



Drift HD170 Instruction Manual

Dear Customer,

Thank you for purchasing the Drift HD170.

Here at Drift Innovation, we share your passion for extreme sporting activities, and we love the added layer of excitement brought to them by recording and sharing the experience with our action camera.

We designed the Drift HD170 with the most asked-for features in the action camera community, such as the built-in 1.5" LCD screen and the wireless RF remote control, to ensure you get the perfect shot every time. We also designed the Drift HD170 to be as user-friendly as possible, so you could use it right away without reading an instruction manual.

We hope you will read the manual however, as the Drift HD170 is a cutting edge piece of equipment, with many killer options and features. We've also included some tips and general advice that you may find useful.

In order to make the manual as easy to use as the Drift HD170, we've used the following symbols to bring your attention to key points.

Note: Any text written in orange is important information about the finer points of the Drift HD170.

Tip This symbol marks advice to make your recording experience smoother and more enjoyable.

! This symbol means **WARNING**. You should pay special attention to this symbol, as it marks **very important information** regarding the safety of your camera and your video files.

Don't forget to register your Drift HD170 at <http://www.driftinnovation.com> to stay informed of new accessories, products, firmware releases, cool videos, hints, tips and offers.

CHECT IT, SHOOT IT, SHARE IT

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I. Quick Start

We have carefully designed the Drift HD170 package as an all-in-one solution, allowing you to shoot in any situation without having to purchase extra equipment. We want you to be able to start using your camera as soon as possible. This section contains the basic information you need right away. The Drift HD170 has many more features than are shown here – please refer to later sections for more information.

Getting ready to use the Camera

Insert the battery (page 11) and an SD memory card (page 15), and securely close the rear hatch.



Securely mount the camera. The LCD screen's live preview allows for accurate positioning to get the best possible shot. A full description of the various mounting options can be found on pages 9-10.

Note: The rechargeable battery will need to be charged before its first use. Please see page 12 for details on how to charge the battery.

Turning the Camera On

Press the SELECT button (●/▶) to turn the camera on. The LCD screen will turn on and the LED in the SELECT button will turn green. Once switched on, the HD170 logo will appear and the camera will enter the Live Preview mode.

Live Preview Mode

In Live Preview Mode, the screen will display a live image from the camera lens, and a number of icons indicating the recording options, remaining memory and battery life – an overview of these can be found on page 18.



Recording Video

1. To begin recording, press the SELECT button (●/▶) on the camera or the RECORD (●) button on the remote control. The unit will beep and the LED will turn red.
2. To stop recording, press the SELECT button (●/▶) again, or the STOP (■) button on the remote. There will be another beep and the LED will turn green.

Capturing Photos

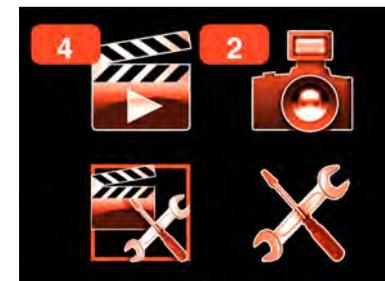
The default recording mode for the camera is Video mode. In order to take photos, the Photo mode must be selected. Changing the Record Mode is described on page 17.

1. Once the Record Mode has been changed to Photo, return to Live Preview mode by pressing the MENU button a few times.
2. Use the LCD screen to aim the camera at your subject.
3. Press the SELECT (●/▶) button on the camera or the RECORD (●) button on the remote control. The unit will beep once and the LED will briefly turn red.
4. Once the LED returns to green, the camera is ready to take another photo.

Note: You will need to change the record mode back to video to be able to record video again.

Reviewing Photos and Video

To change any of the camera settings or review / play back videos or photos recorded with the HD170, press the MENU button on the camera. This will bring up the Main Menu:

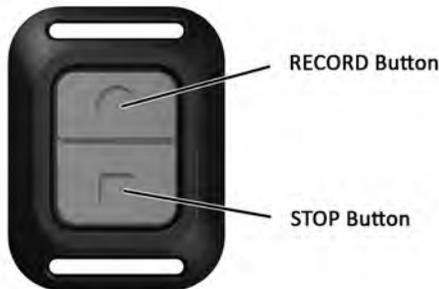
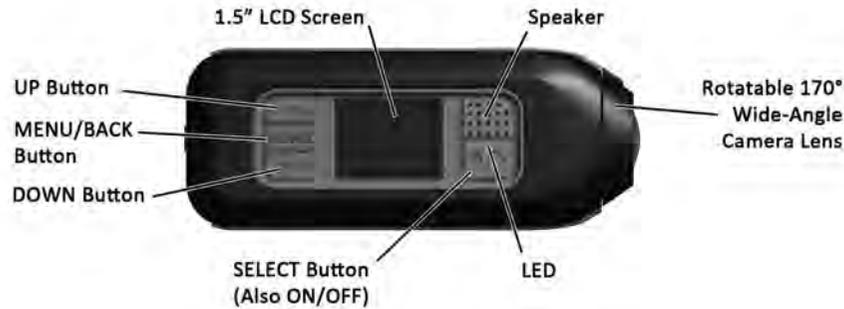


If the memory card contains any videos or photos taken with the HD170, these will be indicated by a number on the Video or Photo icons. Using the UP and DOWN buttons, highlight the Video icon or the Photo icon and press the SELECT button. You can now browse your files using the UP and DOWN buttons. Full details about the Video & Photo Menus can be found on pages 28-29.

Turning the Camera Off

To turn the camera off, press and hold the Select button (●/▶) for 3 seconds.

II. Camera Overview



III. Camera Precautions

a) General Precautions

Please take note of the following guidelines when using your Drift HD170.

- The camera is shock resistant, not shock proof.
- For your safety, do not press the buttons on the camera body during sports activities.
- Do not place the camera in areas prone to dust or damp for extended periods of time.
- Do not leave the camera in places exposed to extremely high temperatures, such as under direct sunlight, for extended periods of time. This may affect the camera housing and internal components.
- Clean the lens with a soft cloth to remove fingerprints or dust.
- The camera has a working temperature range of -10°C to 40°C.
- Turn the camera off before removing the batteries or memory card. The card and data may be damaged if the memory card is inserted or removed while the camera is switched on.
- Remove the batteries and memory card before storing the camera for long periods of time. Keep it in a well-ventilated place to prevent mould.

