VSH PUMPJACK HYDRAULIC DRIVE SYSTEM

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VSH has developed and patented hydraulic technology to enhance the operation of a conventional style pumpjack in order to optimize a pumping oil well's production.

In today's world, oil producers are looking for ways to increase their return on investment and optimize their production, while minimizing the impact on the environment. It will allow all producers to optimize pumping wells without the cost & reliance of electricity.

Traditional methods of stroke control are plagued with inefficiencies and draw backs that limit the ability to maximize a well's production to its fullest.

i.e.)

- manpower/resources

- downtime

- cost associated with belts/sheaves

- fluctuating well dynamics

The Variable Speed Hydraulic drive, by itself, has the ability to speed up and slow down the jack as needed by a mere turn of a dial (0-9spm). For example, in the case of a high fluid level, simply turn the Speed Variance Dial clockwise to speed the jack up, and vice versa, turn it counter clockwise to slow it down once the fluid is pumped off. This is a basic way to optimize a well, however, it is onerous on operational staff.

By attaching a Pump Off Controller to this variable speed hydraulic unit you can eliminate the need for pumpers/operators to adjust the speed. Simply let the algorithms take control of the optimization.

As the Pump Off Controller recognizes a higher fluid level, it will send an electronic signal to the hydraulic pump, automatically increasing the hydraulic oil flow to the transmission; the jack will then increase in speed as needed. If the Pump Off Controller continues to see a high fluid level, the jack will advance to full strokes per minute as pre-set by the operation staff. Once the Pump Off Controller senses lower pump fillage, the pump off control will signal the unit to reduce stokes per minute until the fluid level recovers.

For current Pump Off Control users, this is a common practice, however, with the Variable Speed Hydraulic drive system, you can achieve full optimization on any well. This translates to no costly set up of utility infrastructure, thus allowing easy remote location placement with limited environmental impact.

To further optimize gas infused wells, the Variable Speed Hydraulic drive system can be enhanced with the addition with a Casing Gas Compressor. The Variable Speed Hydraulic Drive System is capable of operating the Casing Gas Compressor in addition to the Variable Speed Drive of the pumpjack without any further need of an additional power source.

With the Casing Gas Compressor the pressure can be reduced on the formation, thus allowing more inflow of fluid to enter the downhole pump. This in turn reduces operating costs and furthers the profitability of the well.

In conclusion, the Variable Speed Hydraulic Drive system is a robust unit which excels in remote access areas with limited or no electricity infrastructure. All the while allowing producers to fully optimize their wells with real time data.

