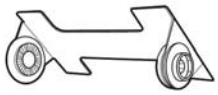
DC3 Video Event Recorder
Standard Installation Instructions

Installation of the event recorder is not complicated, but care must be taken to ensure successful operation. Follow these instructions carefully to ensure proper orientation and operation.

1. Check the contents of the installation kit

A) DC3 Video Event Recorder - pre-assembled with:

B) Mounting Bracket



C) Torx Screws (2)

CAT Kit - Part # 2015-00035-KIT rev.A

A) Cable Access Terminal (CAT)

B) RJ45 Interconnect Cable

RJ45 (large) connectors 14 ft.

C) Power I/O Cable

30 in.

D) Wire Splice Clips (5)

Additional Items (included)

A) TR-27 Torx Wrench

B) Alcohol Prep Pad

(clean glass thoroughly)

C) This Booklet

Other items you may need:

- Felt tip marker
- Voltmeter
- Pliers
- Wire cutter/crimper
- Flat blade screwdriver or panel removal tool

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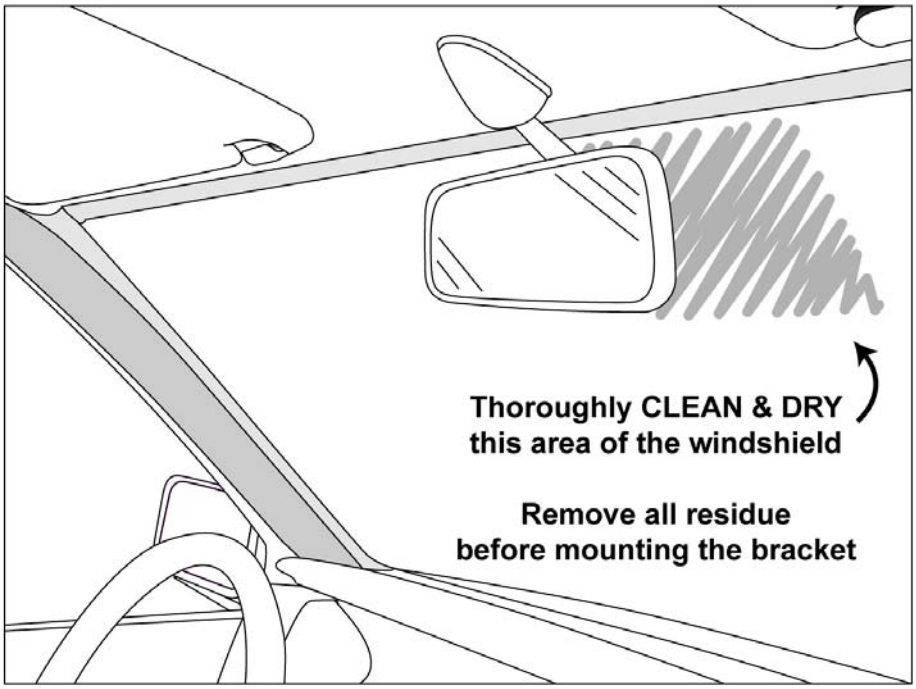
2. Thoroughly clean and dry the glass

CAUTION: This step is critical to prevent the bracket from falling off at a later date.

Step 1 **Select a mounting location on the windshield behind the rear view mirror on the passenger side of the vehicle.**

Step 2 **Using the alcohol prep pad provided, thoroughly clean the mounting area.**

Step 3 **Using a clean, dry cloth, thoroughly dry the mounting area.**



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3. Carefully select the mounting location

The event recorder needs to be mounted in a location that provides an unobstructed view of the interior and exterior (front) of the vehicle.

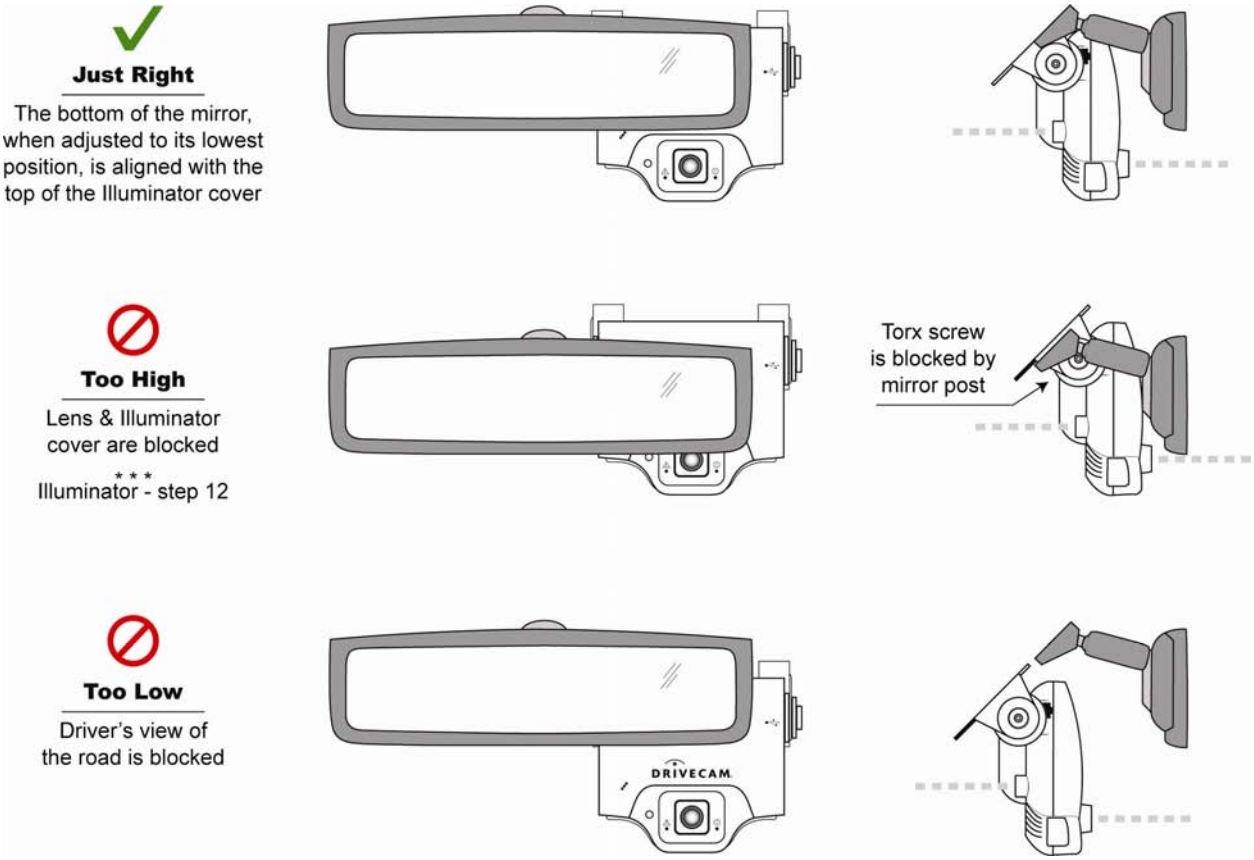
CAUTION: Do not peel the backing from the adhesive strip until instructed to do so.

