Care for your cycle

RALEIGH cycle owner's handbook

contents

good cycling

To enjoy your cycling and become a good cyclist, it is important that you should know and appreciate the rules of the road as they apply in your part of the world.

Before you ride:— make sure your cycle is in good condition, particularly check that your:—

Brakes are efficient;
Tyres are inflated to correct pressure;
Lamps operate satisfactorily;
Rear Reflector complies with the law;
Your riding position is comfortable.

When riding:—

(a) Always hold the handlebar, and keep your feet on the pedals.

(b) Always obey all traffic regulations.

(c) Do not ride more than two abreast. Ride in single file on busy or narrow roads. Do not weave in and out of traffic.

(d) Give clear hand signals to warn other road users of your intentions.

(e) Give way to pedestrians.

(f) Do not carry anything which may affect your balance.

(g) Do not carry a passenger unless the cycle has been built or altered to carry one.

(h) Do not hold on to another vehicle or another cyclist.

(i) Do not ride too close behind another vehicle.

(j) If there is a cycle path beside the road — ride on it.

In the U.K., cyclists are advised to obtain the latest edition of "THE HIGHWAY CODE" — which can be obtained from Post Offices and most good book shops. Also ask at your school or nearest police station for information about the National Cycling Proficiency Scheme — which can be invaluable in learning all about "Good Cycling".

ready for the road

Few things equal the thrill of owning a brand new bike; especially a handsome, precision-built machine like yours. We — its manufacturers — are very proud of it. It is the product of over 85 years research and development and we are confident that, with reasonable care and regular maintenance — oiling, cleaning, checking and adjusting, it will give you many years of enjoyable cycling.

In the pages which follow we tell you (with the help of a few simple drawings) how to enjoy your bicycle, how to get the best out of its superbly efficient gears and how to keep it generally in tip-top trim; ready for the road, at all times. But first: two very important points.

1. **After using a new bicycle for a few days — say riding it about 50 miles — it is always advisable to check that all nuts and bolts are as tight as they were the day they left our factory.**
2. **If you are in any doubt about your ability to carry out any of the adjustments described in this book, get your cycle dealer to do them for you.**

looking after your cycle

Your bicycle will last much longer, run better and continue to look as good as new if it is cleaned and oiled regularly.

For lubrication details see page 38.

Before storing your bicycle for a long period of time smear the chromium plating with a light grease.

Important

Before using your cycle, clean off ALL the oil or grease from the brake tracks on wheel rims.

cleaning

Clean all the enamel parts of your machine (except the chain)* with warm soapy water. Rinse with clean water and finish with a dry duster.

On synthetic enamels use a good wax polish. Be very careful how you use polishes which contain silicones; under certain conditions they may remove colours.

Do not use metal polish on chromium plating. To finish cleaning chromium use a dry cloth with a slight trace of oil. The oil will help to protect and keep the chromium clean and bright.

Important

Keep oil away from brake tracks on wheel rims.

*Cleaning the chain — occasionally remove chain from cycle and clean thoroughly with paraffin (kerosene) making sure all grit is removed. Dry with clean cloth and lubricate.

riding position

The best riding position is the one which gives **YOU**, the rider, the greatest comfort consistent with good balance. No two people ride alike but the following hints should help you to find your most comfortable, efficient position. Correct saddle height is most important. This can usually be determined by fully extending the leg (when seated on the saddle) and placing the heel on the pedal with the pedal at its lowest point. This allows for a slight bend at the knee when the ball of the foot is on the pedal. Tilt the nose of the saddle slightly upwards. Your saddle is usually at its most comfortable angle when its nose is about two inches behind a vertical line rising from the centre of the bottom bracket to which the chainwheel and pedal cranks are fixed.

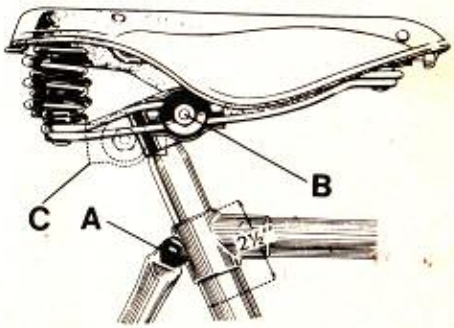
Your weight should be so balanced that your hands rest lightly on the handlebars. This prevents strain on wrists and forearms when pedalling. If the angle of the hand grips is adjusted remember to tighten the handlebar stem nut.

saddle adjustment

HOW TO ADJUST YOUR SADDLE HEIGHT. Raise or lower by loosening nut "A". Be sure that at least 2½ in. of the saddle pillar remains in the frame.

FORWARD or BACKWARD. By loosening nuts "B" on either side of the saddle its chassis can be moved forward or backwards.

By reversing the clip (as shown on dotted line "C") the saddle can be set further back.



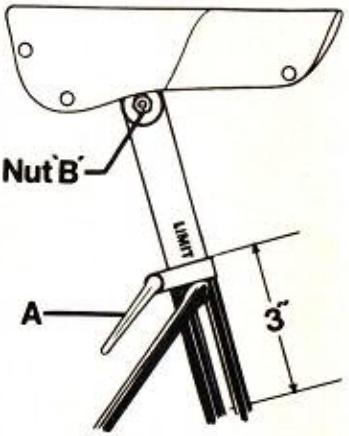
saddle adjustment

R.S.W. & Twenty Models

Turn the quick release lever "A" in an anti-clockwise direction to allow the saddle to move up or down to the required position, and finally tighten lever "A" firmly in a clockwise direction to lock.

In order to facilitate maximum leverage when locking the saddle into position, provision is made for positioning lever "A" in a downward direction, by adjustment of the square 'under-head' of the bolt in the seat lug.

To adjust the saddle angle, simply loosen nut "B" on either side of the saddle frame. BE SURE TO TIGHTEN THESE NUTS AFTER ADJUSTMENT.



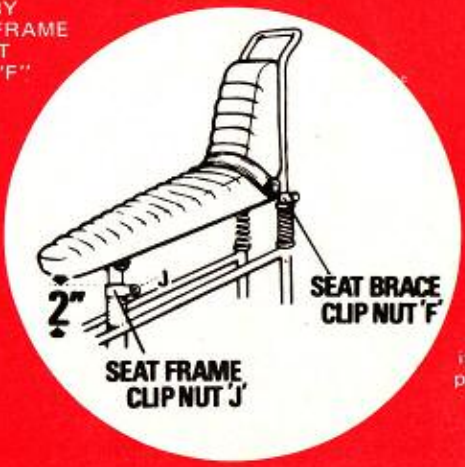
IMPORTANT WARNINGS:

1. Your machine must never be ridden with the saddle raised out of the frame beyond the 'limit' mark visible on the saddle pillar. This is to ensure that at least 3" of the saddle pillar remains inserted in the frame. DO NOT ADJUST BEYOND THIS HEIGHT.
2. Do not apply pressure with any tool, as this may result in damage to the finely threaded locking system.

Chopper models

RAISE OR LOWER BY LOOSENING SEAT FRAME NUT "J" AND SEAT BRACE CLIP NUTS "F" BE SURE THAT AT LEAST 2" OF SEAT PILLAR AND SEAT BRACE REMAIN IN FRAME TUBES.

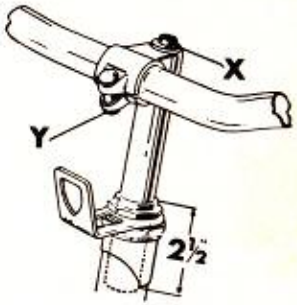
The "Chopper" bicycle is not designed to carry a passenger.



NOTE: Under Section 13 of the U.K. Road Traffic Act of 1960, it is an offence for two people to ride a bicycle unless this is specially adapted.

handlebar adjustment

To raise or lower your handlebars loosen expander bolt "X" two turns and give it a firm but gentle tap. This releases the expander cone and allows the stem to move. When you have set the handlebars at the new height re-tighten bolt "X" but, before you do this, make sure that at least 2½ inches of handlebar stem remains in the fork steering tube.



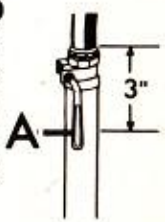
With rod brakes loosen brake tube nuts to allow the brake rods to take up the new position, then re-adjust as shown on pages 14 and 15.

If the angle of handlebars requires adjustment, loosen nut "Y" and rotate bars to the desired angle. Tighten nut "Y".

NOTE:–
The "Chopper" handlebars are fitted with a restrictor device (Patent applied for).
The restrictor allows height of handlebars to be adjusted within the recommended safety limit.

