



Inspired Cycle Engineering Ltd

**2 0 0 9
TRICE 'Q'
&
TRICE 'T'**



**STEP-BY-STEP
ASSEMBLY INSTRUCTIONS
and
OWNER'S MANUAL**

1.0 Introduction.

Congratulations on being a new Trice owner. You have purchased the finest, most refined recumbent tricycle available today; we hope it brings you many years of enjoyment.

This manual has been written to help you set up and use your trike. Recumbent trikes may be a little different from the cycles you are familiar with, so please take a moment to read through this document. You will find the latest version of this manual in a download-able PDF format on our website.

Throughout the manual, we have included some Tips, which have been learned from over 20 years of experience building trikes. They are well worth taking special note of.

We hope you enjoy owning and riding your Trice as much as we like making these great machines.

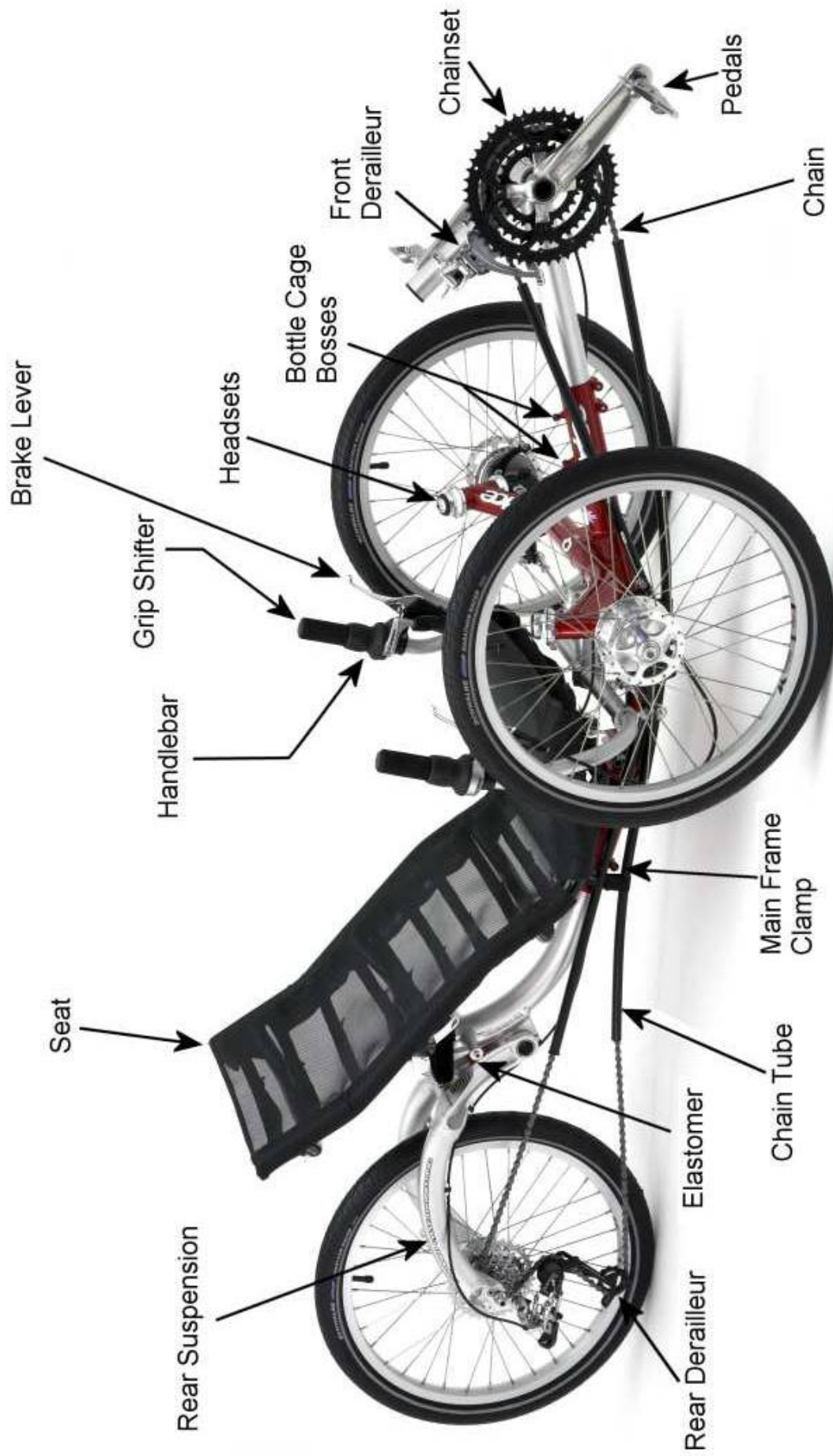
The ICE team

1.1 Index

| | |
|--|----|
| 1.0 Introduction | 2 |
| 1.1 Index | 2 |
| 1.2 Overview | 4 |
| 2.0 Assembling your TRICE | 5 |
| 2.1 Unpacking..... | 6 |
| 2.2 Fit and set the handlebars to an approximate position..... | 8 |
| 2.3a Fit front drum brake wheels | 9 |
| 2.3b Fit front disc brake wheels | 10 |
| 2.4a Connecting the front drum brakes..... | 11 |
| 2.4b Installing and connecting the front disc brakes..... | 12 |
| 2.5 Fitting the parking brake strap..... | 13 |
| 2.6 Fitting the rear section to the cruciform..... | 13 |
| 2.7a Assembling the seat – mesh seat..... | 14 |
| 2.7b Assembling the seat – hard-shell seat | 15 |
| 2.8 Fit the seat to the lowest position..... | 17 |
| 2.9 Fit the front boom to an approximate position..... | 17 |
| 2.10 Fit the chainset | 18 |
| 2.11 Fit the pedals..... | 19 |
| 2.12 Adjust the seat angle | 19 |
| 2.13 Set the handlebars | 19 |
| 2.14 Set the front boom | 19 |
| 2.15 Install the front derailleur | 20 |
| 2.16 Install and connect the rear derailleur | 21 |
| 2.17 Check the chain tube lengths | 24 |
| 2.18 Fit the chain | 24 |
| 2.19 Check the gear shifting | 28 |
| 2.20 Fit the rear mudguard..... | 29 |
| 2.21 Fit the mirror | 30 |
| 2.22 Fit the flag | 30 |
| 2.23 Reflectors and bell..... | 30 |
| 2.24 Check nuts and bolts | 30 |
| 3.0 Adjusting your TRICE..... | 31 |
| 3.1 Tyre pressure | 31 |
| 3.2a Mesh seat cover | 31 |
| 3.2b Fitting the hard-shell seat to you | 31 |
| 3.3 Suspension adjustment..... | 31 |
| 3.4 Seat angle adjustment..... | 32 |
| 3.5 Seat brackets | 32 |
| 3.6 Leg length | 34 |
| 4.0 ICE Optional Accessories | 35 |
| 4.1 Computer | 35 |
| 4.2 "Handlebar" bag side mount | 36 |
| 4.3 Lights..... | 36 |
| 4.4 Extra water bottle mount | 36 |
| 4.5 Assembling and fitting the suspension rack..... | 36 |
| 4.6 Fitting Radical bags | 37 |

| | |
|---|----|
| 4.7 Fitting a Rohloff | 38 |
| 5.0 Riding your TRICE | 39 |
| 5.1 Getting on and off the trike. | 39 |
| 5.2 Initial test ride..... | 39 |
| 5.3 Stopping in a low gear | 39 |
| 5.4 Relax | 40 |
| 5.5 Cornering | 40 |
| 5.6 Handling | 40 |
| 5.7 Brakes..... | 40 |
| 5.8 Hill climbing | 41 |
| 5.9 Descending a hill..... | 41 |
| 5.10 Ground clearance | 41 |
| 5.11 Muscles | 41 |
| 5.12 Folding and unfolding the trike | 41 |
| 6.0 Maintenance | 43 |
| 6.1 Lubrication..... | 43 |
| 6.2 Adjusting cables | 43 |
| 6.3 Drum Brakes..... | 43 |
| 6.4 Disc brakes | 44 |
| 6.5 Rear brake..... | 45 |
| 6.6 Drivetrain | 45 |
| 6.7 The frame..... | 45 |
| 6.8 Tyres, tubes, & wheels..... | 46 |
| 6.9 Suspension | 46 |
| 6.10 Adjusting the tracking..... | 46 |
| 6.11 Storage | 47 |
| 6.12 Serial Number | 47 |
| 6.13 Recommended minimum tools and spares | 47 |
| 7.0 Safety | 48 |
| 8.0 Other Important Information | 49 |
| 8.1 Recumbent/Trike forums on the Internet..... | 49 |
| 8.2 Warranty Information | 50 |
| 8.3 Liability Information | 50 |
| 8.4 Legal requirements | 50 |
| 8.5 Contacting us | 51 |
| Appendix A: Tightening torques | 52 |
| Appendix B: Elastomer limits | 53 |
| Appendix C: Tyre Pressures | 53 |

1.2 Overview



2.0 Assembling your TRICE

Assembly tools required:

3mm Hex Key
4mm Hex Key
5mm Hex Key
6mm Hex Key
8mm Hex Key
10mm Hex Key
Cable cutter

Bicycle pump
8mm wrench
10mm wrench
19mm wrench
Chain link remover
Sharp knife
Small flat screwdriver



TIP – You will find it much easier to assemble the trike if you can work on a bench or a table at waist height; this avoids too much bending down. If you have to work on the ground, put down some newspaper to avoid the chain, which is protected by grease, from picking up dirt

Throughout this manual, “left” and “right” are based on the rider’s position, as seated on the trike.

First of all, open the box, unwrap and lay out the pieces.

You should have all the items in the enclosed packing list, as well as any accessories you have ordered.

Assembling your trike is quite simple, even if you have never done any bicycle assembly/work before. If you’re uncertain about the work, any decent bike shop will be able to follow these instructions to assemble it for you. It will take you a few hours to put your trike together, but don’t be tempted to rush through;

When assembling your trike, please refer to the table in the appendix for the proper tightening torques for all fasteners. Do not over-tighten.

Adjusting and Closing Quick-releases



Open



Closed

Quick-releases are used in a number of places on your trike; it is important that they are tightened correctly. A quick-release that isn’t fully and properly closed can result in parts coming loose or moving while riding. This could cause a serious accident.

A quick-release system consists of two basic parts: a lever that provides the clamping force and an adjusting nut that alters the clamping tension.

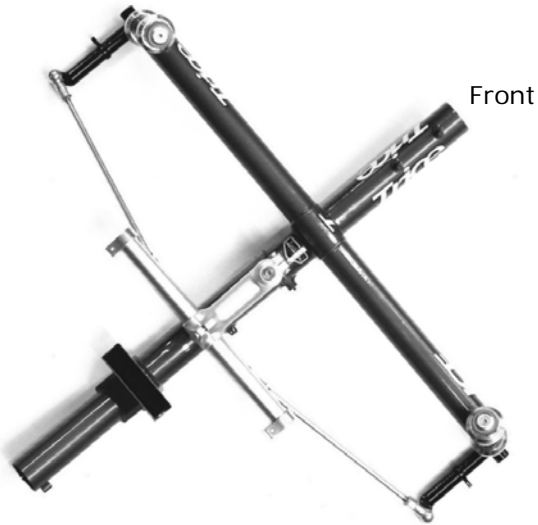
With the part you are clamping located properly, adjust the quick-release by opening it, holding both ends and turning one clockwise until, when you close the lever, you feel some resistance. At this point, try to close the lever fully. The adjustment is correct when you can fully close the lever, but with some effort (the lever should leave its impression in the palm of your hand). If you can only close the lever part way, open it, unscrew the adjusting nut slightly and try again. If it closes too easily, tighten it up a tiny bit and try again. Do not try to tighten the quick-release by winding the lever around; it will not tighten enough to be safe.

Right..... let’s begin assembly!

2.1 Unpacking

Carefully unpack the contents of the box and inspect for any damage that may have occurred during shipping.

You should be able to unpack your trike without resorting to a knife; if you use one, be careful not to cut through the parts or to mark the paintwork. Have a good look at the various packages and familiarize yourself with the various parts. In addition to the main components shown below, there are other small packages of parts. Don't open them just yet; leave them sealed until you need them. (Please note, tyres may be supplied only partially inflated for shipping. Please inflate tyres to correct pressure before sitting on your trike. The correct inflation pressures are printed on the tyre sidewalls.)



Front

Main frame (cruciform)



Front Boom



Rear Suspension
(seen folded here)



Chainset



Handlebars



Front Wheels (drum
brake version shown)



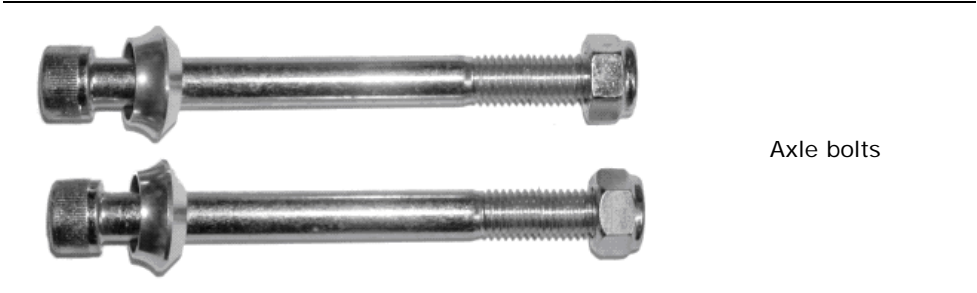
Rear Wheel



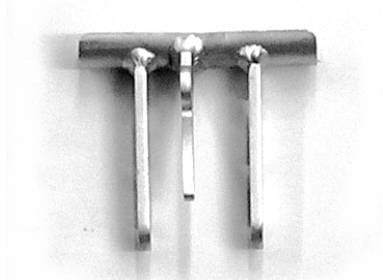
Rear and Front
Derailleurs



Chaintubes
(supplied fully
assembled)



Axle bolts



Seat Mount



TT Bracket (standard
with T only)



Seat Cover and Frame
(mesh seat models)

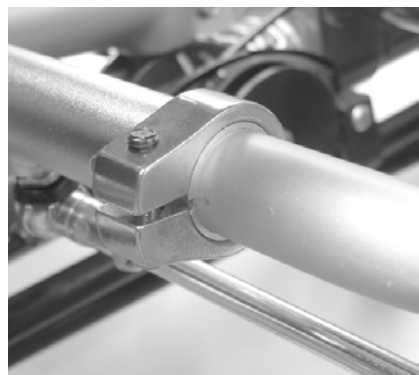


Seat and Cover
(hard-shell seat
models)

2.2 Fit and set the handlebars to an approximate position.

All versions: Slacken off the two clamps on the steerer, insert the handlebars and adjust them to an upright position. They only need to be lightly tightened at this stage.

Note: If you have purchased the optional quick-release kit, please refer to the instructions for their installation in QR pack.



Drum Brake Version: Find the bag containing the handlebars. Also find the bag containing the brake cables (with the derailleurs). These are the ones with the inner cables installed. Squeeze the brake lever, and slide the small barrel end into the hanging bracket on the lever. Feed the inner cable down through the slot on the front of the lever (you may have to turn the adjuster to line up the slots).

Disc Brake Version: Find the bag containing the handlebars. Also find the box containing the hydraulic brakes. You will have to remove the cable brake levers from the handlebars and install the hydraulic brake levers. Note how the Grip-shift shifter is positioned on the handlebars. Pull the rubber handlebar grip from the end of the handlebar. If the rubber half-grip doesn't want to come off, lift the top edge of the rubber grip and dribble a little water down inside (an old spoke or something similar can help lift the grip and let the water go a little deeper). Undo the shifter locking screw (top picture) and gently pulling the shifter assembly from the handlebars. Undo the brake lever clamp bolt and remove the lever. Re-install the shifter and the (dry) rubber half-grip. Push the rubber half-grip so it is flush with the end of the handlebar, then slide the shifter up to it and tighten the locking screw. Now fasten the hydraulic brake lever onto the handlebar. **NOTE: the brake levers are handed. The correct lever will put the oil reservoir (with the logo on the cover) facing away from the seat and the rider.** Loosen and remove the bolt of the brake lever clamp with a 4mm Allen wrench. Place the lever/clamp assembly onto the handle bars (the lever clamp is in 2 parts, so it can be installed after the shifter is in place.) and position brake lever so it is on the forward side of the handlebar. Be sure to slide the lever up close to the base of the shifter. Replace and tighten the bolt to 1.7-2.26 Nm (15-20 In. lbs).



