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**146**  
**T-129**  
**M-109**

**Supplementary Service Manual**  
**Edition 2: June 2012**

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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 Brochure or alternatively from the Whyte Bikes website **[www.whytebikes.co.uk](http://www.whytebikes.co.uk)**

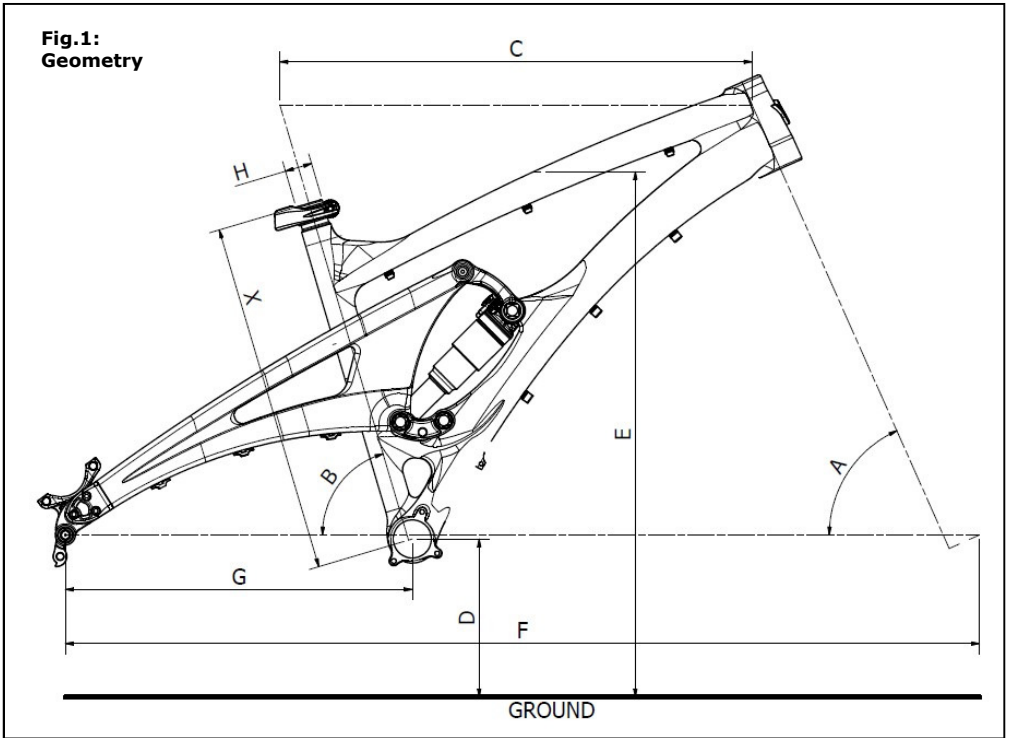
Please remember, if you are in any doubt about your ability to safely service or repair your Whyte bike, do not ride it and instead arrange for a professional bicycle mechanic at your local Whyte dealer to do the job correctly.

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. February 2012.*

**2.0: GEOMETRY**



## WHYTE Service Manual

### 2.1: Whyte 146 Geometry

Frame Size	X	Small	Medium	Large
Head Angle	A	66.0°	66.0°	66.0°
Seat Angle	B	73.5°	73.5°	73.5°
Top Tube	C	575.7mm	599.0mm	624.4mm
BB Height*	D	338mm	338mm	338mm
Stand Over	E	795mm	803mm	810mm
Wheel Base	F	1135.5mm	1159.4mm	1184.8mm
Chain Stay	G	440mm	440mm	440mm
Seat Post	H	30.9mm	30.9mm	30.9mm

Notes:

Geometry shown here is 'Showroom' i.e. without rider aboard the bicycle. 'With Sag' geometry is with rider after correct sag is set at front and rear. Please refer to suspension set up for information on how to achieve the correct sag of the fork and rear damper.

\* BB height with Ø686mm tyres fitted (2.5" / 60-559)

### 2.2: Whyte T-129 Geometry

Frame Size	X	Small	Medium	Large	Extra—Large
Head Angle	A	68.0°	68.0°	68.0°	68.0°
Seat Angle	B	73.2°	73.0°	72.8°	72.5°
Top Tube	C	587.3mm	607.2mm	622.4mm	637.6mm
BB Height*	D	342.5mm	342.5mm	342.5mm	342.5mm
Stand Over	E	808mm	808mm	811mm	813mm
Wheel Base	F	1125.4mm	1145.4mm	1160.4mm	1175.4mm
Chain Stay	G	431mm	431mm	431mm	431mm
Seat Post	H	30.9mm	30.9mm	30.9mm	30.9mm

Notes:

Geometry shown here is 'Showroom' i.e. without rider aboard the bicycle. 'With Sag' geometry is with rider after correct sag is set at front and rear. Please refer to suspension set up for information on how to achieve the correct sag of the fork and rear damper.

\* BB height with Ø748mm tyres fitted (29" x 2.25" / 54/56-622)

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### 2.3: Whyte M-109 Geometry

Frame Size	X	Small	Medium	Large	Extra—Large
Head Angle	A	69.5°	69.5°	69.5°	69.5°
Seat Angle	B	73.3°	73.0°	72.7°	72.4°
Top Tube	C	587.1mm	607.3mm	622.8mm	638.0mm
BB Height*	D	335mm	335mm	335mm	335mm
Stand Over	E	795mm	795mm	800mm	805mm
Wheel Base	F	1105.3mm	1125.3mm	1140.3mm	1155.3mm
Chain Stay	G	431.4mm	431.4mm	431.4mm	431.4mm
Seat Post	H	30.9mm	30.9mm	30.9mm	30.9mm

Notes:

Geometry shown here is 'Showroom' i.e. without rider aboard the bicycle. 'With Sag' geometry is with rider after correct sag is set at front and rear. Please refer to suspension set up for information on how to achieve the correct sag of the fork and rear damper.

\* BB height with Ø748mm tyres fitted (29" x 2.25" / 54/56-622)

## WHYTE Service Manual

### 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 to the right.



**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.

Continental	<a href="http://www.conti-online.com">www.conti-online.com</a>
Easton	<a href="http://www.eastonbike.com">www.eastonbike.com</a>
e*thirteen	<a href="http://www.e13components.com">www.e13components.com</a>
Fi:zik	<a href="http://www.fizik.it">www.fizik.it</a>
Formula	<a href="http://www.formulahubs.com">www.formulahubs.com</a>
Fox	<a href="http://www.foxracingshox.com">www.foxracingshox.com</a>
Mavic	<a href="http://www.mavic.com">www.mavic.com</a>
Maxxis	<a href="http://www.maxxis.com">www.maxxis.com</a>
Shimano	<a href="http://www.shimano.com">www.shimano.com</a>
SRAM	<a href="http://www.sram.com">www.sram.com</a>
TH	<a href="http://www.thindustries.com.tw">www.thindustries.com.tw</a>
WTB	<a href="http://www.wtb.com">www.wtb.com</a>
X-Fusion	<a href="http://www.xfusionshox.com">www.xfusionshox.com</a>

#### 3.2: WHYTE GETTA-GRIP SEAT CLAMP & SADDLE HEIGHT ADJUSTMENT

The Getta Grip seat clamp design is present on all models of Whyte full suspension mountain bikes. It is a patented design to allow adjustment of the saddle height by either the use of a QR Lever, or bolt-up method. This manual covers both of those styles of clamp design.

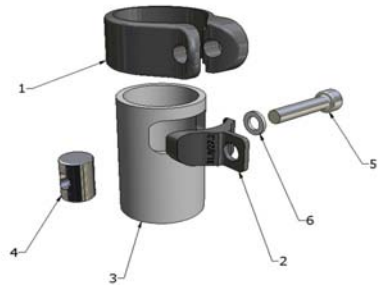
**IMPORTANT:** when adjusting the saddle height you **MUST** obey the Minimum insertion depth requirement marked on the Seat Post.



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

Item:	Description
1	Seat Clamp Band
2	T-Pad
3	Main Frame
4	Barrel Nut
5	M6 x 30mm Fastener
6	M6 Washer

**Fig.2: Getta-Grip Seat Clamp: Bolt-up**





## **Bolt-up Type: Fig.2**

*Tools Required:* 5mm Allen Key

(Note, refer to the seat-pin manufacturers instructions in conjunction with these notes). To adjust the seat height, using the 5mm Allen key, undo the M6 bolt (5) just enough to allow the seat-pin to slide freely up and down. Set the height to the desired level, and re-tighten the M6 bolt (5) with the 5mm Allen Key just enough so as to prevent the seat-pin from slipping down and twisting. (Do not exceed the tightening torque settings in Section 8.0).

Item	Description
1	QR Lever Cam Grub Screw
2	QR Lever Cam
3	Whyte QR Lever
4	Plastic Shim
5	Main Frame
6	Seat Clamp Band
7	QR Adjuster Bobbin
8	QR Shaft
9	T-Pad



## **QR Lever Type: Fig.3**

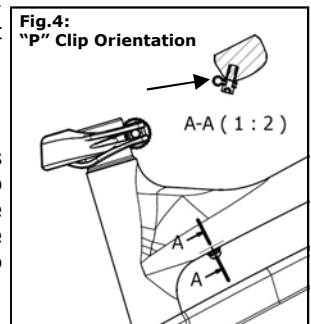
*No tools required.*

(Note, refer to the seat-pin manufacturers instructions in conjunction with these notes).

To Adjust the seat height with the QR Lever assembly fitted, simply undo the QR Lever (4) from the Closed position to the Open position. Next adjust the height of the Seat Pin to the desired level, and close the QR lever (4) to the from the Open position to the Closed position. The QR closing force can be adjusted by turning the QR Adjuster Bobbin (8) clockwise or anti-clockwise before closing the QR Lever (4). As an approximate guide, the QR lever should begin to resist closure at 90° before it reaches it's final closed position.

### **3.3: ORIENTATION OF "P" CLIPS ON THE WHYTE 146 TOP-TUBE**

Some Whyte 146 frames are fitted with "P" clip hose guides under the top-tube. These are for retro-fitting the SRAM Reverb seat-post, so that the hose may be routed along the top-tube to the handlebar control. Note that the "P" clip nearest to the seat-post must face outwards in order for the clip and hose to clear the swinging arm. See figure 4.



