

Repair Manual



K 1200 LT

**BMW AG Motorcycle Division
After Sales**

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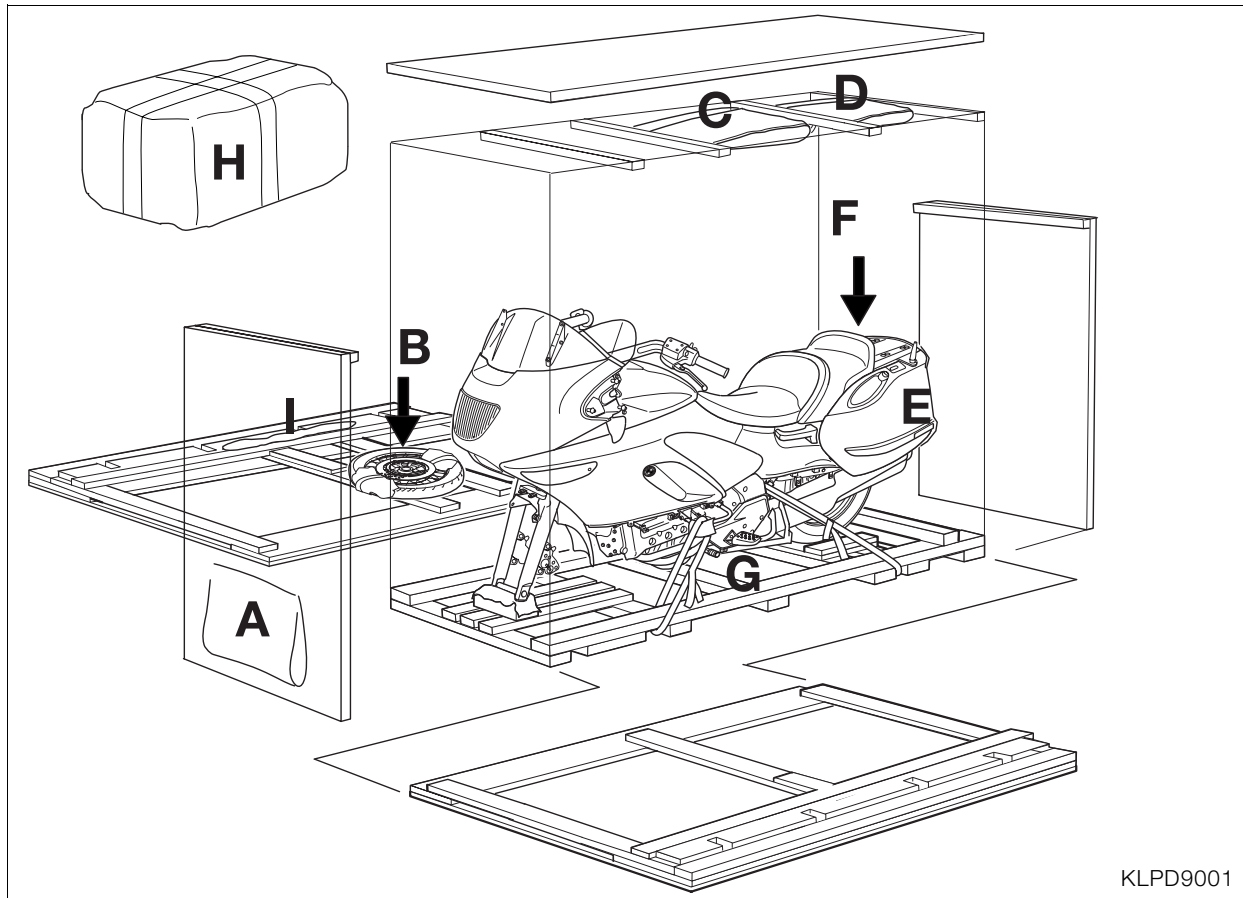
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KLPD9001

Unpacking the motorcycle

- Lever off the cover.
- Cut the plastic sheet open and pull it off.
- Take out the separate packs of items:
 - windscreen, skirt, centre engine spoiler - C
 - left-hand side engine spoiler - D
- Use a crowbar to pry off the cross-struts.

Caution:

Do not knock the cross-struts out or the motorcycle may be damaged.

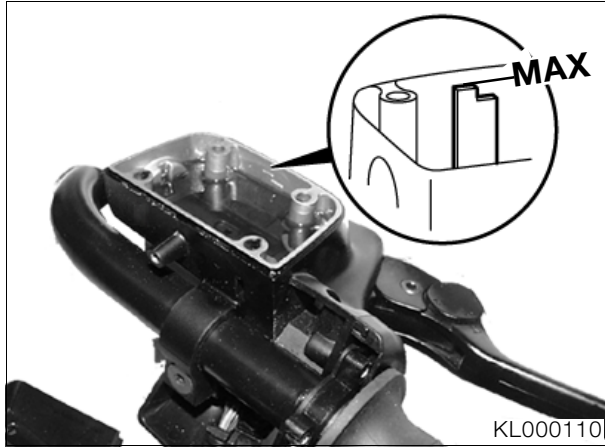
- Remove the end-walls.
- Remove the side-walls.
- Take out the separate packs of items:
 - right-hand side engine spoiler - A
 - front wheel - B
 - mirror, front mudguard, trim panel skirt - E
 - motorcycle tool kit, helmet carrier, engine oil filler funnels remain on the motorcycle - E
 - rear footrest plates, documentation, front right-hand footrest - F
 - front wheel fastener, windscreen cover, reverser, small parts/fastener materials - F
 - top case lock cylinder, key - G
 - top case - H
 - antenna - I.
- Remove protective materials from the motorcycle such as the protective film (green) covering the lamp cluster and radio operating unit.

Caution:

Remove nails projecting from the base of the crate or lying on the base or on the floor.

- Dispose of the packing materials in an environmentally responsible manner as described in Service Information 23/91 - Sales.

- Remove the reservoir cap together with the diaphragm.



- Check brake fluid level.
- Top up the fluid level and, if necessary, check the brake system for leaks if the brake fluid level is below the “MAX” mark with new brake pads.

Required level:..... MAX

- Installation is the reverse of the removal procedure: pay particular attention to the following.



Note:

Wipe the rim of the reservoir, the rubber gaiter and the cover to remove brake fluid, and carefully re-assemble the components.

- Hand-tighten the screws securing the reservoir cap.
- Return the brake fluid reservoir to the marked position.



Note:

Take care with the routing of the wires and cables when fitting the handlebar trim.

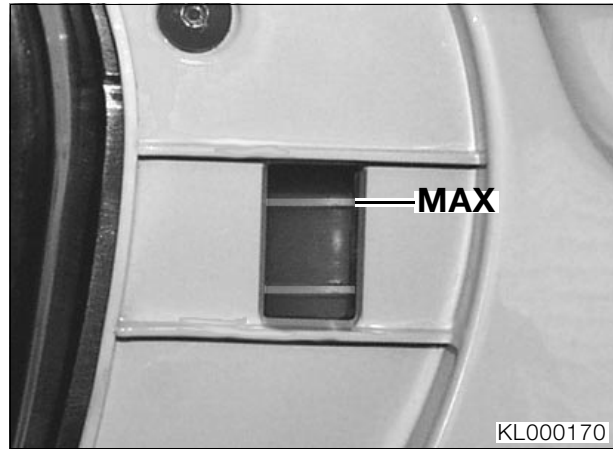


Tightening torque:

Clamping screw 5 Nm
Trim panels 2 Nm

Rear brake

- Place motorcycle on its centre stand.
- Open the right-hand side case.



Caution:

The fluid level in the brake fluid reservoir must be at the “MAX” mark with new brake pads.

Read off the level of brake fluid in the reservoir on the inspection glass at the front of the case. You may need to use a torch to light up the reservoir from behind.

Required level:..... MAX

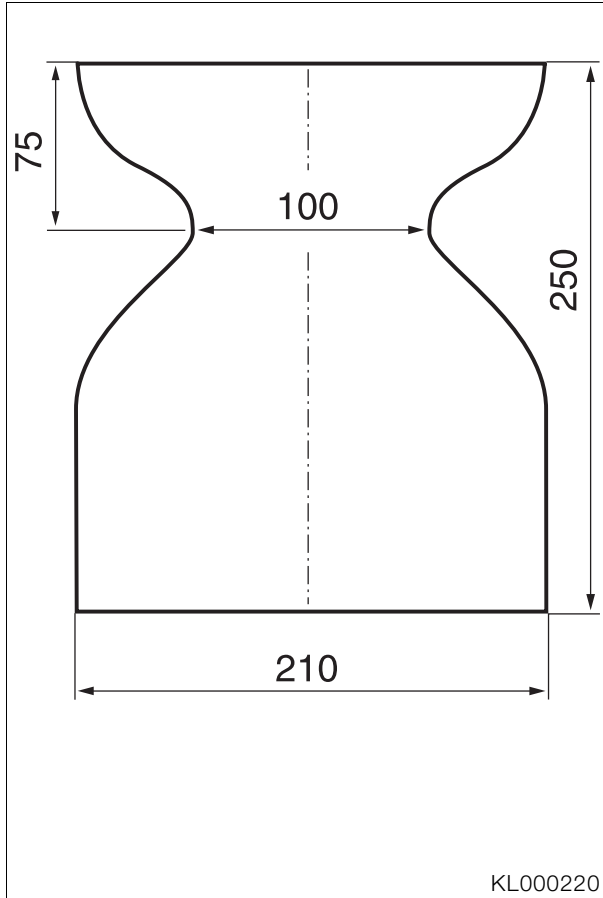
Changing gearbox oil

Change the gearbox oil every two years at the latest (Inspection III)



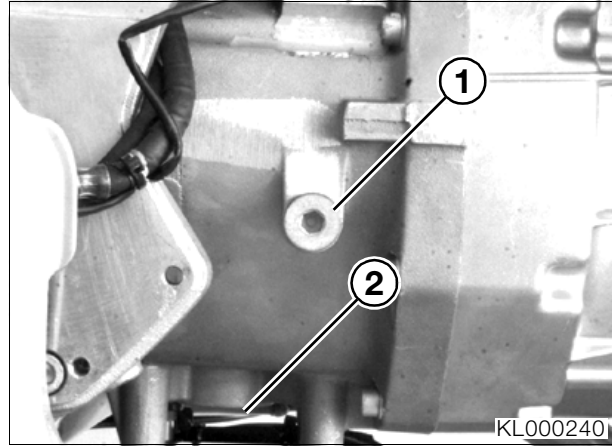
Note:

Only drain gearbox oil when the gearbox is at operating temperature to ensure that dirt and metal particles are flushed out during the oil change.

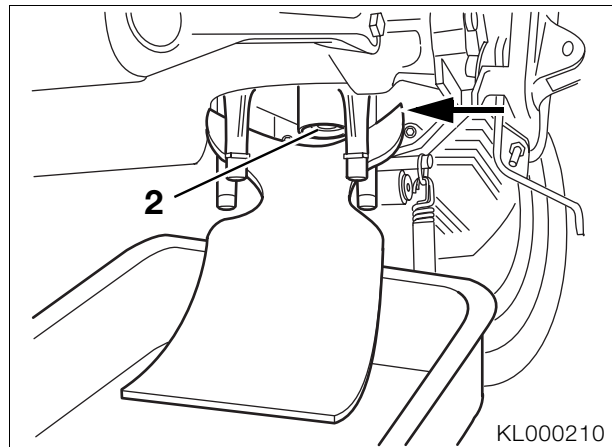


- Cut an oil drain mat from a rubber sheet as shown in the drawing above.

- Place the motorcycle on its centre stand so that it is level.
- Remove engine spoiler.
 - ➔ See Group 46
- Remove the front right footrest.
- Remove the exhaust bracket on the centre stand mounting bracket.
 - ➔ See Group 18, Removing exhaust system



- Unscrew the oil filler plug (1).



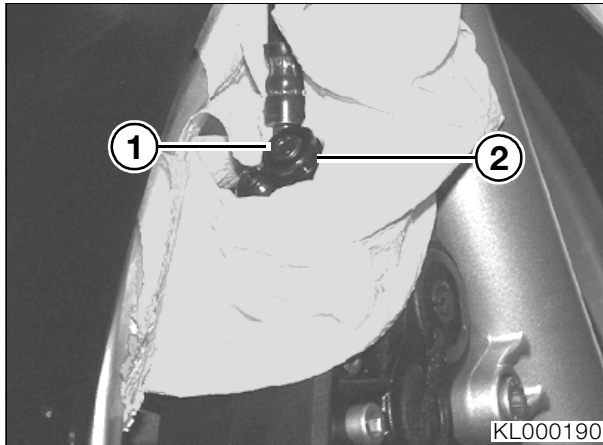
- Position the oil drip tray beneath the gearbox. Secure the oil drain mat (arrow) to the centre stand bracket beneath the oil drain plug (2).
- Remove the oil drain plug (2) and channel the oil into the oil drip tray using the drain mat.
- Drain the oil completely.

Bleeding the front right brake calliper



Note:

Remove the grub screw from the filler adapter and install a bleed screw instead so that the brakes can be bled.



- Wrap a cloth around filler adapter (2) of the right brake calliper.
- Remove socket-head grub screw (1) from the filler adapter (2).



Caution:

Installing the bleed screw opens the valve in filler adapter (2), and the flow of brake fluid starts immediately. It is therefore important to connect the brake bleeding device to the bleed screw **before** installing the bleed screw in the filler adapter.

- Connect the brake bleeding device to the bleed screw.
- With brake bleeding device connected, install the bleed screw in the port in filler adapter (2) and fully tighten it (valve in filter adapter closes).
- Open the bleed screw by half a turn (to open the valve).



Caution:

When adding brake fluid, do not allow it to enter the holes for the reservoir cap screws. During the bleeding process, do not permit the brake fluid level to drop below the "MIN" mark, or else air will be drawn into the brake system. Bleed the system again if this happens.

- Draw off brake fluid until it emerges clear and free from air bubbles.



Warning:

The motorcycle must not be ridden without the grub screw screwed into the filling port.

Take care when removing the bleed screw and installing the grub screw: do not permit brake fluid to come into contact with the brake pads or other parts of the motorcycle.

- Remove the bleed screw.
- Disconnect the brake bleeding device from the bleed screw.
- Install socket-head grub screw (1) in filler adapter and tighten.
- Installation is the reverse of the removal procedure: pay particular attention to the following.



Note:

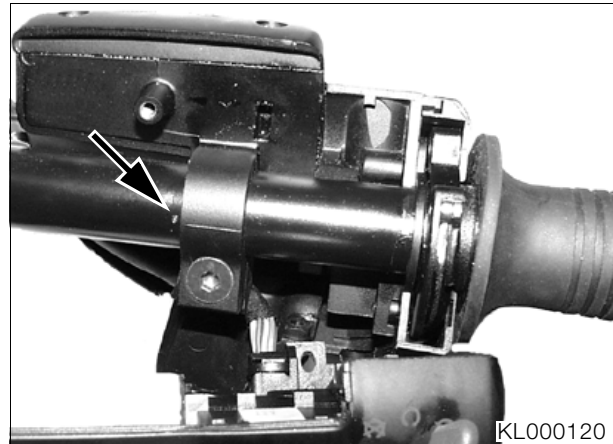
Wipe the rim of the reservoir, the rubber gaiter and the cover to remove brake fluid, and carefully re-assemble the components.

Brake fluid gradeDOT 4



Tightening torque:

Grub screw 10 Nm



- Return the brake fitting to the marked position (arrow).



Note:

Take care with the routing of the wires and cables when fitting the handlebar trim.

- Check the function of the brake system.



Tightening torques:

Clamping screw 5 Nm



Battery

(Inspections III and IV)

Check battery acid level and add distilled water if necessary; inspect battery terminals and clean and grease them if necessary



Warning:

Battery acid is highly caustic. Protect the eyes, face and hands and also paintwork and clothing.

Checking battery acid level



Note:

The battery must be removed for checking the acid level.

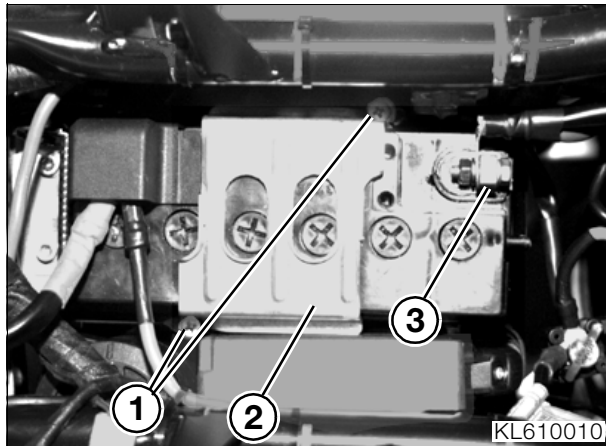
- Place motorcycle on its centre stand.
- Open the seat at the front.



