



## **eMTB FULL SUSPENSION RANGE**

### **eMTB GRAVITY ENDURO SUSPENSION**

E-180 S MX

E-180 RS MX

E-180 WORKS MX

### **eMTB TRAIL ENDURO SUSPENSION**

E-160 S MX

E-160 S 27.5"

E-160 RS MX

E-160 RS 27.5"

### **eMTB TRAIL ENDURO 29ER SUSPENSION**

E-160 S 29ER

E-160 RS 29ER

**Supplementary Service Manual 2022 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.whytebikes.com](http://www.whytebikes.com)**

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, may be some of 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.whytebikes.com](http://www.whytebikes.com)**

**Note: The designation "MX" is used on bike models that use a 29" front wheel and a 27.5" rear wheel**

## **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.

Bosch	<b><a href="http://www.bosch-ebike.com">www.bosch-ebike.com</a></b>
Crank Brothers	<b><a href="http://www.crankbrothers.com">www.crankbrothers.com</a></b>
DT Swiss	<b><a href="http://www.dtswiss.com">www.dtswiss.com</a></b>
Easton	<b><a href="http://www.eastoncycling.com">www.eastoncycling.com</a></b>
Formula	<b><a href="http://www.formulahubs.com">www.formulahubs.com</a></b>
Fox	<b><a href="http://www.ridefox.com/subhome.php?m=bike">www.ridefox.com/subhome.php?m=bike</a></b>
Hope	<b><a href="http://www.hopetech.com">www.hopetech.com</a></b>
Joytech	<b><a href="http://www.joy-tech.com.tw">www.joy-tech.com.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>
SRAM	<b><a href="http://www.sram.com">www.sram.com</a></b>
TRP	<b><a href="http://www.trpcycling.com">www.trpcycling.com</a></b>
WTB	<b><a href="http://www.wtb.com">www.wtb.com</a></b>

### 3.2: WHYTE SEAT CLAMP ADJUSTMENT

Tools required:

5mm A/F Allen Key

Torque Wrench

To adjust the Whyte Seat Clamp, using a 5mm Allen key, undo the M5 socket head screw, until the seat post becomes free in the seat tube of the frame. Adjust the height of the Seat Post in accordance with the relevant seat post manufacturers instructions. To retighten the Whyte seat clamp, tighten the M5 socket head cap screw in a clockwise direction and torque the M5 socket head cap screw to the recommended torque setting as set out in Section 10 of this manual.



**CAUTION!** Do not forcibly pull up or push down on a cable or hydraulically operated dropper seat post without first making sure that the cable or hose is moving freely inside the whole frame to facilitate the seat post adjustment.

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

*In particular, "dropper" seat posts that have moving internal components may not work correctly if the seat clamp is over-tightened. This could lead to the seat post's function to be impaired, leading to a potential crash or injury.*

**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 setting. 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 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 table 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-bounce 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-bounce damping is set too slow. On the other hand if the bike feels choppy and not plush then the re-bounce 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-bounce 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, e.g. Fox "3pos w/Adj" or SRAM RockShox "Motion Control". Please refer to the relevant shock manufacturers 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

 **Warning! For Whyte Bikes fitted with wireless suspension control systems, please refer to the manufacturers instructions at all times.**


Model	Shock Stroke	Sag (25%) Firmer	Sag (30%) Plusher
E-160 (29")	57.5mm	14.5mm	17.25mm
E-160 MX	57.5mm	14.5mm	17.25mm
E-160 (27.5")	57.5mm	14mm	17.25mm
E-180 MX	65mm	16.25mm	19.5mm

### 3.5: SUSPENSION TUNING LOG

Record your best suspension settings in the table below, to restore them if necessary, e.g. 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 slowest setting)	Shock Pressure (bar or P.S.I)	Shock Rebound Damping (# of clicks from slowest 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 latest version of the 'Whyte 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 electric suspension bicycles have been designed, tested and comply with ISO 4210-2 & EN-15194-2017 Safety Standards, for typical mountain biking use.

## **5.0: LUBRICATION**

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

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

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

### **6.1: Removing the Rear Shock, Link & Swinging Arm:**

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

#### **6.1.1 Removing the Rear Shock:**

General Note. Make sure to retain and store carefully, all components as they become disassembled from the bike.



Whilst referencing figure 1, using the T-25 Torx Keys, undo the two M5 x 16mm long Socket-head Cap Screws (10) from the Ø8mm x 31mm long Hollow Pivot Pin (8) that passes through the Main Frame (1) and front of the Rear Shock Absorber (6). Whichever Cap Screw (10) becomes undone first, remove it and the adjacent Collar (9), and pull the Pivot Pin (8) all the way out from the other side.

Next we recommend to remove the Shap-It Link (5) from the Link (4). Using the 6mm AF Allen Key, unscrew and remove the two M15 Pivot Screws (16). You can now remove the Rear Shock Absorber (6) and Shape-It Link from the bike.

Once removed from the bike, to separate the Rear Shock Absorber (6) from the Shape-it Link (5), using the 5mm AF Allen Key, undo and remove the M8 Socket head Cap Screw (7) from the Shape-it Link (5). Next separate the rear of the Rear Shock Absorber (6) from the Shape-it Link (5).

