CENTURION

THE INTELLIGENT CHOICE

OWNER'S MANUAL & WARRANTY

CONGRATULATIONS

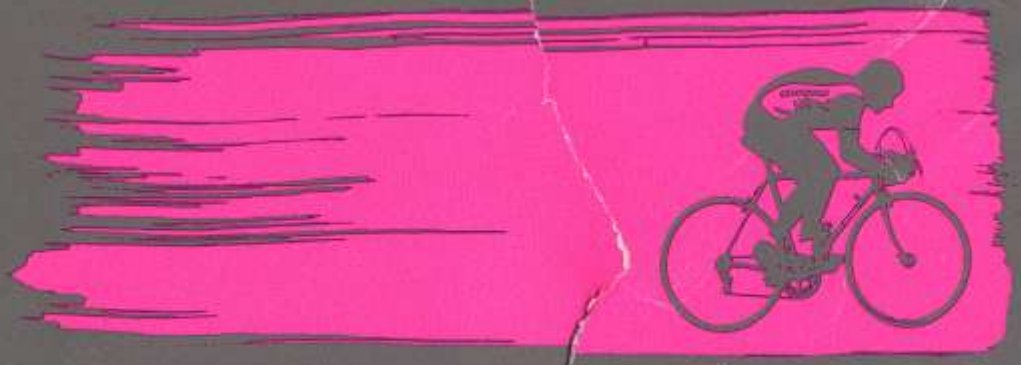
You are now the proud owner of the finest quality lightweight bicycle obtainable.

Your CENTURION is expertly designed and manufactured by professionals with over 70 years' experience. Frame geometry, materials and components are coordinated to provide a lifetime of enjoyable, safe cycling.

Your bicycle has been properly assembled and tested by a trained, authorized dealer. CENTURION dealers maintain an inventory of spare parts and special tools which enables them to make any adjustments or repairs without inconvenience to you. Only a minimum amount of owner maintenance is required.

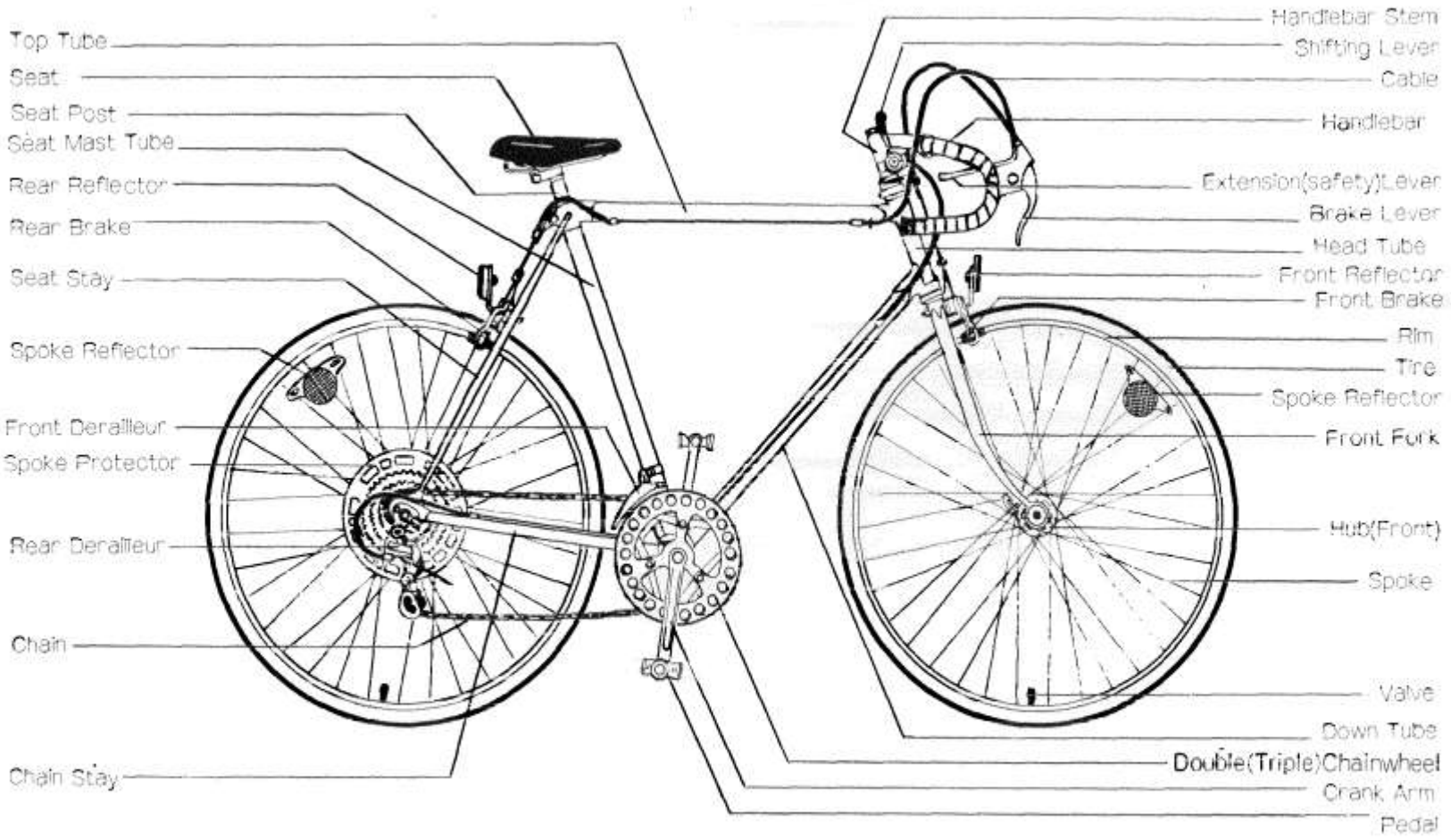
Routine maintenance will increase your cycling efficiency, safety, and enjoyment. This owner's manual covers all but the most complicated mechanical operations. In addition, it contains information about certain components which may not be used in your particular bike.

Please take the time to read this manual to familiarize yourself with the operation and care of your CENTURION.



INDEX

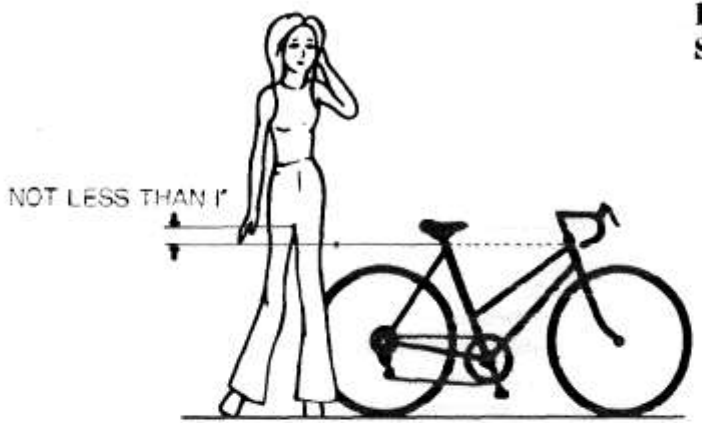
PARTS DESCRIPTION OF MULTIPLE-SPEED BICYCLE

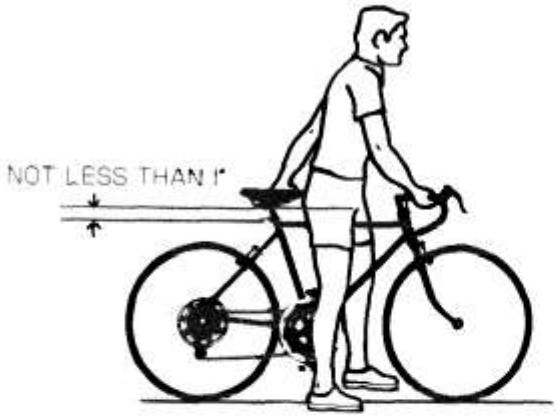


IMPORTANT : Please carefully note the names of all parts of your bicycle for ease of assembly.

PROPER FRAME FIT

RIDER MUST BE ABLE TO STRADDLE BICYCLE WITH AT LEAST 1" CLEARANCE ABOVE THE HORIZONTAL BAR WHEN STANDING.





NOTE: Measurment for a female should be determined using a men's model as a basis.

PROPER SIZE OF BICYCLE

FRAME SIZE	LEG LENGTH OF RIDER
17" (430mm)	26"—30"
18" (460mm)	27"—31"
19" (480mm)	28"—31"
21" (530mm)	30"—33"
22" (560mm)	31"—34"
23" (580mm)	32"—35"
25" (635mm)	34"—37"

OWNER'S RESPONSIBILITY

1. **Bicycle Selection and Purchase:** Make sure this bicycle fits the intended rider. Bicycles come in a variety of sizes. Personal adjustment of seat and handlebars are necessary to assure maximum safety and comfort. Bicycles come with a wide variety of equipment and accessories. . . make sure the rider can operate them.
2. **Assembly:** Carefully follow all assembly instructions. Make sure that all nuts, bolts and screws are securely tightened.
3. **Fitting the Bicycle:** To ride safely and comfortably, the bicycle must fit the rider. Check the seat position, adjusting it up or down so that with the sole of rider's foot on the pedal in its lowest position the rider's knee is slightly bent.

Note : Specific charts illustrated in above detail the proper method of determining the correct frame size. Failure due to accident, abuse, neglect, nomal wear, improper fit, maintenance by bicycle mecanic or use of parts inconsistent with the use originally intended as sold or incompatible with those parts installed as original equipment by the factory are not responsible at manufacturer.

Inspection & Maintenance

Inspection : Every week or two tighten all nuts and bolts. Check all hardware to see that no parts are worn or damaged, that there is correct fork and frame alignment, and that all components are seated in proper position.

1. Make frequent inspections of your bicycle to insure that all nuts, bolts and hardware items are tight and no parts are worn or damaged.
2. **Caliper Brakes :** Keep brake shoe adjusted to rim. Replace worn or missing shoes. Do not wax or oil rim. (Wipe oil off the rim before riding.)

2-a. **Coaster Brake :** Be sure that brake operates smoothly without locking or grabbing when applied normally. Keep brake arm securely fastened to bicycle frame. Have checks made on brake periodically for wear on interior discs or shoes.