Caution:

Avoid damage to fuel tank, wiring and hoses. Disconnect the battery only when the ignition is switched off.

To avoid short-circuits: Disconnect **negative** battery lead (-) first, then **positive** (+) lead.



- Disconnect negative battery lead (3) from the battery and isolate.

- Open cover cap for the positive battery terminal, disconnect positive battery lead and isolate.
- Release the fasteners (1) on the battery tray (2). Remove the battery tray.
- Lift the battery off the holder together with the battery breather hose and place the battery down on a level surface.
- Clean battery terminals and lubricate with acid-proof grease.
- Check battery acid level.

Adding distilled water

- Remove the battery.
- Set the battery down on a level surface.
- Open the 6 battery caps with a screwdriver.



Caution:

Use only distilled water to top up the acid level in the battery. Never top up with diluted sulphuric acid.

- Add distilled water up to the MAX mark.
- Replace the battery caps securely.

Installing the battery



Caution:

Only reconnect the battery with the ignition switched off to avoid short-circuiting. First connect **positive** battery lead (+), fit the positive battery terminal protective cap, then connect **negative** battery lead (-).

Make sure that the battery breather hose is not kinked or blocked.

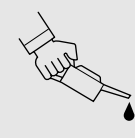
Battery acid is highly caustic. Do not permit escaping acid vapour to contact motorcycle components.

- Installation is the reverse of the removal procedure: pay particular attention to the following.



Caution:

The motorcycle may only be ridden with the protective cap fitted on the positive battery terminal.

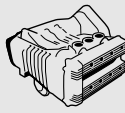


11 Motor

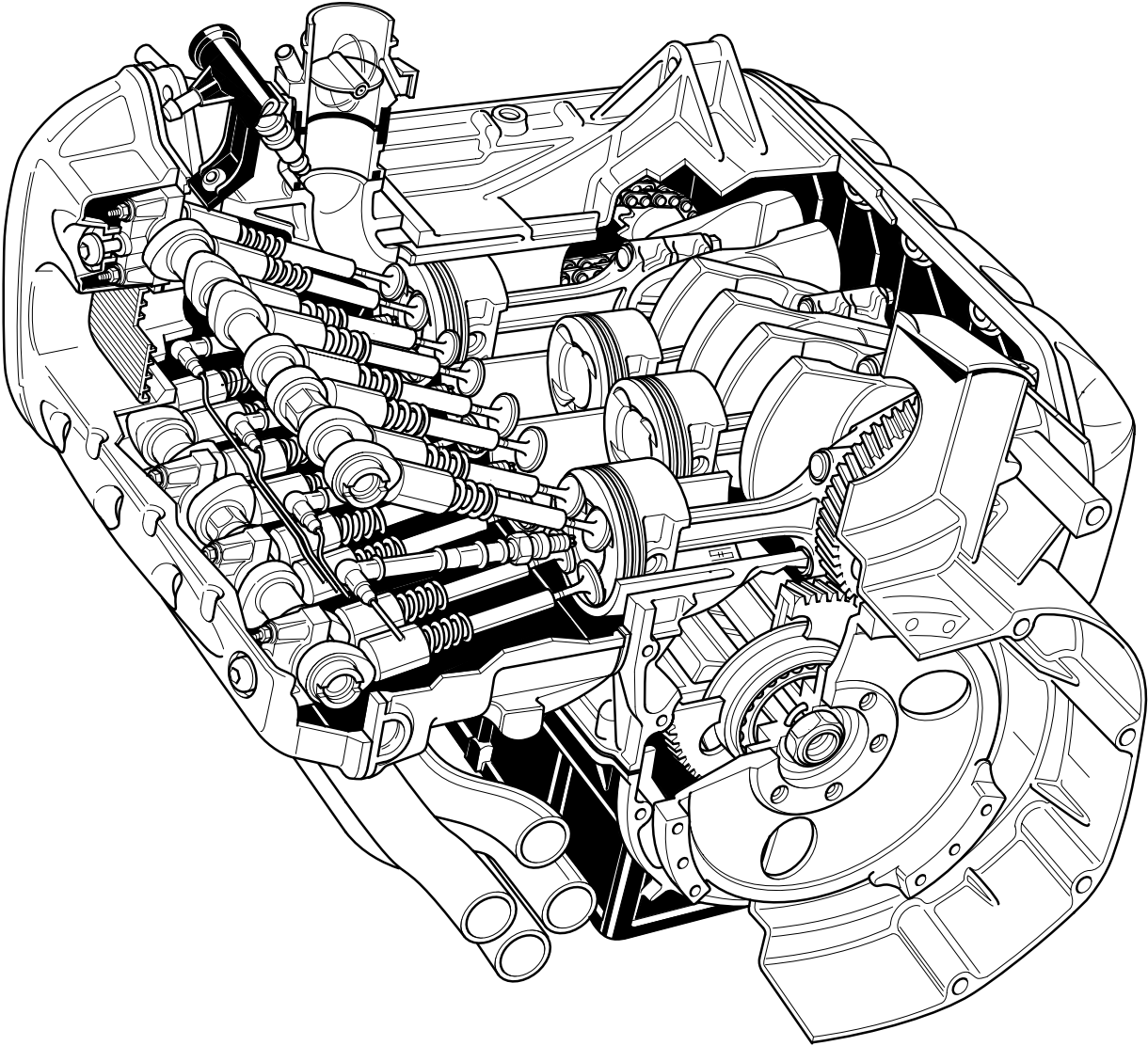
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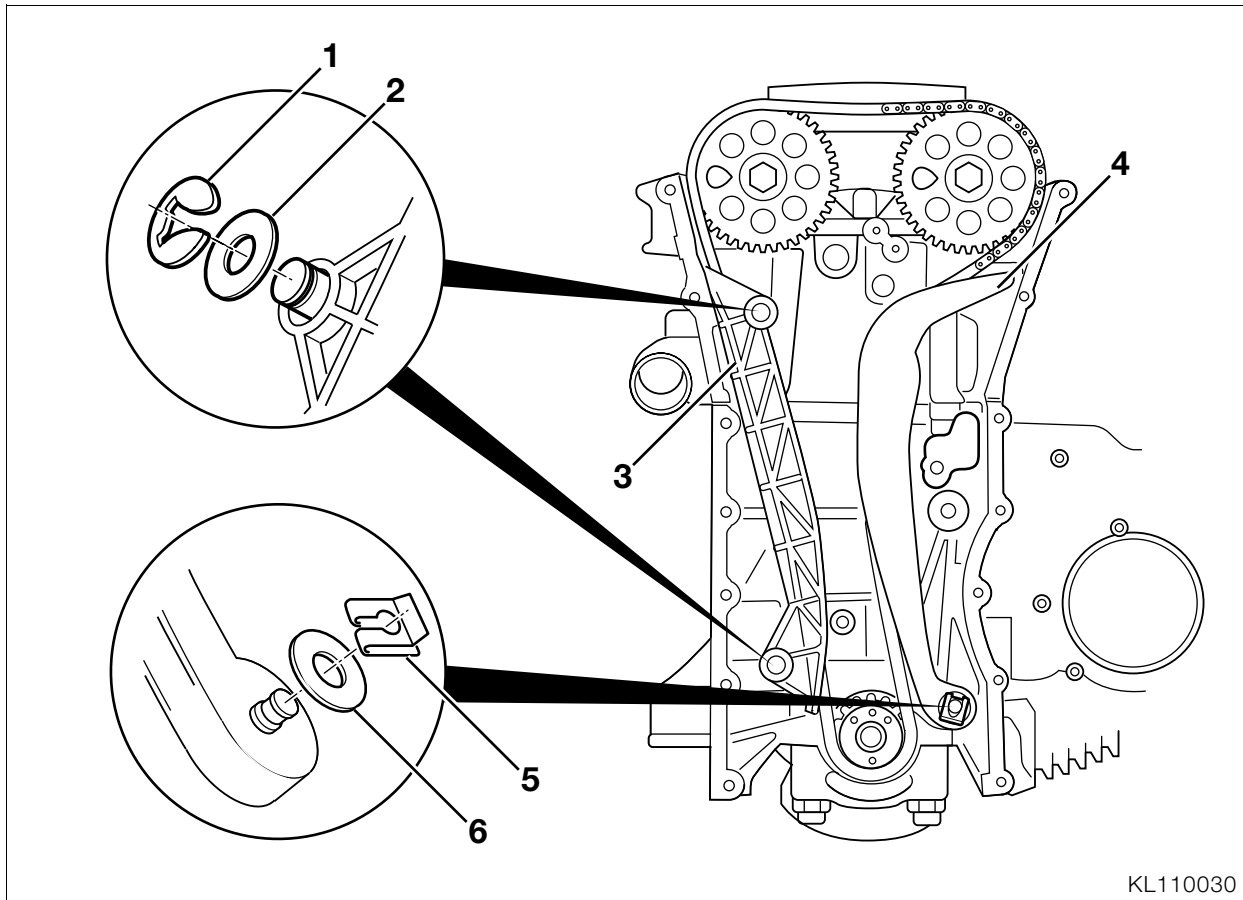
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Cutaway drawing of engine, K 1200 LT



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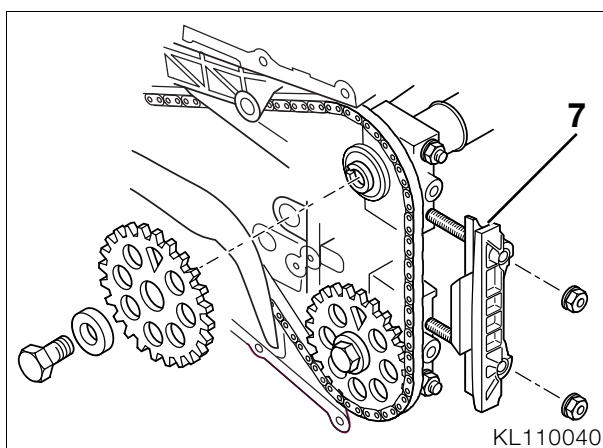
Removing the timing chain



Caution:

Centre the piston in the cylinder (cylinder 1 approx. 90° before top dead centre), to avoid damage to the valves and piston. Turn the crankshaft in the counter-clockwise direction only.

Removing camshaft chain sprockets



KL110040

- Slacken the nuts securing the slide rail (7).

- Remove the screws securing the chain sprockets, holding the camshaft at the hexagon.
- Remove the chain sprockets and slide rail.

Removing chain tensioner rail

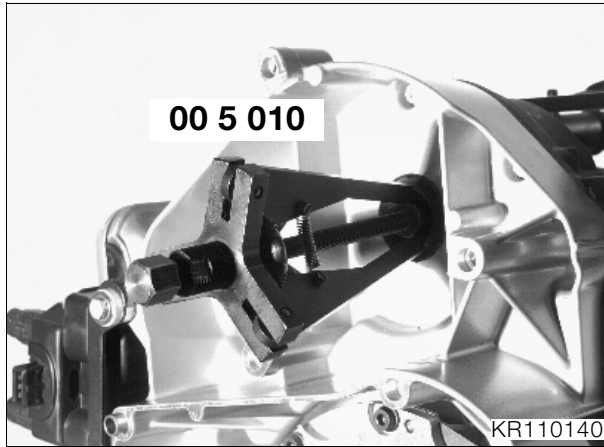
- Remove the keeper (5) and washer (6).
- Remove tensioner rail (4).

Removing chain guide rail

- Remove snap rings (1) and washers (2) from locating pins.
- Remove guide rail (3) with bushing and timing chain.

Removing/installing shaft sealing ring for driver

- If the intermediate flange has been removed, lever out the sealing ring.



- If the intermediate flange is installed, use puller, **BMW No. 00 5 010**, to remove the sealing ring.

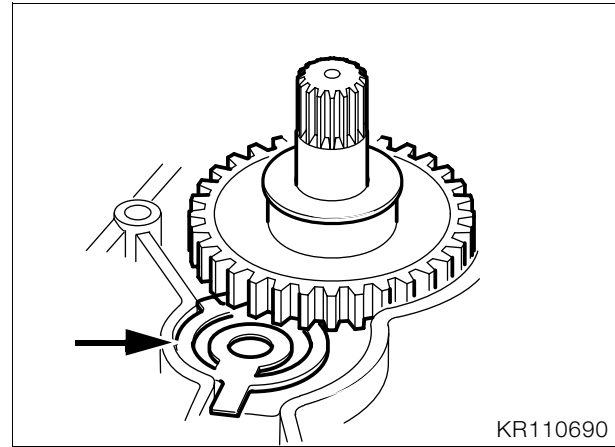


Note:

Clean the sealing ring seat.

- Pre-shape the sealing ring with the thumbs and drive it in (in a dry condition) with a drift, **BMW No. 11 1 620**, and handle, **BMW No. 00 5 500**.

Removing countershaft and layshaft with freewheel

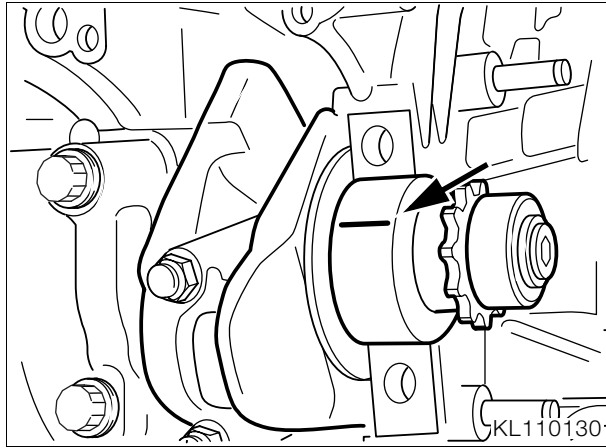


- Pull the countershaft and layshaft out of the crankcase together.
- Note special spring (arrow).

Measuring crankshaft bearing play

Measuring radial play

- Turn the crankshaft to top dead centre at the bearing to be measured.
- Take off the bearing cap.
- Wipe off oil at the bearing journal and bearing shell.
- Measure bearing play with Plastigage, **BMW No. 00 2 590**.



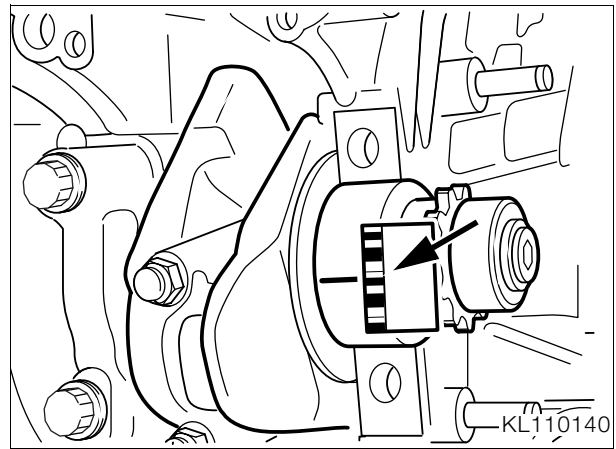
- Place the Plastigage strip (arrow) over the entire bearing width and 6 to 8 mm (0.2 to 0.3 in) off centre.
- Place the bearing cap in position and tighten the securing screws.

Tightening torque:
Main bearings 50 Nm



Note:
Do not turn the crankshaft any more.

- Remove bearing cap.

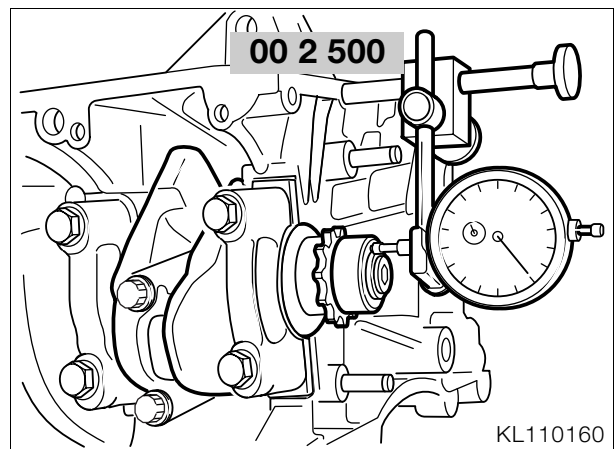


- Compare the width of the strip with the scale (arrow) in order to determine bearing play.
- Remove all traces of Plastigage from the shaft journal and bearing shell.

Radial play .. 0.020...0.056 mm (0.0007...0.0022 in)
Wear limit 0.130 mm (0.0051 in)

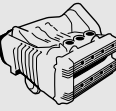
Measuring endplay

- Install the crankshaft.



