

Bicycle and Tandem owners guide

Please read carefully prior to first use

Thorn Bicycle Owners manual

Thank you for purchasing one of the hand crafted Thorn bicycles. This manual will outline how to carry out some basic maintenance on your cycle, how to approach riding in a safe manner and the full details of the warranty we offer.

With care and only simple maintenance, we are convinced this cycle should last many years, which is why we are confident enough to offer a lifetime warranty on the frame and forks, against manufacturing defects (In the case of most of our cycles, for no extra cost).

Every effort is made to ensure this cycle has reached you in perfect mechanical order. However, it is very important that you read this manual thoroughly and carry out the basic safety checks listed in the "Preparing your bicycle before your first ride" section on page 3.

If you have any questions about your new bicycle, or if you need advice concerning cycling-related issues, please do not hesitate to contact me.

Best wishes,



Robin Thorn

Important details for you to record:

Model: ……

Size: ……

Frame number (located under the bottom bracket shell or stamped inside the rear dropout):

……

Date of purchase: ……

Customer number: ……...

Transaction number: ……

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Preparing your bicycle before your first ride

Although a lot of time has been spent preparing your bicycle to a very high standard, it is obviously not possible to carry out certain adjustments when a bicycle is sent to you in a box. This section will cover these important points stage by stage.
If you are unsure about any of these items, please do not hesitate to contact us. Don't suffer in silence, we are here to help!

1. Remove any packaging from your cycle – try not to use any sharp instruments too close to the paintwork or the tyres! If possible, retain the packaging, in case your cycle needs to be returned. Please dispose of any waste in an appropriate manner.
2. Locate your pedals in the packaging – or your own pedals if none have been supplied with your bicycle. Identify which pedal is which – the pedal marked "L" or "G" is the left one (as viewed from the saddle), and the one marked "R" or "D" is the right pedal. Apply some grease or copper slip sparingly to the thread of each pedal.
3. Put the right pedal into the drive side crank arm and screw the pedal in a clockwise direction until it touches the surface of the crank arm, then give it a final tighten to ensure it will not come loose. We recommend a tightening torque of 40 Nm if you have the means to measure this.
4. Put the left pedal into the non-drive side crank arm and screw the pedal in an anti-clockwise direction, following point 3 with regard to tightening. It is important not to under or over tighten the pedals, as permanent damage to the threads could occur.
5. Loosen the bolt(s) holding the handlebar stem to the forks. You are most likely to have the threadless headset system, which will have two bolts on the back of the stem which clamp around the steerer tube. Loosen these bolts (with a 5mm or 6mm allen key) BUT DO NOT ADJUST THE TOP ALLEN SCREW. A few of our bikes use the Quill system (this has a single bolt on the top of the stem and has no bolts on the back, the shaft of the stem fits inside the steerer tube). With this system you DO loosen the Allen screw at the top.
6. Turn the handlebar stem until it is in line with the front wheel
7. Re-tighten the bolts you loosened in step 5.
8. If you have the threadless headset system, there is a chance that the headset may now have some play in it. You can check this by holding the front brake and rocking the bicycle back and forwards. If there is ANY movement, you must adjust it as outlined in the instructions on pages 13-14.
9. Adjust your saddle height. If you do not already know how high to set your saddle, measure your inside leg length (from crotch to floor in cycling shoes) and multiply this measurement by 1.05. This is the distance from the top of the pedal to the top of the saddle. Loosen the bolt(s) which hold the seatpost in the frame with either a 5mm or 6mm allen key (or a 6mm allen key and a 13mm spanner in the case of the Thorn Voyager or Explorer). Pull upwards on the saddle and move to your correct saddle height. Re-tighten the bolt(s) holding the seat post in the frame.

THEN CARRY OUT THIS **MECHANICAL SAFTY CHECK** ... *before every ride*

1. Check the handlebars and stem for tightness.
2. Check that the brakes work, and that the cables do not pull through when they are applied strongly.
3. Check the tyres for pressure and for any damage.
4. Check the tightness of all accessories, especially mudguard stays and carriers.
5. Check the function and status of your lights, if fitted; ensure that you can complete your journey in daylight if they are not.
6. Check the gears are in correct adjustment; especially confirm that the rear derailleur does not over-shift into the rear wheel.
7. Check that the wheels are securely tightened, using the quick release wheel skewers (if fitted) or wheel nuts.
8. Visually inspect the bicycle to ensure no components have been damaged.

Adjusting the gear system

DERAILLEUR GEARS INTRODUCTION

The derailleur gear is so named because it works on the derailing principle to move the chain from one sprocket to another. The number of gears is determined by multiplying the number of sprockets on the rear by the number of chain rings on the front crank set.

By using different combinations of sprocket and chain ring sizes, a wide range of gear ratios are available. The highest gear is when the large chain ring is coupled with the small sprocket and the lowest gear is when the small chain ring is combined with the largest rear sprocket.

The wide range of gears allows you to combat all prevailing conditions whilst pedalling at a constant and efficient rate of between 60 and 100 revolutions per minute (depending on your fitness).

DERAILLEUR GEAR MAINTENANCE

To help ensure that your derailleur gear works efficiently and to prolong its life, it must be kept clean and free from excess dirt and should be properly lubricated.

GEAR CHANGING

The rider's left gear lever controls the front derailleur and chain rings. The right gear lever controls the rear derailleur and sprockets.

The large rear sprockets generate low gears for hill climbing. The small rear sprockets enable high gear ratios for speed work and downhill riding.

The small front chain ring produces low gear ratios while the larger front chain rings produce higher gear ratios.

To operate your derailleur gear system efficiently thus reducing damage and wear and keeping noise to a minimum, avoid using the maximum crossover gear ratios of large chain ring/large rear sprocket and small chain ring/small rear sprocket.

Caution: For positive gear selection, observe these four precautions:

1. Change only when pedals and wheels are moving in a forward motion.
2. Reduce pedal pressure while changing gears.
3. Never back pedal when changing gear.
4. Never force the gear levers.

