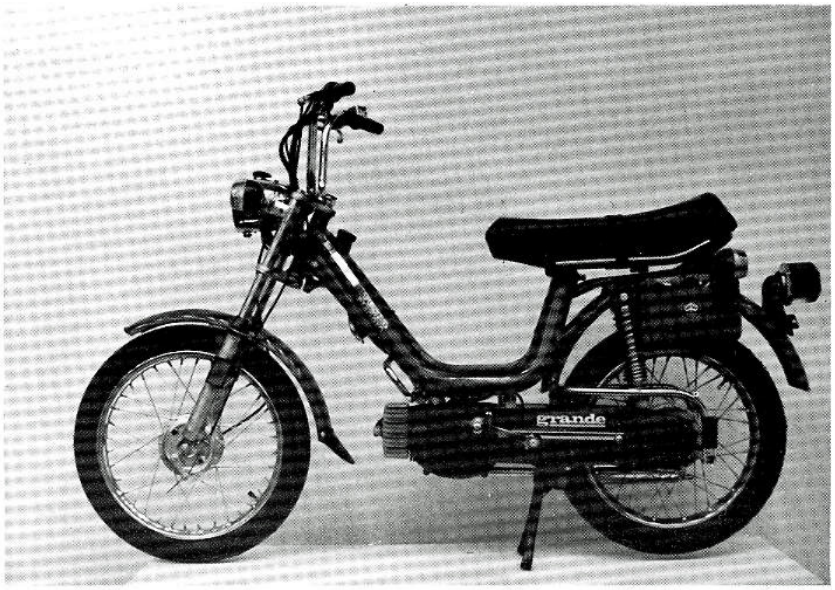
vespa of america corporation
PIAGGIO GROUP


# Assembly and Preparation Manual

## Vespa Moped:

## grande


■ 048




■ 048/B

# SAFETY

***SAFETY AWARENESS SYMBOLS*** are inserted in this manual to alert you to possible **SAFETY HAZARDS.**Whenever you see these symbols, WARNING or CAUTION **HEED THEIR INSTRUCTIONS!**

## *SAFETY AWARENESS SYMBOLS AND MEANINGS*

WARNING This WARNING symbol identifies special instructions or procedures which, if not correctly followed, could result in personal injury OR loss of life.

CAUTION This **CAUTION** symbol identifies special instructions or procedures which, if not strictly observed, could result in damage TO/OR destruction of equipment.

## NOTICE TO DEALERS

This manual is provided to ensure that the scooter/moped is assembled correctly and given adequate presale preparation. Your customer expects and should be given a safe, reliable vehicle and performance of the steps listed herein are essential to that end.

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# I. VEHICLE IDENTIFICATION

All Grande mopeds have a prefix that precedes the frame serial number. This prefix corresponds to the following commercial identification.

| | FRAME PREFIX |
|---|---|
| Grande Deluxe | 048 |
| Grande Super Deluxe | 048/B |

Each model of moped will be referred throughout this manual by the corresponding frame prefix.

Vehicle application for each section is indicated by ■ .

# II. UNCRATING

The Grande moped will arrive in the following form:

A. 048; one per box

All Grandes come from the factory partially disassembled and crated in a cardboard container.

Handlebars, cables, and speedometer are the only items that will need assembly. The model equipped with turn signals (/B) will require the battery to be charged (refer to Pg. 7 for proper battery charge methods).

The easiest method for uncrating the Grande, is to split one side of the carton at each corner and fold the side down (see Fig. 1). This will allow for easy access to the bike and all small components needed for assembly.

