



VW MKIV Big Brake Kit Installation Instructions



Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

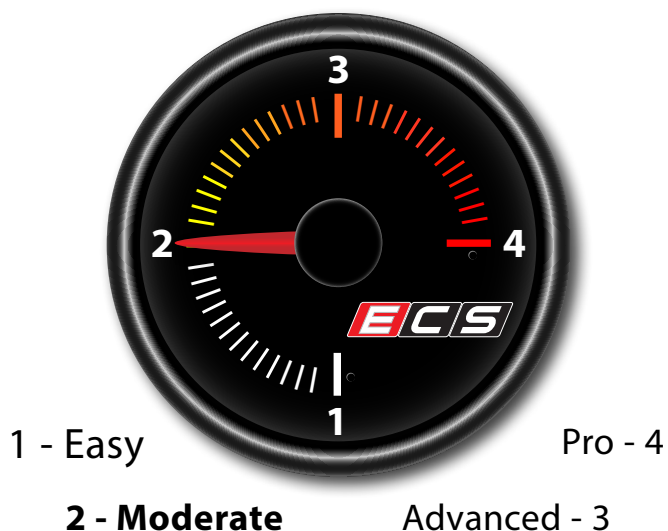
INTRODUCTION

The Project:

The ECS Tuning Big Brake Kit provides huge improvements in braking power with a specially packaged kit containing:

- ECS Tuning four piston calipers available in red, blue, or black
- All caliper mounting hardware
- ECS Tuning two-piece drilled and slotted floating rotor kits
- Hawk HPS brake pads
- Brake pads dampening plates
- ECS Tuning Exact-Fit brake line kit
- High quality Pentosin DOT 4 brake fluid

ECS Difficulty Gauge



Installing the ECS Tuning big brake kit on your MKIV Volkswagen is a great weekend project. Plan your time accordingly based on your experience level. These easy-to-follow instructions will help you with a smooth trouble-free installation. Before you begin, read and familiarize yourself with these instructions and make sure you have all the required tools on hand. Thank you for purchasing our ECS Tuning big brake kit. We appreciate your business!

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KIT CONTENTS



ECS Tuning Front Brake Calipers with Hardware



ECS Tuning Caliper Brackets



ECS Tuning Brake Hoses



DOT 4 Brake Fluid



Performance Brake Pad Set



ECS Tuning Two Piece Rotors



44mm Brake Pad Dampening Plates



36mm Brake Pad Dampening Plates



Caliper Mounting Bolts



Brake Hose Retaining Clips



Brake Line Clips



Banjo Bolts and Sealing Washers

REQUIRED TOOLS

Note: The tools required for each step will be listed by the step number throughout these instructions.

Standard Automotive Tools

- **Protecta-Sockets (for lug nuts)** [ES#2221243](#)
- **3/8" Drive Ratchet** [ES#2765902](#)
- **3/8" Drive Torque Wrench** [ES#2221245](#)
- **3/8" Drive Deep and Shallow Sockets** [ES#2763772](#)
- **3/8" Drive Extensions** [ES#2804822](#)
- **Hydraulic Floor Jack** [ES#240941](#)
- **Torx Drivers and Sockets** [ES#11417/8](#)
- **1/2" Drive Deep and Shallow Sockets** [ES#2839106](#)
- **1/2" Drive Ratchet**
- **1/2" Drive Extensions**
- **1/2" Drive Torque Wrench** [ES#2221244](#)
- **1/2" Drive Breaker Bar** [ES#2776653](#)
- Bench Mounted Vise
- Crows Foot Wrenches
- Hook and Pick Tool Set [ES#2778980](#)

Required For This Install

Available On Our Website

- **1/4" Drive Ratchet** [ES#2823235](#)
- **1/4" Drive Deep and Shallow Sockets** [ES#2823235](#)
- **1/4" Drive Extensions** [ES#2823235](#)
- **Plier and Cutter Set** [ES#2804496](#)
- **Flat and Phillips Screwdrivers** [ES#2225921](#)
- **Jack Stands** [ES#2763355](#)
- **Ball Pein Hammers**
- **Pry Bar Set** [ES#1899378](#)
- Electric/Cordless Drill
- Wire Strippers/Crimpers
- Drill Bits
- **Flare Nut Wrench Set** [ES#2840737](#)
- **Hex Bit (Allen) Wrenches and Sockets** [ES#11420](#)
- **Thread Repair Tools** [ES#1306824](#)
- **Open/Boxed End Wrench Set** [ES#2765907](#)

SHOP SUPPLIES AND MATERIALS

Standard Shop Supply Recommendations: We recommend that you have a standard inventory of automotive shop supplies before beginning this or any automotive repair procedure. The following list outlines the basic shop supplies that we like to keep on hand. Shop supplies with a hyperlink are available on our website.