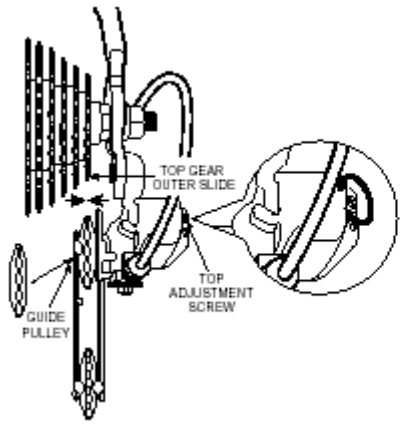
Gear selection should be made in anticipation of need since forward motion of the bicycle is required when changing gear. It is advisable to change to a low gear before stopping in order to be in the proper gear when you start up. On hills, change gear early while still maintaining forward pedalling speed.

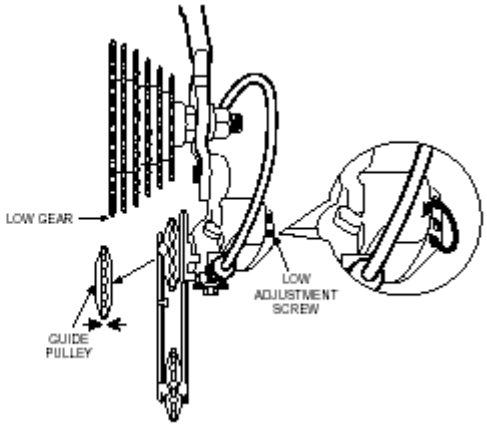
SIS ADJUSTMENT

The next few pages and diagrams show how to set this up. If you have any problems you should immediately call us for advice.

High and Low adjustment (the rear wheel must be free to rotate)

1. Turn the high (H) rear adjustment screw on the gear mechanism so that, looking from the rear, the top jockey wheel is below the outer line of the small sprocket. Check that the chain can not accidentally over-shift the small sprocket.
2. Using the shift lever position the chain over the biggest sprocket, turn the low adjustment screw in (clockwise) until resistance is felt. Check the gear operation to ensure that the shift to the lowest gear can still be made……
3. **If it can not**, then screw the low adjusting screw out ¼ turn, check operation and repeat, if necessary, until the shift can be made.
4. **If it can be made**, then screw the low adjuster in by ¼ turn, check the operation and repeat, if necessary, until the shift can not be made, then screw out by ¼ turn.
5. The idea is to find the position where the shift will always occur, but there is **no possibility of accidentally over-shifting the rear derailleur into the spokes. This will not only be expensive but will cause the rear wheel to lock up…with potentially serious consequences.**
6. Confirm the gear operation, whilst actually cycling at low speed, on a quiet road.





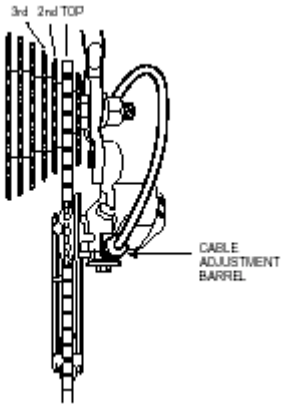
Turn the low gear adjustment screw (L) so that the top jockey wheel moves to a position directly below the largest sprocket.

Trim adjustment

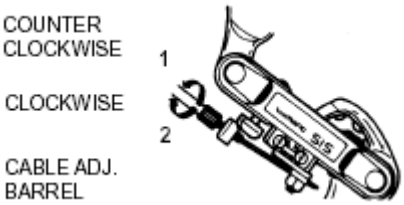
1. Operate the shifting lever to shift the chain from the top gear to 2nd gear.

*If the chain **will not move to the 2nd gear**, turn the cable adjusting barrel to increase the tension **1 (counter clockwise)**

*If the chain **moves past the 2nd gear**, decrease the tension **2 (clockwise)**



2. Next, with the chain on the 2nd sprocket, increase the inner cable tension while turning the chain wheel forward. Stop turning the cable adjusting barrel just before the chain makes noise against the 3rd sprocket. This completes the adjustment.



Be sure to lubricate each part of the derailleur. The optimum lubricant is dry molybdenum oil or the equivalent.

Front Derailleur

The adjustment of the sideways movement of the front changer is by means of two gear stop screws situated on the body of the changer mechanism. The inner screw limits the inner travel of the changer cage, the outer limits the outward movement

Use the following procedure for adjustment: (the rear wheel must be free to rotate)

1. While turning the pedals forward select the middle (on a triple chainset) or the top chain ring then select the smallest rear sprocket.

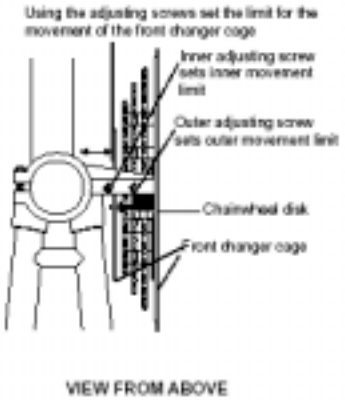
2. While turning the pedals adjust the inner screw on the front changer so that the chain will just drop into the lower ring with the gear lever fully forward.

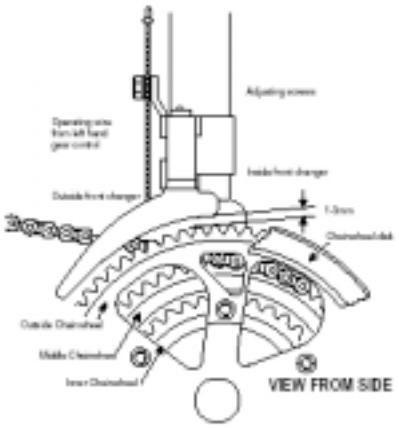
3. Select the largest rear sprocket. If there is any evidence of chain rub adjust the inner screw until this just ceases.

4. With the chain still on the largest rear sprocket select the ring below the largest at the front. Adjust the outer screw so that the chain just selects the outer chain ring when the gear lever is moved through its full arc range.

5. Select the smallest rear sprocket, if there is any evidence of chain rub then adjust the outer screw until this just ceases. The lower edge of the outside plate should be positioned approximately 1-3 mm above the largest outside chainring.

6. If problems continue to arise please contact us for advice.





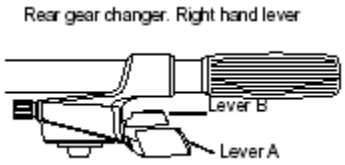
STI RAPIDFIRE

STI Rapidfire lever uses two levers mounted conveniently under the bar in front of the thumb and finger.

