



How to change front coil  
springs on **BMW 5**  
**Touring (E39)** –  
replacement guide

### SIMILAR VIDEO TUTORIAL



This video shows the replacement procedure of a similar car part on another vehicle

#### **ⓘ Important!**

This replacement procedure can be used for:

BMW 5 Touring (E39) 520i 2.0, BMW 5 Touring (E39) 523i 2.5, BMW 5 Touring (E39) 528i 2.8, BMW 5 Touring (E39) 525tds 2.5, BMW 5 Touring (E39) 520d 2.0, BMW 5 Touring (E39) 520i 2.2, BMW 5 Touring (E39) 525i 2.5, BMW 5 Touring (E39) 530i 3.0

The steps may slightly vary depending on the car design.

This tutorial was created based on the replacement procedure for a similar car part on: BMW 5 Saloon (E39) 520i 2.0

**REPLACEMENT: COIL SPRINGS – BMW 5 TOURING (E39). TOOLS YOU NEED:**



- Wire brush
- WD-40 spray
- Brake cleaner
- Copper grease
- Combination spanner #13
- Combination spanner #16
- Combination spanner #18
- Drive socket # 13
- Drive socket # 16
- Drive socket # 18
- Drive socket # 22
- HEX bit No.H6.
- HEX bit No.H7.
- Wheel impact socket #17
- Ratchet wrench
- Torque wrench
- Shock absorber socket
- Tap wrench
- Crow bar
- Ball joint puller
- Hydraulic strut spring compressor
- Hydraulic transmission jack
- Fender cover
- Wheel chock

**Buy tools**

Replacement: coil springs – BMW 5 Touring (E39). Tip from AUTODOC:

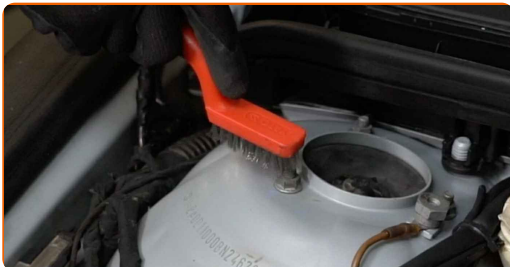
- Both coil springs of the front suspension should be replaced simultaneously.
- The replacement procedure is identical for the left and right coil springs of the front suspension.
- All work should be done with the engine stopped.

**REPLACEMENT: COIL SPRINGS – BMW 5 TOURING (E39). USE THE FOLLOWING PROCEDURE:**

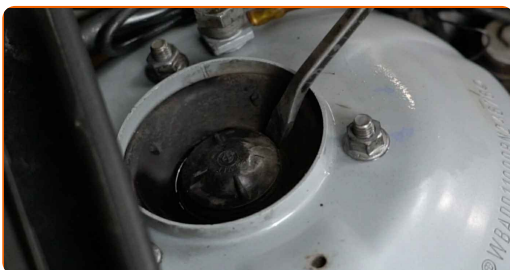
**1** Open the bonnet.

**2** Use a fender protection cover to prevent damaging paintwork and plastic parts of the car.

**3** Clean the fasteners of the shock strut upper mount. Use a wire brush. Use WD-40 spray.



**4** Remove the shock strut mount cap. Use a crowbar.



5

Loosen the upper fastener of the shock strut mount. Use a combination spanner #13.



6

Secure the wheels with chocks.



7

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

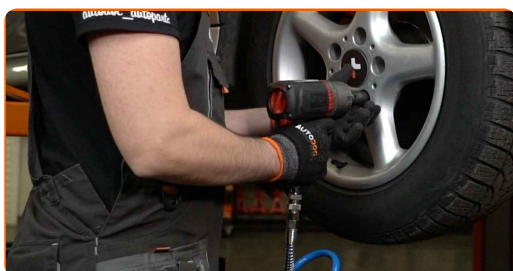


8

Raise the front of the car and secure on supports.

9

Unscrew the wheel bolts.



Replacement: coil springs – BMW 5 Touring (E39). AUTODOC recommends:

- To avoid injury, hold up the wheel when unscrewing the bolts.

**10** Remove the wheel.

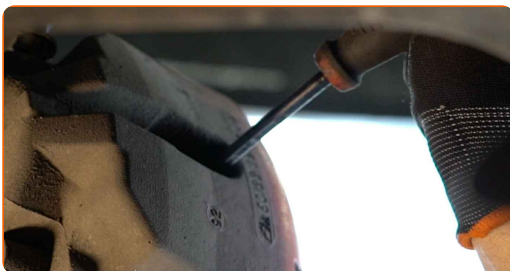
**11** Clean the stabiliser link fasteners. Use a wire brush. Use WD-40 spray.