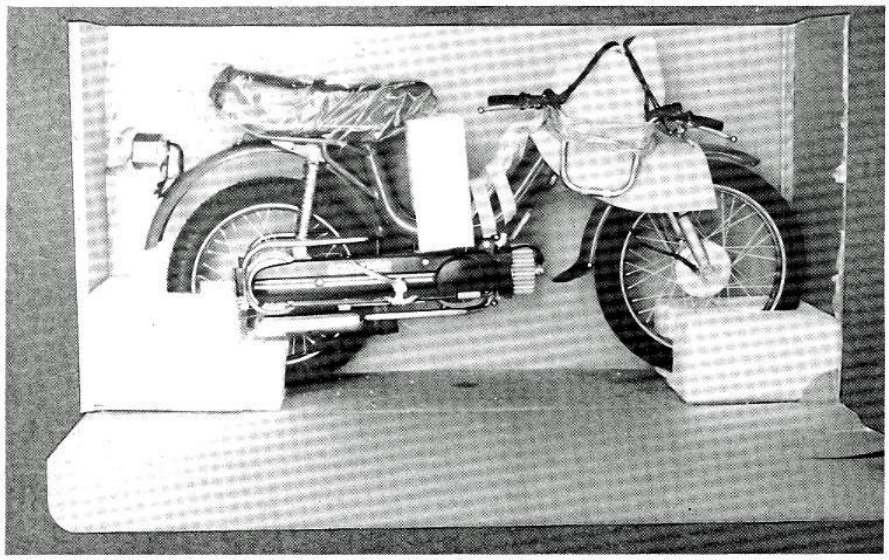


Fig. 1

# III. FRAME AND ENGINE NUMBER LOCATION

■ 048 ■ 048/B

The **frame number** can be found located on the front of the steering column, adjacent to the fork lock. (Fig. 2)

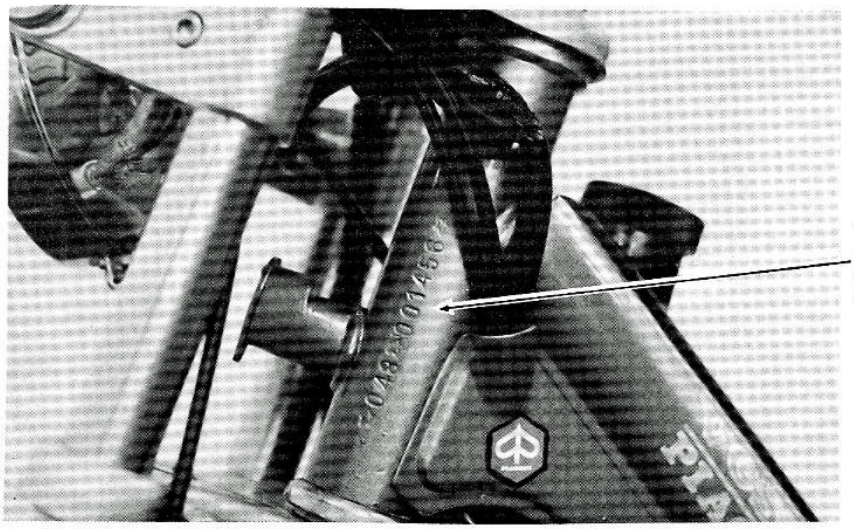



Fig. 2

■ 048 ■ **048/B**

The **engine number** can be found imprinted on the R.H. side (chain drive) of the engine case, adjacent to the cylinder head. (Fig. 3)

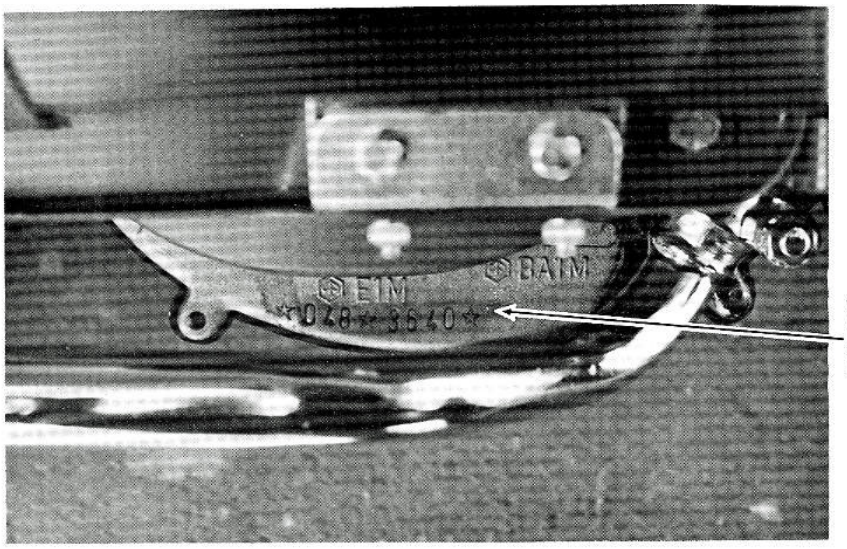



Fig. 3

# IV. ASSEMBLY AND PREPARATION

### *HANDLEBARS*

■ 048 ■ 048/B

After removing all packing material:

Step #1. Insert mounting plate over handlebars.
Step #2. Center handlebars and tighten allen screws with a 5mm allen wrench.
Step #3. Cross tighten screws to ensure even tension on the handlebars. (Fig. 4)

**WARNING** If handlebar securing nuts are not tightened as specified, damage to components or personal injury could result.

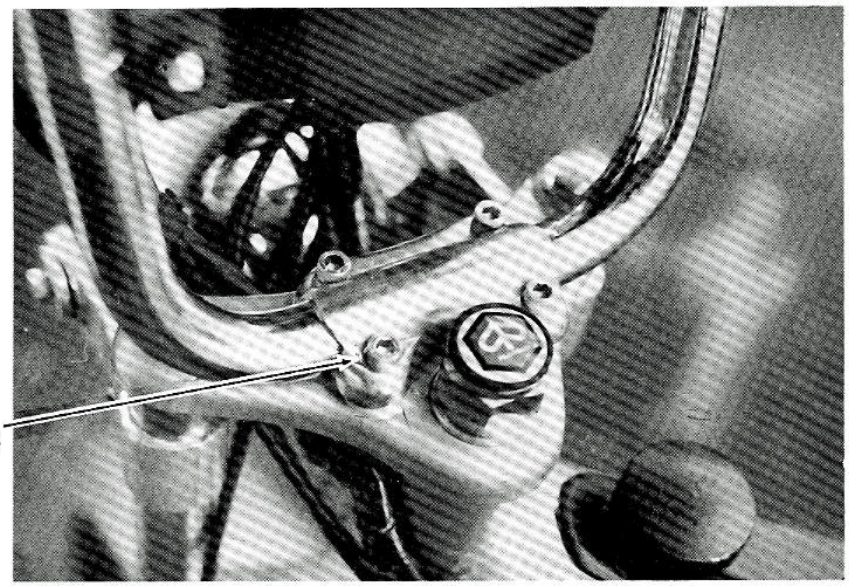



Fig. 4

### *SPEEDOMETER*

■ 048 ■ 048/B

Step #1. Connect speedometer housing to handlebars.
Step #2. Tighten housing to handlebars with a 4 mm allen wrench.
Step #3. Connect speedometer cable to the housing and two wires for the speedometer light.

# IV. ASSEMBLY AND PREPARATION

CONTINUED

### *PEDALS*

■ 048 ■ 048/B

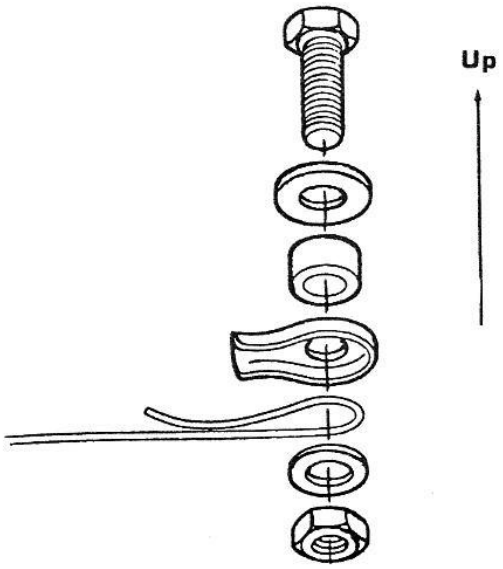
Step #1. Lubricate pedal threads with oil.
Step #2. Insert L.H. threaded pedal on L.H. side crank arm.
Step #3. Insert R.H. threaded pedal on R.H. side crank arm.
Step #4. Tighten well.

