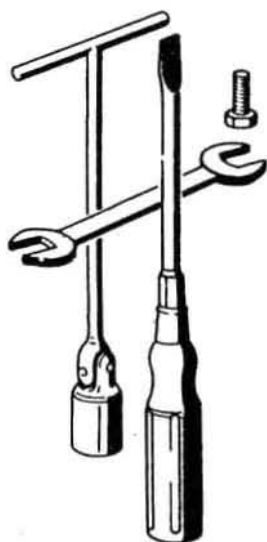




California
TOOL

WORKSHOP MANUAL



COD. 29 92 01 51

Additions to the Workshop manual for the models V1000 G5 e 1000 SP - Cod. 17 92 01 61



The illustrations and description in this booklet are indicative only and the manufacturer reserves itself the right to introduce any modification it may deem necessary for better performance or for constructive or commercial reasons without prior notice.

SEIMM MOTO GUZZI - TECHNICAL PUBLICATIONS

CODE. 29 92 01 51

300 K - 10/87 - Printed in Italy - D.E.Ca. - Ravenna

INDEX

2 MAIN SPECIFICATION pag. 270

7 TABLE OF MAINTENANCE AND LUBRICATION OPERATIONS pag. 272

12 ENGINE OVERHAULING AND CHECKING pag. 273

15 FUEL FEEDING pag. 275

- 1 Carburettors
- 6 Air cleaner replacement

20 REAR SUSPENSIONS pag. 276

21 FRONT SUSPENSION pag. 277

- 1 Front fork
- 2 Fork arms lubrication

22 SWINGING FORK pag. 279

23 WHEELS pag. 280

- 1 Front wheel
- 3 Rear wheel
- 5 Tyres
- 11 R.H. front brake control pump

24 ELECTRICAL APPARATUS pag. 283

- 2 Alternator-Generator (Saprisa)

25 ELECTRIC SYSTEM SCHEME pag. 284

- 1 Electric system scheme legend

ENGINE	4-stroke, twin cylinder	
— Cylinder configuration:	90° V-twin	
— Bore:	88 mm	
— Stroke:	78 mm	
— Capacity:	948.8 cc	
— Compression ratio:	9.2:1	
— Max. torque:	7.7 kgm at 5200 rpm	
VALVE GEAR	O.H.V. push rod operated rocker arms	
CARBURETTORS	2 Dell'Orto carburetors PHF 30 DD (right) and PHF 30 DS (left)	
LUBRICATION	Pressure feed by gear pump Wire mesh and cartridge filters on oil sump Normal lubrication pressure 3.8-4.2 kg/cm ² (pressure valve on oil sump) Low oil pressure sensor (electrical) on oil crankcase	
GENERATOR ALTERNATOR	On front of crankshaft (14V-20A)	
IGNITION	Battery-coil ignition, double contact breaker with automatic advance.	
— Ignition timing	Ignition advance (fixed)	2° ± 1°
	Full advance (static and automatic)	33° ± 1°
— Contact breaker points gap:	0.37-0.43 mm	
— Spark plugs:	Marelli CW 7 LP; Bosch W 7 D; Bosch W 7 DC; Champion N 9 Y; Lodge HLN Y.	
— Spark plug gap:	0.6 mm	
— Ignition coils	2 mounted on frame.	
STARTER	Electric starter motor (12 V - 0.7KW) with electromagnetic ratchet control. Pinion fixed to flywheel. START push-button on right handlebar.	
TRANSMISSION		
CLUTCH	Dry, twin driven plates. Located on engine flywheel. Clutch lever on left handlebar.	
PRIMARY DRIVE	By gears, 1:1.235 (Z = 17/21)	
GEARBOX	5-speed, front engaging, constant mesh. Incorporated Cush drive. Control pedal on left side of machine.	
— Gear ratios		
1st	1 : 2 (Z = 14/28)	
2nd	1 : 1.388 (Z = 18/25)	
3rd	1 : 1.047 (Z = 21/22)	
4th	1 : 0.869 (Z = 23/20)	
5th	1 : 0.750 (Z = 28/21)	
FINAL DRIVE	Cardan shaft with gears	
— Ratio:	1 : 4,714 (Z = 7/33)	1 : 5.333 (Z = 6/32)
— Overall ratios (engine-wheel):		
1st gear	1 : 11,643	1 : 13.1764
2nd gear	1 : 8,080	1 : 9.1503
3rd gear	1 : 6,095	1 : 6.9019
4th gear	1 : 5,059	1 : 5.7289
5th gear	1 : 4,366	1 : 4.9411

FRAME	Modular duplex tubular cradle
SUSPENSION	
— Front:	«MOTO-GUZZI patented» hydraulically damped telescopic forks.
— Rear:	swinging arm with adjustable helical springs around adjustable hydraulic damper.
WHEELS	Light alloy castings
— Front:	18 MT 2.50 H2
— Rear:	18 MT 3.00 H2
TYRES	
— Front:	110/90 V18
— Rear:	120/90 V18
	Type: TUBELESS or TUBE-TYPE
BRAKES	
— Front:	floating disc with fixed caliper, twin brake cylinder. Brake lever on right handlebar. Independent hydraulic circuit for rear brake. \varnothing disc 300 mm; \varnothing brake cylinder 38 mm; \varnothing master cylinder 13 mm.
— Rear:	floating disc with fixed caliper, twin brake cylinder. Brake pedal on centre-right of motorbike; \varnothing disc 270 mm; \varnothing brake cylinder 38 mm; \varnothing master cylinder 15.875 mm; The rear brake is connected by a hydraulic circuit to the left front brake; the left front brake has the same dimensions as the right front brake controlled by the brake lever.
DIMENSIONS AND WEIGHT	
— Wheelbase	1.550 m
— Overall length	2.330 m
— Overall width	0.970 m
— Height (with screen)	1.445 m
— Weight (dry)	272 kg
PERFORMANCE	
— Max. speed:	with one rider approx. 190 kph
— Fuel consumption:	6.5 lt/100 km
REFUELINGS	
— Fuel tank (reserve approx 6 lt.)	approx. 25 l. Super petrol (97 NO-RM/min.)
— Oil sump	3 l. «Agip Sint 2000 SAE 10W/40» oil
— Gearbox	0.750 l. «Agip Rotra MP SAE 80W/90» oil
— Rear drive (bevel set lub.)	0.250 l. of which: 0.230 l. «Agip Rotra MP SAE 80W/90» oil and 0.020 l. «Agip Rocol ASO/R» or «type A Molykote»
— Front forks (per leg)	0.150 l. «Agip ATF Dexron» fluid
— Front and rear brake circuits	«Agip Brake Fluid - SUPER HD»

7 TABLE OF MAINTENANCE AND LUBRICATION OPERATIONS

ITEMS ◇	COVERED MILEAGE◇	1500 Km	3000 Km	6000 Km	9000 Km	12.000 Km	15.000 Km	18.000 Km	21.000 Km	24.000 Km	27000 Km	30.000 Km
Engine oil		R	R	R	R	R	R	R	R	R	R	R
Oil filter cartridge		R					R					R
Wire gauze oil filter		C					C					C
Air filter				C	R		C	R			R	
Ignition timing		A	A	A	A	A	A	A	A	A	A	A
Spark plugs		A	A	A	R	A	A	R	A	A	R	A
Rocker clearance		A	A	A	A	A	A	A	A	A	A	A
Carburation		A	A	A	A	A	A	A	A	A	A	A
Nuts and bolts		A					A					A
Fuel tank, filters and pipes					C			C			C	
Gearbox oil		A	A	A	R	A	A	R	A	A	R	A
Rear drive box oil		A	A	A	R	A	A	R	A	A	R	A
Wheel and steering bearing									A			
Fork legs oil									R			
Starter motor and generator									A			
Brake system fluid		A	A	A	A	A	R	A	A	A	A	R
Brake pads		A	A	A	A	A	A	A	A	A	A	A

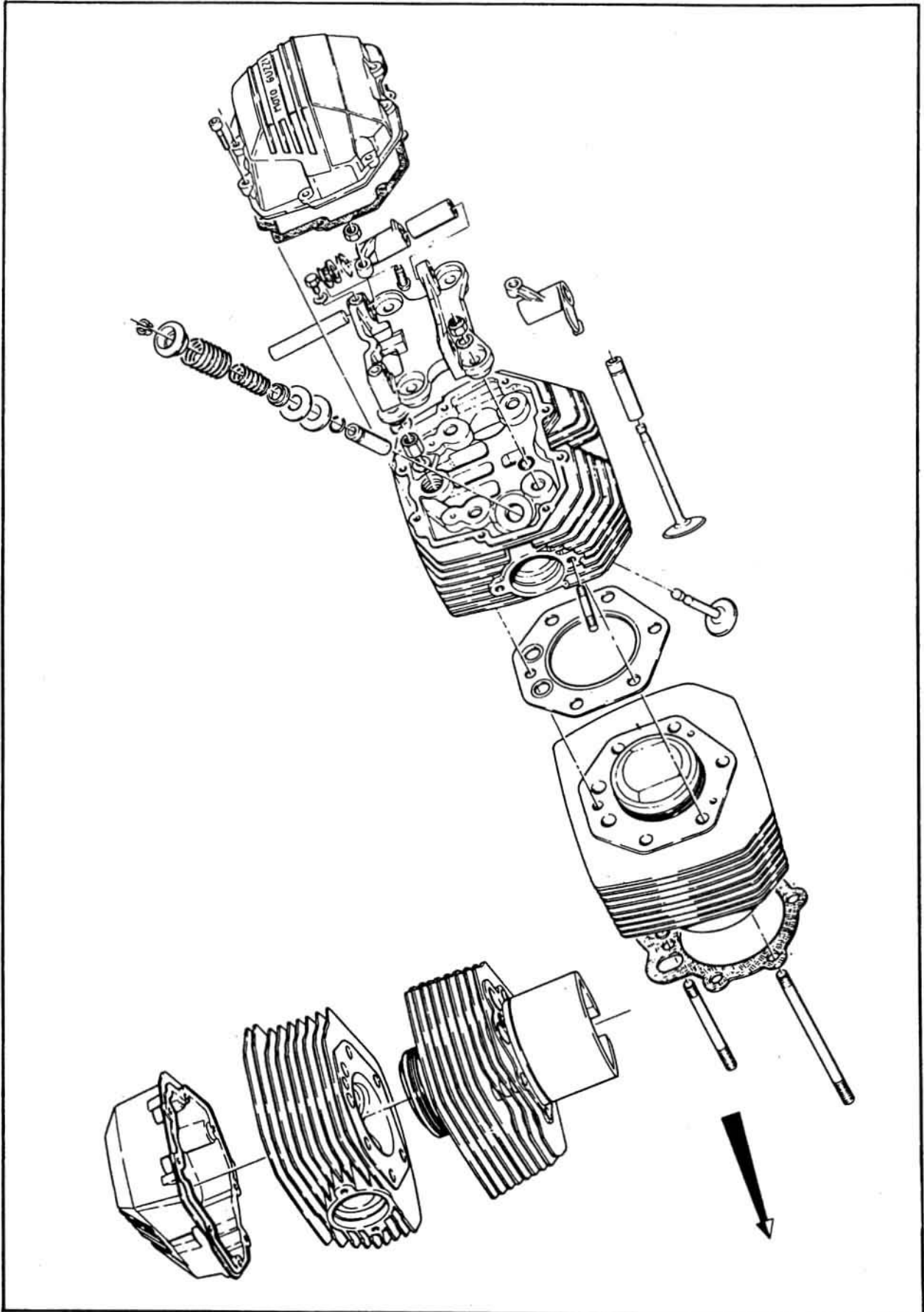
A = Inspections - Adjustments - Possible replacements - Servicing / C = Cleanings. R = Replacements.

