OWNER'S MANUAL

5-10 SPEED BICYCLES
3 SPEED & COASTERS



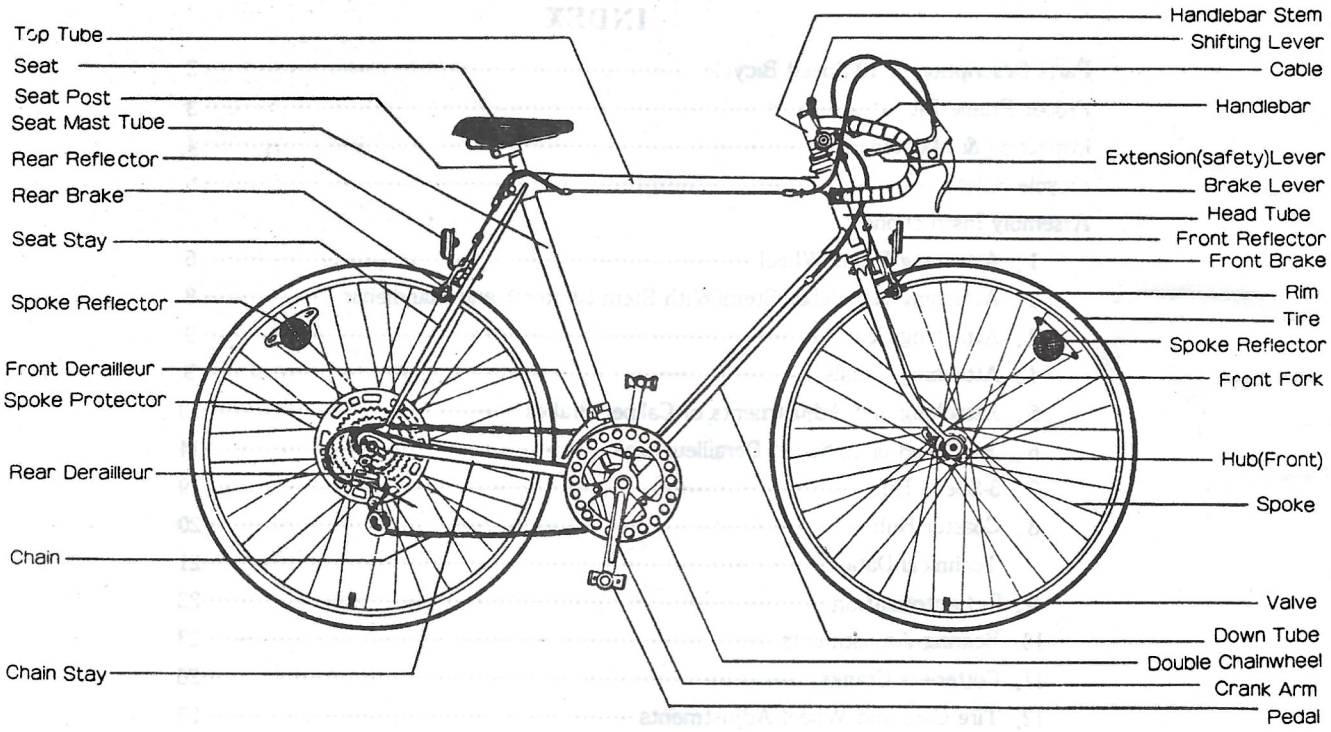
columbus cycle

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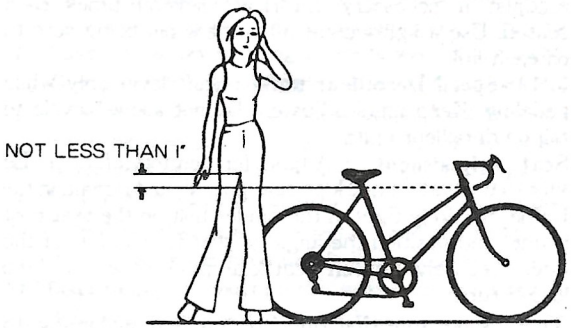
PARTS DESCRIPTION OF 10-SPEED BICYCLE

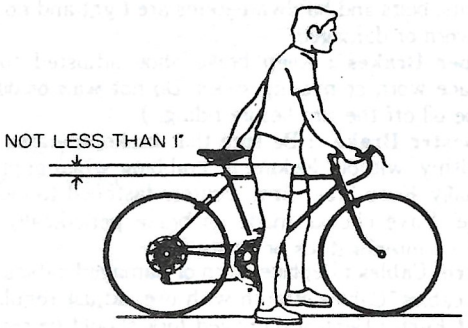


IMPORTANT : Please carefully note the names of all parts of your bicycle for ease of assembly.

PROPER FRAME FIT

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





NOTE: Measurement 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"	26" – 30"
18"	27" – 31"
19"	28" – 31"
21"	30" – 33"
22"	31" – 34"
23"	32" – 35"
25"	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 ball of rider's foot on the pedal in its lowest position the rider's knee is slightly bent.

Note : Specific charts illustrated at left detail the proper method of determining the correct frame size.

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 are tight or frozen 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. **5, 10 -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.

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

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.