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### **3.4: SET UP OF FORK**

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

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 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.

Model	Sag (15% - Firm)	Sag (25% - Plush)
M109	15mm	25mm
T-129	18mm	30mm
146	24mm	40mm

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.

#### **IMPORTANT SAFETY NOTE:**

Always stop riding when making adjustments of any kind to the bicycle!

### **3.5: SET UP OF REAR DAMPER**

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

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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 to the right. 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 pressure. Repeat the 'sag' test until the recommended sag distance is achieved.

Model	Sag
M109	14mm (25%)
T-129	17mm (25%)
146	17mm (30%)

### **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 mountainbikes 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.

### **IMPORTANT SAFETY NOTE:**

Always stop riding when making adjustments of any kind to the bicycle!

### **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 "Pro-Pedal" or SRAM RockShox "Floodgate". 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.

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### 3.6: 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 146, T-129 & M-109:**

18st. / 114kg (including rider's luggage)



**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:**

The Whyte M-109 & T-129 have all been designed, tested and comply with BS EN 14766 Standard, for typical cross country mountain biking use. They have not been designed or tested for extreme down-hilling or free-riding.

The Whyte 146 bike has been designed, tested and complies with BS EN 14766 Safety Standard, for typical cross country and free-ride mountain biking use. It has not been designed or tested for extreme down-hilling.

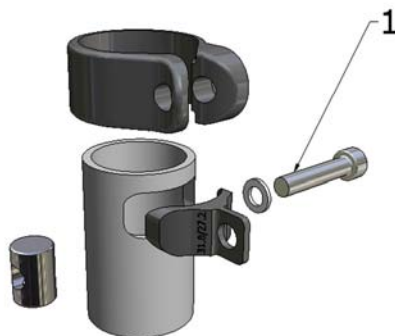
## **5.0: LUBRICATION**

### **5.1: GETTA-GRIP SEAT CLAMP**

#### **5.1.1: BOLT-UP**

Item	Description	Lubricant	Lubrication Interval
1	M6 x 30mm Fastener	Castrol LM or equivalent	Once a Month

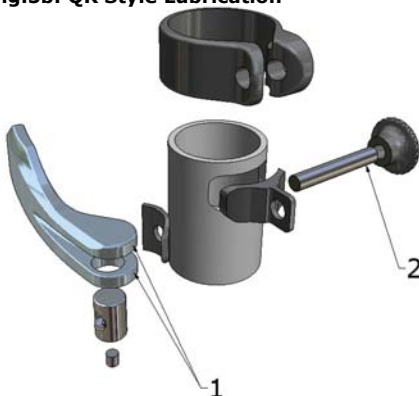
**Fig.5a: Bolt-up Style Lubrication**



#### **5.1.2: QR STYLE**

Item	Description	Lubricant	Lubrication Interval
1	Whyte QR Lever Cam Surface	Castrol LM or equivalent	After Every Ride
2	M6 QR Shaft	Castrol LM or equivalent	Once a Month

**Fig.5b: QR Style Lubrication**



## **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.

## WHYTE Service Manual

### 6.0: SERVICING THE REAR SUSPENSION

#### **6.1: REMOVING THE REAR SHOCK, LINKS AND SWINGING ARM**

##### **6.1.1 From the Whyte 146**

*Tools Required:*     15mm Open-ended, or adjustable spanner (1 off)  
                              4mm AF Allen Key (2 off)  
                              Medium sized flat-bladed screwdriver (1 off)  
                              10mm AF Socket (2 off)

##### **6.1.1.1 To remove only the rear shock (11) from the frameset.**

Whilst referencing fig. 6, using the 15mm open ended spanner, unscrew and remove the two Bearing Caps (1) at the rear of the lower H-link (9) and 2 caps (1) in the upper Y-link (8). Next using the 10mm Sockets, undo the M8 Aerospace nuts (2) on the M8 shaft (3) that passes through the lower H-link (9) and swinging arm (10). Whichever Aerospace Nut (2) becomes undone first, remove it, and pull the M8 Shaft (3) towards the other side, just enough to allow the Rear Shock Absorber (11) to move (don't pull the M8 Shaft (3) fully out, since this makes refitting the rear shock much easier). Then, using the 10mm Sockets, undo the M8 Aerospace nuts (2) on the M8 shaft (4) that passes through the Main Frame (7) and front of the Rear Shock Absorber (11). Again whichever Aerospace Nut (2) becomes undone first, remove it, and pull the M8 Shaft (4) all the way out from the other side.

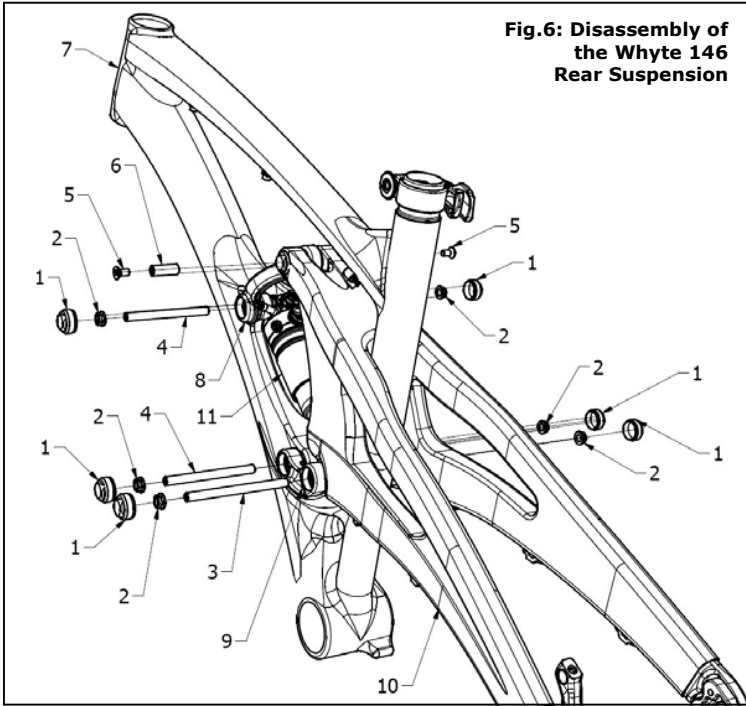
You can now remove the Rear Shock Absorber (11) after lifting up the front of the Swinging Arm (10). Be careful to keep the shield washers (Items 4, Fig 12) in situ in the upper Y-link (8). Leave the Swinging Arm (10) & the upper Y-link (8) in situ if only replacing or servicing the Rear Shock Absorber (11). Otherwise go to 6.1.1.2 below to also remove those items.

##### **6.1.1.2 To remove the links (8 & 9) & swinging arm (10) from the main frame (7).**

Again, whilst referencing fig. 6, pull all the way out the M8 shaft (3) that passes through the lower H-link (9) and swinging arm (10). You can now lift off the Swinging Arm (10) and upper Y-link (8) from the Main Frame (7). Be careful to retain all the shield washers (Items 4, Fig 12) ready for re-assembly. Using the 4mm A/F Allen keys undo the M6 countersunk socket screws (5) in the Ø9.5 x 25 long hollow pin (6) that pass through the upper Y-link (8) and front of the Swinging Arm (10). Whichever screw (5) becomes undone first, remove it, and push the pin (6) all the way out towards the other side. You can now separate the Swinging Arm (10) from the upper Y-link (8).

To remove the Rear Link Assembly (9) from the main frame (7), using the 15mm open ended spanner, unscrew and remove the two Bearing Caps (1) at the front of the lower H-link (9). using the 10mm Sockets, undo the M8 Aerospace nuts (2) on the M8 shaft (4) that passes through the lower H-link (9) and the Main Frame (7) and remove the M8 shaft (4) and the lower H-link (9) from the Main Frame (7). Be careful to retain all the shield washers (Items 4, Fig 12) ready for re-assembly.

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**Fig.6: Disassembly of the Whyte 146 Rear Suspension**

Item	Description
1	Screw in Bearing Cap (15mm A/F)
2	M8 Aerospace Nut (10mm A/F)
3	M8 x 100mm long Stud
4	M8 x 90mm long Stud
5	M6 x 12 long Countersunk Capscrew (5mm A/F)
6	Ø9.5mm x 25 long Hollow Pin (M6 internal threads)
7	146S Main frame
8	Front 80mm centres Y-Link Assembly
9	Rear 55mm centres Quad-Link Assembly
10	146S Swinging Arm
11	Rear Shock Absorber

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### **6.1.2 From the Whyte T-129 or M-109**

*Tools Required:*

- 4mm AF Allen Keys (2 off)*
- 5mm AF Allen Key - ball ended (1 off)*
- 15mm Open-ended, or adjustable spanner*
- T-25 Torx® Keys (2 off)*
- Medium sized flat-bladed screwdriver (1 off)*
- 10mm AF Socket (2 off)*

#### **6.1.2.1 To remove only the rear shock (5) from the frameset.**

Whilst referencing figure 7, 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 (13) and front of the Rear Shock Absorber (5). 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.

Then undo the two M5 x 16mm long Socket-head Capscrews (1) from the Ø8mm x 45mm long Hollow Pivot Pin (4) that passes through the Seatstays (14 & 15) and rear of the Rear Shock Absorber (5). Whichever Capscrew (1) becomes undone first, remove it and the adjacent Collar (2), and pull the Pivot Pin (4) all the way out from the other side. You can now remove the Rear Shock Absorber (5).

#### **6.1.2.2 To remove the link (17) & swinging arm parts (14, 15 & 16) from the main frame (13).**

Again, whilst referencing figure 7, using the 15mm open ended spanner, unscrew and remove the two M22 Bearing Caps (6) at the front of the H-link (17). Next, using the 10mm Sockets, undo the M8 Aerospace nuts (8) on the M8 stud (9) that passes through the H-link (17) and Main Frame (13). Whichever Aerospace Nut (8) becomes undone first, remove it, and then remove the M8 x 71mm long stud (9) from the other side.

