VW MKV/VI Stage 3 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

Stage 3 BBK Kits require minimum 17-inch diameter road wheels with a spoke design and enough offset to clear the larger caliper bodies.

Please download and use the template from the BBK product page to ensure adequate caliper-to-wheel clearance.

ECS Difficulty Gauge

1 - Easy

Pro - 4

2 - Moderate

Advanced - 3

Installing the ECS Tuning big brake kit on your MKV/VI Volkswagen is a great weekend project. Plan you 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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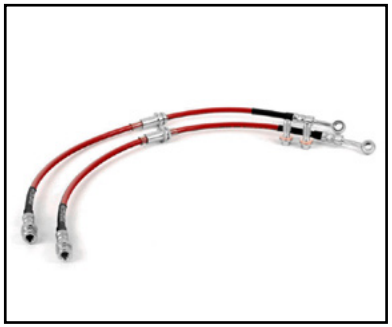
KIT CONTENTS


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

High Temp Brake Lube


Caliper To Carrier bolts


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

Required For This Install

Available On Our Website

- **Protecta-Sockets (for lug nuts)** ..... ES#2221243
- **⅜" Drive Ratchet** ..... ES#2765902
- **⅜" Drive Torque Wrench** ..... ES#2221245
- **⅜" Drive Deep and Shallow Sockets** ..... ES#2763772
- ⅜" Drive Extensions ..... ES#2804822
- **Hydraulic Floor Jack** ..... ES#240941
- **Torx Drivers and Sockets** ..... ES#11417/8
- **½" Drive Deep and Shallow Sockets** ..... ES#2839106
- **½" Drive Ratchet**
- ½" Drive Extensions
- **½" Drive Torque Wrench** ..... ES#2221244
- **½" Drive Breaker Bar** ..... ES#2776653
- Bench Mounted Vise
- Crows Foot Wrenches
- Hook and Pick Tool Set ..... ES#2778980
- ¼" Drive Ratchet ..... ES#2823235
- ¼" Drive Deep and Shallow Sockets ..... ES#2823235
- ¼" 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.

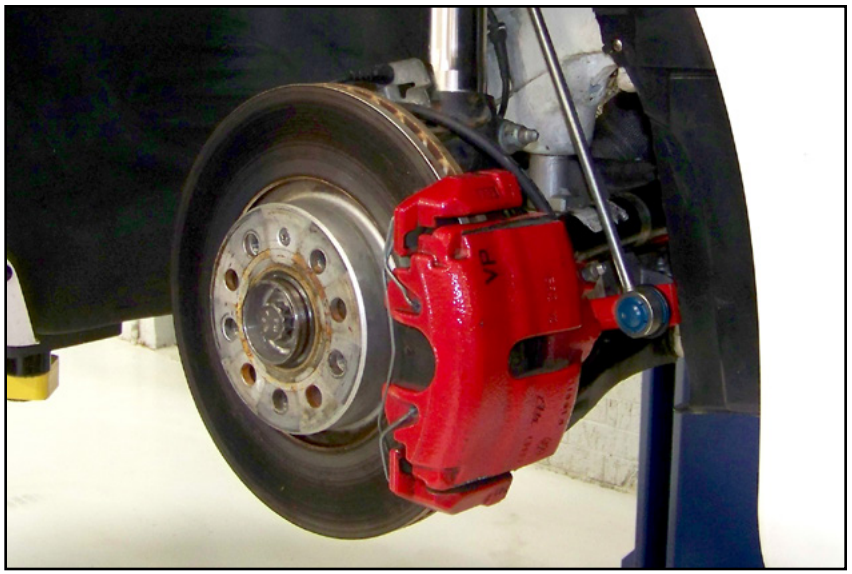
- Park your car in a safe, well lit, level area.
- Shut the engine off and remove the key from the ignition switch.
- Make sure any remote start devices are properly disabled.
- **ALWAYS** wear safety glasses.
- Make sure the parking brake is applied until the vehicle is safely lifted and supported.
- 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

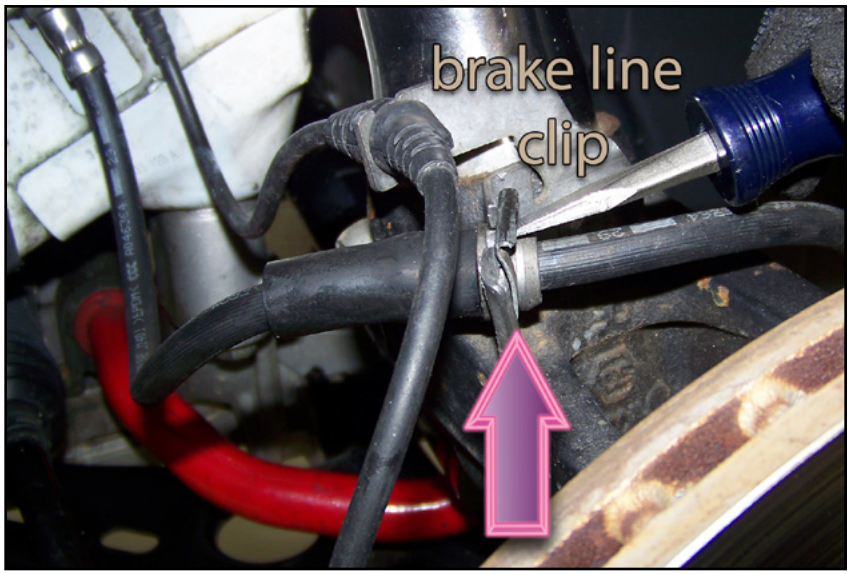
Step 1:

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



Step 2: Flat Head Screwdriver

Using a common screwdriver, pry the u-shaped retainer clip from the brake hose bracket at the strut knuckle.



