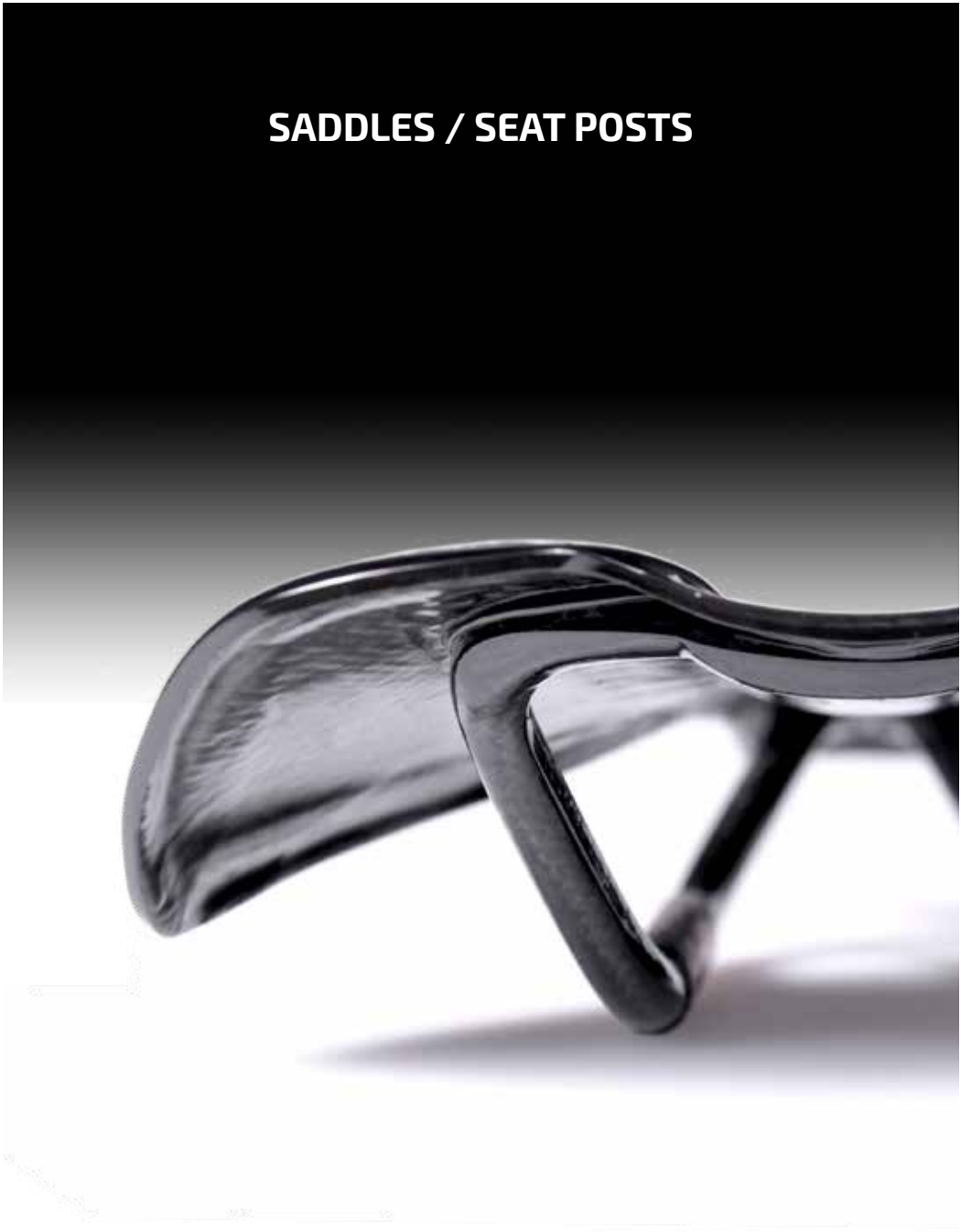
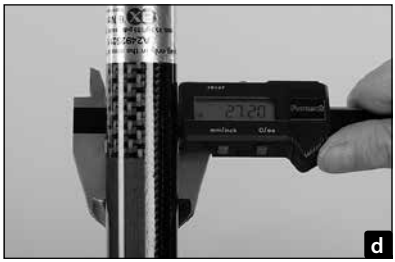
SADDLES / SEAT POSTS



engage
by ax-lightness

ax-lightness
composites



Seat posts

General notes on mounting

Make sure your new AX-Lightness and engage seat post has the same diameter as the seat tube of your frame.