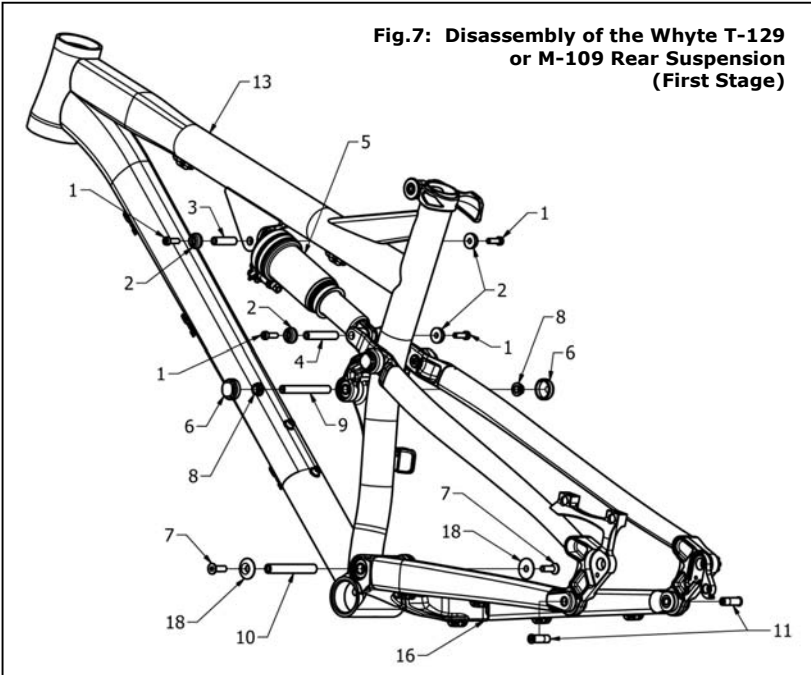
Next, using the T-25 Torx®) Key, unscrew and remove the two M8 x 23 long Flanged Screws from either side of the Chainstays (16). The Seat-stays (14 & 15) together with the H-link (17) may now be removed from the Main Frame (13) & Chainstays (16). Be careful to retain all the shield washers (Items 2, Fig. 13 & Items 2 & 3, Fig. 14) ready for re-assembly.

Then, using the two 4mm AF Allen keys, undo the two M6 x 20mm long countersunk-head cap screws (7) in the M6 x 70mm long hollow pivot pin (10). Whichever countersunk head cap screw (7) becomes undone first, remove it and the adjacent collar (18), and then remove the M6 x 70mm long hollow pivot pin (10) from the other side. The Chainstays (16) may now be removed from the Main Frame (13). Be careful to retain all the shield washers (Items 2, Fig 15) ready for re-assembly.

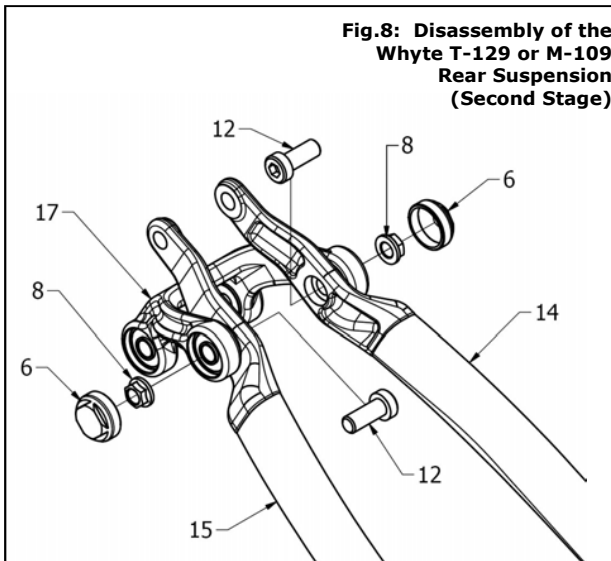
To separate the Seat-stays (14 & 15) from the H-link (17), whilst referencing figure 8, using the 15mm open ended spanner, unscrew and remove the two M22 Bearing Caps (6) at the rear of the H-link (17). Next, using a 10mm Socket and the 5mm AF Allen Key, undo the M8 Aerospace nuts (8) on the M8 x 20 long Socket-head Capscrews (12) that passes through the H-link (17) and seat-stays (14 & 15). The Seat-stays (14 & 15) may now be removed from the H-link (17). Be careful to retain all the shield washers (Items 2, Fig 13) ready for re-assembly.



**Fig.7: Disassembly of the Whyte T-129 or M-109 Rear Suspension (First Stage)**



**Fig.8: Disassembly of the Whyte T-129 or M-109 Rear Suspension (Second Stage)**



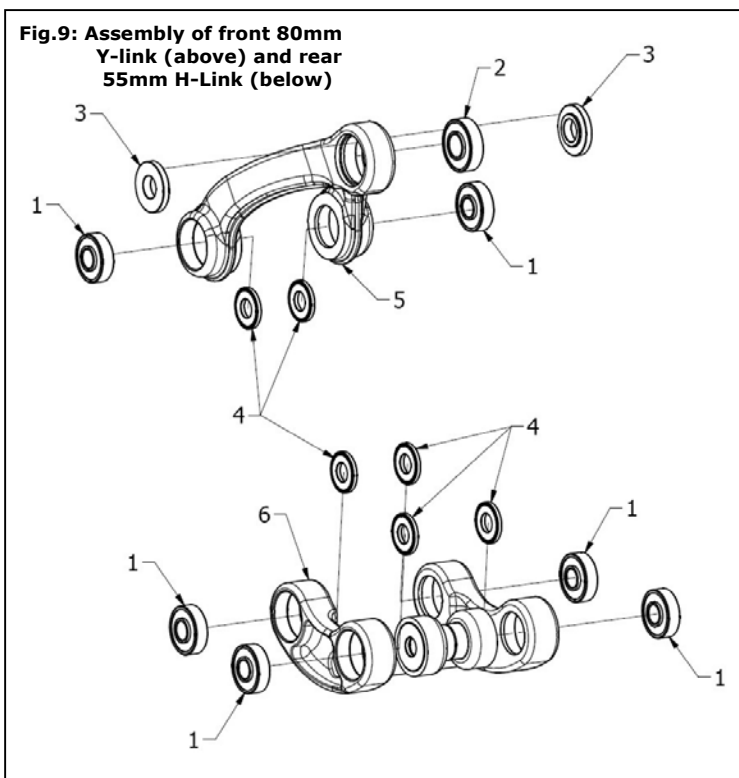
## **WHYTE Service Manual**

<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>	Hollow Pivot Pin Ø8mm x 45mm long
<b>5</b>	Rear Shock Absorber
<b>6</b>	M22 Bearing Cap (15mm A/F)
<b>7</b>	M6 x 20mm long Countersunk-head Capscrew (4mm A/F Internal Hex)
<b>8</b>	M8 Aerospace Nut (10mm A/F)
<b>9</b>	External M8 x 45mm long Stud
<b>10</b>	Internal M6 x 70mm long Hollow Pivot Pin
<b>11</b>	M8 x 23 long Flanged Screw (T-25 Torx®)
<b>12</b>	M8 x 20mm long Socket-head Capscrew (5mm A/F)
<b>13</b>	T-129, M-109 & M-109C Main Frame
<b>14</b>	T-129, M-109 & M-109C Right Seat-stay
<b>15</b>	T-129, M-109 & M-109C Left Seat-stay
<b>16</b>	T-129, M-109 & M-109C Chain-stays
<b>17</b>	60mm centres H-Link Assembly
<b>18</b>	Collar for M6 Countersunk-head Capscrew

## WHYTE Service Manual

### 6.2: STRIPPING AND REASSEMBLING BEARINGS.

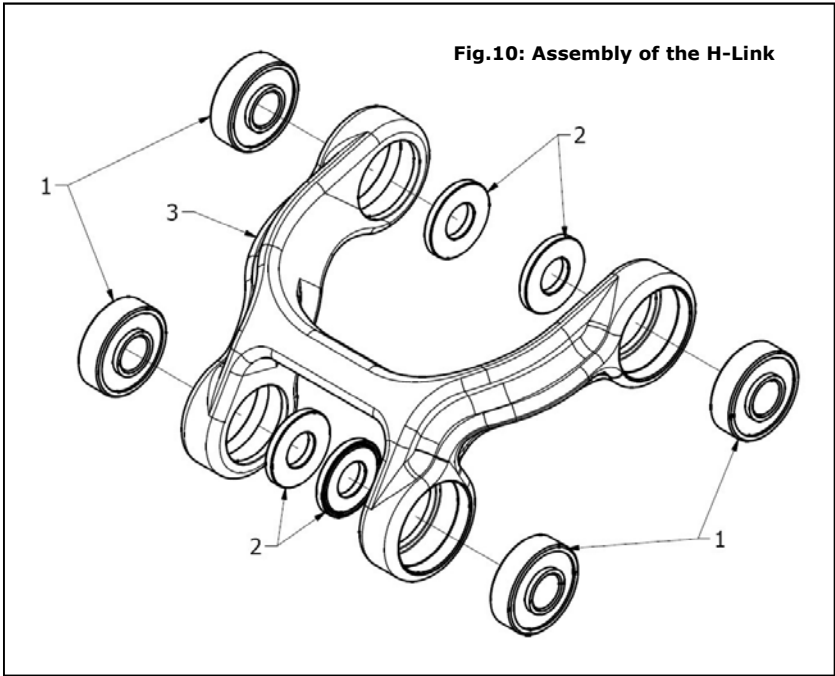
#### 6.2.1 In the Whyte 146 (Reference figure 9)



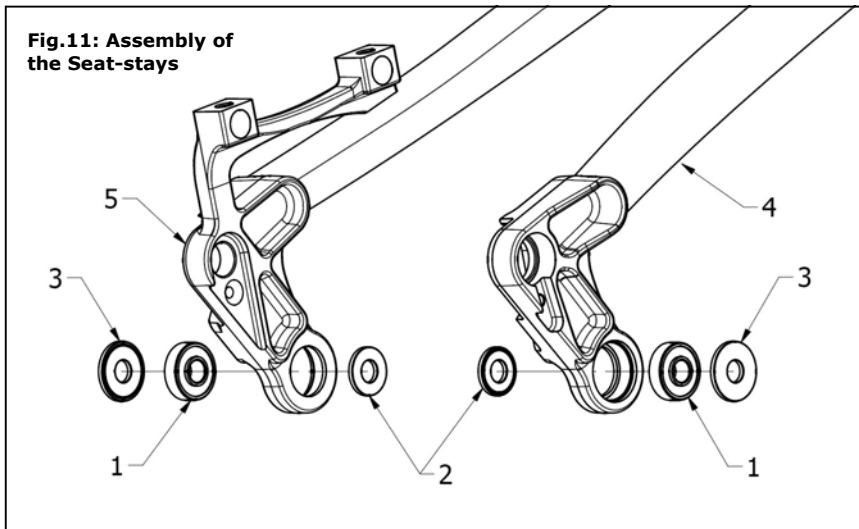
Item	Description
1	KP5AX bearing
2	KP6AX bearing
3	Stepped shield washer (Ø9.6mm hole)
4	Shield washer (Ø8.1mm hole)
5	Front 80mm "Y" Quad-Link Body
6	Rear 55mm "H" Quad-Link Body