**12** Clean the brake caliper bracket fasteners. Use a wire brush. Use WD-40 spray.

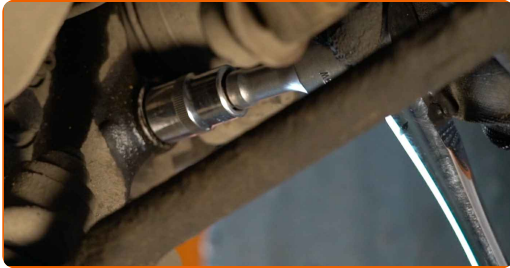


**13** Spread the brake pads. Use a crowbar.



**14**

Unscrew the caliper bracket fastening. Use a drive socket #18. Use a tap wrench.



**15**

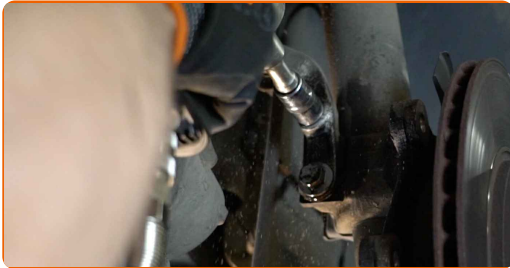
Remove the brake caliper together with its bracket. Use a crowbar.



**Replacement: coil springs – BMW 5 Touring (E39). Professionals recommend:**

- Tie the caliper to the suspension or to the body with a wire without disconnecting from the brake hose to prevent depressurization of the brake system.
- Make sure that the brake caliper is not hanging on the brake hose.
- Don't press the brake pedal after the brake caliper has been removed. As a result, the piston can fall out from the brake cylinder, and brake fluid leakage and depressurization of the system may occur.

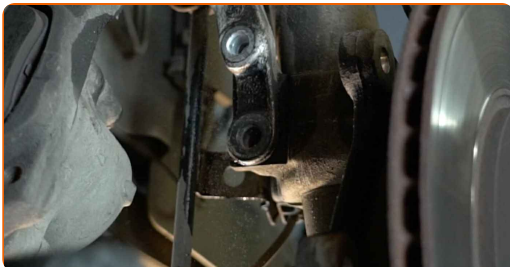
- 16** Unscrew the fastener connecting the stabilizer link to the shock strut. Use a drive socket #16. Use a ratchet wrench.



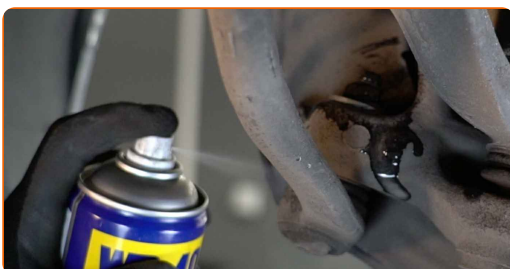
- 17** Unscrew the lower fastener connecting the shock strut to the steering knuckle. Use a combination spanner #18. Use a drive socket #16. Use a ratchet wrench.



- 18** Remove the fastening bolts.

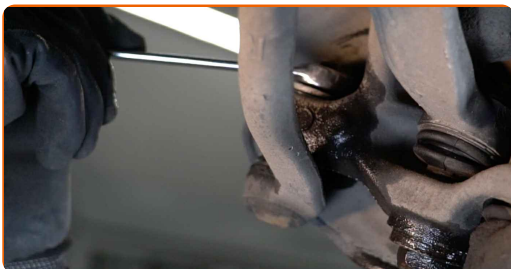


- 19** Clean the fastener connecting the tie rod end to the steering knuckle. Use a wire brush. Use WD-40 spray.

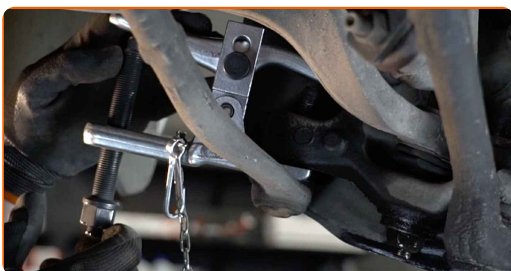




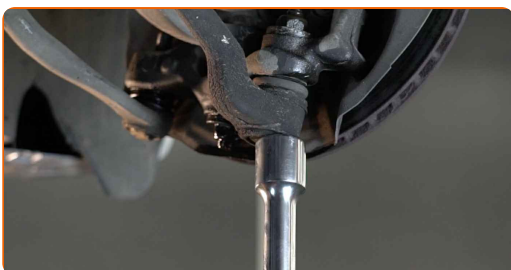
**20** Unscrew the end fastening nut to the steering knuckle. Use a combination spanner #18.



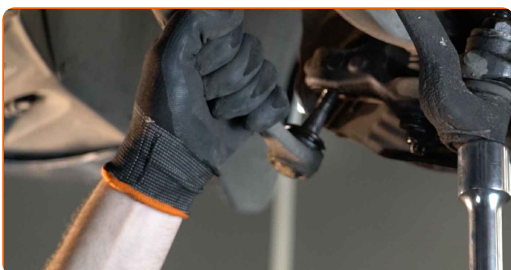
**21** Disconnect the tie rod end from the steering knuckle. Use a ball joint puller.



