

NOTICE

Bleeder screw information for step 29 in the installation instructions:

You can strip the bleeder screw with too much torque!

(24 to 48 in/lbs of torque) IT'S JUST A LITTLE MORE THAN HAND TIGHT!

It only takes a $\frac{1}{4}$ to $\frac{1}{2}$ turn to open and the same to close.

DO NOT OVER TIGHTEN BLEEDER SCREW!! CAN CAUSE DAMAGE IF OVER TORQUED!!

ALL CALIPERS ARE INSPECED FOR DAMAGE BEFORE THEY ARE PACKAGED!

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Front Brake Kit for Honda ATV's

READ THOROUGHLY BEFORE INSTALLATION

Honda 300 (Must have 12" wheels and will not work with OEM Stock wheels)
Honda 350 Rancher
Honda 400 (Must have 12" wheels and will not work with OEM Stock wheels)
Honda 450 Forman
Honda 500 Rubicon
Honda 650 Rincon

Parts List:

Caliper Left	1 ea	5mm Tapered Allen Bolt	8 ea
Caliper Right	1 ea	Round Spacer	1 ea
Hub Spacer	2 ea	13mm Hex Head Bolt	12 ea
Rotor	2 ea	8mm Flat Washer	4 ea
Studs	8 ea	Mounting Bracket	2 ea
LocTite	1 tb	Clear Tubing	2 ft
17mm Nut	1 ea		

Required Tools

Clear plastic bottle	Brake cleaning fluid	Dot 4 Brake Fluid
5mm allen head socket	Torque Wrench	Metric Sockets
¼" Wrench	Hammer	Vise Grips

Warning!

Read carefully before installation

Only qualified individuals should carry out brake system work. If you are not experienced and completely confident of your skill in this area, have someone who is do the installation or assist you with the installation, or take it to a dealer or professional shop. High Lifter Products, Inc. accepts no responsibility for the consequences of improperly installed brake components.

The purchaser is solely responsible for determining the suitability of this product for his application. If before installation, the purchaser decides that the product is not suitable for any reason, the purchase price less applicable fees will be refunded upon return of the product.

Neither Wilwood Engineering nor High Lifter Products, Inc. assume any responsibility for damage or injury of any kind, because of improper application, improper installation or maintenance, misuse, or abuse of this system.

For safe operation of the ATV **the rear brakes must also be in good working condition.** There are riding situations where it is necessary to use both front and rear brakes or rear brakes only. In those situations strong application of only front brakes could cause loss of control of the ATV and bodily injury. **Application of front brakes only could cause an accident.** Riders should consult their owner's manual for braking techniques and should maintain both front and rear brakes in good working order.

Additional disclaimer of warranty is included on the last page.

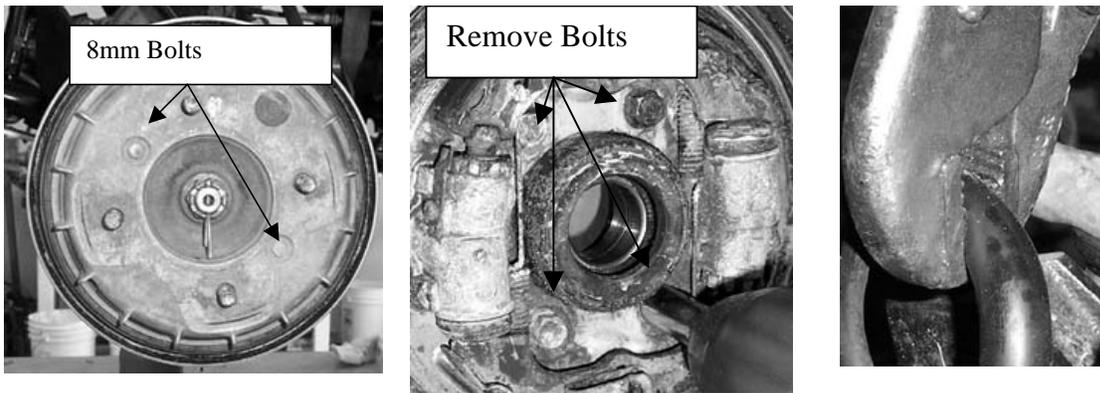
WARNING

Do not attempt high speed braking or any maneuver, such as downhill riding, that will require full use of brakes until pads are properly bedded or seated as described on page 7. Full braking is not available until this is completed.

