



MERCURY ELITE PRO DUAL

Assembly Manual & User Guide



RAID 0 & 1



USB 3.1 Gen 1



Up to 407MB/s



Mac and PC



Thunderbolt

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1.1 Minimum System Requirements

Mac Requirements

- USB 3.1 Gen 1
- OS X 10.6.8–10.11.6
- macOS 10.12 or later
- Thunderbolt 2
- OS X 10.9.3–10.11.6
- macOS 10.12 or later

Windows Requirements

- USB 3.1 Gen 1: Windows XP or later
- Thunderbolt 2: Windows 7 or later

Supported Drives

- 3.5-inch SATA hard drives (identical model and capacity required for RAID 0 and RAID 1)

1.2 Package Contents



OWC Mercury Elite Pro Dual



Thunderbolt cable



USB 3.1 Gen 1
(Standard-A to Standard-B) cable



Power Supply and cable

- Drive mounting screws are included with empty enclosures, but not pictured.
- Required tools: Phillips PH2 screwdriver

1.3 About This Manual

The images and descriptions may vary slightly between this manual and the unit shipped. Functions and features may change depending on the firmware version or driver version, if applicable. Please visit the product web page for the most recent product information. OWC's Limited Warranty is not transferable and subject to limitations.



General Use Precautions

- To avoid damage, do not expose the device to temperatures outside the following ranges:

Environmental (Operating)

- Temperature (°F): 41° — 107°
- Temperature (°C): 5° — 42°

Environmental (Non-Operating)

- Temperature (°F): -40° — 149°
- Temperature (°C): -40° — 65°

- Always unplug the device from the electrical outlet if there is a risk of lightning or if it will be unused for an extended period of time. Otherwise, there is an increased risk of electrical shock, short-circuiting or fire.
- Do not use the device near other electrical appliances such as televisions, radios or speakers. Doing so may cause interference which will adversely affect the operation of the other products.
- Do not place the device near sources of magnetic interference, such as computer displays, televisions or speakers. Magnetic interference can affect the operation and stability of hard drives.
- Do not place objects on top of the device.
- Protect your device from excessive exposure to dust during use or storage. Dust can build up inside the device, increasing the risk of damage or malfunction.
- Do not block any ventilation openings on the device. These help to keep the device cool during operation. Blocking the ventilation openings may cause damage to the device and cause an increased risk of short-circuiting or fire.

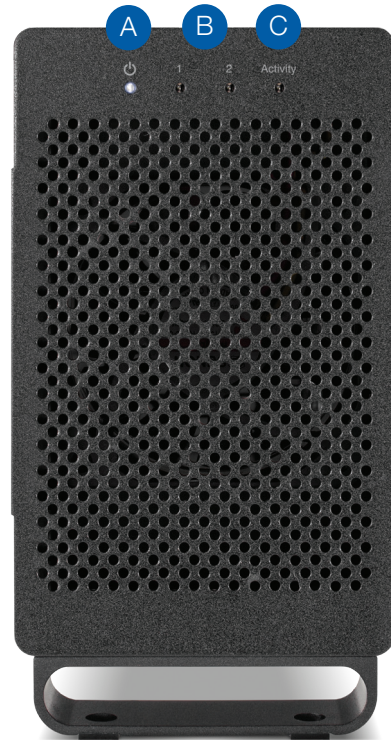


Safety Precautions

- Read this user guide carefully and follow the recommended steps for assembly.
- Use proper anti-static precautions while installing your hard drives into this drive enclosure. Failure to do so can cause damage to your drive mechanisms and/or the enclosure.
- Do not attempt to disassemble or modify the device. To avoid any risk of electrical shock, fire, short-circuiting or dangerous emissions, never insert any metallic object into the device. If it appears to be malfunctioning, please contact technical support.
- Never expose your device to rain, or use it near water or in damp or wet conditions. Never place objects containing liquids on the drive, as they may spill into its openings. Doing so increases the risk of electrical shock, short-circuiting, fire or personal injury.

