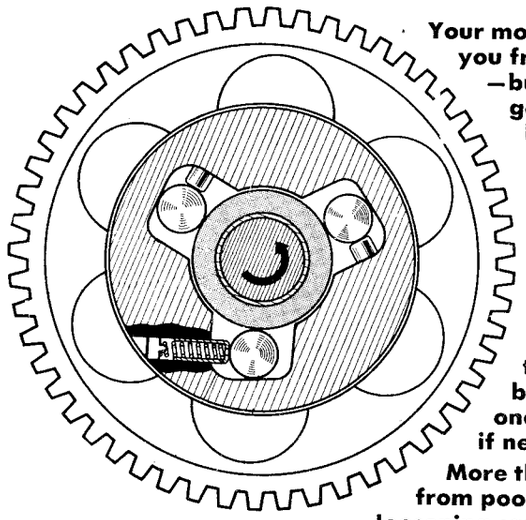
HONDA SERVICE • REPAIR HANDBOOK

350 AND 500cc FOURS • 1972



Your motorcycle was designed to free you from crowds and congestion. Let it—but make sure you'll be able to get back when you want to. This book, plus a few basic tools, can spell the difference between completing a trip and breaking down miles from the nearest help.

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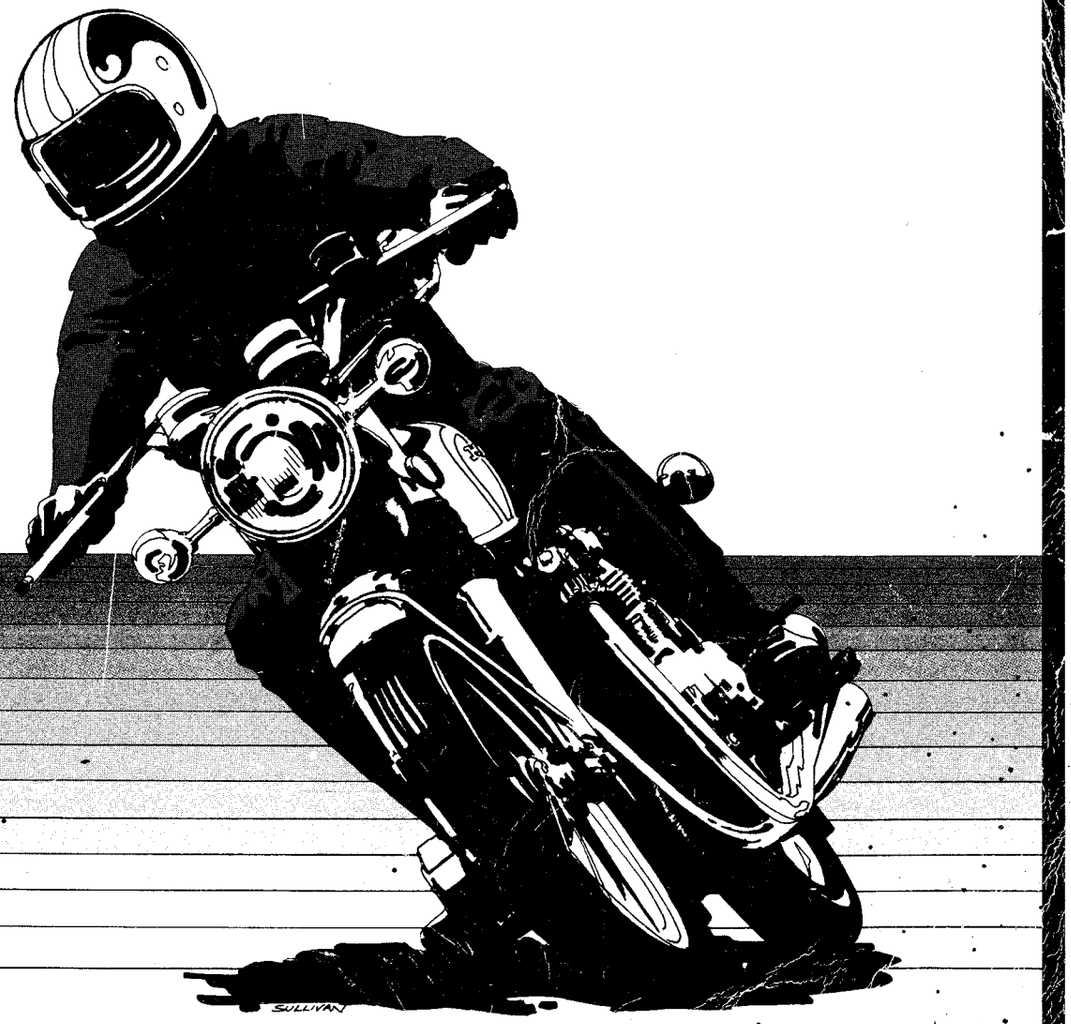

