



ES4166
red calipers

ES4170
black calipers

ES4426
jazz blue calipers

Stage 5 BBK Installation Guide

for
MKIV Golf, Jetta
and New Beetle

best viewed in Acrobat® Reader®

This tutorial is provided as a courtesy by ECS Tuning.

Proper service and repair procedures are vital to the safe, reliable operation of all engine 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.

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Stage 5 Big Brake Kit

- **ES4166** (red calipers) • ES4170 (black calipers)
- **ES4426** (jazz blue calipers)

MKIV Stage 5 BBK Installation



Kit Contents - VW MKIV Stage 5 Big Brake Kit

- 2-piece 358x32mm rotors - machined and assembled (2)
- ECS Tuning Exact-Fit stainless steel reinforced brake lines (2)
- Porsche Cayenne calipers and hardware (2)
- Caliper carrier brackets (2)
- Caliper-to-carrier bracket bolts (4)
- Hawk Performance brake pads (2 pairs)
- Stainless steel rotor set screws (2)
- 1 liter ATE Super Blue brake fluid



Required Tools

- 3/8-inch ratchet
- 10mm hex driver
- 11mm brake line wrench
- 8mm socket
- 13mm socket
- 14mm socket
- 17mm wheel bolt socket
- 18mm socket
- 21mm socket
- 10-150 ft lb torque wrench ([ES2221244](#))
- inch-pound torque wrench (for banjo bolt)
- impact driver with Phillips driver ([ES11416](#)) or Phillips screwdriver

Note! This kit requires *at least* 18" diameter wheels. Offset and spoke clearance also vary between wheels. A wheel clearance template is available for download on the ECSTuning.com [Stage 5 BBK webpage](#).

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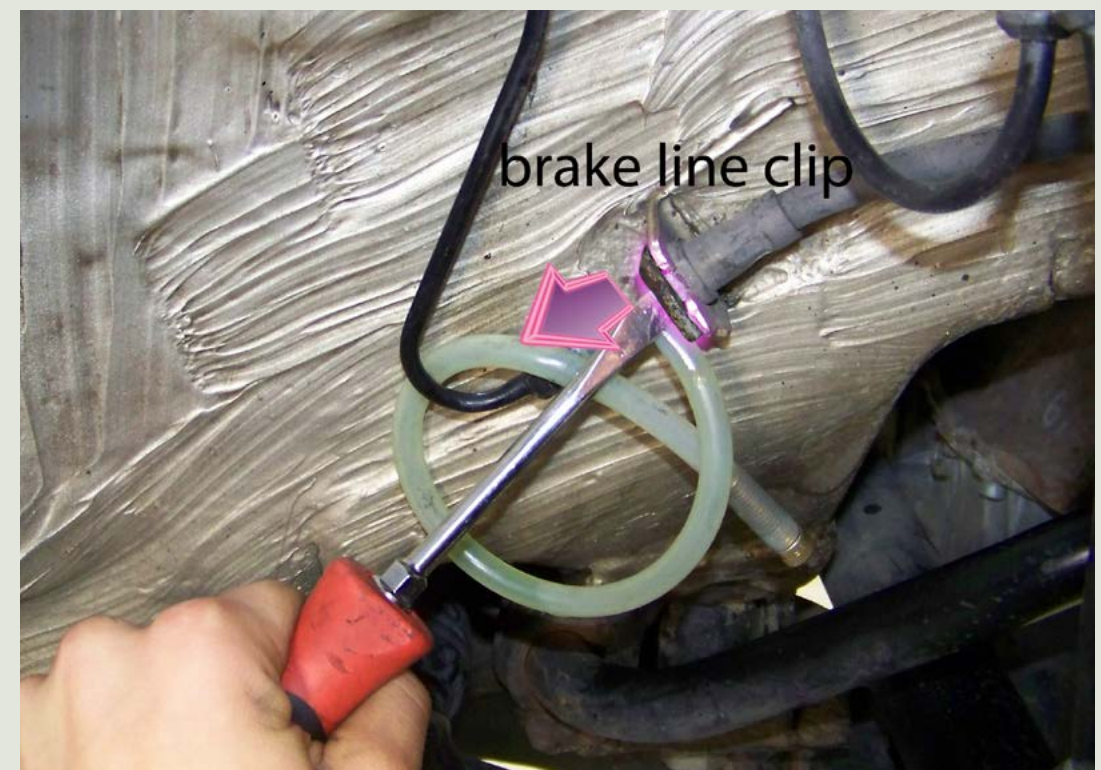
Step 1

- Safely raise and support the car.
- Remove the wheel bolt trim caps.
- Loosen the wheel bolts and remove the wheel and tire.



