

QUICK REFERENCE DATA

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### ELECTRICAL SYSTEM

Item	Number	Rating
Fuse		
Main	—	20 amp
Headlight	—	10 amp
Taillight	—	10 amp
Battery	—	12 volt, 14 amp hour
Replacement bulbs		
Headlight	—	40/50 watt
Tail/brake light	SAE 1157	8/27 watt
Directional		
Front	SAE 1034	23 watt
Rear	SAE 1073	23 watt
Instrument lights	SAE 57	3.4 watt
Running light	SAE 1034	8 watt

### ENGINE TORQUE SPECIFICATIONS

Item	Foot-pounds	Newton meters
Cylinder head bolts		
6mm	6-9	8-12
12mm	33-40	45-54
Camshaft locknut	58-72	79-98
Camshaft sprocket bolts	12-14	16-19
Crankshaft end cap bolts	14-17	19-23
Rod bearing cap nuts	20-23	27-31
Cooling fan bolt	14-18	19-24
Oil filter bolt	14-18	19-24
Alternator rotor bolt	58-72	79-97
Clutch center nut	58-72	79-97
Radiator drain bolt	1-2	1.4-2.7

### FRAME TORQUE SPECIFICATIONS

Item	Foot-pounds	Newton meters
Steering stem	65-87	88-117
Fork top bridge	7-9	9-12
Handlebar holder	13-18	18-24
Fork bottom bridge	13-18	18-24
Front axle nut	40-47	54-64
Front axle holder nut	13-18	18-24
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# QUICK REFERENCE DATA

## TUNE-UP SPECIFICATIONS

Cylinder head bolts	
12mm	33-40 ft.-lb. (45-54 N•m)
6mm	6-9 ft.-lb. (8-12 N•m)
Valve clearance (cold)	
Intake	0.003 in. (0.08mm)
Exhaust	0.004 in. (0.10mm)
Timing (Capacitor discharge ignition)*	Non-adjustable
Idle speed	1,100 ± 100 rpm
Compression pressure (cold)	171 ± 20 psi (12 ± 2.0 kg/cm <sup>2</sup> )

## SPARK PLUGS

Type	U.S.A.	Canada (Resistor Type)
Standard	NGK D8EA ND X24ES-U	NGK DR8ES-L ND X24ESR-U
Cold climate	NGK D7EA ND X22ES-U	— —
High speed	NGK D9EA ND X27ES-U	— —

Gap for all plugs is 0.024-0.028 in. (0.5-0.7mm)

## ADJUSTMENTS

Item	Inch	mm
Clutch lever free play	3/8-1/2	10-20
Rear brake pedal free play	3/4-1 1/4	20-30
Throttle grip free play	0.08-0.24	2-6 (grip rotation)
Rear brake light switch (pedal travel)	3/4	20

## TIRES

Front pressure	24 psi (1.75 kg/cm <sup>2</sup> )
Rear pressure	
Up to 200 lb. (90 kg)	28 psi (2.0 kg/cm <sup>2</sup> )
Up to 330 lb. (150 kg)*	36 psi (2.5 kg/cm <sup>2</sup> )
Size	
Front	3.25 S19-4PR
Rear	3.75 S18-4PR

\*Vehicle maximum load limit

## FLUIDS

Item	Type	Quantity
Engine oil		
All temperatures	SAE 10W-40	3.2 U.S. qt. (3.0 liter)
Above 59° F (15° C)	SAE 30	
32°-59° F (0°-32° C)	SAE 20 or 20W	
Below 32° F (0° C)	SAE 10W	
Fork oil	Automatic transmission fluid (ATF)	4.2-4.6 oz. (125-135cc)
Brake fluid	DOT 3	Upper level line
Final drive oil		
Above 41° F (5° C)	Hypoid gear oil, SAE 90	5.8 oz. (170cc)
Below 41° F (5° C)	Hypoid gear oil, SAE 80	
Coolant	Ethylene glycol for aluminum engines	Radiator and engine: 1.9 U.S. qt. (1.8 liter)
		Reserve tank: 0.26 U.S. qt. (0.25 liter)
Coolant/water ratio		
Above -25° F (-32° C)		45/55 coolant/water
Above -34° F (-37° C)		50/50 coolant/water
Above -48° F (-44° C)		55/45 coolant/water
Fuel-Low lead or regular	86 octane (pump) 91 octane (research)	4.5 U.S. gal. (17.0 liter) total 0.90 U.S. gal. (3.5 liter) reserve

# CHAPTER ONE

## GENERAL INFORMATION

This book provides maintenance and repair information for the Honda CX500.

Read the following service hints to make the work as easy and pleasant as possible. Performing your own work can be an enjoyable and rewarding experience.

### 1.1

#### MANUAL ORGANIZATION

This manual provides service information and procedures for the Honda CX500. All dimensions and capacities are expressed in English units familiar to U.S. mechanics as well as in metric units.

This chapter provides general information and specifications. See **Table 1** at the end of this chapter. It also discusses equipment and tools useful both for preventive maintenance and troubleshooting.

Chapter Two provides methods and suggestions for quick and accurate diagnosis and repair of problems. Troubleshooting procedures discuss typical symptoms and logical methods to pinpoint the trouble.

Chapter Three explains all periodic lubrication and routine maintenance necessary to keep your bike running well. Chapter Three also includes recommended tune-up procedures, eliminating the need to constantly consult chapters on the various assemblies.

Subsequent chapters describe specific systems such as the engine, transmission, and electrical system. Each chapter provides disassembly, repair, and assembly procedures in simple step-by-step form. If a repair is impractical for a home mechanic, it is so indicated. It is usually faster and less expensive to take such repairs to a dealer or competent repair shop. Specifications concerning a particular system are included at the end of the appropriate chapter.

Some of the procedures in this manual specify special tools. In all cases, the tool is illustrated either in actual use or alone. A well-equipped mechanic may find that he can substitute similar tools already on hand or he can fabricate his own.

The terms **NOTE**, **CAUTION**, and **WARNING** have specific meanings in this manual. A **NOTE** provides additional information to make a step or procedure easier or clearer. Disregarding a **NOTE** could cause inconvenience, but would not cause damage or personal injury.

A **CAUTION** emphasizes areas where equipment damage could result. Disregarding a **CAUTION** could cause permanent mechanical damage; however, personal injury is unlikely.

A **WARNING** emphasizes areas where personal injury or even death could result from negligence. Mechanical damage may also occur. **WARNINGS are to be taken seriously.** In

some cases, serious injury or death has resulted from disregarding similar warnings.

Throughout this manual keep in mind two conventions. "Front" refers to the front of the bike. The front of any component such as the engine is the end which faces toward the front of the bike. The "left" and "right" side refer to positions from the perspective of a person sitting on the bike facing forward. For example, the shift lever is on the left side. These rules are simple, but even experienced mechanics occasionally become disoriented.

## 1.2

### SERVICE HINTS

Most of the service procedures covered are straightforward and can be performed by anyone reasonably handy with tools. It is suggested, however, that you consider your own capabilities carefully before attempting any operation involving major disassembly of the engine.

Some operations, for example, require the use of a press. It would be wiser to have these performed by a shop equipped for such work than to try to do the job yourself with makeshift equipment. Other procedures require precision measurements. Unless you have the skills and equipment required, it would be better to have a qualified repair shop make the measurements for you.

Repairs go much faster and easier if your machine is clean before you begin work. There are special cleaners, like Gunk Cycle Degreaser, for washing the engine and related parts. Just brush or spray on the cleaning solution, let it stand, then rinse it away with a garden hose. Clean all oily or greasy parts with cleaning solvent as you remove them.

#### WARNING

*Never use gasoline as a cleaning agent. It presents an extreme fire hazard. Be sure to work in a well-ventilated area when using cleaning solvent. Keep a fire extinguisher, rated for gasoline fires, handy in any case.*

Special tools are required for some repair procedures. These may be purchased at a dealer, rented from a tool rental dealer, or may

be fabricated by a mechanic or machinist, often at a considerable savings.

Much of the labor charge for repairs made by dealers is for the removal and disassembly of other parts to reach the defective unit. It is frequently possible to perform the preliminary operations yourself and then take the defective unit in to the dealer for repair at considerable savings.

Once you have decided to tackle the job yourself, read the entire section in this manual which pertains to it, making sure you have identified the proper one. Study the illustrations and text until you have a good idea of what is involved in completing the job satisfactorily. If special tools are required, make arrangements to get them before you start. It is frustrating and time-consuming to get partly into a job and then be unable to complete it.

Simple wiring checks can be easily made at home; but knowledge of electronics is almost a necessity for performing tests with complicated electronic testing gear.

During disassembly of parts, keep a few general cautions in mind. Force is rarely needed to get things apart. If parts are a tight fit, like a bearing in a case, there is usually a tool designed to separate them. Never use a screwdriver to pry apart parts with machined surfaces such as crankcase halves and valve covers. You will mar the surfaces and end up with leaks.

Make diagrams wherever similar-appearing parts are found. For instance, case cover bolts are often not the same length. You may think you can remember where everything came from — but mistakes are costly. There is also the possibility that you may be sidetracked and not return to work for days or even weeks — in which interval carefully laid out parts may have become disturbed.

Tag all similar internal parts for location and mark all mating parts for position. Record number and thickness of any shims as they are removed. Small parts such as bolts can be identified by placing them in plastic sandwich bags. Seal and label the bags with masking tape.

Wiring should be tagged with masking tape and marked as each wire is removed. Again, do not rely on memory alone.

Disconnect battery ground (negative) cable before working near electrical connections and before disconnecting wires. Never run the engine with the battery disconnected; the alternator could be seriously damaged.

Protect finished surfaces from physical damage or corrosion. Keep gasoline and brake fluid off painted surfaces.

Frozen or very tight bolts and screws can often be loosened by soaking with penetrating oil, like WD-40 or Liquid Wrench, then sharply striking the bolt head a few times with a hammer and punch (or screwdriver for screws). Avoid heat unless absolutely necessary, since it may melt, warp, or remove the temper from many parts.

Avoid flames or sparks when working near a charging battery or flammable liquids such as brake fluid or gasoline.

No parts, except those assembled with a press fit, require unusual force during assembly. If a part is hard to remove or install, find out why before proceeding.

Cover all openings after removing parts to keep dirt, small tools, etc., from falling in.

When assembling two parts, start all fasteners, then tighten evenly.

Clutch plates, wiring connections, and brake pads and discs should be kept clean and free of grease and oil.

When assembling parts, be sure all shims and washers are replaced exactly as they came out.

Whenever a rotating part butts against a stationary part, look for a shim or washer. Use new gaskets if there is any doubt about the condition of old ones. Generally you should apply gasket cement to one mating surface only so the parts may be easily disassembled in the future. A thin coat of oil on gaskets helps them seal effectively.

Heavy grease can be used to hold small parts in place if they tend to fall out during assembly. However, keep grease and oil away from electrical components or brake pads and discs.

High spots may be sanded off a piston with sandpaper, but emery cloth and oil do a much more professional job.

Carburetors are best cleaned by disassembling them and soaking the parts in a commercial carburetor cleaner. Never soak gaskets and rubber parts in these cleaners. Never use wire to

clean out jets and air passages; they are easily damaged. Use compressed air to blow out the carburetor only if the float has been removed first.

A baby bottle makes a good measuring device for adding oil to forks and transmissions. Get one that is graduated in ounces and cubic centimeters.

Take your time and do the job right. Do not forget that a newly rebuilt motorcycle engine must be broken in the same as a new one. Keep rpm's within the limits given in your owner's manual when you get back on the road.

### 4.3

#### SAFETY FIRST

Professional motorcycle mechanics can work for years and never sustain a serious injury. If you observe a few rules of common sense and safety, you can enjoy many hours servicing your own machine. You could hurt yourself or damage the bike if you ignore these rules.

1. Never use gasoline as a cleaning solvent.
2. Never smoke or use a torch in the vicinity of flammable liquids, such as cleaning solvent in open containers.
3. Never smoke or use a torch in an area where batteries are being charged. Highly explosive hydrogen gas is formed during the charging process.
4. If welding or brazing is required on the machine, remove the fuel tank to a safe distance, at least 50 feet away. Welding on gas tanks requires special safety procedures and must be performed by someone skilled in the process.
5. Use the proper sized wrenches to avoid damage to nuts and injury to yourself.
6. When loosening a tight or stuck nut, be guided by what would happen if the wrench should slip. Protect yourself accordingly.
7. Keep your work area clean and uncluttered.
8. Wear safety goggles during all operations involving drilling, grinding, or use of a cold chisel.
9. Never use worn tools.
10. Keep a fire extinguisher handy and be sure it is rated for gasoline and electrical fires.

### 1.4 PARTS REPLACEMENT

Honda makes frequent changes during a model year — some minor, some relatively major. When you order parts from the dealer or other parts distributor, always order by engine and chassis number. Write the numbers down and carry them with you. Compare new parts to old before purchasing them. If they are not alike, have the parts manager explain the difference to you.

### 1.5 EXPENDABLE SUPPLIES

Certain expendable supplies are also required. These include grease, oil, gasket cement, wiping rags, cleaning solvent, and distilled water. Ask your dealer for the special locking compounds, silicone lubricants, and other products which make motorcycle maintenance simpler and easier. Solvent is available at most service stations and distilled water for the battery is available at most supermarkets.