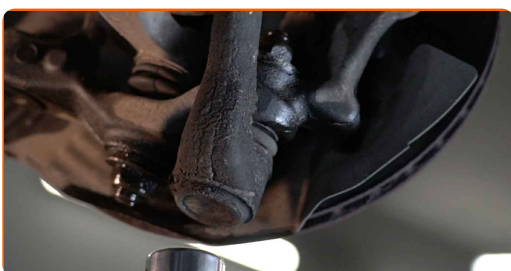
**22** Support the arm. Use a hydraulic transmission jack.



**23** Disconnect the tie rod end from the steering knuckle.



**24** Remove the support from under the arm.



**AUTODOC recommends:**

- Replacement: coil springs – BMW 5 Touring (E39). Lower the transmission jack smoothly, without jerks, to avoid damaging components and mechanisms.

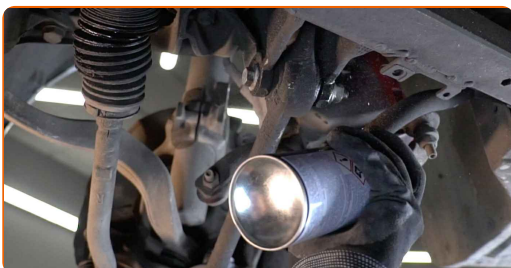
**25**

Disconnect the ABS sensor wiring.



**26**

Clean all joints of the arm. Use a wire brush. Use WD-40 spray.



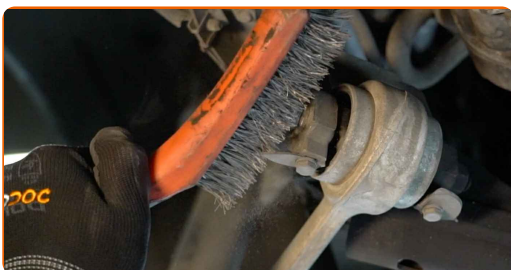
**27**

Remove the control arm cover.

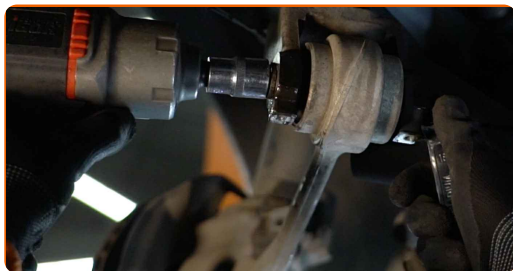


**28**

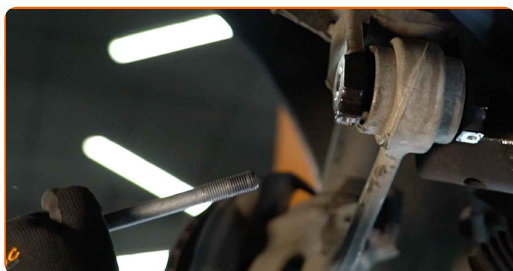
Clean all joints of the arm. Use a wire brush. Use WD-40 spray.



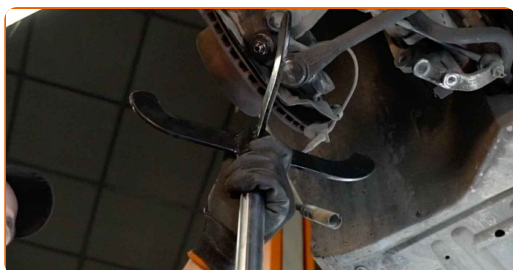
**29** Unscrew the front arm fastener. Use a combination spanner #18. Use a drive socket #18. Use a ratchet wrench.



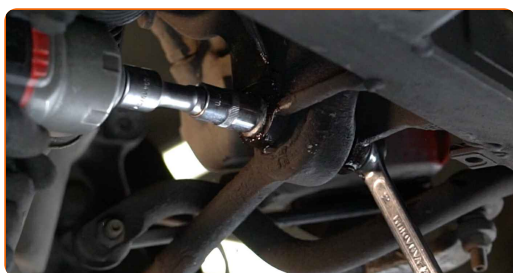
**30** Remove the front fastener of the control arm.



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



**32** Unscrew the rear fastener connecting the control arm to the subframe. Use a combination spanner #16. Use a drive socket #18. Use a ratchet wrench.



**33**

Remove the rear fastener of the control arm.



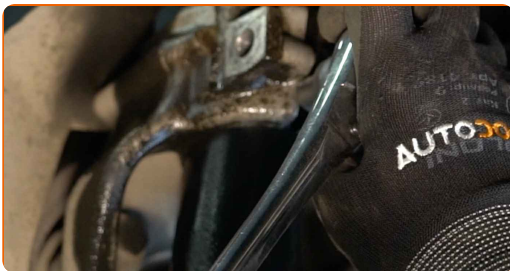
**34**

Clean the fasteners connecting the shock strut to the steering knuckle. Use a wire brush. Use WD-40 spray.



