



# 2014 FLOAT iCD PRE-INSTALLATION GUIDE



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## ***Introduction***

The following instructions are designed to guide you through the process of choosing the most appropriate component configuration and wire sizings to complete the setup of the iCD system with your specific frame type. It is assumed that you will not have the fork, shock, switch, or battery units when determining wire lengths.

Follow the steps in this guide carefully to determine correct wire lengths and battery mounting locations. iCD wires are available in the following stock lengths:

**Table 1: Shimano Wire Part Numbers**

<b>PN</b>	<b>Description</b>
190-01-000	SHIMANO ELECTRIC WIRE, EWSD50, 300 MM BLACK, iRD
190-01-001	SHIMANO ELECTRIC WIRE, EWSD50, 400 MM BLACK, iRD
190-01-002	SHIMANO ELECTRIC WIRE, EWSD50, 500 MM BLACK, iRD
190-01-003	SHIMANO ELECTRIC WIRE, EWSD50, 600 MM BLACK, iRD
190-01-004	SHIMANO ELECTRIC WIRE, EWSD50, 700 MM BLACK, iRD
190-01-005	SHIMANO ELECTRIC WIRE, EWSD50, 800 MM BLACK, iRD
190-01-006	SHIMANO ELECTRIC WIRE, EWSD50, 900 MM BLACK, iRD
190-01-007	SHIMANO ELECTRIC WIRE, EWSD50, 1000 MM BLACK, iRD
190-01-008	SHIMANO ELECTRIC WIRE, EWSD50, 1200 MM BLACK, iRD
190-01-009	SHIMANO ELECTRIC WIRE, EWSD50, 1400 MM BLACK, iRD

## ***Important Notes***

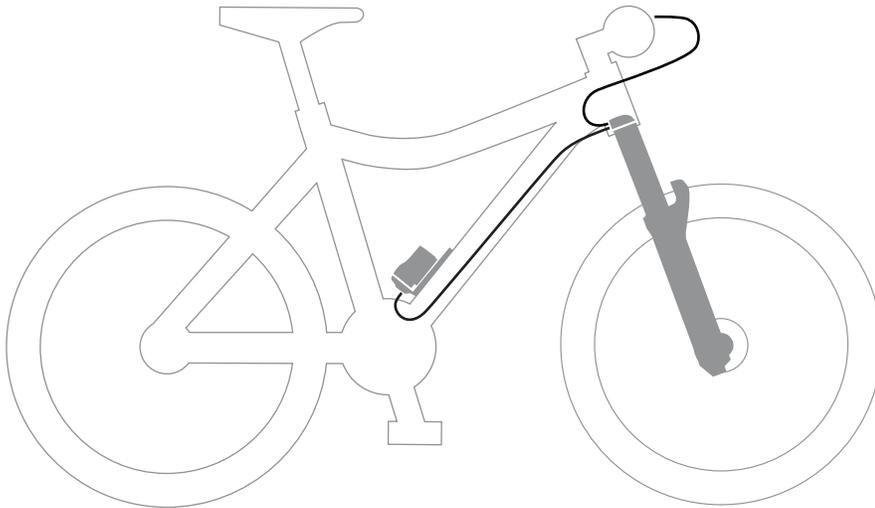
- When determining wire lengths using the following guide, ***always round up to the next closest wire length*** after determining your final measurement.
- If your frame has multiple battery mounting locations, choosing the lowest possible point can accommodate better water bottle placement, and help to keep your center of gravity low for improved bike handling control.
- Frames with vertically mounted shocks ***must*** have the battery mounted in the **high** position, to avoid causing interference between the shock motor unit and the battery.
- Never mount the battery underneath the downtube.
- Suggested wire routing methods illustrate only one example of possible routing methods for each frame/shock/battery configuration listed. Other methods may be appropriate as long as all clearances are checked.
- Never allow any exposed shifter cable, housing, or brake lines to move against or across any iCD wires. Make sure to check for clearance through the entire range of shock travel.

This guide is designed around three basic MTB frame types: hardtails, full suspension bikes with horizontal-mount shocks, and full suspension bikes with vertical-mount shocks. Use the instructions for the frame type that best matches yours.

## ***Two Position Hardtail Setup***

- Two wires are required; one from switch to fork actuator, and a second from fork actuator to battery.
- The battery can be mounted on either the downtube or seat tube.
- The wires are interchangeable and therefore can be arbitrarily inserted into either port of the fork actuator.

