

VERDER

Introduction to Peristaltic Pumps

The Verder Advantage

HOW A PERISTALTIC PUMP OPERATES

Peristalsis is one of the oldest pump designs. Early Greeks used the word peristalsis to describe the operation of a wave of automatic contractions, propelling contents along body tubes to transport food and body waste. Simply substitute with thermoplastic tube and rollers for contraction and we have the peristaltic pump. By mechanical simulation the tube walls are squeezed together to form a seal as the roller moves along the tube. The previously compressed tube regains original form and sucks fluid/gas into the formed vacuum to create a self-priming function.

The fluid/gas will follow the rollers until the tube is no longer compressed and by this time a 2nd or even 3rd roller is compressing the tube, preventing back flow and pushing the initial dose of fluid/gas out of the pump. By a repetitive operation as the rollers rotate, we are creating a pumping movement which has an element of pulsing as a standard. By the squeezing of the tube the rotor creates suction lift and outlet pressure.

Peristaltic pumps designed and manufactured by Verder all operate with the roller and tube assembly creating a movement of liquid through 180°. Other forms of peristalsis would create this movement through 120° but generally in such instances the flow volume is much reduced.

Consideration should be given regarding the delivery pressure required from a peristaltic pump, as most peristaltic pumps operate with a delivery pressure of less than 15 PSIG unless some form of exceptionally thick wall or reinforced tubing is used.

WHAT IS UNIQUE ABOUT VERDER

One of the early unique features of the Verder concept for peristaltic pumps was the development of a cartridge system- patented world-wide by the company. With the cartridge system on the 1000 and 2000 series pumpheads Verder users enjoy two important advantages:

- a) Tube changes in seconds
- b) Tube locked in position- no creeping in use. Set up errors eliminated.

WHY PERISTALTIC?

- o Automatically Self Priming
- o No Backflow or siphoning
- o Pumped Media Only Contacts Tube
- o No Clogging
- o Hygienic- No Contamination
- o Can Run Dry For Limited Periods
- o No Valves Or Seals
- o Positive Displacement
- o Minimal parts wear, other than tube

Tube cartridges are available in autoclavable polysulfone or clear K-resin which can be sterilized by gamma irradiation or ethylene oxide. The tube stays in the cartridge during the sterilization process.

Tube creep from the pressure of the rotating rollers is eliminated by utilizing a dovetail section of tube that is locked into the cartridge by ultrasonic welding.

When fatigue wears the tube simply unclip the old cartridge and clip onto position a new cartridge. No other adjustment is necessary. All pumps are factory set for correct occlusion and a further development is the use of tapered rollers for simplicity and accuracy.

WHY VERDER

- o Large Variety Of Drive Units
- o Easy Load/Change Cartridges
- o Interchangeable Pumpheads
- o Single And Multi-flow Units
- o Customer Specials Not a Problem
- o Competitive Prices
- o Strong Quality Program-ISO 9001

STANDARDS

Verder products are designed and approved to the following specifications and comply with CE directives:

89/392/EEC; 73/23/EEC; 89/336/EEC; FDA 21 CFR 1772600; USPXXI CLASS VI; NSF Std No. F51; NWRC No. 8703067; EN60529 (IEC529); BS2757 CLASS B,E,F (IEC85); BS5000 Pt. 11 (IEC72); EN603351 (IEC335-1)