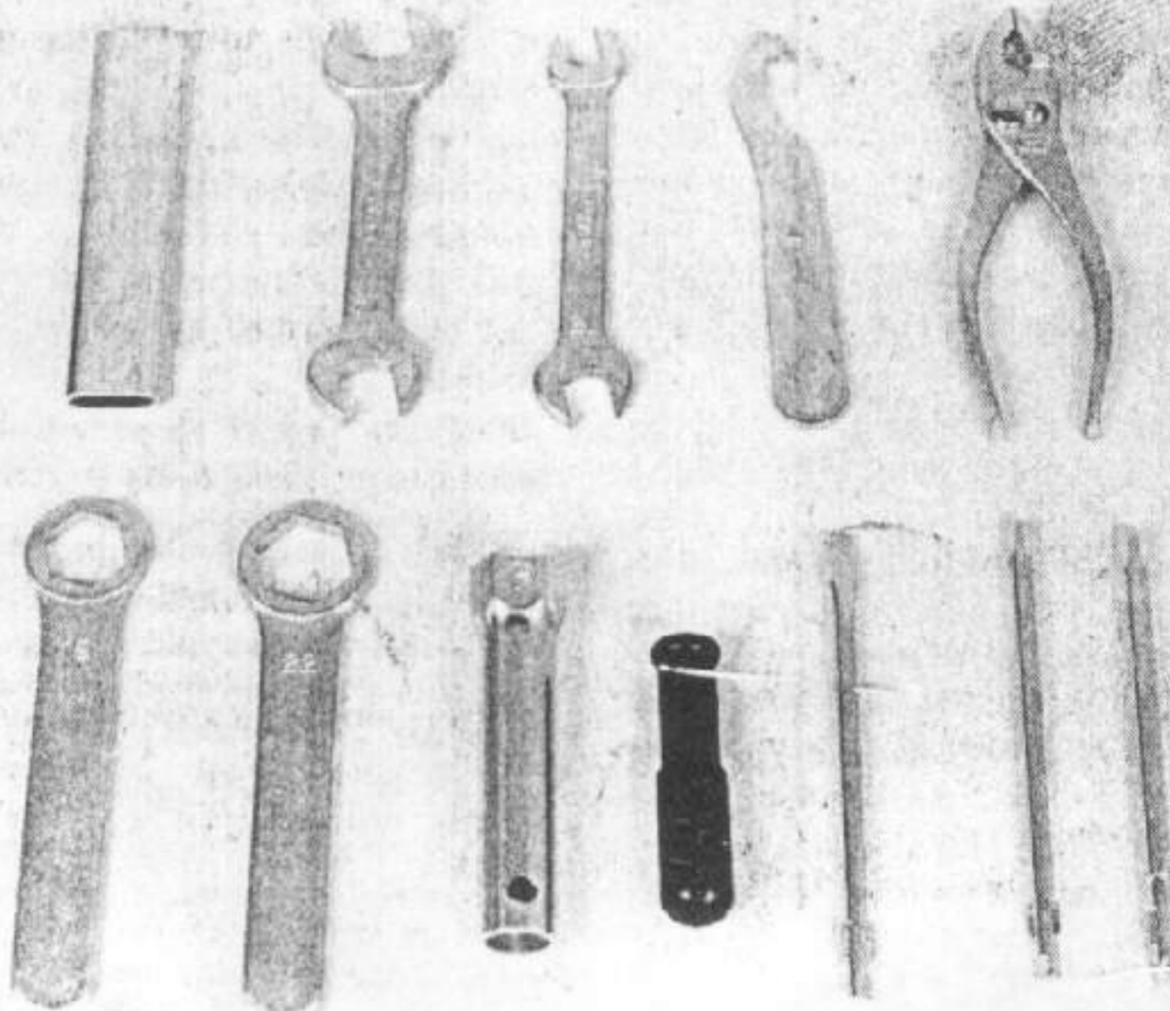
### 1.6 TOOLS

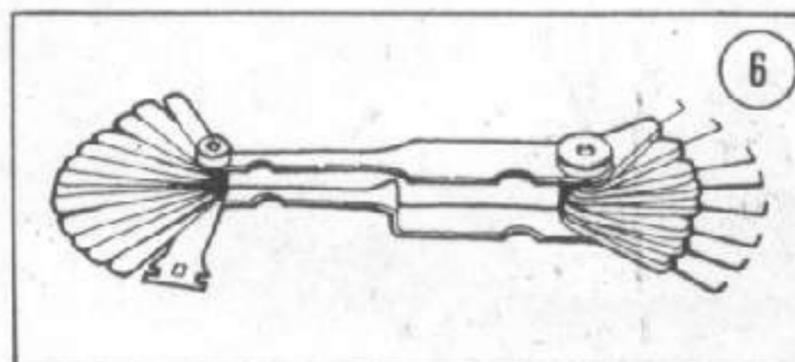
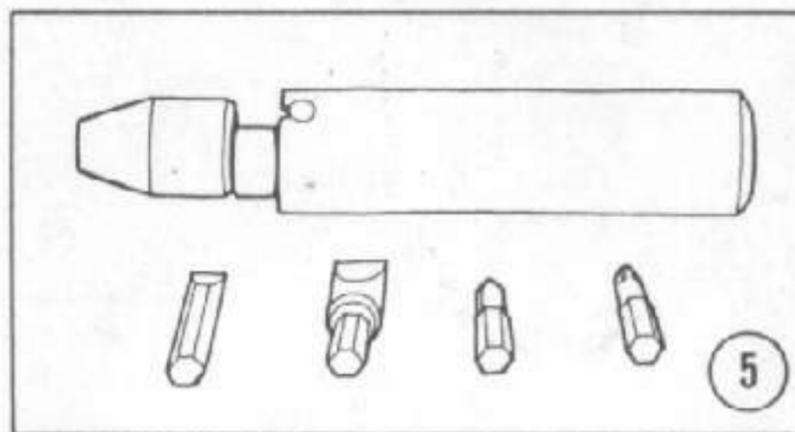
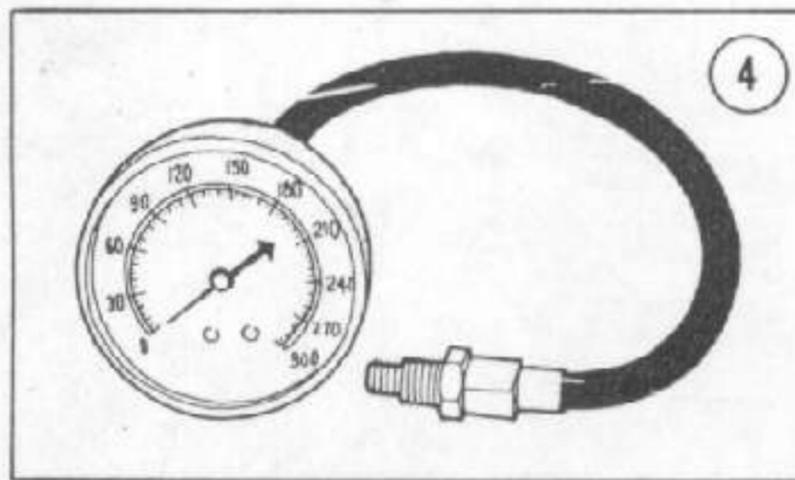
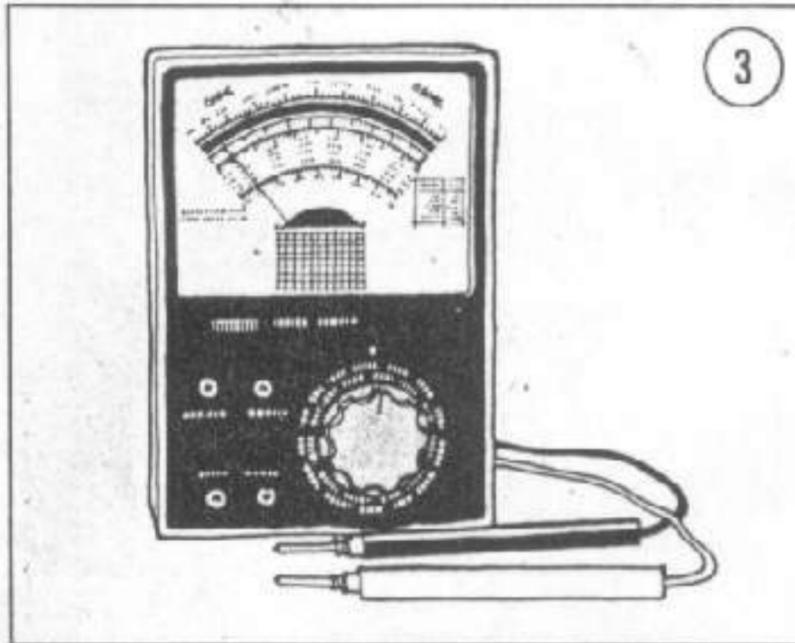
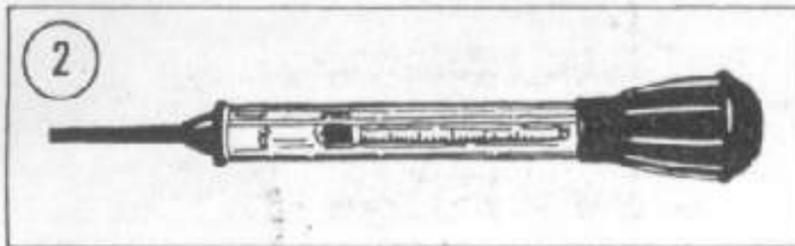
To properly service your motorcycle, you will need an assortment of ordinary hand tools. As a minimum, these include:

- a. Combination wrench
- b. Socket wrenches
- c. Plastic mallet
- d. Small hammer
- e. Snap ring pliers
- f. Phillips screwdrivers
- g. Slot screwdrivers
- h. Impact driver
- i. Pliers
- j. Feeler gauges
- k. Spark plug gauge
- l. Spark plug wrench
- m. Drift

An original equipment tool kit, like the one shown in Figure 1, is available through most

①





Honda dealers and is suitable for most minor servicing.

Engine tune-up and troubleshooting procedures require a few more tools, described in the following sections.

#### Hydrometer

This instrument measures state of charge of the battery, and tells much about battery condition. Such an instrument is available at any auto parts store and through most larger mail order outlets. A satisfactory one costs less than \$3. See Figure 2.

#### Multimeter or VOM

This instrument (Figure 3) is invaluable for electrical system troubleshooting and service. A few of its functions may be duplicated by locally fabricated substitutes, but for the serious hobbyist, it is a must. Its uses are described in the applicable sections of this book. Prices start at around \$20 at electronics hobbyist stores and mail order outlets.

#### Compression Gauge

An engine with low compression cannot be properly tuned and will not develop full power. A compression gauge measures engine compression (Figure 4). Less expensive ones start around \$5 and are available at auto accessory stores or by mail order from large catalog order firms.

#### Impact Driver

This tool makes removal of engine components easy, and eliminates damage to bolt heads. Good ones run about \$15 at larger hardware stores. See Figure 5.

#### Ignition Gauge

This tool has round wire gauges for measuring spark plug gap. See Figure 6.

#### Strobe Timing Light

This instrument is necessary for tuning. By flashing a light at the precise instant the cylinder fires, the position of the flywheel at that instant can be seen. Marks on the flywheel

are lined up with the crankcase mark while the engine is running.

Suitable lights range from inexpensive neon bulb types (\$2-3) to powerful xenon strobe lights (\$20-40). See **Figure 7**. Neon timing lights are difficult to see and must be used in dimly lit areas. Xenon strobe timing lights can be used outside in bright sunlight. Both types work on this motorcycle; use according to the manufacturer's instructions.

### Other Special Tools

A few other special tools may be required for major service. These are described in the appropriate chapters and are available from Honda dealers.

## 1.7

### SERIAL NUMBERS

You must know the model serial number for registration purposes and when ordering special parts.

The frame serial number is stamped on the right side of the steering head (**Figure 8**) and on the VIN plate on the left side of the steering head. The engine number is stamped on the lower left-hand side of the crankcase (**Figure 9**).

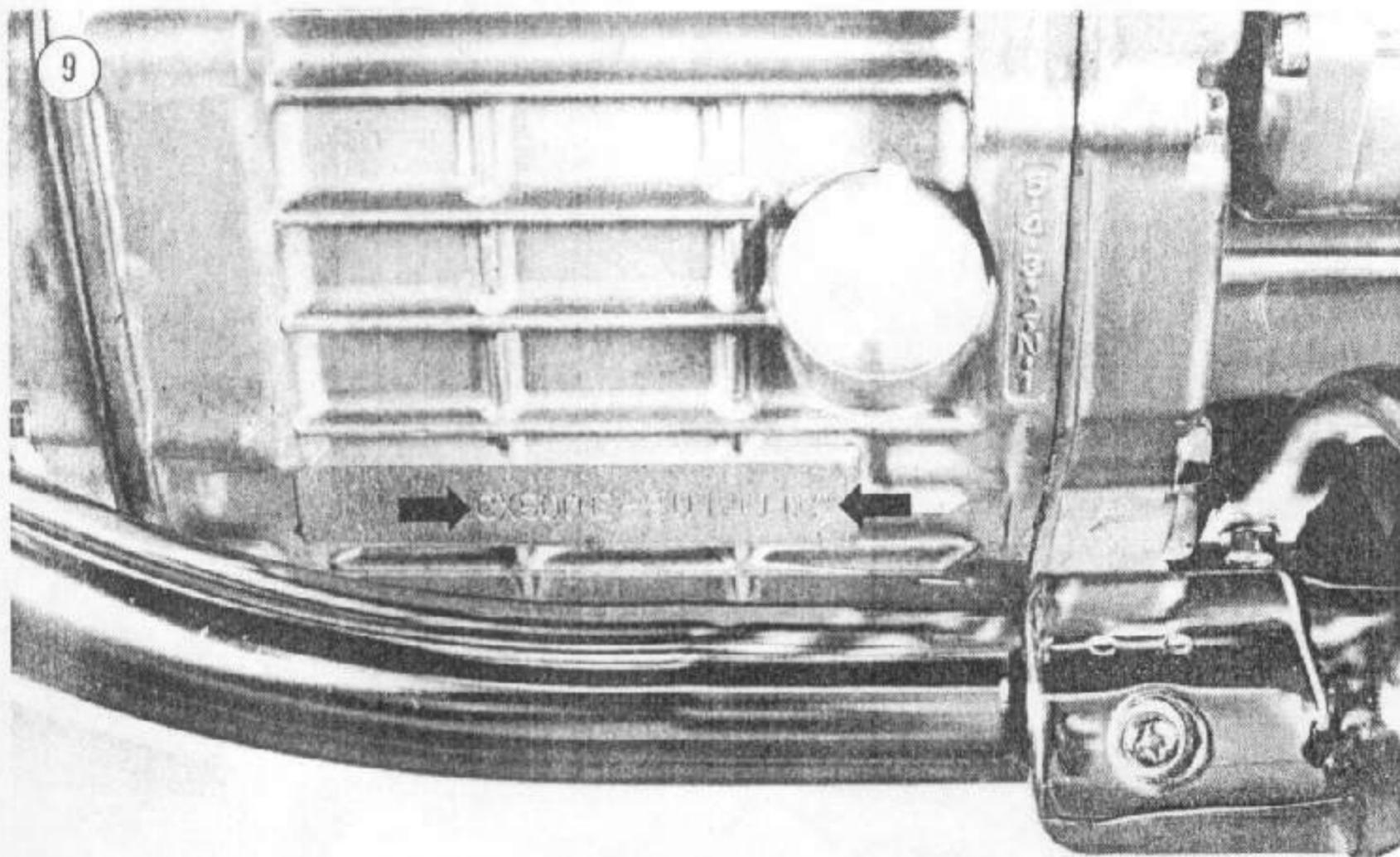
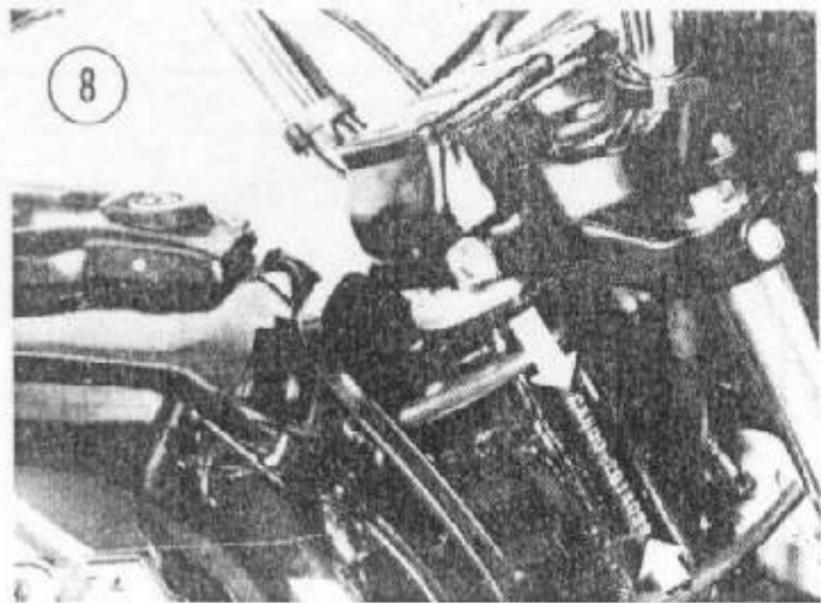
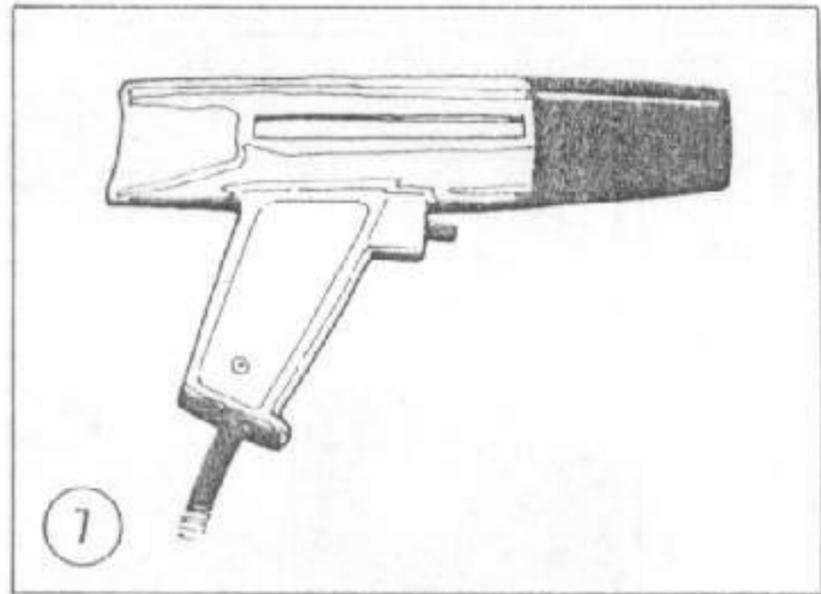


Table 1 GENERAL SPECIFICATIONS

Engine type	Liquid cooled, 4-stroke, OHV, 80° V-twin
Bore and stroke	3.071 × 2.047 in. (78 × 52mm)
Displacement	30.3 cu. in. (497cc)
Compression ratio	10:1
Carburetion	2 Keihin 35mm constant velocity
Ignition	Capacitor discharge ignition (CDI)
Lubrication	Wet sump, filter oil pump
Clutch	Wet, multi-plate (7)
Transmission	5-speed, constant mesh
Transmission ratios	
1st	2.733
2nd	1.850
3rd	1.416
4th	1.148
5th	0.931
Final reduction ratio	3.091
Starting system	Electric starter
Wheelbase	57.3 in. (1,455mm)
Steering head angle	26°5' from vertical
Trail	3.9 in. (100mm)
Front suspension	Telescopic forks, 5.5 in. (13.9mm) travel
Rear suspension	Swing arm, 5-way adjustable shock absorbers 3.3 in. (85mm) travel
Front tire	3.25 S19-4PR
Rear tire	3.75 S18-4PR
Ground clearance	15.9 in. (150mm)
Seat height	31.9 in. (810mm)
Overall height	46.3 in. (1,176mm)
Overall width (handlebar)	34.1 in. (865mm)
Overall length	86.0 in. (2,185mm)
Fuel capacity	
Main	3.6 U.S. gal. (13.6 liter)
Reserve	0.9 U.S. gal. (3.5 liter)
Engine oil capacity	3.2 U.S. qt. (3.0 liter)
Cooling system capacity	1.0 U.S. qt. (1.8 liter)
Front fork oil capacity	
Dry	4.7 oz. (135cc)
Refill	4.4 oz. (125cc)

## CHAPTER TWO

### TROUBLESHOOTING

Diagnosing mechanical problems is relatively simple if you use orderly procedures and keep a few basic principles in mind.

The troubleshooting procedures in this chapter analyze typical symptoms, and show logical methods of isolating causes. These are not the only methods. There may be several ways to solve a problem, but only a systematic, methodical approach can guarantee success.

Never assume anything. Do not overlook the obvious. If you are riding along and the bike suddenly quits, check the easiest, most accessible problem spots first. Is there gasoline in the tank? Is the shutoff valve in the ON or RESERVE position? Has a spark plug wire fallen off? Check ignition switch. Sometimes the weight of keys on a key ring may turn the ignition off suddenly.

If nothing obvious turns up in a cursory check, look a little further. Learning to recognize and describe symptoms will make repairs easier for you or a mechanic at the shop. Describe problems accurately and fully. Saying that "it won't run" isn't the same as saying "it quit on the highway at high speed and wouldn't start," or that "it sat in my garage for three months and then wouldn't start."

Gather as many symptoms together as possible to aid in diagnosis. Note whether the engine lost power gradually or all at once, what color

smoke (if any) came from the exhaust, and so on. Remember that the more complicated a machine is, the easier it is to troubleshoot because symptoms point to specific problems.

After the symptoms are defined, areas which could cause the problems are tested and analyzed. Guessing at the cause of a problem may provide the solution, but it can easily lead to frustration, wasted time, and a series of expensive, unnecessary parts replacement.