Installation Instructions:

1. Park the ATV on a flat surface and set the rear parking brake.
2. Loosen the front lug nuts.
3. Jack up the ATV and brace it with jack stands.
4. Remove both front wheels.
5. Remove the two 8mm bolts that secure the drum cover. Remove the drum cover.
6. Remove the cotter pin from the hub nut and remove the hub nut. You can now pull the hub off the knuckle.
7. Remove the brake lines and breather tubes from the wheel cylinder. Do not lose the 2 washers on the banjo bolt and the brake line, because they will be reused. Be sure to clamp the brake lines to minimize fluid escaping and minimize air getting into the brake lines. Remove the 4 bolts that secure the brake backing plate to the knuckle assembly.

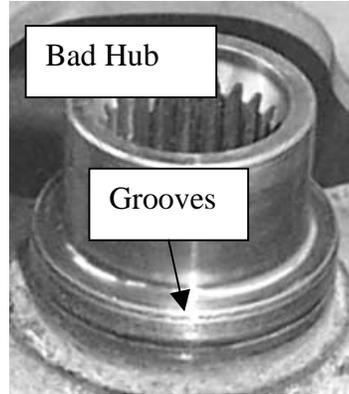
Note: Vise grips are a good tool to use to clamp off the brake lines.



Note: The breather tube can be completely removed or fastened to the ATV out of the way. The breather tube will no longer be used.

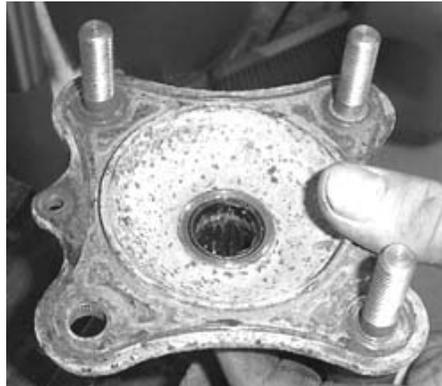
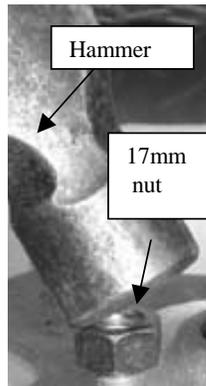
IMPORTANT:

The knuckle assembly will need to be closely inspected for wear. Check all bearings and ball joints for wear. If the knuckle, bearings, hub, or ball joints are worn or show signs of excessive wear or if the backside of the hub has grooves, they need to be replaced at this point. Excessive wear on any of these components may subject the disc and hub assembly to vibration or movement that could cause failure of the brakes to work properly or to engage involuntarily. It is important to replace any worn parts if the brake kit is to function and seat properly. It will also promote brake life and helps to prevent uneven wearing of the brake pads. Take time to clean off the hub and knuckle. You should clean the part of the hub that was in the brake drum with a wire brush and spray paint it black to prevent excessive rust from building up. Be sure to cover the bearings and seal before painting. You should also re-grease the bearings at this time.



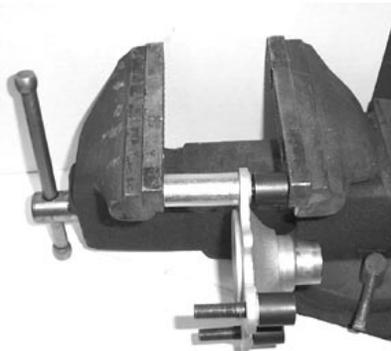
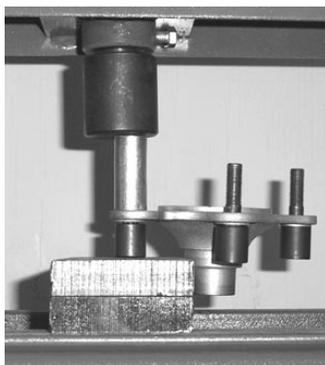
See service manual for maintenance of ball joints, hub, seals and bearings.

8. Once the hub is off the ATV it's now time to press the studs out. To get the studs out use a press or place the 17mm nut, provided in kit, on the stud about three threads and then with a hammer, hit the nut until the stud pops out the backside. Repeat this until all studs are pressed out.



