

Hood installation and adjustment

by Dubois on BMW 2002 FAQ

This is probably one of the trickiest operations to get just right on the entire car. Even for a bodyman or bodywoman - to be politically correct - it would present some challenges. So do not feel bad if you spend 4 hours trying to accomplish this. Part of the problem is that some adjustments affect others, so you will find yourself going around circles. I will attempt to shade some light on the subject and will try my best to break this down into a logical and sequential process.

Before you start, you should take some cross measurements of the front of the car. These should be within 1/4 inch max of each other. You will not be able to fit a square hood on a diamond front, the best you can hope for is a compromise.



The first step is to remove all 3 front grilles. Do not attempt to take a short cut on this one. Have you ever wondered why a few 02's have a little dimple on the center grille?



CAUTION: leave those grilles off, until you are certain that you can open and close the hood properly. If the hood gets stuck, for whatever reason, you can access the front hinges bolts from the bottom, to allow to move the hood slightly in order to free it.

This is not caused by cars, but by the hood swinging too far forward when the springs have not been secured.

The next step is to secure the front hinges to the car. The next picture shows the hinges in their final position - however to be on the safe side you will want to move them up on the center of the bottom slot.



Once the two front hinges are secured to the car, I recommend recruiting two other people to hold the hood and position the hood, while a third person bolts the hinge screws. Push the hood on the hinges as far down, this actually is moving the hood forward at the close position. **DO NOT CLOSE THE HOOD yet!**



Secure both torsion arms to the apron brackets. Slide the arms all the way to the front. Make sure that your washers are positioned such that the attaching point allows the arm to rotate freely. **CAUTION:** do not ever attempt to close the hood with these loose, make sure they are tight on the apron slides - otherwise, you will end up with some nice scratches on your apron.



Remove the angle brackets so they will not interfere with the next adjustments.

Slowly close the hood and observe how it comes down the back. It should clear the front of the doors on both sides

The next step is to adjust the height of the hood in the front, by sliding the hood on the front hinges behind the front grille openings, until it looks like this:



Now, slowly open the hood while observing for clearance with the front panel.

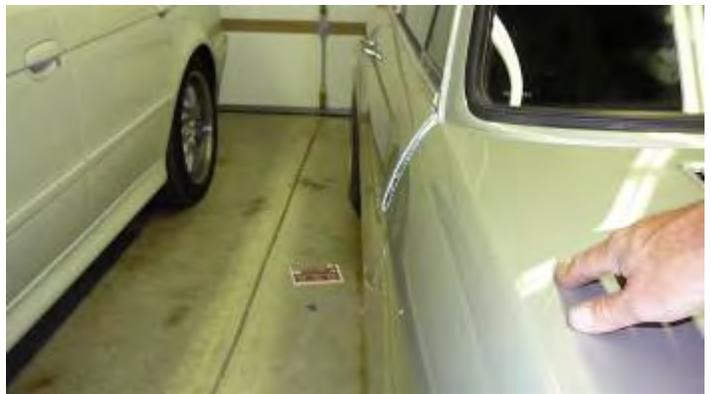
Notice that there is a bigger gap at the center - that's ok. I simply think it is a design feature, but later on, we will talk about how to improve this.

The next step is probably the toughest one, since it adjusts two features on the hood: the gap between the hood and the doors and how flush the sides of the hood are with the surface of the doors!

It is absolutely **IMPORTANT** that all adjustments to be made from here on, are with the hood height (established manually) leveled with with the surface below the belt moulding on the door. Use a straight edge, see next figure:



The reason for that is because the sides of the hood are angled, an incorrect height will appear to bring the sides of the hood in or out relative to the sides of the doors. The next figures illustrate:



Another way to verify the correct height is to look at the car from the side, the holes for the aluminum trim on the hood should line with those on the door.



The position of the torsion bar arms on the apron slides controls both, the door gap and the flushness with the doors. Slide them to the back and you will close the door gap. Slide one side more than the other and you will adjust flushness. At this point, what you want to achieve is flushness first, with an adequate gap on at least one side. Play with the slides until you accomplish this.



Remember to measure flushness at the correct hood height!

Once both sides are flush, it is possible to adjust the gaps a bit on one side to make them both equal. This is accomplished by closing the hood, loosening up the six screws that connect the hood to the hinges, and pulling the hood on one side. Tighten at least one screw on each side, before opening the hood again. You can tighten the rest with the hood open.



Take a break now, the hardest part is over! Your hood should look like this now:



The next step is to install the angle brackets, they have 2 components, one is the side latch catch (there is a center latch also, but there is no adjustment), and a hood rest.

Remove the hood rest so it won't interfere with the side latch adjustment.



Slide the brackets as far back as they go AND level with the hood surface. See figure:



These brackets can slide up and down and back and forth. It is possible to pivot them, but I recommend keeping things simple and restrict the adjustment to straight moves only.

Adjust the height of the brackets in such way to allow the latch to pull the hood to the proper height. Since the stops on the angle brackets have previously been removed, it will bring the hood down, without putting it in a bind.

Bring slight pressure up on the latched hood to verify contact.



If the hood latches too low, move the bracket straight down. If it latches too high, move the bracket up.

Note: you can also affect the adjustment by sliding the bracket forward (remember, we slid them all the way to the back) , but keep things simple. Only do this if you absolutely need to, if you ran out of adjustment. Bare in mind that the front of the brackets have to clear the latch rollers to allow the hood to open.

Once you achieved the correct height, place the stops and adjust them to just touch the aprons when the hood latch is closed. You can peek with a flashlight, by opening the door and actually see what is going on, while you latch the hood.



The next step is to position the keepers on the side of the apron. This is accomplished by bringing them outboard and finger tightening both screws. As you close the hood, it will position them in the correct place. Repeat this step and peek with the door open, to make sure they just touch the sides of the stoppers. The keepers can also be used to push the side of the hood outboard in order to make them flush with the side of the door.



Finally, the two vibration dampeners are installed in the front. These screw in or out for adjustment. These can lift the front corners of the hood slightly and improve the front hood gap.

Remove the front signal lamps to check for proper contact.



Re-install the front signal lamps and close the hood and verify clearance. If the hood is too tight at the ends and touches these, you can adjust it up by screwing out the bump stops. This probably only applies to NA cars that use the bigger lamps.



If done correctly, you should be able to latch the hood with minimal effort, and lift the hood open with one hand from the drivers side - perfectly balanced!

Sit back and and admire your handy work and the fine German engineering!