### *BRAKE CABLES (FRONT & REAR)*

■ 048 ■ 048/B

Step #1. Check to make sure both ends of cable housing are to their respective abutments.
Step #2. Insert cable end into brake arm connector in correct sequence (see Fig. 5)
Step #3. Adjust and tighten to allow for 6mm free movement of the brake arm.
Step #4. Clip excessive cable.

WARNING Lack of braking ability can result from improper assembly of brake connector.




Proper assembly sequence — Brake Assembly.

Fig. 5

# IV. ASSEMBLY AND PREPARATION

CONTINUED

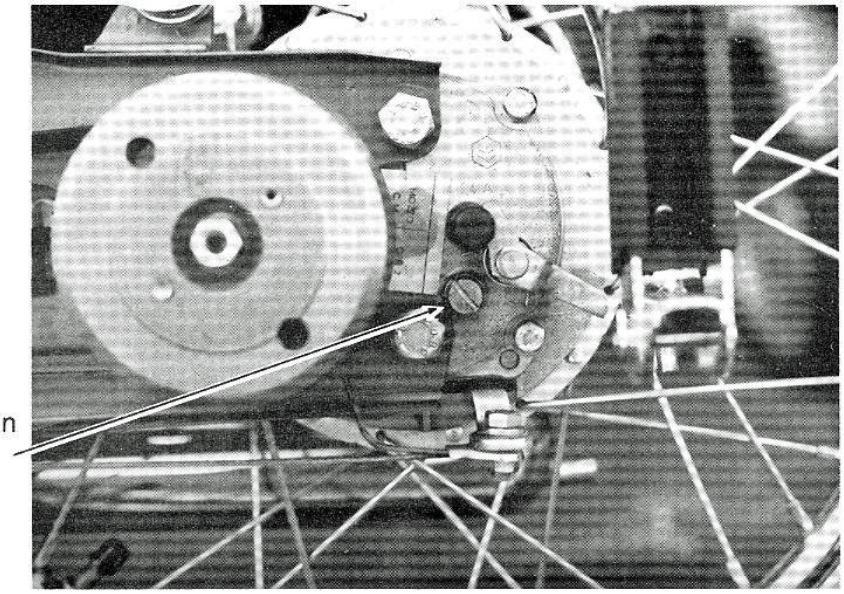
### *REAR HUB OIL LEVEL*

■ 048 ■ 048/B

With moped on center stand, remove from rear hub assembly the oil fill/drain screw (Fig. 6). Proper oil level is even with the oil plug.

NOTE: Recommended oil — 90 wt gear oil

CAUTION Use recommended oil type to eliminate possible rear hub damage.



Rear Hub Oil Fill/Drain Plug

Fig. 6

### *TURN SIGNAL ATTACHMENT*

■ 048 ■ 048/B

All proper electrical connections are previously made at the factory.

Step #1. Slide respective turn signal lamps on the appropriate bracket. Tighten securing screw.

CAUTION Overtightening will result in damage to turn signal lamp assembly.

# IV. ASSEMBLY AND PREPARATION
CONTINUED

### *BATTERY CHARGING*

■ 048 ■ 048/B

Step #1. Fill battery to proper level with electrolite solution and let stand for one hour. If level drops, top off with electrolite solution to required level.
Step #2 Charge battery at charge rate of 1/10 of capacity for a minimum of 8 - 10 hours. (Refer to battery instruction sheet for proper charging period.)
Step #3. If after charge level of electrolite solution has dropped, top off to required level with distilled water.
Step #4. Reinstall battery in vehicle and attach red lead to positive terminal and black lead to negative. Coat terminals with vaseline for protection.

WARNING During charging of battery, hydrogen forms, which can ignite if exposed to any type of flame.

### *PRE-DELIVERY SERVICING*

■ 048 ■ 048/B

PRIOR to delivery the following steps must be taken:

Step #1. Clutch/drive pulley securing nuts — check to verify torque value of 192 in/lbs.
Step #2. Front axle nuts — check to verify torque value of 414 in/lbs.
Step #3. Rear hub securing bolts — check to verify torque value of 390 in/lbs.

CAUTION Failure to verify torque values may result in vehicle and specific component damage.

### *OIL/FUEL RATIO*

All Vespa mopeds require a pre-mix of oil and gasoline at a ratio of 2% (2.6 ounces oil per one gallon of gasoline).

