



How to change front coil  
springs on **Mini R50, R53**  
– replacement guide

## VIDEO TUTORIAL



### Important!

This replacement procedure can be used for:

MINI Hatchback (R50, R53) 1.6 One, MINI Hatchback (R50, R53) 1.6 Cooper, MINI Hatchback (R50, R53) 1.4 D One, MINI Hatchback (R50, R53) 1.4 One D

The steps may slightly vary depending on the car design.

REPLACEMENT: COIL SPRINGS – MINI R50, R53. LIST OF THE TOOLS YOU'LL NEED:



- Wire brush
- WD-40 spray
- Copper grease
- Combination spanner #16
- Combination spanner #18
- Drive socket # 13
- Drive socket # 16
- Drive socket # 18
- HEX bit No.H6
- HEX bit No.H7
- XZN socket bit # 14
- Shock absorber socket
- Wheel impact socket #17
- Ratchet wrench
- Torque wrench
- Flat chisel
- Hammer
- Tap wrench
- Crow bar
- Hydraulic transmission jack
- Hydraulic strut spring compressor
- Wheel chock

**BUY TOOLS**

Replacement: coil springs – Mini R50, R53. Tip from AUTODOC experts:

- Both coil springs of the front suspension should be replaced simultaneously.
- The replacement procedure is identical for the left and right coil springs of the front suspension.
- All work should be done with the engine stopped.

## REPLACEMENT: COIL SPRINGS – MINI R50, R53. USE THE FOLLOWING PROCEDURE:

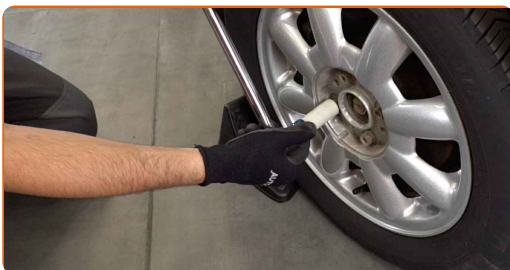
1

Secure the wheels with chocks.



2

Loosen the wheel mounting bolts. Use wheel impact socket #17.



3

Raise the front of the car and secure on supports.



4

Unscrew the wheel bolts.



AUTODOC recommends:

- Important! Hold the wheel while unscrewing the fastening bolts. Mini R50, R53

5

Remove the wheel.



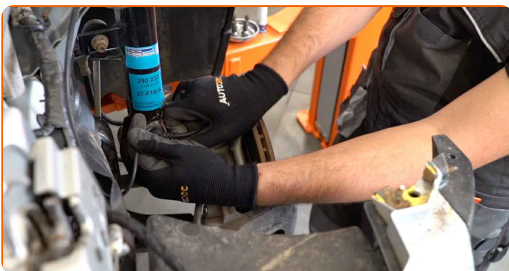
6

Clean the fasteners of the shock strut upper mount. Use WD-40 spray.

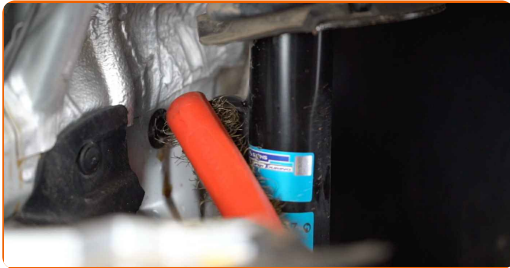


7

Disconnect the wiring and the brake hose from the bracket on the shock strut.



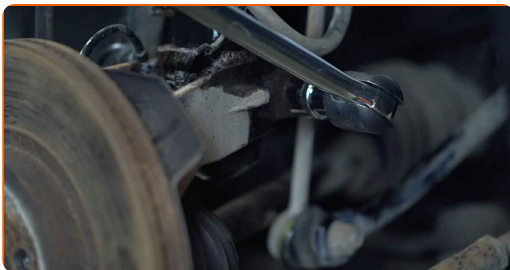
- 8** Clean the fasteners connecting the stabiliser link to the shock strut, and those connecting the shock strut to the steering knuckle. Use a wire brush. Use WD-40 spray.



