



Mineral Processing *case study*

Dead Sea Works Chooses Megaflex Control Pinch Valves to Isolate Massive Intake Pumps



Mt. Nebo, where Moses crossed over with the children of Israel

Israel's Dead Sea is one of the world's richest natural resources, annually yielding millions of tons of magnesium, fertilizers, salts and apothecarial health and beauty formulas. Containing as much as 10 times the salt and mineral concentration of typical seawater, the Dead Sea appeals to industries and individuals the world over for its abundance of life-giving and rejuvenating elements.

Extracting more than \$0.5 billion in annual revenue from what has come to be known as the "Salt Sea," Dead Sea Works (DSW) is the primary force behind the Dead Sea operation. DSW's huge pumps collect the highly concentrated sea water and move it to shallow evaporation ponds, where the natural heat of the desert sun effects rapid evaporation, leaving behind the raw materials needed to manufacture the company's long list of mineral-based products.

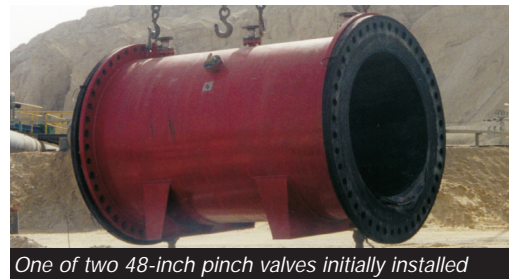
The DSW pumps operate at phenomenal capacities, moving the raw water at rates as high as 100,000 gallons per minute (gpm). When the pumps are shut down for maintenance or fresh-water flushing, massive amounts of water can backflow through the pipes, damaging the pumps.



Huge pipelines move the raw water to shallow evaporation ponds.

DSW attempted to solve the problem by isolating the pumps with gate valves, but the valuable minerals from the seawater would cling to the metal, making it necessary to flush the equipment with millions of gallons of fresh water every year. Furthermore, metal valves are highly susceptible to corrosion, especially when handling water of such a rich mineral content.

Determined to find an abrasion-resistant valve that would help save on fresh-water costs, DSW



One of two 48-inch pinch valves initially installed

considered several alternatives to the metal gate valves and decided on the Type A Air-Operated Megaflex Pinch Valve from Red Valve. The Type A's all-elastomer pinch sleeve isolates the valve body from the process and provides a non-adhesive, abrasion-resistant surface. Furthermore, the simple, compact design of the Type A is both inexpensive and convenient, allowing for easy installation.

Red Valve was also able to solve one of DSW's major concerns with replacing its metal gate valves. Because the powerful DSW pumps take only five seconds upon activation to achieve full-flow operation, the company needed to find a valve that could open completely in less than five seconds to prevent any hindrance to the process. The Type A Valves were custom-engineered, each incorporating three integral ball valves that helped to release the air more quickly, allowing the resilient elastomer sleeve to open in under five seconds.

DSW initially opted to install one 48-inch Type A on each of two pipelines to isolate pump operation. This installation effected an annual savings of \$700,000.00 in fresh-water flushing costs and provided reliable, low-maintenance isolation service. Once the valves had been installed for nearly two years, DSW purchased six additional 48-inch and five 66-inch Type A Valves to provide the same protection and cost savings on other pipelines.