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INFORMATION

THE Vespio is a de-luxe moped, slightly larger and about 30lb heavier than the Ciao. Like the latter, the Vespio has an open frame, and the transmission is similar, enclosed belt drive with an automatic clutch, and reduction gears in the rear hub. On the Vespio, however, the selector fork which engages or disengages the gears to allow the machine to be pedalled, is controlled by a cable from the left twist-grip. The pedal chain is spring-tensioned and enclosed.

The Vespio has motorcycle type telescopic front forks with hydraulic damping and at the rear, enclosed springs, undamped, against which the engine-unit moves on rubber bushes. Tyre size is 21 by 18in. The engine has certain similarities to the Ciao — the same bore and stroke and output, and an induction controlled by one crank cheek opening and closing a port in the crankcase. Lubrication is by petrol mixture, and the fuel tank, mounted below the frame and forward of the engine, has a reserve supply. Both brakes are internal expanding, cable operated, and all controls on the handlebars. The latter are part of a shapely alloy casting, incorporating the headlamp and speedometer head, and are not adjustable. The spring saddle has limited vertical adjustment. The control stand requires minimum effort to operate, and is strong enough to support the machine while the engine is started, if desired.

The rear wheel really is quickly detachable, being held to the overhung hub by four bolts, and as the engine and fuel tank are slung below the frame the centre of gravity is very low. With comparatively large wheels, handling and stability are very good. From a servicing point of view, it is a simple operation (described later) to detach the frame and front wheel, etc, from the engine-unit, leaving the rear wheel, the stand and rear wheel; this gives complete accessibility for any work on the unit. It should be noted that the steering head bearings are not adjustable; they are pressed into the head with a special tube between them, and the steering 'column' is in fact a long bolt which locks the upper and lower fork crowns against the races. There is one left-hand thread only on the machine — the left pedal.

Engine: Single cylinder two-stroke. Inclined cast-iron barrel, cooling fins, and flywheel fan. Die-cast alloy head. Carburettor mounted on crankcase, induction controlled by rotary valve formed as part of crankshaft. Decompressor releases into single exhaust pipe, and rear wheel. Chain drive from right handlebar. **Bore and stroke:** 38.4mm by 45mm. **Capacity:** 49.7cc. **Output:** 2.2bhp @ 4700rpm. **Piston:** Die-cast alloy, flat top. Two plain rings, identical, pegged. Ring gap on assembly 0.1-0.25mm, replace if gap(s) exceed 0.2mm. **Ignition:** External HT coil energised by LT coil in flywheel generator. Fixed advance, points open 20 deg. plus/malus 1 deg. Contact breaker gap 0.4mm (0.015in). HT lead incorporates suppressor. **Spark plug:** Bosch W 240 T1, or Champion L 81. **Cap 6mm (0.238in). Carburettor:** Vespa manufacture (based on Dell 'Orto design). Main jet 56. Choke cable operated from left handlebar. **Transmission:** Y-belt from engine to gearbox (within hub). Variable pulley on engine shaft, ratio selected automatically according to engine speed and load; spring-loaded pulley on rear drive shaft maintains belt tension. Centrifugally-operated friction clutch, 3 shoes, on rear drive shaft, incorporating separate 2-shoe starting clutch for pedal starting engine. Gearbox encloses reduction gears in oil-bath case, with selector (to free engine for pedalling machine) operated by cable from left twist-grip. Chain pedalling gear with freewheel on rear axle, endless chain tensioned automatically by spring-loaded jockey sprockets. **Suspension:** Front — telescopic forks, one compression spring in each leg hydraulically damped. Rear — undamped springs enclosed in telescoping metal shields, engine unit oscillates on rubber bushes. **Brakes:** Internal expanding, cable operated from handlebar levers, 2 shoes in front hub, one shoe in rear. **Tyres:** Front and rear — 21 by 18 in. **Tyre pressures:** Front 24 lb/sq in. Rear 28 lb/sq in. **Lighting:** Direct from LT coil in 4-pole flywheel generator, output 6V 28W. Headlamp 6V 25/25W twin filament bulb, rear 6V 3W, controlled by switch on right handlebar. **Lubrication:** Engine — petrol mixture 2 per cent by volume, oil SAE 30 or two-stroke self-mixing. See users handbook for exact proportions of individual makes and types of oil. **Fuel tank:** Capacity 5.8 pts, including 1.2 pts reserve, supply controlled by 3-position tap. **Consumption:** 190 mpg. **Range:** 125 miles. **Max. speed:** 25 mph.