- Hand Cleaner/Degreaser - [Click Here](#)
- Pig Mats - for protecting your garage floor and work area from spills and stains - [Click Here](#)
- Spray detailer - for rapid cleaning of anything that comes into contact with your paint such as brake fluid - [Click Here](#)
- Micro Fiber Towels - for cleaning the paint on your car - [Click Here](#)
- Latex Gloves - for the extra oily and dirty jobs - [Click Here](#)
- Medium and High Strength Loctite Thread lock compound - to prevent bolts from backing out - [Click Here](#)
- Anti-Seize Compound - to prevent seizing, galling, and corrosion of fasteners - [Click Here](#)
- Aerosol Brake/Parts Cleaner - for cleaning and degreasing parts
- Shop Rags - used for wiping hands, tools, and parts
- Penetrating oil - for helping to free rusted or stuck bolts and nuts
- Mechanics wire - for securing components out of the way
- Silicone spray lube - for rubber components such as exhaust hangers
- Paint Marker - for marking installation positions or bolts during a torquing sequence
- Plastic Wire Ties/Zip Ties - for routing and securing wiring harnesses or vacuum hoses
- Electrical tape - for wrapping wiring harnesses or temporary securing of small components

INSTALLATION NOTES

- **RH** refers to the *passenger side* of the vehicle.
- **LH** refers to the *driver side* of the vehicle.
- Always use the proper torque specifications.
- If applicable to this installation, torque specifications will be listed throughout the document and at the end as well.
- Please read all of these instructions and familiarize yourself with the complete process **BEFORE** you begin.

GENERAL PREPARATION AND SAFETY INFORMATION

ECS Tuning cares about your health and safety, please read the following safety information. This information pertains to automotive service in general, and while it may not pertain to every job you do, please remember and share these important safety tips.

- Park your car in a safe, well lit, level area.
- Shut the engine off and remove the key from the ignition switch.
- Make sure any remote start devices are properly disabled.
- **ALWAYS** wear safety glasses.
- Make sure the parking brake is applied until the vehicle is safely lifted and supported.
- Whether lifting a vehicle using an automotive lift or a hydraulic jack, be sure and utilize the factory specified lift points.
- Lifting a vehicle in an incorrect location can cause damage to the suspension/running gear.
- **ALWAYS** support the vehicle with jack stands.
- **ALWAYS** read and follow all safety information and warnings for the equipment you are using.



NEVER get underneath a vehicle that is supported only by a jack, and **ALWAYS** make sure that the vehicle is securely supported on jack stands.

REMOVING THE ORIGINAL BRAKES

Step 1:

Safely raise and support the vehicle and remove the front wheels.



Step 2:

11mm Line Wrench

Disconnect the brake line from the front brake hose and remove all retaining clips then remove the brake hose from the bracket on the body.



Brake fluid is extremely corrosive and can damage surrounding parts as well as skin and eyes. Before removing the stock brake line, put on gloves and goggles and shield surrounding parts from the fluid.



REMOVING THE ORIGINAL BRAKES

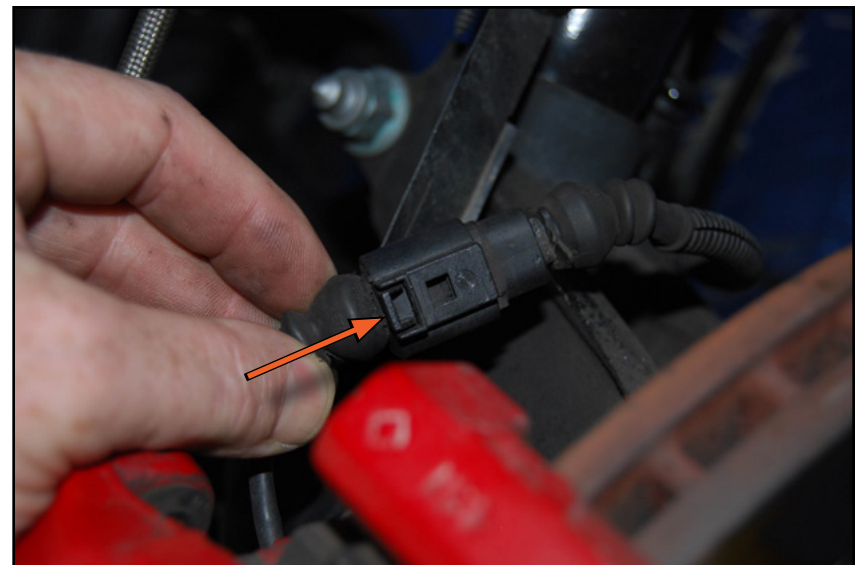
Step 3: Needle Nose Vise Grips or Pinch Off Pliers

Push a piece of hose over the end of the brake line and use needle nose vise grips or pinch off pliers to crimp the hose. Sealing the end of the line will prevent harmful brake fluid from getting on unwanted surfaces and will keep the system from draining completely.



Step 4:

Disconnect the brake pad wear sensor connector by pushing in on the release tab (arrow) and pulling the connector apart.



REMOVING THE ORIGINAL BRAKES

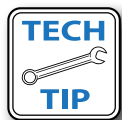
Step 5: 18mm Socket & Ratchet

Loosen and remove the two 18mm caliper carrier bolts and remove the caliper, caliper carrier, brake pads, and hose as a complete assembly.



Step 6: Phillips Head Screwdriver or Impact Driver

Remove the rotor set screw and pull the rotor off of the hub.



While a screwdriver will remove the set screw in most cases, an impact driver comes in handy for breaking loose especially stubborn, rusted screws. ECS offers an impact screwdriver and it is available on our website or by clicking [HERE](#).



REMOVING THE ORIGINAL BRAKES

Step 7: Emery Cloth or Wire Brush

Thoroughly clean the hub surface to create a smooth contact surface for the new rotor.