Using lever (A) you can shift one gear at a time, or shift through the entire cassette with a full stroke push.

Using lever (B) you can shift to a lower gear one cassette sprocket at a time.

STI OPERATION
Rear Gear Operation
Right Hand Lever.

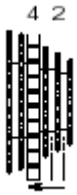


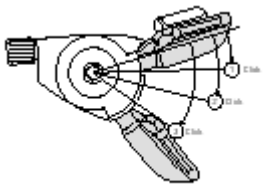
Lever (A) — operated by your right hand thumb pressing away from your body (shifting from a small sprocket to a larger sprocket)

1) To shift one gear at a time from a small sprocket press lever A once
Example: from 2nd to 3rd

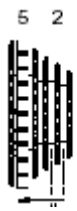


2) To shift two gears at a time from a small sprocket to a larger sprocket press lever A twice
Example: from 2nd to 4th

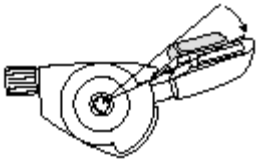



Right hand lever viewed from below

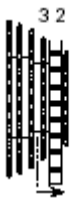
3) To shift three gears at a time from a small sprocket to a larger sprocket press lever A three times **Example: from 2nd to 5th**



Lever (B) - operated by pulling with your right hand forefinger or pushing with your thumb depending on model of shifter (shifting from a large sprocket to a small sprocket)

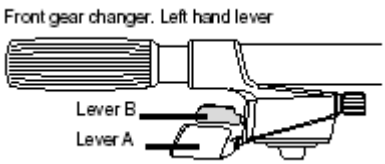

Right hand lever viewed from below

When lever (B) is pulled once, there is a one-step shift from a larger sprocket to a smaller sprocket
Example: from 3rd to 2nd

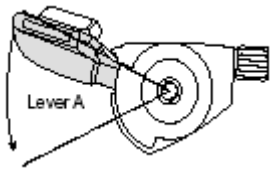


You can shift the triple front chain rings with the same precise STI action, 1 or 2 chain rings at a time, using levers (a) and (b) on the left hand lever.

STI OPERATION
Front Gear Operation
Left Hand Lever.



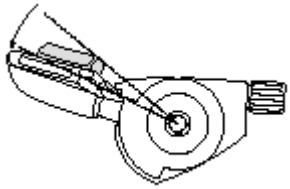
Lever (a) - operated by your left hand thumb pressing away from your body (shifting from a small chain ring to a larger chain ring)



When it is pressed once, there is a shift of one gear from a smaller chain ring to a larger chain ring. **Example: from mid-range to largest chain ring**



Lever (b) - operated by pulling with your left hand forefinger or pushing with your thumb depending on model of shifter. **(shifting from a large chain ring to a smaller chain ring)**



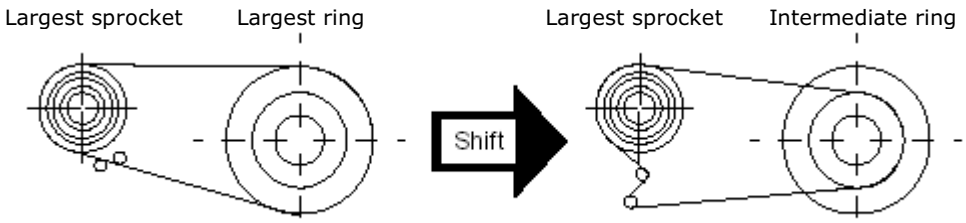
When it is pulled once, there is a shift of one gear from a large chain ring to a smaller chain ring. **Example: from largest chain ring to mid-range**



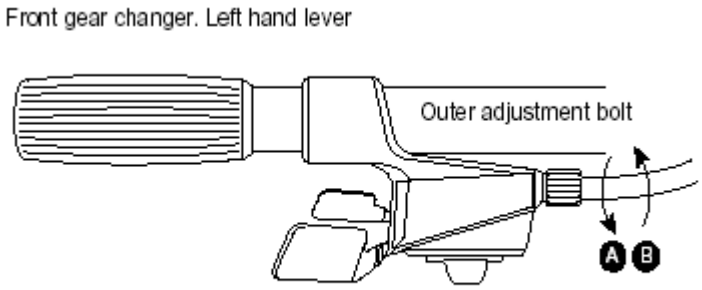
If your front gears do not operate smoothly, it may be that your front gear cable and front changer need adjustment. You can adjust your front gear cable by using the outer adjustment bolt on the left hand lever. This will adjust your front changer so that it has minimum clearance between the chain and the inside left hand side of the chain guide.

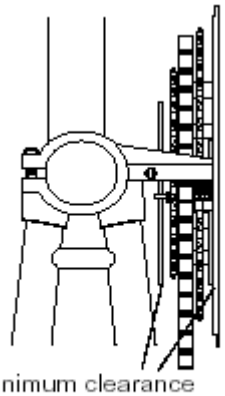
Cable tension adjustment

1. Set the chain to the **largest rear sprocket**, and, at the front, use the Rapidfire to **shift from the largest chain ring to the intermediate chain ring.**



2. Adjust, by using the outer adjustment bolt, so that there is the minimum clearance, but so that the chain and the plate (inside the chain guide) do not contact.

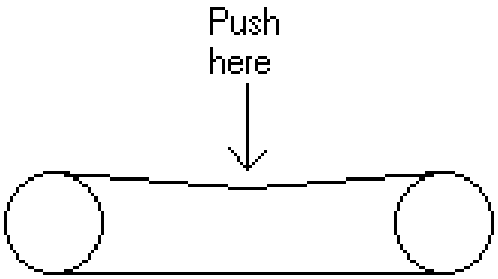




Minimum clearance between chain and inside left of changer

Adjusting the Eccentric on a Tandem

The tension of the chain which transfers drive from the front to the rear of your tandem (connecting chain) is adjusted by way of an eccentric insert on the front bottom bracket.

