

# Aquafacts No.22

## Warning - concern about the suitability of continental dual and tri-way kitchen taps installed in homes with indirect hot water systems

We are the only country in the world that has two distinct types of home heating system - indirect and direct. As most westernised homes have pressurised, direct fed water systems, products from outside the UK are designed accordingly. One range of products that are giving the plumbing fraternity a problem, at this time, are certain types of kitchen taps. Most continental taps (which tend to dominate the current market) are manufactured for high pressure use. These are proving unsatisfactory when installed in a UK property with a traditional, loft tank, water system. Single spout, dual taps are particularly prone to flow rate problems. The reason for this is as follows.

With a typical indirect system the incoming cold water main is connected direct to the kitchen tap (pressure around 3 to 4 bar), with a supply going to a cold water storage tank (usually found in the loft space). The cold water is then fed by gravity from the tank to a hot water storage cylinder (usually found in an airing cupboard). The hot water is usually generated by a boiler or immersion heater. The hot water is stored in the cylinder and fed to taps, around the house, by gravity only. This can give an imbalanced flow rate at the kitchen sink.

Many current and modern homes are now being built with a water supply which is 'direct fed', throughout the premises, under mains pressure (again typically in the region of 3 to 4 bar). With these pressurised systems there are no loft tanks. Most kitchen taps will perform well as the cold and hot water pressures are constantly equal.

The actual pressure of gravity fed hot water is determined by the height of the bottom of the cold water storage tank, in the loft, in relation to the height of the kitchen tap. This is often referred to as the 'head of water'. The higher the tank from the kitchen tap the greater the head of water and the pressure, which is measured in 'bars' - ie. 1 metre head = 0.1 bar, 5 metre head = 0.5 bar, 10 metre head = 1 bar.

The conversion from bar to head is based on the assumption that the kitchen tap is situated directly below the storage tank. In reality this is very rarely the case. Where long pipe runs occur, across the property, from storage tank to the tap, the pressure at

the tap can reduce further.

To obtain sufficient pressure on a traditional gravity feed system to run an average high pressure tap, with a 1 bar recommended minimum pressure, you would have to have a 4 storey building or 10 metres (32.5 feet) head. To run an average medium/high pressure tap, with a .5 bar recommended minimum pressure, you would have to have a 3 storey building or 5 metres (16.25 feet) head. From this you can judge that a large majority of continental, high pressure, kitchen taps will not give a balanced flow of hot and cold water in a single or two storey property.

Due to an increase in demand for drinking water filters, Aqua-Nouveau has had considerable interest shown in 'tri-way' taps. Unfortunately, these have also given variable performances to a point where there are models we would definitely advise not to be used with gravity fed systems.

In conclusion, most kitchen taps will work with high pressure, direct fed, hot water systems, but not necessarily with medium/low pressure gravity fed supplies. It is therefore important to check the specification of a kitchen tap before buying.

### Overcoming low pressure hot water problems

It is possible to increase pressure, at a hot water kitchen tap, by fitting a booster pump, on a gravity fed hot water system. This can usually be installed, under a kitchen sink relatively easily but at a cost. For further information contact us on the telephone number below.

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