

CoolShim Brake Coolers

Installing a set of CoolShims™ is similar to installing a new set of brake pads. While it is not necessary to install a new set of brake pads with the installation of the CoolShims, this would be an opportune time to do so. If a new set of brake pads are installed, particularly if they are a set of competition pads, make sure to follow the manufacturer's guidelines for installation. Most manufacturers require that the rotors be turned to remove any previous brake pad material. Further, they have explicit instructions as to how to properly "break in" or "bed" the new brake pads.

WARNING: THIS PRODUCT IS INTENDED FOR COMPETITION USE ONLY. USE OF THIS PRODUCT FOR APPLICATIONS OTHER THAN ITS INTENDED PURPOSE MAY RESULT IN: DAMAGE TO PROPERTY, INJURY OR DEATH. AUTOMOBILE RACING IS A DANGEROUS SPORT AND NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE AS TO THIS PRODUCT'S ABILITY TO PROTECT THE OCCUPANTS OF THE VEHICLE FROM INJURY OR DEATH. FOUR PRODUCTS LLC IS NOT RESPONSIBLE FOR ANY DAMAGE, CONSEQUENTIAL OR OTHERWISE, FOR EQUIPMENT FAILURE OR MAL-FUNCTION AFTER INSTALLATION. FURTHER, ANY MODIFICATIONS REQUIRED TO INSTALL THIS PRODUCT ON THE BRAKE SYSTEM OF THE VEHICLE ARE PERFORMED AT THE DISCRETION OF THE USER.

The CoolShim is a high performance product constructed from high thermal conductivity copper. It is very ductile and care must be taken during handling to prevent damaging or deforming the fins. If the CoolShim should become bent, simply bend it back to its original shape taking care not to crack the nickel plating. Once installed the CoolShim should be protected from damage under normal circumstances.

Several automotive manufacturers employ shims between the brake pad and the brake caliper piston to prevent brake noise and promote even brake pad wear. The CoolShim should be installed between these shims and the caliper piston. It is not recommended that the CoolShim be installed without the manufacturer's shims.

NOTE: BECAUSE OF THE LIMITED SPACE AVAILABLE INSIDE THE WHEEL, THE COOLSHIM MAY STRIKE BALANCING WEIGHTS IF THE WEIGHTS ARE NOT POSITIONED PROPERLY. IT IS SUGGESTED THAT THE BALANCING WEIGHTS BE MOVED TO A POSITION DIRECTLY RADIAL TO THE ROTOR WHERE THEY WILL BE BETWEEN THE TWO COOLSHIMS. IT IS SUGGESTED THAT "ON-CAR" BALANCING BE PERFORMED SO THAT THE TECHNICIAN CAN CHECK CLEARANCES AND MAKE SURE NO CONTACT WILL OCCUR WHILE THE BALANCING IS BEING PERFORMED. MAKE SURE TO INFORM THE TECHNICIAN OF THE PRESENCE OF THE COOLSHIM'S.

Heavy Duty CoolShim Installation Instructions

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Step 1: Follow your manufacturer's instructions for lifting the automobile and removing the front wheels. It may be necessary to loosen the lug nuts before raising the car.

WARNING: ALWAYS USE JACK STANDS TO SUPPORT A RAISED VEHICLE!

Step 2: Follow your manufacturer's instructions for removing the brake pads from the calipers. If you are going to re-use the brake pads, note where each pad was removed from so that it may be returned to that position.

WARNING: BRAKE PADS CONTAIN CARCINOGENIC MATERIAL - AVOID INHALING THE DUST!

Step 3: Use a piece of wood (recommended), or a large screwdriver to lever the caliper pistons back into the caliper. Do this carefully to insure that neither the seals nor the rotor is damaged.

CAUTION: PUSHING THE CALIPER PISTONS BACK INTO THE CALIPERS WILL RETURN THE BRAKE FLUID TO THE RESERVOIR AND MAY CAUSE IT TO OVERFLOW. IF YOU FEEL THIS MAY OCCUR, OPEN THE BLEEDER SCREWS BEFORE PUSHING THE CALIPER PISTONS INTO THE CALIPER. MAKE SURE TO CLOSE THE BLEEDER SCREWS WHEN YOU HAVE FINISHED.

