Felt IA Owner’s Manual

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Note:
This manual is not intended as a comprehensive use, service, repair or maintenance manual. Please see your dealer for all service, repairs or maintenance. Your dealer may also be able to refer you to classes, clinics or books on bicycle use, service, repair or maintenance.
Introduction

Thank you for buying the fastest triathlon bike available, the Felt IA. Jim Felt has been utilizing the wind tunnel since 1991 and is a pioneer in the advancement of aerodynamic frame design. Using Computational Fluid Dynamics (CFD), Jim Felt and Felt engineers have designed the IA to be the fastest bike possible.

As a result of this research, wind tunnel testing, and feedback from Felt athletes, the IA has been ridden to victory in the world and national championships, as well as the Kona IRONMAN™.

Please familiarize yourself with the following instructions so you can keep your IA operating at maximum efficiency.

This owner’s manual is a resource for the IA and will instruct you on proper set-up of the frame, fork, seatpost, brakes, internal routing in addition to how to optimize the seat and stack height. Additionally, this manual illustrates the features, benefits and technical specifications of the many components which includes the aerodynamic VR seatpost with its 3T DiffLock™ seat clamp and the CalPac, a storage area for energy supplements.

If you need any additional questions answered, visit the nearest authorized Felt Bicycles dealer. Supporting material and a list of authorized Felt Bicycles dealers is available at www.feltbicycles.com.
The larger footprint (lighter color) indicates the maximum reach and stack for each frame size. Colored, bold numbers show the minimum and maximum rise for each frame size.

The smaller, darker shaded box indicates the Felt Bicycles recommended stack and reach envelope. A detailed scale indicates reach envelope near the bottom of each colored box.

The frame size is indicated along the x-axis at the bottom of the chart.
Section 1: Electronic Wiring
Electronic Wiring Road Map

- Battery to Junction B
- Front Derailleur Cable to Junction B
- Rear Derailleur Cable to Junction B
- Downtube Cable to Junction B

Color Code Index

The wires in the diagram are color-coded for your convenience. These wires are all identical black, but for the purpose of clarity we have colored them periodically throughout this manual.
1. BatPac
2. Front Derailleur Wire Grommet (3mm)
3. Rear Derailleur Grommet (3mm)
4. Shimano Di2 Wires (various lengths)
5. Shimano Di2 Junction B
6. Shimano Di2 Battery
7. Cable Tie (x2)
Step 1  Di2 Routing

a. Route a length of Brake Cable through the Cable Entry Point, through the DownTube and out the BatPac opening (located between chainstays). Tape the end of the Di2 Wire to the end of the Brake Cable and pull end of brake cable (exiting BatPac opening) until both ends of the Di2 wire are visible outside of the frame.

The Tape ‘n Pull Method

Tip: to make routing easier, tape the end of the wire to the end of a piece of brake cable (as a steel cable is easier to route than a wire or housing). Once cable is visible through the exit hole, pull through and remove tape.
Step 2

a. Using the same Tap 'n Pull Method, route the rear derailleur wire through the right dropout hole, chainstay and out the BatPac Opening.

b. Route the Front Derailleur Di2 Wire through the Front Derailleur Frame Hole and out the BatPac Opening.

c. Make sure the Downtube Cable is also exiting the BatPac Opening.
Step 3

a. Plug the following Di2 Wires into Shimano Di2 Junction B:

- Front Derailleur
- Rear Derailleur
- Junction A
Step 4  Mount Battery

a. Locate parts: (fig. a)

b. Thread Cable Ties through Di2 battery mount as pictured. (fig. b)

c. Tighten Cable Ties around Shimano Di2 Battery, affixing it to the battery mount as shown. Trim excess Cable Tie. (fig. c)
Step 5

a. Plug the Di2 Battery Wire into the Shimano Di2 Battery shown below.

b. Insert the Di2 BatPac Assembly into the IA frame. (fig. a)
Step 6

a. Continue inserting the Di2 BatPac Assembly into the IA frame as shown below.

b. Once BatPac Assembly is in place as shown (fig a), fasten shut with provided M3 x 10mm bolts.
Step 7