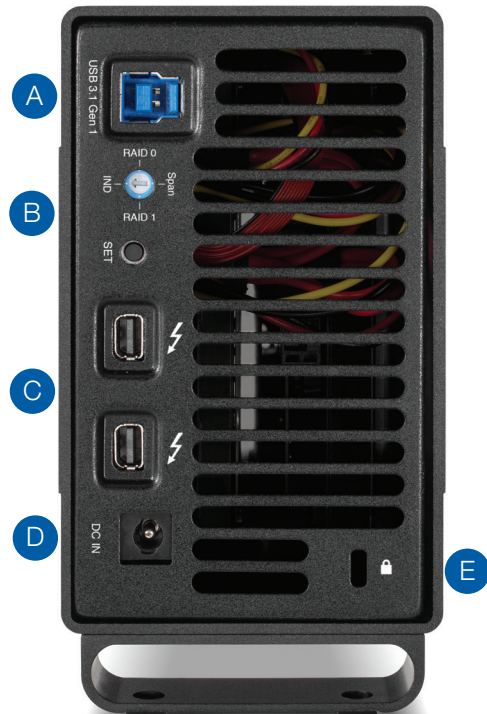
1.4 Front View

- A. Power LED — emits a solid light when the Mercury Elite Pro Dual is powered on.
- B. LEDs 1 & 2 — these LEDs represent the two drives inside the enclosure. If one of the drives fails, is not connected properly, or if the drive bay is empty, the corresponding LED will turn solid red.
- C. Activity — If you are building a new array or if you have replaced a drive in a RAID 1 and are rebuilding the array, the Activity LED will pulse orange. It will blink orange during normal read / write operations (all modes).



1.5 Rear View

- A. USB 3.1 Gen 1 port — attach the included USB 3.1 Gen 1 (Standard-A to Standard-B) cable to this port.
- B. RAID Dial and Set button— set the RAID mode by using these items.
- C. Thunderbolt ports — attach the included Thunderbolt cable to one of these ports. Connect a daisy-chained Thunderbolt device to the other port as needed.
- D. Power input — connect the included power supply here.
- E. Kensington Security Slot — connect a security tether here.



1.6 Usage Notes

- Use only one interface (USB 3.1 Gen 1 or Thunderbolt 2) at a time.
- Identical drives (model, capacity, firmware) are required for RAID 0 and RAID 1 configurations.
- Booting in RAID 0, RAID 1, and span mode are supported via Thunderbolt 2 and USB 3.1 Gen 1. Thunderbolt 2 also supports Independent mode booting.
- When connected via USB, the following limitations apply when booting in Independent mode:
 - If both drives are installed, only the disk connected to the 'Drive A' cables will boot.
 - If only one drive is installed, the disk will boot regardless of which set of cables it is connected to. See **Section 2.2** for more information on drive connections.
- For the safe removal of your drive and to ensure that no data is lost, always eject or unmount the corresponding disk(s) from your operating system before powering off. You can use the methods described below to safely unmount your disk(s).

OS X/macOS

- Drag the icon for the disk you wish to unmount to the trash can; OR
- Right-click the disk icon on the desktop, then click "Eject"; OR
- Highlight the disk on your Desktop and press Command-E.

Windows

- Go to the System Tray (located in the lower right corner of your screen). Click on the "Eject" icon (a small green arrow over a hardware image).
- A message will appear, detailing the devices that the "Eject" icon controls, i.e., "Safely remove..." Click on this prompt.
- You will then see a message that says, "Safe to Remove Hardware." It is now safe to disconnect the Mercury Elite Pro Dual from the computer.

2.1 Quick Start

Follow the steps below to use the OWC Drive Guide utility to format your Mercury Elite Pro Dual for Mac (OS X 10.6 and later) or Windows (XP and later). If you installed your own drives, please use the formatting method you are most familiar with or check Section 3.1 for a link to our online formatting tips.

1. Power on the Mercury Elite Pro Dual and plug it into your computer using the proper data cable. If you prefer to use a different formatting utility, do so at this time and skip the rest of these steps.
2. The disk will mount and your operating system will display it as “OWC SETUP”. Open the disk icon to view its contents.
3. Double-click the OWC Drive Guide application.
4. Follow the simple on-screen instructions to complete the formatting process. Once the formatting is finished the drive is ready to use.

