

FLOWSERVE



VALTEK

StarPac Gas Lift Automation

Manual Gas Lift

Gas Flow

- Unstable gas flow rates
- Excessive surging

Gas Usage

- Sub-optimal injection gas to liquid ratio
- Field optimization impossible during upset conditions

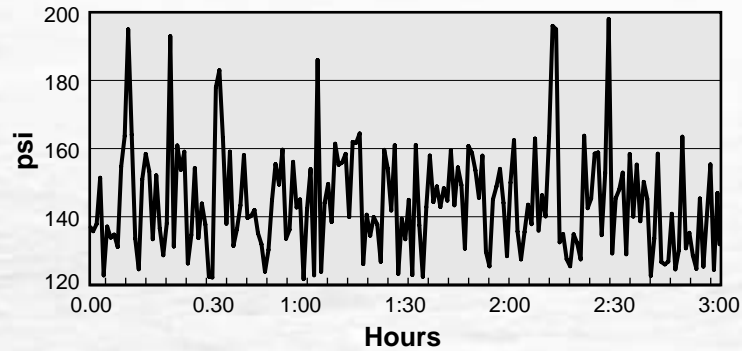
Space and Weight

- Space efficient
- Lowest weight

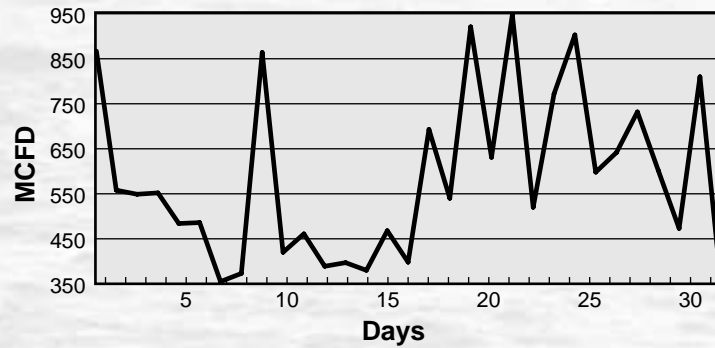
Oil Production

- Low oil production
- Intermittent flow
- Slugging
- Multi-pointing

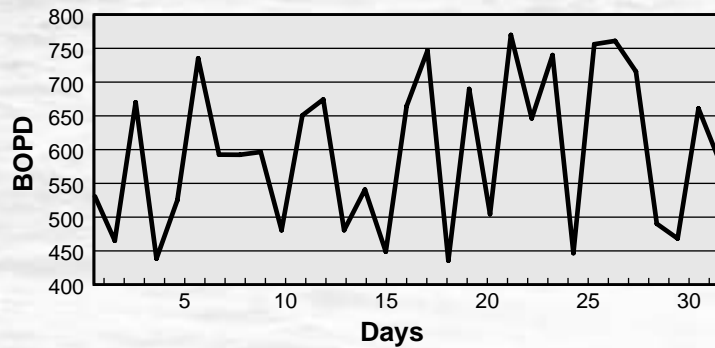
Tubing Pressure



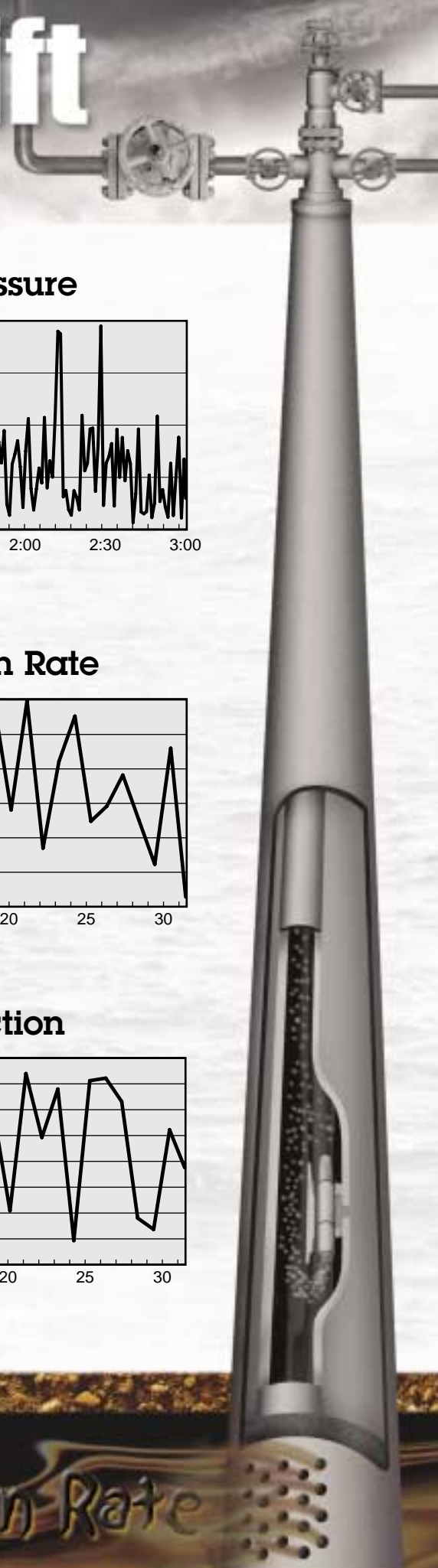
Gas Injection Rate



Oil Production



Variable Gas Injection Rate





Increase Your

Economic Analysis*

- Production increased immediately
- Low capital investment

Additional Economic Benefits*

- Potential for reduced labor & transportation by remote operation
- Diagnostics reduce platform visits and improve maintenance planning
- System continues to operate during communication interrupts, improving up-time

* For a more personalized and detailed payback analysis, contact a local Flowserve representative.

Revenue Calculator

System Cost (typical installed cost per well)

Item	Description	Typical Installation	Your Installation
StarPac System	2-inch CS 600 Class w/ Δ P cell	\$ 16,500	<input type="text"/>
