

# DCI VPA Syringe Pumps



**A VPA offers more.**

**More Affordable**

**More Integratable**

**More User-Friendly**

**More Pressure and Flowrate Options**

**More Than Just a Pump**



**DCI**  
TEST SYSTEMS

# DCI VPA Syringe Pumps

## More than just a pump

The same features that make a VPA (Volume-Pressure-Actuator) ideal for use as a pump also make it ideal for many other applications.

- Servo-motor/encoder, precisely controlled with state-of-the-art digital electronics, provides the smoothest possible drive performance with nano-liter volume resolution.
- High-speed positive feedback control loops that allow for precisely controlled constant flow rate, or accurate pressure control.
- Air-operated, zero-volume valves to allow pulse-free switching between cylinders.
- Large ports in valves and cylinder connections allow pressure control to be unaffected by small particles in the fluid.

## Some of the applications for which the VPA is ideally suited include:

- Permeability or relative permeability experiments where pulse-free, precisely controlled constant flow rate is required.
- Permeability or relative permeability experiments where a constant pressure drop across a sample is required.
- Drainage-Imbibition tests, where the VPA can act as a receiver to control back pressure in one part of the test, and then subsequently as a pump to push fluid back through a sample.
- Pore-volume compressibility tests where a precise measurement of pore fluid volume expressed from (or injected into) a sample is required while maintaining constant pressure.
- Sample desaturation measurements where the precise volume of fluid expressed from a sample is required. The VPA allows these values to be read automatically so that saturation values can be calculated in real time.
- Flow experiments where precise back pressure must be maintained even with some solids in the fluid that would plug a conventional back-pressure regulator.
- Any application where constant pressure must be generated and controlled.

## In short, if your application requires:

- Precisely controlled, pulseless flow
- Exact pressure control in either dynamic flow or static pressure conditions
- Accurate volume measurement to nano-liter resolution either in volume pumped or in volume received
- High pressure/low flow rate or high pressure/high flow rate capability
- Ability to handle some solids in the flow stream
- Ability to handle corrosive fluids

**The VPA is right for your application.**



Series 32



Series 16

## More User-Friendly

The local VPA operator interface is a touchscreen display. With just a few simple steps, the VPA can be set up to operate in flow control mode or pressure control mode, and to act as either a pump or a receiver. In constant flow mode, fill rates are automatically set by the system to assure that continuous pumping can occur.

## More Integratable

Seldom is the VPA the only piece of equipment in an experimental setup. Often it is desirable to have multiple devices controlled, and outputs of multiple transducers in a single data acquisition/control program. For this purpose the local operator interface panel is replicated in a LabView emulator that allows the VPA to be controlled from a PC via LAN connection. A LabView API is also available to allow a programmer to readily integrate VPA control into a system control program.

## More Pressure and Flowrate Options

DCI offers three series of VPA's that cover a wide range of flow rate, pressure, and cylinder volume options. In addition, DCI can customize a pump to meet your exact requirements.

## More Affordable

To find out how affordable the VPA line is, contact DCI for a quotation.

Phone: 801 298 4899

Fax: 801 298 4875

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[www.dcitestsystems.com](http://www.dcitestsystems.com)

# DCI VPA Syringe Pumps

## Specifications

Model Number	Maximum Pressure	Maximum Flow Rate	Cylinder Volume	Volume Resolution	Wetted Parts
Series-Cylinder(s)-Pressure-Volume-Flow-Material	psi(bar)	ml/min	ml	nl	Material
<b>Series 12</b>					
12S-5-20-20-SS	5,000 (345)	20	10	0.97	SS
<b>Series 16</b>					
16(S/D*)-2.5-80-400-(SS/HC**)	2,500 (170)	400	80	4.8	SS or HC-276
16(S/D*)-5-40-200-(SS/HC**)	5,000 (345)	200	40	2.4	SS or HC-276
16(S/D*)-10-20-100-(SS/HC**)	10,000 (689)	100	20	1.2	SS or HC-276
16(S/D*)-20-10-50-(SS/HC**)	20,000 (1379)	50	10	0.6	SS or HC-276
<b>Series 32</b>					
32(S/D*)-3.5-550-550-(SS/HC**)	3,500 (238)	550	550	18	SS or HC-276
32(S/D*)-5-375-400-(SS/HC**)	5,000 (345)	400	375	12	SS or HC-276
32(S/D*)-10-200-195-(SS/HC**)	10,000 (689)	200	195	6.4	SS or HC-276
32(S/D*)-15-120-120-(SS/HC**)	15,000 (1,034)	120	120	3.9	SS or HC-276
32(S/D*)-20-90-70-(SS/HC**)	20,000 (1,379)	90	70	3.0	SS or HC-276

\*Available in a (S) Single or (D) Dual Cylinder configuration

\*\*Available in (SS) Stainless Steel or (HC) Hastelloy C 276 construction

## Dimensions D x W x H (in)

Series 12	4.9 x 3.5 x 33	Controller Separate
Series 16	10.5 x 10.5 x 41	Integral Controller
Series 32	13.5 x 11.5 x 61	Integral Controller

## Utilities

- Power: 110 VAC 60 Hz or 220 VAC 50 Hertz – Specify
- Air (Dual Cylinder Models): 80 – 100 psi (clean and dry)

[www.dcitestsystems.com](http://www.dcitestsystems.com)



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