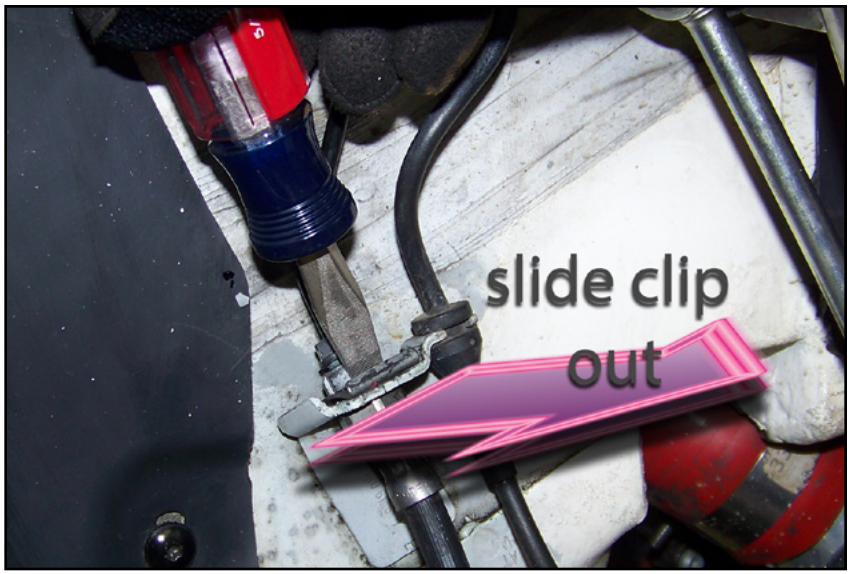
STOP

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: Flat Head Screwdriver

Follow the brake hose to the chassis. Using the same common screwdriver or similar tool, pry the u-shaped retainer clip from the chassis support bracket.

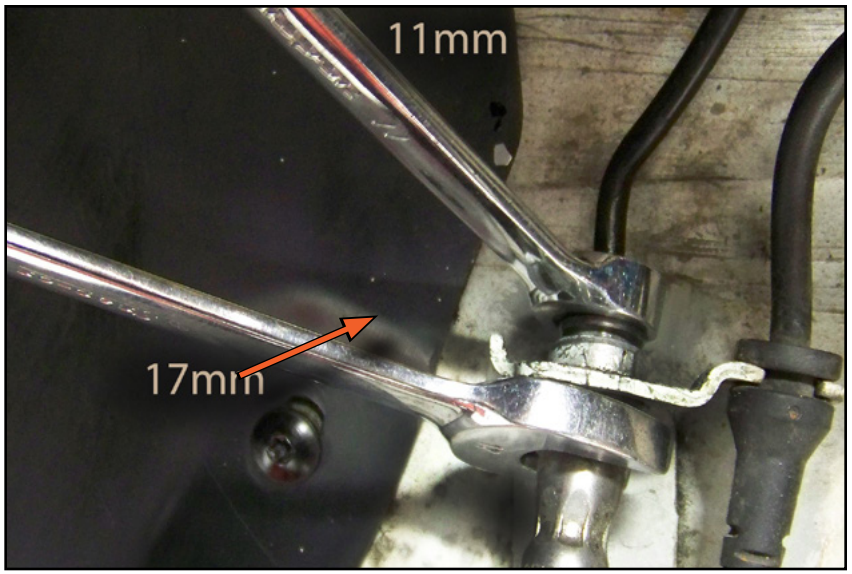


Step 4: 11mm & 17mm Line Wrench

Using two line wrenches loosen and disconnect the solid brake line from the brake hose.

TECH TIP

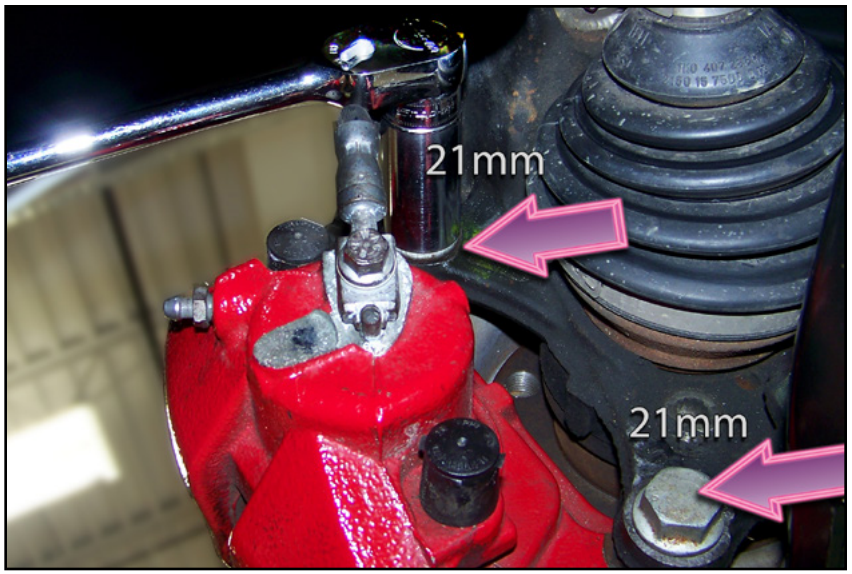
Transfer the rubber cap from the caliper brake bleeder screw to the end of the disconnected solid brake line. This will keep brake fluid from draining onto the floor.