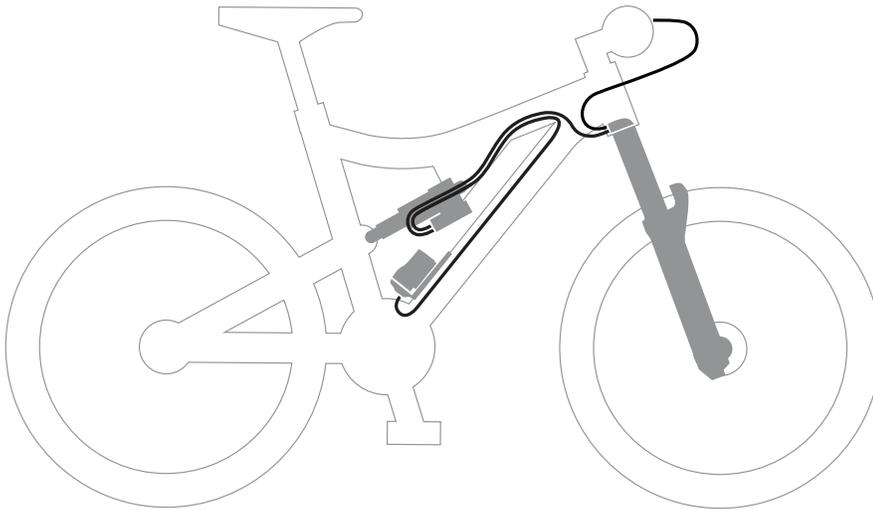
*Figure 1: Suggested Wiring Configuration: Front Suspension Only (Hardtail)*



## ***Three Position Horizontal Full Suspension Setup***

- Three wires are required; one from switch to fork actuator, a second from fork actuator to shock actuator, and a third from shock actuator to battery.
- The wires are interchangeable and therefore can be arbitrarily inserted into the fork and shock actuators.
- The shock can also be installed opposite of what is shown in Figure 2, which may help improve your water bottle clearance.

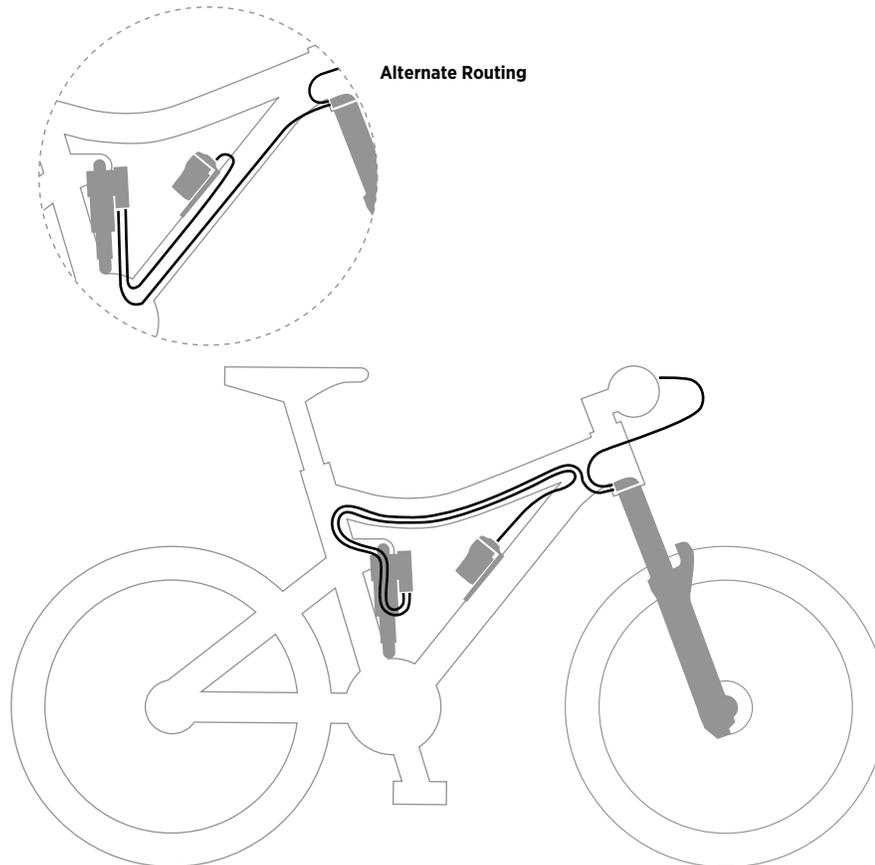
*Figure 2: Suggested Wiring Configuration: Horizontal Full Suspension*



## **Three Position Vertical Full Suspension Setup**

- Three wires are required; one from switch to fork actuator, a second from fork actuator to shock actuator, and a third from shock actuator to battery.
- The wires are interchangeable and therefore can be arbitrarily inserted into the fork and shock actuators.