----Always Ride Carefully----

CAUTION IN NIGHT RIDING

Even in well lighted areas, night vision is highly restricted. In order that you may cycle safely in times of reduced visibility* you should adhere to the following guidelines:

(1) Wear light colored clothing.
(2) Be sure your bike is equipped with approved front, rear, wheel reflectors, and pedal reflectors.
(3) Use an approved front headlamp.

CAUTION IN RIDING OVER ROUGH AND GRAVEL ROADS

When riding on rough roads or over gravel, you should take up some of the shock in your knees by rising slightly from the seat. Also, use a lower gear and maintain lower speeds in order to retain better control of your bicycle.

Tools necessary to properly accomplish assembly and adjustment:

1. 10 inch adjustable crescent wrench
2. Flat-bladed screw driver
3. Allen head screw driver
4. Standard slip-joint pliers
5. Flat pedal wrench having measurement 15 mm
6. Allen key wrench

ASSEMBLY INSTRUCTIONS

IMPORTANT

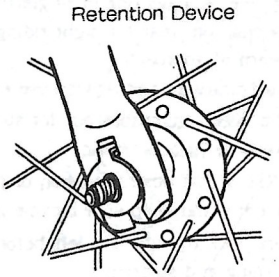
Remove bicycle from carton and carefully examine carton for loose parts before discarding. Turn bicycle upside down with front fork pointing forward, carefully unwind wrappings and parts attached to frame and set them aside. Be careful not to scratch frame or cut tire when removing above wrappings.

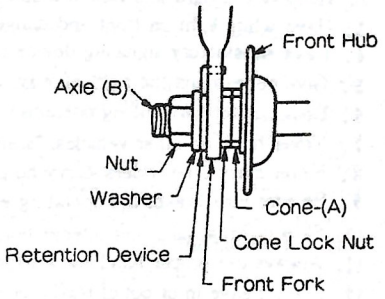
Have you recorded the model and serial number?

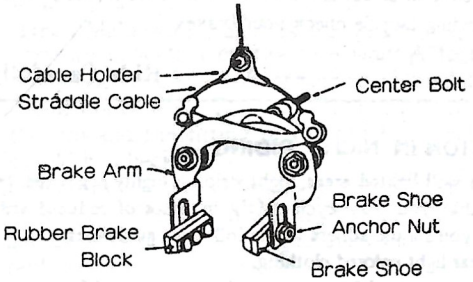
1. Attaching Front Wheel :

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 on the axle (B) and the projecting prongs of the retention device securely fitting the slot in the fork. Reset locking washers and nuts on axle. Tighten axle nuts (recommended torque 16.6-18.1 ft. lbs.) at both ends gradually and alternately in order to keep the wheel centered.

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







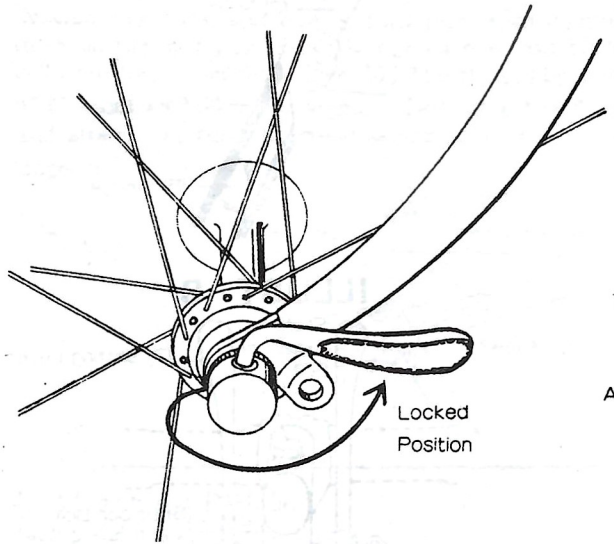
NOTE : On model bicycles fitted with sidepull or centerpull brakes inserting front wheel into fork may be tight fitting. In order to ease installation the following procedure is recommended.

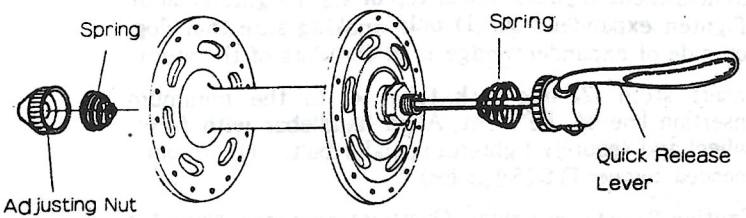
Unscrew brake shoes anchor nut and remove brake shoe.

Upon completion of wheel insertion, reinstall brake shoe to its original position.

CAUTION : Tighten brake shoe anchor nut securely.

QUICK RELEASE WHEEL HUB.





Great care should be taken when locking wheel into the frame using the Quick Release System in order to insure safe operation of your bicycle. First tighten the adjusting nut (see above illust,) in a clockwise direction while the quick release lever remains in an upright horizontal forward position. Next, move quick release lever 180° to upright horizontal rear position.

2. Attaching Handlebar Stem

(With Stem Shifters) and Handlebar

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.