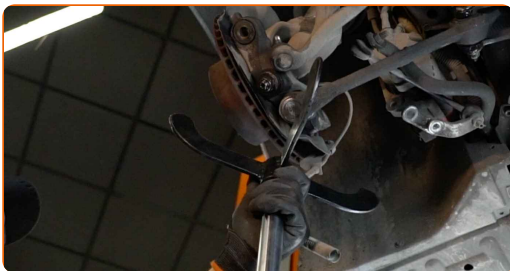
**35**

Release the lower fastener connecting the shock strut to the steering knuckle. Use a special drive socket to remove the shock absorber.



**36**

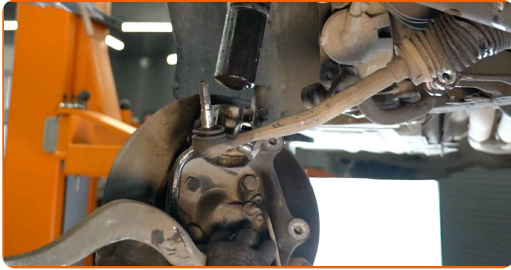
Remove the support from under the steering knuckle.



**AUTODOC recommends:**

- BMW 5 Touring (E39) – Do not lower the transmission jack sharply to avoid damaging components and mechanisms of the car.

**37** Disconnect the steering knuckle from the shock absorber strut.

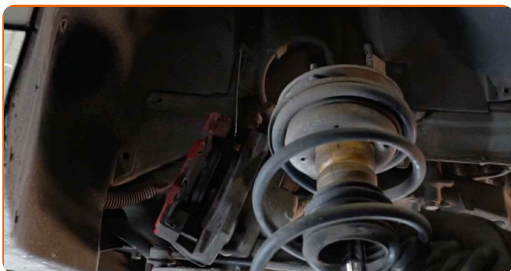


**38** Unscrew the top fastening of the shock strut mount.

Replacement: coil springs – BMW 5 Touring (E39). Tip from AUTODOC:

- To avoid injuries, hold the shock strut when undoing the fastening bolts.

**39** Remove the suspension strut.



**40** Set the shock absorber strut on the spring compressor tool.



Replacement: coil springs – BMW 5 Touring (E39). AUTODOC experts recommend:

- 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.

41

Compress the spring.



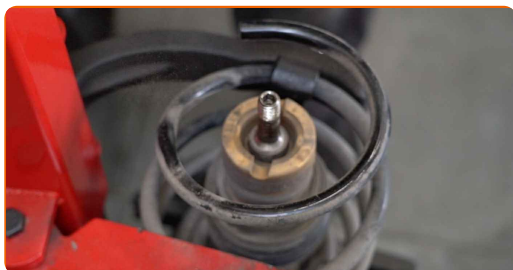
42

Remove the strut piston rod nut. Use a drive socket #22. Use HEX No.H7. Use a ratchet wrench.

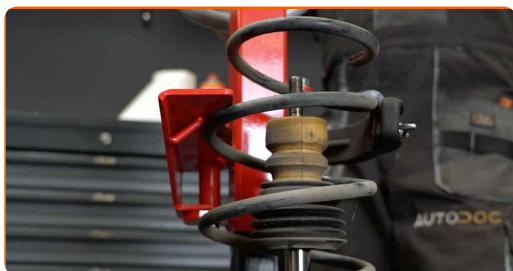


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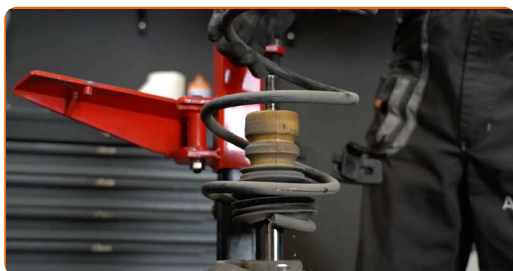
Remove the top strut mount.



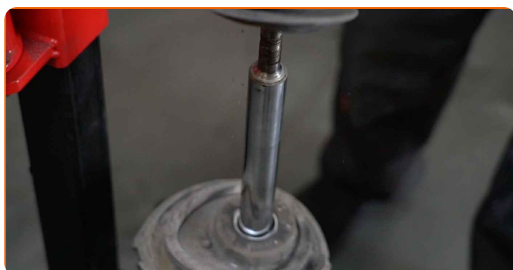
**44** Release the coil spring.



**45** Remove the spring.



**46** Remove the shock absorber dust cap and the bump stop.



**AUTODOC recommends:**

- Replacement: coil springs – BMW 5 Touring (E39). Carefully inspect the mount, the boot, and the bump stop of the shock absorber. Replace if necessary.

**47** Install the boot and a bump stop onto the shock absorber.



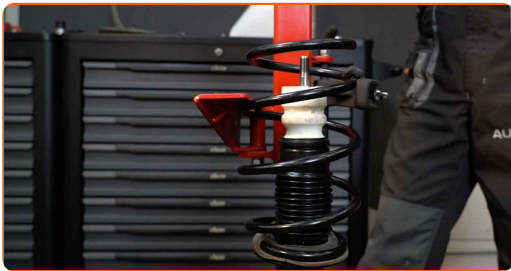
**48**

Install the spring on the shock absorber.