Figure 1: Disassembling the Rear Suspension

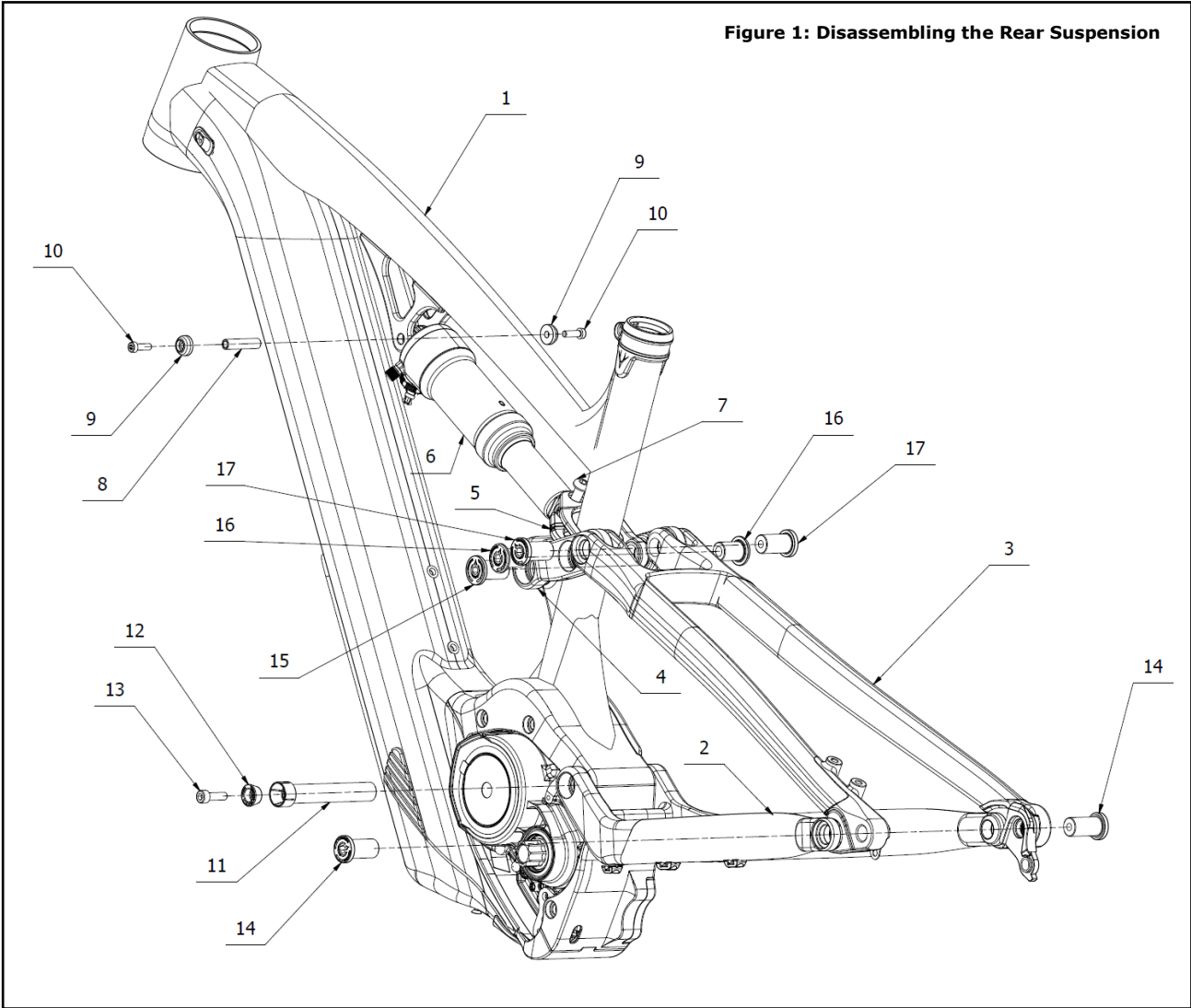
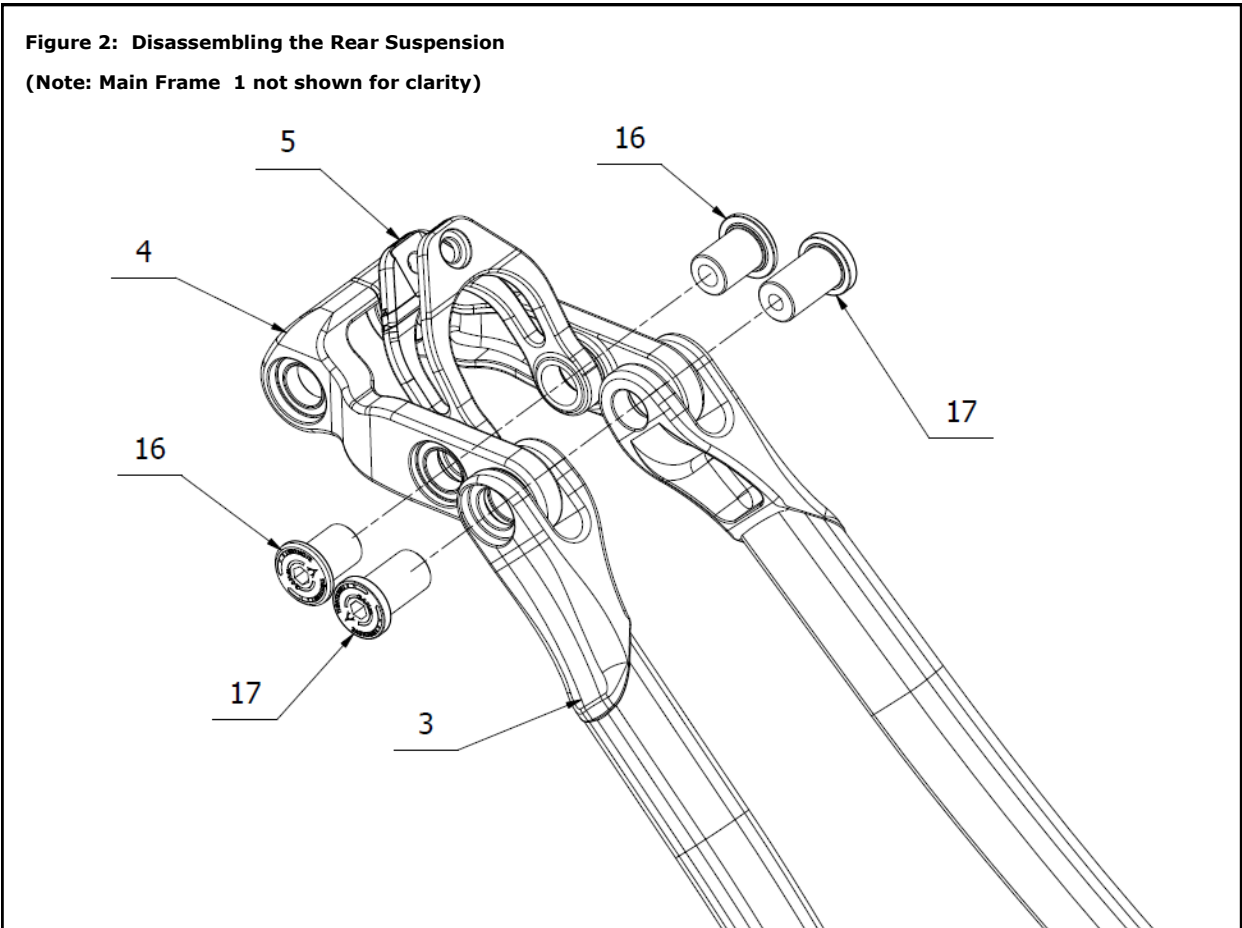


Figure 2: Disassembling the Rear Suspension  
(Note: Main Frame 1 not shown for clarity)





### 6.1.2 Removing the Other Rear Suspension Parts

Whilst referencing figure 1 and 2, using the 6mm AF Allen Key, unscrew and remove the M15 Pivot Screws (15) at the front of the Link (4).

Next, using the 6mm AF Allen Key, unscrew and remove the two M15 Pivot Screws (14) at the rear of the chain-stays (2).