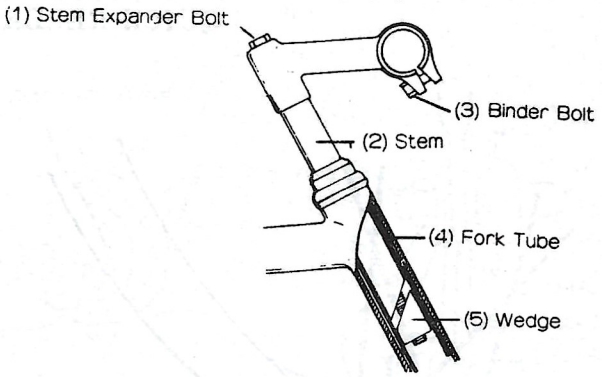
Then, securely tighten the binder bolt (3) (recommended torque 14.5-15.9 ft lbs) Tighten stem shifters just enough to hold them in position near top of stem (tighten bolt 6). Tighten expander bolt (1) only making sure that dog on side of expander wedge is in the slots of the stem.

Insert stem (2) into fork tube (4) to the minimum insertion line of the stem. Aligh handlebar with front wheel and securely tighten expander bolt. (1) (recommended torque 14.5-15.9 ft lbs)

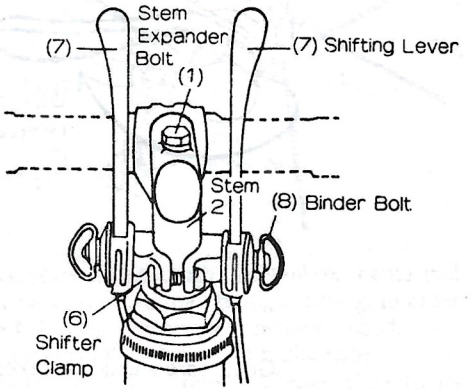
Caution Do not over tighten. Over tightening may cause the risk of injury to the rider. Now set stem shifters into position and tighten shifter clamp (6) and binder bolt (8) to prevent gear slippage.

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

ILLUST. A



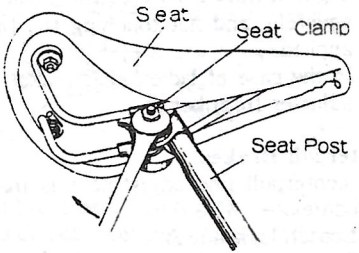
ILLUST. B

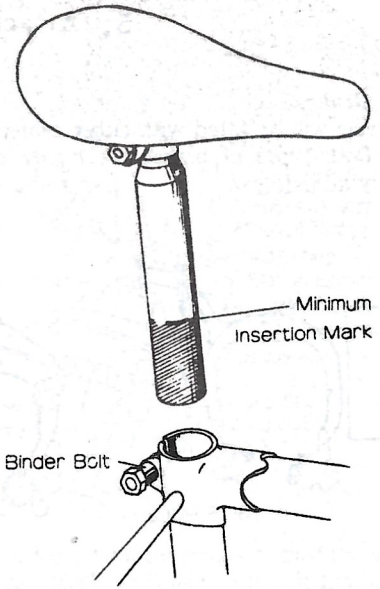


3. Attaching Seat.

Place the small end of the seat post into the clamp beneath the seat and tighten the clamp (recommended torque 15.9 -17.4 ft. lbs.) 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 (recommended torque 10.1-11.6 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.





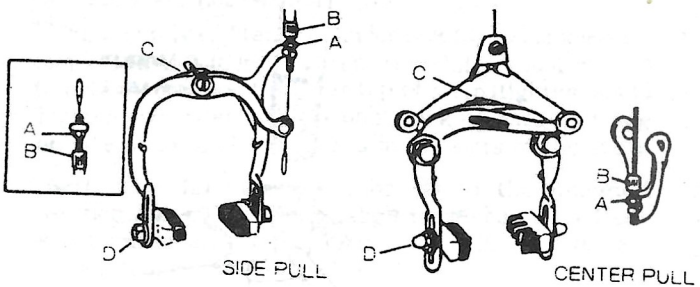
4. Attaching Pedals.

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. (recommended torque 25.3-32.6 ft. lbs.) Insert "R" marked pedal into right crank arm and turn pedal axle clockwise.

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

5. 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 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 spring 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 tire when the brake is applied.
   In the case of ladies' rear brakes, the cable enters the adjuster from below.