You do not need fancy equipment or complicated test gear to determine whether repairs can be attempted at home. A few simple checks could save a large repair bill and time lost while the bike sits in a dealer's service department. On the other hand, be realistic and do not attempt repairs beyond your abilities. Service departments tend to charge heavily for putting together a disassembled engine that may have been abused. Some won't even take on such a job — so use common sense, don't get in over your head.

#### 2.1

#### OPERATING REQUIREMENTS

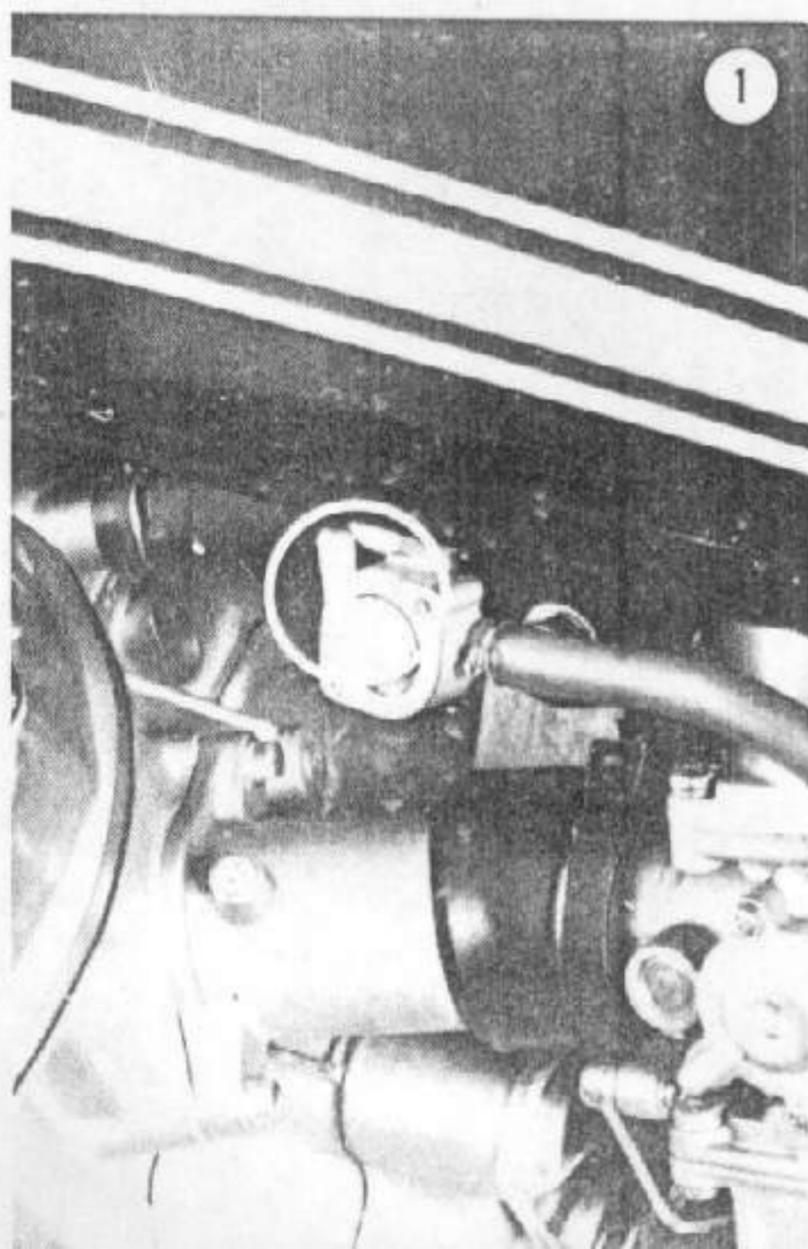
An engine needs three basics to run properly: correct gas/air mixture, compression, and a spark at the right time. If one or more are missing, the engine won't run. The electrical system is the weakest link of the three basics. More

problems result from electrical breakdowns than from any other source. Keep that in mind before you begin tampering with carburetor adjustments and the like.

If a bike has been sitting for any length of time and refuses to start, check the battery for a charged condition first, and then look to the gasoline delivery system. This includes the tank, fuel shutoff valve, lines, and the carburetors. Rust may have formed in the tank, obstructing fuel flow. Gasoline deposits may have gummed up carburetor jets and air passages. Gasoline tends to lose its potency after standing for long periods. Condensation may contaminate it with water. Drain old gas and try starting with a fresh tankful.

## 2.2 TROUBLESHOOTING INSTRUMENTS

Chapter One lists many instruments needed along with detailed instructions on their use.



## 2.2 EMERGENCY TROUBLESHOOTING

When the bike is difficult to start or won't start at all, it does not help to grind away at the starter or kick the tires. Check for obvious problems even before getting out your tools. Go down the following list step-by-step. Do each one; you may be embarrassed to find your kill switch off, but that is better than wearing out your leg or wearing your battery down with the starter. If the bike still will not start, refer to the appropriate troubleshooting procedures which follow in this chapter.

1. Is there fuel in the tank? Do not trust the fuel gauge. Remove the filler cap and rock the bike; listen for fuel sloshing around.

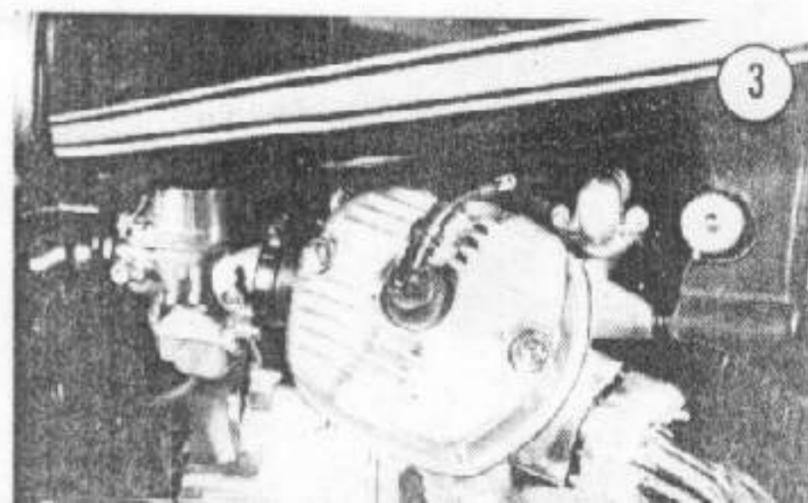
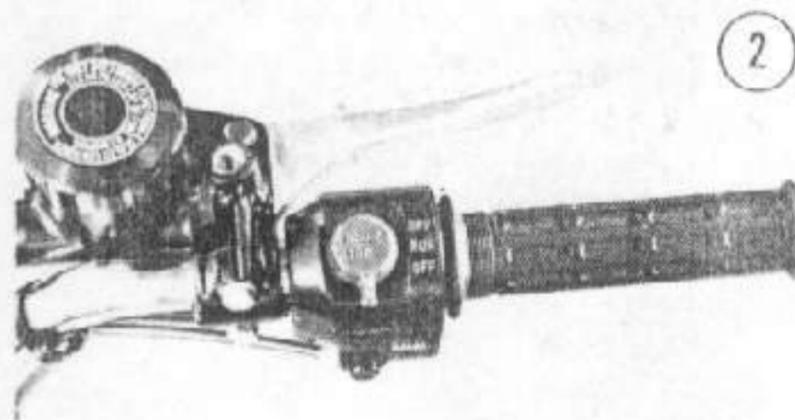
### WARNING

*Do not use an open flame to check in the tank. A serious explosion is certain to result.*

2. Is the fuel shutoff valve on? Turn it to RESERVE (Figure 1) to be sure that you get the last remaining gas.

3. Is the kill switch on? (Figure 2).

4. Are spark plug wires on tight? (Figure 3).



5. Is the choke in the right position? It should be pulled out for a cold engine and pushed in for a warm engine (Figure 4).
6. Is the battery dead? Check it with a hydrometer.
7. Has the main fuse (Figure 5) blown? Replace it with a good one.
8. Is the transmission in NEUTRAL or the clutch lever pulled in? The starter will not operate with the bike in gear without pulling in the clutch lever or having the transmission in the NEUTRAL position.
9. Is the vent hole in the fuel cap clogged (Figure 6)? If so, clean it out.

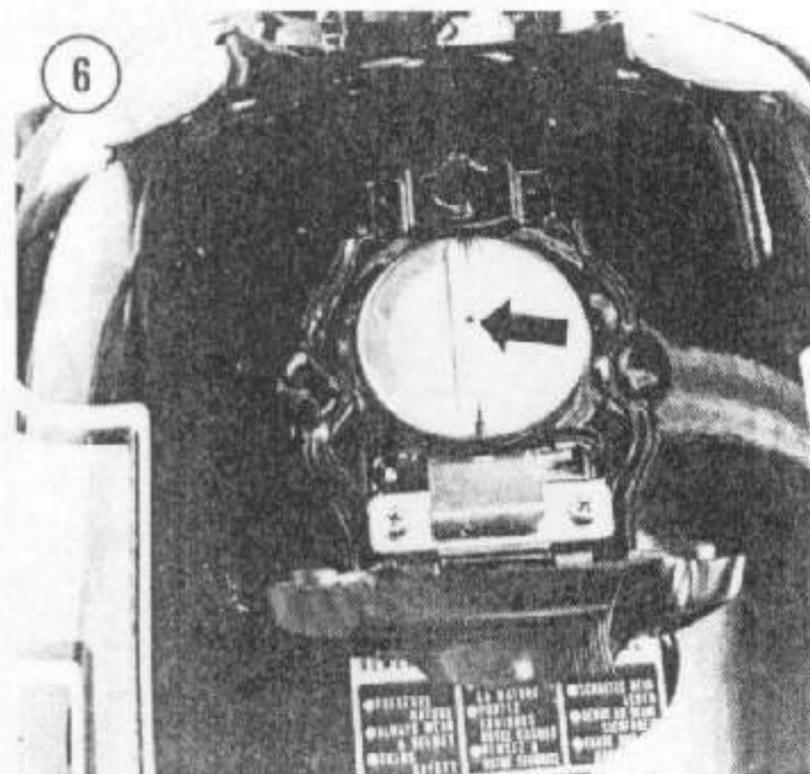
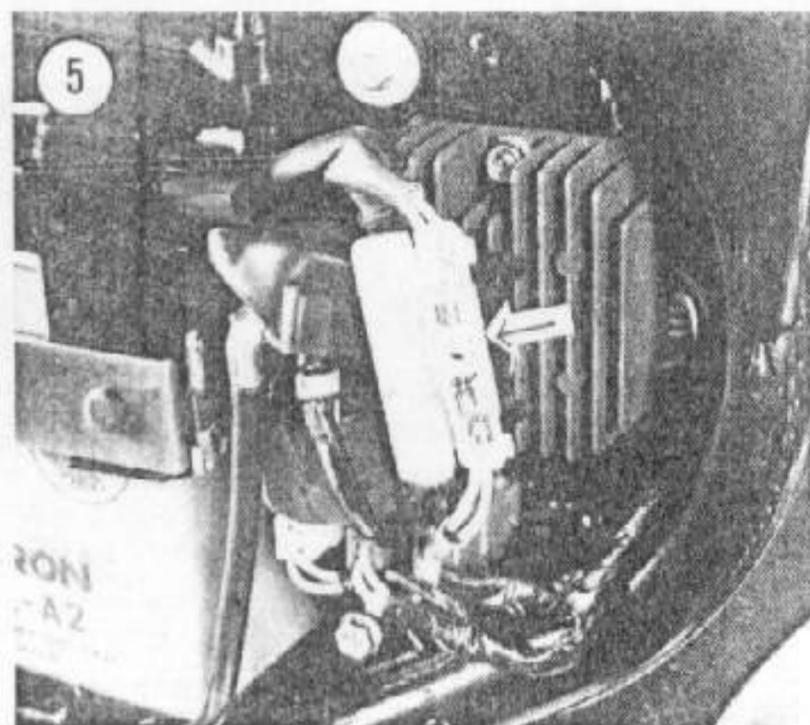


## 2.3 STARTER

Starter system troubles are relatively easy to isolate. The following are common symptoms and cures.

1. *Engine cranks very slowly or not at all* — If the headlight is very dim or not lighting at all, most likely the battery or its connecting wires are at fault. Check the battery condition using the procedures described in Chapter Eight. Check the wiring for breaks, shorts, and dirty connections.

If the battery and connecting wires check good, the trouble may be in the starter, starter solenoid, or wiring. To isolate the trouble, short the 2 large starter solenoid terminals together (not to ground); if the starter cranks



normally, check the starter solenoid wiring as described under symptoms 2 and 3. If the starter still fails to crank properly, remove the starter and test it. Refer to Chapter Seven.

2. *Starter only operates when clutch lever is pulled in, even in neutral* — If neutral light comes on normally, the diode is shorted; a shorted diode will not prevent the starter from operating.

If neutral light does not come on in NEUTRAL, but engine starts when clutch lever is pulled in, the neutral switch is defective or the connecting wire is open.

3. *Starter operates while transmission is in gear without pulling in the clutch lever* — The neutral switch or connecting wire is shorted to ground.

4. *Starter will not operate while transmission is in gear with the clutch lever pulled in* — The clutch lever switch or connecting wire is shorted to ground.

5. *Starter engages, but will not disengage when ignition switch is released* — This trouble is usually caused by a sticking starter solenoid.

## 2.4

### CHARGING SYSTEM

Troubleshooting an alternator system is somewhat different from troubleshooting a generator. For example, *never* short any terminals to ground on the alternator or the voltage regulator/rectifier. The following symptoms are typical of alternator charging system troubles.

1. *Battery requires frequent charging* — The charging system is not functioning or is undercharging the battery. Test the alternator and voltage regulator/rectifier as described in Chapter Seven.

2. *Battery requires frequent additions of water or lamps require frequent replacement* — The alternator is probably overcharging the battery. Check voltage regulator/rectifier as described in Chapter Seven.

## 2.5

### ENGINE

These procedures assume that the starter cranks the engine over normally. If not, refer to *Starter* section in this chapter.

## 2.5.A.

### Poor Performance

1. *Engine misses erratically at all speeds* — A cause for intermittent trouble like this can be difficult to find. The fault could be in the ignition system, exhaust system (exhaust restriction), or fuel system. Follow troubleshooting procedures for these systems carefully to isolate the trouble.

2. *Engine misses at idle only* — Trouble could exist anywhere in ignition system. Refer to *Ignition System* in Chapter Seven. Trouble could exist in the carburetor idle circuits.

3. *Engine misses at high speed only* — Trouble could exist in the fuel system or ignition system. Check the fuel lines, etc., as described under *Fuel System* troubleshooting. Also check spark plugs and wires. Refer to *Ignition System* in Chapter Seven.

4. *Poor performance at all speeds, lack of acceleration* — Trouble usually exists in ignition or fuel system. Check each with the appropriate troubleshooting procedure.

5. *Excessive fuel consumption* — This can be caused by a wide variety of seemingly unrelated factors. Check for clutch slippage, brake drag, and defective wheel bearings. On models with *automatic transmission*, check engine oil level. The engine oil is used in the torque converter also and it may be low. Check ignition and fuel system as described later.

## 2.6

### ENGINE NOISES

1. *Valve clatter* — This is a light to heavy tapping sound from under the valve covers. Usually caused by excessive valve clearance. Adjust clearance as described under *Valve Clearance Adjustment* in Chapter Three. If noise persists, disassemble the rocker arm mechanism as described under *Rocker Assemblies* in Chapter Four. Look for broken springs, worn rocker arms, and shafts.

2. *Knocking or pinging during acceleration* — Caused by using a lower octane fuel than recommended. May also be caused by poor fuel available at some "discount" gasoline stations. Pinging can also be caused by spark plugs of the wrong heat range. Refer to *Correct Spark Plug Heat Range* in Chapter Three.

3: *Slapping or rattling noises at low speed or during acceleration* — May be caused by piston slap, i.e., excessive piston-cylinder wall clearance.

4. *Knocking or rapping while decelerating* — This noise is usually caused by excessive rod bearing clearance.

5. *Persistent knocking and vibration* — This is usually caused by excessive main bearing clearance.

6. *Rapid on-off squeal* — Could be caused by a compression leak around cylinder head gaskets or spark plugs.

### 2.7

#### EXCESSIVE VIBRATION

This can be difficult to find without disassembling the engine. Usually this is caused by loose engine mounting hardware or worn engine or transmission bearings.

### 2.8

#### LUBRICATION TROUBLES

1. *Excessive oil consumption* — May be caused by worn rings and bores. Overhaul is necessary to correct this; see Chapter Four. May also be caused by worn valve guides or defective valve guide seals. Also check for exterior leaks.

2. *Oil pressure lamp does not light when ignition switch is on* — The oil pressure sending switch is located on the engine front cover above the clutch housing (Figure 7). To gain access to it, remove the radiator as described under *Radiator Removal/Installation* in Chapter Eight. Check that the wire is connected to the sender and makes good contact. Pull off wire and ground it. If the lamp lights, replace the sender. If the lamp does not light, replace the lamps.

3. *Oil pressure lamp lights or flickers when engine is running* — This indicates low or complete loss of oil pressure. *Stop the engine immediately*; coast to a stop with the clutch disengaged. This may simply be caused by a low oil level, or an overheating engine. Check the oil level. Check for a shorted oil pressure sender with an ohmmeter or other continuity tester. Listen for unusual noises indicating bad bearings, etc. Do not restart the engine until you know why the light went on and the problem has been corrected.

### 2.9

#### FUEL SYSTEM

Fuel system troubles must be isolated to the carburetor, fuel tank, fuel shutoff valve or fuel lines. These procedures assume that the ignition system has been checked and properly adjusted.