Step 1 **Loosen the Torx screws so the event recorder can rotate in the bracket.**

Step 2 **Pull the mirror down to its lowest position.**

Most rear view mirrors can be adjusted up or down. Before selecting the mounting location, adjust the mirror all the way down so that it can never cover the lens after mounting.

Step 3 **Position the assembly behind the mirror, about one inch to the right of the post to allow easy access to the Torx screw and power connection.**



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4. Mark the selected mounting location on the glass

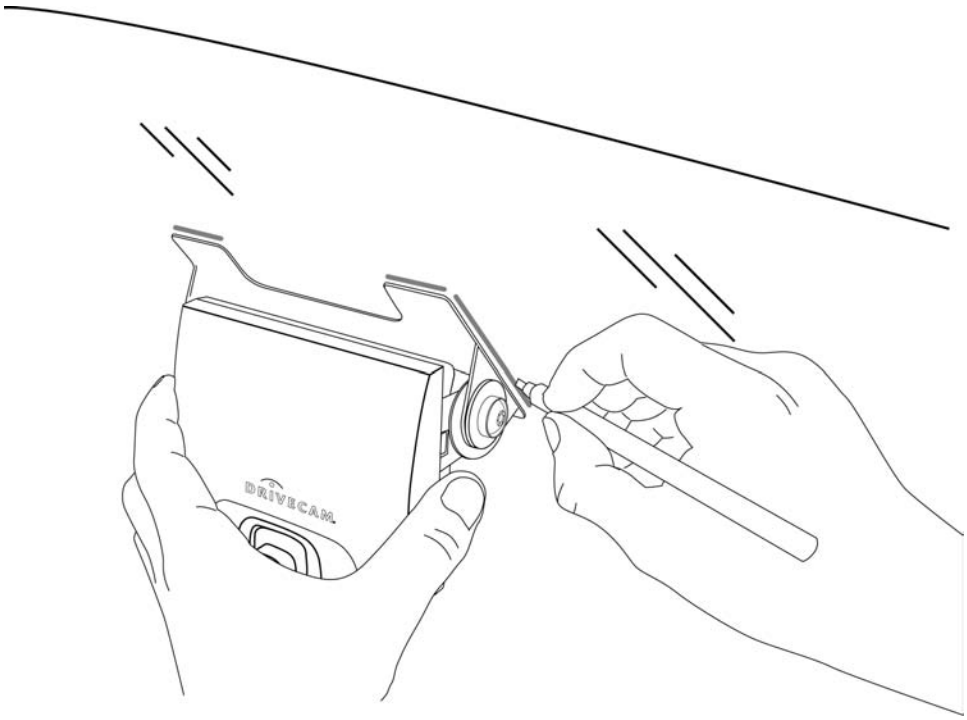
Step 1 **When you have selected the best mounting location, hold the assembly in place and trace the outline of the bracket on the windshield with a felt tip marker.**

Step 2 **Make sure the traced guide marks are level before proceeding.**

Step 3 **Remove the event recorder from the mounting bracket.**

Step 4 **Check the fit of the bracket against the windshield.**

If the windshield is curved, gently bend the bracket so that it will lie flush against the glass.



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5. Attach the mounting bracket to the windshield

CAUTION: The adhesive is very sticky.
Once applied to the windshield, it will not easily come off.

Step 1 **Make sure the glass is clean and dry and the air temperature is at least 50°F (10°C).**

Step 2 **Remove the backing from the adhesive side of the bracket.**

Step 3 **Start by placing only the top edge of the bracket against the windshield, aligned with the guide marks, and make sure it is level.**

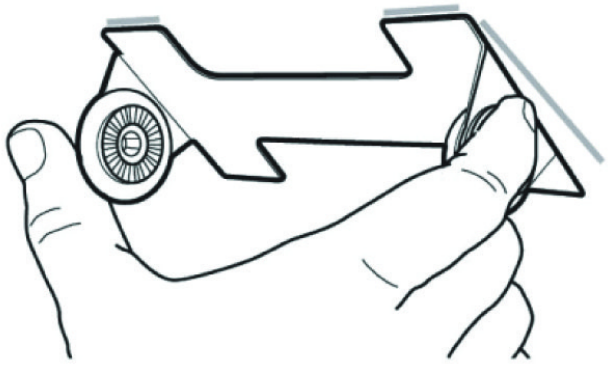
Step 4 **Press the bracket firmly against the windshield starting at the top and pressing the sides downward.**

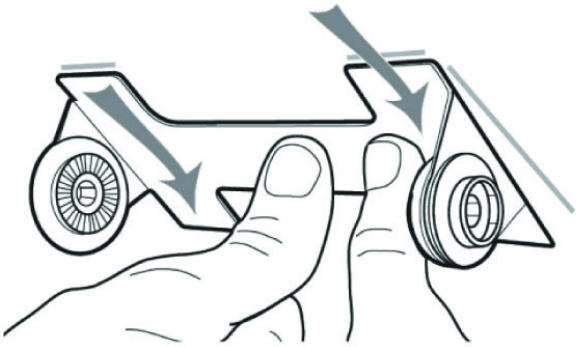
Do not apply excessive pressure as it may cause the windshield to break.

