



R56, R55, R57, R58, R59 MINI
Cooper, Cooper S, JCW
JCW GP2 Brake Kit Installation



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

MINI Cooper GP2 Big Brake Full Upgrade Kit ES#2702967

This kit offered by ECS Tuning is a complete front and rear brake upgrade for the MINI Cooper and Cooper S. Using OEM engineered components and adding in our ECS Tuning Exact Fit front brake lines, it is a full conversion to upgrade your brakes with the performance ability of the MINI Cooper JCW GP2 braking system. This kit is complete with everything you need for a seamless, trouble free installation. **Please see page 51 for important Anti-lock Brake System information.**

MINI Cooper GP2 Big Brake Front Only Kit ES#2652233

The MINI Cooper JCW comes standard with the same big rear brakes as the MINI Cooper GP2. This front brake only kit is the perfect upgrade to give your MINI the performance ability of the JCW GP2 six piston caliper braking system. Using OEM engineered components and adding in our ECS Tuning Exact Fit front brake lines, It comes complete with everything you need for a seamless, trouble free installation.

ECS Difficulty Gauge



1 - Easy Pro - 4
2 - Moderate Advanced - 3

Installing a MINI Cooper GP2 brake upgrade kit is a weekend project that will equip your MINI Cooper with the track proven braking ability of the JCW GP2 braking system. Even if you do not have a lot of previous brake experience, following these instructions closely should allow for a smooth, trouble free installation. Plan accordingly based on your experience level. 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 the MINI JCW GP2 Big Brake Kit. We appreciate your business!

TABLE OF CONTENTS

Kit Contents.....	pg.4
Required Tools and Equipment.....	pg.7
Shop Supplies and Materials.....	pg.8
Installation and Safety Notes	pg.9
Installing the New Brake Master Cylinder	pg.10
Removing the Original Front Brakes	pg.22
Installing the New GP2 Front Brakes	pg.30
Removing the Original Rear Brakes	pg.40
Installing the New GP2 Rear Brakes.....	pg.44
Bleeding the Brake System	pg.51
Torque Specifications.....	pg.52
Brake Pad Break-In and Maintenance	pg.52
Schwaben Tools	pg.53



When installing the GP2 Big Brake Kit, the GP2 master cylinder *must* be installed for proper braking.

Symbols:

The following symbols may be used throughout these instructions indicating special attention:



FORK IN THE ROAD: When there are different options within any given kit, we will direct you to the proper page and step to continue.



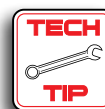
YIELD: Pause for a moment to double check component installation before you continue. Ignoring this can cost you time later during the installation.



CAUTION: Pay close attention to these warnings and instructions. Difficult installation, personal injury or component damage may occur if ignored.



STOP: The upcoming steps require specific preparation and/or assistance in the interest of safety. Please read ahead in the instructions and prepare before continuing.



TECH TIP: Tips and tricks to make the job go much easier.



NOTE: Additional information that may be useful to the installation depending on your application.

MINI COOPER GP2 BRAKE KIT CONTENTS



JCW GP2 6 Piston LH
Front Brake Caliper



JCW GP2 6 Piston RH
Front Brake Caliper



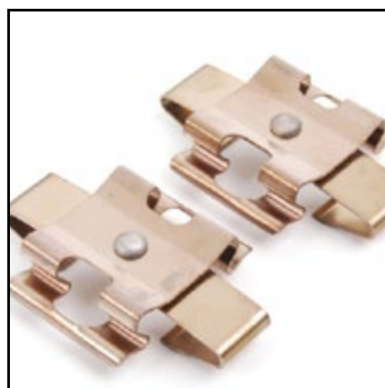
Front Brake Caliper
Bracket Bolts



Front Brake Rotors



Front Brake Pad
Retaining Bolts



Front Brake Pad
Tension Clips



Front Brake Pad Set



Front Brake Pad
Warning Harness

MINI COOPER GP2 BRAKE KIT CONTENTS



Front Brake Pad Warning
Sensor Harness Clip



ECS Tuning Exact Fit Front
Brake Lines



GP2 Master Cylinder



Master Cylinder Mounting
Nuts



LF Brake Shield
OE#34116858073



RF Brake Shield
OE#34116858074



Brake Fluid



ECS Tuning Exact Fit Rear
Brake Lines (Full kit only)

MINI COOPER GP2 BRAKE KIT CONTENTS



Rear Brake Caliper
Bolts (Full kit only)



LH Rear Brake Caliper
Bolts (Full kit only)



RH Rear Brake Caliper
Bolts (Full kit only)



Rear Brake Caliper
Brackets (Full kit only)



Rear Brake Pad Tension
Clips (Full kit only)



Rear Pad Warning
Harness (Full kit only)



Rear Brake Rotors
(Full kit only)



Rear Brake Pads
(Full kit only)

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](#)
- **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](#)
- **Brake Fluid Catch Bottle**..... [ES#4557](#)
- File Set
- **Impact Driver** [ES#11416](#)
- Caliper Hangers
- Air Nozzle/Blow Gun
- Bench Mounted Vise
- **Crows Foot Wrenches**
- Hook and Pick Tool Set..... [ES#2778980](#)

- 1/4" Drive Ratchet [ES#2823235](#)
- 1/4" Drive Deep and Shallow Sockets..... [ES#2823235](#)
- 1/4" Drive Extensions [ES#2823235](#)
- 1/4" Drive Torque Wrench
- Plier and Cutter Set..... [ES#2804496](#)
- **Flat and Phillips Screwdrivers** [ES#2225921](#)
- Jack Stands [ES#2763355](#)
- Ball Pein Hammers
- Pry Bar Set..... [ES#1899378](#)
- **E-Drive Sockets**..... [ES#2777804](#)
- Electric/Cordless Drill
- Angle Grinder w/Cleaning Disc
- Wire Strippers/Crimpers
- Adjustable (Crescent) Type Wrenches
- Drill Bits
- Punch and Chisel Set
- **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.
- If using an automotive lift, be sure and utilize the factory specified lift points. Lifting a vehicle in an incorrect location can cause damage to the suspension/running gear.
- When lifting a vehicle using a jack, always 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. Always make sure that the vehicle is securely supported on jack stands.

INSTALLING THE NEW BRAKE MASTER CYLINDER

Step 1:

Open the hood and remove the cowl seal by pulling it up off the lip of the cowl panel in the direction of the arrows.



When installing the GP2 Big Brake Kit, the GP2 master cylinder *must* be installed for proper braking.



We are installing the master cylinder first so only clean, new brake fluid will enter the system. Following these instructions closely will eliminate any large air pockets in your braking system and take the stress and mess out of bleeding your brakes.



Step 2:

Pivot each wiper arm cap up, then gently pull and wiggle back and forth and pull them off the wiper arms. The picture on the right shows close up detail of the end of the caps.



INSTALLING THE NEW BRAKE MASTER CYLINDER

Step 3: 15mm Wrench

Remove both wiper arm nuts.



Step 4: Wiper Arm Puller (optional)

Remove both wiper arms. There are two ways to do this:

A: Use a wiper arm puller. This is the "correct" way to do this and it works very well, however on the LH side, there is not enough clearance between the hood and the wiper arm to use a puller. Method "B" can be used in this situation and is acceptable to use for both sides if you do not have a puller.

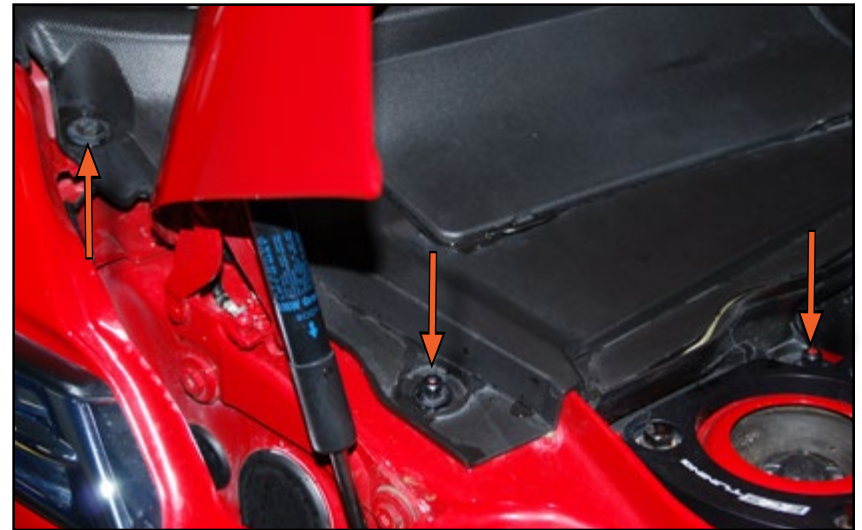
B: Fold the wiper arm up, then gently rock it back and forth so the motion is being transferred to the base of the wiper arm. This will release the base of the wiper arm from the splines on the wiper transmission. Be patient and do not be aggressive with this or you may damage the wiper arm pivot or transmission.



