



How to change front
suspension strut on
BMW 1 Hatchback (E81)
– 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 1 Hatchback (E81) 116i 1.6, BMW 1 Hatchback (E81) 120d 2.0, BMW 1 Hatchback (E81) 130i 3.0, BMW 1 Hatchback (E81) 118i 2.0, BMW 1 Hatchback (E81) 120i 2.0, BMW 1 Hatchback (E81) 118d 2.0, BMW 1 Hatchback (E81) 123d 2.0, BMW 1 Hatchback (E81) 116i 2.0, BMW 1 Hatchback (E81) 116d 2.0

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 3 Saloon (E90) 318i 2.0

REPLACEMENT: SUSPENSION STRUT – BMW 1 HATCHBACK (E81). TOOLS YOU MIGHT NEED:



- Wire brush
- WD-40 spray
- Brake cleaner
- Copper grease
- Combination spanner #13
- Combination spanner #15
- Combination spanner #18
- Combination spanner #22
- Drive socket # 13
- Drive socket # 17
- Drive socket # 18
- Drive socket # 21
- Torx bit T45
- Wheel impact socket #17
- Ratchet wrench
- Torque wrench
- Flat chisel
- Hammer
- Flat Screwdriver
- Hydraulic strut spring compressor
- Hydraulic transmission jack
- Fender cover
- Wheel chock

Buy tools

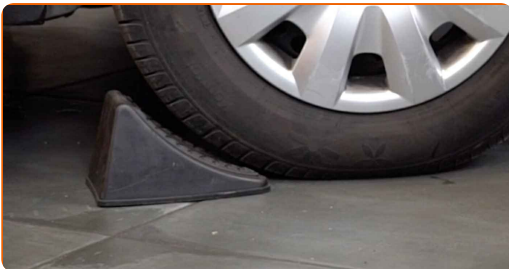
Replacement: suspension strut – BMW 1 Hatchback (E81). AUTODOC recommends:

- Both shock struts of the front suspension should be replaced simultaneously.
- The replacement procedure is identical for the left and right shock struts of the front suspension.
- Please note: all work on the car – BMW 1 Hatchback (E81) – should be done with the engine switched off.

CARRY OUT REPLACEMENT IN THE FOLLOWING ORDER:

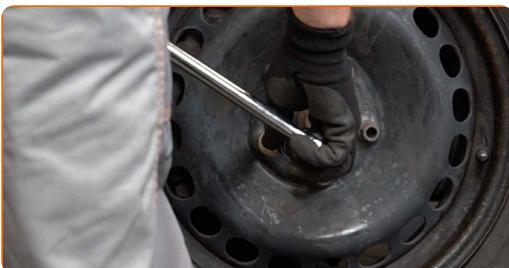
1

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.

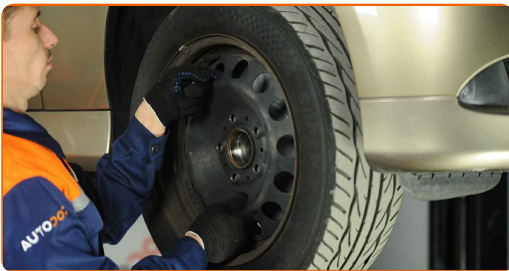
4 Unscrew the wheel bolts.



AUTODOC recommends:

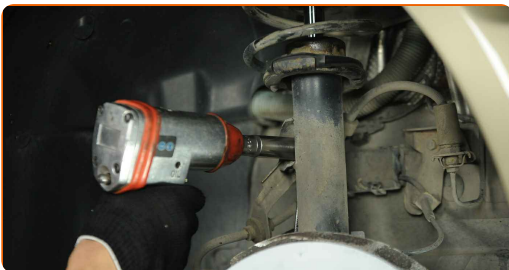
- Warning! To avoid injury, hold the wheel while unscrewing the fastening bolts.
BMW 1 Hatchback (E81)

5 Remove the wheel.



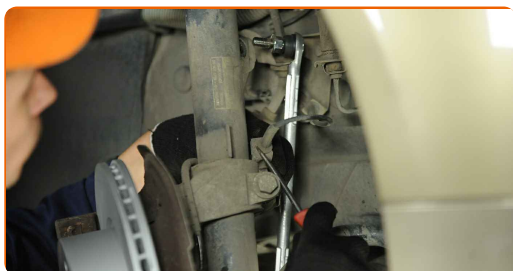
6 Clean the stabiliser link fasteners. Use a wire brush. Use WD-40 spray.