Step 5 **Make sure there are no large air bubbles under the bracket.**

You may need to (carefully) apply additional pressure to the bracket and remove any large air bubbles. Use a small pin to create an escape path for the air if the problem is persistent.

A) Align the top edge with the guide marks





B) Then press the sides firmly downward

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6. Route the RJ45 Interconnect Cable

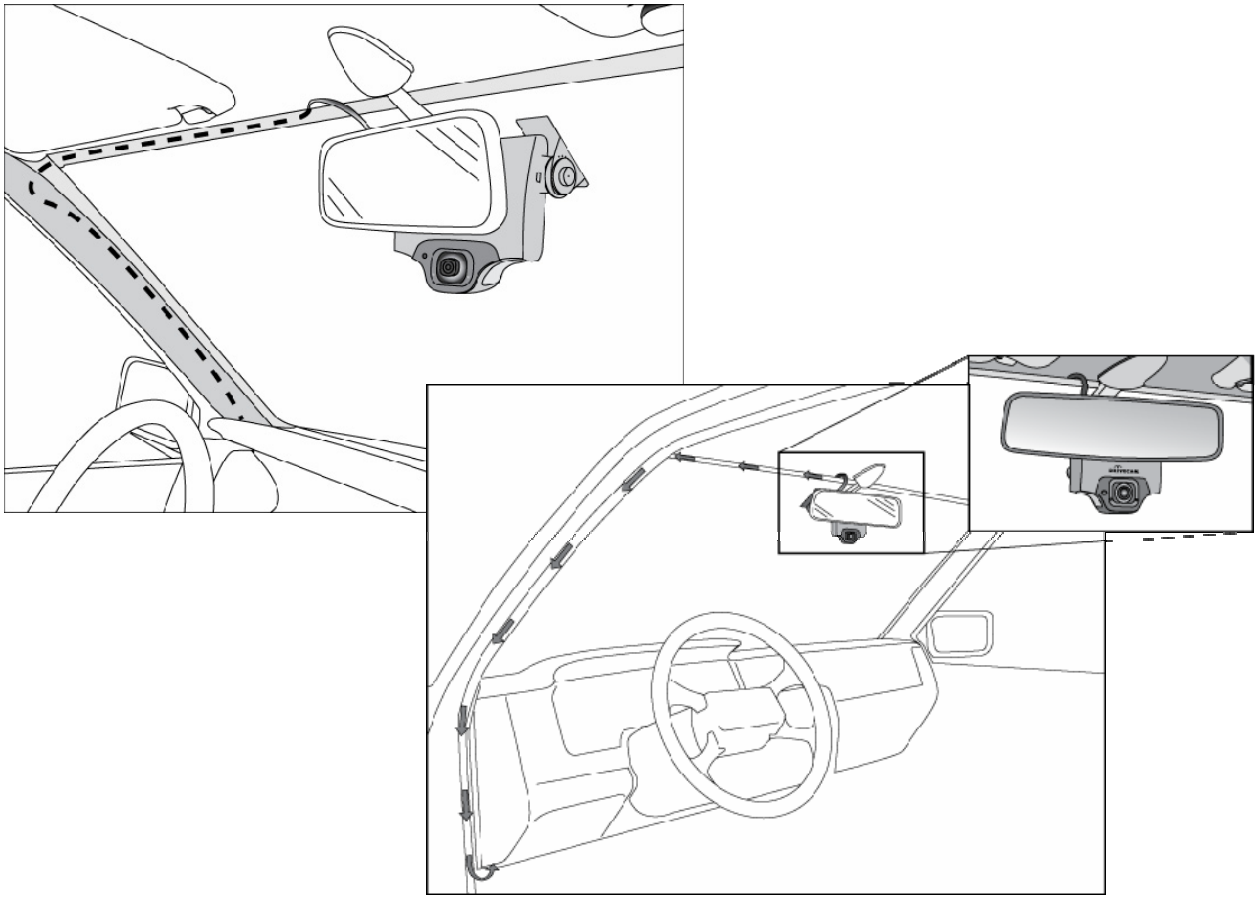
CAUTION: When installing the interconnect cable in a vehicle with side or curtain airbags, be certain that neither the cable, nor your installation activities, interferes with any airbag related mechanisms or otherwise affects airbag deployment.

Step 1 **Starting just above the rear view mirror, route the cable under the window trim or headliner across to the door pillar.**

Step 2 **Route the cable down the door pillar underneath the vertical door / window trim.**