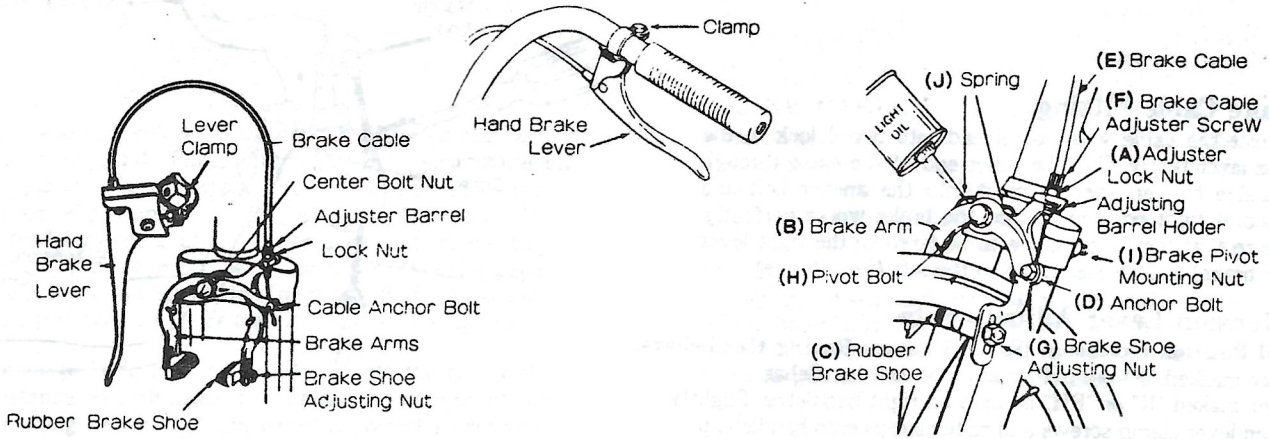
Centerpull Brakes.
The centerpull fine adjustment is made by the following procedure : —

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 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.

CALIPER BRAKE ADJUSTMENTS



a. 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.

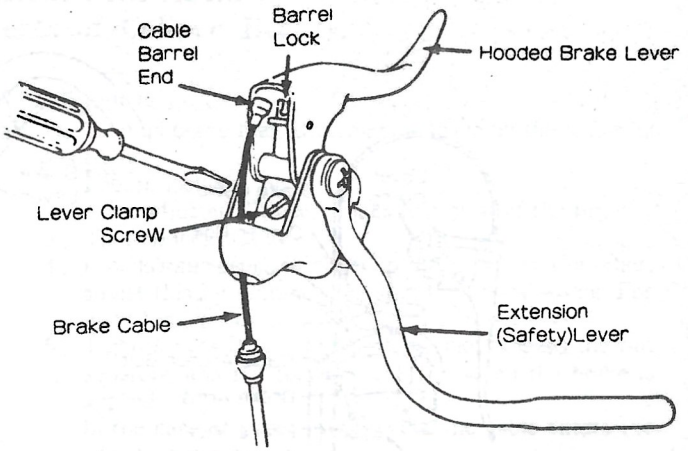
b. After adjusting brake block position, screw brake cable adjuster screw (F) almost all the way down, again close both brake arms in this position, loosen anchor bolt (D) and pull control cable (E) downwards until no slack is left in the cable. Then retighten anchor bolt (D) securely.

c. 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 hand brake is assembled and adjusted in the same manner. 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).

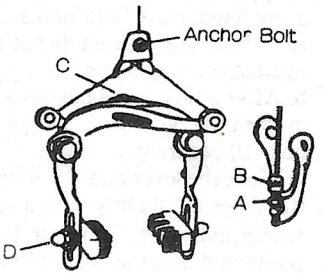


Extension Lever Adjustments

Dual Position Extension (Safety) Levers Racing Handlebars.

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. If additional cable slack is required loosen anchor nut of cable holder and pull cable up.

Refer to side or center pull brake adjustment. 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 tighten the brake cables. 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.

6. 5-Speed or 10-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 should be in adjustment when you receive it, so that the chain will engage on all five rear sprockets when the shift is placed in the five 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 five 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

Rider's left shift lever controls the front derailleur and chainwheels.

Rider's right shift lever controls rear derailleur and gear 1 to 5.

Small rear sprockets produce high gear ratios for speed work or downhill riding. The small front chainwheel on 10-speed bicycle produces low gear ratios while the large front chainwheel produces higher ratios.

IMPORTANT: TO AVOID DAMAGE, OBSERVE THESE FOUR PRECAUTIONS.

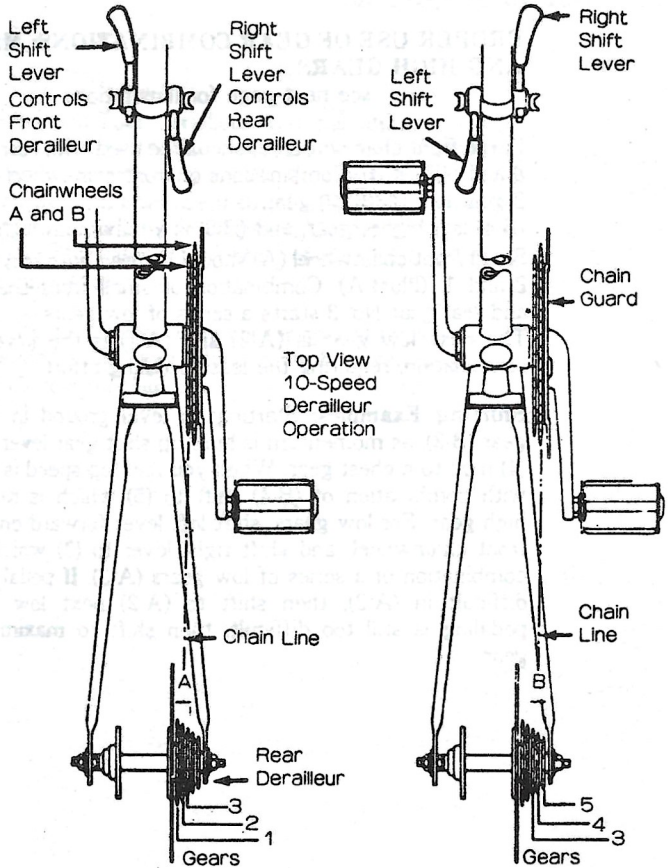
1. REDUCE PEDALING PRESSURE WHILE SHIFTING.
2. SHIFT ONLY WHEN PEDALS & WHEELS ARE IN MOTIN.
3. NEVER BACK - PEDAL WHILE SHIFTING GEARS.
4. NEVER FORCE THE SHIFT LEVERS.

