

LOW PRESSURE HIGH VOLUME VALVE

INTRODUCTION

The Low Pressure High Volume Valve (LPHV) was created to help oil and gas producers extend production time through flowback and in erosive applications.

It does this by utilizing an inverted trim designed that pulls the trim out of the flow path when the valve is open. This reduces the amount of contact between the erosive production fluid and the trim, limiting the potential for damage.

In this field study, we'll show how the valve performed at a site in North Dakota.

PROBLEM

A producer with operations in the Bakken was having trouble achieving consistent production in their 3-phase separator. Due to the erosive production fluid, their mechanical dump valves were experiencing severe issues—from swelling diaphragms to damaged cages—and the valves were washing out every other week.

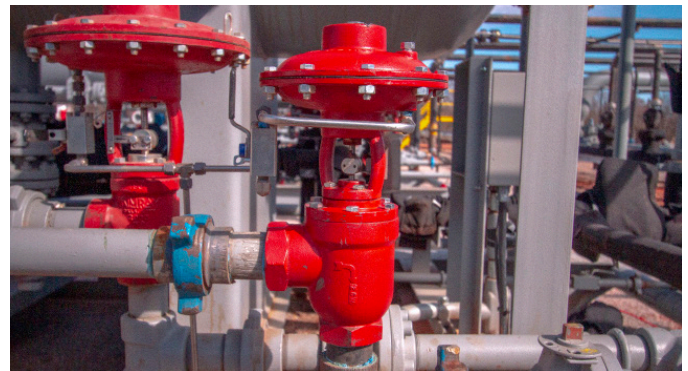
They didn't want to change their piping, so we looked at face-to-face dimensions on the angle body and the 3" LPHV would fit perfectly. We approached them about a field trial.

SOLUTION

We installed a 3" full-port, Low Pressure High Volume Valve with an angle body and D2 hardened trim. The goal was to increase the Cv and create an easier flow path for the erosive production through the valve, thus limiting damage and increasing uptime.

APPLICATION DETAILS

- Upstream (Vessel) Pressure: 60 psig
- Downstream Pressure: 18 psig
- Application: 3-phase water dump
- Process Operating Temperature: 150F
- Specific Gravity of the process liquid: 1.18
- Erosives Present: sand
- Product Installed: 3" Angle Body, Full Port LPHV with 150 RF connection, paired with a Trunnion Assembly and 3PM Mechanical Pilot
- Date of Installation: 8/20/20



RESULTS

On a site where the producer was having to replace the dump valve 2 times per month due to washouts, the Low Pressure High Volume Valve was installed 8/20/20 and was still operating with no issues as of the publish date of this document—three months of uninterrupted operation and counting.

They were also able to open their well even more—almost doubling their production because the full-port LPHV was allowing more flow to get through their separator.

“Installing the LPHV is the single best improvement we’ve made to our site.”

—Production Engineer, Bakken