Step 3 **Route the cable out from underneath the trim and under the dashboard.**

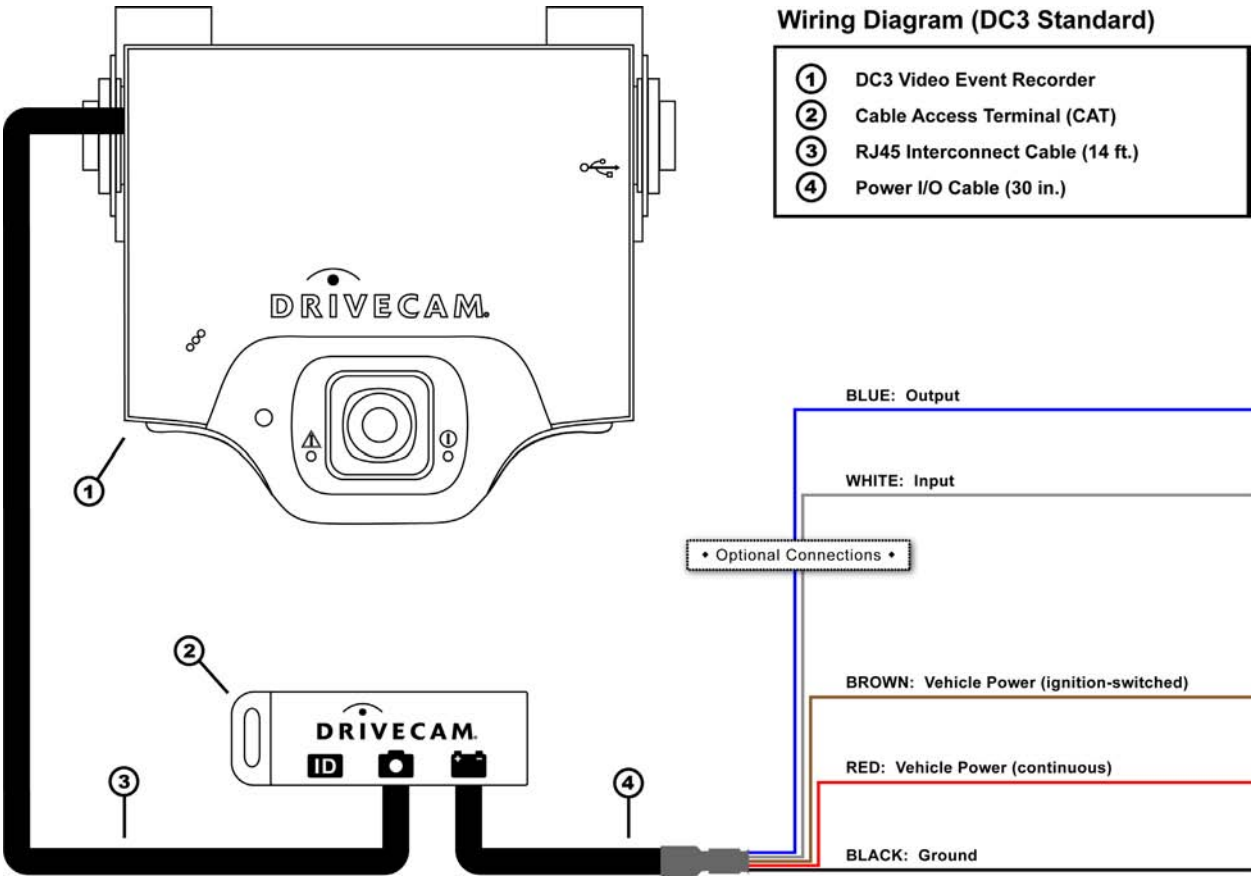
You may need to remove the trim to route the cable. When reinstalling, be careful not to damage the trim clips or the cable. Keep the cable clear from sharp edges and moving parts.



7. Wiring Diagram (DC3 Standard Installation)

The **RJ45 Interconnect Cable** is 14 feet long with connectors (similar to telephone connectors) at each end. One end of the cable plugs into the event recorder. It is then routed to a secure location under the dashboard and plugged into the middle port of the Cable Access Terminal (CAT).

The **Power I/O Cable** is 2½ feet long. One end of the cable plugs into the right port of the CAT. At the other end of the cable are five wires which connect to ground, vehicle power (continuous), and vehicle power (ignition-switched) – this cable's blue and white wires are optional connections.



Required Connections (red, brown, & black wires)

The red, brown, and black wires are required connections for the event recorder to function. These wires provide primary power, ignition sense, and ground, respectively. See page 8.

Optional Connections (white & blue wires)

The blue and white wires are optional connections, used only for the event recorder's secondary functions. These wires are used for input and output connections, respectively. See page 9.

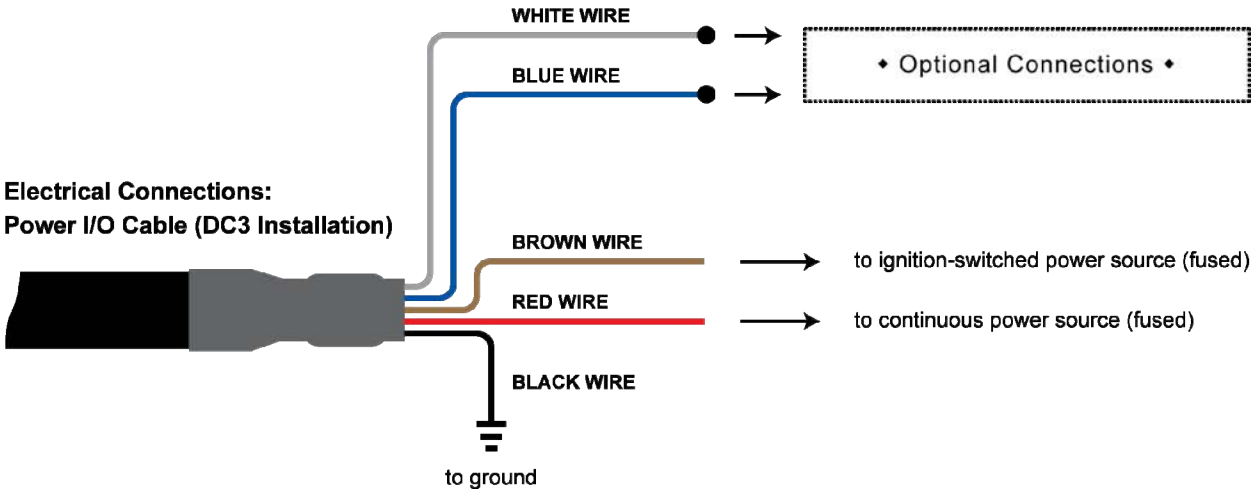
8. Electrical connections (red, brown, & black wires)

These are the 3 required connections for the event recorder to function. The red wire provides primary power and must be connected to a continuous power source. The brown wire is an ignition sense. It is used by the event recorder to perform functions such as activating the IR Illuminator (see page 13) when the vehicle ignition is switched on. The black wire is ground.

The **RED WIRE** must be connected to a 12V or 24V fused power source that is **ALWAYS ON**.

