

THE BIKE MAINTENANCE BIBLE

*THE COMPLETE GUIDE
TO PROFESSIONAL BIKE MAINTENANCE*



The Bike Maintenance Bible

***The Complete Guide To Professional Bike
Maintenance***

Introduction (I will write the introduction)

I want to thank you and congratulate you for downloading the book, “ *The Bike Maintenance Bible. A Complete Guide To Professional Bike Maintenance* ” .

This book contains proven steps and strategies on how to make your bike stay in top shape and maintain excellent running condition.

Thanks again for downloading this book, I hope you enjoy it!

Chapter 1: Understanding Different Kinds Of Bikes

There are many reasons for why people love biking. Some of the reasons are:

- Many riders go biking just for fun.
- Other riders find biking more convenient than commuting by public transport.
- Some riders are health-conscious individuals who find biking as a good exercise.
- Some riders are athletic individuals who enjoy competitive biking.

There are many types of bikes that serve different purposes. From its humble beginning when Baron von Drais invented the Draisine—an improved celerifere that can be steered by handlebars, the look and design of the bikes have gone through an evolution that resulted to many improved and modern versions.

All bikes share the same basic components. However, their designs greatly vary according to their functions. There are different kinds of bikes that are being used today:

Commuter bikes—these are bikes that are designed for daily and regular use. They are perfect for commuting to work or school. They are tough bikes that are designed to last for a very long time. Their frames are very durable and are usually made of steel. On the down side, they are heavier than the other bikes.

Cruiser bikes—these are bikes that are designed to be used for leisure rides. They are supposed to be used for slow and comfortable rides around the neighborhood. They are also great for short distance rides.

Road bikes—these are bikes that are designed to be used for long distance rides. They are lightweight and they are usually made of carbon components. They have narrow tires for better grip on cemented roads. Intermediate and serious bikers favor these bikes because of their efficiency and speed.

Mountain bikes—these bikes are best to be used for off-road biking. They are sturdy and have good shock absorbers which make them suitable for biking on uneven terrain. The tires are wide and have deep treads for better grip on

various surfaces. Mountain bikes may be designed to have front and rear suspension; the suspension makes them efficient in covering drops and rough trails.

Chapter 2: Anatomy of the Bike

Bikers should consider finding enough time to do a routine bike check-up and maintenance. Bikers should take time to become more familiar with the parts of the bike. Knowledge of its anatomy will give any biker an edge in caring for the bike and maintaining its excellent condition.

Any biker knows that a well-maintained bike is a happy bike. A happy bike gives a happy ride; a happy ride equates to a happy biker.

The major components of the bike are:

1. The Drivetrain

This is a set of components that is responsible for powering the bike. It includes:

- Derailleur—this serves as the transmission of the bike. A bike may have two derailleurs; one may be located at the front and the other one may be located at the rear. When the gear shifts are adjusted, the mechanism will move the chain from one sprocket to another.
- Shifters—they are placed on the handlebars and are manipulated by fingers and thumb in order to choose the gear ratio and control the gearing mechanism. They are connected to the derailleur through thin cables.
- Cassette—this is the cluster of sprockets that are situated at the rear hub. It is the entire set that drives the different gears.
- Bottom bracket—this connects the crankset to the bicycle frame. It consists of an axle to which the crankset is attached and a bearing that makes the axle and cranks rotate freely.
- Crankset—this is a set of components that converts the rotational motion of the rider's legs into a power that is use to drive the chain. In turn, the rotation of the chain drives the rear wheel.
- Crank arms—these are the parts that connect the crankset and the pedals.
- Chainrings—these are considered parts of the crankset that may

consist of one or more sprockets for a chain.

2. The Frame Set

This is the major component of the bicycle to which the wheels and other parts are fitted. There are many types of frames that are being used today.

