

# Chapter 7 Frame and forks

## Contents

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General description .....	1	Fluidbloc steering damper: general – 75 models .....	11
Front forks: removal .....	2	Frame: examination and renovation .....	12
Front forks: dismantling .....	3	Footrests: general .....	13
Front forks: examination and renovation .....	4	Stands and controls: general .....	14
Front forks: reassembly .....	5	Fairing: removal and refitting .....	15
Front forks: refitting .....	6	Seat: removal and refitting .....	16
Front forks: aligning the damping components .....	7	Bodywork: removal and refitting .....	17
Steering head bearings: removal .....	8	Mirrors: removal and refitting .....	18
Steering head bearings: examination and renovation .....	9	Luggage: removal and refitting .....	19
Steering head bearings: refitting .....	10	Instruments: removal, dismantling and reassembly .....	20

## Specifications

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### Front forks

#### Travel:

K75 S, any model with 'S' suspension .....

All other models .....

135 mm (5.32 in)

185 mm (7.28 in)

Stanchion OD .....

41.325 – 41.350 mm (1.6270 – 1.6280 in)

Lower leg ID .....

41.400 – 41.439 mm (1.6299 – 1.6315 in)

Stanchion/lower leg clearance .....

0.050 – 0.114 mm (0.0020 – 0.0045 in)

Stanchion maximum warpage .....

0.100 mm (0.0039 in)

Stanchion installed height (test length) – from top of stanchion to top machined surface of bottom yoke .....

180 mm (7.0866 in)

Fork spring free length:

Top spring – K75 S, any model with 'S' suspension .....

135 mm (5.32 in)

Main spring – K75 S any model with 'S' suspension .....

185 mm (7.28 in)

Main spring – all other models .....

41.325 – 41.350 mm (1.6270 – 1.6280 in)

Main spring wire diameter .....

4.67 – 4.73 mm (0.1839 – 0.1862 in)

Fork oil capacity – per leg:

K75 S, any model with 'S' suspension .....

280  $\pm$  10 cc (9.86  $\pm$  0.35 Imp fl oz, 9.47  $\pm$  0.34 US fl oz)

K100, all other 75 models .....

330  $\pm$  10 cc (11.62  $\pm$  0.35 Imp fl oz, 11.16  $\pm$  0.34 US fl oz)

K100 RS, K100 RT, K100 LT .....

360  $\pm$  10 cc (12.67  $\pm$  0.35 Imp fl oz, 12.17  $\pm$  0.34 US fl oz)

## Recommended fork oil:

Manufacturer:

Aral .....  
 Aral .....  
 Bel-Ray .....  
 BP .....  
 BP-Olex .....  
 Castrol .....  
 Castrol .....  
 Castrol .....  
 Castrol .....  
 Castrol .....  
 Castrol .....  
 Esso .....  
 Golden Spectro .....  
 Mobil .....  
 Mobil .....  
 Premium Fork Lubricant .....  
 Shell .....  
 Shell .....  
 Wack Chemie .....

Type

1010 shock absorber oil  
 P3441 shock absorber oil  
 SAE 5 Fork Oil (with 'Seal Swell')  
 Aero Hydraulic  
 HLP 2849  
 Fork Oil Extra Light  
 DB Hydraulic Fluid  
 1/-318 Shock Absorber Oil  
 LHM - only for temperatures below 0°C (32°F)  
 AWH 15  
 Univis 13 Telefork Oil  
 Suspension Fluid Very Light  
 Aero HFA shock absorber oil  
 DTE 11 shock absorber oil  
 Spectro SAE10 - for competition use only  
 Aero Fluid 4  
 4001 shock absorber oil  
 SAE 5 (red) high-performance telescopic fork oil

## Torque wrench settings

## Component

Steering stem top bolt - early 75 models, all 100 models .....  
 Steering stem locking sleeve - late 75 models .....  
 Locking sleeve locknut - late 75 models .....  
 Steering head bearing adjusting knurled circular nut -  
 all models .....  
 Handlebar clamp bolts .....  
 Handlebar mirror retaining nuts .....  
 Fork oil filler plug .....  
 Top yoke pinch bolts .....  
 Fluidbloc retaining screws or bolts .....  
 Bottom yoke pinch bolt .....  
 Fork brace/lower leg mounting bolts .....  
 Damper rod Allen screw .....  
 Fork oil drain plug .....  
 Stand mounting bracket/gearbox bolts .....  
 Centre and side stand pivots .....  
 Footrest plate/gearbox bolts .....  
 Pillion footrest/footrest plate retaining nuts .....  
 Rear brake pedal pivot .....  
 Fairing mounting bracket/steering head screws or bolts - K75 S ...

75 models		100 models	
Nm	Ibf ft	Nm	Ibf ft
74 ± 5	54.5 ± 4	80	59
45 ± 3	33 ± 2	N/App	N/App
45 ± 3	33 ± 2	N/App	N/App
Tightened until free play is just removed from bearings			
22 ± 2	16 ± 1.5	N/Av	N/Av
16 ± 3	12 ± 2	N/Av	N/Av
15 ± 2	11 ± 1.5	8	6
21 ± 2	15.5 ± 1.5	24	18
9 ± 1	6.5 ± 0.5	N/App	N/App
43 ± 3	32 ± 2	47	34.5
21 ± 2	15.5 ± 1.5	21 ± 2	15.5 ± 1.5
20 ± 2	15 ± 1.5	N/Av	N/Av
9 ± 1	6.5 ± 0.5	9	6.5
41 ± 5	30 ± 4	N/Av	N/Av
41 ± 5	30 ± 4	N/Av	N/Av
15 ± 2	11 ± 1.5	N/Av	N/Av
29 ± 3	21.5 ± 2	N/Av	N/Av
25 ± 3	18.5 ± 2	N/Av	N/Av
9 ± 1	6.5 ± 0.5	N/App	N/App

## 1 General description

The front forks are of the telescopic type with internal coil springs and hydraulic damping and are built for BMW by Fichtel and Sachs. The original design received a minor modification late in 1984 and a major revision of the damping components in 1986, when the 75 models were introduced. All 75 models and a special edition K100 RS were fitted with an integral fork brace. When the K75 S model was introduced it was fitted with shorter travel forks which were fitted with two springs in each leg and heavily revised damping components. This type of fork, now offered on other models as 'S' type suspension, carries the same damping components as all other current models in its left-hand fork leg but some are omitted from its right-hand leg. The extra spring, coupled with the preload spacers at the bottom of each leg, gives a much stiffer ride than is normal for BMW; these forks must be used only in conjunction with the stiffened K75 S rear suspension unit.

The steering head bearings are of the taper roller type for all models but the top bearing was modified on 75 models early in 1986 to incorporate a more accurate method of adjustment. Also introduced at this time on 75 models was the 'Fluidbloc' steering damper which consists of a stiff rubber bush lubricated with silicone grease and fixed around the steering stem by grub screws passed through the steering head lug; it can be fitted to any earlier 75 model.

The frame is a spine type, constructed of welded steel tubing and incorporating the engine/transmission unit as a stressed member.

## 2 Front forks: removal

1 It is advisable to prevent any risk of damage to its paintwork by removing the fuel tank. See Chapter 5.

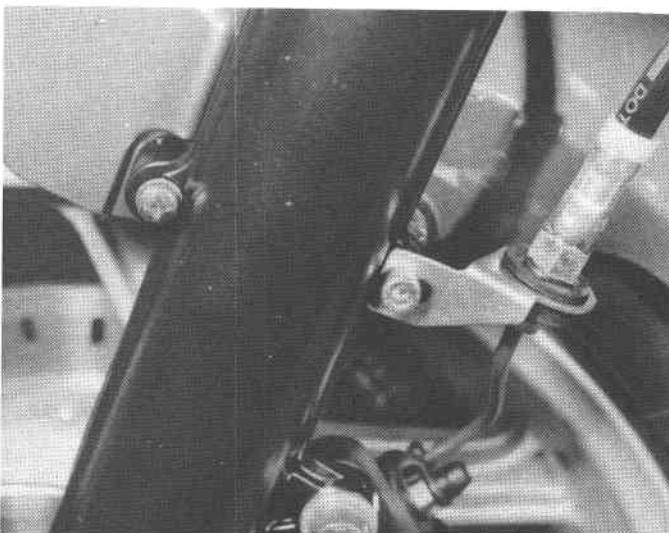
2 On machines fitted with fairings, remove any internal panels (eg the knee pads on K100 RS, K100 RT and K100 LT models) that prevent access to the fork yokes, and on K100 RS, K100 RT and K100 LT models, remove the fork gaiter retaining screws (where fitted). On models fitted with the handlebar fairing (K75 C-type) slacken the clamp screws holding the fairing bracket to the fork stanchions.

