Liteville

Light your fire.

MANUAL

4-ONE Mk1

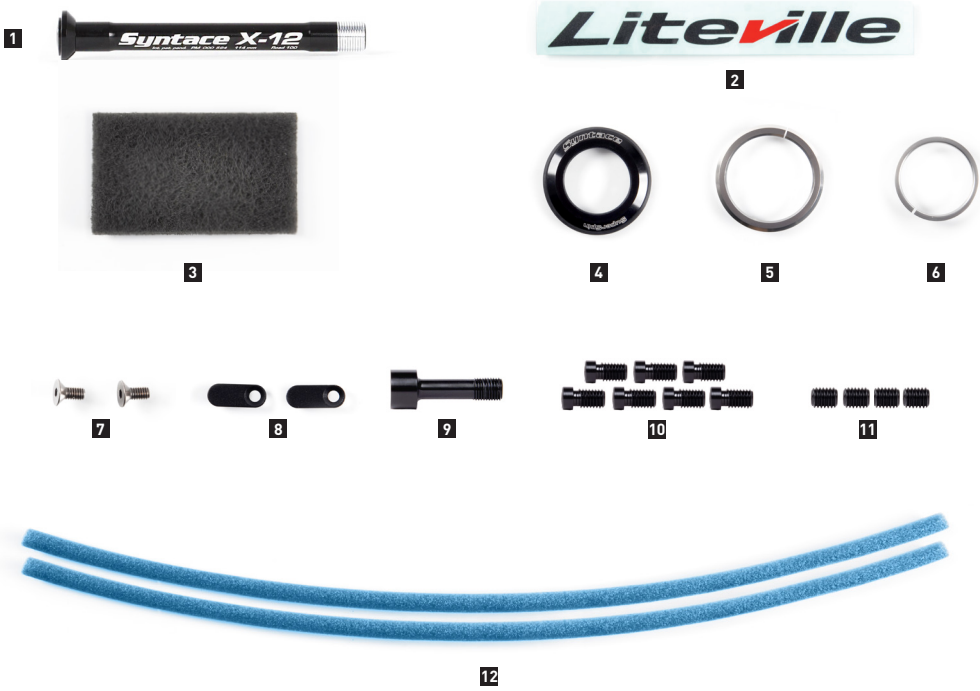
Compatibilities, Assembly & Maintenance

REGISTRATION & WARRANTY

In order for us to help you efficiently in case of an accident (with a repair, a warranty case or a general service) you should register your bike. This way, you also automatically extend the warranty of your Liteville to 10 years.

Please find our entire warranty policy and information on the registration in the warranty & voucher leaflet attached.

Please find the latest updates of your 4-ONE Mk1 manual here:
http://www.liteville.com/en/77/faq-support/manuals/



A. DELIVERY CONTENTS

- **1pcs.** Liteville 4-ONE Mk1 Frame
- **1pcs.** ENVE Fork

1. **1pcs.** Syntace X-12 axle 114mm Road 100x12 #151994
2. **2 pcs.** Liteville 4-ONE sticker works finish frames #142213
3. **1pcs.** polish pad works finish frames
4. **1pcs.** VarioSpin top cap
5. **1pcs.** baseplate cone 1.5 #127159
6. **1pcs.** topplate cone 1 1/8 #127166
7. **2pcs.** screw cable inlet #127487
8. **2pcs.** cable inlet closed #127494

9. **1pcs.** POM screw M9x32 #163065
10. **7pcs.** POM screw M5x8 #163027
11. **4pcs.** POM screw M5x6 #163041
12. **2 pcs.** foam tube #141209

- **1pcs.** tape (for eightpins remote)
- **2pcs.** cable ties (for eightpins remote)

B. USAGE AS INTENDED

There is no restrictions for your Liteville H-3 Mk2 frame as to the maximum rider weight or the range of usage of the bike, however you need to assure that all components are compatible with the frame and that they are mounted according to the manufacturers' manuals.

Additional components such as electric motors may may not be installed.

C. COMPATIBILITIES

1. Fork

Both rigid and suspension forks with a maximum insert length of 410 mm are compatible.

The frame geometry is based upon a fork insert of 395 mm and a fork with 47 mm offset. Forks with different measurements may alter the riding performance and handling of the bike.

ENVE fork specifications

- Hub standard: 12x100 mm
- Brake socket: flatmount | 160 mm
- maximum brake disc diameter: 180 mm
- maximum tire dimension: 50x622 | 57x584

2. Wheel size

Your Liteville 4-ONE frame is compatible with different wheel sizes.

