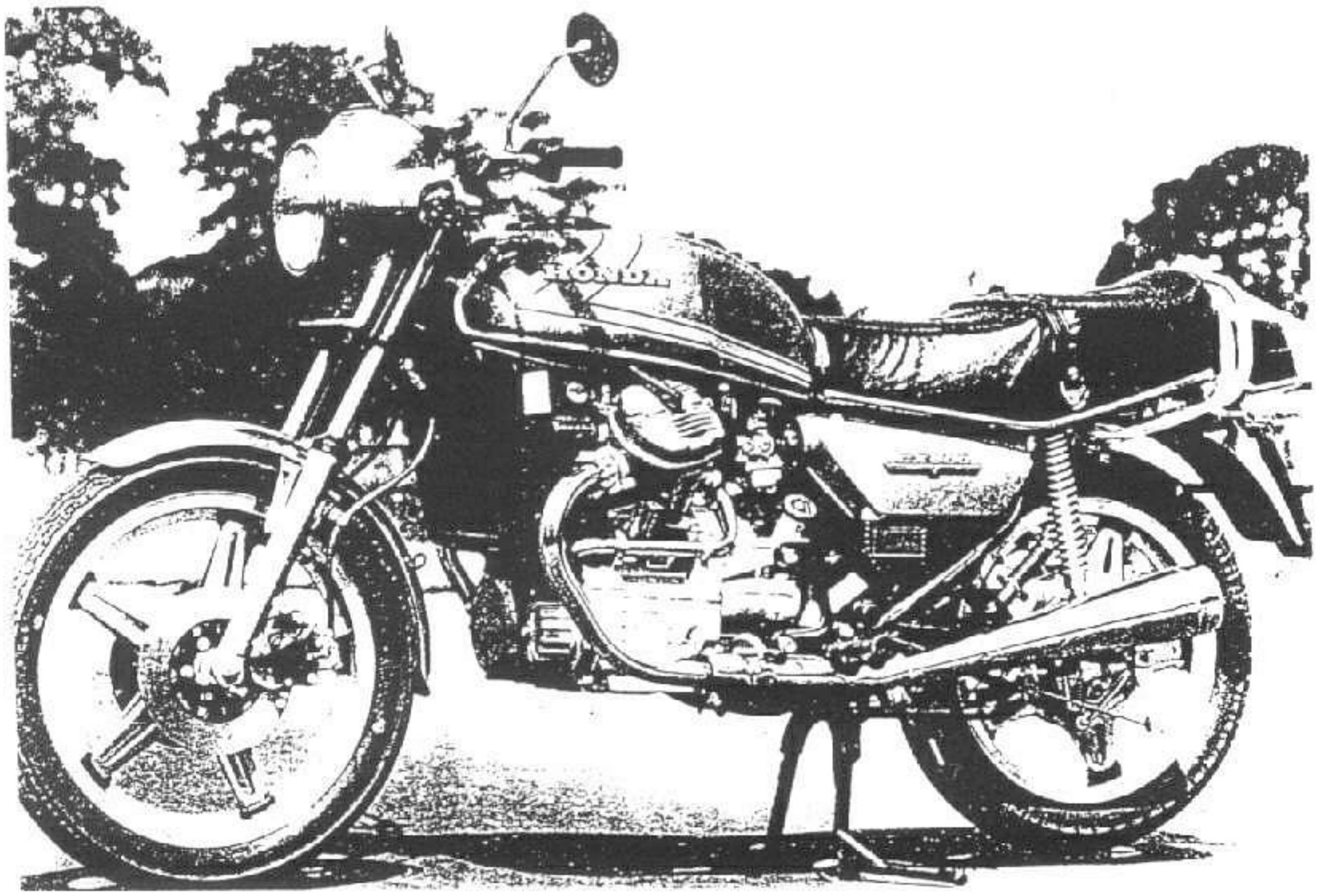
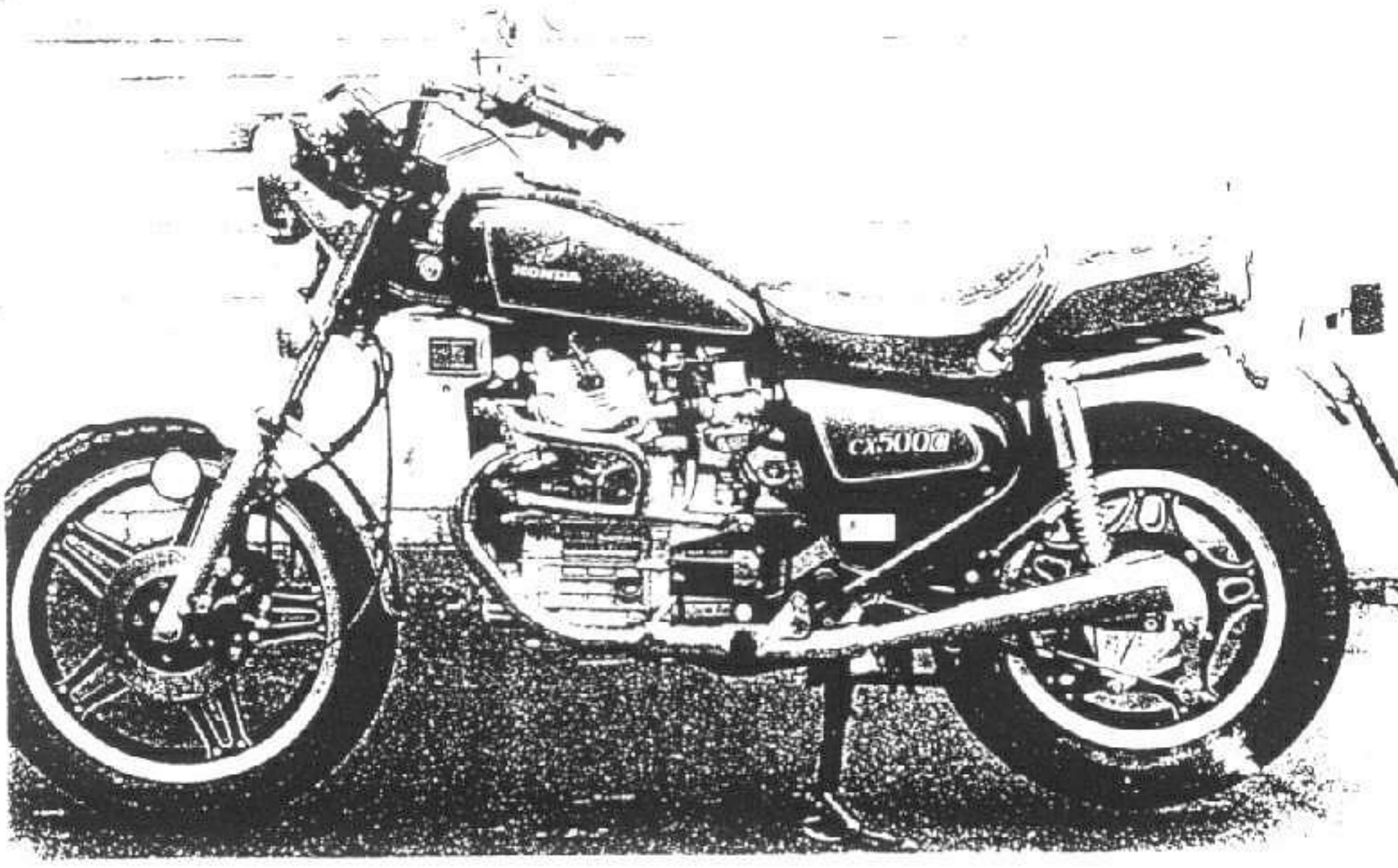


The CX500 (UK) model



The CX500 C-B model

Thoroughly clean all components before refitting

2 *Renew the air filter element*

The manufacturers recommend that the air filter element be renewed at this interval. If the machine is used continually in dusty areas the useful life of the filter may be reduced and therefore filter renewal should be made at correspondingly shorter intervals.

3 *Renew the spark plugs*

The spark plugs should be renewed at this interval, regardless of their apparent condition, as they will have passed peak efficiency. Check that the new plugs are of the correct type and heat range and that they are gapped correctly before they are fitted.

4 *Check and adjust the valve clearances*

The engine must be cold before the valve clearances can be checked accurately. Disconnect their caps and remove both spark plugs, then remove the cylinder head covers; each is retained by two bolts. To enable the covers to be displaced the fuel tank may have to be raised about one inch. This may be accomplished by detaching the dualseat and removing the single retaining bolt from the rear of the tank. Remove the inspection plug from the top right-hand side of the engine rear cover so that the timing marks on the alternator rotor can be seen.

Select top gear and turn the rear wheel in its normal direction of rotation to turn the crankshaft. Watch the right-hand cylinder inlet valves; when they have opened fully and just closed (sunk down and then raised up again) watch the alternator rotor. Turn the engine carefully until the TR mark on the alternator periphery aligns with the index pointer in the rear cover. With the engine in the specified position the piston in the right-hand cylinder will be at TDC on the compression stroke. Check that all the valves are fully closed, (free play at both rockers). Check the clearance between the valve stem head and the rocker of each valve using a feeler gauge of the correct thickness. (See Specifications.)

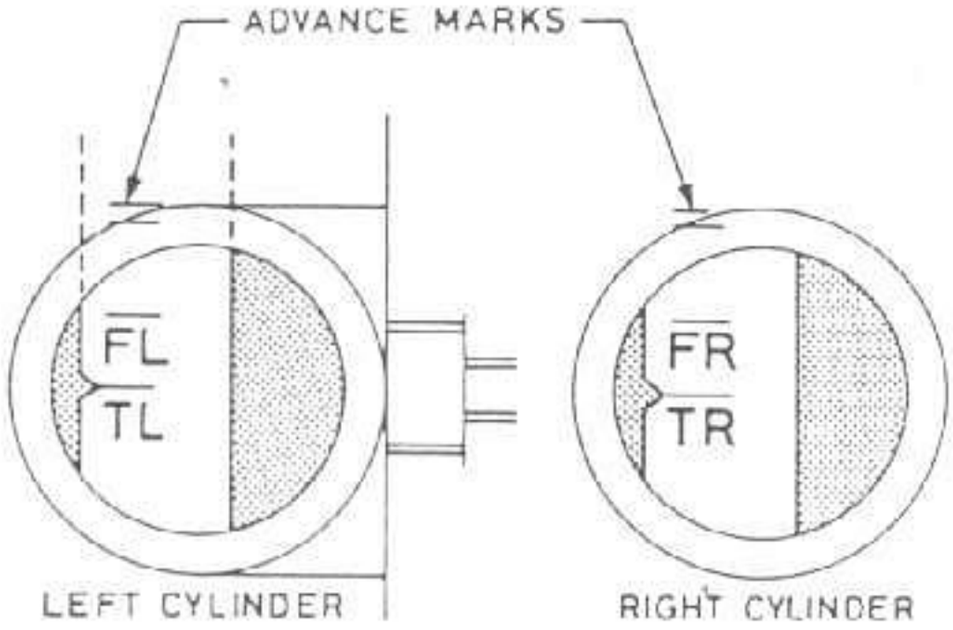
If the gap on any valve is incorrect, loosen the locknut on the adjuster and screw the adjuster in or out as necessary. When the gap is correct, prevent the screw rotating by using a small spanner and tighten the locknut to the specified torque setting. When the gap is correct, the feeler gauge will be a light sliding fit. Some care should be taken when resetting the clearance because even slightly loose rockers will increase tappet noise dramatically. Do not overtighten the adjuster locknuts, this will merely distort the threads and make future adjustment very awkward.

When the clearances on the right-hand cylinder are correct rotate the crankshaft forwards so that the TL mark is aligned with the index pointer and the left-hand piston is on the compression stroke. Repeat the valve clearance check and adjustment on the left-hand cylinder.

Reassemble the engine components by reversing the dismantling procedure. It is recommended that oil be smeared on the rocker cover sealing ring and the two conical bolt seals before replacement; this will help seat the seals and prevent oil leakage. Do not overtighten the retaining bolts; they are easily sheared. The specified torque setting is 0.8 – 1.2 kgf m (6 – 9 lbf ft). Where applicable, do not refit the timing mark inspection plug or the sparking plugs until completion of cam chain tension adjustment.

Adjusting valve clearances

REGULACJA LUZÓW ZAWOROWYCH



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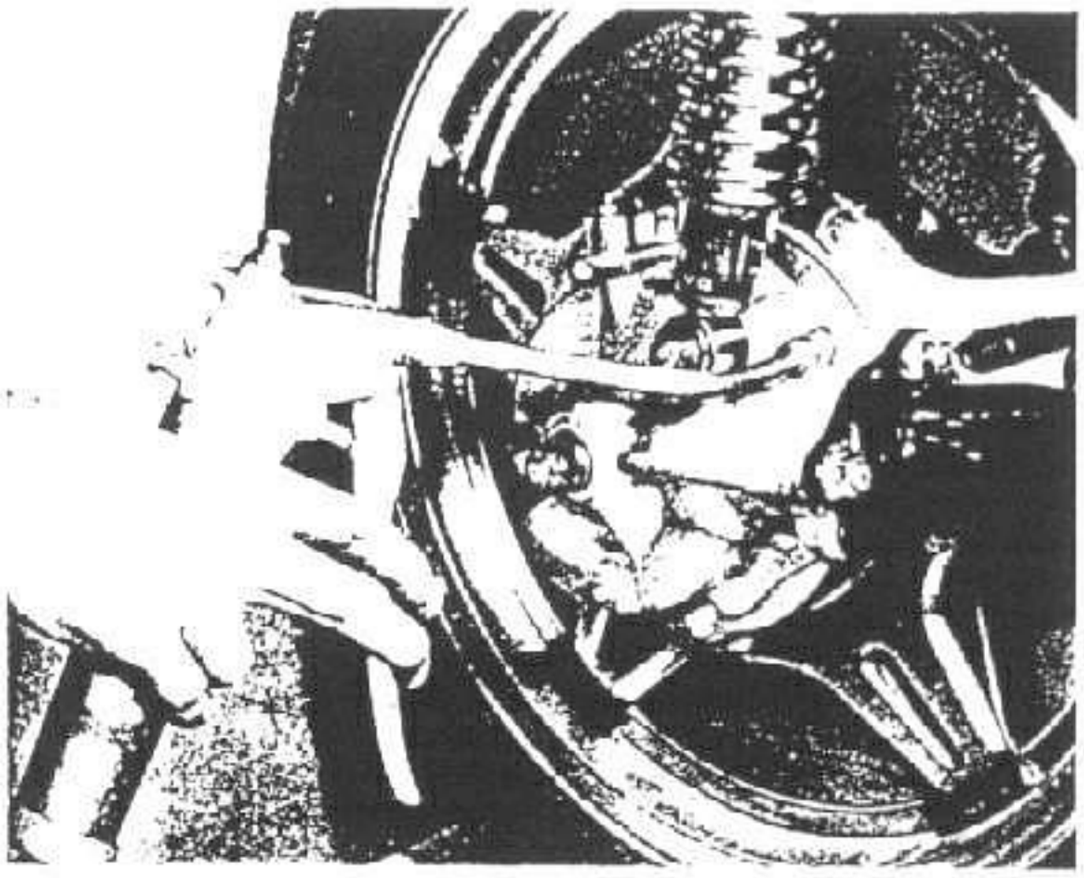
Alternator rotor timing marks – CDI ignition (static marks similar for transistorised ignition)

USTAWIENIE ZNAKÓW NA KOLE ALTERNATORA PRZY ZAPŁONIE CDI (



On 500 models, driveshaft splines can be lubricated via grease nipple provided

multi-purpose lithium-based grease (see Specifications) should prove adequate. On 650 models no grease nipple is fitted and so great care should be taken to clean the driveshaft components, to check them for wear and to pack them with grease on reassembly whenever they are disturbed.

9 *Check the brakes*

Fluid level check

The hydraulic front brake requires no regular adjustments; pad wear is compensated for by the automatic entry of more fluid into the system from the handlebar reservoir. All that is necessary is to maintain a regular check on the fluid level and the degree of pad wear.

To check the fluid level, turn the handlebars until the reservoir is horizontal and check that the fluid level, as seen through the translucent reservoir body, or, where applicable, the sight glass in the front or rear face of the reservoir body, is not below the lower level mark on the body. Remember that while the fluid level will fall steadily as the pad friction material is used up, if the level falls below the lower level mark there is a risk of air entering the system; it is therefore sufficient to maintain the fluid level above the lower level mark, by topping-up if necessary. Do not top up the higher level mark (formed by a cast line on the inside of the reservoir where it is not made of translucent plastic) unless this is necessary after new pads have been fitted. If topping up is necessary, wipe any dirt off the reservoir, remove the retaining screws, where fitted, and lift away the reservoir cover and diaphragm. Use only good quality brake fluid of the recommended type and ensure that it comes from a freshly opened sealed container; brake fluid is hygroscopic, which means that it absorbs moisture from the air, therefore old fluid may have become contaminated to such an extent that its boiling point has been lowered to an unsafe level. Remember also that brake fluid is an excellent paint stripper and will attack plastic components; wash away any spilled fluid immediately with copious quantities of water. When the level is correct, clean and dry the diaphragm, fold it into its compressed state and fit it to the reservoir. Refit the reservoir cover (and gasket, where fitted) and tighten securely, but do not overtighten, the retaining screws (where fitted).

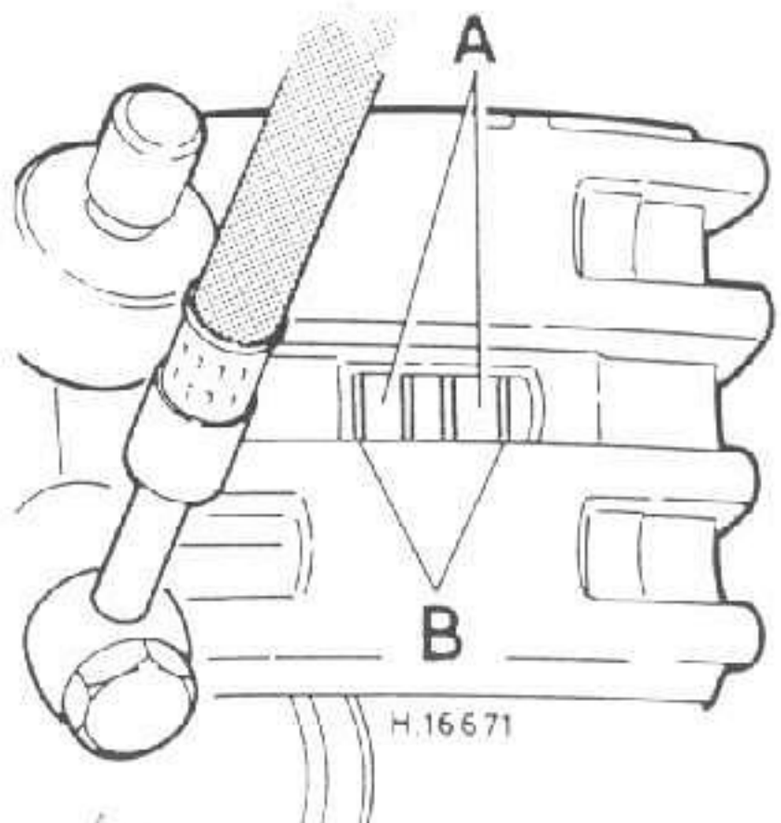
On CX500 E-C and CX650 E-D models remove carefully the right-hand side panel to expose the rear brake master cylinder, then check the level as described above.

Pad wear check

On models with single-piston calipers remove the inspection window cap from the caliper rear face; the pads can be seen through the aperture, with the aid of a torch.

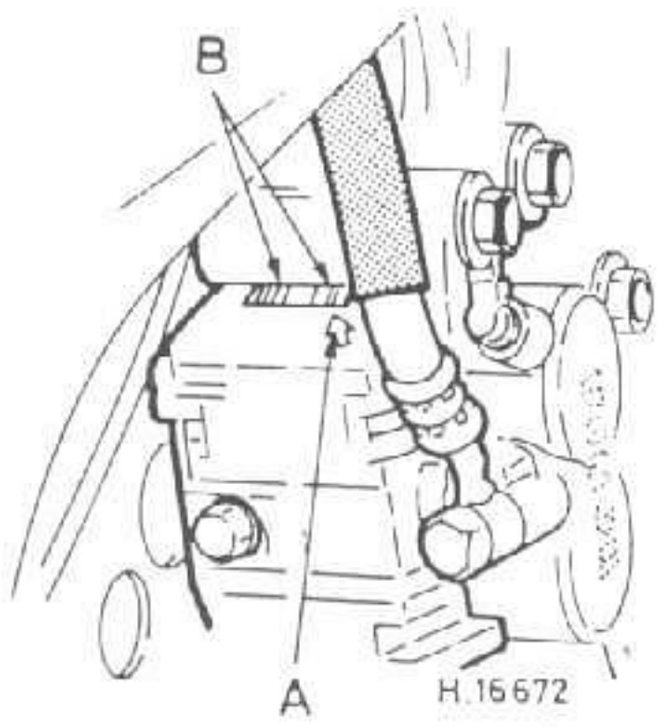
On models with twin-piston calipers, the pads can be seen with the aid of a torch through the slot indicated by the cast arrow on the caliper body. On CX500 E-C and CX650 E-D models the same applies to the rear brake, but it may be necessary to remove the dust cover to gain an adequate view of the pads.

Wear limit marks are provided in the form of deep notches cut in the top and bottom edges of the friction material or as red painted lines cut around the outside of the material. If either pad is worn at any point so that the inside end of the mark (next to the metal backing) is in contact with the disc, or if the wear limit marks have been removed completely, both pads must be renewed as a set. If the pads are so fouled with dirt that the marks cannot be seen, or if oil or grease is seen on them, they must be removed for cleaning and examination.



Checking pad wear – single piston caliper

A Brake pad *B Red wear limit line*



Checking pad wear – front twin piston caliper

A Inspection window *B Wear limit lines*

particles of foreign matter. Any areas of glazing may be removed using emery cloth.

On reassembly, if new pads are to be fitted, the caliper pistons must now be pushed back as far as possible into the caliper bores to provide the clearance necessary to accommodate the unworn pads. It should be possible to do this with hand pressure alone. If any undue stiffness is encountered the caliper assembly should be dismantled for examination as described in Chapter 6. While pushing the pistons back, maintain a careful watch on the fluid level in the handlebar reservoir. If the reservoir has been overfilled, the surplus fluid will prevent the pistons returning fully and must be removed by soaking it up with a clean cloth. Take care to prevent fluid spillage. Apply a thin smear of caliper grease to the outer edge and rear surface of the moving pad (next to the piston) and to the pad retaining pins (where fitted). Take care to apply caliper grease to the metal backing of the pad only and not to allow any grease to contaminate the friction material.

When the caliper has ben refitted, apply the brake lever or pedal gently and repeatedly to bring the pads firmly into contact with the disc until full brake pressure is restored. Be careful to watch the fluid level in the reservoir; if the pads have been re-used it will suffice to keep the level above the lower level mark by topping-up if necessary, but if new pads have been fitted the level must be restored to the upper level line described above by topping up or removing surplus fluid as necessary. Refit the reservoir cover, gasket (where fitted) and diaphragm as described above.

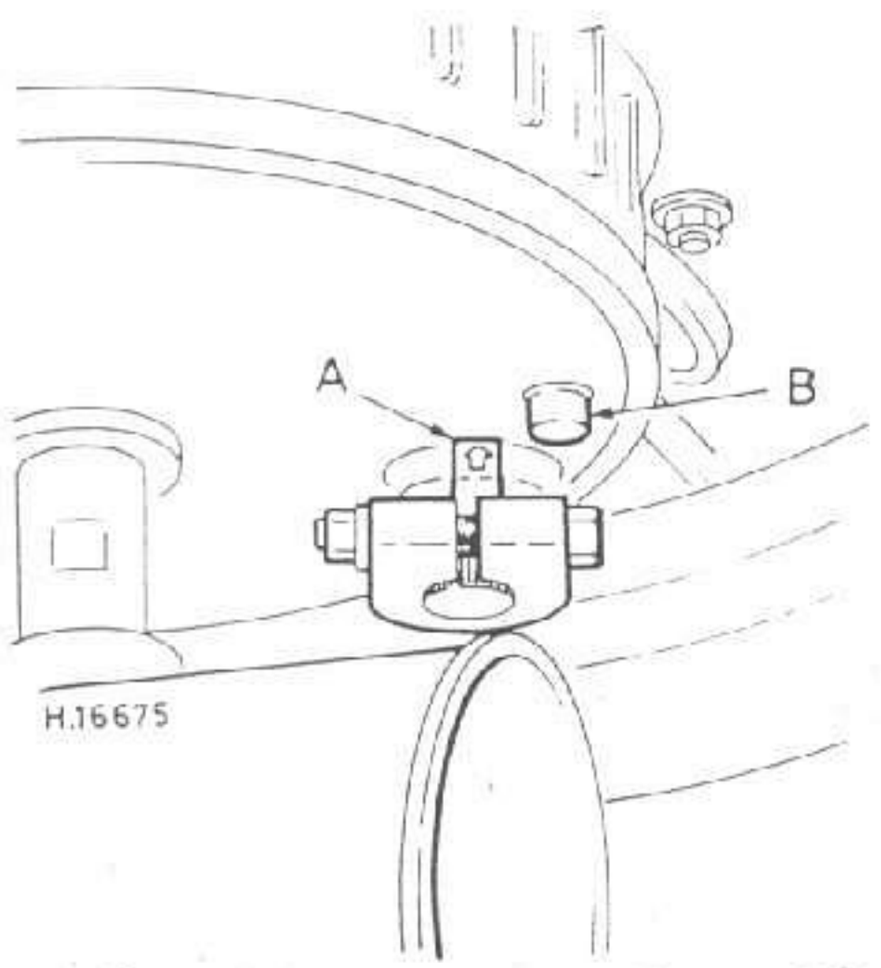
Before taking the machine out on the road, be careful to check for fluid leaks from the system, and that the front brake is working correctly. Remember also that new pads, and to a lesser extent, cleaned pads will require a bedding-in period before they will function at peak efficiency. Where new pads are fitted use the brake gently but firmly for the first 50 – 100 miles to enable the pads to bed in fully.

Rear drum brake – adjusting and checking for wear

Drum brakes will require regular adjustment to compensate for shoe wear; adjustment is made by rotating the nut at the rear end of the operating rod.

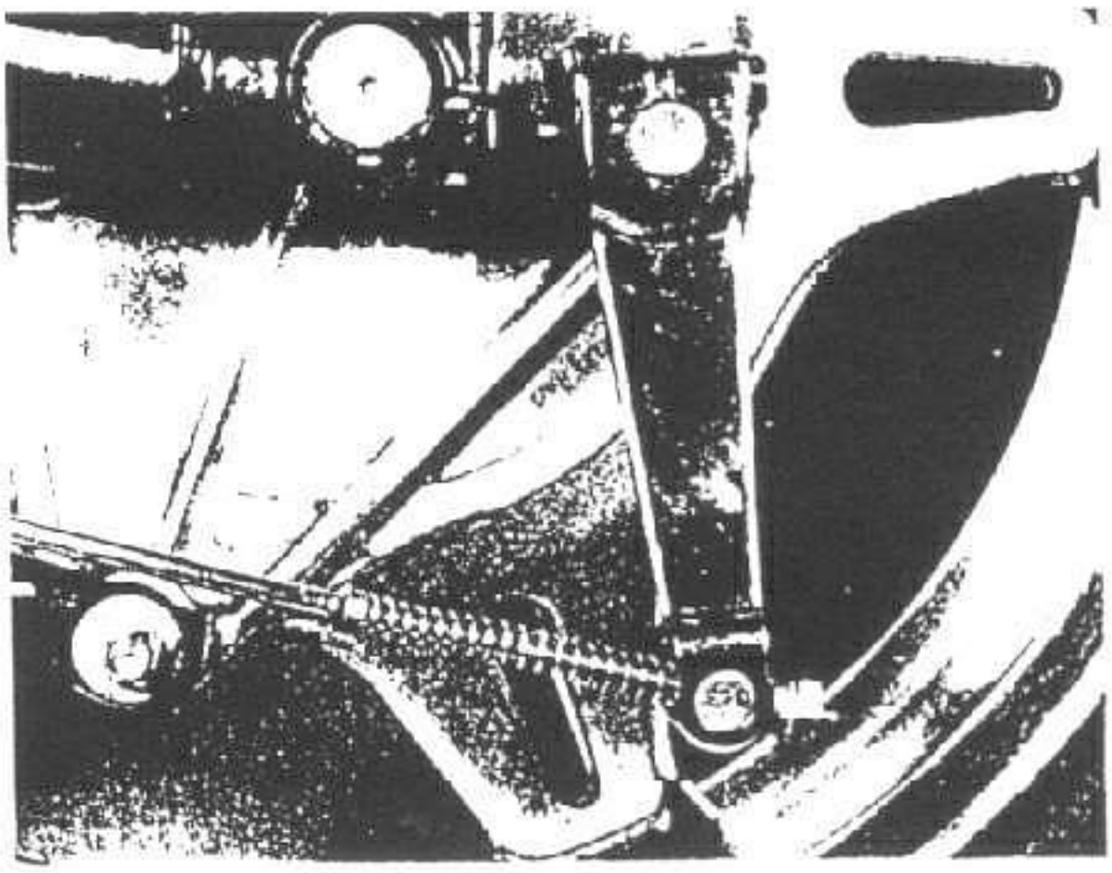
Place the machine on its centre stand so that the wheel is clear of the ground, spin the wheel and tighten the adjusting nut until a rubbing sound is heard as the shoes begin to contact the drum, then slacken the nut by one or two turns until the sound ceases. Spin the wheel and apply the brake hard to settle the components. Check that the adjustment has not altered and tighten securely all disturbed fasteners. This should approximate the specified setting, which is that there should be 20 – 30 mm (0.8 – 1.2 in) of free play before the brake begins to engage the drum, measured at the pedal tip. Switch on the ignition and check that the stop lamp lights just as all free play has been taken up and the brake is beginning to engage. This is adjusted by holding steady the stop lamp rear switch body and rotating the plastic sleeve nut to raise or lower the switch as necessary; do not allow the body to rotate or its terminal will be damaged. Check the switch setting whenever the rear brake is adjusted.

Complete brake maintenance by checking that the wheels are free to rotate easily, and then lubricate all lever or linkage pivots and the stoplamp switch. To prevent the risk of oil finding its way on to the tyres or the brake friction material do not oil excessively the brake components, a few drops of oil at each point will suffice. Dismantle the rear brake pedal pivot and grease it at regular intervals. Note that the operating mechanism is at its most efficient when, with the brake correctly adjusted and applied fully, the angle between the rod and the operating arm on the brake backplate does not exceed 90°. This can be adjusted by removing the operating arm from the brake camshaft and rotating it by one or two splines until the angle is correct. Ensure that all components are correctly secured on reassembly.

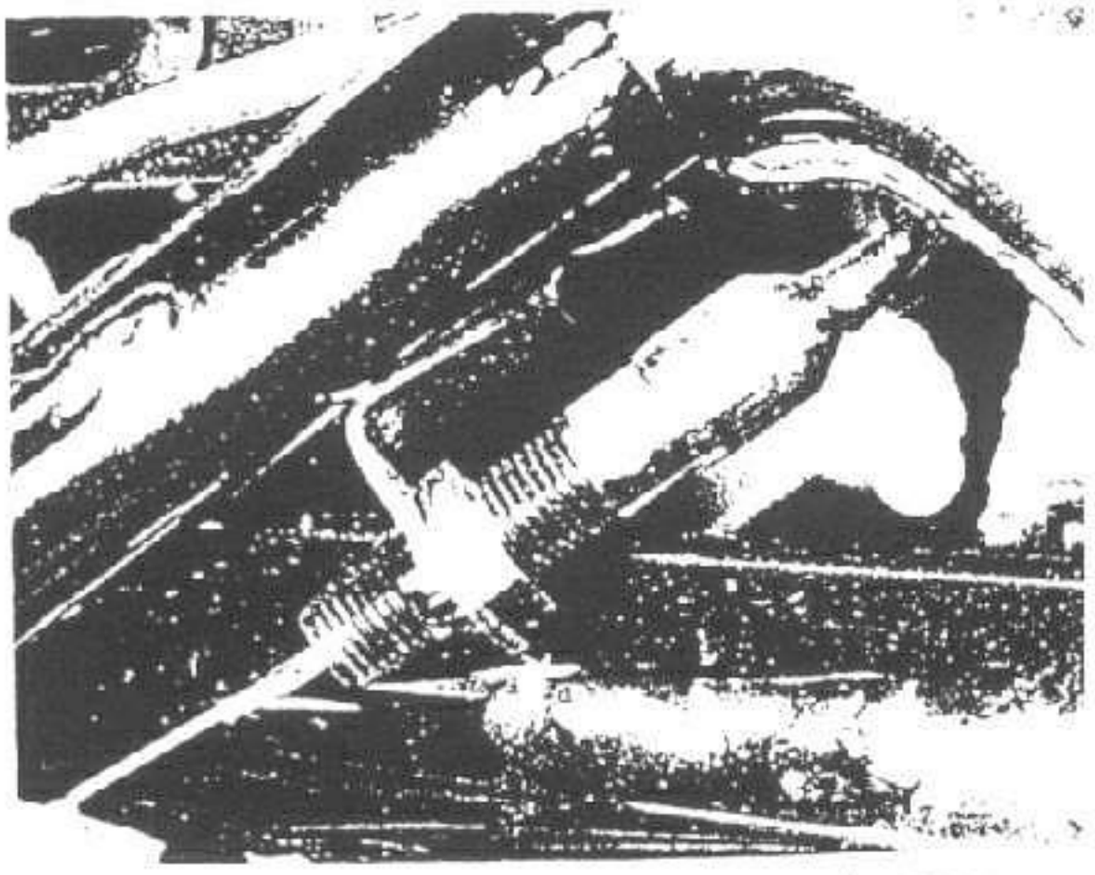


Rear drum brake wear indicator marks – typical

A Wear indicator arrow *B Brake panel mark*

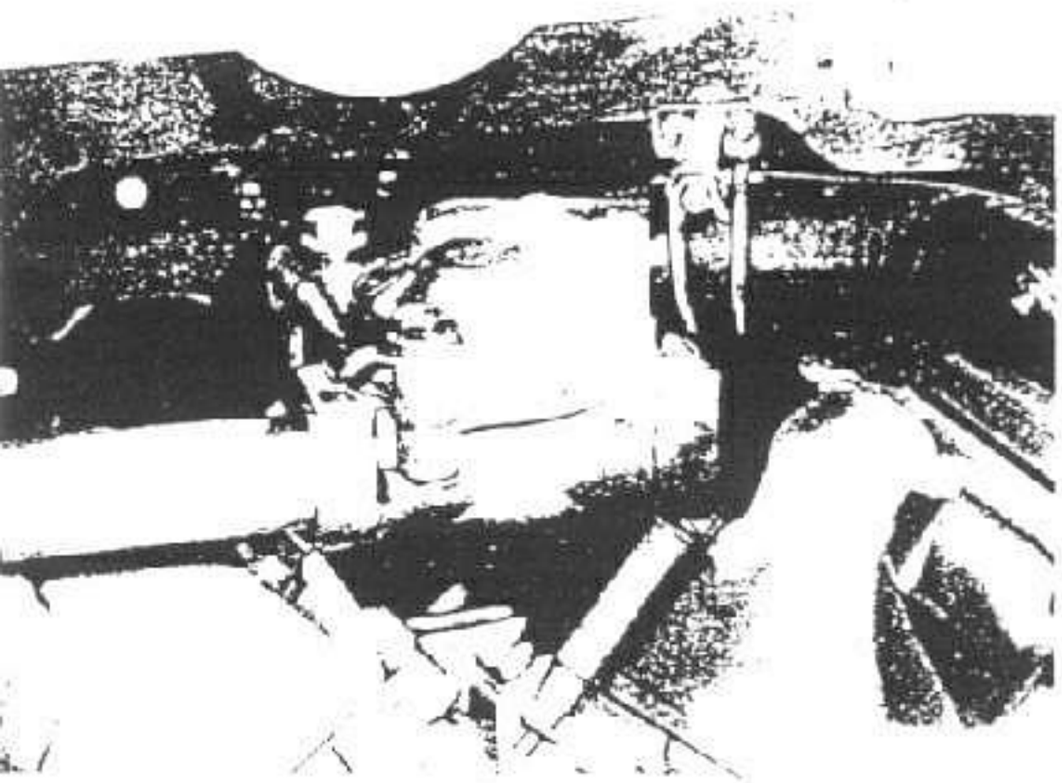


Drum rear brakes are adjusted at nut at end of operating rod

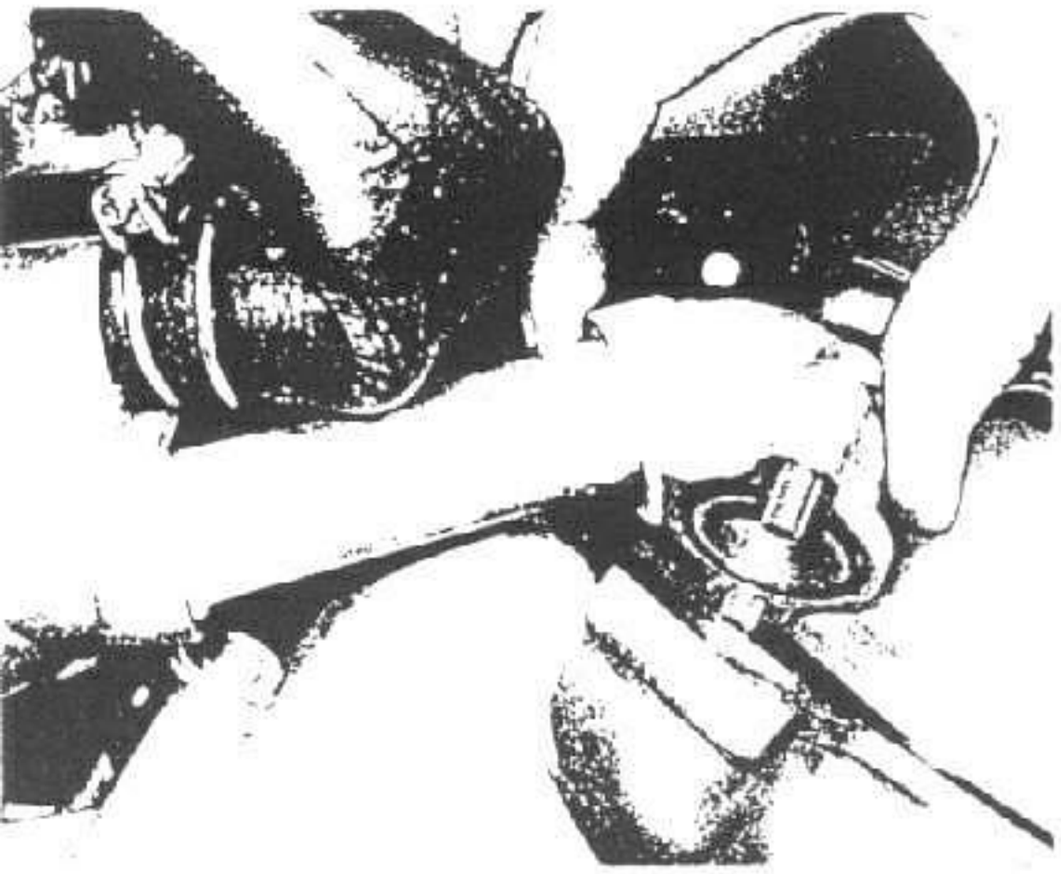


Rotate plastic sleeve nut to alter stop lamp rear switch setting

25 Remove pinch bolt to release tachometer drive cable



1a Remove thermostat assembly mounting bolts



1b Unit note O rings sealing coolant pipe flanged manifolds

6 Dismantling the engine/gearbox unit: removing the cooling system components

1 Remove the bolts holding the thermostat bracket to the top of the crankcase. Loosen evenly and remove the two bolts which hold each flanged manifold to the cylinder head. Disconnect the pump bypass hose and remove the assembly. Note the O-ring sealing the face of each manifold. The transfer pipes are a push fit in the manifolds and thermostat housing, and may be detached. Note the O-ring on each end of the pipes. Remove the air spoiler plate (where fitted) from the top of the engine.

2 The chrome plated lower water pipe may be detached at this stage. It is held by two clamps, each of which is secured by two recessed socket screws. Note the sealing O-ring.

3 On 500 models only the fan must be removed. Unscrew the inspection cap from the engine front cover and apply a suitable spanner to the head of the primary drive gear retaining bolt to prevent rotation while the fan retaining bolt is unscrewed.

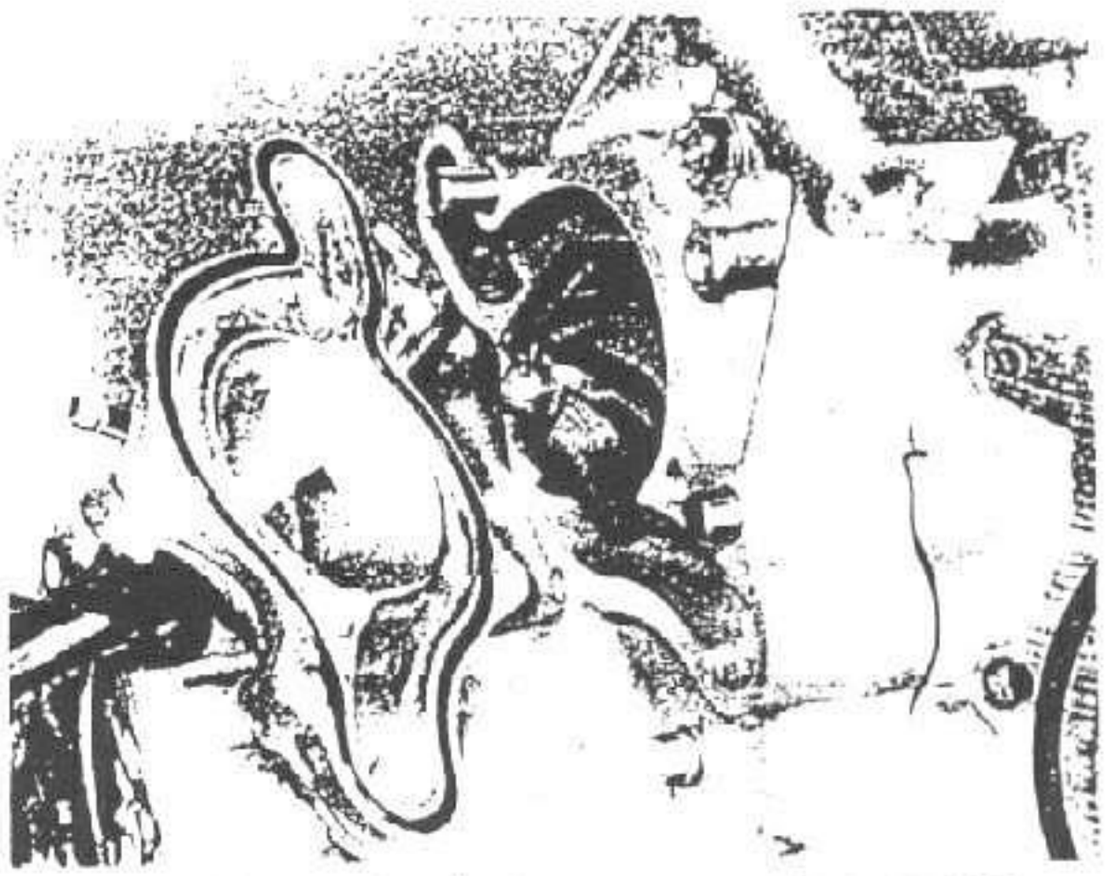
4 The fan must be pulled off the camshaft taper using a Honda service tool which is available under part numbers 07733-0010000, 07933-0010000, or 07933-2000001; if these are not available the machine's front wheel spindle will provide a substitute. Screw the extractor in until the fan is pushed from position. If the fan is very tightly in place and stubbornly refuses to move, do not continue tightening the bolt. When the bolt is tight, a few sharp blows on the bolt head with a hammer should release the tapered joint.

5 On all models, the water pump can be dismantled (except for the mechanical seal) with the engine/gearbox unit in the frame; the only preliminary work necessary is to drain the coolant (see Chapter 2) and to remove the chromed water pipe.

6 To dismantle the pump itself, remove the bolts holding the pump cover in place. The cover is located on two dowels and because of the presence of water, may be corroded in position. Tap the cover away from the engine rear cover using a rawhide mallet or a block of wood and hammer. The use of levers in an effort to remove a stubborn cover should be avoided because the risk of damage to the mating surfaces is high.

7 Remove the nut and copper washer from the end of the camshaft. The impeller is a tight push fit on the splined end of the shaft and should be eased from position using flat bladed levers. Great care must be taken not to damage the mating surfaces of the casing or the rear face of the impeller. Remove the small ceramic washer behind the impeller.

6.4 Fan (500 models only) can be pulled off camshaft using front wheel spindle



6.6 Note two locating dowels when removing water pump cover

6.7a Remove dome nut and copper washer

6.7b ... to release water pump impeller

6.7c ... noting small spacer behind impeller

7 Dismantling the engine/gearbox unit: preliminaries

1 Before any dismantling work is undertaken, the external surfaces of the unit should be thoroughly cleaned and degreased. This will prevent the contamination of the engine internals, and will also make working a lot easier and cleaner. A high flash-point solvent, such as paraffin (kerosene) can be used, or better still, a proprietary engine degreaser such as Gunk. Use old paintbrushes and toothbrushes to work the solvent into the various recesses of the engine castings. Take care to exclude solvent or water from the electrical components and inlet and exhaust ports. The use of petrol (gasoline) as a cleaning medium should be avoided, because the vapour is explosive and can be toxic if used in a confined space.

2 When clean and dry, arrange the unit on the workbench, leaving a suitable clear area for working. Gather a selection of small containers and plastic bags so that parts can be grouped together in an easily identifiable manner. Some paper and a pen should be on hand to permit notes to be made and labels attached where necessary. A supply of clean rag is also required.

3 Before commencing work, read through the appropriate section s that some idea of the necessary procedure can be gained. Whe removing the various engine components great force is seldo required, unless specified. In many cases, a component s reluctance t be removed is indicative of an incorrect approach or removal method in any doubt, re-check with the text.

8 Dismantling the engine/gearbox unit: removing the cylinder heads

1 These components can be removed with the engine in or out of t frame. Note that if work is being carried out with the engine in t frame it is only necessary to remove the fuel tank if the rocker gear is be dismantled. However if the cylinder heads are to be removed t seat, side panels and fuel tank must be withdrawn, the carburettor in stubs must be released, the exhaust pipes and engine front mount bracket(s) must be removed and the cooling system must be drain Refer to Section 4. Also the air spoiler plate (where fitted) and t

ermostat/water pipe assembly must be removed See Section 5 On arly models only, the breather pipe must be disconnected from each ylinder head stub

Each cylinder head should be dismantled separately, to prevent the nterchange of identical components, the parts should be stored eparately for the same reason Before commencing, the remaining oolant which will still be in the water jacket must be drained by emoving the small drain plug located at the front of each cylinder just elow the exhaust port Tip the engine forward so that the draining oolant clears the crankcase

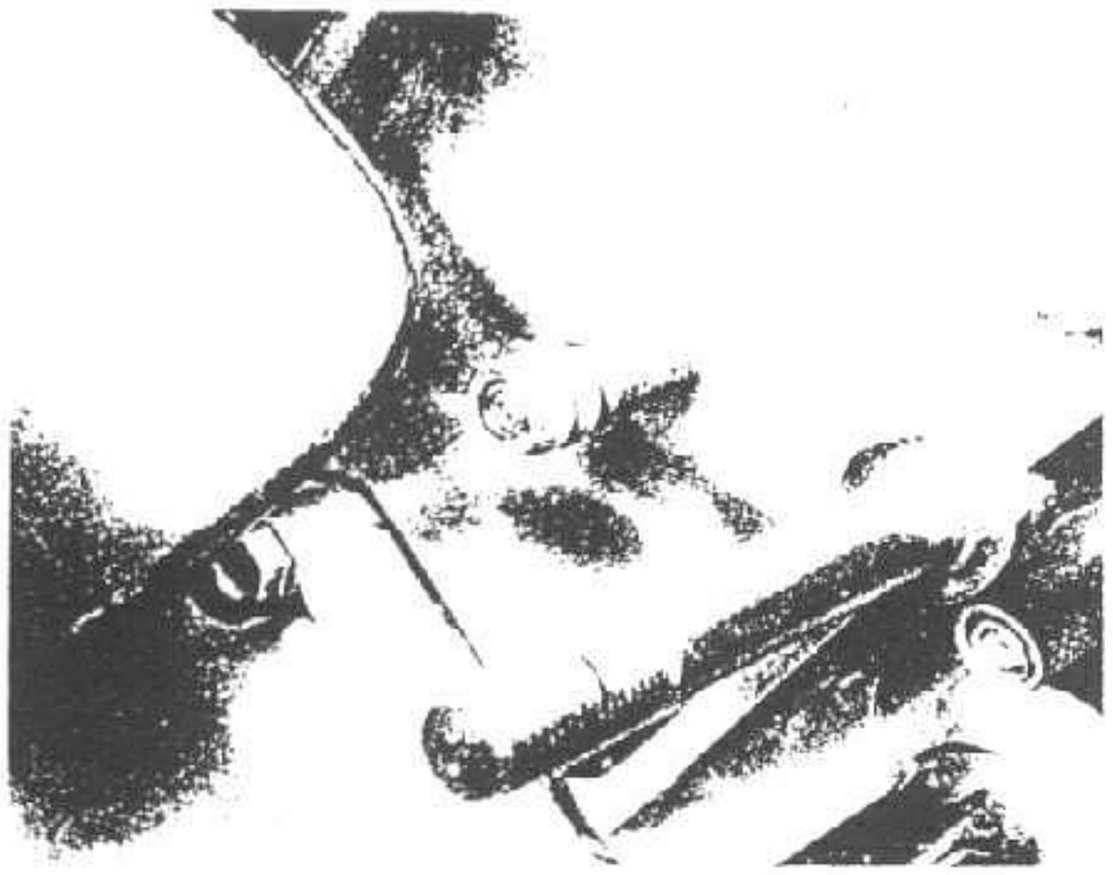
Unscrew the two bolts securing the rocker cover and lift the cover way together with the sealing ring Remove the spark plug Before osening the rocker arm carrier bracket the crankshaft should be ated so that all the valves are closed This will prevent any nwarranted stress being placed on the carrier by the partially open alves To rotate the crankshaft, remove the inspection cap from the ngine front cover and apply a spanner to the head of the primary drive ear retaining bolt

Remove the two small bolts which pass through the cylinder head ange on the inner side of the head Slacken them evenly, in a diagonal attern, and then remove the rocker carrier bolts The bolts serve also s the cylinder head holding bolts and must be loosened evenly to help void distortion The rocker carrier is located on two hollow dowels If ecessary, ease the carrier from position using a flat bladed lever Take pecial care not to damage the sealing surfaces of the cylinder head

) the rocker carrier removed the two pushrods may be withdrawn. ark each pushrod clearly so that it may be refitted in its original sition on subsequent reassembly

The cylinder head is now free to be lifted from place The use of a whide mallet may be required initially to release the cylinder head om the gasket and the two dowels on which it locates

6 Note carefully the O ring and the small oil feed jet which it surrounds, both of which fit into a stepped recess in the cylinder barrel mating surface Remove and discard the O ring and withdraw the jet The jet should be stored carefully in a safe place Remove and discard the head gasket



8.2 Remove drain plug to drain coolant from cylinder water jacket

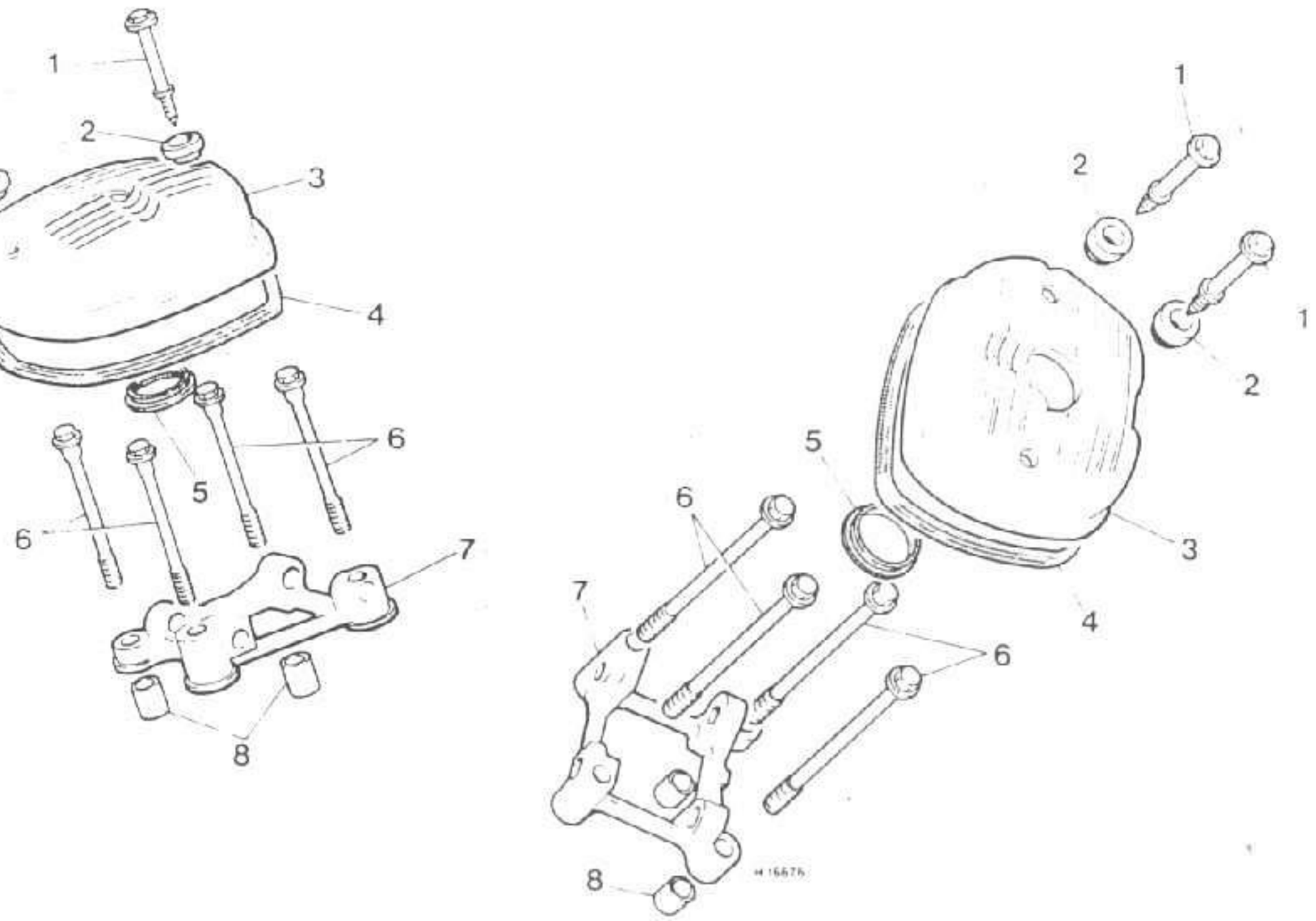


Fig 1.1 Rocker covers

1 Bolt
2 Rubber seal
3 Rocker cover
4 Cover gasket
5 Plug hole gasket
6 Bolt
7 Rocker arm bracket
8 Dowel pin

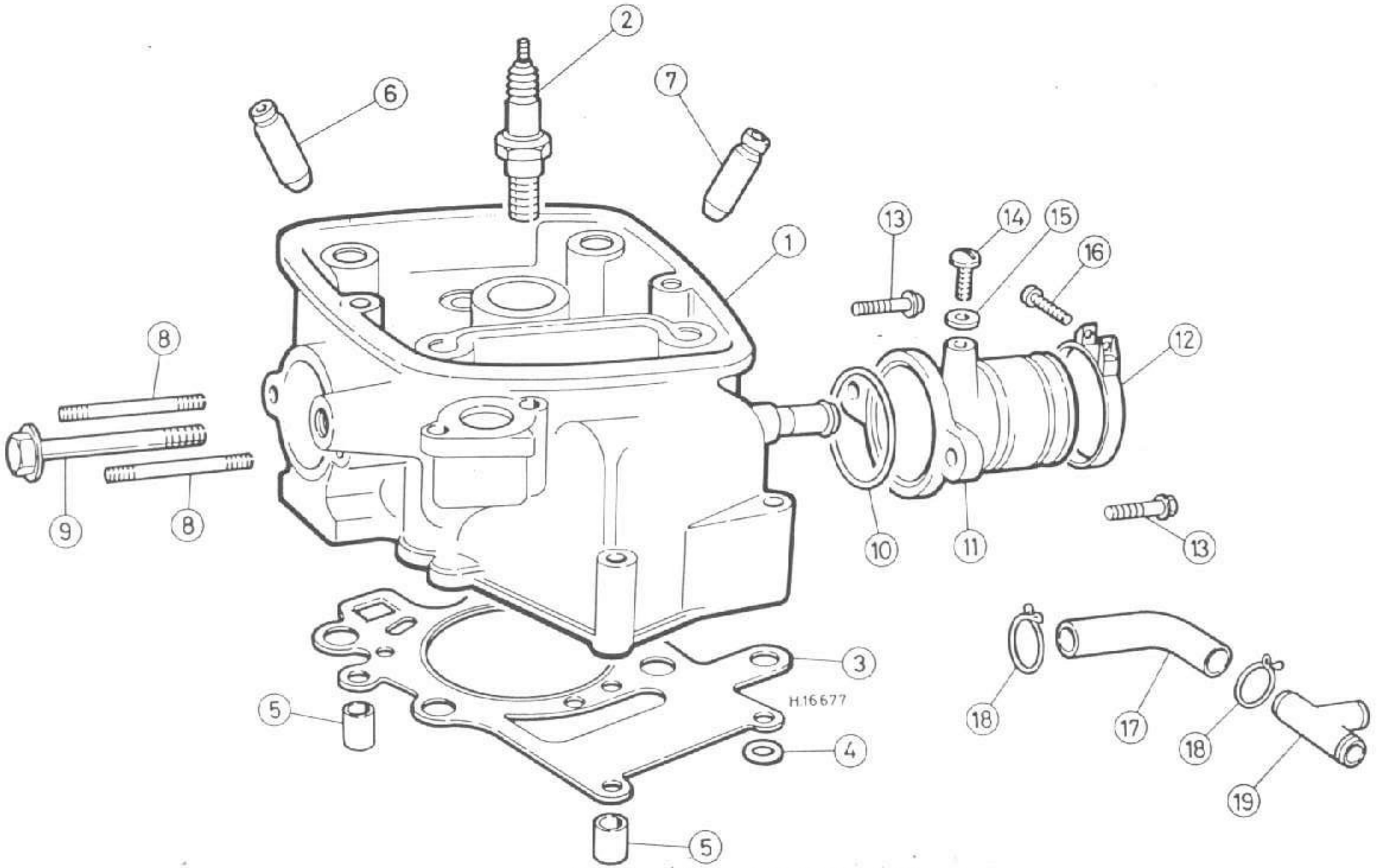


Fig. 1.2 Right-hand cylinder head

1 Cylinder head	5 Dowel pin	9 Bolt	13 Bolt	17 Breather pipe
2 Spark plug	6 Exhaust valve guide	10 O-ring	14 Vacuum take-off plug	18 Clamp
3 Cylinder head gasket	7 Inlet valve guide	11 Inlet stub	15 Sealing washer	19 Pipe union
4 O-ring	8 Stud	12 Clamp	16 Screw	

Dismantling the engine/gearbox unit: removing the utch

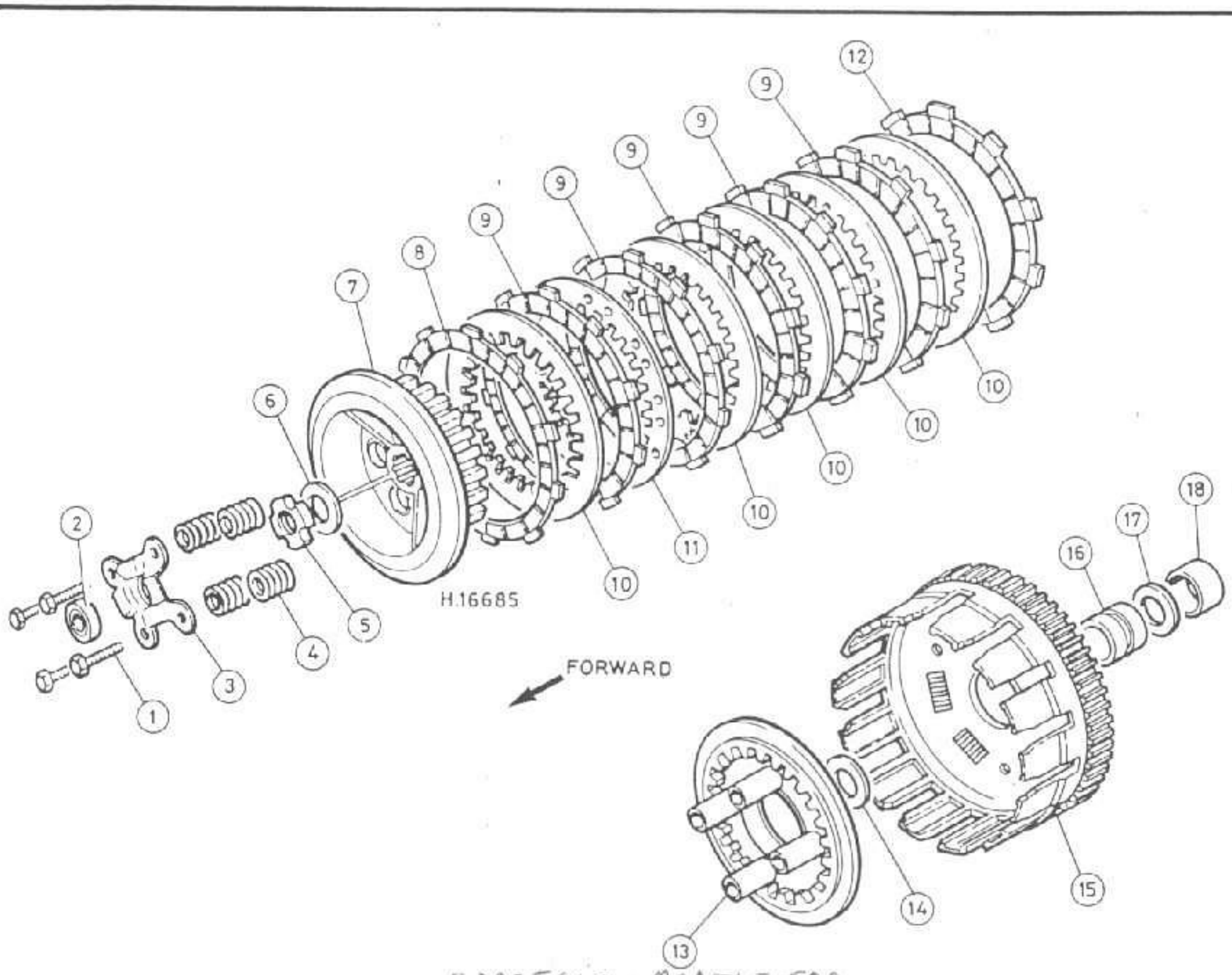
The clutch may be removed with the engine in the frame or out of it, ut in the former case the engine oil must be drained and the cable ust be disconnected from the operating lever.

Unscrew its retaining bolts and withdraw the cover and its gasket. the cover proves stubborn, apply a close-fitting open-ended spanner a self-locking wrench to the operating lever and apply pressure as if tempting to operate the clutch; this will extract the cover with no risk damage.

Unscrew evenly and remove the four bolts which retain the lifter ate in the centre of the clutch. Lift out the plate and bearing and the prings. The clutch is retained by a special nut which requires a peg panner. A suitable tool can be fabricated from a short length of thick alled pipe, as shown in the accompanying illustration. Relieve the nd of the pipe so that four pegs are formed which will engage ecurely with the special nut. This tool acts as a substitute for the Honda service tool part number 07716-0020201/2/3 which is applied with a handle 07716-0020500.

4 To prevent the clutch centre rotating lock the two parts of the clutch by refitting two or more clutch springs and bolts using suitable washers to take the place of the lifter plate. Remove the inspection cap from the engine front cover and apply a spanner to the primary drive gear retaining bolt. Holding the crankshaft with the spanner will lock the clutch and allow the clutch nut to be unscrewed.

5 Remove the refitted clutch springs and bolts and pull out the clutch centre, plates and pressure plate as one unit by grasping two of the four threaded columns into which the spring bolts screw. Before separating the plates and the clutch centre **carefully note** the sequence of plates to aid refitting, particularly that the plates are fitted in two separate sections, separated by a special double thickness plate. The clutch outer drum may now be withdrawn from the casing. Note that the drum is fitted with a central sleeve or a needle roller bearing; note carefully the arrangement of any thrust washers fitted, also the spacer fitted behind the clutch on CX500 C 1982, CX500 E-C and all GL500 models.

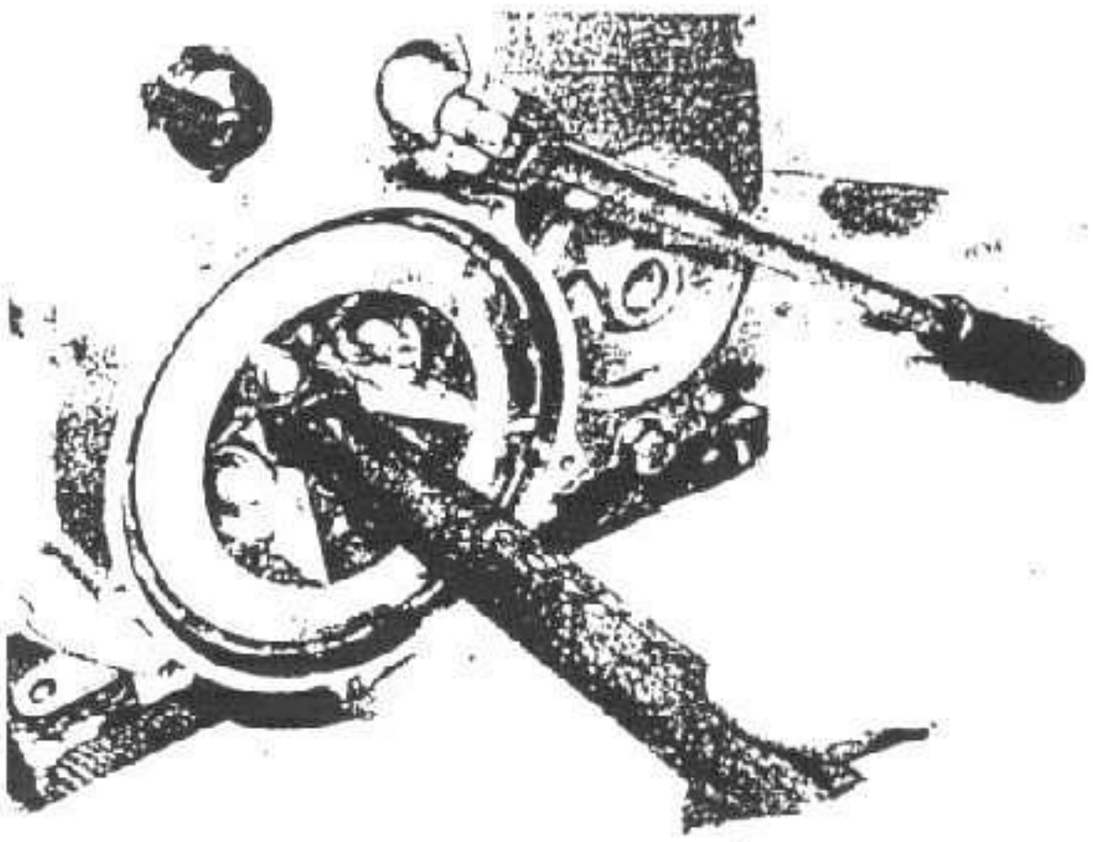


SPRZEGŁO - MODELE 500

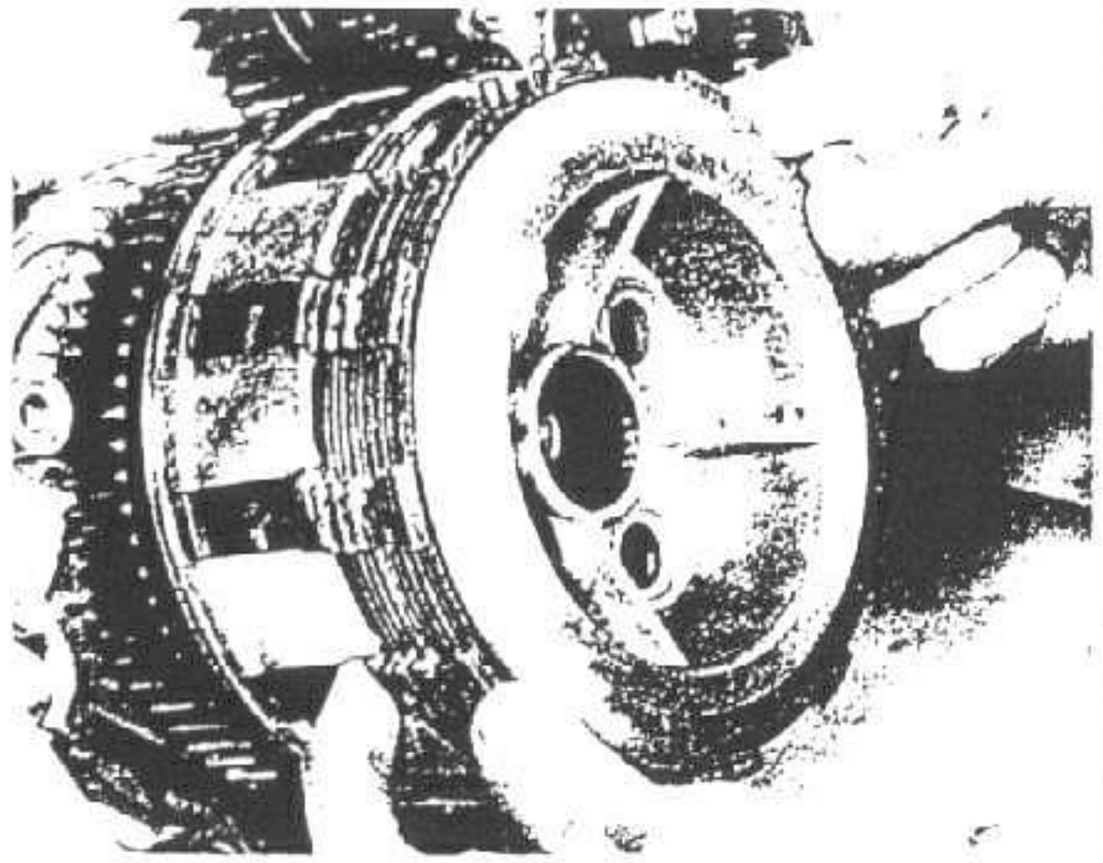
Fig. 1.3 Clutch – 500 models

1 Bolt	6 Lock washer	11 Plain plate	15 Outer drum
2 Bearing	7 Clutch centre	12 Outer friction plate	16 Spacer
3 Thrust plate	8 Inner friction plate	13 Pressure plate	17 Thrust washer
4 Spring	9 Friction plates	14 Thrust washer*	18 Collar*
5 Nut	10 Plain plates		

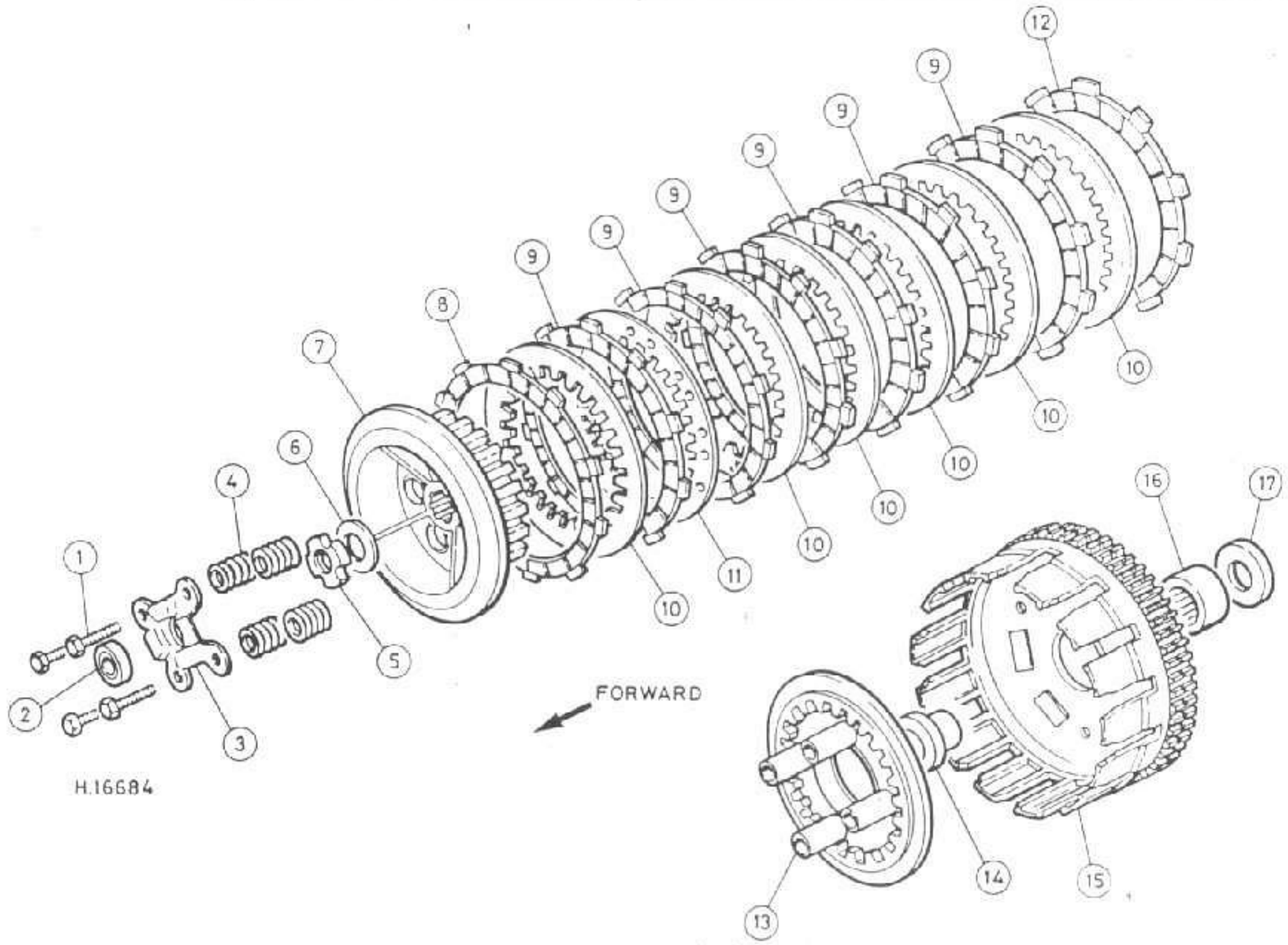
*CX500 C 1982, CX500 E-C and GL500 models only



9.4 Lock clutch centre as shown and unscrew nut using special peg spanner



9.5 Note carefully sequence of clutch plates before disturbing them



SPRZEGŁO - MODELE 650

Fig. 1.4 Clutch – 650 models

1	Bolt	6	Lock washer	10	Plain plates	14	Centre sleeve
2	Bearing	7	Clutch centre	11	Plain plate	15	Outer drum
3	Thrust plate	8	Inner friction plate	12	Outer friction plate	16	Bearing
4	Spring	9	Friction plates	13	Pressure plate	17	Spacer
5	Nut						

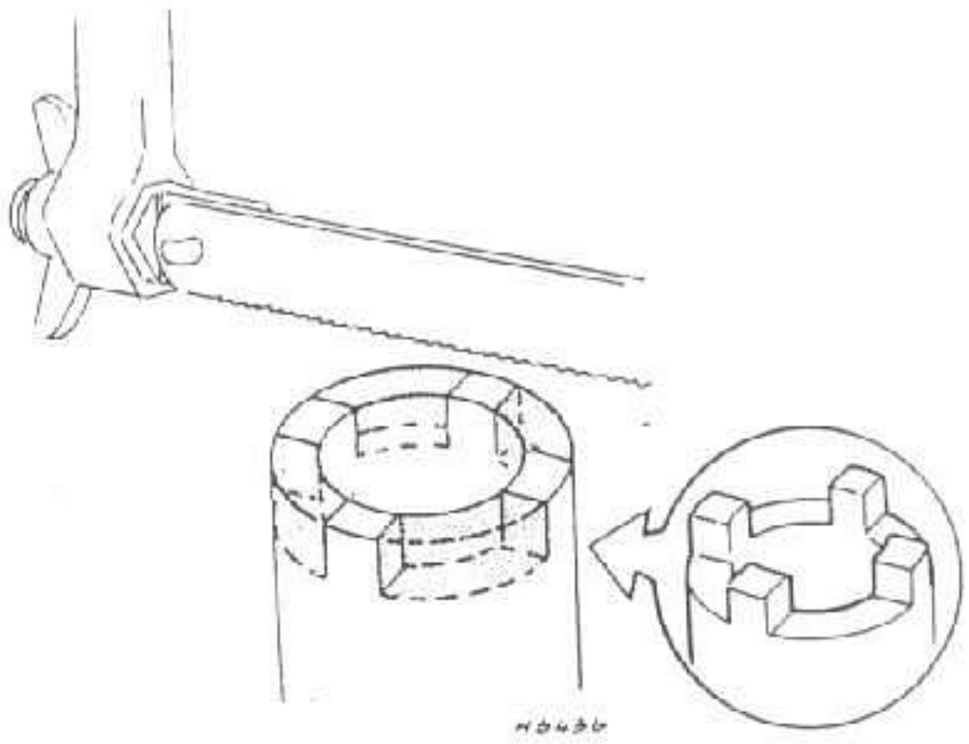


Fig. 1.5 Fabricated peg spanner

DOMOWEJ ROBOTY KLUCZ
DO ODKRĘCANIA NAKRĘTKI SPRZĘGŁA

10 Dismantling the engine/gearbox unit: removing the engine front cover, primary drive gear and oil pump

1 While the components can be removed with the engine in or out of the frame, in the former case the engine oil and coolant must be first drained, the radiator, fan shroud and fan (500 models only), and the engine front mounting bracket must be removed, and the clutch cable and oil pressure switch wire must be disconnected. Release the wire from the clamp securing it.

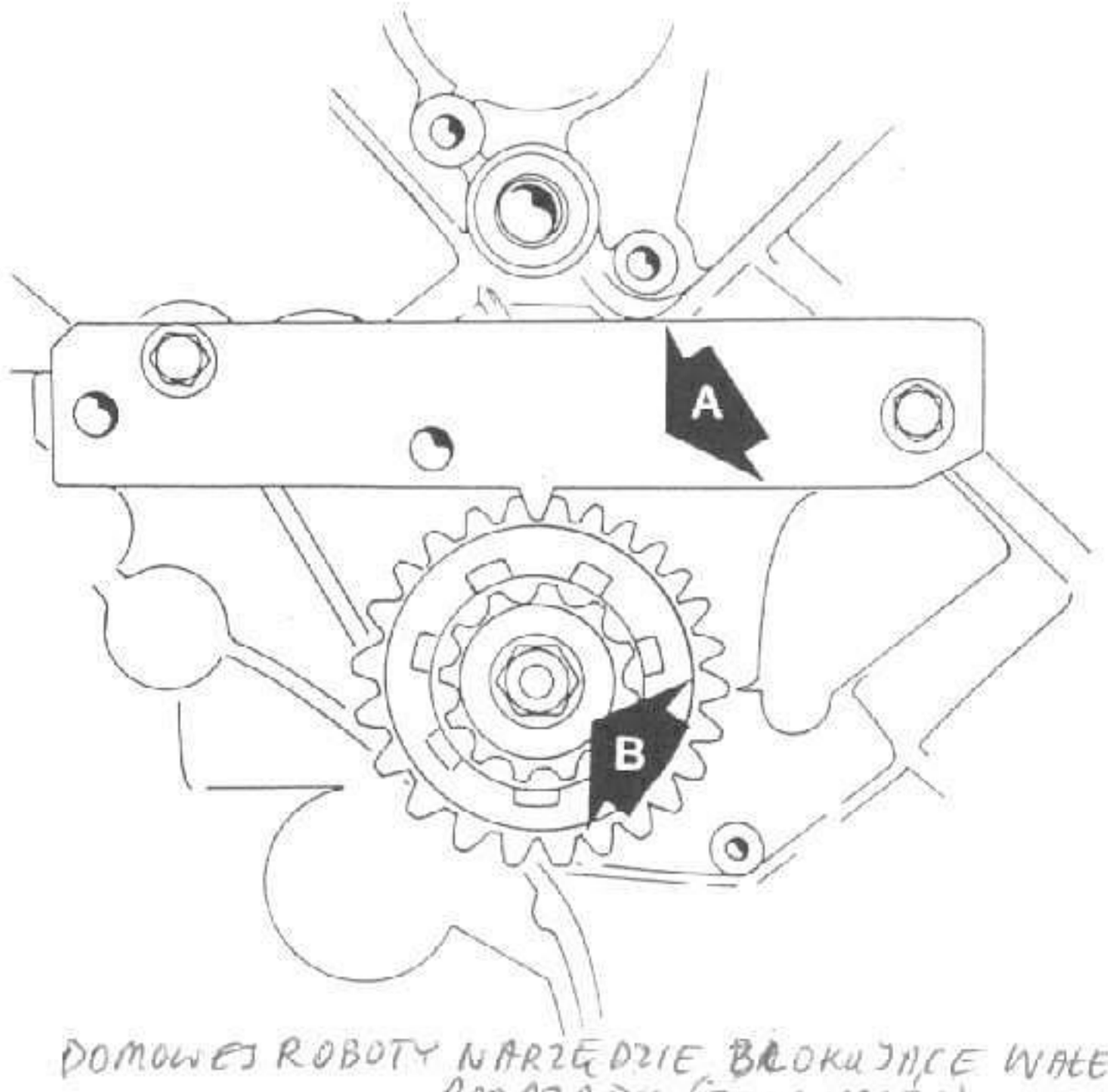
2 Note that the front cover can be removed complete with the clutch cover, if required, there is no need to dismantle the clutch. The oil pressure switch also need not be unscrewed unless necessary.

3 Remove the cover retaining bolts, slackening them evenly in a diagonal sequence from the centre outwards and noting the presence of various cable and wiring clamps. Using a rawhide mallet break the joint between the cover and the gasket and then pull the cover off the location dowels. In addition to the small hollow locating dowels take careful note of the presence of two large oilway dowels and O-rings and the small oil feed jet and O-ring. These should be removed, the dowels and jet being stored safely and the O-rings discarded.

4 Remove its three retaining bolts, then pull the pump off the locating dowel and lift it away together with the drive chain. Withdraw the dowel and store it in a safe place.

5 To allow removal of the primary drive gear retaining bolt the crankshaft must be prevented from rotating. To achieve this a pinion locking plate should be fabricated, which bolts on the casing and engages with one or more teeth on the primary drive pinion. The tool is illustrated in the accompanying figure and replaces Honda tool 07924-4150000. It is recommended that this system of locking is adopted in preference to using a steel sprag or lever held by hand which is less controllable and may lead to damage of the teeth or casing. Unscrew the bolt and remove the oil pump drive sprocket.

6 On 650 models, the gear can be pulled off the crankshaft when required (see note below). On 500 models, pull off first the spring plate followed by the side plate and the two drive pins. Lift off the narrow auxiliary drive pinion. Mark the outer face of each pinion and the side plate to aid reassembly. Leave the primary drive gear in place until the alternator centre bolt has been loosened as described in Section 11.



DOMOWEJ ROBOTY NARZĘDZIE BLOKUJĄCE WAŁEK ROZRZĄDU (JEDNAPĘD)

Fig. 1.6 Fabricated tool for locking the crankshaft

A Locking tool *B Primary drive pinion/oil pump sprocket*

20 Cylinder heads and valves: dismantling, examination and renovation

1 Before examination and renovation of the cylinder heads can be carried out, the valves, springs and oil seals must be removed. Prior to this it is suggested that the carbon deposits in each combustion chamber are removed. Use a blunt scraper, which will not damage the surface, and then finish with a metal polish. Put an old sparking plug in place during cleaning, to prevent the fine particles of grit from clogging the plug hole threads.

2 A valve spring compressor is required to remove the valves. Compress the springs and remove the valve collets. Relax the springs and remove the valve spring collar, valve spring, valve spring seats and valve. Keep these components together in a set. Each valve must be replaced in its original location on subsequent reassembly. Prise off the oil seals and discard them. They should be renewed as a matter of course.

3 Clean the carbon from the inlet and exhaust ports and from the head of the valve.

4 Before attending to the valve seats, check the valve guide and stem wear. Valve clearance may be determined by subtracting the valve stem diameter from the internal diameter of the guide. If a valve or guide exceeds the stated wear limit it must be renewed. If the valve/guide clearance is excessive but the valve stem is still within the limits and is in good condition, the guide alone may be renewed. If an internal micrometer is not available for measuring the valve guide bore the extent of wear may be determined using a new valve and a dial gauge. Insert the new valve and measure the extent of lateral movement with the gauge at right angles to the stem. If the clearance is greater than that given in the Specifications, the guide must be renewed.

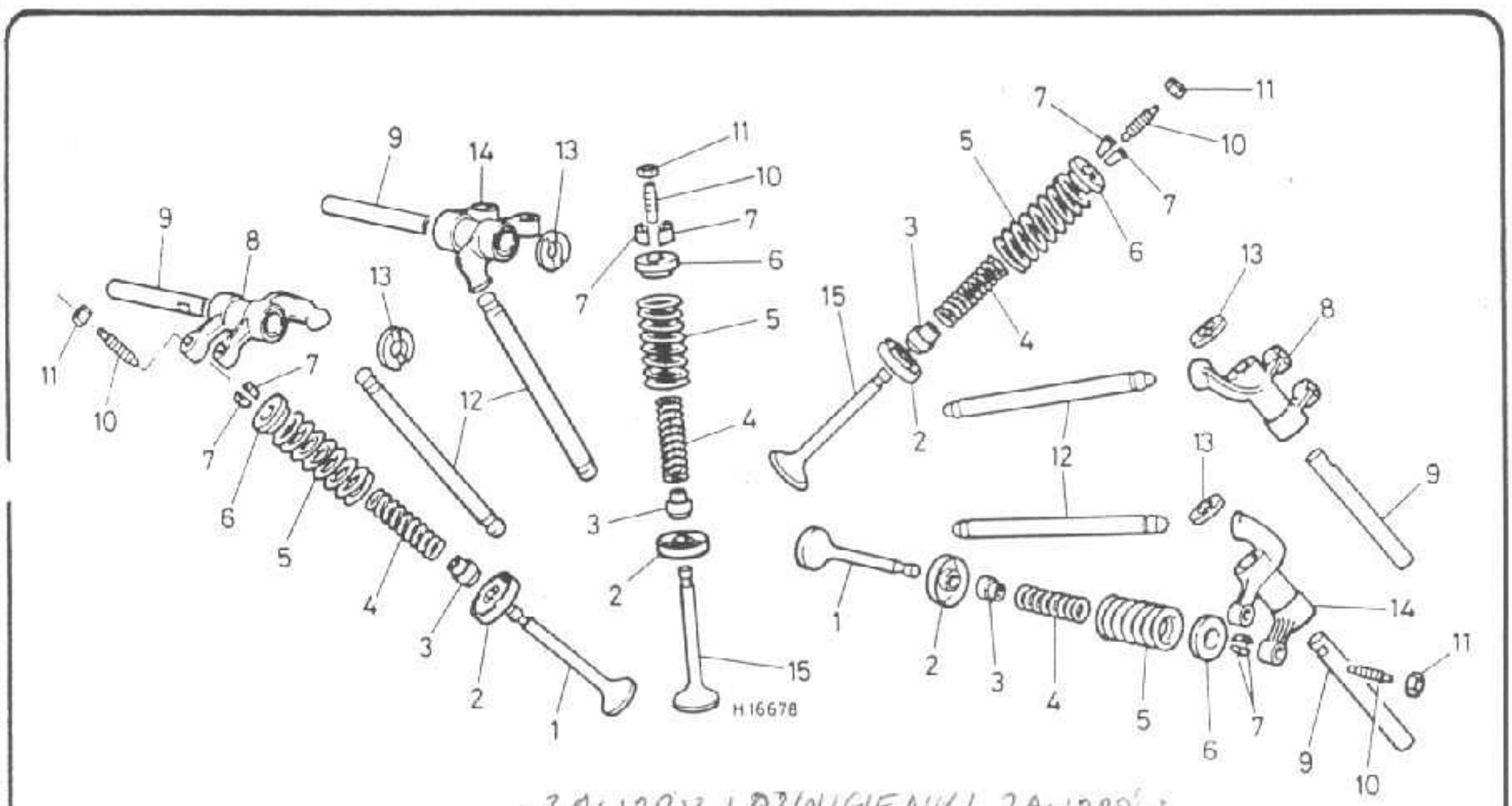
5 The valve guides may be drifted from position from the combustion chamber side of the cylinder head. Heating of the cylinder head before removal is not recommended by the manufacturers. Great care must be taken when carrying out this operation not to damage the cylinder head material. If inexperienced in this type of work, the advice of a Honda Service Agent should be sought. Before drifting a guide from place, remove any carbon deposits which may have built up on the guide end projecting into the port. Carbon deposits will impede the progress of the guide and may damage the cylinder head. If possible, use a double diameter drift. The smaller diameter should be close to that of the valve stem, and the larger diameter slightly smaller than that of the valve guide. Provided that care is exercised, a parallel shanked drift may be used as a substitute. A new guide may be fitted by reversing the removal procedure. A new guide will require reaming in order to bring the valve/guide clearance within the specified tolerances. It is probable also that the valve seat will require cutting in order that the valve seat/guide alignment is exact.

6 Check also that the valve stem is not bent, especially if the engine has been over-revved. If it is bent, the valve must be renewed.

7 The valves must be ground to provide a gas-tight seal, during normal overhaul, or after recutting the seat or renewing the valve.

8 Valve grinding is a simple, but laborious task. Smear grinding paste on the valve seat and attach a suction grinding tool to the valve head. Oil the valve stem. Rotate the valve in both directions, lifting it occasionally and turning it through 90°. Start with coarse paste if the seats are badly pitted and continue with fine paste until there is an unbroken matt grey ring on each seat and valve. After many re-grinds, the valve seat may become pocketed, when it should be re-cut. Wipe off very carefully all traces of grinding paste. If any remains in the engine, it will cause very rapid wear!

