Replacing the Hard Drive on a DVR

Overview

Introduction
As the Explorer® Digital Video Recorder (DVR) product line matures, some of the early DVR models are no longer covered under warranty. Because the hard drive in the DVR is a moving piece, it is prone to wear with age and may become inoperable. This document details the necessary steps to replace an inoperable hard drive in an out-of-warranty Explorer DVR set-top.

Purpose
The purpose of this document is to provide the procedure for replacing the hard drive on a DVR that is no longer under warranty and to identify the tools and components you will need to perform this task. This document also provides information to help you ensure that you are using the latest bracket for securing the drive.

Audience
This document was written for staging and warehouse technicians.

Warranty Considerations
The hard drive replacement procedures in this document are intended for use only with Explorer DVR set-tops that are no longer under warranty. Performing these procedures on a set-top that is still under warranty will void the warranty.

IPC Industry Standards
The instructions provided in this document for replacing the hard drive are consistent with industry standards, including without limitation, the following Institute of Printed Circuits (“IPC”) industry standards for workmanship: IPC-A-610, IPC-7721, J-STD-001, IPC-7711 and IPC-HDBK-001 (copies of the full text for these standards can be obtained online at www.IPC.org).
Overview

Related Publications
You may find the following publications useful as resources when you implement the procedures in this document.

- Guide to Using Your Digital Video Recorder in Stand-Alone Mode (part number 4011416)
- Introducing the DVR Power Save Feature (part number 745268)

Document Version
This is the second release of this document.

In This Document

- Tools and Materials Requirements................................................................. 3
- Determine If Your Explorer DVR Requires a Retrofit Bracket .................... 5
- Replace the Hard Drive on an Explorer 8000 or 8010 that Requires a Retrofit Bracket................................................................. 7
- Replace the Hard Drive on an Explorer 8000 or 8010 that Does Not Require a Retrofit Bracket................................................................. 13
- Replace the Hard Drive on an Explorer 8300 ............................................ 19
- For Information............................................................................................... 26
Tools and Materials Requirements

This section covers the required tools and materials you will need to replace the hard drive on your DVR.

Tools

You will need the following tools to replace the hard drive on your DVR.

<table>
<thead>
<tr>
<th>Part</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torx-T10 screwdriver</td>
<td>1</td>
</tr>
<tr>
<td>Phillips #2 screwdriver</td>
<td>1</td>
</tr>
<tr>
<td>Calibrated torque driver</td>
<td>1</td>
</tr>
</tbody>
</table>

Labels and Silicone Pads

You will need the following label and silicone pad to replace the hard drive on your DVR.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Part</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>4007141</td>
<td>Tamper/void label</td>
<td>1</td>
</tr>
<tr>
<td>4006699</td>
<td>Silicone pad</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: The silicone pad comes on an 8 x 11-inch sheet with a quantity of 10 per sheet for use on 10 units.

Approved Hard Disk Drives

The following table lists the approved hard disk drives for your DVR.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Drive</th>
<th>Vendor</th>
<th>Status</th>
<th>DVR Model</th>
<th>Approved Manufacturer Part Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>207799</td>
<td>80GB</td>
<td>WD</td>
<td>Repair</td>
<td>8010, 8000</td>
<td>WD - WD800BB-55JKCO</td>
</tr>
<tr>
<td>1001597</td>
<td>80GB</td>
<td>WD, Seagate</td>
<td>Mass Prod.</td>
<td>8300</td>
<td>WD - WD800BB-55JKCO / SG - ST3802110ACE</td>
</tr>
<tr>
<td>1001980</td>
<td>160GB</td>
<td>WD</td>
<td>Repair</td>
<td>8010</td>
<td>WD - WD1600AABB-56PUA0 / WD1600BB-56GUC0 / WD1600BB-56RDA0</td>
</tr>
<tr>
<td>1001981</td>
<td>160GB</td>
<td>WD, Maxtor</td>
<td>Obsolete</td>
<td>8010</td>
<td>Maxtor 6L160P00332P2 / 6L160P00432P2 / 6L160P01332P2 / WD-WD1600BB-56GUC0</td>
</tr>
<tr>
<td>1002260</td>
<td>160GB</td>
<td>WD, Seagate</td>
<td>Mass Prod.</td>
<td>8300</td>
<td>WD - WD1600AABB-56-PUA0 / WD1600BB-56RDA0 / SG - ST3160212ACE / ST3160215ACE</td>
</tr>
</tbody>
</table>
Retrofit Hard Disk Drive Bracket and Screws
(for the Explorer 8000 and 8010 DVR Models Only)

