

USER'S MANUAL

Pure Sine Wave Uninterruptible Power Supply/ Inverter Long Time Backup Design

Model: UPS-HEATST-STEADY300/500/800/1000/1500/VA-WL



Thank you for choosing this product. Please read carefully the following instructions and keep them within reach.

USER'S MANUAL

PLEASE READ AND KEEP THIS MANUAL

Thank you for selecting this desktop pure sine wave Uninterruptible Power Supply (UPS) / Inverter.

This manual is a guide to install and use the UPS. It includes important safety instructions for operation and correct installation of the UPS. Should you have any problems with it, please refer to this manual before calling for customer service.



This symbol gives information regarding the points important for user's health and safety, UPS operation and the safety of your data.



This symbol gives information, warnings, and other suggestions.

(Version 1.0)

Before operating this product, please read these instructions carefully.

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1. IMPORTANT SAFETY INSTRUCTIONS

In case of any questions, please refer to the authorized technical service representative.

-In order to avoid any damage to the UPS, it is advised to transport it in its own packing.

-In the event of sudden temperature changes such as from the cold to the normal working temperature, mist will form inside the UPS. It is absolutely essential that the UPS must be dry before switching it on. In such case, waiting for 2 hours at least before operating it.

-Once it's dry, make sure you observe all the conditions in the environment section of the technical specifications table, then introduce it into the circuit.



Earth cable should be chosen according to the current capacity. All units' earth connections, which are connected to UPS, should be done with earth cable. Without earth connection or unproved earth connected units are dangerous for user's health, and have high risk of electronic circuit board faults. Using earth cable with improper diameter could be dangerous for user's health and safety of the unit.



- Place all the cables in a proper place so that they are not be stepped on or get caught into people's feet. Before connecting the UPS to the mains power make sure you carefully read all the instructions and warnings in the "Installation of the UPS" section of this manual.

- Don't drop any foreign materials (like clips, nails etc...) into the equipment.

- In emergencies (damage to the cabinet, front panel, or mains connections, splashing of liquid dropping of any foreign materials into the equipment) switch off the UPS, pull the plug out and inform the authorized service center.

- Do not connect any loads to the UPS, which exceed equipment's power range.

- UPS may not work properly when input distortion or resistance is too high.

- To prevent falling off and oxidation, wiring must be tightened.



The UPS can only be repaired by the authorized technical service personnel. Any attempt to open and to repair by the user on his own could prove to be dangerous.



Placing magnetic storage media on the top of the UPS may result in data corruption.



Special Precautions: When the UPS input comes from a generator:

-Output power capacity must be higher than the UPS rating, otherwise the UPS and generator may not work properly;



-Output frequency of generator must be in range from 45 to 65Hz, and wave form must be sine wave, otherwise the UPS and generator may not work properly.

2. INTRODUCTION

UPS-HEATST-STEADY300/500/800/1000/1500VA-WL series UPS/Inverter are specifically designed to backup all the home and office electrical appliances when the mains power is failure. It's equipped with the latest line interactive technology, CPU-controlled PWM technology, and full-protected modular circuit. It's a reliable backup power source for all kinds of loads.

FEATURES:

■ **365x24 hours backup design (Long backup design)**

High up to 15A charging current, recharge the large battery like 100AH or 200AH in short time.

■ **Pure sine wave output**

Applicable to all kinds of loads, especially good for the motorized loads.

■ **Modular CPU controlled circuit**

Offer accurate output and protection.

■ **Big colorful displayer**

Big colorful displayer to show enough information about the UPS.

■ **AVR (automatic voltage regulator) function**

Best for places where the mains voltage is extremely unstable.

■ **Heavy duty transformer and circuit, strong loading ability**

With the high efficiency heavy-duty transformer, and specially designed circuit, with strong loading ability.

■ **3-Stage charging current selector**

Allow the user to connect different battery, base on the requested backup time.

■ **Full protection design**

Overload, overheat, battery over charge/discharge, short circuit protection.

