

Instructions for M700 and DV700 Optical Disk Drive (ODD) Replacement

Title KVault Optical Disc Drive Replacement

Time to Complete 30 minutes

Service Kit Parts

- Slim Optical Disc Drive
- Spare 1.5mm hex screws and washers for ODD
- Tie-wrap

Tools Required

- 4mm hex screwdriver or Allen Key
- 2.5mm hex screwdriver or Allen Key
- 2mm hex screwdriver or Allen Key
- 1.5mm hex screwdriver or Allen Key
- Phillips screwdriver
- Container for collecting screws as they are removed
- Disc storage for safely collecting removed discs
- Fine-tip felt marker (required for A-Frame Only)

Overview

Follow this procedure to replace the optical disc drive in a Kaleidescape Vault. There are two optical drive bracket configurations that were used with the vaults: the original and new A-Frame ODD mounting bracket that was updated in June 2016. Identifying the version and replacement procedures for both are covered by this document.

The steps to follow are:

[Prepare and Open the Vault](#)

Identify the Vault

Eject All Discs

Power Off and Disconnect

Expose the Optical Disc Drive

[Original Bracket Procedure](#)

Remove Old Optical Drive

Transfer Mounting Brackets to New Optical Disc Drive

Install New Optical Disc Drive

Calibrate the Optical Disc Drive Position

[New A-Frame Bracket Procedure](#)

Mark the Locations of the Bracket

Remove Old Optical Disc Drive

Install New Optical Disc Drive

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 Reinstall the Cables
[Testing and Installation](#)
 Test the Unit
 Put the Disc Vault Back Together
 Insert the Discs

Procedure

Prepare and Open the Vault

Identify the Vault

If multiple vaults are in the system, note the vault serial number that requires the ODD replacement and its physical location. The vaults serial numbers can be found on the back of the unit or by removing the front panel (see Figure 1). Ensure that this is the vault serial number referenced when using the Browser Interface or Onscreen Display.

Eject All Discs

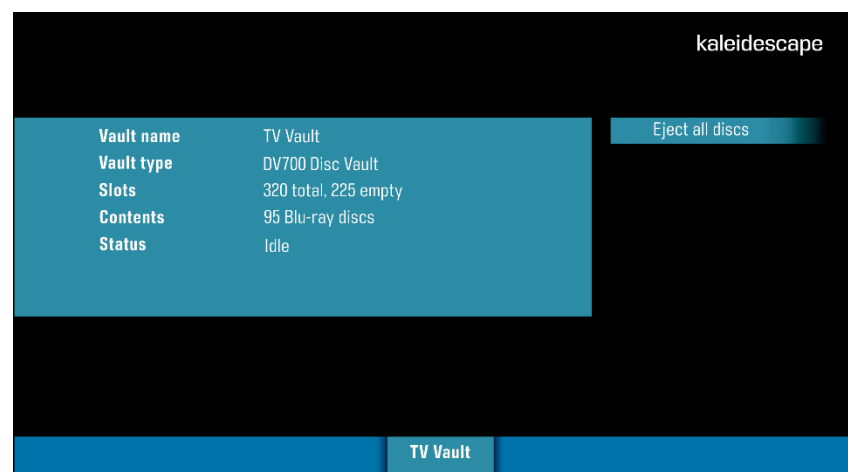
All discs must be removed prior to replacing the drive. Ejecting the discs properly through methods 1-3 listed below is best as this ensures the vault is in a known empty state prior to servicing and will save time at the end of the procedure. If this is not possible, discs will have to be removed manually. This will result in a long start-up time once repaired. Have cases, spindles, or a box available to receive the discs.

1. Front panel buttons – use the Option button to select Eject All.
2. Browser interface – Connect to the Premiere Browser Interface. See <https://support.kaleidescape.com/article/Accessing-the-Browser-Interface>



Navigate to Settings -> Components -> *Find the disc vault in the list* -> Eject all discs

3. Onscreen display (vault must be connected to a system). This is found in the discs menu.



Navigate to Menu -> Discs -> *Select the Vault* -> Eject all discs

Note: Not available for Co-Star viewing zones.

4. If options 1-3 above are unsuccessful, discs may be removed manually as described in step 10. This method will require an additional 40 minutes upon start up for the Vault to self calibrate before discs can be inserted.

Power Off and Disconnect

Disconnect the power cord, Ethernet, and audio/video cables from the back of the disc vault.

Note: The drive replacement cannot be done with the unit in a rack.

Expose the Optical Disc Drive

1. Remove the front panel by gripping each side and pulling it **straight** from the disc vault. See Figure 1.



Figure 1

2. Remove the disc vault from the rack. Use a Phillips screwdriver to unmount the ears from the rack. A fully loaded vault weighs 49 lbs. A two-person lift technique is required to safely remove a disc vault from the rack.

3. Take off the rack ears using a 2.5 mm hex screwdriver to remove the 7 screws that hold them on each side of the chassis. See Figure 2.

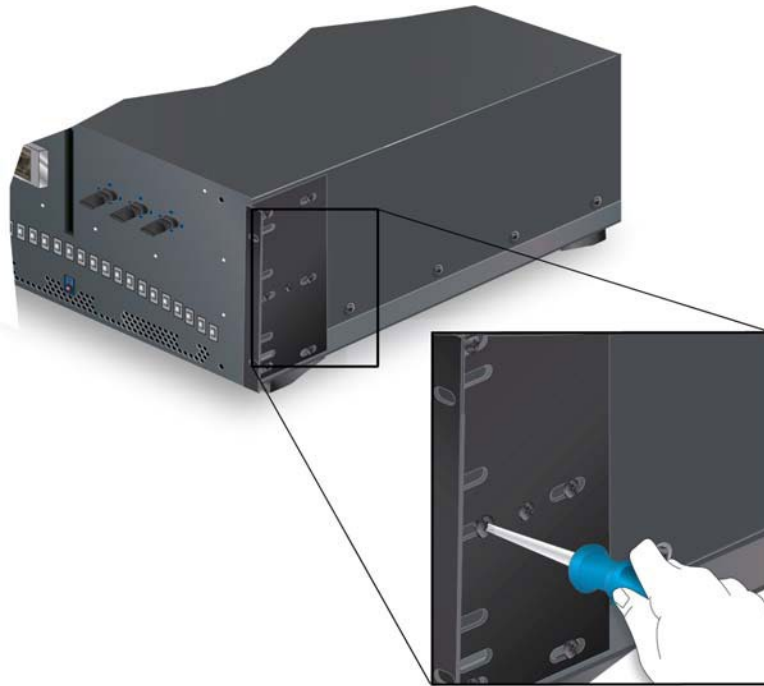


Figure 2

4. Remove 6 screws from the back using the 2.5 mm hex screwdriver. See Figure 3.
Note: All remaining chassis screws will use the 2.5mm hex screwdriver.