## WHYTE Service Manual

### 6.2.2 In the Whyte T-129 or M-109 (Reference figures 10, 11 & 12)

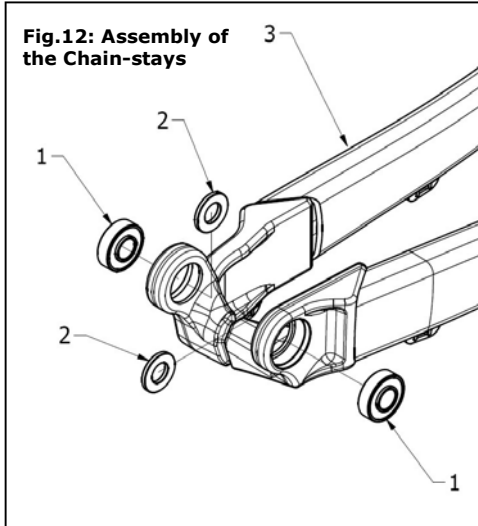


Item	Description
1	KP5AX bearing
2	Middle shield washer (O.D. 17.5mm)
3	60mm centre-to-centre Alloy Quad-Link Body



Item	Description
1	KP5AX bearing
2	Middle shield washer (O.D. 17.5mm)
3	Outer shield washer (O.D. 21.5mm)
4	Right Seat-stay
5	Left Seat-stay

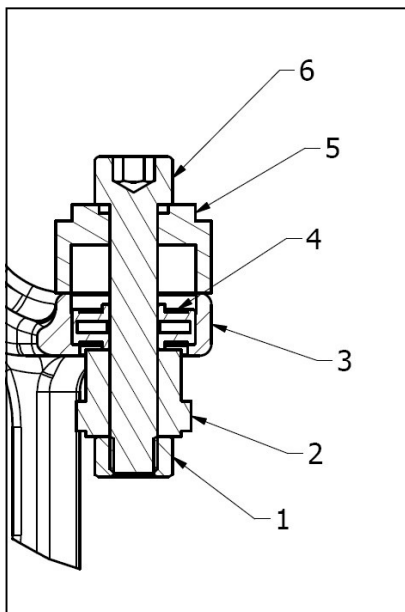
## WHYTE Service Manual



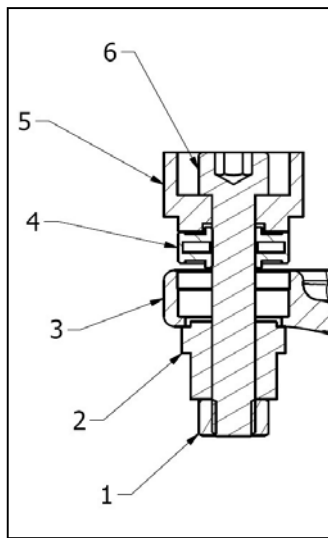
Item	Description
1	KP6AX bearing
2	Shield Washer (O.D. 18.5mm I.D. 9.6mm)
3	Chain-stays

## WHYTE Service Manual

**Fig.13a: Bearing Extraction**



**Fig 13b: Bearing Insertion**



Item:	Description.
1	M8 Flanged Nut
2	KP5AX or KP6AX or 689-2RS Bearing Tool 1
3	Link, Seat-stay or Chain-stay Body
4	KP5AX or KP6AX Bearing
5	KP5AX or KP6AX or 689-2RS Bearing Tool 2
6	M8 x 45mm Socket Head Cap Screw

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### 6.2.4: EXTRACTION OF BEARINGS

*Tools required:* Whyte KP5AX or KP6AX or 689-2RS bearing press tool  
6mm AF Allen Key  
10mm AF Spanner

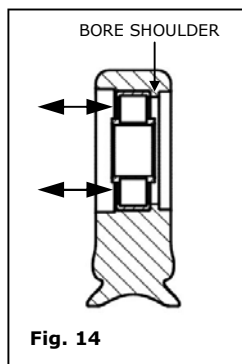
To remove the Bearings (4) from the Link, Seat-stay or Chain-stay Body (3). Assemble the parts as shown in Fig 13a. Using the 6mm Allen Key and 10mm spanner, tighten the assembly together until the bearing (4) is pressed out of the mating component (3). Repeat on all other bearings.

**Important note:** *Whyte 146* - the single KP6AX bearing in a "Y" link MUST be extracted the opposite end to the shoulder in the bore, see Fig. 14.

### 6.2.5: INSERTION OF BEARINGS

*Tools required:* Whyte KP5AX or KP6AX or 689-2RS bearing press tool  
6mm AF Allen Key  
10mm AF 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 (3) apply a small amount of Loctite 638 to the outside diameter of the bearing and to the inside bore of the mating component (3). Next assemble the components as illustrated in Fig. 13b. It is very important to make sure the bearing (4) and Bearing Insertion tool 1 (3) are squarely seated against the mating component (4). With great care, slowly tighten the M8 Socket head cap screw (6) with the 6mm Allen key and 10mm Spanner until you can see the KP bearing (4) being pressed squarely into the mating component (3). Once the KP bearing is fully seated and you can no longer tighten the M8 Socket Head Cap Screw further, undo the nut and bolt and remove any excess Loctite from around the KP Bearing, particularly in any internal threads. Repeat for the remaining KP Bearings. **Allow 24 hours for the Loctite to totally cure.**



**Important note:** *Whyte 146* - the single KP6AX bearing in a "Y" link MUST be inserted into the opposite end to the shoulder in the bore, see Fig. 14.

### 6.2.6: REASSEMBLY OF SHIELD WASHERS / SPACERS

*Tools required:* Molykote Silicon 111 Grease  
SKF LGAF 3E" or "Castrol Optimol T" Anti-Fret Paste

Apply a good quantity of Molykote 111 Silicon on top of the Bearings. The Molykote Silicon should completely cover each bearing and be applied on both sides of each bearing when it is in the swinging arm component.

Assemble the shield washer components (Items 3 & 4 in Fig.9; items 2 in Figs.10 or 12; items 2 or 3 in Fig.11). If you have applied enough Molykote 111 Silicon, it should spread from under the shield washer or spacer components as they are positioned. Wipe this excess Silicon away from around the shield washer or spacer components.



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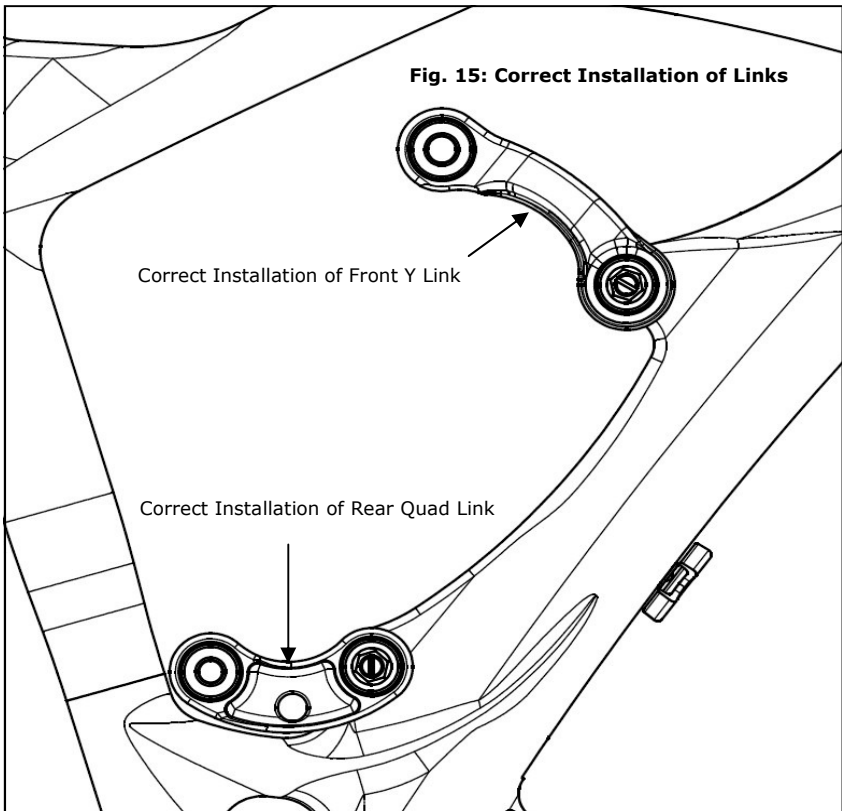
### APPLICATION OF "SKF LGAF 3E" or "Castrol Optimol T" ANTI-FRET PASTES

Once the swinging arm 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 (Items 3 & 4 see fig. 9; items 2 see figs. 10 or 12; items 2 or 3 see fig. 11), that contact the Main Frame and Swinging Arm. It is additionally recommended to apply anti-fret paste to the contact surfaces on the Main Frame and Swinging Arm.

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

#### 6.3.1: Whyte 146 - Correct Orientation of Front & Rear Quad-Links

Ensure that upon assembling the Quad-Links to the mainframe, that the links are orientated as shown in Figure 15.



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### **6.3.2: Re-assemble the Whyte 146**

*Tools Required:* 15mm Open-ended, or adjustable spanner  
4mm AF Allen Key (2 off, 1 fitted to a 5Nm to 25Nm Torque Wrench)  
Medium sized flat-bladed screwdriver  
10mm AF Socket (2 off, 1 fitted to a 5Nm to 25Nm Torque Wrench)  
10mm open ended spanner

Reference figure 16. The re-assembly of the rear suspension is essentially the reverse of the dis-assembly procedure 6.1.1.