INSTALLING THE NEW BRAKE MASTER CYLINDER

Step 5: 10mm Socket

Remove the three fasteners (One bolt and two nuts) from the RH (passenger side) cowl panel.



Step 6:

First pull up on the RH cowl panel where it meets the windshield until it is free of the channel at the base of the windshield. Then lift the cowl panel at the front to disengage the clips, and pull it towards the center of the car to remove it. Work slowly to make sure the cowl panel clears the base of the "A" pillar and hood.



INSTALLING THE NEW BRAKE MASTER CYLINDER

Step 7: 10mm Socket

Remove the three fasteners and unclip the washer hose on the LH cowl panel. Remove the panel in the same manner as the RH side, first pulling up where it contacts the windshield, then releasing the clips at the base, and finally pulling it towards the center of the vehicle to remove it.

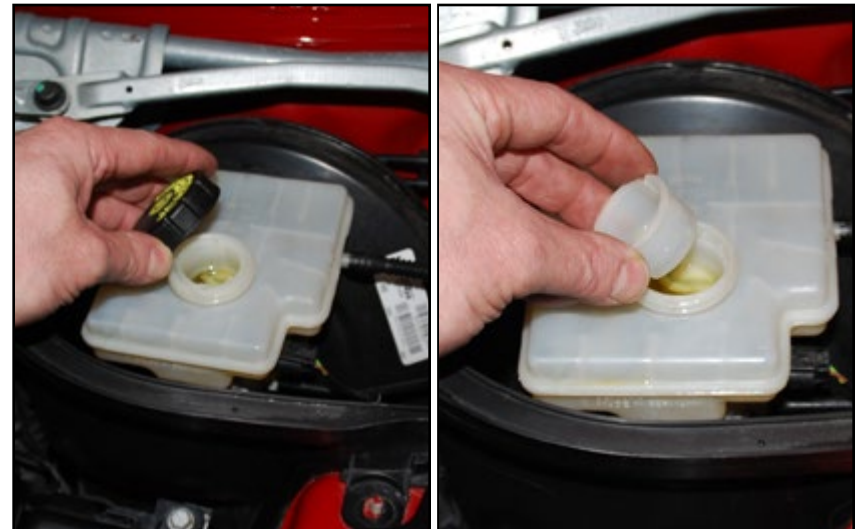


Step 8: Small Flat Blade Screwdriver

Remove the brake fluid reservoir cap and screen. You may need to use a small flat blade screwdriver to help remove the screen.



Brake fluid is extremely corrosive and damaging. Be sure to protect all surroundings with fender covers and rags, and clean up any spills immediately.



INSTALLING THE NEW BRAKE MASTER CYLINDER

Step 9: Fluid Extractor

Draw all the old fluid out of the brake fluid reservoir.



Step 10:

Depress the locking tab and pull the electrical connector off the brake fluid reservoir.



INSTALLING THE NEW BRAKE MASTER CYLINDER

Step 11:

Pull the clutch cylinder supply hose off of the reservoir. Begin by pulling back on the hose with light but constant pressure. Gently wiggle the hose back and forth as you slowly increase the pressure and it will come off with relative ease.



Even though you have removed the old fluid, you will still experience brake fluid loss when disconnecting the clutch supply hose and when removing the reservoir. Be sure to place shop towels underneath the master cylinder to absorb the spilled fluid.



Step 12: E7 Torx Socket

Remove the reservoir retaining screw (arrow).



INSTALLING THE NEW BRAKE MASTER CYLINDER

Step 13:

Remove the master cylinder reservoir by pulling it straight up using both hands and even, steady pressure. To keep brake fluid from dripping, it is best to hold a rag underneath as you move the reservoir to your work surface.



Step 14: 11mm Flare Nut Wrench

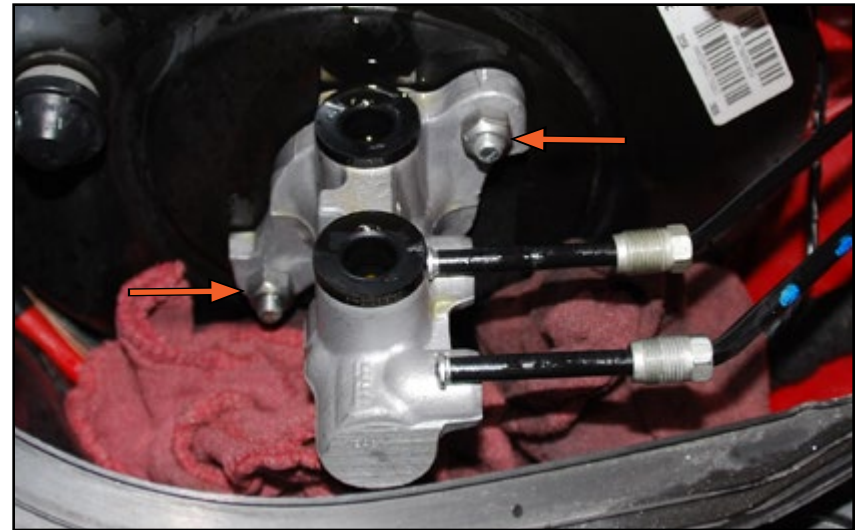
Disconnect the brake lines from the master cylinder. Do not bend them in any way or try to reposition them. Once they are disconnected, simply rest them on top of the master cylinder.



INSTALLING THE NEW BRAKE MASTER CYLINDER

Step 15: 13mm Wrench

Remove both master cylinder mounting nuts.



Step 16:

Pull the master cylinder off the brake booster and remove it from the car. Move the brake lines gently as necessary when removing the master cylinder, but try to keep them as close to their original position as possible.



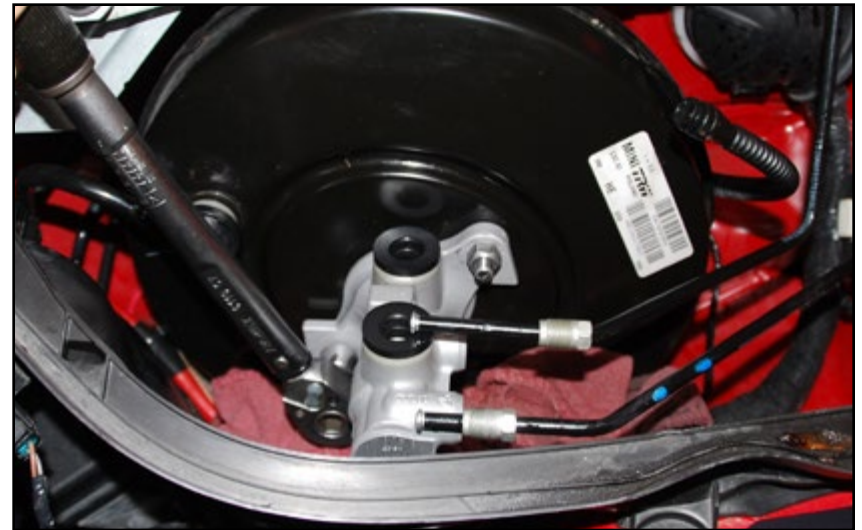
Stored vacuum in the brake booster will hold the master cylinder in place. You will hear the hissing of air as you pull the cylinder from the booster. This is normal.



INSTALLING THE NEW BRAKE MASTER CYLINDER

Step 17: 13mm Socket, Torque Wrench

Thoroughly clean up any spilled brake fluid, then install the new GP2 master cylinder using the new mounting nuts supplied with the kit. Torque the nuts to 23 Nm (17 Ft-lbs).



Step 18: 11mm Flare Nut Wrench

Connect both brake lines. Tighten them just until they are fully seated. It is not necessary to fully tighten them at this time.



INSTALLING THE NEW BRAKE MASTER CYLINDER

Step 19:

Wipe the outside of the reservoir clean, then position it on top of the master cylinder and push down with even pressure until it is fully seated in the grommets.



A small amount of clean brake fluid on the seals will act as a lubricant and make the reservoir installation easy.



