

Verholen 85 mm Handlebar Riser Installation (for 2010 K1300s)

Installation Steps

1. Throw away any instructions that came with the kit. They're useless. And if you are not mechanically inclined and can't follow your nose in some places, just waltz off to your BMW dealer.
2. Remove the windscreen for better visibility and access to cables and such.

Parts Required:

- Bleeder nipple and dust cap to replace the OEM grub screw
- Brake fluid
- Mineral oil

Left Grip

3. Remove bar weight. (6mm Hex)
4. Remove saddle bracket holding clutch lever in place. (T25 Torx) Do not remove any switch connections.
5. Roll back the inside lip of the grip next to the switch to expose a bolt that passes through the bar. There is a hex nut on the other side of the grip, which you can see if you roll back the far side lip. It is held in place by its own hex nut impression and the pressure of the grip. You will be drilling a replacement hole in the Verholen riser for this in Step...
6. If the grip assembly does not easily slide off, it is probably because of an OEM piece of soft clear tape hidden under the switch assembly that is generating the friction. I assume it has some value in the original assembly process. Keep working the grip off...at some point you'll begin to see the clear tape...once past the tape, the grip is free to slide off. If the clutch and switch cables prevent pulling the grip entirely off the bar, go to Step 7 and remove the handle bar from the cross brace.
7. Remove bolts holding grip tube in handlebar cross brace. (T30 Torx)
8. Slide handle bar out of cross brace.
9. Slide the Verholen riser into the cross brace and (nearly) tighten the screw holding the support brace. (4mm Hex)
10. Replace the bolts (Step 7) and tighten to the point where the handle bar can be adjusted to your desired riding position (don't thread lock the bolts just yet). Be cognizant of where your hand touches the tank on full left sweep of the bar. Tighten the bars more securely now, but you may want to remove the riser to drill the hole through the bar.
11. Replace the grip assembly (leave the clutch lever off for now) and bar weight.
12. Position the assembly in its original rotational location (I found that the flasher and info buttons on the assembly line up with the MV decal on the riser, but this is dependent upon where you choose to position the risers).
13. Roll the grip back again and use a center punch to mark the location of the thru hole. Remove the bar weight and grip assembly.
14. Here you have some choices. You can drill the hole with the riser in place or remove it to a vice. If you have a jig, you stand a better chance of getting the holes to line up 180 degrees apart.

(Drill bit 9/64") The riser bar is solid (the original is hollow) and formed of a relatively soft metal.

Alternatively, you might elect to drill each side (i.e. hole) independently, sinking deeply enough but not clear through the bar, and use self-tapping screws.

15. Replace the grip assembly and if you have drilled the holes correctly, you can slide the bolt through the hole you just drilled and secure the grip assembly.
16. Remove the screws holding the riser in place and reinstall with thread locker.

Clutch Cable Extension

17. Disconnect the clutch cable from the clutch housing. You'll get some mineral oil leaking out but it's not corrosive like brake fluid. (11mm wrench)
18. Pry open as best you can the stainless clip that holds the cable to the clutch housing. It's very strong and I used needle nose pliers to finally expand the clip's grip on the cable. It will also need to more open as the repositioning of the clutch cable brings a thicker portion of the cable into the clip.
19. The cable is next held secure with a tie up near where it enters the handlebar space. You can remove the side plastic to access the tie or, as I did, apply some lubricant to the tie and cable so that you can pull the cable upward a bit. How much is determined by the length of the stub cable you install between the original cable end and the clutch assembly.
20. Attach the stub cable to the original cable (do this before you attach the stub cable to the clutch assembly). (11mm and 14mm wrenches)
21. Attach the stub cable to the clutch assembly. (11mm wrench)
22. Pull the clutch cable up until the slack is taken out at the clutch assembly. You want a smooth, unknicked stub hose.
23. Remove the grub screw and insert the bleed nipple.
24. Bleed the clutch. The reservoir cap has two lugs that can be manipulated with fingers or screwdriver to allow unscrewing cap. Slow and a bit tedious, but you can avoid purchasing BMW tool 34 2 551.

