

 VOLTERA
V-One Drill **User Manual**

English

Safety

The V-One Drill Attachment is a precision tool for electronics prototyping, specifically intended as an add-on to extend the functionality of the Voltera V-One to allow drilling of holes in FR1 substrates.

As with any piece of precision equipment, the V-One and the accompanying materials and accessories should be handled with care. Please review the following documentation to ensure a safe work environment and maintain optimal machine performance.

The V-One is not only an excellent tool for the seasoned electrical engineer but it is also a great way to teach electronics. Never leave the V-One unattended while in use, and supervise young and inexperienced users to ensure safe operation.

The V-One Drill is for use as-is. Any modifications or improper use without explicit approval and direction from Voltera will void your warranty and can potentially damage the device and cause bodily harm.

In case of emergency or prior to performing any maintenance, please ensure power cable is disconnected from the Voltera V-One and V-One Drill Attachment.



Spinning Motor

The V-One Drill contains sharp parts that will spin at high speeds during operation. Always ensure that the V-One Drill is properly mounted on the V-One before powering it on. Never handle the V-One Drill when the motor is spinning, and wait for the motor to stop and the appropriate software prompt before handling the V-One Drill. Keep fingers away from moving parts at all times.



Wear Eye Protection

Wear eye protection at all times when operating the V-One Drill. To protect the eyes from particles, debris, or other ejected matter.



Sharp Tools

The drill bits included with the V-One Drill are sharp. When the drill bits are not in use, remove them from the V-One Drill, and store them in the provided case to prevent damage to the equipment and accidental injury.



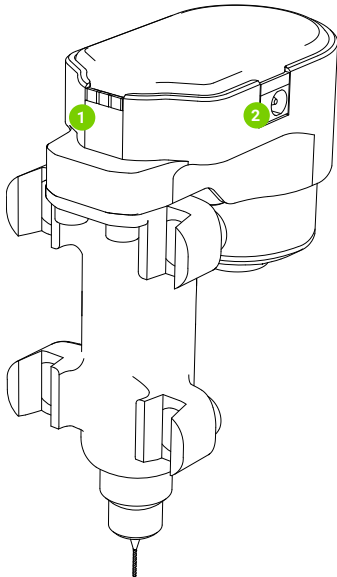
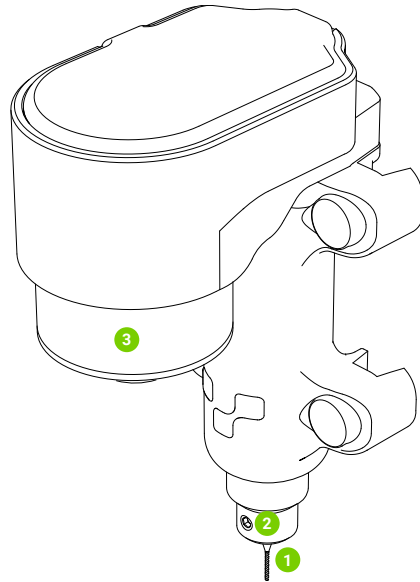
Dust Hazard

Drilling certain materials may release particles or byproducts which are harmful when inhaled. To mitigate this risk, use only Voltera-supplied FR1 substrates, and use a dust extractor or dust mask when drilling.

Drill Anatomy

Front

1. Drill Bit
2. Set Screw
3. Motor



Back

1. Contact Pads
2. Power Entry

Using the Drill

Follow All Prompts in the V-One Software

The Voltera V-One and Voltera V-One Software are required to operate the V-One Drill. Follow all instructions and prompts in the software to properly use the V-One Drill.

Application: Visit voltera.io/downloads to download the Voltera V-One Software application.

Setting Up the Drill

1. Remove all items from the box. Make sure you keep all packaging in case the product needs to be transported in the future.
2. Connect the provided power cable to the C14 receptacle on the power supply, then to an earthed socket outlet.
3. Connect the female end of the 2.1 to 1.7mm DC Jack Adapter to the 2.1mm male DC barrel connector of the power supply.
4. Ensure the Voltera V-One is powered and operating as described in the Voltera V-One manual.
5. When prompted by the Voltera V-One software, mount the V-One Drill unit on the Voltera V-One as instructed, and connect the male end of the adapter to the female barrel jack on the V-One Drill.
6. Ensure the two LEDs on the top of the V-One Drill are illuminated, and that the audible startup sequence has been completed.

