CHAMPIONX | **THETA**
ARTIFICIAL LIFT | AUTOMATION AND OPTIMIZATION

RODSTAR rod pump system design software
Smart design software for deviated or vertical rod pumping systems

APPLICATION

- Deviated or vertical rod pumping wells

BENEFITS

- Enables quick and easy comparison of pumping units
  - Can simulate any pumping unit, including long stroke and hydraulic units
  - Offers a large database with over 4000 pumping units
  - Allows you to customize lists to only show the pumping units you have in inventory
- Offers a sophisticated 3D wellbore pilot
  - Simply import deviation survey and view a 3D plot of your wellbore
  - Shows different sections in the rod string with color variations to easily view where the pump is located
- Provides on-screen dynamometer card comparison and animation
  - Load XDIAG file into the RODSTAR software to overlay measured dynamometer card on the predicted plot
  - Allows you to determine unknown quantities such as rod-tubing friction, fluid level, detect bad data, etc.
  - Can "animate" plots by simultaneously showing how the surface and downhole loads change, allowing you to see rod stretch effects, load fluctuations on the plunger, delay between pump and surface position, severity of fluid pound, and more

RODSTAR™ rod pump system design software offers both vertical and horizontal well operators a powerful tool to design optimized pump configurations and simulate future pump performance. An advanced calculation engine guides you through a series of steps to collect configuration data about your pump design. After the inputs have been collected, it performs complex calculations that model the performance of the design. This performance is documented in a comprehensive report that grades the design's attributes and provides itemized design improvement recommendations.

Powerful technology

With the RODSTAR software, you can enter "target" production (or IPR) data and have the program automatically calculate the pumping speed, plunger size, and optimum rod string design you need. IPR integration allows the software to automatically calculate the target production from pump intake pressure (PIP) or fluid levels, or to calculate the PIP from a target production or entered strokes per minute (SPM). It can even recommend the pumping unit and motor size you need while it simultaneously designs the rod string for you.

RODSTAR software also has a powerful "batch" run capability that allows unattended execution of as many RODSTAR files as you want. It can summarize the results of all these runs in a customizable Excel® spreadsheet file for easier comparison. This allows you to select the best design with the least amount of work. It even calculates the cost of the rods, pumping unit, and monthly electrical bill for even more accurate comparisons.
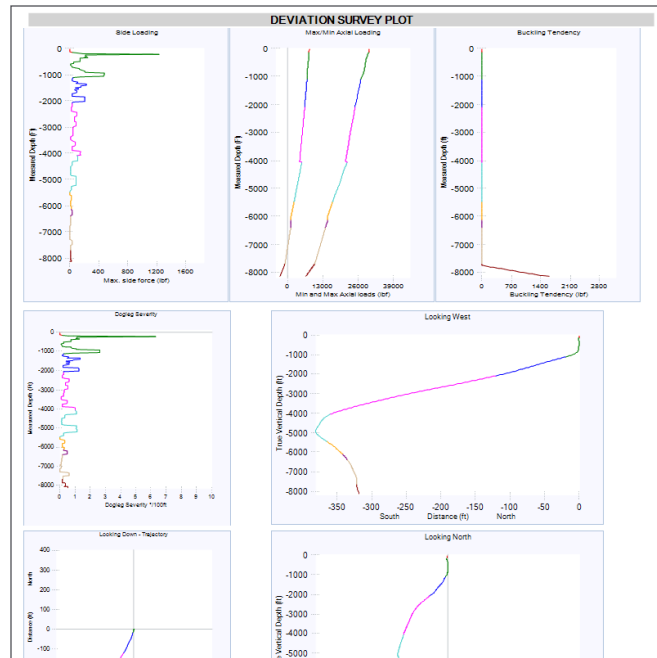
Example of a RODSTAR deviation plot

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Intuitive interface

The RODSTAR software has an improved user interface that is very easy to use. It contains help assistance options for each input parameter and program feature, and also displays recommendations and warnings to help you avoid mistakes and improve system design. You can enter deviation data from a spreadsheet or even with Optical Character Recognition (OCR) software and the system will automatically import the data. RODSTAR software also has an intuitive output report that looks the same on the screen as on the printer. All deviation-related plots are on one page, saving paper and making the output report easier to use.

Customizable defaults

The software allows you to select English, SI (Metric), or Canadian (mix of English and Metric) units. You can save time by specifying values that usually do not change such as your company name, electricity costs, standard sucker rod length, tubing size and pump type, rod and pumping unit costs, etc. You can also specify different types of sucker rod guides and how much side load is recommended per guide. The program will then use this information to recommend rod guide placement.

Responsive technical support

Our technical support includes enhancements, upgrades, "bug" fixes, and a quick response team to contact for any issues or questions. You also have easy access to manuals, technical documentation, and software upgrades at our customer portal, ThetaPortal.com.

Contact your local Theta automation and optimization representative or visit ChampionX.com/theta-software to learn more.

Example of a RODSTAR deviation input

System requirements	
Processor	1.6 Hz or higher
Operating system	Windows XP/Vista/7/8/10
Memory	1 GB of RAM or higher
Hard disk space	125 MB of available disk space
Display	1024 x 768 or higher

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