



[www.whyte.bike](http://www.whyte.bike) 

**e-MTB Full Suspension Range**

**e-180: Enduro Suspension**

**e-160: Trail/Enduro Suspension**

**e-150: Trail Suspension**

**Supplementary Service Manual 2020 Edition 1**

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## **1.0: INTRODUCTION**

Thanks for choosing to purchase this Whyte product. We hope you will enjoy all the benefits its advanced design and engineering will bring to your riding experience.

This manual will guide you through the set-up, safety and maintenance procedures that are specific to your Whyte bike. For other more general information, we strongly advise that you also read thoroughly the General Instruction Manual that is also supplied with your new bike.

Also, please note that the specification of all the components that are fitted to your bike as standard may be obtained from the Whyte Bikes website **[www.whyte.bike.co.uk](http://www.whyte.bike.co.uk)**

Please remember, if you are in any doubt about your ability to safely service or repair your Whyte bike, do not ride it and instead arrange for a professional bicycle mechanic at your local Whyte dealer to do the job correctly.

Bundled with this manual, are the respective manufacturers instructions and manuals for the branded parts that are fitted to your Whyte bike. Please take time to study all the relevant instruction manuals to ensure you have a continually safe and well set-up bike before every ride, and to help you build up a relationship of knowledge between you and your Whyte Dealer.

Happy and safe riding,

*Whyte design team.*

## **2.0: GEOMETRY**

The geometry of the full suspension range of Whyte Bikes is available from the Whyte Bikes website **[www.whytebike.co.uk](http://www.whytebike.co.uk)**

## **3.0: PREPARATIONS FOR RIDING**

### **3.1: MAKING ADJUSTMENTS**

Please refer to the specific component manufacturers manual or published technical information about adjusting the components on your Whyte bike. Instructions may be downloaded from the relevant manufacturer's internet site, as shown in the table below.



**CAUTION!** If you are uncertain in any way, about making adjustments to any components on you Whyte bike, then **DO NOT RIDE YOUR BIKE.**

Contact your Whyte dealer who will be able to advise you on how to go about setting up you Whyte bike for riding, and or making adjustments to the components fitted to your Whyte bike.

DT Swiss	<b><a href="http://www.dtswiss.com">www.dtswiss.com</a></b>
Easton	<b><a href="http://www.eastonbike.com">www.eastonbike.com</a></b>
Formula	<b><a href="http://www.formulahubs.com">www.formulahubs.com</a></b>
Fox	<b><a href="http://www.foxracingshox.com">www.foxracingshox.com</a></b>
Hope	<b><a href="http://www.hopetech.com">www.hopetech.com</a></b>
Joytech	<b><a href="http://www.joytech.co.tw">www.joytech.co.tw</a></b>
Maxxis	<b><a href="http://www.maxxis.com">www.maxxis.com</a></b>
Race Face	<b><a href="http://www.raceface.com">www.raceface.com</a></b>
Shimano	<b><a href="http://www.shimano.com">www.shimano.com</a></b>
SR Suntour	<b><a href="http://www.srsuntour-cycling.com">www.srsuntour-cycling.com</a></b>
SRAM	<b><a href="http://www.sram.com">www.sram.com</a></b>
Tektro	<b><a href="http://www.tekro.com">www.tekro.com</a></b>
WTB	<b><a href="http://www.wtb.com">www.wtb.com</a></b>

### 3.2: WHYTE INTER GRIP SEAT CLAMP ADJUSTMENT & SERVICE

**Tools Required:** 5mm AF Allen Keys (2 off, 1 fitted to a 3Nm to 15Nm Torque Wrench)  
Small Size Flat Blade Screwdriver  
SKF LGEP2 or Castrol Spheerol AP3 or Finish Line Teflon White Lithium Complex grease

Reference Fig. 1-7 and also Figure 21. The Inter Grip seat clamp design is present on some models of Whyte full suspension mountain bikes. It allows adjustment of the saddle height & alignment of the saddle.



**CAUTION! Avoid over-tightening the seat clamp.**

*In particular, "dropper" seat-posts such as SRAM Reverb may not work correctly if the seat clamp is over tightened.*

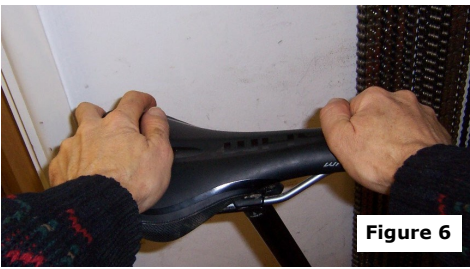
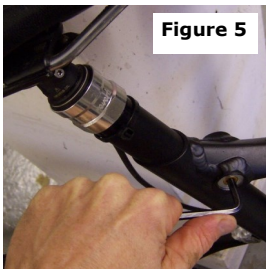
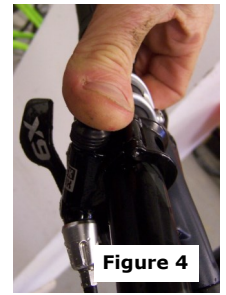
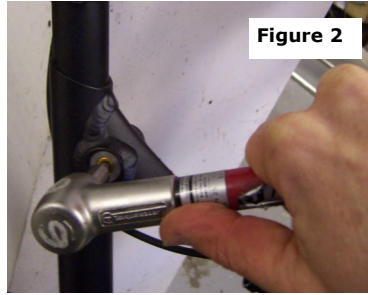


Figure 1. To adjust the seat height and/or direction, using the 5mm Allen key, undo the M6 Capscrew (1) just enough to allow the Seat Post (7) to slide freely up and down. Set the height and/or direction to the desired level.

Figure 2. Re-tighten the M6 Capscrew (1) with the 5mm Allen Key in the Torque Wrench to the 14Nm limit, as marked on the Plain Sleeve (2).

Figures 3 & 4. If a "dropper" seat-post is fitted, simultaneously depress the activation trigger and press down on the saddle to compress the seat-post until it is fully down. Then release the activation trigger and the seat-post should rise up automatically.

Figure 5. If this does not happen, gradually loosen the M6 Capscrew (1) with the 5mm Allen Key below the 14Nm limit, until the seat-post rises automatically.

Figure 6. Then firmly twist the saddle to confirm the seat-post is still securely gripped by the lowered torque value that allows the "dropper" seat-post to function correctly.



**CAUTION!** When adjusting the saddle height you **MUST** obey the Minimum insertion depth requirement marked on the Seat Post (7). Also consult the seat-pin manufacturers instructions in conjunction with these notes.

### 3.3: SET UP OF FORK

*Tools Required:*     *Good Quality Shock Pump.*  
                              *Small Ruler*



**IMPORTANT SAFETY NOTE:** Always stop riding when making adjustments of any kind to the bicycle!

The front suspension fork fitted to your Whyte bike will be pre-set with the standard settings. Before riding, you may need to adjust these settings. First is the Sag setting on the fork. This is to ensure the forks are set-up correctly for your own body weight, so the fork will perform as intended.

To set Sag on the front fork, you need to measure the amount the fork compresses when you sit on the bike in the normal riding position. See the table on the right for our recommendation of front fork sag on your Whyte bike. To achieve this you will need to adjust the air spring pressure inside the fork.

Refer to the specification tables in this manual, and then to the relevant fork manufacturers set up instructions to find how to adjust the air spring pressure in the fork. Using a shock pump, either add or remove air until Sag is correctly set.

Please note that for the detailed instructions for servicing and all matters relating to the forks fitted to your Whyte bike, please refer to the manufacturers instructions.

Rebound Damping adjustment:

This adjustment fine-tunes the speed at which the wheel returns to its normal ride height after hitting a bump. Refer to the relevant manufacturers instructions to find out how to adjust the rebound damping. To demonstrate the effect of this function, turn the adjuster to its slowest setting. Press down on the handlebars to compress the forks, then release the load. The suspension recovers very slowly to its original position.

Repeat the above with the adjuster turned to the fastest setting and the difference will be seen immediately the load is released. We recommend the optimum setting is to adjust the re-bound damping to be as slow as possible, but not so slow that the normal ride height is not recovered. On very rough terrain, if the bike becomes progressively lower as more bumps are hit then the re-bound damping is set too slow. On the other hand if the bike feels choppy and not plush then the re-bound damping is too fast. A bit of trial and error is needed to get the exact setting.

### 3.4: SET UP OF REAR DAMPER

*Tools Required:*     *Good Quality Shock Pump.*  
                              *Small Ruler*



**IMPORTANT SAFETY NOTE:** Always stop riding when making adjustments of any kind to the bicycle!

Your Whyte bike is fitted with an air spring rear shock absorber. This means that the air pressure in the shock absorber determines the spring rate. The correct 'sag' can be found using the sliding 'O' ring fitted to the shaft of the shock piston. Slide the 'O' ring against the shock body. Then gently sit on the bike in your normal riding position and with normal riding gear, including back pack if applicable, and also raise your feet off the floor. Carefully dismount and measure the distance the 'O' ring has moved away from the shock body.

The optimum distance for the Quad-Link rear suspension system is shown in the table. If there is less than that distance fit a shock pump and release air pressure. Conversely if there is greater than that distance, fit the shock pump and increase air

Repeat the 'sag' test until the recommended sag distance is achieved.

Rear Suspension Set-up - Rebound Damping:

When the damper unit is being compressed, this is known as the compression stroke. As the suspension unit recovers from compression back towards its full length, this is called the re-bound stroke. All the shocks fitted as standard to the Whyte full suspension mountain bikes have factory set compression damping, and manually adjustable rebound damping.

### Rebound Damping Adjustment:

The advice in section 3.3 about the fork rebound damping adjustments also applies to the rear shock.

### Platform Damping Adjustment.

The rear Shock fitted to your Whyte bike may have a "platform" facility to adjust the slow speed compression damping, eg Fox "3pos w/Adj" or SRAM RockShox "Motion Control". Please refer to the relevant shock manufactures technical information to learn how to adjust these features.

Please note, that the Whyte rear suspension systems have been designed not to rely on excessive low speed compression damping to obtain efficient pedalling performance, and turning on too much low speed damping on the rear shock will compromise the suspensions sensitivity to small bump absorption and traction


Model	Shock Stroke	Sag (25%) Firmer	Sag (30%) Plusher
E-150 (29")	50mm	12.5mm	15mm
E-160 (27.5")	55mm	13.75mm	16.5mm
E-180	65mm	16.25mm	19.5mm

### 3.5: SUSPENSION TUNING LOG

Record your best suspension settings in the table below, to restore them if necessary, eg. after dealer servicing of the suspension or if a friend has borrowed your bike

Date	Rider Weight (including all riding kit) (kg or lbs)	Fork Pressure (bar or P.S.I)	Fork Rebound Damping (# of clicks from softest setting)	Shock Pressure (bar or P.S.I)	Shock Rebound Damping (# of clicks from softest setting)

### 4.0: SAFETY

 **IMPORTANT:** The following are intended to be advisory notes on the safe use of your Whyte bike. You should also read thoroughly the General Instruction Manual also supplied with your new bike. If at any stage you are uncertain about the safety or safe operation of the bike as a whole, or any specific component, then **DO NOT RIDE YOUR WHYTE** and instead please consult the specific component manufacturers instruction manual or your Whyte Dealer for advice.

**Maximum Weight Limit for Whyte Suspension Bikes:** 18st. / 114kg (including the rider's equipment.)

**WARNING:** As is the case with all mechanical components, the bicycle is subjected to wear and high stresses. Different materials and components may react to wear and stress fatigue in different ways. If the design life of a component has been exceeded, it may fail suddenly causing possible injury to the rider. Any form of crack, scratches and decolouring in highly stresses areas are showing that the component has exhausted its life time and has to be replaced. If you are in any doubt about one or more components on your Whyte **DO NOT RIDE YOUR BIKE**. Consult the specific component manufacturers literature, or take your bike to your local Whyte Dealer.