Mount the Sacrificial Layer

The V-One Drill is supplied with a sacrificial layer: A large FR1 substrate with 2 slots on either side. It must be mounted directly on the printing platform to protect it from any damage during operation.

1. Mount the sacrificial layer on the printing platform
2. Mount your substrate and secure it with the 10mm long thumbscrews and clamps received with the V-One.

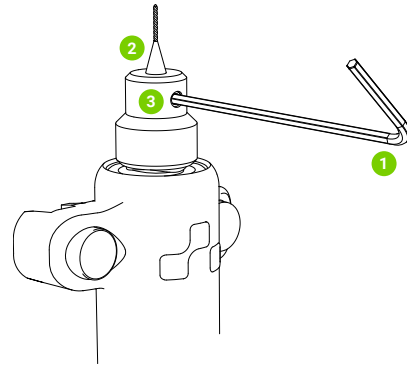
Changing Drill Bits

To remove or insert a bit, use the provided 1.5mm Allen key to loosen the set screw on the drill bit chuck.

- To remove a bit, pull gently on the drill bit until it slides free from the chuck. Inspect and store the bit appropriately.
- To insert a bit, gently slide the drill bit in the chuck until the straight shaft is no longer visible. Tighten the set screw with the allen key.

Changing a Drill Bit

1. 1.5mm Allen Key
2. 1/8" Drill bit
3. Set Screw



Removing the Drill

1. Confirm that all drilling has completed and the V-One Drill is stationary.
2. Unplug the DC Adapter Cable from the V-One Drill.
3. Remove the Drill from the V-One.
4. Remove any drill bits from the V-One Drill before storage.

Third Party Drill Bits

The V-One Drill has been manufactured with very tight tolerances for high precision.

The use of unauthorized third party drill bits is not recommended as they may be manufactured with looser tolerances. Such drill bits may not fit in the chuck or may not be removed after insertion.

Note: Do not force drill bits in the chuck.

Maintenance

Inspect Drill Bits Before Use

Drill bits may break if not handled correctly or become dull with use. Ensure the drill bits are not damaged before using and inspect drill bits before storing.

Cleaning

During operation, the V-One drill will generate dust debris. This debris should be cleaned after drilling has been completed using a dust extractor.

Replacement Power Cable

Replacement power cable depends on electrical standards of the country and locality of use.

Mains Voltage	100-120 VAC	200-240 VAC
Length	>=1.8m	
Ratings	>250V, >1A	
Termination	C14 to Plug Type B	C14 to Plug Type F

V-One Drill Technical Specifications

Disclaimer: Voltera reserves the right to change or update the following specifications at any time without notice. Please visit www.voltera.io or contact support@voltera.io for most up-to-date information.

Hardware

Maximum Speed	13000 RPM	
Maximum Drill Bit Length	38.1mm	1.5"
Maximum Drill Bit Diameter	2mm	0.078"
Maximum Dimensions	84 x 39 x 59 mm	3.3 x 1.4 x 2.3 in
Weight	120g	0.26lb
Environmental Conditions		
Operating Temperature	15 - 30° C	59 - 86°F
Maximum Altitude	2000m	1.24 miles
Relative Humidity	80%	
Pollution Degree	2	
Power Requirements	100 - 240 VAC, 50/60 HZ	
	25 W DC, 12V, 2.08 A	
Other Equipment	Voltera V-One is required to operate the V-One Drill	

Consumables and Accessories

The items below are the compatible consumables for the V-One Drill. Please visit voltera.io/store to view or purchase additional consumables.

- 2x3 FR1 Substrates
- 3x4 FR1 Substrates
- Sacrificial Layer
- PCB Rivets
- 1/8" shank PCB Drill Bits

The items below are the compatible accessories for the V-One Drill. In case of lost accessories, please contact support@voltera.io

- 2.1 to 1.7mm DC Jack Adapter
- 1.5mm Allen Key
- Thumbscrews
- Rivet Tool

For consumables and replacement parts, please contact our sales team or visit our online store:

sales@voltera.io

+1 88-381-3332 Ext. 1

voltera.io/store

For technical assistance, please reach out to our technical support team:

support@voltera.io

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voltera.io/support

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