



# HARD WATER IS HARD ON APPLIANCES

## Service Bulletin



### Automatic Washers

Many complaints received by service technicians concerning poor washing results can be traced directly to hard water. Hardness minerals interfere with the cleaning action of soaps and detergents. As a result, larger amounts of cleaning agents are needed to counteract the hard water, and even then, laundry results are not as effective as in soft water. The hardness minerals also react with carbonate builders commonly found in phosphate-free detergents. The resulting product is a white precipitate, calcium and magnesium carbonate that makes fabrics stiff and rough. Colors tend to appear faded and streaked.

Precipitates also build up in the washer tub and on the lint screen. A build-up of carbonate on the pump mechanism and other moving parts can cause early failure of the appliance. Major appliance manufacturers realize this serious problem and recommend installation of a water softener as a practical solution.

### Dishwashers

A prime cause of poor results in the cleaning of tableware by an automatic dishwasher is the use of hard water. Spotting, staining and often just unsatisfactory cleansing action can be attributed to the chemical action of minerals found in untreated hard water. Cleaning powders cannot achieve their full potential when hard water interferes with their designed purpose. Water droplets that dry on glassware leave behind a film of mineral scale. It has also been observed that the mineral deposits on glassware when subject to the high temperatures of the drying process can permanently etch the glass. Eventually all glassware will have a dull, cloudy look that cannot be reversed. Soft water and low drying temperatures eliminate this problem.

The intricate and often delicate mechanism of the modern dishwasher can become fouled with calcium and magnesium carbonates. This will considerably lessen the life of even the best-engineered appliance.

### Hot Water Heaters

Water heaters operating on untreated hard water consume significantly more energy than units operating with softened water. The calcium and magnesium found in hard water forms a rock-like scale when heated. The scale forming primarily in the areas where heat is greatest acts as insulation to prevent the energy source from performing efficiently. The mineral build-up is a poor conductor of heat and causes the water heater to use greater amounts of energy to treat the same amount of water. In one case, almost 40 pounds of sediment were found in the ten-year-old water heater. In addition to the handicap of scale formation on hot water heaters, hard water interferes with most cleaning tasks. Bathing, personal grooming, dishwashing and laundering all have diminished results with hard water.

## Ice Maker, Electric Iron, Automatic Coffee Maker and all Water Using Appliances

Without exception, all appliances that use or process water work less efficiently with hard water. The shortened life of equipment due to mineral build-up is a major cause of service calls. Most products are built to exceed their warranty lifetime by a wide margin under normal conditions. It is when undue strain is placed on appliances using hard water, that the effective life span of the unit falls short, and customer dissatisfaction becomes a problem.

The unhappy customer with a non-operating washer or water heater is only part of the problem. In many cases, that customer has been growing increasingly upset with the less than expected performance that has been promised. An automatic washer that leaves clothes dingy no matter how much soap is used will not encourage the customer to seek out the same store for another appliance or a replacement for an existing appliance. A hot water heater that demands increasing amounts of energy to heat the same amount of water may convince a customer that he has been sold inferior equipment.

If you were able to show a customer how hard water deposits were, day by day, building up on expensive equipment, and in the plumbing throughout the house, it would be easy to put the blame where it belongs.

### There is a Solution

This bulletin is designed to make you, the service representative, aware of the many problems generated by the hard water found in most homes today. The solution is, quite simply, replace the hard water with soft water. Not only will your customer have the advantages of increased appliance life and less repair bills, but the very real cost savings are almost too numerous to list. The amounts of soaps and cleaning agents can be reduced up to two-thirds - for soft water works harder with less help. Clothes last longer and look better without deposits of minerals embedded in the material. Energy costs go down with clean soft water flowing through the water heater and pipes. Average dollar savings are available for those who are interested in specific facts. Just as important, if not in monetary terms, are the very real advantages of bathing and grooming in soft water and the ease of keeping fixtures and bathrooms clean in conditioned water. Of the many ways that water plays a part in our lives, virtually all will be improved with soft, conditioned water.

Do yourself and your customers a favor. Suggest the advantages of installing a Kinetico Water Conditioner. With the increased sophistication of modern appliances, it really makes more sense than ever before. It may cut down on your service calls, but you'll have satisfied customers that will keep coming back and maybe even tell their friends about you.



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