



STREET ADVANCE DAMPER

MAZDA MIATA 90-98/99-05

TEIN Ride Height Adjustable Shock Absorber Installation Instructions.

Thank you for purchasing a set of TEIN Shock Absorbers (the "Product"). This Product complies with JASO automobile standards. This Product is designed for **OFF ROAD USE ONLY.**

The Product may only be installed in race vehicles, show vehicles and other specially configured vehicles intended for off-road use.

THE PRODUCT MAY NOT BE INSTALLED IN VEHICLES DRIVEN ON PUBLIC ROADS.

The Shock Absorbers' damping force and spring rate (spring hardness) differ from factory standard suspension.

All Shock Absorbers can be completely disassembled so that changes to damping force and stroke settings (i.e., short stroke suspension) can be made.

Disassembly also provides easy access for overhaul, repair, and maintenance.

However, any disassembly of the Shock Absorber or any portion of the Shock Absorber must be performed only by TEIN.

TEIN should be contacted for information as to the scope of disassembly services required, related labor costs, and time necessary to complete any disassembly work. The contact information for TEIN's Downey, California office is:

TEIN U. S. A. , INC.

9798 Firestone Blvd. Downey, CA 90241 U. S. A.

Phone : (562) 861-9161 / FAX : (562) 861-9171

URL : <http://www.tein.com> E-mail: tus_sales@tein.com

TEIN assumes no responsibility for any accident, injuries, death or damage related to disassembly of the Product performed by non-TEIN personnel.

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⚠ WARNING

- The removal of brake parts requires specialized skills; therefore, **INSTALLATION OF THIS PRODUCT SHOULD BE DONE ONLY BY A LICENSED MECHANIC.**
- This document is copyrighted and the reproduction of this document in part or in full, is prohibited by law.

⚠ CAUTION

- This Product has been developed according to the specifications of Japanese law.
- When using the OE mounts, use the parts noted with part numbers on the assembly diagrams.
- Do not install this Product in vehicles other than those specified in this Manual. Doing so may result in damage to the vehicle and/or to the Product and will void the warranty. If you have doubts or questions about fitment of this Product on your vehicle, please contact TEIN immediately.
- TEIN assumes no responsibility for damages, accidents, injuries, or death resulting from improper installation, assembly, misuse, and/or modification of the Product.

! NOTE

- Please read this Manual before installation.
- Before installing this Product, verify that all necessary parts are included.
- Note that Product design improvements and changes may be made without notice.

⚠ CAUTION– READ PRIOR TO INSTALLATION

Please ensure that all components of the TEIN damper kit are tightened before installation. Items that require tightening are: Nut or Pillow Upper Mount Nut, Seat Locks, Bracket Locks (if applicable), Camber Plate Bolts (if applicable), Stabilizer Link (if applicable), and/or any other parts. Torque specifications are listed in the diagram section of this Manual. Please tighten OE Mount and Lower Bracket mounting bolts to OE specifications, which can be found in the vehicle's service manual.

WARNING

- This product contains highly compressed gas; do not disassemble or expose to flames. Doing so may result in the cracking or explosion of the product. **DO NOT INSTALL THE PRODUCT IF IT HAS BEEN DISASSEMBLED IN ANY WAY BY NON-TEIN AUTHORIZED PERSONNEL.**
- This product has been designed to withstand the stresses of off road driving, therefore, the Product should not be modified in any way.

CAUTION

- If an impact wrench is used in the removal and installation of the Piston Rod Top Lock Nut, loads may be placed on the nut inside the Shock Absorber and may become loosened and damage the Product.

AN IMPACT WRENCH SHOULD NOT BE USED DURING INSTALLATION unless absolutely necessary. However, if it is imperative that an impact wrench be used, make sure to conduct the operation at **LOW** torque, and **MAKE SURE THAT THE PISTON ROD DOES NOT SPIN.**

TEIN assumes no responsibility for loose internal nuts caused by improper impact wrench use.