2.2 Assembly

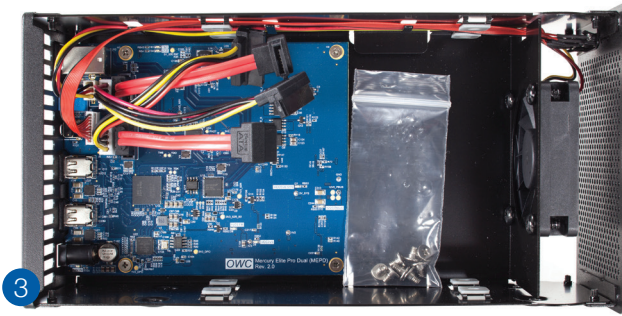
These assembly instructions are written for users who purchased the Mercury Elite Pro Dual as an empty enclosure. The instructions show how to open the enclosure in order to install drives. **IMPORTANT:** opening an enclosure with pre-installed drives will **VOID the warranty**. You may replace the drives after the expiration of the original warranty. You should start with Step 9 in that case and work backwards.



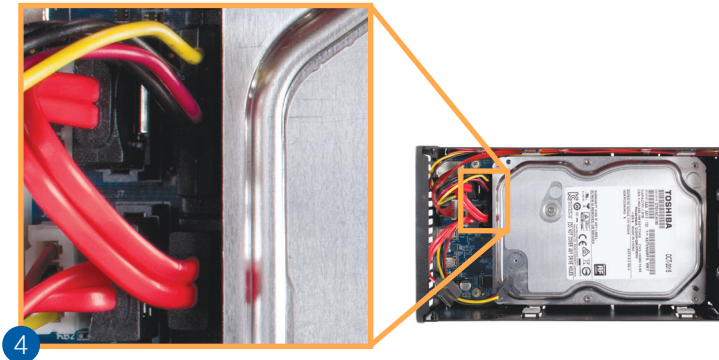
1. Remove the Mercury Elite Pro Dual from its packaging, then set the enclosure on its side. Use a Phillips PH2 driver to remove the two screws shown at right.



2. Slide the inner chassis out the front of the outer enclosure, as shown at left. Start by pushing on the back cover, then grip the front grill and pull the chassis the rest of the way.

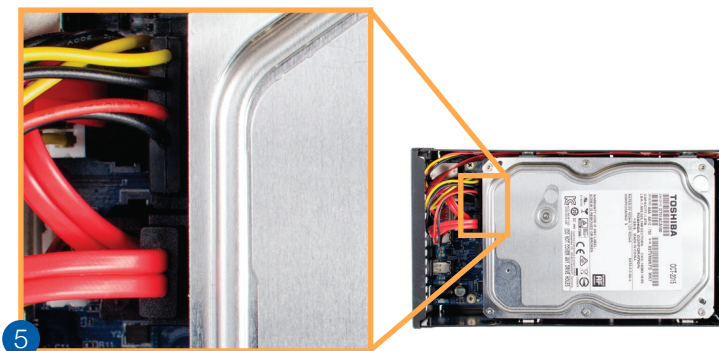


3. Remove the packet of screws from the inner chassis and set them aside; they will be used in upcoming steps.



4. IMPORTANT: before installing the drives, note that each SATA port on the blue circuit board is accompanied by a label. These labels are printed on the board and are located at the base of the two red SATA cables. The 'Drive A' cable corresponds to LED 1 on the front cover. The 'Drive B' cable corresponds to LED 2. This is important when replacing a failed drive or checking a drive's connection.

To continue with the installation, carefully set the first hard drive into the inner chassis so that the edge with the SATA ports sits just to the right of the cable connectors on the circuit board. Connect one set of data and power cables to the corresponding ports on the drive.



5. Set the second hard drive into the inner chassis so it is aligned above the first drive. Connect the second set of data and power cables to the corresponding ports on the drive. The cables may need to twist or bend a modest amount; this is OK as long as you do not crimp the cables and as long as none of the cables protrude from the back plate once connected.



6. Using eight of the larger screws from the packet removed in Step 3, fasten the inner chassis to the hard drives. There are four screw holes on each side of the inner chassis; you may need to move each drive slightly to align its screwholes with the holes on the inner chassis.