Step 20: E7 Torx Socket

Complete the following:

Install the reservoir retaining screw.

Push the clutch supply hose back onto the reservoir.

Install the screen.

Fill the reservoir with new brake fluid.



INSTALLING THE NEW BRAKE MASTER CYLINDER

Step 21:

Inspect the tool in the picture at right. It is a flare nut crow's foot on the end of a short extension. This will give you access to loosen and tighten the flare nut fittings on the master cylinder with the reservoir installed.



Carefully performing the following procedure will bleed the master cylinder and prevent any air from being ingested into the ABS unit.



Step 22: 11mm Flare Nut Wrench

Make sure there are still plenty of rags underneath, then using the tool shown above, loosen both flare nut fittings on the master cylinder approximately two full turns. The lines should be loose enough to feel them wiggle freely in the fittings.

Watch the fittings very closely. As gravity draws the brake fluid through the master cylinder, you will see bubbles being forced out between the lines and the fittings. Allow the fluid to bleed in this manner until no more air bubbles can be seen and fluid is running/dripping out of the fittings. (This will generally take about 6-7 minutes).

Tighten the fittings.



INSTALLING THE NEW BRAKE MASTER CYLINDER

Step 23:

Complete the following:

Top off the brake fluid.

Install the reservoir cap.

Use brake parts cleaner to flush away any remaining residue.

Plug in the electrical connector.

Remove all rags and perform a final wipe down.



Step 24:

Check the brake pedal "feel". It should be firm with only about an inch of travel. Complete the following:

Check both brake line flare fittings for leaks.

Install both cowl covers.

Install both wiper arms and torque them to 20 Nm (15 Ft-lbs).

Install the wiper arm caps and cowl seal.



REMOVING THE ORIGINAL FRONT BRAKES

Step 1: 17mm Protecta-Socket

Safely raise and support the vehicle and remove the front wheels. If you are installing the complete front and rear upgrade kit on your car, remove the rear wheels at this time as well.



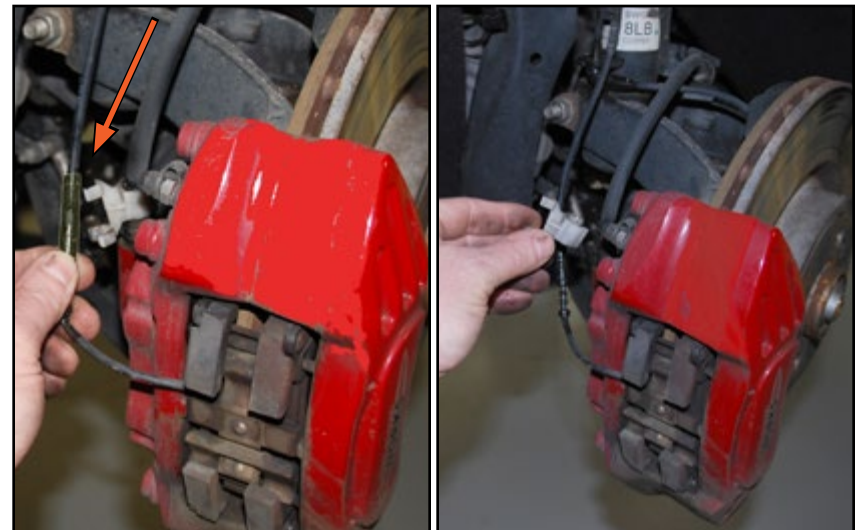
When installing the GP2 Big Brake Kit, the GP2 master cylinder *must* be installed for proper braking. If you have not installed the master cylinder, please perform the master cylinder installation beginning on page 9 before you proceed.

Step 2:

On the LH side, pull the brake pad warning sensor harness out of it's retaining clip, then remove the clip off the end of the brake hose.



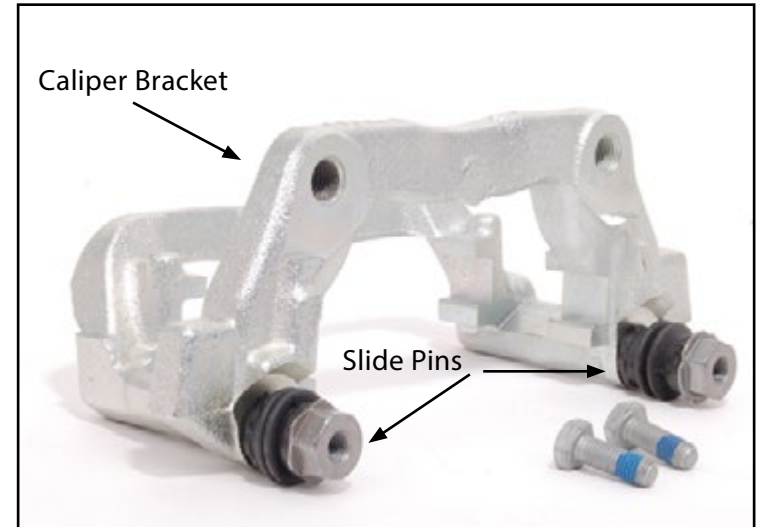
JCW brakes are shown in this example. MINI Cooper and Cooper S brakes differ in design and appearance but you can still follow these steps and remove the calipers in the same manner. See the following page, 23, for reference pictures of Cooper and Cooper S brakes.



COOPER AND COOPER S FRONT BRAKES



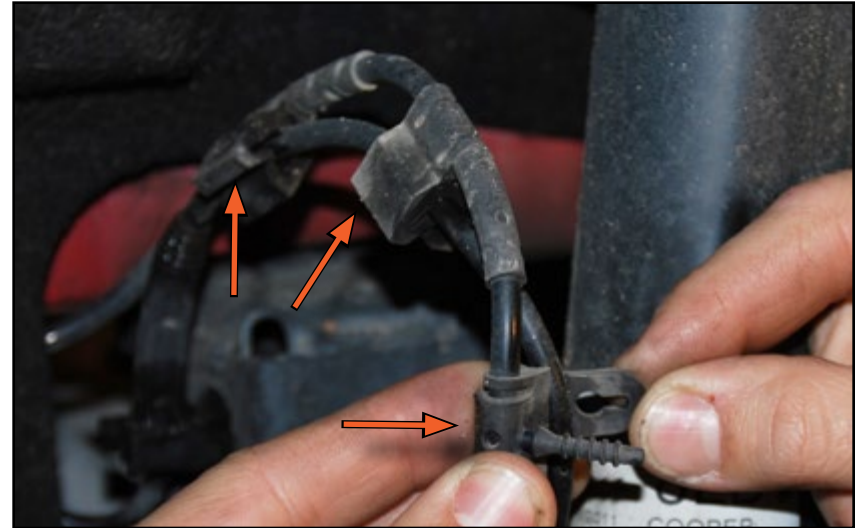
Original Cooper and Cooper S front brakes are shown here. Instead of a fixed caliper, they are a floating caliper design which consists of the caliper, two slide pins, and a caliper bracket. The slide pins move back and forth in the bracket and the caliper is bolted to the slide pins. Even though you can unbolt and remove the caliper then remove the caliper bracket separately, you can leave the caliper bracket and caliper together and remove them as one unit as we have shown with the fixed JCW caliper.



REMOVING THE ORIGINAL FRONT BRAKES

Step 3:

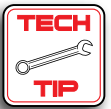
Separate the pad warning harness from the ABS sensor wire by unfastening the single rubber retainer and pulling the ABS sensor wire out of the molded clips on the pad warning harness.



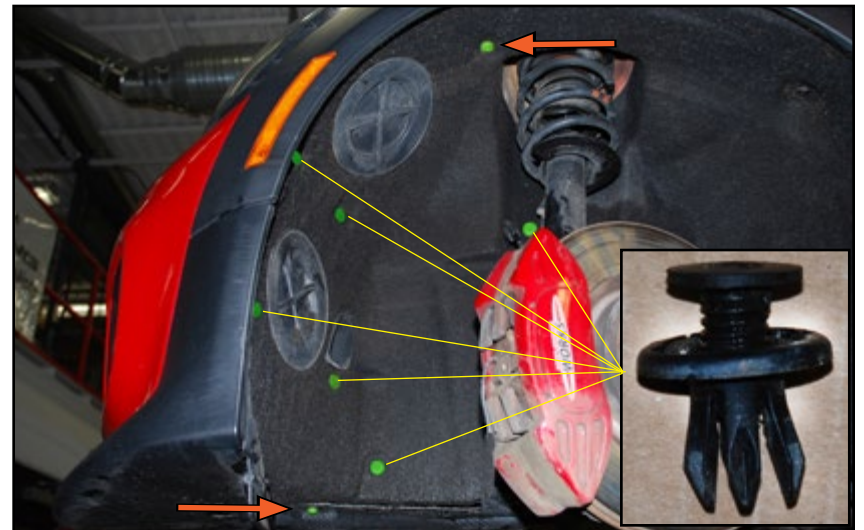
Step 4:

T30, Phillips Screwdriver

Remove the eight fender liner retainers highlighted in this picture.