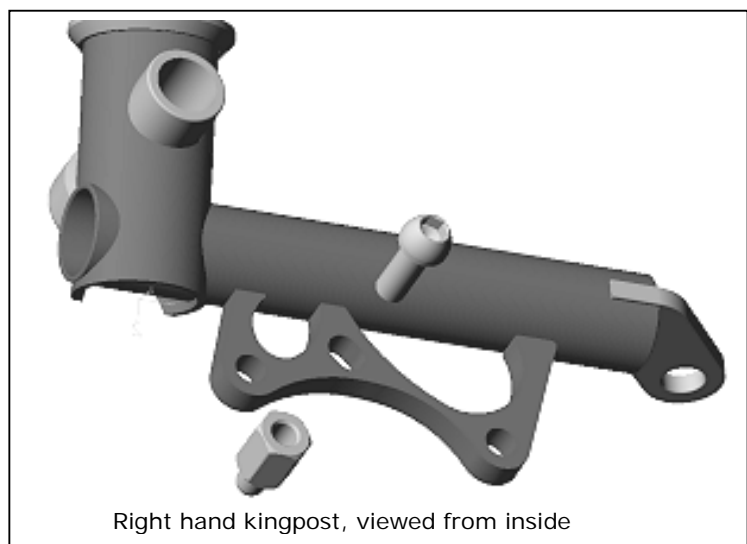
2.3a Fit front drum brake wheels

Note: if you have purchased disc brakes, please refer section 2.3b

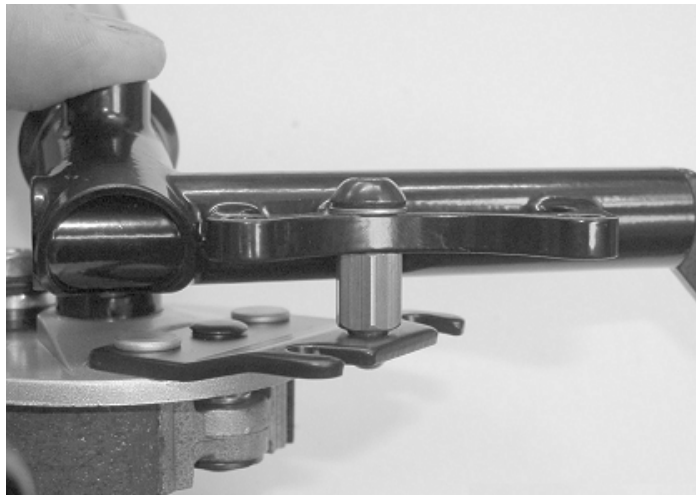
Note: If you have purchased the optional quick-release kit, please refer to the instructions for its installation in the QR pack.

Located in the drum brake pack are the drum brake pins. These pins need to be fastened onto the kingposts. They are provided with hi-tensile bolts that appear to have paint on their threads. This is threadlocking adhesive, and it must not be removed. If you remove and replace the drum pin bolts, they must be held in place with Loctite 243 Threadlocker or equivalent.

Put the bolt (with the washer under the head) through the centre, elongated hole in the kingpost brake mount, thread the drum brake pin on the other side, and tighten gently. (The pin should be on the outside of the kingpost). This should be only just finger-tight, so you are able to slide the pin in the elongated hole. Do not make this bolt tight at this time; it will need to be adjusted later.



Identify the left-hand and right-hand wheels (the labels are on tape labels fastened to the spokes). Locate the front wheel 12mm axle bolts and 12mm nylock nuts which are in a bag with the upper seat mount. Slide an axle bolt through the hub from the outside of the wheel (the side with the five webs on the hub flange), then from the bag with the drum brake baking plates and spacers in it fit the small brake plate spacer over the axle with the **small shoulder** on the spacer against the bearing in the hub. Slide on the brake plate. (Note the brake plates are handed, and should be fitted so the brake lever arm points forward and down towards the ground. See photo on page 11). Now slide the bolt with the complete wheel assembly through the kingpost, locating the single hole in the black brake plate onto the drum brake pin you previously installed.



Tip – make sure the brake plate is located on the pin as this stops the plate rotating.



This is essential for proper operation of the brake.

With everything located, add the M12 nylock nut and tighten onto the bolt which is protruding on the inside of the kingpost. A 10mm hex key and a 19mm wrench are needed to tighten the front wheels. Lightly tighten the axle bolt, and then check that the drum pin is properly located. Tighten the drum pin bolt to 10-11 ft-lb (13-14 nm). Now, finally, tighten the axle bolt (see table in Appendix A for torque setting). When using a hex key and wrench, this would be as tight as you can comfortably manage. It is important that these bolts are tight; you will not damage the bearing by tightening to the required torque.

Repeat the fitting procedure for the other wheel.

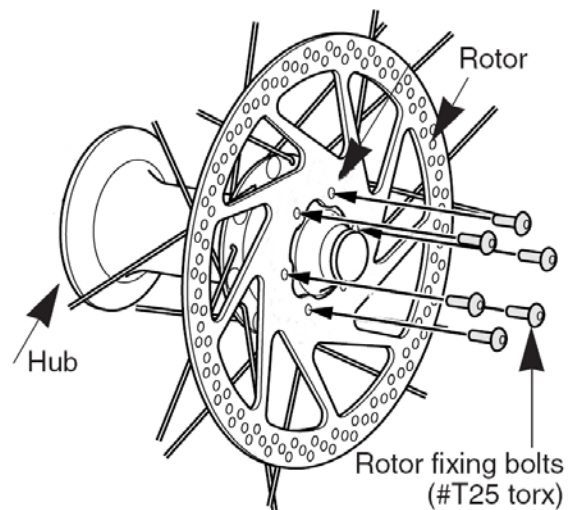
2.3b Fit front disc brake wheels

Note: if you have purchased drum brakes, please refer section 2.3a

Note: If you have purchased the optional quick-release kit, please refer to the instructions for its installation in Accessories Section of this manual.

Identify the left-hand and right-hand wheels (there are tape labels fastened to the spokes).

First, the disc brake rotors must be mounted on the hubs. Place the disc rotor on the hub mounting surface. Be sure that the arrow on the disc is pointing in the same direction of the forward wheel rotation. Using a Torx T25 driver, install then tighten the bolts to a torque of 6-7 Nm (4.5-5 ft-lbs). Note: the bolts have what appears to be paint on their threads. This is threadlocking adhesive, and it must not be removed. If you remove and replace the rotor bolts, they must be held in place with Loctite 243 Threadlocker or equivalent.



Locate the front wheel 12mm axle bolts, axle caps and 12mm nylock nuts. Also locate the aluminium spacer tubes for the axles, which are supplied in a bag (along with 4 M5 washers) with the disc brakes. Slide the outside axle cap over the axle, then push the axle bolt through the hub from the outside of the wheel (the side opposite the rotor). Now slide the bolt with the complete wheel assembly through the kingpost.

With everything located, slide the aluminium spacer tube over the end of the bolt (now protruding on the inside of the kingpost), and then tighten the M12 nylock nut onto the thread. A 10mm hex key and a 19mm wrench are needed to tighten the front wheels. The bolt must be done up quite tight (see table in Appendix A for torque setting). When using a hex key and wrench, this would be as tight as you can comfortably manage. It is important that these bolts are tight; you will not damage the bearing by tightening to the required torque.

Repeat the fitting procedure for the other wheel.

2.4a Connecting the front drum brakes.

Note: if you have purchased disc brakes, please refer section 2.4b

If your brake levers have them, check the ratio adjustment. It should look like the photo below.

Connect the brake cable barrel at the brake lever, make sure the brake cable long black outer casing is threaded onto the cable inner wire.

Thread the 90 deg bent tube over the inner brake cable wire and then add the long threaded adjusting barrel so that the cable assembly looks like the picture on the right. Slide the brake cable adjusting piece into the lower slot in the brake plate. Slide the brake cable clamping barrel onto the brake cable, pull the slack out of the cable and clamp the barrel into place.

Adjust the brake by screwing out the adjuster until the wheel starts to drag slightly when spun. Screw in again slightly until the wheel runs freely. Screw down the locking ring tightly.



2.4b Installing and connecting the front disc brakes.

Note: if you have purchased drum brakes, please refer section 2.4a

The disc brake system is supplied fully assembled and bled. It is strongly recommended that you install the brakes supplied without disconnecting any hoses or attempting to shorten the hose

Route the hose down to the kingpost disc mount. Make sure the hose is running in a position where it will not twist, kink, or be damaged or pinched. Also check for chaffing of the hose on the tyre or the trackrod. The hose should lead in a fair curve between the lever and the mounted caliper. If it doesn't, it is possible to twist the hose in its connector at the lever end until the hose runs smoothly to the caliper

Mounting the Caliper

New brakes are supplied fully retracted with a red plastic insert between the pads. With a firm grip, pull the red insert out from between the pads (it just clips in place).

Do not squeeze the brake lever until the caliper is installed. If you do, the brake pistons will be overextended and you may need a bike shop to rebuild your caliper.

Slip the caliper over the rotor and then rotate it up to the kingpost. Align mounting holes with those on the caliper and fix with the supplied caliper bolts. It is important to centre the caliper over the disc rotor using some of the supplied caliper shim washers between the caliper and disc mount. This is done by trial until the correct position is achieved. We have also supplied 4 thicker washers (packed with the aluminium axle



spacers) which may be needed. The pads should not contact the rotor unless the lever is pulled.



Fitting the shims can be a bit frustrating, as they tend to fall out when the caliper mounting bolt is withdrawn. Try applying a thin film of grease to the shims; they will stick to each other and to the caliper body, making it easier to make adjustments. If you still find it difficult, the wheel can be removed each time you change the shims. It's slower this way, but much easier to work around the caliper bolts.

Once the caliper has been centred and wheels spin freely (without dragging), fully tighten the caliper bolts with a 5mm Allen wrench to a torque of 11–13 Nm (97 to 114 in. lbs.) Check that the caliper is still mounted centrally over the rotor.

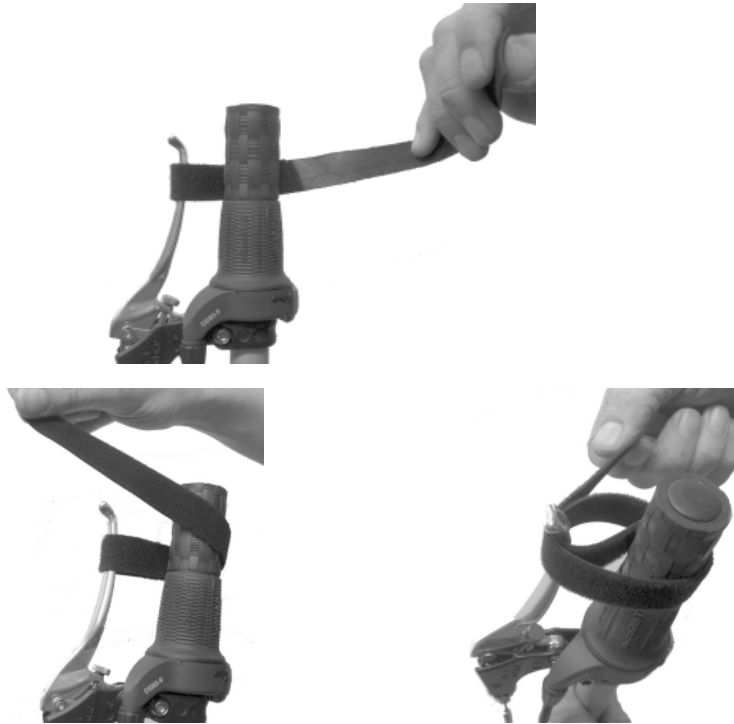
Now sit down and read the instruction booklet that came with your brakes.



Warning: If you are not confident of installing your brakes correctly, we strongly recommended that you have a competent cycle mechanic install your disc brake system. Always wear protective clothing, safety glasses and gloves when servicing this system.

2.5 Fitting the parking brake strap

There are 2 parking brake straps made of Velcro and they wrap around the brake lever and grip as seen below. They are essential if you do not want your trike going off on its own. You will be surprised how little a slope is necessary to get the trike moving. Gusts of wind are also capable of moving a trike that doesn't have a parking brake. The brake straps can be left dangling on the handlebars when not in use, or removed and stowed in a handy pocket or bag.



Caution: Don't rely solely on the parking brake straps for the security of your trike, especially when you park on a steep hill. Point the trike towards a wall or curb so it cannot roll far. Make sure the Velcro® strap is secured – Your trike will attract attention, and Velcro® is an irresistible temptation to young children.

The parking brake strap can be stored like this when not in use.

2.6 Fitting the rear section to the cruciform

Slide the rear section into the cruciform, taking care not to damage the plastic shim located inside the rear of the main frame. A small amount of lubricant has been applied at the factory. Evenly tighten the two frame bolts with a 5mm hex key, until the bolts just bite. Align the rear section by eye so it is vertical (stand back a few feet to get a better view). Tighten the two bolts by ¼ turn alternately until the rear section is just clamped enough to prevent it moving around (you will need to adjust this again later in section 2.8).

If you have opted for a different elastomer from the standard, remove the red elastomer from the suspension swing-arm. This is done by pulling and twisting it from its retaining pin, then pushing the new elastomer onto the pin in its place.

Note: If you have purchased the option Quick-release kit, do not put any quick-releases into the rear frame bosses. You must use the M6 bolts which have already been installed.

Note: If you have purchased the optional rear disc brake kit, please refer to the instructions for the kit in Accessories Section of this manual.

Unclip the quick-release from the spokes of the rear wheel and thread it through the centre of the axle. The lever should be on the side opposite the gears (lever on left of trike). Fit the rear wheel to the rear swingarm. You may find this easier if the Velcro restraining strap on the swingarm is fastened around the rear section main tube.

If you have a 'T', or are fitting the TT bracket for any reason, now is the time to fasten it in place. The first mounting bolt passes through the single mounting hole and the front mounting position on the tube top. Pass the 2nd mounting bolt through the appropriate hole and the back mounting position. The correct position for the 'T' is as shown on the right. For other applications, the correct position will depend on the application.

Photo taken from left hand side, washers are fitted underneath nuts.



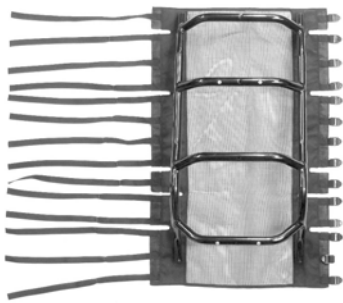
2.7a Assembling the seat – mesh seat



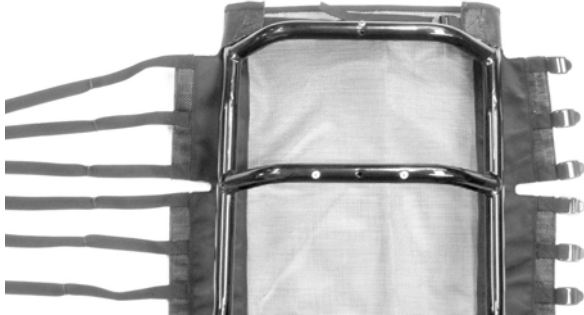
Find the seat frame and the bag with the seat cover in it. Unfold the cover and identify which is the top, the bottom, the front and the back. The top can be identified by the cut-out just below a single strap. The back can be identified by the wide Cordura bands running down the cover.



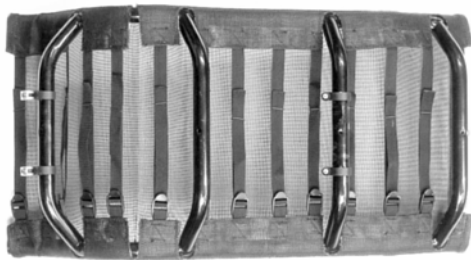
Before you begin assembly, locate the O-rings in the cover pack. Each O-ring needs to be slipped onto a strap on the cover, and pushed 8" (200mm) or more down the strap. These O-rings are used to hold down the loose tails of the straps after the seat has been assembled.



Aligning the top of the cover with the top of the seat frame, place the back of the cover (the wide cordura bands) against the frame.



Thread the top strap through the top buckle, and pull snug. Thread the next strap down through its corresponding buckle and pull snug. Make sure the seat cover is centred on the seat frame and the top of the cover is not too high or low. Work your way down the seat frame, fastening up the straps snugly as you go.

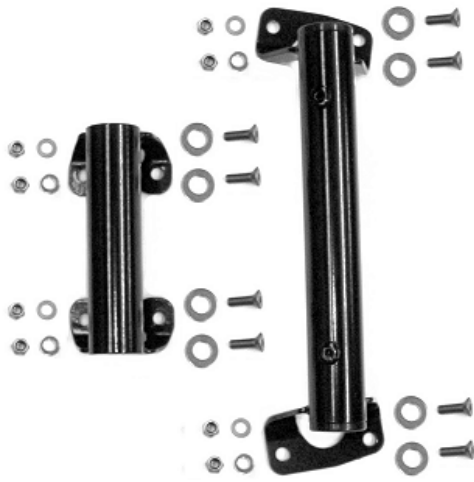


When you reach the bottom, check the cover for a smooth, symmetrical fit. When you are happy with the appearance of the seat, tighten the bottom 5 straps so they are tight. If you're got the optional seat foam, push it between the seat bottom and the 5 bottom straps before tightening. The rest of the straps can be adjusted to your preference after you sit on the trike. A good starting point is to slack off each strap in turn, and retighten, pulling the strap gently between your thumb and forefinger. Be careful about over-tightening the straps on the back of the seat; too loose is more comfortable than too tight. When all the straps are adjusted, tuck the loose tails into the O-rings so they don't flap about.

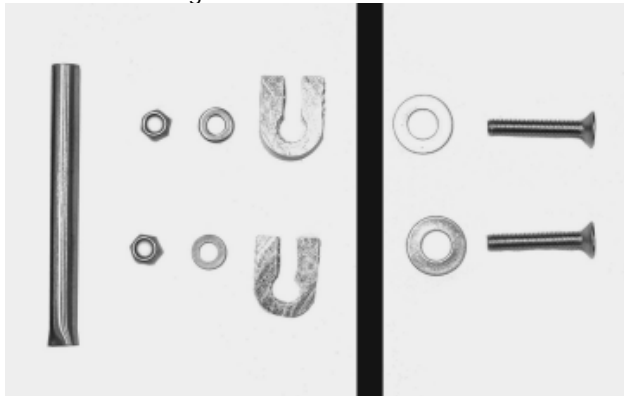
2.7b Assembling the seat – hard-shell seat

The hard-shell seat is supplied with 2 seat mounting brackets, which have to be fastened to the seat. The lower bracket is the wider one, and fastens underneath through the pre-drilled holes. The upper bracket is narrower, and can be mounted in one of two positions. The lower position is used for most riders. The upper position is only for those riders that want maximum seat recline. In this upper position, the rear suspension will have to be pulled further out of the main frame.