■ **1x USB charging port at the back**

It's convenient for user to charge the mobile phone when mains power is off

■ **Audible alarm**

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3. SPECIFICATIONS

Model No.	Capacity	Battery Voltage	Machine Size (D x W x H)
UPS-HEATST-STEADY300VA-WL	300VA/180W	12VDC	300x130x273.5mm
UPS-HEATST-STEADY500VA-WL	500VA/300W	12VDC	300x130x273.5mm
UPS-HEATST-STEADY800VA-WL	800VA/480W	12VDC	300x130x273.5mm
UPS-HEATST-STEADY1000VA-WL	1000VA/600W	24VDC	300x130x273.5mm
UPS-HEATST-STEADY1500VA-WL	1500VA/900W	24VDC	390x156x273.5mm

Input Voltage Range	140-270VAC
Input Frequency Range	45-65 Hz
Rated Output Voltage	220VAC
Output Voltage Precision	Battery mode: $\pm 5\%$; Mains mode: -13%, +10%
Output Frequency	Battery mode: 50/60 Hz $\pm 1\%$; Mains mode: synchronized with input frequency
Output Waveform	Pure sine wave
Efficiency	Battery mode: >75% ; Mains mode: >95%
Transfer Time	<8ms
Display	LCD or LED
Charging Current	3 stages selectable by user: Low (3A~5A); Medium (7A~9A); High (13A~15A)
Protection	Overload, overheat, over charge/discharge, surge, short circuit, battery reverse connection protection
Buzzer Alarm	Battery mode, battery low voltage, overload, overheat, other errors
USB Charging Port	5VDC, 700mA max
Safety Standard	CE (EMC+LVD)
Operating Temperature	-10°C ~ +40°C
Operating Humidity	10%~90%, non-condensing
Storage Temperature	-20°C ~ +45°C
Noise	<56dB, at 1m distance with full load
IP Level	IP20
Protection Class	I

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4. INSTALLATION

4.1 UNPACK AND CHECK

Open the package, you will find:

UPS..... 1 Set
User's Manual..... 1 piece
Warranty Card..... 1 piece
Battery Cable..... 1 pair



Check the rating label/plate to make sure the UPS is in accordance with your purchase order.

Make sure the main body of the UPS is not damaged! If any damage, do not switch it on or try to repair it by yourself! Contact the seller or authorized dealer immediately!



Please keep the package for future carriage!

4.2 PLACEMENT



This UPS is for indoor use only!

- Install the UPS in a cool, dry, clean place.
- Install the UPS in a well-ventilated area, keep 50 cm at least between UPS and the wall.
- Keep away from unstable base or sources of excessive vibration.
- Keep away from windows, dust, moisture and cold places.
- Keep away from fire, heat sources.- Keep away from corrosive gas or fluid.
- Operating temperature: -10°C~ +40°C.
- Operating humidity: 10%~90% (non-condensing)
- Operating altitude: <1000m

The designed working altitude of this UPS is below 1000m. If the installation place is over 1000m altitude, the load capacity will accordingly decrease, show as below table.

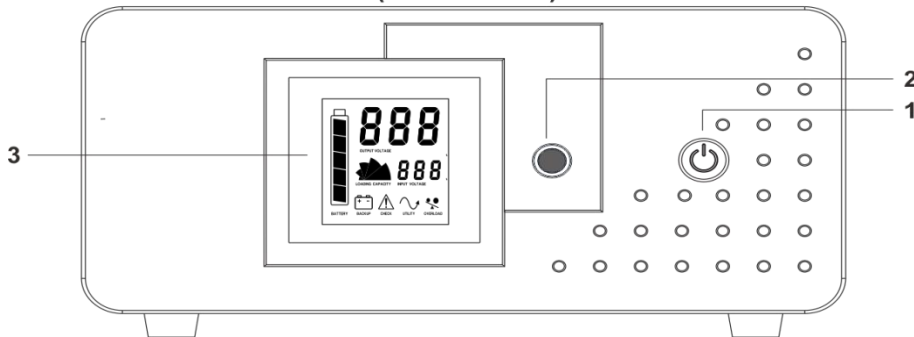
Altitude(m)	1000	1500	2000	2500	3000	3500	4000	4500	5000
% of Load	100%	95%	91%	86%	82%	78%	74%	70%	67%