The **BROWN WIRE** must be connected to a 12V or 24V fused power source that is **IGNITION–SWITCHED**.

The **BLACK WIRE** must be connected to negative or to a clean **GROUND**.



CAUTION: Check the vehicle manufacturer's recommendations and guidelines for proper installation and wiring of aftermarket devices.

Extending Wires: The power and ignition sense connections provide current limiting protection through the Cable Access Terminal (CAT). However, any wire with power before reaching the CAT is not protected. If wires need to be extended for any reason, extend the ground wire first. If you must extend the red or brown wires, keep them as short as possible. If the extended length exceeds 16 inches, place an inline fuse (1-3 Amp) between the extended wire and the power connection. The gauge of wire used for any extension must be the same gauge (18 gauge) as the DriveCam power cable wires or larger. If the extended wire length must exceed 20 feet, contact DriveCam for the recommended wire gauge.

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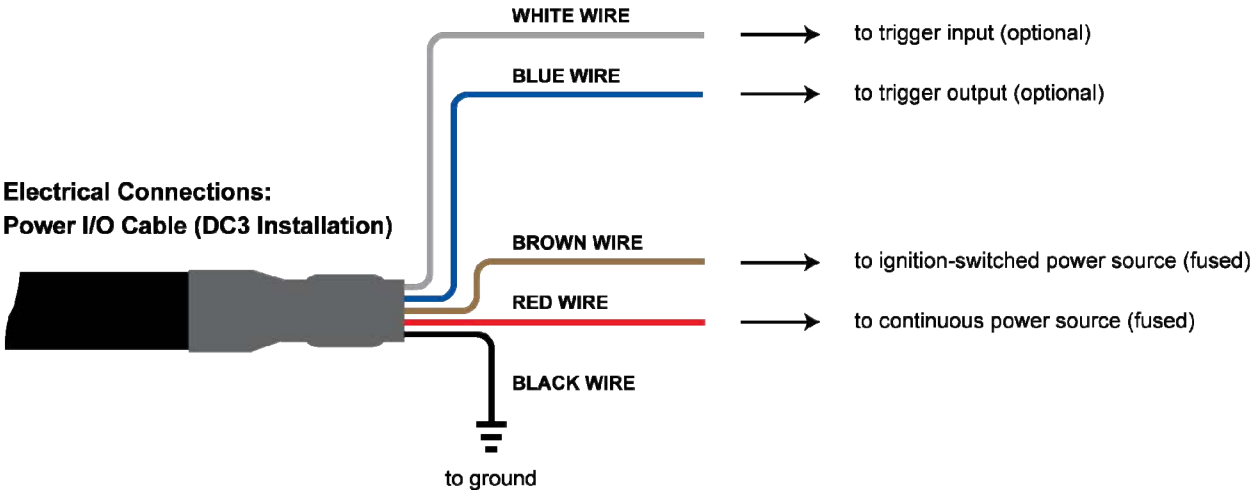
9. Electrical connections (white & blue wires) * optional *

These 2 optional connections allow you to configure the event recorder to operate with a variety of other devices in the vehicle. For example, an external button can be connected to the white input wire, triggering the event recorder when the button is pressed. The blue output wire can be connected to an external device, activating the device each time the event recorder is triggered. For example, a secondary event recorder located elsewhere in the vehicle.

The **WHITE WIRE** connects to an external **INPUT** so the event recorder may be activated by another device

The **BLUE WIRE** connects to an external **OUTPUT** so the event recorder may activate another device



CAUTION: Check the vehicle manufacturer's recommendations and guidelines for proper installation and wiring of aftermarket devices.

Simple input signals (e.g. external button, car alarm, etc.) can be easily made using basic wiring procedures. These will not be covered in this document. Other input signals (e.g. vehicle doors) and output signals (e.g. GPS) may require the optional UM05 module. Refer to page 13 or contact your DriveCam Sales Representative for more information.

If you will not be using the optional connections, cap or tape the end of each wire separately, making sure they do not come in contact with any other wires or ground. Wrap the wires securely to the cable.

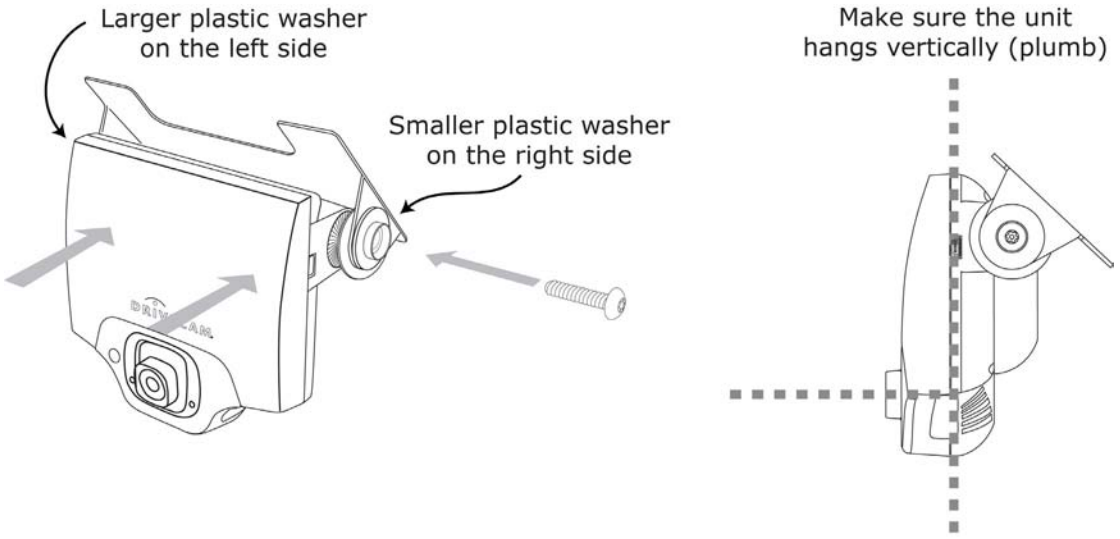
10. Mount the event recorder in the bracket