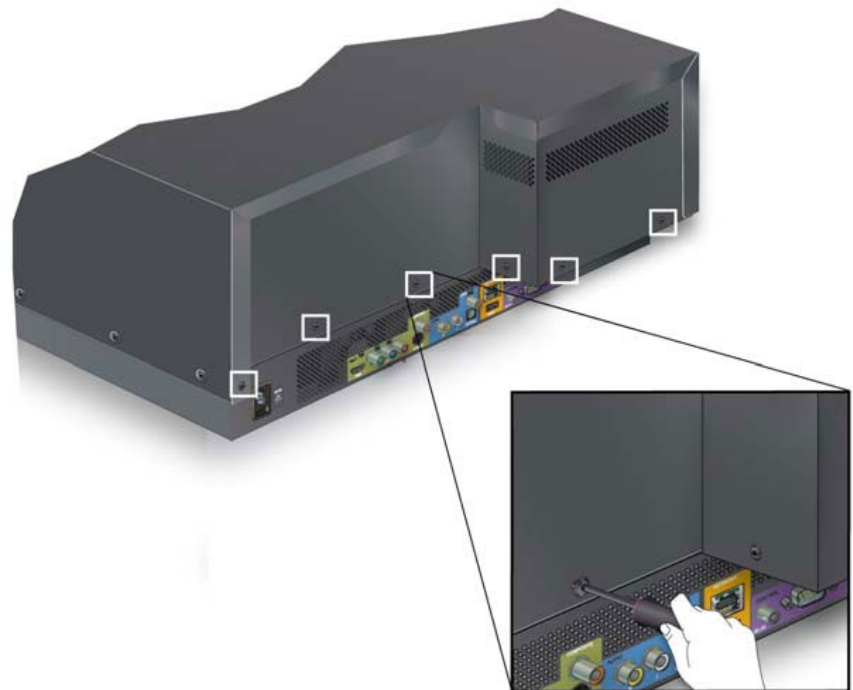


Figure 3

5. Cut the warranty sticker with a box knife.

Note: Cutting the warranty sticker will not void the warranty if Kaleidescape Support has already issued an RMA for the M700 Disc Vault or DV700 Disc Vault and sent this document to you.

6. Remove 7 screws from the longer side. **Do not remove the screw marked in red.** See Figure 4.

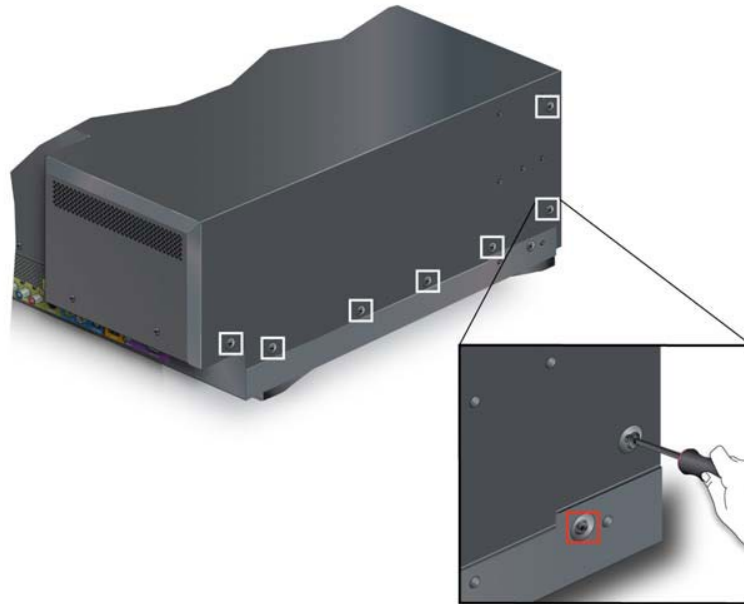


Figure 4

7. Remove 6 screws from the shorter side. **Do not remove the screw marked in red.** See Figure 5.

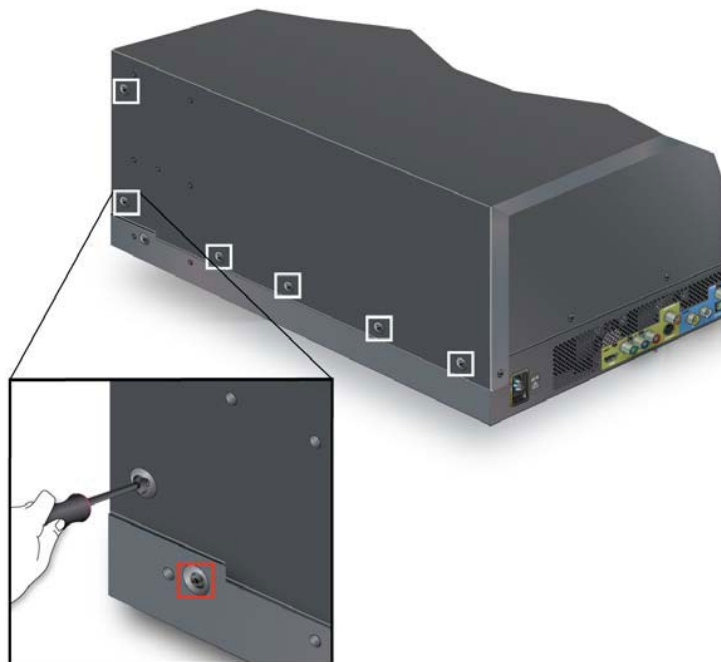


Figure 5

8. Remove the casing by sliding it back towards the rear of the vault, then lift it off. See Figure 6 and Figure 7.



Figure 6

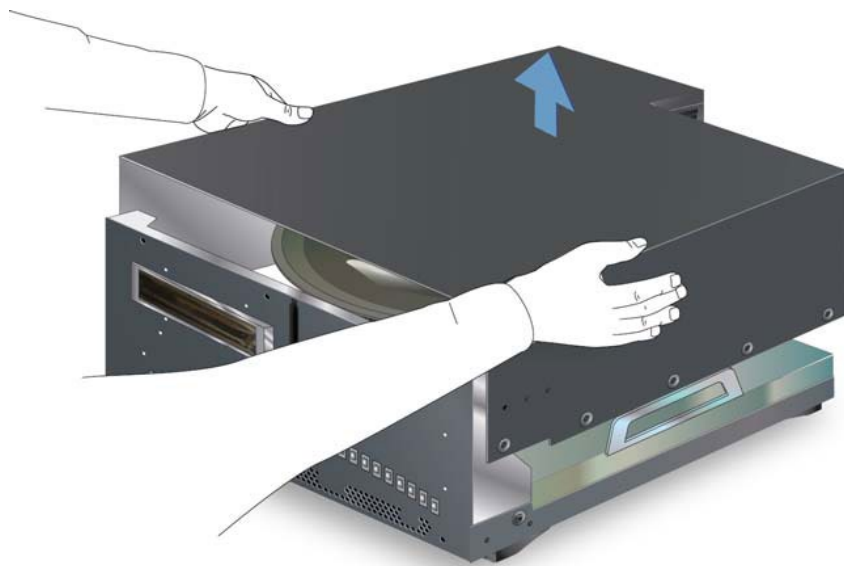


Figure 7

9. Remove the Disc Retention Funnel. Remove the 4 screws with washers using a 2mm hex screwdriver. Remove the central bolt with washer using a 4mm hex screwdriver and lift off the funnel.

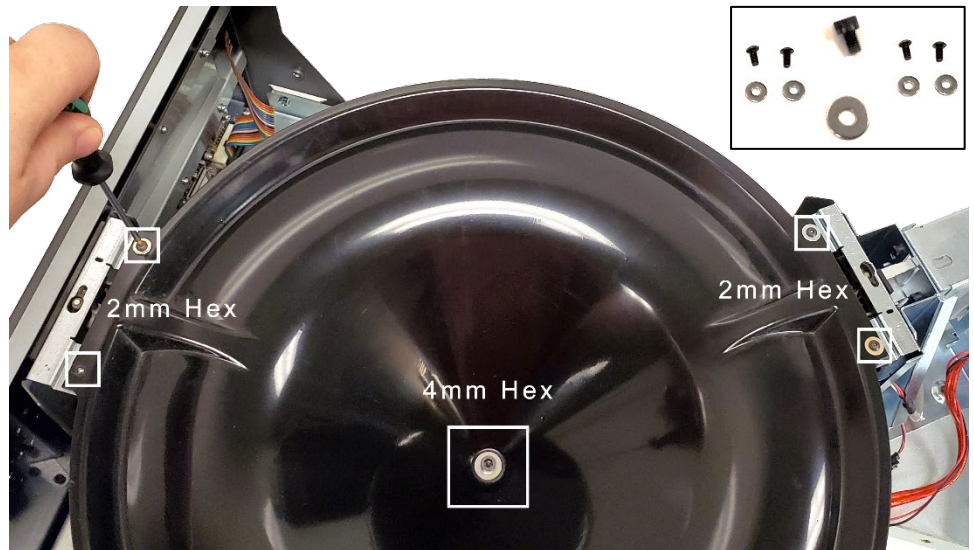


Figure 8

10. If there are any discs remaining in the carousel, manually remove them and store them in a safe place, such as disc cases or a spindle, to avoid scratches.

