# FALCON CLAUD BUTLER

# OWNERS MANUAL

## 15 YEAR GUARANTEE

# CLAUD BUTLER · HARRIER · FALCON

## CONGRATULATIONS!

You are now the proud owner of a British hand-built bicycle. Included in this manual are details on how to prepare your bicycle for riding, how to maintain your bicycle to keep it roadworthy, information on accessories and recommendations and tips for safe and correct riding position.

It is a measure of our faith and confidence in the quality of the skills of the craftsmen who handbuilt this bicycle and of the materials used that we guarantee the frame and forks against defects for up to 15 years during the lifetime of the original owner from the date of purchase.

Please ensure that the Bicycle Log Sheet and Market Survey Form are completed at the time of purchase. These details will be of value to the police in the unfortunate event of your bicycle ever being lost or stolen. They also act as a record of your guarantee.

Look after your bicycle, maintain it regularly, treat it with respect and it will reward you with many years of trouble free use. Materials, Craftsmanship and Attention to Detail are of the Highest Order. . . . now it's up to you.

## CONTENTS

**Please fill in the form on the following page and return it to:**

**FALCON CYCLES LTD**
**PO BOX 3**
**BRIGG**
**SOUTH HUMBERSIDE**
**DN20 8PB**

1) NAME OF MAIN USER _____

ADDRESS _____

COUNTY _____

POST CODE _____

2) SEX OF MAIN USER MALE ☐ FEMALE ☐

3) DATE OF BIRTH OF MAIN USER YEAR ☐☐☐☐

4) BRAND FALCON ☐ HARRIER ☐ CLAUD BUTLER ☐ OTHER ☐

5) MODEL NAME _____ (Written on bicycle)

6) SIZE 13″ ☐ 15″ ☐ 16″ ☐ 17″ ☐ 18″ ☐ 19″ ☐

20″ ☐ 21″ ☐ 22″ ☐ 23″ ☐ 24″ ☐

7) PRIMARY COLOUR _____

8) WHERE WAS THE CYCLE PURCHASED

1) Cycle Shop ☐ 2) Mail Order ☐ 3) Department Store ☐

4) Halfords ☐ 5) Cash and Carry ☐ 6) Toy Shop/Sports Shop ☐

7) Supermarket ☐ 8) Charlie Browns ☐ 9) Garage/Service Station ☐

DATE OF PURCHASE MONTH ☐☐ YEAR ☐☐☐☐ FRAME No. ☐ ☐☐☐☐☐☐

Complete this **BICYCLE LOG BOOK** and keep it in a safe place. In the event of your machine being lost or stolen this information should be passed on to the police.

Name . . . . . .

Address . . . . . .

. . . . . .

Model Name & Type . . . . . .

Serial No. . . . . .Frame Size & Colour . . . . . .

Extras and Identifying Marks . . . . . .

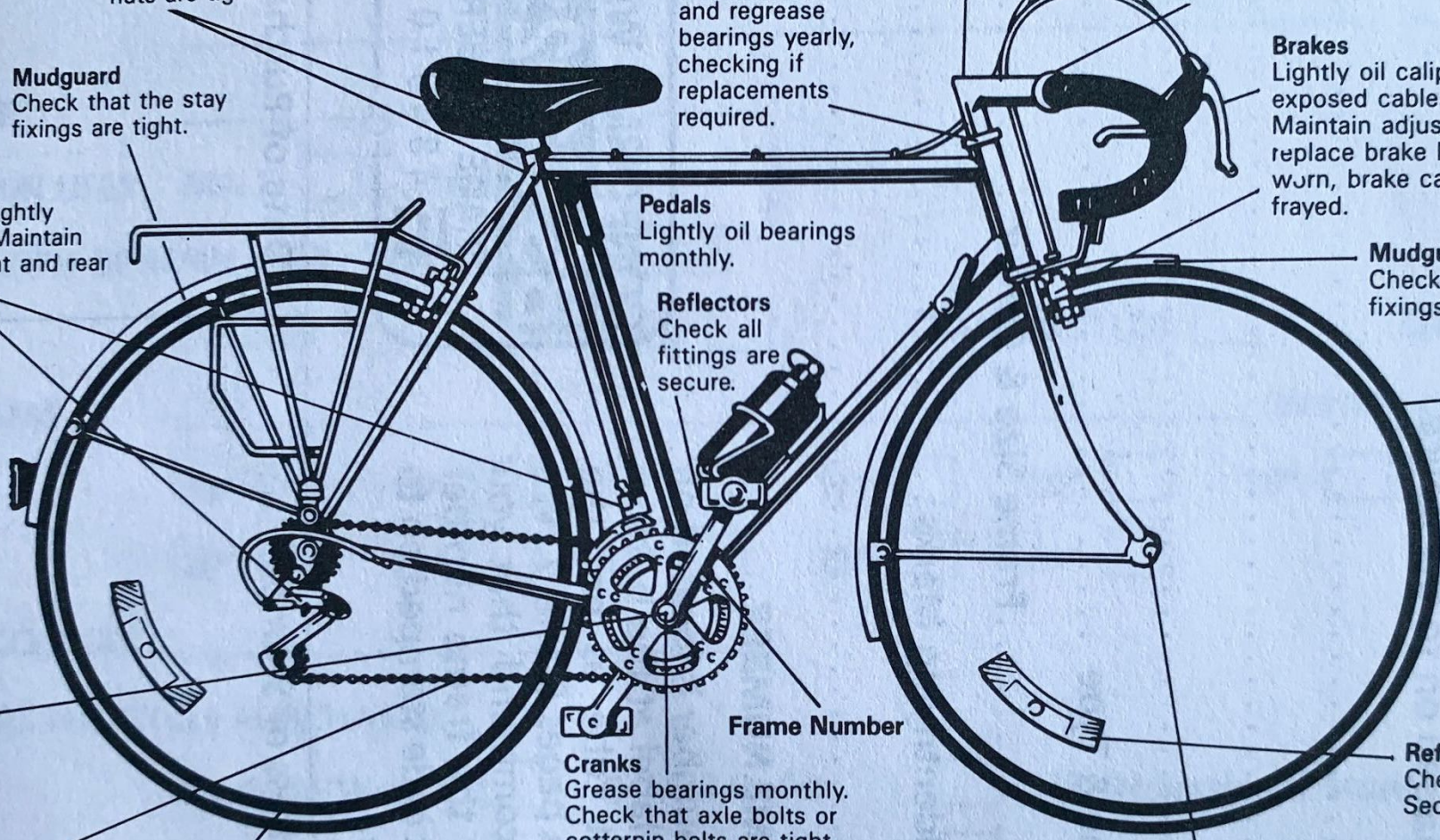
. . . . . .

## FRAME NUMBER

The frame number is located on the BS6102 label at the bottom of the seat tube as per the diagram on pages 6 and 7. We strongly recommend that you have either the frame number or your post code stamped on to your bicycle.


| Dealers Address or Stamp | Date of Purchase |
| --- | --- |
| | |

## Routine Maintenance Checks and Lubrication



**Seat and Stem Nuts**
Be sure seat and stem nuts are tight.

**Mudguard**
Check that the stay fixings are tight.

**Gears**
Front and Rear – Lightly oil moving parts. Maintain adjustment of front and rear derailleurs.

**Half Yearly**
Remove and clean, lubricate chain, derailleur gears and all cables. Check and replace as required.

**Bottom Bracket**
Clean, regrease yearly, checking for wear.

**Chain**
Keep lightly oiled weekly, clean and lubricate half yearly.

**Wheels**
Check that axles are sealed and secured properly. Rims should be kept free from wax, oil, grease and glue.
Check for loose or missing spokes.

**Cranks**
Grease bearings monthly.
Check that axle bolts or cotterpin bolts are tight.
Check for free play in bottom bracket.
Yearly, remove, clean and regrease hub axles, bottom bracket set and headset.

**Frame Number**

**Headset**
Remove, clean and regrease bearings yearly, checking if replacements required.

**Pedals**
Lightly oil bearings monthly.

**Reflectors**
Check all fittings are secure.

**Stem Nut**
Ensure stem bolt is tight.

**Handlebars**
Check handlebar bolt is tight. Check brake levers securely mounted to bars and brakes stop smoothly and efficiently.

**Brakes**
Lightly oil calipers and exposed cables monthly. Maintain adjustment and replace brake blocks when worn, brake cables when frayed.

**Mudguard**
Check that the stay fixings are tight.

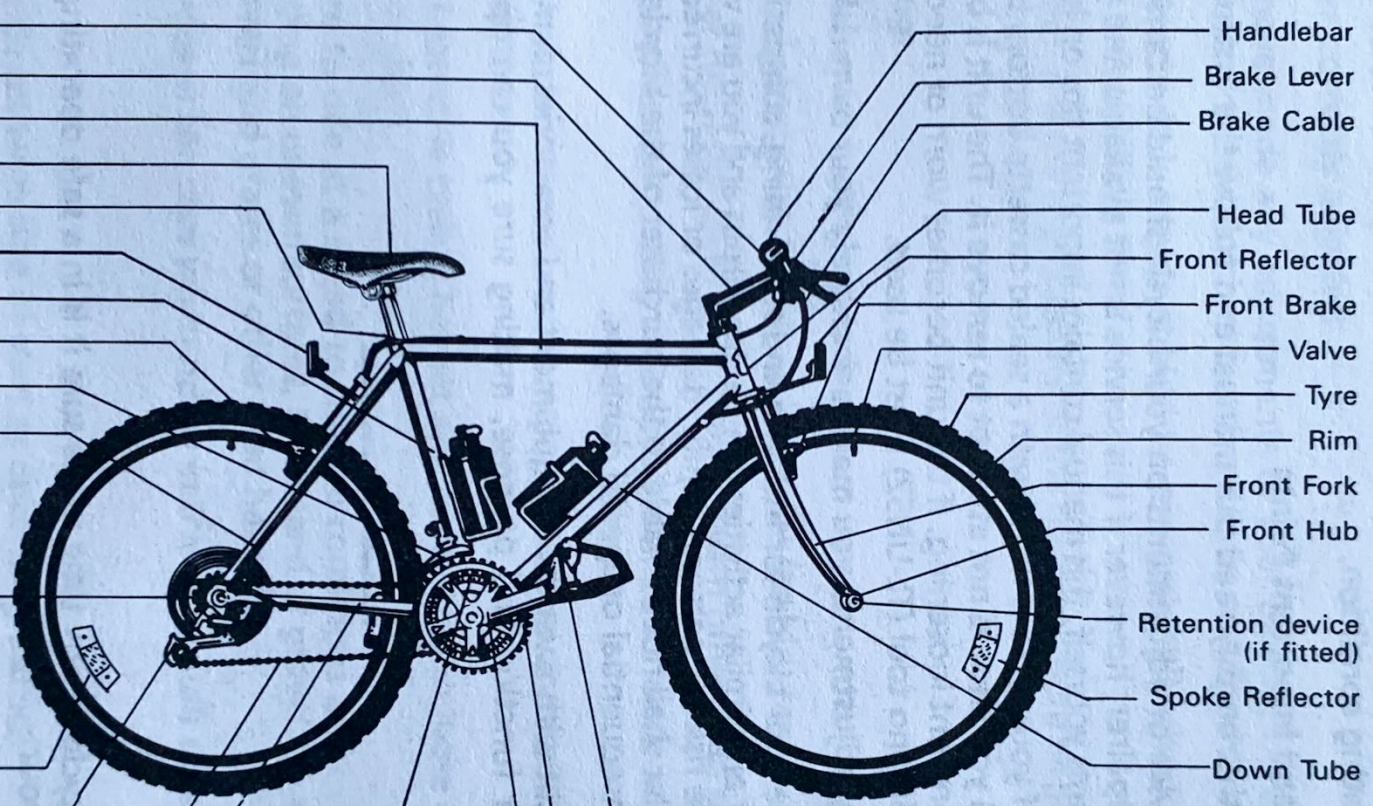
**Tyres**
Check for cuts and wear. Maintain pressure indicated on tyre wall for maximum efficiency.

**Reflectors**
Check monthly. Securely fixed.

**Wheel Hubs**
Grease bearings monthly. Adjust cones to avoid free play from side to side.

**N.B.**
Wash cycle weekly with warm soapy water and polish dry with soft cloth.

# PARTS DESCRIPTION OF AN ALL-TERRAIN BICYCLE




IMPORTANT: Please carefully note the names of all parts of your bicycle for ease of assembly.
The items shown may not all appear on your bicycle.

# YOUR BICYCLE

## OWNERS RESPONSIBILITY

In this handbook we describe and illustrate how to ride safely and keep your bicycle in a safe trouble-free operating condition.

### Owner's Responsibility and Important Points

Point 1 Carefully and thoroughly read this manual and follow the instructions.

Point 2 Any major service or adjustments on your bicycle should be carried out by a professional repairer; however if this service is not available and you wish to make adjustments yourself, this manual contains important tips on how to do it.

