

Acoustic Fluid Logger IV with Dynamometer



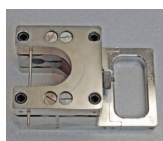
Quick Clamp
Load Cell



String Transducer



Motor Current
Clamp



40K Horseshoe
Load Cell

Fluid Logger components

- Pressure Pulse Gas Gun
- Microphone cable
- CO2 bottle & charge hose
- Pressure Transducer
- Sage Technologies AFL Software

Dynamometer components

- Horseshoe Load Cell Transducer
- Quick Clamp Load Cell Transducer
- Motor Current Clamp Transducer
- String Transducer
- Sage Technologies DYN Software

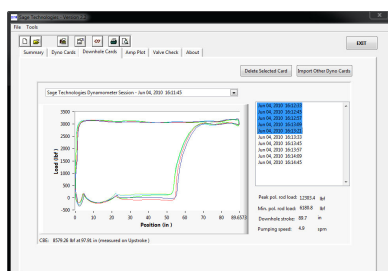
Dual duty: find fluid levels & analyze pump performance

AFL IV with Dynamometer does dual duty on pumping wells, with easy to use software and electronics that identifies fluid levels and gather polished rod load and stroke measurements, giving you the information you need to diagnose well problems that could slow or halt production.

During the dynamometer test, Sage DYN onscreen cards, like the one shown below left, can detect numerous problems such as **leaking valves, leaking tubing or leaking pump barrel, damaged tubing, friction between the tubing and the sucker rod string, stuffing box friction, and paraffin accumulation.** The software compiles all dynamometer testing data into a printable report which shows dyno cards, valve checks and the amp plot, giving you the information you need to detect existing and potential problems on a pumping well.

AFL IV with Dynamometer utilizes your computer and your choice of the 40K Horseshoe Load Cell or Quick Clamp Load Cell, String Transducer and Motor Current Clamp. After entering rod string data, **the surface and downhole cards are both displayed onscreen while running the Dynamometer test.** Basic dyno card shapes and associated identifiable problems are shown in the chart below.

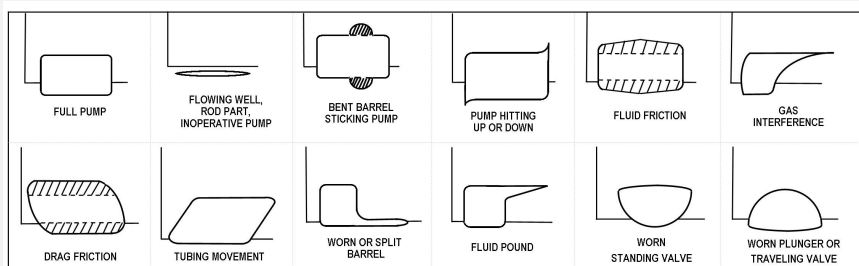
During the fluid level test, the AFL IV with Dynamometer uses the Pressure Transducer to find casing pressure, then delivers a fluid level shot from the Pressure Pulse Gas Gun and **displays the fluid level onscreen.** Software produces a report which shows the fluid level and calculates gas free fluid level and bottomhole pressure, plus calculated production at varying pressures and liquid levels, which aids in enhancing production.



Fluid Pound Dynamometer card

AFL IV with Dynamometer

Downhole Card Shapes



Dynamometer analysis increases production & decreases downtime

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AFL IV with Dynamometer



Sage Technologies

AFL IV with Dynamometer does dual duty on pumping wells, offering all components and software necessary to evaluate the efficiency of the pumping unit and to determine the depth of the fluid level. **Fluid level and pumping unit tests on your wells lets you build a comparative record over time, which can reveal changes in well conditions.**