#### **6.3.2.1: To re-assemble the links (8 & 9) & swinging arm (10) onto the main frame (7).**

Starting with the rear 55mm centre-to-centre Quad Link (9), check that the shield washers are in place (see items 4 in figure 9) and apply either SKF LGAF 3E or Castrol Optimol T anti-fret paste to the contacting faces between the shield washers and main frame.

**IMPORTANT.** Ensure that the Quad-Link (9) is correctly orientated (see figure 15).

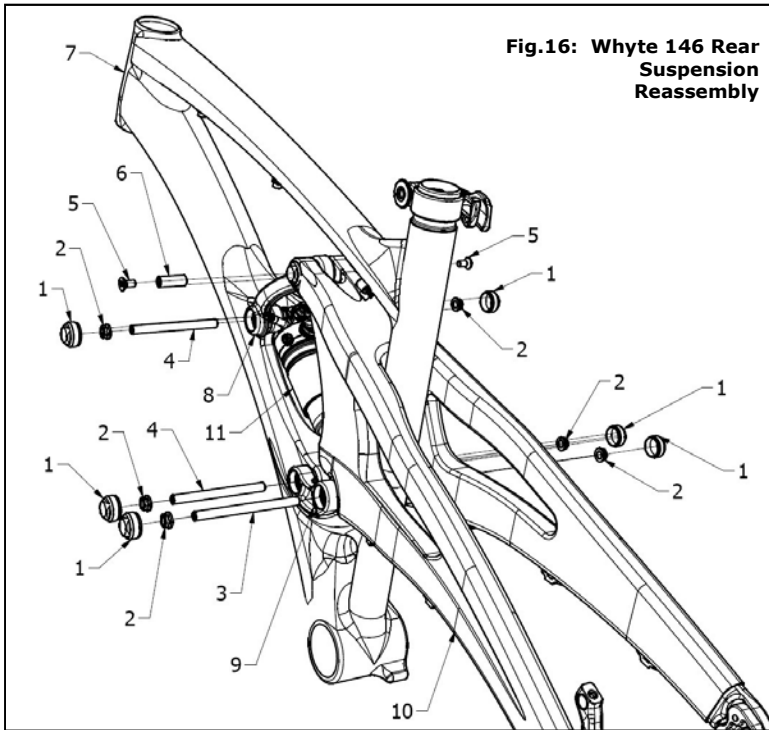
Carefully place the Quad-Link (9) over the Main Frame (7), whilst ensuring that the shield washers (items 4, figure 9) in the link are not pushed out, as you lower it into position. Then pass a 90mm long M8 stud (4) through the Quad-Link (9) and Main Frame (7). Next, make sure that the two stepped shield washers (3, figure 9) are correctly in the Y-Link (8) (**steps must face inwards**) and apply either SKF LG/AF 3E or Castrol Optimol T anti-fret paste on the contacting surfaces of the stepped shield washers and swinging arm (10). Then slide the front of the Swinging Arm (10) onto the Y-Link (8).

**IMPORTANT.** Ensure that the Y-Link (8) is correctly orientated (see figure 15).

Ensure that the stepped shield washers (3, figure 9) in the Y-Link assembly (8) are not pushed out, as you lower the swinging arm (10) into position. Pass the Ø9.5 x 25 long hollow pin (6) through the front of the Swinging Arm (10), the stepped shield washers (3, figure 10) and the Y-Link (8), until it has passed through the other side. Then check the Quad-Link (9) that the other shield washers are in place (see items 4 in figure 9) and apply either SKF LGAF 3E or Castrol Optimol T anti-fret paste to the contacting faces between those shield washers and the main frame. Place the swinging arm (10) into the Quad-Link (9). Ensure that the shield washers (items 4, figure 9) in the Quad-Link (9) are not pushed out, as you lower the Swinging Arm (10) into position. Make sure that the Ø8 holes in the Quad-Link (9) and the Swinging Arm (10) are concentric with each other, and push in the 100mm long M8 stud (3) in one side only, just far enough to allow the Rear Shock Absorber (11) to be fitted later (see 6.3.2.2).

#### **6.3.2.2 To re-assemble the rear shock (11) into the frameset.**

Take the Rear Shock Absorber (11) 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 (7) and Swinging Arm (10). Slide the Rear Shock Absorber (11) into the Main Frame (7) and Swinging Arm (10).



**Fig.16: Whyte 146 Rear Suspension Reassembly**

**IMPORTANT.** Ensure the Rear Shock Absorber (11) is the correct way up, with any dials and levers facing upwards and towards the front of the frameset, reference fig. 16.

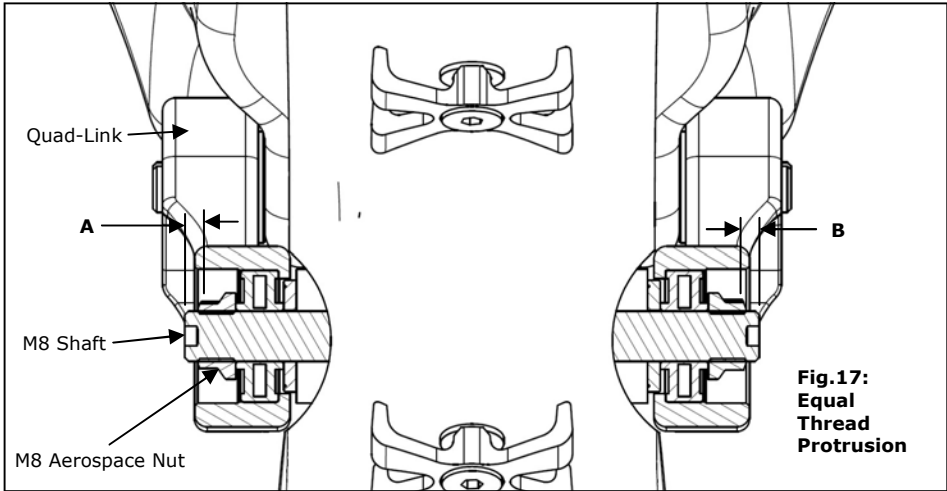
Make sure that the Swinging Arm (10) and the Rear shock Absorber (11) holes are concentric with each other, and push the 100mm long M8 stud (3) all the way in. Rotate the front of the Rear Shock Absorber (11) downwards and in between the lugs on the Main Frame (7). Then check the Y-Link (8) that the two shield washers are in place (see items 4 in figure 9) and apply either SKF LGAF 3E or Castrol Optimol T anti-fret paste to the contacting faces between those shield washers and the main frame. Bring down the Y-Link (8) over the outside of the lugs on the Main Frame (7). Ensure that the shield washers (items 4, figure 9) in the Y-Link (8) are not pushed out, as you lower it into position. Make sure that the Ø8 holes in the Y-Link (8), the Main Frame (7) and the front of the Rear Shock Absorber (11) are all concentric with each other, and push the 90mm long M8 stud (4) all the way through. Next re-fit the M8 Flanged Nuts (2) by screwing onto the ends of all M8 studs (3 & 4). Also screw the M6 countersunk socket screws (5) into the ends of the Ø9.5 x 25 long hollow pin (6).

**IMPORTANT:** before final tightening of the M8 Flanged Nuts (2), it is important to make sure that there is a balanced amount of thread showing through each nut on each side of the

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links, ie: dimensions "A" & "B" should be equal in fig. 17. Use the flat-bladed screwdriver in the end of the M8 studs (3 or 4), and the 10mm spanner, to adjust all three M8 studs (3 or 4) accordingly.

Tighten all M8 Flanged Nuts (2) and M6 x 12 long Countersunk Capscrews (5) to the recommended torque settings (refer to the Tightening torque settings in Section 8.0). Next make sure that there is still a substantial amount of Molykote 111 Silicon covering all the KP5AX Bearings (items 1 in fig. 9). Lastly refit the Link Bearing Caps (1) by carefully screwing them into the link body. Take care not to cross thread the fine thread. Tighten all Link Bearing Caps (1) to the recommended settings. (Refer to the Tightening torque settings in Section 8.0). Wipe off any excess Molykote 111 Silicon from around the links and frame.



### **6.3.3: Re-assemble the Whyte T-129 or M-109**

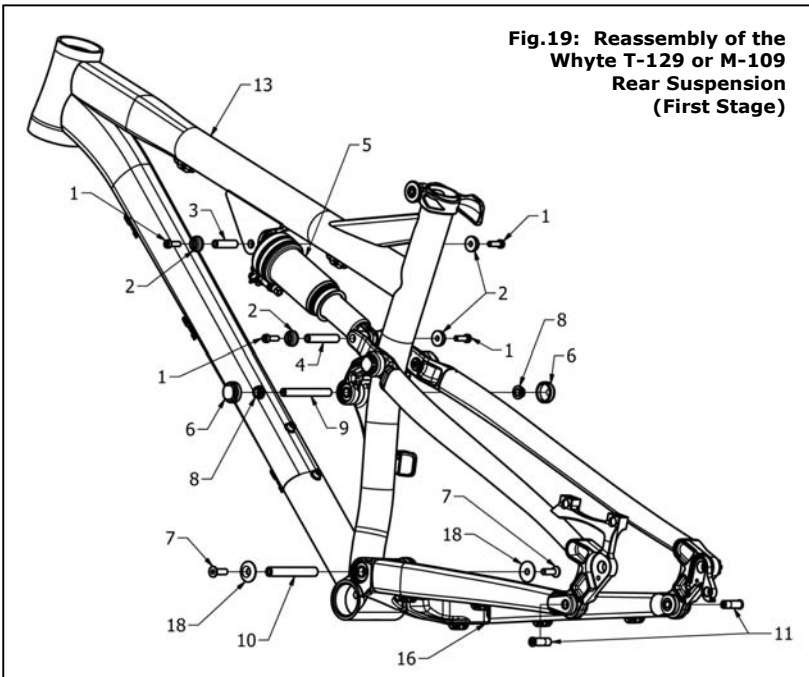
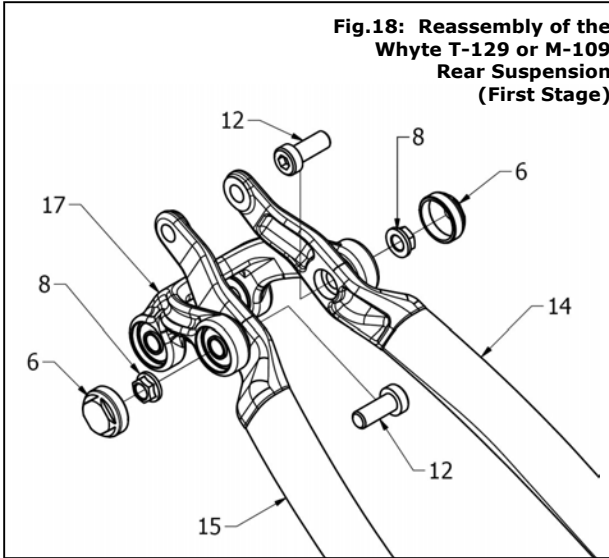
**Tools Required:** 4mm AF Allen Keys (2 off, 1 fitted to a 5Nm to 25Nm Torque Wrench)  
5mm AF Allen Key - ball ended (1 off)  
15mm Open-ended, or adjustable spanner  
T-25 Torx® Keys (2 off, 1 fitted to a 5Nm to 25Nm Torque Wrench)  
Medium sized flat-bladed screwdriver (1 off)  
10mm AF Socket (2 off, 1 fitted to a 5Nm to 25Nm Torque Wrench)  
10mm open ended spanner

Reference figures 18 & 19. The re-assembly of the rear suspension is essentially the reverse of the dis-assembly procedure 6.1.2.