**49**

Compress the spring.



**50**

Install the upper strut mount and the strut mount bearing.



**51**

Tighten the shock strut piston rod nut. Use a drive socket #22. Use HEX No.H6. Use a torque wrench. Tighten it to 64 Nm torque.



**Replacement: coil springs – BMW 5 Touring (E39). Tip:**

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



**52** Decompress the spring.



**53** Remove the assembled shock strut.



**54** Install the shock strut into the wheel arch.



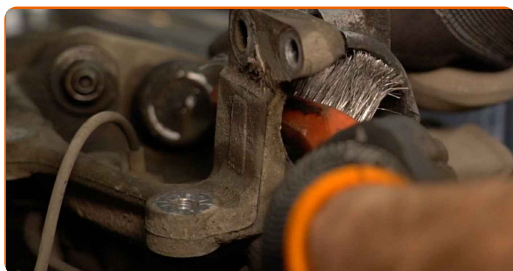
**55** Screw the top fastening of the shock strut mount. Do not tighten it.

**AUTODOC recommends:**

- Important! Hold the suspension strut while screwing in the fastening bolts. BMW 5 Touring (E39)

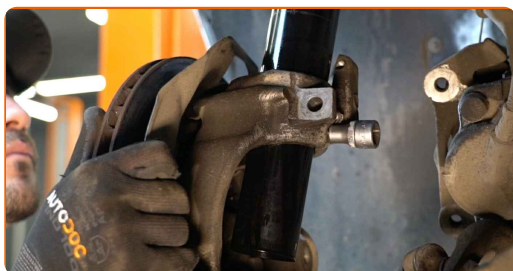
56

Treat the shock strut mounting seat on the steering knuckle. Use a wire brush. Use WD-40 spray.



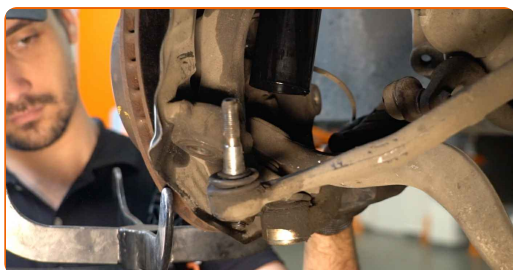
57

Fix the shock absorber strut on the steering knuckle.



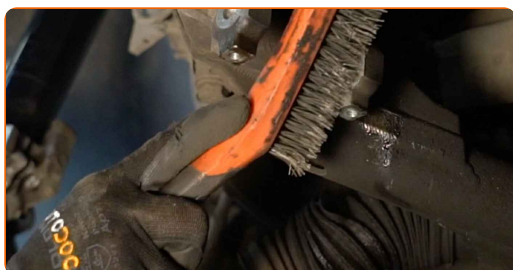
58

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

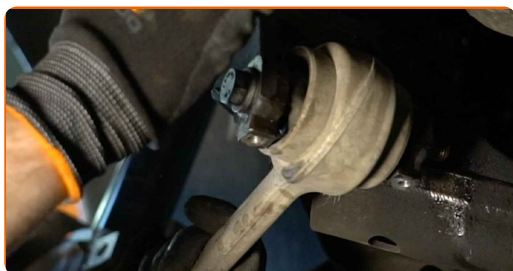


59

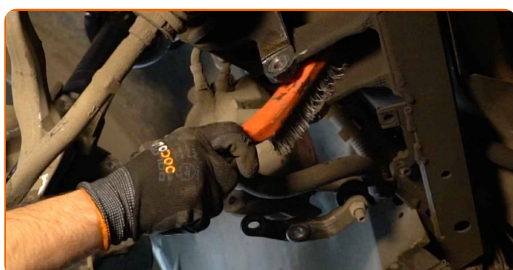
Clean the mounting seats and the thread of the suspension arm. Use a wire brush. Use WD-40 spray.



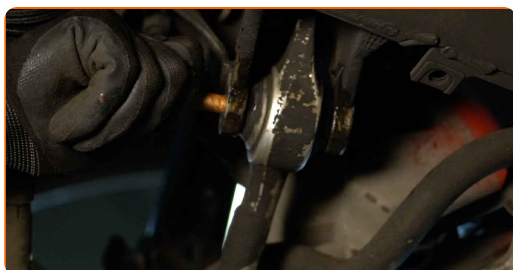
**60** Install the front fastener of the arm.



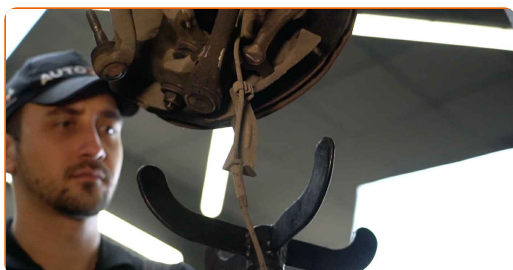
**61** Clean the mounting seats and the thread of the suspension arm. Use a wire brush. Use WD-40 spray.