- Diamond—this is the most common bike frame. The frame resembles a diamond with two triangles put together. The front triangle which is not literary a triangle, actually consists of four tubes. These are the top tube, the down tube, the seat tube and the head tube. The triangle at the rear consists of the seat tube, two pairs of seatstays and chainstays.
- Cantilever—this is a frame that has curve seatstays. The seatstays extend past the seat post and meet the down tube. This kind of bike frame usually has curved tubes. The only straight tubes are the head tube and the seat tube.
- Step-through—this frame has the top tube connected to the middle part of the seat tube. This design allows the rider to easily mount and dismount the bike. This open frame is very popular among women riders because it is comfortable when they are wearing a skirt while riding.
- Recumbent—this frame is designed in such a way that the crankset is not set underneath the rider; it is rather set at the front of the bike.
- Cross—this frame is made up of two tubes. The first one is a backbone tube that connects the head tube to the rear hub. The second is the seat tube that connects the bottom bracket to the saddle. These two main tubes form a cross.
- Foldable—this frame is capable of being folded. It is designed for easy storage and transport.
- Tandem—this is a frame that is designed to support two or more riders.

There are others who use other variations of the frames and opt to have their bike frames customized.

3. The wheel set

This set consists of the following:

- Rim—this serves as the frame of the wheel. It is usually made of aluminum alloy and is designed to have smooth sides to accommodate the brakes.
- Hub—this is the center of the wheel; it consists of a hub shell, bearings and an axle.
- Spokes—the spokes connect the hub to the rim and serves as the support of the wheel. They maintain its shape and balance. For single rider bikes, the wheels can have as many as 28, 32 and 36 spokes. For multiple rider bikes, the spokes could be as many as 48. The spokes are threaded with specific tensions for optimum performance.
- Tires—there are tires with tubes inside and there are also tubeless tires. There are various types of tires for various purposes.
- Tire valves—this will allow the tires to be filled with air. Most tires use a universal valve so that it can be filled like any other tire, while other valves need an adaptor in order to be filled.

Other parts of the bike:

- Brakes—there are three types of brakes. First is the rim brake which grips the sides of the rim. This is the most common and the easiest brake to adjust and repair. Second is the disc brake which is attached at the hub of the wheel. When the brake is applied, a fork will squeeze the pads onto the disc. Disc brakes are good for wet conditions. Last is the internal hub brake which consists of pads that are pressed to the hub's shell.
- Headset—this is the rotating part in between the fork and the frames.
- Handlebar. This is where the gear shifter and the brake levers are attached and mounted.
- Stem—this is the part that connects the handlebar to the fork.

- Fork—this is the part in which the wheel is attached and it is connected to the head tube.
- Saddle—this is the seat of the bike. The most important thing to consider in choosing a saddle is comfort and durability.
- Seat post—this is the tube that connects the saddle to the frame and it can be adjusted to complement different heights of the riders.
- Pedals—these are flat platforms where the biker's feet rest for the length of the ride.

Chapter 3: Cleaning your Bike like a Pro

A well-maintained bike means fewer breakdowns which translate to more time riding it. This includes cleaning your bike. Dirt and grime will eventually cause premature wear on moving parts as well as promote corrosion on the rest of the bike.

1. Clean the bike

When is the right time to clean a bike? Well, it all depends on how often you use the bike, how long you ride the bike and the conditions when you are using the bike. It is ideal to keep it clean at all times although, many bikers do not clean their bikes immediately after every ride. You can set a weekly or monthly cleaning schedule depending on how the bike is used. It is good to note that if your bike is any color other than its original, then most likely it is time to give it a good wipe. Prepare the following:

- Bucket of soapy water—liquid detergent is effective in melting grease and grime. Prepare another bucket of water for rinsing. You can also use the water hose to rinse the bike, just make sure to adjust the tip so as not to have too much pressure.
- Towels—for drying the bike. You can also use cotton cloth or anything that has good absorption. Prepare small pieces of cloth to be used to clean hard-to-reach areas in the bike.
- Brushes—Prepare soft-bristled brushes with different sizes for those nooks and crannies.

Remove any accessories on the bike like lights, bell and water bottle including the bottle holders.

Soak a piece of cloth in the soapy water and gently wet the bike starting from the top down to the wheels. Pay more attention to the rims, spokes and the areas in between the spokes as these are the parts that are more prone to dirt. Wipe stubborn grease and grime as you go along. For hard-to-reach areas, dip the brush and scrub deep seated dirt.

After a complete pass, rinse lightly with clean water. Rinse off as much dirt and soap suds as possible then check for any dirt that might have been left behind. Wash it again using a clean brush or piece of cloth soaked in the

soapy water. Also check all corners and crevices and remove all the dirt.

