

*****IMPORTANT NOTE*****

Operating this motorized bicycle or bicycle engine kit involves some risk of serious bodily injury . Buyer accepts responsibility for any and all vehicle operation that may lead to personal injury, economic loss, social distress, other losses, costs and damages. Seller is not responsible for injuries and/or damages resulting from operating or use of any motorized racing bicycle engine parts or accessories. Not all motorized bicycles are permitted for road use. Check with your local Vehicle Insurance services for requirements. We do not offer any guarantee for legal road use. All of the ZoomBicycles gasoline operated products are NOT compliant with Environmental Protection Agency (E.P.A.) or California Air Resources Board (C.A.R.B) for the use on/off Public roads. Upon purchase, the purchaser agrees to use products for racing (closed-course competition) only and NOT for on/off public roads.

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Installation Instructions

Congratulations on purchasing the Zoombicycles racing bicycle engine kit package. To provide you the best possible experience, we offer these instructions to guide your way to motorized bicycle enjoyment. Please read through the manual before beginning installation.

WARNING: All persons by purchasing a motorized vehicle, engine kit, or individual parts from DISTRIBUTORS LTD, or using these instructions which are provided as suggestions only, agree to the following disclaimer: Operating this motorized bicycle or bicycle engine kit, or use of individual parts, involves the risk of serious bodily injury or even death. The buyer and user accept total responsibility for any and all vehicle operation or use that may lead to personal injury, economic loss, social distress, other losses, costs and damages. Seller is not responsible for injuries and or damages of any kind resulting from operating this motorized bicycle, engine kit, or use of individual parts or instructions. Always have a qualified mechanic inspect your vehicle before operating your vehicle.

Section 1: Installing Sprocket on a Freewheel

STEP 1.

Take an inventory of the contents of your kit.

There is a list inside the box of the entire kit (The engine kit you ordered will determine the contents).

Note: Loctite threadlocker is recommended on all bolts. It keeps them from vibrating loose during operation of the motor.



STEP 2.

PowerKing kits come with a 44 tooth sprocket.

44 Tooth Sprocket :

Gather the nine bolts, nine flat washers, nine locking washers, nine nuts, the two rubber joint binders, and the two metal backing plates.

Note: Sprockets arrive unpainted. You may paint yours to match your frame.

Also available from PowerKing: the 40 tooth Speed Sprocket and 48 tooth Torque Sprocket.



STEP 3.

Remove the rear wheel from your bike.

Note: *This is a freewheel installation.*

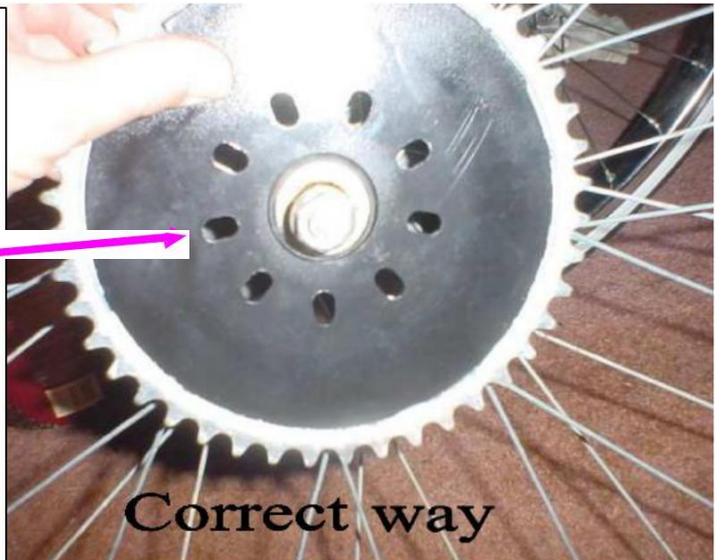


STEP 4.

Place the sprocket on the wheel hub to check for fit.

Notice that the holes should fall between the spokes. The nine hole sprocket works very well with the 36 spoke wheel.

On a 28 Spoke wheel it may be necessary to file the holes slightly to keep the spokes from binding with the bolts.



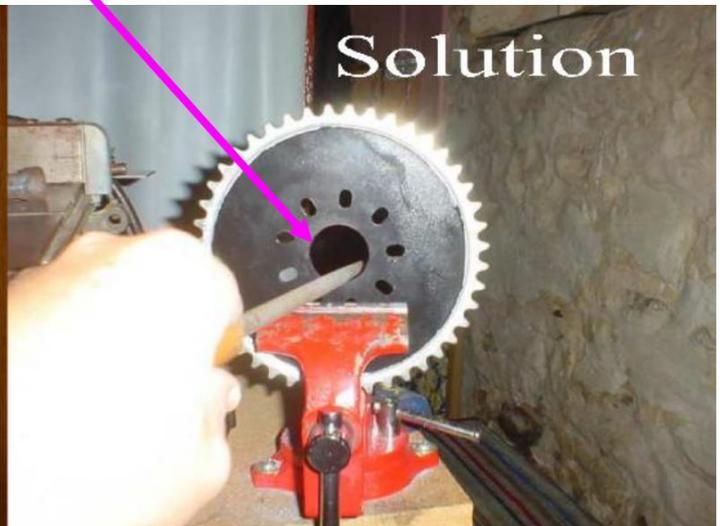
STEP 5.

Notice the hump on the bearing housing.

The sprocket should slide over this and rest against the spokes

Make a 1/16 inch line all the way around the center hole and then file the line away. This will give you an almost perfect circle.

Repeat if necessary. Take your time and your sprocket will be a perfect fit.



STEP 6.

Take both joint binders and with scissors, make a cut centered between two of the holes so they can be placed inside the spokes and around the hub.

DO NOT cut in half.

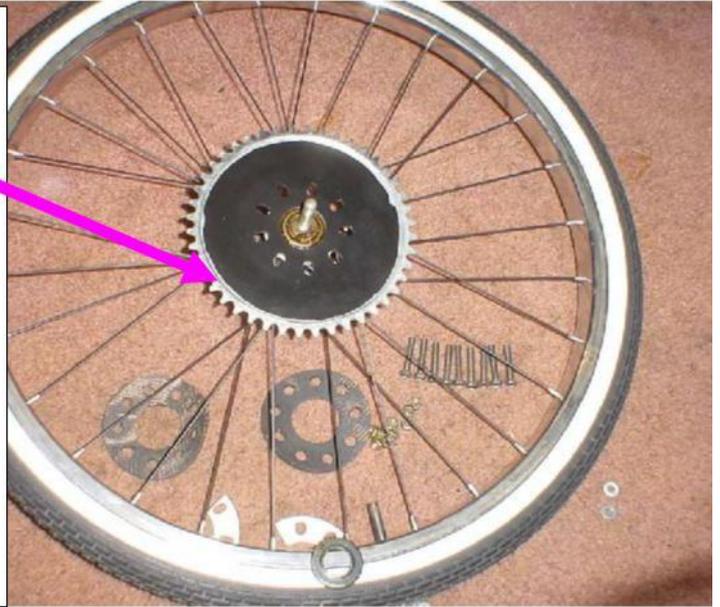
Cut only one side of both binders.



Special Note:

The 44 tooth sprocket may have a bevel and many people are not sure which side faces the wheel. The answer is either. You want to be sure you have chain clearance with the tire. Close to the tire is good - rubbing the tire is bad. Choose the way that allows you to line up the chain the best.

Note: *On the OCC Schwinn Chopper, it will always be with the teeth closer to the wheel.*



STEP 7.

Slide both joint binders through the spokes and around the wheel hub axle.



STEP 8.

To check for center, take a piece of string and tie a loop in one end.

Slip the loop over the axle and pull towards the sprocket teeth.

With a pencil, make a mark on the string at the end of the tooth.

Rotating the string around the sprocket, the mark should be at the same place on each tooth. If it is, you have a centered sprocket.



STEP 9.

Some kit builders have used this **optional** method of setting their sprocket:

If you choose to use the 5 minute epoxy glue to hold your wheel in center, you must have a level wheel stand (bucket) and you need to work quickly.

After mixing the epoxy on a piece of cardboard, spread some on the wheel hub around the bearing housing. Then place the sprocket onto the wheel hub. Move to next step **QUICKLY**.



STEP 10.

Make sure the holes fall between the spokes.

Check that the sprocket is centered using your string. Once the sprocket is centered, leave it until the epoxy is set.

