

PROVEN

THE *SOLUTION* VALVE FOR-PROBLEM WELLS!

*THE SOLUTION FOR
BOTTOM TAGGING,
GAS INTERFERENCE,
AND GAS-LOCKED PUMPS*

**PUMPS BELOW
PACKER!**



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US and Canada Patents
World Wide Patents Pending

The **SOLUTION VALVE (SV)** IS A PROVEN SOLUTION TO THE PROBLEMS OF GAS INTERFERENCE, GAS LOCK AND BALL FOULING!

This exclusive, patented design in travel valve technology increases pump efficiency in vertical, deviated and horizontal wells. Additionally, the **SV's** unique design works wonders in gassy fluids, heavy crude, and dirty well conditions.

SV's FEATURES INCLUDES:

- Valve always opens on the down-stroke and always closes on the up-stroke.
- Exclusive design of the ported seal-stem provides greater flow capacity.
- Reversible ball and seat doubles operational life, with no extra cost.
- All popular alloys are available for balls, seats, and drag plunger. Body components are 316 stainless steel.

BENEFITS INCLUDE:

- Increases production of oil and gas by lowering fluid levels.
- Eliminates need to tag bottom.
- Creates smoother loading and unloading of all valves within the pump.
- Eliminates impacting and pounding of balls and cages.
- Increases pump life and efficiency.
- Pumping below a packer.
- Minimizes stress reversals in rod string -- fewer rod parts and less rod-cut tubing.

ELIMINATES THE NEED FOR:

- Expensive traveling valve accessories.
- Expensive hard balls and seats.
- Hard interior cage surfaces.

With the **Solution Valve (SV)** designed and manufactured by Eagle Innovations, Inc., you can reduce gas interference and positively eliminate gas-locking of your down-hole rod pump. No longer will you have to tag bottom in an attempt to free gas-locked valves. Expensive equipment damage and premature pump failures are eliminated! This valve is not just another ball-knocker; it represents an exclusive new design in travel valve technology. Beginning at the bottom and continuing throughout the up-stroke, the **SV** pulls itself closed by the resistance imposed to movement of its own drag-plunger. With each stroke, this feature enables the pump chamber to be completely recharged with

new fluids entering from the bottom of the hole. Immediately at the top of the down-stroke, this same drag-plunger resistance opens the **SV**, thus permitting 100% of the fluid in the pump, whether gas or liquid, to flow through it. The **SV** cannot gas lock! Acting as a mini-compressor, it will pump gas, oil, or water on each and every stroke. The Ported Seal-Stem holds the ball in a fixed position. At all times both the ball and seat remain centered within the **SV**. Failures experienced by conventional travel valves due to the impacting and fluid pounding between balls and cages are eliminated.

It is important to note that the **SV** is not just another add-on. It's a complete travel valve system that will more than pay for itself by:

- 1) Increasing production lost to gas interference and gas-locking; 2) Eliminating failures of rods, tubing, and other components involved in the pumping process which result from the shock and stress fatigue of tagging bottom; 3) Prolonging pump life associated with premature valve failures; and 4) **Pumping problem zones below a packer.**

The **SV** has been a proven performer in hundreds of wells experiencing problems with gassy and dirty fluids! **DEVIATED & HORIZONTAL WELLS**

The **Solution Valve's** patented design has also had a positive, demonstrable effect when used in horizontal and deviated wells where premature valve failures have been experienced. These failures are typically the result of uneven wear on the valves caused by non-vertical orientations. Many manufacturers of API pumping systems, using various ball and seat configurations, have attempted, with little success, to control ball position by tightening tolerances around the ball. These measures have invariably caused efficiency of the pump to drop dramatically and resulted in premature ball and seat failures.

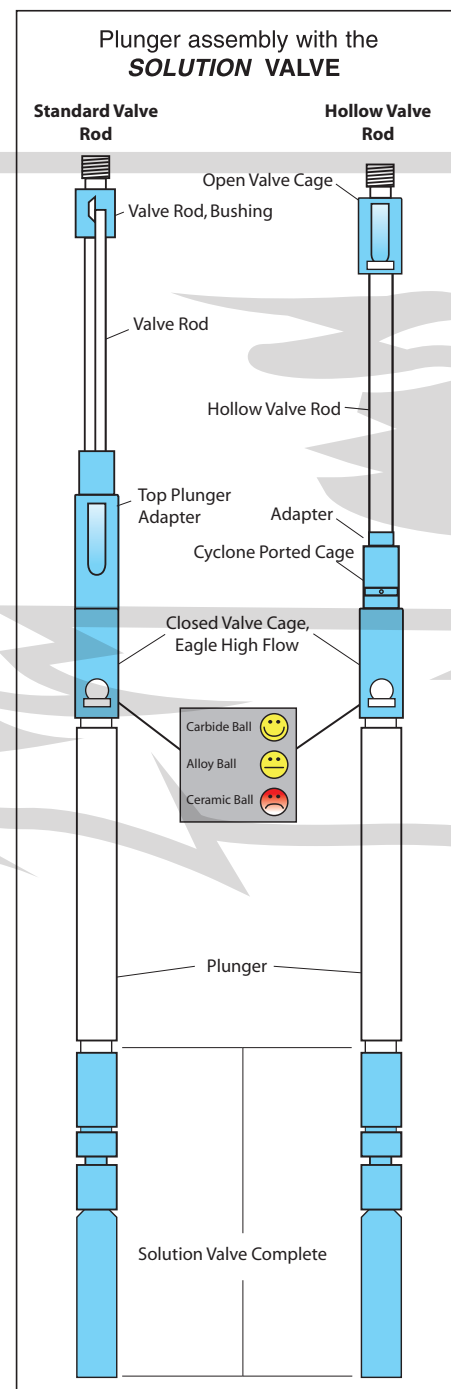
The **SV** was designed to achieve high-efficiency pumping for any down-hole orientation of the pump. Both ball and seat are always centered within the valve. The **SV** performs just as efficiently horizontally as it does vertically, because its guide system keeps the seating surfaces aligned at all times. Consequently, the **SV** immediately closes at the beginning of the up-stroke, thus improving pump efficiency. With conventional pumps often-times 20% or more of the stroke movement occurs before the ball can re-seat itself properly. Use of the **SV** results in fewer valve failures, reduced service costs, increased production, and greater volumetric efficiency.

HEAVY OIL RECOVERY

Wells which produce "heavy oil" often present some of the most difficult pumping conditions incurred within the industry. However, the **SV**, with its greater cross-sectional area, has demonstrated dramatically favorable results under these

same conditions. Production has been increased from 15% to 60%, as compared to pumps with conventional travel valves acting alone. This performance also indicates a significant improvement in the fluid dynamics prevalent within the pump chamber itself. By minimizing pressure drop across the entire valve system, all valves are able to open and close much more quickly and smoothly.

When compared to other pumping systems, tests performed in difficult heavy oil applications consistently demonstrate that the improved technology of the **SV** has resulted in significant reductions in lifting costs and increases in oil production.



THE SOLUTION