

AUGUST 02, 2010

Check Valve Clapper Enhancements

Background

In Q4 2009, Weir SPM began producing the Severe Duty (SD) Check Valve, a check valve design that exhibits longer valve life and more reliable performance in harsh pumping environments such as shale gas applications. The new valve design features include:

Utilization of a Threaded Seat:

- ☑ Self-locking design prevents seat from becoming loose
- ☑ Machined from high erosion and high corrosion resistant NACE compliant stainless steel for longer life
- ☑ Features o-ring for exceptional sealing performance

Enhanced Hanger:

- ☑ Flat machined into hanger matches flat machined into body preventing rotation during operation
- ☑ Removes hanger pin from assembly, eliminating common wear on item

The SD Check Valve originally utilized a clapper which featured a urethane coating on only the flow facing side of the component. (See Figure 1) In some instances, customers reported that the urethane coating of the original clapper design would occasionally peel away from the clapper during harsh pumping operations. Through the continual design improvement process,

Weir SPM now offers an enhanced clapper design that greatly extends the operating life of the clapper.

Solution

Important Weir SPM's new enhanced check valve clapper design features a urethane covering that surrounds all sides of the clapper. While maintaining the same material specification for the urethane material, the fully-covered design has shown to provide significantly longer service life.

Test results have shown the new enhanced clapper performs exceptionally well in a variety of service environments.

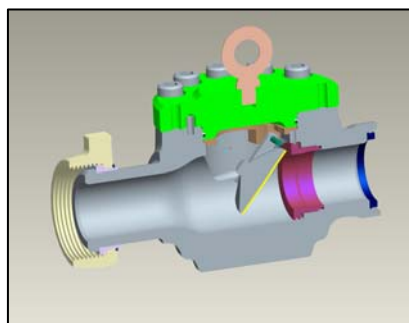


Fig 1 - SD Check Valve – Original Design



Fig. 2 – Enhanced Clapper Design – cross sectional view

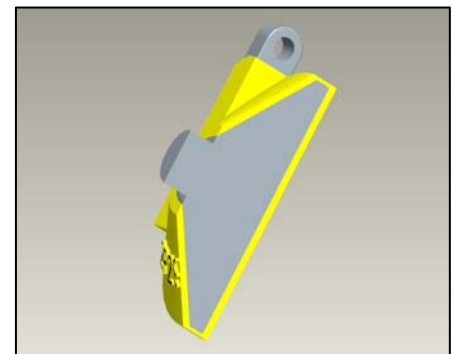


Fig. 3 – Enhanced Clapper Design – back view

Weir SPM: Product Bulletin

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Part Numbers

The enhanced clappers are designed and capable to work in SD model check valves, as well as Weir SPM's traditional top load check valve. The clappers are available in replacements kits under the following part numbers:

SD CHECK VALVE PARTS KIT	
PART NO.	SIZE
2A29477	3" 15K
2A29478	4" 10K & 4" 15K

TRADITIONAL CHECK VALVE PARTS KIT	
PART NO.	SIZE
2A29480	3" 15K
2A29481	3" 15K – VITON (H2S)
2A29482	3" 20K, 4" 6K, 4" 10K & 4" 15K

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