- Secure dial gauge holder, **BMW No. 00 2 500**, with dial gauge in tapped bore for timing case cover.
- Move the crankshaft backwards and forwards as far as it will go and take the dial gauge readings.

Axial play..... 0.080...0.173 mm (0.0031...0.0068 in)
Wear limit 0.250 mm (0.0098 in)



12 Engine electrics

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Replacing three-phase generator

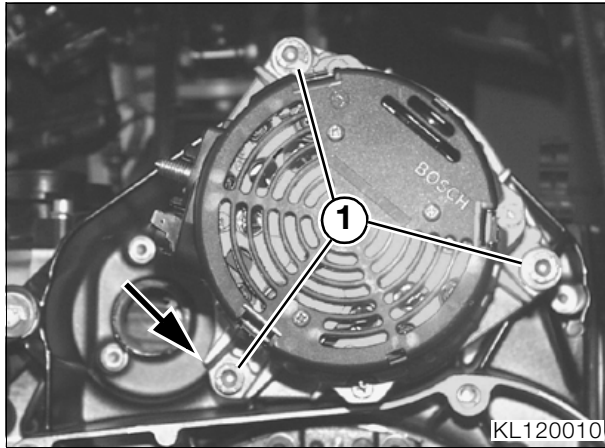
Removing and installing three-phase generator



Note:

It is not necessary to remove the gearshift linkage, gearbox and clutch slave cylinder.

- Raise the frame.
- ➔ See Group 23, Removing gearbox



- Remove the three securing screws (1).
- Pull the three-phase generator off the intermediate flange.
- Installation is the reverse of the removal procedure: pay particular attention to the following.



Note:

Apply tyre mounting paste or similar to the rubber dampers; do not use oil or grease. Use a hex socket with universal joint to tighten the bottom securing screw (arrow), increase tightening torque by approx. 10 %.

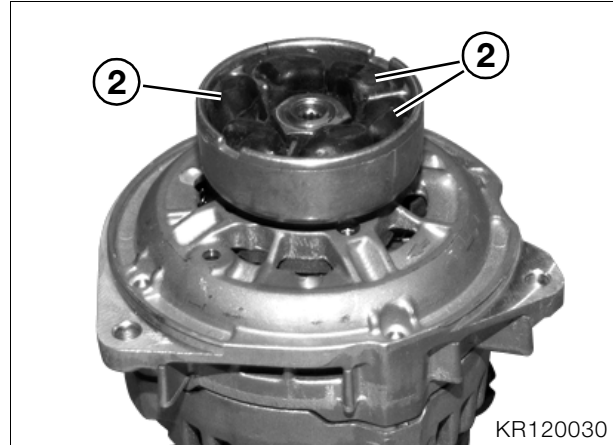


Tightening torque:

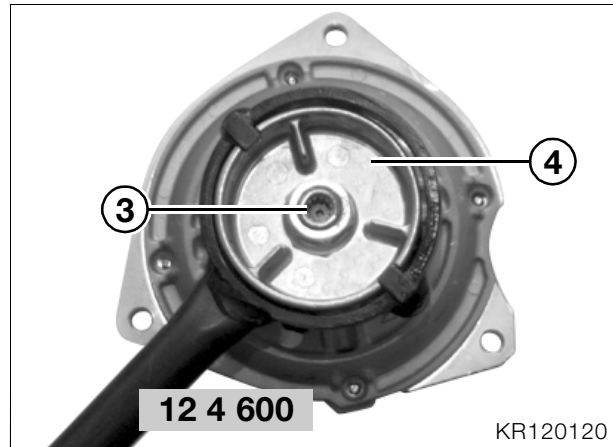
Generator to intermediate flange 20 Nm
 Screw for cable B+ 10 Nm
 Screw for cable D+ 2 Nm

Disassembling the three-phase generator

Removing and installing drive housing



- Take out rubber dampers (2).



- Hold drive housing (4) with retaining device, **BMW No. 12 4 600**, to prevent it from turning, slacken screw (3) and remove it together with the spring washer.
- Remove the drive housing (4).
- Installation is the reverse of the removal procedure.



Tightening torques:

Drive housing 50 Nm
 Screw for cable B+ 10 Nm
 Screw for cable D+ 2 Nm



Removing and installing fuel injection rail

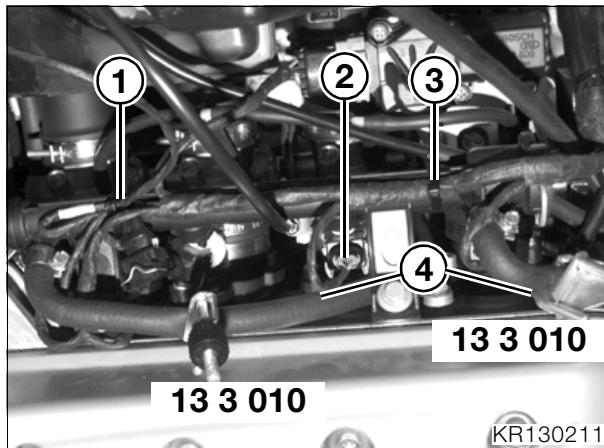
- Remove left and right fairing side sections.
 ➔See Group 46



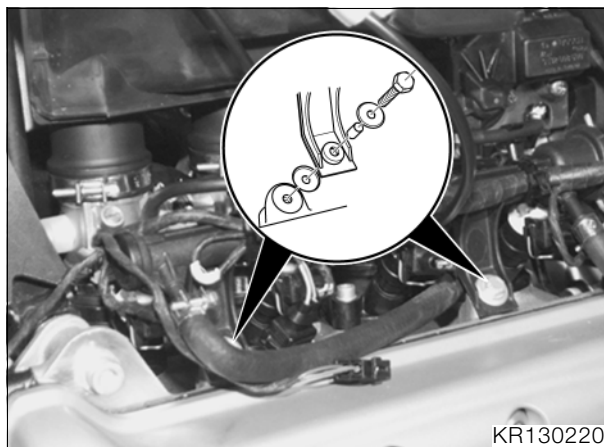
Warning:

Comply with safety precautions when handling or working with fuel; note that the fuel lines are pressurised.

- Remove fuel tank.
 ➔See Group 16
- Remove air outlet duct for left radiator.



- Use hose clamps, **BMW No. 13 3 010**, to close off fuel hoses (4).
- Slacken hose clamps securing fuel hoses and disconnect fuel hoses.
- Remove vacuum hose from cable ties (1, 3) and slacken cable ties.
- Disconnect all four plugs of injection valves (2).



- Slacken screws and remove fasteners.
- Pull the injection rail with the injectors out of the intake stubs.

- Installation is the reverse of the removal procedure: pay particular attention to the following.



Note:

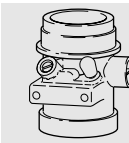
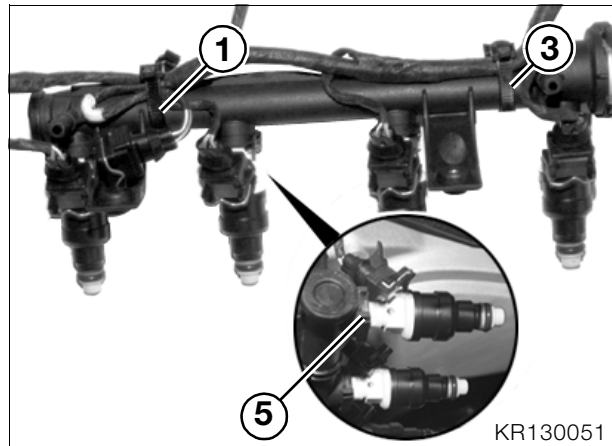
Make sure that the O-ring at the injector is in good condition. Lightly oil the O-rings.



Tightening torques:

Fuel injection rail to cylinder head 9 Nm

Removing and installing injectors



Note:

It is not necessary to slacken the cable ties (1, 3).

- Remove fuel injection rail.
- Slacken clamp (5) at fuel injector and remove fuel injector.
- Installation is the reverse of the removal procedure: pay particular attention to the following.



Note:

Make sure that the O-ring at the injector is in good condition.

Note the correct installed position of the injectors.

16 Fuel tank and lines

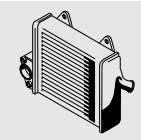
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Technical Data		K 1200 LT
Cooling system capacity		
Total capacity	l (Imp. pints/ US quarts)	3.1 (5.46/3.28)
Coolant circuit	l (Imp. pints/ US quarts)	2.5 (4.40/2.64)
Coolant expansion tank	l (Imp. pints/ US quarts)	0.6 (1.06/0.63)
Coolant		Use only nitrite-free long-term antifreeze and corrosion inhibitor.
Thermostat opening temperature	°C (°F)	85 (185)
Fan cut-in temperature	°C (°F)	105 (221)
Cut-in temperature for coolant warning light	°C (°F)	115 (239)
Pressure relief valve in end cover opens at	bar (psi)	1.5 ^{+0.2} (21.3 ^{+2.8})



Excessive loss of coolant.



Check coolant circuit.
Coolant circuit is interrupted or leaking?

yes

Reconnect or repair leak, as applicable.

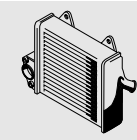
Engine remains cold or warms up very slowly.



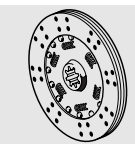
Check thermostat. Thermostat does not close.
Are both radiators equally warm and the coolant hose to the water pump cold?

yes

Replace thermostat.

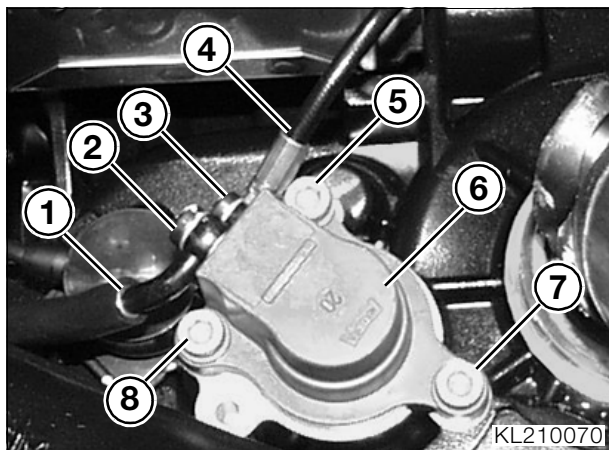


Technical Data		K 1200 LT
Clutch		
Type		Single dry plate clutch (asbestos-free)
Operation		Hydraulic
Clutch fluid		DOT 4 brake fluid
Clutch plate dia.	mm (in)	180 (7.02)
Wear limit: Minimum clutch plate thickness	mm (in)	4.6 (0.18) (measured with tips of calipers pressed by hand against rivets of clutch plate)



Removing and installing clutch slave cylinder

- Remove left fairing section, battery cover and engine spoiler.
- ➡See Group 46
- Remove the right and left front and rear footrest plates.
- Remove the exhaust system
- ➡See Group 18
- Remove the inductive sensor on the rear wheel.
- Remove the rear wheel brake caliper, fasten to the rear frame with the inductive sensor using a cable tie.
- Remove rear wheel.
- Remove rear wheel drive unit.
- ➡See Group 33
- Remove the swinging arm.
- Siphon off the clutch fluid.



Caution:

To prevent the clutch slave cylinder (6) from tilting, slacken securing screws (5, 7, 8) alternately and uniformly.

- Remove screws (5, 7, 8).
- Pull clutch slave cylinder (6) away from gearbox.
- Remove paper gasket.

Note:

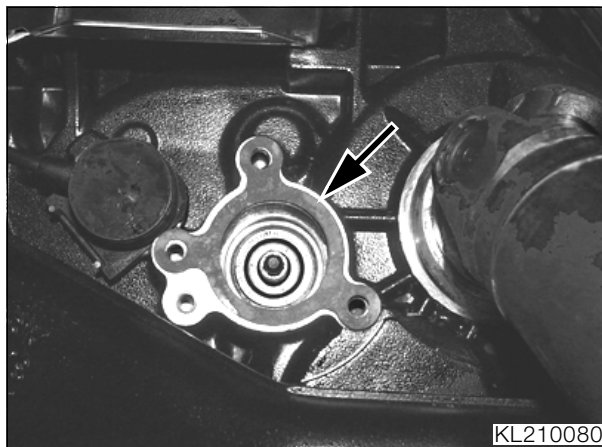
Take care with sealing rings.

- Undo banjo bolts (2, 3), remove pressure line (1) and vent line (4).

- Assembly is the reverse of the disassembly procedure: pay particular attention to the following.

Caution:

To prevent the clutch slave cylinder (6) from tilting, tighten securing screws (5, 7, 8) alternately and uniformly.

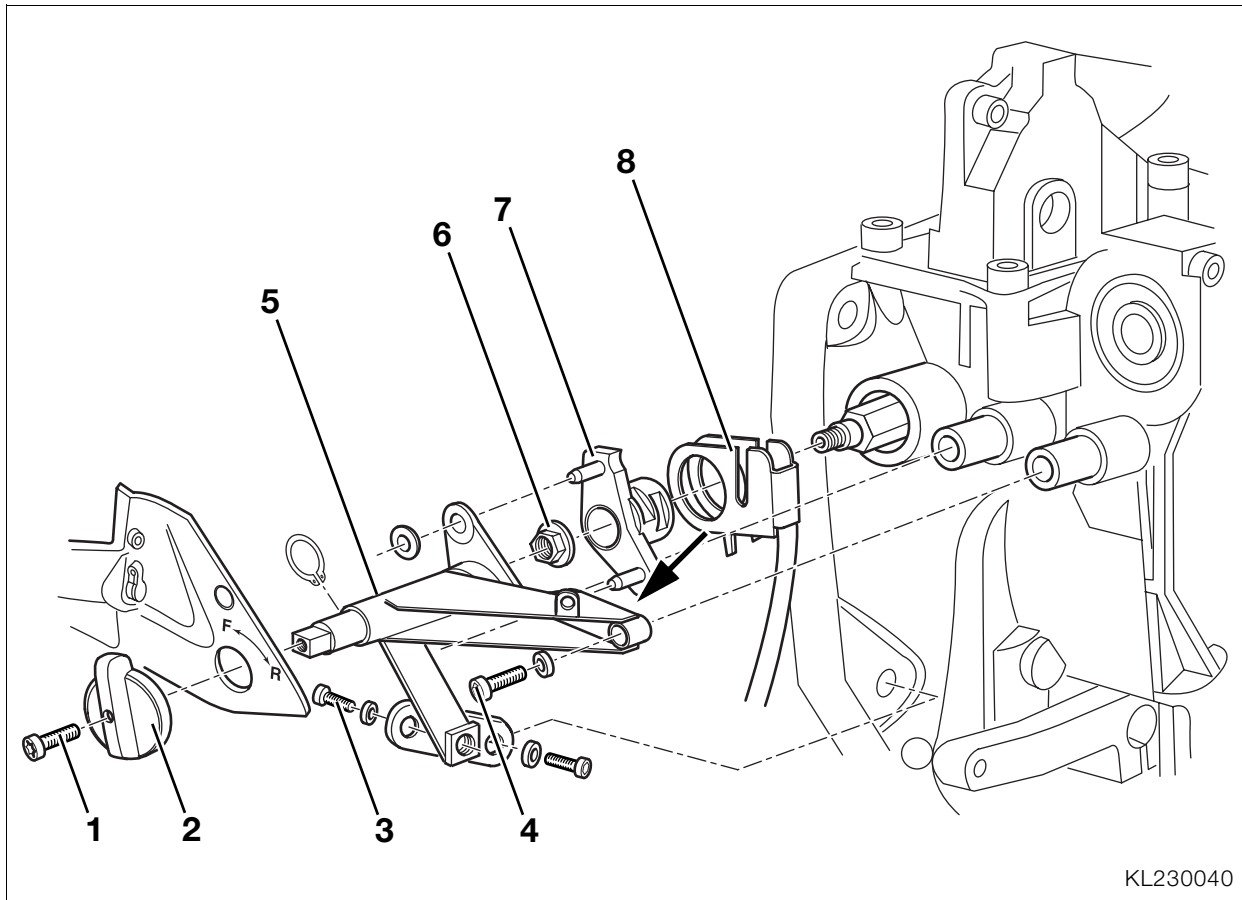


- Clean mating surfaces on the gearbox housing and clutch slave cylinder, use new paper gasket (arrow).
- Fit banjo bolts (2, 3) with new sealing rings.
- Fill clutch system with brake fluid.
- Bleed the clutch.