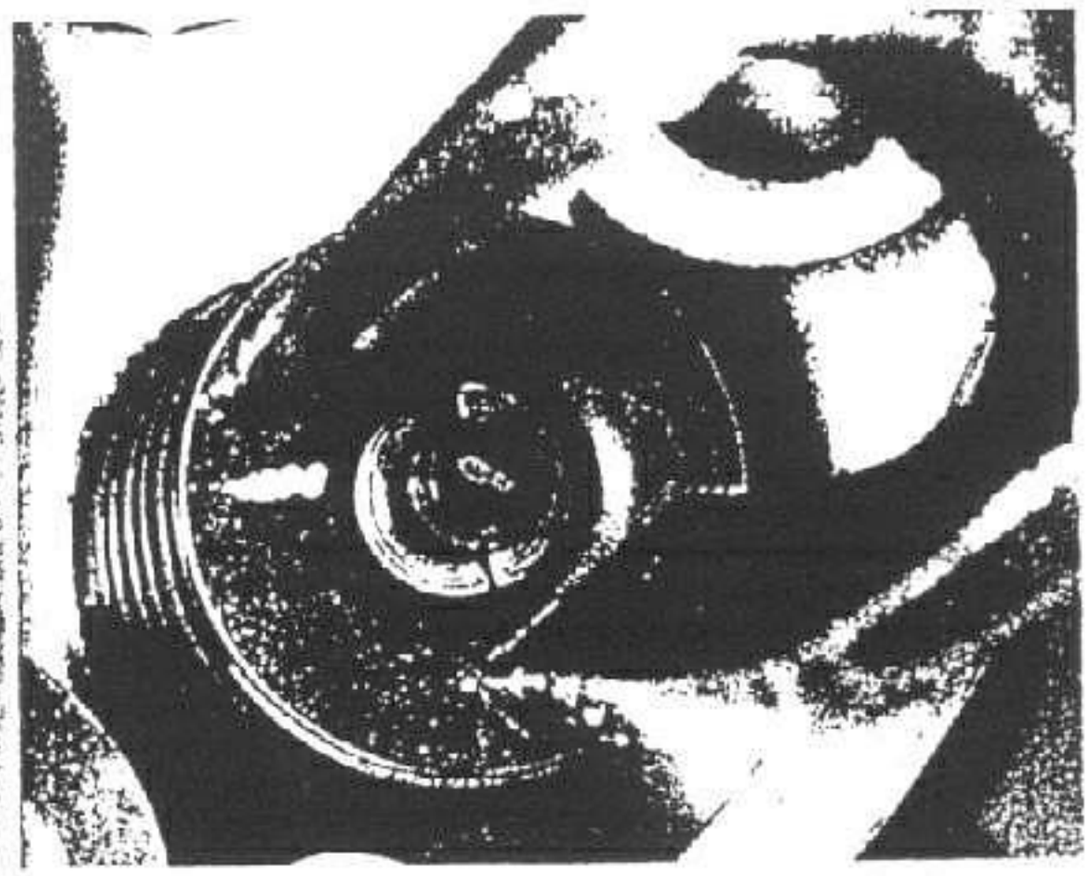
9 Valve sealing may be checked by installing the valve and spring and



ZAWORY I DŹWIGIENIKI ZAWORÓW

Fig. 1.7 Valves and rocker gear

1 Exhaust valve
2 Valve spring seat
3 Valve stem seal
4 Inner spring
5 Outer spring
6 Retainer
7 Collets
8 Rocker arm
9 Rocker arm shaft
10 Tappet adjusting screw
11 Locknut
12 Pushrod
13 Wave washer
14 Rocker arm
15 Inlet valve



20.14e and use a spring compressor to allow fitting of split collets

21 Rocker arms and spindles: examination and renovation

1 Dismantle each rocker carrier assembly separately, using an identical procedure, in order to prevent the accidental interchange of parts. Mark each spindle and rocker arm so that they may be replaced in their original positions. The spindles are a push fit and may be displaced using a drift, to free the arms. Note the wave washer fitted to each spindle between the carrier and the inner face of the arm.

2 Check the outside diameter of each rocker spindle and the inside diameter of each rocker arm bore. If the clearance is not within the service limit given, the relevant components must be renewed. Inspect the ball ends of the valve clearance adjuster screws for wear or damage. The hemispheres should have a smooth surface free of cracks or flaking metal. If damage is evident, the cupped ends of the pushrods may have suffered similarly.

22 Camshaft, cam followers and pushrods: examination and renovation

1 Check the clearance between each cam follower spindle and pair of followers in a manner similar to that used for the rocker arm and spindle inspection. Here again worn components should be renewed. Inspect the cam follower ends for wear or damage. If wear is evident, check for similar damage on the relevant mating component ie, the camshaft lobes or the pushrod lower ends.

2 Roll each pushrod on a flat surface as a check for straightness. If a bend is evident the pushrod in question should be renewed.

3 Measure and record the camshaft journal diameters. If either diameter is less than that given, the camshaft is in need of renewal. Measure the camshaft bearing inside diameters and compare the results with the specified service limits. The front bearing forms a detachable housing which also incorporates the tachometer drive gear. If wear is evident, the housing must be renewed. The rear journal of the camshaft runs directly in the main engine casing (crankcase). If wear develops here the complete casing must be renewed, because the bearing is not detachable. In view of the cost of replacing the casing, boring and sleeving the bearing back to the original size may be worth considering. This type of work is, of course, the domain of the specialist engineer.

4 Inspect the cam lobes for scoring or uneven wear and chipping of the hardened outer surfaces. If a cam lobe is badly worn or chipped it is probable that the rocker arm foot that runs on that lobe is also damaged and will require renewal. Measure the cam lobes at the highest point of lift (maximum diameter). Camshaft renewal will be necessary if one or more lobes does not come within the specified limits.

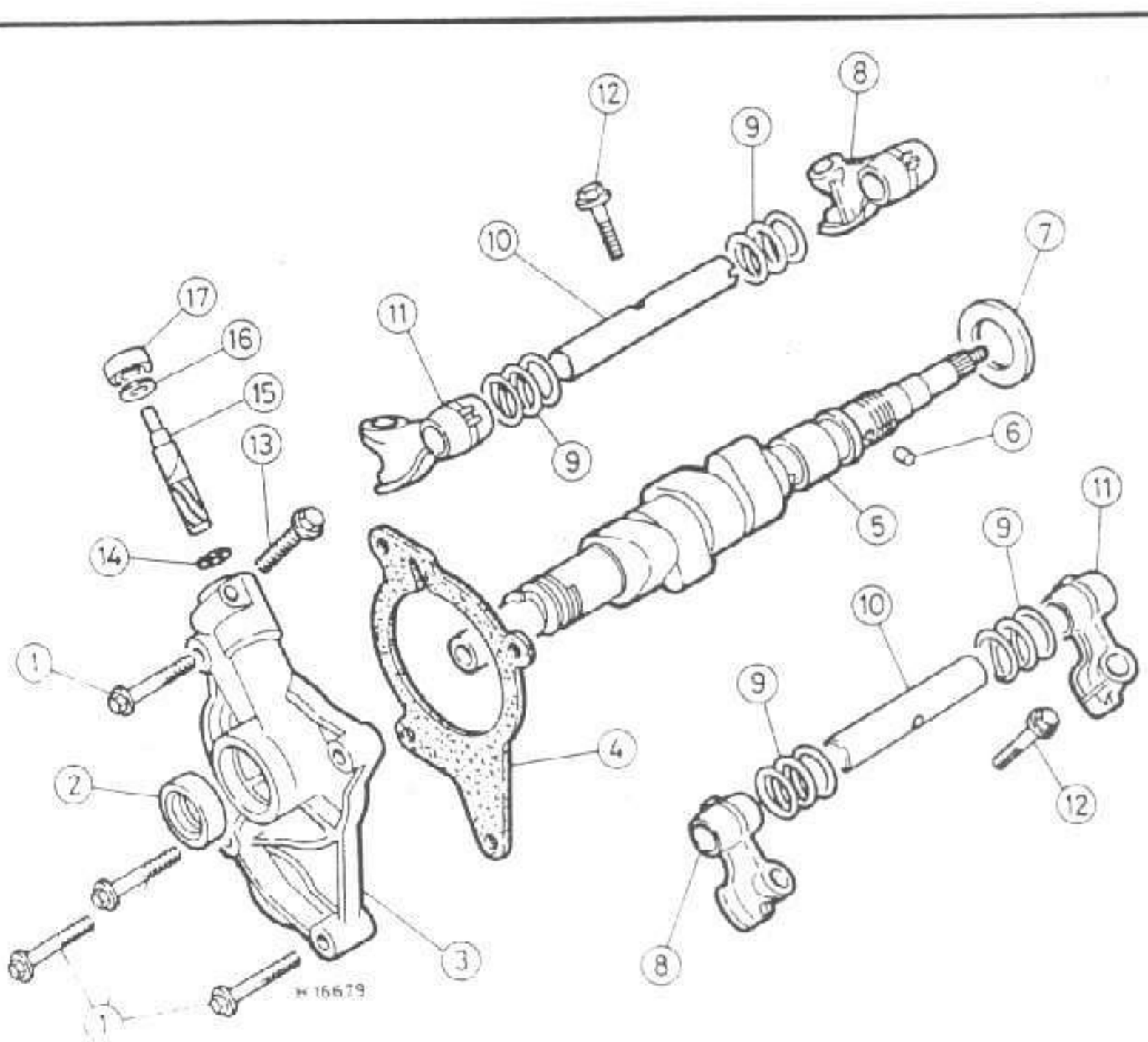


Fig. 1.8 Camshaft and followers

1 Bolt
2 Oil seal (Blanking plug – 650 models)
3 Camshaft bearing housing
4 Gasket
5 Camshaft
6 Drive pin
7 Thrust washer
8 Cam follower
9 Spring
10 Cam follower spindle
11 Cam follower
12 Bolt
13 Bolt
14 Washer
15 Tachometer drive gear
16 Thrust washer
17 Oil seal

23 Cam chain, sprocket and tensioner: examination and renovation

1 Examine the drive chain for wear and loose or broken side plates. There are no specific figures available by which wear can be assessed, but some indication of wear can be obtained by the amount of movement left in the tensioner. If the tensioner arm was near its limit of travel and the guide blades are badly worn, the chain and blades should be renewed. The damage caused by a breaking chain can be imagined easily; therefore if in doubt, renew the chain.

2 The spring which controls the chain tension is unlikely to suffer damage or fatigue but its correct functioning is vital for accurate chain tensioning. Inspect the spring closely, particularly at the hook ends which may have become worn. Here again renew the spring if there is any doubt about its condition. On models with automatic tensioners, this will mean that the tensioner assembly must be renewed complete. Check that the plunger moves smoothly in the tensioner body.

3 Inspect the crankshaft sprockets for signs of wear or chipping of the teeth. Renew as required. The camshaft chain drive sprocket is integral with the crankshaft and therefore if wear is evident the crankshaft must be renewed. This unfortunate state of affairs is not likely to occur until the engine has covered a large mileage, provided that correct chain tension is maintained.

4 Check very carefully the condition of the chain guide and tensioner blades. If they are cracked, worn or damaged in any way they should be renewed. Always ensure, on models with manual tensioners, that only the very latest types of guide and tensioner blade are purchased.

5 The CX500 cam chain tensioner design has given rise to many problems and has been revised on several occasions. The problem lies in the unusual stresses placed on the chain by the camshaft configuration which resulted from the machine's unconventional layout and cylinder angle; the chain is under severe strain at one moment as the camshaft opens or closes the valves, the next moment it is almost too slack.

6 This irregular stress causes the guide blade to vibrate, either snapping itself near the top mounting or shearing off the top mounting bolt. In severe cases the crankcase boss would be damaged or even broken, necessitating crankcase renewal unless some ingenuity was brought to bear. Honda's temporary answer was to have dealers trim the guide blade top mounting down to bare metal in an attempt to provide a stronger mounting. Unfortunately this was not sufficient and various modifications were introduced including several progressively strengthened guide blades, a stronger top mounting bolt and the fitting of an extended guide plate in conjunction with a guide top mounting support plate.

7 Eventually the guide blade became so rigid that the stress was transferred to the tensioner blade, which then started to break. Both guide and tensioner blades were strengthened again.

8 The latest components can be identified initially by their strengthened mounting points and by the addition of rubber bosses on their rear faces to brace them against the rear main bearing cap. In view of the many different types that have been used, correct identification is only possible using the part numbers. If you are in any doubt at all about which items to fit, check first with a Honda Service Agent or with the importers before ordering replacement parts.

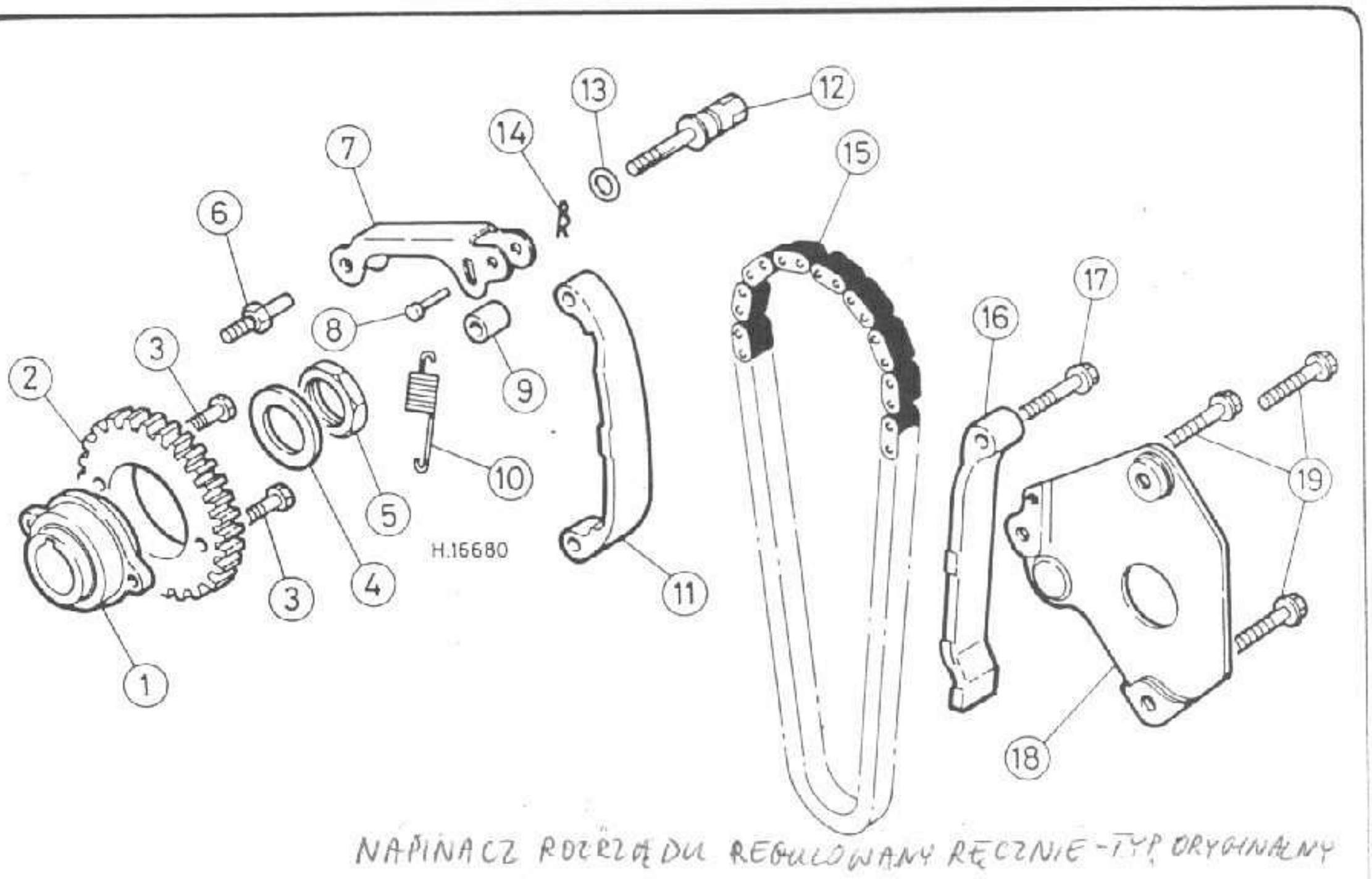
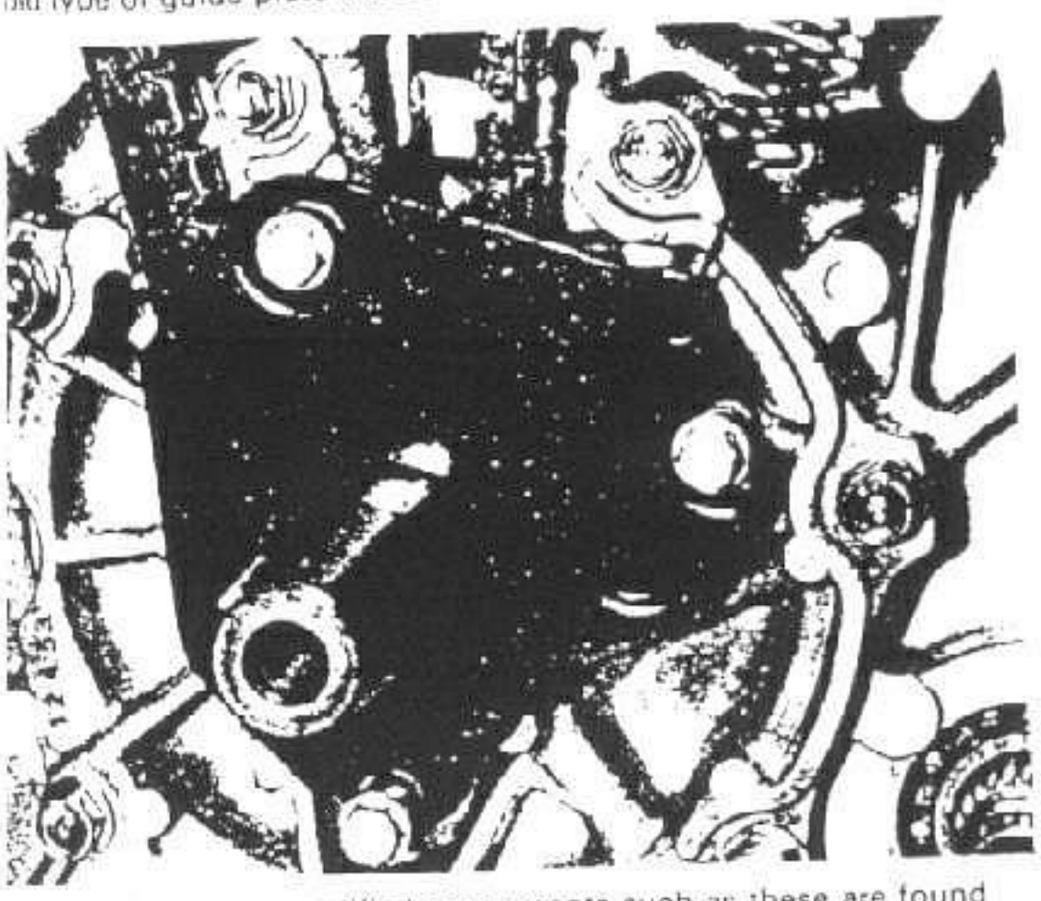


Fig. 1.9 Manual cam chain tensioner – original type

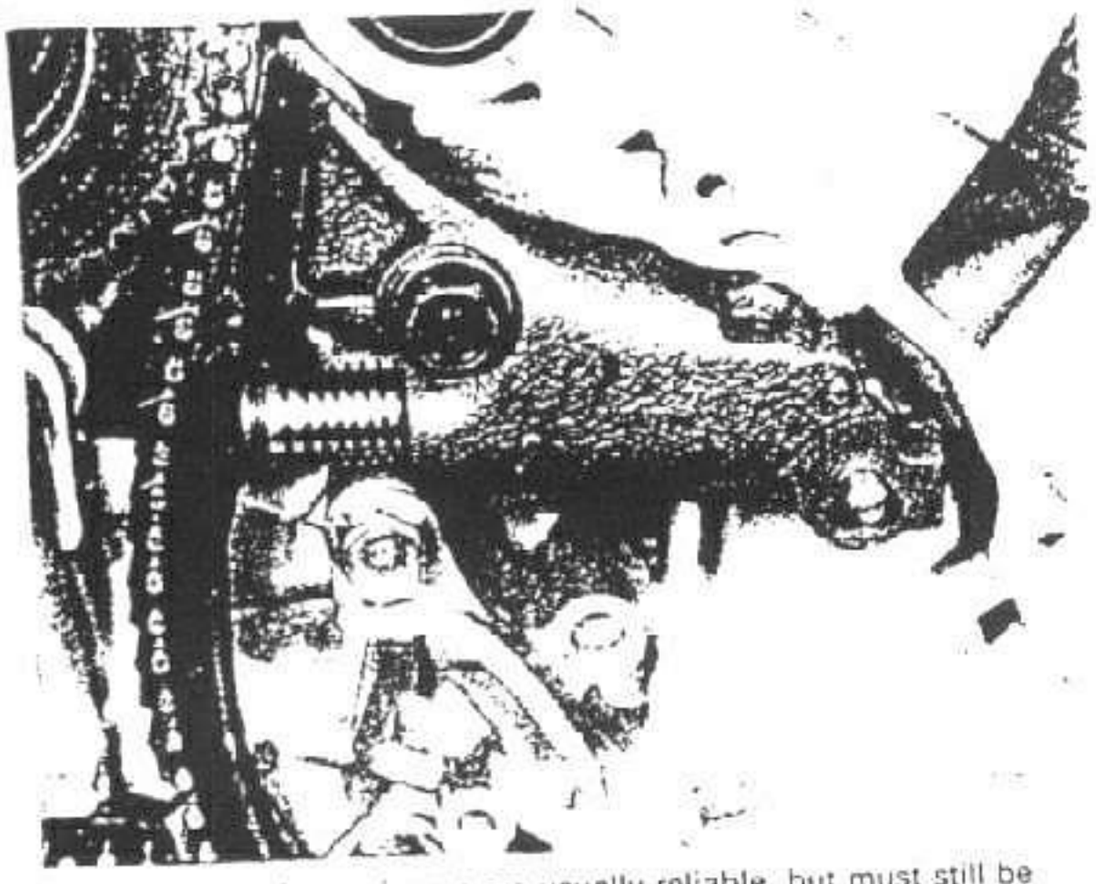
1 Mounting flange
2 Camshaft sprocket
3 Bolt
4 Lock washer
5 Nut
6 Pivot pin
7 Tensioner arm
8 Clevis pin
9 Collar
10 Spring
11 Tensioner blade
12 Locking bolt
13 O-ring
14 R-pin
15 Cam chain
16 Chain guide blade
17 Bolt
18 Tensioner guide plate
19 Bolt

wners of any CX- or (US) GL500 model should treat the cam
and tensioner components with extreme caution; if there is the
test doubt about the condition of any of these components.
cularly the chain tensioner spring, guide blade or tensioner blade,
should be renewed as a matter of course. Any machine fitted with
old type of guide plate should have it changed immediately for the
new type in conjunction with the guide support plate and stronger bolt.

10 Note that at the time of writing the automatic tensioner fitted to CX500 E-C, GL500 D-C and all 650 models seems to be completely reliable. Owners should, however, take note of the above and pay particular attention to checking these components on their machines.



3.6 If early type unmodified components such as these are found be fitted, they must be replaced immediately by modified types



23.10 Automatic tensioners are usually reliable, but must still be checked carefully

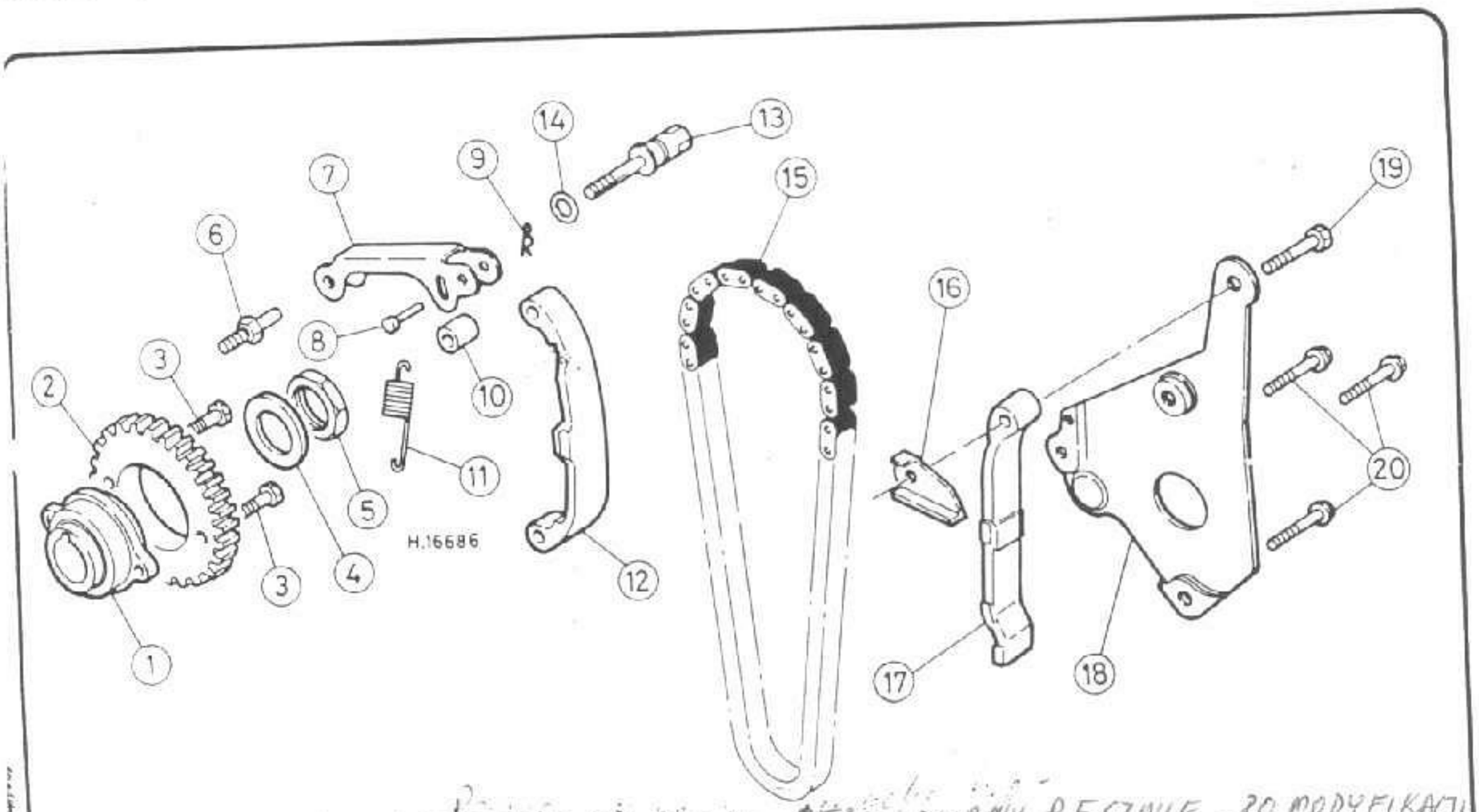


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Fig. 1.10 Manual cam chain tensioner – final modified type

1 Mounting flange
2 Camshaft sprocket
3 Bolt
4 Lock washer
5 Nut
6 Pivot pin
7 Tensioner arm
8 Clevis pin
9 R pin
10 Collar
11 Spring
12 Tensioner blade
13 Locking bolt
14 O ring
15 Cam chain
16 Guide support plate
17 Chain guide blade
18 Tensioner guide plate
19 Bolt
20 Bolt

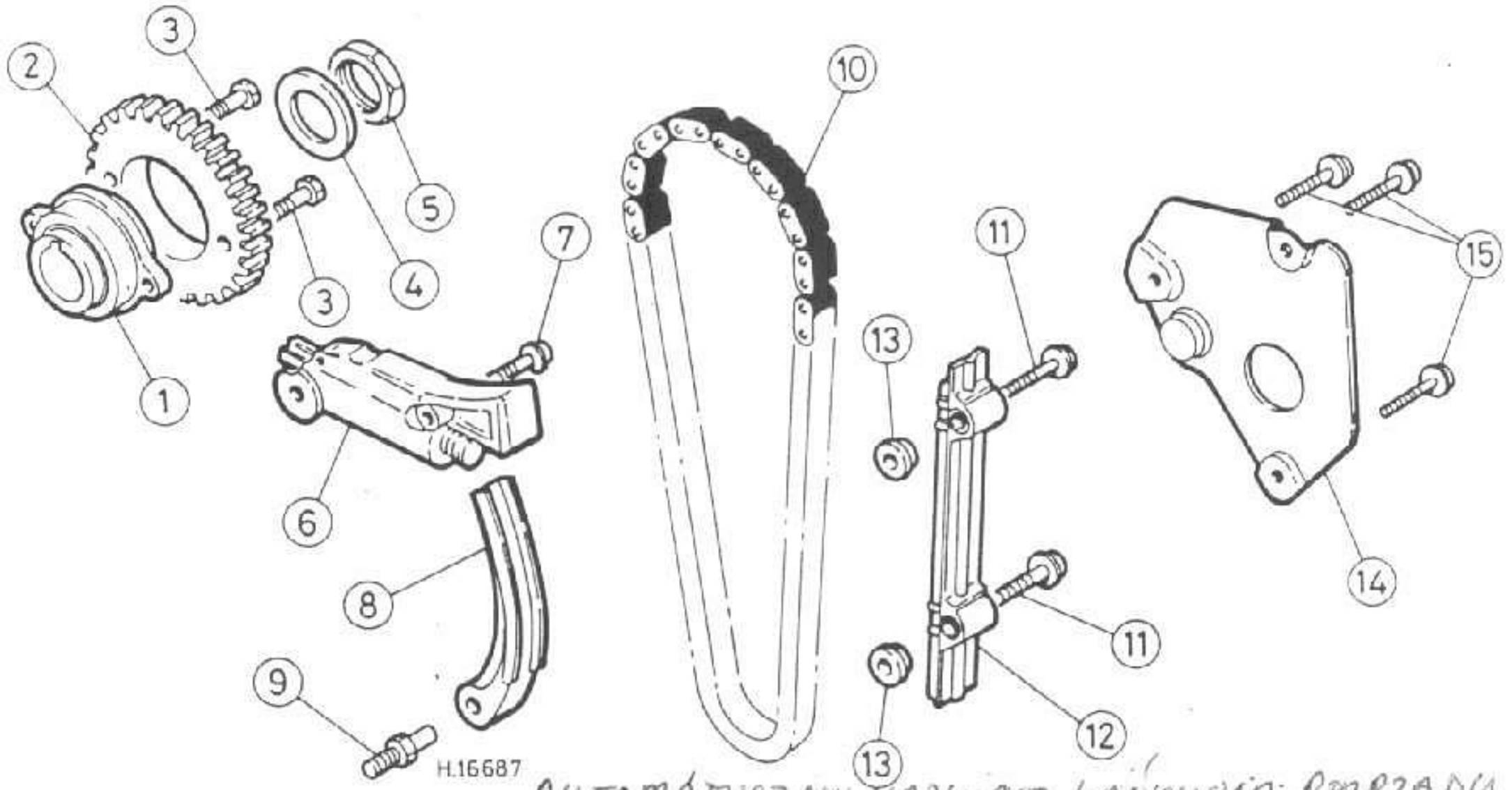


Fig. 1.11 Automatic cam chain tensioner

1 *Mounting flange*
2 *Camshaft sprocket*
3 *Bolt*
4 *Lock washer*
5 *Nut*
6 *Tensioner*
7 *Bolt*
8 *Tensioner blade*
9 *Pivot pin*
10 *Cam chain*
11 *Bolt*
12 *Chain guide blade*
13 *Shouldered spacer*
14 *Chain guide plate*
15 *Bolt*

24 Cylinder bores: examination and renovation

1 The usual indication of badly worn cylinder bores and pistons is excessive smoking from the exhausts and piston 'slap', a metallic rattle that occurs when there is little or no load on the engine. If the top of each cylinder bore is examined carefully, it will be found that there is a ridge on the thrust side, the depth of which will vary according to the wear that has taken place. This marks the limit of travel of the top piston ring.

2 Using an internal micrometer, measure each bore for wear. Take measurements at a point just below the upper ridge, at the centre of the bore and about 1 inch from the lower edge of the bore. Take two measurements at each point. If the diameter at any point exceeds the service limit, the cylinders must be rebored and a set of oversized pistons fitted. Check for ovality by measuring in the manner described for checking bore size. If ovality exceeds the wear limit, a rebore is necessary.

3 Assuming that the checks detailed above have been carried out and satisfactory results obtained, check each bore visually. Inspect for score marks or other damage that may have resulted from an earlier engine seizure or displaced gudgeon pins. A rebore will be necessary to remove any deep scores.

4 If the cylinder bores do not require attention but new piston rings are to be fitted (as is usual after engine dismantling), it is advised that each cylinder is 'glazebusted' before reassembly. This will increase the rate at which the new rings bed in, increasing compression, and will also improve cooling. 'Glazebusting' is a specialised operation and should be entrusted to an expert.

5 Inspect the coolant cavities in the water jacket of each cylinder. 'Furring up' around the transfer orifices in the mating surfaces can be removed by the careful use of a scraper. Heavy deposits within the jacket can most easily be removed after the engine has been reassembled and refitted into the frame, using a special flushing fluid or compound added to the coolant. Ensure that the type used is suitable for aluminium castings.

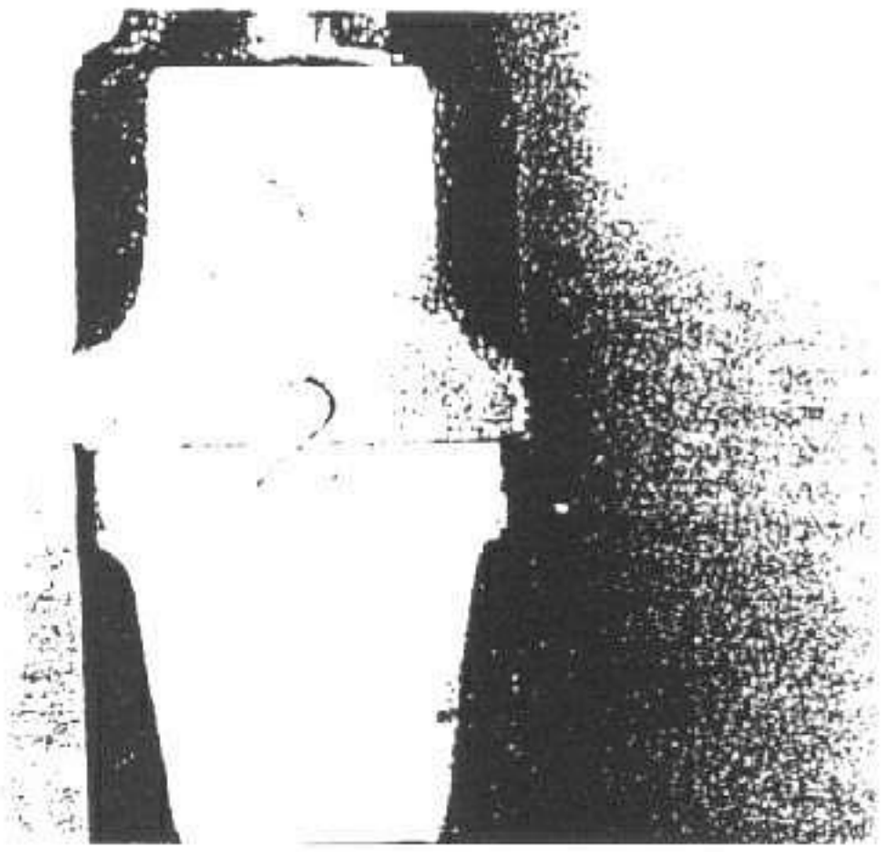
25 Pistons and rings: examination and renovation

1 If a rebore is necessary, ignore this Section where reference is made to piston and ring examination since new components will be fitted.

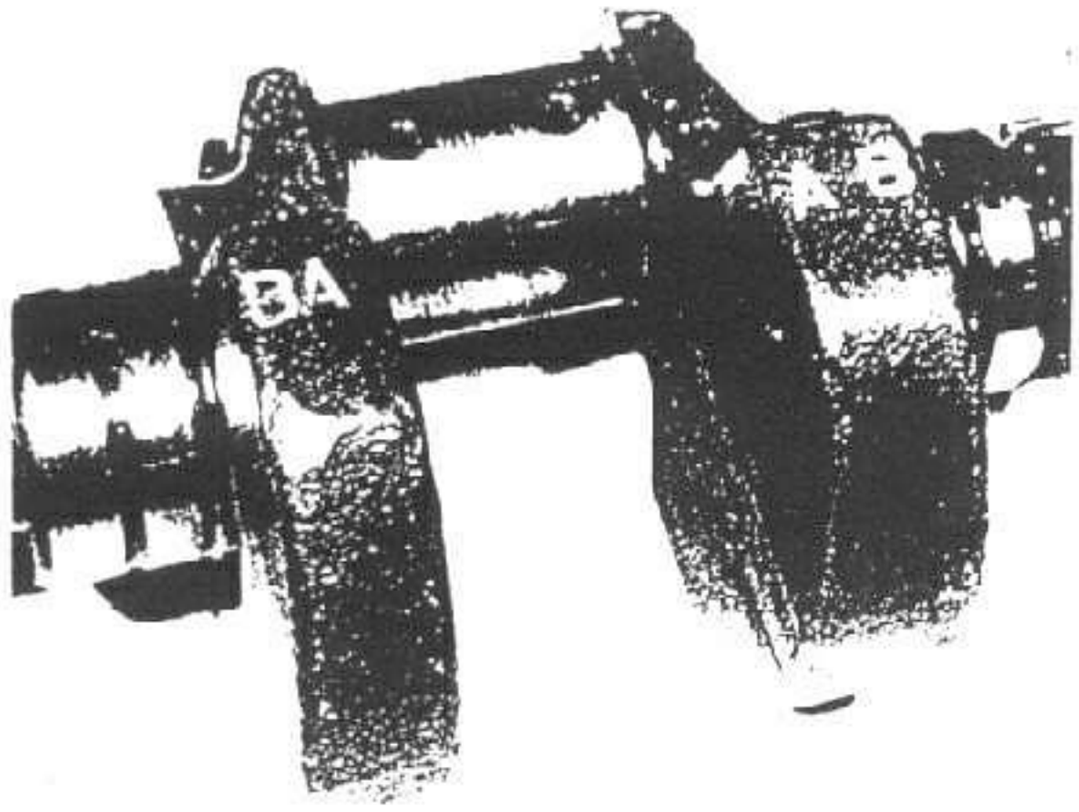
2 If a rebore is not considered necessary, examine each piston closely. Reject pistons that are scored or badly discoloured as the result of exhaust gases bypassing the rings. Remove each ring either by carefully opening each ring using the thumbs, or by placing three thin strips of tin between the ring being removed and the piston (see illustration). The oil scraper ring comprises a special crimped ring 'sandwiched' between two thin plain rings. Special care must be taken when removing this ring.

3 Remove all carbon from the piston crowns using a blunt instrument which will not damage the surface of the piston. A wood chisel with the cutting edge slightly dulled is a suitable tool. Clean away all carbon deposits from the valve cutaways and finish off with metal polish to produce a smooth shiny surface. Carbon will not adhere so readily to a polished surface.

4 Generally, when an engine is stripped down completely, the oil rings are renewed as a matter of course unless the rings have only been fitted for a short time. If ring life is such that renewal is not warranted automatically, the rings should be examined as follows. Check that there is no build-up of carbon on the inside surface of the rings or in the ring grooves of the pistons. Any build-up should be removed by careful scraping. An old broken ring, the end of which has been ground to a chisel profile, is useful for this. Replace each ring in its respective groove and measure the ring side play, using a feeler gauge. If the clearance on any ring exceeds the maximum given, the rings or the piston should be renewed as a set. There is no measurable



26.3 Letter indicates weight group (should be the same on both rods), number indicates size group



26.6 Inner letters are crankpin codes, outer letters are main bearing codes

27 Crankshaft and main bearings: examination and renovation

1 Examine the main bearings for visual signs of damage as described in the previous Section for the big-end bearings. The main bearing clearances can be determined only by direct measurement, using internal and external micrometers. This is because the bearings are of the bush type, rather than the shell type used for the big-ends. The correct clearances are given in the Specifications at the beginning of this Chapter.

2 Each main bearing is a tight interference fit in its housing. Although in practice it may be possible to drive an old bearing from position, when fitting a new bearing, the bearing must be pressed into position

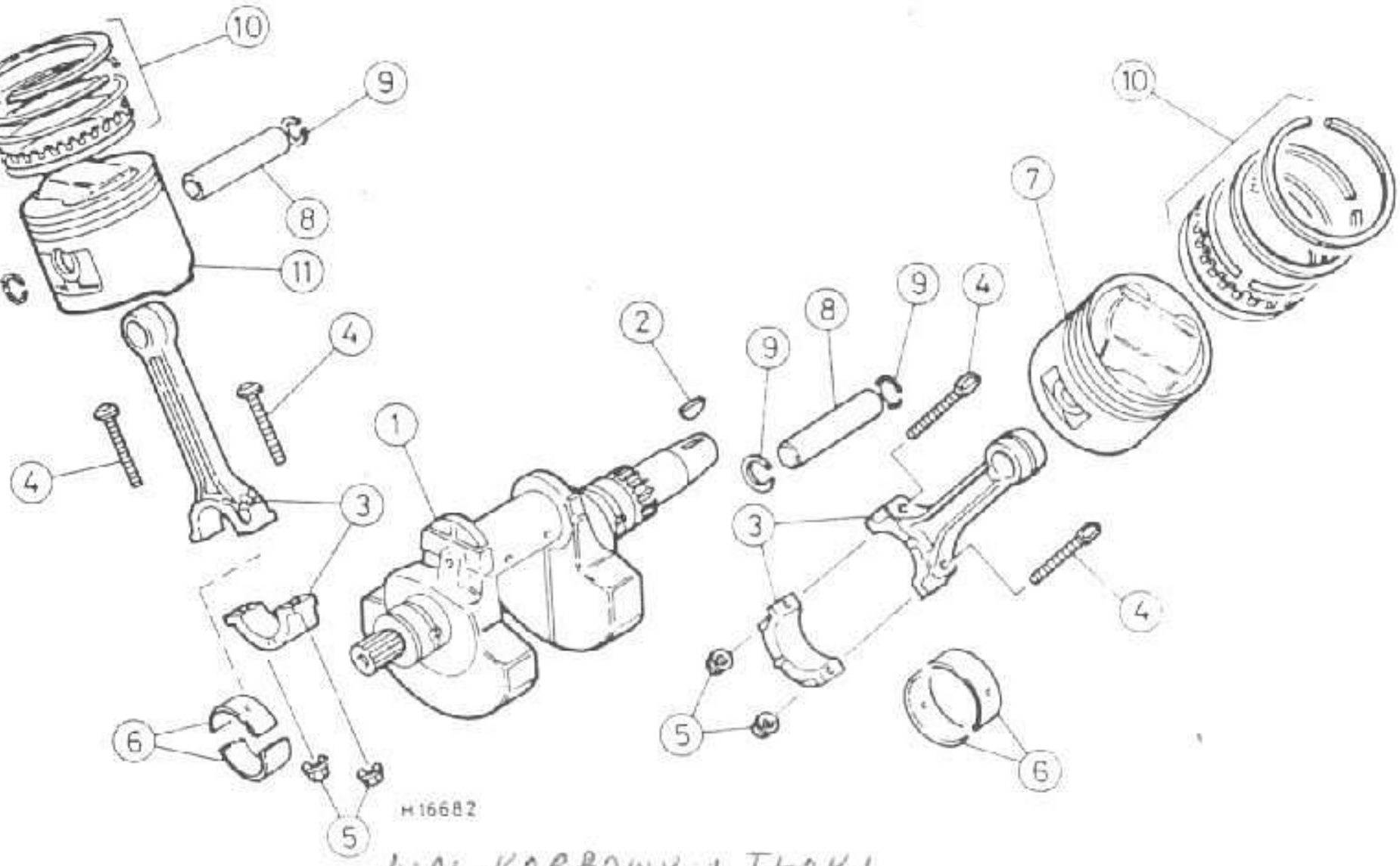


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Fig. 1.13 Crankshaft and pistons

1	Crankshaft	4	Bolt	7	Left hand piston	10	Piston rings
2	Woodruff key	5	Nut	8	Gudgeon pin	11	Right hand piston
3	Connecting rod	6	Big-end bearing	9	Circlip		

special tool by which the spring may be compressed and the retaining collets displaced. This system of spring retention is also used on most types of rear suspension unit. If the special tool is not available, the type of clamp used for suspension unit dismantling could probably be used. Alternatively, a pair of scarf joint clamps as used by carpenter joiners can also be utilised.

2 Compress the main spring sufficiently to release the retaining collets and then release the tension slowly. Do not over-compress the spring as it may be damaged permanently. Examine the cam faces for excessive indentation or flaking. Although alteration of the cam profile due to wear will have little effect on the performance of the shock absorber it is probably wise to renew the two mating components if wear has progressed to a point where the case hardening has been worn through.

3 Measure the free length of the helical spring, renewing if it has settled to the specified service limit or less.

31 Starter clutch and drive gears: examination and renovation

1 The starter clutch assembly is housed in the rear of the alternator generator rotor. Check the condition of the three engagement rollers and the boss on the starter driven gear with which they engage. If necessary, the complete starter clutch can be removed from the rear of the rotor after unscrewing the three mounting screws. The screws are of the socket type but have a special star shaped recess in place of the more usual hexagonal recess. A special 'Torx' bit, (size T40), is therefore required for their removal.

2 Examine the condition of the starter drive gear and the driven gear. In the unlikely event of worn components, renewal is the only method of renovation.

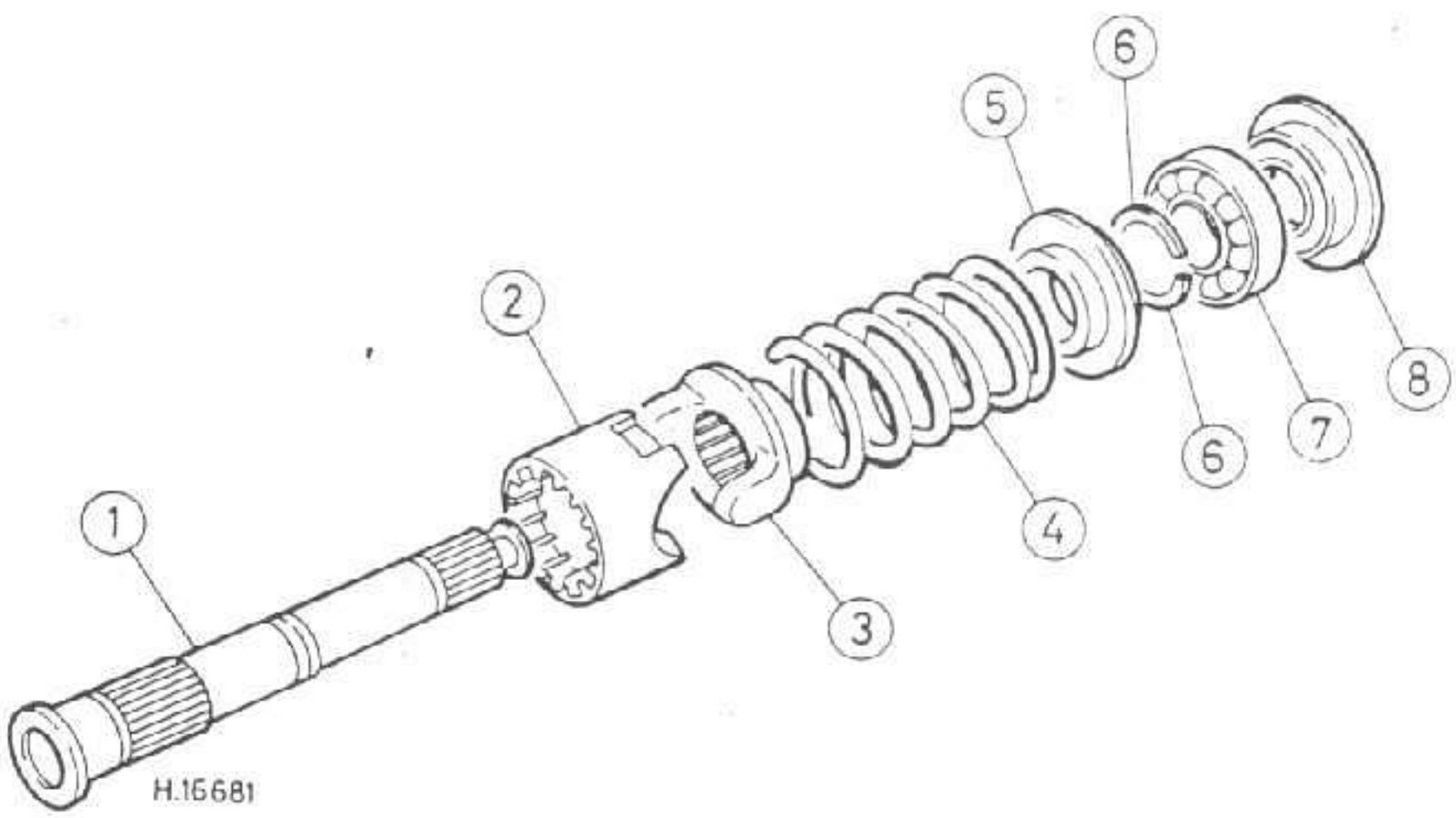
32 Engine reassembly: general

1 Before reassembly of the engine/gearbox unit is commenced, the various component parts should be cleaned thoroughly and placed on a sheet of clean paper, close to the working area.

2 Make sure all traces of old gaskets have been removed and that the mating surfaces are clean and undamaged. Great care should be taken when removing old gasket compound not to damage the mating surface. Most gasket compounds can be softened using a suitable solvent such as methylated spirits, acetone or cellulose thinner. The type of solvent required will depend on the type of compound used. Gasket compound of the non-hardening type can be removed using a soft brass-wire brush of the type used for cleaning suede shoes. A considerable amount of scrubbing can take place without fear of harming the mating surfaces. Some difficulty may be encountered when attempting to remove gaskets of the self-vulcanising type, the use of which is becoming widespread, particularly as cylinder head and base gaskets. The gasket should be pared from the mating surface using a scalpel or a small chisel with a finely honed edge. Do not, however, resort to scraping with a sharp instrument unless necessary.

3 Gather together all the necessary tools and have available an oil can filled with clean engine oil. Make sure that all new gaskets and oil seals are to hand, also all replacement parts required. Nothing is more frustrating than having to stop in the middle of a reassembly sequence because a vital gasket or replacement has been overlooked. As a general rule each moving engine component should be lubricated thoroughly as it is fitted into position.

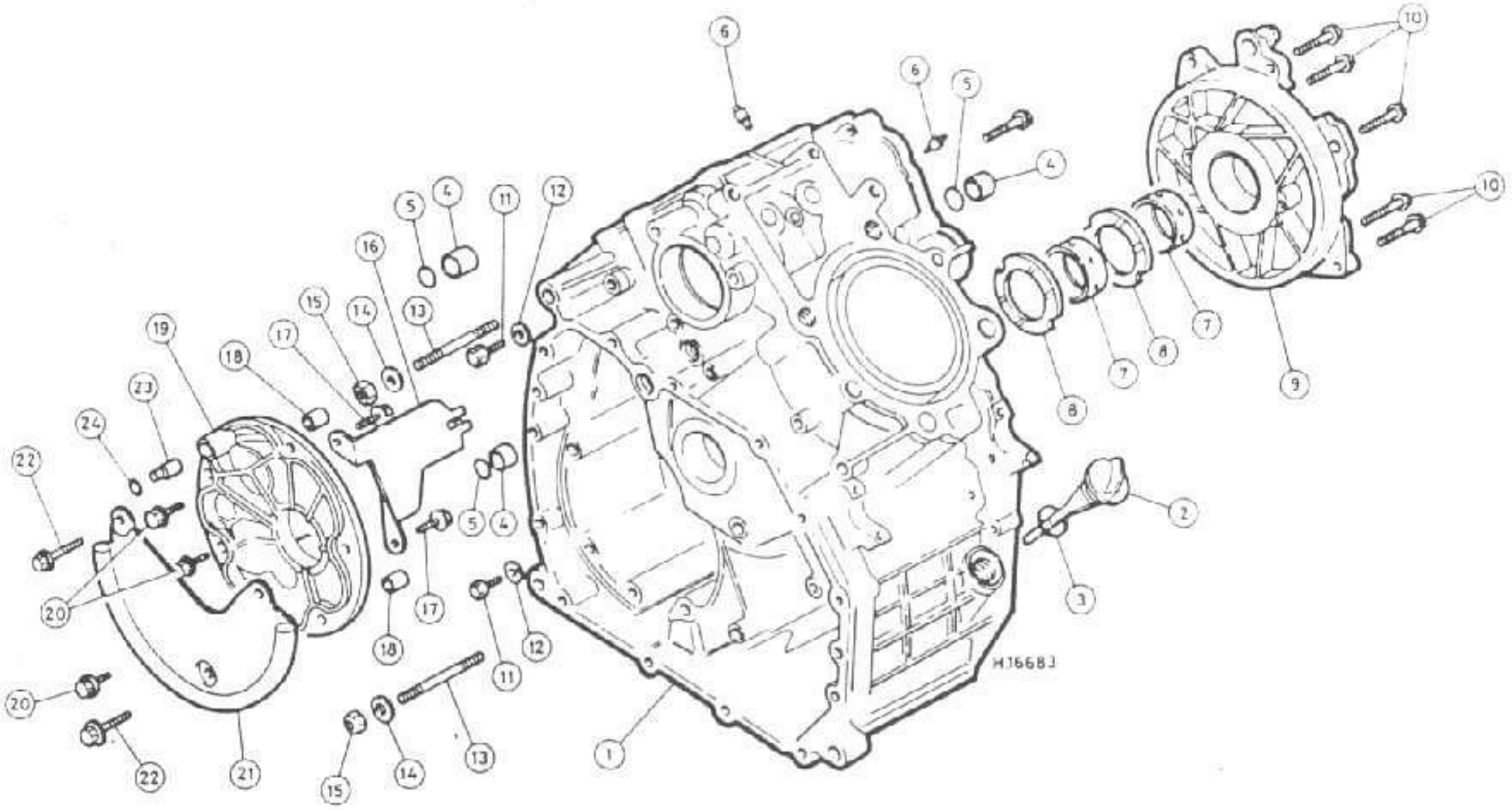
4 Make sure that the reassembly area is clean and that there is adequate working space. Refer to the torque and clearance setting wherever they are given. Many of the smaller bolts are easily sheared if overtightened. Always use the correct size screwdriver bit for the cross-head screws and never an ordinary screwdriver or punch. If the existing screws show evidence of maltreatment in the past, it is advisable to renew them as a complete set.



WAŁEK WYJŚCIOWY NAPĘDU

Fig. 1.14 Final output shaft

1 *Output shaft*
2 *Shock absorber cam*
3 *Shock absorber cam*
4 *Spring*
5 *Spring collar*
6 *Collets*
7 *Bearing*
8 *Oil seal*



BLOK CYLINDRÓW

Fig. 1.15 Cylinder block

1 Cylinder block
2 Dip stick
3 O-ring
4 Dowel
5 O-ring
6 Oil jet
7 Main bearing
8 Crankshaft thrust washer – 650 only
9 Crankshaft rear main bearing cap
10 Bolt
11 Bolt
12 Sealing washer
13 Stud
14 Washer*
15 Nut
16 Oil baffle plate*
17 Bolt*
18 Dowel
19 Gearbox front cover
20 Bolt
21 Oil separator plate
22 Bolt
23 Oil jet
24 O ring

* 500 model only

34 Reassembling the engine/gearbox unit: refitting the pistons and connecting rods

1 Select one connecting rod and its original piston or a new piston of the correct type. Note that the two pistons are not interchangeable and are marked L or R on the crown to aid identification. Place the piston over the end of the rod so that the identification mark on the crown is on the opposite side of the rod to the small oil hole drilled in the rod flank. Insert the gudgeon pin and press it home. Clean engine oil or molybdenum disulphide grease should be applied to the small-end eye before the pin is inserted. Fit two new circlips ensuring that both locate correctly with the grooves in the piston bosses.

2 If not already in place, fit the piston rings as follows. Working from the bottom of the piston fit the first oil control ring side rail, the corrugated expander ring and the final side rail. The end gaps of each component in the oil control ring assembly should be spaced about 3/4 inch apart. Now working from the top of the piston fit the 2nd compression ring and top compression ring. The upper rings must be fitted so that the letter mark, which is stamped on one side of each ring, faces upwards. This is important to retain maximum compression. When fitting any piston into its cylinder bore, the rings should be arranged so that the end gaps are approximately 120° apart. Repeat the assembly procedure with the second piston and connecting rod.

3 Fit the big-end shells to the connecting rods and big-end caps. Ensure that the tongues locate correctly and the oil holes align with the oil holes in the rods. The bearings and journals should be lubricated thoroughly in the normal way. Lubricate both cylinder bores with a copious quantity of clean engine oil and then insert the right-hand piston and rod into the bore. A piston ring clamp should be used to compress the rings as they enter the bore. Fitting the piston without a clamp is possible but the risk of damage to the rings is great as there is no chamfered lead-in. The pistons should be fitted so that the oil hole in each connecting rod faces the top edge of the engine.

4 Engage the connecting rod lower end with the big-end journal and fit the cap. Ensure that the cap is fitted correctly so that the matching marks on the machined faces align. Fit the big-end nuts and tighten them evenly to the specified torque setting. Check that the crankshaft still rotates freely.

5 Repeat the assembly process for the left-hand piston.

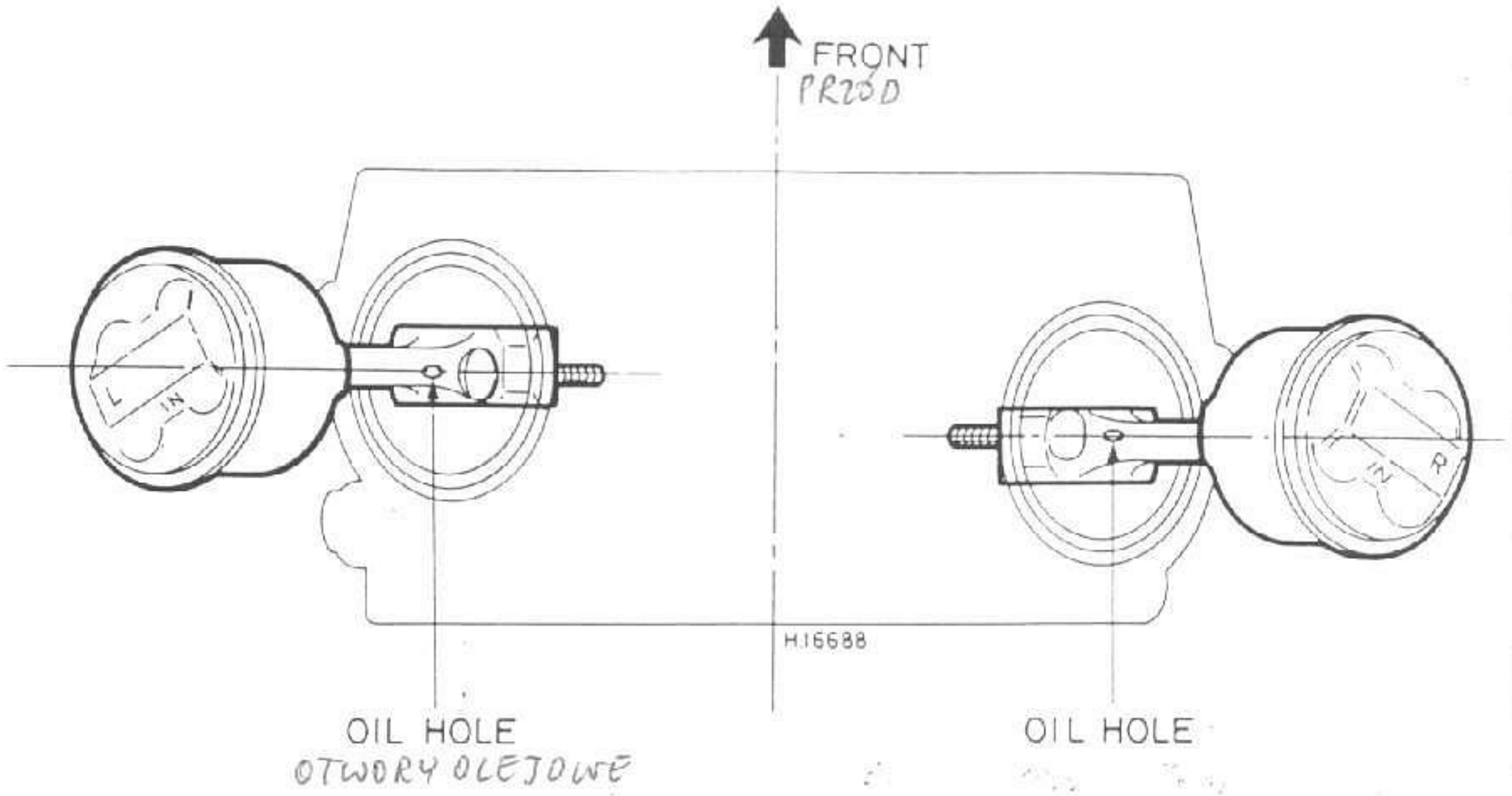


Fig. 1.16 Positioning guide for pistons and connecting rods

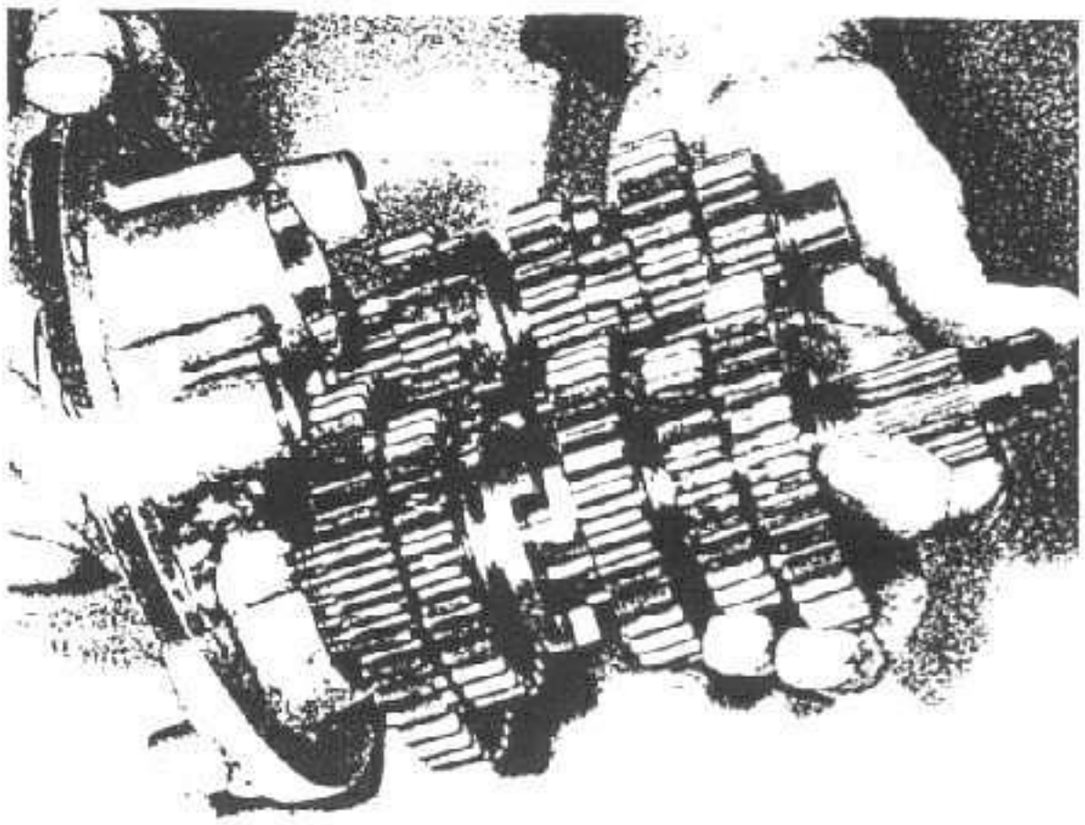
35 Reassembling the engine/gearbox unit: refitting the gearbox components

1 If the input or output shaft assemblies were dismantled for inspection they must be reassembled before refitting. Refer to the accompanying illustrations for the relative positions of the gears, washers and circlips. It is very important that the components are fitted in the correct order and the correct way round, or continual gearchange problems will arise. When the two shafts are complete, mesh them together and insert them into the end cover simultaneously, so that the output shaft enters its bearing and the input shaft passes through its bearing. Using a rawhide mallet, gently drift the input shaft fully home so that the gears are in line with each other.

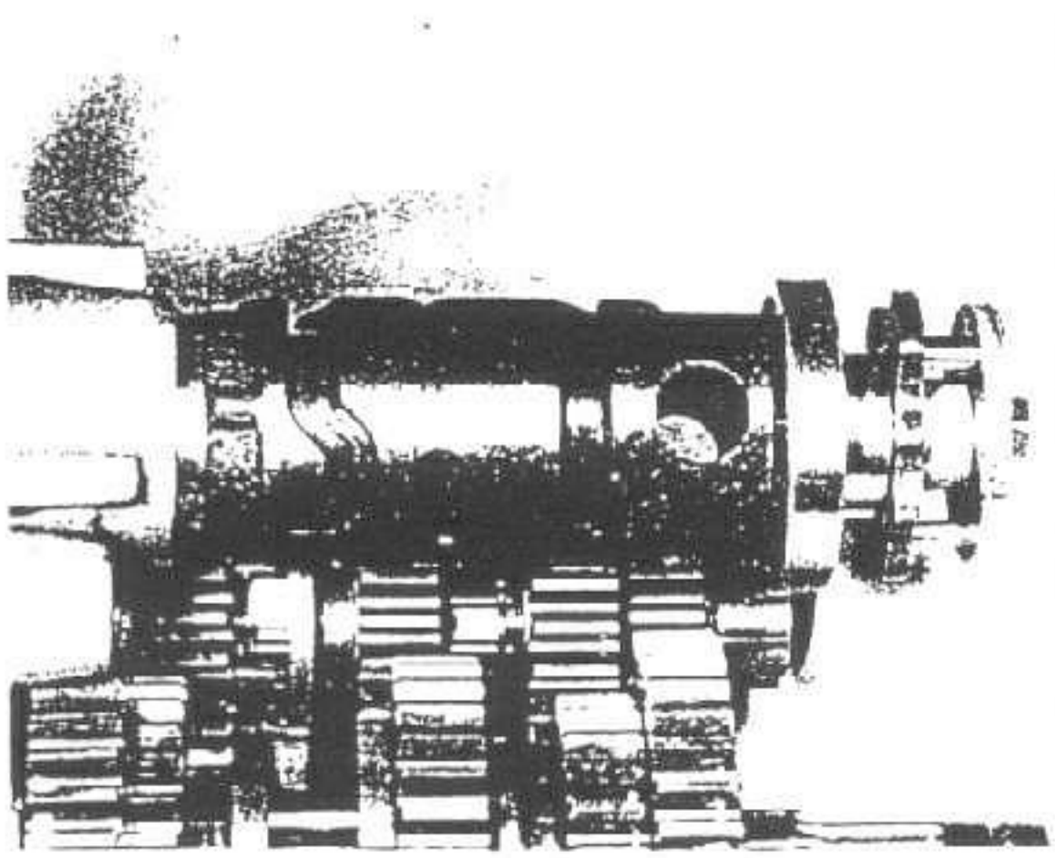
2 Install the selector drum and then position the two output shaft selector forks so that they engage with the channels on the sliding pinions and the selector drum channels. Insert the selector fork shaft to locate the forks. Repeat the operation with the remaining fork and shaft.

3 Rotate the selector drum so that neutral gear is selected. The completed assembly may now be inserted into the gearbox chamber. Some care is required when carrying out this operation because the rear end of the selector drum must pass through the profiled aperture in the casing and the various shafts must engage with their bearings. With the components positioned satisfactorily push the end cover home to engage with the two hollow dowels.

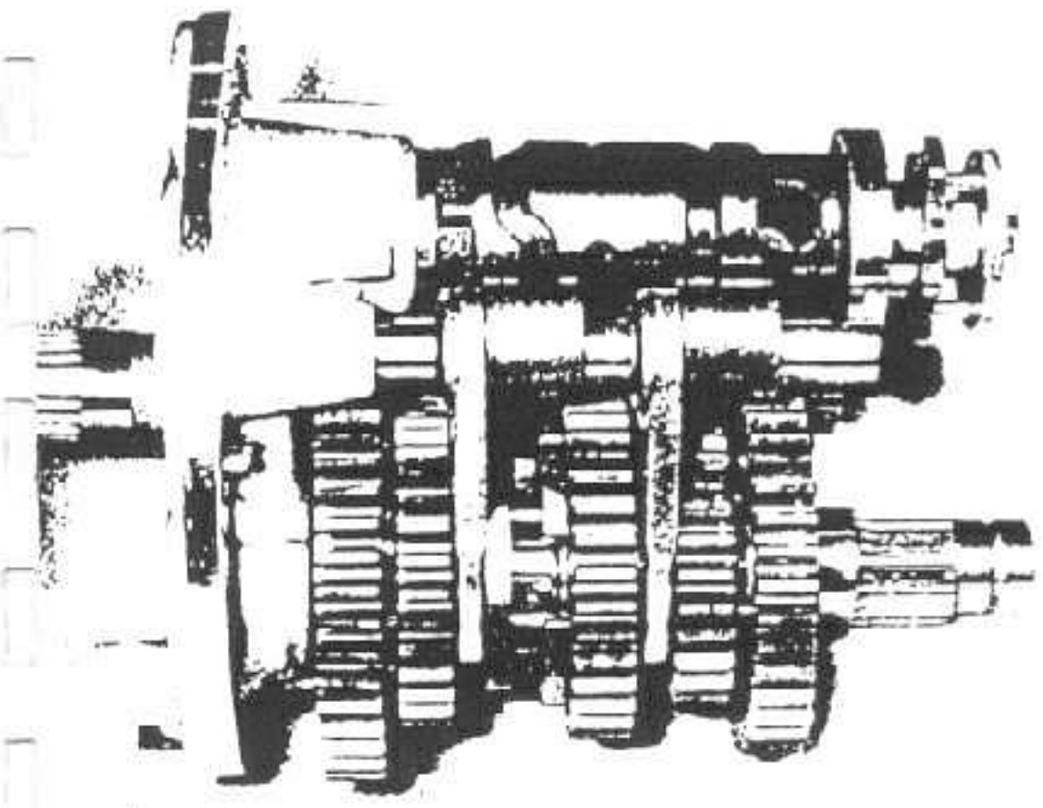
4 Insert all the end cover bolts except those which secure the oil separator plate to the cover. Tighten the bolts evenly, in a diagonal sequence. The separatpr plate can now be fitted and the bolts tightened to the specified torque settings.



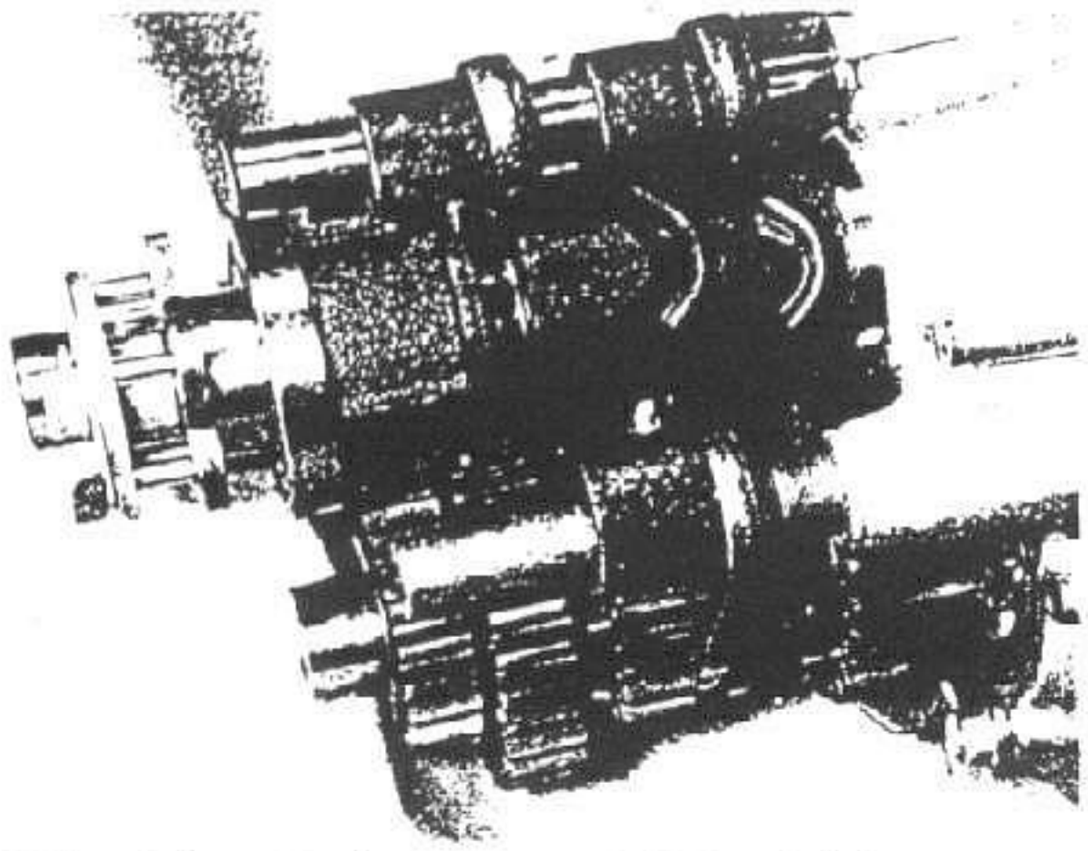
35.1 Fit both gearbox shafts simultaneously to gearbox cover



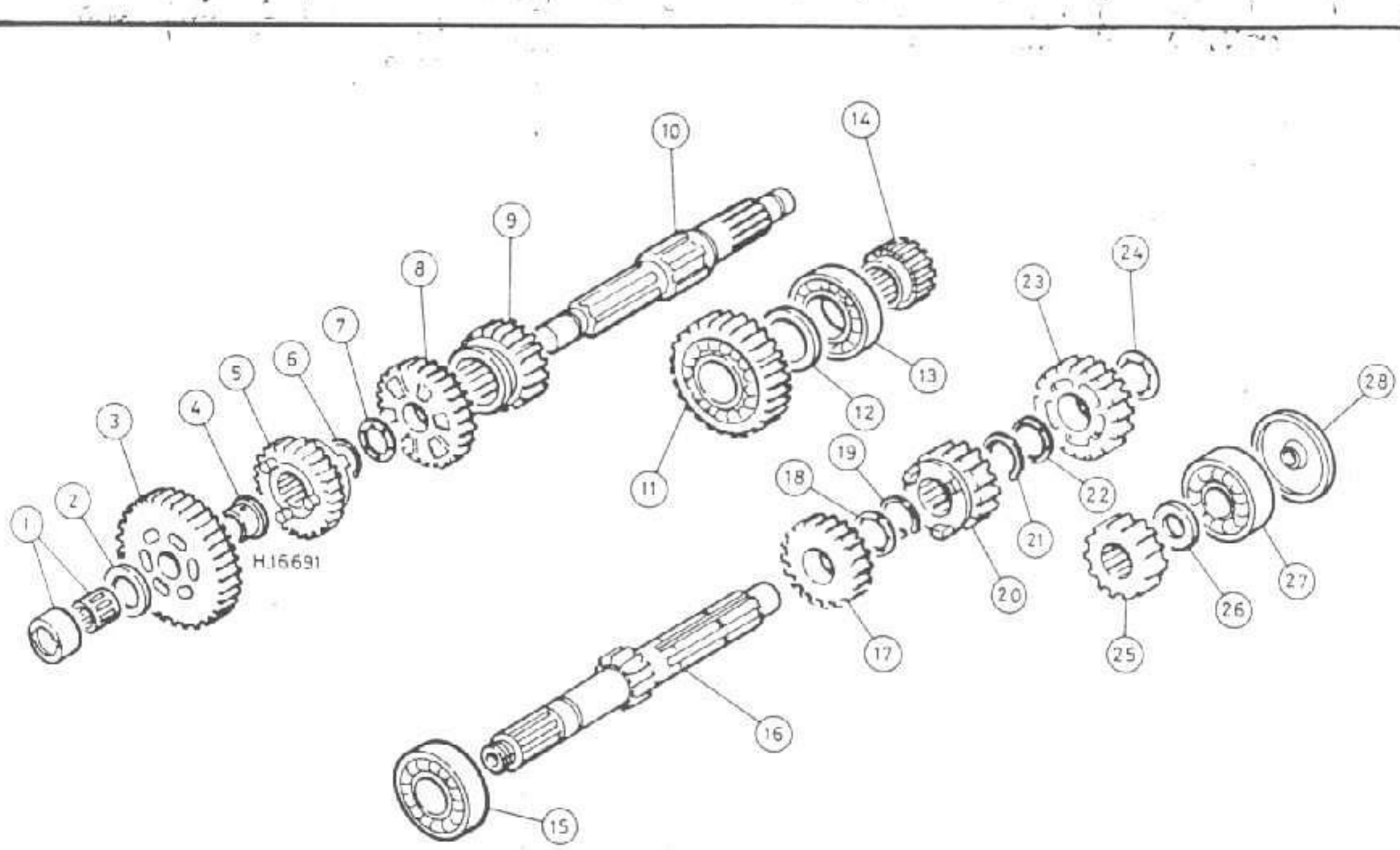
35.2a Install the selector drum, then refit



35.2b ... the two output shaft selector forks and their shaft ...



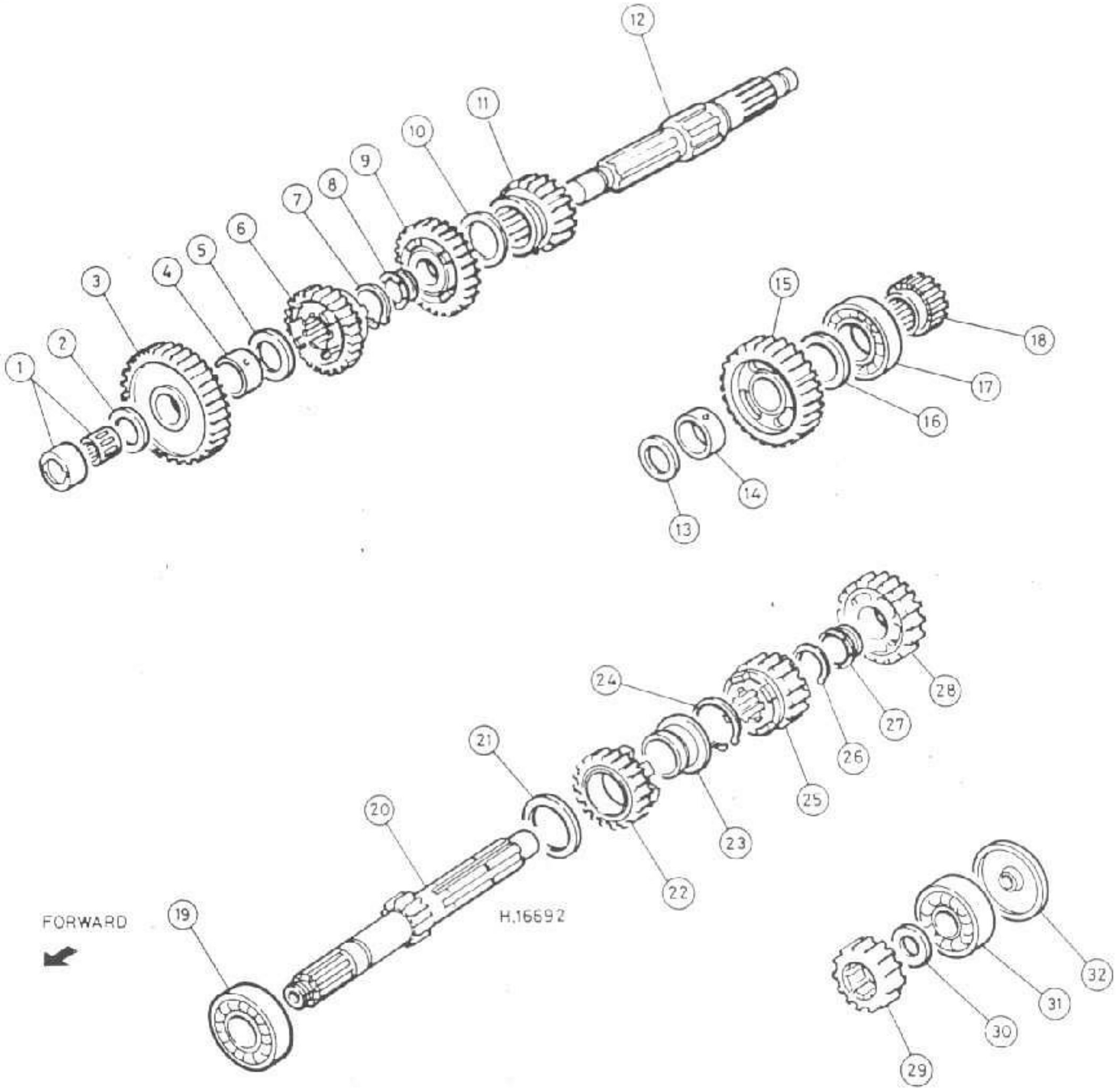
35.2c ... followed by the single input shaft fork and shaft



ELEMENTY SKŁADOWE SKRZYNI BIEGÓW - MODELE 500

Fig. 1.17 Gearbox components - 500 models

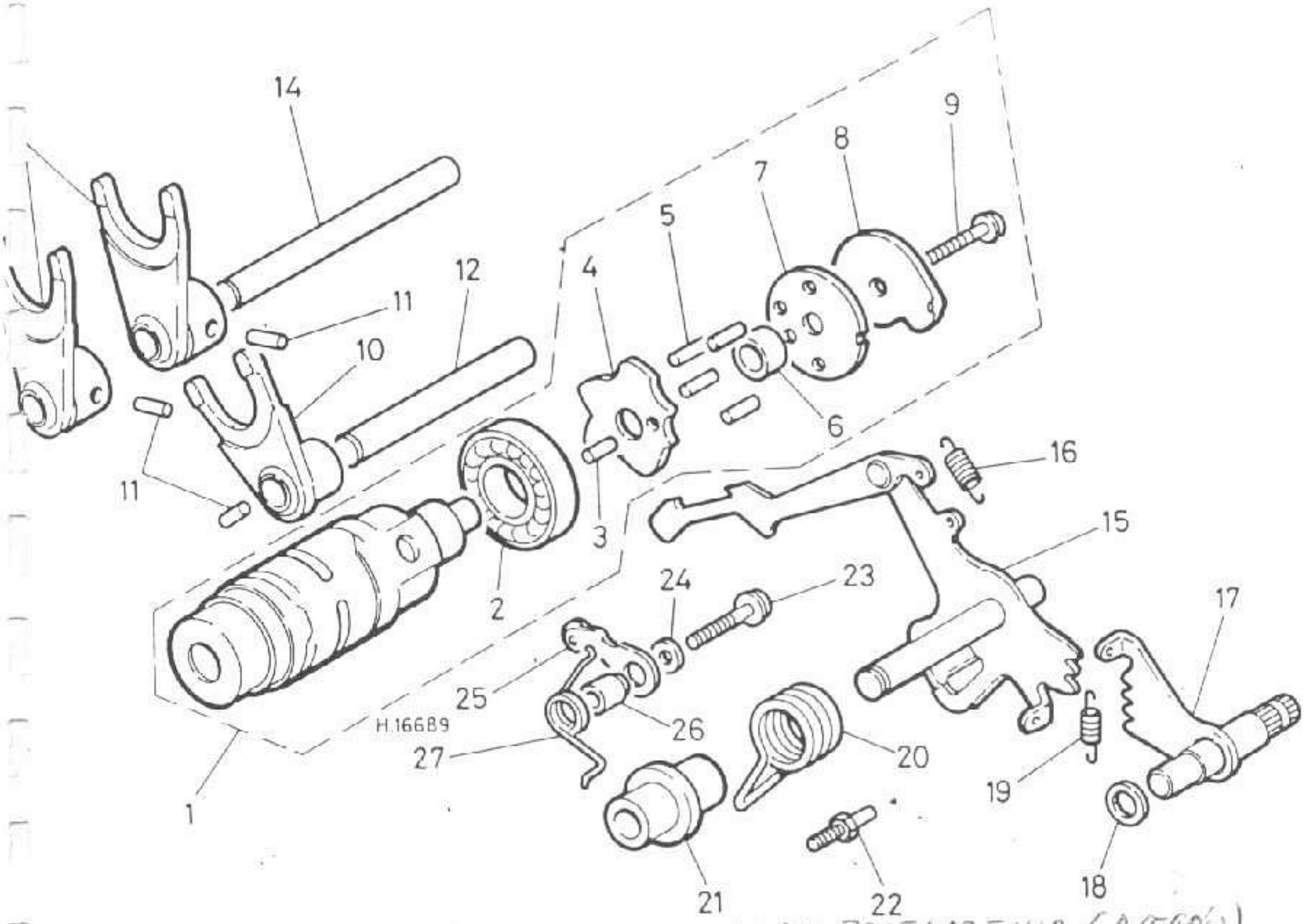
1 *Needle roller bearing*
2 *Thrust washer*
3 *Output shaft 1st gear*
4 *Bush*
5 *Output shaft 4th gear*
6 *Circlip*
7 *Splined thrust washer*
8 *Output shaft 3rd gear*
9 *Output shaft 5th gear*
10 *Output shaft*
11 *Output shaft 2nd gear*
12 *Thrust washer*
13 *Bearing*
14 *Output shaft collar*
15 *Bearing*
16 *Input shaft*
17 *Input shaft 4th gear*
18 *Splined thrust washer*
19 *Circlip*
20 *Input shaft 3rd gear*
21 *Circlip*
22 *Splined thrust washer*
23 *Input shaft 5th gear*
24 *Splined thrust washer*
25 *Input shaft 2nd gear*
26 *Thrust washer*
27 *Bearing*
28 *Oil guide plate*



ELEMENTY SKŁADOWE SKRZYNI BIEGÓW - MODELE 650

Fig. 1.18 Gearbox components - 650 models

1 Needle roller bearing
2 Thrust washer
3 Output shaft 1st gear
4 Bush
5 Thrust washer
6 Output shaft 4th gear
7 Circlip
8 Bush
9 Output shaft 3rd gear
10 Thrust washer
11 Output shaft 5th gear
12 Output shaft
13 Thrust washer
14 Bush
15 Output shaft 2nd gear
16 Thrust washer
17 Bearing
18 Output shaft collar
19 Bearing
20 Input shaft
21 Thrust washer
22 Input shaft 4th gear
23 Bush
24 Circlip
25 Input shaft 3rd gear
26 Circlip
27 Bush
28 Input shaft 5th gear
29 Input shaft 2nd gear
30 Thrust washer
31 Bearing
32 Oil guide plate



MECHANIZM WYBORU PRZEŁOŻENIA (BIEGÓW)

Fig. 1.19 Gear selector mechanism

1 Selector drum assembly
2 Bearing
3 Dowel pin
4 Selector drum cam
5 Selector pins
6 Spacer
7 End plate
8 Neutral switch plate
9 Bolt
10 Selector fork
11 Guide pin*
12 Selector fork shaft
13 Selector fork
14 Selector fork shaft
15 Selector claw arm
16 Spring
17 Gearchange pedal shaft
18 Thrust washer
19 Spring
20 Return spring
21 Shouldered spacer
22 Spring anchor pin
23 Bolt
24 Washer
25 Stop arm
26 Collar
27 Return spring

* Guide pins integral with forks on 650 models

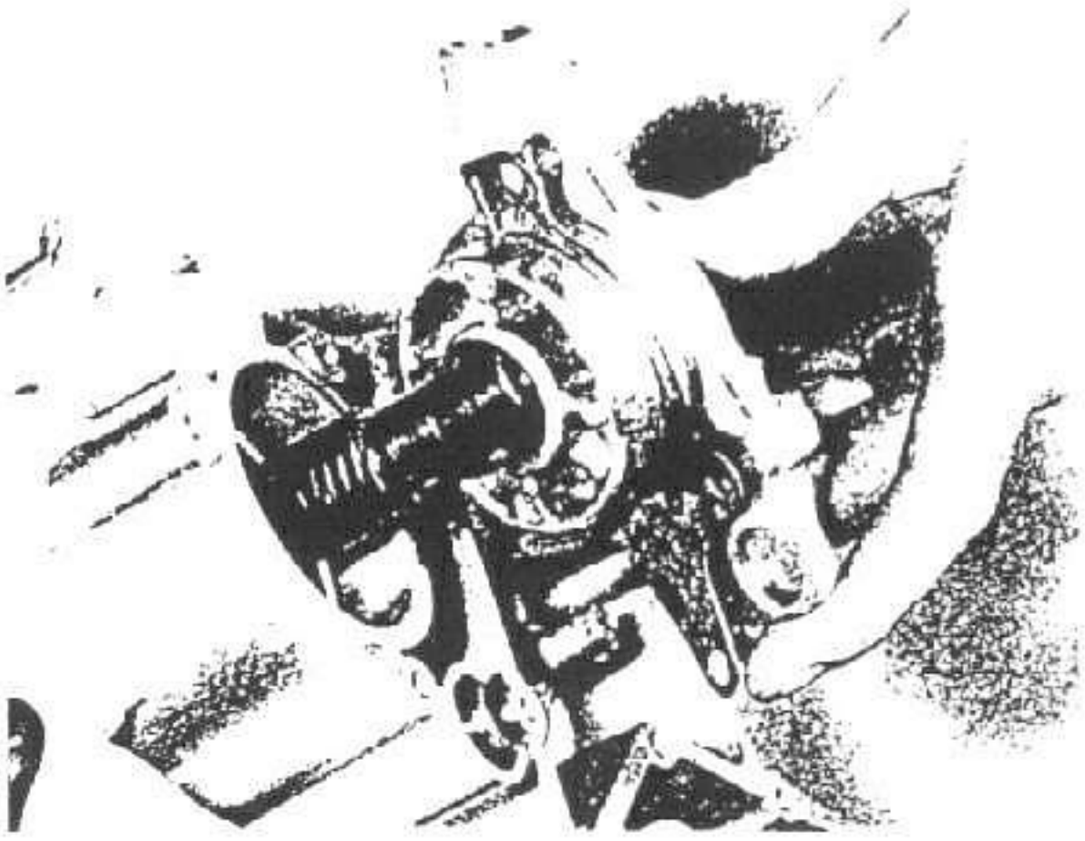
36 Reassembling the engine/gearbox unit: refitting the primary drive pinion and oil pump

Refit the primary drive pinion on the splined front end of the crankshaft. On 500 models only, lubricate the auxiliary pinion and side plate and replace them on the shaft. All three components should have been marked during dismantling so that they may be refitted the correct way round. Insert the two drive pins through the side plate to locate with the primary drive pinion. Position the spring plate on the shaft and then slide the oil pump drive sprocket into place to locate the plate. Turn the plate so that two of the internally projecting tongues cover the drive pins. This will prevent the pins from working out of position during service.

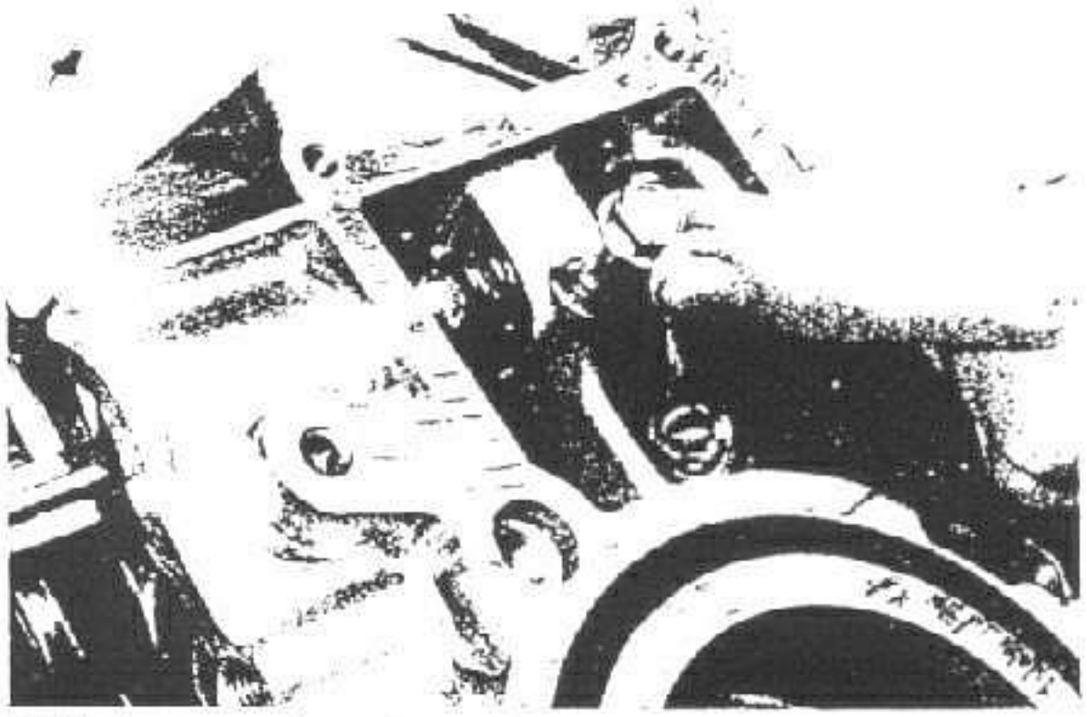
2 Fit the drive pinion bolt and tighten it to a torque of 8.0 - 9.5 kgf m (58 - 69 lbf ft). Prevent the crankshaft from rotating during tightening by using the locking tool fabricated during removal. The locking tool should be left in position until the clutch has been replaced.