Note: We recommend that the rollers be cleaned. You can proceed to Step 9 of the “Exposing the Rollers” section in the “M700 and DV700 Roller Cleaning Procedure” document

<https://support.kaleidescape.com/article/M700-and-DV700-Roller-Cleaning-Procedure>



11. **Carefully** unpack the new drive. When handling the new disc drive, **do NOT put pressure on the large surface on the top of the drive**. The best way to handle the drive is to grasp from the sides. See Figure 9. Place the drive aside until called for in the procedures.



Figure 9

12. If your bracket is the original mount, proceed below.

If your bracket is the newer A-Frame version, [jump to page 14](#).

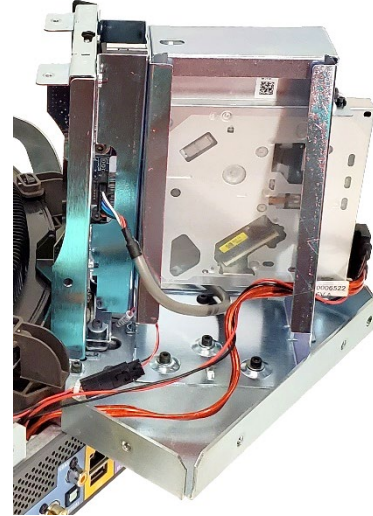
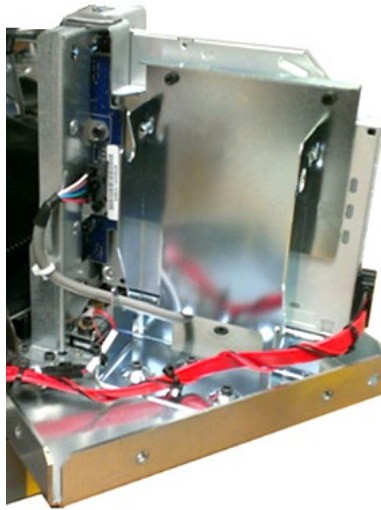


Figure 10

Original Bracket Procedure

Remove Old Optical Drive

1. Remove the red SATA cable from the back of the disc drive by pinching both sides and pulling straight back. See Figure 11.
2. Using the 2.5mm Hex screwdriver, remove the 2 mounting screws from the bottom of the optical disc drive. See Figure 11.

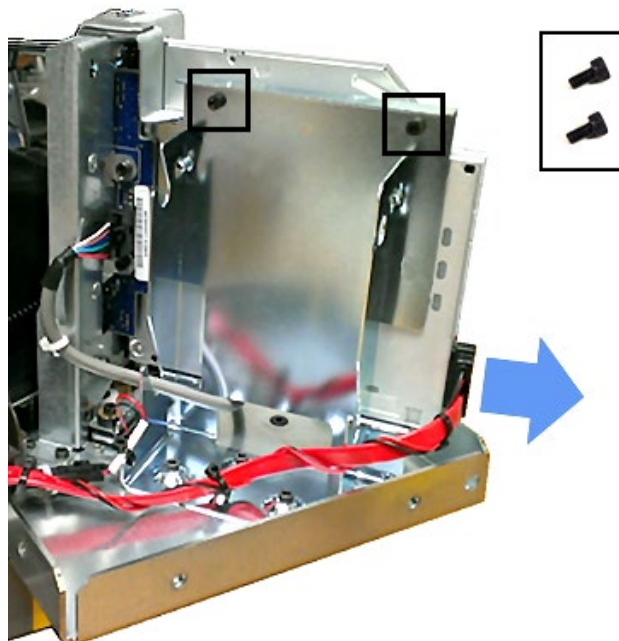


Figure 11

3. On the other side of the drive, use the Philips screwdriver to remove the 2 self-retaining mounting screws. See Figure 12.

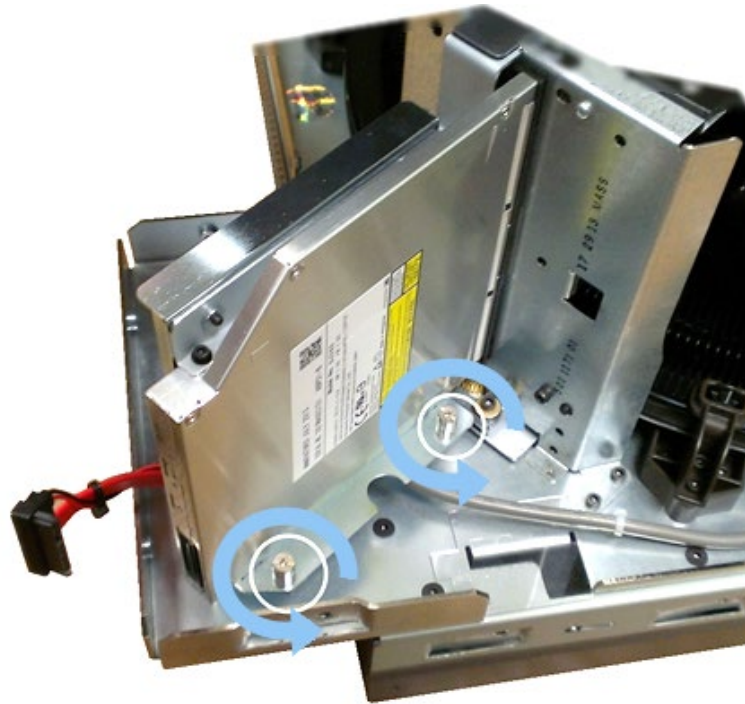


Figure 12

4. Remove the disc drive and attached mounting brackets from the unit. Mark the drive as defective, to avoid accidental reuse.
5. Check the defective drive for stuck discs and carefully extract any disc if found. Removing the drive bezel can help with this.

Transfer Mounting Brackets to New Optical Disc Drive

1. On the removed optical disc drive, note the orientation of the bottom bracket in relation to the optical drive.
2. Remove the two screws from the bottom bracket and recover the bracket.
3. Attach the recovered bottom mounting bracket to drive with two of the provided M2 screws with a 1.5mm hex screwdriver. **These screws are threaded into the soft aluminium of the drive housing and only require a gentle tightening.**