3 Remove the front wheel. See Chapter 9. Disconnect the second brake caliper from the fork lower leg, place a soft wooden or plastic spacer between the pads of each caliper and tie both calipers loosely to the frame so that both are out of harm's way and their hoses are not kinked or stretched.

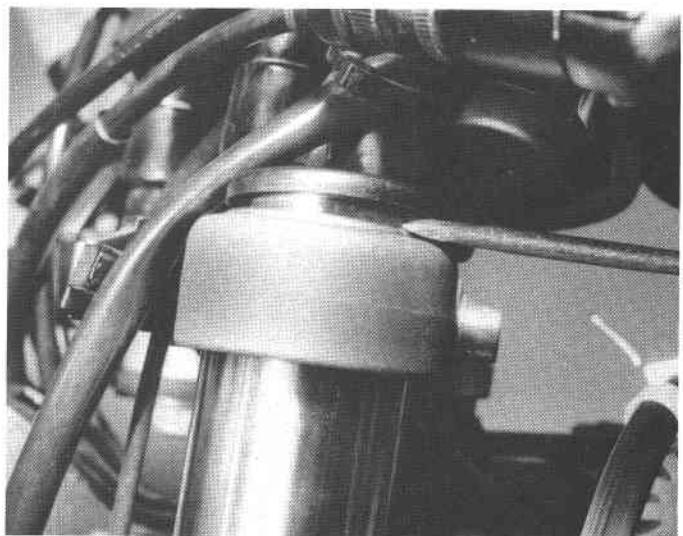
4 Remove its mounting bolts and withdraw the front mudguard and, where fitted, the fork brace.

5 Prise the black plastic cap off the top of each fork leg and slacken fully both fork yoke pinch bolts to release each leg.

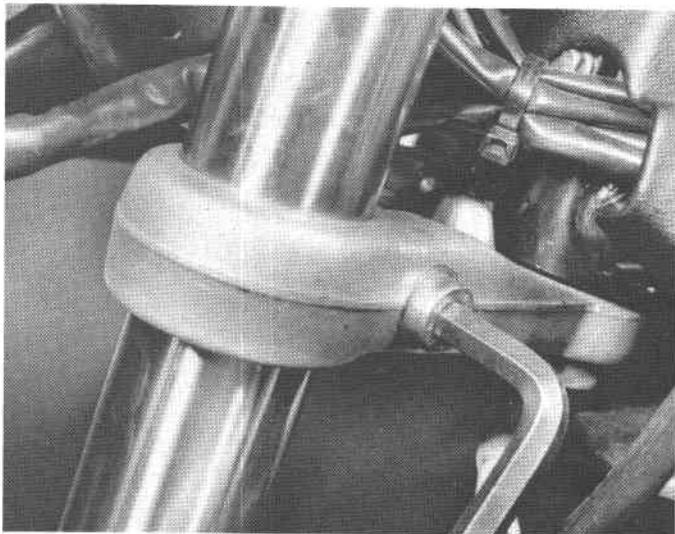
6 Unless the yokes have been distorted through excessive overtightening, the fork legs can be pulled easily downwards and out of the yokes. If resistance is encountered, apply a liberal quantity of penetrating fluid to the fork stanchions where they pass through the yokes, allow time for it to work and then try to rotate the stanchion to break it free of the yoke's grip, before pulling it downwards.



2.3 Remove front wheel, both brake calipers and hoses, and front mudguard



2.5a Prise plastic cap off each leg ...



2.5b ... then slacken pinch bolts to release fork stanchions

### 3 Front forks: dismantling

1 Always dismantle fork legs separately to avoid the risk of interchanging parts and causing increased wear. Store all components in separate, clearly-marked containers and work on one leg at a time to ensure this.

2 Holding the top plug with an open-ended spanner, remove the filler plug then unscrew the drain plug and hold the leg over a suitable container to drain the oil. Pump the leg vigorously to expel as much oil as possible.

3 Using the wheel spindle placed in one of its lugs to prevent rotation, unscrew the damper rod Allen screw from the base of the fork lower leg.

4 Clamp the fork lower leg by the caliper mounting or wheel spindle lugs in a vice equipped with soft jaws to avoid marking the soft alloy, then use a suitable rod to press in the top plug until the retaining circlip is exposed. Push the circlip down into the leg on one side only so that it can be gripped with a pair of pliers and withdrawn. Allow the spring

pressure to push the top plug out of the stanchion; in some cases the sealing O-ring may be such a tight fit that the top plug must be extracted using a pair of pliers to grip a bolt screwed into the filler plug thread.

5 Make a very careful note of the order components are removed, and which way round each is fitted. Note that any references to K75 S suspension components automatically apply to any model fitted with S type suspension.

6 On all models except the K75 S, remove first the white nylon spacer then the fork spring, noting which way round the spring was fitted, also the spring seat at each end.

7 On K75 S models remove the spacer(s), followed by the top spring, then the main spring; note carefully which way round each component was fitted.

8 On all models, remove the damper rod Allen screw and pull the fork stanchion assembly out of the lower leg. Owners should note that the rebuilding procedure is quite difficult if the damper components are removed from the stanchion; it is recommended that these components are left undisturbed unless their removal is absolutely necessary.

9 Remove the circlip from the stanchion lower end and note the number and thickness of shims fitted above it. Pull the damper assembly carefully out of the stanchion; as the damper piston emerges note which way round the piston ring is fitted. The valve housing can be removed from the lower end of the damper rod and the piston ring can be removed from its groove.

10 If the damper components are to be dismantled, thoroughly clean the rod assembly, removing all traces of oil and dirt and finishing off with a rinse in hot soapy water to remove any flammable solvents. On K75 S models measure the exact overall length of each damper rod from the piston top surface to the rod lower end and record the results. The damper piston is screwed on to the rod upper end and secured at a precise distance by Loctite 638 or 273 thread-locking compound; to release this it must be heated in a gentle flame until the Loctite starts to burn (approximately 250°C/482°F), whereupon the piston can be gripped with a pair of pliers or similar and unscrewed. The damper components can then be removed after taking careful note of exactly which way round each is fitted.

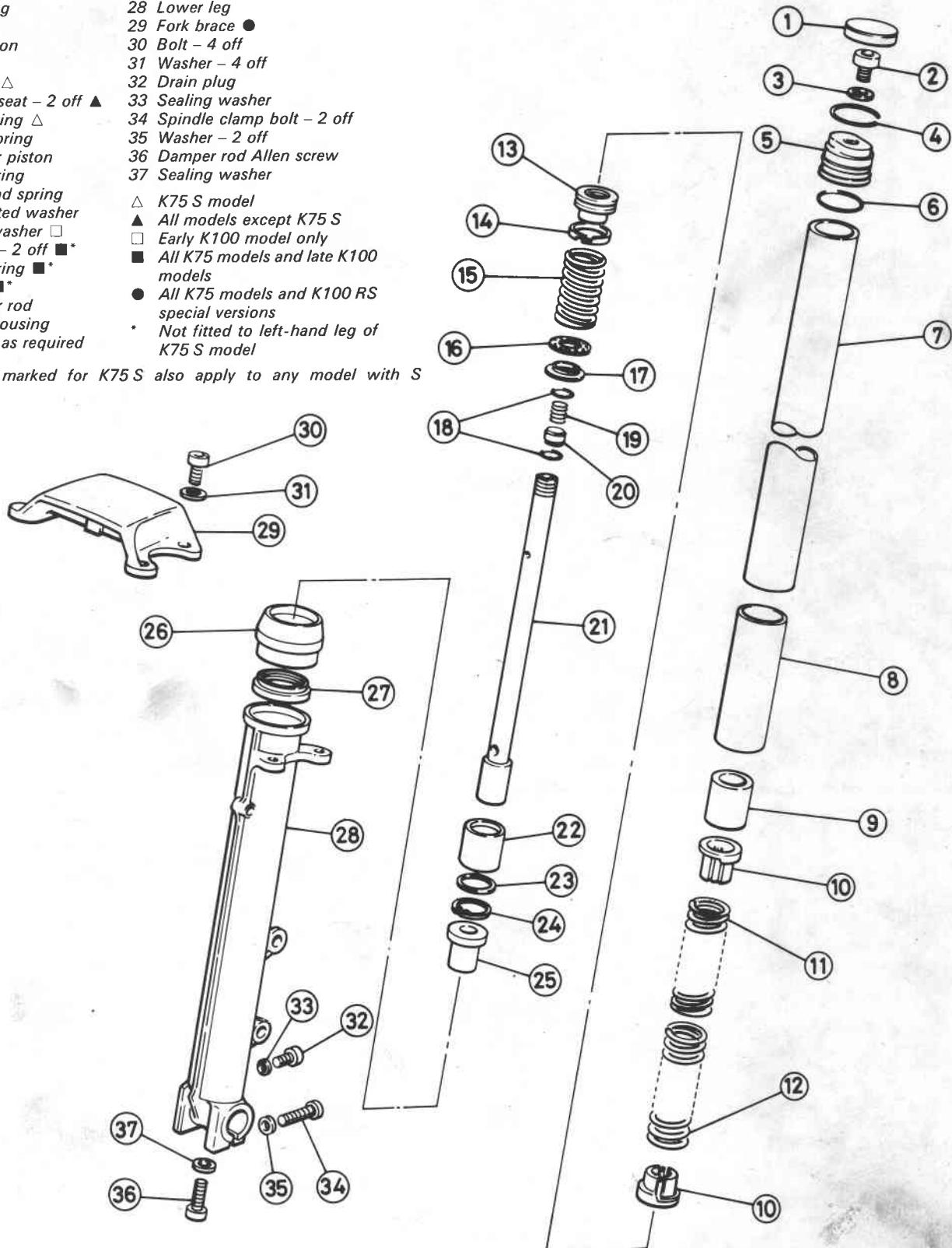
11 To remove the fork oil seals, withdraw the dust excluder from the top of each fork lower leg and carefully lever out the seal. Use only a tool with well-rounded edges to avoid scratching the seal housing and place a piece of wood across the top of the leg to act as a pivot and prevent damage to the leg itself. If a seal is very difficult to remove, pour boiling water over its upper end, taking care to prevent the risk of personal injury.