3 Check that the oil pump locating dowel is positioned in the oil pump lower mounting hole in the main casing. Mesh the pump drive chain with the oil pump sprocket and offer up the assembly so that the chain may be meshed with the drive sprocket on the crankshaft. Push the oil pump into position so that the lower mounting locates with the dowel and then insert, but do not tighten fully, the mounting screws.

4 Position the oil pump so that the up and down movement of the chain measured in the middle of the upper run is 2.0 - 3.5 mm (0.08 - 0.14 in). Hold the oil pump in this position, tighten the crosshead screw or bolt on the right of the pump, then tighten the two remaining bolts, all to the specified torque setting. Recheck the chain tension.



38.2 Always renew gasket and sealing O-ring when refitting camshaft front housing



38.4b Rotate spindle so that locking bolt can be fitted

38.4a Position cam followers and springs and insert spindle slotted end to rear

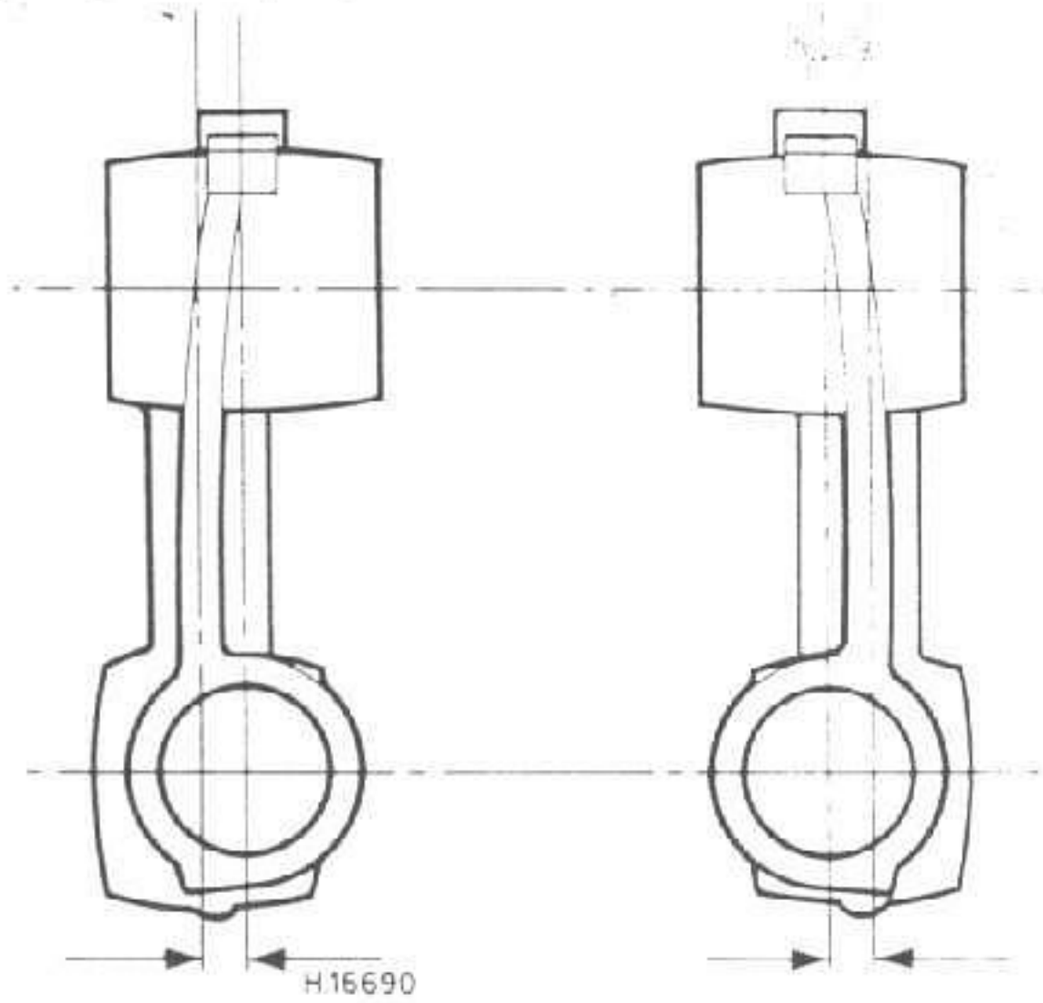


Fig. 1.20 Cam follower off-set

39 Reassembling the engine/gearbox unit: refitting the gearchange external mechanism

1 Assemble the components that make up the detent stopper arm sub-assembly. The correct sequence is as follows: bolt, washer, stopper arm, shouldered collar and spring. Ensure that the narrow end of the collar engages with the arm. Install the unit in the casing so that the roller end of the arm locates with the pins in the selector drum end. Tighten the bolt and check that the arm is free to pivot about the bolt. Grasp the inner end of the return spring with a pair of pliers and tension it in an anti-clockwise direction until the turned end can be engaged with the hole in the gearbox wall.

2 Check that the return spring and collar are correctly positioned on the spindle projecting from the selector claw arm. The spring must be fitted as shown in the accompanying photograph. Push the claw arm into position, simultaneously depressing the arm so that it clears the selector pins. Correctly positioned, the ears of the return spring should lie either side of the stop bolt screwed into the casing.

3 Place the thrust washer on the spindle end projecting from the rear of the gearchange pedal shaft. Install the shaft in the crankcase so that the quadrant teeth mesh with those of the selector claw arm as can be seen in the photographs. Reconnect the tensioning spring which interconnects with the pedal shaft and selector claw arm.

40 Reassembling the engine/gearbox unit: refitting the cam chain and sprockets, and timing the valves

1 Check that the drive pin is correctly in place in the boss on the end of the camshaft. Place the camshaft sprocket (with its word 'this' ...

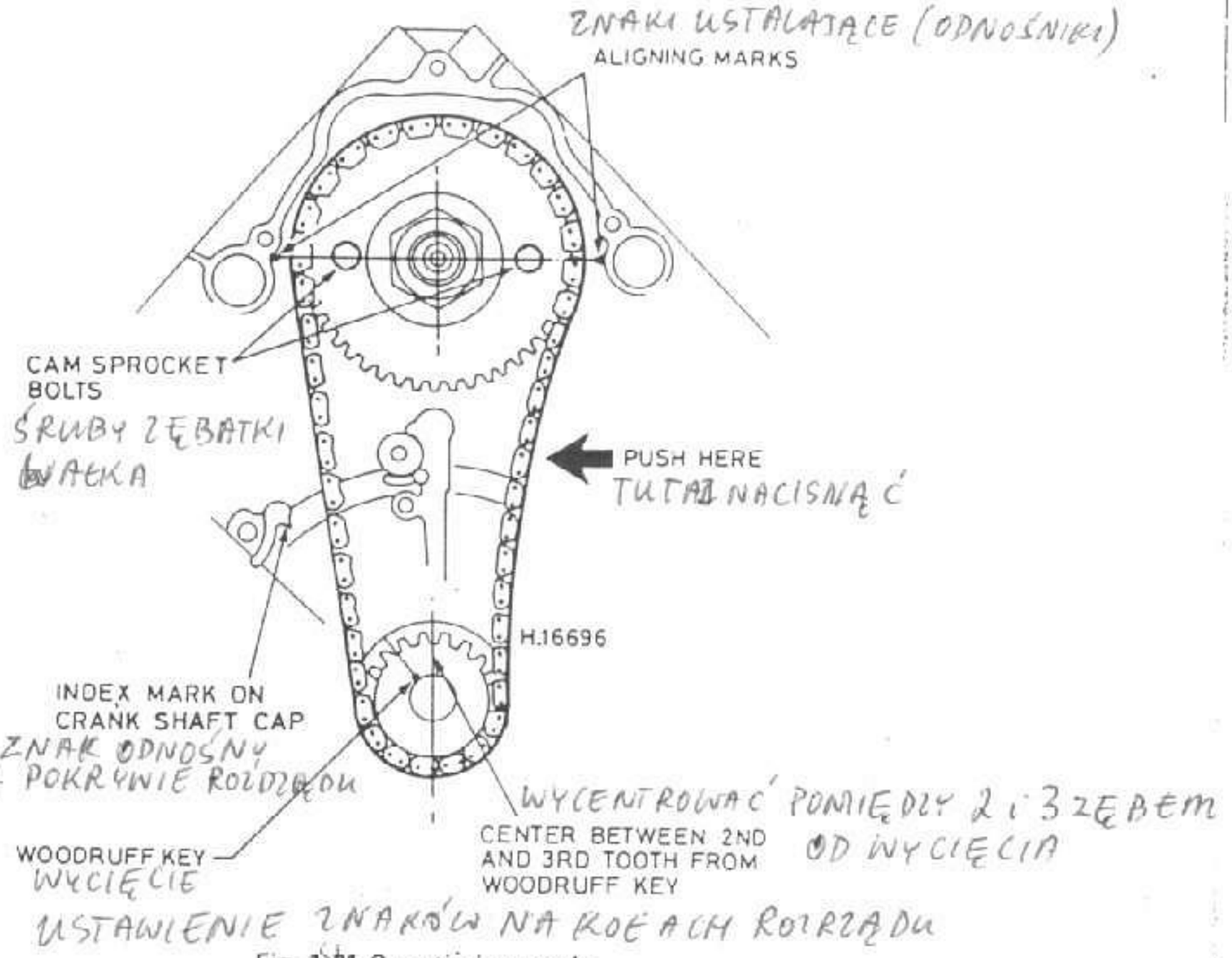


Fig. 1.21 Cam timing marks

41 Reassembling the engine/gearbox unit: refitting the alternator and engine rear cover

1 Check that the three roller assemblies are in place in the starter clutch to the rear of the alternator rotor. Insert the heavy washer and then install the starter driven pinion so that the boss enters the roller housing. To aid insertion of the boss rotate the driven pinion in an anti-clockwise direction.

2 Slide the pinion needle roller bearing onto the crankshaft and lubricate it with clean engine oil. Check that the Woodruff key is correctly positioned in the keyway in the tapered crankshaft end. Slide the rotor assembly onto the crankshaft so that the key engages with the keyway in the rotor internal bore. Insert and tighten the alternator rotor bolt to the specified torque setting.

3 Place the CDI pulser rotor against the end of the alternator rotor boss so that the projection locates with the recess. Insert and tighten the bolt.

4 Fit the starter intermediate pinion so that the smaller pinion engages with the driven pinion. One shim should be placed each side of the pinion on the spindle.

5 Before refitting the engine rear cover, lubricate the lips of the three oil seals with clean engine oil and check that the water pump mechanical seal is correctly fitted. Reference to this seal may be found in Chapter 2. If the CDI pulser (where fitted) or the alternator stator were disturbed, these too should be refitted.

6 When refitting the components, locking fluid should be applied to the bolt threads before they are inserted. When refitting the pulsers (CDI ignition models only), ensure that the pulser with the raised line on the outer face is installed nearest the inspection aperture. The raised line serves as the fixed index pointer used in checking the ignition timing.

7 Install the final output shaft splined collar on the end of the gearbox output shaft and then fit the shaft. Check that the two hollow dowels are in place in the crankcase rear mating surface. Fit the two large collars into the coolant transfer passages and fit a new O ring to each. Place a new gasket on the mating surface and install the rear cover. Care should be taken to avoid damaging the oil seal lips as the shaft passes through the various seals. Fit the cover securing bolts and tighten them evenly, in a diagonal sequence to the specified torque settings. If the neutral indicator switch was removed it may now be refitted and the lead connected. Secure the lead by passing it through the guide channel integral with the pulser stator cover.

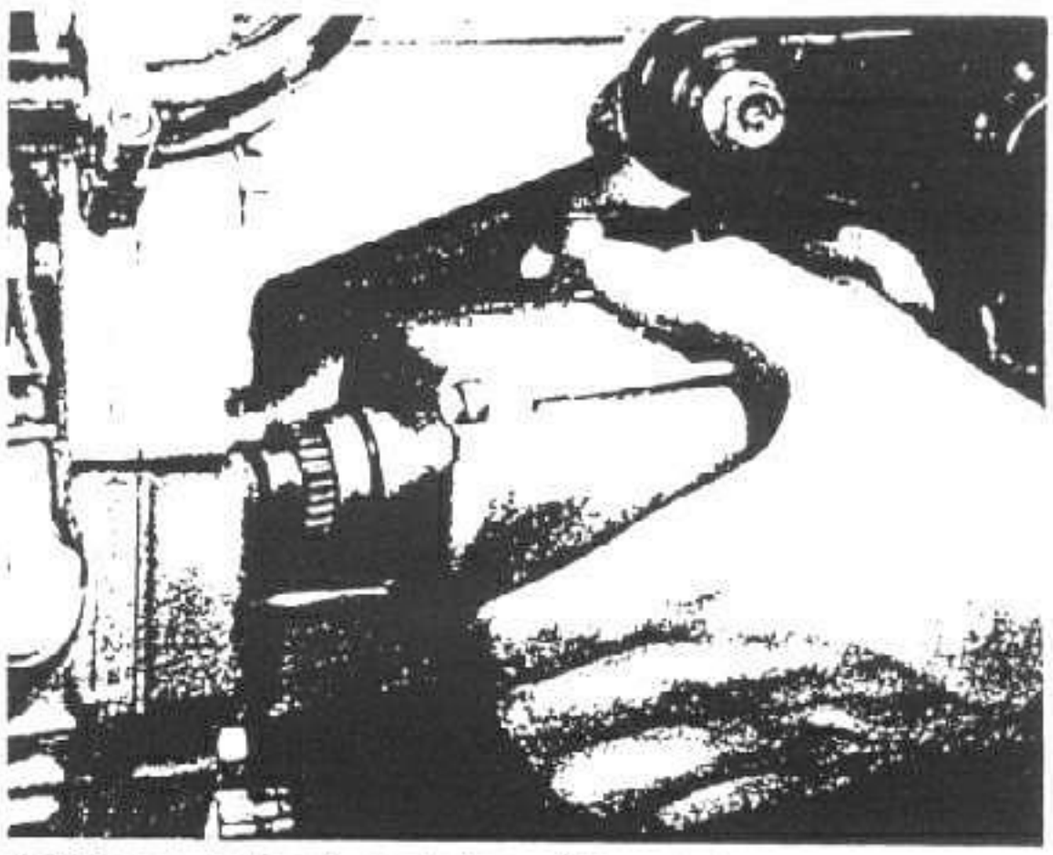
Models with CDI ignition

8 When refitting the advance pulser unit ensure that the line on the stator is lined up with the index mark before the screws are tightened or the advance operation will be incorrect. See the accompanying illustration. Reconnect the wires and fit the cover with a new gasket.

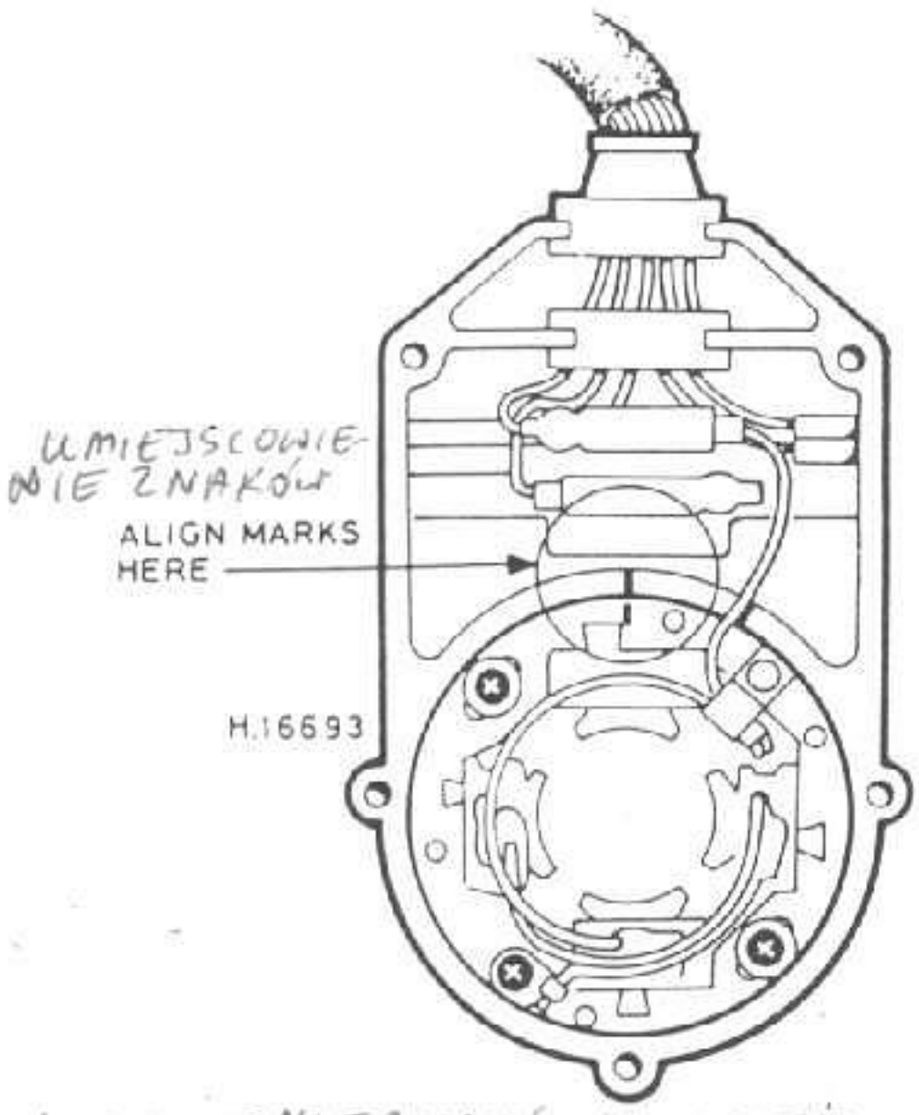
Models with transistorised ignition

9 To refit the ATU, locate the peg in the crankshaft end and replace the centre bolt, tightening it to a torque of 0.8 – 1.2 kgf m (6 – 9 lbf ft).

10 When refitting the pulser coil plate the ignition timing must be set statically. Remove the inspection plug to reveal the timing marks on the flywheel. Rotate the crankshaft until the FS mark for the right-hand cylinder (TR) aligns with the index mark. At this point the pulser coil plate can be fitted over the ATU and loosely secured with its two screws. Move the position of the plate so that the upper pulser coil (right-hand cylinder) alignment mark coincides with the tooth of the ATU cam and secure in place by tightening the two base plate screws. To check the ignition timing for the left-hand cylinder turn the crankshaft so that the FS mark for the left-hand cylinder (TL) aligns with the index mark. The lower pulser coil alignment mark should now coincide with the tooth of the ATU. If these marks do not align then the base plate screws must be slackened and the plate moved accordingly. It must be remembered, however, that by altering the position of the lower coil, the timing for the upper (right-hand cylinder) coil will automatically be changed. If there is a discrepancy in either of the units the misalignment can be shared between both cylinders.

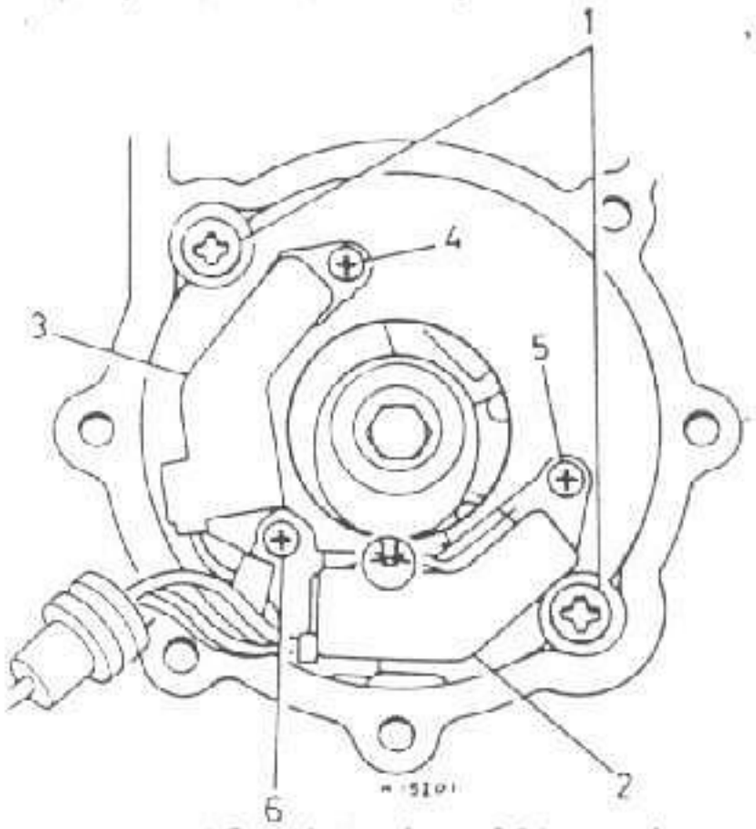


41 14 Renew sealing O-ring before refitting starter motor



USTAWIENIE ZNAKÓW WYPRZEDZENIA ZAPŁONU
ZAPŁON CDI

Fig. 1.22 Alignment marks for advance pulser stator - CDI ignition



CZUJNIKI ZAPŁONU –
– ELEMENTY ZAPŁONU TRANZYSTOROWEGO

Fig. 1.23 Transistorised ignition pulser assembly

1 *Pulser base-plate securing screws*
2 *Left-hand cylinder pulser coil*
3 *Right-hand cylinder pulser coil*
4 *Right-hand cylinder pulser coil adjusting screw*
5 *Left-hand cylinder pulser coil adjusting screw*
6 *Common adjusting screw*

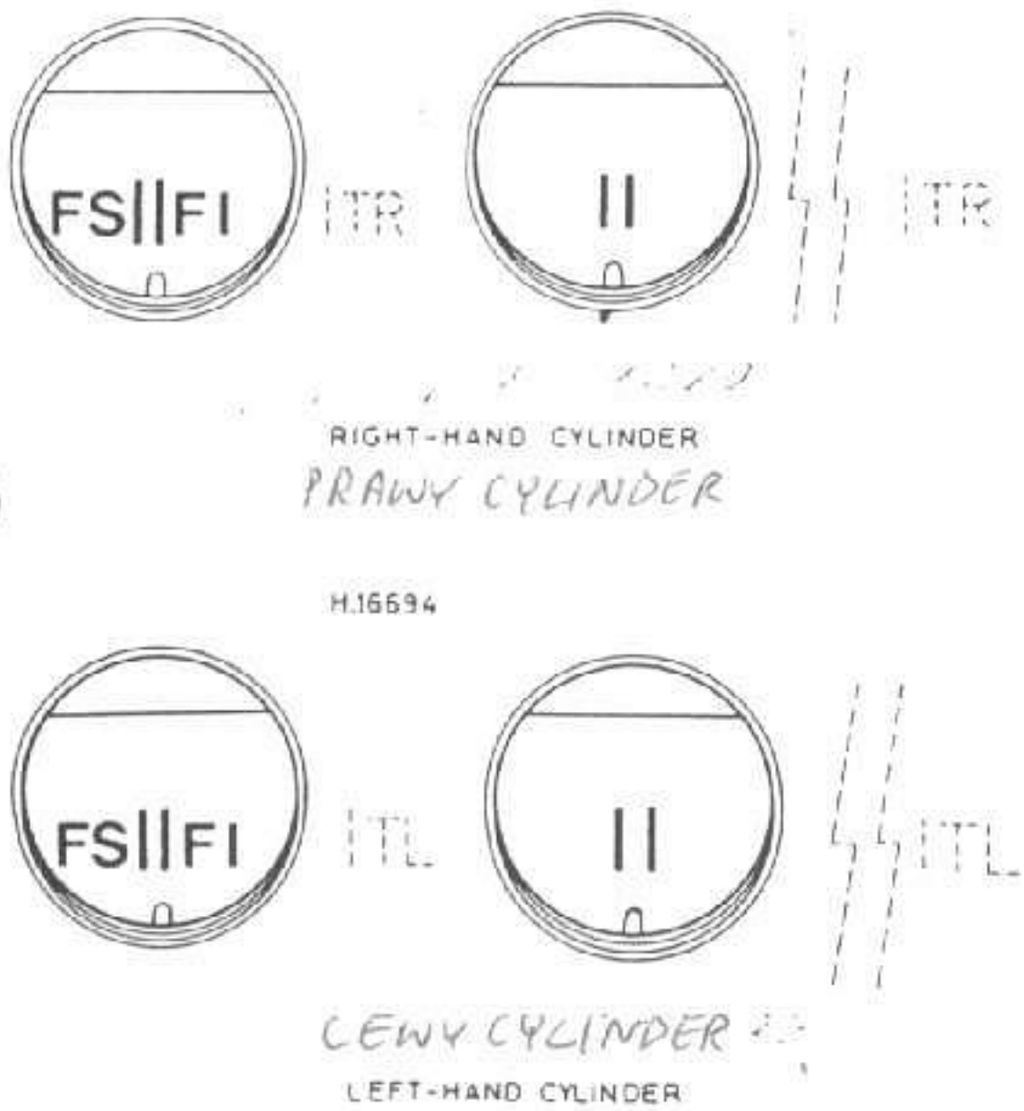


Fig. 1.24 Alternator rotor ignition timing marks – transistorised ignition system

USTAWIENIE ZNAKÓW NA WIRNIKU ALTERNATORA

42 Reassembling the engine/gearbox unit: refitting the cylinder heads and rocker gear

1 The procedure to be followed is identical for both cylinder heads and rocker gear assemblies. Complete the reassembly and installation of one complete assembly and then repeat the operation for the second unit. This will help prevent the accidental interchange of identical components.

2 Pour about 100cc of engine oil over the cam followers and camshaft lobes to ensure adequate lubrication when the engine is started. Install the two locating dowels and the oil control jet and O-ring in the cylinder mating surface. The control jet must be fitted with the narrower diameter innermost. Before fitting, check that the jet orifices are clear. Place a new gasket over the dowels. The gasket should be thinly coated on both sides with a water and oil resistant liquid sealer. Place the cylinder head in position.

3 Grease the ball ends of both pushrods and then insert them through

the tunnel in the cylinder head so that the lower ends engage with the cups in the cam followers.

4 Rotate the crankshaft until the piston is at TDC on the compression stroke. That the piston is on the compression stroke can be determined by viewing the pushrods; both should be down. Install the rocker carrier locating dowels in the cylinder head and then refit the rocker carrier assembly so that the pushrods locate with the cupped ends of the rocker arms.

5 Insert and tighten the four cylinder head holding down bolts. The bolts should be tightened evenly, in the sequence shown in the accompanying illustration, to the specified torque setting.

6 Adjust the valve clearances as described in Routine Maintenance and refit the rocker covers.

43 Reassembling the engine/gearbox unit: refitting the cooling system components

1 Using ordinary household soap, apply a film of soapy water to the ceramic washer at the rear of the pump impeller, and the sealing face of the mechanical seal. Fit the narrow collar and the impeller onto the splined camshaft end and replace the copper washer and domed nut. The nut and washer must be of the type specified to ensure a water-tight seal. The domed nut should be tightened to a torque of 0.8 – 1.2 kgf m (6 – 9 lbf ft). After tightening, rotate the crankshaft to check that the impeller is not binding against the housing wall.

2 Place a new sealing ring in the groove in the pump cover face and position the cover on the two locating dowels. The cover bolts should be tightened evenly to the specified torque setting. Once again, rotate the crankshaft to check that the impeller is not fouling the casing.

3 On 500 models only, check that the taper on the camshaft end and internal taper in the fan boss are clean and then refit the fan. The fan securing bolt should be tightened to a torque of 2.0 – 2.5 kgf m (14.5 – 18.0 lbf ft).

4 Fit new O-rings to each end of the transfer pipes and to the flanges of the manifolds. Before fitting the various components apply a solution of soapy water to the rubber seals. This will aid fitting and help prevent seal damage.

5 Fit the left-hand manifold and tighten the two screws. Replace the thermostat carrier bracket and then install the left-hand pipe and the thermostat housing. Insert the thermostat and fit the cover. Do not omit the cover O-ring. Fit the bolts which pass through the bracket and cover into the housing. Push the housing across to the left as the bolts are tightened. This will ensure that the O-rings are firmly seated. Fit the right-hand pipe and manifold, again pushing the manifold across to the left as the bolts are tightened. Tighten all bolts to a torque setting of 0.8 – 1.2 kgf m (6 – 9 lbf ft).

6 Place a new O-ring on the end of the lower transfer pipe and fit the pipe into the passage mouth at the rear of the engine. Refit the pipe half clamps, tightening the upper socket screws first and then tightening the lower screws, until the pipe is gripped firmly, to a torque setting of 0.5 – 0.9 kgf m (3.5 – 6.5 lbf ft). Push the pipe into the union at the crankcase when tightening the screws.

7 Replace both cylinder drain plugs, ensuring that the sealing washers are not omitted and that they are in good condition. Refit the air spoiler baffle plate and connect the bypass hose to the water pump.

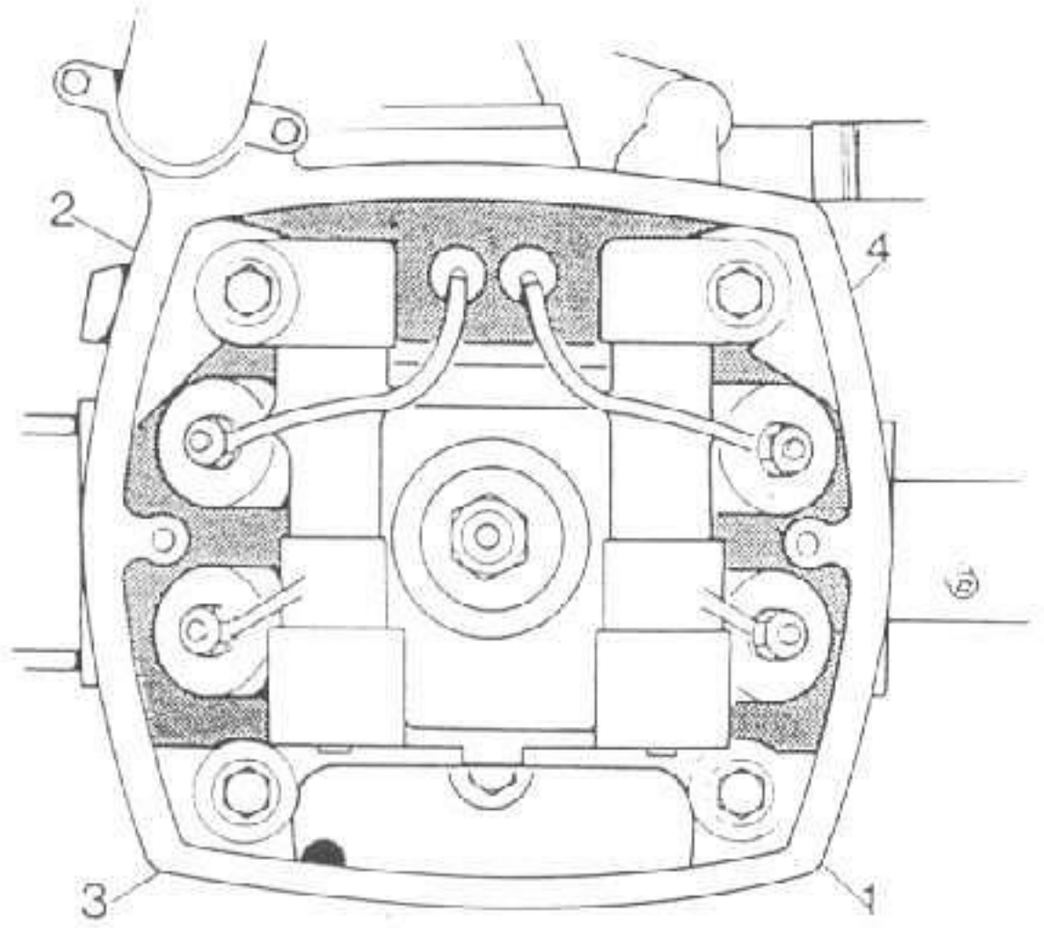
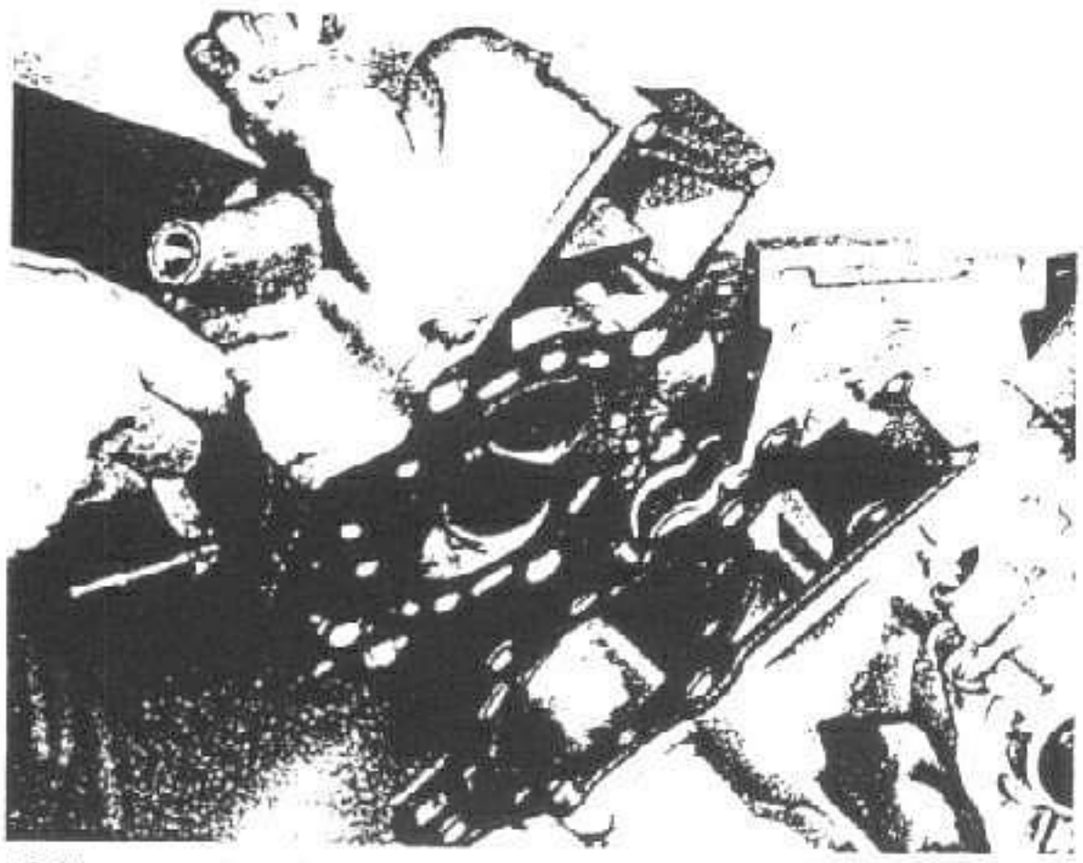


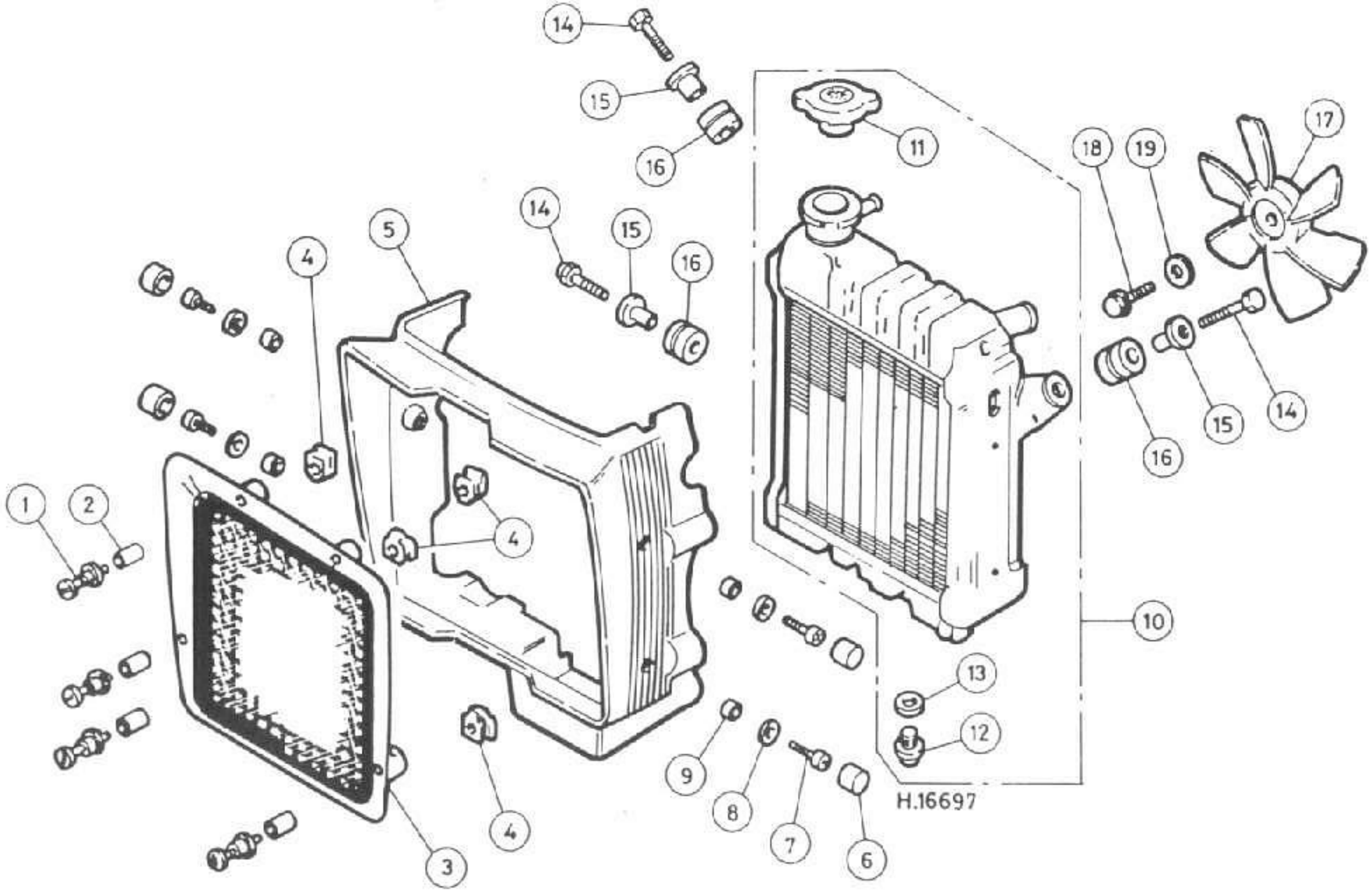
Fig. 1.25 Cylinder head nut tightening sequence

KOLEJNOŚĆ DOKRĘCANIA NAKRĘTEK GŁOWICY CYLINDRÓW

42.2a Check oil jet is clear and fit new sealing O-ring. Place new head gasket...



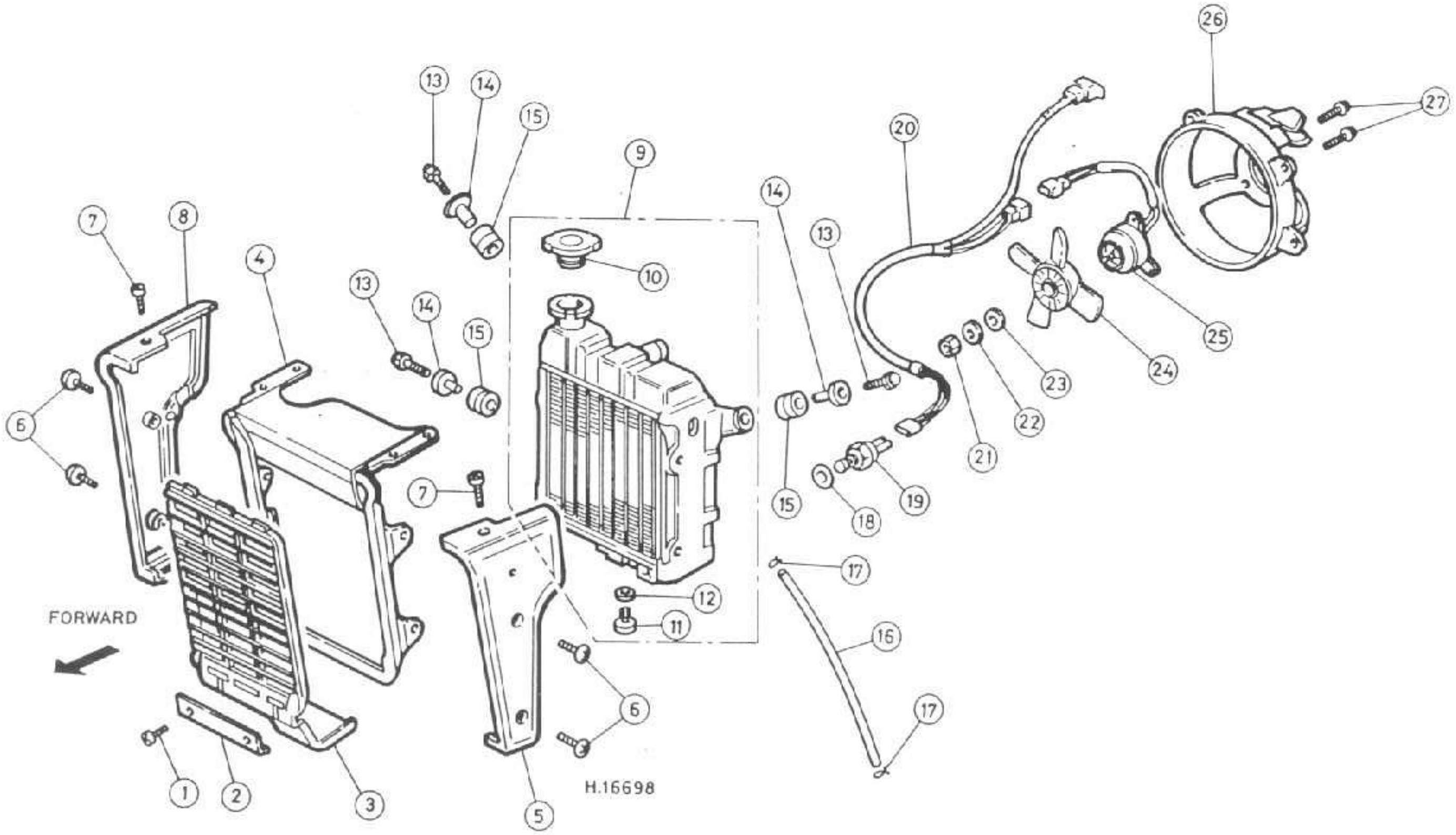
42.2b ... over locating dowels and refit cylinder head



CHLODNICA I WIRNIK – WCZESNE MODELE 500

Fig. 2.1 Radiator and cooling fan – early CX500 models

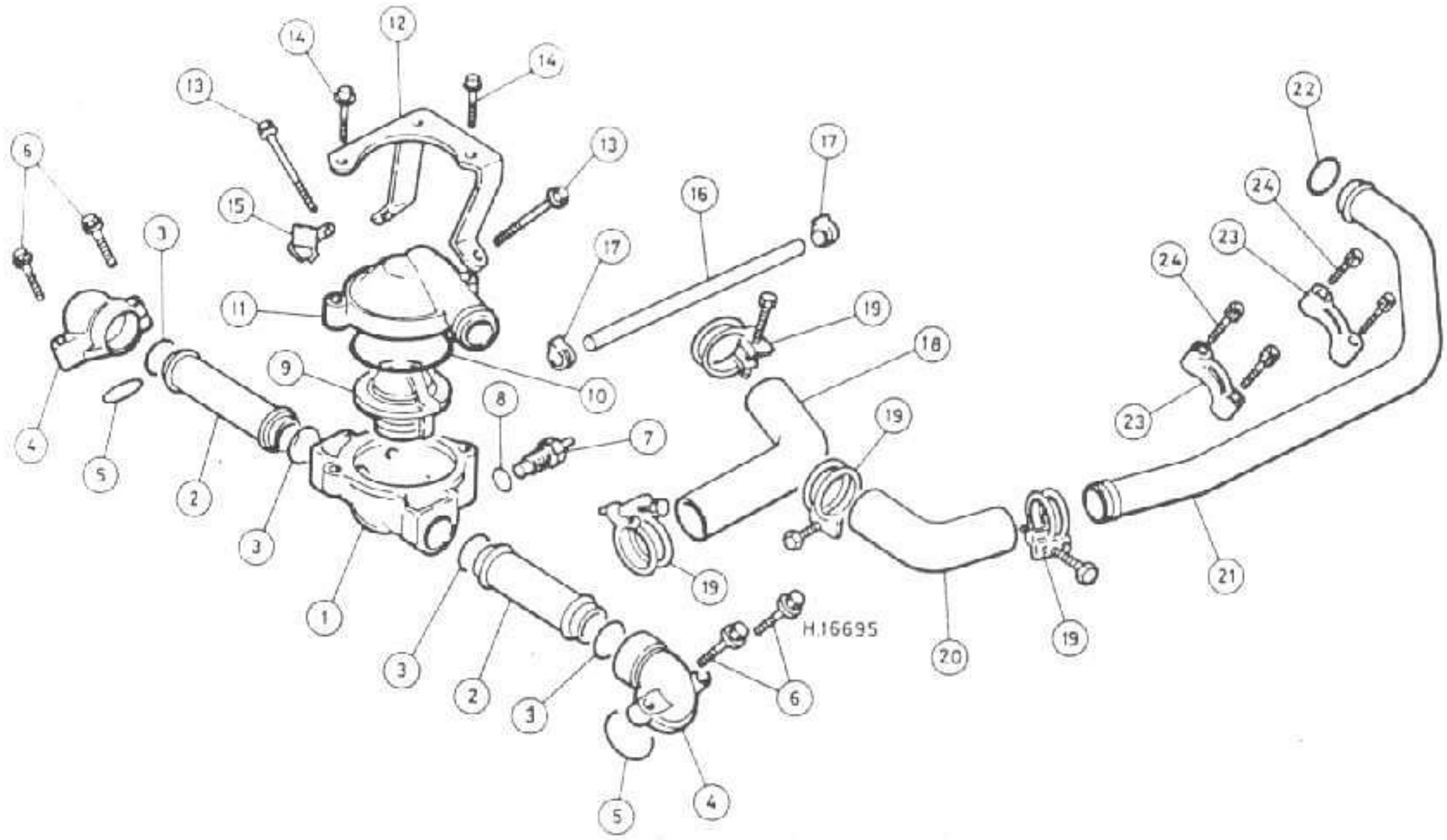
1 *Screw*
2 *Spacer*
3 *Grille*
4 *Nut*
5 *Radiator guard*
6 *Plug*
7 *Screw*
8 *Washer*
9 *Collar*
10 *Radiator*
11 *Radiator pressure cap*
12 *Drain plug*
13 *Gasket*
14 *Bolt*
15 *Collar*
16 *Rubber grommet*
17 *Fan*
18 *Bolt*
19 *Washer*



CHŁODNICA I WENTYLATOR - MODELE 650

Fig. 2.2 Radiator and cooling fan – 650 models

1 Screw
2 Retaining plate
3 Grille
4 Central frame
5 Left-hand cover
6 Screw
7 Screw
8 Right-hand cover
9 Radiator
10 Radiator pressure cap
11 Drain plug
12 Gasket
13 Bolt
14 Collar
15 Rubber grommet
16 Overflow pipe
17 Clip
18 O-ring
19 Thermostatic switch
20 Switch and fan motor wiring
21 Nut
22 Spring washer
23 Washer
24 Fan
25 Fan motor
26 Fan shroud
27 Bolt

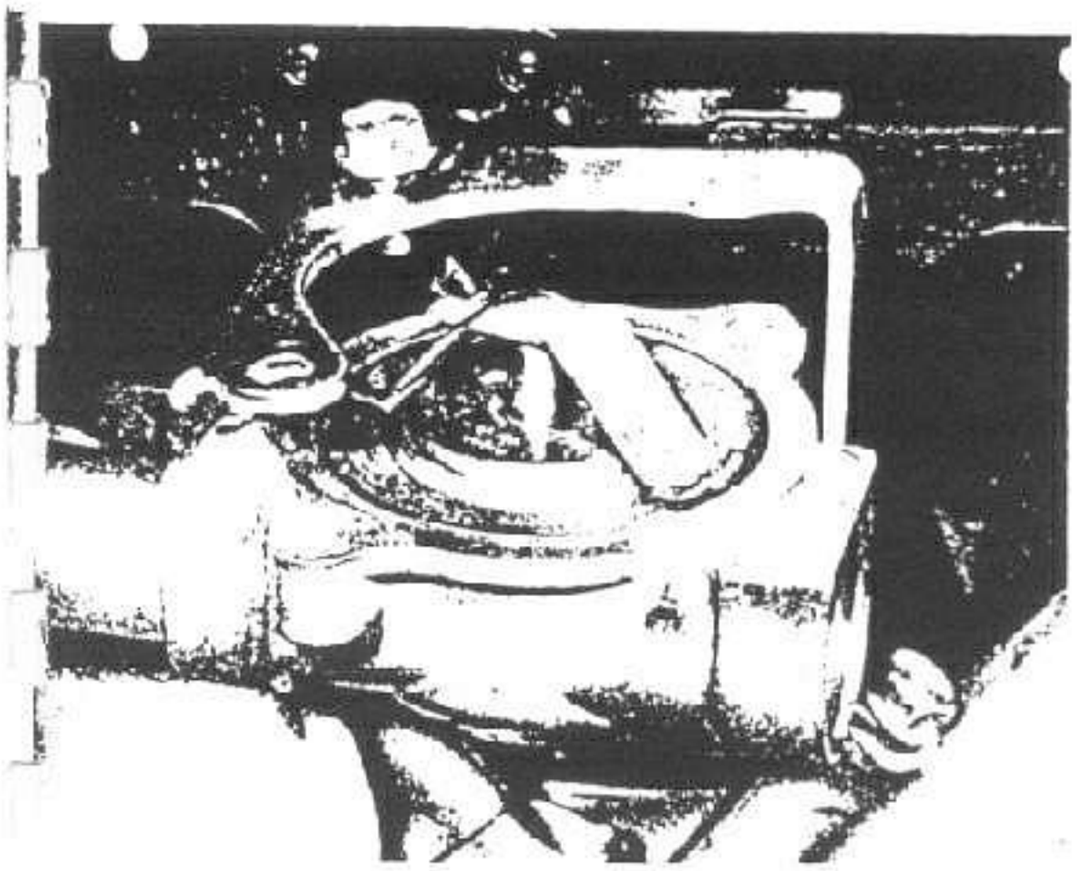


TERMOSTAT - I PRZEWODY UKŁADU CHŁODZĄCEGO

Fig. 2.3 Thermostat and water pipes

1 *Thermostat housing*
2 *Coolant transfer pipe*
3 *O-ring*
4 *Coolant pipe manifold*
5 *O ring*
6 *Bolt*
7 *Temperature gauge sender unit*
8 *Sealing washer*
9 *Thermostat*
10 *O-ring*
11 *Thermostat cover*
12 *Mounting bracket*
13 *Bolt*
14 *Bolt*
15 *Cable clip*
16 *Bypass hose*
17 *Clip*
18 *Radiator top hose*
19 *Clamp*
20 *Radiator bottom hose*
21 *Chrome – plated coolant pipe*
22 *O-ring*
23 *Clamp*
24 *Allen screw*

5 As an emergency measure only, if the thermostat is faulty it can be removed and the machine used without it. Take care when starting the engine from cold as the warm-up will take much longer than usual, and ensure that a new unit is fitted as soon as possible.



9.2 Thermostat is fitted as shown

9 Water pump: removal, renovation and refitting

1 To prevent leakage of water or oil from the water pump to the crankcase and vice versa, two seals are fitted concentrically on the camshaft. The seal on the water pump side is of the mechanical type having a spring loaded annular face which bears against a ceramic washer mounted in the rear face of the impeller. The ceramic washer is mounted in a rubber bed to further prevent seepage. The second seal, which is mounted forward of the mechanical seal, is of the normal 'feathered' lip type used widely to prevent oil leakage along a shaft. Both seals are a drive fit in the engine rear cover.

2 Where work on the seals is required, the engine must be removed and the engine rear cover detached. The procedure for this is given in Chapter 1.

3 Removal of the seals from the engine rear casing is a straightforward operation. Prise out the oil seal from the front of the casing, using a flat bladed lever. Care should be taken not to bruise the periphery of the casing into which the seal fits. Select a tubular drift, the outside diameter of which is slightly smaller than that of the mechanical seal. Place the casing with the outside downwards, supported by blocks so that the mechanical seal can be driven from position. The ceramic washer in the rear of the impeller should be prised from position and the rubber seating displaced. Discard all the sealing components.

4 Replacement mechanical seals are a tight interference fit in the casing. To aid installation and prevent damage to the mechanical seal the casing must be heated prior to fitting of the seal. The casing should be heated in an oven to about 100°C (212°F). Do not use a blowtorch or other means of localised heating because distortion of the casing is likely if this approach is adopted. The mechanical seal is particularly susceptible to damage. Before installing the mechanical

seal apply a liquid jointing compound to the periphery of the seal body. Under no circumstances should the face of the seal be struck when the seal is drifted into place. Select a tubular drift that clears the seal face and spring shroud and abuts against the face of the body outer diameter. Ensure that the seal is driven in squarely. The oil seal should be drifted into position until the outer face is flush with the periphery of the housing. This should be done with the casing cold. Take great care when fitting either seal; both are easily damaged. Note the drain hole which runs into the gap between the seals. This should be cleared of any debris.

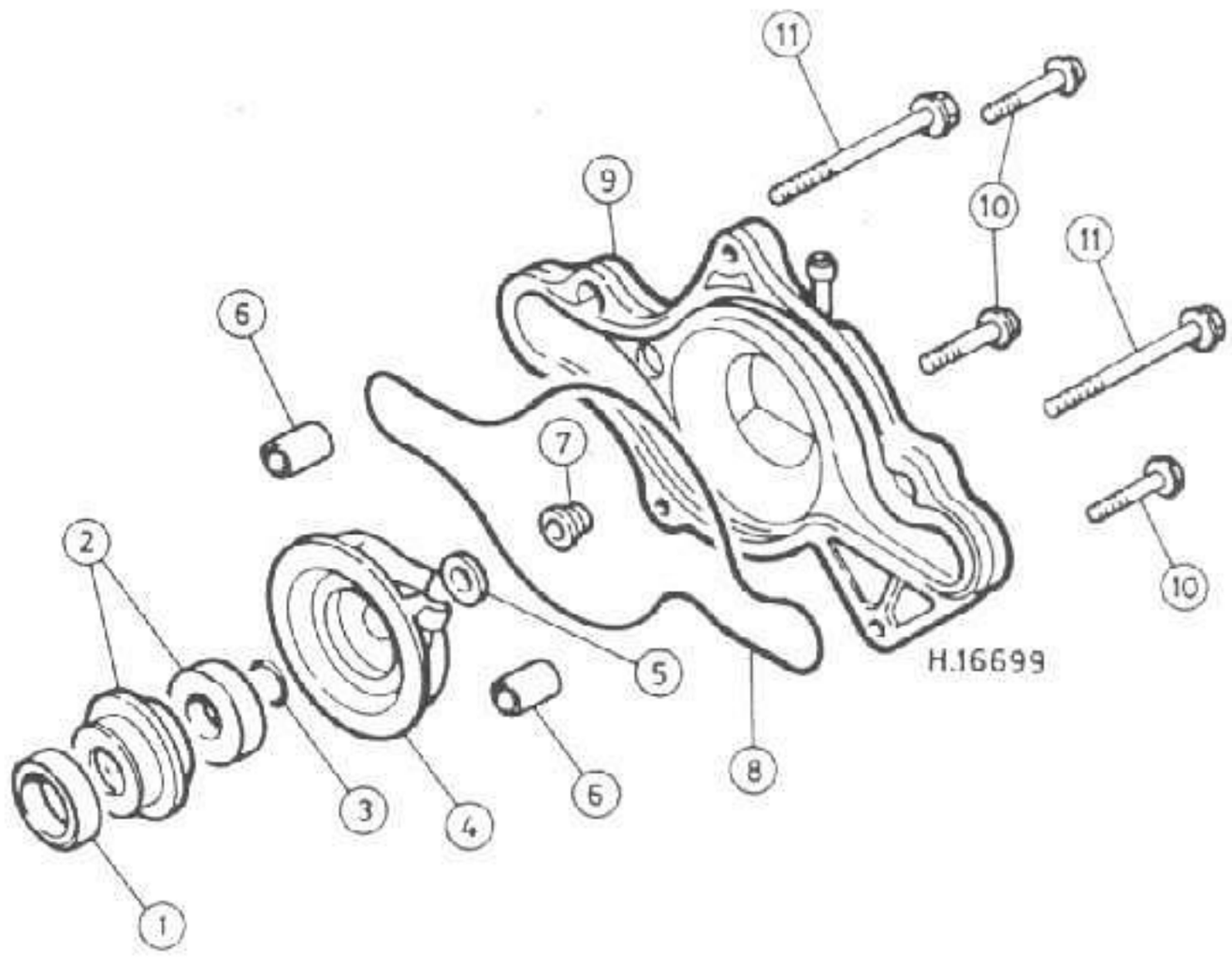
5 Apply soapy water to the washer seating rubber and insert it into the rear of the impeller. Push the ceramic washer into place with the smoother side outermost. Check that the ceramic washer face is square to the face of the impeller. Do not omit the small collar that fits into the impeller recess.

6 After renewing the seals the engine should be reassembled and refitted into the frame. Follow the procedures given in Chapter 1.

7 In the event of seal failure, the inter-mixing of oil and water in the engine will cause sludge to form. The extent of sludging will depend on the quantity of contaminant and the length of time during which contamination has taken place. Before the machine is returned to service, when new coolant and lubricant should be used as a matter of course, it is strongly recommended that the engine be flushed out thoroughly using a proprietary flushing oil. Furthermore, where extensive contamination is evident, an additional oil change is recommended approximately 500 miles after seal renewal. It should be noted that the presence of water in the lubricating oil will reduce its lubricating properties dramatically and may cause permanent damage.

9.3a Prise out oil seal from front of engine rear cover ...

9.3b ... to permit removal of pump mechanical seal



POMPA WODNA

Fig. 2.4 Water pump

1 Oil seal
2 Mechanical seal (carbon face)
3 Thrust washer
4 Water pump impeller
5 Sealing washer
6 Dowel pin
7 Nut
8 Sealing ring
9 Housing
10 Bolt
11 Bolt

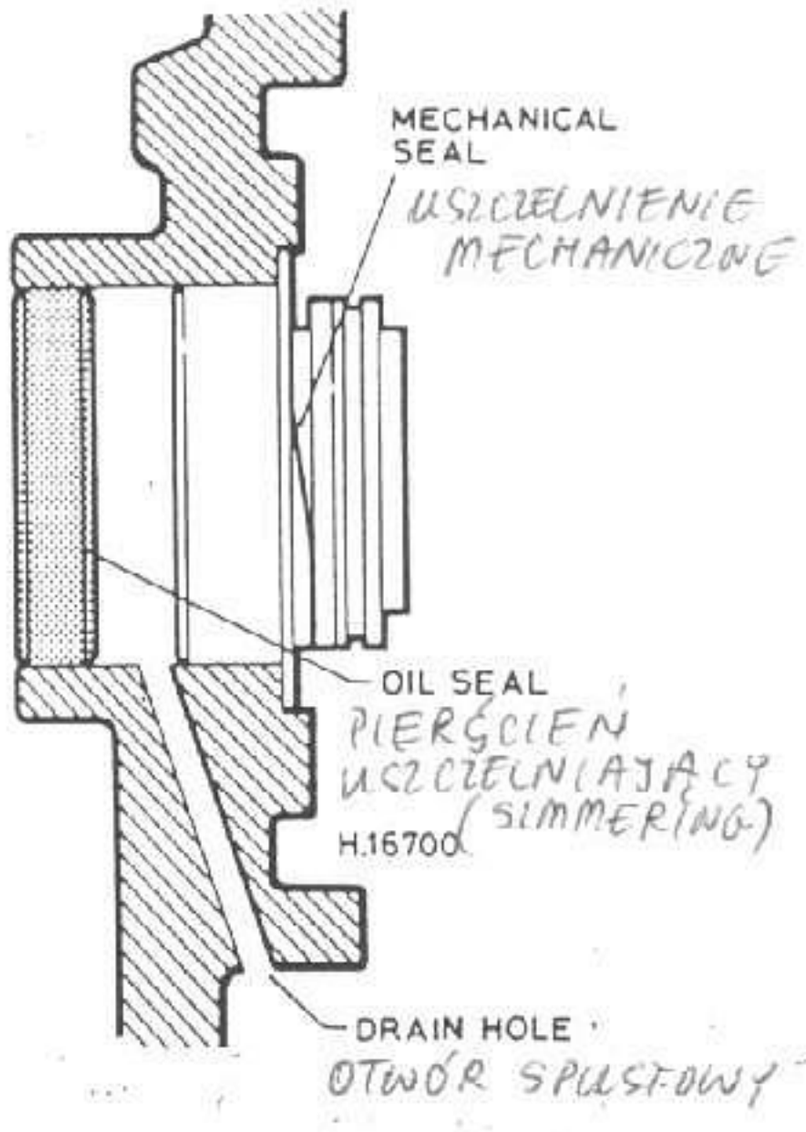


Fig. 2.5 Arrangement of oil seal and mechanical seal

10 Cooling fan: removal, examination and refitting

500 models

1 The cooling fan can be removed, as described in Section 6 of Chapter 1, after the radiator has been withdrawn. See Section 5 of this Chapter. The fan should be renewed if any of its blades are damaged. Refitting is described in Section 43 of Chapter 1.

650 models

2 The fan and motor assembly are automatically removed and refitted with the radiator. See Section 5 of this Chapter.

3 If the fan fails to work, connect a fully-charged 12 volt battery directly to the fan motor; for safety's sake this must only be done while the fan assembly is still attached to the radiator (on or off the machine) so that it is still enclosed by its protective shroud. If the fan motor works, the fault is in the thermostatic switch or in the main wiring loom; check for faults as described in Chapter 7.

4 If the fan motor does not work, it must be renewed. Remove the four shroud mounting bolts and withdraw the fan from the radiator, having released the motor lead from the wire retaining clip. Hold the fan and unscrew the retaining nut and washers. Remove the three mounting screws to separate the motor from the shroud.

5 On reassembly, install the motor with its 'TOP' mark facing to the top of the shroud, tighten the screws securely and refit the fan. Apply locking compound to the motor shaft threads before refitting the nut and washers. Tighten the nut securely and refit the fan assembly to the radiator.

11 Thermostatic switch and temperature gauge sender unit: removal, testing and refitting

1 These components should only be removed after the cooling system has been fully drained. See Section 2. The temperature gauge sender unit is screwed into the rear face of the thermostat housing, while the thermostatic switch is screwed into the radiator bottom rear face.

2 With the coolant drained, disconnect the unit wires and unscrew the unit. On reassembly, apply a suitable sealant such as Three-Bond No 1212 or equivalent to its threads, renew its sealing washer and tighten the unit securely. Do not overtighten.

3 The temperature gauge unit is part of the instruments and is removed as described in Chapter 5.

4 The testing of these components is described in the relevant Sections of Chapter 7.

Chapter 3 Fuel system and lubrication

Contents

Specifications

Note: *unless otherwise stated, information applies to all models*

	Litre	US gal	Imp gal
Fuel tank capacity			
All CX500 and CX500 D models:			
Overall	17.0	4.49	3.74
Reserve	3.5	0.93	0.77
CX500 C 1979, 1980:			
Overall	11.0	2.91	N/App
Reserve	2.5	0.66	N/App
CX500 C-B, CX500 C 1981, 1982:			
Overall	12.0	3.17	2.64
Reserve	2.5	0.66	0.55
CX650 C:			
Overall	12.4	3.28	N/App
Reserve	2.2	0.58	N/App
All GL500/650 models:			
Overall	17.6	4.65	3.87
Reserve	2.5	0.66	0.55
CX500 E-C, CX650 E-D:			
Overall	19.0	N/App	4.18
Reserve	2.5	N/App	0.55
Carburettor			
Manufacturer	Keihin		
ID Number:			
Model	CX500 (UK)	CX500 1978	CX500 1979
Number	VB36A-A/C	VB26A-B	VB26A-B/C

Carburettor (continued)

Model	CX500-A	CX500-B	CX500 C 1979
Number	VB36A-E/F	VB36A-F	VB27A
Model	CX500 C 1980	CX500 C-B	CX500 C 1981
Number	VB25A-B	VB37A-D	VB25A-C
Model	CX500 C 1982	CX500 D 1979	CX500 D 1980
Number	VB25A-D	VB23A	VB28A-B
Model	CX500 D 1981	CX500 E-C, GL500 D-C	GL500 and GL500 I 1981, 1982
Number	VB28A-C	VB1AA-A	VB29A-A
Model	CX650 E-D, GL650 D2-E	GL650, GL650 I	CX650 C
Number	VB2BA-A	VB2AA-A	VA2AC-A, VB2AB, VB2AC

Venturi diameter:	
CX500 C 1980, 1981, 1982, CX500 D 1980, 1981, GL500 and GL500 I 1981, 1982	34 mm (1.34 in)
All other models	35 mm (1.38 in)
Primary main jet:	
CX650 E-D, GL650 D2-E	72
All other models	78
Secondary main jet:	
CX500 C 1980, 1981, 1982, CX500 D 1980, 1981	115
All other 500 models	112
CX650 C	120
All other 650 models	118
Slow jet – CX500 E-C, all GL500 models, all 650 models	45
Pilot mixture screw – turns out from fully closed:	
All US models 1978, 1979, GL650, GL650 I	2*
CX500 (UK), CX500-A, CX500-B, CX500 C-B	2
CX500 C 1980, 1981, 1982, CX500 D 1980, 1981	1 3/4*
CX500 E-C, GL500 D-C	1 7/8
GL500 and GL500 I 1981, 1982	1 5/8*
CX650 E-D, GL650 D2-E	2 3/8
CX650 C	2 3/8
*Initial setting – to be used on renewal of pilot screw only, do not disturb	
Float level	15.5 ± 1.0 mm (0.61 ± 0.04 in)
Idle speed	1100 ± 100 rpm
Fast idle speed:	
CX500 C 1980, CX500 D 1980	1000 – 1500
CX500 C 1981, 1982, CX500 D 1981	1100 – 1500
All other models	1500 – 2500
Maximum vacuum pressure difference between carburettors	40 mm Hg
Accelerator pump – US models from 1980 only:	
Pump rod/choke link arm clearance	0.1 – 0.3 mm (0.0039 – 0.0118 in)
Choke link arm/carburettor stopper clearance	3.1 – 3.3 mm (0.1221 – 0.1299 in)

Engine lubrication system

Recommended oil	Good quality SAE 10W/40 engine oil. API class SE or SF	
Capacity:	**500 models**	**650 models**
At engine rebuild	3.0 lit (3.17 US qt/5.28 Imp pint)	3.6 lit (3.80 US qt/6.34 Imp pint)
At oil and filter change	2.6 lit (2.75 US qt/4.58 Imp pint)	3.1 lit (3.28 US qt/5.46 Imp pint)
At oil change	2.5 lit (2.64 US qt/4.40 Imp pint)	3.0 lit (3.17 US qt/5.28 Imp pint)
Relief valve opening pressure	5.0 – 6.0 kg/cm² (71 – 85 psi)	
Pump delivery rate per minute:		
500 models – @ 3000 rpm	9.3 – 9.5 lit (2.46 – 2.51 US gal/2.05 – 2.09 Imp gal)	
650 models – @ 2500 rpm	14.0 – 14.2 lit (3.70 – 3.75 US gal/3.08 – 3.12 Imp gal)	
Oil pump:		
Inner rotor/outer rotor maximum clearance	0.10 mm (0.0039 in)	
Outer rotor/pump body maximum clearance	0.35 mm (0.0138 in)	
Rotor maximum endfloat	0.10 mm (0.0039 in)	

Final drive lubrication

Recommended oil grade	Good quality hypoid gear oil API class GL-5
Viscosity:	
Above 5°C (41°F)	SAE 90
Below 5°C (41°F)	SAE 80
Capacity	170 ± 10 cc (5.75 ± 0.34 US fl oz/5.98 ± 0.35 Imp fl oz)
Propeller shaft joint – 500 models only:	
Recommended grease	Lithium-based multipurpose NLGI No 2 grease with molybdenum disulphide additive
Quantity:	
On reassembly	45 cc (1.52 US fl oz/1.58 Imp fl oz)
At routine maintenance	20 cc (0.67 US fl oz/0.70 Imp fl oz)

Torque wrench settings

Component	kgf m	lbf ft
Fuel tap filter bowl – where fitted	0.3 – 0.5	2.0 – 3.5
Fuel tap gland nut – all GL500 models, all 650 models	2.0 – 2.5	14.5 – 18.0
Air filter case mounting bolts	0.6 – 0.9	4.0 – 6.5
Throttle joint bolts – 650 models only	0.28 – 0.42	2.0 – 3.0
Carburettor/mounting bracket screws – 650 models only	0.28 – 0.42	2.0 – 3.0
Exhaust pipe/cylinder head nuts	0.8 – 1.4	6.0 – 10.0
Exhaust pipe/silencer clamp bolts	1.8 – 2.8	13.0 – 20.0
Balance chamber mounting bolts or nuts	2.4 – 3.0	17.0 – 22.0
Silencer mounting bolts:		
All GL models, CX650 C	4.5 – 6.0	32.5 – 43.0
CX500 E-C, CX650 E-D	3.0 – 4.0	22.0 – 29.0
Oil filter bolt	2.0 – 2.5	14.5 – 18.0
Engine oil drain plug	2.5 – 3.5	18.0 – 25.0
Oil pump mounting bolts	0.8 – 1.2	6.0 – 9.0
Oil pressure switch	1.8 – 2.3	13.0 – 16.0

1 General description

The fuel system comprises a tank from which fuel flows via a single tap to the left-hand carburettor and then to the right-hand carburettor through a transfer pipe. The tap, which incorporates a gauze filter, has a reserve position providing a small amount of additional fuel when the main source is exhausted. All models from 1981 on are fitted with a vacuum-controlled tap which is opened when the engine is running and therefore needs no 'Off' position although one is provided for emergency use or for long-term storage. For cold starting each carburettor has a butterfly valve choke, interconnected by a control rod and operated via a cable.

Two constant depression Keihin carburettors are fitted as standard, mounted on a shared bracket and interconnected by a control rod. The throttles are controlled by a push-pull two cable arrangement from a traditional twist-grip. To the rear of the carburettors, fitted within a plastic casing, is the corrugated paper air filter element.

US models from 1980 on are fitted with an accelerator pump which is mounted on the underside of the left-hand carburettor. Its purpose is to richen the mixture during acceleration, thus allowing the carburettor to be jetted for a weaker overall mixture to meet EPA emission requirements in the USA. The pump is operated by a spring rod connected to the throttle operating linkage. Once actuated by throttle opening, the pump feeds fuel into both carburettors.

The exhaust system comprises two individual pipes which lead into a large balance chamber under the rear of the engine/gearbox unit, and two silencers which lead the exhaust gases out of the chamber.

Lubrication is by the wet sump principle in which oil is delivered under pressure from the sump reservoir by a mechanical pump to the working parts of the engine. The oil pump, which is of the trochoid rotating vane type, is mounted to the left of the clutch and is driven by a chain from a sprocket on the crankshaft forward end. To protect the engine, oil is picked up from the sump through a gauze strainer and then passed through a full-flow paper filter element. The paper element can be removed and discarded at regular intervals. The engine oil is shared also with the primary drive and gearbox.

2 Fuel tank: removal and refitting

1 The fuel tank is secured at the rear by a single bolt passing through a lug projecting from the tank. The front of the tank is supported (except for the CX650 C and all CX500 C models) on two cups welded to the tank underside which rest on two rubber buffers, one of which is fixed either side of the frame top tube. On CX650 C and CX500 C models the front mounting consists of two bolts which pass through rubber mountings set in a flange at the front of the tank and into the frame.

2 First remove the seat, unscrew the tank rear mounting bolt (and the front mountings on CX500 C and CX650 C models), then lift the tank at the rear, check that the fuel tap is in the 'Off' position and disconnect the fuel feed pipe. Where applicable, disconnect also the fuel gauge sender unit wires, the vacuum pipe and the breather pipe. Lift the tank away.

3 The tank may be refitted by reversing the removal procedure. If difficulty is encountered in pushing the cups over the rubber buffers, a small amount of petrol or soap may be applied to give temporary lubrication. When fitting the rear bolt ensure that the rubber saddle is positioned correctly and that the collar is not omitted.

4 When connecting the pipes, ensure that their wire retaining clips are securely refitted over the tap spigots, although the main seal is effected by the interference fit of the pipes, the clips are an additional security measure to prevent fuel leaks. Do not forget to reconnect the fuel gauge wires (CX500 E-C, CX650 E-D). On models with vacuum taps, note that the vacuum pipe (from the carburettors) is fitted on the tap front union and the breather pipe is fitted to the rear union. If the pipes are reversed the tap will not open sufficiently to allow the engine to run properly, giving all the symptoms of a fuel blockage or a blocked tank breather.

3 Fuel tap and feed pipe: examination

Manual tap

1 Refer to Routine Maintenance for details of tap removal and refitting, and of filter cleaning. These taps cannot be dismantled; if one becomes blocked, attempt to clear it by applying a jet of compressed air through the feed pipe spigot when the tap is in the on or reserve position. If this fails to work, or if the tap is leaking, it must be renewed.

Vacuum tap

2 Refer to Routine Maintenance for details of tap removal and refitting and of filter cleaning.

3 To check the operation of the diaphragm remove the petrol tank from the machine, setting it up on wooden blocks for easy access to the tap. There is no need to drain the fuel or remove the tap for this test.

4 Place a clean container beneath the fuel delivery pipe (pipe on right-hand side of tap) and turn the tap to the 'On' position. No fuel should flow from the pipe. If it does this indicates failure of the diaphragm.

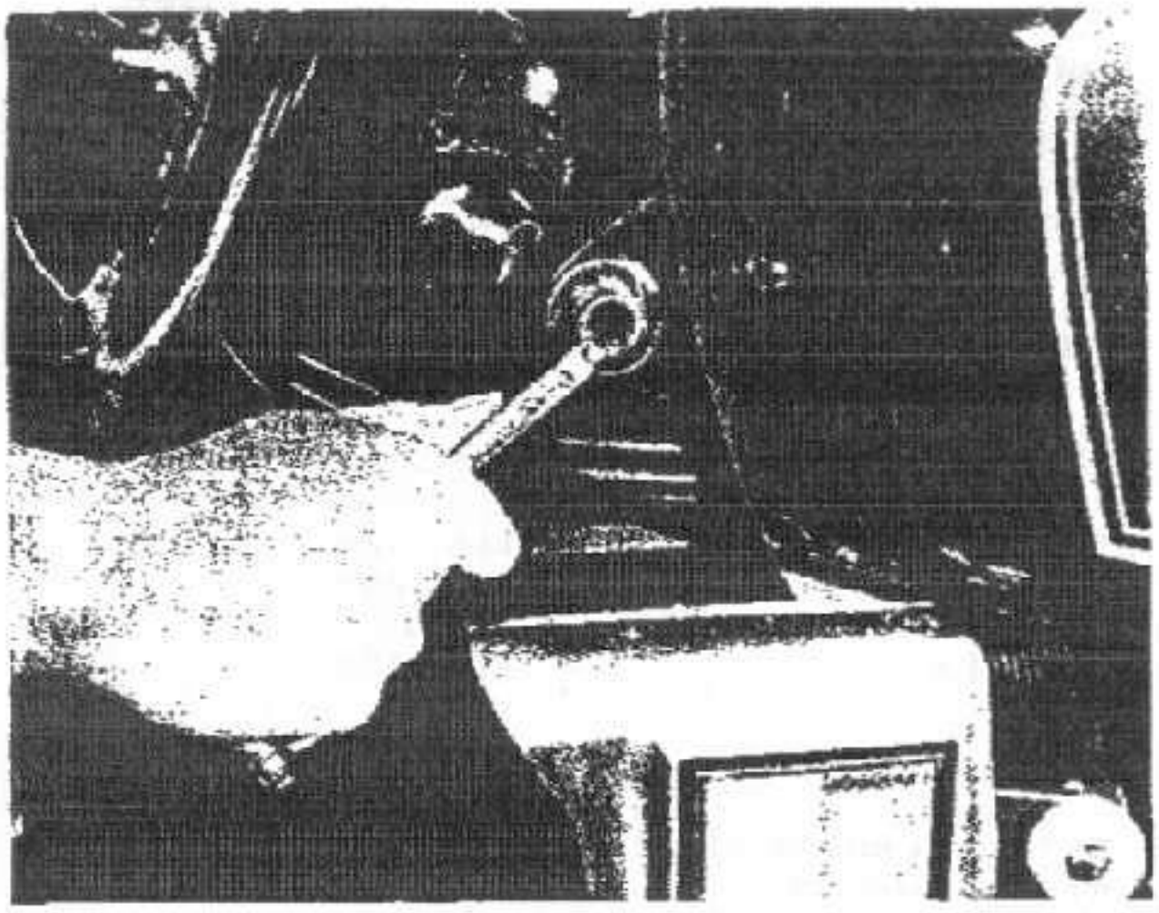
5 A further test can be undertaken by sucking gently on the end of the vacuum pipe (pipe terminating at the tap front union) to create a vacuum effect similar to that of the engine. The fuel tap should be positioned in the 'On' position. Fuel should flow freely from the delivery pipe. If a vacuum pump is available, the tap should open when a vacuum of 12 – 20 mm (0.5 – 0.8 in) of mercury is applied.

6 To inspect the diaphragm, drain the fuel from the tank and remove the fuel tap. Remove the screws retaining the diaphragm cover and lift the cover and gasket away. Remove the diaphragm and plunger valve for inspection. In the event of the diaphragm becoming holed or split, the plunger valve will close, thus blocking the fuel supply.

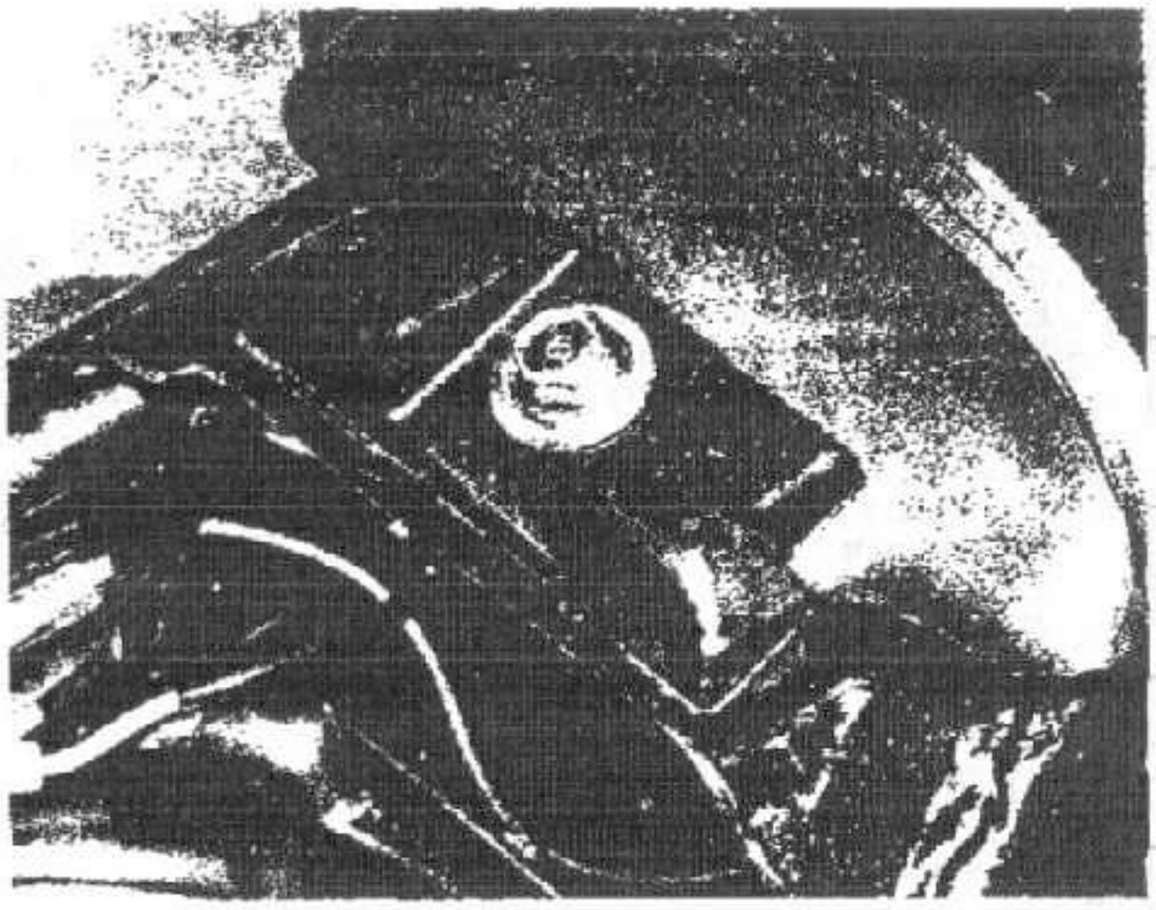
7 When reassembling the diaphragm assembly use new gaskets and seals. Do not use any of the silicone rubber gasket compounds available because they are attacked by fuel and will break up, thus causing small rubber-like particles to obstruct the carburettor jets.

Feed and vacuum pipes

8 Refer to Routine Maintenance.



2.1a Fuel tank is secured by two bolts at front on Custom models ...



2.1b ... and by a single bolt at the rear on all others

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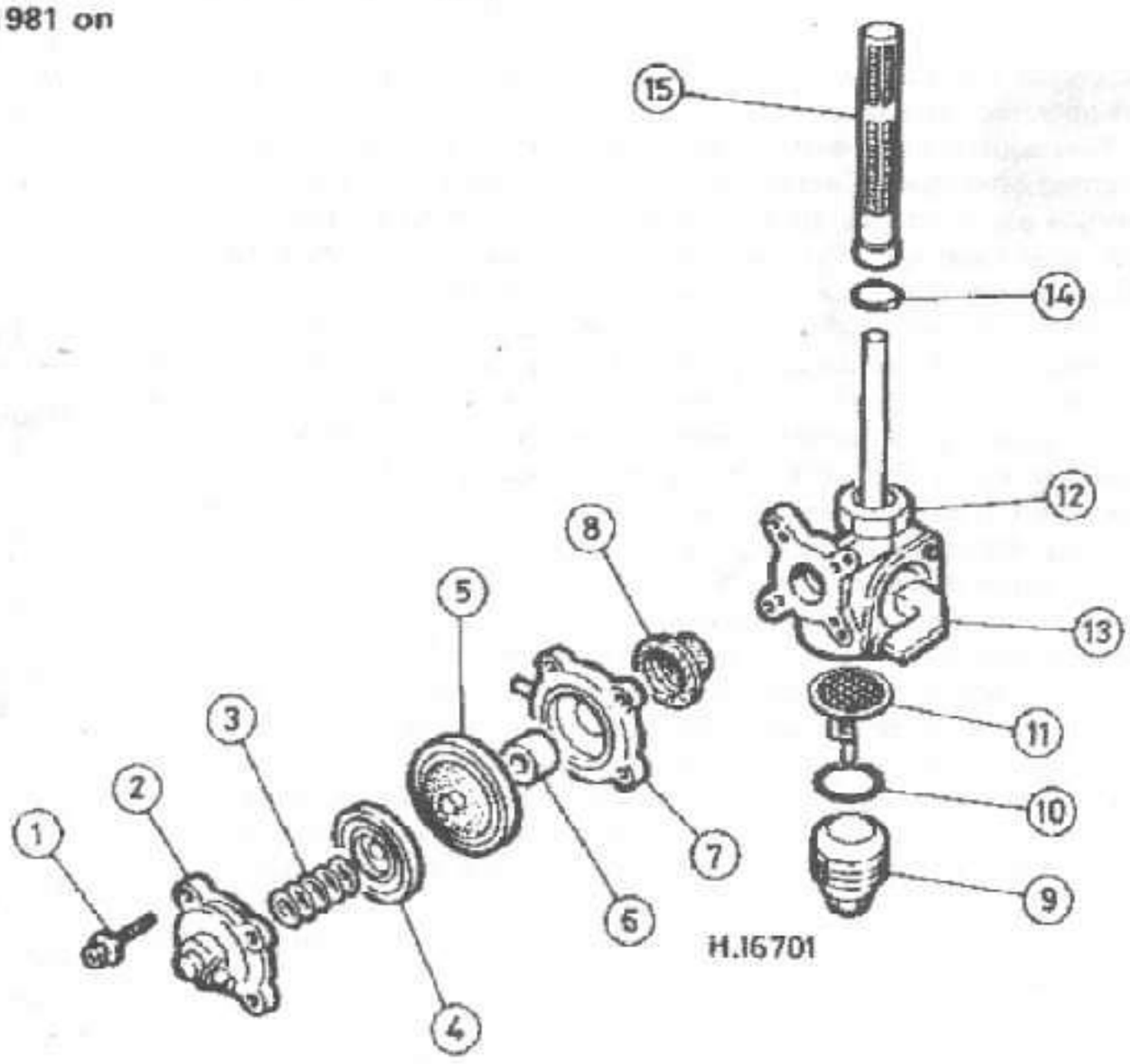
Fig. 3.1 Vacuum fuel tap – all models 1981 on

1 *Screw*
2 *Diaphragm cover*
3 *Spring*
4 *Spring seat*
5 *Diaphragm*
6 *Plunger*
7 *Diaphragm housing*
8 *Inner diaphragm*
9 *Filter bowl**
10 *O-ring**
11 *Filter gauze**
12 *Nut*
13 *Tap body*
14 *O-ring*
15 *Filter*

* *1982 on models only*



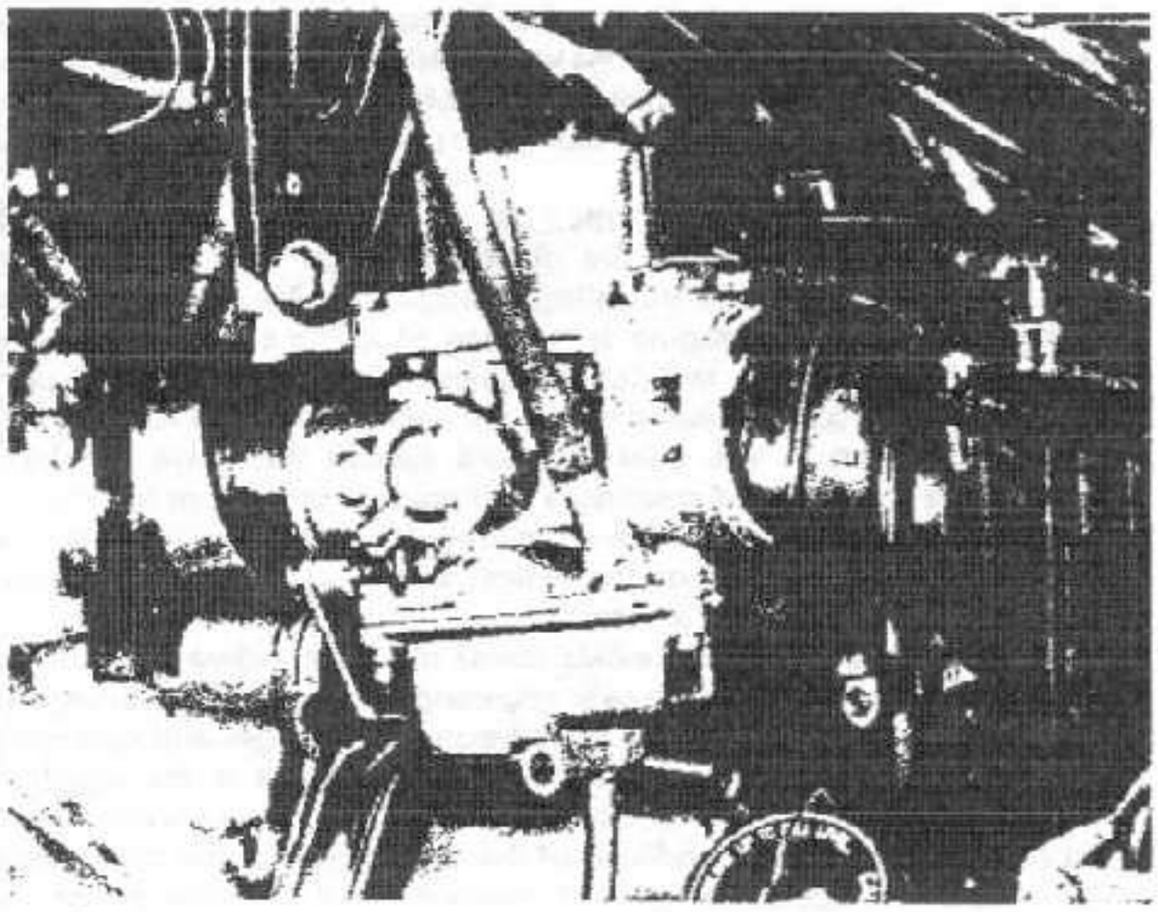
4 Carburettors: removal and refitting

1 Remove the seat and fuel tank, following the procedure given in Section 2. Slacken the hose clips which secure the air filter hoses and inlet stubs to the carburettor mouths. Slide the clips away from the carburettors so that they will not become snagged during removal.

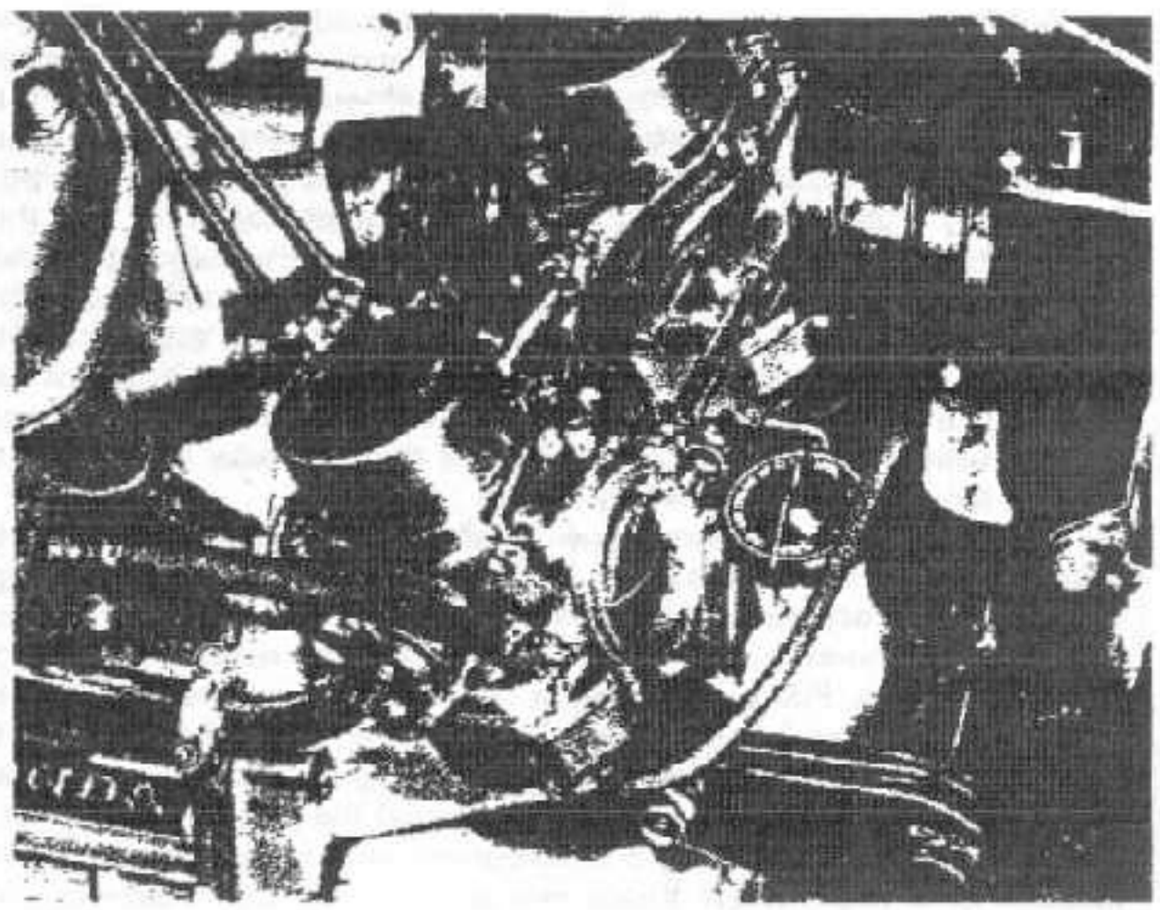
2 Prise the two air hoses backwards so that they clear the carburettor mouths and then pull the carburettors backwards out of the inlet stubs. Ease the carburettors out towards the left-hand side of the machine.