RENEWAL OF PARTS

All moving parts liable to wear are separately renewable, and in line with Vespa practice, a worn big-end or worn crankshafts can only be renewed by a complete crankshaft assembly. As the engine or handlebar, the copper/asbestos exhaust pipe gasket, all oil seals, O-rings and circlips should be renewed as a matter of course once disturbed.

Spare parts list

This publication illustrates and lists all parts, and a very complete Users Handbook is also available. There is no workshop service manual, and therefore this service sheet aims to provide dismantling and re-assembly instructions which are as complete as possible.

Workshop Service Tools

The tools available are listed here in groups, to show readily the parts of the machine to which they apply.

Drive side crankshaft
002713/E Oil seal extractor
002659/E Oil seal fitting tool
002668/E Ball race extractor
002640/E Ball race fitting tool
Generator side crankcase
002642/E Oil seal fitting tool
002810/E Roller bearing, outer race extractor
002641/E Roller bearing outer race fitting tool
002813/E Roller bearing, extractor for inner race (off shaft)
002637/E Roller bearing, fitting tool for inner race (on to shaft) — 3 pieces)
Flywheel generator
002633/E Flywheel holding tool
002609/E Flywheel extractor
Clutch
002632/E Clutch holding tool
002661/E Clutch carrier, inner oil seal fitting tool (2 pieces)
002660/E Clutch carrier, outer oil seal fitting tool (2 pieces)
002659/E Clutch carrier, inner needle bearing fitting tool (2 pieces)
002659/E Clutch carrier, inner needle bearing fitting tool (2 pieces)

DETACHING ENGINE-UNIT

If desired without removing the engine-unit, merely by removing the necessary parts.

Detaching operation: Start by putting the machine on its stand, and lock this by fitting the wood-block described in the last paragraph of "Workshop



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002662/E Clutch carrier, outer needle bearing fitting tool (2 pieces)
Chaincase — rear drive shaft
002714/E Oil seal extractor
002650/E Oil seal fitting tool
002622/E Oil pilot guide (Used on shaft to prevent damage to oil seal during re-assembly)
002780/E Ball race extractor
002628/E Ball race fitting tool
Gearbox — intermediate shaft
002822/E Needle roller bearing fitting tool
Gearbox — front drive shaft
002653/E Oil seal extractor
002647/E Oil seal fitting tool
002646/E Needle roller bearing fitting tool
002692/E Ball race extractor
002664/E Ball race fitting tool
002643/E Freewheel gear wrench
Steering head
002692/E Ball race extractor
002814/E Ball race fitting tool
Front forks
002667/E C-spanner for sleeve nut
Engine unit
002638/E Tubular jig, supports complete unit in vice.

A useful item is a wood block to lock the stand in the down position. This should be a piece of hard wood 1/2 in thick and 1/2 in wide, length not less than 4in or more than 4 1/2 in. One end should be tapered to fit against the rubber stand buffer in the engine unit, the blunt end is fitted against the buffer lug on the stand leg.