#### Designed for the following use:

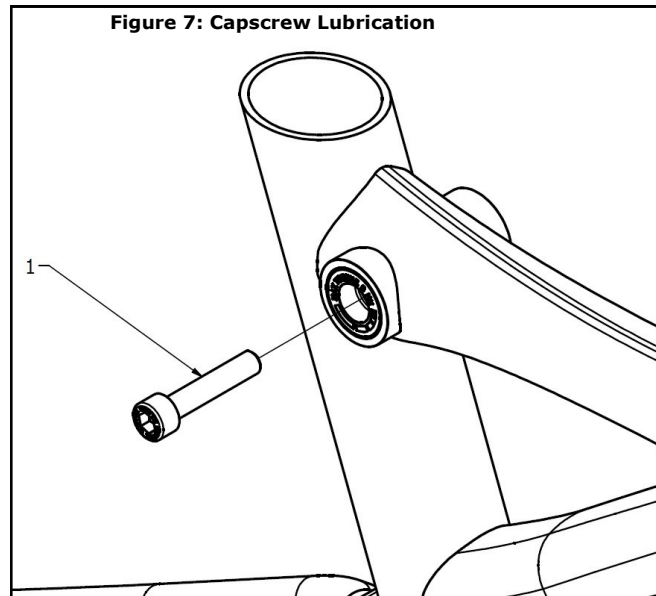
Whyte suspension bicycles have been designed, tested and comply with ISO 4210-2 Safety Standards, for typical mountain biking use.

## **5.0: LUBRICATION**

Please refer to the Whyte General Instruction Manual for guidance about lubricating many of the components on your Whyte bicycle.

For the range of bicycles contained in this Supplementary Service Manual, there is also the following specific guidance:

### **5.1: WHYTE INTER GRIP SEAT CLAMP**



Item	Description	Lubricant	Lubrication Interval
1	M6 x 30mm Capscrew	SKF LGEP2 or Castrol Spherol AP3 or Finish Line Teflon White Lithium Complex grease	Once a Month

### **5.2: GENERAL WHYTE LUBRICATION**

For the correct lubrication regime and maintenance of all parts on a Whyte bicycle, please refer to the specific component manufacturers detailed instructions bundled with this manual or for further information visit the specific manufacturers website.

## **6.0: SERVICING THE REAR SUSPENSION**

### **6.1: Remove the Rear Shock, Links & Swinging Arm:**

*Tools Required:*

- 4mm AF Allen Keys (2 off)*
- 5mm AF Allen Key - ball ended (1 off)*
- 6mm AF Allen Key (1 off)*
- 8mm AF Allen Key (1 off)*
- T-25 Torx® Keys (2 off)*

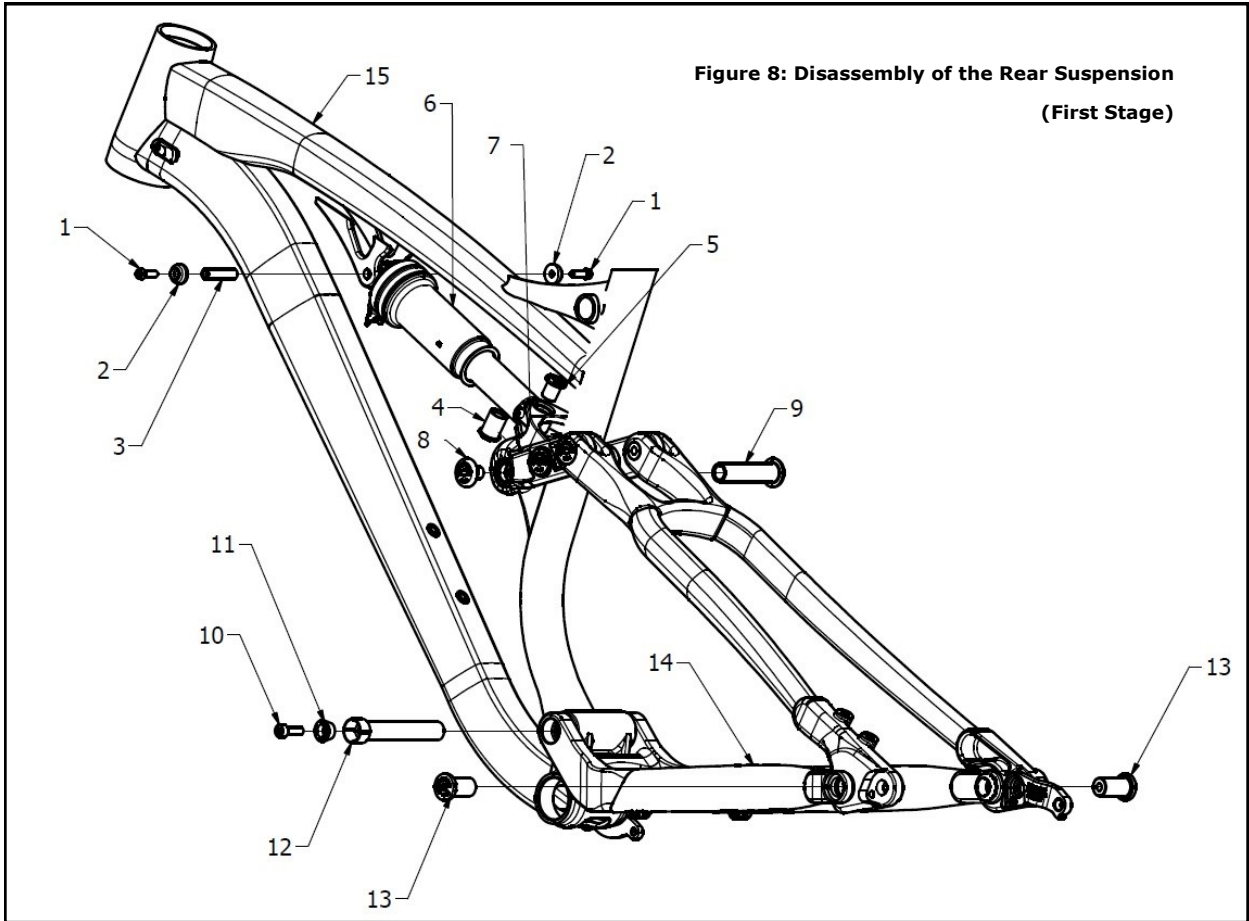
#### **6.1.1 To remove only the rear shock absorber (6) from the frameset.**

Whilst referencing figure 8, using the T-25 Torx® Keys, undo the two M5 x 16mm long Socket-head Capscrews (1) from the Ø8mm x 31mm long Hollow Pivot Pin (3) that passes through the Main Frame (15) and front of the Rear Shock Absorber (6). Whichever Capscrew (1) becomes undone first, remove it and the adjacent Collar (2), and pull the Pivot Pin (3) all the way out from the other side.

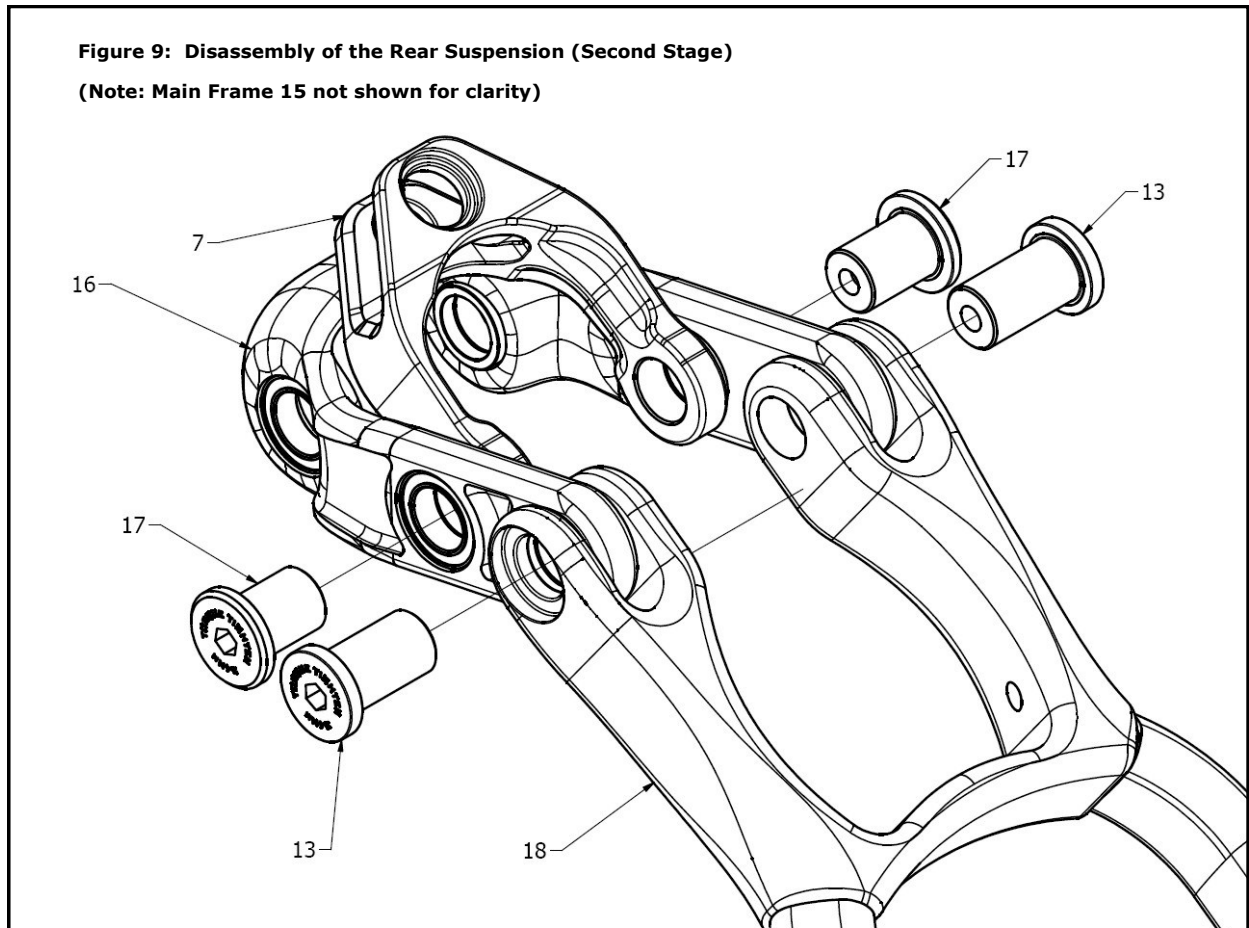
Using the 6mm AF Allen Key and the 8mm AF Allen Key, undo and remove both the Flanged Nut M12 x 19mm long (4) from the Flanged Screw M12 x 15mm long (5), that pass through the Shock Extender (7) and the rear of the Rear Shock Absorber (6). You can now remove the Rear Shock Absorber (6).



**Figure 8: Disassembly of the Rear Suspension  
(First Stage)**



**Figure 9: Disassembly of the Rear Suspension (Second Stage)**  
**(Note: Main Frame 15 not shown for clarity)**



### 6.1.2 To remove the Link (16) and Chain-Stay (14) from the Main Frame (15).

Whilst referencing figure 9, using the 6mm AF Allen Key, unscrew and remove the M12 x 20 long Pivot Screw (8) & the Pivot Pin (9) at the front of the Link (16).

Next, using the 6mm AF Allen Key, unscrew and remove the two M15 x 28 long Pivot Screws (13) at the rear of the chain-stays (14). Be careful to retain all the shield washers (Items 2 & 3, Figure 12) ready for re-assembly.