RSW & Twenty models

Turn quick release lever "A" in an anti-clockwise direction to loosen the handlebars – raise or lower to the required height and tighten firmly by turning lever "A" in a clockwise direction.



NOTE
The handlebars cannot be separated from the frame as they are fitted with a restrictor, the purpose of which is to ensure that at least 3" of the handlebar stem remains within the fork column with handlebars fully raised. If it becomes necessary to remove the handlebars, consult your cycle dealer who is specially equipped to do this job.

handlebar

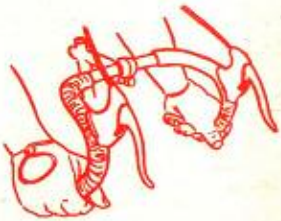
SPORTS AND RACING TYPE

Alternative Riding Positions

Normal riding position. Hands are over brake lever hoods, fingers are on brake levers.

Hands on bend. This position is used to relieve muscle tension.

Hands on top. Used to obtain greater power from back muscles – for hill climbing.



Hands on bottom. This streamlined body position reduces wind resistance.

steering head

IMPORTANT

Steering should be smooth and easy. There should be no front wheel judder when the front brake is applied.

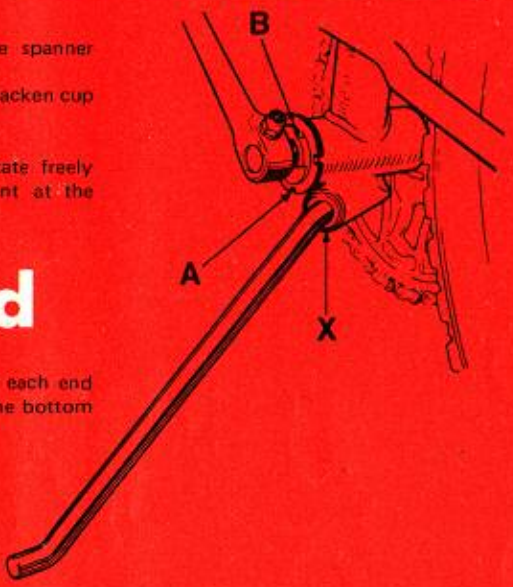
TO ADJUST, loosen locknut (A) then tighten head nut (B) gently. Tighten locknut (A).

bottom bracket bearings

TO ADJUST

1. Loosen lockring "A" – use the spanner supplied with cycle.
2. Tighten adjusting cup "B" then slacken cup "B" 1/8 of a turn.
3. Tighten lockring "A".

A correctly adjusted axle should rotate freely without vertical or lateral movement at the axle ends.



prop stand

Occasional lubrication is required at each end of the tubular housing, "X" under the bottom bracket.

WARNING

DO NOT SIT ON YOUR MACHINE WITH THE PROP STAND DOWN – it is designed to support the machine – not the rider.

folding models

TO FOLD – Loosen Lockring Lever and swing Front of bicycle anti-clockwise (in direction of arrow) to bring the front wheel alongside the rear wheel.

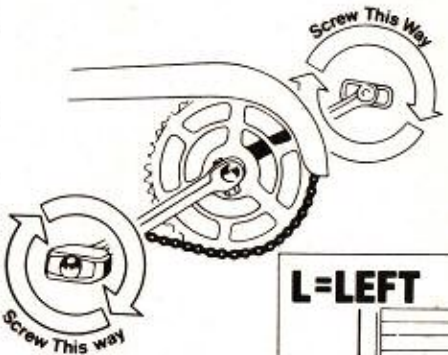
pedals

WARNING – ALWAYS – KEEP PEDAL AXLES TIGHT

Note: Pedal with "L" on axle end fits in left hand crank.

FROM THE LEFT SIDE OF THE BICYCLE:–

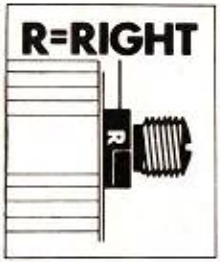
Turn axle in anti-clockwise direction with spanner and FULLY tighten.



Note: Pedal with "R" on the axle end fits in chainwheel crank.

FROM THE RIGHT SIDE OF THE BICYCLE:–

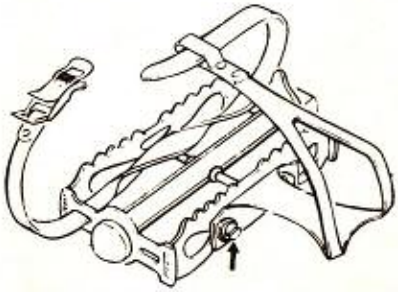
Turn axle in clockwise direction with spanner and FULLY tighten.



toe clips and straps

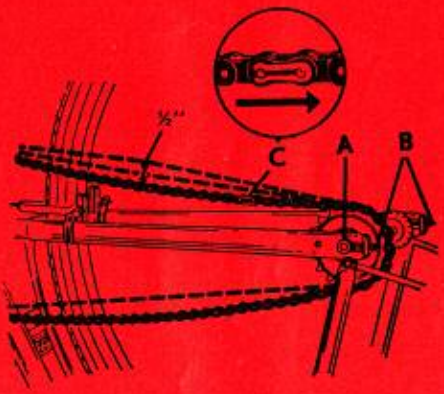
If toe clips and straps are not originally supplied on your cycle, they can be added easily. Simply bolt the clip to the front plate of the pedal as illustrated.

The toe strap is fitted through the pedal from the outside edge, twisted in between pedal edges to avoid slipping and laced through the toe clip eye. The buckle should rest on the top of foot, otherwise it will press on outside edge and may cause discomfort.



chain

A correctly adjusted chain should have about 1/2" free movement at centre between chainwheel and sprocket.
To adjust chain tension – loosen rear wheel axle nuts – push wheel backwards ensuring that wheel remains central between rear forks – tighten axle nuts.
To tension the chain on machines fitted with chain adjuster, loosen nuts "A" and tighten chain adjuster nuts "B" evenly, ensuring that wheel remains central between rear forks. Tighten axle nuts. If chain is removed, see that connecting link is closed and facing direction of movement; see "C".



To adjust chain on gearcase models, first remove gearcase end. This is done by removing the end cap screw.
NOTE: This illustration shows cycle in the upside-down position.
Occasionally remove chain from cycle and clean thoroughly (see page 4).

derailleur gear chain

A derailleur gear chain must be rivetted together (do not use a connecting spring link). Stiff chain links will cause the chain to fall off the chainwheel during gear changes. Ask your dealer to free any stiff links.
A chain of correct length must be used.
A short chain will cause stiff gear change – chain should be in contact with upper chain roller and long enough to allow free movement onto largest chainwheel and sprocket.

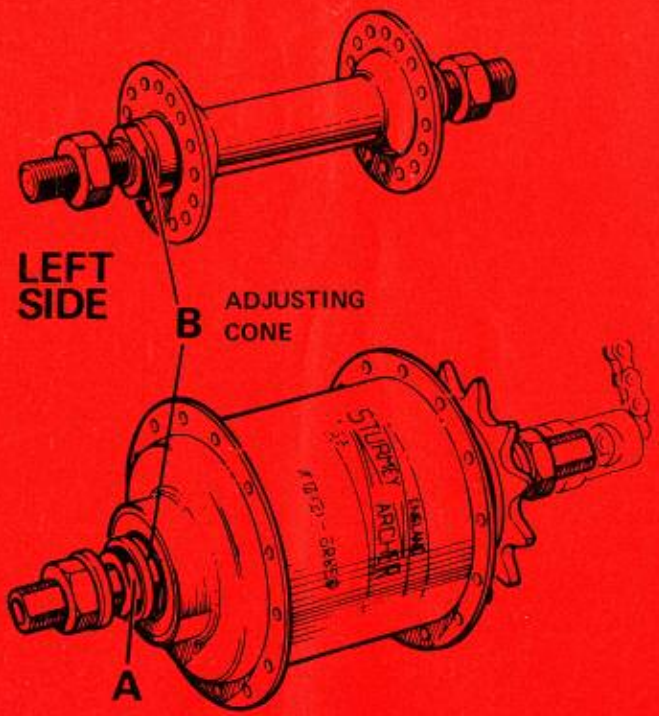
hub bearing adjustment

KEEP WHEEL NUTS TIGHT

If excessive play occurs at wheel rim when wheel nuts are tight – adjust hub cone on left side of hub.

To do this:– Loosen wheelnuts and cone locknut (A) tighten adjusting cone (B), which has flat sides to take a spanner. The 'Fixed' right-hand cone must not be touched.