Useful data

Engine: Single cylinder two-stroke. Inclined cast-iron barrel, cooling fins, and flywheel fan. Die-cast alloy head. Carburettor mounted on crankcase, induction controlled by rotary valve formed as part of crankshaft. Decompressor releases into single exhaust pipe, and rear wheel. Chain drive from right handlebar. **Bore and stroke:** 38.4mm by 45mm. **Capacity:** 49.7cc. **Output:** 2.2bhp @ 4700rpm. **Piston:** Die-cast alloy, flat top. Two plain rings, identical, pegged. Ring gap on assembly 0.1-0.25mm, replace if gap(s) exceed 0.2mm. **Ignition:** External HT coil energised by LT coil in flywheel generator. Fixed advance, points open 20 deg. plus/malus 1 deg. Contact breaker gap 0.4mm (0.015in). HT lead incorporates suppressor. **Spark plug:** Bosch W 240 T1, or Champion L 81. **Cap 6mm (0.238in). Carburettor:** Vespa manufacture (based on Dell 'Orto design). Main jet 56. Choke cable operated from left handlebar. **Transmission:** Y-belt from engine to gearbox (within hub). Variable pulley on engine shaft, ratio selected automatically according to engine speed and load; spring-loaded pulley on rear drive shaft maintains belt tension. Centrifugally-operated friction clutch, 3 shoes, on rear drive shaft, incorporating separate 2-shoe starting clutch for pedal starting engine. Gearbox encloses reduction gears in oil-bath case, with selector (to free engine for pedalling machine) operated by cable from left twist-grip. Chain pedalling gear with freewheel on rear axle, endless chain tensioned automatically by spring-loaded jockey sprockets. **Suspension:** Front — telescopic forks, one compression spring in each leg hydraulically damped. Rear — undamped springs enclosed in telescoping metal shields, engine unit oscillates on rubber bushes. **Brakes:** Internal expanding, cable operated from handlebar levers, 2 shoes in front hub, one shoe in rear. **Tyres:** Front and rear — 21 by 18 in. **Tyre pressures:** Front 24 lb/sq in. Rear 28 lb/sq in. **Lighting:** Direct from LT coil in 4-pole flywheel generator, output 6V 28W. Headlamp 6V 25/25W twin filament bulb, rear 6V 3W, controlled by switch on right handlebar. **Lubrication:** Engine — petrol mixture 2 per cent by volume, oil SAE 30 or two-stroke self-mixing. See users handbook for exact proportions of individual makes and types of oil. **Fuel tank:** Capacity 5.8 pts, including 1.2 pts reserve, supply controlled by 3-position tap. **Consumption:** 190 mpg. **Range:** 125 miles. **Max. speed:** 25 mph.

DISMANTLING ENGINE

If attention to the crankshaft and/or bearings is necessary, the procedure is as follows: 1. Detach the engine-unit as already described, then remove the exhaust pipe and silencer (first paragraph of "Decarbonisation"). The cylinder head and barrel should be left in situ until a later stage. **Flywheel generator.** Use tool 002633/E to hold the flywheel, with its arm resting against the pedal spindle, whilst the nut is undone — there is a spring washer beneath it. Now use tool 002609/E to pull the flywheel off its taper. Mark one lug of the stator plate and the housing, near a screw, to ensure correct replacement, then undo the three screws with spring washers and remove the stator plate. The wires must be eased through the grommet at the back of the housing. Place the stator plate complete into the flywheel to retain magnetism. **Belt drive.** To lock the engine pulley, whilst the nut is undone, place a flat metal bar, about 4in long, between one of the slots in the rear flange and the lug of the cover fastener; there is a shakeproof and a plain washer behind the nut. Next, insert a broad screwdriver between the two halves of the rear pulley, and spread them against the spring pressure — this will allow enough slack in the belt for the engine pulley to be removed. Remove the key and the thrust washer behind it. Use tool 002632/E to hold the clutch whilst its retaining nut is undone, there is a shakeproof washer behind the nut, then pull the clutch housing from the shaft. Remove the key and the thrust washer behind, this allows the rear pulley to be removed. **Pedal chain.** Remove both pedals by knocking out the cotter-pins. The plate covering the chaincase is held by three bolts (at the back, near the rear drive shaft) and fourteen nuts. Of the latter, one held the silencer and will be loose, and three others hold the wiring junction-block and the coil bracket. Remove all these, and lift off the cover-plate. Behind it on the pedal shaft is a loose white nylon sealing washer, and on the engine shaft is a long spacer tube, within the crankcase oil seal — remove both these.

Undo the forward end of the spring which tensions the jockey sprocket assembly, and remove this from its pivot pin. Use tool 002643/E to unscrew the freewheel from the rear axle, and after removing this, pull the pedal shaft (and chain) from its bushes. Undo the rear wheel. **Removing crankcase.** It will now be found convenient to have the unit on the bench, but first the stand must be removed. Turn the unit upside down, pull out the stand wedge, lever the longer end of the stand spring free, remove the split-pin in the stand pivot and pull this out. If tool 002638/E is available, grip this in the vice and fasten the unit to it. Alternatively the unit may be gripped direct in

and turn off the petrol tap and remove the pipe from the tap. On the nearside, undo the three screws holding the air filter to the carburettor, leaving the filter to hang on its pipe. Slacken the carburettor clamp screw, and slide the instrument from the inlet pipe to the barrel before refitting the latter. **Re-assembly—transmission.** Follow the dismantling sequence in reverse, noting particularly the following: a) Before replacing the chaincase cover-plate, slide the spacer tube on, push the crankshaft, pushing it right home into the oil seal, and fit the white nylon washer, small diameter outwards, to the pedal shaft. b) The chaincase cover-plate is secured by seven screws, all with plain washers. The three shortest, 3/4 in long, fit at the back at 12, 9 and 6 o'clock and thread into the alloy case; the remaining fourteen all face outward and have nuts to secure

