

MILAZO®

Instruction Manual

BIKE SERVICE INFORMATION 0800 422 274

A HELMET CAN SAVE YOUR LIFE.

ALWAYS WEAR A PROPERLY FITTED HELMET WHEN
YOU RIDE YOUR BICYCLE.

DO NOT RIDE AT NIGHT.

AVOID RIDING IN WET CONDITIONS.



CORRECT FITTING.
YOUR HELEMET MUST COVER
YOUR FOREHEAD.



INCORRECT FITTING.
FOREHEAD IS EXPOSED TO
SERIOUS INJURY.

PURCHASE RECORD CARD

Fill in immediately and retain as a record of your purchase.

Owners Name:

Address:

Postcode:

Date Purchased: Place of Purchase:

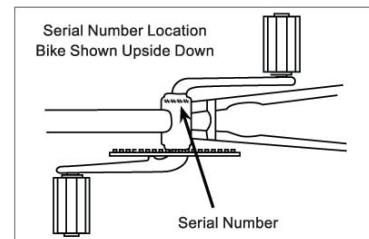
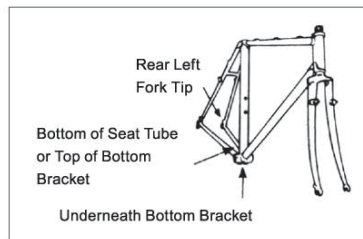
Brand: Model Name:

Wheel Size: Colour:

Serial Number:



Your serial number may be located in one of the following locations.



Customer service number: 0800 422 274

MON – FRI: 8AM – 5PM

SAT – SUN: 9AM – 4PM

Marketed By: The Warehouse LTD
26 The Warehouse Way, Northcote, Auckland

CONGRATULATIONS!

You have chosen one of the finest bicycles available.

Your bicycle has been carefully manufactured with the benefit of years of experience and fully tested to ensure the highest standards of safety and comfort for the rider. In order to fully enjoy your bicycle, a certain amount of care and maintenance is required.

ABOUT THIS MANUAL

This Owner's Manual is not intended as a fully comprehensive workshop manual but it will guide you safe usage and correct maintenance of your new bicycle.

If you have any doubt or difficulty with any of the tasks described, please call our toll free service information number on 0800 445 313. Please read the Manual thoroughly, paying special attention to the safety warnings. This manual will help ensure that your new bicycle keeps working properly and safely, and continues to give years of enjoyable cycling.

GENERAL WARNING

Riding bikes can be a hazardous activity even under the best of circumstances. Proper maintenance of your bicycle is your responsibility as it helps reduce the risk of injury. This manual contains many warnings and cautions, concerning the consequence of failure to maintain or inspect your bicycle. Many of the warnings and cautions say "you may lose control and fall", because any fall can result in serious injury or even death. We do not repeat the warning of a possible injury or death whenever the risk of falling is mentioned.

The bicycle you have purchased is a complex article. The following manual is only a guide to assist you and is not a complete or comprehensive manual of all aspects of maintaining and repairing your bicycle. You are recommended to

consult a specialist bicycle dealer, particularly if:

- You have any doubts or concerns as to your experience or ability to properly repair or maintain your bicycle;
- The following manual does not cover a particular matter; or
- You have any other questions or concerns.



Significant mechanical repairs should be carried out by a skilled bicycle mechanic.



Check handlebar grips and tube end plugs regularly and replace if damaged. This is particularly important on bicycles used by children, as exposed ends on handlebars can cause injury.



Replacement forks must have the same rake and the same tube inner diameter as those originally fitted to the bicycle.

A SPECIAL NOTE FOR PARENTS

It is a tragic fact that most bicycle accidents involve children. As a parent or guardian, you bear the responsibility for the activities and safety of your child. Among these responsibilities you are to make sure that the bicycle which your child is riding is properly fitted to the child; that it is in good repair and safe operating condition, that you and your child have learned, understood and obey - not only the applicable local motor vehicle, bicycle, and traffic laws - but also the common sense rules of safe and responsible biking. As a parent you should read this manual before letting your child ride the bicycle. Please make sure that your child always wears an approved bicycle helmet when riding.

WARNING: IN THE INTEREST OF SAFETY IT IS RECOMMENDED THAT YOU HAVE THIS BICYCLE ASSEMBLED BY A SKILLED BICYCLE MECHANIC.

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Warning/Important
Take notice of this symbol throughout this manual.

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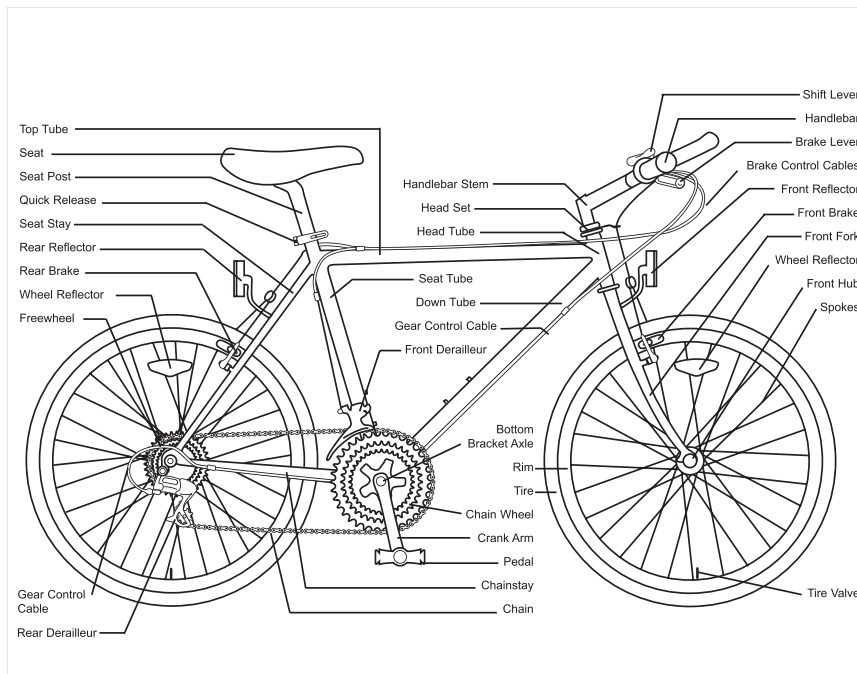
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PARTS IDENTIFICATION

Mountain Bicycles and Crossbikes

Mountain bicycles are designed to give maximum comfort over a wider variety of road surfaces. The wider handlebars and convenient shift lever position make them very easy to control. Wider wheel rims and tyres give them a softer ride with more traction on rough surfaces.

The frame and fork on mountain bicycles is much sturdier and heavier than a racing style bicycle. A variation of the mountain bicycle is the crossbike or hybrid. This style of bicycle is lighter than a mountain bicycle but not as fast as a racing bicycle. It combines some of the features of comfort and control with lighter weight and higher speed.



ASSEMBLY

Your new bicycle was assembled in the factory then partially disassembled for shipping. You may have purchased the bicycle already fully re-assembled and ready to ride OR in the shipping carton in the partially disassembled form. If it was purchased in the carton, the following instructions will enable you to prepare your bicycle for years of enjoyable cycling.

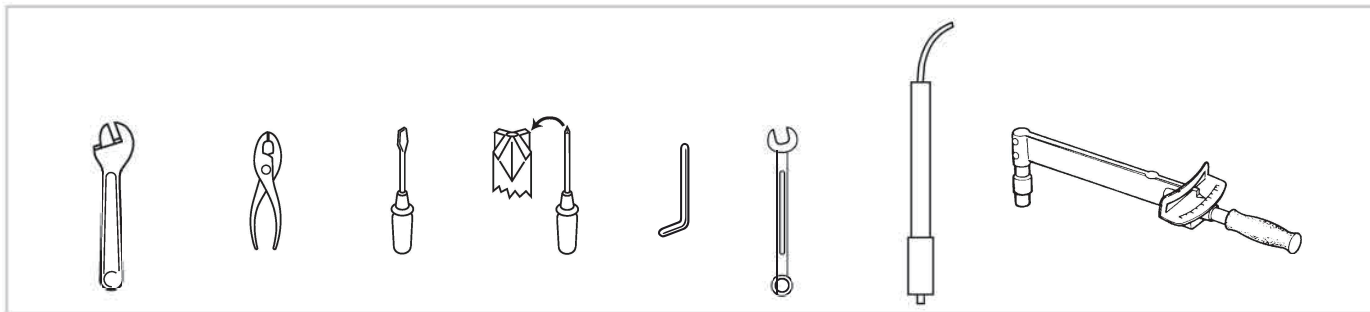
Please check that all parts referred to in the instructions and shown in the photographs/diagrams have been included, and that all tools needed are at your disposal.

For more detail on inspection, lubrication, maintenance, additional tools needed and adjustments of any area please refer to the relevant section elsewhere in this manual.