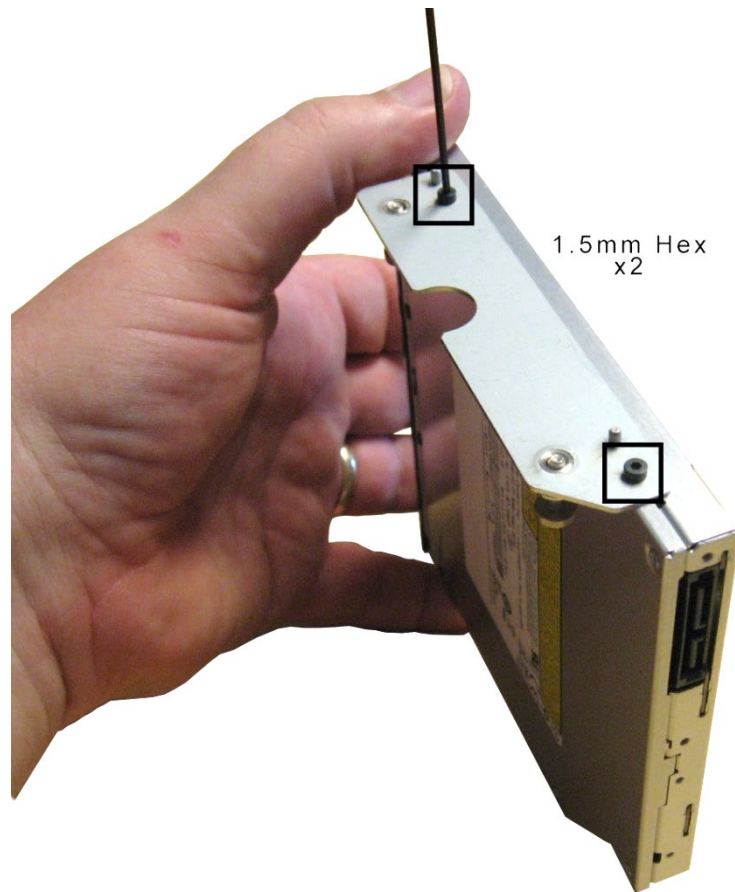


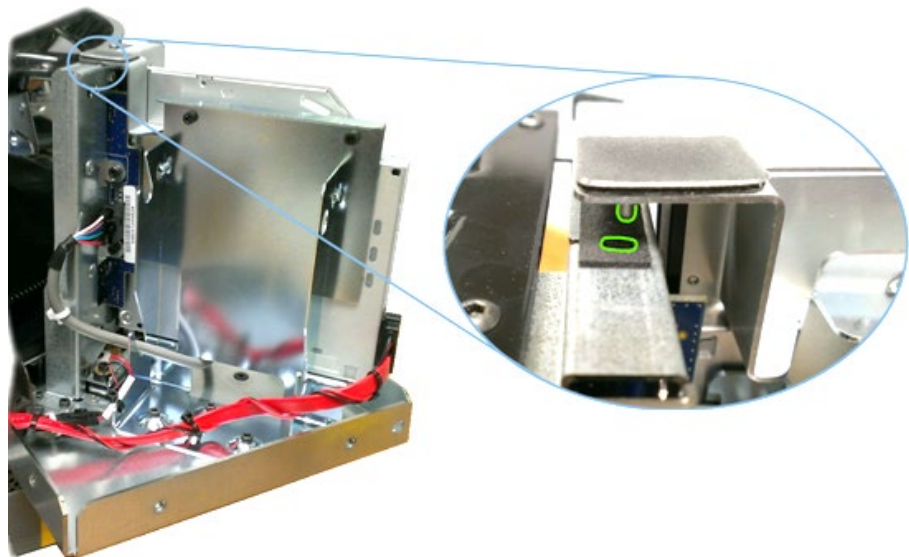
Figure 13

4. On the removed optical disc drive, note the orientation of the top bracket to the optical drive.
5. Remove the two screws and washers from the top bracket and recover the bracket.
6. Loosely install the top 1.5mm hex screws with washers through the bracket and into the drive. Leave these screws loose for now. **The washers are important to avoid internal damage to the drive mechanism.**

*Figure 14*

Install New Optical Disc Drive

1. Place the new disc drive with attached mounting brackets into the mounting location. Be sure to align the guide pins. See Figure 15.

*Figure 15*

2. Loosely install the two 2.5mm hex screws into the back of the disc drive. See Figure 16.

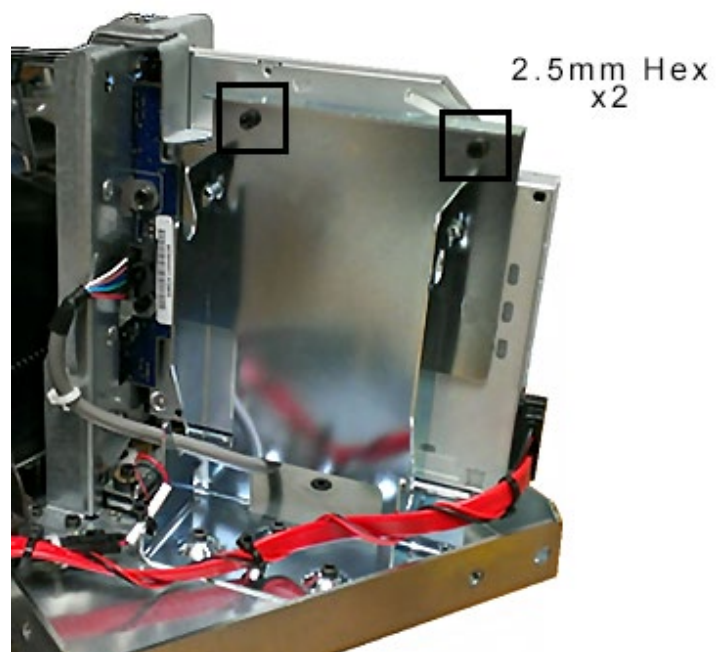


Figure 16

3. Using the Philips screwdriver, loosely fasten the 2 self-retaining screws on the bottom mounting plate. See Figure 17.

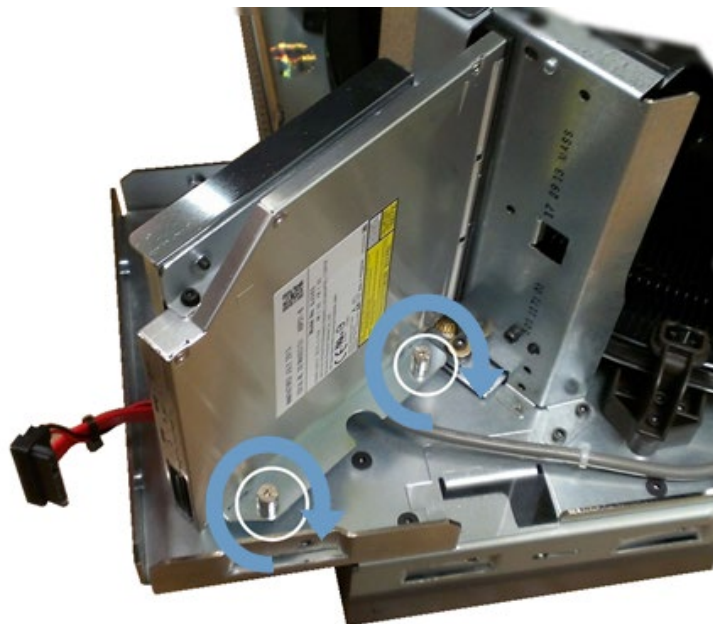


Figure 17

Calibrate the Optical Disc Drive Position

1. To calibrate the optical drive to the pinch rollers, carefully insert a disc between the pinch rollers and push it in just less than halfway. The disc will bring the ODD into alignment with carousel and the roller assembly.



Figure 18

2. With the disc in the drive, tighten up the loose screws in the assembly. **Avoid applying any pressure to the brackets.**

Tighten the screws in the following order:

- 1) Base Philips screws x 2. See Figure 17.
 - 2) Back 2.5mm hex screws. See Figure 16.
 - 3) Top of ODD 1.5mm hex screws with washers x 2 (gently tighten). See Figure 14.
3. With all the screws secured, carefully remove the disc from the assembly.
 4. Re-insert the red SATA cable by aligning the cable and pressing evenly across the back. See Figure 19.

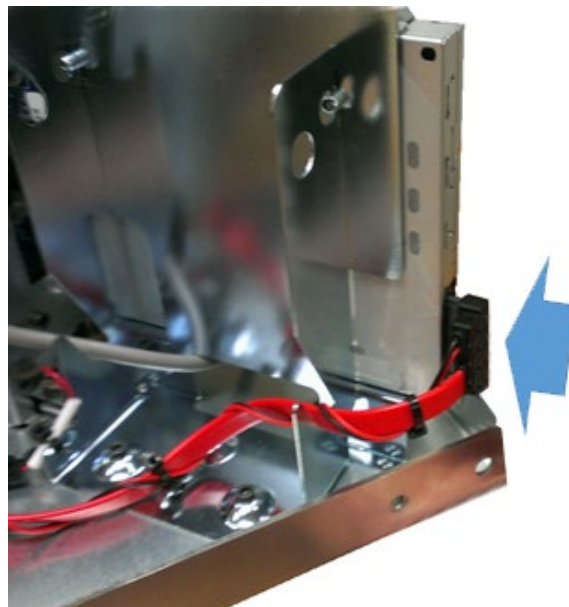


Figure 19

Skip to page 23 [Testing and Installation](#)

New A-Frame Bracket Procedure

Mark the Locations of the Bracket

The vault is calibrated at the factory to allow for chassis tolerances. Keeping the brackets aligned to the current positions will help ensure proper operation.