REMOVING THE ORIGINAL BRAKES

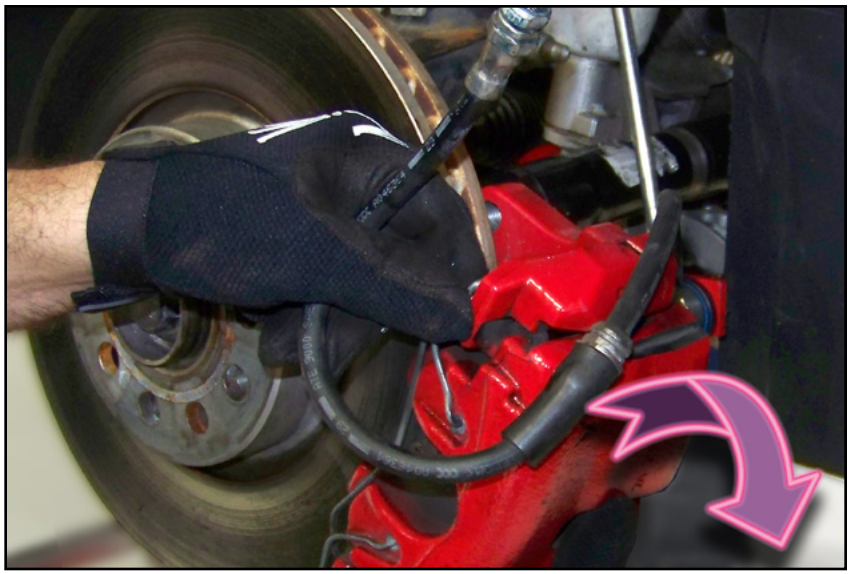
Step 5: 21mm Socket & Ratchet

Loosen and set aside the two 21mm caliper carrier bolts and slide the caliper assembly off the rotor



Step 6: Phillips Head Screwdriver or Impact Driver

Remove the entire caliper, caliper carrier, brake pads and brake line from the vehicle as a complete assembly.



NOTE

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 21 for information on our wear sensor bypass connector.

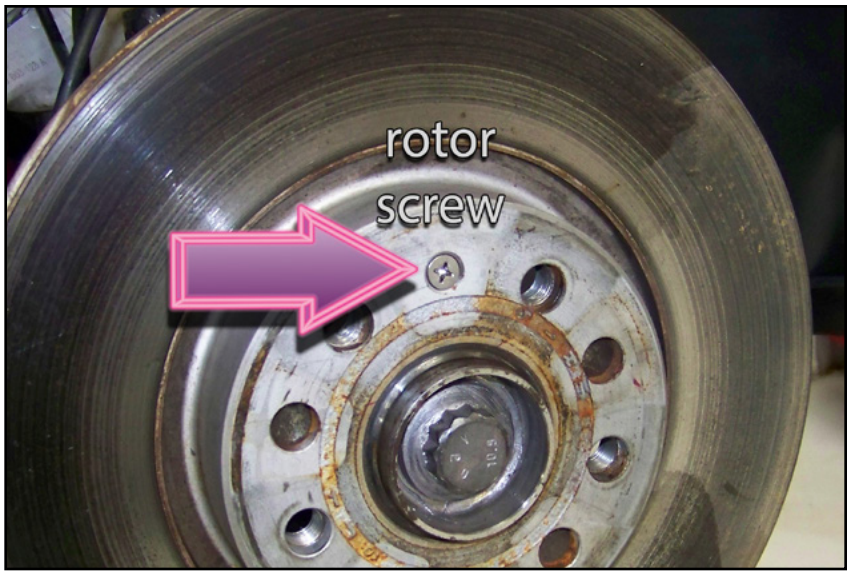
REMOVING THE ORIGINAL BRAKES

Step 7: Phillips Head Screwdriver or Impact Driver

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

TECH TIP

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.



