

MOPED

MOTOR DRIVEN CYCLE

50cc

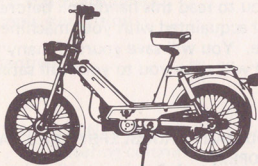
BABETTA



OWNER'S MANUAL

OPERATING AND MAINTENANCE INSTRUCTIONS

JAWA-BABETTA



**MOTOR DRIVEN CYCLE 50cc
MODEL 207/111**



**Manufacturer: Povazske strojarne
 Povazska Bystrica CSSR**

**Importer: American Jawa Ltd., 185 Express Street
 Plainview, N.Y. 11803 (516) 938-3210**

The motor driven cycle is a single-track motor vehicle, easy to ride and to maintain owing to its automatic clutch and single-speed gearbox. Despite its simplicity, we advise you to read this handbook before riding to become well acquainted with your machine and its maintenance. You will save yourself many troubles and your moped will serve you to your full satisfaction.

**WE WISH YOU MANY TROUBLEFREE AND HAPPY MILES
ON YOUR MOPED.**

**Povazske strojarne,
Povazska Bystrica
CSSR**

As regards information contained in this manual, we reserve the right to effect any changes of the design resulting from the moped development without previous notice.

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IDENTIFICATION NUMBER IS LOCATED:

- a. Steering column
 - b. Engine top - left side
-

IGNITION TIMING:

1-1.5 mm B.T.D.C.

FUEL MIXTURE:

Gas - Regular: Oil = 32:1

*QUOTE THE SERIAL NUMBER AND THE YEAR
OF MANUFACTURE WHEN ORDERING SPARE PARTS
FROM YOUR DEALER*

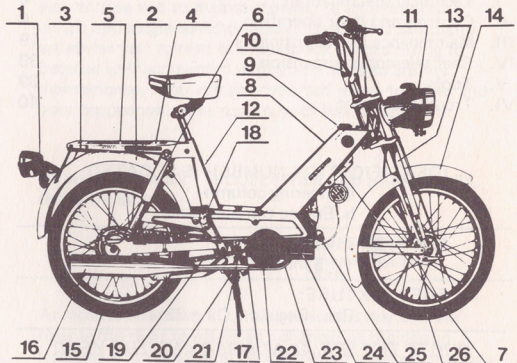


Fig. 1 — Babetta Moped — Main Component Parts

1. Tail light, 2. Rear wing, 3. Tire pump, 4. Luggage carrier, 5. Tool kit bag,
6. Suspension unit, 7. Intake air cleaner, 8. Fuel tank, 9. Fuel tank filler cap,
10. Handlebars, 11. Headlamp, 12. Frame, 13. Front fork, 14. Front wing,
15. Rear wheel, 16. Exhaust silencer, 17. Chain, 18. Pedals, 19. Chain of pedals,
20. Stand, 21. Engine switch-off, 22. Alternator (under cover),
23. Exhaust pipe, 24. Engine, 25. Spark plug, 26. Front wheel

I. TECHNICAL SPECIFICATIONS

Engine type	Air cooled two-stroke single cylinder
Displacement	49 cm ³ (3 cu. in)
Cylinder boreXpiston stroke	39X41 mm (1.55X1.61")
Compression ratio	1 : 7.5
Power output	0.98 BHP (varies according to model)
Clutch type	Automatic dry, centrifugal unit
Gearbox type	Single-speed unit
Overall transmission ratio	1 : 14.82
Pedals transmission ratio	1 : 0.693
Engine starting	Pedaling
Front suspension	Telescopic fork
Front suspension travel	60 mm (2.36")
Brakes	Drum-type shoe-brakes controlled by levers on handlebars
Brake dimensions	85X20 mm (3.55X0.79")
Tires	2¼X16"
Tire inflation pressures - front	196 kPa (28 lb/in ²)
rear	245 kPa (35 lb/in ²)
Vehicle weight	44 kg (92.5 lbs)
Carrying capacity	85 kg (198 lbs)
Rear suspension	Swing arm
Rear suspension travel	60 mm (2.36")

Max. speed	20 MPH (varies according to model)
Fuel capacity	3/4 US Gallon
Maximum climbing ability	10%
Noise	73 decibels
Ignition	Contactless fully transistorized PAL 14-5, 145-175 HEAT RANGE, CHAMPION H10, NGK B-6H
Headlamp bulb	Sealed beam 6V/25W
Tail light bulb	6V/10-3W
Buzzer	6V, type 03.9413.02

