

# Intelligent Conical PCP Artificial Lift System



An elastomer-free lifting solution designed for extreme high-temperature thermal recovery (SAGD/CSS) operations, with a maximum temperature rating up to 380°C (716°F).

IntelliPCP® is a comprehensive rod-driven artificial lift system featuring the FERROXISTM All-Metal Conical Progressive Cavity Pump (AMCCP) at its core, specifically engineered for oil and gas production operations.

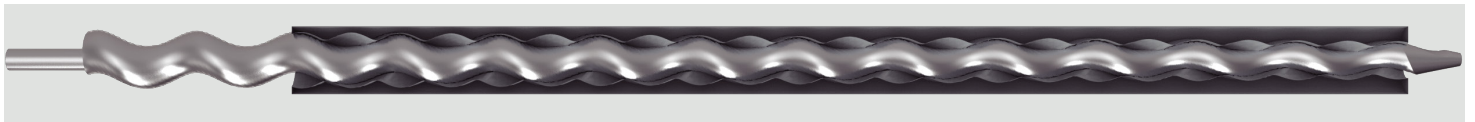
Engineered entirely without elastomers, this all-metal conical progressive cavity pump leverages a patented conical geometry and precision surface hardening to create a dynamic metal-to-metal seal. This design guarantees high and consistent volumetric efficiency throughout high-temperature thermal recovery operations.

The system is compatible with casing sizes of 5.5 in. and larger, and is capable of pumping water, water-cut crude, gas-liquid mixtures, and highly viscous fluids. It offers a production capacity ranging from 10 to 70 m<sup>3</sup>/d (62 to 440 bbl/d), for setting depths up to 1,500 m (4,921 ft) and well deviations up to 80°.

The system is specifically designed to operate in high-temperature and corrosive environments, particularly common in heavy oil thermal recovery applications. It can accommodate material expansion, contraction, and thermal fatigue caused by temperature cycling and extreme conditions.

Operates reliably in wells with bottomhole temperatures up to 380°C (716°F), and functions normally at ambient surface temperatures from -35°C to 45°C (-31°F to 113°F).

Capable of lifting ultra-heavy crude with viscosities up to 20,000 mPa·s at 50°C (122°F).



All-Metal Conical PCP FERROXISTM

## Core Advantages

- Optimizes system volumetric efficiency and extends the pump inspection cycle (MTBF) by adjusting the stator-rotor clearance from the surface.
- Prolongs injection-production cycles in thermal wells, reducing injection frequency and overall steam costs.
- Enhanced wellhead integrity with a high degree of automated sealing.
- Minimizes rod-tubing wear in horizontal wells and optimizes horizontal well lift by uniformly distributing rod forces through coordinated surface and downhole components.
- Prevents pump sticking via active sand flushing and scale removal, achieved by momentarily lifting the rotor to instantly enlarge the stator-rotor clearance.
- Starting torque is reduced to 51% of the rated value, significantly mitigating startup risks.