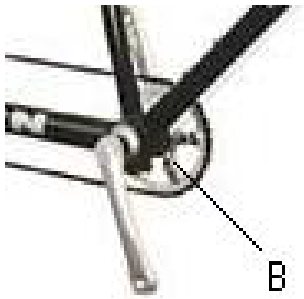


The chain should be free enough to allow the two chain sets to rotate freely, but not so slack as to allow the chain to jump off the chain rings. **Please note that it is entirely expected for the chain to have a "tight spot".** Once you have found the tight spot, you can begin to adjust the chain. If you push down with you finger at the midpoint of the chain, it should deflect approximately 1cm. If this is not the case, adjust as follows…

First you need to undo the bolts which clamp the alloy insert into the frame. On a Discovery or Adventure tandem, the bolts are screwed into the bottom of the shell as in figure (A). On a Voyager, Explorer, ME'N'U2 the bolts are at the front of the shell (B)

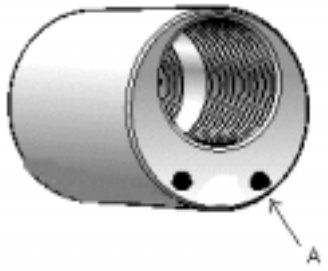
A





B

The insert looks like the illustration opposite.
It is adjusted by inserting a metal rod (6mm Allen key, screwdriver etc.) into one of the holes in the alloy eccentric inset (A).



Next, rotate the crank arm until it contacts the rod protruding from the hole in the insert. Continue to rotate the crank arm, which will rotate the insert, therefore increasing or decreasing tension in the connecting chain.



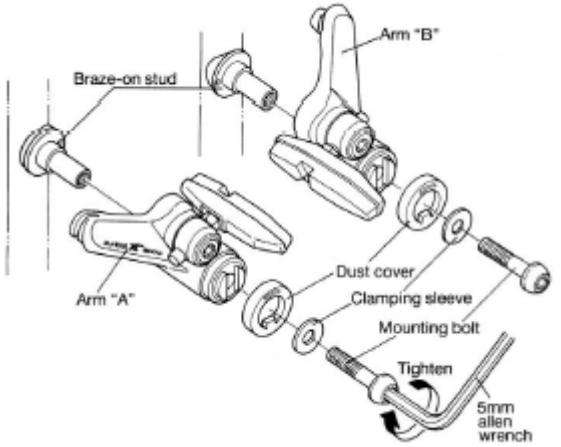
Finally, retighten the bolts which clamp the eccentric and recheck the tension at the midpoint tight spot…please be aware that, in order to increase tension, the rear wheel must be free to rotate.

Adjusting the brakes

Cantilever brakes

If your bicycle has come equipped with drop handlebars, and it is a model from our range of 26" wheeled bikes, then you may have Suntour cantilever brakes fitted. These are actually very simple to adjust.
These are the FULL instructions on how to set up the SE brake:

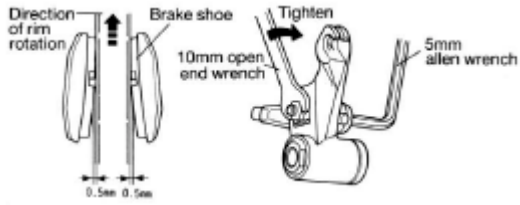
1. Apply a light coat of grease to the braze-on studs before installing the cantis. Use the sequence shown opposite to assemble the cantilever assemblies onto the braze-on studs. Lightly tighten the mounting bolts with a 5mm allen key. Do not over tighten the arms as they should be free to pivot fully without rattling on the studs. This will facilitate shoe positioning in step 2.



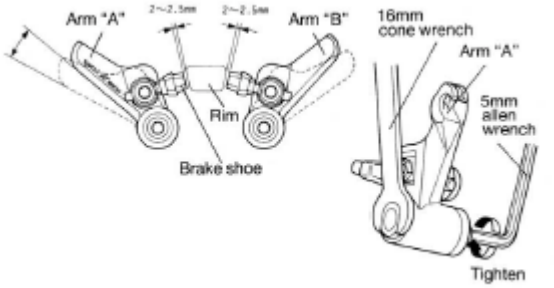
2. Position the shoes. The shoes can be adjusted in five directions, as shown in figure opposite.
Note: the plastic shoe grip cover encircling the shoe's post and the eyebolt is designed to grip the shoe during adjustment and prevent unwanted movement before the shoe mounting hardware has been tightened. This makes precise adjustments simpler.



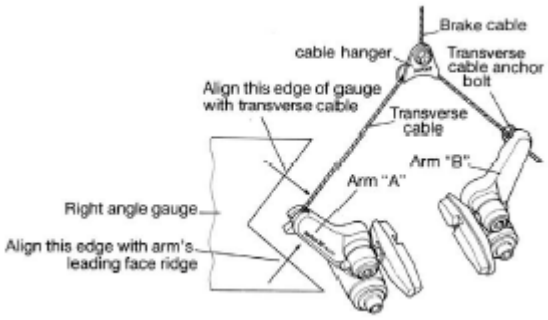
3.Position the shoes as shown opposite. Each shoe should have enough toe-in to leave 1/2mm of clearance at the trailing end of the shoe as the leading end just begins to touch the rim (note direction of rim rotation).
When you're satisfied with the shoe position, tighten the shoe mounting hardware using a 5mm allen key and a 10mm open end or box spanner. (as opposite) The shoe grip cover will hold the shoe so both your hands can be free for tightening the hardware.



4. Loosen the mounting bolts and rotate each arm away from the rim.
Then, holding each arm in position, tighten each 5mm allen mounting bolt to a torque of between 80 and 90kgf/cm (as opposite) until there is 6mm (1/4") of clearance between each shoe and the rim.



5. Install the straddle cable by first inserting the cable end into the cable socket of arm A, and then threading the other end of the cable through the cable clamp assembly on arm B. Shorten the straddle cable until each segment is at right angles to the arm it is connected to (opposite pic) and each shoe is between 2mm and 2.5mm away from the rim (opposite pic). During this operation, keep the straddle cable tight by pulling it upwards at its centre with one hand, and adjusting its length with the other. When the straddle cable is the correct length, tighten the cable clamp assembly on arm B, and trim and cap the exposed end. Then, install the cable hanger onto the brake cable, and clamp it high enough along the brake cable to allow each shoe to recturn to between
2mm and 2.5mm away from the rim.
Trim and cap the brake cable.

