FXA Solar Injection System

DISCOVER A NEW SOLAR SYSTEM™
The next generation of solar chemical injection systems has arrived

CheckPoint introduces the most reliable, durable, and efficient solar chemical injection system in the world. Oil and gas production today demands clean solutions, but until now producers have had to settle for reduced reliability in order to achieve their goals. The FXA Solar Injection System is designed and built around CheckPoint's overriding mission: to offer only the most reliable products that achieve rapid payback through reduced operating costs. Every component in our system has been designed and tested to ensure this mission is achieved. We carefully analyzed the reliability concerns presented by every solar solution available. The FXA system leverages CheckPoint's existing chemical head technology while addressing the weaknesses of prevalent solar packages.

FEATURES & BENEFITS

MAXIMUM BATTERY LIFE – A sophisticated charging system and properly matched components mean operators will avoid the cost and effort of constant battery replacement and the environmental problems associated with discarding old batteries. Battery failure is the number one cause of solar pump failure.

ULTRA HIGH EFFICIENCY – The FXA Solar Injection System offers the highest output per solar panel in the industry. Every component has been optimized for efficiency, allowing the system to reach high pressures and volumes not feasible with other systems.

MODULAR & SCALABLE – The system can scale to three panels with the same frame and components, offering exceptional flow and pressure characteristics even in extreme latitudes. Using the same drive mechanism, frame, enclosure, and electrical components, only a change of plunger diameter and possibly the chemical head is needed to accommodate a surprisingly large performance envelope.

RELIABILITY – With proven chemical head technology from our Series 1250, 1500 and LPX pumps, an extremely simple but effective drive mechanism, and "bullet-proof" electrical components, long term reliability of the critical components is assured.

DURABILITY – The FXA system is built of only high grade materials and the same level of workmanship CheckPoint puts into every product. It is designed to withstand harsh field conditions for many years without failure or corrosion. It is by far the highest quality system on the market.

ABOUT CHECKPOINT

CheckPoint is a leading provider of production solutions. We design, manufacture, and market the world's most reliable chemical injection pumps and pump packages, control panels, pressure test systems, green energy solutions, and process components. CheckPoint built a reputation for reliability in the oil & gas production and refining industries, and our products are selected wherever reliability and quality are essential.

Our mission is to reduce operating costs for our customers by increasing the reliability of their production systems. With a worldwide presence and a genuine customer-focused culture, CheckPoint is large enough to handle the needs of the world's largest industrial clients, but small enough to care about our customers and what happens after the sale. We stake our reputation and our future on the performance of our products and our employees 24/7/365.

CHECKPOINT – RE-DEFINING RELIABILITY FOR OVER 15 YEARS
www.cppumps.com

FLOW RATE
0.15 to 11.55 USG/H
(0.56 to 43.71 L/H)

PRESSURE
0 to 9,000 PSIG
(0 to 621 BARG)

MODULAR
Maximum flexibility with minimum effort

RELIABLE
CheckPoint design and proven components

MINIMIZE
Battery loss and environmental waste

DURABLE
Materials and construction stand up to real world situations

Re-Defining Reliability™

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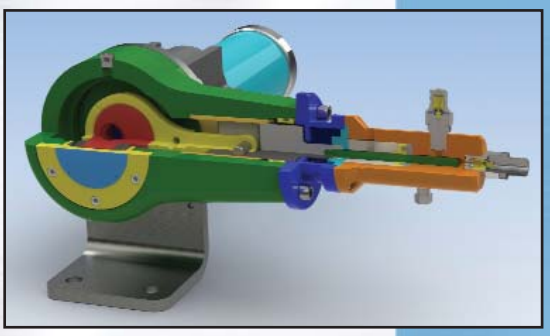
OPERATING PRINCIPLES

The solar panel(s) feed a PWM-type charge controller, which charges the batteries during daylight hours and controls voltage and current. The new ultra-efficient CheckPoint FXA electric chemical injection pump is controlled by a high resolution continuous duty pseudo-3phase controller/motor system; providing a truly continuous injection rate. CheckPoint engineers collaborate with the customer to properly size every system for continuous operation and maximum battery life.

1. **SOLAR PANEL(S)**
   - 135W photovoltaic cell panels
   - 1 to 3 configurable (three shown)
   - Impact resistant panels (hail, etc) available

2. **WEATHERPROOF ENCLOSURE**
   - **DEKA SOLAR™ BRAND BATTERIES**
     - Best "deep-cycle" performance available
     - Low maintenance gel or absorbed types
     - Optimized for renewable energy applications
     - Designed for mission-critical equipment
   - **CHARGE CONTROLLER**
     - **PWM** protects batteries and guarantees maximum charge efficiency
     - **DRO** (Digital Readout) shows realtime system voltage, current, and battery levels

3. **FXA PUMP ASSEMBLY**
   - **ALL NEW DRIVE** - Ultra-efficient eccentric mechanism
   - **MODULAR DESIGN** - Accommodates Series 1250, 1500, and LPX heads and a wide variety of plunger sizes
   - **DC ELECTRIC MOTOR** - 1/5 HP, three-phase, brushless, 12-24V DC, motor with 0-100% speed reduction capability, truly continuous duty
   - **MOTOR INTEGRATED GEAR REDUCTION** - Integral, gear mechanism yields long life and high efficiency
   - **EVERWEAR™ CERAMIC PLUNGERS** - RMS 8 surface finish, Vickers 2750 hardness for nearly infinite life and extended packing durability



4. **MOUNTING ASSEMBLY**
   - **FULLY ADJUSTABLE** - Panel angle and orientation can be changed without unearthing or disassembly
   - **DIMENSIONS** - Approximate weight is 350 lbs 84" Wide X 123.65" High X 48" deep Weight and size are dependent on application
   - **LIGHTWEIGHT** - Aircraft-grade 6061 aluminum construction
   - **SCALABLE** - Accommodates 1 to 3 solar panels; customized systems to accomodate more panels are available

5. **INJECTION PACKAGE**
   - CheckPoint preferred configuration designed for optional pump & system performance
   - Includes calibration gauge, relief valve, pressure gauge, drip pan, and all other components needed to ensure proper operation and extend the life of the pump
   - 316L SS construction throughout

PERFORMANCE PER PV PANEL		1 SOLAR PV PANEL				
PLUNGER DIAMETER	(IN)	1/4	3/8	1/2	3/4	1
	(MM)	6.35	9.53	12.70	19.05	25.40
MAXIMUM PRESSURE	(PSIG)	9,000	6,000	3,500	1,750	850
	(BARG)	621	414	241	121	59
MAXIMUM FLOW RATE	(USG/H)	0.15	0.33	1.13	2.32	3.85
at 0 PSIG discharge pressure	(L/H)	0.57	1.25	4.28	8.78	14.57

Note: For 2 panel-double the flow rate figures above and for 3 panel-triple the figures.
Based on a 3.5 Solar Insolation Factor (equivalent to Mandeville, Louisiana).
For other insolation factors multiply shown volume by the ratio (I/3.5).
Maximum flow rate is given at 0 PSIG discharge pressure.