3. **Control Cables:** Replace worn or damaged cables. Do not kink cables. Cables stretch with use, adjust regularly.
4. **Front Fork:** Bent or damaged fork should be replaced. Never attempt to repair by straightening.
5. **Head Bearings:** Keep tight. The handlebar must turn freely.
6. **Front Wheel :** Keep axle nut tight. Wheel should be centered in fork. Keep wheel bearing adjusted and keep spoke tight and wheel in proper alignment.
7. **Cranks Bearing :** Crank assembly should turn freely without side play. Keep locknut tight and keep bearing clean and well adjusted.
8. **Cranks & Pedals :** Replace bent crank. Do not attempt to straighten. Replace pedals if bearings or cups are broken and if thread is lost or badly worn.
9. **Sprockets :** Replace if sprocket teeth are bent or damaged. Keep sprocket tight on cranks.
10. **Rear Wheel :** Keep axle nuts tight and wheel centered in chain stays. Keep spoke tight and wheel properly aligned.
11. **Wheel Alignment :** Wheel should rotate smoothly without wobbling from side to side. Have it aligned if necessary. Keep axle nuts tight.
12. **Handlebar :** Adjust for your comfort and growth. Make sure insertion mark should remain in the frame. Tighten securely. Replace worn grips or tapes. Make sure they fit snugly.
13. **Chain :** Check frequently for damage and stretch, and readjust if necessary. Lubricate several times each season. Use a lightweight all - purpose oil, being sure to oil each link.
14. **Multiple Speed Derailleur units :** Shift lever only while pedaling. Keep units adjusted. Do not allow bicycle to fall on derailleur units.
15. **Seat Adjustment :** Adjust for comfort of rider. Be sure that insertion mark on seat post should remain in the frame. Securely tighten the binder bolt on the seat post clamp, and position the angle of seat for comfort of the rider. Securely tighten seat clamp until seat will no longer turn.
16. **Tire :** Make sure that tires are inflated according to pressure indication on tire side wall. A foot or frame pump should be used. Pressurized unregulated pumps should not be used. The tire should be properly seated in the rim and the fitting of the tire bead and rim bead should be checked.
17. **Reflectors :** Should be securely fastened and positioned for bicycle identification at night time from front, rear and lateral visibility. Damaged units should be promptly replaced.
18. **FRAME :** Immediately replace a bent or broken frame. Frame damage can cause excess stress or failure in other bicycle parts.

Caution In Wet Weather Riding

No brakes work as well under wet conditions as they do under dry conditions.
In rainy or wet weather, special precautions must be taken to insure safety in stopping. Proper adjustment and cable lubrication will help but the major precaution rests with you. Increased lever forces are required on wet or rainy weather and care must be exercised to maintain safety under these conditions. Ride slower than normal and apply your brakes sooner than normal conditions would require.

BICYCLE SAFETY RIDING

Listed below are rules of cycling

1. Observe all traffic regulations, red and green lights, one–way streets, stop signs, etc.
2. Keep to the right and ride in a straight line. Always ride in single file.
3. Have white light on front and danger signal on rear for night riding.
4. Have satisfactory signaling device to warn of approach.
5. Give pedestrians the right of way. Avoid sidewalks, otherwise use extra care.
6. Look out for cars pulling out into traffic. Keep sharp look-out for sudden opening of auto doors.
7. Never hitch on other vehicles, "stunt" ride or race in traffic.
8. Never carry other riders-carry no packages that obstruct vision or proper control of bicycle.
9. Be sure your brakes are operating efficiently and keep your bicycle in perfect running condition.
10. Slow down at all street intersections and look to right and left before crossing.
11. Always use proper hand signals for turning and stopping.
12. Don't weave in or out of traffic or swerve from side to side.
13. Before riding bicycle check your brakes and quick release mechanism of hubs.
14. Alway be sure to wear bicycle helmet during bicycle riding.

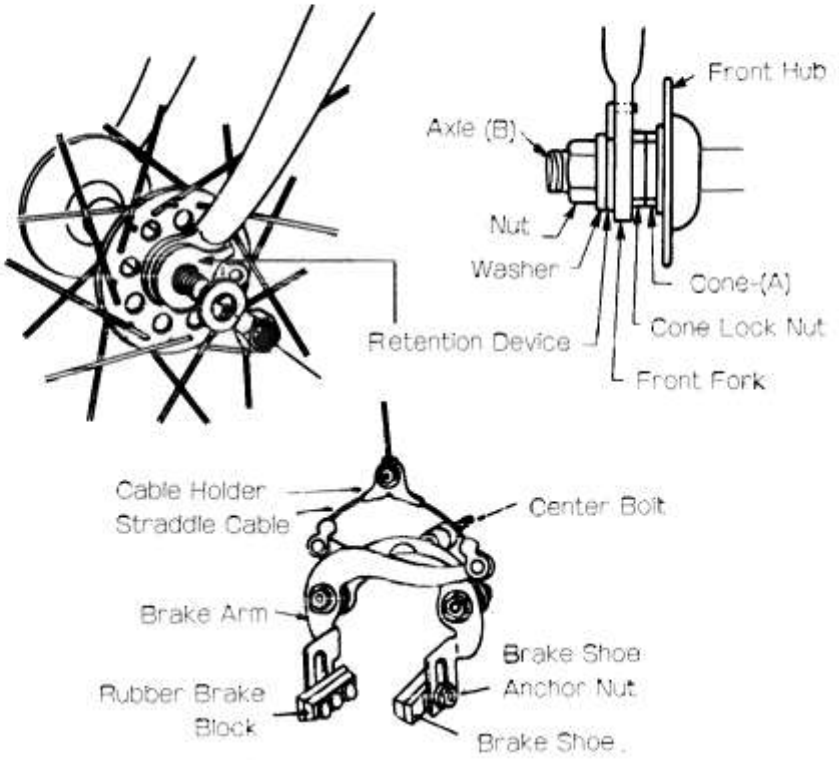
ASSEMBLY INSTRUCTIONS

Important:

Remove bicycle from carton and carefully examine carton for loose parts before discarding. Turn bicycle upside down with front fork pointing forward, carefully unwind wrappings and parts attached to frame and set them aside. Be careful not to scratch frame or cut tire when removing above wrappings.
Have you recorded the model and serial number?

1. Attaching Front Wheel

Remove axle nuts, washers and axle retention device from the ends of the axle. The axle cone bearing adjustment should permit smooth rotation of wheel. Cone locknut should be securely fastened against axle cone (A) to prevent loosening of cone. Place the front wheel between the fork blades with axle retention device. Reset locking washers, retention devices 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 as shown in illustration and tighten axle nuts securely. This will ensure positive locking of front wheel to the front fork.



Note: On model bicycles fitted with sidepull or centerpull brakes inserting front wheel into fork may be tight fitting. In order to ease installation the following procedure is recommended.
Unscrew brake shoes anchor nut and remove brake shoe.
Upon completion of wheel insertion, reinstall brake shoe to its original position.
Caution:Tighten brake shoe anchor nut securely.

2. Installing Quick Re-lease Wheels

A. Quick-release front wheels

1. Turn the quick-release lever so that it curves away from the wheel. This is the open position.

2. With the steering fork curving forward, insert the wheel between the fork blades so that the axle seats firmly at the top of the slots which are at the tips of the fork blades. The quick-release lever should be on your right side as you face the front of the bicycle.

3. With the quick-release still in the open position, tighten the adjusting nut with your left hand, until it is finger tight against the fork tip.

4. While pushing the wheel firmly to the top of the slots in the fork ends, and at the same time centering the wheel rim in the fork, turn the quick-release lever upwards and tighten it in position "closed" so that the lever is parallel to the fork blade, and is curved toward the wheel.

5. If the lever cannot be pushed all the way to a position parallel to the fork blade, return the lever to the open positition; turn the adjusting nut counterclockwise one-half turn; and try tightening the lever again.

B. Quick-release rear wheel

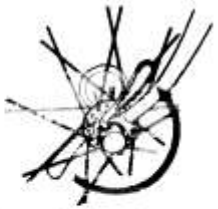
1. Shift the rear derailleur to high gear and pull the derailleur cage back.

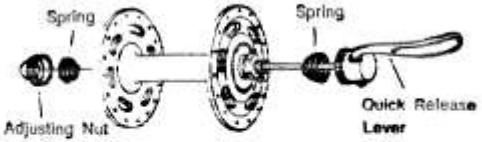
2. Turn the quick-release lever to the open position (refer to A-1.). The lever should be on the side of the wheel opposite the freewheel sprockets.

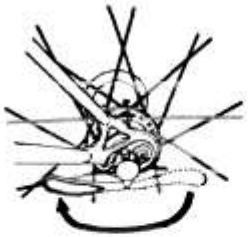
3. Insert the wheel into the frame dropouts and pull it all the way back against the axle stop on the right side, or if axle stop is not installed, place the rear axle in the center of rear dropout.
   At the same time, center the wheel in the frame with the lever still in the open position.

4. Tighten the adjusting nut until it is finger tight against the frame dropout; then turn the lever towards the front until it is parallel "closed" position to the frame's chain-stay tube and is curved toward the wheel.

5. If the lever position cannot be pushed all the way to a position parallel to the tube, return the lever to the open position; turn the adjusting nut counter clockwise one-half turn; and try tightening the lever again.







Note: The quick-release mechanism clamps your front wheel into the bike. If it is not fully locked, the wheel could disengage, causing an accident, body injualy and probable damage to the bicycle. Consequently, it is important that you not only follow this procedure properly, but that you check the position of your quick-release levers before each ride.

3. Attaching Handlebar Stem and Handlebar
(With Stem Shifters)

Loosen expander bolt (1) so that expander wedge is not tight in bottom of handlebar stem (2). Install stem shifter on handlebar stem by sliding stem shifters on to stem (Illust. B). Be sure that levers face upwards and the cables are not twisted.

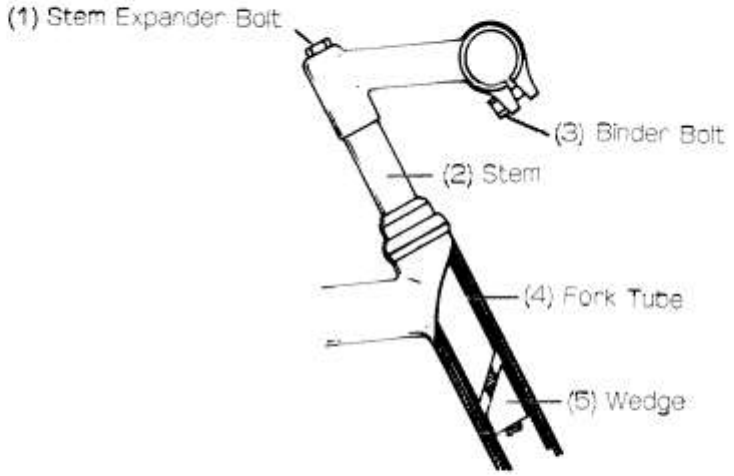
Then, securely tighten the binder bolt (3). Tighten stem shifters just enough to hold them in position near top of stem (tighten bolt 6). Tighten expander bolt (1) only making sure that dog on side of expander wedge is in the slots of the stem.