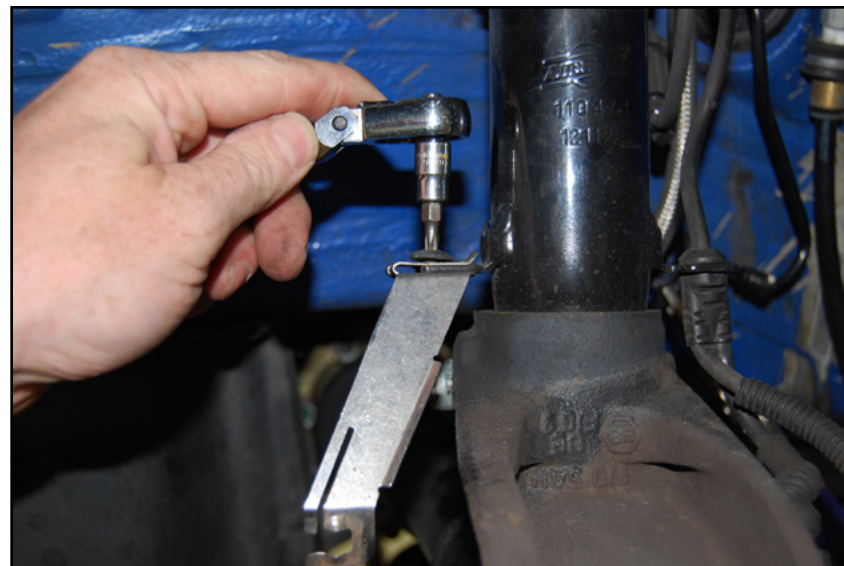


Step 8: T25 Torx Bit and Ratchet

Remove the T25 bolt securing the brake pad wear connector bracket to the knuckle.



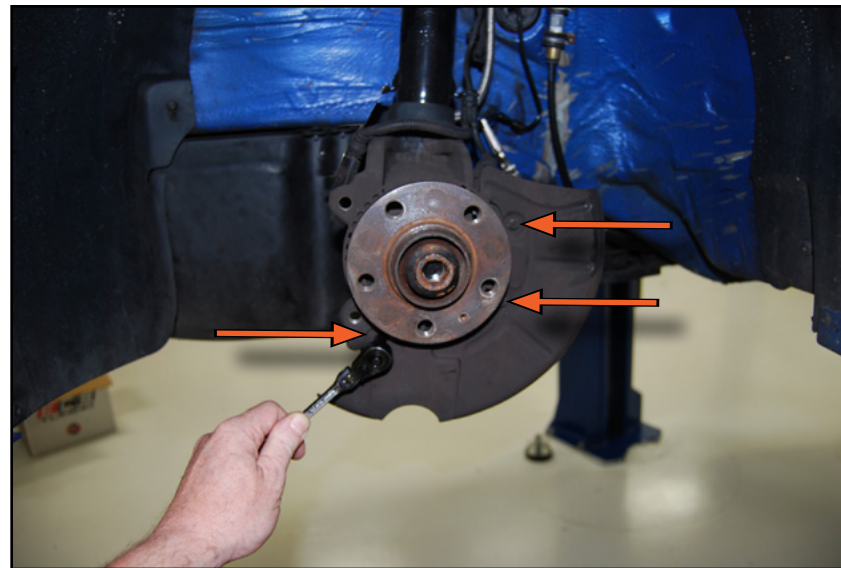
The performance brake pads that come with this kit do not utilize a wear sensor. We are removing this bracket for a clean appearance. See Page 20 for information on our wear sensor bypass connector.



REMOVING THE ORIGINAL BRAKES

Step 9: 7mm Socket & Ratchet

Remove the three 7mm bolts securing the dust shield and remove it from vehicle.

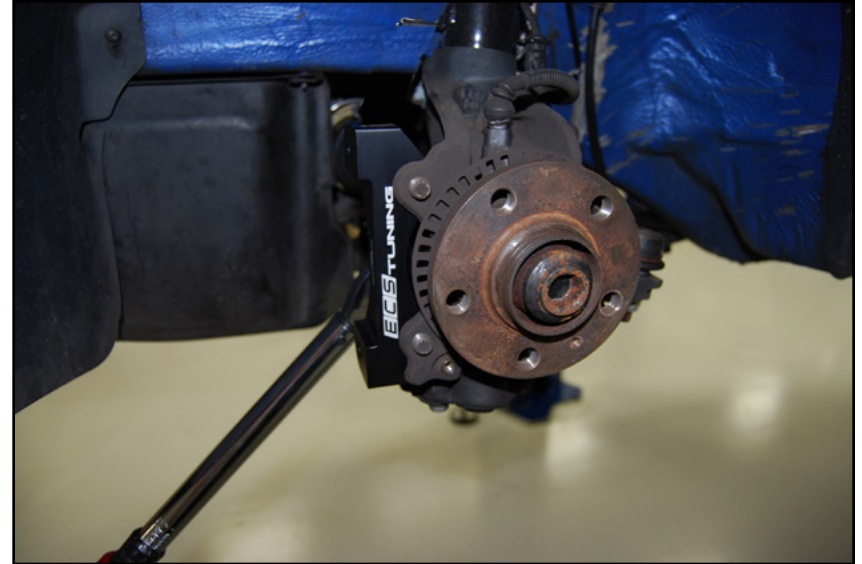


You are now ready to install the new big brake components. Proceed with the installation, beginning on the next page.