- When removing or tightening Top Lock Nut, **DO NOT CLAMP THE PISTON ROD OR THE THREADED SECTION OF THE PISTON ROD** with any tool which might cause scratching.
- If the Piston Rod is damaged or scratched, the Oil Seal may become damaged and cause oil leaks.
- Do not expose this Product to shock (for example, physically dropping the product).
- To increase the durability and performance of the product, the outer diameter of the product is often much larger than the OE suspension. Some vehicle suspensions do not include a Dust Cover Boot due to lack of installation space. Where no Dust Cover Boot is included, we recommend periodical cleaning of the surface of the Piston Rod and inspection of the suspension to help extend the performance.
- Beware that dirt and grit on the Piston Rod may cause scratches.

Before/After Installation

WARNING

The installer assumes all liability for proper installation of the Product. Please read these instructions carefully before beginning installation.

CAUTION

- The Upper Mount used with this suspension must be a TEIN Upper Mount or OE Top Mount. Upper Mounts made by other manufacturers may not properly fit TEIN suspension products.
- **TEIN ASSUMES NO RESPONSIBILITY FOR ANY DAMAGE TO THE SUSPENSION OR ACCIDENTS RESULTING FROM THE USAGE OF THIS PRODUCT COMBINED WITH PRODUCTS MADE BY OTHER MANUFACTURERS.**
- Installer should wear work gloves when installing the Product to avoid injury.
- **PLEASE CHECK YOUR LOCAL MOTOR VEHICLE LAWS AND REGULATIONS REGARDING INSTALLATION OF HEIGHT ADJUSTABLE SUSPENSION SYSTEMS (E. G. MINIMUM RIDE HEIGHT, MINIMUM HEADLIGHT CENTER HEIGHT).**
- TEIN assumes no responsibility for any violations of vehicle codes, rules, laws or regulations.
- Upon installation, avoid rough handling and drive slowly.
- Be sure to check the Product for loosening and oil leaks.
- Periodically re-tighten all parts to the specified torque values.
- After the proper height has been determined, the wheel alignment should be adjusted by an alignment shop. For reference values, check the vehicle's service manual.

Shock Absorber Removal

CAUTION

- Use a spring compressor to compress the spring in order to remove the Top Lock Nut.
- Make sure that the spring is compressed and not in contact with the Lower Spring Seat and Upper Spring Seat before removing the Top Lock Nut.
- When loosening the spring compressor, loosen the spring evenly and carefully, then remove the coil from the Shock Absorber.
- **DO NOT RE-USE THE PISTON ROD TOP LOCK NUT.**

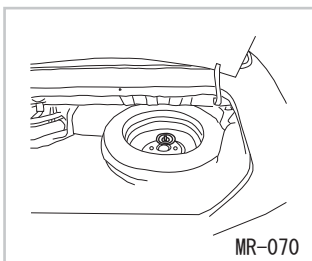
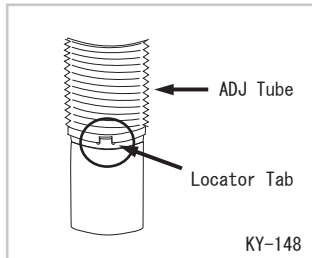
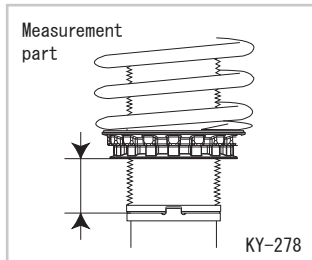
Installation of the Shock Absorber

CAUTION

- (Applies only to adjustable models) The adjustable damper uses a hollow piston rod. To prevent damage to the piston rod, please be **VERY CAREFUL** in the application of torque and usage of impact wrenches.
- (Applies only to adjustable models) Make sure that no tools interfere with the adjustment dial on top of the piston when tightening the nut.
- (Applies only to adjustable models) When the product is manufactured by TEIN, the adjustment dial is automatically set at a full clockwise position. However, after installation is complete, using the hex wrench included with the Product, please confirm that the dial is adjusted to a full clockwise position. From this full clockwise position, use the hex wrench to adjust the dial counter-clockwise for sixteen audible clicks. Avoid further tightening beyond fully clockwise as damage to the damper may result.
- Lowering the vehicle with the lower spring seat at the lowest setting may result in damage to the vehicle.
- Please see the assembly diagram (Page 9 and 10) for the torque values of the piston rod lock nut.