Attention:

- Rechargeable batteries are only to be charged under adult supervision.
- The battery terminals are not to be short-circuited.
- Do not open, puncture or otherwise damage the Lithium-Ion battery, or dispose of it in fire.

b) Waterproof Feature

The Drift HD170 action camera is waterproof up to 0.5m. The camera is fully splash-proof and weatherproof, but it is not designed to be used in a water environment. Please be aware of this when using the Drift HD170. Drift Innovation will not assume any responsibility for camera malfunction caused by liquid entering the camera as a result of misuse by the user.

- Liquid may get inside the camera if the hatch is not closed properly – always ensure the rear hatch is securely locked.
- If the camera gets wet, wipe the liquid off as soon as possible with a dry cloth.
- Other camera accessories may not be waterproof.
- The in-built microphone is covered with a rubber seal as shown on the opposite page – this is not to be removed or punctured in any way, or the camera will no longer be waterproof, and your warranty will be voided.

Disclaimer: Drift Innovation will not, under any circumstances, be responsible for injuries or property damage incurred during participation of any high-risk sport/activity not endorsed or recommended by Drift Innovation. Should the camera malfunction under these circumstances, it would not be covered by the warranty. The warranty will cover manufacturing defects.

IV. Mounting the Camera

The Drift HD170 can be mounted in a number of ways using the mounts provided.

Fixing the Camera onto the Universal Clip

1. Align the screw of the universal clip with the thread on the underside of the camera body.
2. Twist the screw thread in a clockwise direction.
3. As the universal clip tightens against the body of the camera, rotate the universal clip to provide the desired angle of attachment.
4. Tighten the screw on the universal clip until the clip fits firmly against the camera body.

Mounting the Camera using the Head Strap

1. Attach the goggle mount to the elastic head strap.
2. Adjust the diameter of the head strap by sliding the plastic buckles.
3. Slide the camera (with universal clip attached) into the goggle mount until the two arms on the clip, 'click' into place.

Mounting the Camera on a Goggle Strap

1. Attach the goggle mount to your goggle strap.
2. Slide the camera (with universal clip attached) into the goggle mount until the two arms on the clip 'click' into place.

Mounting the Camera on a Helmet

1. Attach one side of the velcro strips to the underside of the helmet mount.
2. Position the helmet mount against your helmet to find the optimum mounting position.
3. Ensure the surface you wish to attach the helmet mount to is clean, dry and free of oil and dust. Attach the remaining velcro strip onto the helmet.
4. Push the helmet mount onto the helmet until the velcro is firmly attached.
5. Slide the camera (with universal clip attached) into the helmet mount until the two arms on the clip 'click' into place.

Mounting the Camera on a Vented Cycle or Kayak Helmet

1. Position the helmet mount on the top or side of your helmet to find the optimum mounting position.
2. Thread the velcro strap through the slits in the helmet mount to attach it to the helmet.
3. Slide the camera (with universal clip attached) into the helmet mount until the two arms on the clip 'click' into place.

Mounting the Camera on a Handlebar

1. Unscrew the nut from the handlebar mount and remove the screw.
2. Fit the handlebar mount onto the handlebar, ensuring that the rubber pad is positioned around the handlebar, between the handlebar and mount.

3. Re-insert the screw and nut and tighten until the mount is securely fastened.
4. Slide the camera (with universal clip attached) into the handlebar mount until the two arms on the clip 'click' into place.

Mounting the Camera onto a Tripod, Camera- or Suction Mount

1. The camera has a standard tripod thread embedded into the camera body. This is the same thread as the one used to attach the universal clip.
2. Thread the camera onto a tripod, camera mount or suction mount (not included), or any other mount with a standard camera thread.



Tips on Mounting the Camera

- Great video footage generally features another person or object. In skiing or snowboarding this could be the skier in front, or your own skis. In motorsports, this can be the fairing of a bike or a car bonnet. If your object is moving too, like a wheel or bike pedals, so much the better. Experiment to find the most exciting shots.
- Your camera doesn't necessarily have to face forward. A classic POV video technique is the direct user shot. For example in mountain biking, try mounting the camera on the handlebars and pointing it back at the user - It makes for some great action footage.
- If your activity allows, mount the camera in different positions between shots. Then, when editing your video later you can cut between various angles to make something truly special. Some pros use more than one camera so they can shoot multiple angles at the same time.
- The lens of the Drift HD170 can be rotated to help you align your shots. Please refer to the lens rotation section on page 14 for further information.

Tip However you choose to mount your camera, ensure that the camera is fitted firmly to reduce the risk of losing it. Give it a tug before you set out, just to make sure.

V. Preparing the Camera for Use

a) Battery Installation

Installing the Camera Battery

1. Unlock the rear hatch by pushing up the clip.
2. Insert the battery with the label facing upwards and the arrow pointing into the slot. Once pushed in all the way, the battery will lock into place.
3. Close the rear hatch and lock it securely.
4. To remove the battery, push down the lever holding the battery in place. The battery is spring loaded, and will slide out.



Note: Remove the battery if the camera is not going to be used for an extended period of time.

Changing the Remote Control Battery

The remote control is supplied with a battery already installed, and is ready to use out of the box. If the remote stops working, this battery can be replaced.

1. Using a screwdriver, remove the four screws fixing the remote control battery cover.
2. Carefully remove the battery and replace it with a new one (model CR2032).
3. Replace the remote control battery cover and the four screws.

Note: Take care not to damage the waterproof seal when replacing the remote battery.

b) Powering On & Charging

Turning the Camera On

Press the SELECT button. The LCD screen will turn on and the LED will turn green. The LCD screen will show the HD170 logo, and the camera will enter Live Preview mode.

Note: The camera will switch on automatically when it is connected to an external power source. Full details can be found in the Auto Power On section on page 13.

Turning the Camera Off

To turn the camera off, press and hold the SELECT button for 3 seconds.

Note: The camera can be set to turn off automatically in order to conserve battery power (page 24).

Charging the Battery

The Drift HD170 comes with a rechargeable Lithium-Ion battery which can be charged with the included USB cable.

