

# Cole-Parmer® Process Peristaltic Pumps Provide Superior Abrasive Handling, Significantly Lower Maintenance Costs

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Progressive cavity pumps are often selected because they are better than many pump types for moving viscous media at lower velocities and typically have low pulsing flow. But their rubber stators can entrap abrasive particles that work against the pump's steel rotor, causing excessive wear and requiring frequent rotor replacement. Also, seals inevitably fail on progressive cavity pumps, allowing abrasive slurry to erode parts within each joint, bringing disruptive downtime and significantly increased costs. Many progressive cavity pumps also require expensive flush systems, which in turn can create EPA hazards.

## Gaining reliability, versatility

Like progressive cavity pumps, peristaltic hose and tubing pumps handle a wide variety of solids and viscosities and provide very little shear, but Masterflex® and Enviroflex® peristaltic pumps also easily handle abrasive materials and there are no seals, stators, rotors or other moving parts in the product stream. Because the product being pumped remains within the hose or tubing, the pump's moving parts are impervious to abrasive materials as well as acids, caustics, solvents or other corrosive materials that attack the stators, rotors and other moving parts of progressive cavity pumps.

## Lower lifecycle costs

Although progressive cavity pumps have a lower initial cost, the annual lifecycle costs of a Masterflex or Enviroflex peristaltic pump over five years of service are only a fraction of that of most progressive cavity pumps. No stator or rotor replacement required, no dilution of pumped media or deadhead pumping, no hassles. They also can run dry and don't require expensive ancillary equipment such as mechanical seals and seal water flush systems.



Enviroflex L Series Hose Pump

No need to disassemble the entire unit for maintenance either. Just a simple change of hose or tubing is required, which typically takes about a minute.

## Masterflex & Enviroflex peristaltic pumps or progressive cavity pumps: Which is best?

Costs are always a consideration when selecting a pumping system, but initial cost is just part of the story. Masterflex peristaltic pumps, and the Enviroflex hose pump, typically have a higher initial cost than progressive cavity pumps of equal capacity, but life cycle costs for progressive cavity pumps are typically much higher. Here's why:

A progressive cavity pump transfers fluid by means of the progress of a sequence of small cavities as its rotor is turned. Rotation of the

rotor inside the stator causes the cavity to progress along the pump, thereby inducing fluid flow. The interface between the pump's rotor and stator is lubricated by the fluid being pumped, but if the pump is allowed to run dry, rapid deterioration of the stator results.

In addition, the stators also can entrap abrasive particles, which will significantly shorten the life of the stator and rotor. The pumps can also lose reliability when pumping aggressive chemicals. Seal failure can be a constant problem, allowing abrasive or corrosive materials to erode the numerous components in each joint. Most maintenance tasks, including replacing seals and stators, require almost entire disassembly of the pump.



Progressive Cavity Pump

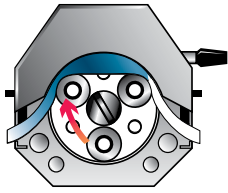
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## Key Words

- Masterflex®
- Enviroflex®
- Peristaltic Pumps
- Tubing Pumps
- Hose Pumps
- Progressive Cavity Pumps
- Seal Failure
- Abrasive Materials
- Corrosive Materials
- Life Cycle Costs

## Peristaltic design: A better alternative

Masterflex and Enviroflex peristaltic pumps operate on a positive displacement principle that uses rotating rollers to occlude



(squeeze) fluid through elastomer tubing. The fluid being pumped never touches the pump. There

are no wetted parts other than inside the tubing. The pump has no seals and no mechanical parts in the product stream.

Masterflex and Enviroflex peristaltic pumps are a far superior alternative than progressive cavity pumps for many demanding applications. They are especially effective in pumping abrasive and corrosive fluids that can spike the life cycle costs of progressive cavity pumps and bring unscheduled downtime that can seriously compromise the integrity of critical processes and equipment.

With their proven peristaltic design, Masterflex and Enviroflex pumps provide accurate, reliable, and repeatable performance of pumping highly viscous materials without blocking, without erosion of critical mechanical components, and without the problems and hassles that can bring about performance and/or product quality issues.

Cole-Parmer process peristaltic hose and tubing pumps are self-priming, and they can run dry for extended periods without damage. They also provide incredible suction lift. With a well-balanced range of capacities and flexibility, excellent repeatability and low cost of ownership, Masterflex and Enviroflex pumps are the smart choice for highly reliable, low cost, and long-term operation.



Masterflex pumps provide superior performance for pumping abrasive and corrosive fluids.

### The Masterflex Peristaltic Pump: When performance counts.

- Superior performance in viscous and abrasive fluid handling applications.
- High reliability minimizes process interruptions and downtime.
- Product comes into contact with only the tubing, which can be replaced in less than a minute.
- With adjustable 650:1 resolution and bidirectional flow, Masterflex pumps provide for smooth, seamless flow.
- Requires very little maintenance to keep in peak operating condition.
- Very gentle method of pumping does not damage shear-sensitive products.

- Proven peristaltic design means no seals or stators to wear out.
- Maintenance-free brushless motor drive (rated for continuous duty) and roller and ball bearing pump head construction produce a robust, powerful pump ideal for long-term operation.
- Self-priming for instant startup. High suction lift provides for operating flexibility. The pump also operates dry without damage.

### The Enviroflex Hose Pump: When performance counts.

- Discharge pressures up to 145 PSIG
- Flowrate to 647 GPM (147,000 L/Hr)
- Dry running pump
- Hose changes are fast and easy
- Self-priming suction lift up to a maximum of 31 ft (9.5m) vertical
- Fixed and variable speed options
- Casing options include 304 and 316 stainless steel
- Unique design brings twice the hose life and significant power savings compared to other peristaltic pumps
- Equipped with hose failure detection

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