**Caution!** Be careful to retain all the shield washers (Items 2 & 3, Figure 5) ready for re-assembly.

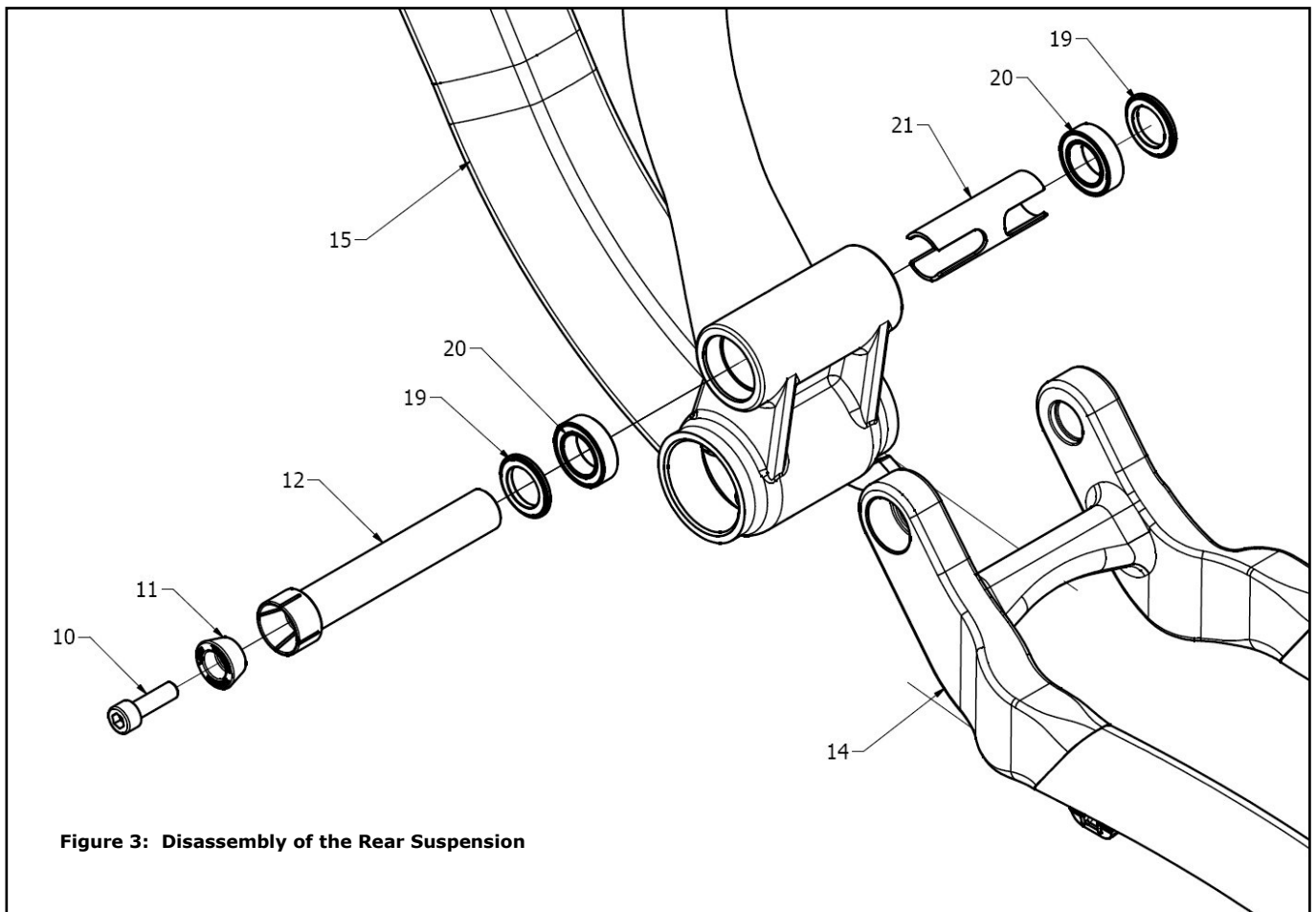
To separate the Seat-stays (3) from the Link (4) and Main Frame (1), whilst referencing figure 1, using the 6mm AF Allen Key, unscrew and remove the two M15 Pivot Screws (17) at the front of the Seat-stays (3). The Seat-stays (3) may now be removed from the Link (4). Be careful to retain all the shield washers (Items 2 & 3, Fig 4) ready for re-assembly.

### 6.1.3 Removing the Chain Stay & Bearings from the Main Frame

Whilst referencing figure 3, using the 5mm A/F Allen Key, partially unscrew the M6 x 20 long Cap Screw (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 Cap Screw (10) may now be completely removed, to allow the tapered sleeve (11) to be released from the collet (12). Note this must be extracted from the Non-Drive-Side of the Pivot Pin.

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 7, extract the 6802-2RS bearings (20) from both sides of the Main Frame (15). Align the removal tool carefully with the slots in the Spacer (21).



**Figure 3: Disassembly of the Rear Suspension**

**Fig. 1 & 2: Table of Components**

Item	Description
1	Main Frame
2	Chain Stays
3	Seat Stays
4	Link
5	Shape-It Link
6	Rear Shock Absorber
7	M6 Socket Head Cap Screw
8	8mm Hollow Pivot Pin 31mm Long
9	Collar for M5 Screws
10	M5 x 16 Socket Head Cap Screws T25 Torx
11	Pivot Pin 80mm Long
12	Tapered Sleeve for Expanding Collet
13	M6 x 20 Long Socket Head Cap Screw
14	M15 Pivot Screw 28mm Long
15	M15 Pivot Screw 28mm Long
16	M15 Pivot Screw 18mm Long
17	M15 Pivot Screw 28mm Long

**Fig 3: Table of Components**

Item	Description
10	M6 x 20 long Capscrew (5mm A/F Internal Hex)
11	Tapered Sleeve for Expanding Collet
12	Pivot Pin 80mm long, expanding collet, M15 thread.
14	Chain-stays
15	Main Frame
19	Shield Washer (O.D. 23mm)
20	Bearing: 3802V2RD (MN) KR-BOLU
21	Internal Spacer (49mm long)

## **6.2: STRIPPING AND RE-ASSEMBLING 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. Assemble the parts as shown in figure 6. 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 7. 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 6, or 7. 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 7, use the 10mm A/F Allen Key & the 18mm A/F Spanner. Once the bearing is fully seated an 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: RE-ASSEMBLY 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*

