



How to change front
suspension strut on
BMW E46 touring –
replacement guide

VIDEO TUTORIAL



ⓘ Important!

This replacement procedure can be used for:

BMW 3 Touring (E46) 320i 2.0, BMW 3 Touring (E46) 318i 1.9, BMW 3 Touring (E46) 328i 2.8, BMW 3 Touring (E46) 330i 3.0, BMW 3 Convertible (E46) 320Ci 2.2, BMW 3 Touring (E46) 318i 2.0, BMW 3 Convertible (E46) 320Cd 2.0, BMW 3 Convertible (E46) 330Cd 3.0, BMW 3 Convertible (E46) 318Ci 2.0

The steps may slightly vary depending on the car design.

REPLACEMENT: SUSPENSION STRUT – BMW E46
TOURING. LIST OF THE TOOLS YOU'LL NEED:



- Wire brush
- WD-40 spray
- Copper grease
- Combination spanner #17
- Combination spanner #19
- Combination spanner #21
- Drive socket # 13
- Drive socket # 18
- Drive socket # 21
- HEX bit no.H6.
- HEX bit no.H7.
- Wheel impact socket #17
- Shock absorber socket
- Ball joint puller
- Ratchet wrench
- Torque wrench
- Tap wrench
- Crow bar
- Hydraulic strut spring compressor
- Hydraulic transmission jack
- Fender cover
- Wheel chock

BUY TOOLS

Replacement: suspension strut – BMW E46 touring. 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.
- All work should be done with the engine stopped.

**REPLACEMENT: SUSPENSION STRUT – BMW E46 TOURING.
RECOMMENDED SEQUENCE OF STEPS:**

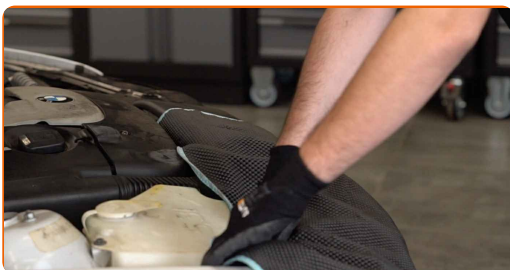
1

Open the bonnet.



2

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



3 Loosen the upper fastener of the shock strut mount. Use a drive socket #13. Use a ratchet wrench.



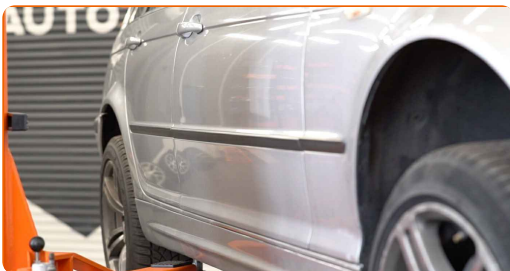
4 Secure the wheels with chocks.



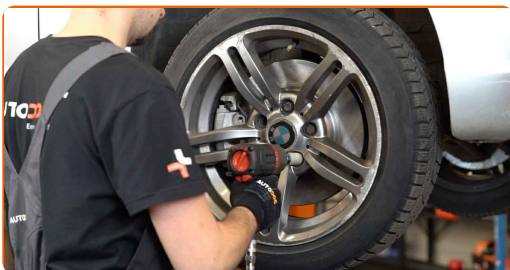
5 Loosen the wheel mounting bolts. Use wheel impact socket #17.



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



7 Unscrew the wheel bolts.



Replacement: suspension strut – BMW E46 touring. AUTODOC experts recommend:

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

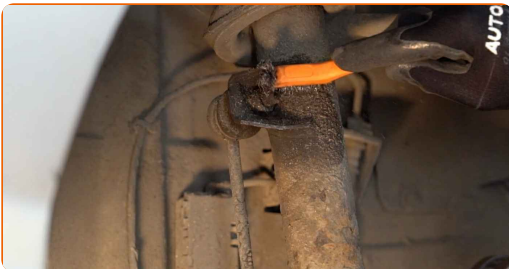
8

Remove the wheel.



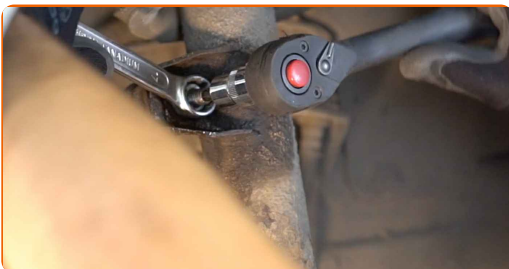
9

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



10

Unscrew the nut and remove the stabilizer rod from the shock strut. Use HEX No.H7. Use a combination spanner #17. Use a ratchet wrench.



