

# CLUTCH

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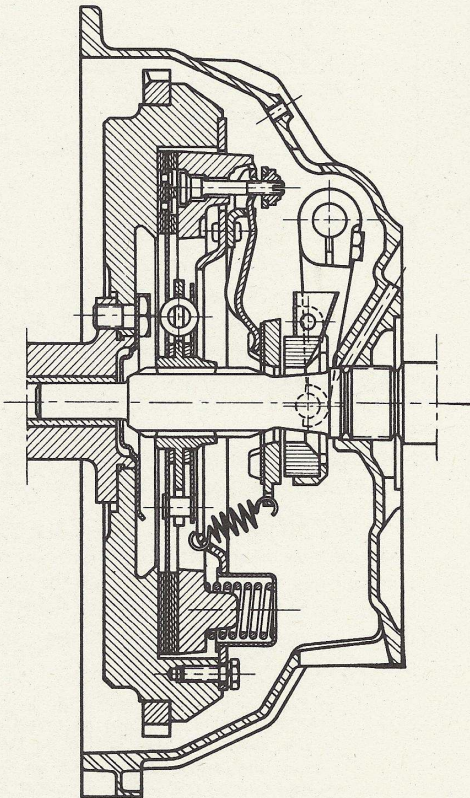
## DESCRIPTION

The clutch used on the Peugeot 404 U. S. model is a PKSC single plate, dry disc type made by Ferodo.

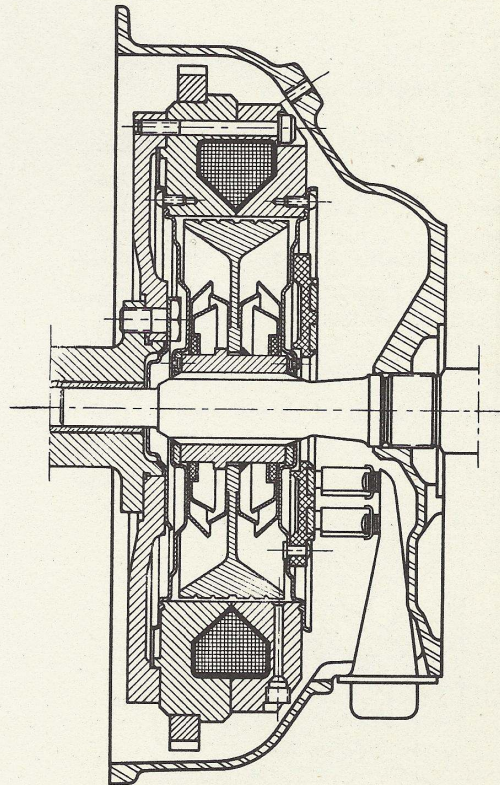
The 404 French model features as optional equipment a Jaeger electro-magnetic clutch. Both types of clutch are enclosed in housings made of strong ribbed aluminum.

Although the electro-magnetic clutch is not available on the U. S. model, it is presented here as a reference for those units purchased in other countries.

CONVENTIONAL TYPE CLUTCH



ELECTRO-MAGNETIC CLUTCH



## CLUTCH

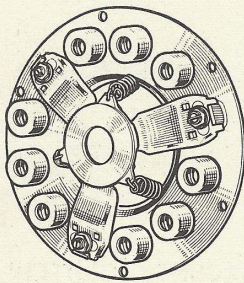
## SINGLE PLATE, DRY DISC TYPE

**TECHNICAL DATA**

The type PKSC 14 clutch has a nominal torque rating of 102 pound feet.

**PRESSURE PLATE**

The pressure plate has three sets of 3 springs of different colors: white, red and green. Each spring of the same color is spaced at 120° around the pressure plate.

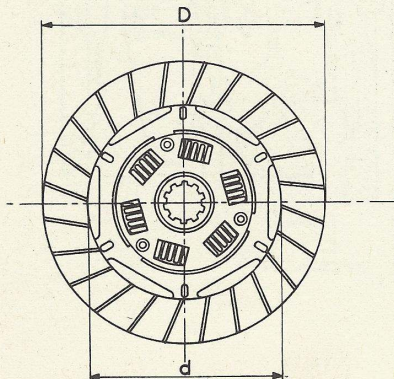
**SPRING SPECIFICATIONS:**

Color	Height	Under Load Of
Red	1.169"	97 to 102 lbs
White	1.169"	114 to 122 lbs
Green	1.169"	141 to 151 lbs

The average tension of the complete pressure plate is 990 lbs.