12 On K75 S models once the seals are removed the spacers can be tipped out of the fork lower legs; note which way round each is fitted.

Fig. 7.1 Front forks

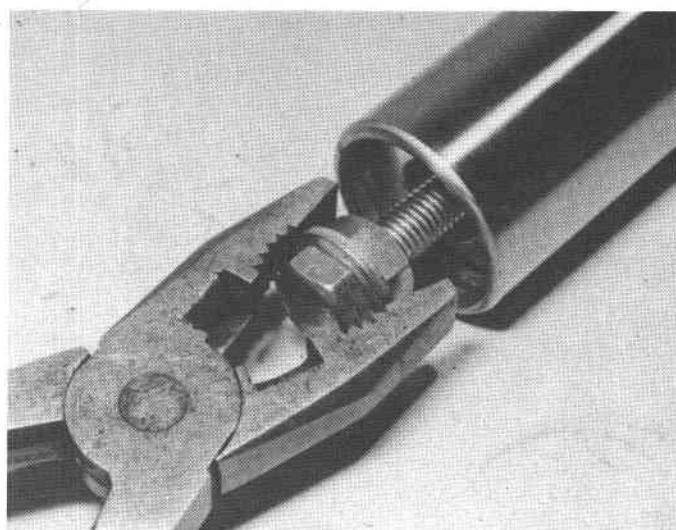
1	Plastic cap	24	Circlip
2	Filler plug	25	Spacer $\triangle$
3	Sealing washer	26	Dust excluder
4	Circlip	27	Oil seal
5	Top plug	28	Lower leg
6	O-ring	29	Fork brace $\bullet$
7	Stanchion	30	Bolt - 4 off
8	Spacer	31	Washer - 4 off
9	Spacer $\triangle$	32	Drain plug
10	Spring seat - 2 off $\blacktriangle$	33	Sealing washer
11	Top spring $\triangle$	34	Spindle clamp bolt - 2 off
12	Main spring	35	Washer - 2 off
13	Damper piston	36	Damper rod Allen screw
14	Piston ring	37	Sealing washer
15	Rebound spring		$\triangle$ K75 S model
16	Perforated washer		$\blacktriangle$ All models except K75 S
17	Valve washer $\square$		$\square$ Early K100 model only
18	O-ring - 2 off $\blacksquare$ *		$\blacksquare$ All K75 models and late K100 models
19	Coil spring $\blacksquare$ *		$\bullet$ All K75 models and K100 RS special versions
20	Valve $\blacksquare$ *		* Not fitted to left-hand leg of K75 S model
21	Damper rod		
22	Valve housing		
23	Shim - as required		

Note: items marked for K75 S also apply to any model with S suspension

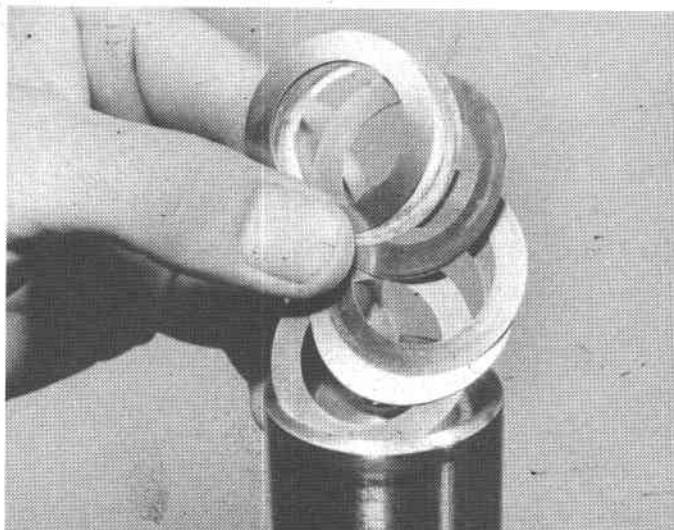




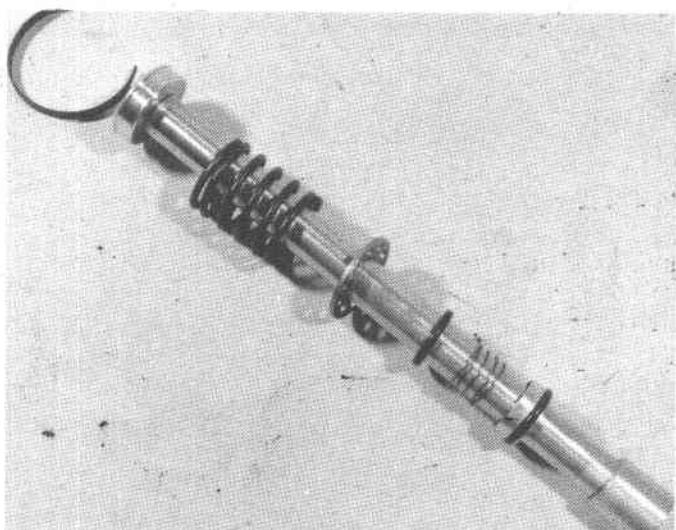
3.4a Push top plug into stanchion until circlip can be withdrawn ...



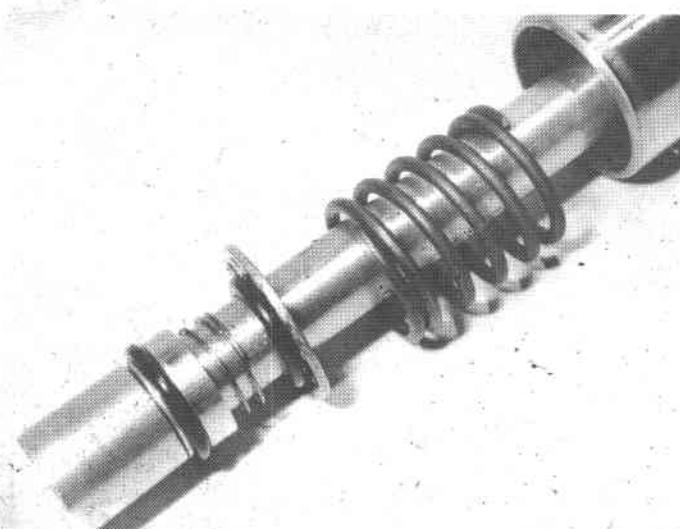
3.4b ... top plug should be pushed out by spring pressure but may require pulling, as shown, if O-ring is a tight fit



3.9 If damper rod is removed from stanchion, note number and thickness of shims



3.10a Do not dismantle damper rod unless necessary – piston must be heated to release locking compound ...