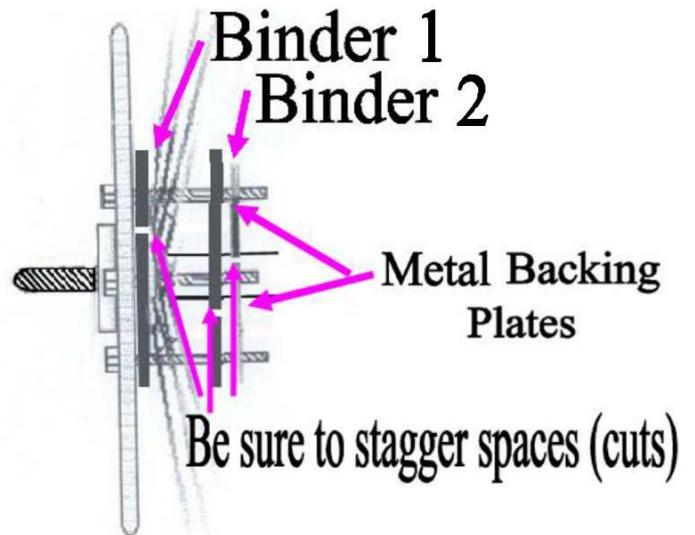


STEP 11.

Place a flat washer onto a bolt and insert the bolt through the sprocket, joint binder or binders, and backing plate. Then, place a locking washer on the bolt and then a nut. Finger-tighten, then repeat until all the bolts are in place.

Note: Only finger-tighten the bolts because the sprocket must be centered on the wheel.

Note: It's not necessary but you can use larger flat washers and locking washers for the sprocket installation.



STEP 12.

Place the wheel in the frame of your bike and spin check for center and side to side wobble. Tighten or loosen the bolts $1/8^{\text{th}}$ turn at a time until any wobble is minimized or gone.

Note: Do the final tightening of the bolts when the wheel is on the bike frame. It's easy to check for wobble and alignment often by giving the wheel a spin.

Once all the bolts are tight it's time to install the motor.





Flip the bike over and let's install a motor.

Section 2: Installing Sprocket on Coaster Brake Hub

STEP 1.

PowerKing kits come with a 44 tooth sprocket.

44 Tooth Sprocket :

Gather the nine bolts, nine flat washers, nine locking washers, nine nuts, the two rubber joint binders, and the two metal backing plates.

Note: *Sprockets arrive unpainted. You may paint yours to match your frame.*

Also available from PowerKing: the 40 tooth Speed Sprocket and 48 tooth Torque Sprocket.



STEP 1 a.

36 or 40 Tooth Speed Sprocket :

If you're using the 36 or 40 tooth speed sprocket, gather the five bolts, five flat washers, five locking washers, five nuts, the two rubber joint binders, and the two metal backing plates.

Note: *The speed sprocket will soon only be available in a 9 hole design for easier installation.*



STEP 2.

Remove the rear wheel from your bike.

Note: *When installing on a coaster brake hub, remove the brake arm.*

Brake arm



STEP 3.

When installing on a coaster break hub, it may be necessary to remove the dust cover or grind down the lip of the dust cover. Or, use a sharpie marker to make a small line (about 1/16 of an inch) evenly around the edge of the center hole of the sprocket. Then file along the edge of the sprocket until the line disappears. This will allow you to fit over the dust cover without rubbing, and will help keep your wheel bearings rolling smoothly.

Repeat this step if necessary.



Bearing Housing



Dust Cover



STEP 4.

Take *one* joint binder and make a cut centered between two of the holes so it can be placed inside the spokes and around the hub.



Note: A joint binder may be needed on both sides of the sprocket for chain alignment on some non-coaster brake bikes.

STEP 5.

When installing on a free wheel, place the second wheel binder on the wheel outside the spokes. Position the holes between the spokes so the bolts clear the spokes. Place the backing plates on the inside, so the cut you made on the inner joint binder is between two of the inner backing plate holes. This is to ensure that the binder can't separate during operation.

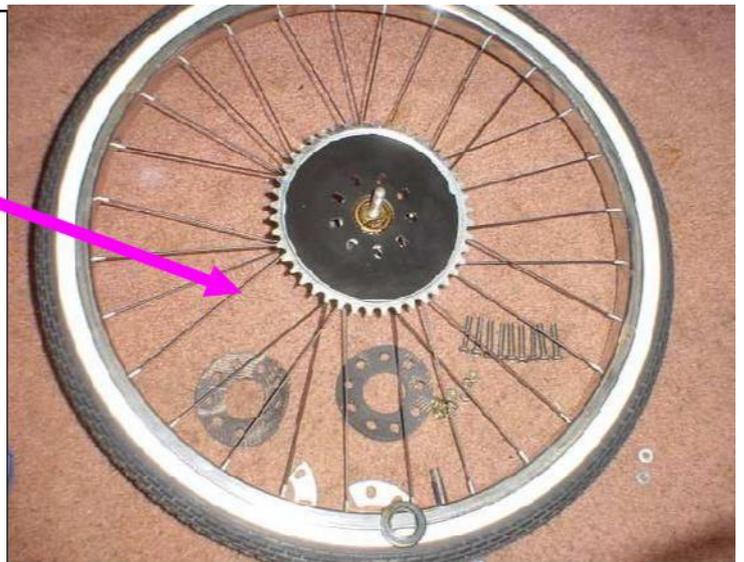
Note: When installing on a coaster brake hub, do not install the outer joint binder. This is necessary for the sprocket to sit flush with the bearing housing.



Special Note:

The 44 tooth sprocket may have a bevel and many people aren't sure which side faces the wheel. The answer is either. You want to be sure you have chain clearance with the tire. Close to the tire is good - rubbing the tire is bad. Choose the way that allows you to line up the chain the best.

Note: On the OCC Schwinn Chopper, it will always be with the teeth closer to the wheel.



STEP 6.

Place a flat washer onto a bolt, and insert the bolt through the sprocket, joint binder or binders, and backing plate. Then place a locking washer on the bolt and then a nut. Finger-tighten, then repeat until all bolts are in place.

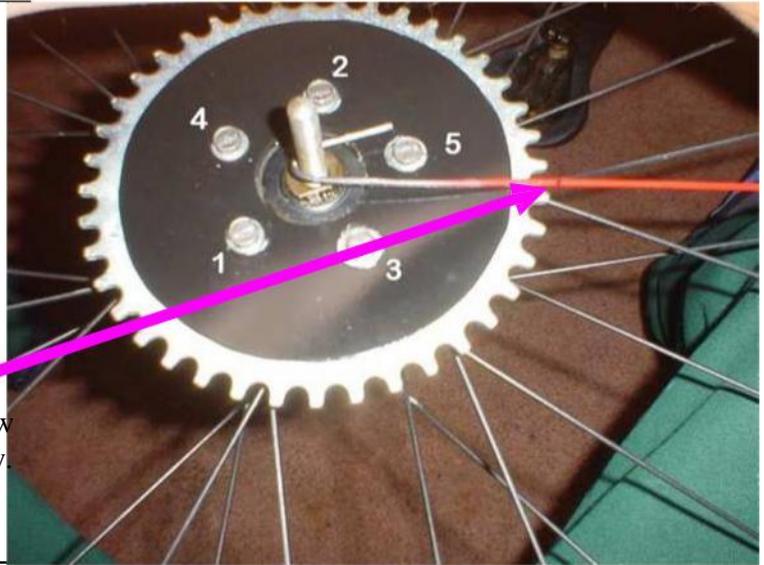
Note: Only finger-tighten the bolts because the sprocket must be centered on the wheel.



STEP 7.

Using a piece of wire or a string with a loop placed over the axle, check the distance of each tooth from the center of the wheel. Adjust the sprocket position until centered. Then with a sharpie marker, mark the wire or string at the edge of one of the teeth. Check the position again to ensure you have the sprocket centered.

Begin tightening the bolts in a star pattern, a few turns at a time, to ensure the sprocket sits evenly. Remember to check for center often.



STEP 8.

Place the wheel in the frame of your bike and spin check for center and side to side wobble. Tighten or loosen the bolts $1/8^{\text{th}}$ turn at a time until the wobble is minimized or gone. If you are installing on a free wheel you are done. If you are using a coaster brake, continue to **step 9**.

Note: Spin the wheel often to check for center and wobble.



STEP 9.

Place the brake arm in position and check for bolt clearance. It may be necessary to bend the brake arm to clear the bolts. Using your sharpie, mark the place you need to bend the arm to clear the bolts.



STEP 10.

Place the brake arm in a vise (heat will make bending easier and more precise). A hammer and brute force will work in this application as well.



STEP 11.

After the bend is complete, install the brake arm and spin the wheel to check for clearance. If the arm clears the bolts, attach the wheel to the bike and get ready to install your motor.



STEP 12.

Now that you have installed the rear wheel and checked to see that it spins true, it's time to move on to the motor.

Note: There are many ways to install your motor and people are coming up with new mounting ideas every day. We will be touching on a few different ones.



