

MOTOMASTER 1933

# NAUTILUS™

## RECREATIONAL

Power Pack



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O W N E R ' S   M A N U A L

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## Introduction

The Motomaster Nautilus Recreational Power Pack features a powerful 33 amp-hour, deep cycle battery that is sure to make any outing more enjoyable.

- Boosts 12-volt batteries in cars, trucks, boats, RVs, motorcycles, ATVs, personal watercraft, lawn and garden equipment and more
- Powers a variety of 120 V AC appliances
- Powers 12 V DC equipment
- Powers and recharges USB devices
- Includes a powerful LED Work Light with 10'(3 m) self-storing power cord
- Includes built-in marine navigational lights
- Includes a built-in 150 PSI compressor for inflating tires and small sports equipment

This manual will explain how to use the booster pack functions safely and effectively. Please read and follow these instructions and precautions carefully.

Whatever your adventure, the Motomaster Nautilus Recreational Power Pack will allow you to start stronger and play longer.

## Warnings & Safety Instructions



**CONTAINS SEALED, NON-SPILLABLE LEAD-ACID BATTERY. MUST BE DISPOSED OF PROPERLY.**



**WARNING: RISK OF EXPLOSIVE GAS.** Working in the vicinity of a lead-acid battery is dangerous. Batteries release explosive gases during normal operation, charging and while boosting. To reduce the risk of explosion, before using the Motomaster Nautilus Recreational Power Pack, read and follow the instructions expressed in this manual. Also pay close attention to the cautionary statements on the battery and any other equipment you may be using.



**CAUTION: BOOST LEAD-ACID BATTERIES ONLY.**

- Do not allow the positive (+) and negative (-) booster clamps of the unit to come into contact with each other (or a common piece of metal) at any time. Sparking, an explosion or damage to the unit may result.
- When boosting a vehicle, make sure that the positive (+) and negative (-) booster clamps are properly connected to the vehicle and battery.
- Never attempt to boost a frozen battery.
- Position booster cables to reduce the risk of damage by hood or moving engine parts.
- Do not expose the unit to moisture. Avoid pouring or splashing water or any other liquids on the unit.
- Always operate the booster pack in an open, well-ventilated area. Do not obstruct the ventilation openings.
- Do not expose unit to fire or intense heat. Explosion could occur.
- Do not connect any AC appliance with neutral conductor connected to ground to the power pack



**WARNING: Failure to follow instructions may cause damage or an explosion.**

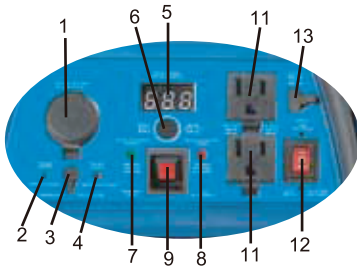


## Personal Safety Precautions

- Make sure that someone is within range of your voice to come to your aid if needed while you work with or are near a lead-acid battery.
- Wear complete eye and clothing protection when working with lead-acid batteries.
- Avoid touching your eyes while working with a lead-acid battery.
- Have plenty of fresh water and soap nearby for use in case battery acid contacts your eyes, skin or clothing. If this happens, wash immediately with soap and water and then get medical attention.
- Never smoke or allow an open spark or flame in the vicinity of the battery or engine. Batteries generate explosive gases.
- Take care not to drop any metal tool or object onto the battery. This may result in a spark or short circuit across the battery or another electrical device that may cause an explosion.
- Remove all personal metal items, such as rings, bracelets, necklaces and watches from your body while working with a lead-acid battery. A battery can produce a short circuit current high enough to weld such objects to the skin, causing a severe burn.

## Location of Controls

### Front



1. 12 V DC Outlet (12A rated)
2. Charged Indicator
3. Charging Port
4. Charging Indicator
5. Digital Battery Status Indicator
6. Battery Status Button
7. Correct Connection Indicator
8. Reverse Connection Indicator
9. Navigation Lights Button
10. Navigation Lights
11. AC Outlets
12. AC and USB Power Switch
13. USB Port

## Rear



- 14. 12 V Positive (+) Power Terminal
- 15. 12 V Negative (-) Power Terminal
- 16. 12 V Power Switch
- 17. Air Compressor Switch
- 18. Air Pressure Gauge
- 19. Air Compressor Stowage Compartment
- 20. Storage Bags

## Accessories



- 21. Positive (+) Booster Cable
- 22. Negative (-) Booster Cable



- 23. 12 V LED Work Light



24. AC Charging Adaptor



25. DC Charging adaptor

## Battery Status

The Motomaster Nautilus Recreational Power Pack is equipped with a Digital Battery Status Indicator. To check the battery status, press the Battery Status button and the battery voltage reading will be displayed.

