GILERA

50 RS
50 ENDURO
125 TG1
125 GR1

SERVICE STATION MANUAL
MANUAL ESTACION SERVICIO

SERVICE STATION MANUAL

This manual has been prepared with the aim of supplying to Piaggio Distributors the necessary instructions for maintenance and repair of the vehicles carried out on the book cover.
This publication handles the following matters:
— General instructions for vehicle maintenance.
— General instructions for eliminating faults and irregularities.
— Illustrations and instructions for dismantl., overhauling and reassembly.
— Assembly play of the main machine - members.
— List of tools for normal operations to be carried out on vehicles.
If in the future modifications to the vehicles, that involve the use of new tools will be introduced or anyway that interest the present publication, amendments to this manual will be carried out.

INDICE GENERAL

SPECIFIC DATA

Fig. 1 - « 50 5V RS »

Chassis: made of steel colddrawn pipe and welded.

Front suspension: with telescopic fork.

Rear suspension: with swinging fork with helical springs and incorporated hydraulic dampers.

50 5V RS

Range: about 230 km.

Max fuel capacity: 7 lt. (1.85 u. s. galls or 1.54 imp. galls).
(incl. 1 lt. 0.26 u. s. galls or 0.21 imp. galls of reserve).

Wheel rims { front / rear } 17" WM 1/1.6 type

Tyres:
- front: 2½x17" ribbed
- rear: 2.75x17" studded

Tyre pressure:
- Front wheel: 1.50 kg./cm²
- Rear wheel: 2.00 kg./cm²

Fig. 2 - « 50 5V Enduro »

50 5V Enduro

Range: about 230 km.

Max fuel capacity: 7 lt. (1.85 u. s. galls or 1.54 imp. galls).
(incl. 1 lt. - 0.26 u. s. galls or 0.21 imp. galls of reserve).

Wheel rims
- front: 19" WM 1/1.6 type.
- rear: 17" WM 1/1.6 type.

Tyres:
- front: 2.50x19" motocross.
- rear: 3.00x17" motocross.

Tyre pressure:
- Front wheel: 1.50 kg./cm².
- Rear wheel: 2.00 kg./cm².

125 5V GR1

Range: about 243 km.

Max fuel capacity: 6.8 lt. (1.79 u. s. galls or 1.49 imp. galls.
(incl. 1 lt. - 0.26 u. s. galls or 0.21 imp. galls of reserve).

Wheel rims { front: 21" WM 1/1.6 type.
rear: 18" WM 2/1.85 type.

Tyres { front: 2.75x21" trial.
rear: 3.00x18" trial.

Tyre pressure: { Front wheel: 1.20 kg./cm^2.
Rear wheel: 1.50 kg./cm^2.

Fig. 3 - « 125 5V Mod. GR 1 »

125 5V TG1

Range: about 293 km.

Max fuel capacity: 8.5 lt. 2.24 u. s. galls or 1.87 imp. galls.
(incl. 1 lt. 0.26 u. s. galls or 0.21 imp. galls of reserve).

Wheel rims { front: 18" WM 1/1.6 type.
rear: 18" WM 2/1.85 type.

Tyres: { front: 2.75x18" ribbed.
rear: 3.25x18" studded.

Tyre pressure: { front wheel: 1.20 kg./cm^2.
rear wheel: 1.75 kg./cm^2.

Fig. 4 - « 125 5V Mod. TG 1 »

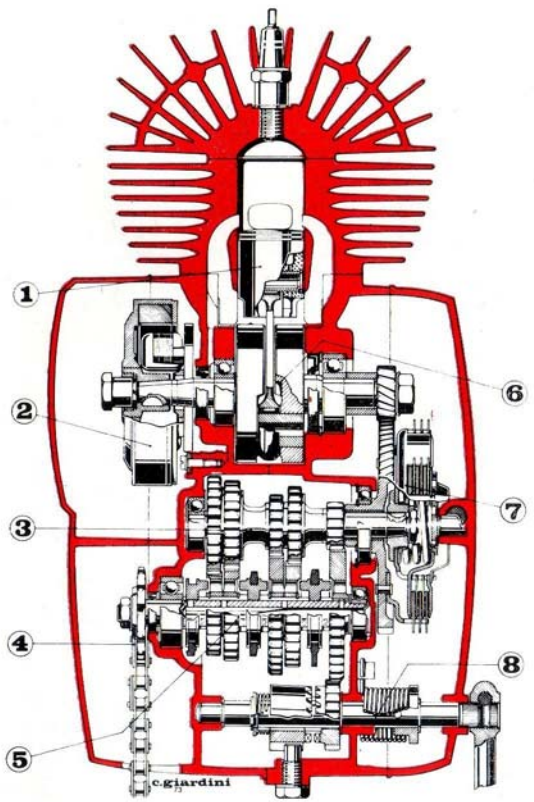


Fig. 5

Longitudinal section of engine 50 5V RS - 50 5V Enduro.

1. Piston - **2.** Flywheel magneto - **3.** Main shaft - **4.** Chain sprocket pinion - **5.** Countershaft with gears and sliding couplings - **6.** Crankshaft - **7.** Clutch - **8.** Starter shaft.

ENGINE: single cylinder two stroke with distribution controlled by the piston through ports on cylinder.

The vehicle **runs** with petrol (gasoline) oil mixture i. e. 4% oil.

Cooling: natural ventilation.

Clutch: multiplate in an oil bath.

Ignition: by means of an outer H. T. coil fed by the flywheel magneto with 6V a. c. on mopeds 50 RS and 50 Enduro. On the motorcycles 125 GR1 and TG1 the ignition is realised through an electronic device, with a built in H. T. coil, fed by a specific flywheel magneto.

MOPED 50 5V RS

Bore: 38.4 mm.

Stroke: 43 mm.

Displacement: 49.8 cm^3.

Compression ratio: 1:6.35.

Spark advance: $15^0 \pm 1^0$ before T.D.C.

Sparking plug: Bosch W 240 T2 or Champion N 4.

MOPED 50 5V ENDURO

Bore: 38.4 mm.

Stroke: 43 mm.

Displacement: 49.8 cm^3.

Compression ratio: 1:6.35.

Spark advance: $15^0 \pm 1^0$ before T.D.C.

Sparking plug: Bosch W 240 T2 or Champion N. 4.

MOTORCYCLE 125 5V GR1 - TG1

Bore: 57 mm.

Stroke: 48 mm.

Displacement: 122.5 cm^3.

Compression ratio: 1:12.5.

Spark advance: $20^0 \pm 1^0$ before T.D.C.

Spark plug: Bosch W 240 T 2 or Champion N. 4.

Gear box: five speed drive with selector controlled by pedal located at the L. H. of the vehicle (see fig. 7).

Primary drive: by gears with helical toothing.

Final drive: Chain with spring drive located between the brake drum and the rear wheel hub.

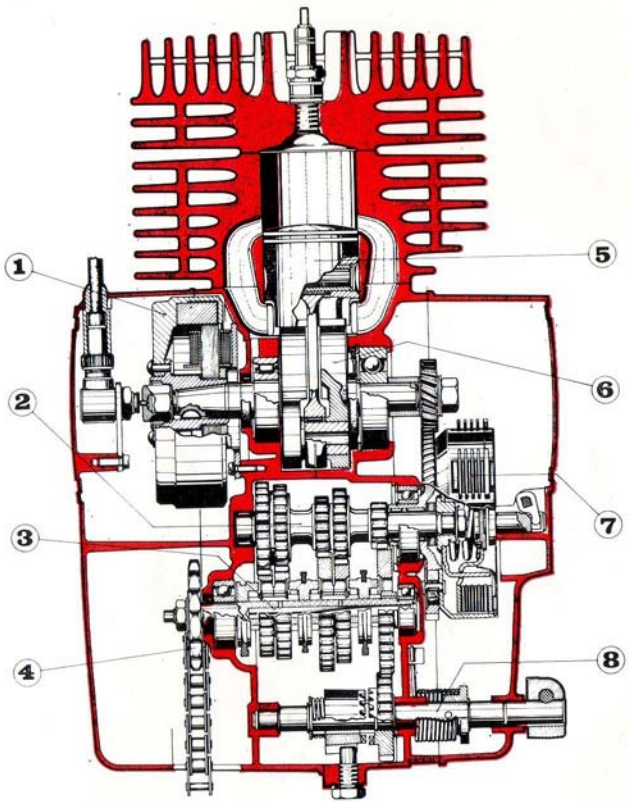


Fig. 6

Engine longitudinal section 125 GR 1 - 125 TG 1.

1. Flywheel magneto - **2.** Main shaft - **3.** Countershaft with gears and sliding couplings - **4.** Chain sprocket - **5.** Piston - **6.** Crankshaft - **7.** Clutch - **8.** Starter shaft.

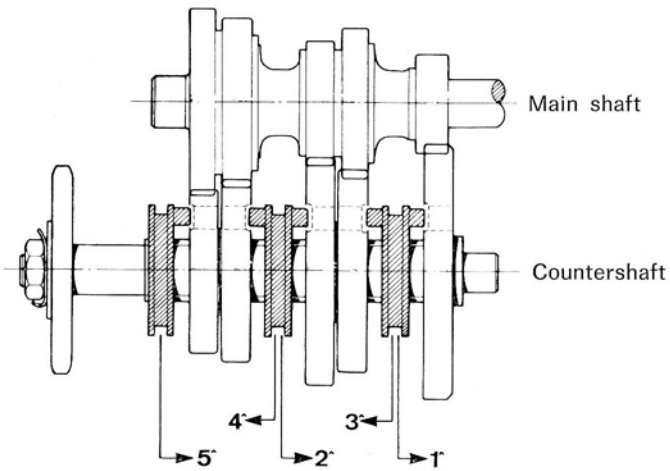


Fig. 7

Gear box diagram.

Primary transmission ratio

50 RS - Enduro	GR 1 - TG 1
1:4,235 (Z=17/72).	1:2,869 (Z=23/66)

Gear ratios

	50 RS - Enduro	GR 1 - TG 1
Bott. gear	1:3,250 (Z=12/39)	1:3,250 (Z=12/39)
2nd gear	1:2,058 (Z=17/35)	1:2,059 (Z=17/35)
3rd gear	1:1,430 (Z=21/30)	1:1,428 (Z=21/30)
4th gear	1:1,080 (Z=25/27)	1:1,080 (Z=25/27)
5th gear	1:0,857 (Z=28/24)	1:0,888 (Z=27/24)

General instructions for maintenance and lubrication

Group	After the first 500÷1000 Km.	Every 4.000 Km.	Every 8.000 Km.	In case of overhaul	Lubricants
Engine	Check carburettor fastening.	Remove carbon from piston, cylinder head, cylinder ports. Clean exterior of cylinder	—	Remove deposit from engine parts which can be used again.	
Gear box	Change oil if motorcycle is new (▲-A)	Check and top up oil level (▲-A) Check with dipstick.	Change oil (▲-A).	Change oil (▲-A)	○) AGIP ARMICA 625 2 E
Air filter	—	Dismantle and clean with mixture.	—	—	▲) AGIP F 1 HD SAE 20W/30 ESSO 2 T MOTOR OIL 40 SHELL X100 MOTOR OIL 30 MOBIL OIL 20 W/30
Flywheel magneto. (Mod. 50 RS and 50 Enduro)	—	—	Clean contact breaker points and adjust max. gap 0.4 mm.	Replace contact breaker points (if necessary) or clean and adjust.	
Spark plug	Check electrode gap.	Clean, decoke, adjust gap (0.5 mm.).	—	Replace spark plug	●) AGIP F1 GREASE 30 ESSO BEACON 3 FIAT IOTA 3 SHELL ALVANIA GREASE 3
Silencer and exhaust pipe.	—	Decoke exhaust pipe.	—	Decoke exhaust pipe.	
Telescopic fork	—	Check and top up oil level (○) (D)	Change oil (○) (D)	Change oil (○) (D)	
Rear fork	—	—	—	Grease (●)	★) AGIP BRAKE FLUID SUPER HD
Wheels bearings, steering balls.	—	—	Grease (●)	Grease (●)	
Control cables for clutch, throttle, front brake, rear brake pedal, central stand pivots.	Adjust	Grease (●)	—	—	▲▲) AGIP F 1 ROTRA SAE 140 ESSO GEAR OIL CZ 85 W - 140 SHELL DENTAX 140 MOBILUBE C 140
Front brake TG 1	—	Check and top up oil level (c) (★)	Replace pads.	Replace pads	
Chain	Adjust	—	Grease ▲▲) - B)	Grease ▲▲) - B)	
More important nuts and bolts of the vehicle	Check tightness (see locking torque table at page 39).	—	—	Check tightness (see locking torque table at page 39).	

If motorcycle is to be stored, proceed as follows: **1)** Clean the vehicle - **2)** Drain off all fuel - **3)** Remove the sparking plug, introduce 10÷15 cm^3 of AGIP F 1 HD SAE 20W/30 and see also note ▲) through spark plug hole, then actuate kick starter lever 3 to 4 times and fit again the spark plug - **4)** Smear unpainted metallic parts with antirust grease - **5)** Raise the vehicle wheels off ground.

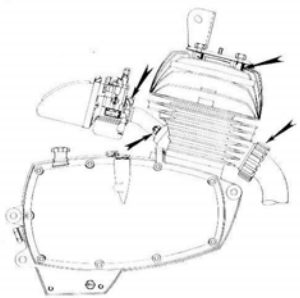
A) Operation to be carried out with warm engine. Quantity gr. 550 for 50 RS and Enduro; gr. 650 for GR 1 and TG 1.

B) Clean chain as follows: wash in petrol, air blast dry, immerse in a thick oil bath for 30 minutes so that the lubricant goes into rollers and pins, then let the excess of oil drain before the fitting on vehicle.

C) The oil level should be at 13÷15 mm. under tank upper edge.

D) The oil quantity for each element should result 110 cm^3 on mopeds 50 RS and Enduro and 180 cm^3 on motorcycles GR 1 and TG 1.

Fault finding

Fault finding	Remedies	Notes
ENGINE		
Lack of power. **Lack of compression.** **Leakages**		
— Loosening of screws and nuts of the different machine members.	— Tighten nuts and bolts of the engine interested parts (carburettor, cylinder head, silencer coupling see fig. 8) at the torques carried out on the table of page 39.	 Fig. 8 - Engine unit
Hard starting.		
— Carburettor jet and fuel cock clogged or dirty.	— Remove, wash in petrol and blow dry.	
— Engine flooding.	— Close the fuel tap, open completely throttle twist grip and kick over the engine several times until it starts. If the engine does not start, attempt « **push starting** » or remove the sparking plug, clean or replace it; before reassembling the sparking plug, kick over the engine in order to eject fuel excess.	