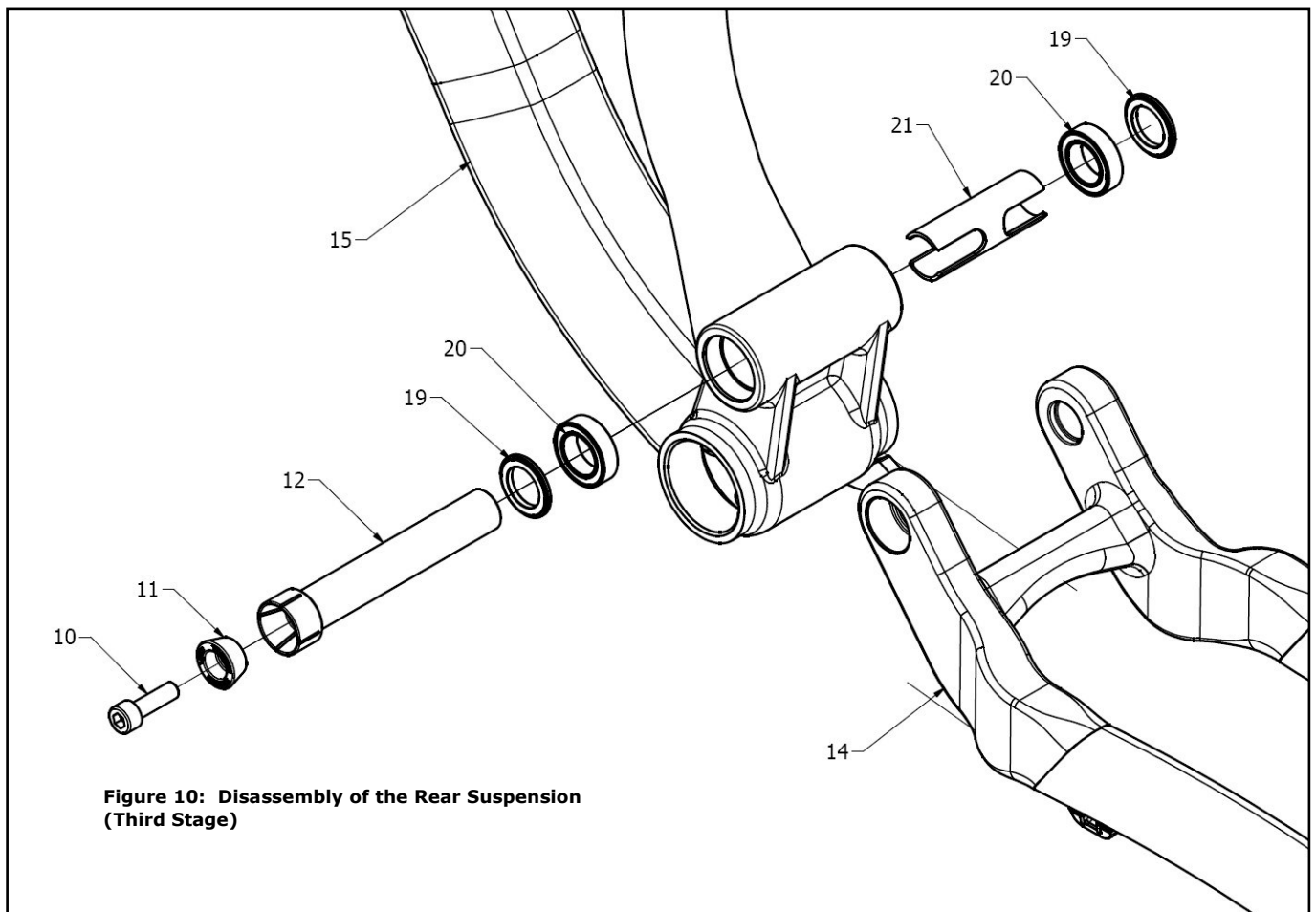
To separate the Seat-stays (18) from the Link (16) and Main Frame (15), whilst referencing figure 9, using the 6mm AF Allen Key, unscrew and remove the two M15 x 28 long Pivot Screws (13) at the front of the Seat-stays (18). The Seat-stays (18) may now be removed from the Link (16). Finally to remove the shock extender (7) from the Link (16), using the 6mm AF Allen Key, unscrew and remove the two M15 x 20 long Pivot Screws (17). Be careful to retain all the shield washers (Items 2 & 3, Figure 12) ready for re-assembly.

### 6.1.3 To remove the Chain-stays (14) and Bearings (20) from the main frame (15).

Whilst referencing figure 10, using the 5mm A/F Allen Key, partially unscrew the M6 x 20 long Capscrew (10) from the Pivot Pin 80mm long, expanding collet, M15 thread (12). Using the 6mm AF Allen Key, unscrew and remove the Pivot Pin 80mm long, expanding collet, M15 thread (12). The capscrew (10) may now be completely removed, to allow the tapered sleeve (11) to be released from the collet (12).

The Chain-stays (14) may now be removed from the Main Frame (15). Be careful to retain the two shield washers (19) ready for re-assembly.

Using the press tools shown in Figure 14, extract the 3802V2RD bearings (20) from both sides of the Main Frame (15). Align the removal tool carefully with the slots in the Spacer (21).



<b>Item</b>	<b>Description</b>
<b>1</b>	M5 x 16mm long Socket-head Capscrew (T-25 Torx®)
<b>2</b>	Collar for M5 Capscrew
<b>3</b>	Hollow Pivot Pin Ø8mm x 31mm long
<b>4</b>	Flanged Nut M12 x 19mm long
<b>5</b>	Flanged Screw M12 x 15mm long
<b>6</b>	Rear Shock Absorber
<b>7</b>	Shock Extender
<b>8</b>	M12 x 20 long Pivot Screw (6mm A/F Internal Hex)
<b>9</b>	Pivot_Pin_link_mount-61lg
<b>10</b>	M6 x 20 long Capscrew (5mm A/F Internal Hex)
<b>11</b>	Tapered Sleeve for Expanding Collet
<b>12</b>	Pivot Pin 80mm long, expanding collet, M15 thread.
<b>13</b>	M15 x 28 long Pivot Screw (6mm A/F Internal Hex)
<b>14</b>	Chain-stays
<b>15</b>	Main Frame
<b>16</b>	Rear Suspension Linkage
<b>17</b>	M15 x 18 long Pivot Screw (6mm A/F Internal Hex)
<b>18</b>	Seat-stays
<b>19</b>	Shield Washer (O.D. 23mm)
<b>20</b>	Bearing: 3802V2RD (MN) KR-BOLU
<b>21</b>	Internal Spacer (49mm long)

## **6.2: STRIPPING AND REASSEMBLING OTHER BEARINGS.**

### **6.2.1: EXTRACTION OF BEARINGS**

*Tools required:*

- Bearing press tool*
- 6mm A/F Allen Key*
- 10mm A/F Allen Key*
- 13mm A/F Spanner*
- 18mm A/F Spanner*

To remove the Bearings (4) from the Link or Rear of the Seat-stay (6). Assemble the parts as shown in figure 13. Using the 6mm Allen Key and 13mm spanner, tighten the assembly together until the bearing (4) is pressed out of the mating component (6). Repeat on all other bearings.

To remove the Bearings (4) from the Bottom Bracket Yoke (6). Assemble the parts shown in figure 14. Using the 10mm Allen Key and 18mm spanner, tighten the assembly together until the bearing (4) is pressed out of the mating component (6). Repeat on all other bearings.

### **6.2.2: INSERTION OF BEARINGS**

*Tools required:*

- Bearing press tool*
- 6mm A/F Allen Key*
- 10mm A/F Allen Key*
- 13mm A/F Spanner*
- 18mm A/F Spanner*
- Loctite 638*

Before inserting the bearings, make sure all the components are clean from dirt and have been thoroughly de-greased. To press the bearings (4) into the mating component (6) apply a small amount of Loctite 638 to the outside diameter of the bearing and to the inside bore of the mating component (6). Next assemble the components as illustrated in either Figure 14, or 15. It is very important to make sure the bearing (4) and Bearing Insertion tool 1 (5) are squarely seated against the mating component (6). With great care, slowly tighten the M8 Socket head cap screw (6) with the 6mm Allen key and the nut (2) with the 13mm Spanner until you can see the bearing (4) being pressed squarely into the mating component (6). For the assembly shown in figure 15, use the 10mm A/F Allen Key & the 18mm A/F Spanner. Once the bearing is fully seated and you can no longer tighten either the M8 or M12 Socket Head Cap Screws further, undo the nut and bolt and remove any excess Loctite from around the Bearing, particularly in any internal threads. Repeat for the remaining Bearings.

**IMPORTANT! Allow 24 hours for the Loctite to totally cure.**

### **6.2.3: REASSEMBLY OF SHIELD WASHERS / SPACERS**

*Tools required:*

- SKF LGEP2 or Castrol Spherol AP3 or Finish Line Teflon White Lithium Complex grease*
- SKF LGAF 3E" or "Castrol Optimol T" Anti-Fret Paste*

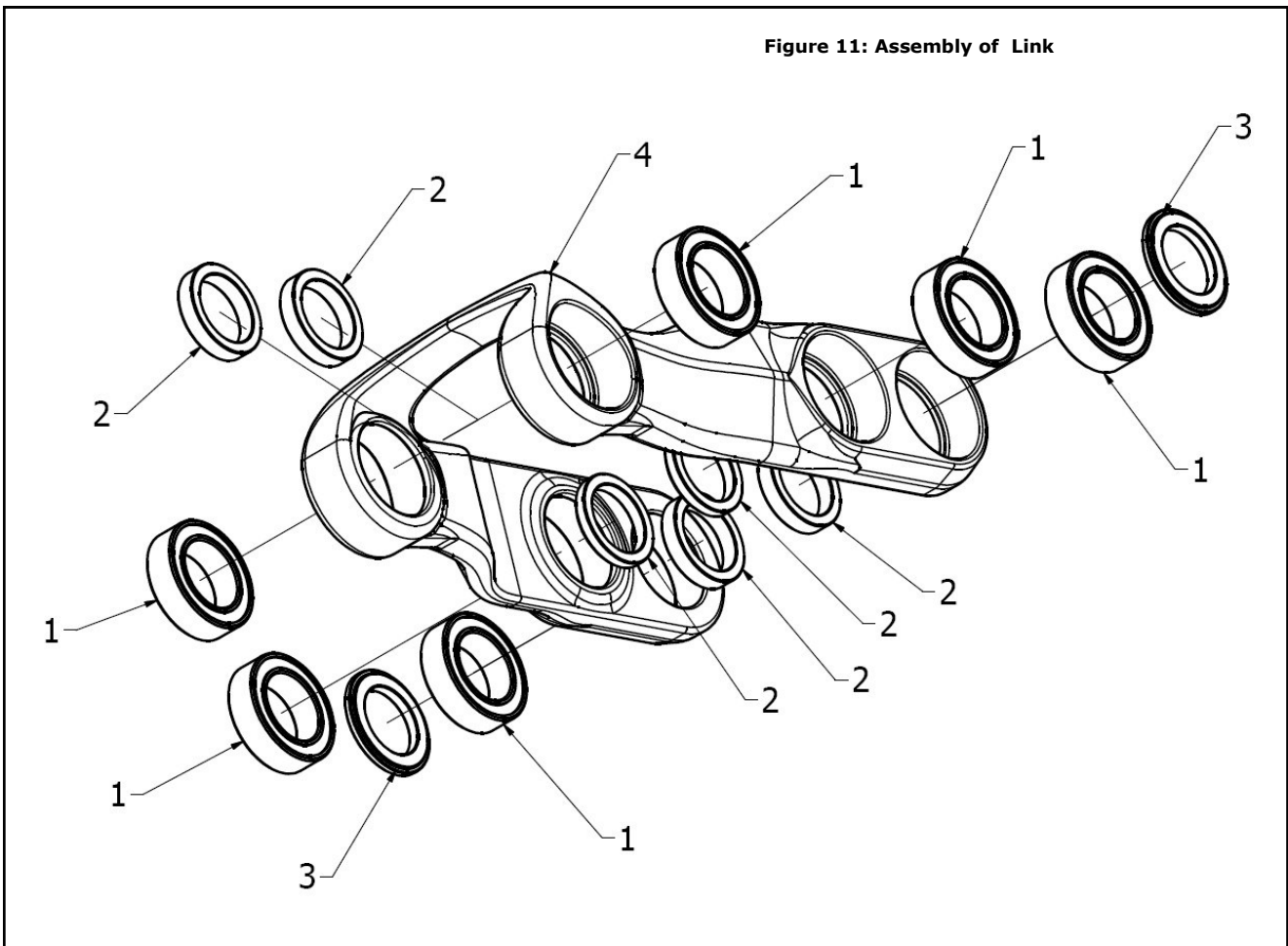
Apply a good quantity of SKF LGEP2 or Castrol Spherol AP3 or Finish Line Teflon White Lithium-Complex grease on top of the Bearings. The grease should completely cover each bearing and be applied on both sides of each bearing subsequent to the bearing being pressed into it's housing in the relevant component.

Assemble the shield washer components (Items 19 in figure 10 or items 2 or 3 in figures 11 & 12). If you have applied enough grease, it should spread from under the shield washer or spacer components as they are positioned. Wipe this excess grease away from around the shield washer or spacer components.