If you are using an Explorer 8000 or 8010 DVR, you may need the following bracket and screws to install the hard disk drive. The number of parts you will need varies depending upon the chassis hole pattern as shown in diagrams A, B, and C on pages 10, 11, 16, and 17 of this document. See Determine If Your Explorer DVR Requires a Retrofit Bracket (on page 5) to determine whether you need a retrofit bracket.

Diagram A

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Part Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>4007077</td>
<td>Bracket</td>
<td>1</td>
</tr>
<tr>
<td>196580</td>
<td>M3x6 (metric) Taptite Torx screws</td>
<td>6</td>
</tr>
</tbody>
</table>

Diagram B

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Part Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>4007077</td>
<td>Bracket</td>
<td>1</td>
</tr>
<tr>
<td>196580</td>
<td>M3x6 (metric) Taptite Torx screws</td>
<td>6</td>
</tr>
<tr>
<td>187526</td>
<td>6-32x5/16 in. screws</td>
<td>2</td>
</tr>
</tbody>
</table>

Diagram C

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Part Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>4007077</td>
<td>Bracket</td>
<td>1</td>
</tr>
<tr>
<td>196580</td>
<td>M3x6 (metric) Taptite Torx screws</td>
<td>6</td>
</tr>
<tr>
<td>187526</td>
<td>6-32x5/16 in. screws</td>
<td>3</td>
</tr>
</tbody>
</table>
Determine If Your Explorer DVR Requires a Retrofit Bracket

Introduction
Some early Explorer 8000 and 8010 DVR models used an earlier version of the hard drive bracket that secures the hard drive.

Note: These models must be retrofitted with a new hard drive bracket (part number 4007077) when you replace the hard drive. The Explorer 8300 set-tops were shipped with the latest bracket and do not require a retrofit bracket.

This section provides the information you need to determine if your Explorer DVR requires a retrofit bracket.

Determining Whether a Retrofit Bracket is Required
To determine whether your DVR requires a retrofit bracket, complete the following steps.

1. Remove the top cover of the Explorer 8000 or 8010 set-top.
2. Check the part number stamped on the front of the hard drive bracket that secures the hard disk drive.

If the part number is not 4007077, a retrofit bracket is required.
Determine If Your Explorer DVR Requires a Retrofit Bracket

3  Is the part number 4007077 on the hard drive bracket?
   - If yes, your set-top has the correct hard drive bracket and your next step is to replace the hard drive. Go to Replace the Hard Drive on an Explorer 8000 or 8010 that Does Not Require a Retrofit Bracket (on page 13) or Replace the Hard Drive on an Explorer 8300 (on page 19).
   - If no, you should use the retrofit bracket (part number 4007077) when you replace the hard drive on this DVR. Go to Replace the Hard Drive on an Explorer 8000 or 8010 that Requires a Retrofit Bracket (on page 7).
Replace the Hard Drive on an Explorer 8000 or 8010 that Requires a Retrofit Bracket

To replace the hard drive on an Explorer 8000 or 8010 that requires a retrofit bracket, complete the following steps.

**CAUTIONS:**
- Torque all fasteners to 8 to 10 in-lb using a manual torque driver. Do not use power drivers. When installing screws, back them up ¼ turn, so that they find the start of the first thread. This step will help avoid stripping the screw or sheet metal.
- Prevent electrostatic damage to electronic equipment. Take ESD precautions, including the use of an ESD wrist strap. Refer to IPC-7711/7721 standards for additional information.

**WARNING:**
Do not connect AC power cord or apply AC power to unit unless cover is in place and all screws are properly tightened.

