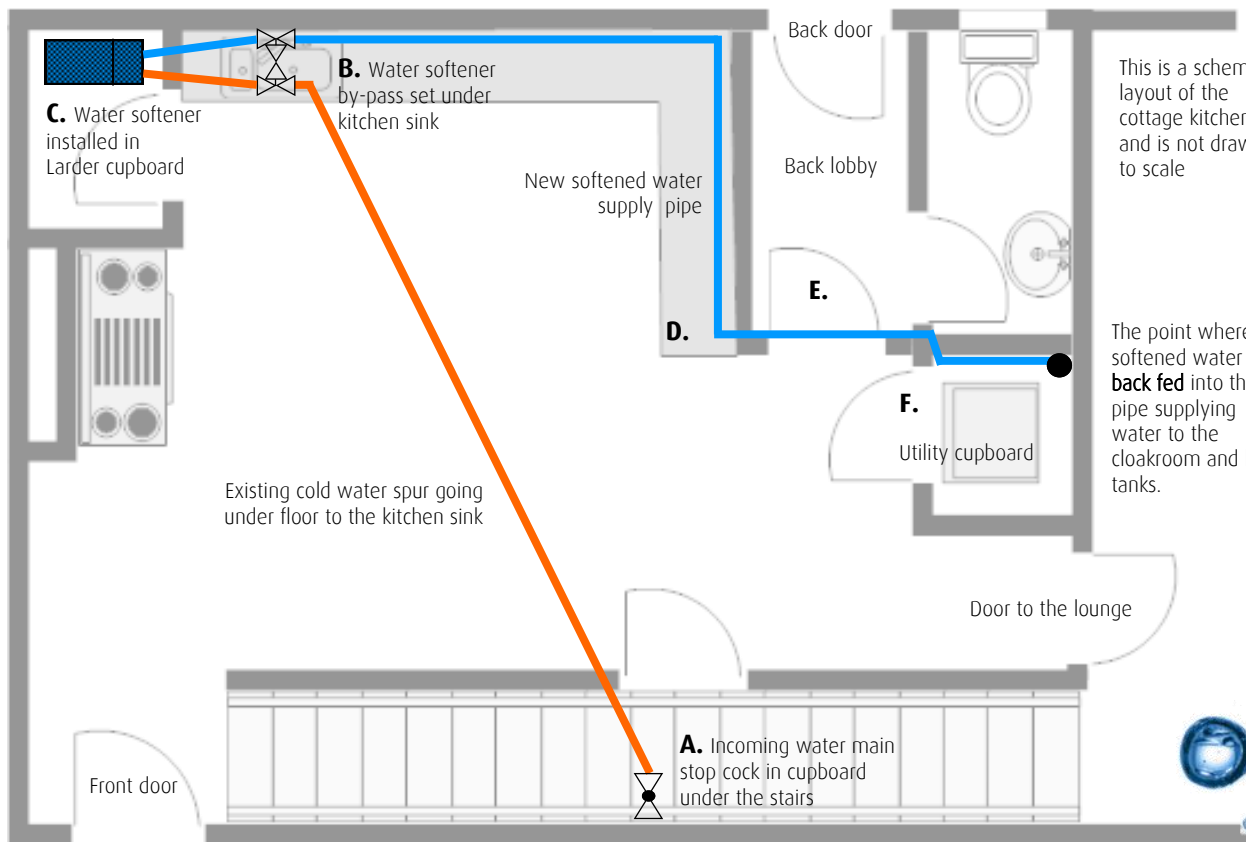
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Due to access difficulties the pipe work under the kitchen cupboards was run in plastic.



- A. The original water supply to the loft was capped after the main was diverted.
- B. The water softener bypass set was located under the kitchen sink.
- C. (See picture of water softener location overleaf).
- D. A new softened water supply pipe was run under kitchen cupboards and through into the.....
- E.back lobby, up and over the kitchen door.....
- F.and **back fed** into the pipe supplying water to the cloakroom and utility cupboard. Here, the flow becomes partly reversed taking the water up the loft tanks.



This is a schematic layout of the cottage kitchen and is not drawn to scale

The point where softened water is **back fed** into the pipe supplying water to the cloakroom and loft tanks.