Insert stem (2) into fork tube (4) to the minimum insertion line of the stem. Alighn handlebar with front wheel and securely tighten expander bolt. (1)

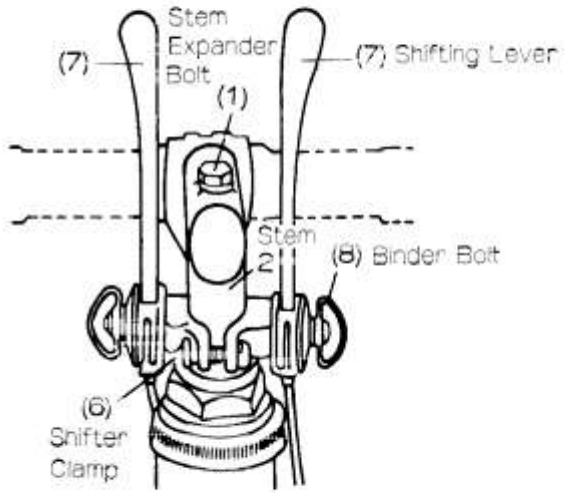
Caution : Extremely important to tighten to minimum 15 foot pounds torque (to use 6" adjustable wrench is recommended) tight enough so that when wheel is held between your legs and turn pressure is applied to handlebar, the handlebar will not move. **Caution** Do not over tighten. Overtightening may cause the risk of injury to the rider. Now set stem shifters into position and tighten shifter clamp (6) and binder bolt (8) to prevent gear slippage.

Caution : A minimum insertion ring is marked on the handlebar stem and this marking should remain in the fork tube (4).

ILLUST. A



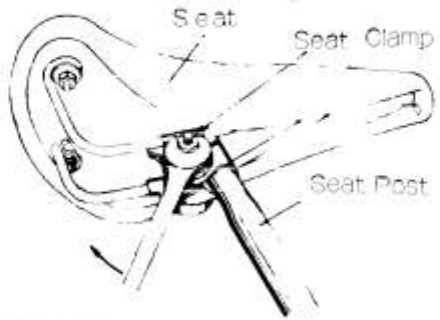
ILLUST. B

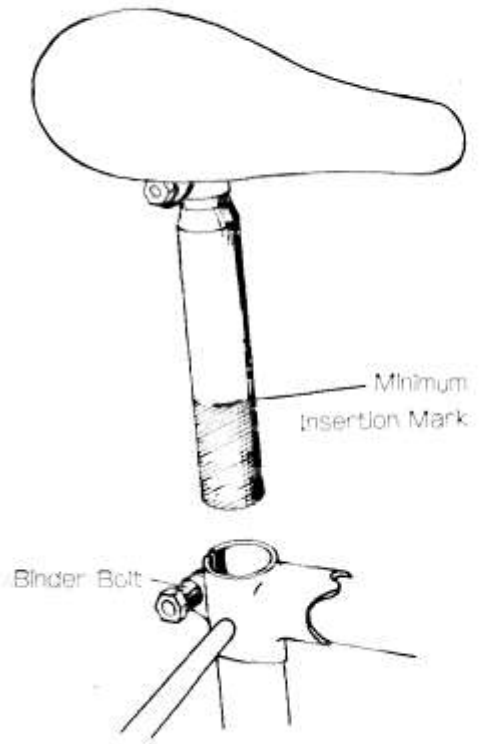


4. Attaching Seat.

Place the small end of the seat post into the clamp beneath the seat and tighten the clamp. Now, insert the seat post into the bicycle frame and adjust to the height of the rider.

Caution: Insert the seat post at least more than insertion mark on the seat post. Securely tighten seat post binder bolt / nut with about 15 ft.-lbs. by using 6"-8" wrench or allen key wrench. Test by grasping seat and attempt to turn. Keep tightening until seat will no longer turn.





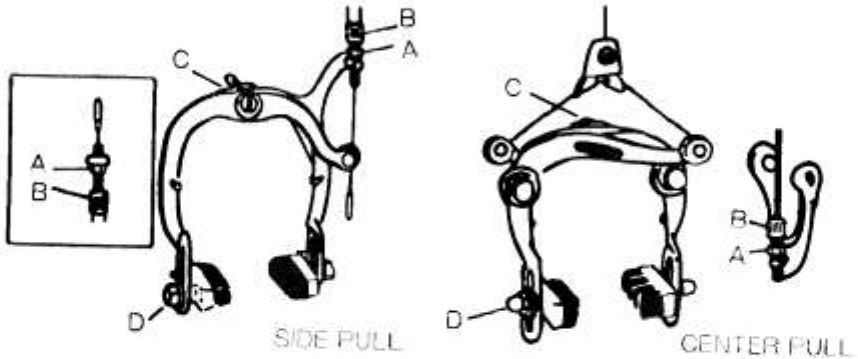
5. Attaching Pedals.

Each pedal has a different thread.
Forcing the wrong pedal into the wrong crank arm will destroy the threads in the crank arm. To prevent this error, insert "L" marked pedal to the left crank arm. Never try to force pedal axle into crank arm, because they can be inserted smoothly once the threads are correctly aligned with each other. Turn pedal axle counterclockwise and finger tighten to insure proper matching of threads. Then tighten securely with wrench.
Insert "R" marked pedal into right crank arm and turn pedal axle clockwise.

PEDAL MUST NOT BE RIDDEN WHEN LOOSE.
Left & Right are determined from riding position on the bicycle.

6. Attaching and Adjustments of Caliper Brakes.

Caliper Brakes
The bicycle will be fitted with either centerpull or sidepull brakes. Both types of brakes are highly efficient when correctly adjusted.



Brake Adjustment
The correct adjustment of the 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 proceedure : —

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 spring on the opposite side. For alloy brakes loosen rear nut C and recentre.
5. Tighten nuts D so that the brake blocks meet the rim squarely, and not touching the tire when the brake is applied.
   In the case of ladies' rear brakes, the cable enters to the adjuster from below.

Centerpull Brakes.
The centerpull fine adjustment is made by the following proceedure : —

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 center 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 tire when the brake is applied.

IMPORTANT : **Do not ride this bicycle until brakes are checked and functioning properly.**

Caution: Always apply rear brake first when stopping. For safe riding, always apply brakes before going into turns. Braking while turning can be dangerous due to unstable road conditions.

INSTALLATION OF CANTILEVER BRAKES

1) Installation of Springs (D-1 & D-2) and Brake Arms (C-1 & C-2)

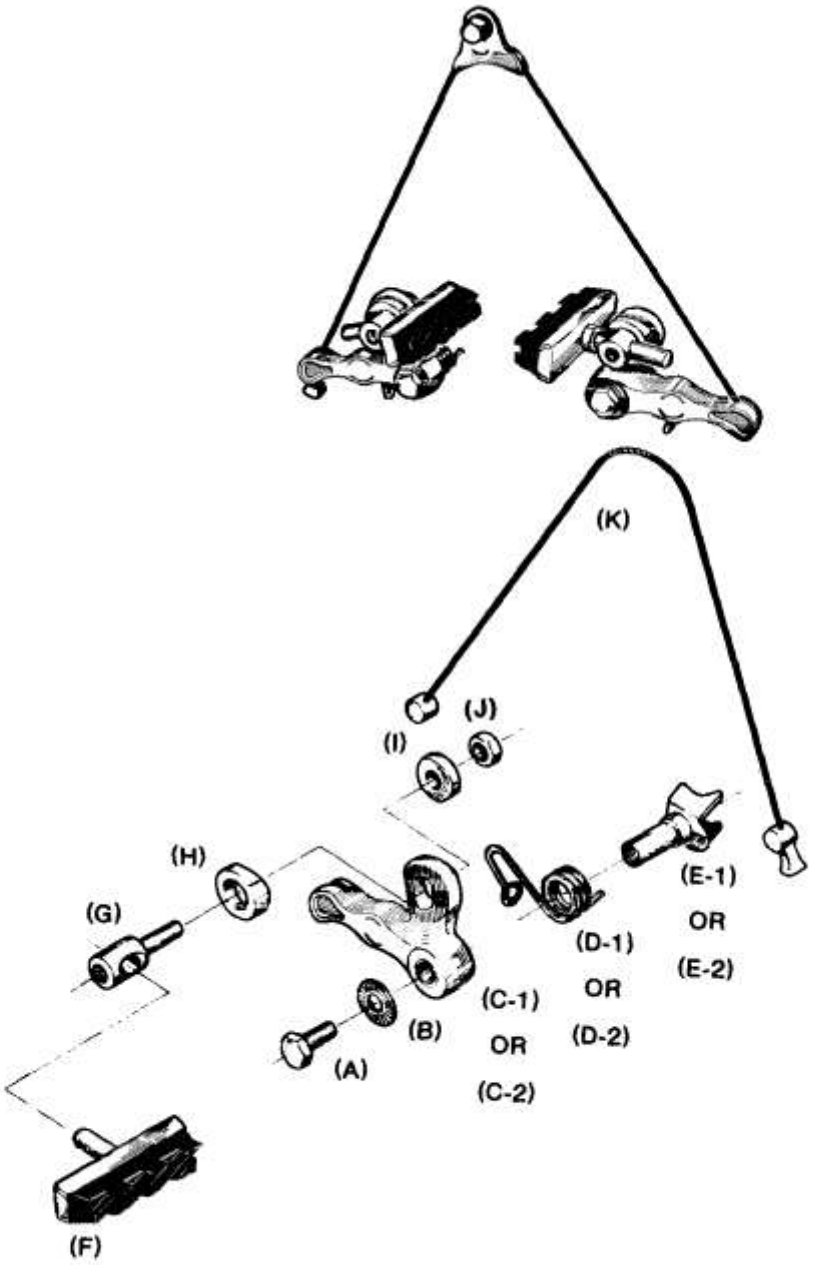
Insert straight end of the spring into the hole on the braze-on. Then, place the brake arm onto them. Do not hook the spring at this stage. The brake arm should be tightened firmly by use the serration washer (B) and the attaching bolt (A).

2) Attaching Brake Shoe (F)

Loosen the nut (J). Then, place the brake shoe into contact parallel with the rim, and tighten the nut.

3) Straddle Cable (K)

Place the straddle cable into the end of the brake arms.



4) Springs (D-1 & D-2)

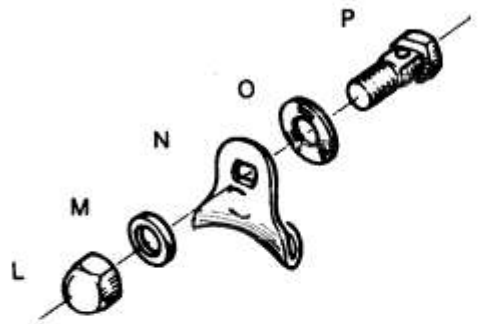
Hook the curved end of the spring around the grooved nub on the brake arm.

5) Adjustment of the clearance between brake shoe and rim.

a) Loosen the acorn nut (L) of straddle cable bridge, and adjust the cable. Then, retighten the acorn nut.

b) Loosen the nut (J) and adjust the brake shoe position to the rim. Then, retighten the nut.