warm the piston (with a cloth dipped in hot water and wrung out) to allow the gudgeon pin to be pushed out towards the flywheel with a suitable rod. The little end bearing is a renewable plain bush. **Re-assembly:** Reverse the above sequence of operations. Take care to replace the piston with the arrow on the crown pointing downwards (toward the exhaust). Remember also to fit the loose air deflector plate to the barrel before refitting the latter. The decompressor valve should not require dismantling until a considerable mileage has been covered — a splitpin through the valve stem locks the valve in the closed position. Finally, when refitting the frame to the engine-unit, make sure the brake and selector cables are not trapped under the front end of the mudguard — they must lie along the top of the chaincase, outside the guard.

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Undo the forward end of the spring which tensions the jockey sprocket assembly, and remove this from its pivot pin. Use tool 002643/E to unscrew the freewheel from the rear axle, and after removing this, pull the pedal shaft (and chain) from its bushes. Undo the rear wheel. **Removing crankcase.** It will now be found convenient to have the unit on the bench, but first the stand must be removed. Turn the unit upside down, pull out the stand wedge, lever the longer end of the stand spring free, remove the split-pin in the stand pivot and pull this out. If tool 002638/E is available, grip this in the vice and fasten the unit to it. Alternatively the unit may be gripped direct in

or the crankpin may be distorted.

Removing crankshaft. With a hide mallet, tap the flywheel shaft until it is free of the bearing. Lay the crankcase flywheel side down on the bench, and turn the crankshaft until the big-end is about 5° before TDC. Hold the conrod to maintain this position, with the other hand lift the crankshaft at the same time tilting it so that larger crank cheek (the inlet valve rotor) comes close to the crankcase mouth. As the shaft is tilted, the end of the flywheel shaft will just clear the bearing and the complete assembly can then be lifted out through the open side of the case.

Renewal of bearings. A worn big-end, and/or worn crankshaft(s) will necessitate a complete replacement assembly. But all bearings and oil seals are renewable, using the tools listed earlier for removal and fitting. (Note that the drive side ball bearing is located by a circlip).

If either or both crankshaft bearings require renewal, examine also the induction crank cheek and the face of the port with which it mates. Any wear here would affect performance, but the worn port area can sometimes be built up and refaced — consult Vespa Service on this point.

Re-assembly—crankshaft. Make sure the rollers in the flywheel side bearing are not tilted, before re-inserting the assembly into the crankcase, then turn the shaft into the bearing — it should not require more than firm hand pressure to seat right home. Fit wedge 002637/E to crank cheeks, and offer up the drive side shaft to its bearing — turn the shaft to ensure that the oil seal is not displaced as the shaft enters.

Tighten up the five bolts a little at a time and diametrically, to pull the crankcase squarely on to the spigot on the chaincase.

Finally tap the flywheel shaft lightly with a hide mallet to centralise the assembly in the crankcase, remove wedge and check that it turns freely.

Remainder of the engine assembly involves re-fitting the components in reverse order of the dismantling sequence. In particular, make sure that two chaincase bolts (1 in long) are in position before the air filter and deflector plate are fitted.

Re-assembly—transmission. Follow the dismantling sequence in reverse, noting particularly the following:

a) Before replacing the chaincase cover-plate, slide the spacer tube on, push the crankshaft, pushing it right home into the oil seal, and fit the white nylon washer, small diameter outwards, to the pedal shaft. b) The chaincase cover-plate is secured by seven screws, all with plain washers. The three shortest, 3/4 in long, fit at the back at 12, 9 and 6 o'clock and thread into the alloy case; the remaining fourteen all face outward and have nuts to secure

GEARBOX

Any work on the reduction gears (in the gearbox within the rear hub) can easily be done with the engine-unit in position — it is not necessary to remove the unit. The sequence of operations is given below.

Preliminary work. Place machine on stand (it is advisable to lock this with the wooden block). Remove plastic belt cover, then silencer and exhaust pipes.

Next remove the front and rear belt pulleys, following the instructions headed "Belt Drive" in the section on "Dismantling Engine".