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CHAPTER ONE

PERIODIC MAINTENANCE AND TUNE-UP

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

The tune-up and maintenance procedures set forth in this chapter should hold no terrors for an owner of average mechanical ability. The operations are outlined step-by-step and it's hard to go wrong if the directions are followed.

How Often?

The factory recommends a complete tune-up every 3,000 miles or six months, which ever comes first. The oil, however, should be changed every 2,000 miles.

Tools and Parts

You will need the basic tools suggested in the introduction to the manual. In addition, equipment required for a complete tune-up includes a static timing light, a strobe light or dwell tachometer, carburetor float gauge, sets of flat and round feeler gauges calibrated in millimeters, and possibly a set of vacuum gauges to balance the carburetors.

The only expensive item is the vacuum gauge set—about $75—but less expensive alternatives are discussed in the carburetor section.

Parts required for the tune-up are four spark plugs matched to the conditions under which the cycle will be operated (discussed later), two sets of breaker points and condensers, four quarts of motor oil, and a filter.

Tune-up Procedure

The tune-up should be performed in the sequence set forth in this chapter to avoid repeated tear-downs to gain access to components.

Operations Covered

Maintenance and tune-up operations covered in this chapter are: oil and filter, spark plugs, points and condensers, static and advanced timing, valve clearances, cam chain, air cleaner, fuel valve, carburetors and throttle, clutch, and battery.

Other servicing operations as well as more detailed coverage of the above components are covered in the appropriate chapters of the handbook.

OIL AND FILTER

Frequency

It's been said over and over again. The Honda factory puts it this way: "The engine oil is the

chief factor affecting the performance and the service life of the engine."

Plan on changing the oil every 1,000 to 2,000 miles (1,500-3,000 km) or 30 to 60 days, whichever comes first. Every 30 days sounds like a waste of time and oil, but the time interval is as important as elapsed mileage. Acids formed by gasoline vapor blown by the piston rings will contaminate the oil even if the cycle is not run for several weeks.

If your motorcycle is run under dusty conditions the oil will get dirty faster. Accordingly, change the oil more often.

Quality and Viscosity

Use only a detergent oil with an API rating of SD (designated MS in the past) or better. These quality ratings are stamped on the top of the can. Try always to use the same brand of oil.

The factory recommends against using special oil additives, warning that they are "unnecessary and will only increase operating expenses."

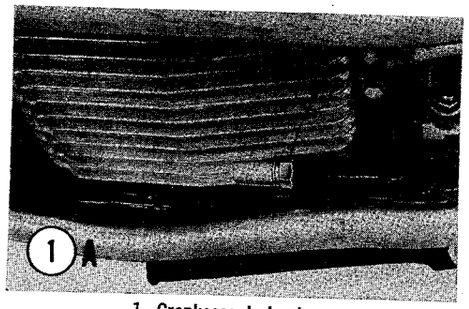
Oil of SAE 10W-40 viscosity is recommended for normal running in moderate climates. If the motorcycle is run hard in high temperatures, use a heavier weight oil such as 20W-50.