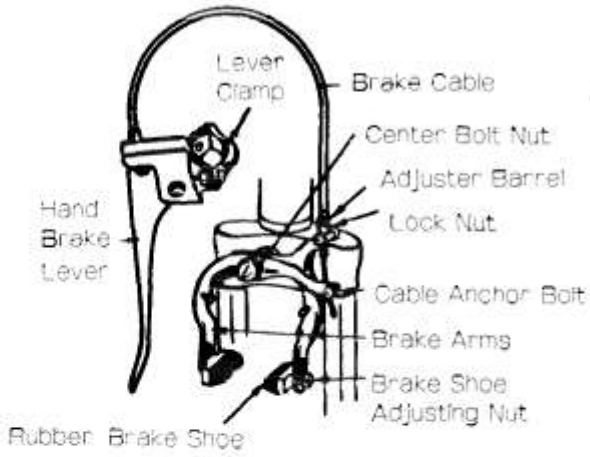
It is important to check the brake alighment against the rim periodically in order to maintain performances of brakes.

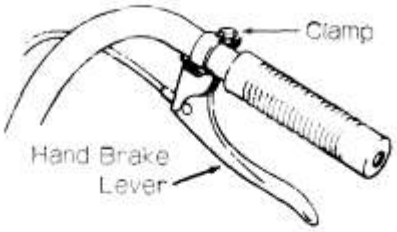


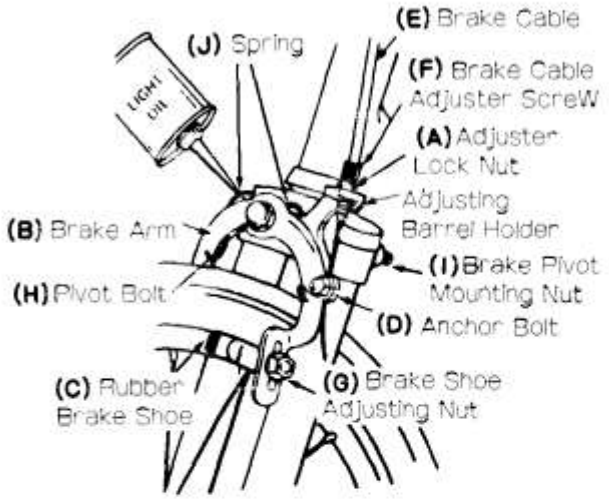
IMPORTANT : **Do not ride this bicycle until brakes are checked and functioning properly.**

Caution: Always apply rear brake first when stopping. For safe riding, always apply brakes before going into turns. Braking while turning can be dangerous due to unstable road conditions.

CALIPER BRAKE ADJUSTMENTS







1). By hand, close both brake arms (B) together against the rim to make sure that the brake shoes (C) meet snugly against the wheel rim. If the brake shoes do not meet the wheel rim, loosen nut (G) and adjust position of brake block vertically so that it fits tightly against the wheel rim.

2). After adjusting brake block position, screw brake cable adjuster screw (F) almost all the way down, again close both brake arms in this position, loosen anchor bolt (D) and pull control cable (E) downwards until no slack is left in the cable. Then retighten anchor bolt (D) securely.

3). Work the lever and if you find the brake blocks do not grip the rim simultaneously and evenly, adjust the block tension by prying the shoes (C) slightly with a screw driver so that it will become even or prod brake arm spring (J) to equalize balance. Then lubricate where indicated, The rear caliper arms are inserted and positioned into the rear stay and positioned by fastening the pivot bolt through the rear stays. Again the brake blocks are pressed against the rim surface and the control cable pulled downward until there is no slack in the cable and the anchor bolt is then firmly tightened.

On both the front and rear brakes there is an adjusting cable screw which controls cable tension and adjusts the position of the brake shoe with respect to the rim surface.

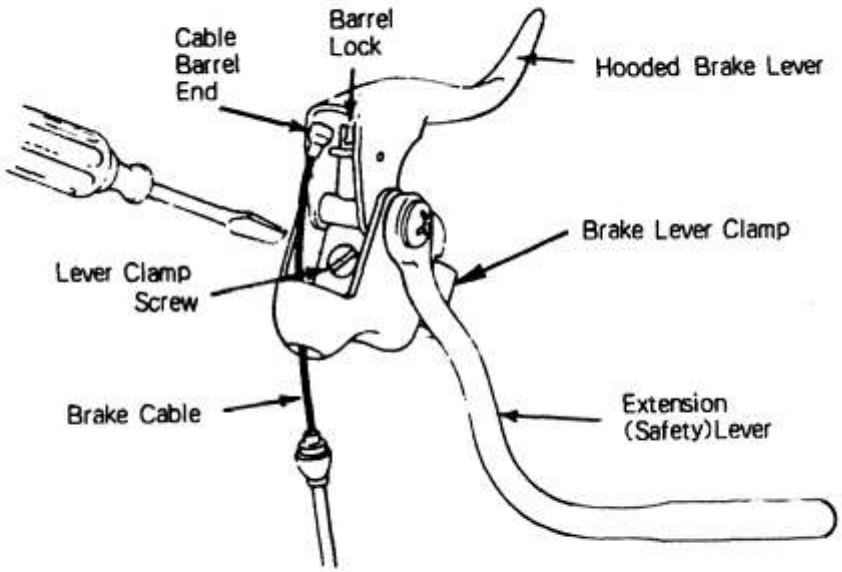
Brake Cable Fitting

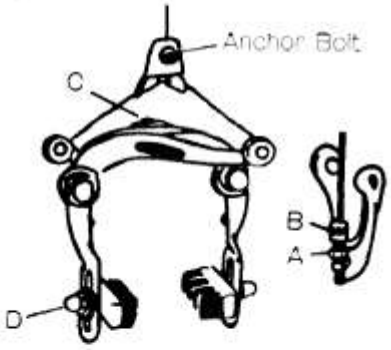
Connect the cable with barrel end into barrel lock in the brake lever firmly. Pull the other end of the cable through the cable hanger, thence insert into the anchor bolt and tighten at right position so that the brake works perfectly. Be sure that the longer cable to be fixed to the right lever (rear brake) and shorter cable to the left (front brake).

Brake Lever Adjustments

Lever marked "F" or "LH" mounts on left handlebar.
Lever maked "R" or "RH" mounts on right handlebar. Slightly loosen lever clamp screws and slide clamps onto handlebars. Mount approximately in position on the handlebars. Connect barrel end on cable to barrel lock in brake lever.

Refer to side or center pull brake adjustment on Page 10.





Brake Maintenance

BRAKE PAD

Rubber brake pad will wear out in normal usage and will have to be replaced. These are available at your dealer. When replacing, make certain that the closed end of the brake shoe is pointing towards the front of the bicycle. Before final tightening of the brake shoe bolt, check the alignment of the brake pad with the wheel rim. If set too high, the pad can rub against the tire sidewall. If set too low, the brake pad can slip under the rim and foul the spokes.

If the brake pads do not fit squarely against the rim with equal distance on both sides, first check the position of the wheel, making certain that the wheel is correctly centered within the frame drop-outs. If the brake arms are still offset in relationship to the rim, loosen the brake center-bolt, re-position the brake and re-tighten.

BRAKE CABLE

Occasionally, due to brake cable stretch and to brake pad wear, you will find it necessary to adjust the cable length. Minor adjustment can be done by turning the adjusting barrel, which is located either at the end of the cable housing or on top of the brake levers. Major adjustment of the cable length is made at the brake body by loosening the anchor bolt and pulling more of the cable through it.
While doing any brake work, you will find it helpful to release the brakes by the quick release mechanism.
Don't forget however, to reset the release mechanism when you are finished.
Tighten all brake nuts and bolts.
Check brake cables for fraying or kinking and replace when worn or frayed. If cables stick——squirt a drop or two of oil where the cable enters the housing.

Test brakes by squeezing brake levers before riding.

IF YOU FIND IT DIFFICULT TO DO THE BRAKE FITTING AND ADJUSTMENT, IT IS RECOMMENDED THAT THE WORK BE DONE BY A QUALIFIED BICYCLE MECHANIC.

7. Multiple Speed Derailleur Unit

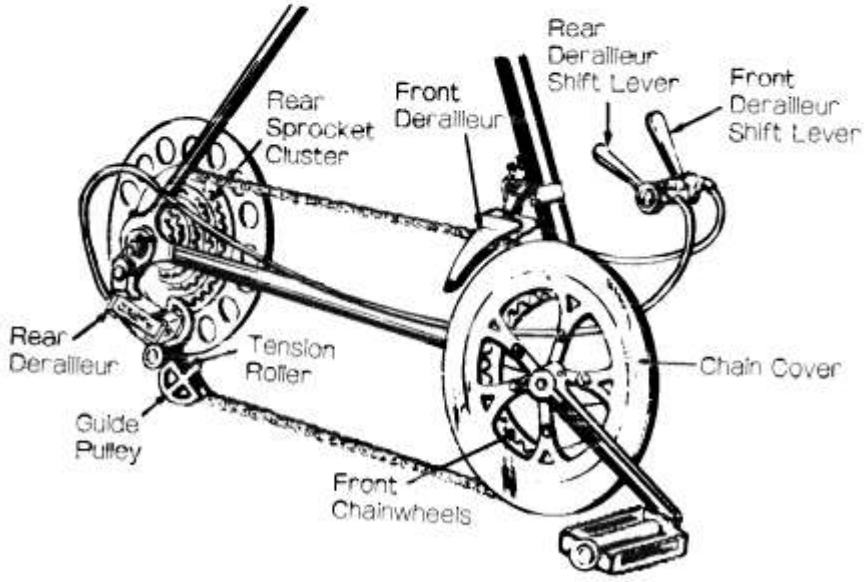
Shimano or Sun-Tour derailleur systems utilize the same method of adjustments. However, the location of adjusting screws vary from model to model. Attached to the bicycle frame, you will find a service instruction pamphlet issued by the manufacturer of the derailleur on the bicycle. This pamphlet clearly illustrates the location of all adjusting screws and adjusting instructions.

Caution: Due to the requirements for special tools, it is recommended that major adjustments be given to a qualified bicycle mechanic.

Adjusting the Rear Derailleur :

The rear derailleur mechanism for multiple speed bicycles should be in adjustment when you receive it, so that the chain will engage on all multiple rear sprockets when the shift is placed in the different speed positions. To check the gears, hold the rear part of the bicycle off the ground, so that the wheel moves freely. Then while turning the right hand pedal forward, put the shift lever in the different positions.

When the gears are in proper adjustment, the shifting mechanism which guides the chain back and forth should locate the chain so that it is on the proper gear.



HOW TO SHIFT DERAILLEUR BICYCLES

On 5-6 speed bicycle, the rear sprokets with different teeth numbers are fitted in parallel row and transfer the chain on sprokets by operating the shift lever during driving, thus changes the gear ratio into 5-6 steps.
On 10-12 speed bicycle there is two row of front chainwheels and also to be shifted by operating the front derailleur. This means in compliance with different row of rear sprocket, different speed obtainable as 2x5, 2x6 steps.
For 15-18 speed bicycle there is 3 row of front chainwheels and consequently can obtain 3x5 -- 3x6 steps. The shift lever for the rear derailleur is fitted at right hand side of bicycle and the shift lever for front derailleur locate at the left hand side.