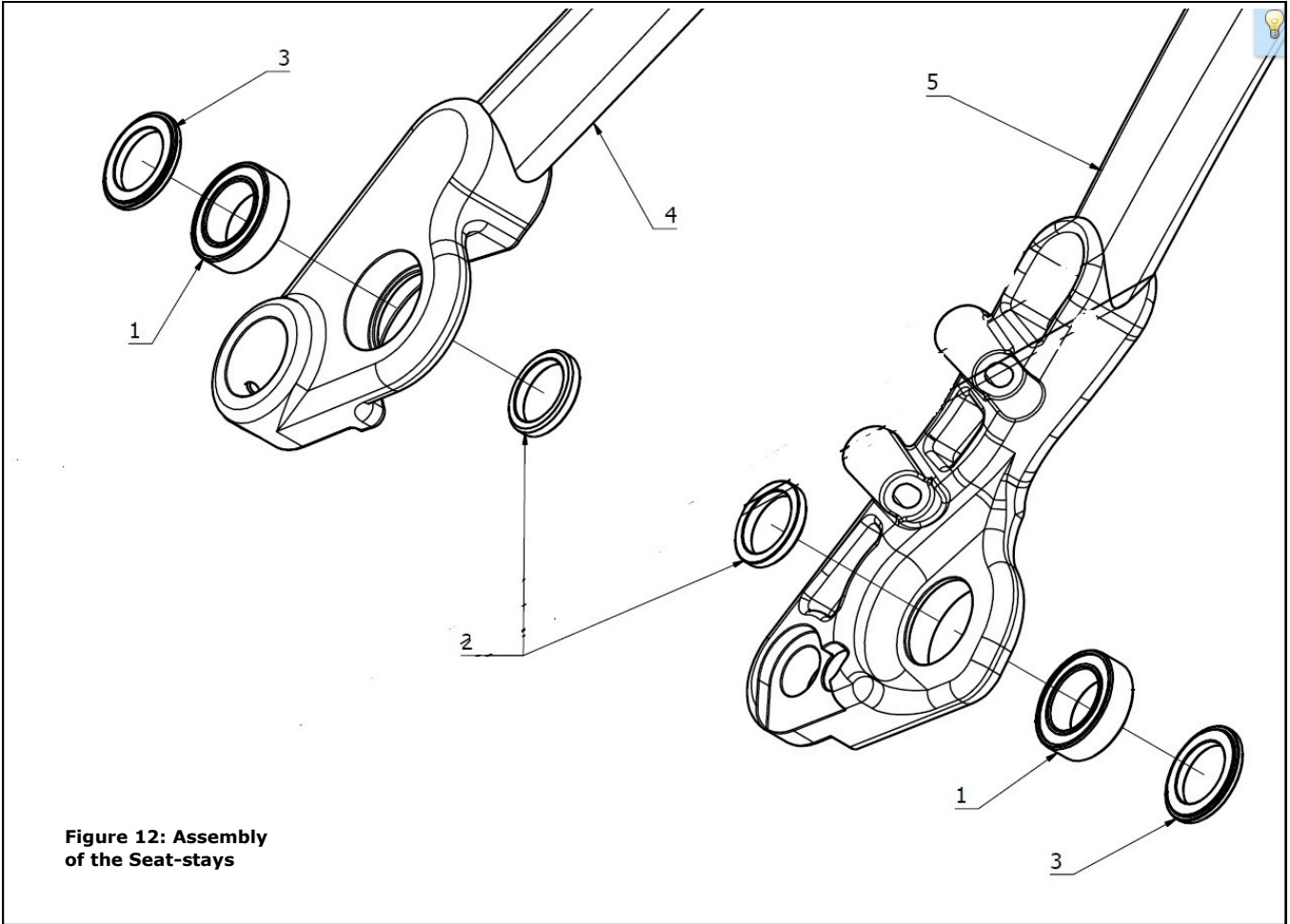
### **APPLICATION OF "SKF LGAF 3E" or "Castrol Optimol T" ANTI-FRET PASTES**

Once the link & Chain-Stay components have been assembled correctly, either SKF LGAF 3E or Castrol Optimol T paste **must** be applied to all outside faces of the shield washer components that contact the Main Frame and Chain-Stay. It is additionally recommended to apply anti-fret paste to the mating contact surfaces on the Main Frame and Chain-Stay

Figure 11: Assembly of Link



Item	Description
1	Bearing: 3802V2RD (MN) KR-BOLU
2	Shield washer (O.D. 20mm)
3	Shield washer (O.D. 23mm)
4	Alloy Link



**Figure 12: Assembly of the Seat-stays**

Item	Description
1	Bearing: 3802V2RD (MN) KR-BOLU
2	Middle shield washer (O.D. 20mm)
3	Outer shield washer (O.D. 23mm)
4	Right Seat-stay
5	Left Seat-stay

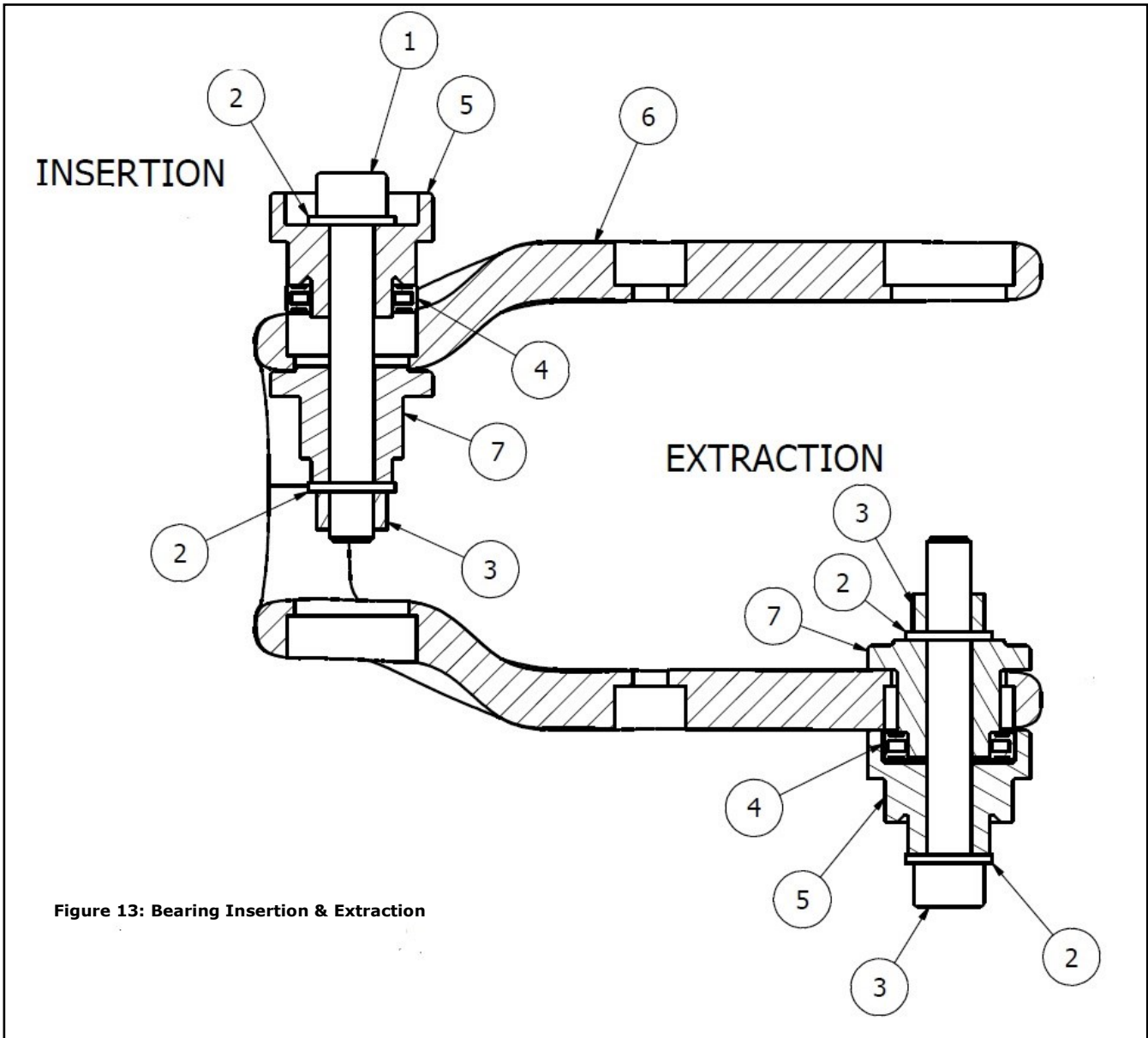


Figure 13: Bearing Insertion & Extraction

Item:	Description.
1	M8 Capscrew ISO4162 55 long
2	M8 Washer ISO 7089
3	M8 Nut ISO 4032
4	Bearing: 3802V2RD (MN) KR-BOLU
5	Bearing Tool 1
6	Mating Component (ie: Link or Seat-Stay)
7	Bearing Tool 2





## 6.3: RE-ASSEMBLING THE REAR SUSPENSION.

### 6.3.1: Re-assemble the Rear Suspension

*Tools Required:* 5mm AF Allen Keys (2 off, 1 fitted to a 5Nm to 25Nm Torque Wrench)  
6mm AF Allen Key (2 off, 1 fitted to a 5Nm to 25Nm Torque Wrench)  
T-25 Torx® Keys (2 off, 1 fitted to a 5Nm to 25Nm Torque Wrench)

Reference figures 8, 9, 10 & 14. The re-assembly of the rear suspension is essentially the reverse of the dis-assembly procedures 6.1.1, 6.1.2 & 6.1.3.

### 6.3.2 To re-assemble the Chain-stays (14) and Bearings (20) into the Main Frame (15) - First Stage.

Before inserting the bearings, make sure all the components are clean from dirt and have been thoroughly de-greased. Apply a small amount of Loctite 638 to the outside diameter of the bearing and to the inside mating bore of the main Frame (15). Using the press tools shown in Figure 14, insert the bearings (20) into both sides of the Main Frame (15). Ensure the spacer (21) is located between the bearings (20).

Referencing figure 10, apply either SKF LGAF 3E or Castrol Optimol T paste to all faces of the shield washers (19), Pivot Pin (12) and Screw (10). Place the Shield Washers (19) alongside the Bearings (20). Insert & align the Chain-Stays (14) between the Washers (19). Insert the Pivot Pin (12) from the left side of the Chain-Stays (14). Screw the Pivot Pin (12) into the thread in the drive-side of the Chain-Stays (14). Insert the Tapered Sleeve (11) and screw in the M6 x 20 long Capscrew (10).

Using a 6mm Socket, first torque tighten the drive-side of the Pivot Pin (12), to the recommended torque settings (refer to the Tightening torque settings in Section 11.0). Then tighten the M6 x 20 long Capscrew (10), again to the recommended torque settings (refer to the Tightening torque settings in Section 11.0). Wipe off any excess grease from around the chain-stays and seat-stays.

### 6.3.3: To re-assemble the link (16), shock extender (7) & Seat-stay (18) onto the main frame (15) - Second & Third Stages.



**IMPORTANT:** Prior to reassembly of the Seat-Stay (18) to the Link (16), make sure the seat tube of the main frame (15, not shown for clarity in Fig.9) is inside of the assembly, as in figure 8. Also make sure all suspension components and linkages are the correct orientation and the correct side facing upwards.

Referencing Fig. 8 and 9. Starting with the Seat-stay (18) and the Link (16), first check that the shield washers are in place in the Link and apply either SKF LGAF 3E or Castrol Optimol T anti-fret paste to the contacting faces between the shield washers and Seat-stay (18). Then ensure that the shield washers in the Link (16) are not pushed out, as you place the seat-stay (18) inside it. Then pass an M15 x 26 long flanged alloy screw (13) through the right side of the seat-stay (18), the adjacent shield washers and the bearing in the Link (16). Using the 5mm A/F Allen Key, torque tighten the M15 screw (13) to the recommended torque settings (refer to the Tightening torque settings in Section 11.0). Repeat that task to assemble the left side of the seat-stay (18) to the H-link (16), also ensuring that the other shield washer in the Link (16) is not pushed out.

Next, to assemble the shock extender (7) and the Link (16), reference figure 11 (Main Frame (15) not shown for clarity), first check that the shield washers are in place in the Link and apply either SKF LGAF 3E or Castrol Optimol T anti-fret paste to the contacting faces between the shield washers and shock extender (7). Then ensure that the shield washers in the Link (16) are not pushed out, as you place the shock extender (7) inside them. Then pass an M15 x 20 long flanged alloy screw (17) through the Link (16), the bearing in Link, the adjacent shield washer, & into the thread of one arm of the shock extender (7). Using a 5mm A/F Allen Key, torque tighten the M15 Flanged Screw (17) to the recommended torque settings (refer to the Tightening torque settings in Section 11.0). Repeat that task to assemble the other arm of the shock extender (7) to the Link (16), also ensuring that the other shield washer in the Link (16) is not pushed out.

