

30830/30832/30835 02+ MINI Cooper Competition Camber Plates



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Camber Plates:

The biggest problem with a strut type front suspension is the lack of camber gain. What is camber gain? Camber gain refers to how much negative camber is increased during the suspension's bump travel. When cornering around a turn, the vehicle will roll causing the outside wheels to tip over in the same direction. This situation causes the tire's contact patch to lose traction with the ground resulting in understeer or "push". On double wishbone suspensions, camber gain allows the suspension to have more negative camber during these rolling conditions, thereby planting the tire contact patch square to the ground resulting in increased traction.

A strut type suspension has little to no camber gain. As the suspension travels upward the camber angle stays the same. One way to counteract this problem is to induce more static camber. Static camber refers to the camber angle at static ride height. By adding more negative camber to the suspension you can optimize the tire grip for any type of rolling conditions. This modification is a must for the track, autocross, or spirited canyon driving.

Before You Start:

The installation of these camber plates will require an alignment after completion.

Please read the entire manual before starting.

If you upgrade to an aftermarket coilover (e.g. Leda, KW, etc.), which utilize linear coil springs, you must also have:

- Hotchkis (part # 30830-225) 2.25" O.D. spring seat Upgrade Kit
- Hotchkis (part # 30830-250) 2.50" O.D. spring seat Upgrade Kit

1. Raise Front of the Vehicle

Jack the front end of the car up and place jack stands in the designated jack points. Chock the rear wheels for safety.

2. Remove the Front Wheels



3. Detach Brake Line and ABS Lines from Strut

Use your fingers to pop of the brake line and ABS line from the strut. Its also a good idea to detach the ABS line from the frame clip to give more allowance.

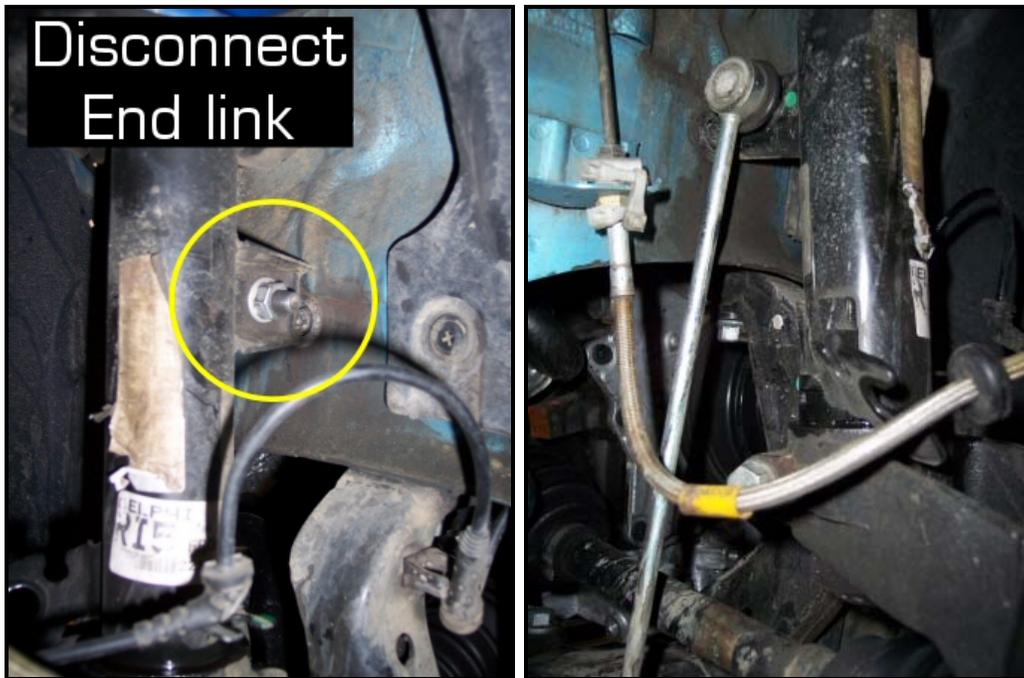


3. Cont.



4. Detach End Link from Strut

Locate the front sway bar end link. Remove the upper end link nut detaching it from the strut.