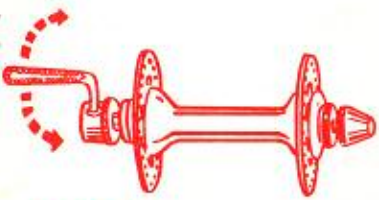
CORRECT HUB ADJUSTMENT – with wheelnuts tight:– A trace of side movement (play) only – at the wheel rim – none at the hub.



wheels

To remove **FRONT WHEEL** – loosen axle nuts (use a spanner) and lift out wheel. If you have quick-release hubs, turn quick-release lever 180 degrees. If cycle is equipped with quick-release brakes, release this unit before removing wheel.

To replace **FRONT WHEEL** – **Important:** Most front hubs have adjusting cones. The adjusting cone has flat sides and must always be on the left side. (Viewed from riding position).



LEFT SIDE

Place the wheel into the front fork – make sure the cone spigott fits inside the wide section of fork slot. Fit washers and tighten axle nuts securely. In the case of quick-release hubs, lock the lever towards the hub flange. **Note:** the quick-release lever must always be on the left side. (Viewed from the riding position).

REAR WHEEL REMOVAL – Derailleur Gear Type – change gear to high gear (i.e.) small rear sprocket. Loosen both axle nuts by turning in a counter-clockwise direction. (If your bicycle has quick-release brakes, release this unit). If equipped with quick-release hubs, turn release lever 180 degrees to free.

The wheel is now free to slide forward and out of the frame.

To replace the **REAR WHEEL** – Locate the top section of the chain on the small sprocket and fit the wheel in the frame, pushing back and centralising wheel between the chainstays – holding the wheel in this position, tighten the axle nuts in a clockwise direction. (Re-set quick-release brake unit).

adjustment of

Front

1. Loosen nut "A".
2. Raise stirrup until blocks almost touch rim.
3. Hold steady roller lever "B" and brake rod "C".
4. Tighten nut "A".
5. With brakes "on" tighten nuts "F", ensuring that blocks fit squarely to rim.
6. Make sure stirrup pegs are fully engaged in guides "D".

WORN BRAKE BLOCKS SHOULD BE REPLACED FOR YOUR OWN SAFETY.

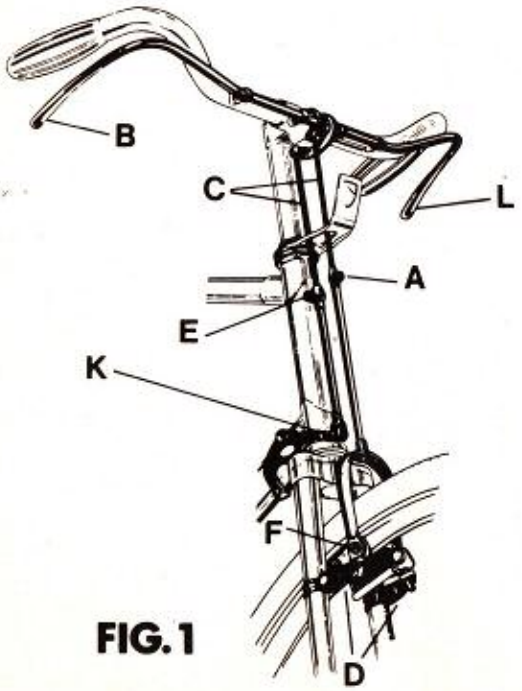


FIG. 1

roller lever brakes

Rear

1. Loosen nuts "E" and "H". Figs. 1 & 3.
2. Set bellcrank "J" until it touches bottom bracket. Fig. 3.
3. Move stirrup until blocks almost touch rim. Tighten nut "H". Fig. 3.
4. Slightly raise tube at "K", depress roller lever "L" and brake rod "C". Fig. 1.
5. Tighten nut "E".
6. With brake "on" tighten nuts "F", ensuring that blocks fit squarely to rim. Fig. 2.
7. Make sure pegs are fully engaged in guides "D". Fig. 3.

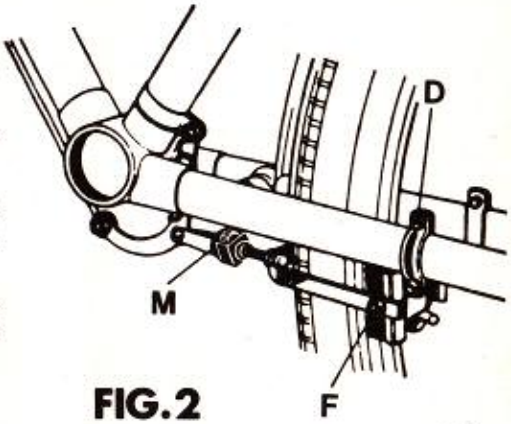


FIG. 2

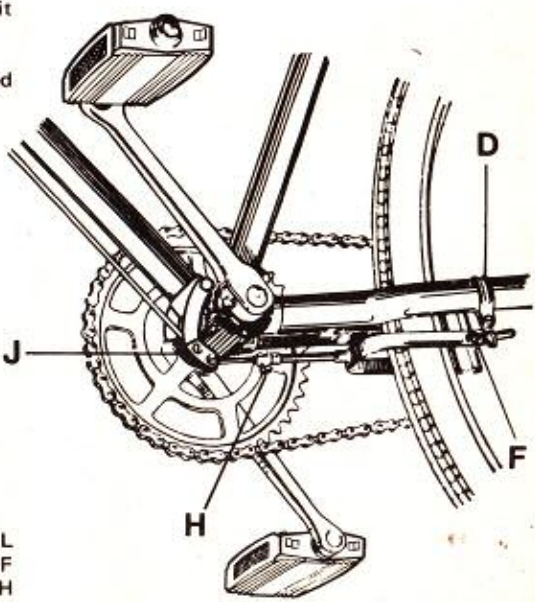
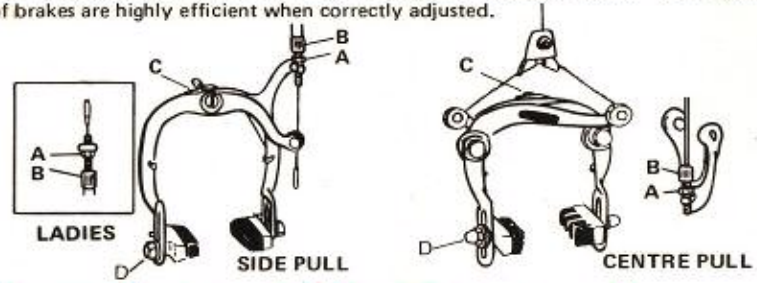


FIG. 3

ON SOME CYCLES THE FINAL ADJUSTMENT IS BY MEANS OF A KNURLED NUT "M" WHICH CAN BE ROTATED TO MOVE THE BLOCKS CLOSER TO OR AWAY FROM THE RIM. Fig. 2.

cable brakes

Your bicycle will be fitted with either centrepull or sidepull brakes. Both types of brakes are highly efficient when correctly adjusted.



brake adjustment

The correct adjustment of your brakes is when a minimum movement of the brake lever brings the brake blocks into contact with the rim. The brake should not be so closely adjusted that the brake blocks touch the rim when in the off position.

sidepull brakes

The sidepull brake fine adjustment is made by the following procedure:—

1. Loosen lock nut A.
2. Turn adjuster B to set blocks just clear of the rim.
3. Tighten lock nut A.
4. If one brake block is closer to the rim than the other, adjust this by tapping C on the opposite side. For alloy brakes loosen rear nut and recentre.
5. Tighten nuts D so that the brake blocks meet the rim squarely, and not touching the tyre when the brake is applied.

In the case of ladies' rear brakes, the cable enters the adjuster from below.

centrepull brakes

The centrepull fine adjustment is made by the following procedure:—

1. Loosen lock nut A.
2. Turn adjuster B to set blocks just clear of the rim.
3. Tighten lock nut A.
4. If one brake block is closer to the rim than the other, loosen the centre bolt nut C and centralise the entire brake body. Then tighten nut C.
5. Tighten nuts D so that the brake blocks meet the rim squarely and not touching the tyre when the brake is applied.

brake levers

The position of any brake lever should not be altered by force. The clip fixing screw should always be loosened to re-position the lever. If your brake lever works loose on the handlebar, a screwdriver can be used to tighten the clip. On hooded levers – to gain access to the securing screw, you will have to pull the lever toward the handlebar and tighten. (Campagnolo requires a Campagnolo T handle socket wrench).

Worn brake blocks and frayed cables should be replaced immediately – FOR YOUR OWN SAFETY.

