

IntelliCPCP®

Intelligent All-Metal Conical Progressive Cavity Pump

APPLICATIONS

- Oil thermal recovery
 - Steam-assisted gravity drainage (SAGD)
 - Steam-Nitrogen Cyclic Stimulation (CSS)
- Conventional Oil Wells
 - Ultra-Heavy Oil Wells
 - High-Sand Content Wells
 - Corrosion-Prone Wells
 - Low-Yield Wells
 - Large-Angle Horizontal Wells
- Unconventional Oil&Gas Wells
 - Shale Oil
 - Coalbed Methane

ADVANTAGES

- Adaptive Pump Efficiency Compensation
 - pump inspection interval: **≥26,000 hours**
- Real-time sand jamming clearance & scale removal to prevent pump lockup
- Robust wellhead integrity with advanced safety protocols
- Minimized rod-tubing eccentric wear in deviated/horizontal wells
- Extended injection-production cycles
- Increased oil-gas ratio & produced water recovery rate
- Modular architecture with streamlined drivetrain components

FEATURES

- Innovative Tapered Geometric Configuration
- Full-Metal Construction, downhole temperature resistance up to **380°C (716°F)**
- Adaptive Clearance Adjustment Mechanism
- Supports lifting medium viscosity up to **11,000 mPa·s** (non-temperature-controlled conditions)
- Self-Sealing Wellhead Design Enables integrated injection-production operations
- Eccentric Wear Balancing Technology
- Compact Transmission System
- Soft-start technology reduces initial torque to **51%** of rated value

IntelliCPCP is a complete rod-driven artificial lift system centered around an all-metal tapered progressive cavity pump (PCP), specifically engineered for oil and gas production operations.

This system is suitable for wellhead casing of **≥ 5.5 inches**, and can pump clean water, water-cut crude oil, gas-liquid mixtures, and high-viscosity media. The production capacity ranges **from 30m³ to 150m³ per day**, and the well depth is up to **2000m**.

This pumping system can reliably produce in wells with a bottom hole temperature of up to **380 °C** and operate normally in the range of **-40 °C to 60 °C** in the surface environment temperature.

Application Performance

IntelliCPCP has undergone rigorous market validation, achieving a maximum pump inspection interval exceeding **3 years and 3 months**, establishing it as the preferred artificial lift solution for ultra-heavy oil, gas-bearing wells, and extreme high-temperature environments.

Performance Metrics (vs. Integrated Injection-Production Tubing Pump):

- GOR (Gas-Oil Ratio)
 - Average increase per well: **0.10 (41.77% improvement)**

- Annual Water Recovery Rate
 - Average increase per well: **0.35 (54.76% improvement)**

Mechanism: Optimized reservoir pressure distribution enhances thermal diffusion efficiency and steam quality utilization, thereby improving subsequent steam injection recovery.

Steam Injection Cycle

- Average extension per well: **24 days**
- Annual steam reduction: **1,857.56 metric tons**

*Cost Benefit: **USD 63,275** annual steam cost savings per well*

*Annual reduction in steam-related downtime: **18 days***

*Equipment start-stop frequency reduction: **2 cycles/year***

Energy Efficiency

- Power consumption reduction per well: **51.35%**
- Annual electricity savings per well: **9,608.00 kWh**



IntelliCPCP All-Metal Conical PCP.