Fault finding	Remedies	Notes
Tendency of the engine to stop when the throttle is full open.		
— Jet dirty, weak mixture.	— Clean the jet in net gasoline (petrol) and blow dry with air jet. — Check the spark plug. — Clean the carburettor (if dirty) in net gasoline (petrol) and blow dry. — If damaged, replace packings.	
Exhaust noise grows weak.		
— Excess of carbon on cylinder ports.	— Decoke (see fig. 9).	
— Silencer clogged.	— Decoke.	
Irregular engine exhaust; crocklings when the vehicle is running up hill or picking - up.		
— Air filter dirty.	— Clean or replace.	
— Defective spark plug.	— Decoke, adjust the electrodes gap or replace (see fig. 10).	
Carburettor		
— Flooded for impurities in the carburettor.	— Dismantle and clean in net gasoline; blow dry with air jet.	

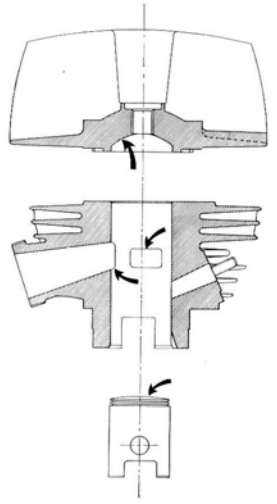
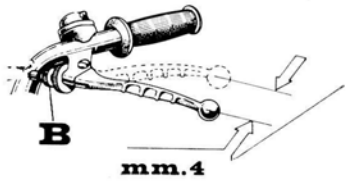
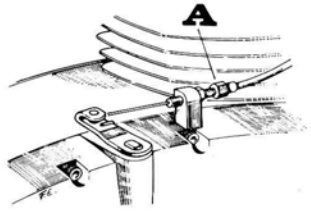
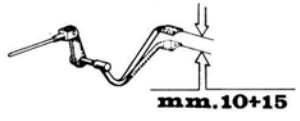
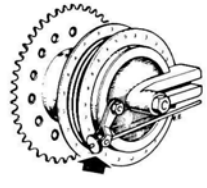
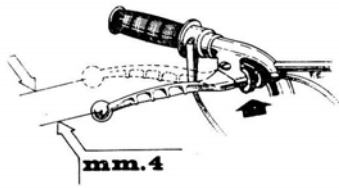


Fig. 9 - Cylinder head-piston

Fig. 10 - Spark plug

Fault finding	Remedies	Notes
High consumption		
— Air filter clogged or dirty. — Starter control set in closed position or not completely open.	— Clean. — Free off starter device lever and lubricate.	
Braking system		
— Poor braking (front brake of vehicles 50 RS - 50 Enduro and 125 GR 1).	— Check prescribed clearances and reset by acting on the adjuster located on the brake drum, when the vehicle is in motion act on the adjuster near the control lever on the handlebars (see fig. 11). — If with the common adjustings on the transmissions it is not possible to eliminate the eventual inconvenients, check the jaws and the drums. In case of excessive wears or scratches replace.	Fig. 11 - Front brake control
		
— Cables rusted in their steeths.	— Lubricate or if necessary substitute.	
— Should lever travel be excessive (rear brake).	— Adjust at control end in order to reset the prescribed plays (see fig. 12). Keep in mind that when the brake lever or pedal are in their resting position the wheel should rotate freely; the braking action should begin immediately on operating the respective control.	
		Fig. 12 - Rear brake control

Fault finding	Remedies	Notes
— Rear brake pedal proves hard.	— Dismantle, remove possible oxidations and lubricate.	
Suspensions and steering controls.		
— Steering proves hard.	— Check steering tightening, ball races, eventually replace damaged parts.	
— Excessive play.		
Clutch		
— Slipping or fierce action.	— Check springs, plates and oil level in gear box. — Check plays to the concerning controls and reset by acting on adjuster « A »; when the vehicle is in motion act on the adjuster « B » near the control lever (see fig. 13).	



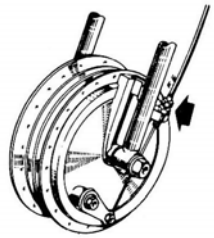


Fig. 13 - Clutch control

Note: Should faults occur, which are not listed in the table (e. g.: abnormal noise, failure or excessive wear of mechanical parts etc. one must locate the fault and if necessary proceed to replace or repair the parts concerned. Ensure that joints, coupling of main components (piston to cylinder, piston ring, a. s. o.) must operate with clearances specified on chart page 30).

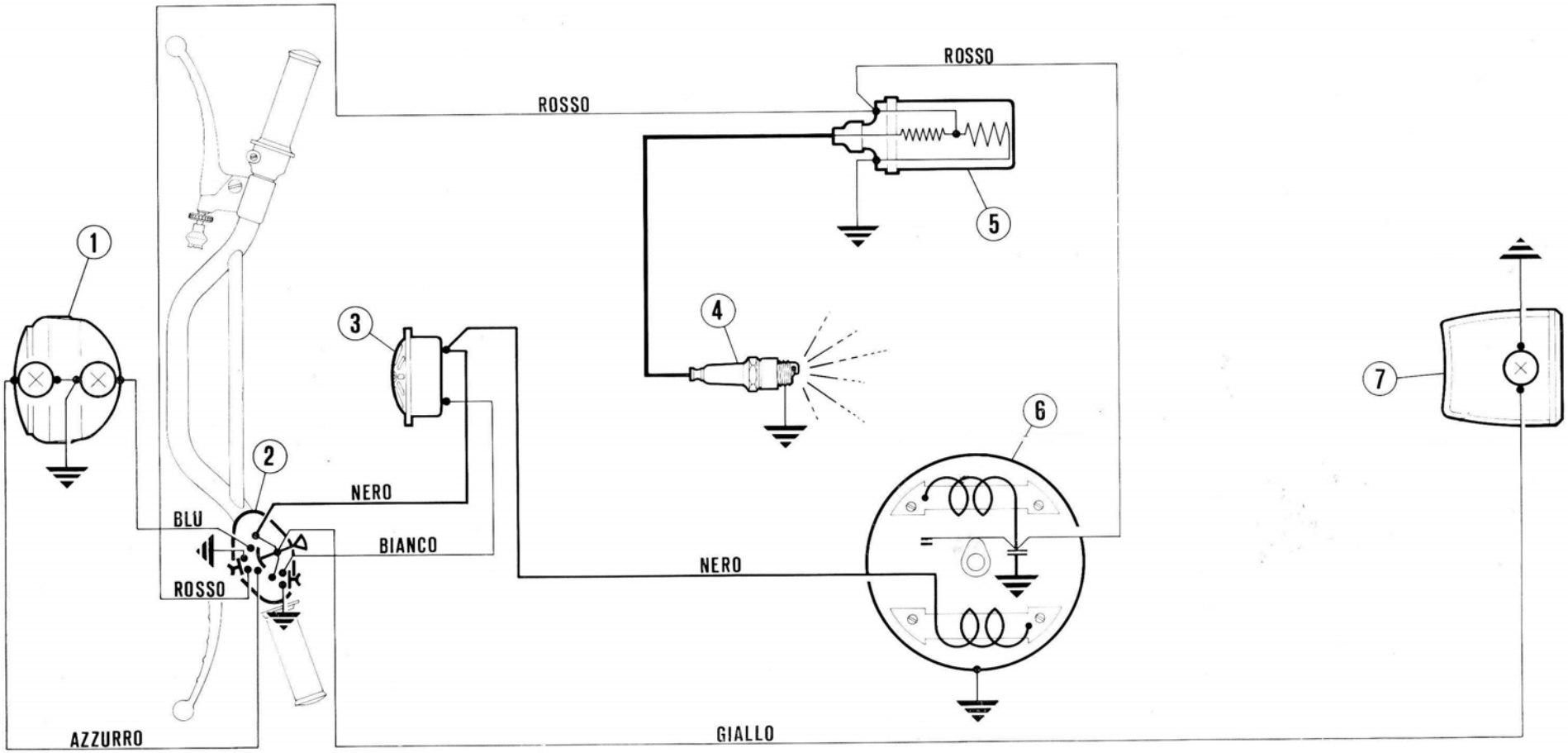


Fig. 14

Wiring diagram « 50 RS » 50 Enduro.

1. Headlamp with 6 V - 15 W bulb and 6 V - 15 W cylindrical bulb - **2.** Headlight switch with horn and cutout push button - **3.** Horn - **4.** Sparking plug - **5.** H. T. coil - **6.** Flywheel magneto - **7.** Tail lamp with 6 V - 3 W cylindrical bulb.

Rosso = Red - Nero = Black Giallo = Yellow - Bianco = White - Azzurro = Light blue - Blu = Blue

ELECTRONIC IGNITION
MOTOR CYCLE 125 GR1 - TG1

1) **Main advantages.**
In comparison with the traditional ignition, both with a magneto and with a battery, the electronic ignition « with discharge of condenser » presents some advantages of electric and mechanic nature, of which we resume the principal ones:

A) **Advantages of electric nature.**
The particular characteristic of the H. T. discharge with electronic ignition in comparison with the traditional ignitions, is essentially that to produce **a higher tension peak reached in a very short time and with a shorter total lengh of the discharge itself.**

The disconnecting and connecting operations for the replacement of the electronic control box **should be carried out with the engine cut - out.**

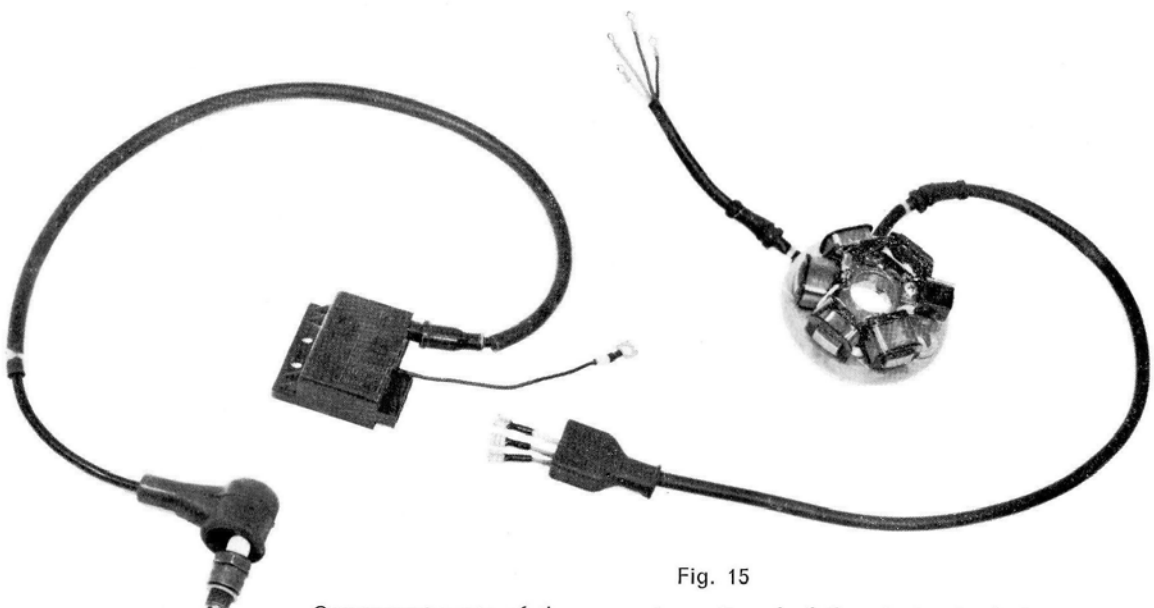


Fig. 15
Component parts of the generator unit and of the electronic device.

It follows:

— Engine regular running also with dirty spark - plugs or with electrode gap not correct.
— Better starting facility with cold engine.
— Higher life of the spark plugs because of a smaller electrodes wear.
— Less possibilities of arc on spark - plug.

B) **Mechanic advantages.**

The absence of the parts exposed to the wear - as the contact breaker - came unit - allows:

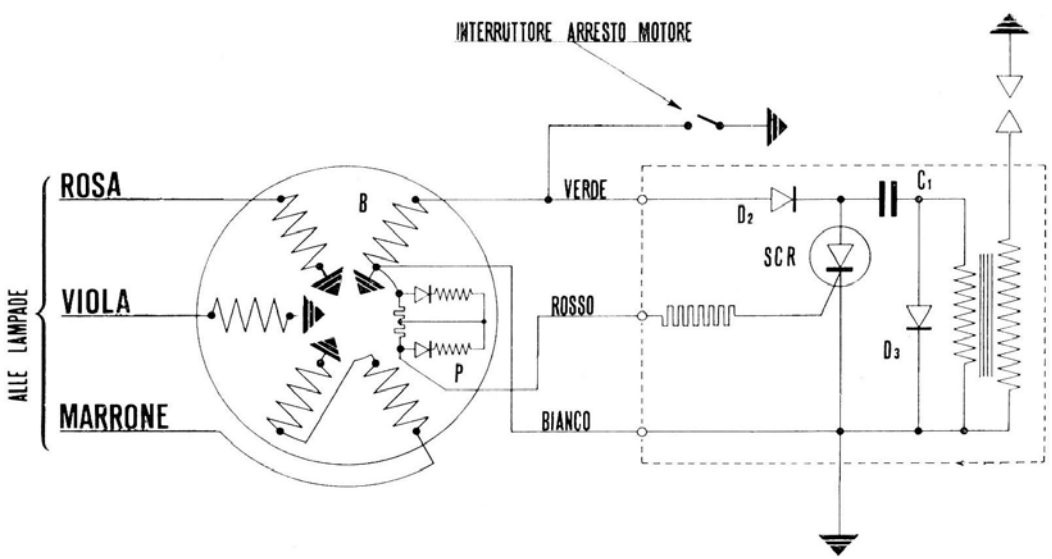
— Unalterability, during the time, of the ignition advance.
— Insensibility to the atmospheric agents.
— Regular engine running also to the high speeds.
— Regular ignition running also after large periods when the vehicle is not used.

Fig. 16

Electric diagram for electronic ignition unit.

INTERRUTTORE ARRESTO MOTORE = ENGINE CUTOUT

Rosa = Pink - Viola = Violet - Marrone = Brown - Verde = Green - Rosso = Red - Bianco = White - Alle lampade = To the bulbs



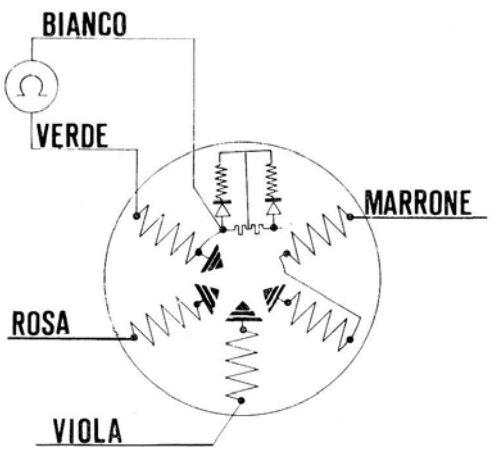


Fig. 17

Bianco = White - Verde = Green - Marrone = Brown - Rosa = Pink - Viola = Violet

To these advantages prevalently functional it can be added, not less important, that of an almost total absence of maintenance.