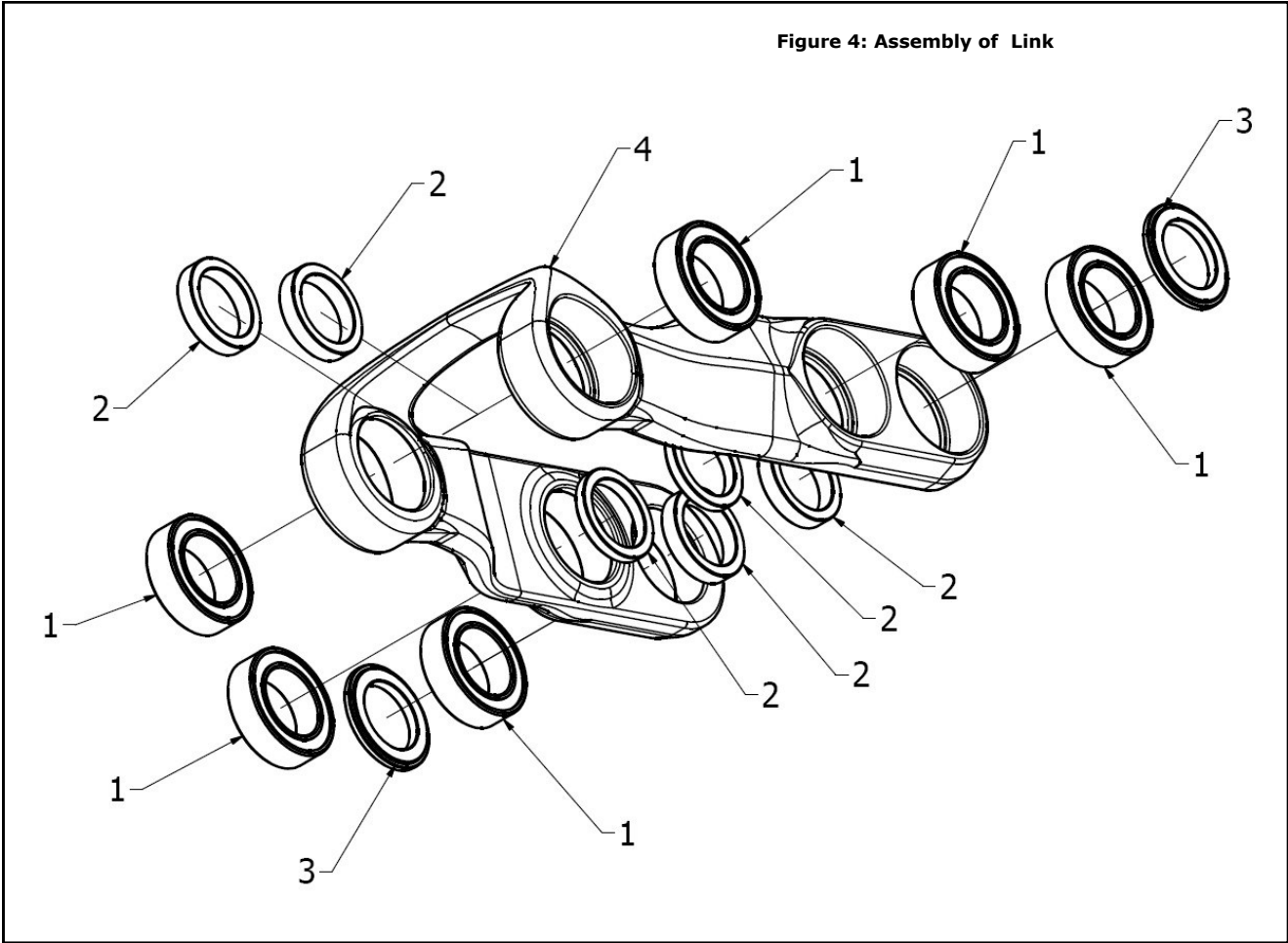
Apply a good quantity of SKF LGEP2 or Castrol Spherol AP3 or Finish Line Teflon White Lithium-Complex grease on top of the Bearings. The grease should completely cover each bearing and be applied on both sides of each bearing subsequent to the bearing being pressed into it's housing in the relevant component.

Assemble the shield washer components (Items 2 or 3 in figures 14 & 15). 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.

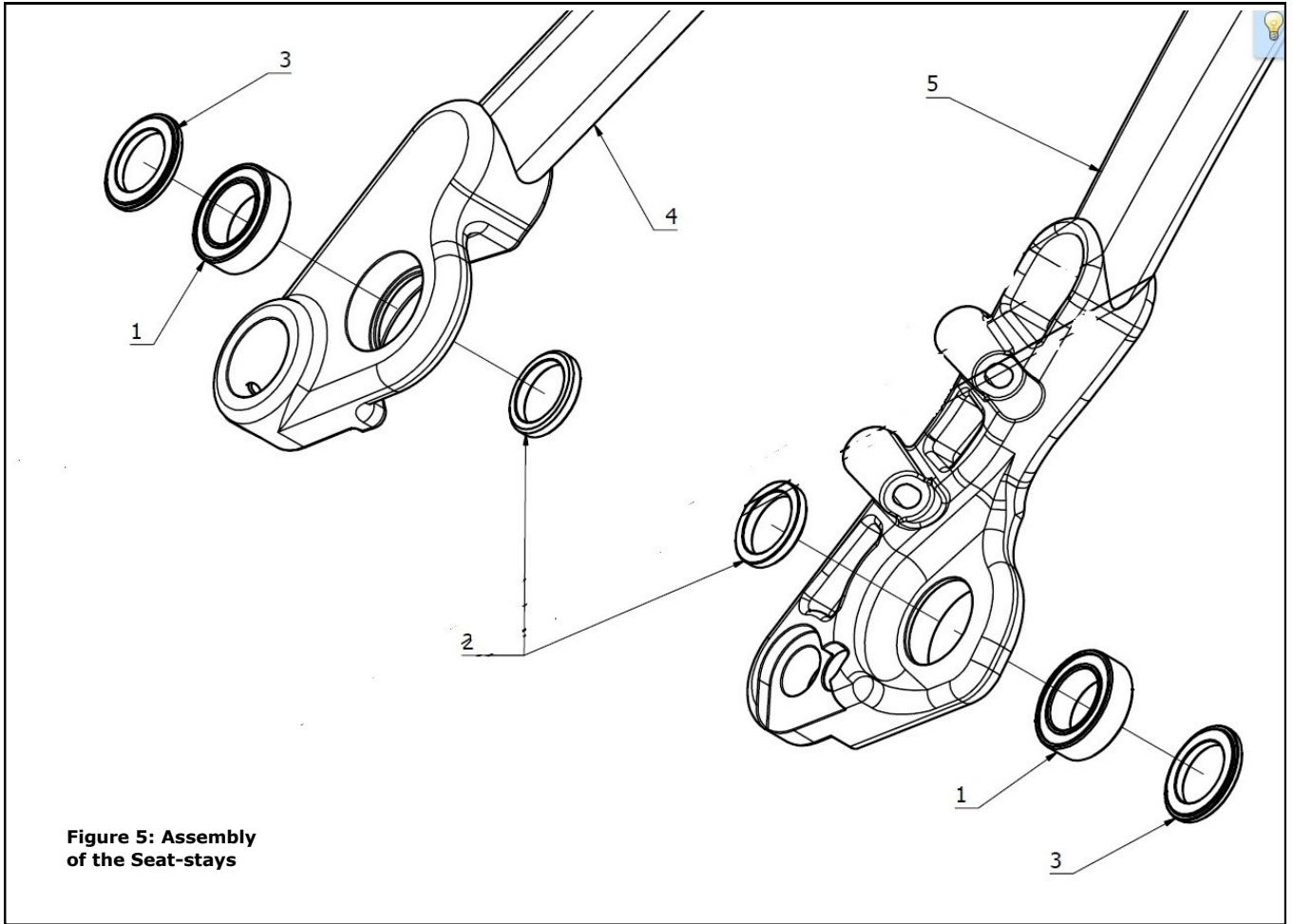
### **APPLICATION OF "SKF LGAF 3E" or "Castrol Optimol T" ANTI-FRET PASTES**

