

# VTP-150-1 VAPE TESTER



Portable Smoking Machine for  
Next Generation Products



The VTP-150-1 Vape Tester has been designed with Next Generation Products and the R&D testing laboratory in mind. Specifically intended as a desktop single port smoking machine for the evaluation of e-cigarette and heated tobacco products, the VTP-150-1 uses the proven syringe pump principle common in conventional smoking machines.

With puff volumes up to 150 ml and flow rates up to 50ml/sec, this is a high performing unit, easily capable of intensive smoking regimes.

The VTP-150-1 is user friendly and provides repeatable results in a reliable manner. For customers who are already using the VTP-150-1, it has become their preferred single channel smoking machine for fast and reliable results.

## FEATURES

- Compact format - desk top compatible
- User friendly interface
- Square and ISO Bell Puff Profiles
- Freely programmable Test Regimes
- Specimen Button Pusher Output
- External trigger output for data capture
- Portable with sturdy Carry Handles
- Durable carry case for transport
- Testing to ISO 20768/CRM81 and Canada Intense regimes.
- Robust stainless steel construction
- Rugged industrial components



The VTP-150-1 enables laboratories to perform R&D studies on individual test specimens without consuming valuable time on multi-channel routine smoking machines.

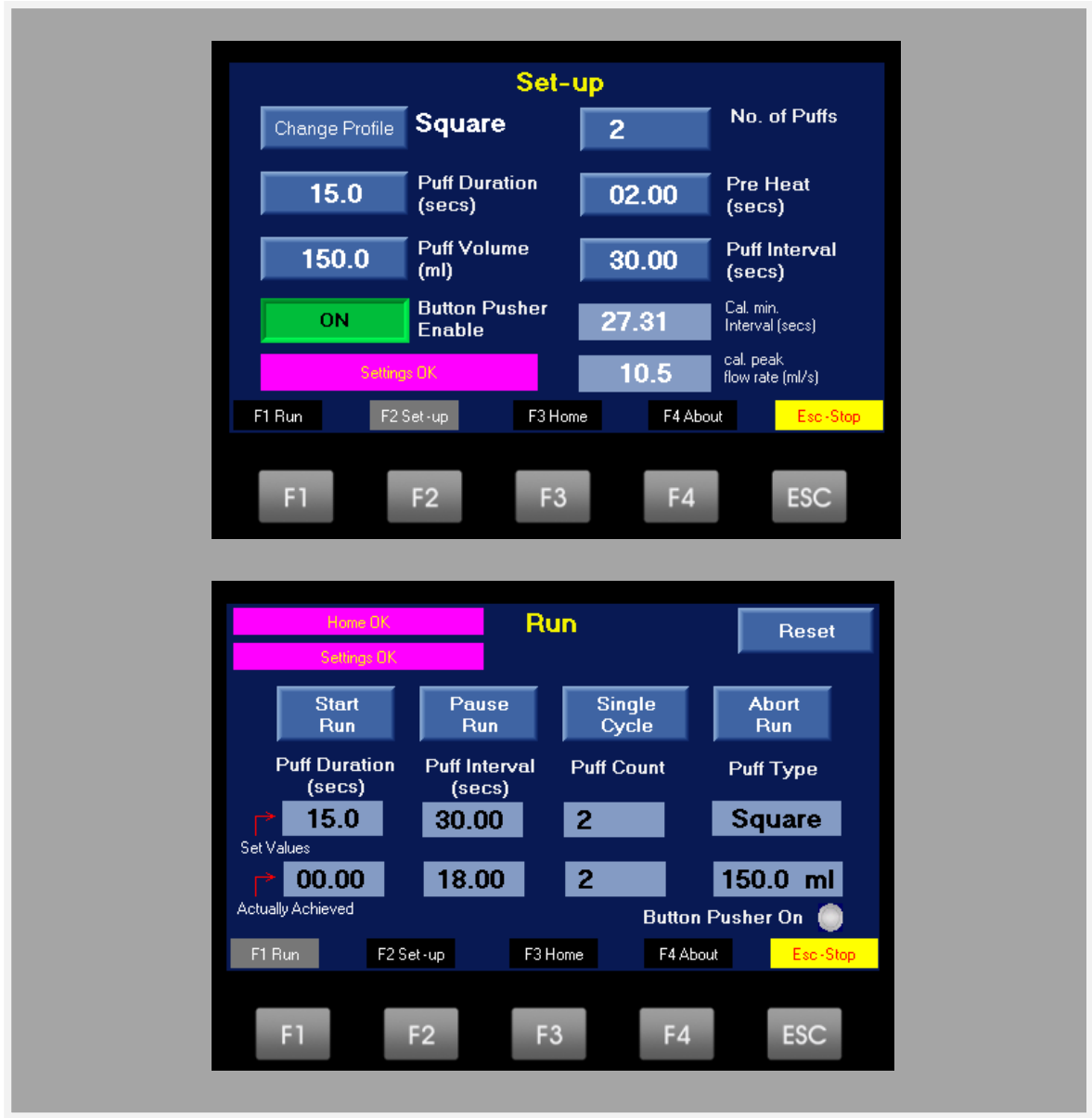
The highly repeatable puffing generated by the unit means that the results can be used with a high degree of confidence.