2) **Device description.**

The fig. 15 shows the main component parts of the generator unit and the electronic device with H. T. coil incorporated (« electronic control box »).
The generator is realized with a 6 poles inductor, as the type with traditional ignition; 5 coils are fitted on stator: 4 for L. T. circuits feeding, one for condenser charging; on a rotor core there is located the pick - up that, excited by the pole shoes of the magnetic circuit of the inductor generates the signal for ignition control.

The diagram of fig. 16, shows the component parts of the ignition system.
The inductor generates on winding B an alternating tension that, rectified by the diode D_2 charges the condenser C_1. The unit pick-up P supplies, on the wished instant, the control signal to the diode (SCR); the latter, fired, realizes the discharge of the condenser C_1 on the primary of the ignition coil and hence produces on the secondary winding the necessary tension for the spark to the spark plug.

3) **Rules to be observed when operate on electric devices:**

A) **General information.**

The checking or any operation on circuits of the devices for electronic ignition can be easy

carried out; **however it is very important to bear in mind the following notices** in that, when not respected the devices can be irreparably damaged.

All checking operations of the electric equipment that involve **cable disconnections** (checking of the connections and of the devices that are component parts of the ignition circuit) **should be carried out with the engine cut - out:** on the contrary the electronic control box can suffer irreparable damages.

Consequently it is very important to positively reconnect each cable to the corresponding tag when the cables have been dismantled or disconnected respecting the different colours (see fig. 19); on this purpose consult the diagrams of the booklets « Operation and Maintenance ».

B) **Checkings to be carried out in the case of troubles on the electronic ignition.**

In the case of a defective ignition, which grounds cannot be immediately located with an inspection at first sight, first replace the electronic control box with a corresponding one surely in perfect condition.

If the replacement restores the ignition, the anomaly is to be found on the electronic control box that should be obviously replaced.

If the ignition is faulty check the generator and the component parts of the backplate as follows:

Inspect at first sight connections, backplate and couplings; then by means of an ohmeter that can measure resistances from 1 up

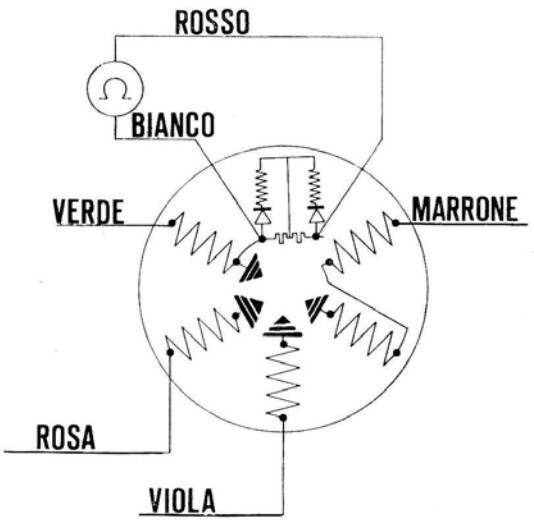


Fig. 18

Rosso = Red - Bianco = White Verde = Green - Rosa = Pink - Viola = Violet Marrone = Brown

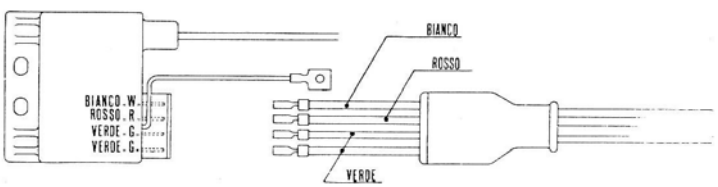


Fig. 19

to 1000 ohms verify the carge coil and the pick-up as follows:
Connect the tester between the green cable and the white one (on fig. 17): it shoud be measured continuity and an ohmic value (500±20 ohms).
Connect the tester between the red cable and the white one on fig. 18; it shoud be measured continuity and ohmic value (110± 5 ohms). If after having checked the charge coil and the pick-up some anomalies come out, **replace the backplate or the damaged parts.**
If a tester for checking the backplate is not available, when it is a sure thing that the inconvenient to the ignition is due neither to the electronic control box nor to other visible causes (wrong connections, damaged cables, damaged spark plug) replace the complete backplate.
In reference to the previous points it is advisable to include in the checking tools also an ohmmeter with the characteristics carried out at the point B).

Checking ignition timing.

The checking of the timing can be for instance useful when the engine doesn't run regularly; if the anomaly doesn't proceed from the carburation, it can derive from irregularities of the ignition timing.
This case is rather unusual; as the inconvenient generally proceeds from irregular working of the pick-up or of the electronic control box; in order to ascertain it operate as explained on the previous points.

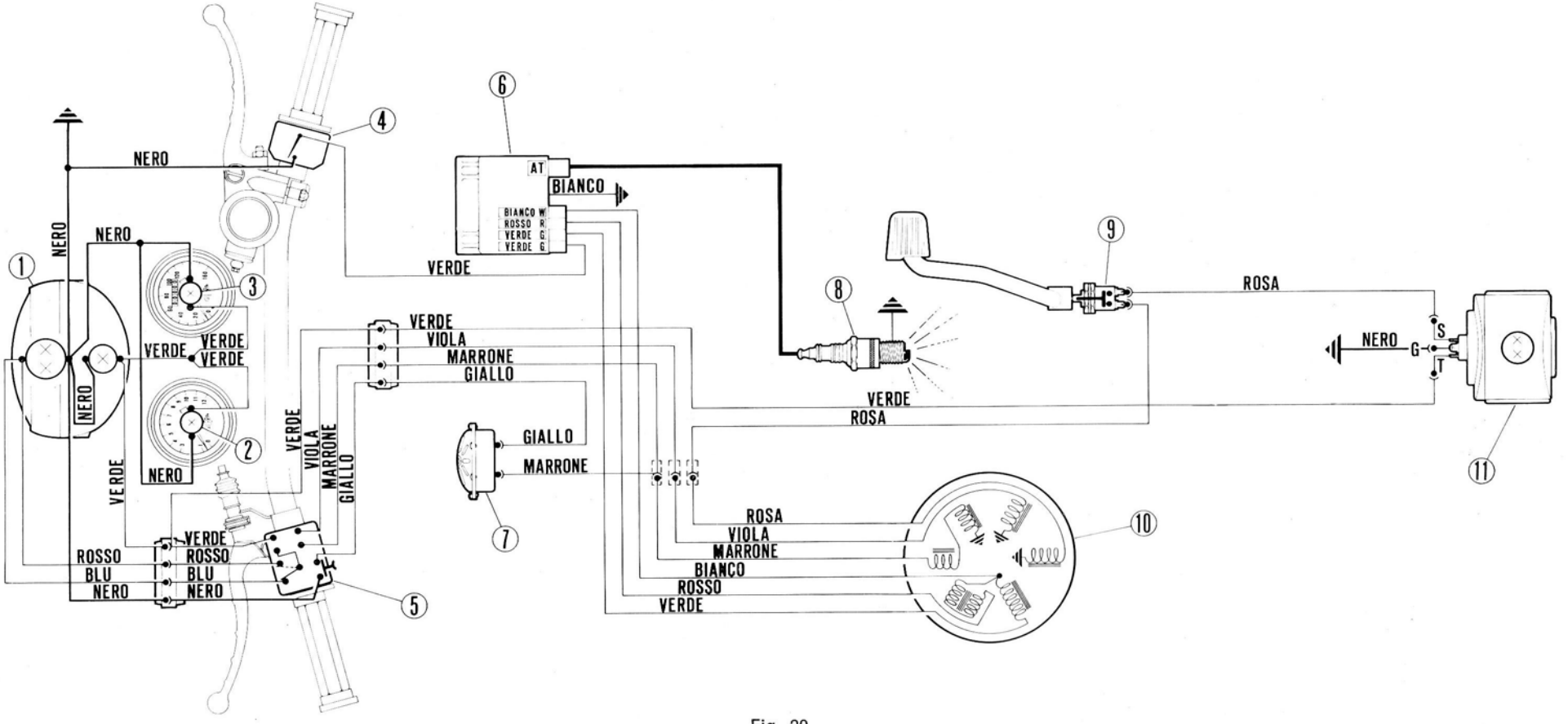


Fig. 20

Wiring diagram

1. Headlamp with high and low beam, 6 V - 25/25 W bulb and 6 V- 3 W pilot light - **2.** Rev. counter light, 6 V - 1.5 W bulb - **3.** Speedometer light, 6 V - 1.5 W bulb - **4.** Engine cutout - **5.** High and low beam switch - **6.** Electronic control box. - **7.** Horn - **8.** Spark plug - **9.** Stop switch - **10.** Flywheel magneto - **11.** Tail lamp, 6 V - 5 W two light bulb for number plate illumination, 21 W for stop light (GR1). 6 V - 3 W bulb for number plate illumination, 10 W for stop light (TG1).

Nero = Black - Verde = Green - Rosso = Red - Blu = Blue - Viola = Violet - Marrone = Brown - Giallo = Yellow - Bianco = White - Rosa = Pink

ELECTRICAL EQUIPMENT 125 GR1 - TG1 (With turn signals)

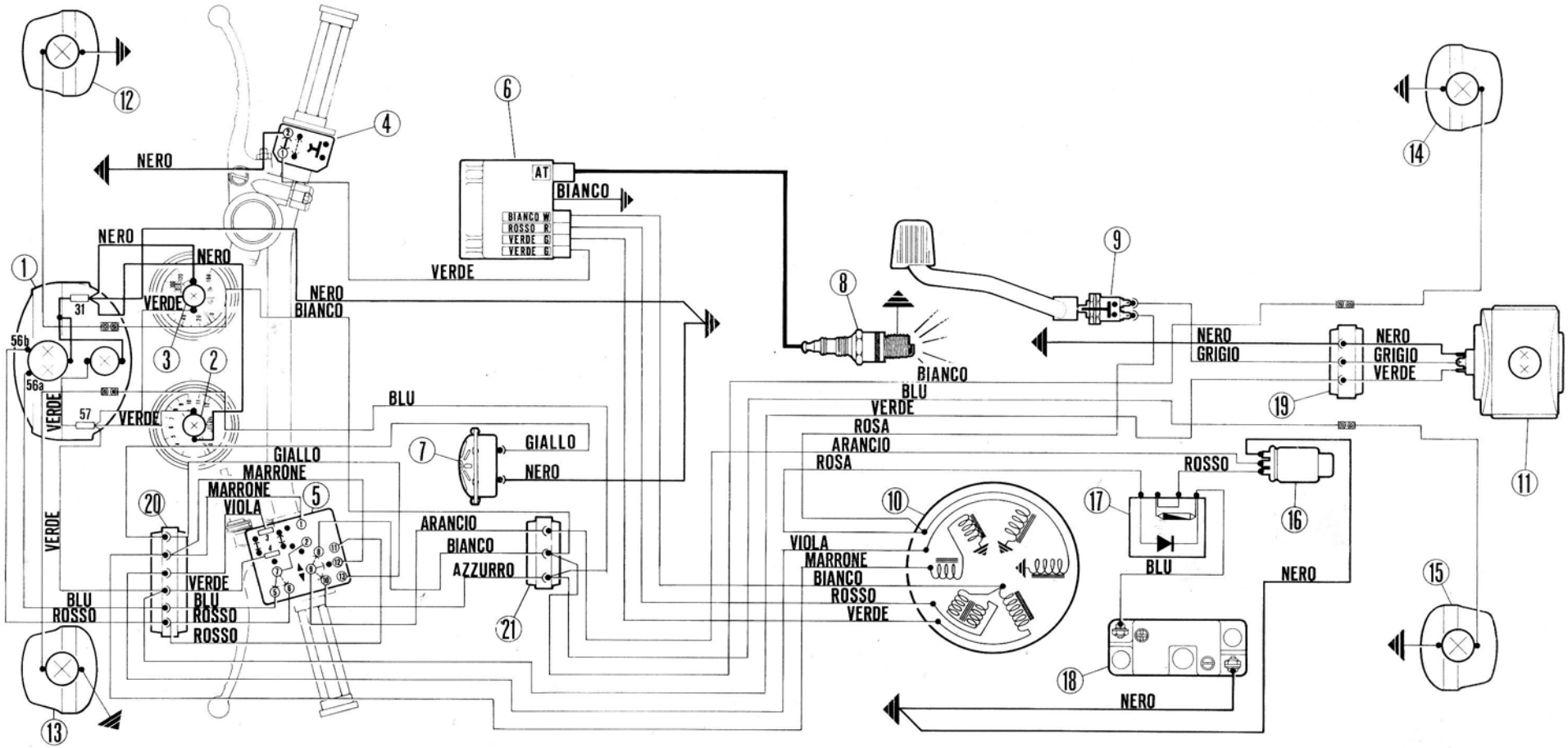


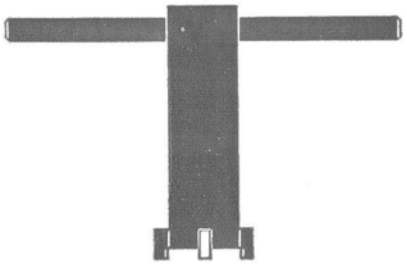
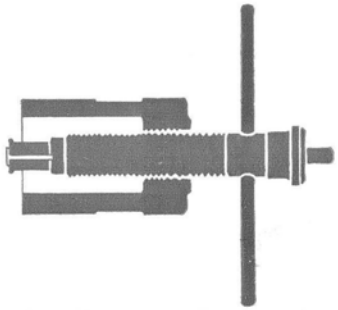
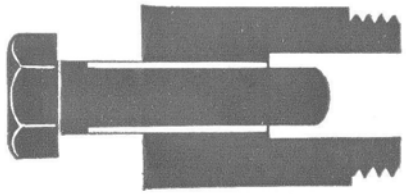
Fig. 20/A

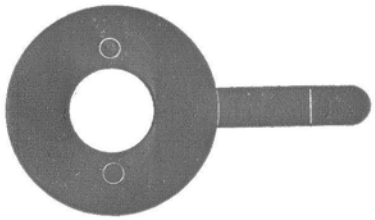
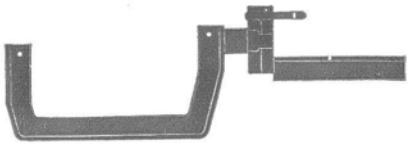
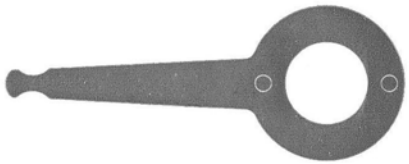
Wiring diagram – Esquema instalación eléctrica

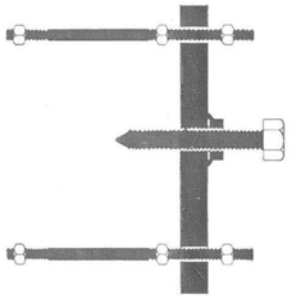
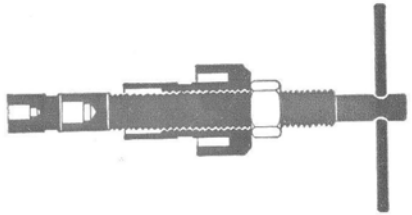
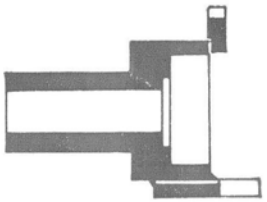
1. Headlamp with high and low beam, 6 V - 25/25 W bulb and 6 V - 3 W piloti light - **2.** Rev. couter light, 6 V - 1.5 W bulb - **3.** Speedometer light (GR1), 6V - 1.2 W - Speedometer light and indicator light for lights on (TG1) two 6 V - 1.5 W bulbs - **4.** Engine cutout - **5.** High and low beam switch, turn signal lamps and horn - **6.** Electronic control box - **7.** Horn - **8.** Spark plug - **9.** Stop switch - **10.** Flywheel magneto - **11.** Tail lamp, two light bulb 6 V - 5/18 W - **12.** Front right turn signal lamp, 6 V - 18 W bulb - **13.** Front left turn signal lamp, 6 V - 18 W - **14.** Rear right turn signal lamp, 6 V - 18 W - **15.** Rear left turn signal lamp, 6 V - 18 W - **16.** Inttrmittence - **17.** Rectifier box with 8 A fuse - **18.** Battery 6 V - 11 Ah - **19.** Connection piece for tail lamp - **20.** 6 ways connection piece - **21.** 3 ways connection piece.