1. Remove the top cover from the unit.
2. Carefully disconnect the integrated drive electronics (IDE) from the hard drive. Be sure to pull on the connector and not on the cable to remove.
3 Carefully disconnect the power cable from the hard drive. Be sure to pull on the connector and not on the cable to remove.

4 Remove the hard drive bracket from the chassis by removing the three screws shown in the diagram, and then remove the bracket from the hard drive itself. Discard the original hard drive bracket.

5 Obtain the approved new hard drive and install one silicone pad (part number 4006699) from the sheet and adhere the sticky side to the outer edge of the hard drive, as shown in the diagram below. Remove protective plastic from outer side of the silicone pad. For a list of approved hard drives, see Tools and Materials Requirements (on page 3) for details.
6 Mount the new hard drive with silicone pad to the new hard drive bracket (part number 4007077) as shown in the diagram below.

7 Place the hard drive bracket assembly inside the chassis as shown in the diagram below.

Tip: Be sure to first mount the hard drive bracket to the chassis wall before mounting the bracket to the inside of the chassis. This step avoids air pockets from forming on the inside of the silicone pad.
Replace the Hard Drive on an Explorer 8000 or 8010 that Requires a Retrofit Bracket

8 Depending on your chassis hole pattern, the way you secure the hard drive bracket to the chassis wall differs as shown in the diagrams (A, B, C) below. Review the following diagrams to determine which method to use.

- Diagram A. If your hole pattern fits this diagram, use 3 screws (part number 196580) to mount the hard drive bracket to the chassis wall.

- Diagram B. If your hole pattern fits this diagram, use 3 screws (part number 196580) to mount the hard drive bracket to the chassis wall (same as diagram A), and use 2 screws (part number 187526) to mount the drive to the chassis wall.
Diagram C. If your hole pattern fits this diagram, use 3 screws (part number 196580) to mount the hard drive bracket to the chassis wall (same as diagram A), and use 3 screws (part number 187526) to mount the drive to the chassis wall.

9 Mount the hard drive bracket assembly to the inside of the chassis using 3 screws (part number 196580) as shown in the diagram below.
Replace the Hard Drive on an Explorer 8000 or 8010 that Requires a Retrofit Bracket

10 Install a new tamper/void label (part number 4007141) from the bracket to the hard disk drive as shown below.

11 Reconnect the hard disk drive IDE cable and power cable and install the top cover of the unit.

12 Functionally test the set-top to ensure it is operational.
Replace the Hard Drive on an Explorer 8000 or 8010 that Does Not Require a Retrofit Bracket

To replace the hard drive on an Explorer 8000 or 8010 that does not require a retrofit bracket, complete the following steps.

**CAUTIONS:**

- Torque all fasteners to 8 to 10 in-lb using a manual torque driver. Do not use power drivers. When installing screws, back them up ¼ turn, so that they find the start of the first thread. This step will help avoid stripping the screw or sheet metal.

- Prevent electrostatic damage to electronic equipment. Take ESD precautions, including the use of an ESD wrist strap. Refer to IPC-7711/7721 standards for additional information.

**WARNING:**

Do not connect AC power cord or apply AC power to unit unless cover is in place and all screws are properly tightened.

1. Remove the top cover from the unit.

2. Carefully disconnect the integrated drive electronics (IDE) cable from the hard drive. Be sure to pull on the connector and not on the cable to remove.
Replace the Hard Drive on an Explorer 8000 or 8010 that Does Not Require a Retrofit Bracket

3 Carefully disconnect the power cable from the hard drive. Be sure to pull on the connector and not on the cable to remove.

4 Remove the hard drive mounting bracket from the chassis by removing the three screws shown in the diagram, and then remove the bracket from the hard drive itself. Be sure to place the bracket in a safe location because you will use it to install the new hard drive.

5 Obtain the approved new hard drive and install one silicone pad (part number 4006699) from the sheet and adhere the sticky side to the outer edge of the hard drive, as shown in the diagram below. Remove protective plastic from outer side of the silicone pad. For a list of approved hard drives, see *Tools and Materials Requirements* (on page 3) for details.
6 Mount the new hard drive with silicone pad to the mounting bracket (part number 4007077) as shown in the diagram below.

