

# VOOL

VOOL Charger  
User Manual

Declaration of Conformity .....	3-4
Safety Instructions .....	5-7
General Information .....	8-9
Specifications .....	10
Charging Quick Guide .....	11-12
Starting a Charge Session .....	13
Stopping a Charge Session .....	14
Duration of Charge .....	15
Status Lights .....	16
VOOL Charger Maintenance .....	17-18
Discarding the VOOl Charger .....	19-20
VOOL Portal & Mobile App .....	21
VOOL Portal .....	22
VOOL App .....	23
Troubleshooting .....	24-26
Warranty Information .....	27
General Terms .....	28
Limits of Liability .....	29
Laws and Dispute Resolution .....	30

# Declaration of Conformity

**MultiCharge OÜ**

Telliskivi 51b  
10611, Tallinn, Estonia  
info@vool.com

Trademark: VOOOL  
Product: VOOOL EV Charger  
Product ID: V22AC

**EU Declaration of Conformity (DoC)**

We declare under our sole responsibility that the VOOOL EV charger is in conformity with the EU directives outlined below, provided that the product is installed according to local regulations and its maintenance and usage follows the manufacturer's guidelines.

**Directives:**

The Low Voltage Directive (LVD)	2014/35/EU
Electromagnetic compatibility Directive (EMC)	2014/30/EU
Radio Equipment Directive (RED)	2014/53/EU
RoHS Directive (RoHS)	2011/65/EU
WEEE Directive	2012/19/EU

**Following harmonized standards have been implemented in the design of the EVSE.**

EN 61851-1:2019  
EN 61439-1:2020  
EN 62955:2018  
EN 61851-21-2:2021  
EN 301489-1 V2.2.3  
EN 301489-3 V2.2.0  
EN 301489-17 V3.2.4  
EN 301489-52 V1.2.1  
EN 300330 V.2.1.1  
EN 300328 V.2.2.2  
EN 301908-1 V11.1.1  
EN 63000:2018

Tallinn 19.02.2024

  
Sander Vahtras



# Safety Instructions

**Please read these instructions before installing, operating, or maintaining the VOOl Charger.**

- ⚠ For safety reasons, avoid installing or using the VOOl Charger near flammable, explosive, harsh, combustible materials chemicals, or vapors.
- ⚠ To ensure proper installation, an authorized installer must carry out all installations. Incorrect installation can damage the charger or the vehicle's battery.
- ⚠ The VOOl Charger should not be used by individuals with a lack of experience or knowledge without the supervision of a responsible party.
- ⚠ Turn off the power from the main switch before installing or configuring the VOOl Charger.
- ⚠ The VOOl Charger is intended solely for electric vehicles.
- ⚠ The VOOl Charger must be grounded via a permanent wiring system.
- ⚠ Use the VOOl Charger only within the specified operating parameters.
- ⚠ Avoid inserting any foreign items into the VOOl Charger to prevent damage.
- ⚠ For safety reasons, avoid direct liquid splash to the VOOl Charger and charge handle. Always put the charge handle back on the dock to minimize contact with moisture or contaminants.
- ⚠ Modifying the equipment or any part of the product is strictly prohibited.
- ⚠ For safety reasons, do not use the equipment if it appears to be damaged.
- ⚠ The VOOl Charger must be installed correctly to prevent damage to the charger and the battery of the vehicle.

- ⚠ The installations must comply with local regulations. Do not exceed power limitations.
- ⚠ To avoid potential damage, it is important to put the charging cable back onto the holder, so it cannot be stepped on, driven over, or tripped on.
- ⚠ To prevent overheating, unroll the charging cable completely before use.
- ⚠ Do not use cleaning solvents on VOOL components. A clean cloth must be used to remove dirt and dust.
- ⚠ Do not use adapters for charging connectors.
- ⚠ Do not use cord extensions for charging cables.

General Information

VOOL guarantees a smooth journey from choosing your product to installing it, and from operating it to managing it daily. We uphold the strictest standards for our products in terms of quality, dependability, and efficiency. To maximize your grid connection and your EV's potential, explore our offerings including the VOOl Load Management Controller (LMC), VOOl Portal, and VOOl App.

The VOOl Charger is an Electric Vehicle Supply Equipment (EVSE) engineered to revolutionize how you power your electric vehicle (EV). As a Level 2 charging device compatible with indoor and outdoor use, it employs a Type 2 plug for versatility.