Adjustment of Ride Height

After installation of the Shock Absorber



1. After installing the Shock Absorber on the vehicle, measure the section that is marked in the Figure, and adjust to match the Reference Values shown below.

Reference Value (NA6, 8C)	
Front	0.8 inch (20 mm)
Rear	0.8 inch (20 mm)

Reference Value (NB8C)	
Front	1.2 inch (31 mm)
Rear	1.2 inch (31 mm)

※1inch=25.4mm

- Make sure to line up the Notch on the ADJ Tube with the Locator Tab on the Shell Case.

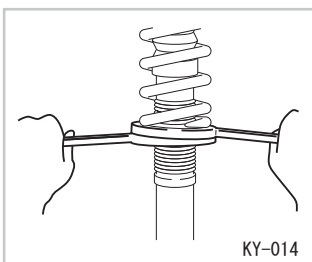
After the Rear Dampers are installed onto the car the spare tire will not sit in its original spot without putting too much pressure on the top of the Piston Rod. In order to counter this the spare tire needs to be offset as far away from the Piston Rod as possible. Using the original mounting hardware, mount the wheel using one of the lugnut holes instead of the center. This should provide ample clearance of the spare tire and Piston Rod.

⚠ CAUTION

- ABOVE IS THE REFERENCE VALUE TO BE USED WITH THE STANDARD RATE SPRINGS. (Supplied with this Product)

! NOTE

- Lubricant is used on the Product body threads to prevent rust after being manufactured. This lubricant is not oil leaking from the Product.



2. After adjusting to the appropriate height, use the ADJ Wrench included with the Product to lock the Lower Spring Seat.

When torquing, hold the Lower Spring Seat with the ADJ Wrench, and turn/screw the Seat Lock upwards. If the Lower Spring Seat is not held with the ADJ Wrench while torquing, the ADJ Tube can turn, possibly breaking the Locator Tab.

- The torque for the Seat Lock is: $56.4 \pm 2.45 \text{ N}\cdot\text{m}$.
($41.6 \pm 1.8 \text{ ft}\cdot\text{lb.}$)
($5.75 \pm 0.25 \text{ kgf}\cdot\text{m.}$)

⚠ CAUTION

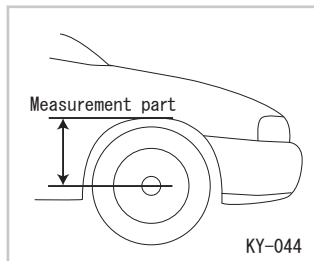
- Make sure that the Seat Lock is locked after the ride height is adjusted.
- Gravel and dirt may adhere to the ADJ Tube. If the ADJ Tube is not cleaned before making adjustments, the threads of the Seat Lock and Lower Spring Seat may become damaged, and cause the Seat Lock to stick.

! NOTE

- If the parts do not screw smoothly, use a lubricant.
- To prevent sticking of the Seat Lock and Spring Seat, it is recommended that the pieces be periodically maintained. (Inspected, cleaned, and oiled)

⚠ CAUTION

- **AFTER RIDE HEIGHT ADJUSTMENT, CONFIRM THAT THE SPRING SEAT IS LOCKED. FAILURE TO LOCK THE SPRING SEAT MAY RESULT IN DAMAGE TO THE VEHICLE.**



3. After installing the tires, measure the distance from the wheel center and the fender edge as shown in the Figure, and confirm that it corresponds to the reference value shown below.