**DISC**

The overall diameter of the disc is: (D) 8.464". The inside diameter (d) of the linings is 5.708".



On the early model, up to Serial #4104575, the thickness (E) of the disc is .354"  $\pm .020$ , the thickness of lining support plate is .050".

On the later model, starting with Serial #4104576, the thickness (E) of the disc is .0338"  $\pm .002$ . The thickness of lining support plate is .040".

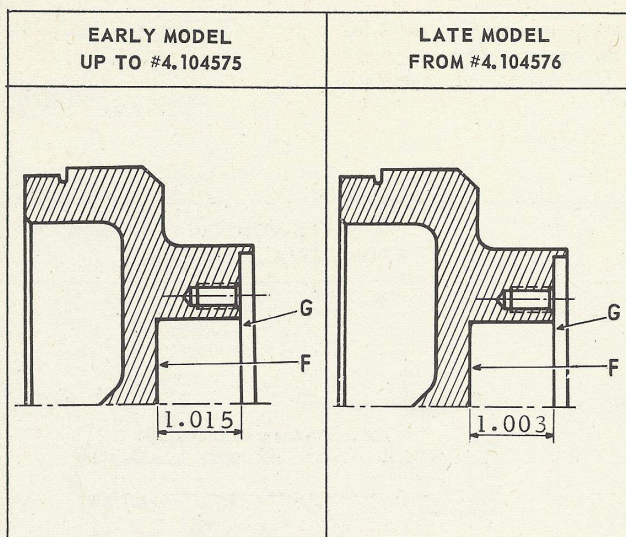
EARLY MODEL UP TO #4.104575	LATE MODEL FROM #4.104576

**FLYWHEEL**

During a repair following excessive lining wear, the face (F) of the flywheel may be found scored. If this is the case, it will be necessary to true-up the surface (F) on a lathe. It is mandatory that an equal amount be turned off the first shoulder (G) in order that the measurement between surfaces F and G remains the same. A different depth would alter the tension of the pressure plate springs.

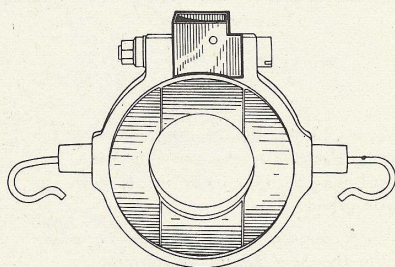
The measurement between the flywheel face (F) and first shoulder (G) on the early model, up to Serial #4104575, is: 1.015" — the measurement on later model, from #4104576, is: 1.003".

**NOTE:** The later model disc can be installed in the early flywheel but in no case should the early model disc be installed in a later flywheel.



### THROW-OUT BEARING

The throw-out bearing holder, previously made of aluminum alloy, is made of cast iron, since Serial #4069061. They are interchangeable. The graphite throw-out bearing is used. An oil cup providing lubrication to the bearing is secured to the upper part. Every 2,000 miles, insert a few drops of engine oil in the cup located at the top of the clutch housing.

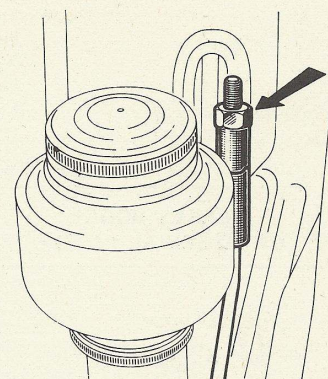


## MAINTENANCE AND ADJUSTMENT

### CLUTCH ADJUSTMENT

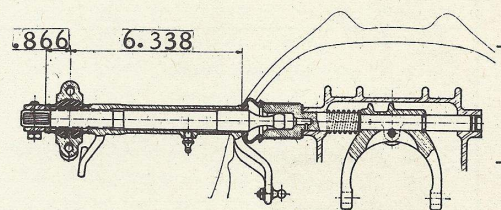
Clutch pedal free travel should be set to  $\frac{3}{4}$  inch. To reduce the free travel, turn clockwise the brass nut located behind the master cylinder reservoir.

**NOTE:** Make this check by hand rather than by foot, for a more accurate feel of the free travel.



### CLUTCH CONTROL ADJUSTMENT

Adjust the clutch control according to the measurements shown on sketch. The conical washer must bear securely against the rubber protecting pad, as well as against the shoulder of the shaft.