Here are some other viscosity oils which can be used according to the prevailing temperature:

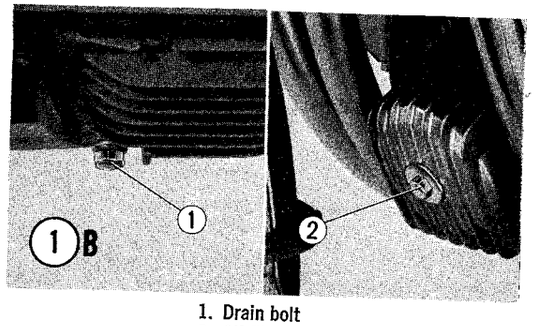
59°F and above	SAE 30 or 30W
32°F to 59°F	SAE 20 or 20W
32°F and below	SAE 10W

Draining Oil

1. Warm up the engine (unless the valves are to be adjusted later). Warm oil drains faster than cold and carries more accumulated impurities with it.
2. Place a catch pan of at least one gallon capacity under the crankcase and remove the filler cap.
3. Use a 17mm socket to remove drain plug. Location of the CB500 plug is shown in **Figure 1A**, and the CB350F is shown in **Figure 1B**. Allow the dirty oil to drain.
4. Crank the engine several times with the kickstarter to force out oil trapped in the inner recesses.



1. Crankcase drain plug



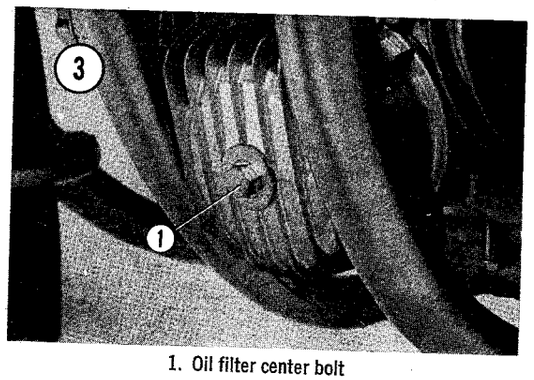
1. Drain bolt
2. Oil filter center bolt

TIP: *Dispose of dirty oil by pouring it into plastic bottles, such as the ones used for laundry bleach. Cap and discard in trash.*