As you may see from the Gear Chart on Page 21, as smaller as number of teeth of rear sprocket (smaller diameter) and/or as larger as number of teeth of front chainwheel (larger diameter) on which the chain hung on will result "High" Gear ratio and in case of opposit way the Gear ratio will become "Low".

The rear sprockets are fixed in parallel row in such a manner as smaller one in outside and large one at inner side. The chainwheels are fixed larger one at outside and smaller size one at inside. Consequently, when you want high Gear ratio for high speed driving or down hill driving, shift the derailleur of front and rear to outside, and in case of climbing hill or against wind driving shift both sprockets into inner sides by that the Gear ratio become Low and secure easy or smooth driving. The most cleaver way in to select most suitable combination of Gear ratio by operating two levers so as to fit to the road condition or physical strength.

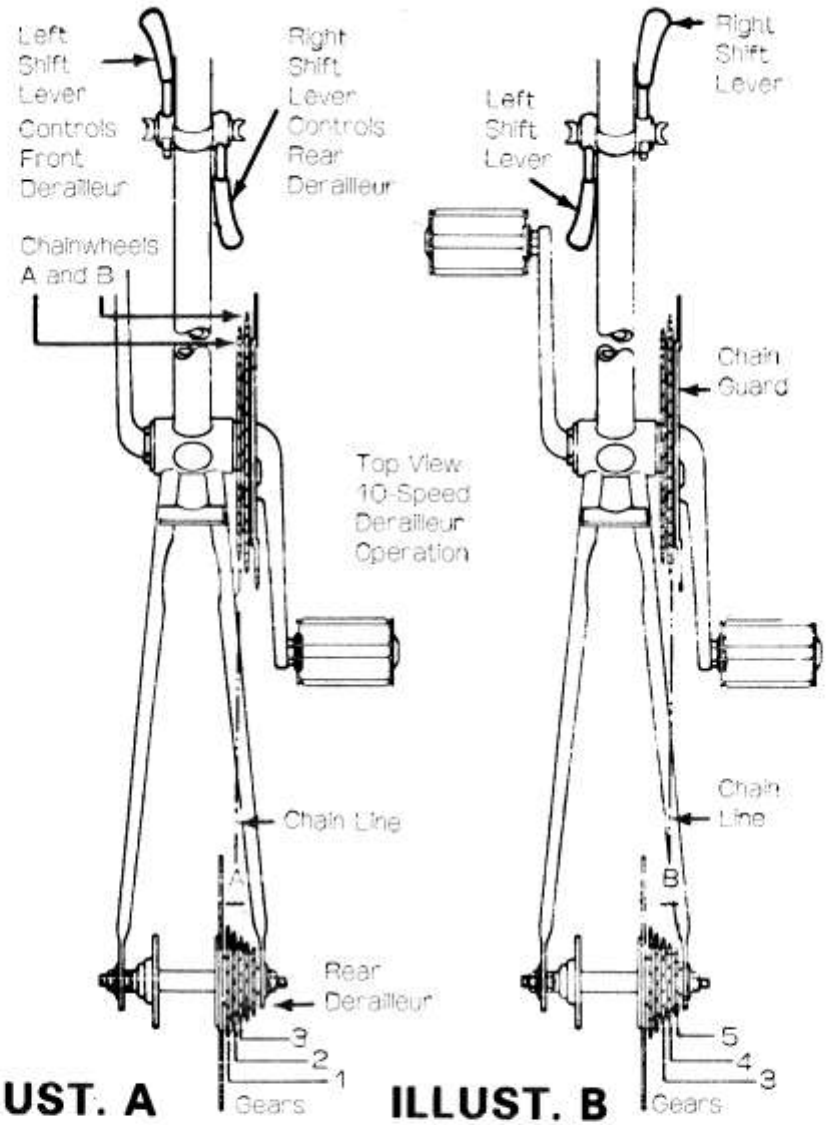
The illustrations "A" and "B" on the following page are the instance in case of 10 Speed.

The shifting examples of 10 speed derailleur are : Starting on level ground in medium gear (B-3), as momentum is built up shift gear lever to (4) next to highest gear.
When you feel top speed is reached with combination of (B-4) shift to (5) which is maximum high gear. For low gears, shift left lever onto small front chainwheel, and shift right lever to (3) which is the combination of a series of low gears (A-3). If pedaling is too difficult in (A-3). then shift to (A-2) next low gear. If pedaling is still too difficult, maximum low gear.(A-1)

In case of 12-18 Speed the same operating method as above will be applied and prevent impropriety caused by too far inclined angle of the chain.

IMPORTANT:**To avoid damage, observe these four precautions.**

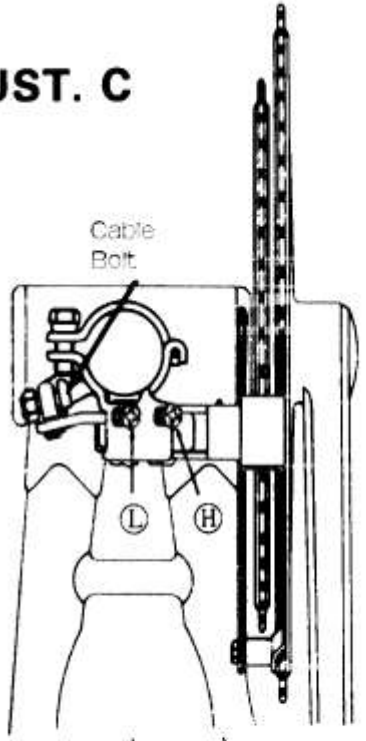
1. REDUCE PEDALING PRESSURE WHILE SHIFTING.
2. SHIFT ONLY WHEN PEDALS & WHEELS ARE IN MOTIN.
3. NEVER BACK - PEDAL WHILE SHIFTING GEARS.
4. NEVER FORCE THE SHIFT LEVERS.

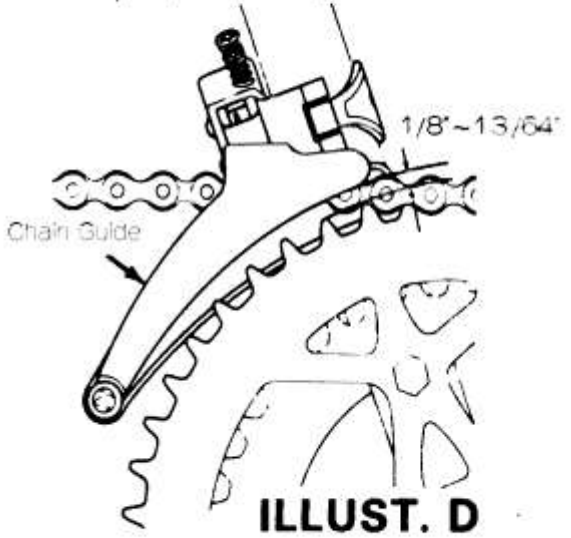


ILLUST. A **ILLUST. B**

Illust. A and B are shifting
Example of 10 speed
Refer to page 15

ILLUST. C





ILLUST. D

DERAILLEUR CABLE ADJUSTMENTS

Cable should be routed so it will not bind and will be free to operate smoothly inside cable housing. Move control lever forward, loosen cable attachment and retighten after slack is removed from cable. Check operation on control throughout range of travel to be sure that control permits complete movement. Reposition cable in clamp if necessary to permit adequate movement. LIMIT STOPS : Limit stops are provided to keep derailleur from overshifting the chain past sprockets or chainwheels. The exact location of these stops varies with the make. Refer to individual illustrations for locations. The low speed adjustment stop is made by "L" and high speed stop by "H" in all of the drawings of specific derailleurs. The high speed limit stop on rear derailleur controls shifting onto the small high speed sprocket. Chain will be permitted to come out past the small sprocket and lodge between sprocket and frame if high speed stop (H) doesn't stop the derailleur soon enough. The chain won't shift onto small high speed sprocket if high speed stop (H) is screwed in too far. Similarly, low speed stop (L) should prevent chain from shifting past large sprocket and lodging beteween hub flange and low speed sprocket. Derailleur cage may also shift into the wheel and catch spokes if incorrect. The chain may not move onto large sprocket if low speed stop screw (L) is screwed in too far. Since the chain is usually slightly out of line, stops for rear derailleur should be adjusted so they operate correctly regardless of the position of the front derailleur. Limit stops for front derailleur operate like those on the rear. Check operation carefully with the bicycle on a stand to be sure that all gears can be easily engaged.

DERAILLEUR MAINTENANCE

All derailleur parts and controls should be lubricated frequently. Aluminum derailleur parts can corrode and prevent free, easy movement. Steel will, of course, rust if not properly protected and lubricated. Control cables and housings are susceptible to rust, which can prevent smooth shifts. Cable wear may make it necessary to adjust the cable before all gears can be engaged. Many parts of the derailleurs may be obtained and installed individually; however, it may be more desirable and sometimes less expensive to install a complete new derailleur assembly.

Further Instruction: Please refer to the manufacturers instruction pamphlet.

ADJUSTMENT OF FRONT DERAILLEUR CABLE (10 OR 18-SPEED BICYCLES)

Pull the wire through cable inlet to cable bolt and cable nut and tighten. Adjust the adjusting bolt (L) until the chain guide comes to the right on the small chainwheel. (ref. to Illust. C on page 18)

Change the lever from small chainwheel to large chainwheel and adjust the adjusting bolt (H). (ref.to Illust. C on page 18)

WARNING : Make sure the adjustment is such that the chain cannot be derailled completely off to the left of the inside chainwheel or completely off to the right of the outside large chainwheel.

FRONT DERAILLEUR TROUBLE CHART.

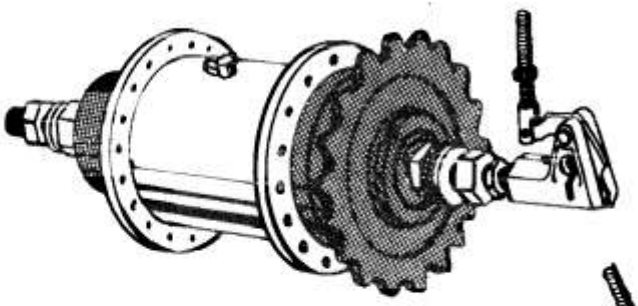
Condition (1) : Chain does not stay on large chainwheel.
Cause (1) : High gear adjusting bolt is out of adjustment.
Cause (2) : Wire has stretched or loosened.
Remedy (1) : Readjust high gear adjusting bolt properly.
Remedy (2) : Tighten wire to correct tension.

Condition (2) : Chain does not shift onto large chainwheel.
Cause (1) : High gear adjusting bolt is out of adjustment.
Cause (2) : Wire has stretched or loosened.
Remedy (1) : Readjust high gear adjusting bolt properly.
Remedy (2) : Tighten wire to correct tension.

