

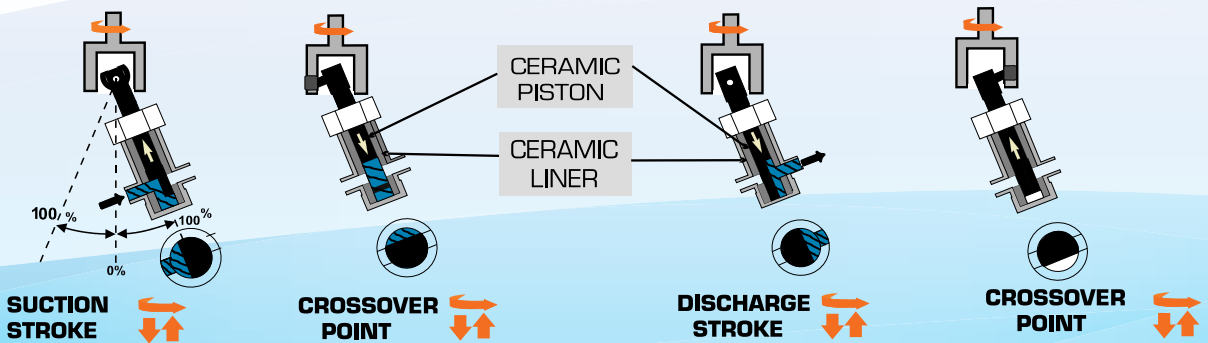


# Valveless Ceramic Dispensers & Metering Pumps Since 1959!

- No Valves, Drift-Free Operation
- One Moving Part
- Precision Dispensing - CV of 0.5% or better
- Flow Rates from Microliters to 4600 mL/min
- Positive Displacement up to 200 psig
- Viscosity Independent - Unaffected by Viscosity of Fluids
- Millions of Maintenance-Free Cycles
- Inert, Corrosion Resistant Fluid path - Ceramic & Fluorocarbon Standard
- Self-priming to 15 Feet, Vertical Lift
- Instant Reversibility While Running
- Large Selection of Drives - Fixed, Variable, Pneumatic, Stepper, Hazardous Duty and OEM

The valveless pumping function is accomplished by the synchronous rotation  and reciprocation  of the ceramic piston in the precisely mated ceramic cylinder liner. One complete piston revolution is required for each suction /discharge cycle as shown. The piston always bottoms for maximum fluid and bubble clearing.



The piston rotates and reciprocates. As the piston is pulled back and the piston flat opens to the inlet port, suction is created and fluid fills the pump chamber. As the piston reaches the highest point in the reciprocation cycle, the pump chamber is now at its maximum volume capacity. Continuing the rotation, the inlet port is then sealed

and crossover occurs. As the inlet port is sealed and the pump chamber is full, the outlet port opens up. **Only one port is open at any time and at no time are both ports interconnected.**

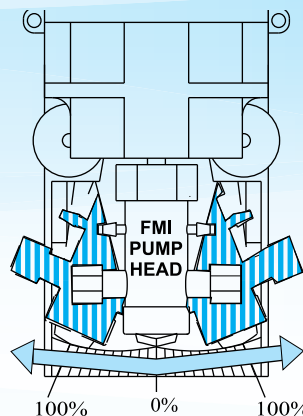
Continuing the rotation and reciprocation, the piston is forced down and the piston flat opens to the outlet port. Discharge is created and fluid is pumped out. The piston bottoms for maximum fluid and bubble clearing. Continuing the rotation, the outlet port is then sealed

and crossover occurs. As the outlet port is sealed and the pump chamber is empty, the inlet port opens to start another suction stroke. **Only one port is open at any time and at no time are both ports interconnected.**

For a video animation of how FMI pumps work, Visit [www.FluidMetering.com](http://www.FluidMetering.com)

## Easy Flow Rate Adjustment

- Moving the pump head position changes the piston stroke length and, in turn, the flow rate
- Infinite fine flow adjustments between zero and 100% flow rate
- Flow rate **Dial Indicator Kit Q485** for the **Q** line provides accurate and simple linear calibration (See page 30)
- Flow rate can be changed while pump is operating or at rest



- On the **Q** line this is done by turning the Flow Control Knob which moves the flow rate indicator along a fixed 20 unit scale linearly calibrated "10-0-10". The "10" equals 100% flow rate in that direction, "0" equals zero flow.
- The **RH** line flow adjustment is accomplished by turning an easy-grip Flow Control Ring graduated in 450 divisions from 0 to 100% flow