

USER MANUAL

SPARKULAR® Max

V1.0

2026/05/13



Showven Technologies Co., Ltd.

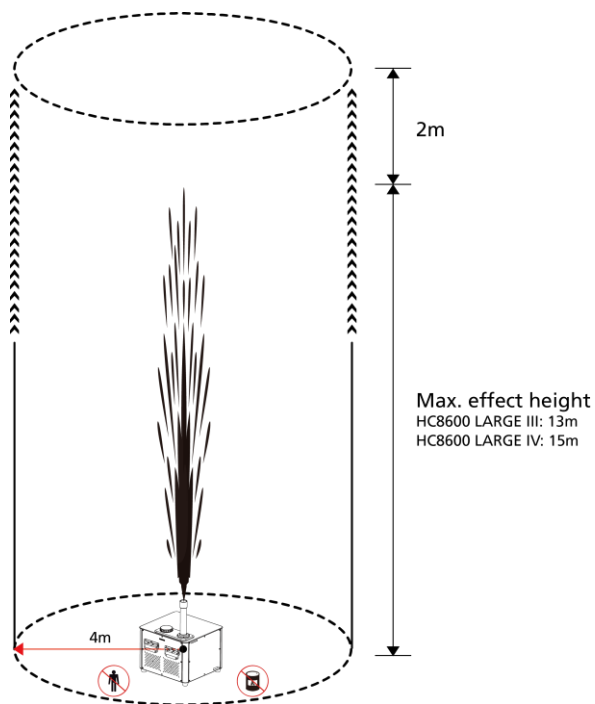
Thanks for choosing SPARKULAR® Max , we wish it will sparks up your show. Please read the following manual carefully before operating this product.

Δ **Safety Instructions**

- ⚡ Unauthorized repair are prohibited, it may cause serious incident.
- ⚡ SPARKULAR® Max can be used in rain, but please keep it dry after use and when storing it.
- ⚡ Make sure lid of feeding hopper are well covered when use SPARKULAR® Max.
- ⚡ Accidentally burning of consumable in hopper please use sands or dry powder fire extinguisher to extinguish.
- ⚡ Consumable should keep away from moisture and stored in a dry sealed environment.
- ⚡ Check whether there is consumable aggregate in the output nozzle both before and after each show, if any, please clean it up, or it will affect the firing effect, damage machine, even cause serious incident.
- ⚡ There will be some sparks drop to ground, make sure there are no flammable objects such as carpet on the ground within the safety radius of the machine.
- ⚡ Make sure power supply in consistent with the rated voltage of the equipment, and the socket must well grounded. Unplug and turn off the machine when not use.
- ⚡ To ensure the equipment operates at full power, please be sure to use a 2.5mm²/12AWG power cord. Insufficient power supply may cause abnormal fan startup.
- ⚡ For better heat dissipation, block the air intake and air outlet is prohibited.
- ⚡ Cover the output nozzle of SPARKULAR® Max is forbidden, inspect the machine before each show, making sure no objects or material will block the output nozzle.
- ⚡ Never touch the nozzle of SPARKULAR® Max danger of getting burnt.
- ⚡ Never touch the sparks which shooting out from the nozzle.

Safety Distance

- ⚡ Keep audience and flammable material at a minimum distance of 4m from SPARKULAR® Max.
- ⚡ Make sure sparks shoot out from SPARKULAR® Max can NOT touch any objects. And keep a clearance with minimum 2m from the setting maximum effect height.
- ⚡ In windy environment, increase the safety distance according to the wind direction and speed.
- ⚡ The safety zone area shifts accordingly when machine installed in tilt position. Please increase the safety distance in the direction which machine tilt.
- ⚡ Sparks and consumables from the machine can lead to serious eye injury. Always wear safety goggles when enter the safety zone.



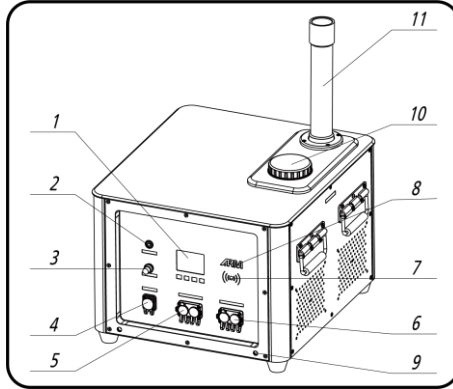
Δ Description

SPARKULAR® Max is a brand new sparks effect platform, brings a never seem sparks effects up to 15m. It is with 7-15 extremely wide effect height adjustment. Custom-tailored for high demanding professional markets such as music festivals, stadium, concert etc applications.