Tightening torques:

Slave cylinder to gearbox 9 Nm
Banjo bolts in slave cylinder 7 Nm





Removing and installing actuating unit for reverser

Removing and installing actuating control for reverser

- Remove screw (1).
- Remove actuating control (2) for reverser.
- Clean threads of screw (1), coat with **Loctite 243** and install.

Removing and installing actuating unit for reverser

- Remove skirt.
- Remove left-hand section of engine spoiler.
- Remove screws (3, 4).
- Remove actuating unit for reverser (5).
- Remove nut (6).
- Remove selector lever for reverser (7) with switch unit (8).
- Remove switch, if necessary.
- Installation is the reverse of the removal procedure: pay particular attention to the following.



Note:

Mount the switch unit for the reverser with the recess engaging the lug on the gearbox.



Note:

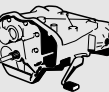
Install the actuating control (2) with the grip projection at the top.
Make sure that all cables are correctly routed and are not pinched or kinked.

- Route cables for side-stand switch, switch for reverser and gearbox switch behind the actuating unit for the reverser (arrow).
- Clean threads of screws (3), coat with **Loctite 243** and install.
- Clip the cable for the oxygen sensor into the retaining clip on the actuating unit for the reverser.



Tightening torques:

Switch unit for reverser to gearbox.....	9 Nm
Actuating control for reverser (clean thread and Loctite 243).....	6 Nm
Reverser actuator to link M8 (clean thread and Loctite 243).....	24 Nm
Link of reverser actuator to intermediate flange M8 (clean thread and Loctite 243).....	24 Nm



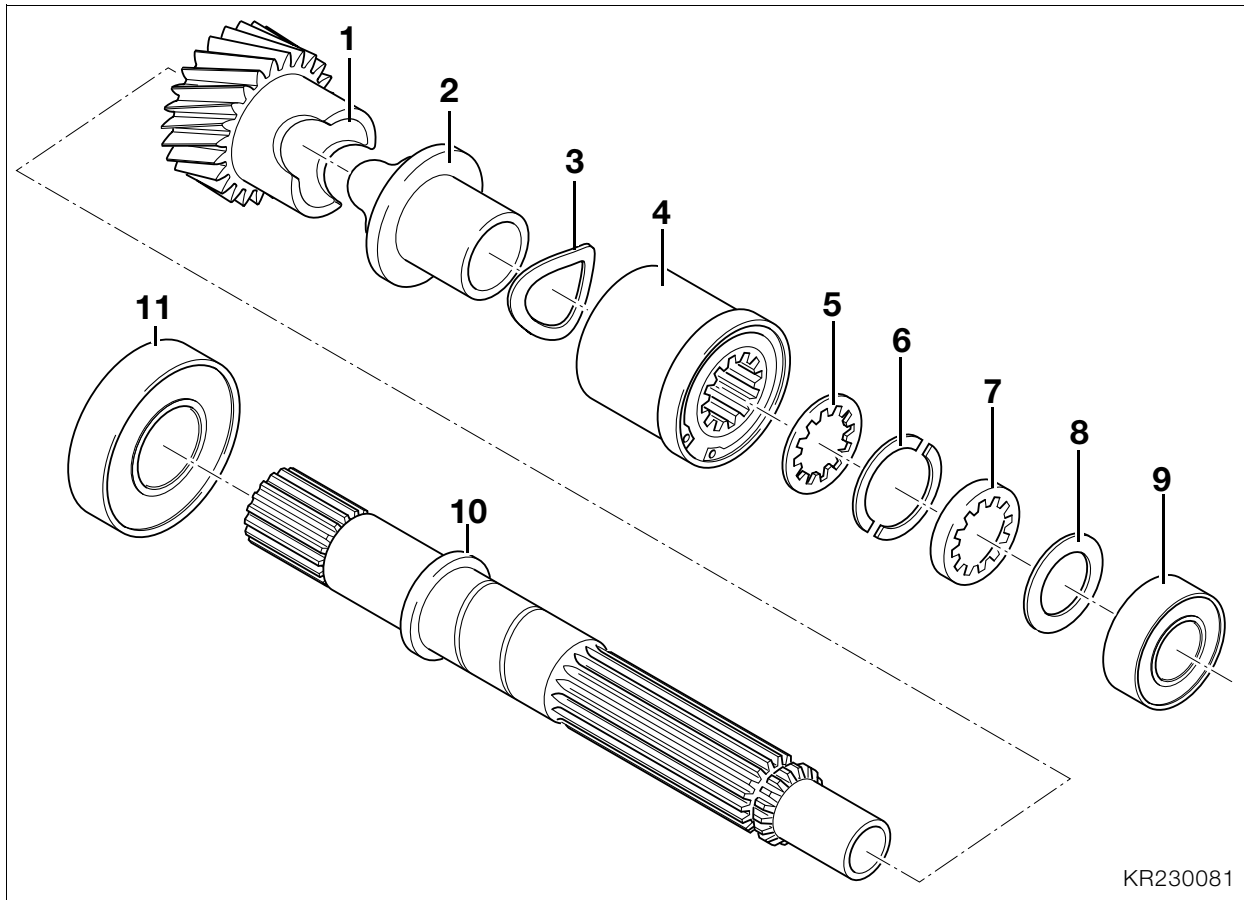
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- You can download the complete manual from: www.heydownloads.com by clicking the link below



- Please note: If there is no response to CLICKING the link, please download this PDF first and then click on it.

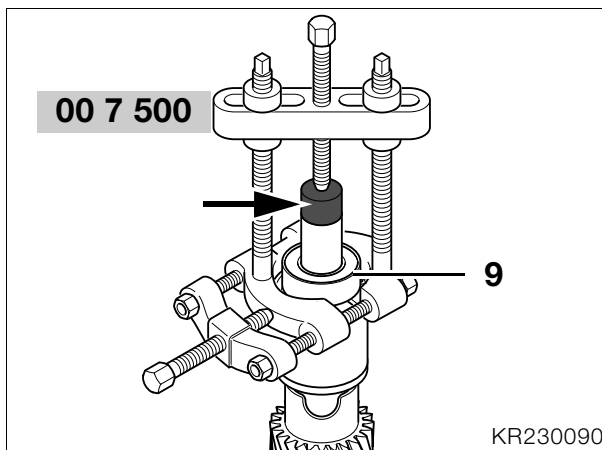
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KR230081

Disassembling/assembling input shaft

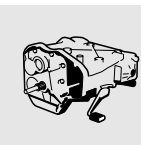
Disassembling input shaft

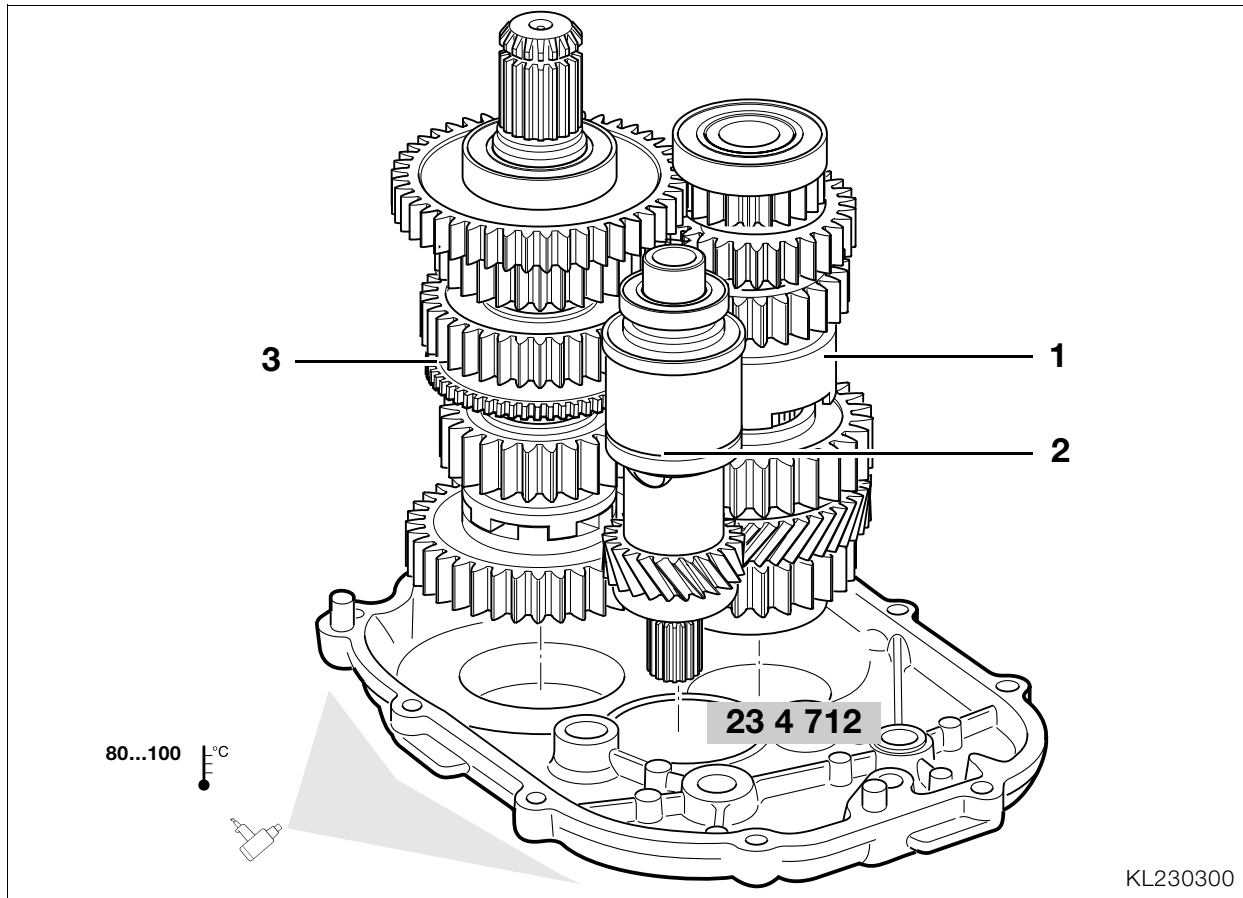


KR230090

- Remove guide ring (7).
- Compress spring cluster (4) and remove split segment washer (6).
- Remove backup washer (5), spring cluster (4), anti-rattle disc (3), thrust block (2) and constant-speed gear (1).
- Clamp input shaft (10) other way round in vise.
- Use universal puller, **BMW No. 00 7 500**, and pressure head (arrow) to pull off grooved ball bearing (11).

- Clamp the input shaft into a vise with soft jaws.
- Use universal puller, **BMW No. 00 7 500**, and pressure head (arrow) to pull off grooved ball bearing (9) with spacing washer (8).
- Note the thickness of the spacing washer.





Assembling gearbox

Installing gearbox shafts

Installing input, output and intermediate shafts

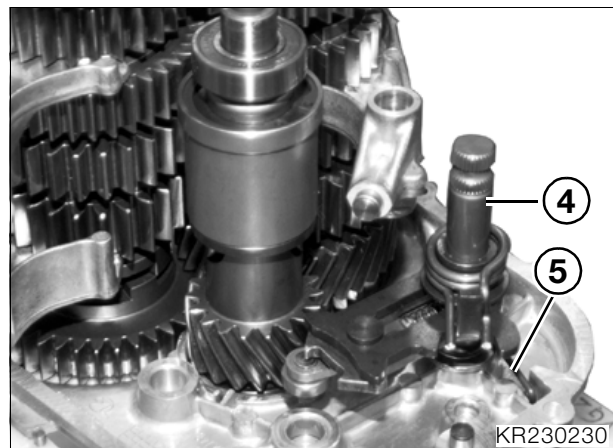


Caution:

Before installing, the gearbox shafts, housing and cover must be thoroughly cleaned and examined for damage. Replace all shaft sealing rings. Check that the gearbox shafts are correctly seated.

- Insert the cover into gearbox mount, **BMW No. 23 4 700**.
- Align the input, output and intermediate shafts so that their gearwheels mesh.
- Insert slip-over sleeve for input shaft, **BMW No. 23 4 712**, into cover.
- Heat bearing points in cover to 80...100 °C (176...212 °F).
- Insert input shaft (2), output shaft (3) and intermediate shaft (1) together, all at the same time.
- Install the selector forks.

Installing selector shaft



- Place a spacing washer of the correct thickness in position and install selector shaft (4).
- Engage torsion spring (5) in position.



- Fully lower the frame.
- Remove workshop crane, **BMW No. 46 5 640**.
- Install skirt brackets.
- Connect plugs for oxygen sensor, side-stand switch, and coolant-temperature sensor.
- Install actuating unit for reverser, complete with switch unit.
- Install radiators with fans left and right in holders.
- Reconnect plugs and cables for engine and gearbox.
- Install transverse tube.
- Install front drive shaft.
- Install swinging arm.
- Install rear wheel drive.
- Install brake caliper.
- Install inductive sensor for rear wheel drive.
- Install rear wheel.
- Install exhaust system.
- Install left and right battery covers.
- Install left and right rear footrest plates.
- Fill gearbox with oil to correct level.
- Install left and right front footrest plates.
- Install throttle-valve rail with air filter box.
- Install fuel injection rail.
- Install the intake air pipe.
- Install the fuel tank.
- Install tank cover with the control unit for the radio.
- Remove lifting gear, **BMW No. 00 1 510**.

- Install engine spoiler.
- Install actuating control for reverser.
- Install left and right fairing side sections.



Caution:

Connect the positive battery terminal first, then the negative terminal.

- Install the battery.

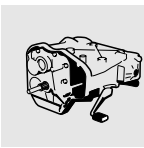
Quantities:

Initial filling approx. 0.6...0.75 l
(1.06...1.32 Imp. pint/0.63...0.79 US quarts)
Oil changes top up oil to bottom of filler neck

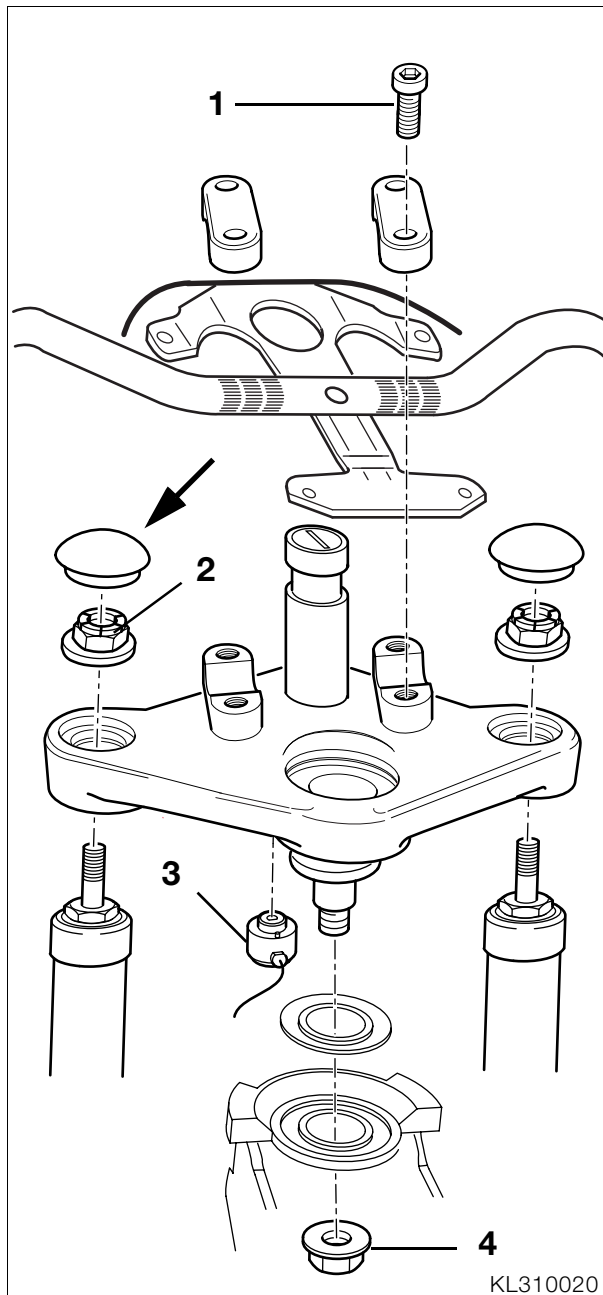


Tightening torques:

Oil drain plug.....	55 Nm
Oil filler/level check plug.....	23 Nm
Selector lever to selector shaft.....	9 Nm
Reverser shift lever to gearbox.....	9 Nm
Gearbox to intermediate flange M8	24 Nm
Link, reverser actuator to intermediate flange M8 (clean thread and Loctite 243).....	24 Nm
Starter motor to gearbox	6 Nm
Gearbox to frame	70 Nm
Pinch bolts, rubber mounts	9 Nm
Speed sensor for reverser	6 Nm
Slave cylinder to intermediate flange	9 Nm
Cross-members to engine.....	41 Nm
Pivot mount to gearbox	41 Nm
Actuating control, reverser (clean thread and Loctite 243).....	6 Nm
Footrest plate to frame	21 Nm
Cover plate, reverser, to gearbox (clean thread and Loctite 243).....	10 Nm
Cover of reverser to gearbox.....	10 Nm



Removing fork bridge



Caution:

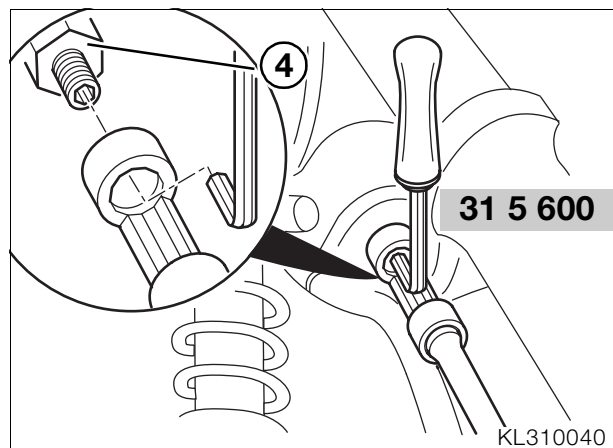
Do not operate the handbrake lever when the brake calipers have been removed.
Protect painted parts from scratching: apply adhesive masking tape if necessary.