Step 2

- Using an 11mm brake line wrench, loosen the body-side brake line fitting. To stop the fluid from draining, cap off the brake line with a plug or a hose with a stopper. Then pry off the brake line retaining clip with a flat-tip screwdriver.



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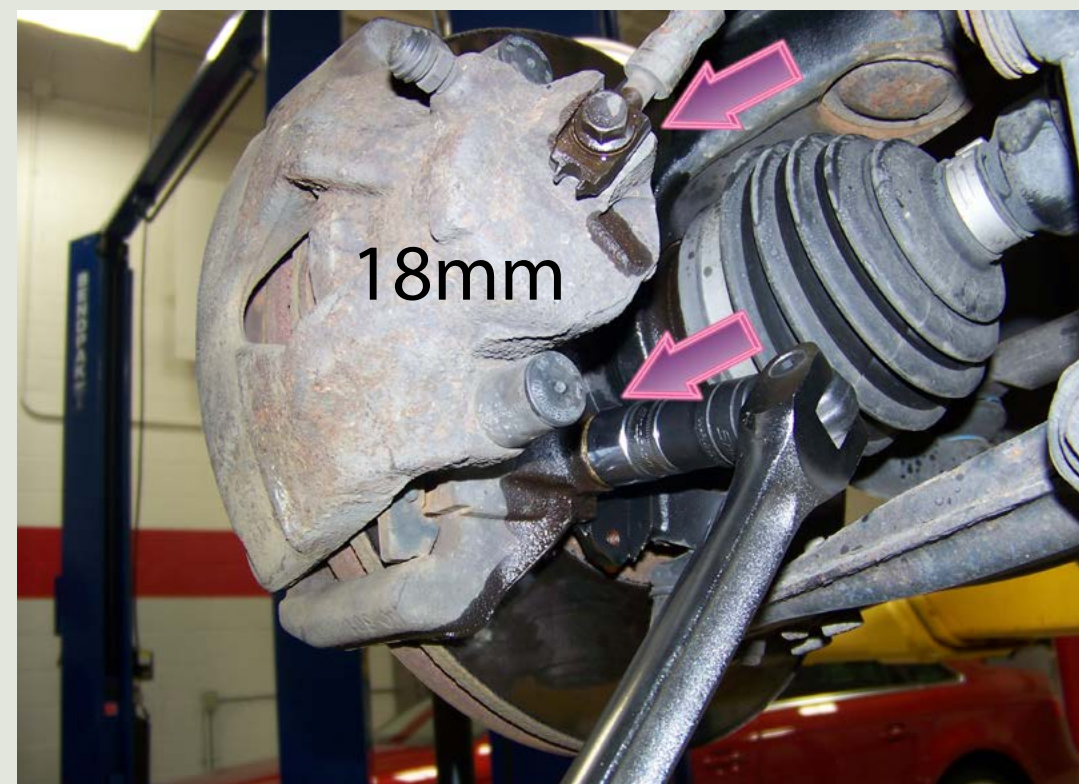
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Step 3

- Using an 18mm socket and ratchet, loosen and remove the two caliper retaining bolts from the knuckle.



- Slide the caliper forward off of the rotor, and remove caliper and the stock brake line.