The charger is designed to connect and share information through a network interface. The owner of the charger is solely responsible for ensuring a secure connection between the charger and their internet network service provider. Implementing security measures such as firewalls, authentication procedures, data encryption, and antivirus programs is crucial to safeguarding the charger. The manufacturer is not liable for any damages or losses that result from security breaches or unauthorized access, intrusion, interference, leakage, or theft of data or information.

VOOL uses the data from internet-connected charging stations to improve user experience, offer additional features, and develop new digital services.

Regardless of the various versions of charging stations VOOl offers, the principles outlined in this product manual should be consistently adhered to for safe and efficient operation.





1. EVSE
2. AC Grid Input
3. RFID Card
4. Smartphone
5. EV Charge Cable



# Charging Quick Guide

## Charging with a Type 2 plug is a simple process.

You'll need to follow these steps:

- **Check compatibility:** Ensure that the Type 2 plug is compatible with your EV. The Type 2 plug is compatible with most EV models sold in the EU.
- **Open the charging port:** Depending on your EV model, you may need to press a button or unlock the charging port before opening it.
- **Plug in the charging cable:** Insert the Type 2 plug into your EV's charging port.
- **Start the charging process:** By default settings, charging will start automatically.
- If start charging settings have been adjusted, activate the charging process via the VOO Portal, the VOO App, or with an RFID card.
- **Monitor the charging process:** Use the VOO Portal or the VOO App to keep track of your charging sessions. You can use both methods to monitor information about charging speed, cost, and energy consumption.
- **Stop the charging process:** The charging process will automatically stop when your EV battery is fully charged. However, you can have the option to stop the charging process at any time by unplugging the charging cable or pressing 'Stop' button within the VOO Portal or App.

## Do not use the charger and immediately contact the distributor or manufacturer if:

- The charger has visible damage.
- The cable or connector has visible damage.
- There was an accident or fire originating from or near the charger.
- Water or other liquids have entered the charger.

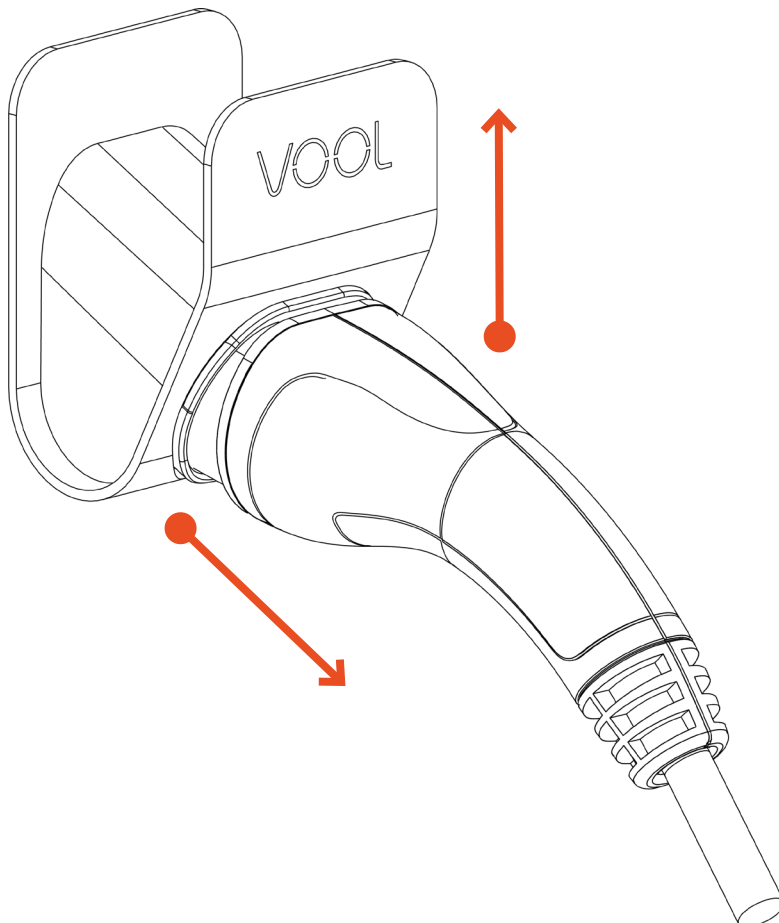


**The VOOl Charger comes with a type 2 charging cable that is attached to the charging station.**

- Prior to each use, inspect the charger for any signs of damage.
- Before plugging in, ensure that the plug matches the outlet.
- By default, all VOOl Chargers come with 'AutoStart' mode enabled. This can be easily changed to RFID start, smart charging, or manual start/stop via the admin menu.
- Once the charger is connected, a green light will illuminate, and a single beep sound will confirm that the charging process has started.