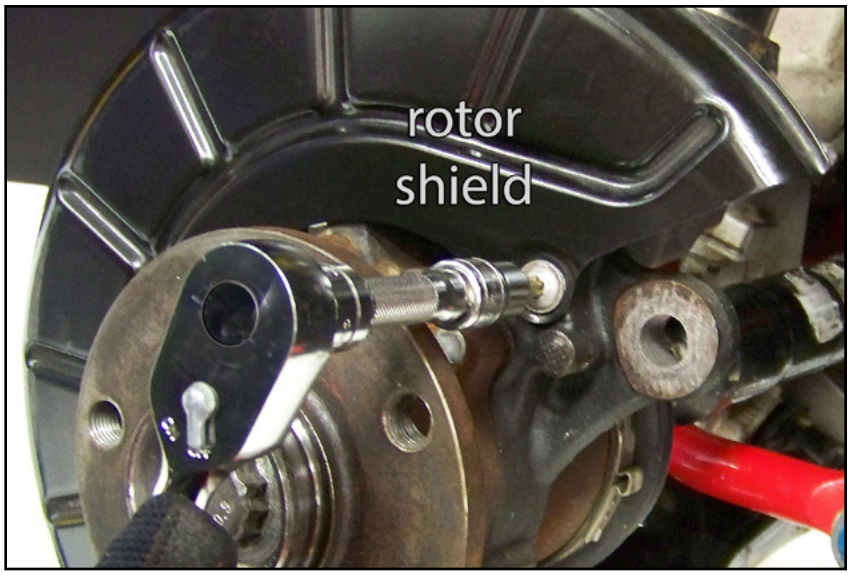
Step 8: Emery Cloth or Wire Brush

Remove the old rotor and thoroughly clean the hub surface with emery cloth or a wire brush to create a smooth contact surface for the new rotor.

REMOVING THE ORIGINAL BRAKES

Step 9: T30 Torx Socket & Ratchet

Remove the three T30 Torx bolts securing the dust shield and remove it from vehicle.

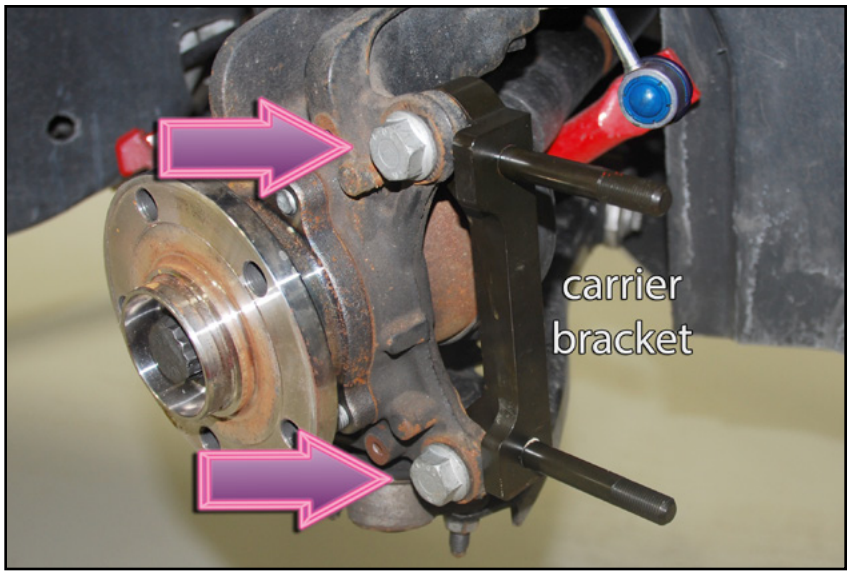


You are now ready to install the new big brake components. Proceed with the installation, beginning on the next page.

BIG BRAKE KIT INSTALLATION

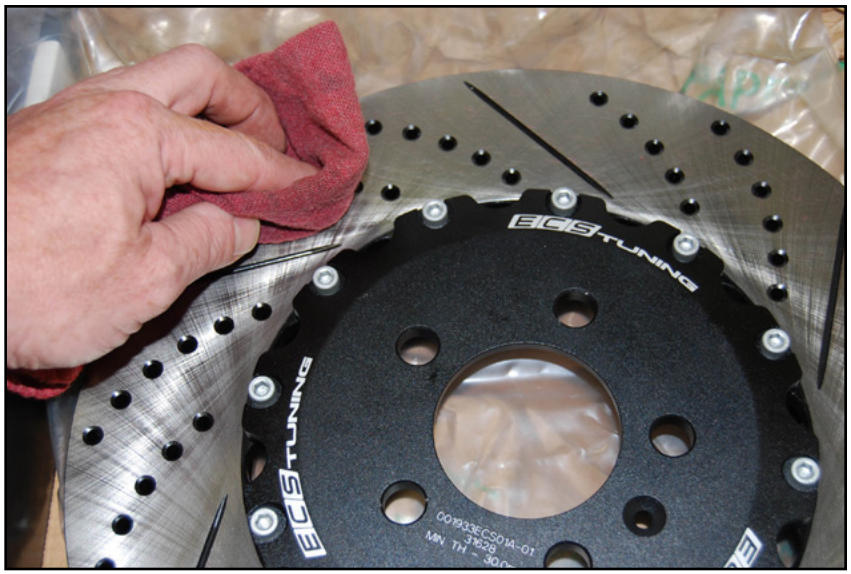
Step 1: Socket Set & Ratchet

Install the new caliper bracket onto the steering knuckle using the original caliper carrier bolts. Torque the bolts to 190 Nm (142 ft-lbs).



