VSH2™ Nitrogen-Over-Hydraulic Pumping Unit

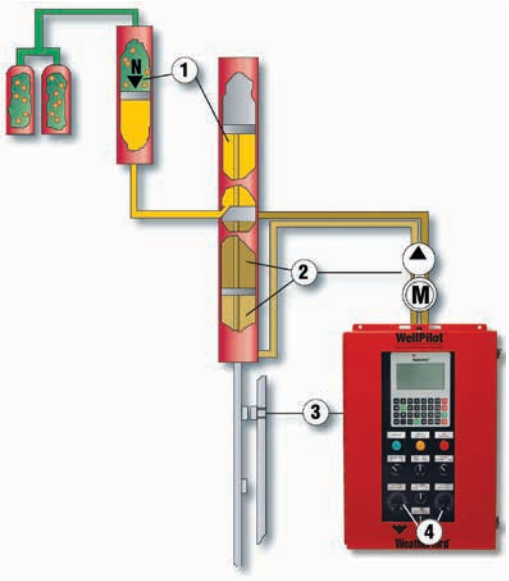
Provides efficient rod pumping in wells with heavy crude production or rod-fall problems

Applications

- Lifting heavy crude in pump-to-surface operations
- Correcting of rod-fall problems
- Testing new and re-entry wells
- Dewatering deep gas wells

Features

- Nitrogen supplies approximately one-half of the lifting power, which decreases the hydraulic horsepower requirement.
- The simple design features only three moving parts, excluding the prime mover.
- Units are ePIC™ rod-pump controller ready (controller optional).
- Electric and single or dual-fuel systems are available.
- Pumps are compatible with automation technologies including WellPilot® rod-pump optimization controller (RPOC) and LOWIS® software.



*The VSH2 unit provides energy-efficient rod pumping: (**1**) Nitrogen pushes down on the accumulator piston, and hydraulic fluid under the piston pushes up on the cylinder piston. (**2**) The servo valve routes pressurized fluid from the pump to the lower stage of the cylinder and cycles the cylinder rod up and down. (**3**) Proximity switches activate the electric displacement control, which operates the servo valve and changes stroke direction. (**4**) Control knobs change the SPM.*

Benefits

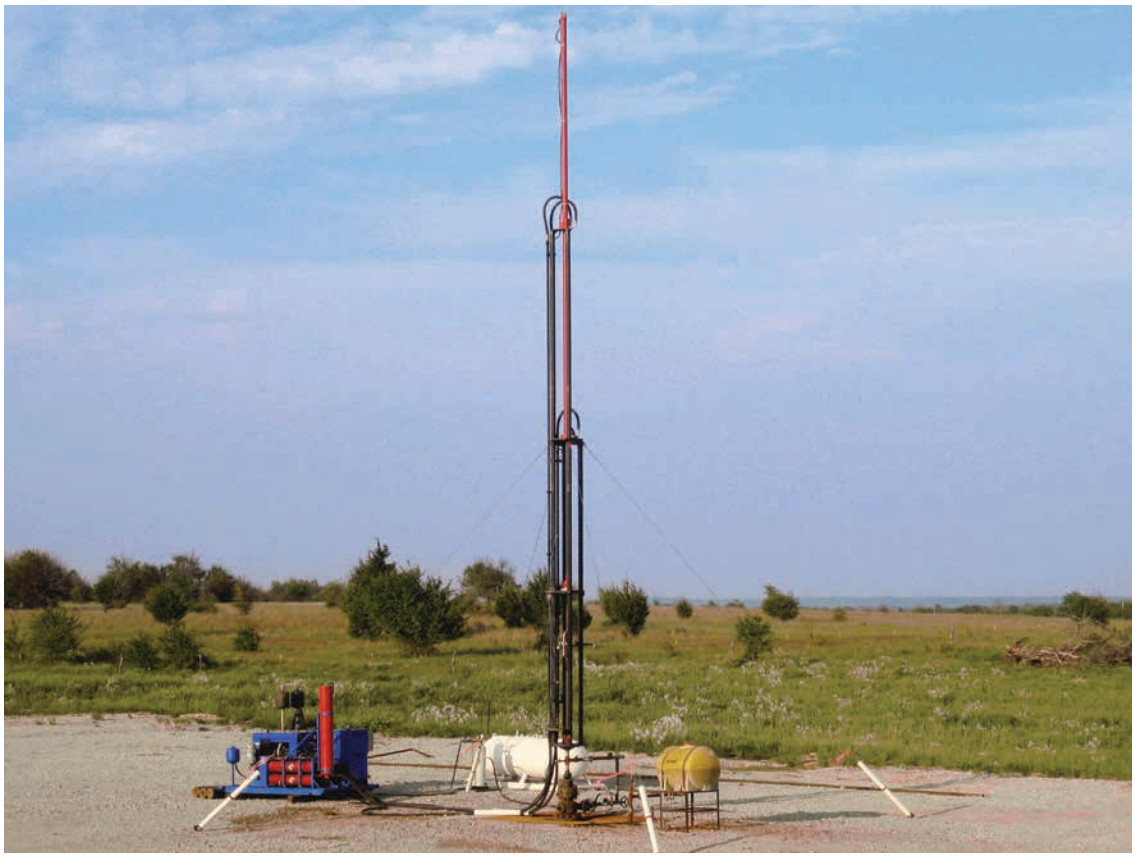
- VHS2 unit consumes less energy than conventional pumping units.
- Maintenance is minimal and consists of two filter changes per year along with normal visual inspections.
- The light weight and simple design minimize site preparation, transportation, and setup costs.
- Variable speed control enables operating flexibility and adjusting to well conditions.

