

Assembly instructions. How to make your THYS 209 Carbon Rowingbike ready to ride:

Look for the instructional videos at www.rowingbike.com > video > instruction video

These videos were prepared for the earlier model, the Thys 222 but are relevant to assembly of the 209, except for a few additional points which are included in the instructions below.

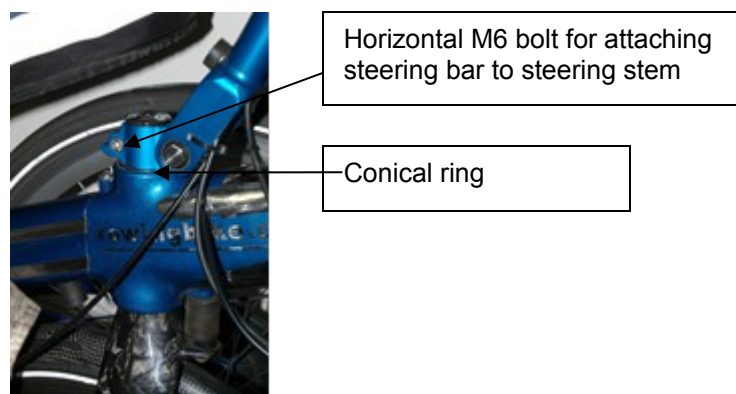
First slide the footslider over the bowsprit, ensuring that all of the brake and shift cables will be located on the left side of the bike. Then mount the bowsprit onto the frame..

Attach the rear stopper onto the bow sprit.

Again check that all shift cables and brake cables are in the correct position (left side if you are sitting on the bike).

Mount the front fork into the frame as follows: first mount the conical ring on top of the bicycle front forktube (with the sharp side down to fit into the top head bearing); then slide the steering stem (or steering head) onto the frontforktube and finish on top with the carbon part marked "PRO"

The top M6 bolt in the carbon part is the adjusting bolt; you just pull it tight to get rid of play in the head set bearings. Don't pull it too hard! This is an A-head system; the downward head bearing is an angular contact bearing.



Put the steering bar in the straight position.

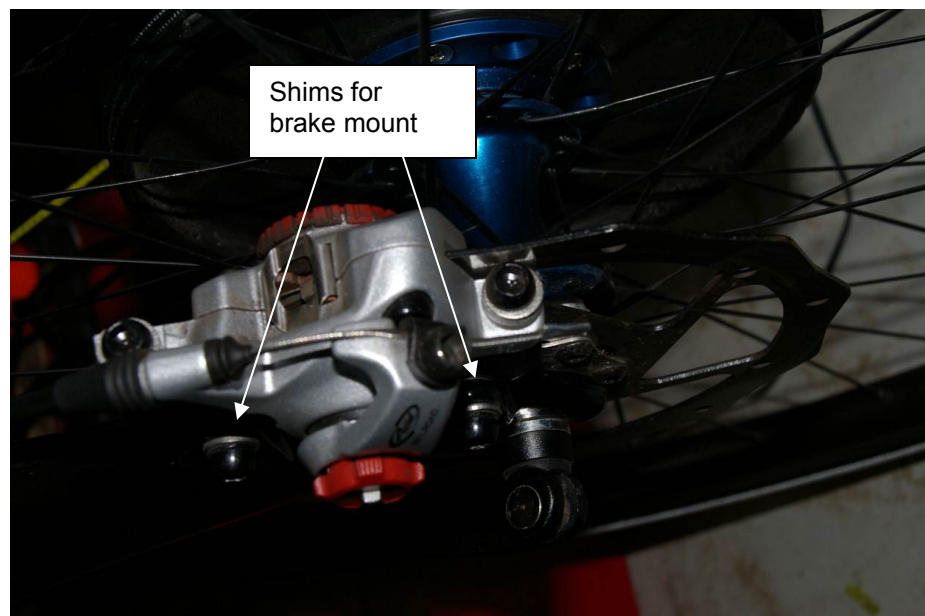
Now you attach the steering bar to the top of the steering stem by tightening the horizontal M6 bolt that goes through the steering head.