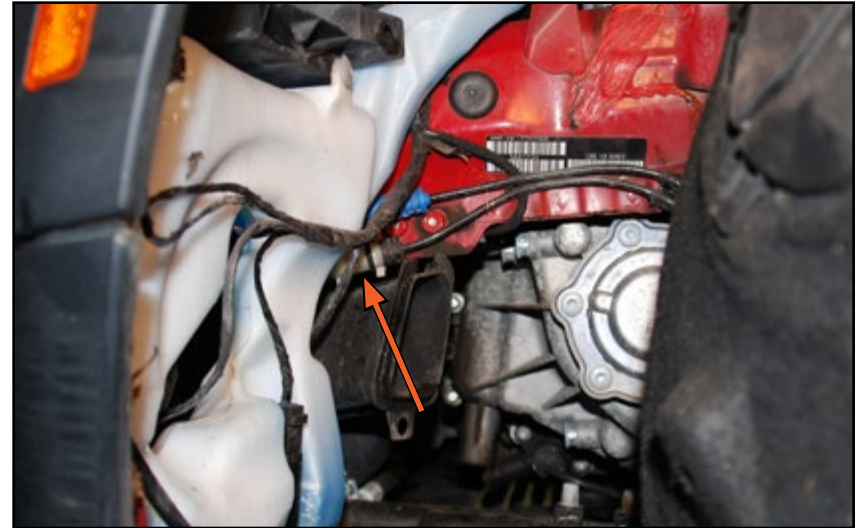
Six of these fasteners are expanding rivets (see inset photo). The center screw of each rivet only needs to be unscrewed far enough to allow the fingers to collapse so the rivet can be pulled out.



REMOVING THE ORIGINAL FRONT BRAKES

Step 5:

Pull back the fender liner and locate the white electrical connector for the brake pad warning harness.



Step 6:

Pull the connector out of its retaining clip and disconnect it by depressing the locking tab and pulling the two halves apart. Remove the original pad sensor wiring harness.



REMOVING THE ORIGINAL FRONT BRAKES

Step 7: T30, Phillips Screwdriver

Connect the new front brake pad warning harness connector, route it in the same location as the old and reattach it to the ABS sensor harness. Reinstall the fender liner.



The end of the new harness will remain disconnected at this time. It will be connected and secured after the new front calipers are installed.



Step 8: Flat Blade Screwdriver

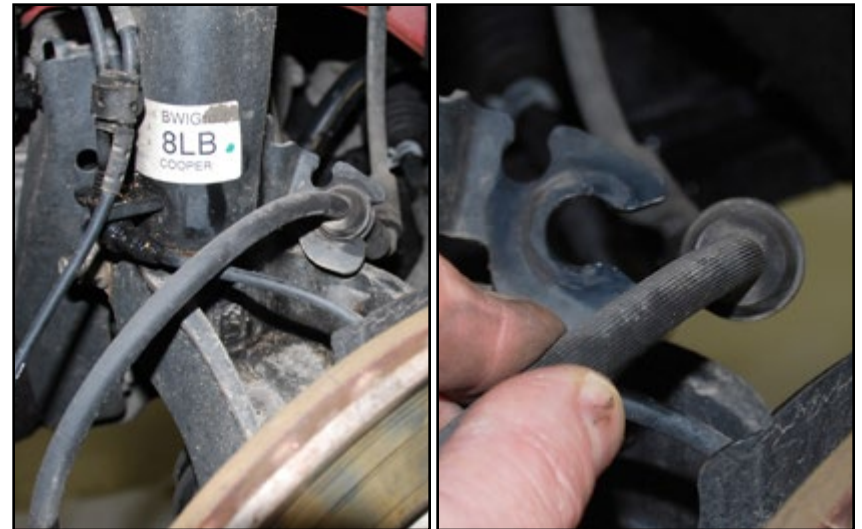
Gently pry between the brake rotor and the brake pads on each side of both front calipers. This will push the pistons slightly back into the caliper, making removal easier.



REMOVING THE ORIGINAL FRONT BRAKES

Step 9:

Pull the brake hose grommets out of their retaining brackets.

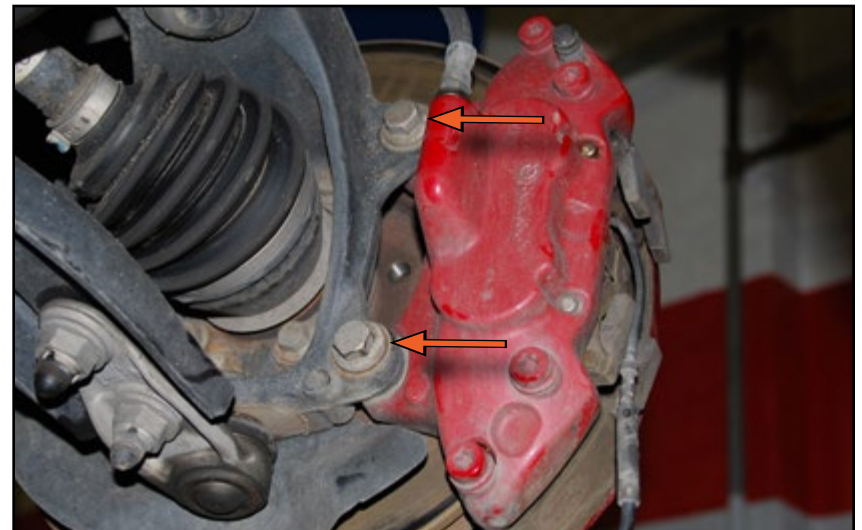


Step 10: 16mm Socket, 1/2" Ratchet

Remove both brake caliper mounting bolts on each side.



JCW brakes are shown in this example. MINI Cooper and Cooper S brakes will differ in appearance but the calipers can be removed in the same manner.



REMOVING THE ORIGINAL FRONT BRAKES

Step 11: Caliper Hanger

Lift the brake calipers off and hang them so there is no weight on the hoses.



We leave the brake hoses connected until we are ready to install the new ones because it keeps the mess to a minimum. Even though the kit comes with new hoses, we prefer to hang the calipers so the hose integrity is not compromised in the event they get used on another vehicle.



Step 12: T50, Impact Driver

Remove the brake rotor retaining screws, then pull the rotors off each drive hub. Using an impact driver is one of the easiest ways to loosen the rotor screws.



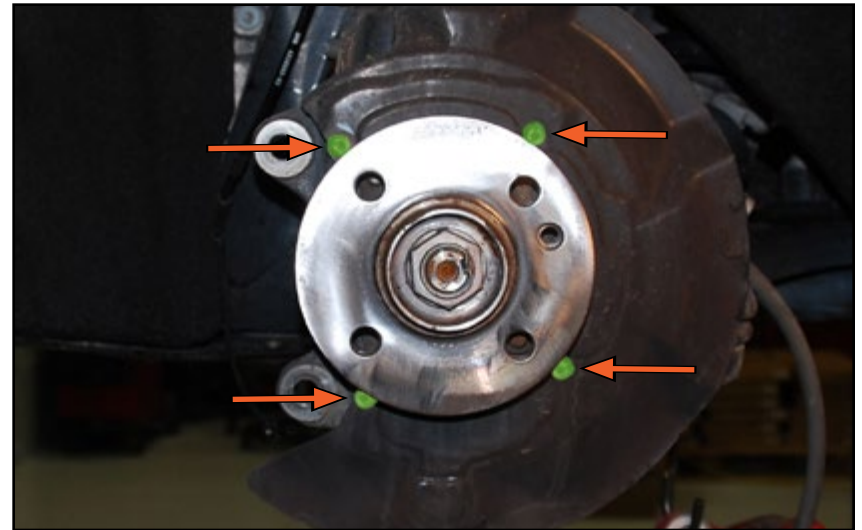
If your rotor screws are broken or missing, we recommend replacement. New rotor screws are available at ecstuning.com. [ES#16458](#)



REMOVING THE ORIGINAL FRONT BRAKES

Step 13: T25 Torx

Remove the four screws (highlighted) on each side and then remove the original brake shields.