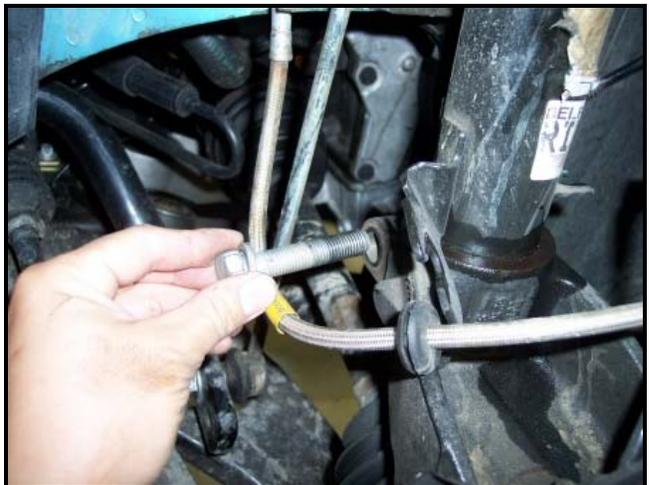
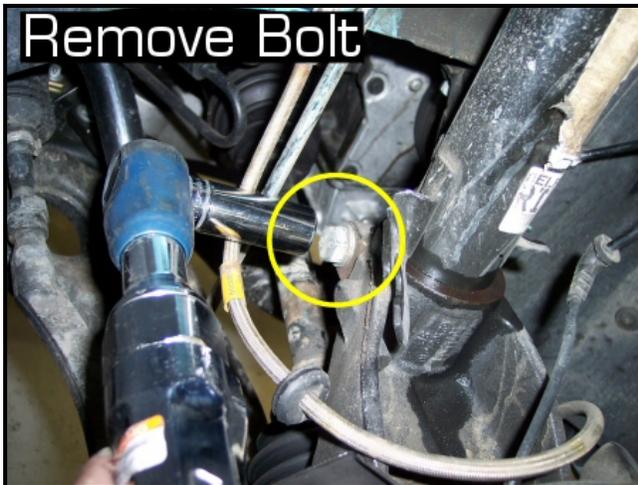


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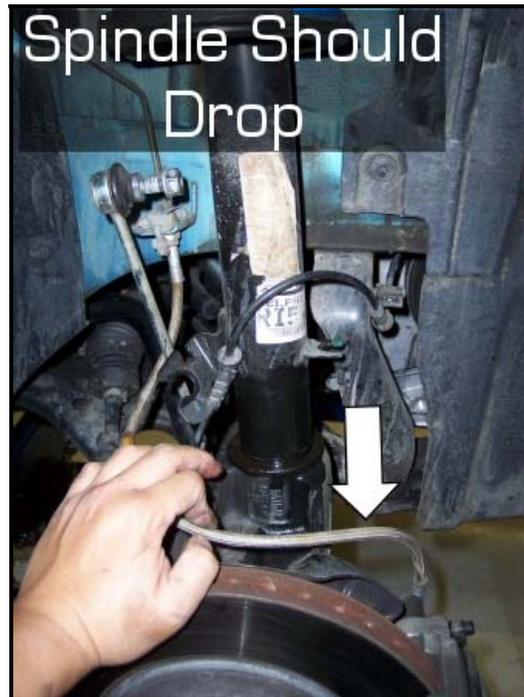


5. Detach Strut from Spindle

Support the lower the front lower control arm with a floor jack. Unfasten the one bolt that secures the strut to the spindle carrier. It's a good idea to spray penetrating oil in the crevice between the strut body and the spindle to aid removal. Lower the floor jack. The strut should slip out of the carrier.



5. Cont.



6. Remove the Strut from the Vehicle

The only thing holding the strut to the car is the upper strut tower nuts which are accessible from underneath the bonnet. Pop the bonnet and undo the 3 nuts holding the strut. The strut assembly can now be removed.

7. Remove the Old Strut Bearing Top and Spring Seat

Place the strut assembly in a spring compressor. Safely compress spring. Once the spring force is detained, loosen the shaft nut. With the shaft nut removed, you can also remove the bearing top and top spring seat. Keep the spring compressed.



8. Install New Strut Bearing Slider and Spring Seat

Install the Hotchkis spring seat as shown in the picture below. Make sure to reuse the oem rubber isolator. Next, Install the Hotchkis bearing slider in the same manner as stock removal. Apply some blue thread-locking compound on the shaft nut and fully tighten onto the strut shaft.