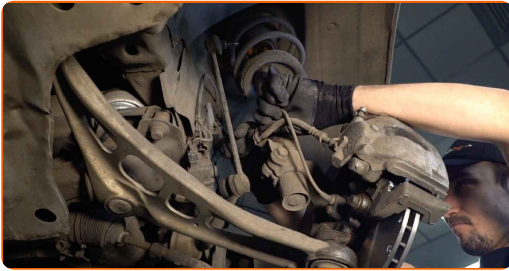
11

Treat the retaining bracket that secures the brake hose and the wiring harness. Use WD-40 spray.



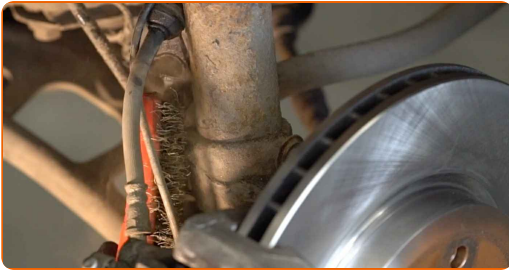
12

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



13

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



14

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



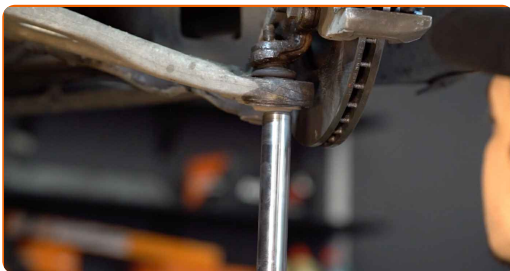
15

Unscrew the ball joint fastening to the steering knuckle. Use a combination spanner #19.



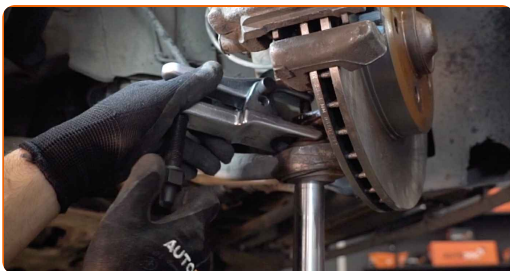
16

Support the arm. Use a hydraulic transmission jack.



17

Disconnect the ball joint from the steering knuckle. Use a ball joint puller.



18

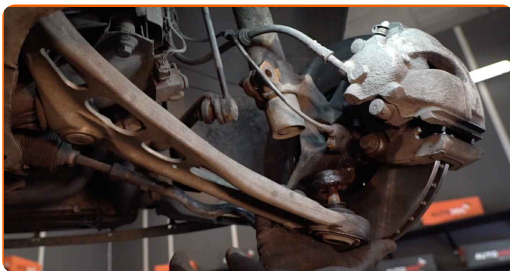
Lower the hydraulic transmission jack by 10-15 cm.



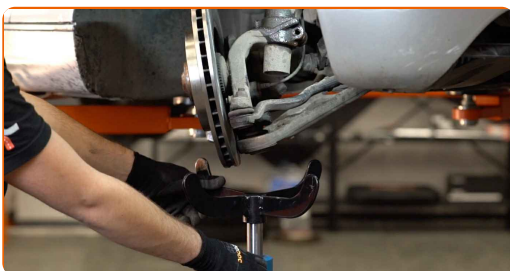
AUTODOC recommends:

- Replacement: suspension strut – BMW E46 touring. Lower the transmission jack smoothly, without jerks, to avoid damaging components and mechanisms.

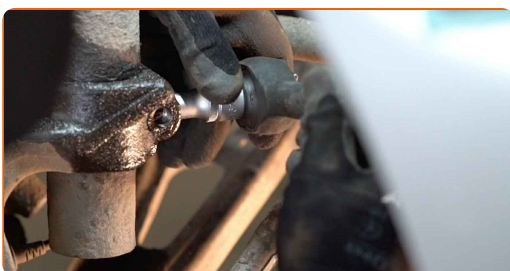
19 Disconnect the lower arm from the steering knuckle.