FRONT AND REAR WHEEL:

S-XL: ETRTO 584 & ETRTO 622

NOTE: We recommend the assembly with the wheel size 'ETRTO 622', which the overall frame geometry is oriented towards.

3. Tire width frame

The maximum tire width is as follows:
40x622 | 50x584

The measurements refer to the model 'Schwalbe G-One Speed' and frame size 'S'.

Riding tires with different measurements, make sure there is enough clearance between tire and frame.

4. Hubs

HUB MEASUREMENT FRONT HUB

The ENVE carbon fiber fork can be used with any 100x12 mm front hub.

HUB MEASUREMENT REAR HUB

All rear hubs with the hub standard 142x12 mm are compatible.

ADVICE: The Liteville 4-ONE features an EVO3 rear frame. The EVO3 standard is a development rooting in the 142 mm standard, however we were able to further stiffen the rear wheel.

An EVO3 wheel, as opposed to a conventional 142 mm wheel, comes with a 3 mm offset. EVO3 wheels thus feature an almost symmetrical spoke triangle leading to a stiffer and more stable wheel.

5. X-12 thru axle

FRONT HUB

The ENVE carbon fiber fork features a Syntace X-12 road thru axle 100x12 mm (Art.Nr.151994) with a shaft length of 114 mm. The thread measurements are M12 x1 mm.

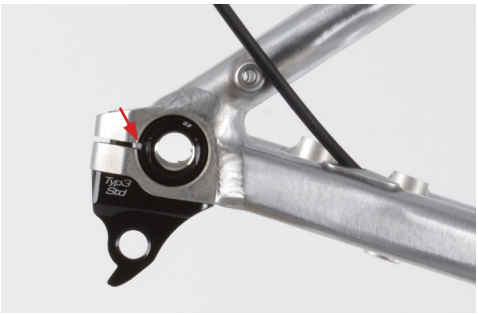
REAR HUB

The Liteville 4-ONE frame is compatible with all X-12 142x12 mm thru axles. Thread: M12x1 mm.

The Syntace X-12 thru axle system, as the only system on the market, allows for the adjustment of both the toe and the camber.

The clamping screw (5 mm Allen key) in the right hand drop out is meant exclusively for the rear derailleur hanger and for the clamping of the axle insert. It does not have to be loosened in order to remove the rear wheel.

ADVICE: The axle insert is adapted individually to your frame and marked respectively. The 0.5 mm or 1.0 mm insert is aligned correctly if the notch of the clamping system and the one of the dropout is parallel.



The picture displays the insert and the clamping notch aligned correctly.

6. Bottom bracket / crankset

The width of the Liteville 4-ONE bottom bracket shell is 68 mm and is thus compatible with all BSA and DUB BSA bottom brackets.

The 4-ONE frame can be fitted with one- and two-speed cranksets with a minimum Q-factor of 145 mm.

NOTE: For fitting a SRAM DUB bottom bracket, the ParkTool BBT-79 tool is needed.

Using different cranksets, the clearance between the chain stays and the crankarms are to be minded. Find further information in 'Bottom bracket/ crankset/ front derailleur/ rear derailleur'

CHAIN LINE:

You need a chain line of at least 43.50 mm

CHAINRING SIZES:

SRAM:	one-speed, up to 42 teeth
Shimano:	one-speed, up to 42 teeth
e+thirteen:	one-speed, up to 42 teeth
SRAM:	two-speed, up to 46/33 teeth
Shimano Ultegra:	two-speed, up to 50/34 teeth

NOTE: the recommendations for the chainring size refer to a frame size 'S' model. It might be possible to ride bigger chainrings for bigger sized frames. The bigger the chain line and the Q-factor, the more room there is between chain ring and right-hand chain stay.

7. Drivetrain

The Liteville 4-ONE frame can be assembled with one- und two-speed drivetrains.

8. Rear derailleur hanger / rear derailleur

The Liteville 4-ONE Mk1 comes with a 'Typ3 Standard' rear derailleur hanger.

Typ3 Standard rear derailleur hanger

9. Front derailleur

Only front derailleurs for 'soldered-on sockets' can be used on the Liteville 4-ONE Mk1.
With mechanical front derailleurs, the cable must also be linked from below (down pull) and a cable stop must be integrated on the front derailleur.
Electronically controlled front derailleurs for 'soldered-on' sockets are also compatible.

