INSTRUCTION MANUAL

Orion® Dynamo™ Pro 17

#2308 Rechargeable 12V DC Mobile Power Station

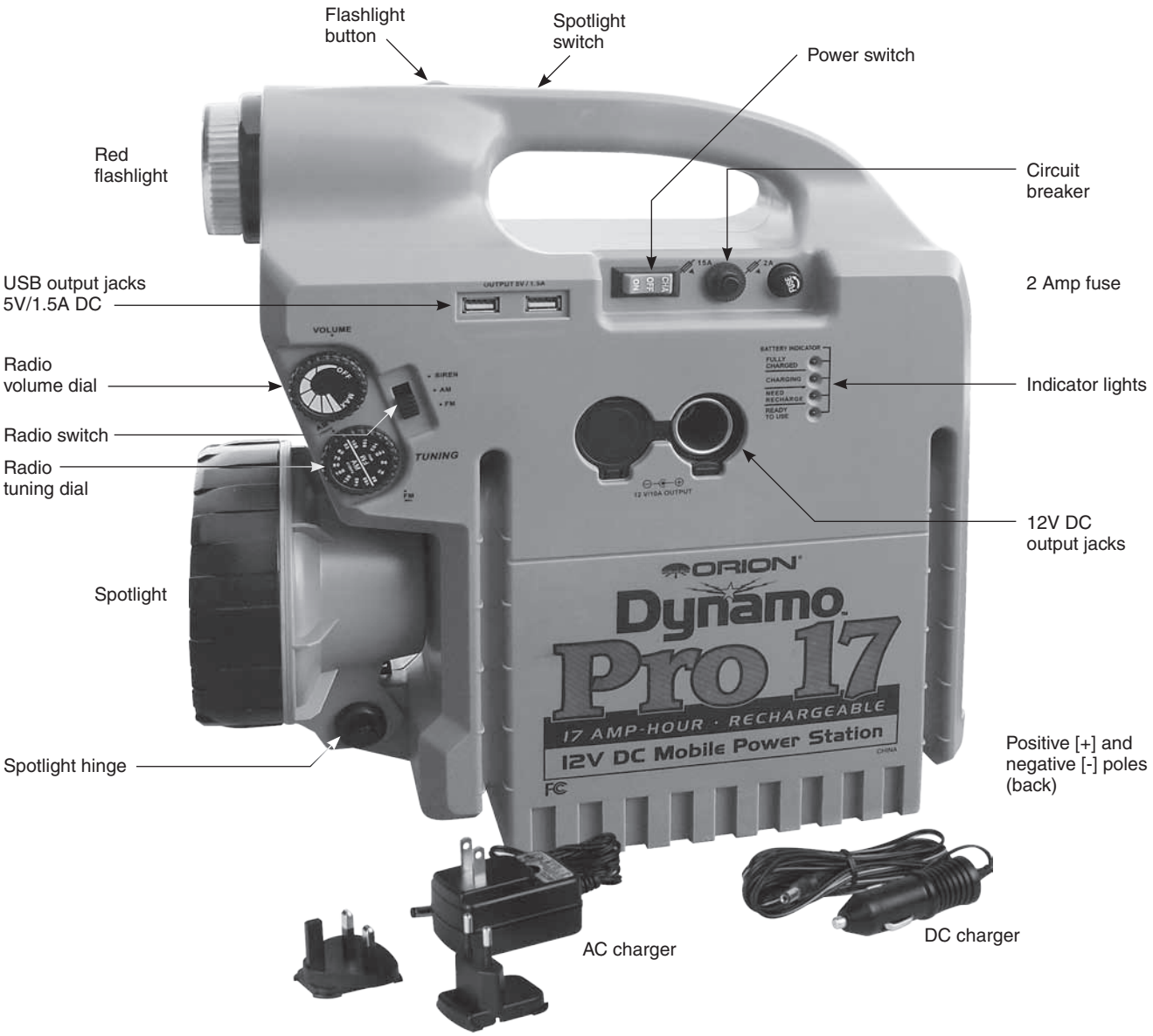

Figure 1: The Dynamo Pro 17 12V DC Power Station.

Congratulations on your purchase of an Orion Dynamo Pro 17. The generous 17 amp-hour battery size provides power for more than twice as long as standard 7 amp-hour batteries before recharging is needed. In addition to powering your astronomical instruments, the Dynamo Pro 17 also serves as a power supply for a multitude of devices. It includes a red lens flashlight for night-vision preservation, as well as a super bright LED spotlight. The built-in radio will keep you entertained and informed during emergencies. The Dynamo Pro 17 can even start your car if its battery is drained (when used with jumper cables).