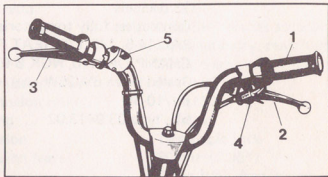


Fig. 2 — Controls

- 1. Twistgrip
- 2. Front brake lever
- 3. Rear brake lever
- 4. Decompressor lever
- 5. Light switch and buzzer push button

The following few controls of the moped are easy to operate:

- a) Throttle twistgrip (1, Fig. 2) by the rotation of which the clutch is engaged or disengaged automatically while the throttle is opened or closed and thus the vehicle accelerates or decelerates;
- b) Front brake lever (2, Fig. 2) and rear brake lever (3, Fig. 2), by the depressing of which the vehicle is braked and stopped;
- c) Decompressor lever (4, Fig. 2), by the operation of which the engine is stopped or its starting facilitated;
- d) Buzzer push button (1, Fig 3);
- e) Light switch (Fig. 3), the buzzer stop switches and the head and tail light are supplied with current only while the engine is running;
- f) Ignition switch on-off (Fig. 4);
- g) Fuel cock lever (Fig. 5);
- h) Choke (Fig. 6);
- i) Pedals (Fig. 7);
- j) Engine drive disengaging nut (Fig. 8)

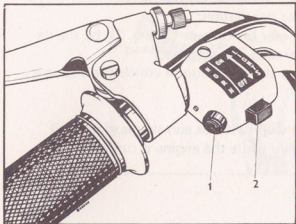
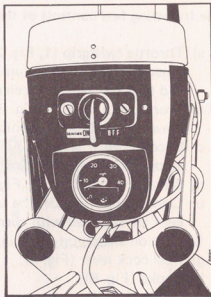


Fig. 3 — Light and Buzzer

1. Buzzer push button
2. Light switch



**Fig. 4 — Ignition Switch
ON — OFF**

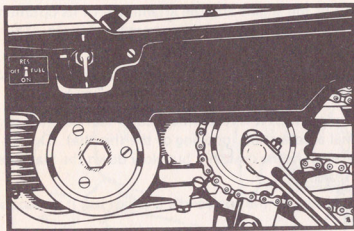


Fig. 5 — Fuel Cock

ON — Fuel on

OFF — Fuel cock closed

RES. — Fuel open

Breaking-in A New Machine

A proper breaking in of a new moped affects its output, fuel consumption and life. A full output of the engine and the attainment of its optimum running properties can be expected only after its correct breaking in. Therefore, observe strictly the following instructions:

- a) PREPARE THE FUEL MIXTURE BY MIXING REGULAR GAS WITH TWO CYCLE OIL – RATIO 32:1
- b) During longer trips it is recommended to lubricate the engine by an occasional acceleration (opening of the throttle). Do not close the throttle when riding downhill but slow down the machine by applying the rear brake.
- c) After stopping, let the engine idle and not run it unnecessarily.

Before Setting Out For A Ride Check:

- The function of the brakes
- The tire inflation pressures
- The amount of gas in the tank
- The function of the buzzer and lights (with the engine running).

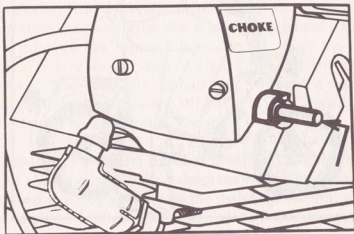


Fig. 6 – Choke

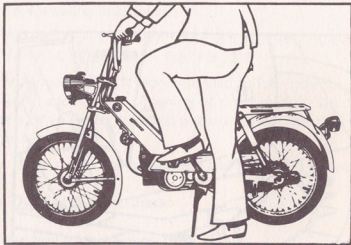


Fig. 7 — Starting the engine

To Start Cold Engine in Summer

- a. **Starting with the machine resting on the stand:** Pull up the moped on its stand, depress the air intake shut-off push button, depress the decompressor lever, rotate the twist grip through one-half of its rotation range, set the pedal forward at an angle of about 30 degrees from the vertical, depress the pedal energetically, and release the decompressor lever before the pedal reaches its bottom position (after the engine has attained a sufficient speed). If the engine does not fire, repeat this procedure. After the engine has started running let it warm up and then rotate the twist grip as far as it will go to open the choke. Then back off the twist grip so that the engine runs at idling speed and is ready for pulling off. Jerk it from the stand on to the wheels and start off by accelerating (opening the throttle).
- b. **Starting by pedaling:** With the vehicle standing on wheels press in the push button of the choke, release the decompressor lever, and rotate the twist grip as described in paragraph a. Use the pedals to start moving and as soon as you have attained a certain speed release the decompressor lever. As soon as the engine fires accelerate by opening the throttle.