FOR EXAMPLE:

Shimano Ultegra:	I-FDR8000F
Shimano GRX:	I-FDRX810F
SRAM:	RED ETAP AXS

Delivery contents for Liteville 4-ONE Mk1 Werksmachines with Shimano shifting groups are an additional FD-Mount Setback CL45 (Art.Nr. 147850), a support plate (Art.Nr.. 158931) and two M5x10 flat-head screws (Art.Nr. 147867).
For electronically controlled front derailleurs from other manufacturers, the FD-Mount Setback CL45 (Item No. 147850) and the two M5x10 flat-head screws (Item No. 147867) must be ordered separately in the Syntace Shop.

Illustration: FD-Mount Setback CL-45 and M5x10 screws

Illustration: support plate ((Art.Nr.158931)

Illustration: assembled FD-Mount setback and support plate

10. Shifting cable housing

Use shifting cable housings only that feature a diameter of 4 mm such as Shimano SIS-SP41.

11. Brakes

The Liteville 4-ONE Mk1 frame can be assembled only with disc brakes.

The frame comes with a 'Flat-Mount' socket where the brake caliper, for a 160 mm rotor, can be mounted directly and without an adapter. The maximum diameter for the rear disc is 160 mm, discs with 140 mm are not compatible.

12. Seatpost / remote lever

As with all Liteville frames, the inner measurement of the seat tube is 34.9 mm. The 4-ONE frame is prepared for an 'Eightpins' variable dropper post; however, it is possible to also fit other dropper posts with the cable interface at the bottom end as well as conventional seatposts.

IN ORDER TO AVOID FRAME DAMAGES, THE FOLLOWING MINIMUM INSERT LENGTHS NEED TO BE CONSIDERED:

- Up to 200 mm above seat clamp: minimum insert = 120 mm
- More than 200 mm above seat clamp: minimum insert = 140 mm

The length is measured from the seat clamp to the top end of the seat cover.

It is possible to operate dropper posts using a shift / brake lever unit like the SRAM Force 1 HRD FM or with a 'drop bar remote' such as the Highline drop bar remote from crankbrothers.

13. Seatpost clamp

We recommend using the Syntace SuperLock2 or the Syntace MicroLock 38 seatpost clamp. If you want to use a different seatpost clamp, it has to fit the outer seat tube diameter of 38 mm. The height of the clamp may not exceed 16 mm.

14. Headset

The Liteville 4-ONE frame comes with a Syntace SuperSpin headset. The headset bearings are mounted directly, without additional bearing shells.

15. Seatpost reduction shims

Using reduction shims, the minimum insert length is still to be minded.

ADVICE: in case of doubt, choose the longer reduction shim and mind both the compatibility and the quality of it (for example Art. #113299 Syntace Post Shim Light 31.6 Art. #114203 Syntace Post Shim 30.9).

NOTE: In case the minimum insert length of 120 mm or 140 mm cannot be realized, the Syntace PostShim 30.9 (Art. #114203) is to be used. This is the only way the minimum insert length can be reduced to 90 mm. .

16. Mud guards

We recommend the SKS 'Bluemels Matt 28 inch mud guards'.

THE FOLLOWING MUD GUARD COMBINATIONS ARE POSSIBLE:

- SKS 35 mm - 20-28 x 622
- SKS 45 mm - 28-35 x 622
- SKS 53 mm - 35-42 x 622

NOTE: the mud guard length and width depend on the intended usage and on personal references. An individual adaption might be necessary.

17. Carrier

In combination with a carrier of 'Tubus', Liteville 4-ONE frames have a maximum baggage load of 25 kg.

WE RECOMMEND THE FOLLOWING 'TUBUS' CARRIERS:

- Cargo Classic carrier
- Cargo Evo carrier
- Airy carrier

D. ASSEMBLY

1. Preparation of the frame

The contact surfaces (bottom bracket, disc brake socket, seat tube) are fully prepared for the assembly. In case you face problems during the assembly, please contact Syntace directly.

NOTE: If you need to service your bike or want it to be painted, make sure the position of the adjustment ring of the Eightpins variable seatpost inside the seat tube is not altered.

2. Sattelstütze / Sattel

The 4-ONE is designed for variable seatposts with internal cable routing. The assembly is simplified thanks to the ServicePort at the lower end of the down tube close to the bottom bracket.

Please use the Eightpins manufacturers manual for assembly of the Eightpins dropper post: https://www.eightpins.at/service-einbau-ngs2-gravel/

NOTE: The cable for the variable seat post with bottom interface is to be routed through the down tube, the bottom bracket and the seat tube.

NOTE: The standard socket for the Eightpins variable seatpost (Postpin) is adjusted already and is neither to be removed or altered.