Section 3: Installing Motor

STEP 13.

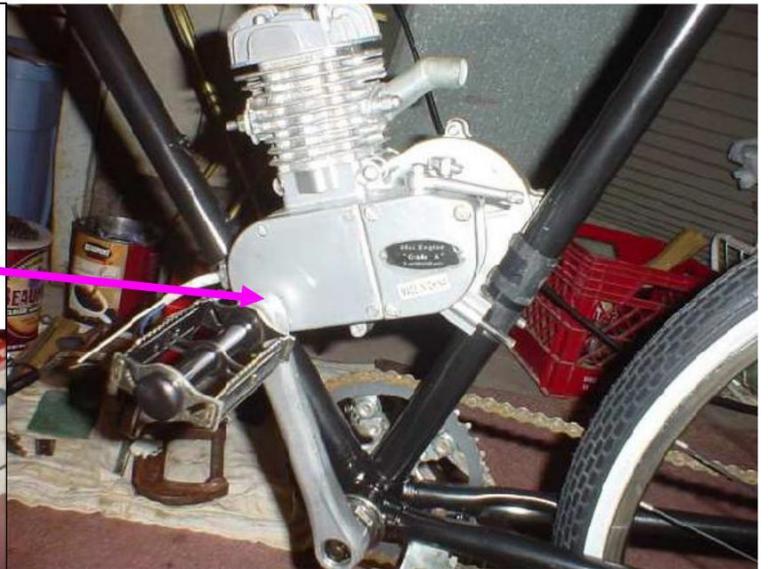
The easiest and most common way to install the motor is to fit it to the frame. On this V-frame, it's easy to slide the motor down until the front and rear mount fit snugly between the bars.

Note: Notice the small pieces of cut inner tube wrapped around the bar to protect the paint. This is always a good idea. You can use a small piece of black electrical tape to hold the piece of inner tube together.



STEP 14.

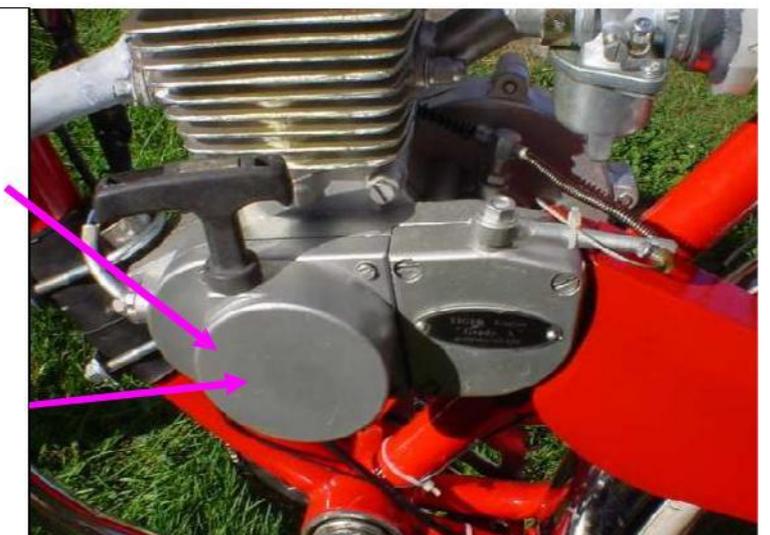
It's important to check pedal clearance on each side of the motor before tightening the mounts in place.



STEP 15.

If you're thinking of installing the pull-start kit on your motor in the future, then this is a good time to prepare by making a simple adjustment in the height (pedal clearance) of the motor. This will save you a lot of time and "head scratching" later.

Note: We'll cover the *pull-start kit* installation later.



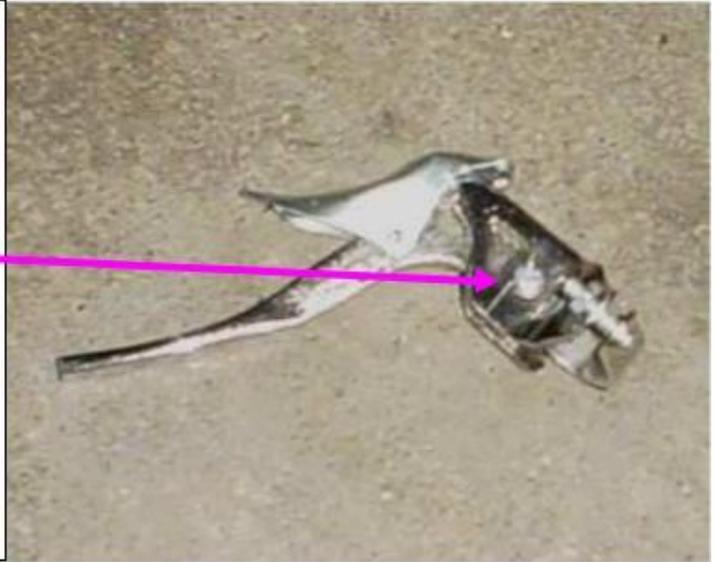
Section 4: Installing the Clutch Lever and Clutch Cable

STEP 16.

Attach the clutch lever to the left side of the Handle bars.

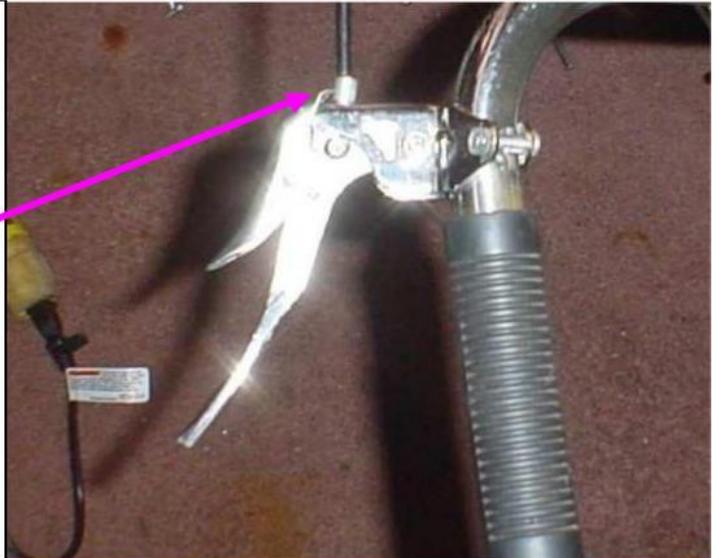
Note: By tightening the bolt that holds the handle to the bracket, you can remove some of the wobble from the handle.

This handle can be replaced with most brake levers. However, you will be losing the locking portion of the lever. It's important to lock the clutch in the "engaged" position when using front and rear hand brakes.



STEP 17 a.

After the lever is attached, reinstall the clutch cable and make sure the locking lever clears the cable when in the unlocked position. If necessary, file away a small amount of metal from the tip of the locking lever.



STEP 18.

Remove the brass tip and the smaller spring from the clutch cable.

Note: Leave the larger spring on the cable. This protects the outer cable cover from the heat of the engine.