We recommend using "Power Stroke" synthetic 2-cycle oil. This oil is formulated to give minimum piston ring varnish and carbon deposits along with excellent lubrication qualities.

It is recommended that all mixing of gasoline and oil be accomplished in a secondary container. And vehicle fuel tanks should be filled from that source. **Do not mix the oil and gasoline in the vehicle gas tank.**

# IV. ASSEMBLY AND PREPARATION

CONTINUED

### *OIL/FUEL RATIO* Continued

**WARNING**

Gasoline fumes are heavier than air and can become explosive if exposed to a pilot light from a furnace, hot water heater, clothes dryer, etc. Mix fuel and fill the fuel tank only in an area that is well ventilated and free from pilot lights and sparks.

### *ADDITIONAL ITEMS*

Final steps for vehicle set-up:

Step #1. Check vehicle appearance.
Step #2. Check all cables and their adjustments.
Step #3. Check tire pressure (23 psi—front, 26 psi and 32 psi with passenger—rear).
Step #4. Mount mirror on L.H. side.
Step #5. Check for oil cup, Owner's Manual, and tool box.
Step #6. Road test vehicle for performance and handling.

When test riding the vehicle, make the following operational checks:

ENGINE: The engine, once warm, should start easily. There should be good throttle response without any hesitation. Listen for any unusual noises that may need attention (ex: knocking, rattles, etc.).

CABLES: All control cables, throttle, brakes, and compression release, should operate freely and return without binding. Make this check with the steering in all positions.

SWITCHES: Emergency stop switches, key switches, etc., should be checked in both on and off positions.

BRAKES: With the cables adjusted properly, the brakes should give smooth, sure stopping when applied. It may be desirable to readjust the brakes by taking in any slack in the cables, so as not to leave excessive play in the brake levers.

# IV. ASSEMBLY AND PREPARATION

CONTINUED

***ADDITIONAL ITEMS*** Continued

LIGHTS, TURN SIGNALS, HORN: Make sure headlight beam is operational. Check to see that the tail light works and that the stop light is activated by both the front and rear brake levers. Make sure the horn functions properly.

RIDE POSITION: Check the seat and handlebar positions, so that the rider has easy access to all controls, and can assume a safe and comfortable riding position.

CAUTION

Do not maintain full throttle during break-in period, as engine damage may result.

# V. GENERAL TROUBLESHOOTING

All vehicles are thoroughly tested for proper operation at the factory prior to their shipment.

On occasion, during transportation and storage, damage to the vehicle may occur which will prohibit its proper operation.

Listed below are guidelines to assist in troubleshooting. The listing is relative only to problems that are most commonly experienced during vehicle set-up.

## *A. NON-RUNNING CONDITION*

Step #1. Disconnect fuel line at carburetor and check fuel flow. If no gas flows, remove the fuel petcock and flush the tank with a 2% gas-oil mixture to remove rust and dirt particles.
Step #2. Check for spark at plug. If no spark, clean and check plug gap for .019 clearance.
Step #3. Clean and gap ignition points.
Step #5. Check all terminal connections of ignition system.

## *B. RUNNING CONDITION*

I. No Idle

Step #1. Clean carburetor thoroughly.
Step #2. With copper wire, clean atomizer tube which runs through carburetor venturi—make sure the three introduction holes in tube are unobstructed.

II. Hard Starting with Good Spark

Step #1. Inspect ignition points — clean and adjust to specifications.
Step #2. Clean carburetor — pay special attention to atomizer tube — running wire through tube.

## *C. ELECTRICAL MALFUNCTIONS*

I. Stop Light Continuously On

Step #1. Check handlebar brake lever activated stop light switches.
Step #2. Check terminals for ground.