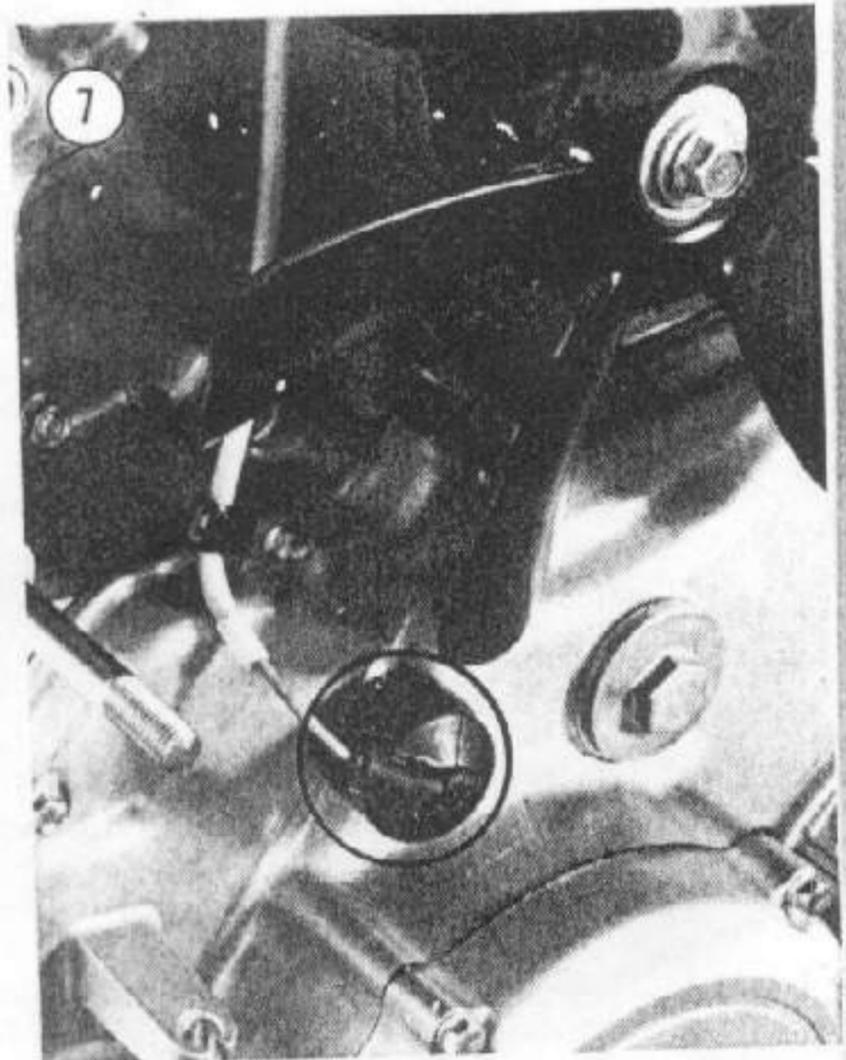
1. *Engine will not start* — First determine that the fuel is being delivered to the carburetor. Turn the fuel shutoff valve to the OFF position, remove the flexible fuel line to the carburetor. Place the loose end onto a small container, turn the shutoff valve to the ON or RESERVE position. Fuel should run out of the tube. If it does not, remove the shutoff valve and check for restrictions within it or the fuel tank. Refer to Chapter Six.

2. *Rough idle or engine miss with frequent stalling* — Check carburetor adjustment. See Chapter Three.

3. *Stumbling when accelerating from idle* — Check idle speed adjustment. See Chapter Three.

4. *Engine misses at high speed or lacks power* — This indicates possible fuel starvation. Clean main jets and float needle valves.

5. *Black exhaust smoke* — Black exhaust smoke means a badly overrich mixture. Check



that manual choke disengages. Check idle speed. Check for leaky floats or worn float needle valves. Also check that jets are proper size.

### 2.10

#### CLUTCH

1. *Slippage* — This is most noticeable when accelerating in a high gear at relatively low speed. To check slippage, shift to 2nd gear and release the clutch as if riding off. If the clutch is good, the engine will slow and stall. If the clutch slips, continued engine speed will give it away.

Slippage results from insufficient clutch lever free play, worn discs or pressure plate, or weak springs.

2. *Drag or failure to release* — This trouble usually causes difficult shifting and gear clash, especially when downshifting. The cause may be excessive clutch lever free play, warped or bent pressure plate or clutch disc, or broken or loose linings.

3. *Chatter or grabbing* — A number of things can cause this trouble. Check tightness of engine mounting bolts. Also check lever free play.

### 2.11

#### TRANSMISSION

Transmission problems are usually indicated by one or more of the following symptoms:

- a. Difficulty shifting gears
- b. Gear clash when downshifting or when shifting from high to low
- c. Slipping out of gear
- d. Excessive noise in NEUTRAL
- e. Excessive noise in gear

Transmission symptoms are sometimes hard to distinguish from clutch symptoms. Be sure that the clutch is not causing the trouble before working on the transmission. Refer to Chapter Five.

### 2.12

#### BRAKES

1. *Brake lever or pedal goes all the way to its stop* — There are numerous causes for this including excessively worn linings or pads, air in the hydraulic system, leaky brake lines, leaky calipers, or leaky or worn master cylinder. Check for leaks and thin brake linings or pads. Bleed the brakes. If this does not cure the trou-

ble, rebuild the calipers and/or master cylinder. Also improper rod adjustment may be a cause.

2. *Spongy lever* — Normally caused by air in the system; bleed the brakes.

3. *Dragging brakes* — Check for swollen rubber parts, due to improper brake fluid or contamination, and obstructed master cylinder bypass port. Clean or replace defective parts. Check for broken or weak return springs.

4. *Hard lever or pedal* — Check brake linings or pads for contamination. Also check for a restricted brake line and hose and a brake pedal that might need lubrication.

5. *High speed fade* — Check for glazed or contaminated brake linings or pads. Ensure that recommended brake fluid is installed. Drain entire system and refill if in doubt.

6. *Pulsating lever or pedal* — Check for out-of-round drum or excessive brake disc runout. Undetected accident damage is also a frequent cause of this.

### 2.13

#### LIGHTING SYSTEM

Bulbs which continuously burn out may be caused by excessive vibration, loose connections that permit sudden current surges, poor battery connections, or installation of the wrong type bulb.

A majority of light and horn or other electrical accessory problems are caused by loose or corroded ground connections. Check those first, and then substitute known good units for easier troubleshooting.

### 2.14

#### FRONT SUSPENSION AND STEERING

1. *Too stiff or too soft* — Make sure forks have not been leaking and oil is correct. If in doubt, drain and refill as described under *Front Forks* in Chapter Nine.

2. *Leakage around seals* — There should be a light film of oil on fork tubes. However, large amounts of oil on tubes means the seals are leaking. Replace seals as described under *Front Fork Seal Replacement* in Chapter Nine.

3. *Fork action is rough* — Check for bent tube.

4. *Steering wobbles* — Check for correct steering head bearing tightness as described under *Steering Head Adjustment* in Chapter Nine.

## CHAPTER THREE

### PERIODIC MAINTENANCE AND LUBRICATION

Regular maintenance is the best guarantee of a trouble-free, long lasting motorcycle. An afternoon spent now, cleaning and adjusting, can prevent costly mechanical problems in the future and unexpected breakdowns on the road.

The procedures presented in this chapter can be easily carried out by anyone with average mechanical skills. The operations are presented step-by-step; if they are followed, it is difficult to go wrong.

#### 3.1 ROUTINE CHECKS

The following simple checks should be performed at each stop at a service station for gas.

##### 3.1.1 Engine Oil Level

Refer to *Checking Engine Oil Level* under *Periodic Lubrication* in this chapter.

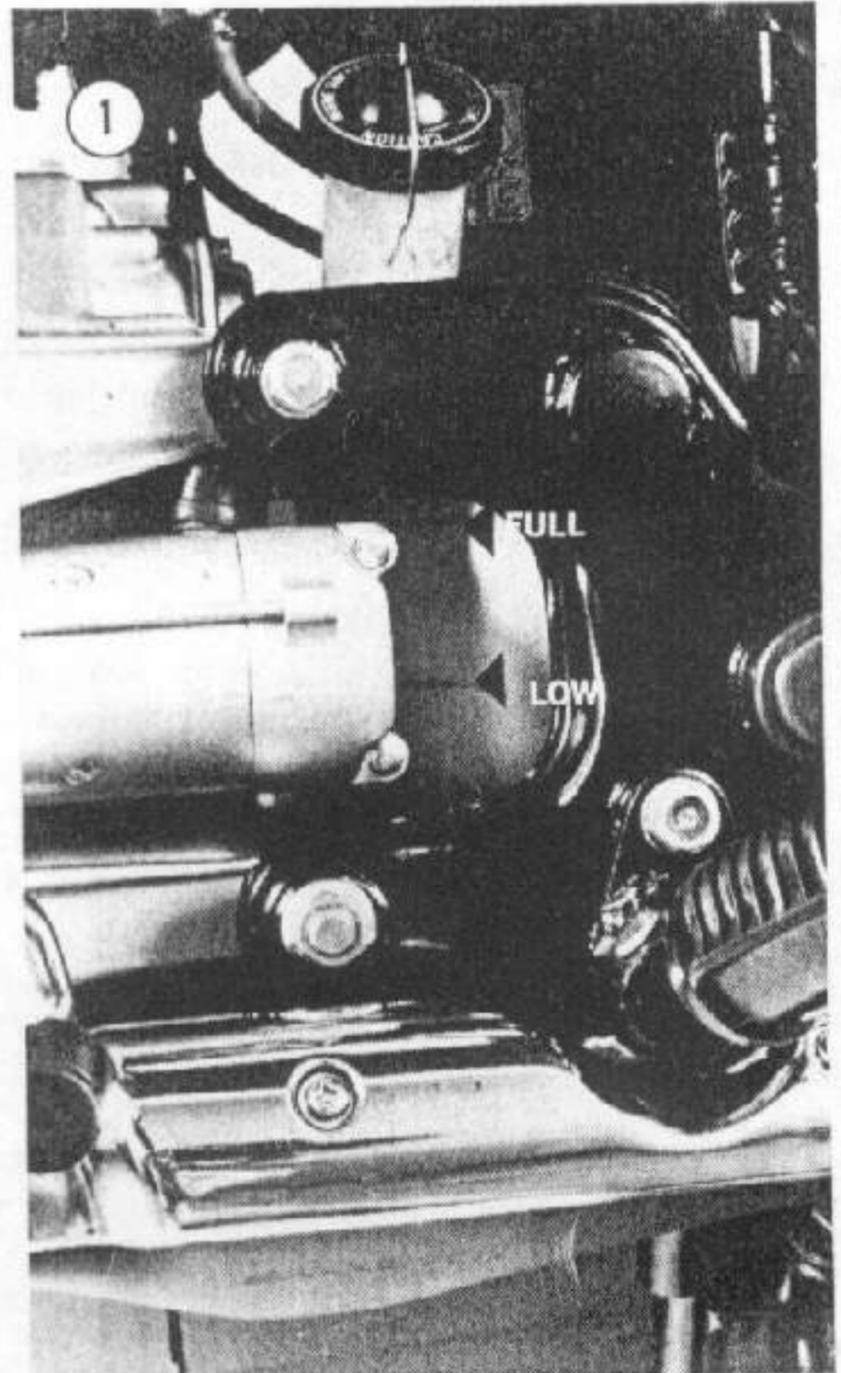
##### 3.1.2 Coolant Level

Check the coolant level when the engine has warmed up to normal operating temperature.

Check level in the recovery tank (Figure 1). Top it up if the level is below the FULL mark.

#### WARNING

*Do not remove the radiator pressure cap when the engine is hot. The coolant is*



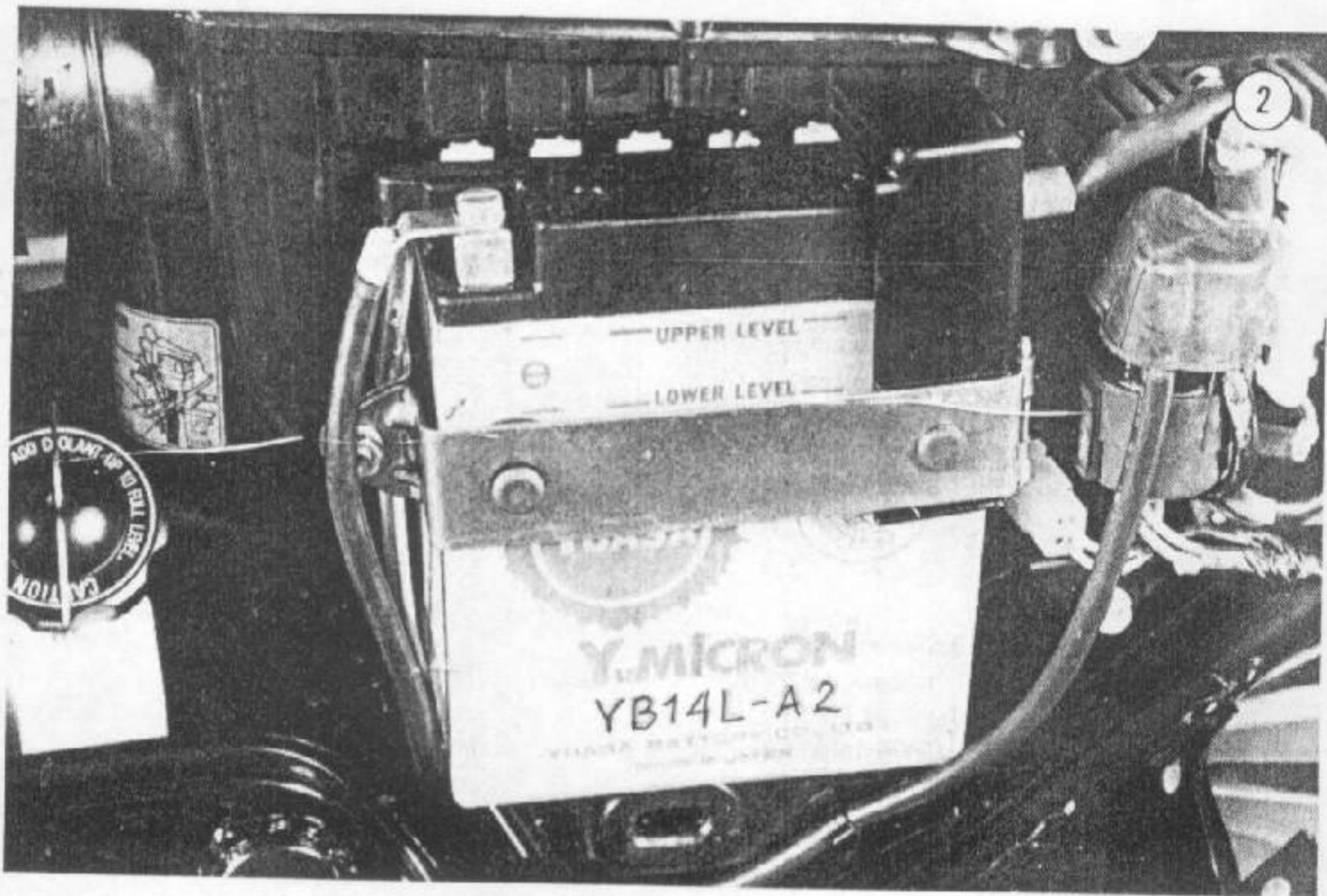


Table 1 TIRE PRESSURES

Load	Front	Rear
Rider only Up to 200 lb. (90 kg)	24 psi (1.75 kg/sq. cm)	28 psi (2.00 kg/sq. cm)
Rider and passenger and/or luggage Up to 330 lb. (150 kg)*	24 psi (1.75 kg/sq. cm)	36 psi (2.50 kg/sq. cm)
*Vehicle maximum load limit		

*extremely hot and under pressure and can scald you.*

**3.4.3  
General Inspection**

1. Quickly examine the engine for signs of oil, fuel, or coolant leakage.
2. Check the tires for imbedded stones. Pry them out with your ignition key.
3. Make sure all lights work.

*NOTE: At least check the brakelight. It can burn out anytime. Motorists cannot stop as quickly as you and need all the warning you can give.*

**3.4.4  
Tire Pressure**

Tire pressure must be checked with the tires cold. Correct tire pressure depends a lot on the load you are carrying. See **Table 1**.

**3.4.5  
Battery**

Remove the left-hand side cover and check battery electrolyte level. The level must be between the upper and lower level marks on the case (**Figure 2**). For complete details see *Battery — Checking Electrolyte Level* in this chapter.

Check the level more frequently in hot weather.

## 3.2

## SERVICE INTERVALS

The services and intervals shown in **Table 2** are recommended by the factory. Strict adherence to these recommendations will go a long way toward insuring long service from your Honda.

For convenience of maintaining your motorcycle, most of the services shown in the table are described in this chapter. However, some procedures which require more than minor disassembly or adjustment are covered elsewhere in the appropriate chapter.

## 3.3

## TIRES

## 3.3.1

## Pressure

Tire pressure should be checked and adjusted to accommodate rider and luggage weight. A simple, accurate gauge (**Figure 3**) can be purchased for a few dollars and should be carried in the motorcycle tool kit. The appropriate tire pressures are shown in **Table 1**.

## 3.3.2

## Inspection

Check tread for excessive wear, deep cuts, imbedded objects such as stones, nails, etc. If you find a nail in a tire, mark its location with a light crayon before pulling it out. This will help locate the hole in the inner tube. Refer to *Tire Changing* in Chapter Nine.

Check local traffic regulations concerning minimum tread depth. Measure with a tread depth gauge (**Figure 4**) or small ruler. Honda recommends replacement when the front tread depth is  $\frac{1}{16}$  in. (1.5mm) or less and rear tread depth is  $\frac{3}{32}$  in. (2mm) or less. Tread wear indicators appear across the tire when tread reaches minimum safe depth. Replace the tire at this point.