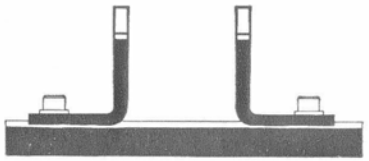
Nero = Black - Verde = Green - Rosso = Red - Blu = Blue - Viola = Violet - Marrone = Brown - Giallo = Yellow - Bianco = White - Rosa = Pink - Arancio = Orange - Azzurro = Blue - Grigio = Grey

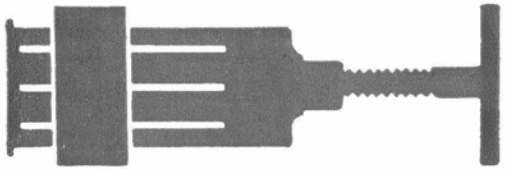
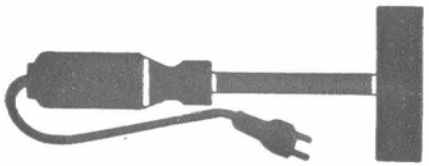
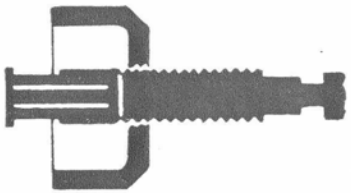
TOOLS FOR DISMANTLING, ASSEMBLING AND OVERHAULING OPERATIONS

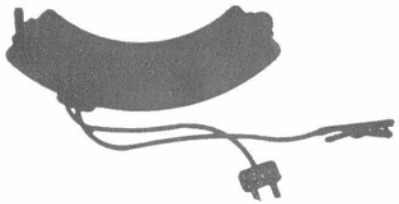
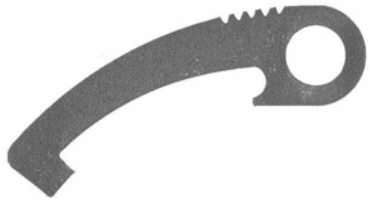
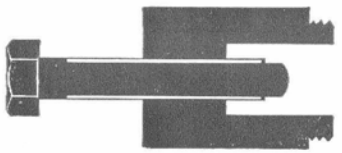
TOOL	illustrated at page
 **G. 13959/30** Wrench for steering upper cap	47
 **G. 20844/30** Extractor for bearing	29
 **G. 22128/30** Extractor for flywheel	24

TOOL	illustrated at page
 **G. 23499/30** Flywheel magneto securing wrench	24
 **G. 26939/30** Engine base plate	24
 **G. 27117/30** Pinion securing wrench	24

TOOL	illustrated at page
 **G. 27118/30** Extractor for crankshaft	27
 **G. 27121/30** Tool for assembling the crankshaft	43
 **G. 27130/30** Tool for securing clutch crown	25

TOOL	illustrated at page
 **G. 27175/30** Extractor for clutch drum	25
 **G. 27176/30** Tool for dismantling and reassembling the clutch	25
 **G. 27828/30** Wrench for exhaust pipe ring nut	23
 **G. 28019/30** Jig checking crankshaft alignement	42

TOOL	illustrated at page
 **T. 0014499** Extractor for bearing	27
 **0019978** Heater (220 V - 50 Hz or 260 V - 50 Hz)	41
 **T. 0021467** Extractor	28

TOOL	illustrated at page
 **T. 0027533** Apparatus for engine timing	45
 **T. 0031729** Clutch sec. wrench	25 - 26
 **T. 0032975** Punch for d. c. roller bearing	42
 **T. 0048564** Flywheel extractor	24

COMPLETE DISMANTLING OF THE VEHICLES GILERA: 50 5V RS - 50 5V ENDURO - 125 5V GR1 - 125 5V TG1.

ENGINE FROM CHASSIS

— Disconnect **throttle and clutch** control cables.

— Close the fuel tap and disconnect the hose.

— Disconnect the electrical cables from the electronic control box and the H. T. cable; in order to make easier this operation take off the fuel tank from vehicle.

— Unloose the clamp securing the air filter chamber that joins it to the carburettor.

— Remove the silencer.

N. B. - In order to remove the exhaust pipe from vehicles 50 RS and 50 Enduro, unscrew, after having loosened the silencer securing strap, the locking ring nut on cylinder, by means of the wrench G. 27828/30.

— **Rev counter:** (GR1 - TG1). In order to disconnect the flexible cable act as follows:

Dismantle the gear change control lever, unscrew the screws sec. the crankcase cover, flywheel side, take off the cover; unscrew the ring nut and remove the transmission.

Unscrew the bolts securing the engine to the chassis and remove the engine. Before the dismantling of the engine in its component parts, wash it carefully and blow dry with air jet.

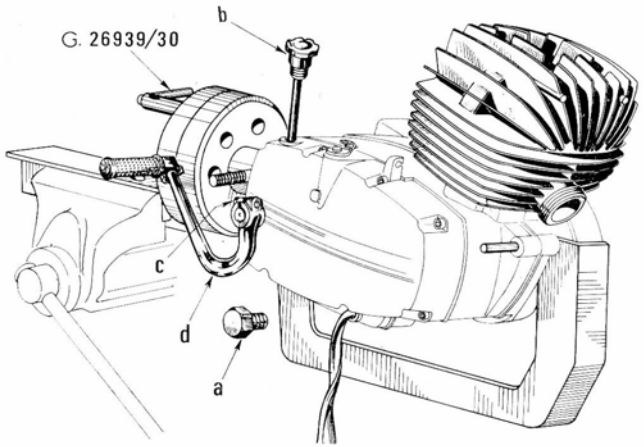


Fig. 21

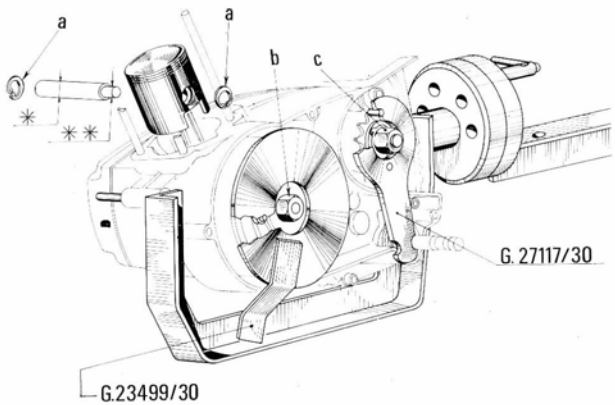


Fig. 22

For 50 RS - Enduro * = Ø 11.5 ** = Ø 7.5 for GR1 - TG1 * = Ø 15.5 ** = Ø 10. Instead of the wrench G. 23499/30 the wrench T. 0031760 can be employed.

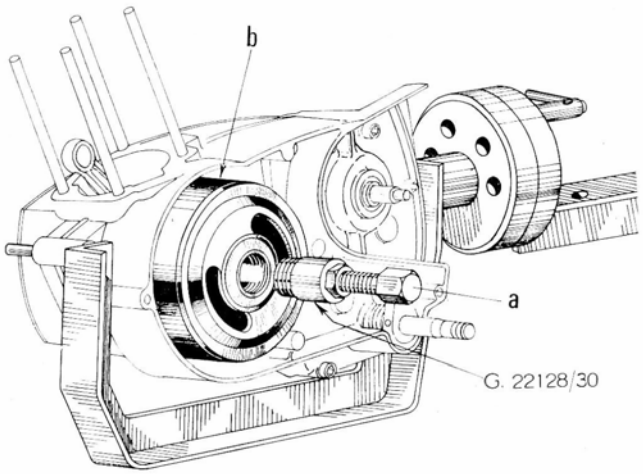


Fig. 23

In order to extract the flywheel magneto of the GR 1 and TG 1 use the extractor T. 0048564.

DISMANTLING OF THE ENGINE IN ITS COMPONENT PARTS

Fig. 21 - **Gear change oil drain:** fit the engine unit on the engine base plate G. 26939/30 (it can be employed the engine base plate T.0025095 complete with the part T.0041930).

— Place a net tray for collect the oil, unscrew the oil drain plug «a»; in order to make easier the draining, unscrew the plug with oil filler rod « b ».

— **Cylinder head - cylinder:** Unscrew the four bolts securing the engine upper anchorage, remove the four spacers then take off the head and the cylinder.

— **Starter lever:** unscrew the nut « c », remove the concerning screw and take off the lever « d ». Dismantle the gear lever.

Fig. 22 - **Gudgeon pin:** by means of the special pliers remove from its housing the circlips « a » retaining the gudgeon pin and acting with a punch with the dimensions carried out on the figure turn out the gudgeon pin.

— **Flywheel magneto securing nut:** lock the flywheel magn. with the wrench G. 23499/30 and unscrew the locking nut « b ».

— **Pinion:** lock with the wrench G. 27117/30 straighten the lock washer, unscrew the nut « c » and remove the pinion.

Fig. 23 - **Flywheel rotor:** place the extractor G. 22128/30, by holding it with the wrench and act on the central screw « a » until the rotor is released.

— **Backplate:** (50 RS and Enduro) trace out two reference marks, one on crankcase and the other one on backplate in order to have a rough reference when reassembling, then unscrew the securing screws and take off the backplate.
On the models **125 GR1 and TG1** both the backplate and the crankcase are provided with reference marks; when reassembling, in order to get mechanical timing line up both marks (see page 46 fig. 57).

Fig. 24 - **Clutch drive gear:** unscrew the socket head screws and remove the crankcase cover clutch side, lock the clutch assy. with the locking wrench (G. 27130/30 for 50 RS - 50 Enduro T. 0031729 fig. 26 for TG1 - GR1), straighten the lock washer, unscrew the nut « a » then remove the gear « b » and take off the key from its housing.
N. B. - Also on vehicles 50 RS - 50 Enduro both the tool T. 0031729 and the G.27130/30 can be employed.

— **Clutch pressure plate:** (50 RS - 50 Enduro) with a screwdriver unhook the pressure plate retaining spring, take off the pressure plate and unscrew the nut « c » for securing the clutch.
— **Clutch unit:** (50 RS - 50 Enduro) fit the tool G. 27175/30 by screwing it to the threaded hub until the unit « d » is taken off.

Fig. 25 - **Clutch plates:** (50 RS - 50 Enduro) fitted the clutch unit in the tool G.27176/30 tighten the wing nut « a » by compressing the plates until the extraction of the circlip « b ».

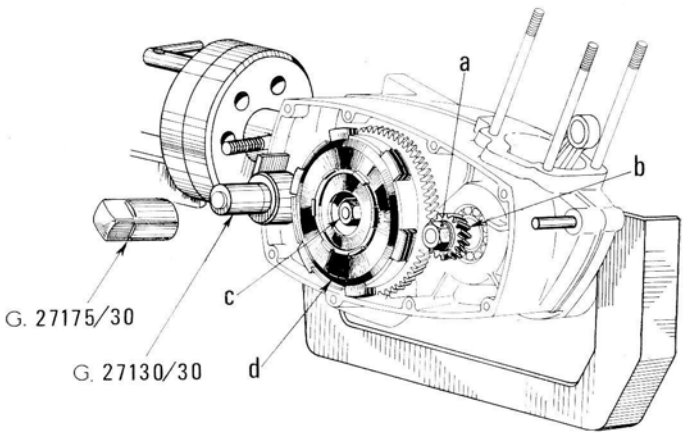


Fig. 24

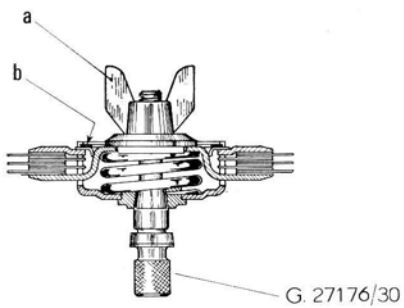


Fig. 25

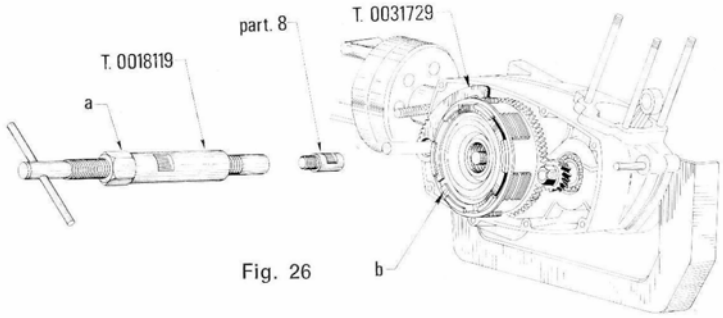


Fig. 26

Fig. 26 - **Clutch unit** (GR 1 - TG 1): after having removed the pressure plate by acting with a screwdriver and by unscrewing the central nut sec. the clutch, use tool T.0018119 provided with the part 8 by placing it as shown on figure, then act on the nut «a» in order to compress the clutch springs so that the circlip « b » retaining the plates can be removed; after unscrew again the nut « a » and take off the plates from the case.