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 4: Assembly of Link

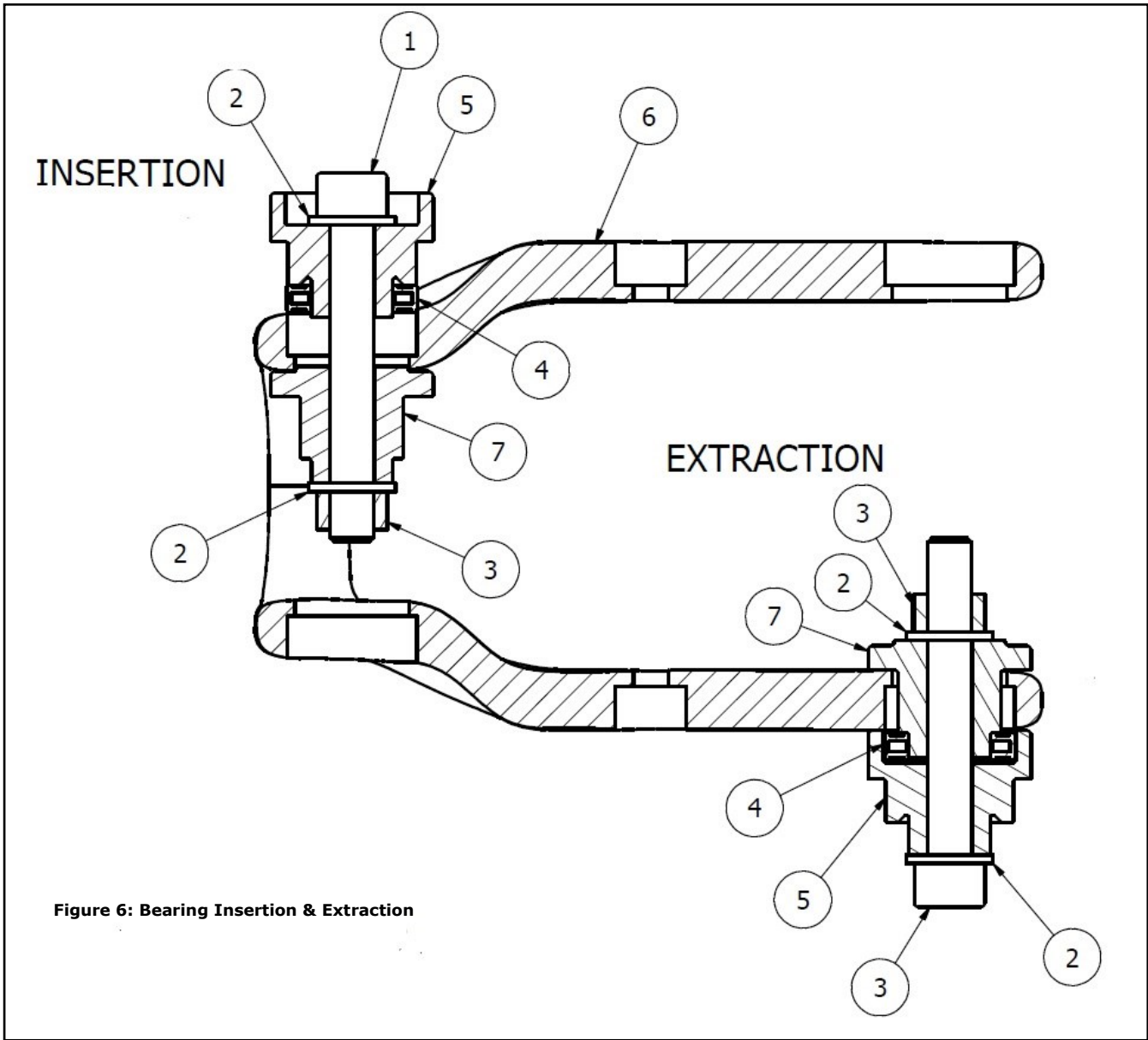


Item	Description
1	Bearing: 3802V2RD (MN) KR-BOLU
2	Shield washer (O.D. 20mm)
3	Shield washer (O.D. 23mm)
4	Alloy Link

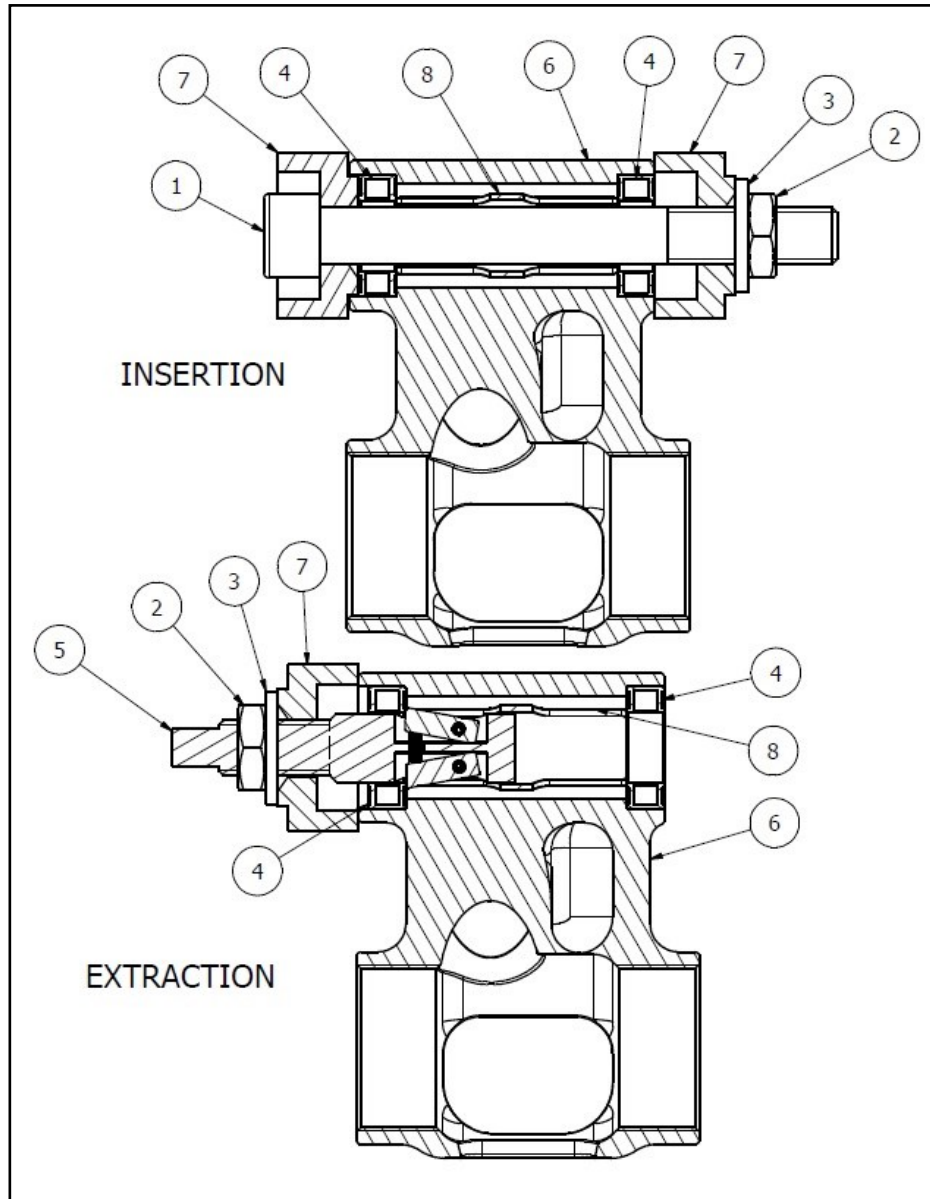


**Figure 5: Assembly of the Seat-stays**

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



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



**Figure 7: Bearing Insertion & Extraction**

Item:	Description
1	M8 Capscrew ISO4762 55 long
2	M12 Nut ISO 4035
3	I. D. 12 Washer ISO 7089
4	Bearing: 3802V2RD (MN) KR-BOLU
5	Bearing Tool 1
6	Mating Component (ie: Bottom Bracket Yoke)
7	Bearing Tool 2
8	Internal Bearing Spacer