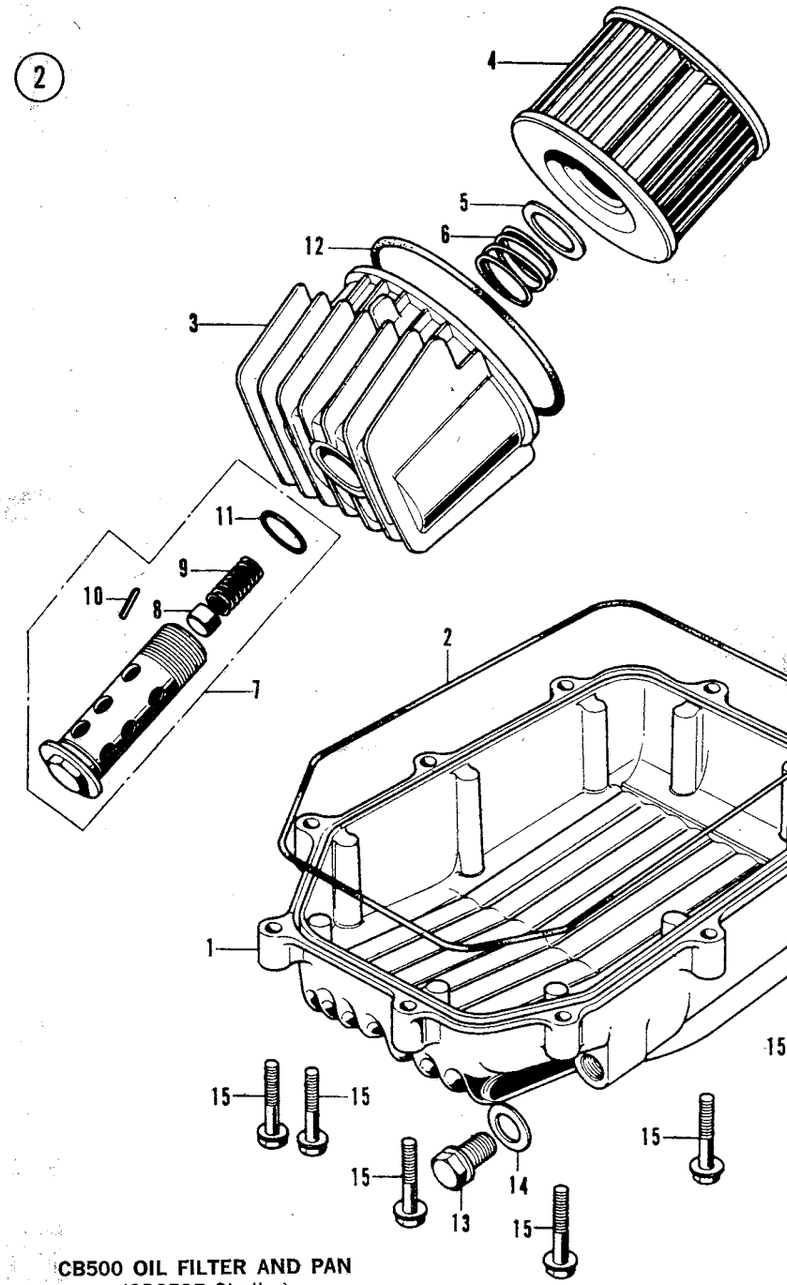
Changing Oil Filter

Figure 2 is an exploded view of the oil filter and its housing. The radial ribs increase the cooling area of the cover. Replace the element every other oil change.

1. Remove the center bolt from the housing (**Figure 3**) and pull the assembly from the engine. Watch out for oil that will drip from the filter.



1. Oil filter center bolt



CB500 OIL FILTER AND PAN
(CB350F Similar)

1. Oil pan
2. Oil pan packing
3. Oil filter case
4. Oil filter element
5. Oil filter spring seat
6. Filter element set spring
7. Oil filter center bolt
8. Check valve
9. Check valve spring
10. Spring set pin
11. O-ring
12. O-ring
13. Drain plug bolt
14. Drain plug washer
15. Flange bolt

2. Throw away the dirty filter element and inspect the O-ring seal for damage. Clean the dirty oil and sludge from the inside of the housing with solvent and dry.

3. Install the new filter element and a new O-ring if required.

4. Replace the assembly on the engine. Torque the center bolt to 19-24 ft.-lbs. (2.7-3.3 kg-m).

Filling with Oil

1. Replace the crankcase drain plug with its gasket. Be careful not to overtighten or it will be difficult to remove the next time. It should be torqued to 25-29 ft.-lbs. (3.5-4.0 kg-m).

2. Fill the crankcase with the recommended oil. The CB500 holds 3.2 quarts (3 liters) and the CB350F holds 3.7 quarts (3.5 liters). Check the level with the dipstick.

3. Run the engine at 1,000 to 1,500 rpm for two minutes, then check for oil seepage around the drain plug and filter housing. Check the oil level a final time and top up if necessary.

SPARK PLUGS

Introduction

Spark plugs are available in various heat ranges hotter or colder than the plugs originally installed at the factory.

Select plugs of a heat range designed for the loads and temperature conditions under which the bike will be run. Use of incorrect heat ranges can cause seized pistons, scored cylinder walls or damaged piston crowns.

In general, use a lower numbered plug for low speeds, low loads and low temperatures. Use a higher numbered plug for high speeds, high engine loads and high temperatures.

More important than any one of these factors is the combination. Thus, a motorcycle ridden at high speeds with a heavy load in freezing weather would require a plug on the high side of the normal heat range.

RULE OF THUMB: *Use the highest numbered plug that will not foul.*

In areas where seasonal temperatures are great, the factory recommends a "two-plug system"—a high numbered plug for hard summer riding and a low numbered plug for slower winter operation.

Removal

1. Blow out any debris that has collected in the spark plug wells to prevent it from falling into the cylinders when the plugs are removed.

