



Honda S2000: 'Sprint' Rear Brake Installation Guide

(301x19mm Vented Mustang Rotor + RX8 Caliper Retrofit kit)



Note: Please read the complete install guide before turning a wrench!

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Installation

The brake system on any vehicle is a safety device. It is strongly recommended that any personnel performing brake-related replacement or maintenance operations should be competent and certified, using proper tools and equipment.

Brake to Wheel Clearance

The customer is solely responsible for verifying wheel fitment. We have a wheel clearance template available for download on our website.

Brake Noise, Vibration, and Harshness (NVH)

Brake noise can be caused by many factors. Following the bed-in procedures outlined on the following pages will help reduce brake noise as much as possible, but keep in mind that high performance brake pads do tend to make more noise than typical OEM pads. **The customer is solely responsible for any NVH related problems with the brake system (squealing, scraping, vibration, judder, etc.).** Also be aware that floating rotors tend to rattle when cold at low speeds. Any unusual pulsing, unusual noises, etc may be a problem. Discontinue use until the source of this issue has been diagnosed. NVH does not mean ignore abnormal brake noise.

Caliper, Bracket, and Hat

The bells (hats) and caliper brackets are hard anodized aluminum, and as such are subject to corrosion when introduced to corrosive agents such as brake fluid, road salt, wheel cleaners, certain soaps, etc. Use caution when cleaning and servicing the system components.

Please note, the rotor hats used in this kit have been designed to accommodate the slight variances in aged hubs due to rust/corrosion to aid in installation and removal. The hat may exhibit slight amount of "play" in relation to the hub on certain vehicles.

What's in the Box?

Customer must supply Left and Right RX8 Rear Calipers. These can be found used on Ebay etc., or purchased rebuilt from various manufacturers. Brand new units can be ordered directly from Mazda.

- Left and right hard anodized aluminum caliper mounting bracket
- 2x Mustang rotor -> S2K Rear Hub Adapter Rings
- 4x hex head flange Bolts – Bracket to upright
- 4x Socket Head Bolts with washers – Caliper to Bracket
- M8 bolts with corresponding nuts
- M6 bolts with corresponding nuts
- E-brake cable relocation brackets, inner and outer sub-frame pieces
- 2x caliper E-brake cable brackets
- 2x rotational brackets

Required Tools

- Pair of jack stands
- Torque wrench accurate under 100 lb.-ft.
- Breaker bar for OEM caliper bolt and wheel removal
- Rear RX8 Brake Calipers, with compliant brake pads
- 3/8" Socket Set - Metric
- 3/8" Allen socket set - Metric
- Pliers
- Metal File
- Large Zip Ties
- Metal-Cutting Shears
- Brake Fluid
- Loctite® Threadlocker Red

OPTIONAL:

- Rear disc brake cube for 3/8 in. drive tool (AutoZone Part Number: 25071)
(May be needed to retract rear caliper pistons)



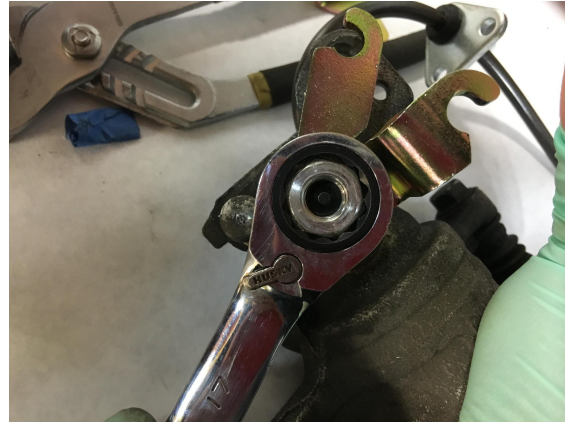
Installation Procedure

Step 1A– Prep RX8 Calipers



- Remove Rotational spring from the RX8 Caliper. Note the orientation of the spring, you will be reusing the spring in the same orientation with the new rotational bracket.
- Remove rotational bracket from stock caliper using a socket or impact driver. As the rotational bracket is spring loaded, you

will want to wedge a socket, or other object in between the caliper body and rotational bracket, to prevent it from rotating while you loosen the nut.