1. Open the rear hatch by pushing up the clip. Ensure the battery is in the camera.
2. Insert the smaller end of the USB cable into the USB mini slot inside the camera.
3. Attach the other end of the USB cable to a USB port in your computer, or to a USB power adapter (not included).
4. If charging via a computer, the LED will turn green and the screen will go black. If charging via a USB power adapter or a USB cigarette lighter adapter, the camera will switch on.
5. To charge the camera, press and hold the SELECT button for 3 seconds. The screen will turn off and the LED will turn blue, to indicate charging is in progress.
6. Once the camera is fully charged, the LED will go out. Remove the USB cable and close the rear hatch. The battery takes around 3 hours to fully charge.

Note: If the LED does not turn blue, the battery is not charging. Please follow the above instructions carefully to ensure that the LED turns blue and the battery does actually charge.

Note: When charging the camera with a USB cable via a Mac, you may get an error message about an incorrectly removed external device. This is not a problem and can be safely ignored.

Note: The battery needs to be charged before its first use.

! When the low battery warning appears, please recharge the battery. If the battery runs out while recording video, the data on the card may become corrupted.

Battery Life

Below are some average battery life figures for the two models of battery available for the Drift HD170. These figures are for continuous recording with all power-saving features switched off and the LCD switched on. Please note that they are an approximation and may vary.

Battery Capacity	Approximate Battery Life		
	25°C	0°C	-10°C
Standard 1110 mAh	2h 30m	2h 26 min	2h 20m
Expanded 1700 mAh	4 hrs	4 hrs	3h 55m

Note: Please see the Conserving Battery Life section on page 24 for details on how to make the battery last longer.

Auto Power On

The Drift HD170 can be powered by an external power supply such as a USB power adapter or a cigarette lighter adapter. When power is first supplied to the camera (e.g. when the power adapter is plugged into the wall, or when the engine ignition is switched on when using a cigarette lighter adapter), the camera will power on automatically and will be ready to start recording.

Note: Plugging an external power supply into the camera does not recharge the battery unless you put the camera into charging mode (page 12). The battery will not charge when the camera is switched on.

If the external power is cut off during recording (e.g. if the cigarette lighter adapter comes loose), the camera will immediately start drawing power from the rechargeable battery instead and continue recording, protecting your footage from file corruption.

Note: This feature will only work if the battery is charged. If using your camera with an external power supply, we recommend charging the battery beforehand to ensure your files are protected.

c) Camera Lens Rotation

A unique feature of the Drift HD170 is the rotating camera lens. In order to maximise your mounting options, the lens can rotate through a total of 300°, allowing for an upright image from even the most awkward mounting positions.

Rotating the Lens

Whilst holding the camera body in one hand, use your index finger and thumb of your other hand to grab the camera lens firmly. Twist the camera lens to the desired angle.



! The camera lens can not be rotated through 360° – it can only be rotated through a range of 300°. At either end of this range, there is a hard stop. Do not force the camera rotation past this point, as you risk damaging the components. If excess resistance is experienced, double-check that you have not reached the camera rotation stop.

! The camera is waterproof to 0.5m and this is not affected by the rotation of the camera lens. However, do not rotate the lens under water or while the camera is wet, as this may force liquid into the body of the camera and damage the components.

d) Using the SD Card

The Drift HD170 can take SD and SDHC cards of up to 32GB in size.

Inserting and Removing the SD Card

1. Turn the camera off.
2. Unlock the rear clip and open the battery hatch.
3. Insert the SD card into the SD card slot, ensuring that the card's terminals are facing up. Carefully push it all the way in until it clicks into place.
4. Close the rear hatch and lock it securely.
5. To remove the SD card, push the card until it clicks and then pull the card out.



Note: The Drift HD170 cannot record any video or photo files without a memory card.

! Ensure that the camera is turned off when inserting and removing an SD card. The card and the data may be damaged if inserted or removed while the camera is turned on.

Formatting the SD Card

It is possible to delete all the data on a memory card by formatting it. When using a new memory card for the first time, formatting it is recommended.

1. Press the MENU button to open the Main Menu.
2. Highlight the Setup icon and press the SELECT button.
3. Highlight the Format option on the third page of the Setup Menu and press the SELECT button.
4. Confirm that you want to format the card by highlighting the tick icon and pressing SELECT button. The formatting process will take several seconds. Please be patient during this process.

! Once the card is formatted, this cannot be undone. Ensure any files you wish to keep have been copied onto your computer, as all data on the SD card will be lost once formatted.

Note: Formatting the SD card does not delete your custom settings such as screen brightness etc.

Recording Time

Memory Type	Approximate Recording Time		
	1080p HD	720p HD	WVGA (SD)
4Gb	45 mins	1 hour	1 hr
8Gb	1.5 hrs	2h 15m	2h 15m
16Gb	3 hrs	4.5 hrs	4.5 hrs
32Gb	6 hrs	9 hrs	9 hrs

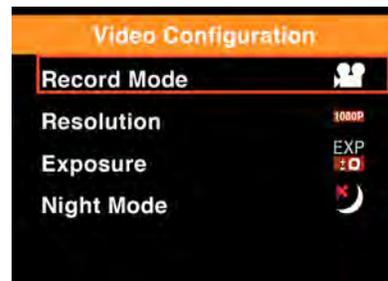
Note: The recording times in the table above are an approximation. Actual recording times will vary depending on the recording conditions and the type of card.

VI. Using the Camera

a) Changing the Record Mode

In order to switch between recording video and shooting photos, you will need to change the camera Record Mode in the Video Configuration Menu.

1. Press the MENU button to open the Main Menu.
2. Use the UP and DOWN buttons to highlight the Video Configuration icon, and press the SELECT button.
3. The screen will show a list of settings. Highlight the Record Mode option and press the SELECT button.
4. Highlight the icon of the Record Mode you wish to use and press the SELECT Button again.
5. Press the MENU button twice to return to Live Preview mode.



Note: The camera must be in Live Preview mode to record any video or take any photos. The MENU button also functions as a BACK button. Press the MENU button a few times to return to Live Preview mode.

b) Video Mode

When the camera is in Video mode, the screen will display a live preview image from the camera lens and a number of icons indicating the camera's status.



Recording Video

1. Ensure that the camera has been set to Video mode using the Video Configuration menu.
2. To start recording, press the SELECT button on the camera or the RECORD button on the remote control. The unit will beep and the LED will turn red.
3. To stop recording, press the SELECT button again, or the STOP button on the remote. There will be another beep and the LED will return to green.