1. With a fine-tip felt marker, mark the perimeter of the square hole to the left of the rollers.
2. Also mark the perimeter of the oblong hole at the top right. This will aid in ensuring the assembly is properly aligned when reassembling.

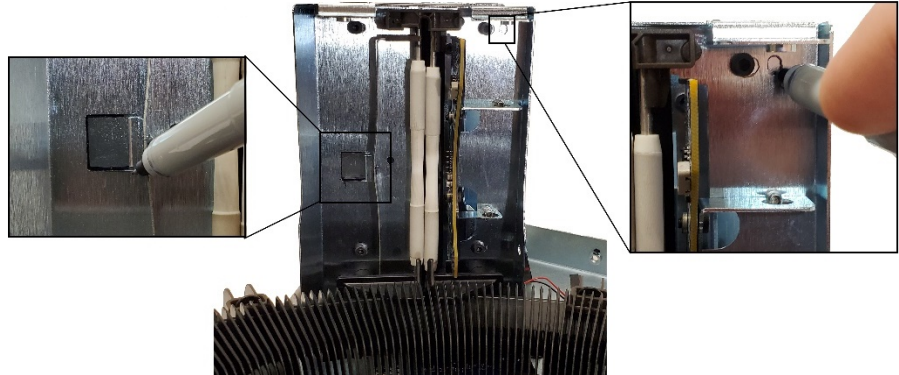


Figure 20

Remove Old Optical Disc Drive

Cut the zip-tie on bottom of the drive bracket to free the cables. Be careful not to nick the cables.

1. Remove the red SATA cable from the back of the disc drive by pinching both sides and pulling straight back. Push cable end through the rectangular bracket hole. See Figure 21.
2. Disconnect the two-pin motor cable by depressing the latch separating the two connectors. Push the cable end through the round bracket hole. See Figure 21
3. Disconnect the sensor board cable by depressing the latch and pulling the connector straight out. See Figure 21.

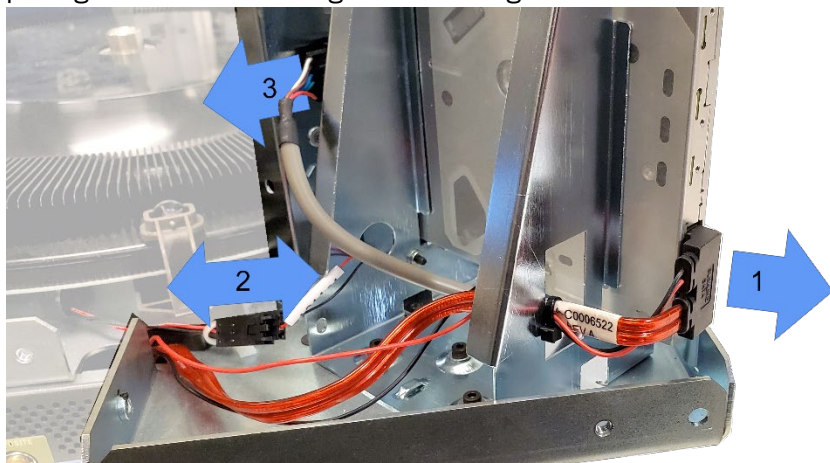


Figure 21

4. Using the 2.5mm hex screwdriver, remove the 4 mounting screws on the front of the ODD assembly.

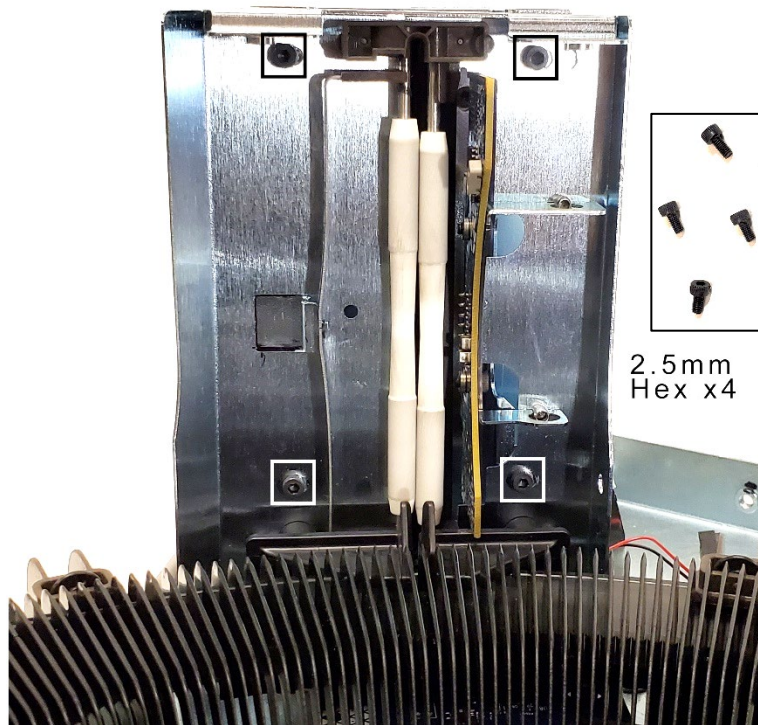


Figure 22

5. Using the 2.5mm hex screwdriver, remove the 4 mounting screws from the bottom of the optical disc drive bracket. See Figure 23.



Figure 23

6. When removing the rear ODD bracket, it is important not to move the roller bracket or knock the sensor board.

To do this carefully:

- 1) lift the rear ODD assembly straight up slightly
- 2) shift the assembly to the rear
- 3) tip back the top of the assembly a few degrees
- 4) lift the assembly

See Figure 24.

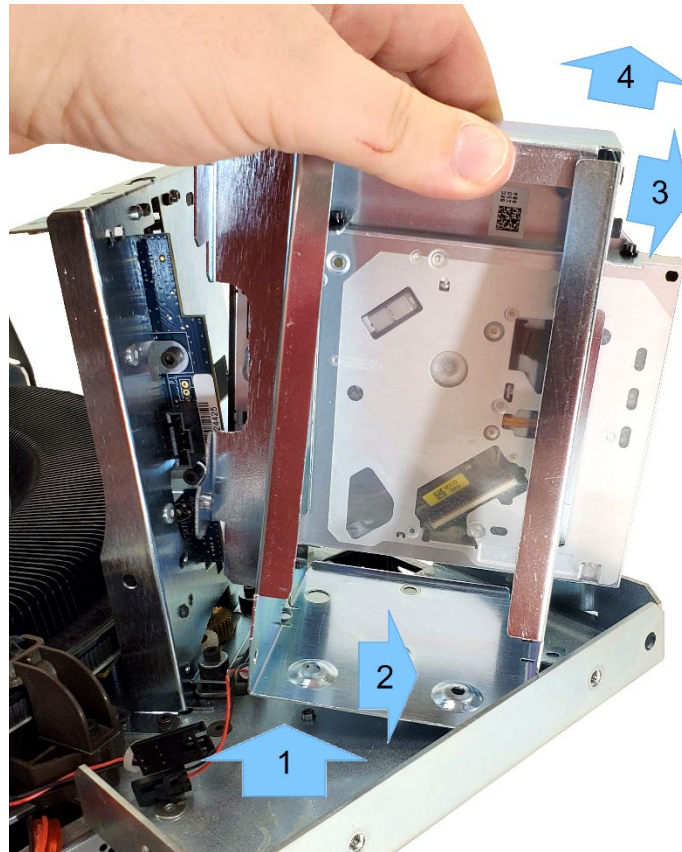


Figure 24

7. Using a 1.5mm hex screwdriver, remove the optical disc drive from the bracket by removing the two top screws with washers. Be sure to retain the two washers on the top screws.