Reference Value (NA6, 8C)	
Front	11.6 inch (295 mm)
Rear	12.2 inch (310 mm)
Reference Value (NB8C)	
Front	11.6 inch (295 mm)
Rear	12.2 inch (310 mm)

⚠ CAUTION

- **ABOVE IS THE REFERENCE VALUE TO BE USED WITH THE STANDARD RATE SPRINGS.** (Supplied with this product).

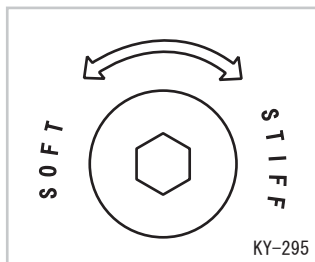
⚠ CAUTION

- **THE FIGURE ABOVE MAY VARY DEPENDING UPON VEHICLE WEIGHT, MODEL, AND OPTIONS.**

⚠ CAUTION

- The lowering of the ride height correlates to the spring rate. Depending on the spring rate, the ride height may not drop as easily.
- If the spring rate is changed, re-adjust the ride height.
- When using a spring rate lower than the standard spring rate, the Spring Seat may require adjustment.

When shipped from the manufacturer, the adjustment knob is set at the stiffest setting (full clockwise). Confirm that the adjustment knob (located at the top of the piston rod) has not been moved from this position.



1. Use the included wrench (HEX wrench) to turn the adjustment knob on top of the piston rod to the stiffest setting (full clockwise). This is the initial damping setting.
 - If the knob comes to a stop at a half way point, turn the knob back slightly until it clicks into place.
2. From the full clockwise position, turn the adjustment knob counterclockwise until the "Recommended Values" listed below are reached.

! CAUTION

- DO NOT turn knob past the last position(16 click).
- Turning the knob past its limit will result in damage to the damper.

! NOTE

- Every time the damper is adjusted, it must first be set to the stiffest setting and then adjust it to the desired setting.

Recommended Value	
Front	Turn back 8 clicks (from stiffest setting)
Rear	Turn back 8 clicks (from stiffest setting)

! CAUTION

- If the springs used are stiffer than the standard set, adjust damping to a stiffer setting.
- Drive at the recommended settings, and adjust as necessary to the preferred settings.

! NOTE

- According to the driving setting (i.e. race track), certain vehicles may require uneven damping force on the left and right sides of the vehicle.
- If the front and rear balance is not proper, adjust either the rear or the front pair of damping only.

! CAUTION

- Some vehicle models require the removal or modification of the interior to allow damping force adjustments to be made.