Note: The default video resolution is 720p HD. The resolution can be changed using the Video configuration menu (page 30).

Note: If the SD card runs out of space while recording, the camera will stop recording but it will remain switched on. You will need to turn it off yourself unless Camera Auto-Off has been enabled (page 24).

Note: If the video being recorded is very long, the video file will be separated into multiple files every 3.6 GB (i.e. every 40 minutes in 1080p). This is automatic – you do not need to monitor this process. The camera will resume filming after a few seconds, once the file is saved. Please be patient while the file is saving.

c) Photo Mode

When the camera is in Photo mode, the screen will also display a live preview image, but the camera status icons are slightly different.

Taking Photos

1. Ensure that the camera has been set to Photo mode using the Video Configuration menu.
2. Press the SELECT button on the camera or the RECORD button on the remote control. The unit will beep once and the LED will briefly turn red.
3. Once the LED returns to green, the camera is ready to take another photo.



d) Time-Lapse Mode

Taking Time-Lapse Photos

The Drift HD170 includes a time lapse mode. When activated, the camera will take a photo every few seconds until it is stopped or the memory card is full.

1. Ensure that the camera has been set to Time Lapse mode using the Video Configuration menu.
2. Press the SELECT button on the camera or the RECORD button on the remote control. The unit will beep once and the LED will briefly turn red.
3. The camera will take photos every 3 seconds by default.

Note: You can change the time interval between time-lapse photos by modifying the Sequence Interval setting as described on the opposite page.

Changing the Sequence Interval

1. Press the MENU button to open the Main Menu.
2. Use the UP and DOWN buttons to highlight the Video Configuration icon, and press the SELECT button.
3. The screen will show a list of settings. Highlight the Sequence Interval option and press the SELECT button.
4. Use the UP and DOWN arrows to choose the desired time interval and press the SELECT Button to confirm.

Note: The Sequence Interval setting can only be changed when the record mode is set to Time-Lapse. The available Sequence Interval settings are 3 seconds, 5 seconds, 10 seconds and 30 seconds.

e) Zoom (not available in 1080p)

The Drift HD170 includes a digital zoom function that allows you to take close-up photos and videos. To use it, press and hold the UP arrow to zoom in, and the DOWN arrow to zoom out.



Note: The Zoom function cannot be used when recording video in 1080p. In other video modes, the zoom indicator bar will disappear after a few seconds if it is not used.

Note: Please be aware that using the digital zoom may affect the image quality of your recording.

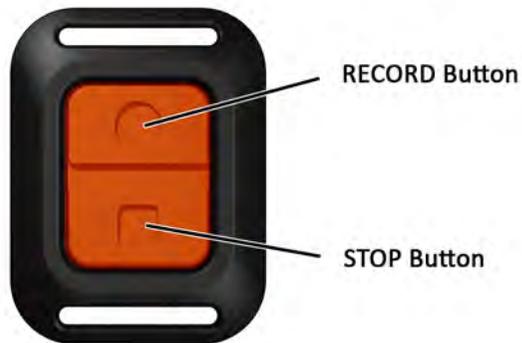
Tip You can zoom in and out while video recording is in progress

VII. Using the Remote

a) Basic Remote Use

The Drift HD 170 comes with a wireless RF (radio frequency) remote control to allow easy, hands-free operation of the camera. It can be used both to record video and to take photos.

Note: Always make sure you fasten the remote control tightly and securely so you do not lose it.



Using the remote control

1. Ensure that the remote control has been enabled. If in doubt, open the Main Menu, highlight the Setup sub-menu and press SELECT. There should be a tick by the Remote Control setting on the first page of the Setup Menu.
2. Attach the remote control to your wrist, handlebar or jacket using the short velcro strap.
3. With the camera in Live Preview Mode, press the RECORD button on the remote to start recording or to take a photo. If the camera speaker is switched on, there will be a beep.
4. If the camera is in Video mode, press the remote control's STOP button to stop recording. If the speaker is switched on, the camera will beep again.

Note: The remote control will not operate the camera if the camera is switched off.

b) Remote Pairing

The Remote Pairing function links your camera to a specific remote. If unpaired, the camera will work with any Drift HD170 remote control in range. This can cause problems if more than one person is using a remote at the same time. For example, if your friend presses his remote's STOP button, your recording will also stop, whether you want it to or not. Pairing your remote to your camera will prevent this from happening – your camera will only respond to instructions from your remote.

Your HD170 remote is paired with your camera out of the box, so you do not need to pair it again. If you lose or damage your remote however, you will need to cancel the old pairing and pair the replacement remote with your camera.

To Cancel a Remote Pairing

1. Open the Setup Menu, highlight the Remote Pairing option and press the SELECT button.
2. Highlight the Reset icon (the circular arrow) and press the SELECT button.
3. The Remote Pairing is now deleted. The icon next to the Remote Pairing option will change to indicate the old remote is no longer paired.

Pairing the Remote Control

1. Press the MENU button to open the Main Menu.
2. Highlight the Setup icon, and press the SELECT button.
3. Highlight the Remote Pairing option on the first page of the Setup Menu and press the SELECT button.
4. Press the RECORD Button on the Remote. The camera screen will briefly display the word OK if the remote is recognized.
5. Highlight the tick icon and press the SELECT Button on the camera body to save the pairing. The icon next to the Remote Pairing option will change to indicate the pairing.



Remote Paired



No Remote Paired

Note: It is important that you press the SELECT button to save the remote pairing. If you press the MENU button instead, pairing information will not be saved.



Pairing Multiple Cameras to a Single Remote

It is possible to pair multiple cameras with a single remote. This allows them all to be operated with one button press, but prevents other Drift HD170 remotes from interrupting your recording.

For every camera you wish to pair:

1. Press the MENU button to open the Main Menu.
2. Highlight the Setup icon, and press the SELECT button.
3. Highlight the Remote Pairing option on the first page of the Setup Menu and press the SELECT button.

Once every camera is displaying the screen above:

4. Press the RECORD Button on the Remote. Each camera screen will briefly display the word OK if the remote is recognized. Any camera that does not display OK will not be paired – try pressing the RECORD Button again if this happens.
5. Highlight the tick icon and press the SELECT Button on every camera to save the pairing. The icon next to the Remote Pairing option will change to indicate the pairing.