Note:

The cable brake shoes are closed at each end, the shoes must NOT be opened to replace the brake blocks. Complete shoes and block assemblies are available for replacement purposes.

quick-release brake mechanism

Some brake levers are fitted with quick-release units (mentioned in wheel fitting). This quick-release allows you to open the brake stirrups further than normal and allows removal and fitting of the wheels. The tyre will pass through the brake blocks without deflating.

To operate the quick-release, gently apply pressure to the brake lever and press the quick-release knob with your thumb. Holding knob, allow the brake lever to return past its normal position.

The quick-release hand lever unit automatically resets itself as soon as you use your brakes.

Campagnolo brakes are fitted with a different type quick-release lever, located on the side of the brake stirrup. When the lever is down, the brake is set. To use your quick-release unit, it is necessary to pull the lever up.

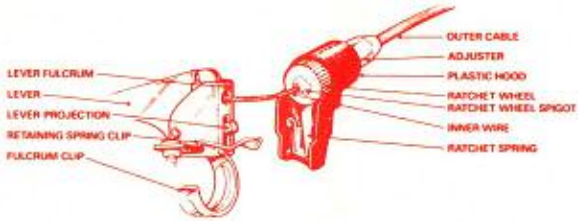
Quick-Release Hand Lever

Campagnolo

IMPORTANT – BEFORE RIDING, MAKE SURE THAT THE LEVER IS PUSHED DOWN OTHERWISE YOUR BRAKE WILL NOT OPERATE.

self adjusting brake lever unit (PATENTED)

The brake lever automatically adjusts the amount of free play in the cable inner wire by an internal spring actuating a ratchet wheel, which moves the cable adjuster inside the lever hood.
When the inner wire becomes stretched or the brake blocks worn – a pull on the brake lever actuates the ratchet wheel (with audible click) and the cable adjuster will move outwards.
Rotation of cable adjuster is anti-clockwise R.H. lever – clockwise L.H. lever – (handlebars viewed from the riding position).
If the brake blocks are too near the wheel rim, i.e. making it difficult to apply the brake lever, the ratchet wheel can be rotated by hand – in the opposite direction – to increase the gap between the wheel rim and the brake block.



TO REPLACE BRAKE CABLE

1. Loosen pinch bolt on brake stirrup and remove cable.
2. Remove outer cable from lever
   (a) Loosen retaining spring clip from lever hood.
   (b) Detach hood assembly from lever.
   (c) Detach cable nipple from lever – slide hood assembly off inner wire.
3. Remove outer cover from new cable. Ensure that ratchet wheel is screwed into adjuster leaving 1/4" gap between adjuster and ratchet wheel. Push inner wire through centre of ratchet wheel and cable adjuster and fit plastic hood. (see diagram). Insert cable nipple into lever. Register the lever projection inside ratchet spring and locate spigot on ratchet wheel into hole in lever fulcrum. Secure retaining clip – operate lever several times to check mechanical function. Push outer cable over inner wire, feed inner wire through holes in cable stop and pinch bolt on stirrup. Ensuring that outer cable is located in seating at brake lever and cable stop on stirrup, pull through surplus inner wire, and whilst maintaining 1/8" clearance between brake blocks and rim, fully tighten pinch bolt nut. **(This is important).**
4. Finally operate lever to obtain correct brake adjustment.

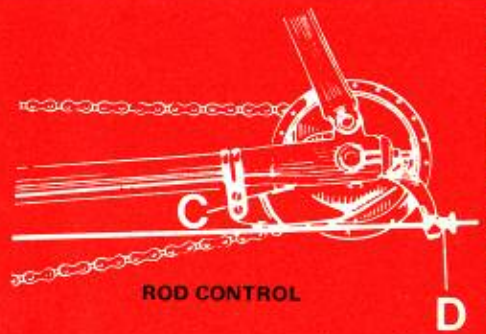
Lubricate cable adjuster threads occasionally.

hub brake adjustment

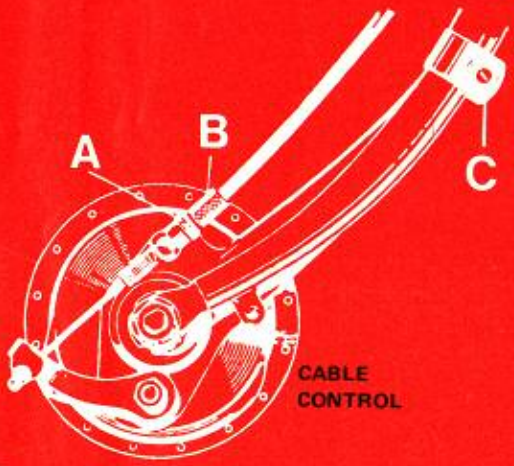
NOTE. It is essential that the clip "C" which secures brake arm to frame or fork, is kept tight. A loose clip will reduce efficiency of brake.

ROD CONTROL TYPE
TO ADJUST, tighten adjuster nut "D" until brake linings are in contact with hub drum, then slacken until wheel revolves freely.

CABLE CONTROL TYPE
The locknut "A" must be loosened before adjuster "B" is moved. Tighten locknut "A" after adjustment.



ROD CONTROL

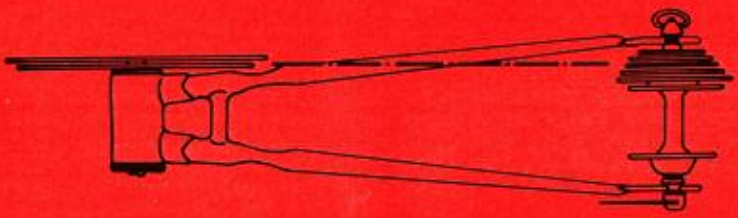


CABLE CONTROL

CABLE CONTROL

derailleur gear

It is so named because it works on a derailling principle of moving the chain from one sprocket to another. The number of gears is determined by multiplying the number of sprockets on the free (rear) wheel and the number of chainrings on the chain wheel.



The wide range of gears allows you to combat all prevailing conditions while pedaling at the comfortable rate of 60 revolutions per minute. The rate and gear ratios have been scientifically determined so all you need do is select the gear that suits the road.conditions.

RULES FOR CHANGING GEARS

1. THE PEDALS MUST BE KEPT TURNING WHEN CHANGING GEAR
   The only way the chain can be carried from one sprocket to another is for it to be moving in a forward direction, so never stop pedaling when changing gear. Never attempt to change gear when back pedaling.

2. IT IS NOT NECESSARY TO USE ALL GEARS IN SEQUENCE
   Select the gear that is most comfortable for the road grade.

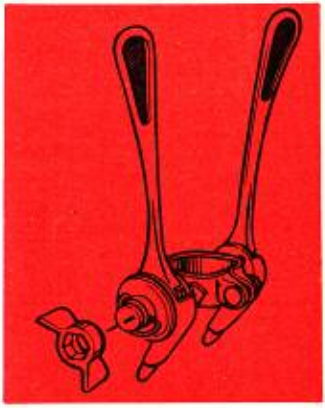
3. GEAR SELECTION SHOULD BE MADE IN ADVANCE
   Since forward speed must be maintained in order to change gear, it's a good idea to shift to a lower gear before stopping in order to be in the proper gear again when you start.

gear change levers

There are two levers. The lever left controls the chainwheel shifter ... the one on the right controls the free (rear) wheel shifter. Both operate with finger-tip control. Shift firmly and smoothly.

The left lever controls only two gear positions and should be moved either all the way forward or all the way back.

The right lever controls several gear positions and they are felt, rather than selected by a positive position. (When changing from one gear to another, if the chain clatters this can be corrected by a slight additional movement of the lever). At first this may seem difficult, but with practice it will become automatic. The system was designed for safety. You can keep your eyes on the road while shifting.



Levers should be tight enough to hold gear, otherwise tighten the tension lever wing-type screws on the side of each lever.

DO NOT LUBRICATE! This lever works on friction which keeps lever from shifting by itself.

Chopper model — 5-speed derailleur console gear shift.
Note: To increase tension on the T bar gear control lever, push forward the small right hand lever as required until the T bar lever holds the gear unit in all gear positions.

Lever position

5-SPEED high gear — lever in most forward position — bottom gear — lever in most backward position.

10-SPEED left hand lever operates front changer to move the chain over chainwheels. Right hand lever operates gear mechanism and moves chain across sprockets.

Chain on large chainwheel and small sprocket = highest gear
i.e. Left hand lever in backward position
Right hand lever in forward position

Chain on small chainwheel and large sprocket = lowest gear
i.e. Left hand lever in forward position
Right hand lever in backward position.

derailleur gear adjustment

You should return your cycle to your dealer for adjustments. However, in case of emergency and for minor adjustments, the fault finding chart should help you. It is recommended that you work in the order given here.