Δ Technical Specifications

- ∨ **DIMENSION:** 460×420×330mm
- ∨ **WEIGHT:** 45kg
- ∨ **VOLTAGE:** AC200-240V, 50/60Hz
- ∨ **WORK POWER:** 3200W
- ∨ **EFFECT HEIGHT ADJUSTABLE:** YES
- ∨ **EFFECT HEIGHT:** 8-15m (LARGE IV), 7-13m (LARGE III)
- ∨ **HC8200 CONSUMPTION RATE:** 70g/min
- ∨ **HOPPER CAPACITY:** 950g
- ∨ **INTERFACE:** 3-pin and 5-pin XLR
- ∨ **CONTROL:** 2 DMX channels
- ∨ **WORK TEMP.:** -10°C-50°C
- ∨ **USAGE IN RAIN:** IPX3

Structure of SPARKULAR® Max



1. LCD Screen
2. Power Switch
3. Fuse
4. Power IN
5. 3-PIN DMX IN / OUT
6. 5-PIN DMX IN / OUT
7. RFID Card Swipe Region
8. ARM Alarming Light
9. Hole for Safety Ring
10. Feeding Hopper
11. Output Nozzle and Extension Tube

Safety Loop Installation Hole

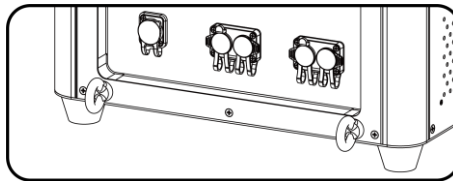
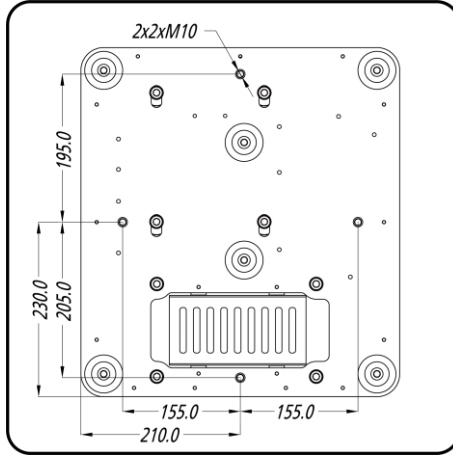


Diagram of Bottom Panel

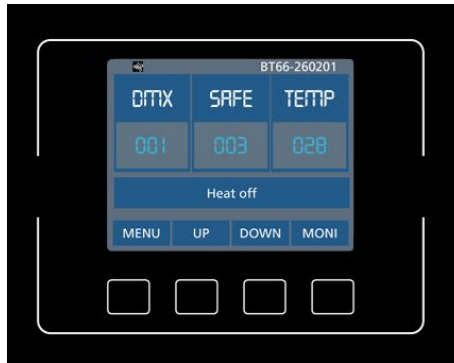


NOTICE:

For truss installations please using minimum two mounting holes, two safety lifting rings and safety ropes; Make sure the safety rope you use are qualified for this equipment.

Δ Operation Panel

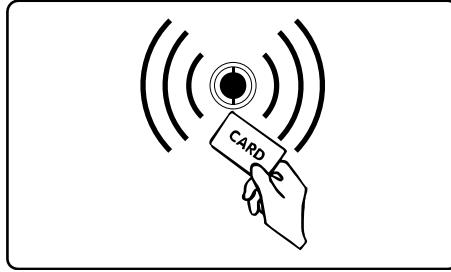
1. Keypad area:



1.1 Display area: device interface, device real-time running status and setting parameters display

1.2 keypad area: for settings.

2. RFID area:



RFID card come with consumable SPARKULAR GRANULES bags, swiping card to identify parameters and types of granules. The RFID card is disposable, one card can only use one time. Each card can increase single machine 20min working time, the maximum recharge time for SPARKULAR® Max is 30min.

3. ARM alarming light



OFF: DMX connected.

BLINK: DMX armed, ready for firing

ON: No DMX connection.

NOTE: you can turn off the ARM light in ADVANCED menu by switch the ARM State to OFF status.

Δ Display Interface

1. Main Interface:



1.1 DMX Block: DMX address, when background color turns to RED means DMX connected.

1.2 SAFE Block: appears when DMX Channel Mode is 3CH-P, when safety channel DMX value between 50-200 the background color of TEMP area turns RED.

