

How to Change Front Brakes

<http://faculty.ccp.edu/faculty/dreed/Campingart/jettatech/Howtochangebrakepads.htm>

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How to change front brake pads, and rotors and bleed brakes on a 98 VW Jetta GLS
(Other models, like BMW, and Audi are similar)

This "how to" assumes you have some basic tools, and safety gear. Safety glasses should be worn at all times when working with tools and automotive fluids. Always use a hydraulic jack and safety stands when lifting or getting under a vehicle. If you are unsure on where to safely lift your vehicle, refer to its owners guide. Brake dust can contain asbestos which has been found to cause cancer. The writer of this how to assumes zero liability in how to use this guide, or any damages that may come from it to you, your property, or others and others property. If you are uncertain at any point, refer to a qualified automotive technician.

Basic Rules, clean brake fluid up with cold water. Keep all fluids, water, dirt, and oil out of the brake system (except for clean brake fluid). Keep all and any grease off pads, shoes, and rotor brake surfaces. If pads become contaminated with grease or oil, throw them out and buy new ones. If rotors become oily, clean them with brake clean, or hot soapy water.

For a quick primer on brake systems, please visit -

<http://auto.howstuffworks.com/brake.htm>

Tools you'll need.

Hydraulic Jack (at least 2 tons)

Safety Stands and Wheel chocks

17mm ½" socket

½" Breaker bar

Torque wrench that can go from 15 to 95 Ft/Lbs

6mm wrench

13 mm socket

3/8" drive ratchet

15 mm wrench

17 mm wrench

11 mm wrench

Flathead screwdriver

Phillips screwdriver

Impact Screwdriver (set)

Small prybar

[MityVac Vacuum pump w/ bleeder cup](#) - [Or use the \\$20 pressure bleeder I made up](#)

Ball peen hammer (16 oz)

Clean small funnel

[Brake pad spreader](#) or 8" C-Clamp

Consumables



Disk Brake Caliper Slide Pin Grease
Anti-Seize compound
[Blue-Loctite](#)
Brake Clean (Spray Can)
600 grit sand paper
DOT 4 brake fluid (2 Qts or 2L)

1. Start with good stuff. ATE Power Disk rotors, ATE DOT 4 Fluid, and ECB GreenStuff brake pads. Recommended – replacement caliper bolts. - (I got everything I needed from - <http://www.germanautoparts.com/>)

Always use brake fluid from a sealed container, never reuse brake fluid. If brake fluid comes in contact with painted surfaces immediately wash them with plenty of cold water and soap. Brake fluid absorbs moisture, never leave the container open to atmosphere.

Never put anything but brake fluid (as specified by the manufacturer) into a vehicles brake system. DOT (Department of Transportation) 3, 4, and 5.1 are all the same base fluid. DOT 5 is a silicone based brake fluid and has a pretty blue/purple color. DOT 5 should never be used in a brake system that takes DOT 3, 4, and 5.1. VW uses DOT 4 as the OEM (Original Equipment Manufacturing) fluid. Any fluid sold in North America marked as DOT 4 will be acceptable. DOT 3 will work as well, but has a lower boiling point. Clean brake fluid will be anything from a clear, to a gold color. More on brake fluids [here](#) and [here](#). VW recommends that you change your brake fluid every two years regardless of mileage. Fluid should be changed any time it becomes contaminated, some North American makes never spec any brake fluid change (I don't feel this is a good idea, but how hard can you push a Ford Windstar?).

While this is a very mild upgrade, these parts are better than stock, and will provide the sporting driver some added brake control and prevent brake fade. The EBC pads also claim (and they do) to put out less dust and have a better grip on the rotors. The slotting on the ATE power disks prevents gas fade (where the pad breaks down and a small layer of gas (fade) starts, and also acts as a “sweep” cleaning the pads for maximum bite.



2. Park the vehicle on a level paved surface. Set the vehicles parking brake AND place it in either 1st gear, or PARK. Use wheel chocks on the opposite side to block the front and back of 1 wheel. **Remove ignition key.**

3. Remove the wheel covers. Loosen the lug nuts (17mm). Do not remove them, only loosen them at this point. Only loosen the side you intend to work on at this point.