**NOTE:** Battery voltage can be used to approximate the state of charge of a battery however it should not be considered a measure of battery capacity as other factors such as temperature, discharge rate, battery age and condition all contribute to a battery's actual capacity.

Open Circuit Voltage	Approximate State of Charge
12.7 or higher	100%
12.4	75%
12.2	50%
12.0	25%
Less than 12.0	Fully discharged

## Charging Instructions

**Before the first use, charge the booster pack overnight even if the Battery Status Indicator shows a full charge. To ensure optimal product performance and life, charge after each use and once every 3 months.**

**IMPORTANT:** Ensure that no AC, DC or USB devices are connected to the booster pack during charging.

The Motomaster Nautilus Recreational Power Pack may take up to 50 hours to charge completely (depending on state of discharge, temperature, battery age and condition).

There are two ways to charge the booster pack:

1. Using the supplied AC charging adaptor plugged into a standard 120 V wall outlet
2. Using the supplied DC-to-DC charging cord plugged into your vehicle's 12 V accessory outlet as you drive

### Charging With AC Charging Adaptor

Using the AC charging adaptor is the simplest method for recharging the booster pack. The booster pack has automatic overcharge protection when using the AC charging adaptor. Once the internal battery is fully charged, the AC charger will go into float mode, maintaining the battery at a full charge. Therefore the charger can be left safely connected for months at a time.

**To recharge with the AC charger:**

1. Ensure that no AC, DC or USB equipment is connected to the booster pack and that all switches and buttons on the booster pack are set to the OFF position.

2. Plug the AC adaptor pin into the Charging Port located on the front of the booster pack.
3. Plug the other end of the AC adaptor into a 120 V AC wall outlet.
4. The Charging indicator will illuminate.
5. When charging is complete, the Charged indicator will illuminate.
6. Unplug the adaptor from the wall outlet first, then from the booster pack and stow it in the supplied storage bag.

## **Charging With DC-to-DC Charging Cord**



**CAUTION:** When using the DC-to-DC charging cord, there is no automatic overcharge protection once the battery is fully charged. Do not leave the unit connected without supervision. Detach the DC-to-DC charging cord from the unit and the vehicle as soon as the battery is fully charged or if the vehicle's engine is turned off. Do not leave the booster pack indefinitely connected to the vehicle's 12 V accessory outlet.



### **WARNING: Fire and explosion hazard**

Do not use this recharging method if your vehicle's electrical system operates above 15 V. This may lead to accumulations of hydrogen, causing exposure to fire and explosion hazard. This condition is typically found in marine appliances or portable generators with DC output.

### **To recharge with the DC-to-DC charging cord:**

1. Ensure that no AC, DC or USB equipment is connected to the power pack and that all switches and buttons on the power pack are set to the OFF position.
2. Plug one end of the DC-to-DC charging cord into the 12 V outlet located on the front of the power pack.
3. Plug the other end of the DC-to-DC charging cord into the 12 V accessory outlet of a running vehicle.


Note: The Charging Status LED and Charged LED will not illuminate when using the DC-to-DC charging cable. As there is no overcharge protection


this charging method, take caution not to overcharge the power pack battery.

This charging method is recommended for emergencies only.

4. To check charge status, unplug the charging cord from the vehicle outlet first, then from the power pack. Wait 15 minutes for any surface charge to dissipate then press the Battery Status button. If the reading is 12.6 V or higher, the power pack is fully charged. If it is lower, repeat steps 1-4 until the unit is fully charged.