BIG BRAKE KIT INSTALLATION

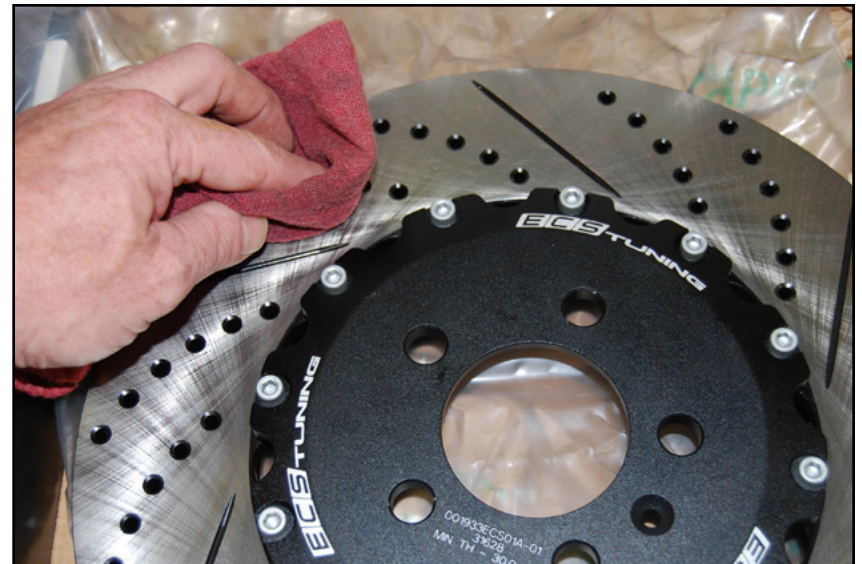
Step 1: Socket Set & Ratchet

Install the new caliper bracket onto the steering knuckle using the original caliper carrier bolts. Torque the bolts to 125 Nm (92 ft-lbs).



Step 2: Brake Cleaner & Cloth

Thoroughly clean the surface of the new rotor using brake cleaner and a clean, lint free cloth.

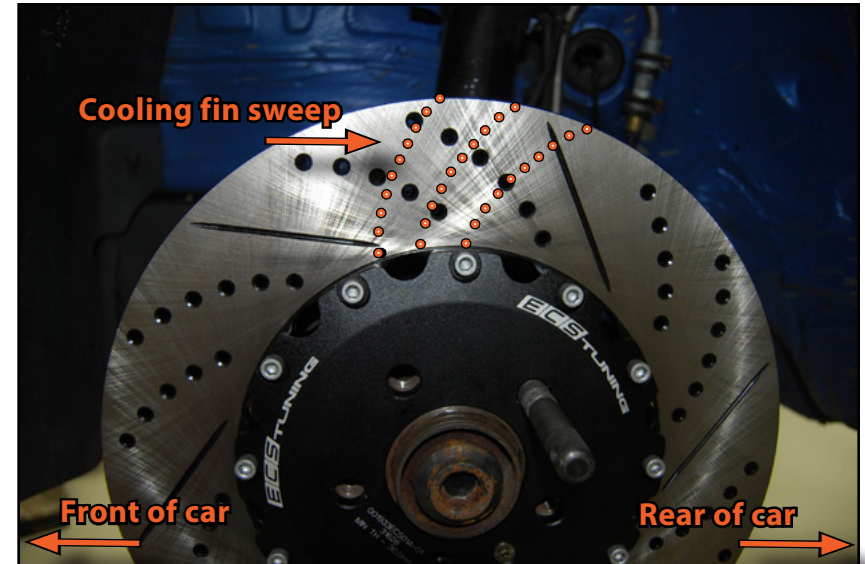


BIG BRAKE KIT INSTALLATION

Step 3: Phillips Screwdriver

Install the new brake rotor onto the hub and install the stainless steel set screw.

Apply a small amount of sealer around the lip of the cap and install on the end of the hub, tapping it in place with a mallet if necessary.



Step 4: 6mm Allen Wrench

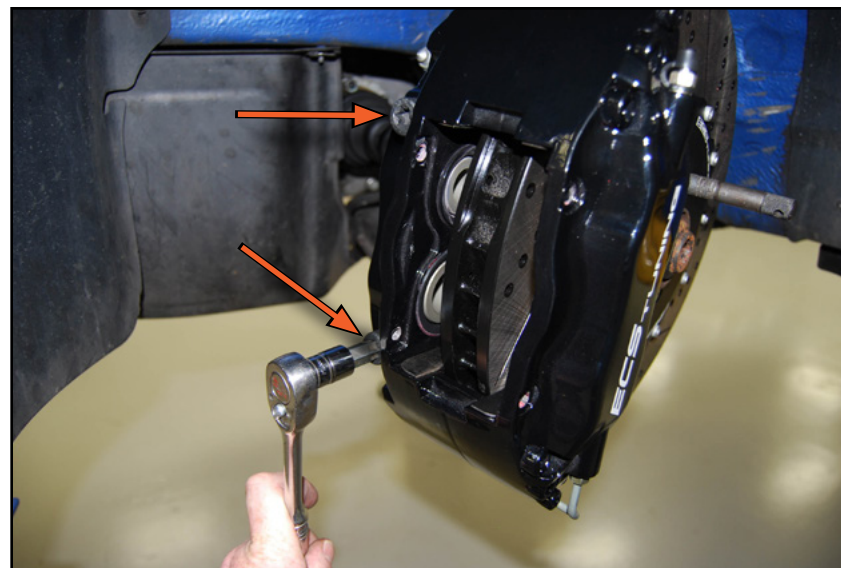
Place a new caliper on a soft rag or fender cover to protect the finish, then remove the two 6mm brake pad tensioning plate bolts and lift the plate and spacers out of the caliper.