4. Raise vehicle at the front lift point, support weight of vehicle with safety stand. It may be useful to use a 2X4 block of wood to distribute the vehicle weight over the safety stand. On the Jetta and Golf models you can raise an entire side of the vehicle with one stand at the front lift point.

5. Remove the wheels and tires that you loosened.

6. Inspect your brakes (front) rotors and pads.



While these are not bad, I am tired of them..



Your Starting point sir....

7. Open the hood, and gain access to the master cylinder. If it is dirty wipe off any debris on to of it. It is critical that no debris fall into the master cylinder. This is the "heart" of your brake system. Never use any other fluid than specific by the manufacturer in a master cylinder.



The master cylinder has the yellow cover.

8. Using your vacuum pump, and adapter (make sure you read how to use it) suck out the brake fluid in the master cylinder. Don't worry you can't get it all right now, that's ok.

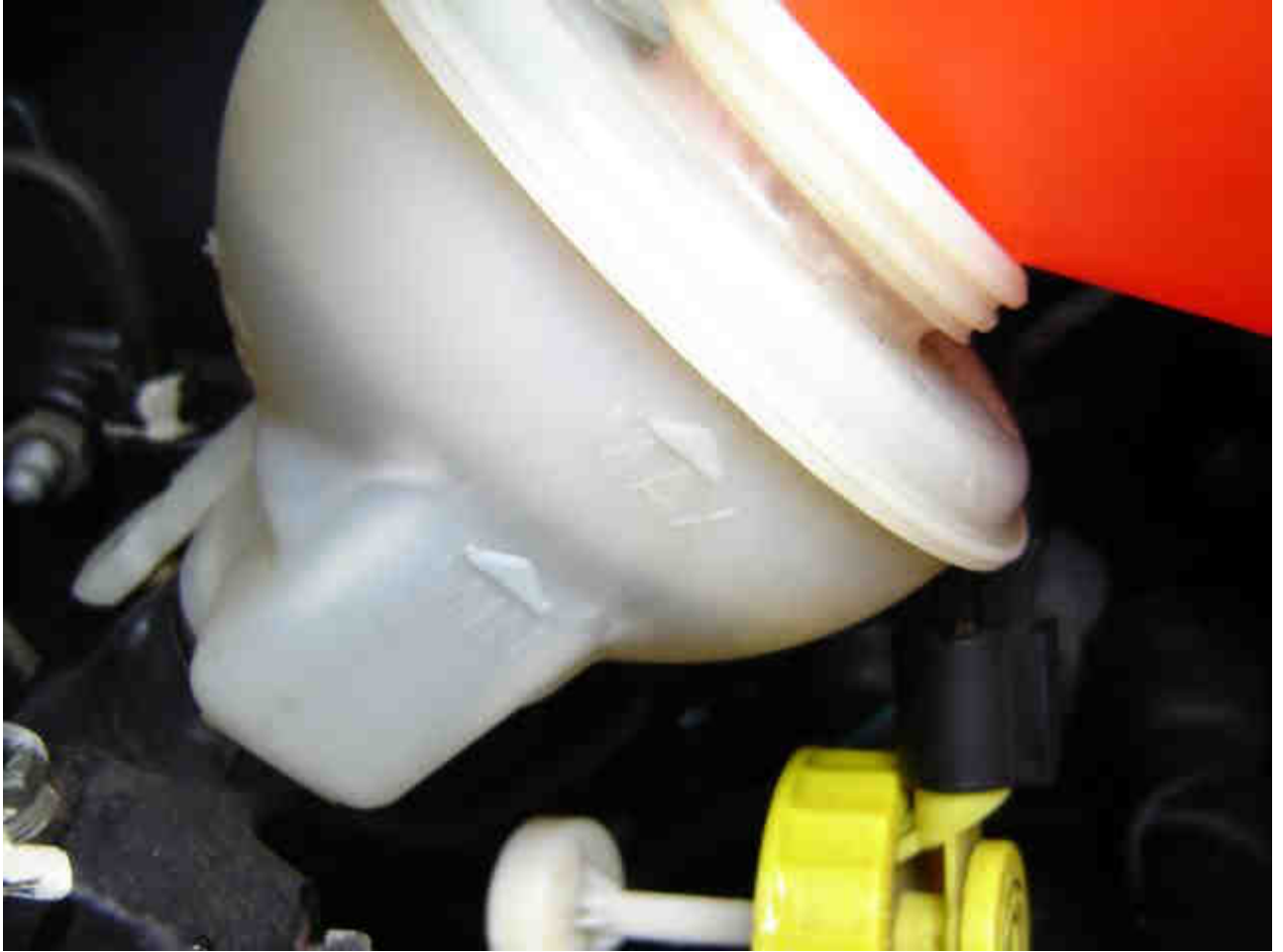


9. If you want you can take a small screw driver and remove the filter, set it aside on a clean cloth. This will allow you to get more of the fluid out. **DO NOT STEP ON THE BRAKES AT THIS POINT!** When done empty out the vacuum pump. If you pump the brakes, you risk pumping air into the brake system. **AT NO POINT ALLOW THE MASTER CYLINDER TO RUN DRY!**



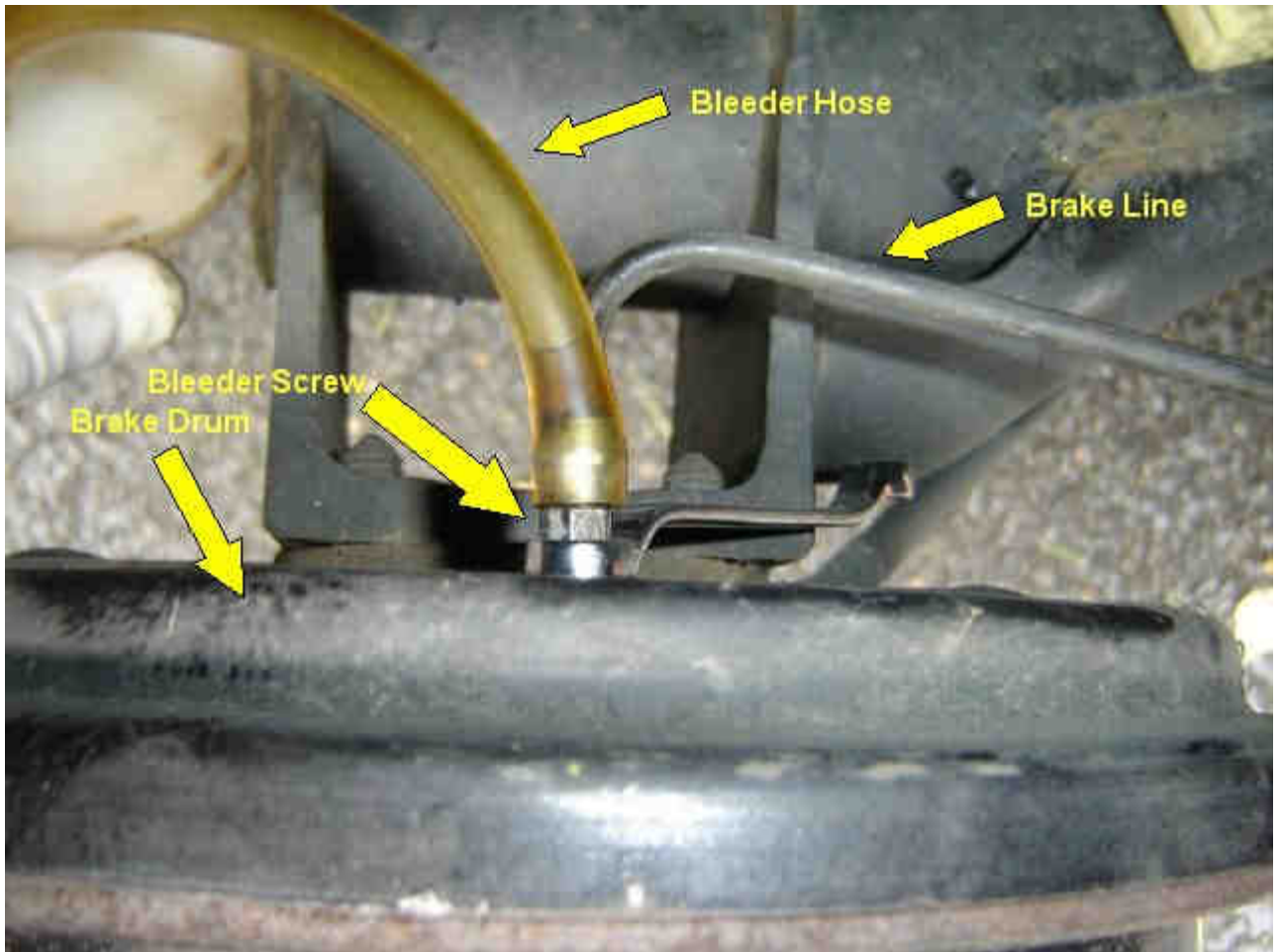
Pulling out the master cylinder filter.