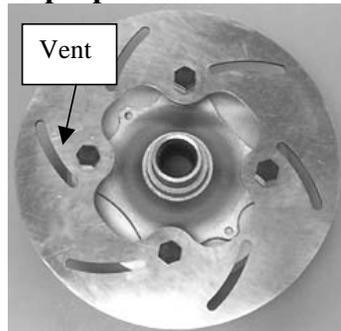
9. To install the new stud, place the stud through the hub. Place the long spacer over the threaded end of the stud. Press the new studs into the hub. If you do not have a press you can use a vise. Do this until all the studs are completely installed. If you do not have a vise or press take it to your local shop or dealer.

NOTE: Do not force studs into hub with hammer or any other means. It may cause damage to the studs.

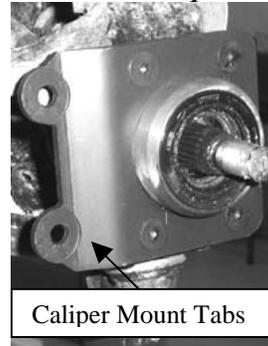
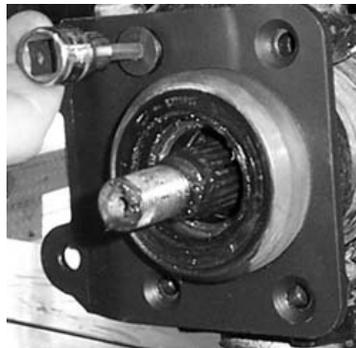


10. Turn the hub over and install the rotor onto the backside of the hub. There are four 13mm hex head bolts that you will use on each side. Be sure to use thread locker on these bolts and torque them to 20 ft lbs. If needed you can put the hub back in the uninstalled wheel for more leverage. When installing the rotor make sure that the outer edge of the vent is pointed to the front of the ATV.

NOTE: When using thread locker be sure to place the drops into the bolthole and not on the bolt. This ensures a proper seal.



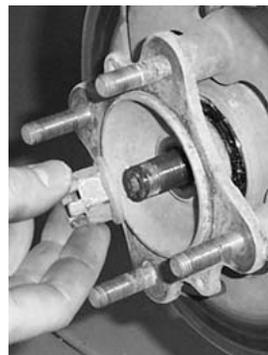
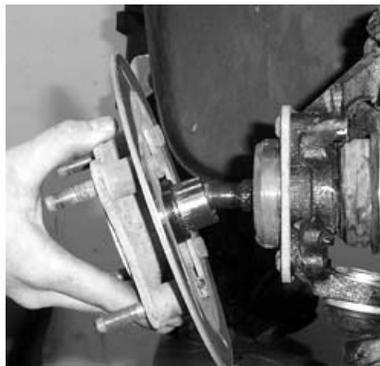
11. Install the mounting bracket onto the knuckle with the caliper mounting tabs pointing to the **REAR** of the ATV. You will use four 8mm tapered allen head bolts per side. Be sure to use thread locker on the bolts and torque them to 22 ft lbs.



IMPORTANT

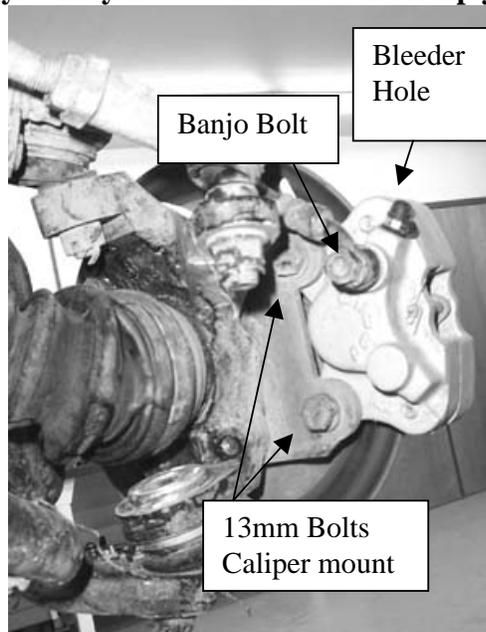
You must use a 5mm allen head socket and torque wrench to ensure proper torque of the bolts. If you use small, palm size allen wrench, the proper torque value **WILL NOT** be attained, which could cause the brakes to fail.

12. Reinstall the hub and torque the hub nut to 58 ft lbs. Don't forget to reinstall the cotter pin in the hub nut. Replace cotter pin if it is damaged.



