

# RACECOMP ENGINEERING

**2013+ BRZ/86**

## **SSR Coilovers Installation Instructions**

### **DISCLAIMER: PLEASE READ**

We (Racecomp Engineering) are not responsible for any issues resulting from improper installation. Removal and installation of suspension components may be dangerous, as parts may be under compression and are likely to shift unexpectedly, causing serious injury or death. Installation should be performed by an ASE certified Subaru technician. Unless you are a technician by trade, you should not attempt installation of this part. Please use caution when driving your vehicle after installation, as handling characteristics may have changed dramatically.

**Before installation, please read the following manual carefully**

#### **1. Check the package for shipping damage. If damaged, please take the following steps ASAP:**

- A. Take pictures before unpacking
- B. Unpack the box and check for damaged parts
- C. Take pictures of damaged parts
- D. Contact Racecomp Engineering

#### **2. Check the contents of the package ensuring everything is received. If any of these items are missing, please contact us.**

- A. x2 Racecomp Engineering SSR front struts w/ top mounts
- B. x2 Racecomp Engineering SSR rear shocks w/ top mounts
- C. x1 Spanner Wrench
- D. x1 Allen key (2mm)



**Racecomp Engineering products are produced and assembled with the highest quality ensuring an easy install. However, sometimes complications arise during installation. In that case, please contact Racecomp Engineering.**

# IMPORTANT NOTES:

1. We recommend the use of a vehicle hoist or lift when installing the suspension. If a lift is not available and jacking equipment is used, make sure that the vehicle is secured with jack stands to ensure safety.
2. The suspension components may only be installed by a trained and certified technician using proper tools.
3. Never use impact wrenches or guns to install or remove shock absorber piston hardware. A strap wrench is highly recommended to secure shock shaft.
4. It is imperative that you do not damage the piston rod surface, through the use of pliers, etc. as the smallest damage will result in seal damage and **will not be covered under warranty**.
5. Never disassemble or cut open shock absorbers and/or shock absorber inserts. They contain oil under pressure. Danger of explosion.
6. Ensure that the set screw on each spring collar is tightened to prevent movement of the spring perch after install. Do NOT over tighten set screws on spring perches.  
**Maximum torque is 0.74 - 1.47 ft-lbs**
7. After assembly and installation is complete, the vehicle should be rolled onto level ground. Once on level ground, measure the vehicle height and adjust to your specifications, within the lowering range specified earlier.
8. Examine the clearance between the tires and the suspension over the full range of motion of the wheel. **The minimum clearance between the suspension and the tire is 5mm.**
9. DO NOT use an aftermarket camber bolt on the UPPER slotted upper strut hole. If additional camber is needed, an OEM crash bolt is recommended. An aftermarket camber bolt may be used for the LOWER bolt.
10. Have the car aligned to ensure camber and toe are corrected (caster if available)

# Rebound Adjustment

## 20 Clicks of rebound



**Never apply force to the adjusting mechanism of the shock absorber. As soon as you reach the end of the adjustment range, you will recognize a certain resistance.**



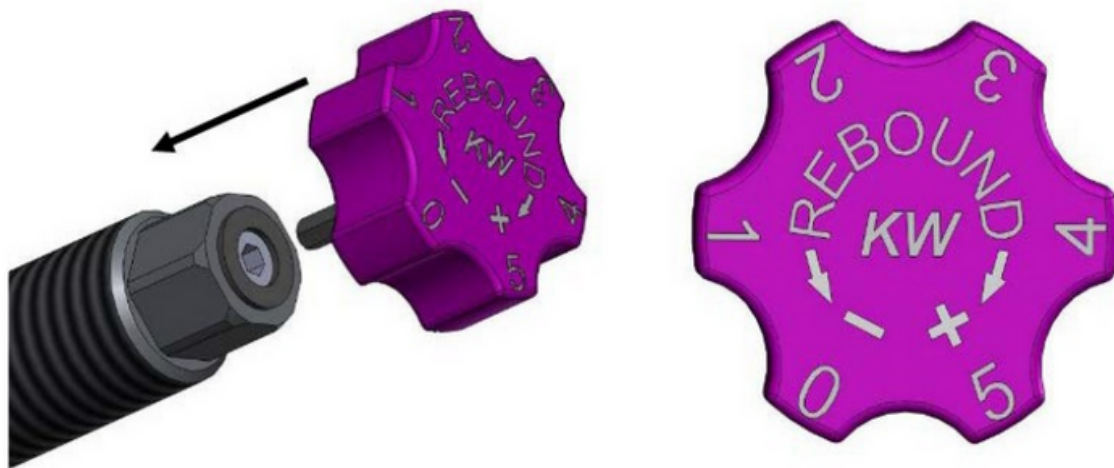
**STOP turning to avoid damage to the bottom valve.**

Rebound controls how the damper extends back over bumps and during body roll. Adding rebound reduces excessive movement of the chassis and improves stability.

Too much rebound can reduce overall grip in cornering, transitions, and traction coming out of slow speed corners.

The adjustment knob included with the kit must be inserted in the top of the piston rod. A 2mm allen wrench can also be used.