Step 1 **Plug the RJ45 Interconnect Cable into the event recorder.**

Step 2 **Place the event recorder in the bracket.**

Step 3 **Adjust the event recorder so that it hangs vertically (plumb).**

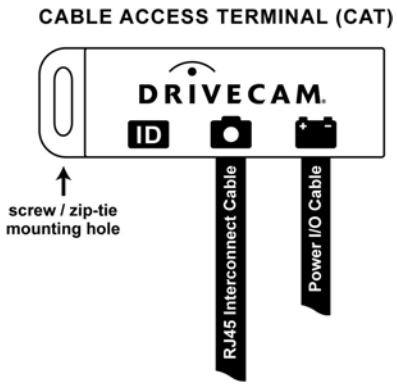
Step 4 **Secure the event recorder in the bracket using the 2 Torx screws and Torx wrench.**



The **Large Plastic Washer** on the left side of the bracket is designed to partially cover the RJ45 Interconnect cable so that it cannot be unplugged by the driver. The plastic washers can be easily removed from the metal bracket after removing the screws. Make sure the larger of the two washers is on the left (power connection) side of the bracket.

Step 5 **Plug the RJ45 Interconnect Cable and the Power I/O Cable into the Cable Access Terminal (CAT).**

After you have tested the connections in Steps 11 & 12, secure the CAT in a safe location using a screw or zip-tie through its mounting hole.



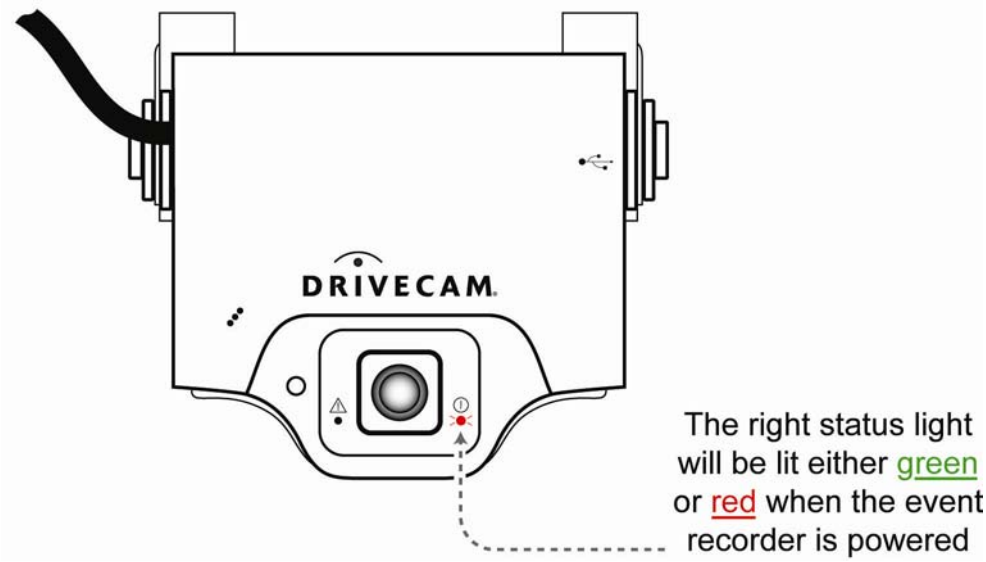
11. Test the red connection (continuous power)

Once power and ground connections are made, the LED status light to the right of the interior-facing lens should be on (either a green or red light) when the vehicle's engine is off and the key is removed from the ignition.

Step 1 **If the right LED is on, the event recorder is connected properly.**

Step 2 **If the right LED is not on, recheck the wiring connections and/or fuses.**

*** * * The right LED should remain on when the key is in any position * * ***



The **LED on the left of the lens** will light (solid green) for about 30 seconds after power is first applied. If the left LED does not turn off or if it begins flashing (either red or green), please call DriveCam Technical Support for instructions.

NOTE: See pages 14 & 15 for detailed descriptions of the LED behavior (light patterns).

12. Test the brown connection (switched power)

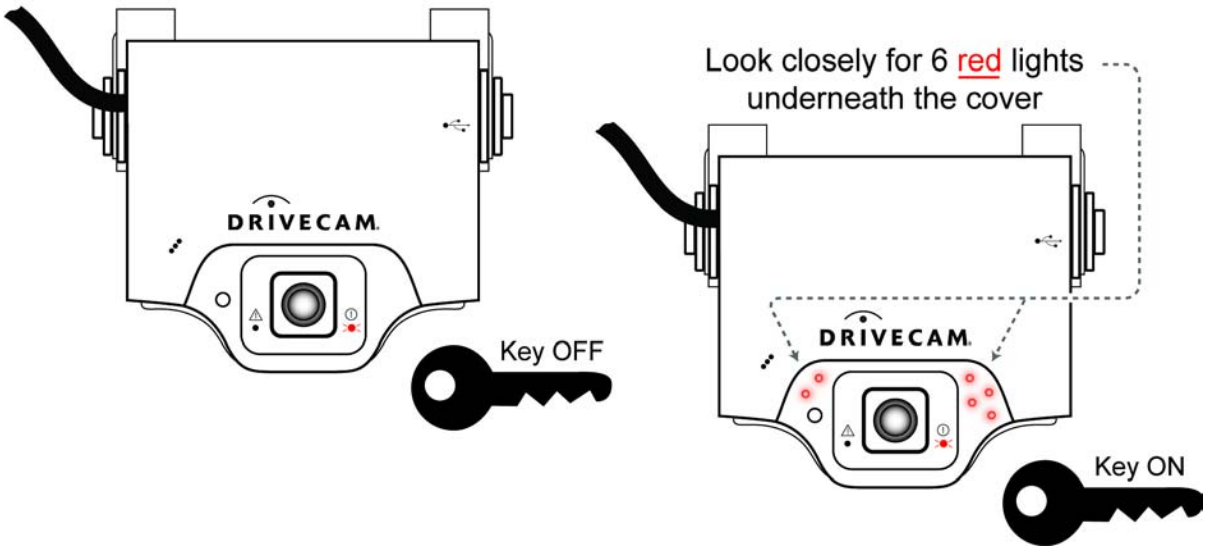
Underneath the translucent cover surrounding the interior-facing lens are six small, infrared lights. These lights can only be seen when they are lit, and they are only lit when power is being provided through the brown wire (i.e. when the key is in the ignition (A) position).