Step 14: Angle Grinder or Wire Brush

Thoroughly clean the surface of each drive hub. This will ensure that the new rotors will be properly seated when installed.



INSTALLING THE NEW GP2 FRONT BRAKES

Step 1: T25 Torx

Thoroughly clean the area underneath the original brake shields, then install the new ones. There is a left and a right, be sure to use the correct shield on each side.

LF Brake Shield
OE#34116858073

RF Brake Shield
OE#34116858074



Step 2:

Apply a thin layer of grease to the surface of each drive hub. This will prevent corrosion between the rotor and drive hub.



INSTALLING THE NEW GP2 FRONT BRAKES

Step 3: T50 Torx, Torque Wrench

Place a new rotor into place on each drive hub and install the new rotor screws included with the kit. Torque them to 27 Nm (20 Ft-lbs).



Apply a small amount of anti seize to each front brake rotor screw before installing.



Step 4:

Clean the surface of each brake rotor to remove any grease or oil using aerosol brake parts cleaner sprayed onto a rag.



What appears as gray paint on the rotor is a protective coating. It is not necessary to remove this coating. It will not affect pad break in or performance.



INSTALLING THE NEW GP2 FRONT BRAKES

Step 5:

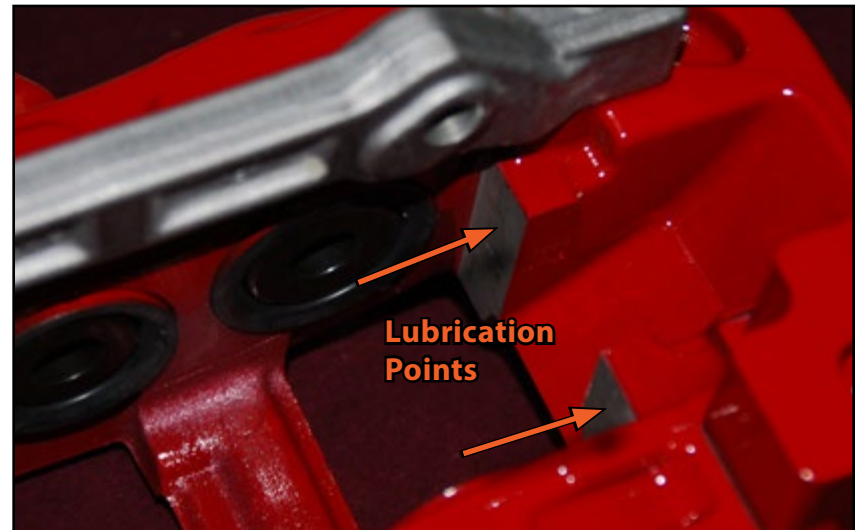
To prepare the brake calipers for installation, begin by placing one on a soft fender cover or towel.



Be sure to install the correct caliper on each side. The easy way to identify them is to hold a caliper in place over the rotor and make sure the bleeder screw is located at the top.

Step 6:

Apply a small amount of brake lubricant to the bare surfaces in each brake caliper, as indicated by the arrows in the top and bottom pictures.



INSTALLING THE NEW GP2 FRONT BRAKES

Step 7: Two Hammers

Install a brake pad tensioning clip into the top of each brake caliper. The easiest way to do this is to position the clip in place from the bottom, then rest the wooden handle of a hammer on one side of the clip, and hit the top of the hammer lightly with another. You will find that it will easily pop into place.



Step 8:

Slide one of the new front brake pads into place in a caliper as shown in the picture.



All four front brake pads are the same.



INSTALLING THE NEW GP2 FRONT BRAKES

Step 9: T40 Torx

Hold the brake pad in place and turn the caliper over. While pressing up on the brake pad to overcome the tension on the pad spring, insert the pad retaining bolts and thread them in just until they are fully seated.



Step 10: T40 Torx

Install the remaining brake pads in the same manner. The calipers are now ready for installation on the car.



INSTALLING THE NEW GP2 FRONT BRAKES

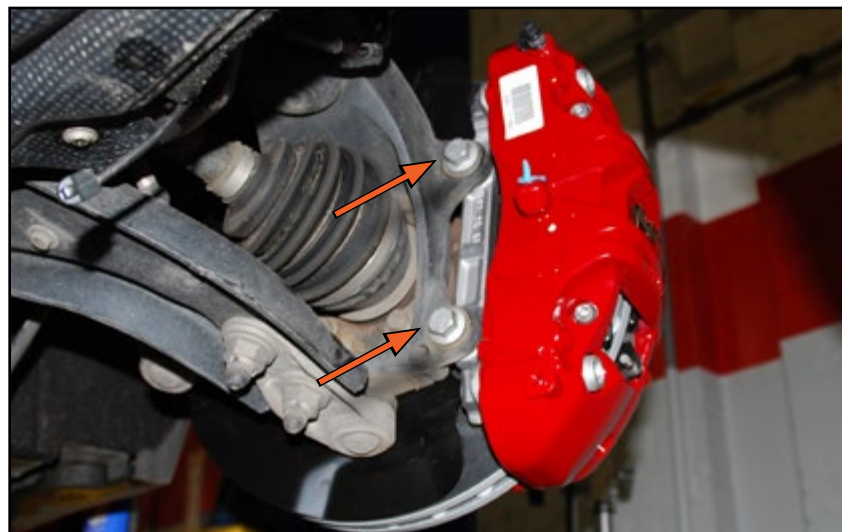
Step 11:

Slide the assembled calipers into place over each brake rotor.



Step 12: 16mm, Torque Wrench

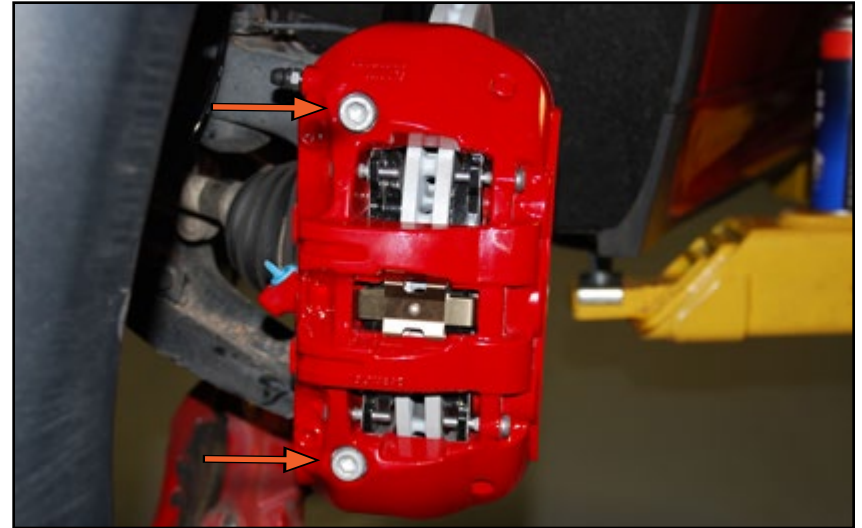
Install the new caliper bracket bolts included with the kit and torque them to 110 Nm (81 Ft-lbs).



INSTALLING THE NEW GP2 FRONT BRAKES

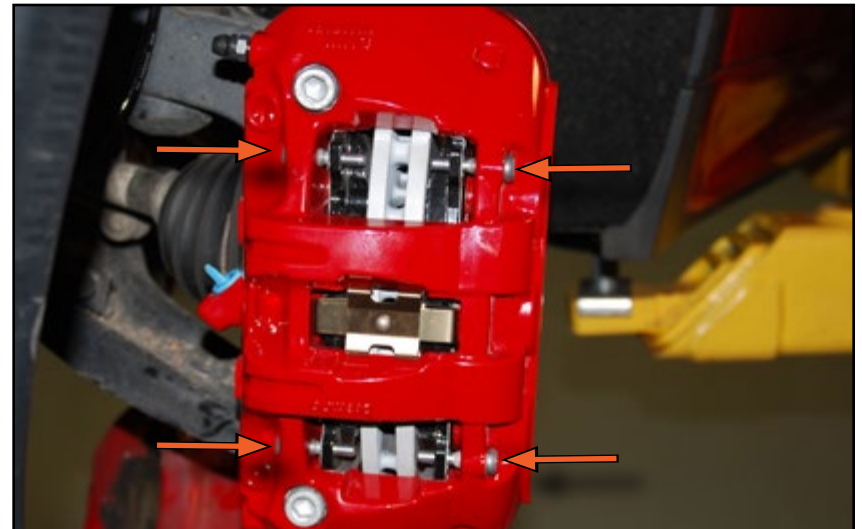
Step 13: 10mm Hex Bit Socket, Torque Wrench

Check the torque of the caliper bolts. These should come properly torqued, but it's better to double check them. Set your torque wrench to 115 Nm (85 Ft-lbs) and check them on both front calipers.