Next, to assemble the Link (16) to the Main Frame seat tube (15), check that the shield washers are in place on the inside of the bearings that are installed in front of the Link (16) and apply either SKF LGAF 3E or Castrol Optimol T anti-fret paste to the contacting faces between those shield washers and the link mounting on the main frame seat tube (15). Insert the Link (16) between the Main Frame seat tube (15). Then pass a Pivot Pin (main frame link mount) x 61 long (9) through the Link (16), the bearing in Link, the adjacent shield washer & through the Main Frame link mounting (15). Screw in, from the left side of the link (16), an M12 x 20 long Flanged Screw (8). Using a 6mm A/F Allen Key, torque tighten the M12 Flanged Screw (8) to the recommended torque settings (refer to the Tightening torque settings in Section 11.0). Wipe off any excess grease from around the main frame (15) and the Link (16).

Finally to assemble the Chainstays (14) to the Seat-Stays (18), reference figure 18, check that the shield washers are in place on both sides of each Seat-stay leg (18) (see items 2 & 3 in figure 13) and apply either SKF LGAF 3E or Castrol Optimol T anti-fret paste to the contacting faces between those shield washers and the Chain-stays (14). Ensure that those shield washers are not pushed out, as you lower the Seat-stays (18) into the Chain-stays (14). Pass an M15 x 28 long Flanged Screw (12) through each Chain-stay (14) and Seat-stay leg (18). Using the 5 A/F Allen key, torque tighten those screws to the recommended torque settings (refer to the Tightening torque settings in Section 11.0). Wipe off any excess grease from around the chain-stays (14) and seat-stays (18).

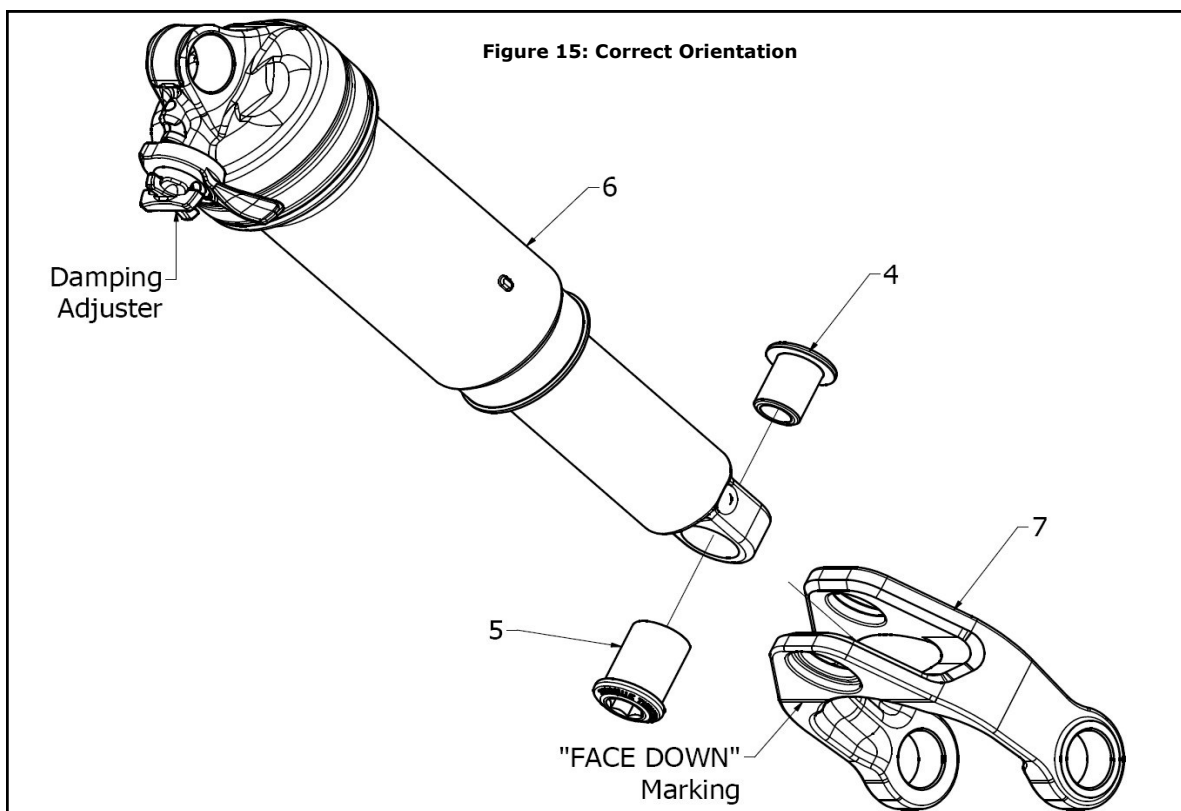
#### 6.3.4 To re-assemble the rear shock (6) into the frameset.

Reference figure 8. Take the Rear Shock Absorber (6) and apply either SKF LG/AF 3E or Castrol Optimol T anti-fret paste onto the side faces of the shock bushes, that contact the Main Frame (15) and Shock Extender (7). Slide the front of the Rear Shock Absorber (6) into the Main Frame (15) and Shock Extender (7).

**IMPORTANT.** Ensure the damper is the correct way up, with any dials and levers facing downwards and towards the front of the frameset, reference figure 15.

Make sure that the Ø8mm holes in the Main Frame (15) and the front of the Rear Shock Absorber (6) are all concentric with each other, and push the Ø8mm x 31mm long Hollow Pivot Pin (3) all the way through. Place a Collar (2) over both ends of the Ø8mm x 31mm long Hollow Pivot Pin (3) and screw in an M5 x 16mm long Socket-head Cap-screw (1) into both ends of the Pivot Pin (3). Using the T-25 Torx® Keys, torque tighten the M5 Cap-screws to the recommended torque settings (refer to the Tightening torque settings in Section 11.0).

Next, make sure that the 12mm holes in the Shock Extender (7) line up with the rear end of the Rear Shock Absorber (6). Insert the Flanged Nut M12 x 19mm long (4) & screw in the Flanged Screw M12 x 15mm long (5). Using the 6mm AF Allen Key and the 8mm AF Allen Key, torque tighten the Flanged Nut M12 x 19mm long (4) into the Flanged Screw M12 x 15mm long (5), to the recommended torque settings (refer to the Tightening torque settings in Section 11.0). Wipe off any excess grease from around both ends of the shock absorber (6).



## **7.0: SERVICING THE WHYTE MODULAR DROPOUT SYSTEMS.**

### **7.1: Removing the Modular Rear Dropouts**

*Tools Required: 2mm Allen Key, 3mm Allen Key & 4mm Allen key*

These Rear Drop-outs are a modular design, that can either be replaced if damaged or converted to one of two different types of through-axle products, ie: Shimano E-Thru or SRAM Maxle 148mm. Contact your local Whyte dealer to purchase either a replacement hanger or a conversion kit.

#### **7.1.1: Shimano E-Thru 'Direct Mount' System (11 speed Only)**

Reference figure 16. The Rear Derailleur Hanger (2) is attached to the Right Side of the Seat-stay (18) by one Countersunk M4 Cap Screw (1). To remove the Rear Derailleur Hanger (2), using the 3mm Allen Key undo that Cap Screw (1) and remove it together with the Rear Derailleur Hanger (2). Also, to remove the Adjuster (4), using the 2mm Allen Key undo the Grub Screw (3) and remove it together with the Adjuster (4). Take care not to loose any of the components.

#### **7.1.2: SRAM 11 Speed and 12 Speed | Shimano 12 Speed**

Reference figure 17. The Rear Derailleur Hanger (4) is attached to the Right Side of the Seat-stay (18) by one M4 Countersunk Cap Screw (3). To remove the Rear Derailleur Hanger (4), using the 3mm Allen Key undo that Cap Screw (3) and remove it, together with the Rear Derailleur Hanger (4). To remove the Axle Nut (6), using the 2mm Allen Key undo the Grub Screw (5) and remove it, together with the Axle Nut (6). Moving across to the Left Side of the Seat-stay (18), again using the 4mm Allen Key undo the M5 Countersunk Cap Screw (2) and remove it, together with the Drop-out Spacer (1), from the assembly. Take care not to loose any of the components.

### **7.2: Re-assembling the Modular Rear Dropouts onto the Swinging Arm**

*Tools Required: 2mm Allen Key, 3mm Allen Key (1 off each, fitted to a 1Nm to 5Nm Torque Wrench)*

It is important to make sure that all components are clean and free from mud, old grease and other dirt, which could prevent them from fitting together perfectly.

#### **7.2.1: Shimano E-Thru 'Direct Mount' System (11 Speed Only)**

Reference figure 16. Loosely assemble all the parts as shown, making sure the screws (1) & (3) are correctly positioned, *be very careful not to cross-thread this, on it's way in.* Insert the rear wheel and the Shimano E-Thru Rear Axle. Adjust the axle as per the Shimano Technical Service Instructions SI-27U0A-001-00. Whilst adjusting the Rear Axle, make sure the nose of the M5 Grub Screw (3) is aligned with one of the slots in the Axle Nut (4). Having tightened the Rear Axle, using the Torque Wrench, tighten the M5 Grub Screw (3) to the correct torque as specified in Section 11.0. *DO NOT OVERTIGHTEN*, since the thread of the Screw (1) is very small.

Remove the rear wheel and using the Torque Wrench, tighten the M4 Countersunk Head Screw (1) to the correct torque as specified in Section 8.0. *DO NOT OVERTIGHTEN*, since the thread of the Screw (1) is very small.

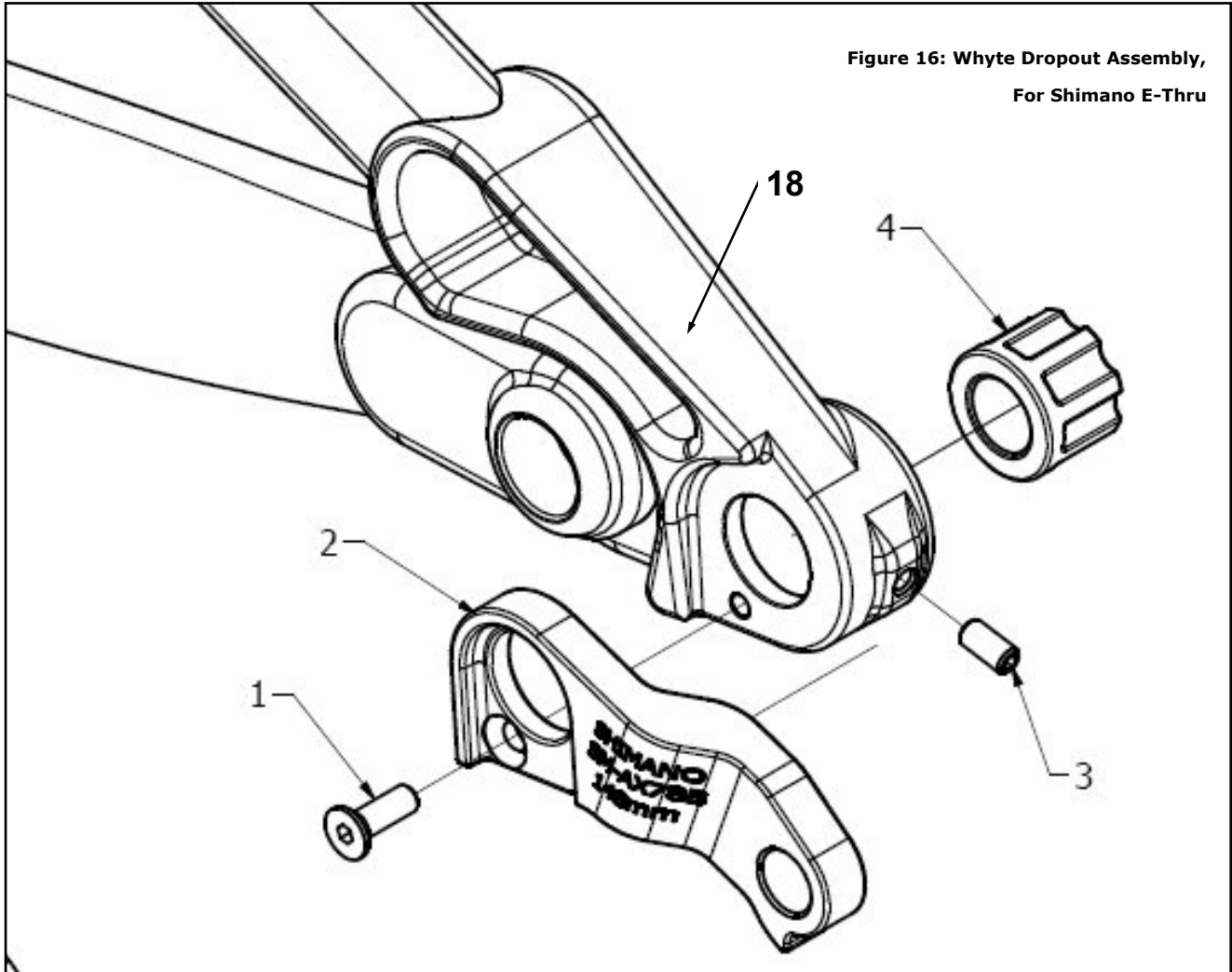
#### **7.2.2: SRAM 11 Speed and 12 Speed | Shimano 12 Speed**

Reference figure 17. Loosely assemble all the parts as shown, making sure the Screws (2), (3) & (5) are correctly positioned, *be very careful not to cross-thread these, on their way in.* Insert the rear wheel and the axle. Whilst tightening the axle, make sure the nose of the M5 Grub Screw (5) is aligned with the single slot in the Axle Nut (6). Using the Torque Wrench, tighten the M5 Grub Screw (5) to the correct torque as specified in Section 11.0. *DO NOT OVERTIGHTEN*, since the thread of the Screw (5) is very small.