Install front and rear derailleurs and plug Shimano Di2 Wires firmly into the respective derailleurs as shown.
Step 8  Wire Grommets

a. Press in any remaining grommets. Refer to below images for placement.

b. If not already done, connect wires to derailleurs and Junction B.
Section 2: Mechanical Cabling
Mechanical Cabling Road Map

- Rear Derailleur Cable to Shifter
- Front Derailleur Cable to Shifter
- Rear Brake Cable to Brake Lever
1. BatPac/ Front Derailleur Housing Stop
2. Front Derailleur Frame Grommet
3. Rear Dropout Cable Grommet (5mm)
4. Derailleur Cable Housing
5. Derailleur Cables
6. BatPac Bolt (x2) M3 x 10mm
Step 1  Mechanical Cabling

Begin by routing a length of Derailleur Cable Housing through the Cable Routing Insertion Area, into the downtube.

Tip: To make routing easier, tape the end of the cable to the end of a second brake cable. Once the first cable is visible through the exit hole, pull through and remove tape. Both ends of the second cable should be visible exiting the frame.
Step 2

a. Route a length of Derailleur Cable into the head tube, through the downtube, under the bottom bracket and out the rear brake hole. (fig. a)

b. Route the Derailleur Cable through the right dropout hole, right chainstay, and out the rear brake hole. (fig. b)

c. Bring end of Derailleur Cable Housing and the Derailleur Cable (both of which which just exited the rear brake hole), and by inserting the cable into the Rear Derailleur Cable Housing, advance the cable housing through the frame until it is visible through top tube exit port.
Step 3

a. The Rear Derailleur Cable Housing installation is shown below. (fig. a)

b. Route the Front Derailleur Cable Housing through the Routing Insertion Area, down the downtube and out the rear brake hole. (fig. b)

c. Then route the end of the Front Derailleur Cable out of the hole between the chainstays as illustrated below. (fig. c)
Step 4  Install Cable Stop

a. Feed a ferrule over the Derailleur Cable and press onto the Derailleur Housing.

a. Feed the exposed Front Derailleur Cable through the Front Derailleur Cable Stop as pictured.

Be sure the end of the Front Derailleur Cable Housing fits snugly into the hole of the Cable Stop.
Step 5

a. Fit Front Derailleur Cable Housing Stop into the frame as pictured. Fasten securely with provided M3 bolts. Tighten to 2Nm.

b. Install Front Derailleur Frame Grommet. (fig. a)

c. Install front derailleur and attach Front Derailleur Cable. (fig. b)
Step 6

a. Fit Rear Dropout Cable Grommet as shown. (5mm conical) Be sure to press securely into frame. (fig. a)

b. Install rear derailleur and plug Rear Derailleur Cable Housing into derailleur. (fig. b)
Section 3: Fork Installation
Fork Installation Instructions

1. IA Fork
2. Lower Headset Bearing
3. Upper Headset Bearing
4. Upper Headset Race
5. Carbon Compression Plug
Fork & Headset Installation

Step 1

a. Install the Carbon Compression Plug into the fork steerer tube and tighten to 5Nm.

b. Slide the lower headset bearing over the fork steerer tube and push down onto the fork crown.

Note: The fork has an integrated crown race.
Step 2

a. Slide fork steerer tube through frame’s head tube as shown.
Step 3

a. Install upper headset bearing and Headset Race as shown below.
Section 4: Stem Installation
1. Headset Preload Bolt
2. Fit Washer (x4)
3. Stem Top Cap
4. Handlebar Bolt
   - 25mm M6 (x4)
5. Stem
6. Handlebar Bolt
   - 40mm M6 (x4)
7. 15mm Stem Spacer
   (Used with 40mm Bolt)
8. Handlebar Bolt
   - 55mm M6 (x4)
9. 30mm Stem Spacer
   (Used with 55mm Bolt)
Step 1 Stem Installation

a. Once Fork is installed, slide the Stem onto steerer tube, then place the Top Cap and tighten the Preload Bolt as needed to eliminate play in the headset. (fig. a & fig. b)

b. Tighten pinch bolts to 6Nm. (fig. c)
Section 5: Aerobar Installation

Like all Felt products, this aerobar is engineered to offer maximum adjustability and dependability while being easy to use and service. Because this is a precision engineered product, we ask you to take great care in its installation and use. Please apply quality grease to all bolts and always use a torque wrench when tightening all fasteners.
Section 5 Pt. 1: Basebar Routing Instructions

1. Basebar Plate Bolt (M3 x 10mm)
2. Basebar Plate
3. Basebar

- 34 -
Step 1  Route Di2 Wire

Route Rear Shimano Di2 Shifter Wire through the Aero Basebar as shown.