Step 14: T40 Torx Socket, Torque Wrench

Torque all of the brake pad retainer bolts to 30 Nm (22 Ft-lbs).



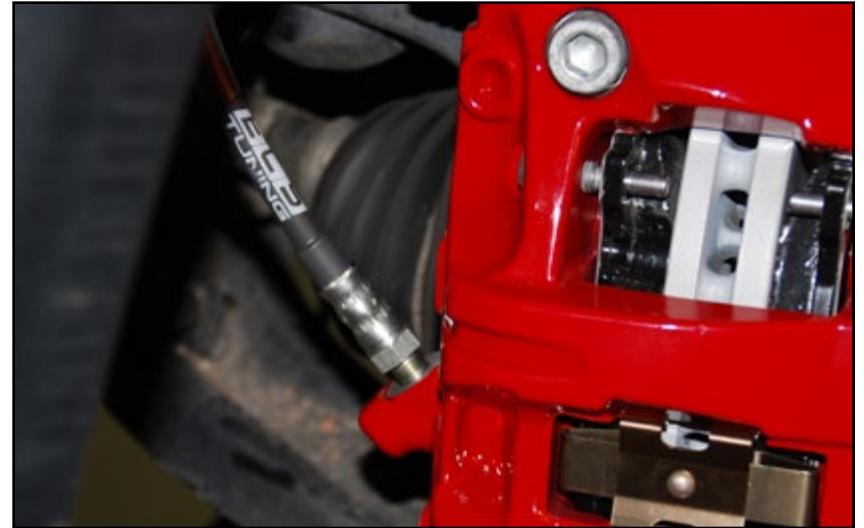
INSTALLING THE NEW GP2 FRONT BRAKES

Step 15: 14mm

Install and tighten a new ECS Tuning Exact Fit Brake line into each front caliper.



Both ECS Tuning Exact Fit front brake lines are the same.



Step 16:

Clean the area where the original brake hose connects to the hard line by flushing it with brake parts cleaner. This will remove dirt and rock particles that tend to build up here and prevent anything from falling into the new brake hose during installation.



INSTALLING THE NEW GP2 FRONT BRAKES

Step 17: 11mm Flare Nut Wrench

Place a drain pan underneath to catch brake fluid, then loosen and disconnect the brake line on each side. With the brake lines disconnected from the original hoses, you can now remove the original calipers from the car.

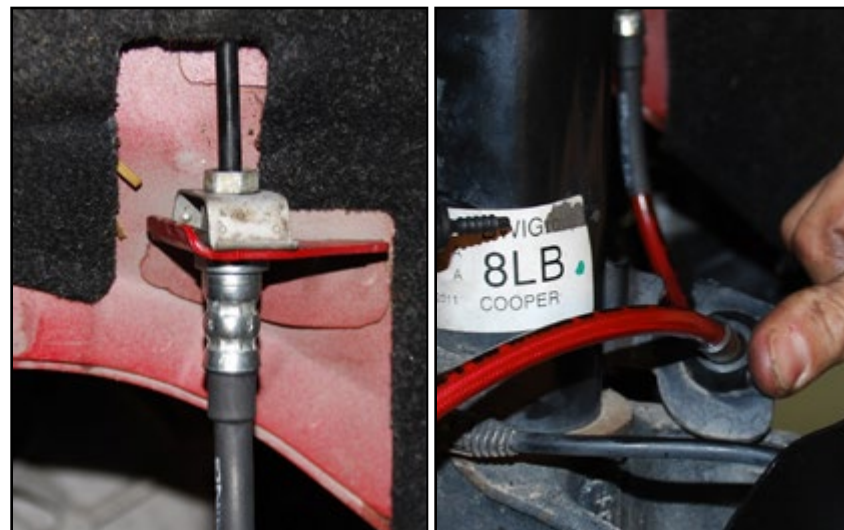


Step 18: 11mm Flare Nut Wrench

Connect the new ECS Tuning Exact Fit brake lines on each side and tighten the line fittings. Push the brake hose grommets into their retainers.



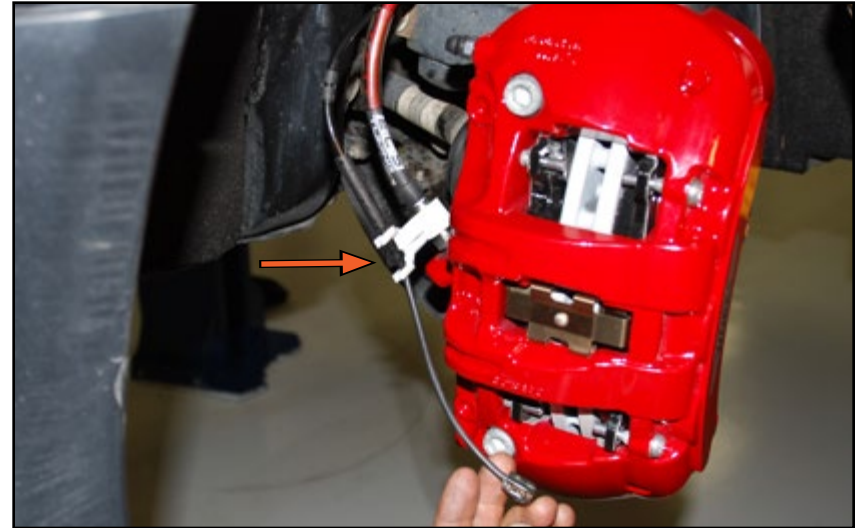
There is generally no specific torque specification for brake flare fittings. As a standard rule of thumb, tighten the flare nut until it is fully seated, then an additional 1/6 turn. These brake lines have ISO flares. When the flare nut becomes tight, it is bottomed out, applying a predetermined amount of pressure on the ISO flare to create the seal. Additional tightening of the flare nut does not increase the sealing ability of an ISO flare, it can only weaken the threads on the nut or component.



INSTALLING THE NEW GP2 FRONT BRAKES

Step 19:

LF only: Install the new brake pad warning harness clip (included with the kit) onto the end of the ECS Tuning brake line, then push the harness into place as shown in the picture.



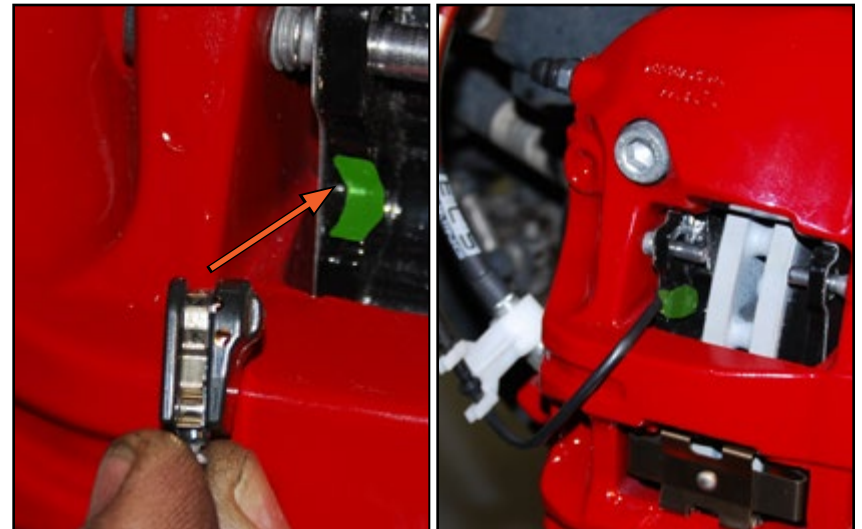
Step 20:

Complete the following:

Install the pad warning harness into the cutout in the LH front brake pad.

Follow the brake bleeding procedure on page 51. If you are installing rear brakes, install them first then bleed all brakes at the same time.

Reinstall and torque the wheels to 140 Nm (103 Ft-lbs).