10. Fill the master cylinder up with clean DOT 4 fluid. Use a very clean funnel. I like to keep one that I only use for brake fluid, and I do not allow any dirt to settle it side of it.



Fluid level is 1/2 way full

11. Go to the rear brake. For this example, we are looking at a drum brake. Remove the rubber dust cap from the bleeder screw. Attach the bleeder hose to the end of the bleeder screw. Open the bleeder (6mm) about $\frac{1}{2}$ a turn. Do not remove the bleeder. Old brake fluid should start to flow out into the tube.



If the bleeder screw is stuck, make sure that you are turning it the right way. If it continues to be stuck, as you try to turn it, gently strike the head of it with the ball peen hammer. Avoid using WD-40 or other types of penetrating lubricants as they will harm the rubber components of the brake system. Do not use a torch to heat a stuck bleeder as it may cause the brake fluid to boil and then come out and burn you. Do NOT open the brake fluid line (the metal line running into the back of the brake assy.)

12. With the bleeder line open, create suction with the vac. pump. Fill the vac. bleeder bottle once, then close the bleeder valve. Check the fluid level in the master cylinder, and if needed top it off again. **Perform this cycle 2 times. MAKE SURE THAT AT NO TIME THE MASTER CYLINDER RUNS DRY, THIS IS VERY VERY SERIOUS.** If you see bubbles, that's OK, what you are seeing is some air being drawn past the threads of the bleeder screw. This does NOT mean that there is air in the brake system. Air in a brake system is bad and will lead to a low, spongy brake pedal. For more help on bleeding brakes, visit [here](#).

