

CASE **Study**



We wanted to test the consumables in one of the more challenging drilling formations

Rylan Ardoin
Sales Director –
Drilling Pump Aftermarket



GARDNER DENVER DRILLING PUMP CONSUMABLES DELIVER BIG RESULTS IN FIELD TRIALS

CHALLENGE

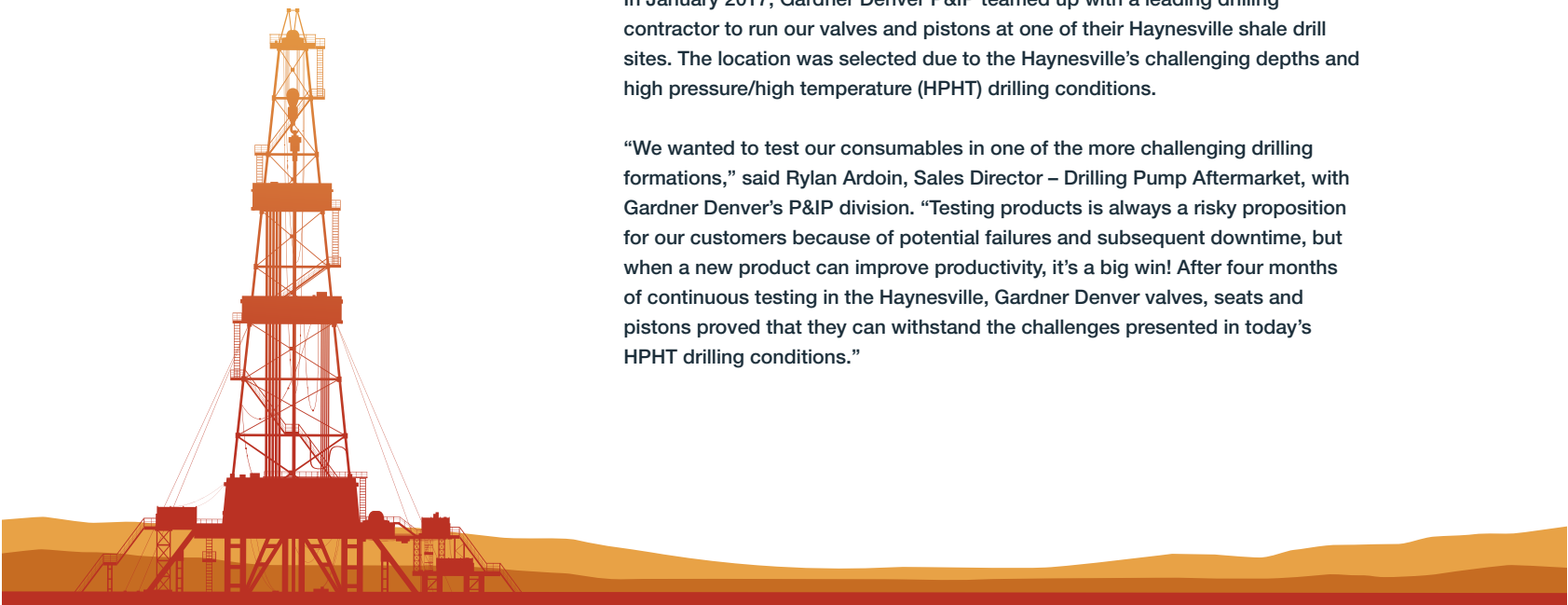
As the industry shakes off its latest downturn, many U.S. operators have been aggressive in executing their delayed drilling operations. In the first half of 2017, the U.S. drilling market experienced a phenomenal comeback as the year-over-year rig count doubled in size with over 500 rigs going back to work. And while drilling contractors have scaled back the last few years on equipment upgrades, the need for reliable and efficient equipment is vital for survival in today's competitive drilling market. As drilling pumps are pushed to the max, working harder and longer with increased demand, the expectation for superior performance is paramount. The same logic holds true for aftermarket consumable parts (i.e., pistons, valves and seats) that are vital to help drilling pumps achieve maximum operating efficiency.

INNOVATION

As part of its 150-year commitment to innovation, Gardner Denver's Petroleum & Industrial Pumps (P&IP) division has been steadfast in its development of superior drilling pumps and associated consumables, including pistons, valves and seats. Dependable drilling pump performance is critical for productive drilling operations and keeping downtime to a minimum.

In January 2017, Gardner Denver P&IP teamed up with a leading drilling contractor to run our valves and pistons at one of their Haynesville shale drill sites. The location was selected due to the Haynesville's challenging depths and high pressure/high temperature (HPHT) drilling conditions.

"We wanted to test our consumables in one of the more challenging drilling formations," said Rylan Ardoin, Sales Director – Drilling Pump Aftermarket, with Gardner Denver's P&IP division. "Testing products is always a risky proposition for our customers because of potential failures and subsequent downtime, but when a new product can improve productivity, it's a big win! After four months of continuous testing in the Haynesville, Gardner Denver valves, seats and pistons proved that they can withstand the challenges presented in today's HPHT drilling conditions."



PUT OUR LEGACY TO WORK

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THE RESULTS

Gardner Denver's bonded pistons and valves feature a proprietary urethane blend for extended performance and durability.

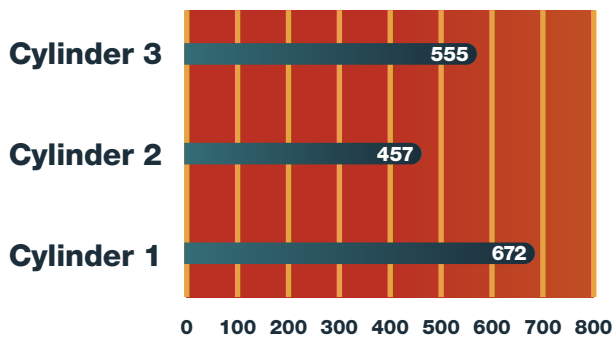
To measure product reliability, we monitored performance of Gardner Denver's 5" flex-lip pistons along with our full-open, valves and seats. The test was conducted on a drilling rig operating in the Haynesville shale play that is equipped with Gardner Denver 1600HP/7500 psi PXL pumps. This was a multi-well, horizontal drilling pad with total well depths over 19,000 feet. Peak pressure recorded over the drilling operations was in excess of 5,400 psi and flow line temperatures were nearly 200°F. Both oil and water-based drilling muds were utilized in the various stages of the drilling operation. A summary of the performance hours is illustrated in the charts below.

Per the results below, Gardner Denver was pleased to see its products meet or exceed industry standards and we are very excited to introduce our product to the market!

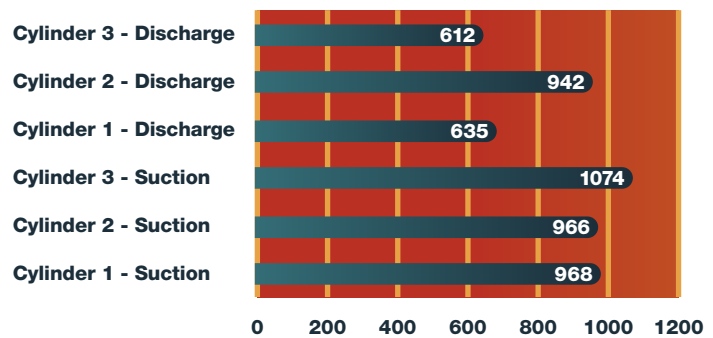
Performance



5" PISTON PERFORMANCE (HOURS)



API-6 VALVE & SEAT PERFORMANCE (HOURS)



PUT OUR LEGACY TO WORK