## 3.4

## BATTERY

## 3.4.1

## Checking Electrolyte Level

The battery is the heart of the electrical system. It should be checked and serviced as indicated. The majority of electrical system troubles can be attributed to neglect of this vital component.

The electrolyte level may be checked with the battery installed. However, it is necessary to

remove the left-hand side panel (**Figure 5**). The electrolyte level should be maintained between the two marks on the battery case (**Figure 2**). If the electrolyte level is low, it is a good idea to remove the battery so that it can be thoroughly serviced and checked.

1. Remove the left-hand side panel (**Figure 5**).

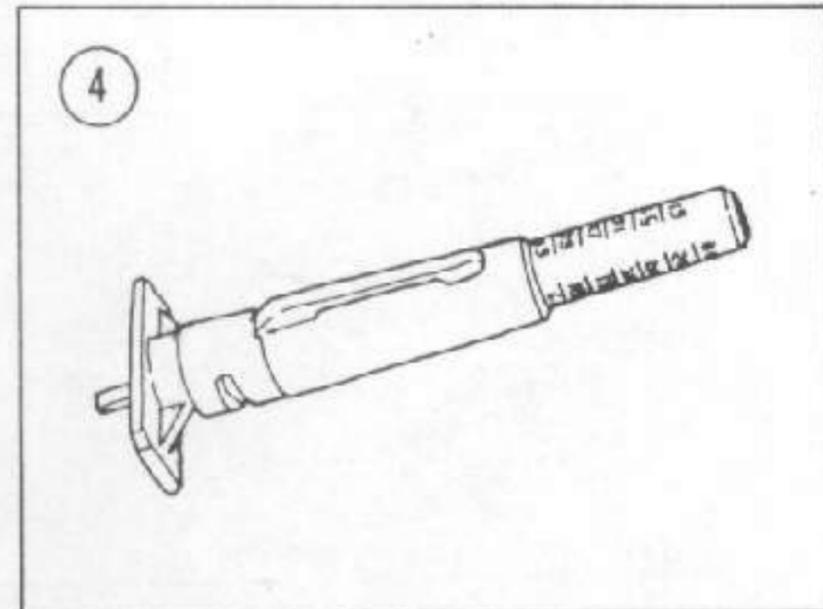
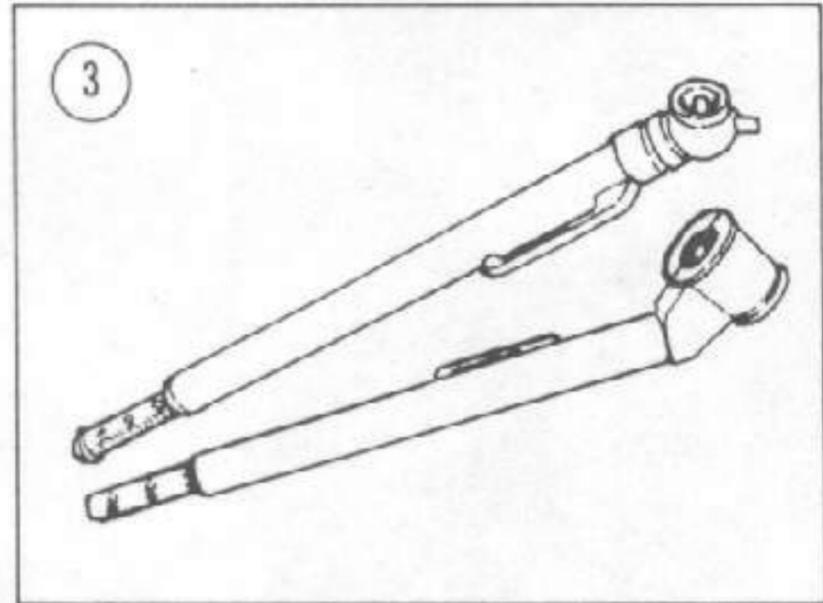


Table 2 SERVICE INTERVALS

<p>Every Month</p>	<ul style="list-style-type: none"> <li>• Check tire pressure and condition.</li> <li>• Check battery electrolyte level.</li> </ul>
<p>Every 250 Miles</p>	<ul style="list-style-type: none"> <li>• Check engine oil level.</li> <li>• Check coolant level in recovery tank.</li> </ul>
<p>Every 1,800 Miles</p>	<ul style="list-style-type: none"> <li>• Check brake fluid in master cylinder.</li> <li>• Lubricate all control cables with oil.</li> <li>• Adjust brake (disc brake is non-adjustable).</li> </ul>
<p>Every 3,600 Miles</p>	<ul style="list-style-type: none"> <li>• Tune-up engine.</li> <li>• Check crankcase breather tubes.</li> <li>• Clean air cleaner element.</li> <li>• Inspect spark plugs; regap if necessary.</li> <li>• Check carburetor idle speed.</li> <li>• Adjust camshaft chain tensioner.</li> <li>• Check clutch free play adjustment.</li> <li>• Check rear brake pedal free play adjustment.</li> <li>• Examine disc brake pads for wear.</li> <li>• Check valve clearance.</li> <li>• Inspect throttle operation.</li> <li>• Check engine mounts for side play.</li> <li>• Check all suspension components.</li> <li>• Lubricate rear brake pedal pivot.</li> <li>• Inspect wheels.</li> <li>• Inspect fuel lines for chafed, cracked, or swollen ends.</li> </ul>
<p>Every 7,200 Miles</p>	<ul style="list-style-type: none"> <li>• Change engine oil.</li> <li>• Replace oil filter.</li> <li>• Replace spark plugs.</li> <li>• Inspect cooling system and hoses.</li> <li>• Inspect steering head and bearings.</li> <li>• Replace air cleaner element.</li> <li>• Check oil level in final drive unit.</li> <li>• Change fluid in front forks.</li> <li>• Check stoplight switch operation.</li> <li>• Inspect brake system.</li> <li>• Inspect throttle operation.</li> <li>• Lubricate final drive joint.</li> <li>• Check all nuts, bolts, and fasteners.</li> </ul>
<p>Every 10,800 Miles</p>	<ul style="list-style-type: none"> <li>• Repack wheel bearings with grease.</li> <li>• Dismantle and clean both carburetors.</li> </ul>
<p>Every 21,000 Miles</p>	<ul style="list-style-type: none"> <li>• Drain and replace coolant.</li> <li>• Drain and replace final drive lubricant.</li> <li>• Drain and replace disc brake fluid.</li> </ul>



2. Remove negative electrical cable (ground) from the battery (Figure 6).
3. Remove the nut (Figure 7) securing the retaining strap and pivot the strap out of the way.
4. Remove the positive electrical cable (A, Figure 8) and the breather tube (B, Figure 8).
5. Pull the battery out and remove it.

#### CAUTION

*Be careful not to spill battery electrolyte on painted or polished surfaces. The liquid is highly corrosive and will damage the finish. If it is spilled, wash it off immediately with soapy water and thoroughly rinse with clean water.*

6. Remove the caps from the battery cells and add distilled water to correct the level. *Never add electrolyte (acid) to correct the level.*
7. After the level has been corrected and the battery allowed to stand for a few minutes, check the specific gravity of the electrolyte in each cell with a hydrometer (Figure 9). Follow the manufacturer's instructions for reading the instrument.

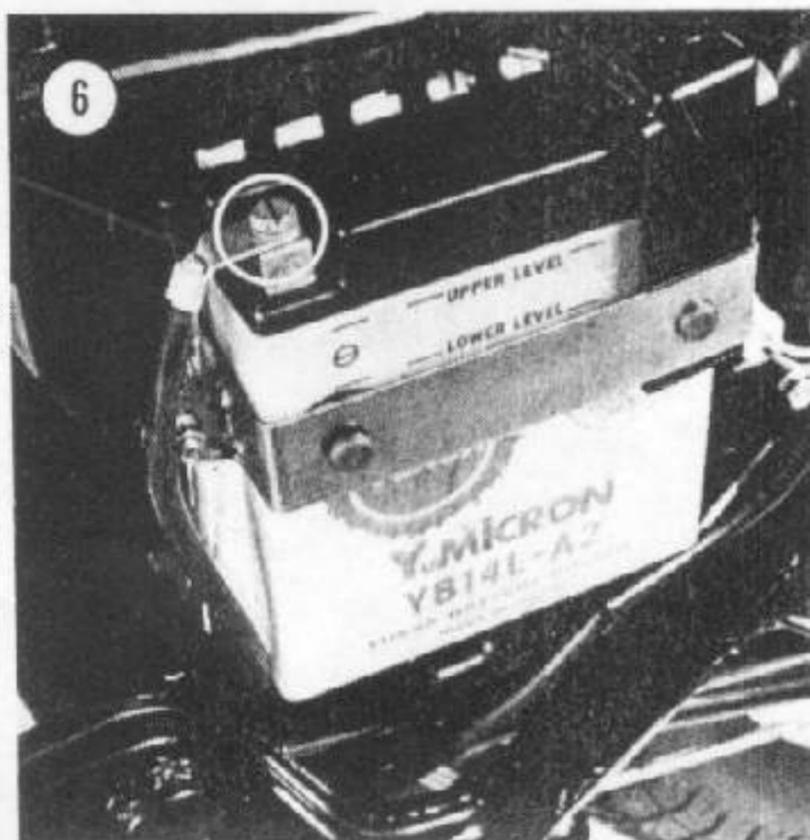
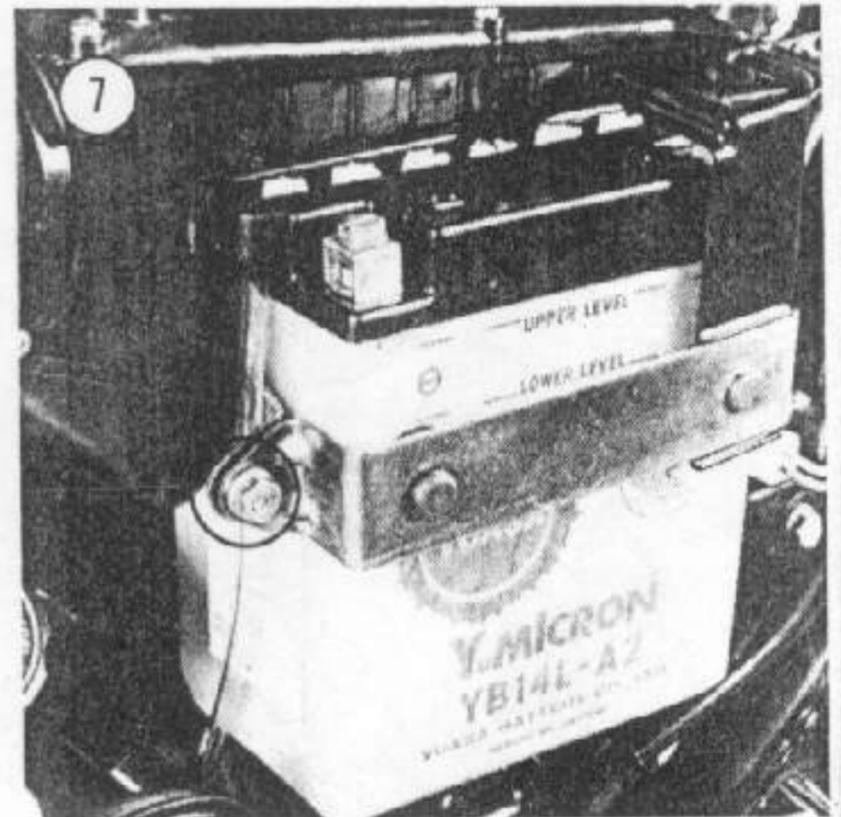
#### 3.4.2

#### Testing

Hydrometer testing is the best way to check battery condition. Use a hydrometer with numbered graduations from 1.100 to 1.300 rather than one with color-coded bands. To use the hydrometer, squeeze the rubber ball, insert

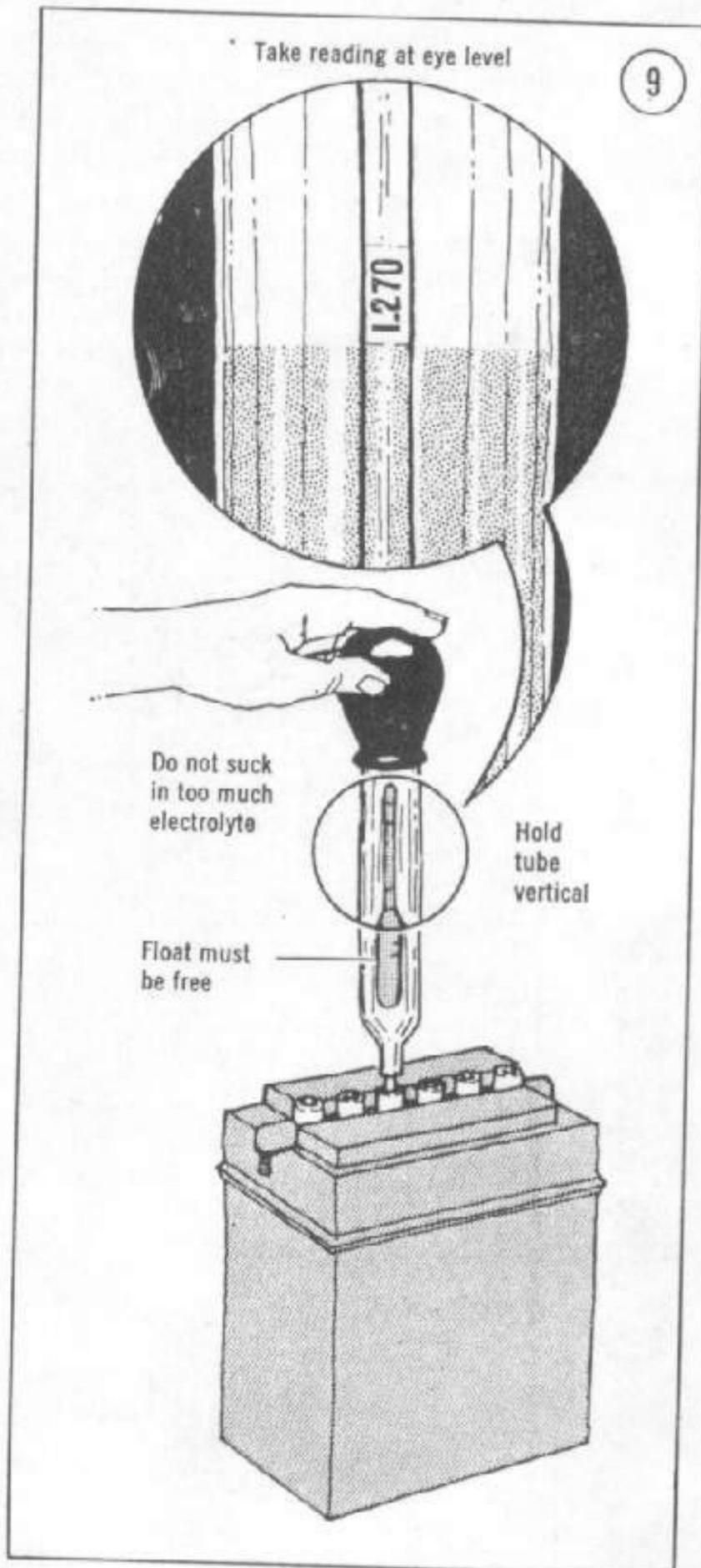
the tip in the cell and release the ball. Draw enough electrolyte to float the weighted float inside the hydrometer. Note the number in line with surface of the electrolyte; this is the specific gravity for this cell. Return the electrolyte to the cell from which it came.

The specific gravity of the electrolyte in each battery cell is an excellent indication of that cell's condition. A fully charged cell will read 1.275-1.280, while a cell in good condition may read from 1.250-1.280. A cell in fair condition reads from 1.225-1.250 and anything below 1.225 is practically dead.



Specific gravity varies with temperature. For each 10° that electrolyte temperature exceeds 80°F, add 0.004 to reading indicated on hydrometer. Subtract 0.004 for each 10° below 80°F.

If the cells test in the poor range, the battery requires recharging. The hydrometer is useful for checking the progress of the charging operation. Table 3 shows approximate state of charge.



### 3.4.3 Charging

#### CAUTION

Always remove the battery from the motorcycle before connecting charging equipment.

#### WARNING

During charging, highly explosive hydrogen gas is released from the battery. The battery should be charged only in a well-ventilated area, and open flames and cigarettes should be kept away. Never check the charge of the battery by arcing across the terminals; the resulting spark can ignite the hydrogen gas.

1. Connect the positive (+) charger lead to the positive battery terminal and the negative (-) charger lead to the negative battery terminal.
2. Remove all vent caps from the battery, set the charger at 12 volts, and switch it on. If the output of the charger is variable, it's best to select a low setting — 1½ to 2 amps.
3. After battery has been charged for about 8 hours, turn off the charger, disconnect the leads and check the specific gravity. It should be within the limits specified in Table 3. If it is, and remains stable after one hour, the battery is charged.
4. Clean the battery terminals, case, and tray and reinstall them in the motorcycle, reversing the removal steps. Coat the terminals with Vaseline or silicone spray to retard decomposition of the terminal material. Install the breather tube without any kinks or sharp bends. It must be clear in order to dissipate the gas normally given off by the battery.

Table 3 STATE OF CHARGE

Specific Gravity	State of Charge
1.110 - 1.130	Discharged
1.140 - 1.160	Almost discharged
1.170 - 1.190	One-quarter charged
1.200 - 1.220	One-half charged
1.230 - 1.250	Three-quarters charged
1.260 - 1.280	Fully charged

## 3.5

## PERIODIC LUBRICATION

## 3.5.1

## Checking Engine Oil Level

Engine oil level is checked with the dipstick located on the left-hand side of the crankcase (Figure 10).

