

FRANKLIN AID



Franklin Electric



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HOW TO USE A SELF PRIMING PUMP

When you need to extract water from a shallow well or a water storage tank and submersible / submerged pumps are not an option, a self-priming pump will be your instrument of choice. So, what is it you need to know when designing / installing such a pumping system?

As opposed to submersible pumps, with dry-mounted pumps there is no water pressure available to help evacuate the air inside. Since air is a compressible gas, the pump will not work.

With dry-mounted pumps there is no water pressure available to help evacuate the air.

For this reason, aboveground mounted pumps that are intended to rise water from a level situated below their intake need to be primed. Even so, during operation, air can be trapped inside the pump creating noise and cavitation, both unwanted and leading to premature failure.

While there are several types of self-priming mechanisms, the one using an elastic valve inside the pump is the most commonly used.

Depending on the application, the pump itself can be single- or multistage, but the priming system will stay the same.

Some installation arrangements must be respected

Things to remember when installing a self-priming pump:

- Place the pump as close as possible to the suction source.
- With suction pipes longer than 10 m, use an internal pipe diameter larger than the pump suction connection. For flow ratings over 4 m³/h use a suction pipe G 1 1/4 (DN 32).
- The suction pipe must be perfectly airtight and be led upwards in order to avoid air pockets.
- With a pump located above the water level, fit a foot valve with strainer which must always remain immersed (or a check valve on the suction connection).
- If operating with flexible hoses use a reinforced spiral suction hose, in order to avoid the hose collapsing due to suction vacuum.
- For suction from a storage tank fit an anti-backflow valve.
- With a (geodetic) head at outlet over 15 m fit a check valve between the pump and the gate valve in order to protect the pump from water hammering and prevent foreign particles from entering the pump.

Conditions for self-priming:

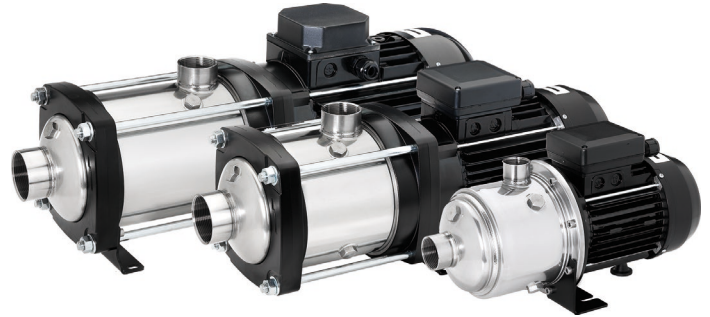
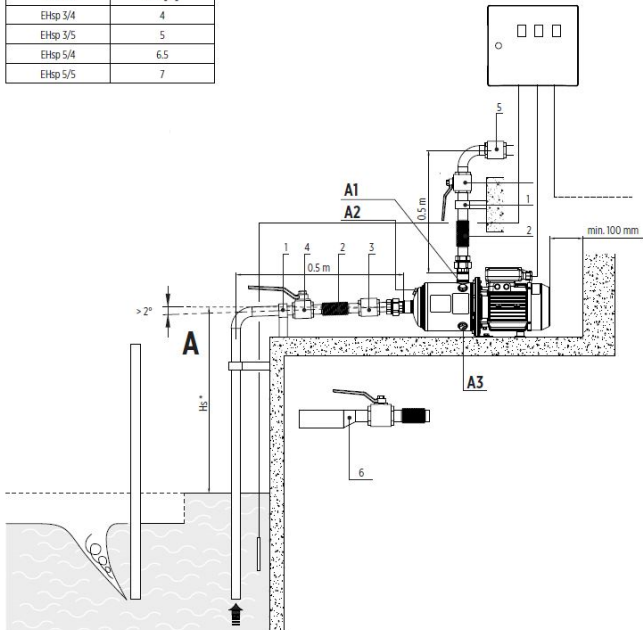
- Suction pipe with connections perfectly airtight and immersed in the water to be lifted at all times
- Install a portion of vertical pipe at the discharge above discharge port
- Before a non-return valve pump casing completely filled with clean cold water before starting.



Below picture details a typical installation:

EHsp - Installation recommendations

SUCTION HEIGHT	
MODEL	Hs * [m]
EHsp 3/4	4
EHsp 3/5	5
EHsp 5/4	6.5
EHsp 5/5	7



System components:

- A1, A2: Priming holes
- A3: Drain hole
- Hs: Suction height
- 1: Pipe support
- 2: Flexible coupling
- 3-5: Non return valve
- 4: Check valve



TRAININGS

In spring 2020

Please visit our website for dates

The Franklin Electric Field Service Team thanks you for the good corporation and wishes a Merry Christmas and all the best for 2020.