The VTP-150-1 has been designed as a low maintenance unit. Used correctly, there is no need for the customer to remove the cover. In order to prevent fluids from accidentally entering the unit and potentially causing problems, a user accessible protection filter has been added to the suction connection. For convenience the protection filter holder accepts 44mm dia "Cambridge" filter pads that are commonly used in the testing lab.

The electrical connections and pipe work connections are laser marked and also uniquely sized so that incorrect connection by the user is not possible. The exhaust is fitted with a Colder Palmer PMC quick disconnect making it compatible with some commonly used gas collection bags if required.

A volt free output contact provides the user with a convenient manner to synchronise other equipment such as a data acquisition system with the VTP-150-1 puffing. This output operates in parallel with the button pusher output.

The CE marked unit uses quality industrial automation components and has been independently assessed for EMC, LVD and RoHS compliance based on EN61325 and EN61010.



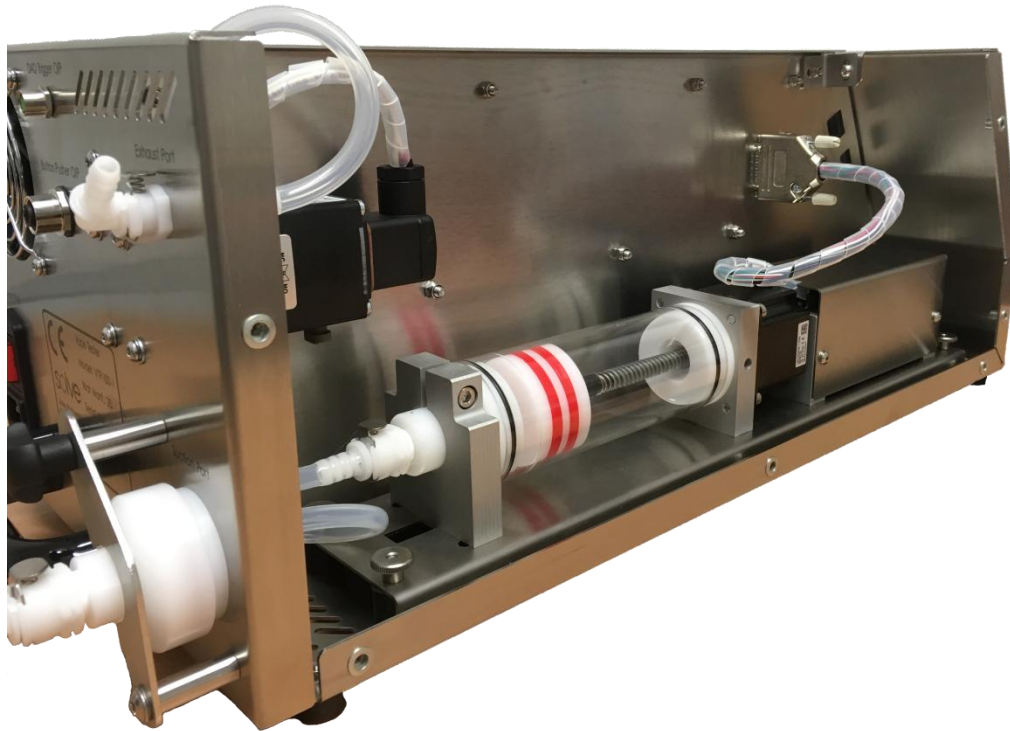
With just four screens, the user interface is designed to minimise the need for navigation through multiple screens and menus. All parameters required for a run can be defined in a single set-up screen. Message boxes provide the user with helpful feedback on the parameters input thus making set-up simple.