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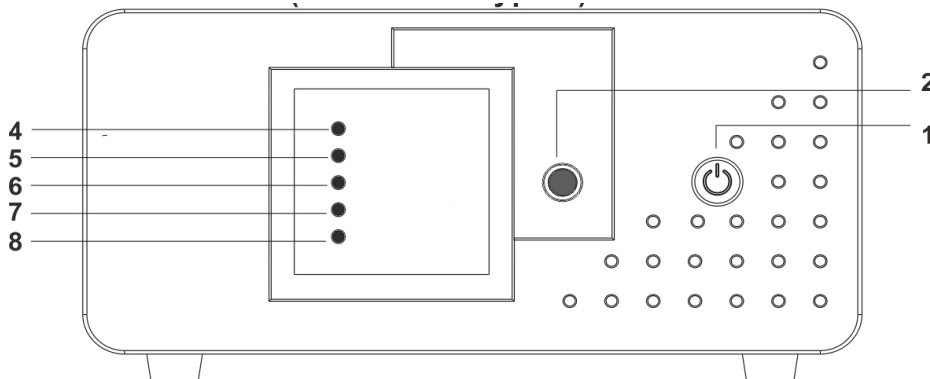
4.3 FAMILIAR WITH THE UPS

A. Front View of the UPS

UPS-HEATST-STEADY-300/500/800/1000VA-WL



UPS-HEATST-STEADY1500VA-WL



1. Power Switch

2. Temporary Mute Button

3. LCD Display

4. LED- "Mains on" Indicator

5. LED- "Inverter on" Indicator

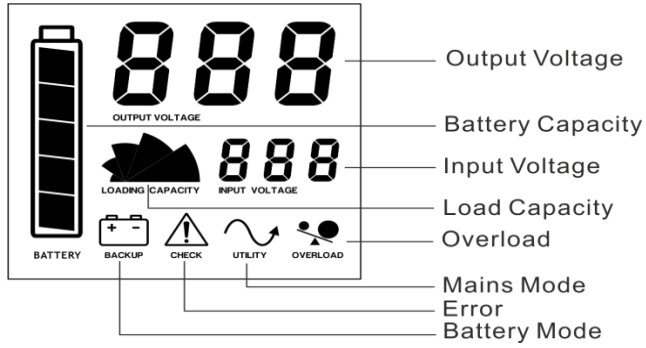
6. LED- "Low battery" Indicator

7. LED- "Charging" Indicator

8. LED- "Overload" Indicator

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EXPLANATION OF SYMBOLS IN LCD DISPLAY