7 Unscrew the fastener connecting the stabilizer link to the shock strut. Use a combination spanner #15. Use a drive socket #17. Use a ratchet wrench.



8 Remove the stabilizer rod.

9 Disconnect the ABS sensor wiring. Use a flat screwdriver.

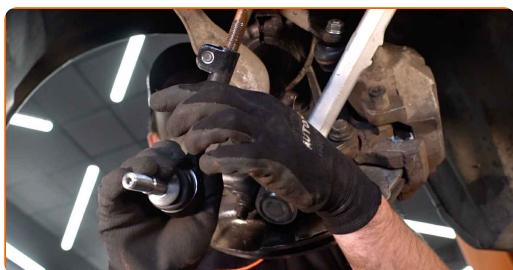


10 Clean the fastener connecting the tie rod end to the steering knuckle. Use a wire brush. Use WD-40 spray.

11 Unscrew the end fastening nut to the steering knuckle. Use a combination spanner #22. Use Torx T45. Use a ratchet wrench.

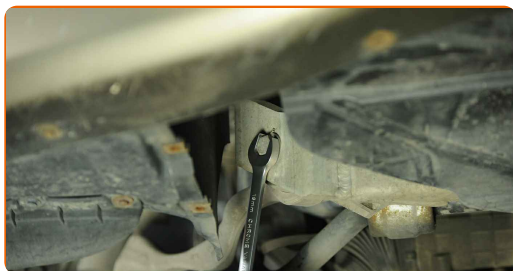


12 Disconnect the tie rod end from the steering knuckle.

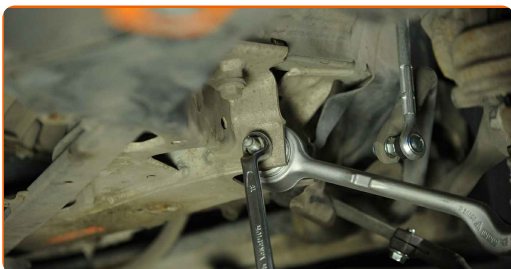


13 Clean the fasteners connecting the control arm to the subframe. Use a wire brush. Use WD-40 spray.

14 Loosen the front fastener of the control arm. Use a combination spanner #18.



- 15** Unscrew the rear fastener connecting the control arm to the subframe. Use a combination spanner #18 (2 pieces).

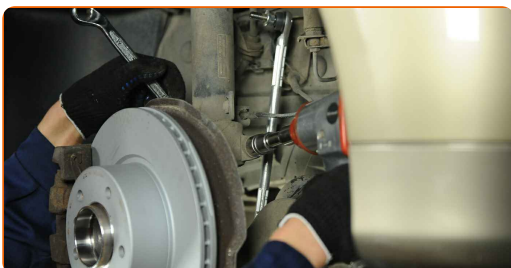


- 16** Remove the rear fastener of the control arm.



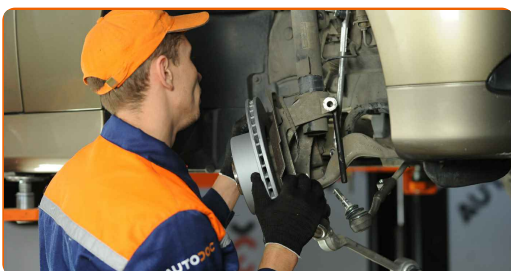
- 17** Clean the fasteners connecting the shock strut to the steering knuckle. Use a wire brush. Use WD-40 spray.

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



- 19** Remove the fastening bolt.

- 20** Release the lower fastener connecting the shock strut to the steering knuckle. Use a flat metal-working chisel. Use a hammer.



21

Disconnect the steering knuckle from the shock absorber strut.



Replacement: suspension strut – BMW 1 Hatchback (E81). Tip from AUTODOC experts:

- Make sure that the steering knuckle is supported.

22

Lower the car.

23

Open the bonnet.

24

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

25

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

26

Unscrew the top fastening of the shock strut mount. Use a combination spanner #13. Use a drive socket #13. Use a ratchet wrench.