Operation required for maintaining the vehicle according to emission regulations (USA).

Occasionally, check the electrolyte level in battery, lubricate joints and cables; every 500 Km (300 miles) check the engine oil level.

In any case, renew this oil at least once a year.

12 ENGINE OVERHAULING AND CHECKING



CYLINDERS

Cylinders range (mm)

GRADE A	GRADE B	GRADE C
88,000 ÷ 88,006	88,006 ÷ 88,012	88,012 ÷ 88,018

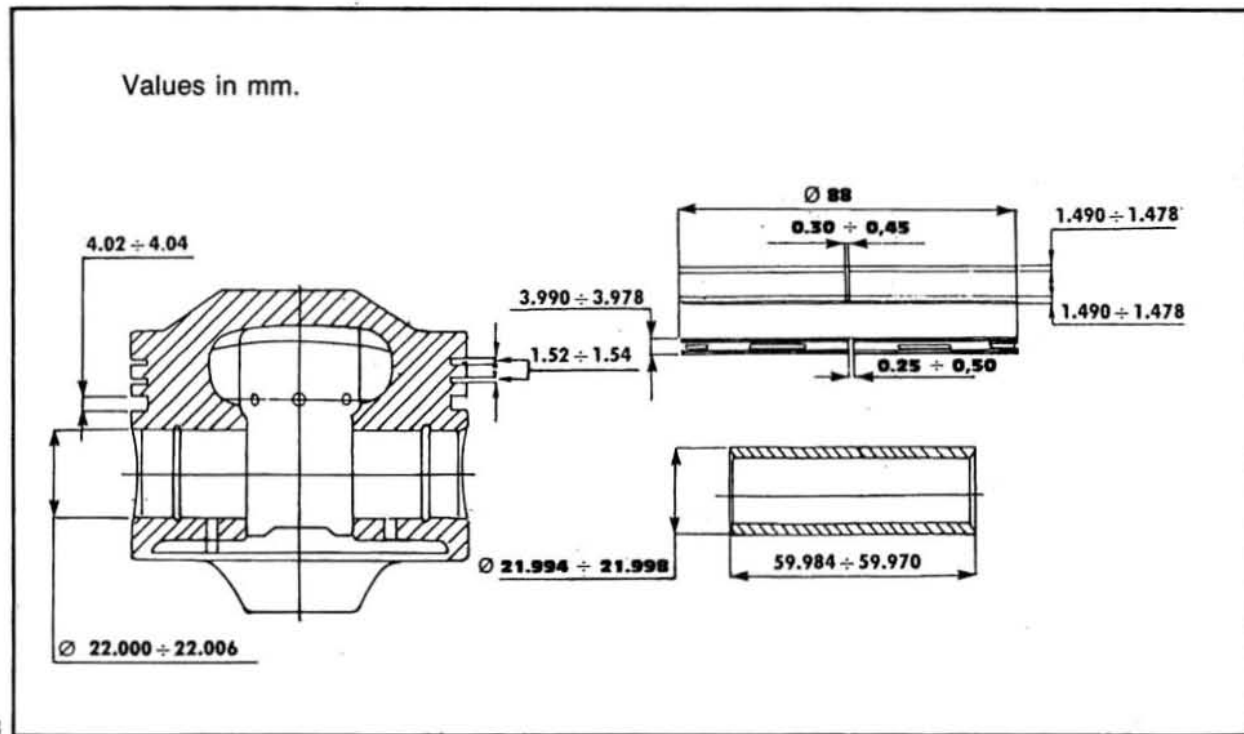
PISTONS

Pistons range (mm)

GRADE A	GRADE B	GRADE C
87,968 ÷ 87,974	87,974 ÷ 87,980	87,980 ÷ 87,986

Pistons of an engine have to be balanced; only a difference of 1.5 gr. in weight is admissible. peso.

When fitting a piston, make sure that the «SCA» (exhaust) mark is facing towards the exhaust hole of the cylinder.



Piston-pin and bushing mating data.

Inserted and machined bush inner dia. mm	Piston-pin dia. mm	Bushing to piston-pin mating clearance mm
22.015	21.994	0,017 ÷ 0,036
22.030	21.998	

CRANKSHAFT BALANCE CHECKING

To statically balance the crankshaft it is necessary to apply to the crankpin a load of 1,650 ÷ 1,652 Kg.

15 FUEL FEEDING

15.1 CARBURETORS (fig. 344).

No. 2 Dell'Orto «PHF 30 DD» (R.H.) «PHF 30 DS» (L.H.) type.

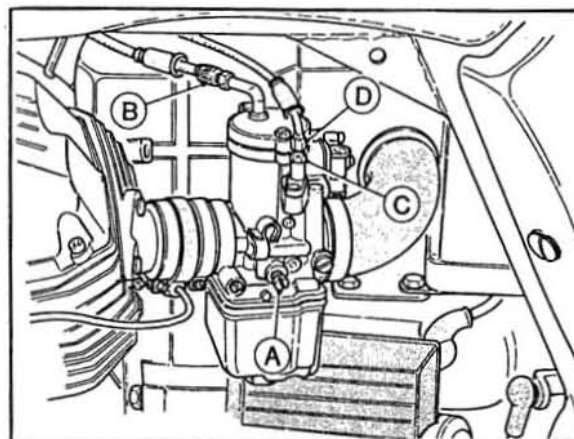
Carburators controls

- throttle twist grip on the R.H. handlebar;
- «CHOKE», **cold start** control, on left handlebar.

Carburettor setting

Diffuser	∅ mm 30
Throttle valve	50/3
Spray nozzle	264 AB
Main jet	125
Idle jet	50
Starting jet	75
Tapered needle	K23 (3rd notch)
Float	gr 10

Idling screw: open by 1½ turns.



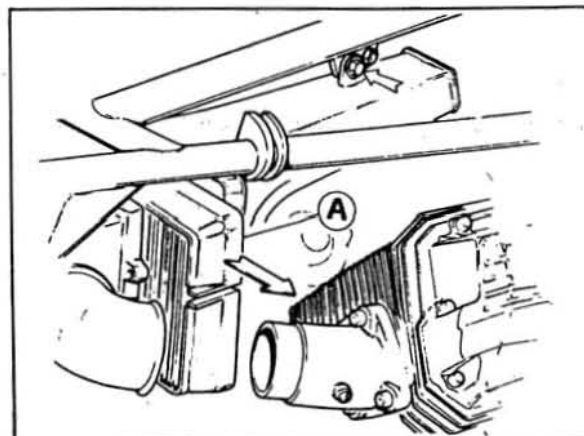
344

15.6 CHANGING THE AIR FILTER

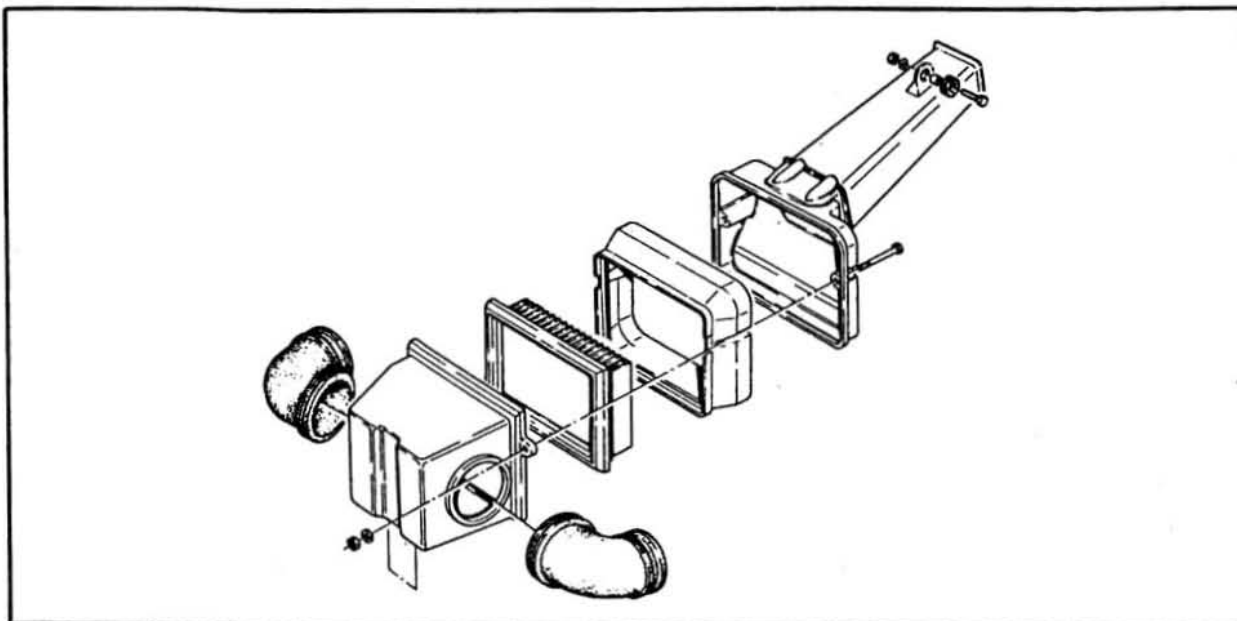
(figg. 345-346).