Using a conventional seatpost, the frequent adjustment of the seat height results in the seatpost wearing out. Carbon fiber seatposts wear out faster than Aluminum seatposts due to the epoxymatrix, fiber surface. In order to reduce the wear, the seatpost as well as the inside of the seat tube need to be cleaned after every ride in wet and muddy conditions. The diameter of the seatpost must not be less than 34.7 mm. If the diameter is below, it needs to be replaced. If it is not replaced, the frame can be damaged irreparably in the areas respectively.

3. Headset / fork

The frame comes with nothing but the cone and the cover cap for tapered fork steer tubes (see picture).

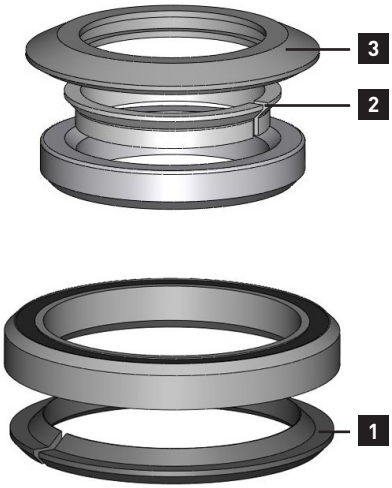


Illustration 07: Headset components.

ADVICE: Reduction kit for 1 1/8"-fork steer tube: Syntace Art. 14593

Fette vor dem Einbau alle Steuersatzteile und Lager leicht ein.

Make sure all parts of the headset, including the bearings, are greased before the assembly.

Put the bigger (1,5") cone 1 on the fork laying evenly on the fork crown. The fork can now be inserted into the frame before the smaller (1 1/8") cone 2 is put on the fork steering tube. Installing the cover cap is the last step of the headset assembly 3.

NOTE: A carbon fiber specific clamp for the headset is included already.
In case you prefer an alternative product, make sure it is compatible with carbon fiber steering tubes and mind individual manufacturers' instructions.

One alternative product: Cane Creek eeNut

ADVICE: Using a Syntace MegaSpacer, a silver 0.6 mm washer needs to be added between the SuperSpin cover cap and the MegaSpacer. The washer is included in the MegaSpacer package or can be ordered separately as a spare part at Syntace.

ADVICE: Tighten the adjustment screw of the Ahead star nut hand-tight. Loosen it again thereafter with about ¾ revolutions and only in the next step adjust the bearing play of the headset bearing. Following this procedure, you make sure that the bearings sit properly in the bearing shells. The result should be that the fork can be turned easily without any bearing play. It may be necessary to repeat this process after the first ride.

4. Handlebar / stem

Mount and adjust the handlebar and stem according to the Syntace manual.

NOTE: make sure the clamping area of the steering tube is degreased thoroughly before the stem is mounted.

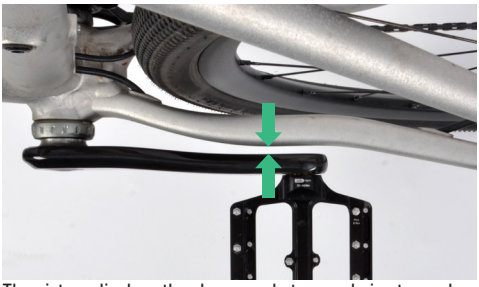
5. Shift and brake levers

Mount and adjust the shift and brake levers according to the manufacturers' manuals.

ADVICE: Tighten the screws of the brake and shift levers only so much that they can still turn in case of a crash. This might avoid a lever to brake apart and additionally protects the thin walls of your handlebar.

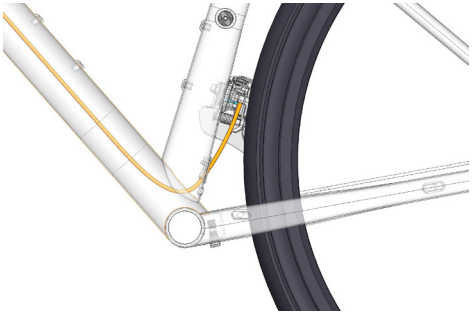
6. Bottom bracket / crankset / front derailleur / rear derailleur

Mount the two bottom bracket bearings and the crankset according to the manufacturer's instructions. Apply grease, where necessary.



The picture displays the clearance between chain stay and crankset.

- Mount the front derailleur with the adapter included at the front derailleur socket respectively.
- Make sure, before finishing off the assembly, the front derailleur and the big chainring are aligned precisely



Front derailleur for integrated interface

- Mount and adjust the rear derailleur according to the manufacturer's manuals.