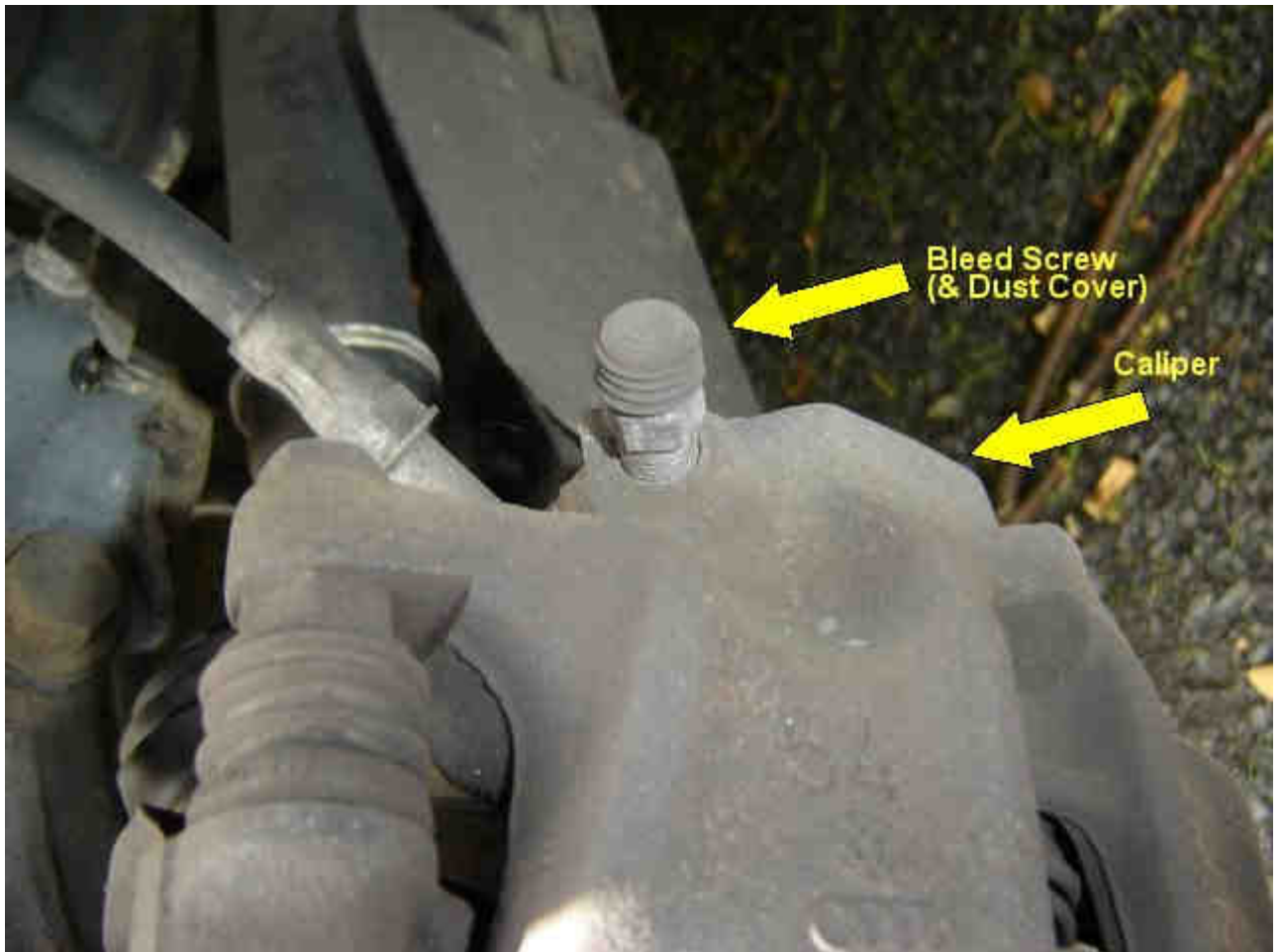
Side note, with the wheel off, paint your ugly gray drums. Use a nice black high temperature paint, or the color of your choice. Now is also a nice time to sit down and clean the wheel face and backside! Also, take a look at the condition of your tires, and check the brake lines for damage or abrasion. And make sure the tire pressure is set to spec!

13. Torque the bleeder screw to **10-13 Ft Lbs**, and replace the dust cap. The dust cap will keep crud out of the bleeder screw and prevent it from seizing up next time you have to bleed the brakes.

14. Check and top off the master cylinder fluid level, and depress the brake pedal. Check for leaks at the point where you just worked.

15. Reinstall the rear wheel, and torque the lugs down to **81 Ft Lbs**, in a [“star” pattern](#). Congratulations, you just flushed ¼ of your brake system with new fluid.

16. Moving onto the front wheel. Remove the dust cap and open the front bleeder screw. (This will ensure that it is not stuck when we bleed the brakes in the next few steps.) Close the bleeder screw.



Caliper bleeder screw (w/ dust cap)

17. Using the 13mm and 15mm wrenches remove the brake caliper by holding the 15mm and turning the 13mm nut on the back side of the caliper carrier. Do this for the top and bottom bolts.



18. The caliper should come off. **Do NOT** overly flex, or allow the caliper to hang by the brake line. Doing so may damage the brake line. Use some wire, or the strut body to hold the caliper up while you are working on the brakes. From this point on, do not step on the brakes or the piston will be forced out of the caliper!



Inspect the pads for equal wear, they should look like this, if so - everything is/was working as it should be...



Mmm.. Pad sandwich!



If needed, hang the caliper on the strut tower.

19. Take the 17mm wrench and remove the caliper carrier (also know as the torque member, or caliper frame) bolts. **These bolts are very tight.** You may need to use the 17mm breaker bar you used to loosen the wheels. Make sure you don't damage the caliper slide pins!



20. Once the caliper carrier is removed, clean its mounting points, and remove the slide pins, and apply a small amount of caliper slide grease to them. They should slide smooth and free. This operation is critical to the performance and longevity of the brakes. Inspect the boots for tears or cracks that will allow water and dirt to enter the pins, and the grease to become contaminated.