The AX-Lightness seat post Europa (a) is available with the nominal diameters:
27.2 mm, 30.9 mm, 31.6 mm and 34.9 mm

It is available in the following lengths:
L1 = 220 mm (7-14 cm extension length)
L2 = 290 mm (13-20 cm extension length)
L3 = 350 mm (19-26 cm extension length)
L4 = 400 mm (24-31 cm extension length)

The AX-Lightness seat post Daedalus (b) is available with the nominal diameters:
27.2 mm, 30.9 mm and 31.6 mm

It is available in the following lengths:
L1 = 260 mm (11-18 cm extension length)
L2 = 320 mm (17-24 cm extension length)
L3 = 370 mm (22-29 cm extension length)
L4 = 410 mm (25-32 cm extension length)

engage seat posts (c) are available with the nominal diameters:
27.2 mm and 31.6 mm

They are all 400 mm long.

Measure the AX-Lightness **(d)** and engage seat post as well as the seat tube **(e)** of the frame. The difference between the (bigger) inner diameter of the seat tube and the (smaller) outer diameter of the seat post should be between 0.05 and 0.1 mm.

Before mounting a carbon seat post on the frame make sure the seat tube is absolutely free of sharp edges and burrs. If necessary, have the seat tube cleaned and deburred by a skilled mechanic.

If you have an AX-Lightness or engage carbon seat post, the seat tube must be absolutely free of lubricants no matter what material it is made of. However, if you have a road racing machine or the like, where you don't need to change the saddle height during the race, use special AX-Lightness carbon assembly paste inside the seat tube **(f)** to achieve a tight clamping.

If your AX-Lightness and engage seat post has a suitable diameter and is free of burrs, slide it gently into the seat tube. Do not insert it deeper than necessary into the seat tube to prevent the still visible surface of the AX-Lightness and engage seat post from being damaged.

You should be able to insert the AX-Lightness and engage seat post easily into the frame without pressing or turning. It must be, however without play and should not move from one side to the other when inserted.

Slide the AX-Lightness and engage seat post into the seat tube until the binder clamp of the frame is around the area reinforced with UD-fabric (AX-Lightness) **(g)** or marked with the scale (engage) **(h)**.

Tighten the binder bolt or close the quick-release (read the chapter **"How to use quick-releases of seat post clamps"**) until the seat post no longer moves when you mount the saddle, as described further below, and check the saddle height.

A mismatch between frame and seat post can cause failure of the AX-Lightness and engage seat post and result in an accident and possible injury to the rider.


e


f


g


h

a

b


c

Saddles

The product range of AX-Lightness and engage comprises a variety of saddle models **(a+b)** which not only differ in weight, but also in terms of spring properties and proper fit.

Note that the surface of uncushioned saddles is clearly smoother than you are probably used to from your previous saddle.

To increase the friction on the saddle and hence the hold, particularly in damp conditions, we recommend that you glue a strip of standard fabric tape to the saddle.

Do not combine AX-Lightness and engage saddles with seat posts that have a sharp edged or hard support. In principal, AX-Lightness and engage recommend that you use saddles and seat posts from the same AX-Lightness and engage model series.

Be sure to only clamp the saddle within the prescribed range. AX-Lightness saddles must be clamped in the round area with the woven fabric look **(c)**. The clamping area of engage saddles is marked with a scale.

Read the chapter **"Mounting the saddle on the seat post"** to inform yourself about the correct mounting and adjustment of your AX-Lightness and engage saddle on AX-Lightness and engage seat posts.

If you mount the saddle to the seat post of another manufacturer, carefully read the mounting instructions and observe the notes given here and there. If you have any questions, contact your AX-Lightness and engage dealer.

Make sure the clamping mechanism is always within the marked or specially reinforced clamping area and never in the saddle rail bend!

Get used to the characteristics of riding with carbon saddles and increase the friction with fabric tape, if necessary.

Once the saddle is mounted check that the gap between the bottom side of the saddle cover and the top edge or the seat post bolt is 15 mm at least. This prevents the components from colliding.

Mounting the saddle on the seat post

Your AX-Lightness and engage seat post is designed for most sport saddles with a saddle rail diameter of 7 mm as well as for saddles with slightly ovalized saddle rail tubes (width 7 mm and height 9 mm) including AX-Lightness and engage saddles.

Release both clamping bolts by four to five turns for saddle mounting. Do not disassemble the entire mechanism **(d)**. Turn the two holding brackets instead and place the AX-Lightness and engage saddle in the holding cup.