Step 2: Brake Cleaner & Cloth

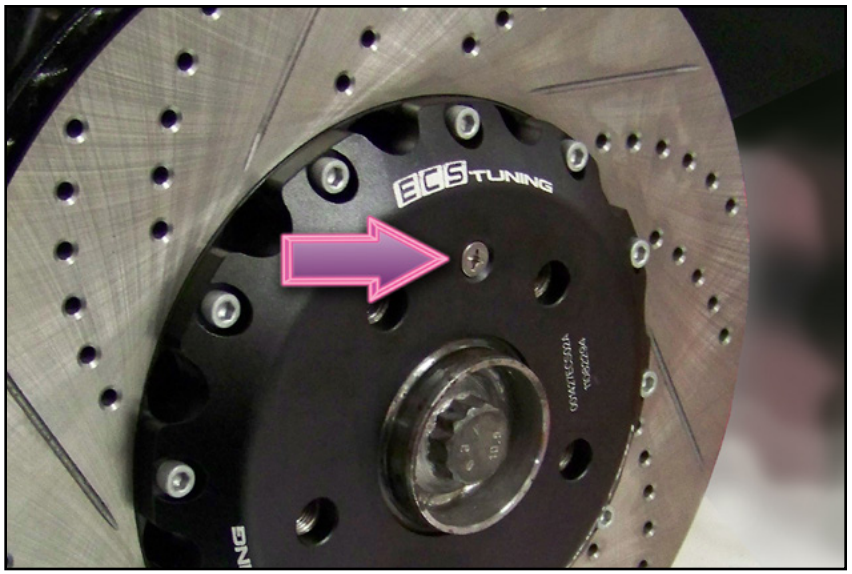
Thoroughly clean the surface of the new rotor using brake cleaner and a clean, lint free cloth.



BIG BRAKE KIT INSTALLATION

Step 3: Phillips Screwdriver

Install the new brake rotor onto the hub and reinstall the set screw.

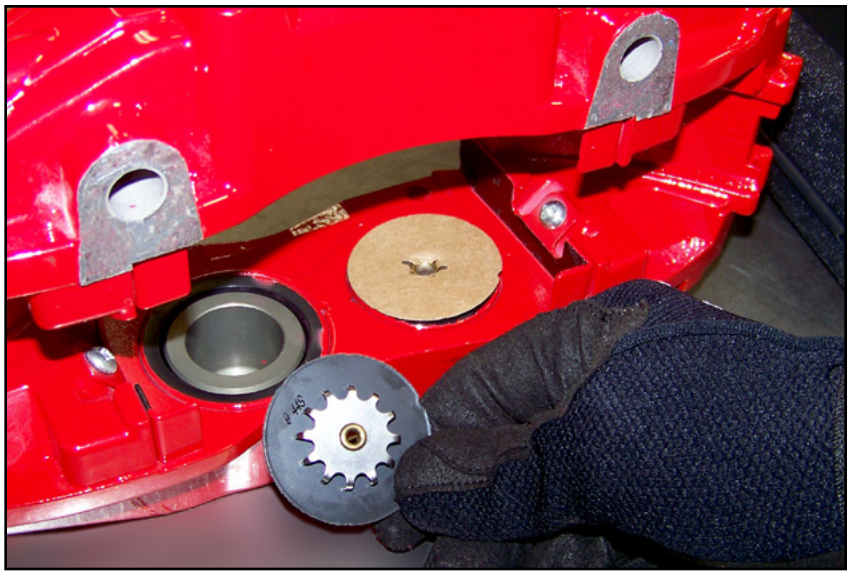


Step 4:

Place the caliper on a soft rag or fender cover to protect the finish, then remove the two brake pad tensioning plate bolts and install the dampening disks on the pistons.

NOTE

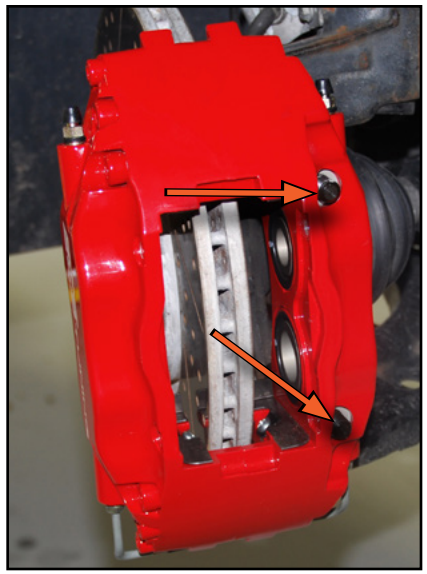
There are two different size pistons in each of these calipers. The retaining clips on the dampening plates are two different sizes as well. Make sure you install the correct plate in each piston.

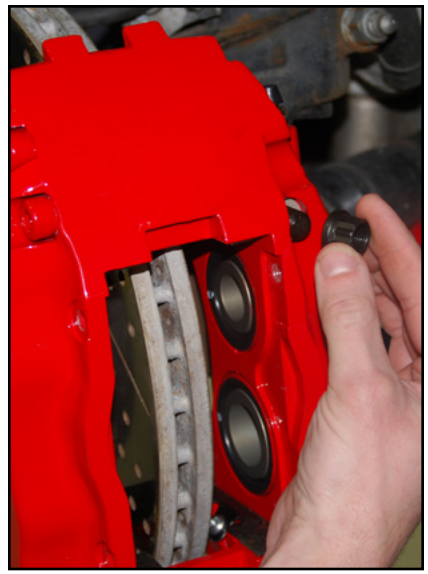


BIG BRAKE KIT INSTALLATION

Step 5:

Install the caliper onto the caliper carrier studs (arrows) and secure using the provided 12-point nuts. It is not necessary to torque the bolts at this time.