- Remove screw (1) securing handlebar to fork bridge.
- Remove protective caps (arrow).
- Use spanner to hold fixed tube at w/f 22 flats and remove 2 nuts (2) securing fixed tubes in fork bridge.



Caution:

Nut is secured with thread-locking compound; heat if necessary, taking care not to overheat lines and cables.



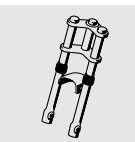
- Remove fastener (4) securing fork bridge to frame with socket and adapter for socket-head screw, **BMW No. 31 5 600**.



Note:

Stud is a press-fit in angular-contact ball bearing, so remove as a complete unit.
Inside trim is easily scratched, so cover with masking tape or remove, if necessary.

- Remove fork bridge.
- Remove plug for ignition switch/steering lock (3).

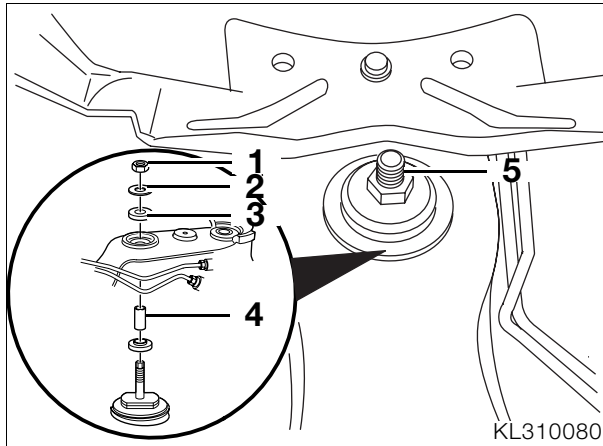


Removing and installing front suspension strut

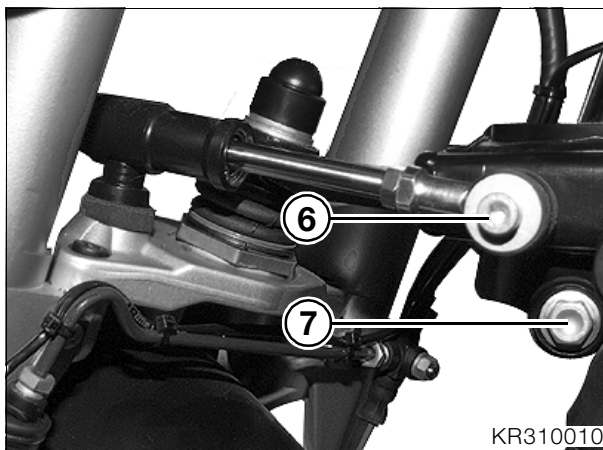
Removing front suspension strut

- Remove engine spoiler.
- Remove fairing side section.
- Remove upper section of fairing.
- Remove cover of fork bridge.

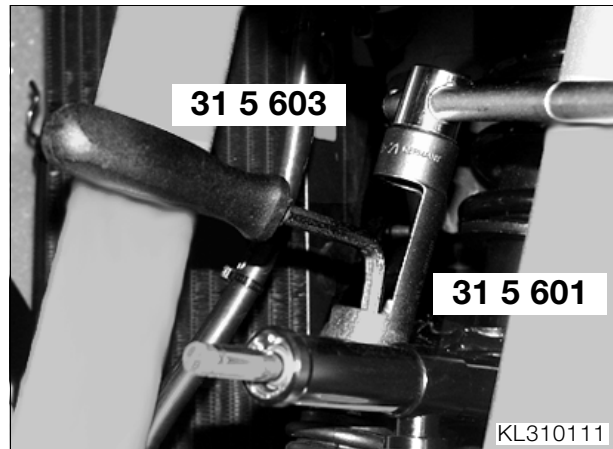
➔See Group 46



- Secure hoist, **BMW No. 00 1 510**, to oil sump.
- Remove fastener (5) securing suspension strut to frame.
- Remove nut (1), plain washer (2), rubber washer (3) and sleeve (4).
- Use cardboard or similar to protect ribs of left radiator.



- Remove fastener (7) securing suspension strut to leading link.
- Remove fastener (6) securing steering damper to leading link.

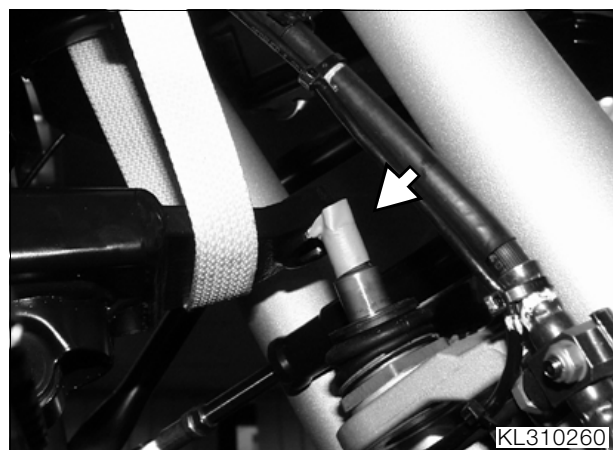


Caution:
Fastener securing leading link to slider tube fork bridge is secured with thread-locking compound; heat to max. 120°C (248°F) if necessary.

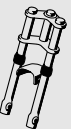
- Heat fastener securing leading link to slider tube fork bridge and use socket, **BMW No. 31 5 601**, and adapter for socket-head screw, **BMW No. 31 5 603**, to remove.
- Remove screw securing brake line to fairing bracket.

Caution:
Do not raise motorcycle too far: it must be firm on its centre stand and the lines must be free of strain.

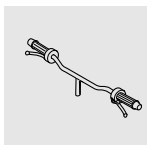
- Raise motorcycle with hoist.



- Wrap a length of adhesive tape around thread of ball joint (arrow).
- Pull leading link up and disengage ball joint from leading link.



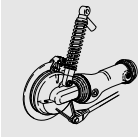
Technical Data	K 1200 LT	
Type	One-part jacketed tubular handlebar; without weights	
Handlebar diameter, inner tube	mm (in)	22 (0.87)
Handlebar diameter, outer tube	mm (in)	28 (1.10)
Steering lock angle	°	32
Handlebar width with grip tube	mm (in)	826 (32.52)



33 Rear wheel drive

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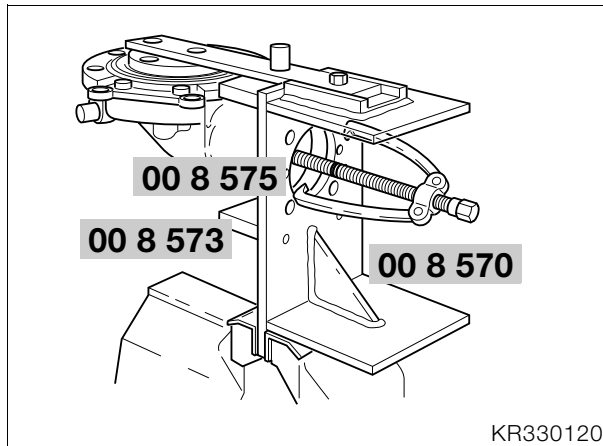
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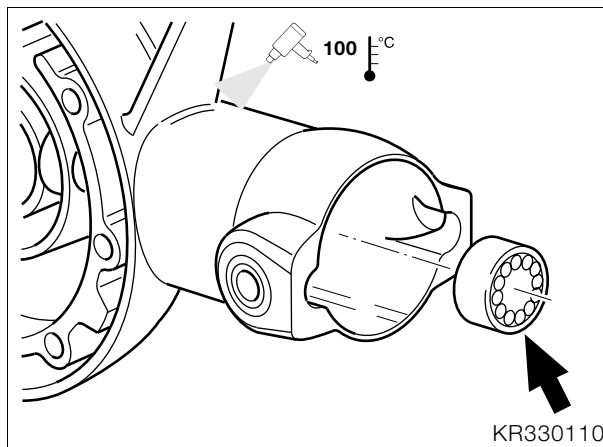
Removing needle roller bearing for input bevel pinion

- Heat the housing to 100 °C (212 °F).



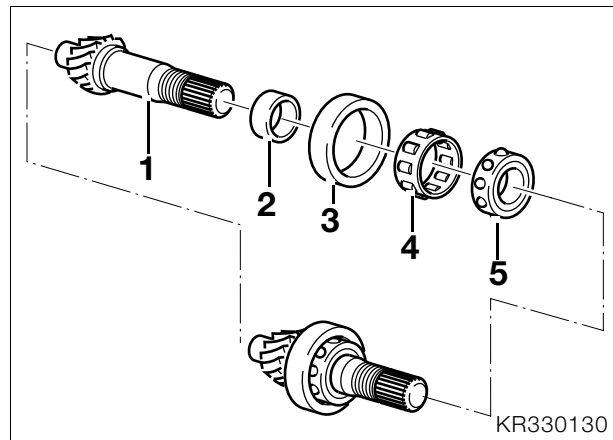
- Pull out the outer race of the needle roller bearing using internal puller, **BMW No. 00 8 573**, extension, **BMW No. 00 8 575**, and reaction support, **BMW No. 00 8 570**.

Installing needle roller bearing for input bevel pinion



- Heat the needle roller bearing seat to 100 °C (212 °F).
- Press in needle roller bearing using drift or the input bevel pinion.

Assembling input bevel pinion



Note:

Clean the threads of the input bevel pinion prior to assembly.

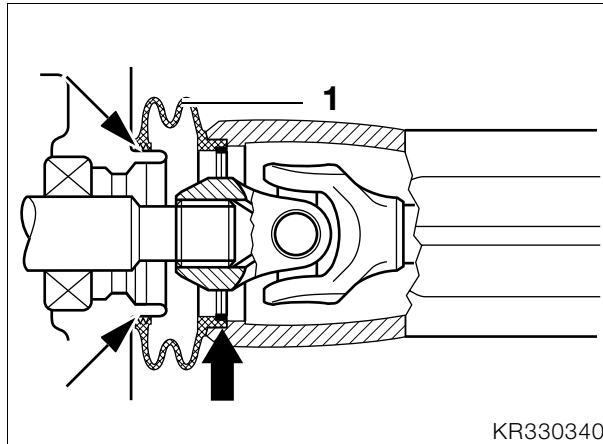
- Heat the inner race (2) to 100 °C (212 °F) and push onto input bevel pinion (1) until seated.
- Slide outer race (3) together with roller cage (4) onto inner race (2).

Note:

Do not overheat the ball cage.

- Heat ball thrust bearing (5) to 100 °C (212 °F) and push onto input bevel pinion (1) until seated.
- Allow input bevel pinion to cool down.

Removing and installing flexible gaiter



- Take out the inner circlip (arrow) and pull the flexible gaiter (1) out of the swinging arm.
- When installing, coat inner and outer sealing lips (arrows) with **Staburags NBU 30 PTM**.

Removing and installing threaded ring bearings



Removing bearing from left/right threaded ring

- Engage pins (arrows) of press-out tool, **BMW No. 33 6 644**, in bores of threaded ring.
- Press the left/right bearing out of the threaded ring.

Installing bearing in left/right threaded ring



Caution:

Install with the open side of the bearing facing the threaded ring.

- Grease the bearing.
- Press the bearing into the left/right threaded ring.

Front brake calliper

Removing and installing front brake calliper

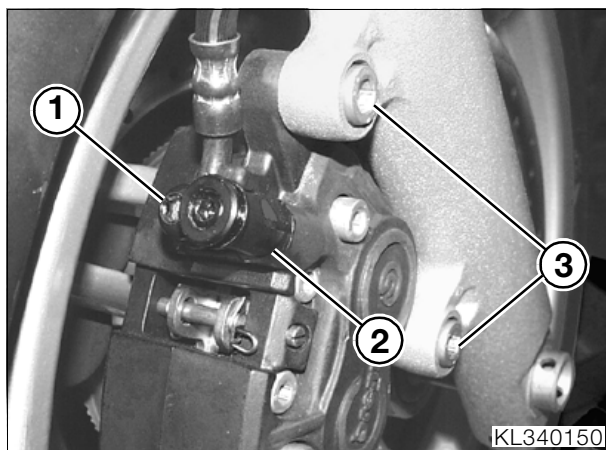


Warning:
Do not separate the two halves of the brake calliper.



Caution:
Do not allow brake fluid to come into contact with painted parts of the motorcycle or with the brake pads.

- Drain the brake system.



Caution:
Avoid scratching the wheel rim; if necessary mask off the brake calliper.

- Remove screws (3) securing brake calliper.
 - Carefully remove brake calliper, if necessary press it back and forth against the brake disc to force back the brake pads and pistons.
 - Remove the brake pads.
- ➔See Group 00



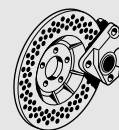
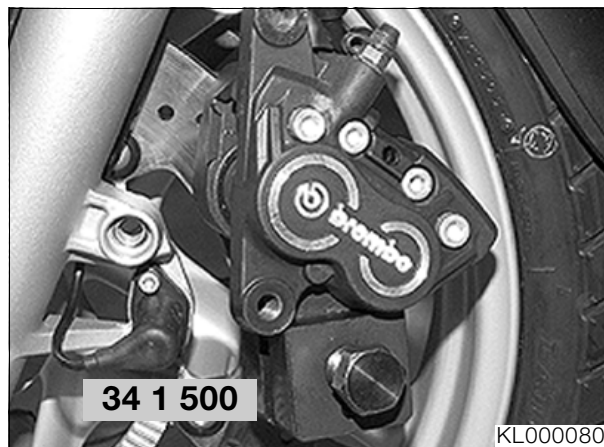
Caution:
Do not operate the brake with the brake callipers removed from the motorcycle.

- Remove banjo bolt (1) for brake hose and remove brake hose.
- Installation is the reverse of the removal procedure: pay particular attention to the following.



Caution:
Do not damage the brake pads when installing.

- Replace sealing rings of banjo bolt (1).



- If necessary, press the brake pads/pistons fully back with resetting tool, **BMW No. 34 1 500**.
 - Fill and bleed the brake system.
- ➔See Group 00
- Check/adjust ABS sensor gap.

Sensor gap 0.45...0.55 mm (0.018...0.022 in)



Tightening torques:

Brake calliper to fork slider tube.....	40 Nm
Brake hose to brake calliper.....	18 Nm
Grubscrew in filler adapter	10 Nm
Bleed screw	10 Nm

Removing and installing ABS control unit



Warning:

All work on the ABS control unit must be carried out by an authorised BMW workshop.



Caution:

Disconnect the negative battery terminal first, then the positive one.

- Remove the battery.
- ➡See Group 00, Battery
- Drain front and rear brake systems.
- Remove left and right rear footrests.
- ➡See Group 46
- Remove left and right fairing side sections.
- Remove left and right battery covers.



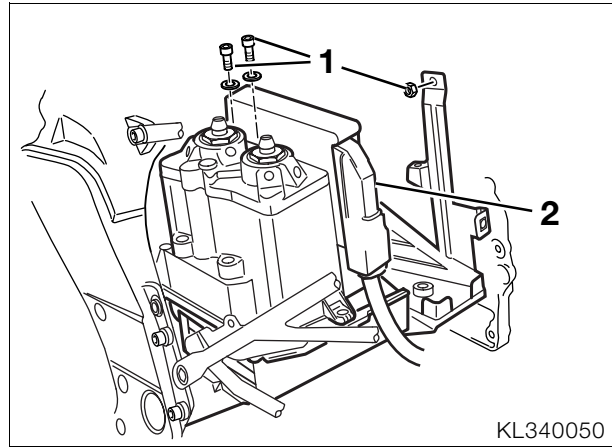
Warning:

Comply with safety precautions when handling or working with fuel.