NOTE: IF NECESSARY, YOU CAN ASSIST THE ENGINE BY PEDALING, ESPECIALLY WHEN CLIMBING A LONG OR STEEP GRADIENT.

To Start Cold Engine in Winter

When the temperature drops below zero, it is necessary to modify the starting procedure as follows:

Start the engine as described in paragraph a. but depress the pedal before the actual start several times to make the sticking mechanisms move freely. To assist the starting, you may hold the decompressor lever released.

Proceed with the actual starting according to paragraph a. with the difference of rotating the twist grip only through three quarters of its rotation range. How many times you have to depress the pedal depends on the dropping temperature.

STARTING BY PEDALING AS DESCRIBED IN PARAGRAPH b. IS NOT RECOMMENDED ON ICE COVERED ROADS FOR SAFETY REASONS.

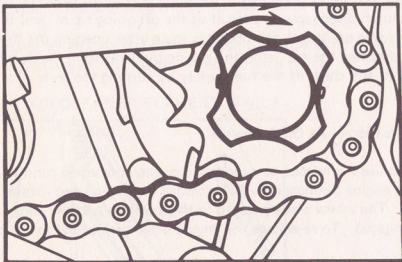


Fig. 8 — Disengaging the engine

Braking And Stopping

If it is necessary to apply the brakes, release the twist grip and operate the brake levers (2, 3, Fig. 2). Proceed in the same way when stopping the machine. The clutch disengages as a result of the dropping r.p.m. and the engine idles. When riding on, the clutch operates again after opening the throttle. After having finished the trip, stop the engine by depressing the decompressor lever (4, Fig. 2) and shut off the fuel supply by turning the lever of the fuel cock (Fig. 5).

Riding On The Moped As On A Bicycle

If you wish to use the moped as a bicycle (for example when running out of fuel), depress engine disengaging wheel toward the engine and rotate it clockwise (Fig. 8). The wheel stays engaged in this position and the engine drive remains disengaged. To re-engage the engine drive turn wheel anticlockwise.

III. MAINTENANCE AND ADJUSTMENTS

Moped Maintenance

For cleaning the varnished and chromium plated vehicle parts use only water and detergents. After washing, wipe these parts with chamois leather.

Use only water when cleaning parts of plastics or rubber. Kerosene, gas or various solvents have a detrimental effect on such parts.

WASH THE AIR CLEANER ELEMENT (Fig. 9)

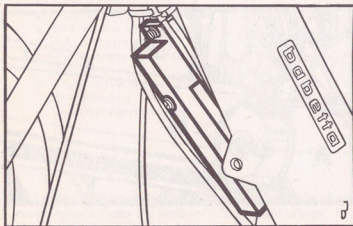


Fig. 9 — Air Cleaner

Exhaust Silencer

Use a stick to clean the hole "A" of the exhaust silencer (Fig. 10) from carbon deposits. If the engine output drops markedly, check whether the exhaust silencer is not clogged with carbon deposits. The exhaust tail pipe can be removed after unscrewing nut "B".

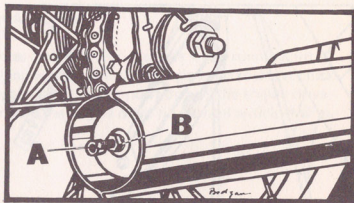


Fig. 10 — Exhaust Silencer

AFTER THE FIRST 500 MILES

- Change gear box oil
- Adjust and clean carburetor
- Tighten cylinder head nuts
- Tighten seat nuts
- Check all screws and bolts for slackening
- Adjust and lubricate chains
- Adjust brakes

AFTER THE FIRST 1300 MILES

- Change gearbox oil
- Clean carburetor
- Clean intake silencer element
- Tension and lubricate chains
- Adjust brakes
- Check screws and bolts for slackening
- Check nuts and wheel spokes for slackening
- Lubricate bowden cables