**IMPORTANT:** If your cycle is fitted with a sealed cassette bottom bracket unit (crank spindle) **you should not attempt to remove it.** The unit is bonded into the frame to prevent loosening. If the unit becomes worn or needs replacing the correct Shimano tool (TL-UN52) must be used.

**CAUTION: Any adjustments you make are entirely your own risk.**

Point 3 **Caution:** To use your bicycle for freestyle and stunt riding, competitive events, off-road use or any similar activities can be dangerous and you are warned that you assume the risk for personal injury, damages or losses incurred from such use. The Retailer shall not be liable to the purchaser of the bicycle or to third parties for consequential or special damages.

Point 4 Bicycles are built with a variety of equipment and accessories, familiarise your self with their function and purpose, making sure you can operate them correctly.

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# SAFE CYCLING

## SAFETY TIPS

### Before Riding:

Before you ride your bicycle at any time make sure it is in a safe operating condition. Particularly check that your:-

- Bicycle's nuts, bolts and parts are tight and not worn or damaged;
- Riding position is comfortable;
- Brakes are operating effectively;
- Steering is free with no excessive play;
- Wheels run true and hub bearings are correctly adjusted;
- Wheels are properly secured and locked to frame/fork;
- Tyres are in good condition and inflated to correct pressure;

- Pedals are securely tightened to pedal cranks;
- Gears are correctly adjusted.
- Pedals are securely tightened to pedal cranks;
- Gears are correctly adjusted.

After you have made any adjustments to your bicycle, check that all nuts, bolts are securely tightened and cables are free from kinks and fixed securely to the bicycle frame.

Every six months your bicycle should be professionally checked to ensure that it is in correct and safe working order.

But remember, it is the responsibility of the rider to ensure all parts are in working order, prior to riding the bike.

**When Riding:**

- Always obey all traffic regulations.
- Know and observe all local laws and rules for bicycles.
- Give clear hand signals in good time to warn other road users of your intentions.
- Be aware of vehicles pulling in or out of traffic and for doors being opened on parked cars.
- Always keep both hands and feet on handlebars and pedals also sit correctly on the seat at all times.
- Wear a protective cycling helmet and make sure no loose clothes can catch in your wheels or chain.
- Take care to ride at a speed to suit the conditions and extra care should be taken when riding on uneven surfaces, loose sand or gravel. Be alert and avoid potholes, drain covers and grates or other road hazards.

  *Always loosen toe clips when riding in traffic or built up areas.*

**Do Not's**

- Do not ride on same side of road as oncoming traffic.
- Do not ride two abreast.
- Do not carry a passenger.
- Do not swerve in and out of traffic.
- Do not hang items over the handlebars to impede steering or catch in the front wheel.
- Do not hold on to another vehicle.
- Do not ride too close behind another vehicle.

### Caution: Wet Weather Riding

No brakes work as well under wet or icy conditions as they do under dry conditions. In wet weather special precautions must be taken to assure safe stopping. Ride slower than normal and apply your brakes well in advance of anticipated stops.

### Caution: Night Riding

We recommend you minimize the time you ride after dark. If you should have to be out on your bicycle at night you must, to comply with the law, use headlight and taillight on your bicycle in addition to the all-around reflectors that are fitted. For added safety wear light coloured clothing with reflective stripes.

Check that the reflectors are firmly secured in their correct position and clean and not obscured. Damaged reflectors must be replaced immediately.

### Riding Position

It is important that you and your bicycle are fitted to each other, not only for comfort and riding ease but for control and safety. Normally your Dealer will custom fit your bicycle to you but the following hints should help you to find your most comfortable, safe and efficient position.

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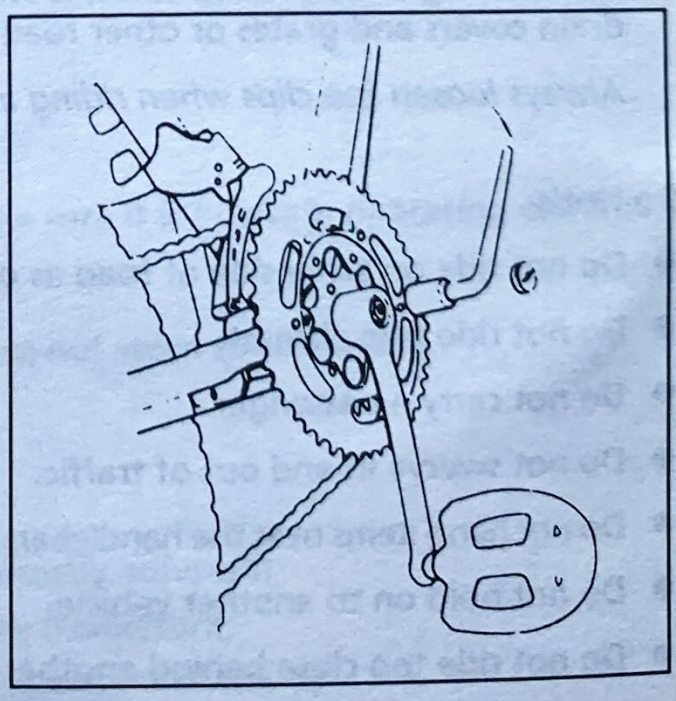
### COTTERLESS CRANKS

If the chainwheel and cranks of your bicycle are of the cotterless type as shown below, to ensure trouble free operation it is important that the axle nuts are tightened as securely as possible. It is strongly recommended that tightness of cranks be checked after the first two weeks of use and at six-monthly intervals thereafter.

***WARNING: Failure to do so may cause permanent damage to the precision made components.***

To carry out adjustment, first remove the dust cap, then using a 14mm socket tighten to a torque of 47.5Nm (420 lb/f in).



# SEAT

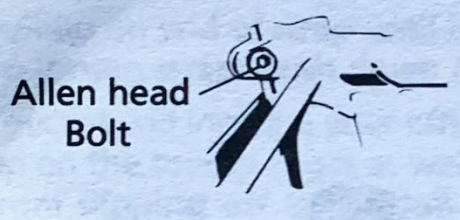
## Seat Adjustment

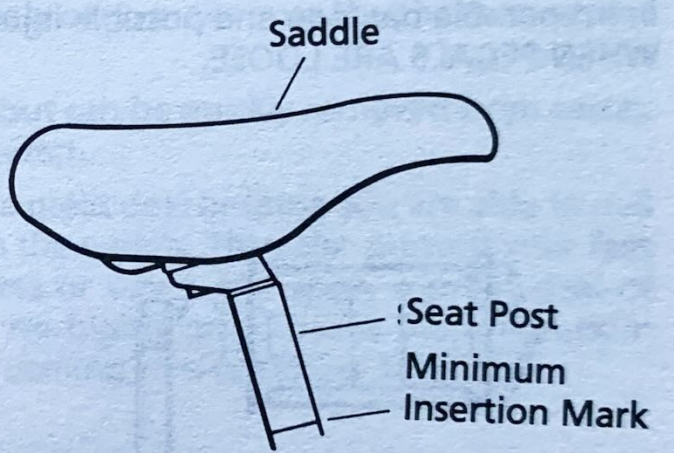
Loosen the nut on the seat-post clamp enough to allow the saddle to move forward and back. The seat can then be aligned forward and back and the angle can also be adjusted (it is recommended that the seat be fairly parallel to the ground).

To adjust the seat up and down, loosen the binder-bolt on the seat tube, position the seat and re-tighten the binder-bolt.

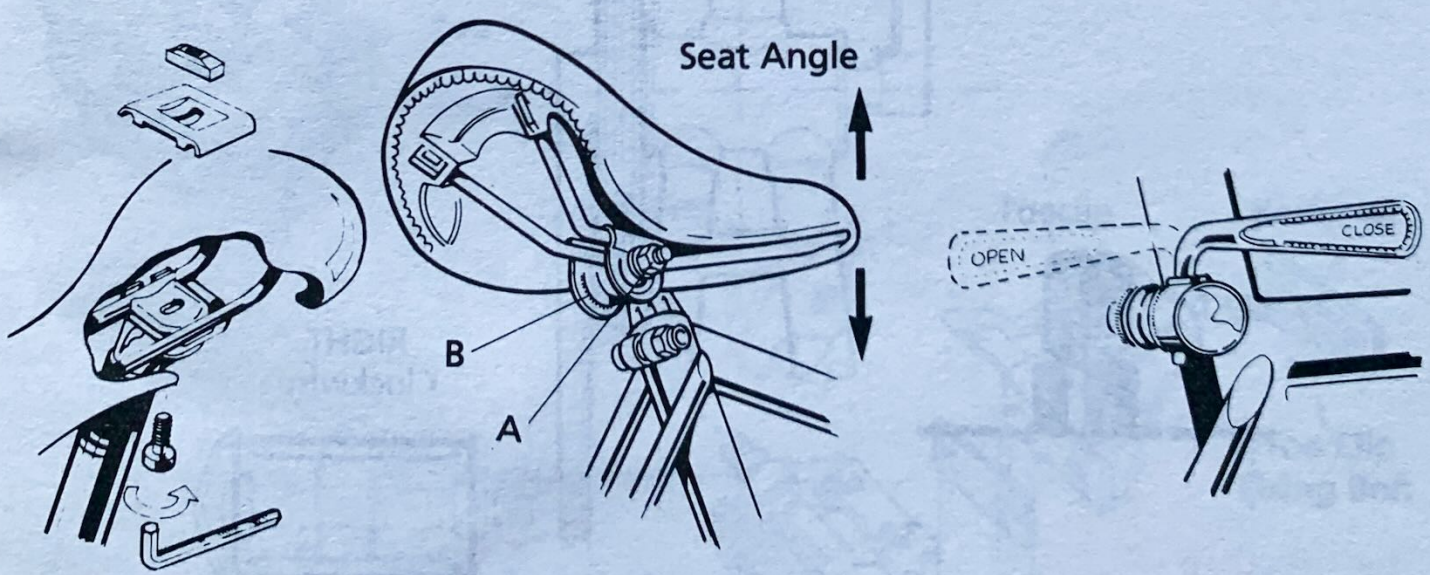
**Caution:** Insert the seat-post to a point *above* the insertion mark. Securely tighten the seat-post binder bolt/nut to 160 in.-lb. by using a 6mm allen key. Test by grasping the seat and attempting to turn. Keep tightening until the seat will no longer turn.

**Warning:** Bicycle should *not* be ridden if seat adjustments are not properly tightened.




Seat posts differ according to saddle types and accordingly the procedure for fitting varies as shown in the illustrations below.



# PEDALS

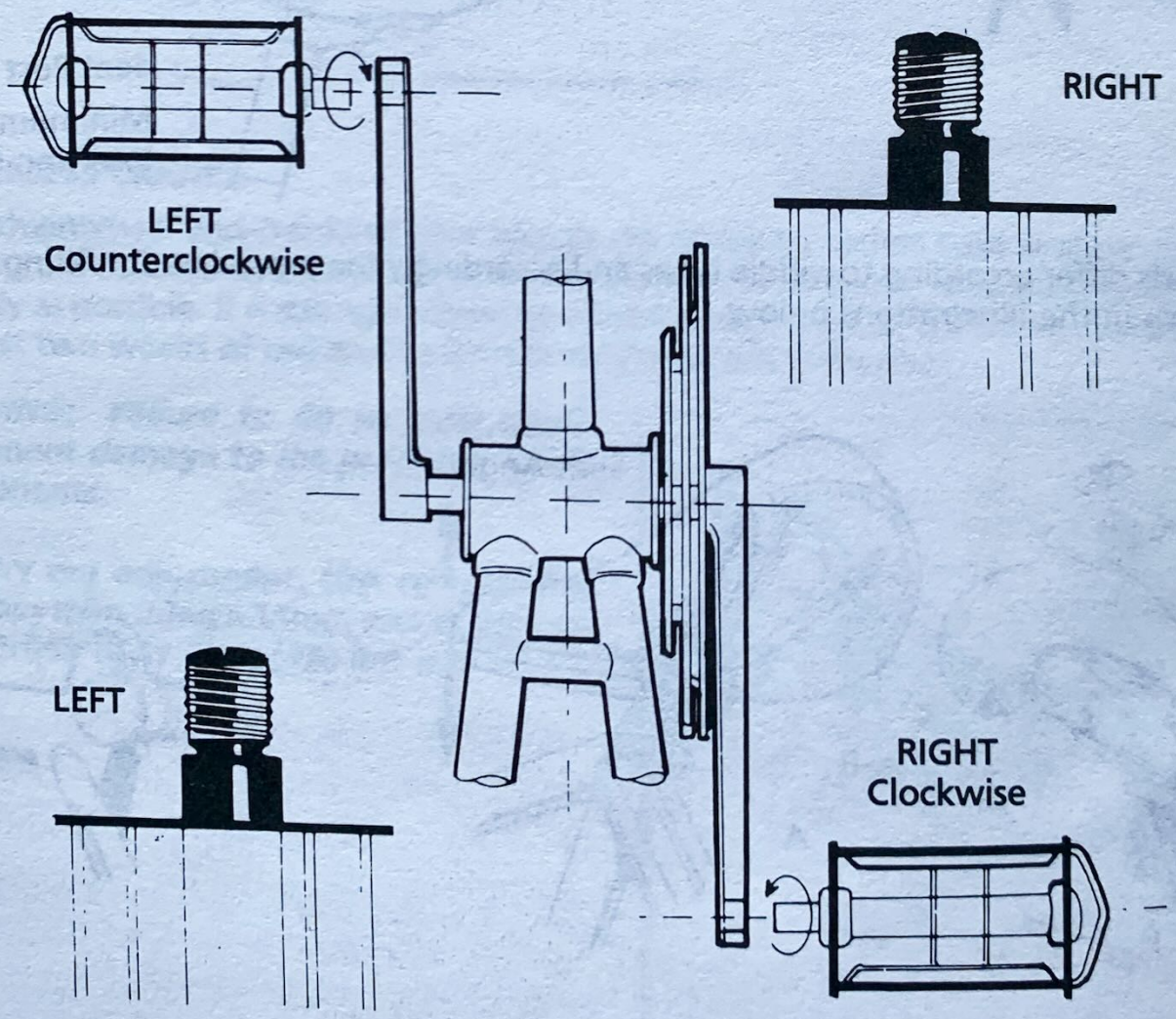
## PEDAL INSTALLATION

**Note:** Left and right are determined from riding position on the bicycle.

Most pedals have left and right hand threads to prevent them from loosening while riding. Left-hand pedals have left-hand threads and are marked with an "L" on the spindle. Right-hand pedals have right-hand threads and are marked with an "R".