⚠ Do not put excessive strain on the charging cable.

For more detailed information, including charging settings, visit the WEB interface.



## Stop a Charge Session

- Ensure the charging process is stopped before unplugging the charging cable
- If desired, stop the charging process via the VOOO Portal or App by selecting 'Stop Charging'. The charger will automatically unlock from the socket.
- Once unlocked, the cable can be safely unplugged from your EV.
- Unplug the charger and close the charge port.
- Winding the cable neatly around the VOOO Charger or Hook prevents tangling. Secure the plug into the VOOO Hook if available.
- Do not leave the cable on the ground and do not use it as a jump rope.

Upon completion of the charging process, the green light on the VOOO Charger will stop flashing and remain solid green, signaling that the charging cycle has concluded.

For more detailed information, including charging settings and monitoring status, visit the VOOO Portal.



The charging duration depends on many factors, such as battery capacity, charging speed, initial state of charge, available current, ambient temperature, vehicle battery health, and user settings.

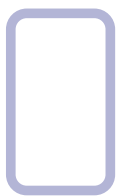
- **Charger Temperature:** During hot days, or when installations are carried out in direct sunlight, the charger may heat up. This increase in temperature can subsequently reduce the charging speed.
- **Battery Capacity:** The size of an EV battery determines how much energy it can store, and consequently, how much time it takes to charge. Larger batteries generally require more time to charge compared to smaller ones.
- **Charging Speed:** The charging speed relies heavily on the type of charger being used. It will also depend on maximum charge rate supported by the EV. Typically, an 11 kW charger can charge an electric vehicle overnight. A 22 kW charger provides twice as much power, which significantly reduces the charging time.
- **Initial State of Charge:** The time it takes to charge the battery also depends on its starting charge level. If the battery is partially charged to begin with, the overall charging time required will be less.
- **Available Current:** The charging speed is largely determined by the amount of power delivered to the EV. The higher the available current, the faster the battery will charge.
- **Ambient Temperature:** Charging times can vary in extremely hot or cold temperatures. The battery management system reduces the charging rate to avoid potential damage to the battery.
- **Battery Health:** The condition of the battery also influences the charging duration. An aging or damaged battery may not be capable of accepting a full charge, consequently extending the required charging time.
- **User Settings:** Some EV models offer the option for users to set the charging rate or delay the start of charging, which will affect the duration of charging.

The duration of EV charging depends on multiple factors, and to provide real-time insights, the charging duration and is available to view on the [VOOL network](#). You can access this information via your mobile phone, tablet, or computer. After adding a vehicle to the VOO network, data related to the time required to fully charge and the battery level will be displayed in the admin view.

The VOOL Charger is intuitively designed to provide visual feedback during the charging process to assist you in understanding the status of your charging session.

The status lights are shown when:

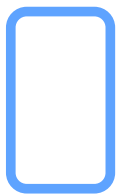
- The charger is connected to a power source.
- The charger is ready to charge and the cable is properly connected.
- The charger has started charging.
- The charger has completed the charging.
- An error or issue occurred in the charging process.
- Smart charging has been initiated.



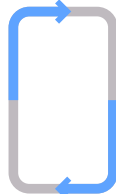
**Ready to Charge**  
WHITE  
Static



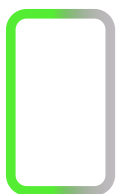
**Suspended**  
BLUE  
Pulsing



**EV Connected**  
BLUE  
Static



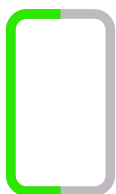
**Charger Updating**  
BLUE  
Scrolling



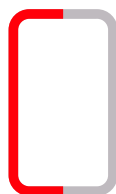
**Charging**  
GREEN  
Pulsing



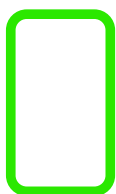
**Charger Disabled**  
RED  
Pulsing



**Start Charging**  
GREEN  
Blinking



**Error**  
RED  
Blinking



**Finished**  
GREEN  
Static



**No Communication**  
RED  
Static

# VOOL Charger Maintenance

Performing regular maintenance on your VOOl Charger ensures safe and reliable operation and extends the lifespan of your equipment. Before each use, conduct a visual inspection. Inspect the charger and charging cable regularly for signs of damage or wear and tear, such as cracks or loose connections. If you notice any issues, stop using the equipment and contact a qualified technician for repairs.