PROPER USE OF GEAR COMBINATIONS: MEDIUM AND HIGH GEARS

see next page for Illustrations

Large front chainwheel (B) should be used with rear gears 3, 4 and 5(Illust.B). Combinations of front chainwheel and No. 3 gear is a medium gear.
(B-4) is a higher gear, and (B-5) is a maximum high gear.
Small front chainwheel (A) should be used with rear gears 3, 2 and 1. (Illust.A). Combination of small front chainwheel and rear gear No. 3 starts a series of low gears.
The next low gear is (A-2) and (A-1) is the lowest gear combination, requiring the least pedaling effort.

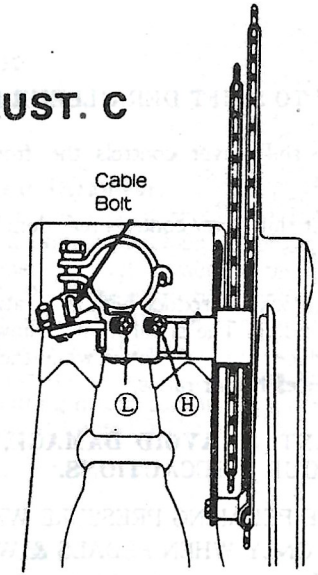
Shifting Examples: Starting on level ground in medium gear (B-3), as momentum is built up shift gear lever back to (4) next to highest gear. When you feel top speed is reached with combination of (B-4) shift to (5) which is maximum high gear. For low gears, shift left lever forward onto small front chainwheel, 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, then shift to maximum low gear.

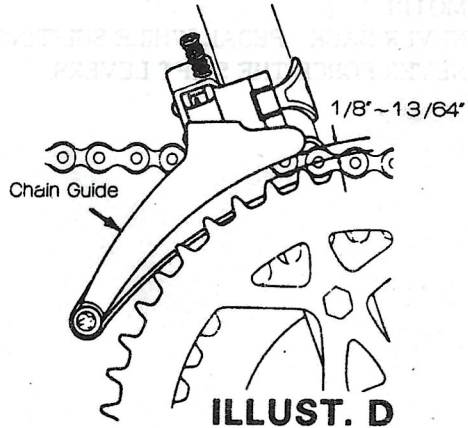


ILLUST. A

ILLUST. B

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 of 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 between 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-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 16)

Change the lever from small chainwheel to large chainwheel and adjust the adjusting bolt (H). (ref.to Illust. C on page 16)

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.

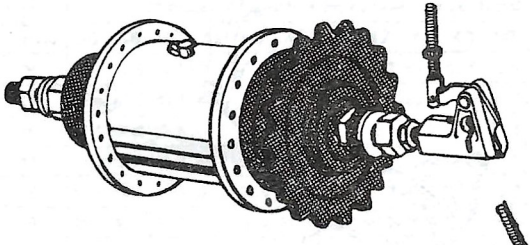
Condition (1) : Chain does not stay on large chainwheel.
Cause (1) : High gear adjusting bolt is out of adjustment.
Cause (2) : Wire has stretched or loosened.
Remedy (1) : Readjust high gear adjusting bolt properly.
Remedy (2) : Tighten wire to correct tension.

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.
Remedy (4) : Readjust the adjusting bolt H or L.

7. 3-Speed Hub

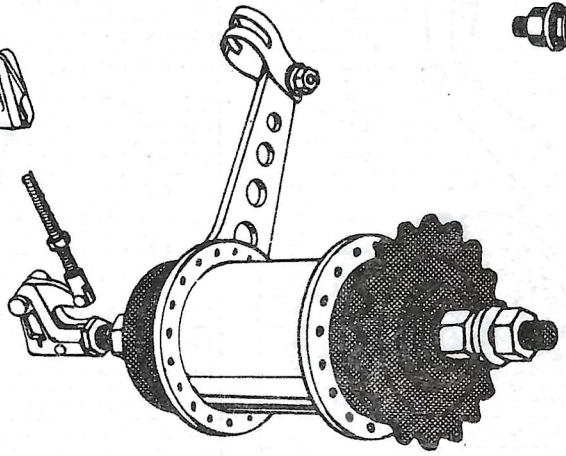
"Shimano" 3-Speed Hub



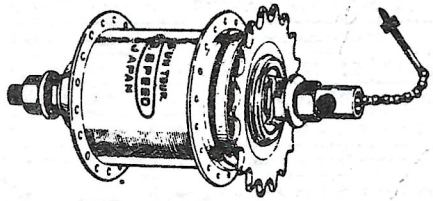
Trigger Control Lever

Alternatively:
Grip Control Lever

"Shimano" 3-Speed
Coaster Hub



"Sun Tour" 3-Speed 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.