Should the markings be absent, thread direction can be determined by examination. Left-hand threads run up to the left and right-hand threads run up to the right. Grease threads before installation. The left-hand pedal is tightened by turning counterclockwise and the right-hand pedal is tightened by turning it clockwise. We recommend a torque of 350 in-lb.

**Important:** Pedals should tighten securely. A loose pedal will strip the threads, resulting in irreparable damage and possible injury to the rider. BICYCLE MUST *NOT* BE RIDDEN WHEN PEDALS ARE LOOSE.



# PEDALS

## TOE CLIPS AND TOE STRAPS

Toe clips supplied in certain models and having only one screw where shown are adjustable. To adjust, loosen screw and slide toe clip in desired direction, then securely retighten screw.

**Note:** Periodically check tightness of *Screw(s)* holding *toe clips* in place.

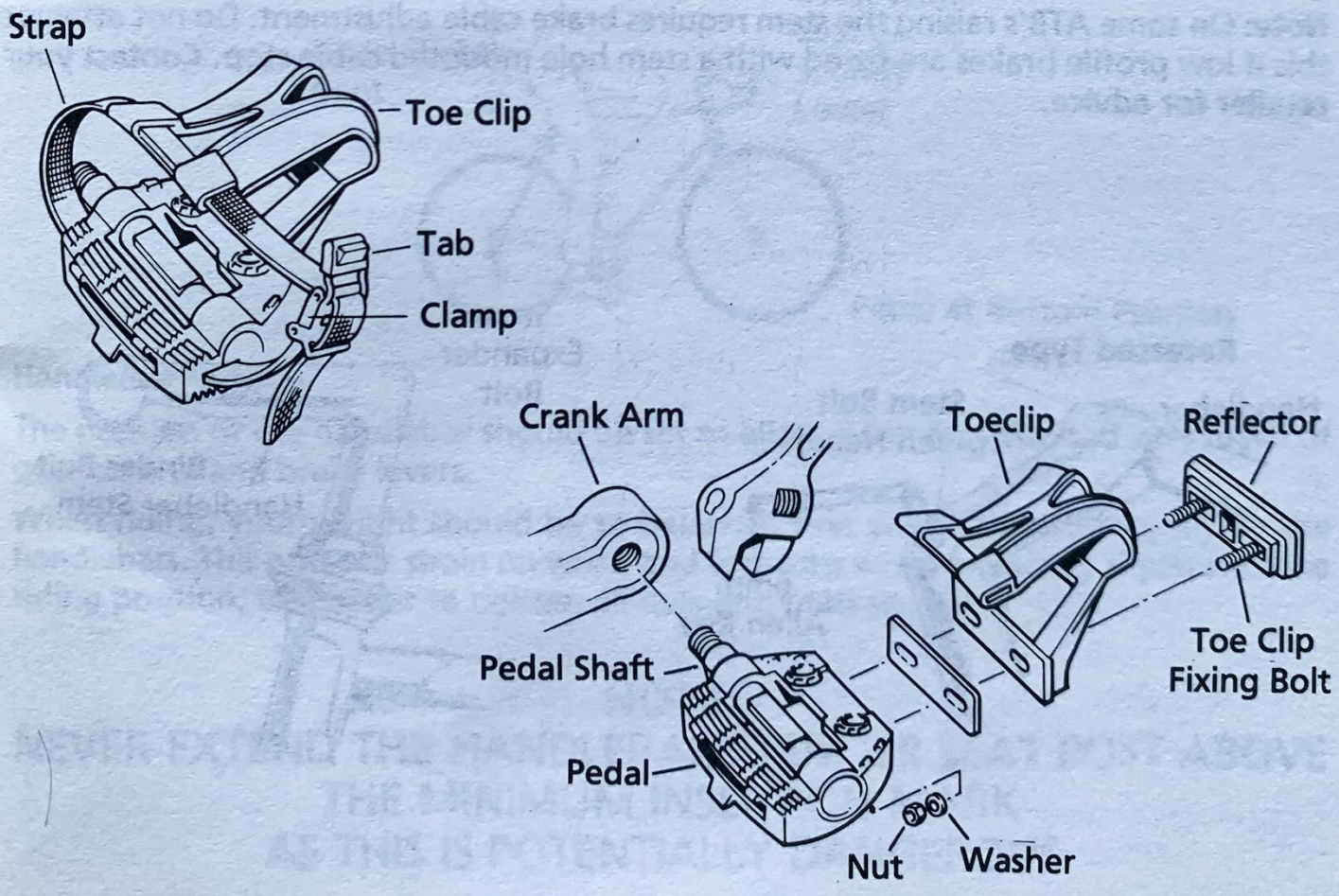
If toe clips and straps are not original equipment on your bicycle they can be added easily.

Attach each toeclip to a pedal with the bolts that are integral parts of the pedal reflectors. Sandwich the toeclip between the pedal surface and the reflector and fasten it to the pedal with the lock washers and nuts. Feed each toeclip strap through the pedal slots, then through the slot in the toeclip cage. Buckle the strap. See diagrams.

*Operation.* Getting on and off a bicycle equipped with toeclips is a little tricky at first, but with just a little practice it becomes extremely easy, make sure that both toestraps are open wide enough to accept your shoes.

Pull up on end of strap until foot is held snugly but can be quickly removed from pedal. To loosen strap, push down on tab at top of clamp.

Toeclips will increase your efficiency and power a great deal because you are able to pull up on the toeclip cages as well as push down on the pedals. They also prevent your feet from slipping off the pedals when they are wet or when you apply a great deal of pressure. Although toeclips are an accessory, we highly recommend them. **Caution:** Always remember to release the straps before coming to a complete stop.



# HANDLEBARS

Loosen expander bolt so that expander wedge is not tight in bottom of handlebar stem. Gently tap the top of the expander bolt to further loosen the wedge if necessary. 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.**

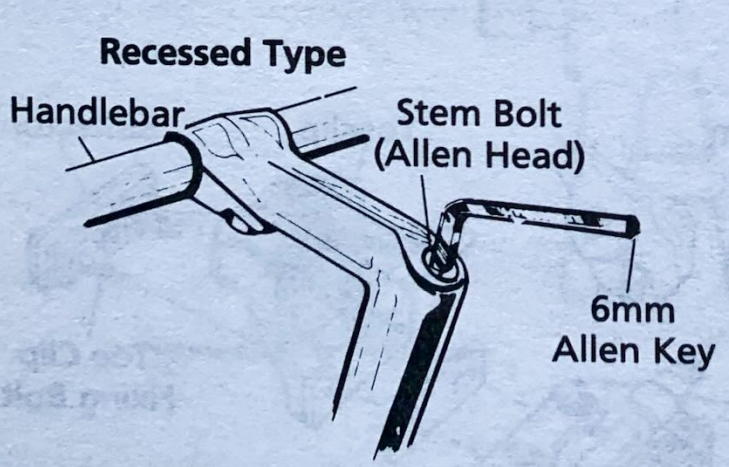
When desirable height has been achieved, align the handlebar with the front wheel and securely tighten expander bolt.

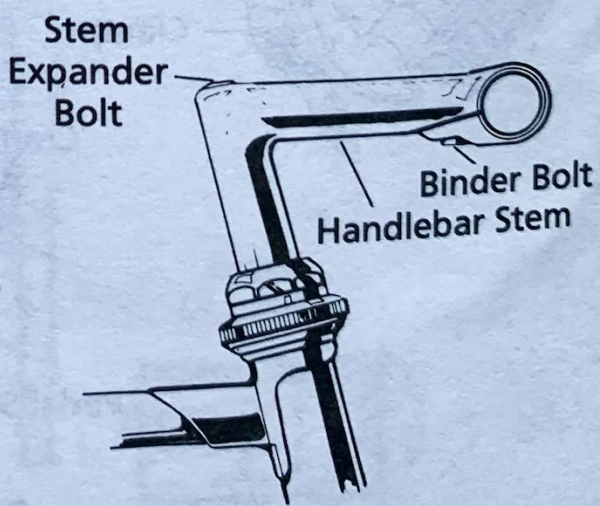
**Note:** On models equipped with stem mounted gearlevers the levers may be moved up or down to the rider's most comfortable position. When moving them, be certain that the levers face upwards and that the cables are not twisted.

**Caution:** It is extremely important to tighten it sufficiently, so that when the wheel is held between your legs and the handlebars are twisted, the handlebars do not move. Do not overtighten, 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 headtube then the expander bolt should be lightly greased.

**Note:** On some ATB's raising the stem requires brake cable adjustment. Do not attempt this if low profile brakes are fitted with a stem hole mounted cable stop. **Contact your retailer for advice.**



# CYCLING POSITION – Seat

## Saddle Angle

The seat should be horizontal or parallel with the ground. Slight variation around the horizontal may suit individual comfort but if excessive angles are felt necessary check other aspects of your position.

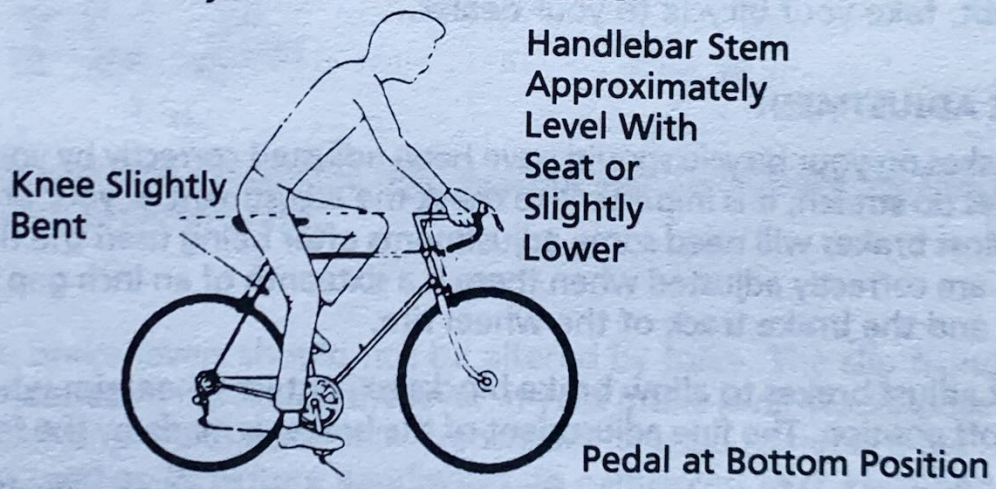
## Saddle Height

The correct seat height is determined by sitting on the seat with your leg fully extended. Your heel (in flat shoes) should just touch the pedal when it is positioned at its lowest point. When riding normally with the ball of your foot on the pedal your knee should be slightly flexed at the bottom of the pedal stroke (see diagram).

## Saddle Forwards/Backwards Position

With the ball of one foot on the pedal and the cranks parrallel to the ground the saddle should be adjusted backwards or forwards to a position whereby the pedal centre is directly below the knee joint.

Very small changes in saddle position can have a substantial effect on performance and comfort. Consequently, whenever you make a change to your saddle position, make only one directional change at a time; and make the changes in small increments, until you have found the point at which you are most comfortable.




## 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.

**NOTE:**

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

## BRAKES

For safe riding, one of the most important parts of your bicycle are the brakes. Check their operation before each ride assuring that they both function correctly.

