

Bethania Garage Inc. & Hard Dog Fabrication



Hard Dog offers hitches for each generation of the Miata / MX-5. Listed below are the instructions for each installation type.

INSTALLING THE HITCH:

1st Generation / 1990 - 1997, item #R1 & R1H

Jack up the rear of the Miata. Be sure to support the car with sturdy jack stands. BE CAREFUL!!!!

Remove the rear tie-down hooks and save the attaching fasteners. No additional hardware is required to mount the hitch.

Install the hitch in place of the tie-downs using the OEM tie-down fasteners.

2nd Generation / 1999 - 2005, item #R2

Jack up the rear of the Miata. Be sure to support the car with sturdy jack stands. BE CAREFUL!!!!

The hitch will mount between the tie down loops welded under the rear of the car. Remove the bolts, washers and backup plates attached to the hitch.

Push the hitch up until the mounting brackets are approximately even with the bottom of the structure to which the tie down loops is welded. Check clearance under the bumper and using the hitch as a template mark the chassis for the 8 holes to be drilled. Take the hitch back down and drill 3/8" holes at the previously marked spots. Depending on the type drill you are using it may be helpful to remove the heat shield over the muffler and / or the rear bumper cover. Put the hitch back in position and push a bolt through on either side to hold it in place.

Slide the backup plates into place. The outer plates go inside the square "hole" just inside the tie down loops. Align the plates and start all bolts before tightening any. Tighten the bolts to 35-40 ft lbs (the bolts will seem hard to tighten because of the self-locking nuts used on the backup plates).

2nd Generation / 1999 - 2005, item #R2H

Installation requires removal of the rear bumper cover and the bumper support.

Open the trunk, remove the carpet and plastic trunk wall panels. The side panels are attached by reusable plastic rivets that are loosened by lifting the centre button with a knife blade or fingernail which allows the fastener to be removed.

Remove the taillights. Unplug the taillight wiring, 1 plug per side, remove the two nuts per side that hold the light assemblies in place. The lights are usually stuck to the car, be careful not to let them drop.

Remove the rear wheel splash panels.

Remove the rear bumper cover. There are screws behind the splash panels you just removed inside the wheel wells, behind the license plate and on top in the trunk opening. Once you have all of the fasteners removed pull the bumper cover loose by slightly twisting while pulling on the wheel and taillight openings to unsnap the attachments.

Remove the aluminium rear bumper support by removing the three hex nuts per side using a ratchet, 6" extension and deep well socket through the holes provided.

Install the hitch over the bumper studs and snug one of the nuts to hold it in place. Put on the safety glasses. The three threaded studs per side that hold the bumper support in place should protrude through the hitch plate leaving one hole empty. Drill a 3/8" hole through the empty hole. Remove the nut you initially installed to hold the hitch in place and reinstall the aluminium bumper support. Use Loctite or some type of thread locker on the stock nuts and torque to 40 ft / lbs. Install the bolts, washers and self-locking nuts provided with the hitch into the holes you just drilled and torque to 40 ft / lbs. From the rear drill a 3/8" holes through the holes the hitch reinforcement plate through the flange at the lower edge of the body. Install the bolts, washers and self-locking nuts provided and torque to 40 ft / lbs.

Reinstall the rear bumper cover, make sure you don't have any extra parts.

Reinstall and plug in the taillights. Do NOT over torque the taillight fasteners, remember these are plastic. Check the lights to make sure everything is operational.

Reinstall the splash shields, trunk panels and carpet.

3rd Generation / 2006 - 2015, item #R3 & R3H

Installation requires removal of the rear bumper cover and the steel bumper. This seems like a lot to do but is a relatively easy task. No need to raise the car off the ground for this one.

Open the trunk, remove the carpet and plastic trunk wall panels. The carpet is held in place by simple plastic buttons that pull out easily. The side panels are attached by reusable plastic rivets that are loosened by lifting the centre button with a knife blade or fingernail which allows the fastener to be removed. Unplug the wires attached to the rear panel for the trunk latch and light.

Remove the taillights. Unplug the taillight wiring, 3 plugs per side, remove the three nuts per side that hold the light assemblies in place. The lights are usually stuck to the car, be careful not to let them drop.

Remove the rear wheel splash panels. These are held in place by screws behind the rear wheels and on the bottom.

Remove the rear bumper cover. There are screws behind the splash panels you just removed inside the wheel wells, behind the license plate and on top in the trunk opening. There are two more of those plastic rivets in the taillight opening. (larger than the ones that hold the trunk panels) Once you have all of the fasteners removed pull the bumper cover loose by slightly twisting while pulling on the wheel and tail light openings to unsnap the attachments.