Undo the fourteen nuts which hold the three holding the chaincase cover-plate and pull the plate away from the case until it clears the end of the rear drive shaft, when it can be allowed to hang down from the pedal shaft.

Undo the jockey sprocket spring and remove the sprocket assembly, then unscrew the freewheel using tool 002643/E.

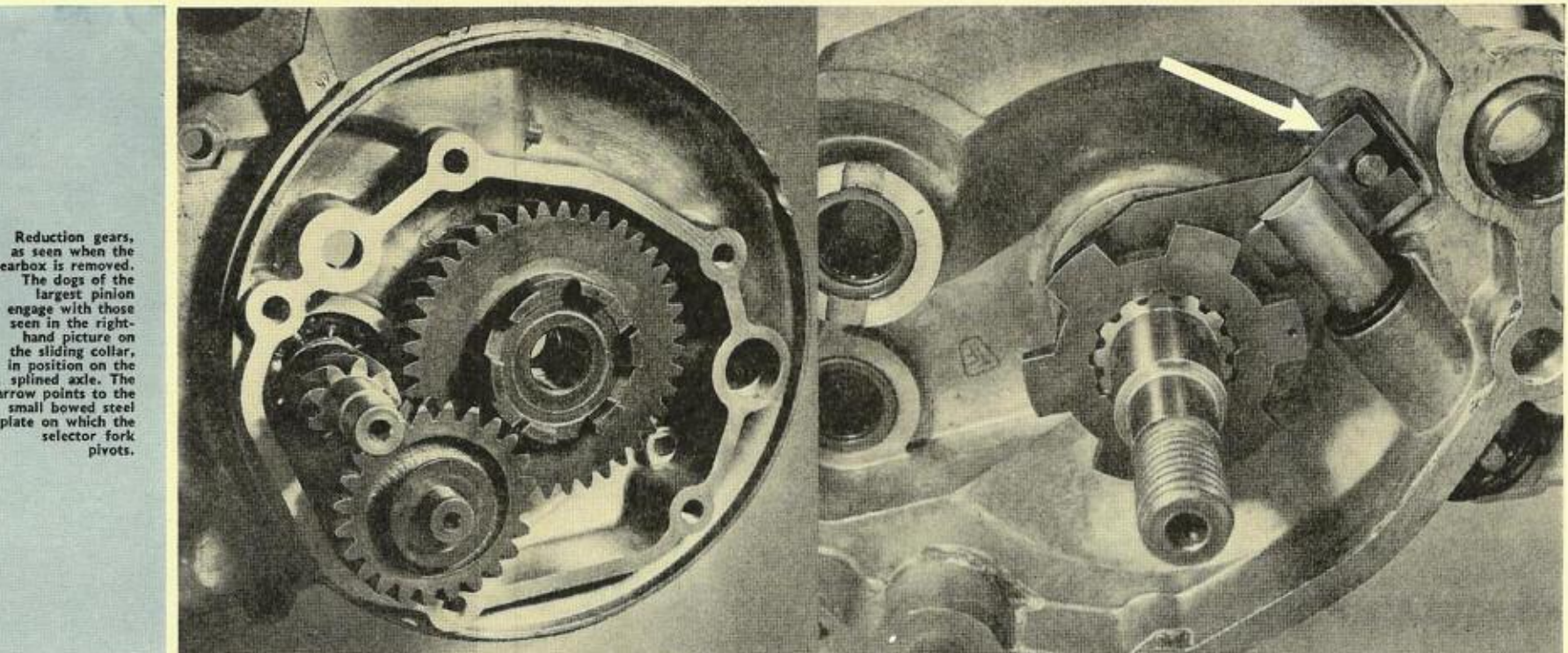
Undo the rear wheel and disconnect the selector cable from its lever.

Rear brake. Undo the shoe spring, remove the circlip which hold the shoe on its pivot, and remove the shoe. Next undo the nut holding the brake lever to the camshaft, and push the shaft right out from its housing.

Removing gearbox. Place a tray under the gearbox to catch the oil which will run out, then undo the three bolts with spring washers which hold the gearbox bolts previously trapped will be free to come out.

Position the conrod at TDC and place the wedge part of tool 002637/E (which comprises three items) between the crank cheeks. Undo five bolts with plain washers holding the crankcase to the chaincase — a paper washer seals the joint, and the crankcase is located on a spigot. To free it the end of the engine shaft may be tapped lightly with a hide mallet.

