Volumetric Two Part Mixing Pump

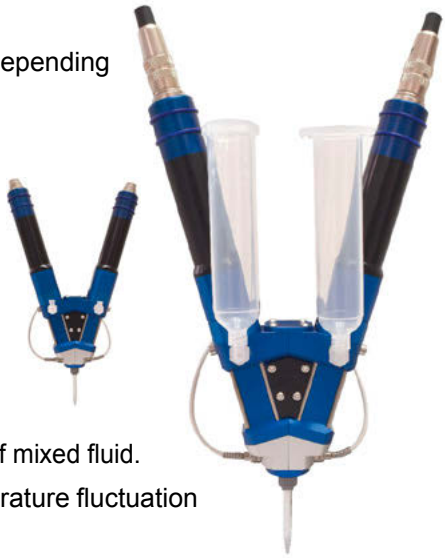
Disposable Static Mixer, No Recharge

Applications: Adhesives, Sealants, Encapsulants, Potting Fluids, Gasketing, Dots, Beads, 2-Component Adhesive System Materials, and more

The continuous volumetric PCD two part mixing pump (2K or Bi Component) is based on volumetric *Progressive Cavity Displacement* (PCD) technology.

The 2-component mixer is a truly volumetric pump that pushes parts A+B fluid through a static mixer. The mixing head functions valve-free. The components to be mixed are dispensed by volume with no dead space in the static mixer. Mixing is done in the disposable static mixer, the only part wetted by both fluids. Static mixers are available in different sizes and lengths depending on the mixing requirements of the fluid. Unlike piston based mixing systems, recharge is not required.

The principle of fluid movement is to transmit uniform, sealed cavities of fluid through the displacement mechanism. Exceptionally high dispense rates can be achieved due to the movement of the individual cavities through the displacement chambers. Abrasive materials are pushed rather than sheared or impacted, maximizing the life of the displacement components. The fluid transfer mechanism consists of a chrome plated surface (rotor) that mates with a high durometer rubber (stator).



The pumps use a geared stepper motor for output up to 12 ml/min per each pump depending on configuration.

- The mix ratio is primarily controlled by adjusting the speed of the individual pumps. Standard ratios of 1:1 and 2:1, as well as 1.1:1 or 1.3:1, are achievable. Large ratios up to 10:1 are attainable.
- Reverse flow is possible (no dripping or stringing of product).
- Processing of low-to-high viscosity materials.
- Compatible with standard syringes (10-55 cc) or bulk fed to the pump

Easy programming of quantity and output rate.

- Standard type luer dispense tip may be attached to static mixer for final placement of mixed fluid.
- Constant dispense volume - even with density or viscosity changes due to temperature fluctuation or batch change.

Applications

Following are applications and materials that may be used with the pumps for metering or transferring:

- Adhesives and sealants with or without spherical fillers
- Encapsulant and potting fluids
- Gasketing, dot, or bead applications
- Suitable for 2-component adhesive systems based on: epoxy resin (EP), polyurethane (PU), silicone (Si), methyl methacrylate (MMA), urethanes, UVs, sealants, etc.

Mixing Pump Technical Data

MIXING PUMP TECHNICAL DATA	Small Volume	Medium Volume
Dimensions (W x L)	163 x 228 mm (additional dimensions in graphic on page 2)	
Mixing Ratio	1:1 to 10:1	
Continuous Output Rate - maximum	up to 6.6 ml/min*	up to 12 ml/min*
Weight with Drive	approx. 1.6 kg	
Required Supply Pressure at Dispenser	0-20 bar input pressure	
Connection for Material Feed	G 1/8" cylinder Whitworth pipe thread DIN/ISO 228	
Volume per Revolution - each pump, approx.	0.028 ml/revolution	0.05 ml/revolution
Smallest Dispensing Shot	0.005 ml / 5 µl	0.01 ml / 50 µl
Syringe Sizes	Standard 10-55 cc	