The armstroke cable goes from the steering bar over the top bow pulley to the foot slider.

Use the opening in the side wall of the upper bow pulley to lay the armstrokecable over the top bow pulley.

Mount the rear wheel into the frame. Take care that the propulsion cable goes straight from the footsliderring to the Snek on the rear wheel and that it does not tangle on anything.

Mount the rear brake and make sure that you include the shims. These go between the bike frame and the brake mount.



Make sure that the brake cables are properly mounted.

Once the rear wheel is in the frame, set the bike on the floor standing on its wheels and roll the Snek backwards (by freewheeling) with your left hand while you are keeping tension on the cable using your right hand. Roll the cable onto the Snek until there is tension on the propulsion cable; now the footslider will be in the most backward position in the lowest gear (i.e. the propulsion cable is completely unrolled from the footsliderring and wound all the way onto the Snek). Now you can mount the return cable; this is the 5 mm thick shock cord. Its function is to roll the Snek back into beginning position and to maintain tension on the propulsion cable. Roll the shock cord off the footsliderring and leave the attachment of one end of the cord to the ring as it is.

Hook the small hook on the other end of the shock cord into the Snek into the marked hole at the largest diameter of the Snek. If no hole is marked just try a hole on the lowest (most downward) part of the Snek. The shock cord will leave the Snek in a counterclockwise direction. Take care that the knot in the shock cord is pointing upwards so that it does not disturb the next winding on the Snek. Now you will have to wind the shock cord counter clockwise onto the footsliderring **under full tension**. This will take some effort – the shockcord needs to be wound onto the footsliderring as tightly as you can possibly wind it. Winding the shock cord and propulsion cord is made much easier if you watch the instructional videos.

With the 178 mm Snek you need to wind it just $\sim 3,5$ circumferences over the ring and then you lay it over the downward bow pulley on the front tip of the bow sprit.

When you have a 220 mm Snek you need to wind it ~ 5 circumferences.

The footsliderring has 6 different holes for the Shock Cord. In this way you can find an ideal position that prevents you from shifting to a too heavy gear.

You can also very easily adjust tension by choosing another hole for the hook on the return shock cord in the Snek; there are several holes you can choose.

When there is tension on the system make a few strokes with the rowingbike and check out if you can shift it to the highest gear. If you have around 5 windings of propulsion cable (Dyneema) left on the Snek in the highest gear (when the footslider is in the forward-most position), this indicates that you have wound the shockcord one circumference too little on the ring. Return to lowest gear position and correct it.

Put the bike into its highest gear and check if the tension on the shock cord is OK. In the highest gear, with the footslider in the forward-most position, the tension on the system is at its greatest. . Practically all the elasticity should be pulled out of the shock cord in this position and you should not be able to flex it by hand (check instructional videos if you are unsure).

If necessary go back to the lightest gear to adjust the tension by choosing another hole (on the Snek) for the hook of the shock cord to increase or decrease the tension (or shorten the shock cord if necessary).

Have a good look at the Snek system and check how changing gears works before riding.

When shifting, the right thumb button needs to be pushed all the way in (like the clutch of your car or motorbike). You need to time it such that you push the lever at the moment of the stroke when the footslider is practically not moving over the bow sprit. You should aim for a clean shift without making a crunching sound.

During shifting two things happen: the Snek is locked: it can no longer turn around its axis and the footsliderring is unlocked from the foot slider.

So when this shifting button is pushed, if you make (a small part of) a propulsion stroke you will be shifting down (i.e. propulsion cable is unwound from the footsliderring and wound further onto the Snek). If you make a (part of) a recovery stroke, you will be shifting up (propulsion cable is rolled onto the ring and unrolled from the Snek). You should only push the shifting button all the way in or not at all. You should never push the button part of the way, or this will cause wear on the Snek toothed wheel.

Note that when you are in a low gear you will have to shift almost a full stroke before you notice a difference in gearing. This is because one circumference of the Snek at large diameter is perhaps 45 cm whereas the diameter at its smallest part is only 13 cm.