Every 6000 km. check the filtering unit condition and eventually clean it with compressed air; every 9000 km. replacement is prescribed.

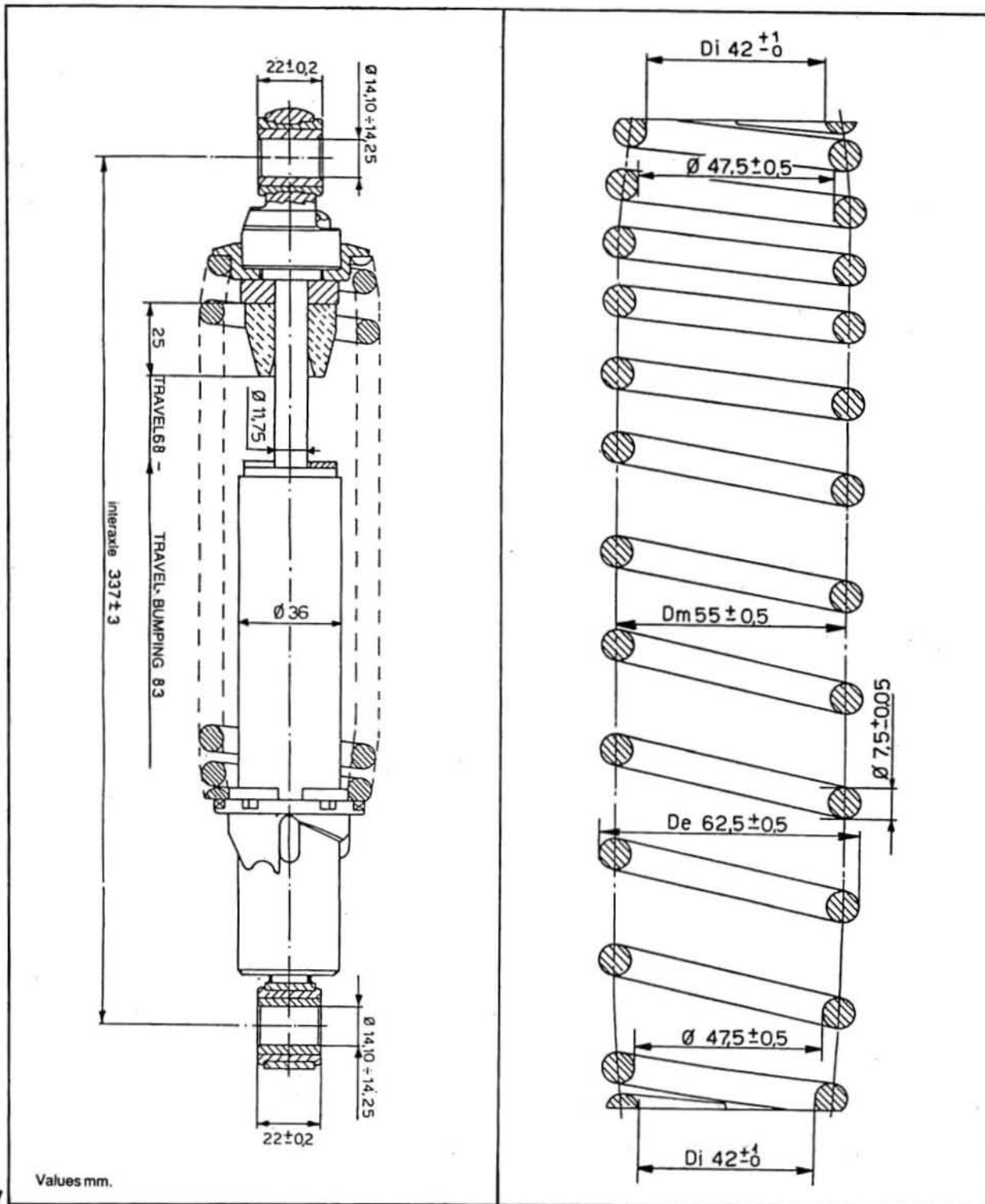
To replace the air filter lift the saddle, remove fuel tank and side covers. Take out R/H carburettor and undo the screw fixing the air intake to the bike frame; remove the two side screws and take out from the R/H side the container «A» complete with air filter.



345



346



Values mm.

347

Rear suspension spring features.

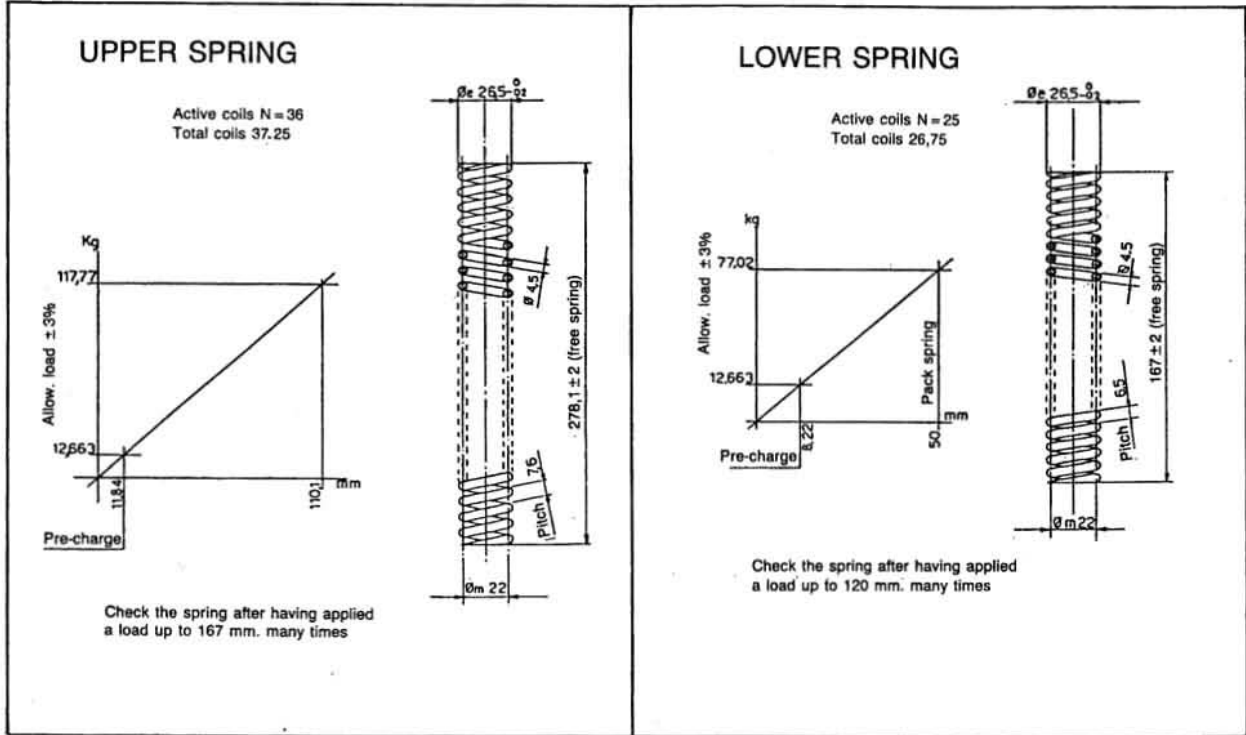
- A free spring has the length of 235 mm.
- A spring under 36,5 Kg. load must have a 215 mm length.
- A spring under 118 Kg. load must have a 170 mm length.
- A spring under 197 Kg. load must have a 138 mm length.

A spring under 288.5 Kg. load must have a 108 mm length.
 A fully loaded spring must have a 94 mm Length.
Note: If springs have not the above features or prove warped, they must be replaced.