## **Battery Boost Operation (For a Negative Ground System Only)**

 **WARNING: FAILURE TO FOLLOW INSTRUCTIONS MAY CAUSE DAMAGE OR AN EXPLOSION. READ ENTIRE INSTRUCTION MANUAL BEFORE USING. ALWAYS WEAR EYE PROTECTION. USE IN A WELL-VENTILATED AREA.**

 **CAUTION:** Make sure that the battery is a 12-V battery. (Determine voltage of battery by referring to the vehicle owner's manual.

1. Ensure that the 12 V Power Switch is set to the OFF position.
2. Remove the power cables from accessory storage bag. Connect the positive (red) cable to the positive (red) terminal at the top of the power pack ensuring red cap is firmly tightened. Connect the negative (black) cable to the negative (black) terminal at the top of the power pack ensuring the black cap is firmly tightened.
3. Turn vehicle ignition off before making cable connections.
4. Connect the positive (red) clamp from the power pack to the positive (POS, P, +) ungrounded post of the battery.
5. Connect the negative (black) clamp to an unpainted part of the vehicle chassis or engine block away from the battery. Do not connect clamp to carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.

**NOTE:** If you have connected the clamps in reverse polarity, an audible alarm will sound and the Reverse Connection indicator on the front panel will illuminate. **DO NOT ATTEMPT TO START THE VEHICLE.** This could cause serious damage. Reverse the connections. The audible alarm will stop and the Correct Connection indicator will illuminate confirming proper connection.

6. Rotate the 12 V Power Switch to the ON position.

7. Crank the engine for no more than 5 seconds. If the engine does not start after 5 seconds of cranking, it is recommended to wait at least 3 minutes before attempting to start vehicle again. This cool down period helps to prevent damage to your battery, starter and the power pack.

**NOTE:** If the vehicle does not start after multiple attempts to boost it, there may be another problem unrelated to the battery (e.g. fuel or spark problem) causing the vehicle not to start. Have your vehicle inspected by a qualified technician.

8. After the engine starts, turn the 12 V Power switch back to the OFF position, remove the negative (black) clamp first, followed by the positive (red) clamp. Disconnect the battery cables from the power pack and return them to the storage bag. Ensure red and black caps are securely screwed back onto their respective terminals.

9. Fully recharge the power pack as soon as possible after use.

## 12 V DC Power Supply Operation

This Motomaster Nautilus Recreational Power Pack can be used as a 12 V DC power supply in two ways: (1) using the 12 V accessory outlet located on the front of the unit or, (2) using the 12 V power terminals located at the top of the unit.



## **12 V DC Accessory Outlet**

If your 12 V DC appliance comes with a male accessory plug, use the 12 V DC power outlet on the front panel of your power pack.

The DC outlet is protected by a 12A rated over load protector. If the power pack experiences a short-circuit or an overload, it will automatically cut-off power to the 12-V outlet. After a few seconds, the over load protector will reset itself and power will be restored. If the amperage rating of the DC device being used exceeds 12A, it may cause the over load protector to cycle on and off. If this occurs, discontinue using the 12-V device.

## **12 V DC Power Terminals**

If your 12 V DC appliance comes with a pair of power input leads (ring terminal connectors) for hardwire connection, use the red and black Power Terminals located at the top of the power pack.

1. Ensure that the 12 V Power Switch is set to the OFF position.
2. Unscrew the protective caps at the red and black Power Terminals.
3. Connect the positive lead (usually red in colour) of the appliance to the red power terminal and the negative lead (usually black in colour) to the black power terminal.
4. Screw the protective caps back onto their proper terminals ensuring a firm connection.
5. Rotate the 12 V Power Switch to the ON position and turn on the DC appliance.
6. After use, turn off the appliance. Rotate the 12 V Power Switch to the OFF position. Undo the connections between the appliance leads and the power pack Power Terminals. Ensure that the red and black caps are securely screwed back onto their respective terminals.
7. Fully recharge the power pack as soon as possible after use.

**Estimated Runtimes for Popular 12 V DC Appliances**

Product/Appliance	Estimated Consumption* (wattage)	Estimated Runtime** (hours)
Fluorescent lights, cell phone	4	80
Radios, depth finders, fans	9	35
Camcorders, spotlights	15	23
Electrical tools, bilge pumps	24	12
Electric cooler	48	6
Air compressors, car vacuums	80	3

\*Refer to the owner’s manual of the product being used for actual wattage consumption.