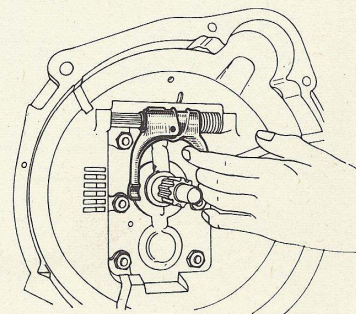
### REMOVAL OF CLUTCH MECHANISM FORK

Remove the clamp bolt from the fork.

Compress backing spring by sliding the fork in order to free the snap ring.

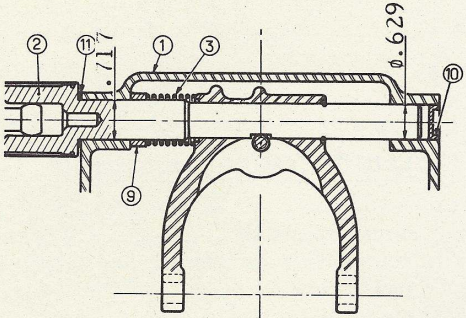
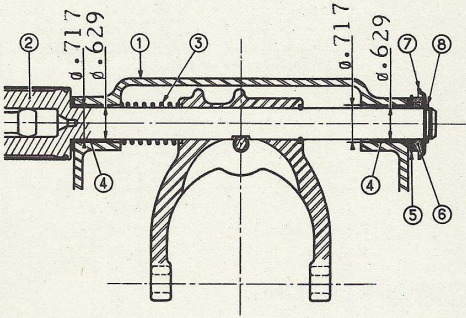
Remove the snap ring and release the fork.

Remove shaft.



## CLUTCH

NOTE: Starting with Serial #4157275, two nylon bushings (4) are installed in the clutch housing. This modification requires a longer shaft.

EARLY MODEL UP TO SERIAL #4.157274	LATE MODEL FROM SERIAL #4.157275
	
<ol style="list-style-type: none"> <li>1. Clutch housing</li> <li>2. Shaft</li> <li>3. Spring</li> <li>4. Nylon Bushing</li> <li>5. Stop washer</li> <li>6. Rubber ring</li> </ol>	<ol style="list-style-type: none"> <li>7. Cover washer</li> <li>8. Snap ring</li> <li>9. Spacer (Between Serial #4124559 and Serial #4157275)</li> <li>10. Plug</li> <li>11. Thrust washer</li> </ol>

**REMOVAL OF THE CLUTCH ASSEMBLY**

Remove the transmission. Refer to Page 3-3.

Mark the position of the pressure plate on the engine flywheel before removing to re-install the pressure plate in the same position.

NOTE: Before installing the clutch, coat the centering bushing in the crankshaft and the splines of the input shaft with graphite grease.

The bolts securing the pressure plate onto the flywheel should be torqued to 14 ft. lbs.

**ELECTRO-MAGNETIC TYPE:****TECHNICAL DATA**

The coupler assembly, replacing the conventional clutch, is secured on a special engine flywheel. The engine flywheel and the coupler are matched and balanced.

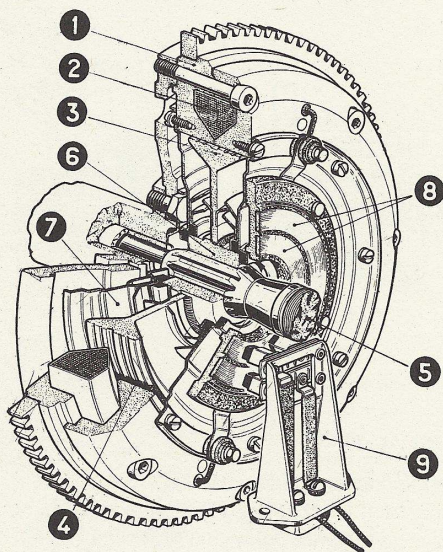
a) The fixed armature:

The fixed armature, secured to the flywheel, includes:

- an electro-magnetic coil
- a front cover
- a rear cover fitted with a double commutator
- a starter ring gear

b) The moving armature:

The moving armature is located inside the fixed armature and splined to the transmission input shaft.



- 1 - Electro-magnet
- 2 - Coil
- 3 - Moving armature
- 4 - Metallic powder
- 5 - Transmission input shaft
- 6 - Splined hub
- 7 - Front cover
- 8 - Rear cover with double commutator
- 9 - Brush holder

The gap between the two armatures is filled with an accurate amount of metallic powder.

The electrical system which controls the energizing of the electro-magnet, causes the fluidity of the metallic powder to vary and insures progressive clutching.