NOTE: This is the event recorder's IR Illuminator feature (see page 13 for information).

Step 1 **Turn the key to the Ignition / Switched-On position.**

Step 2 **Look closely for the six red LEDs underneath the translucent cover.**

Step 3 **Turn the key to the OFF position. The six red LEDs should go out.**



*** * * The six red lights must go out when the key is in the OFF position * * ***

*** * * The single (red or green) LED to the right of the lens will always remain lit * * ***

If the test worked as described, the brown wire has been connected properly. Bundle the CAT and wiring and secure it in a safe place under the dashboard. **Installation is complete.**

If the test did not work as described, repeat the test in a darker area. The lights are difficult to see in bright light. If still not lit, check with the key in a different position and then recheck the wiring.

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Frequently Asked Questions

How does the event recorder work?

The DriveCam Event Recorder is mounted on the windshield behind the rearview mirror and captures sights and sounds inside and outside the vehicle. The forward facing lens (outside view) captures the viewing area in the front of the vehicle. The inside lens captures what is happening inside the vehicle plus whatever is visible through the side and rear windows. All audio that can be heard within the vehicle is also recorded. The device is constantly recording in a digital loop. When triggered, it immediately saves the 10 seconds before the trigger and continues to record and save the 10 seconds following the trigger. Event recordings are triggered by unusual motion, such as hard braking, swerving, or collision. They can also be triggered manually by pressing the button on the event recorder.

Why are there two different power connections?

There are two different mechanisms at work in the event recorder, each is described in detail below. The first is the event recorder itself, capturing audio and video when triggered. This should always be on to capture events even when the vehicle is parked and switched off. The second is the event recorder's IR Illuminator feature, which lights the interior of the vehicle with infrared light to enhance recordings in low light situations. This draws additional power and should not be connected (brown wire) to a continuous power source.

The red wire connects to a power source that is always on, even when the key is off. The brown wire connects to a power source that is only on when the key is in the ignition position (and when the vehicle is running), but not when the key is off.

Why must the event recorder be connected to a continuous power source?

The event recorder is designed to remain on 24 hours a day, 7 days a week. This allows the device to record events even when the vehicle is parked (hit and run accidents, vandalism, theft, etc.) and when the vehicle loses ignition-switched power for any reason. Unlike the event recorder's built-in IR Illuminator (which must be connected to an ignition-switched power source), the event recorder itself draws minimal power from the vehicle and is less likely to drain the battery.

What is the event recorder's IR Illuminator feature?

The Infrared (IR) Illuminator lights the interior of the vehicle with infrared light (invisible to the eye). This enables the event recorder to record clearly lit images in low light situations. The Illuminator draws additional power from the vehicle, which is why it is only switched on when the key is turned to the ignition position and when the vehicle is running. The brown wire on the power cable provides this switch, sensing when to turn the Illuminator on and off. Infrared light from the Illuminator shines out through the thin translucent cover surrounding the interior-facing lens. By looking closely through this translucent cover, you can see the six red lights (dimly lit LEDs) underneath that indicate when the Illuminator is switched on.

Where can I find more information about connections made to the input (white) and output (blue) wires?

Due to the wide variety of ways that the input and output connections may be used, it is impossible to cover all potential applications in one document. Some users with the Power I/O Cable wiring configuration use the input to connect a simple external switch. Or, they simply tie off the two wires. DriveCam's Universal Module (UM05) is specifically designed with a more powerful array of input and output features. However, there are many applications that can be used with this Power I/O Cable wiring configuration. We recommend that you call your DriveCam Sales Representative or DriveCam Technical Support. They can provide you with detailed information and recommendations to suit your particular needs.

How do I remove or reinstall the mounting bracket?

The mounting bracket is not easy to remove once it has been stuck to the window so that tampering is minimized. Do not try to pull or pry the bracket off – it will destroy the bracket and may break the window. Use a thin putty knife and lubricant to cut through the adhesive. First, remove the event recorder from the bracket. Then apply a small amount of lubricant to the putty knife and slide the blade between the bracket and the window. Gently rock the blade back and forth while pushing forward until the bracket is completely removed. You will then need a new mounting bracket from DriveCam.

Who do I contact for more information or technical assistance?

We are here to help. DriveCam Technical Support is available 24 hours / 7 days at (866) 910-0403. For international assistance please call (858) 380-3007.

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DC3 Video Event Recorder LED Behavior

for Wi-Fi & Cellular DC3 models

	Warning (Left LED)	Status (Right LED)	Description
Normal Operation	Solid green	Off	**The event recorder is powering up (booting).** The warning light should go off within 30 seconds. If not, cycle power.
	Any state	Solid green	**No event files are stored in memory.** The event recorder is ready to record an event.
	Any state	Solid red	**Event files are stored in memory and ready to download.** The event recorder is ready to record an event.
	Any state (off is typical)	Alternating green & red	**An event was triggered and is being recorded.**
	Any state (off is typical)	Blinking red	**Data transfer is in progress.** Event files are being downloaded. The rate of flashing indicates the speed of the connection.
	Alternating green & red	Alternating green & red	**Firmware upgrade is in progress.** The event recorder is operating normally but is not available to record an event.
Warnings & Errors	Off	Off	**Power to the event recorder is off or less than 9V.** Supply power to the event recorder. Check vehicle battery and wiring to restore voltage.
	Blinking green then off	Any state	**Unsuccessful wireless connection.** 2 blinks = No WAP found or failed to connect with WAP (WiFi) Failed to make cell-modem data connection (Cellular) 3 blinks = Connected to WAP but no DHCP address (WiFi only) 4 blinks = Received DHCP but no TCP connection with HindSight (WiFi) Data connection but no TCP connection with HindSight (Cellular) 5 blinks = HindSight protocol error (WiFi & Cellular)
	Both LEDs blinking red together	Both LEDs blinking red together	**Boot error (fast blink) or event recorder is in limited mode (slow blink).** Contact DriveCam Technical Support.
	Blinking red continuously	Off	**Memory failure.** Contact DriveCam Technical Support.
	Blinking red then off repeatedly	Off	**Nonvolatile memory failure.** Contact DriveCam Technical Support.
	Solid red	Any state	**Backup battery failure.** Contact DriveCam Technical Support.
	Both LEDs blinking red alternating	Both LEDs blinking red alternating	**Internal error.** Contact DriveCam Technical Support.

