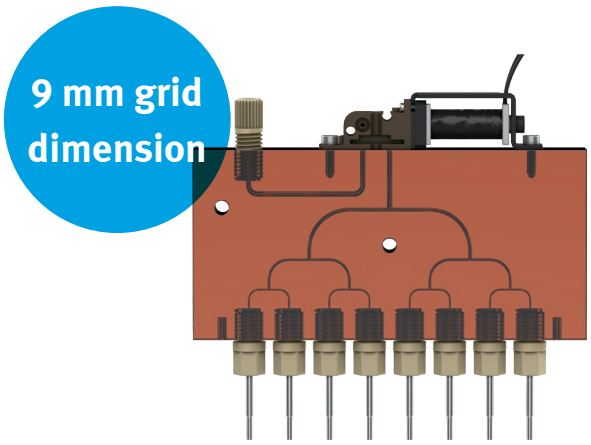
Dispense head VTOI



Efficient control

Highlights

- One valve controller for distributing to 8 dispensing channels
- 9 mm grid dimension – ideal for microwell plates
- Simple design with side-by-side mounting for increased throughput
- Complete system using just a few components
- Suitable for aggressive liquids

The dispense head VTOI significantly increases your throughput! It saves on valves and at the same time reduces the number of channels to be controlled. This allows you, for example, to control a 96-well dispense head with only 12 valves. High-performance materials make the VTOI suitable for use with aggressive media.

The simple 8-channel dosing system
Thanks to the 9 mm grid dimension and a valve with 8 outputs, the VTOI is an optimal 8-channel dispense head for microwell plates, offering increased throughput. A 96-channel dispense head can now be realised with only 12 valves. With just a few other components from Festo, you can have a complete, pressure-controlled dispensing system.

High-precision aspirating and dispensing!
Not only does the vacuum function enable you to use the VTOI for dispensing but it can also be used for aspirating. The minimum dispensing volume is 1 µl. The dispensing accuracy is ≤3% CV for intra-run and ≤5% CV typical accuracy for one complete microwell plate, even down to the smallest microlitre range.

A tough performer
All components that come into contact with the media are made exclusively from high-performance materials such as PEI (ULTEM), PPS, FKM, ETFE and high-alloy steel. This means that even aggressive media can be dispensed.

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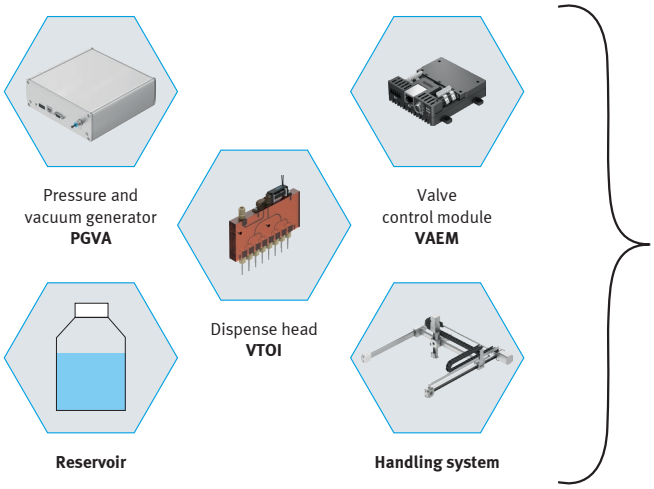
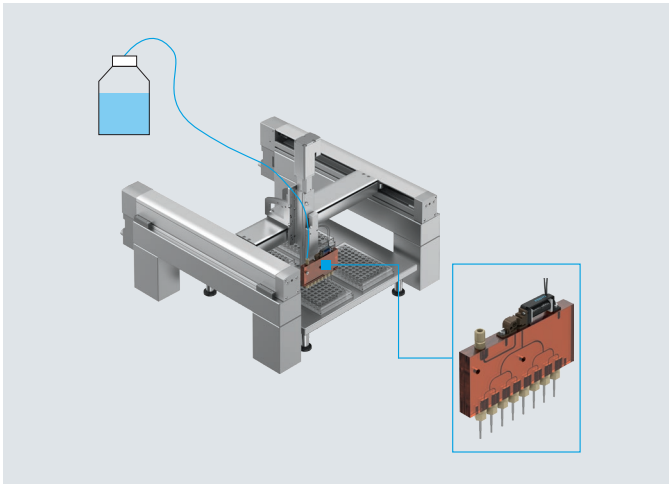
Complete system using just a few components

You need just five different building blocks for an 8-channel, pressure-controlled dispensing system: the pressure and vacuum generator VEAB, a reservoir, the dispense head VTOI, the valve control module VAEM and an appropriate handling system for moving the dispense head.

With these few components you get a complete, 8-channel dispensing system for filling microwell plates quickly, easily and cost-effectively.





The process is based on just a few parameters: you define how much liquid is dispensed into the wells of the microwell plates as a function of the pressure in the reservoir, the needle cross section and the valve opening time.

Technical data

Type	VTOI-A-V8	VTOI-V8
Min. dispensing volume [1]	1 µl	
Typical dispensing precision CV [1]	≤ 5% tip-to-Tip CV, ≤ 3% intra-run CV	
Operating pressure	–0.2 ... 0.65 bar	0 ... 1 bar
Valve function	2/2-way valve, closed, monostable, mechanical spring	
Internal nozzle diameter/length	0.3 mm/30 mm	
Internal volume (sub-base only)	108 µl	
Internal volume (sub-base and dispensing needles)	167 µl	
Nominal DC operating voltage	24 V ±10%	
Max. power consumption	2.0 W	1.8 W
Duty cycle	100%	
Fluid connector	1/4-28 UNF	
Fluid outlet	8 channels in 9 mm grid (designed for microwell plates)	
Suitable for vacuum	Yes	No
Temperature of medium	5 ... 50 °C	
Ambient temperature	5 ... 40 °C	
Operating medium	Gaseous media, liquid media	
Materials in contact with the medium	PEI (ULTEM), PPS, FKM, ETFE, high-alloy stainless steel 1.4404	
Degree of protection	IP30	

1) The information was gathered in a selected configuration, specific ambient conditions and a specified application according to ISO 8655.
The required target volume, correctness and precision were set primarily by the working pressure and the actuation time of the dispense head.

142487 en 2022/10 – Errors and omissions excepted