Electronic Wire

Tip: to make routing easier, tape the end of the wire to the end of a material that is easier to route than a wire or housing. (We used blue plastic tubing for this example). Once cable is visible through exit hole, pull through and remove tape.

Step 9

Insert end of Shimano Di2 Wire into appropriate hole in Basebar as shown and pull back out through main grip opening.
Step 2  Pull Di2 Wire Through Bar

a. As previously mentioned, tape end of Shimano Di2 wire to tube or brake cable. (fig. a)

b. Carefully pull through the bar until the taped end exits the basebar. (Remove tape and tube or cable used to route with.)
Step 3  Route Brake Housing

In similar fashion to the way we previously routed the Di2 wire, we will use a brake cable to assist in routing the Brake Cable Housing.

a. Route the end of a brake cable through the hole where the basebar mounts to the stem and out the right handle. (fig. a)

b. Slide Brake Housing over exposed end of brake cable (which just exited the right handle) and advance it through the basebar. (fig. b)
Step 4
After Brake Cable Housing is routed, remove the cable which was used to route the Brake Cable Housing as pictured.

Step 5
a. Plug handlebar end of Brake Cable Housing into Brake Lever and install Brake Lever into handlebar.

b. Repeat the previous 4 steps to finish Brake Cable Housing and Di2 Wire for left side of basebar.
Step 6  Basebar Routed

Both Di2 Wires and Brake Cable Housing are shown routed through the Basebar properly.

* Note: Front Brake Cable Housing exposed length will vary. Trim after verifying necessary length required to reach front brake when basebar is properly mounted.
Step 7  Barrel Adjuster Installation

a. Insert the rear brake housing (which exits the basebar) into the large opening of Barrel Adjuster.

b. Insert Stepdown Ferrule into Barrel Adjuster as shown. (fig. a.)

c. Insert Rear Brake Housing (rear brake bound into Stepdown Ferrule.)

fig. a

To Rear Brake

To Rear Brake Lever
Step 8  Plug Wires Into Junction A

a. The following Di2 wires plug into the Shimano Di2 Junction A:

- Front Brake Lever
- Front Derailleur Shifter
- Rear Brake Lever
- Rear Derailleur Shifter
- Junction B
Step 9 Basebar Plate

Place Aerobar Basebar Plate onto the basebar and tighten bolts as shown to 2Nm.
## Section 5 Pt. 2: Aerobar Assembly

### Parts List

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<th>QTY.</th>
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<td>Narrow Fixed Bridge</td>
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<td>5mm Non-Threaded Spacer</td>
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5 Aero Bar
Adjustability

The below reference highlights the five main areas of adjustment that can be manipulated to achieve the desired configuration.

1. Armpad position & angle
2. Armpad fore & aft
3. Armpad width
4. Extension width & angle
5. Extension fore & aft
6. Stack height
For riders who prefer a narrower position, further adjustment can be achieved by flipping the extension brackets 180 degrees to position the extensions closer together. See the two images below for demonstration. See details below for additional clarity.
Shown below is an example of a high-stack configuration with a narrow armpad and extension position which utilizes a narrow fixed bridge for stability.

Narrow Fixed Bridge
If you know the dimensions that you require while riding a TRI bicycle, the chart below will help you quickly identify the hardware required to achieve your desired stack height.

Use only the specific parts listed for your desired stack height. Using any combination of parts other than those specified can result in suboptimal performance, including causing the bracket or the aerobar to come loose or even break.

If you do not know the dimensions you require, Felt recommends getting fitted by a qualified fit specialist.