21. Take some 600 grit sand paper and clean the mounting surfaces of the caliper carrier, and the pad seats. Remove any rust, scale, or old brake dust. Doing this step will ensure a noise free brake system.



22. Using the impact screwdriver remove the rotor hold-down screw. If this screw gets destroyed it will need to be drilled out and removed. The impact screwdriver is the fastest and safest way to remove this stubborn screw.



23. If the rotor is stuck to the hub (And it will be). Strike the inner surface of the rotor face. A few good hammer blows should shock the rotor off. Never strike the rotor brake surface, unless you are sure you never plan to use the rotors again. Rotors can crack and shatter.

24. With the hub exposed, let's clean it up a little. Use the 600 grit paper to clean any rust or scale off the hub and its center. This step ensures that the rotor will mate perfectly with your hub, and prevent brake shutter and roughness.



Before



After!

25. Apply a very thin film of anti-seize compound to the hub face. Take care in NOT getting it into the lug-holes. This will prevent your new rotor from getting stuck like the old one did.





From this point forward, we start to put stuff back together.

26. Install your new rotor. If needed, clean off the rotor before hand with a clean rag, and brake clean to remove any chemicals that the rotor may have been treated with while it was in storage. (Note, the ATE Power Disks do not need to be cleaned, they can go on the vehicle as they come out of the box.)

27. Coat the rotor hold-down screw with anti-seize compound and torque it to **11 Ft. Lbs.**

28. Reinstall the caliper carrier, and torque the carrier bolts (the big ones) to a whopping **92 Ft Lbs.** These are the bolts that hold the brakes to your car.

29. Reattach the vacuum pump the calipers bleeder valve. Open the bleed screw.

30. Using your disk brake pad spreader, take an old pad and place it against the piston of the caliper. As you screw the spreader in, it will force the piston back and force the old fluid into the bottle. Screw the piston in until it bottoms out.



31. With the bleeder line open, create suction with the vac. pump. Fill the vac. bleeder bottle once, then close the bleeder valve. Check the fluid level in the master cylinder, and if needed top it off again. Perform this cycle 2 times. **AGAIN MAKE SURE THE MASTER CYLINDER DOES NOT RUN DRY.**