A single run screen displays the current set-up values and actual current values. A run may be paused or aborted early.

For convenient calibration purposes and clearing of the system a single cycle facility has also been included.

A selectable audible alarm sounds when the run has finished informing the user without the need for constant monitoring.

The software is currently provided with both English and German selection options. Additional languages are possible upon request.



For ease of maintenance, the internal piston pump has been designed with a single electrical plug and a quick disconnect on the pipe work meaning removal of the piston pump in a few minutes is possible by the service engineer.

Precision borosilicate glass is used for the pump cylinder to ensure a good seal, minimise wear and facilitate visual inspection without the need for full disassembly of the pump.

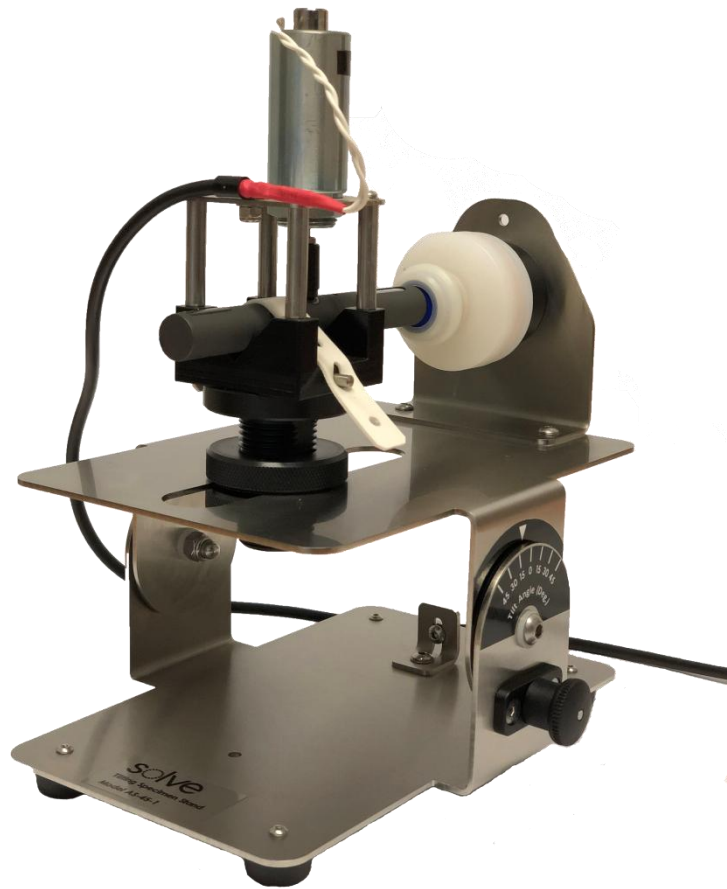
Fan cooling ensures the unit remains at a constant temperature thus providing consistent puff volumes throughout the session.

The piston pump is mounted on four vibration isolators to ensure quiet operation. The entire piston pump assembly is secure using four thumb screws allowing removal without tools.

#### PISTON PUMP FEATURES

- Precision Glass Cylinder for easy inspection
- Simple Disconnection and removal of piston pump unit.
- Vibration Isolation ensure quiet operation
- Platinum cured silicone tubing used throughout the unit.

# SPECIMEN HOLDER SYSTEM



The VTP-150-1 is offered as standard with a compact specimen holder system comprising an angle adjustable stand and an adjustable Vee shaped specimen holder for accommodating cylindrical test specimens ranging from 8 to 20mm Dia. With this system vaping is possible at various angles in 15 Degree intervals from horizontal to a maximum of +/- 45 Degrees. (Alternative angle range stands are also available if required.)

To allow flexibility and cost savings across the laboratory, the stand has been designed with a 21.7mm wide slot to accommodate specimen holders thus making it compatible with the specimen holders from some other common multi channel smoking machine brands.