BIG BRAKE KIT INSTALLATION

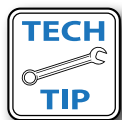
Step 5: T55 Torx Socket & Ratchet

Install the caliper in place on the car and hand tighten the bolts (arrows) using a T55 Torx socket. It is not necessary to torque the bolts at this time.

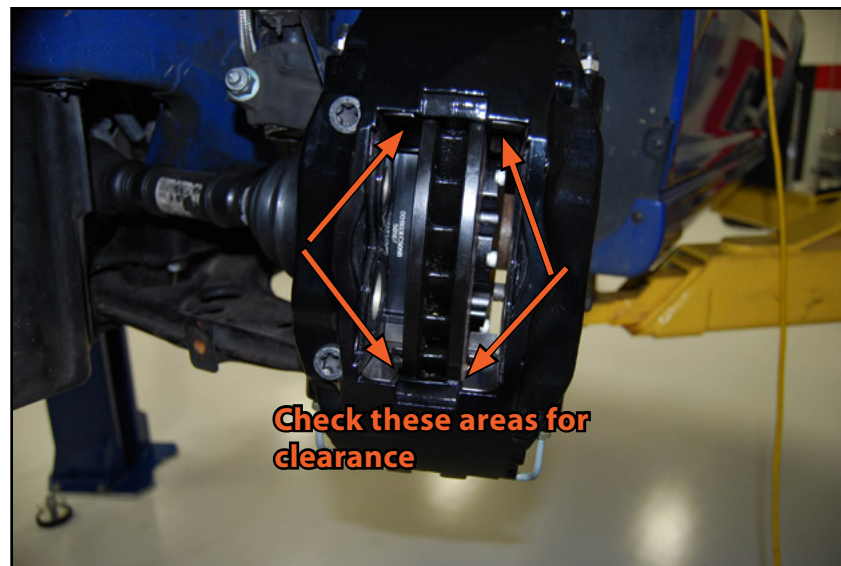


Step 6:

Closely inspect all areas of the caliper for proper clearance between the caliper and the rotor. Spin the brake rotor and make sure it spins freely.



If the rotor contacts the caliper at any points, remove the caliper and rotor and check for any rust or debris between the rotor and drive hub or on the caliper mounting bracket.



BIG BRAKE KIT INSTALLATION

Step 7:

Remove the caliper from the car and place it back onto your work surface. Next, remove the waxed paper on the back side of each brake pad dampening plate.



Step 8:

Install four brake pad dampening plates into the caliper pistons. (Shown here with the waxed paper installed for clarity).



There are two different size pistons in each of these calipers. The retaining clips on the dampening plates are two different sizes as well. Make sure you install the correct plate in each piston.



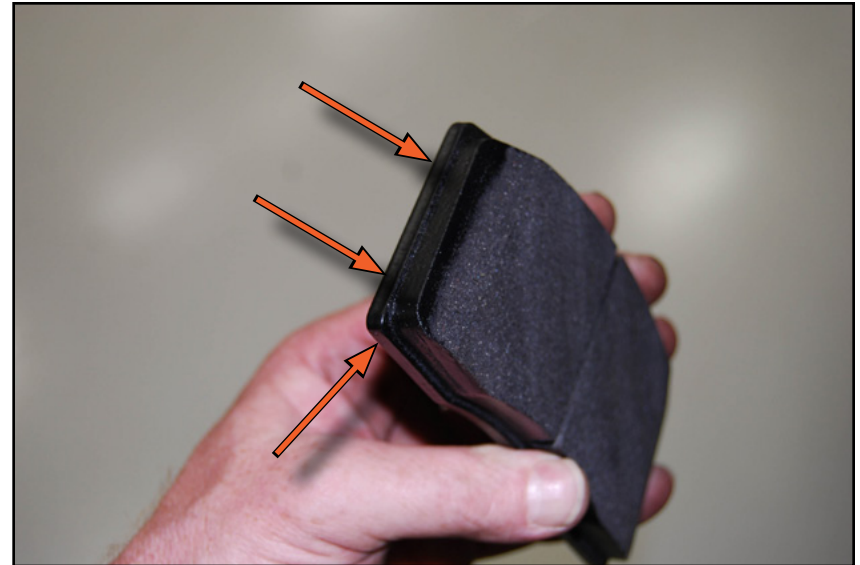
BIG BRAKE KIT INSTALLATION

Step 9:

Sparingly apply high temperature brake parts lubricant (included with the kit) to the brake pads on the areas shown with arrows. Make sure to apply the lubricant to both ends of each brake pad. The lubricant is intended for the areas where the pad edge contacts the caliper. Install a pad into the caliper and note the contact areas if you are uncertain of where to apply the lubricant.

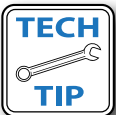


Be careful not to get any lubricant on the brake pad dampening plates or the friction surface of the brake pads.



Step 10:

Slide both brake pads into the caliper until they rest on the lower pad seat, then push them back against the pistons. The pads should slide in with relative ease.