! NOTE

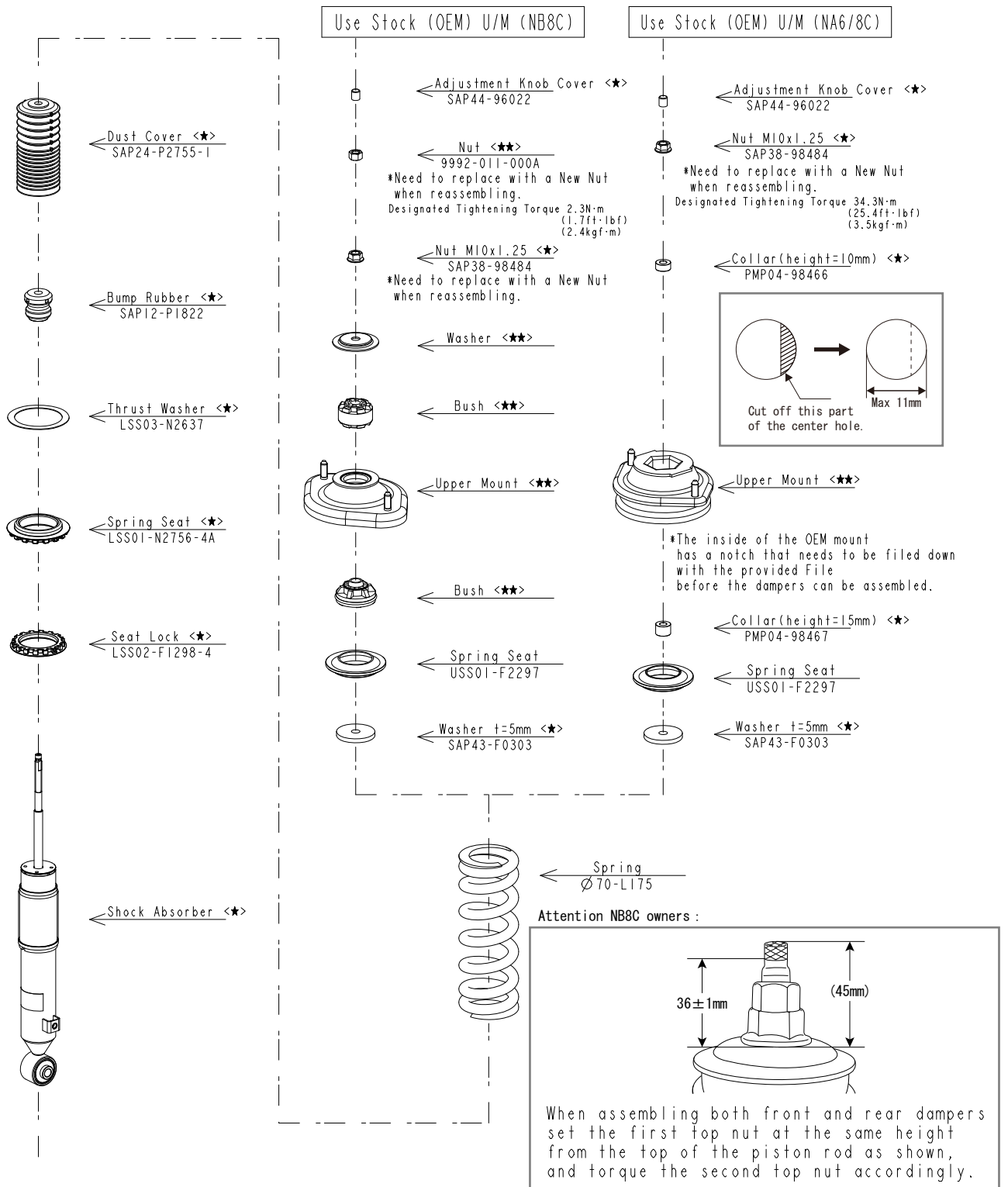
- A hole may need to be made in the interior for the adjustment knob.
- For the protection of the adjustment knob, the add cap (rubber cap) should be used to cover the knob.

Important Notice

1. ALL TEIN PRODUCTS ARE FOR OFF-ROAD USE ONLY. All TEIN lowering springs, coilovers, and various other products may be deemed illegal for street use based upon ride height regulations, and suspension restrictions for each city, county, state, and/or country.
2. TEIN assumes no responsibility for parts which are prohibited by local, county, state, and federal laws. It is the consumer/purchasers sole responsibility to ensure that these products are deemed legal for street use.
3. Purchaser assumes full responsibility for proper installation, adjusting settings, and any alignment related issues.
4. All parts should be properly installed by a licensed and/or certified mechanic.
5. TEIN will not assume any responsibility for errors and/or omission in this Installation Manual.
6. Suspension noise during vehicle operation is normal and does not affect performance and safety; therefore, noise issues are not covered under warranty.
7. TEIN highly recommends that the suspension is installed at the TEIN recommended ride height and settings upon first use.
8. If negative pre-load is applied to the spring, spring noise and/or damage to the damper may occur.
9. TEIN assumes no responsibility for damage, injuries, or death caused directly or indirectly by this Product.
10. By installation and/or use, consumer agrees to the above stated notices.