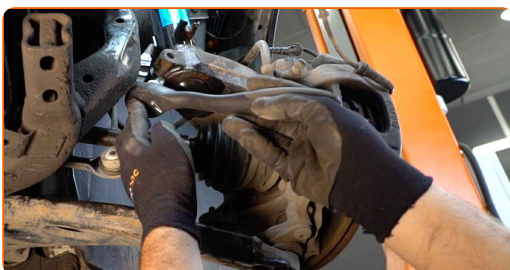
- 9** Unscrew the nut and remove the stabilizer rod from the shock strut. Use a combination spanner #16. Use HEX No.H6. Use a ratchet wrench.



- 10** Unscrew the lower fastener connecting the shock strut to the steering knuckle. Use a drive socket #18. Use a ratchet wrench. Use a tap wrench.

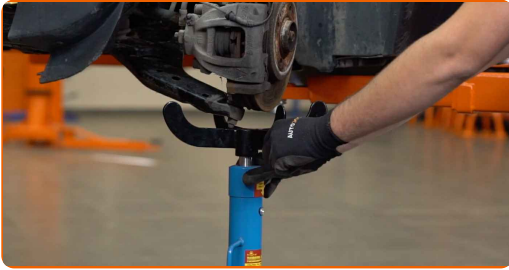


- 11** Release the lower fastener connecting the shock strut to the steering knuckle. Use a special drive socket to remove the shock absorber. Use a ratchet wrench.



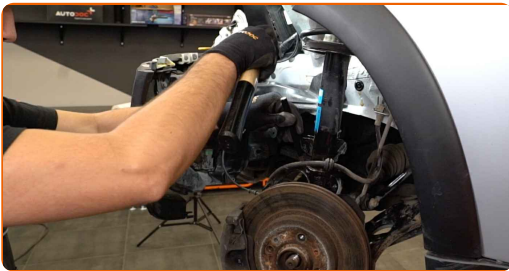
12

Prop up the steering knuckle. Use a hydraulic transmission jack.



13

Disconnect the steering knuckle from the shock absorber strut. Use a flat metal-working chisel. Use a hammer.

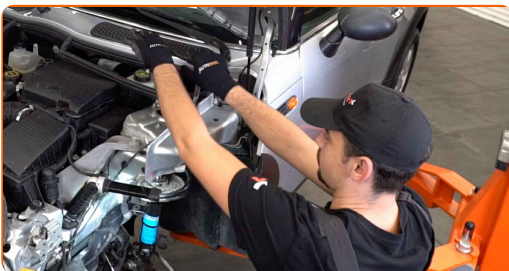


Replacement: coil springs – Mini R50, R53. Tip from AUTODOC experts:

- Make sure that the steering knuckle is not released from load.

14

Unscrew the upper fastening of the shock absorber strut. Use a drive socket #13. Use a ratchet wrench.



AUTODOC recommends:

- Important! Hold the suspension strut while unscrewing the fastening bolts. Mini R50, R53

15 Remove the suspension strut.



16 Set the shock absorber strut on the spring compressor tool.



Replacement: coil springs – Mini R50, R53. Tip from AUTODOC:

- Note that when using a spring compressor, spring coils need to be securely gripped, compressing the spring on the opposite sides.
- Ensure the correct position of the spring in the retainer.
- Make sure that the spring coils tightly entered the lock handles.

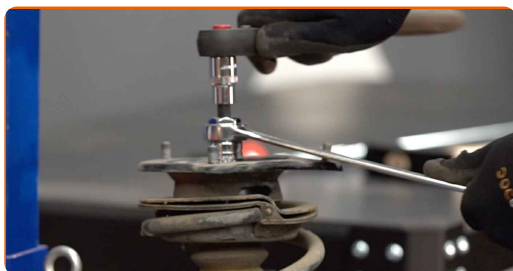
17 Compress the spring.