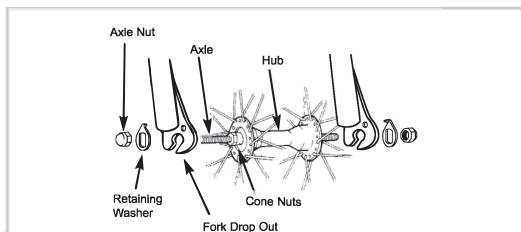
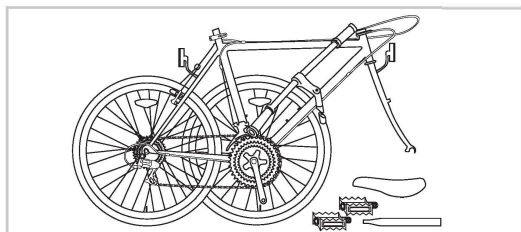
You will need the following tools:

- Spanners, ring or open ended - 8mm, 10mm, 12mm, 13mm, 14mm and 15mm, or adjustable wrenches.
- Spanners, open ended and narrow - 15mm.
- Torque Wrench with newton meter graduations.
- Phillips head screwdriver.
- Blade ended screwdriver.
- Bicycle pump.
- Allen key - 5mm and 6mm
- Standard slipjoint pliers.

It is recommended that a large torque wrench be used in the initial assembly process and that the torque requirements listed on Page 36 be adhered to.



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Getting Started

Open the carton from the top and remove the bicycle. Remove the straps holding the front wheel, handlebar assembly, pedals and seat. Remove the protective wrapping from the bicycle.

Note

Your bicycle may be equipped with different style components than the ones illustrated.

Front Wheel and Mudguard

For bicycles where a front mudguard is supplied, this should be attached to the FORK before fitting the front wheel. Position it with the short end facing forward and attach the metal bracket behind the 10mm nut fixed to the rear of the brake center bolt. Or attach it behind the brake bridge of the fork with the bolt and nut supplied. The mudguard stays (if supplied) are to be attached under the wheel axle nuts(outside the fork dropout). Tighten the wheel nuts using the appropriate spanner.

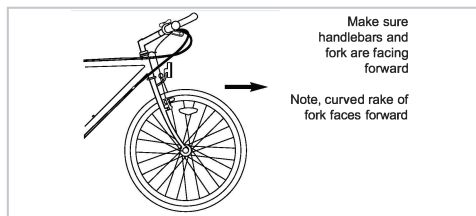
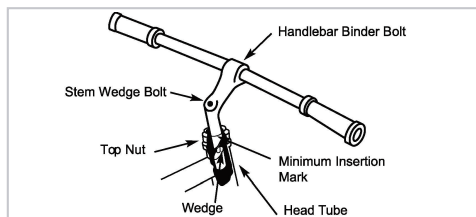
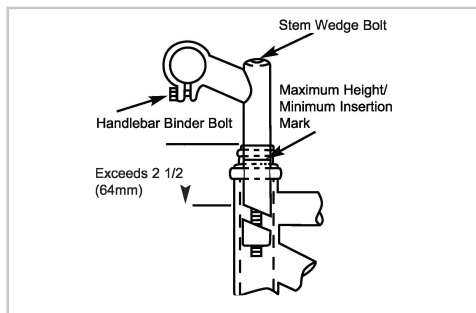
1. Make sure the brakes are loose enough to allow the wheel to pass through the brake pads easily.
2. Place wheel into fork drop outs.
3. Install retaining washers with raised lip pointed towards the fork, and insert into the small hole of the fork blade.
4. Install axle nut and securely tighten. Make sure the wheel is centered between the fork blades.
5. Spin the wheel to make sure that it is centered and clears the brake shoes. Tighten the brakes if necessary.
6. Turn the bicycle upright using the kickstand to support it.



Some bikes may be equipped with QR (quick-release wheel). Please refer to separate section.

It is very important to check the front wheel connection to the bicycle. Failure to properly tighten may cause the front wheel to dislodge.

ASSEMBLY



Handle Height

Maximum comfort is usually obtained when the handlebar height is equal to the height of the seat. You may wish to try different heights to find the most comfortable position.

Handlebars

Remove the protective cap from the handlebar stem and loosen the Allen key bolt using the 6mm Allen key. Some models may use a 13mm hexagonal bolt instead of an Allen key bolt. Place the handlebar stem into the top of the head tube, ensuring all cables are free of tangles. Tighten the handlebar stem in the frame to 17 - 19 Newton metres if using a torque wrench, while observing the minimum insertion mark and checking that the forks and handlebars are both facing forward. Ensure that the handlebar is tightened to 17 -19 Newton metres if using a torque wrench. For MTB bicycles supplied with handlebar end extensions, these can now be fitted to the exposed ends of the handlebar. Set the angle to your personal preference, ensuring both are fitted at the same angle. End plugs must be fitted and the clamp bolts must be firmly tightened.



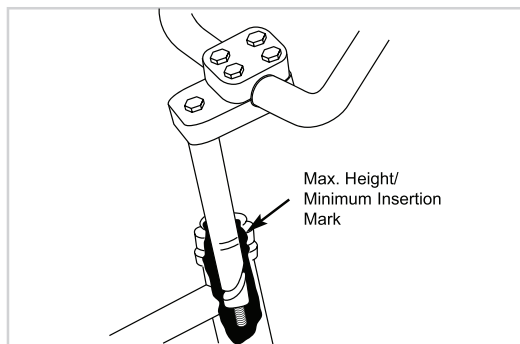
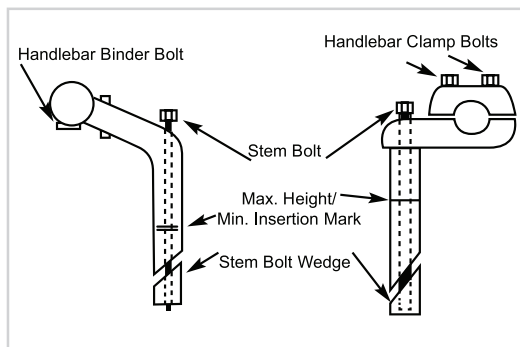
Some Bicycles are equipped with A-head type head set, refer to head set section for details in this manual.

If the stem is not inserted into the top nut to at least the "minimum" insertion mark, it is possible to over-tighten the stem wedge bolt and damage the fork steerer tube. If these instructions are not followed, it could cause an unsafe condition and risk injury to the rider. Check steering tightness prior to riding by straddling the front wheel. Try turning the handlebar. If you can turn it without turning the front wheel, the stem is too loose. Re-align the handlebar with the front wheel and re-tighten the stem wedge bolt.



Handle bar grips or tube end-plugs should be replaced if damaged, as bare tube ends have been known to cause injury. It is particularly important that bicycle used by children be checked regularly to ensure that adequate protection for the ends of the handlebars is in place.

ASSEMBLY



Handlebar Stem

The handlebar stem fits into the steering column and is held firm by the action of a binder bolt and expander wedge, when tightened, binds with the inside of the fork steerer tube.

Some bikes now use a different, "Ahead" system whereby the stem clamps onto an unthreaded fork steerer.

When removing the stem, loosen the expander bolt two or three turns, and then give it a tap to loosen the wedge inside.

Lubricate by first wiping off any old grease and grime, then apply a thin film of grease to the part, including the wedge, that will be inserted into the frame.

The height of the handlebar can be adjusted to suit your comfort preference (Refer to BEFORE YOU RIDE section).

If the stem is removed from the steering column you will notice a mark about 65mm up from the bottom with the words "max. height" or "minimum insertion".



Never ride a bicycle if the stem has been raised so that the minimum insertion/max, height line can be seen.



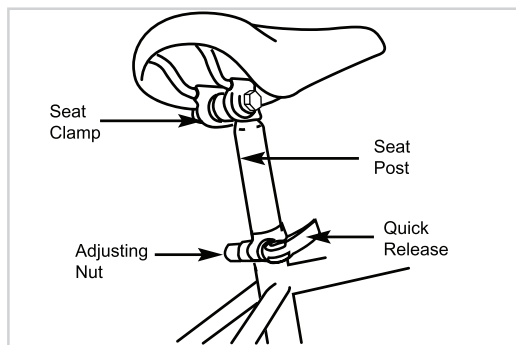
On some MTB bicycles the front brake cable is routed through a hole in the front of the stem.



If the height is adjusted on this type of stem you will need to re-adjust the front brake.

If your bicycle is fitted with a suspension type handlebar stem, then be sure to check this is intact and functioning correctly.

ASSEMBLY



Saddle

The saddle can also be adjusted by sliding it forward or back along the mounting rails to obtain the most comfortable reach to the handlebars.

When fitting, position the seat post into the clamp under the seat and place it in the frame without tightening. Adjust to the desired angle and position, and tighten the clamping mechanism.

There are two types of seat clamp commonly in use. The most common employs a steel clamp with hexagonal nuts on either side to tighten. The other type, known as a micro-adjustable clamp, uses a single vertically mounted Allen head-fixing bolt to tighten. After fixing the seat to the desired position on the post, adjust the height to the required level and tighten the binder bolt.

Note: that the type of binder bolt may be either a hexagonal bolt, an Allen head bolt, or a quick release mechanism.

The operation of a seat post is the same as for Quick Release Hubs.

Test the security by grasping the seat and trying to turn it sideways. If it moves you will need to further tighten the binder bolt.

NOTE: Remember that the minimum insertion mark must remain inside the frame assembly.