- With nut removed, gently pull up on the stock rotational bracket, while twisting to relieve pressure between the stop and the rotational bracket. The internal spring will unwind slightly with the bracket removed, this is normal.
- Check to ensure you're using the correct rotational bracket for the corresponding caliper. Slide the bracket down over the threaded portion of the rotational shaft.
- Using a pair of pliers, grab the top section of the rotational shaft, and rotate slightly to recompress the internal spring mechanism. This will allow you to fully seat the rotational bracket on the shaft (fitting the irregularly shaped hole over the similarly designed bottom portion of the rotational shaft). Note: to avoid damaging the threads, we recommend wrapping the threaded part of the shaft with a thick tape, when using pliers to rotate it.
- Replace the original bolt & washer and tighten down.
- Repeat the above processes for the other Caliper.



Step 1B– Replace RX8 E-brake Cable Mount



- Remove the stock E-brake Cable mount.
- Using the supplied hardware, and the stock bolt, fasten the E-brake cable mount in place. The two M6 bolt holes that you will attach the brake line to, should face upwards above the pass-through for the E-brake cable.
- Attach the E-brake cable and reseal OEM spring clip from S2000 Caliper. Once this step is complete, you can install your brake pads.
- **If necessary:** Your brake caliper piston may need to be retracted in order to create enough room between the brake pads to slide over the rotor. Use a rear disc brake retractor tool to spin the rear caliper piston back into place.



OEM/Rear disc brake cube for 3/8 in. drive tool
(AutoZone Part Number: 25071)

- Fit the brake pads into the caliper. Make sure that the pin sticking out of the rear brake pads is aligned with the “+” shaped notch in the piston retractor. The Piston retractor notches should be oriented in a vertical position, so that the pin (on the pad) slides into the groove.

Step 2- Lift and secure vehicle, remove wheels

- Apply the parking brake and chock the front wheels.
- Loosen rear wheel lug nuts using the appropriate socket. Lug size will vary depending on what brand you have. Typical sizes are 17mm, 19mm and 21mm.
- Lift the rear of the car on a flat, clean, and stable surface per manufacturer recommendations.
- Secure the vehicle on two jack stands or one if you'd like to install one side at a time.
*** **Never leave your vehicle supported with only a floor jack** ***
*** **ALWAYS USE JACK STANDS** ***
- Remove rear wheels
- Undo parking brake

Step 3- Unbolt OEM caliper

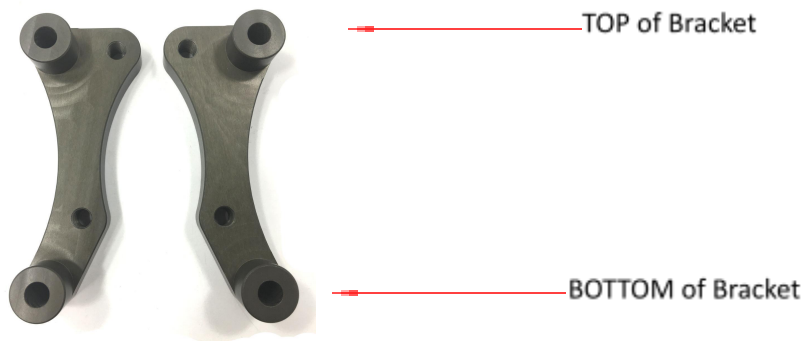
- Using a socket wrench, loosen and remove the two bolts that hold the OEM caliper onto the upright.
- Remove the caliper from the rotor and support it with zip ties so that it does not hang from the brake line, until fully removed. The pads can remain installed in the OEM caliper during removal.
- Remove the spring clip holding the E-brake cable in place, then remove the E-brake cable from the caliper.
- Leave the stock caliper hanging from zip ties, you will finish removing it later.

Step 4- Remove OEM disc

- Once the OEM caliper is removed, you should be able to easily remove the OEM discs.
- If the disks do not come off easily a soft blow mallet may help the process.

Step 5- Install Caliper Bracket

- The driver and passenger side caliper brackets ARE MIRRORED. Be SURE you install the correct bracket for each side of the car. Please see the below photo to determine which caliper bracket is which:



Driver Passenger

- Apply Loctite® Threadlocker Red to the threads of the Hex Head Flange Bolts which will be used to mount the caliper bracket to the upright.
- Install the caliper bracket using the Hex Head Flange Bolts to attach it to the upright. Torque to 38 lb-ft.