7. Shifting cable and brake hose routing

NOTE: : Mind the clearance between the crank arm and the chain stay as well as between the right-hand crank arm and the Syntace SCS chain guide.

NOTE: As exemplified and displayed, we use the ParkTool tool Nr. 3 (Part.-Nr. 346) and the magnet.

NOTE: Reaffirm that the cable holes are deburred thoroughly from the inside and from the outside.

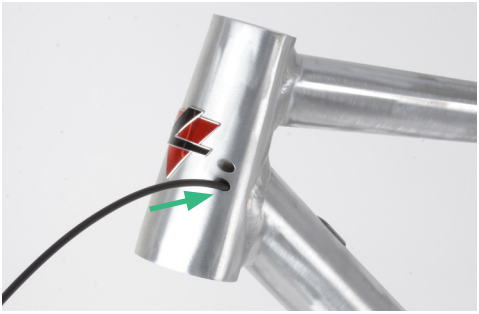
The picture displays an assembly example with a 1x11 drivetrain, a brake unit and a variable dropper seat post.

1 Variable dropper post
2 Rear derailleur
3 Rear brake
4 Front brake

8. Cable routing rear derailleur

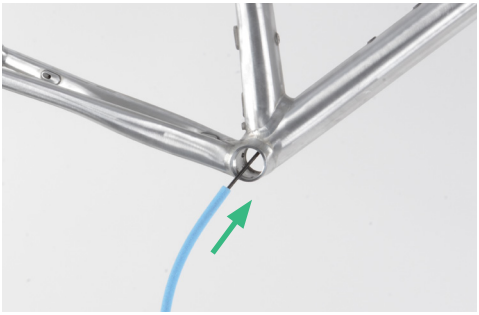
The new frame comes with the rear derailleur cable housing laying inside the frame already. In case the shift cable housing needs to be replaced, follow the steps below:

NOTE: if you face issues with the assembly, we recommend using the ParkTool kit Internal Cable routing kit' IR-I.2 with tool Nr. 3 (Part.-Nr. 346). The assembly steps equal the ones of the brake hose installation.

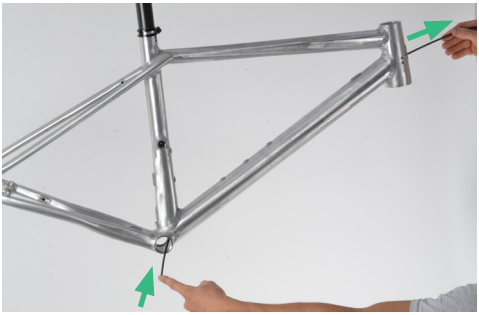


1. Insert the shifting cable housing into the left-hand bottom hole underneath the headset.

2. Have the cable exit the frame at the right-hand side next to the bottom bracket.

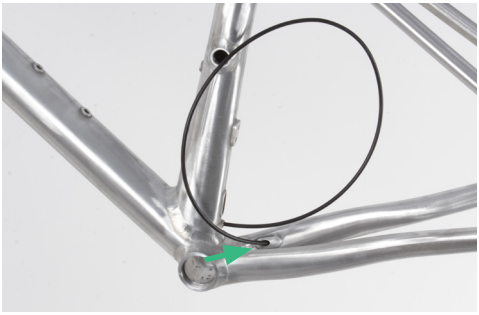


3. Slip a foam tube over the housing.



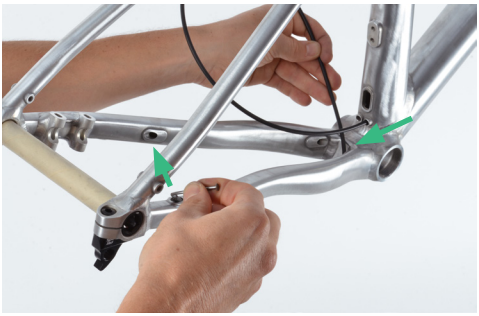
4. Pull the shifting cable housing including the foam tube back and bend the end of the cable.

5. The shifting cable housing is to be guided towards the top end hole of the seat tube. Push and pull it – from the top and the bottom – simultaneously.



6. Form a looping with the cable housing and insert it into the right-hand chain stay.

8. Twist the looping downwards in order to prevent the cable housing from breaking off.



7. Push the one end of the cable housing into the chain stay until it can be seen at the rear end of the right-hand chain stay. Guide it out of the chain stay using a nail, for example, and have it exceed the chain stay with approximately 20 cm.