7. To determine the correct orientation of the outer enclosure relative to the inner chassis, turn the outer enclosure on its side and look at the bottom. As shown above, the screw holes at the front of the outer enclosure are close to the silicone feet. The screw holes at the rear of the outer enclosure are farther away from the silicone feet.



8. Once you know the correct orientation from Step 7, slide the inner chassis back into the outer enclosure as shown.



9. Once the front grill of the inner chassis sits flush with the edge of the outer enclosure, turn the device on its side again. The screw holes in the outer enclosure should line up with the screw holes in the inner chassis. Use the four smaller screws to fasten the inner chassis to the outer enclosure, shown above.

This completes the assembly process.

2.3 RAID Settings

Changing the RAID Mode

The RAID mode is controlled by a dial on the rear of the unit, as shown below-left. The dial has four positions, each labeled with a different RAID mode. To change the RAID mode, follow the simple steps below.

Warning

Changing the RAID mode will destroy the data on the drives. Be sure to back up your data first! See Section 3.4 for information on proper backup strategies.

Note

Changing the RAID mode for the Mercury Elite Pro Dual requires an active USB or Thunderbolt connection.



Adjust the RAID dial so that the arrow is pointing at the desired RAID mode. Each time the arrow is aligned with a new mode, you will feel a slight click. A small flathead screwdriver works the best to adjust the dial.

When starting from a powered-on state, first unmount the disk, then rotate the RAID dial to the desired mode and hold down the SET button for 3 seconds. The LED on the front will blink for a brief time; once the blinking stops the new array has been built. You can access and format the disk in the OS at this time.

When starting from a powered-off state, rotate the dial on the back of the enclosure to the desired RAID mode, then power on the Mercury Elite Pro Dual and immediately press the SET button for three seconds. The LED on the front will blink; once the blinking stops the new array has been built. You can access and format the disk in the OS at this time.

RAID Modes

Warning

Drives of identical model and capacity are required for RAID 0 and RAID 1. Always maintain a full and separate backup of your RAID disks, especially RAID 0 disks.

RAID 0 “Drive Striping” Mode

The two drives show up as a single large disk with a size equal to the combined capacities of both drives. RAID 0 is used when speed is the primary objective; it does not provide data redundancy for protection. The reading and writing of data files is spread across both drives to gain speed by distributing the workload. This allows for the fastest data transfer rates, but if one drive fails the whole array becomes corrupted. The data will be lost.

RAID 1 “Drive Mirroring” Mode

The two drives show up as a single disk with a size equal to the capacity of a single drive from the array. RAID 1 copies (or “mirrors”) the data from the first drive to the second drive. This is useful when reliability and redundancy are more important than capacity or maximum speed. When one drive fails, it can be replaced and the data can be rebuilt automatically from the other functioning drive. See Section 2.4 for more details on the drive replacement and rebuild process.

Span Mode

Both drives show up as a single large disk, but one which functions differently than RAID 0. The total size will depend on the drives installed; unlike RAID 0 or RAID 1 you can use drives of different capacities. A span is an array (but not a RAID) in which the data is written sequentially across the drives. When one drive becomes full, subsequent data is written to the second drive. This combines the capacities of the drives, but it does not provide any performance or data redundancy benefits.

Independent Drive Mode

Each drive will appear individually without being combined. If you are using drives of differing capacity and model, or if you are using only one drive, this is the mode to use.

2.4 Drive Failure

If one of the drives fails, the corresponding drive LED will turn solid red. If the Mercury Elite Pro Dual was configured as a RAID 0 or span, the data on the array is lost and the disk is no longer usable. In a span, only the data stored on the failed drive is lost, although data recovery software will be required to retrieve the data from the other drive. If the drives were configured independently, then the data on the drive that did not fail will remain intact.

Replacing Drives

If the Mercury Elite Pro Dual is set up as a RAID 1, a drive that has failed can be replaced. The data will remain accessible via the functioning drive until the array is rebuilt with a new drive. If the enclosure was purchased with drives and it is still under warranty, contact OWC technical support for assistance (see Section 3.5). If the unit is outside its warranty or was purchased without drives, follow the assembly instructions in Section 2.2 to access and replace the failed drive.

