

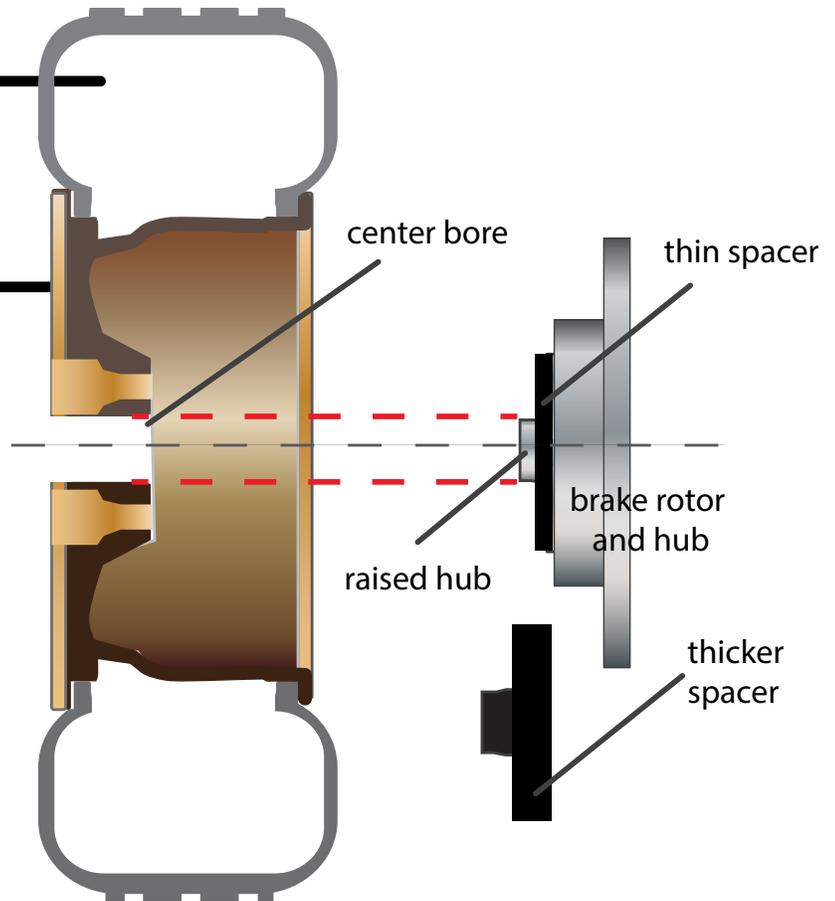
Wheel Spacer Tricks and Tips

Things you need to do:

1) **Select the correct spacer.** Pick spacers that match your bolt pattern. Then use our [online video](#) to help you select the correct spacer thickness.

The video demonstrates how to use simple tools like a straightedge and tape measure to determine the correct offset for your car and wheel combination.

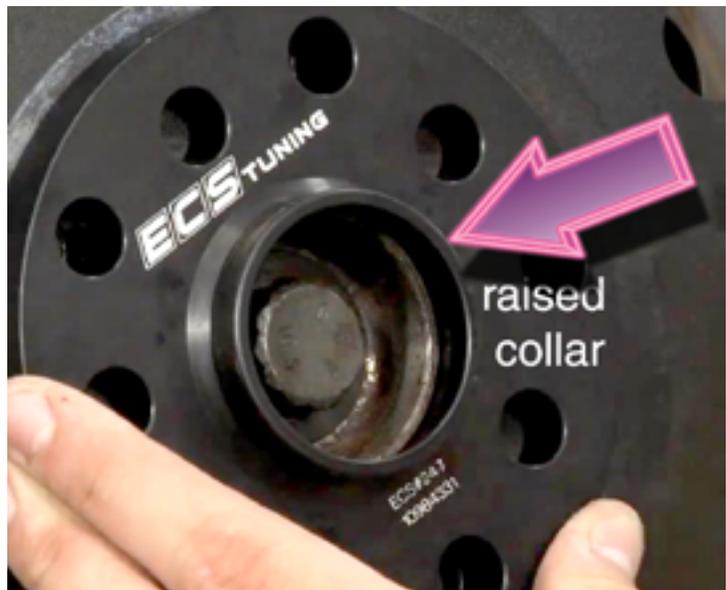
The raised hub center must stick out far enough to center the wheel on the hub.



2) **Use hubcentric spacers when necessary.** Hubcentric wheel hubs have a raised center that engages the wheel center bore. This keeps the wheel centered on the hub.

- Thinner spacers let the OE hub center extend far enough beyond the spacer face that they can still engage and center the wheel.
- When thicker spacers are used, select a hubcentric spacer that has its own raised centering collar.

Caution: Hubcentric wheels installed without a raised centering collar may spin elliptically, creating vibration.



Thicker spacers center on the wheel hub and add a raised hub of their own to keep the wheel centered. Never install a hubcentric wheel without a raised centering collar.