Figure 25

8. Turn the bracket over and, using a 1.5mm hex screwdriver, remove the bottom two screws. These do not have washers.

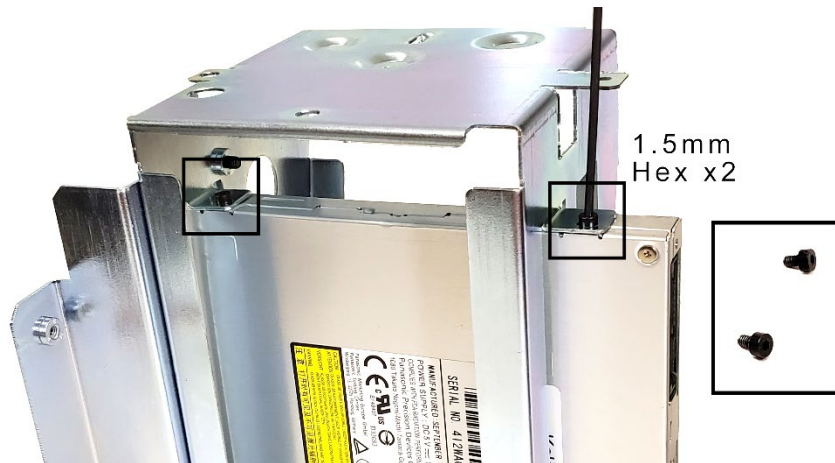


Figure 26

9. Grasp the drive by the front black bezel. Slide the defective drive from the front of the bracket. Mark the drive as defective, to avoid accidental reuse.
10. Check the defective drive for stuck discs and carefully extract any disc if found. Removing the drive bezel can help with this.

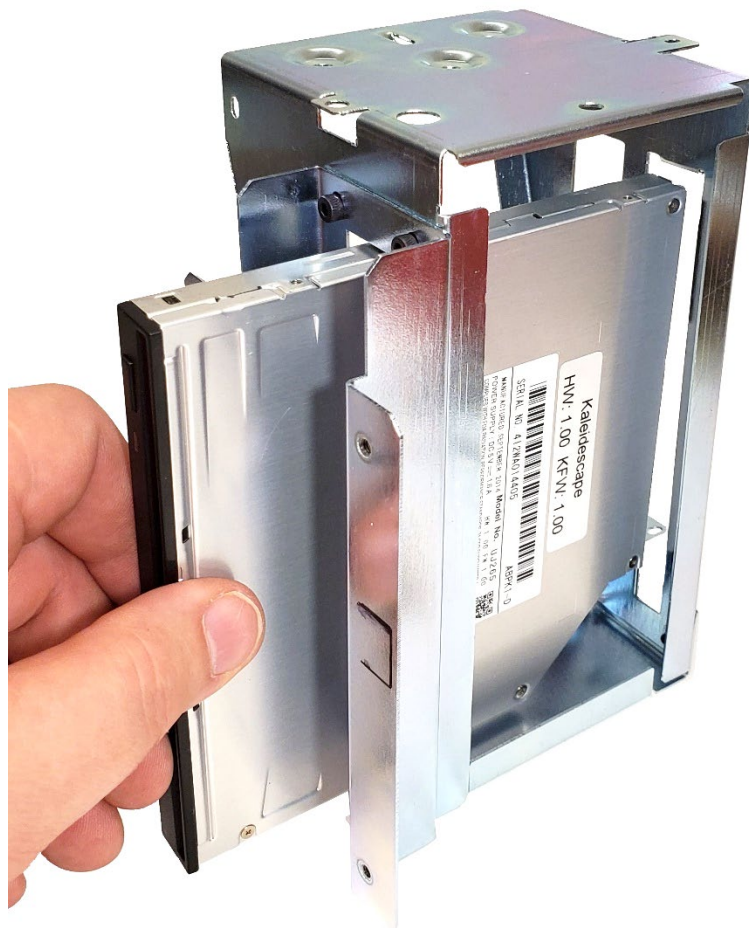


Figure 27

Install New Optical Disc Drive

1. Insert the new drive into the front of the drive bracket which is still upside-down. Note the orientation of the label on the drive. Align the drive mounting holes with the bracket holes.

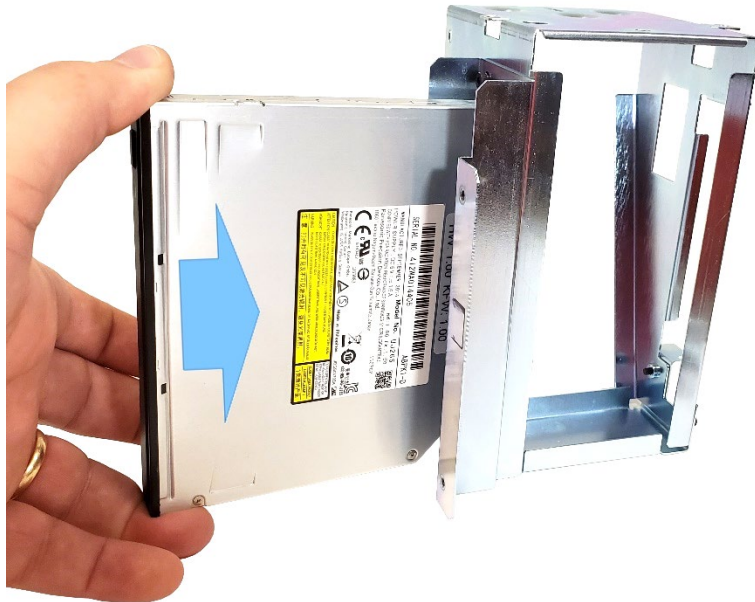


Figure 28

2. Loosely install the two 1.5mm hex screws **without washers** through the bracket into the ODD.
3. Gently press rear of the drive to ensure the drive is forward in the bracket then finish snugging the two drive mount screws. **These screws are threaded into the soft aluminium of the drive housing and only require a gentle tightening.**

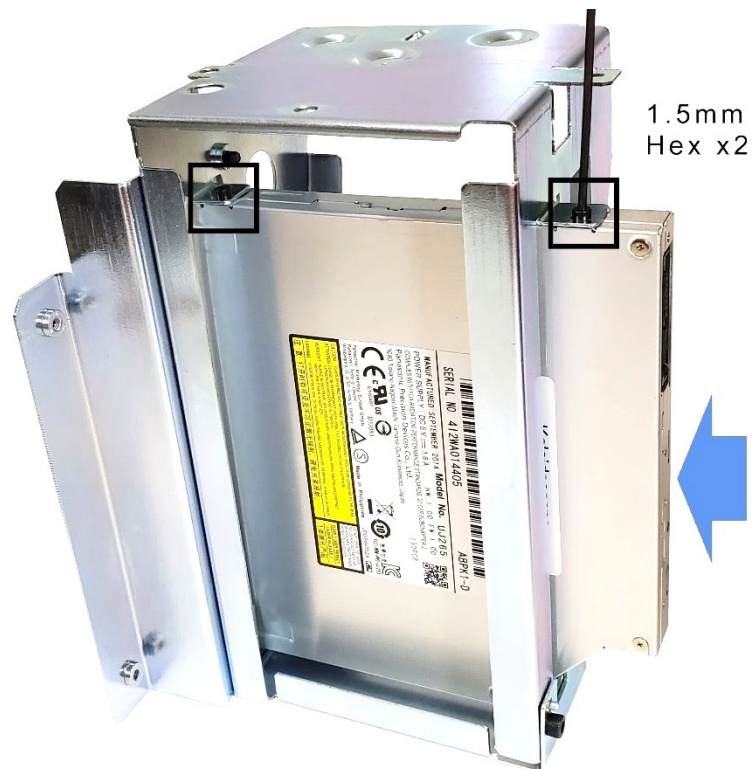


Figure 29

4. Turn the bracket and drive over.
5. Loosely install the top 1.5mm hex screws with washers through the bracket and into the drive. **Leave these screws loose for now.** The drive should have a bit of play to the sides. **The washers are important to avoid internal damage to the drive mechanism.**



Figure 30

6. Carefully install the ODD bracket back into the chassis to avoid damaging or misaligning the roller sensors.
 - 1) Place the ODD assembly into rear of the chassis at a slight angle.
 - 2) Tip the assembly to vertical
 - 3) Slide the assembly forward into place until it drops over the alignment pins.