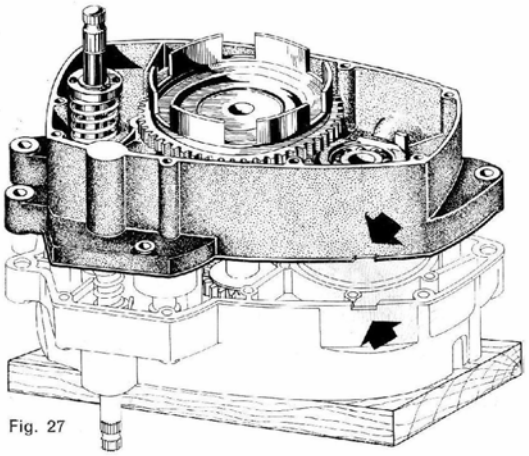


Fig. 27

Fig. 27 - **Separation of crankcase halves:** fit the starter lever on its axle, hold it in position while the pivot is uscrewed, then turn clockwise so that the spring is released.

Unscrew all the crankcase halves coupling screws, for the separation introduce the end

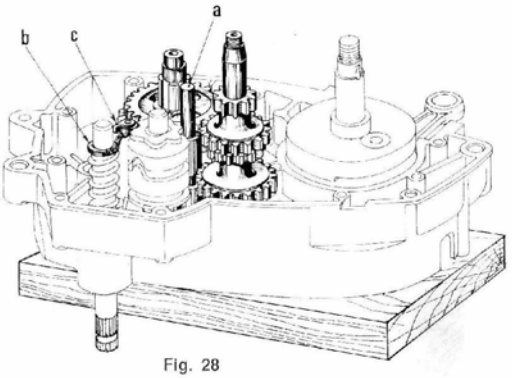


Fig. 28

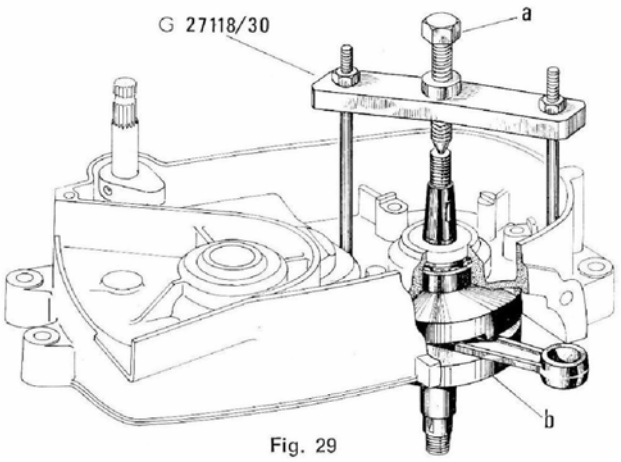


Fig. 29

of a screwdriver in the slot of the crankcase itself (see the arrow on figure).

Notice: When separate crankcase halves note the position and the quantity of the spacers and shoulder washers because when reassembling they should be reassembled in the same position.

CRANKCASE HALF, FLYWHEEL SIDE

Fig. 28 - **Gear change and cluster gear unit:** take off the pin « a » in order to release the gear change fork and remove all the unit from crankcase half.

— **Lever and selector drum:** dismantle the circlip « b », when removing the lever « c » remember that the return spring is preloaded.

Fig. 29 - **Crankshaft:** (50 RS and Enduro) fit the tool G. 27118/30 by securing the concerning tie rods on two holes of the crankcase, then act on the central screw « a » of the tool until the crankshaft « b » is completely removed from its housing.
On the mod. 125 GR1 and TG1, on crankcase half, flywheel side there is fitted a roller main bearing instead of a ball bearing one: this allows the spontaneous dismantling of the crankshaft from crankcase, half.

Fig. 30 - **Crankshaft bearing:** fit the specific rings halves shown on fig. on the extractor T. 0014499; place it into the bearing and extract the bearing « a ».

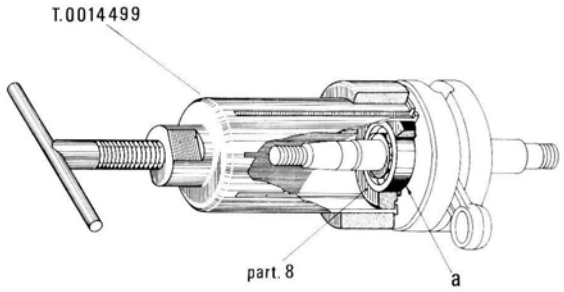


Fig. 30

In order to remove the inner race of the roller bearing of the GR 1 and TG 1 use the part 23 instead of the part. 8.

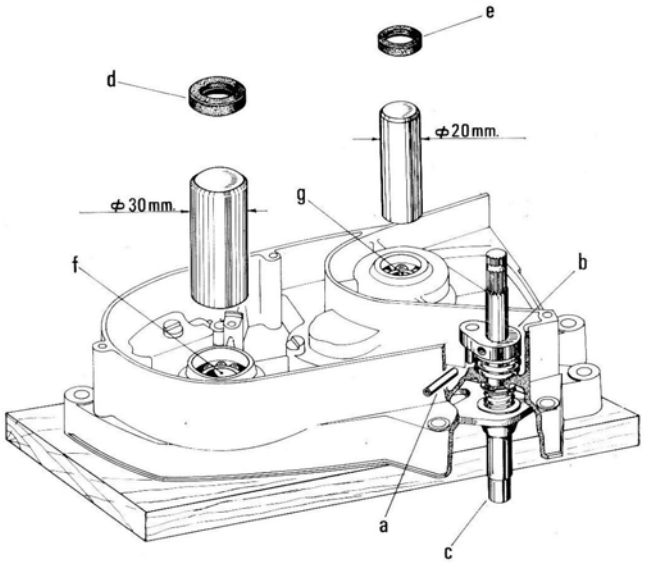


Fig. 31

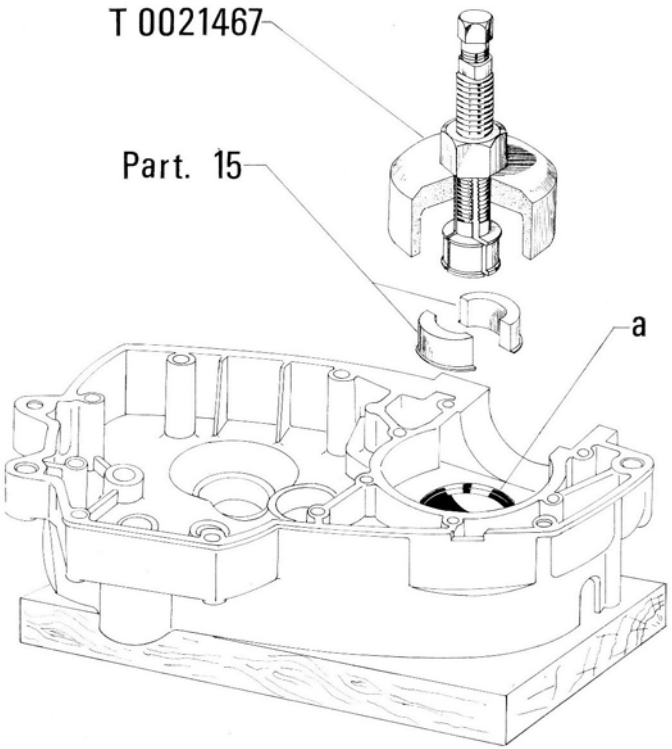


Fig. 32

Fig. 31 - **Selector control shaft:** Take off the pin « a », remove the lever controlling the selector « b » and dismantle the shaft « c ».

— **Crankshaft and drive shaft oil seals:** remove the two oil seals « d » and « e » taking care not to damage the concerning housings, then by means of punches of the dimensions carried out on figure take off the bearings «f» and «g». (In order to extract the bearing « g » of the GR1 and TG1 act as indicated on the following figure).

Fig. 32 - **Outer race** GR1 - TG1 roller main bearing flywheel side; for this operation use the extractor T. 0021467 with the specific collet part 18 and the half rings part 15.

— D. c. roller bearing for cluster gear GR1 - TG1: the dismantling is carried out with the tool T. 0021467 provided with the collet part 13.

CRANKCASE HALF, CLUTCH SIDE

Fig. 33 - **Clutch case:** by means of the special pliers remove the circlip « a », then with the punch « b » of the dimensions carried out on figure take off the case « c ».

— By means of the punch «d» flatten the oil seal in order to permit the introduction into the bearing of the pliers of the tool shown on the following figure.

— **Starter shaft:** remove the circlip « e », dismantle the starter coupling « f », the gear

« g », take off the circlip « h » and the spring pin « i » connecting the ring nut, remove the latter then the shaft « l ».

Fig. 34 - **Drive shaft bearing:** place the extractor G. 20844/30 and remove the bearing « a », take off the oil seal « b », the circlip retaining the main bearing « c » and the circlip « d » retaining the cluster gear bearing taking care not to damage the concerning housings.

Fig. 35 - **Main bearing « a » and of the cluster gear « b »:** for the dismantling use the punches with the dimensions carried out on the figure taking care not to damage the concerning housings.

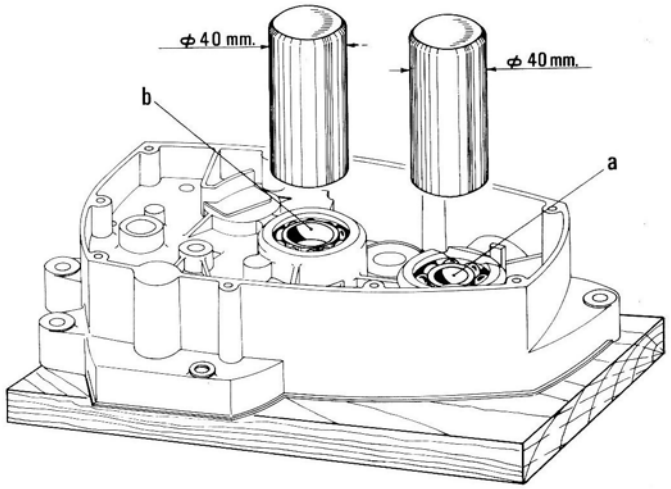


Fig. 35

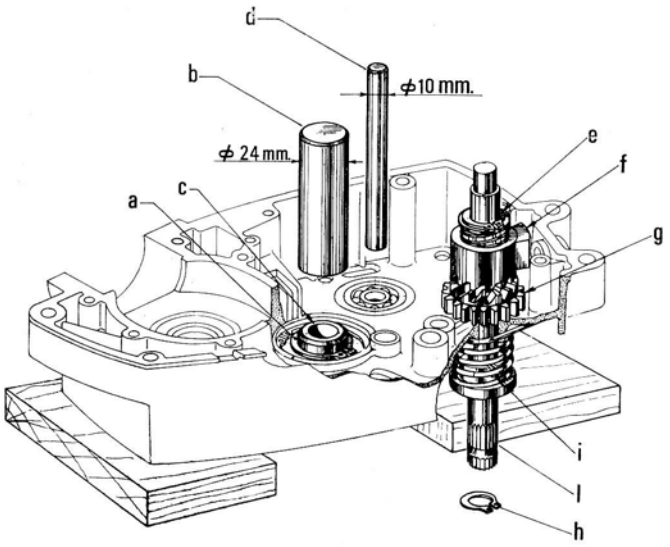


Fig. 33

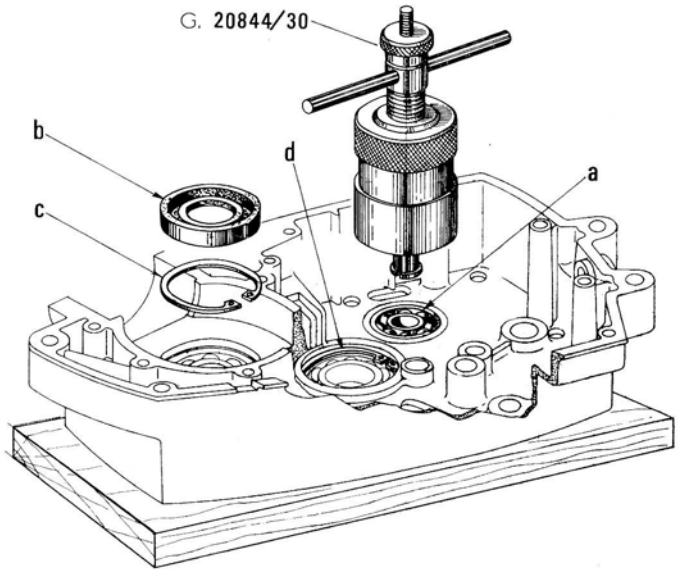


Fig. 34

ASSEMBLY PLAY

Pistons and cylinders supplied by the factory as spares are marked with letters of the alphabet. In the case where a cylinder or a piston is to be replaced it should be countersigned with the same letter as the mating component.

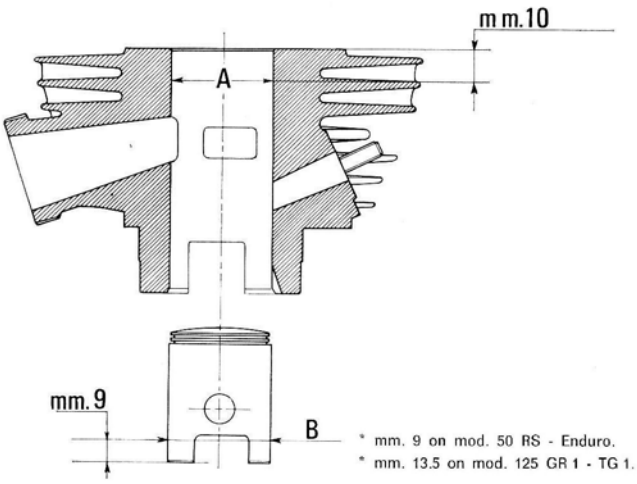
CYLINDER - PISTON

50 RS - 50 Enduro			125 - GR 1 - TG 1	
Cylinder		Piston	Cylinder	Piston
Class	Ø A mm.	Ø B mm	Ø A mm.	Ø B mm
A	38,395 ÷ 38,400	38,370	56,995 ÷ 57,000	56,950
B	38,400 ÷ 38,405	38,375	57,000 ÷ 57,005	56,955
C	38,405 ÷ 38,410	38,380	57,005 ÷ 57,010	56,960
D	38,410 ÷ 38,415	38,385	57,010 ÷ 57,015	56,965
E	38,415 ÷ 38,420	38,390	57,015 ÷ 57,020	56,970
F	38,420 ÷ 38,425	38,395	57,020 ÷ 57,025	56,975
G	38,425 ÷ 38,430	38,400	57,035 ÷ 57,030	56,980
H	38,430 ÷ 38,435	38,405	57,030 ÷ 57,035	56,985

Clearance on assy. 0.025 ÷ 0.030 mm.

Clearance admissible after use 0.070 mm.

On assembling the piston into the cylinder ensure that the arrow stamped on the crown of the piston is facing the cylinder exhaust port.



* mm. 9 on mod. 50 RS - Enduro.
* mm. 13.5 on mod. 125 GR 1 - TG 1.