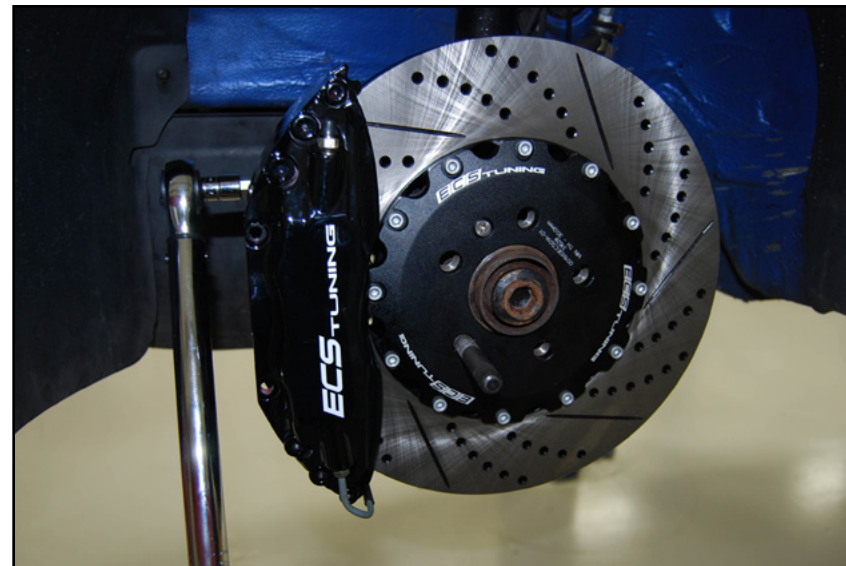
If any of the brake pads do not slide easily into the caliper, remove them and check the ends for any burrs or runs in the coating. You can lightly file away these imperfections to allow for a proper fit of the brake pad.



BIG BRAKE KIT INSTALLATION

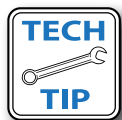
Step 11:

Install the brake caliper back onto the car and torque the bolts to 85 Nm (62 Ft-lbs).



Step 12:

Install the brake pad tensioning plate and spacers into place, then install the two retaining bolts and torque them to 15 Nm (11 Ft-lbs).



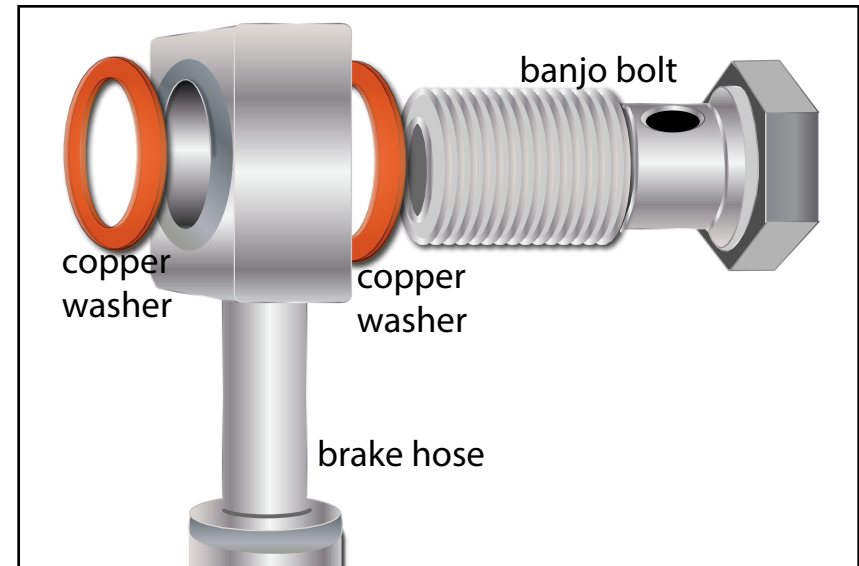
You will have to press down and hold the spacers while installing the bolts to overcome the spring tension on the tensioning plate.



BIG BRAKE KIT INSTALLATION

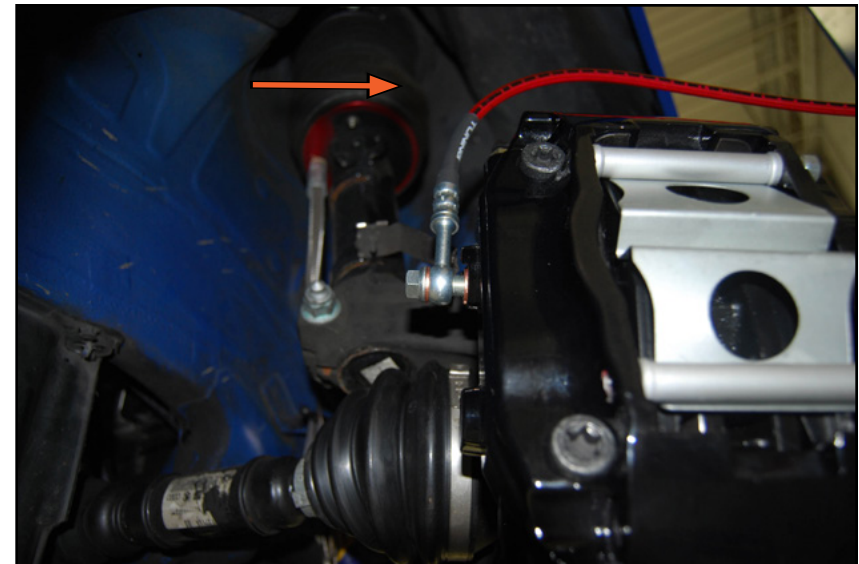
Step 13:

Assemble the banjo bolt and brake line as shown here, with one sealing washer as the head of the banjo bolt and the other between the brake line block connector and caliper.



Step 14: 12mm Socket & Ratchet

Remove the sealing plug from the back of the brake caliper and install the new brake hose using the new 12mm banjo bolt with the two sealing washers. Make sure the hose is pointing straight upward, then torque the banjo bolt to 17 Nm (13 Ft-lbs).