(Passenger side pictured above)

- Slide the rear brake caliper into place. Thread the top caliper bolt in by hand and then insert the lower caliper bolt & washer through the bottom of the caliper bracket.

- Now hand-tighten the caliper bolts. Do not torque bolts down yet, as you will need to remove the caliper and brake disc to trim the dust shield.

Step 6- Trim and Bend Back the OEM brake dust shields and install rotors

- You will need to trim off the portion of the heatshield which comes into contact with the RX8 Caliper. Once you've identified the contact points, mark the areas for trimming. Next, remove the caliper, so you can trim the shield.
- Install ring adapters into rotor - with chamfer at back side of rotor (facing hub). (You may need to gently tap the ring into the rotors with a soft blow mallet, working your way around each side.)
- Clean hub face so that it is free of dirt and rust
- Install rotors
- Rotate the rotor, and check for contact points with the heat shield, these can be bent back out of the way, using pliers or a screw driver. Remove the brake rotor and trim or bend any remaining contact points.
- The Heatshield must have a minimum of 2mm of clearance at all interference locations. Once this is accomplished, mount the brake rotor back in place.
- Bolt the Caliper into place and torque to 43 lb-ft, using an allen key socket.
- Install brake pads, and mount the brake rotor.



Step 7- Install E-brake Cable Relocation Brackets



Passenger

Driver

- Locate the inner E-Brake cable mount on the sub-frame on the vehicle's passenger side. Unbolt the cable-mount from the stock sub-frame. Attach the inner relocation bracket to the cable-mount using the included M8 bolt and nut.
- Attach the relocation bracket (with the brake cable now bolted on) to the sub-frame using the stock bolt.

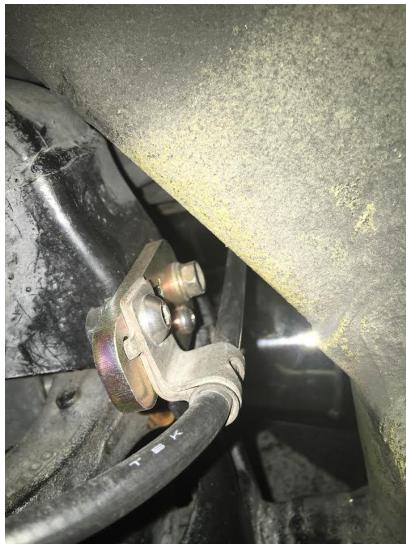


- Repeat the process on the driver side, using the corresponding bracket. Note: You may need to bend the overhanging bracket to give yourself room to work.



*Passenger Side with Bomb insignia on left, driver side without insignia on right.

- The outer E-brake cable relocation brackets are threaded. Thread in one of the included M6 x 16mm bolts.
- Locate the outer E-brake cable mounts on the sub-frame, towards the inside of the wheel well. Remove the bolt holding the mount in place.



- Using the stock bolt, attach the bracket to the sub-frame.
- Attach the E-brake cable mount to the to the relocation bracket, using the included M8 bolt and nut.

Step 8- Install Stainless Steel Brake Lines

- Attach banjo bolt side of the stainless steel brake lines to rx8 caliper with copper crush washers in-between and tighten down.
- Attach the line mounts on the new brake line to the E-brake cable bracket, using two M6 x16mm bolts and nuts. You may need to slide the line inside of the rubber grommet, to give it more or less slack. Make certain the line does not rub on any other components, this could lead to catastrophic failure! To move the grommet, add some lubrication, and slide the line within the grommet to reposition it.
- At this point, you should have the new RX8 Caliper installed, and the old S2000 Caliper hanging from zip ties, with the brake lines still attached.

Step 9- Detach hard line brake connection

Warning- Brake fluid is corrosive and will damage painted and anodized finishes. Clean up all spills immediately.