There are two brake mechanisms working independently – one on the front wheel and the other on the rear wheel. The brakes are operated by hand levers fastened to the handlebars. The right lever controls the front brake and the left lever controls the rear brake. To stop with safety:

1. Operate the rear brake (left lever) slightly before the front brake (right lever).
2. Apply firm pressure to both front and rear brake levers.

   **Caution:** If the front brake is applied with too much pressure, the rider may be thrown off the bicycle.
3. Never apply the front brake on a turn. This is especially dangerous when cornering or riding on slippery or loose surface roads.

**Caution:** Brakes are less effective in wet weather. Ride slower and allow more distance for stopping.

**Note:** Do not ride your bicycle if the braking system is not working correctly. If you are in doubt, take your bicycle to your dealer.

### BRAKE ADJUSTMENT

The brakes on your bicycle should have been adjusted correctly by your dealer; however, as cables do stretch, it is important to check the adjustment of your brakes after your first ride. Most brakes will need some adjustments after being used the first few times. Your brakes are correctly adjusted when there is a sixteenth of an inch 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 one-sixteenth of an inch.
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.

# BRAKES

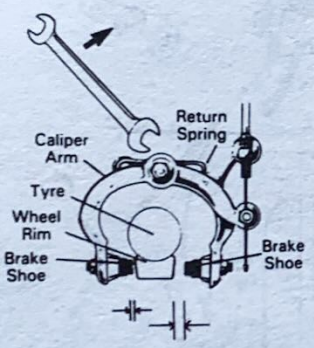
## BRAKE MAINTENANCE

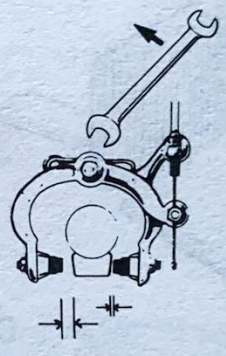
To maintain cable brakes in efficient working order, regularly check the brake adjustment and lightly lubricate brake pivots and springs. Oil the exposed parts of the cable to prevent corrosion. Slow or inefficient braking often indicates that the brake cables themselves require lubrication. As this 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. See your dealer if you are in any doubt regarding wheel and brake adjustment.

Protect yourself from frayed cable ends by maintaining the end pieces fitted over the cable ends.

**Important:** Brakes should function freely and release fully. If brakes bind, first check for cleanliness and proper lubrication. If brakes still bind, return your bicycle to your dealer for adjustment.

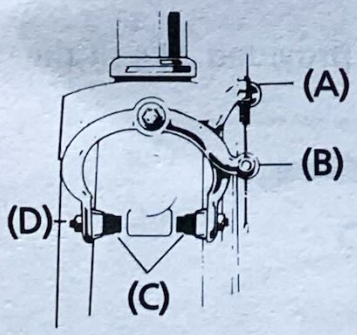


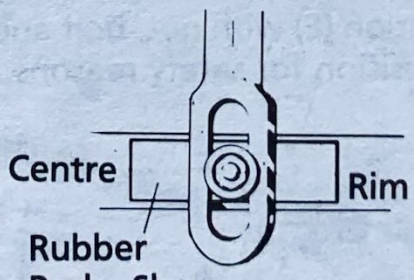



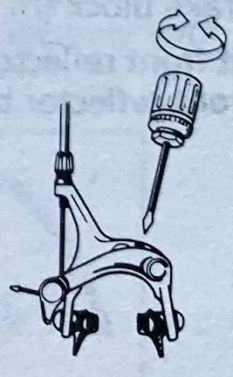
To centre side pull brakes first slacken the retaining nut and then centre the brake using a spanner on the front retaining nut.

## BRAKE LEVERS

The position of the brake levers should not be altered by force. The clip fixing screw should always be loosened to reposition the lever. If your brake lever works loose on the handlebar, a screwdriver or suitable socket wrench can be used to tighten the clip. On hooked brake levers used on downturn handlebars, to gain access to the securing screw, you have to pull the brake lever towards the handlebar and you will see the fixing screw behind the brake cable. (see diagram page 19).



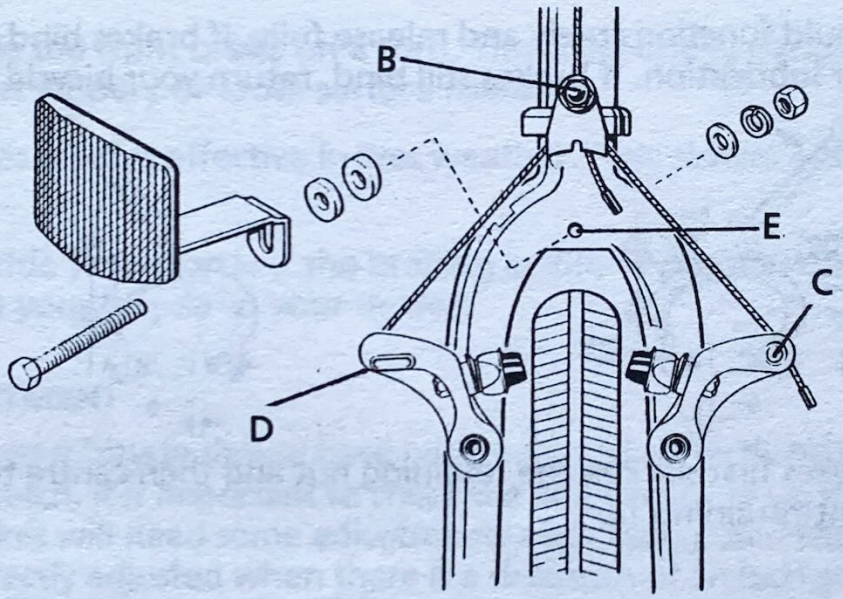
To adjust brakes that have central caliper adjuster simply turn screw as shown until brakes centralise.

**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.

**Note:** For your own safety, brakes must work efficiently without vibration. Worn brake blocks and damaged cables should be replaced immediately, using exact manufacturer's replacement parts for best results.

## Assembly Instructions ATB — BRAKES

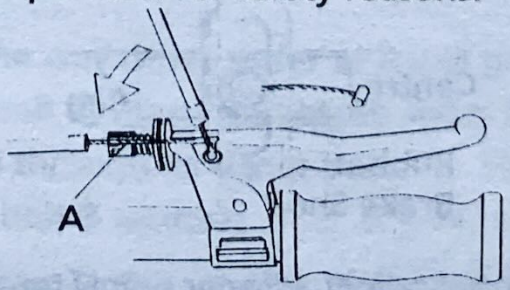
**WARNING**
FRONT AND REAR REFLECTOR BRACKETS
**MUST NOT BE REMOVED FROM THIS BICYCLE AT ANY TIME.**
THEY ARE A SAFETY BRACKET FOR THE BRAKE SYSTEM.




Take the nipple end of the front brake cable and hook it through the right hand brake lever and through the slots in the adjusters (A) ensuring that the adjusters are fully retracted.

Pass the cable through the pinch bolt on the brake stirrup (B) and tighten. The cross cable is passed through the retaining pin cramped in position on the left hand brake block assembly (C) through the brake stirrup (B) and through the pinch bolt on the right hand brake block (D) assembly.

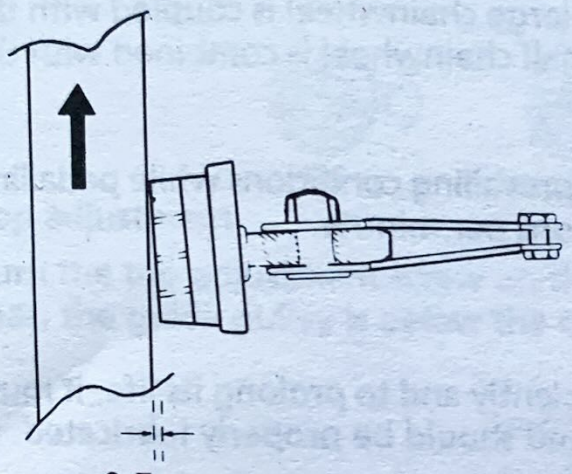
Fit front reflector bracket to location (E) with nut, bolt and washer provided. We fit the front reflector bracket in this position for safety reasons.

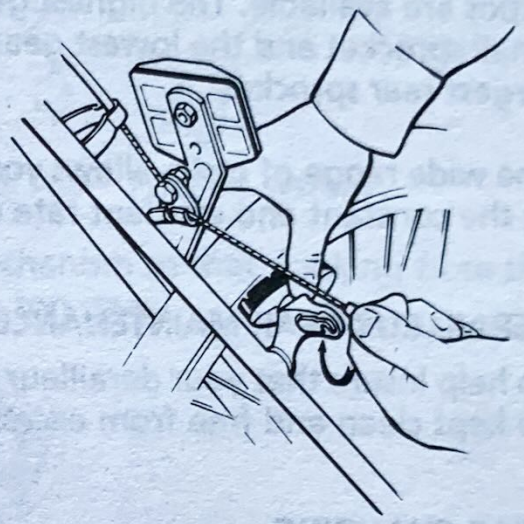



**WARNING:** Always keep your brakes properly adjusted. Check them regularly.

## BRAKES

Move the brake shoe to adjust it to the rim. Turn the adjustment washer and adjust so that the rim surface and shoe surface are as shown in the figure. After the adjustment is completed, use the 5mm Allen key to secure the shoe-holding bolt, and then tighten and secure the shoe-holding nut.



### BRAKE ADJUSTMENT

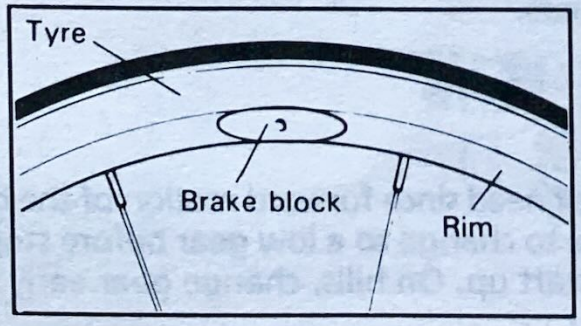
Your bicycle will be fitted with one of two types of brake: caliper or cantilever. It is very important to check your brakes regularly for proper adjustment and excess wear.

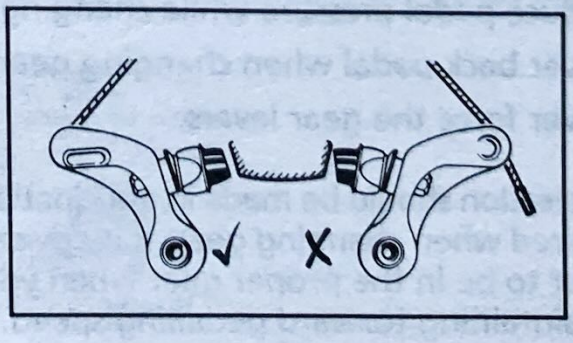
### BRAKE BLOCK REPLACEMENT AND ADJUSTMENT

If your blocks are worn down or if they are not lined up with the wheel rim as shown below, replace and/or adjust as follows:
Open the quick release lever, if fitted, or slacken the cable adjuster. Undo the brake block nut using a spanner and replace the blocks if necessary. Always replace brake blocks in pairs. It is imperative that new blocks are fitted the right way round, as shown.

**WARNING:** Remember to close the quick release mechanism or reset the cable adjuster.

Apply the brakes and position the blocks so that they hit the rim squarely as shown. With the brakes still applied to hold the blocks in place, tighten the nuts securely with a spanner.



# DERAILLEUR GEARS INTRODUCTION

The derailleur gear is so named because it works on the derailling 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 freewheel by the number of chainrings on the front crank set.

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

The wide range of gears allows you to combat all prevailing conditions while pedalling at the constant and efficient rate of sixty revolutions per minute.

## DERAILLEUR GEAR MAINTENANCE

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

## GEAR CHANGING

The rider's left gear lever controls the front derailleur and chainwheels.

The right gear lever controls the rear derailleur and sprockets.

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

The small front chainring produce low gear ratios while the large front chainring produce higher gear ratios.

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

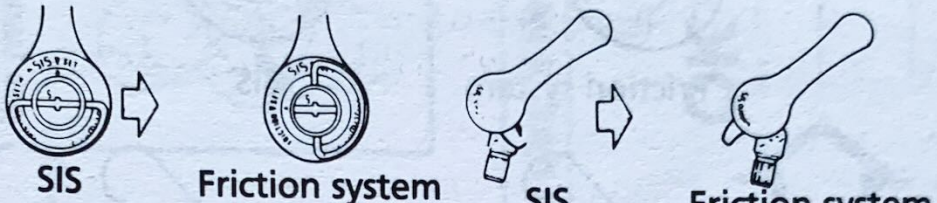
Gear selection should be made in anticipation of need since forward motion of the bicycle is required when changing gear. It is advisable to change to a low gear before stopping in order to be in the proper gear when you start up. On hills, change gear early while still maintaining forward pedalling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

# SIS ADJUSTMENT

If your bicycle is equipped with the Shimano Index System (SIS) you can preset the gear shifter to change gear simply by clicking the shifter up or down to the required gear.