9. Install Hotchkis Base Plate

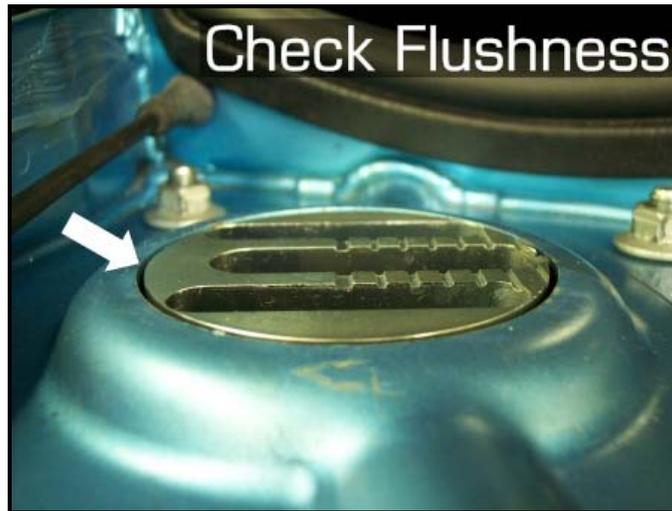
Before we install the base plate to the strut tower, we must first check to see if there has been any strut tower damage. This phenomenon is also known as “mushrooming”. The OEM strut tops are made of thin gauge steel and the same with the strut tower. With the combination of these components and low-profile tires, the strut tower sheet metal really takes a beating. The sheet metal begins to bow upward into a shape of a mushroom. Your new Hotchkis camber base plate is constructed using 2 layers of steel plate for maximum rigidity. Further more, the shape of the plates have been optimize to create a larger “foot print” mating to the strut tower to distribute the load over a larger area. You will not have to worry about “mushrooming” again.

9A. Check for “Mushrooming”

Put the Hotchkis base plate into position as a mock up. The top surface of the camber plate should be flush with the top strut peep hole (see picture below). If the peep hole is higher than the camber plate top, than mushrooming has occurred. Do not panic, this can be fixed.



This picture depicts NO mushrooming. Your strut tower should look like this before proceeding.



9B. Fixing "Mushroomed" Strut Towers

Depending on the amount of damage, you may have to take your car to the dealer to be fixed. Mushrooming should be covered under warranty, since it is OEM defect. You may be able to fix the mushrooming yourself if it is not too severe. Simply grab a 2x4 piece of wood and place it onto the peep hole. With the camber plate removed, use a dead blow or similar hammer and carefully pound the wood down. Check the flushness of the camber plate top and the peep hole edge after a couple of poundings. Once the edge is flush with the camber plate top you can install the the camber plate.



9. Cont.

9C. Installing Camber Plate

Using the same 3 OEM nuts, Install the camber base plate.



10. Reinstall Strut

With base plates in place, reinstall the strut in the same manner as removal. Slide the bottom portion of the strut into the spindle clamp. Make sure the alignment tab is lined up with the clamp gap. Use a floor jack to raise the suspension upward. Make sure the strut bearing slider is positioned correctly when installing onto the camber base plate. The strut bearing slider “arrow” shape should point inboard. The slider should fit into the base plate cavity. Repeat steps 3 - 5 in reverse order.

11. Install Indicator Plate

Once the slider is properly installed in the base plate cavity, install the blue indicator plate with the supplied hex bolts. Before installing the hex bolts, apply blue thread-locking compound on the threads. Make sure the straight edge of the plate is facing inboard where the tick marks are located.



12. Double Check All Hardware

Make sure all nuts & bolts are fully tightened. Reinstall the front wheels. You are done with the installation!

13. Adjusting Camber

Whenever you adjust the camber, you must take some (not all) of the weight off of the wheels to easily move the slider in or out. Use a floor jack and raise the front wheel until just before it lifts off the ground. Loosen the 2 hex bolts, but do not remove them. Move the slider in for more negative camber and out for less. It is recommended that a professional alignment shop align your car.



The allowable camber range is as follows:

Stock Diameter Coil:

0° to - 2°

Linear Coil (2.25" or 2.50" Diameter)

0° to - 3.8°

The limiting factor when achieving negative camber will be the diameter of the front coil. When using large/stock diameter front coils, the coil will hit the inner chassis sheet metal when moving the strut in passed - 2°. With adjustable coilovers that utilizes linear springs, you will have more clearance to move the strut in allowing up to nearly - 4°.