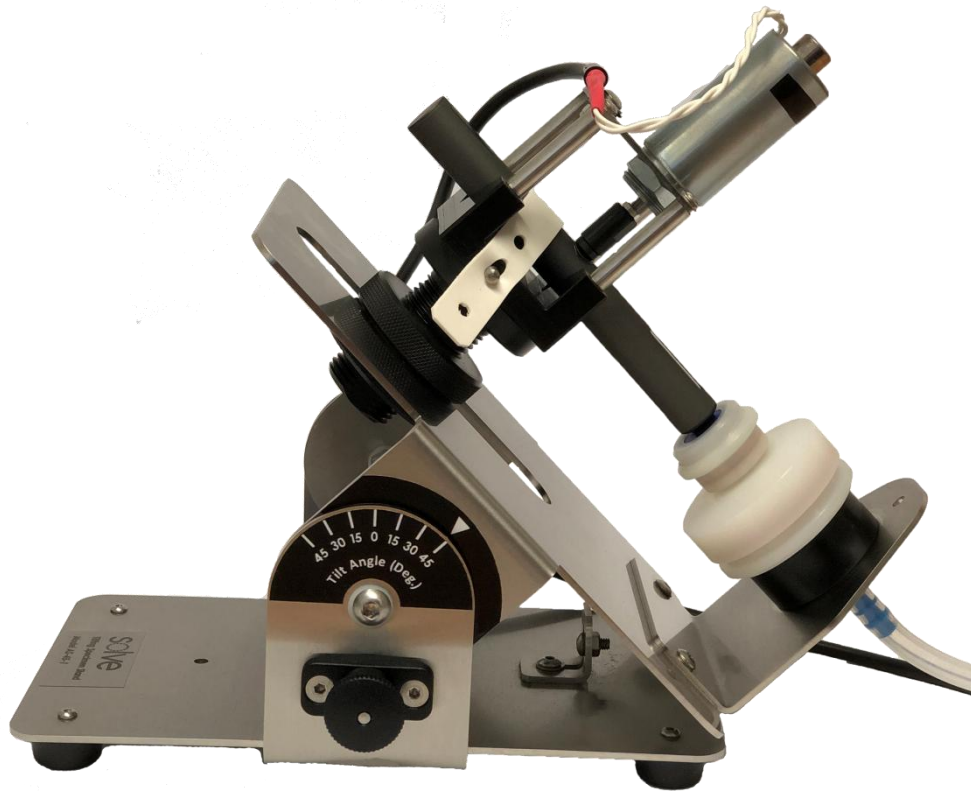
The Dia 15.8 mm filter holder connection port will also accept filter holders from some other common smoking machine brands.

The specimen holders and filter holders supplied with the unit as standard are both compatible with some other common smoking machine brands.

## HOLDER SYSTEM FEATURES

- Angled Vaping to +/- 45 Deg
- Compact and simple to set-up and connect.
- Compatible with other brand specimen holders and filter holders.
- Automatic Button pusher.
- Specimen button and LED clearly visible.
- Manual button override for turning on specimens
- Custom specimen holders available to user requirements.

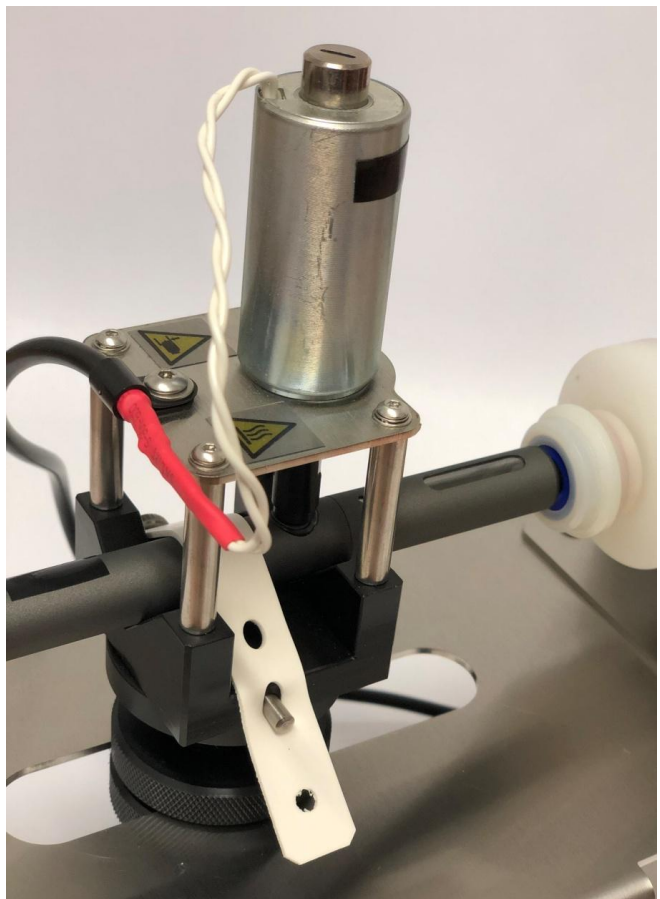




The specimen holder is supplied with a low voltage solenoid coil for automatic button pushing of test specimens where required. The user configurable signal is provided by the VTP-150-1 and no additional external power or air supplies are required. A rugged industrial plug is provided for simply connecting to the VTP-150-1. A quick connect fitting is also provided with the silicone tube for speedy and reliable connection to the smoking machine.