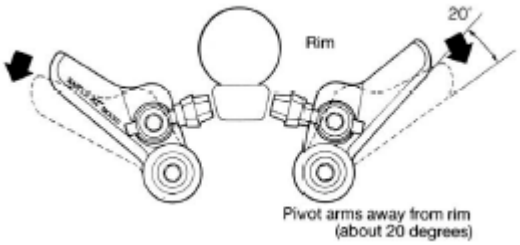


If necessary, use the right-angle gauge opposite in these instructions to determine the best cable/arm angle. Use the ridge along the leading face of the brake arm as the reference for the right angle gauge. Mechanically, this "high rise" canti brake design is most effective when the straddle cable is pulling at right angles (90 to 100 degrees) to each arm. You may shorten or lengthen the straddle cable as you wish, but this will slightly diminish the efficiency of the brake.



Squeeze and release the brake lever a few times to be certain that the adjustments are stable.

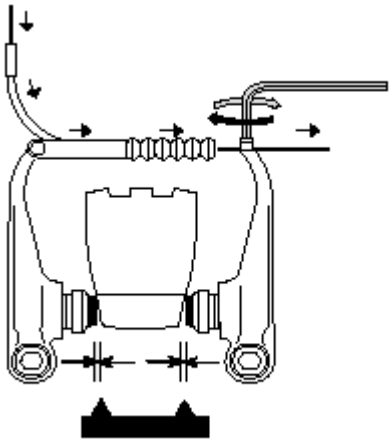
To remove the rear wheel, squeeze the brake shoes against the rim to allow enough slack at the straddle cable to remove its cable end from its socket in arm A. When the cable end is free, pivot the brake arms away from the rim (opposite pic**).**

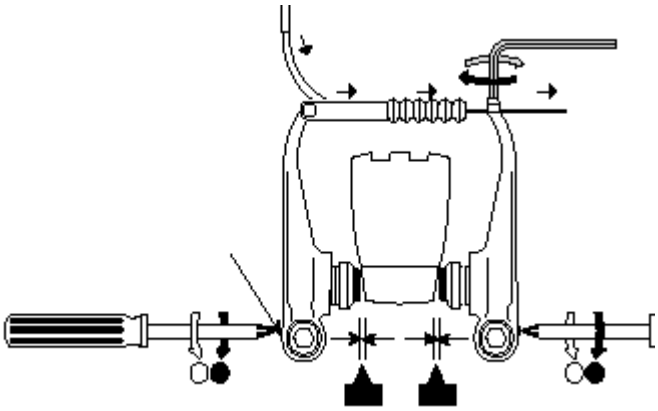


V Brakes

If you have straight handlebars, then you will probably have V Brakes fitted. These are very easy to adjust with a little patience.

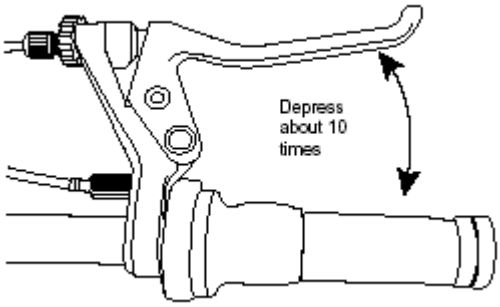
1. Pass the inner cable through the inner cable lead, and after setting so that the total of the clearances between the left and right shoes and the rim is 2 mm, tighten the cable fixing bolt.





2. Adjust the balance with the spring tension adjustment screws.

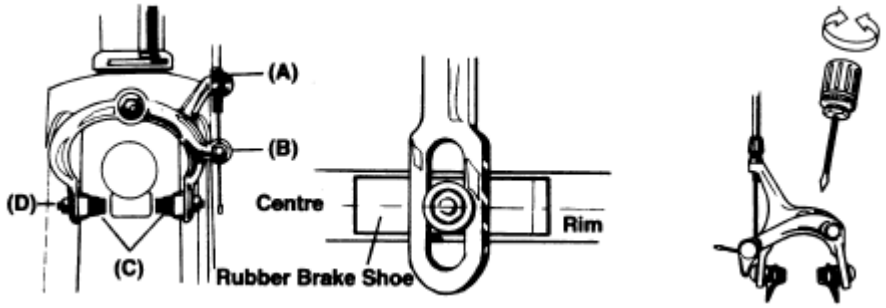
3. Depress the brake lever about 10 times as in normal brake operation and check that everything is operating correctly and
that the shoe clearance is correct before using the brakes.



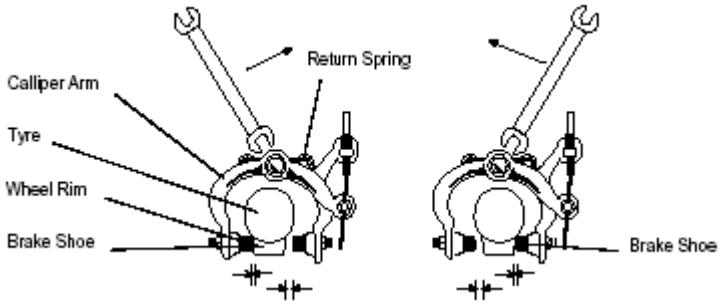
Dual-Pivot brakes

Some of our bikes are supplied with Shimano Dual-Pivot brakes.
The brakes on your bicycle should have been adjusted correctly by us. However, as cables do stretch, it is important to check the adjustment of your brakes after your first ride. Most brakes will need some adjustment after being used the first few times. Your brakes are correctly adjusted when there is a 1.5 mm gap between the brake blocks and the brake track of the wheel rim.
Do not adjust brakes to allow brake blocks to contact wheel rim when brake levers are in the off position. The fine adjustment of the brakes is made by the following procedure:
1. Turn adjustor A to set blocks C just clear of rim by 1.5 mm.
2. Ensure that the brake blocks meet the rim parallel and central to the rim brake tracks. Adjust by nuts D if necessary, then tighten securely.
3. When all fine adjustment is taken up on adjustor A, it will be necessary to reset the cables as follows:
a. Turn adjustor A all the way down as far as it will go into its mounting.

b. Loosen cable clamp bolt B. Press both brake shoes firmly against wheel rim.
c. Pull brake cable wire through its clamp bolt.
d. Tighten cable clamp bolt B securely.
Note: If one brake shoe is closer to the rim than the other first check that the wheel has been centred between the forks then adjust the brakes as necessary.



To adjust brakes that have a central calliper adjuster simply turn screw as shown until brakes centralise.