## Applications

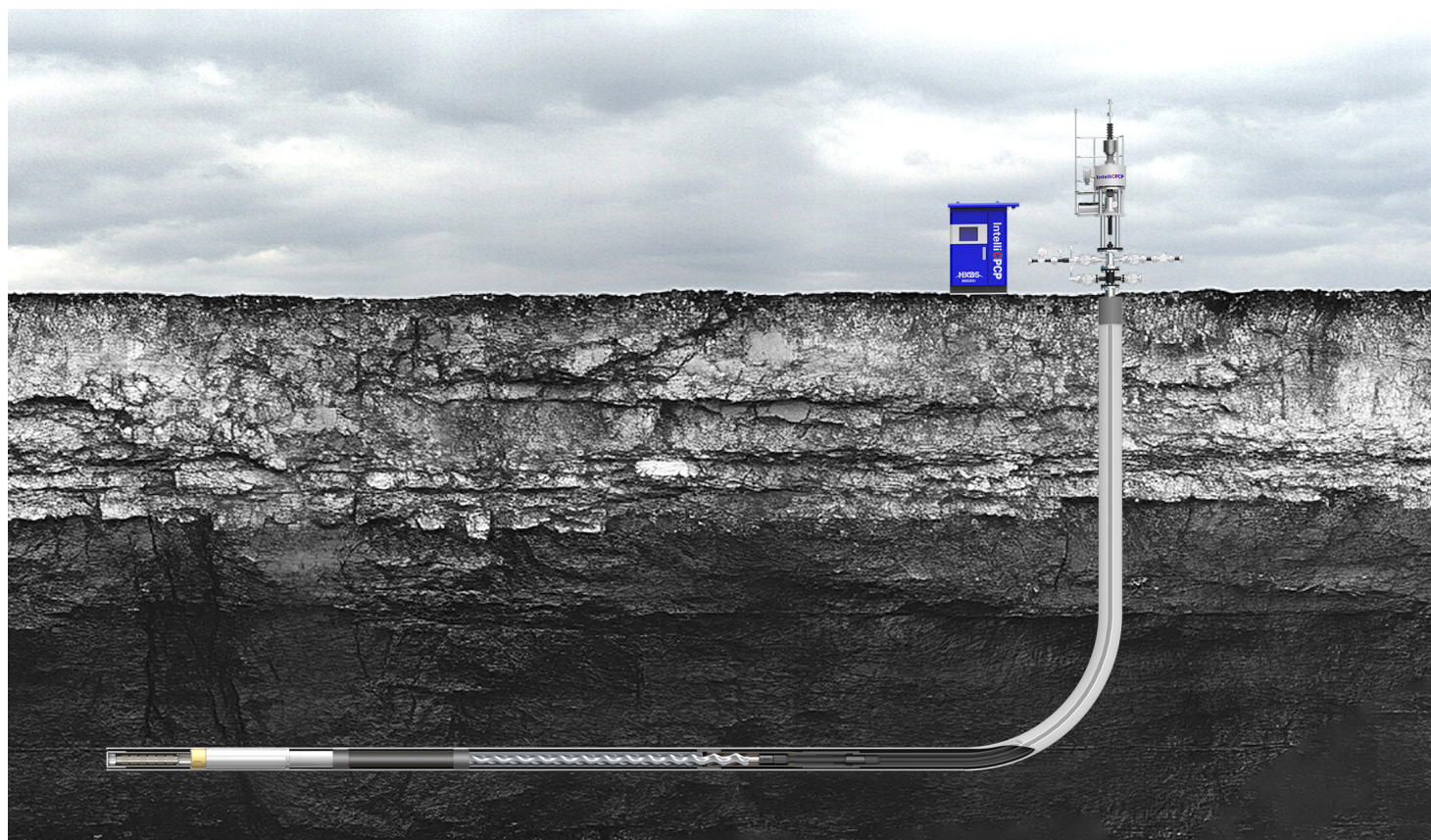
### Thermal Recovery

Steam-Assisted Gravity Drainage (SAGD)  
Nitrogen-Assisted Cyclic Steam Stimulation (CSS)

### Conventional Wells

Ultra/Extra-Heavy Oil Wells  
High-Sand-Producing Wells  
Corrosive Wells / Sour Wells  
Marginal and Low-Rate Wells  
High-Angle and Horizontal Wells (HAHZ)

# Intelligent Conical PCP Artificial Lift System



IntelliPCP® System

## Specifications Series

	GLB258-17C	GLB258-25C	GLB311-12C	GLB322-20C
Fluid Compatibility	Ultra-heavy crude, conventional crude, sand-laden fluids, high-water-cut crude, and multiphase flow (including associated gas)			
Applicable Bottomhole Temp (BHT), °C [°F]	-10 ~ 380[-14~716]			
Fluid Viscosity, mPa·s [cP]	1 ~ 20,000			
Rated Rotational Speed, rpm	200			
Max. Wellbore Deviation, °	≤80			
Dogleg Severity (DLS), °/30m [°/100ft]	< 2			
Applicable Casing Size, in.	≥5.5			
Max. Downhole Component OD, mm [in.]	114/135[4.5/5.3]			
Pump Setting Depth, m [ft]	1,000[3,280]	1,500[4,921]	800[2,624]	1,500[4,921]
Rated Dynamic Head, m [ft]	1,700[5,577]	2,200[7,217]	1,000[3,280]	1,800[5,905]
Theoretical Displacement @ 100 rpm, m <sup>3</sup> /d [bbl/d]	37[232]	37[232]	45[283]	46[289]
Speed Adjustment Range, rpm	0 ~ 200			
Mean Time Between Failures (MTBF), yr	≥3			
Sand Content, %	≤0.3			
H <sub>2</sub> S Content, %	≤2			
CO <sub>2</sub> Content, %	≤30			