## **6.3: RE-ASSEMBLING THE REAR SUSPENSION**

### **6.3.1: Re-assembly of 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)*

**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 Re-Assembly of Chain-stays & Bearings onto Main Frame**

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 7, insert the bearings (20) into both sides of the Main Frame (15). **Ensure the spacer (21) is located between the bearings (20).**

Referencing figure 3, 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 10.0). 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: Re-Assembly of Link, Shape-It Link & Seat-Stay onto the Main Frame**



**IMPORTANT:** Prior to Re-Assembly of the Seat Stay to the Link, make sure the seat tube of the main frame is inside of the assembly. Also make sure all suspension components and linkages are the correct orientation and the correct side facing upwards.

Referencing Fig. 1 and . Starting with the Seat-stay (3) and the Link (4), 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 (3). Then ensure that the shield washers in the Link (4) are not pushed out, as you place the seat-stay (3) inside it. Then pass an M15 x 28 long flanged alloy screw (17) through the right side of the seat-stay (3), the adjacent shield washers and the bearing in the Link (4). Using the 5mm A/F Allen Key, torque tighten the M15 screw (17) to the recommended torque settings (refer to the Tightening torque settings in Section 10.0). Repeat that task to assemble the left side of the seat-stay (3) to the Link (4), also ensuring that the other shield washer in the Link (4) is not pushed out.

Next, to assemble the Shap-It Link (5) and the Link (4), reference figure 2 (Main Frame (1) 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 Shape-It Link (5). Then ensure that the shield washers in the Link (4) are not pushed out, as you place the shock extender (7) inside them. Then pass an M15 x 20 long flanged alloy screw (16) through the Link (4), the bearing in Link, the adjacent shield washer, & into the thread of one arm of the Shape-It Link (5). Using a 6mm A/F Allen Key, torque tighten the M15 Flanged Screw (17) to the recommended torque settings (refer to the Tightening torque settings in Section 10.0). Repeat that task to assemble the other arm of the Shape-It Link (5) to the Link (4), also ensuring that the other shield washer in the Link (4) is not pushed out.

Next, to assemble the Link (4) to the Main Frame seat tube (1), check that the shield washers are in place on the inside of the bearings that are installed in front of the Link (4) 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 (1). Insert the Link (4) between the Main Frame seat tube (1). Then pass an M15 x 28 Long Flanged Alloy Screw (15) through the Link (4), the bearing in Link, the adjacent shield washer & screw into the Main Frame link mounting (1). Screw in an M15 x 28 Long Flanged Alloy Screw (15) from the left side of the link (4). Using a 6mm A/F Allen Key, torque tighten the M15 x 28 Long Flanged Alloy Screws (15) to the recommended torque settings (refer to the Tightening torque settings in Section 10.0). Wipe off any excess grease.



Finally to assemble the Chainstays (2) to the Seat-Stays (3), reference Figure 1, check that the shield washers are in place on both sides of each Seat-stay leg (3) (see items 2 & 3 in Figure 5) 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 (2). Ensure that those shield washers are not pushed out, as you lower the Seat-stays (3) into the Chain-stays (2). Pass an M15 x 28 long Flanged Screw (14) through each Chain-stay (2) and Seat-stay leg (3). Using the 6 A/F Allen key, torque tighten those screws to the recommended torque settings (refer to the Tightening torque settings in Section 10.0). Wipe off any excess grease from around the chain-stays (2) and seat-stays (3).

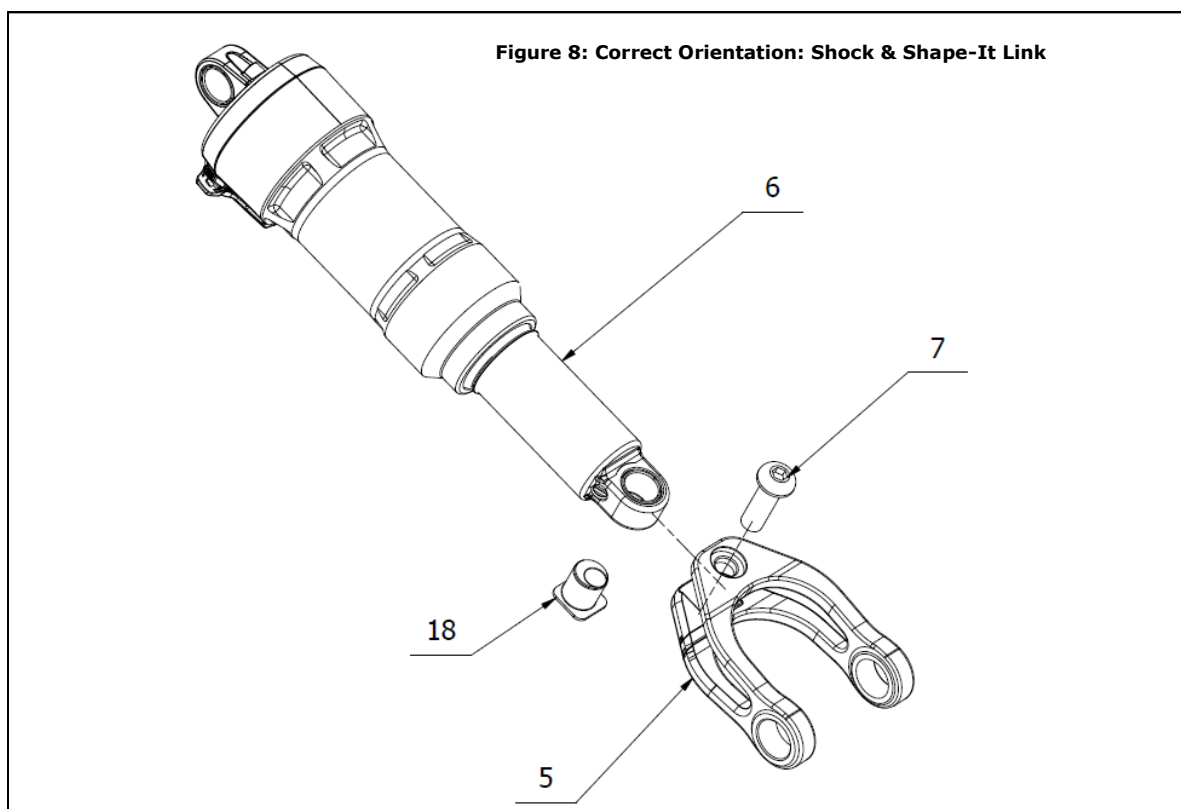
#### 6.3.4 Re-Assembly of the Rear Shock onto the Frameset.