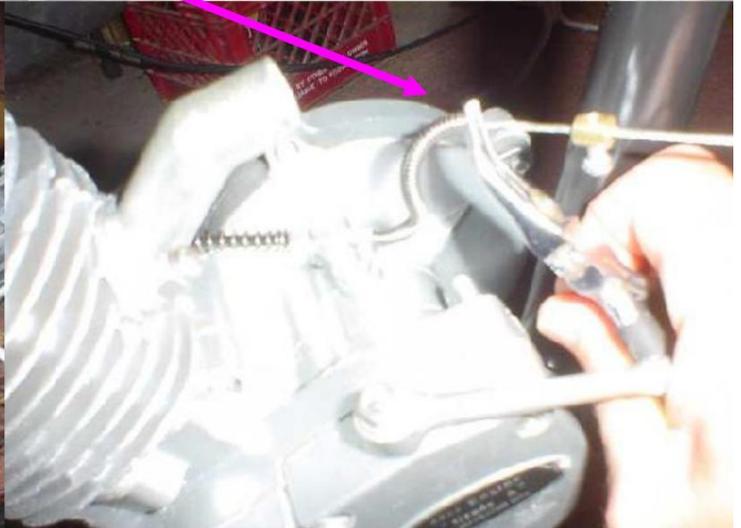
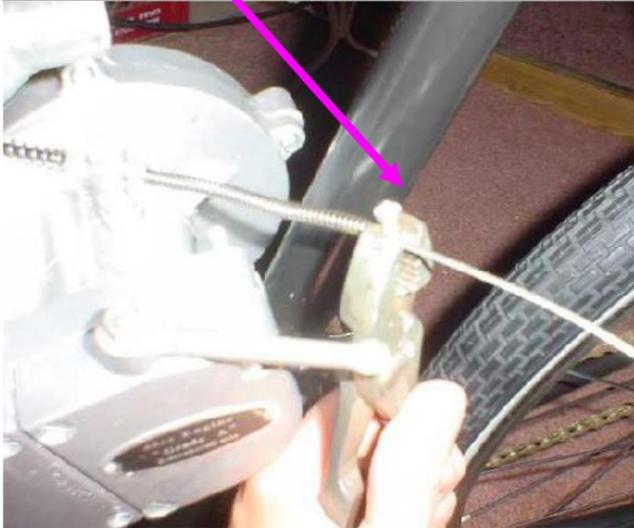
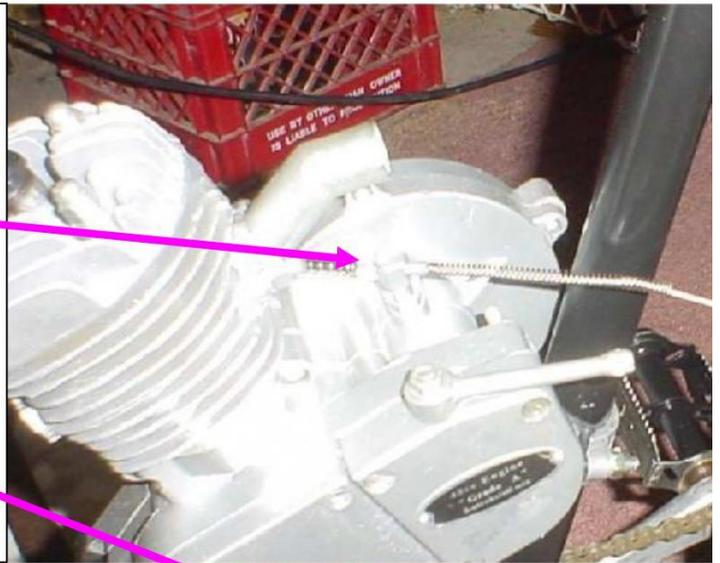


STEP 19.

Thread the cable through the clutch adjustment on the motor housing.

Slide the smaller spring onto the cable end, all the way to the adjuster. Then replace the brass tip onto the cable at the end of the spring.

Pull back the spring and hold it.



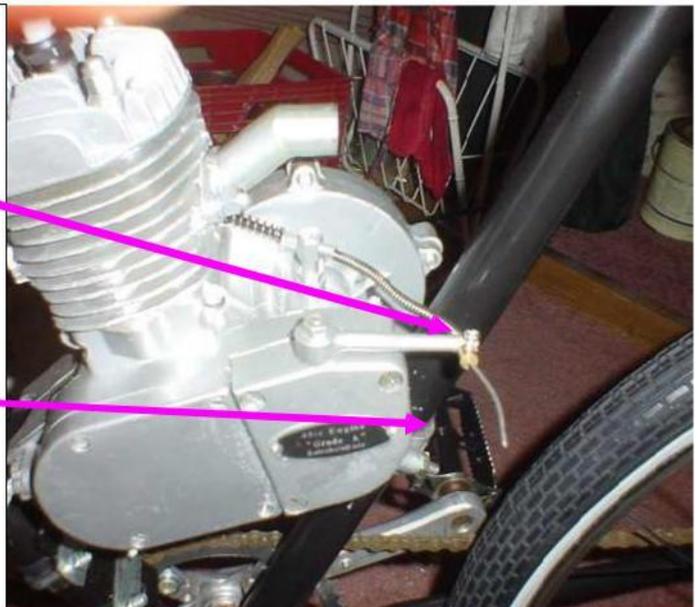
STEP 20.

Slide the cable through the slot in the end of the clutch lever on the engine.

Pull the clutch handle to engage the clutch. The handle should automatically lock into place.

Reach into the space below the clutch lever and spin the small chain sprocket with your finger.

If it doesn't spin, it may be stuck after sitting in the box for a time. Using gentle force, apply back and forth pressure until the sprocket moves.



Section 5: Installing the Chain

STEP 21.

Remove the chain from its box and locate the master link.

Remove the master link from the chain and set it aside until the chain is the proper length.



STEP 22.

With the clutch engaged, feed the chain over the small sprocket under the clutch lever on the engine. Use a pliers or flat screw driver to pull the chain through if necessary.



STEP 23.

Loop the chain over the rear sprocket and pull both ends together. The chain will have to be shortened.

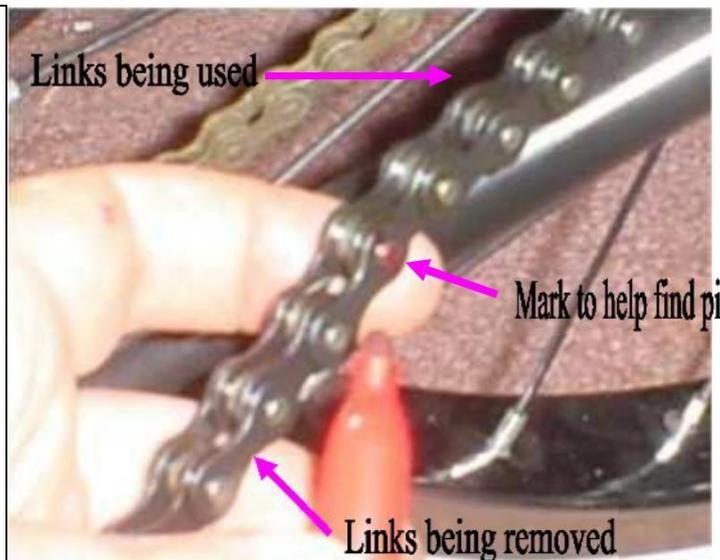
Important: Remember, you are replacing the master link so you must remove the proper pin (on the link remove the pin from the closest end to the portion of the chain you are going to use).

Mark the pin being removed with a sharpie marker, and count the links being removed to make it easier to locate after the chain is removed from the bike.



STEP 24.

Note: The chain should be as tight as possible, but it may not be possible to get it perfect. The chain tension adjuster will pick up the slack in the following steps after the chain has been shortened.



STEP 25.

Using a punch, remove the selected pin and links from the chain.

Reinstall the chain onto the bike. Replace the master link back into the chain.



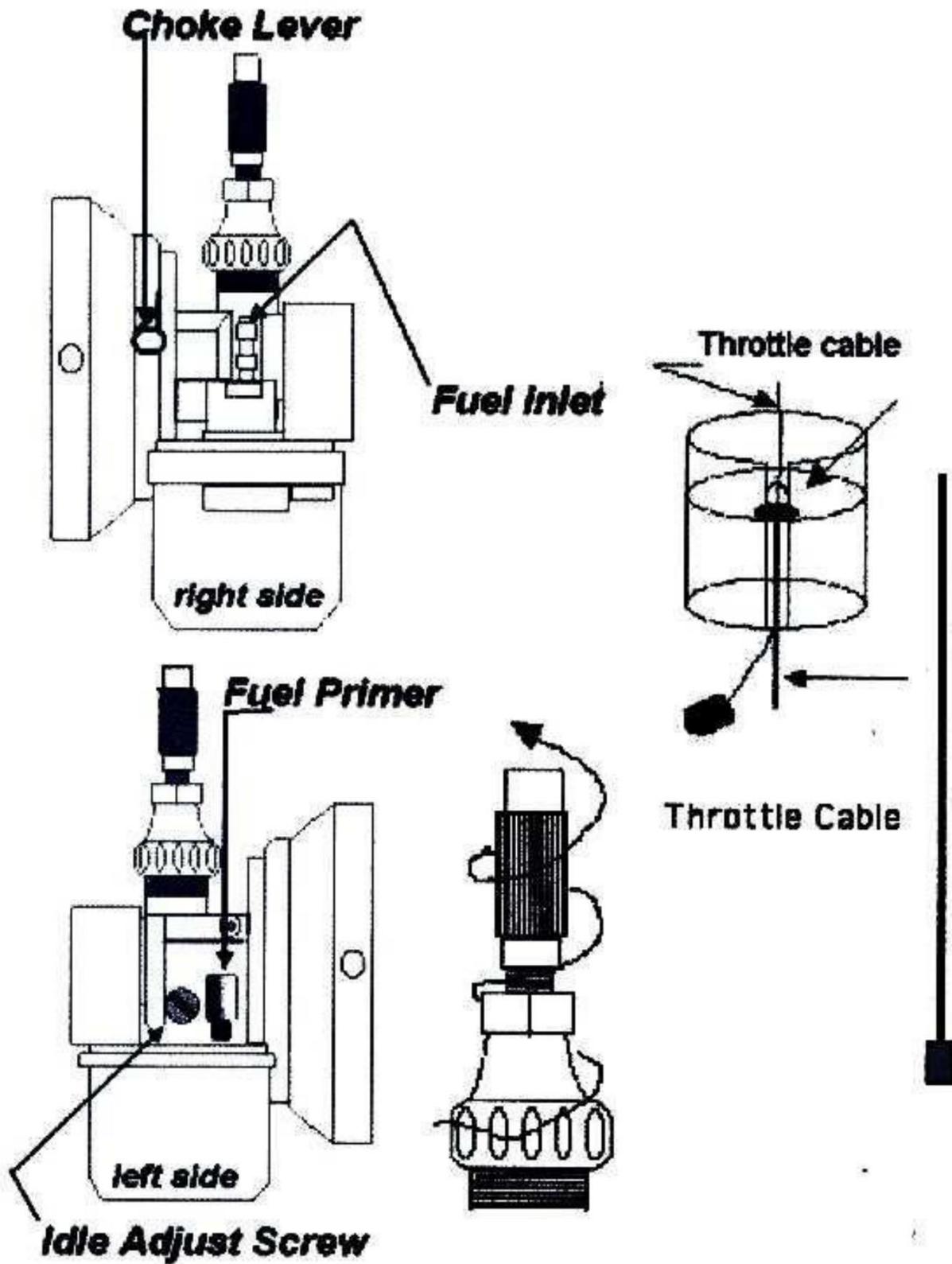
STEP 26.

