Assembly procedure for MCU (micro-cellular polyurethane) bushings 99-05 Miata shocks

Need help? Call 408-221-8247!

The Fat Cat MCU bushings are physically longer than stock NB rubber bushings, but once installed per these instructions give the same effective support to the shock absorbers with improved ride quality due to the action of the MCU material. This addendum contains notes to supplement the standard installation procedure for NB shocks. The MCU bushings reduce noise, vibration and harshness and will a noticeable improvement to the drivability of your Miata which uses the NB (99-05) shocks.

Set of FCM upper bushings (left) and lower bushings (right)

MCU and factory upper bushings

MCU and factory lower bushings

Total effective thickness of factory NB rubber bushings is ~52mm.
Total thickness of FCM MCU NB bushings is 52mm; 31mm upper, 21mm lower, +/- 0.5mm

Assembly procedure for shock, spring, and shock mount with MCU bushings

NOTE: Use of impact tools aid this process but are not required.

1. Add the bump stop to the shaft then the dust boot (if used) followed by either the factory bump stop cup (stock-style springs) or the red aluminum cupped washer (aftermarket 2.5" springs).

   NOTE: For Koni shocks, the hole must be drilled to 12mm.

Factory cupped washer

Supplied cupped washer, shown drilled for Koni

2. Place lower bushing, conical side up, on the cup. The sequence number must point up.

3. Place the spring on the shock, inside the lower spring isolator (not shown).
4. FOR STOCK SPRINGS: add the factory upper spring isolator
5. FOR AFTERMARKET 2.5” SPRING: add the supplied urethane spring isolator

6. Place the shock mount on top of the lower bushing then add the upper bushing, number side up.

7. Put the top washer on the upper bushing, concave down.

8. Add larger flanged nut and tighten bushing assembly. You may need to squeeze the bushings down a bit to get the nut to grab.

9. Check the alignment of the upper and lower bushing. The lower bushing should remain centered and the upper washer should not be tilted with respect to the shock mount. Loosen and re-tighten the flanged nut as necessary to get good bushing centering in the mount.

10. The bushings should be compressed such that there is 17mm gap from the top of the shock shaft to the top of the lock nut. There is no specific 'torque spec' for the lower flanged nut.

11. Once the bushings are centered and the gap is correct, add the smaller jam nut. Tighten to 15 ft-lbs.

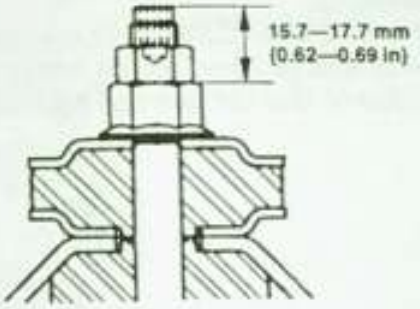
12. Place Teflon gasket on top of shock mount.