Tool Description

The Weatherford VSH2 nitrogen-over-hydraulic pumping unit provides efficient rod pumping in wells with heavy crude production or rod-fall problems. In many wells, this technology can lift greater loads and use less energy than conventional pumping units. The VSH2 pumping unit can accommodate polished-rod loads up to 40,000 lb (18,144 kg) and features a pump depth of 11,000 ft (3,353 m). The unit features a simple, turn-of-a-knob functionality to change strokes per minute (SPM).

Weatherford®

VSH2™ Nitrogen-Over-Hydraulic Pumping Unit



The VSH2 pumping unit can accommodate polished-rod loads up to 40,000 lb (18,144 kg) and features a pump depth of 11,000 ft (3,353 m)

Specifications

Performance Data

Model	120	150
Maximum stroke (in., *mm*)	120 *3,048*	150 *3,810*
Minimum stroke (in., *mm*)	52 *1,321*	72 *1,829*
Maximum speed (SPM)[1]	8	6
Maximum rod loads[2] (lb, *kg*)	40,000 *18,144*	
Cylinder size (in., *mm*)	4 *101.6*	

[1]Maximum SPM can vary depending on peak polished rod load (PPRL).
[2]Loads can vary depending on SPM.

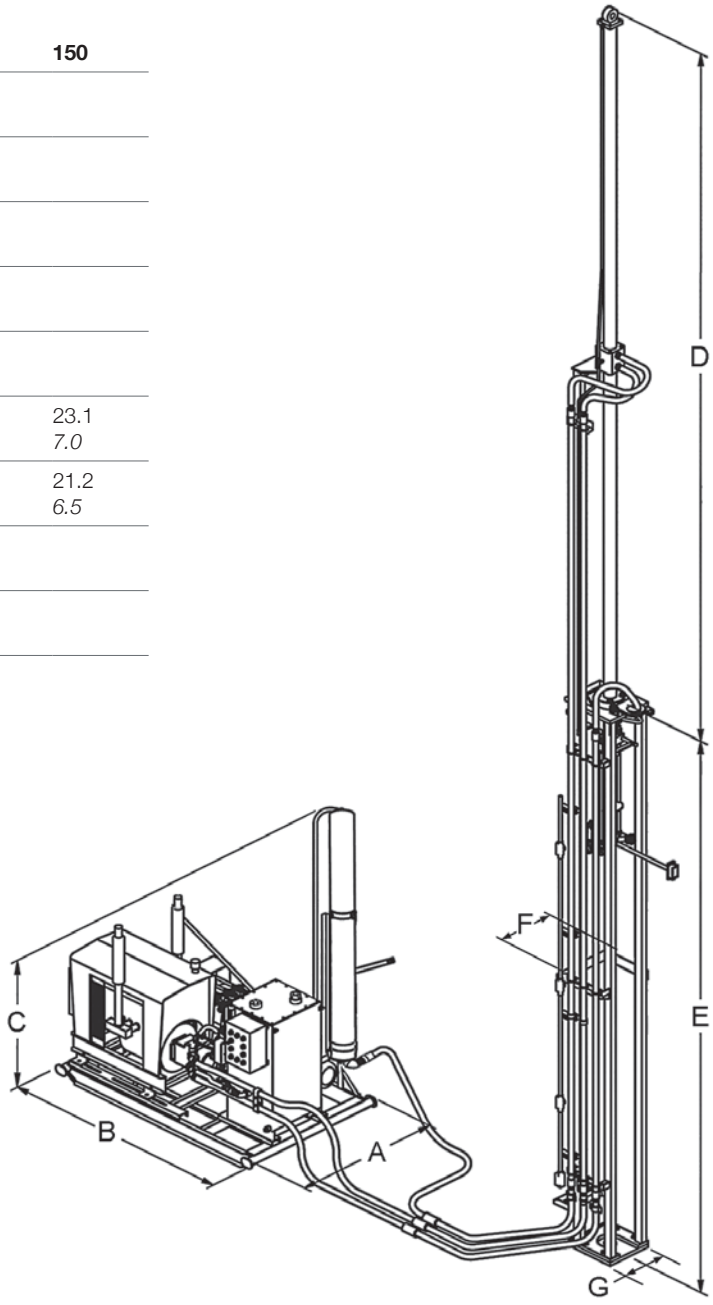
Weatherford®

VSH2™ Nitrogen-Over-Hydraulic Pumping Unit

Specifications *(continued)*

Dimensions

	Model	120	150
A	Width (ft, *m*)	5.1 *1.5*	
B	Length (ft, *m*)	8.5 *2.6*	
C	Shipping height (ft, *m*)	4.8 *1.4*	
C	Working height, 90° (ft, *m*)	6.2 *1.9*	
C	Working height, vertical (ft, *m*)	9.6 *2.9*	
D	Height, cylinder (ft, *m*)	21.3 *6.5*	23.1 *7.0*
E	Height, pedestal (ft, *m*)	18.0 *5.5*	21.2 *6.5*
F	Shipping width, mast (in., *mm*)	26.0 *660*	
G	Width, mast (in., *mm*)	18.5 *470*	



Weatherford®