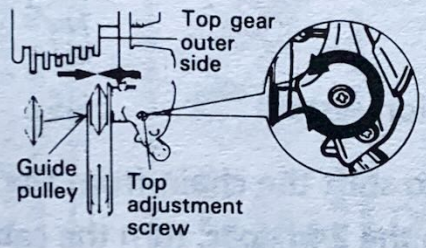
The next few pages and diagrams show how to set this up (if your dealer has not already done it). If you have any problems you should get your dealer to set the SIS up.

Adjust with the lever at the friction position.



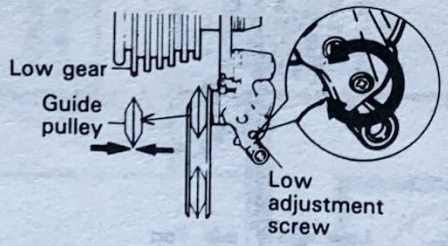

**Top adjustment**

Turn the top adjustment screw on the rear gear mechanism so that, looking from the rear, the guide pulley is below the outer line of the top gear.



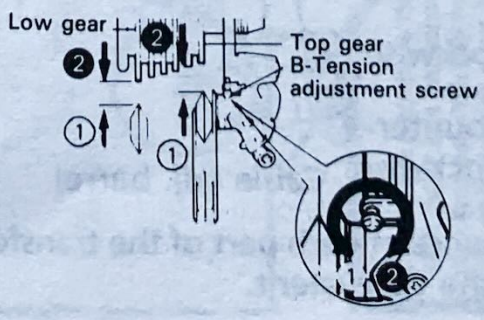

**Low adjustment**

Turn the low adjustment screw so that the guide pulley moves to a position directly below the low gear.



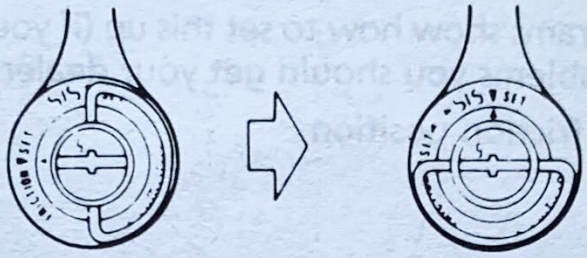

## HOW TO USE B-TENSION ADJUSTMENT SCREW

Mount the chain on the smallest chainwheel gear and the largest freewheel gear, and turn the crank backwards. Turn the B tension adjustment screw to adjust the guide pulley (1) as close to the gear (2) as possible but not so close that it touches. Next, set the freewheel to the smallest gear and repeat the above to make sure the pulley does not touch.

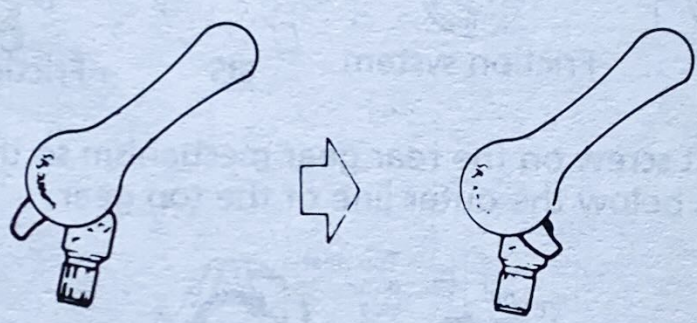


## SIS ADJUSTMENT

1. Move the shifting lever from friction to SIS, and make the SIS adjustment.



Friction system SIS

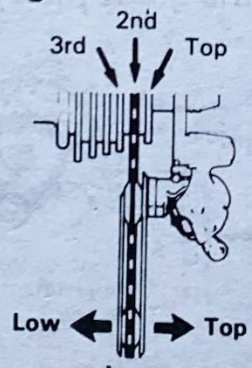


Friction system SIS

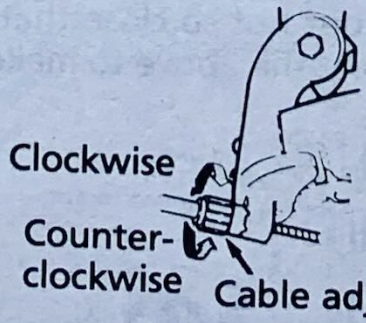
2. Operate the shifting lever to shift the chain from the top gear to 2nd gear.

*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)**



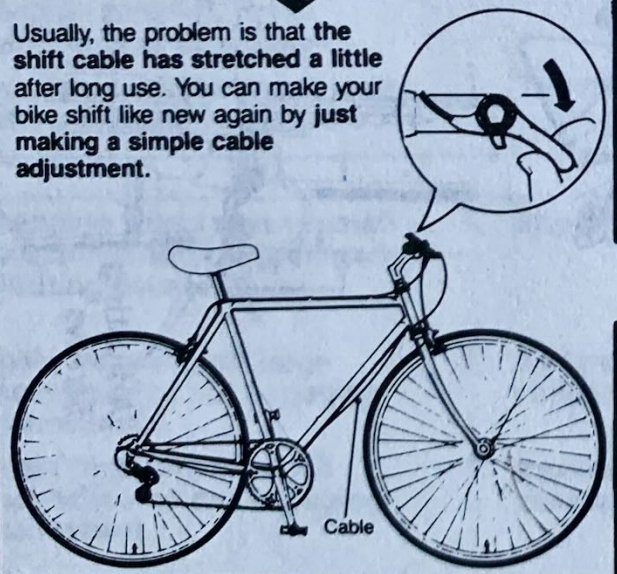

3. Next, with the chain on the 2nd gear, increase the inner cable tension while turning the crank forward. Stop turning the cable adjusting barrel **just before the chain makes noise against the 3rd gear.** This completes the adjustment.

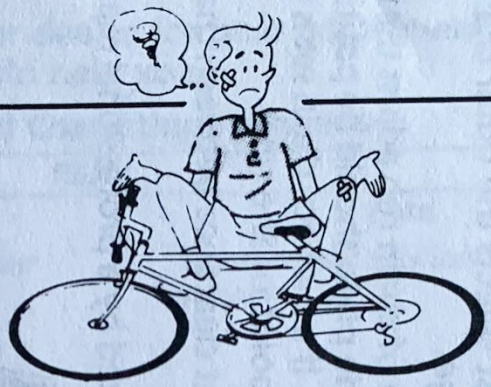



Be sure to perform oil maintenance at each part of the transfer mechanism. The optimum oil is dry molybdenum oil or the equivalent.

## What should you do if your bike doesn't shift cleanly and quickly?

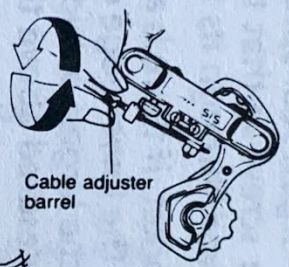
Usually, the problem is that **the shift cable has stretched a little** after long use. You can make your bike shift like new again by **just making a simple cable adjustment.**



What should you do if the shift cable becomes too tight due to dropping the bicycle or some other mishap?

Turn the adjuster barrel on the derailleur end of the cable 1/2 turn in the counterclockwise direction. Have a friend lift the back wheel off the ground; then turn the pedals and shift gears to check the adjustment.

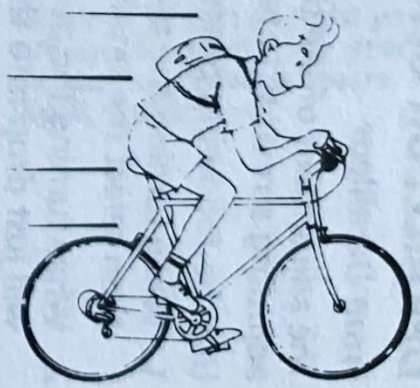




**In case of No Good**

In this case, the best thing to do is take your bike to the nearest bicycle shop.

**OK**



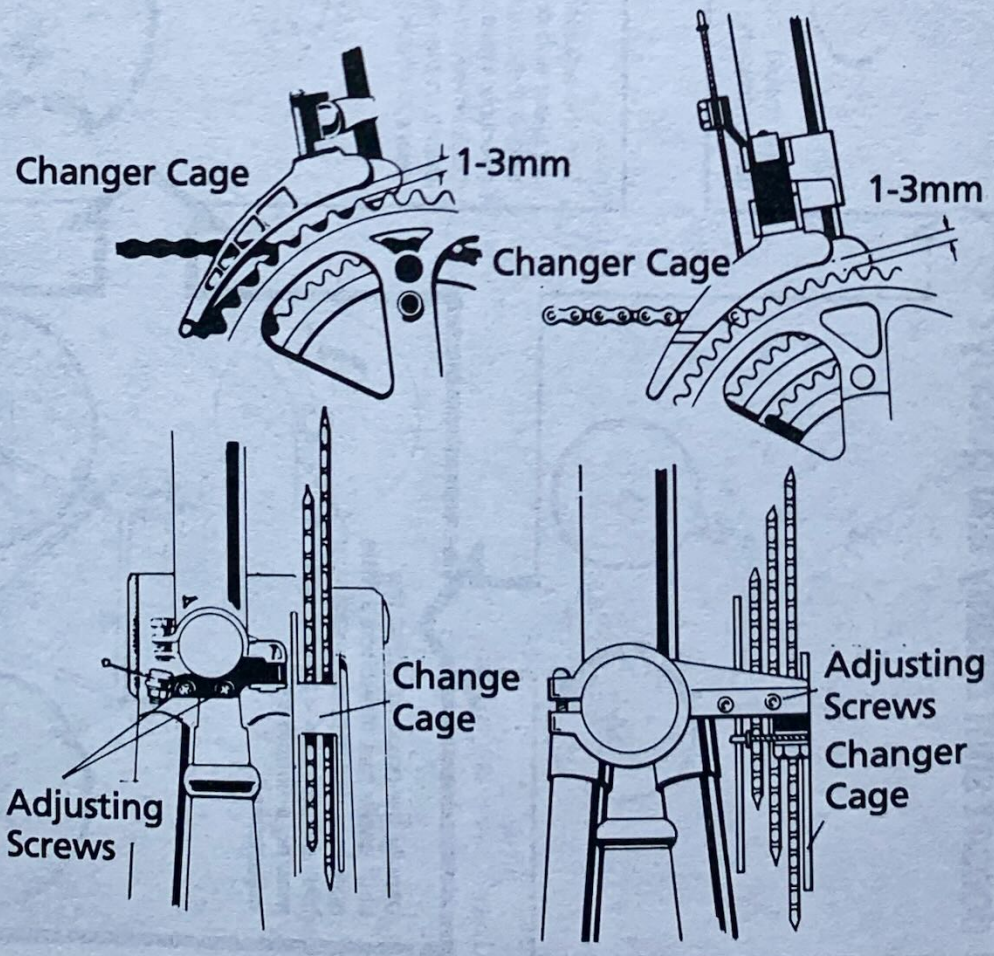
# DERAILLEUR GEARS

## Front Derailleur

The adjustment of the sideways movement of the front changer is by means of two gear adjusting screws situated on the body of the change mechanism.

Use the following procedure for adjustment:

1. While turning the pedals forward select the middle (on a triple c/set) or the top c/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 chainring 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 adjust the outer screw until this just ceases. The lower edge of the outside plate should be positioned approximately 2mm above the largest outside chainring. If a biopace chain set is fitted the clearance should be measured above the highest point of the ring.
6. If a chainwheel disk is fitted, make sure there is sufficient clearance between changer cage and chainwheel disk.
7. If problems continue to arise, the bicycle should be checked by a professional repairer.



# GEAR ADJUSTMENT

We strongly suggest that you return your bicycle to your dealer for gear adjustments. However, in case of emergency and for minor adjustments, the fault finding chart should help you.

## Finding and Correcting Problems

### REAR

| Problem | Cause | Cure | Comments |
|---|---|---|---|
| 1. Changing from gear selected without touching gear lever. | 1. Improper tension on gear levers. | Tighten gear tension lever screws. | Do not tighten so tight you are unable to change gear. Do not lubricate as levers work on friction. |
| | 2. Cable Slip. | Tighten cable pinch bolt. | Ensure cable adjustment is correct before tightening. Ensure tension in gear cable is not acting as a stop. |
| 2. Chain throwing off the small sprocket toward frame or not riding on sprocket or not reaching small sprocket. | 1. Incorrect setting of high gear adjustment screw. | Readjust. | Ensure tension in gear cable is not acting as a stop. |
| 3. Chain throwing off the large sprocket toward wheel or not riding on sprocket or not reaching large sprocket. | 1. Incorrect setting of low gear adjustment screw. | Readjust. | Ensure that the chain never derails toward the wheel as extensive damage can be incurred. |
| 4. Gear lever engages lever stop before low gear is obtained. | 1. Too much slack in cable. | Readjust cable. | Ensure cable is not used as a stop. |

### FRONT

| | | | |
|---|---|---|---|
| 1. Changing from large to small chainwheel sprocket without touching gear lever. | 1. Improper tension on levers. | Tighten gear tension lever screws. | Do not tighten so tight you are unable to change gear. Do not lubricate as levers work on friction. |
| 2. Chain throwing off large chainwheel or not engaging chainwheel. | 1. Incorrect setting of outer chainwheel adjust screw. | Readjust. | |
| 3. Chain throwing off small chainwheel or not engaging chainwheel. | 1. Incorrect setting of inner chainwheel adjust screw. | Readjust. | |

# STI ADJUSTMENT

STI Rapidfire lever uses two push levers mounted conveniently under the bar in front of the thumb. Shift one gear at a time, or shift down the entire block with a full stroke push. Release (upshift) lever lets you shift up the sprocket with the same capability.