** depending on medium and configuration.*

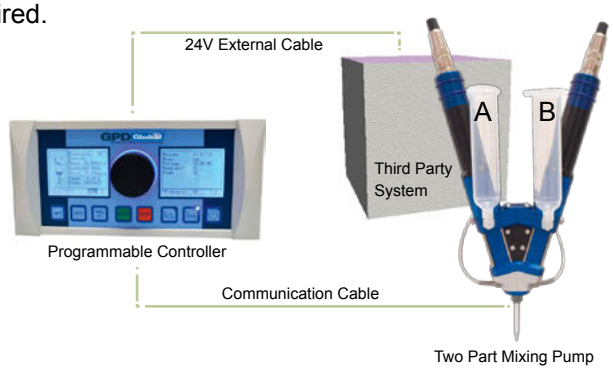
GPD Global
Precision Dispensing Systems
www.gpd-global.com • request@gpd-global.com

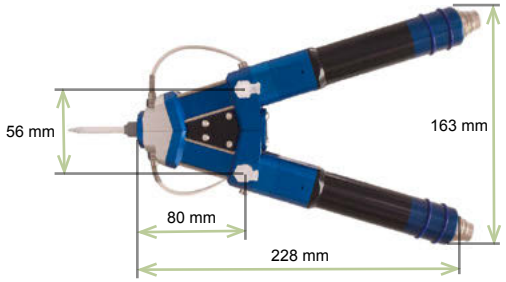
Volumetric Two Part Mixing Pump

Integration

PCD Two Part Mixing Pump is compact for two part mixing and easily integrated into tabletop robots or fully automated platforms. The programmable controller allows you to calibrate the dispensing volume from each pump for accurate mix ratios. Interfacing to the controller requires a simple 24 V signal to initiate dispensing.

The pump is easily mounted to a motion system via three screws located in the center of the pump body. No special tooling is required.





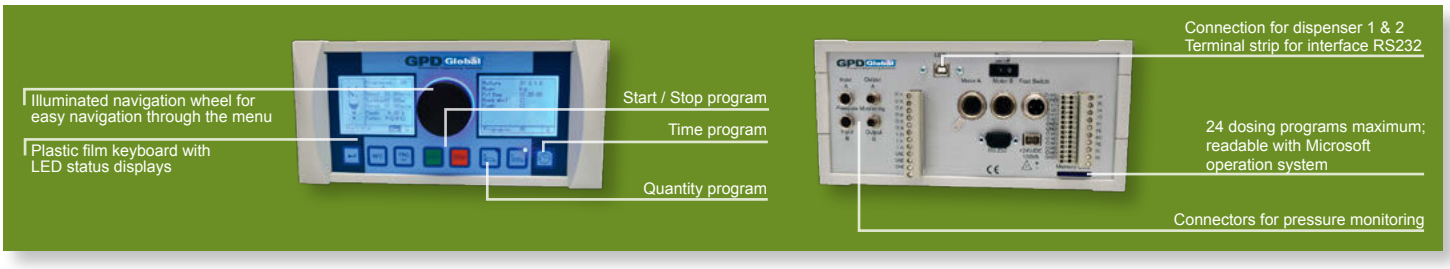
Programmable Controller

The controller allows you to (1) program the mix ratio of the pump and make final adjustments to the mix ratio, and (2) calibrate the pump for appropriate volumetric dispensing. Up to 24 programs can be saved to the controller for selection. You can change all the dispensing parameters using the navigation wheel.

The controller accepts an analog input 0-10 V to control the pump speed at a programmed ratio. With the analogue input, the pump speed can be proportional to any external device such as a robot, pressure and level sensors, flow meters, etc.

Integration is simple - easily interface controller with any robot via a 24 V external signal.

A reverse or suck back operation can be programmed to prevent dripping.



PROGRAMMABLE CONTROLLER	
Dimensions (H x W x D)	110 x 240 x 210 mm (4.33” x 9.45” x 8.27”)
Weight	approx. 1.3 kg
Power Supply Voltage	220/110V AC, 50/60 Hz connection with ON/OFF, output 24V DC
Communication Cable	RS 232
External Trigger Signal (basic)	24 V Signal
Operating Temperatures	+10° to +40° C, air pressure 1 bar
Analog Input Voltage	0-10 V

GPD Global
Precision Dispensing Systems

www.gpd-global.com • request@gpd-global.com

Headquarters 611 Hollingsworth Street, Grand Junction, CO 81505 USA • T: +1.970.245.0408 • F: +1.970.245.9674

GPD Global (Asia Pacific) Bayan Lepas, Penang, 11900 Malaysia • T: +60.12.555.0909

Rev May 2018