AUTODOC recommends:

- Important! Hold the suspension strut while unscrewing the fastening bolts. BMW 1 Hatchback (E81)

27

Remove the suspension strut.



28

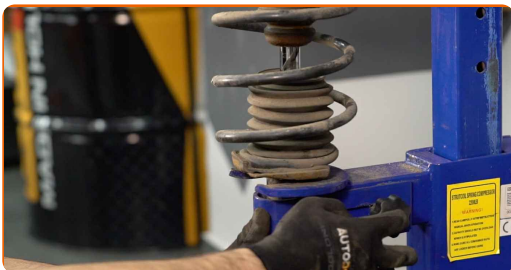
Set the shock absorber strut on the spring compressor tool.

Replacement: suspension strut – BMW 1 Hatchback (E81). Professionals 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.

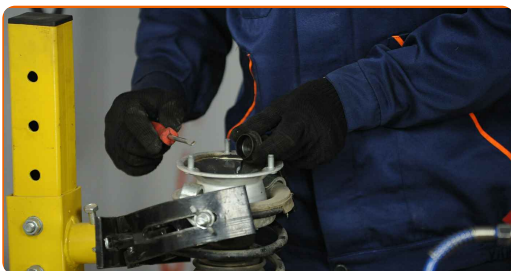
29

Compress the spring.



30

Remove the shock strut mount cap. Use a flat screwdriver.



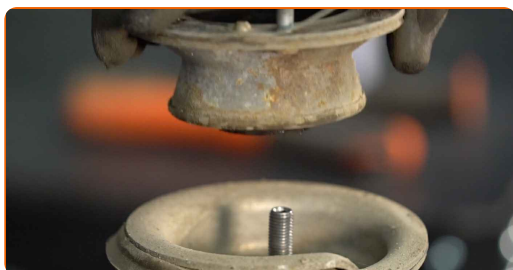
31 Treat the shock strut rod. Use a wire brush. Use WD-40 spray.



32 Remove the strut piston rod nut. Use a drive socket #21. Use a ratchet wrench.



33 Remove the top strut mount. Use a flat screwdriver.



34 Release the coil spring.

35 Remove the spring.



36

Remove the shock absorber dust cap and the bump stop.



AUTODOC recommends:

- Replacement: suspension strut – BMW 1 Hatchback (E81). Carefully inspect the mount, the boot, and the bump stop of the shock absorber. Replace if necessary.

37

Remove the old shock absorber from the hydraulic coil spring compressor.

38

Remove the rubber spring spacer. Use a flat screwdriver.



Replacement: suspension strut – BMW 1 Hatchback (E81). AUTODOC experts recommend:

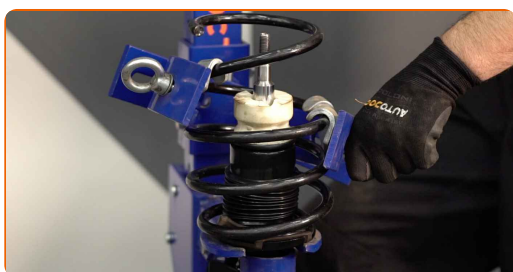
- Before installing a new shock absorber you should pump it manually 3-5 times.

39 Install the rubber spring spacer.



40 Install the new shock absorber on the hydraulic coil spring compressor.

41 Install the spring on the shock absorber.



42 Install the dust sleeve and the bump stop on the new shock absorber.

43 Compress the spring.

44 Install the upper strut mount and the strut mount bearing. Use a flat screwdriver.



45 Tighten the shock strut piston rod nut. Use a drive socket #21. Use a torque wrench. Tighten it to 64 Nm torque.



Replacement: suspension strut – BMW 1 Hatchback (E81). Professionals recommend:

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

46

Install the shock strut mount cap.



47

Decompress the spring.

48

Remove the assembled shock strut.

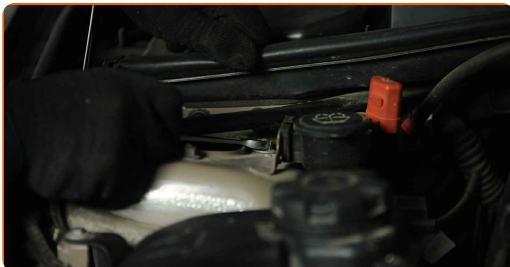
49

Install the shock strut into the wheel arch.