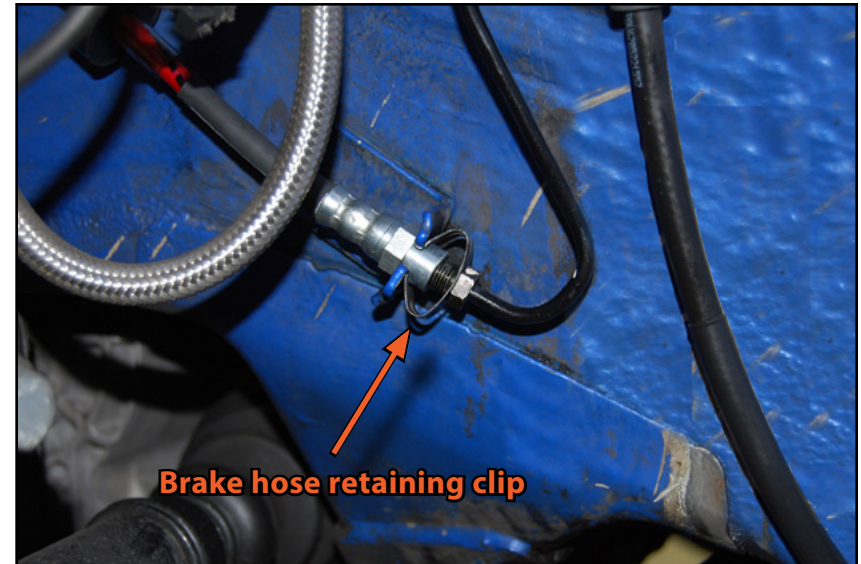
BIG BRAKE KIT INSTALLATION

Step 15:

Install the brake hose into the body mount bracket. Remove the "plug" from the brake line, place a new retaining clip over the end of the brake line and thread the brake line fitting into the hose. Tighten the brake line.

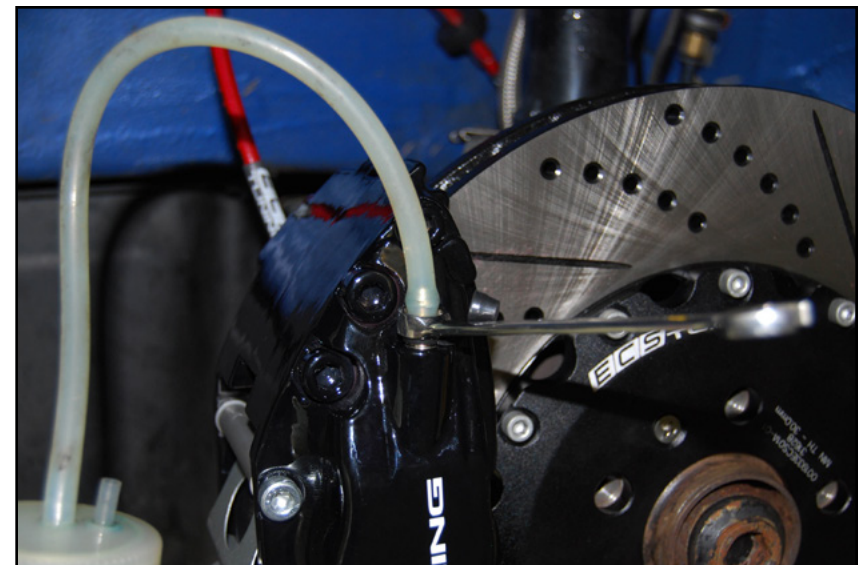


In order to fit a number of different applications, this brake kit contains two different styles of brake hose retaining clips. Be sure to use the clips that match the originals on your car.



Step 16: 13mm Wrench

Bleed the air from the brake system. These calipers have two bleeders each. Bleed the calipers in this order: RF outer bleeder, RF inner bleeder, LF outer bleeder, LF inner bleeder.