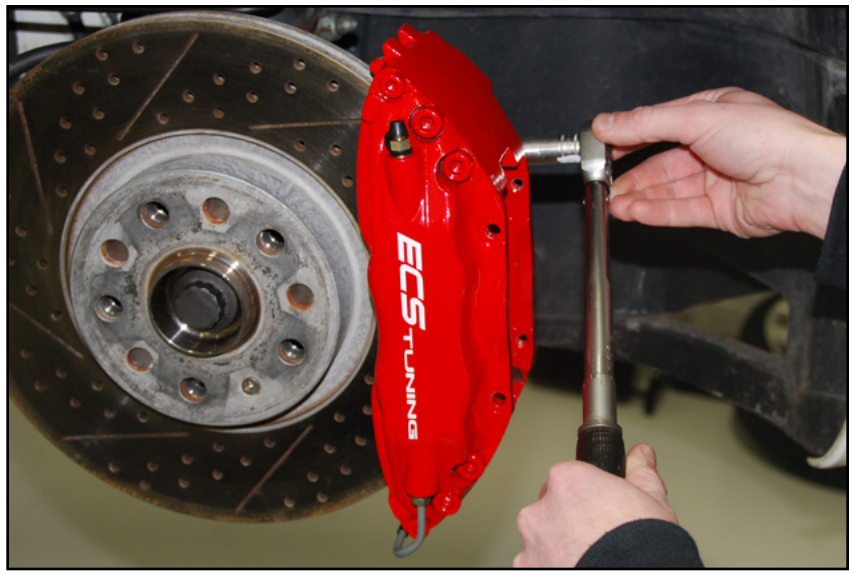


STOP

Before moving forward, ensure that the brake caliper is installed with the brake bleeder screws on top; installing them upside down will make it impossible to properly bleed the brakes.

Step 6: 12-point 14mm Socket & Ratchet

Ensure that the caliper aligns flush against the carrier, then torque the 14mm nuts to 120Nm (88 ft-lbs)



BIG BRAKE KIT INSTALLATION

Step 7:

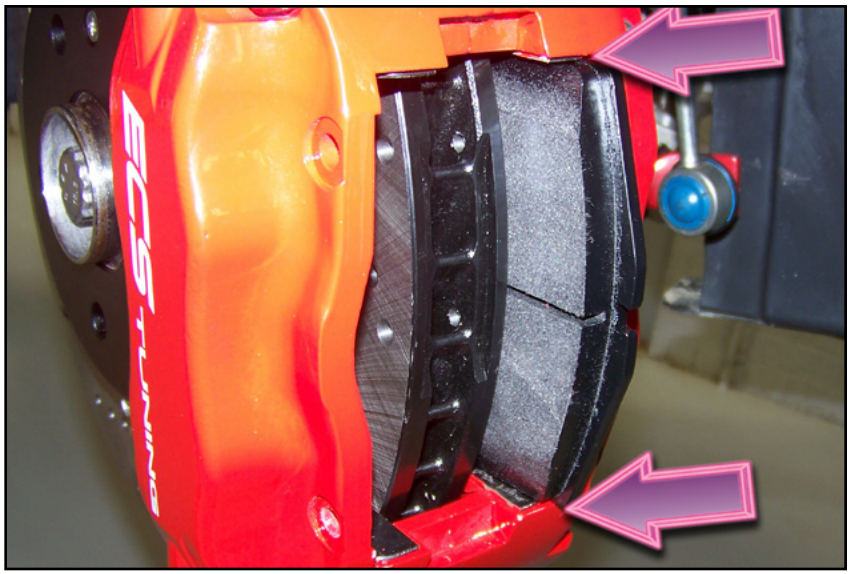
Apply 1-2 grams of brake part lubricant thinly across the brake pad metal backing plate of each pad.

NOTE

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

Step 8:

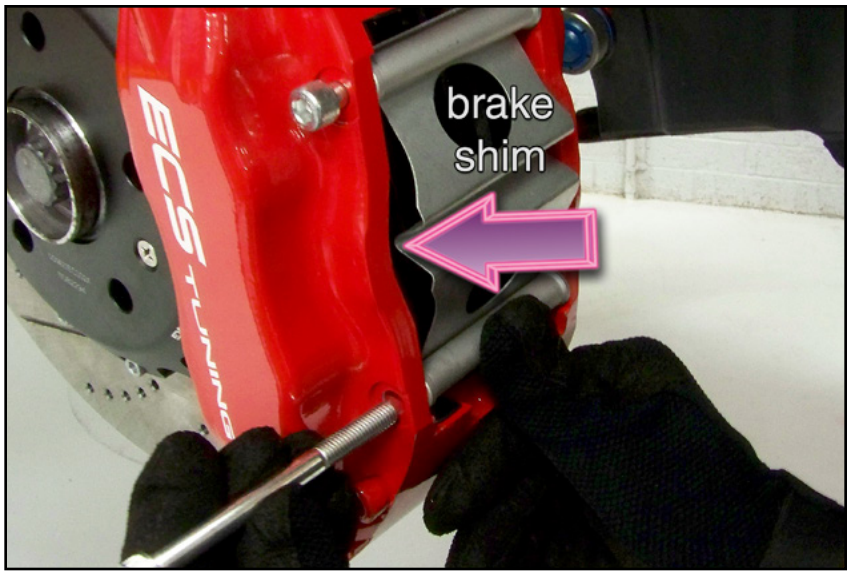
Slide the brake pads into the caliper with the slotted friction lining facing toward the rotor. Apply a thin layer of brake grease to the upper and lower edges of the metal backers (arrows) to help them slide freely and reduce brake noise.