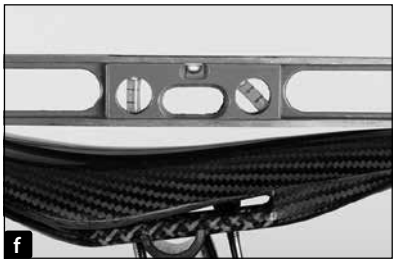
If the distance between the saddle rails is too large, do not try to force them into the clamping grooves. The clamping mechanism or the saddle rail could break and result in an accident and injuries to the rider.

Use in this case another saddle model or ask your AX-Lightness and engage dealer instead.

If the saddle is dimensioned accurately, slide it on the seat post until the saddle rail is clamped in the middle by the clamping mechanism of the seat post **(e)**. Check that the rail is clamped within the clamping range prescribed by the saddle manufacturer. AX-Lightness saddles must be clamped in the round area with the woven fabric look. The clamping area of engage saddles is marked with a scale.

Adjust the top edge of the saddle in parallel to the ground **(f)**. Tighten both bolts alternately and gradually until the saddle rails fit snugly in the recesses of the holding cup and are tightened accurately by the two holding brackets **(g)**.

In the case of the straight AX-Lightness seat posts with yoke type clamping you can perform the adjustment by using an Allen key with spherical head.



Once you have found the desired position, tighten the two bolts alternately and gradually by using a torque wrench **(a)** to the maximum torque value indicated in Nm on the AX-Lightness and engage seat post.

In the case of the cranked AX-Lightness and engage seat posts, turn the bolt in the front either gradually by hand **(b)** or remove the AX-Lightness and engage seat post from the frame and insert a long 5 mm Allen key from the bottom and tighten the bolt.

Once the crossmember engages with the rail, pull the saddle upward and tighten the bolt. Tighten the front bolt by two to three turns more to lower the saddle nose a little. Tighten the rear bolt subsequently by using the torque wrench to the recommended torque value **(c)** which is noted on the seat post.

In case you are not sure about the correct torque value or you have no torque wrench at hand, ask your AX-Lightness and engage dealer for help. Otherwise, a too tight or too loose tightening of the bolts may lead to premature wear or breakage of the AX-Lightness and engage component during the ride and thus to an accident with possible injuries to the rider.

Check the secure clamping of the saddle on the seat post by bringing your weight to bear on it with your hands at either side of the saddle **(d)**. A loose saddle can lead to an accident.

Never exceed the torque values recommended by AX-Lightness and engage which are indicated on the components.

Before removing the seat post (e.g. when taking your bicycle along on a trip), mark the saddle height by using e.g. an adhesive strip. This will allow you to quickly find your preferred saddle height.

Rider-specific adjustments

Determination of the correct saddle height

The appropriate saddle height is a matter of how it allows you to pedal. When pedalling, the ball of your foot should be positioned above the centre of the pedal axle **(e)**.

With the pedal axle, as above described, below your foot, you should not be able to stretch your leg completely at the lowest point, the farthest distance of the pedal to the saddle, otherwise your pedalling will become awkward and you will strain your knee or other joints more than necessary. You can check the height of your saddle in the following simple way. Perform the check by wearing flat-soled shoes. Sit on the saddle and put one heel on the pedal at its lowest point. Make sure your hips remain straight when doing this. Your leg should be fully stretched in this position **(f)**.

For off-road riding it can be helpful to opt for a lower saddle height. Note that over extended periods of pedalling a deeper saddle height can result in knee pain. If your knees or hip hurt, contact your AX-Lightness and engage dealer immediately.

Make particularly sure there is enough space between your crotch and the top tube **(g)** so that you do not hurt yourself, if you have to get off your bicycle quickly.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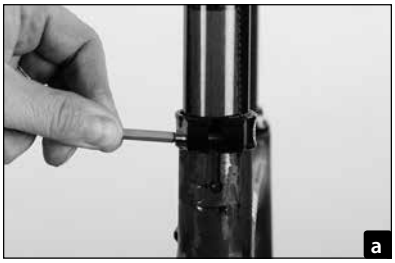

Adjusting the correct saddle height

To adjust the saddle height loosen the binder bolt **(a)** or quick-release lever (read the chapter **"How to use quick-releases of seat post clamps"** beforehand). Release the seat post binder bolt by using a suitable tool and turn it anticlockwise by two to three turns or open the quick-release at your saddle clamping.
You can now adjust the AX-Lightness and engage seat post to the desired height.

Do not pull out the seat post too far from the seat tube and do not slide it in too deep **(b)**. The binder clamp of AX-Lightness seat posts should be positioned in the area which is reinforced with the UD-fabric (UD = unidirectional) **(c)**, the binder clamp of engage seat posts in the area marked with the scale **(d)**. The mark indicating the minimum insertion depth (min. insert) on the seat post rear serves you as additional reference point.