Section 5: Pt. 3 Aerobar Configuration Chart

<table>
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<tr>
<th>Outer Stack Height (c-c)</th>
<th>Inner Stack Height (c-c)</th>
<th>Threaded Spacers</th>
<th>Non-threaded config</th>
<th>Felt Washers</th>
<th>Top Bolts (mm)</th>
<th>Bottom Bolts (mm)</th>
<th>Thru Bolt Lower Nut</th>
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<td>X</td>
<td>5mm</td>
<td>4 45 X</td>
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<td>25 30</td>
<td>X</td>
<td>10mm</td>
<td>4 50 X</td>
<td></td>
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<td>X</td>
<td></td>
</tr>
<tr>
<td>30 35</td>
<td>X</td>
<td>5mm + 10mm</td>
<td>6 55 X</td>
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<td>X</td>
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<td>40 45</td>
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<td>20</td>
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<td>X</td>
<td></td>
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<tr>
<td>50 55</td>
<td>30</td>
<td>Fixed Bridge</td>
<td>6 30 30</td>
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<tr>
<td>55 60</td>
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<tr>
<td>60 65</td>
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<td>6 35 30</td>
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<td>70 75</td>
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<td>10 45 30</td>
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Notes:

When calculating stack height measurement: As the IA uses an integrated stem, the center of the stem is equivalent to that of conventional 70mm X -7 degree stem.

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5 Aerobar - 49 -
Stack Height & Riser Assembly

Like all Felt products, this aerobar is engineered to offer maximum adjustability and dependability while being easy to use and service. Because this is a precision engineered product, we ask you to take great care in its installation and use. Please apply quality grease to all bolts and always use a torque wrench when tightening all fasteners.

Option A. The diagram to the left is a low-stack configuration and does NOT require the narrow fixed bridge. Use this example to assist in building low-stack assemblies. Tighten the 2 bolts to 6Nm.
Option B. The diagram to the left is a high-stack configuration and does require the narrow fixed bridge and a total of 4 bolts. The of the bolts enter the underside of the basebar and thread into the threaded spacer, and 2 top bolts enter the extension bracket and thread into the threaded spacer. Tighten all 4 bolts to 6Nm.

Like all Felt products, this aerobar is engineered to offer maximum adjustability and dependability while being easy to use and service. Because this is a precision engineered product, we ask you to take great care in its installation and use. Please apply quality grease to all bolts and always use a torque wrench when tightening all fasteners.
Important!

*BRACKET SPACER
Insert the bracket spacer into the slot located on the extension bracket, making sure to align the holes and leave the long, curved edge flush with the edge of the extension bracket slot as shown in the illustration to the right.

**FIT WASHERS
Begin with pressing the fit washers into the recessed holes.

Sandwich the fit washer between the bolt, spacer/bridge and a threaded spacer. Tighten the bolt until the fit washer is pressed in. Unthread the bolt and assemble.

Threaded spacer
Threaded lower nut
Arm Rest Assembly

To complete the arm rest assembly, you will need the following:
- Two 12mm Arm Rest Bolts
- One Arm Rest Washer
- One Arm Rest
- One Arm Rest Bracket
- One 15mm Bolt

Begin by taking an arm rest bracket and thread a 15mm bolt into the underside and finger-tighten to keep in place. Place the arm rest washer and use two arm rest bolts to fasten in desired position. Finally, slip the arm rest assembly over the extension and tighten the 15mm bolt to 7Nm.

DO NOT OVERTIGHTEN, as this can affect the structural integrity of the assembly and the aerobar.

See diagram on following page for the four acceptable configurations.

Possible armrest configurations
Notice that the diameters of the six holes in the arm rest are each larger than the diameter of the bolt shaft. This allows for fine-tuning to achieve desired arm pad angle. See below for illustrations.