Wheel Spacer Tricks and Tips

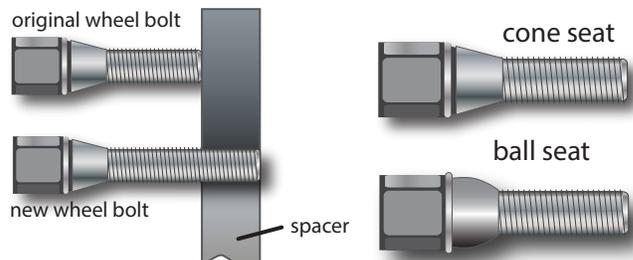
3) **Clean the wheel and hub.** Accumulations of rust and debris must be removed from both the wheel and hub mating surfaces before the spacers are installed. Clean using a wire brush or Roloc disc. Apply a thin film of anti-seize to the hub face to protect it from corrosion, and make future disassembly easier.



Clean the hub collar and face and the mating surfaces on the wheel.

4) **Select the correct length wheel bolts.** Wheel bolts must penetrate the threaded holes in the wheel hubs to a minimum depth for safety reasons.

Please observe the precautionary measures addressed on pg. 3 and 4 of this tutorial before preceding to step 5.



Lug Bolt Penetration		
bolt/stud diameter	nominal torque	minimum penetration
12.5x1.5	70-80	6.5 turns
12x1.25	70-80	8 turns
14x1.5	85-90	7.5 turns
14x1.25	85-90	9 turns

Lug bolts may have either conical or ball seat heads. Select the correct bolt style for your wheel application.

Wheel Spacer Tips

5) Tighten the wheel bolts correctly. Wheels bolts must be tightened properly for safety and performance.

Never use an impact gun to install lug bolts unless you are using torque limiting sockets.

Tighten lug bolts in stages, in a star pattern. Use a properly calibrated torque wrench and tighten the bolts to the recommended spec. The chart above shows general torque ranges for both 12 and 14mm bolts.

Incorrect tightening of lug bolts creates uneven stress points that can damage



Tighten lug bolts in steps using a star pattern.

Protect your expensive alloy wheels with extended reach

Schwaben Protecta six-point impact sockets. Like our standard length versions, extended length Protecta Sockets have color-coded mar-free exterior coatings that prevent nicks and scratches left by plain metal sockets, but reach deeper when standard length sockets just aren't long enough.

ES2221243



17 mm for VW/Audi oem bolts (19 and 21mm for non-oem aftermarket applications)

The Schwaben Torque-Limiting Wheel Bolt Socket Set prevents over-tightening of wheel bolts and lug nuts. Attach them to your ½-inch impact gun and tighten the wheel bolts or lugs until the socket stops tightening at 74 ft-lb (100 Nm). Then final-tighten the wheel fasteners to the recommended tightness using a torque wrench.

ES9021

Bolt-On Spacers

Bolt-on spacers are an attractive upgrade for several reasons:

- They keep the spacer and hub holes aligned for easier wheel bolt installation, a big plus for those who do seasonal wheel changes.
- Since the wheel bolts do not retain the spacers, standard lug bolts can be used, saving the added expense of longer bolts.
- They accept standard length wobble bolts.

ES2622666



For more on how to install bolt-on spacers, continue to the next page.

Wheel Spacer Tricks and Tips



Installing Bolt-on Wheel Spacers

Let's put what we've learned so far to good use installing wheel spacers on a MKIV GTI.

The spacers are thick: 22.5mm thick, to be exact. Their countersunk holes let you bolt them to the hub. That way you can use your stock wheel bolts.

Start by removing the wheel and tire. Clean the hub face and raised center hub. A Roloc disc mounted in an electric drill or die grinder quickly removes unwanted rust and dirt, without damaging the hub surface.



Apply a thin film of antiseize compound to the hub face. This will help prevent rust, and make hub removal easier at a later date.



Tighten the spacer bolts to the recommended wheel bolt torque. Draw the bolts down in steps, tightening in a star pattern to seat the spacer evenly.

Temporarily insert a screwdriver into a slot in a rotor vent, then let it ride against the brake caliper body to lock the rotor in place as you tighten the bolts.





Wheel Spacer Tips

Tighten the wheel bolts to the recommended torque.

Draw the bolts down in steps, tightening in a star pattern to seat the wheel evenly.

As you can see, installing wheel spacers is not complicated or difficult, if you follow these simple steps.



Thanks for purchasing ECS Tuning wheel spacers.

We appreciate your business, and hope this tutorial has been helpful and informative.