AFTER EVERY 930-1300 MILES

- Remove carbon deposits from exhaust silencer and elbow

AFTER EVERY 2,000 MILES

- Check gearbox oil level
- Inspect and/or clean intake silencer element

AFTER EVERY 4,000 MILES

- Clean and inspect spark plug
- Change gearbox oil
- Clean carburetor
- Clean air intake silencer element
- Tension and lubricate chains
- Adjust brakes
- Check screws and bolts for slackening
- Check nuts and wheel spokes for slackening
- Lubricate all vehicle lubricating points
- Remove carbon deposits from exhaust silencer and elbow

Do all other maintenance jobs including lubrication of the vehicle as necessary. Remove carbon deposits from the exhaust silencer and elbow. In dusty conditions lubricate the chains and the free wheel and clean the brakes at shorter intervals.

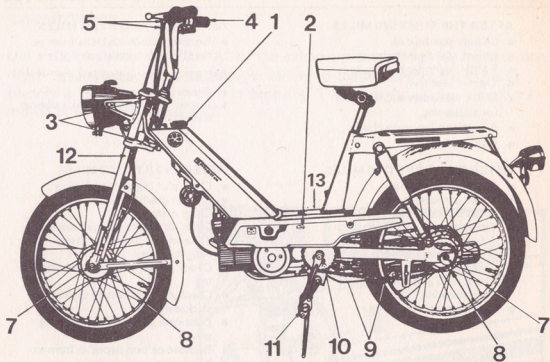


Fig. 11 — Vehicle Lubricating Points

Lubrication Chart (Fig. 11)

VEHICLE LUBRICATION

Pos. No.	Lubricating Point	Lubricant	Note
1	Engine	SAE 30 oil for two-stroke engines	Permanent Lubrication Oil/gas mixing ratio 32:1 (4%)
2	Gearbox	SAE 30-50 gear oil	Filling 0.2 litres
3	Steering	Bearing grease	Wash and lubricate on dismantling
4	Twistgrip	Grease	Apply on sliding surfaces after washing
5	Brake and decompressor levers	SAE 30 oil	
6	Bowden cables	Thin oil	Drop into bowden sleeves
7	Wheel bearings	Bearing grease	Fill up bearings
8	Brake cam pin, brake shoe pins	Grease	Apply grease sparingly on cleaned parts
9	Chains	Graphite Oil, grease	Clean
10	Pedal pins	SAE 30 oil	
11	Pedal bearings	SAE 30 oil	
12	Front telescopic fork	SAE 30 oil	
13	Idling run wheel	SAE 30 oil	

The gearbox oil should be changed only after a ride while the engine and the oil are still warm. Remove the drain Screw (2, Fig. 12) from the engine bottom. After draining the oil, flush the gearbox with flushing oil. Fill in fresh gear oil through the filling hole till its level reaches the inspection hole. From time to time, check the gearbox oil level and add more oil when the level is below the inspection hole.

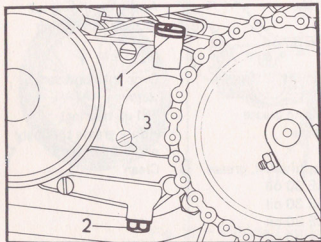


Fig. 12 —

Oil filling and drain screws

1. Screw closing the filling hole
2. Screw closing the drain hole
3. Control hole

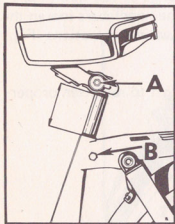


Fig. 13 — Seat Adjustment

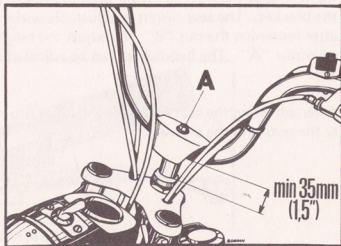


Fig. 14 — Handlebars height adjustment

TO ADJUST HEIGHT OF SEAT AND HANDLEBARS

The height of the seat and handlebars can be adjusted to suit the rider. Adjust the inclination of the seat after loosening the nut "A" (Fig. 13). Check proper tightening of the nut "A" from time to time to prevent stripping the teeth of the bracket. The seat height is adjustable within the range of 120 mm (4-3/4") after loosening the nut "B". To adjust the height of the handlebars loosen the capscREW "A". The handlebars can be adjusted as shown in Instructions (Fig. 14).