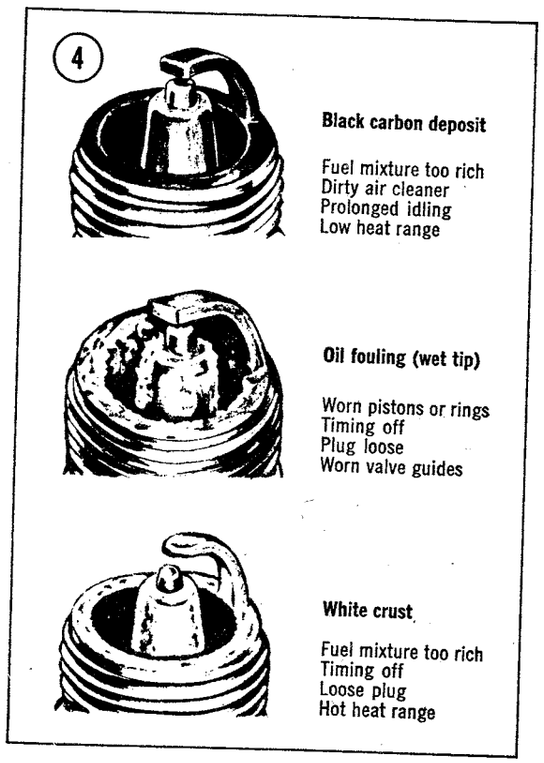
2. Gently remove the electrical leads, pulling up and out. Don't jerk; the wires could pull out of the insulator caps.

3. Back out the plugs with a socket that has a rubber insert to grip the insulator. Be careful not to drop the plugs into the cooling fins on the cylinder head where they can become lodged.

Inspection

The normal color of a spark plug tip ranges from a light tan to a chocolate brown, depending on the amount of lead in the gas used.

Figure 4 shows some abnormal tip conditions and the probable causes.



If the old plugs are to be used again, check them for deposits on the electrodes, cracked insulators, damaged threads, or eroded electrodes.

If any one plug is found unsatisfactory, discard the set.

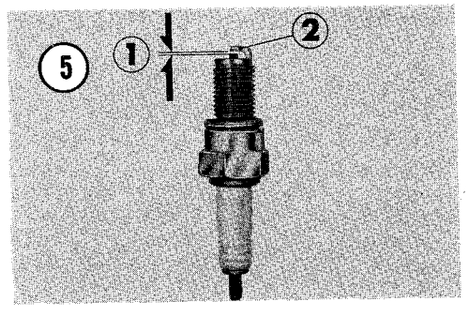
Cleaning

Clean the tips of the plugs with a sandblasting machine—some gas stations have them—or with a wire brush and solvent.

Adjusting Gap and Installing

Use the round-type wire gauge to gap spark plugs. With its smaller contact area, a wire gauge measures more accurately than a flat gauge when the plugs have surface irregularities.

1. Refer to **Figure 5** and adjust the gap between the electrodes to 0.2 in. to .03 in. (.6mm-.7mm). Vary the gap by bending only the outside negative electrode. The distance is correct when the gauge slips through with only a slight amount of drag.



1. Spark plug gap
2. Negative electrode

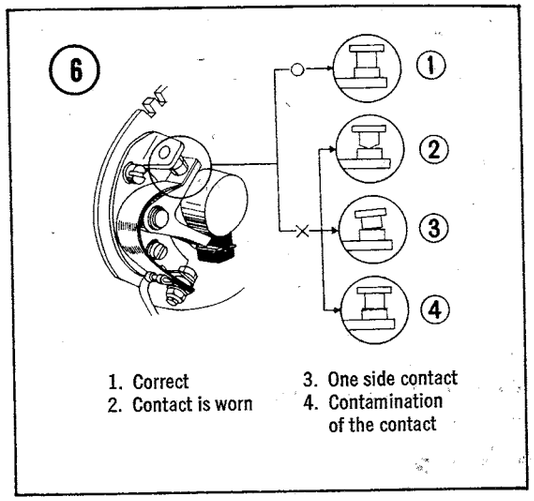
2. Screw the plugs back into the cylinder head, finger-turning the socket until the plug is seated. Then tighten one half to three quarters of a turn more, or torque to 9-12 ft.-lbs. (1.2-1.6 kg-m). Overtightening can change the gap, damage threads and make the plug hard to remove the next time.

BREAKER POINTS

Inspection

1. Remove the breaker point cover (it's the round plate on the side of the engine with "Honda" stamped on it) by removing the two Phillips head screws. If the cover does not come off easily, try tapping it loose with a rubber or rawhide mallet.

2. Pry open the points gently with a finger and check the two sets for alignment and wear. **Figure 6** shows what to look for. Replace the points if they are severely pitted or worn.