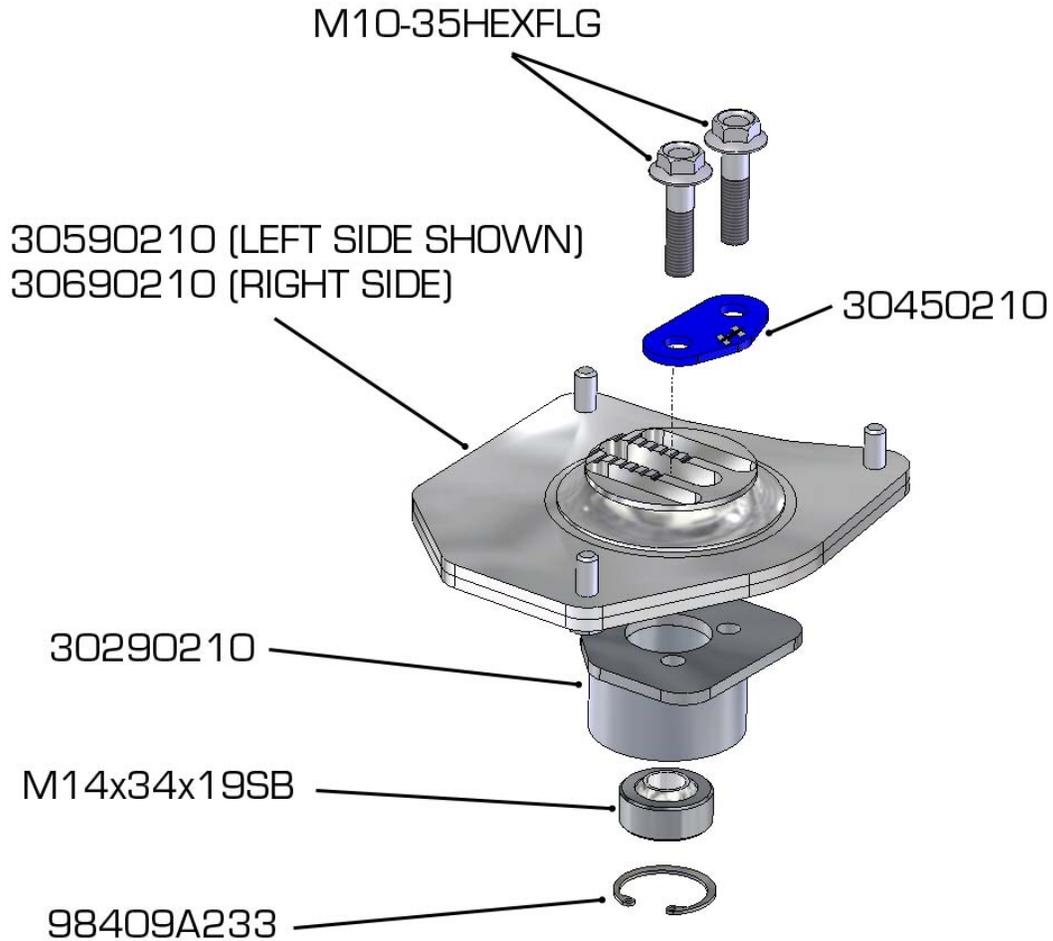
Keep in mind, whenever you adjust the camber, your toe will also be affected.

14. Optional Colored Indicator Marks

To make the indicator marks more visible, you can fill in the grooves with paint. You will need to buy a paint marker from your local stationary store. Simply mask off one groove at a time and apply the paint into the grooves. Repeat this process for each groove.



Component Diagram



Note:

The Spherical Bearing (M14x34x19SB) is a wearable item. For future replacement for this part or any other part shown above, please contact us at (877)-4-NOROLL and we will be happy to assist you.

Hotchkis Performance LLC

Return Policy & Limited Warranty

Effective September 1, 2007. This return policy and limited warranty supersedes all previous policy and warranty statements. Policies and warranties are subject to change without notice. Hotchkis Performance is not responsible for printing errors.

Return Policy

We want you to be completely satisfied with your Hotchkis Performance product. In case you're not, you can exchange or return it within 30 days of the purchase date. To obtain a full refund on unused products, excluding freight, please contact our Customer Service Department at (562) 907-7757. You will be assigned a Returned Goods Authorization Number (RGA). The package you return must show the RGA on the outside of the package, include the original invoice and be shipped prepaid to our facility. The product has to be unused and in its original packaging materials and be in sellable condition. For products presenting signs of use or damage, only warranty claims will be accepted. Exchanges or refunds made after 30 days will be subject to a 20% restocking charge. If you purchased your Hotchkis Performance product from an authorized dealer, you are still covered by this return policy. All returns however, should be made to your dealer, not to Hotchkis Performance directly.