	Freight	\$ 150	<input type="text"/>
Installation Costs	General Labor	\$ 520	<input type="text"/>
	Wiring	\$ 200	<input type="text"/>
System Integration	Programming	\$ 800	<input type="text"/>
Total Installed Cost		\$ 18,170	<input type="text"/>

Production Gains (typical gain per well)

Increased Oil Production / Day

Assumes a 15% Oil Increase (500 BOPD Well)	75 BOPD	<input type="text"/>
@ \$25/bbl	\$1,875/day	<input type="text"/>

Decreased Gas Usage / Day

Assumes a 15% Usage Decrease (550 MCFD)	82.5 MCFD	<input type="text"/>
@ \$5/MCF	\$413/day	<input type="text"/>
Total Revenue	\$2,288/day	<input type="text"/>

Payback Analysis

Annual Oil Production Increase	27,375 bbls	<input type="text"/>
Annual Injection Gas Decrease	30,112 MCF	<input type="text"/>
Payback Time (Total Cost / Total Revenue Per Day)	8 days	<input type="text"/>
Annual Revenue Increase (Total Revenue Per Day X 365 - Total Cost)	\$816,768/yr	<input type="text"/>

Increased Profits

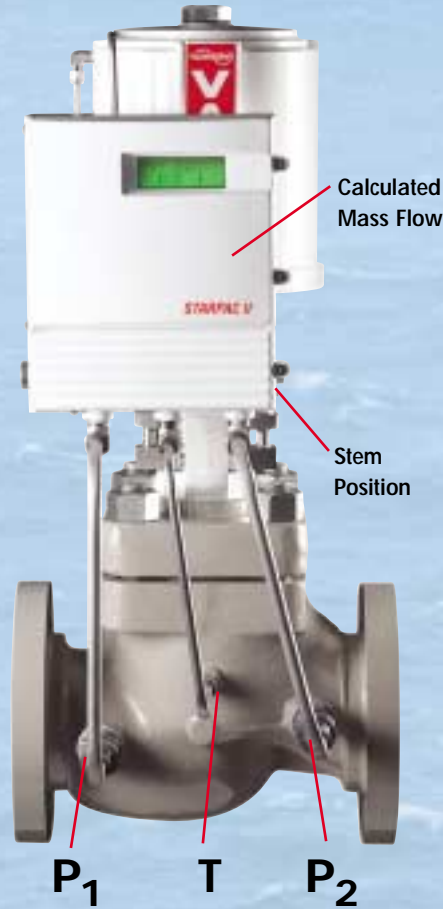
Revenue with Valtek

System Benefits

- Constant gas flow rate equals increased production (15 percent typical)
- No piping modifications required
- System measures and controls flow over 30:1 turndown
- Reduced well-test times
- Improved well optimization