Depending on the model you own, your cycle will be fitted with one of four different kinds of gears. Since they all operate on the same principle, the adjustment is basically the same.

1. Turn cycle over standing it on handlebar and saddle (protect handlebar and saddle from damage).

2. Rotate pedals to turn rear wheel and operate all gears to determine your problem. (Use chart for reference).

cable adjustment

1. Rotating pedals, shift both levers forward (natural position with chain on small chain wheel and sprocket).

2. Check cable tension. Properly adjusted, cables should have a small amount of play.

3. To adjust, release cable clamp bolt C then pull cable tighter with a pair of pliers and retighten clamp bolt.

(see illustrations on page 16).

gear maintenance

To help ensure that your Derailleur gear works efficiently and to prolong its life, it must be kept clean of excess oil and condensation and properly lubricated.

finding & correcting problems

REAR MECHANISM

Problem	*Cause*	*Cure & Comments*
1. Changing from gear selected without touching shift lever.	(1) Incorrect tension on gear change lever.	Tighten gear tension lever screw. Do not over tighten so that you are unable to change gear. Do not lubricate – as lever works on friction.
	(2) Cable slip.	Tighten cable pinch bolt. Ensure cable adjustment is correct before tightening.
2. Chain throws off the small sprocket toward frame – or not riding on or reaching small sprocket.	(1) Incorrect setting of high gear adjustment screw.	Readjust. Ensure that tension in gear cable does not act as a stop.
3. Chain throws off the large sprocket toward wheel or not riding on or reaching the large sprocket.	(1) Incorrect setting of low gear adjustment screw.	Readjust. Ensure that the chain never derails toward the wheel, as extensive damage can occur.
4. Gear lever engages lever stop before low gear is obtained.	(1) Too much slack in cable.	Readjust cable. Ensure cable does not act as a stop.

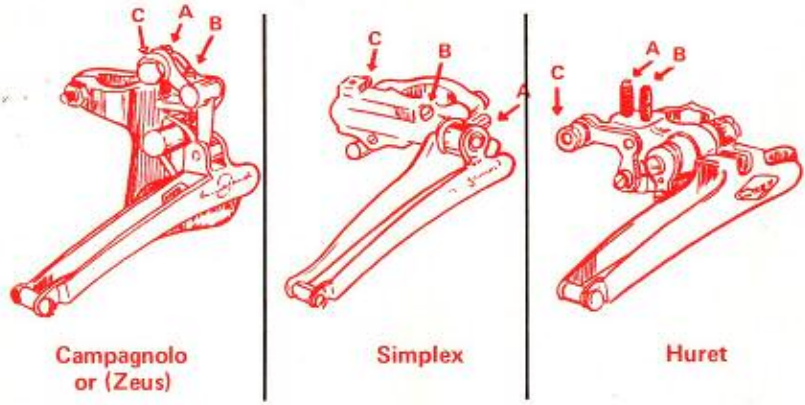
FRONT MECHANISM

1. Changing – from large to small chain wheel without touching shift lever.	(1) Incorrect tension on gear change levers.	Tighten gear tension lever screw. Do not over tighten so that you are unable to change gear. Do not lubricate as lever works on friction.
2. Chain throwing off large chain wheel or not engaging chainwheel.	(1) Incorrect setting of outer chainwheel adjustment screw.	Readjust.
3. Chain throwing off small chainwheel or not engaging chainwheel.	(1) Incorrect setting of inner chainwheel adjustment screw.	Readjust.

If problems continue to arise, take your cycle to the dealer for additional adjustments.

derailleur gear front changer

1. While turning pedals move the right hand lever back changing to middle sprocket. Move the left hand lever forward changing to small chain wheel.
2. The chain should be in the middle of the derailleur cage. If not, adjust as follows:—
   (a) On Huret and Campagnolo gears use adjusting screws 'A' and 'B' to limit movement of cage. Turn clockwise to decrease movement and counterclockwise to increase movement.
   (b) On Simplex gears, loosen set screw 'A' and slide cage by hand until centred — retighten set screw. IMPORTANT, DO NOT OVER TIGHTEN. Screw 'B' is outward limit screw.
3. Turn pedals and shift to large chainwheel (left lever). If chain does not shift, place chain on large chainwheel by hand and re-centre the cage.



Campagnolo or (Zeus) | Simplex | Huret

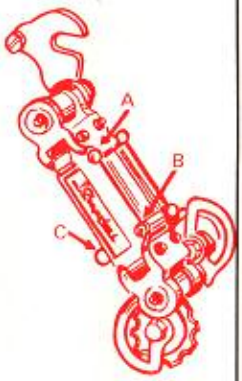
Position of Derailleur Gear Front Changer

The vertical position of the changer is set correctly at the factory. If the front changer has been removed re-fit carefully; the changer plates must be parallel to the chainwheel and set vertically so that the lower edge of the outer plate of the cage is 3/8" above the larger chainwheel teeth.

adjustment of rear derailleur gear

1. While turning pedals move right-hand lever backwards and change to second largest sprocket.
2. Still turning pedals gently, try to shift to the largest sprocket.
   (a) If you are unable to shift onto this sprocket, turn adjusting screw B counter-clockwise until the chain moves to the largest sprocket.
   (b) If you can shift to the largest sprocket and continued movement of the shifting lever causes the chain to override ... then turn screw B clockwise until the shifting lever stops with the chain in the correct position on the largest sprocket.
3. Gently move lever forward until you have shifted to next sprocket.
4. To adjust shifting of the chain to the smallest sprocket, follow generally the procedure outlined in No. 2 above, using screw A.

Campagnolo or (Zeus)



Simplex

Huret

Screw "A" limits the outward movement of the gear unit
Screw "B" limits the inward movement of the gear unit
Screw "C" is the cable clamp bolt

tyres

There are two basic types of tyres.

(a) The **standard** or wire bead type with replaceable tube, normally found on touring cycles.

(b) The **tubular** with tube completely enclosed, primarily used on track and roadracing cycles.

The exclusive "RALEIGH" range of wire-edged tyres has been specially developed to ensure free running with safety and comfort.

TO OBTAIN MAXIMUM LIFE AND FULL BENEFIT FROM YOUR TYRES IT IS ESSENTIAL TO MAINTAIN THE RECOMMENDED PRESSURE INDICATED ON THE TYRE.

Most tubes are fitted with car type (Schrader) valves and therefore can be inflated and checked at any garage where the pressure reading can be ascertained. Alternatively a car foot pump, or normal bicycle inflator fitted with a Schrader valve connector, can be used in conjunction with a tyre pressure gauge.

Inflate tubular tyres to at least 90 pounds per square inch. For best performance and longer wear, it is best to partially deflate tubular tyres after each day's use, and re-inflate before riding again.

Use your brakes with intelligent anticipation – unnecessarily hard braking greatly reduces tyre life. Make sure your tyres do not come into contact with oil, petrol (gasoline) paraffin (kerosene) Naptha or other rubber solvents.

Buying new Tyres or Tubes

To ensure satisfactory service, always fit the "RALEIGH" brand.

Make sure you obtain the correct size. Sizes are clearly marked on the rim of each wheel and on tyres and tubes. ALL THREE MUST AGREE – RIM – TUBE AND TYRE.

tyre changing

(a) STANDARD – wire edged tyre – to remove: completely deflate tube and push tyre edges to centre of rim. Take a tyre lever and wedge it carefully under the edge of tyre near the valve and lift edge over rim. Hook handle of lever under a spoke to hold. Using other tyre levers, work your way around until one side of tyre is off. Use caution not to catch tube between lever and tyre or rim. Also, do not use sharp edged tools in lieu of the blunt tyre levers. Remove tube.

To repair a puncture: use tube repair kit and follow instructions supplied with kit.

To replace tyre: first make sure that the rim tape (narrow band of cotton or rubber that surrounds rim to protect tube from spoke ends) is in place in centre of rim.

Fit one side of tyre on wheel and push tube valve through valve hole. Inflate tube slightly and place carefully in tyre. Starting opposite valve hole, work second side of the tyre over rim. Using fingers and thumbs, work from both sides toward valve until tyre is on rim. Inflate slowly making sure tyre is sitting squarely on shoulders of the rim. (Never use tools to replace tyre on rim).

(b) TUBULAR – to remove: simply deflate and work off the rim with hands.

To replace tyre: since tubular tyres must be cemented to rims, the rim first should be cleaned with a solvent. When cleaning, check spoke ends to see that they are level with nipple heads – not above.

Apply a layer of rim cement evenly with your finger or a small brush in the well of the rim – make sure you do not get cement on outside braking surface of rim.