To centre side pull brakes first slacken the retaining nut and then centre the brake using a spanner on the front retaining nut.
Caution: Before riding, test your brakes. Make sure that the quick release mechanism is returned to its normal correct position, otherwise your brakes will not operate effectively.
Protect yourself from frayed cable ends by maintaining the end pieces fitted over the cable ends.

BRAKE MAINTENANCE
To maintain cable brakes in efficient working order, regularly check the brake adjustment and lightly lubricate brake pivots and springs. Oil the exposed parts of the cable to prevent corrosion. Slow or inefficient braking often indicates that the brake cables themselves require lubrication. As this job requires the removal of the complete brake cable, we recommend strongly that this service is done professionally.
Note: To assure smooth braking, wheels must run true and be correctly adjusted, with the rim brake tracks free from dents and kinks. The brake blocks should be in correct alignment with the rim brake track. Contact us if you are in any doubt regarding wheel and brake adjustment.

Important: Brakes should function freely and release fully. If brakes bind, first check for cleanliness and proper lubrication. If brakes still bind, call us for advice.



Adjusting the handlebars and stem and headset

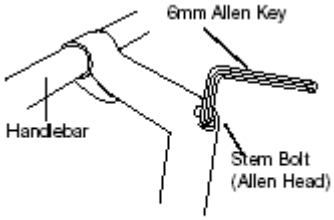
As your cycle may be fitted with a threadless headset or a threaded one, you must first ascertain which system you have. (See diagrams on page 13)

Handlebar Position
The position of the handlebar should be set to allow a comfortable and easy reach of gear control and brake levers. When riding, your weight should be so balanced that your hands rest lightly on the handlebars. This prevents strain on wrists and forearms when pedalling. If you alter the riding position, remember to tighten all nuts and bolts securely.

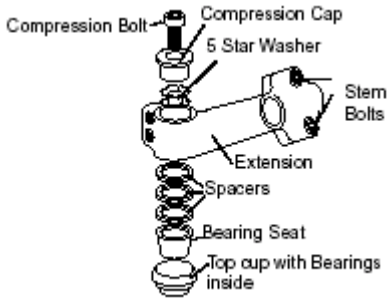
Adjusting threaded headsets
Loosen the expander bolt 1.5 turns. Gently tap the top of the expander bolt to loosen the wedge. When the expander wedge is loose, move the handlebars up or down until you find the optimum height at which you can easily reach the brake levers and comfortably grasp the handlebars. Usually this height is level with, or slightly lower than, the top of the saddle. Be sure the stem is in line with the front wheel.
Caution: A minimum insertion ring is marked on the handlebar stem and this marking should remain in the head tube. Under no circumstances should the minimum height insertion mark be visible on the handlebar stem. It must be down in the head tube.
When the desirable height has been achieved, align the handlebars with the front wheel and securely tighten the expander bolt.

Caution: It is extremely important to tighten the expander bolt sufficiently, so that when the wheel is held between your legs and the handlebars are twisted, the handlebars do not move. Do not over tighten, as it may increase risk of injury to the rider. Position grip portion of handlebars horizontally and securely tighten the binder bolt.
Note: Whenever the handlebar stem is removed from the head tube then the expander bolt should be lightly greased.

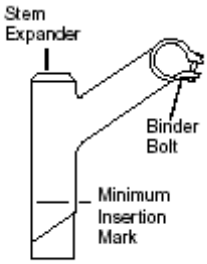
Recessed allen key type



Threadless type



Quill type



Adjusting threadless headsets.

Threadless headsets are easy to adjust and work on the same basic principal as a standard headset. The bearing races needs to press against the bearings. The compression bolt in the top cap will put pressure on the stem, which presses on the spacers, which press on the bearing seat, which press against the bearings

Loosen the stem bolt(s) that secure the handlebar stem to the steering column. Lubricate these bolts if they are dry. NOTE: DO NOT LUBRICATE INSIDE STEM/STEERING COLUMN SURFACE. Wiggle the stem from side to side to see that it is loose. If the stem is jammed or frozen to the steering column, no adjustment can be made.

Align the stem, and gently secure the top bolt. Stop when you feel the cap first contact the stem (or spacers). Secure the stem bolts. Check for play by pulling back and forth on the fork. A knocking sensation is called play. Turn the handlebars in different directions while checking for play. There may be play at this early setting…if there is: Loosen the stem bolt(s). Turn the adjusting bolt in the centre cap 1/8th of a turn clockwise. Secure the stem bolts, check for play again. Repeat until play disappears. Remember to loosen the stem bolts before turning the adjusting bolt.

Align the stem and secure the stem bolts fully. Do not over tighten stem bolts.

NOTE:
IF ANY HEADSET IS OVERTIGHTENED, THE BEARINGS WILL BE PERMANENTLY DAMAGED. The degree of damage is directly proportional to the amount overtightened.

NEVER EXTEND THE HANDLEBAR STEM OR SEAT POST ABOVE THE MINIMUM INSERTION MARK AS THIS IS POTENTIALLY DANGEROUS

Tyre care & removing the wheels

To obtain maximum life and full benefit from your tyres, it is essential to maintain the recommended pressure indicated on the tyre sidewall. Unnecessary hard braking and skidding greatly reduces tyre life. Make sure your tyres do not come into contact with oil, petrol, paraffin or other rubber solvents. Make sure that your wheels run true and are in correct alignment to avoid chafing the tyre sidewall against the bicycle frame or fork.
Tyres should regularly be inspected for wear and cuts. Check that the tyre tread pattern is clearly showing all round the outside edge of the tyre. Check there are no breaks or cuts and look for uneven wear. Tyres should be replaced if damaged. Tyre punctures can be caused by careless riding over sharp stones, holes in the road, or by hitting kerb stones. If you are storing your bicycle for a long period of time, it is advisable to store the machine with the tyres off the ground to prevent them from becoming distorted.
To inflate tyres, a foot pump or normal bicycle pump fitted with a suitable valve connector should be used along with an accurate tyre pressure gauge.
Wheels should be checked regularly for spoke tension. Perform this check more frequently if the bicycle is used on rough roads.

