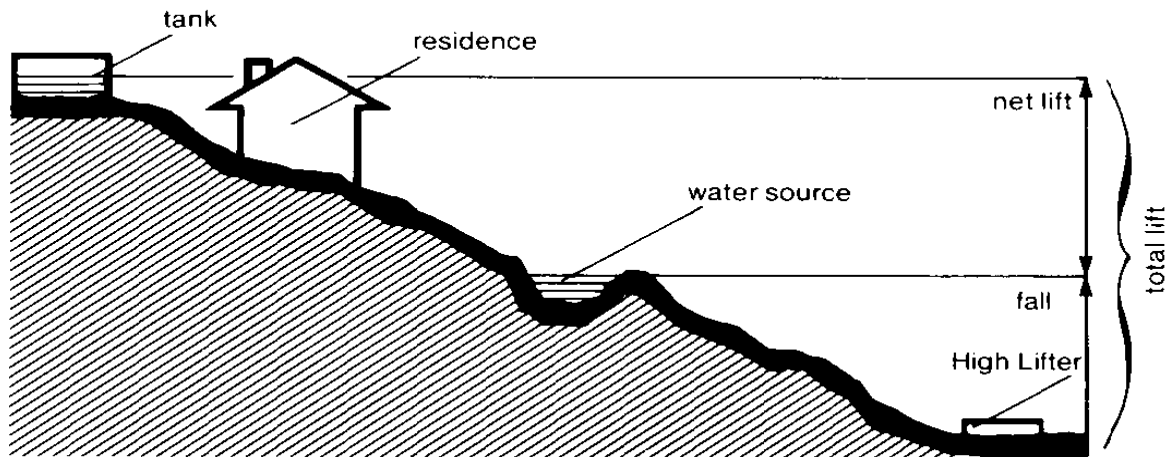


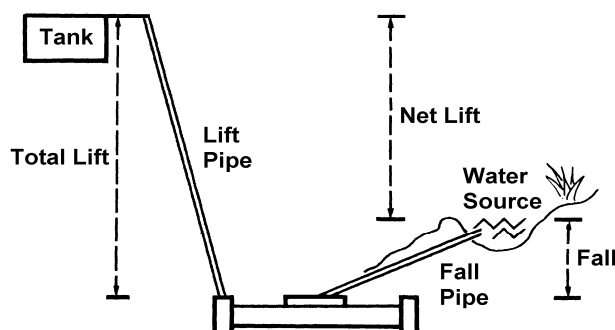
## Typical High Lifter Installation for Homestead Use on Sloping Ground



Most High Lifters are installed in hilly or mountainous terrain. Note that the water source must be above the High Lifter.

For example, for a "fall" of 80 feet and a "net lift" of 500 feet, a 9:1 pump would be recommended and would provide 450 gallons per day, see the output charts below. The 9:1 High Lifter would use 9 times the output gallons, or 3,780 gallons per day, to drive the pistons. This water must be able to flow away freely from the pump. It cannot be used to power a hydro turbine or other pump, but it can be used to fill a tank below it. The pump uses a large amount of water under low pressure to pump a small amount of water under high pressure. This is known as the principle of the "hydraulic lever" to distinguish it from a Ram Pump which operates from the impact of a mass of water coming at it in the drive pipe.

The High Lifter will not operate on flat land since it needs pressure to operate. The "force" of water from a rapidly flowing stream will not develop enough pressure to operate the High Lifter. It will also not suck water from any water source. The water source must always be higher than the High Lifter. The water source must be at least 33 feet above the pump in altitude difference to get the pistons moving. More than 33 feet is usually required to develop enough output pressure for most applications. Typically, the water source must be 50 to 160 feet above the pump. See the Output Charts for more details.

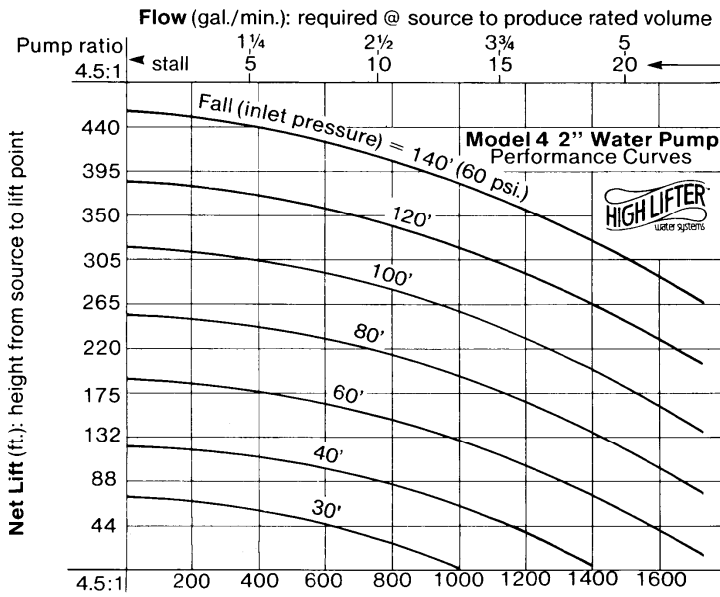


Pipe runs for a typical installation

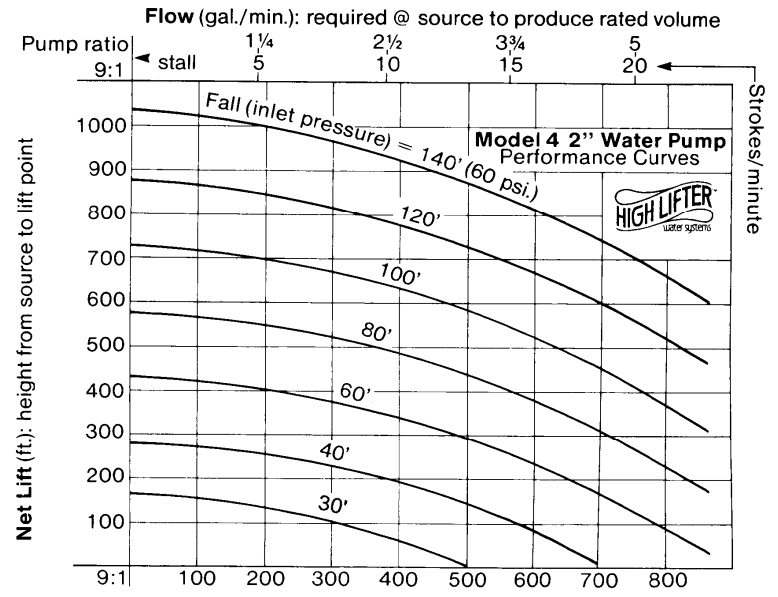
To increase output, locate the High Lifter further down the hill from the water source. This increases inlet pressure and makes the pump work faster. The size of the fall pipe should be  $\frac{3}{4}$  inch diameter. A larger pipe such as 2 inch can be used, but contrary to many people's assumptions, this will not increase pressure. The lift pipe is typically  $\frac{1}{2}$  inch for runs of less than 1000 feet. Larger pipe is OK but gpm delivered will be about the same. Use either black poly or pvc pipe depending on pressure needed.

Always use the 120 micron water filter supplied with the pump, and better yet, allow the water source to run through a tank or barrel to settle out grit.

### Output Charts for 4.5:1 and 9:1 High Lifter



1 psi = 2.3' Delivery (gal./day): assuming adequate water @ source



1 psi = 2.3' Delivery (gal./day): assuming adequate water @ source

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