50

Screw the top fastening of the shock strut mount.



AUTODOC recommends:

- Important! Hold the suspension strut while screwing in the fastening bolts. BMW 1 Hatchback (E81)

51 Tighten the upper fastener of the shock absorber strut mount. Use a combination spanner #13. Use a drive socket #13. Use a torque wrench. Tighten it to 34 Nm torque.

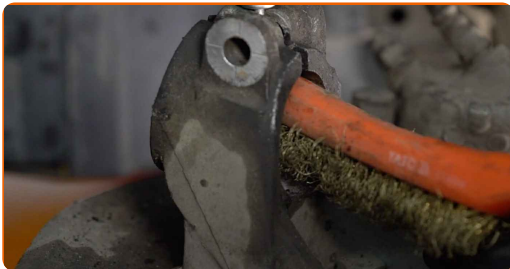


52 Remove the fender protection cover.

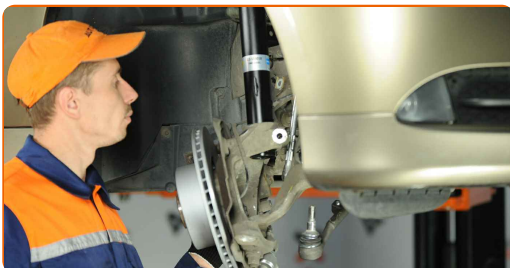
53 Close the hood.

54 Raise the front of the car and secure on supports.

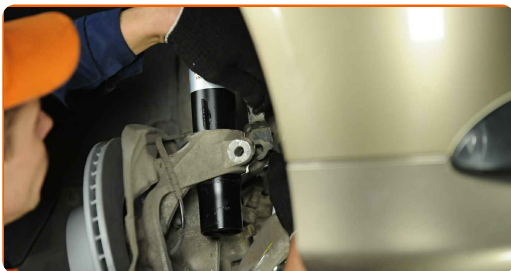
55 Treat the shock strut mounting seat on the steering knuckle. Use a wire brush. Use WD-40 spray.



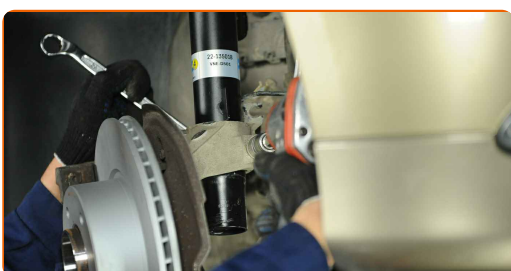
56 Fix the shock absorber strut on the steering knuckle. Use a flat metal-working chisel. Use a hammer.



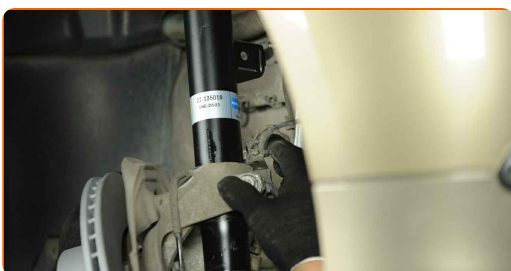
57 Install the fastening bolt.



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

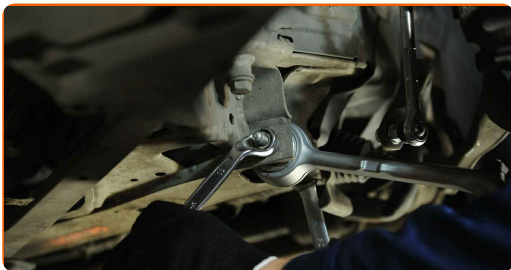


59 Connect the ABS sensor wiring.



60 Install the rear fastener of the control arm.

61 Screw the rear fastener connecting the control arm to the subframe. Use a combination spanner #18 (2 pieces).

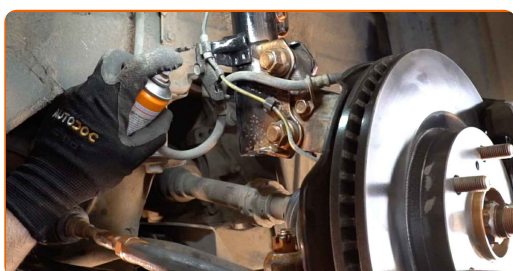


62 Install the transverse stabilizer link.

- 63** Tighten the fastener connecting the stabilizer link to the shock strut. Use a combination spanner #15. Use a drive socket #17. Use a torque wrench. Tighten it to 58 Nm torque.