Inflate tubular tyre until it turns inside out and apply a thin layer of cement to the base tape.

When cement becomes tacky, reduce pressure until the tyre will just hold its shape then proceed to fit tyre as shown.

changing tubular tyres

1.
Stand wheel in upright position – insert valve through valve hole in rim.

2.
Holding tyre firmly on both sides – stretch by pushing downward and work into position on rim.

3.
Continue process as far as possible working to side of rim opposite valve.

4.
Lift to horizontal position and stretch remaining portion into place – clean your hands.

5.
Inflate tyre further and seat correctly on rim – true by rolling in proper direction. If there are high or low spots, stretch the tyre where there are high spots – push together where there are low spots. Now fully inflate tyre. It is advisable to allow 12 hours for drying before riding.

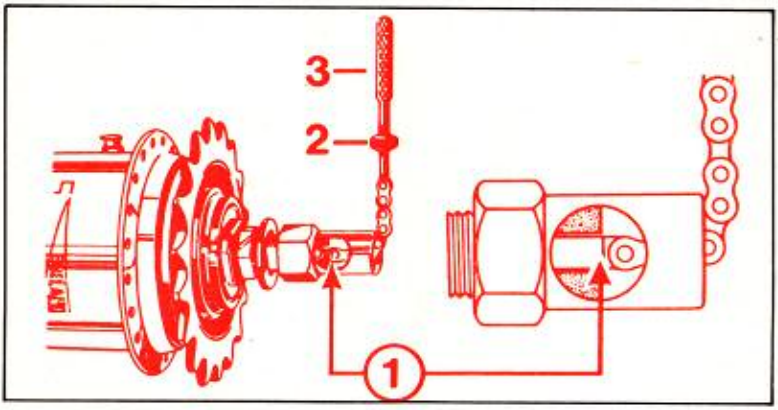
sturmey-archer 3-speed hub gear

THE IMPORTANCE OF CORRECT GEAR ADJUSTMENT

Correctly adjusted, Sturmey-Archer gears will give you years of trouble-free cycling. If however they are not adjusted correctly they will not function properly and 'slipping' will occur and this will result in permanent damage, unless corrected promptly.

GEAR ADJUSTMENT

First place the gear control in No. 2 position. Then screw the cable connector (3) until **THE END OF THE INDICATOR ROD IS EXACTLY LEVEL WITH THE EXTREME END OF THE AXLE.** This can be seen through 'window' in the right-hand nut, see (1) – Now tighten locknut (2). All Gears are now set.



GEAR CHANGING

In use, Sturmey-Archer variable gear hubs have the easiest, cleanest and most convenient means of making a change of gear. The change may be made whilst the cycle is in motion or when it is stationary.

To change gear when the bicycle is moving, continue to pedal but EASE the pressure on the pedals and move the gear lever smartly. Should it be necessary to change gear whilst stationary EASE PEDALS BACKWARDS – the internal gears will rotate and engage easily.

LUBRICATION

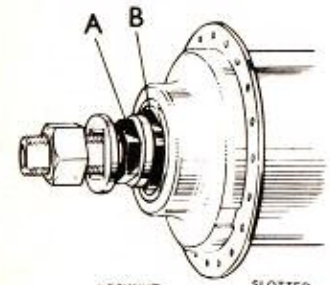
A NEW HUB MUST BE OILED BEFORE USE through the lubricator on the hub shell. Afterwards add one or two drops of oil at least every month.

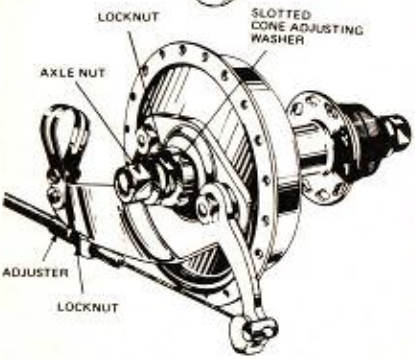
maintenance & adjustment of sturmey-archer gears

BEARING ADJUSTMENT – ALL HUBS

The right-hand cone is fixed at factory and should not be touched. Bearings are adjusted by loosening left-hand locknut "A" and rotating cone "B", care being taken to re-tighten locknut afterwards.

A CORRECTLY ADJUSTED WHEEL SHOULD RUN FREELY WITH A TRACE OF SIDE MOVEMENT ONLY AT THE WHEEL RIM.





In the case of hub brakes BF, BR & AB – a slotted cone adjusting washer is placed over the cone. This should be rotated to obtain correct adjustment as above.

BRAKE LINING RENEWALS, BF BR AB

If brake efficiency is poor and cannot be corrected by adjustment, brake linings may need renewal. Your dealer should be consulted as a Sturmey-Archer re-lining service is available.

LUBRICATION

A NEW HUB SHOULD ALWAYS BE OILED BEFORE USE. The ideal rule for lubrication should be two or three drops of oil every month which will maintain the hub in first class running order.

3-SPEED COASTER BRAKE S3C

Lubrication of gear automatically provides for the brake mechanism. No other attention is necessary.

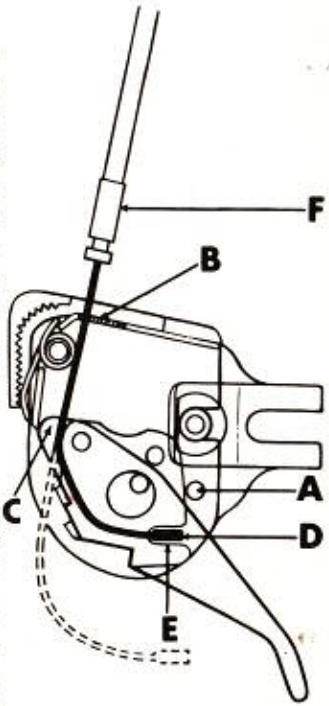
trigger control

TO FIT TRIGGER CONTROL

1. Open clip and place control approximately 2" from end of handlebar grip and secure fixing screw.
2. Pass cable inner wire through fulcrum clip and into clip slot – (then over pulley wheel, if fitted).
3. Push outer cable up to fulcrum slot. Fit cable anchorage – at hub end – Push gear lever forward, tighten inner wire and secure anchorage nut firmly.
4. Connect control cable to gear indicator coupling at hub.
5. Slide fulcrum clip to take up any slackness in cable and tighten clip screw.
6. Adjust gears.

TO REMOVE THE CONTROL WIRE

It is not necessary to remove control from handlebar if the lever can be pulled back far enough to allow cable nipple to pass between pawl and ratchet plate. Procedure is: Detach the inner wire from indicator chain at hub, and outer casing from fulcrum clip. Pull cable ferrule (F) downward to remove from slot (B). Pull lever right back beyond bottom gear position to stop (A), push inner wire through to detach nipple (D) from ratchet plate then pull wire out between pawl and ratchet at (C) and finally through slotted hole (B).



TO FIT CONTROL WIRE

Pull lever right back beyond bottom gear position to stop (A) and insert wire through hole (B) and between pawl and ratchet plate at (C).

Wire nipple (D) is then fitted into notch (E) and cable ferrule (F) slotted into (B). Keeping tension on wire, push lever forward into top gear position. Control is then ready for re-connection.

auto twist grip control

IMPORTANT – THE GRIP MUST NOT BE TWISTED UNTIL FITTED TO THE BICYCLE AND THE CABLE CONNECTED TO GEAR INDICATOR ROD AT THE HUB.

1. Slide control on to handlebar as far as possible, adjust grip to required position. Tighten – EVENLY – fixing screws.
2. Pass cable inner wire through fulcrum clip and into clip slot – (then over pulley wheel, if fitted).
3. Push outer cable up to fulcrum slot. Fit cable anchorage at hub end – Twist the grip forward to tighten inner wire and secure anchorage nut firmly.
4. Connect control cable to gear indicator coupling at hub.
5. Slide fulcrum clip to take up any slackness in cable and tighten clip screw.
6. Adjust gears.

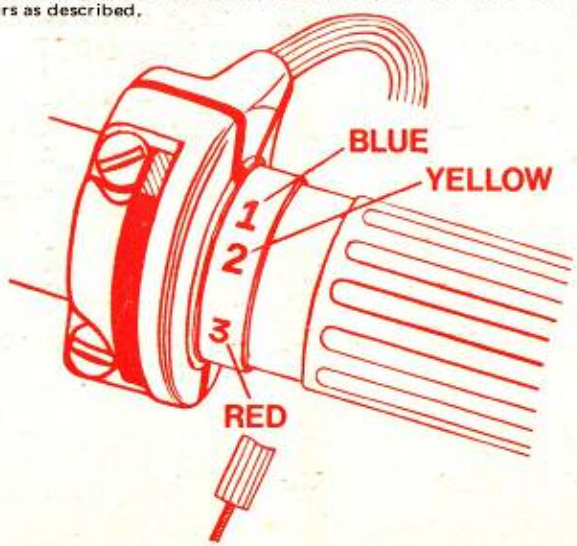
TO SET GEARS AUTOMATICALLY IN ADJUSTMENT

Twist the grip until bottom gear (No. 1) is indicated (i.e. the blue coloured section can be seen through top of casing aperture) – Continue to turn grip until no further movement can be obtained. ALL THREE GEARS ARE NOW AUTOMATICALLY IN ADJUSTMENT.