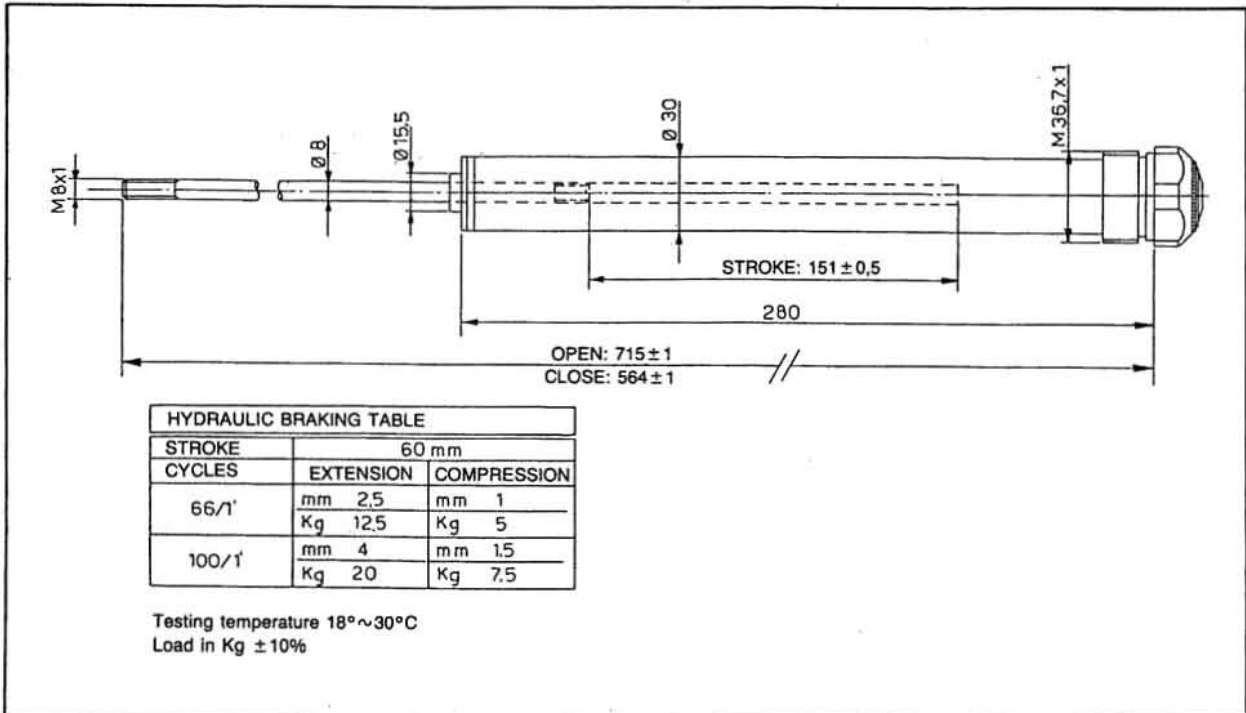
21 FRONT SUSPENSION

21.1 FRONT FORK (fig. 351).

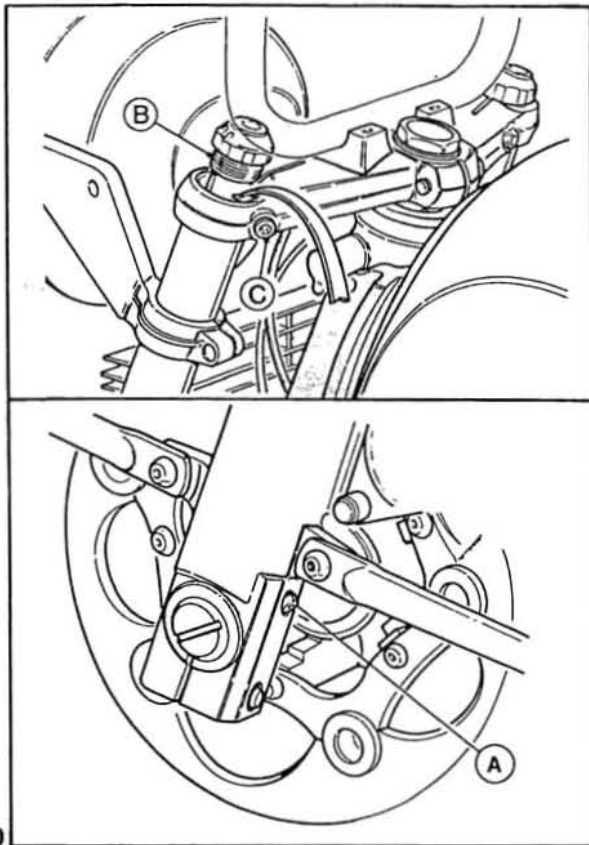
- Stroke 140 mm.
- Sleeve inner diameter:
40.010 ÷ 40.050 mm.
- Fork legs outer diameter:
39.975 ÷ 39.950 mm.



348



349

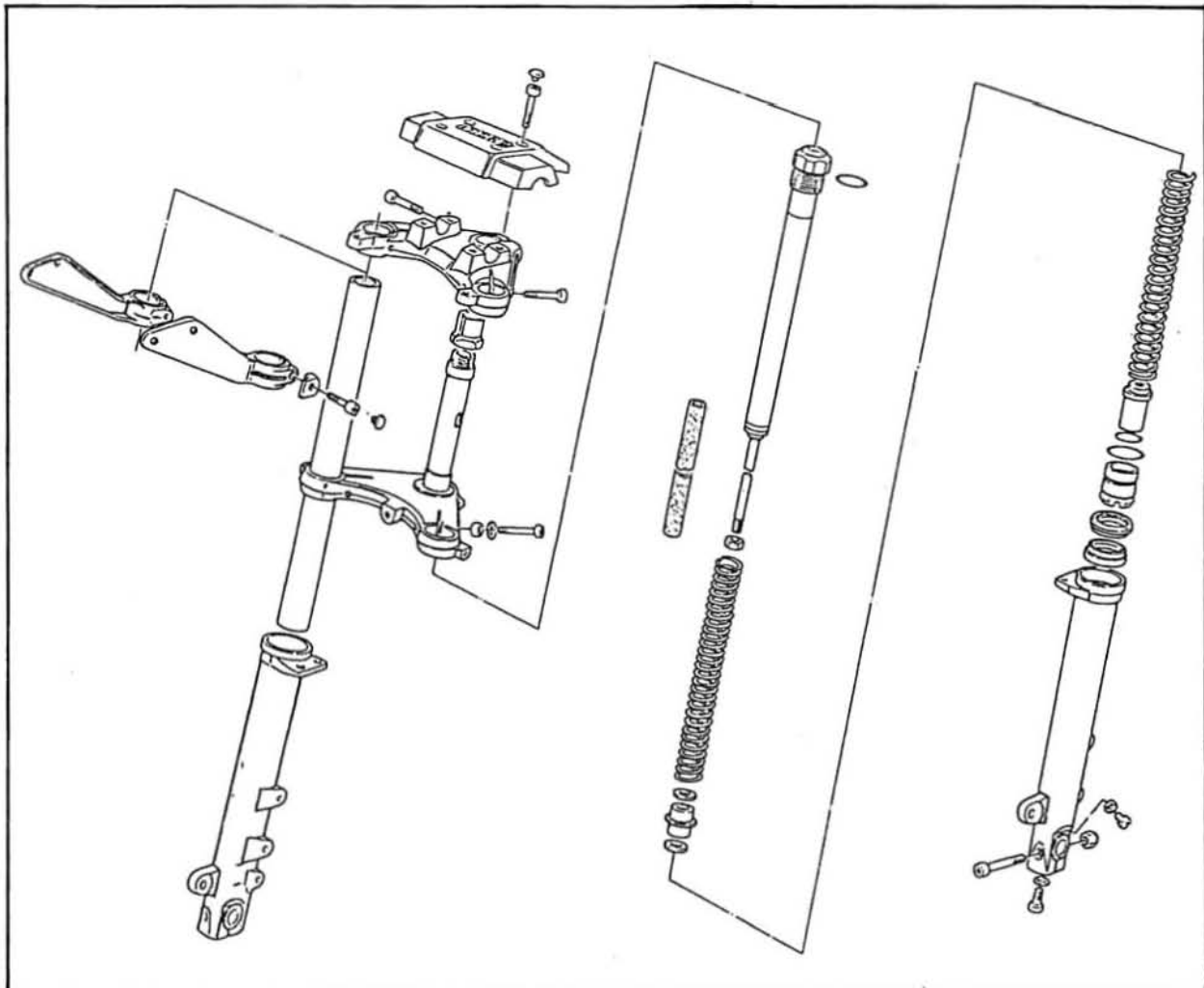


350

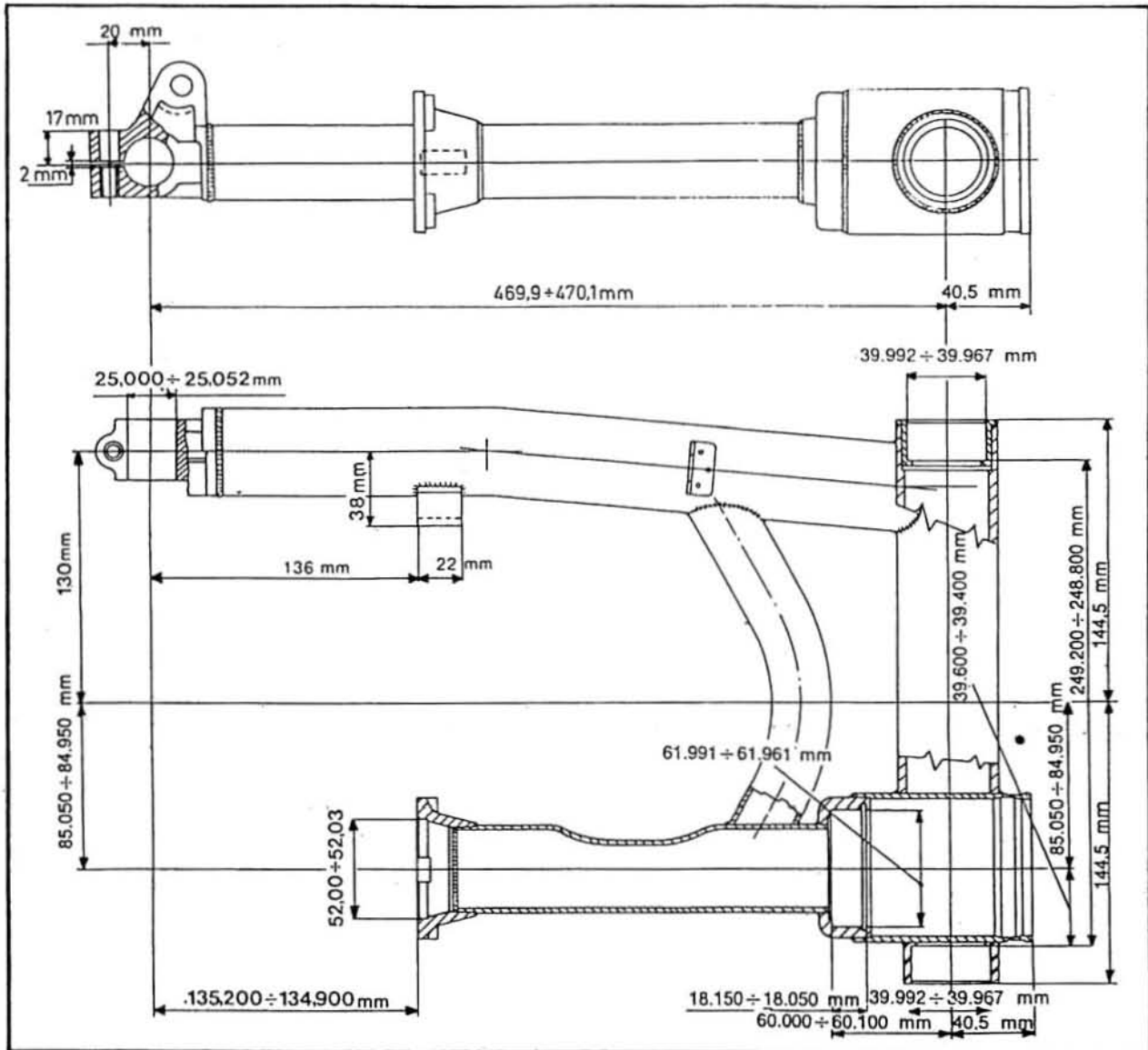
21.2 FRONT FORK LEGS LUBRICATION (fig. 350).