Note: It is important that you press the SELECT button to save the remote pairing. If you press the MENU button instead, pairing information will not be saved.

Tip When pairing multiple remotes, always test the remote to see if it operates all the cameras before mounting them. You don't want to find out later that one of your cameras didn't start recording.



VIII. Conserving Battery Life

The Drift HD170 comes with a rechargeable 1110 mAh Lithium-Ion battery, allowing you to record continuously for hours between charges. However, sometimes you may find yourself in a location without a power outlet to charge your camera with. Also, cold conditions drain battery power at a faster rate. Fortunately, the Drift HD170 comes with a number of features to extend the battery life. These can all be found in the Setup Menu.

Note: Changing camera settings is described in the Setup Menu section on page 31-32.

LCD Off

The Drift HD170's built-in LCD screen consumes power, so one of the best ways to extend your battery life is to use the LCD Auto-Off function. By default this LCD screen is always on, but it can be set to turn off when no buttons are pressed for a while (the exact time interval is chosen when turning this function on). The camera will still function as normal when the screen is switched off – in Live Preview mode, the camera is ready to record at any time, and if recording is in progress, it will continue to record with the screen off. The LCD remote is also useable with the screen off. The screen can be turned on again by pressing any button.

Note: Do not use the Select button to switch the camera screen back on – doing so will begin a new recording or stop the current recording if the camera is in Live Preview mode. Unless you specifically want to start or stop a recording, use one of the other buttons.

Changing the Brightness Setting

The LCD backlight also consumes power. If you don't want to switch the LCD screen off, it is possible to reduce its intensity by using the LCD Brightness setting on the second page of the Setup menu. You may notice a slight increase in battery life if you use a lower brightness setting.

Camera Auto-Off

It is also possible to set the camera to switch off entirely when no buttons are pressed for a set amount of time (the exact time interval is chosen when turning this function on). The main use of this function is to automatically switch off the camera in case you forget to do so yourself.

Note: This will not switch the camera off while recording is in progress. However, when the camera does switch off, you will need to switch it back on again before you can record any new video.

Note: The remote control will not operate the camera if the camera is switched off.

Spare batteries

If the battery life of the Drift HD170 is not long enough for your purposes, you can replace it with an expanded capacity model. You can also charge a second battery before you set out and change battery when the first one runs out.



Spare batteries are available from Drift Dealers. These are available in both the standard 1110 mAh capacity as well as an expanded 1700 mAh capacity. Please see <http://www.driftnnovation.com/> for more information.

! Always change the battery in a clean, dry and safe environment. Getting camera batteries wet will damage them and may result in injury to yourself. For your safety, never use damaged batteries.



IX. Camera Care

The Drift HD170 is specifically designed for extreme sports. It is a very durable piece of equipment. However, to ensure a long and healthy life for your camera, please follow the instructions below.

Cleaning the Camera

During your sporting activities, the camera will inevitably get dirty or wet. Although this is not an issue, it is recommended that you clean the Drift HD170 whenever this occurs. Clean the camera thoroughly with a damp cloth and let it air dry before you open the back hatch or rotate the lens.

Cleaning the lens and LCD screen

In order to provide a clear image for High Definition Video, it is important to keep the camera lens clean. Be careful not to scratch the camera lens whilst cleaning it. Wipe off any surface mud or water from the lens with a damp cloth and use a dry scratch-proof cloth to polish the lens once it is dry.

Tip Scratch-proof cloths are available from any camera shop or optician.

Cleaning the seals

To ensure that the camera remains waterproof to 0.5m, it may be necessary to occasionally clean the contact surfaces around the rear camera hatch seal. This can be done by wiping a damp cloth around the seal. Be careful not to leave excessive water on the seal, and let it air dry.

Tip You can run a little Vaseline around the rubber seal from time to time to keep the seal airtight.

X. Menu Options

a) The Main Menu

To open the Menu, press the MENU button when the camera is switched on. A screen containing the four Menu icons will appear:



If the SD Memory card contains any Video or Photo files, these will be indicated on the Video and Photo Number of Photo Files, number of Video Files



Opening the Sub-Menus

1. Once the Main Menu is open, use the UP and DOWN buttons to highlight the icon of the Menu Option you wish to open.
2. Press the SELECT button.

Note: The MENU button also functions as a BACK button. Pressing the MENU button while in a sub-menu will take you back to the Main Menu. Pressing the MENU button on the Main Menu will take you back to Live Preview mode.



b) Video Menu

Once you have selected the Video Menu, you will either see the 'No File' screen, or you will see a thumbnail image of the last video file recorded to the SD card.



Video Playback

1. Scroll through the thumbnail images using the UP and DOWN arrows.
2. Once you find the video you want to watch, press the SELECT button.
3. A screen with three options will appear – highlight the View option and press the SELECT button. The video will start playing.
4. Press the SELECT button to pause and resume playback, or the MENU button to exit.

Tip You can Fast Forward and Rewind a video while it is playing. Press the DOWN arrow to fast forward, and the UP arrow to rewind. Once you reach your desired point in the file, press the SELECT button to pause the video. Press the SELECT button to resume playback.

Deleting Videos

1. Scroll through the thumbnail images using the UP and DOWN arrows.
2. Once you find the video you want to delete, press the SELECT button.
3. A screen with three options will appear – highlight the Delete option and press the SELECT button.
4. Confirm file deletion by highlighting the tick icon and pressing the SELECT button.

Note: You can delete all the videos on the camera by selecting the Delete All option. This will not delete any of the photo files on the SD card.

! Once a file is deleted, it cannot be restored. Make sure you no longer need a video before deleting it. Please be especially careful when using the Delete All option.



c) Photo Menu

Once you have selected the Photo Menu, you will either see the 'No File' screen, or you will see a thumbnail image of the last photo saved to the SD card.



Viewing Photos

1. Scroll through the thumbnail images using the UP and DOWN arrows.
2. Press the MENU button to exit.

Slideshow Function

1. Scroll through the thumbnail images using the UP and DOWN arrows.
2. Once you find the image you want to show first, press the SELECT button.
3. A screen with three options will appear – highlight the View option and press the SELECT button. The camera will show all the photos on the card in order, changing image every few seconds.
4. Press the SELECT button to pause the slideshow, and press it again to resume it.