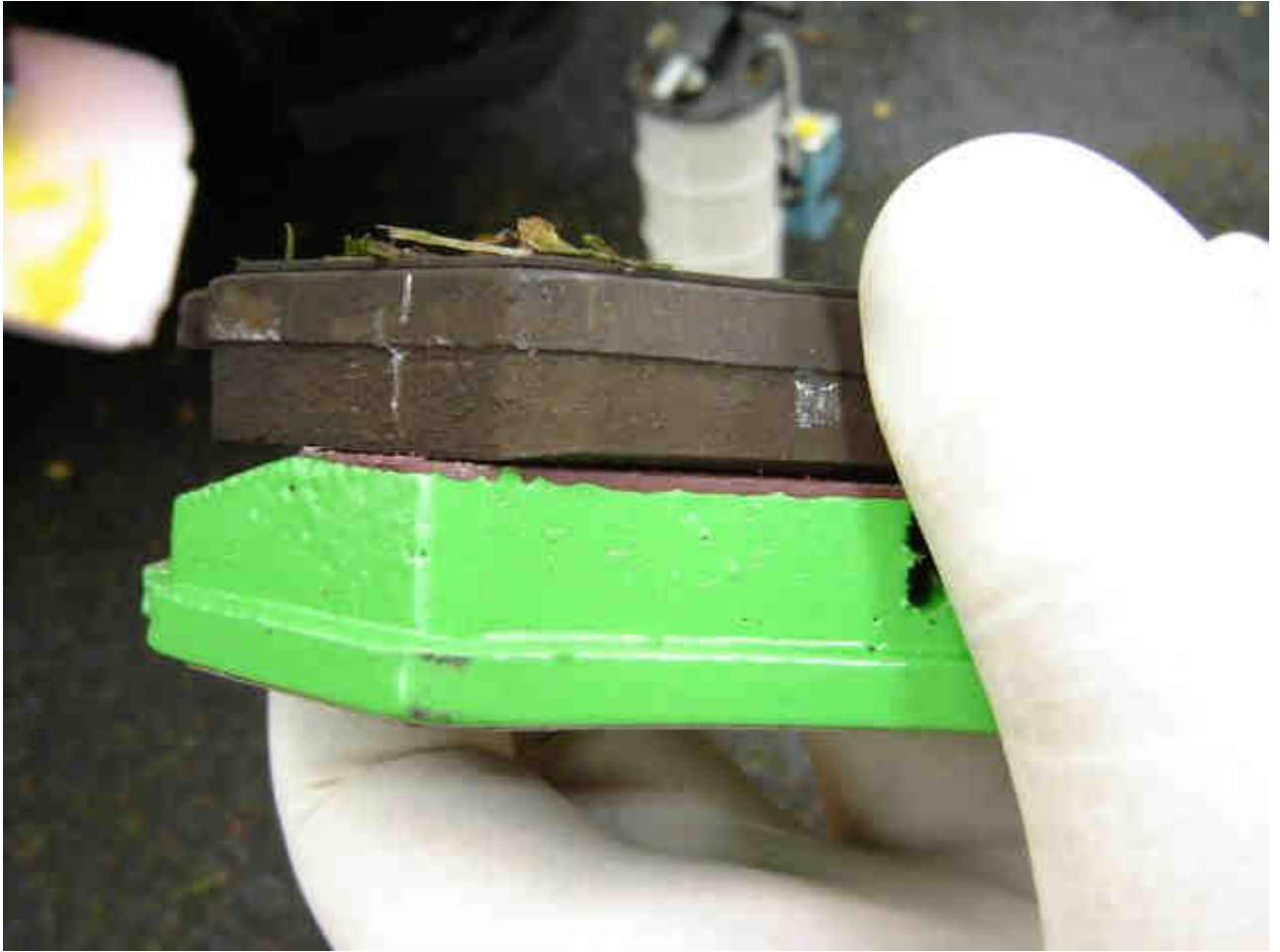
Side note, I prepped, and cleaned 1/2 of my caliper and used caliper paint for a flashy look. It's not necessary to do the whole caliper with my wheel setup. Follow the directions on the caliper paint.





32. Close the bleeder screw, and torque it to **10-13 FT LBS**, and replace the dust cap.

33. Compare the old brake pads to the new ones, to make sure they are a perfect match. Do not worry if the shim (the metal part that is stuck to the pads) is slightly different. This is ok.





34. Apply a small amount of disk-brake quiet to the backing plates of the pads. This material will harden up, and conform to the caliper carrier and caliper and prevent brake squealing. Do not use a ton of this stuff, only a

little.





Silly monster garage gloves not needed to do brake job..

35. Allow the anti-squeal compound to dry for 10 min (as per the directions). And then place the pads into the caliper carrier.

Add some Blue-Loctite to the threads of the caliper pin bolts. VW says to replace this hardware, but it's only needed IF you do not re apply the blue-thread locker (My opinion).

36. Swing the caliper down on to the pads assy. Reinstall the small bolts that held the caliper to its carrier. Hold the 15mm slide pins, and torque the bolts to 25 **Ft Lbs.**

Note, make sure the caliper shim on the piston side does not shift out of place. This can be tricky. The Jetta/Golf pads on the GLS have small spring like clips to keep them from making noise. This can be stiff and some force must be

used to swing the caliper into position. Make sure all 4 of these little buggers are seated inside the caliper.

Start with the top bolt in place (finger tight), and then swing the caliper down. Press firmly to get the lower bolt to line up. Keep an eye out for the slide pin, if it's out too far it can block the caliper from swinging into position.



37. Reinstall and torque the wheel to **81 Ft Lbs.** Remember, star pattern.

38. Lower vehicle.

39. Do steps 1 - 38 on the other side.



40.

PUMP THE BRAKES BEFORE DRIVING!
Road test the vehicle to confirm proper function of the brakes.
USE CAUTION THE FIRST TIME YOU DRIVE YOUR CAR AFTER
MODIFICATION TO ENSURE THE PROPER FUNCTION OF ALL VEHICLE
SYSTEMS!

41. [Bed in your new shoes](#)... enjoy... your perfect brake job, quiet, and good stopping!

Finished Pictures!







End of article - Questions? Comments - danireed@gmail.com