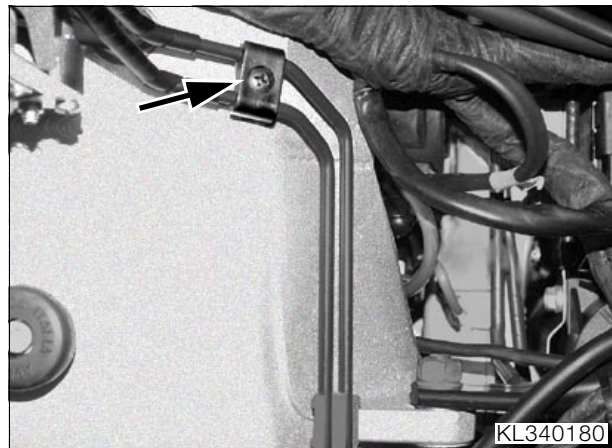
- Remove fuel tank.
- ➡See Group 16



- Remove securing screws (arrows) and remove retaining plate for plug connectors.
- Remove fasteners securing coolant expansion tank.



- Disconnect plug (2) from ABS control unit.
- Remove control unit for reverser.
- ➡See Group 61



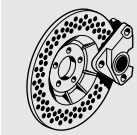
- Remove the holder (arrow) for the front brake lines from the main frame.



Caution:

Do not allow brake fluid to come into contact with painted parts of the motorcycle, because brake fluid destroys paint. Wrap cloths around the ends of the pressure lines to prevent residual brake fluid escaping.

- Disconnect brake lines from ABS pressure modulator.
- Remove screws (1) securing the battery carrier to the frame.



Installing brake lines/hoses

- Installation is the reverse of the removal procedure: pay particular attention to the following.
- Apply **Loctite 243** to threads of lower fasteners securing rear frame to main frame.
- Carefully re-route all lines in their original positions and secure with cable ties.



Caution:

Renew sealing rings at brake line/hose.
Always secure brake hose with stop plate.

- Always replace non-reusable hose clips and close with pliers, **BMW No. 13 1 500**.
- Check play at brake master cylinder, adjust if necessary.

Brake fluid gradeDOT 4



Tightening torques:

Rear frame to main frame, top	41 Nm
Rear frame to main frame, bottom	41 Nm
(clean thread + Loctite 243)	
Battery carrier to frame M 6	9 Nm
Retaining plate for brake line to battery carrier	4 Nm
Brake line to frame M 5	4 Nm
Union, brake hose and brake line	18 Nm
Brake line to ABS pressure modulator	18 Nm
Brake hose to brake calliper	18 Nm
Brake line to master cylinder	18 Nm
Master cylinder to footrest plate	9 Nm
(clean thread + Loctite 243)	
Bleed screw in brake calliper/ ABS pressure modulator	10 Nm
Fuel tank to frame, M 8	21 Nm
Fuel tank to frame, M 6	9 Nm
Lifter handle to rear frame	9 Nm
Saddle, rear, to rear frame	9 Nm
Suspension strut to swinging arm	50 Nm
Suspension strut to frame	43 Nm
Handwheel for adjusting spring strut to frame	21 Nm
Footrest plate to frame	21 Nm

Checking brake pads for wear/ replacing brake pads

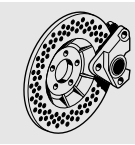
See Group 00

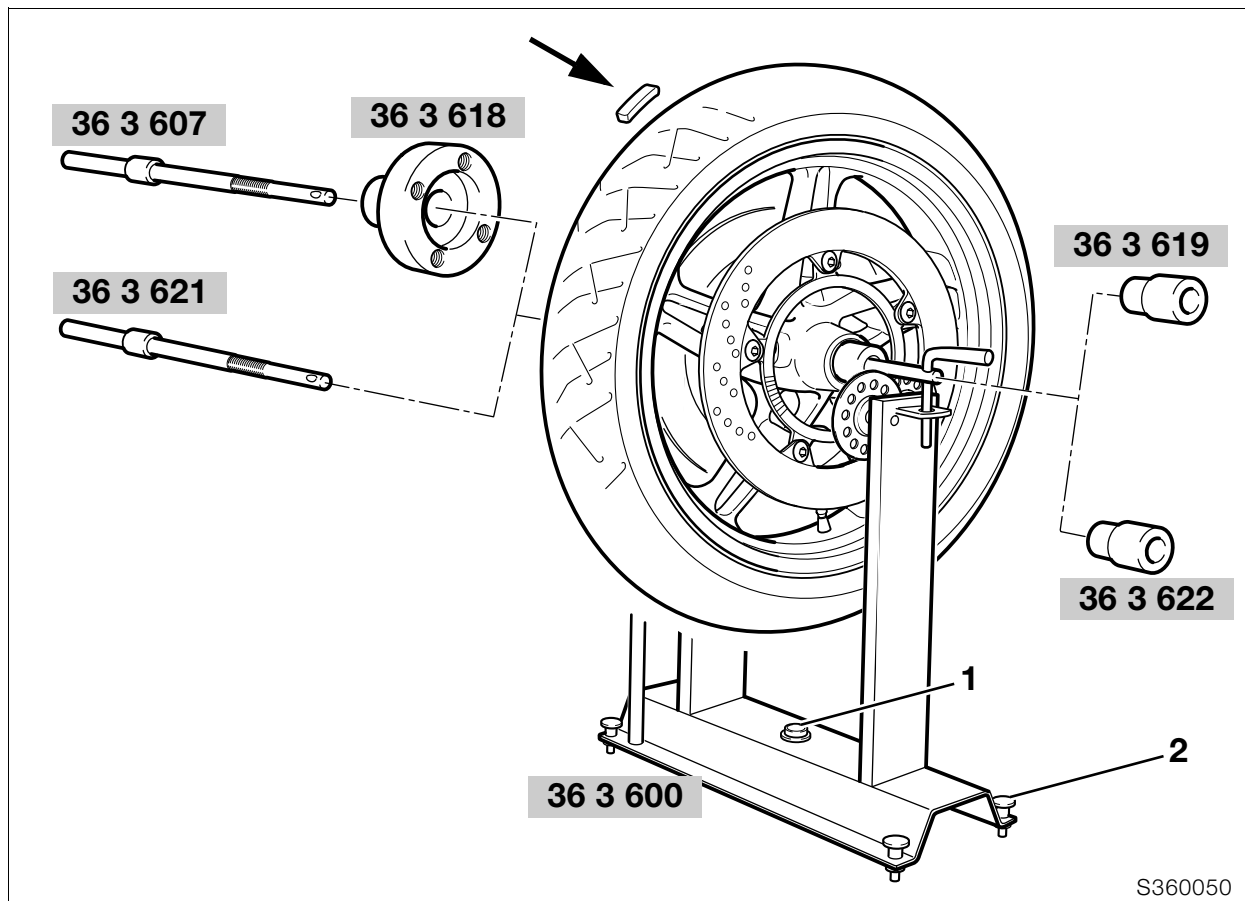
Checking brake fluid level

See Group 00

Replacing brake fluid and bleeding brake system

See Group 00





Static balancing of front and rear wheels

Static balancing of front wheel

- Level balancer, **BMW No. 36 3 600**, using knurled-head screws (2) and spirit level (1).
- Insert the balancing shaft, **BMW No. 36 3 621**, through the front wheel.
- Hand-tighten the balancing shaft with knurled nut, **BMW No. 36 3 622**.
- Place front wheel on balancer, **BMW No. 36 3 600**.
- Rotate the front wheel and allow it to come to a halt.
- Clean the attachment points for the adhesive weights.



Caution:

The maximum balancing weight is 60 g (2.1 oz.)!

- Affix the adhesive weights (arrows) uniformly spaced on both sides of the rim opposite the wheel's heaviest point.
- Repeat the balancing procedure as a check.

Static balancing of rear wheel



Note:

The rear wheel can also be balanced dynamically.

- Level balancer, **BMW No. 36 3 600**, using knurled-head screws (2) and spirit level (1).
- Attach mounting fixture, **BMW No. 36 3 618**, to the centering-collar side of the rear wheel.
- Pass the balancing shaft, **BMW No. 36 3 607**, through the rear wheel.
- Hand-tighten the balancing shaft with knurled nut, **BMW No. 36 3 619**.
- Place the rear wheel on the balancer, **BMW No. 36 3 600**.
- Rotate the rear wheel and allow it to come to a halt.
- Clean the attachment points for the adhesive weights.



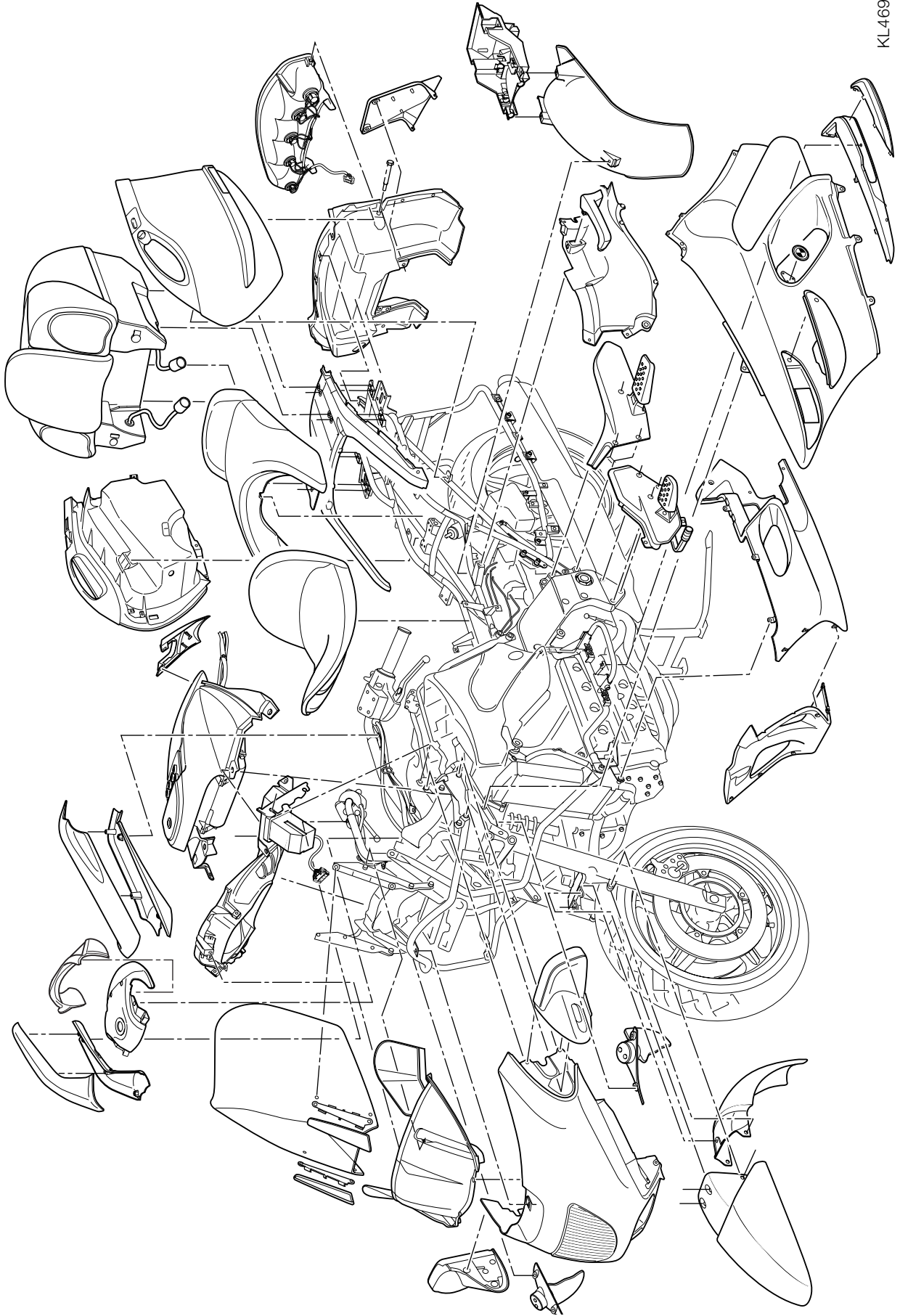
Caution:

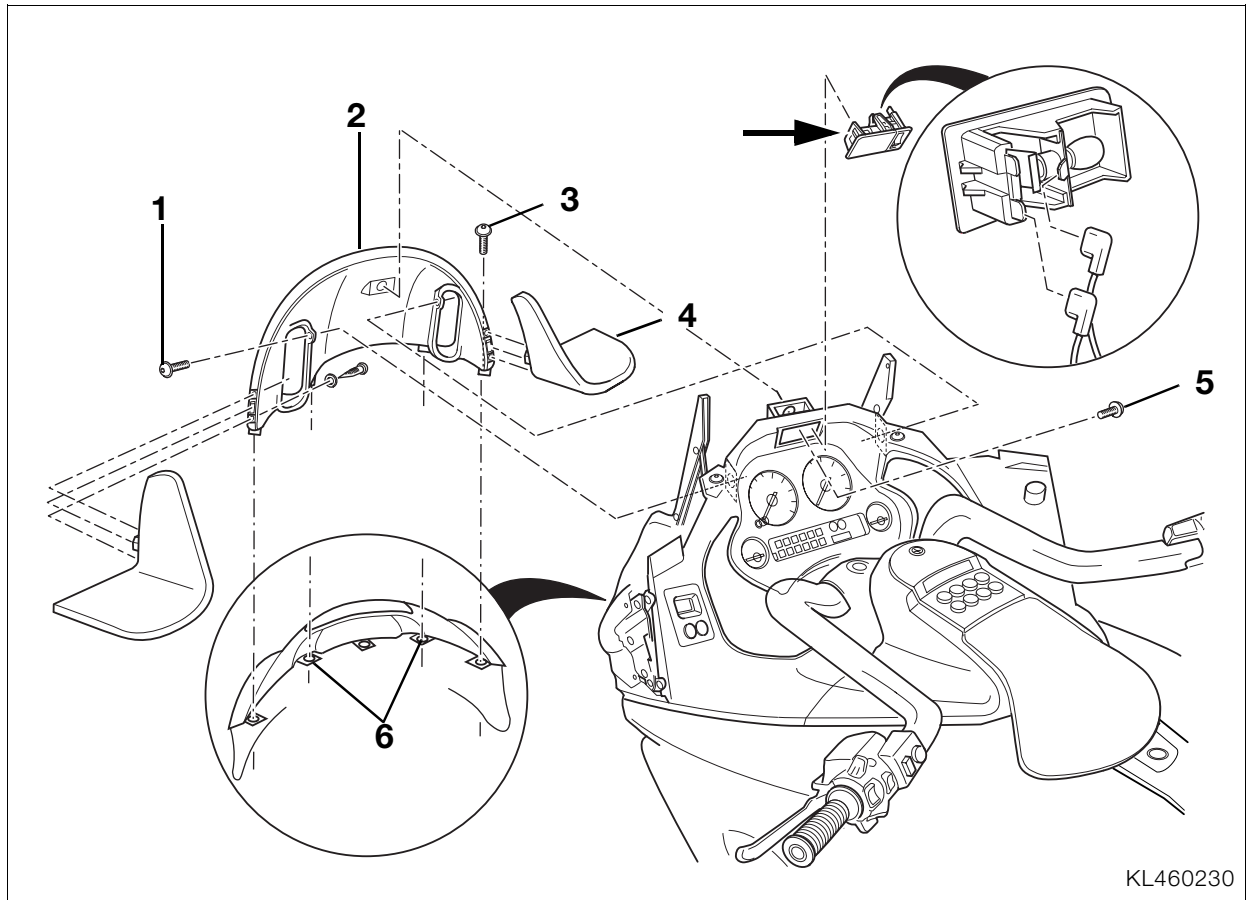
The maximum balancing weight is 60 g (2.1 oz.)!

- Affix the adhesive weights (arrows) uniformly spaced on both sides of the rim opposite the wheel's heaviest point.
- Repeat the balancing procedure as a check.

Overview of fairing sections, K 1200 LT

KL469000





KL460230

Removing and installing instrument cover

- From the left (arrow), unclip the light from the inner cover.
- Remove 1 fastener (5) behind the light.
- Remove 2 long fasteners (1) from the windscreen adjuster.
- Remove 2 long fasteners (3), 2 short fasteners (6) from below the cover.
- Remove instrument cover (2) with wind deflector (4).
- Remove wind deflector, if necessary.
- Installation is the reverse of the removal procedure.