With clockwise rotation of the adjustment wheel the rebound damping will become harder. With anti-clockwise rotation the rebound damping will become softer. The click directions are labeled with "+" (harder) and "-" (softer) on the adjustment wheel



# Compression Adjustment

## 30 Clicks of Bump (Low & High)



**Never apply force to the adjusting mechanism of the shock absorber. As soon as you reach the end of the adjustment range, you will recognize a certain resistance.**



**STOP turning to avoid damage to the bottom valve.**

Adjustment of compression damping is located at the bottom of the damper. The adjustment is typically set by backing off the clicks starting FROM full stiff (+)

Compression, also known as bump, controls how the damper compresses over bumps and during body roll. Adding compression damping can improve the stability, feel, and feedback of the car. Too much compression can cause the car to skip or skate over bumps. Low and high-speed refers to the shaft velocity of the damper. Low-speed adjustment changes behavior during body roll and slower chassis movements. High-speed adjustment affects bigger bumps.

In general, the goal is to use the most amount of compression damping and the least amount of rebound damping needed to provide good platform control, bump absorption, and provide the most grip. More damping is not always better or faster

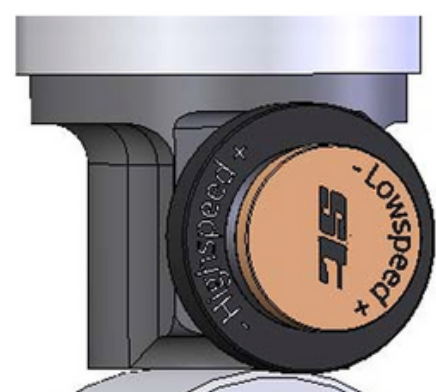
**Low and high-speed compression are linked and will affect each other slightly. Full soft on high-speed compression will not allow for sufficient low-speed compression damping for optimal performance.**

**A softer overall setting will improve the car in the rain or lower grip surfaces**

**Front**



**Rear**



# Ride Height

Before installation, roll the vehicle onto level ground. Then measure the ride height and note the measurements in the table below.

Measure from top of the fender (A) to center of the hub (B)

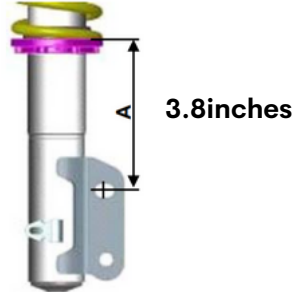


	<b>Left</b>	<b>Right</b>
<b>Front</b>		
<b>Rear</b>		

## RECOMMENDED HEIGHT SETTINGS

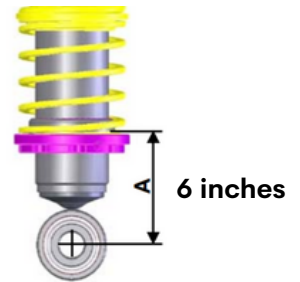
**Ride height should be set AFTER coilovers are fully assembled**

**FRONT STRUT**



50mm threads bottom spring perch to end of threads

**REAR SHOCK**

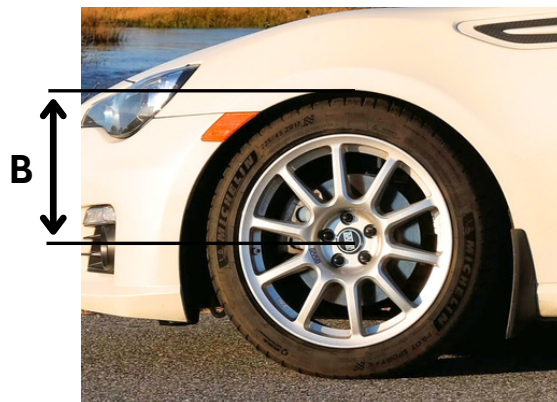


90mm threads bottom spring perch to end of threads

<i>Approximate distance measurement A</i> Front axle: Fastening screw - spring contact area Rear axle: Seating height adjustment - spring contact area or fastening screw - spring contact area	<i>min:</i>	<i>max:</i>	<i>min:</i>	<i>max:</i>
	70 mm / 2,8 inch	100 mm / 3,9 inch	130 mm 5,1 inch	155 mm / 6,1 inch

**⚠ GOING BELOW THE MINIMUM COULD VOID WARRANTY CLAIM ⚠**

<b>Approximate measurement* B in mm / inch:</b> wheel hub center to fender edge	<b>min:</b>	<b>min:</b>
	320 mm / 12,6 inch	320 mm / 12,6 inch





# Front Camber Adjustment

Racecomp Engineering's Super Street R coilovers provide two points of camber adjustment

## (1) Slotted clevis tab on top

The clevis tabs are slotted and this allows for more front camber by pushing in the top of the wheel when doing an alignment

**\*\*Both top and bottom strut bolts must be loosened to adjust camber\*\***



## (2) Adjustable camber plates

To adjust camber plates, loosen the 4 Torx bolts on the top of the plate and slide the bearing carrier to achieve desired specs. Tighten the Torx bolts to 17 ft. lbs.