1. Correct
2. Contact is worn
3. One side contact
4. Contamination of the contact

Cleaning

1. Gray discoloration of the contacts is normal. Dress the surfaces with a point file. Never use sandpaper or emery cloth for this purpose.

2. Blow away the residue and then clean the contacts with chemical point cleaner or a piece of unwaxed stiff paper such as a business card. Make certain the contacts are absolutely clean. Even fingerprint oil can affect performance.

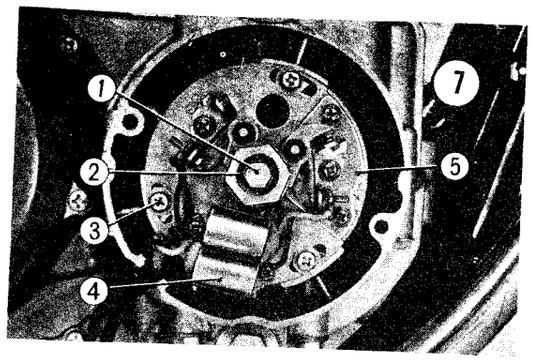
3. If the same points are to be used, skip the next section on removal and replacement procedure. If new points will be installed, it is recommended that the two condensers also routinely be replaced. These parts usually are sold in sets.

Removal and Replacement

1. Disconnect the yellow and blue leads at the junction box located near the center of the frame.

2. Refer to **Figure 7**, and remove the 6mm hex bolt and its washer. Then loosen the three breaker plate holding screws and lift out the unit.

3. Study the exploded view of the assembly shown in **Figure 8** (this is the unit from the CB350F but the one in the CB500 is similar), and remove the points and condensers. Install the new parts.



1. 6mm bolt
2. Special washer
3. Screws
4. Condensers
5. Contact breaker plate

NOTE: *If the layout seems confusing, remove one wire at a time and install the new component before proceeding to the next one.*

Adjusting the Gap

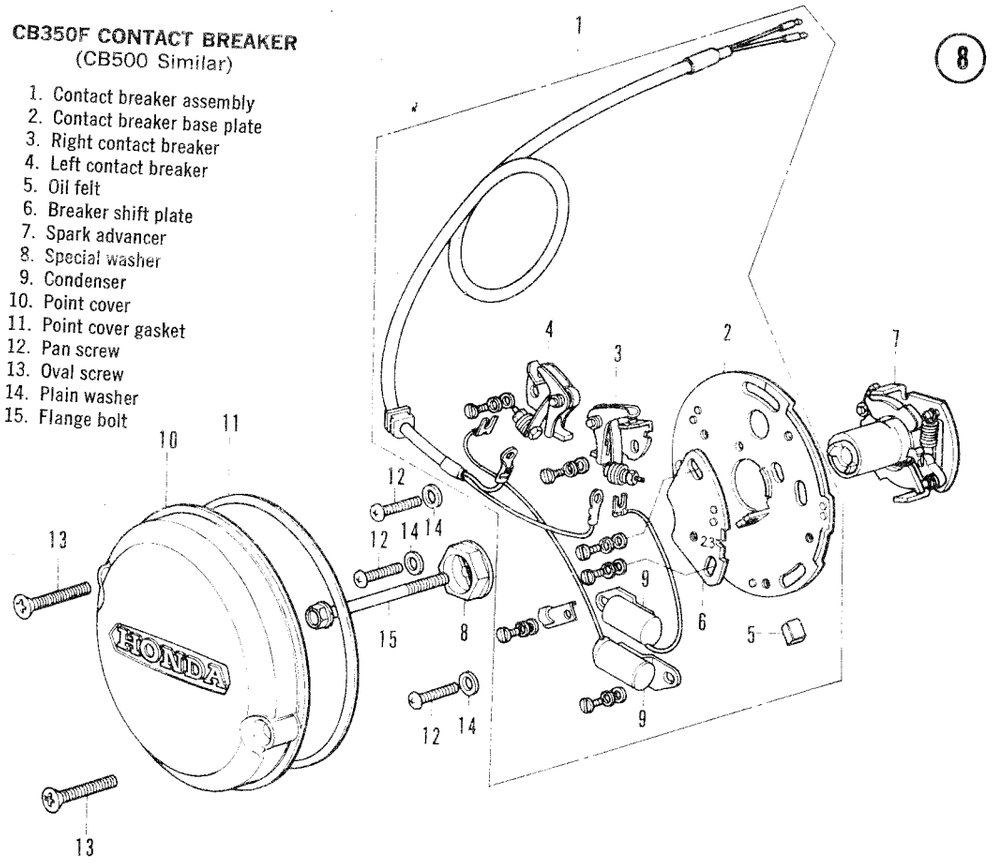
There are two methods for measuring point gap: the static procedure using a feeler gauge and the dwell tachometer method. In either case, the points must be adjusted manually.