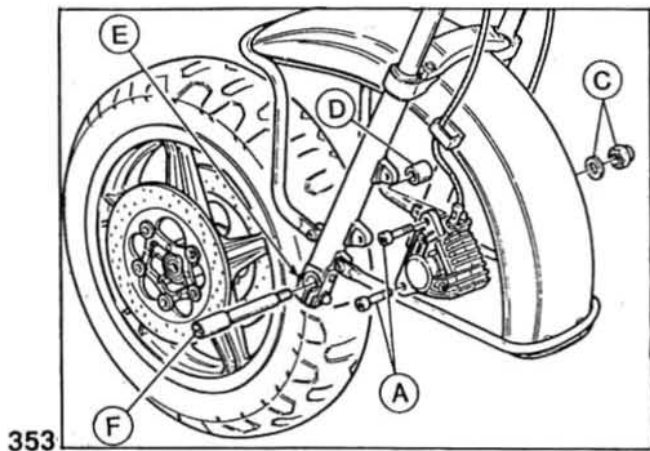
To replace the oil in the front fork legs, proceed as follows:

- the vehicle placed on the central stand, remove the handlebar fixing plate and the instrument panel fixed to the same;
- loosen the side scrow «C» locking the steering head to the fork leg;
- unscrew the upper plug «B»; then undo drain plug «A»;
- slightly press down the front side of the bike to force out the plug «B» which is solid to the shock absorber body;
- refit plug «A» and fill with the quantity of fluid prescribed (cc 150 «Agip ATF Dexron» type) through the space existing between the inner diameter of the fork leg and the shock absorber body;
- after having lifted the front side of the bike, refit plug «B» and lock the side scrow again. Repeat the same operations for the other fork leg.



351





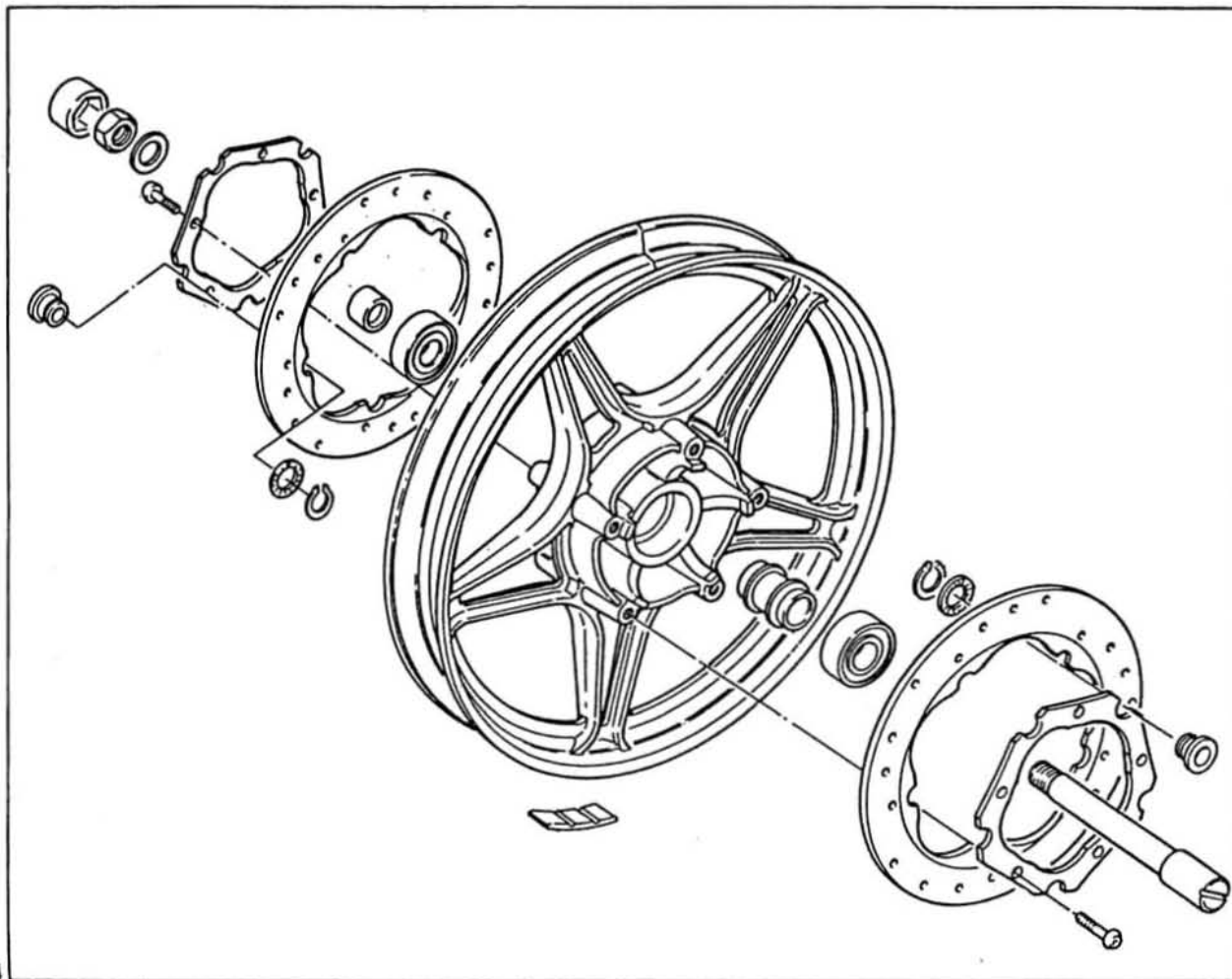
353

23 WHEELS

23.1 FRONT WHEEL (fig. 353).

To remove the front wheel from the vehicle, proceed as follows:

- set the vehicle up on the central stand, place a support under the engine block to keep the front wheel up from the ground;
- undo screws «A» securing the calipers to the fork legs and remove calipers together with their pipes from same;
- undo spindle wheel securing nut «C» on the L.H. side;
- undo screws «E» securing the fork tubes to wheel spindle;
- withdraw spindle «F» paying attention to the mounting position of spacers «D» and remove the wheel;
- the reassembly operation is a reversal of the dismantling one. Pay attention to the correct position of spacers; then operate different times the brake controls to re-set caliper pistons in their normal position.