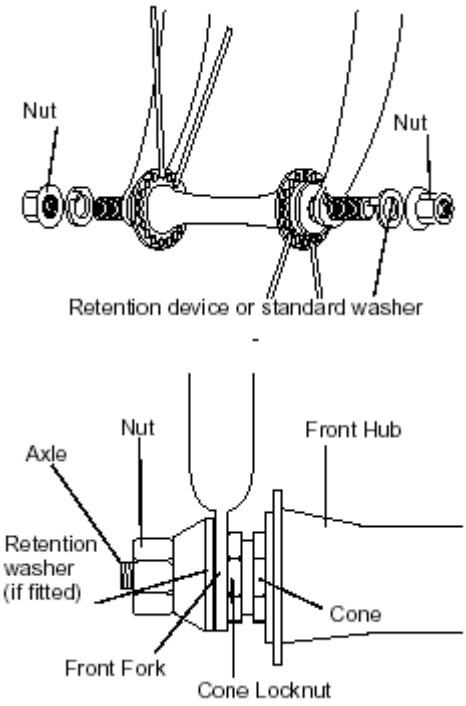
Nutted Rear Wheel
Move the chain onto the smallest rear sprocket. Disengage the brake quick release lever if your bicycle is so equipped. Loosen both axle nuts by turning in a counter clockwise direction. Pull the derailleur mechanism gear for additional clearance. Remove the rear wheel by sliding forwards/downwards and out of the frame.
To replace the wheel, locate the top section of the chain on the small sprocket and push the wheel back into the frame, centralising it between the chain stays. While holding the wheel in this position, tighten the axle nuts in a clockwise direction. The wheel should turn freely and have no side-play.
Reset the rear brake quick release mechanism and check the brake for proper operation.

Quick Release Rear Wheel

Use the same procedure as for a standard rear wheel (with the exception of loosening the axle nuts). Operate the quick release lever by pulling it away from the wheel and turning it 180° to release the wheel. When installing the rear wheel, use the same adjusting and closing procedure as outlined for the quick release front wheel. Check the release lever is in the correct and fully locked position before each ride. Reset the rear brake quick release mechanism and check the brake for proper operation.

Nutted Front Wheel

Remove axle nuts, washers, and axle retention device if fitted. The axle cone bearing adjustment should permit smooth rotation of the wheel. The cone locknut should be securely fastened against the axle cone to prevent loosening. Place the front wheel between the fork blades with the axle retention device and the projecting prongs of the retention device securely fitting the slot in the fork or with standard washers securely placed in position on to the wheel axle in the place of the retention washer. Replace locking washers and nuts at both ends gradually and alternately in order to keep the wheel centred.



Quick Release Front Wheel

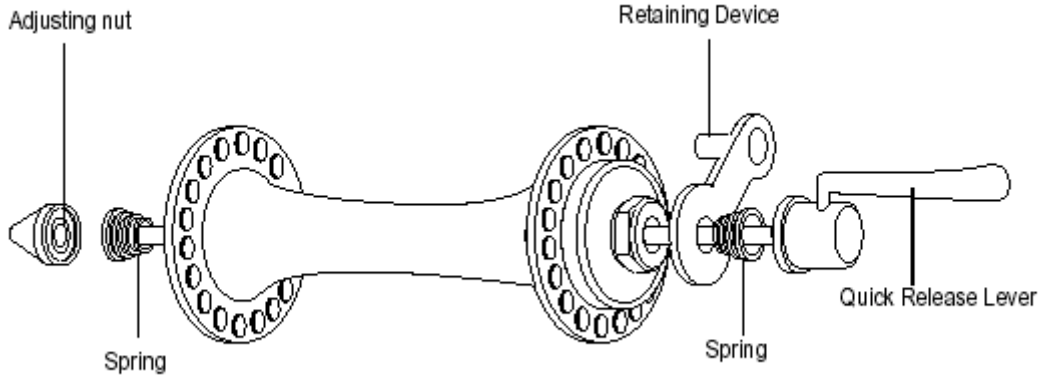
To remove the front wheel, first release the front brake. Then release the quick release lever on the axle and pull the wheel from the forks.

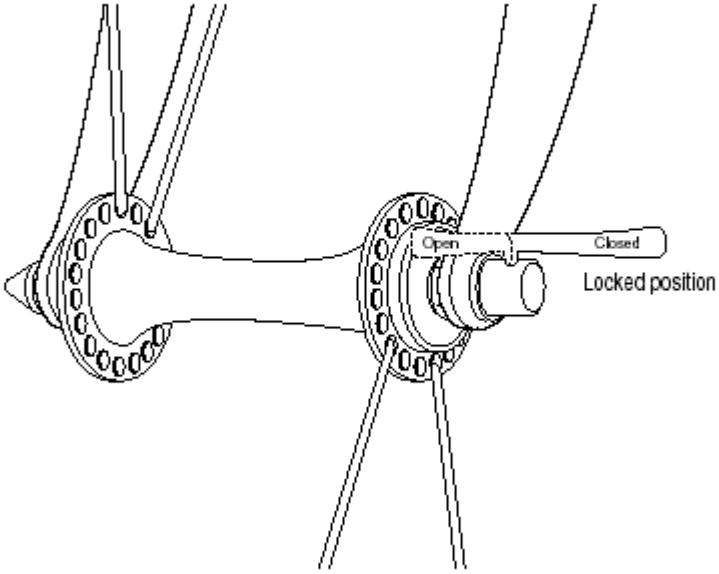
To install, fit the wheel into the forks with the quick release lever on the left side. Close the quick release and tighten the adjuster until snug. Release the quick release lever and further tighten the adjuster approximately three quarters of a turn. Lock and check that the quick release has gripped the fork ends. It may be necessary to tighten or loosen the adjuster slightly. Make certain to reset the quick-release front brake to ensure proper operation.

The wheel must clear the frame and fork by at least 2mm.

The wheel should turn freely and have no side-play.

Check the quick-release lever is correctly and fully locked in position before each ride.





Warning! Do not attempt to ride the cycle until you are absolutely sure that the quick release lever is fully closed and securely tightened. Children should check with their parents to ensure that this has been tightened correctly.



Safer cycling

NOTE: Like any activity, cycling involves risk of injury and damage. By choosing to ride a bicycle, you assume the responsibility for that risk. So you need to practise safe and responsible riding. The following are some points which, if practised, may reduce that risk. It is not intended to be a definitive work on the subject, there may be omissions and strict adherence to these points in no way guarantees survival.