BIG BRAKE KIT INSTALLATION

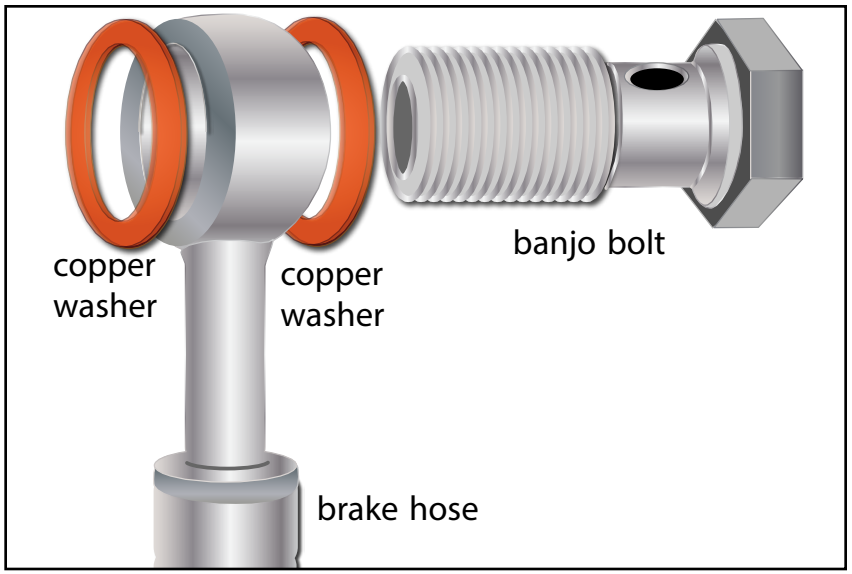
Step 9:

Install the brake shim over the brake pads in the same orientation as shown. The “V” in the stamped metal shield should engage the notches in the pads. Then, press the caliper bolt tubes against the brake shim and hand tighten the pad retainer bolts.



Step 10:

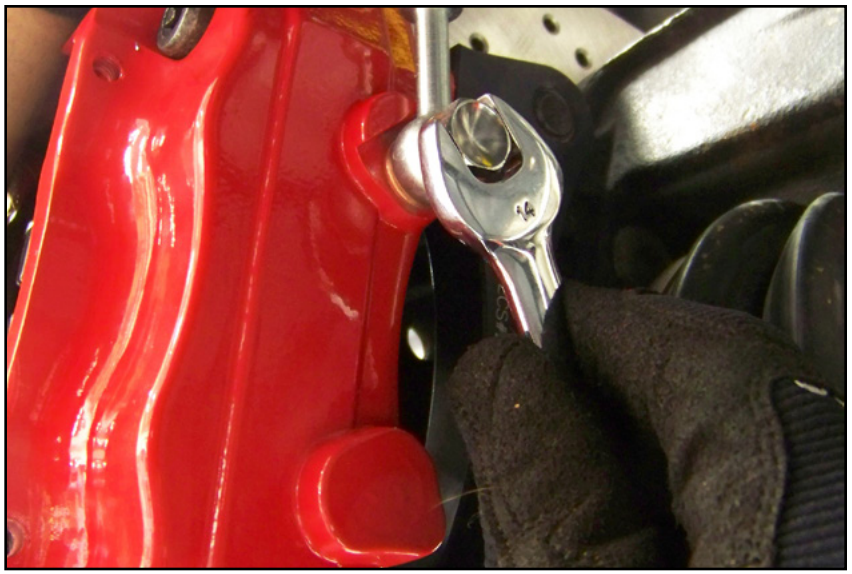
Assemble the banjo bolt and brake line as shown here, with one sealing washer as the head of the banjo bolt and the other between the brake like block connector and caliper.



BIG BRAKE KIT INSTALLATION

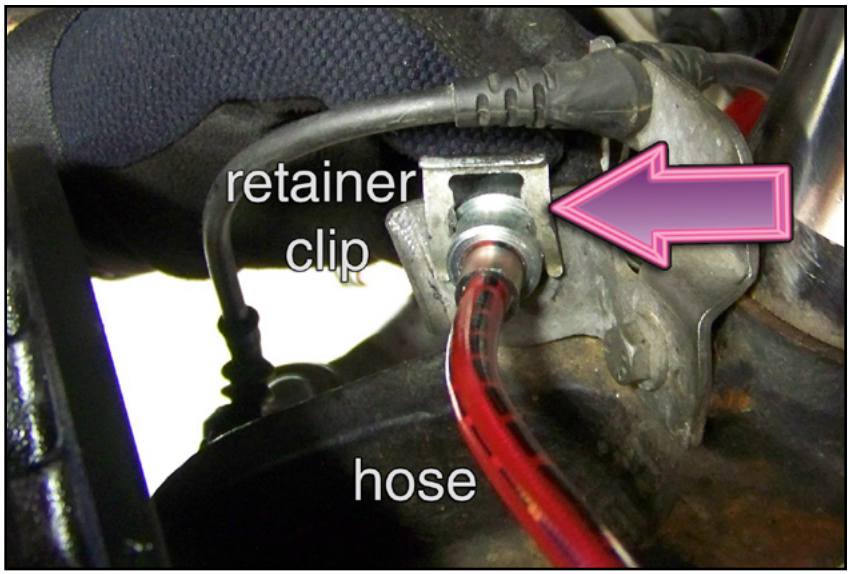
Step 11:

Install the banjo bolt and torque to 16Nm (12ft-lbs).



Step 12:

Install new brake hose over the knuckle and attach it to the support bracket. Install the u-shaped retainer clip through the groove in the hose collar and push the clip downward until it clicks into place.



BIG BRAKE KIT INSTALLATION

Step 13:

Make the final brake hose connection by screwing the solid brake line at the chassis into the new Exact-Fit brake hose then reinstall the retaining clip and hand-tighten the fitting.

Step 14:

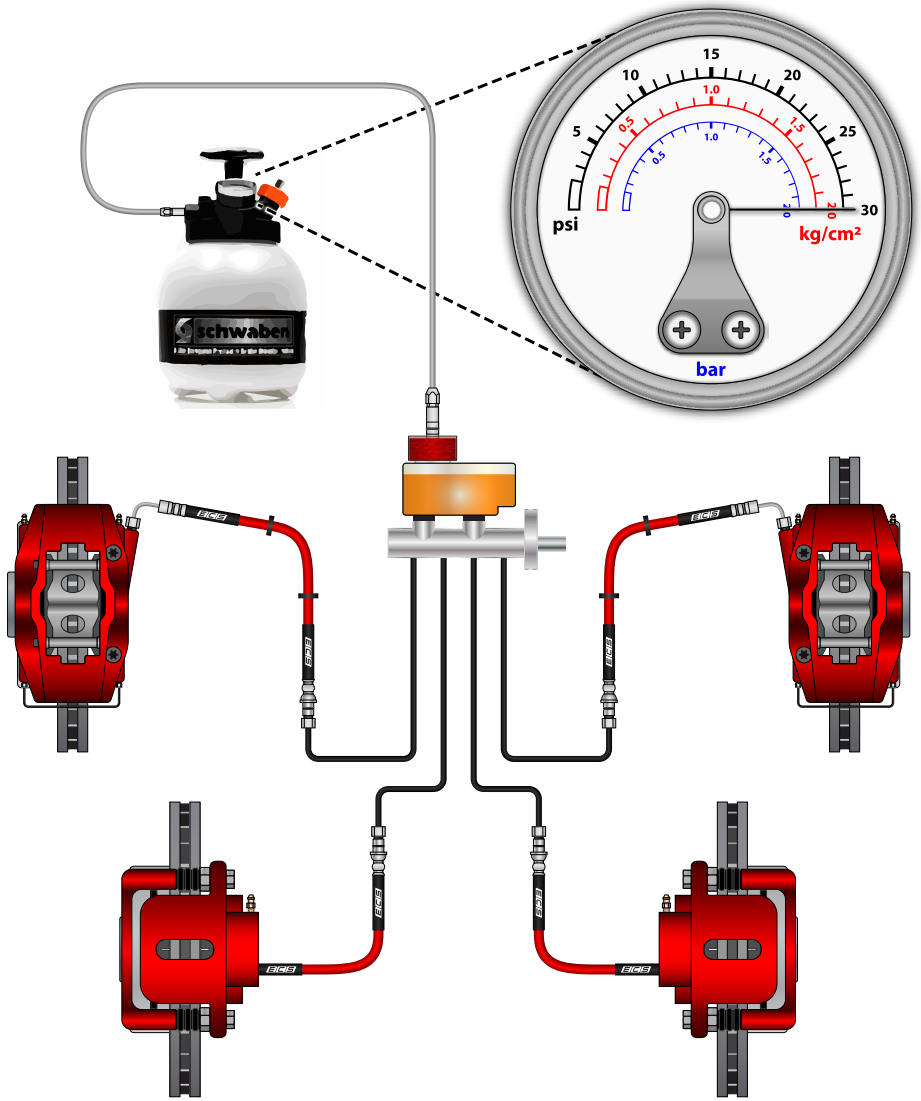
Bleed the air from the brake system. These calipers have two bleeders each. Bleed the calipers in this order: RF outer bleeder, RF inner bleeder, LF outer bleeder, LF inner bleeder.

BRAKE LINE BLEEDING PROCEDURE

Step 15: 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 16, step 8.

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 ..... 16 Nm (12 Ft-lbs) ..... (Page 17)
Caliper Bracket Bolts ..... 190 Nm (142 Ft-lbs) ..... (Page 13)
Caliper Mounting Bolts ..... 120 Nm (88 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)

- 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.

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 MKV/VI Stage 3 Big Brake Kit installation is complete!

These instructions are provided as a courtesy by ECS Tuning

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