REMOVING THE ORIGINAL REAR BRAKES

Step 1: 10mm, T20 Torx

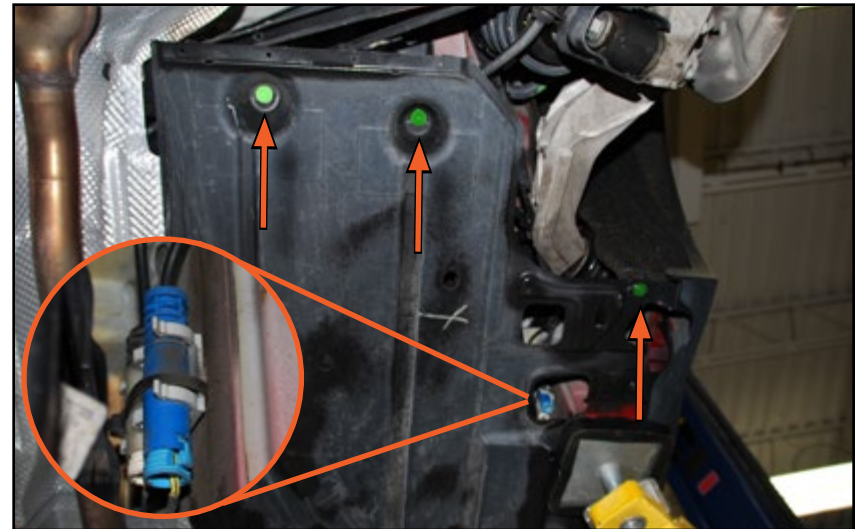
Remove the three fasteners at the rear of the RH underbody panel. Note the location of the ABS and pad warning harness connectors.



The underbody panels are only installed on JCW cars and MINI Cooper models with the aero underbody kit. On Cooper and Cooper S models without the aero underbody kit, these panels are not installed.

Step 2: Side Cutters

Pull down the underbody panel slightly to access the harness connectors, and if necessary cut any wire ties that hold them in place.



REMOVING THE ORIGINAL REAR BRAKES

Step 3:

Remove the white connector from it's mounting clips and disconnect it. Then separate the pad warning harness from the ABS sensor harness and remove it from the brake pad.



Step 4:

Flat Blade Screwdriver

Lever a screwdriver in each rear caliper brake cable actuator as shown, pull down slightly, then pull the end of each brake cable out of the actuator.



REMOVING THE ORIGINAL REAR BRAKES

Step 5: Flat Blade Screwdriver

Remove the brake cable retaining clips then pull each cable out of it's mounting bracket.

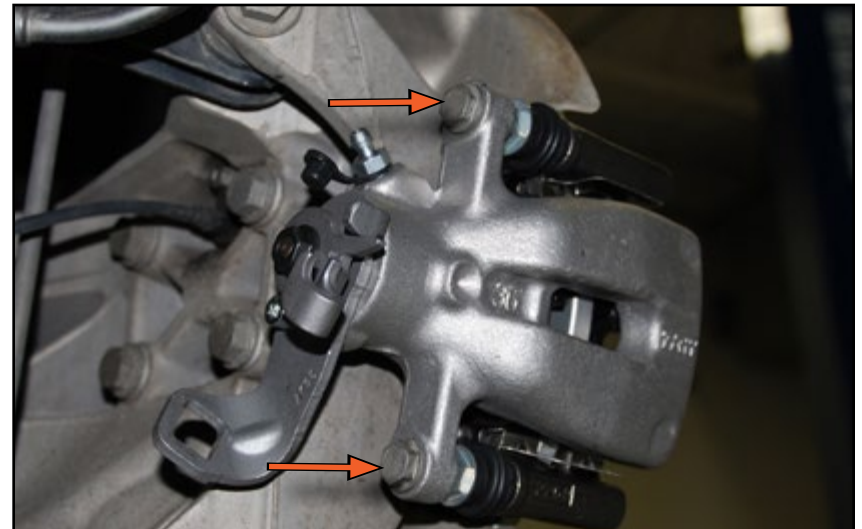


Step 6: 13mm, 15mm, Caliper Hanger

Remove both caliper mounting bolts on each side, then lift each caliper off and hang it out of the way.



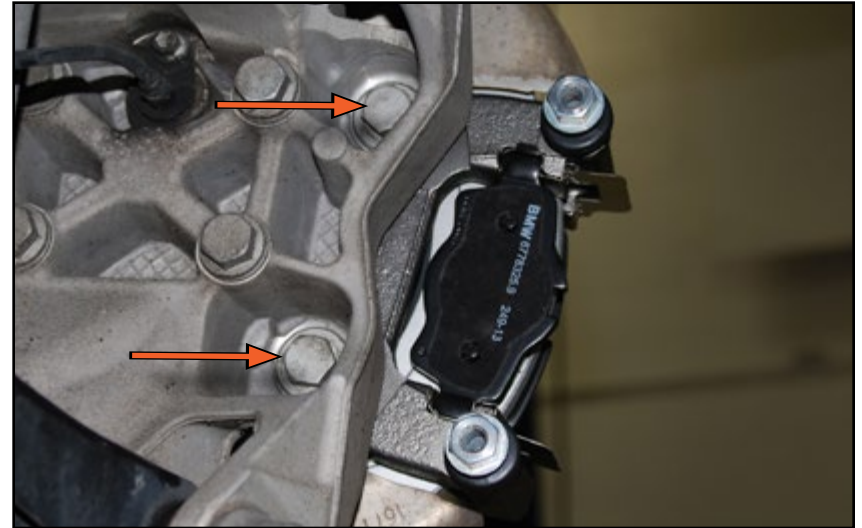
We leave the brake hoses connected until we are ready to install the new ones because it keeps the mess to a minimum. Even though the kit comes with new hoses, we prefer to hang the calipers so the hose integrity is not compromised in the event they get used on another vehicle.



REMOVING THE ORIGINAL REAR BRAKES

Step 7: 16mm Socket, Ratchet

Pull the brake pads out of the caliper brackets, then remove the two bolts on each side and remove the brackets.

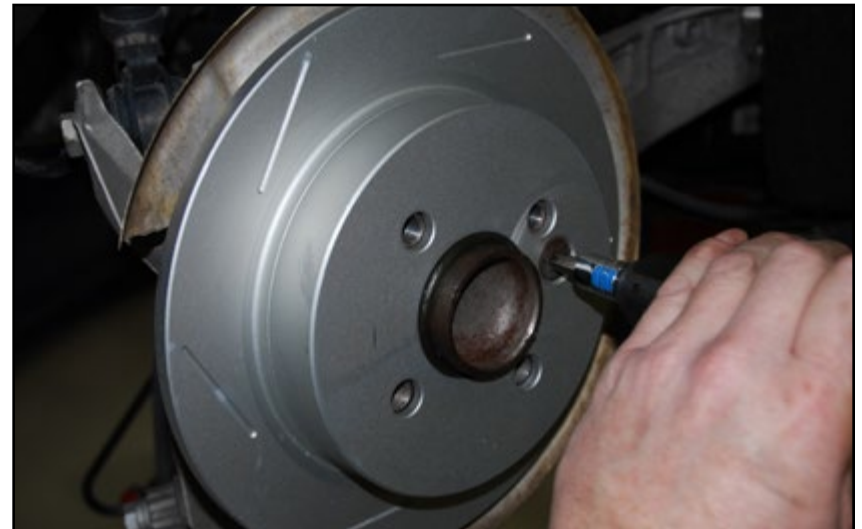


Step 8: T50 Torx, Impact Driver

Remove the brake rotor screw on each side, then remove both rotors and clean the surface of the drive hub.



If your rotor screws are broken or missing, we recommend replacement. New rotor screws are available at ecstuning.com. [ES#16458](#)



INSTALLING THE NEW GP2 REAR BRAKES

Step 1: T50 Torx, Torque Wrench

Install the new rear rotors using the new rotor screws included with the kit and torque them to 27 Nm (20 Ft-lbs).



Apply a small amount of anti seize to each rear brake rotor screw before installing.



Step 2:

Prepare for caliper assembly by setting everything out on a soft fender cover or towel.



INSTALLING THE NEW GP2 REAR BRAKES

Step 3:

Install all four rear brake pad tensioning clips onto the new caliper brackets by pushing them into place.



Both rear caliper brackets are the same.



Step 4:

Apply a small amount of grease to the ears on each rear brake pad.