1.3 TEMP. Block: Temp. of heating chamber, RED background means machine temp. reached set temp. and ready to shot. If shows "Err" means temp. sensor malfunction.

1.4 Message Block: It alternating display of remaining time and real-time operational status information. If there is an error of the machine, it will also display it here.

1.5 Button Block:

MENU / BACK: Press enter setting interface / Backward

UP / LEFT: Parameter up / Left menu

DOWN / RIGHT: Parameter down / Right menu

MONI / EDIT / SAVE: Status monitoring of main part inside machine / Parameters edit / Save

1.6 Status Block: Displays device status and software version

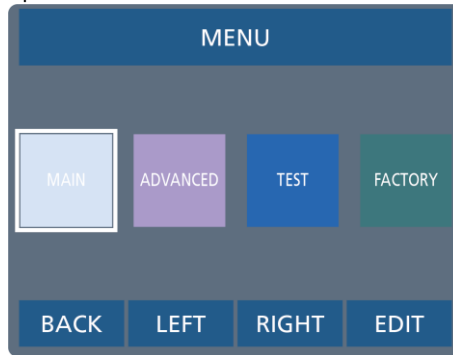
2. Error information

Error information	Why it appear	How to remove
E0 System IC 0	<ol style="list-style-type: none"> 1. Power supply AC frequency abnormal 2. Mainboard malfunction 	<ol style="list-style-type: none"> 1. Check the AC power supply frequency 2. Replace a new mainboard
E0 System IC3	Systematic error, use fake RFID card	Contact your SPARKULAR GRANULES supplier
E1 Blower Err000	<ol style="list-style-type: none"> 1. Blower power wire terminal connection loose 2. Blower signal wire terminal connection loose 3. Blower motor is damaged 4. Other blower issue or main board issue 	<ol style="list-style-type: none"> 1. Check the blower power wire terminal connection 2. Check the blower signal wire terminal connection 3. Change a new blower motor 4. Contact SHOWVEN or local supplier
E1 Shaft Motor Stall	<ol style="list-style-type: none"> 1. Shaft is blocked 2. Shaft motor is damaged 3. Main board malfunction 	<ol style="list-style-type: none"> 1. Check whether the shaft can be turned manually 2. Check whether shaft motor is working, if not please replace a new shaft motor 3. Replace a new main board
E1 Feeding Motor Stall	<ol style="list-style-type: none"> 1. Feeding hopper is blocked 2. Feeding motor is damaged 3. Main board malfunction 	<ol style="list-style-type: none"> 1. Check whether there is foreign objects stuck the consumable feeding in feeding hopper 2. Check whether feeding motor is working, if not please replace a new one. 3. Replace a new main board
E2 Temp. Sensor	<ol style="list-style-type: none"> 1. Temp. sensor wire terminal connection loose 2. Temp. sensor damage 3. Main board malfunction 	<ol style="list-style-type: none"> 1. Check the Temp. sensor wire connection 2. Replace a new Temp. sensor 3. Replace a new mainboard
E3 P Temp. Over	<p>Machine chassis over temperature, maybe because:</p> <ol style="list-style-type: none"> 1. Cooling fan wire terminal connection loose 2. Cooling fan is damaged 3. Main board malfunction 	<p>Stop firing and heating up, let the machine cooling down itself.</p> <ol style="list-style-type: none"> 1. Check the cooling fan wire connection 2. Replace a new cooling fan 3. Replace a new main board

E4 Time Remain	Remaining firing time is less than 10min	Swipe a new V2.0 RFID card, it is in SHOWVEN original SPARKULAR GRANULES package box
E5 K Temp. Over	<ol style="list-style-type: none"> 1. Firing duration is too long 2. Main board malfunction 	<ol style="list-style-type: none"> 1. Stop firing and let the machine cool down itself, or use clear material function to help heating coil dissipate heat. 2. Replace a new main board
E6 Heat Fail	<ol style="list-style-type: none"> 1. Heating PCB or heating coil wire terminal loose 2. Heating PCB is damaged 3. Heating coil is damaged 4. Main board malfunction 	<ol style="list-style-type: none"> 1. Check heating PCB and Heating coil wire terminal connection 2. Replace a new heating PCB 3. Replace a new heating coil 4. Replace a new main board
E7 Tip Over	<ol style="list-style-type: none"> 1. Tip over more than 45° 2. Main board malfunction 	<ol style="list-style-type: none"> 1. Place the machine on a horizontal position or set the Tip over to OFF status if necessary 2. Replace a new main board
E8 Low Voltage	Input voltage is low	Check the input voltage

3. Menu

Press "MENU" enter setup menu.