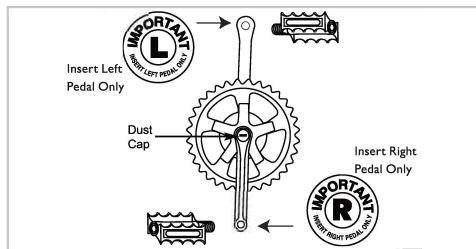
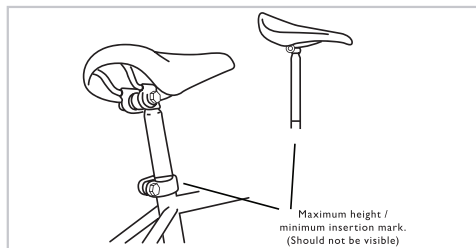
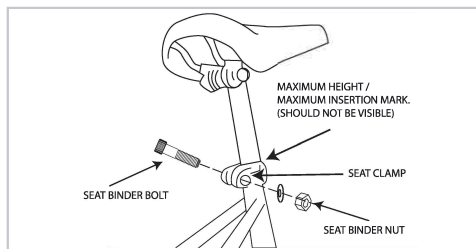
WARNING: Riding with an improperly tightened seat post can allow the saddle to turn or move and cause to lose control and fall. Therefore:

1. Ask your dealer to help you make sure you know how to correctly clamp your seat post.
2. Understand and apply the correct technique for clamping your seat post quick release.
3. Before you ride the bike, first check that the seat post is securely clamped.



CAUTION: If your bicycle is fitted with a suspension type seat post then be sure to check this is intact and functioning correctly.

ASSEMBLY



Seat

Insert the smaller end of the seat pillar into the seat clamp and tighten. Insert the seat/pillar assembly into the frame tube of the bicycle observing the minimum insertion mark on the seat pillar. Ensure the seat is level and facing the front. Tighten with a 13mm ring spanner. Tighten to 22-26 Newton metres if using a torque wrench. If your bicycle is fitted with a Quick Release type seat bolt, turn the adjusting nut to ensure the locking lever is moved to the closed position with a firm action. Refer to Page 48 for more detail about Quick Release Mechanisms.

For models with pre-assembled seat post/seats: Insert the assembled seat post into the seat tube of the bicycle, observing the minimum insertion mark on the seat post. Tighten the seat tube using the quick release clamp.



The seat pillar must be inserted so that the minimum insertion mark cannot be seen.

Riding Position

Saddle Height

In order to obtain the most comfortable riding position, offering the best possible pedaling efficiency, the seat height should be set correctly in relation to the riders leg length. The correct saddle height should not allow leg length. The correct saddle height should not allow leg strain from over-extension, and the hips should not rock from side to side while pedaling.

While sitting on the bicycle with one pedal at its lowest point, place the ball of your foot on that pedal. The correct saddle height will allow that knee to be slightly bent in this position. If the rider then places the heel of that foot on the pedal the leg should be almost straight.

Pedals

Attach to pedals carefully, engaging the thread initially by hand. Note that the right hand pedal attaches to the chain wheel side crank with a right hand (clockwise) thread. The left pedal attaches to the other crank arm and has a left hand (counter clockwise) thread. The ends of each pedal spindle are marked with either an 'R' for right or 'L' for left. Tighten pedals very firmly using a narrow 15mm open ended spanner. Note, damage will occur if pedals are not correctly and firmly attached.

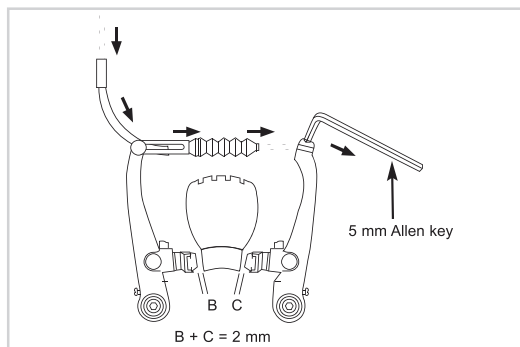
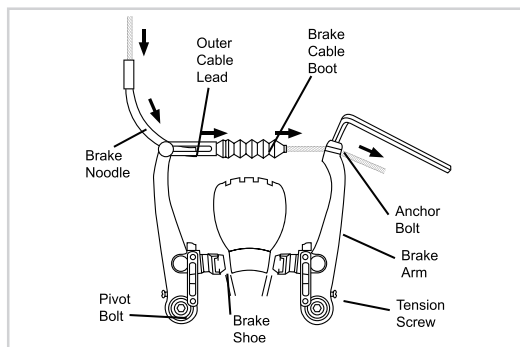


The right and left pedals each have a different thread. They are NOT interchangeable.

Never force pedal into an incorrect crank arm.

Attachment of an incorrect pedal into a crank arm will cause irreparable damage.

ASSEMBLY



Front Brake

Brakes must be adjusted and firmly tightened so that the brake shoes are correctly aligned with the rim, and have minimal clearance with the rim before the control lever is squeezed. Your bike may be fitted with side pull, cantilever, "V" style, or other types of brakes but the same adjustments must be made. Be sure that the right hand control lever operates the front brake, and the left lever operates the rear brake. For bikes with disc brakes or other types, please refer to Brakes section under Detailed Maintenance further on in the manual.

To connect the front brake, position yourself so you can comfortably squeeze the brake calipers together with one hand while adjusting and fastening the brake cable with the other hand.

If your bike is fitted with "sidepull" type brakes grasp and firmly squeeze the caliper with one hand so that the brake pads are touching the rim. Loosen the cable anchor bolt holding the brake cable with a 10mm spanner; firmly pull the cable through the hole and then re-tighten.

If fitted with "cantilever" type brakes position the straddle cable into the straddle cable holder above the reflector bracket and connect the cable end into the brake arm. With the cable fitted the straddle holder should sit 10-20mm above the reflector bracket and can be adjusted via the cable anchor bolt using a 10mm spanner.

To connect and adjust "V" style or "Linear Pull" type brakes, use a 10mm spanner or Allen key to set the brake shoes to within 2mm of, and parallel to the rim with the brake arms in a vertical position. Position the drum shaped end button of the control cable into the hand brake lever. Loosen the cable anchor bolt on the left hand brake arm. Thread the cable through both brake arms, positioning the curved outer casing runner through the right arm and the inner wire through the cable anchor bolt on the left arm. Squeeze the brake arms together, pull the cable wire through the cable anchor bolt, and tighten it.

Adjust the brake pads and tighten the appropriate 10mm spanner or Allen key so they contact squarely with and are aligned parallel to the rim surface. Firmly squeeze the control lever and check the brake pads are 1.5mm to 2mm away from the rim each side after lever is released. If

ASSEMBLY

Fig. 1

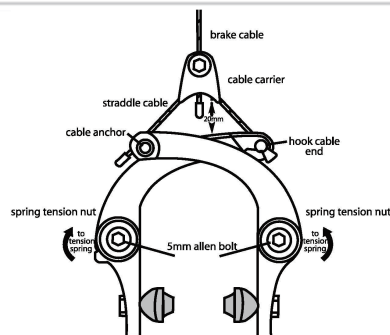


Fig. 2

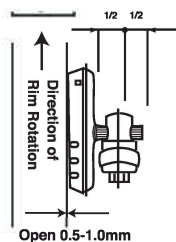
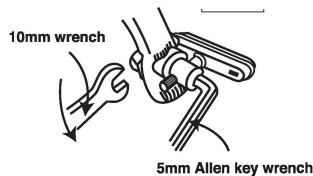


Fig. 3



Adjustment / Installation - U-Brakes

1. Installation to frame.

- Apply grease (lubricant) on the contacting surfaces of the frame bosses and the brake arm attaching area.
- Note that spring winding direction for right and left arms is different. (see Fig. 1)
- Be sure that spring is securely attached to the hole on the brake arm, spring cover and arm fixing nut. Then tighten the attaching bolt with a 5mm Allen key wrench. Tightening torque should be 60 to 80 kgf. cm.

2. Adjusting and Fixing Brake shoes.

- Brake arm should have free movement when adjusting brake shoes. Be sure to place the brake shoes so that the direction of the arrow sign is the same direction of rim rotation.
- Facing the shoe surface to the rim, set it as shown in Fig. 2.
- Hold the brake in position with a 5mm Allen key wrench and tighten the nut with a 10mm wrench. (the tightening torque should be 70 to 90 kgf.cm) see fig 3.

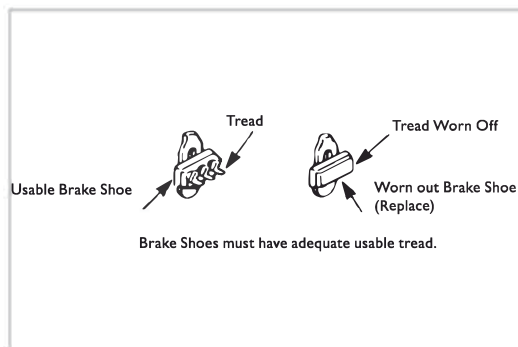
3. Connecting to Braking Cable See fig 1.

- Attach the braking cable to the straddle cable bridge.
- Set the straddle cable as in fig 1, and adjust the shoe-rim leaving clearance of 1.5mm on both sides.
- Tighten the straddle cable with the cable fixing nut. Tightening torque should be 50 to 70 kgf. cm.
- Cut off the excess straddle cable and attach the cable cap.