\*\*Estimated time is based on a fully charged power pack.

**120 V AC Power Supply Operation**

The Motomaster Nautilus Recreational Power Pack has two AC power outlets for use with a variety of AC appliances. Simply plug the appliance directly into the AC outlet or, alternatively, you can use an AC power bar to increase the number of outlets available. However, for continuous operation, the combined loads must not exceed 400 W.



**WARNING:** Some appliances may be difficult or impossible to operate from the power pack; these appliances may have high surge requirements or may be incompatible with the output waveform of the power pack. See “High Surge Appliances” and “Incompatible AC Appliances” below.

**To operate:**

1. Plug the AC appliance into the AC outlet.
2. Set the AC Power switch to the ON position.
3. Turn on the appliance.
4. Set the AC Power switch to the OFF position when finished using the appliance.
5. Fully recharge the power pack as soon as possible after use.

**Low Battery Alarm:**

Most AC appliances will not operate properly once the battery voltage drops below 11.0 V. Also, preventing excessively deep drains on the power pack's battery will help extend its life.

When using the AC power supply, once the internal battery is drawn down to 11.0 V, an audible alarm will sound. At this point, it is recommended that you stop using the AC appliance and recharge the power pack. If the alarm is ignored and the appliance is left running, the AC outlets will automatically shut down after a few minutes.

**Overload and Over-Temperature Protection:**

In the event of an overload (>400 W) or overheating condition, the power pack automatically shuts down power to the AC outlets. If this occurs, you should check whether the AC appliance you are using exceeds the 400 W continuous rating. After confirming the wattage rating of the AC appliance, you can reset the power pack by turning the AC Power switch OFF and ON again.

### **High Surge Appliances:**

The wattage rating of an AC appliance is the average power used by the appliance. Appliances such as televisions, computer monitors and equipment with motors consume much more power than their average rating when they are first switched on.

Although the power pack can supply momentary surge power up to 600 W, some appliances may exceed the capabilities of the power pack and trigger the safety overload shutdown circuit.

### **Incompatible AC Appliances:**

The output of the power pack's internal AC inverter is modified sine wave (non-sinusoidal). Some 120 V AC equipment may not work or may be damaged if used with the AC inverter's modified sine wave output. **DO NOT USE THE POWER PACK TO POWER OR RECHARGE:**

- Electronics that modulate RF (radio frequency) signals on the AC line
- Speed controllers found in some fans, power tools, kitchen appliances
- Some chargers for small rechargeable batteries
- Metal halide arc (MHI) lights

Examples of these products include:

- Appliances such as flashlights, razors and night lights that can be plugged directly into an AC receptacle to recharge
- Some chargers for battery packs used in power tools (affected chargers display a warning label stating that dangerous voltages are present at the battery terminals)

**NOTE: If you are unsure about powering any device with the inverter, contact the manufacturer of the equipment to determine whether it is compatible with the modified sine wave (non-sinusoidal) output of the inverter.**

**Estimated Runtimes for Popular 120 V AC Appliances**

Product/Appliance	Estimated Consumption* (wattage)	Estimated Runtime** (hours)
Spotlights, sump pumps	100	2 ½
Fax machines, Small TVs	150	1 ½
Computers, printers	200	1
Medium-sized power tools, blenders	250	¾

\*Refer to the owner’s manual of the product being used for actual wattage consumption.

\*\*Estimated time is based on a fully charged power pack.

**USB Power Supply Operation**

The Motomaster Nautilus Recreational Power Pack is also equipped with a 5 V DC USB power outlet located on the front panel. This USB outlet can power and recharge devices that require less than 500mA of power. To activate the USB power, set the USB power switch to the ON position.



**CAUTION:** Never connect the USB port directly to a computer USB outlet or damage to both devices could result.

## Air Compressor Operation

### **WARNING: Fire hazard**

The compressor is designed for short term operation only.

Operating the compressor over an extended period of time will cause the compressor unit to overheat, which could lead to fire. Allow the compressor to cool down for 10 minutes after each 10 minutes of continuous operation.



### **WARNING: Fire hazard**

Do not leave the compressor unattended while in operation. Keep out of reach of children.