After adjusting the seat and the handlebars, do not forget to retighten properly the nuts and the screws.

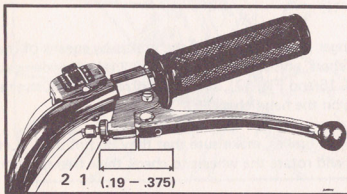


Fig. 15 — Brake Adjustment

TO ADJUST FRONT AND REAR BRAKE

For routine adjustment of the front and rear brake, use the respective adjusting screws on the handlebars (Fig. 15). First loosen the knurled nut (1) and then screw the adjusting screw (2) in or out to adjust the free travel of the brake lever so that it keeps a distance of .19" to maximum .375" from the brake lever holder. After having adjusted the correct brake lever travel re-tighten the nut (1).

When it is no longer possible to adjust the brakes by means of the adjusting screws on handlebars, adjust the tension of the brake bowden cables on brake cams (Fig. 16 and Fig. 17), and then correct the adjustment using the adjusting screws on the handlebars.

Having adjusted the brakes, make sure that they do not drag. Let the moped rest on its stand and rotate the wheels to check their free rotation.

TENSIONING OF CHAINS

Adjust the engine chain slack after loosening the rear wheel spindle nut (3, Fig. 17). By moving the chain tensioner (2) on both sides of the frame adjust the tension of the chain so that it sags 15 mm under thumb pressure. After having adjusted the chain slack, it is necessary to check the track of the wheels (alignment of wheels) using a straight lath. Do not forget to retighten the wheel spindle nut.

The pedal chain can be adjusted by means of the tension pulley on the left-hand side of the machine (Fig. 18).

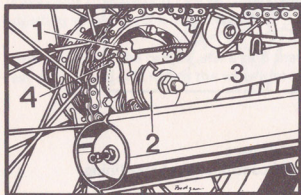


Fig. 17

Rear brake and engine chain slack adjustment

1. Brake lever
2. Chain Adjuster
3. Rear axle
4. Hole for visible control of the brake lining

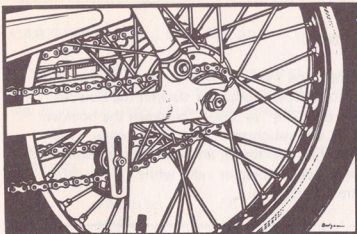


Fig. 18 —
Pedal chain tensioning

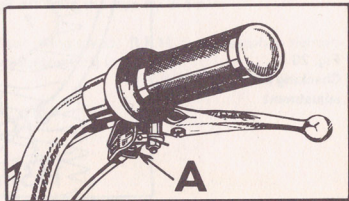
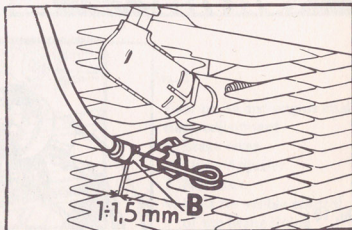


Fig. 19 —
Decompressor adjustment

DECOMPRESSOR ADJUSTMENT

The decompressor can be adjusted after loosening the adjusting screw "A" (Fig. 19) of the decompressor lever. Then tighten or slacken the bowden cable so that there is a clearance of .0394" to .0591" between the bowden sleeve and the stop "B" (Fig. 20), and retighten the adjusting screw. The bowden cable must have the specified free travel; an excessively tensioned cable is apt to cause burning of the decompressor valve while a slack cable prevents the decompressor from functioning.

Fig. 20 —
Checking decompressor
adjustment



CARBURETOR (Fig. 21 & Fig. 22)

In the case of a defect, it is recommended to have the carburetor repaired, adjusted and cleaned by a specialized service station or workshop. When cleaning the jets, use only gas and compressed air.

The Jikov 2909 DC carburetor on your moped has the following parts and adjustments:

- Main jet 58
- Idling jet 35
- Carburetor metering needle set in the second notch from top
- Air screw backed off from the stop by $3/4$ turn

The idling screw is used to adjust idling speed. R.P.M. increases when tightening the screw and decreases when loosening it.