Right Grip

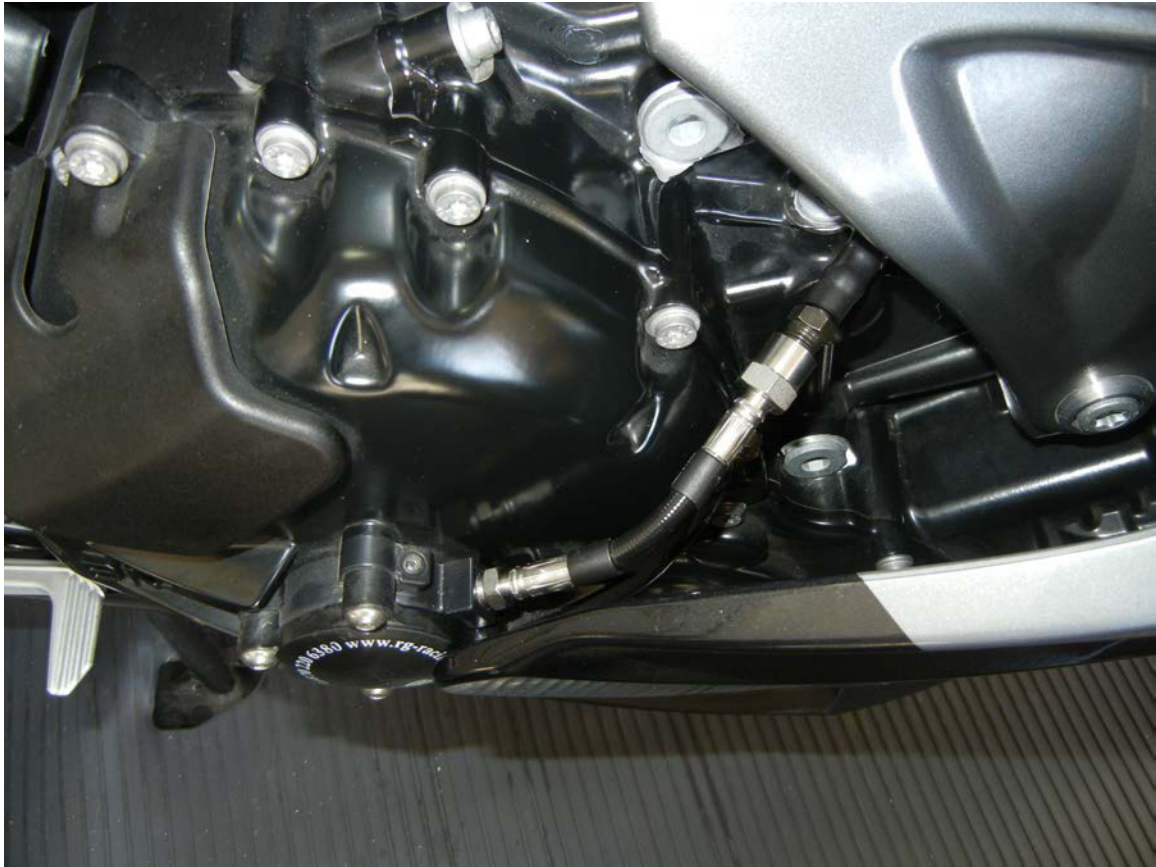
25. Remove the brake lever assembly by removing the saddle bracket. (just like Step 4)
26. Remove the multi-function switch. There's a small screw (T9 Torx) on the underside that can only be access with a thin handle Torx screwdriver. Remove the screw and then remove the lower half of the switch by pulling down and pushing up and forward to free it from clips on the front. Remove the small screw on the bottom (T9 Torx) that holds the switch to the throttle assembly bracket. Remove the switch assembly.
27. Remove the top half of the throttle bracket by removing the single screw on the top. (T20 Torx)
28. Remove the screw that passes through the bar and holds the throttle bracket in place. (T15 Torx)
This will be the second hole you will need to drill in the risers.
29. Remove the bar weight and the grip assembly should slide off easily. The grip and throttle bracket are one assembly. I did not find any friction tape under the grip as I did on the left.
30. Install the right hand riser in the same fashion as the left.

31. Temporarily reinstall the grip and bar weight and locate the desired position to match the left.
32. Relocate the throttle bracket and use a center punch to mark the location for drilling the hole (See Step 27).
33. Drill the hole using whatever technique works best for you (See Step 14).
34. Reinstall the grip assembly, bar weight and secure the throttle bracket using the screw removed in Step 26.
35. Replace the top half of the throttle bracket that you removed in Step 27.
36. Reinstall the multi-function switch that was removed in Step 26.
37. Make sure that the bolts securing the riser to the handlebar cross brace are thread locked.