1. Start the engine and allow it to run for a couple of minutes.
2. Shut off the engine and allow the oil to settle. Remove the dipstick, wipe it clean, reinsert it, *do not screw it in*. Remove it and check level. The motorcycle must be level for a correct reading.
3. The level should be between the 2 lines (Figure 11) but not above the upper one. If necessary, add the recommended weight of oil (Figure 12) to correct the level. Install the dipstick, and tighten it securely.

## 3.5.2

## Changing Engine Oil and Filter

The factory recommends oil change intervals every 7,200 miles. The filter should be changed with every other oil change. This assumes that the motorcycle is operated in moderate climates. In extreme cold climates, oil should be changed every 30 days. The time interval is more important than the mileage interval because acids formed by gasoline and water vapor from combustion will contaminate the oil even if the motorcycle is not run for several months. Also, if the motorcycle is operated

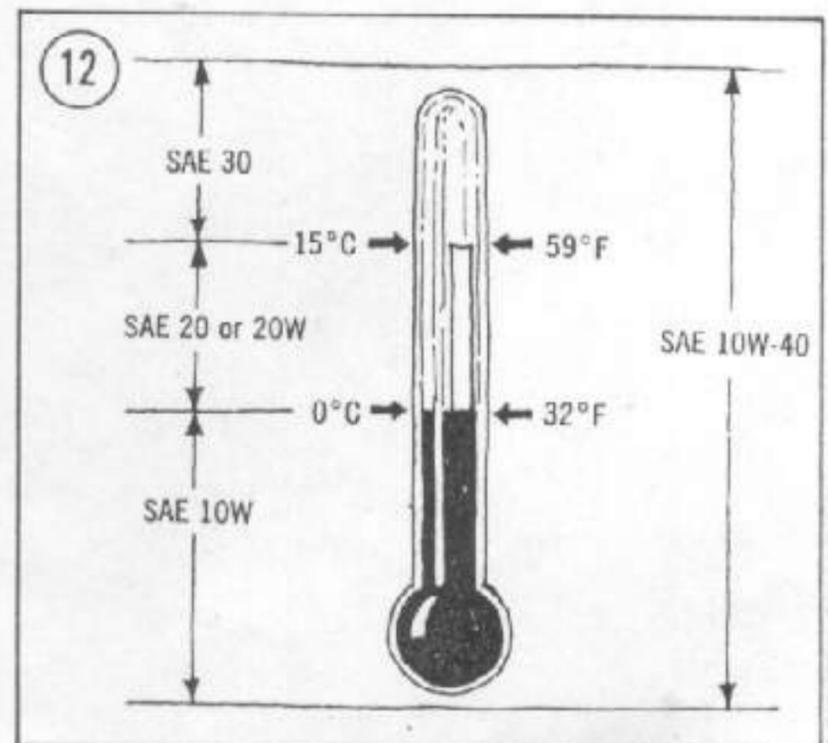
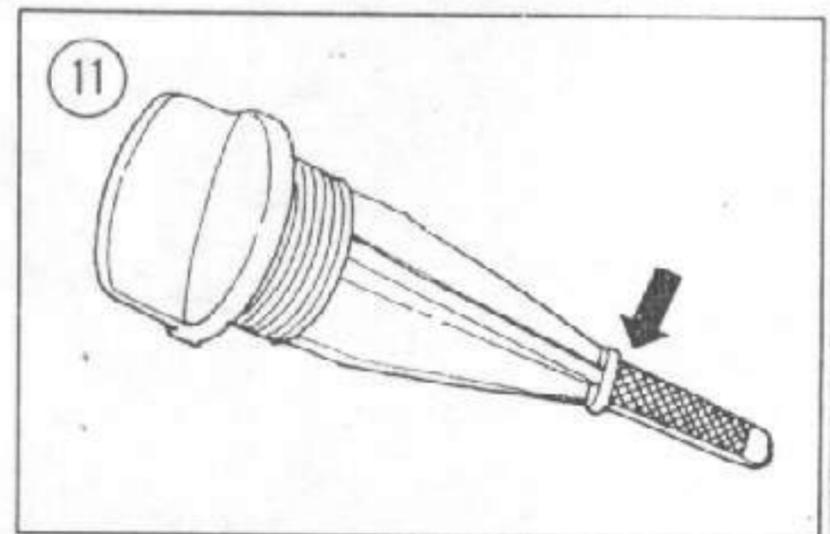
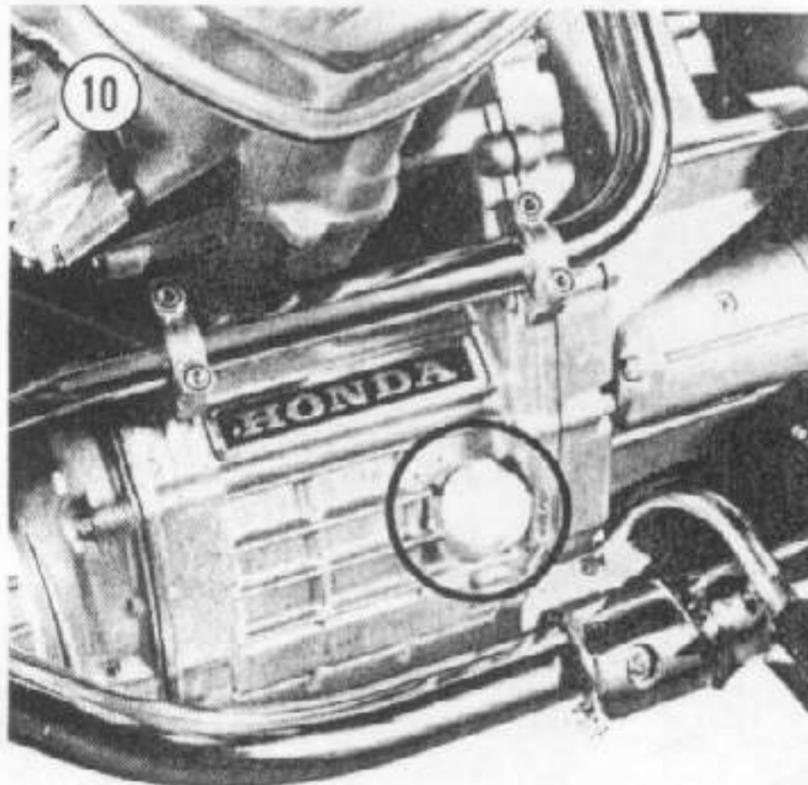
under dusty conditions the oil will get dirty more quickly and should be changed more frequently than recommended.

Use only a detergent oil with a API rating of SE or better. The quality rating is stamped on top of the can. Try always to use same brand of oil. Oil additives are not recommended.

Refer to Figure 12 for the correct weight of oil to use under different temperatures.

1. Place the motorcycle on the centerstand.
2. Start the engine and run it until it reaches normal operating temperature, then turn it off.
3. Place a drip pan under the crankcase and remove the drain plug (A, Figure 13) with a 17mm wrench. Remove dipstick (Figure 10); this will speed up the flow of oil.
4. Let it drain for at least 15-20 minutes.

NOTE: Before removing the filter cover, thoroughly clean off all road dirt and oil around it.



5. To remove the oil filter, unscrew the bolt securing the filter cover (B, Figure 13) to the crankcase.

6. Remove the cover and the filter, discard the old filter and clean out the cover and the bolt with cleaning solvent and dry thoroughly. Remove all solvent residue.

7. Inspect the O-ring (A, Figure 14) on the bolt and the seal (B, Figure 14) on the cover. Replace any if damaged or deteriorated.

NOTE: Prior to installing the cover, clean off the mating surface of the

crankcase — do not allow any road dirt to enter into the oil system.

8. Insert the bolt into the cover and install the spring and washer (Figure 15). Insert the filter and reinstall into the crankcase.

9. Tighten the filter cover bolt to 14-18 ft.-lb. (19-24 N•m) and install the drain plug.

10. Fill the crankcase with the correct weight (Figure 12) and quantity of oil.

NOTE: The capacity is approximately 3.2 qt. (3.0 liters).

11. Screw in the dipstick and start the engine, let it idle at moderate speed and check for leaks.

12. Turn off the engine and check for correct oil level.

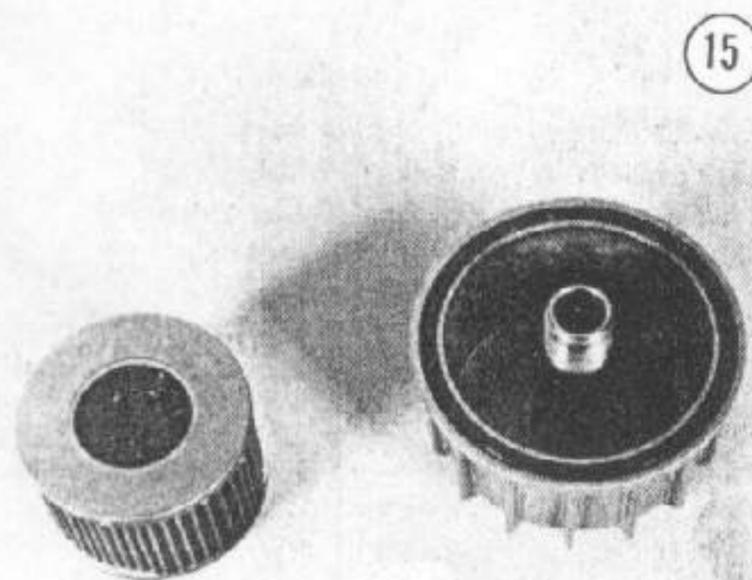
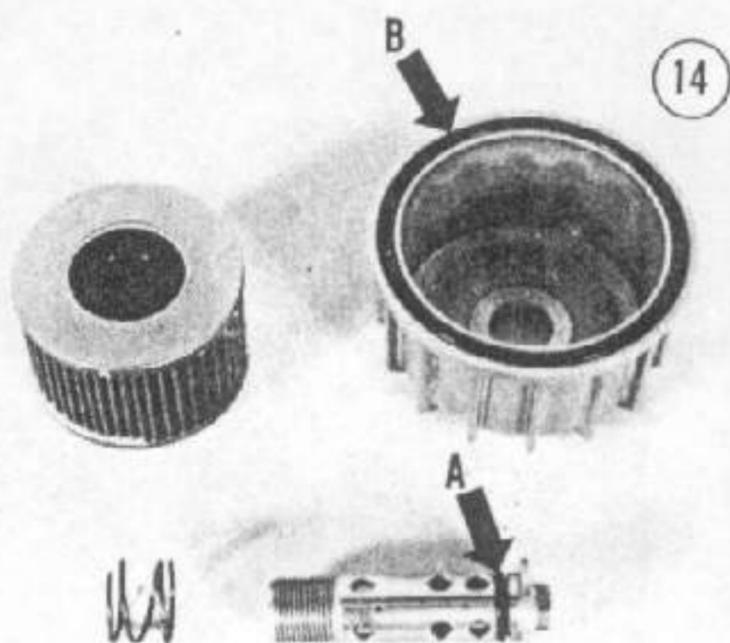
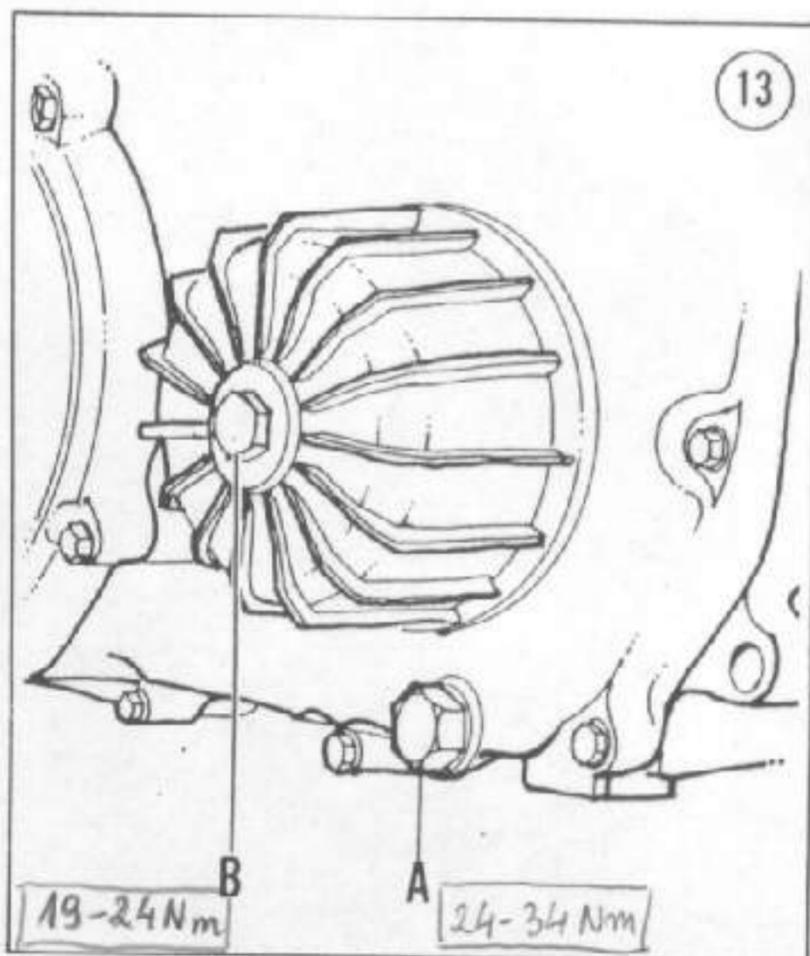
13. Remove the dipstick and wipe it clean. Reinsert it, but *do not screw it in*. Remove it and check level. Maintain the level between the upper and lower marks (Figure 11).

### 3.5.3

#### Front Forks

The damping oil in the front fork should be changed every 7,200 miles or at any time excessive bouncing of the front end indicates a low oil level. There is no practical way of checking and correcting the level; each fork leg must contain exactly 4.6 oz. (135cc) of damping oil if front suspension is to operate correctly.

It is necessary to completely disassemble the forks to change the oil. Refer to *Front Fork Disassembly/Assembly* in Chapter Nine.



## 3.5.4.

**Final Drive**

Every 7,200 miles, check the oil level in the final drive. Rest the bike on the centerstand on level ground. Remove the cap (Figure 16). The level should just reach the bottom of the hole. Top up if necessary with the lubricant recommended in Table 4.

At the same interval, inject a small amount of multipurpose grease into the Zerk fitting (Figure 17). Use a small hand-held grease gun. See Table 4.

## 3.6

**PERIODIC MAINTENANCE**

The hydraulic brake fluid level in the disc brake master cylinder should be checked every month or 1,800 miles and the brake pads should be checked for wear. Bleeding the hydraulic system, servicing the master cylinder, caliper, and disc and also replacing brake pads are covered in Chapter Eleven.

## 3.6.1

**Front Disc Brake Fluid Level**

1. Clean the outside of the reservoir cap thoroughly with a dry rag and unscrew it. Remove the washer and diaphragm.
2. The fluid level in the reservoir should be up to the upper level line (Figure 18). If necessary, correct the level by adding fresh brake fluid.