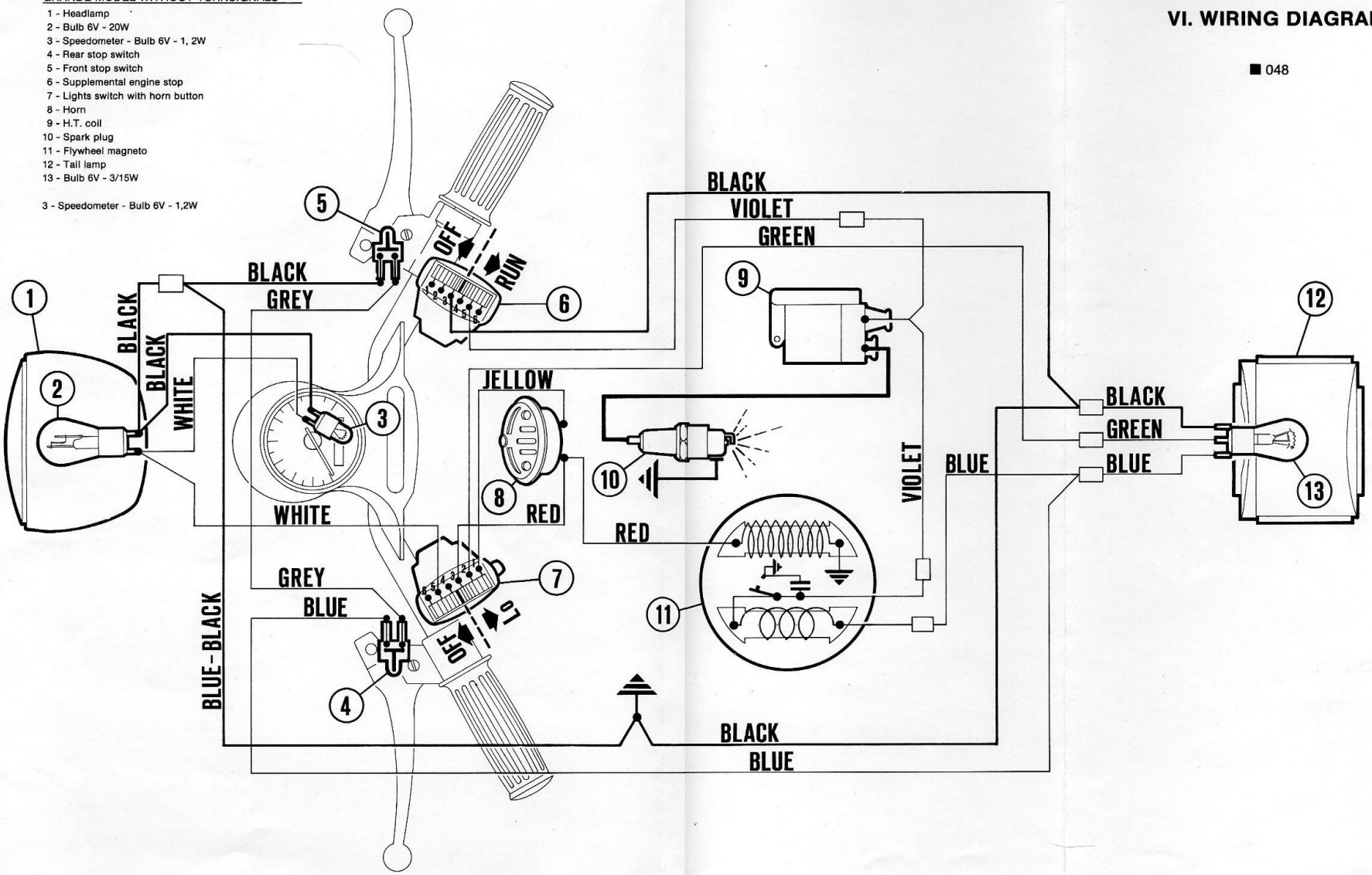
II. Engine Dies When Brakes Applied

Step #1. Check black ground lead at tail light.
Step #2. Check tail light bulb if burnt out.

