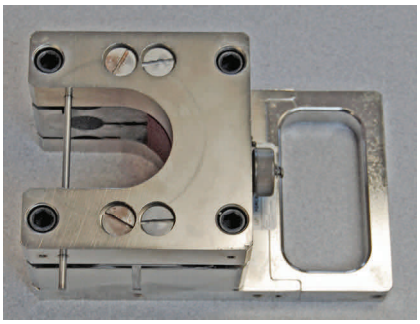
Transducers

40K Quantitative (Horseshoe) Load Cell



The 40K Quantitative Horseshoe Load Cell measures the polished rod load on a pumping unit with accuracy and versatility — as it accommodates both of the two most common methods of load cell insertion without the need to acquire varying load cells.

In Method One: The **Horseshoe Load Cell** is placed between the **carrier bar** and the **rod clamp**. First, a **stuffing box protector** is used to extend slightly above the stuffing box. A temporary **knock-off stand** is positioned on the stuffing box protector. A **fine thread rod clamp** is temporarily installed on the polished rod above the knock-off stand; then, on the downstroke, the temporary rod clamp comes in contract with the knock-off stand, which produces separation between the carrier bar and the top rod clamp.

Install stuffing box protector

At this point, the Horseshoe Load Cell is inserted between the carrier bar and the permanent rod clamp. The brake on the pumping unit is slowly released, causing the slack to pick up between the carrier bar and the permanent rod clamp. This applies the load to the Horseshoe Load Cell. The knock-off stand is removed and the well motor started for the dynamometer test.

In Method Two: The **hydraulic lift method** allows use of the Horseshoe Load Cell, without the corresponding 3½ -inch thickness offset caused by inserting the load cell as in Method One. This requires permanent installation of an inexpensive **spool spacer** between the **carrier bar** and the **permanent rod clamp.**

Horseshoe Load Cell in operation with String Transducer

The spool spacer has dimension that will hold the Horseshoe Load Cell and a **hydraulic lift mechanism,** which lifts with the help of a hand pump and hydraulic hose. As the unit lifts up, a small **shim spacer** is inserted between the lift and the Horseshoe Load Cell. Then as the hydraulic pressure is released, the load is applied through the shim spacer directly onto the horseshoe load cell. Then the hydraulic hose is removed, and the pumping unit is started for the dynamometer test.

Horseshoe Load Cell: Methods of Data Acquisition and Accuracy

- **In Method One, the entire rod string is lifted by the 3½- inch vertical height of the load cell, causing the pump plunger to be further separated from the standing valve and to operate in a different (higher) part of the pump barrel. This sometimes causes pump performance during the test to be different from actual performance. The different pump spacing will cause a slightly different compression ratio, and will change the look of gas interference and other effects.**
- **Method Two causes only minimal change to the pump spacing and minimal change to the pumping string.**

Rugged, accurate transducers from Sage Technologies

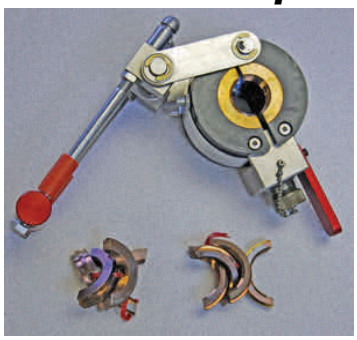
Sage Technologies, Inc.
1021 S. Main St., Ste. 105
Grapevine, Texas USA 76051

Phone: 817-488-2579
Fax: 817-421-0607
Tollfree in U.S.: 877-488-2579

Email: info@sageoiltools.com
Website:www.sageoiltools.com

Transducers

Quick Clamp Load Cell



The fast hand-operated **Quick-Clamp Load Cell** allows easy tool-free installation on the rod string for testing with the AFL IV with Dynamometer. Sensor technology measures changes in rod loads for a quick qualitative look at pump performance.

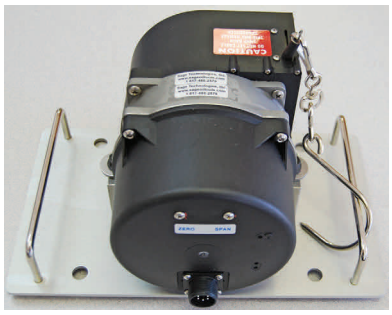
Changeable jaws included in the universal adapter kit and a fine-tune ball-seat adjustment guarantee the clamp will fit all rod sizes. High sensitivity to changes in the load weight provides a more detailed dynamometer card, which allows for accurate rod pump analysis. Precision stainless steel moving parts for reliability and durability.

The Quick Clamp Load Cell clamps to the polished rod below the carrier bar in a quick set-up motion. The Quick Clamp Load Cell does not change the relationship between the pump and the barrel, making it ideal for a quick dynamometer analysis.

With the AFL IV with Dynamometer, the Quick Clamp Load Cell allows easy gathering of surface pump cards, calculation of downhole pump cards, standing valve check and traveling valve checks, for complete diagnostics of the pumping unit. And it calibrates easily with Sage DYN software.

Installing Quick Clamp on rod string

String Transducer



The **String Transducer** monitors the position of the rod string during dynamometer testing.

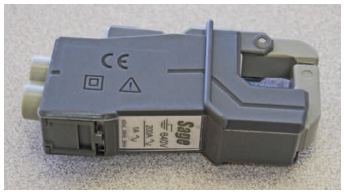
The high quality string transducer ensures proper position data across the entire range of pumping configuration without the inherent inaccuracies involved when using an accelerometer to determine rod string position.

The String Transducer installs in seconds, functions properly without perfect alignment, and yet with the cable retracted, it measures only six inches long.

The nylon-coated stainless steel cable and powder anodized aluminum shell ensure a maintenance-free operation with the Acoustic Fluid Logger IV with Dynamometer.

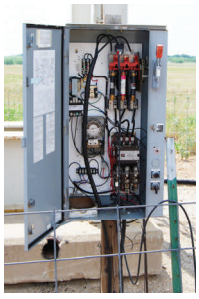
String transducer operating with 40K Load Cell

Motor Current Clamp



The Motor Clamp Transducer allows measurement of the **current used during the pumping cycle** on both the upstroke and the downstroke. Sage DYN software provides an analysis plot of the current data, which allows for quick balancing of the pumping unit.

The easy-opening jaw of the handheld device clamps easily around the power wires in the control panel. No changes to the control panel are required.



Clamp connects to the control panel

Transducer options for your unique well situations

Sage Technologies, Inc.
1021 S. Main St., Ste. 105
Grapevine, Texas USA 76051

Phone: 817-488-2579
Fax: 817-421-0607
Tollfree in U.S.: 877-488-2579

Email: info@sageoiltools.com
Website:www.sageoiltools.com