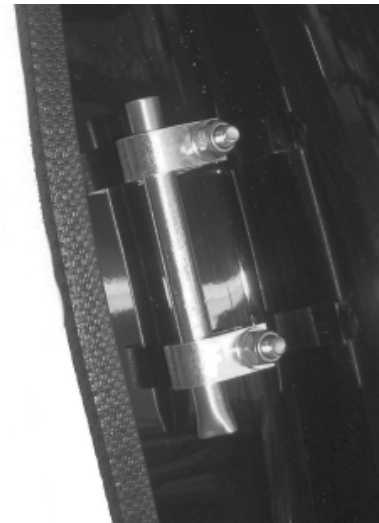




The flag mount bracket consists of 2 metal clips and a short length of stainless steel tubing with one end partially closed. The flag mount is positioned on the back of the seat as shown in the photograph, with the closed end facing down.

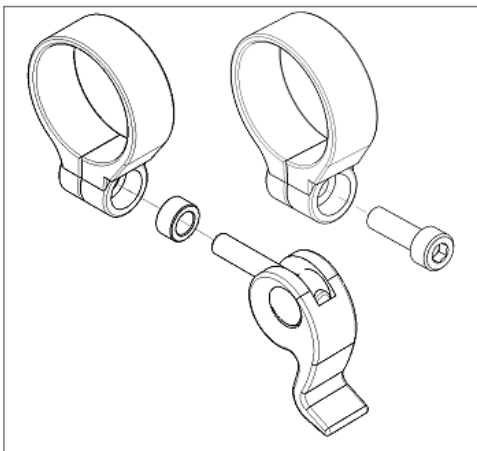


The 'Love Handles' help keep the rider located on the hard-shell seat; their installation is optional. To install the Love Handles, bolt the slots on the Handles through the pre-drilled holes in the seat with the Love Handles resting on the inside surface of the seat. The washers go on the back of the seat. Install the supplied covers. The Love Handles can be adjusted for width by loosening the bolts and sliding them to the required position.



To install the breathable cover, remove the protective paper from the double faced tape on the seat, put the Ventisit cover in place and press firmly over the taped areas. The cover will stick in place sufficiently to stop it from sliding around. The cover can be removed and replaced many times before the tape becomes non sticky.

2.8 Fit the seat to the lowest position

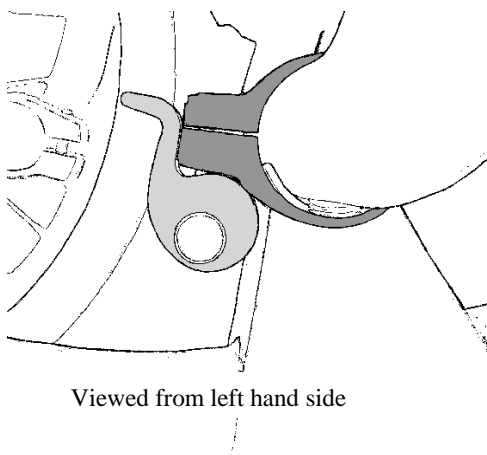


The seat is provided with 4 plastic SP-6 clamps. Two of these clamps go around the bottom seat rail, and the other 2 go around the top rail on the hard-shell seat or the 3rd rail (counting from the bottom) on the mesh seat.

The 2 clips that go around the bottom rail are provided with quick-release clamps. Place the clips on the bottom rail as shown in the picture below, and then screw the quick-release into the clip. Do not forget the small plastic spacer; the quick-release will not work reliably without it.

The 2 clips that go on the upper rail are provided with M5 fasteners; quick-releases are not necessary as the seat mount is held to the frame with a quick-release. Clip the SP-6 clamps to the rail and thread the bolts into place.

Set the 3 position upper seat mount in the lowest position (see photo). There is a quick-release skewer that goes through the front hole on the top of the rear section. Place the seat onto the trike and see if it lines up with the two mounting cups. Get the seat to fit by sliding the rear section in or out. Try to get the seat mount to sit at an angle similar to the picture below right. Hold the seat on loosely with the 4 plastic clips supplied (quick-release clips on the bottom, and bolted clips on the top) and then tighten the 2 lower quick-releases. Tighten the upper seat mount quick-release, and then tighten the 2 upper plastic clip bolts. Check to see that the rear section is still upright and then tighten the two rear section main clamp bolts evenly and tightly.



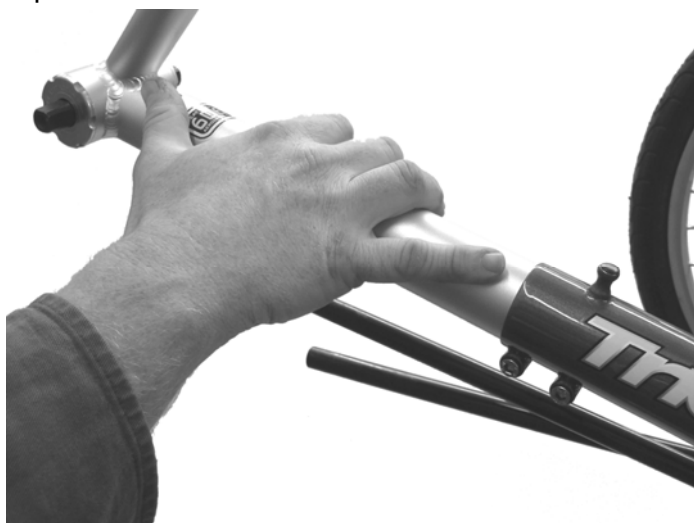
Viewed from left hand side



2.9 Fit the front boom to an approximate position.

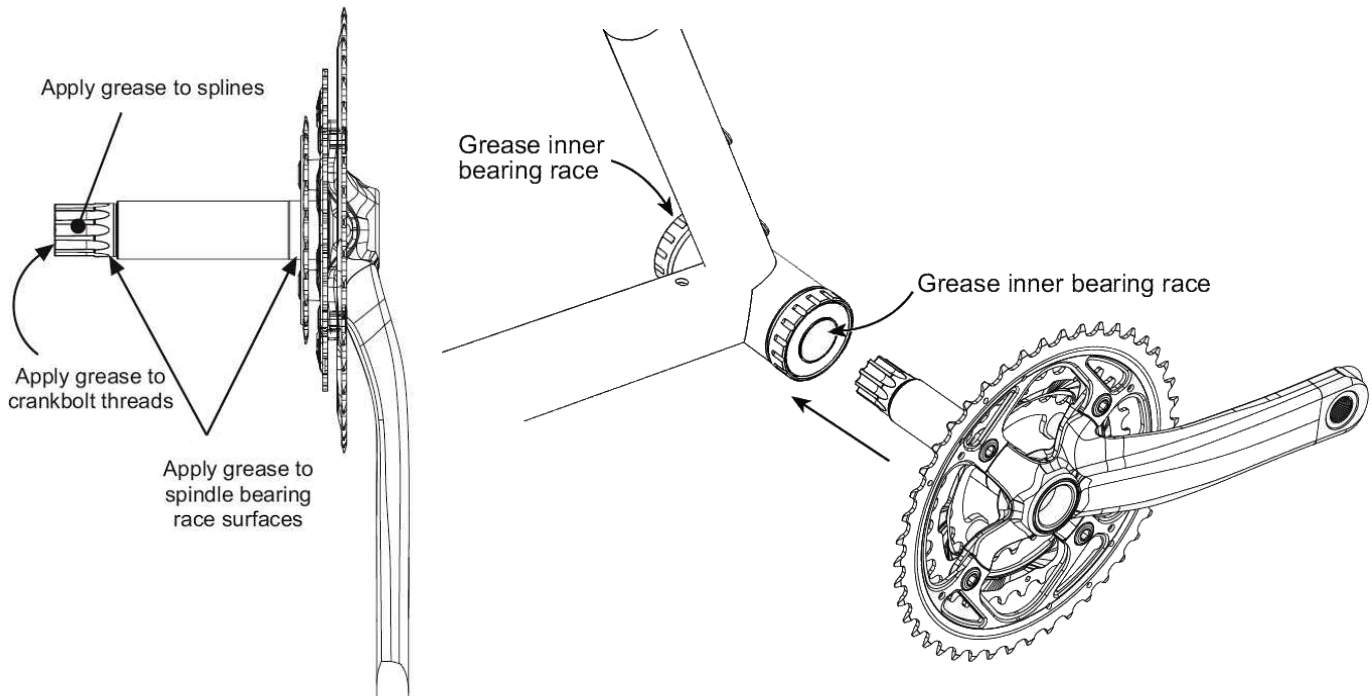
Fit the front boom into the frame taking care not to damage the plastic shim located inside the front of the main frame. Position the boom at approximately a hands span from the base of the front derailleur post to the end of the main cruciform.

Note: If you have purchased the optional quick-release kit, please refer to the instructions for its installation in Accessories Section of this manual.

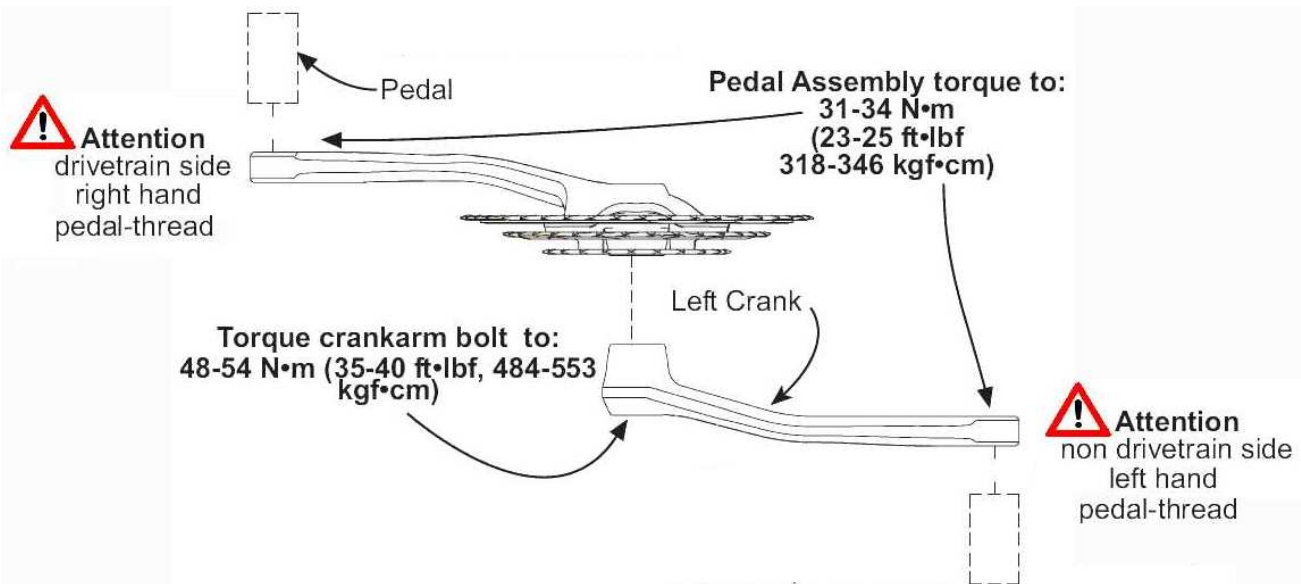


2.10 Fit the chainset

You now need to install the left and right sides of the chainset. Your trike is supplied with the bottom bracket already installed. It is very important to follow these instructions exactly. If the chainset is not installed correctly, it will develop play and annoying movement soon after being put into service.



Grease the inner bearing races as shown in the diagram. Grease is good... don't be afraid of using too much. Slide the right crankarm and spindle assembly through the bottom bracket until the left side splines come through the left bottom bracket cup, and the spindle stops. There will be a gap of about 3mm between the right crankarm and the bottom bracket.



Assemble the left crankarm onto the bottom bracket spindle using an 8mm hex key and torque as shown. The left crank arm will press against the bottom bracket with no gap. Check the assembly for play by pulling the crankarm away from the boom, alternating back and forth. If the crank moves, tighten crankarm bolt until no play is detected. If maximum torque has been reached, remove the crankarm from the spindle, apply additional grease, and repeat the installation. It may take several installations to eliminate all play.



Note: the seals on the bottom bracket are designed to prevent contamination and therefore must rub against their sealing surfaces. New seals will feel stiff when they are first installed. This is normal. With use the seals will wear in and loosen up.



Warning: if you do not follow the instructions for installing the bottom bracket exactly, then within a few miles the bottom bracket will develop play. It will feel much the same as a bottom bracket with a bad or worn bearing. If this happens soon after you begin to use the trike, retighten the bottom bracket.

2.11 Fit the pedals

(Your own if not ordered from us) – **Note:** the pedal threads are handed. The right hand pedal tightens in the normal direction; the left-hand pedal has a left hand thread, and tightens in the opposite direction to normal. Tighten the pedals to the torque shown in section 2.10

2.12 Adjust the seat angle

Check the tyres are inflated and then sit on the trike (see section 5.1) and decide whether the seat angle suits you. The seat can be set more upright (it was set to maximum recline in section 2.8) by simply opening the seat mount quick-release, sliding the seat mount off the quick-release, and slotting it back over using a different set of slots. Please refer to section 3.4

2.13 Set the handlebars

The handlebars on your trike adjust forward and back, as well as for width. Sit on the trike and adjust the bars to a position that feels comfortable. Typically, the angle of your elbow joint should be slightly more than 90 degrees open. Check the clearance between your hands and the wheels; also check the clearance between the brake levers and frame at full steering lock. Adjusting the handlebars to their widest comfortable position that doesn't interfere with the front wheels will give you the maximum amount of steering movement. Tighten the handlebar clamp bolts.



Do not use the handlebars to pull yourself out of the trike with; they are not meant for this purpose. Under normal use the handlebars will not slip in their clamps, they will however move if subjected to an abnormal force.

There is also no need to pull on the handlebars when riding. The trike is easily steered with a light grip of the fingers.

2.14 Set the front boom

Set the leg length by sitting on the trike and placing your **heel** on the pedal. Adjust the boom so that your leg is almost straight when the pedal is at its furthest away from you. Set the front boom upright (by eye), and then tighten the 2 clamp bolts.

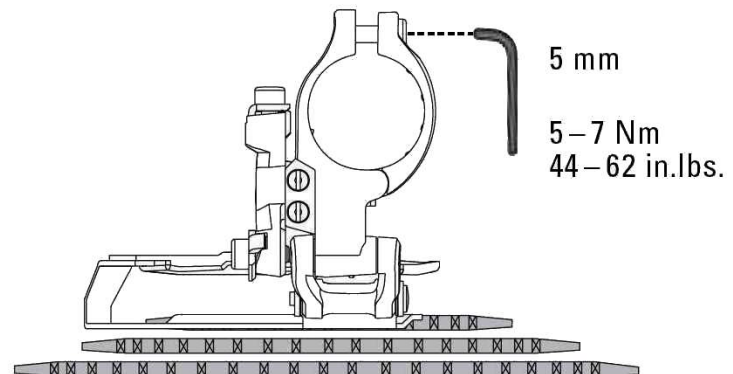
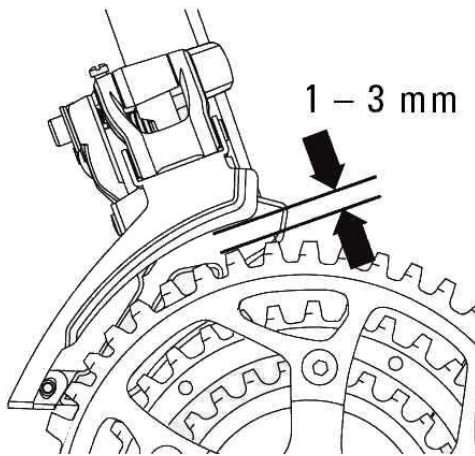


Check the boom is not extended past its minimum insertion length. The end of the boom should not be visible in the slot in the underside of the frame. If in doubt, set the boom a little longer than you think may be required as it will be easier to shorten the chain later. Try pedaling without the chain on to see if it feels about right.

2.15 Install the front derailleur



If you have ordered the Shimano bar end shifters, please refer to the separate instruction sheet for information on cable routing



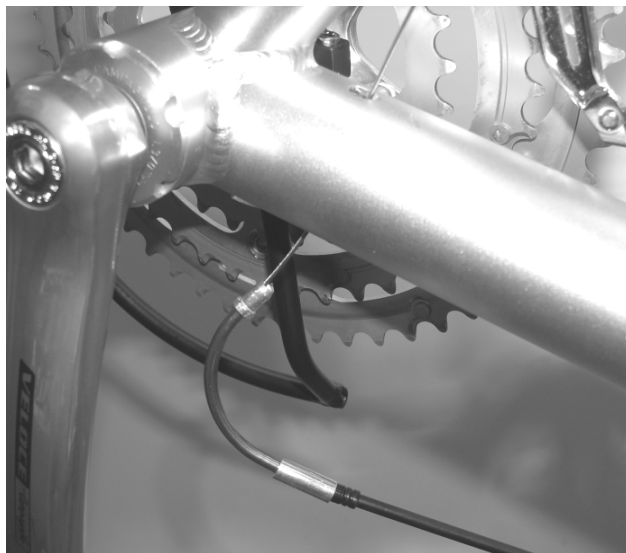
Next, the front derailleur needs to be installed. Its position is determined by the size of outer chainring. Attach the front derailleur to the derailleur post and tighten the supplied M5 bolt lightly so you can adjust the position of the derailleur. Adjust the position up or down the post so that clearance between the front derailleur cage and the large chainring is 1 – 3 mm.