Condition (3) : Abnormal noise.
Cause (1) : Improper installation of chain and guide plate.
Cause (2) : Improper adjustment.
Remedy (1) : Reinstall properly. Loosen the clamp nut to open the clamp, then fit it around the tube at the proper position. Retighten nut to secure it in place, secure the clamp bolt on the other side very tightly.
Remedy (2) : Arrange the guide plate and chainwheels in parallel.
Remedy (3) : Adjust the chainwheel teeth and guide plate to the proper clearance. (Refer to Illust. D on page 18)
Remedy (4) : Readjust the adjusting bolt H or L.

8. Three-Speed Hub

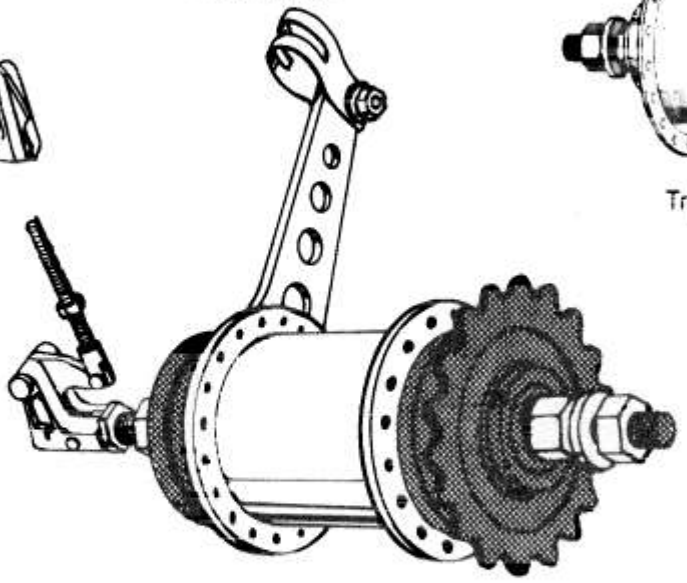
"Shimano" 3-Spead Hub



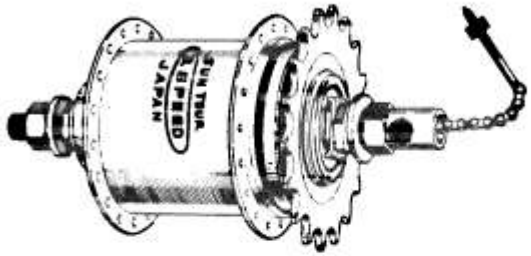
Trigger Control Lever

Alternatively :
Grip Control Lever

"Shimano" 3-Spead
Coaster Hub



"Sun Tour" 3-Spead Hub



Trigger Control Lever

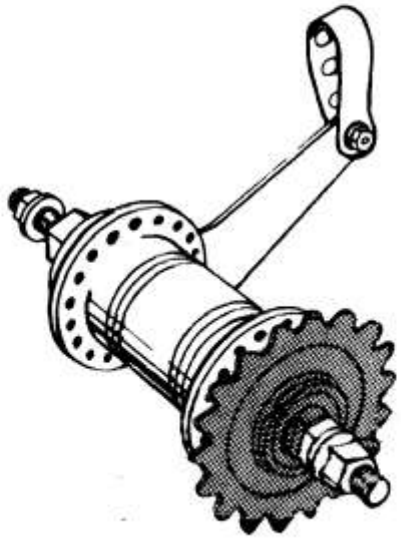
The new hub must be oiled before use through lubricator on the hub shell. Afterwards add one or two drops of oil at least every month.

The internal mechanism of above hub is quite complicated and we recommend you bring the bicycle to a qualified bicycle mechanic whenever you get in trouble with the hub.

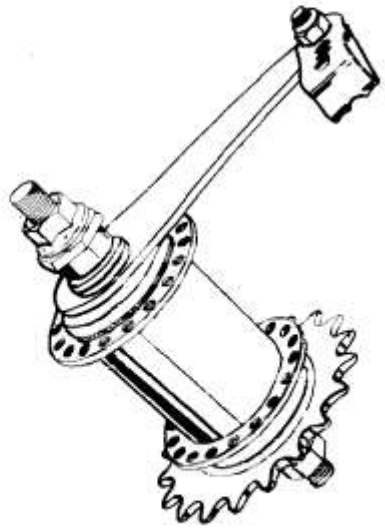
Please read carefully the manufacturer's instructions attached to each bicycle for detailed information and maintenance.

9. Coaster Hub (Single Speed)

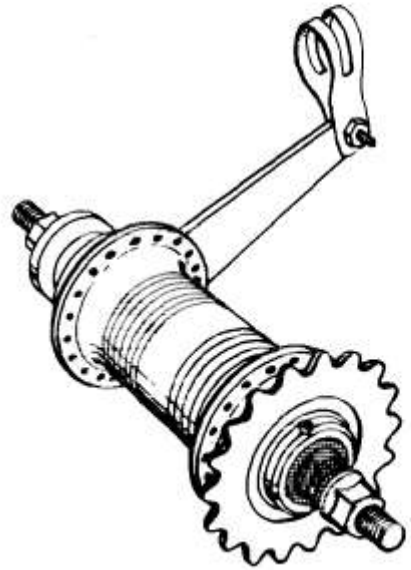
"Shimano" Coaster Hub



"Sun Tour" Coaster Hub



"NK" Coaster Hub



The new hub must be oiled before use through lubricator on the hub shell . Afterwards add one or two drops of oil at least every month.

The internal mechanism of above hub is quite complicated and we recommend you bring the bicycle to a qualified bicycle mechanic whenever you get in trouble with the hub.

Please read carefully the manufacturer's instructions attached to each bicycle for detailed information and maintenance.

TECHNICAL DATA

FOR YOUR CONVENIENCE

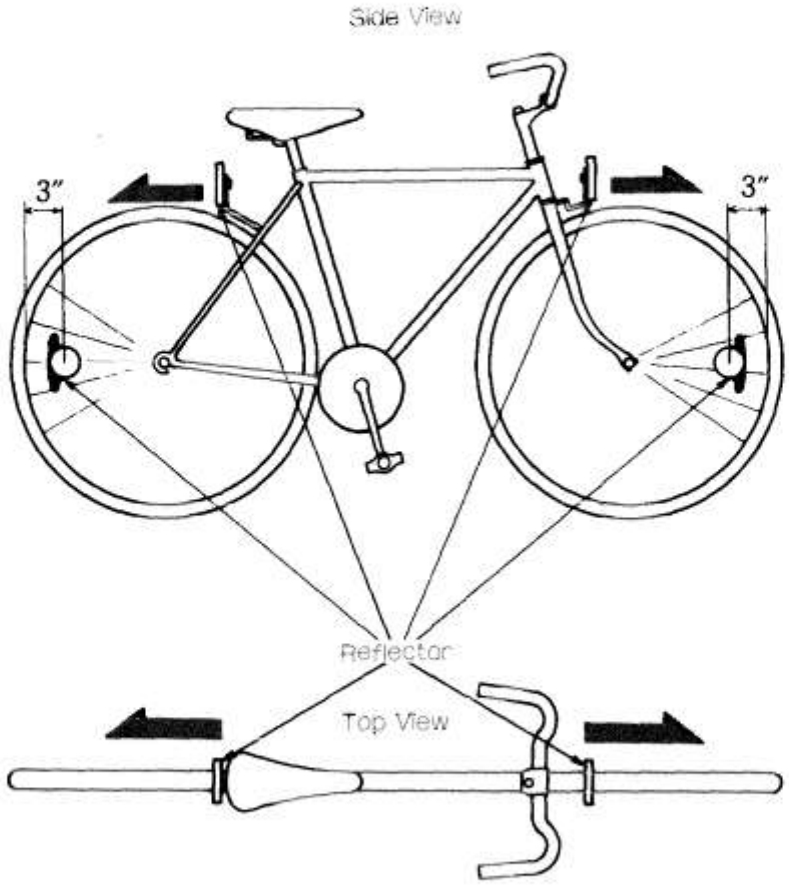
GEAR CHART FOR 26" WHEEL

TEETH REAR SPROCKET	Number of teeth, Chainwheel (large front sprocket)														
	36	38	40	42	44	45	46	47	48	49	50	51	52	53	54
14	66.9	70.6	74.3	78.0	81.7	83.6	85.4	87.3	89.1	91.0	92.9	94.7	96.6	98.4	100.3
15	62.4	65.9	69.3	72.8	76.3	78.0	79.7	81.5	83.2	84.9	86.7	88.4	90.1	91.9	93.6
16	58.5	61.8	65.0	68.3	71.5	73.1	74.8	76.4	78.0	79.6	81.3	82.8	84.5	86.1	87.5
17	55.1	58.1	61.2	64.2	67.3	68.8	70.4	71.9	73.4	74.9	76.5	78.0	79.5	81.1	82.9
18	52.0	54.9	57.8	60.7	63.6	65.0	66.4	67.9	69.3	70.8	72.2	73.7	75.1	76.6	78.0
19	49.3	52.0	54.7	57.5	60.2	61.6	62.9	64.3	65.7	67.1	68.4	69.8	71.2	72.5	73.9
20	46.8	49.4	52.0	54.6	57.2	58.5	59.8	61.1	62.4	63.7	65.0	66.3	67.6	68.9	70.2
21	44.6	47.0	49.5	52.0	54.5	55.7	57.0	58.2	59.4	60.7	61.9	63.1	64.4	65.6	66.9
22	42.5	44.9	47.3	49.6	52.0	53.2	54.4	55.5	56.7	57.9	59.1	60.3	61.5	62.6	63.8
23	40.7	43.0	45.2	47.5	49.7	50.9	52.0	53.1	54.3	55.4	56.5	57.6	58.8	59.9	61.0
24	39.0	41.2	43.3	45.5	47.7	48.8	49.8	50.9	52.0	53.1	54.2	55.3	56.3	57.4	58.5
25	37.4	39.5	41.6	43.7	45.8	46.8	47.8	48.9	49.9	51.0	52.0	53.0	54.1	55.1	56.2
26	36.0	38.0	40.0	42.0	44.0	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0	54.0
27	34.7	36.6	38.5	40.4	42.4	43.3	44.3	45.3	46.2	47.2	48.1	49.1	50.1	51.0	52.0
28	33.4	35.3	37.1	39.0	40.9	41.8	42.7	43.6	44.6	45.5	46.4	47.4	48.3	49.2	50.1
29	32.3	34.1	35.9	37.7	39.4	40.3	41.2	42.1	43.0	43.9	44.8	45.7	46.6	47.5	48.4
30	31.2	32.9	34.7	36.4	38.1	39.0	39.9	40.7	41.6	42.5	43.3	44.2	45.1	45.9	46.8
31	30.2	31.9	33.5	35.2	36.9	37.7	38.6	39.4	40.3	41.1	41.9	42.8	43.6	44.5	45.3
32	29.3	30.8	32.5	34.1	35.8	36.6	37.4	38.2	39.0	39.8	40.6	41.4	42.3	43.1	43.9
33	28.4	29.9	31.5	33.1	34.7	35.5	36.2	37.0	37.8	38.6	39.4	40.2	41.0	41.8	42.5
34	27.5	29.1	30.6	32.1	33.6	34.4	35.2	35.9	36.7	37.5	38.2	39.0	39.8	40.5	41.3