DriveCam Technical Support is available 24 hours / 7 days at (866) 910-0403.

DRC 971-A ◆ May 2007 ◆ Commercial Wi-Fi & Cellular

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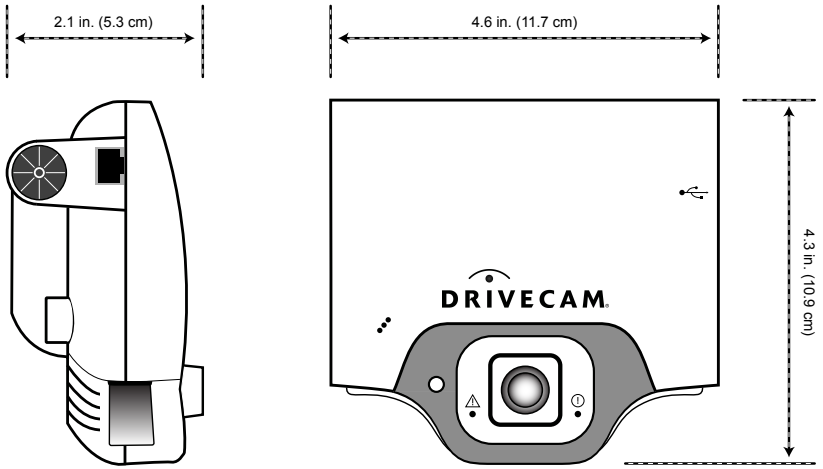
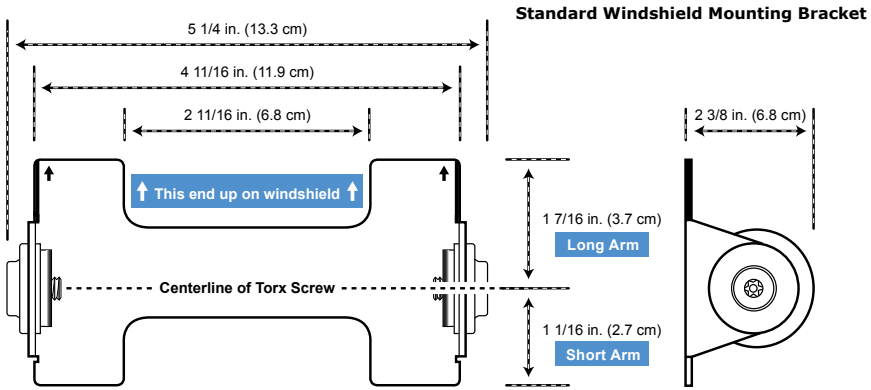
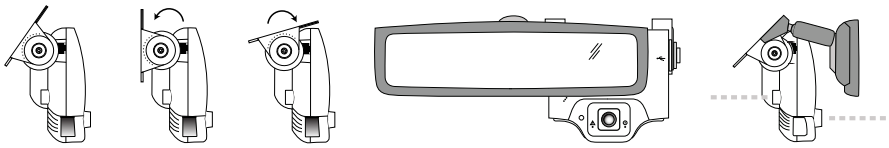
DC3 Video Event Recorder Specifications







General

Memory available for event and data storage:	96MB
Horizontal field of view:	92° (internal) / 75° (external)
Articulating interior lens:	+/- 13.5° (horizontal or vertical)
Accelerometers:	3 axis (forward, lateral & vertical)
Manual trigger:	Yes

Power

Standard input voltage:	12V or 24V (9V min. to 30V max.)
Power input connector to event recorder:	RJ45 (short body)

Connectivity

Wireless (two models available):	Cellular (CDMA) or Wi-Fi (802.11b)
USB (both models):	USB 2.0 (USB Mini A or Mini B plug)

Advanced Functionality (may require additional peripherals)

Speed, heading and location through GPS:	Yes
Speed and vehicle idling through OBD:	Yes
Driver identification support through RFID card:	Yes
Safety Enhancement Module (SEM) support:	Yes (integrated)
Infrared illuminator for low light conditions:	Yes
Input/output connectors for additional functionality:	Yes

Environmental

Dimensions (excludes mounting bracket):	4.6 x 4.3 x 2.1 in. (W/H/D) 11.7 x 10.9 x 5.3 cm (W/H/D)
Operating temperature:	-40 to 185 °F (-40 to 85 °C)
Weight:	8.3 oz. (236 g)

Event Characteristics

Typical 20 second event file size:	
Average:	2MB
Minimum:	0.5 - 1MB
Maximum:	3 - 4MB
Standard resolution:	640 x 368 (235,520 pixels)
Ability to capture multiple triggers:	Yes (up to 60 seconds record time)
Advanced triggering algorithms:	Yes (reduces false positives)

Download Times (operating environment will affect performance)

Download a 20 second event via USB:	5 seconds
Download a 20 second event via Wi-Fi:	10 seconds
Download a 20 second event via Cellular:	2 minutes

Physical Security

Security screws used to seal unit:	Full coverage
Block to prevent power disconnection:	Yes
Memory format:	Disk on chip (non-removable)
Mounting bracket:	Non-removable

DriveCam Technical Support is available 24 hours / 7 days at (866) 910-0403.

DRC 974-A ◆ August 2007