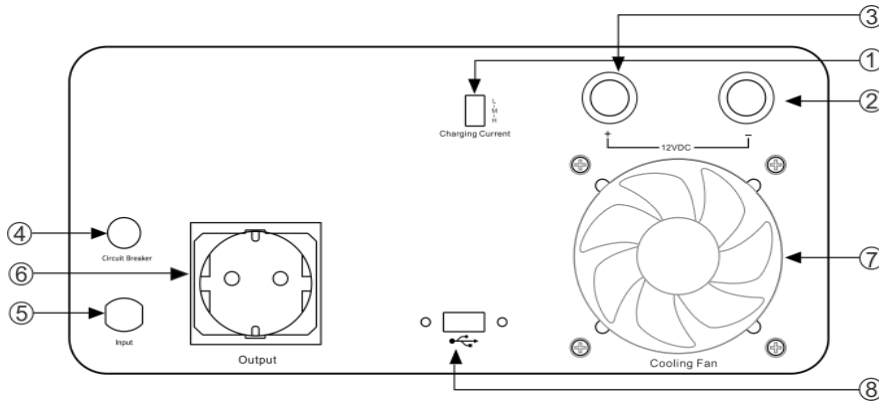


%	20%	40%	60%	80%	100%
Battery Capacity					
Load Capacity					

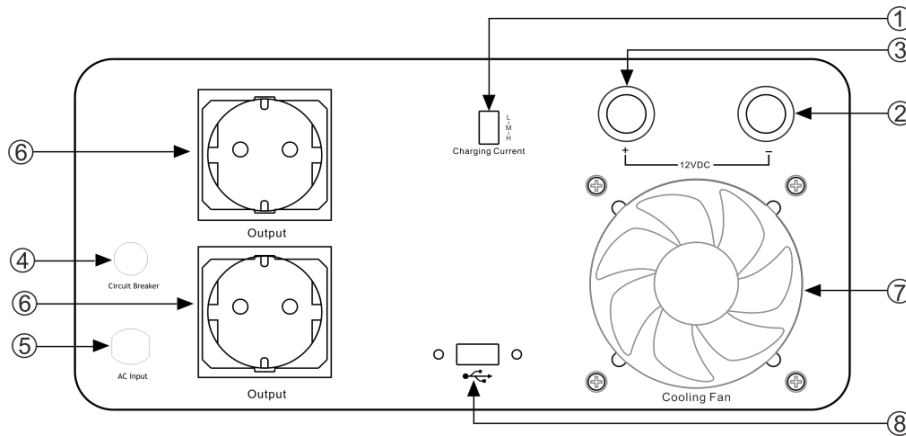
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B. Back View of the UPS

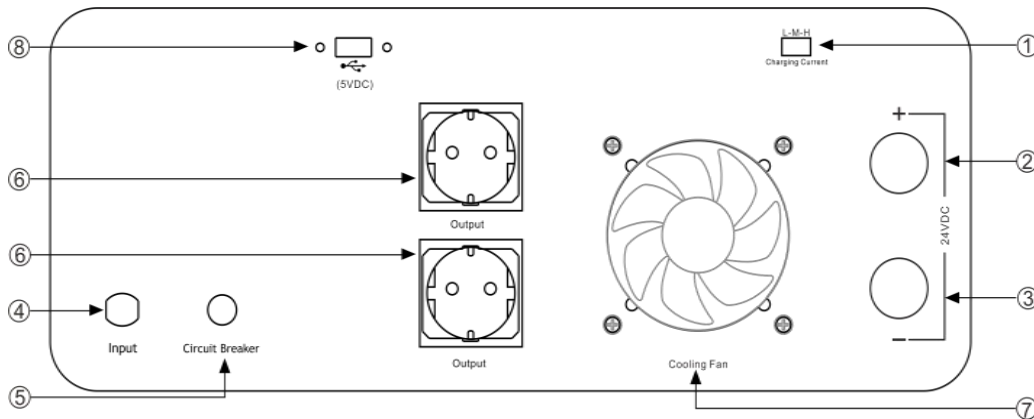
UPS-HEATST-STEADY300/500VA-WL



UPS-HEATST-STEADY800/1000VA-WL



UPS-HEATST-STEADY1500VA-WL



1. Charging Current Selector

2. Battery Terminal "-"

3. Battery Terminal "+"

4. AC Input

5. Input Circuit Breaker(push to reset)

6. Output Socket

7. Cooling Fan

8. USB Charging Port

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4.4 INSTALLATION OF BATTERY

A. Make sure using the correct battery cable. The over current ability of the battery cable should not be less than the maximum discharging current. Please refer to the below table.

Model No.	Specification of Battery Cable
UPS-HEATST-STEADY300VA-WL	10AWG / 5.26mm ²
UPS-HEATST-STEADY500VA-WL	10AWG / 5.26mm ²
UPS-HEATST-STEADY800VA-WL	8AWG / 8.37mm ²
UPS-HEATST-STEADY1000VA-WL	8AWG / 8.37mm ²
UPS-HEATST-STEADY1500VA-WL	8AWG / 8.37mm ²

B. Make sure the battery voltage is correct, you can find the battery voltage which is shown in the back plate of UPS.

C. Disconnect the UPS from mains power completely.

D. Connect the negative (-) of battery to the BATTERY TERMINAL “-” of UPS, and positive (+) to the BATTERY TERMINAL “+”.

E. Before replacing battery, turn off the UPS and disconnect it from mains power.



This UPS is designed for long time backup, the connected battery should be at least 20AH because the initial charging current is at least 3A. Smaller battery could be damaged easily.

