

Hydraulic Pumping Unit (HPU)

Reduce total cost of ownership with a long-stroke HPU that delivers maximum lifetime and efficiency

Stroke length:
up to 336 in [8.53 m]

Lift rating:
up to 50,000 lbm [22,600 kg]

Installation time:
<6 hours

Applications

- Conventional, unconventional, and heavy oil wells onshore
- Multiwell pads
- Highly deviated wells
- Wells with high gas/oil ratio (GOR)
- Thermal and steam-assisted gravity drainage (SAGD) wells
- Well testing
- Transitional and intermittent production

How a hydraulic pumping unit (HPU) improves oilfield economics

Schlumberger long-stroke HPUs improve pump efficiency, simplify installation and maintenance, manage temperature swings, and reduce cyclical wear on bottomhole valves, rods and tubing, and surface equipment. That means operators experience lower total cost of ownership and less downtime and deferred production.

Long-stroke HPUs increase well productivity by reducing gas locking potential—without increasing wear on downhole equipment. This makes the technology especially beneficial to avoid downtime and interventions in steamflood, CO₂-flood, and high-GOR wells.



Schlumberger hydraulic pumping units handle varying well conditions with the flexibility to suit any production requirements.

Remote monitoring and control capabilities also enable real-time well data analysis and pump adjustments. That means operators can rapidly respond to changing well conditions to optimize production, anytime, anywhere.

The leak-free design and compact footprint improve wellsite safety and environmental impact during operations and workovers.

Why replace a conventional pumping unit?

	Conventional Pumping Unit	Hydraulic Pumping Unit
Shipping	One unit in one to three trailer loads, depending on size	Up to four units on one trailer
Site preparation	Gravel, concrete slab, and piles	Mounts directly to the wellhead; skids are fully contained
Installation time	2–5 days	<6 hours
Footprint	10 ft × 10 ft or larger	Minimal, next to the well
Installation requirements	Specialized crew, cranes, pickers	Turnkey equipment requires no site preparation or guide wires.
Adjustments	Variable frequency drive required for production optimization	Operators can remotely control speed and stroke length; [†] independent up and down stroke speeds facilitate optimization
Maintenance	100% mechanical = frequent maintenance, high service costs, and increased downtime	Simplified maintenance requirements and intervals, reducing costs and downtime
Total cost of ownership	High capex due to cost of equipment; high opex due to maintenance and increased wear	Faster ROI due to lower capex and opex

[†] On-location control is standard. Remote control requires additional SCADA interface or third-party equipment.

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How an HPU works with a sucker rod pump (SRP)

The HPU is a hydraulically powered rod-reciprocating system. The surface equipment can be installed in most sucker rod pumping applications.

With the press of a few buttons on the unit's controller, the up and down stroke speeds can be independently set to optimize well production characteristics. This is important because stroke length is fixed on conventional pumpjacks, which means smaller or larger units must be installed to accommodate production changes. The HPU stroke length adjustability delivers flexibility to manage the full production range without changing equipment.

What it replaces

Conventional mechanical sucker rod pumping units are large and difficult to install. Production optimization and maintenance requirements add to the uptime challenges, production assurance, and lifetime cost of ownership.

Additional information

Schlumberger HPUs are available in electric or gas-powered power unit options with either enclosed (rod down) or hollow (rod up) cylinders, several different cylinder diameters and lengths to enable design flexibility for any production requirements.

Hydraulic Pumping Unit Specifications

	Low Flow Lite (LFL)	Low Flow (LF)	High Flow (HF)
Pump-off control	Yes	Yes	Yes
Surface and downhole cards	Yes	Yes	Yes
SCADA compatibility	Yes	Yes	Yes
Hollow-cylinder operation	Yes	Yes	Yes
Enclosed-cylinder operation	No	Yes	Yes
Multiple-well capability	No	Yes	Yes
Automated stroke-speed adjustment	No	Yes	Yes

Hollow Jacks

Model	Lift Rating, lbm	Stroke, in	LFL Strokes Per Minute (spm)	LF spm	HF spm
H30-144	30,000	144	0.5–4.5	0.5–5.0	Not supported
H40-192	40,000	192	0.5–4.0	0.5–4.5	0.5–6.0

Enclosed Jacks

Model	Lift Rating, lbm	Stroke, in	LFL Strokes Per Minute (spm)	LF spm	HF spm
E30-144	30,000	144	Not supported	0.5–6.0	Not supported
E30-240	30,000	240	Not supported	0.5–4.5	0.5–6.0
E30-336	30,000	336	Not supported	0.5–3.0	0.5–4.5
E40-240	40,000	240	Not supported	0.5–3.5	0.5–5.5
E40-336	40,000	336	Not supported	Not supported	0.5–4.0
E50-240	50,000	240	Not supported	Not supported	0.5–4.5
E50-336	50,000	336	Not supported	Not supported	0.5–3.5

All specifications are subject to change without notice. Strokes-per-minute ranges are subject to Schlumberger review of downhole survey and application design.

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