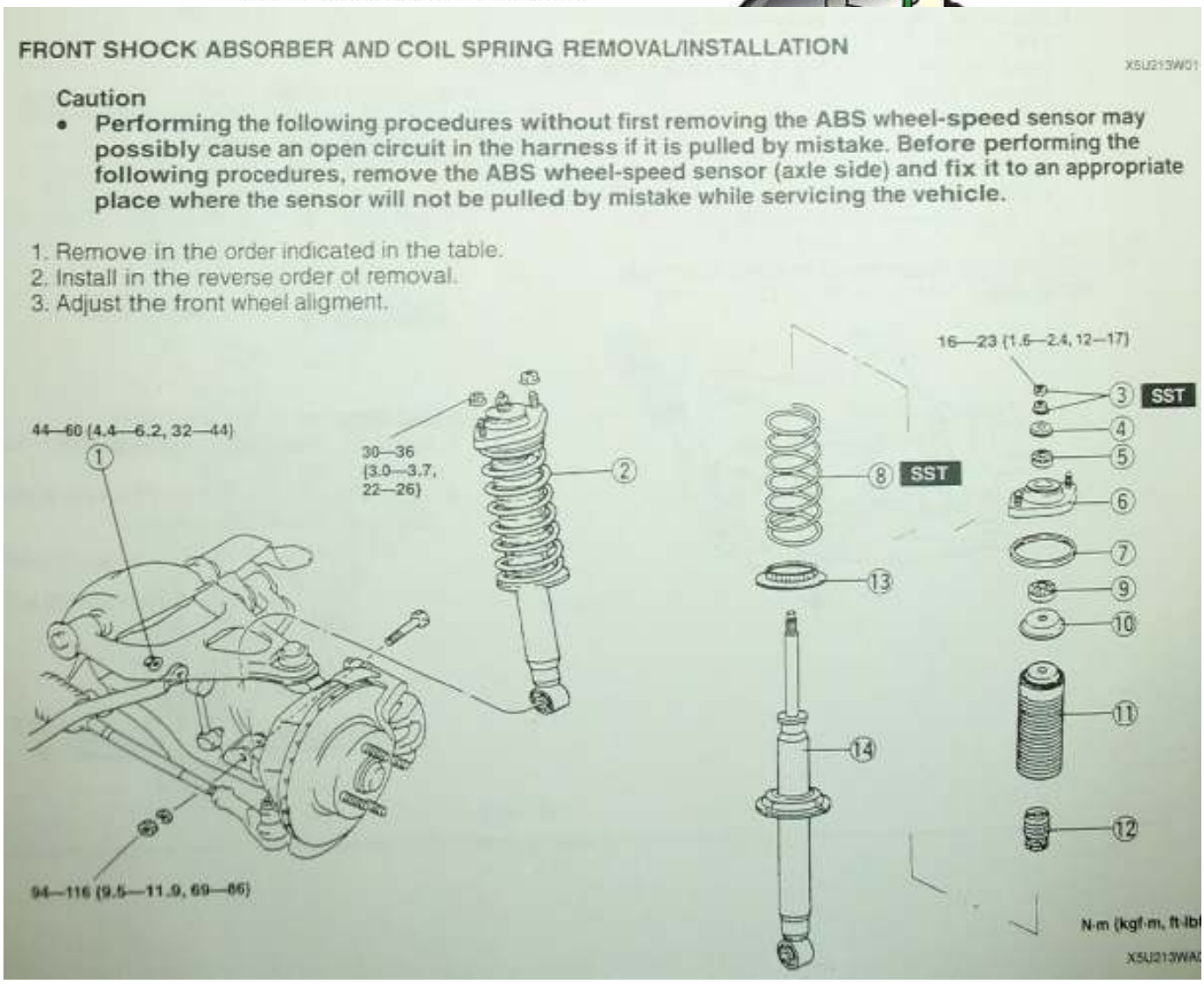
13. Install completed NB shock mount assembly into your Miata. If changing springs, be sure to get an alignment and drive the vehicle carefully until you are comfortable with the limits.

NOTE: The following pages from the service manual are provided as a reference.

9. Apply an antirust penetrating oil lubricant to the piston rod thread and tighten the lower piston rod nut so that the exposed thread of the piston rod is **15.7—17.7 mm {0.62—0.69 in}**.
10. Tighten the upper nut to the specified torque.