Amperage drawn at 12 volts: 5 to 5.5 amps.

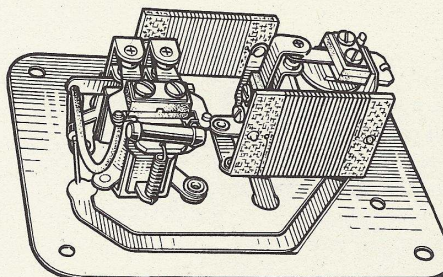
Maximum torque: 102 pound-feet.

Metallic powder capacity: 115 grams (4.05 oz), available from the Parts Department in a red plastic bag.

**COREL**

"Corel" is a trade name for the control box secured on the left front inner panel. It includes:

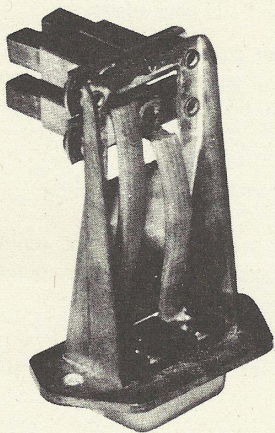
- a) .25 Microfarad condensor
- b) 250 OHM Resistor, protecting the condensor.
- c) Relay "R1" controlled by the "Governor" provides power supply to the coupler from generator or battery.
- d) Relay "R2" controlled by the gear shift lever switch provides unclutching of the coupler.
- e) 7.5 OHM Resistor. For idling speed. It is one of the items providing progressive action of the clutch.
- f) 2.5 OHM Economy Resistor.
- g) 170 OHM Resistor. It controls the demagnetization of the powder when the clutch is disengaged.



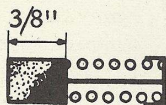
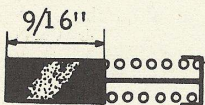
## CLUTCH

**SUBAL:**

This is a trade name for the brush holder secured on the lower part of the clutch housing. It holds the brushes providing power supply to the coupler.

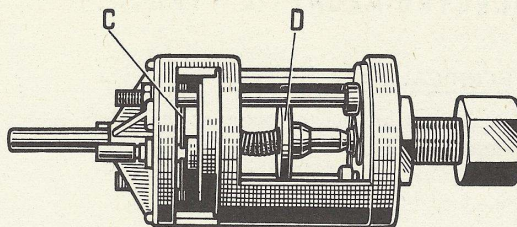


The brush holder should be checked and cleaned every 10,000 miles. The minimum length of the brushes is 3/8 inch.

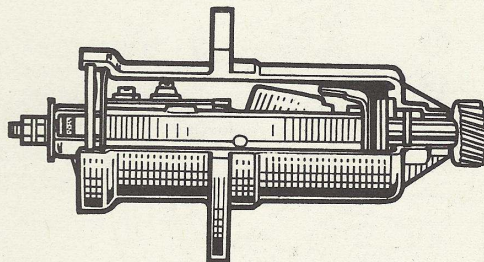
**CONAC**

This is a trade name for the double switch secured on the fire wall and controlled by the accelerator cable. This double switch controls the idling resistor and the economy resistor according to the position of the accelerator pedal.

A free play of 1/4 inch should be kept between the accelerator cable housing stop and its seat on the carburetor.

**GOVERNOR**

The governor is a centrifugal switch attached to the transmission and driven by the main shaft. Its duty is to supply power to the coupler through the Relay R1, according to the speed of the automobile. Below a vehicle speed of 15 m.p.h., the power is obtained from the third brush of the generator. Above this speed, the power is supplied from the battery.

**TERMINAL STRIP**

The terminal and fuse strip is located on the left front inner panel. The leads should be connected in the following order:

First Terminal: (Toward the front of the car)

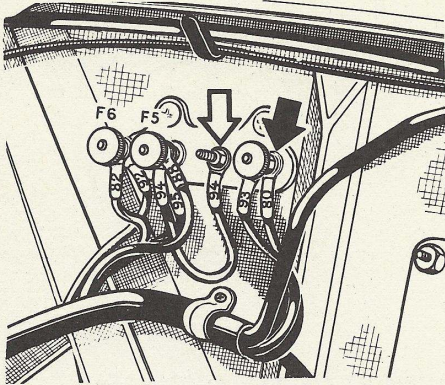
- Lead #80 held by a nut
- Lead #93 held by the plastic knob

2nd Terminal: Lead #94 held by a nut

3rd Terminal: Lead #95 under the fuse 18 amp. Fuse (F5)  
Leads 88 and 94 on top of the fuse

4th Terminal: Lead #92 under the fuse 18 amp. fuse (F6)  
Lead 82 on top of the fuse

If a power supply failure should happen to the coupler, it is possible to provide direct power from the battery to the coupler by connecting #93 to 2nd Terminal.