4. Tuning the shoe clearance and spring tension.

- When the left side is greater turn the arm fixing nut in counter clockwise with a 13mm wrench. When the right side is greater, turn the arm fixing nut in the clockwise. (use a 13mm wrench)
- When spring tension is tightened, tighten both the arm fixing nuts. When loosening, loosen both fixing nuts accordingly. (use 13mm wrench)

ASSEMBLY



Brake Shoe Replacement

Brake shoes must be replaced if worn so far that there is insufficient effective pad material remaining or they are worn past the “wear line” indication. To replace, first remove the worn brake shoes after disconnecting the holding mechanism. Depending on the type of brake, as described on previous pages, the holding mechanism may be a hexagonal nut or an Allen screw arrangement, or a combination of both. Take note of the order and position in which the various curved washers and spacers are attached. Fix the new brake shoes, adjusting the angle and clearance to the rim as previously described, and tighten firmly. It will usually be necessary to adjust the rim clearance after first loosening the control cable anchor bolt, then screwing in cable adjusters and finally tensioning the cable. be sure to refasten the anchor bolt after adjusting the cable. Always replace brake shoes in pairs-never one side only. Before riding, test brakes to ensure they are effective. Brake shoes must have adequate usable tread.

Disc Brakes

If your bike is fitted with disc brakes, the rear brake will be already attached. Check all components for tightness and function before riding.

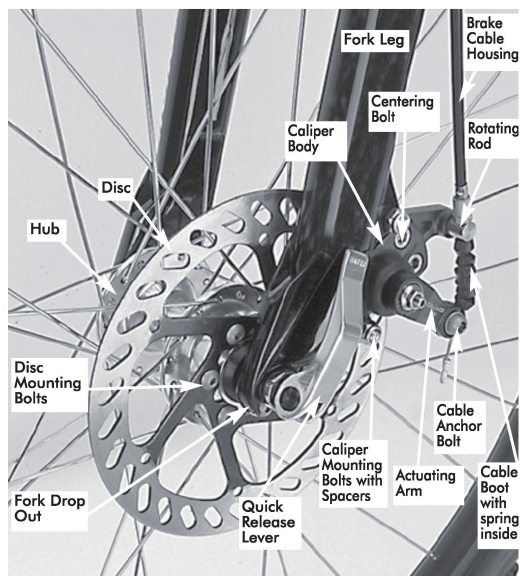
Installing the front disc

When installing the front disc to the hub, ensure the arrows on the disc are pointing in the direction of forward wheel rotation. Tighten the disc to hub with the M5 screws disc mounting bolts, in a star pattern sequence, using torque of 5-8Nm.

Installing the front caliper

1. Install caliper on front fork legs, and tighten front fork M6 screws to torque 8-10M.
2. Thread the inner brake cable through the top cable adjuster on caliper and then through the actuating arm, tightening the cable anchor bolt to torque 6-10M to secure firmly.

ASSEMBLY



3. Loosen the cable adjuster screws on the inside part of the caliper, and check the gaps between the inner and outer pads of the disc are suitable. Manually push the pads so they almost touch the disc, and then re-tighten adjuster screws to 8-10NM.

4. Check the wheel runs freely when brake lever is released. If further adjustment is required, turn the adjusting nut/screw accordingly, and tighten. Activate levers to check brakes are working correctly.

To prevent adjustment screws from working loose, ensure internal Caliper fixing screw is tight (4-6nm).

Adjust or Change brake pads:

When brake force weakens, brake pads may be worn. Adjustment can be actioned through steps 3 and 4 above. If pads require replacement, loosen internal caliper fixing screw, remove outer then inner pad, and then replace inner then outer pad. Then follow the steps for installing the front caliper above.

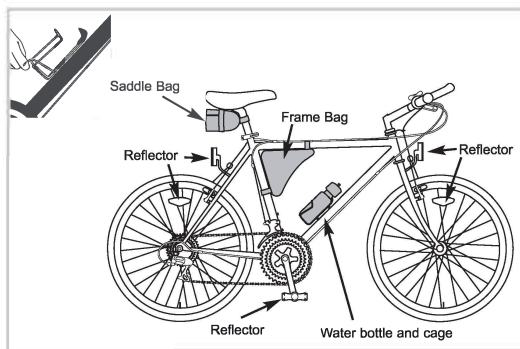


WARNING: Discs get hot with use. To avoid injury, take care not to contact with hands or legs.



WARNING: Disc brakes require initial wearing in to function correctly. Ride gently for several kilometres before braking heavily in sudden, fast or downhill conditions. Brake performance will change over the wear in period. Clean the brake disc before first ride using methylated spirit. **NEVER** clean using oil or other lubricants.

ASSEMBLY



clearance needs adjusting loosen the cable anchor bolt, hold the brake arms in position so the pads just touch the rim, pull the cable tight, then re-tighten the eyebolt. Firmly squeeze the lever again and re-check clearance. Adjust again as above if necessary or fine-tune by turning the cable adjusters at the lever. Ensure end cap is fitted to cable to prevent fraying. Connecting and adjusting rear brakes follows same procedures as for the front. For more details refer to Brakes section under Detailed Maintenance further on in the manual.

Gears

Gears are pre-set at the factory and normally will not require further adjustment before riding. However before testing them check that the 10mm anchor bolts which clamp the front and rear derailleur control cables are firmly fastened. Only then test the gears ensuring the drive chain moves freely into each position when the control levers are activated. If further adjustment is needed, refer to the Derailleur Systems section under Detailed Maintenance further in this manual.

Finally

If your bike is supplied with a water bottle and cage, the cage should now be attached to the frame using the Allen head bolts supplied. Check tyre pressure is inflated to the range recommended on the tyre sidewalls. Attach the orange reflectors to the spokes of both wheels directly opposite the valve stem and within 75mm of the rim. Attach the white reflector to the front reflector bracket, and the red reflector to the rear reflector bracket using an 8mm spanner or Phillips head screwdriver. Attach the bell to the left handlebar near the grip. Check and adjust the gears if necessary before riding.

Correct maintenance of your bicycle will ensure many years of happy and safe riding. Service your bicycle regularly yourself, refer to the relevant sections of this manual for instructions, OR take it to your specialist bicycle shop.



Do not ride the bike until the brakes are functioning properly. To test, apply the brakes while trying to push the bike forward to make sure they will stop the bicycle. Before riding, ensure all nuts, bolts and fittings on the bicycle have been correctly tightened.

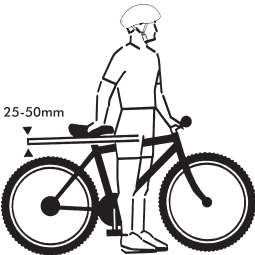
BEFORE YOU RIDE

Correct Frame Size

When selecting a new bicycle the correct wheel and frame size is a very important safety consideration. A bicycle should never be purchased too big for the rider with the view that they will grow to fit it. This is especially important for kids as they need to gain confidence and the necessary co-ordination to control the bike safely. Kid's body and leg lengths vary a lot even in same age groups. Kid's bikes come in different wheel sizes and there are different frame styles, such as Y-Frames, to suit the rider's size. Most full sized gent's bicycles come in a range of frame sizes. These sizes usually refer to the distance between the centre of the bottom bracket and the top of the frame seat tube.



If your bicycle does not match your size properly, you may lose control and fall, so ask your dealer to exchange it before you ride it. For safe and comfortable riding there should be a clearance of between 25mm and 50mm between the crotch of the intended rider and the top frame tube of the bicycle, while rider straddles the bicycle with both feet flat on the ground. Female riders should take into account the slope of the top tube to determine frame size suitability. If in doubt, ask your dealer.



The ideal clearance will vary between types of bicycles and rider preference. This makes straddling the frame when off the saddle easier and safer in situations such as sudden traffic stops.

The correct sized female style bicycle can be checked using a male model as a guide.

The following chart will help you make the correct choice.

Bike Sizing Guide

Approx. rider inner leg length	Approx. Ages	Wheel Size (kid's models]	Suggested Frame size for Road Bikes	Suggested Frame size for Mountain or Hybrid Bikes
40cm min.	3-5	30cm(12")		
46cm min.	4-7	40cm(16")		
55cm min.	6-10	50cm(20")		
61cm min.	9-12	61cm(24")		
61 -69cm	12 plus			37cm(14.5")
66-76cm	12 plus			43cm(17")
71-79cm	12 plus		50cm(19.5")	45cm(18")
76-84cm	12 plus		55cm(21.5")	50cm(19.5")
79-86cm	12 plus		57cm(22.5")	52cm(20.5")
81-89cm	12 plus		60cm(23.5")	53cm(21")-56cm(22")
86-94cm	12 plus		63cm(25")	58cm(23")- 60cm(23.5")

BEFORE YOU RIDE

Safety Checklist

Before every ride it is important to carry out the following safety checks. In addition to these, and the recommended maintenance in DETAILED MAINTENANCE of this manual, every fortnight a thorough inspection should be carried out with all nuts and bolts tightened, worn and damaged parts, replaced, and components properly positioned. For further details please refer to the relevant sections in DETAILED MAINTENANCE.

Be careful to keep body parts and other objects away from the sharp teeth of the chainrings, the moving chain; the turning pedals and cranks; and the spinning wheels of your bicycle. Always wear shoes that will stay on your feet and will grip the pedals. Never ride barefoot or wearing sandals. Don't jump with your bike. Jumping a bike, particularly a BMX or Mountain Bike, can be fun; but it puts incredible stress on everything from your spokes to your pedals. Perhaps most vulnerable to jumping-related damage is your front fork.