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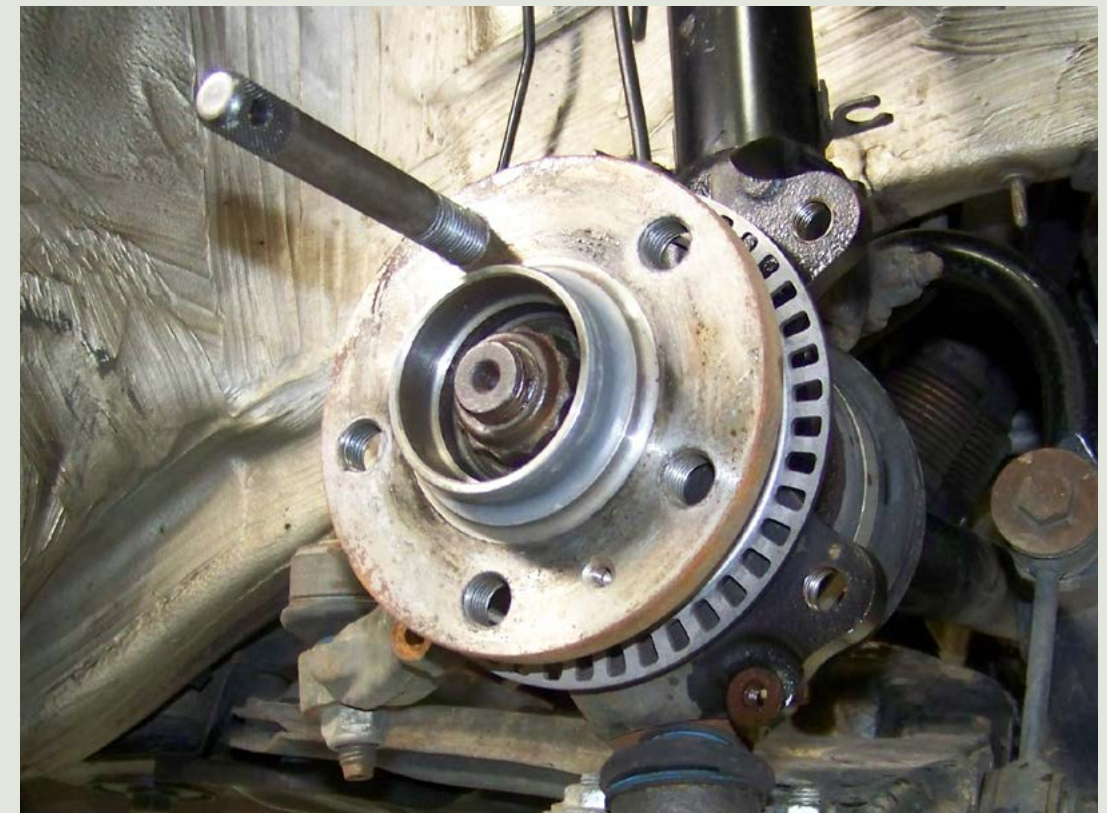
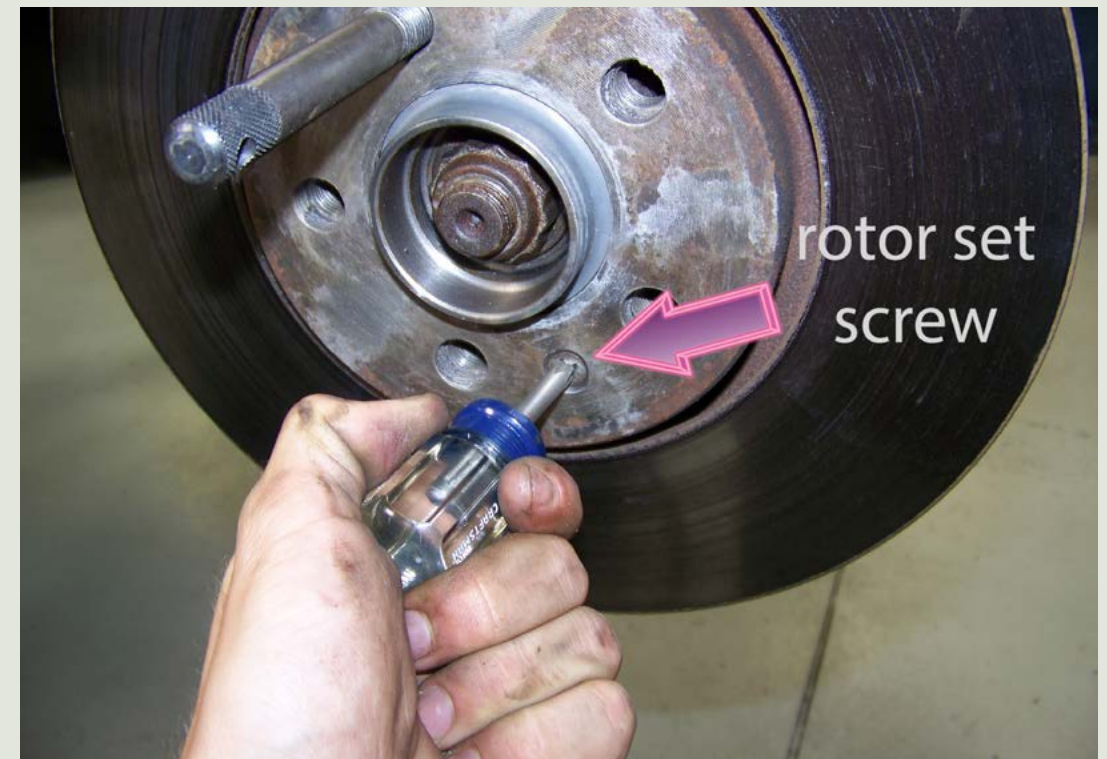
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Step 4

- Remove the Philips-head rotor set screw (arrow).
- For rusted set screws, an impact driver (**ES11416**) with a Phillips-head bit is far more effective than a Phillips screwdriver.
- Remove the old rotor, and clean the hub mounting face. Any rust or debris may cause misalignment of the new components. A die grinder and a mild abrasive disc work best.