Do not do this unless wedge 002637/E is in position against the hub bearing. When the sliding dog is



(Below) Main engine components are seen here—on the right, the crankshaft is shown in the EXACT position for removal from or re-entry into the crankcase.

the plate, their positions being—four 1 in long at the front at 12, 2, 4 and 6 o'clock (two already fitted before barrel was replaced), the longest is 1 1/2 in and fits directly below the crankshaft, and the remaining nine are 1 1/4 in long.

a) After the cover-plate is in position, fit a thrust washer to the crankshaft before the key and the pulley.

d) Slide the rear pulley carefully on to the drive shaft, to avoid damage to the internal oil seals, then fit the thrust washer and key for the clutch housing.

e) The clutch housing cannot be fitted unless the two small starting shoes are compressed against their springs — do this with a thumb and forefinger the spacer tube on, push the crankshaft, pushing it right home into the oil seal, and fit the white nylon washer, small diameter outwards, to the pedal shaft. f) After the pulley nuts have been tightened, spread the rear pulley with a screwdriver to allow the belt to be looped over the front pulley.

TRANSMISSION

The design and working of the variable pulley (on engine shaft), rear pulley and automatic clutch and starting clutch (on drive shaft) are similar to the same components used on the Ciao, but of course the dimensions are different on the Vespio.

Variable pulley. The working of this component was described in Trader Service Sheet no. 4-3, dealing with the Ciao. Note especially that if dismantled, the bronze bush for the movable flange is oil-impregnated and must never be washed in petrol or paraffin.

Clutch carrier and rear pulley. The carrier runs on two needle roller bearings, each with an oil seal, and Workshop Service Tools are listed to remove and replace these. The movable pulley flange

freed from its splines, the selector fork can be lifted off its pivot pin.

The short intermediate shaft has a thrust washer at each end — one of these may be found stuck to the inner face of the bearing in the chaincase casting.

The drive shaft is located endwise in its bearing (in the chaincase) by a small circlip outside the bearing, the shaft must be tapped to remove it after the circlip has been removed.

Renewal of bearings. There are two ball bearings in the chain case, supporting the outer ends of the drive shaft and rear axle, and these bearings are located by circlips, and have oil seals outside them.

The hub end of the rear axle runs in a large needle roller bearing, in the gearbox casing, with an oil seal.

The intermediate shaft and the inner end of the drive shaft, run in small needle roller bearings in blind housings.

Extractors and fitting tools for all these bearings and oil seals are listed in the Workshop Service tools.

The selector fork spindle runs directly in the alloy case, it is retained by a circlip and has an O-ring oil seal.

Re-assembly. The selector fork pivots on a curved spring-steel plate on a pin. Fit the plate concave side downwards, then assemble the fork with the dimple facing up (the dimple takes the thrust of the selector lever), and fit the sliding dog to the fork, with the spring and seating collar. Lay hub on the bench, axle pointing up, and lower the box with fork assembly over the axle, turning this so that the splines en-

der the fuel tank to support the machine. Unscrew the speedo gearbox from its cable.

Place a tray under each leg and remove the drain plug in each slider. While the oil is draining, remove the front mudguard, held by three bolts to each slider.

Removing fork assembly. Undo the two chrome bolts in the upper fork crown which secure the legs. Next undo the steering column nut (under the lower fork crown), this has a shakeproof washer and an inverted cup washer. The complete fork assembly can now be moved clear of the machine, but before further work on them, remove the plain steel dust-cover washer which protects the bottom steering head race (it may be stuck to the race with grease, if so it may be left in position).

Dismantling fork legs. Lift off the upper dust covers, each has a chrome ring with a rubber washer insert (in which the cover seats) at its lower end, above the lower fork crown.

Slacken the clamp bolts in the lower fork crown and slide each leg clear, this action may displace the rubber sealing ring at the top of each leg.

From each leg, lift off the speedo collar and spring cover, inside which is a shouldered rubber washer (this may be stuck to the top of the spring); then lift off the spring, and then remove the felt washer and plain steel washer in the top recess of the sleeve nut.

Now invert each leg over the oil tray, to get rid of any oil not yet drained out.

Dismantling fork sliders. Grip the wheel spindle lug in the vice, and undo the chrome sleeve nuts using tool 002667/E (C-spanner). The stanchion can now be withdrawn from the slider, bringing with it the sleeve nut and the two chrome filler bolts.