Install the chain tensioner and adjust the slide wheel to the desired chain tension.

Note: The tensioner doesn't come painted black. Also, adding a little grease to the wheel shaft will help it spin easily. Don't forget the piece of inner tube rubber on the frame.



Section 6: Installing the Carburetor and Throttle



Carburetor Diagram

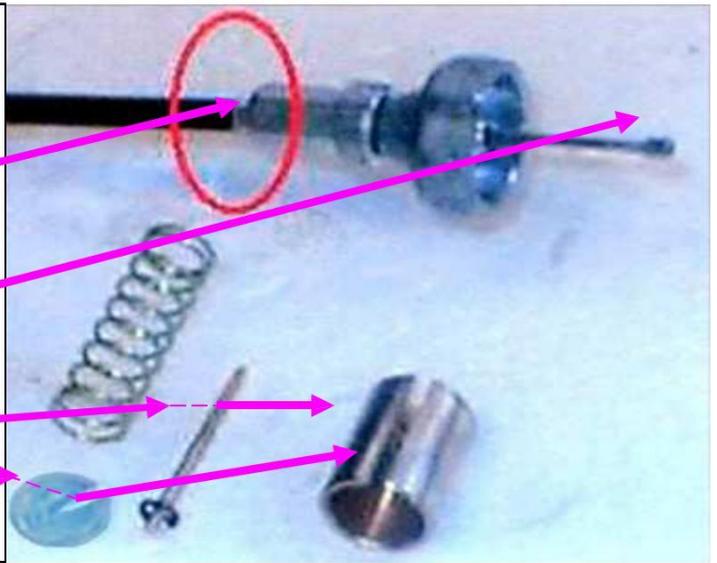
STEP 27.

Remove the throttle assembly cap from the carburetor and slide out the components.

Slide the cable through the hole in the throttle assembly cap.

Note: If the tip won't fit, take a small file and file the rough edge of the tip left from molding it to the cable.

Slide the pin back into the brass slide. Then slide the split washer into the slide, making sure to line up the two splits.



STEP 28.

Slide the spring over the end of the cable.

Note: The cable will slide out past the end of the spring, because the throttle handle is not connected yet.



STEP 29.

Slide the tip of the cable into the notch on the bottom of the brass slide. The cable should fit into the split of the slide as well as the split of the washer. Next, slip the spring over the lip of the brass slide and into the hole. This will hold down the split washer.

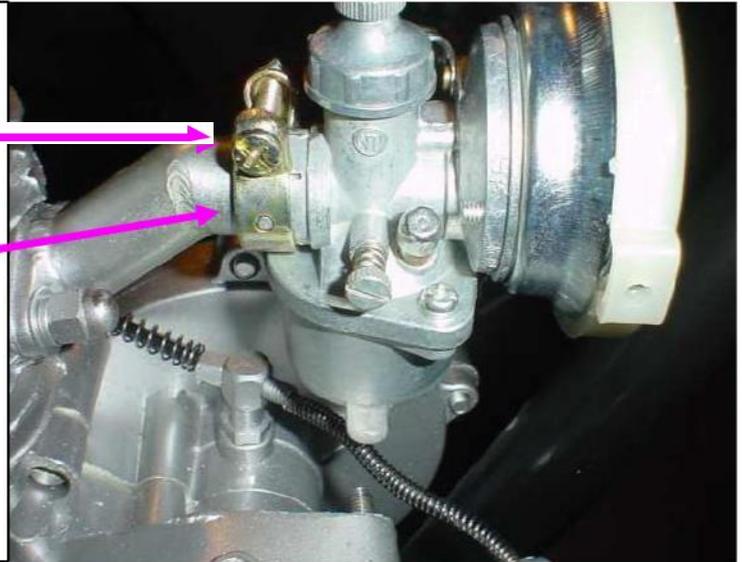


STEP 30.

Loosen the bolt on the top of the retaining strap.

Wiggle the carburetor onto the intake tube, being sure the carburetor is seated all the way on.

Tighten the bolt on the retaining strap.



STEP 31.

Slide the throttle assembly into the carburetor, taking note to place the split so it slides over the notch in the side wall of the carburetor.

This is the only way it will fit into the carburetor.

Slide it all the way down, then screw the cap back into place.



STEP 32.

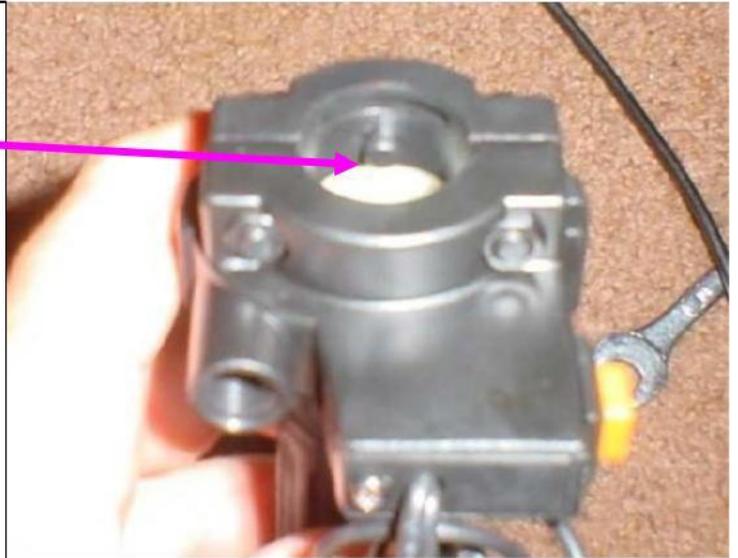
Twist grip throttle handle.

The orange or yellow button is the kill switch.



STEP 33.

The nipple inside the top of the handle keeps the handle from moving on the handle bar.



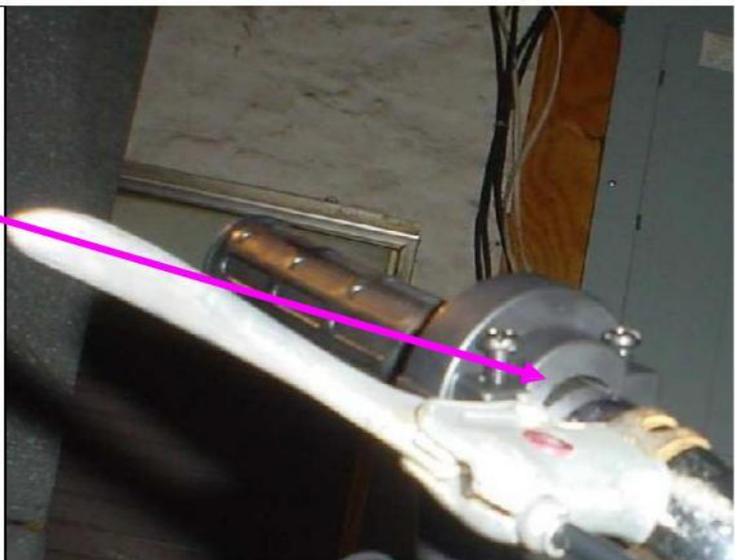
STEP 34.

Remove the two bolts from the top of the twist throttle and slide it over the handle bar.



STEP 35.

Mark the center position between the two bolts of the twist throttle with a sharpie marker.



STEP 36.