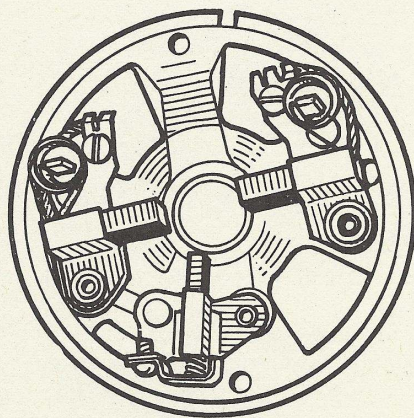


### GENERATOR

Identification: "Ducellier 7229G"

Description:

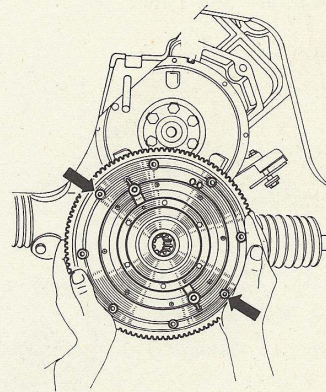
- 3 Brushes - 300 watts
- Cut-out speed: 1200 to 1300 RPM's
- The third brush is used only to supply power to the coupler from 0 to 15 miles an hour and in decreasing speed from 12 to 0 miles an hour.
- Brushes and commutator should be cleaned every 10,000 miles.
- The minimum length of the 3rd brush is  $\frac{1}{2}$  inch.



### MAINTENANCE

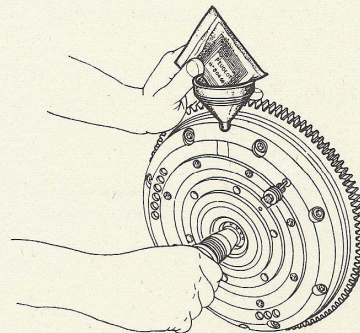
#### REMOVAL OF THE COUPLER

- Disconnect and remove brush holder.
- Remove rear axle and gear box.
- Remove six Allen screws. (Do not remove two Allen screws marked with yellow paint-arrows).
- Remove coupler by gently tapping around with a mallet.
- Remove six bolts securing flywheel.
- Mark the crankshaft and the flywheel before taking them apart.
- Remove the flywheel matched with the coupler.



#### INSTALLATION OF THE POWDER IN A NEW COUPLER

- Remove Allen type plug.
- Hold coupler vertically.
- Pour a full bag of powder using a plastic funnel. In order to evenly distribute powder, while pouring, rotate the moving armature.
- Clean thread and replace plug.

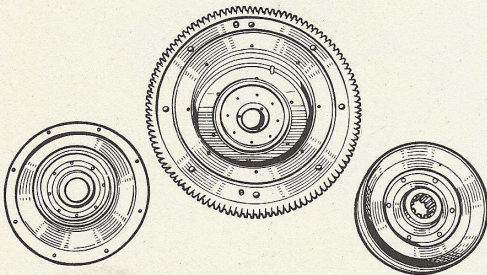


## CLUTCH

**REPLACEMENT OF POWDER FROM AN OLD COUPLER**

- From the flywheel side, unscrew 8 crosspoint screws and remove side cover.
- Remove moving armature. Using a dry and clean paint brush sweep powder out of inside part of coupler and side covers.
- Install moving armature and side cover secured with 8 screws.
- Install powder as explained above.

**NOTE:** Coupler filled with powder should always be kept vertically.

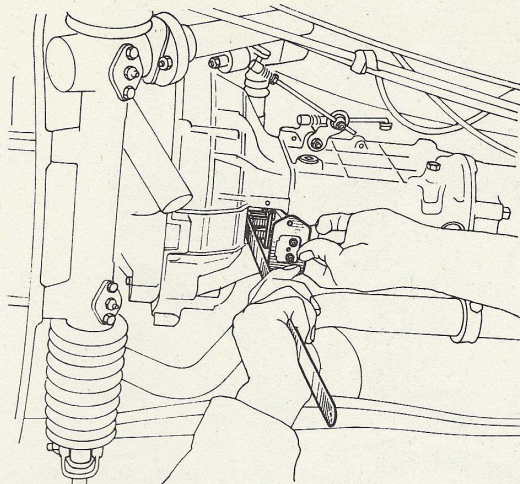
**INSTALLATION OF THE COUPLER**

Install flywheel matched with the coupler according to the marks made at the time of removal. Replace the locking plate with the 6 bolts. Torque bolts to 45 ft. lbs. and lock.