9. Push the cable housing at the steering tube and simultaneously guide the looping backwards. Make sure, the cable housing is not bent.

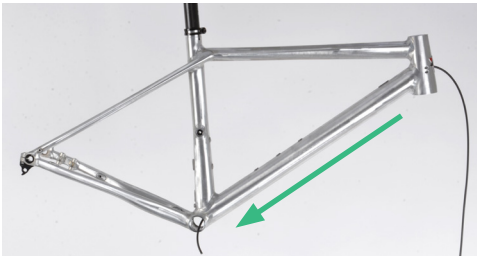
10. Cut the cable housing at both ends as needed for the final installation of the shifting components.

9. Brake hose

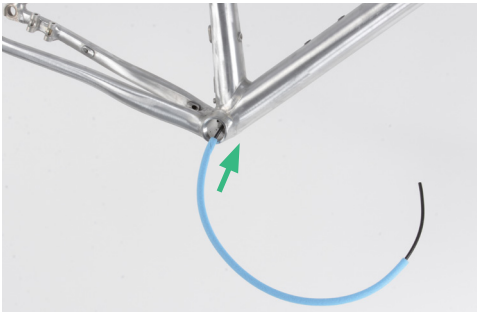
1. Unscrew the brake hose at the rear brake caliper and remove the capsule and the nut.

NOTE: the picture displays the installation of a Shimano and a SRAM Force brake system. The procedure may vary with different manufacturer's products.

2. Insert the brake hose into the left-hand top cable hole at the steering tube ...



3. ... and have the hose exit again at the right-hand side, next to the bottom bracket.



4. Slip a foam tube over the hose.

5. Insert the ParkTool installation tool into the left-hand cable exit in the seat tube and push it out of the frame again at the right-hand side next to the bottom bracket.

6. Connect the installation tool and the brake hose.

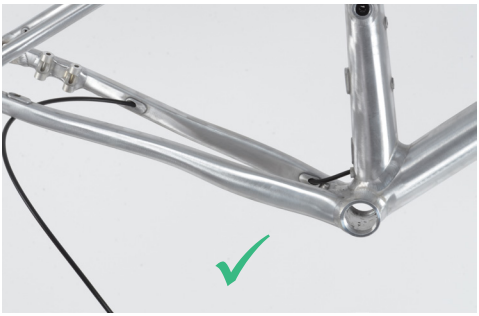
7. Carefully insert the brake hose and push it towards the top end of the down tube until the installation tool fully lays inside the down tube.

10. Push the ParkTool installation tool out of the frame at the rear end.

8. Simultaneously pushing and pulling, have the brake hose come out of the top end of the down tube.

11. Now carefully insert the brake hose, making sure that it does not get bent or damaged.

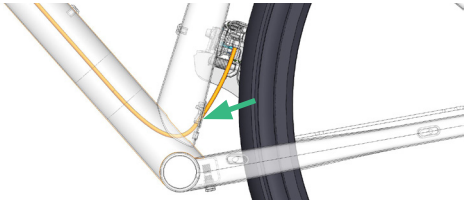
9. With the magnet first, insert the installation tool into the chain stay.



12. Mount the brake lever at the handlebar and connect the brake hose and the brake caliper again.

10. Cable routing front derailleur

- Push the cable housing into the right-hand, bottom hole at the steering tube. Guide the housing through the down tube and have it exit at the bottom bracket.
- From the bottom end, slip a foam tube over the cable housing.



- Have the end of the cable housing exit at the rear end of the seat tube.
- Install the black cable guidance and tighten the screw at the frame cable exit hole.
- Cut the end of the cable housing with specific Bowden cable pliers and connect it with the front derailleur.

11. Variable dropper post

- Insert the cable housing or hydraulic hose into the cable hole at the down tube, close to the steering tube. Push the housing into the down tube and have it exit at the right hand of the bottom bracket.
- Now slip a foam tube over the bottom bracket all the way to the top end of the housing, close to the steering tube.

- From the bottom, push the housing into the seat tube.
- For the assembly and installation of the variable dropper post, stick to the manufacturers' manuals.

NOTE: depending on the handlebar width, the number of spacers underneath the stem, the frame size and the length of the cable, the cable housing or the hydraulic hose can alternatively exit the frame at the right-hand cable hole next to the steering tube.

NOTE: the seat tube is specifically prepared for the installation of an Eightpins variable dropper post with very precisely manufactured, small tolerances. The measurements of the frame including the inner tube diameter must not be altered.