Brakes

- Ensure front and rear brakes work properly
- Ensure brake shoe pads are not over worn and are correctly positioned in relation to the rims
- Ensure brake control cables are lubricated, correctly adjusted, and display no obvious wear
- Ensure brake control levers are lubricated and tightly secured to the handlebar

Wheels and Tyres

- Ensure tyres are inflated to within the maximum recommended limit as displayed on the tyre sidewall
- Ensure tyres have tread and have no bulges or excessive wear
- Ensure rims run true and have no obvious buckles or kinks
- Ensure all wheel spokes are tight and not broken
- Check that axle nuts are tight. If your bicycle is fitted with quick release axles, make sure locking levers are correctly tensioned and in the closed position

Saddle

- Ensure clamp underneath saddle is firmly tightened to the saddle post
- Ensure frame clamping mechanism is securely fastened
- Saddle pillar must be inserted so that the minimum mark cannot be seen

Steering

- Ensure handlebar and stems are correctly adjusted and tightened and allow proper steering
- Ensure that the handlebars are set correctly in relation to the forks and the direction of travel
- Check that head set locking mechanism is properly adjusted and tightened
- If the bicycle is fitted with handlebar end extensions ensure they are properly positioned and tightened.,

BEFORE YOU RIDE

Chain

- Ensure chain is oiled, clean and run smoothly
- Extra care is required in wet or dusty conditions

Bearings

- Ensure all bearings are lubricated, run freely and display no excess movement, grinding or rattling
- Check Headset, Wheel Bearings, Pedal Bearings and bottom Bracket Bearings

Cranks and Pedals

- Ensure pedals are securely tightened to the cranks
- Ensure cranks are securely tightened to the axle and are not bent

Derailleur

- Check that front and rear mechanisms are adjusted and function properly
- Ensure control levers are securely attached
- Ensure derailleur, shift levers and control cables are properly lubricated

Frame and Fork

- Check that the frame and forks are not bent, cracked or broken. If either are bent, cracked or broken they should be replaced

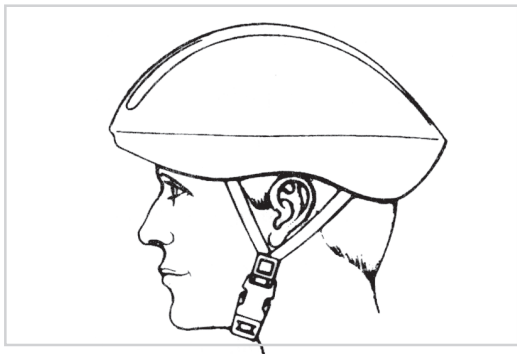
Suspension

- Check that all components of fork and rear suspension (if fitted) are correctly tightened
- Check that there is no excessive wear or side play in rear suspension components
- Check that components function smoothly without binding
- Where suspension components are supplied with a separate manual, refer to this for more specific safety checks

Accessories

- Ensure that all reflectors are properly fitted and not obscured
- If night riding, ensure dynamo or battery powered lights are fitted to the front and rear of the bicycle and are functioning properly
- Ensure all other fittings on the bike are properly and securely fastened and functioning
- Ensure all riders are wearing helmets
- Ensure the bell is functioning properly as a warning device (if supplied)

BEFORE YOU RIDE



Helmets

It is strongly advised that a properly fitting, New Zealand approved bicycle safety helmet be worn at all times when riding your bicycle. In addition, if you are carrying a passenger in a child safety seat, they must also be wearing a helmet.

A bicycle helmet must be labeled with the New Zealand Standards approved mark. The right helmet should:

- Fit correctly
- Be comfortable
- Be lightweight
- Have good ventilation

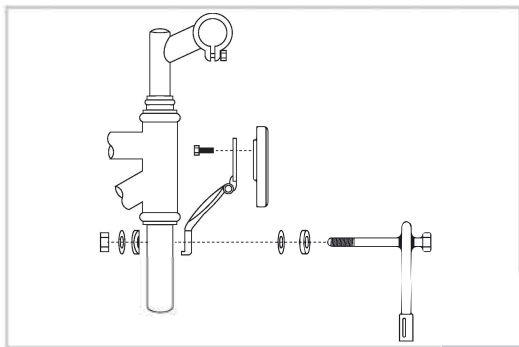
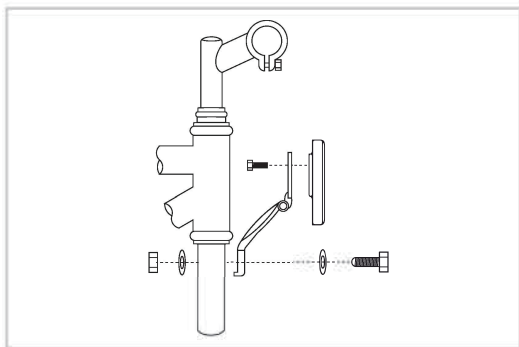


In New Zealand the wearing of helmets is compulsory with enforceable penalties.



All fitting adjustments should be made before starting the ride and any re-adjustments should be made while stationary

BEFORE YOU RIDE



Reflectors

Your bicycle is supplied with one front (white), one rear (red), two wheel (orange), and four pedal (orange) reflectors.

(Please note: sidewall bikes, 12' and under, may not have reflectors). These are an important safety and legal requirement, and should remain securely fitted and in good, clean condition at all times. Periodically, inspect all reflector, brackets and mounting hardware for signs of wear or damage. Replace immediately if damage is found. Some bicycles will require you to install reflectors onto your bicycle. Please refer to the following section for instructions on all types of bicycle reflectors.

Fork Mount Reflector Bracket Assembly

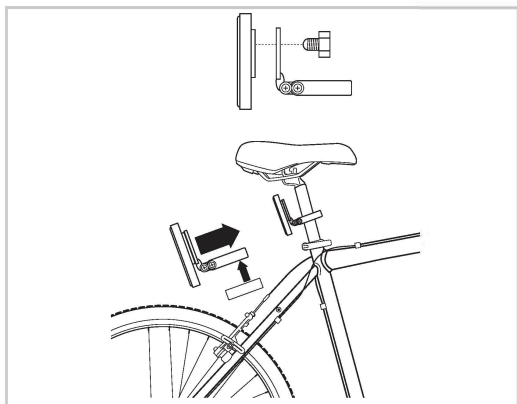
First insert one washer onto the hex bolt and insert hex bolt through the reflector bracket once then through the fork.

Next insert a second washer onto the bolt and thread a hex nut onto the bolt behind the fork. Tighten bolts until snug, making sure the reflector is in an upright position. See diagram to the left.

Front Reflector Mount with Caliper Brake Assembly

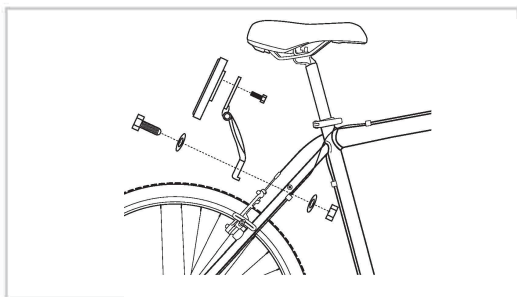
First remove the hex nut from the back of the fork and pull the brake from the fork. Insert a spacer, washer and the reflector bracket on to the caliper bolt. Insert the caliper bolt back into the fork and secure firmly with a concave spacer, washer and the hex nut. Finally, adjust the reflector so that it is in an upright position. See diagram to the left.

BEFORE YOU RIDE



Seat and Handlebar Mounting Reflectors

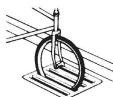
First attach the reflector to the reflector bracket with the reflector screw, see diagram. Next, remove the clamp screw and open the clamping reflector bracket. Place clamping reflector bracket around the handlebar or seat post. If the clamp is too loose, insert the shim inside of the clamp. Tighten the clamp screw to hold reflector assembly in place, see the attached diagram. Finally, adjust the reflector assembly in place and ensure that it is upright and facing away from the bike.



Seat-Stay Mount Reflector Bracket Assembly

First insert one washer onto the hex bolt and insert bolt through the reflector bracket and then through the Seat-Stay bridge. Next, insert a second washer onto the bolt and thread a hex nut onto the bolt behind the Seat-Stay bridge. Tighten bolts until snug, making sure the reflector is in an upright position.

BEFORE YOU RIDE



Riding Safely

General Rules

- When riding obey the same road laws as all other road vehicles, including giving way to pedestrians and stopping at red lights and stop signs.
- For further information contact the Road Traffic Authority.
- Ride predictably and in a straight line on the left side of the road. Never ride against the traffic.
- Use correct hand signals to indicate turning or stopping.
- Ride defensively. To other road users you may be hard to see.
- Concentrate on the path ahead. Avoid potholes, gravel, wet road markings, oil, curbs, speed bumps, drain grates and other obstacles.
- Cross tram and train tracks at a 90-degree angle or walk your bicycle across.
- Expect the unexpected such as opening car doors or cars backing out of concealed driveways.
- Be extra careful at intersections and when preparing to pass other vehicles.
- Familiarize yourself with all the bicycle's features. Practice gear shifts, braking.
- If you are wearing loose trousers, use leg clips or elastic bands to prevent them being caught in the chain.
- Don't carry packages or passengers that will interfere with your visibility or control of the bicycle.
- Don't use items that may restrict your hearing.
- When braking, always apply the rear brake first, then the front. The front brake is more powerful and if it is not correctly applied you may lose control and fall.
- Maintain a comfortable stopping distance from all other riders, vehicles and objects. Safe braking distances and forces are subject to the prevailing weather conditions.