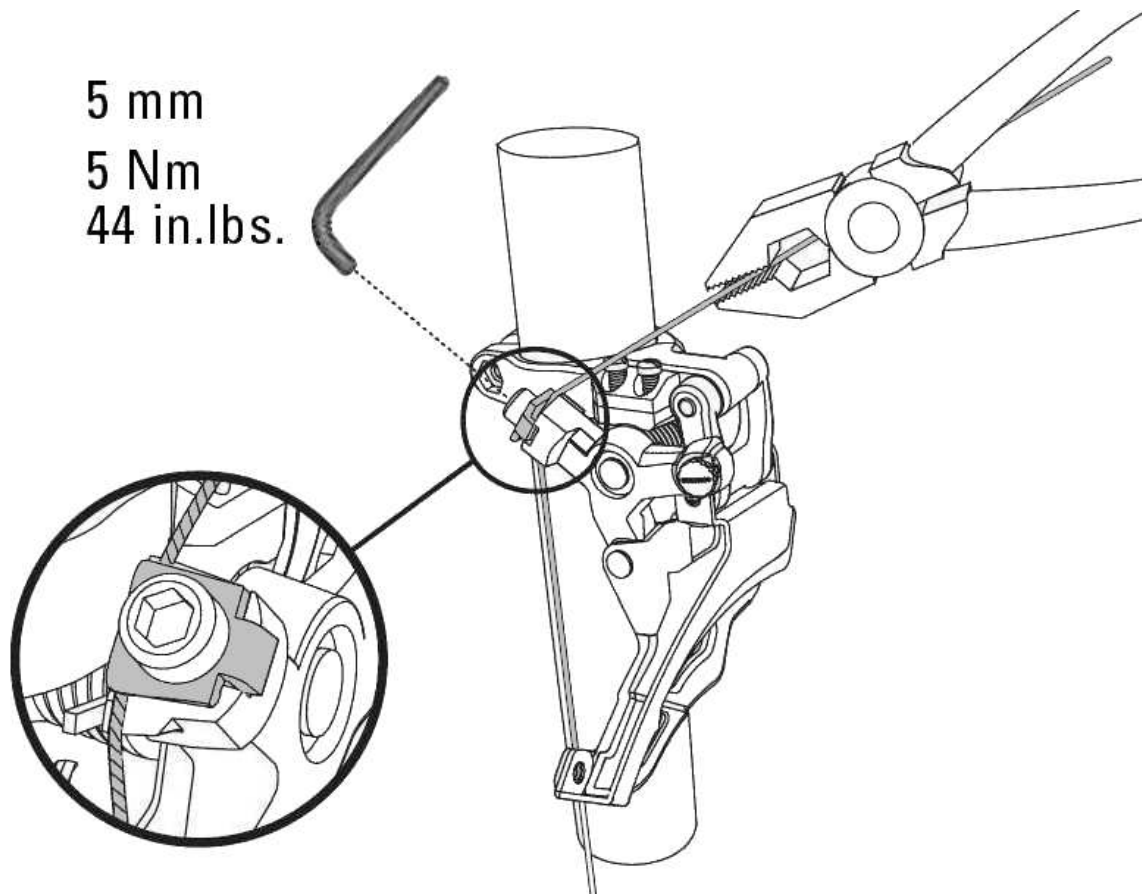
At the same time, align the front derailleur cage outer plate to be parallel with the chainrings.

Tighten the 5 mm hex clamp bolt to 5 – 7 Nm (44 –62 in.lbs.).

Check that the front derailleur cage is positioned over the smallest chainring. Place the shifter in gear position 'L'. Turn the front shifter barrel adjuster clockwise fully into the shifter, then turn counter-clockwise 1 full turn.

Thread the front gear cable (left hand shifter) outer casing through the guide on the side of the frame and up towards the end of the front boom. The front shifter casing is the shorter one. Thread the inner wire through the outer casing and then through the cable guide tube (chromed noodle). Pass the cable guide up through the rear (larger) hole on the underside of the front boom, so that it just pokes out of the hole on the top face of the boom. NOTE – the “noodle” appears to sit at an odd angle but this is correct and angles the cable towards the derailleur.





Pull through any slack cable. While holding the cable taut, turn the shifter through its range of movement to check the cable moves smoothly and that the cable is properly seated inside the shifter. Run the cable under the cable anchor washer and hold taut. Tighten the 5 mm hex cable anchor bolt to 5 Nm (44 in.lbs.). Be careful not to crush or deform the cable.



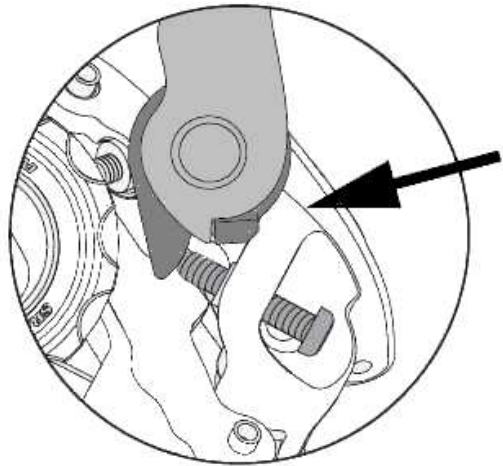
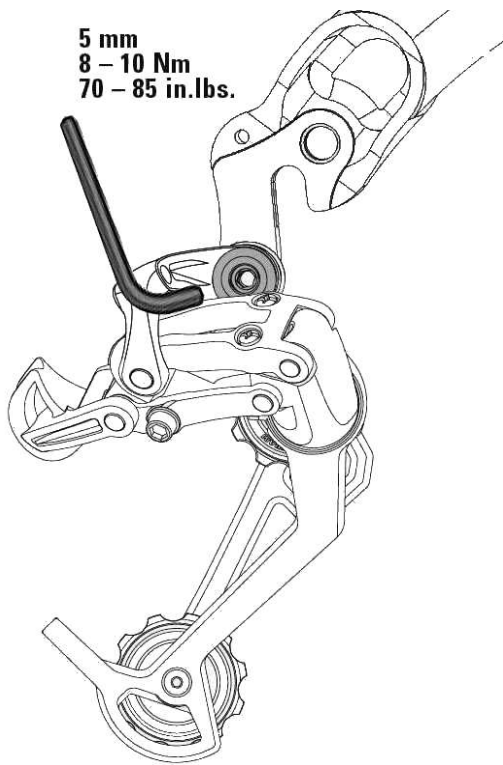
TIP - Do not trim any cables until you are happy with the various settings of front boom and gears. The loose end of the cable can be tightly coiled so that it is out of the way.

2.16 Install and connect the rear derailleur

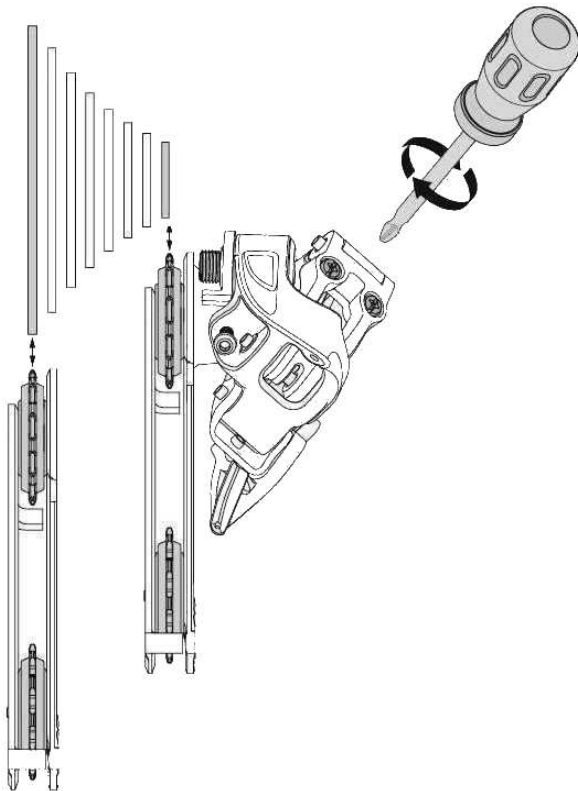


If you have ordered the Shimano bar end shifters, please refer to the separate instruction sheet for information on cable routing

Find the bag with the rear derailleur parts in it. Fit the rear derailleur to the rear dropout using a 5mm hex key, making sure the B-tension washer tab / b-adjust screw is clear of the rear derailleur dropout tab. Tighten the 5 mm hex hanger bolt to 70 – 85 in.lbs. (8 – 10 Nm).



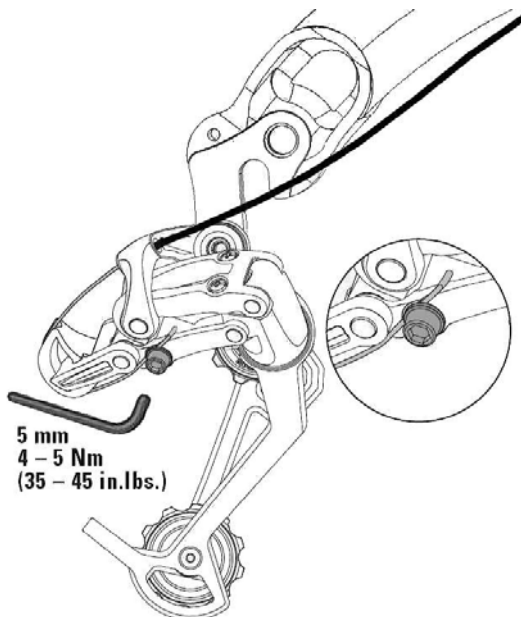
Check the stop plate is correctly aligned when viewed from the inside of the trike.



View the rear derailleur and pulleys from behind the rear wheel. Turn the limit screw marked 'H' on the outer link of the derailleur to align the upper guide pulley centre with the outboard edge of the smallest cog. Then, push the rear derailleur towards the larger cogs by hand. Align the upper guide pulley under the largest cog, centre to centre, by turning the limit screw marked 'L' on the outer link. The final adjustment will take place once the chain is installed.

Fit the rear shifter cable housing over the rear shifter cable (right hand shifter). This is the longest cable housing.

Thread the cable housing through all of the cable guides located on the right side of the main frame also using the cable to secure the chain tube hanging strap as per the picture below:



Fit the long length of gear outer casing into the rear derailleur. Clip the cable outer casing to the 2 guides on the rear frame using the black plastic clips provided. The third clip which is located behind the dropout will not be used. This clip is only to be used if you are fitting a rear-entry derailleur (like a Shimano), for front-entry derailleurs the cable runs on the outside of the swingarm.



Thread the inner wire cable through the outer casing through to the rear derailleur.

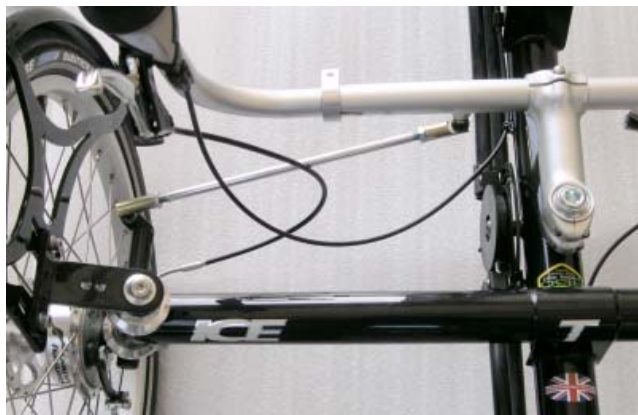
Check that the rear derailleur is in the smallest cog position. Rotate the rear shifter to the '9' position. Turn the rear shifter barrel adjust clockwise fully into the shifter, then back it off 1 full turn.

Thread the rear derailleur cable through the rear derailleur housing stop and through the cable guide on the fin. Pull the cable tight and position it under the cable anchor washer. Tighten the 5 mm hex cable anchor bolt to 35 - 45 in.lbs. (4 - 5 Nm).



TIP - Do not trim any cables until you are happy with the various settings of front boom and gears. The loose end of the cable can be tightly coiled so that it is out of the way.

Check at this point that the brake and shifter cables are routed correctly. They should look like the photos below.



2.17 Check the chain tube lengths

Find the chaintubes, pulley, and pulley bolt with 3 washers. Place the bolt through the pulley, followed by the 3 washers, and then put the bolt through the hole in the middle of the pulley plate (the black plate holding all the chaintubes together). Mount the chain tube assembly and pulley onto the frame and at the same time **pass the lower rear chain tube through the hanging strap** which you installed from the rear main frame cable guide. Ensure that the small tab on the frame locates in the notch on the pulley plate (just above the bolt). If tightening the plastic clips onto the pulley plate, be careful not to over-tighten the bolts; it is possible to damage the plastic clips if you do. These clips are pre tightened at the factory and are designed to allow some movement of the top front and rear tubes for correct chain alignment when in different gears.

Check for clearance between the chain tubes and the front chainset. If the top chain tube at the front is too long, shorten by cutting the tube at the front end to the required length with a sharp knife.

If the lower front tube is too long, adjust the front position of the tube by loosening the tube clamp at the pulley and sliding the lower tube rearward to the required position at the front and re-clamp the tube.

When the front of the lower tube is properly positioned, trim the rear of the lower tube off so it is the same level with the end of the upper rear chain tube. This is essential to allow proper folding of the rear section.

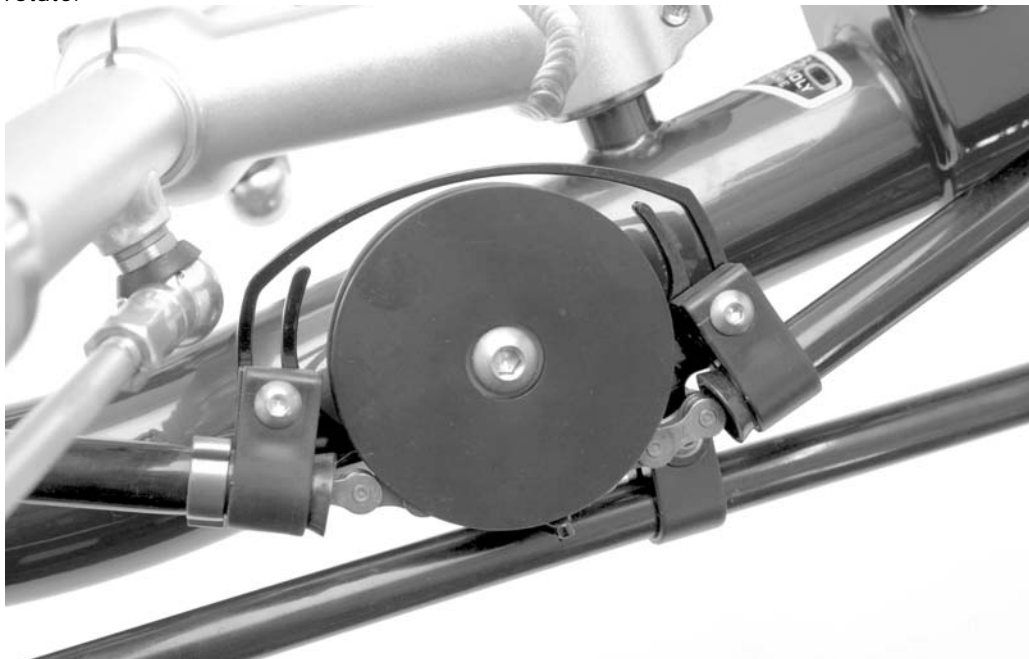


2.18 Fit the chain

Find the pack containing the chains and the 'R' pins. Remove the pulley and chain tube assembly from the trike. Clip an 'R' pin through one end of each of the two chains. Hold the chain tube assembly vertically and drop a chain down each tube (for the top tube, pass the chain around the pulley and down the other tube); the 'R' pins will prevent the chains from dropping right through.



Add two more 'R' pins to the bottom ends of the chains; this keeps them in the chain tubes while they are being fitted. Refit the chain tube set and pulley to the trike making sure the tab on the pulley plate is engaged in the slot on the pulley plate mount. Also make sure the pulley clamping bolt is tight. Check the pulley plate is secure and cannot rotate.



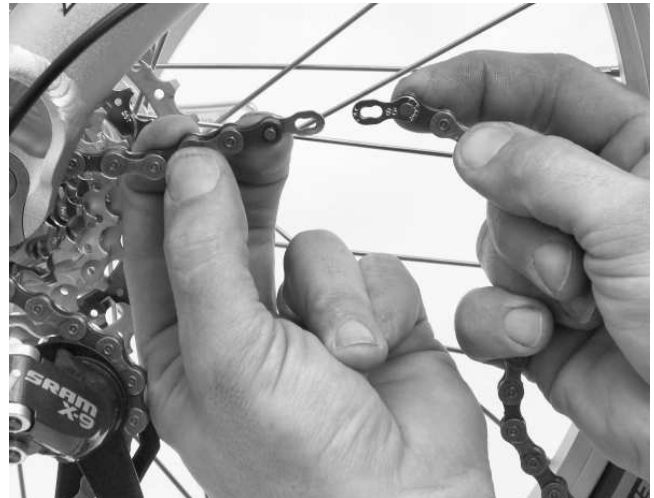
Twist the right hand rear shifter to the "9" position so that the rear derailleur lines up with the largest rear sprocket. Twist the left hand front shifter to the "H" position so that the front derailleur lines up with the largest front chainring.