Limited Warranty

Hotchkis Performance warrants its products against defects in materials and workmanship for the term of 36 months (3 years) from the date of purchase. This Warranty only applies to the original retail purchaser who retains ownership of the vehicle on which the product was originally installed. If the product is determined to be defective, Hotchkis Performance will repair, replace or refund the purchase price of the defective product at Hotchkis Performance's sole discretion, which shall fully satisfy and discharge any and all warranty claims. Any repaired or replaced product will be returned to the sender freight prepaid.

Exclusions from Warranty

Items offered but not manufactured by Hotchkis Performance are warranted according to the manufacturer's terms and are not covered by this limited warranty. Hotchkis Performance shall not be responsible for any labor, removal, installation, re-installation or maintenance costs. This warranty does not cover the cosmetic finish or plating of any product or any normal wear and tear to any product. In addition, this warranty does not apply to any products that have been:

- **Improperly installed or installed by someone other than a qualified, licensed auto mechanic experienced in the installation and removal of suspension products;**
- **Improperly serviced, misused, or modified, altered or subjected to abuse, negligence, accident or collision;**
- **Installed in any vehicle that has been modified;**
- **Installed on any vehicle that has carried loads in excess of automobile manufacturer suggested weight limits; or**
- **Installed on any vehicle that has been subject to abnormal or excessive use, including rallying, racing or racing-type activities or off-road use.**

Limitation of Warranty

This limited warranty is the entire and only warranty for the products and may not be modified or supplemented by any other person or company in any form. Any description of the products, by anyone, is for the sole purpose of identifying them and is not part of the basis of the bargain, and does not constitute a warranty that the products will conform to that description. The statements of any salesperson do not constitute part of this limited warranty and cannot be relied upon as a warranty.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. ANY IMPLIED WARRANTIES ARE DISCLAIMED TO THE FULLEST EXTENT PERMITTED BY LAW. THIS WARRANTY DOES NOT COVER CONSEQUENTIAL DAMAGES, LOSS OF TIME OR REVENUES, INCONVENIENCE, LOSS OF USE OF THE VEHICLE, DAMAGE TO THE VEHICLE OR COMPONENTS OF THE VEHICLE, ANY OTHER TYPE OF CONSEQUENTIAL DAMAGES, OR OTHER INCIDENTAL OR INDIRECT DAMAGES. HOTCHKIS' MAXIMUM LIABILITY UNDER THIS WARRANTY SHALL IN NO EVENT EXCEED THE PURCHASE PRICE OF THE PRODUCT. Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages and in such states the above limitations or exclusions may not apply. This limited warranty gives the purchaser specific legal rights and the purchaser may have other rights that may vary from state to state.

Technical Information

Hotchkis Performance makes every effort to ensure that you are provided with the most accurate and up-to-date technical information. However, all technical information is approximate and may vary upon application. Additional suspension components may be needed in some applications, depending upon the make, model, engine and chassis of the vehicle. Hotchkis Performance is not responsible for any consequences resulting from manufacturer's technical mid-year changes. Hotchkis Performance products should only be installed by a qualified, licensed auto mechanic experienced in the installation of such products.

Warranty Claim Procedure:

The answer to ALL the following questions should be YES before making a warranty claim:

- **Is the product appropriate to your application?**
- **Did you carefully and thoroughly read the instructions provided along with the product?**
- **Do you have the original invoice or sales receipt?**
- **Is the return date within 36 months from the purchase date?**
- **Are you the original purchaser?**
- **Was the product properly installed by a qualified, licensed auto mechanic?**
- **Has the product been installed on the original vehicle on which it was installed at all times?**
- **Is the product unmodified and clean?**
- **Is the reason for return a legitimate product defect?**

If the answer to all these questions is YES, please contact our Customer Service Department at (562) 907-7757. You will be given a Returned Goods Authorization Number (RGA) valid for 60 days. You will also be asked to ship the product prepaid to our facility. All shipments MUST be (i) prepaid, (ii) include the original invoice or sales receipt, (iii) show the RGA on the outside of the package and (iv) include your name, address, make and model of the vehicle, and a brief description of the claimed defect, including the circumstances under which the defect occurred. Warranty related inquiries should be sent to the following address:

HOTCHKIS PERFORMANCE, LLC
C/O CUSTOMER SERVICE
12035 BURKE ST. SUITE 13
SANTA FE SPRINGS, CA 90670

Hotchkis Performance will not accept product returns without the RGA number, receipt and the information described above. C.O.D. or collect shipments will be refused. Once the returns are received at Hotchkis Performance, we will evaluate the products, verify the sales receipt, and investigate the warranty claim.