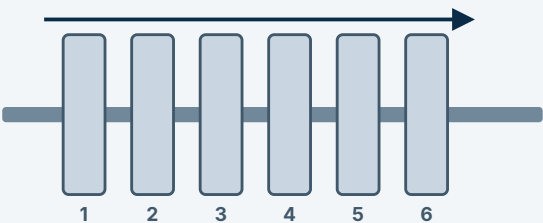


COMPARISON

Pitot tube pump or multistage pump?

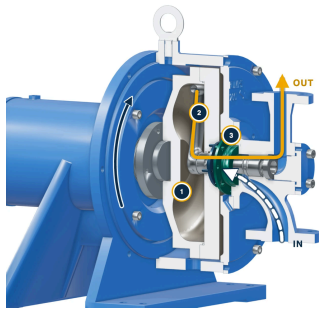
For high head at low flow, both pump types can do the job. They build pressure in different ways, which changes the wear parts, the seal conditions and the running cost.

Multistage centrifugal pump



Several impellers sit in series on one shaft. Each stage adds part of the head, so a higher head needs more stages, more close clearances and a longer rotor.

EHIK pitot tube pump



The rotor spins the liquid, and a fixed pickup tube turns its speed into pressure. One stage gives the full head, up to 1,050 m (3,445 ft).

	EHIK PITOT TUBE PUMP	MULTISTAGE CENTRIFUGAL PUMP
Stages	One stage for the full head	Several stages in series; the head rises with the number of stages
Main wear parts	Pickup tube, rotor, mechanical seal and bearings	Impellers, wear rings, interstage bushings, balancing device, seals and bearings
Shaft seal	One mechanical seal at the low-pressure inlet	One or two shaft seals; the pressure they see depends on the design
Axial thrust	Low; it comes mainly from the inlet pressure	Needs a balance drum, balance disc or opposed impellers
Low flow	Built for low flow. With a small bypass, it can run with the outlet valve closed	At very low flow it runs far from its best point, with more recirculation, heat and vibration
Flow range	0.05–70 m³/h (0.2–308 US gpm); up to 100 m³/h (440 US gpm) as a special design	Also available for much larger flows
Viscosity	Up to 250 cSt (about 1,160 SSU), best below 100 cSt	Efficiency falls as viscosity rises

What changed after the replacement

Multistage pumps that EHIK pumps replaced, with the results from each project record.

SITE	CHANGE	RECORDED RESULT
Kong 6 Well, PetroChina · 2015	Motor 90 → 45 kW (121 → 60 hp)	39.5% less electricity for the same volume of gas-field water
Wei 001-H1 Well, PetroChina · 2014	Motor 90 → 45 kW (121 → 60 hp)	23.5% less electricity per m ³ (264 US gal) of gas-field water
Jing 4 Central Station, PetroChina	Multistage pump replaced	48.3% less electricity per 10,000 m ³ (2.64 million US gal) of water
Bao 46 Well, PetroChina	Motor 75 → 45 kW (101 → 60 hp)	A smaller motor for the same duty
Daqing methanol plant · 2009	Motor 30 → 15 kW (40 → 20 hp)	Stable delivery after severe cavitation and loss of prime
Daqing ammonia plant · 2010	75 kW (101 hp) multistage pump replaced	Over USD 28,000 a year saved on electricity

Energy results are from site meter readings at each project. For your site, we compare power, volume pumped and running hours under the same conditions.

Why plants replace a multistage pump

Frequent maintenance

Worn stages, clearances and seals mean repeated overhauls and downtime.

Leakage and falling pressure

As parts wear, the pump leaks and can no longer hold the pressure.

High energy use at low flow

A large multistage pump working at a small flow wastes power.

Cavitation and loss of prime

At the Daqing methanol plant, the EHIK pump restored stable delivery.

When a multistage pump is still the better choice

Larger flows

Above about 70–100 m³/h (308–440 US gpm), a multistage pump is usually the better fit.

Lower heads

Our smallest series starts at about 40 m (131 ft) of head. Below that, a standard centrifugal pump is enough.

Viscous liquids

Above 250 cSt, the liquid is outside the pitot tube pump range.

Send us the duty of your existing pump.

We reply within 1 business day.

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