Note: Our test car, a 2001 GTI VR6, did not have the front brake dust shields. You need to remove them to fit the Stage 5 BBK. Unbolt the three 8mm bolts that secure the dust shield and remove. If you live in a rust-prone climate, reinstall the bolts with a dab of anti-sieze.



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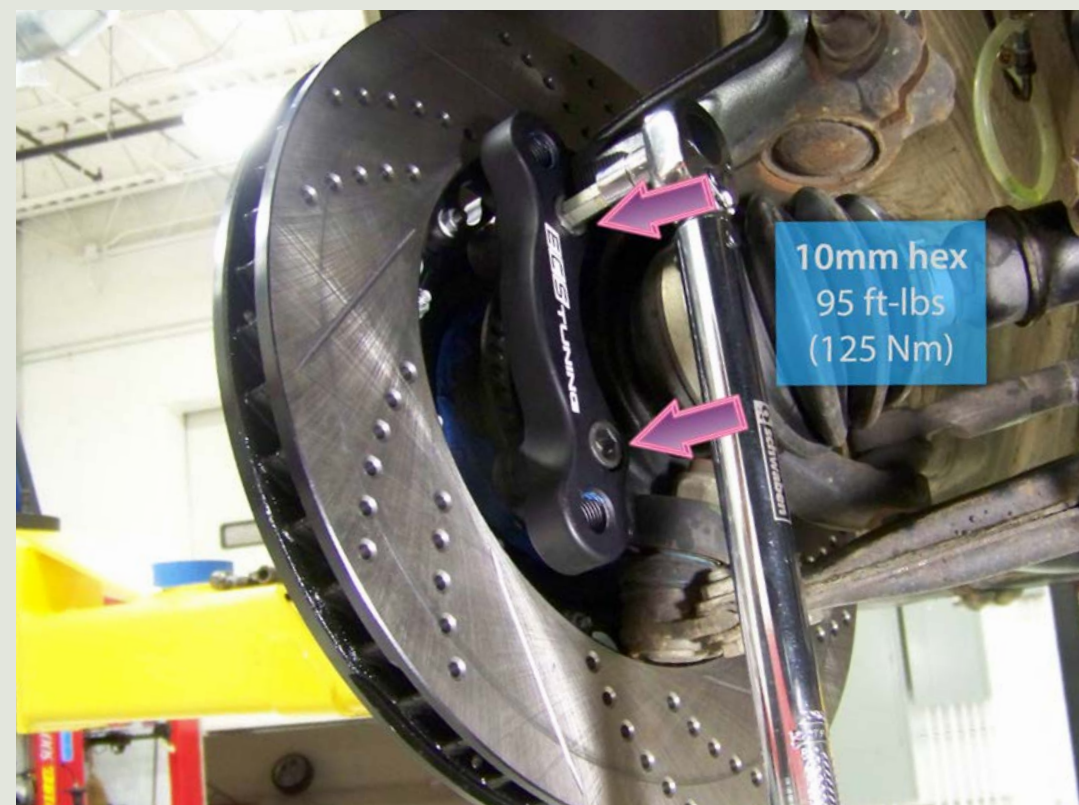
Step 5

- Install the new rotor and stainless steel set screw. The rotors are directional; make sure the slots/holes sweep backwards at the 12 o'clock position.



Step 6

- Using a 10mm hex driver, install the ECS Tuning caliper carrier bracket to the knuckle with the provided bolts. Torque these bolts to 95 ft-lbs (125 Nm).