**62** Install the rear fastener of the control arm.



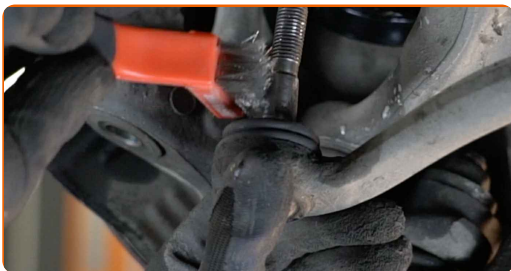
**63** Remove the support from under the steering knuckle.



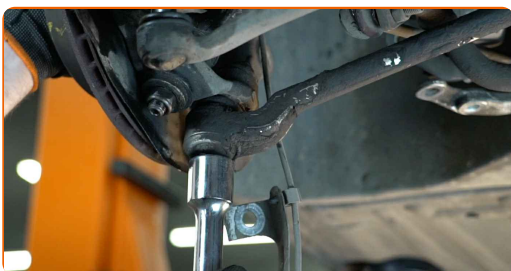
Replacement: coil springs – BMW 5 Touring (E39). Tip from AUTODOC experts:

- Lower the hydraulic transmission jack smoothly, without jerks, to avoid damaging assemblies and mechanisms.

**64** Clean the mounting seats of the tie rod end. Use a wire brush. Use WD-40 spray.



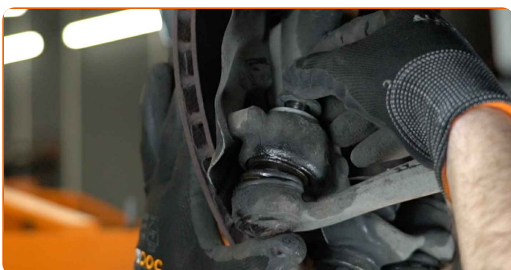
**65** Support the arm. Use a hydraulic transmission jack.



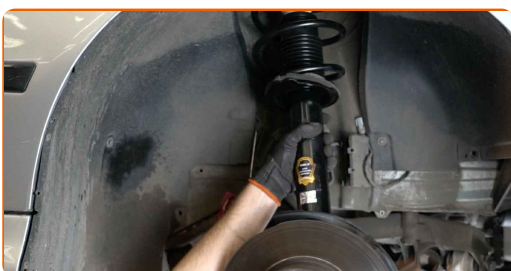
**66** Connect the tie rod end to the steering knuckle.



**67** Screw on the fastening nut that connects the tie rod end to the steering knuckle. Use a combination spanner #18.



**68** Install the shock absorber mount using the center hole as a guide.

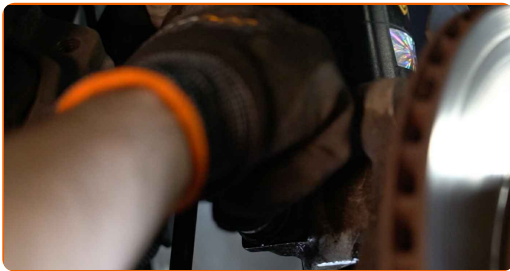


**69**

Clean the mounting seats of the stabiliser link. Use a wire brush. Use WD-40 spray.

**70**

Install the fastening bolts.

**71**

Screw in the fastener that connects the shock strut to the steering knuckle.

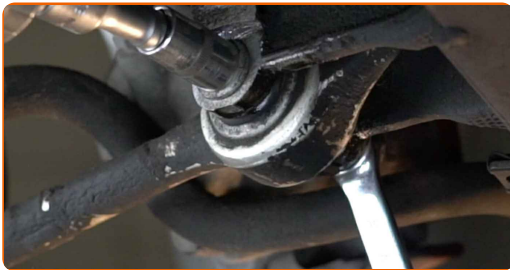
**72**

Raise the hydraulic transmission jack by 10-15 cm.



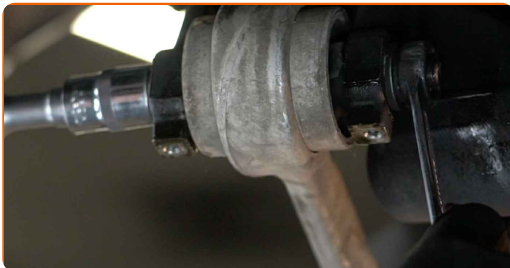
**73**

Screw the rear fastener connecting the control arm to the subframe. Use a combination spanner #16. Use a drive socket #18. Use a ratchet wrench.



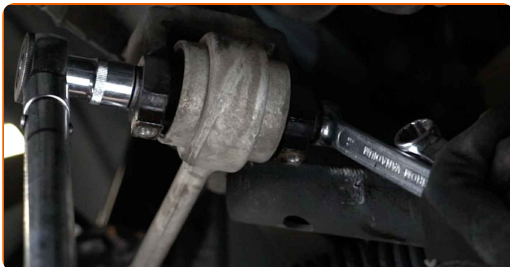
**74**

Screw the front arm fastener. Use a combination spanner #18. Use a drive socket #18. Use a ratchet wrench.



