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## The Facts



*"Whether you know it or not, whenever fluids run through the pipes and appliances in your house, or through the engine in your car or truck, problems are building -- problems that can wear down your equipment, cost you money and hurt our environment."*

The facts are in disputable: the hard water that is piped into the vast majority of our homes, offices, factories, and other buildings causes scale build-up. And scale build-up causes problems that result in wasted dollars.

Water heater inefficiency is just one of these problems. Scale reduces the water flow and decreases heat transfer.



The estimated energy cost for running a 40-gallon electric hot water heater is \$450 each year. A scale build up of just 3/8" gobbles up 55 percent more energy, according to the U.S. Bureau of Standards. That's an additional \$247 more each year to produce the same amount of hot water, for a total of \$697.

In heat exchangers/cooling towers, scale build-up results in reduced heat transfer resulting in higher energy and chemical costs, not to mention the environmental impact of chemical disposal.

Boilers suffer from scale build-up in the same way: a loss of heat transfer efficiency that triggers an increase in energy and chemical costs.

Scale build-up from hard water also causes the following problems:

- clogged water pipes,
- reduced water pressure,
- "frozen" valves on faucets,
- hard-to-remove soap film on shower tiles and doors,
- white deposits on shower heads,
- spots and milky clouds on glassware and silverware,
- crusted rings in toilet tanks,
- spotting on tubs, chrome, and tile,
- poor sudsing of soaps, detergents, and shampoos,
- scale-related performance decreases in other appliances that use water.



*"GMX Magnetic fluid conditioning products work! They solve scale build-up problems in water, and make fuel combustion more complete. Plus, they help the environment."*

Fuel is another fluid that causes problems if not treated. While scale build-up is not a problem in gasoline and diesel fuel, incomplete combustion is. Combustion is never complete in gasoline and diesel engines. This is readily visible in the accumulations of carbon in the combustion chambers and valves, and in the varnish that forms in the injectors and carburetors.

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### Scale and Calcium buildup within pipes.

Incomplete combustion results in harmful emissions, as well as decreased fuel efficiency and engine performance. Like scale build-up in water, these problems take dollars out of your pocket and harm the environment.

GMX has created magnetic fluid conditioning devices that capture the full power of magnetohydrodynamics and put it to work for you.

It begins with the magnets themselves. The heart of all GMX products are super high-powered ceramic magnets. Originally developed by the U.S. government for NASA's Space Program, these high-tech, lightweight, compact magnets pack thousands of gauss of magnetic pull into a small space. And they don't wear out or require outside power! In fact, over a normal human life span, the magnets lose an insignificant amount of their original strength! While the basic technology has been used for many years in industrial applications, the compact new magnets allow the advantages of GMX magnetic fluid conditioning to go into private residences...even cars and trucks.

**"The potential benefits which could be derived from a non-chemical method of water conditioning of this type (magnetic fluid conditioning) include reduced energy requirements, water conservation, reduction or elimination of chemical feed and control requirements, and reduced pollution."**

*American Petroleum Institute, Washington D.C.  
Evaluation of the Principles of Magnetic Water Treatment  
API Publication 960, September, 1985*

**"Old ways die hard but the change is inevitable. We stand on the threshold of a magnetic revolution in fluid conditioning."**

*Dennis Sheppard & Ron Van Dyke,  
Clash of Technologies, January 1993*

**"No one argues whether magnetic treatment is effective or not: in the Soviet Union the magnetic treatment of water is used extensively and with tremendous economic effect."**

*V.I. Klassen Ph.D., Institute of Mineral Fuels,  
Academy of Sciences, USSR, 1969*

But the magnet isn't everything. Unless magnetic fluid conditioning devices are designed to take advantage of the principles of magnetohydrodynamics, they are worthless. The products of GMX -- the leader in this technology --- are not only properly designed, they are designed better than any other products of their kind.

**There are three reasons for this:**

#### **1. Contact time**

The amount of time a fluid is in contact with the magnetic field as it runs through a pipe is called "contact time." The amount of contact time is indicated by the length of pipe that is exposed to the

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magnetic field. The more contact time, the more effective the conditioning. Some magnetic fluid conditioners give the fluids only a half-inch of contact time. That's a major difference.

## **2. Focus**

The focus of the energy field is another essential factor. A magnetic fluid conditioning unit must be focused properly on the fluid that runs through the pipe. If the water or fuel is not squarely within the focal range.

## **3. The Magnet's Strength**

All GMX magnetic fluid conditioning products are made with grade 8 ceramic magnets developed by NASA. Ceramic magnets are the only material known to man to hold a permanent magnetic charge throughout a human's lifetime. In 125 years, these lose less than 3 percent of their power.



**1.** Typical scale and calcium buildup caused by untreated water has almost closed this pipe.



**2.** This photo shows the effect of magnetically treated water on the same section of pipe a short time after the installation.



**3.** After continual treatment, most scale is removed and will be prevented as long as the system is in operation.