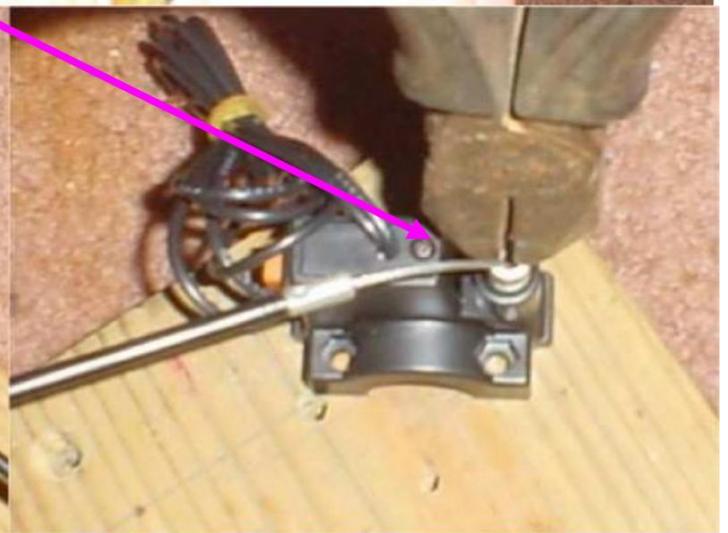
Measure out 3/8 of an inch from your mark and drill a 1/4 inch hole in the handle.



STEP 37.

Slide the end of the throttle cable into the large hole on the bottom half of the front twist grip piece.

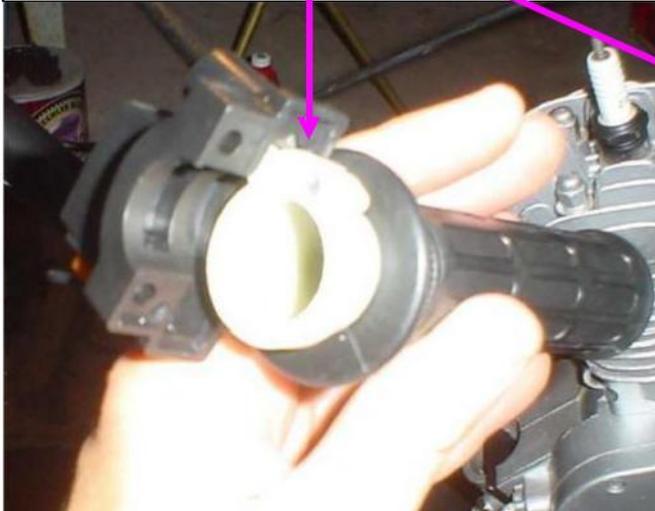
Place on a hard surface and with gentle pressure, push the large cable guide into the hole. Be sure to push it all the way into the hole.



STEP 38.

A thin coat of grease on the handle bar under the twist throttle will help with a smooth twist.

Place the tip of the throttle cable into the round cut out in the twist grip and allow the cable to follow the groove. A thin coat of grease on the white plastic will help give a smooth twist. Put the top piece on the twist grip and slide over handle bar until the nipple fits into the ¼ inch hole. Tighten the bolts and twist several times to test for smoothness.



STEP 39.

The two wires coming from the twist grip are for the orange kill button. The shorter wire (sometimes red and yellow) is to be connected in between both black wires. Slide the exposed tip of the wire between the metal handle bar and the plastic twist grip (this will ground the switch).

The longer wire (often green) should follow the throttle cable to the bike frame, where it will then be connected to the blue wire coming from the motor to the CDI.

Note: Pushing the orange (yellow) button while the motor is running will shut off the motor.



Section 7: Installing Ignition Box and Gas Tank

STEP 40.

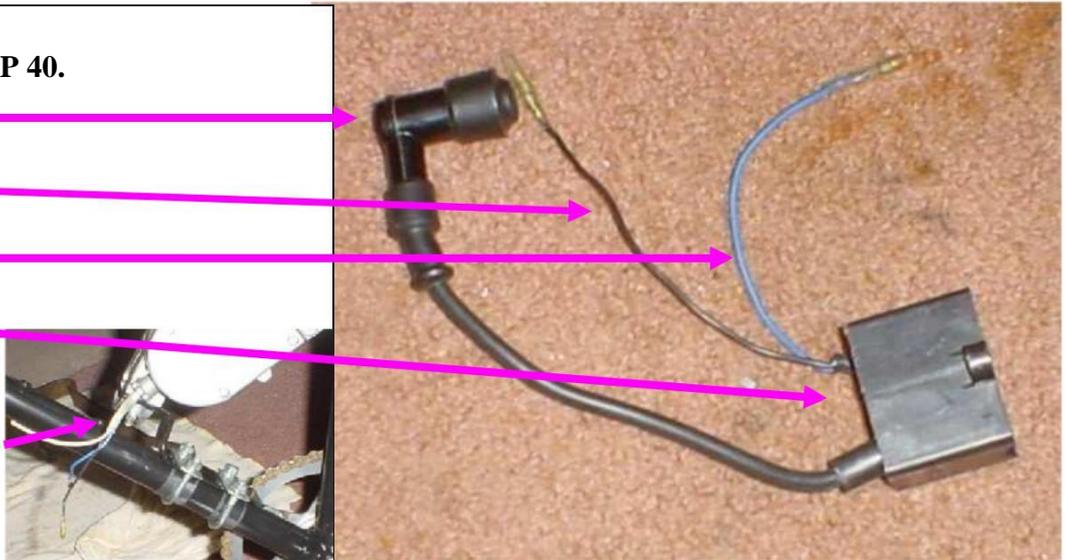
The spark Plug Cap. 

The black wire. 

The blue wire. 

The ignition box. 

The wires coming from the motor (Black, blue, and white) 

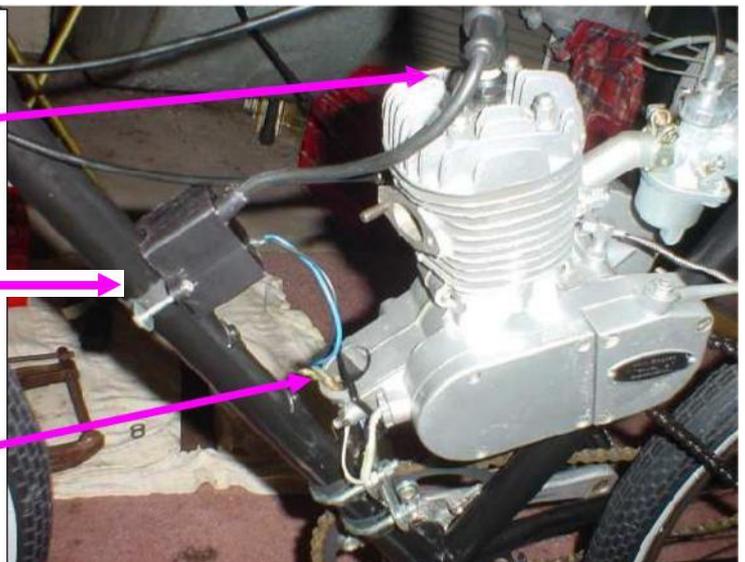


STEP 41.

Push the spark plug cap all the way onto the spark plug until you feel the threads on the spark plug vibrate into place. 

Attach the ignition box to the frame with the bracket supplied. Remember to use a small piece of inner tube to protect the paint on the frame. 

Connect the black wire from the ignition box to the black wire from the motor, and then the blue wire to the blue wire. 



STEP 42.

Use a wire brush on the gas tank bolts to clean the excess coating so the nuts go on easily. 

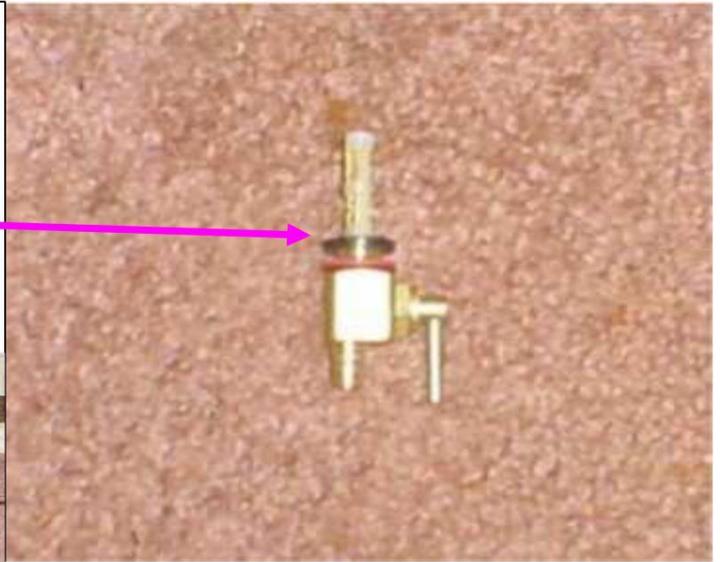


STEP 43.