In the case of frames with long seat tubes which continue above the top tube, the seat post should at least reach below the height of the top tube or the rear stay! This can mean a minimum insertion length of 10 centimetres (3.94 in.) or more.

Retighten the seat post in its new position. To do so turn the seat post binder bolt clockwise or close the quick-release lever (read the chapter **"How to use quick-releases of seat post clamps"** beforehand).

You should not need high hand forces to tighten the bolts or the quick-release to achieve a suitable clamping effect. Otherwise the seat post does not match the frame.

Check the tight fit of the seat post by taking hold of the saddle at both ends and then trying to rotate the seat post inside the seat tube **(e)**. If it does rotate, gently retighten the binder bolt or the quick-release and check the seat again. Do not exceed the prescribed torque values.

If the seat post is still not tight, check whether the bolt is tightened to the prescribed torque value **(f)**. If you are in doubt about the proper torque value, read the operating instruction of the frame manufacturer or ask your AX-Lightness and engage dealer for advice.

If in spite of observing the indicated torque values the seat post clamping is still not tight, release the bolt and remove the seat post. Apply a new layer of AX-Lightness and engage carbon assembly paste **(g)** on both clamping areas. Retighten the bolt to the recommended torque value **(h)**. If the seat post is still not tight, ask your AX-Lightness and engage dealer for advice.

Do not grease the seat tube of a frame. Once greased carbon fibre may never ever be fixed in a secure and safe way again!

Do not overtighten the binder bolt or the quick-release of the seat post clamp. Overtightening can damage the AX-Lightness and engage seat post and/or frame, and result in an accident and injury of the rider.


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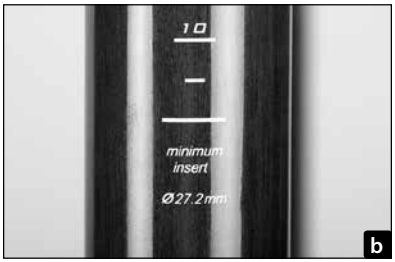


If your bicycle has a long seat tube which continues above the top tube, the seat post should at least reach below the height of the top tube or the rear stay! This can mean a minimum insertion length of 10 centimetres (3.94 in.) or more.

If sitting on the saddle causes you pain, e.g. because it numbs your crotch, this may be due to the saddle. Your AX-Lightness and engage dealer has a wide range of AX-Lightness and engage saddles available and can offer advice on position.

Does the leg stretch test now produce the right result? Check by moving your foot and pedal to the lowest point.

When the ball of your foot is exactly above the pedal centre in the ideal pedalling position, your knee should be slightly bent **(a)**. If it is, you have adjusted the saddle height correctly.

Check whether you can balance safely on your bicycle while sitting on the saddle by stretching your feet to the ground. If you cannot, you should lower the saddle a little, at least to begin with.

AX-Lightness seat posts are available in different lengths. Note that the maximum adjustment range is only 7 centimetres (2.76 in.). For this reason be sure to choose a matching seat post.

Do not ride your bicycle with the AX-Lightness seat post clamped beyond the area reinforced with UD-fabric and the engage seat post clamped beyond the marked scale, i.e. the minimum insertion depth marking **(b)**! The seat post could break or the frame could be damaged, which could result in an accident with injuries to the rider.

Correcting the fore-to-aft position and tilt of the saddle

The inclination of your upper body and hence your riding comfort and pedalling power, are also influenced by the distance between the handlebar grips and the saddle. This distance can be altered slightly by changing the position of the saddle rails in the seat post clamp. However, shifting the saddle rails in the seat post will also affect the pedalling, i.e. the rider's legs will reach the pedals to a greater or lesser extent from behind.

Make sure the seat of the saddle remains horizontal **(c)** as you retighten the bolt(s). The bicycle should stand on level ground while you adjust the saddle. You need to have the saddle horizontal in order to pedal in a relaxed manner. If it is tilted, you will constantly have to lean against the handlebars to prevent yourself from slipping off the saddle.

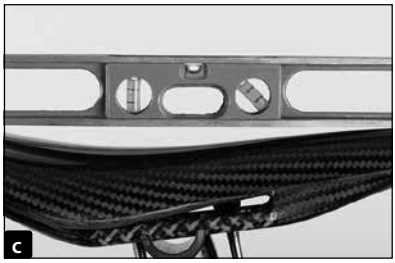
When riding off-road or with full-suspension bicycles the position can vary, i.e. the nose of the saddle can point either a little downward or upward. Ask your AX-Lightness and engage dealer.