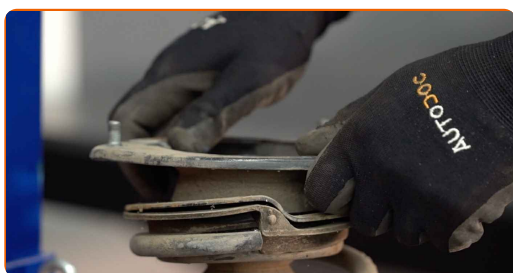
18

Remove the strut piston rod nut. Use HEX No.H7. Use a drive socket #18. Use a ratchet wrench.



19

Remove the top mount.



20

Release the coil spring.



21

Remove the spring.



22

Install the spring on the shock absorber.



23 Compress the spring.

24 Install the upper strut mount and the strut mount bearing. Use a crowbar.



25 Tighten the shock strut piston rod nut. Use a drive socket #18. Use a combination spanner #18. Use HEX No.H7. Use a torque wrench. Tighten it to 64 Nm torque.



Replacement: coil springs – Mini R50, R53. Tip from AUTODOC experts:

- Check to make sure the spring is positioned correctly. Avoid its misalignment.

26 Decompress the spring.



27 Remove the assembled shock strut.



28 Install the shock strut into the wheel arch.



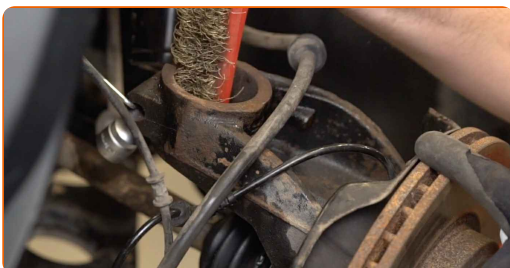
29 Tighten the upper fastening nut of the shock absorber strut. Do not tighten it.



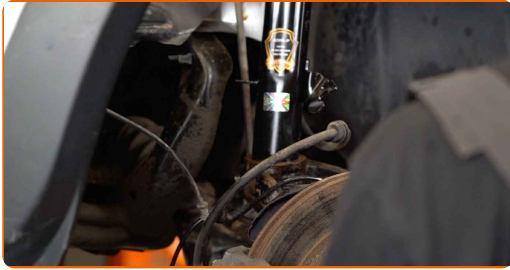
**AUTODOC recommends:**

- Mini R50, R53 – To avoid injury, hold the suspension strut while screwing in the fastening bolts.

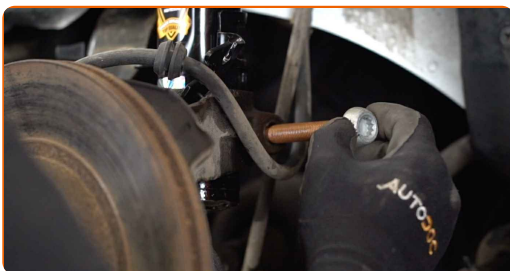
30 Treat the shock strut mounting seat on the steering knuckle. Use WD-40 spray.



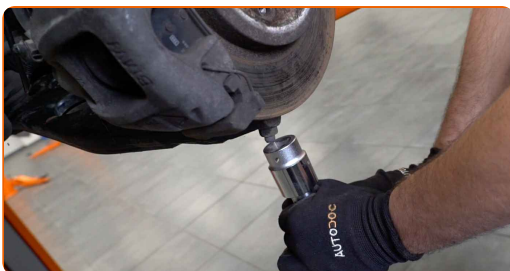
31 Fix the shock absorber strut on the steering knuckle.