GEAR CHART FOR 27" WHEEL

TEETH REAR SPROCKET	Number of teeth, Chainwheel (large front sprocket)														
	36	38	40	42	44	45	46	47	48	49	50	51	52	53	54
14	69.4	73.3	77.1	81.0	84.9	86.8	88.7	90.6	92.6	94.5	96.4	98.4	100.3	102.2	104.1
15	64.8	68.4	72.0	75.6	79.2	81.0	82.8	84.6	86.4	88.2	90.0	91.8	93.6	95.4	97.2
16	60.8	64.1	67.5	70.9	74.3	76.0	77.6	79.3	81.0	82.7	84.4	86.1	87.8	89.4	91.1
17	57.2	60.4	63.5	66.7	69.9	71.5	73.1	74.6	76.2	77.8	79.4	81.0	82.6	84.2	85.8
18	54.0	57.0	60.0	63.0	66.0	67.5	69.0	70.5	72.0	73.5	75.0	76.5	78.0	79.5	81.0
19	51.2	54.0	56.8	59.7	62.5	64.0	65.4	66.8	68.2	69.6	71.1	72.5	73.9	75.3	76.7
20	48.6	51.3	54.0	56.7	59.4	60.8	62.1	63.5	64.8	66.2	67.5	68.9	70.2	71.6	72.9
21	46.4	48.9	51.4	54.0	56.6	57.9	59.1	60.4	61.7	63.0	64.3	65.6	66.9	68.1	69.4
22	44.2	46.6	49.1	51.5	54.0	55.2	56.5	57.7	58.9	60.1	61.4	62.6	63.8	65.0	66.3
23	42.3	44.6	47.0	49.3	51.6	52.8	54.0	55.2	56.3	57.5	58.7	59.9	61.0	62.2	63.4
24	40.5	42.8	45.0	47.3	49.5	50.6	51.8	52.9	54.0	55.1	56.3	57.4	58.5	59.6	60.8
25	38.9	41.0	43.2	45.4	47.5	48.6	49.7	50.8	51.8	52.9	54.0	55.1	56.2	57.2	58.3
26	37.4	39.5	41.5	43.6	45.7	46.7	47.8	48.8	49.8	50.9	51.9	53.0	54.0	55.0	56.1
27	36.0	38.0	40.0	42.0	44.0	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0	54.0
28	34.7	36.6	38.6	40.5	42.4	43.4	44.4	45.3	46.3	47.2	48.2	49.2	50.1	51.1	52.1
29	33.5	35.4	37.2	39.1	41.0	41.9	42.8	43.8	44.7	45.6	46.6	47.5	48.4	49.3	50.3
30	32.4	34.2	36.0	37.8	39.6	40.5	41.4	42.3	43.2	44.1	45.0	45.9	46.8	47.7	48.6
31	31.4	33.1	34.8	36.6	38.3	39.2	40.1	41.0	41.8	42.6	43.5	44.4	45.2	46.2	47.0
32	30.4	32.1	33.8	35.4	37.1	38.0	38.8	39.7	40.5	41.3	42.2	43.0	43.9	44.7	45.6
33	29.5	31.1	32.7	34.4	36.0	36.8	37.6	38.5	39.3	40.1	40.9	41.7	42.5	43.4	44.2
34	28.6	30.2	31.8	33.3	34.9	35.7	36.5	37.3	38.1	38.9	39.7	40.5	41.3	42.1	42.9

10. Reflectorization



The Bicycle comes equipped with mounting reflector brackets (or When newly mounting). Carefully follow mounting instruction listed below.

FRONT

1. Securely fix reflector (top marked upright position) to the bracket.
2. Remove the fixing nut from the center bolt and place the reflector/bracket so that it comes into direct with the square front fixing and retighten the nut.

REAR

1. Securey fix the reflector (top marked upright position) to the bracket.
2. Remove the nut from the rear of reflector assembly and secure the square concave washer so that it is completely covered by reflector bracket.

CAUTION

To be directed forward or rearward within 5° of the horizontal - vertical alignment of the bicycle when the wheel are traveling in a straight line.

SIDE REFLECTORS :

To be mounted within 76 mm (3 inches) of the inside of the rim. (see the sketch)

RETRO-REFLECTIVE tire sidewalls are approved for lateral reflectivity and if these are installed then spoke reflectors may not be required.

11. Bearing Adjustments.

There are four places on the bicycle that contain bearings that may require adjustment. They are the steering head, front wheel, crank and rear wheel.
Each of these bearings is adjustable and must be kept in proper adjustment to insure the long life and riding ease of the bicycle. In order for you to know when the bearings are out of adjustment, the following procedure is used for checking each bearing.

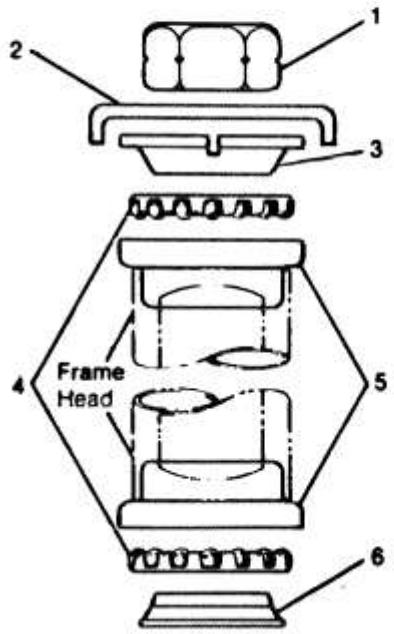
11-1.

Checking Steering Head.

Lift up handlebar at the handlebar ends (grips)
There should be no play of the handlebar stem and fork within the frame, but the handlebar must be able to turn freely and easily.

Steering Head Adjustment.

Remove head lock nut and reflector bracket, if any.Turn the adjusting cone clockwise until finger-tight, replace reflector bracket and tighten head lock nut setting the adjustment.



Part Name

1 Head lock nut
2 Reflector bracket (or Tongue Washer)
3 Adjusting cone
4 Head bearing (2 required)
5 Head Cup (2 required)
6 Unthreaded Fork Cone

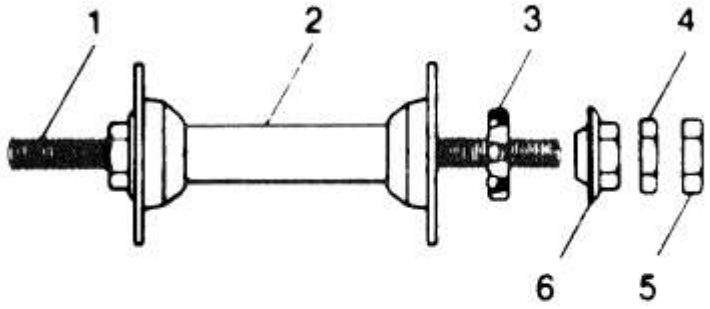
11-2.

Checking Wheel Bearings.

The front and rear wheel bearings are both checked in the same manner. Hold the wheel bearings checked off the ground and try rotating it. The wheel bearings adjustment must be set so that the wheel can turn easily and freely with only a trace of side play at the wheel rim.

Wheel Bearing Adjustment.

Remove the wheel from the frame and loosen locknut (4) on one side of the wheel while holding the adjusting cone (6) on the same side of the hub with a flat open-end wrench and rotate the adjusting cone as needed to eliminate side play. Tighten the locknut while holding the adjusting cone in the desired position. An adjusted hub must allow the wheel to rotate freely without friction or side play.



Part Name
1 Axle
2 Hub Shell
3 Bearing & Retainer
4 Locknut
5 Axlenut
6 Adjusting Cone

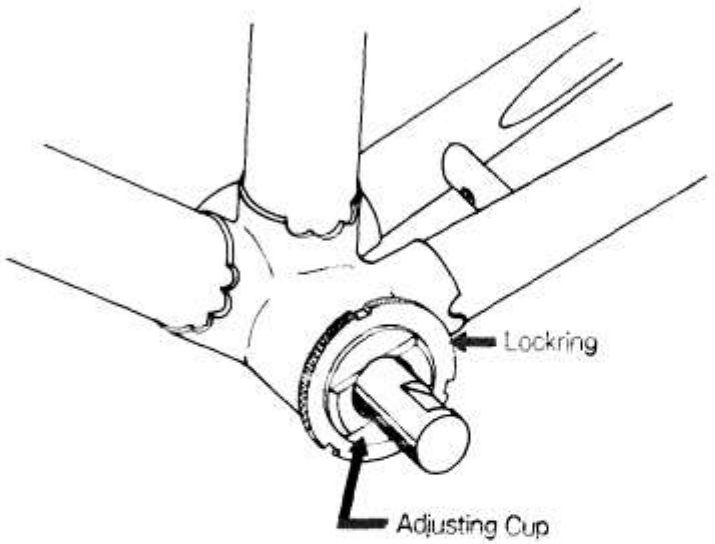
11-3.

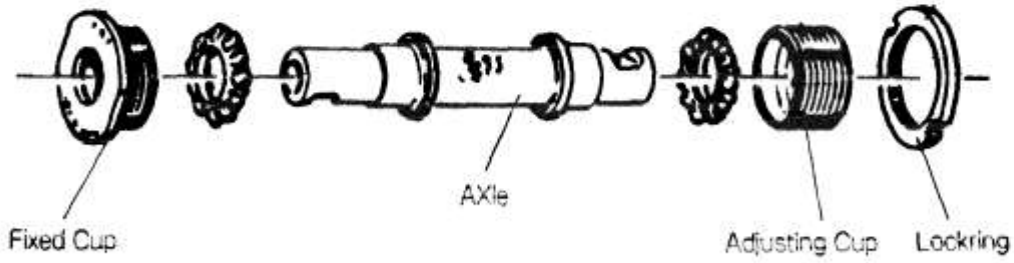
Checking Crank Bearings.

Test for play in the crank by taking hold of one end of the crank and trying to move it sideways. There should be only a trace of play. The crank bearing adjustment must be set so that the crank can turn easily and freely.

Crank Bearing Adjustment.

Remove the lockring and loosen or tighten adjusting cup at left side. Then, check proper rotation and side play. Reset lockring and tighten it. An adjusted crankset assembly should rotate freely and should not have any side play.



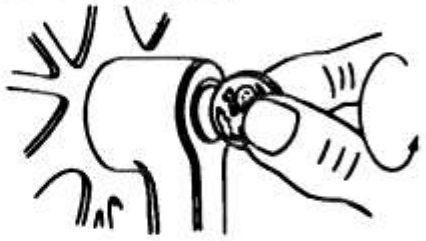


12. Cotterless Cranks

The best way to identify Cotterless Cranks would be by not seeing a crank cotter pin attachment. Also, most cotterless cranks utilize alloy material for lightness. Illustrated below are the steps required to remove or adjust the cotterless gear and crank. On the following pages are illustrations for fitting cotterless cranks.

