

UNDERSTANDING COLD WATER SYSTEMS IN THE HOME

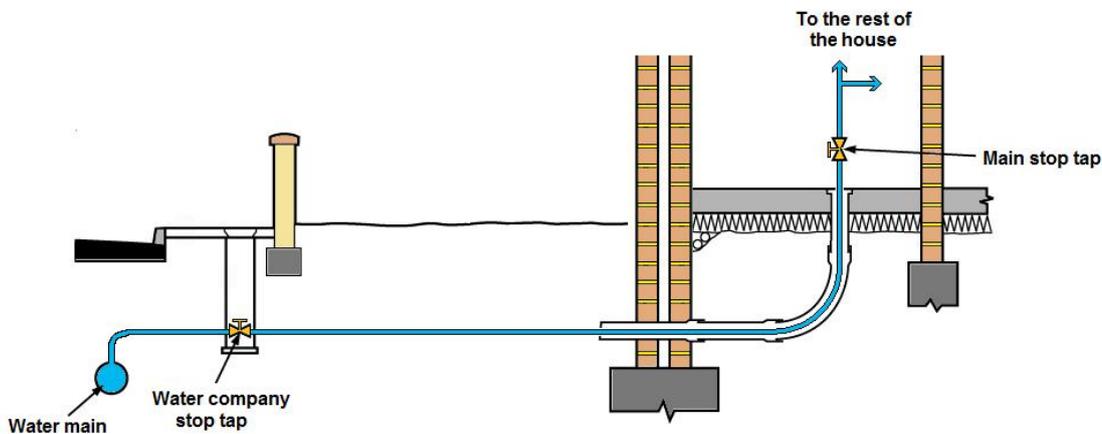
This advice guide is part of a series of free guides produced by the Association of Plumbing & Heating Contractors Ltd. which provide consumers with essential basic information on a range of plumbing and heating matters including installations, repairs and maintenance.

We don't often see the pipework that carries cold water around the home, for example, a cold tap on a bath, a cold feed to an electric shower or washing machine or an outside tap for using a garden hose. Understanding how cold water is distributed around the home will allow you to identify what has gone wrong in the unfortunate event of a leak or ensure you have the most suitable system installed to meet your needs.

Getting cold water to the home

A water supplier will provide water to a home, through a water main, then branch off. At this point, older systems may have one branch that connects up to four homes. New properties will have an installation similar to that shown in the diagram below.

It is vital that people living in a property know where and how to turn off the water supply to their home, in the event of a leak or for maintenance.



Cold water system components

The following materials and components are common to most domestic cold water systems.

Copper and plastic pipes

Pipes for cold water systems can be produced in either copper or plastic, and come in many sizes from 8mm to 35mm in diameter. The most common sizes for cold water pipes are 15mm and 22mm.

Lead pipes

Very old cold water systems used lead pipes to run water around homes; this is still in place in a lot of properties in the UK. Lead pipes are also very commonly used between the water company stop tap and the mains stop tap in your home. It is now illegal to fit or alter lead pipe, it must be replaced with a copper or plastic pipe when changes to water pipes are required.

Cold feed

This is a pipe which provides cold water into a hot water or heating system.

Water main

This is a pipe that brings cold water directly from the water pipe in the street to the stop tap in your house

Stop tap

This can also be called a stopcock or stop valve. This is the tap which turns off the cold water into your house, from the water coming in from the street.



The Storage Cistern



This is the reservoir of cold water used to supply either the hot water cylinder or the central heating system. Inside the cistern there are components:

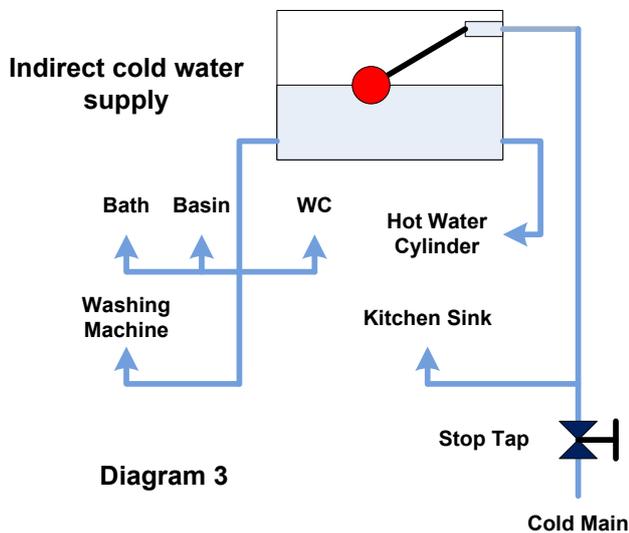
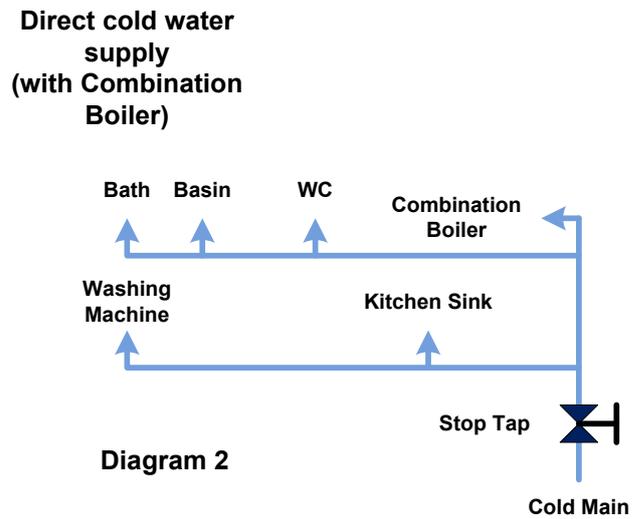
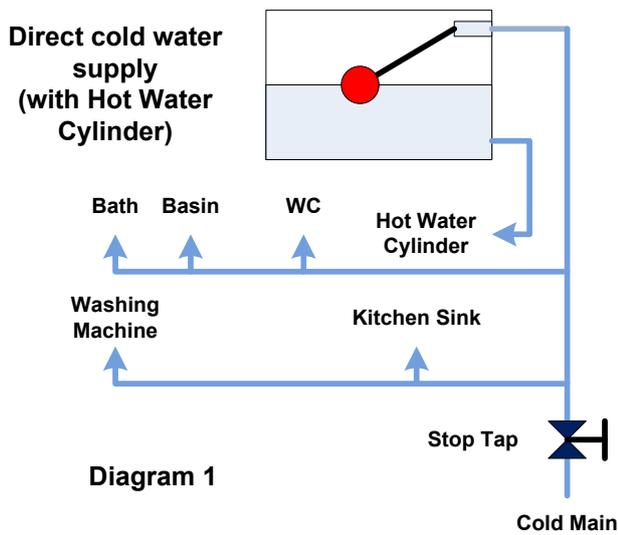
Float operated valve - This is commonly known as a ball valve. It is a mechanical valve that automatically opens and closes as water is removed and added to a cistern, and they come in all shapes and sizes and materials.



The warning pipe - This is commonly referred to as the overflow. It will advise the occupier that a cistern is full and the valve is not turning off water and 'warning' that it could spill over the cistern sides.

Types of cold water system

There are two main types of cold water system used in the UK, to distribute water around the home. The first (diagram 1 and 2 below), uses water supplied 'directly' from the water main, called a direct system and the other method (diagram 3 below) uses a storage tank (cistern) to give a store of cold water, then distributes the water around the home, known as an indirect system.



Each type of cold water system has advantages and disadvantages to consider. An APHC plumber will be able to help you choose the right system to meet your needs.

Disadvantages	Advantages
Direct cold water	
If cold mains fail there is no emergency backup supply	Can be cheaper to install than a storage system
Cannot always supply cold water even if mains water pressure is low	No chance of water growing harmful bacteria
More system noise as water is under high pressure	Can deal with large demand more easily
Indirect cold water	
Can be more expensive to install	Water supplied even if mains stops working
Cannot deal easily with large demand	Can supply cold water even if mains water pressure is low
Greater chance of the water growing harmful bacteria	Less system noise as water is under less pressure

In summary

Cold water systems provide water to and around the home and are relatively straightforward with the majority of new homes having a direct cold water system. It is important to understand the cold water system within the home in order to isolate the water if a leak occurs.

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