

Dry-Disconnect Coupling Improves Unloading of Detergent Ingredients

VISCOUS products pose quite a handling problem for the Lever Brothers Company detergent manufacturing plant in Baltimore, Maryland. As Lever Brothers' largest laundry detergent plant, the Baltimore facility produces a variety of consumer brands, including Wisk, Surf, and All.

Transported in ISO tank containers, the raw materials must be offloaded into storage tanks at the plant. With viscosities approaching 5,000 centipoises, the liquid does not flow readily from the containers. In the past, several hundred pounds of product would adhere to the container walls even after the unloading pump lost suction.

"Since the material could not be recovered by the supplier, each shipment resulted in the loss of thousands of dollars," says George Schminke, senior project manager at the plant. "We solved the problem by using tilt-chassis that raise the liquid containers up to 35 degrees from horizontal.

"Tilting the container introduced a number of new problems for the flexible hose connection. An extremely short piping arrangement was required to prevent the hose and connector from hitting the rear wheel support frame of the tilt chassis. The tight spacing at the container outlet made connection to the hose coupling difficult.



A container carrying laundry detergent ingredients is tilted for unloading at the Lever Brothers Company plant in Baltimore MD. The cargo is highly viscous.

"The plug-type hose connection we were using exhibited significant pressure drop, which caused the unloading pump to lose suction. Cavitation leading to reduced pump life was clearly evident, and the coupling was retaining significant amounts of liquid on exposed surfaces after being disconnected."

The laundry detergent manufacturer solved these problems by switching to a dry-disconnect coupling assembly developed by the environmental products division of Victaulic Company of America, Easton, Pennsylvania.

"The Victaulic coupling is short, with full three-inch threaded connections that allow a compact piping arrangement," Schminke says. "The coupling is guided into place, making it easy for the operator to complete a connection in a

tight space.

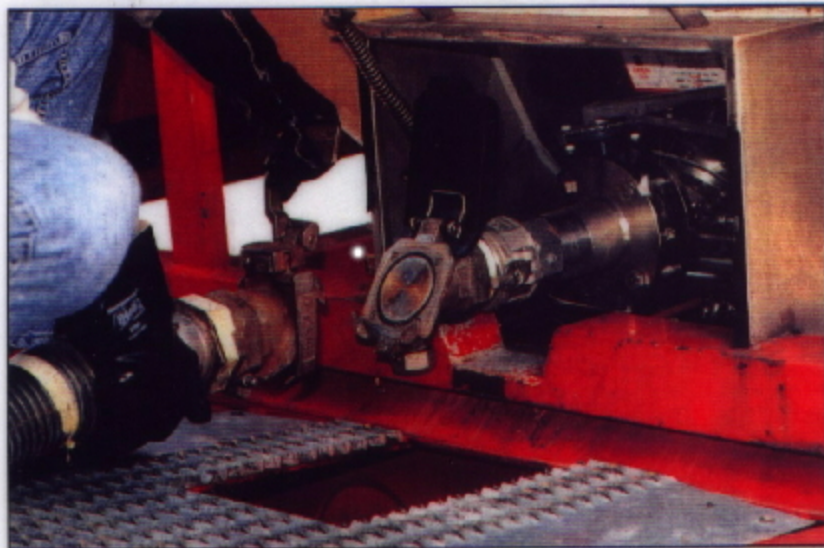
"Pressure drop is much less than that of the plug-type coupling we had been using. Pump suction pressure increased by almost 5 psi and all cavitation stopped. As a result, we can now unload a 5,000-gallon container in half an hour compared with about an hour for the old coupling.

"We selected an EPDM seal because of the particular material involved. The seals prevent chemicals from entering the center of the disc, leaving both faces of the disconnected coupling completely clean."

Called Dry Link, the drip-free assembly uses a quarter-turn handle and matching disc halves to control flow. When the hose fitting and the mating adapter on the container are separated, the disc splits into two identical halves. Each half acts as an automatic cap that seals the end of the hose and discharge outlet to prevent drips and leaks.

A mechanical interlock prevents the fittings from opening unless the two halves of the disc are closed. Dry Link also has a low pressure drop. Its smooth-bore configuration allows unimpeded product flow.

Equipped with a coupler-end swivel to facilitate alignment regardless of hose orientation, Dry Link assemblies are light and easy to handle. Seals are accessible for inspection, cleaning, and replacement. The assemblies are available in two-inch and three-inch sizes with Teflon, Viton, or EPDM seals. Operating pressure is 150 psi for the two-inch assembly and 120 psi for the three-inch coupler. Usable temperature range is -20° F to 230° F. □



Dry Link dry-disconnect couplings have helped to make the unloading process much faster and cleaner.