At the front of the trike, pull the top chain through the top chain tube. Pass the chain through the front derailleur cage, around the large chain ring and then connect it to the lower return chain at the front using the quick connect link. Remove the 'R' pin from the top and bottom chains.

Now, checking that the chain is not twisted inside the chain tube, thread the bottom chain up through the derailleur and over the largest cog of the cassette.



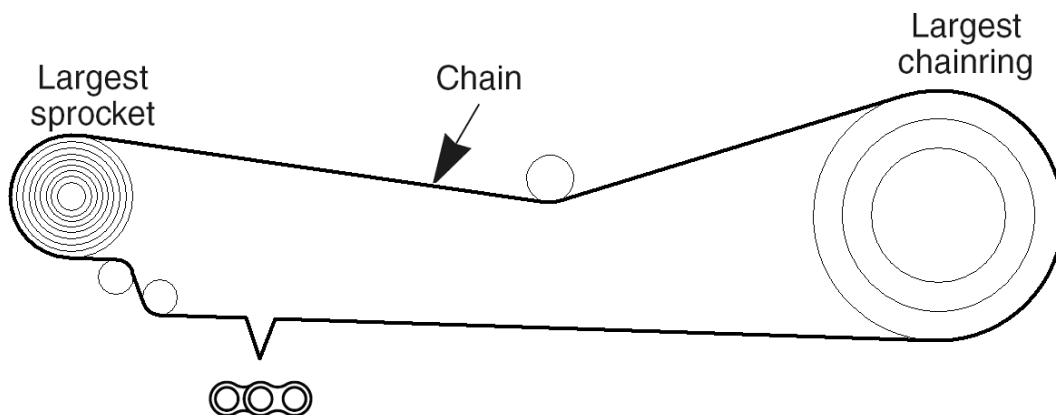
TIP - make sure the chain is correctly routed through the rear derailleur cage and goes the correct side of the tab on the derailleur cage between the two jockey wheels.



Connect the bottom chain to the top chain using the quick connect links supplied. Make sure that the chain is not twisted. Remove the last 2 'R' pins.



Now set the chain to length by removing a section of chain from between the rear derailleur and the lower chain tube with a chain rivet tool as below. Move the chain until one of the connecting links can be seen between the rear derailleur and the lower chain tube. Open the link and then work out how much chain to remove. Use an R pin to help stop the chain going back up the chain tube.



Add 2 links (with the chain on both the largest sprocket and the largest chainring). This should leave just enough slack so that the rear derailleur jockey wheels are pointing forward but so that they can still move up a fraction. Then check that there is not too much slack when using the smallest chain ring and smallest cassette sprocket.

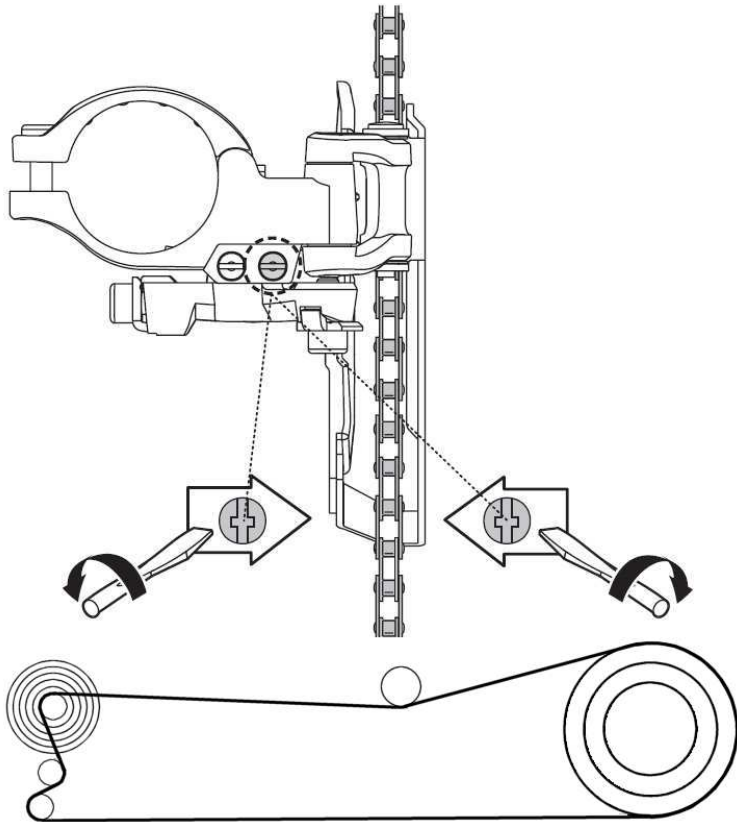


TIP – get an extra pair of hands to help with this. Make sure that any links you alter with the chain link remover are not stiff on the rivets. If in doubt, remove fewer links than you think as removing links is easier than riveting links back in. Use the quick disconnect link to open the chain and then punch out links and quick connect back together.

When you've finished adjusting the chain length, check at the pulley plate where the chain enters and leaves the chain tubes. The plastic clips should be adjusted vertically so the chain is running centrally where it enters and exits the chaintubes. This is also the position where the chain runs at it quietest.

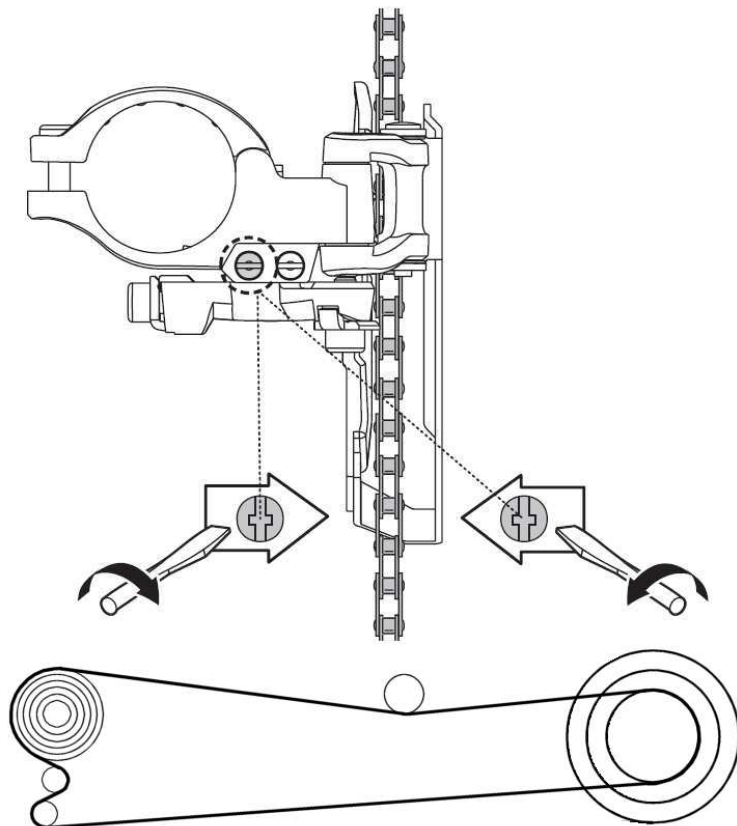
2.19 Check the gear shifting

While pedaling, shift the chain up and down the chainrings several times to take out initial slack in the cables. Any slack can be removed by adjusting the barrel adjuster on the shifters.



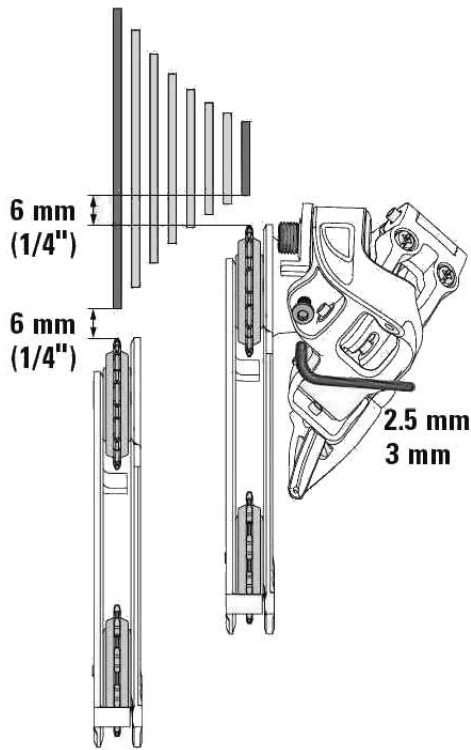
Adjust the Front mech high limit screw

Set the chain to the smallest rear cog and the largest front chainring. Adjust the high limit screw so that clearance between the front derailleur cage outer plate and the chain is 0 – 0.5 mm.



Adjust the Front mech low limit screw

Place the chain on the largest rear cog and the smallest front chainring. Adjust the low limit screw so that the chain is positioned close to the inner cage plate without actually touching it. If the front mech will not move to this position, it may be the cable that is holding it. Loosen the cable clamp, adjust the front mech, and then re-clamp the cable



Rear mech 'B' adjust

Shift chain to the small chain ring. While turning the crank, push the rear derailleur inboard by hand to the largest cog. Hold the rear derailleur in this position while making the following adjustment. Using a 2,5 / 3 mm hex wrench to turn the b-adjust screw until the chain gap equals approximately 6 mm (1/4") from tip of the cog to tip of upper guide pulley. While pedalling, release the derailleur and check the chain gap throughout the cassette.

Setting the chain gap at this point of your installation may be considered a rough estimate. Precision index shifting may require small changes of the b-adjustment while setting the proper cable tension. Do not use the b-adjust screw to adjust the rear derailleur to act as a chain-tensioning device or to prevent chain suck. This increases the chain gap causing poor shifting performance.

Shift the chain to the smallest cog. While turning the pedals, move the shifter up 1 click, to the "8" position. If the chain hesitates or does not shift to the second cog, increase the cable tension by turning the shifter barrel adjuster counter clockwise. If the chain shifts beyond the second cog, decrease the cable tension by turning the shifter barrel adjuster clockwise.

Repeat the two former steps until shifting and cable tension is accurate.

It is not enough that the chain should run quietly in each gear, it should also move smartly from one sprocket to the next, without clattering or jamming.

Now check for smooth changing up through the range, checking one pair of sprockets at a time (8-7, 7-6, etc.) Make any minor adjustments by turning the shifter barrel adjuster. Finally, check that the chain cannot jump off the cassette, either on the inside into the spokes, or on the outside onto the dropout. This is adjusted using the high and low limits screws as shown in section 2.16

Cut the cable off leaving about 3" (75mm) past the cable clamp, and crimp the cable end cover onto the cable end.

2.20 Fit the rear mudguard

Note: If you have purchased the optional quick-release, full-wrap rear mudguard kit, please refer to the instructions for its installation in Accessories Section of this manual.

2.21 Fit the mirror



The mirror comes with instructions showing how it is to be assembled. The mirror is mounted in the top of one of the handlebars (right handlebar if you drive on the left, left handlebar if you drive on the right). A plastic plug is provided for the opposite handlebar. Many people prefer to ride with a mirror both sides.

If you have fitted the option bar-end shifters, you will have fastened a mirror mount to the handlebars. Insert the mirror into the end of the mirror mount and tighten.

2.22 Fit the flag

Place the flag in the flag holder hole in the left or right side at the top of the seat frame.

If you have an 'S', the flag mounts in the tube on the top seat mount rail.



2.23 Reflectors and bell

Reflectors and a bell are supplied with your trike. The bell can be mounted anywhere on the handlebars where it can be reached easily and doesn't interfere with steering the trike. The reflectors have brackets which allow the front reflector to be mounted on the front derailleur post, and the rear reflector to be mounted on the top rail of the seat.

2.24 Check nuts and bolts

Generally, check all nuts, bolts and quick-releases to make sure everything is tight.

3.0 Adjusting your TRICE

Fine-tuning for leg length, seat angle, handle bar width / angle, brake lever reach, tyre pressure etc are all well worth taking time to set to your personal preference.



TIP - Experiment but always go for a reasonable (a mile or two) test ride to decide if an adjustment is right for you.

3.1 Tyre pressure

Typical tyre pressure for the standard tyres is about 70psi (4.6 bar). Do not inflate the tyres more than the maximum pressure recommended on the tyre sidewalls. You will need to experiment a bit to find the tyre pressure that suits you best. Higher pressures will allow the trike roll more easily, but will transmit more road shock to the rider. Lower pressures will feel much more comfortable, but there can be more rolling resistance. Also try experimenting with tyres; there are now large cruiser tyres available which can provide a comfortable ride and reasonably low rolling resistance, as well as small high-pressure racing tyres that offer very-low rolling resistance and sport-car type handling.

3.2a Mesh seat cover

When new both the seat cover and the straps stretch a little, and in the first few weeks of use you may need to re-tension the seat by tightening up the straps. In time it will settle down. For maximum comfort you may need to tighten the cover more in some places than in others. In general, the base of the seat should be tight, and the back looser.

3.2b Fitting the hard-shell seat to you

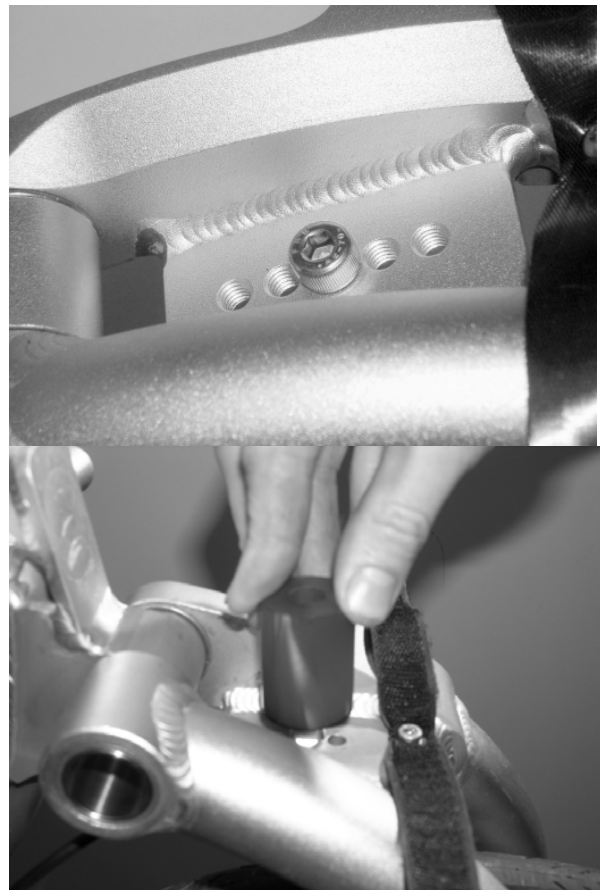
The hard-shell seat is supplied with adhesive-backed foam. Try experimenting with cutting out pads and sticking them on. You should be trying to pad any spaces where you do not touch the seat. *Don't pad the pressure points; pad around them.* You can temporarily hold the pads in place with a bit of adhesive tape. Don't peel off backing of the foam sheet until you are certain of their position. The adhesive is very strong.

3.3 Suspension adjustment

The suspension adjusted is accomplished by the selection of elastomers and mounting positions. To adjust the suspension, find an assistant, and then proceed as follows:

- Shift the chain onto the smallest sprocket at the rear ('9')
- Select the elastomer based on the table in Appendix B.
- Screw the shock pin into the centre hole in the shock plate.
- Sit on the trike and put your feet on the pedals. Press lightly to apply a small amount of tension to the upper chain.
- Have your assistant look at the trike from the side. In profile, the chain should appear to pass about through the middle of the suspension pivot. If you don't have an assistant, reach under the seat and put your finger (carefully! Don't trap it in the pivot) into the hollow pivot pin. Feel whether the chain is higher or lower than the centre of the pivot. If the chain is higher than the pivot, the suspension is too compressed, and the elastomer has to be moved to the upper hole on the shock plate. If the chain is still higher than the pivot, try replacing the elastomer with a harder one.
- If the chain is lower than the pivot, the suspension is not compressed enough, and the elastomer needs to be moved to the lower mounting hole. If the chain is still lower than the pivot, try replacing the elastomer with a softer one.

The elastomer is removed by pulling and twisting it off of the shock pin. Unscrew the pin and move it to the new hole. Press the elastomer into place on the pin again.



The elastomers have different compression characteristics, and you may find other combinations of elastomer hardness and pin position which suit the roads you ride on and your riding style better; it is just a matter of trying different combinations. The elastomer system is simple and small enough that you can carry a couple of elastomers in your pocket and change them when you are out on a ride.

If you carry a significant amount of luggage (perhaps you are going on a long tour), re-tune the suspension with the trike loaded; you will definitely notice the difference. It is possible to fit 2 lighter elastomers side-by-side if you find one elastomer doesn't provide the ride characteristics you want.

Elastomers will become stiffer in cold weather, and may take a couple of miles before warming up from use. In very cold weather, it would be possible to remove the elastomer and keep it warm (in your pocket) while you are away from the trike. Riding with a cold, stiff elastomer will not harm the trike or the elastomer; you just won't feel all the benefits of riding with suspension.