3.10b ... Note carefully which way round components are fitted before removing them

#### 4 Front forks: examination and renovation

1 If the forks have been damaged in an accident, it is essential to inspect both fork yokes, the stanchions and the lower legs, for distortion and hairline cracks. Distorted components must be renewed, do not attempt to straighten them.

2 Stanchions may be checked for straightness by rolling them along a flat surface.

3 Check the fork bottom yoke by clamping the steering stem horizontally in a vice with soft jaws. Fit the stanchions to the yoke, with the upper ends projecting the specified test length beyond the top machined face of the yoke.

4 Take a sight across two straightedges laid across the extreme ends of the stanchions. Check for parallelism by measuring between the stanchions at each end, at right angles. Fit the top yoke and check that the steering stem and both stanchions fit into it without any apparent strain.

5 The fork lower legs are not bushed; the stanchions bear directly in the alloy casting. If the lower legs are worn or scored they must be renewed. Permissible clearance is given in the Specifications Section of this Chapter.

6 The oil seals should be renewed whenever they are disturbed, as should all sealing O-rings and washers. Check carefully the condition

of each damper rod piston ring and renew it if there is any doubt about its condition. Where fitted, check the dust excluder and fork gaiters for signs of wear or damage and renew them if necessary.

7 Measure the spring free lengths; if either has settled to less than the specified length, where available, both springs must be renewed.

8 Thoroughly clean all components and dry them ready for reassembly.

### 5 Front forks: reassembly

1 On K75 S models refit the spacers to the fork lower legs, ensuring that they are the correct way up.

2 On all models refit the fork seals. Check that each housing is free from burrs or raised edges, then smear grease over the seal's outside edge and tap it squarely into its housing until it is **just** flush with the top of the fork lower leg. **Do not** attempt to drive it in any further as this will merely distort the seal and promote leaks. Use a hammer and a tubular drift such as a socket spanner which bears only on the seal's hard outer edge to tap the seal into place.

3 If the damper rod assembly was disturbed, it must be rebuilt following the accompanying photographs and illustrations to ensure that all components are correctly refitted. Note particularly that the valve fitted at the bottom of the rod on later models has an O-ring around it which should be on the lower side of the valve.

4 When the damper assembly is complete, the piston must be refitted to retain the components; make a final check that all are refitted and degrease the piston and rod threads. Apply a single drop of Loctite 638 or 273 thread-locking compound and screw the piston on to the rod until the rod's overall length (from the top of the piston to the bottom of the rod's lower end) is  $258 \pm 0.5$  mm ( $10.16 \pm 0.02$  in). Note that a specified figure is not available for K75 S models; these must be rebuilt to the length noted on dismantling. When the piston is correctly set, either dry the Loctite with a hot-air blower or leave it to cure for 24 hours at room temperature.

5 Fit the damper piston ring to the piston groove so that its notched end is downwards then wrap a sheet of thin (the metal in the photograph is 0.35 mm/0.014 in thick) metal or stiff plastic around the piston and ring to hold the ring securely in its groove and to act as a guide to lead it into the stanchion bore. Withdraw the guide and push the damper rod into the stanchion.

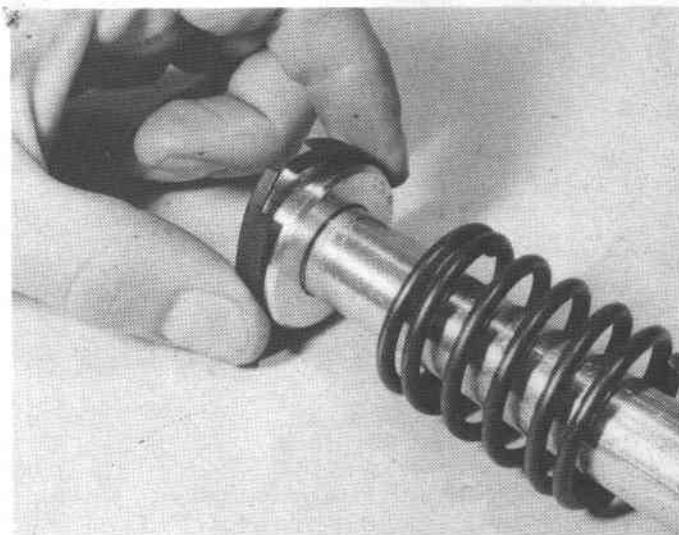
6 Fit the valve housing over the rod lower end and insert it into the bottom of the stanchion. The housing is retained by a circlip but the clearance between them must be eliminated by careful shimming to prevent an annoying rattle. Shims are available in thicknesses of 0.1 and 0.3 mm (0.004 and 0.012 in) for early 100 models but can only be used in conjunction with a modified circlip which was subsequently fitted to all other models. For later models shims are available in thicknesses of 1.6, 1.7, 1.8, 1.9 and 2.0 mm (0.063, 0.067, 0.071, 0.074 and 0.079 in).

7 Smear the stanchion assembly with oil and insert it into the fork lower leg, using the spring(s) to stop the damper rod from disappearing inside the stanchion. Refit the damper rod Allen screw and its sealing washer. Either pass a slim wooden dowel, with a coarse taper ground on one end, down inside the stanchion to bear against the damper piston or refit the spring(s) and spacer(s) and use these to apply sufficient pressure to stop the damper rod from rotating. Tighten the damper rod Allen screw to the specified torque wrench setting, where given. Refit the drain plug and tighten it to its specified torque setting. Smear the sealing lips with grease (BMW specify Gleitmo 805) and refit the dust excluder.

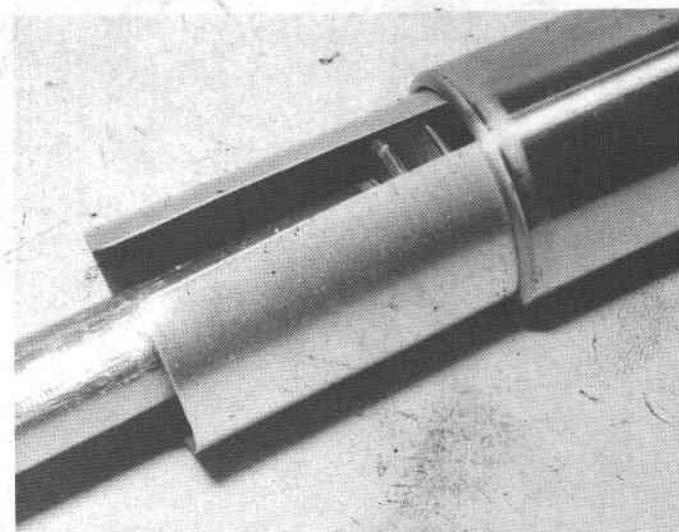
8 If required, the fork oil can be added at this stage rather than risk wasting any in trying to pour it through the rather small filler hole. Refit the fork spring(s) ensuring that the spring seats (where fitted) are correctly installed and that the springs are refitted the correct way up. Refit the spacer(s) and install the fork top plug with a new O-ring.

9 Push the plug into the stanchion, fit the retaining circlip to its groove and allow the spring pressure to push the plug back up against the circlip.

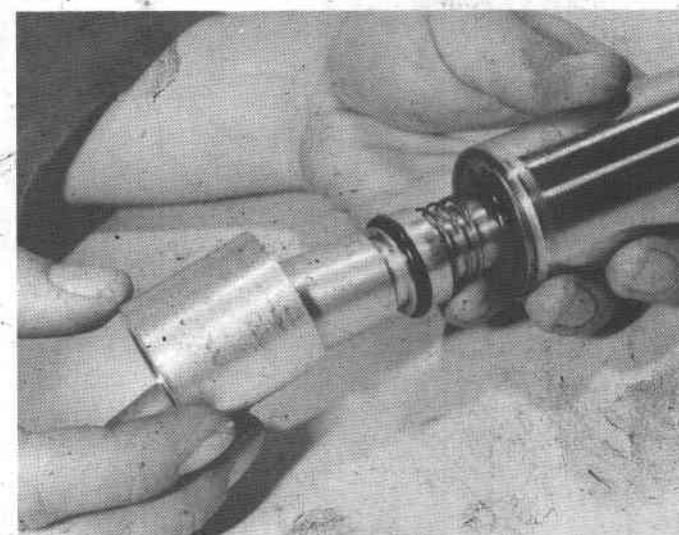
10 Fill the fork leg with exactly the specified amount of the correct type of oil, as described in Routine Maintenance, then check that the fork leg is fully extended before refitting the filler plug; the forks are designed with the cushioning effect of the trapped air in mind. Hold the top plug with an open-ended spanner and tighten the filler plug to the specified torque setting.