Fig. 36

PISTON RINGS

Upper and lower piston ring.	Ø mm	Clearance « A »	
		On assy.	Admissible after use.
50 RS - Enduro	38,4	0,1 ÷ 0,25	1,6
125 - GR1 - TG1	57	0,25 ÷ 0,4	2

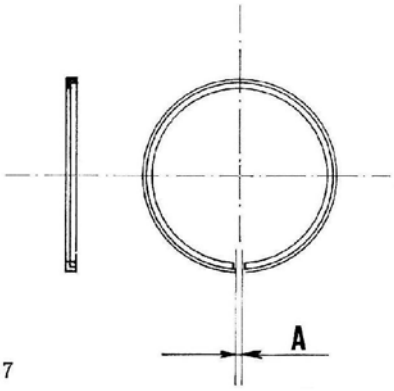


Fig. 37

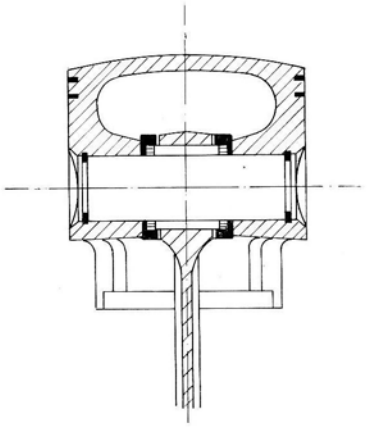


Fig. 38

SMALL END - WRIST PIN - ROLLER CAGE

The con - rods roller cages are subdivides in 4 categories and the category number is marked on every con - rod and cage.

Assemble:

1st category con - rod with 4th category cage
2nd category con - rod with 3rd category cage
3rd category con - rod with 2nd category cage
4th category con - rod with 1st category cage

N. B. - If the engine is noisy use cages of the next **inferior** category.

N. B. - The max. axial clearance admissible **after use** of the con rod (longitudinal run of crank pin) is of 0.7 mm.

For the wrist pin, that is coupled with a **0** clearance on assembly, the max. clearance admissible after use is 0.02 mm.

ANTI - FRICTION BEARINGS OF REAR FORK OSCILLATION 50 RS - 50 ENDURO

Anti - friction bearing inner diameter ∅ A	14,790 ÷ 14,808
Spacer outer diam. ∅ B	14,722 ÷ 14,740
Max clearance on assy. C	0,076
Max-clearance admissible after use C	0,15

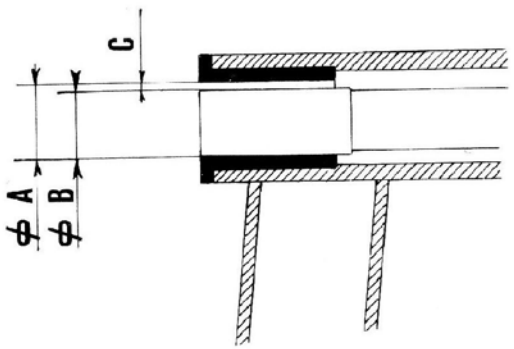


Fig. 39

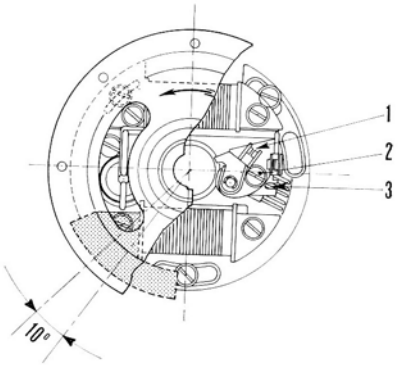


Fig. 40

OVERHAUL OF FLYWHEEL MAGNETO BACK-PLATE 50 RS - 50 ENDURO

Flywheel magneto

When replacing one or both the coils (supplied with pole shoes already turned), press the same towards the interior of the backplate during the locking of the concerning screws, then check with a feeler gauge the air gap that should result of 0.40 (+ 0.010 — 0.05 mm.).

Contacts breaker checking

For a correct running of the flywheel magneto it is essential that the air gap « 1 » (see fig. 40) is adjusted at 0.35÷0.40 mm.
Carry out the checking by means of a feeler gauge through the opening of the rotor, after having turned the latter in the position of T.D.C. (mark « 0 » on the rotor lined up with the mark « A » on the crankcase see fig. 56).
In order to adjust the gap unloose the locking screw «2» (see fig. 40) of the contact breaker and act with a screwdriver on the adjusting notch « 3 » by tightening after the screw.
The contacts should be clean with soft emery cloth and petrol (gasoline).

Ignition checking

Check the contact breaker points opening; the opening should occur 10° ($\pm$ 2°) after a

magnetic split, exactly when the centre line of a pole shoe is aligned with that one of a coil (see fig. 40).

Light checking

Verify that the bulbs fitted are of the prescribed value and measure if possible with a thermocouple voltmeter the voltage on the terminals of one of the filaments of the bilux main beam (6V - 25/25 W).

The voltage on the dipped beam bulb terminals should be 5.5÷6.5 V at 4500 r.p.m.

Note - On remagnetized flywheels not yet « stabilized », the voltage across the bulb is to be considered approx 10% in excess to the above mentioned one.

CARBURETTOR

Overhaul

Dismantle the carburettor in its component parts, carefully wash them in gasoline (petrol) and blow dry also the canalization of the body. Attentively check the conditions of all the parts.

The **throttle slide** should freely slide in the mixture chamber; in case of excessive play for wear replace.

If on mixture chamber you note wear traces, that don't permit a normal seal or a free sliding of the valve (also if it is new) replace the carburettor.

It is advisable when reassembling to replace the packings.

Characteristics	50 RS and/y Enduro	125 GR 1 - TG 1
Type dell'Orto	SHA 14 - 9	VHB 24 BS
Venturi	14/100 9 mm.	24/100 24 mm.
Main jet	55/100	92/100
Slow running	—	53/100
Float	6122. 01. 80 of/de 3,5 g.	of/de 10 g.
Throttle valve	6116. 03. 28	40
Tapering needle	—	E 40
Atomiser	—	265 Q
Starter jet	—	70

N. B. - The idle setting should be carried out **with the engine warm.**

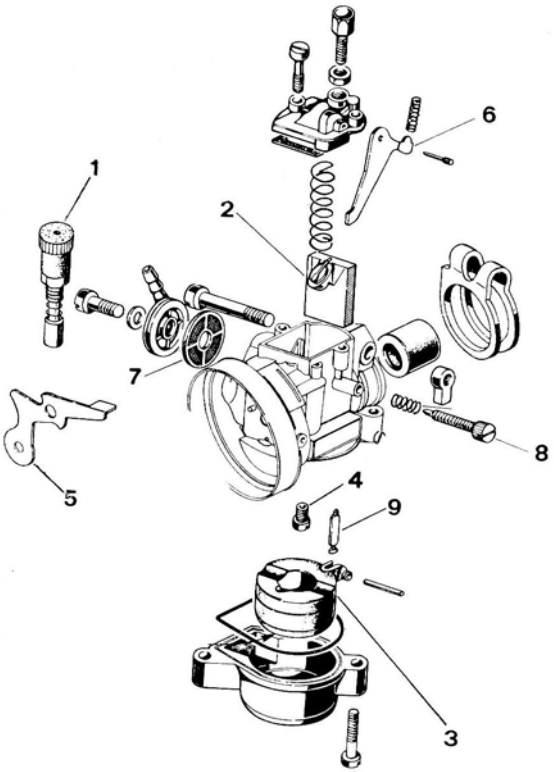


Fig. 41

Carburettor type SHA 14 - 9.

1. Starting device - **2.** Throttle valve - **3.** Float - **4.** Main jet - **5.** Air valve - **6.** Air valve control lever - **7.** Petrol (gasoline) filter - **8.** Slow running adjusting screw - **9.** Float chamber needle.

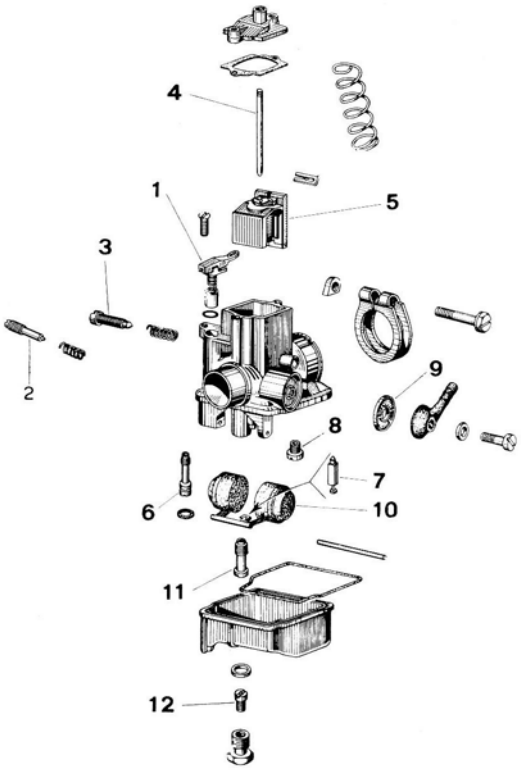


Fig. 42

Carburettor type VHB 24 BS.

1. Starting device - **2.** Slow running adjusting screw - **3.** Throttle valve adjusting screw - **4.** Tapering needle - **5.** Throttle valve - **6.** Starter jet - **7.** Float chamber needle - **8.** Slow running jet - **9.** Petrol (gasoline) filter - **10.** Float - **11.** Atomiser - **12.** Main jet.

INSTRUCTIONS FOR OVERHAULING AND ADJUSTING DISK BRAKE FITTED ON TG1

1) Oil level checking:

Oil level should never be 15 mm. below the upper edge of the tank see fig. 43.

2) Brake control lever adjusting:

In order to recover a possible play between the floating on the pump and the brake control lever, act on the proper screw « e » on fig. 44.

3) Brake pads replacement:

Checked that pads have reached wear limit, i. e. 3.5 mm. thickness (pad thikness before use is 7 mm.), replace them.

Unscrew the bolts «a» fig. 45 securing brake caliper to the fork, remove both split pins securing the pads, replace the latter with the new ones, fit again the split pins then secure the caliper to the fork and lock both bolts « a » to the torque carried out on the table at page 39.

4) Brake system bleeding:

When this operation should be carried out act as follows: check that the flexible pipe and the gaskets are not cracked or hardened in order to avoid an irregular braking system

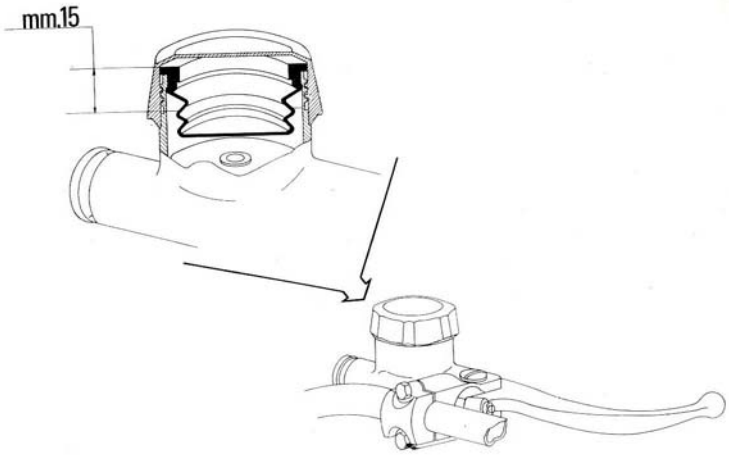
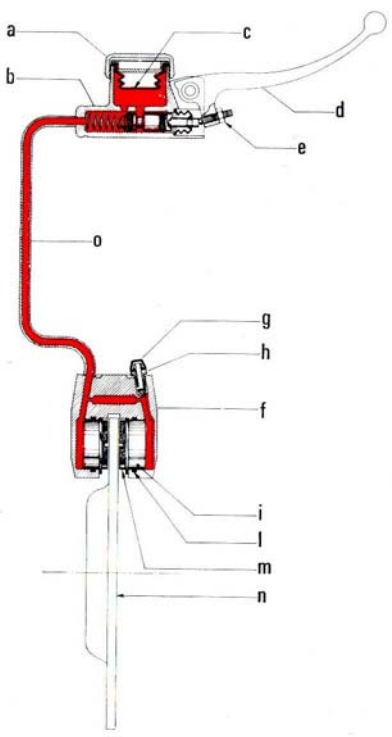


Fig. 43



a) Tank cap

b) Pump body

c) Elastic membrane

d) Brake lever

e) Adjusting screw

f) Brake caliper

g) Protection cap

h) Breather

i) Cup for brake push - pad

l) Cup seal packing

m) Brake pad

n) Brake disk

o) Oil flexible pipe

Fig. 44

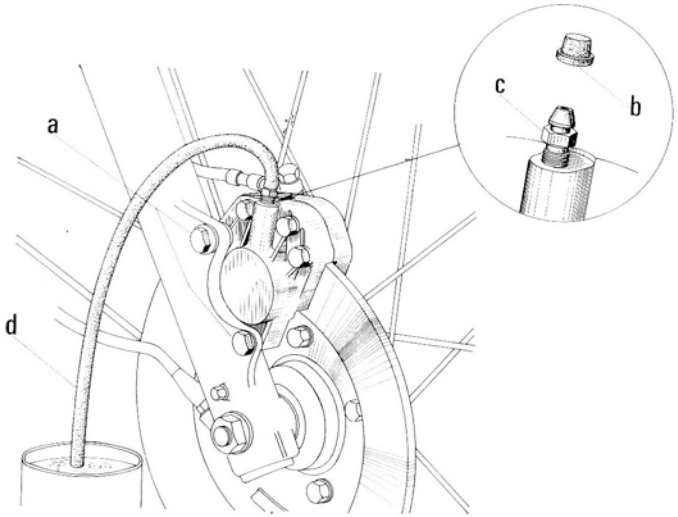


Fig. 45

functioning, if that is the case replace the damaged parts.

a) Restore (if necessary) the oil level in the tank (fig. 43).

b) Remove the rubber cap «b» from the bleeder screw « c » fig. 45, apply on the same a transparent flexible pipe « d » by introducing the other end in a container with oil, unloose the bleeder screw « c » then pull the lever on the handlebars with short time intervals between a pumping and the other; repeat the operation until from bleeder tube oil without air bubbles comes out, then pull completely the lever, lock the pipe union « c », leave the lever, take off the pipe « d » and fit again the cap.

If the operation has been correctly carried out, by acting on the lever the braking without noting no fluid elasticity will be obtained.

NOTES CONCERNING REASSEMBLY

On this chapter there are illustrated the main operations of reassembly which require special tooling and expendients. Operations easily executed using standard screwdrivers wrenches, pliers etc. are not demonstrated; likewise there are not illustrated the operations already carried out on the chapter «Dismantling» as these operations are carried out with a viceversa procedure.