The rear swingarm is held in the normal position by a double-sided Velcro strap. This bolts on through the mudguard hole as shown in the picture above. The purpose of the strap is to keep the rear swingarm from dangling when the trike is picked up. To fasten, place the trike on the ground with no weight on it. Wrap one side of the Velcro strap around the curved frame tube where the corresponding Velcro strip has been placed. The other loose end of the Velcro strap is then wrapped over the first.

3.4 Seat angle adjustment

The seat has 3 positions of adjustment, and adjustment is simple and quick.

- Loosen the seat mount quick-release lever.
- If you want to make the seat more reclined set it to the slots closest to the seat cup. If you want to make the seat less reclined, then set it to the slots furthest from the seat cup.
- Re-tighten the seat mount quick-release. If you have fitted the suspension rack, make sure the rack mounting plates are also hooked in place.



3.5 Seat brackets

There are 3 accessory seat mounting brackets available for your trike. The FF and FB brackets are used to move the position of the seat forward or back. The FF and FB brackets are installed onto the trike in place of the seat, using the 2 stainless steel Mikalor clamps provided. A strip of adhesive-backed protection strip is supplied to be fitted to the main seat mount on the trike where the small tube bears against it. A cable tie is also provided to strap the small tube to the main frame.

The FF bracket is used to move the seat forward on the trike. This is useful if the rider is small, and cannot adjust the pedals close enough without their heels hitting the crossaxle. Fit the FF bracket to the trike with the supplied clamps, then fit the seat as you would normally (section 2.8). You will have to push the rear section into the frame a little.



The FB bracket is used to move the seat backwards on the trike. This is useful if the rider has long legs, and cannot adjust the pedals far enough away from them. Fit the FB bracket to the trike with the supplied clamps, then fit the seat as you would normally (section 2.8). The plastic clamps will have to be turned around from how they are normally mounted. You will have to pull the rear section out of the frame a little.

Note: using this bracket with the hard-shell seat will reduce the maximum seat recline available.



The TT bracket is used as standard on the 'T' and is also used by shorter riders on the Q who would like to sit more upright. The TT bracket has 4 positions and can be mounted forwards or backwards, giving a number of positions for the upper seat mount.



Off Road

Use the TT bracket on the 2007 Trice Q/QNT in conjunction with the FB bracket to improve rear wheel traction and weight distribution for off-road riding (not a recommended combination for short riders - also not compatible with pre 2007 Q, S or T)

3.6 Leg length

A small adjustment can be quite noticeable, just like adjusting the saddle on a conventional bike.

- Change gear to the smallest chain ring.
- Undo the two clamp bolts under the front boom. They must be loose.
- Slide the front boom in or out by twisting and pulling or pushing



TIP – It is easier to move the boom if you get a helper to sit on the trike with both front brakes on.

- Check the boom is vertical by eye. It's not necessary to measure anything, if it looks upright, then it will be fine.
- Tighten the two clamp bolts under the front boom.
- If you have moved the boom by more than approximately 10mm you will need to check that you have the correct chain length (see Fitting the Chain - section 2).

3.7 Brake lever adjustment

The position of the brake lever relative to the handlebars (the 'reach') can be adjusted. It can be useful for move the lever closer to the handlebar for riders with smaller hands.

For Gator Hydraulic brakes, there is an adjustment screw on the inside of the lever near the pivot. Adjust the position of the lever using the adjuster screw to the desired lever reach. Use a 2 mm hex key to adjust the screw.



For drum brakes, the lever has a reach adjustment screw on the underside of the lever body, between the cable entry and the handlebar clamp. Use a 2 mm hex key to adjust the screw.

Other knob, located on the inside of the lever, controls the leverage ratio of the brake lever. Changing this setting changes the amount of cable the lever pulls, and affects the feel of the brakes. The usual position is with the knob turned fully clockwise, so that the minimum amount of cable is pulled (but with the maximum power). If you fit other brakes, you will need to experiment to find the best position.



4.0 ICE Optional Accessories

Instructions for many of our accessories are now packed with the accessory itself. These include:

- Front mudguards
- Neck rest
- Full wrap rear mudguard
- Chainring guard
- Easy adjust chain management system
- Quick release kit
- Rear disc brake

If you require an additional copy of these instructions, they may be downloaded from our website at <http://www.ice.hpv.co.uk/reference/manuals.htm>

4.1 Computer

A cycle computer can be fitted with the aid of the optional mounting kit. The computer display mount bolts (supplied) onto the bottle bosses on the main frame (just in front of the main cross joint).

The sensor mount is fitted to the kingpost balljoint mount and set so that the sensor lines up with the magnet clamped onto the spokes. The exact position will depend on the model of computer that is installed. To fit the sensor mount, you will need a thin 11 mm spanner, and a 13mm spanner. The 11 mm spanner is to grip the small flats of the ball joint under the rubber shield, while you use the 13mm spanner to loosen or tighten the ball joint nut.

If you are fitting a wireless computer, the display should now be able to receive signals from the sender. Because wireless computers are designed with upright bicycles in mind, they do not always work well on recumbent trikes. If you find the computer is under-reading, or not receiving a signal at all, try moving the position of the sensor so it is higher or lower; the sensor can be mounted below the sensor mount and the sensor mount can be turned over to gain/lose addition height. As a last resort, the sensor mount can be bent to a more vertical position, which some wireless computers seem to prefer.

If you are fitting a wired computer, you will first need to secure the display to the display mount. Lead the cable out from the display (leaving a small amount of slack so the cable is not strained) and along the underside of the crossaxle to the kingpost. Hold the cable in place temporarily with small pieces of electrical tape. Lead the cable along the kingpost steerer arm (again, leaving a small amount of slack so the kingpost is free to move without straining the cable) and secure the sensor to the sensor mount. Any extra cable can be coiled into a small loop and secured to the steerer arm with a supplied cable tie. Check that the steering is able to move completely and freely in both directions without straining the cable. Secure the cable to the frame along the underside of the crossaxle using the supplied cable ties. Some people prefer to secure the cable with a single length of electrical tape and cable ties securing each end of the tape and cable.



4.2 "Handlebar" bag side mount

This optional item allows a standard "handlebar" bag to be mounted beside the seat. The mount is clamped around the seat frame cross rail and adjusted to the desired position. The bag side mount is made to take a standard Klickfix handlebar bag fitting, but many others will fit as well. Follow the fitting instructions that came with your bag, to mount the bag onto the side mount.



4.3 Lights.

Front lights may be fitted to the front derailleurs tube utilising the optional ICE front light mount. Rear lights can be mounted to the rear of the carrier, on the upper seat cross-rail, or on optional neck rest. The instructions for installing the front light mount are printed on the packaging. Please ensure that the mount is tightened properly.

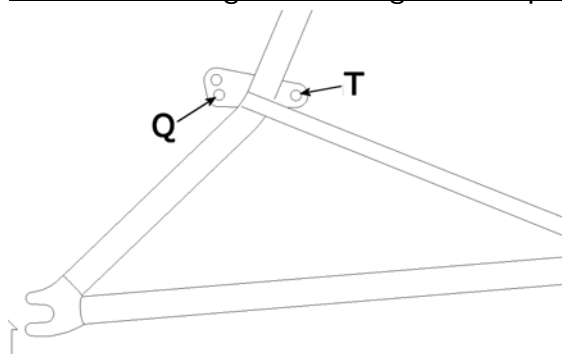


4.4 Extra water bottle mount

An extra water bottle mount can be fitted to the seat frame by using the option ICE bottle cage mount and a bottle cage. Fitting instructions are included with the mounts.



4.5 Assembling and fitting the suspension rack



Assemble the rack by finding the upper rack arms, and bolting them onto the correct lug, as show in the diagram.

The supplied mudguard can now be fastened in place. A M5 x 12mm button-head bolt goes through each mounting hole in the rack, a rubber washer is then placed on the bolt, followed by the profile, the metal washer, and then the nylock nut. Tighten the nut snugly until the rubber washer begins to compress. **Do not over-tighten.**

Fasten any lights or reflectors onto the rear of the rack.

Slide the long quick-release through the lower rack mount (the spindle welded into the frame)



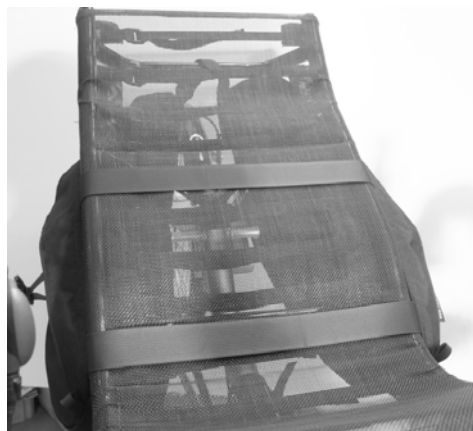
Slacken off the seat mount quick-release.

To fasten the rack to the trike, it is easiest to undo the top seat mount quick-release, unclip the top seat mount, and rotate the seat forward.

Slide the lower mounting dropouts on the rack onto the lower rack mount on the frame. Rotate the rack forward slightly until the upper rack arms can slip over the seat mount quick-release.

Rotate the seat back into position, locating the seat mount back onto the seat mount quick-release. Tighten both quick-releases.

4.6 Fitting Radical bags



Radical bags are extraordinarily simple to fit. The bags are simply held the right way up (so you can read the writing in the side), and they are draped over the seat. The top strap is either wrapped around the top seat tube if you don't have a neck rest fitted (photo left), or looped over the neck rest base if it is fitted (photo lower right). Gently pull the bags until they fit neatly around the seat.



4.7 Fitting a Rohloff

The left side CNC rear drop out on the standard Trice models is equipped with a mounting point for the Rohloff OEM2 axle plate (Rohloff No 8227) making a tidy job of a Rohloff retrofit.



What you will need:

- A complete built rear wheel (the hub is only available as 32 hole) and:
 - If you don't want to run a rear disc parking brake
 - Rohloff Art Nr: 8015 SPEEDHUB 500/14 CC EX OEM Silver
 - Art Nr: 8250 Chain Tensioner
 - Art Nr: 8227 Axle Plate CC OEM2
 - Or, if you want to run a rear disc parking brake using our optional kit then we suggest using:
 - Rohloff Art Nr: 8025 SPEEDHUB 500/14 CC DB OEM Silver
 - Art Nr: 8250 Chain Tensioner
 - Art Nr: 8227 Axle Plate CC OEM2
 - Art Nr: 8281 Brake Disc 160 mm, International standard 6 bolt fixing for Shimano.

For more information on Rohloff, please see <http://www.rohloff.de/en/home/index.html>

5.0 Riding your TRICE



CAUTION: If your feet fall from the pedals when you are riding then they could be dragged under the cross axle of the trike. Therefore the trike should only be ridden with your feet securely attached to the pedals; either with special shoes and pedals which you clip into or toe clips and straps.

We recommend the use of 'clipless' pedals. There is more information in section 8 of this manual. They are a safe way of attaching your feet to the pedals. Remember, because you are now riding a tricycle, there is no need to put your feet down until you want to get off the trike.

5.1 Getting on and off the trike.

Getting on

Begin by standing in front of the cross axle with one foot on either side of the front boom.

Now bend down and reach back to hold the side of the seat to help lower yourself as you sit. **Try not to push or pull on the handle bars as you get on and off.**

Getting Off

This is much like getting on, but in reverse order. Sit forward on the seat and put your feet firmly on the ground. Reach behind you and hold the side of the seat while you push yourself up into a squatting position before standing up.



Note: It is possible to damage the hard-shell seat if these instructions are not followed. Not all parts of it are capable of handling the weight of a full grown person trying to get out of a trike. Seats damaged in this way are not covered under warranty.

5.2 Initial test ride

Start on a flat piece of road or drive preferably away from traffic. The front brakes are independent so the left brake operates the left front wheel and the right brake operates the right wheel. Sit on, clip in and make sure you know where the brakes are and that they stop you moving. Before you have ridden more than a few yards, **check the front brakes. MAKE SURE YOU CAN STOP!** You should do this before each ride, as well as checking your brakes for damage and wear.

Steering is very easy and natural and you will soon become unaware of the movements required.

Gear changing - As with any derailleur system you can only change gear when you are pedalling and moving forward. It is easier to change if you are not putting a lot of force on the pedals, particularly when changing from a high to a low gear. The rear derailleur is operated by the right shifter, and the front using the left shifter. You should not try to change into the lowest gear (largest rear sprocket) unless you are on the middle or lowest (smallest) chain wheel, because the chain will put strain on the rear derailleur.



TIP - Try to get into the habit of not crossing over the gears at the extremes – don't run on the biggest chain ring and the biggest rear sprocket or the smallest chain ring and the smallest rear sprocket. This will help prolong the life of the transmission. Also try to anticipate hills and change to a lower (easier) gear before you get onto the steep part of the hill hence avoiding changing gear under pressure.

Do not change gear when the trike is rolling backwards, as the chain will jam in the rear derailleur and likely damage it. When you are riding, you can make minor adjustments to the indexing of the gears using the adjusters located where the cables exit the shifters.

5.3 Stopping in a low gear

As with an ordinary bicycle it is best to get into the habit of finishing your journey in an easy gear so that you can pull away easily when you start again.

5.4 Relax

Whilst riding sit back and relax. **DO NOT PULL ON THE HANDLEBARS**; just hold them lightly. The trike will tend to steer itself in a straight line depending on the road surface and camber.



TIP – The steering of the trike runs on ball bearings so it is very smooth and requires minimal effort to steer. The gear cables run forward and backwards and the spring effect in these cables tend to make the trike slowly turn to the left if you let go of the handlebars completely. This is normal and we do not recommend riding without holding at least one of the handle bars or you will not have proper control of the trike.

5.5 Cornering

Your trike is inherently very stable under normal riding conditions. Cornering at high speed can cause your trike to lift a wheel, or in worse cases, roll over. Leaning into the corner can help this, and is a fun technique that all trike riders learn.

Take care on corners which have a 'reverse camber.' Reverse camber is where the outside of the corner is lower than the inside. On a corner with reverse camber, the trike will try to move to the outside of the curve, which could take you off the edge of the road, or into the oncoming lane.

We recommend that you find a quiet smooth surfaced area (such as a car park or firm grassy field), and get a feel for handling your trike. Try turning at various speeds to find the point where your starts to lift a wheel. It is better to learn this in a quiet park than a busy street.

When you are negotiating a corner at speed, remember that your weight shifts away from the inside wheel. You must remember that it is very easy to skid or lock the lightly loaded inside wheel, and that wheel is contributing less to your ability to brake and steer.

5.6 Handling

You should avoid riding the trike on two wheels. It is possible to do, with considerable practice, but it places unfair stresses on the wheels and you will not be able to control the trike properly.

If you lock the back wheel (using the optional rear disk brake), it is possible to make the back end of the trike skid around; this is the so-called 'handbrake turn'. While fun to do in a quiet car park, this maneuver can cause a loss of control, and should not be attempted around other vehicles. It can also scrub the tread off an expensive tyre in a very short time.

Heavy loads should be carried as low as possible, and as much in the middle of the trike as you can. Heavy loads mounted high on the back of the trike will affect its handling, especially at higher speeds and when cornering. Do not carry a child in a child seat over the rear wheel. Besides affecting the trike's stability, the trike is not heavy enough to sufficiently support a child without someone sitting on it (it can fall over when you get out of the seat). For carrying children or heavy loads, we recommend towing a trailer. There are plenty of 2 wheeled trailers on the market, and they can be very heavily loaded without affecting the handling of the trike. Crash tests done in Germany show a child is much safer in a trailer than in a child seat.

5.7 Brakes

The front brakes are operated independently by each main brake lever. The left lever operates the left brake, and the right lever operates the right brake. Normal braking should be done with both levers together and evenly for excellent stopping power; you will find your trike to be very stable under braking. Unlike other trikes, stopping using only one brake will not result in the trike veering from its intended course. This 'No-Brake-Steer' geometry is a safety feature that ICE developed and is designed into every trike we make.

Because your weight is being supported on 3 wheels rather than 2, you will find it easier to lock up the brakes on the front wheels. The trike will not roll over, but it will slide. Locked wheels are hard on tyres, and are not as efficient for braking as a wheel which is still turning. When you are braking into corner, you will find the unloaded inside wheel will lock up quite easily. It is not a problem, but remember that the lightly loaded wheel is not contributing much to steering or braking the trike.

If you brake violently, at low speeds and with both brakes, you may find the trike wants to lift its back wheel. In extreme cases, you can brake hard enough for the chainring to hit the ground.

Brake drums, calipers and rotors will heat up when they are used. They can get very hot, especially after a long descent, and it is possible to burn yourself if you are not careful. Do not touch them while riding or immediately after dismounting from the bicycle. Check that the brake components have been cooled down before attempting to adjust the brakes.

5.8 Hill climbing

A recumbent trike or bike tends not to climb a hill as quickly as an upright bike whose rider can get off the saddle to use his/her weight to get extra effort. It will climb in comfort at a lower speed and in a lower gear. Try to keep your cadence up by shifting down early. You should never need to get off and push, even when carrying a heavy load. Just gear down and keep spinning until you reach to the top of the hill.

5.9 Descending a hill

CAUTION, take care on your first downhill rides until you gain experience. It is not unusual to reach speeds of over 40 mph on steep descents. You will find you can go faster and with much more confidence once you are used to the way the machine handles. Because there is less air drag in the recumbent position you will go faster than a bike. You have powerful brakes with good stopping power.