Wheel Spacer Tips

***Due to differences in wheel design, some wheels may have a thinner hub than others. This can cause the stock length wheel bolt to bottom out before completely securing your wheel. Please read the installation instructions for information on how to verify fitment of your bolts prior to purchasing.**

Additional text to be added to the “Wheel Spacer Tricks and Tips”:

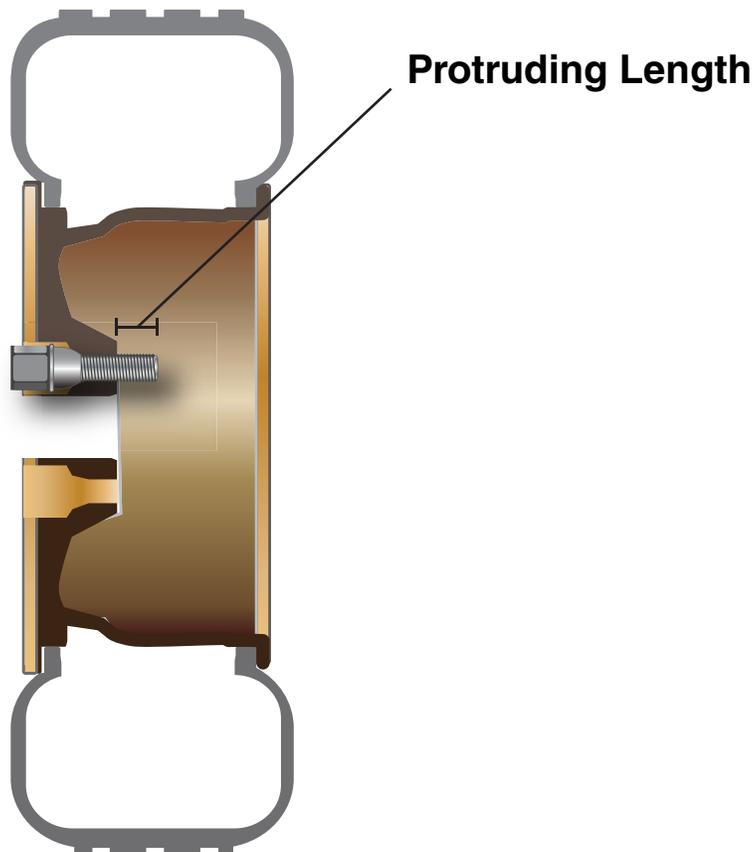
Required Items:

The wheel that will be installed with the spacer/adaptor
The wheel bolt that will be used to attach the wheel to the spacer/adaptor (make sure you have the correct bolt seat for your wheel; conical vs. ball)

A measuring tool (digital or analog calipers, depth gauge, measuring tape, etc.)

Procedure:

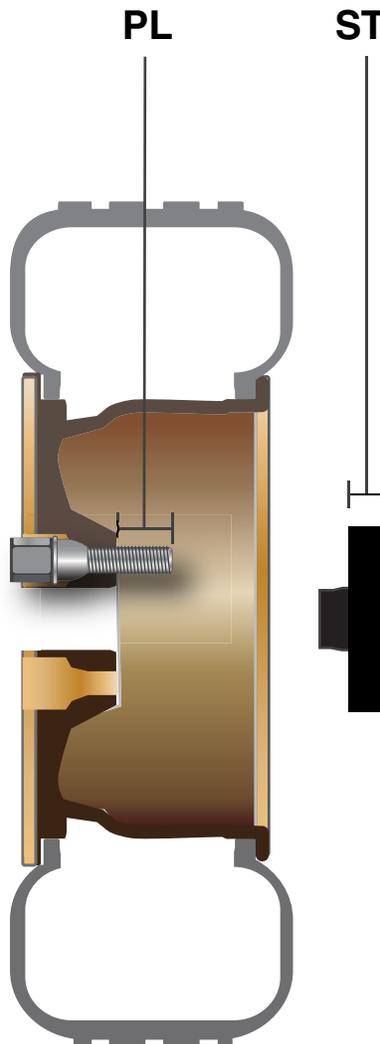
1. Insert the wheel bolt through one of the bolt holes on your wheel. Pressing firmly on the head of the bolt to hold it in position, measure the length of wheel bolt that protrudes beyond the hub mounting face of the wheel.



Wheel Spacer Tips

If the protruding length (PL) is greater than the thickness of spacer/adaptor (ST) you are planning to install, you will either need shorter bolts or a thicker spacer/adaptor to avoid bottoming out against the hub. (Wheel bolts can be found on the ECS Tuning website by selecting: Your Vehicle > Wheels > Bolts, Studs & Nuts > Wheel Bolts)

PL - Protruding Length
ST- Spacer Thickness



Wheel Spacer Tips

If shorter bolts are required, find the length of your existing bolt (BL) by measuring the threaded section from the base of the bolt seat to the end of the bolt.

Use the following formula to find the longest possible bolt length:

$$\text{Correct Bolt Length in millimeters} = \text{BL} - \text{PL} + \text{ST} - 0.25^*$$

*Buffer for material compression