If the Drive 1 LED is solid red, the failed drive is the one connected to the data and power cable labeled as Port 1 on the printed circuit board (Section 2.2 Step 4). If the Drive 2 LED is solid red, the failed drive is the one connected to the data and power cable labeled Port 2.

Note

A failed drive must be replaced with an identical drive (model, capacity, firmware).

Once the drive has been replaced, if the Mercury Elite Pro Dual is configured as a RAID 1, the array will automatically begin to rebuild when the enclosure is powered on. This process may take several hours to more than a day, based on the capacity of the drives. During the rebuild process, the LED for both drives will blink green. The Rebuild LED will blink orange.

If possible, leave the Mercury Elite Pro Dual powered on during the entire rebuild process; if power is interrupted (or the computer sleeps), the unit will continue rebuilding automatically when power is restored. Once the rebuild process is complete, the rebuild LED will turn off and the LED for the rebuilt drive will resume normal activity. See Section 1.6 for more information on the behavior of the LEDs.

Note

The Mercury Elite Pro Dual needs an active data signal to remain powered on. If it is disconnected from the computer, or if the computer goes to sleep or turns off, the device will power off. To minimize the total rebuild time, it is recommended to keep the device connected to the computer (with the computer powered on), and disable any hard drive sleep settings on the computer for the duration of the rebuild process.

3.1 Formatting

For additional formatting information, including instructions on how to format your Mercury Elite Pro Dual for Mac or Windows, go to: www.owcdigital.com/format

3.2 Troubleshooting

Begin by verifying that the power cable is connected to the Mercury Elite Pro Dual and to a power source. If the power cable is connected to a power strip, make sure that the power strip switch is in the ON position. Next, verify that both ends of the data cable are properly plugged into the computer and the Mercury Elite Pro Dual, respectively.

If you are still having trouble, try connecting a different type of data cable and see if the Mercury Elite Pro Dual works properly; you can also connect the device to a different computer or use different cables of the same type.

If one of the drive LEDs (Drive 1 or Drive 2) is solid red, then that drive has failed or is missing. If you purchased the Mercury Elite Pro Dual as an empty enclosure, or the enclosure shipped with drives installed but is past the three year warranty period, unmount the disk from the OS, power off, then check the cables connected to drive and enclosure. See Section 2.4 if you are sure the drive has failed. If the Mercury Elite Pro Dual is configured as a RAID 1 and the rebuild LED is blinking, simply wait for the rebuild process to complete. If the rebuild LED is still blinking after more than 48 hours, or if you still need assistance for other reasons, Section 3.5 provides information for contacting technical support.

3.3 About Data Backup

To ensure that your files are protected and to prevent data loss, we strongly suggest that you keep two copies of your data: one copy on your Mercury Elite Pro Dual and a second copy on either your internal drive or another storage medium, such as an optical backup, or on another external storage unit. Any data loss or corruption while using the Mercury Elite Pro Dual is the sole responsibility of the user, and under no circumstances may OWC, its parents, partners, affiliates, officers, employees, or agents be held liable for loss of the use of data including compensation of any kind or recovery of the data.

3.4 Online Resources

To access our online knowledge base, which includes topics like migrating your data from an old drive to a new one, please visit: www.owcdigital.com/faq

3.5 Contacting Technical Support



Phone: M–F, 8am–5pm Central Time
(866) 692-7100 (N. America) | +1 (815) 338-4751 (Int'l)



Chat: M–F, 8am–8pm Central Time
www.owcdigital.com/support



Email: Answered within 48 hours
www.owcdigital.com/support

Changes:

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FCC Statement:

Warning! Modifications not authorized by the manufacturer may void the user's authority to operate this device. NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference with radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

Warranty:

The Mercury Elite Pro Dual has a 3 Year OWC Limited Warranty if it was bundled with drives. Mercury Elite Pro Dual enclosures that do not ship with drives have a 1 Year OWC Limited Warranty. For up-to-date product and warranty information, please visit the [product web page](#).

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