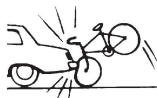
BEFORE YOU RIDE



Wet Weather Riding

In wet weather you need to take extra care.

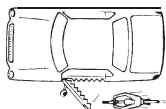
Brake earlier, you will need a longer distance to stop.



- Decrease your riding speed, avoid sudden braking and take corners with additional caution.
- Be more visible on the road – wear reflective clothing and use safety lights.
- Potholes and slippery surfaces such as line markings and tram tracks all become more hazardous in the wet.

Night Riding

- Ensure bicycle is equipped with a full set of correctly positioned and clean reflectors.
- Refer to DETAILED MAINTENANCE of this manual.
- Use a properly functioning lighting set comprising a white front lamp and a red rear lamp.



Never venture on roads at night without functioning front and rear bicycle lights.

- If using battery powered lights make sure batteries are well charged. If using dynamo-powered lights ensure wiring is properly connected and not loosely fitted.
- Some rear lights available have a flashing mechanism, which enhances visibility.
- Wear reflective and light coloured clothing.
- Ride at night only if necessary. Slow down and use familiar roads with streetlights if possible.

Pedaling Technique

- Position the ball of your foot on the centre of the pedal.
- When pedaling, ensure your knees are parallel to the bicycle frame.
- To adsorb shock, keep you elbows slightly bent.
- Learn to operate the gears properly.

BEFORE YOU RIDE

Hill Technique

- Gear down before a climb and continue gearing down as required to maintain pedaling speed.
- If you reach the lowest gear and are struggling, stand up on you pedals. You will then obtain more power from each pedal revolution.
- On the descent, use the high gears to avoid rapid pedaling.
- Do not exceed a comfortable speed, maintain control and take additional care.



Never take your hands off the handlebars, or your feet off the pedals when riding downhill.

Cornering Technique

Brake slightly before cornering and prepare to lean your body into the corner. Maintain the inside pedal at the 12 o'clock position and slightly point the inside knee in the direction you are turning. Keep the other leg straight; don't pedal through fast or tight corners.

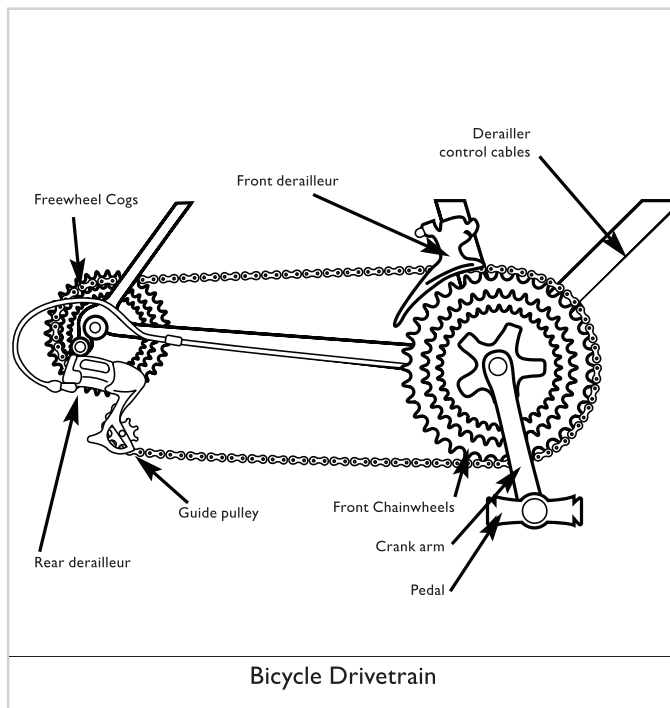
Rules For Children

To avoid accidents, teach children good riding skills with an emphasis on safety from an early age.

- Always wear a properly fitted helmet.
- Do not play on driveways or the road.
- Do not ride on busy streets.
- Do not ride at night.
- Obey all the traffic laws, especially stop signs and red lights.
- Be aware of other road vehicles behind and nearby.
- Before entering a street: Stop. Look right, left, and right again for traffic. If there's no traffic, proceed into the roadway.
- If riding downhill be extra careful. Slow down using the brakes and maintain control of the steering.

Children should be made aware of all possible riding hazards and correct riding behavior before they take to the streets.

BEFORE YOU RIDE



Gears – How To Operate

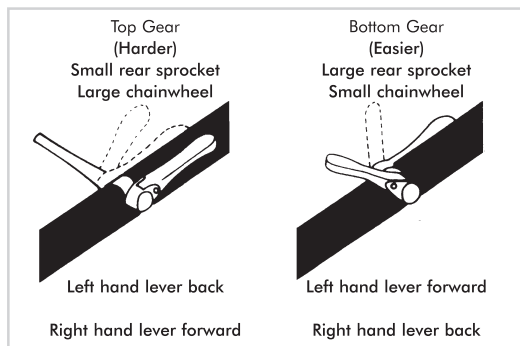
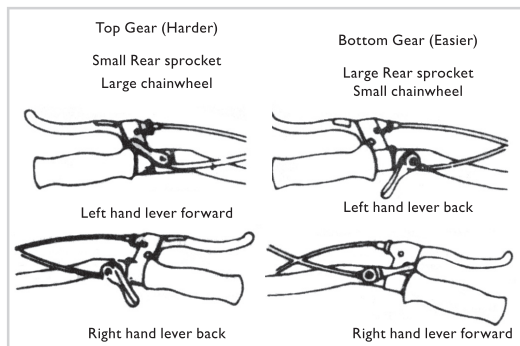
Derailleur Gears.

Most multi-speed bicycles today are equipped with what are known as derailleur gears. They operate using a system of levers and mechanisms to move the drive chain between different sizes driving gears or cogs. The purpose of gears is to let you maintain a consistent, steady pedaling pace under varying conditions. This means your riding will be less tiring without unnecessarily straining up hills to fast pedaling down hill. Bicycles come with a variety of gear configurations from 5 through to 24 speed. A 5-6 speed bicycle will have a single front chain wheel, a rear derailleur only and 5 or 6 cogs on the rear hub. Bicycles with more gears will also have a front derailleur, a front chain wheel with 2-3 cogs and up to 8 cogs on the rear hub.

Operating Principles

No matter how many gears, the operating principles are the same. The front derailleur is operated by the left shift lever and the rear derailleur by the right. To operate you must be pedaling forward. You cannot shift derailleur gear when you are stopped or when pedaling backwards. Before shifting ease up on your pedaling pressure. On approaching a hill, shift to a lower gear before your pedaling speed slows down too much for a smooth shift. When coming to a stop, shift to a lower gear first so it will be easier when you start riding again. If, after selecting a new gear position, you hear a slight rubbing noise from the front or rear gears, gently adjust the appropriate shifter until the noise goes away.

BEFORE YOU RIDE



Thumb Shifters (Top Mounted).

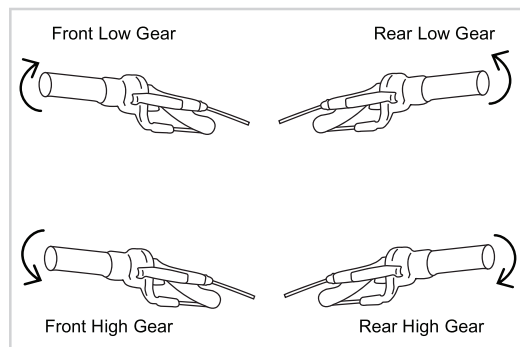
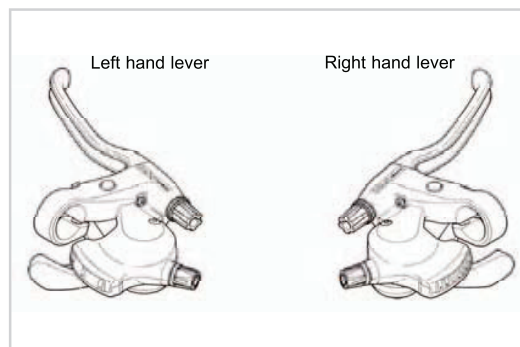
Most MTB style bicycles are equipped with shifters mounted on the top of the handlebars and operated by the thumbs. To select a lower, easier gear, shift to a bigger rear cog and a small chain wheel. Pull the left shifter back to operate the front derailleur, and push the right shifter forward to operate the rear derailleur. To select a higher, harder gear, shift to a smaller rear cog and a larger chain wheel. Push the left shifter forward for the front, and pull the right lever back for the rear.

Down Tube and Handlebar Stem Shifters

Racing style and touring model bicycles usually have the gear shifters mounted either on the handlebar stem or toward the top of the frame down tube. To select a lower gear, push the left shifter forward to engage a smaller front chainwheel, and pull the right shifter back to engage a larger rear cog.