4.5 CONNECT TO MAINS POWER AND TO LOAD

A. Plug the UPS into the wall socket.

B. Make sure the loads/appliances are turned off before connection.

C. Connect the loads/appliances to the UPS one by one. Make sure the total capacity of connected appliances does not exceed the rated capacity of UPS.

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5. OPERATION

5.1 TURN ON THE UPS

Press the POWER SWITCH, The UPS is switched on and deliver output till the UPS gives one beeping sound.

Then switch on the connected appliances one by one. If there are 2 or many appliances, please turn on the biggest appliance at the first, the smallest appliance at the last, according to their rated power.

5.2 TURN OFF THE UPS

Turn off the appliances on by one, then press the POWER SWITCH till the UPS give one beeping sound again, the output is turned off.



Even if the output of UPS is turned off, the UPS is still working to charge the battery, the UPS is not totally switched off. To switch it off completely, disconnect the UPS from the mains power.



5.3 CHARGING CURRENT SELECTOR

It's recommended to select the charging current as below:

Battery Capacity	Charging Current
20AH to 50AH	Low(3A~5A)
60AH to 100AH	Medium(7A~9A)
100AH to 200AH	High(9A~13A)



Wrong selection of the charging current may lead to the damage of battery in charging process!

5.4. MUTE BUZZER BEEPING

■ Temporary Mute Button

At battery mode, press and hold the TEMPORARY MUTE BUTTON for 1~2 seconds, the UPS will be muted. When mains power restore, the UPS will work at mains mode, if mains power is failure again, the MUTE FUNCTION will be disabled, the UPS will beep till press this button again.

5.5 USB CHARGING PORT

This USB output, allow the user to charge the mobile phone, or to power a USB fan or a small LED table light.

The maximum output is 700mA/5VDC. Do not overload!

5.6 WORK AS AVR (AUTOMATIC VOLTAGE REGULATOR)

Even if the battery is not connected, the UPS can work as an AVR when the input range is 150-255V, offering regulated output and surge protection to the connected appliances.

6. MAINTENANCE OF BATTERY

With correct using and maintenance, the life of the battery can last for three to six years, depending on the times of discharging and temperature. So regular check and maintenance are very necessary.

- A. Charge the battery every three months if you don't use the UPS for a long time. The charging time should be at least 12 hours.
- B. If the UPS works continuously in mains mode for more than four months, please discharge the battery with 50% of rated load, so as to keep the battery active.
- C. More details, please refer to the specification of the battery.

7. ALARM AND PROTECTION.

7.1 BATTERY MODE ALARM

The UPS will beep every 30 seconds when working at battery mode.

7.2 BATTERY LOW VOLTAGE ALARM AND SHUT DOWN

The UPS will beep once every second when battery is in low level. When the battery is near empty, it will beep rapidly and shut down automatically.

7.3 OVERHEAT PROTECTION

When the temperature of transformer winding is exceeding the limitation:

- At Mains Mode, the UPS will beep rapidly for around 20 seconds, then cut off the output automatically.
- At Battery Mode, the UPS will beep rapidly for around 20 seconds, then shut down automatically.

7.4 OVERLOAD PROTECTION

- At Mains Mode, the UPS will beep once every second, until the overload is removed.
- At Battery Mode, the UPS will beep once every second for 20 seconds, then shut down automatically.

7.5 SHORT CIRCUIT

- At Mains Mode, the circuit breaker will cut off the input power automatically once a short circuit happens.
- At Battery Mode, the UPS will beep rapidly for around 20 seconds, then shut down automatically.

7.6 BATTERY REVERSE CONNECTION PROTECTION

Once the batteries are reverse connected (battery polarity wrong), the internal DC fuse will be burnt to prevent inverter from being damaged. Please contact the dealer/manufacturer for replacing it.

8. MAINTENANCES

This UPS is basically maintenance free! while regular maintenance can extend the life of the UPS by the following steps:

8.1 REGULAR INSPECTION

- Disconnect the UPS from the mains power and battery completely.
- Use cotton cloth and detergent to clean the body and ventilation holes.

8.2 EXTRAORDINARY INSPECTION

- When malfunction occurs, or the UPS is abnormal, please measure and check the parameters, refer to the authorized dealer if needed.
- In thunder and lightning or rainy season, Extraordinary Inspection should be executed to prevent malfunction.
- Maintenance must not be operated when UPS is working.