Stage 5 Big Brake Kit

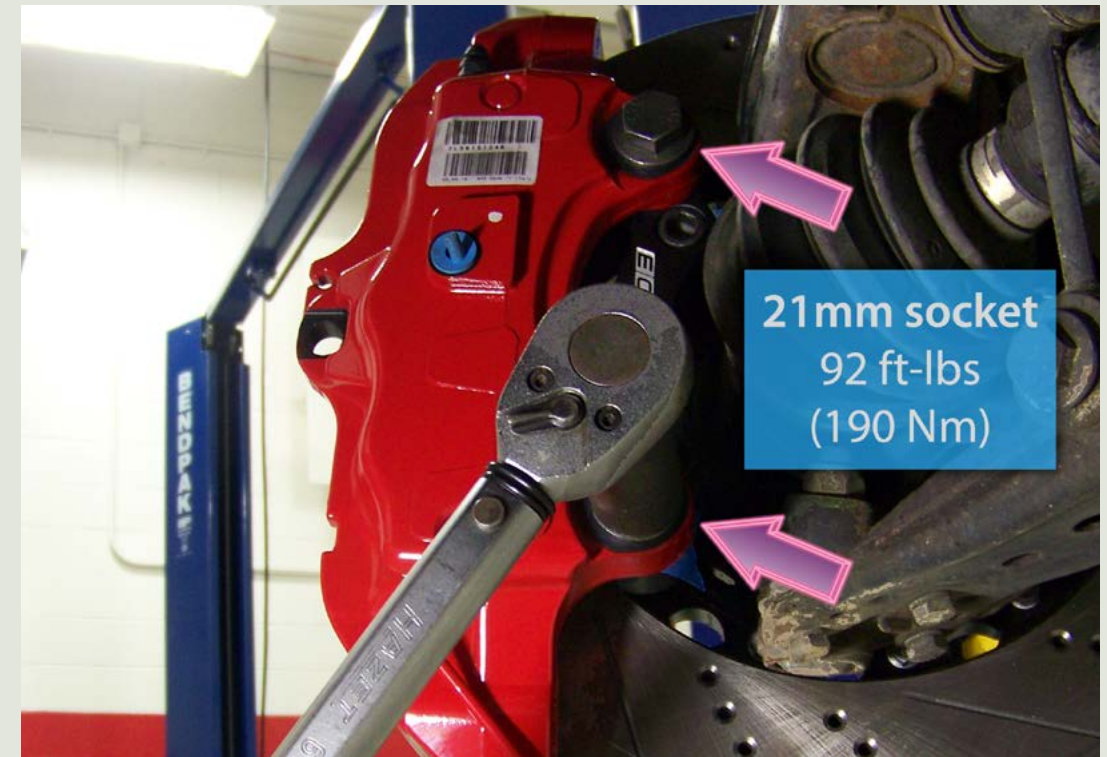
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Step 7

- Install the Stage 5 caliper on the caliper carrier bracket using the provided 21mm bolts. Torque to 92 ft-lbs.



Step 8

- When you have determined a brake pad sensor solution (see next page), load the pads into the calipers.

Note: Your Hawk Performance brake pads are packaged with a 7 gram packet of brake paste. This paste is used to reduce pad noise, when applied properly.

Apply a thin film of brake paste to each brake pad metal backing plate. Concentrating on where pad will contact caliper pistons.

CAUTION: Do not apply too much paste. Never get the paste on the friction surface.



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Notes on brake pad sensors

The brake pad sensors on your MKIV are a single-use item; once they warn of low pad depth, they need to be replaced.

You have four options for installing the brake pad sensors and eliminating the warning lamp.

Option 1: Modify your brake pads to support the sensors. Simply drill a hole in the top of the pad, centered on the notch in the backing plate. Cut the old pad off the pad sensor harness (leave some wire). Splice in the new pad sensor (or existing, undamaged sensor), and install the sensor into the hole you drilled. Then plug into your cars' wiring harness.



Option 2: IF YOU ARE DILIGENT ABOUT INSPECTING YOUR PADS, simply cut the connector from the stock pad and solder the two wires together. This completes the circuit and turns off the warning lamp on the instrument cluster. Alternatively, buy a pre-made harness from ECS Tuning ([ES8014](#)).



Option 3 : Using a VAG-COM or similar tool, recode the instrument cluster to ignore the pad sensor circuit. You will need to reference your vehicles service manual for the proper coding.