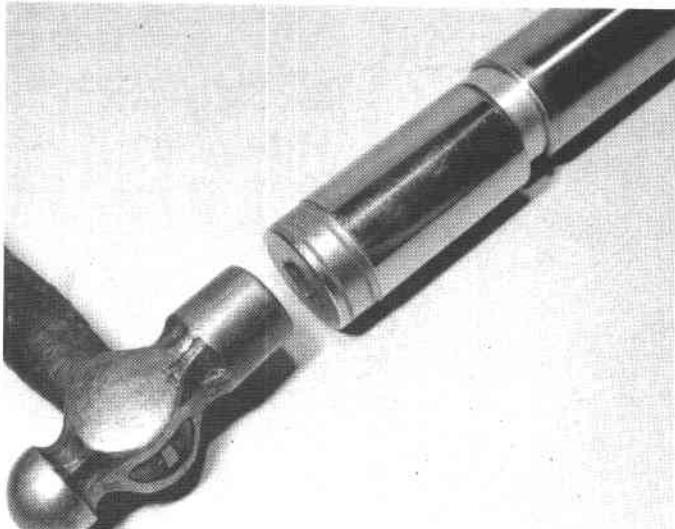
5.5a Wrap piston ring around piston groove ...



5.5b ... and use fabricated guide to ensure assembly is inserted into stanchion without damage



5.6a Fit valve housing over damper rod lower end ...



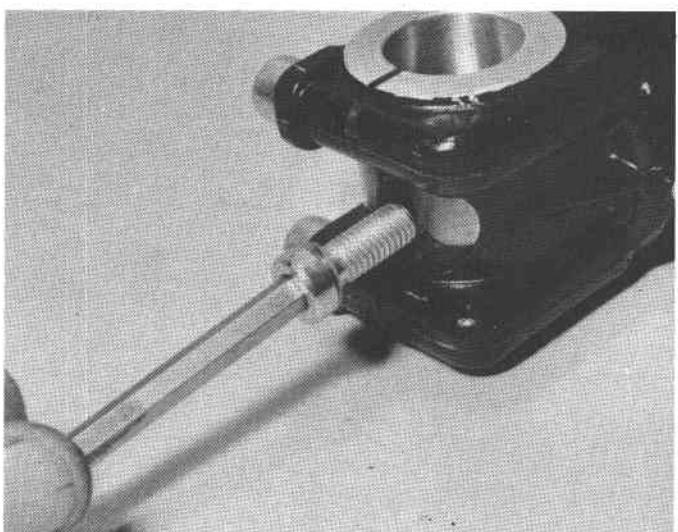
5.6b ... valve housing may have to be tapped gently into stanchion



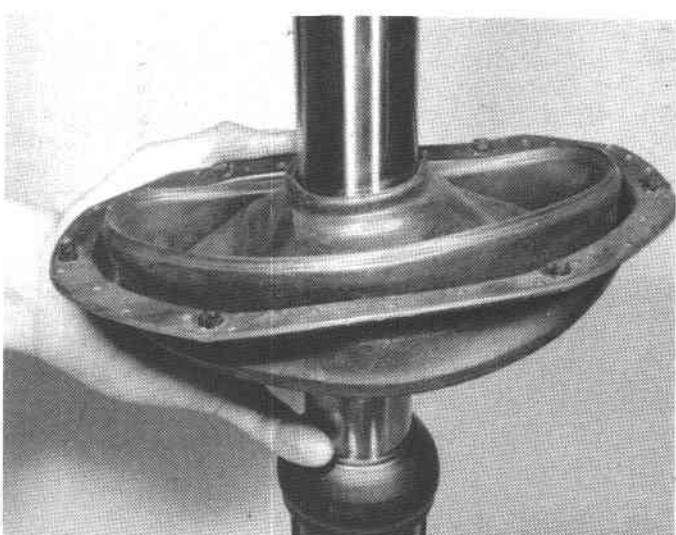
5.6c Clearance between valve housing and circlip must be eliminated using shims



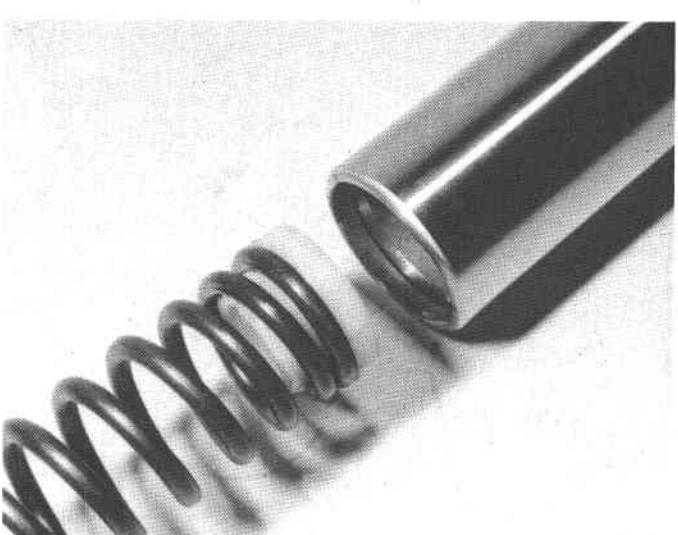
5.7a Lubricate all components before refitting stanchion assembly to lower leg



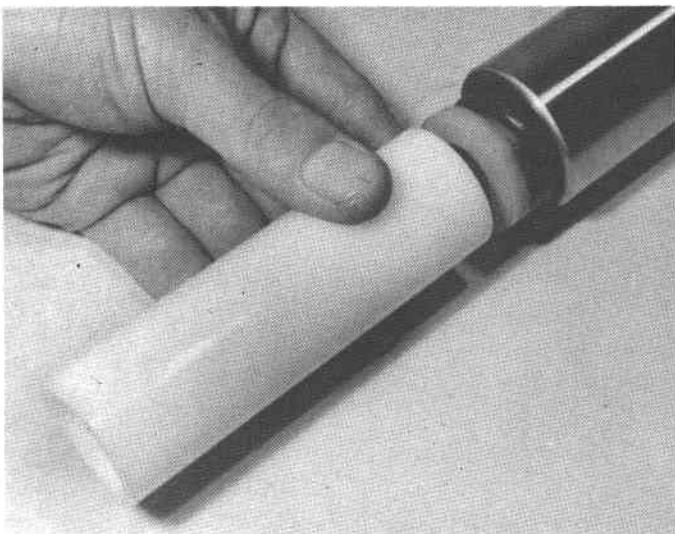
5.7b Prevent damper rod from rotating while Allen screw is fastened



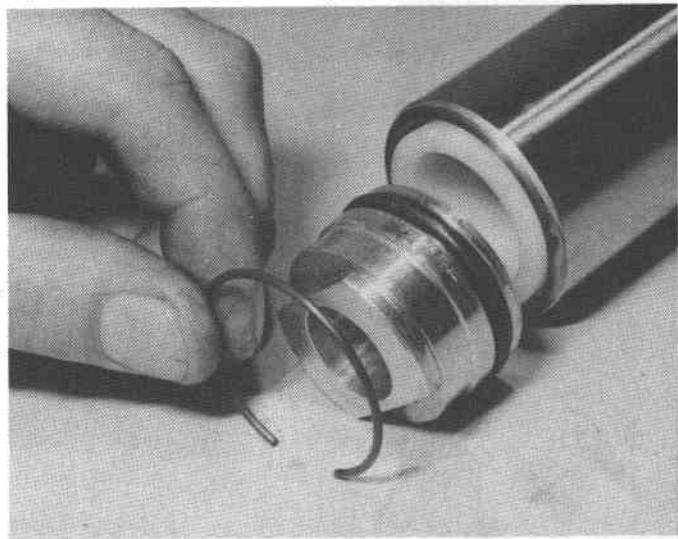
5.7c Refit dust seal to top of lower leg – do not forget gaiter (where fitted)