**Torque Spec**  
**Torx Bolt: 17 ft-lbs**

**NOTE: Always begin with the eccentric bolt on the lower strut when adjusting camber. Fine adjustments can be made via camber plates**

# Front Strut Installation

1. Remove plastic clip that holds the ABS wire to the strut



2. Remove 12mm bolt that attaches the brake line



3. Remove 17mm nut that attaches swaybar endlink to strut using a 17mm open end wrench and a 6mm allen key.



4. Remove the two 19mm nuts/bolts that attaches the front strut to the hub



5. While having the strut supported or held in place, carefully remove three upper 12mm nuts that fasten strut top mounts to chassis.



6. Once all three 12mm top nuts are removed, ensure the abs and brake line are out of the way and remove the strut from the car.





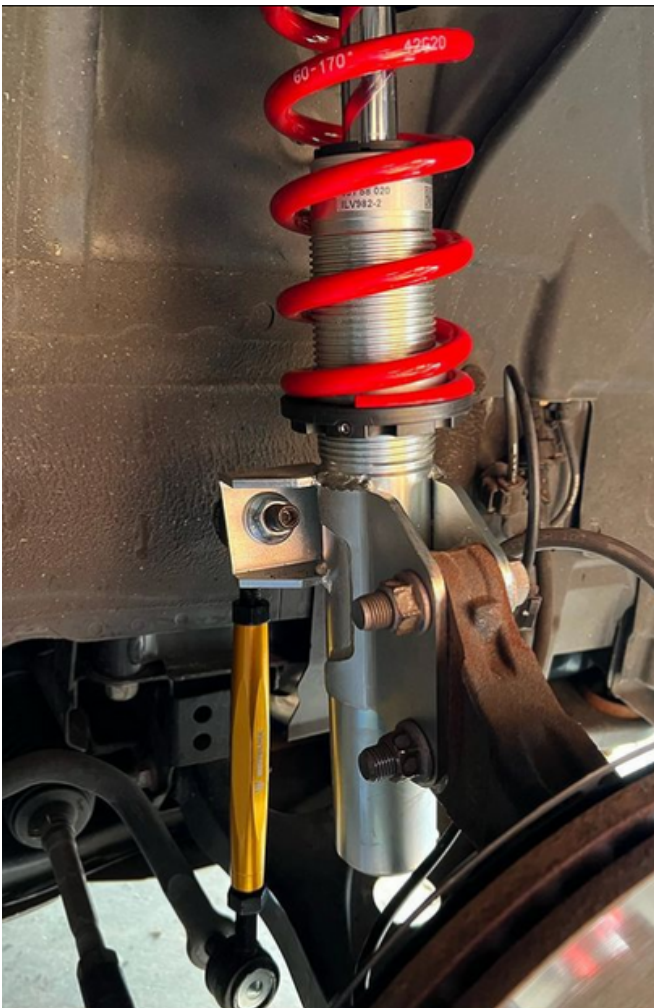
7. Install assembled Super Street R coilovers by guiding the shock up ensuring the camber plate is situated correctly. Secure the three bolts on the top mount to the car. Carefully guide the bottom of the strut to the hub and insert the two 19mm bolts. **DO NOT TIGHTEN YET**

**\*\*Top clevis tab is slotted; bolt can only go in one direction\*\***

8. With the strut bolts loose, push in the hub and tighten both top and bottom strut. This will help maximize negative camber at the strut/hub. More negative camber can be adjusted via top mount.

9. Reattach front sway bar endlink to the strut.

10. Attach brake line to strut. Be careful not to pinch or tangle the ABS and brake lines.



**\*\*Both top and bottom strut bolts must be loosened to adjust camber\*\***

- Top mount to chassis nuts: 15 ft-lb
- Lower clevis bolts/nuts: 115ft-lb
- Brake line: 24.3 ft-lb

# Rear shock Installation

1. Remove trunk mat to expose tops of rear shocks.



2. Remove two 14mm upper nuts that fasten top mounts to chassis.



3. Remove 17mm bolt/nut that attaches the shock to swingarm (1) and 14mm bolt/nut that attaches swaybar endlink to swingarm (2)



4. Push down on swing arm and remove shock



**NOTE:**

If there is still too much tension to remove the shock, remove the 17mm nut/bolt that connects the swing arm to rear hub

**Rear lower arm to hub: 59 ft-lb**

5. Install new SSR coilovers with the adjustment knobs **facing** the wheel  
(As shown below)

**DO NOT insert lower bolt through the shock and control arm yet.**

6. Push the shock upward and secure the rear top mount with the provided nuts.

7. Reinstall the bolts for the sway bar endlink and rear shock.



**MAKE SURE LOWER EYE SOCKET IS CENTERED WITH THE LOWER CONTROL ARM. FAILURE TO DO SO WILL CAUSE DEFLECTION IN THE BUSHING**



8. Install and torque wheels. Roll the car on level ground and check ride height. Adjust if needed

- **Top mount to car: 22.4 ft-lb**
- **Shock to LCA: 63 ft-lb**
- **Swaybar endlink to LCA: 28 ft-lb**
- **Wheels: 88.5 ft-lb**