Shift triple front chainwheels with the same precise STI action, 1 or 2 gears at a time. Trimming adjustment eliminates chain rub.

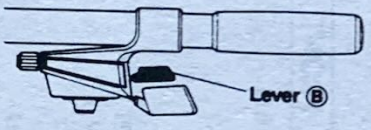
The current design of the off-road shifting system utilizes a thumb-type shifter placed on top of the bars near the grip. While the shift lever is located near the hand position, the hand must still be released from the grip in order to shift gears. Of course, this results in a certain loss of control and balance, and makes shifting almost impossible when traversing rough and changing terrain.

Shimano found that there was a much better place to put the off-road shift lever – under the bar, directly in front of the thumb when the hand is in the normal bar-gripping position.

But that's not all. A new type of dual repeat function lever has been developed in which only a simple "punching" movement of the thumb is needed to both downshift and upshift. The result is a significantly easier and faster shifting action which allows the rider to maintain a firm grip on the bars at all times.

**Notes when securing the inner cable**

**Rear**




After pressing the lever (B) **six times or more** (so that the lever is set for the smallest sprocket), connect the inner cable.

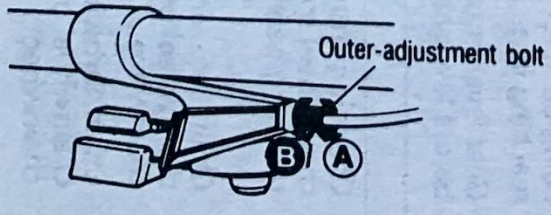
**Front**

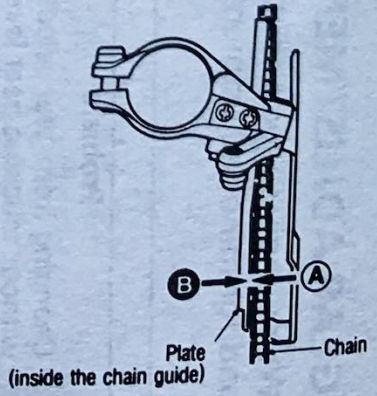

After pressing the lever (b) **three or four times** (so that the lever is set for the smallest chainwheel), connect the inner cable.

**Cable tension adustment** (front derailleur)

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

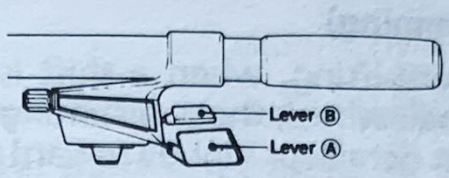

2. Adjust, by using the outer-adjustment bolt, so that there is the minimum clearance, but so that the chain and the plate (inside the chain guide) do not contact.



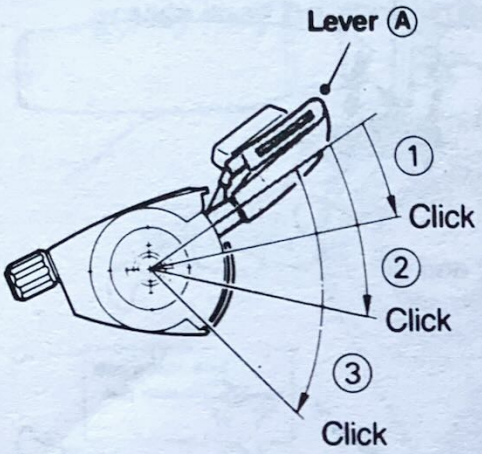



# STI ADJUSTMENT – Operation

## Rear Lever Operation

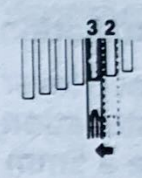



### Lever (A)
(shifting from a small sprocket to a larger sprocket)



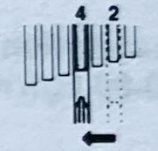

(1) To shift one gear at a time from a small sprocket to a larger sprocket

**Example:** from 2nd to 3rd




(2) To shift two gears at a time from a small sprocket to a larger sprocket

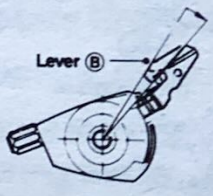
**Example:** from 2nd to 4th




(3) To shift three gears at a time from a small sprocket to a larger sprocket

**Example:** from 2nd to 5th

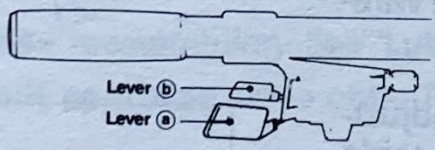

### Lever (B)
(shifting from a large sprocket to a small sprocket)



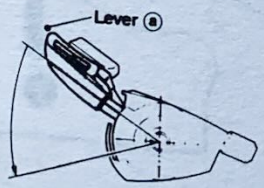

When lever (B) is pressed once, there is a one-step shift from a larger gear to a smaller gear.

**Example:** from 3rd to 2nd


## Front lever operation



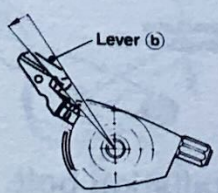

### Lever (a)
(shifting from a small chainwheel to a larger chainwheel)




When it is pressed one time, there is a shift of one gear from a smaller chainwheel to a larger chainwheel.

**Example:** from mid-range to largest chainwheel

### Lever (b)
(shifting from a large chainwheel to a smaller chainwheel)



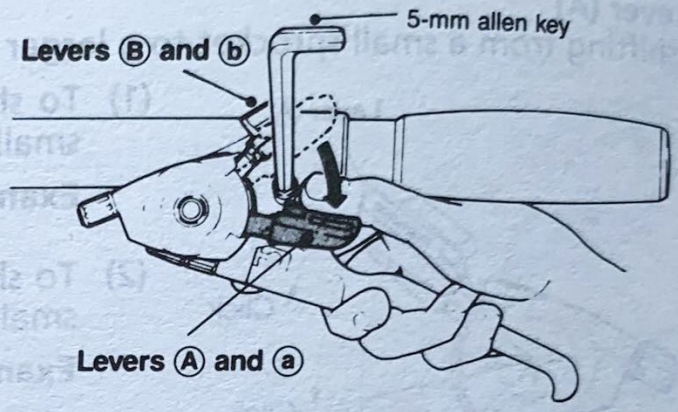

When it is pressed one time, there is a shift of one gear from a large chainwheel to a smaller chainwheel.

**Example:** from largest chainwheel to mid-range.

# STI ADJUSTMENT – Installation

## Noise-prevention mechanism (trimming)

If chain noise occurs, due to overshifting, when a shift is made from the smallest chainwheel to the intermediate chainwheel, the overshifting can be adjusted by gently pressing lever (b) to move the front derailleur slightly toward the small chainwheel, thus activating the noise-prevention mechanism.




## Installation to the Handlebar

Move lever (A) and lever (a) so that the installation bolt can be seen, and then use a 5mm allen key to install

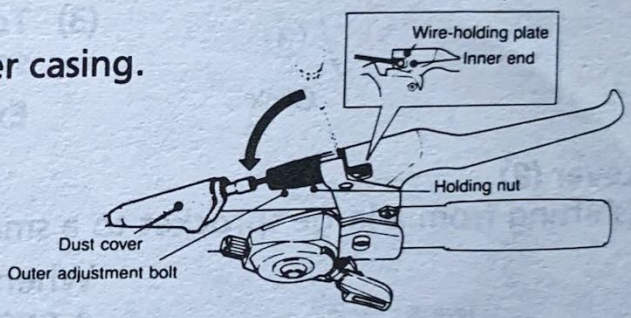
**Installation torque:**
**60-80 kgfcm (50-70 in.lbs.)**

## Installation of the Brake Cable

Use the ∅ 1.6mm inner cable and ∅ 5mm outer casing.

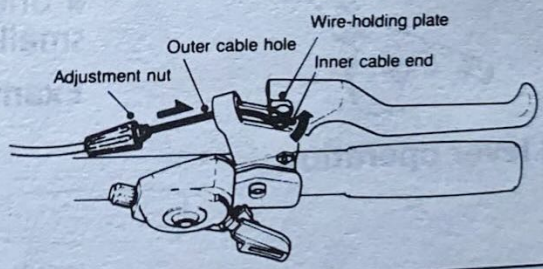
1. Attach the inner end of the wire-holding plate.

2. Align the groove of the outer adjustment bolt and the groove of the holding nut with the groove in the lever, and then connect the brake cable.



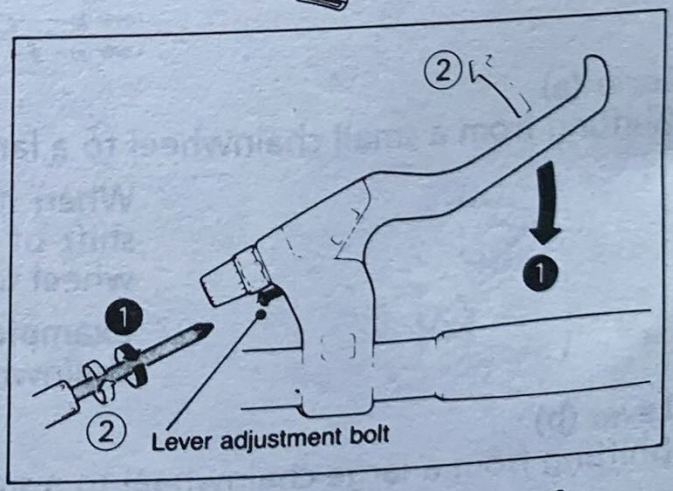

1. insert the cable into the outer cable hole.

2. Hook the inner cable end to the wire-holding plate.



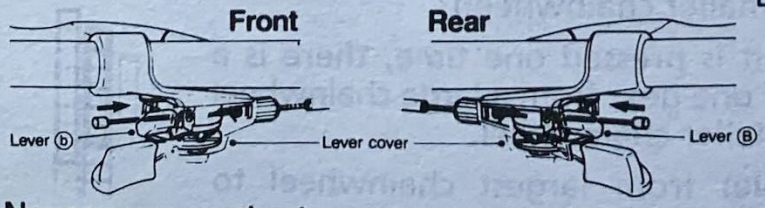

**Note:** Check to be sure that the adjustment nut is seated in the outer cable hole.

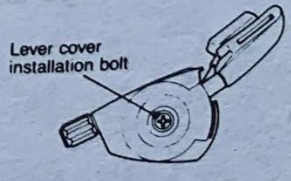
Turn the lever adjustment bolt to adjust to the desired grip width.




## Connection of the Shifting Cable

First, for the rear, press lever (B) six times or more, and then, for the front, press lever (b) three of four times.



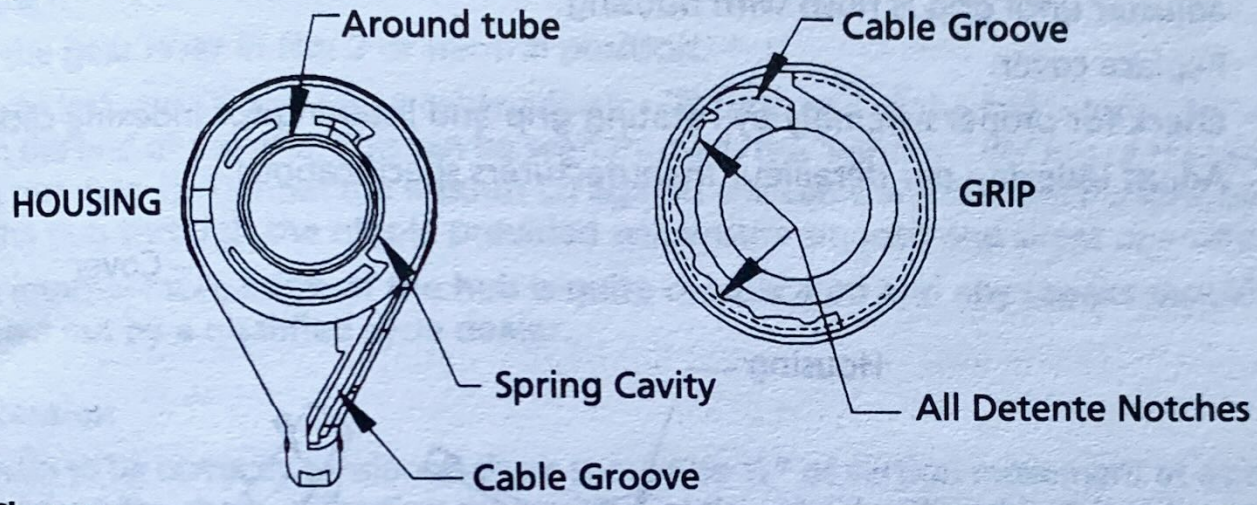

Never remove the lever cover. Do not loosen the lever cover installation bolt.