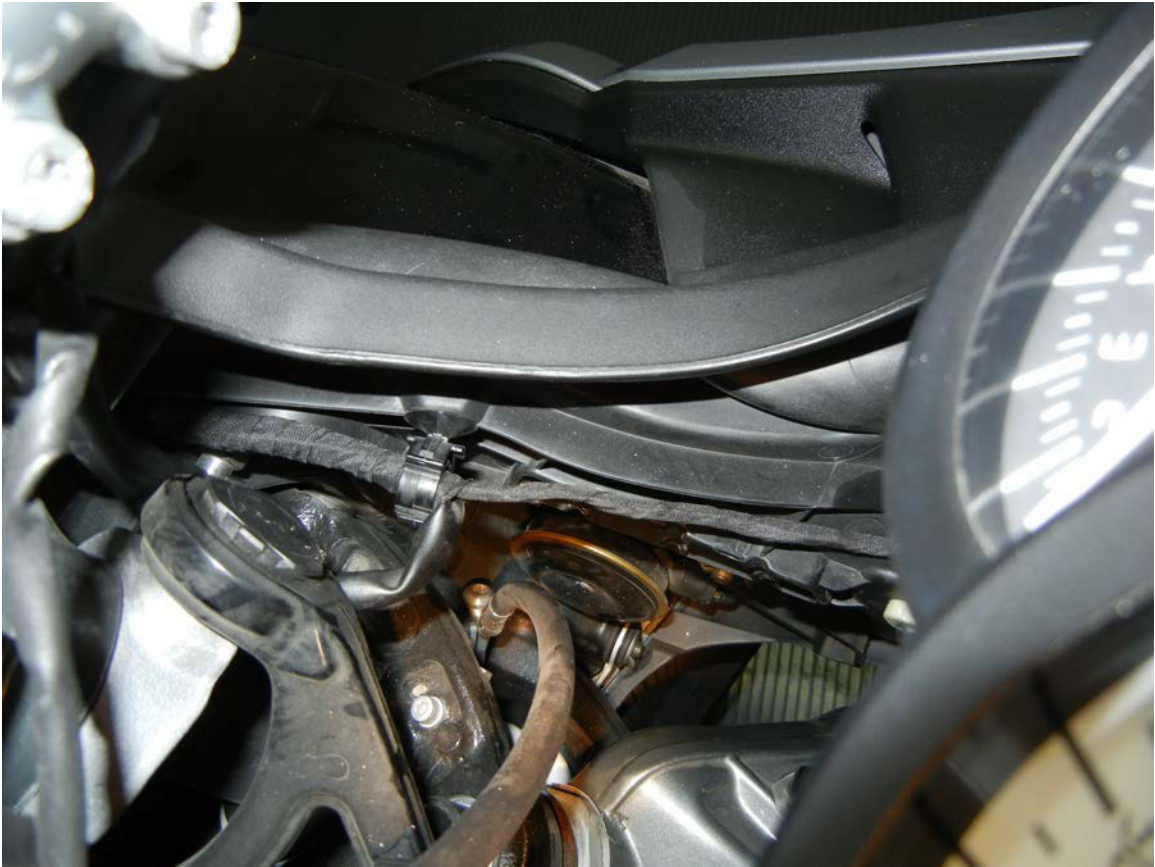
Brake Line Extension

38. Drain brake fluid from the system.
39. Disconnect the banjo fitting at the brake fluid reservoir. (T40 Torx)
40. Turn the handlebars full right.
41. With the windscreen removed, you can sight the lower banjo fitting next to the horn. Space is very tight but you should be able to get a T40 Torx bit and medium size ratchet on the screw. With only one hand to hold the ratchet, the challenge is to keep the bit perpendicular and not let it slip off the screw while turning the ratchet handle. The shorter your Torx bit, the better. Remove screw and remove the OEM cable.
42. Install longer cable that came with the kit. Make sure banjo fittings are tight and secure.
43. Position and re-attach brake lever to riser.
44. Bleed front brake.

Clutch cable stub installed...



Front brake line lower banjo fitting...sure hope you have slim arms and small hands.