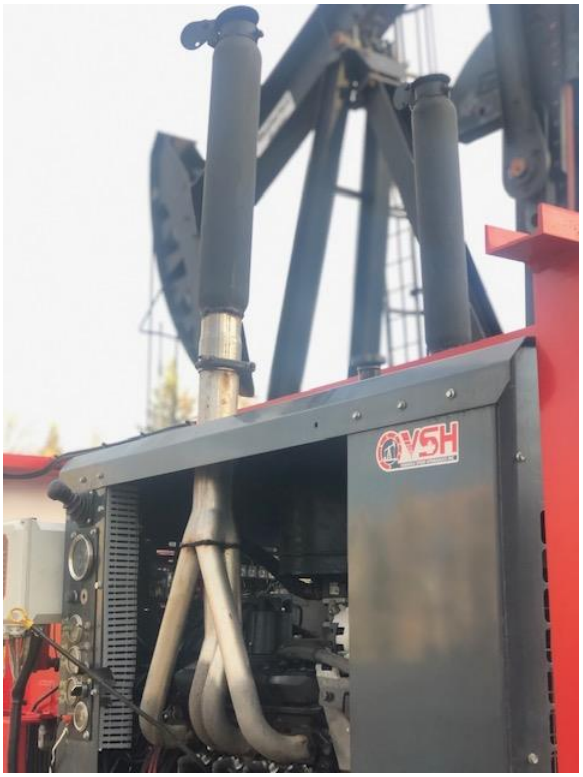

Figure 1. VSH Pumpjack Hydraulic Drive System

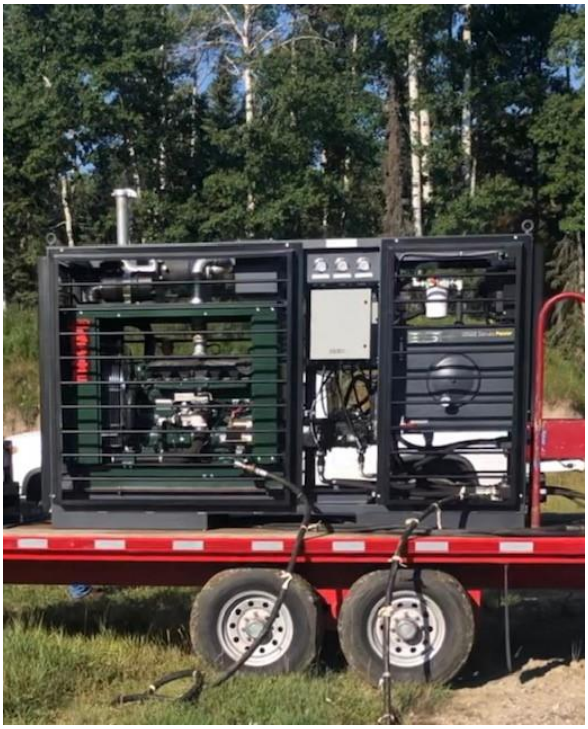

Figure 2. VSH Heavy Duty Drive System

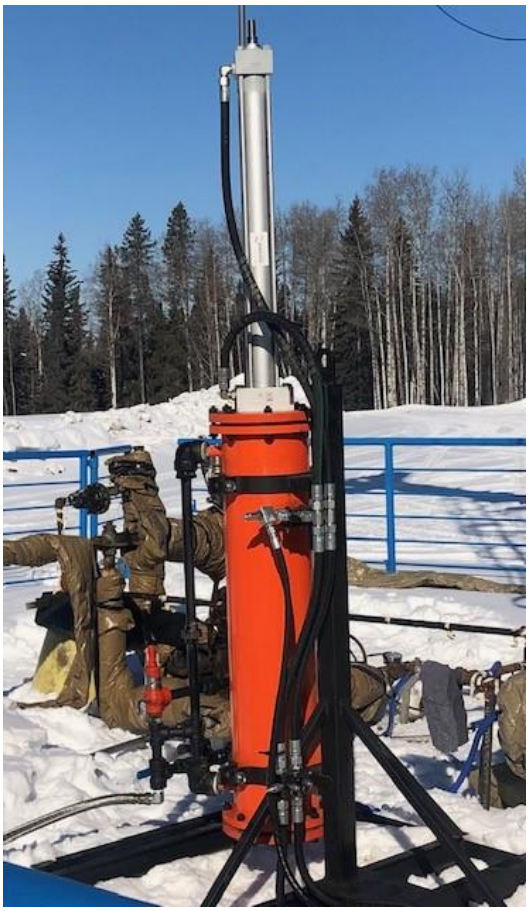