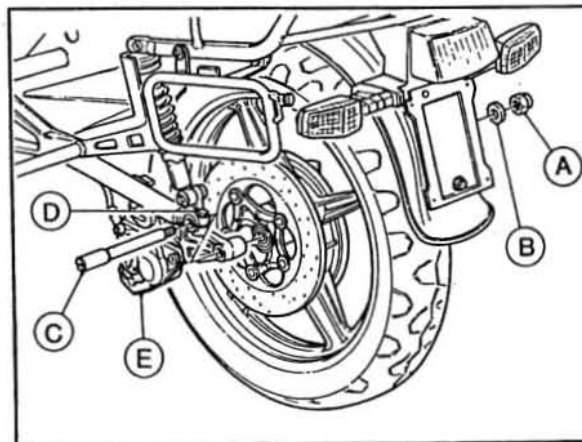
354

23.3 REAR WHEEL (fig. 355).

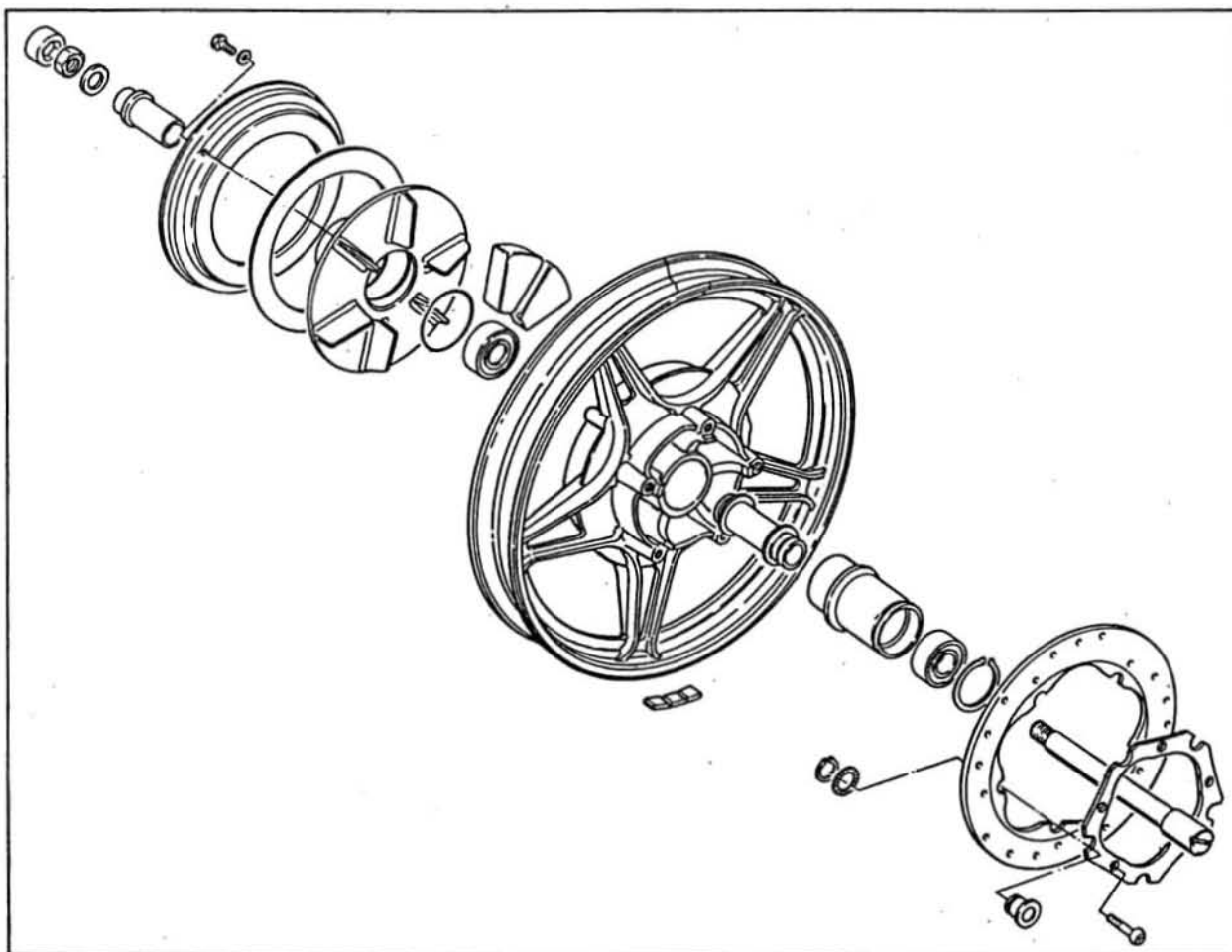
To remove the rear wheel from the swing arm and the drive box, proceed as follows:

- set up the bike on the central stand;
- remove the L.H. silencer;
- undo nut «A» with washer «B» on the spindle, rear drive box side;
- loosen spindle locking screw «D» on fork arm;
- withdraw spindle «C» from the drive box, the hub and the swing arm;
- withdraw the plate group with fitted the «E» caliper; from the stop spindle on the fork, fixing the same group to the frame;
- lean the vehicle to the right just enough to allow the wheel to be withdrawn from the rear fork arm and the rear drive box.

To reassemble the wheel, reverse the dismantling sequence paying attention to insert the plate complete with caliper on the stop of the swing fork left arm.



355



356

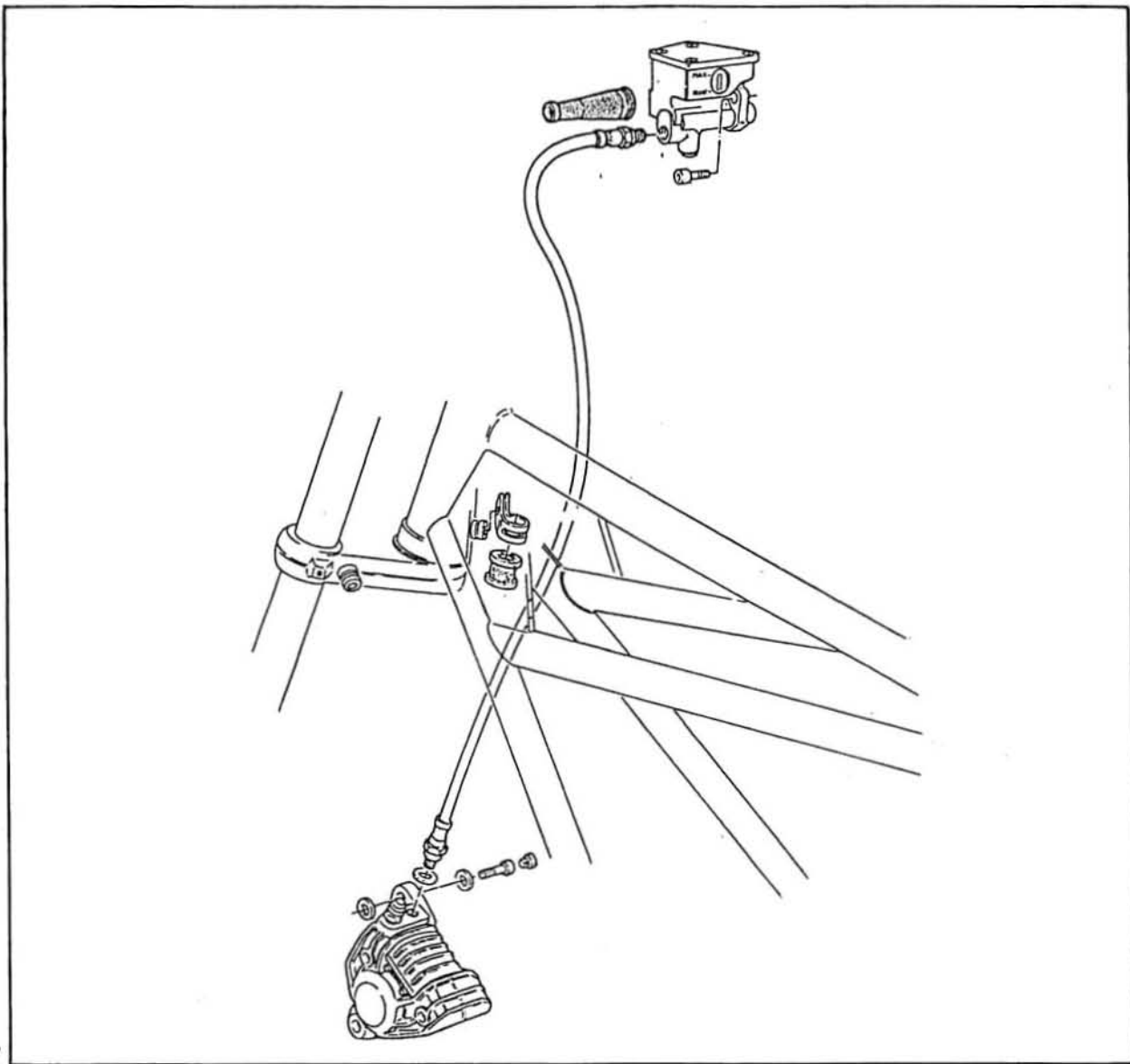
23.5 TYRES

Recommended pressures are:

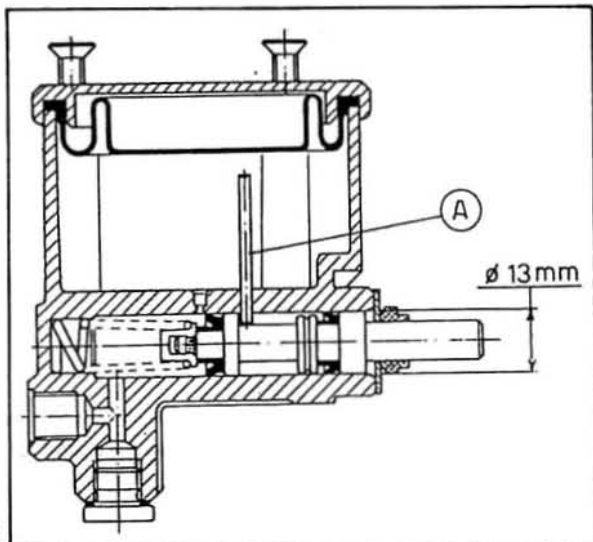
- front wheel: with pilot only and with pillion too: 2,2 BAR;
- rear wheel: with pilot only: 2,4 BAR; with pillion too: 2,8 BAR.

Above figures are for normal riding (cruising speed). When using the motorcycle at constant high speed or on highways, it is recommended to increase the pressure by 0.1 BAR.