WARNING: FOR OLDER VEHICLES, THE BRAKE CALIPERS SHOULD BE REBUILT AND THE PISTONS CAREFULLY INSPECTED BEFORE COOLSHIMS ARE INSTALLED. IF ANY RUST OR PITTING IS FOUND ON THE CALIPER PISTON, PARTICULARLY UNDER WHAT IS USUALLY COVERED BY THE DUST SHIELD, THE PISTON AND/OR CALIPER SHOULD BE REPLACED. WHILE THIS PITTING MAY NOT HAVE CAUSED PROBLEMS IN THE PAST, INSTALLING THE COOLSHIM WILL REQUIRE PUSHING THE BRAKE CALIPER PISTON FURTHER INTO THE CALIPER THAN PREVIOUSLY AND AREAS OF PITTING THAT WERE NORMALLY UNDER THE DUST SHIELD MAY BE PUSHED BACK INTO THE SEAL AREA. THIS WILL LEAD TO LEAKAGE AND POSSIBLE BRAKE FAILURE!

Step 4: Because of wheel taper, it is generally necessary to install a shorter CoolShim on the outer most brake pad. For this reason CoolShims are sold in pairs (one for each side of the car). If you have not already done so, download the fitting cutouts for your automobile from the web site (<http://www.fourproducts.com/fitting.html>), follow the directions and make sure that you have the correct CoolShim for your application. If you have already done this, continue on to the next step.

Step 5: Put a small amount of Permatex Disk Brake Quiet (P/N 82017) or similar product on the CoolShim where it contacts the caliper piston. This will help prevent brake squeal. These points are denoted with an X in the figure below:

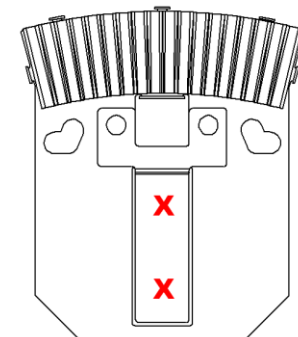


Figure 1: Disk Brake Quiet Application

Note: Your CoolShim will most likely be different than the generic device in this figure, but the disk brake quiet is always applied where the piston contacts the CoolShim.

Step 6: Install the first CoolShim between the brake pad and the caliper piston. **NOTE: COOLSHIM HEAT SINKS SHOULD FACE OPPOSITE ROTOR DIRECTION.**

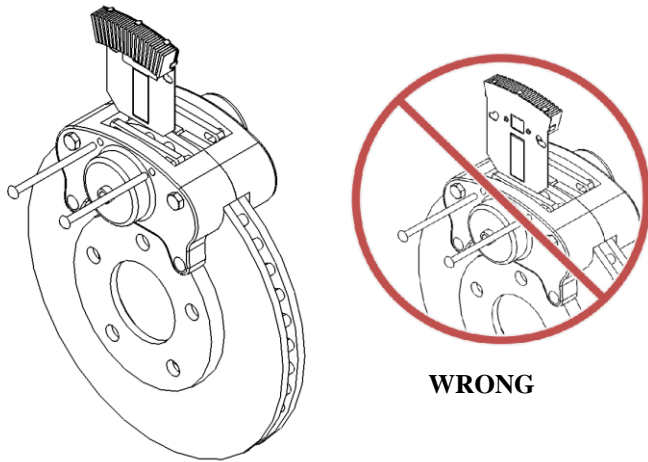


Figure 2: First COOLSHIM Installation

Note: The generic caliper shown in this figure is for illustration purposes only. Your specific caliper and COOLSHIM will most likely be different. Also, brake pad hardware specific to your vehicle is not shown in the illustration.

Step 7: Slide the guides in half-way to hold the first CoolShim and brake pad in place and then install the second pad and CoolShim. Depending on the make and model of your vehicle, it may be necessary to install some of the brake hardware at this point.

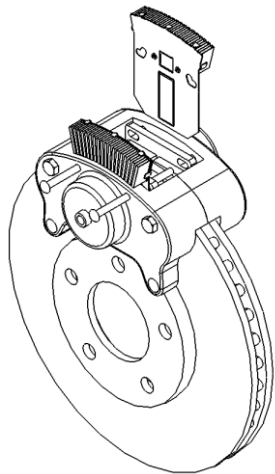


Figure 3: Second CoolShim Installation

Note: The generic caliper shown in this figure is for illustration purposes only. Your specific caliper and CoolShim will most likely be different. Also, brake pad hardware specific to your vehicle is not shown in the illustration.