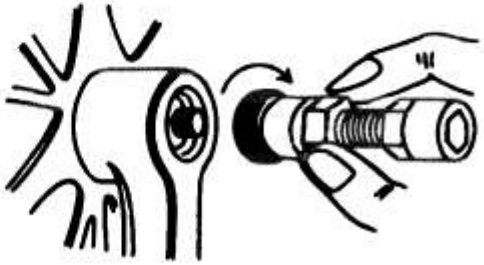
TO REMOVE CRANKS

Take off the dust cap.

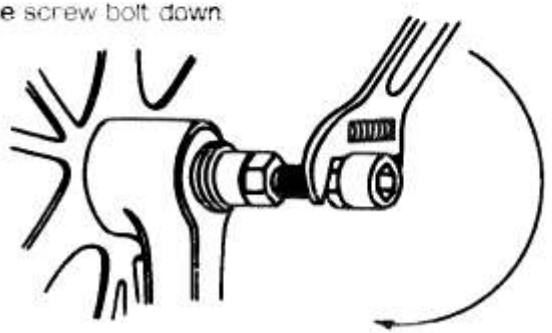


2) Loosen the flange nut or bolt and take off.

3) Screw in the removing tool to the depth.

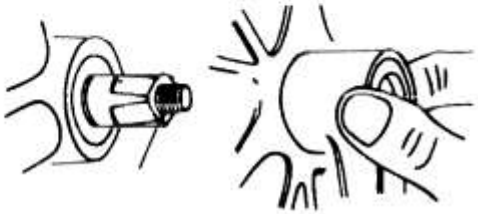


4) Turn the screw bolt down.

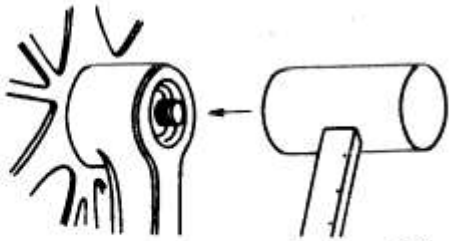


TO FIT CRANKS

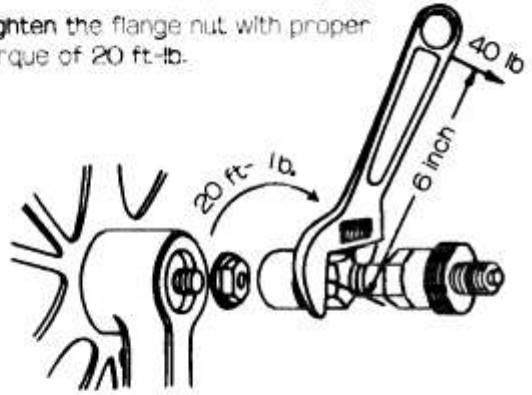
1) Insert the bracket axle to the crank.



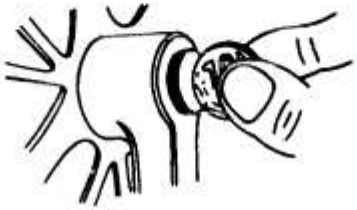
2) Tap in the crank lightly with mallet.

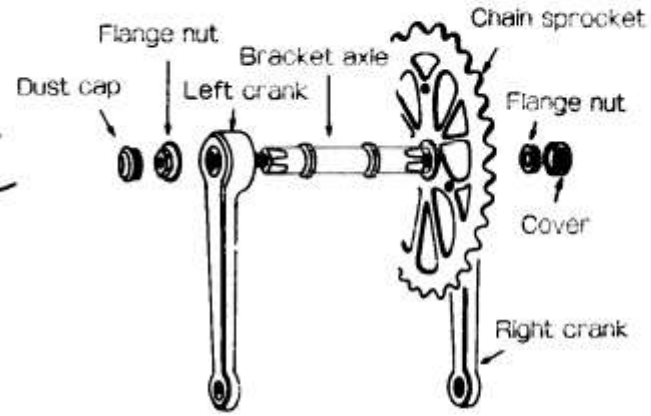


3) Tighten the flange nut with proper torque of 20 ft-lb.



4) Screw in the dust cap.





TOOL

COTTERLESS CHAINWHEEL & CRANKS

Cotterless means that no crank pin is used, also the crank axle has a square taper and the gear crank taper is fitted onto this taper and the two are fastened together. In order to remove the cotterless gear and cranks the special tool shown herein must be used.

DUE TO THE COMPLEXITY OF REPAIR AND ADJUSTMENT, IT IS RECOMMENDED THAT THIS WORK BE DONE BY A QUALIFIED BICYCLE MECHANIC.

13. Tire Care and Wheel Adjustments.

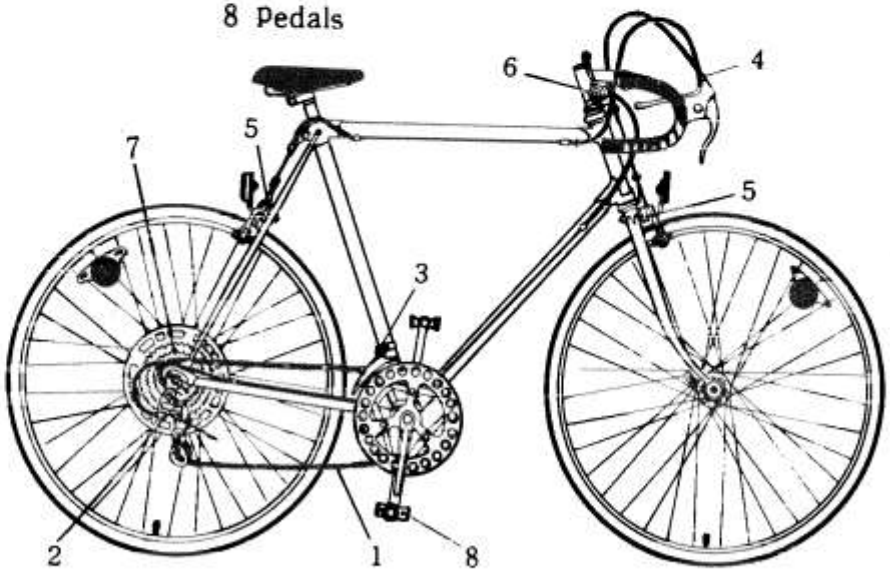
1. Tire pressure is indicated on the sidewall of the tire.
2. Inflate the tire upto the pressure indicated on the sidewall of the tire.
3. Use hand or foot pump to inflate the tire.
4. Never ride a bicycle with under inflated tire.
5. Improper tire pressure will cause excessive wear, causing premature replacement.
6. Blowouts of the tire are the result of over inflation, or also may be caused by the tire not being properly on the rim when inflated.
7. Whenever you hear any irregular noise on wheels, or the brakes touch to the rim it is necessary to check and repair the wheels.
8. In case of any minor loosening of spokes happens, you may repair by yourself by tightening the nipples, but we recommend you to take the bicycle to a bicycle mechanic.
9. Wheels should be checked regulary for spoke tightness and true alignment. Perform this check more frequently if the bicycle is used on rough roads.

14. Lubrication

Your bicycle has many moving parts which are exposed to the elements. Cleaning and lubrication will keep it running smoother and longer. This chart indicates the parts that require oil.

Indicated points require lubrication

1. Chain
2. Rear derailleur
3. Front derailleur
4. Brake control cables
5. Brake pivot bushing(Front & Rear)
6. Shift control cables
7. Gear clusters
8. Pedals



Attach this card to your receipt and present both to dealer if service is required.

Owner's Name _____

Address _____

City _____ **State** _____ **Zip** _____

Date Purchased _____

Model NO. _____ **Serial NO.** _____

Dealer's Name _____

Address _____

City _____ **State** _____ **Zip** _____

For customer's use

Owner's Name _____

Address _____

City _____ **State** _____ **Zip** _____

Date Purchased _____

Model NO. _____ **Serial NO.** _____

Dealer's Name _____

Address _____

City _____ **State** _____ **Zip** _____

For Dealer's use

LIMITED LIFETIME WARRANTY
NO TIME LIMIT

WESTERN STATES IMPORT CO., INC. (hereinafter referred to as WSI) warrants the replacement of any original part including the frame and fork, due to defect in material and/or workmanship of this CENTURION bicycle. This Warranty shall continue in full force and effect without any time limit and is freely transferable.

WSI will replace, without charge, any part that is determined by WSI to be defective under the terms of this warranty. However, transportation to the site of repair and authorized dealer labor charges are not covered by this Warranty.

CLAIMS UNDER THIS WARRANTY must be presented to an authorized CENTURION dealer who in turn, will present the claim to WSI. Any part replaced under the terms of this Warranty must be installed by an authorized CENTURION dealer exclusively. To locate the authorized CENTURION dealer nearest you, call or write one of the CENTURION BICYCLE DISTRIBUTION CENTERS listed below.

FAILURE DUE TO ACCIDENT, abuse, neglect, normal wear, improper assembly, improper fit, maintenance by any other than an authorized CENTURION dealer, or use of parts inconsistent with the use originally intended as sold or incompatible with those parts installed as original equipment by the factory are not covered by this Warranty.

THERE ARE NO OTHER WARRANTIES OR GUARANTEES, expressed or implied, made by WSI on this bicycle. The sole and exclusive liability of WSI and/or any of its authorized dealers, affiliates or agents pursuant to this Warranty shall be for the replacement of the defective part, and incidental or consequential damages are expressly excluded by this Warranty. The authorized CENTURION dealer may grant certain other policies respecting labor charges but these do not bind WSI and are not a part of this Warranty.

NOTICE! This bicycle is not manufactured, marketed, or sold for use at any time in racing, motorcross, stunt riding, offroad riding, or any similar activity, nor is it intended to be used with a motor or power assist of any kind. Neither under this Warranty nor under any State or Federal Law or the common law or otherwise shall WSI, its authorized dealers, affiliates, or agents be liable for any damage or failure, including personal injury and/or loss of life, resulting from such use.

OTHER LEGAL RIGHTS, in addition to those specific ones given you by this Warranty, may also be available to you depending on and varying with the state in which you live.

EXCLUSIVE U.S. DISTRIBUTOR

WSI

- 1837 De Havilland Dr., Newbury Park, CA 91320
- 1344 Roundtable Dr., Dallas, TX 75247
- 4350 Kearney St., Denver, CO 80216
- 19 Stults Road., Dayton, NJ 08810

EXCLUSIVE U.S. DISTRIBUTOR:

VSI

1837 De Havilland Dr., Newbury Park, CA 91320
1344 Roundtable Dr., Dallas, TX 75247
4350 Kearney St., Denver, CO 80216
19 Stults Rd., Dayton, NJ 08810

AUTHORIZED DEALER:

PRINTED IN JAPAN