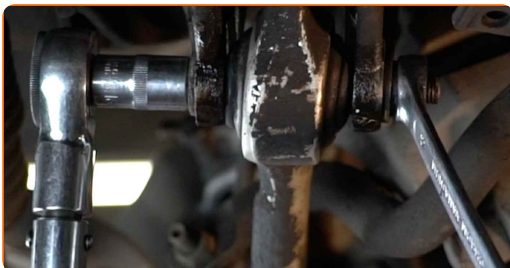
**75**

Tighten the front fastener connecting the control arm to the subframe. Use a combination spanner #18. Use a drive socket #18. Use a torque wrench. Tighten it to 110 Nm torque.



**76**

Tighten the rear fastener connecting the arm to the body subframe. Use a combination spanner #16. Use a drive socket #18. Use a torque wrench. Tighten it to 110 nm torque.



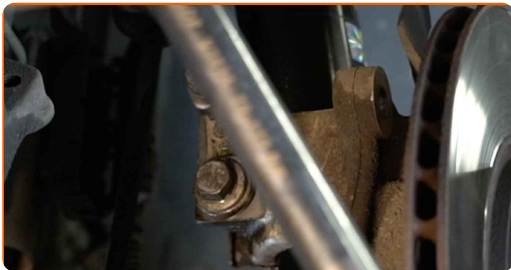
**77**

Tighten the lower fasteners connecting the shock strut to the steering knuckle. Use a combination spanner #18. Use a drive socket #16. Use a torque wrench. Tighten it to 81 Nm torque.



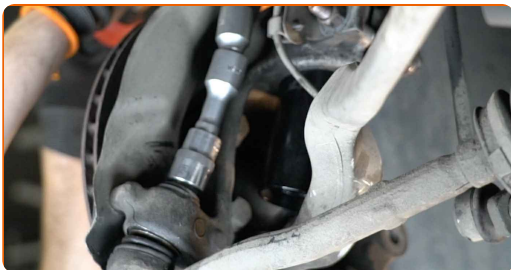
**78**

Tighten the fastener connecting the stabilizer link to the shock strut. Use a drive socket #16. Use a torque wrench. Tighten it to 65 Nm torque.



**79**

Tighten the fastening nut connecting the tie rod end to the steering knuckle. Use a drive socket #18. Use a torque wrench. Tighten it to 65 nm torque.



**80**

Remove the support from under the arm.



**AUTODOC recommends:**

- BMW 5 Touring (E39) – Do not lower the transmission jack sharply to avoid damaging components and mechanisms of the car.

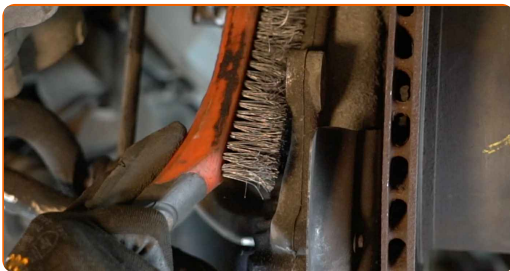
**81**

Connect the ABS sensor wiring.



**82**

Clean the mounting seats of the caliper and its bracket. Use a wire brush. Use a brake cleaner.



**AUTODOC recommends:**

- Replacement: coil springs – BMW 5 Touring (E39). After applying the spray, wait a few minutes.

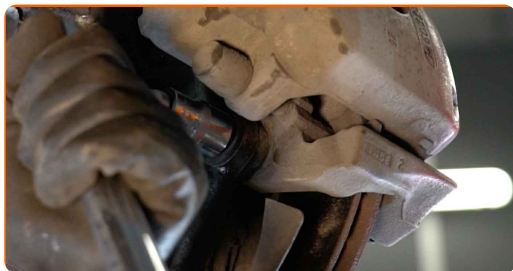
**83**

Install the brake caliper together with its bracket.

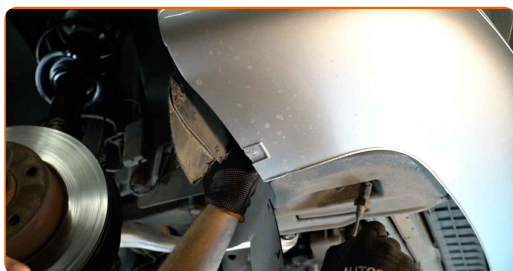




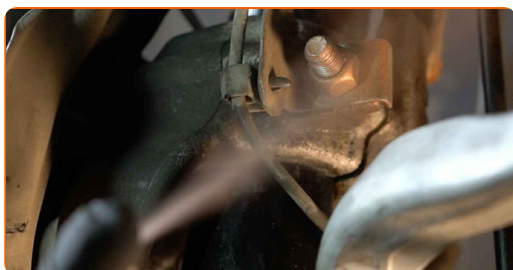
**84** Tighten the brake caliper bracket. Use a drive socket #18. Use a torque wrench. Tighten it to 110 Nm torque.