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 and Shape-It Link. Slide the front of the Rear Shock Absorber (6) into the Main Frame (1) and Shape-It Link (5).

**IMPORTANT.** Ensure the Rear Shock (6) and the Shape-It Link (5) are the correct way up, with any dials and levers facing downwards and towards the front of the frameset, reference figure 8.

Reference Figure 1: Make sure that the  $\varnothing 8\text{mm}$  holes in the Main Frame (1) and the front of the Rear Shock Absorber (6) are all concentric with each other, and push the  $\varnothing 8\text{mm} \times 31\text{mm}$  long Hollow Pivot Pin (3) all the way through. Place a Collar (9) over both ends of the  $\varnothing 8\text{mm} \times 31\text{mm}$  long Hollow Pivot Pin (8) and screw in an M5 x 16mm long Socket-head Cap-screw (10) into both ends of the Pivot Pin (8). 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 10.0).

Next, make sure that the holes in the Shape-It Link (5) line up with the rear end of the Rear Shock Absorber (6). Insert the M8 Socket Head Cap Screw (7). Using the 5mm AF Allen Key torque tighten to the recommended torque settings (refer to the Tightening torque settings in Section 10.0). Wipe off any excess grease.



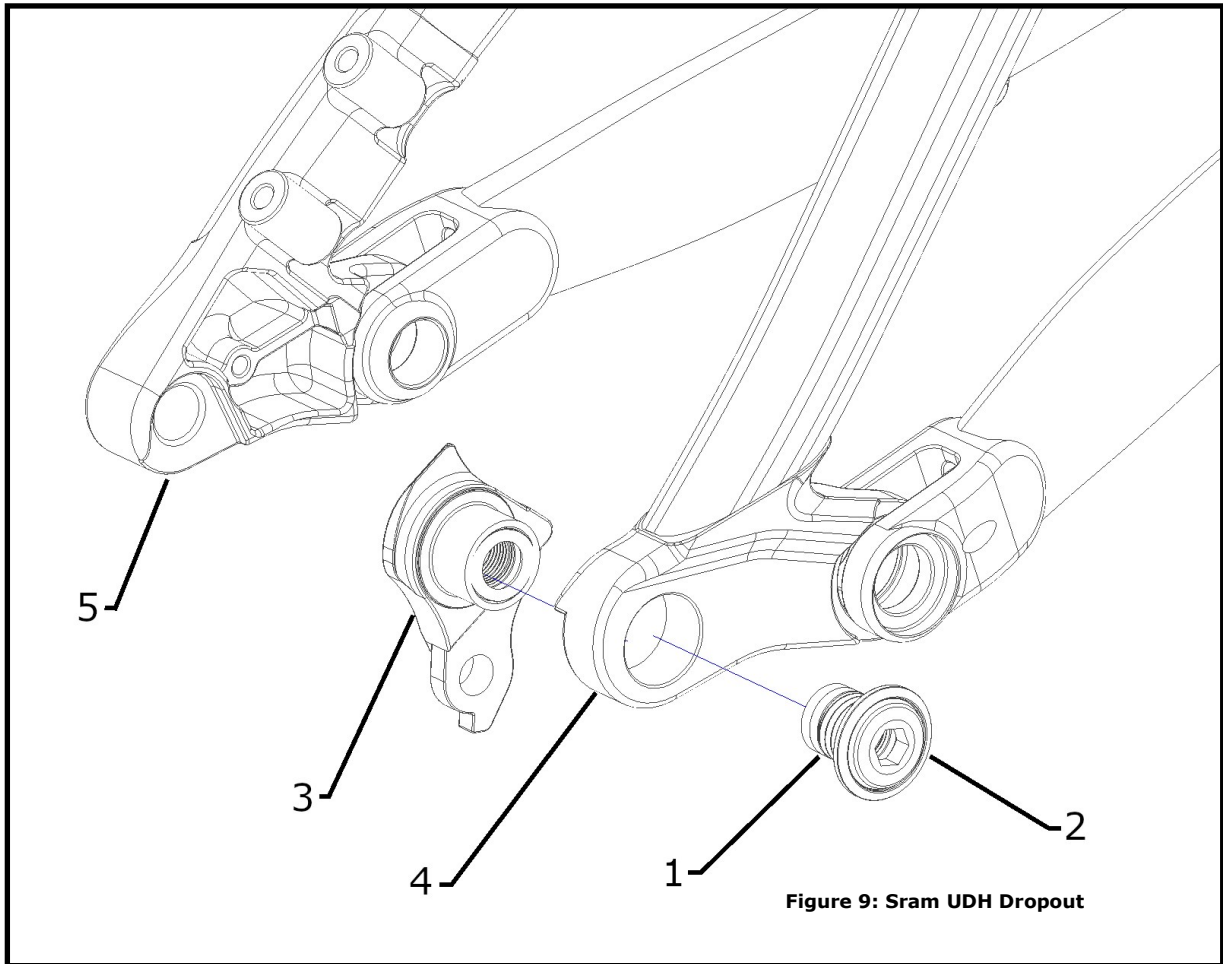


Figure 9: Sram UDH Dropout

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

## 7.0: SERVICING THE DROPOUT SYSTEM

### 7.1: 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.

#### 7.1.1: 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.

#### 7.1.2: 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.

## 7.2: WHYTE 12mm QR SHAFT

Referencing Figure 10 and 11. 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. 10 Arrow No.1) until the lever arm dis-engages from the axle (Figure 11) Whilst the lever is dis-engaged from the axle, rotate the lever (Fig.10 Arrow No.2) around to a '9'0'clock' position as shown in Fig. 11. Next release the spring-loaded Lever arm to re-engage the Lever Arm with the axle (Fig.10 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.**

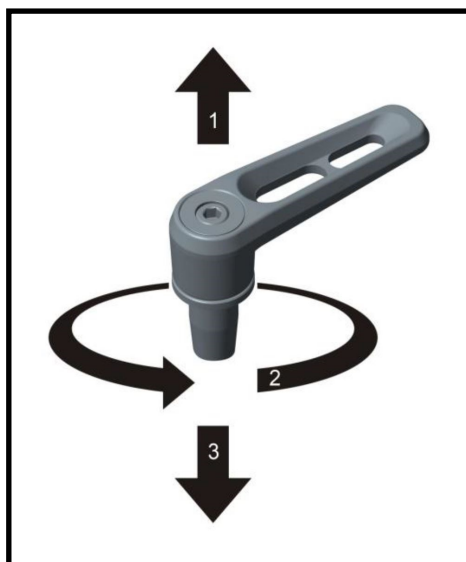


Figure 10: 12mm QR Axle



Figure 11: 12mm QR Axle  
Re-Positioning Lever Arm

## **8.0: 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.

### **8.1 To replace cable or hose outers.**

Reference figures 12 to 17. 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:

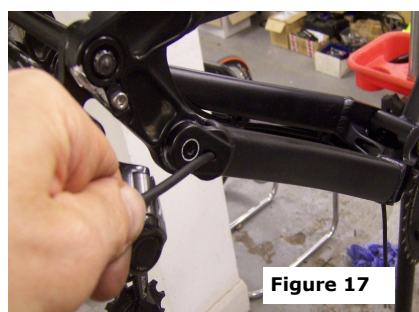
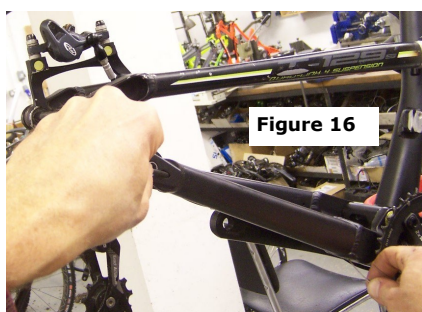
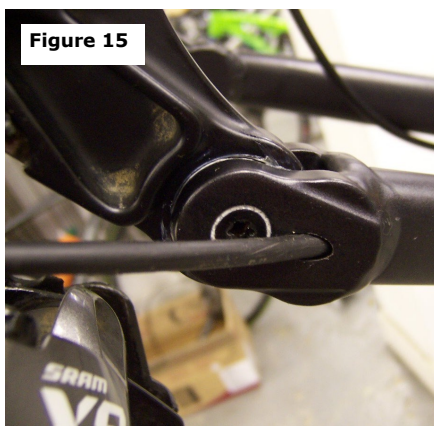
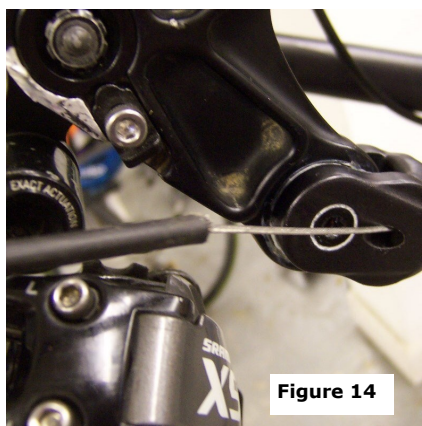
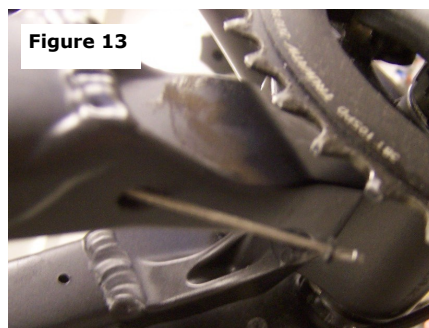
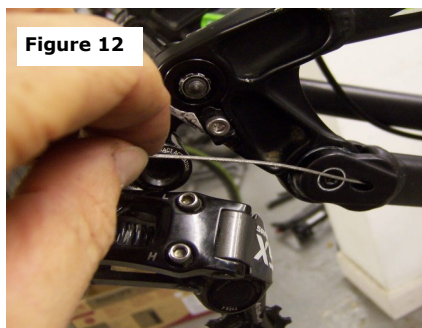
Figures 12 & 13: Using a piece of inner cable, feed into the entrance hole in the right-side chain-stay, near the drop-out, then through the exit hole at the opposite end of the chain-stay. This will probably need several attempts pushing to & fro to find the hole, please be patient!

Figures 14 & 15: 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 16: 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 17: 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.





## **9.0: REMOVAL OF THE BOSCH BATTERY**


### **9.1: Battery Removal**

*Note: Before removing the battery from your Whyte eMTB, please read and understand all relevant documentation from Bosch. To ensure that the battery is not being charged, disconnect the charger from the remote battery port.*

**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:* 5mm A/F Allen Key

*Torque Wrench (Ranging from 3Nm to 15Nm)*

 *Tip: Take care to position the bicycle in a suitable work stand clear of the ground to enable the removal of the battery. We do not recommend turning the bicycle upside down as this risks damage to the Bosch remote handlebar controller when in contact with the ground. Please refer to Fig.18*




**Figure 18:**

**Bosch Remote Can be damaged if the bicycle is turned upside down**

Referencing Fig.19: To remove the battery from the bicycle frame, first peel back the rubber flap cover that covers the M10 Bolt. Using the 5mm Allen Key, remove the M10 bolt from the Bottom Cover as shown in Fig. 20. taking care not to lose the M10 bolt once it has been removed. As shown in Fig 21, once the M10 bolt is removed from the Bottom Cover, slide the Bottom Cover off the Down Tube of the frame in the same direction as the axis of the Down Tube so as to completely remove the Bottom Cover from the bicycle. Note: Safely store the Bottom Cover and the M10 bolt.

Next as shown in Fig.22, firmly grip the Bosch toggle and pull in the direction shown by the red arrow. The battery will disengage from the Rail. Next as shown in Fig.23 still firmly holding the Bosch toggle, pull out the Bosch battery from the downtube of the bike. Take care to catch the battery as it exits the downtube and do not drop the battery.

 **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.*

### **9.2 Battery re-Installation**

The re-Installation of the battery into the Downtube is the reverse of the removal process. Make sure that the orientation of the battery is correct. Refer to Fig. 23, Fig. 24 and Fig. 25 for the correct orientation of the Bosch Battery before pushing the battery into the Down Tube. When the Bosch Battery is fully inserted into the Down Tube, close the Bosch lever in the opposite direction to the arrow in Fig. 22. Next push home the clip so that the Bosch battery is securely located into the Bosch Rail with an audible 'Click' as shown in Fig. 24. Next Slide the Lower Cover onto the end of the Downtube and secure the lower cover onto the mounting Point so that the fixing hole is aligned with the Threaded hold on the Downtube and re-fit the M10 bolt as shown in Fig. 20. Tighten the M10 Bolt to the torque setting as set out in Section 11. Next refit the Rubber Flap over the M10 bolt, pushing the insert into the 5mm Hex of the bolt to secure it.



Figure 19



Figure 20



Figure 21



Figure 22



Figure 24



Figure 23

#### 9.4: Location Of Bosch Battery Charge Port



Figure 21a



Figure 21b

**! 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 21a and 21b. 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.

#### 10.0: TORQUE SETTINGS

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.

Rear Suspension	Nm	lbs.ft
M5 Socket-head Cap Screw (T-25 Torx)	5.0 (Min) - 6.0 (Max)	3.7 (Min) - 4.4 (Max)
M15 x 20 long Alloy Flanged Screw	15.0 (Min) - 17.0 (Max)	10.5 (Min) - 12.5 (Max)
M15 x 28 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 Assembly</b>		
8mm Sram UDH Fixing Bolt	21.0 (Min) - 25.0 (Max)	15.4 (Min) - 18.4 (Max)
<b>Seat Post Clamp</b>		
M5 Cap Screw	6.0 (Min) - 8.0 (Max)	4.4 (Min) - 5.9 (Max)
<b>DownTube Lower Cover</b>		
5mm Socket Head M10 screw	9.0 (Min) - 10.0 (Max)	6.6 (Min) - 7.4 (Max)

**11.0: OWNER'S NOTES**