Removing and installing radiator holder

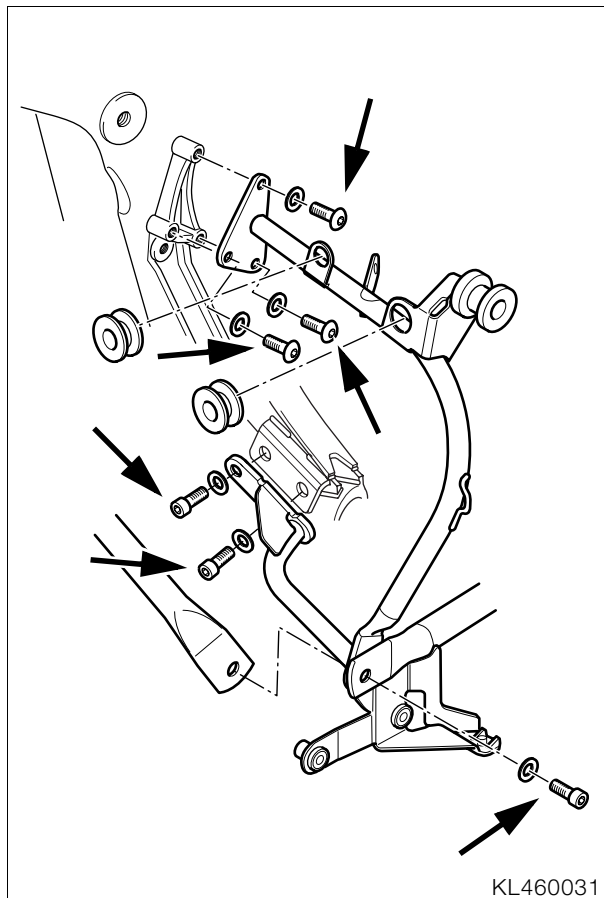
- Remove left and right fairing side sections and tank cover.



Caution:

Note safety precautions; the fuel lines are pressurised.

- Remove fuel tank.
- ➡See Group 16
- Remove the left or right radiator, as applicable.
- ➡See Group 17



- Release fasteners (arrows) and remove radiator holder.
- Installation is the reverse of the removal procedure.



Tightening torques:

Radiator holder to fairing bracket M 8 21 Nm
 Radiator holder
 to frame/engine traverse M 6 10 Nm

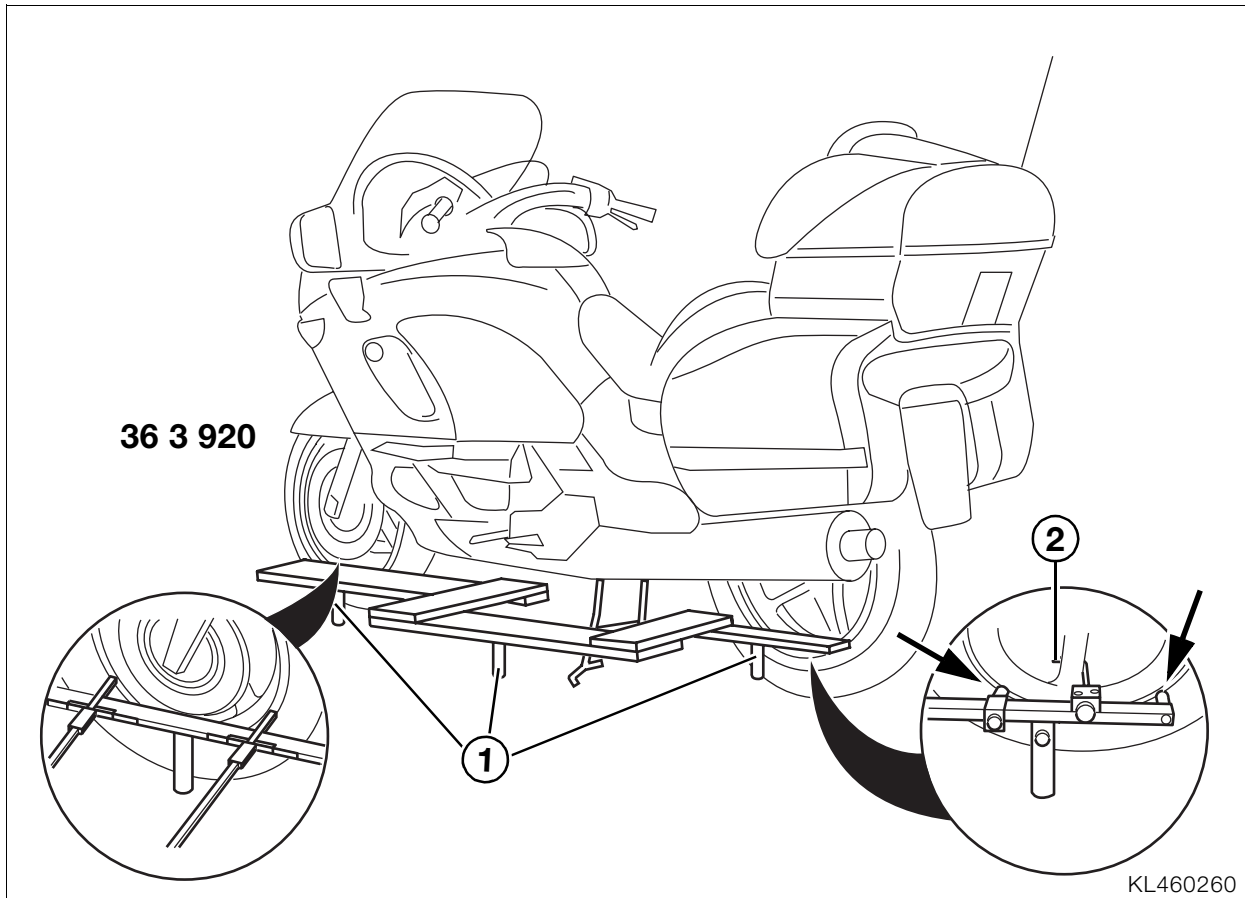
Removing and installing rear-mounted components

Removing and installing number-plate carrier



- Remove the number plate, if applicable.
- Remove 2 screws (1) securing the number plate carrier.
- Tilt the number plate carrier to disengage.
- Installation is the reverse of the removal procedure: pay particular attention to the following.





Checking running gear

Measuring wheel track offset



Note:

Wheel track offset S is the distance to left or right between the longitudinal axes of the front and rear wheels.

- Place the motorcycle on its main (centre) stand on a flat, level surface.
- Measure wheel rim width at front and rear and make a note of the figures.
- Place track alignment gauge, **BMW No. 36 3 920**, against the left or right side of the motorcycle.

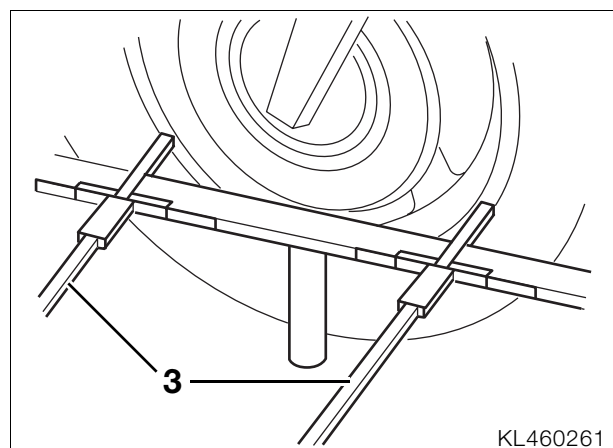


Note:

In order to use the track alignment gauge on either the left or right side, simply screw in the supports (1) on the other side.

- Adjust supports (1) so that the measuring plane is as close as possible to the wheel centreline. The gauge must slide freely up to the motorcycle.
- Adjust measuring stops (arrows) until they contact the rim – not the tyre.
- Connect hook (2) to a wheel spoke and use it to pull the gauge firmly up to the wheel.
- Align front wheel parallel with the gauge.

- Release tension in the track alignment gauge by raising it by approx. 5 mm (0.2 in) at the front and lowering it again.



- Using a depth gauge (3), measure the distance from the outer edge of the gauge to the front wheel rim at the front and rear of the wheel and make a note of the figures.
- Subtract the width of the track alignment gauge from the measured values.



Note:

The average of these two values is distance B.

- Calculate the average.

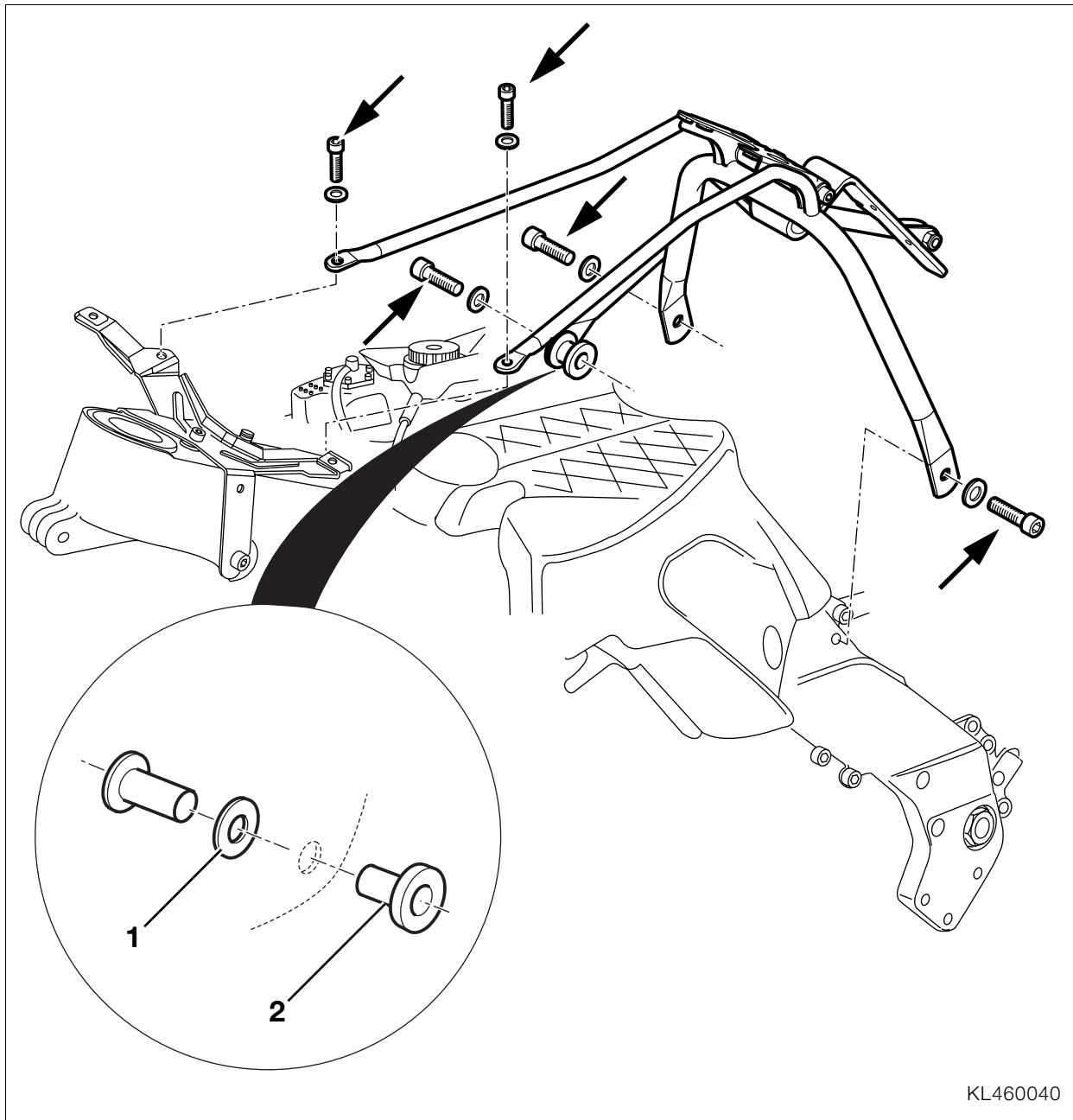
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KL460040

Removing and installing seat

Removing and installing front seat with bridge

- Remove left and right fairing side sections.
- Remove tank cover.
- **[Seat heating]** Disconnect plug for seat heating.
- Remove 5 screws (arrows) and remove seat and bridge.
- Installation is the reverse of the removal procedure: pay particular attention to the following.
- Note rubber washer (1) and grommet (2).

Tightening torques:

Bridge, seat to frame M 6..... 9 Nm
 Bridge, seat to frame M 8..... 21 Nm

Removing and installing rear seat

- Lift the seat at the front.
- Remove 2 screws and remove seat.
- **[Seat heating]** Disconnect plug for seat heating.
- Installation is the reverse of the removal procedure.

Tightening torques:

Seat to rear frame 9 Nm

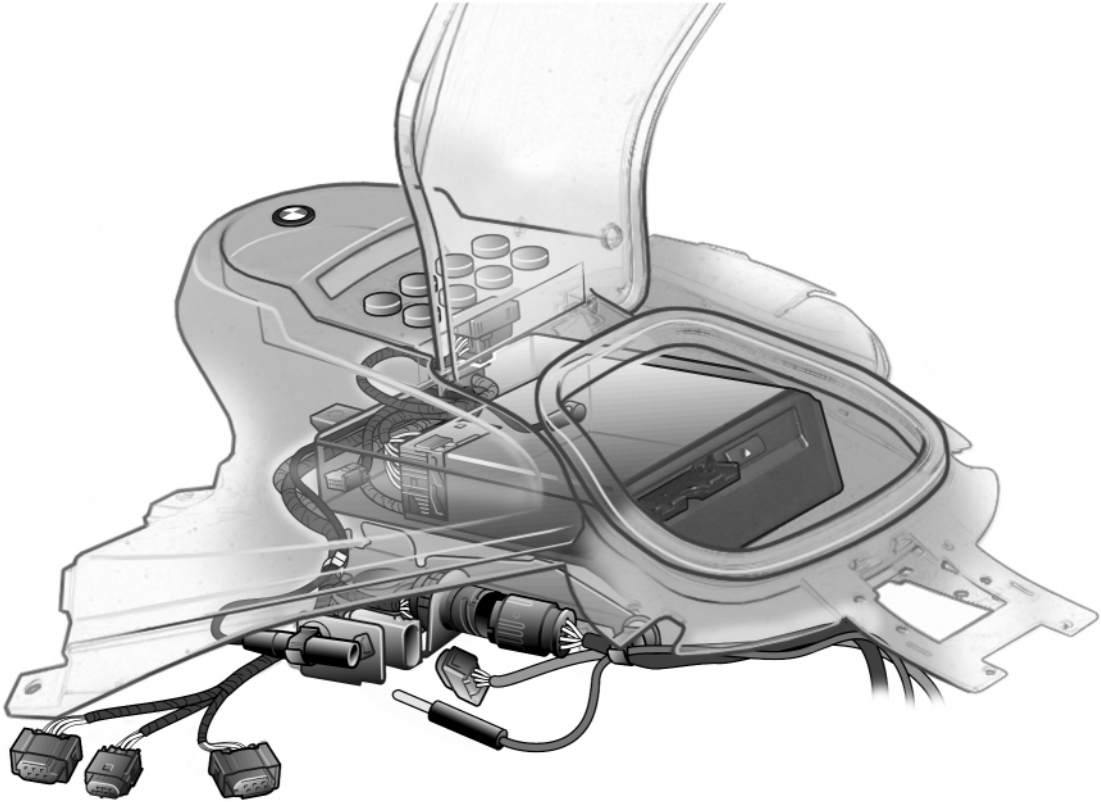
Removing and installing rear seat backrest

- Open the top case.
- Remove 4 screws and remove backrest.
- Installation is the reverse of the removal procedure.