Clean the equipment as needed by using a soft cloth and mild cleaning solutions. Be sure to avoid getting water or other liquids inside the charger or charging cable. Do not use high-pressure water or strong cleaning solvents on the charger to prevent potential damage. Use a clean, moist cloth to remove any dust and dirt from the VOOl Charger and its components.

Regular checks using VOOl software ensure your charger is functioning correctly. Undertake necessary repairs and upgrades as required. If you encounter any issues with the charger, reach out to the manufacturer via the VOOl Portal or VOOl App. Refer to the troubleshooting section for additional assistance. Ensure unauthorized personnel maintain a safe distance during maintenance operations.

Discarding the  
VOOL Charger

When it's time to discard the VOOl Charger, it's important to do it in an environmentally responsible and safe manner. The charger contains potentially hazardous materials that require proper disposal methods. With correct disposal, you contribute to the recycling and reusing of most of the charger.

To dispose of the charger, deliver it to your local recycling and collection point designated for small electrical household equipment. This ensures that batteries and other potentially hazardous materials are separately collected in accordance with guidelines and regulations.

Ensure that electrical and electronic equipment is discarded separately, adhering to the WEEE – 2012/19/EU Directive concerning the disposal of waste electrical and electronic equipment.

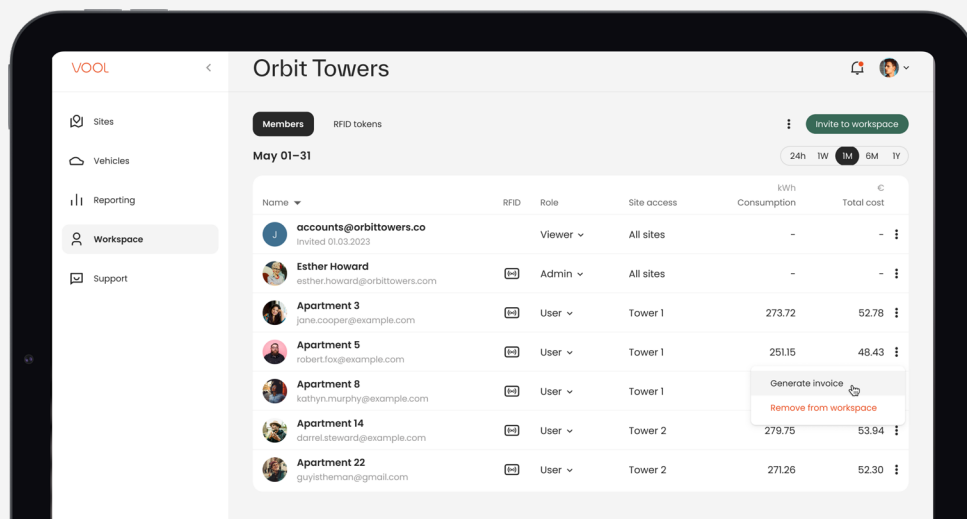
- ⚠ If you are unsure about where to dispose of your EVSE, please reach out to the government waste-disposal department in your country.
- ⚠ Do not dispose of the charger or any of its components with your regular household waste.



VOOL Portal  
& Mobile App

The **VOOL Portal** is a user-friendly platform designed to manage all your EV charging requirements, and offering an array of additional features and functionalities.