NOTE: in case the frame is painted or anodized, the internal diameter of the seat tube within the first 140 must not be altered.

E. MAINTENANCE AND CARE

1. Headset bearing

With normal usage, the bearings of the headset do not have to be dismounted or greased.

In case you notice a defect bearing anyways, you may order the specific bearing in your Liteville WorksStation or directly at Syntace.

Never point at your bearings with a high-pressure water jet as this can easily damage them. After all, too much "maintenance" may even harm your bearings.

2. Screws

The screws in your frame are all made from Titanium or Aluminum and are produced specifically for Liteville frames. They are all mounted with screwlock. Nonetheless, you are to check the correct tightening torque frequently.

ADVICE: in case a screw can actually be twisted as the tightening torque is checked, the screwlock is broken and as a consequence needs to be exchanged. The screw needs to be secured again. Unscrew it, clean it and reassemble everything with screwlock.

We have summed up a "Screwlock Basics" at www.liteville.de > FAQ.

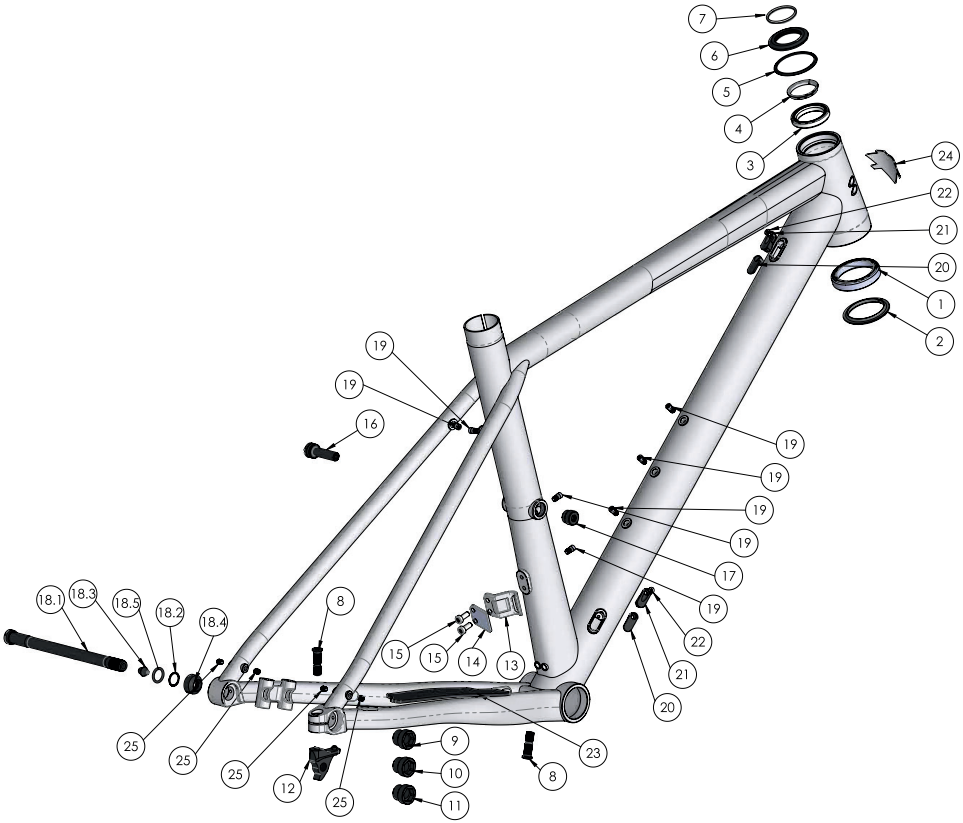
3. WorksFinish surface

The Liteville WorksFinish is a genuine raw Aluminum surface, free of any kind of protection paint, meaning it is no Aluminum simulation. The frame actually shows the signs of the original manufacturing process. Stains are thus common, the frame may even change its color slightly which leads to the natural charm of a grown patina.

The surface can be reprocessed at all times either chemically or mechanically with a Scotch-Brite-Finish or by being polished manually. The frame comes standard with two Scotch-Brite grinding fleeces. Try applying it on a spot that is not seen directly.

NOTE: The WorksFinish frame comes with 3M stickers. It is your choice if you put them on your frame or if you do not.

