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## New Products Enhancing Production

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In a fast-paced world that seems to be reshaping itself on a daily basis, understanding what new technology can do can make all the difference.

Advances in technology offer solutions for producers trying to improve well performance and profitability, and include everything from new completion systems, to a tool that separates problem gas downhole and delivers dense fluid to pump, to a software package for controlling failures and optimizing artificial lift installations.

### Maximizer™ Separator

The technical principles and projected results of a downhole dynamic fluid-gas separator have been recognized by engineers for years, and Kenneth Schmitt, president of STREN Company, says the Houston-based manufacturer took into consideration the full scope of downhole separation technical know-how when designing the patented Maximizer™, a high-efficiency gas separator designed for simple, effective and economical performance.

The traditional approach to the problem of excess gas has been to handle the gas after it goes into the pump. With the Maximizer separator, Schmitt reports that STREN has devised a way to degas production fluids prior to intake into the pump, thereby increasing volumetric efficiency and preventing gas locking and pounding for increased pump life.

According to Schmitt, the first stage isolates free gas from the fluid-gas mixture as it enters the separator. The second stage induces the gas in solution to break out and separate at each dwell time (down stroke) of the plunger, and then discharge

out the gas discharge stack tubes.

"As this dynamic gas isolator strips the gas, the production fluid density increases at the pump intake," he explains, adding: "The Maximizer gas separator is adjustable to a specific production range, and offers proven improved pumping efficiency."

When in-flowing abrasive particles are known to damage the pump plunger and barrels, Schmitt notes that an optional STREN PumpGuard™ membrane can be attached to the Maximizer separator to further reduce pumping cost.

Key developments in the separator's design include applying proprietary software developed initially for the aircraft industry to accurately determine dynamic pressure drops generated across the pump standing valve seat during the intake stroke. Schmitt notes that the software allows STREN to manufacture certain models as standard, off-the-shelf units using pre-set separator ranges and gas stripper valve spring pressures. For example, he notes that both 150 and 400 barrel-a-day units for 28-41 degree API gravity crude oil are stock items.

### Wide Operating Range

In addition, Schmitt points out declining wells are no problem, because while each Maximizer has a maximum daily production rating, there is no minimum rating. Spring and valve plate combinations give operating ranges from 5 to 600 bbl/d in 5.5-inch casing, and up to 1,500 bbl/c in 7.0-inch casing. In addition, a unit can be moved to another well, provided the pressure differential is higher than the pressure drop expected at the standing valve. Often, Schmitt notes, STREN only needs to be consulted if the unit is being considered for a field with a different oil gravity.

The units feature a key operator benefit of 90 percent turn-down ratios, to give "plug-and-play" capability for wells on

steep decline curves, or on carbon dioxide or water floods where producing rates may be highly variable. "Maximizer gas separators offer proven, affordable performance," Schmitt states.