When you are already in a heavy gear you perhaps only have to shift a few cm to feel a difference.

Adjust the rowing bike to your body length. You can adjust the height of the steering bar: it should be as low as possible so that you leave approximately 20 mm between you knees and the steering bar.

More important is the length of the armstroke cable (the cable that goes from top of the steering bar to the footslider). You can adjust its length by using the sliding knot in the armstroke cable. The double part can be changed into a triple part by sliding the middle knot forward or backward. When you are clicked in with your feet lying down in the seat with your feet at the end of the stroke position, your elbows should be at an angle of 90 degrees; the steering bar should just clear your breast or belly. When adjusting space of the sliding knot is not sufficient for your length you can make it shorter or longer by loosening the front bowlineknot and move some cable from the single to the double part or other way around.

Important before you start riding your rowing bike:

Check if your shoe plates are compatible with your click pedals and get used to clicking your feet in and out.. Make sure you can always get out of the pedals - they are adjustable.

Always use your arms symmetrically - if you do not do that you are in fact steering. Only take one hand away from the steering bar when you are freewheeling, with legs in the straight position.

Practice this one hand steering on low speeds first!

You should never take one hand off the steering bar during a power stroke, if you would do so you would pull the steering bar to one side and fall immediately!!

Take care that you always ride with tension on the armstroke cable (the cable that goes from the top of the steering bar to the footslider).

Once you are an experienced rowingbike rider you always have tension on the armstroke cable.

Notice :

Always drive with two feet clicked in. When you start to ride with one leg only use very little force, you can put enormous asymmetrical forces on the foot slider and bow sprit when driving with one leg.

Once you have two feet on the pedals you can go full force!!

(For disabled people with one leg we reinforce the foot sliders with more bearings)

Choice of gearing:

Almost all beginning rowingbikers have the tendency to choose a rather heavy gearing. This is quite logical as you do not yet have the skill and technique to do a short and fast stroke.

Keep in mind that experienced rowingbikers only shift to the heaviest gear of the rowingbike once they reach speeds over 45 kmh (tailwind or downhill)

The ideal stroke rate is between 40 ~45 strokes per minute, it takes training in a rather light gearing to get there.

Riding in a heavy gear can cause aching knees and /or back joints as well as heavy "acid" legs. If you have any of these problems shift to a lower gearing!

Maintenance:

Always keep your propulsion cable and Snek far away from greasy products; just clean them with water every now and then.

The Stainless steel rails of the bowsprit and the ball bearings of the foot slider **need** a bit of oil,vaseline or other grease on a regular base, these parts should **never** be without grease!

The bearings of the revolvingring and the inside of the ring can best be lubricated with WD 40, this does not attract dirt.

The bolt of the footslider ring also needs WD 40 every now and than; if it gets dry, it will start to make a clicking sound; Than you know you need to lubricate it with WD 40.

After a ride in heavy rain; certainly in winter conditions when there is salt on the road, clean your bowsprit and the inside of the revolver ring immediately. Let it dry and grease the bowsprit and inside the revolver ring immediately.

If you use the steel **CVT** propulsion cable on the revolver bike it should be replaced after ~ 3000 to 7000 km depending on how much you shift and on your weight and force. The more different gears you use the longer the lifetime of the cable.

We advise to check all cable for damage and fatigue breaks before each ride. The rejection standard is when there are more than 10 fatigue breaks per 10 mm cable length.

If you use Dyneema HS propulsion cable you will see it wear out slowly. It is likely to break after 1000~3000 km.

Only the part that runs over the Snek all the time will wear out so you can use it twice by turning it around. We advise you to ride it for 700~2000 km; than turn it around and use it for another 700~2000 km; then replace it.

When you use the Dyneema cable in wet and dirty conditions it wears out sooner. When you use it in dry conditions and if you drive on hilly roads it will last very long as you will use different parts of the propulsion cable. You can see the wear of the cable on the snek slowly increasing with the mileage; when it starts to show heavy wear turn it around or replace it.