3 Before the carburettors can be lifted away, the two throttle control cables and the choke operating cable must be detached. Slacken the locknuts on the adjusters at the lower end of the cables, and screw the adjusters inwards to give as much slack as possible in the cables. Displace first one and then the other cable from the anchor bracket and then disconnect the inner cables from the pulley. The choke cable is secured to the carburettor by a small clamp held by a single screw. Slacken the screw to release the outer cable and disconnect the inner cable from the choke arm. With all the controls disconnected, pull the breather hoses through from below the carburettors and lift the assembly away from the machine.

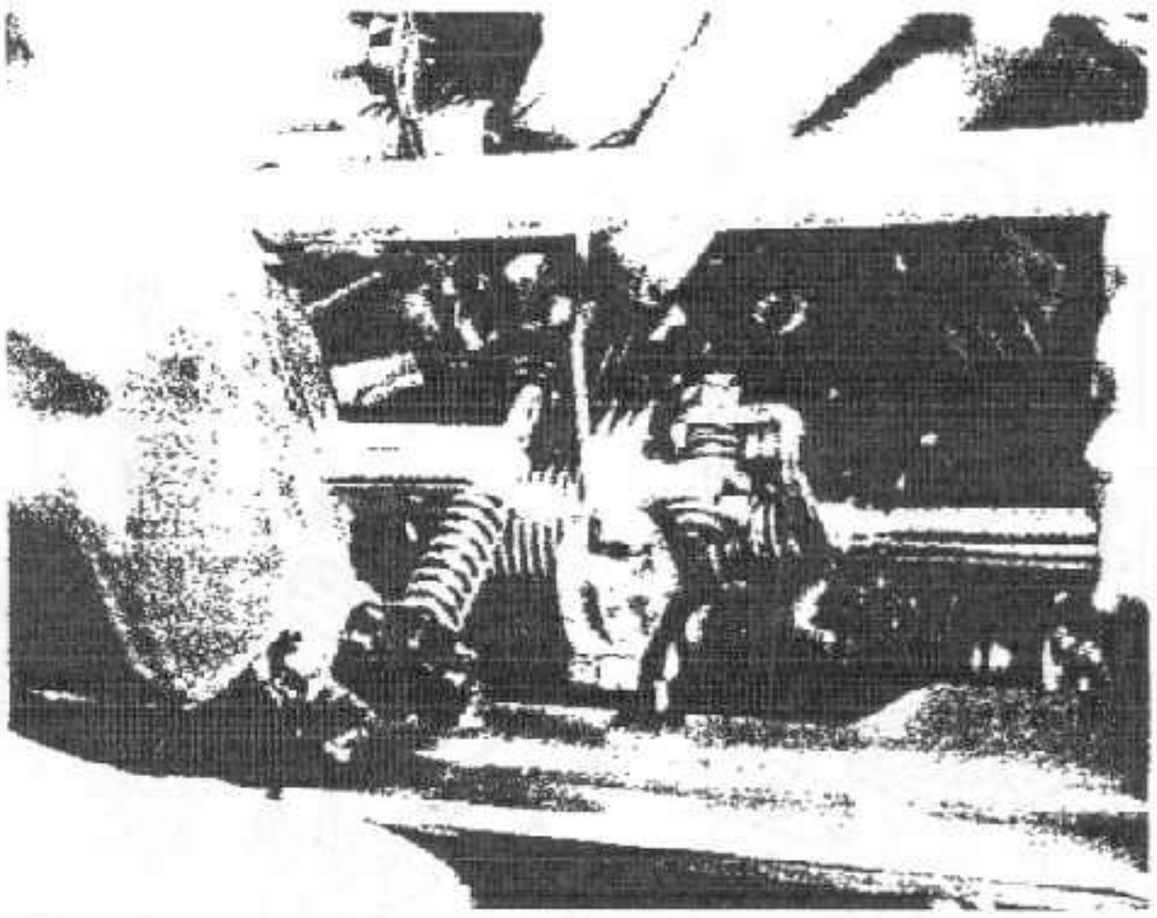
4 Refitting is a straightforward reversal of the removal procedure. Ensure all breather pipes are routed correctly behind the engine/gearbox unit, re-connect the control cables before the carburettors are fully in place. When the carburettors are secured in position, adjust the cables as described in Routine Maintenance.



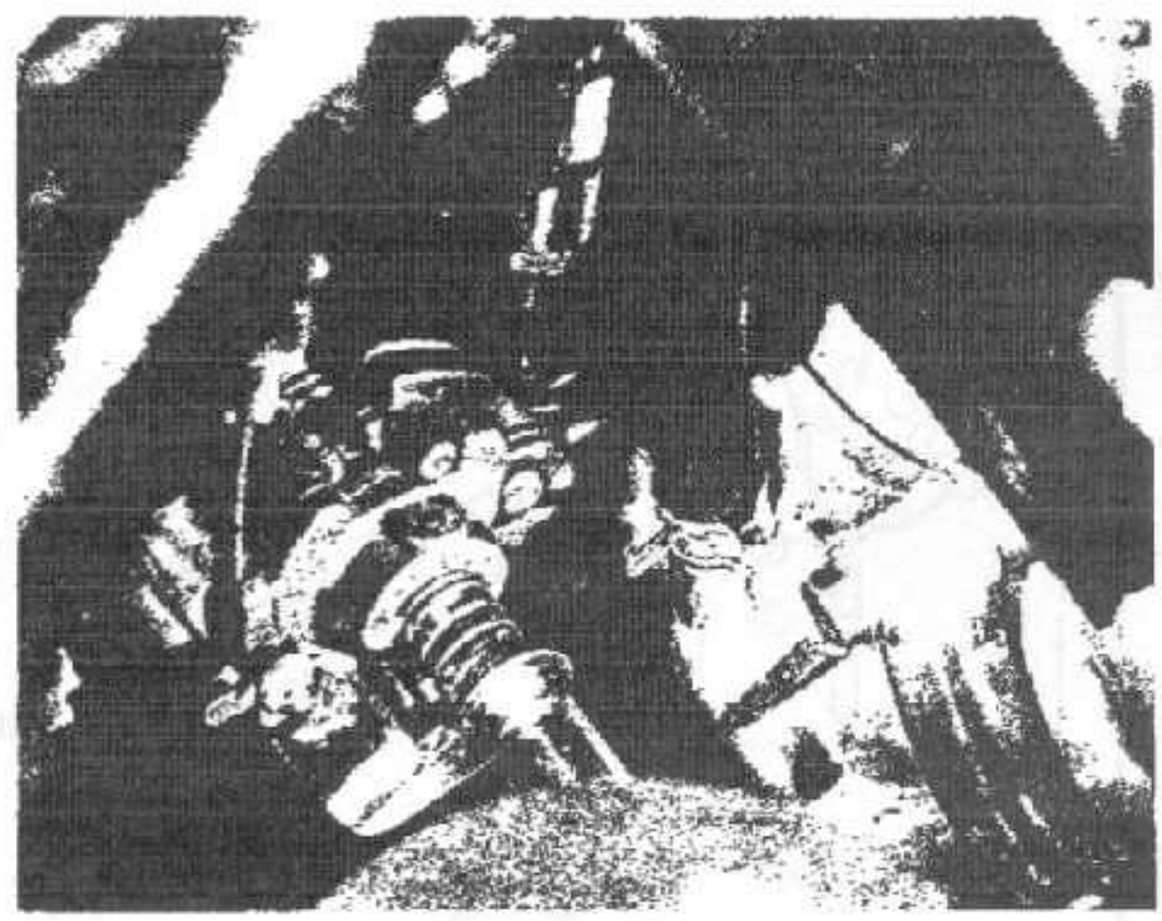
4.1 Slacken hose clips and displace air filter hoses ...



4.2 ... so that carburettors can be withdrawn far enough to disconnect ...



4.3a ... first the rear (opening) cable ...



4.3b ... and then the front throttle cable

5 Carburettors: dismantling, examination and reassembly

1 The procedure set out for removal and separation of the carburettors in paragraph 2 need not take place for normal examination and removal of the carburettor internal components such as the float assembly and jets. It is strongly advised that each carburettor be dismantled and reassembled separately, to prevent accidentally interchanging the components. Dismantle and examine each carburettor, following an identical procedure as described below.

2 If the carburettors are to be separated, displace the end of the light spring that interconnects the end of the choke link rod and the choke operating arm on the right-hand carburettor. Note very carefully the position of the spring before it is released. Remove the screws holding the lower mounting bar in place. These screws may be very tight, having been assembled using a locking fluid. Great care should be taken during removal because the screws are of a soft material and shear easily. On US 650 models, remove the split pin and withdraw the accelerator pump washer, spring and spring collar. On all 650 models, bend down the tabs securing the right-hand throttle joint bolt then unscrew the bolt and remove the tab washer, balljoint seat and balljoint. Hold the joint pipe and turn the throttle link to separate the throttle linkage. Note very carefully the exact position of all components to ensure correct reassembly and do not lose the spring from inside the joint pipe. On all models remove its screws and withdraw the upper bar. Pull the carburettors apart; as this is done the choke rod will disengage from the choke arm, the throttle link will disengage from the spring loaded synchronisation screw and the fuel and (where fitted) the accelerator pump transfer pipe(s) will pull out of one or other of the carburettors. Do not lose the helical spring which lies concentrically between the ends of the throttle pivot rods (500 models only).

3 Invert each carburettor and remove the three screws which retain the float bowl. Lift the bowl from position. The sealing ring need not be displaced unless it has split or perished and leakage is likely to occur. The float assembly can be lifted from position after pushing the pivot pin out of the pivot posts. On early models the float needle will come away with the float assembly as it is retained by a spring clip hooked around the float tongue. On later models with plastic floats the needle must be lifted out.

4 Apply a small spanner to the needle jet holder hexagon (the jet assembly nearest the float needle seat), and using a screwdriver remove the secondary main jet. When removing any jet from a carburettor ensure that the screwdriver is of the correct size, fitting the slot closely. This will prevent damage to the jet and prevent burring, which may alter the orifice size. Unscrew the jet holder to free the needle jet. This jet projects into the venturi bore of the carburettor and may be displaced by inserting a finger through the carburettor mouth. Prise the rubber plug from the central jet pillar to gain access to the slow jet. On early models this jet is a tight press fit and must not be removed; on later models it is listed separately (see Specifications) and may be unscrewed for cleaning. From the third jet pillar unscrew the primary main jet and the primary nozzle.

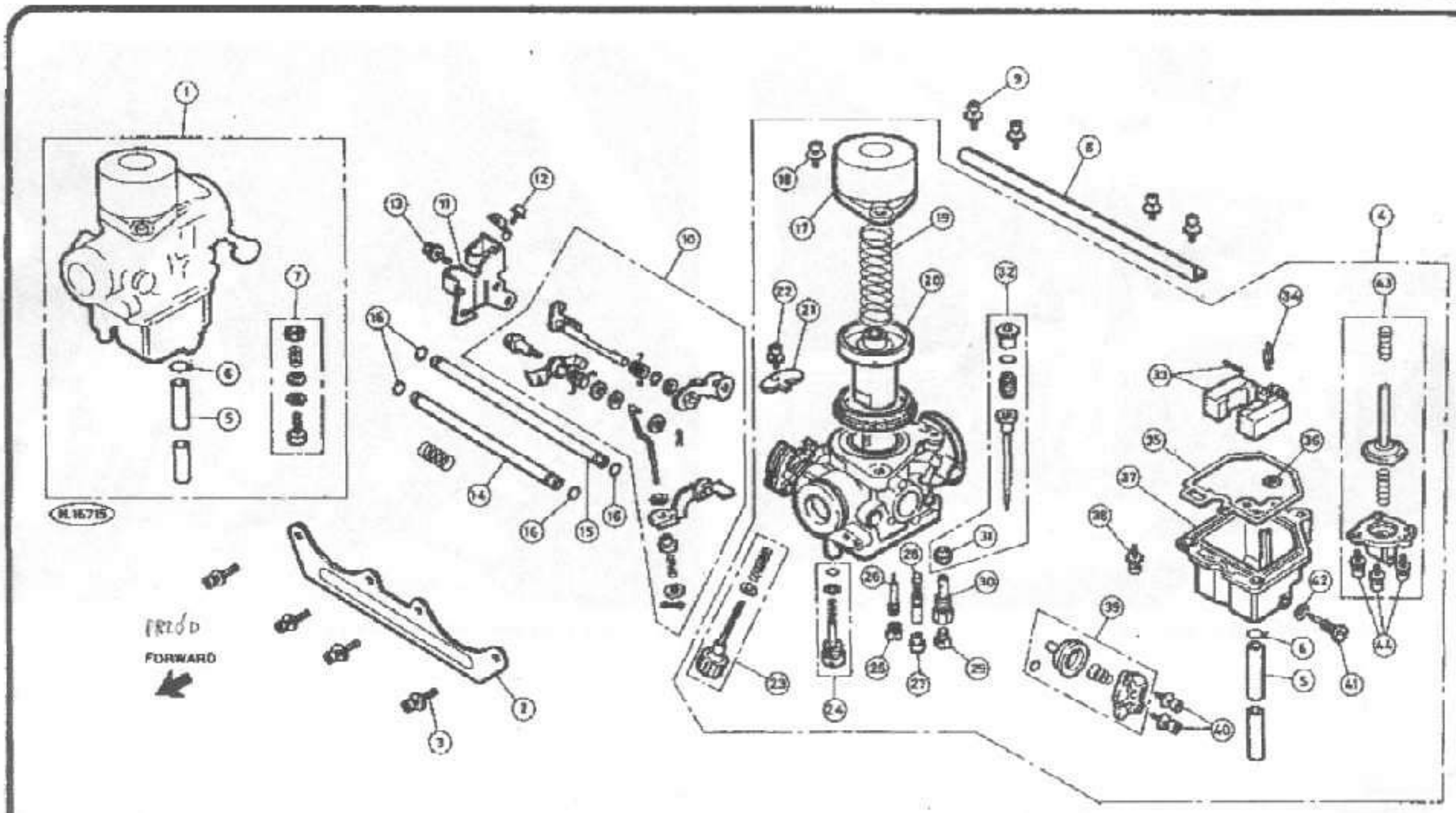
5 The pilot screw (mixture adjusting screw) may be removed to aid cleaning of the internal passages. If this is done the pilot screw setting will have to be adjusted on reassembly as described in Section 8 or 9.

6 Lift the carburettor cap off the main body, after removing the two retaining screws. Pull out the piston very carefully, so that the piston needle does not get bent. The needle can be removed after lifting out the helical spring and removing the nylon plug and grub screw from the piston centre tube. If the piston is inverted the needle will fall out. Two air jets are obstructed by a small curved plate and gasket, which is retained by a single screw. These two jets and the two remaining jets (slow air jets) on the opposite side of the carburettor upper surface should not be removed.

7 It is not recommended that the 'butterfly' valves of either the throttle or choke be removed. The valves themselves are not subject to wear. If wear occurs on the operating pivots, a new carburettor will be required, as air will find its way along the pivot bearings, resulting in a weak mixture.

8 An air cut-off valve is fitted to the left-hand side of each carburettor. The valve is of the diaphragm type and automatically regulates the amount of air travelling through the pilot air system of the carburettor. When the engine is running at idling speeds, the valve remains open, allowing the correct quantity of air to enter the pilot system. If the throttle is closed when the engine has been running fast the high vacuum in the inlet manifold causes the valve to close, reducing the air flow and creating a rich mixture to prevent backfiring. Remove the valve cover, which is retained by two screws and lift the cover from position. Lift out the helical spring and valve diaphragm. Clean all the components in petrol.

9 On later (1980 on) US models dismantle the accelerator pump by unscrewing the three pump cover retaining screws and removing the cover and spring. This will expose the pump diaphragm and operating rod assembly. Remove the diaphragm and inspect it for signs of damage or deterioration. Check the rod is not bent and the spring is not broken. Check also the condition of the small gaiter at the carburettor body end of the operating rod and renew it if it is found to be split or perished. Note that it will be necessary to remove the float chamber to allow the gaiter to be withdrawn from its location in the carburettor



GAŹNIK – MODELE 500

Fig. 3.2 Carburettor – 500 models

1 *Right-hand carburettor*
2 *Mounting bracket*
3 *Screw*
4 *Left-hand carburettor assembly*
5 *Overflow pipe*
6 *Clip*
7 *Synchronising screw set*
8 *Mounting bracket*
9 *Screw*
10 *Operating linkage*
11 *Cable adjuster bracket*
12 *Screw*
13 *Screw*
14 *Fuel transfer pipe*
15 *Fuel transfer pipe*
16 *O-ring*
17 *Cap*
18 *Screw*
19 *Spring*
20 *Piston*
21 *Plate*
22 *Screw*
23 *Idle adjusting screw*
24 *Pilot screw assembly*
25 *Primary main jet*
26 *Primary nozzle*
27 *Plug*
28 *Slow air jet – later models only*
29 *Secondary main jet*
30 *Needle jet holder*
31 *Needle jet*
32 *Jet needle assembly*
33 *Float and pivot pin*
34 *Float needle valve*
35 *O-ring*
36 *O-ring*
37 *Float bowl*
38 *Screw*
39 *Air cut-off valve assembly*
40 *Screw*
41 *Drain screw*
42 *O-ring*
43 *Accelerator pump assembly – US models 1980 on*
44 *Screw*

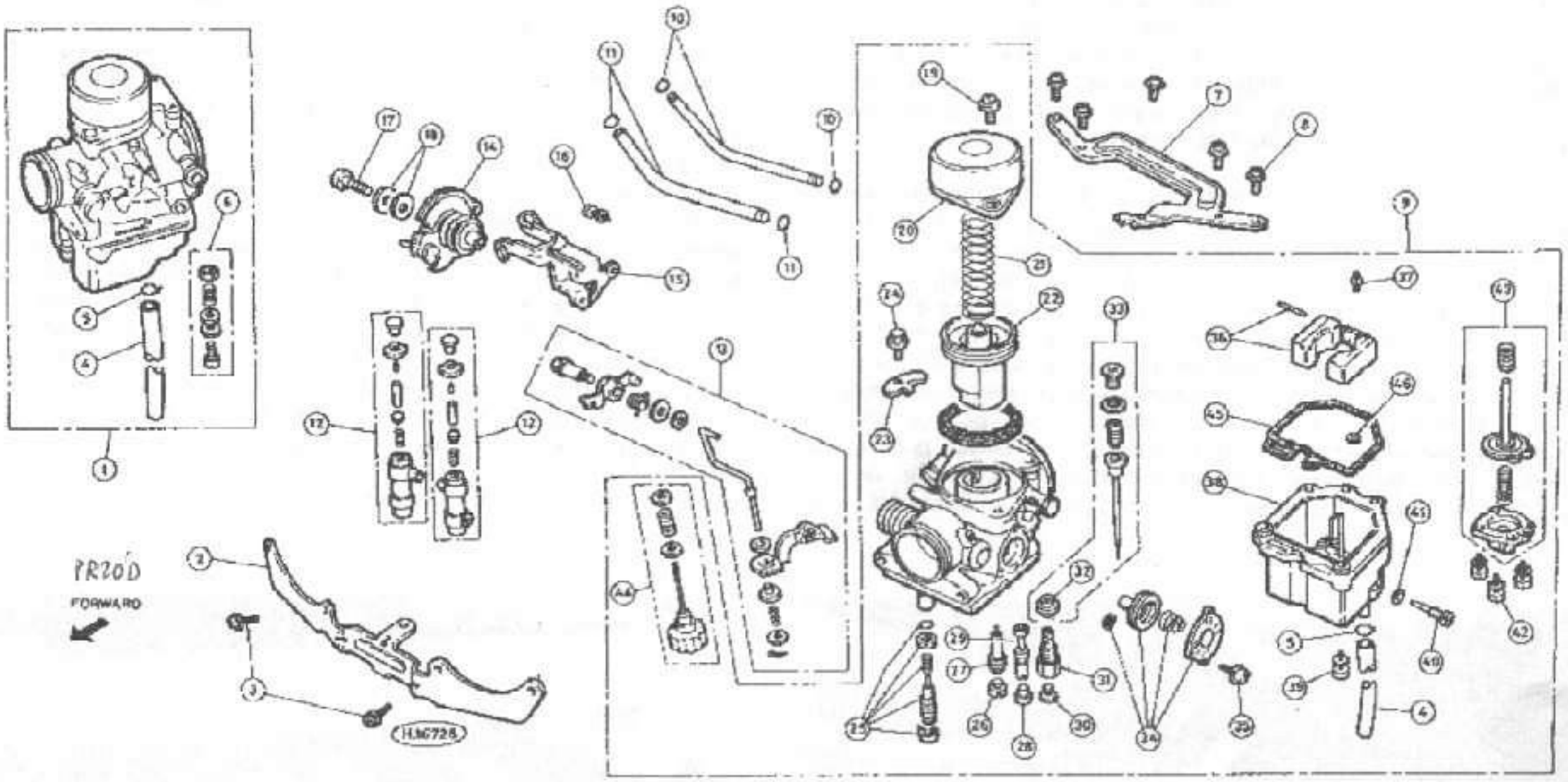


Fig. 3.3 Carburettors – 650 models

1 *Right-hand carburettor*
2 *Mounting bracket*
3 *Screw*
4 *Overflow pipe*
5 *Clip*
6 *Synchronising screw set*
7 *Mounting bracket*
8 *Screw*
9 *Left-hand carburettor assembly*
10 *Fuel transfer pipe*
11 *Fuel transfer pipe*
12 *Throttle joint assembly*
13 *Accelerator pump linkage*
14 *Throttle cable pulley*
15 *Cable adjuster bracket*
16 *Screw*
17 *Bolt*
18 *Washer*
19 *Screw*
20 *Cap*
21 *Spring*
22 *Piston*
23 *Plate*
24 *Screw*
25 *Pilot screw assembly*
26 *Primary main jet*
27 *Primary nozzle*
28 *Plug*
29 *Slow air jet*
30 *Secondary main jet*
31 *Needle jet holder*
32 *Needle jet*
33 *Jet needle assembly*
34 *Air cut-off valve assembly*
35 *Screw*
36 *Float and pivot pin*
37 *Float needle valve*
38 *Float bowl*
39 *Screw*
40 *Drain screw*
41 *O-ring*
42 *Screw*
43 *Accelerator pump – US models only*
44 *Idle adjusting screw*
45 *O-ring*
46 *O-ring*

body. Little should go wrong with the pump apart from a cracked or perished diaphragm, but if the pump system is completely dry it may require priming to expel air.

10 Check the condition of the floats. If they are damaged in any way, they should be renewed. Refer to Section 8 for details of the float level adjustment. The float needle and needle seating will wear after lengthy service and should be inspected closely. Wear usually takes the form of a groove or ridge, which will cause the float needle to seat imperfectly. Ideally, the needle and valve seat should be renewed as a pair. On this model of carburettor, however, the seat is not renewable and if the valve seat is faulty, the complete carburettor must be renewed. Furthermore the carburettor body is not supplied as a separate component but must be obtained as a fully jetted assembly. If faulty valve seating has caused persistent flooding of the float bowl, first attempt a cure by fitting a new needle only. If this fails to cure the problem, attempt to grind the seat in, using a light polishing compound (Brasso or Solvol Autosol). If the second procedure does not have the desired effect, the expense of a complete carburettor must be met.

11 After considerable service, the piston needle and the needle jet in which it slides, will wear, resulting in an increase in petrol consumption. Wear is caused by the passage of petrol and the two components rubbing together. It is advisable to renew the jet periodically in conjunction with the needle. The vacuum piston and carburettor cap also work as a pair. Examine the components for scoring and other damage, checking particularly that the piston does not have a 'tight spot' anywhere in its travel. Such a 'tight spot' could be caused by a bent needle so carry out the check with the needle detached. Never interchange the piston or cap of one carburettor with that of another.

12 Before the carburettors are reassembled, each should be cleaned out thoroughly, using compressed air. Avoid using a piece of rag since there is always risk of particles of lint obstructing the airways and jet orifices. Never use a piece of wire or any pointed metal object to clear a blocked jet. It is only too easy to enlarge a jet under these circumstances and increase the rate of petrol consumption. If an air line is not available, a blast of air from a tyre pump will usually suffice.

13 Check the air cut-off valve diaphragm for splitting or other damage. Use compressed air to clean the by-pass channel and the valve plate seat. Inspect the small O-ring that fits in the by-pass orifice. Renew components as necessary.

14 Reassemble each carburettor, using the reversed dismantling procedure. Work must be carried out in absolute cleanliness. If possible, use new gaskets, O-rings can be re-used if there is no doubt as to their condition. When replacing the piston, note that it can be refitted in only one position. The groove in the piston side must locate with the projection in the main body.

15 Do not use excessive force when reassembling a carburettor since it is easy to shear a jet or some of the smaller screws. Furthermore, the carburettors are die cast in a zinc based alloy which itself does not have a high tensile strength.

16 Place the two completed carburettors together in preparation for refitting the mounting bars. When doing this attention should be paid to the following points as some of the refitting operations will need to be made more or less simultaneously. The fuel and accelerator pump

(US models only) transfer pipe(s), with an O-ring fitted to the groove in each end must enter the transfer ports in the carburettors. On 500 models, engage the synchronisation adjustment screw at the end of the throttle link rod with the fork in the operating pulley so that the spring and one washer lie against the upper side of the fork. The helical spring should be fitted concentrically between the end of the rod and the pulley rod. Engage the lightweight relief spring so that it interconnects the choke arm with the link rod. Refit the mounting bars one at a time.

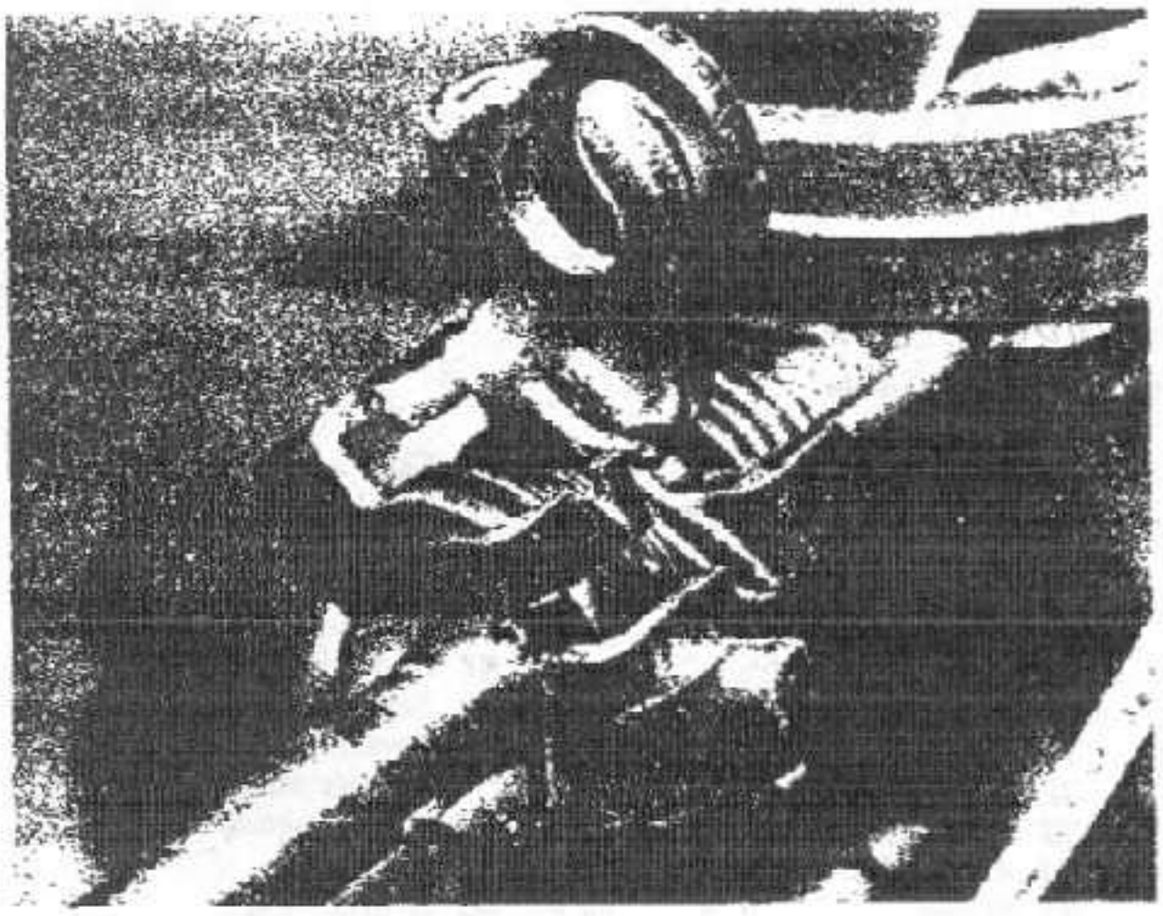
17 On 650 models very carefully reassemble the throttle linkage following the reversal of the dismantling sequence. Tighten the mounting bar screws to the specified torque setting, then tighten the throttle joint bolt to the same torque setting and bend up against its flats an unused tab of the lock washer. Reassemble the accelerator pump collar, spring and washer, using a new split pin to secure them.

18 On all models, open and close the throttles a number of times and then check that the two throttle butterflies open and close simultaneously. If this is not the case, slacken the locknut on the synchronisation adjustment screw and turn it as necessary to bring the butterflies into alignment. Tighten the locknut. Whether or not adjustment is made at this juncture does not preclude the necessity for a synchronisation check to be made using a pair of vacuum gauges as described in Section 10.

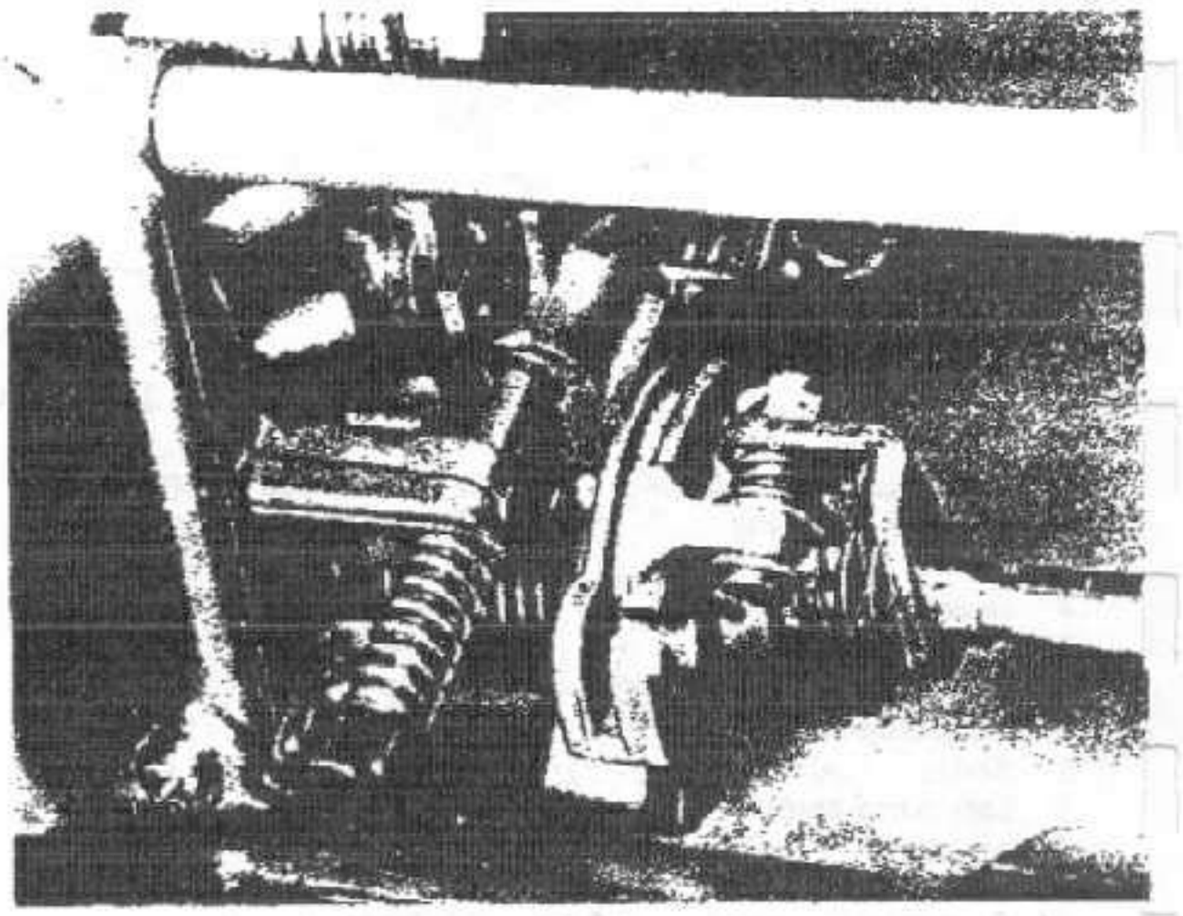
19 With the throttles working properly and correctly adjusted, set the fast idle mechanism. Unscrew the throttle stop screw until both butterflies are fully closed, then check the clearance between the choke link arm and the throttle drum; this should be approximately 0.8 mm (0.032 in). If adjustment is necessary bend the forked end of the link arm open or closed until the clearance is correct. When the throttle stop screw is returned to its original setting this should give the correct fast idle speed (see Specifications).

20 On US models from 1980 on, the accelerator pump output is set up during manufacture but should be re-checked after the carburettors have been overhauled or the operating linkage has been disturbed. With the throttle stop screw slackened so that both butterflies are closed, check the clearance between the accelerator pump rod and the choke link arm. This should be 0.1 - 0.3 mm (0.004 – 0.012 in). Any necessary adjustment may be made by careful bending of the link arm.

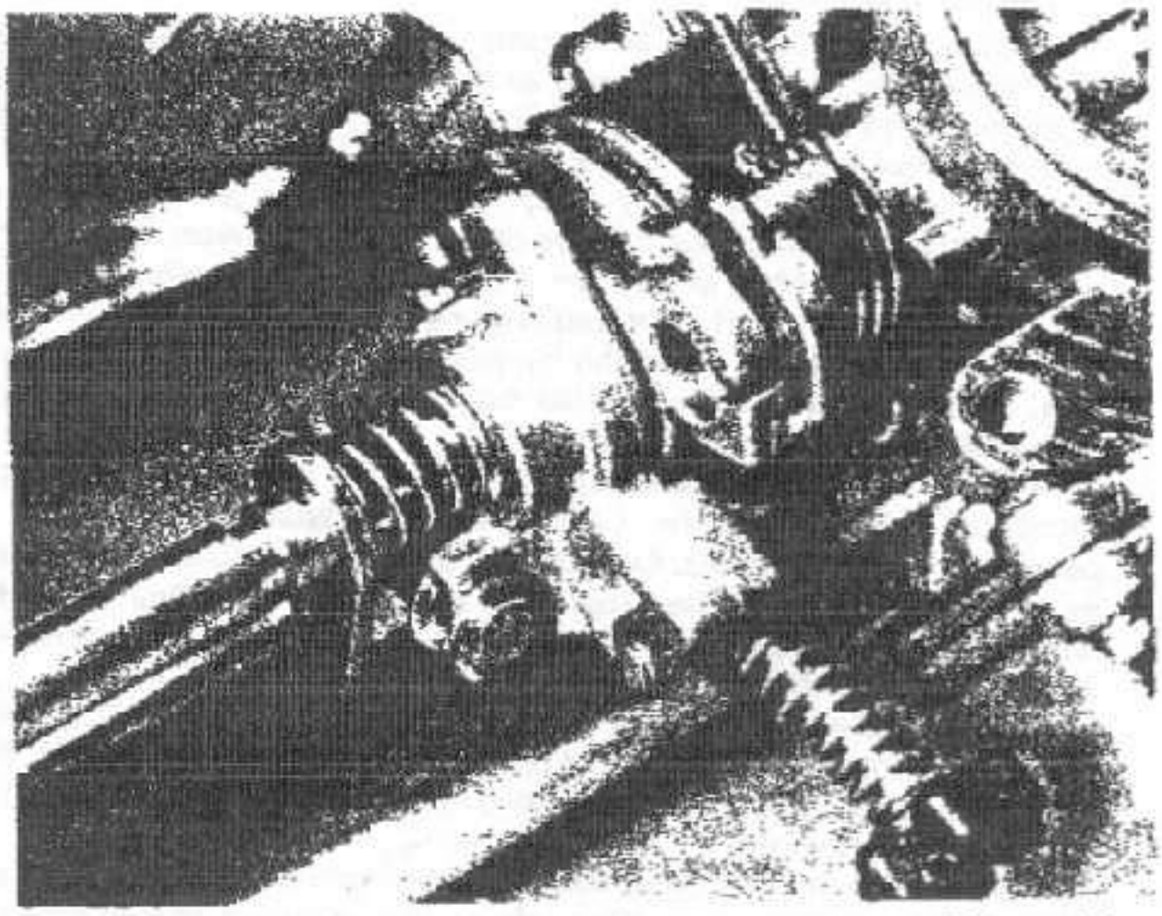
21 At the other end of the arm, the pump stroke is limited by a second tang which stops against the projecting lug on the carburettor body. The specified gap here is 3.1 – 3.3 mm (0.12 - 0.13 in). Once again, adjustment can be made by bending the tang.



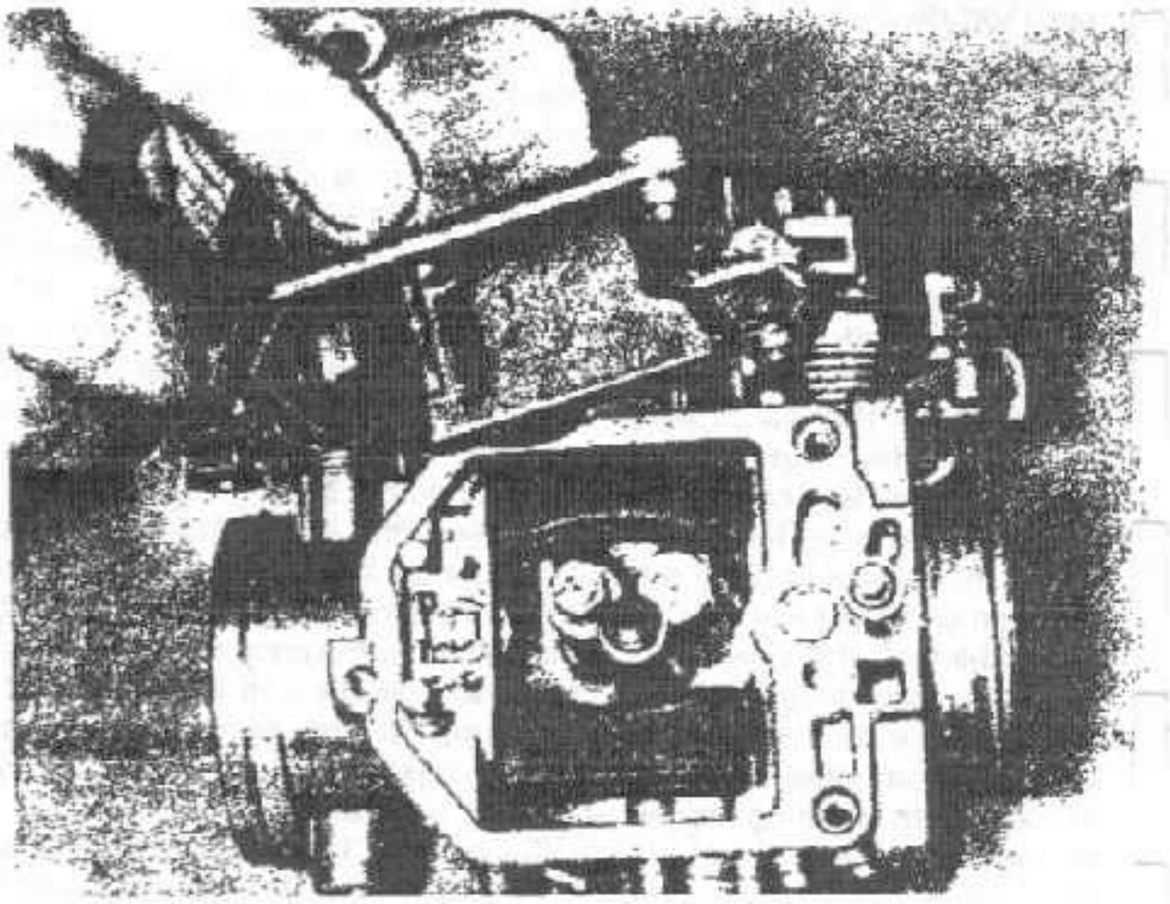
5.2a Before separating carburettors, note carefully how components of choke ...



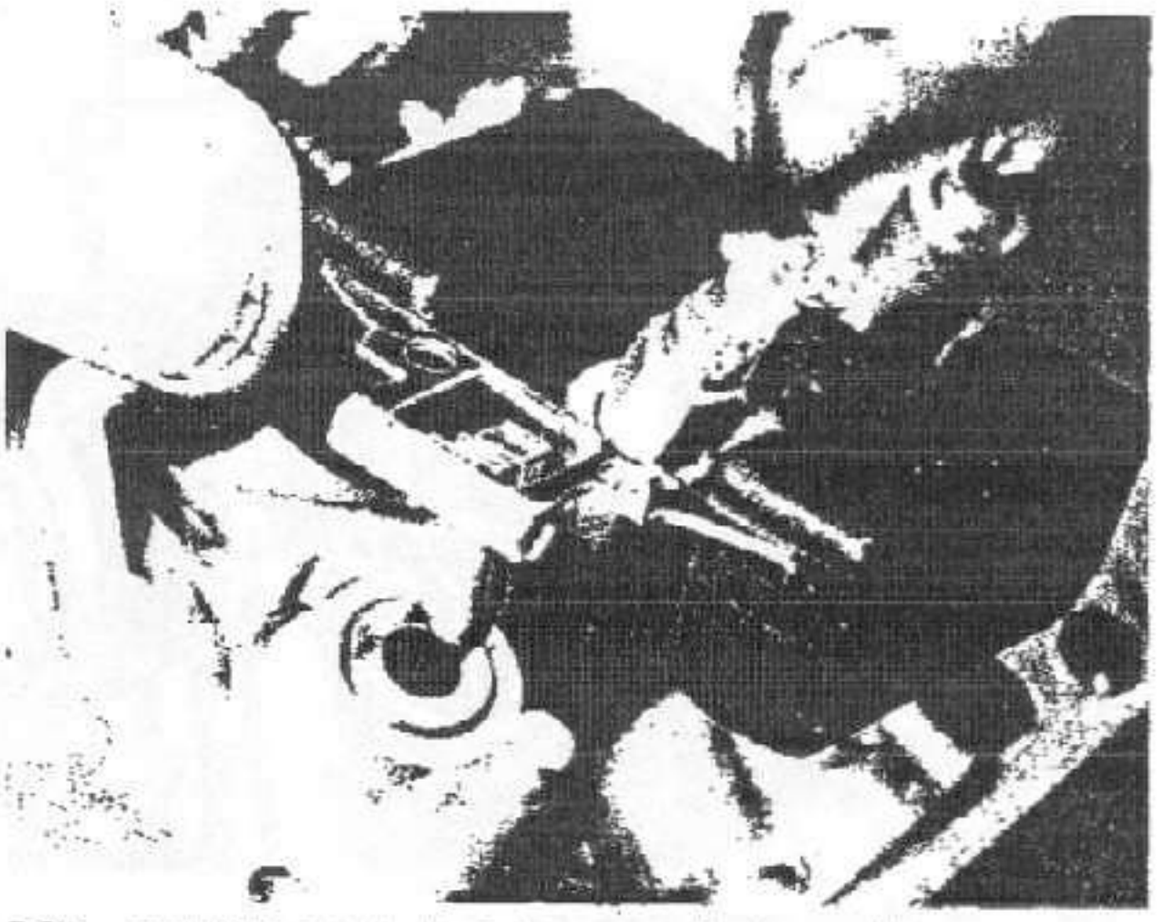
5.2b ... and throttle linkages are fitted together



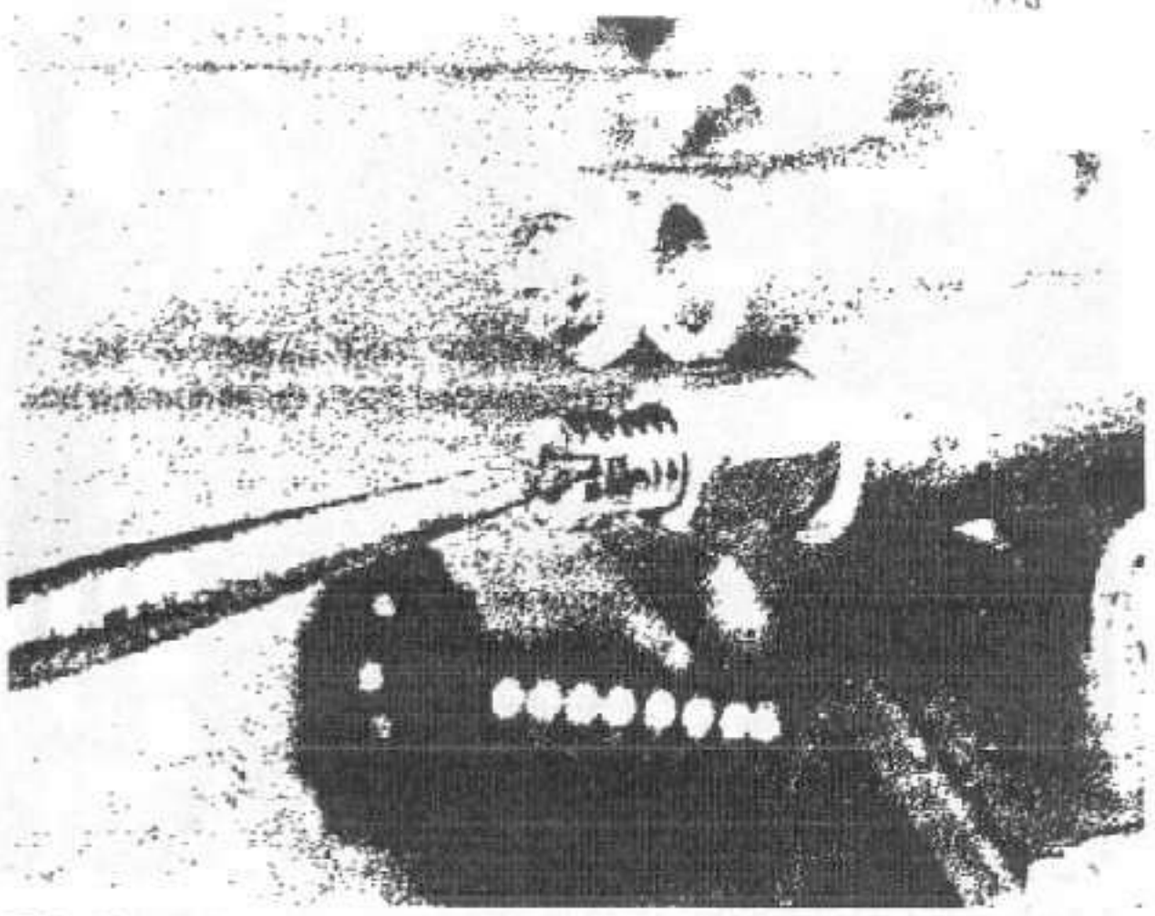
5.2c Do not lose small spring between pulley and rod - 500 models only



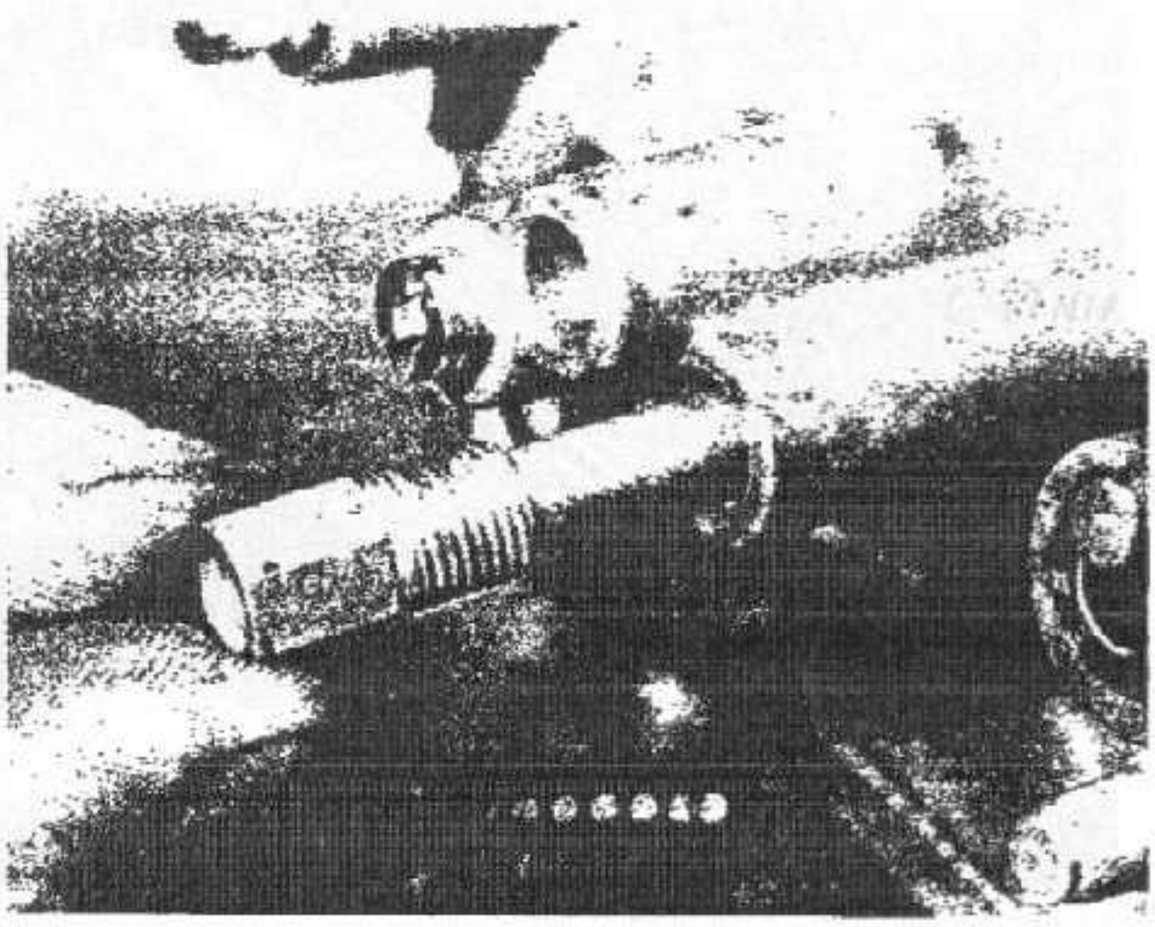
5.3a Remove retaining screws to release float bowl ...



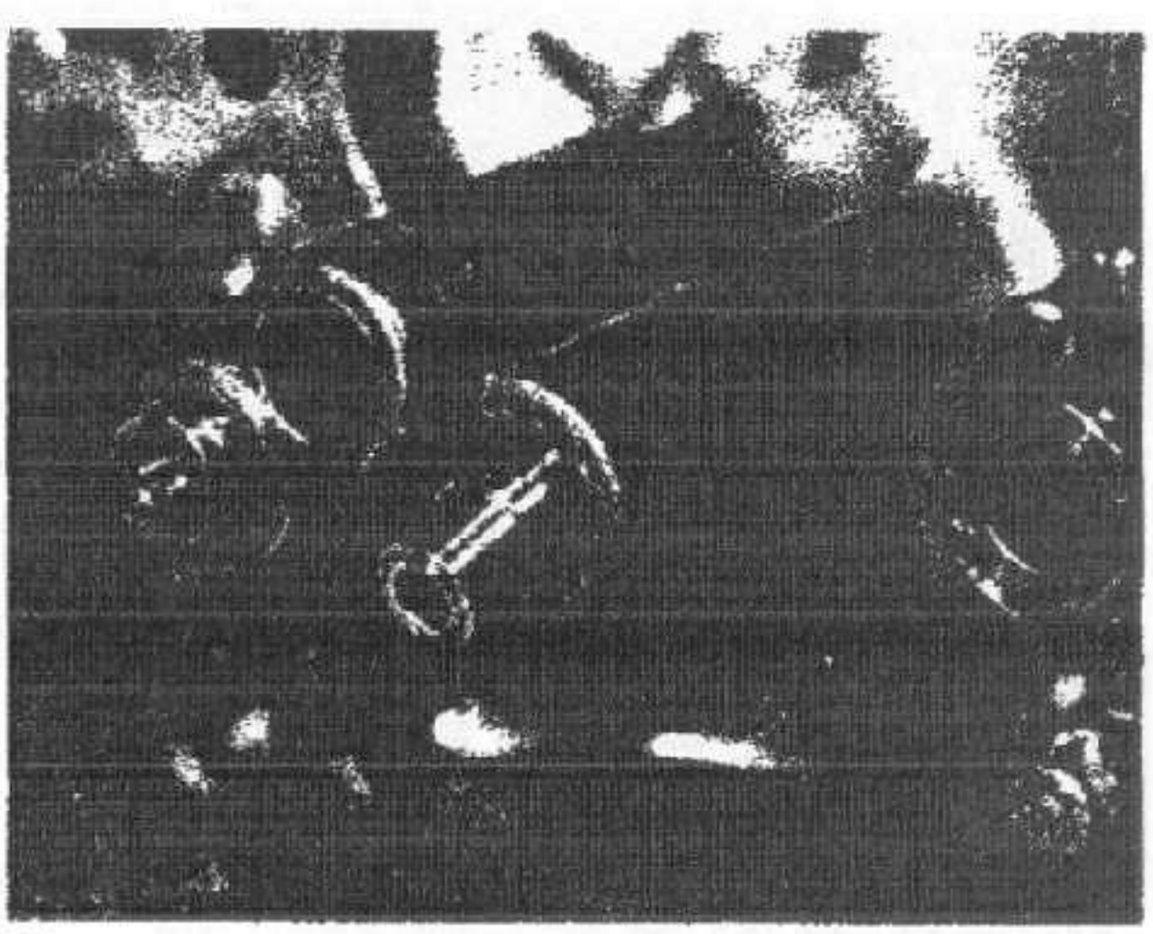
5.3b ... and drive out pivot pin to remove float assembly



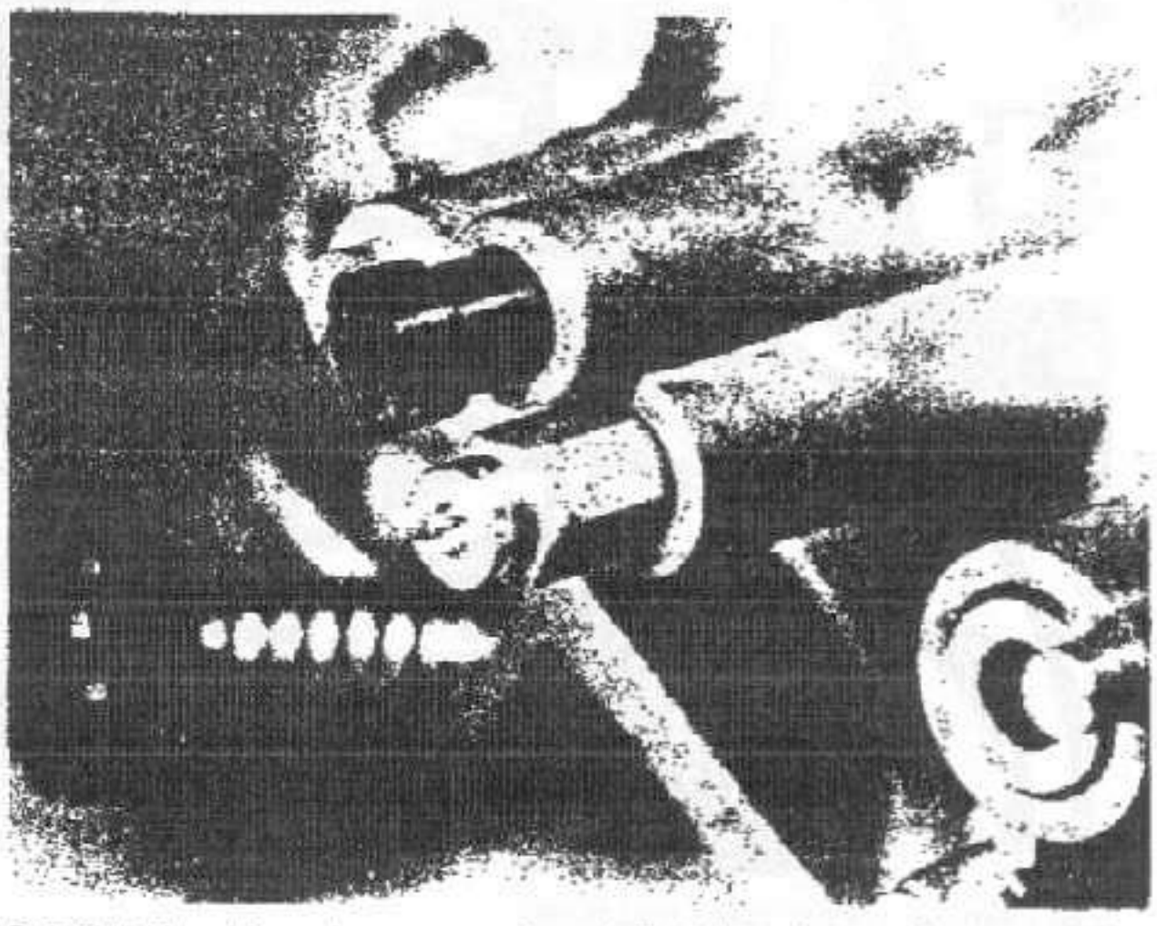
5.4a Unscrew secondary main jet ...



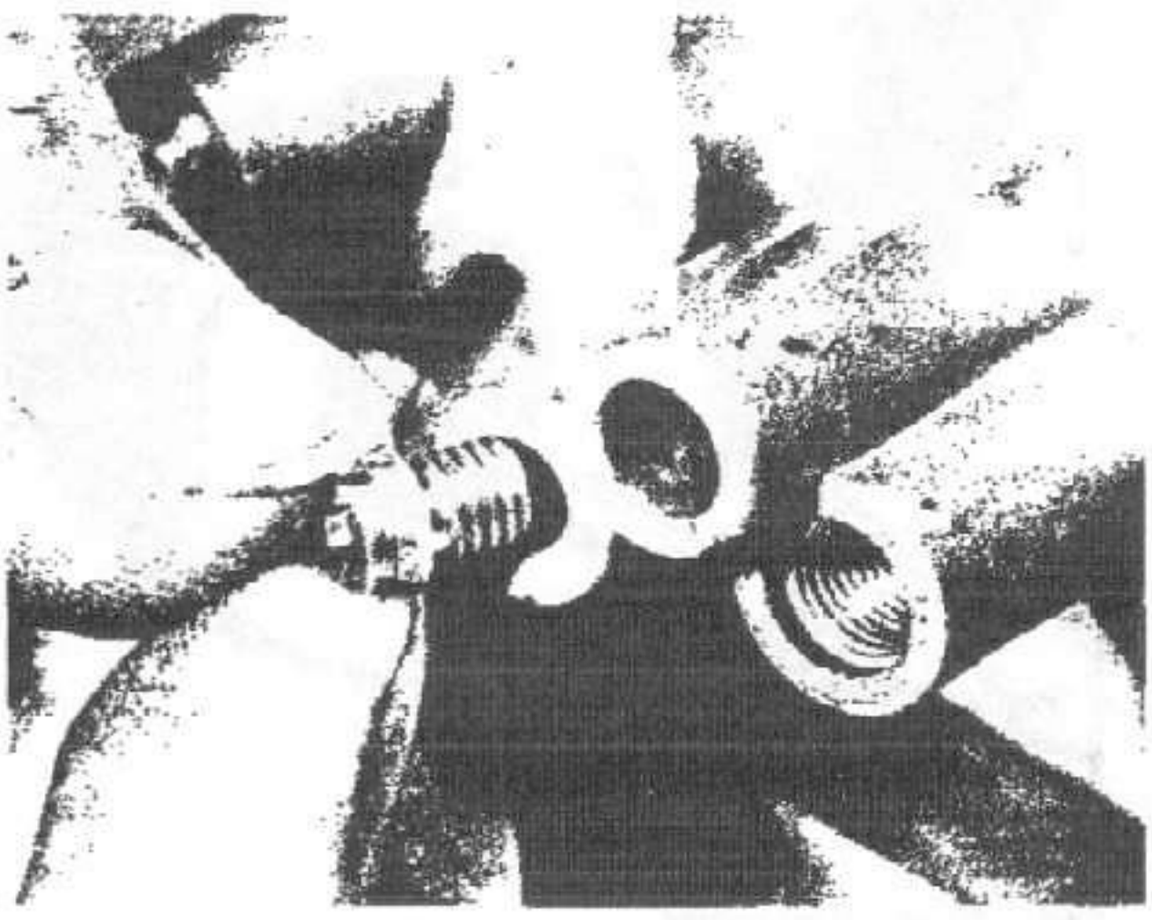
5.4b ... followed by jet holder ...



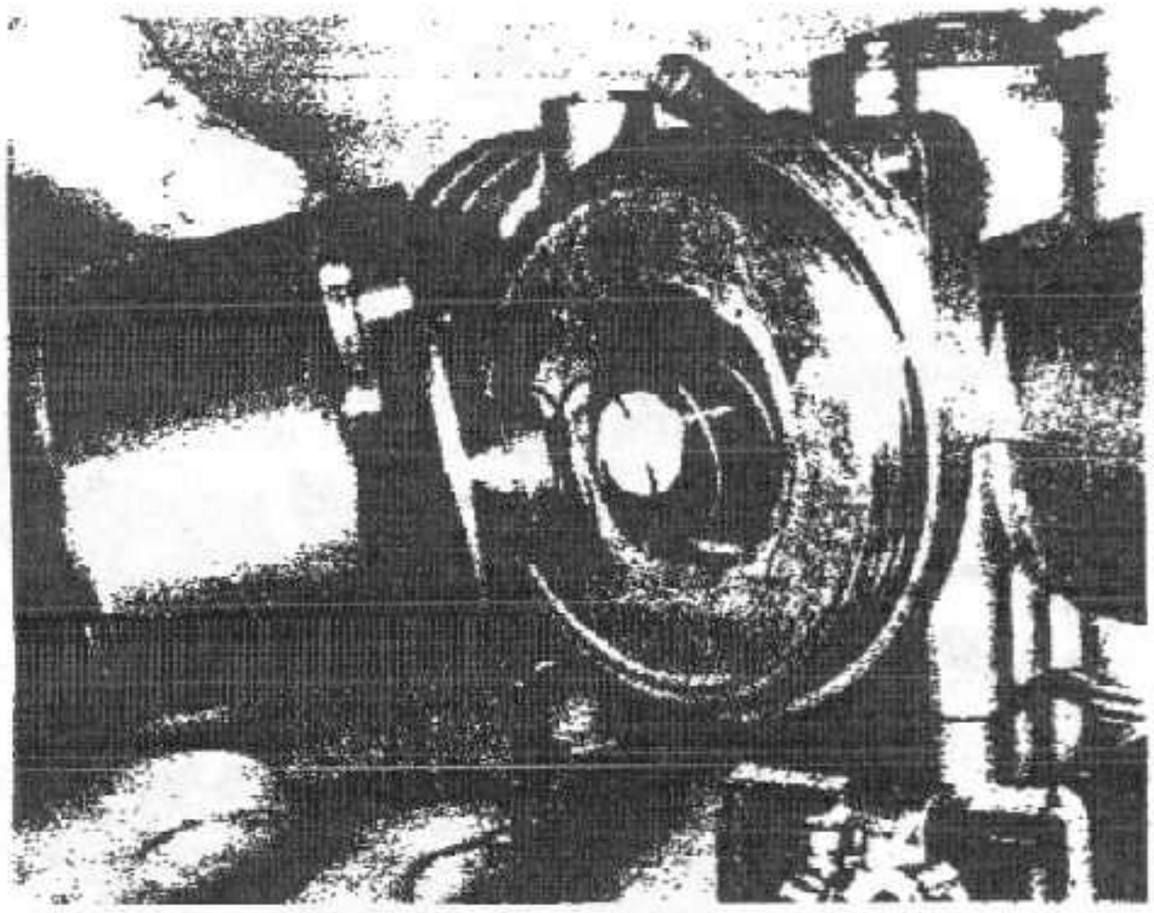
5.4c ... to permit removal of needle jet



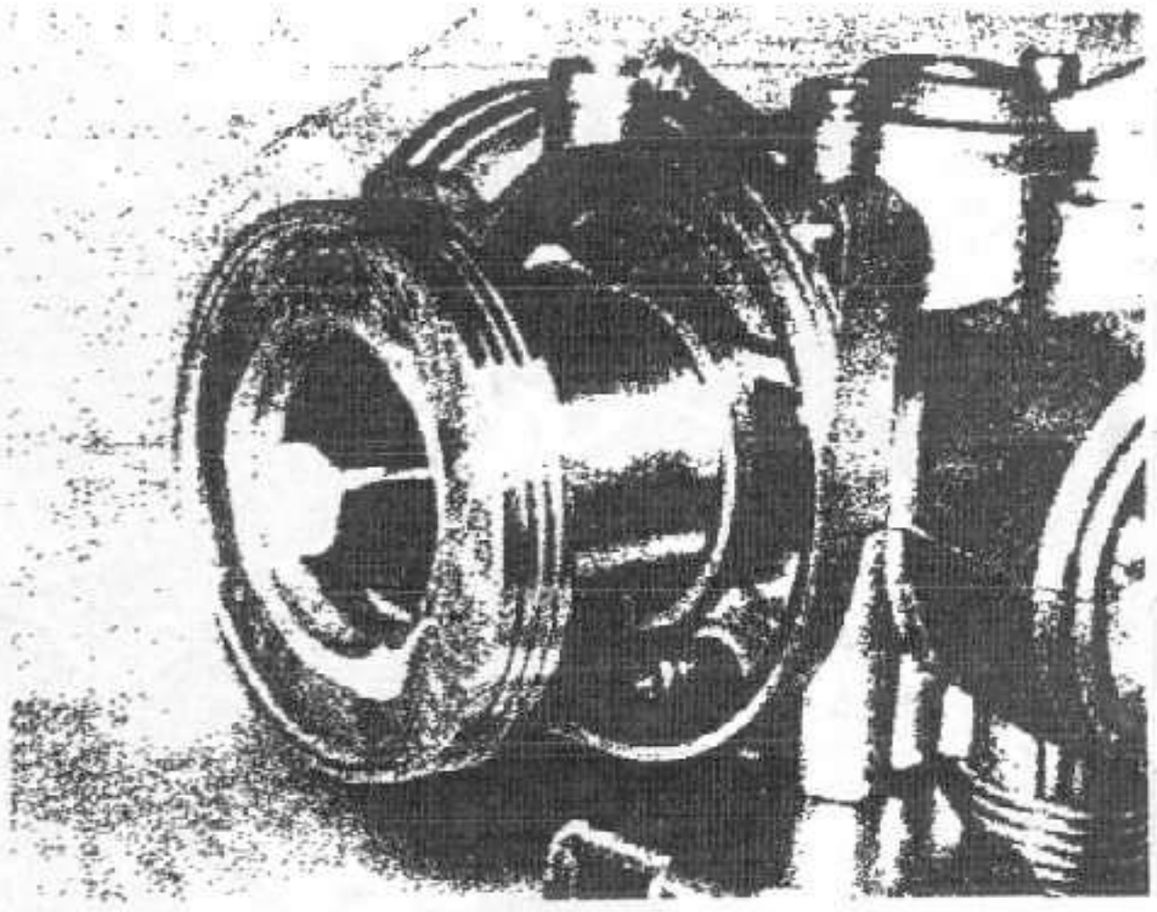
5.4d Black rubber plug covers slow (pilot) jet – jet can be removed on later models only



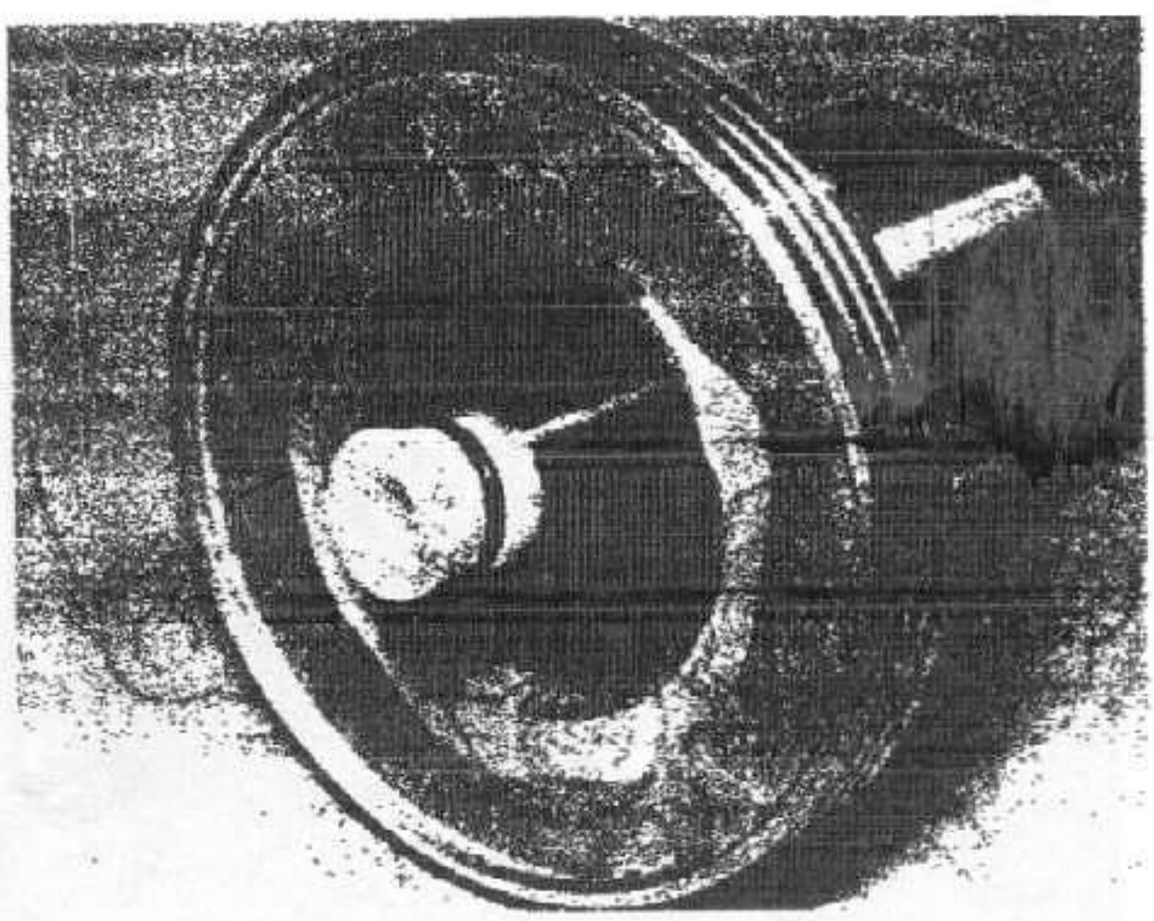
5.4e Primary main jet and nozzle are screwed into third jet pillar



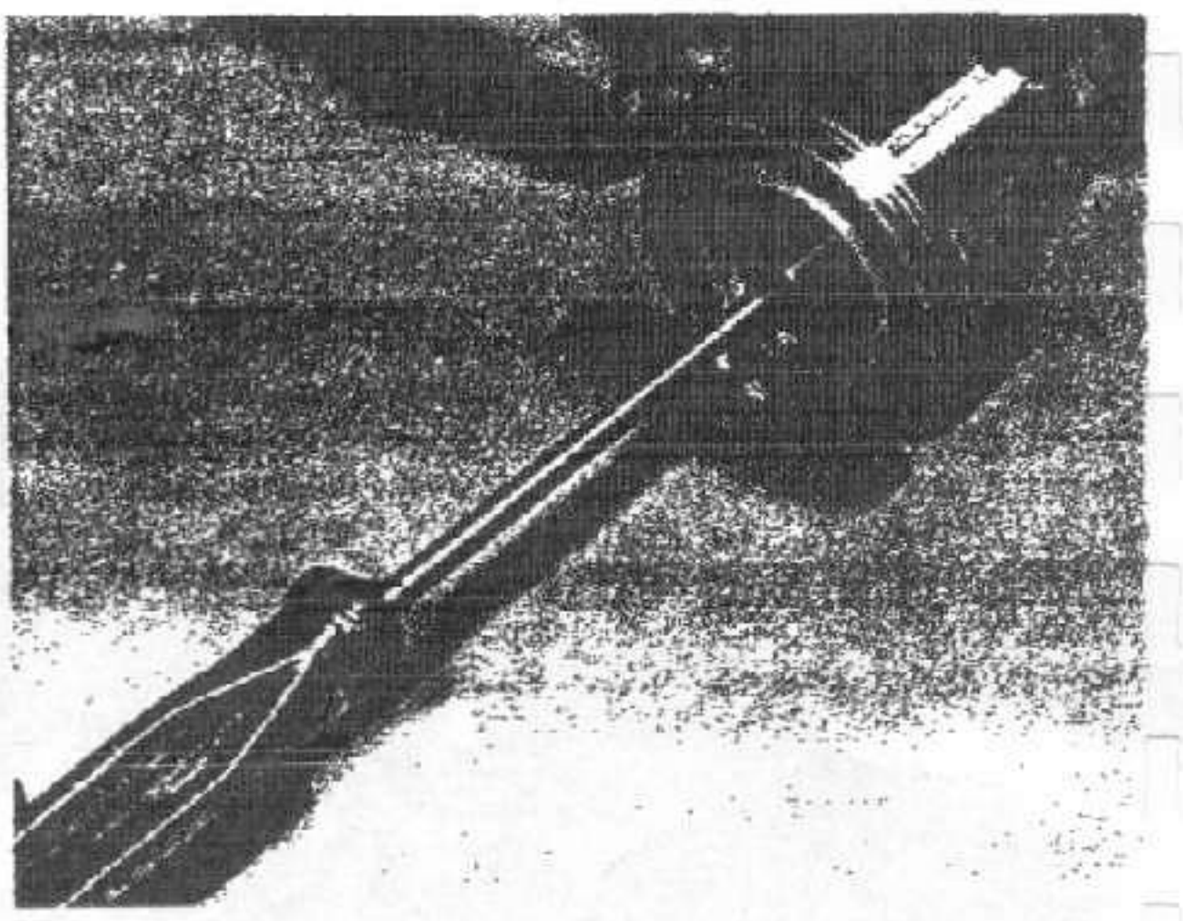
5.6a Remove retaining screws to release carburettor cap and spring ...



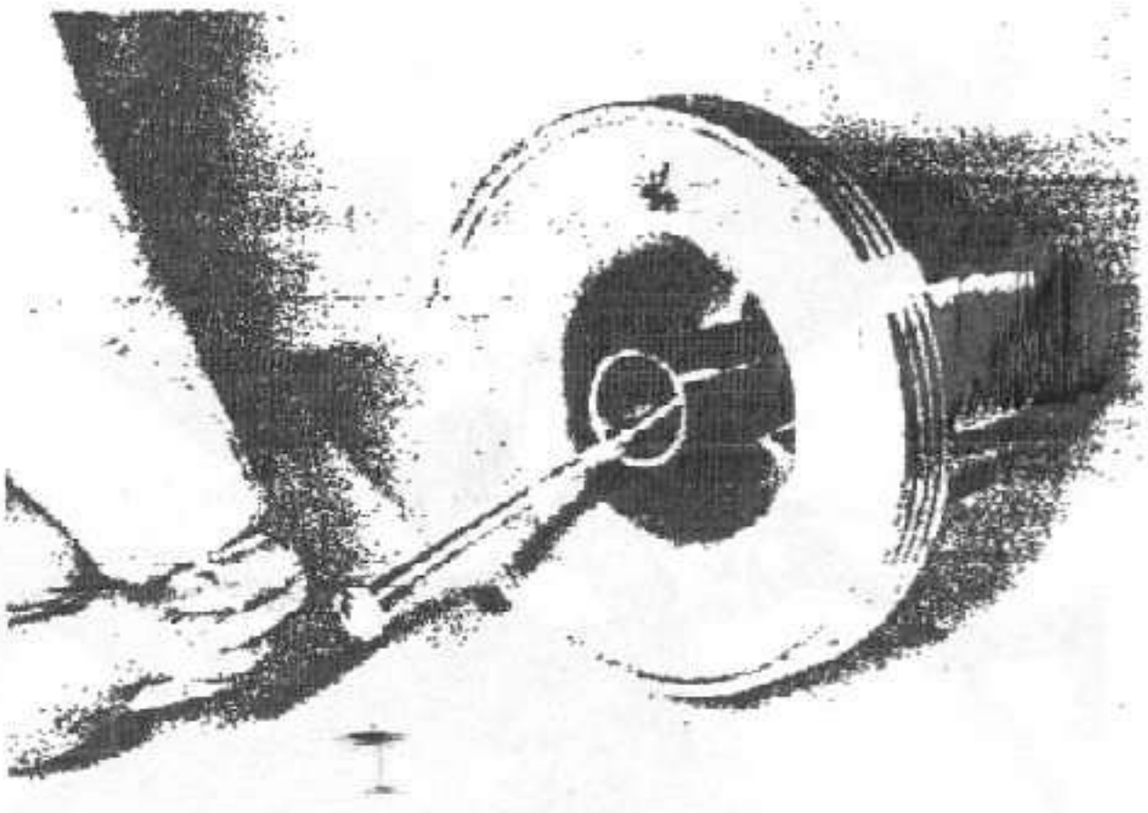
5.6b ... then lift out piston assembly



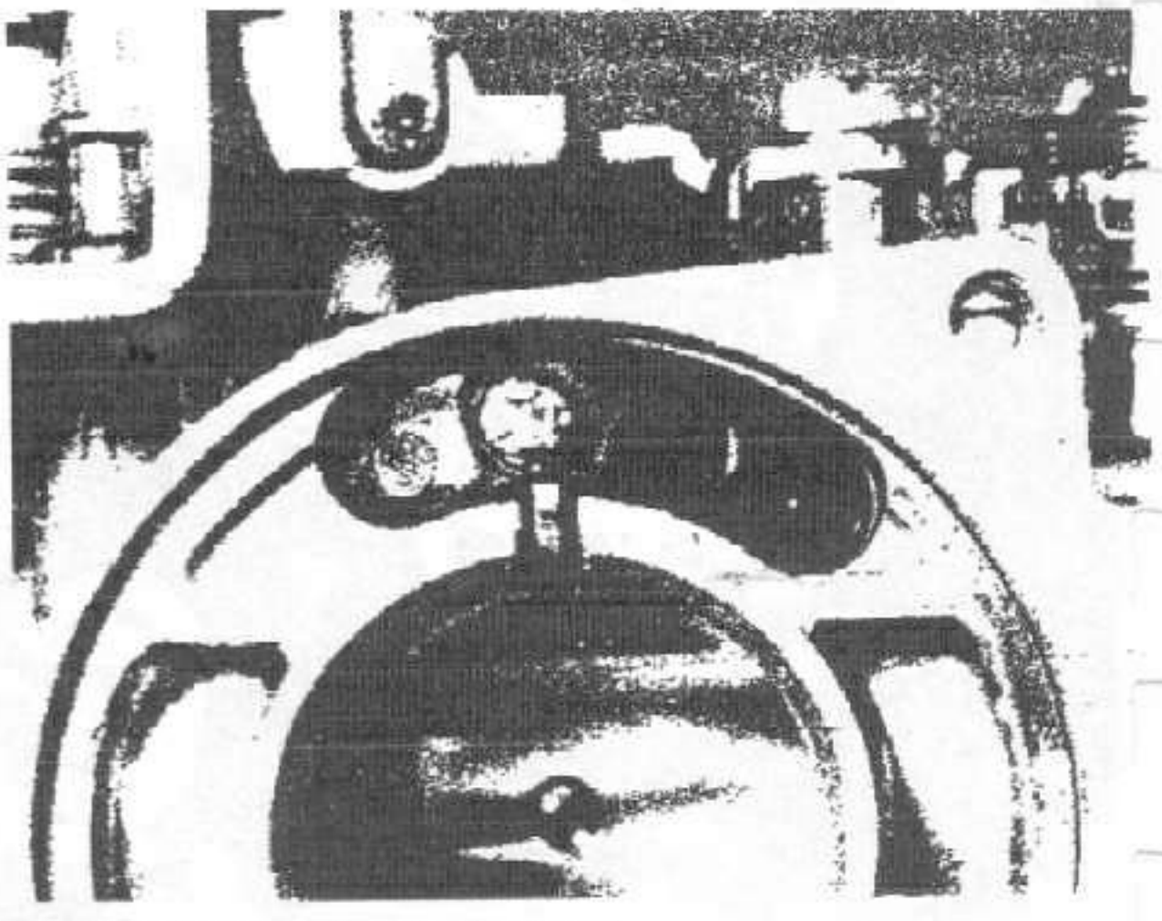
5.6c Displace nylon plug from piston – note sealing O-ring ...



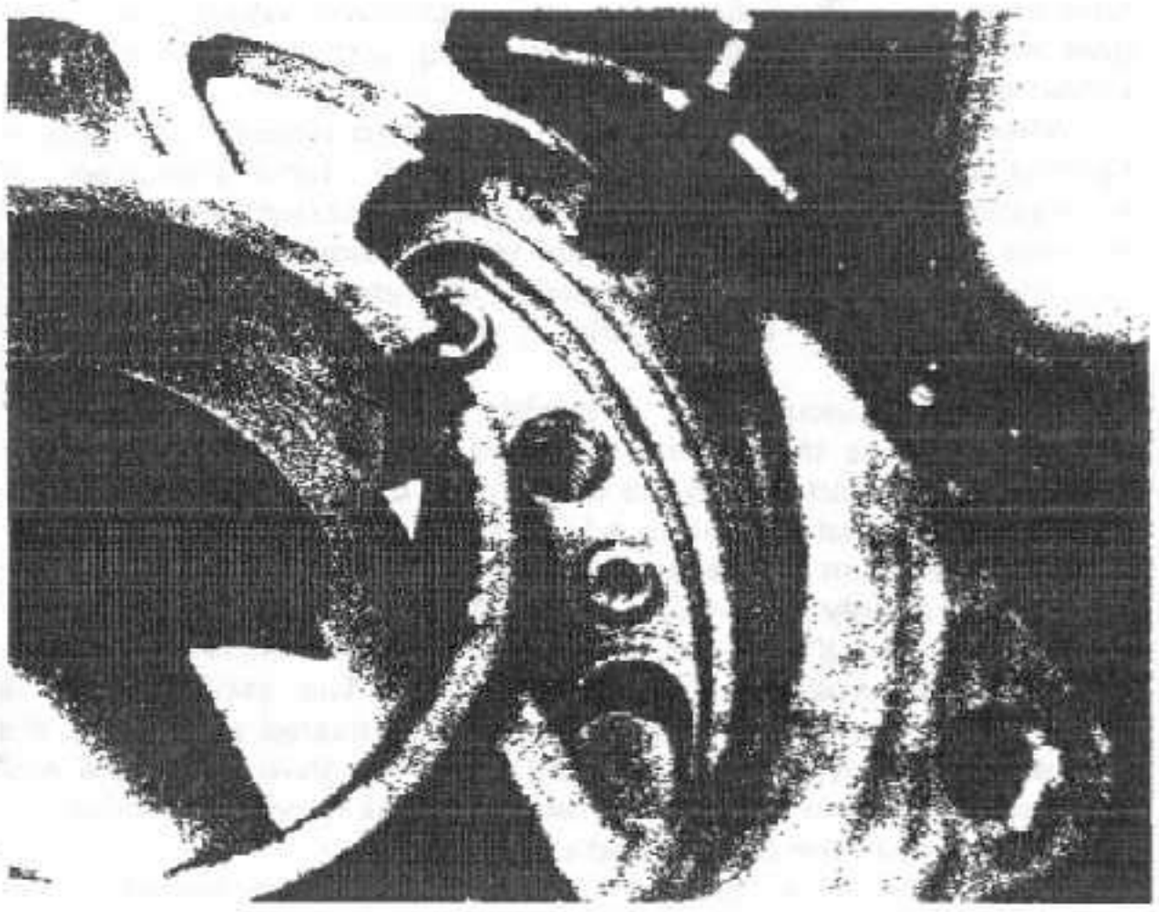
5.6d ... and unscrew retaining screw ...



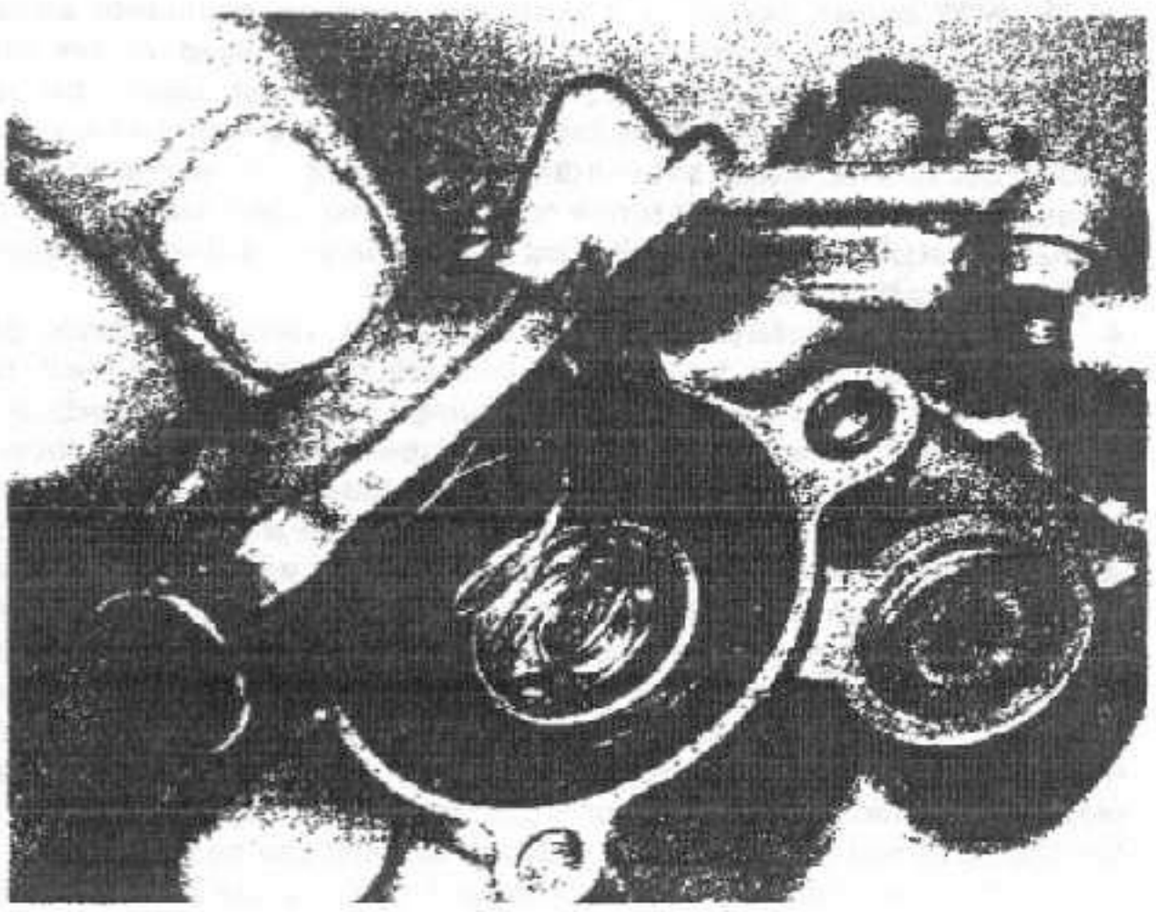
5.6e ... to release jet needle



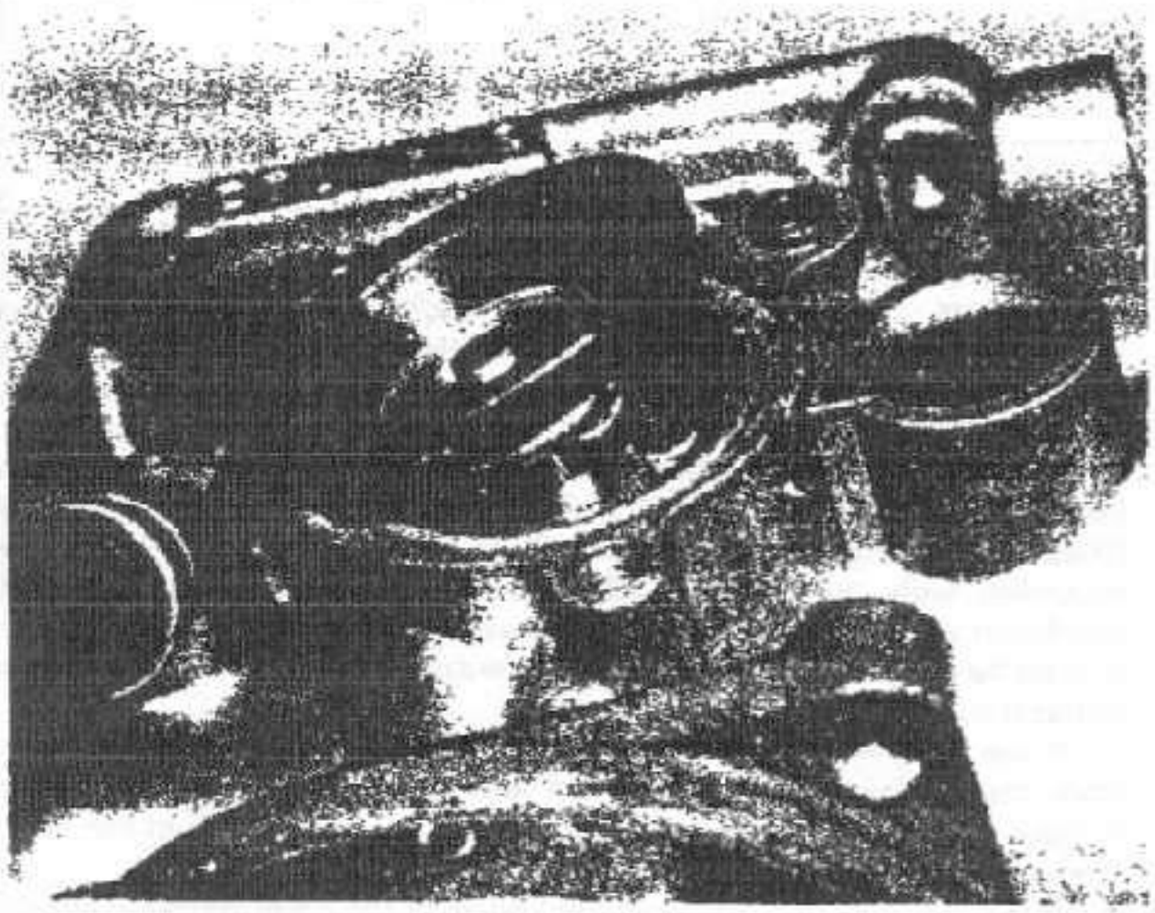
5.6f Remove curved plate and gasket ...