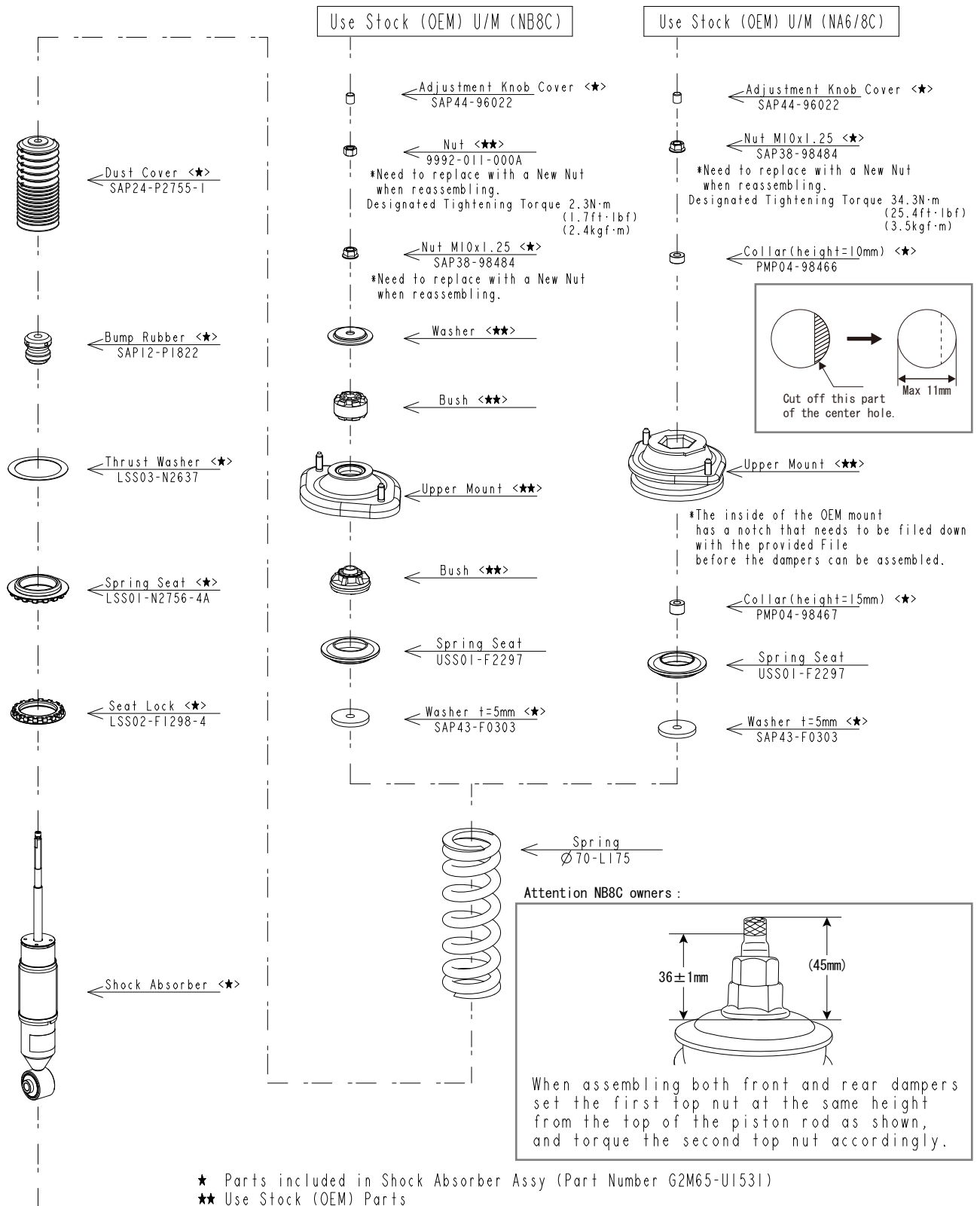
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Assembly Diagram (Front)



- ★ Parts included in Shock Absorber Assy (Part Number G2M64-UI531)
- ★★ Use Stock (OEM) Parts

Assembly Diagram (Rear)



★ Parts included in Shock Absorber Assy (Part Number G2M65-U1531)
★★ Use Stock (OEM) Parts