Static Procedure

1. Rotate the crankshaft (use a 23mm socket on the big retainer bolt on the center shaft) until the cam lobe which turns against the "slipper" on the breaker shown in **Figure 9** opens the points governing No. 1 and No. 2 cylinders to the greatest extent.
2. The gap between the contacts should be .012 in. to .016 in. (.3mm to .4mm). Check the distance with a wire feeler gauge.
3. To adjust, loosen the setscrew designated "a" in **Figure 10**.

CB350F CONTACT BREAKER
(CB500 Similar)

1. Contact breaker assembly
2. Contact breaker base plate
3. Right contact breaker
4. Left contact breaker
5. Oil felt
6. Breaker shift plate
7. Spark advancer
8. Special washer
9. Condenser
10. Point cover
11. Point cover gasket
12. Pan screw
13. Oval screw
14. Plain washer
15. Flange bolt



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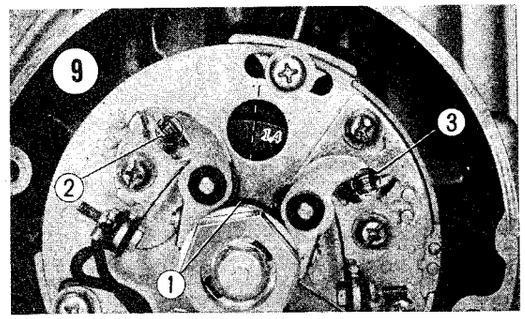
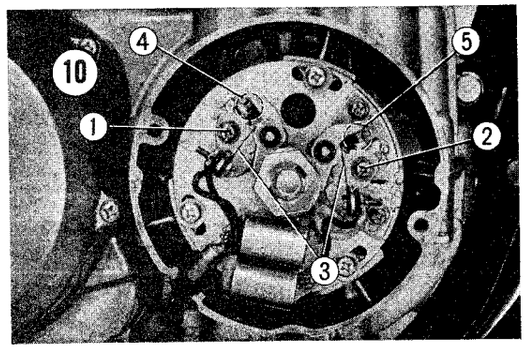


1. Slipper
2. 1-4 points
3. 2-3 points



1. Screw a
2. Screw b
3. Breaker
4. 1-4 points
5. 2-3 points

4. To vary the gap, set the tip of the screwdriver in the notch in the point arm and shift it by gently prying against the two leverage buttons set into the plate on which the point rests.
5. When the gap is correct (.3mm to .4mm), tighten the lock screw. Check the gap a final time with the gauge. It should slip between the contact points with a slight amount of drag.

NOTE: *The act of tightening the lock screw in itself may throw off the point gap. The set of points may have to be adjusted several times to get it right.*

6. To adjust the other set of points, those governing cylinders No. 2 and No. 3, rotate the crankshaft clockwise until that set is opened to its maximum. Then repeat steps three and four, this time loosening the screw designated "b" in Figure 10.
7. Finally, lubricate the cam with a thin coating of special cam grease. Do not apply an excessive amount or it will contaminate the contact surfaces, which must stay absolutely clean.