Tip Use the slideshow function when the camera is connected to a television to view all your photos on a big screen.

Deleting Photos

1. Scroll through the thumbnail images using the UP and DOWN arrows.
2. Once you find the video you want to delete, press the SELECT button.
3. A screen with three options will appear – highlight the Delete option and press the SELECT button.
4. Confirm file deletion by highlighting the tick icon and pressing the SELECT button.

Note: You can delete all the photos on the camera by selecting the Delete All option. This will not delete any of the video files on the SD card.

! Once a file is deleted, it cannot be restored. Make sure you no longer need a photo before deleting it. Please be especially careful when using the Delete All option.



d) Video Configuration Menu

To change Video Configuration settings, highlight the setting you wish to change and press the SELECT button. Use the UP and DOWN arrows to choose the option you want, and press the SELECT button again to confirm it. The icon next to the setting name will reflect the new setting.

Note: The options available depend on the recording mode selected – the Resolution option is only available in Video mode, and the Sequence Interval option is only available in Time Lapse mode.

Setting	Options	Description
Record Mode	<ul style="list-style-type: none"> • Video (Default) • Photo • Time Lapse 	Choose whether to record video, still photos or time-lapse photos.
Resolution	<ul style="list-style-type: none"> • 1080p HD • 720p HD (Default) • WVGA (SD) 	Different video qualities can be selected to optimise the video quality or file size. 1080p required the most memory, but has the best video quality.
Exposure	<ul style="list-style-type: none"> • -2.0 • -1.0 • 0 (Default) • +1.0 • +2.0 	(Advanced Users) The exposure setting determines the camera's sensitivity to light. If conditions are very bright (e.g. sun on snow), use a negative value. For dark conditions (e.g. dusk), use a positive value. Most of the time you can just use zero.
Night Mode	<ul style="list-style-type: none"> • Off (Default) • On 	Depending on the ambient light conditions, the night mode can be used to enhance darker video environments.
Sequence Interval	<ul style="list-style-type: none"> • 3sec (Default) • 5sec • 10sec • 30sec 	Allows the user to select the time interval between photos when shooting in Time-Lapse mode.

e) Setup Menu

To change Camera Setup settings, highlight the setting you wish to change and press the SELECT button. Use the UP and DOWN arrows to choose the option you want, and press the SELECT button again to confirm it. The icon next to the setting name will reflect the new setting.

Menu	Options	Description
Mic Sensitivity	<ul style="list-style-type: none"> High Medium (Default) Low Off 	Different sports have different ambient sound levels. Generally choose Low for motorsports and Medium for cycling and wintersports.
Remote Control	<ul style="list-style-type: none"> Yes (Default) No 	Use this option to turn remote control functionality on or off.
Remote Pairing	<ul style="list-style-type: none"> Paired (Default) Not Paired 	This option allows for the camera to be paired with a specific remote. Please see the pairing instructions on page 22.
LCD Off	<ul style="list-style-type: none"> Never (Default) 5sec 10sec 20sec 1min 5min 	To conserve battery life, the LCD screen can be set to power down after a set period of time. The camera remains on - only the LCD screen powers down. To switch on the LCD screen, just press any button on the control panel.
Camera Off	<ul style="list-style-type: none"> Never (Default) 1min 5min 10min 20min 30min 	To conserve battery life, the whole camera can be set to power down after a set period when not in use. Once powered down, the camera will need to be switched on again. The camera will not switch off while recording is in progress.
Speaker Volume	<ul style="list-style-type: none"> Off Low Medium High (Default) 	Use this option to change the volume level of the built-in speaker.
LCD Brightness	<ul style="list-style-type: none"> High (Default) Medium Low 	Use this option to change the brightness of the built-in LCD screen.
Date	<ul style="list-style-type: none"> Year Month Day 	Set the camera date. When the battery is removed or runs out of charge, the date information is lost and will need to be reset.
Time	<ul style="list-style-type: none"> HH MM 	Set the camera date. When the battery is removed or runs out of charge, the time information is lost and will need to be reset.

Date/Time Stamp	<ul style="list-style-type: none"> Off (Default) On 	Certain video applications require a date/time stamp. Enabling this option will add the time and date to the bottom-right corner of all video footage.
Language	<ul style="list-style-type: none"> English (Default) French German Spanish Italian Portuguese Japanese 	Seven language settings are available for the camera. If you would like to see more, please email us at info@driftinnovation.com .
Format	<ul style="list-style-type: none"> No Yes 	Use this option to format your SD card. Please note that all data will be lost.
Reset Settings	<ul style="list-style-type: none"> No Yes 	Use this option to reset all camera options to the factory settings.
Firmware Version		The number indicates the firmware version installed on the camera. When new firmware is successfully installed, this number will change.

f) Setting the Time & Date

1. Open the Camera Setup Menu as described on the opposite page.
2. Highlight the Time or Date setting on page 2 of the Setup Menu and press the SELECT button.
3. Press the UP and DOWN buttons to adjust the value of the time or date fields, and the SELECT button to move between hours/minutes or year/month/day.
4. Press the MENU button to save the time/date and return to the Setup Menu.



XI. Connecting the Camera to a Computer or TV

You can copy your recorded video footage and photos to a PC or Mac computer by using the included USB cable.

a) Connecting the Camera to a Computer

Connecting to a Windows PC

1. Connect the camera to your PC using the USB cable. The camera LED will turn green and the camera will display a black screen.
2. Your operating system may be set up to show a file window automatically. Otherwise, double-click on the My Computer icon.
3. Your computer should recognize your camera as a Removable Disk. Look for the DRIFT Removable Disk and double click on it to open it.
4. Double-click on the 'DCIM' folder to open it.
5. Inside the 'DCIM' folder you will find a folder called '100DRIFT' which contains all photos and videos recorded on the SD card. If there are a large number of files, there will be multiple folders - 100DRIFT, 101DRIFT, etc.
6. Copy the desired video and photo files to your PC.