*Figure 3: Suggested Wiring Configuration: Vertical Full Suspension*



## ***Basic Setup***

### **1. Determine your battery location:**

**Hardtails:** mounting the battery on the downtube is best. If your frame has more than a single mounting location, choose the lowest one. This accommodates improved water bottle placement and helps keep your center of gravity as low as possible, to optimize bike handling.



- **Full suspension with horizontal shock:** Battery unit can be mounted on the downtube in either downtube location, a high or low position.



- **Full suspension with vertical shock:** Battery unit must be mounted on the down-tube as close as possible to the head tube. Never mount it close to the bottom bracket, as the shock motor unit can impact there as it goes through full travel.



2. **Determine your switch location:**



Choose left or right hand handlebar mounting options. The switch must be located as close to grip as possible, with no shifter or brake levers installed between it and the grip.

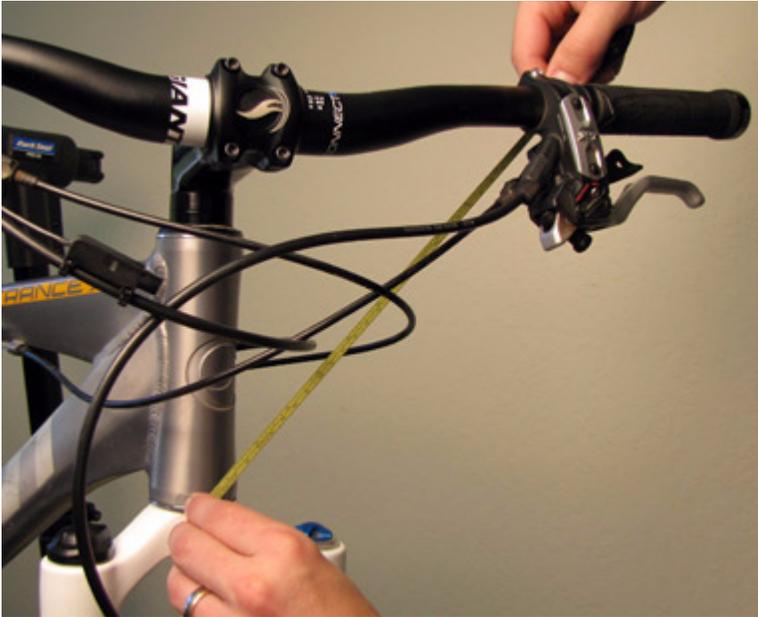
3. **Determine your switch configuration:**

- The factory default switch configuration is a two-position setup, controlling Descend and Climb mode actuation for both fork and shock (or the fork only, for hardtail set-ups). With the switch mounted on the right side of the handlebar, Descend mode is actuated by switch rotation to the top, and Climb mode is actuated by switch rotation to the bottom.

- With the switch mounted on the left side of the handlebar, Descend mode is actuated by switch rotation to the bottom, and Climb mode is actuated by switch rotation to the top.
- The switch can be mechanically reconfigured to provide Climb mode activation in either direction, for both left and right switch mounting setups. For more information, see "Changing Switch Configuration" in the FOX Float iCD Owner's Guide.

**4. Determine switch-to-fork wire length for all bike types:**

- Measure from the underside of the handlebar, near the inside edge of the grip where you plan to locate your switch, to the front/centermost point of the bottom of the head tube (at the crown-race/headset base plate).



- Add 50 mm to your measurement, then round up to the next closest available iCD wire length offered to ensure having enough slack (see "Shimano Wire Part Numbers" on page 2).

## Hardtails: Fork-to-battery Wire Lengths

- If battery unit will be mounted on the down tube in the **low** position (near the bottom bracket), use a length of cable housing to simulate the wire's path from the lowest water bottle cage bolt on the top of the down tube to the fork's right topcap.