**WARNING**

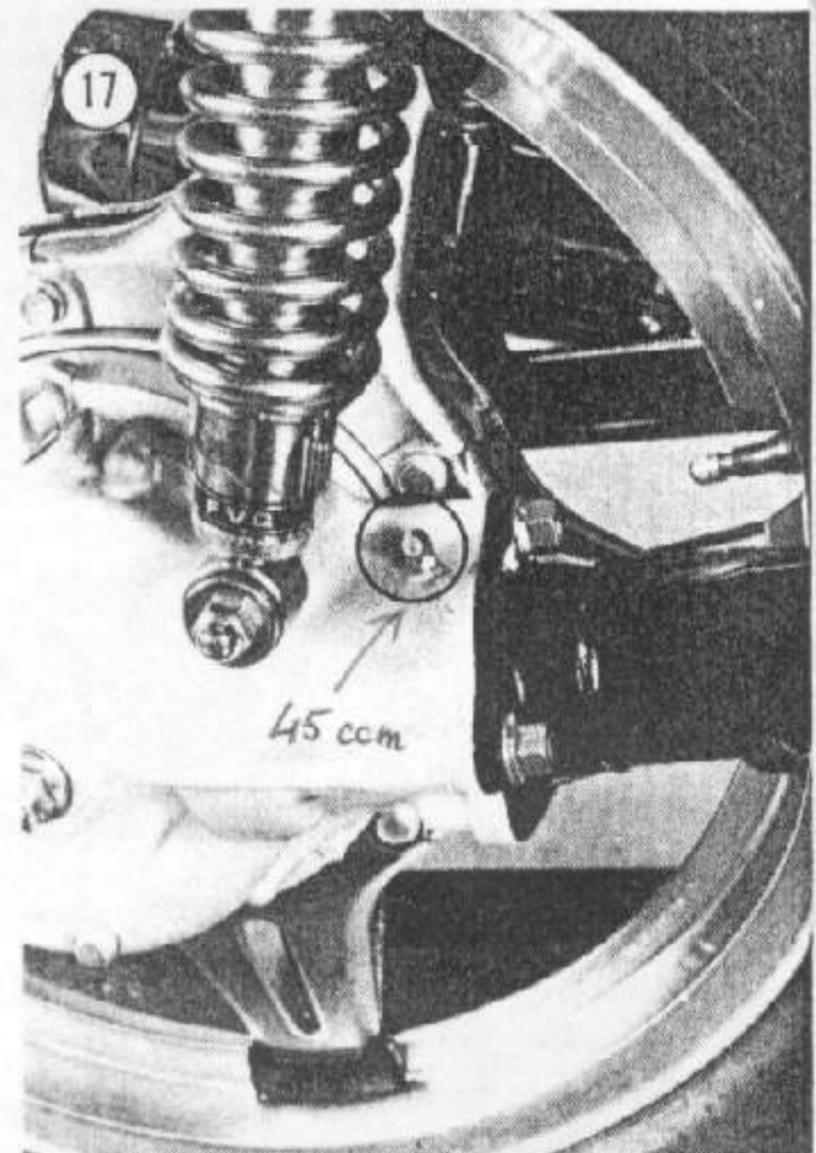
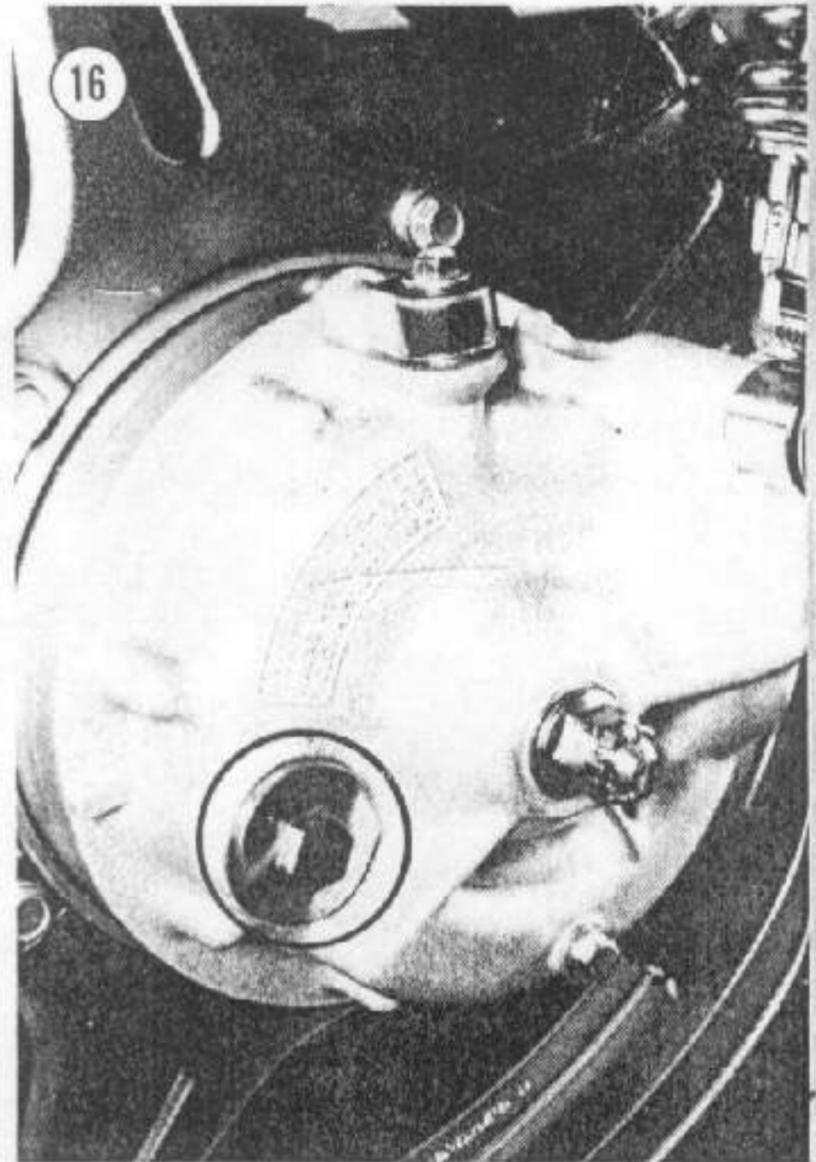
*Use brake fluid clearly marked "DOT 3" only. Others may vaporize and cause brake failure.*

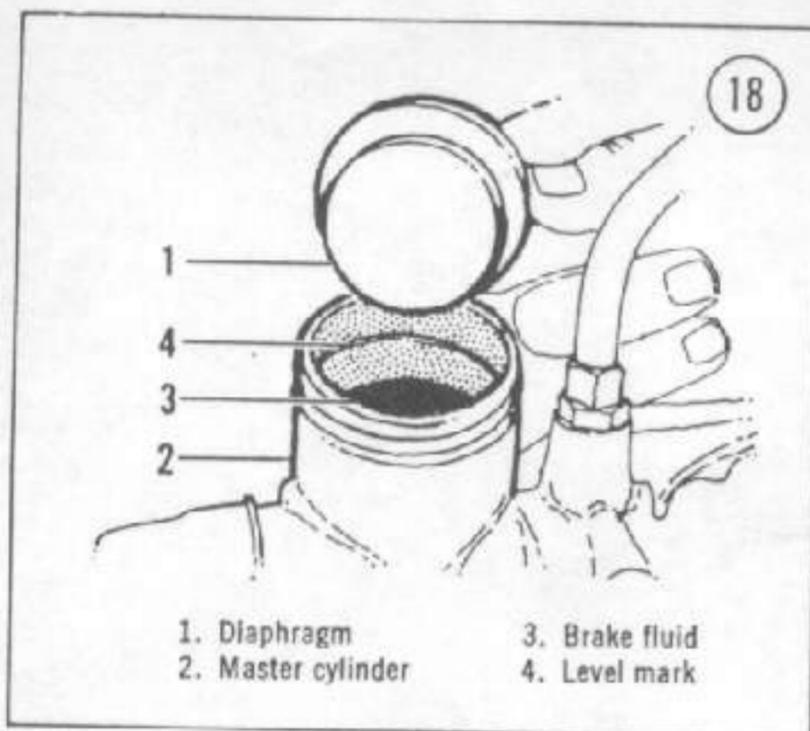
**CAUTION**

*Be careful not to spill brake fluid on painted or plated surfaces as it will destroy the surface. Wash immediately with soapy water and rinse thoroughly.*

Table 4 FINAL DRIVE LUBRICANTS

Temperature	Type	Capacity
Above 41 °F (5 °C)	Hypoid gear oil SAE 90	5.8 oz. (170cc)
Below 41 °F (5 °C)	Hypoid gear oil SAE 80	5.8 oz. (170cc)
Zerk fitting	Molybdenum disulfide grease	1.5 oz. (45cc)





3. Reinstall the washer, diaphragm, and cap. Make sure that the cap is screwed on tightly.

### 3.6.2

#### Front Disc Brake Lines

Check brake lines between the master cylinder and the brake caliper. If there is any leakage, tighten the connections and bleed the brakes as described under *Bleeding the System* in Chapter Eleven. If this does not cure the leak, or if a line is obviously damaged, cracked or chafed, replace the line and bleed the brake.

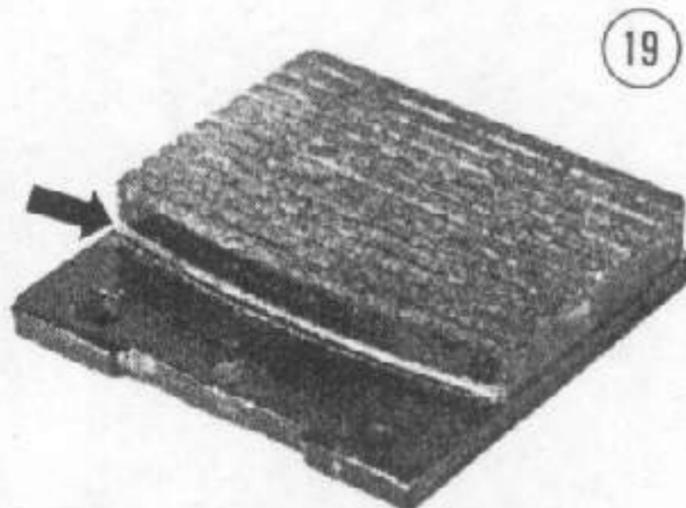
### 3.6.3

#### Front Disc Brake Pad Wear

Inspect the brake pads for excessive or uneven wear, scoring, and oil or grease on the friction surface. If the pads are worn to the red line (**Figure 19**) they must be replaced.

*NOTE: Always replace both pads at the same time.*

If any of these conditions exist, replace the pads as described under *Brake Pad Replacement* in Chapter Eleven.



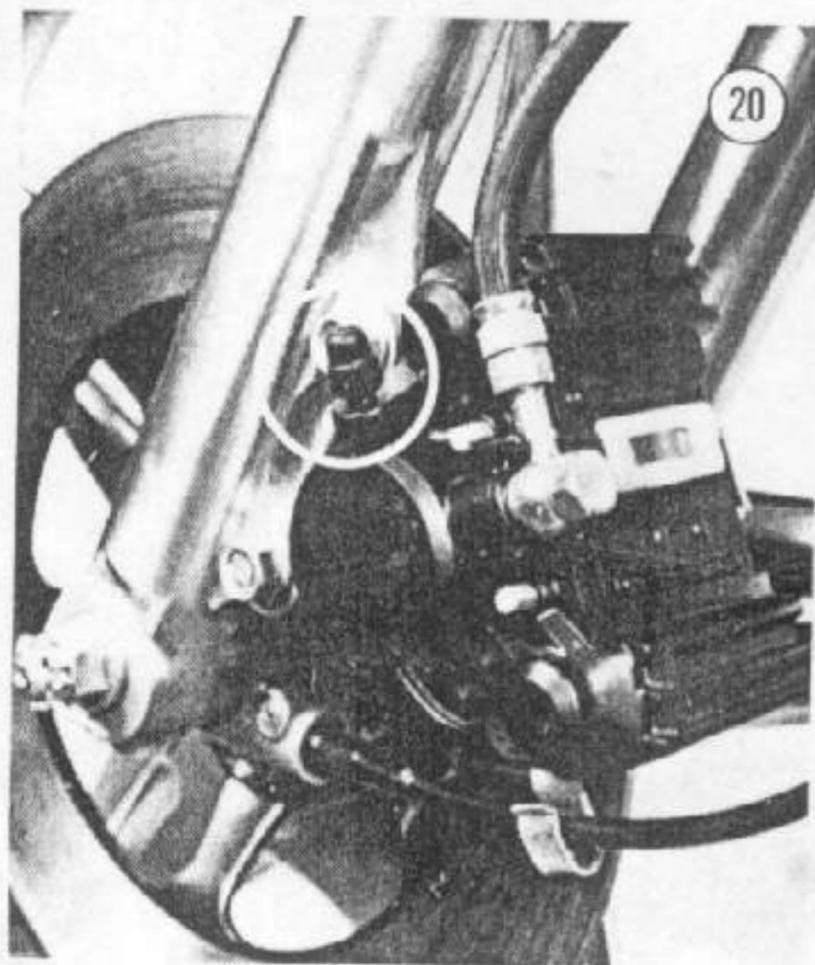
### 3.6.4

#### Front Disc Brake Fluid Change

Every time you remove the reservoir cap, a small amount of dirt and moisture enters the brake fluid. The same thing occurs if a leak occurs, or any part of the hydraulic system is loosened or disconnected. Dirt can clog the system and cause unnecessary wear. Water in the fluid vaporizes at high temperatures, impairing the hydraulic action and reducing brake performance.

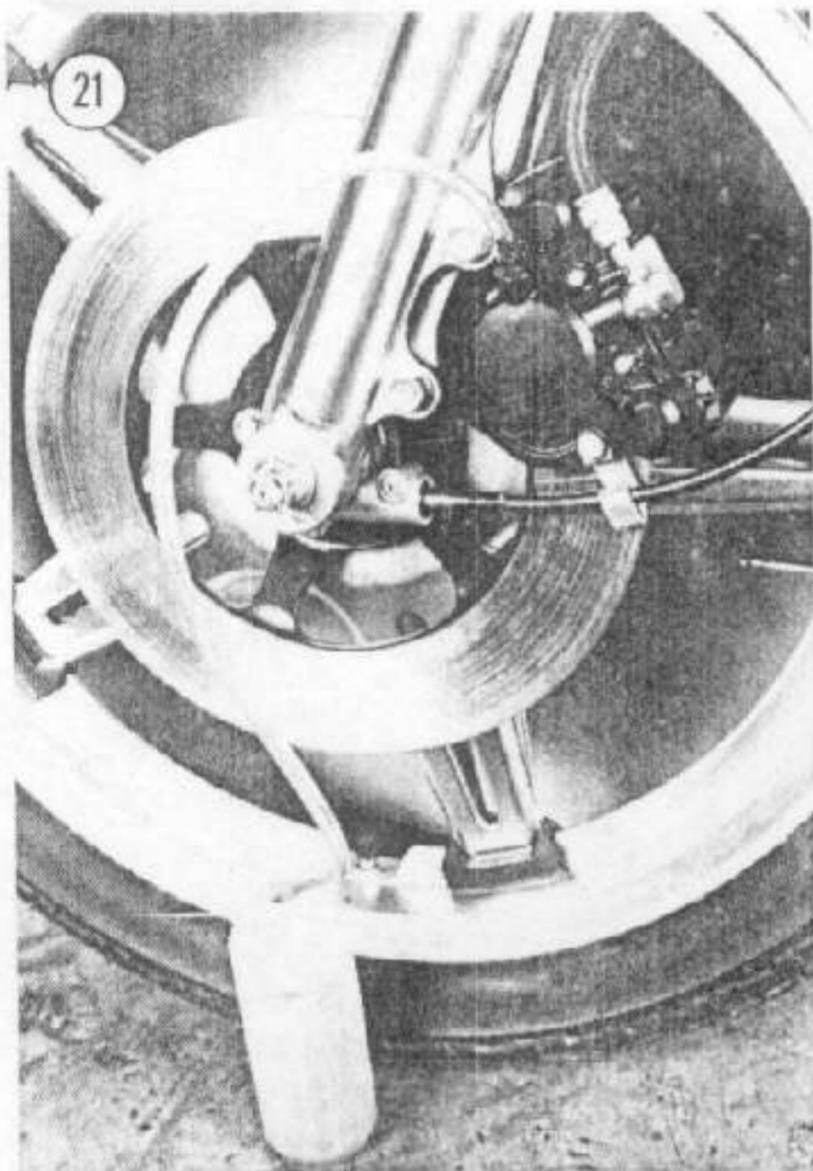
To maintain peak performance, change the brake fluid every 21,000 miles or 2 years.

1. Remove dust cap from the caliper bleeder valve (**Figure 20**) and connect a small hose. Place free end of hose in a container (**Figure 21**).
2. Open the bleeder valve with a wrench about half a turn.
3. Squeeze the brake lever several times to force out as much brake fluid as possible. Close the bleeder valve.



#### WARNING

*Do not reuse brake fluid which has been drained from a brake system.*



4. Fill the reservoir with new brake fluid, install the cap and bleed the system as described under *Bleeding the System* in Chapter Eleven.

#### WARNING

*Use brake fluid clearly marked "DOT 3" only. Others may vaporize and cause brake failure.*

#### 3.6.5

#### Front Disc Brake Adjustment

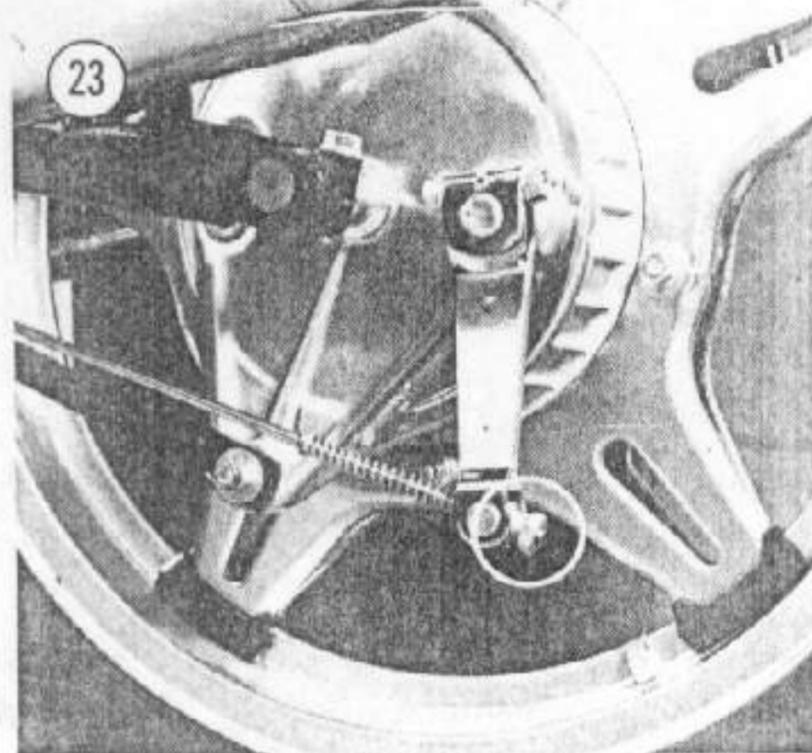
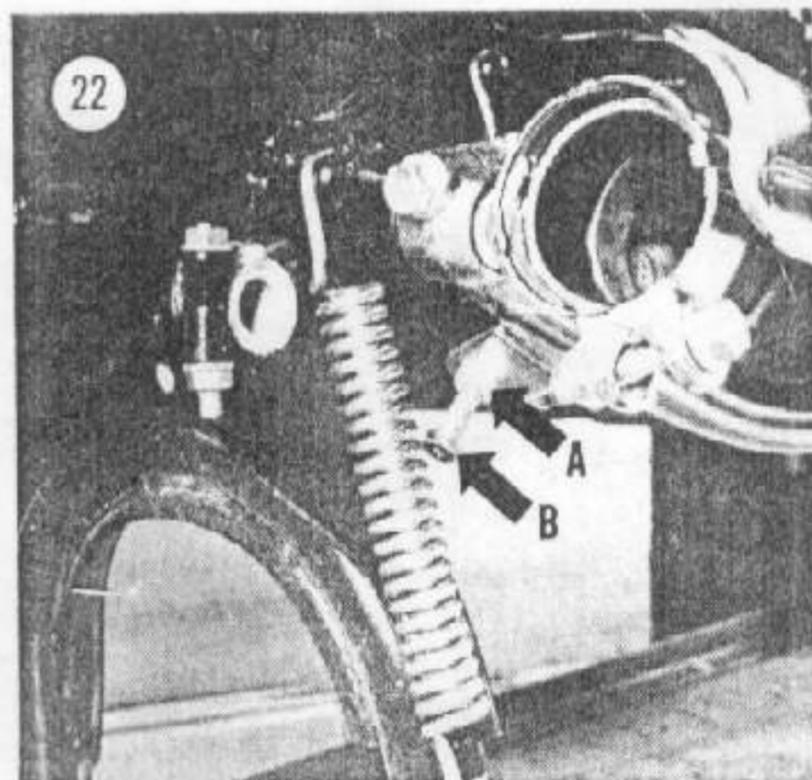
The front disc brake requires no adjustment, but the pads and fluid should be inspected as described under *Front Disc Brake* in this chapter.