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



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



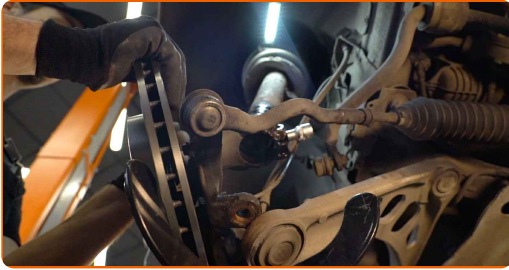
22 Lower the hydraulic transmission jack by 10-15 cm.



Replacement: suspension strut – BMW E46 touring. Tip:

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

23 Disconnect the steering knuckle from the shock absorber strut.



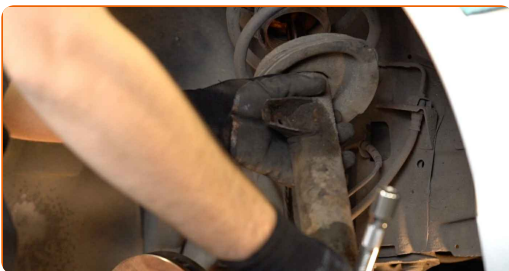
24 Unscrew the top fastening of the shock strut mount. Use a drive socket #13. Use a ratchet wrench.



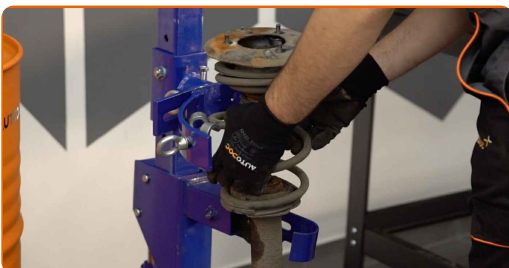
Replacement: suspension strut – BMW E46 touring. Tip from AUTODOC experts:

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

25 Remove the suspension strut.



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



Replacement: suspension strut – BMW E46 touring. 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.

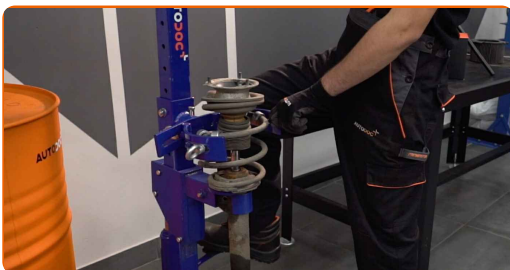
27

Remove the shock strut mount cap. Use a crowbar.



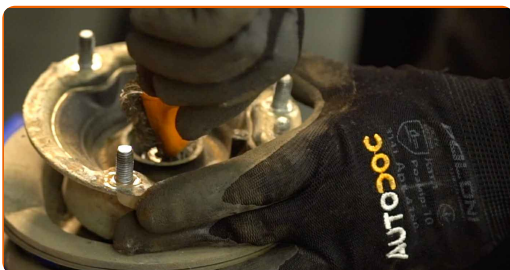
28

Compress the spring.

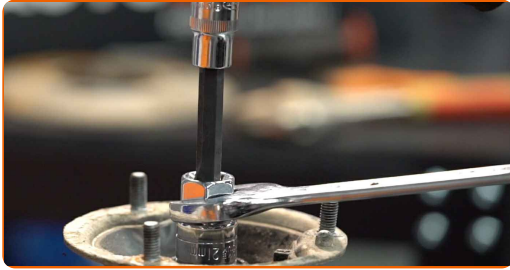


29

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



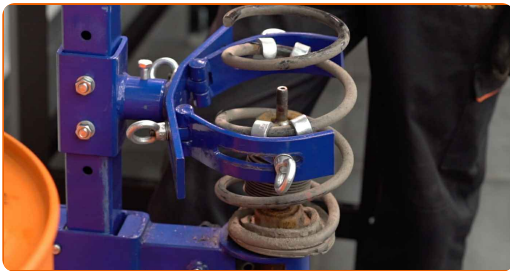
30 Remove the strut piston rod nut. Use a combination spanner #21. Use HEX No.H6. Use a ratchet wrench.



31 Remove the top strut mount. Use a crowbar.



32 Release the coil spring.



33 Remove the spring.



34 Remove the shock absorber dust cap and the bump stop.



35

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



AUTODOC recommends:

- Replacement: suspension strut – BMW E46 touring. Carefully inspect the mount, the boot, and the bump stop of the shock absorber. Replace if necessary.
- Before installing a new shock absorber you should pump it manually 3-5 times.