To select a higher gear, pull the left lever back to engage a larger chain wheel, and push the right lever forward to engage a smaller rear sprocket.

BEFORE YOU RIDE



Below the Bar Shifters.

Many of today's more up market Mountain style bicycles now use a shift lever arrangement mounted on the underside of the handlebars, which uses two levers operated by the thumb and the index finger. To select a lower gear push the larger (lower), right shifter with your thumb to engage a larger rear cog. One firm push shifts the chain one cog, continuing to push will move the chain over multiple cogs. Pushing the smaller (upper) left shifter with you index finger mover the chain from a larger to a smaller chain wheel.

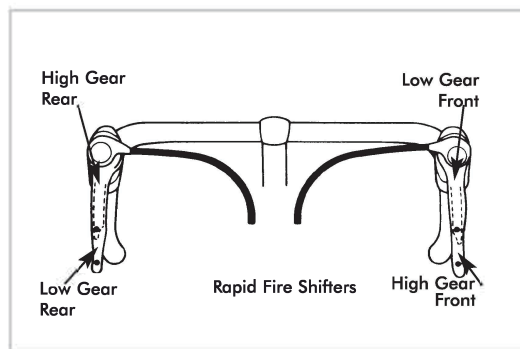
Hand Grip Shifters

Some bicycles are now being equipped with a shifting mechanism, called Grip Shift, which is built into the handlebar grips and does not make use of separate levers. The actuating mechanism is built into the inside part of the grip that the web of the thumb and index finger closes around.

To select a lower gear, twist the right shifter toward you to engage a larger rear cog. You can shift one gear at a time by moving the Grip Shift one click, or through multiple gears by continued twisting. By twisting the left shifter forward or away from you a smaller chain wheel can be selected.

To select a higher gear, twist the right shifter forward or away from you to engage a smaller rear cog. To engage a larger front chain wheel, twist the left shifter towards you. Single shifts can be achieved by twisting one click at a time and multiple shifts by larger twists.

BEFORE YOU RIDE

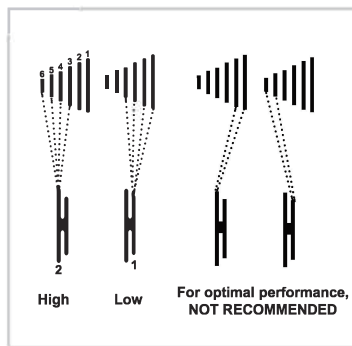
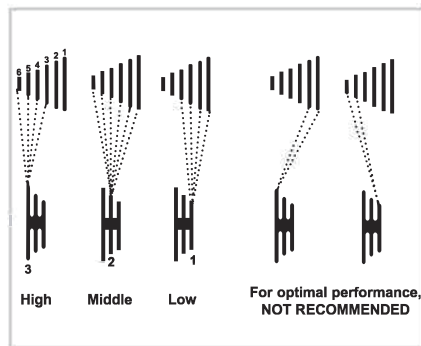


Dual Control Shifters

Some “top of the range” racing bicycles now use dual control levers. These actuate both the brakes, like a conventional brake lever, and also the gears, when moved inward toward the front wheel. This allows gear shifting without the need to take your hands off the handlebar bends or brake drop levers.

To select a lower gear move the large right lever inward to engage a larger rear cog. One firm push shifts the chain one cog, continuing to push will move the chain over multiple cogs. Pushing the small left lever lightly will move the front derailleur a small amount to eliminate noise, pushing again will engage a smaller chainwheel.

To select a higher gear, push the small right lever to engage a smaller rear cog. By pushing the large left lever inwards a larger front chainwheel will be engaged.



Never move the shifter while pedalling forward, nor pedal backwards after having moved the shifter. This could jam the chain and cause serious damage to the bike.



Never shift a mal-adjusted derailleur onto the largest or the smallest sprocket. The chain could jam, causing you to lose control and fall.

BEFORE YOU RIDE

Bicycle Care

Basic Maintenance

The following procedures will ensure your bicycle is maintained in top condition.

For painted frames, dust the surface and remove any loose dirt with a dry cloth. To clean, wipe with a damp cloth soaked in mild detergent mixture. Dry with a cloth and polish with car or furniture wax. Use soap and water to clean plastic parts and rubber tyres. Chrome plated bikes should be wiped over with a rust preventative fluid.

Store the bicycle under shelter. Avoid leaving it in the rain or exposed or corrosive materials.

Riding on the beach or in coastal areas exposes your bicycle to salt, which is very corrosive. Wash your bicycle frequently and wipe or spray all unpainted parts with an anti-rust treatment. Make sure all rims are dry so braking performance is not affected. After rain, dry your bicycle and apply anti-rust treatment.

If the hub and bottom bracket bearings of your bicycle have been submerged in water, they should be taken out and re-greased. This will prevent accelerated bearing deterioration.

If paint has become scratched or chipped to the metal, use touch up paint to prevent rust. Clean nail varnish can also be used as a preventative

measure.

Regularly clean and lubricate all moving parts, tighten components and make adjustments as required. The use of alloy components minimizes the number of places where rust can surface.

Storage

Keep your bicycle in a dry location away from the weather and the sun. Ultra violet rays may cause paint fading or cracking to the rubber and plastic parts. Before storing your bicycle for a long period of time, clean and lubricate it and wax the frame. Deflate the tyres to half pressure and hang the bicycle off the ground. Don't store near electric motors as ozone emissions may affect the rubber and paint. Don't cover with plastic, as 'sweating' will result, which may cause rusting.

SERVICING

Schedule I Lubrication

Frequency	Component	Lubrication	How to lubricate
Weekly	Chain	Chain lube or light	Brush on or squirt
	Derailleur wheels	Chain lube or light oil	Brush on or squirt
	Derailleur	Oil	Oil can
	Brake callipers	Oil	3 drops from oil can
	Brake levers	Oil	2 drops from oil can
Monthly	Shift levers	Lithium based grease	Disassemble
	Brake cable ends	Oil	1 drop from oil can
6 Monthly	Hubs	Lithium based grease	Disassemble
	Bottom bracket	Lithium based grease	Disassemble
	Pedals	Lithium based grease	Disassemble
	Freewheel	Oil	2 squirts from oil can
	Brake cables	Lithium based grease	Disassemble
	Derailleur cables	Lithium based grease	Disassemble
Yearly	Wheel bearings	Lithium based grease	Disassemble
	Headset	Lithium based grease	Disassemble
	Seat pillar	Lithium based grease	Disassemble

Note: The frequency of maintenance should increase with lots of usage or use in wet or dusty conditions.

Do not over lubricate – remove excess lubricant to prevent dirt build up.

SERVICING

Schedule 2 Service Checklist

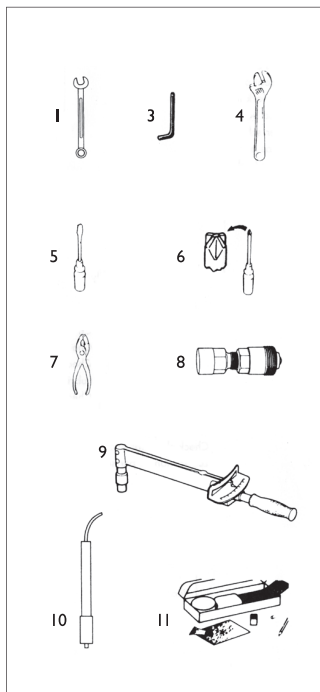
Frequency	Task	
Before every Ride	Check tyre pressure Check brake and gear operation Check wheels for loose spokes Make sure nothing is loose	
After every ride	Quick wipe down with damp cloth	
Weekly	Lubrication as per schedule I	
Monthly	Lubrication as per schedule I Check derailleur adjustment Check brake adjustment Check brake and gear cable adjustment Check tyre wear and pressure Check wheels are true and spokes tight	Check hub, head set and crank bearings for looseness Check pedals are tight Check handlebars are tight Check seat and seat post are tight and comfortably adjusted Check frame and fork for trueness Check all nuts and bolts are tight
6 Monthly	Lubrication as per schedule I Check all points as per Monthly service Check and replace brake pads if required. Check chain for excess play or wear	
Yearly	Lubrication as per schedule I	

SERVICING

Torque Requirements

When performing routine adjustments on nuts and bolts it is recommended that a torque wrench be used to prevent over tightening and damage to the threads. The following are key components that should be tightened using a torque wrench.