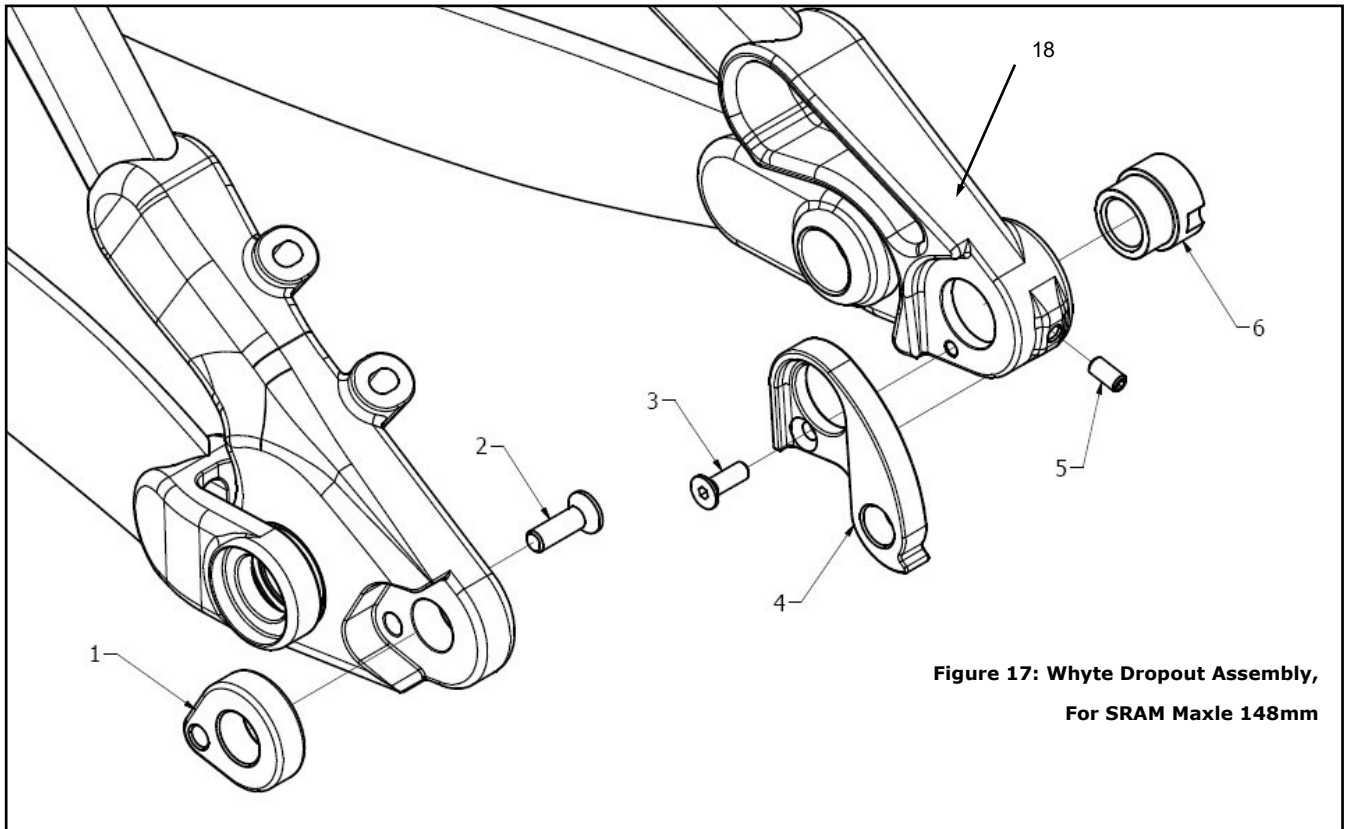
Remove the rear wheel and using the Torque Wrench, tighten the M4 Countersunk Head Screw (3) to the correct torque as specified in Section 8.0. Also tighten the M5 Countersunk Head Screw (2). *DO NOT OVERTIGHTEN*, since the thread of the Screws (2) & (3) are very small. At all times follow the relevant manufacturers user-instructions that relate to your rear axle system.



**IMPORTANT NOTE:** The Shimano 'Direct Mount' Rear Derailleur Hanger is not Compatible with 12 Speed Shimano Drivetrains and Derailleurs.



Item	Description
1	M4 x 16mm long Countersunk Head Screw
2	Rear Derailleur Hanger, for Shimano E-Thru Direct Mount (Grey Colour)
3	M4 x 8 long Grub Screw.
4	Axle Nut, for Shimano E-Thru
18	Drive-Side Dropout (Seat-Stay)



**Figure 17: Whyte Dropout Assembly,  
For SRAM Maxle 148mm**

Item	Description
1	Dropout Spacer (8mm wide) Left Side, for SRAM Maxle 148mm (Gunmetal Colour)
2	M5 x 16mm long Countersunk Head Screw
3	M4 x 12mm long Countersunk Head Screw
4	Rear Derailleur Hanger, for SRAM Maxle 148mm (Black Colour)
5	M4 x 8 long Grub Screw.
6	Axle Nut, for SRAM Maxle 142mm (Black Colour)
18	Drive-Side Dropout (Seat-Stay)

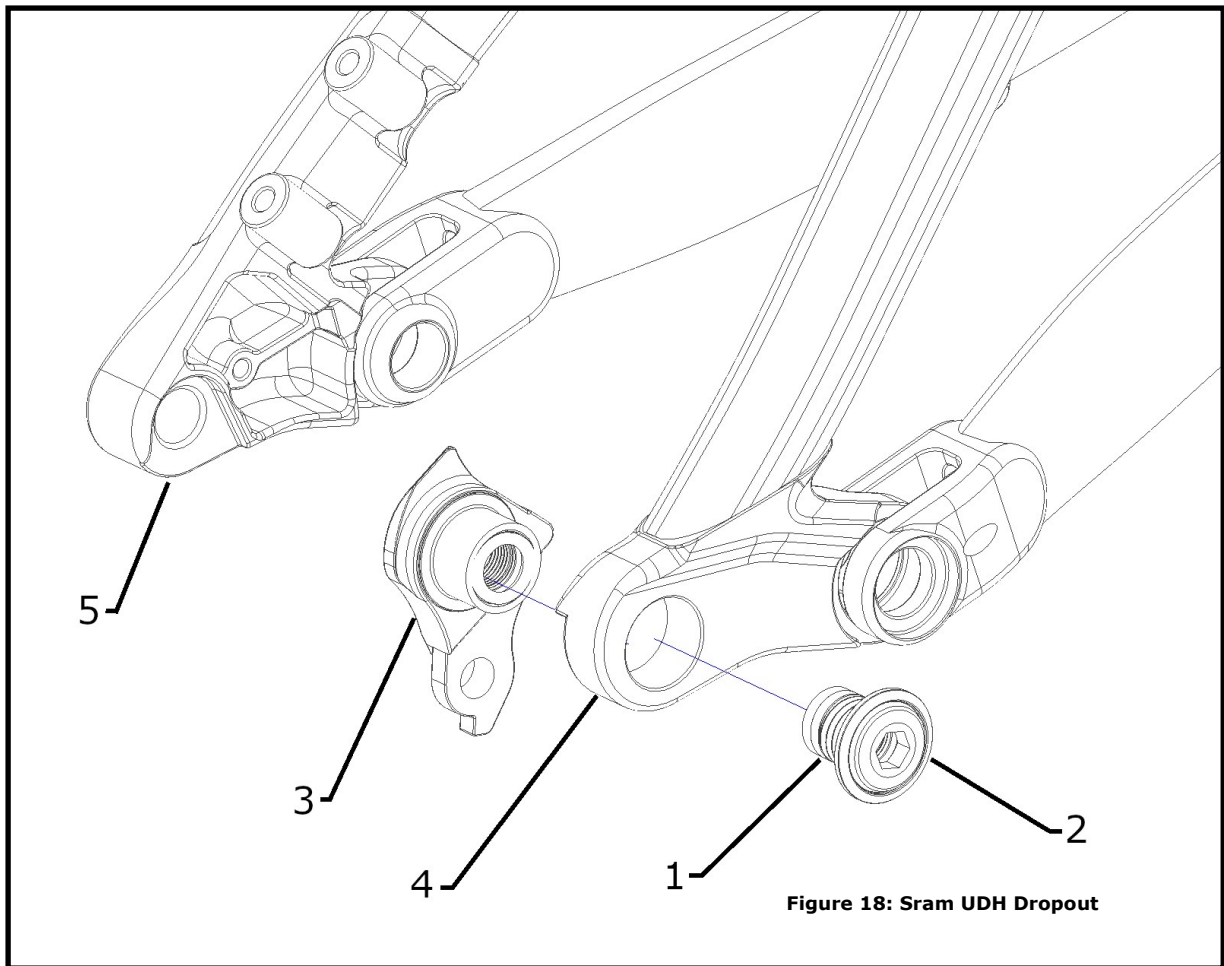


Figure 18: Sram UDH Dropout

Item	Description
1	Sram UDH (Universal Derailleur Hanger) Fixing Bolt
2	Sram UDH Fixing Washer
3	Sram UDH Derailleur Hanger
4	RH Dropout
5	LH Dropout

### 7.3: SRAM UDH (Universal Derailleur Hanger) System

Tools Required: 8mm Allen Key, Torque Wrench.

**NOTE:** The UDH Fixing Bolt (1) is a Left-Hand Thread. Refer to all Sram Documentation pertaining to the Sram UDH system.

#### 7.3.1: Removal of the Sram UDH

Reference figure 18. To remove the Sram UDH derailleur hanger, using the 8mm Allen Key, undo the 8mm UDH fixing bolt (1) and remove from the frame taking care not to lose the Fixing Washer (2) on removal of the Bolt. Note, the UDH Fixing Bolt (1) is a LH thread, which means to undo the bolt you turn the 8mm Allen Key in a Clockwise direction when looking straight at the head of the bolt. The UDH (3) can now slide out of the RH Dropout (4) and be removed.

#### 7.3.2: Re-assembly of the Sram UDH

Reference Fig.18. Re-assembly of the UDH is the reverse of the removal process. Note the correct torque setting in Section 11



**NOTE:** The Sram UDH dropout system is designed by Sram. As such, please refer to Sram technical documentation for the full details of how to service and replace the Sram UDH system.

#### 7.4: USING THE 12mm WHYTE QR SHAFT.

Referencing Figure 19 and 20. The rear wheel is attached to the frame by a lever-actuated mechanism that allows you to install and remove the wheel without tools.

To undo and remove the axle from the bicycle, turn the lever anti-clockwise until the axle is disengaged from the threads in the RH dropout, then pull the axle out of the hub and through the LH dropout to remove it from the frame. Note. If you have placed the bike in a work-stand take care to support the rear wheel as you remove the axle, to prevent the rear wheel falling out of the frame and potentially damaging any components in the process. If you are in the habit of turning your bicycle upside-down to remove the wheels, please take care not to damage the saddle or any of the controls on the handlebars when doing so.