13. Remove the cardboard spacer from between the brake pads and attach the caliper to the mounting plate keeping the bleeder screw on the top of the caliper. Place the caliper over the rotor, with the rotor sandwiched between the brake pads. There is a left and right caliper so it is important that the bleeder screw goes on top to ensure that the calipers are on the correct side. **Torque caliper mounting bolts to 18ft lbs.**
14. Reattach the brake line using the OEM “banjo” bolt and the two washers, one on each side of the brake line. These are the two saved washers from the wheel cylinder removal. If they are not reused the brake fluid will leak and there will not be enough brake pressure to stop the ATV. This is the bolt that connected the brake line to the OEM wheel cylinder; it is used to connect the brake line to the new caliper.

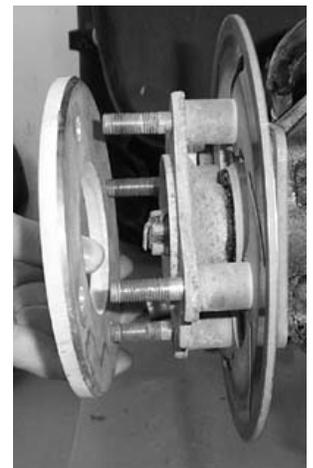
NOTE: In some cases you may need to re-route or unclip your OEM brake lines.



15. Install the aluminum spacer on the hub studs, with the taper side of the spacer **facing** into the rotor.
16. Release clamp holding the brake line closed.
17. Repeat these steps for the opposite side before continuing.

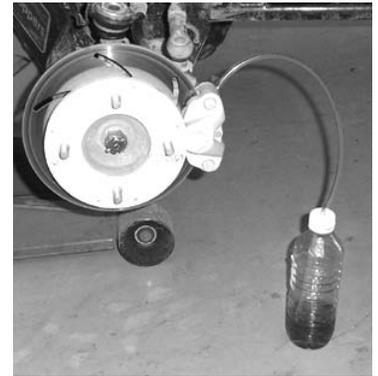
Bleeding the brakes

When air is present in the brake lines, it creates inefficiencies within the system because, unlike liquid, air can be compressed. So, when enough air fills the lines, pressure from the brake lever causes the air to compress instead of creating pressure at the brake corners. In other words, when air is in the lines, the brakes do not work. Usually, a small amount of air within the brake system will give a mushy or soft feel and will reduce stopping ability. If enough air enters the brake system, it can result in complete brake failure.



Bleeding Process (You will need an assistant for this process and Dot 4 brake fluid)

18. Remove the cover on the master cylinder and check for the proper fluid level.
19. Begin with the front left side of the ATV.
20. Locate the bleeder screw at the top of the caliper body. Remove the rubber cap from the bleeder screw and do not loose it.
21. Place the ¼” box-end wrench over the bleeder screw. An offset wrench works best, since it allows the most room for movement.
22. Place one end of the plastic hose over the nipple of the bleeder screw.
23. Submerge the other end of the hose in about 1” of brake fluid in a clear plastic bottle. (An empty water bottle works well)
24. Place the bottle for the waste fluid on the floor or ground below the caliper body. Hold the bottle with one hand and grasp the wrench with the other.
25. Tell the person helping you to squeeze the front brake lever three times and on the third time hold the lever in firmly. Tell your assistant not to release the brake lever until told.
26. Loosen the bleeder screw about a ¼ to a ½ turn to release fluid and air into the waste line. The brake lever should loose pressure as the bleeder screw is opened.
27. Tell the assistant to pump the brake lever. As the assistant pumps the brake lever you will see fluid start to pass from the caliper body, through the waste line, into the plastic bottle. Watch for air bubbles.
28. Keep a close eye on the fluid level in the master cylinder on the handlebars to ensure that it does not run out or get too low. If fluid runs out or gets too low you will get more air in the lines. Be sure to refill master cylinder as needed.
29. **Once the fluid flows clear, with no air bubbles present, close the bleeder screw. (24 to 48 in/lbs of torque) IT’S JUST A LITTLE MORE THAN HAND TIGHT!**



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30. Instruct the assistant to release the brake lever.
31. Typically we repeat this process several times per wheel when doing a standard bleed to ensure that there are no air bubbles present in the line.
32. When both sides have been completed, spray the bleeder screw and any other parts that were moistened with spilled or dripped brake fluid with brake cleaner and wipe dry. This will make it easier to spot leaks through visual inspection later. Try to avoid spraying the brake cleaner directly on any parts made of rubber or plastic, as the cleaner can make these parts brittle after repeated exposure. If brake fluid remains on the brake pads or on the rotor the pads will not function properly.
33. Test the brake lever for a firm feel.
34. Be sure to inspect the bleeder screws and all other fittings for leakage.