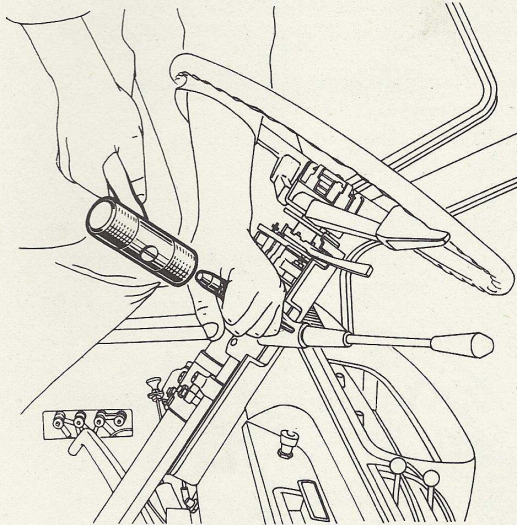
- Install the coupler onto the flywheel.
- Smear the splines of the input shaft with lubriplate.
- Install the transmission.
- Install the brush-holder.

**NOTE:** While installing the brush-holder, use a thin blade to press brushes into their holder.

- Connect the wires.

**REPLACEMENT OF THE POGEL GEAR SHIFT LEVER SWITCH**

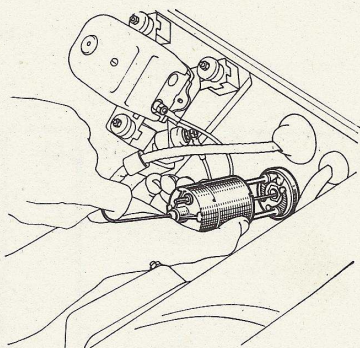
- Remove the horn switch and the lower steering column cover.
- With a  $\frac{1}{4}$ " bit, drill the clevis pin from the gear shift lever shaft, and remove the shaft.
- Disconnect the wire and remove the clamp.
- Remove the switch and its bushing.

**TO INSTALL**

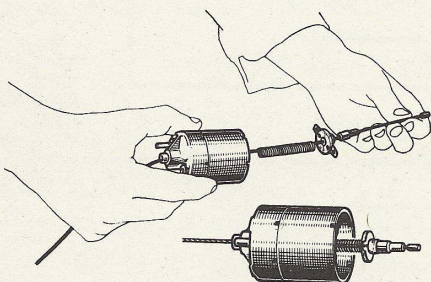
- Coat the ball joint of the lever with grease.
- Install a new shaft clevis pin.
- Proceed in the reverse order of removal.

**REPLACEMENT OF THE ACCELERATOR CABLE**

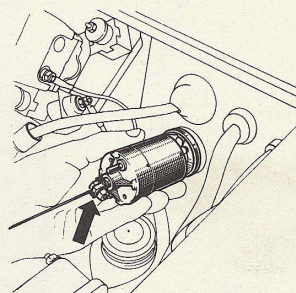
- Disconnect the cable from accelerator pedal, and from the carburetor.
- Remove the plastic cable housing.
- Disconnect the wires from the switch.
- Remove the nuts from the terminal studs. Do not remove rubber washers.
- Holding the center part, remove the switch and the cable together.



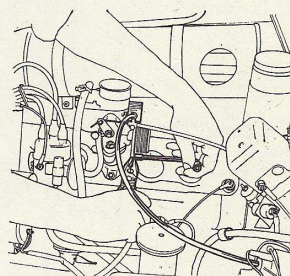
- Install the new cable, the spring, and the contact as shown.



- Pull the cable through the housing, compressing the spring, until the contact bottoms. Lock the cable in this position with a bolt and nut (arrow). (Do not squeeze cable.)
- Install washers and assembly nuts.
- Remove the bolt holding the cable.
- Reconnect the wires.
- Reconnect the cable to the accelerator pedal.
- Install a new cable housing after applying a small amount of lubriplate to the cable.



- Connect the cable to the carburetor leaving  $\frac{1}{4}$  inch space between the housing stop and its seat on the carburetor.



# **ELECTRO-MAGNETIC CLUTCH** **WIRING DIAGRAM**