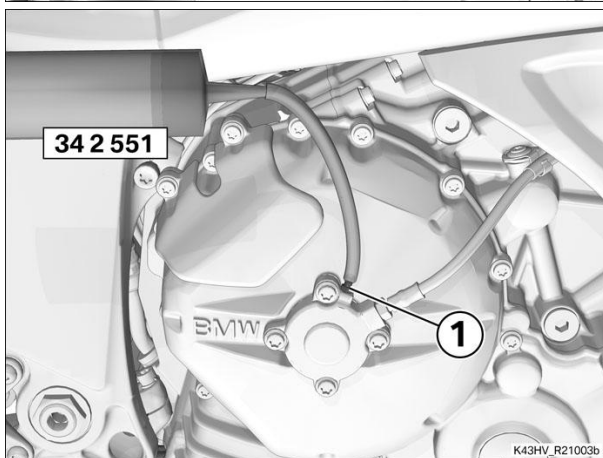
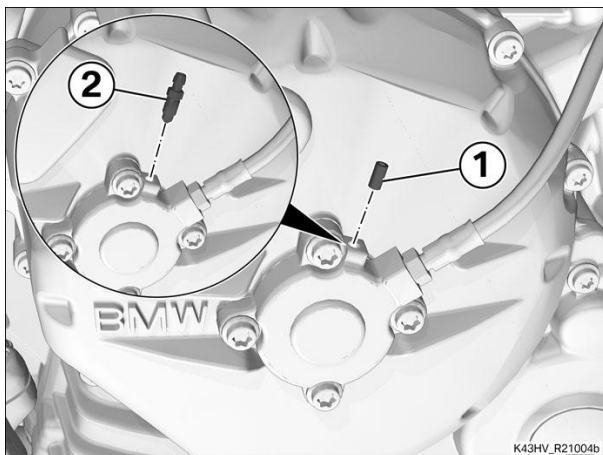
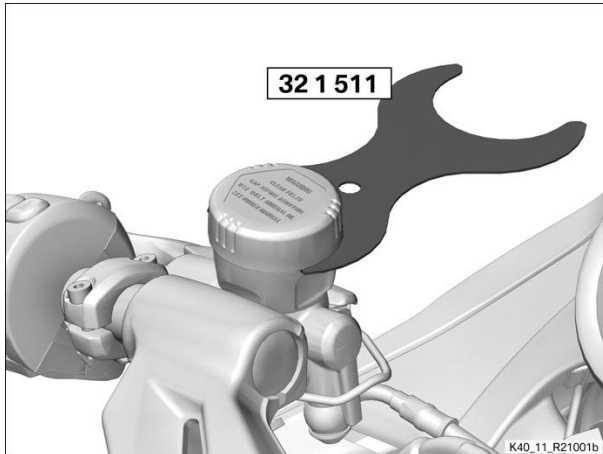
Ratchet and T40 Torx bit for front brake line banjo fittings...and T9 Torx long neck screwdriver to reach screw in multi-function switch on right grip assembly.



 **21 52 005 Bleeding hydraulic clutch system**

+ 21 52 506


Equipment trim-level variant:
Centre stand, generation II



Core activity

(-) Draining clutch system

- Using disengagement tool (No. 32 1 511), press back the lugs on the reservoir and open the reservoir cap.

 **Attention**

Any mixture of oil, brake fluid and clutch fluid, even if the quantities involved are minute, can attack and damage seals.

Always use separate sets of syringes and hoses for the individual fluids, in order to avoid the risk of one fluid contaminating another.

- Use syringe (No. 34 2 551) to draw the clutch fluid out of the clutch-fluid reservoir.
- Remove grub screw (1) and install bleed screw (2) and tighten until hand-tight.

 **Note**

Order the bleed screw and dust cap through the electronic parts catalogue (ETK).

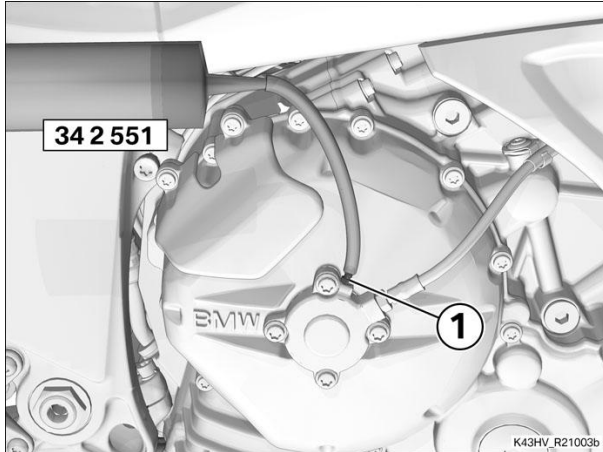
- Connect syringe (No. 34 2 551) to bleed screw (1) and secure it with cable ties.
- Back off bleed screw (1).
- Use syringe (No. 34 2 551) to extract hydraulic fluid through bleed screw (1) until the line is empty.
- Slightly tighten bleed screw (1).
- Disconnect syringe (No. 34 2 551) from bleed screw (1).

(-) Filling clutch system

 **Note**

Order the bleed screw and dust cap through the electronic

parts catalogue (ETK).





⚠ Attention


Any mixture of oil, brake fluid and clutch fluid, even if the quantities involved are minute, can attack and damage seals.

Always use separate sets of syringes and hoses for the individual fluids, in order to avoid the risk of one fluid contaminating another.

- Fill syringe (No. 34 2 551) to capacity with hydraulic fluid.
- Connect syringe (No. 34 2 551) to bleed screw (1) and secure it with cable ties.
- Back off bleed screw (1).
- Use syringe (No. 34 2 551) to inject hydraulic fluid into the system through bleed screw (1) until the fluid level in the reservoir is correct.