Renewal of parts. The parts most likely to require renewal will be the slider bushes, and the oil seals and O-rings. But if the forks have been neglected and/or misused, other parts will may require to be replaced.

The sleeve nut contains a lipped oil seal and a rubber O-ring in an internal groove, and there is a

gage. Fit the intermediate shaft, with a thrust washer on each end, then fit the large pinion to the axle, with the dogs facing the sliding dog.

If the drive shaft has been removed, tool 002622/E, oil seal pilot guide, must be fitted on before the shaft is pushed through the bearing — if this tool is not used, the shoulder on the shaft will displace and damage the seal.

Now fit the gearbox assembly to the chain-case, turning the hub to mesh the gears as the case is pushed home — the hub may require a few taps with

a hide mallet to push the axle through the bearing. Fit the five bolts and tighten a little at a time and diametrically, to pull the box up squarely to its seating. When all bolts are tight, turn the hub to check that the gears are meshing freely.

Fill the gearbox with fresh SAE 90 oil using a force-feed can — the filler plug, just below the axle, is also the level plug.

Re-assembly of the remaining components is straightforward, and special points have already been noted in the section "Dismantling Engine".

Automatic clutch. Each of the three shoes has a small friction pad and pressure spring in a transverse blind hole in the shoe, exerting sideways pressure to prevent rattle and jerky engagement. If the shoes are removed (after detaching the three tension springs) take care to stop the pads and springs jumping out.

Starting clutch. The two shoes have integral springs, and on top of them is a white nylon thrust washer with cutouts which register on the pivot pins.

FRONT HUB AND BRAKE

This is of conventional design. The brake plate carries two shoes, and is locked against the offside one by a nut. On the nearside the speedometer drive gearbox is a push fit on the spindle, there is

det washer between it and the cone-locknut and a thin plain washer outside it. Some of the components (shoes, spindle, hub shell) are interchangeable with the Ciao.

All the component parts of the lamps, switch and flywheel generator are available separately for renewal, and are shown on p. 28 of the Parts List.

Handlebar switches controlling terminal no. 1 — red, no. 3 — yellow, no. 4 — blue, no. 6 — brown, and no. 7 — mauve or purple. (Do not confuse these

with the colors in the wiring diagram/layout terminal numbers with the numbers used as a key to wiring colours in the wiring diagram referred to above).

Headlamp connections: Main beam — mauve or purple, dipped beam — brown, earth — white.

Horn connections: Blue to one terminal, two yellows to the other. The rear light wire is red.

Junction block (on engine) connections: Black from harness to black from HT coil, yellow from harness to yellow from lighting coil, white to earth under clip bolt.

Control cables terminal numbers with the numbers used as a key to wiring colours in the wiring diagram referred to above).

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and is secured to an upward extension of the top fork crown by a transverse clamp bolt which heads into a captive square nut. All the components of the assembly are shown on p. 20 of the Parts List.

If work on the steering head bearings is necessary, the handlebar assembly must be completely removed, which is a lengthy process because all control cables and electrical wires must be disconnected, and this is described below. But to replace a broken cable or electrical wire, removal of the headlamp unit would provide access to the interior of the shell, and complete removal would not be necessary.

Dismantling process. Start by disconnecting the cables: first the front and rear brake, by undoing the clamp bolts on the cam levers; next the choke, by undoing three screws holding the air filter and then freeing the cable from the choke slide; lastly, the decompressor, by depressing the lever on the cylinder head.

Detach the lamp front, held by two screws, then disconnect the wires from the junction block behind the reflector. Undo the screw holding the speedo head to the casting, then slacken the nearside front wheel spindle nut and turn the speedo gearbox to give slack in the drive cable and push this up through the steering head until the knurled nut below the speedo head can be undone, and lift out the speedo head.

Undo two screws holding the horn to the top fork crown, and disconnect the wires, which should be pushed free of the securing slot, fit the rear brake, and gear selector cables, through the right slot fit the front brake, decompressor and throttle cables and the wiring harness. Then lower the crown into position on the head, pulling the cables through the slots. Drop in the steering column bolt, and then push the speedo drive cable up through the slot in the crown extension.

Undo the cover of the speedo drive cable through the left slot, front brake cable through the right. Offer up the crown and fork assembly to the head, fit the plain dust-cover washer above the crown, the rubber dust-cover washer and the decompressor nut below, and tighten the nut. Fit the chrome filler bolt through