# Excerpt from Helical Rotor Pump Guide

1.   Overview of Pump Failure Modes.

When a helical rotor pump is bought, it is usually meant to be in service for 10 to 40 years. Everyone wanted it to run well during that time without stopping or failing.

To prevent any failure over all those years, you must:
1. Buy the correct pump in the first place,
2. Install it for long-life service,
3. Keep it running in its design conditions envelope,
4. Monitor it so that you find and correct any possible problems before they cause the pump to fail.
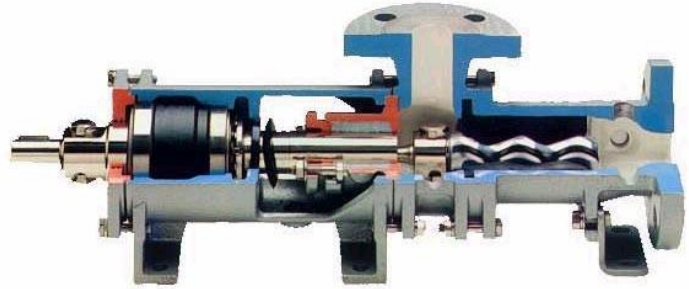
If you want great service from a helical rotor pump, you must get all four factors right for the pump's life.

They are also known as progressive cavity, 'wiggle' or 'Mono' pumps. The rotor is usually made of hard alloy steel with a harder chrome-plated outer surface. Ceramic rotors are available from some suppliers. The stator is made of molded elastomer bonded to an outer metal barrel. Urethanesubbers and urethanes are available for the pump, depending on the service. The size of the cavity is the difference between the volume of the stator void minus the volume occupied by the rotor.

2. Understand The Pump Service Duty, Conditions and Environment.

A qualified engineer typically calculates the duty point. An experienced technician trained in the necessary calculations can also do them. Below are the issues to be considered when determining the design duty point for the pump.

1. What is the chemical(s) name to be pumped? What is the viscosity (slipperiness) of the chemical(s)? What is the specific gravity (weight per unit volume) of the chemical(s)? What is the maximum operating temperature? These issues affect the friction losses, affecting how much power the pump needs to drive it.
2. If particulates are present, then take samples for inspection. What are their shapes? Do they have sharp or rounded edges? What is the smallest particle size? What is the biggest size particle or solid?
   Is it a true slurry with its own behavior characteristics?

Download the complete guide at https://bin95.com/ebooks/chemical-pumps.htm