NOTE – When all the cable adjustment has been taken up the twist grip must be dismantled and the gear locating spring refitted: See Assembly Notes.

TO RESET GEAR LOCATING SPRING AND ASSEMBLE TWIST GRIP MECHANISM

1. First fit detent spring and the 3/16" dia. ball into recess in operating sleeve – (use grease to hold spring and ball in position).
2. Fit cable nipple into slotted recess of operating sleeve.
3. Fit cable inner wire into slot of gear locating spring, and position spring over operating sleeve. (Check 3/16" dia. ball is positioned in elongated hole of locating spring).
4. Keeping thumb of right hand over ball and spring, feed inner wire into cable slot of bottom half of casing. Now press locating spring into casing – until spring is **right down** into its groove.
5. Fit top half of casing over operating sleeve. Holding two halves of casing together, fit clamp screws.
6. Refit Twist Grip on to Handlebar, and take up all slackness in Control Cable. Set gears as described.



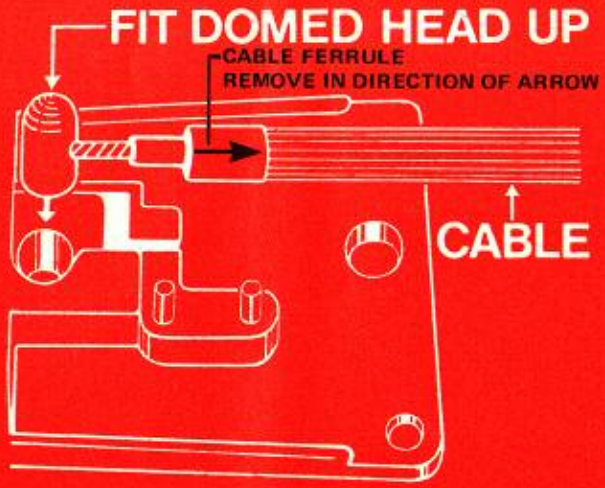
replacement of gear cable 'sportshift' control

To Remove Old Cable

1. Detach control unit from bicycle. Unscrew cable connector from gear indicator coupling – at hub end.
2. Remove front screw from underside of control unit fixing plate.
3. Unscrew lever knob and remove from lever, lift off plastic cover and push lever forward. Use a screwdriver to prise cable ferrule from its recess.
   N.B. If your 'Sportshift' has gear indication with a mechanical linkage and cursor plate, gently ease plastic cursor plate from its retaining pegs and swing to right side to reveal cable ferrule.
4. From underside of base plate, use a small screwdriver to push cable nipple from recess.

To Fit New Cable

5. Fit inner wire nipple and outer cable ferrule into recess: see diagram – the domed end of inner wire nipple must face upwards.
   (Note: Refit cursor plate onto its securing pegs).
6. Replace plastic cover and lever knob. Refit control unit to bicycle.
7. Pass inner wire through fulcrum clip – on rear frame tube – and fit wire into clip slot.
8. Connect cable to hub end.
9. Set gears as described. See page 29.



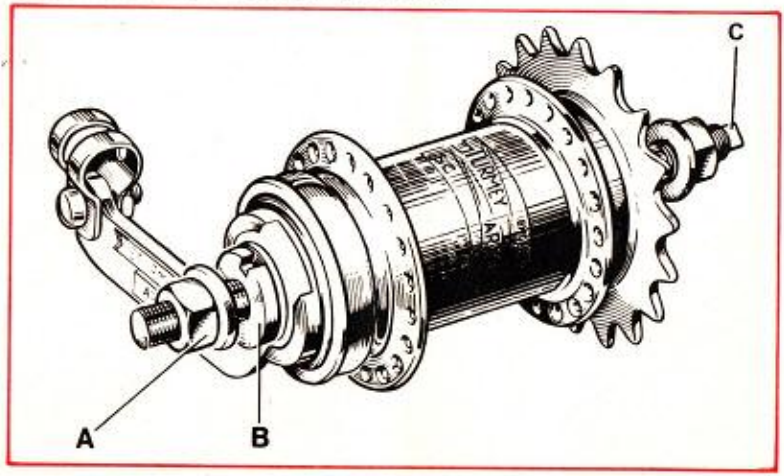
maintenance of sturmey-archer SC coaster hub

IMPORTANT the following simple instructions covering ADJUSTMENT AND LUBRICATION should be followed to ensure that the SC hub, (which is fitted with a powerful brake unaffected by all weather conditions) may operate efficiently.

The Hub bearings can be adjusted without removing the wheel from the bicycle.

1. Loosen the two axle nuts "A".
2. Loosen the locknut on the left-hand side of the wheel "B".
3. Place the special spanner on the square end of the axle "C", turn it clockwise to tighten the bearings or anti-clockwise to loosen them.
4. Re-tighten the locknut and axle nuts leaving the wheel with just a trace of side-play at the rim.

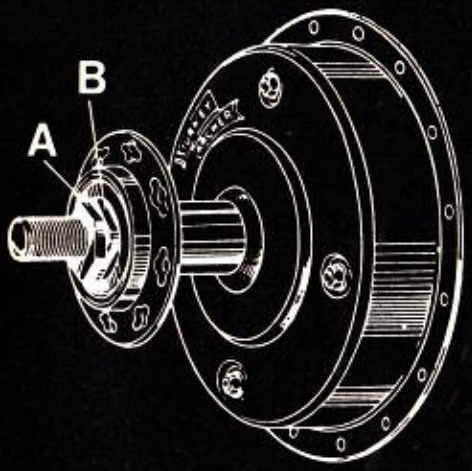
If for any reason it is necessary to remove the rear wheel from the bicycle, it is most important that the brake arm clip is TIGHTENED SECURELY when the wheel is refitted.



To maintain this Hub in good running condition, we recommend the specially blended high grade STURMEY ARCHER or RALEIGH INDUSTRIES "ALL-PURPOSE" lubricants.

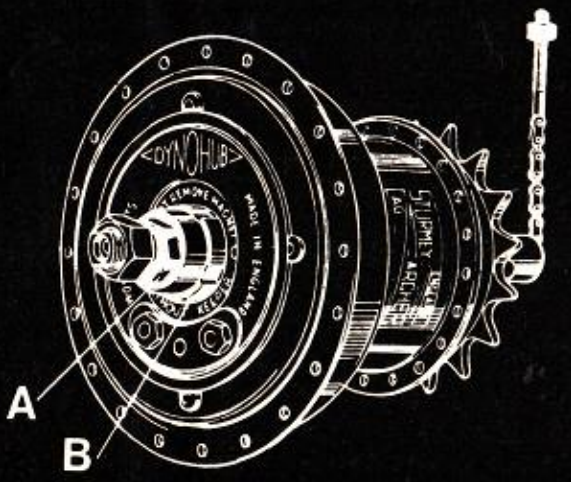
dynohub bearing adjustment

A correctly adjusted wheel has a trace of side movement only at wheel rim – none at the hub.



Front 'Dynohub' (GH6) is adjusted on left side (away) from dynamo by loosening locknut "A" and adjusting cone "B".

Rear 'Dynohub' (AG) is adjusted on left side (dynamo side). Loosen locknut "A" and adjust slotted washer "B".



sturmey-archer 'dynohub' hub lighting equipment

Servicing of this equipment is a job for the expert, but a few hints may prevent trouble.

1. Never remove armature from magnet. De-magnetising will occur even during a very short separation.
2. See that all terminals are secure and clean.
3. Use correctly rated bulbs at all times –
   Steel Headlamp – 6v.2 amp – M.E.S.
   Plastic Headlamp– 6v.2 amp – Capless type
   Rear Lamp – 6v.1 amp – Capless type
4. Always loosen fixing bolt before altering headlamp angle.
5. Never leave run-down batteries in Dry Battery Unit (D.B.U.) or Filter Switch Unit (F.S.U.) casings, or corrosion will occur.
6. Keep retaining spring in groove in battery container clean. A smear of grease will prevent corrosion.

moulton

Maintenance of all the individual components of Moulton models is identical to that of the conventional bicycle shown under the various headings in this Cycle Owner's Handbook.