To re-assemble the axle, ensure the wheel is placed correctly into the frame and the hub is aligned with the dropouts. Insert the Axle into the LH dropout and push it through the dropout, hub and into the RH dropout. Turn the lever clockwise. After inserting the axle through the dropout of the frame and wheel hub, it will be necessary to turn the lever several times to fully engage the axle into the threads in the RH dropout before the axle tightens. The required minimum hand-force is 15 Nm.

**⚠ WARNING: If you are unsure about how tight the axle needs to be done up to, DO NOT ride your bike and instead consult your Whyte Dealer who will be able to advise and demonstrate the correct closing force.**

Ensure that the lever is back to its normal position after every adjustment is made. To do this, pull the spring-loaded lever arm away from the bike (Fig. 19 Arrow No.1) until the lever arm dis-engages from the axle (Figure 20) Whilst the lever is dis-engaged from the axle, rotate the lever (Fig.19 Arrow No.2) around to a '9'0'clock' position as shown in Fig. 20. Next release the spring-loaded Lever arm to re-engage the Lever Arm with the axle (Fig.19 Arrow No.3).

Under no circumstances should the 4mm Allen Screw in the centre of the Axle Lever arm be loosened. Do not loosen the screw for opening or closing of the Axle System.

#### Always check for safety before riding

Before every ride check your thru axle System is in the Locked (CLOSED) position. Make sure that the wheels are correctly installed on the bicycle frame or fork, and the lever does not contact any part of the bicycle. If the lever contacts anything, it might not be closed; replace the thru axle or consult your dealer for safety. Ensure that the tightening force of the thru axle lever is minimum 15 Nm.

**⚠ WARNING: A thru axle that is not correctly adjusted and closed to a minimum hand force of 15Nm, may allow the wheel to work or become loose or become detached from the bike unexpectedly. This could cause the rider to lose control and fall and may result in serious injury or death. Always make sure the thru axle is adjusted and closed correctly before every ride as part of your Pre-ride checks.**

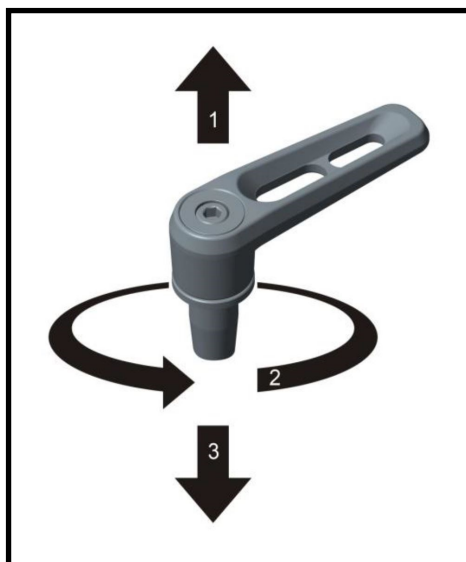


Figure 19: 12mm QR Axle



Figure 20: 12mm QR Axle  
Re-Positioning Lever Arm



## 8.0: WHYTE INTER GRIP SEAT CLAMP SERVICE

**Tools Required:** 5mm AF Allen Keys (2 off, 1 fitted to a 3Nm to 15Nm Torque Wrench)  
M6 cap-screw at least 40mm long or a small size flat blade screwdriver  
SKF LGEP2 or Castrol Spheerol AP3 or Finish Line Teflon White Lithium Complex grease

Reference figures 21 to 35. To service the Inter Grip seat clamp, carefully follow these procedures otherwise there is a risk of damaging some of the components.

### ***Especially remove and replace the seat-post (7) in the specified order.***

Figures 22 to 23. From the right side of the Main Frame (6) unscrew & remove the M6 x 30 long Capscrew (1). Replace that with the longer capscrew and screw loosely into the Threaded Sleeve (5). Figures 24 & 25. Push the Threaded Sleeve (5) all the way out of the opposite side of the Main Frame (6).

Figures 26 to 27. Move to the left side of the Main Frame (6). Place the M6 x 30 long Capscrew (1) diagonally through the Grip Pad (4) and onto the Plain Sleeve (2). Then push the Plain Sleeve (2) all the way out of the right side of the Main Frame (6).

Figures 28 & 29. Remove the Seat Post (7) all the way out of the Main Frame (6). Remove the Grip Pad (4) from either side of the Main Frame (6). The 'O' rings (3) may be removed from the Threaded Sleeve (5) and the Plain Sleeve (2), using the small size flat blade screwdriver.

To re-assemble the Inter Grip seat clamp, coat the 'O' rings (3) with a small quantity of grease. Carefully fit the 'O' rings (3) into the grooves in the Threaded Sleeve (5) and the Plain Sleeve (2). Also place some grease onto the threaded end of the M6 Capscrew (1).

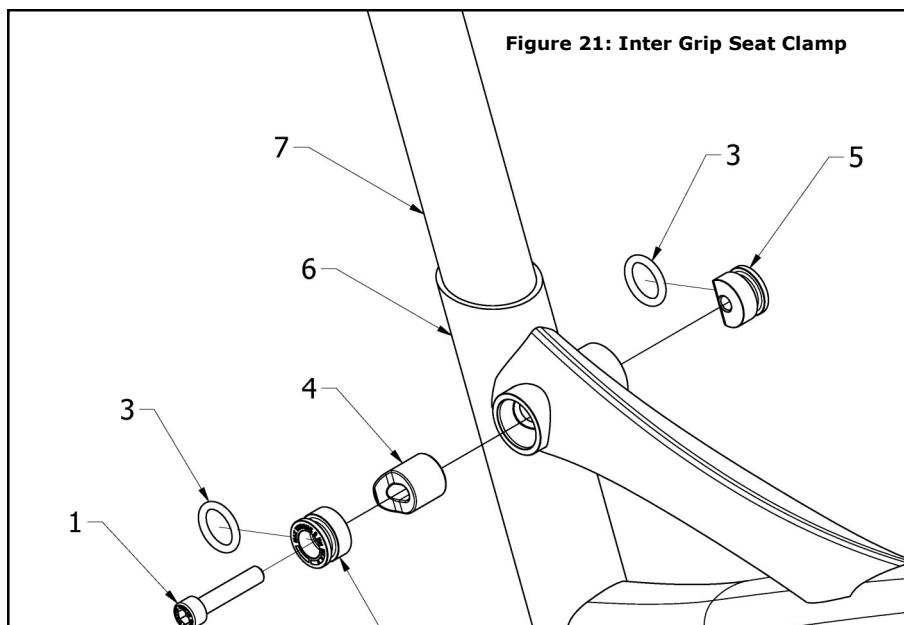
Figures 30 & 31. Place the Grip Pad (4) into the hole in the Main Frame (6) such that the curved face is towards the seat tube in the Main Frame (6). Insert the Seat Post (7) to help align the Grip Pad (4).

Figures 32 & 33. From the left side of the Main Frame (6), insert the Plain Sleeve (2) and make sure the 45° angled edge on the Plain Sleeve (2) touches the 45° angled edge on the Pad (4).

Figures 34 & 35. Move to the right side of the Main Frame (6) and insert the Threaded Sleeve (5), aligning the 45° angled edge to touch the 45° angled edge on the Grip Pad (4). Place the M6 Capscrew (1) through the Threaded Sleeve (5), the Pad (4) & screw into the Threaded Sleeve (5).

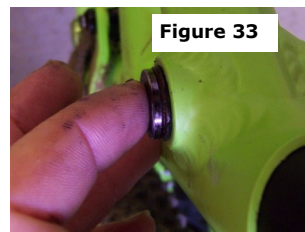
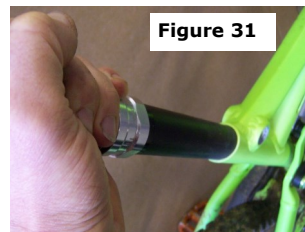
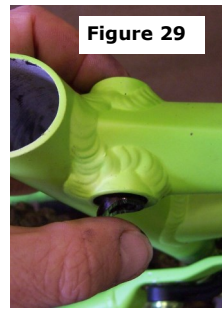
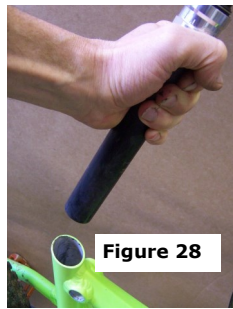
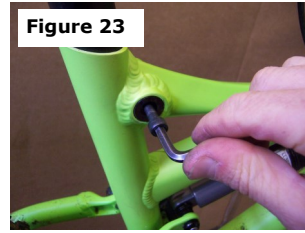
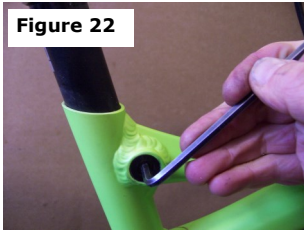
Both of the Sleeves (2 & 5) should be nearly flush with the edge of the hole in the Main Frame (6) when the assembly goes tight. If this is not the case, one or other of the four 45° angled edges are not touching each other, so re-align as necessary to make sure both of the Sleeves (2 & 5) are nearly flush.

Then follow the instructions in section 3.2 to set the height and direction of the Seat Post (7).



Item:	Description
1	M6 x 30mm Capscrew
2	Plain Sleeve
3	'O' ring
4	Grip Pad
5	Threaded Sleeve
6	Main Frame
7	Seat Post





## 9.0: INTERNAL CABLES & HOSES

Tools Required: Whyte Grommet Insertion Tool  
Short length of inner gear cable  
A torch / Light source

General Note: Take care when removing and refitting or replacing, the Whyte rubber grommets, Too much force applied to the rubber will damage them. Always use the Whyte Grommet Insertion tool to facilitate the removal and insertion of the Whyte Grommets into the frame.

### 9.1 To replace cable or hose outers.

Reference figures 36 to 41. When replacing outer cables and or brake hoses, most of the holes in the frame are large enough (25mm long x 8mm wide) simply to manipulate the outer cable or brake hose into or out of the hole. However the two holes for the rear derailleur cable in the chain-stay are necessarily small, therefore the following method is needed to refit a new outer cable:

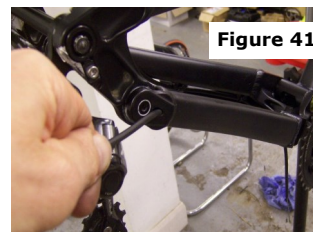
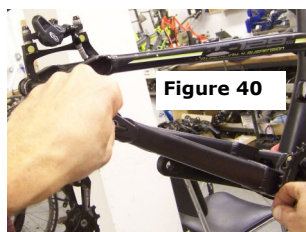
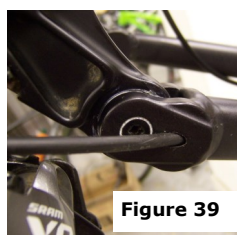
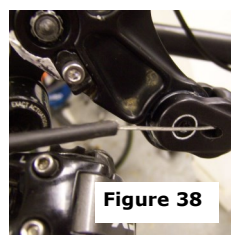
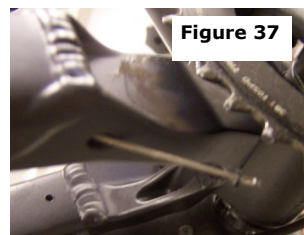
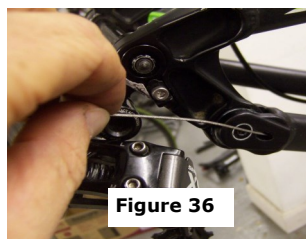
Figures 36 & 37: Using a piece of inner cable, feed into the entrance hole in the right-side chain-stay, near the drop-out, then through the exit hole at the opposite end of the chain-stay. This will probably need several attempts pushing to & fro to find the hole, please be patient!

Figures 38 & 39: At the drop-out end, push the outer cable onto the inner cable and then feed the outer cable into the chain-stay following the same path as the inner cable.

Figure 40: Make sure the inner cable is held tight where it emerges from the chain-stay at the opposite end, otherwise it will be pushed out. Eventually the outer cable will reach the front of the chain-stay. Then manipulate both the inner cable and the outer cable, whilst also pushing the outer cable forwards with a lot of force and the outer cable should also find the exit hole.

Figure 41: Push the outer cable all the way through the exit hole and finally remove the inner cable.

For the replacement of Hydraulic Brake hoses, please follow the instructions set out in the relevant manufacturers service documents when changing and re-bleeding hydraulic brake hoses.