Counter-Clockwise Rotation  Clockwise Rotation

The image below shows the stack assembly and arm rest assembly properly mounted on an extension (actual placement of assemblies in relation to the extension will vary).
Section 6: Felt Aero Brake System
Felt Aero Brake System Parts

1. Right Brake Arm
2. Return Spring
3. Front Plate Mounting Screw (x2)
4. Carriage Assembly
5. Brake Mounting Bolt
6. Front Plate
7. Brake Arm IGUS® Pivot Bushing (x4)
8. 30mm Brake Mounting Screw
9. Backing Plate
10. Brake Pad & Brake Pad Holder (x2)
11. Left Brake Arm
12. Brake Pad Spherical Washer (x2)
13. 1mm Thick Pad Spacer Washer (x2)
14. Brake Shoe Fixing Washer (x2)
15. Brake Shoe Fixing Screw (x2)
16. Track Mounting Screw (x2)
17. Track
18. Cable Noodle
19. Cable Barrel Adjuster
### Felt Aero Brake System Torque Values

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<td>5</td>
<td>Cable Clamping Screw</td>
<td>M4 x 0.7</td>
<td>2mm</td>
<td>1Nm</td>
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</table>

**Diagram:**
- **1:** Front Plate Mounting Screw
- **2:** Track Mounting Screw
- **3a:** Front Brake Mounting Screw
- **3b:** Front Brake Mounting Nut
- **4a:** Rear Brake Mounting Screw
- **5:** Cable Clamping Screw

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**Brake Installation**
Felt Aero Brake System Disassembly

Step 1: Begin by removing Cable Barrel Adjuster, Noodle, Brake Pad Assemblies and Mounting Screw.

Step 2: After Removal of initial parts, the remaining brake should look as the sample above does.

Step 3: Remove Front Plate and Mounting Screws. 
Step 4: Remove Carriage Assembly.

Step 5: Remove Brake Arms, Mounting Bolt and Spring.

Step 6: Remove Track from Backing Plate.
Felt Aero Brake System Cleaning and Inspection

Step 1: Clean and Inspect Brake Carriage Assembly Rollers and T-Slot

Step 2: Clean and Inspect Brake Arm Cam Surfaces and Spring Pocket

Step 3: Clean and Inspect Brake Arm Bushings.
Step 4: Clean and Inspect Spring

Step 5: Clean Brake Arm Pivots

**Cleaners:** The Brake Pivots and Cam Follower Rollers incorporate IGUS® lubrication-free polymer bushings, which DO NOT require any form of lubricant to function properly. It should be noted that if these bushings are exposed to harsh chemical cleaners, aerosol cleaners, solvents, or lubricants, they may experience a chemical reaction causing the bushings to swell up and bind and/or eventually break down. (Notes: WD-40 is particularly harmful to these bushings. Petroleum-based products are okay to use. Typically, aerosol cleaners are not acceptable.)

It is recommended that the brake be cleaned with a mild degreaser or soap and water.

**Lubricants:** As previously noted, the Brake Pivots and Cam Follower Roller Bushings are lubricant-free, and DO NOT require any form of lubricant to function properly.

A Light Waterproof Grease may be applied to the Brake Arm Cam Track and to the Carriage Track if desired.
Felt Aero Brake System Reassembly

Step 1: Remount Track and apply film of light, waterproof grease. Tighten bolts to 1Nm.

Step 2: Apply a thin film of light waterproof grease to Brake Arm Cam surfaces.

Step 3: Apply thin film of light waterproof grease to spring arms.
Step 4: Preassemble Brake Arms and Spring.

Step 5: Add Bushings to Brake Arms. Slip Brake Arm and Spring Preassembly onto Brake Posts. Add Brake Mount Bolt

Step 6: Install Carriage Assembly followed by installing the Front Plate and tighten screws to 2Nm.
Step 1 Install Front Brake

Fasten the Front Brake to the fork using the Brake Mounting Bolt and the 30mm Brake Mounting Nut and Serrated Nut as shown.
Using a 4mm and 5mm Hex Wrench, tighten the Brake Mounting Nut and Bolt to 6Nm.