Figure 3. Casing Gas Compressor

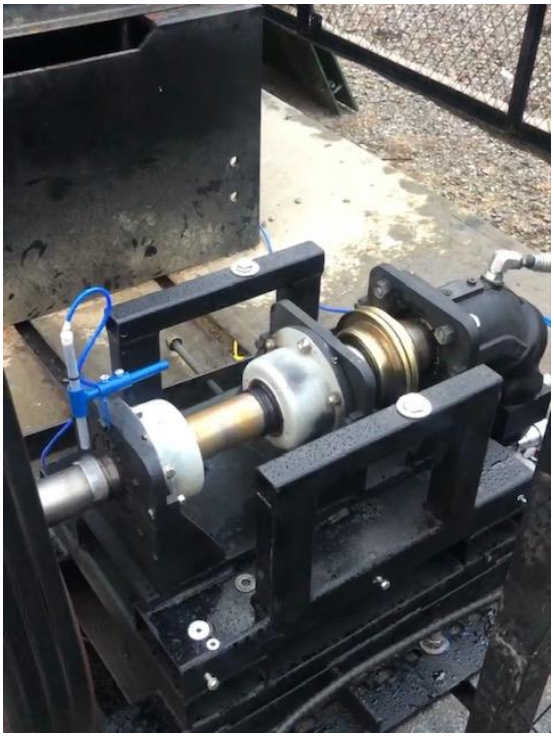

Figure 4. Power Transmission

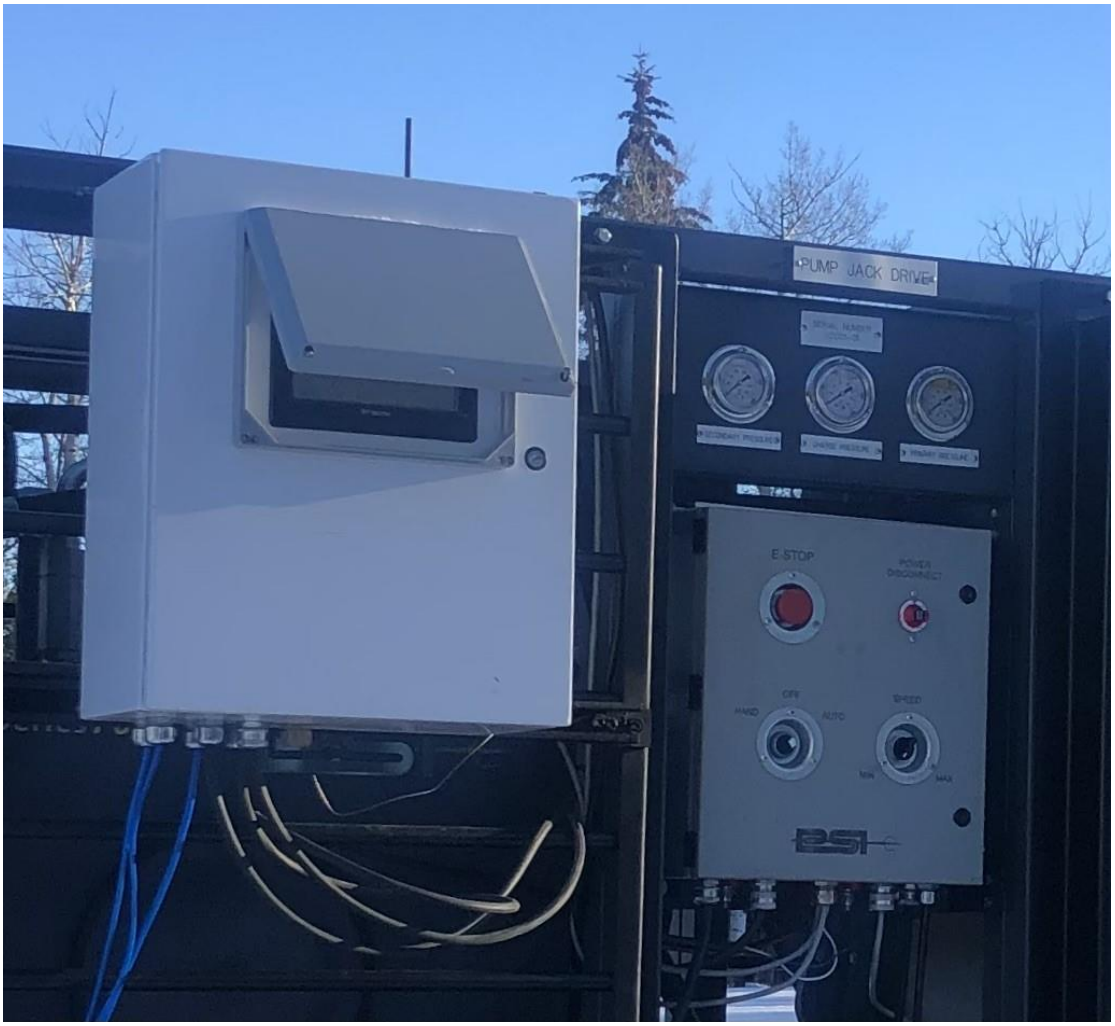

Figure 5. Pump Off Controller with Speed Variance Dial