- Place a tray and/or rags below the brake hard line connection.
- Take note of how the factory spring clip holds the brake line in place (which side is up). Using needle nose pliers, remove the OEM spring clip at the hard line attachment point.
- Using the 10mm **line wrench**, loosen and remove the hard line fitting from the stock brake line (if you use a standard 10mm open end, you will likely strip the fitting).
- Disconnect the soft line from the hard line nearest the chassis, and quickly wrap the hard line to absorb brake fluid which will drain out.
- Insert the stainless steel brake line into the hard line bracket on the car. Hand-tighten the hard line fitting into the stainless steel soft line. Use the 10mm line wrench and 17mm open-end wrench to tighten the connection. The threads on the hard line will not go all the way down into the stainless line, leaving some threads exposed. Do not over tighten. Just make sure the connection is snug.
- Replace the factory spring clip at the hard line (removed in Step #3). You may need to tap the clip slightly with a hammer to get it seated properly.

Step 10- Bleed Brakes

- For use with our system, we recommend Motul 600/660, ATE 200, Endless RF650 etc. brake fluid. Most are typically in stock and available through us. We recommend purchasing three bottles (if standard 500ml size) of your preferred fluid to complete the installation.
- The goal of bleeding the brakes is to remove all air from the system, as well as flushing old fluid from the system and replacing it with new. We recommend bleeding all four corners of the brakes during this process. The caliper bleeding sequence is to start with the corner of the car furthest from the master cylinder (mc), and work your way closer to the mc: Passenger rear, driver rear, passenger front, driver front. For fixed calipers with two bleed screws (like the AP calipers included in your package), the proper bleeding sequence is the inboard bleed screw (closest to the engine), followed by the outboard bleed screw (closest to the wheel face).
- When loosening and tightening the bleed screws during this process, just snug them and do not over-tighten. The final torque value on your last tightening of the bleed screw should be 150 lb-in. An easy rule of thumb to remember when tightening bleed screws is that you should never apply more pressure than you could exert with one finger.
- Open the top of your brake fluid reservoir, and make sure it is mostly full. **At no point during the bleeding process should you allow the level of brake fluid to go below the minimum level marking.**
- Have some rags and brake cleaner handy, and place a drip pan or cardboard below the caliper you are bleeding.
- Position a line wrench over the inboard bleed screw on the passenger rear caliper, followed by the hose from your bleeder bottle.
- With a friend behind the wheel and working the brake pedal, loosen the bleed screw and have your friend pump the brakes to the floor 5 or 6 times to flow some of the old brake fluid out of the system. You should see some air bubbles flowing

through the bleeder hose. Have your friend hold the brake pedal to the floor, and snug the bleed screw back up.

- **Check the fluid in your reservoir often, and refill to the max line if necessary throughout this process. Do not allow the fluid to run low or you may introduce air into the system.**
- Tell your friend, “pressure.” S/he will apply pressure to the brake pedal. Loosen the bleed screw. The pedal will slowly drop to the floor as fluid flows out of the bleed screw. When the pedal hits the floor your friend should hold it there and say, “down.” Tighten the bleed screw. Your friend may now lift the pedal. You will repeat this process until no more air bubbles (even small ones) are seen flowing through the clear drain line attached to the caliper.
On your friend’s final press, close the bleed screw when his foot is half way to the floor.
- **Again, remember to check the fluid level in your reservoir, and refill to the max line if necessary throughout this process.**
- Repeat this procedure on the outside bleed screw on the passenger rear.
- Repeat the above procedure in the prescribed caliper order, continually checking the fluid level in your reservoir. It will drain quickly, so keep a close eye on it.
- When you are done bleeding, wipe up any brake fluid on the calipers, lines, etc. with brake clean and rags. It will destroy the finish of any painted surface it touches.
- Fill your fluid reservoir to the max line and tighten the cap.
- Have your friend apply pressure to the brake pedal, while you examine the connections at all corners of the car for leaks.

Step 11- Install wheels

- Check wheel clearance before tightening. At times adhesive wheel weights inside the wheel barrel could potentially come into contact with your calipers.
Torque your wheels to manufacturer’s recommendation.

Step 12- Safety check

- Drive the car at low speeds in a safe location to ensure proper functioning of the brakes.
- If any unusual behavior is witnessed immediately discontinue driving and assess the problem.

**We at SakeBomb Garage would like to thank you again
for choosing us, and for your continued support.**

If you need assistance don’t hesitate to contact us at info@sakebombgarage.com