5.6g ... to permit cleaning of air jets



5.8a Note spring behind air cut-off valve cover ...



5.8b ... and lift out valve diaphragm – renew if split or perished

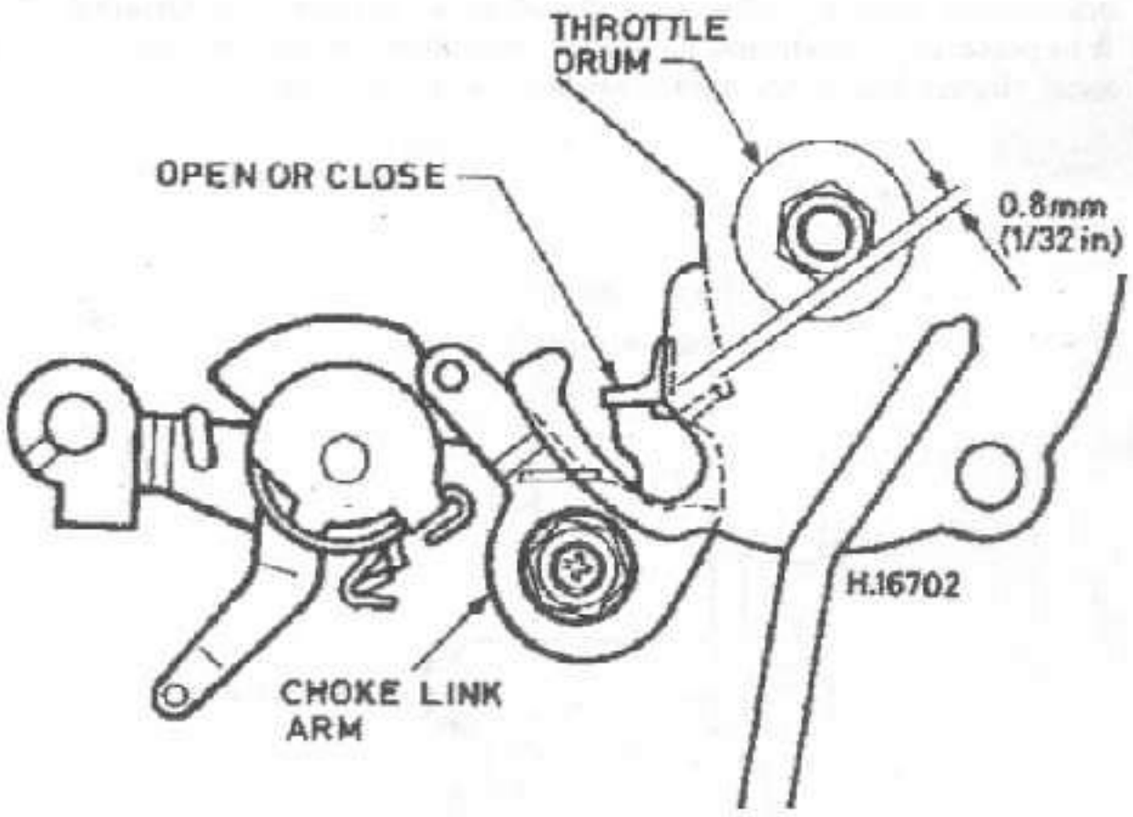


Fig. 3.4 Fast idle adjustment

REGULACJA SSANIA

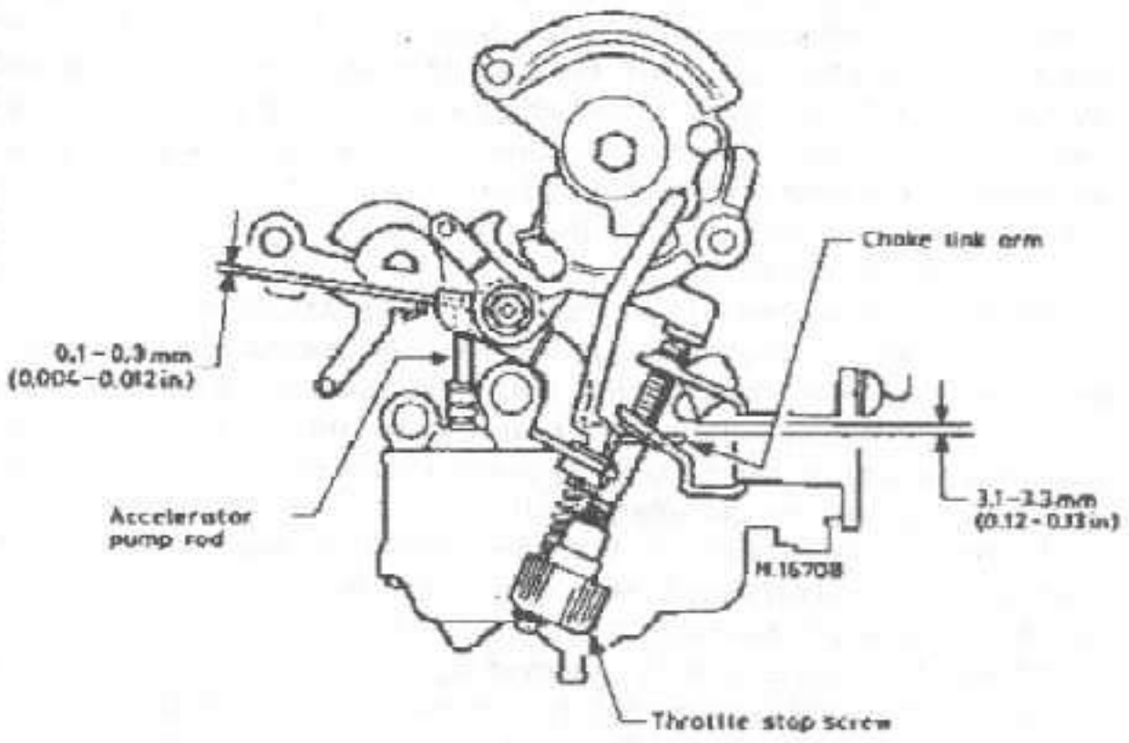


Fig. 3.5 Accelerator pump adjustment

REGULACJA POMPKI PRZYSPIESZAJĄCEJ

6 Carburettor adjustment and exhaust emissions: general note

1 In some countries legal provision is made for controlling the types and levels of toxic emissions from motor vehicles.

2 In the USA exhaust emission legislation is administered by the Environmental Protection Agency (EPA) which has introduced stringent regulations relating to motor vehicles. The Federal law, entitled The Clean Air Act, specifically prohibits the removal (other than temporary) or modification of any component incorporated by the vehicle manufacturer to comply with the requirements of the law. The law extends the prohibition to any tampering which includes the addition of components, use of unsuitable replacement parts or maladjustment of components which allows the exhaust emissions to exceed the prescribed levels. Violations of the provisions of this law may result in penalties of up to $10 000 for each violation. It is strongly recommended that appropriate requirements are determined and understood prior to making any change to or adjustments of components in the fuel, ignition, crankcase breather or exhaust systems.

3 To help ensure compliance with the emission standards some manufacturers have fitted to the relevant systems fixed or pre-set adjustment screws as anti-tamper devices. In most cases this is restricted to plastic or metal limiter caps fitted to the carburettor pilot adjustment screws, which allow normal adjustment only within narrow limits. Occasionally the pilot screw may be recessed and sealed behind a small metal blanking plug, or locked in position with a thread-locking compound, which prevents normal adjustment.

4 It should be understood that none of the various methods of discouraging tampering actually prevents adjustment, nor, in itself, is re adjustment an infringement of the current regulations. Maladjustment, however, which results in the emission levels exceeding those laid down, is a violation. It follows that no adjustments should be made unless the owner feels confident that he can make those adjustments in such a way that the resulting emissions comply with the limits. For all practical purposes a gas analyser will be required to monitor the exhaust gases during adjustment, together with EPA data of the permissible Hydrocarbon and CO levels. Obviously, the home mechanic is unlikely to have access to this type of equipment or the expertise required for its use, and, therefore, it will be necessary to place the machine in the hands of a competent motorcycle dealer who has the equipment and skill to check the exhaust gas content.

5 For those owners who feel competent to carry out correctly the various adjustments, specific information relating to the anti-tamper components fitted to the machines covered in this manual is given in the relevant Sections of this Chapter.

6 Note that if the machine is to be used for extended periods at high altitudes the pilot mixture screw settings will require careful re-adjustment, also if the machine is later returned to lower altitudes. This is to preserve its performance and to minimise exhaust emissions. See a local Honda dealer for details relevant to your model.

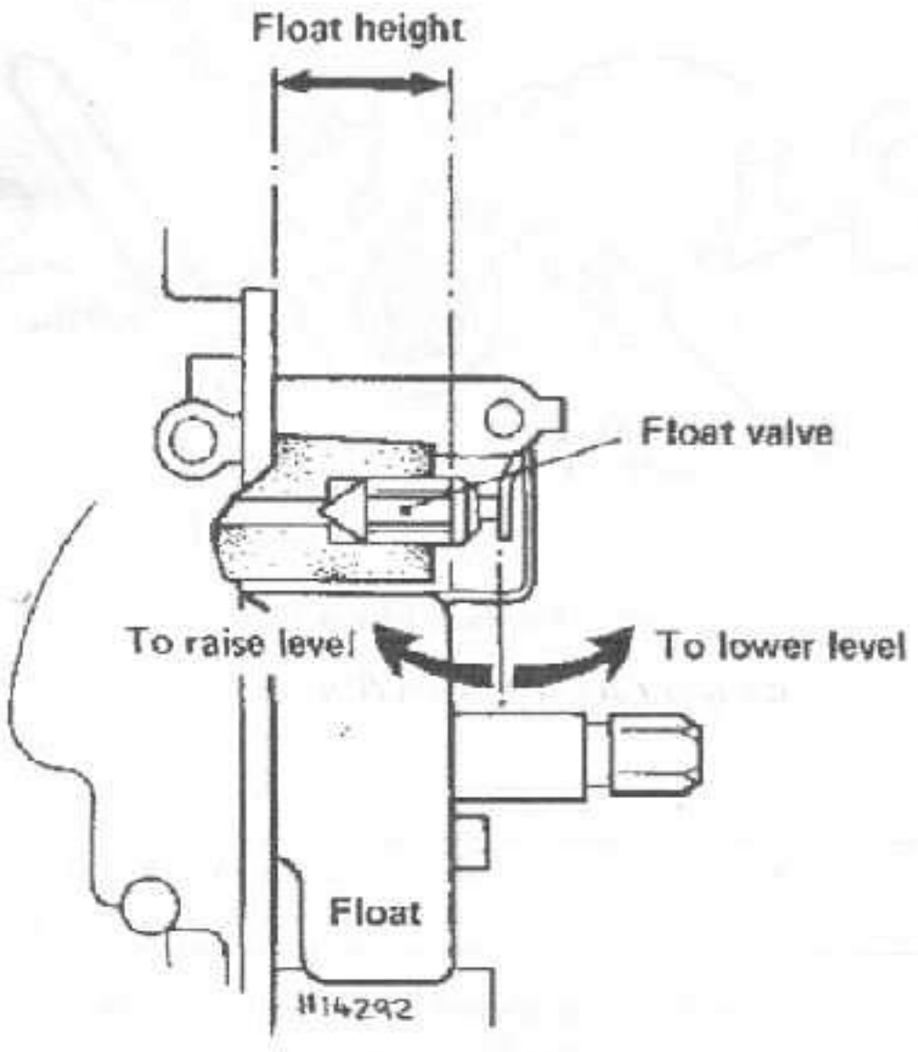


Fig. 3.6 Measuring the float height

POMIAR USTAWIENIA(POZIOMU) PŁYWAKA

7 Carburettors: checking the settings

1 The various jet sizes and needle position are predetermined by the manufacturer and should not require modification. Check with the Specifications list at the beginning of this Chapter if there is any doubt about the types fitted. If a change appears necessary it can often be attributed to a developing engine fault unconnected with the carburettor(s). Although carburettors do wear in service, this process occurs slowly over an extended length of time and hence wear of the carburettor is unlikely to cause sudden or extreme malfunction. If a fault does occur check first other main systems, in which a fault may give similar symptoms, before proceeding with carburettor examination or modification.

2 Where non-standard items, such as exhaust systems, air filters or camshafts have been fitted to a machine, some alterations to carburation may be required. Arriving at the correct settings often requires trial and error, a method which demands skill borne of previous experience. In many cases the manufacturer of the non-standard equipment will be able to advise on correct carburation changes.

3 As a rough guide, up to 1/8 throttle is controlled by the pilot jet, 1/8 to 1/4 by the throttle valve cutaway, 1/4 to 3/4 throttle by the needle position and from 3/4 to full by the size of the main jet. These are only approximate divisions, which are by no means clear cut. There is a certain amount of overlap between the various stages. The above remarks apply only in part to constant depression carburettors which utilise a butterfly valve in place of the throttle valve. The first and fourth stages are controlled in a similar manner. The second stage is controlled by the by-pass valve which is uncovered as soon as the throttle valve (piston) is opened. During the third stage the fuel passing through the main jet is metered by the needle jet working in conjunction with the piston needle (jet needle).

4 If alterations to the carburation must be made, always err on the side of a slightly rich mixture. A weak mixture will cause the engine to overheat which may cause engine seizure. Reference to Routine Maintenance will show how, after some experience has been gained, the condition of the spark plug electrodes can be interpreted as a reliable guide to mixture strength.

8 Carburettors: adjustment

1 If the engine is not running properly, causing you to suspect the carburettors, bear in mind the points made in the previous Section when tracing the cause of the problem. Before touching the carburettors, ensure that the air filter is clean and that there are no leaks in the filter casing, air hoses or in the inlet stubs. Check the valve clearances (see Routine Maintenance) and, if a high mileage has been covered, carry out a compression test to check the engine top end. See Chapter 1. Check that the exhaust is in good condition and securely mounted with no leaks, check that the spark plugs are in good condition and correctly gapped. Although unlikely, the ignition timing should be checked (see Chapter 4) to ensure that the fault is not in the ignition system.

2 If the fault is still thought to be in the carburettors, remove them from the machine, dismantle them and clean them thoroughly. See Section 5. On reassembly check the float level to ensure that the basic mixture setting is correct.

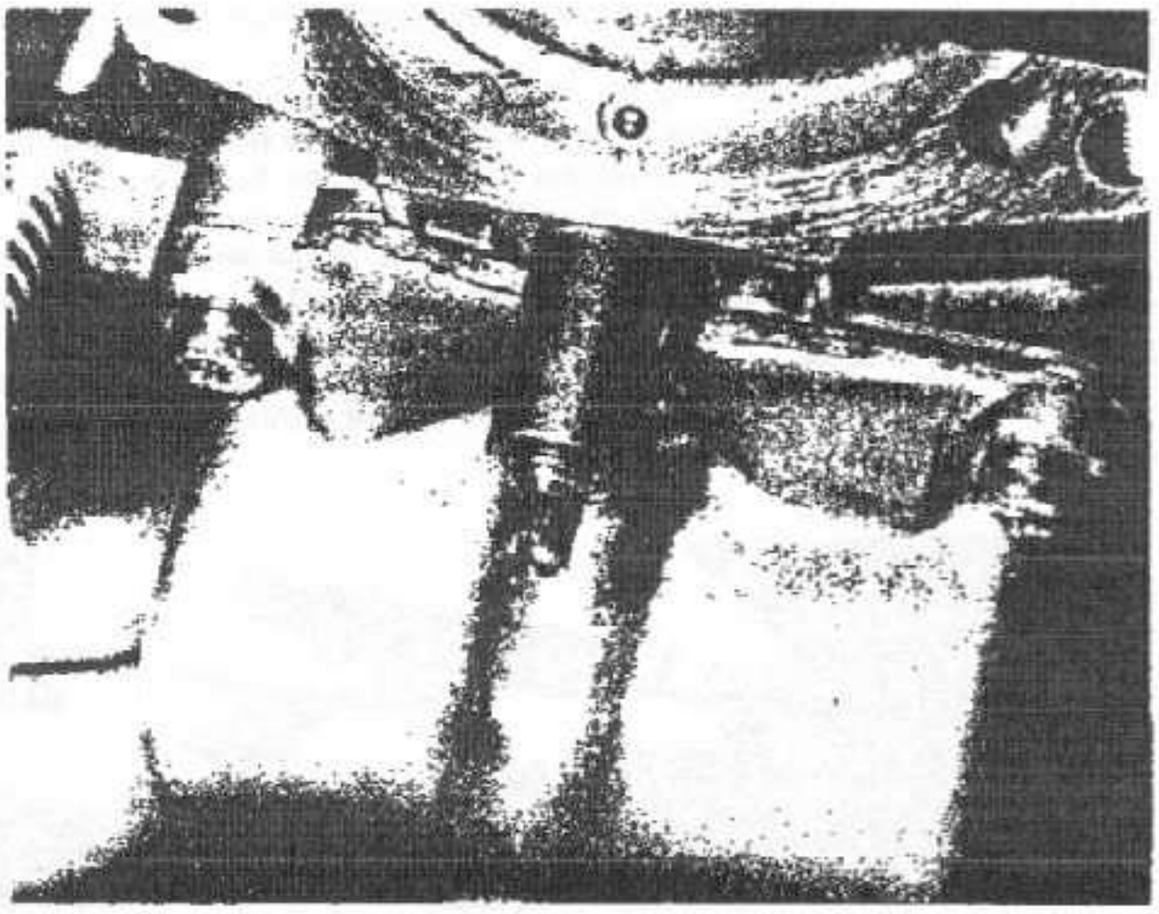
3 The float level can only be checked with the carburettors removed from the machine and the float bowls removed. Hold the carburettors vertically with the air filter end upwards so that the float hangs from its pivot. Tilt the carburettors over to 15 – 45° from the vertical until the float is just resting on the needle so that the valve is just closed, then measure the distance between the raised edge of the float bowl mating surface on the main body and the lower surface of the float. The correct distance is 15.5 mm (0.61 in). On early models, make any adjustment by bending the float tang, which abuts against the float needle. Use a pair of electricians pliers to carry out the somewhat delicate adjustment. On later models with plastic floats, if the level is incorrect the float must be renewed. If this does not cure the fault then the needle must be renewed.

4 When the levels are correct, refit the float bowls. fit the carburettors to the machine, having checked the fast idle setting and accelerator pump setting (where applicable). Start the engine and allow it to warm up fully to normal operating temperature (a ten minute ride, or until the temperature gauge needle is in its normal position). Refer to Routine Maintenance and set the idle speed.

5 If attention is required to the pilot mixture screws, owners of US models from 1980 on should refer to the next Section. UK owners (and owners of early US models) proceed as follows.

6 When the engine is fully warmed up, stop it and screw in each mixture screw until it seats lightly and then unscrew it by the exact number of turns specified. This provides an initial setting which is exactly the same for each instrument and which may be used as a basis for the adjustment procedure. Start the engine and, if necessary,

re-adjust the tick-over speed to the normal setting of 1100 ± 100 rpm.
7 Select one carburettor for attention and turn the pilot screw first in one direction and then the other until the highest possible engine speed is obtained. Only very small movements should be made until an altered effect is noted. Now return the engine to the normal tick-over speed of 1100 ± 100 rpm
8 Repeat this operation on the second carburettor and then readjust the tick-over. Carburettor adjustment is now complete, unless synchronisation is required. See Section 10.



8.6 Set pilot mixture screws carefully as described in text

9 Pilot mixture screw: adjustment – all US models from 1980 on

1 To meet EPA emission control regulations the pilot screw setting is preset at the factory and a limiter cap is fitted over the head of the screw to restrict adjustment to 7/8 of a turn. Any attempt to remove the limiter cap will inevitably break the pilot screw. The limiter cap is so designed that it cannot be turned to richen the mixture whilst the float bowl is attached. This is because the ear of the cap abuts against a lug cast in the float bowl. If it becomes necessary to remove the pilot screw for renewal or cleaning purposes access can be made as follows.
2 Remove the three screws and spring washers from the base of the float bowl and lift the bowl away. Screw the pilot screw in until it lightly touches its seat, counting the number of turns taken. The pilot screw can then be removed and examined for wear in the normal way.
3 When reassembling, screw the pilot screw in fully until it seats lightly and screw it out to the number of turns noted during dismantling.
4 In the event of a new pilot screw being fitted, set the screw position to the figure given in the specifications at the beginning of this Chapter. All new pilot screws should be fitted with limiter caps which are cemented to the screw head with Loctite 601 or an equivalent. See paragraph 8 below.
5 Start the engine and allow it to reach its normal operating temperature (take the machine on a journey of at least 10 minutes duration). By turning the throttle stop screw adjust the engine idle speed to 1100 ± 100 rpm.
6 Select one carburettor for attention and turn the pilot screw first in one direction and then the other until the highest possible engine speed is obtained. Using the throttle stop screw return the engine to the normal tick-over speed of 1100 ± 100 rpm. Screw in the pilot screw slowly until the speed is reduced by 100 rpm. If it is found that the pilot screw seats before the drop of 100 rpm is reached turn the screw out exactly 1 turn and then readjust the tick-over to the normal speed.
7 Repeat this operation on the second carburettor and then readjust the tick-over.
8 When the final setting has been reached, if a new limiter cap is to be fitted it must be positioned so that the pilot screw cannot be turned any further anti-clockwise to richen the mixture, ie with the cap ear bearing against the float bowl on that side. Glue the cap in place, being careful not to disturb the screw setting.

10 Carburettors: synchronisation

1 For the best possible performance it is imperative that the carburettors are working in perfect harmony with each other. If the carburettors are not synchronised, not only will one cylinder be doing less work, at any given throttle opening, but it will also in effect have to be carried by the other cylinder. This will reduce performance accordingly.
2 For synchronisation, it is essential to use a vacuum gauge set consisting of two separate gauges, one of which is connected to each carburettor by means of a special adaptor tube. The adaptor pipe screws into the outside lower end of each inlet stub, the orifice of which is normally blocked off by a crosshead screw plug. Most owners are unlikely to possess the necessary vacuum gauge set, which is somewhat expensive and is normally held by Honda service agents who will carry out the synchronisation operation for a nominal sum.
3 If the vacuum set is available to the owner, the adjustment necessary for synchronisation should be made as follows. First check all other systems and ensure that the carburettors are correctly adjusted, or it will be impossible to get the full benefit of the operation. Remove the blanking plugs from the inlet stubs and fit the adaptor pieces. Connect the gauge hoses to the adaptors.
4 Start the engine and allow it to reach normal working temperature before adjusting the tick-over to 1100 ± 100 rpm. Compare the readings of the two gauges. If the difference exceeds 4 cm Hg (1.6 in Hg) the carburettors require synchronisation. However, this is an extremely generous tolerance and in practice one should not be satisfied until both gauges produce exactly the same reading; this is by no means as difficult as it would appear to be.
5 Adjustment is effected by turning the screw that passes into the throttle link arm; this should be easily identified by the dab of white or yellow paint. Depending on the tools available it may be easier to remove the fuel tank to gain access to the screw. Either arrange a separate fuel supply or remove and refit the tank as often as necessary to refill the carburettors while adjustment is made. On models with vacuum taps, do not forget to plug the end of the vacuum pipe before attempting to run the engine with the fuel tank removed.
6 When making adjustments, do not press down on the adjusting screw while rotating it, hold the screw in exactly the same position while fastening the locknut and do not overtighten the locknut. Open and close the throttle quickly to settle the linkage after each adjustment is made, wait for the gauge reading to stabilise and note the effect of the adjustment before proceeding.
7 When the carburettors are correctly synchronised, stop the engine, disconnect the gauges and refit all disturbed components.

11 Air filter: general

The care and maintenance of the air filter element is described in Routine Maintenance. Never run the engine with the air filter disconnected or the element removed. Apart from the risk of increased engine wear due to unfiltered air being allowed to enter, the carburettors are jetted to compensate for the presence of the filter and a dangerously weak mixture will result if the filter is omitted.

12 Crankcase breather pipe: modifications – CX500-A model

1 A modified crankcase breather system has been introduced on the 1980 CX500-A. This modification affects models with engine numbers 2200013 to 2209731.
2 It was found that when the engine speed was increased above 7000 rpm, excess oil was being blown out of the breather tubes fixed to each cylinder head and accumulating in the air filter box. To rectify this, Honda have introduced a new crankcase breather system, whereby the timing inspection plug doubles as an engine breather.

3 In the event of the modified assembly not being fitted, the following parts can be obtained from an authorized Honda dealer.

Cylinder head plug (2 off) – 90547-415-305
Timing inspection/breather plug – 12361-415-610
O-ring – 91302-001-000
Breather tube – 95005-12460-20

4 Dismantle the previous breather assembly. Use the two plugs contained in the kit to blank off the cylinder head nozzles and secure with the wire clips used to retain the previous pipes. Fit the new inspection plug to the timing hole and run the breather pipe from the top of the plug to the pipe joint at the base of the air filter box.

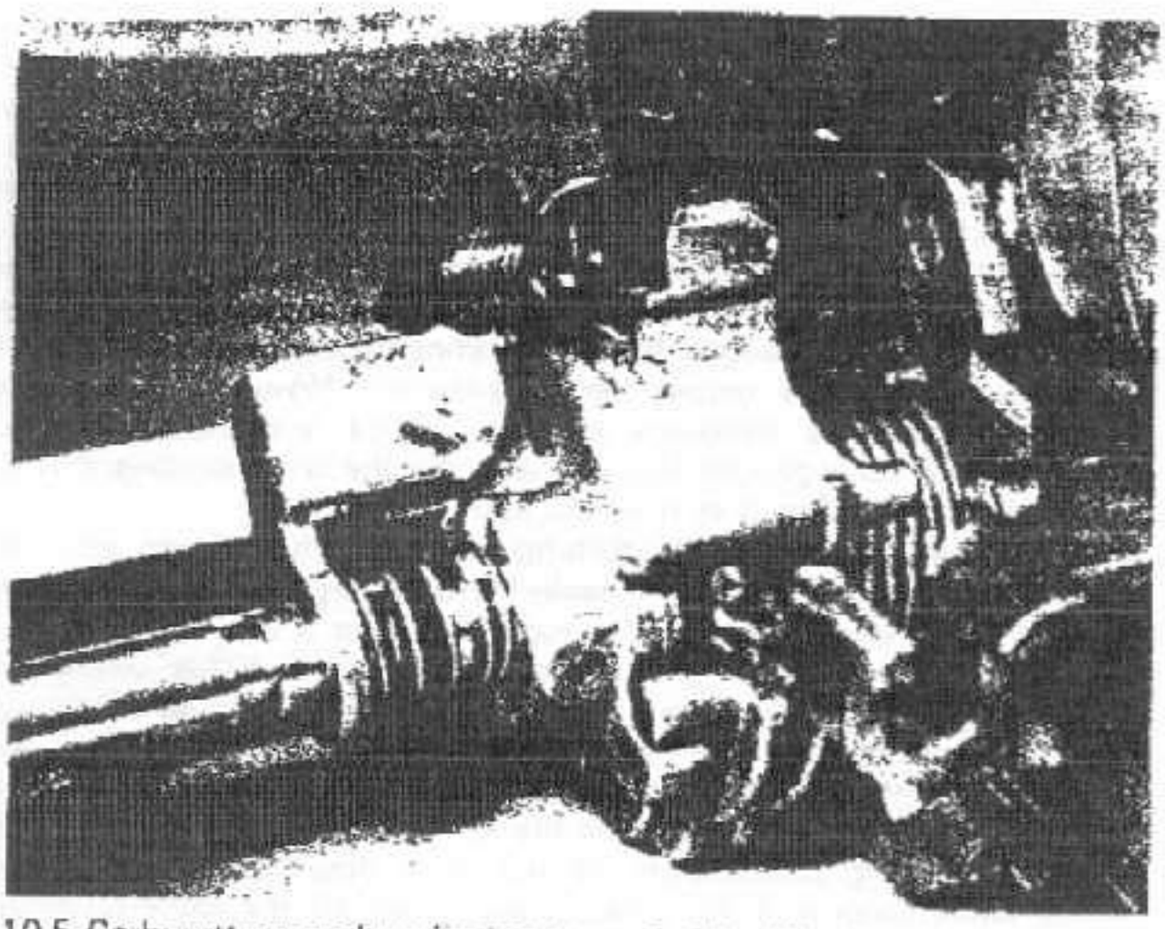
13 Exhaust system: removal and refitting

1 Unlike the two stroke engine, the exhaust gases of a four-stroke engine are usually not of an oily nature. The silencers are therefore not fitted with detachable baffles. If any fault develops in the silencer the complete unit should be renewed.

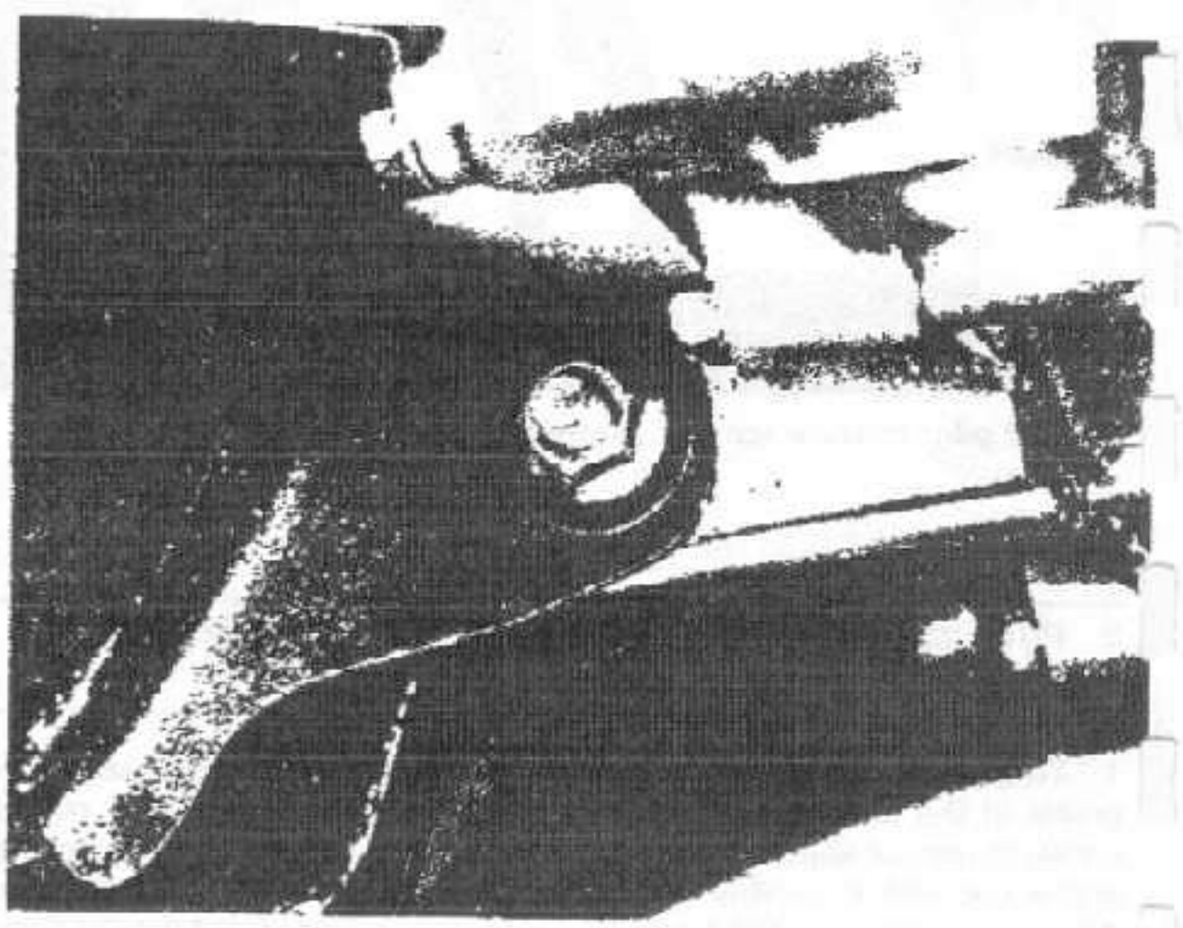
2 Removal of the exhaust system may be carried out as follows: slacken off the silencer and exhaust pipe clamp screws at the balance box joints. Loosen the screws as much as possible as the clamps are rounded over at the front edge to help secure the pipe ends. Each silencer may be removed individually after detaching the single support bolt which also secures the pillion footrest. Remove the two nuts that hold each exhaust pipe flange to the cylinder head and pull the flanges off the studs. Each exhaust pipe may be eased forward separately so that the pipe ends leave the exhaust port and balance box.

3 The balance box is supported by a single central bolt which passes through a bracket on the top of the box and a forked projection integral with the engine casing. Slacken the single bolt and then lift the box to the rear so it clears the fork. The box may now be lifted out from either side.

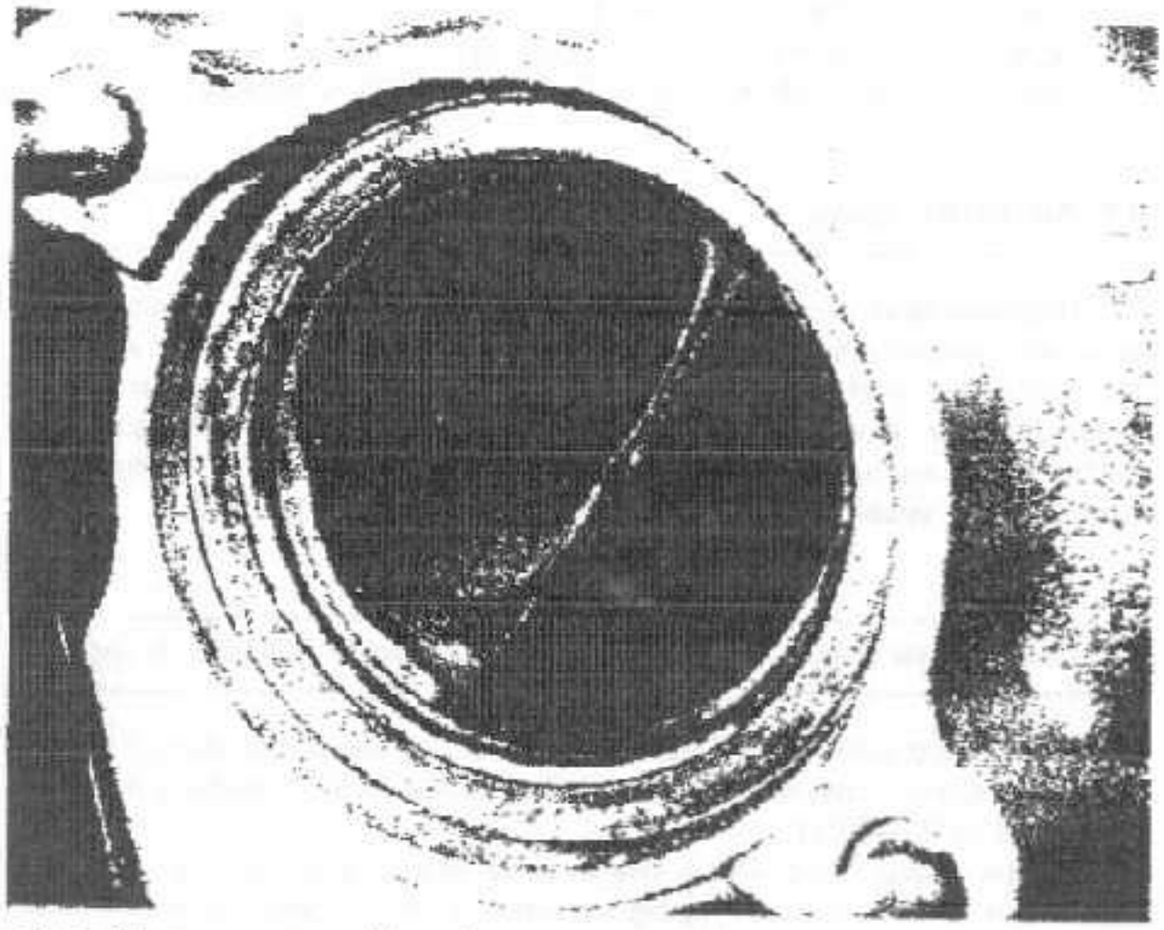
4 The exhaust system may be replaced by reversing the dismantling procedure. Fit a new gasket to each exhaust port to prevent leaks. The silencer and exhaust pipe junctions at the balance box are sealed by special sleeves. These should be renewed if leakage has occurred or if their condition is suspect. Do not tighten any of the securing bolts or nuts until the complete system has been assembled, then tighten them to their specified torque settings in sequence from the front of the machine. This method of assembly will prevent stresses being placed on the components which might cause fracture during service.



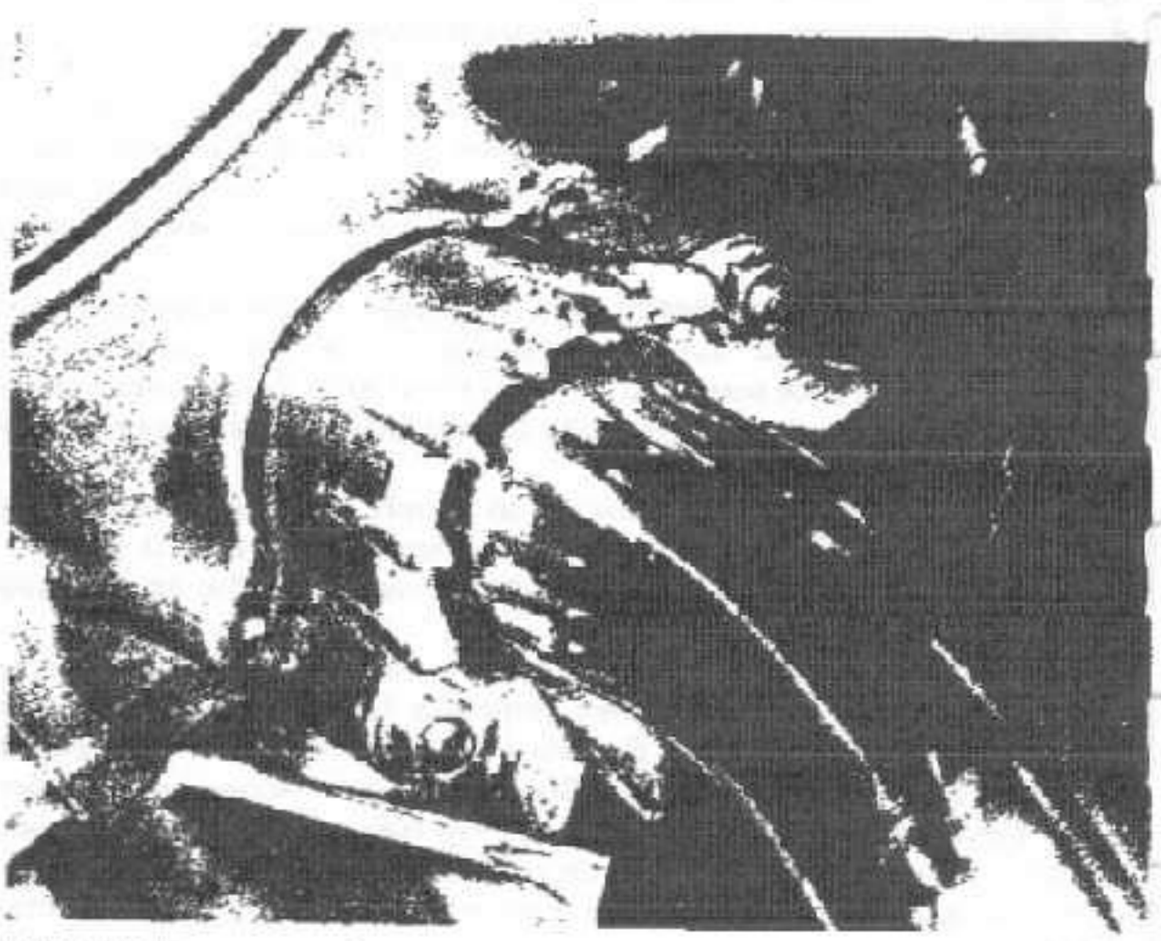
10.5 Carburettor synchronisation screw is identified by dab of paint



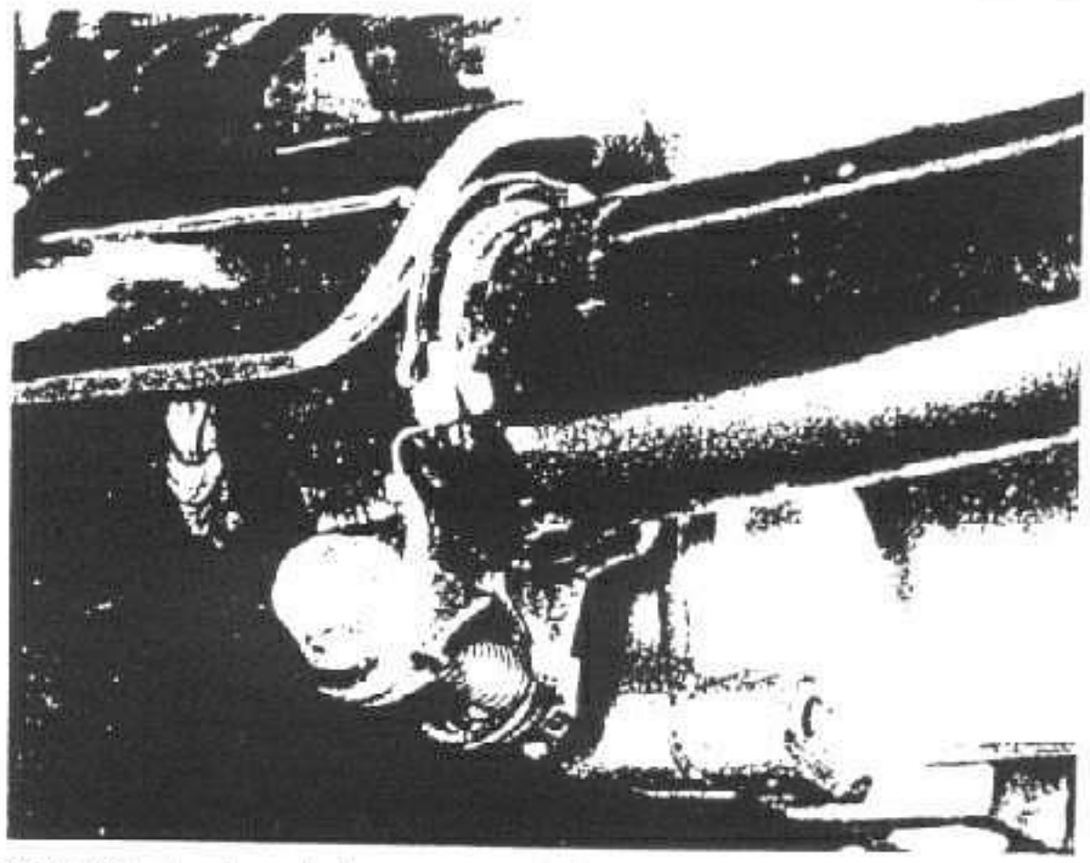
13.3 Exhaust balance box is mounted on engine by a single bolt



13.4a Always renew all gaskets on reassembly to prevent exhaust leaks



13.4b Tighten mountings to specified torque settings working from front to rear



13.4c Check clamp bolts are securely fastened and gaskets intact

14 Engine lubrication system: general

1 Refer to Routine Maintenance for details of crankcase breather cleaning, changing the engine oil and checking its level, changing the filter element and cleaning the oil pump pick-up filter gauze and the filter bypass valve.

2 Refer to Chapter 1 for information on oil pump and pressure relief valve removal and refitting.

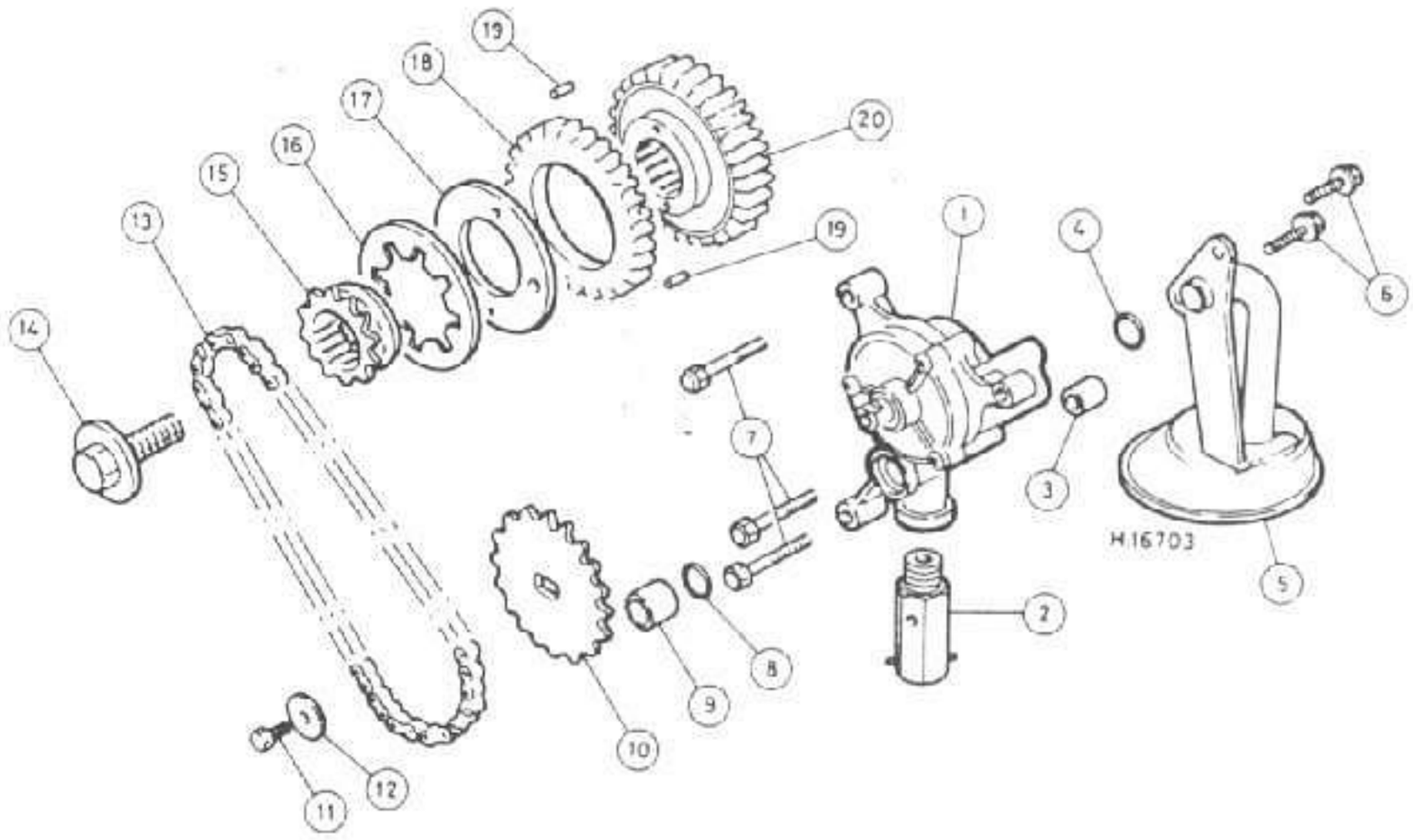
3 The oil pressure warning lamp circuit is checked as described in Chapter 7.

15 Oil pump: examination and renovation

1 After removal of the oil pump from the crankcase it should be dismantled as follows: detach the pick-up funnel/strainer unit after removing the two securing bolts. Note the O-ring, this should be discarded and a new item fitted on reassembly. Unscrew the bolt from the pump shaft and lift off the driven sprocket. Mark the outer face of the sprocket so that it may be refitted in the same position. Unscrew the pressure relief valve from the pump body, this unit should be put to one side for further dismantling. Remove the three screws which pass into the pump body and hold the end cover in place. Carefully ease the cover off the pump and then remove the end-float shim, pump shaft and drive pin. Before removing the pump rotors, check that the outer surface of the outer rotor has a small punch mark on it to aid identification. If no mark is evident, one should be made using a spot of paint. On reassembly the rotor must be fitted with the mark outermost again. Displace the two rotors.

2 Clean all the components thoroughly in petrol and allow them to dry. Check the pump castings for cracking or fracture and inspect the inner wall surface of the housing for scoring. Similarly, inspect the outer surface of the rotors. Using a feeler gauge, check the tip-to-tip clearance of the two rotors and the pump body/outer rotor clearance. If the clearances are greater than those given in the Specifications at the beginning of this Chapter, or if damage is evident, the complete pump unit must be renewed. The component parts of the oil pump proper are not available as individual spare parts. It should be noted that scoring of the rotors is only likely to occur as a result of the ingress of grit or metallic particles.

3 Reassemble the pump components in absolutely clean conditions, even a small particle of grit or metal may score the rotor or housing. Remember to fit the outer rotor in its original position. Lubricate the



1 Oil pump
2 Pressure relief valve
3 Dowel
4 O ring
5 Oil strainer
6 Bolt
7 Bolt
8 O-ring
9 Dowel
10 Pump driven sprocket
11 Bolt
12 Washer
13 Drive chain
14 Bolt
15 Pump drive sprocket
16 Spring plate
17 Side plate
18 Anti backlash pinion
19 Pin
20 Primary drive pinion

Fig. 3.7 Oil pump and primary drive gear - 500 models

POMPA OLEJU I JEJ NAPĘD. - MODELE 500

1 Oil pump
2 Bolt
3 Dowel
4 O ring
5 Oil strainer body
6 Oil strainer
7 Bolt
8 Pressure relief valve
9 O-ring
10 Dowel
11 Pump driven sprocket
12 Bolt
13 Washer
14 Drive chain
15 Bolt
16 Pump drive gear
17 Primary drive pinion

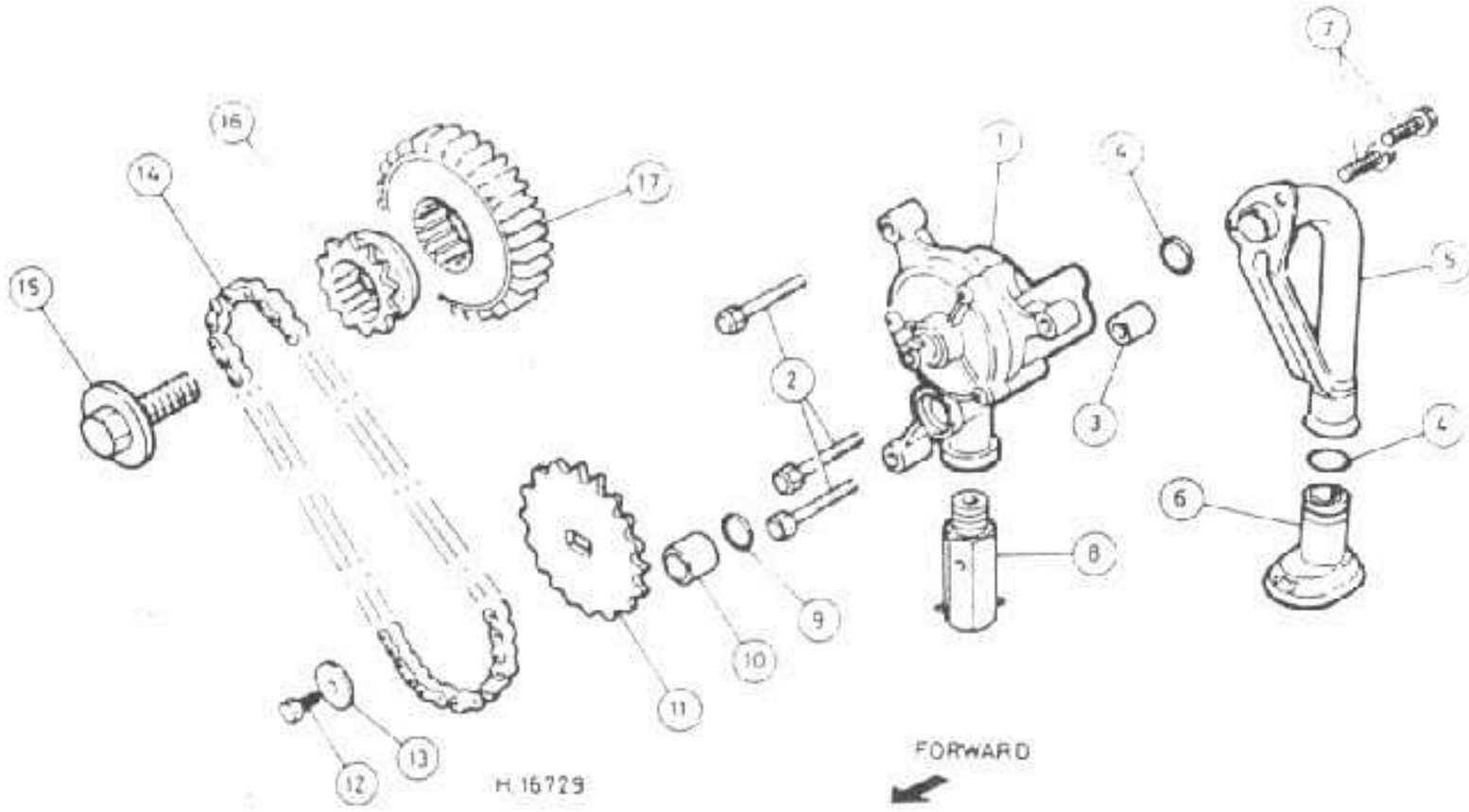


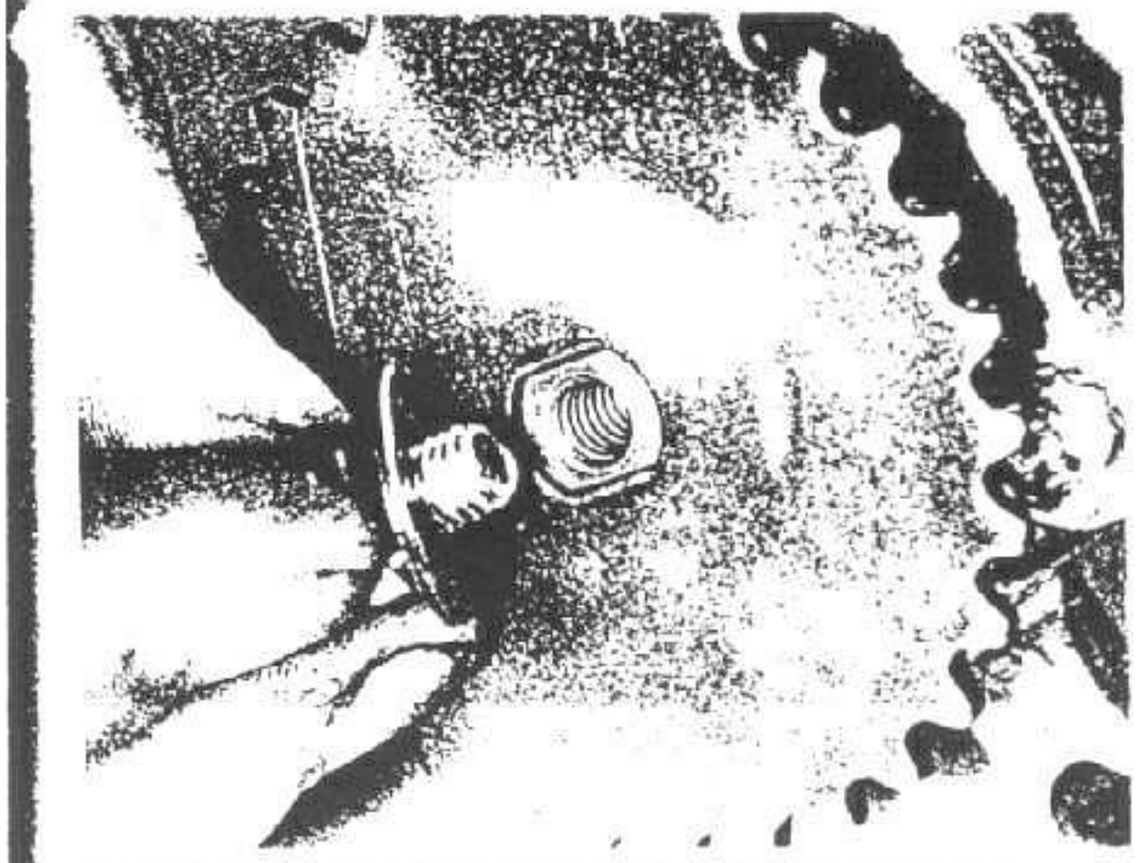
Fig. 3.8 Oil pump and primary drive gear - 650 models

POMPA OLEJU I-JEJ NAPĘD - MODELE 650

rotors thoroughly before fitting the cover and check that the pump shaft turns freely when the screws have been tightened. Final tightening of the relief valve and the sprocket bolt may be carried out after the pump has been installed in the casing.

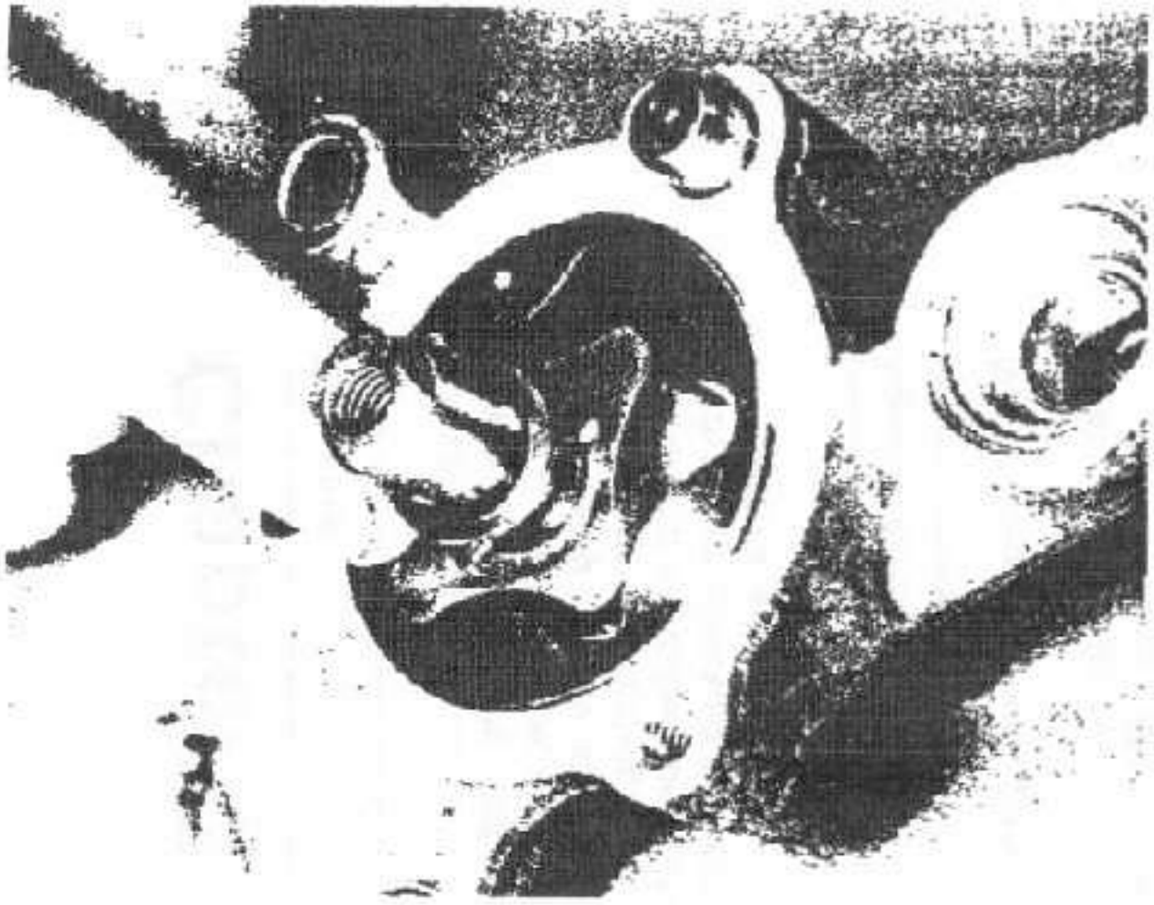
16 Oil pressure relief valve: examination and renovation

The pressure relief valve may be dismantled for inspection and cleaning. Place the valve in the soft jaws of a vice with the threaded portion downwards. The valve plunger is under tension from a spring and spring cap which are retained under load by a radially placed roll pin. Drive the pin out using a suitable drift. Before withdrawing the drift, depress the spring cap using a small screwdriver so that it and the spring are not ejected into the darkest recesses of the workshop. After removing the drift, slowly release the spring cap and spring and invert the valve body so that the valve plunger falls out. If the plunger has become stuck, it may be pushed out using a suitable rod inserted from the threaded end. If the valve plunger or the spring have become damaged, the complete valve unit should be renewed. Carefully clean all components before reassembly.

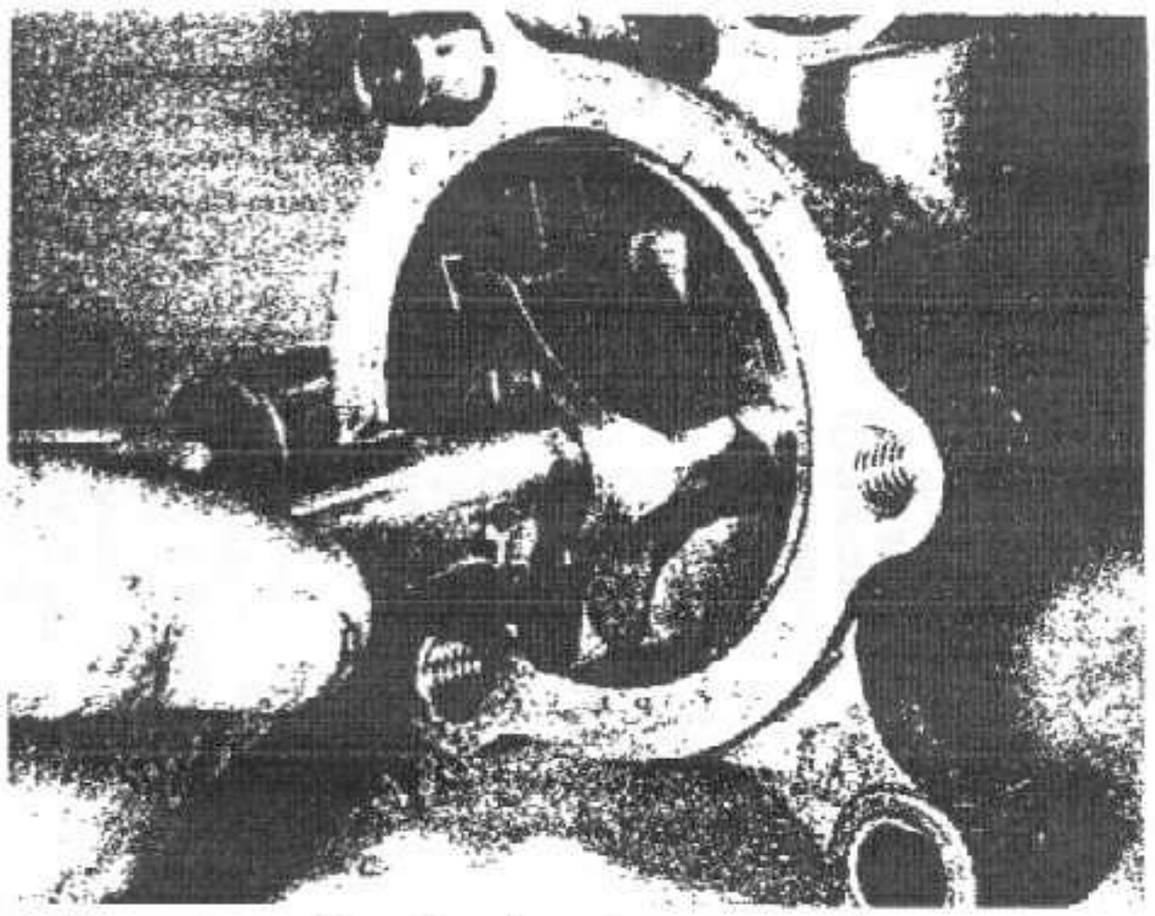


15.1a Mark sprocket outer face before removing retaining bolt

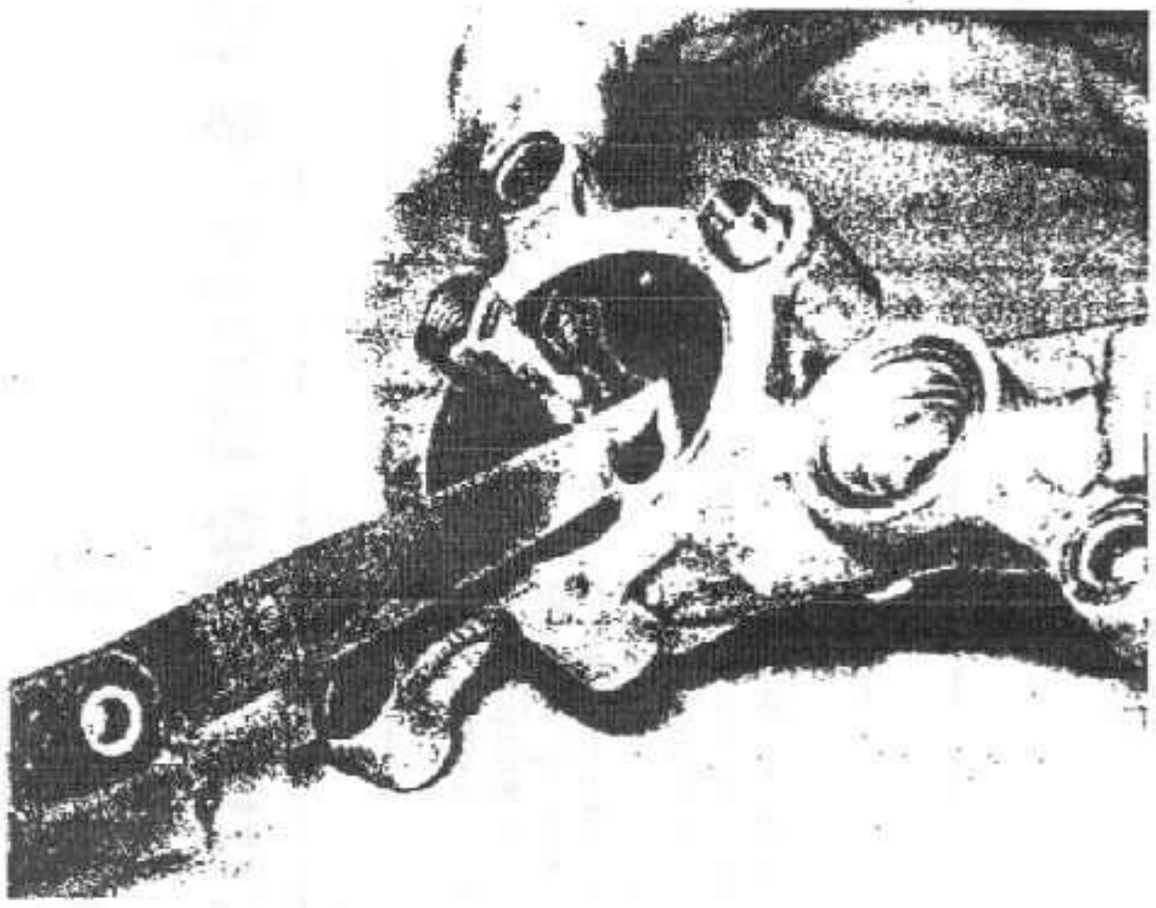
15.1b Pump cover is retained by three screws - check for rotor face identification marks before removing them



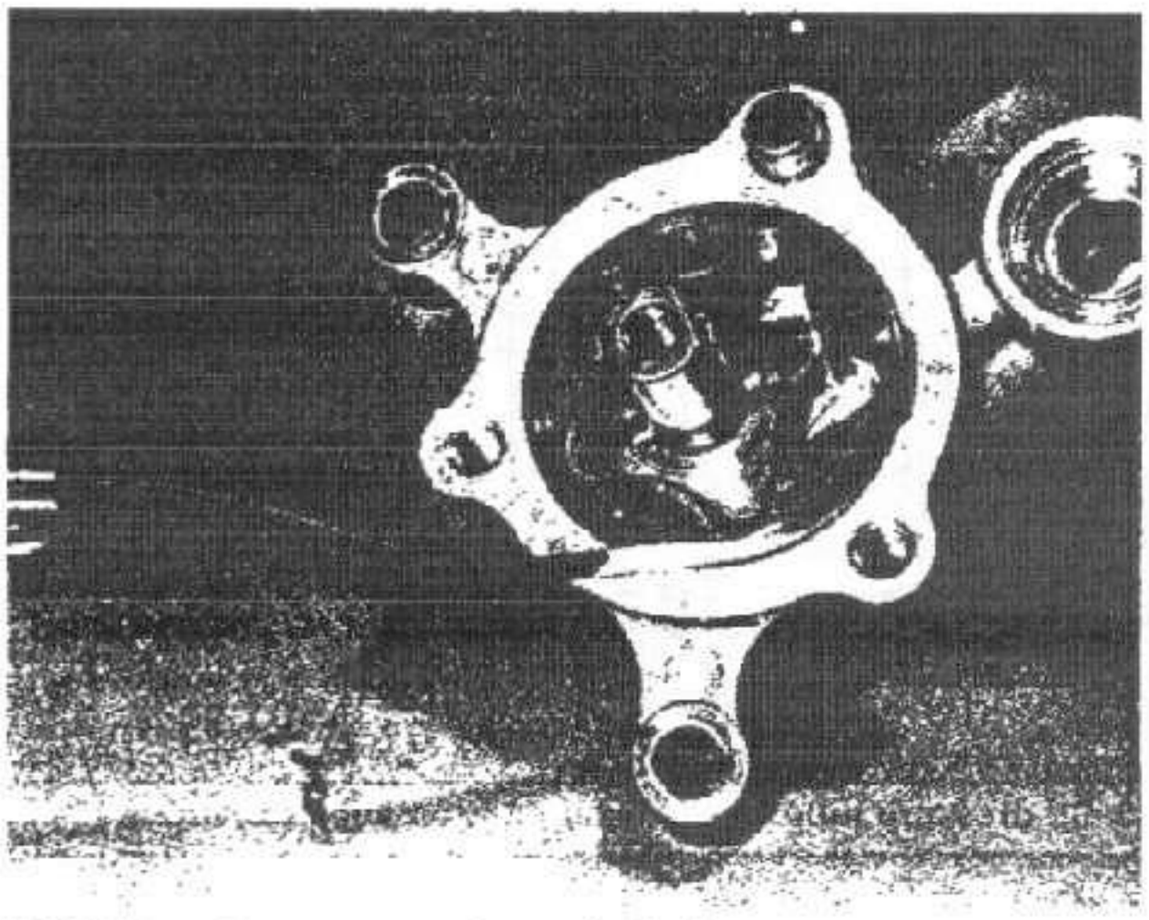
15.1c Note shim on pump driveshaft ...



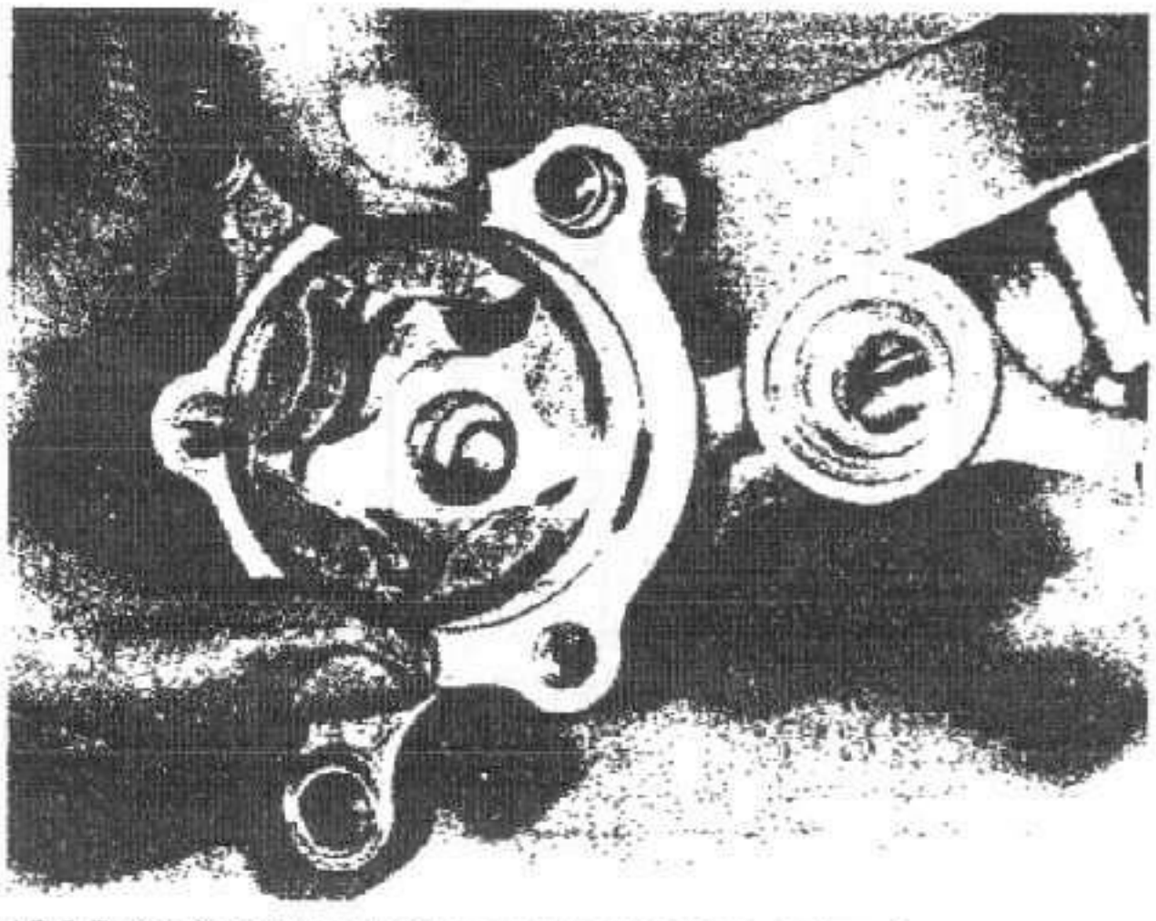
15.1d ... and rotor drive pin – do not lose



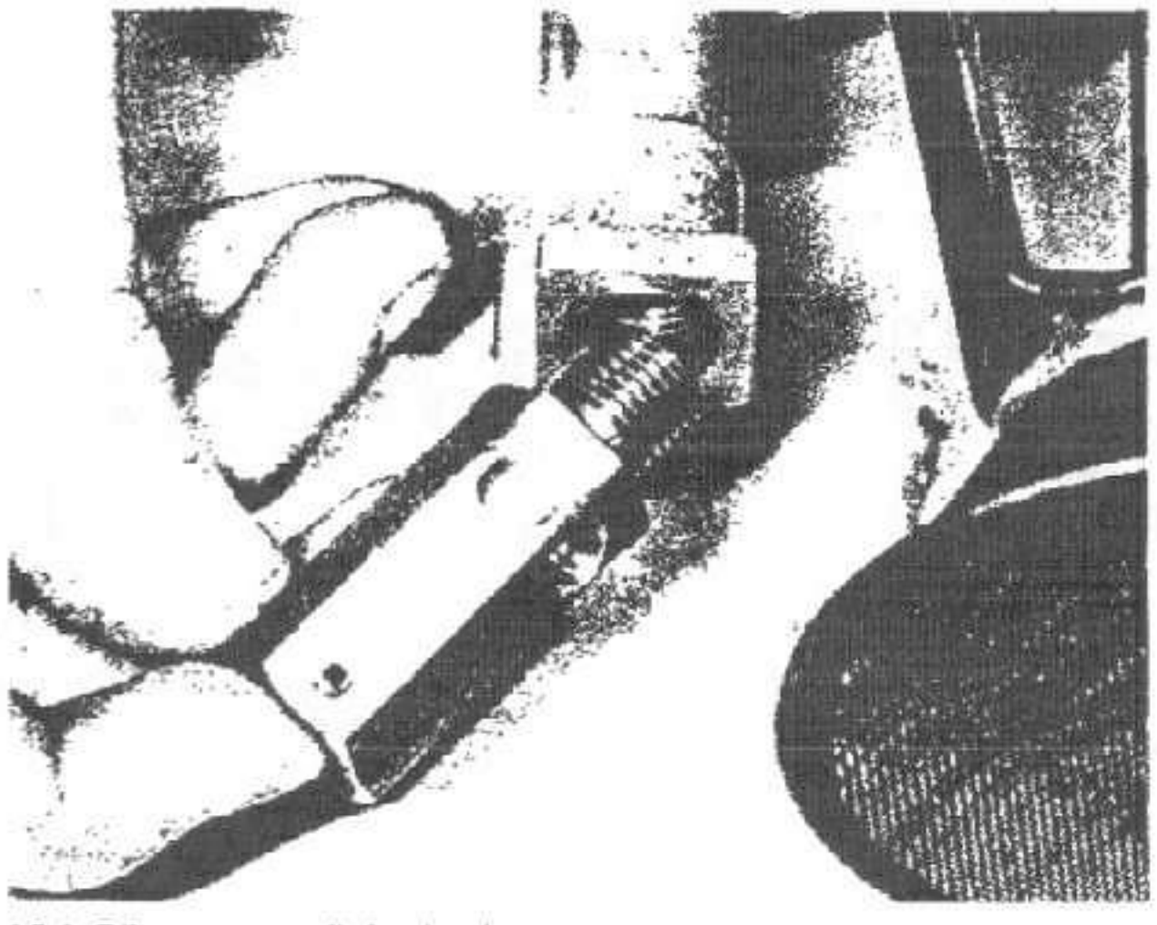
15.2a Measuring inner rotor/outer rotor clearance



15.2b Measuring outer rotor/pump body clearance



15.3 Rotor face identification marks must face outwards on reassembly



16.1 Oil pressure relief valve is screwed into pump body.

Pulser coil – transistorised system	
Pulser coil/ATU rotor air gap	0.45 – 0.65 mm (0.018 – 0.026 in)

Spark plugs – standard recommendation	NGK	ND
All UK 500 models, CX500 C 1982, GL500 and GL500 I 1982	DR8ES-L	X24ESR-U
All other US 500 models	D8EA	X24ES-U
All 650 models	DPR8EA-9	X24EPR-U9

Spark plug gap	
500 models	0.6 – 0.7 mm (0.024 – 0.028 in)
650 models	0.8 – 0.9 mm (0.032 – 0.035 in)

1 General description

Early models are fitted with a full electronic ignition system of the CDI type in which two fixed pulser coils mounted on the inside of the engine rear cover are triggered by a small magnetic pick-up on the periphery of the alternator rotor; a source coil in the alternator stator provides power for the system. A CDI unit and two HT coils are the only external components of the system. The spark is advanced at higher engine speeds by a separate circuit controlled by two advance pulser coils which are triggered by a small rotor mounted on the rear end of the alternator rotor centre; these two coils are mounted on a stator plate, in a housing on the outside of the engine rear cover.

Later models are fitted with a fully-transistorised electronic ignition system in which two pulser or pick-up coils are mounted on a stator plate, in a housing on the outside of the engine rear cover, and are triggered by a raised tooth on the cam of a mechanical automatic timing unit (ATU) which is mounted on the rear end of the alternator rotor centre. The trigger pulse generated as the ATU tooth passes each coil's steel core signals a separate spark unit for each cylinder. The

Fig. 4.1 CDI ignition system circuit

SCHEMAT OBWODU ZAPŁONU CDI

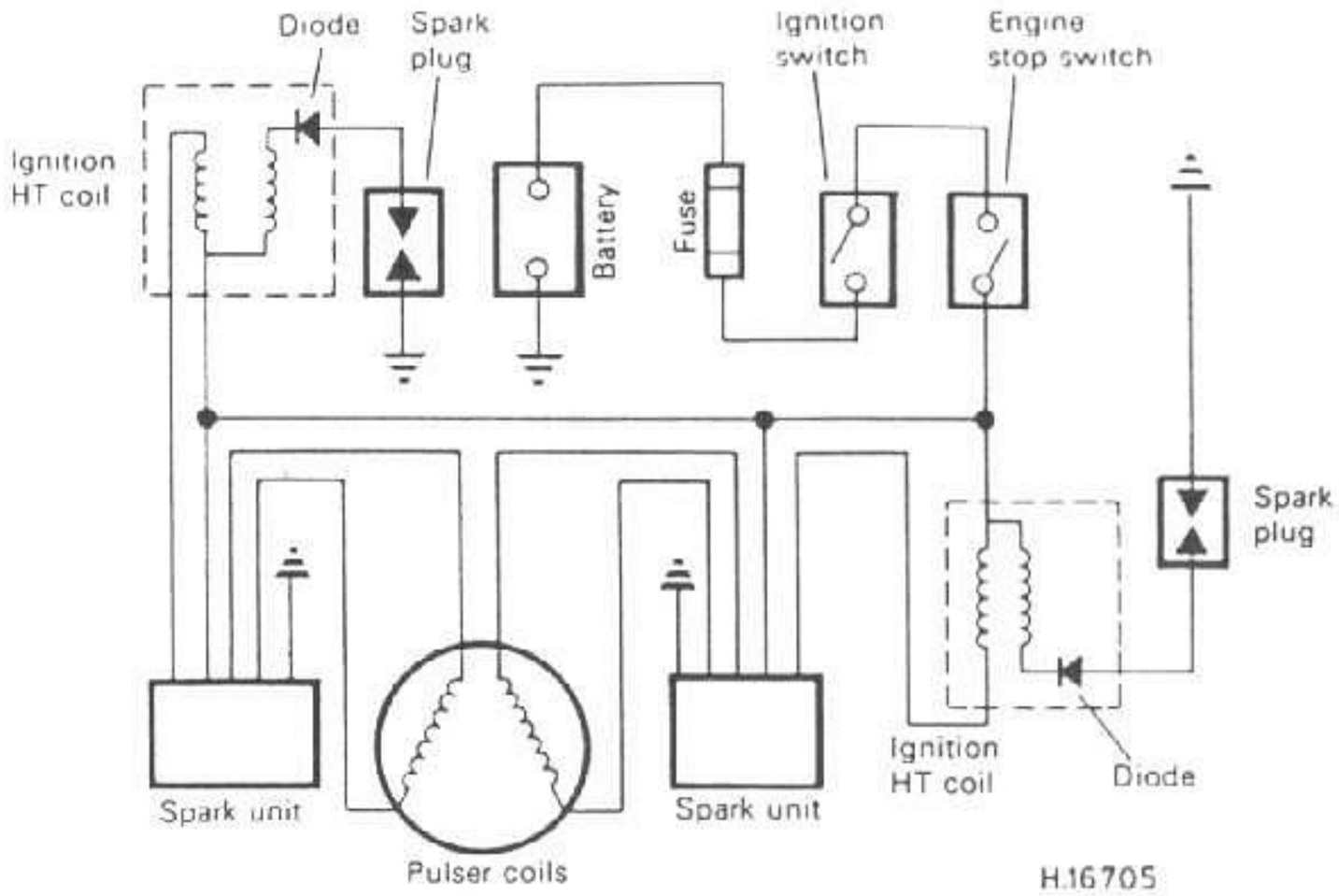


Fig. 4.2 Transistorised ignition system circuit

SCHEMAT OBWODU ZAPŁONU TRANZYSTOROWEGO.

spark units amplify the signal to activate the ignition HT coils. The components are completely separate for each cylinder.

Neither system requires any maintenance except for the spark plugs. See Routine Maintenance.

2 Ignition system: fault diagnosis

1 As no means of adjustment is available, any failure of the system can be traced to the failure of a system component or a simple wiring fault. Of the two possibilities, the latter is by far the most likely. In the event of failure, check the system in a logical fashion, as described below.

2 Remove the spark plugs giving them a quick visual check noting any obvious signs of flooding or oiling. Fit the plugs into the plug caps and rest them on the cylinder head so that the metal body of each plug is in good contact with the cylinder head metal. The electrode end of the plugs should be positioned so that sparking can be checked as the engine is spun over.

3 *Important note.* The energy levels in electronic systems can be very high. **On no account** should the ignition be switched on whilst the plugs or plug caps are being held. Shocks from the HT circuit can be most unpleasant. Secondly, it is vital that the plugs are soundly earthed when the system is checked for sparking. The system components can be **seriously damaged** if the HT circuit becomes isolated.

4 Having observed the above precautions, check that the kill switch is in the 'Run' position, turn the ignition switch to 'On' and turn the engine over. If the system is in good condition a regular, fat blue spark should be evident at the plug electrodes. If the spark appears thin or yellowish, or is non-existent, further investigation will be necessary, but first check the plugs by substituting new ones. Before proceeding further, turn the ignition off and remove the key as a safety measure.

5 Ignition faults can be divided into two categories, namely those where the ignition system has failed completely, and those which are due to a partial failure. The likely faults are listed below, starting with the most probable source of failure. Work through the list systematically, referring to the subsequent sections for full details of the necessary checks and tests. For models with transistorised ignition, refer to Section 3.

Total or partial ignition system failure:

a) Loose, corroded or damaged wiring connections, broken or shorted wiring between any of the component parts of the ignition system
b) Faulty main switch or engine kill switch
c) Faulty ignition HT coil
d) Faulty CDI unit or spark unit
e) Faulty generator source coil (CDI system only)
f) Faulty pulser coil

3 Transistorised ignition system: preliminary test

1 On later models a simple test can be used to check the system, but its usefulness is mitigated by the amount of preliminary dismantling required, and by the fact that it merely duplicates the much quicker test outlined in the previous Section.

2 Referring to the instructions given elsewhere in this Manual, remove the rear wheel and swinging arm. On some models it may also be necessary to remove the air filter casing and the inner rear mudguard. Remove the pulser cover.

3 Remove both spark plugs, connect each to its cap and place it so that each plug's metal body is firmly in contact with a good engine earth point. Check that the engine kill switch is in the 'Run' position and switch on the ignition.

4 Touch the blade of a screwdriver to each coil's steel core in turn; a healthy spark should appear at the respective spark plug's electrodes.

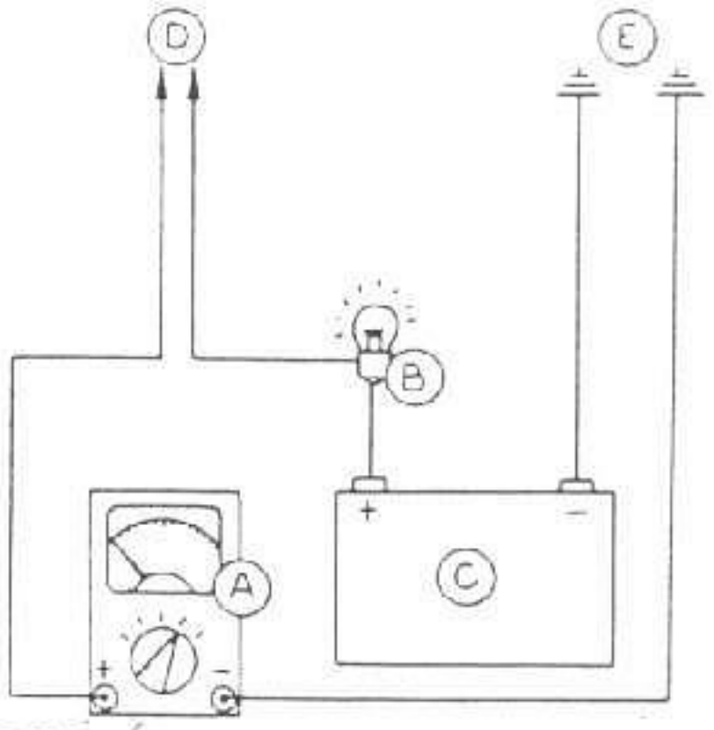
5 If sparks did not occur when carrying out the test as described in the previous Section, but do occur when carrying out this test, the fault can only be in the ATU, although there is a slight possibility of a wiring fault which should be checked as described later in this Chapter.

4 Checking the wiring

1 The wiring should be checked visually, noting any signs of corrosion around the various terminals and connectors. If the fault has developed in wet conditions it follows that water may have entered any of the connectors or switches, causing a short circuit. A temporary cure can be effected by spraying the relevant area with one of the proprietary de-watering aerosols such as WD40 or similar. A more permanent solution is to dismantle the switch or connector and coat the exposed parts with silicone grease to prevent the ingress of water. The exposed backs of connectors can be sealed off using a silicone rubber sealant.

2 Light corrosion can normally be cured by scraping or sanding the affected area, though in serious cases it may prove necessary to renew the switch or connector affected. Check the wiring for chafing or breakage, particularly where it passes close to part of the frame or its fittings. As a temporary measure damaged insulation can be repaired with PVC tape, but the wire concerned should be renewed at the earliest opportunity.

3 Using the wiring diagram at the end of the manual, check each wire for breakage or short circuits using a multimeter set on the resistance scale or a dry battery and bulb wired as shown in the accompanying illustration. In each case, there should be continuity between the ends of each wire.



PROSTY OBWÓD DO TESTOWANIA INSTALACJI

Fig. 4.3 Simple testing arrangement for checking the wiring

A Multimeter
B Bulb
C Battery
D Positive probe
E Negative probe

5 Ignition and engine kill switches: testing

CDI ignition

1 The ignition system is controlled by the ignition switch or main switch which is bolted to the fork top yoke. The switch has several terminals and leads, of which two are involved in controlling the ignition system. These are the 'IG' terminal (black /white lead) and the 'E' terminal (green lead). The two terminals are connected when the switch is in the 'Off' position and prevent the ignition system from functioning by shorting the CDI unit to earth. When the switch is in the 'On' position the CDI/earth connection is broken and the system is allowed to function.

2 If the operation of the switch is suspect, reference should be made to the wiring diagram at the end of this book. The switch connections are also shown in diagrammatic form and indicate which terminals are connected in the various switch positions. The wiring from the switch can be traced back to the respective connectors where test connections can be made most conveniently.

3 The purpose of the test is to check whether the switch connections are being made and broken as indicated by the diagram. In the interests of safety the test must be made with the machine's battery disconnected, thus avoiding accidental damage to the CDI system or the owner. The test can be made with a multimeter set on the resistance scale, or with a simple dry battery and bulb arrangement as previously shown. Connect one probe lead to each terminal and note the reading or bulb indication in each switch position.

4 If the test indicates that the black/white lead is earthed irrespective of the switch position, trace and disconnect the ignition (black/white) and earth (green) leads from the ignition switch. Repeat the test with the switch isolated. If no change is apparent, the switch should be considered faulty and renewed. If the switch works normally when isolated, the fault must lie in the black/white lead between the switch and the CDI unit.

5 The kill switch, mounted on the right-hand handlebar, is tested the same way as its connections and functions are exactly as described above.

6 If either switch is found to be faulty it must be renewed. While each is a sealed unit and can only, officially, be repaired by renewing it as a complete assembly, there is nothing to be lost by attempting to repair it if tests have proven it faulty. Depending on the owner's skill, worn contacts may be reclaimed by building up with solder or in some cases, merely cleaning with WD40 or a similar water dispersant spray.

Transistorised ignition

7 The switches for models equipped with this system are tested (and repaired or renewed, as necessary) in substantially the same way as those described above. Note however, that the wires are now connected first to the engine kill switch and that there should be continuity between their terminals (black/white to black) only in the 'Run' position.