 Technical data			
Clutch-fluid level (repairs) 	Motorcycle upright on level ground and reservoir horizontal.	Bottom edge of groove for reservoir cap catch	
	Fluids and lubricants		
	Vitam LS		

- Tighten breather screw (1).

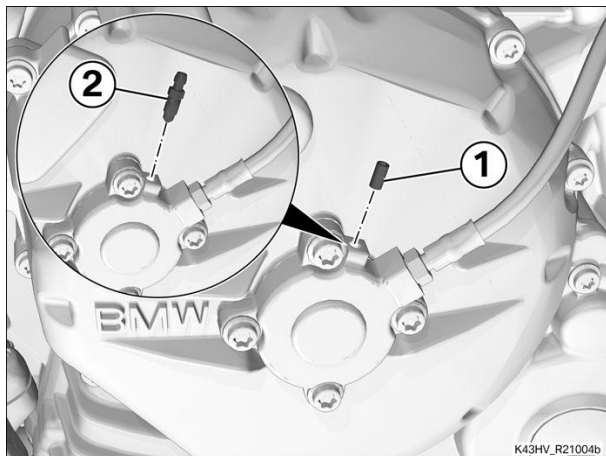
 Tightening torques		
Bleed screw/grubscrew to clutch slave cylinder		
M5	3 Nm	


- Disconnect syringe (No. 34 2 551) from bleed screw (1).
- Motorcycle upright, handlebars turned all the way to the right.
- Repeatedly pull the clutch lever until the pressure point is perceptible.
- Repeat the procedure with the handlebars turned all the way to the left.
- Correct the level in the clutch fluid reservoir by drawing off excess fluid or topping up with fresh hydraulic fluid, as necessary.

 Technical data			

Clutch-fluid level (repairs) 	Motorcycle upright on level ground and reservoir horizontal.	Bottom edge of groove for reservoir cap catch
	Fluids and lubricants	
	Vitam LS	

- Install the cap to seal the clutch-fluid reservoir.
- Remove bleed screw (2) and install grubscrew (1).



 Tightening torques		
Bleed screw/grubscrew to clutch slave cylinder		
M5	3 Nm	

Finishing work

Final check of work performed

34 00 033 Bleeding front brake system

+ 34 00 507

Equipment trim-level variant:
Centre stand, generation II

Core activity

(-) Filling and bleeding front brake system



Warning

Air can be drawn into the system through the fluid replenishing hole if the fluid level in the reservoir is too low; the system has to be bled again if this happens.

During the fluid-change and bleeding procedure, make sure that the fluid replenishing hole is always below the level of the brake fluid.



Note

This description applies for brake filling and bleeding units with vacuum extraction. If other devices are used, comply with the manufacturer's instructions.

- Set the brake lever to maximum span.



Attention

Brake fluid attacks paintwork, plastic and rubber parts.

Do not allow brake fluid to come into contact with paintwork, plastic or rubber parts.

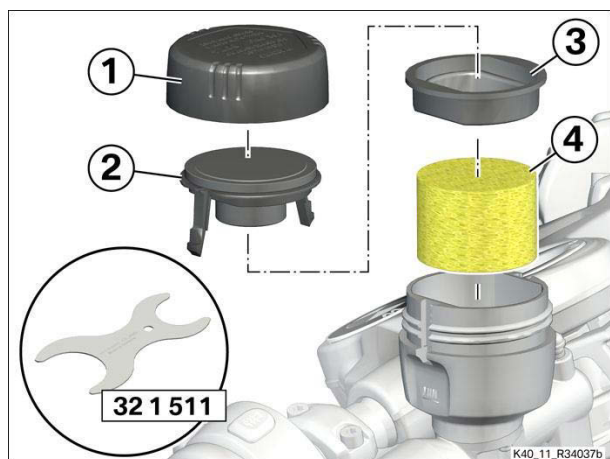
- Using disengagement tool (No. 32 1 511), press back the lugs on retainer (2).