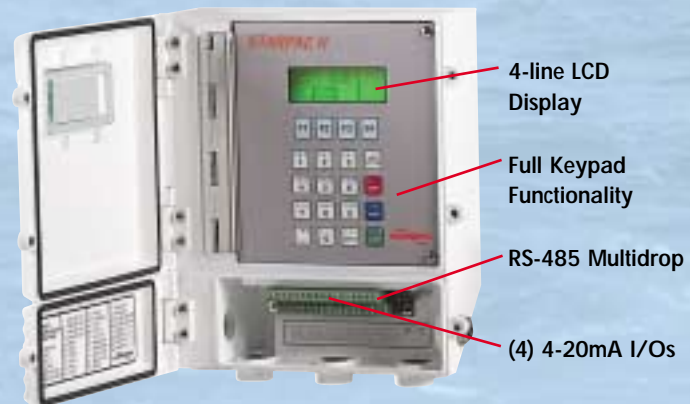
Local Touchpad Benefits

- Local access to process variables via display
- Ability to change set points on the spot with keypad
- Local manual control for maintenance functions
- Local verification of system functionality



Remote Operation Benefits

- Simplified system integration
- Unsupervised normal operation (saving personnel costs)
- Complete monitoring and control during hurricane mode
- User-definable alarms
- Diagnostics helps accurately identify problem before going on-site
- Constant, real-time data access
- Manual data logging eliminated
- Quick access to historical data
- Provides production accounting information



Today's Standard

StarPac Gas Lift



Gas Flow

- Extremely stable gas flow rates
- Surging eliminated

Gas Usage

- Optimal injection gas to liquid ratio
- Field optimization under upset conditions
- 15 percent reduction typical

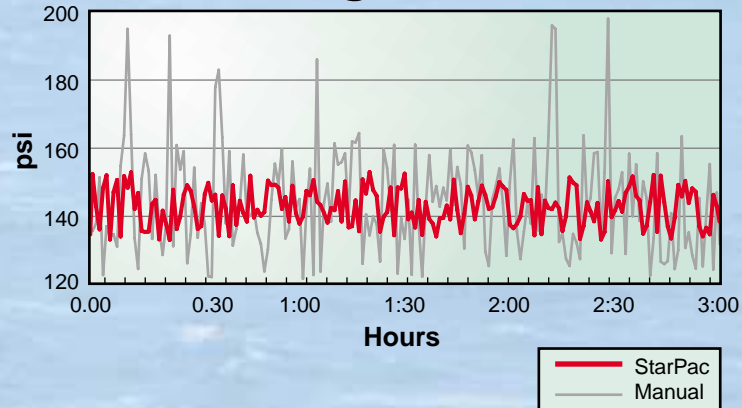
Space and Weight

- Complete flow loop installs in place of manual valve
- Lowest automation weight