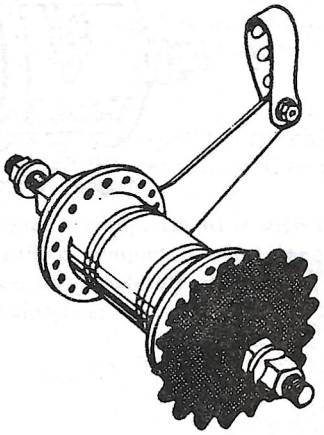
The internal mechanism of above hub is quite complicated and we recommend you bring the bicycle to a qualified bicycle mechanic whenever you get in trouble with the hub.

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

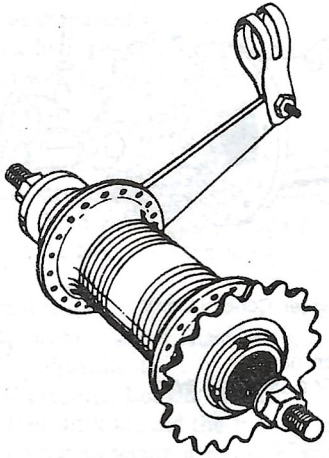
8. Coaster Hub

Single Speed

"Shimano" Coaster Hub



"NK" Coaster Hub



The new hub must be oiled before use through lubriccator 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

9. Reflectorization

The bicycle comes equipped with mounting reflector brackets. (See illustration below). Carefully follow mounting instruction listed below.

FRONT

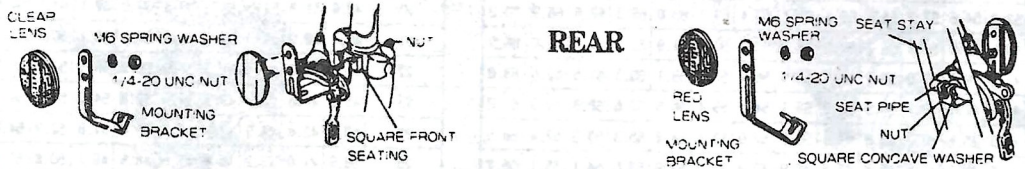
1. Securely fix the reflector (top marked upright position) to the bracket.
2. Remove the fixing nut from the center bolt and place the reflector / bracket so that it comes into direct contact with the square front fixing pad and retighten the nut.

REAR

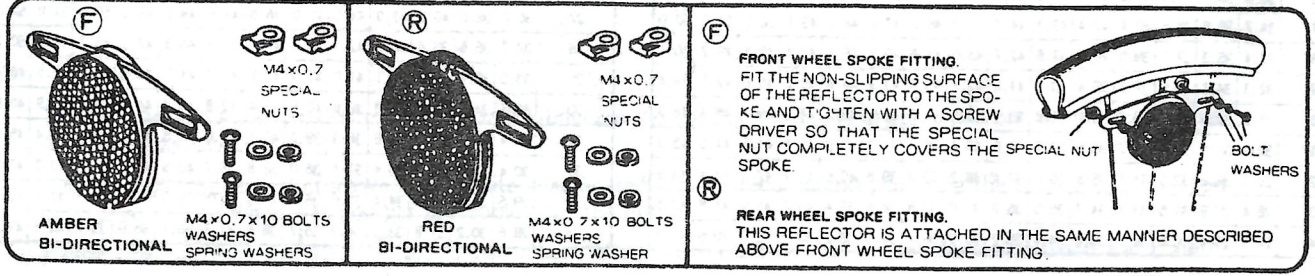
1. Securely fix the reflector (top marked upright position) to the bracket.
2. Remove the nut from the rear of reflector assembly and secure the square concave washer so that it is completely covered by reflector bracket.

CAUTION:

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



FRONT AND REAR SPOKE SIDE REFLECTORS



TO BE MOUNTED WITHIN 76mm (3 inch) OF THE INSIDE OF THE RIM.

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

10. Bearing Adjustments.

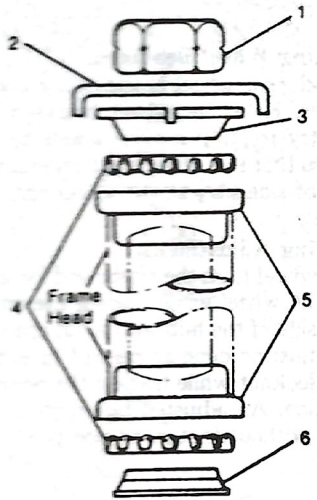
There are four places on the bicycle that contain bearings that may require adjustment. They are the steering head, front wheel, crank and rear wheel.
Each of these bearings is adjustable and must be kept in proper adjustment to insure the long life and riding ease of the bicycle. In order for you to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

10-1. 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.

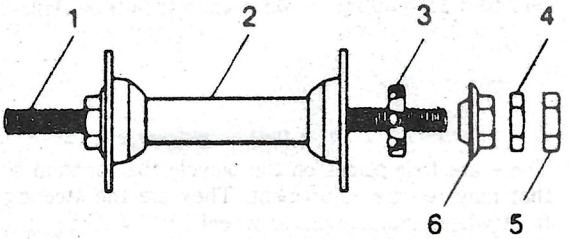


Part Name

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

10-2. 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.