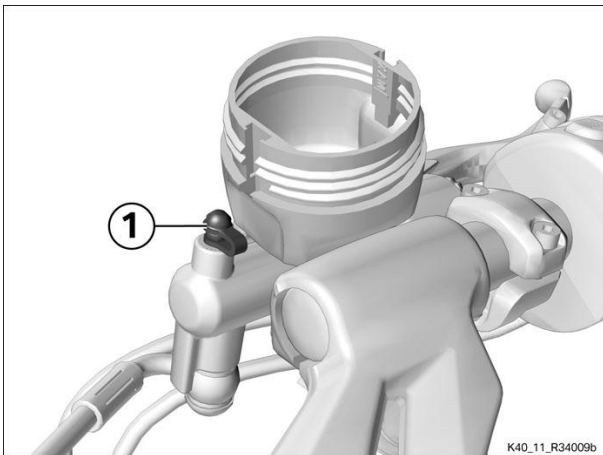
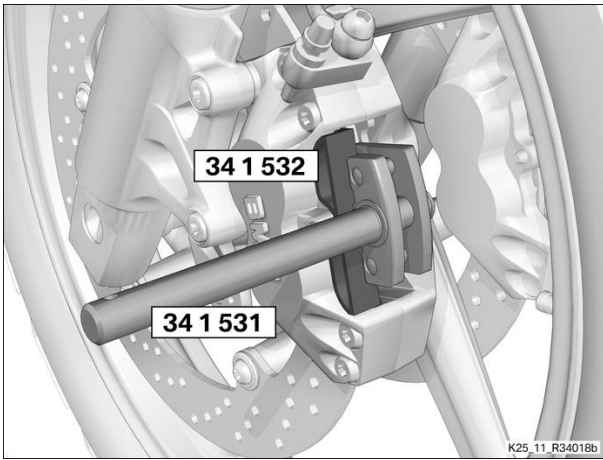
Warning

The ingress of air can have a detrimental effect on braking efficiency.

The screen insert must be replaced each time the brake fluid is changed and invariably each time the front brake pads are replaced.



- Remove the following components:
 - Reservoir cap (1)
 - Suppressor weight with lock washer (2)
 - Diaphragm (3)
 - Screen insert (4)
- Draw off the old brake fluid and carefully clean the reservoir and components (1), (2) and (3).
- Dispose of screen insert (4) in accordance with the applicable regulations.
- Install piston resetting device (No. 34 1 531) and locator (No. 34 1 532) in the **left and right** brake calipers.
- Use the piston resetting device and locators to force the pistons in the left and right brake calipers all the way back and hold them in this position.
- Draw off the excess brake fluid from the reservoir.



- Turn the handlebars to a position in which the brake fluid reservoir is horizontal.




Warning


Brake fluid is hygroscopic, which means that its boiling point drops once the container has been opened.

Use only new brake fluid from freshly opened containers.

- Top up with fresh brake fluid to the MAX mark (MAX)

 Fluids and lubricants		
DOT4 brake fluid	Hydraulic systems	83 13 0 139 895, 83 13 0 139 896, 83 13 0 139 897

- Connect the brake bleeding device to bleed screw (1) in the handbrake cylinder.
- Slightly open bleed screw (1).
- Continue bleeding the brake system until the fresh brake fluid emerges clear and free from bubbles.
- Close bleed screw (1).

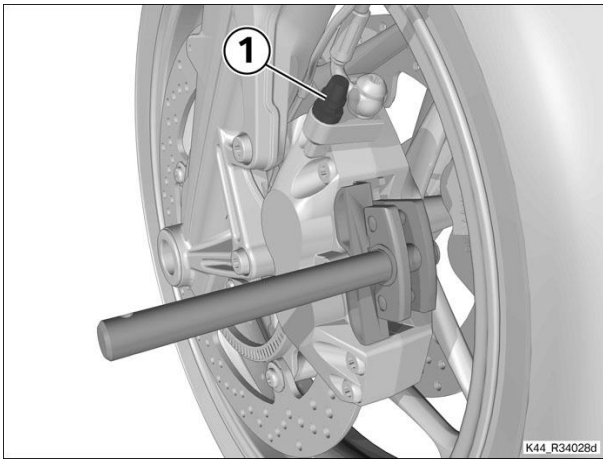
 Tightening torques		
Bleed screw, handbrake fitting		
M5	2 Nm	

- Connect the brake bleeding device to bleed screw (1) in the left brake caliper.
- Slightly open bleed screw (1).
- Continue bleeding the brake system until fresh brake fluid emerges.



Warning


The brake-bleeding process might have been interrupted even though air remained in the system. On account of the vacuum extraction process, it is