MAIN: main menu

ADVANCED: advanced menu

TEST: test menu

FACTORY: factory menu (for manufacturer use only).

BACK: back to main interface

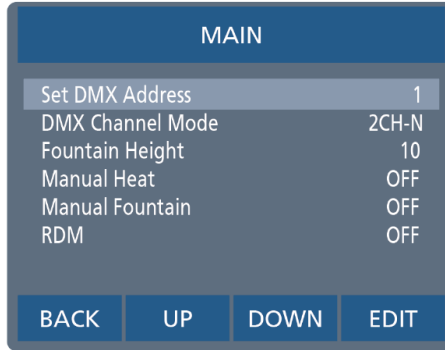
LEFT: switch to left option

RIGHT: switch to right option

EDIT: edit the selected item

4. Main Menu

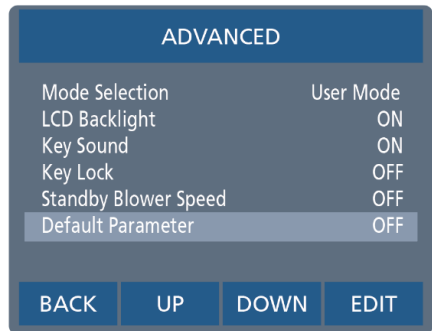
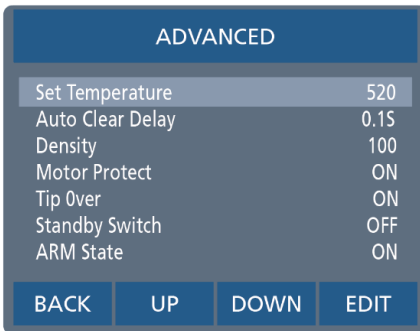
Choose MAIN at menu interface, press EDIT enter main menu interface.



Options	Range	Default	Explanation
Set DMX Address	1-512	1	Set DMX Address
Set Safety Address	3-512	3	Safety address under 3CH-P channel mode
DMX Channel Mode	2CH-N/3CH-P	2CH-N	2CH-N: 2 channel mode 3CH-P: 3 channel safety channel mode
Fountain Height	5-10	5	Manual firing height adjust, for test purpose.
Manual Heat	ON/OFF	OFF	Auto heating up ON/OFF
Manual Fountain	ON/OFF	OFF	Manual firing ON/OFF.
RDM	ON/OFF	OFF	RDM function ON/OFF setting

5. Advanced Menu

Choose ADVANCED at menu interface, press EDIT enter advanced menu interface



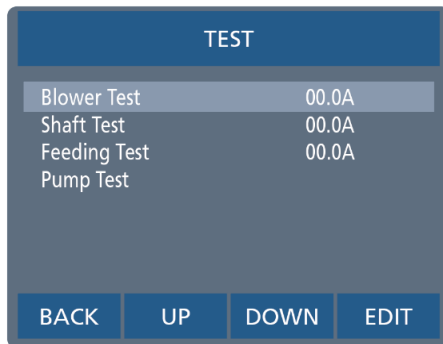
Options	Range	Default	Explanation
Set Temperature	520-620	580	Heating chamber temperature setting
Auto Clear Delay	0.1s-0.9s	0.1s	Automatic clear material duration setting
Density	50-100	100	Feeding amount setting

Motor Protect	ON/OFF	ON	Motor protect function
Tip Over	ON/OFF	ON	Tilt function switch, when machine slant over 45 degree it will stop working.
Standby Switch	ON/OFF	ON	When ON, the machine can firing only when heating up was finished
ARM State	ON/OFF	ON	ARM indicator light setting
Mode Selection	User / Factory	User Mode	Factory mode is for manufacturer use only. When in Factory mode machine can't controlled by DMX console
LCD Backlight	ON/OFF	OFF	LCD Backlight ON/OFF
Key Sound	ON/OFF	OFF	Key pad sound ON/OFF switch
Key Lock	ON/OFF	OFF	Keypad lock if no operation in 30s, restart machine to enable
Default Parameter	ON/OFF	OFF	Parameters reset to default setting

*For better performance of SPARKULAR® Max, please don't change the default value without permission from SHOWVEN®.