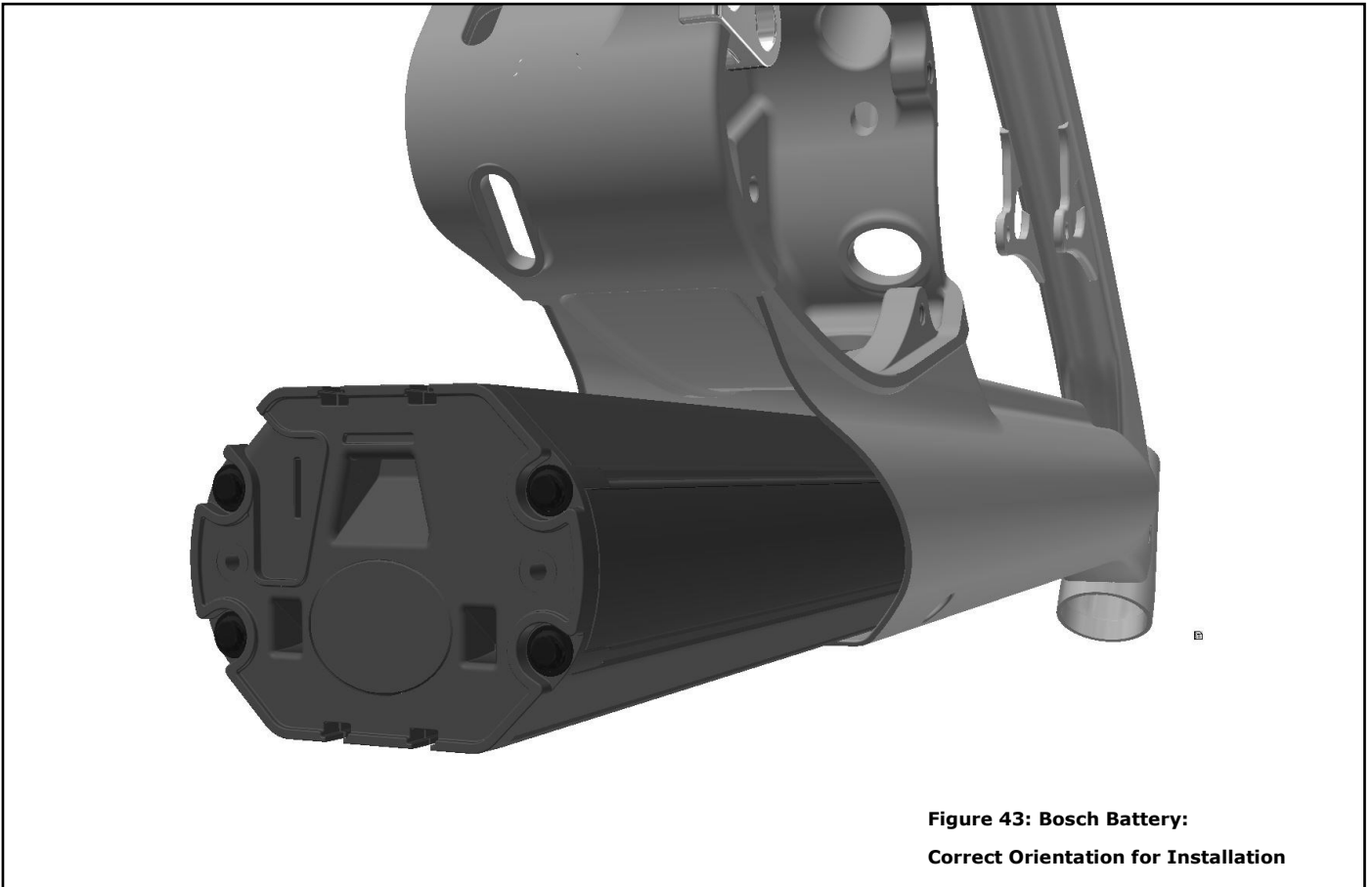




## 10.2 Battery Installation

To Refit the Bosch Battery (6) is the reverse of the removal process. Slide the Bosch Battery (6) back into the Down Tube (3).

**IMPORTANT:** Ensure that the Bosch Battery (6) is in the correct orientation (see Figure 43). Failure to correctly orientate the battery will result in the Bosch Connector Block (5) being unable to be re-fitted.



**Figure 43: Bosch Battery:  
Correct Orientation for Installation**

As the Bosch Battery (6) is inserted into the Downtube (3), take care not to foul or trap the wiring loom associated with the Bosch Connector Block (5) or the control cables housed in the Down Tube (3). The Bosch Battery (6) should slide smoothly up into the Down Tube (3). Before the Bosch Battery (6) is fully inserted into the Down Tube (3), re-fit the Bosch Connector Block (5) into the end of the Bosch Battery (6). Ensure the Bosch Connector Block (5) is correctly aligned (see Figure 54). With the Bosch Connector Block (5) now re-connected to the Bosch Battery (6), slide the assembly into the Down Tube (3) until the Bosch Battery (6) 'bottoms out' on it's end-stop. Next re-fit the T-25 Torx Bolt (4) and Spring Washer (4a) into the correct threaded hole (see Figure 54). Tighten the T-25 Torx Bolt (4) to the Bosch Recommended Tightening Torque. (Min 5.0 Nm Max 6.0Nm). Next re-fit the Bottom Cover (2) onto the Down Tube (3) by sliding the Bottom Cover (2) up the axis of the Down Tube (3) until the fixing hole lines up with the hole in the Down Tube (3). Re-fit the T-25 Torx Bolt (1) into the threaded hole. Tighten the T-25 Torx Bolt (1) to the Bosch Recommended Tightening Torque. (Min 5.0 Nm Max 6.0Nm).

### 10.3: Location Of Bosch Battery On-Off Button.

*Note: Before making adjustments to the Bosch e-bike system, please read and understand all relevant documentation from Bosch which have been included with your Whyte eMTB.*

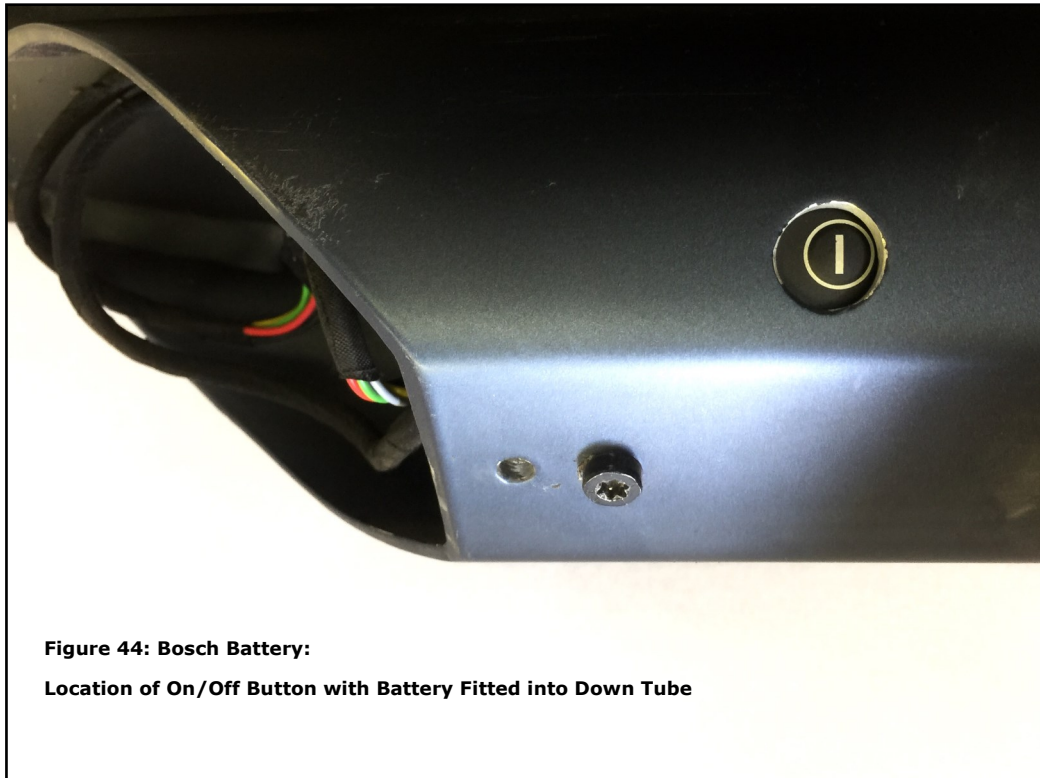
**IMPORTANT:** For all other Torque settings, refer to the specific manufacturers information bundled with this manual, or alternatively, refer to the specific manufacturers website for further information.

**Tools Required:** Torx T-25



Torque Wrench (Ranging from 3Nm to 15Nm)

(See Figure 42 and Figure 44) If you are required to start the eBike system using the On/Off button located on the Bosch Battery (6), follow the instructions in Section 10.1 to remove the Bottom Cover (2) from the Down Tube (3). You will then reveal the Access Hole (7) in the Down Tube (3). Press the On/Off button to Start the e-bike system. Refit the Bottom Cover (2) as described in Section 10.0



**Figure 44: Bosch Battery:**  
**Location of On/Off Button with Battery Fitted into Down Tube**

10.4: Location Of Bosch Battery Charge Port.



**Figure 45a**



**Figure 45b**

**⚠ IMPORTANT:** At all times follow closely all recommendations from Bosch contained in the relevant Bosch Customer User Manual documentation material bundled with your bike (or consult the on-line Bosch resources) to fully understand how to re-charge, handle and store your Bosch Battery. Failure to comply with all Bosch recommendations could lead to failure of the battery function, and risk of fire leading to serious injury and death.

The position of the remote charge port for the Bosch Battery has been integrated into the top of the Motor Mount as can be seen in Figure 45a and 45b. To access the charge port, peel back the sealed cover of the Charge Port marked "Whyte Energy" to reveal the charge port. Follow the instructions contained in the Bosch Battery Instruction Manual to Charge the Battery. When Charging has finished, re-fit the Remote Charge Port Cover and press firmly to seal the Cover over the Charge port to prevent ingress of mud and water and other contaminants.



## 11.0: TORQUE SETTINGS

*Torque explained: If no suitable Torque Wrench is available a Torque of 5 lbf.ft can be obtained by applying a force of 5lb, with a Spring Balance, to the end of a spanner, 1 Foot in length.*

**IMPORTANT:** For all other torque settings, refer to the specific manufacturers information bundled with this manual, or alternatively, refer to the specific manufacturers website for further information.

<b>Rear Suspension</b>	<b>Nm</b>	<b>lbs.ft</b>
M12 Flanged Screw & Flanged Nut	16.1 (Min) - 19.9 (Max)	11.9 (Min) - 14.7 (Max)
M5 Socket-head Cap Screw (T-25 Torx®)	5.0 (Min) - 6.0 (Max)	3.7 (Min) - 4.4 (Max)
M12 x 20 long Alloy Flanged Screw	15.0 (Min) - 17.0 (Max)	10.5 (Min) - 12.5 (Max)
Pivot Pin (link mount, main frame) x 61 long	15.0 (Min) - 17.0 (Max)	10.5 (Min) - 12.5 (Max)
M15 x 20 long Alloy Flanged Screw	15.0 (Min) - 17.0 (Max)	10.5 (Min) - 12.5 (Max)
M15 x 26 long Alloy Flanged Screw	22.0 (Min) - 26.0 (Max)	16.2 (Min) - 19.2 (Max)
M15 x 87 long Pivot Pin	9.0 (Min) - 11.0 (Max)	6.1 (Min) - 7.5 (Max)
M6 x 20 long Socket Head Capscrew	9.0 (Min) - 11.0 (Max)	6.1 (Min) - 7.5 (Max)
<b>Rear Dropout Assemblies</b>		
M4 Countersunk Screws	4.2 (Min) - 4.6 (Max)	3.1 (Min) - 3.4 (Max)
M5 Countersunk Screws	4.8 (Min) - 5.2 (Max)	3.6 (Min) - 3.8 (Max)
M5 Grub Screw	2.2 (Min) - 2.6 (Max)	1.6 (Min) - 1.9 (Max)
8mm Sram UDH Fixing Bolt	21.0 (Min) - 25.0 (Max)	15.4 (Min) - 18.4 (Max)
<b>Seat Post Clamp</b>		
M6 Cap Screw	12 (Min) - 14 (Max)	8.9 (Min) - 10.3 (Max)
<b>Battery Installation</b>		
T-25 (Torx) M5	4.8 (Min) - 5.2 (Max)	3.6 (Min) - 3.8 (Max)

## 12.0: OWNER'S NOTES

[www.whyte.bike](http://www.whyte.bike)

