

# Blast Cleaning Fracking Valves

**Market: Oil and Gas**

Application: Abrasive blast cleaning of fracking valves prior to coating

**The Challenge:**

A major supplier of fracking valves to the oil and gas industry wanted to blast clean the valves prior to coating. They were using two indexing turntable abrasive blast cleaning machines made by an Empire competitor. These machines were suction blast units with six to eight guns per unit.

The valves were cylindrical in shape and approximately six inches in diameter and six inches tall. The surface had several valve seats and a protruding surface, making the blast cleaning process challenging.

Employees manually re-adjusted the nozzles to accommodate the different parts. In addition, some parts were more complex, resulting in a longer set-up time for the guns. The finishing step was very important—a coating was applied after the valves were blast cleaned. However, the manual set-up was time consuming and it was affecting quality and repeatability.

**The Solution:**

Empire technical sales personnel and application engineers met with the manufacturer to evaluate the current process and determine their requirements. After careful analysis, Empire recommended the replacement of the two suction blast machines with a single automated indexing turntable machine that would employ a pressure blast system rather than suction blasting. Fully programmable, the new machine would dramatically reduce set-up time and make production more efficient.

The Empire machine consisted of a pressure blast system with six pressure nozzles, including one vertical oscillation station with three nozzles and one horizontal oscillator with three nozzles. This system featured a menu controller for the input of the blast parameters for each job. The new machine also employed two-direction part rotation control (clock-wise and counter clock-wise) so when the oscillator stroke was going up, the part would turn in one direction and when the oscillator stroke went down, the part would turn in

the opposite direction. The end result of the changing part rotation was a more consistent finish. To further improve the surface finish, the Empire machine employed a higher rotation speed than the machines it replaced.

**Benefits:**

Empire was able to supply an indexing turntable abrasive blast cleaning system with advanced computer control and segmented blast coverage that not only increased productivity, but also assured a consistent finish quality. This was a major concern in this quality-intensive application that involved critical components. The fracking valve supplier was able to reduce production time from two minutes per part to less than one minute per part while maintaining or, in some cases, exceeding the current quality. ●



*A natural gas fracking drill worksite in the middle of rural farmland in Pennsylvania.*