6. Test Interface

Choose TEST at menu interface, press EDIT enter test menu interface



Options	Duration	Reference Value
Blower Test	5s	4.5-5.5A
Shaft Test	2s	0.01-0.2s
Feeding Test	2s	0.01-0.2s
Pump Test	2s	/

It shows "Running" if testing is going, shows Finish after testing finished and test value will keep until exit test interface.

7. Monitor Interface

Press "MONI" enter monitor interface

From this interface, we can check the PCB TEMP., motors status, DC voltage etc. of machine.

MONITOR	
PCBA Temperature	28
Shaft Motor Sensor	00.0A
Feeding Motor Sensor	00.0A
Blower Motor Sensor	00.0A
DC Voltage	24.1V
AC Voltage	220.0V
BACK	UP
DOWN	MONI

8. DMX Channel Mode

SPARKULAR® Max have two channel mode optional.

2CH-N mode:

SPARKULAR® Max occupies 2 operational channels. First channel is for effect height, second channel for effect trigger and clear material etc.

Channel	Function	Value
CH1	Firing	0~15: Firing OFF 16-39: Firing ON at height level 1 40-63: Firing ON at height level 2 64-87: Firing ON at height level 3 88-111: Firing ON at height level 4 112-135: Firing ON at height level 5 136-159: Firing ON at height level 6 160-183: Firing ON at height level 7 184-207: Firing ON at height level 8 208-231: Firing ON at height level 9 232-255: Firing ON at height level 10
CH2	Heating / Clear Material / Emergency Stop	0-10: Heating OFF 20-40: Emergency Stop 60-80: Clear Material 240-255: Heating Up

3CH-P mode:

SPARKULAR® Max occupies 2 functional channels and a separate safety channel (this channel is independent from functional channel, can be shared with other machine).

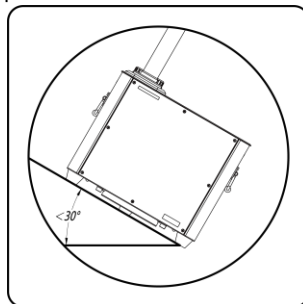
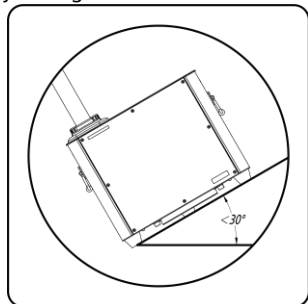
Channel	Function	Value
CH1	Firing	0~15: Firing OFF 16-39: Firing ON at height level 1 40-63: Firing ON at height level 2 64-87: Firing ON at height level 3

		88-111: Firing ON at height level 4 112-135: Firing ON at height level 5 136-159: Firing ON at height level 6 160-183: Firing ON at height level 7 184-207: Firing ON at height level 8 208-231: Firing ON at height level 9 232-255: Firing ON at height level 10
CH2	Heating / Clear Material / Emergency Stop	0-10: Heating OFF 20-40: Emergency Stop 60-80: Clear Material 240-255: Heating Up
CH-Safe	Firing Enable / Disable	0-49: Firing Disable 50-200: Firing Enable 201-255: Firing Disable

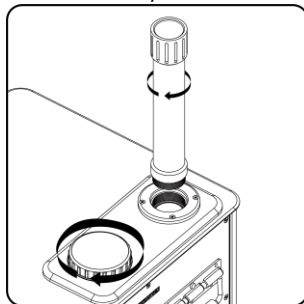
Δ Operation Guide

1. Install SPARKULAR® Max

- a) Horizontal installation is preferred for SPARKULAR® Max. If need to installed SPARKULAR® Max in angles, please turn the Tip over to OFF status first, maximum firing angle is 30 ° and can only be angled to the side as show in below picture.



- b) Check carefully the output nozzle of each machine, make sure the output nozzle is in good shape and there is no powder aggregate.
- c) Check and install the output extension tube, make sure there is no foreign objects in it.



- d) Make sure the machine is securely installed to avoid tipping.

- e) The safety zone area shifts accordingly when machine installed in tilt position. Please increase the safety distance in the direction which machine tilt.

2. Fill SPARKULAR® Max

- a) Open powder bags and fill the feeding hopper. Hopper capacity of SPARKULAR® Max is 950g.
- b) Choose correct consumable according to the application scenario.
- c) Please be noted that there may sparks or remains fall to the ground. Make sure no flammable material on ground in the safety zone.
- d) Maximum effect height: HC8200 LARGE IV is 15m
- e) Make sure the lid of hopper is locked tight after filling.