On reassembly check that all parts are clean and carefully examined.
The following points should be strictly adhered to:

— **The crankcases** should not be cracked or deformed; the bearing seats should not be damaged or worn.

— **Ball bearings** check that they are in perfect conditions and not excessive axial and radial plays appear; check their smoothness by wheeling them by hand: if after the cleaning (washing in gasoline), roughness appears on the rotation replace them.

— **Drawn cup roller bearings:** for each reassembling operation use new drawn cups, by observing the following rules:

Wash the new drawn cup in neat gasoline (petrol) or in paraffin to eliminate the slush, after the greasing place them with the side on which is stamped the mark facing towards the outside.

For their fitting operate as indicated on respective figures of the present chapter, by using the proper tooling.

— **Shafts and axles:** bearing and sliding surfaces have not to present indentations and abrasions so that a good running is compromised. They should be suitably lubricated.

When reassembling grease the bearings with AGIP F. 1 GREASE 30 or ESSO BEACON 3 FIAT IOTA 3, SHELL ALVANIA GREASE 3.

— **Starting:** check that the teeth of the coupling are not excessively worn out and that the engagement with starting gear is correctly carried out.

— **Gear selector:** if the gear change pedal runs a little without meeting spring resistance, replace the latter.

— **Clutch:** check the wear of the plates, of the couplings on plates and of the toothing of the helical gear, in case replace the damaged parts.

— **Gears:** check the conditions of the toothing, if it presents some spallings or an excessive wear replace with new parts.

— **Rear transmission:** check pinion and ring gear toothing wear, if there are damages that can compromise the correct working, replace. If the replacement is to be carried out, replace at the same time pinion, ring gear and chain.

When reassembling the rear transmission, if chain sprocket is at the end stop, take off a link from the chain and adjust.

LOCKING TORQUE

PART	Torques in Kgm.		
	GR 1	TG 1	50 RS 50 Enduro
Engine unit			
Nut sec. the inlet jointing pipe to cylinder.	1,5÷1,8	1,5÷1,8	0,5÷0,7
Clutch unit sec. nut	50 RS - 50 Enduro, GR1 and/y TG1	4÷4,5	
Backplate sec. screw		0,3	
Flywheel magn. sec. nut		5	
Clutch drive gear sec. nut		5÷5,5	
Chain pinion sec. nut		5÷5,5	
Crankcase halves coupling screw		0,7÷0,9	
Starter coupling pin		1,5÷1,8	
Cylinder head sec. nut		1,5÷1,8	
Crankcase cover sec. screw		0,5	
Suspension unit			
Damper retaining nut	2,5	2,5	2
Fork retaining nut	3	3	2,5

PART	Torques in Kgm.		
	GR 1	TG 1	50 RS 50 Enduro
Steering unit			
Nut for sec. lower handlebars bracket to the steering plate	2,25	2,25	—
Handlebars sec. screw (nut for 50 RS)	1,5	1,5	1,25
Nut for sec. hub spindle to the outer tube of fork	2,5	2,5	2
Nut sec. the lower plate to the steering tube	2,5	2,5	2,25
Wheel unit			
Nut for sec. hub spindle (front and rear)	4,75	4,75	3,5
Nut for sec. the rod to the brake plate	front. rear 2	rear 2	—
Nut sec. rod to the front fork	1,5	—	—
Nut sec. rod to the rear fork	3	3	—
Nut for sec. engine to chassis	2,5	2,5	2,25
Nut for sec. footrest	3	3	2,75
Central stand sec. nut	2,75	2,75	2,5

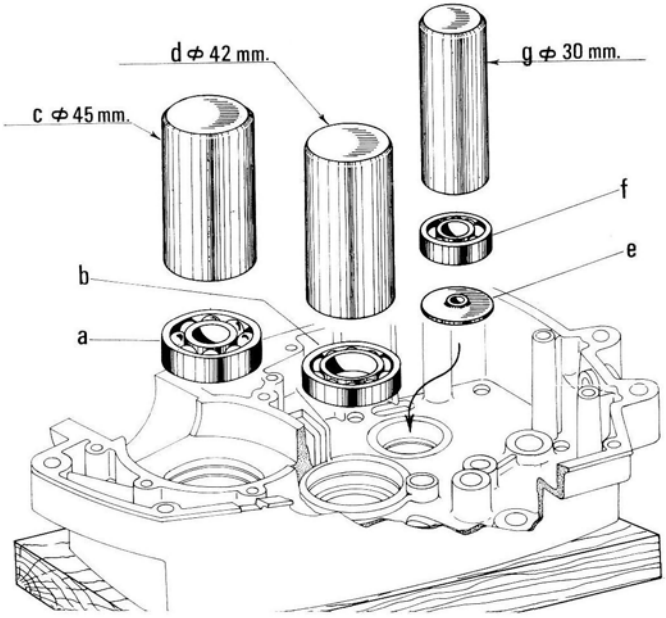


Fig. 46

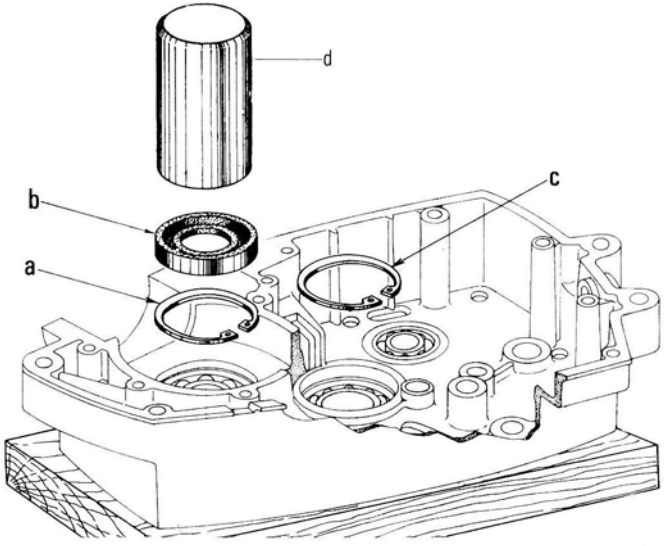


Fig. 47

REASSEMBLING

CRANKCASE HALF CLUTCH SIDE

Heat up the bearings housing zone of the crankcase to about 80° C with the heater 0019978.

Fig. 46 - **Ball bearing:** place the crankcase half on a table in order not to damage coupling surface of the crankcase itself.
Fit the main bearing « a » and that one of the output shaft « b » taking care that they are correctly positioned; the operation should be carried out by using the punches « c » and « d ».
Place the oil retainer « e » and bearing of

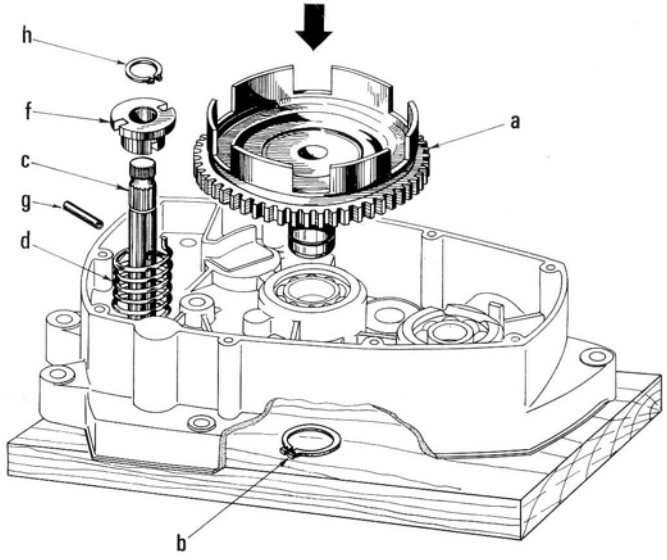


Fig. 48

the countershaft « f » by using for fitting them the punch « g » carried out on figure.

Fig. 47 - **Oil seal and circlips:** place the circlip « a » in its housing, then by using the punch « d » fit the oil seal « b », place the bearing retainer circlip « c » taking care that it is correctly fitted in its housing.

Fig. 48 - **Clutch case:** fit case « a » by using a buff mallet after having interposed a wood block; then place circlip « b ».

— **Starting shaft:** introduce the shaft « c » in its housing, place the return spring « d » the ring nut « f » by constraining to the shaft with the spring pin « g », install the circlip « h », then hook the spring to the proper cast - in fastener on crankcase half and to the ring nut groove.

Fig. 49 - **Starting coupling:** fit the gear « a », for the load of the spring « d » (illustrated on fig. 48) care when setting the coupling « b » that the trace existing on starting shaft grooved zone is aligned, then position the spring « c », the shoulder washer « d » and the circlip « e ».

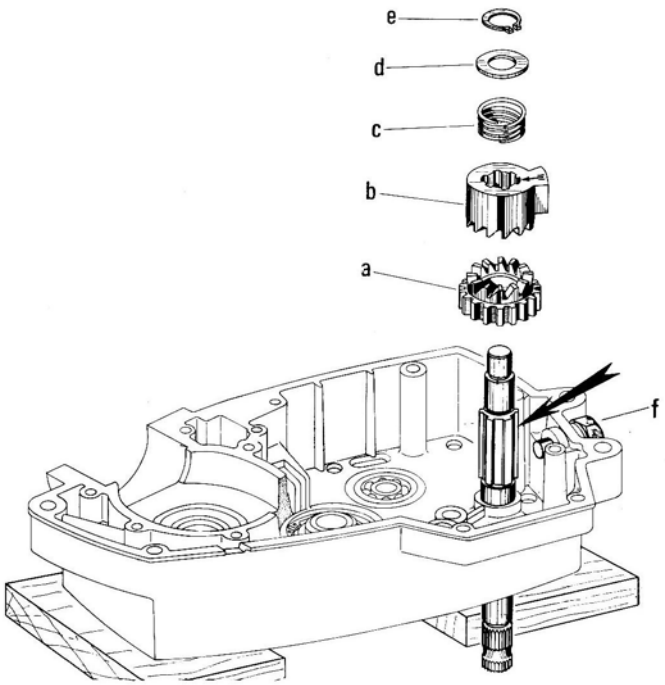


Fig. 49

CRANKCASE HALF, FLYWHEEL SIDE

Fig. 50 - **Bearings:** 50 RS - Enduro. Heat up with the heater 0019978 the bearing housing zone, then by using punches of the dimen-

sions carried out on figure install the bearings «a», «b» and «c» by pushing them in their own housings.

— **Bearings:** after having heated up the crankcase as we have said for the fig. 50, carry out the fitting by respecting for the assembling of the d. c. roller bearings « b » the rules of page 37.
On the mod. GR1 - TG1 the bearing « c » on fig. is a roller bearing, consequently the fitting is carried out by using a suitable punch. Care not to damage the housing on crankcase. Instead of the ball bearing indicated with « b » on figure there is fitted a d. c. roller bearing for the fitting of which it is essential to use the specific punch T. 0032975, by following the rules carried out at page 37.

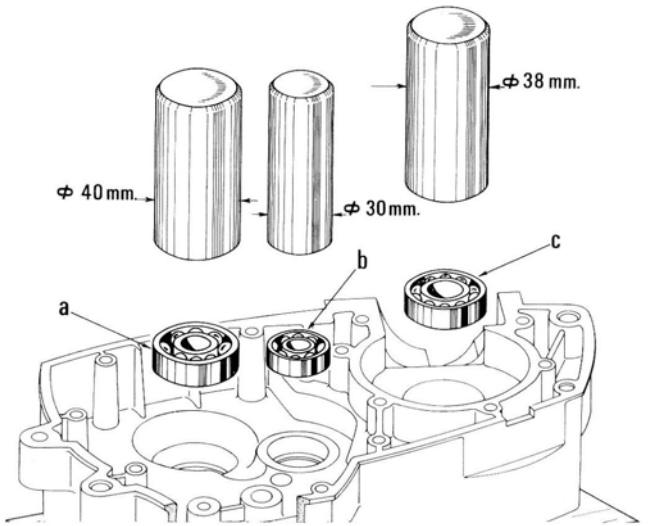


Fig. 50

Fitting of the bearings on mod. 50 RS - Enduro

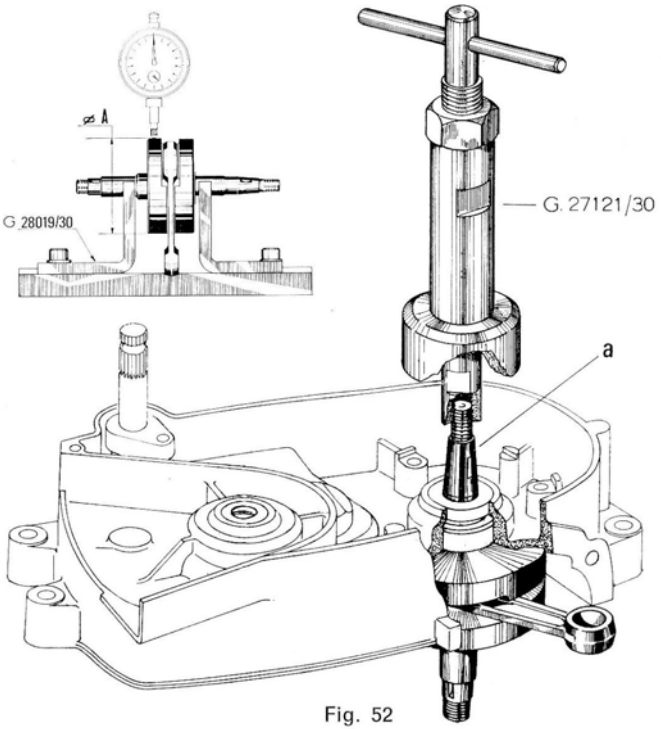


Fig. 52

Reassembling of the crankshaft

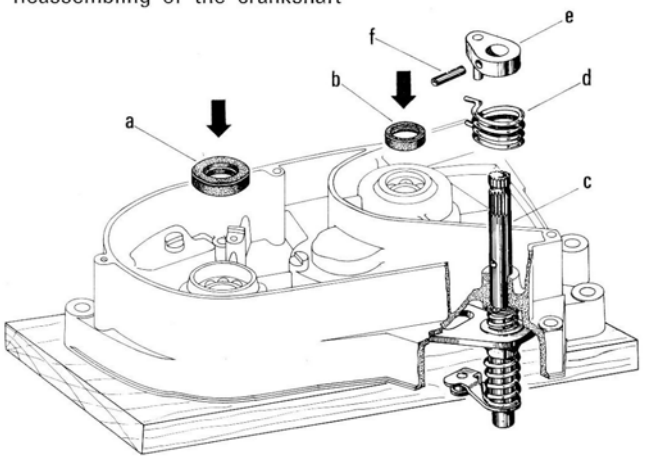


Fig. 51

Fig. 51 - **Oil seals:** position the oil seals « a » and « b ».

— **Selector shaft:** introduce the shaft « c » in its housing, install the spring « d » and the lever controlling selector «e» by constraining it to the shaft by means of the spring pin «f».