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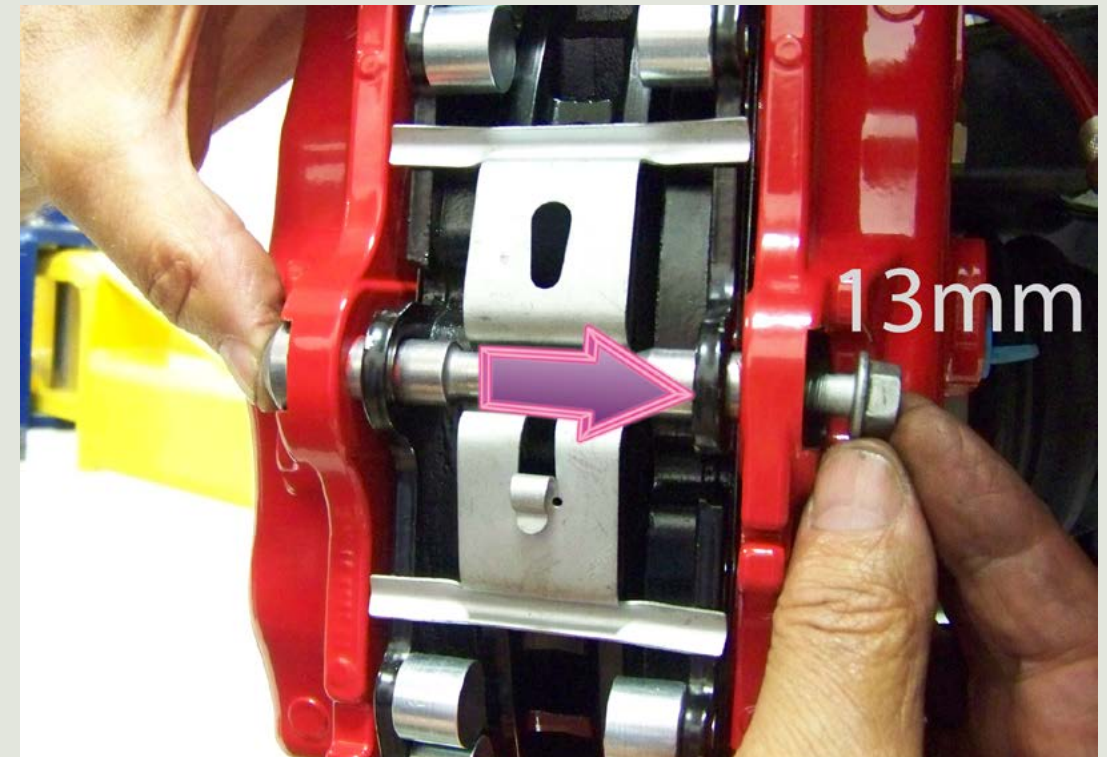
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Step 9

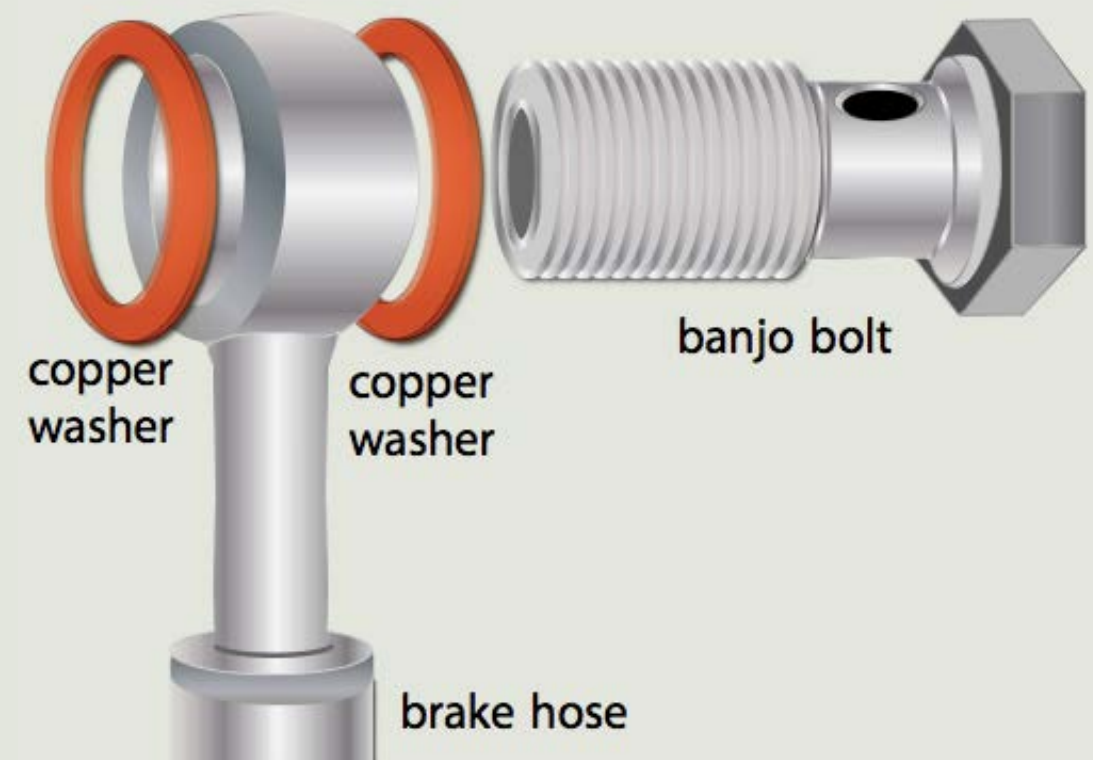
- Install the brake pad shim as shown.
- Make sure the brake pad shim retaining bolt head is aligned with the slot on the front side of the caliper. Firmly press the brake pad shim into the brake pads, and guide the bolt through the hole on the back of the caliper and into place.
- Using a 13mm socket, hand tighten the provided retaining screw into the bolt.