7 Place the hard drive bracket assembly inside the chassis as shown in the diagram below.

**Tip:** Be sure to first mount the drive bracket to the chassis wall before mounting the bracket to the inside of the chassis. This step avoids air pockets from forming on the inside of the silicone pad.
Replace the Hard Drive on an Explorer 8000 or 8010 that Does Not Require a Retrofit Bracket

8 Depending on your chassis hole pattern, the way you secure the hard drive bracket to the chassis wall differs as shown in the diagrams (A, B, C) below. Review the following diagrams to determine your method.

- **Diagram A.** If your hole pattern fits this diagram, use 3 screws (part number 196580) to mount the drive bracket to the chassis wall.

- **Diagram B.** If your hole pattern fits this diagram, use 3 screws (part number 196580) to mount the drive bracket to the chassis wall (same as diagram A), and use 2 screws (part number 187526) to mount the drive to the chassis wall.
Replace the Hard Drive on an Explorer 8000 or 8010 that Does Not Require a Retrofit Bracket

Diagram C. If your hole pattern fits this diagram, use 3 screws (part number 196580) to mount the drive bracket to the chassis wall (same as diagram A), and use 3 screws (part number 187526) to mount the drive to the chassis wall.

9 Mount the bracket assembly to the inside of the chassis using 3 screws (part number 196580) as shown in the diagram below.
Replace the Hard Drive on an Explorer 8000 or 8010 that Does Not Require a Retrofit Bracket

10 Install a new tamper/void label (part number 4007141) from the bracket to the hard disk drive as shown below.

11 Reconnect the hard disk drive IDE cable and power cable and install the top cover of the unit.

12 Functionally test the set-top to ensure it is operational.
Replace the Hard Drive on an Explorer 8300

To replace the hard drive on an Explorer 8300, complete the following steps.

**CAUTIONS:**

- Torque all fasteners to 8 to 10 in-lb using a manual torque driver. Do not use power drivers. When installing screws, back them up ¼ turn, so that they find the start of the first thread. This step will help avoid stripping the screw or sheet metal.

- Prevent electrostatic damage to electronic equipment. Take ESD precautions, including the use of an ESD wrist strap. Refer to IPC-7711/7721 standards for additional information.

**WARNING:**

Do not connect AC power cord or apply AC power to unit unless cover is in place and all screws are properly tightened.

1. Remove the top cover from the unit.
2. Carefully disconnect the integrated drive electronics (IDE) cable from the hard drive. Be sure to pull on the connector and not on the cable to remove.
Replace the Hard Drive on an Explorer 8300

3 Carefully disconnect the power cable from the hard drive. Be sure to pull on the connector and not on the cable to remove.

4 Remove the three screws (part number 187526) that secure the hard drive to the heat sink.
5 Remove the screws at the front and rear of the bracket as shown in the following diagram.

6 Remove the remaining four screws as shown in the following diagram to remove the hard drive from the bracket.
Replace the Hard Drive on an Explorer 8300

7  Remove the original tamper-void label as shown in this illustration.

8  Obtain the approved new hard drive and install one silicone pad (part number 4006699) from the sheet and adhere the sticky side to the outer edge of the hard drive, as shown in the diagram below. Remove protective plastic from outer side of the silicone pad. For a list of approved hard drives, see Tools and Materials Requirements (on page 3) for details.

9  Mount the new hard drive to the bracket using the 4 screws (part number 1004182) as shown in the following diagram.
10 Install a new tamper/void label (part number 4007141) from the bracket to the hard drive.

11 Place the hard drive bracket assembly inside the chassis as shown in the following illustration. Be sure the bracket tabs extend through the heat sink on the side of the chassis.
Replace the Hard Drive on an Explorer 8300

12 Secure the hard disk drive to the chassis as shown in the following illustrations.
   a Securely install three screws (part number 187526) to secure the hard drive to
      the heat sink.

   b Securely install screws (part number 196580) at the front and rear of the
      bracket as shown in the following illustrations.

13 Reconnect the IDE cable and power cable and install the top cover of the unit.
14 Functionally test the set-top to ensure it is operational.
For Information

If You Have Questions

If you have technical questions, call Cisco Services for assistance. Follow the menu options to speak with a service engineer.