- **Real-time monitoring:** Monitor your EV charging status in real-time. The VOO Portal displays key information such as charging time, speed, battery level, and estimated time remaining for a full charge.
- **Scheduling and Control:** Schedule charging sessions for your electric vehicles and set up alerts to be notified upon completion of the charging process. It also enables remote control of charging, with the option to pause and resume as required.
- **User Management:** Manage user access, charger permissions, and billing
- **Analytics and Reporting:** Oversee user data and analytics, such as energy consumption and costs. This data can be used for reporting and optimization.
- **Network Management:** For instances involving multiple charging stations, the VOO Portal allows administrators to monitor and manage the entire charging network. This includes system configuration and firmware upgrades.
- **Troubleshooting and Maintenance:** Access diagnostic information and perform maintenance tasks on the charging station remotely via the VOO Portal.
- **Public Charging:** Make your charging spaces available to the public and make a profit. Select your contract type (fixed or market-rate), your desired profit margin, and EV drivers can find you via navigation platforms such as Waze, Google Maps, and Apple Maps.



## Setting up VOOl home charger on the VOOl App

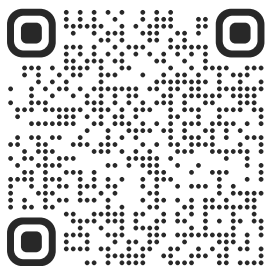
The VOOl App also includes functionality to install and set up a VOOl home charger easily and conveniently.

The installer can setup the charge point, establish the internet connection for the charger and make sure everything is ready to use.

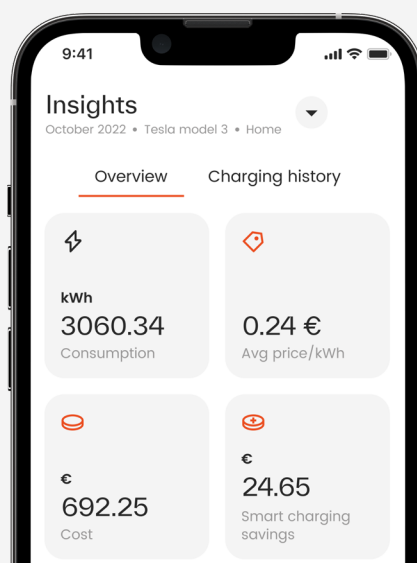
Setup smart charging at your home or office in a few clicks. And later, analyze all your charging session data in one place conveniently.

Download the app from App Store or Google Play and create an account to setup smart charging.

App Store



Google Play



Troubleshooting

In case of a problem, the VOOl Charger will illuminate the red LED lights and the charger app will display a further error description. Potential causes and solutions are brought in the following table. If you cannot find a solution to the problem, contact the [support@vool.com](mailto:support@vool.com)

Error code	Issue	Troubleshooting
01	The charger received inaccurate information from the vehicle.	Switch off the charger from the main switch. Then switch it back on. If the error persists contact the manufacturer at <a href="mailto:support@vool.com">support@vool.com</a> .
02	The sensor of the residual current is not working.	Contact the manufacturer at <a href="mailto:support@vool.com">support@vool.com</a> .
03	There is an internal malfunction in the charger.	Contact the manufacturer at <a href="mailto:support@vool.com">support@vool.com</a> .
04	The residual current is discovered in the charging circuit.	Switch off the charger from the main switch. Then switch it back on. If the error persists contact the manufacturer at <a href="mailto:support@vool.com">support@vool.com</a> .
05	The charger has detected a malfunction in the vehicle.	Turn off the charger from the main switch, and turn it right back on. If the error persists contact customer service at <a href="mailto:support@vool.com">support@vool.com</a> .  If possible, try to charge another vehicle.
06	The vehicle exceeded the allowed charging current.	Turn off the charger from the main switch, and turn it right back on. If the error persists contact customer service at <a href="mailto:support@vool.com">support@vool.com</a> .  If possible, try to charge another vehicle.
07	The charger detected a short circuit in the cable.	The cable may be defective. Restart the charger from the main switch and if the error persists, try using another cable for charging.
08	The temperature is too high.	Allow the charger to cool down and try again.  If the ambient temperature is too high, try to cool down the environment.

9	An error occurred while locking or unlocking the charging cable.	Make sure the charging cable is not too stretched or strained  Push the plug deeper into the socket and try again. If the error reccurs then replace the charging cable with a new one.
10	A fault in the charging contactor applied the system protection device RCD	Turn on the RCD protection device. If the error persists, contact customer service.
11	There is no connection between the energy consumption meter and the charging station.	Contact the manufacturer at <a href="mailto:support@vool.com">support@vool.com</a> .