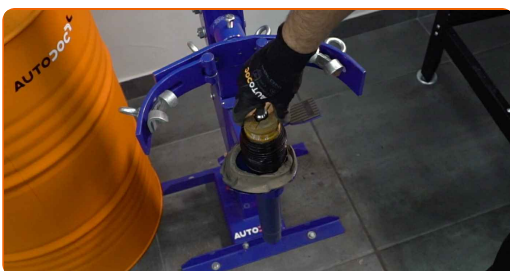
36

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



37

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



38 Install the spring on the shock absorber.



39 Compress the spring.



40 Install the upper strut mount and the strut mount bearing.



41 Tighten the shock strut piston rod nut. Use a drive socket #21. Use HEX No.H6. Use a torque wrench. Tighten it to 64 Nm torque.



Replacement: suspension strut – BMW E46 touring. Tip from AUTODOC:

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

42 Decompress the spring.



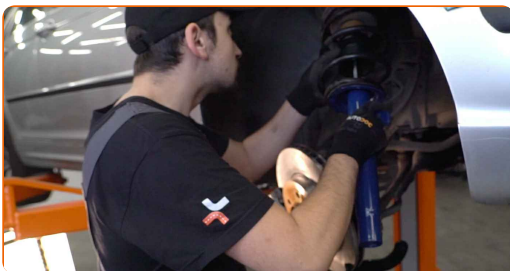
43 Remove the assembled shock strut.



44 Install the shock strut mount cap.



45 Install the shock strut into the wheel arch.



46 Screw the top fastening of the shock strut mount. Use a drive socket #13. Do not tighten it.

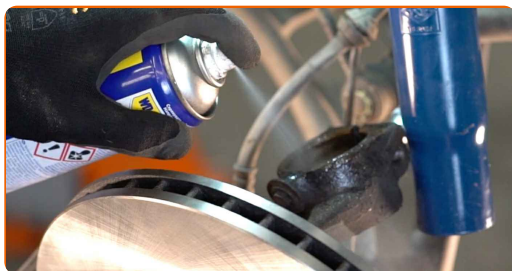


AUTODOC recommends:

- BMW E46 touring – To avoid injury, hold the suspension strut while screwing in the fastening bolts.

47

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



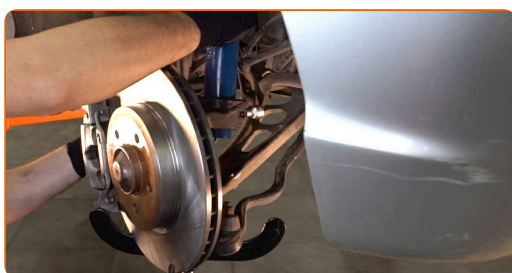
48

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



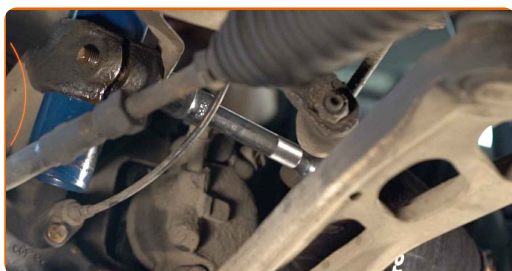
49

Fix the shock absorber strut on the steering knuckle.



50

Tighten the lower fasteners connecting the shock strut to the steering knuckle. Use a drive socket #18. Use a torque wrench. Tighten it to 80 Nm torque.



51 Remove the support from under the steering knuckle.



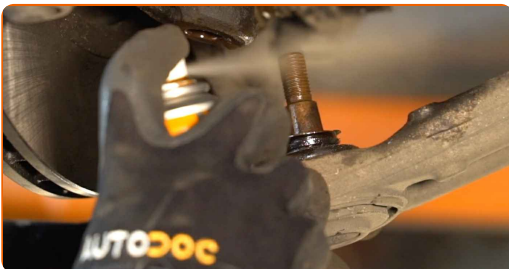
Replacement: suspension strut – BMW E46 touring. AUTODOC recommends:

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

52 Clean the ball joint mounting seat. Use a wire brush. Use WD-40 spray.



53 Treat the fasteners connecting the control arm to the steering knuckle. Use copper grease.



54 Connect the lower arm to the steering knuckle.



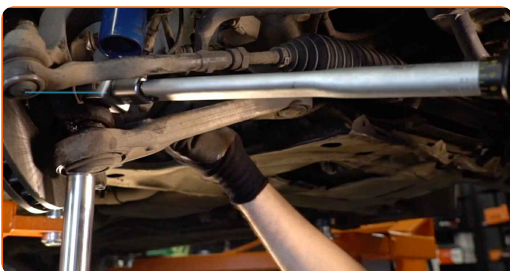
55 Install the control arm fasteners.



