

CARNIVORES OF CRUD

**The DDT Pigg hogs out on the coke that builds up
inside refinery process lines and pipelines**





A DDT Quad Pass pumping unit supplies high-pressure water that pushes a patented Pigg through refinery pipelines to remove the buildup of coke.

Before a barrel of crude oil can become a gallon of gas or diesel, it must be refined — broken down and purified under intense heat and pressure then mixed with additives. Oil refineries contain a network of pipes where these crude and refined products flow.

Pipes must be cleaned periodically to keep them running efficiently, and that's where the Pigg® comes into play. Not a real pig, but a mechanical one about the size of a tin can, with a strong appetite for petroleum coke, nonetheless.

The Pigg is a patented product, the brainchild of Orlande Sivacoe, owner of Decoking & Descaling Technology (DDT) Inc. In fact, Sivacoe and his company hold 28 patents connected to both the equipment and process of pigging pipelines clean. It's a service that the company has been providing refineries and other industrial plants for 27 years, and they've honed the process.

The Pigg is dedicated to the removal of scale and coke deposits that dwell inside the pipes of fired heaters, boilers, and heat-recovery steam generators. These producers will often shut down portions of a facility to perform a variety of maintenance jobs, so real estate is limited. DDT designed a Quad Pass pumping unit that can clean four to eight process sections or pipes at one time, decreasing both the footprint of the equipment and reducing the time required to decoke and descale.

The Quad Pass pumping unit delivers high-pressure water that pushes the Pigg through the pipeline at 1.5 to 6 meters (5 to 20 feet) per second. As the Pigg moves through the pipeline, its appendages shave away at deposits, which are flushed away by the flow of water and captured in the closed-loop water system. DDT also offers Filter Press Units that continuously recycle the water used for cleaning.

One smart Pigg

There are a couple of cool features of DDT's patented Pigg. It can be equipped with a variety of metal studs and is made of a flexible polymer foam to decoke varying sizes of pipe. Plus, it is bidirectional, making it possible to tackle the most fouled sections of the pipeline.



Frontier Power Products supplied DDT with several power units, including this one powered by a John Deere PowerTech Plus 13.5L engine.

The Quad Pass pumping unit consists of CMU Series centrifugal pumps powered by a John Deere PowerTech™ Plus 13.5L engine. "We use split gear cases to run multiple pumps off one engine," explains Roman Korpus, DDT's vice president. He says the company plans to expand its trailer-mounted systems to include additional pumps.

Korpus says that DDT selected the John Deere engine because it delivers consistent torque through the power band. The equipment draws on the torque when higher water pressures are required to push the Pigg through coke-laden sections of pipe.

DDT has been powering its pigging systems with John Deere engines for five years "with no issues," says Korpus. The company has several locations and purchases the engines from Canadian John Deere engine distributor, Frontier Power Products, as well as *engines, inc.* in Jonesboro, Arkansas, which supplies a special customized radiator to accommodate 60-degree Celsius (140-degree Fahrenheit) ambient temperature within the refinery.

"We run approximately 2,000 hours a year on each engine," says Korpus, "and they've held up great for us."

Distributor: Frontier Power Products in Delta, British Columbia, Edmonton and Calgary, Alberta; www.frontierpower.com; *engines, inc.* in Jonesboro, Arkansas; www.enginespower.com