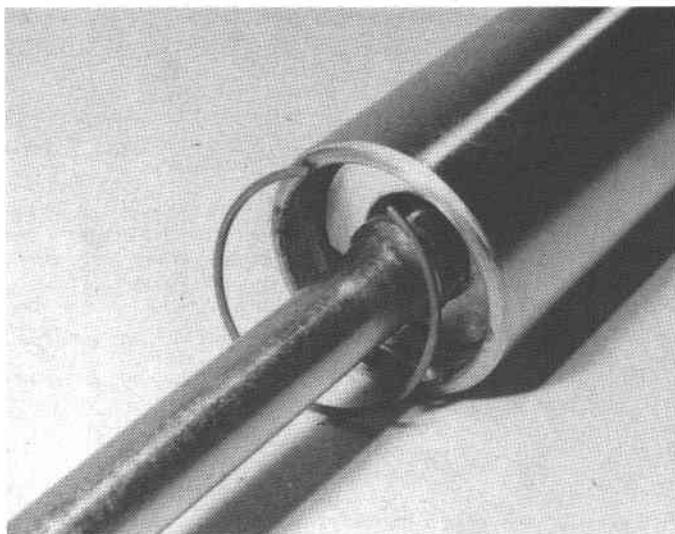
5.8a Ensure springs are refitted original way up – do not omit spring seats, if fitted



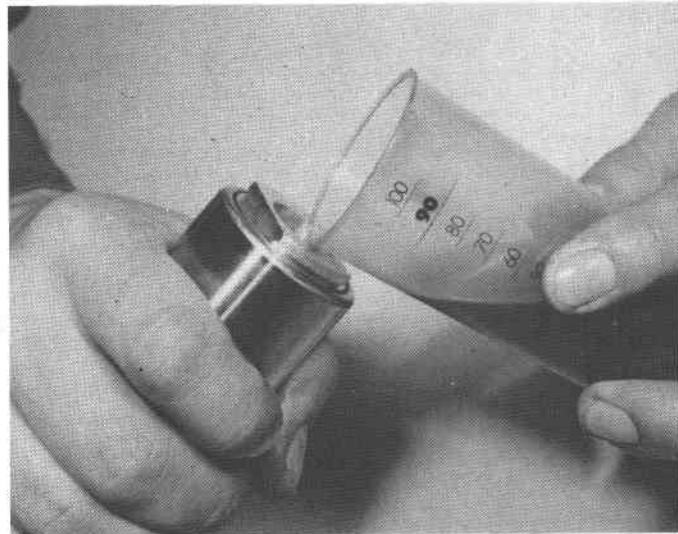
5.8b Refit fork spring spacer ...



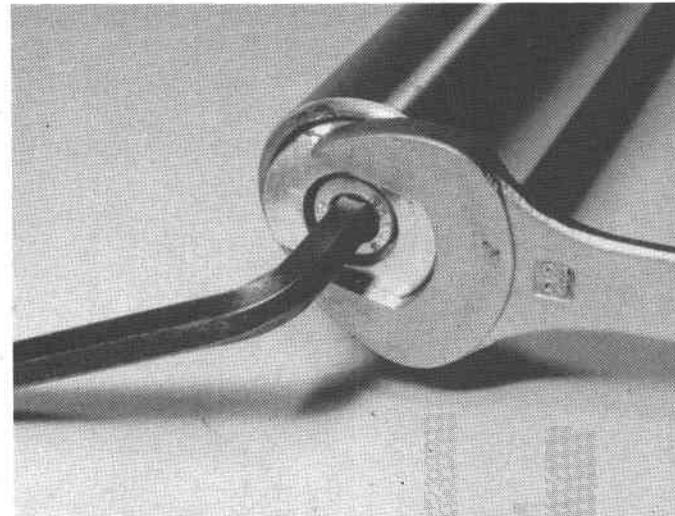
5.8c ... followed by top plug – note new sealing O-ring



5.9 Push top plug into stanchion until circlip can be refitted



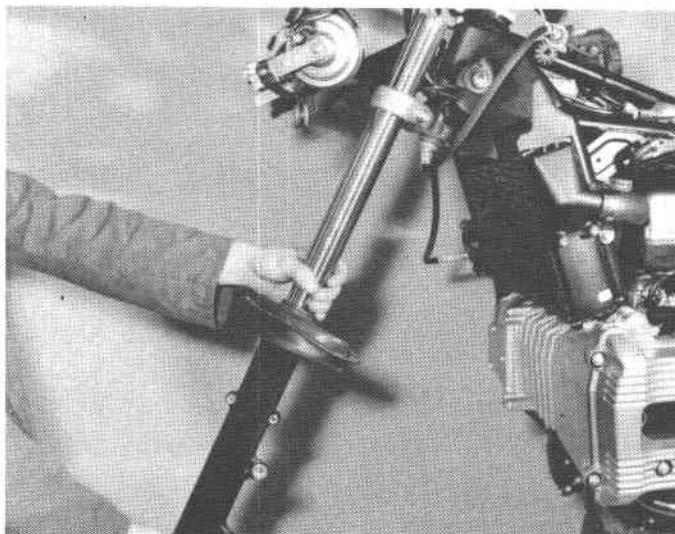
5.10a Add exactly the specified amount and type of oil to each fork leg



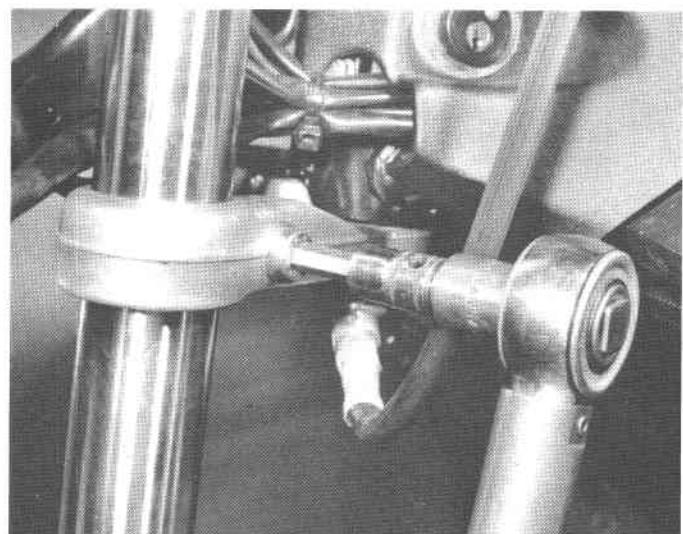
5.10b Hold top plug as shown while tightening filler plug – fork leg should be fully extended

## 6 Front forks: refitting

- 1 Use fine abrasive paper to polish away any burrs, raised edges or deposits of corrosion from the fork stanchions and from the yokes through which they must fit. Smear a light coat of grease over the stanchion upper end and slide the legs into place.
- 2 Lightly tighten the pinch bolts so that the legs are just held in the yokes, then check that the tops of the stanchions are flush with the top of the top yoke. Slide the wheel spindle through the spindle lugs to ensure that the fork legs are correctly aligned, then tighten first the top yoke pinch bolts to their specified torque setting, followed by the bottom yoke pinch bolts which must also be tightened to their specified setting. Refit the black plastic cap to the top of each leg.
- 3 Refit the fork brace (if fitted) and the front mudguard, followed by the front wheel and the brake calipers.
- 4 When the front mudguard and wheel have been refitted, push the machine off its stand, apply the front brake and pump the forks up and down to align the legs and their mountings. Working from the top downwards tighten all fasteners to their specified torque settings, where available.
- 5 Check that all controls are correctly adjusted, that all components are securely fastened and that the suspension works smoothly before using the machine.



6.1 Smear grease over stanchions to aid fitting – do not forget gaiters, if fitted



6.2 Tighten pinch bolts to specified torque settings – do not overtighten

## 7 Front forks: aligning the damping components

1 Due to their long travel and relatively complex construction, these forks can be noisy in operation or, especially after they have been disturbed, they can become stiff in operation. While the standard procedure described in Sections 5 and 6 of this Chapter is sufficient in most cases, to remedy this, on occasion a stiff or noisy fork can be cured only by the more elaborate procedure described below. Note that the procedure starts with the premise that the stanchions are in place on the machine, with the damper rods fitted, and that the lower legs are attached loosely by the damper rod Allen screws; the mudguard, front wheel and fork brace (if fitted) must be removed.

2 Push each lower leg sharply upwards until it is heard to make contact, then rotate it two or three times around the stanchion to centre the damper rods before tightening the damper rod Allen screw to the specified torque setting (where given); use the spring or a wooden dowel to prevent the damper rod from rotating. Check that the lower leg still slides smoothly and easily and rotates without stiffness; if necessary slacken the Allen screw and repeat the procedure until results are satisfactory.