56 Support the arm. Use a hydraulic transmission jack.



57 Screw the fastener connecting the ball joint to the steering knuckle. Use a combination spanner #19. Use a torque wrench. Tighten it to 65 Nm torque.



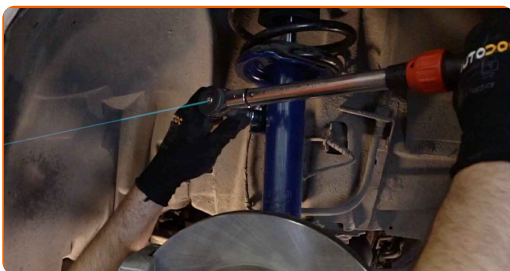
58

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



59

Secure the stabilizer link on the suspension strut. Use HEX No.H7. Use a combination spanner #17. Use a torque wrench. Tighten it to 55 Nm torque.



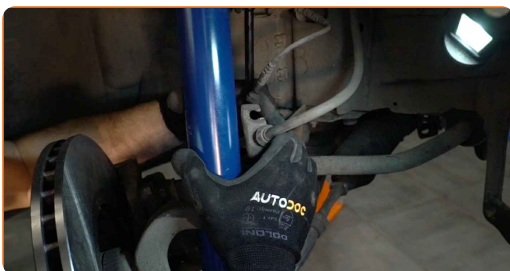
60

Treat all joints of the stabiliser link. Use copper grease.



61

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



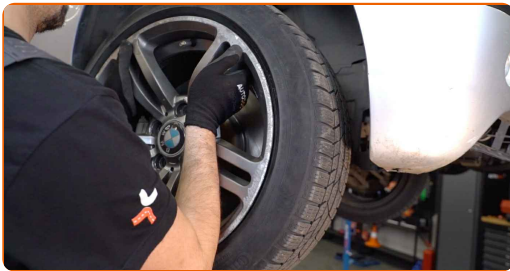
62

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



63

Install the wheel.



AUTODOC recommends:

- To avoid injury, hold up the wheel when screwing in the fastening bolts.

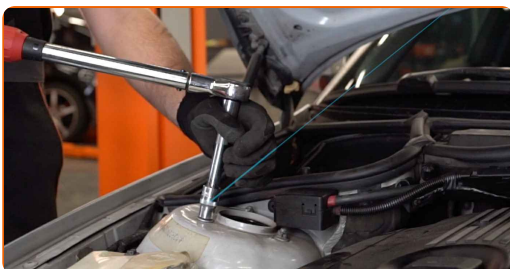
64

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

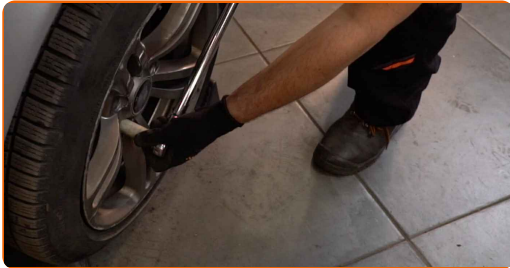


65

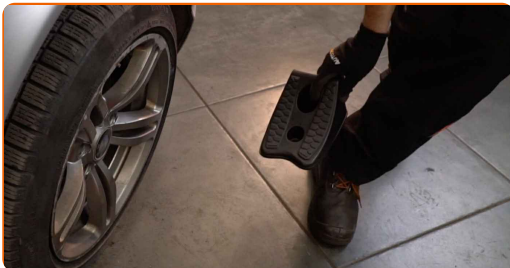
Tighten the upper fastener of the shock absorber strut mount. Use a drive socket #13. Use a torque wrench. Tighten it to 34 Nm torque.



- 66 Lower the car and working in a cross order, tighten the wheel bolts. Use a torque wrench. Tighten it to 120 Nm torque.



- 67 Remove the jacks and chocks.



- 68 Remove the fender protection cover.



- 69 Close the hood.



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

BUY SPARE PARTS FOR BMW

SHOCK ABSORBERS: A WIDE SELECTION

CHOOSE CAR PARTS FOR BMW E46 TOURING

SHOCK ABSORBERS FOR BMW: BUY NOW

**SHOCK ABSORBERS FOR BMW E46 TOURING: THE BEST
DEALS & OFFERS**

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 2022 – 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 GmbH.