Step 10

Now install the brake lines. Your new ECS Tuning Exact-Fit brake lines come complete with a banjo bolt and two new copper sealing washers.

Make sure you have one copper washer on either side of the hose fitting, as shown.



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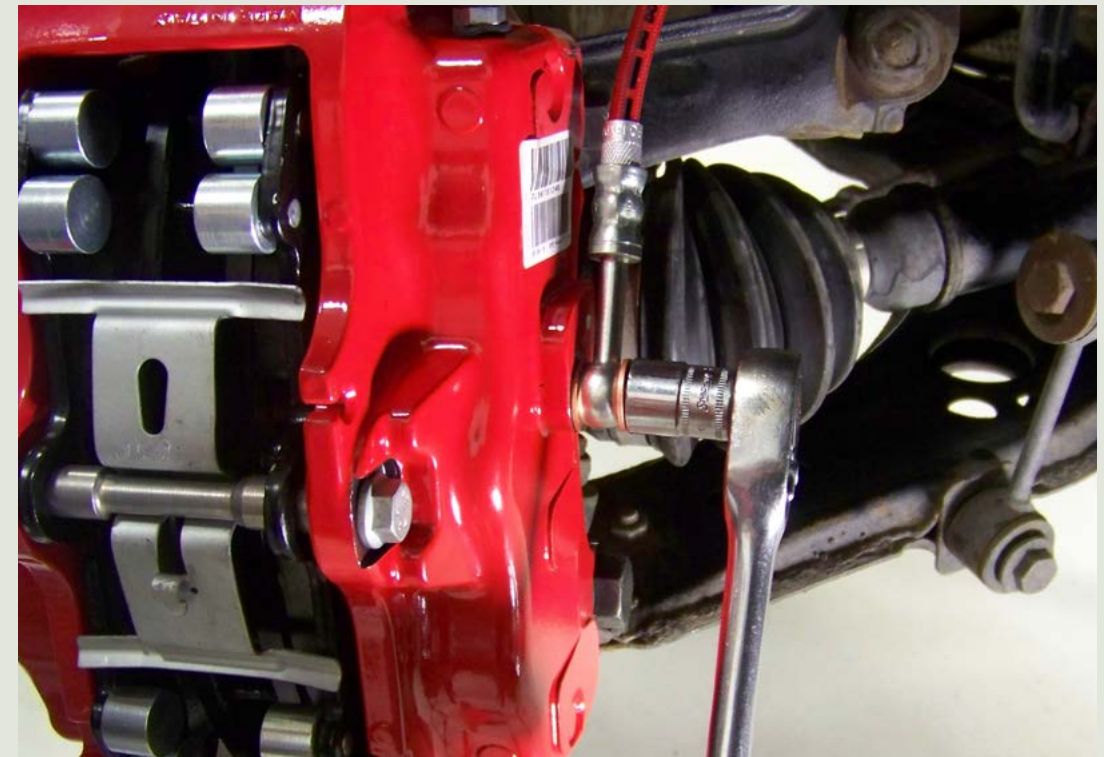
MKIV Stage 5 BBK Installation