#### **6.3.3.1: To re-assemble the link (17) & swinging arm parts (14, 15 & 16) onto the main frame (13).**


Starting with the Seat-stays (14 & 15) and the H-link (17), reference fig. 18, check that

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the shield washers are in place in the H-link (see items 2 in figure 10) and apply either SKF LGAF 3E or Castrol Optimol T anti-fret paste to the contacting faces between the shield washers and Seat-stays. Then ensure the H-Link (17) is correctly orientated, reference fig. 18. Also ensure that the shield washer in the H-Link is not pushed out, as you place the right seat-stay (14) inside it. Then pass an M8 x 20 long Socket-head Capscrew (12) through that seat-stay (14) and also through the H-link (17). Screw an M8 Flanged Nut (8) onto the end of that M8 screw (12). Using a 10mm Socket and the 5mm AF Allen Key, torque tighten the M8 Flanged Nut (8) and the M8 screw (12) to the recommended torque settings (refer to the Tightening torque settings in Section 8.0). Repeat that task to assemble the left seat-stay (15) to the H-link (17), also ensuring that the other shield washer in the H-Link is not pushed out.

 **CAUTION: The 5mm A/F hexagon socket in the M8 screw (12) is only intended for holding the screw to prevent rotation. So the tightening torque MUST ONLY be applied to the M8 Flanged Nut (8).**

Then make sure that there is still a substantial amount of Molykote 111 Silicon covering all the KP5AX Bearings (Items 1, fig. 10). Refit the M22 Bearing Caps (6) by carefully screwing them into the link body. Take care not to cross thread the fine thread. Tighten all M22 Bearing Caps (6) to the recommended settings. (Refer to the Tightening torque settings in Section 8.0). Wipe off any excess Molykote 111 Silicon from around the links and frame.

Moving to the Main Frame (13) and Chain-stays (16), reference fig. 19, check that the shield washers are in place on the inside of the chain-stays (see items 2 in figure 12) and apply either SKF LGAF 3E or Castrol Optimol T anti-fret paste to the contacting faces between those shield washers and the main frame (13), where they pivot behind the bottom bracket shell. Ensure that those shield washers are not pushed out, as you lower the chain-stays (16) into position. Pass the M6 x 70mm long hollow pivot pin (10) through the Chain-stays (16) and Main Frame (13). Make sure that there is still a substantial amount of Molykote 111 Silicon covering both of the KP6AX Bearings (items 1, fig. 12). Place a collar (18) on the outside of each KP6AX bearing (recessed side facing outwards) and then screw an M6 Countersunk Cap-screw (8) into each end of the pivot pin (10). Using the 4mm A/F Allen keys, torque tighten the M6 countersunk cap-screws (7) to the recommended torque settings (refer to the Tightening torque settings in Section 8.0). Wipe off any excess Molykote 111 Silicon from around the chain-stays and frame.

Returning to the Seat-stays (14 & 15) and the H-link (17), check that the shield washers are in place at the front of the H-link (17), (see items 2 in figure 10). Also apply either SKF LGAF 3E or Castrol Optimol T anti-fret paste to the contacting faces between those shield washers and Main Frame (13). Then place the Seat-stays (14 & 15) and the H-link (17) around the seat-tube of Main Frame (13). Ensure that the shield washers in the H-Link (17) are not pushed out, as you lower the H-Link into position. Then pass an M8 x 45mm long stud (9) through the H-Link (17) and the Main Frame (13).

Screw an M8 Flanged Nut (8) onto each end of the M8 x 45mm long stud (9). Using the 10mm Sockets, torque tighten the M8 Flanged Nuts (8) to the recommended torque settings (refer to the Tightening torque settings in Section 8.0).

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**IMPORTANT:** before final tightening of the M8 Flanged Nuts (8), it is important to make sure that there is a balanced amount of thread showing through each nut on each side of the M8 x 83mm long stud (10). Using the flat-bladed screwdriver in the end of the stud and the 10mm spanner on the nut, adjust the stud accordingly. Refer to Fig. 17 as an example of this balancing on the Whyte 146 (ie: dimensions "A" & "B" to be equal).

Then make sure that there is still a substantial amount of Molykote 111 Silicon covering all the KP5AX Bearings (Items 1, fig. 10). Refit the M22 Bearing Caps (6) by carefully screwing them into the link body. Take care not to cross thread the fine thread. Tighten all M22 Bearing Caps (6) to the recommended settings. (Refer to the Tightening torque settings in Section 8.0). Wipe off any excess Molykote 111 Silicon from around the links and frame.

Next, to rejoin the Seat-stays (14 & 15) to the Chain-stays (16), reference fig. 19, check that the shield washers are in place on both sides of each Seat-stay (14 & 15) (see items 2 & 3 in fig. 11) 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 (16). Ensure that those shield washers are not pushed out, as you lower the Seat-stays into the Chain-stays. Pass an M8 x 23 long Flanged Screw (11) through each Chain-stay (16) and Seat-stay (13). Using the T25 Torx® Key, torque tighten those screws to the recommended torque settings (refer to the Tightening torque settings in Section 8.0). Wipe off any excess Molykote 111 Silicon from around the links and frame.

### **6.3.3.2 To re-assemble the rear shock (5) into the frameset.**

Take the Rear Shock Absorber (5) 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 (13) and Seat-stays (14 & 15). Slide the front of the Rear Shock Absorber (11) into the Main Frame (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 fig. 19.

Make sure that the Ø8 holes in the Main Frame (13) and the front of the Rear Shock Absorber (5) are all concentric with each other, and push the Ø8mm x 31mm long Hollow Pivot Pin (3) all the way through. Next, slide the rear of the Rear Shock Absorber (11) into the Seat-stays (14 & 15). Make sure that the Ø8 holes in the Seat-stays (14 & 15) and the rear of the Rear Shock Absorber (5) are all concentric with each other, and push the Ø8mm x 45mm long Hollow Pivot Pin (4) all the way through. Place a Collar (2) over both ends of the Ø8mm x 31mm long Hollow Pivot Pin (3) and also both ends of the Ø8mm x 45mm long Hollow Pivot Pin (4). Screw an M5 x 16mm long Socket-head Capscrew (1) into both ends of those Pivot Pins. Using the T-25 Torx® Keys, torque tighten the M5 Capscrews to the recommended torque settings (refer to the Tightening torque settings in Section 8.0).

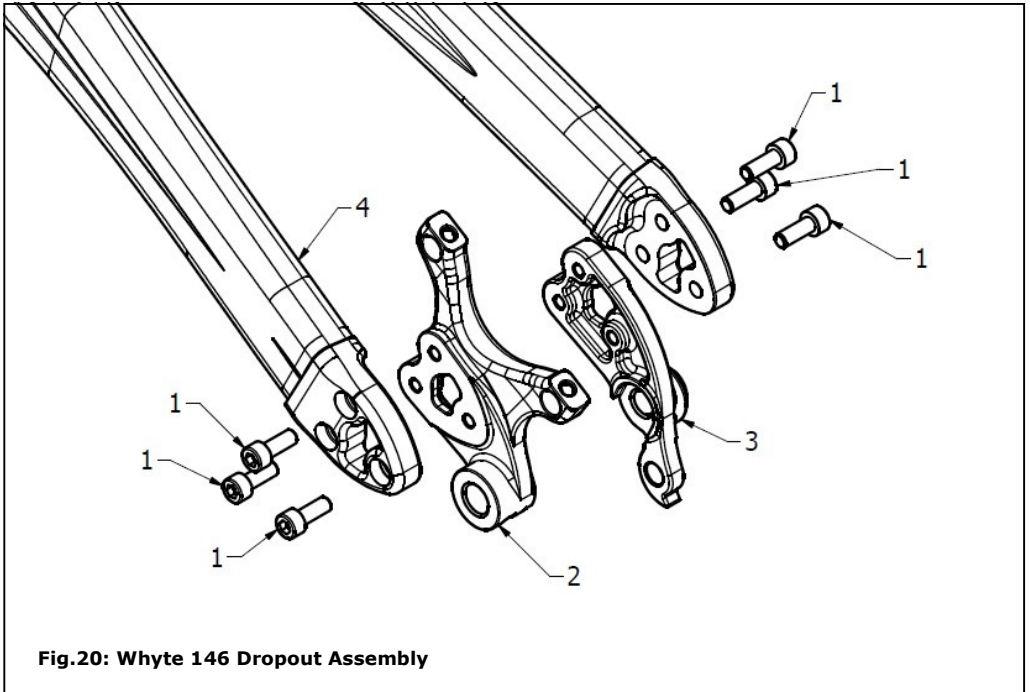
### 7.0: SERVICING THE WHYTE MODULAR DROPOUT SYSTEMS.

#### **7.1: Removing the Modular Rear Dropouts from the Swinging Arm.**

##### **7.1.1: From the Whyte 146**

*Tools Required: 5mm Allen Key*

Reference figure 20. Both Left (2) and Right Hand (3) dropouts are a modular design, that can be replaced if damaged. Contact your local Whyte dealer to purchase a replacement drop-out kit. They are each attached to the Swinging Arm (4) by three capscrews (1). To remove either Right Hand (3) or Left Hand (2) dropout apply heat to the assembly - to reduce the Loctite strength - then using the 6mm Allen key completely undo all three bolts and remove them from the assembly. The Dropout (2 or 3) should now be detached from the Swinging Arm (4). Take care not to loose any of the components & also handle hot parts with care.