Finally, rinse the bike again with clean water. Make sure to rinse off all the soap suds. If you are using a hose to rinse the bike, make sure the pressure is not too strong to avoid getting too much water on internal parts such as the bearing system.

Use the towel to dry the bike.

2. Clean the drivetrain

It is important to keep the drivetrain clean to make the bike continue running smoothly. A worn and dirty drivetrain will result to poor gear shifting that can make the ride annoying and unpleasant. To make the components clean and gleaming, you will need the following:

- Chain cleaner and degreaser—you can find excellent products at your nearest bike shop. The best for chain cleaning is an oil-based degreaser. Avoid using caustic cleansers because they have a tendency to destroy the protective coating that prevents corrosion on these components.
- Brushes—Prepare few stiff -bristled brushes with different sizes.
- Rags—prepare plenty of rags because you will need them to clean parts with lots of oils and greases.
- Work stand—this is optional but this will make cleaning easier by allowing you to suspend the bike, making it more convenient for you to maneuver.

Wrap a rag or any piece of clean cloth around the chains beneath the chainstays. Apply a slightly loose grip on the rag and rotate the cranks backwards. This will transfer the dirt and oils to the rag.

Apply a bike specific degreaser to the chains, chainrings and derailleurs. Let the degreaser soak for a few minutes and let it do its magic on the inner components. Use a stiff-bristled brush to remove dirt; which should come off easily. Then, wash the drivetrain with bike cleaner and rinse off.

Brush off any dirt in the sprocket. You may have to remove the wheel at the rear to clean to sprocket efficiently. Apply degreaser to the cassette sprocket. Use a long-bristled brush to reach and clean hard-to-reach areas. Wipe off

dirt in between the sprockets with a clean piece of cloth. Use a bike cleaner to wash the cassette and rinse off.

Wash away any oil and dirt residue in the components then use a cotton cloth to wipe them dry.

Chapter 4: Lubricating the Bike Properly

1. Lubricate the drivetrain

Good lubrication is essential to the drivetrain. This will reduce the wear of the components and will increase the flexibility of the chain links. This will also improve the shifting performance for a more comfortable ride. Be careful though not to put too much lubricant because it will collect dirt that will increase the wear of the drivetrain. On the other hand, too little lubricant will make the links stiff and may produce annoying squeaky sounds.

You can set up a regular schedule to lubricate it or just check the condition of the components from time to time and determine if it is already necessary to lubricate it. Take a look at the components, if you see that they are somewhat dry then it is time to lubricate them. If you hear strange squeaks when you ride the bike, it is already a sign that you need to lubricate the drivetrain.

To lubricate the drivetrain you will need the following:

- Chain lubricant—Use lubricants that are specific for drivetrains. There are three different types of drivetrain lubricants to suit various riding conditions. First is the dry lubricant which is designed to repel dirt in dry and dusty conditions. The second is the wet lubricant which is suitable to be used in wet and muddy conditions. Last is the all-around lubricant which is use for all weather conditions. A bottle with a nozzle will be handy for applying lubricant on tight areas.
- Rags—prepare clean and lint-free rags for wiping off any excess lube.

Make sure that the drivetrain is thoroughly cleaned and completely dried before applying the lubricant. Apply lubricant to each chain while rotating the chainset; this will make sure all chains are covered. Continue rotating backwards several times to let the lubricant penetrate the inner parts of the chain.

Apply also few drops of lubricant on the derailleurs' pivots; make few additional rotations to move the chain around and evenly coat the rest of the drivetrain.

Check also the brake's levers and cables for any signs of wear. Apply lubricant on them to keep them functioning properly as well.

Wipe any excess lubricant from the chains, chainrings and jockey wheels. Excess oil will only attract more dirt that will damage the drivetrain instead of protecting it from the elements.

2. Lubricate other parts

In general, it is wise to lubricate every pivot and moving part of the bike especially the parts where metals are frequently in contact with one another.

Pay attention to the pedals, headset and the area where the fork meets the headtube. These areas should be properly lubricated to avoid stiffness in the movement and prevent any squeaking sounds.

Just keep in mind that there is a specific lubricant for each part.