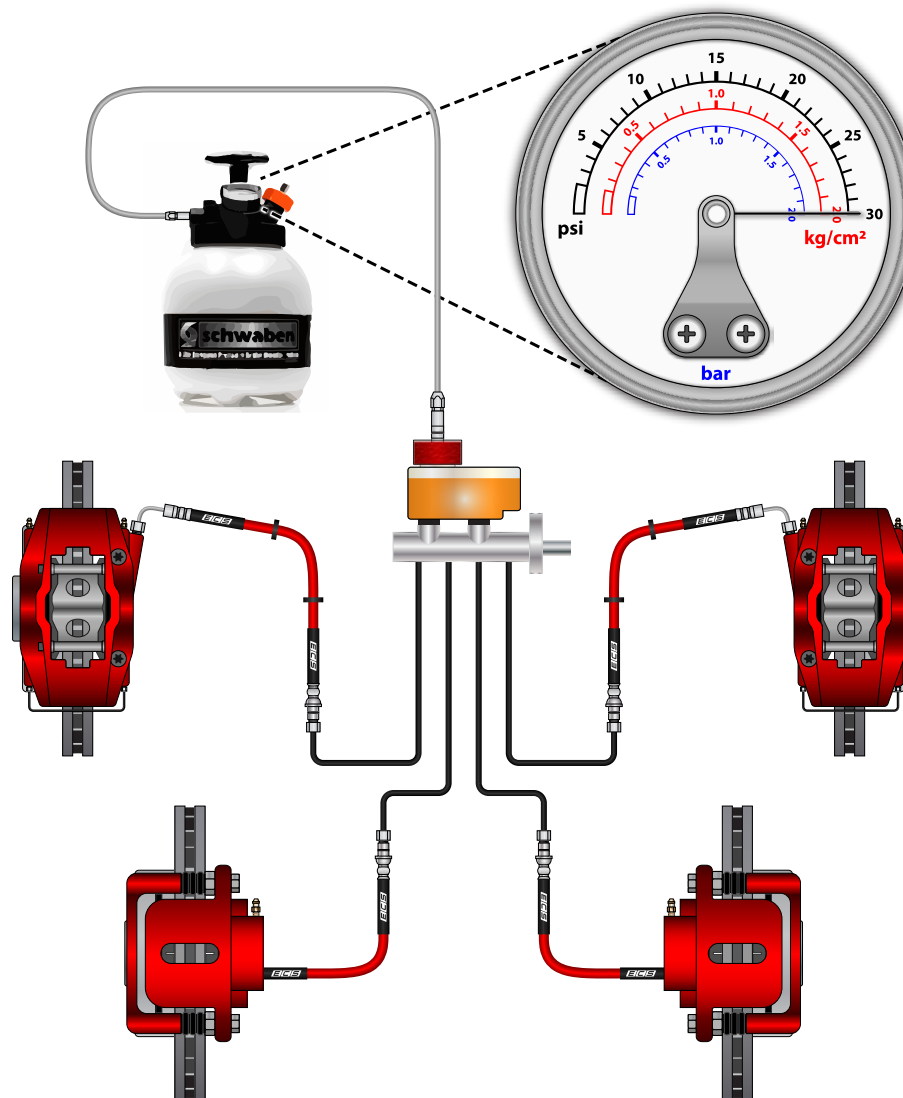
Proceed to the next page for brake master cylinder bleeding procedure.

BRAKE LINE BLEEDING PROCEDURE

Step 17: Brake Bleeder

Whenever the brake lines are serviced you will need to bleed the air from the system, consult your service for model specific instructions.

We suggest the use of our 3-Liter Premium European Brake Bleeder ([ES3125779](#)) for this job because it features a professional grade aluminum master cylinder cap adapter which can handle the higher pressure.



FINAL ASSEMBLY

Perform the following steps for final assembly:

- Install the wheels on the car and torque the wheel bolts to 120 Nm (89 Ft-lbs).
- Lower the car to the ground
- Check hose/line connections and clearance then top off brake fluid in the reservoir.

Proceed to next page for brake pad break in procedure

MKIV STAGE 3 BIG BRAKE KIT

Pad Break in and Maintenance

- Be sure to read the pad break in procedure included with the pads in the kit. Performing this procedure as specified will guarantee the correct performance and wear from your brake pads.
- To ensure even wear, consistent performance, and long life of your brake pads, it is a good idea to remove the pads once a year and clean any rust, dirt, or debris from the brake pad and caliper. Relubricate the contact points as shown on page 17, step 9.

Brake Pad Wear Sensor Bypass

- To prevent the brake pad warning indicator from illuminating, you may install one of our ECS Tuning Brake Pad Wear Sensor Bypass connectors ([ES#2785559](#)).
- We have chosen to remove the wear sensor connector bracket for a clean appearance. In addition, we installed our wear sensor bypass and secured the harness with wire ties along side of the ABS sensor harness.

REPLACEMENT PARTS AND HARDWARE

Stainless Steel Brake Rotor Screw ([ES#257461](#))

Brake Pad Dampening Plate for 44mm piston ([ES#1466558](#))

Brake Pad Dampening Plate for 36mm piston ([ES#1458693](#))

TORQUE SPECIFICATIONS

Brake Hose Banjo Bolt	17 Nm (13 Ft-lbs)	(Page 18)
Caliper Bracket Bolts.....	125 Nm (92 Ft-lbs)	(Page 12)
Caliper Mounting Bolts	85 Nm (62 Ft-lbs)	(Page 17)
Caliper Tension Plate Bolts.....	15 Nm (11 Ft-lbs)	(Page 17)
Rotor Screw	4 Nm (3 Ft-lbs).....	(Page 13)
Wheels.....	120 Nm (89 Ft-lbs)	(Page 19)
Axial Bolt (Through spindle to caliper bracket).....	190 Nm (140 Ft-lbs)	
Radial Nut (Attaches to stud that protrudes from the caliper bracket through the caliper).....	120 Nm (89 Ft-lbs)	

- A note about torque to yield or “stretch” bolts: Many bolts will have a torque specification listed in the format - xx Nm+xx degrees (xx Ft-lbs+xx degrees). These bolts are torque to yield bolts, commonly referred to as “stretch” bolts. The correct procedure for torquing these bolts is: **Stage One** - torque them to the Nm or Ft-lb specification. **Stage Two** - tighten each one the additional specified number of degrees. To prevent over torquing it is important to mark each fastener with paint **immediately** after performing the second stage or “stretching” of the bolts.

SCHWABEN - BUILD THE ULTIMATE TOOL COLLECTION

At ECS Tuning, we carry a line of high quality Schwaben Tools and Equipment to help you build your ultimate tool collection. Never before has affordability and quality been so closely related. Our entire Schwaben line is subjected to strict in house testing for strength and durability. See what we have to offer and equip your garage without breaking the bank.

Your VW MKIV Stage 3 Big Brake Kit installation is complete!



These instructions are provided as a courtesy by ECS Tuning

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