3 If a fork brace is fitted, install it but tighten the bolts only lightly then refit the wheel spindle and clamp it on one side only. Push both lower legs upwards simultaneously until contact is heard again then tighten the fork brace mounting bolts evenly and in a diagonal sequence to the specified torque setting; tighten also the second pair of spindle clamp bolts to the specified torque setting.

4 Pump the lower leg assembly up and down several times to check for any signs of stiffness or distortion, then check that the wheel spindle can be easily removed and refitted. If any stiffness or difficulty is found, check the fork components for distortion.

5 Refit the oil drain plugs, the front mudguard, the front wheel and the brake components then fill each leg with the specified quantity and type of fork oil and refit the fork springs and spacers.

6 Raise the front wheel from the ground and support the machine with a wooden box or similar under the crankcase so that the forks are fully extended. Refit the top plugs and oil filler plugs, then lower the machine to the ground and check the fork action.

7 Note that some stiffness will be inevitable in a freshly-rebuilt fork and a running-in period of 600 miles (1000 km) will probably prove necessary before the fork operates with absolute smoothness.

## 8 Steering head bearings: removal

1 Owners of machines with fairings are strongly advised to remove the fairing components to prevent any risk of damage.

2 Remove the fuel tank. See Chapter 5.

3 Remove the front fork legs. See Section 2 of this Chapter.

4 Carefully prise out the ignition switch surround and disengage the switch from the handlebar panel with a small screwdriver, then remove the panel mounting screws and withdraw the panel.

5 On K75, K75 C, K75 T and K100 models remove the headlamp surround/handlebar fairing, then remove its two fixing bolts and withdraw the headlamp unit, disconnecting the electrical leads to release it. Disconnect the horn wires, slacken the horn mounting bolts and remove the single screw securing the connector plug cover to the underside of the instrument panel. Withdraw the cover and unplug the connectors, then unscrew four Allen screws or hexagon-headed bolts securing the housing rear cover to the fork yokes. Withdraw the rear cover complete with the instrument panel, manoeuvring the panel clear of the bottom mounting bracket.

6 Disconnect the brake hose at the unions on the steering stem upper end and either plug the hose or wrap it tightly in a plastic bag or similar so that brake fluid cannot leak out. Unscrew the plastic nut (early 75 models and all 100 models) or release the retainer (later 75 models) at the top of the steering stem and pull the brake pipe down through the steering head, taking care not to splash brake fluid.

7 Remove the handlebar clamp bolts and bring the handlebars to the rear, clear of the steering head area, ensuring that all cables and wiring are out of the way. The fork yokes should now be completely clear and ready for removal.

8 On all 100 models and early 75 models unscrew the steering stem top bolt, tap the top yoke upwards off the steering stem using only a soft-faced mallet, unscrew the circular adjusting nut and pull the bottom yoke downwards out of the steering head; it may be necessary to use a soft-faced mallet to tap the steering stem down through the bearings. Withdraw the top bearing.

9 If working on an early K75 C model that has been subsequently fitted with a 'Fluidbloc' damper (identified by the two bolt heads protruding from the steering head lug) wipe all traces of grease away from the steering stem and wrap a thin layer of insulating tape around the threads to prevent them damaging the damper rubber as they pass through it.

10 On later 75 models unscrew the locking sleeve locknut and tap the fork top yoke upwards off the steering stem, then slacken the locking sleeve and unscrew the bearing adjuster nut while pulling the bottom yoke downwards out of the steering stem. The top bearing must be driven off the adjuster nut using a hammer and a pin punch passed through the holes in the nut top cover.

11 The bearing outer races can only be extracted using a slide-hammer or similar puller which has an internally-expanding adaptor of the necessary size.

12 To remove the bottom bearing thoroughly clean the whole steering stem and mark its installed position in the bottom yoke next to the slot

for the steering lock. Heat the assembly to 120 – 130°C (248 – 266°F) and drive or press the steering stem downwards through the bottom yoke until the bearing is released.

13 Before the yoke cools down, use a 30 mm (1.2 in) drift to tap the stem back into its previously marked position; the circlip should locate against the yoke underside.

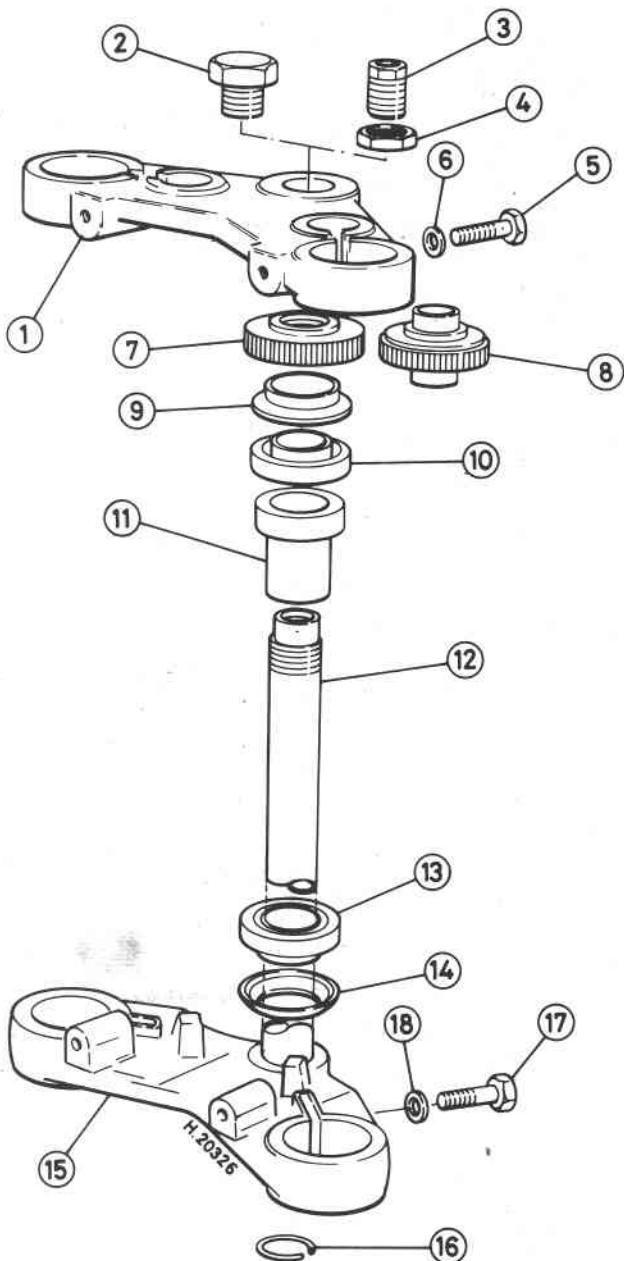
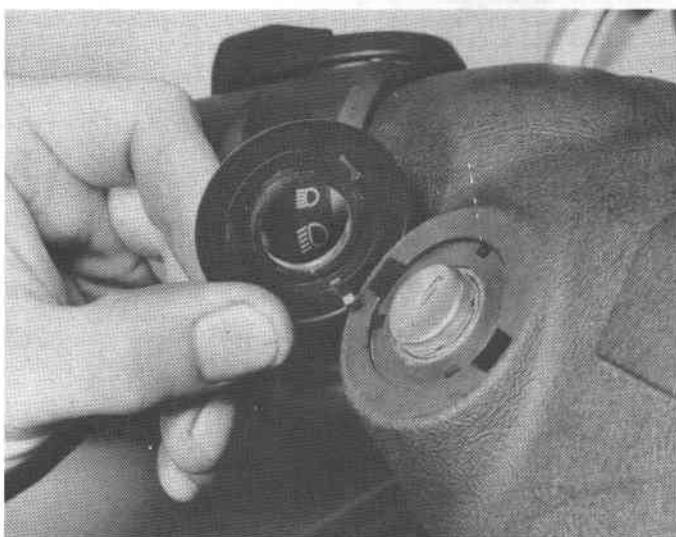


Fig. 7.2 Steering head assembly

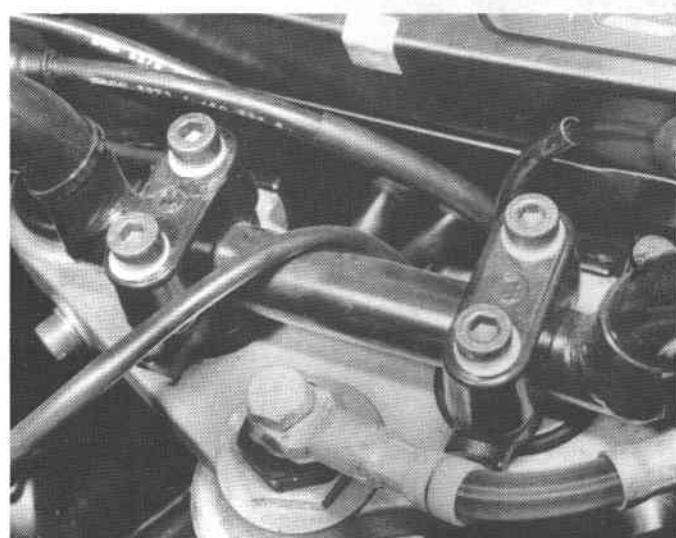
1 Top yoke	11 Fluidbloc steering damper ▲
2 Steering stem top bolt △	12 Steering stem
3 Locking sleeve ▲	13 Taper roller bearing
4 Locknut ▲	14 Dust seal – where fitted
5 Bolt – 2 off	15 Bottom yoke
6 Washer – 2 off	16 Circlip
7 Bearing adjuster nut △	17 Bolt – 2 off
8 Bearing adjuster nut ▲	18 Washer – 2 off
9 Dust seal – where fitted ▲	△ All models except late K75
10 Taper roller bearing	▲ Late K75 models only



8.4a Prise off switch surround to release ignition switch from handlebar cover ...