**Fig.20: Whyte 146 Dropout Assembly**



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Item	Description
1	M6 x 16mm long Socket Cap Screw
2	Dropout, Q/R Modular Type, brake side.
3	Dropout, Q/R Modular Type, derailleur side
4	Swinging Arm Mounting Point

### **7.1.2: From the Whyte T-129 or M-109**

*Tools Required:* 2.5mm Allen Key

These Rear Drop-outs are a modular design, that can either be replaced if damaged or converted to one of three different types of through-axle products, ie: Shimano E-Thru, SRAM Maxle 142mm or SRAM Maxle 135mm. Contact your local Whyte dealer to purchase either a replacement hanger or a conversion kit.

#### **7.1.2.1: Shimano E-Thru System**

Reference figure 21. The Rear Derailleur Hanger (3) is attached to the Right Side Seat-stay (4) by one M4 Button Head Cap Screw (1). To remove the Rear Derailleur Hanger (3), using the 2.5mm Allen Key undo that Cap Screw (1) and remove it together with the Adjustment Clamp (2) and also the Axle Nut (4) from the assembly. The Rear Derailleur Hanger (3) should now be removed from the Seat-stay (4). Take care not to loose any of the components.

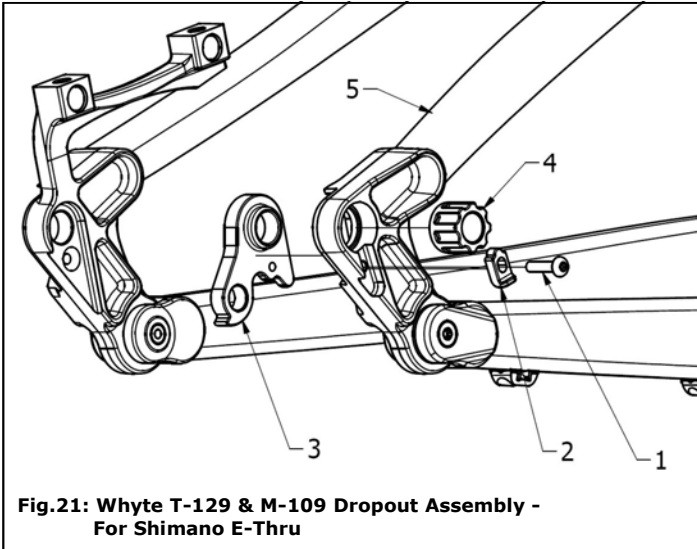
#### **7.1.2.2: SRAM Maxle 142mm System**

Reference figure 22. The Rear Derailleur Hanger (3) is attached to the Right Side Seat-stay (7) by one M4 Button Head Cap Screw (1). To remove the Rear Derailleur Hanger (3), using the 2.5mm Allen Key undo that Cap Screw (1) and remove it, together with the Adjustment Clamp (2), from the assembly. The Rear Derailleur Hanger (3) and also the Axle Nut (4) should now be removed from the Right Side Seat-stay (7). Moving across to the Left Side Seat-stay (8), again using the 2.5mm Allen Key undo the M4 Countersunk Cap Screw (5) and remove it, together with the Drop-out Spacer (6), from the assembly. Take care not to loose any of the components.

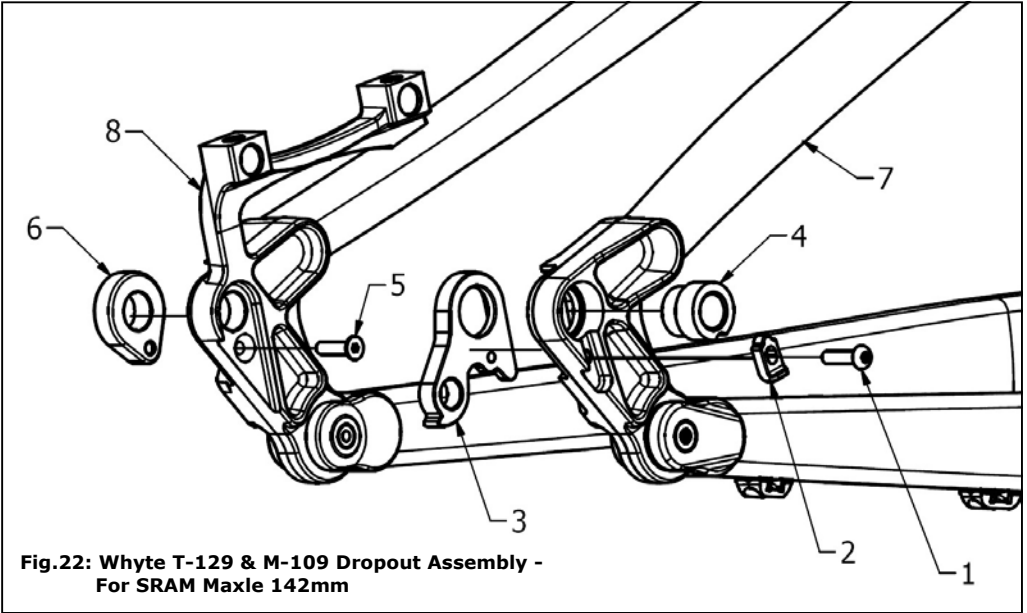
#### **7.1.2.2: SRAM Maxle 135mm System**

Reference figure 23. The Rear Derailleur Hanger (3) is attached to the Right Side Seat-stay (8) by one M4 Button Head Cap Screw (1). To remove the Rear Derailleur Hanger (3), using the 2.5mm Allen Key undo that Cap Screw (1) and remove it, together with the Adjustment Clamp (2), from the assembly. The Rear Derailleur Hanger (3) and also the Axle Nut (4) should now be removed from the Right Side Seat-stay (7). Moving across to the Left Side Seat-stay (8), again using the 2.5mm Allen Key undo the M4 Countersunk Cap Screw (5) and remove it, together with the Drop-out Spacer (7) and the Dropout Insert (6), from the assembly. Take care not to loose any of the components.

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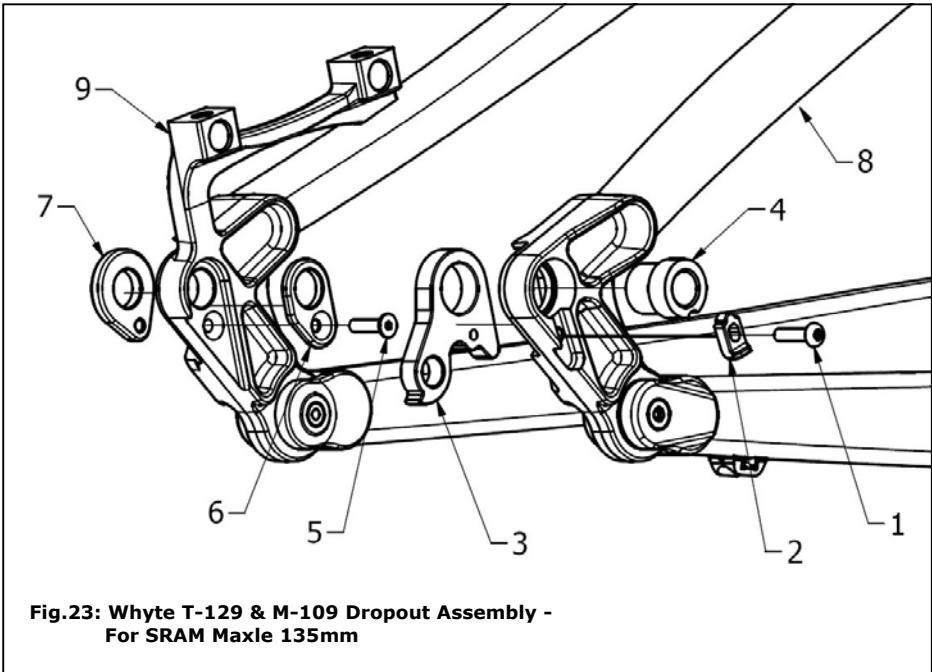


<b>Item</b>	<b>Description</b>
<b>1</b>	M4 x 16mm long Hex Head Cap Screw
<b>2</b>	Adjustment Clamp
<b>3</b>	Rear Derailleur Hanger, for Shimano E-Thru (Grey Colour)
<b>4</b>	Axle Nut, for Shimano E-Thru
<b>5</b>	Seat Stay, Right Side



Item	Description
1	M4 x 16mm long Hex Head Cap Screw
2	Adjustment Clamp
3	Rear Derailleur Hanger, for SRAM Maxle 142mm (Black Colour)
4	Axle Nut, for SRAM Maxle 142mm (Black Colour)
5	M4 x 16mm long Countersunk Cap Screw
6	Dropout Spacer (8mm wide) Left Side, for SRAM Maxle 142mm (Black Colour)
7	Seat Stay, Right Side
8	Seat Stay, Left Side

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**Fig.23: Whyte T-129 & M-109 Dropout Assembly -  
For SRAM Maxle 135mm**

Item	Description
1	M4 x 16mm long Hex Head Cap Screw
2	Adjustment Clamp
3	Rear Derailleur Hanger, for SRAM Maxle 135mm (Red Colour)
4	Axle Nut, for SRAM Maxle 135mm (Red Colour)
5	M4 x 16mm long Countersunk Cap Screw
6	Dropout Insert, Left Side, for SRAM Maxle 135mm (Red Colour)
7	Dropout Spacer (4.5mm wide) Left Side, for SRAM Maxle 135mm (Red Colour)
8	Seat Stay, Right Side
9	Seat Stay, Left Side

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

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: To the Whyte 146**

*Tools Required:* 5mm Allen Key (1 off, fitted to a 5Nm to 25Nm Torque Wrench)  
Loctite 638 retaining compound