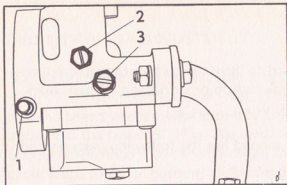
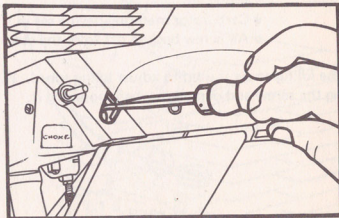


Fig. 21 — Carburetor
 1. Choke push button
 2. Idling screw
 3. Air screw

Fig. 22 — Carburetor Adjustment



IGNITION

The moped is equipped with a non-contact semiconductor ignition system which does not require any maintenance except cleaning the spark plug. It is practically failproof and a defect can only be the result of unwarranted interference on the part of the owner. Ignition adjustment is unnecessary since no mechanical wear can take place. Ignition advance should be adjusted only if the stator screws have become loose or after the removal of the alternator. We recommend therefore not to interfere with the ignition adjustment. In the case of a failure go to a specialized workshop.

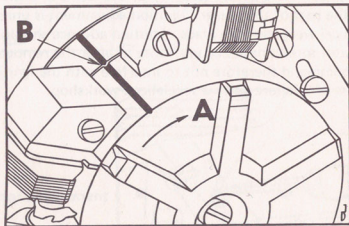


Fig. 23 — Ignition timing I

When adjusting the ignition advance, rotate the rotor in the direction of the arrow "A" (Fig. 23) till the timing marks (lines) "B" of the rotor and stator coincide. Insert dial indicator or a depth gauge into the spark plug hole and measure the depth. Then continue rotating the rotor in the direction of the arrow "A" till the piston reaches its top dead center position. The distance measured on the dial indicator from the alignment (coinciding) of the timing marks up to the top dead center should be 1 to 1.5 mm. If this value is exceeded, loosen the screws "E" (Fig. 24) and rotate the stator in the direction of the arrow "C", if the value is less, rotate the stator in the direction of the arrow "D".

Repeat this procedure until obtaining the specified advance value of 1 to 1.5 mm. After having adjusted the ignition advance properly tighten all screws and recheck the setting.

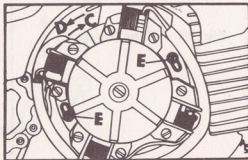
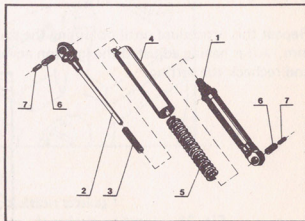


Fig. 24 — Ignition timing II

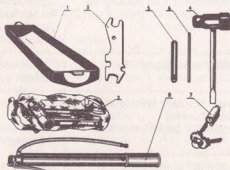
IV. REAR TELESCOPIC SUSPENSION

The moped has a rear suspension, the telescopes of which are of simple design without shock absorbers. Their stroke is 60 mm (2.3"). They do not require any maintenance.

Fig. 25 — Rear telescope



ITEM	PART NUMBER	DESCRIPTION	PCS.
1	451 9 207 00 101	Tool Tray (Model M/207/111 Only)	1
2	451 9 228 75 001	Tools Complete	1
3	451 9 228 75 003	Wrench	1
4	451 9 228 75 007	Socket Wrench	1
5	451 9 555 71 024	Socket Wrench	1
6	451 9 555 71 023	Rod	1
7	549 633 011 000	Lock Type 1304	1
8	413 531 035 001	Air Pump	1



VI. TROUBLE SHOOTING

		Defect	Removal
Irregular running	Engine misfires	Overheated engine	Let engine cool down and not run at high speed (r.p.m.)
		Overheated electrodes of spark plug	Replace spark plug
	Engine stalls	The faulty plug (not corresponding thermal value)	Remove cylinder head and exhaust pipe. Remove carbon deposits
		Excessive carbon deposits in cylinder head and exhaust port	Adjust
		Excessive ignition advance	Remove and clean exhaust silencer
		Clogged exhaust silencer	
	Correct spark	Water or oil in carburetor	Clean carburetor
		Insufficient fuel supply to carburetor	Open fuel cock fully (or reserve), fill up fuel, inspect fuel feed line, clean vent hole in fuel tank filler cap
		Leaky crankcase	Check crankcase for leakage and replace gasket if necessary
	Irregular spark	Lean mixture (white exhaust fumes)	Adjust carburetor, clean jets
		Incorrect gas/oil mixture	Mix fuel correctly and stir thoroughly
		Incorrect spark plug	Replace spark plug with a correct one
		Oiled spark plug	Remove and clean it