9. OTHERS

This UPS is designed and made by strict standards and quality control system for common use, but if apply to purposes may cause any dangerous to human or other lives, include but not limited to the following cases, please refer to the manufacturer.

- Apply to traffic system;
- Apply to medical purpose;
- Apply to nuclear, power system;
- Apply to aviation and aerospace;
- Apply to all kinds of safety devices;
- Other special usages.

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Annex I DISPLAY & AUDIBLE ALARM

Mode	Item	LED Display & Audible Alarm
Mains Mode	Normal (Output On)	Input Voltage, Output Voltage, Frequency, Load Capacity, Battery Capacity, "Mains Mode" Symbol appears
	Normal (Output Off)	Input Voltage, Battery Capacity, "Mains Mode" Symbol appears.
	Charging Battery	Bar of "Battery Capacity" is running.
	Battery is full, or Disconnected	Bar of "Battery Capacity" is full and still.
	Overload	"Overload" symbol appears. Buzzer beeps once every 1s.
	Overheat	"Error" symbol appears. Buzzer beeps rapidly, then output is cut off.
	Short Circuit	Input circuit breaker/air breaker trips off.
Battery Mode	Normal	Output Voltage, Frequency, Load Capacity, Battery Capacity, "Battery Mode" symbol appears. Buzzer beeps once every 30s
	Battery Low Voltage	Buzzer beeps once every 1s.
	Battery Empty	Buzzer beeps rapidly, then UPS shuts down.
	Overload (<120%)	"Overload" symbol appears. Buzzer beeps once every 1s.
	Overload (>120%)	"Overload" symbol appears. Buzzer beeps rapidly, then UPS shuts down immediately.
	Overheat	"Error" symbol appears. Buzzer beeps rapidly, then UPS shuts down immediately
	Short Circuit	"Error" symbol appears. Buzzer beeps rapidly, then UPS shuts down immediately.

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Annex II TROUBLE SHOOTING

Malfunction	Cause	Solution
1. UPS goes into battery mode, but there is mains power	The input voltage or input frequency is out of range.	Wait till the input voltage or input frequency is normal
2. Can't turn on UPS when there is mains power.	Press time is too short.	Press and hold the power switch till the UPS give a beeping sound.
	Others.	Contact the dealer / manufacturer.
3. Can't turn on UPS at battery mode.	Press time is too short.	Press and hold the power switch till the UPS give a beeping sound.
	Battery is empty.	Charge the battery.
	Battery connection is loose/disconnected.	Tighten/Connect the battery.
	Others.	Contact the dealer / manufacturer
4. Can't charge the battery.	Battery is faulty.	Replace the battery.
	Charger is faulty.	Contact the dealer / manufacturer.
5. Short backup time.	Short charging time.	Charge battery at least 10 hours.
	Battery is faulty.	Replace the battery.
6. "Overload" symbol appears, or "Overload" LED is ON, and UPS is beeping.	UPS is overloaded	Remove the non-critical load
7. "Error" symbol appears, or "Overload" LED is ON (not due to overload, and UPS is beeping.	UPS is overheating	Remove the non-critical load
	Ventilation holes are blocked	Clean the ventilation holes
	Ambient temperature is too high	Cut off the output and input, and wait for at least 30 minutes, then restart it.
	Load is short circuit	Remove load and restart the UPS, if it's still not ok, contact the dealer/manufacturer
	Cooling fan is dead	Replace it
8. Input circuit breaker tripps off	UPS is short circuit	Contact the dealer/manufacturer
9. Others	Others	Contact the dealer/manufacturer

Ecological information:

Waste electrical and electronic equipment are a special waste category, collection, storage, transport, treatment and recycling are important because they can avoid environmental pollution and are harmful to health. Submitting waste electrical and electronic equipment to special collection centers makes the waste to be recycled properly and protecting the environment.

Do not forget! Each electric appliance that arrive at the landfill, the field, pollute the environment!

SYMBOL FOR THE MARKING OF ELECTRICAL AND ELECTRONIC EQUIPMENT

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