GRANDE MODEL WITHOUT TURNSIGNALS

1 - Headlamp
2 - Bulb 6V - 20W
3 - Speedometer - Bulb 6V - 1, 2W
4 - Rear stop switch
5 - Front stop switch
6 - Supplemental engine stop
7 - Lights switch with horn button
8 - Horn
9 - H.T. coil
10 - Spark plug
11 - Flywheel magneto
12 - Tail lamp
13 - Bulb 6V - 3/15W

3 - Speedometer - Bulb 6V - 1,2W



# VII. VEHICLE SPECIFICATIONS

| | | | 048 | | | 048/B | | |
|---|---|---|---|---|---|---|---|---|
| ***ENGINE:*** 2-Cycle, Single Cylinder, Rotary Valve Rotary Valve Induction | | MPH | 20 | 25 | 30 | 20 | 25 | 30 |
| Displacement | 49.26 cc | | X | X | X | X | X | X |
| Bore | 38.2 mm | | X | X | X | X | X | X |
| Stroke | 43 mm | | X | X | X | X | X | X |
| Wrist Pin Clearance | .010" | | X | X | X | X | X | X |
| Connecting Rod Sideplay | .012" | | X | X | X | X | X | X |
| Lubrication | 2% oil mix | | X | X | X | X | X | X |
| Piston/Cylinder Clearance | .004" | | X | X | X | X | X | X |
| Compression Ratio | 8 to 1 | | X | X | X | X | X | X |
| Piston Ring End Gap | .004" | | X | X | X | X | X | X |
| Head Bolt Torque | 75 in. lbs. | | X | X | X | X | X | X |
| Crankcase Bolt Torque | 65 in. lbs. | | X | X | X | X | X | X |
| Carburetor | SHA - 7 | | X | | | X | | |
| | SHA - 12 | | | X | X | | X | X |
| Main Jet | 39 | | X | | | X | | |
| | 49 | | | X | X | | X | X |
| ***ELECTRICAL SYSTEM:*** Flywheel Magneto | | | | | | | | |
| Point Gap | .016" | | X | X | X | X | X | X |
| Timing | 19° BTDC | | X | X | X | X | X | X |
| Spark Plug (Bosch) | W95T1 | | X | X | X | X | X | X |
| Headlight | 6V/20W | | X | X | X | X | X | X |
| Tail Light | 6V-3/15W | | X | X | X | X | X | X |
| Turn Signal | 6V/21W | | | | | X | X | X |
| A. 1978 048/B | | | | | | | | |
| ***TRANSMISSION:*** Single Speed | Automatic Clutch | | | | | | | |
| Belt Ratio | 1.09 to 1.7 | | X | | X | | | |
| | 1.04 to 1.7 | | | X | X | | X | X |
| Chain Drive Ratio | 30/16 | | X | X | X | X | X | X |
| Engine/Driving Wheel Ratio | 1/12.27 - 1/20.86 | | X | X | X | X | X | X |

# VII. VEHICLE SPECIFICATIONS

CONTINUED

| | | | 048 | | | 048/B | | |
|---|---|---|---|---|---|---|---|---|
| ***TRANSMISSION CONTINUED*** | | MPH | 20 | 25 | 30 | 20 | 25 | 30 |
| Rear Hub Oil Quantity | 2.1 oz. | | X | X | X | X | X | X |
| Clutch Nut | 192 in. lbs. | | X | X | X | X | X | X |
| Chassis Type | tubular steel | | X | X | X | X | X | X |
| Front tire Pressure | 23 psi | | X | X | X | X | X | X |
| Rear Tire Pressure | 26 psi single rear | | X | X | X | X | X | X |
| | 32 psi double rear | | X | X | X | X | X | X |
| Chain Tension | 0-slack | | X | X | X | X | X | X |
| ***DIMENSIONS AND CAPACITIES*** | | | | | | | | |
| Wheel Base | 44" | | X | X | X | X | X | X |
| Fuel Capacity | 3/4 gal. | | X | X | X | X | X | X |
| Reserve Capacity | 1/8 gal. | | X | X | X | X | X | X |
| Dry Weight | 130 lbs. | | X | X | X | X | X | X |
| ***FUEL CONSUMPTION:*** (CUNA Standard) | | | | | | | | |
| Mileage may vary according to riding conditions, rider's weight, and the condition of the moped. | up to: 140 mpg. | | X | X | X | X | X | X |
| ***RANGE:*** (CUNA Standard) | | | | | | | | |
| Range may vary according to riding conditions, rider's weight, and the condition of the moped. | up to: 105 mil. | | X | X | X | X | X | X |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