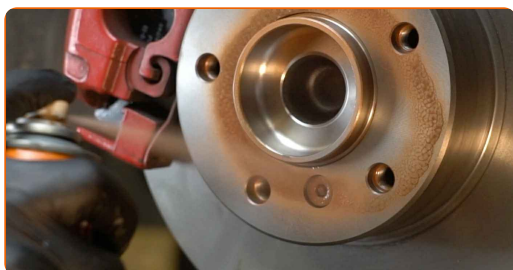
**85** Install the control arm cover.



**86** Treat all joints of the arm. Treat the shock strut fasteners. Use copper grease.

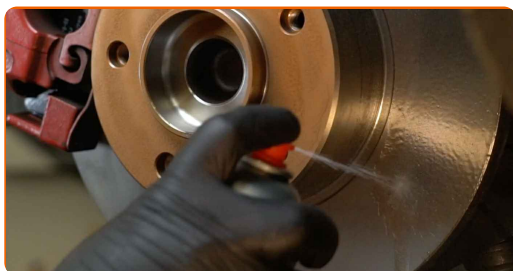


**87** Treat the surface where the brake disc contacts the wheel rim. Use copper grease.



88

Clean the brake disk surface. Use a brake cleaner.

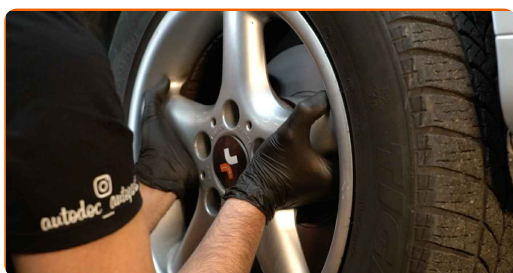


Replacement: coil springs – BMW 5 Touring (E39). AUTODOC recommends:

- After applying the spray, wait a few minutes.

89

Install the wheel.



AUTODOC recommends:

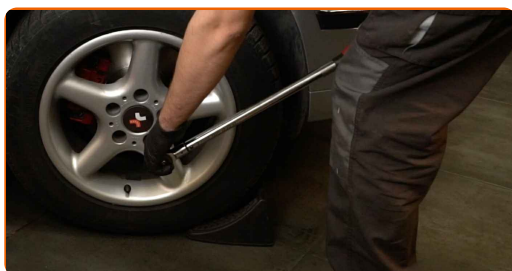
- Important! Hold the wheel while screwing in the fastening bolts. BMW 5 Touring (E39)

90

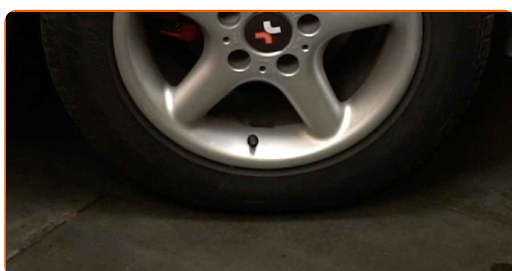
Screw in the wheel bolts. Use wheel impact socket #17.



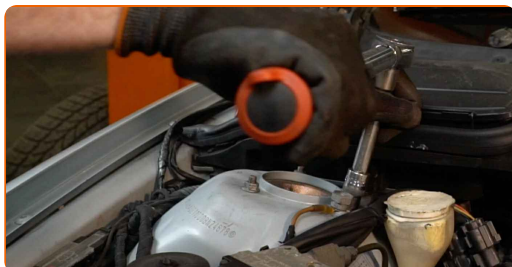
- 91 Lower the car and working in a cross order, tighten the wheel bolts. Use wheel impact socket #17. Use a torque wrench. Tighten it to 120 Nm torque.



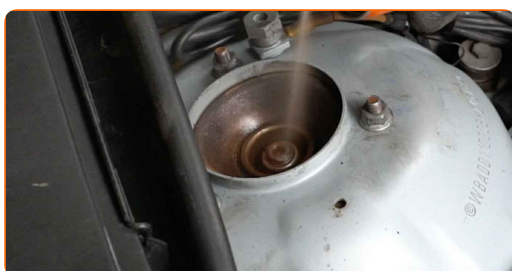
- 92 Remove the jacks and chocks.



- 93 Tighten the upper fastener of the shock absorber strut mount. Use a drive socket #13. Use a torque wrench. Tighten it to 24 Nm torque.

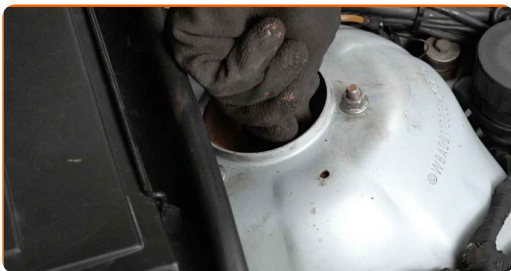


- 94 Treat the fasteners of the shock strut mount. Use copper grease.



95

Install the shock strut mount cap.



96

Remove the fender protection cover.

97

Close the hood.

### AUTODOC recommends:

- BMW 5 Touring (E39) – Without starting the engine, press the brake pedal several times until it feels firm.

**WELL DONE!** 

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