Fig. 52 - **Crankshaft:** check that the eccentricity of the ∅ « A » **measured on dial gauge** is max 0.02 mm. When excentricities are not much higher than those ones established, **carry out the straightening** by acting between the counterweights with a wedge or by tightening them in a vice (equipped with aluminium protections) as required. On mod. **50 RS and 50 Enduro,** for the reassembling on the crankcase half, introduce and position the crankshaft « a », flywheel side, into the main bearing, position the tool G. 27121/30 as indicated on figure and complete the assembling.
For the reassembling of the crankshaft on the mod. 125 GR1 - TG1 it is not essential the tool G. 27121/30.

Fig. 53 - **Inner race of the roller main bearing, flywheel side (GR1 - TG1).** Use the tube « a » inner ∅ 26 mm.: by placing the shaft on the base « c » of a suitable lenght and with the central hole ∅ 35 ∽.

Fig. 54 - **Selector drum:** Install the spring and fit the drum «a», place the toothed disk «b» by positioning it so that the lever is on the 1st gear position (see figure).

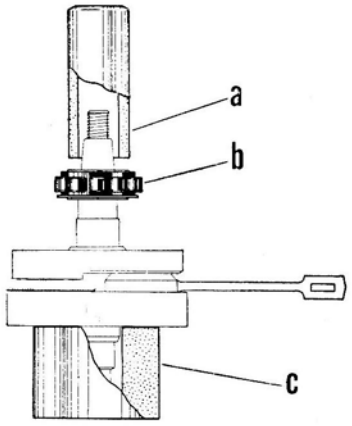


Fig. 53

Fitting of the inner race of the roller main bearing (mod. GR 1 TG 1)

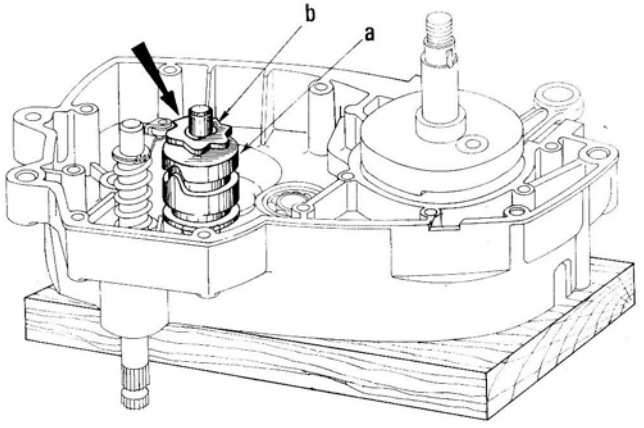


Fig. 54

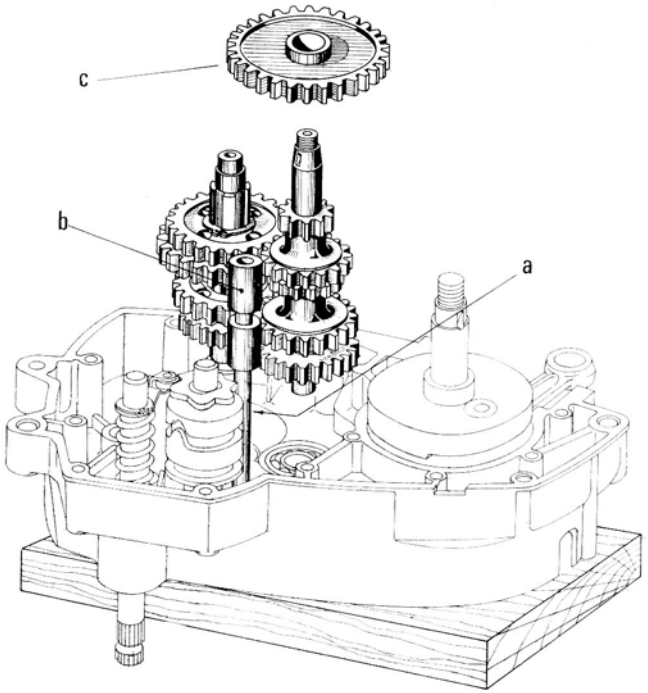


Fig. 55

Fig. 55 - **Gear change unit:** Install the unit complete with fork 2nd - 4th gear.

— Insert the concerning pin of the fork into the groove of the selector drum and the guide axe « a » into the fork.

— Place the fork « b ».

— Introduce the 1st gear «c», install the washers on shafts by positioning them as they had been found during the dismantling.

Crankcase coupling: in order to make easier the couling of both crankcase halves turn the starting shaft so that its gear can engage the 1st gear on the countershaft.

Piston - wrist pin, cylinder, cylinder head - clutch, flywheel magneto - pinion etc.: the assembling of these parts does not require special tooling and expendients: these operations are carried out with a viceversa procedure to that one of the dismantling.

For the locking of nuts, bolts and screws keep scrupulously to the specific torques carried out on the table at page 39.

ENGINE TIMING

Engine timing on **50 RS and 50 Enduro** mopeds (fig. 56) is carried out as follows:

a) - Put the piston to the **T.D.C.** by rotating the flywheel magneto until the mark «0» of the flywheel matches with the mark « A » on the crankcase.

b) - The max opening of the contact breaker points should be 0.35÷0.4.

c) - Insert the electrical plug of the tool T. 0027533 (that works at 220 V a. c.).

d) - Connect the red cable of the device with the cable coming from flywheel feeding the H. T. coil.

e) - Rotate the rotor **anti - clockwise** until the mark « B » engraved on the same matches with the mark « A » on the crankcase; if the lamp of the device lights the timing is correct.

f) - If the lamp lights when the mark « B » on the rotor has exceeded the mark « A » on the crankcase (anti - clockwise) the ignition **is retarded**; in this case act as follows;

1. Remove the rotor and unloose the screws fastening the backplate on crankcase.

2. Turn **clockwise** the backplate of about the half of the displacement between the marking « B » on the rotor in respect of the mark « A » on the crankcase.

3. Lock the 3 screws for securing the backplate, fit the rotor and repeat the previous operations.

g) - In the case of **advanced ignition** carry out inversely the operations of the points 1 - 2 - 3.

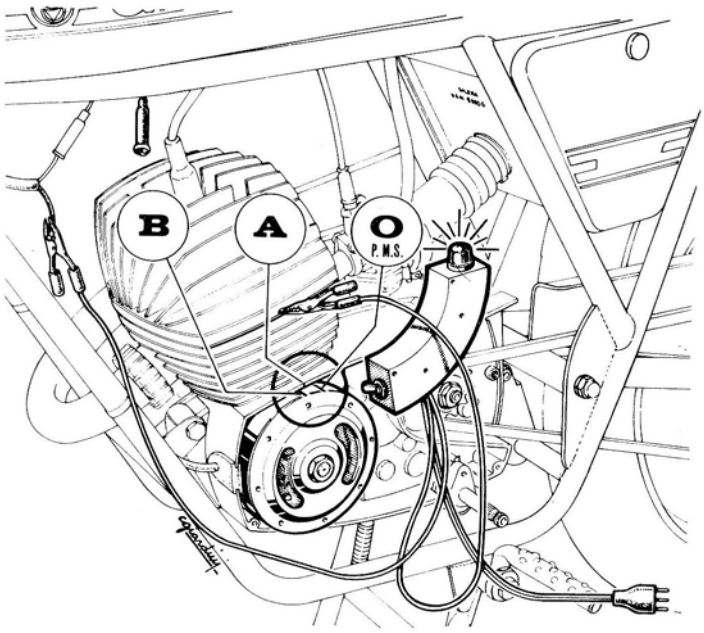


Fig. 56

Engine timing of 50 RS and 50 Enduro

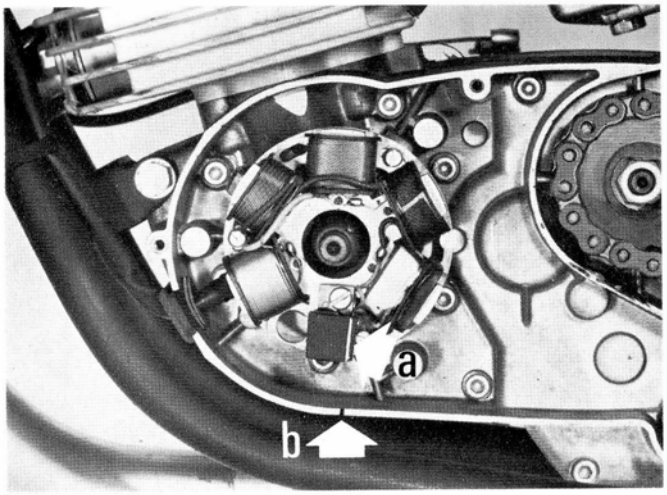


Fig. 57

Engine timing

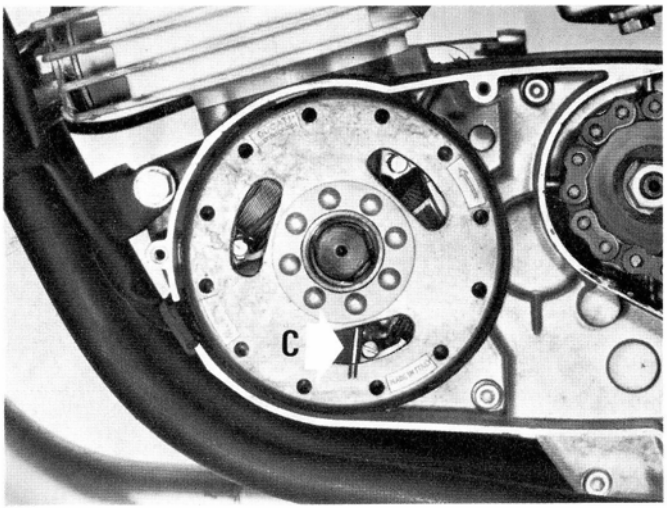


Fig. 58

Electrical timing

CHECKING OF THE ENGINE AND ELECTRIC TIMING ON MOPEDS 125 GR1 - TG1

The checking of the timing can be for instance necessary when the engine doesn't run regularly (starting difficulties, lack of power, difficult and irregular acceleration etc.); if the anomaly is not due to carburation, it can be due to ignition timing irregularities. This case is rather unusual, as for the characteristics of the ignition system, the ignition advance is unaltered during the time, as the inconvenient proceeds for the most part from irregular working of the electronic control box. In order to ascertain it, operate as explained on the previous pages for checking the mentioned device.

Anyway, if after having checked the efficiency of the carburation and of the electronic control box the requested improvements are not obtained and there is the dubt that the anomalies are imputable to the ignition timing, check the latter by acting as follows:

Engine timing (fig. 57): check that the backplate is oriented so that the « a » engraved on the same matches with the mark « b » on crankcase; in such conditions the correct ignition timing is obtained.

Electrical timing (fig. 58): connect a stroboscopic lamp (with capacity coupling) to the ignition; the connection is directly realized on spark plug, or on the H. T. cable etc. ac-

cording to the type of stroboscopic lamp available and the specific instruction of operations.
Then start the engine.
— The engine results correctly timed when with the stroboscopic lamp the spark arcs in the instant when the (white) mark on pick up « P » matches with the two marks on the rotor close to a slot pointed out with an arrow on fig. 58.
— When the marks on the rotor result displaced in respect of the mark on pickup replace the backplate.

CHASSIS

Front suspension

Fig. 59 - Place the balls (27) in the inner track and grease.
Fit the balls (27) in the upper track of the steering and grease; introduce the fork into the head tube and screw the upper track by means of the wrench G. 13959/30 until the axial play is recovered; however the fork should rotate freely. Place and screw the steering locking nut.
For fitting the other chassis parts, special tooling and expendients are not required.
For the locking torques see the table at page 39.

CHAIN ADJUSTING

In order to carry out the chain adjustment unloose the nuts securing the rear wheel pivot, then act uniformly on proper eccentrics for 50 RS - Enduro, adjusting nuts for TG1 - GR1. so that on the lower part of the chain, at a dis-

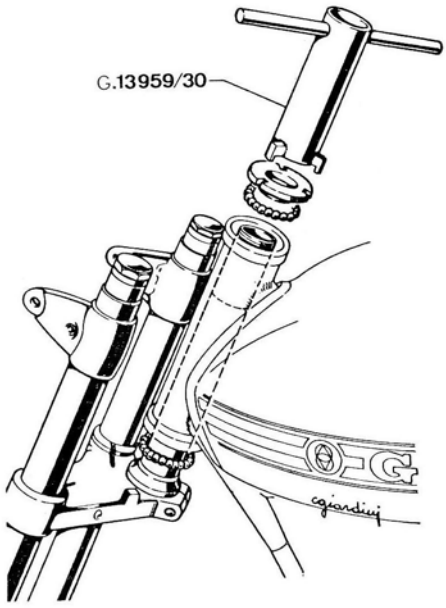


Fig. 59

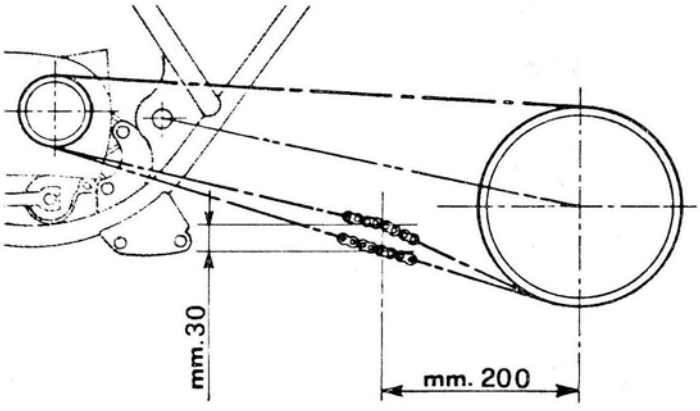


Fig. 60

Chain adjustment

tance of 200 mm. from wheel axle a vertical displacement of 30 mm. is obtained; after this operaiton lock the nuts for securing wheel pivot.

OPERATIONS AND CHECKS BEFORE OPERATING

After having completed overhauls to the engine or other vehicle units and in case after having tested the engine before consigning the vehicle to its owner, the following operations should be carried out:

1. - Check nuts and bolts for tightness.
2. - Efficiency of front and rear suspensions.
3. - Oil level in the gear box (check with the proper rod).
4. - Check for absence of oil and fuel losses.
5. - Check brake efficiency: if necessary adjust.
6. - Check tyre pressure.
7. - Adjust the controls.
8. - Chain tension.
9. - Check the carburation and — if necessary - the timing.
10. - Check the efficiency of electrical equipment.
11. - Road holding without the hands on the handlebars.
12. - Cleaning down vehicle: for external surfaces use paraffin; for the paintwark use water and chamois leather. When cleaning the headlight reflector use a very soft feather (avoid finger contact).
13. - Correct headlamp setting.

Notice: Dealers are advised to carry out the above indicated operations also on new vehícles prior to consignment.

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