# GRIP SHIFT – Service Instructions

## Lubrication

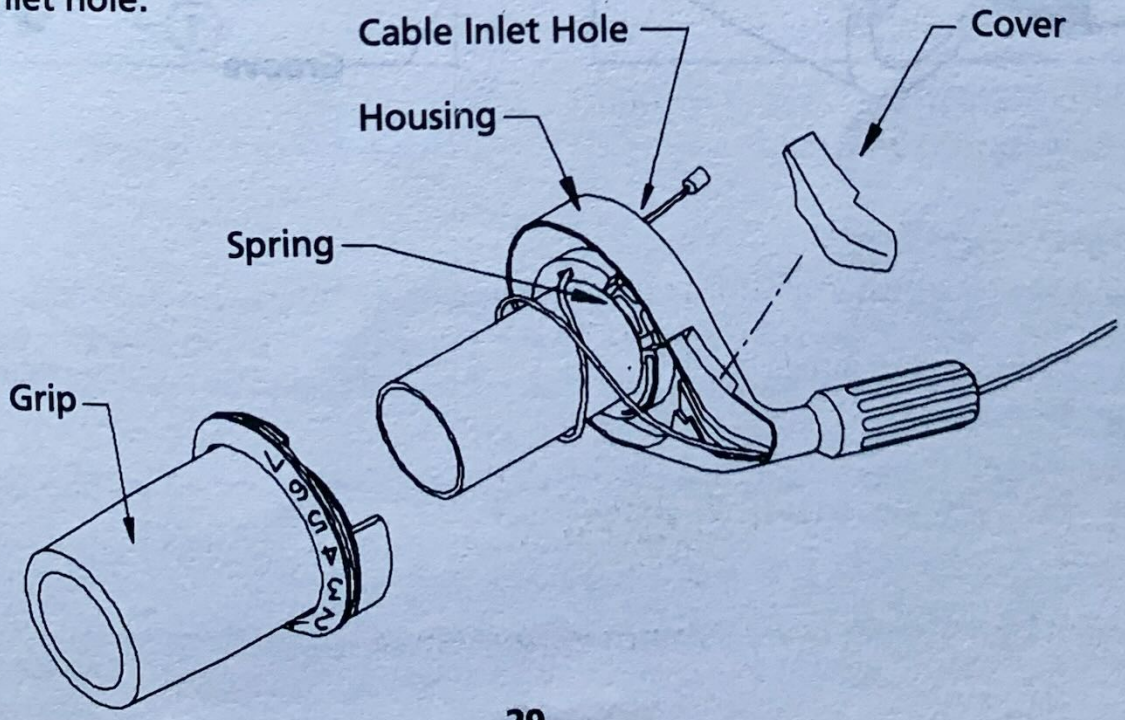
If regreasing should become necessary due to excessive exposure to water and grit:

1. Disassemble and wash parts in kerosene or degreaser. Blow parts clean with compressed air before lubricating.
2. Using a silicone based teflon grease, apply to areas shown. Phil Wood waterproof grease may be substituted. Do not use lithium grease.



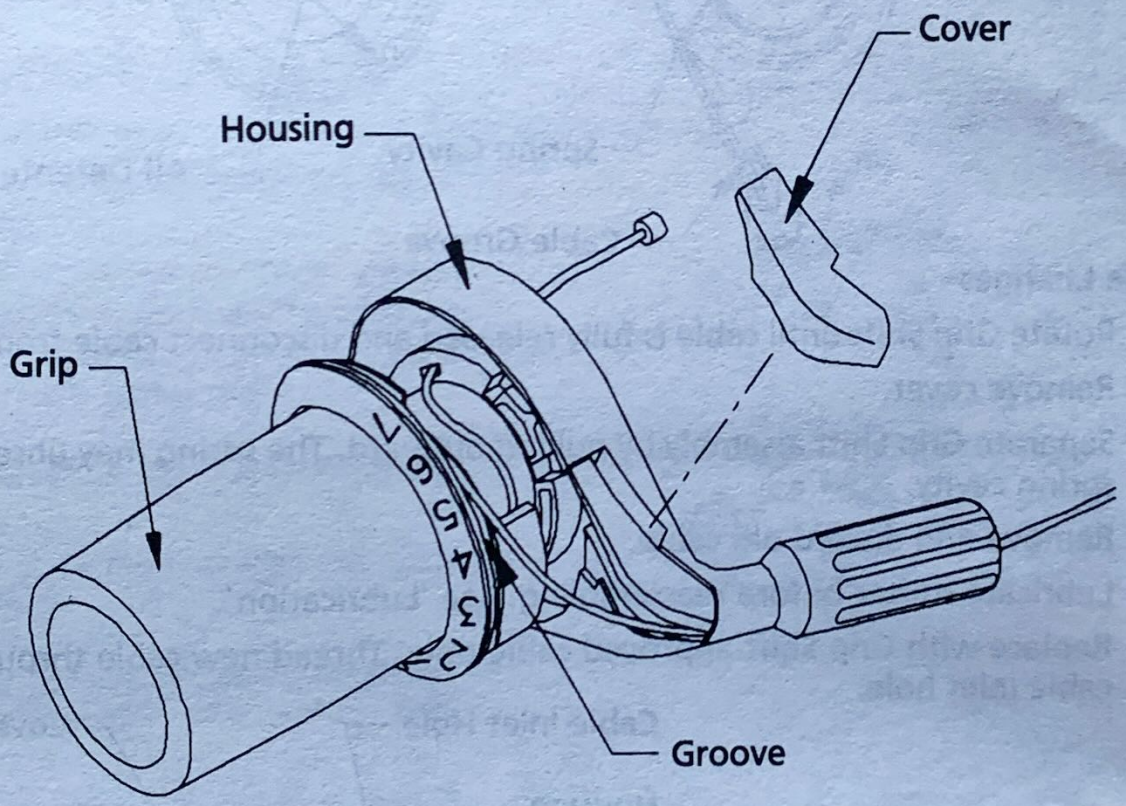

## Cable Changes

1. Rotate Grip Shift until cable is fully released and disconnect cable from derailleur.
2. Remove cover.
3. Separate Grip Shift assembly by pulling outward. The spring may unseat from the spring cavity.
4. Remove and discard old cable.
5. Lubricate shifter before reassembling. See 'Lubrication'.
6. Replace with Grip Shift approved cable only. Thread new cable through housing cable inlet hole.



## GRIP SHIFT

7. Loop the cable around housing. Exit cable through barrel adjuster.
8. Put the spring in spring cavity. If necessary apply a small amount of grease to hold spring in place.
9. Slide grip over housing. Rotate grip to align gear indicator mark with the largest number on grip. Lift the loop of cable off the housing and lay the cable into the groove in grip. Push the grip inward while pulling the cable out of the barrel adjuster until grip is flush with housing.
10. Replace cover.
11. Check for proper assembly by rotating grip and listening for indexing clicks.
12. Adjust indexing per derailleur manufacturers specifications.



# LOOKING AFTER YOUR CYCLE

## HUB GEARS

### Sturmey Archer 3 speed

These are very robust and reliable gears: correct adjustment will give long life and service. Incorrect adjustment may result in the gears slipping and internal damage. Change gear with pedals either static or whilst pedalling backwards.

### To Adjust

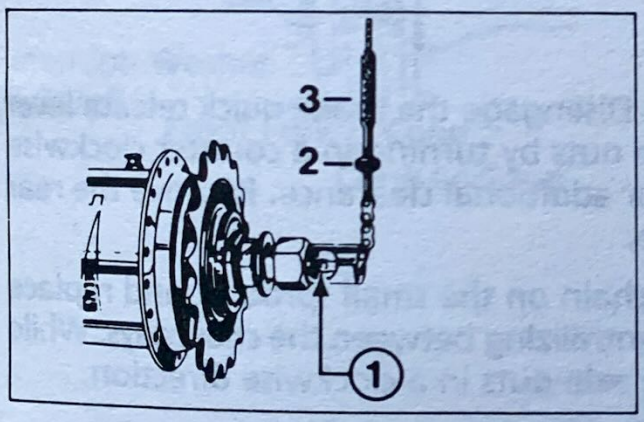
a) Put the gear lever in No. 2 or neutral position.

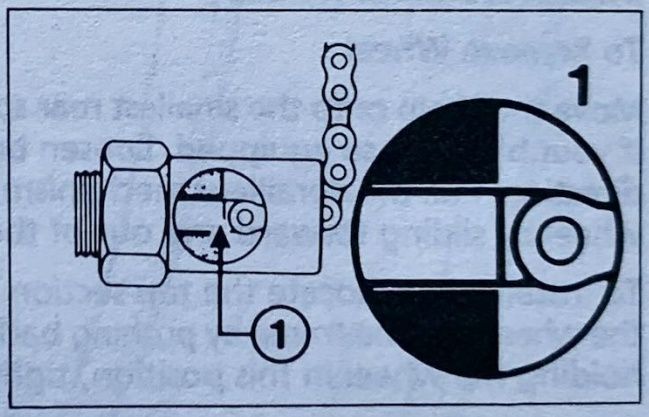
b) Loosen lock nut (2) and screw cable adjuster (3) until end of the indicator rod is level with the end of the axle. This can be seen through the 'window' drilling of the wheel lock nut, (see 1). Tighten the locknut (2) against the cable adjuster (3). Periodic oiling of the hub through the nipple provided will ensure smooth and silent operation.

c) The internal mechanism of the hub is quite complicated and any repairs should be carried out by a qualified cycle dealer.

### Chain Tension

For a chain to be correctly tensioned there should be ½" of vertical movement at a point halfway along the chain. Adjusting the position of the wheel will enable this to be done.



# TYRE CARE AND WHEEL ADJUSTMENTS

To obtain maximum life and full benefit from your tyres, it is essential to maintain 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 tubes.

Tyres should regularly be inspected for wear and cuts. Check that the tyre tread pattern is clearly showing all around the outside edge of the tyre. Check there are not any breaks, cuts or uneven wear in the tyre. Tyres should be replaced if damaged.

Tyre punctures can be caused by careless riding over sharp stones, holes in the road, or by hitting curbstones.

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 inflator 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.

## STANDARD REAR WHEEL

### To Remove 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 forward and out of the frame.

To install wheel, locate the top section of the chain on the small sprocket and replace the wheel into the frame by pushing back and centralizing between the chainstays. While holding the wheel in this position, tighten the axle nuts in a clockwise direction.

The wheel should turn freely and have very little side play.

Reset rear brake quick release mechanism and check brake for proper operation.

### Quick Release Rear Wheel

Removal and installation of rear Wheel fitted with quick release mechanism. Use same procedure as for standard rear wheel, with the exception of loosening axle nuts. Operate the quick release lever by pulling away from the wheel and turning release lever 180° to release the wheel.

When installing the rear wheel, use the same closing and adjusting procedure as outlined for quick release front wheel.