After cleaning the bolts, take the fuel petcock valve and remove the black washer from the threaded area.

Leave the red washer in place. Then screw the petcock into the bottom of the gas tank.

Remember to add some Teflon tape to the threads of the petcock to keep it from leaking.



STEP 44.

Place the gas tank on the top bar of the bike. Using the brackets from the hardware bag and the four nuts, tighten the tank into place.

Remember to use a piece of inner tube under the tank to protect the bike finish.



STEP 45.

Cut the fuel line provided in the kit to the proper length. Then slide it onto both the ends of the petcock fuel valve and the inlet on the carburetor.

Note: It's a good idea to get an inline filter for your fuel line. The petcock does have a screen filter, but small sediment can still get through.



Section 8: Installing the Chain Guard and Exhaust

STEP 46.

Slide the chain guard onto the long bolt under the clutch lever on the motor

Mark the places to be trimmed to fit with your sharpie marker. You may or may not have to trim the chain guard. Installations vary depending on the application.

These areas can be trimmed with a pair of tin snips or a cutting wheel on a rotary tool.



STEP 47.

After trimming the chain guard, touch up any bare metal on the guard and slide the front over the long bolt. Attach with a ten mm. nut from the hardware bag.

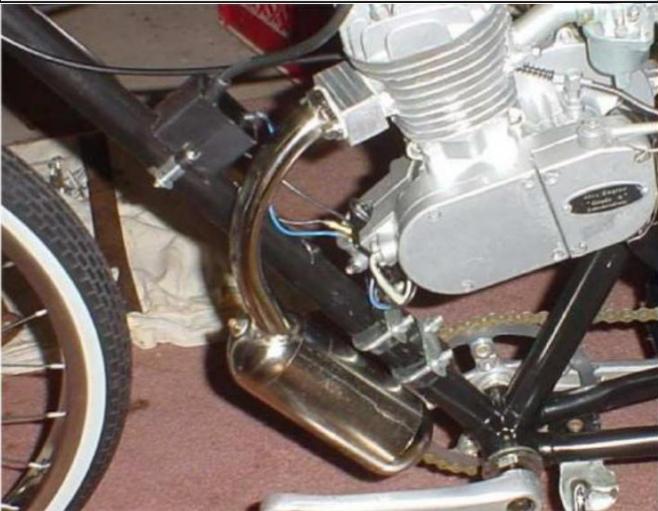
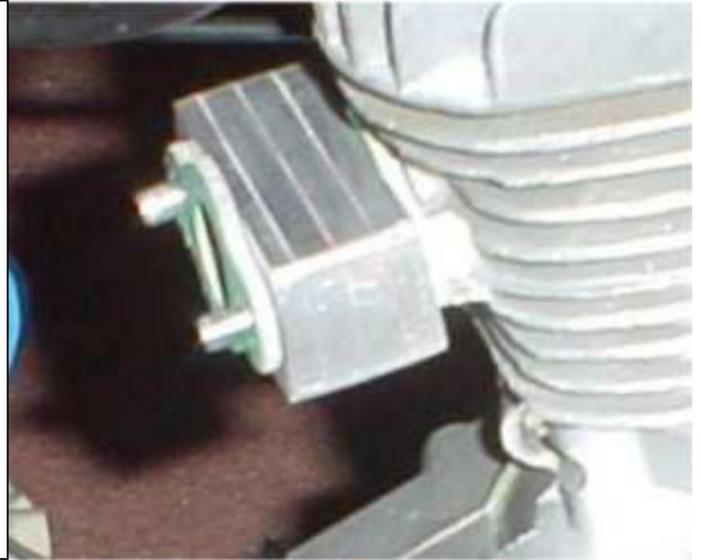
Bend the flat bracket from the hardware bag to fit the rear strut. Use a bolt (not supplied) to attach the rear of the chain guard to the bike.



STEP 48.

Slide the exhaust gasket onto the studs located at the exhaust port, then slide on the exhaust pipe. Slide on a locking washer then a ten mm. nut. Tighten the bolts snugly.

Note: It may be necessary to adjust the exhaust system by bending the pipe, cutting and welding the pipe, or adding spacers. **DON'T** try to bend the pipe while it's attached to the exhaust studs. This **will** break the exhaust mount.



Congratulations! Your bicycle engine kit is now installed.

General Safety Precautions

Obey all traffic regulations.

Do not operate bike without the chain guard installed.

Always wear a helmet and eye protection when riding.

Do not wear loose fitting pants or skirt when riding, as loose fabric can catch in the drive chain and cause an accident.

Remember that you are riding a small, motorized vehicle and other traffic may not be able to see you. Wear bright colors on your shirt and helmet.

Never ride at night without proper headlight, taillight, and reflectors. Be sure to wear reflective clothing when riding at night.

Never ride on pedestrian thoroughways or sidewalks, especially with the engine running.

Never operate your Motorized Bicycle in an unsafe manner.

Wear riding gloves to prevent injury to hands during an accident.

Check local and state laws before riding your Motorized Bicycle on the street.

WARNING” ALWAYS WEAR A HELMET WHILE RIDING!!

IMPORTANT NOTE

Operating this motorized bicycle or bicycle engine kit involves some risk of serious bodily injury . Buyer accepts responsibility for any and all vehicle operation that may lead to personal injury, economic loss, social distress, other losses, costs and damages. Seller is not responsible for injuries and/or damages resulting from operating or use of any motorized racing bicycle engine parts or accessories. Not all motorized bicycles are permitted for road use. Check with your local Vehicle Insurance services for requirements. We do not offer any guarantee for legal road use. All of the ZoomBicycles gasoline operated products are NOT compliant with Environmental Protection Agency (E.P.A.) or California Air Resources Board (C.A.R.B) for the use on/off Public roads. Upon purchase, the purchaser agrees to use products for racing (closed-course competition) only and NOT for on/off public roads.

Operating Suggestions

EXHAUST SYSTEM:

After 20 hours of operation, check the exhaust pipe for excessive oil and carbon buildup. Be sure to use the supplied support strap to secure the exhaust muffler to a solid anchor point on the bike frame or engine.

1. Remove the exhaust pipe cap by loosening the retaining screw.
2. Pull the cap and baffle out of the pipe.
3. Clean with degreaser, rinse and dry.
4. Re-assemble.

Note: Excessive periods of low-speed operation, idling, or leaving the fuel petcock in the “on” position during shutdown periods may cause the pipe to become clogged with unburned fuel.

CHAIN:

Every time the bike is ridden, check the tension of the drive chain.

1. Roll the bicycle forward to remove slack from the bottom of the chain.
2. Find the center and push downward on the top of the chain while measuring the deflection.
3. Tighten the chain if the deflection is more than ½ inch. This is done by raising or lowering the adjustment on the chain tensioner roller.

FASTENERS:

Tighten all fasteners after every 5 hours of operation. 8 mm diameter cylinder head bolts and motor-mounting studs should be tightened to 9-10 ft./lb. using a torque wrench. Check before each and every ride. Use thread locker and lock washers on all connections.

RIGHT-SIDE GEARS:

Remove the cover plate and keep a small amount of heavy grease on the gear train. Do not over-grease, as leaks will occur and also may adversely affect the clutch operation. Regular greasing, if required, will help reduce gear wear and keep the gear train quiet. Check the gears weekly. Remove old debris and apply a small amount of grease to the inside of the gear teeth.

BRAKE PADS:

Fresh brake pads and clean rims assure proper braking.

Starting and Operating Instructions

1. Mix 8.0 oz. of 2-stroke oil (16 : 1 ration) to 1 gallon of fuel in separate container. Shake well to mix and fill the gas tank (1/2 gallon capacity). Do not overfill. Remember to put the fuel cap back on. This is the recommended break in mixture for the first 2 tanks full.
2. Open the fuel valve. Small lever pointed down with fuel line is in the open position.
3. Depress the small, round cap plunger (tickle button) to prime the carburetor. It is located on the left side of the carburetor next to the idle adjust screw. One or two times should be enough.
4. Lift the choke lever to the “up” position. It is the small lever on the right side of the carburetor.
5. Pull the handlebar clutch lever inward, to disengage the engine from the rear wheel.
6. Start to pedal – downhill if possible for the first start.