35. Properly dispose of the used waste fluid. Important—used brake fluid should never be poured back into the master cylinder reservoir!
36. Be sure and check the master cylinder to ensure that is properly filled to the correct level, reinstall the master cylinder cover and put the rubber cap back on the bleeder nipple.
37. Reinstall the wheels and tighten the lugs by hand.
38. Lower the quad off the jack stands and jack.
39. Torque the lugs to 47 ft lbs.

How Often to Bleed the Brakes?

1. Under **normal operating conditions**, and without brake system modifications, the braking system on your ATV should not require regular or annual bleeding.
2. Those who choose to ride their ATV in a **sporting manner or under extreme conditions** should bleed their brakes on an annual basis or sooner if brake quality fades.
3. If your ATV sees **significant amounts** of high-speed braking or if you participate in track racing you should bleed before every event.

WARNING

Do not attempt high speed braking or any maneuver, such as downhill riding, that will require full use of brakes until pads are properly bedded or seated. Full braking is not available until this is completed.

Pad Bedding or Seating

It is important to properly bed or seat-in pads on their rotors. In a safe location, make a series of gentle stops from low speed. Start under 10mph to prove that the system is functioning properly. Gradually work up to 20 and 30 mph again with gentle stops. Gradually work up to harder stops and higher speeds bringing the pads up to their upper operating temperature. Do not attempt to “lock up” the front brakes as this could cause the ATV to become unstable and roll over. If brake fade is experienced at any time the system should be cooled immediately and the entire brake system inspected for problems. Drive at moderate speeds to cool the pads; do not apply brakes during this process if possible. After initial cooling in this manner, the ATV should be parked so that the pads can return to ambient or current environment temperature. This completes the heat cycle and will promote pad life and maximum pad friction.

NOTE: Since components of this kit are considered and classified as racing parts, Wilwood Engineering Inc. and High Lifter Products Inc. make the following disclaimer of warranty.



DISCLAIMER OF WARRANTY

Purchasers recognize and understand that racing parts and equipment, such as disc brakes, hubs, etc. and all parts, inventory and services manufactured and/or sold by Wilwood Engineering, Inc. are exposed to many and varied conditions due to the manner in which they are installed and used. Purchasers and Wilwood Engineering, Inc. consciously desire to make their own bargain, irrespective of any court decision and purchasers agree upon good faith and in consideration for being allowed to purchase from Wilwood Engineering, Inc. said parts or services. Purchasers expressly acknowledge and understand that Wilwood Engineering, Inc. does not make any affirmation of fact or promise to purchaser, which relates to said parts, inventory, or services that becomes part of the basis of the bargain between Wilwood Engineering, Inc. and purchasers. Nor does Wilwood Engineering, Inc. make, or cause to be made to purchaser any description of the goods sold to purchaser, nor does Wilwood Engineering, Inc. make, or cause to be made, as part of the basis of the bargain with purchasers, any description or affirmation of fact concerning any sample or model of racing parts, and equipment inventory or service.

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Wilwood Engineering, Inc. makes no warranties whatsoever, expressed or implied, oral or written, to purchasers. There is no warranty of merchantability made to purchasers. Wilwood Engineering, Inc. further excludes any implied warranty of fitness with respect to racing and equipment, any and all inventory and service.

It is expressly understood and agreed between purchasers and Wilwood Engineering, Inc. that as part of the bargain between Wilwood Engineering, Inc. and purchasers, and in consideration of doing business with each other, all purchasers take, select and purchase said racing parts, equipment, any and all inventory, or services from Wilwood Engineering, Inc. "as is" and "with all faults" and Wilwood Engineering, Inc. shall always provide purchasers with a full and complete opportunity to examine, at purchasers' leisure and convenience, any racing parts and equipment, any and all inventory, or services when purchasing or contemplating purchasing from Wilwood Engineering, Inc.

If, and in the event that purchasers expressly or impliedly cause representations, or statements or affirmations of fact contrary to this disclaimer of all warranties, expressed or implied, then purchasers agree to indemnify and hold harmless Wilwood Engineering, Inc. in the event of any claim, demand, or legal action against Wilwood Engineering, Inc. by any purchaser.

Purchasers understand and agree that no officer, director, employee, or salesman of Wilwood Engineering, Inc. has any authority to make any statement contrary to the terms of this agreement. On the contrary, Wilwood Engineering, Inc. disavows any statement contrary to what is herein above written.