Connecting to a Mac

1. Connect the camera to your Mac by using the USB cable. The camera LED will turn green and the camera will display a black screen.
2. Your operating system may be set up to show a file window automatically. Otherwise, open the Finder.
3. Your computer should recognize your camera as an external device called DRIFT. Click on it to open it.
4. Click on the 'DCIM' folder to open it.
5. Inside, the 'DCIM' folder you will find a folder called '100DRIFT', which contains all photos and videos recorded on the SD card. If there are a large number of files, there will be multiple folders - 100DRIFT, 101DRIFT, etc.
6. Copy the desired video and photo files to your Mac.

Note: The battery does not need not be inserted or charged to copy files to a computer.

Note: You can also copy data from the memory card by using a USB card reader (not included). Your computer may also have an SD card reader built into it, which you can use to transfer your files.



c) Playing and editing video footage on a Computer

1. Some computers may not have the correct codecs required for video playback and editing.
2. If you experience difficulties playing video recorded with your camera, you can download VLC media player for free from <http://www.videolan.org/>
3. If you are experiencing difficulties editing video or do not wish to use VLC player for playback, you will need to download and install a codec pack. The FFDshow codec pack can be downloaded from http://www.free-codecs.com/FFDshow_download.htm

d) Connecting the Camera to a TV

1. While the camera is turned off, connect it to your TV using the component video cable.
2. Switch the camera on.
3. Once booted up, the image usually displayed on the camera's LCD screen will instead be displayed directly on your TV, and the sound will come out of the TV speakers.
4. All other camera functions and the camera buttons work as normal.



XII. Computer System Requirements

To smoothly view and edit 1080p HD video, more powerful hardware is required

Recommended System Requirements – Windows

- 3.2 GHz Pentium 4 processor or higher
- At least 1GB of RAM
- Graphics Card with at least 256MB of Video RAM
- Direct X 9.0c or later
- Microsoft Windows XP (SP2 or later), Windows Vista or Windows 7

Recommended System Requirements - Macintosh

- 2.0 GHz Intel Core Duo or higher
- At least 1GB of RAM
- Graphics Card with at least 256MB of video RAM
- Mac OS X v10.4.11 or later

Tip High Definition Video requires large amounts of hard drive space. If your hard drive is not large enough, you can purchase an external hard drive to store your video files. These are relatively inexpensive, and can also be used to back up your other computer files as well.



XIII. Frequently Asked Questions

What type of SD Card does the camera support?

The Drift HD170 supports SD cards from all leading brands, but we recommend Kingston class 4 cards for video. The unit is also compatible with SDHC cards.

What is the biggest SD Card I can use?

The Drift HD170 supports SD and SDHC cards with a capacity of up to 32GB.

How does the remote control work?

The remote control uses radio frequency (RF) to communicate directly with the camera unit. The remote is RF based, rather than infrared (IR), as used in other helmet cameras. As a result, you do not need to point the remote at the camera. As long as the remote is in range of the camera, it will pick up the remote control signal.

How far will the remote control work?

The wireless remote control has a range of 5m.

What is the remote pairing feature?

The Remote Pairing function links your camera to a specific remote. If unpaired, the camera will work with any Drift HD170 remote control in range. This can cause problems if more than one person is using a remote at the same time. Pairing the remote to your camera will ensure your camera only responds to instructions from your remote control. The Drift HD170 comes paired with the remote in the box.

Full instructions on Remote Pairing can be found in the “Using the Remote” section on page 22.

How long will the batteries last?

The Drift HD170 comes with a 1110 mAh rechargeable Lithium-Ion battery. When recording video in 1080p with all battery saving features switched off, the camera will operate for a total of 3 hours at room temperature, and 2.5 hours in cold conditions (-5°C), before the battery runs out. Several camera options can be changed in order to extend the battery life – these are detailed in the “Conserving Battery Life” section on page 24.

In addition, both standard capacity 1110 mAh and expanded capacity 1700 mAh spare batteries are available from Drift dealers. Please see <http://www.driftnnovation.com/> for more information.

How do I charge the battery?

The battery is charged via a USB port built into the camera. You don't necessarily have to charge it via a computer however. Many electronics stores sell USB power adapters that can be used to charge the Drift HD170. These have a mini USB port at one end, while the other end plugs into a power outlet or wall socket. Please follow the charging instructions on page 12 carefully to ensure the camera enters charging mode. If the LED does not turn blue, the camera is not charging.



Can I power my camera from a cigarette lighter adapter?

Yes. When connected to a USB cigarette lighter adapter, the unit will draw its power from your bike or car battery. Please note that while this allows you to power the camera unit, it does not recharge the battery unless you put the camera into charging mode (page 12). You can buy a USB cigarette lighter adapter from all of our leading dealers or from electrical stores.

What is the Auto Power On feature?

This is a unique feature of the Drift HD170 when used with an external power source. When power is first supplied to the camera (e.g. when the power adapter is plugged into the wall, or when the engine ignition is switched on when using a cigarette lighter adapter), the camera will power on automatically and will be ready to start recording. Full details can be found in the Auto Power On section on page 13.

The videos and photos give me a slight fisheye effect. Is this right?

Yes. We specifically selected a 170° lens to provide users with the really quirky wide angle that was prominent in the early days of helmet cameras, particularly in skateboarding. The effect is less pronounced on objects in the distance and more pronounced on objects close to the camera lens. If you prefer a tighter angle, you can use the camera's zoom function, or shoot in 1080p. But we think you'll grow to love this classic hallmark of action sports video.

What is the difference between 1080p and 720p?

The Drift HD170 can record video in both 1080p and 720p High Definition video formats. 1080p video files have a resolution of 1920x1080 pixels, providing the highest level of video quality but taking up the largest amount of space. 720p files have a resolution of 1280x720 pixels, providing excellent video with a smaller file size. All three available video formats provide a 16:9 aspect ratio widescreen image.

In addition, 1080p mode and SD mode have a 127° recording angle, while 720p mode will capture video in a 170° wide angle. The digital zoom function is not available in 1080p mode.

What are the dimensions of the video camera?

The dimensions of the camera are 133 (L) x 50 (D) x 33 (W) mm and those of the remote control are 52 (L) x 40 (W) x 13 (D) mm.

Can I connect my camera to a tripod or suction cup?

Yes. The Drift HD170 comes with a built-in 1/4" (8mm) female camera thread. This allows the camera to be mounted directly on any tripod, suction mount (such as the Panavise 809) or any other camera mount with a 1/4" thread. These mounts can be purchased from all our leading dealers or from camera stores.