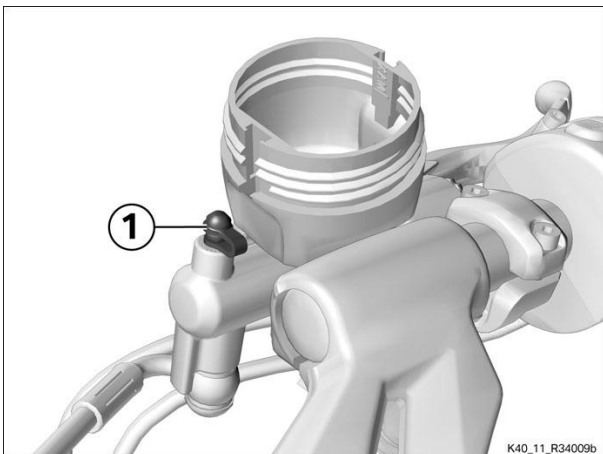
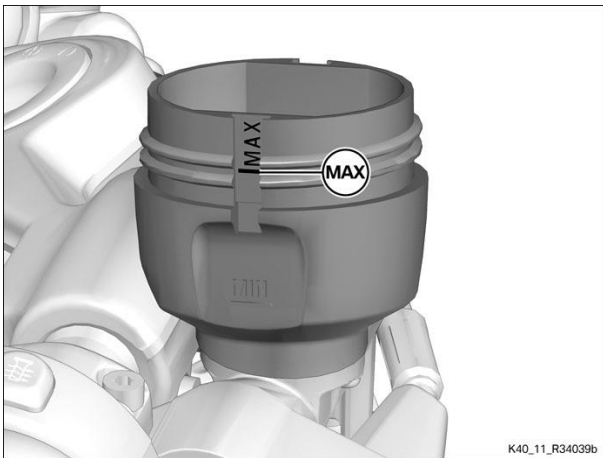
not possible to tell whether the brake fluid extracted from the system is free of bubbles.

On conclusion of the process, bleed the system manually (without vacuum extraction) until you are sure that the brake fluid expelled from the system is free of bubbles.


- Close bleed screw (1) of the left brake caliper.

 Tightening torques		
Bleed screw, brake caliper, front		
	9 Nm	

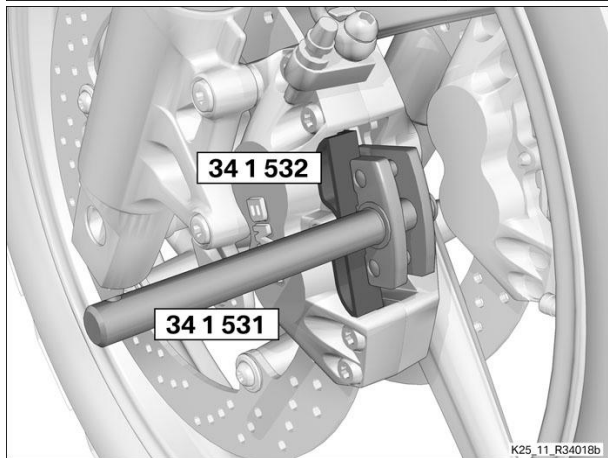
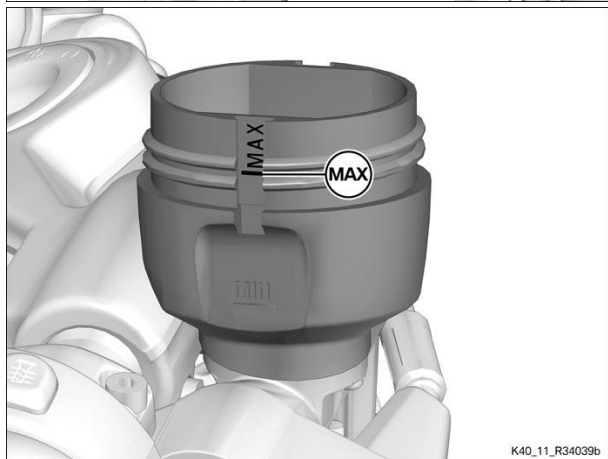
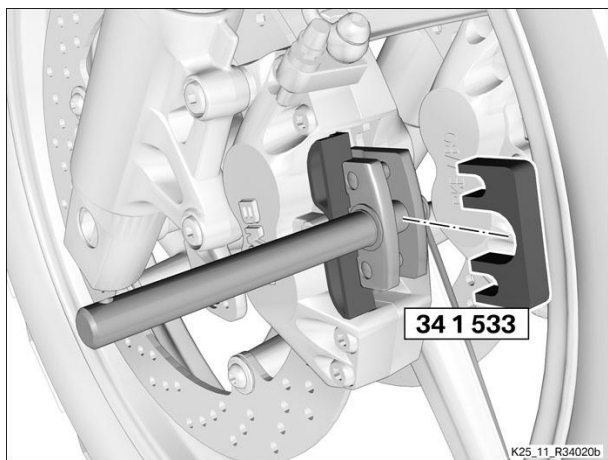
- Repeat the fluid-change procedure/procedure for bleeding the brakes at the right brake caliper.
- Turn the handlebars to a position in which air can rise to the equalising bore.
- Repeatedly pull front brake lever lightly to expel air from handbrake cylinder; release the lever at the end of each short pull so that it can snap back to its initial position.
- Top up the brake fluid to the MAX mark (MAX).



