

WATER CONSERVATION 101



WHY INSTALL A TOILET LEAK DETECTOR WITH A WATER SHUTOFF VALVE

Water conservation, particularly in our more heavily populated areas, is no longer a matter of convenience, but one of necessity. The readily available fresh water, comprising less than 1% of earth's total surface water, is presently being consumed at an unsustainable rate. The actual conservation of fresh water requires a very complex set of activities encompassing an overwhelming number of actions that must be taken by governments, municipal providers, and most of all by the general population. The complete subject of water conservation requires volumes and volumes to cover. Let's look at one specific area of water conservation, that of waste. More specifically, let's look at one of our largest single sources of waste of our fresh water supply. That source of waste is leaking toilets.

Just addressing the United States, there are 300 - 350 million toilets in daily use. Of these about 225 - 275 million are tank type toilets. We have seen major efforts to redesign our toilets to low-flow units using less than 1 gallon of water per flush. Also, we have developed and are encouraging the use of dual-flush systems for all of our toilets. So far, we have converted about 50 - 75 million toilets to the low-flow design and a similar number have added dual-flush systems. This is obviously an effort towards water conservation that is becoming very successful. However, there is one rarely publicized fact about low-flow and dual-flush toilets. When they leak, they leak just as much as any other toilets. Our waste from leaks still far exceeds our savings from low-flow and dual-flush technologies. Water leaks account for approximately 14% of the total usage in US homes, and our toilets are the number one culprit. It is these leaks that account for one of our largest single sources of wasted water. It is this specific problem we are addressing here.

HOW DOES THE TOILET LEAK

Toilets may exhibit four faults, all of which waste huge amounts of water.

The four faults are:

1. Leaky flush (flapper) valve
The tank water level slowly goes down until the fill valve opens and restores water to the normal level. The cycle is repetitive.
2. Stuck open flush valve
The tank remains empty and the fill valve continues flowing.
3. Leaky fill valve
The water level rises to the overflow and continues to flow.
4. Bowl overflow
The bowl becomes plugged and overflows causing property damage.

WHAT DOES A TOILET LEAK DETECTOR WITH A WATER SHUTOFF VALVE DO

The toilet leak detector and shutoff perform the following functions:

Detects faults

Electronic sensors individually detect each of the four toilet faults.

Turns off the water supply

Upon detection of any fault, the toilet supply water is turned off. The unit may be programmed so that it turns off the water supply for only selected faults. For example, in a hotel or hospital application it may be programmed to turn off the water supply only for a bowl overflow, fault #4, and fully open flush valve, fault #2

Identifies and reports the specific fault.

Colored LED's on the unit flash a code which identifies the specific fault which has occurred.

The report functions may be optionally connected to other systems:

- Maintenance services
- SMS messaging
- Smart Phones
- Home Security Systems

Reports a low battery

Resets and restores water supply with the simple turn of a knob.

