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TIGER LIFT HYDRAULIC PUMP NOISE

Elevator Concepts manufactures 2 basic styles of pumping units - gear and screw. As of 1995 the screw pump is our standard. Previous to that, the gear pump was standard. The gear pump is the least expensive pumping unit. We offer this pump because many customers are looking for the least expensive installation possible, and are willing to accept the noise of a gear pump to save money. Customers with gear pumps who are concerned about noise can convert to the screw pump at extra cost. The screw pump is much quieter in operation than the gear pump.

The gear pump utilizes standard straight cut gears to pressurize the oil. Straight cut gears are relatively inexpensive to manufacture; however, they make noise when they mesh. There are 11 teeth on each gear, which spin at 3450 rpm, meaning that the teeth mesh approximately 632 times per second, resulting in a high pitched whine. This noise is transmitted through the hydraulic oil to all parts that the pressurized oil contacts. In turn, these parts will vibrate at this same frequency, or some nodal harmonic of that frequency. The amplitude, or loudness, of the vibration depends on many factors, and is unique from job to job. **There is no accurate way of predicting what the amplitude, or loudness, will be;** every job has a different jack length, piping length, piping configuration, wall construction, etc. Some jobs run relatively quiet, while others are very loud. The sound level in the cab can be greater than that next to the equipment, as the hydraulic jack and cab both may act as amplifiers. Stud and drywall hoistways may also act as amplifiers.

The screw pump utilizes a three element screw drive to pressurize the oil. The elements are in constant mesh, and therefore do not generate the meshing noise associated with gear pumps. Screw pumps are more expensive to manufacture than gear pumps. Screw pumps also require that they be submersed, or that the inlet sump be flooded - we manufacture a unique coupling that allows us to use the pump in a submerged manner, while still using a standard electric motor. The result is a pumping unit that is virtually silent; there is no noise transmitted by the hydraulic oil, and all that is heard is the fan in the motor.

Both pumps are dependable and maintenance free, and are designed to provide many years of service under normal conditions. If your application is such that noise is a concern, we highly recommend spending the few extra dollars for the screw-type pumping unit from the factory. It is also available as a field installed retrofit; the cost will be higher. If you have any questions, please contact us.