8.4b ... then remove panel mounting screws and withdraw panel



8.6 Brake hose must be disconnected before fork top yoke can be removed

## 9 Steering head bearings: examination and renovation

1 Clean and examine the outer bearing tracks whilst in the steering head. Since the forks rotate through only a small angle, the commonest damage to the bearings is brinelling. This is indenting of the roller tracks by the rollers, generally due to maladjustment. It can be felt, when turning the forks, by the steering seeming to 'index' in one position.

2 Check the rollers and their cages for signs of wear or damage and renew the complete bearing if in doubt about its condition.

3 Always renew any dust seals or other sealing components to prevent the entry of dirt.

## 10 Steering head bearings: refitting

1 To refit the bearing outer races assemble a drawbolt consisting of a pair of thick steel washers which are large enough to fit over the end of the steering head lug, a bolt long enough to pass through the head lug, both washers and one outer race, and a large nut.

2 Ensuring that it is square to its housing in the steering head lug draw the bottom bearing outer race into the head lug until it seats fully. Do not forget to fit the Fluidbloc (where fitted) before repeating the procedure to refit the top bearing outer race.

3 Both inner races must be heated to 80°C (176°F) to refit them. To fit the lower bearing inner race a tubular drift must be found that will fit over the steering stem and yet bear only against the bearing inner race itself, not touching the rollers or cages. Refit the dust seal (where fitted) heat the bearing and drop it over the steering stem (ensuring that it is the correct way up) then tap it firmly down on to the bottom yoke; there must be no clearance between the bearing and the yoke. 4 The top bearing is fitted in a similar manner to the adjuster nut; again there must be no clearance between the bearing and the nut top cover.

5 Thoroughly grease all bearings after they have cooled, but be careful to keep grease away from the 'Fluidbloc' (where fitted). Where a Fluidbloc has been fitted to an early K75 C model, wrap a thin layer of tape around its threads before refitting the steering stem.

6 On early 75 models and all 100 models check that the bottom bearing is greased and refit the bottom yoke to the steering head. Remove the tape (if applicable). Heat the top bearing to 80°C (176°F) and drop it over the stem upper end. Tap it into place and refit the circular adjuster nut. Allow the bearing to cool, pack it with grease, if necessary, and tighten the nut hard to preload the bearings then slacken it fully and re-tighten it until all free play is just eliminated.

7 On later 75 models check that the bearings are greased and carefully refit the bottom yoke to the steering head. Refit the circular adjuster nut with the top bearing and locking sleeve. Again tighten the adjuster nut hard to preload the bearings, then slacken it fully and retighten it until all free play is just eliminated.

8 On all models refit the top yoke, followed by the top bolt (early 75 models and all 100 models) or locknut (late 75 models); do not tighten them until adjustment is complete.

9 Refit the handlebars, ensuring that the punch mark is aligned on the inside of the left-hand clamp, between the joint faces of the two clamps.

10 Refit the brake pipe to the steering head, fasten the plastic nut or retainer to secure it and connect the master cylinder brake hose again, using new sealing washers. Refill the brake system with fresh fluid, check that the spacers are in place between the brake pads, and bleed the brake system until normal lever pressure is restored. If the handlebars are kept on full left lock, the master cylinder will be the highest point in the system which will aid this procedure. Be very careful to check that the brakes are working correctly before taking the machine out on the road.

11 Refit the front forks, mudguard and fork brace. See Sections 6 and 7 of this Chapter. Refit the front wheel as described in Chapter 9.

12 Adjust the steering head bearings as described in Routine Maintenance, then refit all disturbed fairing or headlamp housing components, the handlebar panel and ignition switch and the fuel tank.

13 Check that the front brakes, the suspension, the steering and all controls work properly and are adjusted correctly before taking the machine out on the road. All fasteners should be securely tightened to their respective torque wrench settings, if available.

## 11 Fluidbloc steering damper: general – 75 models

1 This component is fitted as standard to all K75 C models from the end of 1985 onwards and to all K75 S models; it can also be fitted to any earlier K75 C model.

2 It consists of a firm rubber bush set in the steering head lug and retained by two tapered screws or bolts which are of exactly the required length to penetrate the soft surface of the damper without tearing it and so cannot be swapped between models.

3 The carefully shaped pattern on the damper's inside diameter, coupled with the use of silicone grease, gives sufficient friction to damp any fork movement greater than 1 degree side to side.

4 The unit requires no maintenance since the grease specified is a long-life lubricant. If the steering head bearings are to be adjusted at any time remove the tapered screws or bolts so that the damper no longer exerts any damping effect which would otherwise give a false setting, and always take great care to protect the damper from other types of grease and from any damage when overhauling the steering head bearings.

5 It will be necessary to remove the steering head bearings to remove or refit a Fluidbloc damper. If installing a new damper mark a line on its larger diameter at a point 7 mm (0.28 in) below its top edge. Fill the recesses with the specified Silicone Grease 300 Heavy and press the damper into the steering head until the mark appears in the tapped holes; refit and tighten to the specified torque setting the tapered retaining screws or bolts.

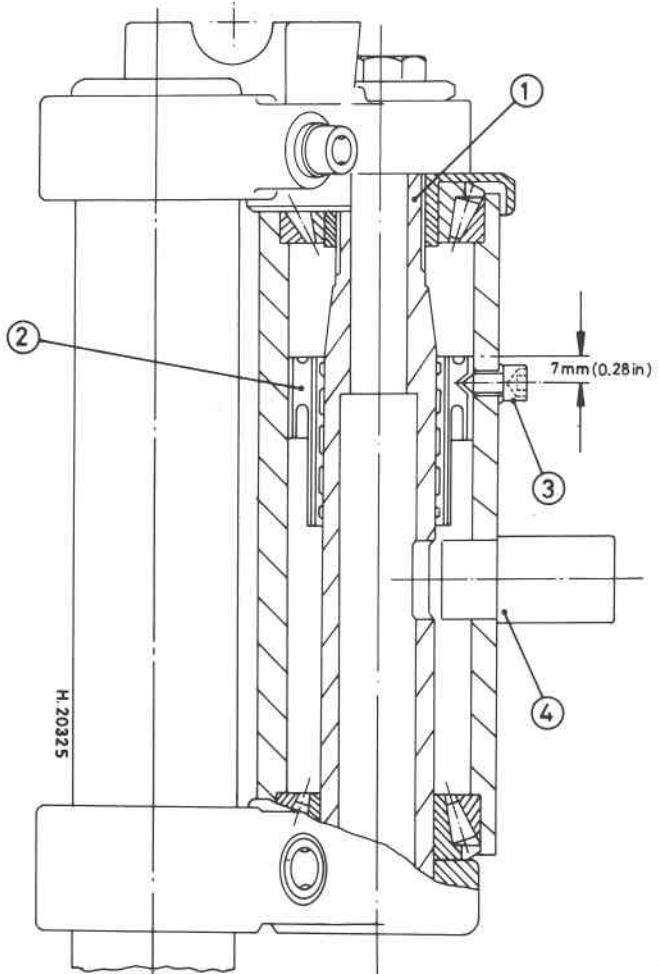


Fig. 7.3 Fluidbloc steering damper installation

1 Steering stem  
2 Fluidbloc

3 Tapered screw or bolt  
4 Steering lock