### **WARNING: Risk of personal injury or damage to equipment**

Do not exceed the recommended pressure of either the compressor or the object being inflated. The compressor is capable of inflating to 150 PSI. If the recommended pressure is exceeded, an explosion may result.



### **WARNING: Risk of personal injury or damage to equipment**

If the power pack shuts off due to an over-temperature condition, turn OFF the Air Compressor switch and allow the compressor to cool for 15 minutes before re-starting. If the power switch is not turned off, the compressor will automatically turn itself on when it reaches an acceptable operating temperature.

If left unattended it is possible that the unit can over-inflate the object being inflated and create an explosion hazard.



### **CAUTION: Equipment damage**

The power pack cannot be used to inflate large capacity inflatable devices such as float tubes, large air mattresses, transport truck tires, and inflatable boats. These types of products require extended inflating times which may damage the compressor.



### **CAUTION: Inflating tires**

If the pressure gauge on the power pack indicates more than twice the recommended pressure for the object you are inflating and you have only started to inflate the object, the valve connector is incorrectly connected to the valve stem. This may damage the power pack. Remove and reattach the valve connector to the valve stem.

### **To inflate vehicle, motorcycle or bicycle tires:**

1. Open the storage compartment on the rear of the power pack and uncoil the air compressor fill hose.
2. Ensure that the locking lever of the valve connector is fully extended (in an upright position).
3. Remove the valve cap from the valve stem of the tire.
4. Latch the valve connector firmly and completely over the valve stem and push down on the locking lever so that it locks onto the valve stem.
5. Press the Air Compressor switch to the "I" position to turn the compressor on.
6. Inflate to desired pressure paying close attention to the pressure gauge located on the rear of the power pack. (Inflation time will vary depending on the size of the tire and its starting pressure.)

**NOTE:** If the tire is not inflated to the desired pressure after 10 minutes, turn the air compressor off and allow it to cool for 10 minutes before resuming inflation.

7. After use, press the Air Compressor switch to the "O" position to turn the compressor off.
8. Lift the locking lever of the valve connector back to the fully extended (upright) position and unlatch from tire valve. Stow the air compressor fill hose back in the storage compartment.
9. Reinstall the valve cap back onto the tire valve stem.

### **To inflate other inflatable objects using supplied adaptors:**

Follow the steps for inflating a tire except instead of latching the valve connector to the valve stem of a tire; latch the valve connector to one of the supplied inflation adaptors.

## Navigation Light Operation

**CAUTION:** Do not turn on the navigation lights until you have placed the power pack in the correct position. Improper positioning of the lights may send a wrong navigation signal to other mariners.

The Motomaster Nautilus Recreational Power Pack is equipped with Navigational Lights for marine use. Position the power pack with the front pointing at the bow and the back pointing at the stern of your boat. The red navigation light should now be located at the port side and the green navigation light should be located at the starboard side. To illuminate the lights, press the Navigation Lights button. Press the button again to turn the navigation lights off.

## 12 V LED Work Light Operation

The Motomaster Nautilus Recreational Power Pack is supplied with a 12 V LED Work Light. The Work Light is equipped with a 10' power cord for versatility and has a multi-position magnetic base for hands-free use.

To use the Work Light, gently pull on the power cord until the desired amount of cord is released. Plug the male accessory plug into the 12 V DC outlet located on the front of the power pack.

After use, simply rotate the bezel of the Work Light clockwise to draw the excess cord back into the unit. Store safely in the accessory bag.

## Troubleshooting



### **WARNING: Electric shock hazard**

Do not remove the cover of the power pack or disassemble the power pack. The power pack does not contain any internal user-serviceable parts and attempting to service the unit yourself could result in electrical shock or burn.



## **Buzzing and in audio systems and radios:**

Some inexpensive radios have inadequate internal power supply filtering and “buzz” slightly when powered by the power pack. Generally, the only solution is an audio product with a higher quality filter.

