



Artificial Lift Services

**raise**  
PRODUCTION INC

[www.Q2als.com](http://www.Q2als.com)

## Q2 REAL - Raise Efficient Artificial Lift High Angle Reciprocating Pump System

The patented Q2 Raise High Angle Reciprocating Pump (HARP™) is part of a complete system designed for landing at high inclination (surpassing 90 degrees) in deviated, horizontal, and high Dog Leg Severity (DLS). The HARP pump can be ran stand alone or in conjunction with a unique horizontal gas separation (REAL™) system depending on the flow conditions at the heel section of the wellbore.

The pump is designed to pump at high efficiency in varied and challenging flow regimes, including high GLR and poor fluid quality (ex: foam) observed in wells that have a propensity to gas lock or have high gas interference. Insufficient draw down due to pumps landed too high up in the well bore, as well as inconsistent slugging of fluids, can cause inconsistent pump efficiency. The HARP allows operators to maximize draw down and production rates for all applications. The HARP is the first step of a complete Horizontal Wellbore Optimization system.



### HARP™ High Angle Reciprocating Pump (Patented)



### REAL™ Horizontal Gas Separator (Patent Pending)

## ARTICULATING: PLUNGER, VALVE ROD ARTICULATION JOINT

### FEATURES

- Swiveling knuckle joints installed between plunger segments and traveling valve
- Top Articulating Sub valve rod entry guide
- Collette / bushed-barrel valve rod centralizer

### ADVANTAGES

- Specifically targets deflection issues that standard "rigid" plunger designs face in high DLS landing spots
- Capable of bending to conform and track along the deflection plane of the pump barrel
- Designed for minimum force required to stroke plunger - greatly reducing pump-barrel friction

### BUSHED-BARREL VALVE ROD GUIDE



## ENERGIZED, MECHANICALLY UNSET TRAVELLING & STANDING VALVES

### FEATURES

#### Normally closed, guided, spring-loaded Valve Systems

- Hydraulic spring aids in valve closing
- Internal tap design ensures mechanical valve opening every stroke
- Valve and seat lapped for perfect seal

#### Spring Technology

- Cycle tested for long run times.
- Materials selected to resist degradation

### ADVANTAGES

- Eliminates gas locking
- No redundant gas compression
- Efficient at slow speed (low SPM)
- Re-seats on center line of pump, without assistance of gravity or differential pressure

