



iChem

Precise consistent injection rates from a highly reliable solar pump

Chemical Pump reliability and consistency are of utmost importance to oil and gas producers. Unfortunately, many chemical injection systems do not deliver the desired results. Ferguson Beauregard launched a joint engineering effort with our sister companies; Blackmer and Neptune, part of Dover's Pump Solutions Group. That effort has resulted in the *iChem*, an innovative solar-powered chemical injection system with a superior pump design. *iChem* can deliver consistent, accurate injection rates for wells up to 1,200 psi.

This advanced system was engineered to meet the needs voiced by our industry:

- Reduce Field Service and Maintenance Downtime
- Eliminate Chemical Loss Due to Leaks
- Precise and Consistent Injection Rates at Various Pressures

The Benefits are Clear:

- Decreased Maintenance
- Protect against Chemical Leaks
- Reliable Dosing Rates

iChem: The Best Solution For Accurate Chemical Injection

The *iChem* Solar Chemical Injection Pump System is a revolutionary step forward in oil and gas field production. Some of the most trusted names in the energy and chemical dosing industries have come together to solve many of the problems that sap profitability and productivity.

Better Product

- **Eliminate Chemical Leaks** with durable seal-less pump technology. Reduce maintenance calls and needless downtime. The unique diaphragm technology has no o-rings on the wet-end of the pump, allowing a wide range of chemical compatibility.
- **Easy to calibrate and use** with highly accurate settings. The *iChem* has a user-friendly digital controller with numeric keypad and LCD display, making calibration simple, yet precise.

Better Performance

- **Reduced operator time at well sites** since this system was designed to eliminate the need to adjust or replace packing. Integrating the reliable diaphragm pump with intelligent Ferguson Beauregard controls gives operators maximum visibility and real-time monitoring with minimum time on site.
- **Increased production and reduced chemical expenses** even as pressure varies. Accurate and consistent injection rates translate into better well yields. Injection rates can be easily adjusted, ranging from 0-45 gallons per day.

Better People

- **Experienced FB field support** that has provided superior service to the industry for more than 35 years. FB has field offices across North America to provide direct production-knowledgeable assistance. You can rely on the FB technology and people for unmatched field service to keep your equipment running efficiently.



FERGUSON BEAUREGARD™

New Intelligence In Problem Solving™

A DOVER COMPANY

An Effective, Efficient, Environmentally Responsible Solution for Chemical Injection

iChem has been carefully engineered to run independent of the well. Environmental regulations and an ever increasing industry-wide appreciation for minimizing environmental impact has led to the creation of this solar-powered chemical injection system. A system that is designed to minimize environmental impact:

- No atmospheric gas emissions
- No chemical leaks
- Reduced chemical consumption
- Reduced trips to the well

This fully integrated system has been designed to provide highly accurate injection rates in a safe, energy-efficient manner. *iChem* is a solution that reduces chemical consumption and maximizes well output with extremely low energy draw, all powered by the sun. We call this a Smart Energy® Solution.

Smart Energy®

Maximize visibility and control of your well operations by monitoring performance in real- time from your mobile device.

The easy-to-configure *iChem* controller from Ferguson Beauregard is proven technology. Precise digital controls (not thumbwheels or speed knobs) ensure accuracy, and it can send instant text-message updates directly to your phone, saving you time and money by reducing "check-in" well visits.



***iChem's* Power System**

The battery life for *iChem* is, on average, twice as long as other leading solar chemical injection systems.

Chemical Injection in production wells is vital to improve oil and gas recovery. *iChem* injection is highly accurate and can be administered in regular doses or in batches.



***iChem's* system**

Pre-wired and easy to set up in less than one-hour. Among the most accurate chemical dosing systems on the market, effective at pressures up to 1,200 psi.

Improve Well Production with Ferguson Bearegard's *iChem*, Chemical Injection System