Engine refuses to fire or stops		
Faultless carburetor and fuel line	Defects of fuel feed line	Fuel tank nearly empty Fuel cock closed or only partially opened Clogged fuel filter (strainer) above fuel cock Stopped fuel line or clogged strainer in carburetor Stopped vent hole of fuel tank filler cap Stopped carburetor jet Punctured float Needle valve does not Turn fuel cock lever to "Reserve" position Open fuel cock Remove fuel cock and clean fuel strainer Remove and clean fuel line and carburetor, blow through jet Clean vent hole Remove and clean it Solder or replace it Replace damaged valve
	Spark on cable end	Oily spark plug Damaged spark plug insulation Short-circuited spark plug electrodes Too wide gap between spark plug electrodes Spark plug short-circuited to vehicle frame by water and mud Replace or clean spark plug Replace spark plug Adjust electrode gap to about .025" Adjust gap to .025" Clean and dry cable, cable sleeve and spark plug
	No spark on cable end	Burnt (punctured) cable insulation Damaged cable terminal Defective Tranzimo unit or defective transistor Wrap insulating tape around cable and replace cable as soon as possible Replace cable terminal Replace Tranzimo unit or transistor alone

Engine cannot be cranked or stopped	Faultless spark plug Engine lacks compression	Broken piston ring Sticking piston ring Faulty packing ring under spark plug Seized piston	Remove piston ring from piston and fit a new one Remove, clean and refit it Replace packing ring Dismantle and repair
	Faultless carburetor Correct compression Correct spark on spark plug points	Overheated engine Poor lubrication Damaged gasket between carburetor and cylinder	Let engine cool down and keep it running at low speed (r.p.m.) Observe correct gas/oil mixing ratio Stir well when filling Replace gasket, tighten carburetor throat thoroughly
Loss of power Continual		Excessive carbon deposits in cylinder, cylinder head, and exhaust silencer Partially stopped up fuel line Incorrect ignition advance Incorrectly adjusted carburetor Seized throttle	Remove cylinder head, cylinder and exhaust pipe, if necessary, and remove carbon deposits Remove and clean fuel line Adjust advance Adjust idling speed, needle, and clean air filter Free and adjust throttle

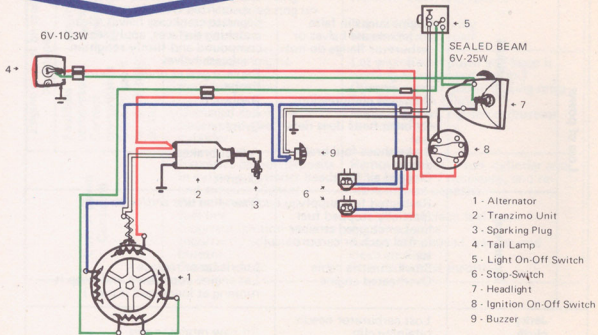
Loss of power	Continual	Clogged exhaust silencer Worn cylinder bore and piston Engine sucks in false air (crankcase halves or carburetor flange do not seal) Damaged compression ring Cylinder head does not seal Brake shoes foul brake drums Clogged air filter	Clean exhaust silencer Have cylinder rebored, new piston and piston rings fitted, and small end bearing inspected for wear in a specialized workshop Separate crankcase halves, clean matching surfaces, apply sealing compound and firmly retighten crankcase halves Replace gasket under carburetor flange Replace it Grind it Adjust brakes Clean it
	Occasional	Restricted fuel supply (partially stopped fuel line) or clogged strainer in fuel cock or carburetor Stuck throttle cable Overheated engine	Clean fuel line and/or strainer Lubricate or replace it Let engine cool down and keep it running at low speed (r.p.m.)
	Jerky clutch operation/slipping	Lost carburetor needle retaining clip Dirty clutch jaws	Fit new retaining clip Clean jaws. Inspect clutch Gufero sealing ring



WIRING DIAGRAM

Motor Driven Cycle
Babetta 50
Model 207/111

Babetta



AMERICAN JAWA LTD., Plainview, N.Y. 11803
(516) 938-3210



American Jawa Ltd., Plainview, New York
Printed in U.S.A.