CAUTION, the brakes are powerful and if they are applied sharply on some of our models with higher seats, you can cause the rear wheel to rise up. This can result in some loss of directional control.

5.10 Ground clearance

When going over very rough ground, it is possible, but unlikely, that the underside of the frame could make contact. If you think there is a chance that the underside of the frame may hit an obstacle, get off first and look under the trike to see how close things are getting. You will quickly learn to recognize terrain that your trike can easily handle. If you do contact the underside of the frame then, it's unlikely any serious damage will be done (other than scratching the paint) but check to make sure everything is OK. A good way of riding over obstacles is to aim your trike so that the object goes directly under one of your feet. This way it misses the front wheel, the central frame, and the rear wheel.

5.11 Muscles

The first few times you ride your new trike, you will feel the muscles on your legs working harder than you may be used to. This is because pedaling from the recumbent position uses different muscle groups than riding in an upright position. You will find a noticeable improvement in this in a few days, and with a couple of months, you won't notice anything different at all.

When you are riding a recumbent, the best approach is to keep your cadence a little high, even if it means gearing down a little early. One good reason for this is that the recumbent seat allows you to brace yourself when you push on the pedals, and this makes it possible to put large loads into your knees. On an upright bike, if you pushed that hard, you'd lift yourself out of the saddle. Also, try to remember to shift down before you come to a stop; you will find starting off again to be much easier.

5.12 Folding and unfolding the trike

Folding and separating tool-lessly

- Ensure the chain is in top gear (on the smallest sprocket at the back)
- Release the two lower quick-release clamps holding the seat in place. Release the seat angle quick-release behind the seat. Slide the two clamps under the seat off the main frame seat cup. Remove the seat.
- Remove the rear mudguard and/or the rear carrier.
- Remove the back wheel by undoing the quick-release axle and sliding the wheel down out of the dropouts, holding the rear derailleur back out of the way if necessary.
- Undo the Velcro retaining strap, then lifting both rear chain tubes up to the lower rack mount; fold the back legs under the frame.

If you have the optional Q/R kit you can go further

- If you want to further reduce the length, release the quick-releases holding the front boom and either push it in fully, or pull it out completely. It is a good idea to mark the position of the boom with a permanent marker so it can be easily returned to its original position when you reassemble the trike. If you pull it out completely, you will need to unhook the chain from the chain rings.
- Remove the front mudguards (if fitted) by releasing, then unscrewing the quick-releases.
- Release and remove the quick-releases from the front wheels.
- Release the quick-releases on the handlebars and fold them down flat.

Reassembly if you have the optional Q/R kit.

- Stand the handlebars up and secure the quick-releases. Check that they are tight.
- Fit the front wheels and secure the quick-releases. Check that they are tight.
- Fit the front mudguards.
- Return the front boom to its original position. Either pull out the front boom, or push it back in if you removed it (take care not to damage the thin plastic shim inside the main frame tube). Secure the quick-releases, and check that they are tight.

Reassembly from the standard fold

- Lift up both rear chain tubes, and hold them up to the lower rack mount. Fold the back legs out from under the frame. Secure the Velcro retaining strap.
- Replace the rear wheel. Hold the derailleur mechanism back out of the way if necessary. Ensure the chain is engaged on the smallest sprocket. Secure the quick-release, and check it!
- Replace the rear mudguard and or the rear carrier, and check they are secure.
- Replace the seat. Place the seat on the lower seat cup on the main frame, and slide the seat clamps back over the seat cup. Fasten shut the two quick-releases on the clamps. Hook the top seat support back onto the quick-release behind the seat, then secure and check the quick-release.

6.0 Maintenance

Your Trice has been built from quality materials and parts, and will last for many years with just a bit of simple maintenance. Although there is nothing on the trike that a bike shop can't maintain for you, doing your own basic maintenance gives you a good feel of how your trike is working.

6.1 Lubrication



TIP - as with any cycle, a small amount of regular care will prolong the life of your trike and its components. The simplest thing you can do is to regularly give a quick drop of oil to all of the moving parts especially after riding in heavy rain. Always keep the chain and chain tubes oiled.

Lubricating the Chain

At regular intervals, and always after riding in wet weather, you should lubricate the chain. The chain tubes supplied with your Trice will help keep the oil on the chain by protecting it from rain and dirt, prolonging chain life. Check with your local bike shop to see which chain lube works best in your area. It is not necessary to use a lot of lube on the chain; better to use a little every week than a lot once a month. Wiping the chain down occasionally with a dry cloth will help keep it clean and prolong its life.

Other lubrication

Rear hub, head set and pedal bearings on your trike will need greasing from time to time depending on riding conditions, the same as any conventional cycle. The plain bearings in the suspension pivot need no lubrication. If they show any significant wear (unlikely), they are simply pushed out and replaced with new ones.

The steering ball joints don't require lubrication.

The front hub bearings, handlebar (stem) bearings, and pulley bearings are pre-lubricated and sealed. If they feel rough or sloppy, they should be replaced.

6.2 Adjusting cables

Cables don't normally need a lot of adjustment. When they are new, they will stretch slightly, and that stretch needs to be adjusted out of the system. Check all cables regularly for signs of damage.

Brake Cables

To adjust the brake cables, loosen the locking nut on the barrel adjuster (this is the part that hooks into the brake backing plate on the inside of the hub). Screw the barrel adjuster out a little and check the brakes. When squeezing the lever, it shouldn't come too close to touching the handlebar grips. When the lever is released, the wheel should turn freely and not drag on the brakes. When the cable is adjusted, tighten the locking nut. If you are out riding and feel the cable could be a bit tighter, you can turn the adjuster on the brake levers to fine-tune the cable tension.

Derailleur Cables

These are adjusted in the same way as brake cables. There is an adjuster on the rear derailleur, but none on the front. For the front derailleur, it is only necessary to have the cable tensioned slightly when the chain is on the inside chainring; fine tuning can be done using the adjuster on the left-hand shifter.

6.3 Drum Brakes

The drum brakes on your trike have a very long life, and shouldn't ever need replacing under normal use. We have yet to see a worn out set of pads. If you find that the brakes are not gripping as well as they used to, they can be disassembled and de-glazed. Remove the wheel from the bike, and then the backing plate from the wheel. Note how the spacer between the hub and the backing plate is located. If the pads are glazed, they will look somewhat shiny and smooth. Using some fine sandpaper, lightly sand the surface of the brake pads until they look dull again. Be careful about not breathing in the dust from the surface of the pads. Clean the inside of the hubs out with a clean, dry cloth (use no oil, grease, or wax on the inside of the hubs), then reassemble the brake plates on the hubs. You should notice a difference in braking performance, and you should initially test them away from traffic until you are used to the improvement in braking. If you notice a gradual reduction in braking power over a period of time, check the condition of the brake cables and housing. Friction from dirty cables can considerably increase the effort required to stop the trike.



TIP – periodic removal and lubrication of the brake cables helps increase their life and gives smoother operating brakes. Disconnect them at the wheel, and then a small amount of light oil can be dribbled down the housing without removing the inner cable.

6.4 Disc brakes

The hydraulic disc brakes require regular attention and maintenance. The most common task is replacing the disc pads. These will wear under normal use and will require periodic replacement to keep the brakes working properly.

Your disc brakes may squeal under braking. This is normal, and will change depending on how worn the pads are and how damp or cold the rotor is. A brake which is hot and dry will rarely squeal.

The braking performance will be severely reduced if the system is contaminated. Clean the calipers, lever, and rotors with water and a clean cloth. If the disc rotor becomes contaminated with oil or grease, it can be cleaned by wiping with a cloth with isopropyl alcohol or disc brake cleaning products designed specifically for disc brakes. It is almost impossible to properly clean contaminated pads; they should be replaced.

Check the caliper and lever for any signs of fluid leaks and the hose for any damage such as chaffing or being roughly handled. A damaged hose could cause a system leak, which will severely impair braking performance or cause the brakes to fail.

Brake pads need replacing when the friction material is worn, contaminated or damaged. Don't wait until the friction material is worn through to the backing plate to replace the pads. To maintain safe and efficient braking, the pads need to be replaced if the material is worn down to 0.5mm.

Replacing Brake Pads – follow the instructions that are supplied with your brakes. Parts and spares are available from ICE.

Bleeding the Brake System - Bleeding the brake system is a procedure where new hydraulic fluid is used to replace leaked oil or to flush out any trapped air. Air in the system will reduce the braking performance and the feel of the brake. To bleed your brakes, follow the instructions that were supplied with your brakes. Parts and spares are available from ICE. Your brake takes mineral oil, which is not the same as hydraulic fluid used for automotive brakes and clutches. Using automotive fluid will ruin the seals in your brakes and they **WILL** fail! Always use mineral oil; a good source is LHM mineral oil used in many Citroen and Jaguar motor vehicles. One liter is inexpensive and will last you a lifetime.

Troubleshooting

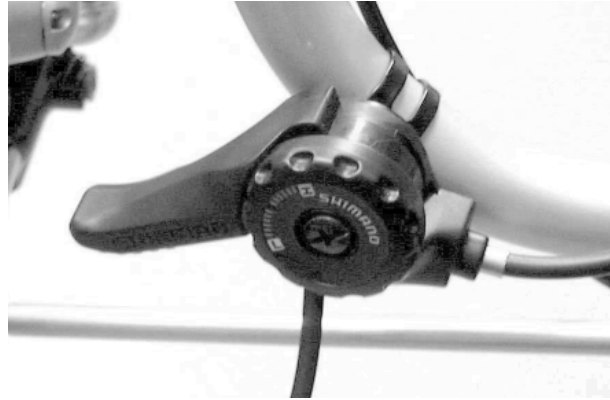
| Symptoms | Possible Cause | Corrective Action |
|--------------------------------|---|--|
| Lever goes to the handlebar | System leak Air in the System Brake pads worn out | Re-bleed the system Re-bleed the system Replace pads |
| Spongy Lever | Air in the system | Re-bleed the system |
| Disc Rotor rubbing on the Pads | Caliper not centred over disc Inadequate clearance Bent rotor | Re-centre the caliper Push piston back Replace new rotor |
| No braking power | Contaminated pads Worn out pads Contaminated disc | Replace new pads Replace new pads Clean disc with alcohol |
| Pads fall out | Missing pin | Replace pin |
| Fluid loss | Hose leaking Banjo leaking Caliper bleeding | Tighten hose nut Replace new hose Replace banjo O-ring Tighten or replace bleeder |



Warning: If you are not confident of servicing your brakes correctly, we strongly recommended that you have a competent cycle mechanic service your disc brake system. Always wear protective clothing, safety glasses and gloves when servicing this system.

6.5 Rear brake

If you have fitted the optional rear disc brake, it will be operated from a small lever mounted on the left-hand handlebar. Because the brake functions as a parking brake, it is necessary to make sure that it holds securely. Check the brake's function, and if it appears to be slipping, tighten up the central bolt on the brake lever using a large flat screwdriver.



6.6 Drivetrain

The chain pulley on the tension side of the chain will wear over time. Initially it may make a small amount of noise, but within a few weeks it will bed in and run much quieter. A pulley should normally last about 10,000-12,000 miles, but if it shows significant wear, replace it.

Check that your cranks are tight after the first 50 miles of riding. These should be fastened firmly to the bottom bracket, with no play. Even a small amount of movement will cause the joint between the spindle and the hole in the crank to wear, resulting eventually in damage to the chainset.

The rear derailleur idlers tend to collect oil and dirt. Clean them with a dry rag. If they squeak, they can be disassembled and greased. When you lubricate your chain, put a drop of light oil on the moving pivots of the derailleur; they will last much longer.

The more you ride your trike, the more used you become to the sounds it makes. If you notice any change in the sound your trike makes, check it carefully; it may be a sign of something needing attention.

6.7 The frame

The main cruciform of your Trice is powder-coated, a baked-on finish that is both tough and beautiful. It is possible to damage the coating, particularly if you scrape the trike over road obstacles. If this happens, touch-up paint is available from ICE to repair the damage. Lightly abrade the scrape with fine sandpaper, cover the exposed metal with regular metal primer, and then apply the coloured touch-up paint.

The front boom and rear section of your Trice are anodized. They require little maintenance except for regular cleaning.

Mud, rain, road salt, salt air, and sweat can all affect the finish of your trike. Fitting mudguards will help to keep road dirt off your trike.

Regular cleaning and corrosion protection should be a part of your maintenance routine. We recommend hand washing your trike with warm soapy water and a rag or soft brush. Never use abrasive cleaners or solvents on the powder-coated finish. Rinse well and dry after, and then lubricate the chain.

Do not clean your trike using a pressure washer, as the water will force its way into bearings, removing the grease and causing corrosion.

Keeping the frame dry and clean will keep the coating looking its best for years to come.

If you need to clean the seat mesh, it should be hand-washed in warm soapy water, rinsed well, and hung up to dry. Do not tumble dry!

After the first 50 or 100 miles, check the steering components for signs of looseness. The headset bearings may need to be snugged up after they have bedded in, and the axles should be checked for tightness as well.

After the first ride or two, the clamp bolts should be checked to ensure they are tight.

6.8 Tyres, tubes, & wheels

Tyres

Quality tyres are vital for good traction and control while accelerating, turning and braking. Each brand of tyre has its own individual mix of puncture protection, rolling resistance, pressure rating, and durability. Finding the one that suits your riding style best is the challenge. Tyres should always be inflated according to the range marked on the sidewall, never above the maximum recommended, and they should be checked regularly. Worn tyres should be replaced. Trikes often run with slightly reduced pressure, as the load is distributed across three tyres, not two. Lower pressure results in a more comfortable ride, but at the expense of higher rolling resistance. Balloon tyres are now available that combine relatively low rolling resistance, puncture protection, and a smooth ride; they are well worth considering. Your Trice has been designed to allow these larger tyres to be fitted.

Appendix C has a conversion table for pressure in PSI and Bar.

Tubes & Punctures

Always use good quality inner tubes on your trike. It is easiest to carry a spare inner tube with you, and change it if you should be unlucky enough to have a puncture. Front punctures are fairly easy to mend, as the tyre can be removed without taking the wheel off the bike. You may find it easier to work on the front wheel if you put the trike on its side first. Repairing a rear wheel puncture is no different from any other cycle.

Spokes

Occasionally check for loose spokes. Broken spokes are caused by spokes loosening up, and then undergoing stress every time they take a load. If you notice loose (or broken) spokes, or an untrue wheel, take your bike to your local bike shop to have the wheels re-trued. One loose spoke puts an unfair load on the spokes next to it, and one broken spoke is usually followed by another.

6.9 Suspension

The suspension on the TRICE trikes runs on plain bearings. These bearings are made from a copper-plated steel shell, coated with a sintered bronze layer filled with a mixture of PTFE and other friction-reducing additives. They do not normally require lubrication or maintenance. If you should notice any significant amount of play in the suspension joint, the bearings can be easily replaced. To do this:

- Undo the 2 pivot pin clamp bolts under the suspension mount.
- Slide the pivot pin out of the bearings. If it is reluctant to slide, tap gently using a hammer and a small block of wood to move the pin.
- Using the hammer and small block of wood, gently remove the suspension bearings. There are three separate bearings to be removed; note the order they came out in.
- Gently push or tap the new bearings into place. Be careful not to damage the Teflon coating on the bearings.
- Press the pivot pin back into place, and tighten the 2 pivot pin clamp bolts.

6.10 Adjusting the tracking

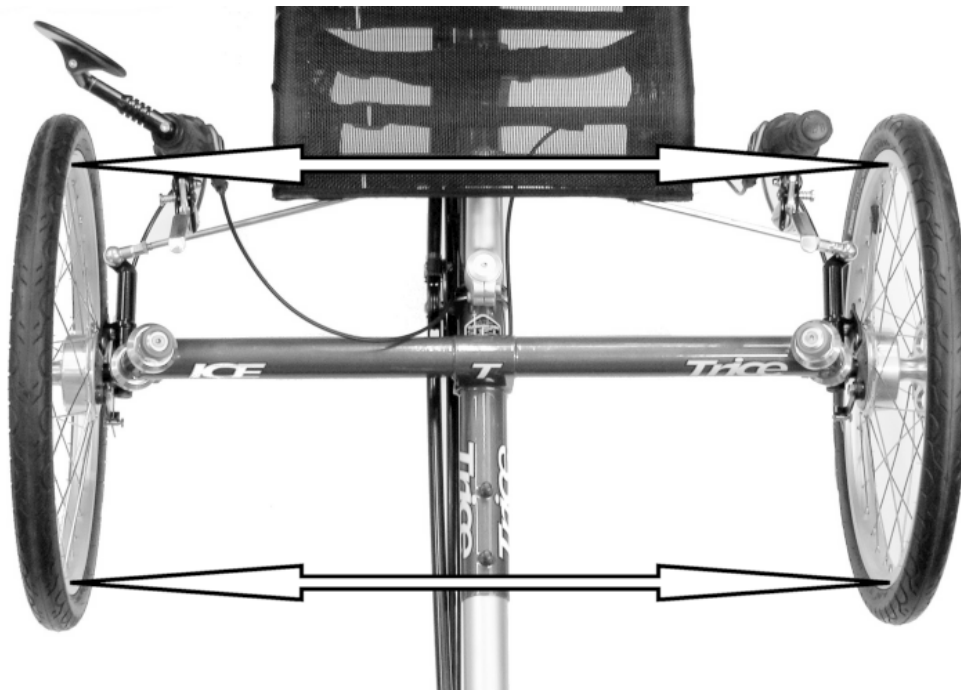
To avoid excessive tyre wear the front wheels must be kept parallel. Tracking only needs to be checked if you suspect damage through an accident, if unusual wear starts on one or both front wheels, or the feel of the steering changes. Before adjusting the tracking, check to make sure the track rods are not bent and the ball joints are in good condition.