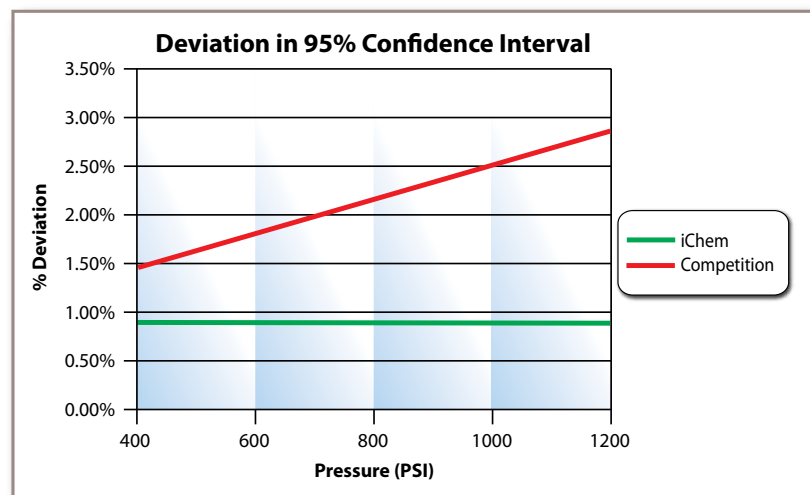
The *iChem* is a result of years of experience in oil and gas field production. We set out to deliver a pump that eliminates problems associated with inconsistent dosing and leaks that are prevalent in competitive pump designs. The highly consistent dosing provided by Ferguson Bearegard's *iChem* system helps maintain healthy well yields, but it also reduces the amount of chemicals used two ways:

- There is no need to "over-dose" the well because you have more control over the injection rate.
- The seal-less pump design eliminates leaks that can sap chemicals

Consistent injection rates save chemicals...and money!

Other solar pump brands suffer from significant flow inconsistencies. The *iChem* diaphragm pump is designed using a brushless motor, paired with a digital controller for precise, accurate injection rates. Over the range of pressures (300 - 1,200 psi), our tests show the *iChem* has a dramatically smaller deviation of injection rate within a 95% confidence interval (as shown below). At 1,200 psi, other solar chemical injection pumps can vary their injection rate as much as 2.8%. By comparison, the *iChem* system at an average below .90%, or less than a third of the flow deviation, within that 95% confidence interval. What does this mean to you? You can be confident each of your wells are delivering precise doses without wide fluctuations in flow rates. When injection rates are consistent, you reduce wasting chemicals from over-delivery and you avoid corrosion and output problems from under-delivery. *iChem* injects just what your well needs, reliably and without repeated trips to monitor performance.

iChem's Controller
Easy to configure digital controls with text message updates to your mobile device.



The *iChem* Pump has the heartbeat to keep production flowing

Proven Neptune diaphragm pump technology has been used in industrial chemical dosing for years. This highly durable diaphragm pump has fewer moving parts and no dynamic seals, making performance more consistent and maintenance much easier. The diaphragm completely separates the chemical side from the oil side and is hydraulically balanced to reduce stress and increase pump life. On the oil side, there are no O-rings in the pressurizing piston sleeve, resulting in no wear on the piston rod. By comparison, competitive plunger models are known for leaks, and have no fewer than 14 dynamic seals or washers in the business end of the pump that can wear over time. *iChem* features a stainless steel head and check valves and a Teflon coated diaphragm to protect against corrosion. Robust design performs well, resulting in more uptime with less maintenance.





Superior Warranty and Field Service

Ferguson Beauregard knows that reliable, proven oil and gas recovery technologies are critically important, but we also know that this represents only one part of the overall equation. The other, equally important part involves having trained, knowledgeable and customer-focused staff, which is why we make substantial investments in our people. It is through their collaborative effort with customers that the greatest achievements are realized.

When you put it all together, for the very best in service, innovation and fully integrated oil and gas recovery system solutions, it's easy to see why leading companies around the world demand Ferguson Beauregard.

- **Local Field Sales and Service Offices** – Proven technicians with an “above and beyond” commitment to every customer’s mission.
- **Technical Support** – Experts in peace-of-mind assurance, making sure your equipment is always right for the job. Unparalleled technical knowledge, on-site product training, troubleshooting, installation and product-selection consultation, and total life cycle attention.
- **Customer Care Specialists** – Action-oriented specialists committed to making sure every order receives immediate attention, is accurately processed and followed up, to keep your operations flowing smoothly.

Specifications

Max Injection Pressure	1200 psi (82.73 bar)
Max Output*	45 GPD (170.64 l/day)
Solar Panel Sizes	50/80 W
Power Supply	100 Ah, 12 VDC

* Typical solar panel configurations allow only up to 10 GDP output. Special solar panel configurations can be provided if higher rates are necessary.

Features

Highly efficient and accurate brushless stepper motor

Corrosion resistant 316 SS and Teflon as standard on chemical end

Hydraulically balanced diaphragm pump design to reduce wear

Seal-less design to prevent leaks

Fully controllable digital timer to meet output requirements with precision

Option for remote monitoring and control

An Integrated Solution from

NORRIS
PRODUCTION SOLUTIONS



**FERGUSON
BEAUREGARD**
New Intelligence In Problem Solving™



Neptune

For more information, contact your local field technician, or call our main office: 1-800-282-0039