- Add 300 mm to that value to account for the actual wire connection locations and safe steering clearances.
- Round up to the next stock iCD wire length (see "Shimano Wire Part Numbers" on page 2).
- If battery unit will be mounted on the down tube in the **high** position (nearest the head tube), use a length of cable housing to trace the wire's path from the uppermost water bottle cage bolt on the down tube, to the fork's right topcap. There is no need to add any additional length for steering slack in this measurement, as the upper cage bolt to which you are measuring is further away from the fork topcap than the actual battery connection point.



- Round up to the next stock iCD wire length offered (see "Shimano Wire Part Numbers" on page 2).
- You're done! Only two wires are required for hardtail setups.

## Full Suspension Vertical: Fork-to-shock Wire Lengths

### **Top Tube Wire Routing**

- If you are choosing to route your wire from the right fork topcap to the rear shock along the **top tube**, use a length of cable housing to measure the distance from the upper shock bolt (with the shock in its fully extended position) to the fork's right topcap.



- Add 300 mm to that value to accommodate safe steering clearances, shock travel, and actual wire connection locations.
- Round up to the next stock iCD wire length offered (see "Shimano Wire Part Numbers" on page 2).

### **Down Tube Wire Routing**

- If you plan to route your wire from the right fork topcap to the rear shock along the **down tube**, use a length of cable housing to measure the distance from the upper shock bolt (with the shock in its fully extended position) to the fork's right topcap.



- Add 40 mm from that value to accommodate safe steering clearances and actual wire connection locations.
- Round up to the next stock iCD wire length offered (see "Shimano Wire Part Numbers" on page 2).

## Full Suspension Vertical: Shock-to-battery Wire Lengths

### *Top Tube Wire Routing*

- If you are routing your wire along the **top tube** from the shock to the battery, use a length of cable housing to measure the distance from the upper shock bolt (with the shock in its fully extended position) to the upper water bottle cage bolt.



- Add 100 mm to that value to accommodate shock travel and actual wire connection locations.
- Round up to the next stock iCD wire length offered (see “Shimano Wire Part Numbers” on page 2).

### *Down Tube Wire Routing*

- If you plan to route your wire along the **down tube** from the shock to the battery, use a length of housing to measure the distance from the upper shock bolt to the upper-most water bottle cage bolt.



- Add 140 mm to that value to accommodate actual wire connection locations.
- Round up to the next stock iCD wire length offered (see "Shimano Wire Part Numbers" on page 2).

### **Full Suspension Horizontal: Fork-to-shock Wire Lengths**

- Use a length of cable housing to measure the distance from the fork's right topcap to the forward-most shock bolt along the top tube.



- Add 240 mm to that value to accommodate safe steering clearances and actual wire connection locations.
- Round up to the next stock iCD wire length offered (see "Shimano Wire Part Numbers" on page 2).

## Full Suspension Horizontal, Low-mount Battery: Shock-to-battery Wire Lengths

- Use a length of cable housing to measure the distance from the forward-most shock bolt, along the top tube to the head tube, then down along the downtube to the lowest water bottle cage bolt.



- Add 350 mm to that value to accommodate actual wire connection locations.
- Round up to the next stock iCD wire length offered (see "Shimano Wire Part Numbers" on page 2).

## Full Suspension Horizontal, High-mount Battery: Shock-to-battery Wire Lengths

- Use a length of cable housing to measure the distance from the forward-most shock bolt along the top tube to the head tube, then down along the downtube to the uppermost water bottle cage bolt.



- Add 50 mm to that value to accommodate actual wire connection locations.
- Round up to the next stock iCD wire length offered (see “Shimano Wire Part Numbers” on page 2).

## **Clearance Verification After Installation**

***CAUTION: Do not ride the bicycle until each item in this section has been checked!***

**To verify clearances throughout shock travel, depressurize the shock and manually cycle the suspension to full bottom, as you inspect every aspect of your iCD installation:**

- **Check that iCD wires do not interfere with normal steering, and any other hand-operated devices or controls mounted on your handlebar.**
- **Check that no part of the shock motor unit can contact any part of the frame, battery, or suspension linkage as the shock cycles through its entire range of travel.**
- **Check that the iCD wires are not trapped, pinched, or abraded in any way as the shock cycles through its entire range of travel.**