Picture shows Liteville stickers.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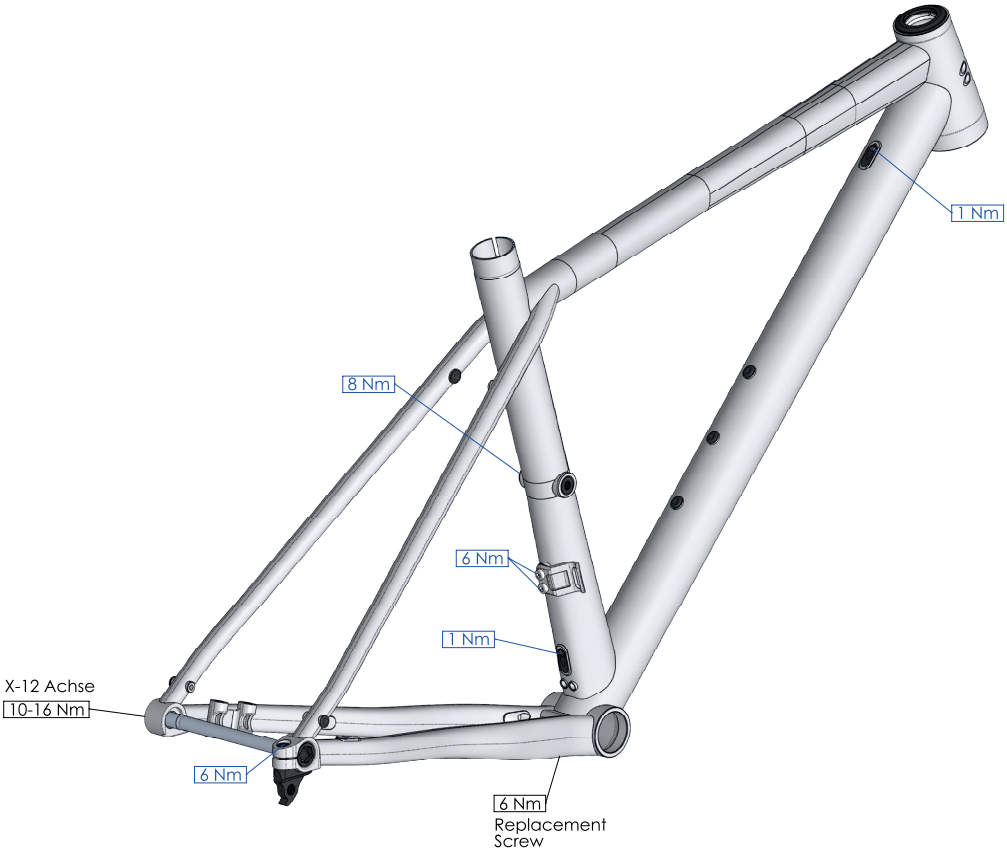
ITEM NO.	Description	Article No.	QTY.
1	BB_40x52x9_45x45_4RS_cone	147843	1
2	Baseplate-cone_1.5_39.8	127159	1
3	BB_30x41x6.5_2RS_cone	103870	1
4	Topplate-cone_1-1-8	127166	1
5	VarioSpin-Top-seal_1-1-8	127210	1
6	VarioSpin-Top-Cap_1-1-8	127173	1
7	O-Ring_28.6x2.0	127203	1
8	X-12_hanger_screw_Typ2_26mm	116849	2
9	X-12_thread-insert_0mm	105683	1
10	X-12_thread-insert_0.5mm	105690	1
11	X-12_thread-insert_1mm	105706	1
12	X-12_hanger_Typ3_Std	128118	1
13	FD-mount_setback_CL45	147850	1
14	FD-Mount-Support	158931	1
15	screw_M5x10_flat-head_HEX4	147867	2
16	Mounting_Pin_Assembly	153103	1
17	Adjusting_Ring_V2	153486	1
18	X-12_axle_assembly_142mm_allen-key		1
18.1	X-12_axle_142mm	105645	1
18.2	X-12_stainless-steel_washer 12mm	127098	1
18.3	X-12_axle_end-plug	127104	1
18.4	X-12_axle_cone	127111	1
18.5	X-12_axle_O-ring_small	127128	1
19	Bottle_Holder_Screw_M5	163027	7
20	cable-inlet_closed_Typ2	148246	2
21	cable-inlet_single_5mm_Typ2	148253	2
22	screw-sc_M3x6_HEX2	148260	2
23	CS-protector_top_4-ONE	158108	1
24	headbadge	120518	1
25	POM_Setscrew_M5x6	163041	4

SCREWS: TIGHTENING TORQUE AND LOCTITE



x Nm black = no loctite

x Nm blue = medium loctite

x Nm green = high strength loctite

NOTES

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