Tightening torques:

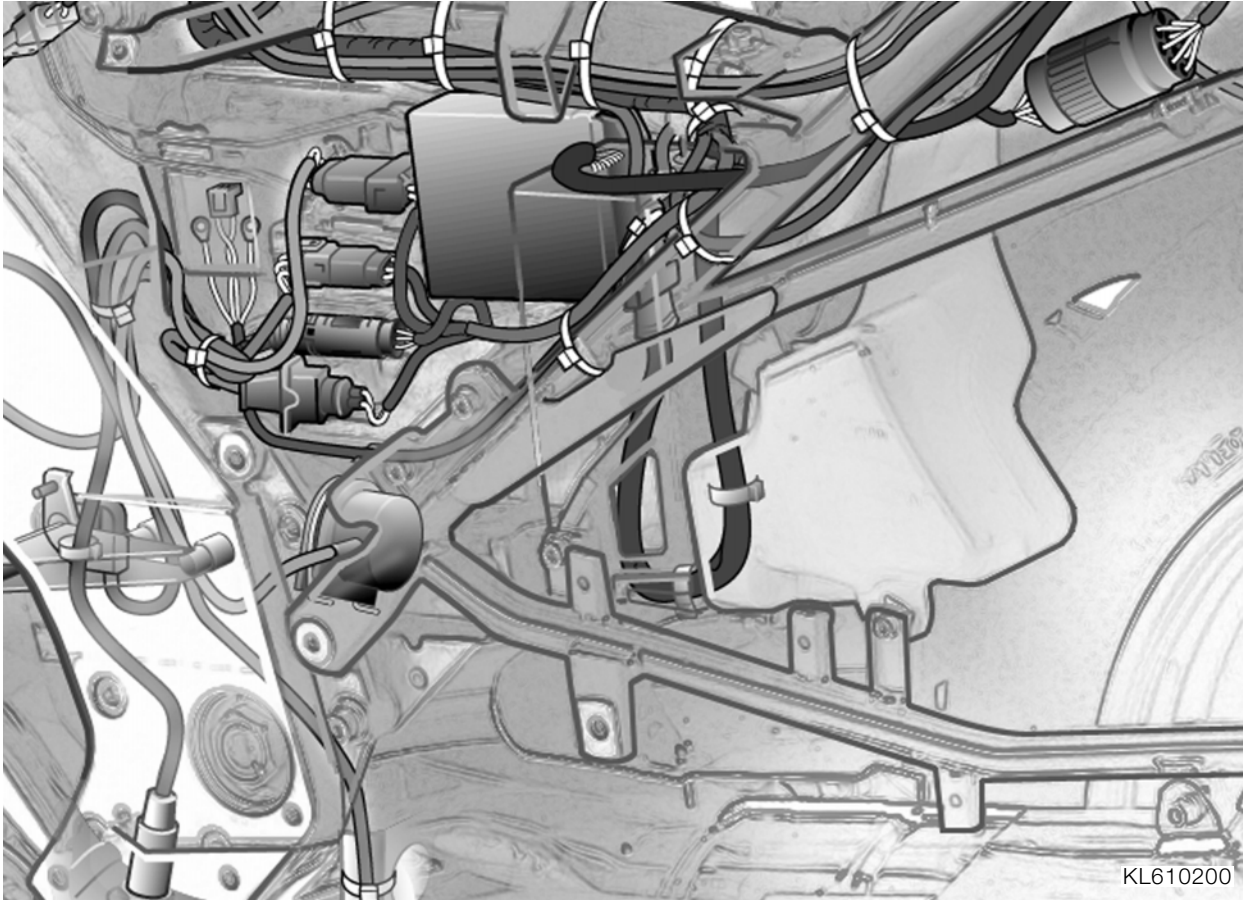
Seat backrest to top case 5 Nm

Tank cover with radio/cassette player



KL610040

Connectors beside ABS control unit

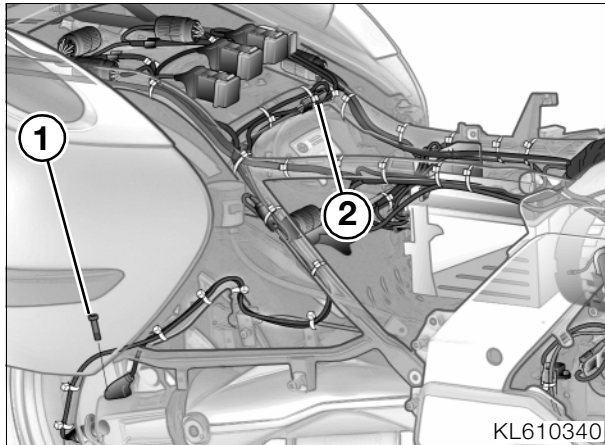


KL610200



Removing and installing inductive sensor for speedometer

- Remove right side section of fairing and battery cover.
- ➡See Group 46
- Remove rear seat.



- Release the fastener (1).
- Disconnect plug (2).
- Open the cable ties.
- Remove inductive sensor for speedometer with cable.



Caution:

When installing, make sure that the O-ring is in good condition.

- Installation is the reverse of the removal procedure.

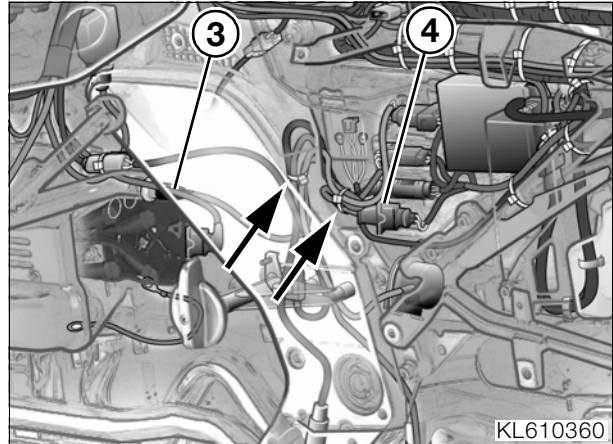


Tightening torques:

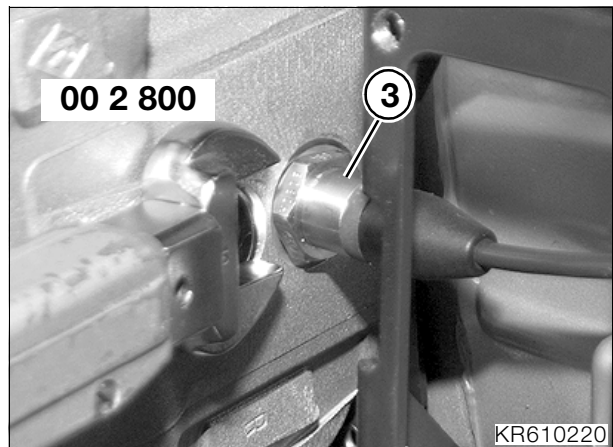
Inductive sensor to rear wheel drive 4 Nm

Removing and installing water temperature sensor

- Remove left side section of fairing and battery cover.
- ➡See Group 46
- Remove left-hand and centre sections of engine spoiler.
- Drain coolant.
- ➡See Group 17
- Remove the ignition coil.
- ➡See Group 12



- Disconnect plug (4).
- Open cable ties (arrows) and pull cable through toward cylinder head.
- Remove temperature sensor (3) with washer.
- Installation is the reverse of the removal procedure: pay particular attention to the following:



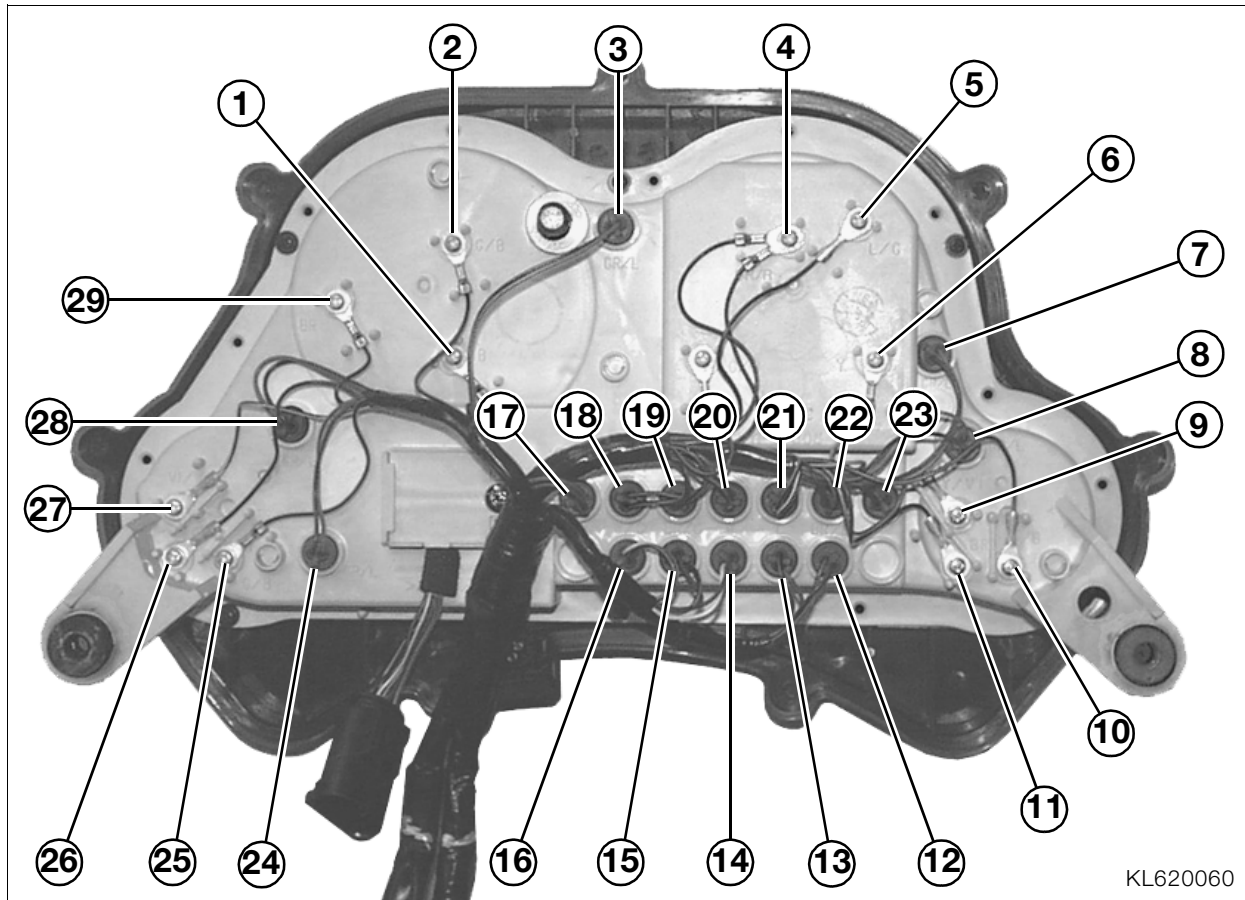
- Install temperature sensor (3) with special wrench, **BMW No. 00 2 800**.



Tightening torques:

Temperature sensor to cylinder head 30 Nm
Skirt bracket to frame 21 Nm

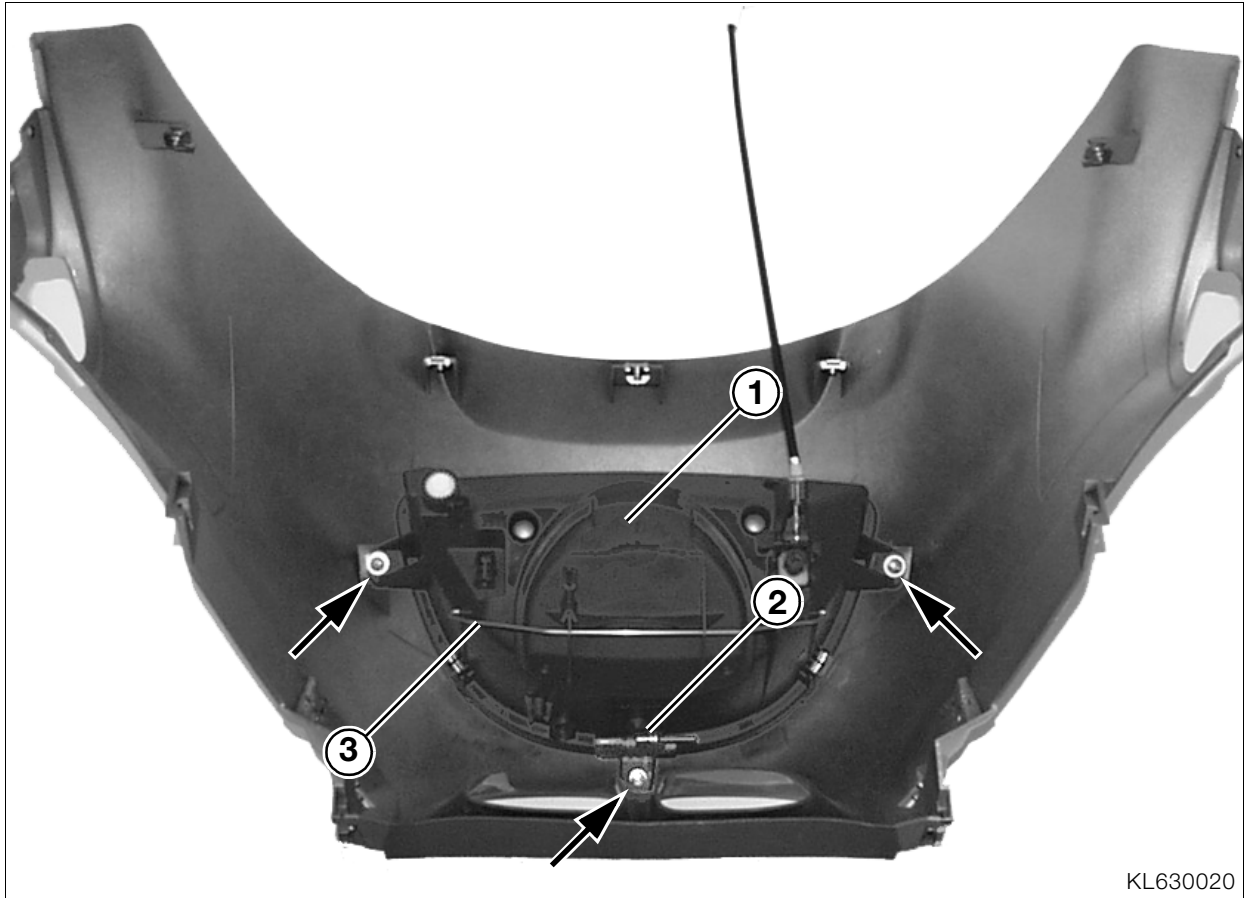




Wiring colours

- 1 black
- 2 green/black
- 3 grey//blue, brown/blue
- 4 brown, brown/red
- 5 blue/green
- 6 yellow
- 7 grey/blue, brown/blue
- 8 grey/blue, brown/blue
- 9 yellow/violet
- 10 green/black
- 11 brown
- 12 brown/black, green/black
- 13 green/black, blue
- 14 brown/blue, white
- 15 green/black, brown/green
- 16 white/green, green/black
- 17 blue/black, brown/blue
- 18 green/black, brown/yellow
- 19 violet/yellow, green/black
- 20 green/black, brown/violet
- 21 black/white, black/green
- 22 brown/blue, green/yellow
- 23 brown/blue, blue/red
- 24 brown/blue, grey/blue
- 25 green/black
- 26 brown
- 27 violet/white
- 28 grey/blue, brown/blue
- 29 brown





KL630020

Removing and installing headlight

- Remove top section of fairing with headlight.
 ➔See Group 46
- Release securing screws (arrows) for headlight on top section of fairing.
- Remove the headlight.



Note:

Do not touch inside of reflector and glass of bulbs with bare hands.

- Installation is the reverse of the removal procedure: pay particular attention to the following.
- Secure the temperature sensor (2) in its original position on the upper part of fairing.



Tightening torques:

Headlight to upper section of fairing..... 2 Nm

Renewing bulbs

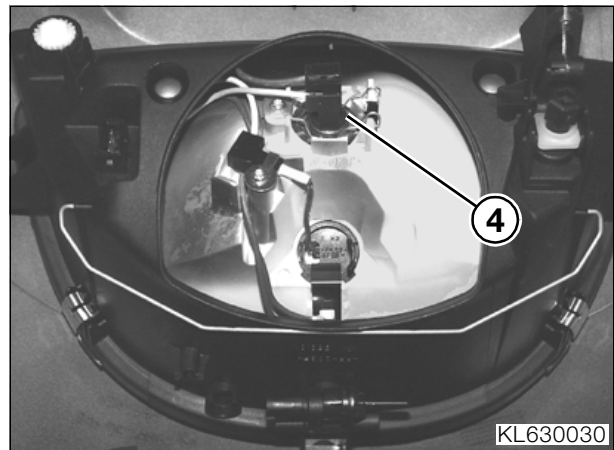


Note:

Do not touch inside of reflector and glass of bulbs with bare hands.

Bulb for low-beam headlight/ high-beam headlight

- Press retaining clip (3) down and remove the housing cover (1).



KL630030

Low (dipped) beam headlight

- Disconnect plug housing from bulb for low-beam headlight (4).
- Release spring clamps at top and bottom from retainer and remove the H7 bulb.
- Installation is the reverse of the removal procedure.



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