Step 2  Tighten Brake Bolts
Step 3

Thread the Front Brake Cable through the Front Brake Cable Housing, through the Barrel Adjuster and into the Front Brake as shown.
Step 4  Secure Brake Cable

Apply tension on the front brake cable and tighten the Cable Clamping Screw as shown. (fig. a)
Section 6 Pt. 2: Front Brake Cover Installation

1. Lower Front Brake Cover
2. Brake Cover Bolt
3. Upper Front Brake Cover
Step 1  Add Lower Cover

a. In order to make Di2 Wires easier to manage, it is recommended that a cable tie be used to affix wires to Junction A as pictured. (fig. a)

b. Place Lower Front Brake Cover. (fig. b)
Step 2  Add Upper Cover

a. Place the Upper Front Brake Cover as shown.

b. Secure both Lower and Upper Brake Cover with M3 bolts tightened to 2Nm.
Step 1  Rear Brake Installation

a. Locate the Rear Brake Cable Housing currently exiting the hole under the bottom bracket. (fig. a)

b. Insert a flexible guide noodle onto Rear Brake Cable Housing and install Rear Brake Cable.
Step 2  Install Brake

a. Thread the Rear Brake Cable Into the Rear Brake as shown. (fig. a)

b. Mount the rear brake by tightening M 6 bolt to 6Nm. (fig. b)
Step 3

a. Trim Excess brake cable and install a cable crimp as shown.
Step 4  Install Brake Cover

a. Orient the brake cover as shown and tighten included M3 bolts to 2Nm.
Section 7: Seatpost Installation
1. VR Seatpost
2. 3T Difflock End-Cap
3. 3T Difflock M5 Bolts/star washers (x2)
4. 3T Difflock Inner Spline Support
5. 3T Difflock Outer Spline
6. InternaLoc Seatpost Wedge
7. Compression Spring
8. Seatpost Seals
9. InternaLoc Seatpost Bolts
Step 1 Internaloc Seatpost Wedge Assembly

a. Place Compression Spring between Internaloc Seatpost Wedges. (fig. a)

b. Place Internaloc Seatpost Wedge on top of other wedge, sandwiching the Compression Spring. (fig. b)

c. Make sure spring is aligned with seatpost wedges. (fig. c)
d. After the Compression Spring is installed in the two halves of the InternaLoc Seatpost Wedge, orient the seatpost so the bottom edge will slant downward toward the ground at the front of the bike. (fig. d)

e. Apply a thin coat of carbon friction paste on the surface of aluminum InternaLoc Seatpost Wedge that will contact the carbon fiber surface of seatpost to prevent slipping or noise. (fig. e)

f. Slide the assembly up into the seatpost until the guides on each side of the internal seatpost wedge snap into the slots on each side of the seatpost. Be sure to keep the assembly at the bottom of the seatpost for now. (fig. f)
Step 2

a. Insert the 3T Difflock Outer Spline into VR seatpost seat clamp area. (fig. a)

b. Insert the 3T Difflock Inner Spline Support into the 3T Difflock Outer Spline. (fig. b)

c. Insert 3T Difflock End-Cap and M5 Bolt. (fig. c)

d. Partially tighten with 4mm Allen Wrench. (fig. d)
Step 2

a. If not done yet, press-fit the Seatpost Seals into the VR Seatpost Slot. (fig. a)

b. Apply a thin coat of carbon friction paste on the surface of Seatpost to insertion point and inside seat tube to prevent slipping or noise. (fig. a)

c. Insert seatpost into frame, thread seatpost binder bolts, but do not tighten completely. (fig. b)

d. After determining appropriate seatpost insertion, trim silicone slot cover so exposed seatpost slot is entirely covered by slot cover. (fig. b)

e. After making sure slot cover is entirely covered, tighten seatpost binder bolts to 7Nm.
Section 8: CalPac / AeroPac Installation
Once the protrusions of the Calpac are aligned with the cavities located on the underside of the AeroPac, press the AeroPac firmly into place.

Step 1 Install CalPac Cover
Step 2   AeroPac Properly Installed

Be sure the CalPac is properly installed. There should be no significant gap between the CalPac and AeroPac cover. Once installed, it should appear as pictured. (fig. a)
Complete

The IA is shown with CalPac, Fork, Headset, Stem, Aerobars, Brakes, Brake Covers Installed and all Brake Cables and Shimano Di2 Wires Routed.

Should you ever need further clarification, or do not feel entirely confident performing maintenance on your IA, please contact your local Felt Dealer for help.

Thank you for your support and ride safely!