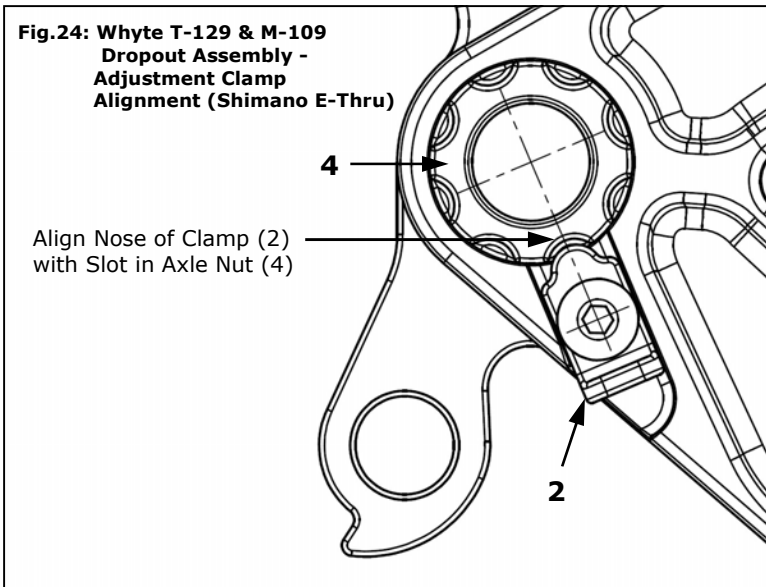
Reference figure 28. Before assembling the Screws (1), apply a small amount of Loctite 638 retaining compound to the threads of the Screws (1) and Swinging Arm (3). Next, assemble the parts as shown, making sure the Screws (1) are correctly positioned. Using the Torque Wrench, tighten the Screws (1) to the correct torque as specified in Section 8.0. Wipe off any excess retaining compound.

#### **7.2.2: To the Whyte T-129 or M-109**

*Tools Required:* 2.5mm Allen Key (1 off, fitted to a 1Nm to 5Nm Torque Wrench)

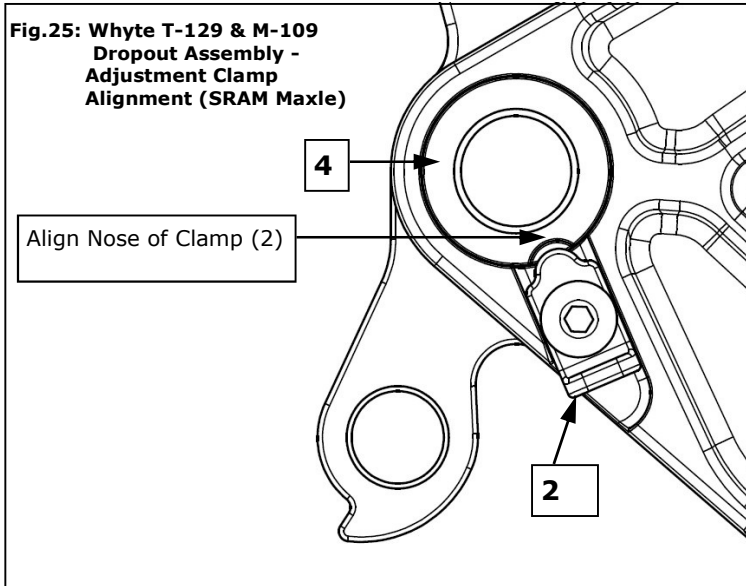
##### **7.1.2.1: Shimano E-Thru System**

Reference figures 21 & 24. Loosely assemble all the parts as shown, making sure the Screw (1) is 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 Adjusting Clamp (2) is aligned with one of the slots in the Axle Nut (4), reference fig. 24. Having tightened the Rear Axle, slide the Clamp (2) upwards to engage it into the slot in the Axle Nut (4). Using the Torque Wrench, tighten the Screw (1)



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to the correct torque as specified in Section 8.0. **DO NOT OVERTIGHTEN**, since the thread of the Screw (1) is very small.



### **7.1.2.2: SRAM Maxle 142mm System**

Reference figure 22 & 25. Loosely assemble all the parts as shown, making sure the Screws (1) & (5) are correctly positioned, **be very careful not to cross-thread these, on their way in**. Insert the rear wheel and the SRAM Maxle, as per the SRAM User Manual 95-4315-004-000. Whilst tightening the SRAM Maxle, make sure the nose of the Adjusting Clamp (2) is aligned with the single slot in the Axle Nut (4), reference fig. 25. Having tightened the SRAM Maxle, slide the Clamp (2) upwards to engage it into the slot in the Axle Nut (4). Using the Torque Wrench, tighten the Screws (1) & (5) to the correct torque as specified in Section 8.0. **DO NOT OVERTIGHTEN**, since the threads of the Screws (1) & (5) are very small. Finally, if necessary, adjust the SRAM Maxle Rear Axle as per the SRAM User Manual 95-4315-004-000.

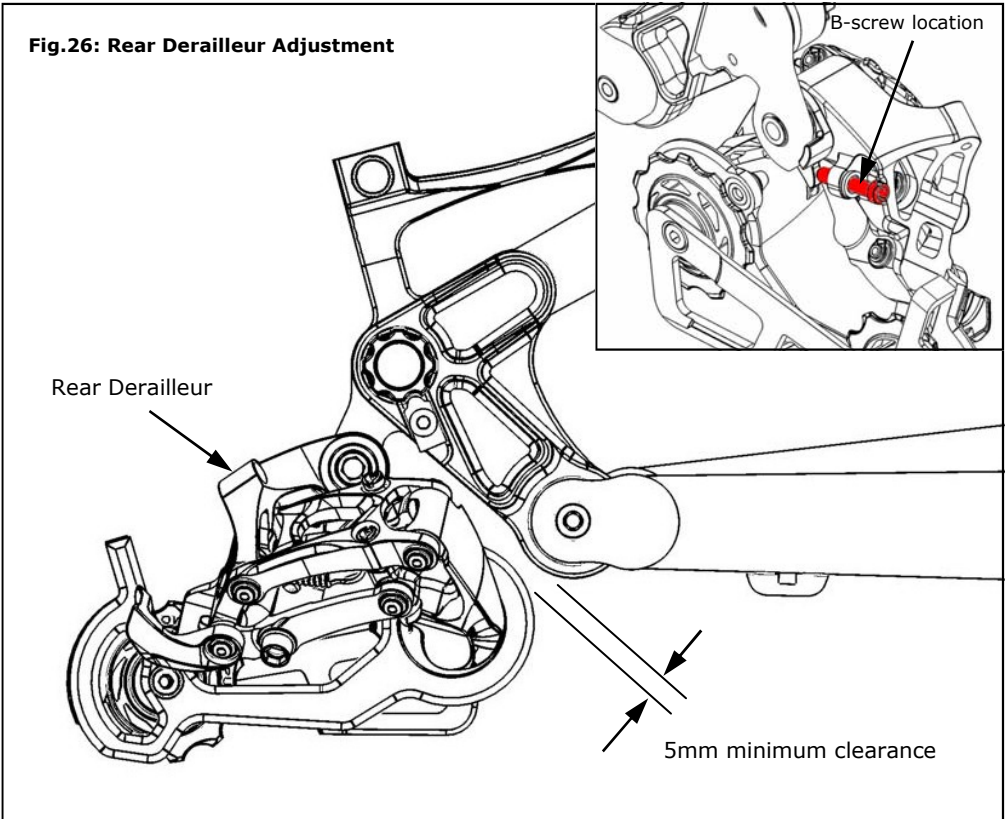
### **7.1.2.2: SRAM Maxle 135mm System**

Reference figure 23 & 25. Loosely assemble all the parts as shown, making sure the Screws (1) & (5) are correctly positioned, **be very careful not to cross-thread these, on their way in**. Insert the rear wheel and the SRAM Maxle, as per the SRAM User Manual 95-4315-004-000. Whilst tightening the SRAM Maxle, make sure the nose of the Adjusting Clamp (2) is aligned with the single slot in the Axle Nut (4), reference fig. 25. Having tightened the SRAM Maxle, slide the Clamp (2) upwards to engage it into the slot in the Axle Nut (4). Using the Torque Wrench, tighten the Screws (1) & (5) to the correct torque as specified in Section 8.0. **DO NOT OVERTIGHTEN**, since the threads of the Screws (1) & (5) are very

small. Finally, if necessary, adjust the SRAM Maxle Rear Axle as per the SRAM User Manual 95-4315-004-000.

### **7.1.2.3: Rear Derailleur Adjustment**

Reference figure 26. With the chain sitting on the smallest front chain-ring and also on the smallest rear cassette sprocket, make sure that there is at least 5mm clearance between the rear derailleur and the swinging arm chain-stay pivot. To adjust this clearance, using a flat blade screwdriver, turn the B-screw as indicated in the inset view in figure 34. Turn it clockwise to increase clearance.



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### 8.0: TORQUE SETTINGS

<b>Rear Suspension</b>	<b>Nm</b>	<b>lbs.ft</b>
15 A/F M22 & M24 Link Outer Bearing Caps	2.3 (Min) - 2.7 (Max)	1.7 (Min) - 2.0 (Max)
M8 Flanged Nut	16.1 (Min) - 19.9 (Max)	11.9 (Min) - 14.7 (Max)
M6 Countersunk Cap Screw (Whyte 146 Y-link & Whyte T-129 & M-109 Chain- stay / Bottom Bracket Pivots)	8.5 (Min) - 10.5 (Max)	6.3 (Min) - 7.7 (Max)
M8 x 23 long Flanged Screw (T25 Torx®) (Whyte T-129 & M-109)	13.5 (Min) - 16.5 (Max)	10.0 (Min) - 12.2 (Max)
M5 Socket-head Cap Screw (T-25 Torx®) (Whyte T-129 & M-109)	5.0 (Min) - 6.0 (Max)	3.7 (Min) - 4.4 (Max)
<b>Rear Dropout Assemblies</b>		
M6 Cap Screws (146 Dropout)	10 (Min) - 12 (Max)	7.4 (Min) - 9.2 (Max)
M4 Screws (T-129 & M-109 Dropouts)	4.2 (Min) - 4.6 (Max)	3.1 (Min) - 3.4 (Max)
<b>Seat Post Clamp</b>		
M6 Cap Screw	10 (Min) - 12 (Max)	7.4 (Min) - 9.2 (Max)

*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.

### 9.0: NOTES



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## NOTES (Continued)

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## NOTES (Continued)

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## NOTES (Continued)



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