Tightening torque
16—23 N·m {1.6—2.4 kgf·m, 12—17 ft·lbf}





Front suspension

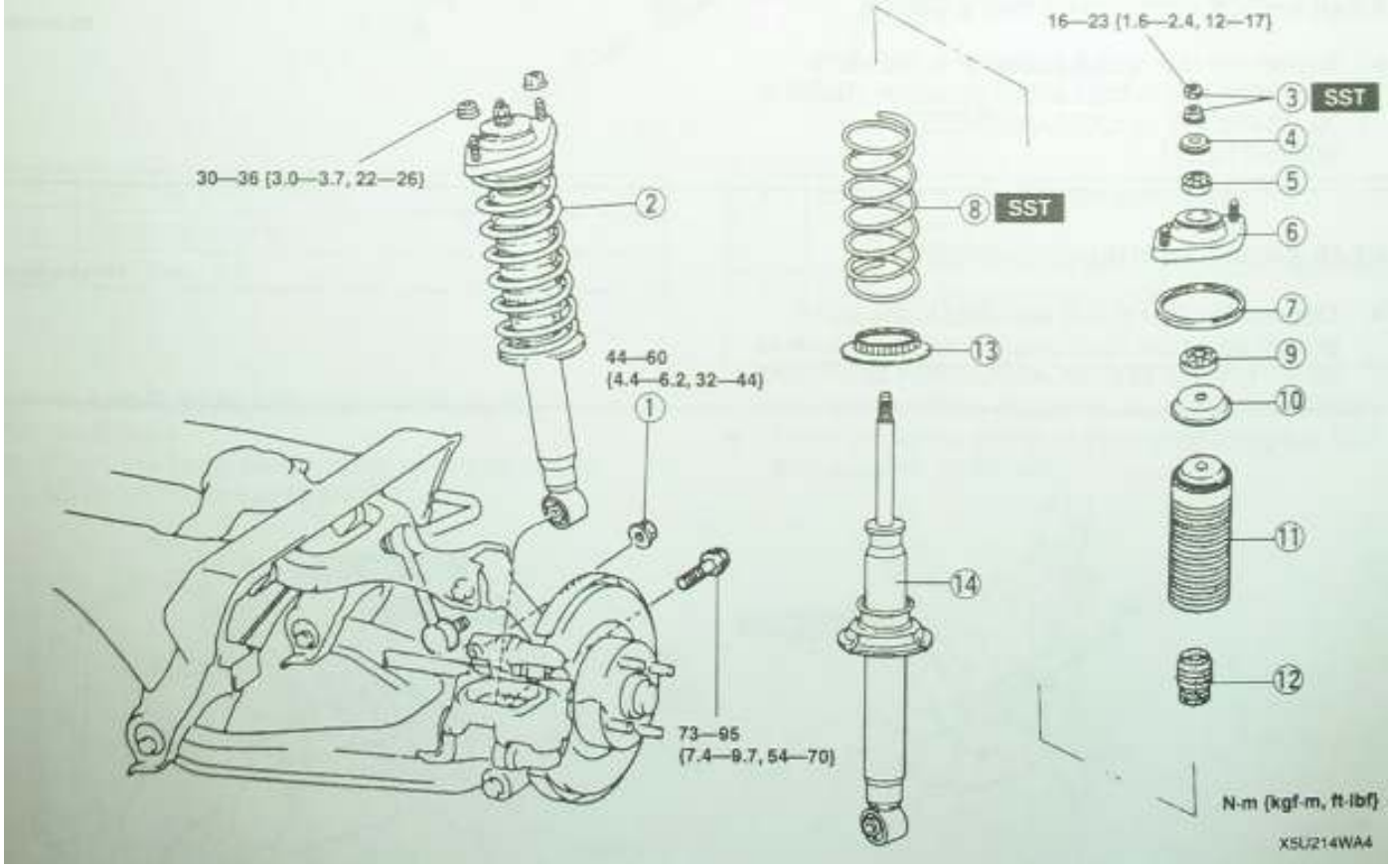
REAR SHOCK ABSORBER AND COIL SPRING REMOVAL/INSTALLATION

X5U214W01

Caution

- **Performing the following procedures without first removing the ABS wheel-speed sensor may possibly cause an open circuit in the harness if it is pulled by mistake. Before performing the following procedures, remove the ABS wheel-speed sensor (axle side) and fix it to an appropriate place where the sensor will not be pulled by mistake while servicing the vehicle.**

1. Remove in the order indicated in the table.
2. Install in the reverse order of removal.
3. Adjust the rear wheel alignment.



Rear suspension