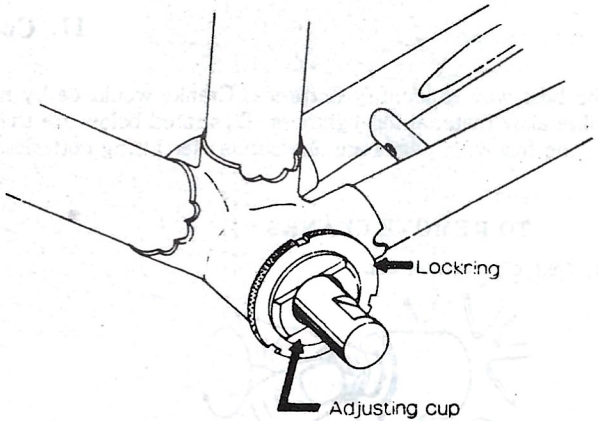
	Part Name
1	Axle
2	Hub Shell
3	Bearing & Retainer
4	Locknut
5	Axlenut
6	Adjusting Cone

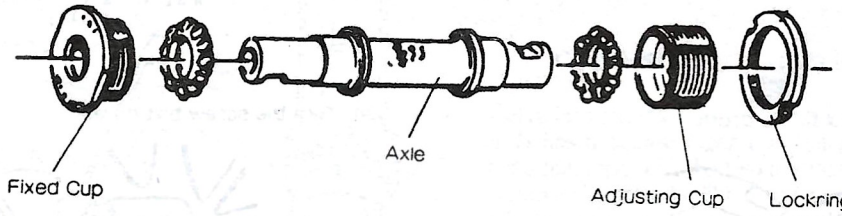
10-3. Checking Crank Bearings.

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.



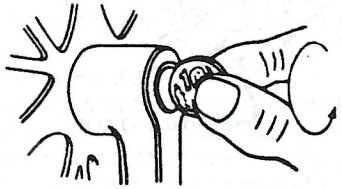


11. Cotterless Cranks

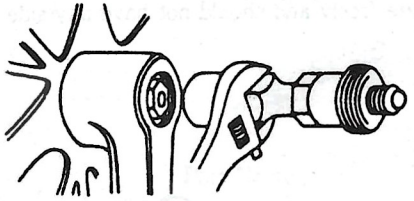
The best way to identify Cotterless Cranks would be by not seeing a crank cotter pin attachment. Also, most cotterless cranks utilize alloy material for lightness. Illustrated below are the steps required to remove or adjust the cotterless gear and crank. On the following pages are illustrations for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

TO REMOVE CRANKS

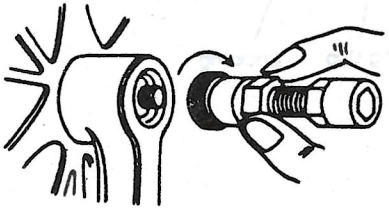
1) Take off the dust cap.



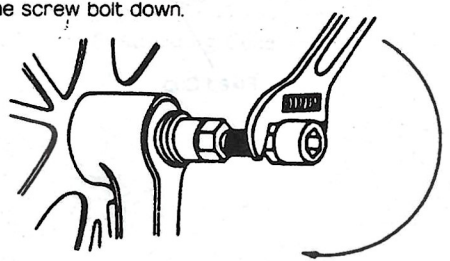
2) Loosen the flange nut or bolt and take off.



3) Screw in the removing tool to the depth.

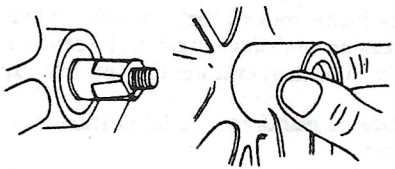


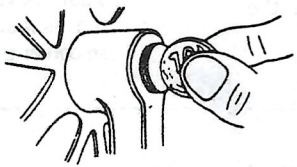
4) Turn the screw bolt down.



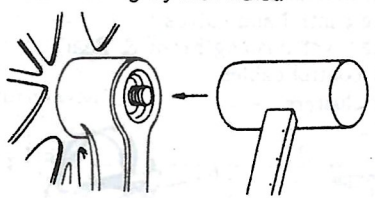
TO FIT CRANKS

1) Insert the bracket axle to the crank.

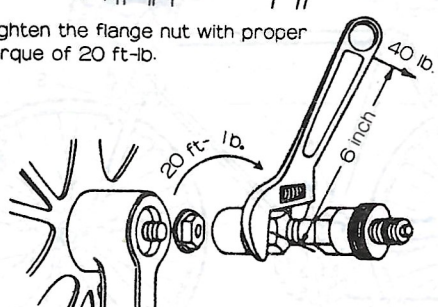




2) Tap in the crank lightly with mallet.