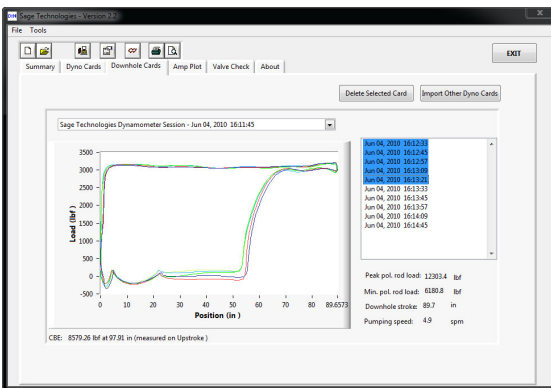
The AFL IV with Dynamometer uses Sage Technologies DYN and AFL Software, Windows based software which offers simple and unlimited installation, for loading on office computers as well as field portable computers. Reports from each well can also be stored and emailed as .dat and .pdf files.

Sage Technologies DYN Software

- Records surface and downhole pump cards and standing and traveling valve checks, counterbalance and pump leakage calculations, to find problems before costly downtime and lost production.

Sage Technologies AFL Software

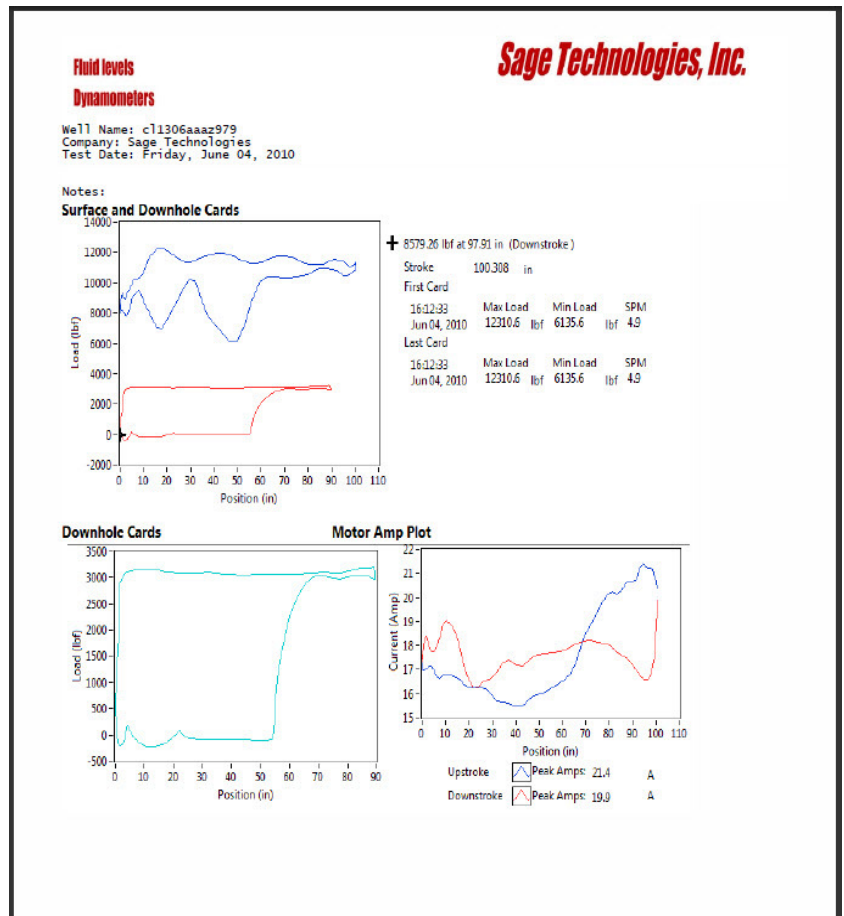
- Records the fluid level and calculates pump intake pressure, gas free fluid level and bottom hole pressure, which aids in proper well unloading.



Sample Dynamometer Card shows fluid pound in pumping unit by analysis of load and stroke data. Successive tests are overlaid for comparison.



Sample Fluid Level shows the compressed gas shot (red line), fluid level (blue), and second reflection of fluid (green).



Above: A Sample first page of an AFL IV with Dynamometer Report, created after completing a dynamometer test on a well; shows Surface and Downhole Dynamometer cards and the Motor Amp Plot

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