23.11 RIGHT FRONT BRAKE CONTROL MASTER CYLINDER



357

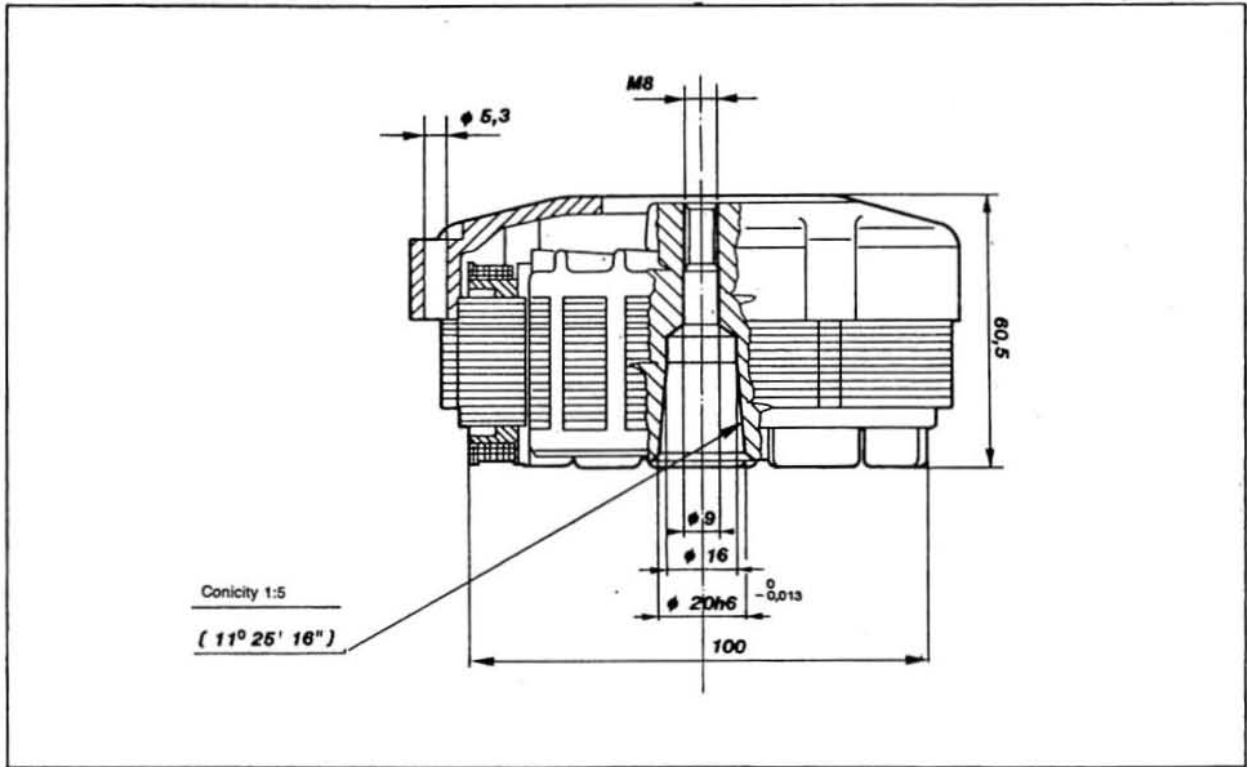


358

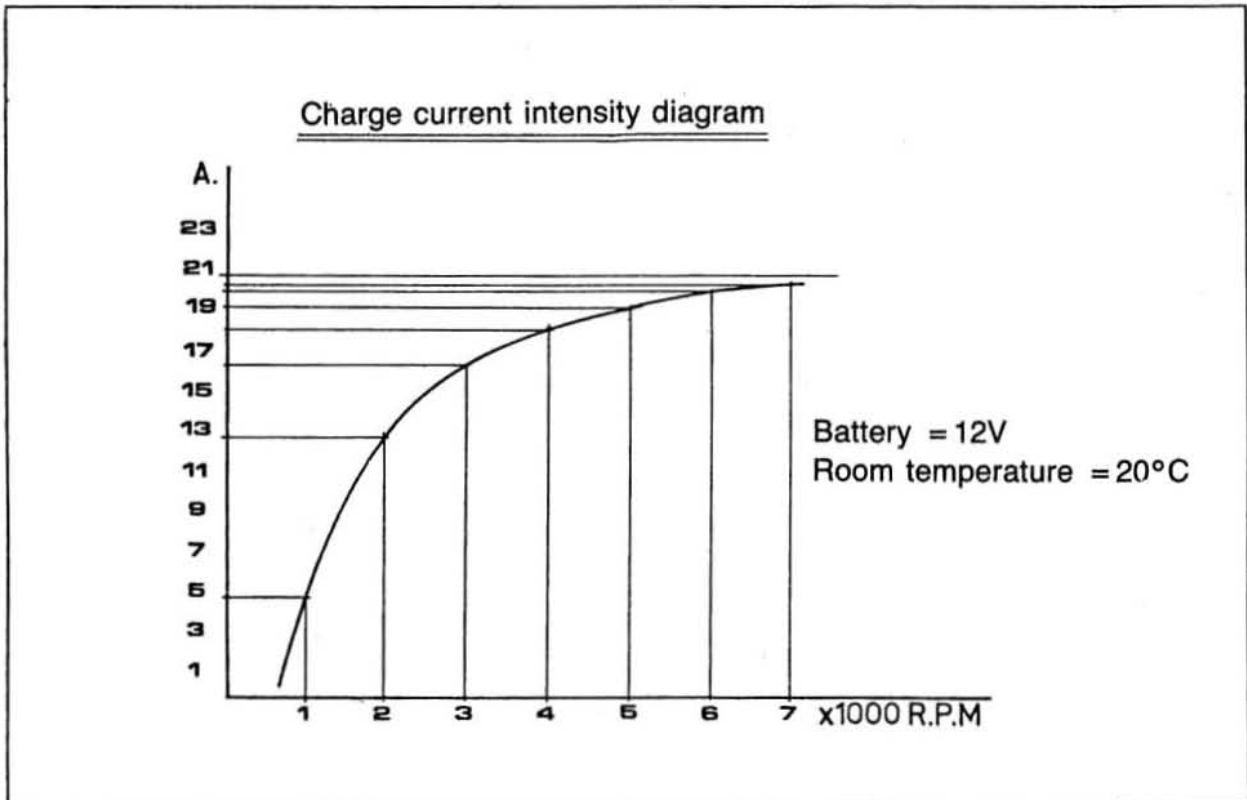
For the floating overhaul, in order to make reassembly of master cylinder easier, insert a pin «A» 2 mm dia. to lock the floating as shown in the drawing (fig. 358). Before filling the tank with fluid, remove the pin.

