

MOBILE PUMPING UNIT



1. Mobile Pumping Unit driven by an electric motor (hereinafter called as Mobile Unit) is intended for individual mechanical drive of sucker rod pumps for test short-term service of reactivated or new wells to determine their productivity and other characteristics. It allows proper selection of a stationary pumping unit size for well operation.

2. Mobile Unit (Fig. 1, 2) consists of a beam pumping unit mounted on a semi-trailer transported by a truck;

3. Beam pumping unit consists of the frame, Samson post, walking beam with horsehead, gear reducer with a locker, belt transmission, electric motor and double four-link crank mechanism transforming crank rotation into vertical motion of polished rod carrier bar with connected sucker rod string.

Beam pumping unit has a hinged design to allow transportation in unladen position over highways and roads. In the transport position, the rear support is located under support pyramid with two rollers in curve-shaped frame guides. Horsehead and walking beam are designed as a single welded assembly.

4. Double-staged herringbone gear reducer. Gearing lubrication is from oil bath; lubrication of gear reducer bearings and pumping unit bearings is an individual grease through holes in covers. Pumping unit is supplied with greased bearings, gear reducer is free of oil.

5. Pumping unit can be installed on a customer-defined trailer certified in a country of intended use. The trailer must be equipped with two axes with four supporting single wheels and heavy-duty mechanical suspension, axle swivel, and four outriggers. The semitrailer is transported by a truck. The front and rear support plates pivotally connected to the side members of the semi-trailer are intended to support the Mobile Unit in the working position

6. Mobile Unit is transformed from transport position into working position and visa versa by lifting the Samson post and the walking beam with the 15 tons (32,850 lbs) automobile crane. SPM is set by selection of belt transmission pulley diameter.

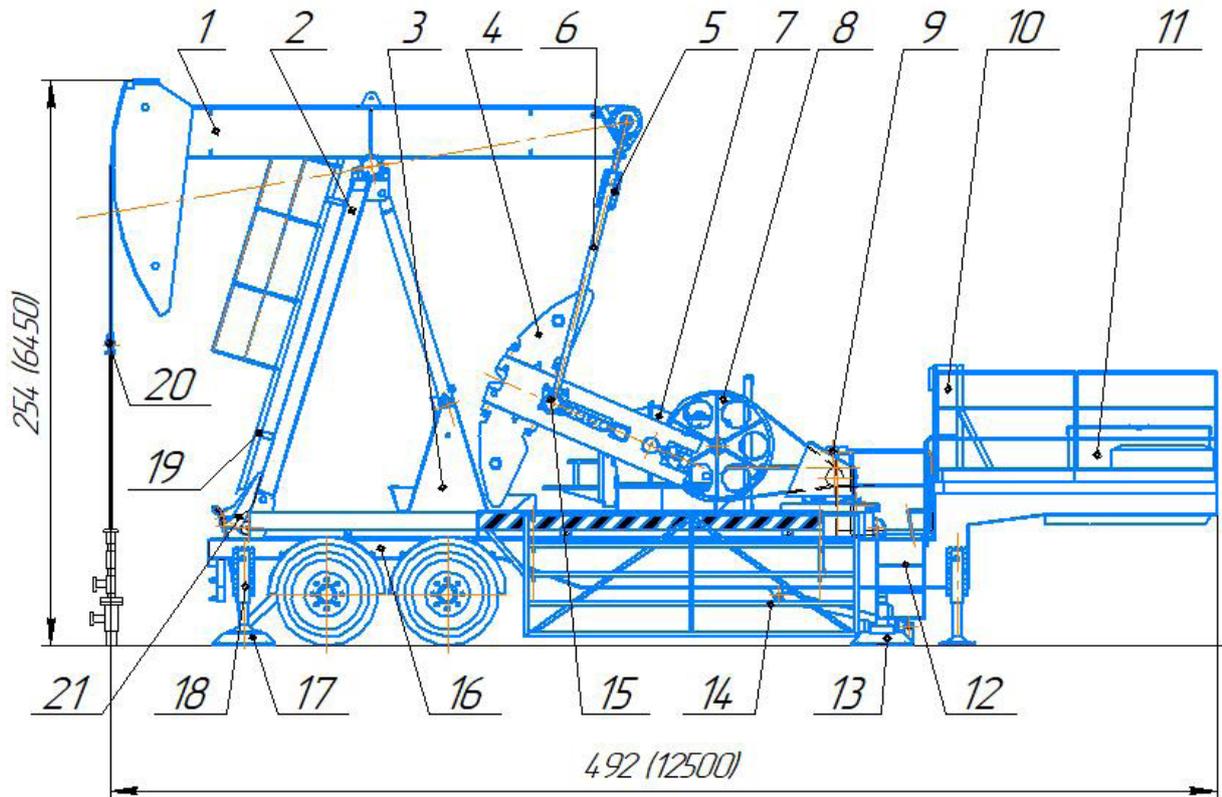
7. Polished rod stroke length can be changed by setting the pins of big ends in the correspondent holes of cranks.

8. Rotary counterbalancing with counterweights assembled on cranks is applied in the Mobile Unit.

MOBILE UNIT TECHNICAL SPECIFICATIONS

PARAMETER	VALUE
Load on polished rod, lbs (ton), max	19,710 (9)
Nominal stroke length, in (m)	100 (2.5); 79 (2.0); 71 (1.8); 55 (1.4); 47 (1.2)
Gear Reducer	Double stage RP 450
Gear Reducer Rated Torque, lbf*ft (kN*m)	354,000 (40)
Gear ratio	37
Type of gearing	Herringbone Novikov gearing
Overall dimensions, in (mm), max:	
- length	58.5 (1484)
- width	76 (1930)
- height	38 (968)
Belt transmission	V-belt
Number of belts, pcs.	6
Pulley diameters, in (mm)	
- of gear reducer	35.4 (900)
- of engine	7.9 (200) 9.8 (250) 11 (280)
SPM	4.3 5.4 6.0
Motor RPM	750
Motor rated power, hp (kW)	41 (30)
Control Station	Under customer request
Brake	Drum-type with locker
Overall dimensions of Mobile Unit, in (mm), max:	
- width	98.4 (2500)
- length - in working position	492 (12,500)
- in transport position	449 (11,400)
- height - in working position	254 (6450)
- in transport position	156 (3960)
Weight of pumping unit without trailer weight, lbs (tons), max	28,908 (13.2)
Weight of Mobile Unit, lbs (tons), max	47,304 (21.6)
Max speed on the road, mph (km/h)	37 (60)

Figure 1 – General view of Mobile Pumping Unit in working position



1- walking beam with equalizer support; 2 – Samson post with walking beam support; 3 – frame pyramid; 4- counterweight; 5 – equalizer; 6 - pitman; 7 – gear reducer with locker; 8 – gear reducer pulley; 9- motor with VShB bushing and pulley $\varnothing 200$ mm; 10 – control station under customer request; 12 – ladder; 13 – rear support plate with screw supports; 14 – safeguards of crank mechanism; 15- big end (left, right); 16 –semi-trailer; 17 – front support plate; 18 –outrigger; 19- ladder with tunnel guards; 20 – polished rod carrier bar; 21 – consoles for chain fixture.

Figure 2 – Mobile Pumping Unit in transport position