8 The ignition switch is tested in the same way, but by careful reference to the wiring diagram switch connection tables to note the different wire colours.

6 Ignition switch: removal and refitting

Early models

1 The combined ignition and lighting master switch is mounted on the front of the fork top yoke, and passes through a projection in the handlebar mounting clamp.

2 If the switch proves defective, it may be removed as follows: unscrew the two small bolts which pass through the headlamp shroud mounting lugs into the fork upper yoke. Push the shroud forward at the top so that the two lower locating projections on the lower yoke free the shroud. The shroud can be moved forward sufficiently to gain access to the ignition switch. Disconnect the block connector plug from the base of the ignition switch. The switch is held in place by two screws, after the removal of which the switch can be displaced downwards.

3 Repair of a malfunctioning switch is not practicable as the component is a sealed unit; renewal if the only solution.

4 The switch may be refitted by reversing the dismantling sequence. Tighten the bolts to the specified torque setting. Remember that a new switch will also require a new set of keys.

Later models – 1981 on

5 Disconnect the instrument drive cables from the console and move the cables clear. Remove the two bolts which retain the instrument console to its mounting plate. This will allow the console to be removed upwards just enough to reveal the two bolts retaining the ignition switch to the yoke. Where fitted, take care not to damage the front fork air pressure balance pipe when slackening the bolts. Disconnect the block connector from the base of the switch and remove the switch. If necessary the headlamp unit can be moved slightly from position by removing the single bolt on each side to allow removal of the switch.

6 The only part of the switch that can be dismantled is the wiring connector at its base. Position the ignition key between the 'On' and 'P' positions of the lock and with the use of a screwdriver push the plastic ears of the connector out of location through the three rectangular slots, around the base of the switch. The connector can now be removed for inspection.

7 Reassembly is a direct reversal of the dismantling procedure. If the headlamp unit position has been disturbed it must be refitted so that the punch marks on each side coincide with those on the support brackets.

7 Ignition HT coils: location and testing

All models

1 Two separate ignition coils are fitted, each of which supplies a different cylinder. The coils are mounted below the fuel tank, each side of the frame top tube.

2 If a weak spark, poor starting or misfiring causes the performance of the coils to be suspected, they should be tested on a spark-gap tester by a Honda Service Agent or an auto-electrician who will have the appropriate equipment.

3 It is unlikely that the coils will fail simultaneously. If intermittent firing occurs on one cylinder, the coils may be swopped over by interchanging the low tension terminal leads and the HT leads. If the fault then moves from one cylinder to the other, it can be taken that the coil is faulty.

4 The coils are a sealed unit and therefore if a failure occurs, repair is impracticable. The faulty item should be replaced by a new component.

Transistorised ignition models

5 On these later models the HT coils can also be tested by measuring the resistance of their windings. Note that this will serve to give some

indication of a coil's condition, but will not be as effective as the spark gap test mentioned above. If any of these tests show a coil to be defective, it must be renewed, if however they show it to be in good condition but the fault persists, then the spark-gap test must be carried out to check.

6 Remove the seat and fuel tank to gain access to the ignition coil mountings. Remove the bolts retaining the coils to the frame and disconnect the wiring connectors. Using a multimeter set on the resistance scale inspect the primary windings as follows. Checking one coil at a time, connect one probe of the tester to one contact in the plastic block connector and the other probe to the remaining contact. The resistance measured should be 2-3 ohms. Carry out the same test on the primary windings of the second coil.

7 Before checking the secondary windings check carefully the coil body. If an S mark is moulded into it, the winding resistance can be checked as described in paragraphs 8 and 9 below, if no S mark is found the test is as described in paragraph 10. In both cases, when checking the resistance of the secondary windings it is necessary to use either a multimeter of the Sanwa SP10-D or Kowa type because the correct readings quoted by Honda can only be obtained with these testers. Part numbers for the testers are, Sanwa - 07308-0020000 and Kowa - TH-5H-1.

8 Set the tester to the K ohms scale and connect the negative probe of the tester to the black and white wire contact in the plastic block connector and the positive probe to the high tension terminal. The reading obtained on the Sanwa tester should be within 200-350 K ohms and 50-200 K ohms on the Kowa tester.

9 A single diode is fitted to the secondary windings to stop the high tension current from flowing back up the feed wire and into the secondary windings of the other coil. In this event both cylinders would fire at the same time. To test the correct operation of the diode, transpose the probes of the tester used for the secondary winding test. An infinitely high resistance should register on the tester scale, indicating that the diode is in working order.

10 Connect two 12 volt batteries as shown in the accompanying illustration and check that 23-25 volts is available before starting. Set the tester to the required milli-amps range (Sanwa 25 mA, Kowa 100 mA) and connect it as shown. A reading of 3 mA approximately should be obtained on the Sanwa tester, on the Kowa tester the needle should swing slightly. Reverse the tester polarity to test the diode (see above), there should be no continuity.

8 CDI unit: location and testing

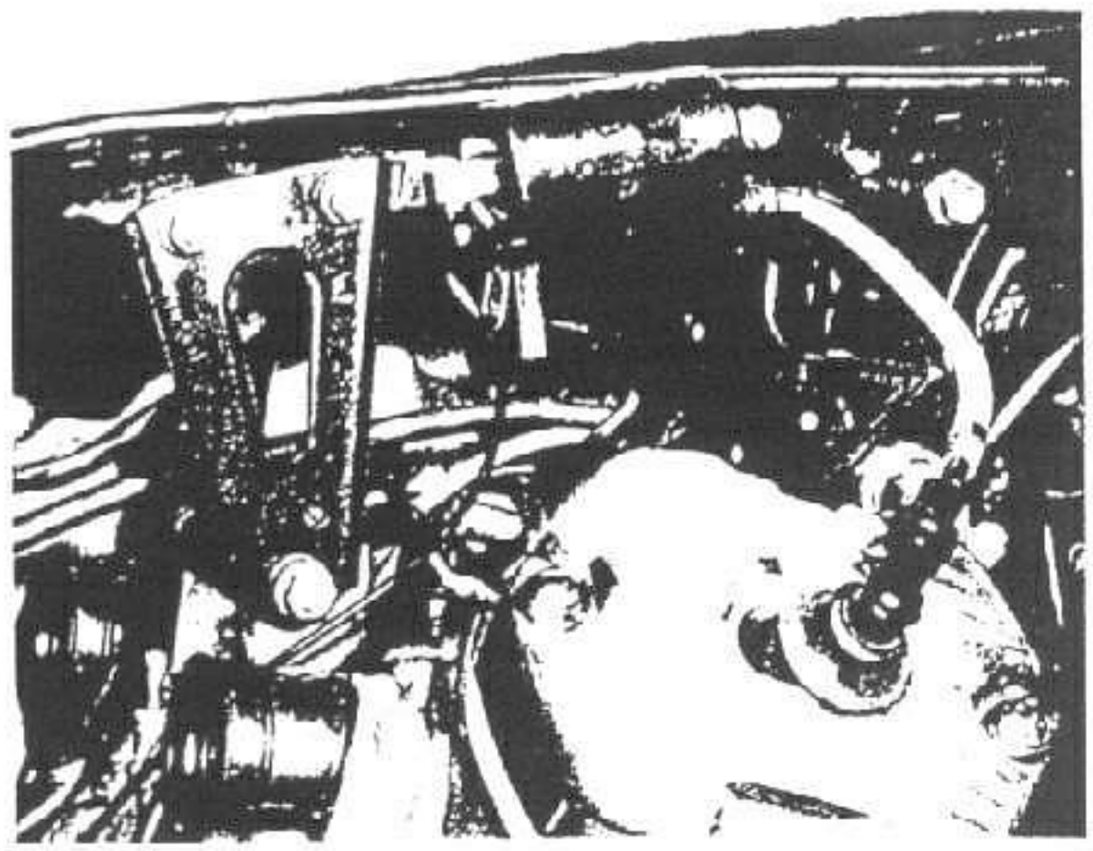
1 The CDI unit is located below the dualseat where it is mounted on top of the rear mudguard. This unit, which contains the various transistorised components that control the ignition system, is sealed for life, the components being encapsulated in a resin. To remove the unit, withdraw the seat, unplug the wiring connectors and unbolt the unit from its mounting.

2 To test the unit, Honda advise against the use of any test meter other than the Sanwa Electric Tester Type SP-10D (Honda part number 07308-0020000) or the Kowa Electric Tester (TH-5H), because the use of other instruments may result in inaccurate readings.

3 Most owners will find that they either do not possess a multimeter, in which case the CDI unit will have to be checked by a Honda Service Agent, or own a meter which is not of the specified make or model. In the latter case, a good indication of the unit's condition can be gleaned in spite of inaccuracies in the readings. If necessary, the CDI unit can be taken to a Honda Service Agent or auto-electrician specialist for confirmation of its condition.

4 The test details are given in the accompanying illustration in the form of two tables of meter probe connections with the expected reading in each instance. If an ordinary multimeter is used, the resistance range may be determined by trial and error. The diagram illustrates the CDI unit connections referred to in the table. For owners not possessing a test meter the unit or the complete machine can be taken to a Honda Service Agent for testing. When using the tables, identify the table to be used by the finish of the unit ie, plated (galvanised) or black-painted. The models given are as precise as possible, but not conclusive.

5 If the CDI unit is found to be faulty as a result of these tests, it must be renewed. No repairs are possible. It might be worthwile trying to obtain a good secondhand unit from a motorcycle breaker, in view of the cost of a new part.



7.1 Ignition HT coils are mounted each side of frame top tube

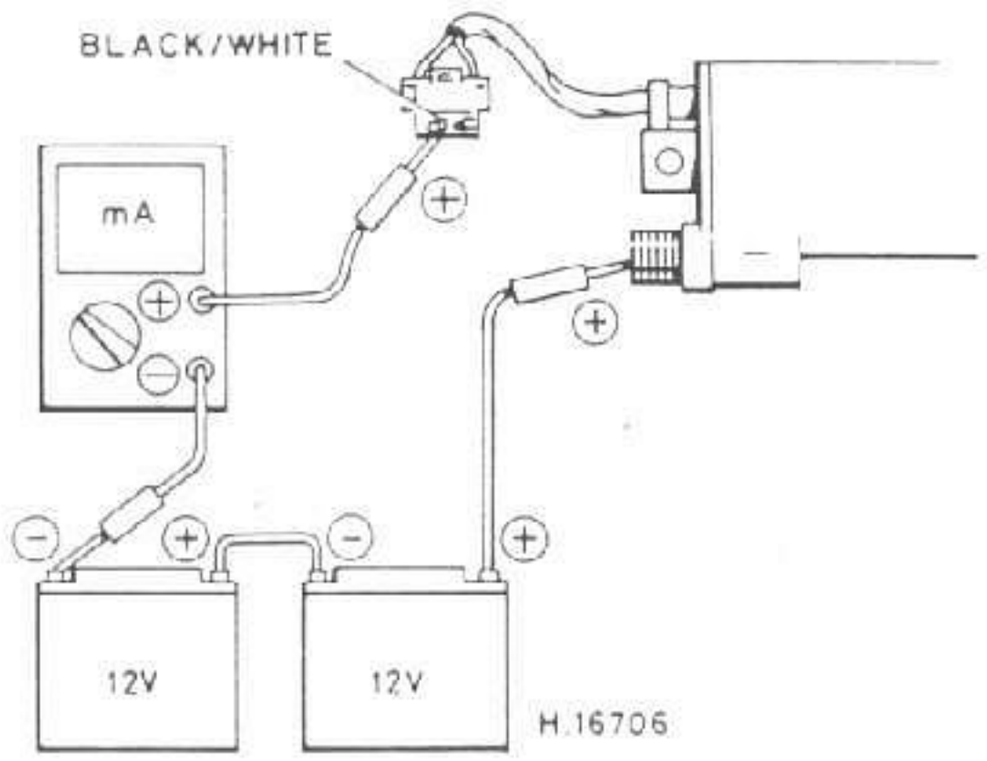
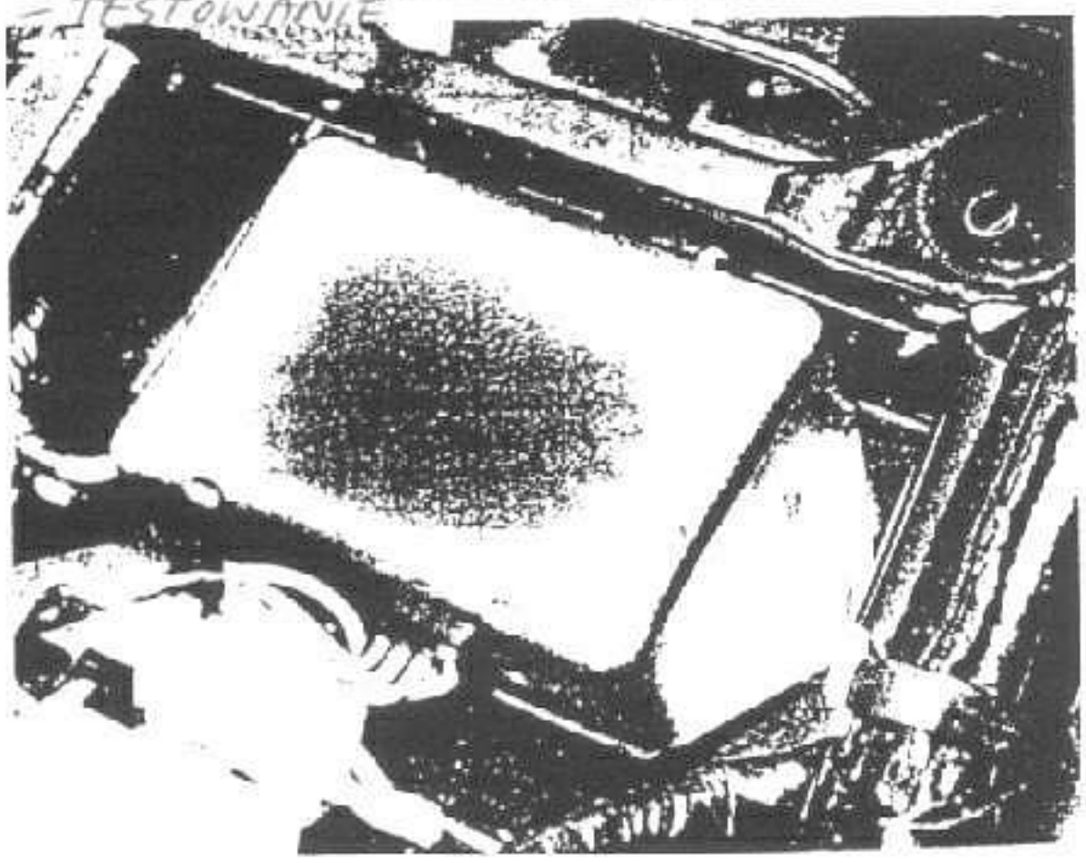


Fig. 4.4 Transistorised ignition system - testing non S-marked HT coil secondary windings



8.1 Location of CDI unit

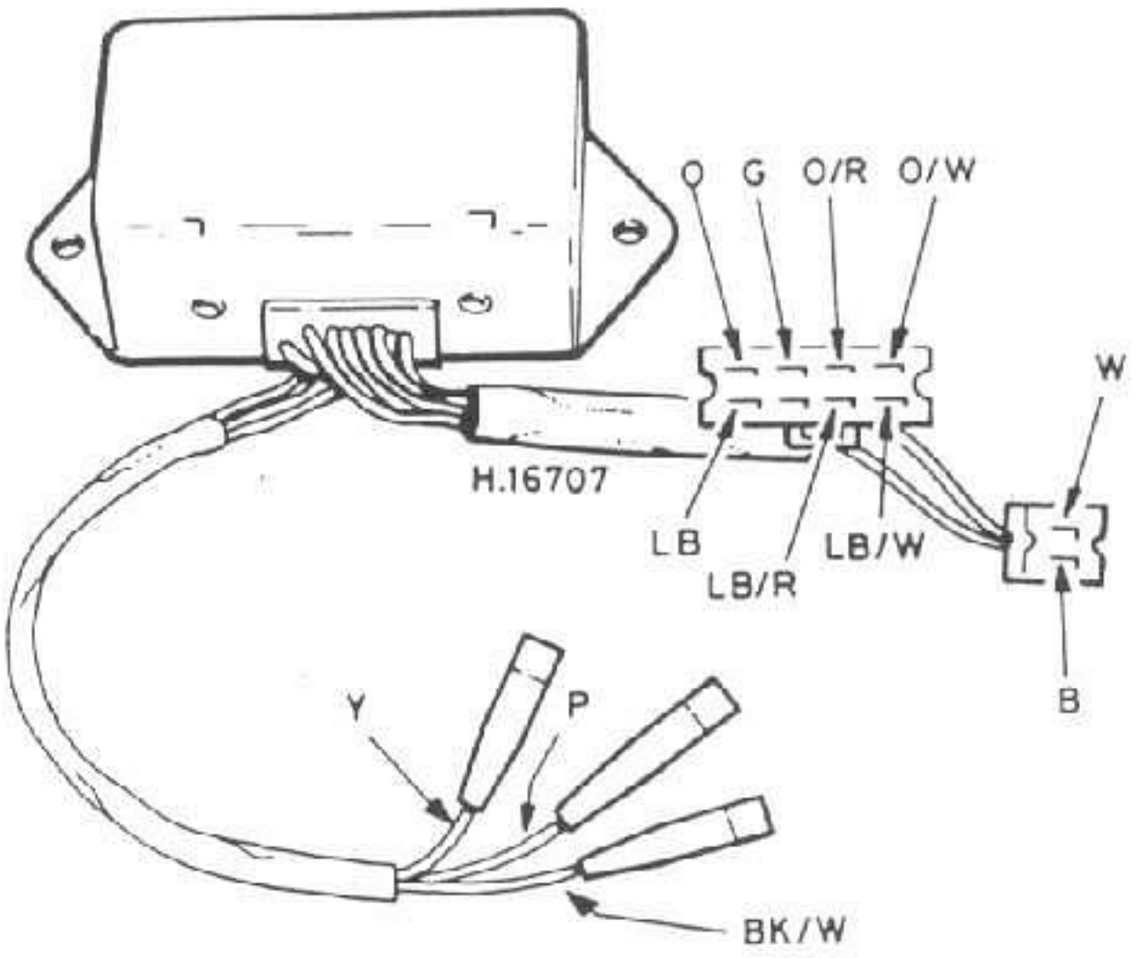


Fig. 4.5 CDI unit test connections

See test table Fig. 4.6 for early models up to 1979 or Fig. 4.7 for later models 1979 on

Note: *the results shown in both tables relate to two recommended testers. The upper figure is the expected result when using a Sanwa tester set on the x K ohm scale and the lower, when using a Kowa tester set on the x 100 ohm scale.*

TABELA KOLORÓW

Wire colour key

B	Blue NIEBIESKI	P	Pink RÓŻOWY
BK	Black CZARNY	R	Red CZERWONY
G	Green ZIELONY	W	White BIAŁY
LB	Light blue JASNY NIEB.	Y	Yellow ŻÓŁTY
O	Orange POMARAŃCZ.		

	W	B	LB	O	LB/R	O/R	G	LB/W	O/W	P	Y	BK/W
W		500 ~ ∞	10 ~ 20 / 20 ~ 60	10 ~ 20 / 20 ~ 60	500 ~ ∞	500 ~ ∞	3 ~ 8	10 ~ 20 / 20 ~ 60	10 ~ 20 / 20 ~ 60	500 ~ ∞	500 ~ ∞	500 ~ ∞
B	500 ~ ∞		500 ~ ∞	←	←	←	←	←	←	←	←	←
LB	500 ~ ∞	←		500 ~ ∞	←	←	←	←	←	←	←	←
O	500 ~ ∞	←	←		500 ~ ∞	←	←	←	←	←	←	←
LB/R	500 ~ ∞	500 ~ ∞	10 ~ 20 / 20 ~ 60	10 ~ 20 / 20 ~ 60		500 ~ ∞	3 ~ 8 / 5 ~ 20	10 ~ 20 / 20 ~ 100	10 ~ 20 / 20 ~ 100	500 ~ ∞	←	←
O/R	500 ~ ∞	500 ~ ∞	10 ~ 20 / 20 ~ 60	10 ~ 20 / 20 ~ 60	500 ~ ∞		3 ~ 8 / 5 ~ 20	10 ~ 20 / 20 ~ 100	10 ~ 20 / 20 ~ 100	500 ~ ∞	←	←
G	500 ~ ∞	500 ~ ∞	3 ~ 8 / 5 ~ 20	3 ~ 8 / 5 ~ 20	500 ~ ∞	500 ~ ∞		3 ~ 8 / 5 ~ 20	3 ~ 8 / 5 ~ 20	500 ~ ∞	←	←
LB/W	500 ~ ∞	←	←	←	←	←	←		500 ~ ∞	←	←	←
O/W	500 ~ ∞	←	←	←	←	←	←	←		500 ~ ∞	←	←
P	500 ~ ∞	∞	←	←	500 ~ ∞	500 ~ ∞	∞	←	←		∞	∞
Y	500 ~ ∞	∞	←	←	500 ~ ∞	500 ~ ∞	∞	←	←	500 ~ ∞		∞
BK/W	500 ~ ∞	10 ~ 20 / 20 ~ 60	500 ~ ∞	←	←	←	←	←	←	←	←	

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Fig. 4.6 Testing the CDI unit – plated type (early models up to 1979)

WCZESNE MODELE DO 1979r

PROBE − / PROBE +	W	B	LB	O	LB/R	O/R	G	LB/W	O/W	P	Y	BK/W
W		500 ∼ ∞	10∼20 / 20∼60	10∼20 / 20∼60	500 ∼ ∞	500 ∼ ∞	3∼8 / 3∼20	10∼20 / 20∼60	10∼20 / 20∼60	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞
B	500 ∼ ∞		500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞
LB	500 ∼ ∞	500 ∼ ∞		500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞
O	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞		500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞
LB/R	500 ∼ ∞	500 ∼ ∞	10∼20 / 20∼60	10∼20 / 20∼60		500 ∼ ∞	3∼8 / 5∼20	10∼20 / 20∼100	10∼20 / 20∼100	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞
O/R	500 ∼ ∞	500 ∼ ∞	10∼20 / 20∼60	10∼20 / 20∼60	500 ∼ ∞		3∼8 / 5∼20	10∼20 / 20∼100	10∼20 / 20∼100	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞
G	500 ∼ ∞	500 ∼ ∞	3∼8 / 5∼20	3∼8 / 5∼20	500 ∼ ∞	500 ∼ ∞		3∼8 / 5∼20	3∼8 / 5∼20	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞
LB/W	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞		500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞
O/W	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞		500 ∼ ∞	500 ∼ ∞	500 ∼ ∞
P	500 ∼ ∞	∞	∞	∞	500 ∼ ∞	500 ∼ ∞	∞	∞	∞		∞	500 ∼ ∞
Y	500 ∼ ∞	∞	∞	∞	500 ∼ ∞	500 ∼ ∞	∞	∞	∞	500 ∼ ∞		500 ∼ ∞
BK/W	500 ∼ ∞	20∼100 / 100∼500	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	500 ∼ ∞	∞ / 500∼∞	∞ / 500∼∞	

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Fig. 4.7 Testing the CDI unit – black painted type (later models 1979 on)

Pan42EJ 1979r

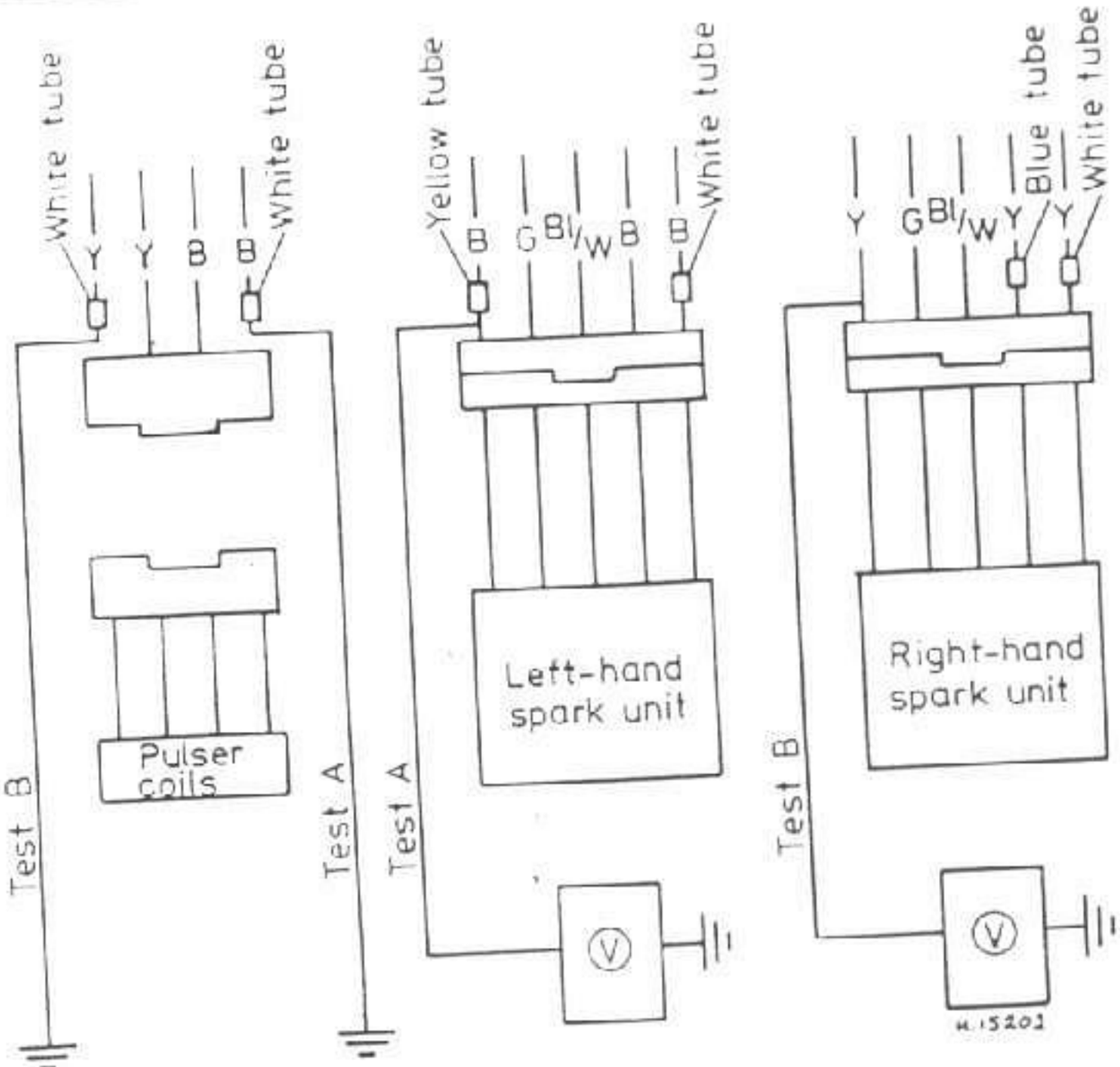
9 Spark units: location and testing

1 The spark units are two identical rectangular units mounted in an aluminium alloy casing and mounted by one bolt. They are to be found mounted side by side under the seat on the CX500 C 1982 model and behind the left-hand side panel to the rear of the battery on all other models except the CX650 C. In all of the above cases, the units can be disconnected at their block connectors and unbolted

2 On the CX650 C model, remove the left-hand side panel and the battery, then remove the three bolts securing the battery carrier to the air filter casing, and withdraw the carrier to expose the units. They can then be removed as described above.

3 To test each unit, first disconnect the pulser coil four-pin block connector. Start by testing the left-hand cylinder spark unit. Use the diagram accompanying this text for guidance. Connect a multimeter set to the voltage measuring function, between the blue with yellow tube wire of the six pin block connector, and earth the other side to the frame. Run another wire from the blue with white tube wire from the pulser coil's four-pin connector to earth on the frame. Turn the ignition on and check the reading on the multimeter. The needle should change from 12 to 0 volts each time the white-tubed wire is earthed. Turn the ignition off and disconnect the apparatus. To test the right-hand spark unit, connect the voltmeter between the yellow wire of the six-pin block connector and earth. Run a wire from the yellow with white tube wire of the pulser coil's four-pin connector to earth on the frame. Turn the ignition on and check that the voltmeter behaves in the same way as before.

4 If a fault is apparent in either of the spark units, that unit should be renewed because repair is impracticable.



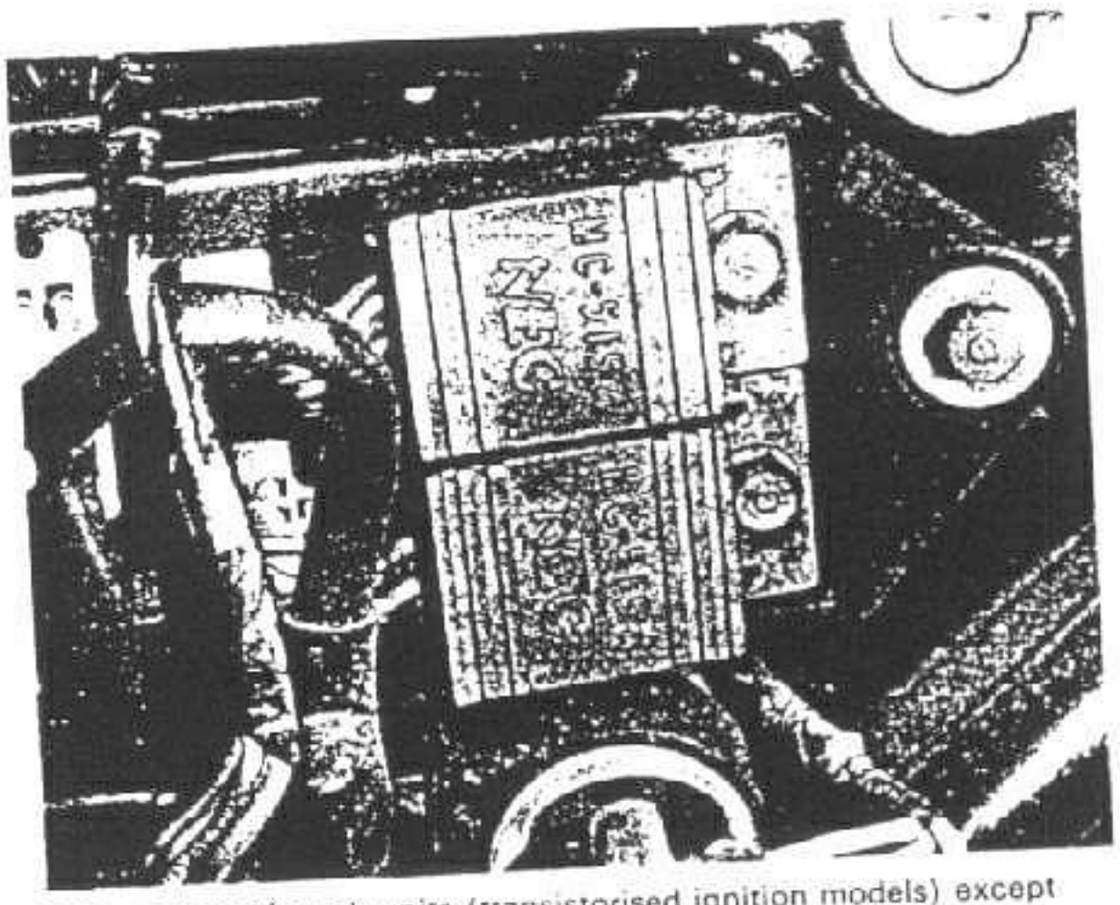
SCHEMAT PODŁĄCZENIA WOLTOMIERZA PRZY TESTOWANIU MODUŁÓW ZAPŁONU

Fig. 4.8 Voltmeter connections for spark unit tests

Test A – Left-hand spark unit test

Test B – Right-hand spark unit test

Y Yellow	*G Green*
B Blue	*Bl Black*
W White	



9.1 Location of spark units (transistorised ignition models) except CX500 C and CX650 C

10 Alternator stator and fixed pulser coils: testing – CDI ignition system

1 The ignition source coil and the fixed pulsers can be tested whilst still in place on the machine for breakdown of internal insulation and connections. An ohmmeter or a multi-meter set to the x10 ohm resistance position is required to carry out this test.

2 Remove the seat, disconnect the battery and disconnect the large block connector and two smaller block connectors which are clipped to the top of the rear mudguard. Measure the resistance across the following pairs of wires on the larger male connector plug and compare the readings with the following specified resistance figures.

Wire colour	Resistance (Ohms)
White to Blue	77 – 95
Green to White	387 – 473*
Orange to Green	95 – 116
Light blue to Green	95 – 116
Orange/Red to Green	81 – 99
Light blue/Red to Green	81 – 99

***Note:** *on some models, unspecified by the manufacturer, the resistance range for this test is 315 – 385 ohms.*

If the resistance of one or more pairs of wires is found to be outside the range given in the table, there is evidence that the components are not serviceable. The alternator stator, the two pulser units and the alternator rotor are available only as a set and as a result the replacement cost is high. It is wise to have the system double-checked by an expert before renewing the components.

3 Apparent failure of the ignition source coil or the pulser may be a result of breakage of wires external to the units themselves. This may be verified by a visual inspection after removal of the components from the engine casing. New wires may be fitted and then joined at a suitable point, using a soldering iron.

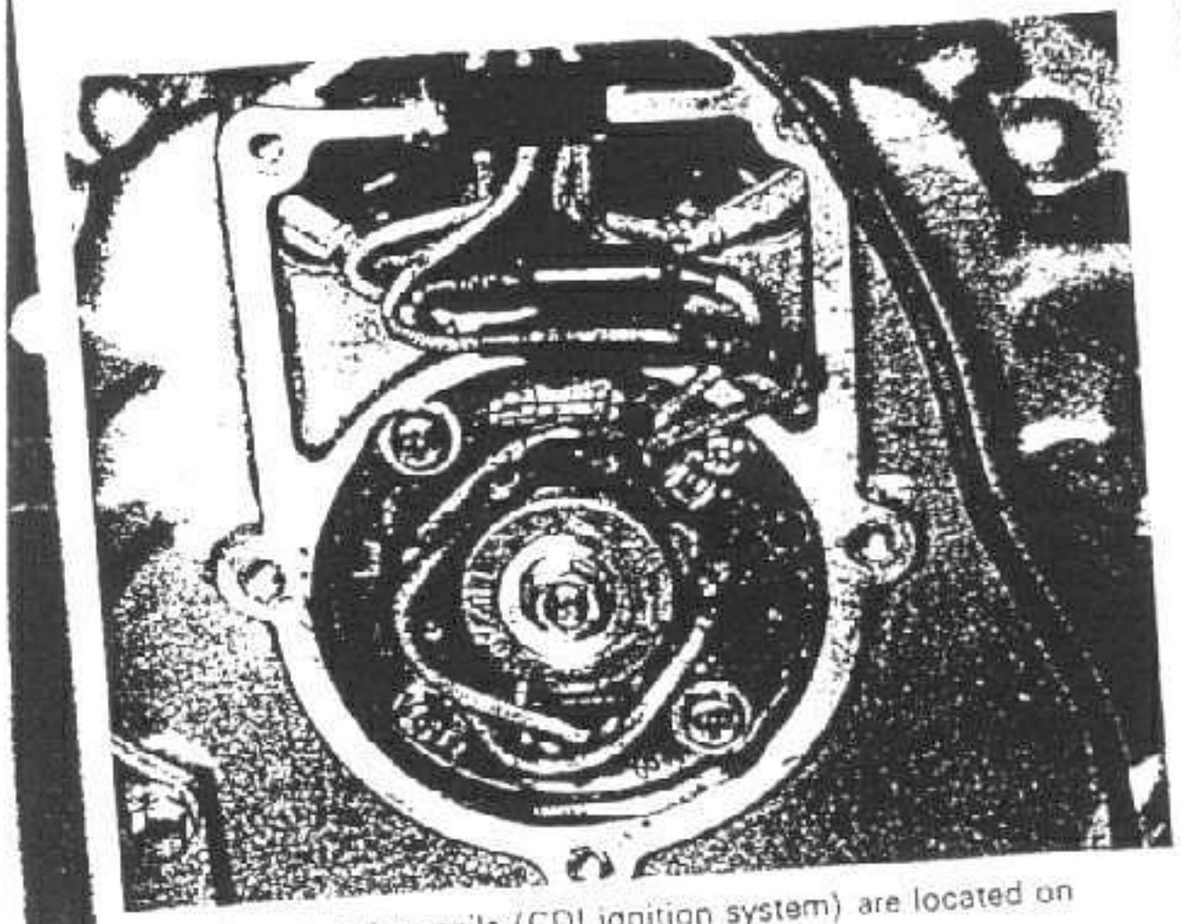
11 Advance pulser coils: testing – CDI ignition system

1 The advance pulser coils may be tested in place on the machine in manner similar to that described for the fixed pulsers. The two wire from the coils are connected by two separate snap connectors close the unit and hidden behind the plated cover at the rear of the engi rear cover. In addition to this, the wires are connected at one of t smaller block connectors on the rear mudguard. By virtue of go accessibility, make the initial resistance test at the block connec Check that the resistance between the Light blue/White lead an suitable earth point (the Green wire) is within the range 185 – ohms. Repeat the test between the Orange/White wire and earth

result should be within the same specified range. If either reading is incorrect, further inspection should be made.

2 Removal of the chromed pressed-steel cover which encloses the advance pulser at the rear of the engine is not impossible, merely difficult due to lack of working space. If care is taken, the bolts holding the plate in position can be removed and the cover slipped from place. Access may now be made to the two separate snap connectors which connect the pulser leads that terminate at the block connector at which the initial test was made. Disconnect the snap connectors and repeat the resistance test between each lead and the stator ring of the advance pulser unit. If the readings are both correct, it is possible that the initial readings were not reliable, being caused by poor conductivity at the snap connectors.

3 If the final readings taken are not within the specified range, the unit must be renewed. Check first that the fault is not due to a break or short in the wiring which might be repaired.



11.1 Advance pulser coils (CDI ignition system) are located on engine rear cover

12 Pulser coils: testing – transistorised ignition system

1 Remove the seat (or the left-hand side panel) to gain access to the block connector. Disconnect it and carry out the following resistance test on that half of the connector which carries the wires from the pulser coil assembly. Connect a multimeter set on the resistance scale across the wire contacts for the right-hand cylinder, these being the two yellow wires. The coil resistance should be 530 ± 50 ohm at around 20°C (68°F). Carry out the same test across the two blue wires for the left-hand cylinder pulser coil.

2 If either unit does not produce the expected result it is faulty. This means that the complete pulser stator assembly must be renewed. Check first that the problem is not due to a wiring fault which might be repaired.

13 ATU: examination – transistorised ignition system

1 The unit comprises spring loaded balance weights, which move outward against the spring tension as centrifugal force increases. The balance weights must move freely on their pivots and be rust-free. The tension springs must also be in good condition. Keep the pivots lubricated and make sure the balance weights move easily, without binding. Most problems arise as a result of condensation, within the engine, which causes the unit to rust and balance weight movements to be restricted.

2 If the unit is severely worn or if greasing does not cure sticking, it must be renewed. When reassembling the unit after lubrication, align the rotor tooth with the backplate cutout. Use a light high melting-point grease for lubrication.

14 Spark plug (HT) leads and suppressor caps: examination

1 Erratic running faults and problems with the engine suddenly cutting out in wet weather can often be attributed to leakage from the high tension leads and spark plug caps. If this fault is present, it will often be possible to see tiny sparks around the leads and caps at night. One cause of this problem is the accumulation of mud and road grime around the leads, and the first thing to check is that the leads and caps are clean. It is possible to cure the problem by cleaning the components and sealing them with an aerosol ignition sealer, which will leave an insulating coating on both components.

2 Water dispersant sprays are also highly recommended where the system has become swamped with water. Both these products are easily obtainable at most garages and accessory shops. Occasionally, the suppressor caps or the leads themselves may break down internally. If this is suspected, the components should be renewed.

3 Where the HT leads are permanently attached to the ignition coil it is recommended that the renewal of the HT leads is entrusted to an auto-electrician who will have the expertise to solder on new leads without damaging the coil windings.

4 When renewing the suppressor caps, be careful to purchase ones that are suitable for use with resistor spark plugs (where fitted).

15 Ignition components: removal and refitting

1 All components of the ignition system that are outside the engine unit are removed and refitted as described in the relevant Sections of this Chapter.

2 The ignition source coil (CDI system), alternator and fixed pulser coils (CDI system) are mounted inside the engine rear cover. If they are to be renewed, the engine must be removed from the frame and the rear cover must be detached. See Chapter 1.

3 The advance pulser coils and rotor (CDI system) or the pulser coils and ATU (transistorised system), however, represent a different story. Depending on the owner's ingenuity it may be possible to reach them with the engine in the frame. Honda's recommendation is to remove the rear wheel and swinging arm to enable them to be reached.

4 For instructions on removing and refitting all these components, refer to the relevant Sections of Chapter 1. Note particularly the need to align the fixed pulser and/or pulser stator (as applicable) with fixed timing marks on reassembly; also note the procedure necessary to set the pulser coil air gap (transistorised ignition).

16 Checking the ignition timing

1 Since no provision exists for adjusting the ignition timing (with the minor exceptions mentioned below), and since no ignition component is subject to mechanical wear there is no need for regular checks, only if investigating a fault such as a loss of power or a misfire should the timing be checked.

2 The ignition timing can be checked only whilst the engine is running using a stroboscopic lamp; therefore a suitable timing lamp will be required. The inexpensive neon lamps should be adequate in theory, but in practice may produce a pulse of such low intensity that the timing mark remains indistinct. If possible, one of the more precise xenon tube lamps should be employed powered by an external source of the appropriate voltage. Do not use the machine's own battery as an incorrect reading may result from stray impulses within the machine's electrical system.

3 Remove the inspection plug from the right-hand side of the engine rear cover. The set of timing marks for each cylinder, and the fixed timing pointer, can now be identified. Refer to the appropriate accompanying diagram; for the left-hand cylinder on CDI models the TL line represents TDC, the FL line the initial timing mark, and the two adjacent unmarked parallel lines the full advance mark. Similar marks are given for the right-hand cylinder. On transistorised ignition models the TDC marks are the same as on CDI machines, but the initial timing mark is made up of two lines, the FS mark is for static timing (see

Chapter 1) and the FI mark is the dynamic (engine running) mark. The full advance marks are the same.

4 To check the ignition timing connect a timing lamp to the right-hand cylinder HT lead as directed by the lamp's manufacturer. Start the engine and when warm set the idle speed at 1100 ± 100 rpm. Point the lamp at the rotor and check that the initial timing mark is aligned with the fixed index pointer. At a slightly increased engine speed (see Specifications) the timing will start to advance and the mark on the flywheel will go out of alignment with the index pointer. Increase the engine speed to that specified and check that the full advance marks align with the index pointer.

5 Stop the engine and connect the stroboscope up to the left-hand cylinder HT lead. Check the timing as shown for the right-hand cylinder.

6 Because of the nature of the ignition system it is unlikely that the timing will be incorrect. For this reason no actual means of adjusting the timing is provided. A small amount of adjustment can, however, be made by altering the position of the pulser coil baseplate in relation to the rotor (CDI ignition) or ATU (transistorised ignition). This will of course require considerable dismantling and the need for the air gap to be rechecked. It is also worth checking that the alternator rotor is securely fastened and correctly located on the crankshaft by its Woodruff key; the same applies to the rotor or ATU (as applicable). Check also that all coils are securely fastened.

7 On models with CDI ignition, any deviation from the correct ignition timing can only be a result of failure of one or more of the controlling components, ie the ignition source coil, timing pulsers or the CDI unit.

8 On models with transistorised ignition, unless some component is improperly fastened or not correctly located, the only cause of incorrect timing can be the ATU. If it cannot be cured by careful dismantling, lubrication and reassembly, it must be renewed.

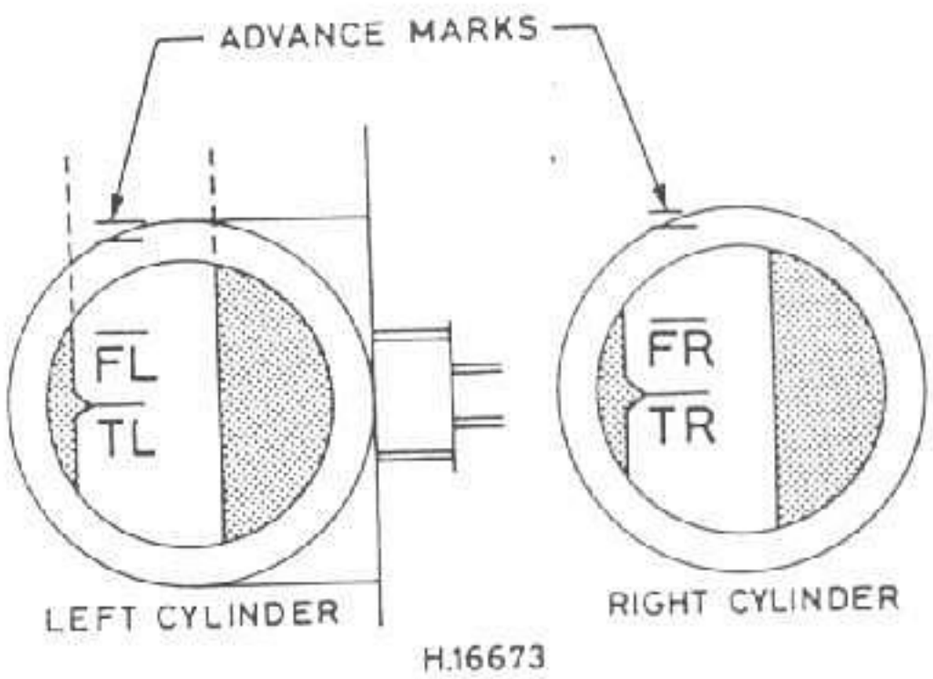


Fig. 4.9 Ignition timing marks – CDI ignition

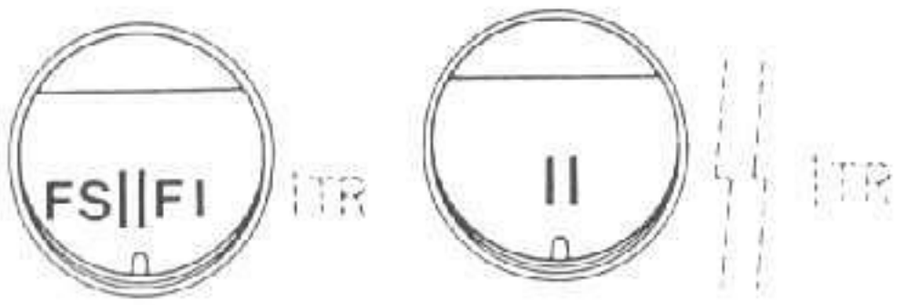


Fig 4.10 Ignition timing marks – Transistorised ignition

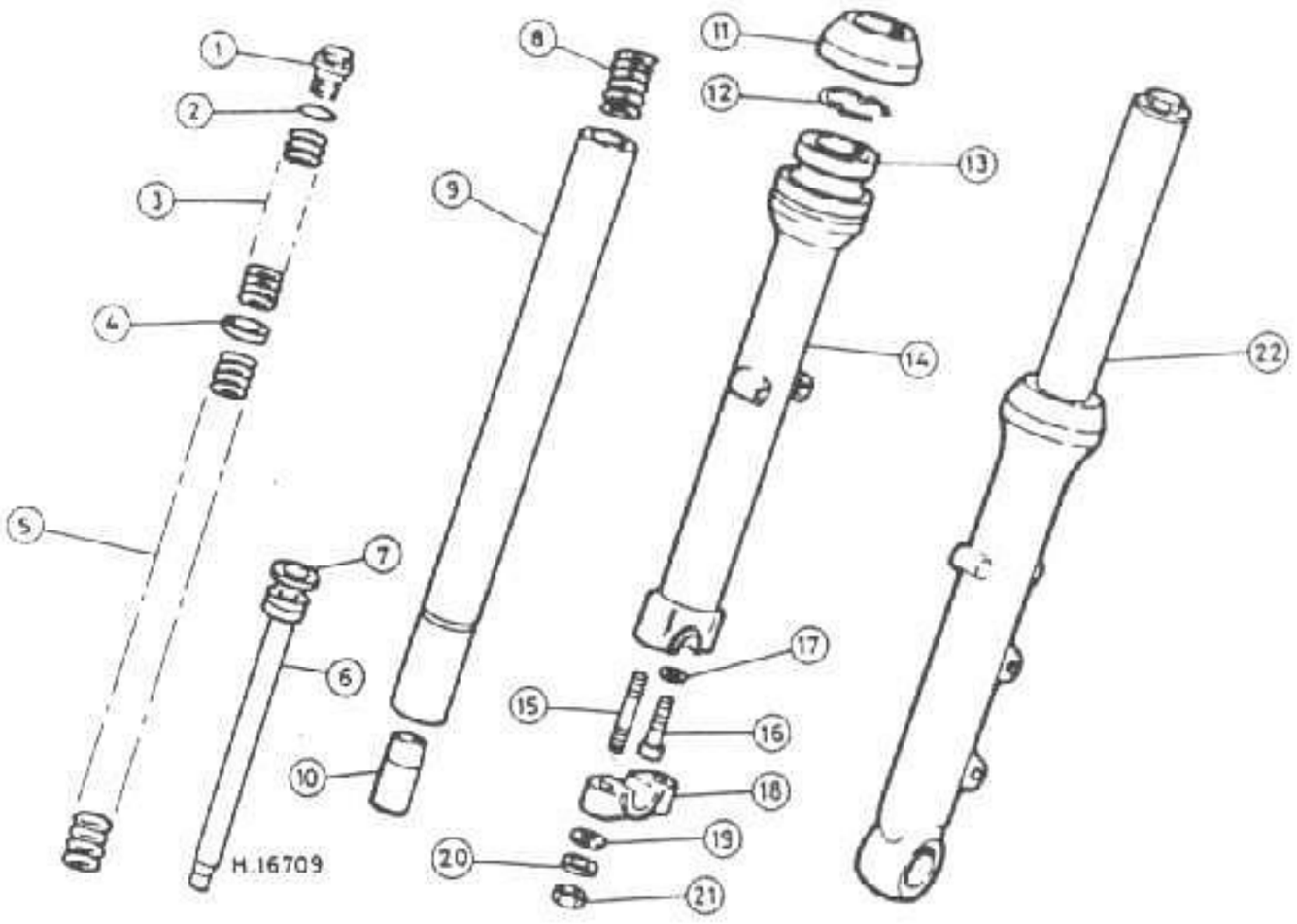


Fig. 5.1 Front forks - CX500, CX500-A, CX500 1978, 1979, CX500 C and CX500 D 1979, 1980

1 Top plug
2 O-ring
3 Top spring
4 Spring seat
5 Main spring
6 Damper rod
7 Piston ring
8 Rebound spring
9 Stanchion
10 Damper rod seat
11 Dust seal
12 Spring clip
13 Oil seal
14 Right-hand lower leg
15 Stud
16 Allen screw
17 Sealing washer
18 Spindle clamp
19 Washer
20 Spring washer
21 Nut
22 Left-hand leg

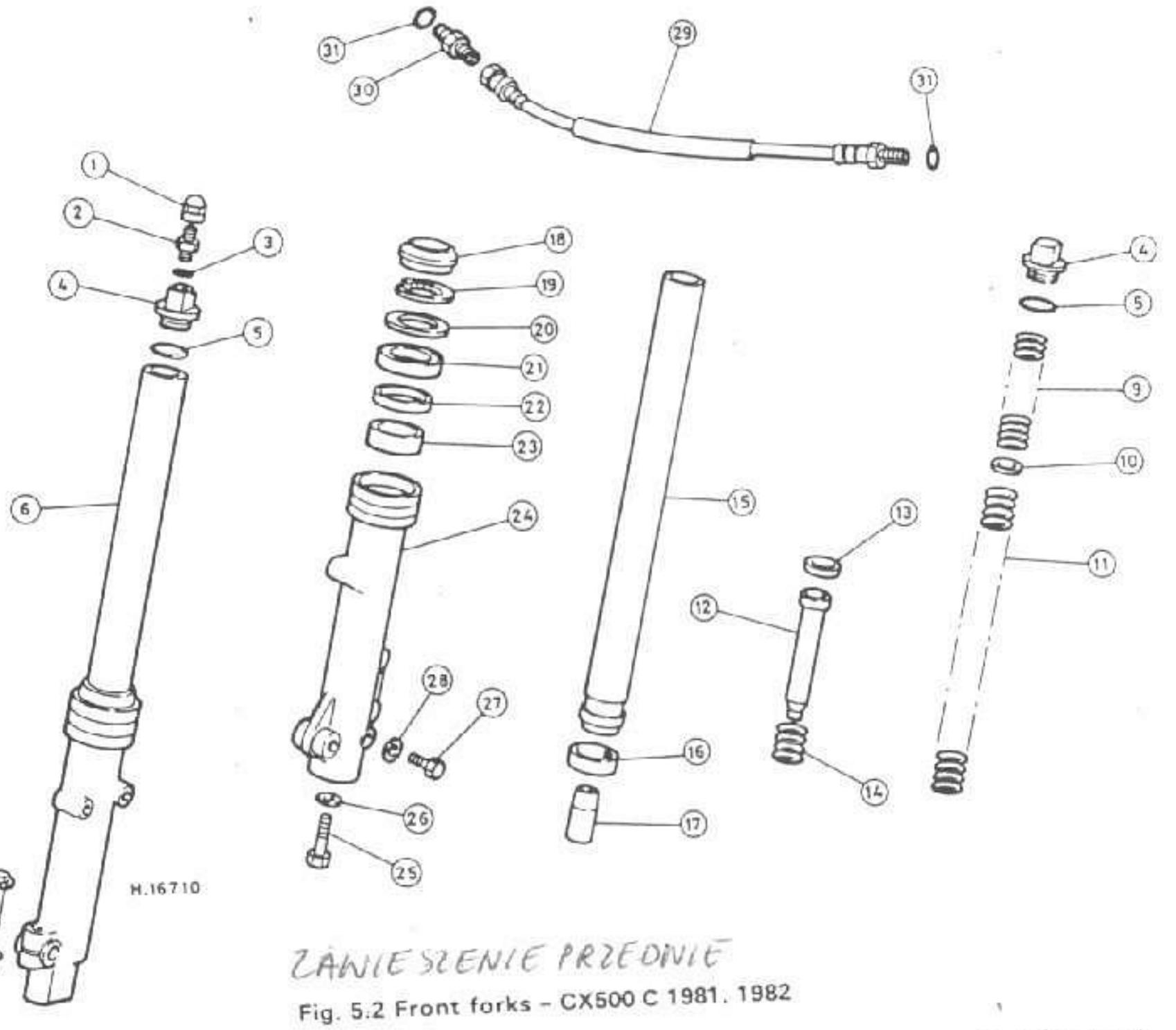


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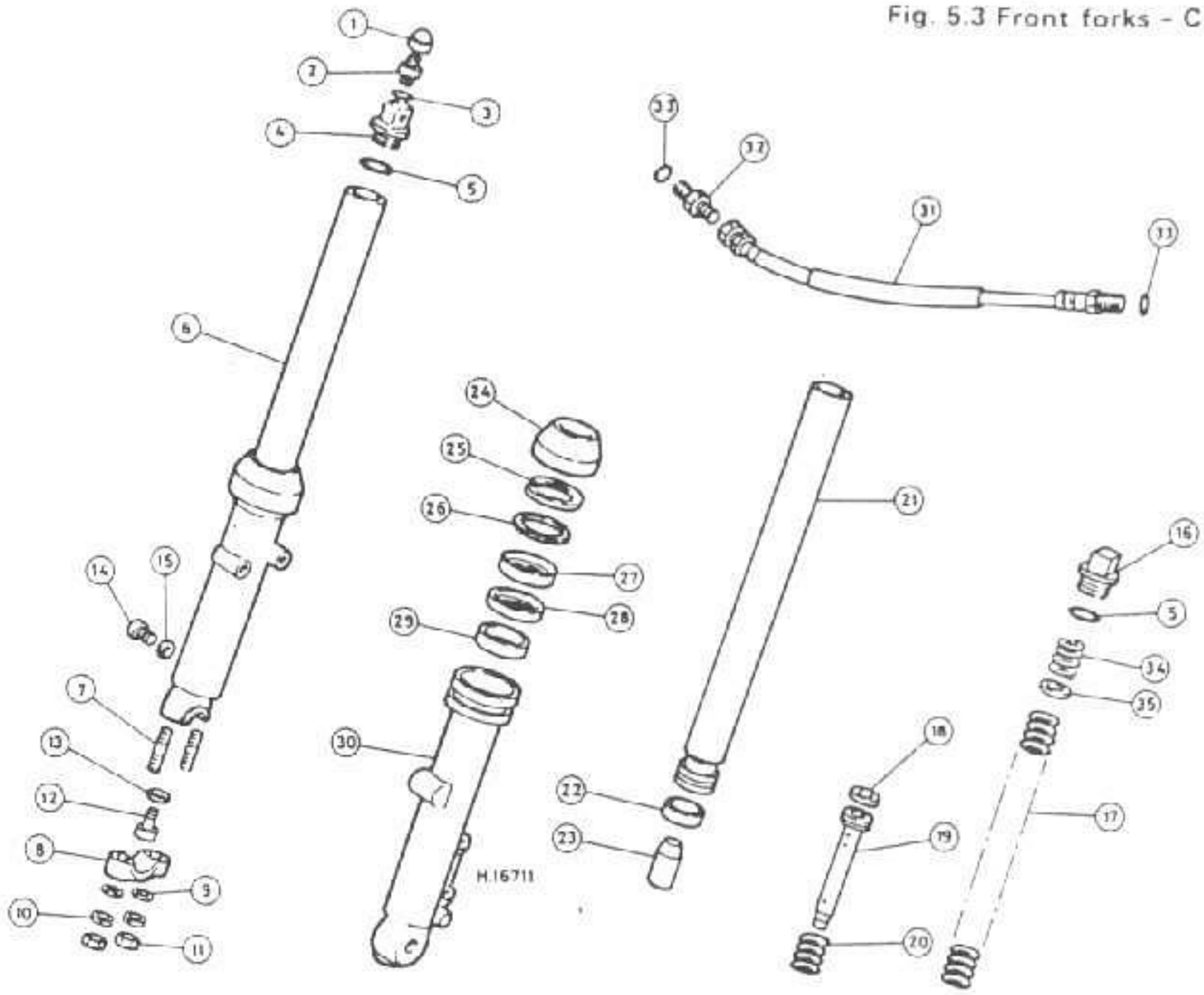
Fig. 5.2 Front forks - CX500 C 1981, 1982

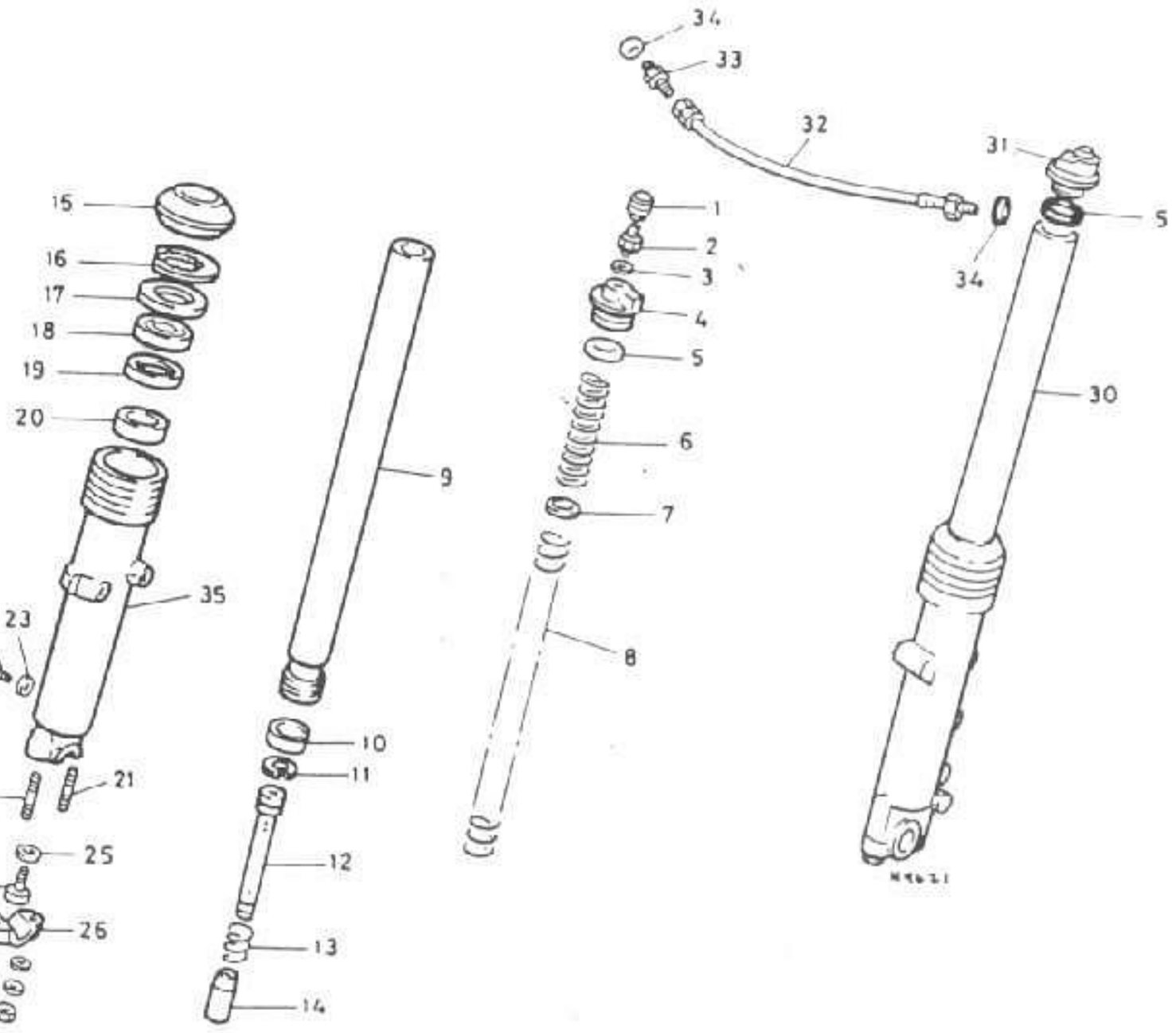
1 Cap
2 Air valve
3 O-ring
4 Top cap
5 O-ring
6 Right-hand leg
7 Pinch bolt
8 Nut
9 Top spring
10 Spring seat
11 Main spring
12 Damper rod
13 Piston ring
14 Rebound spring
15 Stanchion
16 Bottom bush
17 Damper rod seat
18 Dust seal
19 Circlip
20 Backing ring
21 Oil seal
22 Backing ring
23 Top bush
24 Left-hand lower leg
25 Allen screw
26 Sealing washer
27 Drain bolt
28 Sealing washer
29 Air balance pipe
30 Union
31 O-ring

Fig. 5.3 Front forks - CX500-B, CX500 C-B, CX500 D 1981



1 Cap △
2 Air valve △
3 O-ring △
4 Top cap
5 O-ring
6 Right-hand leg
7 Stud
8 Spindle clamp
9 Washer
10 Spring washer
11 Nut
12 Allen screw
13 Sealing washer
14 Drain bolt
15 Sealing washer
16 Top cap
17 Main spring
18 Piston ring
19 Damper rod
20 Rebound spring
21 Stanchion
22 Bottom bush
23 Damper rod seat
24 Dust seal
25 Circlip
26 Backing ring
27 Oil seal
28 Backing ring
29 Top bush
30 Left-hand lower leg
31 Air balance pipe —
32 Union △
33 O-ring △
34 Top spring ⊐
35 Spring seat ⊐

△ US models only
⊐ UK models only



1 Cap
2 Air valve
3 O-ring
4 Top cap
5 O-ring
6 Top spring
7 Spring seat
8 Main spring
9 Stanchion
10 Bottom bush
11 Piston ring
12 Damper rod
13 Rebound spring
14 Damper rod seat
15 Dust seal
16 Circlip
17 Backing ring
18 Oil seal
19 Backing ring
20 Top bush
21 Stud
22 Drain bolt
23 Sealing washer
24 Allen screw
25 Sealing washer
26 Spindle clamp
27 Washer
28 Spring washer
29 Nut
30 Left-hand leg
31 Top cap
32 Air balance pipe
33 Union
34 O-ring
35 Right-hand lower leg

Fig. 5.4 Front forks - all GL500 models

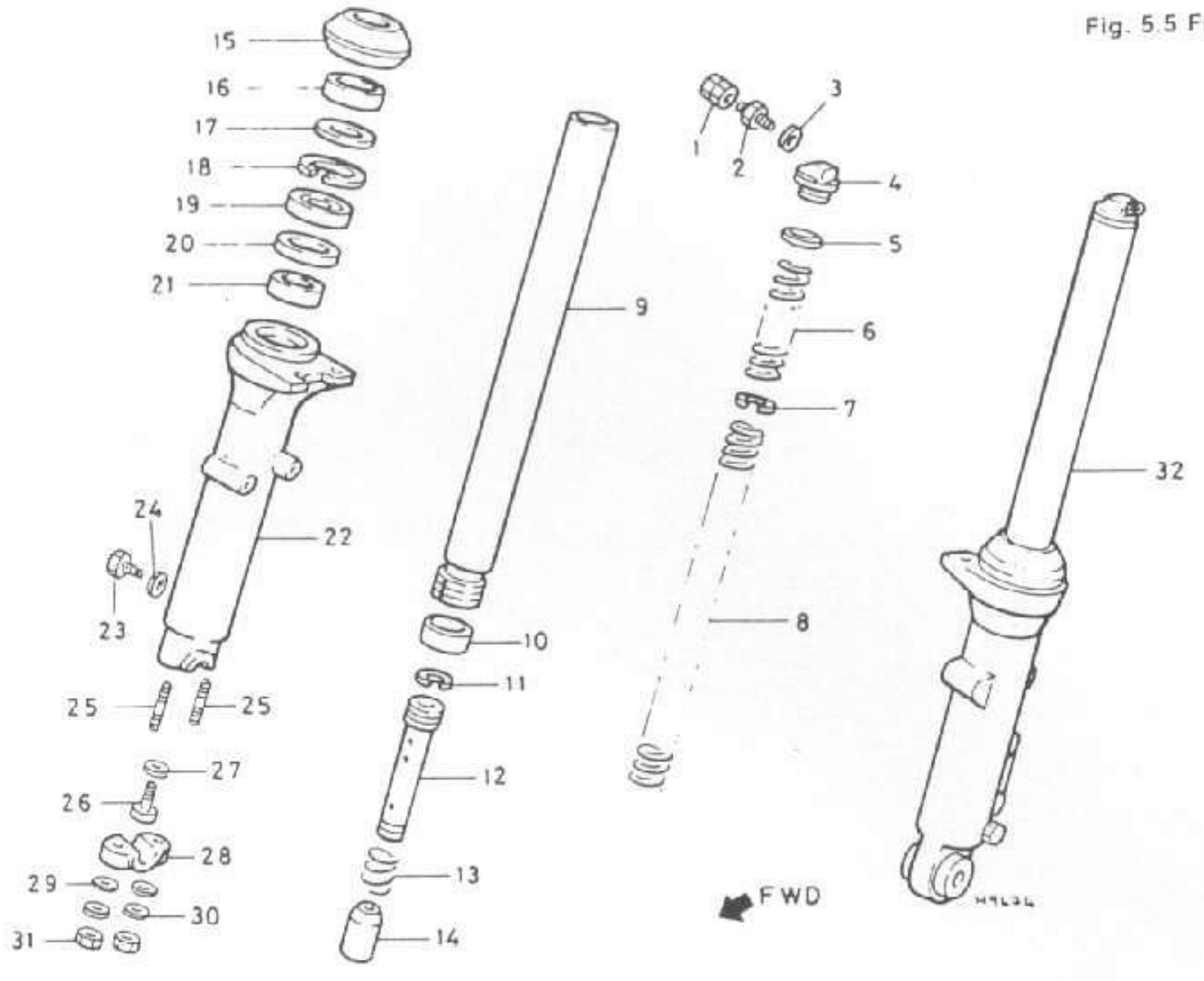


Fig. 5.5 Front forks – all GL650 models

1 Cap
2 Air valve
3 O-ring
4 Top cap
5 O-ring
6 Top spring
7 Spring seat
8 Main spring
9 Stanchion
10 Bottom bush
11 Piston ring
12 Damper rod
13 Rebound spring
14 Damper rod seat
15 Dust seal
16 Foam seal
17 Backing ring
18 Circlip
19 Oil seal
20 Backing ring
21 Top bush
22 Right-hand lower leg
23 Drain bolt
24 Sealing washer
25 Stud
26 Allen screw
27 Sealing washer
28 Spindle clamp
29 Washer
30 Spring washer
31 Nut
32 Left-hand lower leg

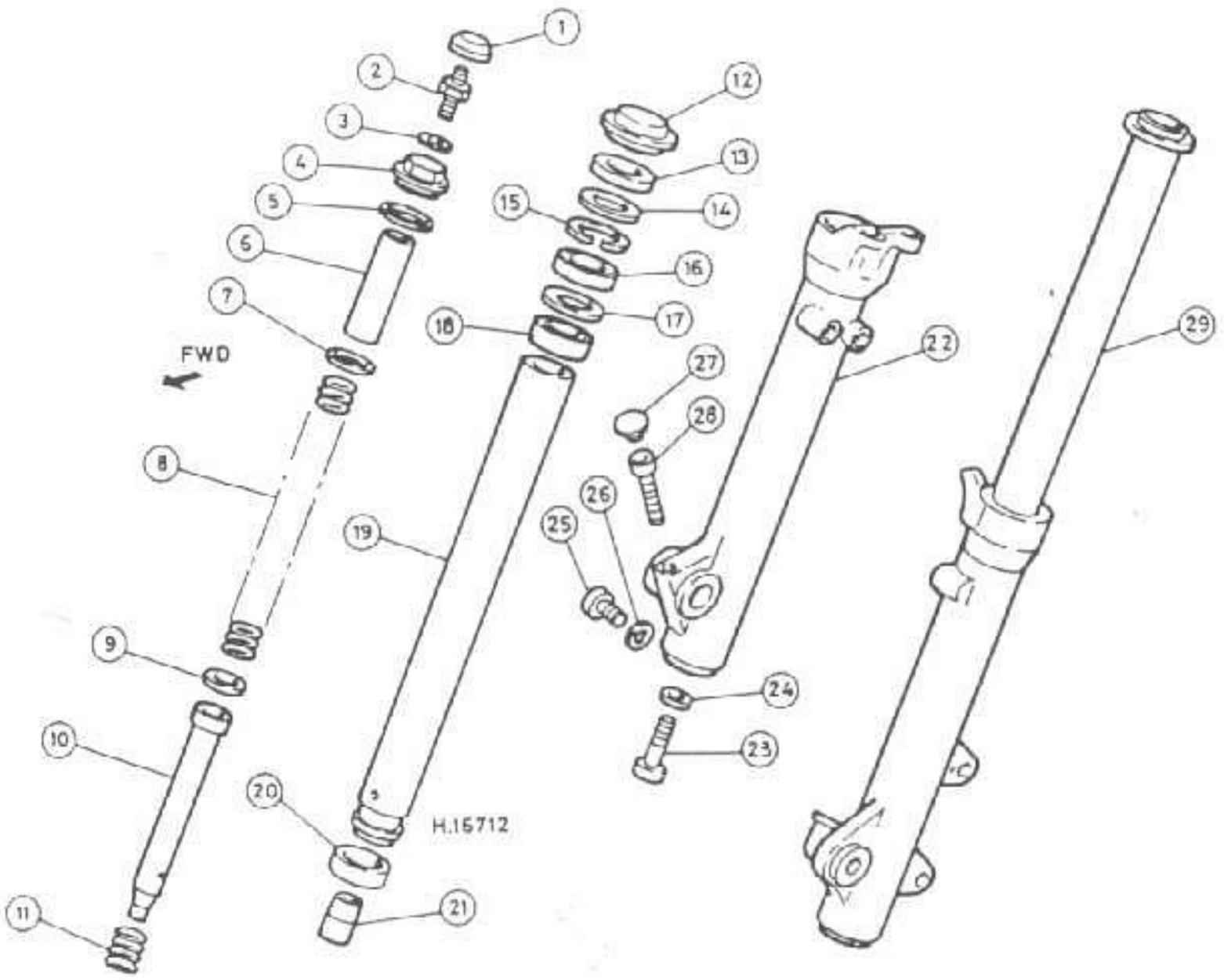


Fig. 5.6 Front forks – CX650 C

1 Cap
2 Air valve
3 Seal
4 Top cap
5 O-ring
6 Spacer
7 Spring seat
8 Spring
9 Piston ring
10 Damper rod
11 Rebound spring
12 Dust seal
13 Foam seal
14 Backing ring
15 Circlip
16 Oil seal
17 Backing ring
18 Top bush
19 Stanchion
20 Bottom bush
21 Damper rod seat
22 Right-hand lower leg
23 Allen screw
24 Sealing washer
25 Drain bolt
26 Sealing washer
27 Plug
28 Allen pinch bolt
29 Left-hand leg

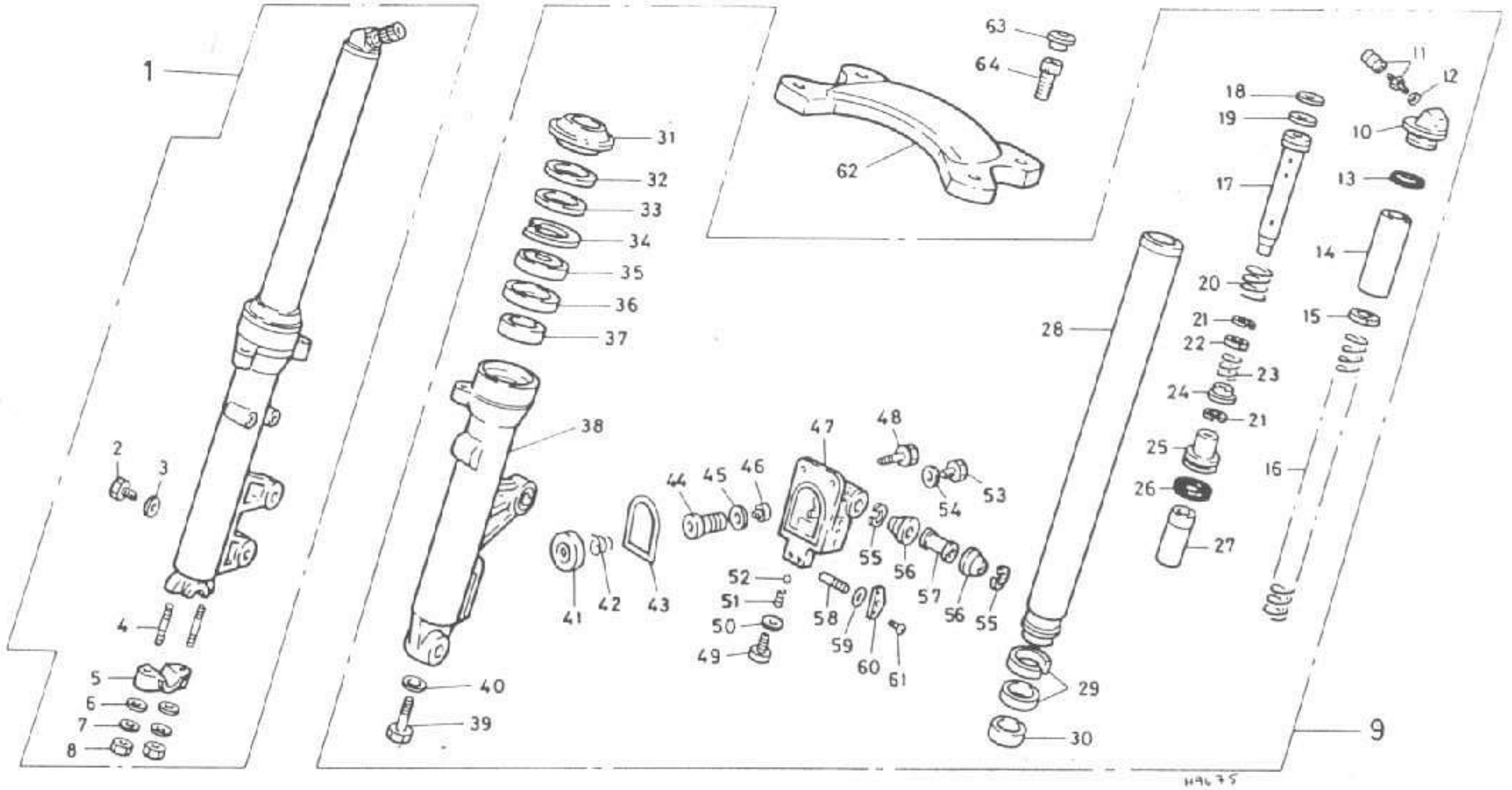


Fig. 5.7 Front forks - CX500 E-C and CX650 E-D

1 Right-hand fork leg
2 Drain bolt
3 Sealing washer
4 Stud
5 Spindle clamp
6 Washer
7 Spring washer
8 Nut
9 Left-hand fork leg
10 Top plug
11 Air valve and cap
12 O-ring
13 O-ring
14 Spacer - 500 model
15 Spring seat
16 Main spring
17 Damper rod
18 Top piston ring*
19 Bottom piston ring
20 Rebound spring
21 Circlip*
22 Spring seat*
23 Spring*
24 Oil lock valve*
25 Damper rod seat*
26 O-ring*
27 Damper rod seat - right-hand leg
28 Stanchion
29 Bottom bush
30 Bottom bush
31 Dust seal
32 Foam seal
33 Plastic washer
34 Circlip
35 Oil seal
36 Backing ring
37 Top bush
38 Left-hand lower leg
39 Allen screw
40 Sealing washer
41 Seal
42 Piston spring
43 O-ring
44 Piston
45 Seal
46 Stopper
47 Anti-dive unit
48 Allen bolt
49 Detent bolt
50 Washer
51 Spring
52 Ball
53 Drain bolt
54 Sealing washer
55 Circlip
56 Boot
57 Sleeve
58 Selector
59 O-ring
60 Selector retaining plate
61 Screw
62 Brace - 650 model
63 Cap - 650 model
64 Allen screw - 650 model

* Components fitted to left-hand fork leg only

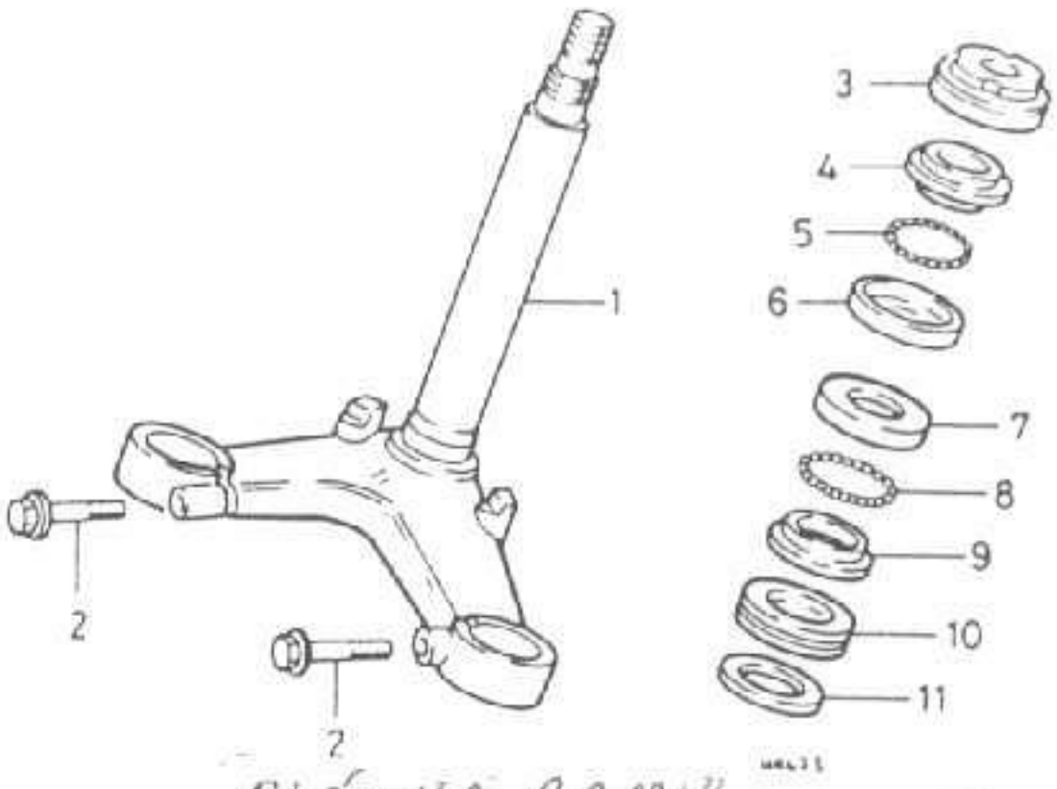


Fig. 5.8 Steering head - typical

1 Steering stem
2 Pinch bolts
3 Adjusting nut
4 Top cone
5 Top bearing balls
6 Top cup
7 Bottom cup
8 Bottom bearing balls
9 Bottom cone
10 Seal
11 Washer

10 Steering head bearings: refitting

1 Fit the steering head bearing components to the frame and refit the fork yokes as described in the previous Section. When the front forks and wheel have been refitted, check the steering head bearing adjustment as described in Routine Maintenance and make any alterations necessary. When adjustment is complete, tighten the steering stem nut (and clamp bolt, where fitted) to the specified torque setting.
2 Refitting is a straightforward reversal of the dismantling sequence. Be very careful to ensure that all control cables, brake hoses and wiring are correctly routed and secured by any clamps or ties provided. Re-connect the wiring using the colour-coding of the wires and by reference to the wiring diagrams at the back of this manual; most connections are simplified by the use of coloured plastic block connectors which can only be connected in the correct way.
3 Tighten securely all disturbed nuts, bolts and other fasteners, using the correct torque settings, where given.
4 Before taking the machine out on the road check that all components are correctly refitted and securely fastened, that the steering is correctly adjusted and that the front brakes and suspension are working properly. Check also, at all handlebar positions, that the controls are correctly adjusted and working smoothly.

11 Steering lock: removal and refitting

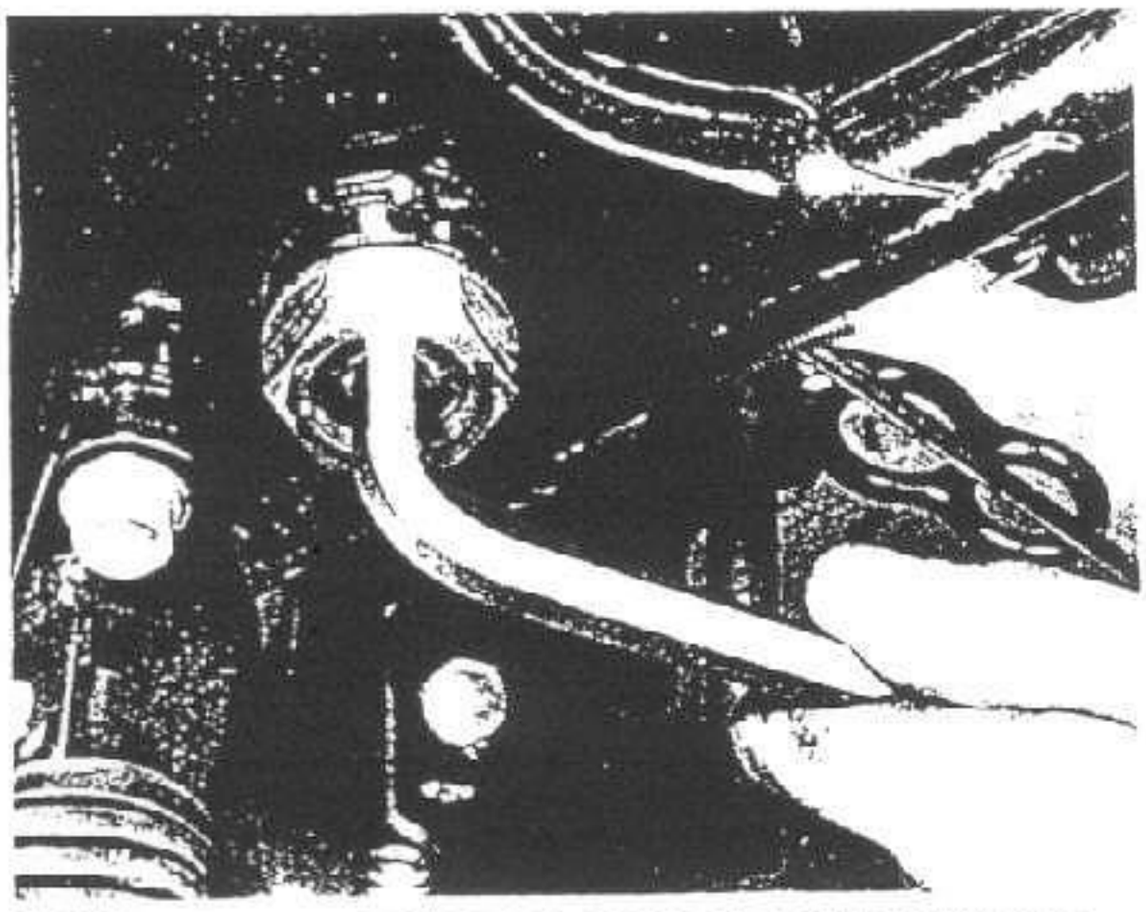
1 On early models the steering lock is fitted within a lug on the left-hand side of the steering head, and is retained by a Mills pin. If the lock fails, or the keys are lost, the lock cylinder can be removed after drilling out the pin.
2 Later models incorporate the steering lock in the ignition switch, which is located in the warning lamp console on the handlebars. The forks become immovable when the key is turned to the 'lock' position and removed. If the lock is to be renewed, the switch assembly must be disconnected and the retaining bolts which secure it to the underside of the top yoke removed.

12 Frame: examination and renovation

1 The frame is unlikely to require attention unless accident damage has occurred. In some cases, renewal of the frame is the only satisfactory remedy if the frame is badly out of alignment. Only a few frame specialists have the jigs and mandrels necessary for resetting the frame to the required standard of accuracy, and even then there is no easy means of assessing to what extent the frame may have been overstressed.
2 After the machine has covered a considerable mileage, it is advisable to examine the frame closely for signs of cracking or splitting at the welded joints. Rust corrosion can also cause weakness at these joints. Minor damage can be repaired by welding or brazing, depending on the extent and nature of the damage.
3 Remember that a frame which is out of alignment will cause handling problems and may even promote 'speed wobbles'. If misalignment is suspected, as a result of an accident, it will be necessary to strip the machine completely so that the frame can be checked, and if necessary, renewed.

13 Swinging arm pivot bearings: adjustment

1 The rear fork assembly pivots on two tapered roller bearings, one of which is placed either side of the swinging arm cross-member. Worn swinging arm bearings will cause handling problems, making the rear end twitch and hop, especially when accelerating or shutting off whilst banked over. Play in the bearings may be detected by pulling and pushing horizontally on the rear fork ends. Any play will be magnified by the leverage obtained. Because the bearings are of the tapered roller type, adjustment of play due to wear is possible within certain limits.
2 Adjustment is carried out by means of the left-hand pivot shaft, which is threaded and fitted with a locknut. Remove the rubber boot covering the nut and then loosen the nut. Tighten the pivot shaft, using an Allen key, to the specified torque setting and then tighten the locknut, also to its specified torque setting. If the play has not been eliminated, or if harshness occurs in the swinging arm movement, the bearings are worn to an unacceptable level and must be renewed.



13.2 Swinging arm pivot bearings can be adjusted to remove play

14 Swinging arm: removal

1 Place the machine on its centre stand so that it rests securely on level ground and the rear wheel is well clear of the ground. Remove the silencers after slackening off the clamps at the silencer/balance box unions and removing the silencer support bolts. Remove the rear wheel as described in Chapter 6.
2 On all models with Pro-Link rear suspension, remove the

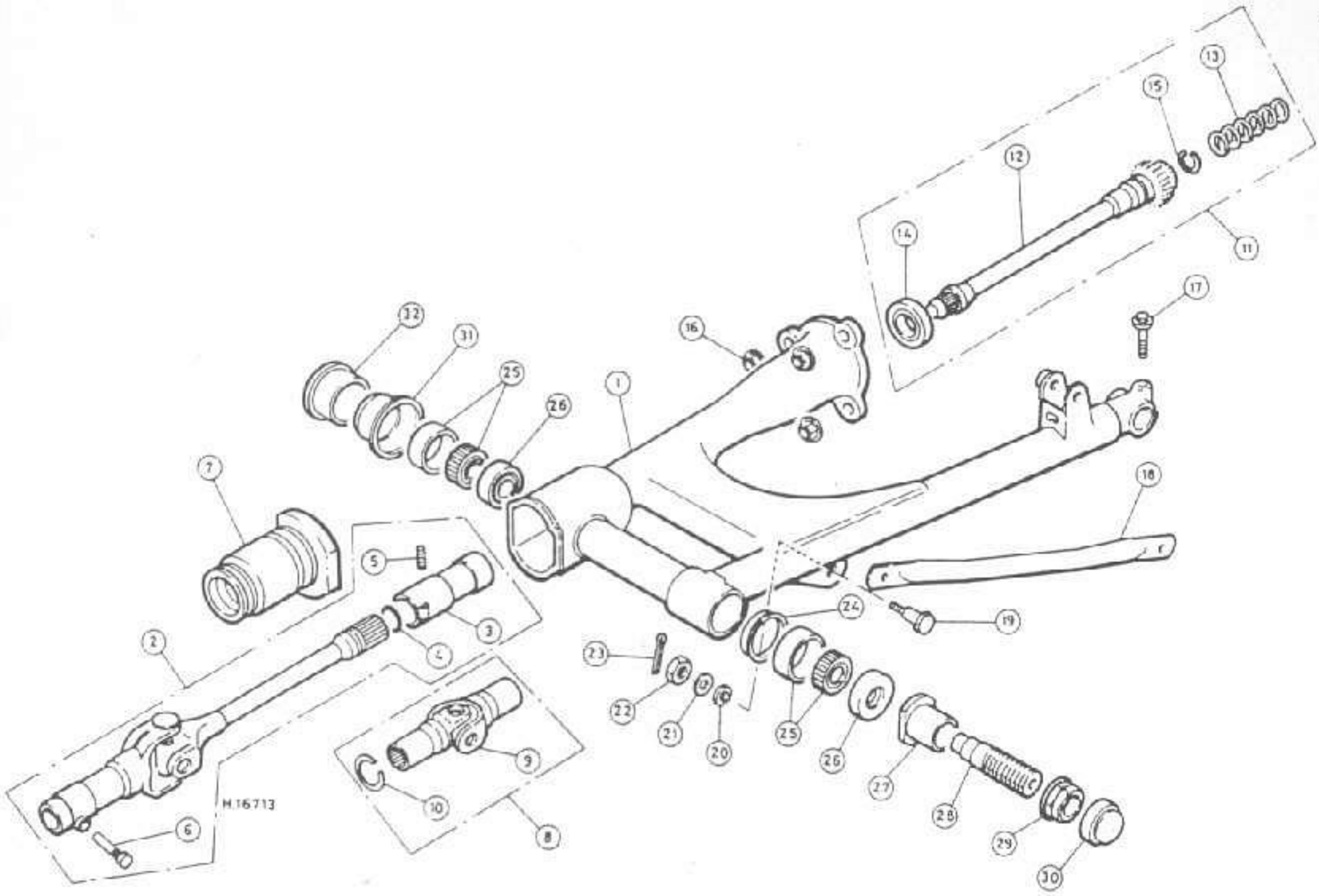


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Fig. 5.9 Swinging arm and final drive shaft – all 500 models, CX650 E-D and GL650 models

1 *Rear fork/shaft housing*
2 *Propeller shaft - 500 models, GL650 and GL650 I*
3 *Shaft joint*
4 *O-ring*
5 *Spring pin*
6 *Bolt*
7 *Gaiter*
8 *Universal joint - CX650 E-D, GL650 D2-E*
9 *Universal joint*
10 *Circlip*
11 *Propeller shaft - CX650 E-D, GL650 D2-E*
12 *Propeller shaft*
13 *Spring*
14 *Oil seal*
15 *Circlip*
16 *Nut*
17 *Bolt*
18 *Brake torque arm*
19 *Bolt*
20 *Spring washer*
21 *Washer*
22 *Nut*
23 *Split pin*
24 *Grease cap*
25 *Bearing*
26 *Oil seal*
27 *Threaded sleeve*
28 *Pivot shaft*
29 *Locknut*
30 *Cap*
31 *Bearing holder*
32 *Pivot cap*

suspension linkage and the rear suspension unit. See Sections 17 and 18.