24 ELECTRICAL APPARATUS

24.2 ALTERNATOR-GENERATOR (SAPRISA)



359

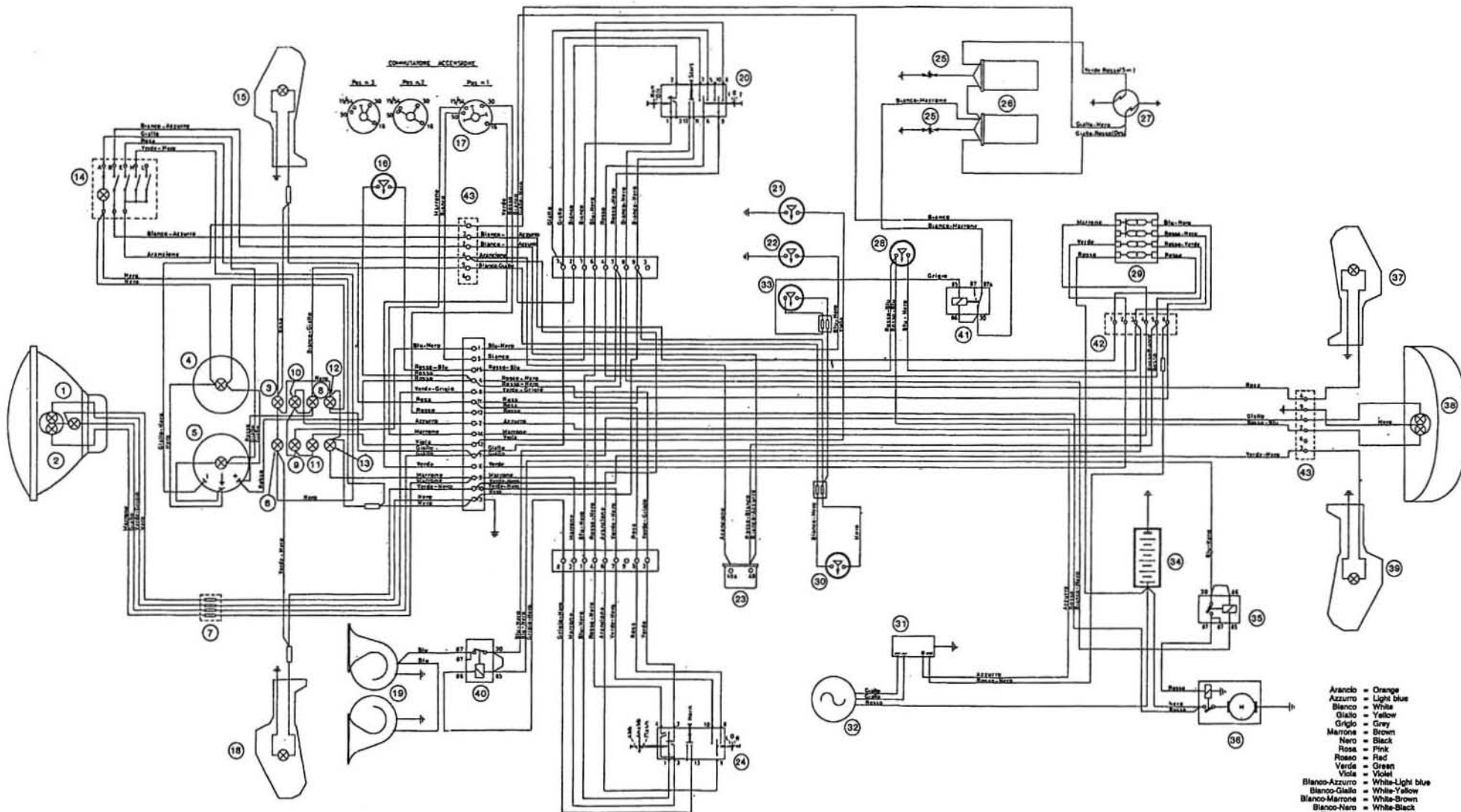


360

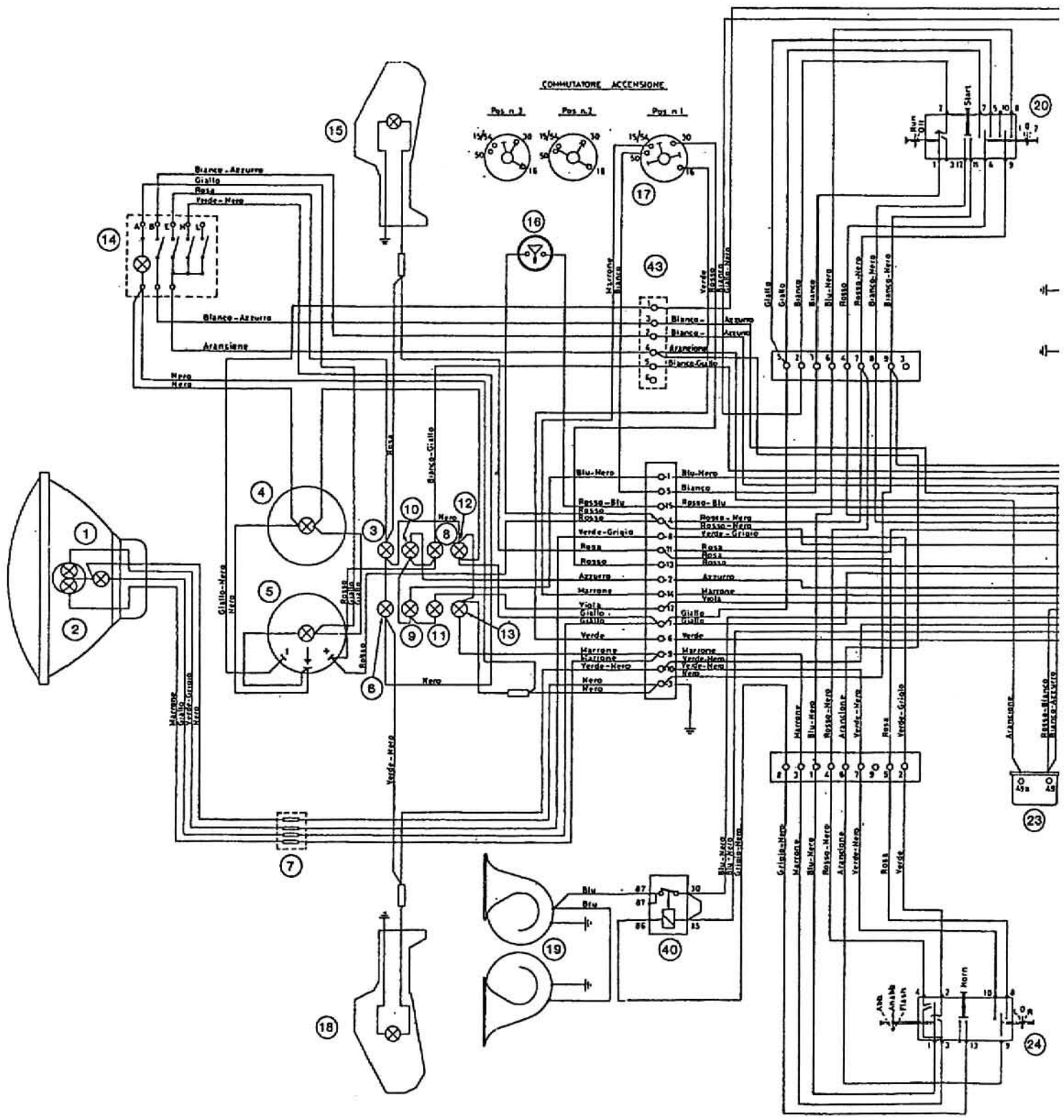
25 ELECTRIC SYSTEM SCHEME

25.1 Key to wiring diagram.

- 1** Bulb, main/dipped beam 60/55 W
- 2** Bulb, front sidelights 4 W
- 3** Bulb, r/h direction indicator warning light.
- 4** Bulb, speedometer light
- 5** Bulb, rev. counter light
- 6** Bulb, l/h direction indicator warning light.
- 7** Connector, 4-way Molex
- 8** Bulb, fuel level warning light
- 9** Bulb, oil pressure warning light
- 10** Bulb, generator warning light
- 11** Bulb, neutral warning light
- 12** Bulb, sidelight warning light
- 13** Bulb, main beam warning light
- 14** Flasher switch
- 15** R/H front direction indicator
- 16** Front brake stop switch
- 17** Starter switch
- 18** L/H front direction indicator
- 19** Two-note horn
- 20** Control switch: start/stop engine, lights
- 21** Neutral switch
- 22** Oil pressure switch
- 23** Blinker unit (12 V - 46 W)
- 24** Control switch: lights-horn-direction indicators
- 25** Spark plugs
- 26** H.T. coil
- 27** Contact breaker
- 28** Rear brake stop switch
- 29** Fuse terminal board
- 30** Low fuel level warning sensor
- 31** Voltage regulator
- 32** Alternator 14 V - 20 A
- 33** Side stand microswitch
- 34** Battery 12 V - 24 Ah
- 35** Starter solenoid
- 36** Starter motor
- 37** R/H rear direction indicator
- 38** Bulb, number plate and stop light
- 39** L/H rear direction indicator
- 40** Two-note horn switch
- 41** Solenoid for side stand.
- 42** Connector, 6-way AMP
- 43** Connector, 6-way Molex

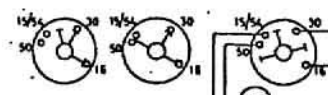


- | | | |
|----------------|---|------------------|
| Aranzo | = | Orange |
| Azzurro | = | Light blue |
| Bianco | = | White |
| Giallo | = | Yellow |
| Grigio | = | Grey |
| Marrone | = | Brown |
| Nero | = | Black |
| Rosa | = | Pink |
| Rosao | = | Red |
| Verde | = | Green |
| Viola | = | Violet |
| Bianco-Azzurro | = | White-Light blue |
| Bianco-Giallo | = | White-Yellow |
| Bianco-Marrone | = | White-Brown |
| Bianco-Nero | = | White-Black |
| Bianco-Verde | = | White-Green |
| Giallo-Nero | = | Yellow-Black |
| Nero-Grigio | = | Black-Grey |
| Rosao-Bianco | = | Red-White |
| Rosao-Blu | = | Red-Blue |
| Rosao-Giallo | = | Red-Yellow |
| Rosao-Nero | = | Red-Black |
| Rosao-Verde | = | Red-Green |
| Verde-Grigio | = | Green-Grey |
| Verde-Nero | = | Green-Black |



COMMUTATORE ACCENSIONE

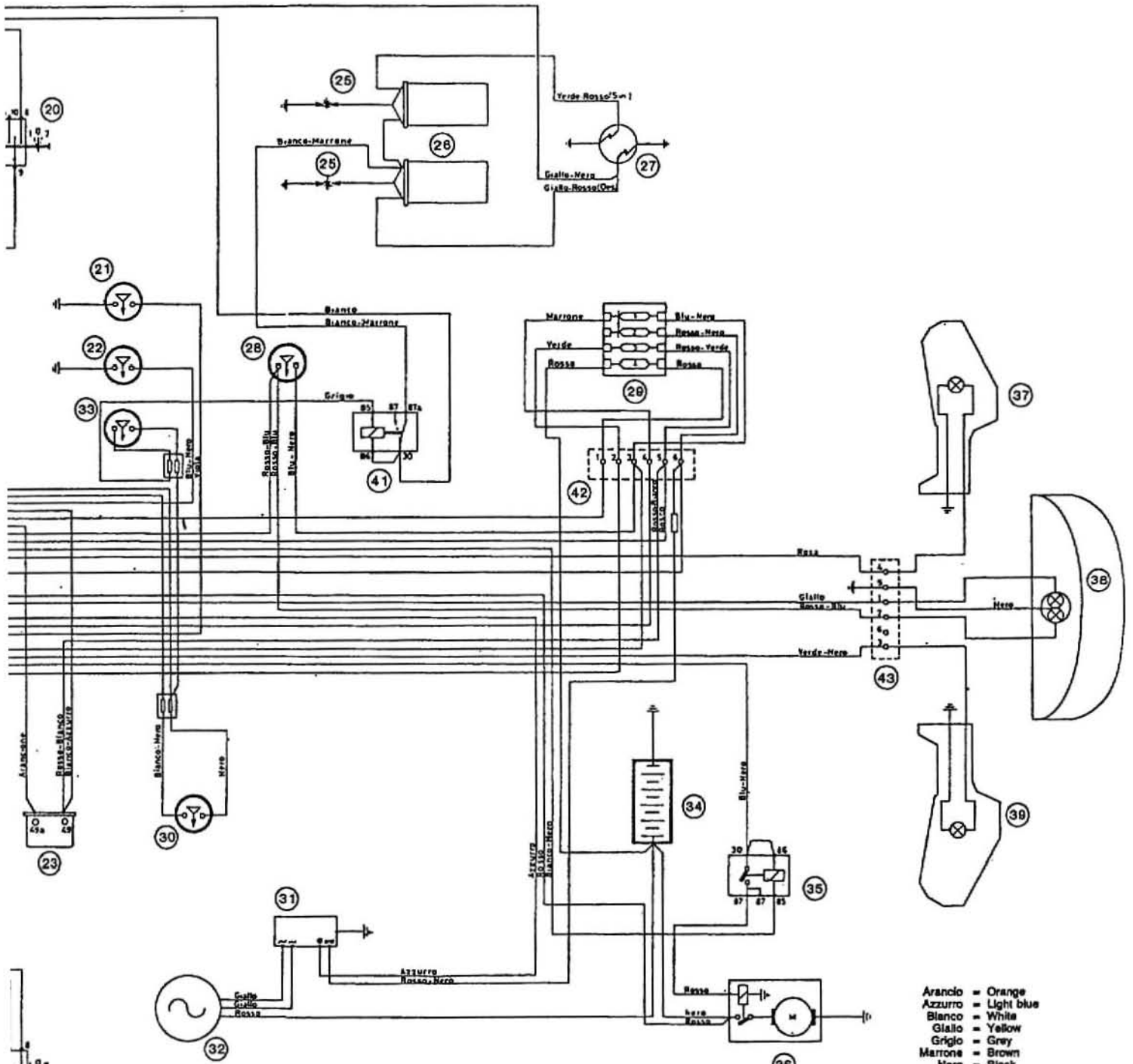
Pos. n. 3 Pos. n. 2 Pos. n. 1



- Blu-Merco
- Rosso-Blu
- Rosso
- Verde-Grigio
- Rossa
- Rossio
- Azzurro
- Marrone
- Viola
- Verde
- Marrone
- Verde-Merco
- Merco
- Merco
- Blu-Merco
- Bianco
- Rosso-Blu
- Rosso-Merco
- Rosso-Merco
- Verde-Grigio
- Rossa
- Rossio
- Azzurro
- Marrone
- Viola
- Grigio
- Giallo
- Verde
- Marrone
- Verde-Merco
- Merco
- Merco

- Grigio-Bianco
- Marrone
- Blu-Merco
- Rosso-Merco
- Azzurro
- Verde-Merco
- Rossa
- Verde-Grigio





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

