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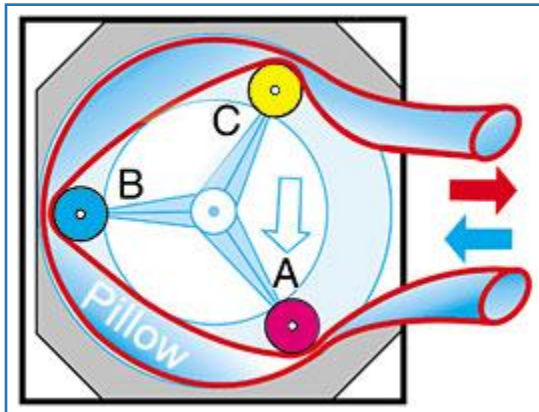


# How a Peristaltic Pump works





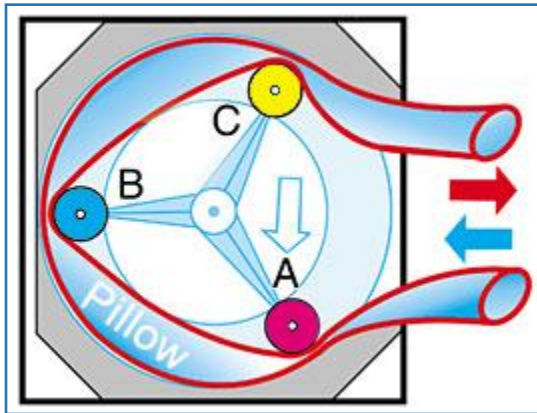
# Peristaltic Principle



- A 'pillow' of liquid is formed between the rollers
  - the pillow is the pump chamber and determines the volume per roller step and, hence, the flow rate
  - the pillow volume not only depends on the inner diameter (i.d.) of the tubing, but also on the tubing properties, the drive and pump-head specifications as well as the liquid and the physical application conditions



# Roller-step volume



The pillow volume determines the roller-step volume which depends on:

## ❑ Pump system

- number of rollers
- pump-head design
  - e.g. spring-loaded tube-bed
- occlusion setting
- rotation speed

## ❑ Tubing

- inner diameter
- wall thickness
- formulation
- age of tubing

## ❑ Liquid

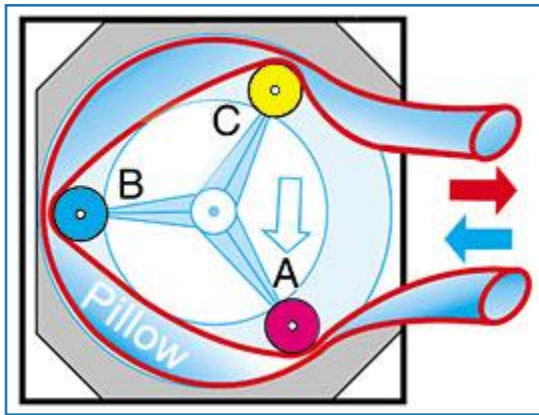
- type of liquid
- temperature
- viscosity

## ❑ Application conditions

- suction lift / vacuum
- differential pressure



# Flow rate

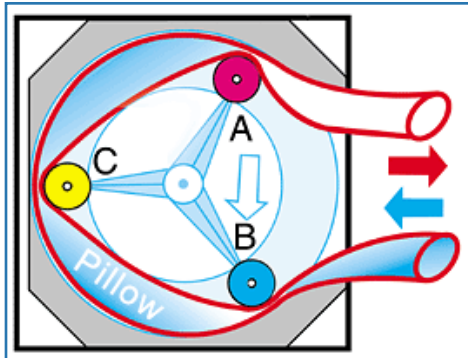


The flow rate is calculated as follows:

- Volume per roller step (pillow volume)  
x Number of rollers  
**= Volume per revolution**
  
- Volume per revolution  
x Rotation speed per minute  
**= Flow rate per minute**



# Advantages



- no contact of the liquid with mechanical parts
- tube is only part to wear
- service and maintenance costs are minimal
- easy to clean and sanitize
- multi-channel systems available
- Ismatec pumps available up to 24 channels
- insensitive to dry-running