7. Let out the clutch lever all the way and continue to pedal. The result is a direct engine hook up with the rear wheel via the chain and sprocket, and the engine will now turn over (start spinning). Pedal until the motor starts. Accelerate slowly at first.
8. Twist the throttle to increase speed, reverse twist the throttle to decrease speed. To stop, disengage the clutch and apply the brakes. To accelerate, pedal and release clutch while opening the throttle.
9. Adjust the choke to the smoothest engine running position.
10. After warming up the engine, push the choke lever all the way down. If the engine races too fast or too slow, pull the clutch lever and lock in the notched catch. Stop and adjust the engine rpm.
11. If the rpm needs adjusting, turn the idle adjust screw (left side of carburetor) in or out slowly, to obtain the proper idle speed of about 1400 rpm \pm 100 rpm. To correctly break in the engine, do not exceed 20 mph or 30 minutes of continuous running time for the first 50 miles.
12. To stop the engine, push the Kill Switch and turn off the gas valve at the tank. Turning off the gas will prevent fuel from being siphoned from the tank. **Warning note:** Never leave the fuel-tank gas valve in the open position when the engine is not running or when the bike is in storage.
13. After and before each ride, check all of the mounting fasteners, including the axle and brakes.
14. After using the first gallon of gasoline, the next fuel mix will remain at 40:1 gas to oil ratio. Use a high-grade, synthetic 2-cycle motorcycle oil. This can be purchased at most motorcycle shops or lawn and garden shops. **Warning note:** Engine lockup or piston seizure due to improper gas/oil mixture will not be covered by your engine’s factory warranty. It is the responsibility of the owner/operator to make sure the gas and oil are mixed correctly.

Pull Start Installation

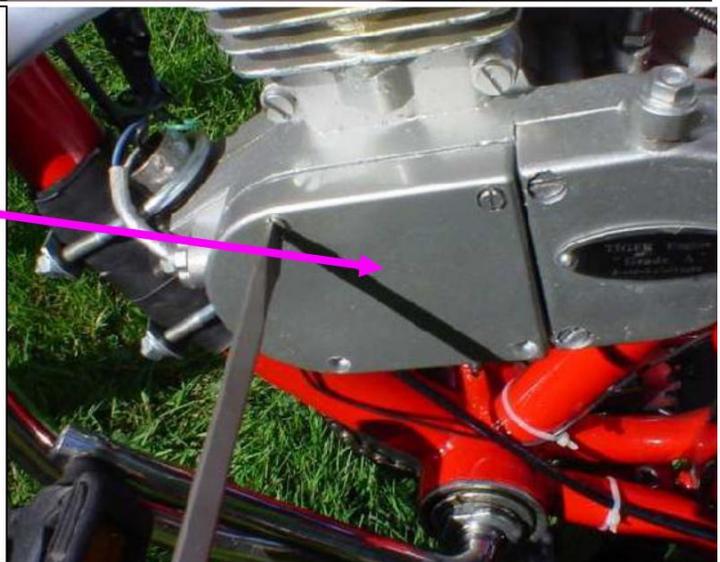
STEP 1.

The Pull Start Kit.



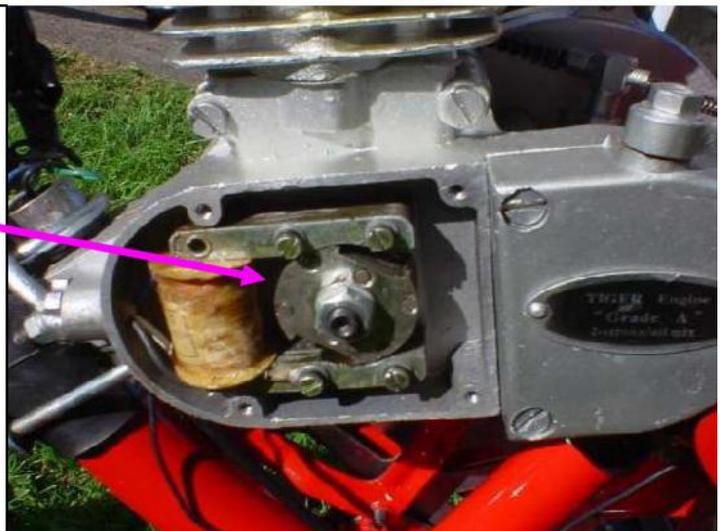
STEP 2.

Remove the left side plate covering the flywheel.



STEP 3.

Flywheel.



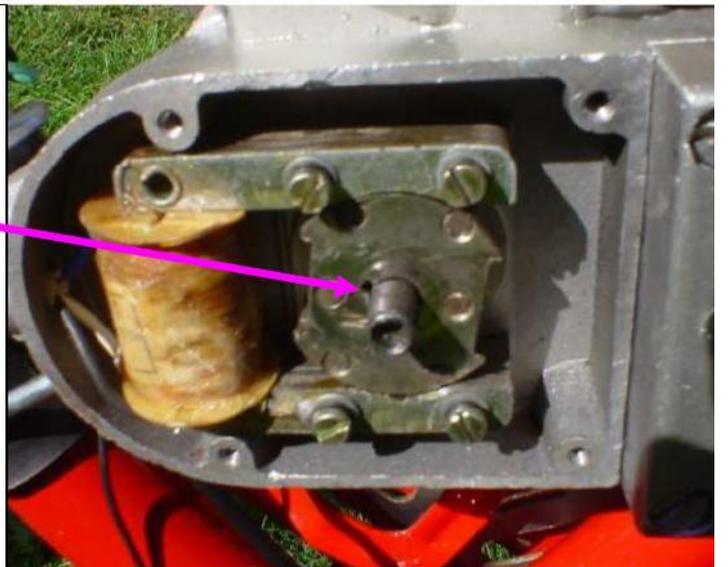
STEP 4.

Hold the flywheel with a pair of adjustable pliers and remove the bolt that holds the flywheel in place. →



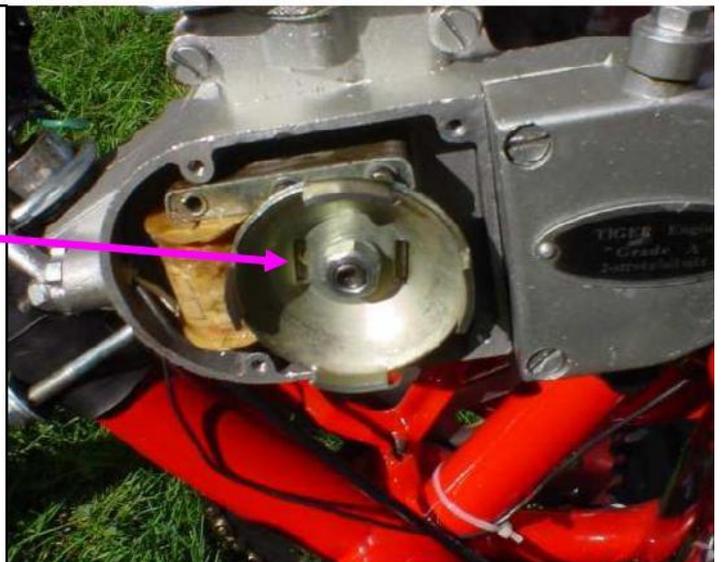
STEP 5.

Bolt removed. →



STEP 6.

Place the wheel on the shaft so the two tabs fit into the two notches on the flywheel. Then replace the washer and bolt. →



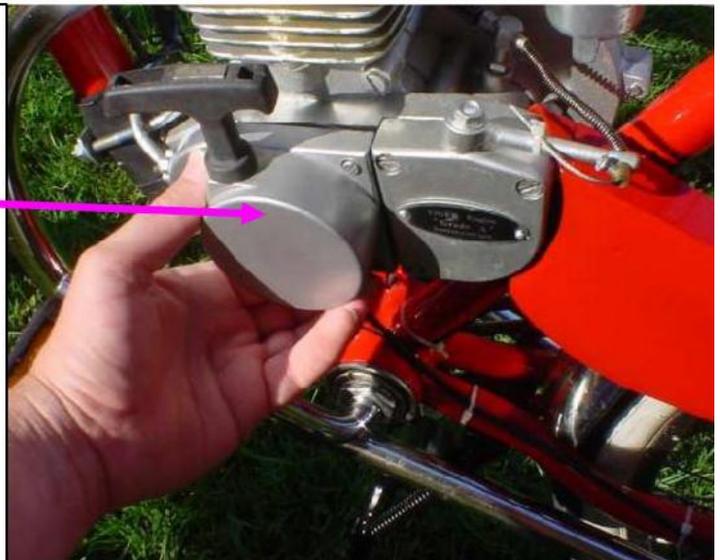
STEP 7.

Place the paper gasket on the pull start and slide one of the retaining bolts into place.



STEP 8.

Place the pull start against the motor and reattach with the retaining bolts.



STEP 9.

Pull start installed.

Note: If the pedal cranks will not clear the pull start, it's possible to adjust the pedal crank to compensate for the wider profile of the motor.