INSTALLING THE NEW GP2 REAR BRAKES

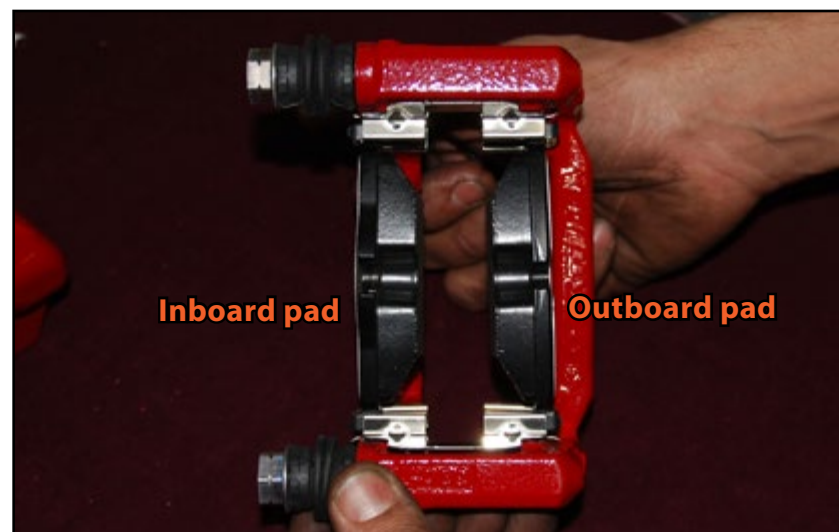
Step 5:

Inspect the brake pads and note the difference between the inboard and outboard pads.



Step 6:

Install the pads into each caliper bracket, making sure the inboard pads are located on the same side as the slide pins.



INSTALLING THE NEW GP2 REAR BRAKES

Step 7: 16mm, Torque Wrench

Install a caliper bracket over each rear rotor, thread in the bracket bolts, then torque them to 65 Nm (48 Ft-lbs).



Step 8:

Squeeze the brake pads together to seat them against the rotors.



INSTALLING THE NEW GP2 REAR BRAKES

Step 9: 5mm Hex Bit

Remove the sealing plug from each rear caliper.



The left and right calipers are different. Be sure to install the correct caliper on each side. The location of the bleeder screw and brake cable bracket is the easiest way to identify them. Compare the locations to the original calipers.



Step 10: 14mm Wrench

Install and tighten a new ECS Tuning Exact Fit brake line into each rear caliper.



Both ECS Tuning Exact Fit rear brake lines are the same.



INSTALLING THE NEW GP2 REAR BRAKES

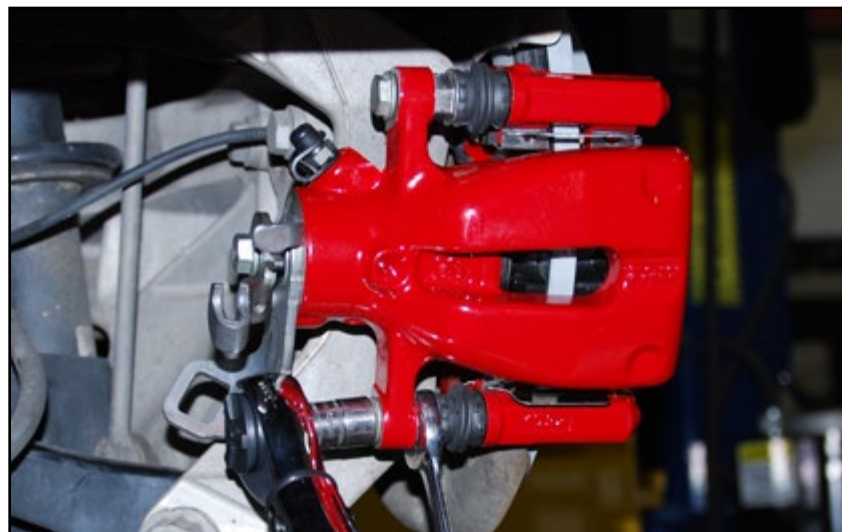
Step 11:

Hold a caliper in place on each side and thread the new caliper bolts into each slide pin.



Step 12: Torque Wrench

Torque the caliper bolts to 35 Nm (26 Ft-lbs).



INSTALLING THE NEW GP2 REAR BRAKES

Step 13: 11mm Flare Nut Wrench

Complete the following:

Disconnect the original brake hoses at each line and remove the original calipers.

Connect and tighten new ECS Tuning Exact Fit lines.

Push each brake line grommet into it's retainer.



Step 14:

Complete the following:

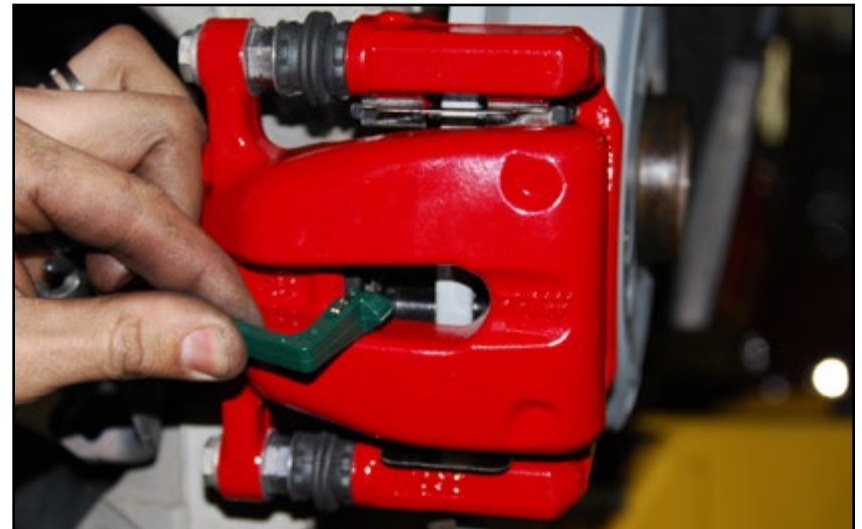
Connect the new pad warning sensor and route it in the same location as the original.

Install the new pad warning sensor into the inboard pad.

Re install the underbody retaining nut and screws.

Follow the brake bleeding procedure on page 51.

Reinstall and torque the wheels to 140 Nm (103 Ft-lbs).



BLEEDING THE BRAKE SYSTEM

Bleed the air from the brake calipers in the following order:

RH Rear

LH Rear

RH Front

LH Front

The majority of the air in the calipers can be removed by “gravity bleeding”. Simply open each bleeder screw in the prescribed order until fluid flows out bubble free. Check the brake fluid level and top it off as necessary between calipers.

Once you have “gravity bled” each caliper, depress the brake pedal a number of times to seat the pads. The pedal should be firm with no more than approximately an inch of travel.

If the pedal feels slightly spongy or even as a final step, have an assistant pump up and hold pressure on the brake pedal, then open one bleeder screw until the pedal goes to the floor. With the pedal held to the floor, tighten the bleeder screw then repeat for the remaining calipers.

Before test driving the vehicle, check all brake line connections for leaks and re tighten them as necessary.



MINI Cooper and Cooper S Anti-lock Brake System information

Due to the drastic increase in caliper size and fluid volume requirements, when upgrading the original brakes on a MINI Cooper and Cooper S, the operation of the ABS brake system will be affected. A JCW Big Brake Kit Flash is available for the ABS control unit to adjust the ABS operation for this upgrade. This JCW BBK Flash is available at your local MINI Dealership.

TORQUE SPECIFICATIONS

Brake Hose to Caliper Front.....	24 Nm (18 Ft-lbs)
Brake Hose to Caliper Rear	24 Nm (18 Ft-lbs)
Brake Pad Retainer Bolts Front	30 Nm (22 Ft-lbs)
Brake Rotor Screw Front	27 Nm (20 Ft-lbs)
Brake Rotor Screw Rear.....	27 Nm (20 Ft-lbs)
Caliper Bolts (Allen Head) Front	115 Nm (85 Ft-lbs)
Caliper Bolts Rear	35 Nm (26 Ft-lbs)
Caliper Bracket Bolts Front	110 Nm (81 Ft-lbs)
Caliper Bracket Bolts Rear	65 Nm (48 Ft-lbs)
Master Cylinder Mounting Nuts	23 Nm (17 Ft-lbs)
Wheels Front.....	140 Nm (103 Ft-lbs)
Wheels Rear	140 Nm (103 Ft-lbs)
Wiper Arms	20 Nm (15 Ft-lbs)

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. Re lubricate the contact points as shown on page 32.

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 MINI Cooper GP2 Brake Kit installation is complete!



These instructions are provided as a courtesy by ECS Tuning.

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.

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