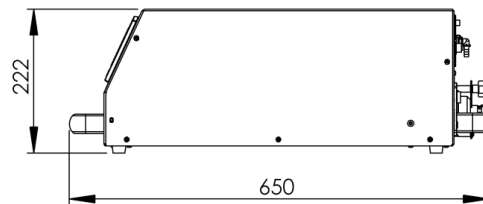
The button pusher is mounted above the test specimen and this is combined with a unique open frame design that ensures the button is easily visible by the operator from all angles thus minimising the chance of test errors from button operation malfunction.

The button pusher is height adjustable for different specimen diameters and additionally the button pusher may also be manually pressed by the operator to turn on test specimens prior to commencement of test regime. The VTP-150-1 software allows the specimen button to be automatically pressed prior to commencement of a puff by a user specified pre-heat duration.

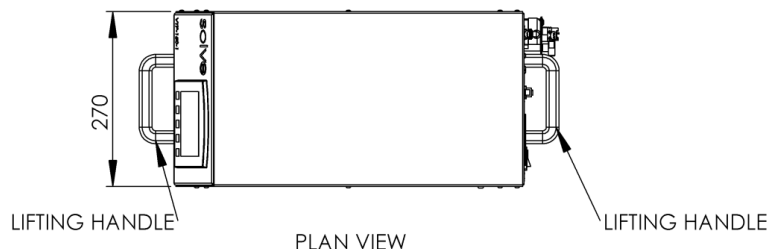


## VTP-150-1 Vape Tester Technical Specification

Dimensions	approx: 27cm wide x 22cm high x 65cm deep
Weight	approx 15 kg
Power Supply Required	230 V AC, 50 Hz, (No air required)
Operating Environment	+15 to +30 Degrees C, Relative Humidity Max 68 %
Enclosure Material	Stainless Steel
Protection Filter	rear mounted 44mm Cambridge Filter Pad compatible
No. of channels	1
Button Pusher Activation Output	yes – 24V dc
External trigger Output	yes – volt free contact
Puff Profile	Square and ISO Bell
Max Puff Volume	150 ml
Puff Flow Rate Range	1 – 50 ml/sec
Pre heat	0.00 – 59.99 sec, 0.01 resolution
Puff duration range	1 - 60 sec, 0.1 resolution
Puff Interval range	max 59.99 sec
No. of Puffs range	1 - 9999



SIDE VIEW



PLAN VIEW

## Specimen Holder System Technical Specification

Dimensions	approx 17.5 cm wide x 25.4 cm high x 20 cm deep
Weight	1.7 kg
No. of test specimens accommodated	One
Test Specimen Specification	Cylindrical shape 8mm – 20mm diameter (dia 14mm standard pillars)
Filter Holder Size	44mm Cambridge Filter Pad
Vaping angles	Horizontal to + - 45° incline in 15° increments
Electrical connection	24v DC, 11W, 4 pin M12 plug fitted
Pipe work	silicone platinum cured tube 4.8 ID x 1.6 Wall, Colder Palmer PLC 23004 Quick Connect Elbow fitted
Button Activation	Auto solenoid controlled by VTP-150-1
Test Specimen Holder Material	Acetal Copolymer
Main Frame sheet metal	304 Grade Stainless Steel

The VTP-150-1 was developed with portability in mind. With ergonomic handles fitted to both front and rear of the machine and a total weight of around 15kg the machine can be safely manoeuvred by a single person.

As standard, the VTP-150-1 and specimen holder system are supplied with rugged transit cases manufactured with custom foam inserts designed to prevent damage in transit. This means that in a COVID 19 era, units can easily be shipped to us for service.



## ACCESSORIES & OPTIONS

A range of accessories and options are offered including:

- Unpainted stainless finish or custom powder coat colour.
- Additional language options.
- Custom shaped specimen holders and filter holder front adapters designed to hold your device securely and achieve a reliable leak free seal around your device mouthpiece.
- +/- 90 Degree specimen holder stands

*To order or request a quotation please contact Dr. Samuel Paul*

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Development since 2012