THE RUBBER SUSPENSION SYSTEM requires no maintenance whatsoever. NOTE:– rubber will deteriorate if allowed to come into contact with oil and care should be taken when oiling the chain or rear brake to ensure that oil is kept away from the rear suspension unit.
Do not attempt to dis-assemble the Front suspension. Leave it to your authorised Raleigh Dealer who is specially equipped to do this job.

FRONT SUSPENSION
If you should have to remove the front brake, take care not to displace the short bush through which the brake bolt passes and which itself fits in the fork crown. This holds the coil spring and column of rubber inside the fork assembly.
Even under extremely rough conditions the suspension system gives a comfortable ride, but at the same time the bicycle should be used in a sensible manner.

holdalls and carriers

R.20 HOLDALL

(1) To secure the R.20 holdall to the plastic luggage tray — push the ball ends of the rubber straps **right through** the circular ends of the 'keyhole' shaped slots in the tray end flanges.

Note. The straps must be pulled sideways to secure them in the narrow section of 'keyhole' slots.

(2) When fitting the holdall into its plastic tray, ensure that both rubber bands are fastened to the hooks on the holdall carrying strap.

R20 HOLDALL

TWENTY & RSW MODELS

TO REMOVE CARRIER BASKET or HOLDALL from the bicycle simply pull the quick release handle 'A' in the direction indicated, and lift away.

TO REFIT CARRIER BASKET or HOLDALL — pull the quick release handle 'A' as indicated and lower the Basket or Holdall into position, locating side mounting plate under bar 'C' of carrier.

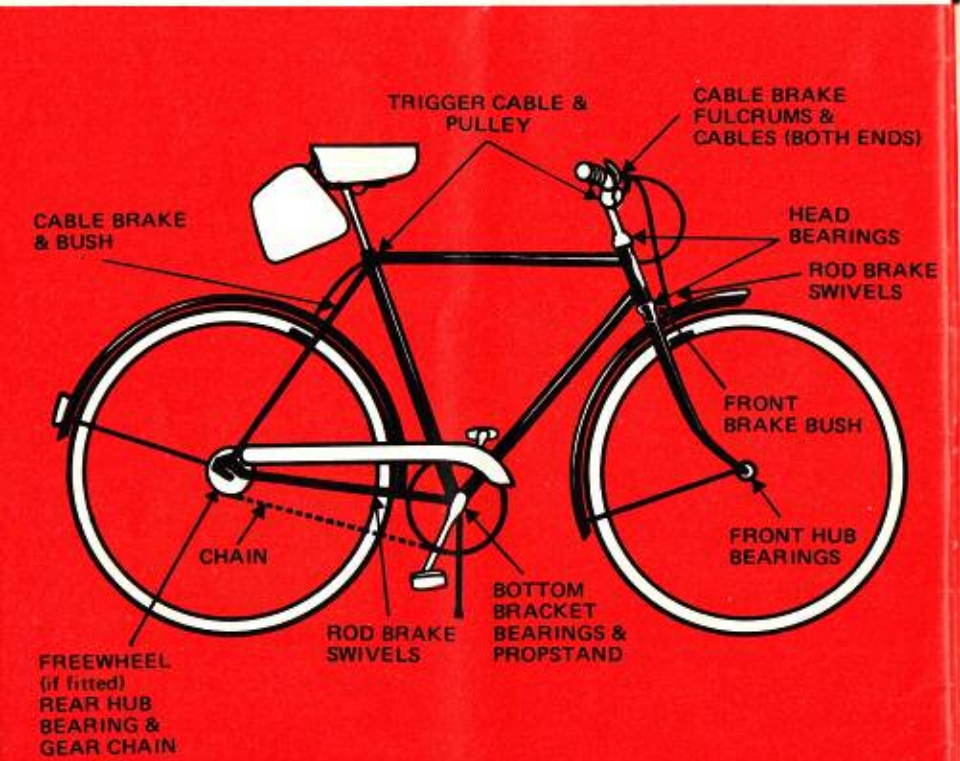
The release handle 'A' will automatically locate over the side of mounting plate, when released, locking the Basket or Holdall in position.

R20 Shopper Model

R.S.W. Model

lubrication

REGULAR LUBRICATION IS IMPORTANT
Lubricate the parts shown when new and every two weeks when in use. **Do not allow surplus oil to run down spokes and ruin tyres.**
Important
Keep oil and grease away from brake tracks on wheel rims — also from brake blocks.
If the cycle has been idle for some time, lubricate before using. DO NOT OVER-OIL. If a gearcase is fitted remove gearcase end and lubricate the chain while revolving the cranks.
On some models the Bottom Bracket, Pedals and Hubs do not have a lubricator provided in which case these bearings have been grease packed before leaving the factory, giving lubrication over a long period without attention.
When not in regular use cycle should be hung up to protect tyres. Metal parts should be lightly smeared with grease if storage is for an extended period.
TAKE CARE to remove grease or oil from brake tracks on wheel rims before using cycle again.
Use only R.I. 'ALL-PURPOSE' Oil or STURMEY ARCHER Oil — specially blended high grade lubricants.



important

Check these points regularly:

In addition to carrying out the lubrication routine described on opposite page it is essential to check the following points every 100 miles.

1. Check that all nuts and bolts are securely tightened.
2. Ensure that your pedals are tightly screwed to the cranks (see page 10).
3. Check to see that both brakes are correctly adjusted (see pages 14-19).
4. Check hub adjustment (see page 12).
5. Check that steering is free – but not loose. (See page 8).
6. Check tyre pressure.

Cycle Identification Form

You should complete this form and keep it safely for production to the police should your cycle be lost or stolen.

Owner's Name .....

Address .....

.....

Lady's or Gent's .....

*Cycle Serial No. .....

Make and Frame Size .....

Colour ..... Cycle Lock Key No. .....

Other Details .....

.....

* The Cycle serial number is located either:
(1) On the seat lug.
(2) The left side chainstay end of the rear fork, just above the rear wheel axle.
(3) Under the bottom bracket.

international cycle warranty

RALEIGH PRODUCTS ARE THE RESULT OF MANY YEARS OF RESEARCH AND DEVELOPMENT. THEY ARE DESIGNED AND BUILT TO THE HIGHEST STANDARDS AND ARE GUARANTEED AGAINST ANY DEFECT IN WORKMANSHIP OR MATERIALS.

RALEIGH CANNOT GUARANTEE ANY OF ITS PRODUCTS WHICH HAVE BEEN DAMAGED DUE TO ACCIDENT, ABUSE, ALTERATION OR MISUSE.

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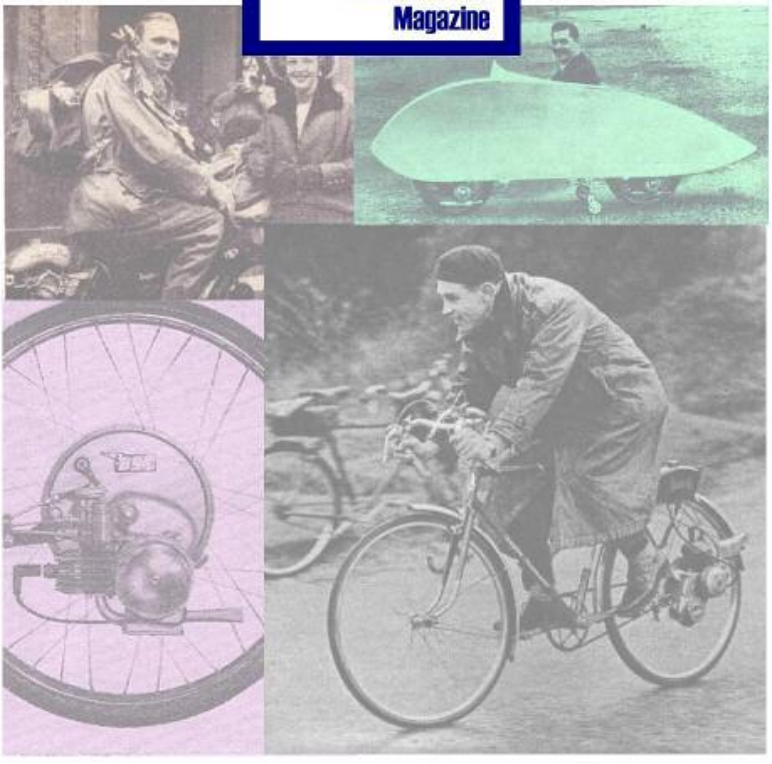

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