Remove the steel rear bumper support by removing the three 17mm hex nuts per side using a ratchet, 6" extension and deep well socket through the holes provided.

Install the hitch over the bumper studs and snug one of the nuts to hold it in place. Put on the safety glasses. Using the hitch as a template, drill 3/8" holes through the upper mounting plates. Install the bolts, backing plates and self-locking nuts and torque to 40 ft / lbs. The three threaded studs per side that hold the steel bumper in place should protrude through the hitch plate leaving one hole empty. Drill a 3/8" hole through the empty hole. Remove the nut you initially installed to hold the hitch in place and reinstall the steel bumper. Use Loctite or some type thread locker on the stock nuts and torque to 40 ft / lbs. Install the bolts, washers and self-locking nuts provided with the hitch into the holes you just drilled and torque to 40 ft / lbs. From under the steel bumper drill a vertical 3/8" hole through the bumper and the hitch reinforcement plate. The bumper is formed from high strength steel. Although fairly thin, it is difficult to drill. A good thing for a solid mounting point but you will need a very good drill bit or carbide burr to get the job done. Once you get through the factory bumper the hitch plate is relatively easy to drill. Do not leave this step undone. Thankfully it's only one bolt but it's important. Install the bolt, washer and self-locking nut provided and torque to 40 ft / lbs.

Reinstall the rear bumper cover, make sure you don't have any extra parts. You can notch the cover if you like to somewhat obscure the tow bar, but this is not an absolute necessity.

Reinstall and plug in the taillights. Do NOT over torque the taillight fasteners, remember these are plastic. Check the lights to make sure everything is operational.

Reinstall the splash shields, trunk panels and carpet.

4th Generation / 2016 and up, item #R4H

Installation requires removal of the rear bumper cover and the bumper support. This seems like a lot to do but is a relatively easy task. No need to raise the car off the ground for this one. The good news is no drilling required.

Open the trunk, remove the side carpet and plastic trunk rear panel. The carpet and rear panel are attached by reusable plastic rivets that are loosened by lifting the centre button with a knife blade or fingernail which allows the fastener to be removed. Unplug the wires attached to the rear panel for the trunk latch.

Remove the taillights. They are held in place by a Phillips screw at the top a nut inside the trunk with a 10mm head and a hidden fork that slides over a plastic spool on the side. Remove the screw and nut and slide the light assembly straight to the rear. The lights are usually stuck to the car. Be careful but a gentle nudge to the rear will usually do the trick. Unplug the taillight wiring, by rotating the plugs. The taillights are LEDs with a small connector. The turn signals are traditional incandescent bulbs that come out when you rotate the plug.

Remove the rear wheel splash panels. These are held in place by screws behind the rear wheels and on the bottom. There's a troublesome little plastic push rivet with a small Phillips head. I assume you are supposed to be able to turn it out with a screwdriver. Wiggle it out if you have to and push the centre back for reinstallation. It's easy to reinstall.

Remove the rear bumper cover. There are screws behind the splash panels you just removed inside the wheel wells. Look for the one that goes in at an angle toward the top of the splash panel. There are Phillips screws on top in the trunk opening and at the lower corners. There are two more of those plastic rivets under the back and four hex head screws. Once you have all of the fasteners removed pull the bumper cover loose by slightly twisting while pulling on the wheel and taillight openings to unsnap the attachments. The cover snaps along the rear lower edge of the quarter panel and at the top in the middle in the rear. Pull the sides loose and pull straight back at the top. There are 2-pointed alignment pins at the bottom that attach to a plastic bracket that you've already removed the hex screws from. Pull the cover to the rear and off the alignment pins.

Remove the rear bumper support by removing the four hex nuts per side.

With the bumper support removed you will see the openings at the end of the unibody ribs. Slide the nut plates supplied into the openings until they align with the openings in the bottom of the unibody rib just to the side of the muffler.

Install the hitch over the bumper studs and snug one of the nuts to hold it in place. Install the bolts through the lower brackets into backing plates previously installed in the unibody rib and snug slightly but do not tighten. Remove the nut you initially installed to hold the hitch in place and reinstall the bumper support. Use Loctite or some type thread locker on the stock nuts and torque all fasteners to 40 ft / lbs.

Reinstall the rear bumper cover, make sure you don't have any extra parts.

Reinstall the taillights. **Do NOT over torque** the taillight fasteners, remember these are plastic. Check the lights to make sure everything is operational.

Reinstall the splash shields, trunk panel and carpet.

Do not exceed the vehicle towing capacity.