Warranty Information

The VOOl Charger Limited Warranty provides coverage for a period of 3 years (3 years for EU member states) from the date of purchase. The Limited Warranty covers the refund, repair, or necessary replacement of adapters that have manufacturing defects occurring during normal use.

The VOOl Charger Limited Warranty does not provide coverage for any damage or malfunction caused directly or indirectly by normal wear and tear, abuse, misuse, carelessness, accidents, or using the charger in a manner unsuitable for its intended purpose. The Limited Warranty does not provide coverage for improper maintenance, storage, or transport. This includes but is not limited to, situations where

- maintenance and warnings specified in the documentation are not followed;
- external factors, including but not limited, such as faulty electrical wiring, damaged junction boxes, circuit breakers, power outlets, environmental factors, or natural disasters such as fire, earthquake, water, lightning, etc.
- paint damage or any general appearance minor damages that may occur on the surface such as scratches, scrapes, small marks or notches, bumps, or fractures.
- The VOOl is not contacted immediately after discovering a defect that is covered by the warranty.
- Non-certified parts or accessories or any other modification is made by an unauthorized person or facility.
- There is improper repair or maintenance, without non-genuine accessories or parts.

While it is not mandatory for you to have all maintenance, service, or repairs done at the VOOl service center, the Limited Warranty may not provide coverage when there are inadequate maintenance, service, or repairs. For this reason, it is advised you have all maintenance services and repairs performed in an authorized repair facility.

Apart from the rights provided under the VOOl Charger Limited Warranty, you may be entitled to additional legal rights based on the laws in your local region or country.



This limited warranty is only for the VOOl Charger. Any other warranties or conditions that may arise under relevant local laws, federal statutes, or otherwise, in law, including but not limited to implied warranties and conditions of merchantability or merchantable quality, durability, or those arising by a course of dealing or usage trade, are either disclaimed to the maximum extent permitted by your local law or limited in duration to the term of this VOOl Charger Limited Warranty. To the maximum extent permitted by your local law, necessary repairs and/or replacements will be carried out using new remanufactured components. By your local law, the liability of the VOOl Charger Limited Warranty is limited to a reasonable cost of repair or replacement. This cost will not exceed the manufacturer's suggested retail price. If the replacement is necessary, it may be fulfilled with non-original manufacturer's parts of similar quality.

If the costs of repairing or replacing the VOOl Charger exceed its fair market value at the time when the defect was discovered, VOOl will not be responsible for covering such costs. Furthermore, the total benefits you receive under this VOOl Charger Limited Warranty cannot exceed the price you paid for the VOOl Charger.

VOOl does not allow create any additional responsibilities or liabilities on behalf of the company. VOOl company reserves the right to decide, whether to repair or replace a component and whether to use new, reconditioned, or remanufactured parts.

To the extent allowed by local law, VOOl declares that it takes no responsibility for any indirect, incidental, special, or consequential damages arising from or relating to the VOOl Charger or adapter. Including, but not limited to transportation, loss of the charger, reduction of the vehicle value, loss of time, income, personal or commercial property, inconvenience or annoyance or emotional stress or harm, expenses that are made for towing, bus fares, vehicle rental, service call charges, gasoline expenses, lodging expenses and incidental expenses such as telephone calls, emails, etc.

Regardless of the nature of your claim, whether it is based on contract, tort, breach of warranty or conditions, misrepresentation, or any other law, these limitations and exclusions will still apply. This includes the situations where damages were reasonably foreseeable.

In compliance with local laws, VOOl requests that you notify them in written form of any manufacturing defects within a reasonable timeframe and during the coverage period specified in the VOOl Charger Limited Warranty. This will allow us to perform any necessary repairs. If you have any disputes that require resolution, please send a written notification to:

[support@vool.com](mailto:support@vool.com) or

Telliskivi 51b  
10611, Tallinn  
Estonia

The following information must be provided:

- The date of purchase
- Your name and contact information
- Detailed information about the problem you are experiencing
- Details about the attempts you have made to resolve the issue

If any disputes or arguments arise between you and VOOl about the VOOl charger Limited Warranty, VOOl will try all possibilities to reach for agreeable resolution.

For more information, support,  
or inquiries, please reach out to us at

[info@vool.com](mailto:info@vool.com)

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