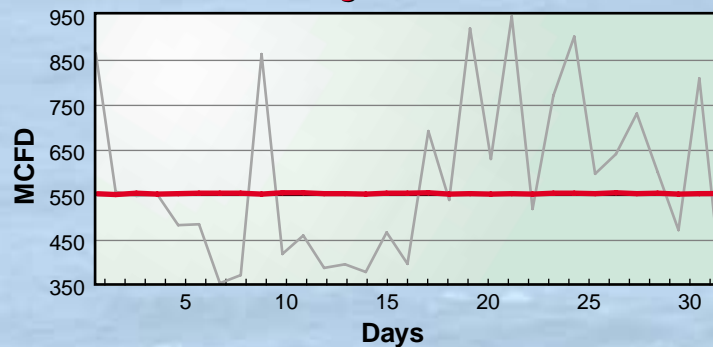
Oil Production

- Slugging eliminated
- 15 percent increase typical

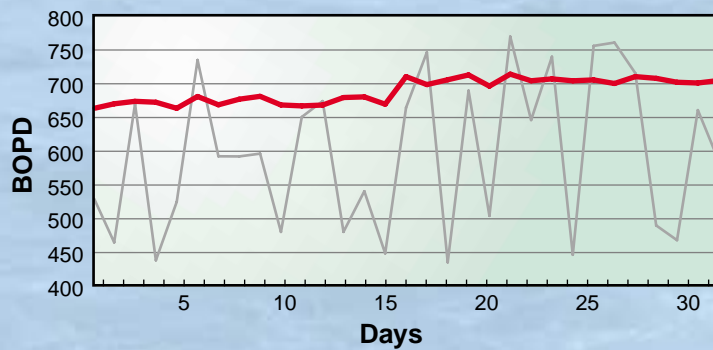
Tubing Pressure



Gas Injection Rate

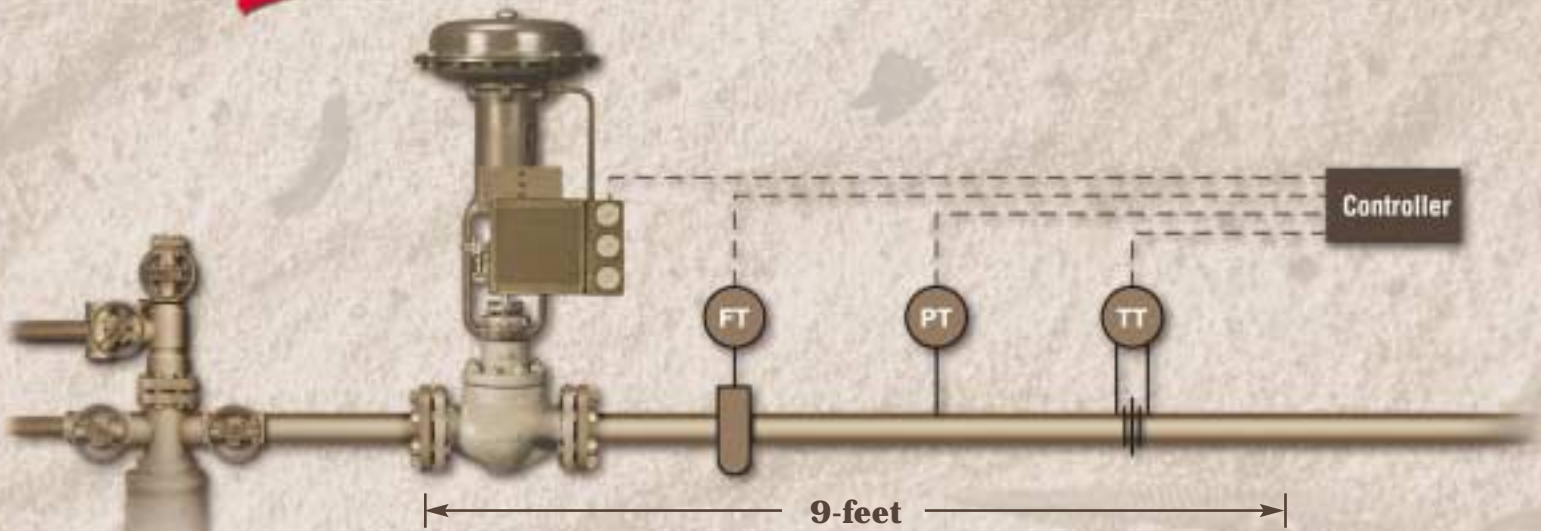


Oil Production



Constant Gas Injection Rate

StarPac Prehistoric Automation



Gas Flow

- System too slow to fully stabilize

Gas Usage

- Field optimization difficult during upset conditions

Space and Weight

- Major piping changes required
- Significant weight penalty (120 pounds per well typical)

Remote Operation

- Complex system integration required

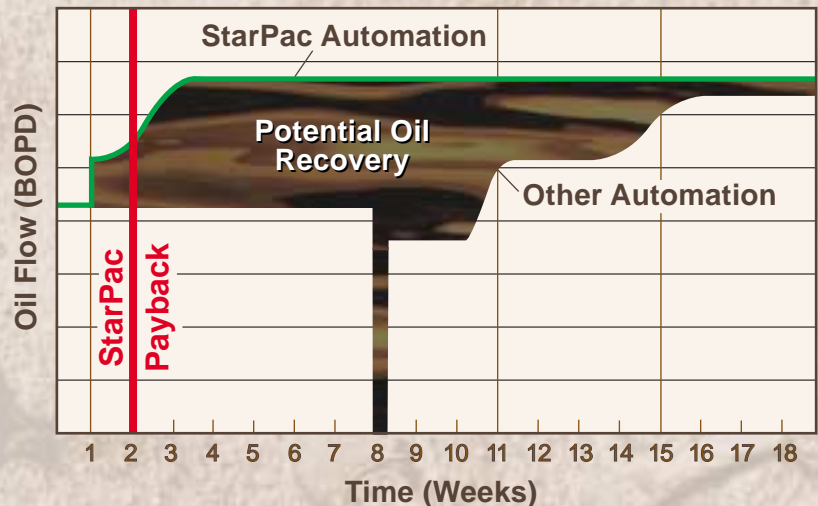
Diagnostics

- Remote diagnostics unavailable
- Local diagnostics limited to valve and transmitter

Oil Production

- Oil production less than optimal
- Moderate slugging

StarPac Delivers Oil Faster



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