THE BASICS

1. Always carry out the Mechanical Safety Check before you get on a bike (see page 3).
2. Seriously consider wearing a cycling helmet which meets the appropriate local standard.
3. Be careful to keep body parts and other objects away from the sharp teeth of chain rings, the moving chain, the turning pedals and cranks, and the spinning wheels of your bicycle.
4. Always wear shoes that will stay on your feet and will grip the pedals. Never ride barefoot and consider the possible implications of wearing sandals, of any type.
5. Be thoroughly familiar with the controls of your bicycle.
6. Wear bright, visible clothing that is not so loose that it can catch on moving parts of the bicycle or be snagged by objects at the side of the road or trail.
7. Don't jump with your bike.
8. Think about your speed, and keep your speed at a level which is consistent with conditions. Always keep in mind that there is a direct relationship between speed and control, and between speed and component stress.

SOME "RULES" OF THE ROAD

1. You are sharing the road or the path with others - motorists, pedestrians and other cyclists. Respect their rights, and be tolerant if they infringe on yours.
2. Be assertive when necessary but always be prepared to ride defensively when required...if you don't know how to be safely assertive, always ride defensively. Assume that the people with whom you are sharing the road are so absorbed with what they are doing and where they are going that they are oblivious to you.
3. Look ahead of where you're going, and be ready to avoid anything, for example:
    - Vehicles slowing or turning in front of you, entering the road or your lane ahead of you, or coming up behind you.
    - Parked car doors opening in front of you.
    - Pedestrians stepping out in front of you.
    - Children playing near the road.
    - Pot holes, sewer grating, railway tracks, expansion joints, road works, debris and other obstructions that could cause you to swerve into traffic, catch your wheel or otherwise cause you to lose control and have an accident.
    - The many other hazards and distractions which can occur on a bicycle ride.
4. Where they exist, seriously consider riding in designated bike lanes, or on designated bike paths. Where they don't exist, always ride on the correct side of the road, in the same direction as car traffic, at times you will need to be as close to the edge of the road as practicable.
5. Stop at stop signs and traffic lights; slow down and look both ways at junctions. Remember that a bicycle always loses in a collision with a motor vehicle, so be prepared to yield even if you have the right of way!
6. Use hand signals for turning and stopping. Learn the local vehicle code for the correct signals.
7. Riding with headphones can be very dangerous. They mask traffic sounds and emergency vehicle sirens, distract you from concentrating on what going on around you, and their wires can tangles in the moving parts of the bicycle, causing you to lose control.
9. Never carry a passenger, unless it is a small child wearing an approved helmet and secured in a correctly mounted child carrier or a child-carrying trailer.
10. Never carry anything which obstructs your vision or your complete control of the bicycle, or which could become entangled in the moving parts of the bicycle.
11. Never hitch a ride by holding on to another vehicle.
12. Don't do stunts, wheelies or jumps. They can cause you injury and damage your bike.
13. Don't weave through traffic or make any moves that may surprise people with whom you are sharing the road.
14. Observe and yield the right of way.
15. Never ride your bicycle while under the influence of alcohol or drugs.

16. Take extra care when riding in bad weather, when visibility is obscured, at dusk or in the dark, or when extremely tired. Each of these conditions increases the risk of accident.

WET WEATHER RIDING

WARNING: Wet weather impairs traction, braking and visibility, both for the cyclist and for other vehicles sharing the road. The risk of an accident is dramatically increased in wet conditions. Under wet conditions, the stopping power of your brakes (as well as the brakes of other vehicles sharing the road) is dramatically reduced and your tires don't grip nearly as well. This makes it harder to control speed and easier to lose control. To make sure that you can slow down and stop safely in wet conditions, you may have to ride more slowly and apply your brakes earlier and more gradually than you would under normal, dry conditions.

NIGHT RIDING

Riding a bicycle at night can be many times more dangerous than riding during the day.

WARNING: Riding at dawn, at dusk, after dark or at times of poor visibility without a bicycle lighting system which meets local and national laws and without reflectors is illegal, dangerous and can result in serious injury or death.

Even if you have excellent night vision, many of the people with whom you're sharing the road don't. A cyclist is very difficult for motorists and pedestrians to see at dawn, at dusk, at night, or at other times of poor visibility. If you **must** ride under these conditions, check and be sure you comply with all local laws about night riding; follow the rules of the road even more carefully, and take the following additional precautions:

- Make sure that your bicycle is equipped with correctly positioned and securely mounted lights and reflectors.
- Wear light-coloured, reflective clothing and accessories, such as a reflective vest, reflective arm and leg bands, or reflective stripes on your helmet.
- Make sure your clothing or anything you may be carrying on the bicycle does not obstruct a reflector or light.
- Be especially careful in areas which have heavy traffic and when on roads with speed limits over 40 mph.
- Be on the constant look out for road hazards.
- If possible, ride on routes already familiar to you.

Gloom and doom?

A few years ago the CTC (Cyclist's Touring Club) published the conclusions of a study undertaken in Denmark. This study found that the health benefits of riding a bicycle were five times more likely to prolong your life than potential accidents were to shorten it! But please remember that this is a Danish study and SJSC is in no way suggesting that these statistics can be applied exactly to any other country.



Your warranty

Your Thorn branded bicycle comes with one of the best warranties available.

Thorn branded bicycles
Your entire bicycle is covered by a "money back if not delighted" guarantee. This entitles the owner to a 14 day trial of the bicycle from the date of delivery and full payment. If you find that this is not long enough, or circumstances prevent you from fully testing the bicycle, then please contact us - we will probably be able to extend this period!
If after this period you are not entirely satisfied with your bicycle, we will collect the bicycle and give you a full refund of the purchase price.

Thorn branded frames and forks
The frame and forks are warranted against failure or defects for the lifetime of the original owner (Thorn Voyager, Explorer and ME'N'U2 carry 5 year warranties – extendable to lifetime for a minimal charge) . Faulty items will be replaced at no charge, although after the first 12 months from date of delivery, the labour and carriage costs are the responsibility of the owner.
This warranty does not cover wear and tear, misuse, abuse or improper maintenance.

Some Thorn custom cycles and tandems, purchased for competitive racing, have a 12 month warranty on frame and forks.

Component parts
The components fitted to the frame and forks are warranted against failure or defects for 12 months from the date of delivery.
This warranty does not cover wear and tear, misuse, abuse or improper maintenance.

In offering this guarantee, Thorn Cycles Ltd in no way seeks to diminish your statutory rights as a consumer.



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