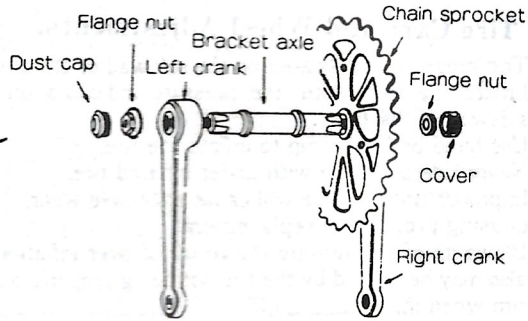
3) Tighten the flange nut with proper torque of 20 ft-lb.



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.

12. Tire Care and Wheel Adjustments.

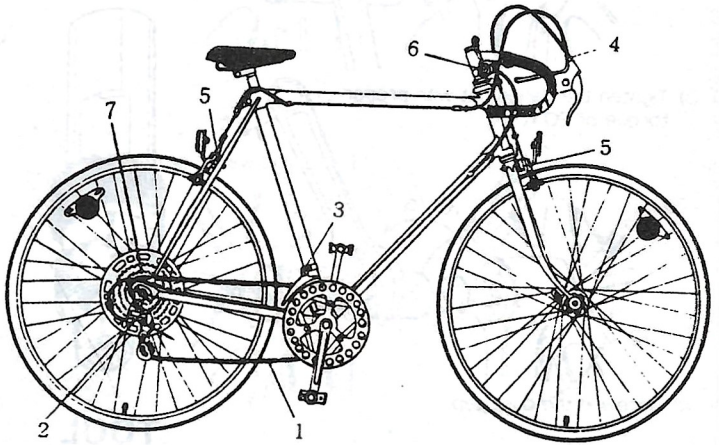
1. Tire pressure is indicated on the sidewall of the tire.
2. Inflate the tire upto the pressure indicated on the sidewall of the tire.
3. Use hand or foot pump to inflate the tire.
4. Never ride a bicycle with under inflated tire.
5. Improper tire pressure will cause excessive wear, causing premature 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 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.

13. 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 and cables
5. Brake pivot bushing(Front & Rear)
6. Shift control cables
7. Gear clusters



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

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 Dealer's use

STATEMENT OF LIMITED WARRANTY

1. Warranty: Concord frames are warranted to be free from defects in material and workmanship under normal use and service for the life of the bicycle. Concord will repair or replace the frame without charge within one year of original purchase. After one year, labor charges are not covered and Concord's liability shall be limited solely to the cost of the frame. All other costs shall be those of the purchaser. This warranty is not transferable and is extended only to the original owner of each Concord bicycle.

2. Defective Parts: All other parts are warranted for one year from the date of purchase. During the warranty period, all parts found to be defective in workmanship or material will be repaired or replaced by Concord without charge, excluding the cost of labor.

3. Warranty Exclusions: This warranty does not apply to normal wear and maintenance items (such as tires, brake shoes, lubricants, cables, adjustments), or to Concord bicycles which have been:

A. Involved in an accident or subjected to misuse or neglect.
B. Repaired with parts other than Concord parts or parts approved by Concord.
C. Repaired by other than an authorized Concord Dealer.
D. Used for leasing, renting or any other commercial service.
E. Bicycles used in racing, motocross, stunt riding, ramp-jumping, or any similar activity, nor is it intended to be used with motors or any power driven apparatus.

4. How to Claim Warranty: All claims under this Concord warranty must be made through an authorized Concord Dealer within the warranty period described above. To obtain warranty service, the owner must return the defective bicycle to an authorized Concord Dealer with proof of date of purchase and original ownership (needed to qualify for warranty). Concord shall not be responsible for any transportation costs.

The warranty provided herein is in lieu of all other express warranties. Any implied warranties, including any implied warranties of merchantability or fitness for a particular purpose, are limited in duration for the period of one year from the date of purchase for frames and to one year from date of purchase for all other parts covered by this warranty.

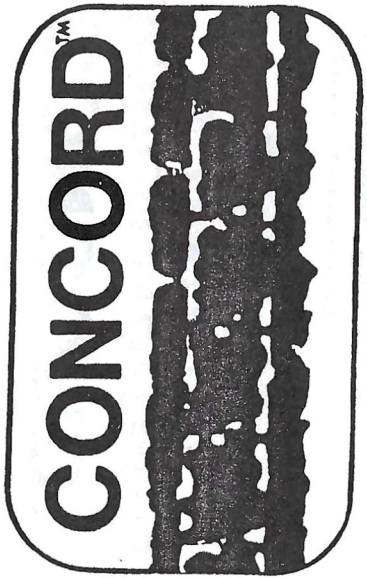
All other obligations or liabilities, including liability for consequential damages on the part of the manufacturer, and the dealer, are hereby excluded.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of implied or consequential damages. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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Place Stamp Here
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CONCORD™

Limited warranty & owner's registration

IMPORTANT! Please fill out and return this registration card immediately.

Thank you. (Please Print)

Name_____

Address_____

City_____ State_____

Zip_____

Date of Purchase_____

Serial No._____

Model_____ Frame Size_____ Color_____

Dealer's Name_____

City and State_____

Age of Primary User_____

What brands of bicycles have you owned previously? _____

_____

Major reason for buying a Concord. (X)

( ) Design ( ) Price ( ) Quality

( ) Availability ( ) Dealer

( ) Other _____

Comments: _____

_____

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