3 On CX500 E-C and CX650 E-D models release the brake hose from its clamps, disconnect the torque arm at its front mounting and secure the rear brake assembly out of harm's way.

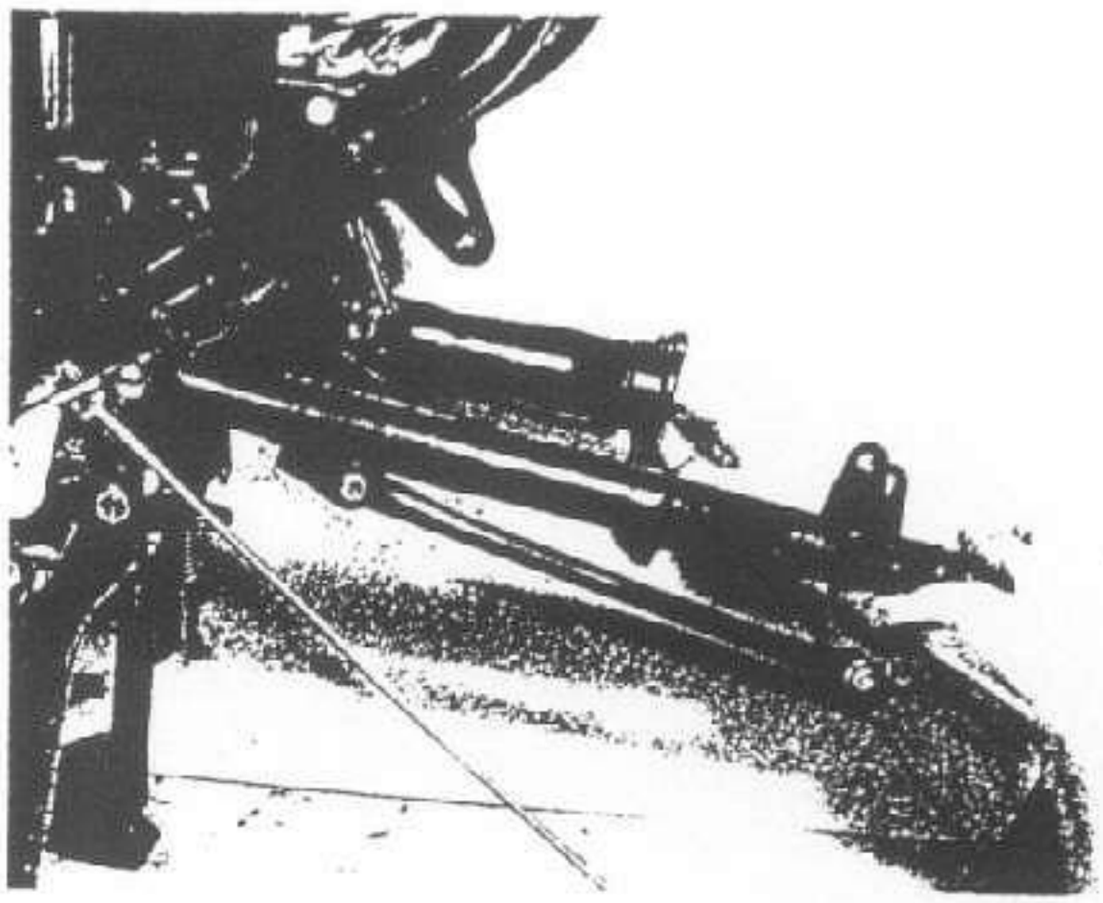
4 On all models with twin suspension units, disconnect the brake torque arm at the forward mounting by removing the bolt. Free the drain hoses from the guide bracket on the swinging arm cross-member. Remove the right-hand rear suspension unit completely and unscrew the left-hand suspension unit lower mounting bolt, leaving it in position to support temporarily the swinging arm's weight.

5 On all models, remove the nuts securing the final drive case to the swinging arm and withdraw the gear case. On CX650 C, CX650 E-D and GL650 D2-E models the propellor shaft will be withdrawn with the case, on all other models the shaft will stay in place. To remove it, peel back the rubber gaiter at the rear of the gearbox. Unscrew and withdraw the pinch bolt from the coupling sleeve, so that the driveshaft will be able to slip off the end of the final output shaft when the swinging arm is detached.

6 On all models remove the rear brake pedal if it prevents access to the swinging arm pivot components.

7 On CX650 C models, displace the caps from the pivot bearings and slacken the left-hand shaft locknut. Unscrew the left-hand pivot shaft, followed by the right-hand shaft. Manoeuvre the swinging arm out of the frame.

8 On all other models, displace the cap from the left-hand pivot bearing, slacken the locknut and then unscrew the pivot shaft. Support the weight of the swinging arm and pull out the left-hand rear suspension unit lower mounting bolt (where applicable). Lift the swinging arm over to the left so that the small stub leaves the bearing in the right-hand swinging arm support plate. The swinging arm can now be manoeuvred from position.



14.8 Remove rear wheel, brake, final drive and suspension components to release swinging arm

1 Rear fork/shaft housing
2 Gaiter
3 Circlip
4 Universal joint
5 Oil seal
6 Spring
7 Propeller shaft
8 Circlip
9 Cap
10 Pivot shaft
11 Locknut
12 Pivot shaft
13 Oil seal
14 Bearing
15 Grease cap
16 Nut
17 Bolt
18 Brake torque arm
19 Bolt
20 Washer
21 Spring washer
22 Nut
23 Split pin

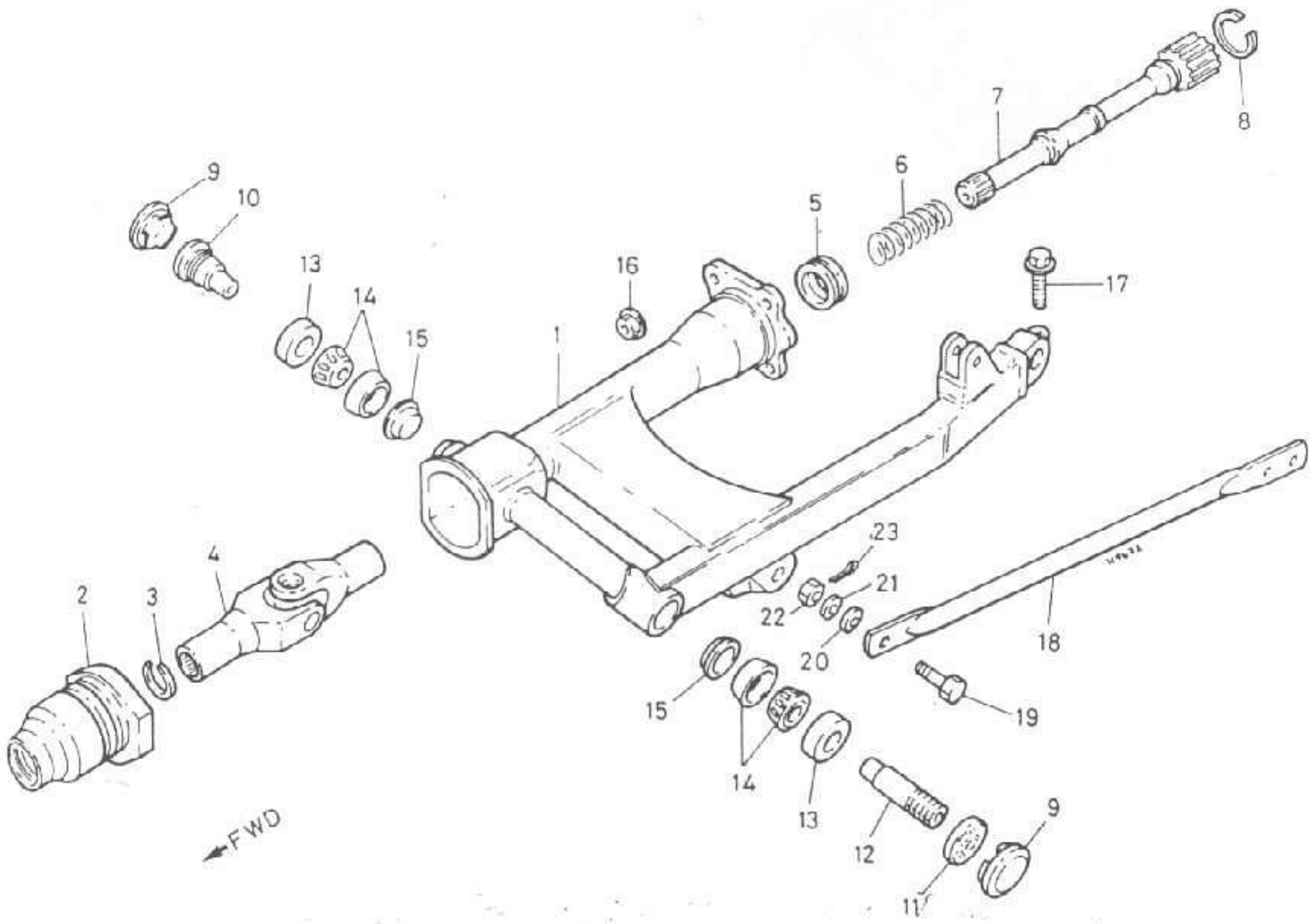


Fig. 5.10 Swinging arm and final drive shaft – CX650 C

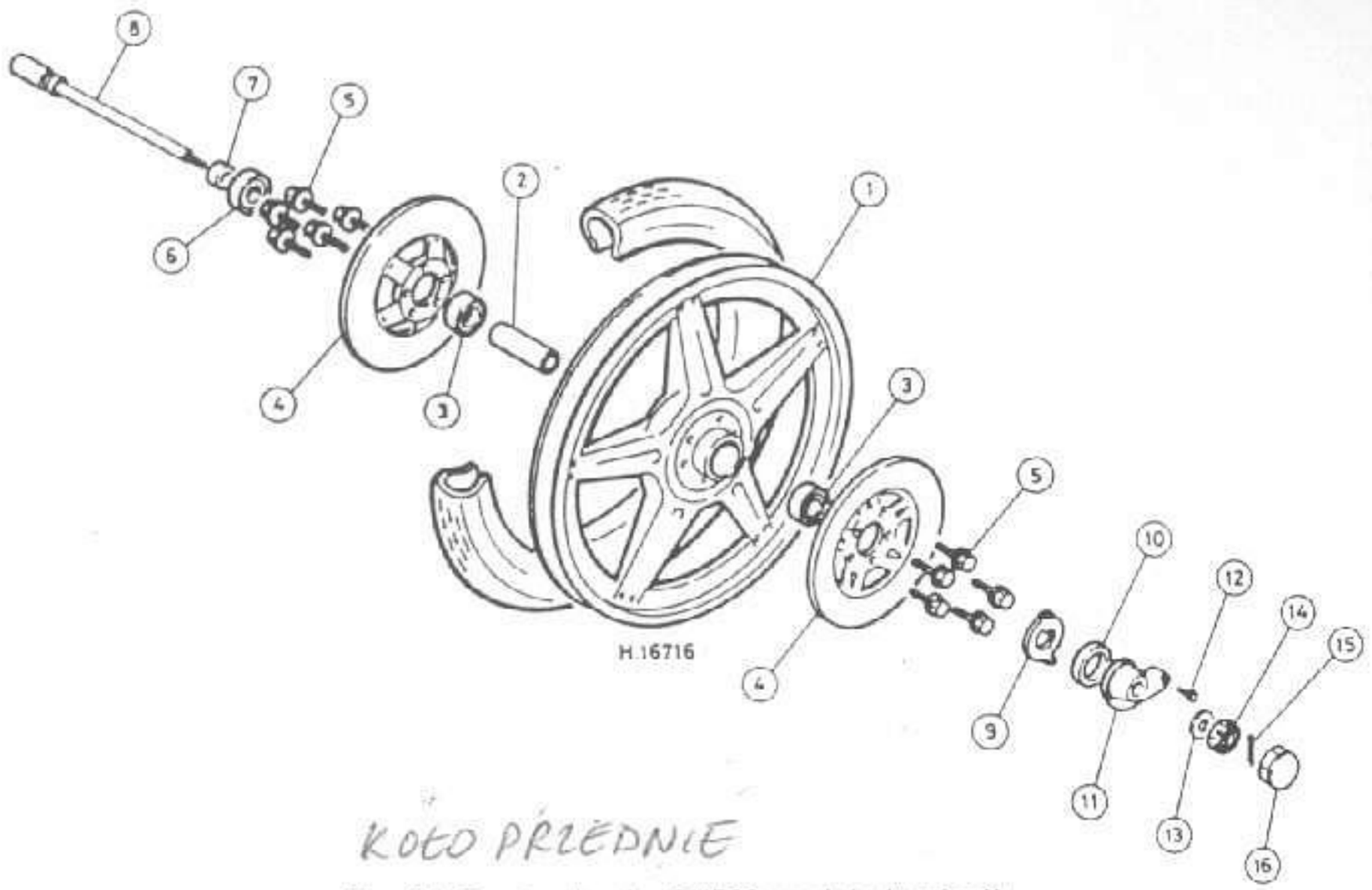


Fig. 6.1 Front wheel – CX500 models (typical)

1 *Wheel*
2 *Spacer*
3 *Bearing*
4 *Brake disc*
5 *Bolt*
6 *Seal*
7 *Collar*
8 *Spindle*
9 *Gearbox retainer*
10 *Seal*
11 *Speedometer drive gearbox*
12 *Screw*
13 *Washer*
14 *Nut*
15 *Split pin*
16 *Cap*

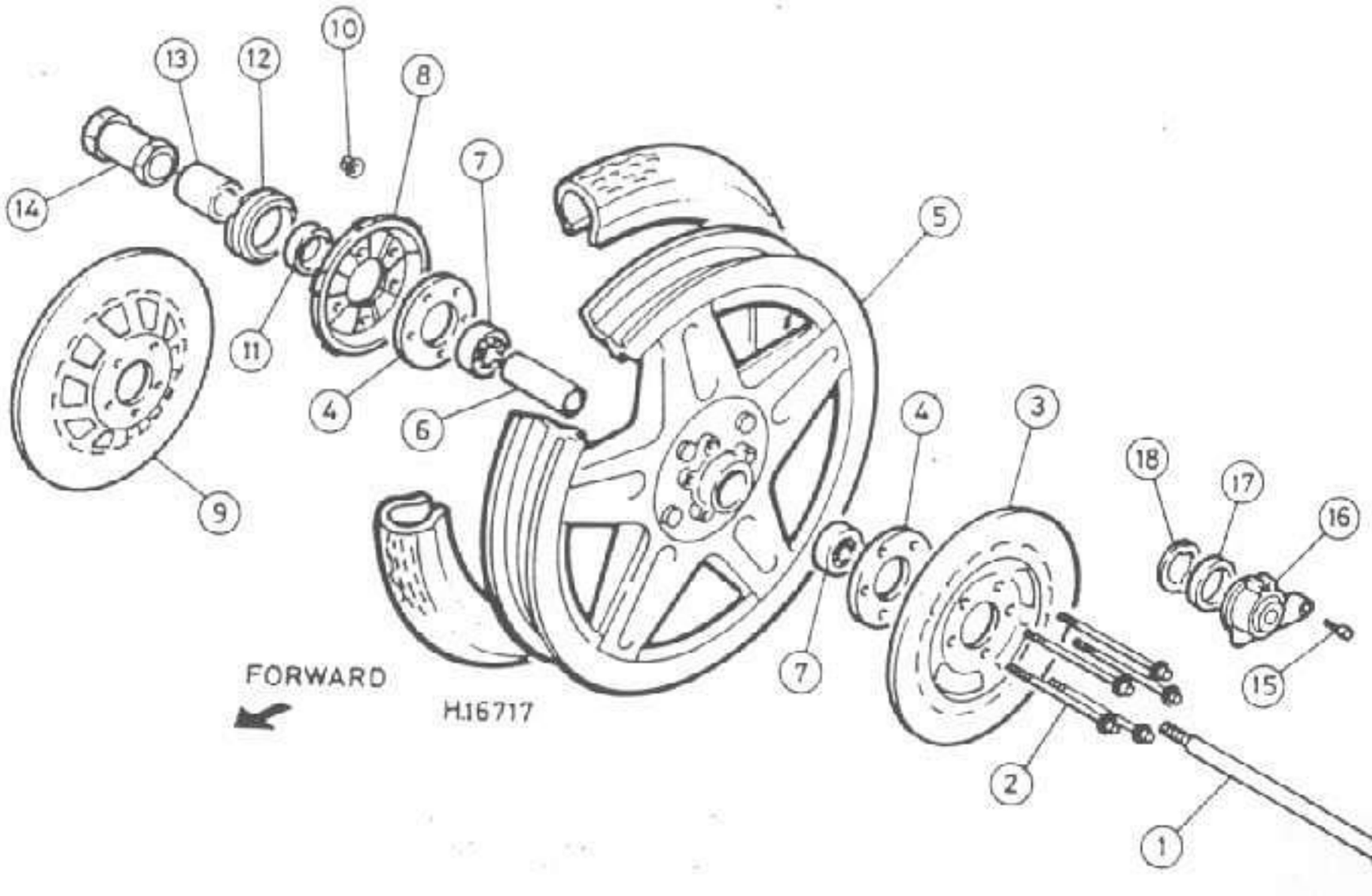


Fig. 6.2 Front wheel – GL500 models (typical)

1 *Spindle*
2 *Bolt*
3 *Left-hand brake disc*
4 *Damping shim*
5 *Wheel*
6 *Spacer*
7 *Bearing*
8 *Flange – single disc system*
9 *Right-hand brake disc*
10 *Nut*
11 *Oil seal*
12 *Threaded retainer*
13 *Spacer*
14 *Nut*
15 *Screw*
16 *Speedometer drive gearbox*
17 *Oil seal*
18 *Gearbox retainer*

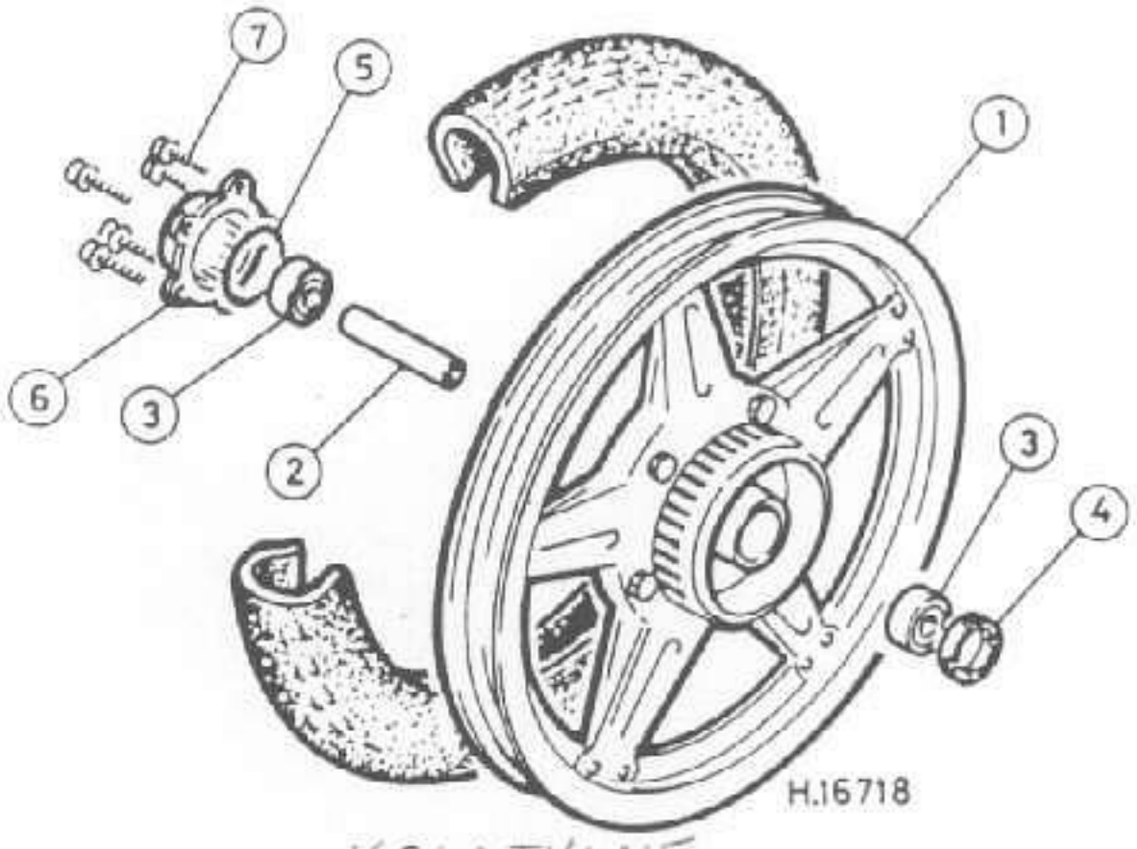


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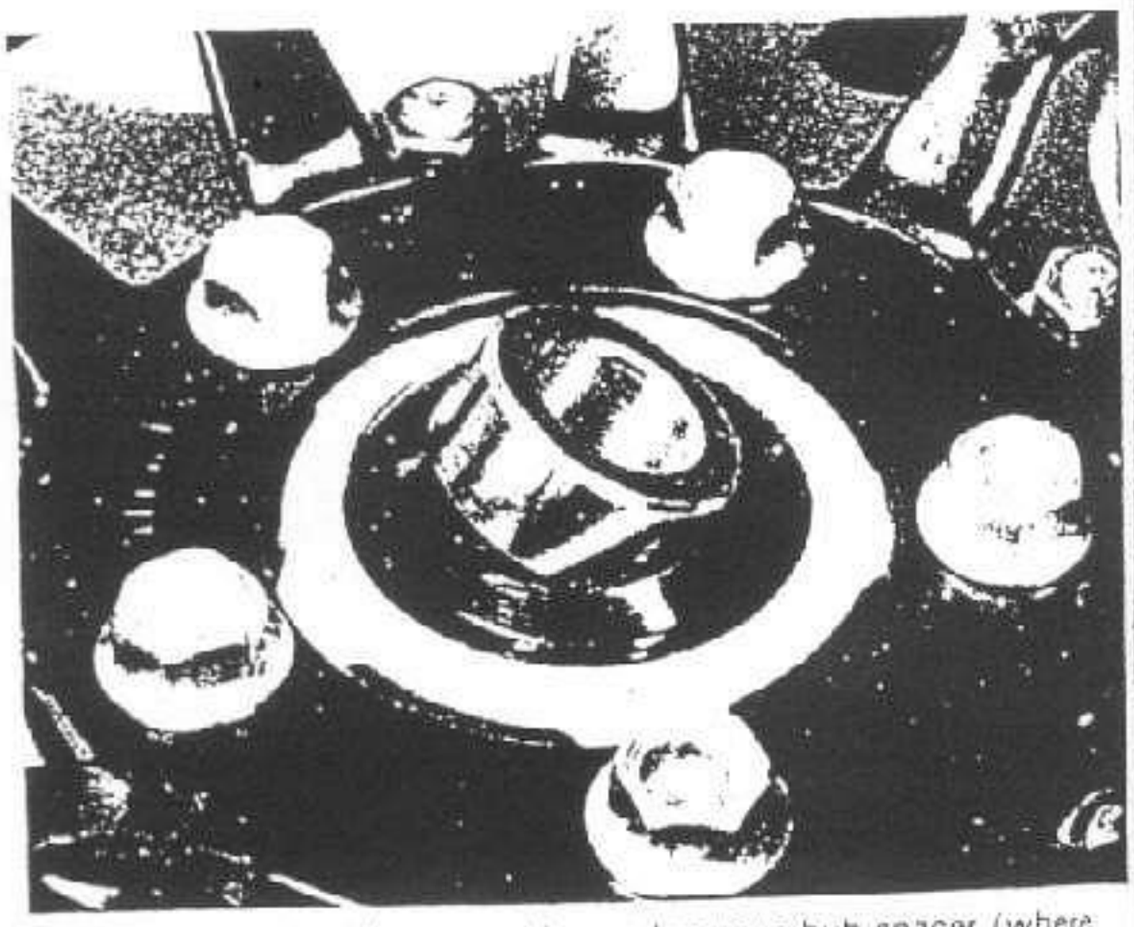
Fig. 6.3 Rear wheel – typical

1 *Wheel*
2 *Spacer*
3 *Bearing*
4 *Bearing retainer*
5 *O-ring*
6 *Rear bevel drive*
7 *Bolt*

4 Wheel bearings: removal, examination and refitting

1 Remove from the machine the wheel to be overhauled and withdraw the hub spacer and, where applicable, the brake backplate; refer to Section 2 or 3 of this Chapter.
2 On the front wheel of GL500 models, unscrew the spindle sleeve nut and withdraw the spindle and spacer. The speedometer drive ring can be lifted out of the hub after the retaining oil seal on that side has been levered from its housing.
3 On all GL500 models the front hub right-hand bearing is secured by a threaded retainer, and all Comstar type rear wheels have a threaded retainer fitted to secure the left-hand bearing. These retainers are screwed into the hub and staked at four points to prevent them from unscrewing. A retainer is removed and refitted using a special tool, Part Number 07710-0010401 in conjunction with an adaptor, Part Number 07710-0010200. If these are not available, and a peg spanner of suitable size cannot be found, obtain a steel strip (an old tyre lever would be ideal) and drill two holes in it to correspond with two diagonally opposite holes in the retainer. Pass a small bolt through each hole and secure them with nuts to complete a fabricated peg spanner of the type shown in the accompanying illustration.
4 In all cases, the oil seal into which the hub spacer is inserted may be either levered out or driven out with the appropriate bearing.
5 The bearings are easiest to remove if an internally-expanding bearing puller is used. If this is not available an expanding bolt such as a Rawlbolt could be tightened on to the inner race of one bearing so that it can be driven out by passing a drift through the hub. The simplest method is given below but will require some skill and care if it is to be successful. On GL650 machines the rear wheel right-hand bearing must be removed first, but in all other cases either bearing can be removed first.
6 Position the wheel on a work surface with its hub well supported by wooden blocks so that enough clearance is left beneath the wheel to drive out the first bearing. Ensure the blocks are placed as close to the bearing as possible, to lessen the risk of distortion of the hub casting whilst the bearings are being removed or refitted.
7 Place the end of a long handled drift through the hub and against the upper face of the bearing inner race and tap the bearing downwards out of the wheel hub. The spacer located between the two bearings may be moved sideways slightly in order to allow the drift to be positioned against the face of the bearing. Move the drift around the face of the bearing whilst drifting it out of position, so that the bearing leaves the hub squarely.
8 With the one bearing removed, the wheel may be lifted and the spacer withdrawn from the hub. Invert the wheel and remove the second bearing, using a similar procedure. The dust seal should be closely inspected for any indication of damage, hardening or perishing and renewed if necessary. It is advisable to renew all seals as a matter of course if the bearings are found to be defective.
9 Remove all the old grease from the hub and bearings, giving the latter a final wash in petrol. Check the bearings for signs of play or roughness when they are turned. If there is any doubt about the condition of a bearing, it should be renewed.
10 If the original bearings are to be refitted, they should be repacked with high-melting point grease before being fitted into the hub. New bearings must also be packed with grease. Ensure that the bearing recesses in the hub are clean and both bearings and recess mating surfaces lightly greased to aid fitting. Check the condition of the hub recesses for evidence of abnormal wear which may have been caused by the outer race of a bearing spinning. If evidence of this is found, and the bearing is a loose fit in the hub, it is best to seek advice from a Honda Service Agent or a competent motorcycle engineer. Alternatively, a proprietary product such as Loctite Bearing Fit may be used to retain the bearing outer race; this will mean, however, that the bearing housing must be cleaned and degreased before the locking compound can be used.
11 With the wheel hub and bearing thus prepared, fit the bearings and central spacer as follows. With the hub again well supported by the wooden blocks, drift the first of two bearings into position. Use a soft-faced hammer in conjunction with a socket or length of metal tube which has an overall diameter which is slightly less than that of the outer race of the bearing, but which does not bear at any point on the bearing sealed surface or inner race. Tap the bearing into place against the locating shoulder machined in the hub, remembering that the sealed surface of the bearing must always face outwards. With the first bearing in place, invert the wheel, insert the central spacer and pack the hub centre no more than 2/3 full with high-melting point grease. Fit the second bearing, using the same procedure. Take great care to ensure that each of the bearings enters its housing correctly, that is, square to the housing, otherwise the housing surface may be broached.
12 Insert the speedometer drive ring into the hub so that its protruding tangs fit into the slots in the hub. Oil seals should be greased before being drifted into place using the method described above. Where applicable, renew the retainer if its threads are damaged, apply grease to the threads and screw it into the hub until it is securely tightened. Use a hammer and a punch to stake it to the hub at four diametrically opposite points around its outer edge to prevent any risk of its slackening.



4.1 Withdraw wheel from machine and remove hub spacer (where fitted)

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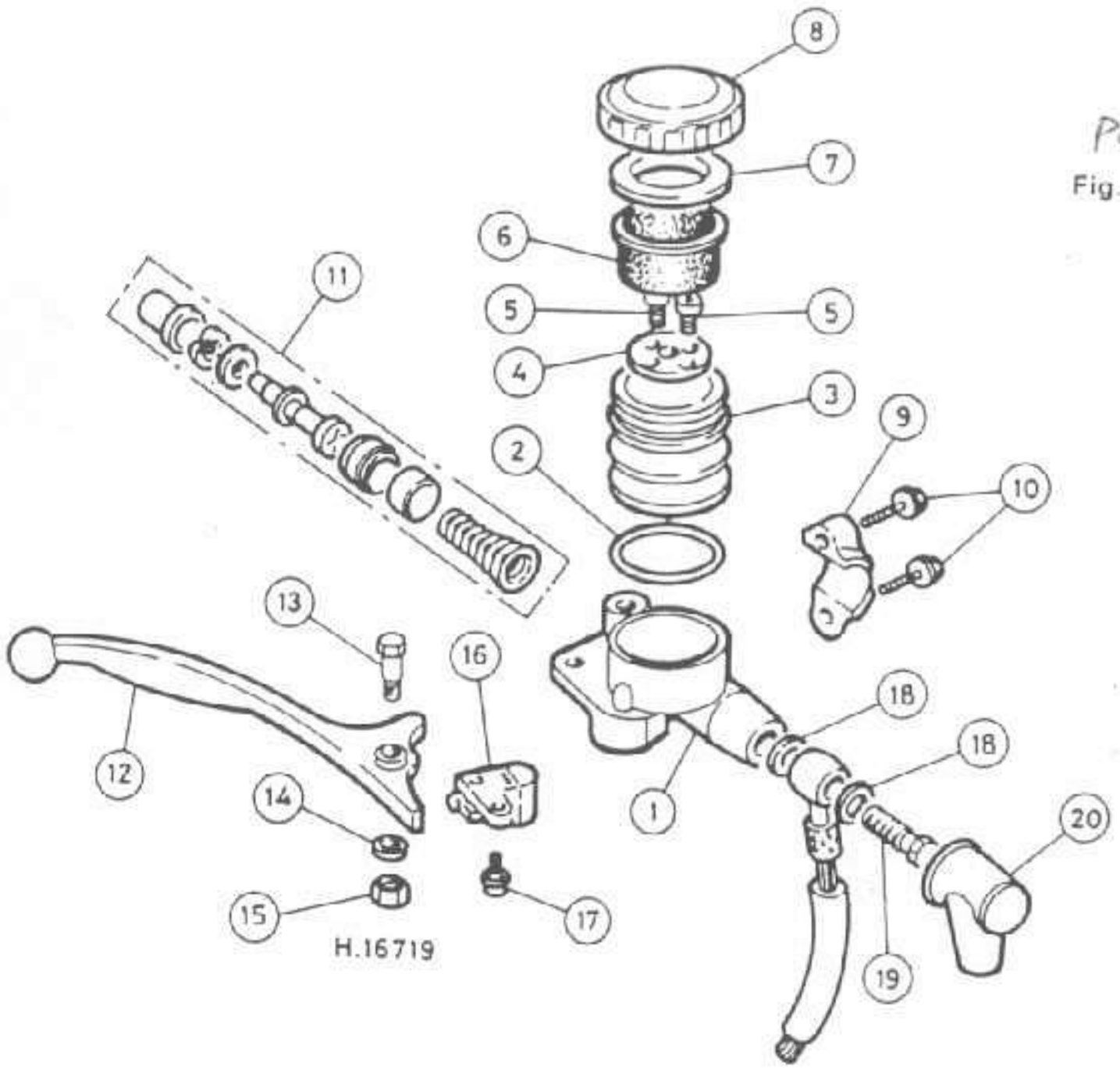

Fig. 6.5 Front brake master cylinder – CX500, CX500 1978

1 *Master cylinder body*
2 *O-ring*
3 *Reservoir*
4 *Reservoir plate*
5 *Screw*
6 *Diaphragm*
7 *Diaphragm plate*
8 *Reservoir cap*
9 *Clamp*
10 *Bolt*
11 *Primary piston assembly*
12 *Handlebar lever*
13 *Lever pivot bolt*
14 *Washer*
15 *Nut*
16 *Front brake stop lamp switch*
17 *Screw*
18 *Sealing washer*
19 *Union bolt*
20 *Boot*

1 *Master cylinder body*
2 *Handlebar clamp*
3 *Front brake stop lamp switch*
4 *Bolt*
5 *O-ring*
6 *Reservoir*
7 *Diaphragm*
8 *Retaining plate*
9 *Master cylinder top*
10 *Screw*
11 *Primary piston assembly*
12 *Handlebar lever*
13 *Lever pivot bolt*
14 *Washer*
15 *Nut*
16 *Spring washer*
17 *Screw*

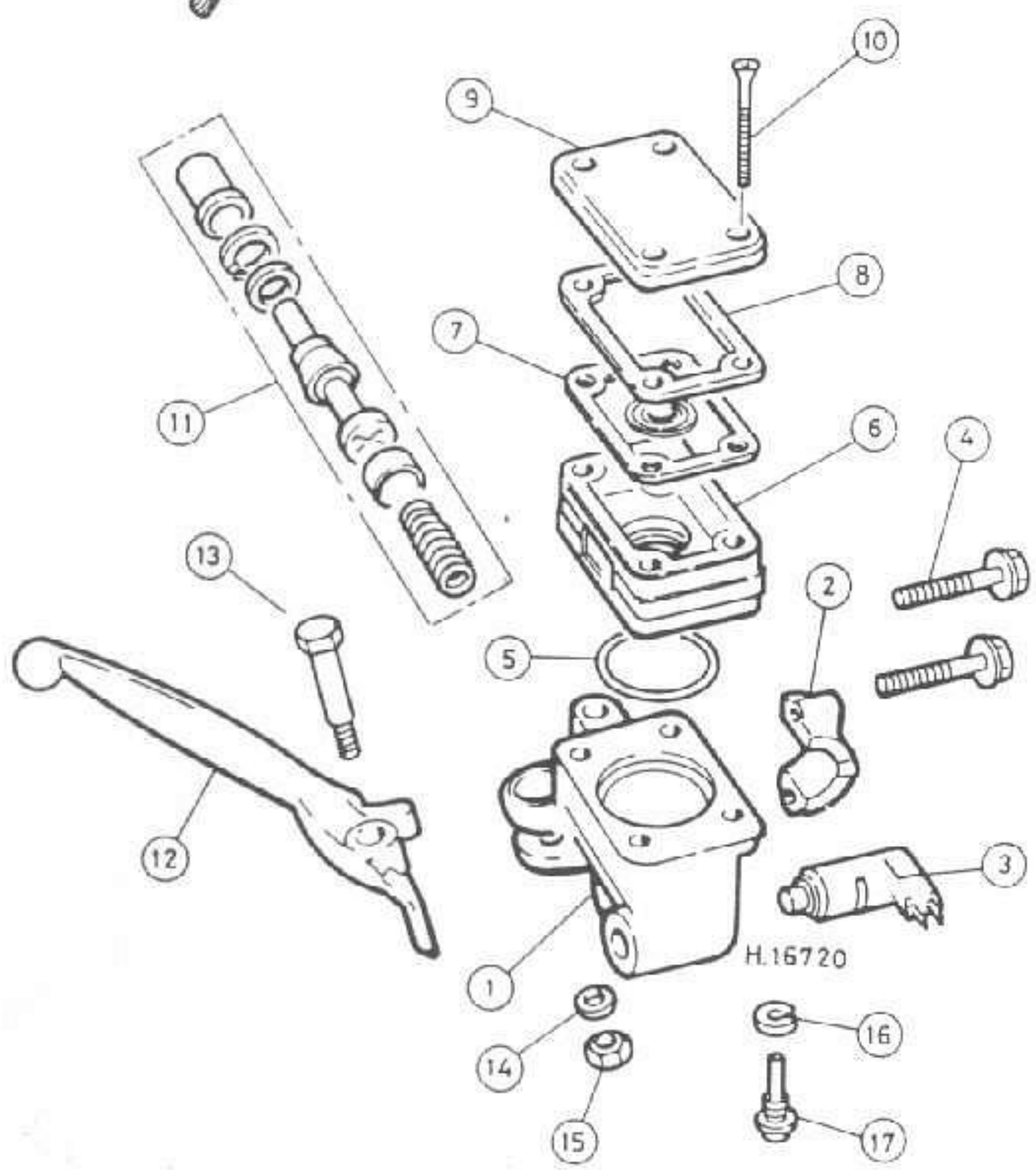

Fig. 6.6 Front brake master cylinder – all later models (typical)

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Immerse all of these components in new brake fluid prior to reassembly and refer to the figure accompanying this text when in doubt as to their fitted positions. When refitting the master cylinder assembly to the handlebar, position the assembly so that the reservoir will be exactly horizontal when the machine is in use. Tighten the clamp top bolt first, and then the bottom bolt. Connect the brake hose to the master cylinder, ensuring that a new sealing washer is placed on each side of the hose union, and tightening the hose union (bolt) to the specified torque setting. Finally, replace the rubber union cover.

12 Bleed the brake system after refilling the reservoir with new hydraulic fluid, then check for leakage of fluid whilst applying the brake lever. Push the machine forward and bring it to a halt by applying the brake. Do this several times to ensure that the brake is operating correctly before taking the machine for a test run. During the run, use the brakes as often as possible and on completion, recheck for signs of fluid loss.

Rear master cylinder – CX500 E-C, CX650 E-D

13 Remove the right-hand sidepanel. To avoid splashing brake fluid over any plastic or painted components, drain the system as described in paragraph 2 above before disconnecting the fluid reservoir hose from the master cylinder top union; place plenty of clean rag around the components to catch any spilt fluid.

14 Straighten and remove the retaining split pin, then withdraw the clevis pin from the end of the pushrod. Unscrew the two Allen bolts retaining it to the pillion footrest plate and withdraw the master cylinder.

15 With the unit on the work surface, remove the rubber cover from its lower end, and use a pair of circlip pliers to displace the circlip which retains the pushrod. Withdraw the pushrod, noting that the piston assembly behind it may be ejected under spring pressure; wrap the cylinder in clean rag to prevent the piston from flying out. Withdraw the primary cup and spring; it may be necessary to apply a jet of compressed air to the fluid passage to force them out.

16 Clean and check the unit following the instructions given in paragraphs 7 – 10 above.

17 Reassembly is a straightforward reversal of the removal sequence, noting those points made in paragraphs 11 – 12 above which do not specifically apply to the front unit. Tighten the mounting bolts to the specified torque setting.

8 Brake hose: examination and renovation

1 A flexible brake hose is used as a means of transmitting hydraulic pressure to the caliper unit once the front brake lever is applied.

2 When the brake assembly is being overhauled, or at any time during a routine maintenance or cleaning procedure, check the condition of the hose for signs of leakage, damage, deterioration or scuffing against any cycle components. Any such damage will mean that the hose must be renewed immediately. The union connections at either end of the hose must also be in good condition, with no stripped threads or damaged sealing washers. Do not tighten these union bolts over the recommended torque setting as they are easily sheared if overtightened.

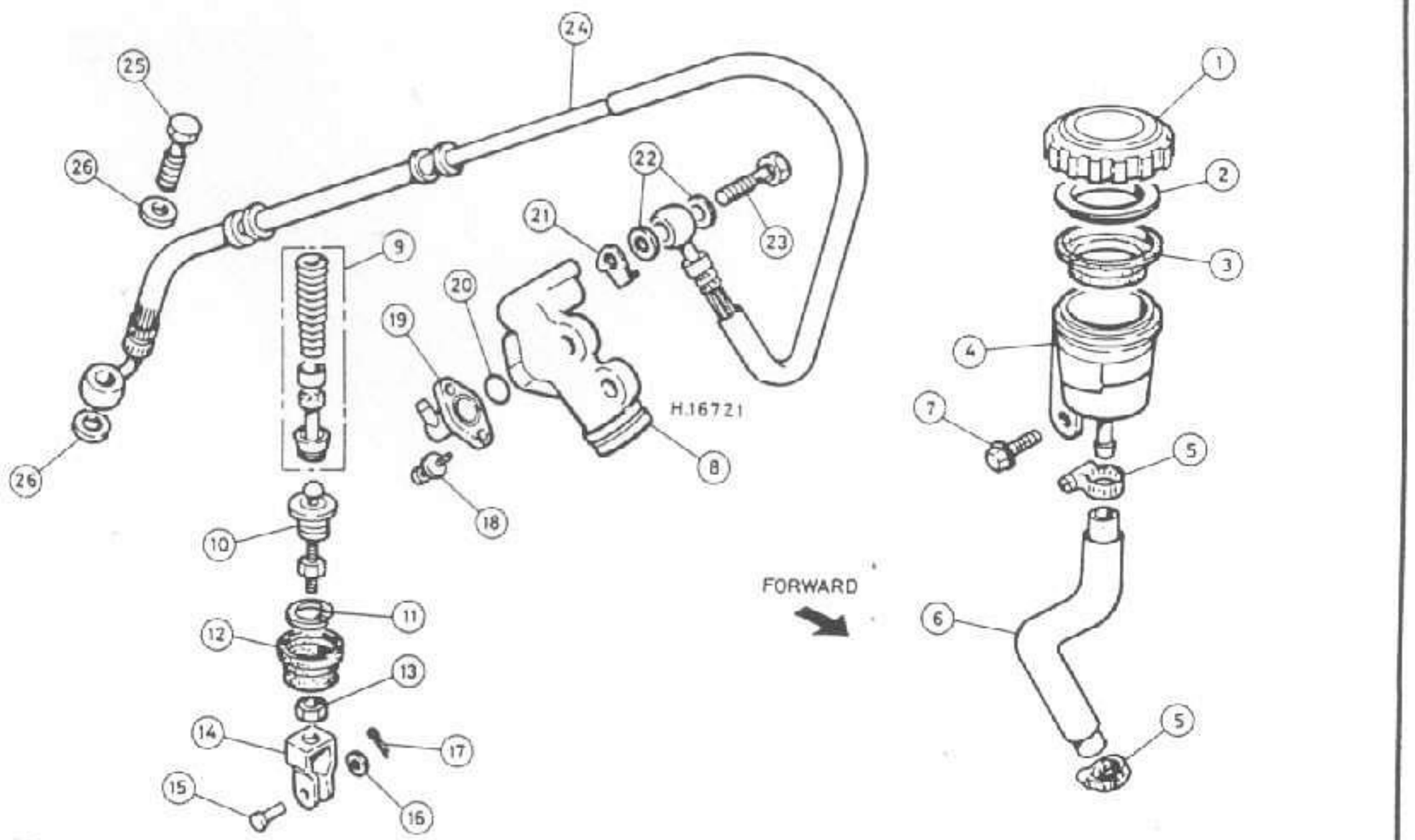

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Fig. 6.7 Rear brake master cylinder – CX500 E-C, CX650 E-D

1 *Reservoir cap*
2 *Retaining plate*
3 *Diaphragm*
4 *Reservoir*
5 *Hose clamp*
6 *Hose*
7 *Bolt*
8 *Master cylinder*
9 *Piston assembly*
10 *Pushrod*
11 *Circlip*
12 *Rubber cover*
13 *Locknut*
14 *Link*
15 *Clevis pin*
16 *Washer*
17 *Split pin*
18 *Screw*
19 *Union*
20 *O-ring*
21 *Plate*
22 *Sealing washer - 1 off 650, 2 off 500*
23 *Union bolt*
24 *Brake hose*
25 *Union bolt*
26 *Sealing washer*

9 Brake caliper: examination and renovation

1 Start by removing the pads as described in Routine Maintenance. If working on a twin-disc system, dismantle the calipers separately and store their components in separate, clearly-marked containers to avoid the accidental interchange of part-worn components.

Single piston caliper – all CX500 and CX500 D models, CX500 C 1979, 1980, 1981

2 Drain the system of fluid as described in Section 7, paragraph 2.

3 Having separated the caliper from its mounting bracket, withdraw the two slider pins and their rubber dust covers. Displace the circlip which retains the piston dust seal and then carefully prise it out using a small screwdriver, taking care not to scratch the surface of the cylinder bore. The piston can be displaced most easily by applying an air jet to the hydraulic fluid feed orifice. Be prepared to catch the piston as it falls free. Displace the annular piston seal from the cylinder bore groove.

4 Clean the caliper components thoroughly in trichlorethylene or in hydraulic brake fluid. **Caution:** Never use petrol for cleaning hydraulic brake parts otherwise the rubber components will be damaged. Discard all the rubber components as a matter of course. The replacement cost is relatively small and does not warrant re-use of components vital to safety. Check the piston and caliper cylinder bore for scoring, rusting or pitting. If the necessary measuring equipment is available, compare the dimensions of the caliper bore and piston with those specified. If any component is found to be excessively worn or if any of the above defects are evident it is unlikely that a good fluid seal can be maintained and for this reason the components must be renewed. Inspect the slider spindles for wear and check their fit in the support bracket. Slack between the spindles and bores may cause brake judder if wear is severe.

5 To assemble the caliper, reverse the removal procedure. When assembling pay attention to the following points. Apply caliper grease (high heat resistant) to the caliper spindles. Apply a generous amount of brake fluid to the inner surface of the cylinder and to the periphery of the piston, then reassemble. Do not reassemble the piston with it inclined or twisted. When installing the piston push it slowly into the cylinder while taking care not to damage the piston seal. Apply brake pad grease around the periphery of the moving pad. Bleed the brake after refilling the reservoir with new hydraulic fluid, then check for leakage while applying the brake lever tightly. Repeat the entire procedure for the second brake caliper. After a test run, check the pads and brake disc.

6 Note that any work on the hydraulic system must be undertaken under ultra-clean conditions. Particles of dirt will score the working parts and cause early failure.

Twin piston caliper – all later models

7 The general procedure for dealing with twin piston front calipers is similar to that described above noting the following points. After draining the hydraulic system remove the caliper mounting and pivot bolts and lift the caliper clear of the mounting bracket and disc. Remove the pads and anti-rattle shim as described in Routine Maintenance. The pistons can be displaced from their bores using compressed air as described above. Note that a strip of wood or similar should be placed in the caliper to prevent one of the pistons from emerging before the other, once both are nearly clear of the bores they can be pulled clear manually. In the absence of compressed air temporarily reconnect the brake hose and use hydraulic pressure to push the pistons out. With either method, wrap some rag around the caliper to catch any spilt fluid and take care to avoid trapped fingers.

8 Examination and reassembly of the caliper is as described above with the obvious exception that there are two sets of pistons and bores to be dealt with. It is recommended that the pistons are marked internally with a spirit-based felt marker to ensure that they are refitted in their original bores.

9 On CX500 E-C and CX650 E-D models, the rear caliper can be dealt with in the same way as the front.

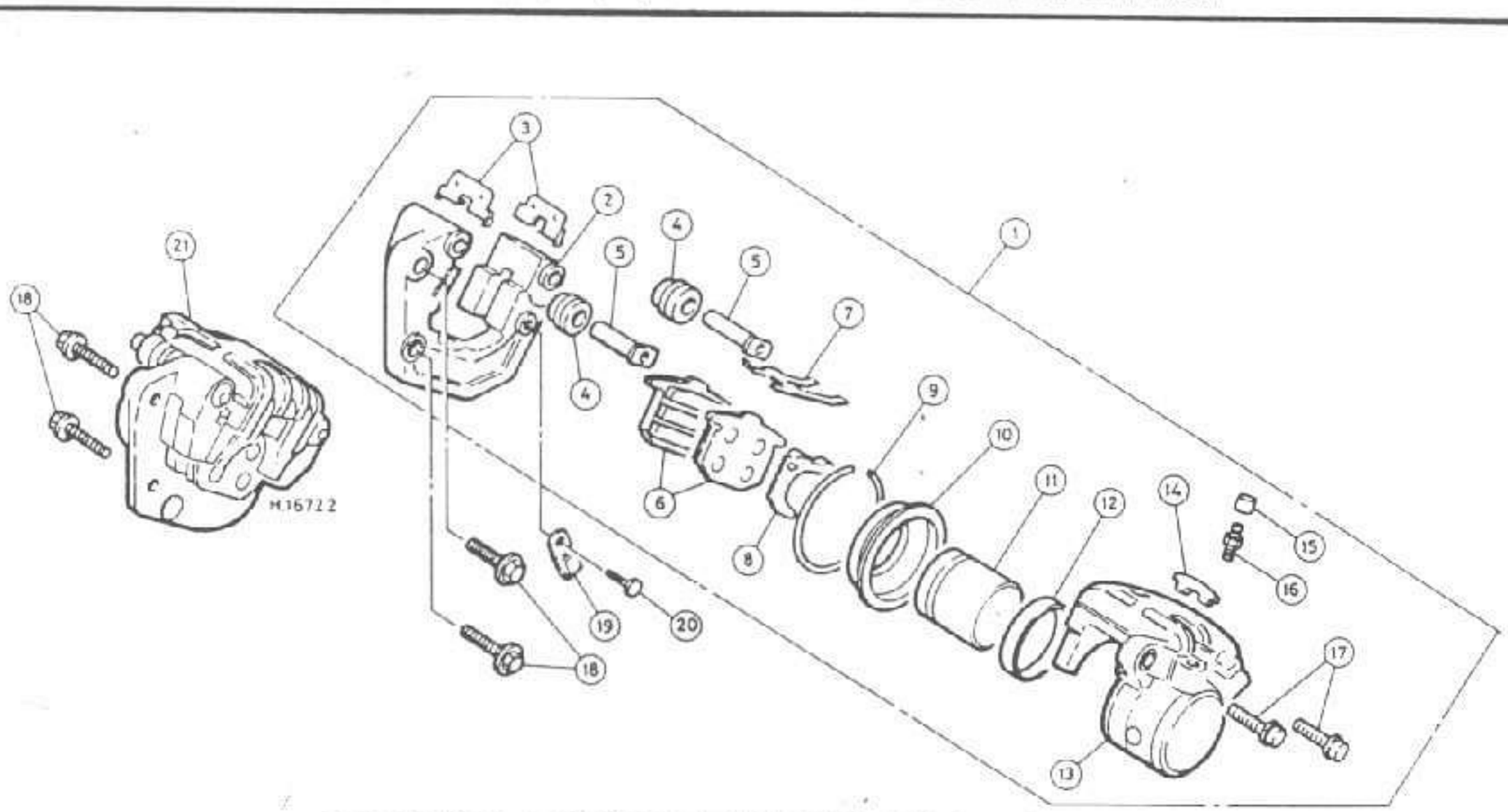
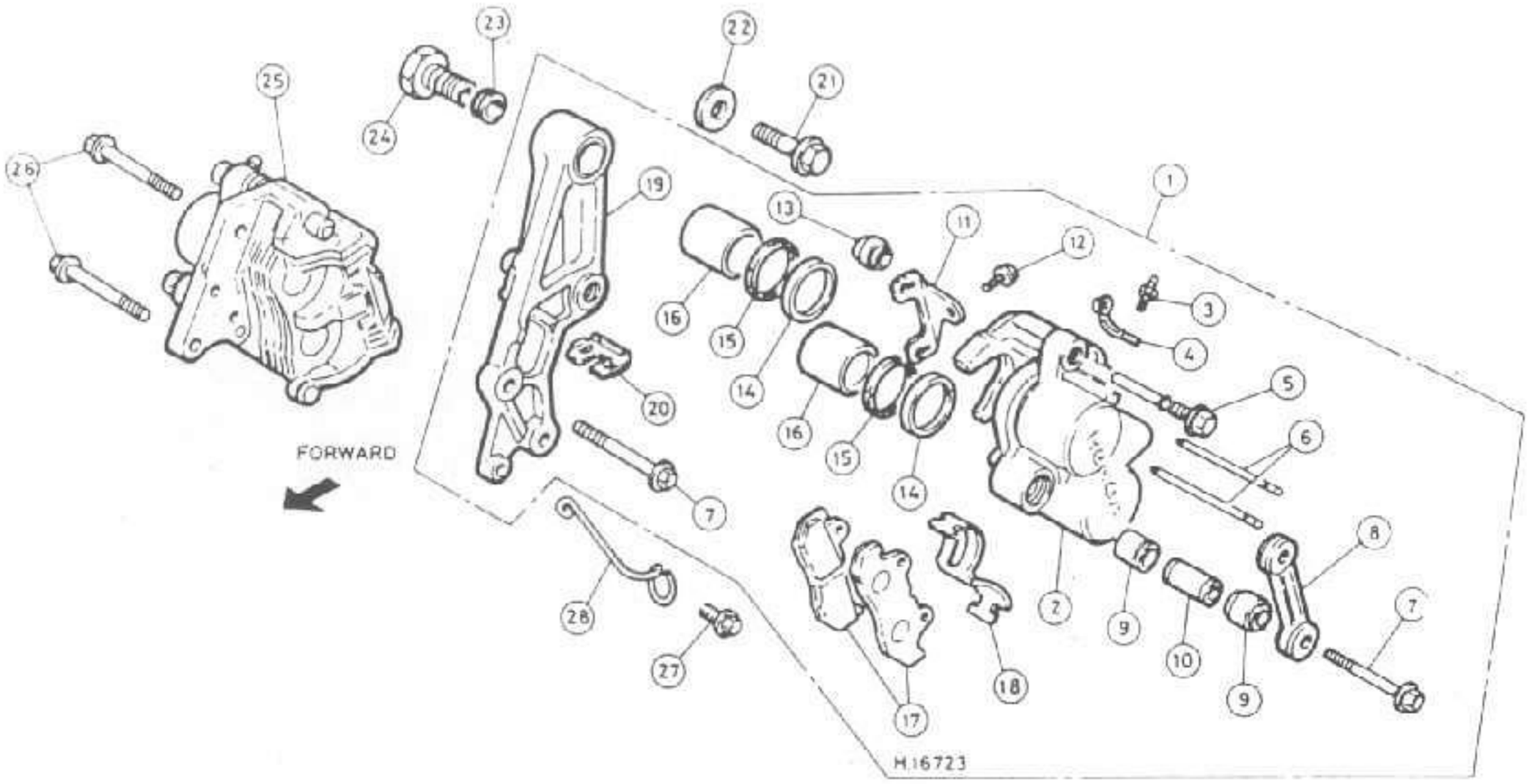


Fig. 6.8 Single piston brake caliper

1 *Caliper assembly*
2 *Front bracket*
3 *Bracket retainer*
4 *Dust cover*
5 *Pin*
6 *Brake pads*
7 *Pad spring*
8 *Anti-chatter shim*
9 *Clip*
10 *Piston boot*
11 *Piston*
12 *Piston seal*
13 *Caliper*
14 *Inspection window cap*
15 *Cap*
16 *Bleed nipple*
17 *Bolt*
18 *Bolt*
19 *Clamp*
20 *Bolt*
21 *Caliper*

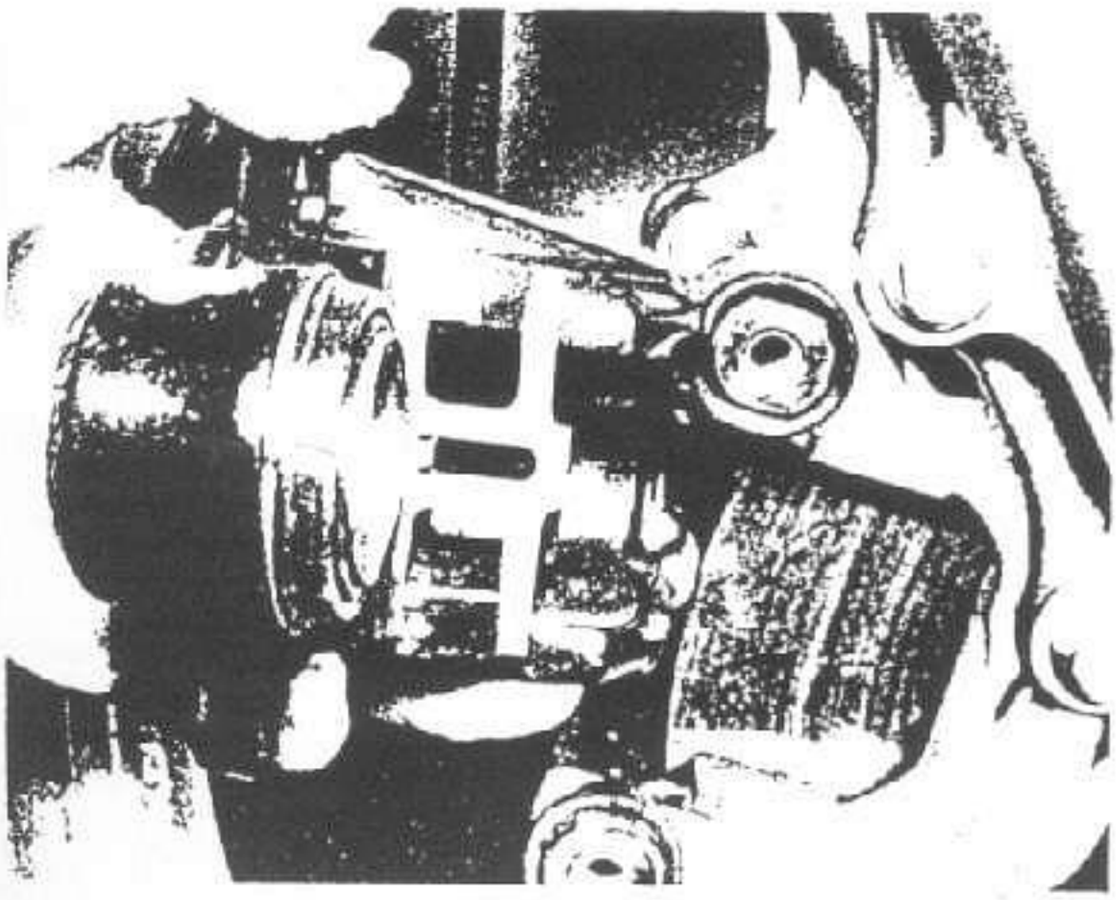


DWUTŁOCZKOWY ZACISK HAMULCA

Fig. 6.9 Twin piston brake caliper – CX500 E-C, CX650 E-D (other models similar)

1 *Left-hand caliper assembly*
2 *Caliper*
3 *Bleed nipple*
4 *Cap*
5 *Caliper pivot bolt*
6 *Pad retaining pin*
7 *Caliper mounting bracket/fork lower leg mounting bolt*
8 *Torque link**
9 *Dust seal*
10 *Sleeve*
11 *Pin retaining plate*
12 *Bolt*
13 *Dust seal*
14 *Piston fluid seal*
15 *Piston dust seal*
16 *Piston*
17 *Brake pads*
18 *Pad spring*
19 *Mounting bracket*
20 *Bracket retainer*
21 *Caliper mounting bracket/fork lower leg mounting bolt*
22 *Washer**
23 *O-ring**
24 *Pivot**
25 *Right-hand caliper*
26 *Caliper mounting bracket/fork lower leg mounting bolt*
27 *Bolt*
28 *Cable guide*

* *CX500 E-C and CX650 E-D only*



9.3 Piston dust seal is retained by a circlip on single-piston calipers

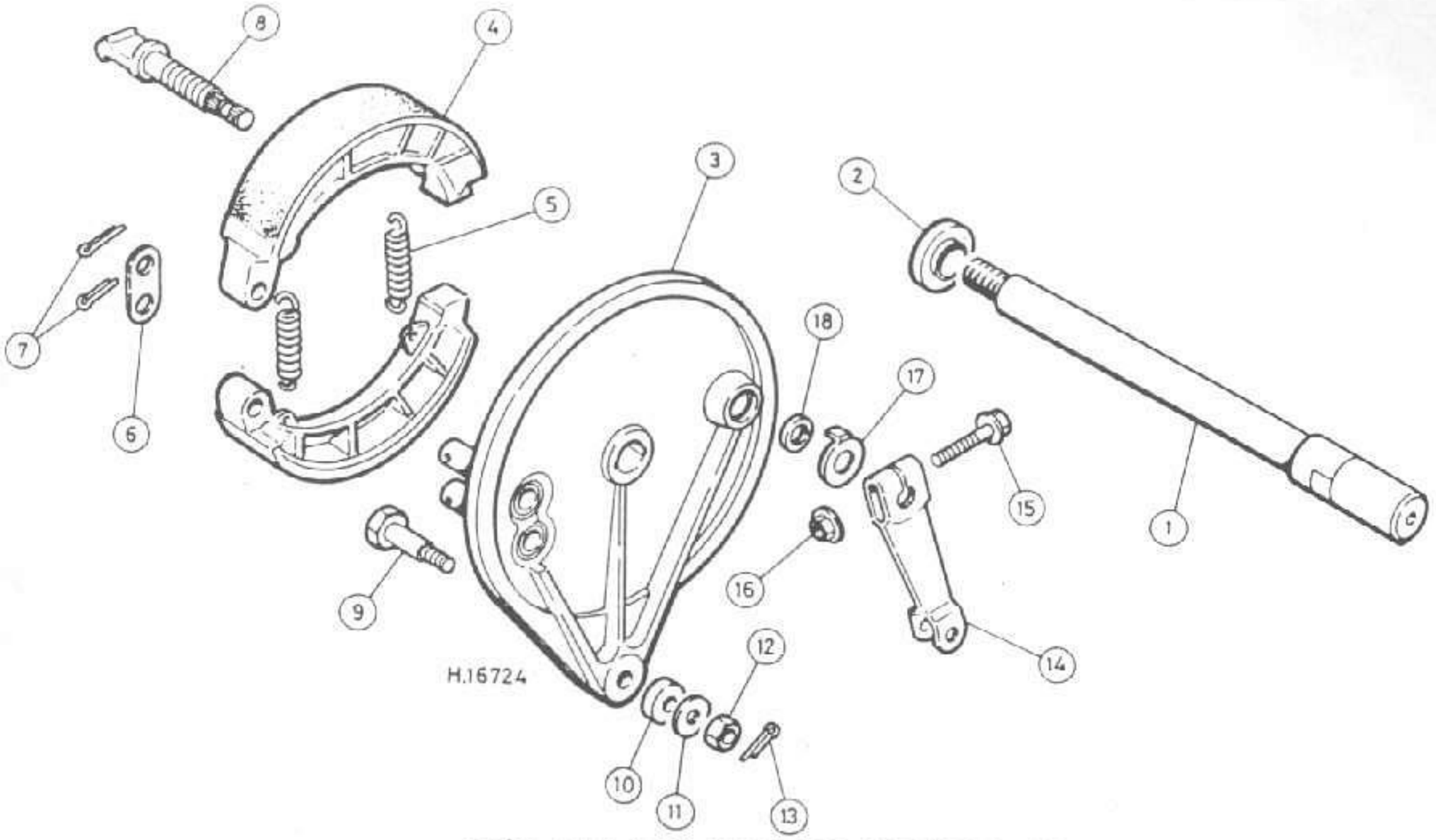
10 Bleeding the hydraulic brake system

1 The method of bleeding a brake system of air and the procedure described below apply equally to either a front brake or rear brake of the hydraulically actuated type.

2 If the brake action becomes spongy, or if any part of the hydraulic system is dismantled (such as when a hose is replaced) it is necessary to bleed the system in order to remove all traces of air. The procedure for bleeding the hydraulic system is best carried out by two people.

3 Check the fluid level in the reservoir and top up with new fluid of the specified type if required. Keep the reservoir at least half full during the bleeding procedure; if the level is allowed to fall too far air will enter the system requiring that the procedure be started again from scratch. Refit the cap onto the reservoir to prevent the ingress of dust or the ejection of a spout of fluid.

4 Remove the dust cap from the caliper bleed nipple and clean the area with a rag. Place a clean glass jar below the caliper and connect a pipe from the bleed nipple to the jar. A clear plastic tube should be used so that air bubbles can be more easily seen. Where two calipers are fitted a pipe should be fitted to each nipple, and the two nipples operated simultaneously. Place some clean hydraulic fluid in the glass jar so that the pipe(s) are immersed below the fluid surface throughout this operation.



TYLNY HAMULEC BĘBNOWY

Fig. 6.10 Rear drum brake

1 *Wheel spindle*
2 *Collar*
3 *Brake backplate*
4 *Brake shoe*
5 *Return spring*
6 *Anchor plate*
7 *Split pin*
8 *Brake cam*
9 *Bolt*
10 *Rubber washer*
11 *Washer*
12 *Nut*
13 *Split pin*
14 *Brake arm*
15 *Bolt*
16 *Nut*
17 *Wear indicator*
18 *Dust seal*

12 Tyres: removal and refitting

1 It is strongly recommended that should a repair to a tubeless tyre be necessary, the wheel is removed from the machine and taken to a tyre fitting specialist who is willing to do the job or taken to an official dealer. This is because the force required to break the seal between the wheel rim and tyre bead is considerable and considered to be beyond the capabilities of an individual working with normal tyre removing tools. Any abortive attempt to break the rim to bead seal may also cause damage to the wheel rim, resulting in an expensive wheel replacement. If, however, a suitable bead releasing tool is available, and experience has already been gained in its use, tyre removal and refitting can be accomplished as follows.

2 Remove the wheel from the machine by following the instructions for wheel removal as described in the relevant Section of this Chapter. Deflate the tyre by removing the valve insert and when it is fully deflated, push the bead of the tyre away from the wheel rim on both sides so that the bead enters the centre well of the rim. As noted, this operation will almost certainly require the use of a bead releasing tool.

3 Insert a tyre lever close to the valve and lever the edge of the tyre over the outside of the wheel rim. Very little force should be necessary: if resistance is encountered it is probably due to the fact that the tyre beads have not entered the well of the wheel rim all the way round the tyre. Should the initial problem persist, lubrication of the tyre bead and the inside edge and lip of the rim will facilitate removal. Use a recommended lubricant, a diluted solution of washing-up liquid or french chalk. Lubrication is usually recommended as an aid to tyre fitting but its use is equally desirable during removal. The risk of lever damage to wheel rims can be minimised by the use of proprietary plastic rim protectors placed over the rim flange at the point where the tyre levers are inserted. Suitable rim projectors may be fabricated very easily from short lengths (4 – 6 inches) of thick walled nylon petrol pipe which have been split down one side using a sharp knife. The use of rim protectors should be adopted whenever levers are used and, therefore, when the risk of damage is likely.

4 Once the tyre has been edged over the wheel rim, it is easy to work around the wheel rim so that the tyre is completely free on one side.

5 Working from the other side of the wheel, ease the other edge of the tyre over the outside of the wheel rim, which is furthest away. Continue to work around the rim until the tyre is freed completely from the rim.

6 Refer to the following Section for details relating to puncture repair and the renewal of tyres. See also the remarks relating to the tyre valves in Section 14.

7 Refitting of the tyre is virtually a reversal of removal procedure. If the tyre has a balance mark (usually a spot of coloured paint) indicating its lightest point, as on the tyres fitted as original equipment, this must be positioned alongside the valve. Similarly any arrow indicating direction of rotation must face the right way.

8 Starting at the point furthest from the valve, push the tyre bead over the edge of the wheel rim until it is located in the central well. Continue to work around the tyre in this fashion until the whole of one side of the tyre is on the rim. It may be necessary to use a tyre lever during the final stages. Here again, the use of a lubricant will aid fitting. It is recommended strongly that when refitting the tyre only a recommended lubricant is used because such lubricants also have sealing properties. Do not be over generous in the application of lubricant or tyre creep may occur.

9 Fitting the upper bead is similar to fitting the lower bead. Start by pushing the bead over the rim and into the well at a point diametrically opposite the tyre valve. Continue working round the tyre, each side of

Bulbs	UK models	US models
Headlamp:		
CX500 1978, 1979, CX500 D 1979	N/App	12V, 50/40W*
CX500 C 1979, 1980, CX500 D 1980	N/App	12V 65/50W*
All other models	12V, 60/55W	12V, 60/55W
Parking lamp	12V, 4W	N/App
Front turn signals	12V, 21W	12V, 23/8W (32/3cp)
Rear turn signals	12V, 21W	12V, 23W (32cp)
Number/license plate lamp – where fitted	12V, 10W	12V, 10W (4cp)
Stop/tail lamp	12V, 21/5W	12V, 23/8W (32/3cp)
Instrument illuminating and warning lamps	12V, 3.4W	12V, 3.4W (2 cp)

*Indicates a sealed-beam unit

Fuses

	All CX500 models, CX500 C 1979, 1980 CX500 D 1979, 1980	CX500 C, CX500 D 1981	CX500 E-C, GL500 1981, GL500 I 1981
Main	20A	30A	30A
Headlamp	10A	10A	10A
Instruments, tail lamp	10A	10A	10A
	GL500 D-C, CX500 C 1982, GL500 and GL500 I 1982	CX650 C, CX650 E-D	All GL650 models
Main	30A	30A	30A
Headlamp	10A	15A	15A
Oil and neutral warning lamps	10A	15A	15A
Turn signals, stop lamp, horn	10A	15A	15A
Instruments, tail lamp	10A	15A	15A
Accessory	5A	N/App	5A
Interstate fairing fuses:			
GL500 I 1981	10A, 5A		
GL500 I 1982, GL500 D-C, GL650 I, GL650 D2-E	1A, 2A, 5A		

1 General description

The 12 volt electrical system is powered by a three-phase alternating current generator (alternator). The permanent magnet rotor is mounted on the extreme rear end of the crankshaft where it is driven at engine speed and the multi-coil stator is mounted in the engine rear cover.

The alternating current (ac) produced by the alternator is passed through a combined integrated circuit (IC) regulator/rectifier unit. The

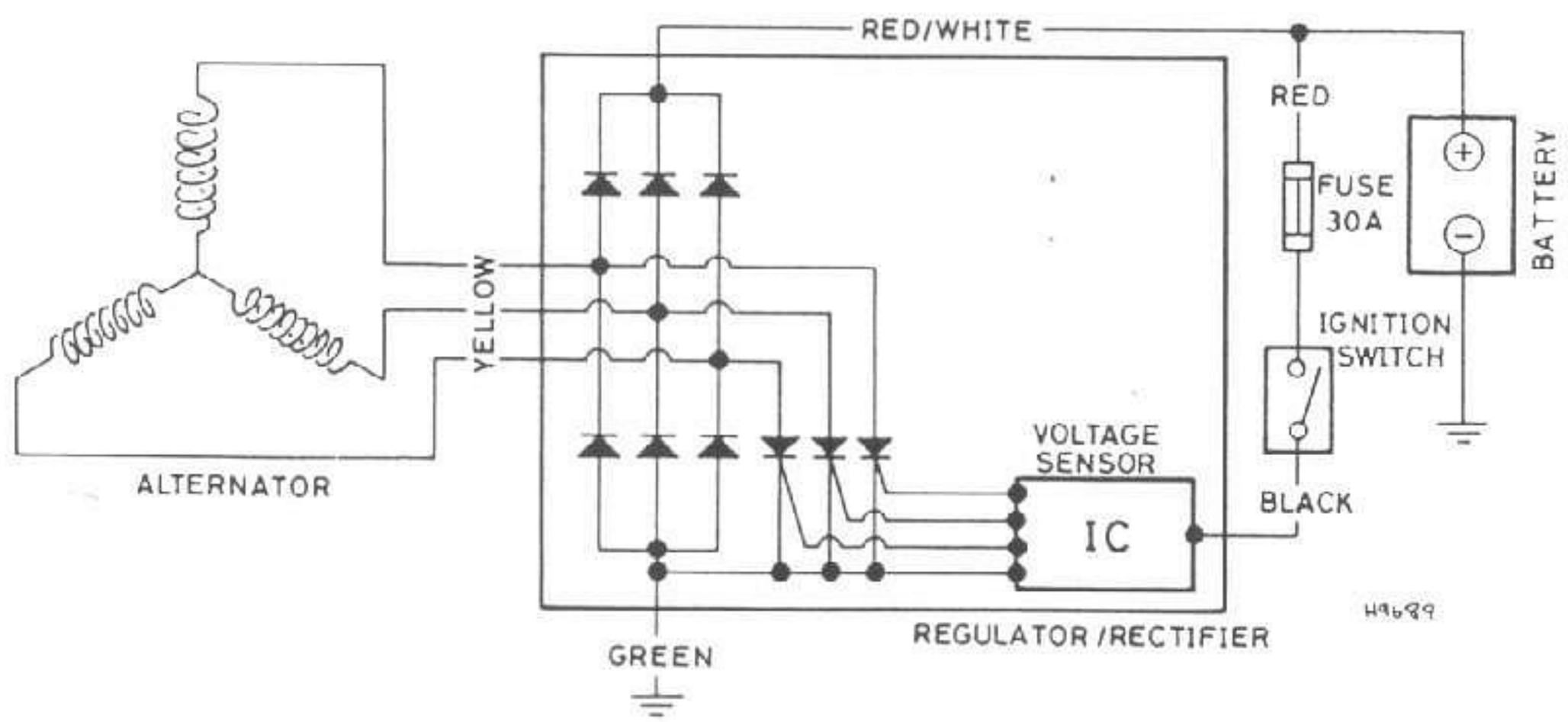


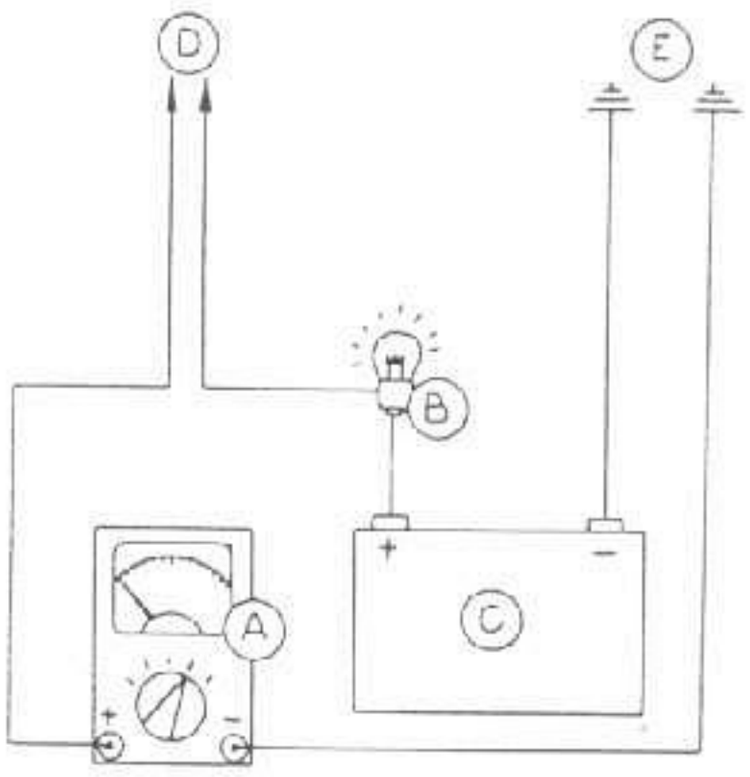
Fig. 7.1 Battery charging system

UKŁAD ŁADOWANIA AKUMULATORA

ac current passed through the rectifying components of the unit is converted to direct current (dc) to enable the lights and ancillary electrical equipment to be powered and the battery to be charged. The regulator side of the unit ensures that the voltage does not exceed a predetermined level of 14 - 15 volts.

2 Electrical system: general information and preliminary checks

1 In the event of an electrical system fault, always check the physical condition of the wiring and connectors before attempting any of the test procedures described here and in subsequent Sections. Look for chafed, trapped or broken electrical leads and repair or renew these as necessary. Leads which have broken internally are not easily spotted, but may be checked using a multimeter or a simple battery and bulb circuit as a continuity tester. This arrangement is shown in the accompanying illustration. The various multi-pin connectors are



PROSTY OBWÓD TESTUJĄCY

Fig. 7.2 Simple testing arrangement for checking the wiring

A Multimeter
B Bulb
C Battery
D Positive probe
E Negative probe

generally trouble-free but may corrode if exposed to water. Clean them carefully, scraping off any surface deposits, and pack with silicone grease during assembly to avoid recurrent problems. The same technique can be applied to the handlebar switches.

2 A sound, fully charged battery is essential to the normal operation of the system. There is no point in attempting to locate a fault if the battery is partly discharged or worn out. Check battery condition and recharge or renew the battery before proceeding further.

3 Many of the test procedures described in this Chapter require that voltages or resistances be checked. This necessitates the use of some form of test equipment such as a simple and inexpensive multimeter of the type sold by electronics or motor accessory shops.

4 If you doubt your ability to check the electrical system entrust the work to a Honda Service Agent. In any event have your findings double checked before consigning expensive components to the scrap bin.

3 Battery: examination and maintenance

1 Details of the regular checks needed to maintain the battery in good condition are given in Routine Maintenance, together with instructions on removal and refitting and general battery care. Batteries can be dangerous if mishandled, read carefully the 'Safety First' section at the front of this Manual before starting work, and always wear overalls or old clothing in case of accidental acid spillage. If acid is ever allowed to splash into your eyes or on to your skin, flush it away with copious quantities of fresh water and seek medical advice immediately.

2 When new, the battery is filled with an electrolyte of dilute sulphuric acid having a specific gravity of 1.280 at 20°C (68°F). Subsequent evaporation, which occurs in normal use, can be compensated for by topping up with distilled or demineralised water only. Never use tap water as a substitute and do not add fresh electrolyte unless spillage has occurred.

3 The state of charge of a battery can be checked using an hydrometer.

4 The normal charge rate for a battery is 1/10 of its rated capacity, thus for a 14 ampere hour unit charging should take place at 1.4 amp. Exceeding this figure could cause the battery to overheat, buckling the plates and rendering it useless. Few owners will have access to an expensive current controlled charger, so if a normal domestic charger is used check that after a possible initial peak, the charge rate falls to a safe level. If the battery becomes hot during charging stop. Further charging will cause damage. Note that cell caps should be loosened and vents unobstructed during charging to avoid a build-up of pressure and risk of explosion.

5 After charging top up with distilled water as required, then check the specific gravity and battery voltage. Specific gravity should be above 1.270 and a sound, fully charged battery should produce 15 - 16 volts. If the recharged battery discharges rapidly if left disconnected it is likely that an internal short caused by physical damage or sulphation has occurred. A new battery will be required. A sound item will tend to lose its charge at about 1% per day.

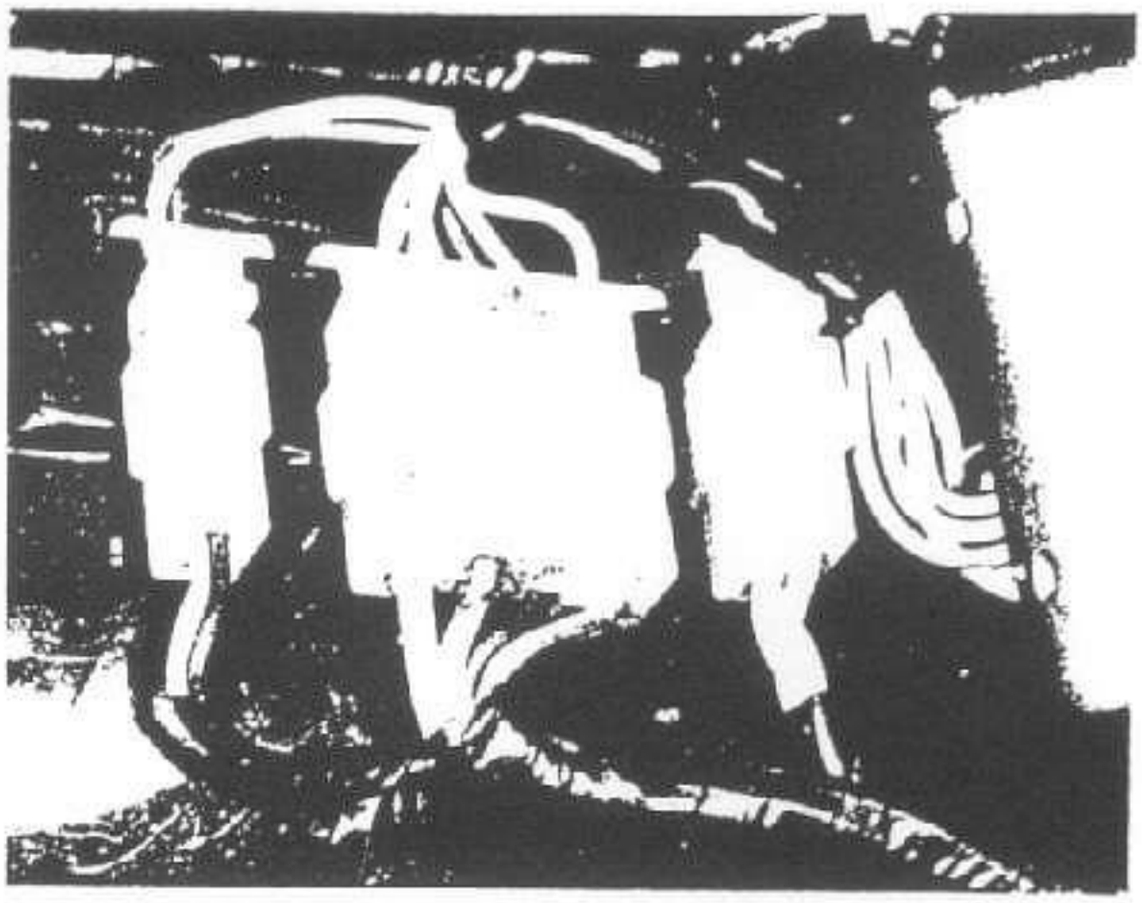
4 Charging system: checking the output

1 Remove the left-hand side cover from the frame so that access can be made to the battery, which must be fully charged for the test to be accurate. Connect a 0 - 20 volt dc voltmeter (or a multi-meter switched to a similar range) across the battery terminals. Place an ammeter in line with the starter solenoid negative (-) terminal and the Red/White lead that runs from the terminal on early models; on later models with the 30A ribbon-type fuse (see Specifications), remove the fuse and connect the ammeter across the fuse terminals. See the accompanying diagrams. Disconnect the Black wire from the voltage regulator/rectifier unit. This will isolate the regulator, taking it out of circuit.

2 Start the engine and allow it to warm up. Increase the engine speed from tick-over. At 1300 - 1600 rpm a definite charge should be evident. Increase the engine speed smoothly to 5000 rpm, keeping it at this speed only long enough for a reading of the ammeter and voltmeter to be taken. The specified output at this speed is 5 amperes minimum and 14.5 volts on early models, 8A/14.0 volts on later models.

3 If the output is erratic or noticeably below the specified amount, either the alternator or the rectifier may be at fault. The rectifier may be tested as described in Section 5. The alternator stator should be tested as follows, using a multi-meter set to the resistance function. Disconnect the block connector which interconnects the three Yellow wires running from the alternator. The block connector is clipped to the rear mudguard, below the dualseat. Using the multi-meter check that continuity exists between all three wires when tested in pairs. Check also that no lead has continuity with earth. If the results of the check do not correspond with those specified, there is evidence of short-circuits or open-circuits in the stator windings or the leads.

4 A visual check of the stator coils and leads can be carried out only after the engine has been removed and the rear cover detached. Removal of the stator is described in Chapter 1. To check for breakage in the individual leads, use a multi meter set to the resistance function. Due to the high cost of a replacement stator, which is available only as a complete unit, including the ignition fixed pulser on CDI ignition systems only, it is wise to have the assembly double-checked by a Honda Service Agent or auto-electrician, before consigning it to the scrap bin.



4.3 Alternator stator is tested at connectors on rear mudguard

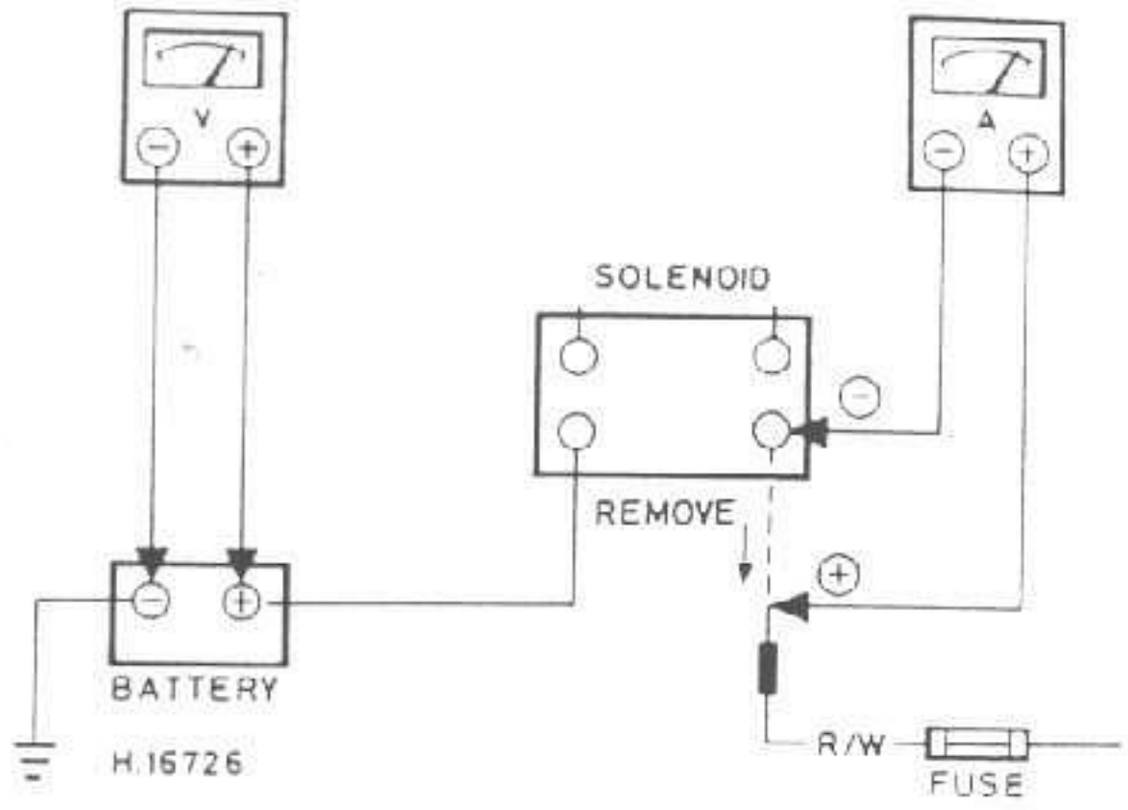


Fig. 7.3 Testing the alternator output – early models

...WCZEŚNIEJSZE MODELE

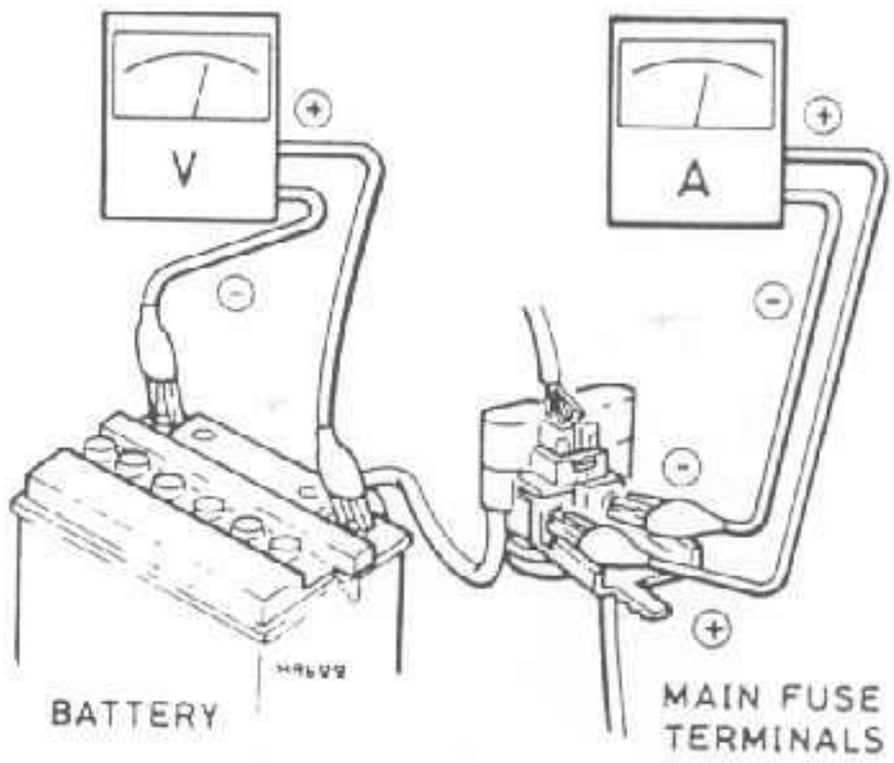


Fig. 7.4 Testing the alternator output – later models

TESTOWANIE UKŁADU ŁADOWANIA (ALTERNATOR) – PÓŹNIEJSZE MODELE

5 Regulator/rectifier unit: location and testing

1 If performance of the charging system is suspect, but the alternator is found to be in good condition, it is probable that one side of the combined regulator/rectifier unit is malfunctioning. Exactly which side is malfunctioning is of academic interest only because the sealed unit cannot be repaired, but must be renewed.

2 Voltage regulator performance may be checked using a voltmeter connected across the battery. Connect the positive voltmeter lead to the positive (+) battery terminal and the negative voltmeter lead to the negative (–) battery terminal. Start the engine and increase the speed until a 14 volt output is registered. Increase the engine speed to approximately 5,000 rpm. If the regulator is functioning correctly, the voltage will not rise to above 15 volts. If this voltage is exceeded, the unit is malfunctioning.

3 A static test on the rectifier side of the unit may be carried out using a multi-meter set to the resistance function. Disconnect the leads running from the unit at the two block connectors. Connect the multi-meter first between the green wire and each yellow wire and between the red/white wire and each yellow wire, then transpose the meter leads to repeat these tests, but in the opposite direction.

4 In the normal direction of current flow continuity (ie very little resistance) should be indicated, but in the reverse direction there should be no continuity (very heavy resistance). If any one of the twelve tests fails to produce the expected result then that diode is faulty and the complete unit must be renewed. Always have your findings confirmed by a Honda Service Agent using the correct equipment before purchasing a new component.

5 The regulator/rectifier is a sealed, heavily finned unit mounted to the rear of the battery on early models, or immediately underneath the battery carrier on later models.