Step 8: Slide the guides into place and attach the guide pin securing hardware (not shown). Please note that it may be necessary to use cotter pins or cotter rings instead of the original securing hardware. Both of which should be available from your local hardware store

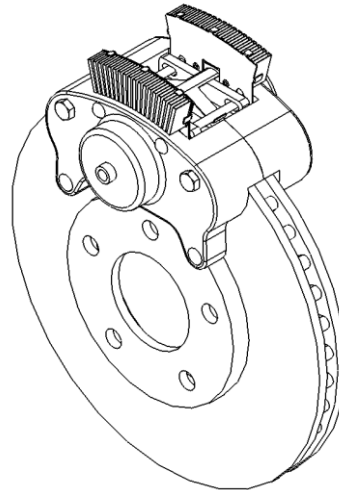


Figure 4: Securing Hardware Installation

Note: The generic caliper shown in this figure is for illustration purposes only. Your specific caliper and COOLSHIM will most likely be different. Also, brake pad hardware specific to your vehicle is not shown in the illustration.

Step 9: Compare the installation with that shown in your manufacturer's instructions for replacing the brake pads and confirm that the installation has been completed properly.

Step 10: Step on the brakes to seat them. Make sure that they seat properly and do not impede the motion of the brake pads in any way before continuing.

Step 11: Carefully remount the wheel making sure that it does not touch the CoolShims. Carefully rotate the wheel to check for any clearance issues paying particular attention to balancing weights that may be installed on the inside of the wheel.

CAUTION: IT IS STRONGLY RECOMMENDED THAT WHEN IT IS NECESSARY TO REPLACE YOUR TIRES, THAT YOU HAVE THE WHEELS BALANCED ON THE VEHICLE SO THAT A TECHNICIAN CAN CHECK FOR CLEARANCE WHILE HE OR SHE IS INSTALLING THE BALANCING WEIGHTS.

Step 12: After completing installation on both sides of the vehicle return it to the ground and tighten the lug nuts to the recommended torque.

WARNING: MAKE SURE THAT THE BRAKES FEEL FIRM BEFORE ENGAGING THE AUTOMOBILE INTO DRIVE. CHECKS TO MAKE SURE THAT THE BRAKES DO NOT MAKE ANY UNUSUAL NOISES AND THAT THEY DO NOT PULL THE CAR TO THE LEFT OR THE RIGHT DURING A STOP.

Step 13: If you have installed a new set of pads, follow the manufacturer's instructions for properly breaking them in. If you reused your old pads then seat the CoolShims by doing several short stops from approximately thirty miles an hour.

NOTE: WHEN REUSING THE ORIGINAL BRAKE PADS, THE BRAKES SHOULD FEEL EXACTLY THE SAME AS BEFORE THE COOLSHIMS WERE INSTALLED. IF USED WITH NEW BRAKE PADS, PARTICULARLY COMPETITION BRAKE PADS, THE BRAKES MAY FEEL DIFFERENT DUE TO THE NEW PADS, *NOT* THE COOLSHIMS.

NOTE: FOR THE COOLSHIM HEAT SINKS TO BE EFFECTIVE THERE *MUST* BE A SIGNIFICANT AIRFLOW THROUGH OR ACROSS IT. INSTALLING THE COOLSHIMS WITHOUT INSTALLING DUCTING TO DIRECT AIR TOWARDS THE HEAT SINK WILL SEVERELY LIMIT THE PERFORMANCE.

While many specialty shops and retailers sell ducting specifically designed for the purpose of directing air towards the brake calipers, it is possible to construct your own with 3" aluminum dryer ducting available at your local hardware store. Avoid the plastic or fabric ducting and instead use the accordion style aluminum. Simply bend and stretch the dryer duct into a position that gathers air from the front of the vehicle and directs it onto the CoolShim. After you are satisfied with the position, secure it with large nylon zip cords. Make sure that the ducting will not interfere with the steering or rub against any wires or painted surfaces.