



DesignRite

Artificial lift design and optimization software

Design Schlumberger ESP and gas lift systems quickly and accurately

DesignRite* artificial lift design and optimization software is used daily by engineers across the globe. The user-friendly software helps determine the optimum ESP and gas lift system for individual wells. Users are guided through an intuitive workflow to carefully select each well system component from a comprehensive catalog of the latest lift technology and equipment. The software output is designed with the end user's workflow as a driving parameter, and the result is a complete ESP or gas lift solution best-suited to maximize production and minimize downtime of an operation.

Reduce uncertainty of current and future well performance

To ensure longest-possible operation in a well, accurate performance prediction of each system component at field conditions is crucial. DesignRite software simplifies well analysis. While leading users through a step-by-step design process, the sophisticated software sizes and analyzes entire ESP or gas lift systems and uses the inputted fluid, well, and reservoir information to predict the inflow and outflow performance of the systems. With extensive casecomparison capability, the software accounts for varying field and well conditions when helping engineers with the design and selection of the most effective lift system for their well.







Features

- Easy-to-install software with various reports prepared in Microsoft[®] Word or PDF format
- System component selection for fast and precise design
- Well nodal performance analysis
- Automatic tolerance and clearance checking
- Compatability with previous releases and other applications

The design process involves:

- entering PVT data
- entering well data
- entering inflow data
- providing design specifications
- sizing and selecting equipment
- performing sensitivity analysis
- analyzing reports and plots.

ESP Mode

Workflow design for wide range of applications

The ESP design mode incorporates methods and equipment for low-gas-oil ratio (GOR), high-GOR, and very high water-cut applications. The step-by-step data entry and selection simplifies the design procedure of the complete ESP system, which, ultimately, guickens the process and decreases production downtime. It allows pump selection based on the estimated pumping rate; calculates total dynamic head; provides well conditions and casing size limitations; and includes motors available in a broad range of voltage ratings with multiple cable, protector, ancillary equipment, and surface equipment selections. A gas separation algorithm is built for specific gas separators adding flexibility in stageby-stage handling of gas-a necessary ESP system design component for high-GOR wells

An annulus unloading simulation of system conditions helps determine when to unload the well, allowing users to visualize the fluid level from the start of the operation until system stabilization.

Fluid model description and flow correlation selection

The ESP design module provides a comprehensive selection of fluid models and correlations to match measured well data. An extended set of empirical and mechanistic flow correlations is available to match field performance.

ESP performance prediction

DesignRite software uses the latest analysis technology to predict performance measures and power requirements for each component within the designed system, including separation equipment. Users can calculate heat transfer, define pipe segmentation, and apply viscosity corrections to the pumps. Powerful sensitivity features confirm that the design is robust when there is uncertainty in the field performance.

ESP system component database

- Intake and gas separators
- Pump, housing, and gashandling devices
- Motor
- Protectors
- Downhole sensor
- Cables and motor lead extensions
- Surface equipment

Well performance curve



The basic workflow menu of the ESP mode includes fast and easy data entry and the ability to compare plots of various fluid properties against pressure.

Gas Lift Mode

Workflow design for various retrievable gas lift systems

The gas lift design mode helps engineers control the design of multiple types of gas lift systems, including injectionpressure-operated (IPO) and productionpressure-operated (PPO) valves. The software provides options to specify gas lift injection parameters, operating parameters, unloading parameters, and valve spacing.

System performance prediction Precise prediction of well productivity is an integral part of the design and selection of a gas lift system. The DesignRite software allows engineers to calculate deepest injection depths, determine valve spacing and sizing based on selected methods, and compare cases with variation in design variables.



Users specify fluid and flow correlations, choke and flowline data, fluid properties, and wellbore and inflow performance data in the model data window.



The basic workflow menu of the gas lift mode allows fast and easy input of relevant data to set system parameters, calculate injection depths, and view plots with well performance curves showing well response to lift gas.



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