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1. Operation

Power 12-Volt Devices (12V/10A output)

The Dynamo Pro 17 will operate up to two devices that are powered by a 12V/10A car cigarette lighter-type plug. If your 12V device does not have a cigarette lighter-type plug, then you will need to purchase an adapter (contact Orion or your local electronics store). The tip of the plug will receive the positive charge (tip positive) from the Dynamo Pro 17, so make sure that the device to be powered is also tip positive. If the device is tip negative, then an adapter is needed. (Some cigarette lighter-type plug adapters allow you to switch between tip positive and tip negative). If both of the 12V sockets are being used simultaneously, the total amperage of the 12V devices together must not exceed 10 Amps.

Switch the power switch (Figure 1) to the "ON" position and the green "READY TO USE" power indicator LED should shine. Slide open the door to one of the 12V/10A output jacks and insert the device's 12V power plug.

Powering USB Devices

To use these jacks, simply turn the Dynamo Pro 17 power switch to the "ON" position and insert the device's plug into the appropriate output jack.

Operating the 12V Flashlight

The 12V flashlight located on the top of the Dynamo Pro 17 is a medium-power light that can be used to provide light to a small area. It has a red lens to preserve night vision under dark skies. The flashlight can also be removed from the body of the Dynamo Pro 17. Simply line up the tab on the body of the flashlight with the recess in the body of the Dynamo, grab hold of the front of the flashlight, and pull it out. You will notice that the flashlight is tethered by a 10 foot long cable. For your convenience, there is a cable-winder built into the rear of the flashlight. To expose the cable-winder, fold back the rear cover of the flashlight. You will also notice that there is a magnet on the rear cover; this can be used to attach the flashlight to a metal surface for "hands-free" applications.

To operate the flashlight, the Dynamo Pro 17 power switch must be in the "ON" position. Press the flashlight button (Figure 1) once to produce a constant light. Pressing the button a second time will cause the flashlight to flash on and off steadily. Pressing the button a third time will turn the flashlight off.

Operating the Spotlight

The spotlight is comprised of 30 individual super bright white LEDs. Although it has many useful applications, the use of such a powerful light at astronomical gatherings is not advised.

To operate the spotlight, the Dynamo Pro 17 power switch must be in the "ON" position. Flip the spotlight switch (Figure 1) to the "ON" position. The spotlight can be rotated about its hinge (Figure 1) for easy positioning of its beam. Simply take hold of the spotlight and move it to the position you want.

Operating the Radio

To use the radio, the power switch must be in the "ON" position. The radio switch (Figure 1) allows you to select between FM radio, AM radio, or the internal siren. The internal siren is for emergency situations.

To turn the radio on, rotate the volume dial clockwise until it clicks on. The tuning dial allows you to adjust the frequency to the desired radio station signal. To turn the radio off, rotate the volume dial counterclockwise until it clicks into the off position.

2. Recharging the Dynamo Pro 17

If the yellow "NEEDS CHARGING" LED indicator light is shining, then the battery power is low and requires recharging. The battery can be recharged from an AC outlet or from a DC source, such as a car cigarette lighter.

Recharging the Dynamo Pro 17 with AC Current

Recharging the Dynamo Pro 17 with an AC current outlet requires the included AC adapter (15V DC). Do not use substitute AC adapters. The AC adapter is stored in the compartment above the car battery clips. The Dynamo Pro 17 AC Charging Adaptor is provided with interchangeable 110v-240v AC power outlet plugs for UL (US style plug, 110v/60Hz), BS (230v/50Hz) and Europe (230v/50Hz) standard voltage AC outlets. Before using the AC Adaptor, select the appropriate power outlet prongs depending on your location and clip them into the body of the AC Adaptor.

Press the power switch into the "CHA", or charge position. Then plug the small end of the AC adapter into the charge input jack (Figure 1) located at the rear of the Dynamo Pro 17, and plug the other end of the adapter into a 110V AC wall outlet. The red "CHARGING" LED light should come on indicating that the battery is charging.

Charging should take around 14-20 hours, depending upon how drained the battery is. The green "FULLY CHARGED" LED light should shine when the battery is fully charged. Unplug the adapter from the Dynamo Pro 17, and the "READY TO USE" LED should shine again once the power switch is in the "ON" position.

Recharging the Dynamo Pro 17 with DC Current

Recharging the Dynamo Pro 17 with DC current should be done with the cigarette lighter outlet in an automobile. The car's engine must be operating during charging. The DC

recharging adapter is stored in the compartment above the car battery clips.