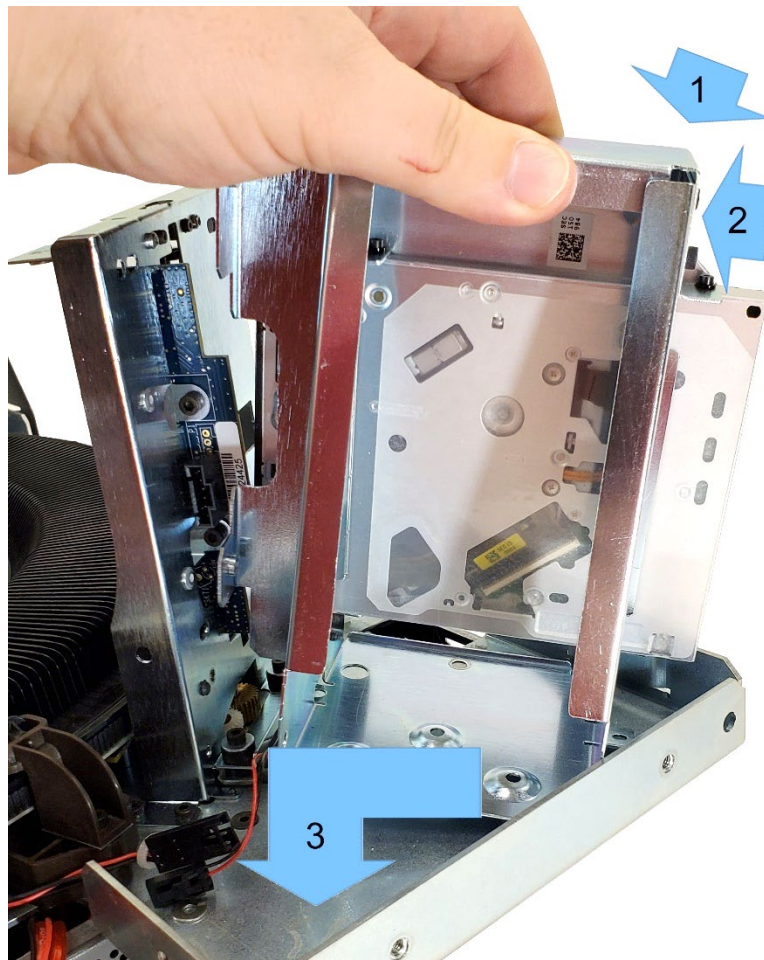


Figure 31

7. Make sure the cables are not caught under the bracket.
8. Loosely install the 2.5mm hex screws into the ODD bracket base. Use washers on the right three screws. The left screw is a round head screw. **The bracket should still have some movement.**

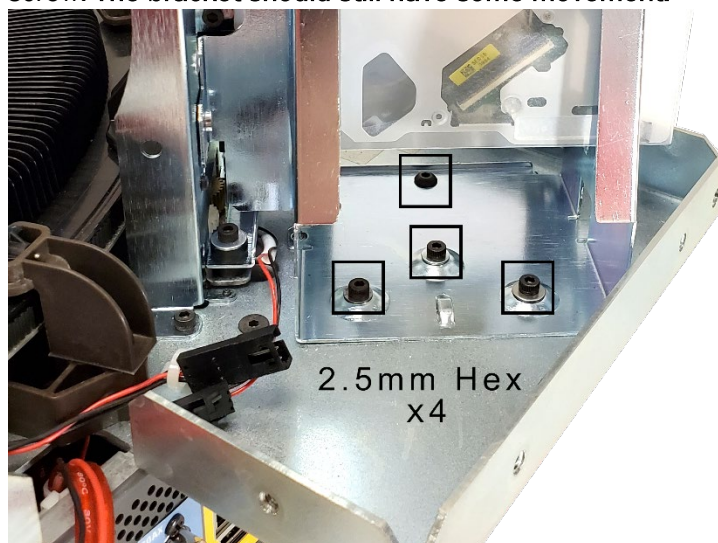


Figure 32

9. Loosely install the front four 2.5mm hex screws. **The rear bracket should still have some movement.**

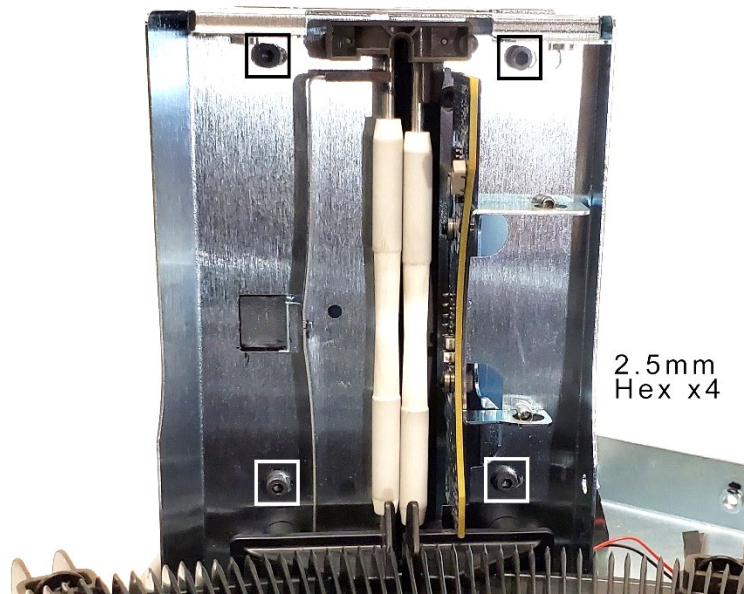


Figure 33

Calibrate the Optical Disc Drive Position

1. To calibrate the optical drive to the pinch rollers, carefully insert a disc between the pinch rollers and push it in just less than halfway. The disc will bring the ODD into alignment with carousel and the roller assembly.

