



General Industry *case study*

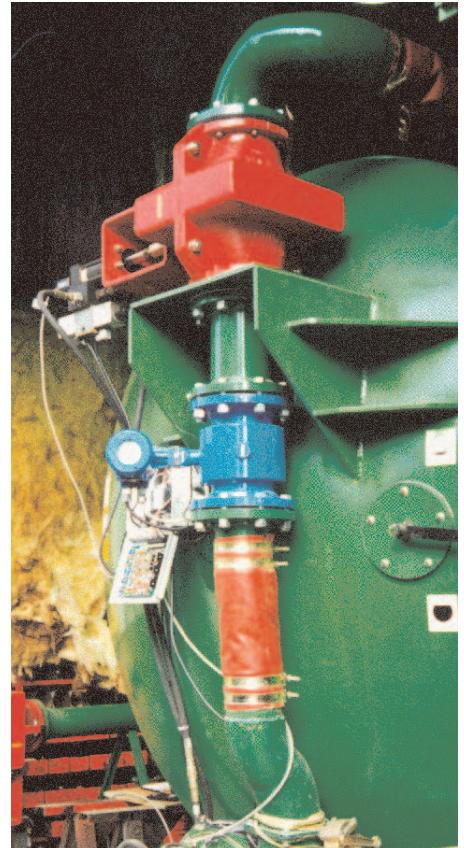
Control Valves Provide Precise Flow Control and Tight Shutoff on Fertilizer Slurry

When people think of high-tech applications for the satellite-based global positioning system (GPS), manure probably doesn't come to mind. Unless you're Frank Bazzoli and Frank Miller, the Chief Engineer and Vice President of Balzer Incorporated. Balzer has applied the same space-age technology used in the stealth bomber for a bombing mission of a different sort.

The manure in question is in fact hog manure, most commonly used as a fertilizer for farming. The proper application of the manure to the fields is critical to achieve the maximum crop yield, and that's where the GPS comes in. The GPS, along with accurate ground maps, are used to guide computer-equipped manure spreaders across the fields, adjusting the amount of fertilizer dispensed. This maximizes the use of the manure, and it allows the farmer to stay within DNR requirements for soil quality. The computer stores a record of all activity for future reference and analysis.

Advanced systems such as this have given rise to the term "precise farming". The Balzer system uses a 6,000 gallon tank and an injector system that places the manure just below the soil surface, eliminating the need for tilling. The flow rate of the manure must be precisely controlled, and stopped quickly when needed. Traditional valve designs

offered poor throttling control over the manure, and clogged quickly due to the high solids control of the manure. For this reason, the manure was spread without achieving the optimum rate in GPM to assure peak nutrient transfer to the soil. Balzer turned to Red Valve's Series 5200 Control Valve for a solution. The full-port design eliminates clogging, and the laminar flow characteristics allowed precise throttling. Red Valve Engineering designed a custom control/actuator assembly to work from the truck's existing hydraulic system. The elastomer sleeve is the only wetted part, greatly reducing wear from the highly corrosive fertilizer. Balzer reports excellent results from the initial installation, and has now standardized on the Series 5200 control Pinch Valve.



Series 5200 Control Pinch Valve fitted with hydraulic control system.

Balzer manure spreader uses GPS satellites to improve accuracy for greater crop yields.



Control Valves