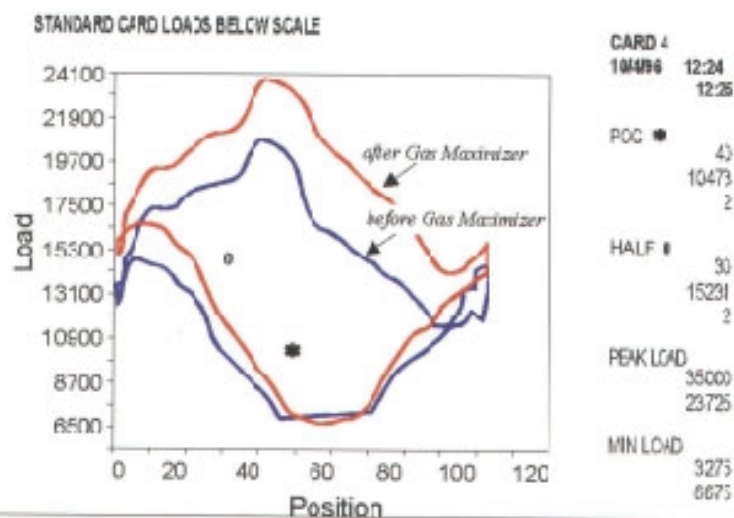
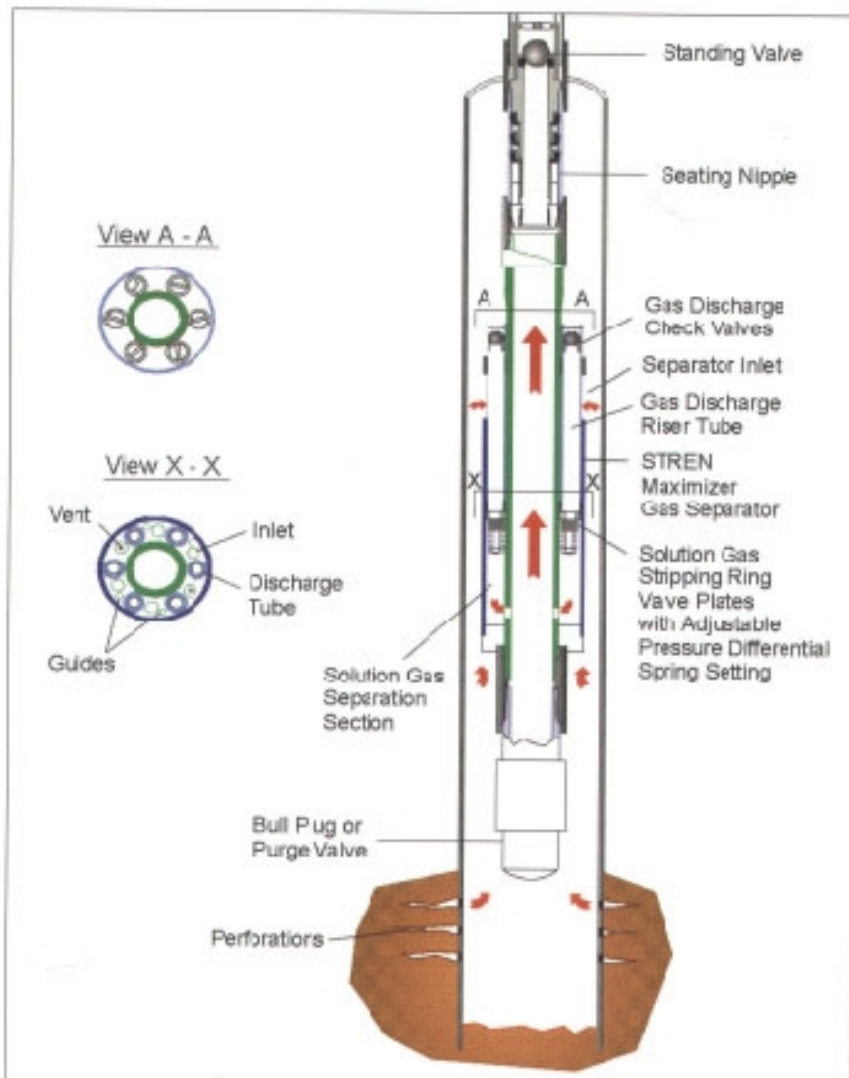
He adds that in all of its product lines, STREN believes in using the simplest, most cost-effective method that works. At a cost of \$1,100-\$3,000, depending on configuration, the Maximizer is a solution that can pay for itself quickly when correctly applied, Schmitt relays. As an example, he refers to one of STREN's customers who installed the Maximizer on a well. As a result of increased efficiency, the operator was able to produce an extra 80 bbl/d. At a price of \$18 a barrel, the extra production was worth about \$1,440 a day (Schmitt notes that additional case history information can be obtained by phoning STREN at 1-800-856-0206).

"The Maximizer is unique in the technology it applies," Schmitt concludes. "I expect it to be one of the most successful products in our line based on the positive response so far from the industry."

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**Engineered Products For  
The Production Industry**



STREN's Maximizer™ Gas Separator effectively separates the free gas and solution gas from the fluid stream and delivers a dense fluid to the pump. Two dynamometer traces before and after installation, show the improved performance resulting from the Maximizer separator.