The adjustment range of the saddle is limited. Replacing the stem allows you to make far bigger adjustments to the rider's fore-to-aft position. You may achieve differences of more than 10 centimetres (3.94 in.). In most of the cases this requires the adjustment of the Bowden and brake cable lengths – a job best left to your AX-Lightness and engage dealer!

The range of AX-Lightness and engage models includes models with central positioning of the saddle on the seat post as well as models allowing a saddle set-back. Opt for the seat post matching with your proportions and your individual riding style. Ask your AX-Lightness and engage dealer.

Make sure the clamping mechanism is always within the marked **(d)** or specially reinforced clamping area **(e)** and never in the saddle rail bends of the AX-Lightness and engage saddle rails!

Release both bolts at the top of the seat post. Turn the bolts two to three turns anticlockwise at the most **(f)**, otherwise the whole assembly can come apart. Move the saddle forward or backward as desired to adjust the horizontal position. You may have to give the saddle a light tap to move it. Please observe the markings on the saddle rail.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Having found your preferred position, make sure both brackets and the lower holding cup of the clamping mechanism fit snugly around the saddle rails **(a)** before tightening the bolts to the indicated torque value.

Tighten both bolts evenly so the saddle remains at the same angle. If you wish to lower the nose of the saddle a little, tighten the front bolt clockwise. If necessary, you may have to loosen the rear bolt a little as well. To lower the rear part of the saddle, the rear bolt has to be tightened clockwise and the front bolt to be released, if necessary.

After fastening the saddle, check whether it resists tilting by bringing your weight to bear on it once with your hands at either end of the saddle **(b)**.

The saddle clamping bolts are among the most delicate bolts of the entire bicycle. Therefore, strictly observe the recommended minimum and maximum torque values. Do not under- or overtighten. The torque values are indicated in the present operating instructions or on the components themselves.

Check the bolts by using a torque wrench once a month according to the torque values indicated in the enclosed operating instructions or directly on the components.

Poorly tightened or loosening bolts can fail. **Risk of accident!**

Mounting a saddle bag

When looking for and mounting a saddle bag, make sure it allows a secure fastening to the saddle rails **(c)**. There are some models which are connected to the seat post. Make sure the saddle bag is mounted rattle-free and does not swing around **(d)**. A swinging around saddle bag can affect pedalling and damage the saddle or the seat post surface. Ask your AX-Lightness and engage dealer for suitable models.

How to use quick-releases of seat post clamps

As the proper use of quick-releases is not common knowledge, they are again and again the reason for accidents. We recommend you to thoroughly read the following instructions and to practice the procedures as outlined.

Quick-release mechanisms essentially consist of two operative elements **(e)**:

1. The hand lever on one side of the clamp
   as fold-out lever on the seat post clamp. The clamp is released by opening the hand lever; closing the hand lever creates a clamping force.

2. The tightening nut on the opposite side of the clamp
   with which the preload on the threaded rod (quick-release axle) is set.

How to securely mount the seat post clamp

Open the quick-release **(f)**. You should now be able to read "Open" on the lever.

Move the lever back, as if to close it. Now you should be able to read "Close" on the outside of the lever. From the start of the closing movement up to about the first half of its travel the lever should move very easily, i.e. without clamping effect.

Over the second half of the travel, the force you need to move it, should increase. Towards the end of its travel the lever can only be moved by applying more force. Use the ball of your thumb **(g)**. Do not pull, however, with your fingers on the seat post or the frame, the created force could be too high.

Make sure the lever is fully closed. Only in this position maximum hold is achieved and it is ensured that the quick-release remains closed.

In its end position, the lever should be parallel to the bicycle **(a)**, i.e. it should not stick out. The lever must lie close to the frame so that it cannot be opened accidentally.

Finish by checking the firm hold of the saddle by taking hold of the saddle and trying to rotate it in the seat post **(b)**. If the seat post is tight in the seat tube, the saddle clamp is tight enough.

If the saddle can be moved around, re-open the quick-release and increase the preload. To do so screw the tightening nut on the opposite side clockwise by a quarter turn.

Close the lever again and check it again for tightness. Once the saddle can no longer be moved, the quick-release is tight.

Improperly closed quick-releases can make components come loose.

AX-Lightness and engage strongly recommend that you do not use seat post clamps with quick-releases in combination with carbon seat posts, as it is impossible to measure the torque value necessary for the seat post clamp. A too high clamping force can damage the carbon seat post, resulting in a component failure and thus in an accident with possible injuries to the rider.

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