How waterproof is the camera?

The Drift HD170 action camera is waterproof up to 0.5m. The camera is fully splash-proof and weatherproof, but it is not designed to be used in a water environment. Please be aware of this when

using the Drift HD170. Drift Innovation will not assume any responsibility for camera malfunction caused by liquid entering the camera as a result of misuse by the user.

What are the benefits of using the camera's Night Mode?

The Night Mode allows the Drift HD170 to record video and capture photos in a dark environment, such as at dusk or night-time. It does this by increasing the sensitivity of the camera to light. The trade-off is a slight decrease in image quality – the image will contain noise and possibly be slightly more blurry. Please note that this is normal for digital cameras. The Night Mode is more effective when capturing photos than when recording video.

How do I connect an external microphone?

An external microphone accessory is available for the Drift HD170 – please download the separate instruction manual from <http://www.driftinnovation.com/> for details on how to use it.

How do I upgrade the camera firmware?

From time to time, Drift Innovation may release new firmware versions to improve the functionality of the Drift HD170. These are not essential, but the updates may improve your recording experience. To be kept informed of new firmware releases, please register at <http://www.driftinnovation.com/> where you will be able to access and download new firmware along with detailed installation instructions.



XIV. Troubleshooting

The LCD screen does not display anything

- Check that the rechargeable battery is properly installed.
- The battery may need recharging.
- If the LED is switched on, try pressing a button on the control panel. The LCD Auto-Off function may be switched on. Please see page 24 for details.

After the camera is connected to my PC, it cannot find the new drive in the My Computer folder

- Ensure each end of the USB cable is properly connected to your PC and your camera.
- Is there an SD card in the camera's SD card slot?
- Your USB port may not be working correctly. Try connecting another USB device into the port. If the other device does not work, the USB port may have a malfunction. In this case, try the other USB ports in your computer. If you still have problems, contact your system manufacturer or the manufacturer of your USB card.

I can't capture video footage

- Is there an SD card in the camera's SD card slot?
- There may not be enough space left on the SD card. If the memory card is full, there will be an 'x' through the SD card memory indicator.
- Ensure the SD card is not locked. The LCD will display a padlock symbol if the SD card is locked. The SD card can be unlocked by sliding a small switch located on the SD card itself.

I can't play the video footage on my television

- Ensure each end of the component cable is properly and firmly connected to the camera and to the correct ports on your television.
- Check that the camera and television are both turned on.
- Check that you have set the television to display the correct input.

The sound is very low or there is no sound

- Ensure the camera speaker and the camera microphone are turned on in the Setup Menu.
- The camera is specifically designed for extreme sports, where noise levels can be very high. As a result, the microphone is less sensitive than in a regular digital camera. You can increase the microphone sensitivity in the Setup menu.

I can't view clips on my computer, or I get an error message

- You may have outdated codecs. We recommend using VLC player, which is available for free from www.videolan.org
- If you still wish to use WMP or other editing or video playback software you need to install a codec pack. You can download the FFDshow codec pack for free from http://www.free-codecs.com/FFDshow_download.htm

I switched my camera off during recording, and the video clip is damaged.

- Please ensure that you stop recording before switching off your camera, as this can damage the video clip you are currently recording.



XV. Technical Specifications

- Sensor type: CMOS
- Water Resistance: 0.5m
- Video resolution: 1080p, 720p & SD
- Video format: .MOV (H.264)
- Frames per second: 30 FPS
- Video format: 16:9
- Lens Rotation: 300°
- Recording Angles: 127° in 1080p & WVGA, 170° in 720p
- Exposure: Auto / Manual (advanced users)
- Zoom: Digital x4 (in 720p & WVGA mode)
- Remote range: 5m range
- Built-in Microphone
- Inputs: Optional External Microphone
- Audio/Video Output: HD TV out (cable included)
- Battery: 1110mAh rechargeable lithium-ion
- Power-Save option saves batteries by powering down the screen
- SD memory capacity: Supports memory cards up to 32 GB
- Photo resolution: 5 Megapixel
- LCD screen: 1.5" colour TFT
- Lens focal range: 0.5m to infinity
- Dimensions: Camera - 133 (L) x 50 (D) x 33 (W) mm / Remote Control - 52 (L) x 40 (W) x 13 (D) mm
- Power: Camera - DC 3.7V / Remote control: DC 3V, 1x CR2032 battery (included)
- RF: Receiver (Camera): 433.92MHz ISM band / Transmitter (Remote): 433.92MHz ISM band
- Weight: Camera - 138g / Remote control - 19g
- Operating Systems: Compatible with Windows XP, Vista & Windows 7; Mac OS 10.4

Further Help

We make every effort to ensure the accuracy and appropriateness of the information provided on our products. We encourage you to contact our Technical Support Team on info@driftinnovation.com with any problems and/or suggestions.

Please note that the Technical Support Team cannot issue or authorise any Returns / RMA's or replacements.

For a Return / RMA or replacement please contact the place of purchase.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

WARNING:

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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 to 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 into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

INFORMATION FOR USERS

In accordance with European Directives 2002/95/CE, 2002/96/CE and 2003/108/CE on the restriction of the use of dangerous substances in electric and electronic equipment as well as their waste disposal.



This symbol shown on the equipment indicates that, at the end of its useful life, the product must be collected separately from other waste.

Therefore, any products that have reached the end of their useful life must be given to waste disposal centres specialising in separate collection of waste electrical and electronic equipment, or given back to the retailer at the time of purchasing new similar equipment, on a one for one basis.

The adequate separate collection for the subsequent start-up of the equipment sent to be recycled, treated and disposal of in an environmentally compatible way contributes to preventing possible negative effects on the environment and health and optimises the recycling and reuse of components making up the apparatus.

Abusive disposal of the product by the user involves application of the administration sanctions according to the laws in force.

CAUTION RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

XVI. Warranty

Thank you for purchasing the Drift HD170. We are confident you will have great fun with the HD170!

Warranty

To obtain our warranty service, register your product at www.driftinnovation.com as soon as you purchase it.

Customer Support

- Check www.driftinnovation.com for firmware updates, product updates and user videos.
- We are here to help. If you have any suggestions, comments or problems, please contact our customer support team on support@driftinnovation.com.