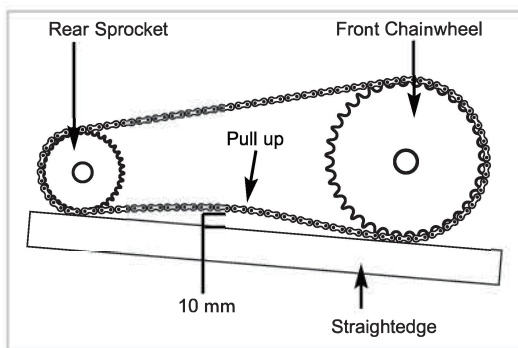
Component	Torque
Front axle nuts	22-27 Newton Metres
Rear axle nuts	24-29 Newton Metres
Handlebar clamp nut	17-19 Newton Metres 8-10 Newton Metres if Road/ Racing bikes
Head stem expander bolt	17 - 19 Newton Metres
Seat clamp nuts	18-25 Newton Metres
Seat post binder nut	15-19 Newton Metres 8-10 Newton Metres if Road/ Racing bikes
Brake cable fixing nut	7-11 Newton Metres
Brake caliper centre bolt nut	5-10 Newton Metres
Cotterless crank nut	27 Newton Metres



Tools Required

- 1 Open ended or ring spanners:
8mm, 9mm, 10mm, 12mm, 13mm,
14mm, 15mm
- 2 Open end or pedal spanner 15mm
- 3 Allen key wrenches: 4mm, 5mm, 6mm
- 4 Adjustable wrench
- 5 Standard flat head screwdriver
- 6 Standard Phillips head screwdriver
- 7 Standard slip joint pliers
- 8 Crank remover
- 9 Torque wrench with
Newton Meter gradations
- 10 Tyre pump
- 11 Tube repair kit
- 12 Tyre levers

Detailed maintenance



Chain

Inspection

The chain must be kept clean, rust free and frequently lubricated in order to extend its life as long as possible. It will require replacing if it stretches, breaks or causes inefficient gear shifting. Make sure that there are no stiff links, they must all move freely.

Lubrication

The chain should be lubricated with light oil at least every month, or after use in wet, muddy or dusty conditions. Take care to wipe off excess oil, and not get oil on the tyres or rim braking surfaces.

Adjustment and Replacement

On derailleur geared bicycles the rear derailleur automatically tensions the chain.

To adjust the chain on single speed freewheel, coaster hub brake or 3-speed hub geared bicycles:

- 1 Loosen the rear axle nuts (and coaster brake arm clip if fitted) and move the wheel forward, to loosen, or backward, to tighten, in the frame.
- 2 When correctly adjusted the chain should have approximately 12mm of vertical movement when checked in the centre between the chainwheel and rear sprocket. Centre the wheel in the frame and re-tighten the axle nuts after any adjustment. Bicycles, which have a single speed freewheel, coaster hub brake or 3-speed hub, generally use a wider type chain than derailleur-geared bicycles. These chains can be disconnected by way of a special joining link after prising off a U-shape plate on the master link with a screwdriver. To replace, feed the chain around the chainwheel and rear sprocket, fit the master link into the rollers into

Detailed maintenance

Wheels and Tyres

Wheel Inspection

It is most important that wheels are kept in top condition. Properly maintaining your bicycle's wheels will help braking performance and stability when riding. Be aware of the following potential problems:

Dirty or greasy rims

Caution: These can render your brakes ineffective. Do not clean them with only oily or greasy materials. When cleaning use a clean rag or wash with soapy water, rinse and air dry. Don't ride while they are wet. When lubricating your bicycle, don't get oil on the rim braking surfaces.

Wheels not straight

Lift each wheel off the ground and spin them to see if they are crooked or out of round. If wheels are not straight they will need to be adjusted. This is quite difficult and is best left to a specialist bicycle store.

Broken or loose spokes

Check that all spokes are tight and that none are missing or damaged.

Caution: Such damage can result in severe instability and a possible crash if not corrected.

Again, spoke repairs are best handled by a specialist.

Loose hub bearings

Lift each wheel off the ground and try to move the wheel from side to side.

Caution: If there is movement between the axle and the hub, do not ride the bicycle. Adjustment will be required.

Axle nuts

Check that all these are tight before each ride. In addition, check that the front wheels secondary retention device is properly positioned if fitted. These devices help keep the wheel in place if axle nuts become loose.

Caution: Secondary retention devices should always remain properly fitted.

Quick release (QR)

Check that these are set to the closed position and are properly tensioned before each ride.

Caution: Maintain the closed position and the correct adjustment. Failure to do so may result in serious injury.

Detailed maintenance

Tyre Inspection

Tyres must be maintained properly to ensure road holding and stability. Check the following areas:

Inflation

Ensure tyres are inflated to the pressure indicated on the tyre sidewalls. It is better to use a tyre gauge and a hand pump than a service station pump.

caution: If inflating tyres with a service station pump, take care that sudden over inflation does not cause a blow out.

Bead seating

When inflating or refitting tyres make sure that the bead is properly seated in the rim.

Tread

Check that the tread shows no signs of excessive wear or flat spots, and that there are no cuts or other damage.

Caution: Excessively worn or damaged tyres should be replaced.

Valves

Make sure valve caps are fitted and that valves are free from dirt. A slow leak caused by the entry of dirt can lead to a flat tyre, and possibly a dangerous situation.

Recommended tyre pressures

The recommended pressure moulded on the sidewall of your bicycles' tyres should match the following chart. Use this chart as a guide only. Actual pressure recommendations will vary widely depending on the manufacturer and the quality of the tyre. Tyres will require different inflation pressures depending on the type of wheel rim they are fitted to and on the kind of surface to be ridden over.

Always follow the tyre inflation pressure instructions which are written on the tyre sidewalls.

BMX (30cm/12", 40cm/16", 50cm/20" models)	240 - 344 KPa	(35-50 psi)
MTB (50cm/20", 61cm/24", 66cm/26" models)	240 - 380 KPa	(35-45 psi)
Road Touring (69cm/27", 700C models)	483 - 620 KPa	(70-90 psi)
Road Racing (700C)	755 - 862 KPa	(110-125 psi)
Hybrid / Crossbike (700C)	414 - 690 KPa	(60-100 psi)

Tyre pressure written on the sidewall may be given either as a maximum pressure or as a pressure range. How a tyre performs under different terrain or weather conditions depends largely on tyre pressure. Inflating a tyre to near its maximum recommended pressure range, give a softer ride on smooth, slick terrain such as hard packed clay, and improved grip on deep, loose surfaces such as deep, dry sand. Riding on tyres with pressure too low for your weight, surface conditions or the sidewall recommendations can increase chances of punctures by allowing the tyre to deform sufficiently to pinch the inner tube between the rim and the riding surface.



Pencil type automotive tyre gauges and service station air hose pressure settings are generally inaccurate and should not be depended on for consistent, accurate pressure. Instead, use a good quality dial gauge.

Detailed maintenance

TROUBLESHOOTING

Problem	Possible Cause	Usual Remedy
Gear shifts not working properly	Derailleur cables sticking/ stretched/ damaged. Front or rear derailleur not adjusted properly. Indexed shifting not adjusted properly	Lubricate/ tighten/ replace cables Adjust derailleur Adjust indexing
Slipping chain	Excessively worn/ chipped chainring or freewheel sprocket teeth. Chain worn/ stretched. Stiff link in chain Non-compatible chain/ chainring/ freewheel	Replace chainring, sprockets and chain Replace chain Lubricate or replace link Seek advice at a bicycle shop
Chain jumping off freewheel sprocket or chainring	Chainring out of true Chainring loose Chainring teeth bent or broken Rear or front derailleur side-to-side travel out of adjustment	Re-true if possible, or replace Tighten mounting bolts Repair or replace chainring/set Adjust derailleur travel
Constant clicking noises when pedaling	Stiff chain link Loose pedal axle/ bearings Loose bottom bracket axle/ bearings Loose bottom bracket or pedal axle Loose crankset	Lubricate chain Adjust bearings/ axle nut Adjust bottom bracket Replace bottom bracket axle or pedals Tighten crank bolts

Detailed maintenance

Problem	Possible Cause	Usual Remedy
Grinding noise when pedaling	Pedal bearings too tight Bottom bracket bearings too tight Chain fouling derailleur Derailleur jockey wheels dirty/ binding	Adjust bearings Adjust bearings Adjust chain line Clean and lubricate jockey wheels
Freewheel does not freewheel	Freewheel internal pawl pins are jammed	Lubricate. If problem persists, replace freewheel
Brakes not working effectively	Brake blocks worn down Brake blocks/rim greasy, wet or dirty. Brake cables are binding/stretched/damaged. Brake levers are binding Brakes out of adjustment	Replace brake blocks Clean blocks and rim Clean/ adjust/ replace cables Adjust brake levers Centre brakes
When applying the brakes they squeal/ squeak	Brake blocks worn down Brake block toe-in incorrect Brake blocks/rim dirty or wet Brake arms loose	Replace blocks Correct block toe-in Clean blocks and rim Tighten mounting bolts
Knocking or shuddering when applying brakes	Bulge in the rim or rim out of true Brake mounting bolts loose Brakes out of adjustment Forks loose in head tube	True wheel or take to a bike shop for repair Tighten bolts Centre brakes and/or adjust brake block toe-in Tighten headset

Detailed maintenance

Problem	Possible Cause	Usual Remedy
Wobbling wheel	Axle broken Wheel out of true Hub cones loose Headset binding Hub bearings collapsed	Replace axle True wheel Adjust hub bearings Adjust headset Replace bearings
Steering not accurate	Inner tube old or faulty Tyre thread/casing worn Tyre unsuited to rim Tyre not checked after previous puncture Tyre pressure too low Spoke protruding into rim	Replace inner tube Replace tyre Replace with correct tyre Remove sharp object embedded in tyre Correct tyre pressure File down spoke
Frequent punctures	Inner tube old or faulty Tyre thread/casing worn Tyre unsuited to rim Tyre not checked after previous puncture Tyre pressure too low Spoke protruding into rim	Replace inner tube Replace tyre Replace with correct tyre Remove sharp object embedded in tyre Correct tyre pressure File down spoke