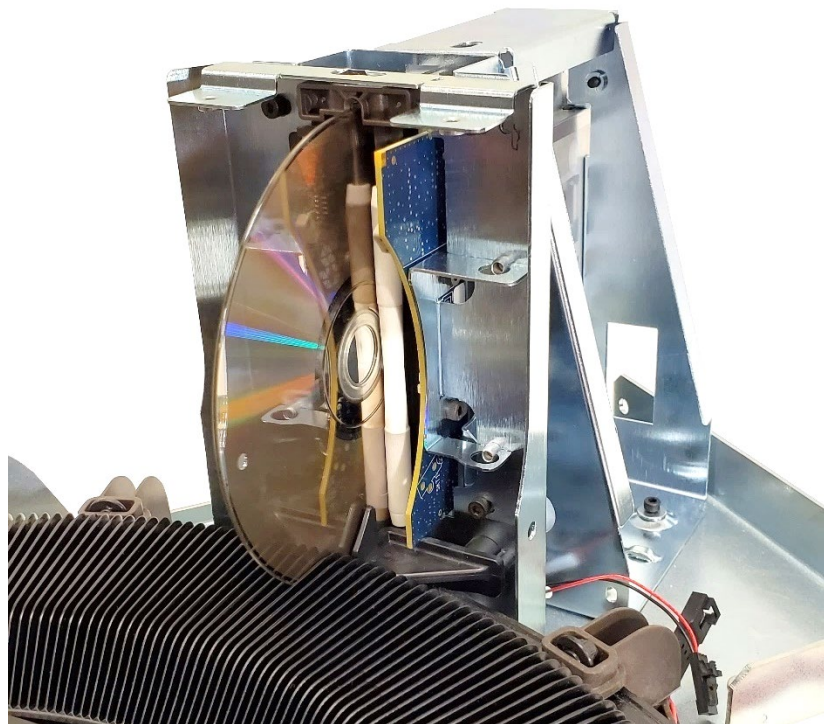


Figure 34

2. With the disc in the drive, tighten up the loose screws in the assembly. Avoid applying any pressure to the brackets.

Tighten the screws in the following order:

- 1) Front 2.5mm hex screws x4 (**Verify alignment markings made earlier are close to their marked positions.**) See Figure 3324.
 - 2) Base 2.5mm hex screws x 4. See Figure 3223.
 - 3) Top of ODD 1.5mm hex screws with washers x 2 (gently tighten). See Figure 3021.
3. With all the screws secured, carefully remove the disc from the assembly.

Reinstall the Cables

1. Route the cables through the ODD bracket openings as shown in Figure 35:

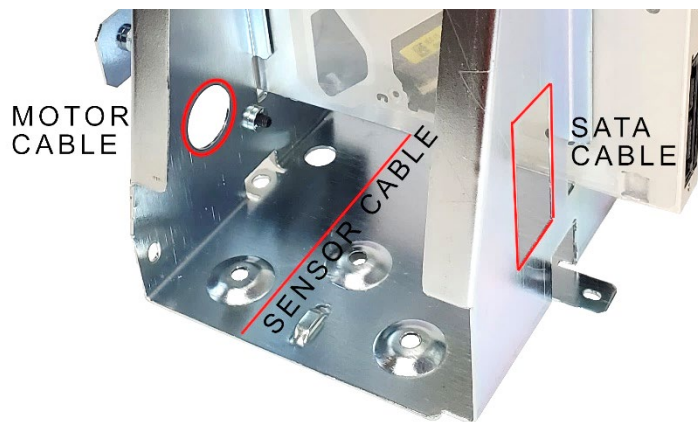


Figure 35

2. Connect the cables to the ODD assembly.
 - 1) SATA cable to the rear of the Optical Drive
 - 2) Motor cable to the mating cable from the main assembly
 - 3) Sensor cable to the Sensor PCB from the main assembly. Be careful not to apply too much force.

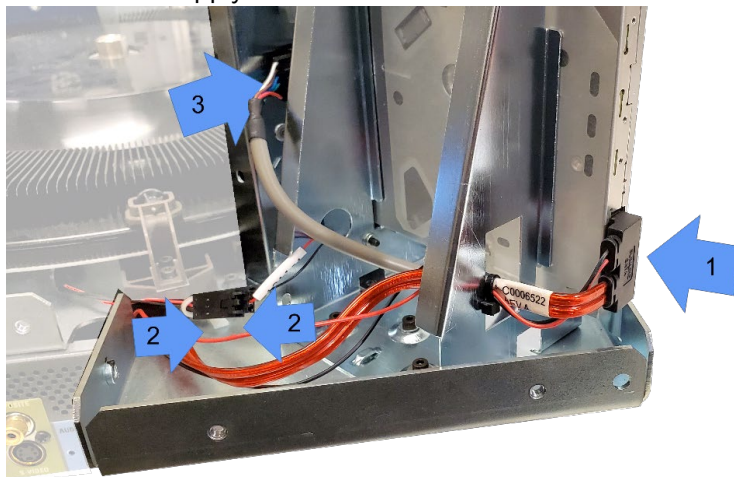


Figure 36

3. Secure the cables with a tie-wrap to the drive bracket base.

Testing and Installation

Test the Unit

Testing the unit with the cover off is possible, if desired. Ideally, the unit must be able to boot on the customer's original network and connect to the same servers as it did before the failure.

If this network is not accessible at this time, either add fewer cover screws in the **Put the Vault Back Together** section below and test later, before rack mounting, or connect to another local Kaleidescape device network with a server and add the vault to the local network temporarily. See

<https://support.kaleidescape.com/article/How-to-add-components-to-an-existing-Kaleidescape-System>



To test the unit:

1. Plug in the AC power and network.
2. Wait for the unit to boot, then insert two or three discs into the front rollers ensuring disc labels are facing right. Press OK.
3. The discs should rotate into position in front of the optical drive and be inserted into the ODD in a smooth motion.
4. After the disc had been identified, the disc will be ejected back into the carousel and the next disc will be inserted and identified. This will repeat for each disc.
5. Once it has successfully cycled through the inserted discs, eject all discs the front panel.

Although unlikely, if a disc fails to insert or eject smoothly:

1. Remove the discs.
2. If not already done, perform the disc roller cleaning procedure, referenced on page 7, and retest with the same discs.
3. If this still fails, unplug the unit, loosen the screws holding the bracket and top of the ODD in place, and repeat the calibration steps, from **Calibrate the Optical Disc Drive Position**, with the disc that failed. If this does not correct the error, further diagnostics will be required. Please contact Kaleidescape support.

Put the Disc Vault Back Together

Now that the optical disc drive has been replaced and tested, proceed with putting the disc vault back together.

Do not manually load discs into the carousel. Discs should be loaded from the front slot once the vault is fully reinstalled.

1. Replace the disc retention cone onto unit, aligned as best as possible with the front and rear roller brackets. Install the central large screw with washer using a 4mm hex screwdriver.
2. Replace the 4 small screws with washers using a 2mm hex screwdriver to secure the cone to the front and rear roller brackets.

3. Replace the top lid casing. Set it over top of the chassis 1-1/2" toward the back, then slide the casing forwards into place. Check that the screw holes line up.
4. With the 2.5mm hex screwdriver, loosely fasten 6 screws on the back
5. Replace 7 screws on the longer side and 6 screws on the shorter side.
6. Tighten all the replaced screws.
7. Replace the rack ears on each side with the "ears" to the front. Loosely fasten the center screw first, then tighten all 7.
8. Install the disc vault back into the rack. Use a Phillips screwdriver to mount the ears to the rack. A two-person lift technique is required to safely install a disc vault into a rack.
9. Replace the front panel by lining up the metal tab at the bottom rear of the panel with the slot in the front of the chassis. Press firmly and evenly to snap the panel into place.
10. Reconnect the power cord, Ethernet, and audio/video cables to the back of the disc vault.

Insert the Discs

The vault should be reinstalled in the system, powered and booted.

If discs were properly ejected using methods 1–3 described in Eject All Discs, the system will be ready to accept discs. This is indicated by the two blue LEDs above and below the disc slot. Insert all discs following steps 1-4 outlined in the section Test the Unit . If the LEDs above and below the disc slot are amber then the vault is busy calibrating or reading discs. Wait for the operation to complete before inserting additional discs.

If all discs were not ejected properly and had to be manually removed (method 4 of the section Eject All Discs), or if a disc was stuck in the defective drive, the system must perform a carousel recalibration. This can take up to 40 minutes. During this time, the vault disc slot will show amber.

When the vault is ready to receive discs, insert all removed discs ensuring the disc labels are facing to the right. Press 'OK' after the last disc has been inserted.

Kaleidescape Support

Get the Kaleidescape Installation Guide at www.kaleidescape.com/install

See www.kaleidescape.com/support for the latest manuals and guides, Knowledge Base, and more technical and customer support resources.

For additional information, contact Kaleidescape Support.

Send an email message to support@kaleidescape.com.

Call the support line at **+1 650-625-6160**.