Bike grease, which is thicker in consistency, is used for bearing systems including the crankset, hubs and headset. They are also best to be used on large-thread bolts. On the other hand, bike oil, which is thinner than grease, is best for thin-thread bolts and in maintaining the drivetrain, the brake and the derailleur system.

Chapter 5: Check Other Components

1. Check the wheels. Turn the bike upside down. To protect the handlebars and the saddle, you can lay a towel or any thick cloth on the ground. You can also use a repair stand. It would be much better if you have a stand so you can easily adjust the bike's position. Hanging the bike in an upright position is highly recommended as all parts will be in their normal position.

Make sure that the hubs on the wheels are properly greased and check for any signs of damage. Spin each wheel and check if it is moving freely and if it is straight and true. In adjusting or "truing" the wheel, the left and right centering of the rim must be aligned. If it needs realigning, adjust it as soon as possible to avoid any run-out issues.

Check the rim. Sideway bash on the rim will mean more stress on the spokes and other parts which will eventually lead to a bigger damage to the wheel. For minor dents, you can use a wrench or pliers to pull out and adjust the affected area. Check if there are any cracks on the spoke holes.

Every spoke should feel tight. Rotate the wheel and feel the spokes for any loose ones and tighten immediately. The tension of the spoke should be even as much as possible. Equal tension on the spokes will produce even sounds when the spokes are plucked. You can also use tensionometer to measure the exact tension. If you see any kinked or broken spoke, replace it as soon as possible.

Make sure the tires are inflated correctly. The pressure should be just right; the correct pressure is indicated at the side of the tire. Make necessary adjustment based on the rider's weight. If you see any major damage, replace the wheel to ensure safety on your next ride.

2. Check the brakes. These are very important in order to control your speed on the road. Rim brakes should have deep grooves on the pads. To check the function of the rim brake, stand in front of the bike and pull the bike towards you while applying the front brake. The front wheel should remain steady on the ground. Otherwise, the brake needs adjustment. Do the same process on the rear brakes.

For disc brakes, it should clamp the rotor properly. Check the cables from the top tube to the brake calipers. If there is any sign of wear, replace it

immediately.

Hub brakes are relatively less likely wear out quickly. Since they are located inside the hubs, they are more protected from the elements.

3. Check if the saddle and the seat tube are tightened securely. Apply also a generous amount of lubricant on the tube to avoid stiffness and seat adjustment problems.

4. Check every bolts and nuts and check if there is a need to tighten them. Loose parts will render the bike prone to accidents.

5. When you are done with the scrutinizing every part, clean all the accessories that you have removed. After cleaning and checking their function, mount them back to the bike and secure properly.

Chapter 6: Handy Tools for Maintenance

In your pursuit of excellent bike maintenance, it is very important to have the necessary tools and equipment to do the job. The following tools are highly recommended to make the job more efficient.

- Bike stand—although there are many ways to position your bike while doing your repair and maintenance, nothing compares to the convenience that the bike stand can give you.
- Cassette lockring tool—this is used to loosen the cassette lockring from the freehub.
- Chain whip—this is used to loosen the lockring from the wheel.
- Floor pump—this is handy during maintenance. Choose a pump that has a gauge so you will know how much air is in your tire already.
- Hex and Allen wrenches—these are very useful tools in loosening and tightening many bicycle components. Try to equip your toolkit with different sizes for convenience. There are foldable designs that are great for compact storage.
- Multitool—this tool is handy for a variety of uses in a neat, compact package. It comes with additional features like a can opener and a knife.
- Screwdrivers—Choose screwdrivers with different tips. The most common are the Philips and the flatheads.
- Spoke wrench—this is very handy in tightening and loosening the spokes.
- Hammer—some maintenance need a little bit of hammering, so go get a hammer with both a metal and a rubber hammerhead.
- Utility knife and scissor—these two are very handy tools; you'll never know when you might need them.

Bike cleaning and maintenance is not a very glamorous job. But every biker knows by heart that caring for the bike is part of experiencing the joy that biking has to offer. Start by committing some time to care for your bike. In

no time you will find that the job will become much easier and you may finish the whole process in an hour or even less.

Conclusion (I will write the conclusion)

Thank you again for downloading this book!

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Thank you and good luck!