The ball bearings of the foot bench are mounted with eccentric parts.

You can adjust these with a thin (3mm) 11mm end wrench after loosening the centre bolt with an Allen key. Always leave some tiny space between bearings and bow sprit so that it runs without resistance and dirt and sand can not cause a jam.

When foot slider bearings become noisy oil them or replace them (usually after 10.000 to 20000 km)

Flat tires:

If you have a flat on the rear wheel;

You can repair the tire when you leave the wheel in the bike as it is.

If you want to replace the inner tube:

Put the bike in lowest gear with the footslider in most backward position.

Hook out the hook of the return shock cord out of the Snek and attach it somewhere on the frame near the rear dropout. Now lift the rear wheel up and let the footslider roll to its most forward position. Now unwind the propulsion cable from the Snek completely. Now take your rear wheel out and replace the inner tube. Pump up the tire before you put it back in the frame;

Roll on the propulsion cable on the Snek all the way. You need a bit of force as you are pulling out the bungee in this way, now hook in the bungee on the Snek, check that the knot of the bungee is in upright position and you are ready to ride again.

For your knowledge:

The steering damper between mainframe and front fork is mounted with a black eccentric part, this is used to adjust the neutral steering angle.

The rubber steering damper should be mounted in such way that the front wheel is in straight position when the bike is held upright.

Stretch on cables:

Dyneema propulsion and return cable stretch when they are new mounted.

The dyneema fibre does not stretch under short tension but it does crawl; this means it stretches very slowly when hold under tension for a long time. The stretch of cables after they have just been mounted is stretch caused by the knots and stranding of the cables. So after mounting a new cable you may have to stop and readjust your armstroke cable length and /or the tension on the bungee by choosing another hole in the Snek and/or shorten it.

If you park your rowingbike it is best not to park it in lowest or highest gear; The Snek might adapt itself slightly to the force put on it by the shock cord.

The Shock cord will loose some of its elasticity when it is held under tension. So if you park your bike for longer time it is best to demount the shock cord windings of the footslider ring and put it on again before your next ride.

Safety tips:

1. Make sure that the gear cable that runs to the revolver ring cannot hook behind anything. On the THYS 209 there's always taken care of this; the cable has always the correct length. If you replace the cable that runs to the revolver ring, make sure it has the correct size and is certainly not too long. The cable should not be able to hook on to anything, like the left dropout of the front fork. Do not mount anything on the front fork.

Check <http://rowingbike.com/site/EN/Home/Safety/> for pictures which give an even better insight in the correct cable length.

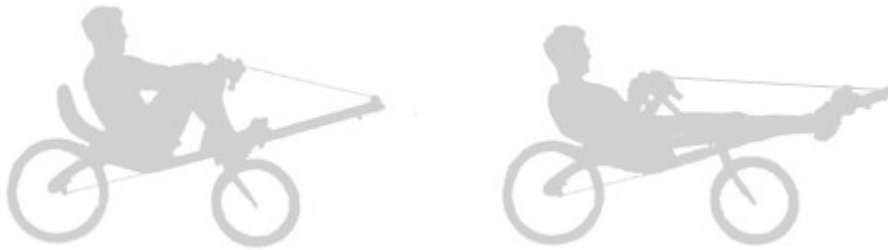
2. If you need to ride with a hand loose, for example because you want to point out the direction you are going or because you want to get your water bottle, do this while your legs are lying stretched and let the bike freewheel. You can't lift your hand during a stroke, your handle bar will then make a sudden swing and you'll be immediately next to your bike. Practice freewheeling with just one hand on a silent road or on an empty parking-lot before doing it in normal traffic.

3. Wear a helmet while on the rowingbike (or any other bike).

4. Wear clothing that stands out in traffic, so you are noticed better by other road users.

DRIVE SAFE

You have bought a fast and low bike; always assume that other traffic users might not see you as you are lower and faster as they expect. Take no risks; It is not worth it!



E-mail thys@rowingbike.com

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