## **Television interference:**

The power pack is shielded to minimize its interference with TV signals. However, with weak TV signals, interference may be visible in the form of lines scrolling across the screen. The following should minimize or eliminate the problem:

- Increase the distance between the power pack and the TV, antenna and cables
- Adjust the orientation of the power pack, TV, antenna and cables
- Maximize TV signal strength by using a better antenna and use shielded antenna cable where possible

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
The power pack cannot jump start vehicle.	The battery in the power pack is not fully charged.	Fully charge the power pack.
	There may be another problem with the vehicle.	Have vehicle inspected by a qualified technician.
	The power pack's battery has been damaged.	Have the battery serviced by a qualified service technician.
The charging status LED indicator does not light.	No AC power at the AC wall outlet.	Ensure power is available at the AC wall outlet.
	120 V AC to DC charger is faulty.	Replace 120 V AC to DC charger.

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
The charging status LED indicator still lights red and has not completed charging after 50 hours.	The 120 V AC to DC charger's output is too low.	Replace the AC charger.
	Internal battery is permanently damaged.	Have the battery serviced by a qualified service technician.
The AC appliance does not operate; audible alarm is not sounding.	AC appliance rated more than 400 W, the safety overload has tripped.	Use AC appliance with a power rating less than 400 W.
	AC appliance rated less than 400 W, high starting surge has tripped the safety overload.	AC appliance may exceed the power pack's surge capability. Use an AC appliance with a starting surge within the power pack surge rating.
The AC appliance does not operate; audible alarm is sounding.	Battery has discharged to 11.0 V.	Fully recharge the battery.
	Internal AC inverter has overheated due to poor ventilation or excessively warm environmental condition.	Allow the power pack to cool for 15 minutes or more. Clear blocked fan opening or remove objects covering the unit, then restart the power pack. Move to a cooler environment.
Run time for appliance is less than expected.	Internal battery is not fully charged.	Recharge using the AC charger, until the charging status LED indicator light green.
	AC appliance power consumption is higher than expected.	Check AC appliance power or wattage rating (or current draw for 12 V DC appliance).

Problem	Cause	Solution
The compressor runs slowly.	The compressor may have overheated from excessive use.	Turn off the compressor and let it cool down.
	Battery voltage is too low.	Check the condition of the internal battery. The battery may need to be recharged or replaced.
The compressor runs but won't inflate.	The valve connector may not be securely placed on the valve stem.	Check that the valve connector is securely placed on the valve stem before closing the thumb latch.
	The item being inflated may have a leak.	Check that the item being inflated has no leaks. Check the compressor hose for any breaks or leaks at connections.

## Specifications

### Electrical specifications

12 V DC Power	
Internal battery (Capacity/Type)	33 Ah / 12 V Sealed Lead-acid deep cycle Battery
DC power socket (maximum continuous load)	12 A
Overload protector	12 A

<b>120 V AC Power</b>	
Output power	
● Continuous output power	320 W
● Five minute AC output power	400 W
● AC output surge capacity	600 W
Output voltage	104 V – 125 V
Output frequency	60 Hz +/- 1Hz
Output wave form	Modified sine wave
Input voltage range	10.5 V - 15.5 V DC
Protections	Low battery alarm
	Low battery shutdown
	High battery voltage shutdown
	Over temperature shutdown
	Overload shutdown
<b>Air Compressor</b>	
Pressure	150 PSI (lb./in2)
<b>Accessories</b>	
Booster cables (Size/Length)	4 AWG / 39" (100cm)
DC cigarette plug	
AC adapter	15 V DC @ 800mA(replacement 011-1599)
LED work light	0.5W 10' (3m) self storing cord

## Physical specifications

Dimensions L*W*H	17 x 8 2/3 x 12" (430*220*307 mm)
Weight	32 lb.(14.56 Kg)
Operating temperature range	14°F~104°F (-10°C~40°C)
Storage temperature range	-4°F~158°F (-20°C~70°C)

## Storage

Avoid storing your power pack in an area that can experience extreme temperatures. Extended exposure to intense heat will accelerate the internal battery's self-discharge characteristics and thus reduce the service life of the battery. Storage of the power pack in a location where freezing temperatures are expected will greatly reduce the internal battery's capacity and may cause the battery to crack or explode.

## Limited Warranty

This Motomaster Nautilus product carries a one (1) year warranty against defects in workmanship and materials. At its discretion, Motomaster Canada agrees to have any defective part(s) repaired or replaced free of charge, within the stated warranty period, when returned by the original purchaser with proof of purchase. This product is not guaranteed against wear or breakage due to misuse and/or abuse.

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