3. Connect Power / DMX cable

- a) Connect a power cable to the POWER IN socket of SPARKULAR® Max. Connect the other end of power cable to the power source. Make sure power supply in consistent with the rated voltage of the equipment, and the socket must well grounded.
- b) Power ON all SPARKULAR® Max.
- c) Assign DMX address for each unit of SPARKULAR® Max. If use SHOWVEN host controller or FXcommander to control the machine please allocate a unique DMX address for each unit of machine.
- d) Connect a DMX cable to the DMX IN socket of first unit of SPARKULAR® Max, connect the male connector end of DMX cable to your DMX controller (FXcommander, HOST CONTROLLER, light console etc).
- e) Connect a DMX cable to the DMX OUT of previous machine, and the other end of to the DMX IN of next machine. Connect all devices in series in this way.
- f) Suggest to plug in a DMX terminator into the DMX OUT in last unit of machine to improve signal reliability. Signal amplifier is required for long distance (>200m) DMX signal transmission.

4. Activate SPARKULAR® Max by swipe RFID card

- a) Swipe an RFID card. SPARKULAR® Max shows time remain if read successfully. SPARKULAR® Max report E4 when remaining time is less than 10 minutes. SPARKULAR Max only compatible with V2.0 RFID card.
- b) Please note each RFID card come with 200g package SHOWVEN original SPARKULAR Granules can increase single machine 20min working time, the maximum recharge time for SPARKULAR® Max is 30min, when time remain reached 30min, it can't recharge anymore RFID card.

5. Programming and Firing

- a) Programming SPARKULAR® Max, set the firing height, firing sequences etc.
- b) Heating up, it takes around 10min, it varies according to the voltage and environment temperature etc.

- c) Make sure the prescribed safety zone is clear.
- d) Suggest to clear material before firing.
- e) Firing. In order to prevent overheating in the heating chamber and protect the machine, the maximum continuous firing time for SPARKULAR® Max is 30s. The operator should always have a clear view of the device, so that he/she can stop the show immediately when there is danger.
- f) Clear material for SPARKULAR® Max for 5s after show, clear material will remove the remaining particles from the heating chamber. For angled installation, please elongate clear material time.

NOTICE: After a continuous firing duration of 30s, please keep the machine cool down for about 1min to prevent overheating. Especially when using SPARKULAR GRANULES HC8600 LARGE IV.

6. Turn Off and clean up

- a) Power off SPARKULAR® Max, allow SPARKULAR® Max to cool down.
- b) Disconnect all POWER and DMX cables.
- c) Empty the remaining SPARKULAR Granules in the hopper, and store in a dry sealed bottle for next time use. Never touch the output nozzle of SPARKULAR® Max when emptying the hopper. **DANGER OF GET BURNT!**
- d) Operators can use a handheld vacuum cleaner to empty the feeding hopper. Do make sure the machine is cool down when clean it. Do NOT use high-power vacuum cleaners to avoid hot consumables from the heating chamber being sucked into the vacuum cleaner and cause fire.
- e) Clean the surroundings to remove powder residues.

Δ Maintenance

- a) Use ONLY SHOWVEN original SPARKULAR Granules.
- b) Empty the feeding hopper before shipment of the machine.
- c) Empty the feeding hopper if long time not used, for a high humidity environment we suggest to empty the feeding hopper after each show.
- d) Clear material both before and after the show.

Δ **Warranty Instructions**

- \ Sincere thanks for your choosing our products, you will receive quality service from us
- \ The product warranty period is one year. If there are any quality problems within 7 days after shipping out from our factory, we can exchange a brand new same model machine for you
- \ We will offer free of charge maintenance service for machines which with hardware malfunction (except for the instrument damage caused by human factors) in warranty period. Please don't repair machine without factory permission

Below situations NOT included in warranty service:

- \ Damage caused by use other type of consumable which is not originally from SHOWVEN®.
- \ Damage caused by improper transportation, usage, management, and maintenance, or damage caused by human factors;
- \ Disassemble, modify or repair products without permission;
- \ Damage caused by external reasons (lightning strike, power supply etc.)
- \ Damage caused by improper installation or use;

For product damage not included in warranty range, we can provide paid service.

Invoice is necessary when applying for maintenance service from SHOWVEN®.

SHOWVEN[®]



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