- **Again** connect the brake bleeding device to bleed screw (1) in the handbrake cylinder.
- Slightly open bleed screw (1).
- Continue bleeding the brake system until the fresh brake fluid emerges clear and free from bubbles.
- Close bleed screw (1).

 Tightening torques		
Bleed screw, handbrake fitting		
M5	2 Nm	

- Install adapters 22 (No. 34 1 533) in the piston resetting device on left and right and **fully compress** the piston resetting device.
 - Pull the handbrake lever until the brake pistons are in contact with the piston resetting device.
- » This simulates the thickness of new brake pads and brake discs.



- Turn the handlebars to a position in which the brake fluid reservoir is horizontal.
- Top up the brake fluid to the MAX mark (MAX).

- Expand piston resetting device (No. 34 1 531) on left and right.
- » This forces back the brake pistons so that the brake pads can be installed.
- Remove piston resetting device (No. 34 1 531) and locators (No. 34 1 532) left and right from brake calipers.

► Installing front brake pads

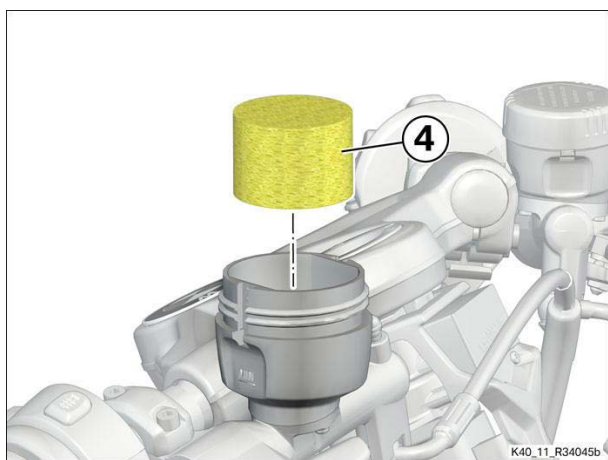
- Install brake pads (4).
- Install spring plate (3), making sure that the **arrow points in the direction of rotation**.
- Install screw (2).
- Install retainer (1).
- Operate the brake several times until the brake pads are bedded.



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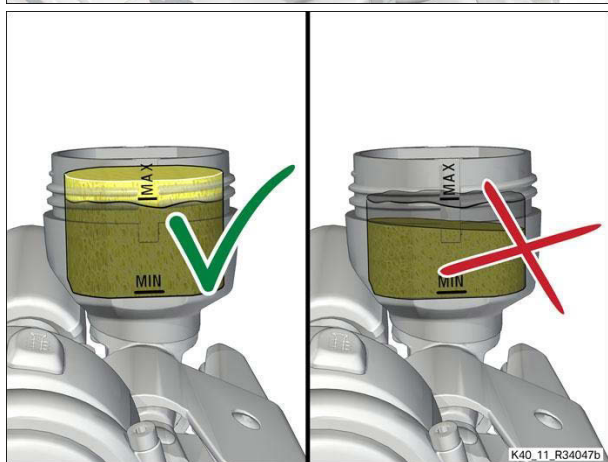
▶ **Replacing screen insert and installing cap of reservoir for brake fluid**

- Carefully install new screen insert (4).



K40_11_R34045b

- Check the brake-fluid level.
- » The surface of the brake fluid passes through the screen insert.



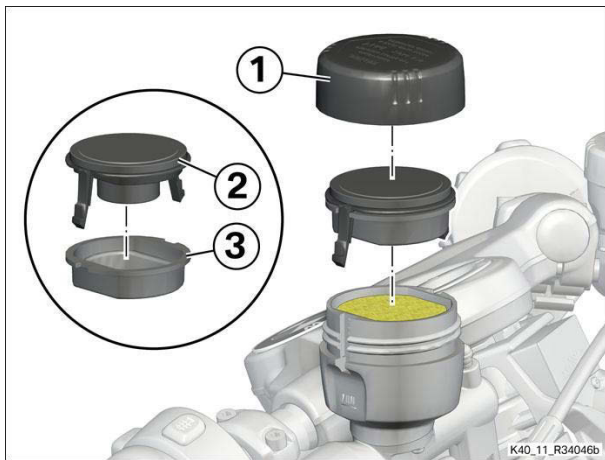
K40_11_R34047b

! Attention

Component damage due to escaping brake fluid.

Carefully clean the sealing faces of both components before installing the diaphragm in the reservoir for brake fluid.

- Place diaphragm (3) on lock washer with suppressor weight (2) and install together.
- Install reservoir cap (1) and tighten **firmly**.



Test

- Check brake pressure by operating the brakes.

Result: Low brake pressure

Measure:

- Repeat the brake bleeding procedure **without removing the brake pads**.

Finishing work

Final check of work performed