#### 3.6.6

#### Rear Brake Adjustment

The rear brake pedal should be adjusted so that there is  $\frac{1}{4}$ - $1\frac{1}{4}$  in. (20-30mm) of brake pedal movement required to actuate the brake, but it must not be so closely adjusted that the brake shoes contact the drum with the pedal relaxed.

1. Place the motorcycle on the centerstand.
2. Loosen the locknut (A, Figure 22) and turn the adjustment bolt (B, Figure 22) until the

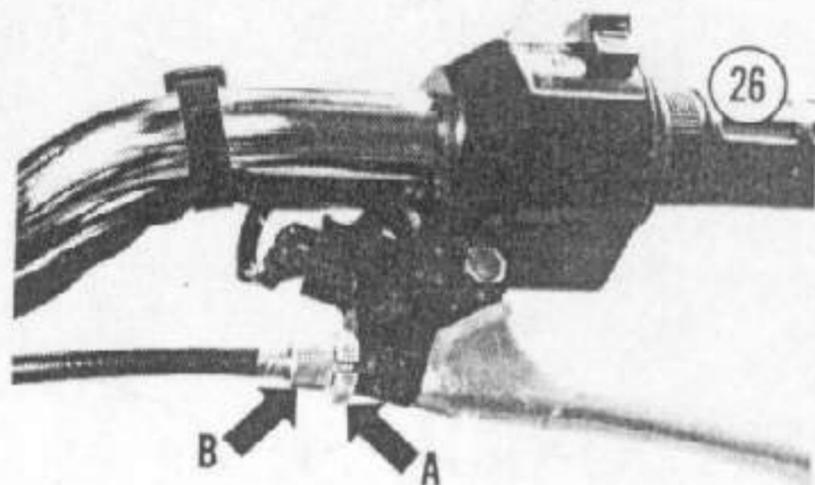
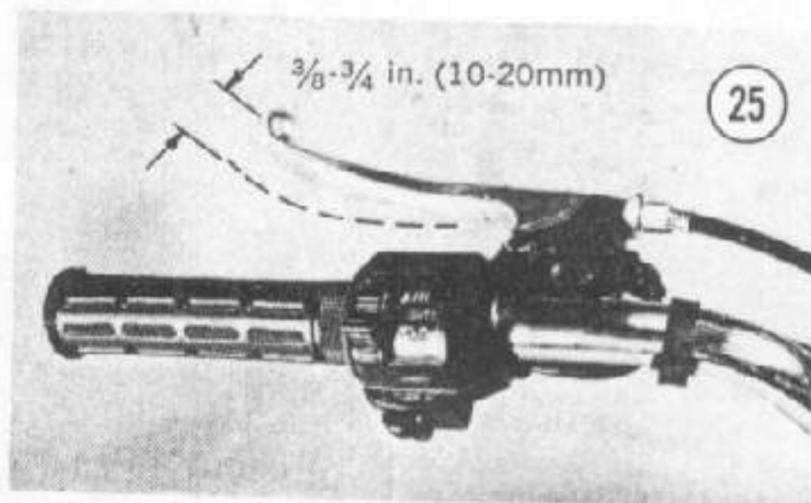
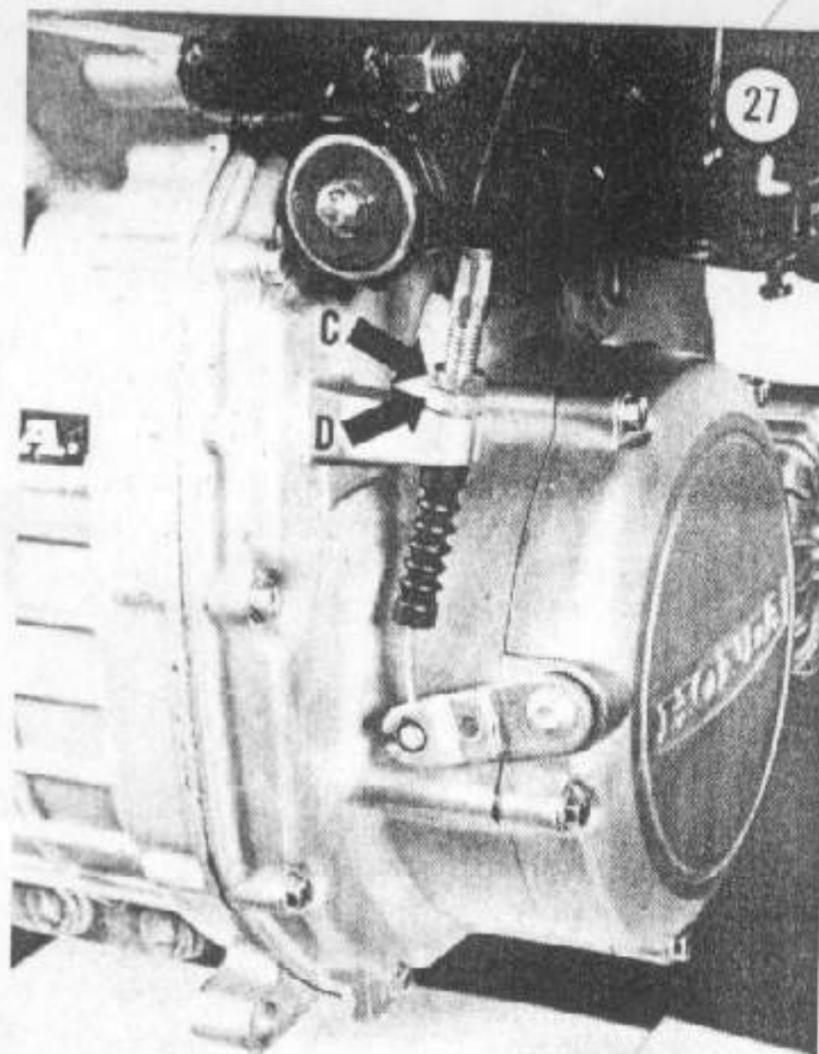
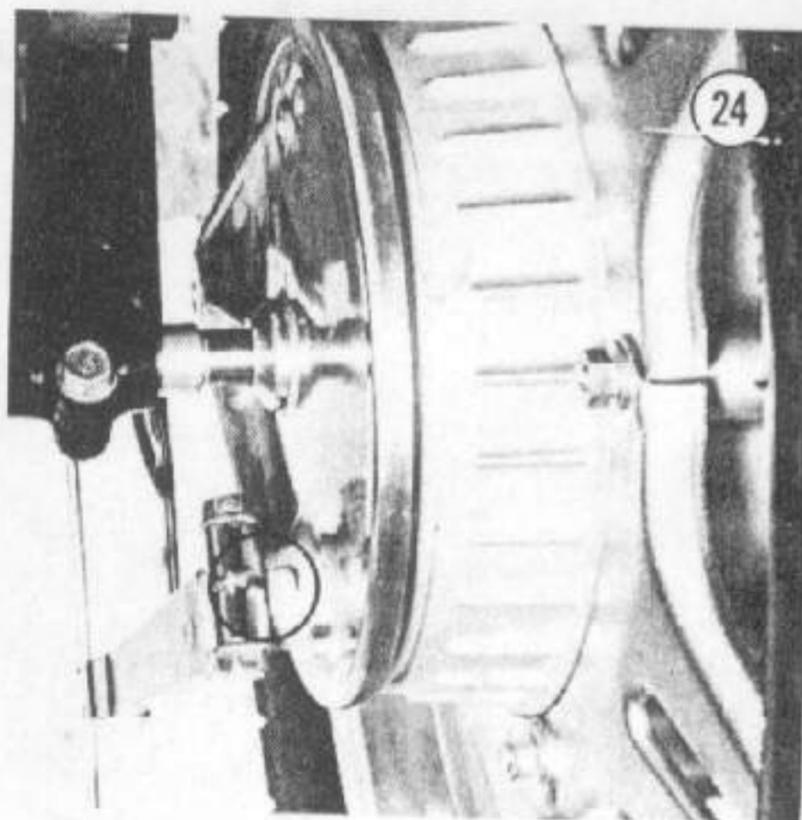


brake pedal is horizontal. Tighten the locknut and adjust switch as described under *Rear Brake Light Switch Adjustment* in Chapter Seven.

3. At the brake plate on the wheel, adjust the nut (Figure 23) on the brake rod until the correct amount of free play can be achieved.

*NOTE: Be sure that the adjustment nut is properly seated on the brake arm pin after adjustment is complete.*

4. When the two arrows (Figure 24) on the brake arm and brake plate align, the brake shoes must be replaced. Refer to Chapter Eleven.



3.6.7.  
**Clutch Free Play Adjustment**

In order for the clutch to fully engage and disengage, there must be  $\frac{3}{8}$ - $\frac{3}{4}$  in. (10-20mm) free play at the lever end (Figure 25).

1. Loosen the locknut (A, Figure 26) and turn the adjuster (B, Figure 26) in or out to obtain the correct amount of free play. Tighten the locknut (A).

- CAUTION**  
*Do not screw the adjuster out so that there are more than 0.3 in. (8mm) of threads exposed between it and the locknut.*
2. Start the engine, pull the clutch lever in and shift into first gear. If shifting is difficult, if bike creeps when stopped, or if the clutch slips accelerating in high gear the clutch will have to be adjusted at the clutch housing.
  3. At the clutch lever, loosen the locknut (A, Figure 26) and screw the adjuster (B, Figure 26) in all the way toward the hand grip. Tighten the locknut (A).
  4. At the clutch housing, loosen the locknut (C, Figure 27) and turn the adjuster (D, Figure 27) in or out to obtain the correct amount of free play and tighten the locknut (C).
  5. If necessary, do some final adjusting at the clutch lever as described in Step 1.
  6. Road test the bike to make sure the clutch fully disengages when the lever is pulled in; if it does not, the bike will creep in gear when stopped. Also, make sure that clutch fully engages; if it does not, clutch will slip, particularly when accelerating in high gear.

### 3.6.8

#### Throttle Operation/Adjustment

The throttle grip should have 0.08-0.24 in. (2-6mm) rotational play (Figure 28). If adjustment is necessary, loosen the pull cable locknut (A, Figure 29) and turn the adjuster (B, Figure 29) in or out to achieve the proper play. Tighten the locknut (A).

Check the throttle cables from grip to carburetors. Make sure they are not kinked or chafed. Replace them if necessary.

Make sure that the throttle grip rotates smoothly from fully closed to fully open. Check at center, full left, and full right positions of the steering.

### 3.6.9

#### Cooling System Inspection

Every 7,200 miles, check the following items.

1. Have radiator cap and the system pressure tested. This can be done at your Honda dealer or most service stations. The radiator cap relief pressure should be  $12.8 \pm 2.1$  psi ( $0.9 \pm 1.5$  kg/cm<sup>2</sup>). The radiator and cooling system should be pressurized up to, but not exceeding, 14.9 psi (1.05 kg/cm<sup>2</sup>). The system should be able to maintain this pressure for at least 6 seconds. Replace or repair any part that fails this test.

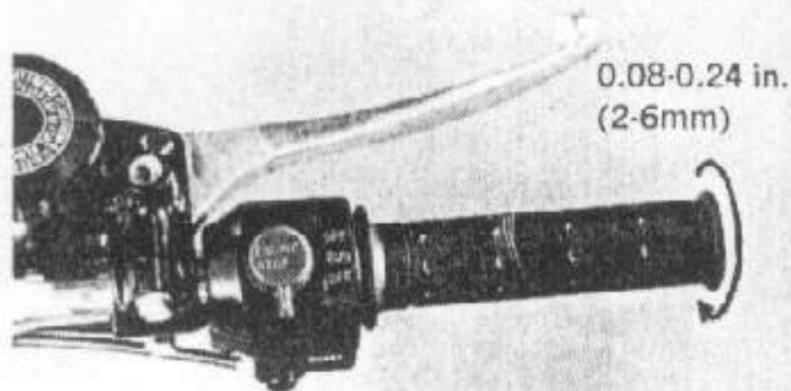
#### CAUTION

*Test pressure exceeding that specified may damage the radiator.*

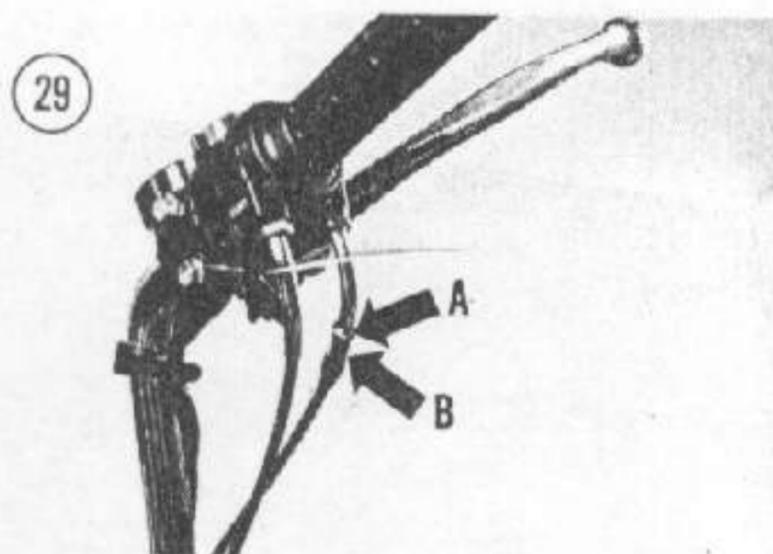
2. Check the specific gravity of coolant with an antifreeze tester to ensure adequate temperature and corrosion protection. The system must have at least a 50/50 mixture of antifreeze to water. Never let the mixture become less than 40/60 or corrosion protection will be impaired.
3. Check all hoses to make sure they are not damaged or deteriorated. Replace them if questionable. Make sure that clamps are tight. See Figures 30, 31 and 32.

*NOTE: Figure 32 is shown with the engine removed. It is not necessary to remove the engine to perform this inspection.*

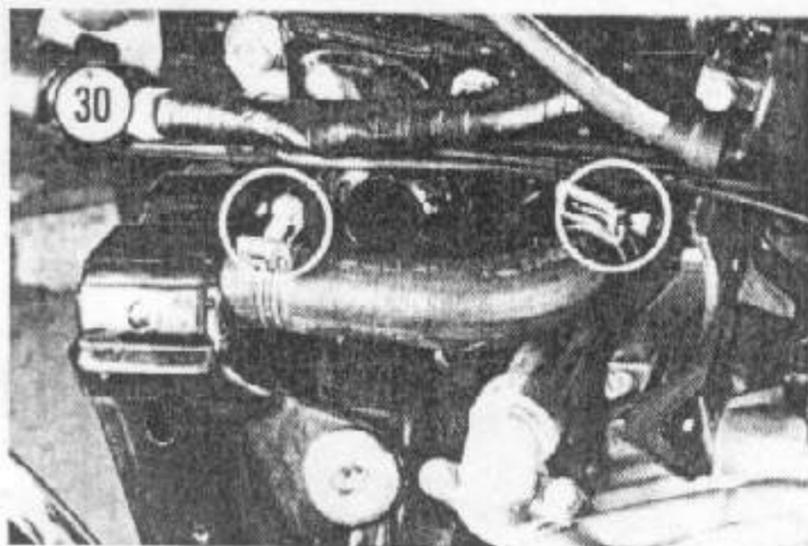
4. Clean the front of radiator. Remove the 4 screws (Figure 33) securing the radiator screen. Remove road dirt and bugs which limit air flow through the radiator.



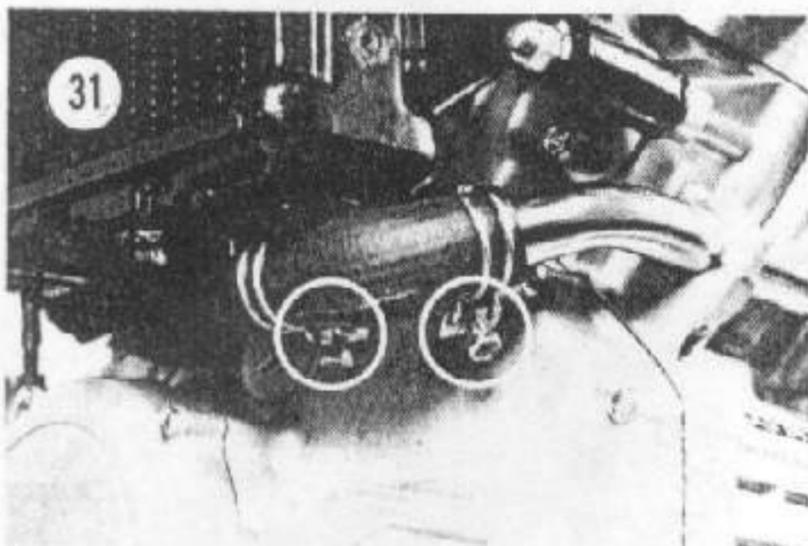
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