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

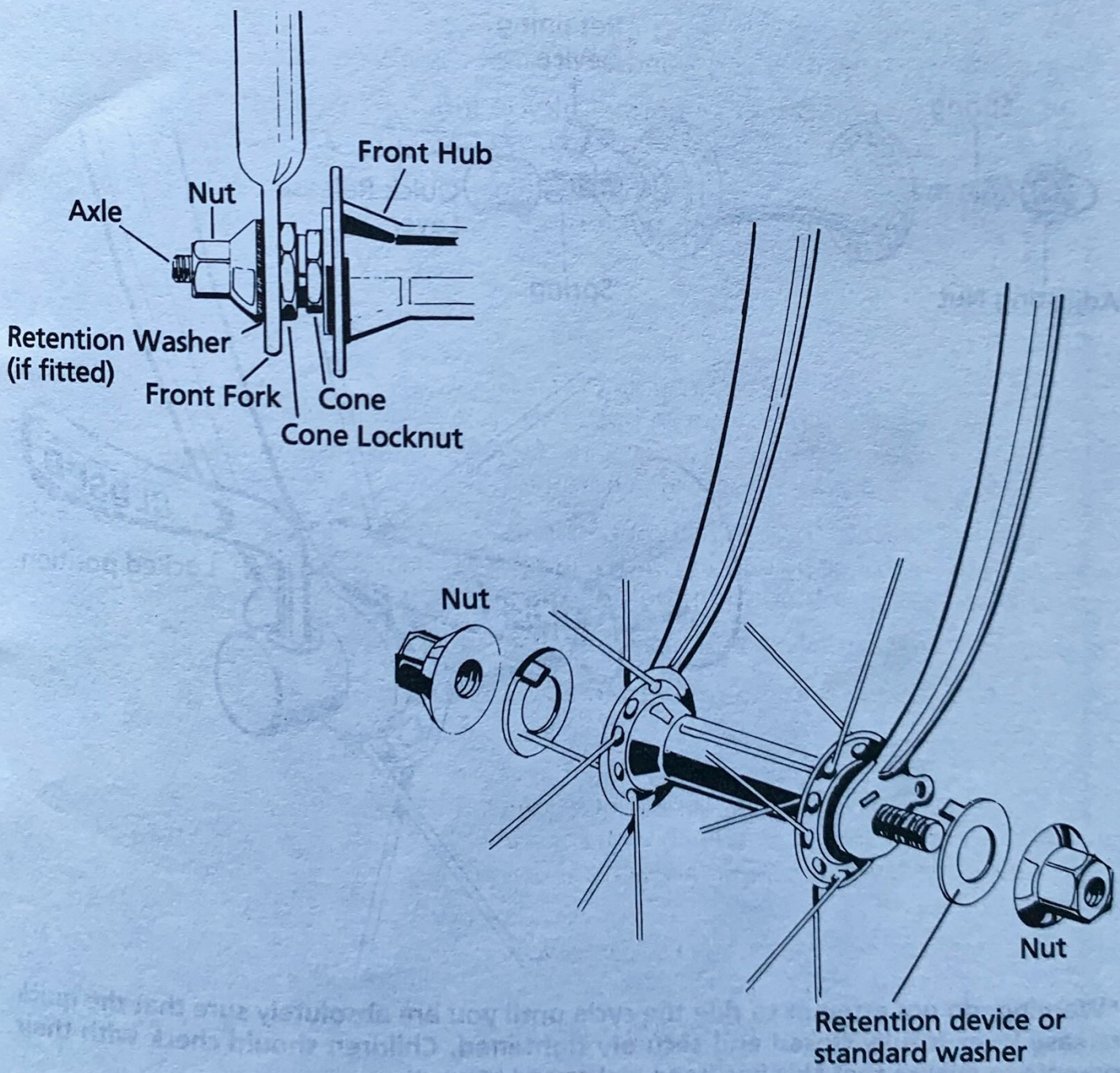
Reset rear brake quick release mechanism and check brake for proper operation.

# TYRE CARE AND WHEEL ADJUSTMENTS

## STANDARD FRONT WHEEL

Remove axle nuts, washers, and axle retention device if fitted. The axle cone bearing adjustment should permit smooth rotation of wheel. Cone locknut should be securely fastened against axle cone to prevent loosening. Place the front wheel between the fork blades with 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 on axle. Tighten axle nuts at both ends gradually and alternately in order to keep the wheel centered.

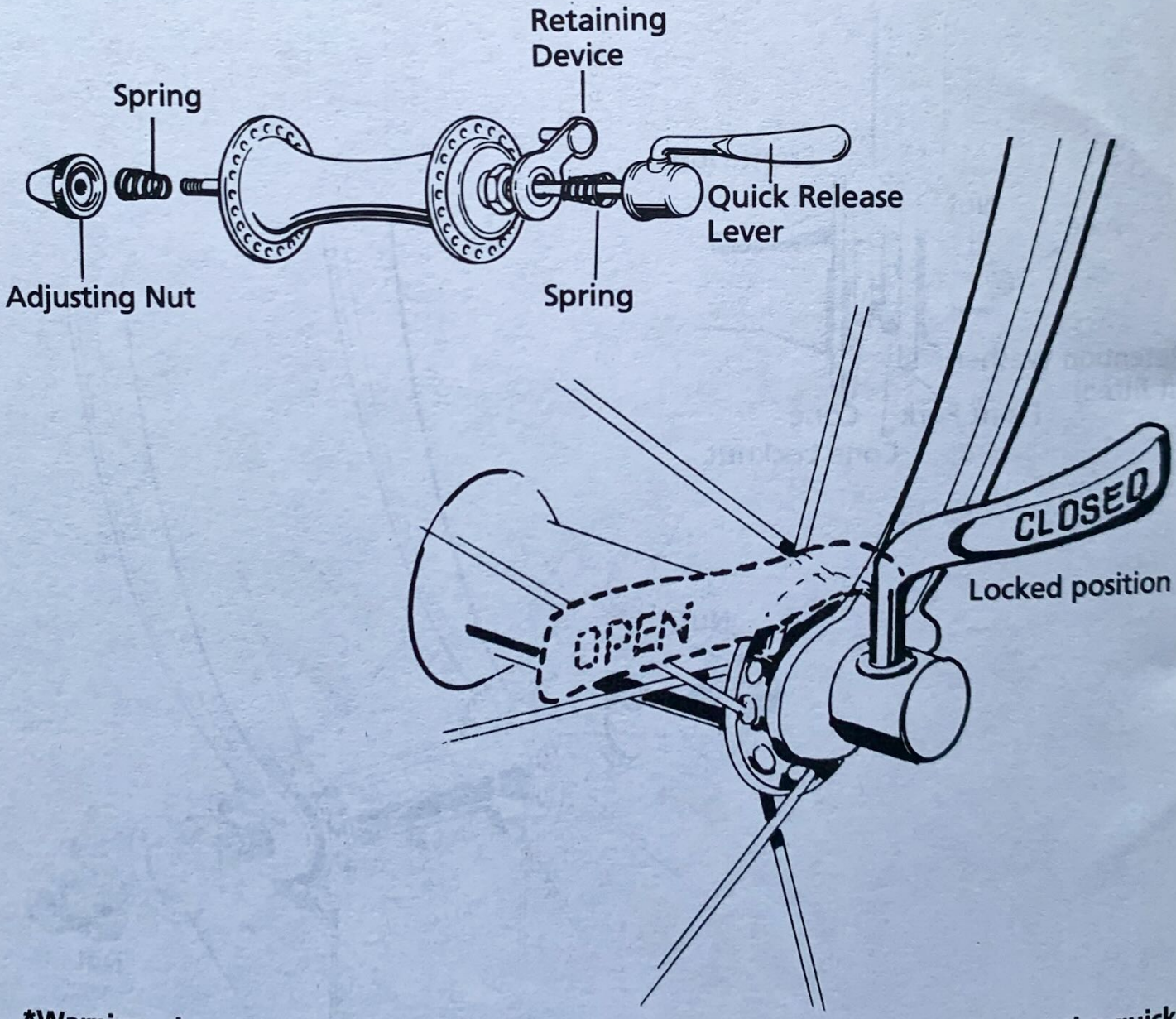
**Caution:** Front wheel must be installed with retention devices securely placed into slots of fork blades or washers if fitted. This will ensure positive locking of front wheel to front fork.



# TYRE CARE AND WHEEL ADJUSTMENTS

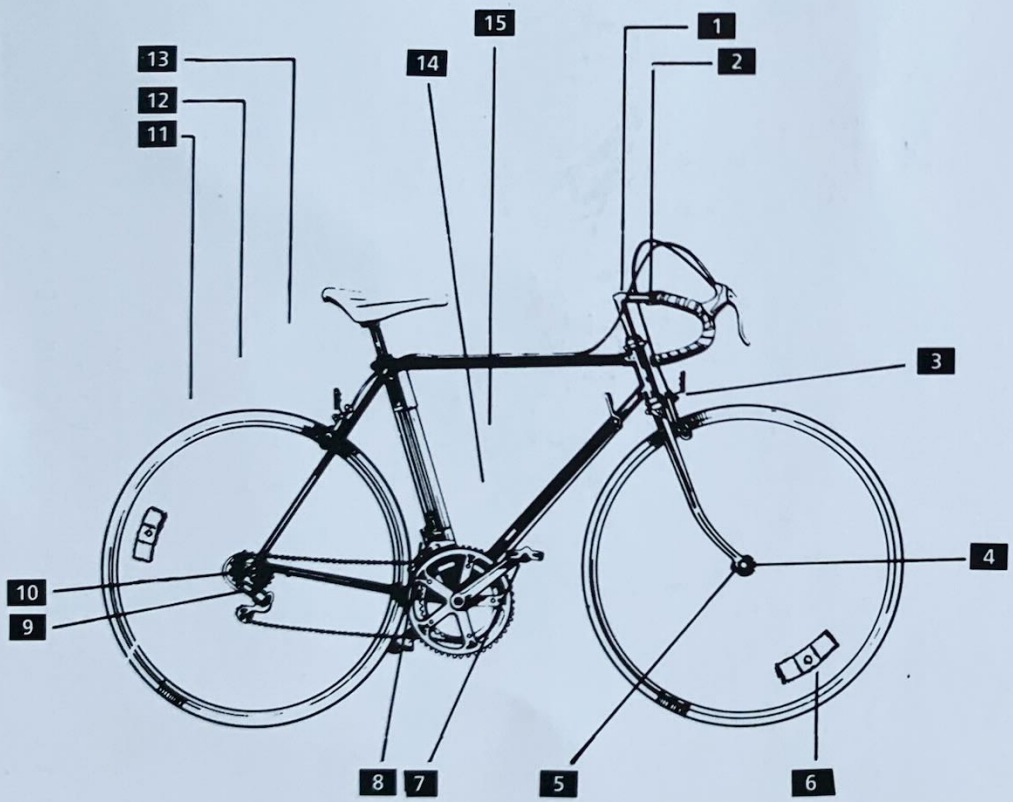
## QUICK-RELEASE FRONT WHEEL

1. To remove the front wheel, first release the front wheel brake. Then release the quick-release lever on the axle and pull the wheel from the forks.
2. To install, fit wheel into forks with quick release lever on left side. Close quick-release, and tighten adjuster until snug. Release quick-release lever and further tighten adjuster approximately ¾ of a turn. Lock and check that the quick-release has embossed 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.
3. Wheel must clear frame and fork by at least 1/16".
4. The wheel should turn freely and have very little side-play.
5. Check quick-release lever is in correct and fully locked 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.**

# TABLE OF RECOMMENDED TORQUE VALUES




| | DESCRIPTION | TORQUE |
|---|---|---|
| 1 | Stem Expander Bolt | 175 in. lbs. |
| 2 | Stem Binder Bolt | 220 in. lbs. |
| 3 | Brake Anchor Bolt<br>Brake Fixing Bolt | 48 in. lbs.<br>48 in. lbs. |
| 4 | Front Axle Nut<br>Front QR Axle | 262 in. lbs.<br>46 in. lbs. |
| 5 | Retention Device Bolt | 36 in. lbs. |
| 6 | Spoke Reflector<br>Mounting Bolt | 22 in. lbs. |
| 7 | Pedal | 345 in. lbs. |
| 8 | F/Derailleur<br>Cable Fixing Bolt | 35 in. lbs. |
| 9 | R/Derailleur<br>Cable Fixing Bolt | 35 in. lbs. |
| 10 | Rear Axle Nut<br>Rear QR Axle | 262 in. lbs.<br>46 in. lbs. |
| 11 | Front & Rear<br>Reflector Mounting Nut | 26 in. lbs. |
| 12 | Seat Pin (Hexagonal Head)<br>Seat Pin (Allen Head) | 150 in. lbs.<br>130 in. lbs. |
| 13 | Saddle Clamp Bolt | 175 in. lbs. |
| 14 | F/Derailleur Clamp Bolt | 48 in. lbs. |
| 15 | Lock Nut<br>for Brake Pivot Bolt | 70 in. lbs. |

## THE CLAUD BUTLER/HARRIER/FALCON GUARANTEE

# UP TO 15 YEARS

Claud Butler/Harrier/Falcon bicycles are guaranteed against material defects or faults in manufacturing from the date of the original purchase as follows:

### FRAME AND FORKS – 15 YEARS

All Claud Butler/Harrier/Falcon frames and forks (with the exception of suspension forks) are warranted against failure or defects for a period up to 15 years after the date of the original purchase, applicable to the original owner only. Faulty goods will be replaced free of charge, if such a defect is not caused by abuse, misuse, neglect, improper maintenance or normal wear and tear.

### COMPONENT PARTS – 1 YEAR

All other Claud Butler/Harrier/Falcon components (including suspension forks) are warranted against failure or defects for a period of up to 1 year. Again, this is applicable from the date of purchase for the original owner only and does not cover accidents, misuse, neglect, abuse or normal wear and tear.

### NOTICE

In offering this guarantee, Claud Butler/Harrier/Falcon in no way seeks to diminish the statutory rights of the consumer.

Claims under this Warranty must be accompanied with dated proof of purchase and be made through the retailer or mail order company who supplied the bicycle.

CLAUD BUTLER/HARRIER/FALCON CYCLES,
Falcon Cycles Ltd, PO Box 3, Brigg, South Humberside DN20 8PB

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