Step 10 continued

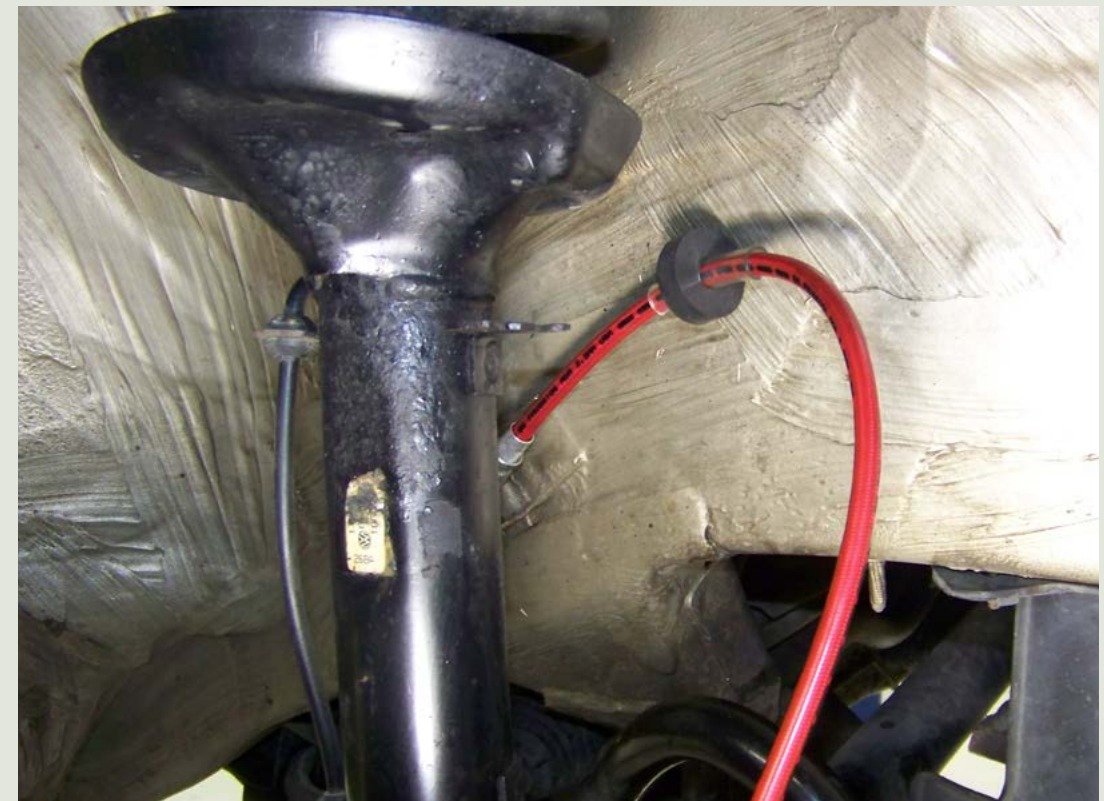
- Remove the blue dust cap from the rotor. Install the Exact-Fit brake line into the caliper using a 14mm socket.

Note: Orient the brake line as shown in the picture; the line should point upwards at roughly a 1 o'clock position as viewed from the back side of the caliper.



- Route the brake line behind the strut tube. Position it such that the round bumper prevents the line from touching the inner wheel well.
- Using a 17mm wrench and 11mm brake line wrench, attach the Exact-Fit brake line into the the rigid brake line at the chassis. Hand tighten the fitting.
- Reinstall the u-shaped retainer clip.

Repeat all steps shown thus far to install the opposite side's Stage 5 Big Brake Kit.



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Step 20

- Bleed the brake hydraulic system. Your kit includes a 1 liter container of ATE brake fluid.
- Add fluid to the brake reservoir, then use a 10mm wrench to pedal or power bleed the system to remove all air. Be sure to bleed at both bleeder screws on each caliper.

(ECS Tuning has a [video](#) demonstrating general brake bleeding procedures, available online.)



Step 19

- After bleeding the system, top up the fluid level in the brake fluid reservoir. Pump the brake pedal several times. The pedal should be hard, and stay hard as you maintain pressure.
- Check for fluid leaks. Even if the pedal feels good, visually inspect all hose connections for leaks.
- Turn the steering from side to side one more time. Make sure the brake lines do not rub or contact any components.
- Reinstall the wheels. Tighten the wheel bolts on a star pattern to 89 ft-lb (120 Nm). Make sure your wheels spin freely and that they do not contact the brake caliper.



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Your Stage 5 Big Brake Kit installation is not complete until you bed the brake pads. Bedding ensures normal pad wear and optimum braking performance. Use manufacturer instructions, or follow the steps below.

- 1) Test your brakes before going out on the highway. The pedal should feel firm and responsive. If it is soft or spongy, check that all air has been removed by the bleeding process, and that there are no fluid leaks.
- 2) Take the car out on the road. Do not ride the pedal. Either apply the brakes to slow the vehicle or fully release them.
- 3) At vehicle speeds of 50-60mph, gently apply the brakes several times to slow, but not stop, the vehicle. This warms the brakes.
- 4) Make 6-10 stops from 35 mph to 5 mph, applying moderate pedal pressure.
- 5) Cruise for several minutes without applying the brakes, allowing them to cool.
- 6) Make 2-3 moderately hard stops from 45 to 5 mph. Brake aggressively, but not hard enough to trigger the ABS.

Let the system cool for 10-15 minutes. Your pads are now bedded!

Be careful on public roadways!

Always wear a seatbelt and always be mindful of other drivers, both in front of and behind you. ECS Tuning accepts no responsibility for your actions or their consequences as a result of following this guide.

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This completes the installation of the ECS Tuning MKIV Stage 5 Big Brake Kit.

We hope this installation guide has been helpful and informative.

Thank you purchasing our Big Brake Kit!

