

Information Pills No.3

These information pills proves the water-energy nexus

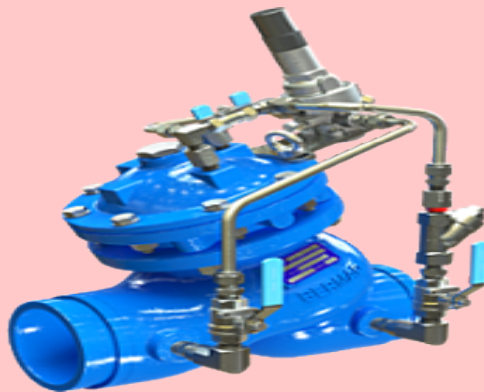
Information pills are part of the benchmark catalog of water and energy technologies for hotels, that will be published soon

Water

Pressure control valves for Leaks Minimization

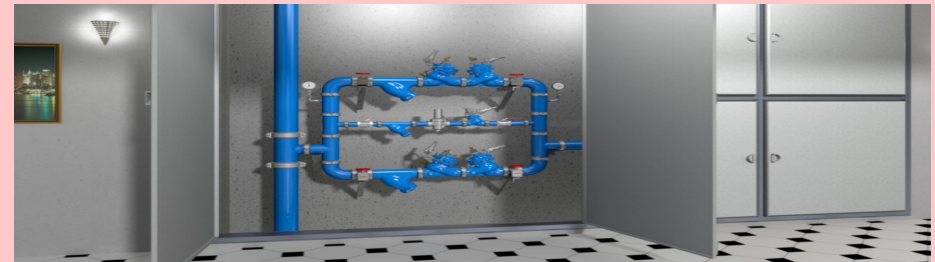
Water saver

Fixtures and pipes with low pressure grade might leak or even burst if high unwanted pressure reaches them. For this reason, appliances must be protected by pressure reducing systems to work properly for long periods of time. There are constant changes to the water demand in a building water supply throughout the day that affects the pressure. The key to a successful, cost-effective drinking water system high water consuming buildings is to install pressure safety valves in conjunction with pressure reducing valves. When there is a sudden rise in pressure, an emergency safety valve kicks in to regulate the pressure. Sometimes, a high flow rate in the system might be reduced to zero in a matter of seconds when a large fixture is turned off and this can create a water hammer. During all these flow variations, the pressure reducing systems in the building must react to regulate pressure.



Potential Use in Hotel Industry

- Controlling water pressure in each floor •
- Controlling water levels in water reservoirs •



Advantages

Simple to implement

Long-term experience in pressure regulating

Leak and pipe bursting prevention

Disadvantages

Space requirements



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water

Pressure control valves for Leaks Minimization

Category (wastewater reuse, grey water, cooling water, smary irrigation, water savers)

Part 2 –Performance, Case studies

Avoid excessive pressure	Install pressure reducers at relevant points and adjust to the minimum pressure sufficient to supply the maximum flow rate required at those points.	All accommodations
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Source : Best Environmental Management Practice in the Tourism Sector

Hydraulically operated, diaphragm actuated pressure reducing system, consisting of a BERMAD BC-720-P PRV, the system reduces a high upstream pressure to a lower, constant downstream pressure, regardless of fluctuating demand or varying upstream pressure.



Part 3 –Companies manufacturing/implementing the technology

Bermad , <https://www.bermad.com/products/buildings-constructions/potable/>

Water & Energy Rack Conveyor Dishwashers

Water & Energy savers

Rack Conveyor Dishwashers use a motor-driven conveyor belt to move the rack loaded dishes through a large tank with separate wash and rinse compartments. This process usually uses recycled water from the final rinse. This not only reduces water use, but also reduces the amount of energy required to heat additional water.

Furthermore, all rack conveyor machines have a timer control for speed to assure proper wash and rinse times, which make

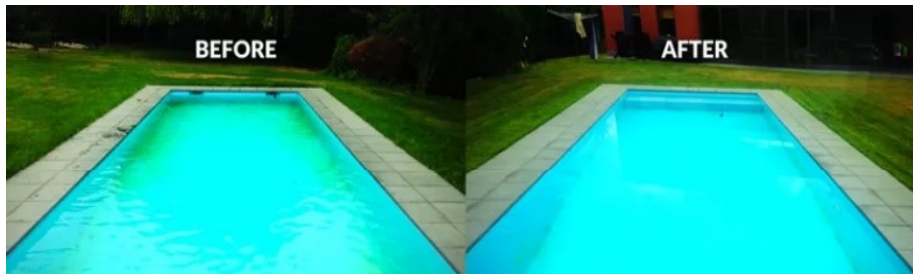


Advantages	Disadvantages
Cost-savings from energy and water conservation (reduce energy and water use by 25 percent)	High costs
Modular dishwasher, tanks can be added to increase capacity	Requires extra devices to increase savings

Water

Ultrafiltration of swimming pool water water & chemicals savers

Ultrafiltration system removes all bacteria, pathogens, organic matters and suspended solids from the pool water in one single pass, thanks to the small and absolute barrier. Only very small dose free chlorine (concentration of 0.2-0.3 ppm) is required to keep disinfectant action – while combined chlorine, trihalomethanes and all harmful disinfection by-products are drastically reduced. Water flows at low pressure in a circulation loop to the Ultrafiltration membranes while the purification process takes place – without use of chemicals. Disinfectants and other salts permeates the membranes and are recycled to the pool. All pollutants are expelled from the system by a simple and regular backwash .



Potential use in hotel industry

- Pool filtration systems
- Spa water filtration
- Downstream separation of biologically treated Grey water



Industrial NUFILTER plants – modular, fully automated units for public swimming pools

Advantages	Disadvantages
Very high water clearness and quality (< 0.1 NTU)	May be more expensive than regular filtration systems
Drastic reduction of chemical consumption	
Cut recycling water capacities and energy costs by up to 50%	