32 Install and tighten a new bolt of the steering knuckle. Use XZN #14. Use a torque wrench. Tighten it to 81 Nm torque.



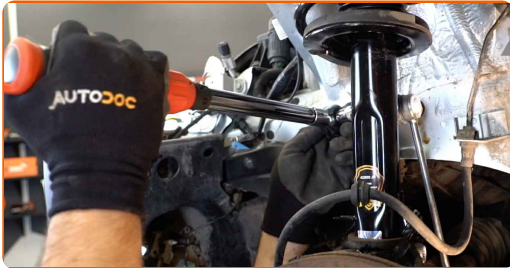
33 Remove the support from under the steering knuckle.



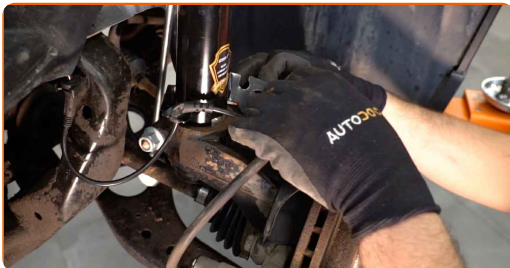
**AUTODOC recommends:**

- Mini R50, R53 – Do not lower the transmission jack sharply to avoid damaging components and mechanisms of the car.

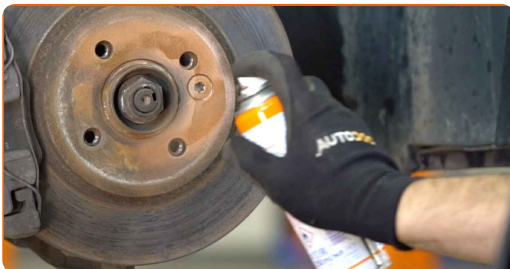
- 34 Secure the stabilizer link on the suspension strut. Use a drive socket #16. Use a torque wrench. Tighten it to 56 Nm torque.



- 35 Connect the fastener of the ABS sensor cable to the shock absorber strut. Fasten the brake hose on the strut.



- 36 Clean the wheel rim mounting seat. Use a wire brush. Treat the contacting surface. Use copper grease.



- 37 Install the wheel.



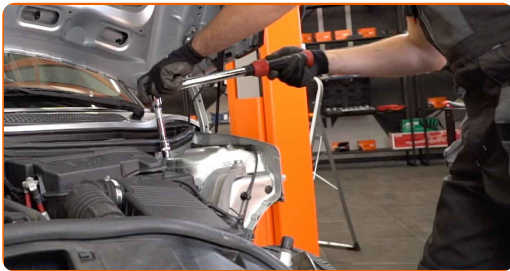
**AUTODOC recommends:**

- Important! Hold the wheel while screwing in the fastening bolts. Mini R50, R53

**38** Screw in the wheel bolts. Use wheel impact socket #17.



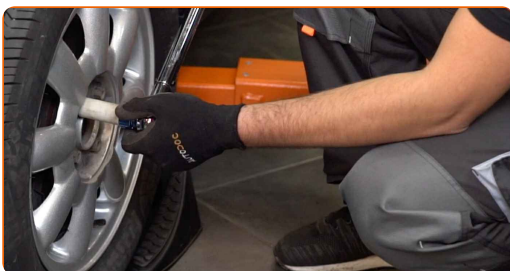
**39** Tighten the shock strut top mount. Use a drive socket #13. Use a torque wrench. Tighten it to 34 Nm torque.



**40** Treat the shock strut rod. Use copper grease.

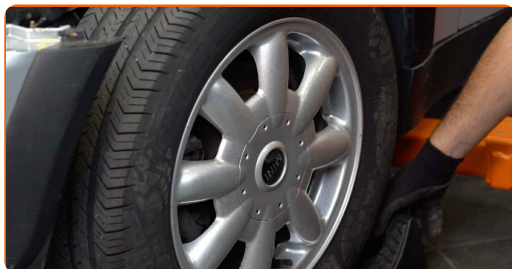


**41** Lower the car and working in a cross order, tighten the wheel bolts. Use wheel impact socket #17. Use a torque wrench. Tighten it to 110 Nm torque.



42

Remove the jacks and chocks.



**WELL DONE!** 

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