Press the power switch into the “CHA” position. Plug the small end of the DC adapter into the charge input jack (Figure 1) located at the rear of the Dynamo Pro 17. Make certain the car engine is running, then plug the other end of the DC adapter into the cigarette lighter in the car. The red “CHARGING” LED light will come on indicating the battery is charging.

Charging should take about 5-8 hours. The green “FULLY CHARGED” LED light should shine when the battery is fully charged. Unplug the adapter from the Dynamo Pro 17, and the “READY TO USE” LED should shine again once the power switch is in the “ON” position.

3. Using the Dynamo Pro 17 to Start A Vehicle

The Dynamo Pro 17 can be used to help start a vehicle that has a drained battery. It may not have sufficient power to charge a severely drained, or extremely large (greater than 4000cc engine), car battery.

To use the Dynamo Pro 17 to help start a vehicle:

Put the power switch in the “ON” position.

Using jumper cables, connect the red clip (+) on the back of the Dynamo Pro 17 under the storage compartment to the positive pole (+) on the car battery

Connect the black clip (-) on the Dynamo Pro 17 to the negative pole (-) on the car battery

Wait a few seconds, then attempt to start the car.

Remove the Dynamo Pro 17 clips from the car battery.

4. Storage and Maintenance

To optimize the lifetime of the Dynamo Pro 17, several steps should be taken for its proper storage and maintenance. Make certain the Dynamo Pro 17 power switch is in the “OFF” position before putting it in storage. Keep the Dynamo Pro 17 stored a dry, cool area when not in use. Fully charge the Dynamo Pro 17 before putting it into storage. If you are going to store the Dynamo Pro 17 for long periods of time, you should occasionally recharge it (about every three months).

Resetting the Circuit Breaker

If the power indicator LED light does not come on when you turn the power switch, the circuit breaker (Figure 1) will need to be reset. Turn the power switch to the “OFF” position and press the circuit breaker button to reset it. Keep in mind that if you are drawing more than 10 Amps through the 12V/10A adapters you will always cause the circuit breaker to break.

Replacing the 2 Amp Fuse

If the fuse for the USB power jacks should blow, it can be replaced with a new 2 Amp (5mm x 20mm long, 250 VAC, fast acting) fuse. Turn the power switch to the “OFF” position, then turn the fuse securing knob (Figure 1) in the indicated direction to free the old fuse. Replace it with the new fuse. Replace the fuse securing knob.

Replacing the Flashlight Bulb

Should the flashlight bulb break or burn out, it can be replaced with a 12V, 0.5A Krypton bulb, available at most hardware stores. Make certain the power switch is in the “OFF” position before replacing the bulb.

To replace the bulb, unthread the flashlight head by turning it counterclockwise. Replace the old bulb with the new bulb and thread the flashlight head back onto the flashlight.

5. Specifications

Primary DC output:	Two 12V cigarette-lighter type sockets, maximum 10 Amp total, tip positive
Primary DC output regulation:	10 Amp circuit breaker
Secondary DC output:	USB jacks, maximum 1.5 Amp output
Secondary DC output regulation:	2 Amp fuse
Internal battery:	12V/17Ah rechargeable sealed lead-acid battery
Recharging current requirements:	110-240v, 50-60Hz AC or 14.5 to 15.5V DC
Flashlight:	12V, 0.5 A Krypton bulb, with red lens
Spotlight:	LED, 30 individual diodes, angle adjustable
Car battery clips:	Can provide up to 250 Amps for 5 sec, will jump start most cars with engine size less than 4000cc
Operating temperature:	32° F to 86°
Weight:	19 lbs. 12 oz.
Dimensions:	13.25" x 14.25" x 5.0"

90-Day Limited Warranty

This Orion product is warranted against defects in materials or workmanship for a period of 90 days from the date of purchase. This warranty is for the benefit of the original retail purchaser only. During this warranty period Orion Telescopes & Binoculars will repair or replace, at Orion's option, any warranted instrument that proves to be defective, provided it is returned postage paid. Proof of purchase (such as a copy of the original receipt) is required. This warranty is only valid in the country of purchase.

This warranty does not apply if, in Orion's judgment, the instrument has been abused, mishandled, or modified, nor does it apply to normal wear and tear. This warranty gives you specific legal rights. It is not intended to remove or restrict your other legal rights under applicable local consumer law; your state or national statutory consumer rights governing the sale of consumer goods remain fully applicable.

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