- 64** Treat the shock strut fasteners. Use copper grease.



- 65** Connect the tie rod end to the steering knuckle.

- 66** Tighten the fastening nut connecting the tie rod end to the steering knuckle. Use a combination spanner #22. Use Torx T45. Use a torque wrench. Tighten it to 165 Nm torque.



AUTODOC recommends:

- Important! Be sure to use new fasteners.

67

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



68

Tighten the front fastener connecting the control arm to the subframe. Use a combination spanner #18. Use a torque wrench. Tighten it to 68 Nm torque. +90°

AUTODOC recommends:

- Important! Be sure to use new fasteners.

69

Tighten the rear fastener of the control arm. Use a combination spanner #18 (2 pieces). Use a torque wrench. Tighten it to 68 Nm torque. +90°



AUTODOC recommends:

- Important! Be sure to use new fasteners.

70

Treat all joints of the arm. Use copper grease.

71

Remove the support from under the steering knuckle.

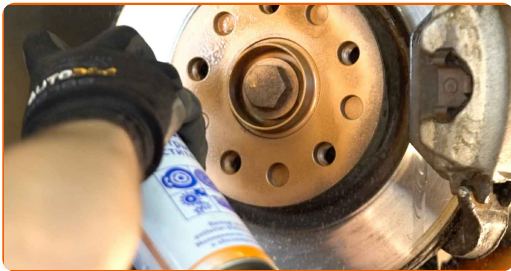


AUTODOC recommends:

- Replacement: suspension strut – BMW 1 Hatchback (E81). Lower the transmission jack smoothly, without jerks, to avoid damaging components and mechanisms.

72

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



73

Clean the brake disc surface. Use a brake cleaner.

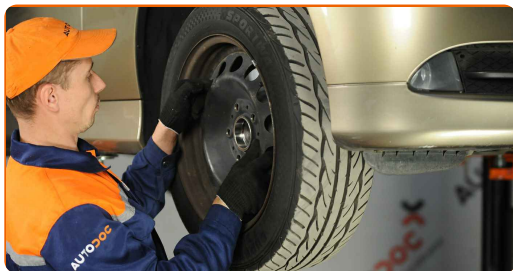


AUTODOC recommends:

- Replacement: suspension strut – BMW 1 Hatchback (E81). After applying the spray, wait a few minutes.

74

Install the wheel.



AUTODOC recommends:

- Important! Hold the wheel while screwing in the fastening bolts. BMW 1 Hatchback (E81)

75

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



76

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.



77

Remove the jacks and chocks.

WELL DONE! 

VIEW MORE TUTORIALS

AUTODOC – TOP QUALITY AND AFFORDABLE CAR PARTS ONLINE

AUTODOC MOBILE APP: GREAT DEALS AND CONVENIENT SHOPPING



+ AUTODOC

GET IT ON
Google Play

 Download on the
App Store

Download

A GREAT SELECTION OF SPARE PARTS FOR YOUR CAR

SHOCK ABSORBERS: A WIDE SELECTION

DISCLAIMER:

The document contains only general recommendations that may be useful for you when you perform repair or replacement work. AUTODOC shall not be liable for any loss, injury, damage of property occurring in the repair or replacement process due to incorrect use or misinterpretation of the provided information.

AUTODOC shall not be liable for any possible mistakes and uncertainties in this guide. The information provided is for information purposes only and cannot replace advice from specialists.

AUTODOC shall not be liable for incorrect or hazardous usage of equipment, tools and car parts. AUTODOC strongly recommends to be careful and observe the safety rules when performing repair or replacement works. Remember: usage of low quality auto parts does not guarantee you the appropriate level of road safety.

© Copyright 2023 – All the contents of this website, in particular texts, photographs and graphics, are protected by copyright. All rights, including reproduction, publication, editing and translation rights, are reserved by AUTODOC SE.