Use a long ruler or a piece of rod to measure between the inside of the tyres at the front of the tyres, and then at the rear, all measured at axle height. The distance (between the arrows) should be the same, or up to 2mm less at the front (toed-in).

If the tracking is out of adjustment, loosen the two lock nuts on one trackrod, and rotate the rod (a small rotation gives a fairly large change in track). Tighten up the lock nuts when the distance is correct.



TIP - note that the lock nuts at each end of the track rods have left and right handed threads (the left hand threaded nuts have a small notch to identify them). This allows the track to be adjusted very precisely



6.11 Storage

If you are using the trike most days, it is best to store it somewhere dry and well ventilated. A damp, covered trike will quickly develop surface corrosion of its components, and eventually, the frame. If you are storing your bike for any considerable period (over winter or a long holiday):

- Clean the bike and lubricate.
- Store the trike indoors where it will be dry. Hanging storage is good. Outdoor storage under cover is acceptable if there good air circulation around the trike. Outdoors under a tarpaulin will actually accelerate any corrosion and can damage the paintwork and components.
- Set the gears to the smallest sprocket and chainring. This keeps the derailleur springs and cables under minimum tension.
- Ensure they tyres are properly inflated before storing the trike, and check them every month or two. Storing a trike on soft or deflated tyres is not recommended.
- Before putting the bike back into service, go through all the maintenance and adjustment instructions in this manual to ensure the trike is working properly.

6.12 Serial Number

The serial number is marked on the under side of the main cross joint.

6.13 Recommended minimum tools and spares

Get you home kit

- Tyre levers
- Spare inner tube
- Puncture repair kit
- Mini Pump
- Small adjustable spanner
- 3, 4, 5, 6mm Hex Keys
- Small Phillips screwdriver
- Spare Chain link
- Chain tool

Full Touring Kit

- the 'Get you home kit' plus at least these items:

- 8mm spanner.
- 9mm spanner.
- 10mm spanner.
- 19mm spanner.
- 8mm Hex Key (for the chainset).
- Chain link extractor tool.
- Spare gear cable.
- Spare brake cable.

7.0 Safety



Between all of us here at ICE, we've ridden thousands of miles on trikes, and we've all developed good road sense. The following safety considerations are for your benefit; please give them serious consideration:

- We recommend always wearing an approved cycling helmet. Get the best you can afford. If you've got cheap head, get a cheap helmet!
- We highly recommend the use of 'clipless' pedals. Shimano's SPD system is a good choice, and there are many SPD compatible shoes and pedals on the market. Most cycling shoes will come with the necessary fittings to allow cleats to be fitted, and the only other thing that you'll need is a set of pedals. Pedals are available with cleat bindings on one side and a standard platform on the other (allowing you to go for a quick spin without having to change into your cycling shoes). For those that have not experienced clipless pedals, they have a small binding mechanism built into the pedal, which locks onto a cleat fastened to the bottom of the shoe. It works in a similar fashion to a ski boot binding. To lock your foot in, you hook the cleat into the binding and push. To remove your foot, you twist your heel sideways and the binding releases the cleat. Once you are clipped in, you will not need to put your feet down until you want to get off; being clipped in is comfortable, lets your legs relax when you are not pedaling, and allows power to be transferred more effectively to the pedals.
- Check your trike before each ride. In particular, check the tyres and brakes to ensure they are in good working order.
- If you are riding at night, make sure you have a legal white headlight and a red taillight. We recommend using both non-flashing and flashing LED taillights in tandem. The flashing light is very noticeable at a great distance, and the non-flashing light is better for other road users to judge your distance from them with.
- Use your rear view mirror, but don't rely on it. You must also turn your head to check behind you before turning or changing lanes.
- Be careful of carrying too much speed into corners. The immense stability of the trike is not absolute, and sharp high speed cornering may cause you to lift the inside wheel, or even roll over. As you ride more, you will gradually learn what the limits of the trike are.
- Be careful of downhill speeds. It is very easy to reach speeds in excess of 40 mph (60kph) when going downhill. Although you may feel in perfect control, be wary of and allow for road hazards and other road users doing stupid things.
- The drum brake hubs and disc brakes rotors can get hot after long descents. You can burn yourself on the hot surfaces.
- The usual practice is to brake evenly using both hands. You can brake at the maximum rate with the front brakes only. The trike is designed not to brake-steer if you brake only one side (a safety feature necessary if you are braking and signaling a turn at the same time), but violent, single sided braking can cause the trike pull slightly to the braked side.
- Use your flag. Most road users haven't ever seen anything like your trike, and will give you much more attention and room on the road than they would a standard upright bike. Nevertheless, using the flag will help to ensure you've been seen, especially in heavy traffic. You are low, and reversing cars may not be able to see you. Ride defensively, as if others can't see you.
- Consider bright visible clothes. They make good sense regardless of what you are riding.
- You might consider fitting a horn. The 'AirZound' is a lightweight air horn, charged with your bicycle pump, and it is LOUD! It is available from most good bike shops.
- Although you are far more noticeable than any other cycle, motorists will almost always underestimate the speed of an approaching trike. They just don't seem to understand how fast you can be traveling. Be wary of cars which assume you are 'slow' and pull out in front of you with little warning. Also be wary of cars overtaking you close to a junction. They will often misjudge the space they have to get in front of you, and are rarely certain of what to do once they've realized their mistake.
- Like any other cycle, try not to ride close to parked cars. Drivers can fling open a door or pull out suddenly.
- Don't ride close to the edge of the road. Rubbish tends to collect there and your tyre is at a greater risk of picking up a puncture. Although a trike is only a little wider than the handlebars of an upright bike, it is seen as being very wide by other road users. If you move out a little into the road, it is less likely that drivers will try to force their way past. Likewise, pay attention to timid drivers that refuse to overtake you (because you are so wide!) Pulling to the side to let the queue pass will earn you the respect of other road users.

8.0 Other Important Information

8.1 Recumbent/Trike forums on the Internet

Now that you have your new trike, why not share your experiences with others on some of the internet forums?

Trice Owners List

There is an online Trice Owners group, started in 2008. Run by Trice owners, it's the first place to go to discuss riding, maintenance, or anything else TRICE. It can be found at:

<http://sports.groups.yahoo.com/group/triceriders/>

IHPVA Lists

There is a trikes specific mailing list run by the IHPVA (International Human Powered Vehicle Association). The list generates one or more emails daily (in digest mode). You can subscribe to the trikes mailing list at **<http://bikelist.org/mailman/listinfo/trikes>**

The same page will also let you unsubscribe and change your subscription options.

Bent Rider Online

The BentRiderOnline website is a valuable source of information. They operate a message board (forum) that is moderated and is free to join. You will need to register before you can post a message, but the forum is available for anyone to read. To register, point your browser to **www.bentrideronline.com** and click on the 'Message Board' link at the top of the page. On this new page, you will find links to the FAQ (Frequently Asked Questions) and the registration page. Follow the simple instructions and you will be registered to participate in the discussion. There is a Trikes specific forum under Specialty Discussions, and you will find a number of Trice owners there.

VeloVision

VeloVision is a magazine, published in the UK, covering specialised bikes, cycling as transport and human power. We'd have to agree when they say "It's a quarterly dose of cycle inspiration." To get to the forum, point your browser to **<http://www.velovision.co.uk/forum/>**

Follow the link to 'VV discussion'. To register, click on the 'Log In' link and then follow the link to 'Need a Login? Register Here'. The registration is painless and allows you to post on the forum. This forum is not arranged by subject, but just has a list of the topics presently under discussion.

uk.rec.cycling

uk.rec.cycling is an un-moderated Usenet group. This is a friendly gathering of enthusiasts who discuss a wide range of subjects, usually related to cycling in the UK. There are a number of recumbent riders and trike owners who are regular contributors to the group. To join the group, you will have to set up a Usenet (News) account with your Internet Service Provider. This is usually free. Your provider will be able to provide you the details of how to configure your email software to access the group.

Alternatively, you can access the group through the Google search engine page. Point your browser to **<http://groups.google.com/group/uk.rec.cycling>** and read the posts at your leisure. You can post to the group if you follow the Google Groups registration process.

Recumbent and Tandem Rider

R&TR Magazine is the world's only magazine dedicated to the riders and enthusiasts of tandem and recumbent bicycles. Each issue has bike and equipment reviews, riding tips, travel stories, technical advice and maintenance ideas. Available by subscription for doorstep delivery, or for FREE at many US bike shops. More information can be found at **<http://www.rtrmag.com/>**

British Human Power Club

The British Human Power Club was formed to foster all aspects of human-powered vehicles for competition, recreation and utility activities. The majority of the Club's activities revolve around land vehicles, which are usually, though not necessarily, recumbent bicycles or tricycles. They run an annual race series for non-UCI-approved machines, usually some 8-10 events. Every six (at present) years, they also host the annual European Championships. If you're not competitively inclined, the race meetings are still good places to meet and socialize with fellow enthusiasts, and to try out people's strange machines.

In addition to the race series, they also organize touring weekends in interesting parts of the country. The club publishes the quarterly "BHPC Newsletter", to keep one abreast of what's happening in the Club and the big wide world of Human-Powered transportation. They have an informative website and public forum at **www.bhpc.org.uk**

8.2 Warranty Information

Warranty

Inspired Cycle Engineering warrants, to the original owner of each new Trice tricycle that the frame, seat, and steering components are free of defective materials and workmanship for three (3) years from original date of purchase. Component parts are limited to one (1) year from original date of purchase. Warranty is conditional upon the trike being operated under normal conditions and being properly maintained. Warranty is offered to the original owner only, and is not transferable. This warranty does not apply to:

- damage through normal wear and tear
- neglect (inadequate care and maintenance)
- damage from crashes or jumping
- overloading through excess weight
- incorrect assembly
- modifications to the trike (additional or changed components)
- theft
- use as a power driven vehicle
- failure to follow instructions or warnings in the owner's manual
- Activities for which they were not designed.

Bending of frames, forks, handlebars, seat posts or wheel rims can be a sign of misuse or abuse.

Inspired Cycle Engineering reserves the right to make sole determination of whether any failure or damage claimed under warranty was caused by material or manufacturing defect, and reserves the sole discretion to repair or replace any parts covered by this warranty.

The owner shall be responsible for all labour, shipping, and travel costs connected with the repair or replacement of warranted parts. Inspired Cycle Engineering will, at our sole discretion, normally consider compensation for reasonable labour, shipping, and travel costs associated with warranty claims.

Inspired Cycle Engineering shall in no event be liable for incidental or consequential losses, damages or expenses in connection with its tricycle products.

In practice, if you think you have a warranty claim, contact your dealer or us. We are passionate about our product, and want you to be too. If it is our problem, then we do our best to put it right.

8.3 Liability Information

Liability Waiver:

Taking part in any sporting activity can result in injury or death. Cycling is no different in this regard, and recumbent tricycles no different from upright bicycles. In many ways, recumbent trikes can be much safer than a standard bicycle. Nevertheless, the rider (that's you) is expressly assuming the risk for any injury and/or property damage that may result from using our product, as well as for any and all injuries and/or property damages caused by someone riding your trike.

We have no control over how the trike is used or maintained. It's your trike; it is up to you to be responsible for yourself. You need to ensure that the trike is safe each time before you ride it. You need to ensure that it is maintained to a proper standard. Read and understand this manual; it has warnings and suggestions that will help you to use the trike safely. If you are in any doubt about any of the advice or procedures in this manual, please contact your dealer or ICE. It is up to you to know and obey traffic laws of the country or state where you will be riding your trike. Pedal cycles are regarded in most countries as vehicles when on the road and are subject to the same rules as motor vehicles. If you are not comfortable on the road, or have little experience riding in traffic, try practicing riding on quieter streets, at least until you develop the necessary skills and road awareness. Many bike shops can offer instruction on advanced riding techniques. Inspired Cycle Engineering shall in no event be liable for incidental or consequential losses, damages or expenses in connection with its tricycle products.

8.4 Legal requirements

Legal requirements vary from country to country and you should always comply with them.

The important areas you need to consider are lighting, and helmet use. Consult your local bike dealer for information about what is required in your area. Please also remember that even if not required by law, some equipment (such as helmets and lights) can increase your personal safety and should be carefully considered.

8.5 Contacting us

Your first point of contact should be your local dealer. They will be able to answer most of your questions and can provide you with the full line of Trice accessories. If you need to speak to us directly, we can be contacted in a number of ways:

In person or by post

Inspired Cycle Engineering Ltd

Unit 9,

Tregoniggle Industrial Estate,

FALMOUTH,

Cornwall TR11 4SN

England

Telephone & FAX:

01326 378848 (+44-1326-378848 outside UK)

e-mail:

sales@ice.hpv.co.uk

Website:

www.ice.hpv.co.uk

Skype:

inspired_cycle_engineering_ltd

Manual Revision: 21 July 2009

This manual is composed using 9pt Verdana, a British-designed font which is renowned for its excellent readability.

Appendix A: Tightening torques

| Fastener | Uses Hex Key (mm) | nm | Lb-ft |
|-----------------------------------|--------------------------|-----------|--------------|
| Front derailleur clamp bolt | 5 | 5-7 | 4-5 |
| Front derailleur cable clamp bolt | 5 | 5-7 | 4-5 |
| Chainset - central crank bolt | 8 | 35-50 | 25-36 |
| Chainset - chainring bolt | 5 + tool | 8-10 | 6-7 |
| Chainring guard bolt | 5 | 6-8 | 4.5-6 |
| Main frame clamp bolts | 5 | 8-10 | 6-7 |
| Mudguard adjusters | 4 | 6-8 | 4.5-6 |
| Mudguard main fasteners | 5 | 8-10 | 6-7 |
| Axle bolts | 19mm spanner | 25 | 18.4 |
| Steerer pivot bolt | 5 | 8-10 | 6-7 |
| Handlebar clamps | 5 | 5 | 4 |
| Twist-grip clamp bolt (hex key) | 3 | 1-2 | 1-2 |
| Brake lever clamp bolt | 5 | 6-8 | 4.5-6 |
| Rear main frame joint | 5 | 8-10 | 6-7 |
| Mirror | 3 | 3-5 | 2.5-4 |
| Pivot pin clamp bolts | 5 | 6-8 | 4.5-6 |
| Shock pin | 10mm spanner | 5-7 | 4-5 |
| Disc brake caliper mount | 5 | 6-8 | 4.5-6 |
| Disc brake rotor lock ring | Tool | 40 | 30 |
| Rear mech hanger | 5 | 8-10 | 6-7 |
| Rear derailleur mounting bolt | 5 | 8-10 | 6-7 |
| Rear derailleur Cable clamp bolt | 5 | 5-7 | 4-5 |
| Upper seat mount clamp bolts | 4 | 5-7 | 4-5 |
| Head rest clamps | 4 | 5-7 | 4-5 |
| Headrest clamp pin | 5 | 5-7 | 4-5 |
| Disc Screws | T-25 | 6 - 7 | 4.5-5 |
| Master Cylinder Clamp Screw | T-10 | 1.7 - 2.3 | |
| Caliper Bleed Screw | 8mm spanner | 3 - 5 | 2.5-4 |
| Caliper Mounting Bolts | 5 | 11 - 13 | 8-10 |

All other M4 bolts, tighten to 5-6 nm (4-5 lb-ft)

All other M5 bolts, tighten to 6-8 nm (4.5-6 lb-ft)

All other M6 bolts, tighten to 8-10 nm (6-7 lb-ft)

Appendix B: Elastomer limits

Rider weight

60-125 lbs (4-9 stone, 27-57 kg)
125-200 lbs (9-14 stone, 57-91 kg)
200-250 lbs (14-18 stone, 91-114 kg)
250-275 lbs (18-20 stone, 114-125 kg)

Elastomer

Yellow
Red
Green
Green & Yellow, or Green & Red

Your elastomer will also depend on your riding style, terrain and other factors. If you ride on rough terrain or ride aggressively, you may benefit from a harder elastomer. If you are a leisurely rider, who riders predominantly on smooth tarmac, you may be able to use a softer elastomer.

Note: you may need an elastomer that is one grade harder if you are carrying any significant load. Elastomers are stiffer at lower temperatures, and you may find you prefer to change to a softer elastomer in cold weather. Two elastomers can be fitted side-by-side if necessary.

Appendix C: Tyre Pressures

| PSI | BAR | PSI |
|-----|-----|-------|
| | 2 | 29.0 |
| 30 | 2.1 | |
| | 2.5 | 36.3 |
| 40 | 2.8 | |
| | 3 | 43.5 |
| 50 | 3.4 | |
| | 3.5 | 50.8 |
| | 4 | 58.0 |
| 60 | 4.1 | |
| | 4.5 | 65.3 |
| 70 | 4.8 | |
| | 5 | 72.5 |
| 80 | 5.5 | 80.0 |
| | 6 | 87.0 |
| 90 | 6.2 | |
| | 6.5 | 94.3 |
| 100 | 6.9 | |
| | 7 | 101.5 |
| | 7.5 | 108.8 |
| 110 | 7.6 | |
| | 8 | 116.0 |
| 120 | 8.3 | |
| | 8.5 | 123.3 |
| 130 | 9.0 | 130 |
| | 9.5 | 137.8 |
| 140 | 9.7 | |