6 Fuses: location

1 Refer to Specifications and/or the relevant wiring diagram for details of the fuses fitted.

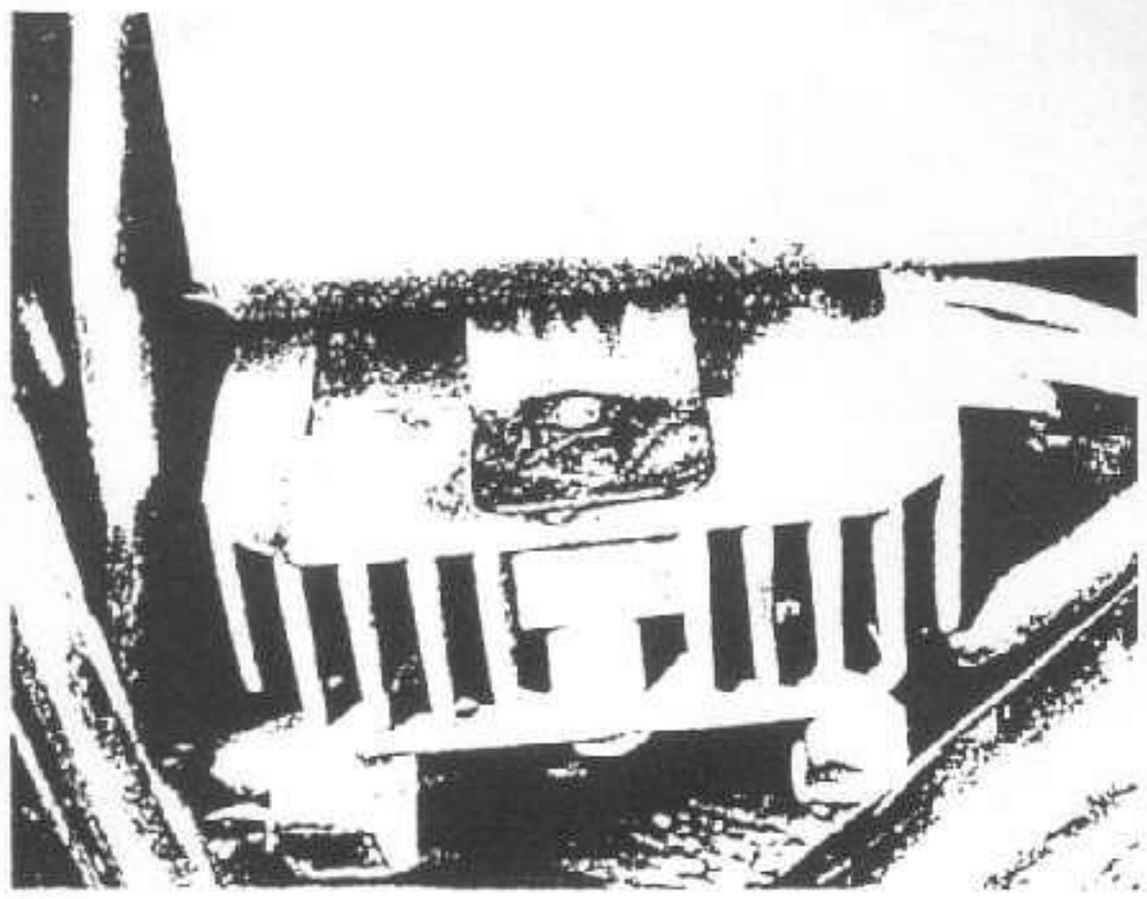
2 The main fuse is a 20A tubular type on early models, retained in a white plastic holder which is clipped next to the starter relay. On later models a 30A ribbon type fuse is fitted in a black plastic holder mounted in the same place. To renew these fuses unplug the connector block, open the cover and slacken the two retaining screws. Always have a spare on the machine as these are likely to be difficult to find; in cases of real emergency a short length of 30A fuse wire should serve as a temporary substitute.

3 Further fuses protect the various circuits, these being housed below a cover on the handlebar clamp for easy access. Fuses are fitted to protect the electrical system in the event of a short circuit or sudden surge; they are, in effect, an intentional 'weak link', which will blow, in preference to the circuit burning out.

4 Before replacing a fuse that has blown, check that no obvious short circuit has occurred, otherwise the replacement fuse will blow immediately it is inserted. It is always wise to check the electrical circuit thoroughly, to trace the fault and eliminate it.

5 When a tubular fuse blows while the machine is running and no spare is available, a 'get you home' remedy is to remove the blown fuse and wrap it in silver paper before replacing it in the fuseholder. The silver paper will restore the electrical continuity by bridging the broken fuse wire. This expedient should never be used if there is evidence of a short circuit or other major electrical fault, otherwise more serious damage will be caused. Replace the 'doctored' fuse at the earliest possible opportunity, to restore full circuit protection. It follows that spare fuses that are used should be replaced as soon as possible to prevent the above situation from arising.

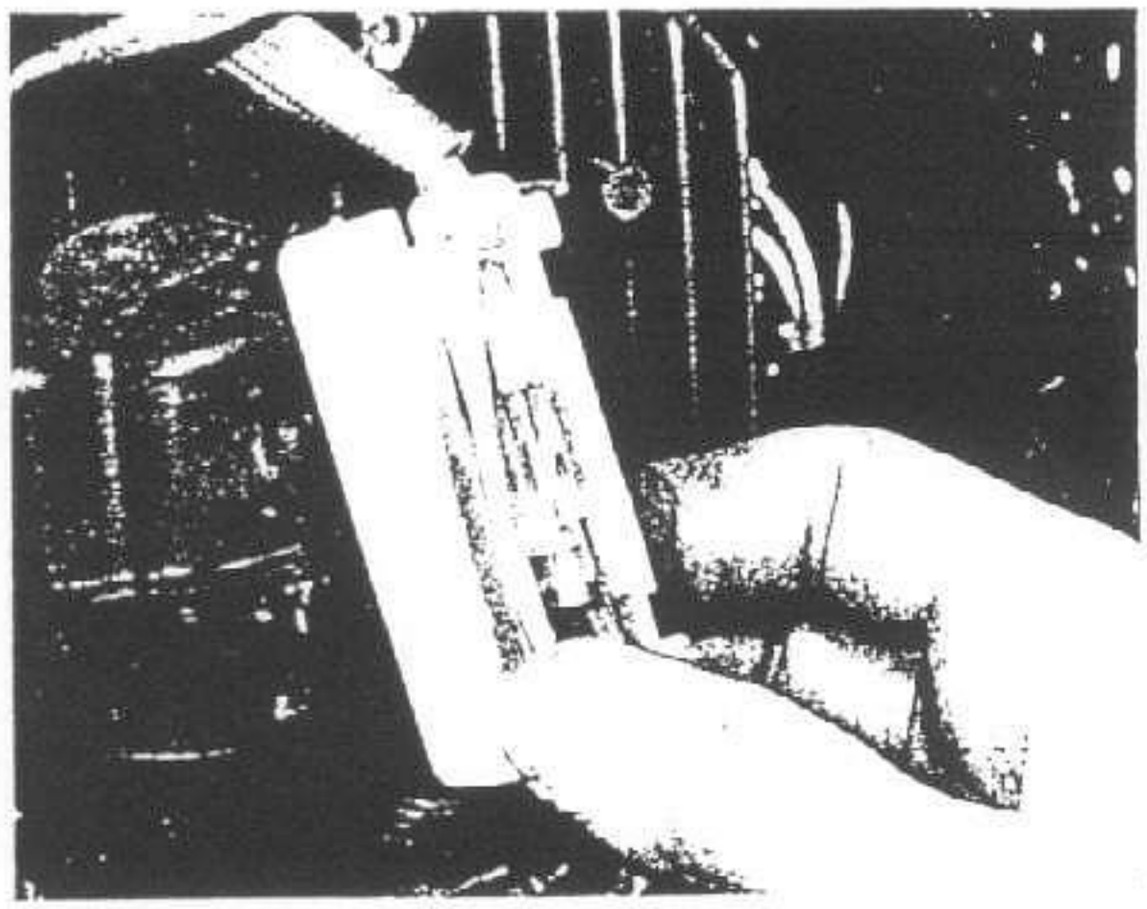
5.5a Location of regulator/rectifier unit - early models ...



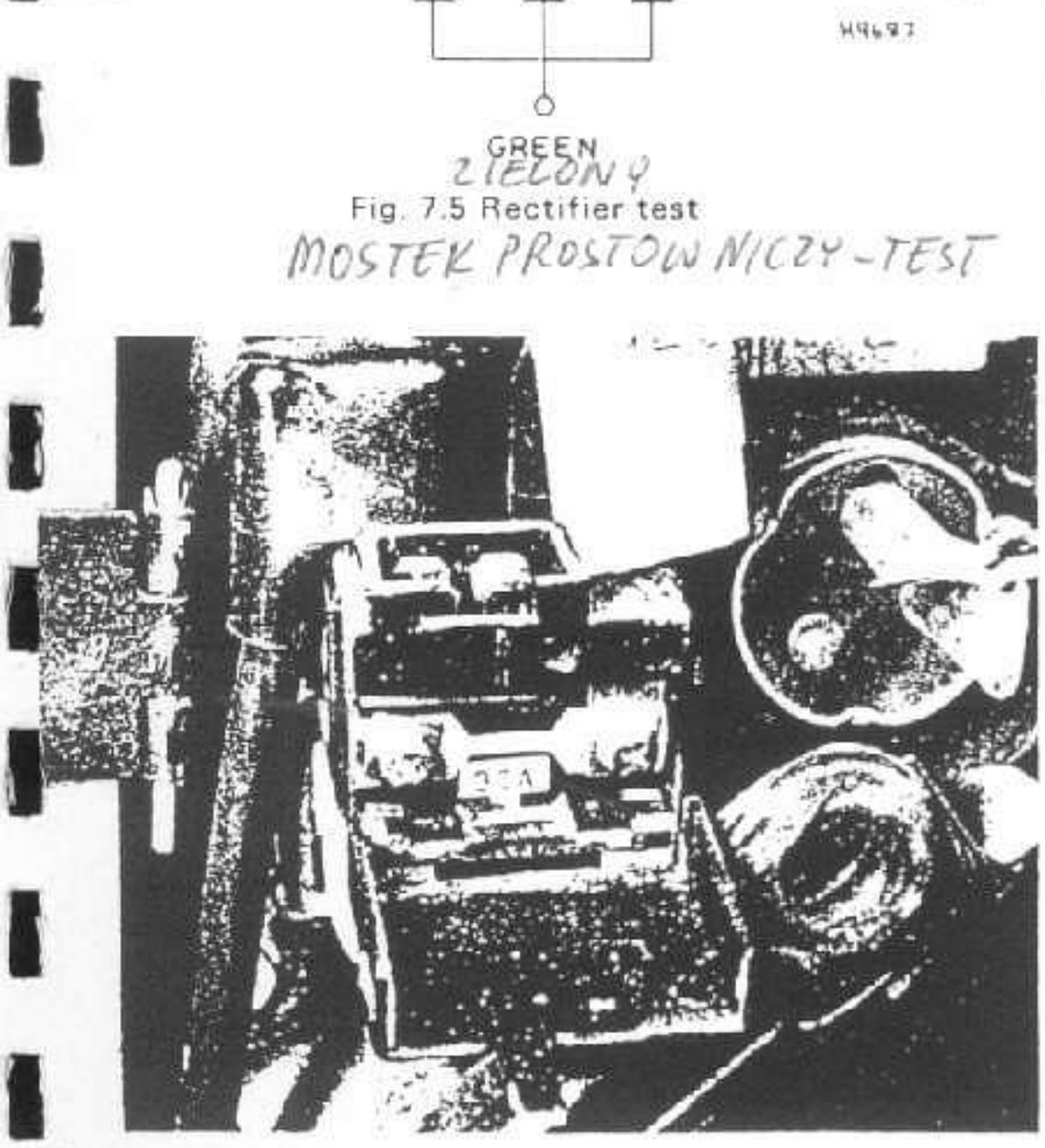
5.5b ... and later models

Fig. 7.5 Rectifier test

MOSTEK PROSTOWNICZY - TEST



6.2a Location of main fuse – early models ...



6.2b ... and later models

7 Starter system: checks

1 In the event of a starter malfunction, always check first that the battery is fully charged. A partly discharged battery may be able to provide enough power for the lighting circuit, but not the very heavy current required for starting the engine.

2 Remove the left hand side panel and note the location of the starter relay. This is mounted on the rear of the battery tray and can be identified by the two heavy duty cables connected to two of its four terminals. Switch on the ignition and press the starter button. If the relay is operating a distinct click will be heard as the internal solenoid closes the starter lead contact. A silent relay can be assumed to be defunct.

3 Disconnect the heavy duty starter lead at the motor terminal and connect a 12 volt test bulb between it and a sound earth point. Operate the starter switch again. If the bulb lights, the motor is being supplied with power and should be removed for overhaul.

4 To test the relay itself, disconnect all cables and wires and check that there is continuity across the relay battery and starter motor cable terminals when a fully-charged 12 volt battery is connected to the relay

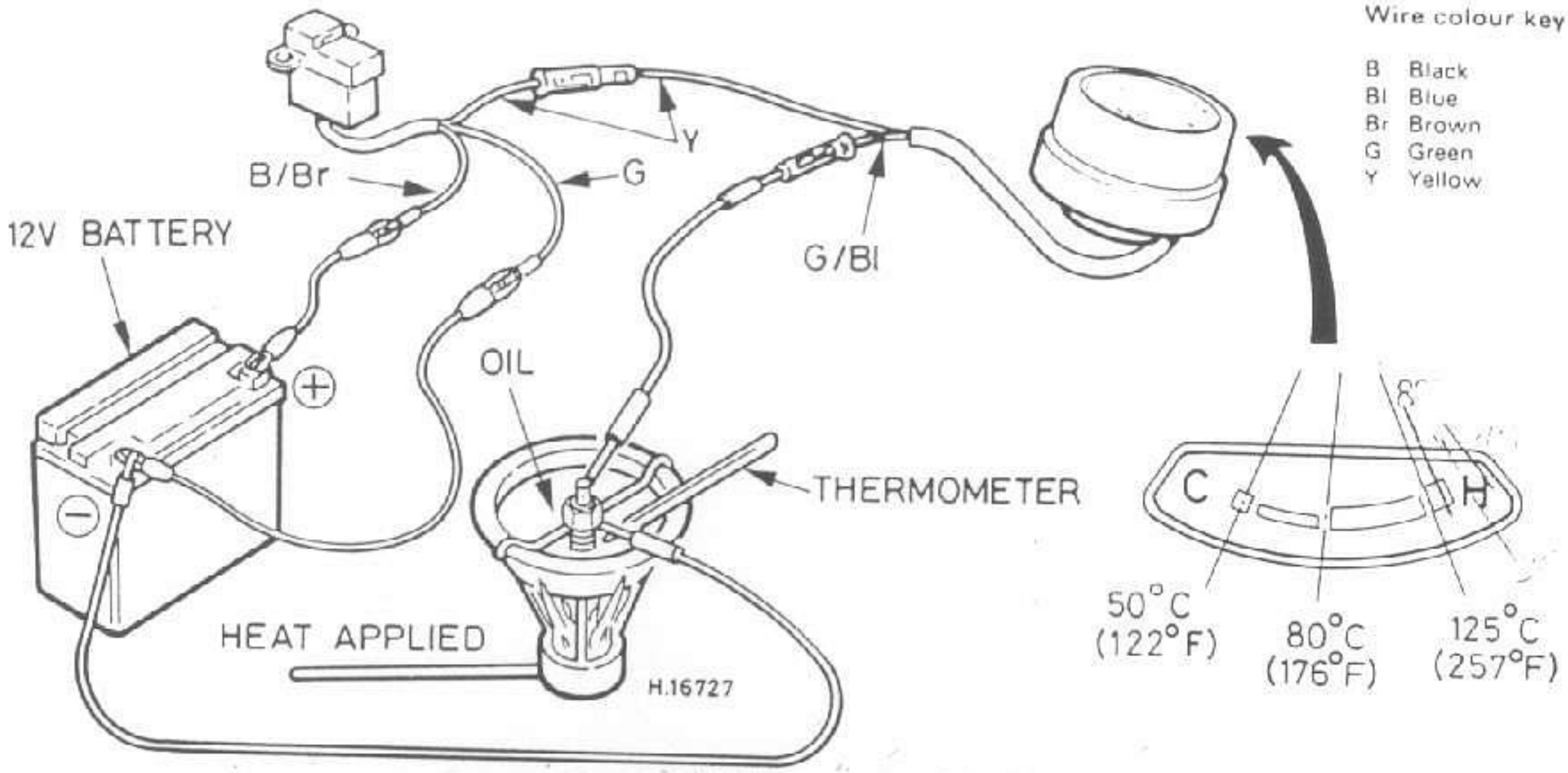


Fig. 7.6 Testing the temperature gauge unit – except CX650 C, CX650 E-D

UKŁAD TESTOWANIA WSKAŹNIKA TEMPERATURY – SKACOWANIE

11 Auxiliary voltage regulator: testing – except CX650 C, CX650 E-D

1 This unit is fitted to all models except the CX650 C and CX650 E-D to reduce to 7 volts the power supply to the water temperature gauge.

2 To test the unit connect it to a fully-charged 12 volt battery as shown in the accompanying illustration. Using a dc voltmeter or equivalent, check that the regulator output is exactly 7 volts.

3 If the output varies significantly from that specified, the unit is faulty and must be renewed.

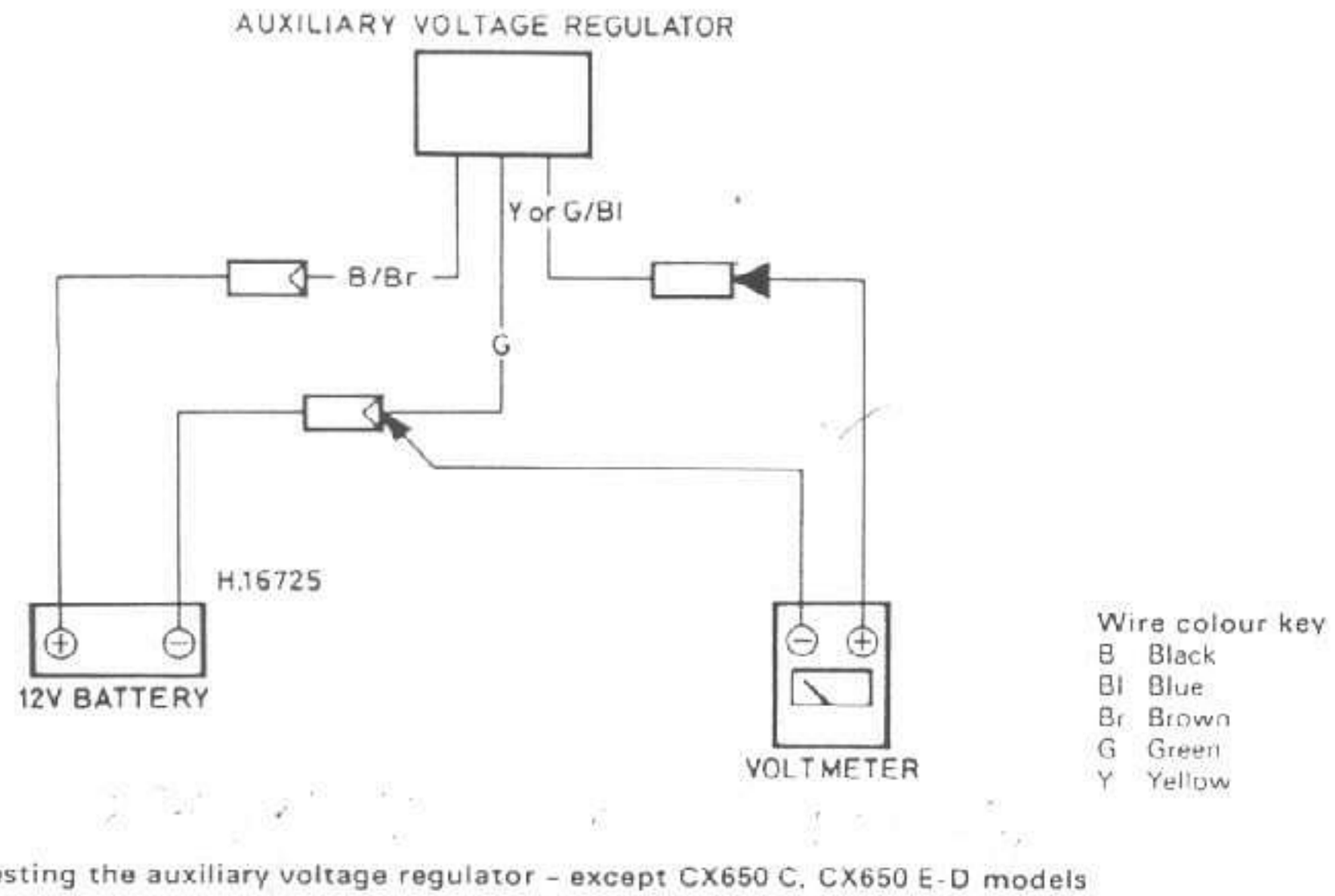
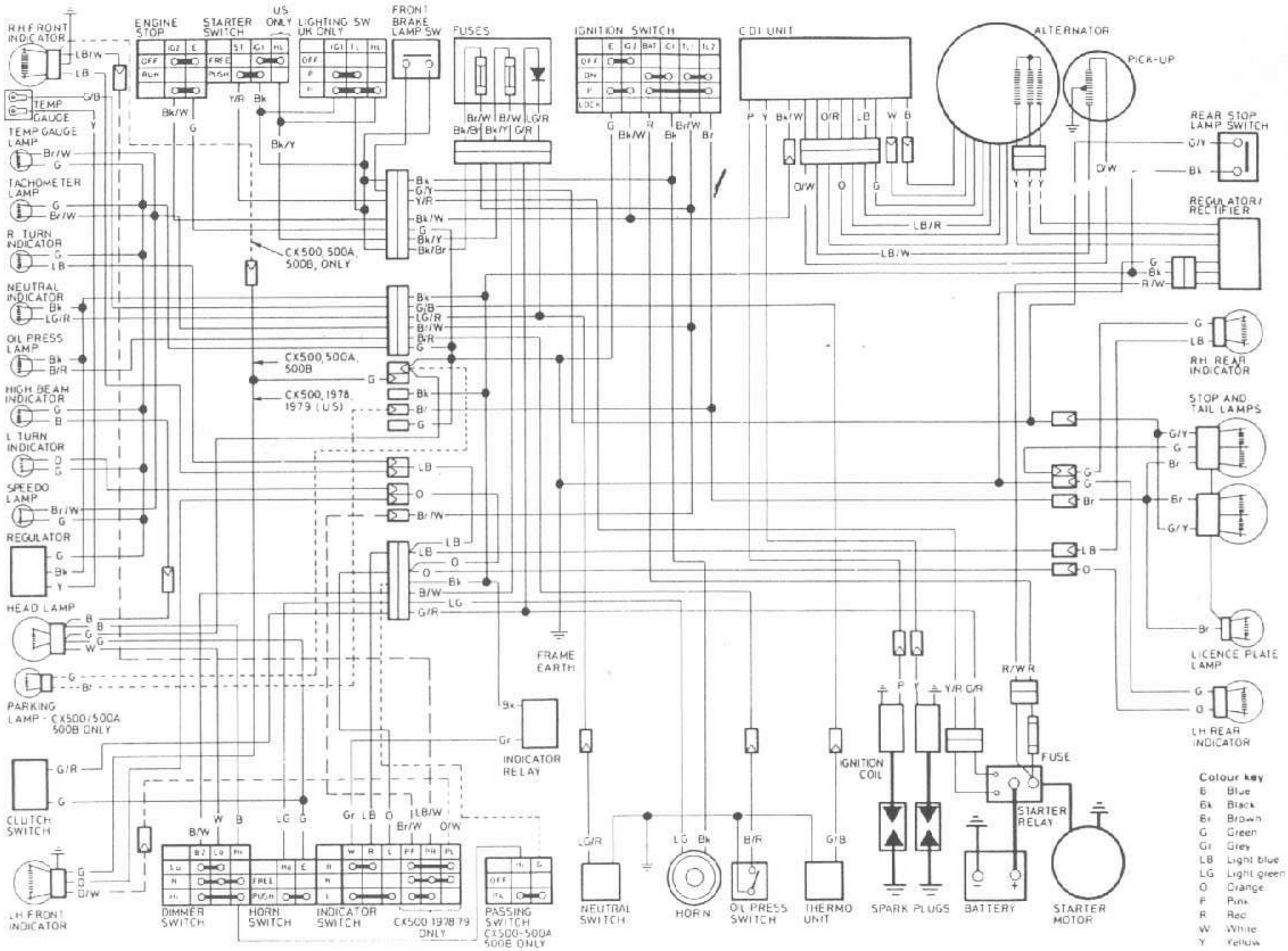


Fig. 7.7 Testing the auxiliary voltage regulator – except CX650 C, CX650 E-D models

REGULATOR NAPIĘCIA - TEST NA PRZYKŁADZIE MODELI CX650C i CX650E-D



Wiring diagram – UK CX500, CX500-A, CX500-B and US 1978 to 1979 CX500

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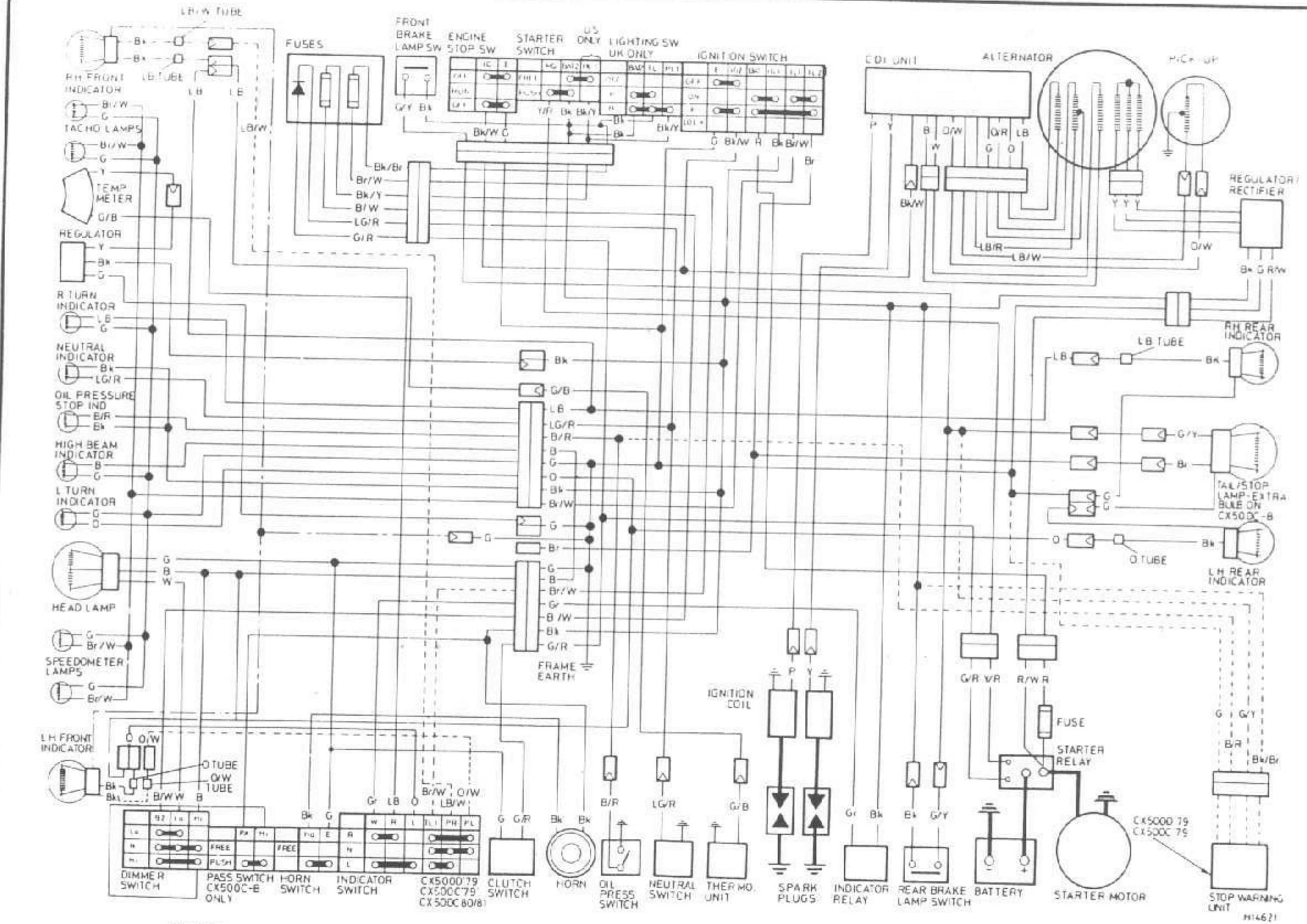
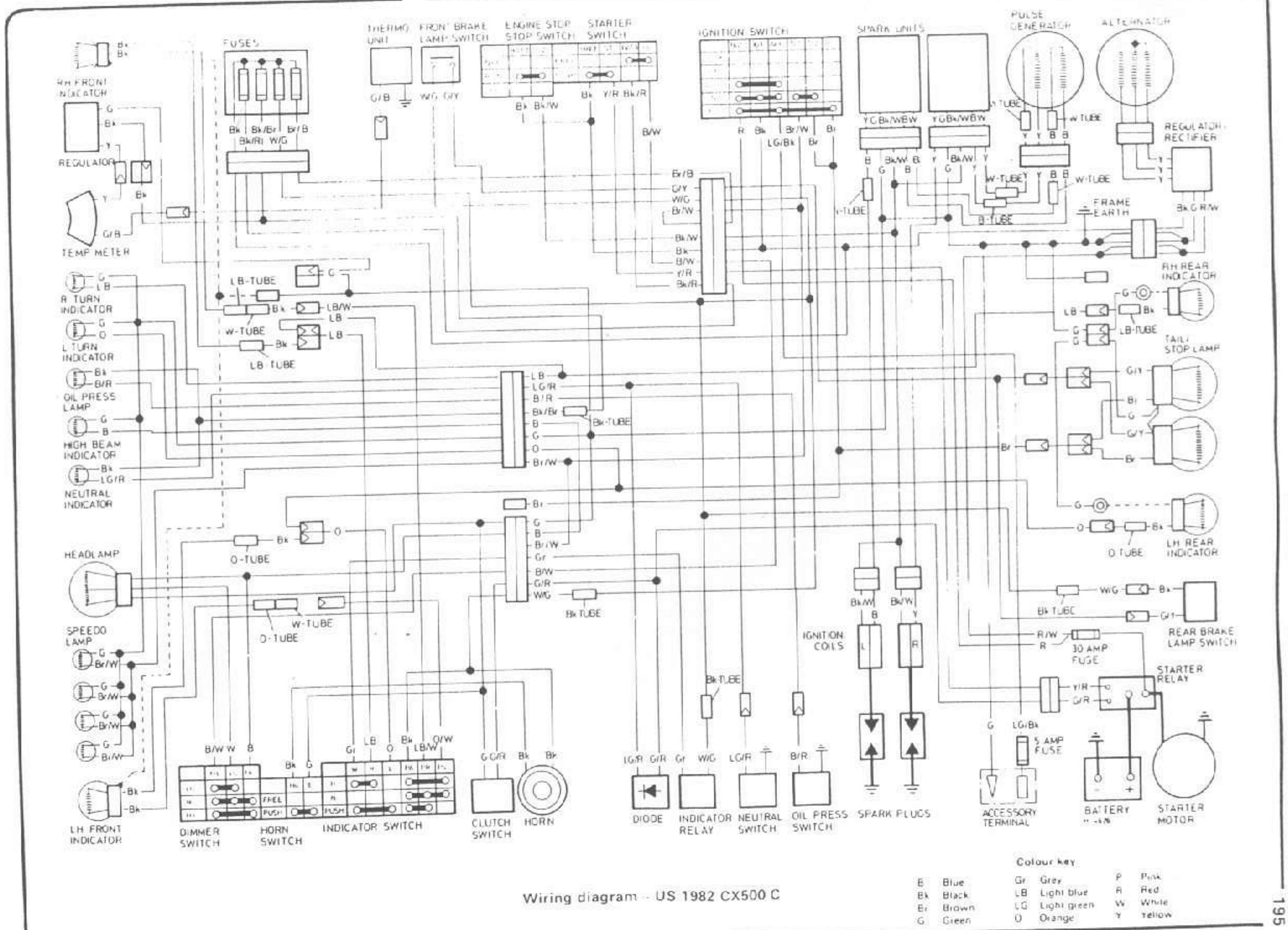


Colour key

B	Blue	G	Green	LG	Light green	R	Red
Bk	Black	Gr	Grey	O	Orange	W	White
Br	Brown	LB	Light blue	P	Pink	Y	Yellow

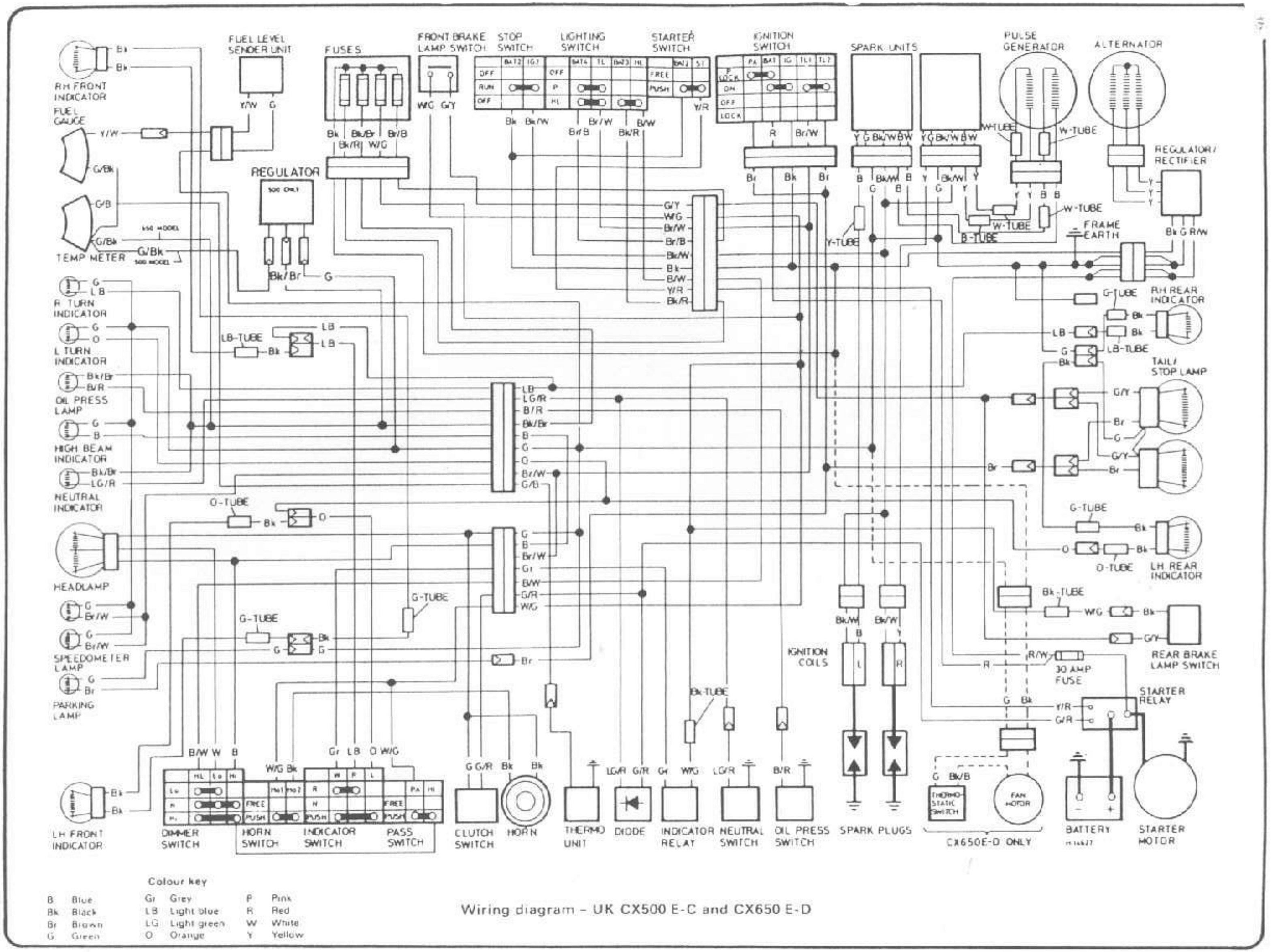
Wiring diagram - UK CX500 C-B and US 1979 to 1981 CX500 C, 1979 CX500 D



Wiring diagram - US 1982 CX500 C

Colour key

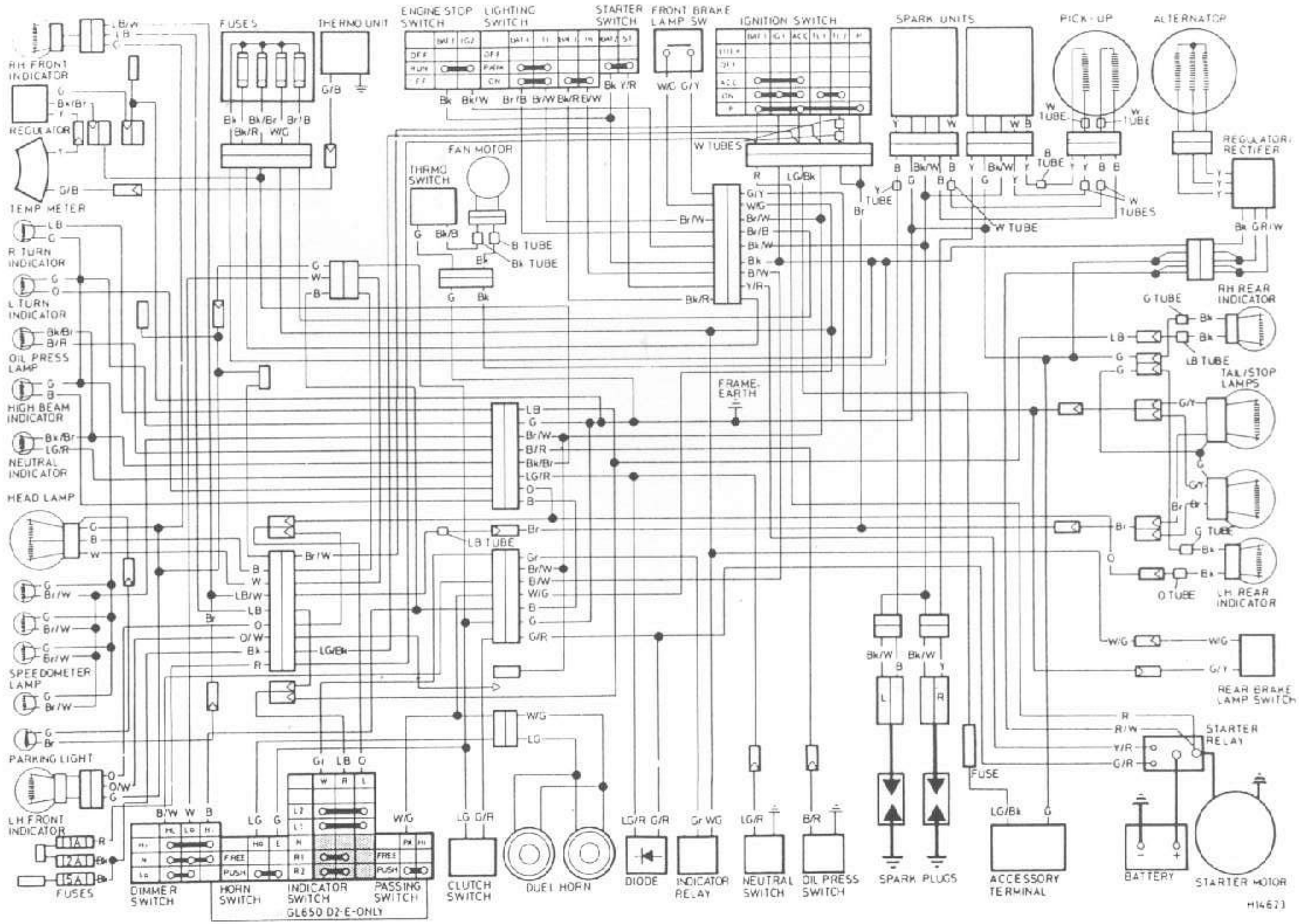
B	Blue	Gr	Grey	P	Pink
Bk	Black	LB	Light blue	R	Red
Br	Brown	LG	Light green	W	White
G	Green	O	Orange	Y	Yellow



Colour key

B	Blue	Gr	Grey	P	Pink
Bk	Black	LB	Light blue	R	Red
Br	Brown	LG	Light green	W	White
G	Green	O	Orange	Y	Yellow

Wiring diagram – UK CX500 E-C and CX650 E-D



Wiring diagram – UK GL500 D-C and GL650 D2-E

Colour key

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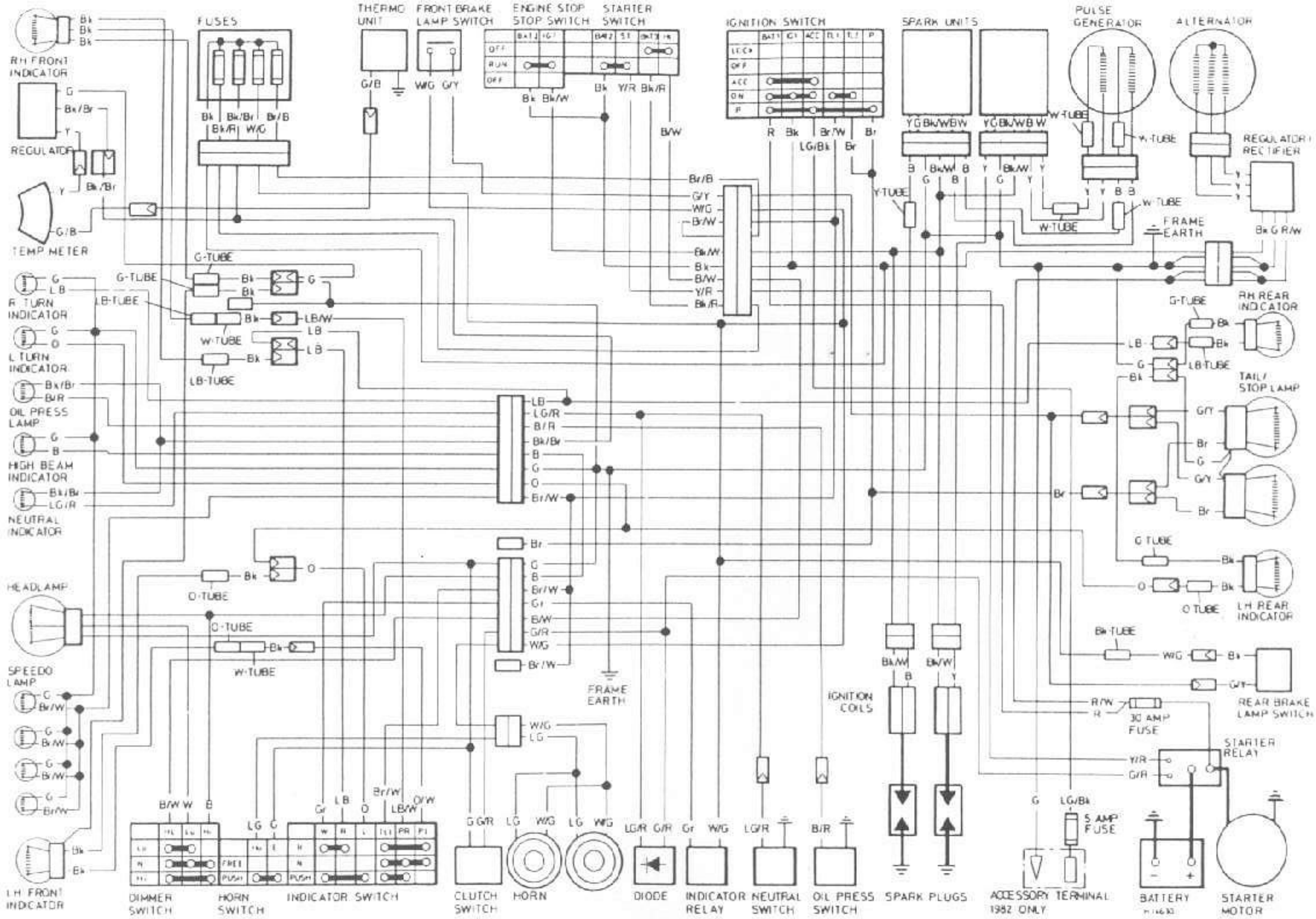
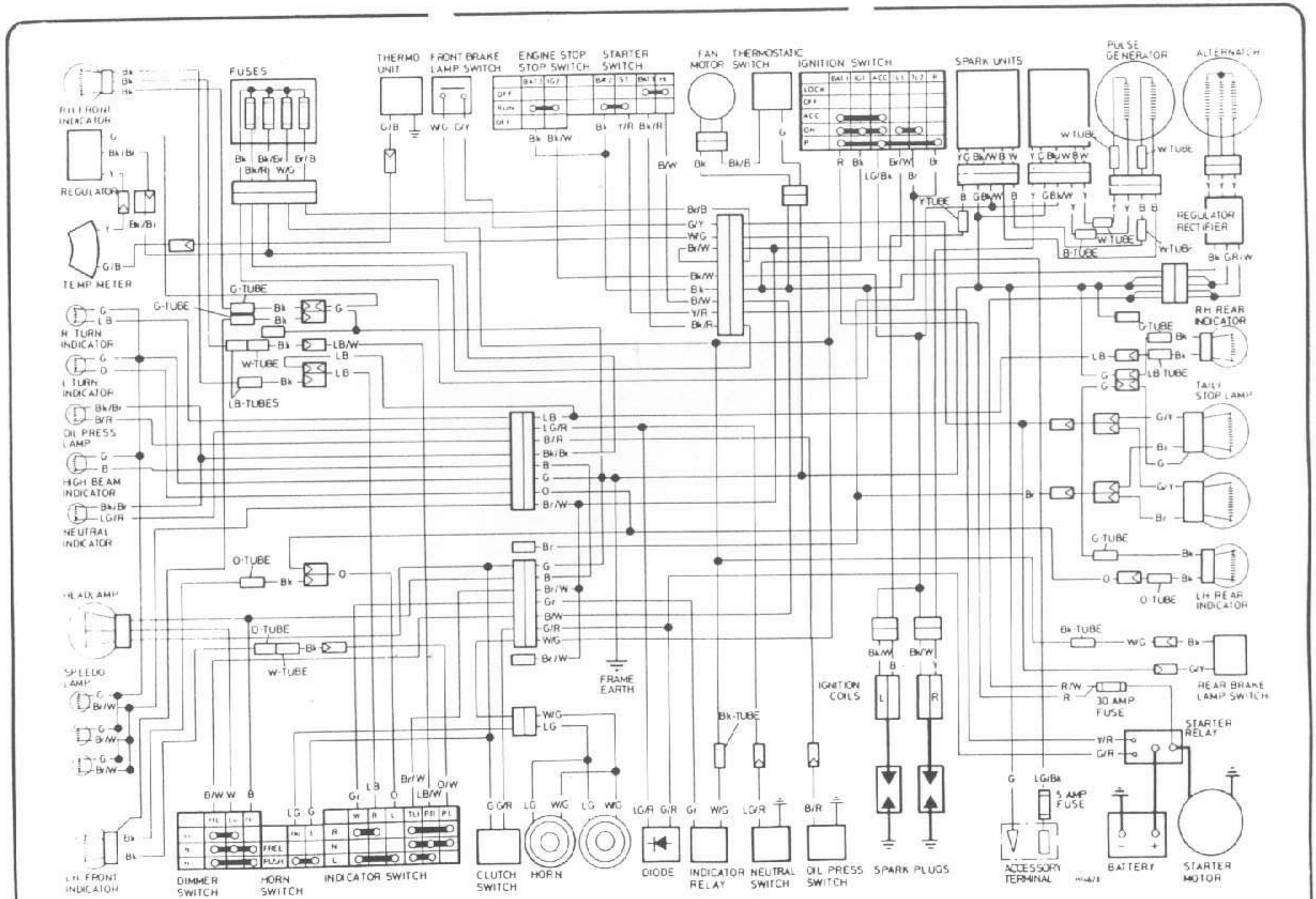
Bk	Black	LB	Light blue	R	Red
Br	Brown	LG	Light green	W	White
G	Green	O	Orange	Y	Yellow



Wiring diagram - US 1981 to 1982 GL500

Colour key

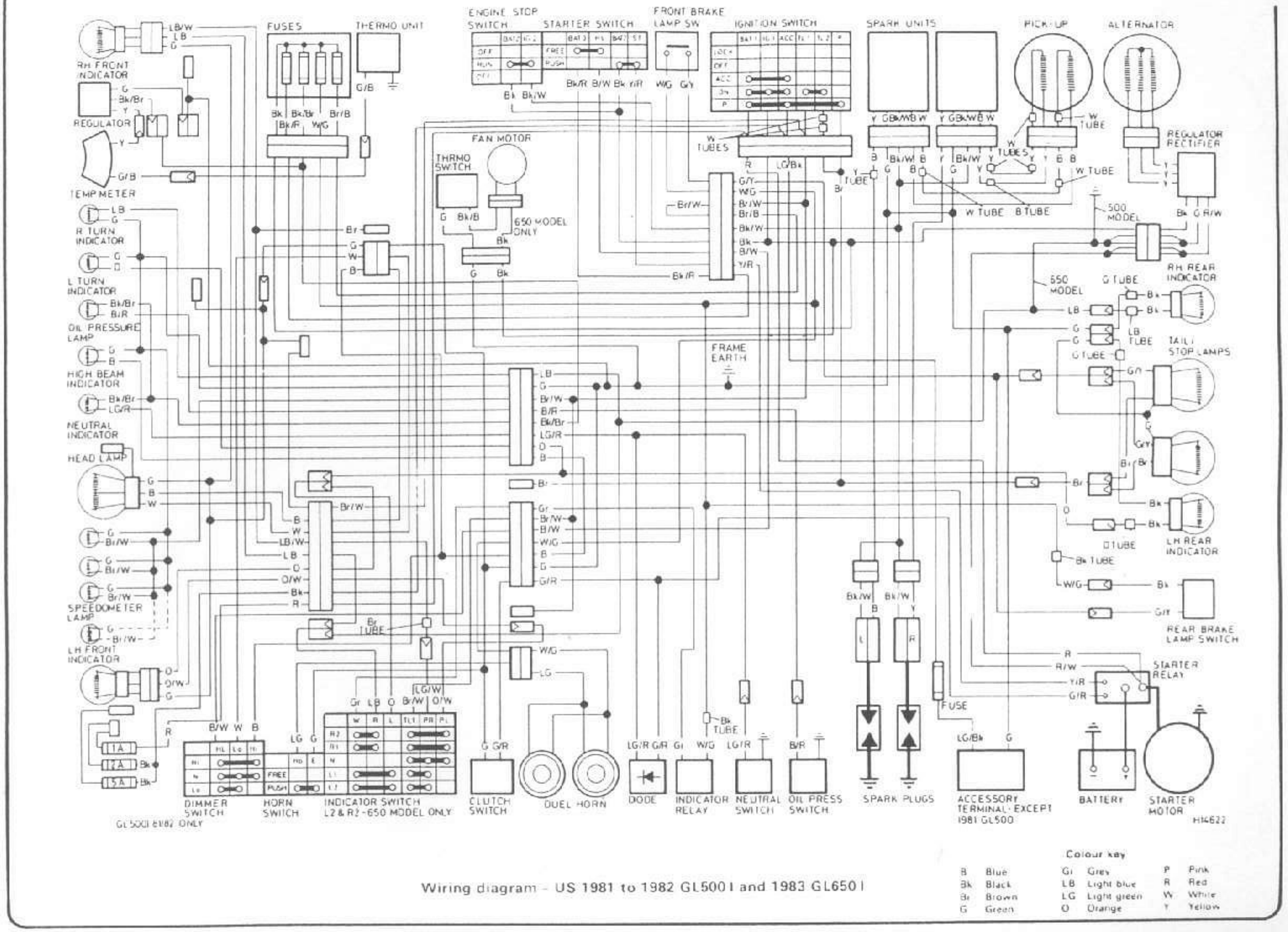
B	Blue	Gr	Grey	P	Pink
Bk	Black	LB	Light blue	R	Red
Br	Brown	LG	Light green	W	White
G	Green	O	Orange	Y	Yellow



Wiring diagram – US 1983 GL650

Colour key

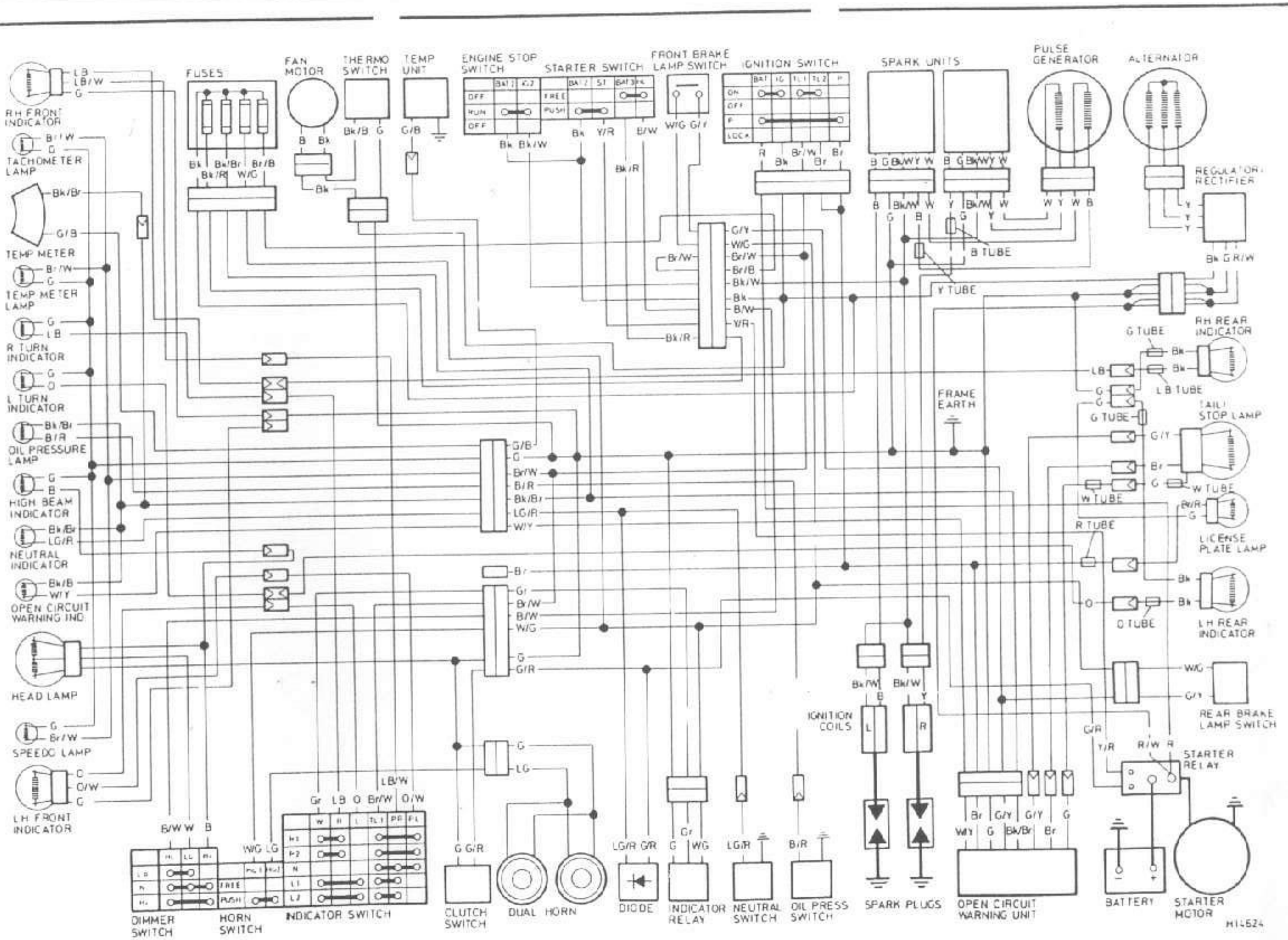
B	Blue	Gr	Grey	P	Pink
Bk	Black	LB	Light blue	R	Red
Br	Brown	LG	Light green	W	White
G	Green	O	Orange	Y	Yellow



Wiring diagram - US 1981 to 1982 GL500I and 1983 GL650I

Colour key

B	Blue	Gr	Grey	P	Pink
Bk	Black	LB	Light blue	R	Red
Br	Brown	LG	Light green	W	White
G	Green	O	Orange	Y	Yellow



Wiring diagram – US 1983 CX650 C

Colour key

B	Blue	Gr	Grey	P	Pink
Bk	Black	LB	Light blue	R	Red
Br	Brown	LG	Light green	W	White
G	Green	O	Orange	Y	Yellow

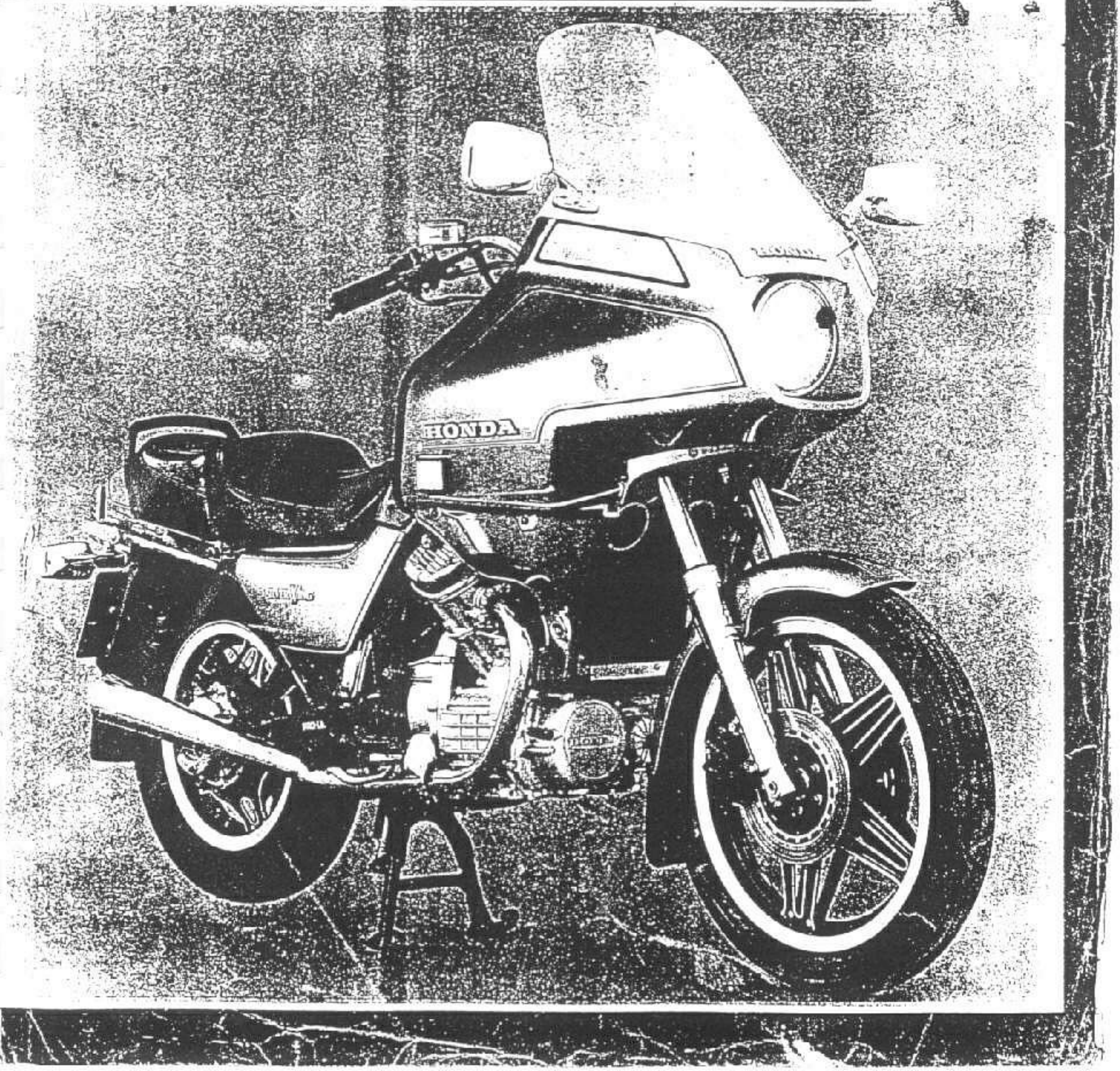
HONDA

CX/GL500 & 650 V-Twins

497cc ~ 673cc. 1978 to 1986

OWNERS WORKSHOP MANUAL

Haynes



Czynnoœci okresowe

Spis treœci

Silnik, sprzêg³o i skrzynia biegów

Spis treœci

Uk³ad ch³odzenia

Spis treœci

Uk³ad paliwowy i smarowania

Spis treœci

Dane techniczne

Notatka: Dane dotycz¹ wszystkich modeli o ile nie zaznaczono inaczej

Zbiornik paliwa		*litrów*
wszystkie modele CX500 i CX500D		
	pojemnoœæ ca³kowita	17,0
	rezerwa	3,5
CX500C 1979, 1980		
	pojemnoœæ ca³kowita	11,0
	rezerwa	2,5
CX500C-D, CX500C 1981, 1982		
	pojemnoœæ ca³kowita	12,0
	rezerwa	2,5
CX650C		
	pojemnoœæ ca³kowita	12,4
	rezerwa	2,2
wszystkie modele GL500/650		
	pojemnoœæ ca³kowita	17,6
	rezerwa	2,5
CX500E-C, CX650E-D		
	pojemnoœæ ca³kowita	19,0
	rezerwa	2,5

GaŸnik			
Marka		Keihin	
Numery identyfikacyjne			
Model	CX500 (UK)	CX500 1978	CX500 1979
Oznaczenie	VB36A-A/C	VB26A-B	VB26A-B/C
Model	CX500-A	CX500-B	CX500-C 1979
Oznaczenie	VB36A-E/F	VB36A-F	VB27A
Model	CX500-C 1980	CX500C-B	CX500C 1981
Oznaczenie	VB25A-B	VB37A-D	VB25A-C
Model	CX500-C 1982	CX500D 1979	CX500D 1980
Oznaczenie	VB25A-D	VB23A	VB28A-B
Model	CX500-D 1981	CX500E-C, GL500D-C	GL500 i GL500I
Oznaczenie	VB28A-C	VB1AA-A	VB29A-A

Model	CX650E-D, GL650D2-E	GL650, GL650I	CX650C
Oznaczenie	VB28A-A	VB2AA-A	VA2AC-A, VB2AB, VB2AC
Œrednica gardzieli			
	CX500C 1980, 1981, 1982, CX500D 1980, 1981, GL500 1981, 1982		34mm
	wszystkie pozosta³e modele		35mm
G³ówna dysza			
	CX650E-D, GL650D2-E		72
	wszystkie pozosta³e modele		78
Druga dysza g³ówna			
	CX500C 1980, 1981, 1982, CX500D 1980, 1981		115
	wszystkie pozosta³e modele 500		112
	CX650C		120
	wszystkie pozosta³e modele 650		118
Dysza wolnych obrotów			
	CX500E-C, wszystkie modele GL500 i 650		45
Wkrêt dawki pilotuj¹cej wykrêcony o ... obrotów			
	wszystkie modele US 1978, 1979, GL650, GL650I		2 *
	CX500 (UK), CX500-A, CX500-B, CX500C-B		2
	CX500C 1980, 1981, 1982, CX500D 1980, 1981		1 ¾ *
	CX500E-C, GL500D-C		1 7/8
	GL500 i GL500I 1981, 1982		1 5/8 *
	CX650E-D, GL650D2-E		2 3/8
	CX650C		2 3/8
* - ustawienie wstêpne - ustawiaæ tylko przy demonta¿u gaŸników			
Poziom p³ywaka paliwa			15,5 +/- 1,0 mm
Obroty biegu ja³owego (tzw. wolne obroty)			1100 +/- 100 rpm
Obroty na ssaniu			
	CX500C 1980, CX500D 1980		1000 - 1500 rpm
	CX500C 1981, 1982, CX500D 1981		1100 - 1500 rpm
	wszystkie pozosta³e modele		1500 - 2500 rpm
Maksymalna ró¿nica podciœnieñ pomiêdzy 2 gaŸnikami			40 mm s³upa rtêci
Pompka przyspieszaj¹ca - jedynie modele US z 1980			
Luz prêt pompki/wahacz linki ssania			0,1 - 0,3 mm
Luz wahacz linki ssania/ogranicznik			3,1 - 3,3 mm

Uk³ad smarowania silnika			
Zalecany olej		SAE10W-40	
Pojemnoœæ miski olejowej		modele 500	modele 650
	po naprawie (suchy)	3,0 l	3,6 l
	przy wymianie filtra oleju	2,6 l	3,1 l
	przy wymianie tylko oleju	2,5 l	3,0 l
Ciœnienie w uk³adzie smarowania		5,0 - 6,0 kg/cm^2	
Wydajnoœæ pompy oleju na minutê			
	modele 500 przy 3000 rpm	9,3 - 9,5 l	
	modele 650 przy 2500 rpm	14,0 - 14,2 l	
Pompa oleju			
	max luz wirnik wewnêtrzny/wirnik zewnêtrzny	0,10 mm	
	max. luz wirnik zewnêtrzny/obudowa pompy	0,35 mm	
	max. ...	0,10 mm	

Smarowanie przek³adni koñcowej		
Zalecana klasa jakoœci oleju		przek³adniowy klasy GL-5 wg API
Klasa lepkoœci		
	poni¿ej 5ºC	SAE 90
	powy¿ej 5^{0}C	SAE 80
Pojemnoœæ		170 +/- 10 ccm
Kapilarka wa³ka kardana - tylko modele 500		
Zalecany smar		NLGI Nr2 ogólnego stosowania na bazie myd³a litowego z dodatkiem dwusiarczku molibdenu
Iloœæ		
	przy naprawie	45 ccm
	przy przegl¹dach	20 ccm

Moment dokrêcania	
Element	*kGm*
...	0,3 - 0,5
nakrêtka d³awika kranika paliwa - GL500 i 650	2,0 - 2,5

œruby mocuj¹ce obudowê filtra powietrza	0,6 - 0,9
œruby z³¹cza przepustnic - tylko modele 650	0,28 - 0,42
wkrêty podpory mocuj¹cej gaŸnik - tylko modele 650	0,28 - 0,42
nakrêtki mocuj¹ce rury wydechowe do bloku cylindrów	0,8 - 1,4
œruby obejm rur wydechowych	1,8 - 2,8
œruby lub nakrêtki mocuj¹ce rurê ³¹cz¹c¹ oba wydechy	2,4 - 3,0
œruby mocuj¹ce t³umik	
wszystkie modele GL, CX650C	4,5 - 6,0
CX500E-C, CX650E-D	3,0 - 4,0
œruba filtra oleju	2,0 - 2,5
œruba spustowa oleju	2,5 - 3,5
œruby mocuj¹ce pompê oleju	0,8 - 1,2
czujnik ciœnienia oleju	1,8 - 2,3

1. Opis ogólny

W sk³ad uk³adu paliwowego wchodzi zbiornik paliwa, z którego paliwo wyp³ywa poprzez pojedynczy kurek do lewego gaŸnika i st¹d dodatkowym przewodem, do gaŸnika prawego. Kranik paliwa, wyposa¿ony w filtr siatkowy, posiada pozycjê rezerwy. Pocz¹wszy od 1981 roku wszystkie modele wyposa¿one s¹ w kranik podciœnieniowy, dzia³aj¹cy jedynie podczas pracy silnika i nie posiadaj¹cy pozycji OFF (zamkniêty) potrzebnej w klasycznym kraniku paliwo podczas d³ugotrwa³ego postoju. Do uruchomienia silnika na zimno gaŸniki wyposa¿one s¹ w zawór wzbogacaj¹cy mieszankê (tzw. ssanie), w³¹czany poprzez prêt uruchamiany link¹.

Do standardowego wyposa¿enia nale¿¹ sta³ociœnieniowe gaŸniki marki Keihin. Przepustnice gaŸników sterowane s¹ dwiema linkami typu ci¹gn¹æ-pchaæ poprzez tradycyjn¹ r¹czkê gazu. Ty³ gaŸników po³¹czony jest z plastikow¹ obudow¹ zawieraj¹c¹ papierowy wk³ad filtruj¹cy.

Od 1980 roku modele na rynek pó³nocnoamerykañski wyposa¿one s¹ w pompkê przyspieszaj¹c¹ zamontowan¹ pod lewym gaŸnikiem. Jej zadaniem jest wzbogacenie mieszanki podczas przyspieszania tak, aby gaŸniki mog³y spe³niæ wymagania co do emisji spalin na rynku USA. Pompka sterowana jest poprzez prêt ze sprê¿yn¹ po³¹czony "z link¹ gazu". Przy otwieraniu przepustnic gaŸników pompka zasila w dodatkow¹ porcjê paliwa oba gaŸniki.

Uk³ad wydechowy sk³ada siê z dwóch niezale¿nych rur wydechowych odprowadzaj¹cych spaliny do komory rozprê¿nej umieszczonej pod tyln¹ czêœci¹ silnika, i dwóch t³umików, odprowadzaj¹cych rozprê¿one gazy z tej komory.

Uk³ad smarowanie jest uk³adem z mokr¹ misk¹ olejow¹. Olej dostarczany jest do elementów silnika wymagaj¹cych smarowania pod ciœnieniem, poprzez mechaniczn¹ pompê oleju. Pompa oleju jest typu trochoidalnego. Zamontowana jest ona po lewej stronie obok sprzêd³a i napêdzana ³añcuchem z przedniej koñcówki wa³u korbowego. W celu zabezpieczenia silnika przed zanieczyszczeniami, olej zasilaj¹cy silnik przechodzi przez wstêpny filtr siatkowy a nastêpnie przez pe³noprzep³ywowy papierowy filtr oleju. Filtr ten jest filtrem wymiennym i nale¿y go zmieniaæ zgodnie z tabel¹ przegl¹dów okresowych. Olej s³u¿y do smarowania silnika oraz napêdu pierwotnego, skrzyni biegów.

1. Zbiornik paliwa: zdjêcie i zamontowanie

2. Zbiornik paliwa przymocowany jest w tylnej czêœci pojedyncz¹ œrub¹ przechodz¹c¹ przez "ucho" wystaj¹ce ze zbiornika. Przód zbiornika podtrzymywany jest (oprócz modeli CX650C i CX500C) poprzez gumê izoluj¹c¹ dwoma uchwytami przyspawanymi pod zbiornikiem. W modelach CX650C i CX500C przód zbiornika przykrêcony jest dwiema œrubami przechodz¹cymi przez gumowe podk³adki umieszczone w "uszach" z przodu zbiornika.
3. W pierwszej kolejnoœci nale¿y zdj¹æ siedzenie, odkrêciæ œrubê mocuj¹c¹ zbiornik w tylnej jego czêœci (i œruby mocuj¹ce przód zbiornika w modelach CX500C i CX650C). Nastêpnie podnieœæ ty³ zbiornika, sprawdziæ czy kranik paliwa jest w pozycji "OFF" (zamkniête) i od³¹czyæ przewody paliwowe. Roz³¹czyæ przewody czujnika poziomu paliwa, rurkê podciœnienia kranika i rurkê odpowietrzenia. Zdj¹æ zbiornik.
4. Zbiornik mo¿na zamocowaæ wykonuj¹c powy¿sze czynnoœci w odwrotnej kolejnoœci. Je¿eli zachodzi trudnoœæ we wsuniêciu, nasmarowaæ gumê uchwytów ma³a iloœci¹ oleju lub myd³a, co tymczasowo zmniejszy tarcie, u³atwi za³o¿enie. Przy zak³adaniu tylnej œruby upewniæ siê, ¿e gumowa podk³adka jest poprawnie zainstalowana.
5. Przy zak³adaniu koñcówek przewodów paliwowych upewniæ siê, ¿e klipsy (obejmy) zabezpieczaj¹ce s¹ za³o¿one. Zabezpieczaj¹ one przed niepo¿¹danymi wyciekami na z³¹czach. Nie zapomnieæ pod³¹czyæ przewody czujnika poziomu paliwa (CX500E-C, CX650E-D). W modelach z kranikiem podciœnieniowym sprawdziæ czy przewód podciœnieniowy (od gaŸników) jest pod³¹czony do przedniego z³¹cza kranika, a do tylnego przewód odpowietrzenia. Przy odwrotnym za³o¿eniu kranik podciœnieniowy nie bêdzie funkcjonowa³ poprawnie - objawy to zablokowanie paliwa lub/i blokada odpowietrzenia zbiornika.

1. Kranik paliwa i przewody paliwowe: sprawdzenie

Kranik sterowany rêcznie

5. Dok³adniejsze dane dotycz¹ce wyjêcia i za³o¿enia oraz czyszczenia kranika paliwa zawarte s¹ w dziale dotycz¹cym przegl¹dów okresowych. Kranik ten jest nierozbieralny. Je¿eli ulegnie zatkaniu mo¿na przeczyœciæ go wykorzystuj¹c sprê¿one powietrze z kompresora. Przewód kompresora nale¿y za³o¿yæ na koñcówkê kranika i przestawiæ kranik na pozycjê "RES" (rezerwa). Je¿eli to nie pomo¿e, lub kranik przecieka, musi zostaæ wymieniony na nowy.

Kranik podciœnieniowy

6. Dok³adniejsze dane dotycz¹ce wyjêcia i za³o¿enia oraz czyszczenia kranika paliwa zawarte s¹ w dziale dotycz¹cym przegl¹dów okresowych.
7. Do sprawdzenie dzia³ania przepony podciœnieniowej kranika nale¿y wyj¹æ zbiornik paliwa z motocykla, postawiæ na drewnianym klocku w celu ³atwiejszego dostêpu do kranika. Przy wykonywaniu tego testu nie jest konieczne opró¿nianie zbiornika paliwa lub odkrêcenie kranika paliwa.
8. Podstawiæ czysty pojemnik pod przewód paliwowy (przewód z prawej strony kranika) i przestawiæ kranik w pozycjê "ON" (otwarty). Z rurki nie powinno wyp³ywaæ paliwo. Je¿eli wyp³ywa, wskazuje to na uszkodzenie przepony.
9. W dalszej czêœci testu konieczne jest podciœnienie. Mo¿na je wytworzyæ wk³adaj¹c przewód podciœnienia (przewód w przedniej stronie kranika) do ust i delikatnie wci¹gaæ powietrze. Kranik powinien byæ w pozycji "ON". Paliwo powinno swobodnie wyp³ywaæ z przewodu paliwowego. Je¿eli dostêpna jest pompa podciœnieniowa, kranik powinien otworzyæ siê przy podciœnieniu 12-20mm s³upa rtêci.
10. Do przegl¹du przepony spuœciæ paliwo ze zbiornika i wykrêciæ kranik paliwa. Odkrêciæ wkrêty pokrywy przepony i umieœæ j¹ wraz z podk³adk¹. Wyj¹c przeponê wraz z t³oczkiem zaworu. Je¿eli przepona jest podziurawiona lub rozszczepiona, t³oczek zaworu bêdzie zamkniêty, a wiêc przep³yw

paliwa przez kranik bêdzie zablokowany.

11. Przy monta¿u elementów kranika podciœnieniowego u¿yæ nowych podk³adek i pierœcieni uszczelniaj¹cych. Nie u¿ywaæ w tym celu p³ynnych uszczelek silikonowych poniewa¿ mo¿e to doprowadziæ do przedostania siê kawa³eczków silikonu do uk³adu paliwowego i spowodowaæ przytkanie dysz (otworów) gaŸników.

Przewody podciœnieniowe

30. Patrz - przegl¹d okresowy

rys.2.1a Zbiornik paliwa modeli Custom przymocowany jest w przedniej czêœci 2 œrubami...
rys.2.1b i pojedyncza œrub¹ w tylnej we wszystkich.
rys.3..1 Kranik podciœnieniowy - wszystkie modele od roku 1981

1. GaŸniki: wyjêcie i zamontowanie

Zdj¹æ siedzenie i zbiornik paliwa zgodnie z procedur¹ podan¹ w podrozdziale 2.

rys.4.1 Poluzowaæ opaski zaciskowe i wyj¹æ rury puszki filtra powietrza...
rys.4.2 ... tak, aby gaŸniki mo¿na by³o wysun¹æ daleko i od³¹czyæ...
rys.4.3a ... pierwsze linkê tyln¹ gazu ...
rys.4.3b ... i wtedy linkê gazu przedni¹.

1. GaŸniki: rozebranie, kontrola i z³o¿enie

Procedurê rozpocz¹æ od wyjêcia i oddzielenia gaŸników... Zaleca siê oddzielny demonta¿ i monta¿ ka¿dego z gaŸników. Zapobiegnie to pomieszaniu elementów sk³adowych. Demonta¿ i kontrolê ka¿dego z gaŸników przeprowadza siê jak opisano poni¿ej.
rys. 3.4 Regulacja obrotów biegu ja³owego
rys. 3.5 Regulacja pompki przyspieszaj¹cej

1. GaŸniki: regulacja, emisja spalin: opis wstêpny

2. W wielu krajach wykonuje siê prawnie pomiaru emisja toksycznych œrodków emitowanych przez pojazdy silnikowe
3. W USA poziom emisji spalin zarz¹dzany jest przez Agencjê Ochrony Œrodowiska (EPA), która wprowadzi³a surowe przepisy. Prawo federalne regulowane przez Akt Czystoœci Powietrza zakazuje demontowanie lub modyfikacjê jakichkolwiek elementów wchodz¹cych w sk³ad fabrycznego wyposa¿enia pojazdu dostosowanego do wymagañ prawa. Prawo rozszerza zakaz o stosowanie wszelkiego rodzaju dodatków, czêœci mog¹cych wp³yn¹æ na zwiêkszenie emisji szkodliwych sk³adników spalin. Z³amanie tego prawa mo¿e skoñczyæ siê na³o¿eniem kary do 10000$ za ka¿de pogwa³cenie rozporz¹dzenia. Stosowanie tak wysokich kar ma wp³yn¹æ na ograniczenie wykonywania wszelkich zmian i niezgodnych regulacji elementów uk³adu paliwowego, zap³onowego, korbowego lub wydechowego.
4. Zgodnoœæ z

rys. 3.6 Pomiar wysokoœci (poziomu) p³ywaka

1. GaŸniki: sprawdzenie ustawieñ

2. Rozmiary dysz i ustawieñ wkrêtów regulacyjnych s¹ z du¿y ustawione przez fabrykê i nie powinny byæ modyfikowane. Je¿eli ma siê jakiekolwiek w¹tpliwoœci co do tych parametrów nale¿y upewniæ siê sprawdzaj¹c w danych zawartych w dziale Dane techniczne. Je¿eli zmiana wydaje siê konieczna mo¿e czêsto byæ przypisana czynnikom nie zwi¹zanym z gaŸnikami. Mimo regularnego serwisowania, ten proces zdarza siê w okresie d³ugotrwa³ej eksploatacji ale nie jest mo¿liwe, aby z tego powodu gaŸniki przesta³y nagle, raptownie Ÿle funkcjonowaæ. Je¿eli uszkodzenie takie zdarzy siê, w pierwszej kolejnoœci nale¿y sprawdziæ pozosta³e g³ówne systemy, w których uszkodzenie mo¿e daæ podobne symptomy. Dopiero wówczas nale¿y sprawdziæ lub modyfikowaæ gaŸniki.
3. W przypadku zastosowania niestandardowych elementów takich jak uk³ad wydechowy, filtr powietrza lub wa³ki rozrz¹du mo¿e okazaæ siê konieczne zastosowanie pewnych zmian w gaŸnikach. Osi¹gniêcie wówczas poprawnych ustawieñ poprzedzone jest licznymi próbami, które nie zawsze daj¹ wymagane rezultaty.
4. W przypadku pracy silnika, do 1/8 otwarcia przepustnicy g³ówny wp³yw ma dysza wolnych obrotów. Od 1/8 do ¼ otwarcia valve cutaway, od ¼ do ¾ pozycja iglicy i powy¿ej ¾ rozmiar dyszy g³ównej. Oczywiœcie jest to tylko podzia³ przybli¿ony...
5. Je¿eli zmiany do tworzenia mieszanki musz¹ byæ robione, zawsze b³¹dz¹ po stronie nieznacznie bogatej mieszanki. Zbyt uboga mieszanka bêdzie powodowaæ przegrzewanie siê silnika, mog¹ce doprowadziæ do zatarcia. Stan elektrod œwiec zap³onowych mo¿e byæ interpretowany jak godny zaufania przewodnik stanu silnika - odniesienie do dzia³u *Czynnoœci Okresowe*.

1. GaŸniki: regulacja

2. Gdy silnik nie pracuje prawid³owo, przyczyn¹ mog¹ byæ gaŸniki, ...
3.

rys.8.6 Ustawienie wkrêtów dawki pilotuj¹cej (mieszanki) dok³adnie jak opisano w tekœcie

1. Wkrêt dawki pilotuj¹cej - wszystkie modele US od 1980

2. W celu sprostania normom emisji spalin zgodnie z wytycznymi EPA, ustawienie wkrêtów dawki pilotuj¹cej jest wykonane przez fabrykê i ograniczone ich regulowanie poprzez na³o¿enie pokrywek ograniczników dopuszczaj¹cych ich 7/8 obrotu. Ograniczniki te s¹ tak zaprojektowane, ¿e uniemo¿liwiaj¹ wzbogacenie mieszanki.
3. Zdj¹æ... Zanim wkrêty dawki pilotuj¹cej zostan¹ wykrêcone nale¿y wkrêciæ je do wyczuwalnego oporu i przy tej czynnoœci liczyæ iloœæ wykonanych obrotów. wkrêtu. Dopiero wówczas mo¿na ca³kowicie wykrêciæ te wkrêty i skontrolowaæ ich stan.
4. Przy wkrêcaniu wkrêtów dawki pilotuj¹cej nale¿y wkrêciæ je do oporu a nastêpnie wykrêciæ o zanotowan¹ przy demonta¿u liczbê obrotów.
5. W przypadku u¿ycia nowych wkrêtów dawki pilotuj¹cej wkrêciæ je do oporu a nastêpnie wykrêciæ o podan¹ na pocz¹tku rozdzia³u iloœæ obrotów.

Wszystkie nowe wkrêty powinny byæ zaopatrzone w pokrywki ograniczaj¹ce ich ruch przymocowane do wkrêtów za pomoc¹ Loctite 601 lub podobnego preparatu. Patrz podpunkt 8 poni¿ej.

6. Uruchomiæ silnik i doprowadziæ do temperatury eksploatacyjnej, co nast¹pi po oko³o 10 minutach pracy na biegu luzem. Ustawiæ obroty biegu ja³owego, krêc¹c œrub¹ wolnych obrotów, na 1100+/-100 rpm.
7. Wybraæ do regulacji jeden z gaŸników. Krêc¹c w nim wkrêtem dawki pilotuj¹cej ustawiæ jak najwy¿sze obroty silnika. Ponownie wyregulowaæ œrub¹ wolnych obrotów obroty biegu ja³owego na 1100+/-100 rpm. Krêciæ powoli wkrêtem dawki pilotuj¹cej zredukowaæ obroty o 100 rpm. Je¿eli redukcja obrotów o kolejne 100 rpm nie jest ju¿ mo¿liwa poprzez krêcenie wkrêtem dawki pilotuj¹cej, odkrêciæ wkrêt ten o dok³adnie 1 obrót i wyregulowaæ ponownie obroty biegu ja³owego. Na tym zakoñczyæ regulacjê.
8. Powtórzyæ powy¿sze czynnoœci dla drugiego gaŸnika i wyregulowaæ obroty biegu ja³owego.
9. Po zakoñczeniu tych czynnoœci za³o¿yæ na wkrêty regulacyjne pokrywki ograniczaj¹ce ich obrót w takiej pozycji, aby uniemo¿liwiæ dalszy ich obrotu przeciwnie do wskazówek zegara - wzbogacanie mieszanki. Pokryæ klejem pokrywki aby uniemo¿liwiæ samoczynne rozregulowanie.

1. GaŸniki: synchronizacja

2. W celu uzyskania jak najlepszych osi¹gów wymagane jest, aby oba gaŸniki pracowa³y w pe³nej harmonii. Je¿eli gaŸniki nie s¹ zsynchronizowane, nie tylko jeden z nich bêdzie pracowa³ nie w pe³ni, lecz równie¿ bêdzie powodowa³ ograniczenie osi¹gniêcie pe³nej wydajnoœci pracy drugiego. Redukuje to osi¹gi silnika.
3. Do synchronizacji konieczne jest posiadanie wakuometrów. Pod³¹czone s¹ one poprzez specjalny adaptor wkrêcany w odpowiednie miejsce przy kana³ach dolotowych.
4. Je¿eli zajdzie konieczno œæ synchronizacji gaŸników, nale¿y postêpowaæ jak opisano poni¿ej. W pierwszej kolejnoœci nale¿y skontrolowaæ wszystkie pozosta³e uk³ady i upewniæ siê, ¿e gaŸnik s¹ poprawnie wyregulowane. Wykrêciæ wkrêty na kana³ach dolotowych i wkrêciæ adaptory. Pod³¹czyæ przewody wakuometrów do adaptora.
5. Uruchomiæ silnik i doprowadziæ do normalnej temperatury pracy. Wyregulowaæ obroty biegu ja³owego na 1100 +/- 100 rpm. Porównaæ odczyty na obu przyrz¹dach. Je¿eli ró¿nica pomiêdzy podciœnieniem w obu kana³ach dolotowych jest wiêksza ni¿ 4 cm s³upa rtêci, konieczna jest synchronizacja. Jakkolwiek to jest nadzwyczaj hojna tolerancja to w praktyce uzyskanie identycznych odczytów jest doœæ trudne.
6. Regulacji dokonuje siê poprzez krêcenie wkrêtem umieszczonym pomiêdzy gaŸnikami. Ruch œruby mo¿na ³atwo œledziæ gdy posiada ona znak namalowany bia³¹ lub ¿ó³t¹ farb¹. Zale¿nie od posiadanych narzêdzi i u³atwienia sobie pracy mo¿e okazaæ siê konieczny demonta¿ zbiornika paliwa. Nale¿y jednak pamiêtaæ o zasileniu gaŸników w trakcie regulacji w paliwo. W modelach z kranikiem podciœnieniowym nie zapomnieæ zatkaæ koniec rurki podciœnienia przed uruchomieniem silnika ze zdjêtym zbiornikiem.
7. Podczas regulacji nie nale¿y wciskaæ wkrêtu do regulacji i trzymaæ wkrêt dok³adnie w tej samej pozycji podczas kontrowania przeciwnakrêtk¹ i nie dokrêcaæ jej zbyt mocno. Otworzyæ i zamkn¹æ kilkakrotnie przepustnice po ka¿dorazowej regulacji co pozwoli na odpowiednie "osadzenie" wszystkich czêœci, odczekaæ a¿ odczyt na wakuometrach ustabilizuje siê.
8. Gdy gaŸniki s¹ ju¿ prawid³owo zsynchronizowane unieruchomiæ silnik, od³¹czyæ adaptor i zamontowaæ wszystkie zdemontowane elementy.

1. Filtr powietrza: wiadomoœci wstêpne

Czynnoœci zwi¹zane z opiek¹ i utrzymaniem filtra powietrza opisane s¹ w dziale Przegl¹d Okresowy. Nigdy nie nale¿y uruchamiaæ silnika z od³¹czonym filtrem lub wyjêtym wk³adem filtruj¹cym. W tym przypadku istnieje du¿e ryzyko zwiêkszonego zu¿ycia silnika poprzez dostawanie siê do jego wnêtrza zwiêkszonej iloœci nie filtrowanego powietrza.

1. Przewietrzanie skrzyni korbowej: modyfikacje - model CX500-A

2. Modyfikacjê uk³adu przewietrzania skrzyni korbowej przeprowadzono w 1980 roku od modelu CX500-A. Modyfikacja ta dotyczy modeli z silnikami od numeru 2200013 do 2209731
3. Stwierdzono, ¿e podczas pracy silnika przy obrotach powy¿ej 7000rpm, nadmiar oleju przedostawa³ siê zespo³em przewodów od g³owicy cylindrów i gromadzi³ siê w obudowie filtra powietrza. Poprawiono to. Honda wprowadzi³a nowy system przewietrzania skrzyni korbowej.
4. W przypadku braku takiej modyfikacji, mo¿liwe jest uzyskanie odpowiednich czêœci do przeprowadzenia jej u autoryzowanego dealera Hondy. Numery tych czêœci:

90547-415-305 - gumowa rura ³¹cz¹ca gaŸnik z cylindrem (2szt.)
12361-415-610 - uszczelka okienka inspekcyjnego
91302-001-000 - pierœcieñ uszczelniaj¹cy o-ring
95005-12460-20 - rurka przewietrzania skrzyni korbowej

5. Zdemontowanie poprzedniego uk³adu przewietrzania. ...

1. Uk³ad wydechowy: zdjêcie i zamontowanie

1. Uk³ad smarowania: opis ogólny

2. W celu uzyskania dok³adniejszych danych o czyszczeniu uk³adu przewietrzania skrzyni korbowej, wymiany oleju silnikowego i sprawdzania poziomu oleju, wymiany filtra oleju i czyszczeniu filtra pompy i zaworu jednokierunkowego filtra oleju nale¿y zajrzeæ do dzia³u *Czynnoœci okresowe*
3. Informacje o pompie oleju oraz wymontowaniu i zamontowaniu zaworu ciœnieniowego nale¿y szukaæ w rozdziale I.
4. Procedurê sprawdzenia obwodu kontroli ciœnienia oleju opisano w rozdziale VII.

1. Pompa oleju: kontrola i regeneracja

1. Zawór ciœnieniowy: kontrola i regeneracja

Uk³ad zap³onowy

Spis treœci

Czujniki zap³onu - zap³on tranzystorowy		
szczelina czujnik zap³onu / wirnik ATU	0,45 - 0,65 mm	
Standardowe œwiece zap³onowe - zalecane	**NGK**	**Nippodenso**
wszystkie modele 500 na rynek UK, CX500C 1982, GL500 i GL500 1982	DR8ES-L	X24ESR-U
wszystkie modele 500 na rynek US	D8EA	X24ES-U
Wszystkie modele 650	DPR8EA-9	X24EPR-U9
Przerwa na elektrodach œwiec		
modele 500	0,6 - 0,7 mm	
modele 650	0,8 - 0,9 mm	

Rama i zawieszenie

Spis treœci

Ko³a, hamulce i opony

Spis treœci

Instalacja elektryczna

Spis treœci

¯arówki

	modele UK	*modele US*
Reflektor g³ówny		
CX500 1978, 1979, CX500D 1979	nie dotyczy	12V, 50/40W *
CX500C 1979, 1980, CX500D 1980	nie dotyczy	12V, 65/50W *
wszystkie pozosta³e modele	12V, 60/55W	12V, 60/55W
Œwiat³a postojowe	12V, 4W	nie dotyczy
Kierunkowskazy przednie	12V, 21W	12V, 23/8W (32/3cp)
Kierunkowskazy tylne	12V, 21W	12V, 23W (32cp)
Oœwietlenie tablicy rejestracyjnej	12V, 10W	12V, 10W (4cp)
œwiat³o STOP / lampa tylna	12V, 21/5W	12V, 23/8W (32/3cp)
Oœwietlenie tablicy rozdzielczej i œwiat³a kontrolek ostrzegawczych	12V, 3,4W	12V, 3,4W (2cp)

* - ¿arówka zintegrowana z odb³yœnikiem

Bezpieczniki

Model	Wszystkie CX500, CX500C 1978, 1980, CX500D 1979, 1980	CX500C, CX500D 1981	CX500E-C, GL500 1981, GL500I 1981
Glówny	20A	30A	30A
Reflektor	10A	10A	10A
Instrumenty, lampa tylna	10A	10A	10A

Model	GL500D-C, CX500C 1982, GL500 i GL500I 1982	CX650C, CX650E-D	Wszystkie modele GL650
G³ówny	30A	30A	30A
Reflektor	10A	15A	15A
Kontrolki oleju i luzu	10A	15A	15A
Kierunkowskazy, STOP, sygna³	10A	15A	15A
Tablica rozdzielcza, lampa tylna	10A	15A	15A
Akcesoria dodatkowe	5A	nie dotyczy	5A
wersja *Interstate* (z owiewk¹)			
GL500I 1981	10A, 5A		
GL500I 1982, GL500D-C, GL650I GL650D2-E	1A, 2A, 5A		