NOTE: *If the engine is to be timed, leave the breaker point cover off for now.*

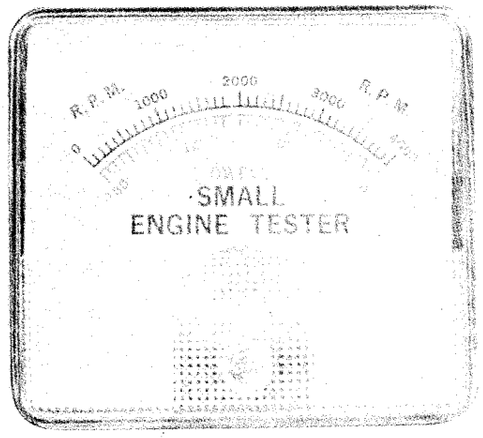
Dwell Procedure

Dwell is the number of degrees that the breaker point cam rotates while the points remain closed. The longer the dwell, the smaller the point gap. The shorter the dwell, the wider the gap.

The dwell should be between 92 and 98 degrees if the points are clean and are adjusted correctly. A dwell meter is an extremely accurate method of measuring point gap. Of course, the points must still be adjusted by hand if the distance is incorrect.

Figure 11 shows one type of dwell meter suitable for motorcycle engines. Make sure the meter is calibrated for small gasoline engines of two cylinders (one point set controls two cylinders in the CB500 and CB350F). If read on a four-cylinder scale, the correct dwell would be 46 to 49 degrees.

(11)



1. Hook up the meter according to its instructions—usually with one lead attached to the points and the other grounded to the engine.
2. Start the engine and read the dwell angle on the meter.
3. If the points require adjustment, refer to the procedure in the static timing section.

IGNITION TIMING

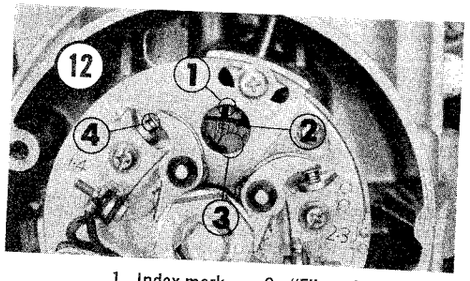
There are two methods used to adjust the ignition timing—the static procedure and the more precise method of using a stroboscopic light.

Static Procedure

The static operation requires something that can signal when an electronic circuit is opened or closed. This can be a buzz box, an ohmmeter, or a continunity light. This last, commonly called a timing light, is the cheapest. They are available for under $2 at parts stores.

A homemade light consists of a 12-volt light bulb, a socket to hold it and two wires attached to the socket with alligator clips at the ends.

1. As shown in **Figure 12**, the cylinders controlled by each set of points are stamped next to the breaker set on the base plate. Start the timing procedure with the set for No. 1 and No. 4 cylinders.



1. Index mark 2. "F" mark
3. Cylinder number
4. 1-4 cylinder breaker points

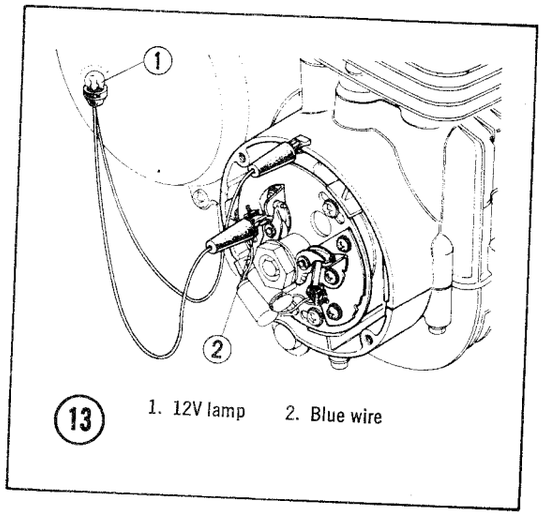
2. Refer to **Figure 13** and disconnect the blue primary wire from the contact and hook up the timing light at that point. Ground the other lead to the engine.

3. Turn on the ignition.

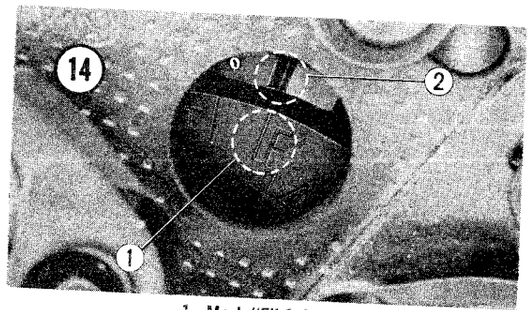
4. **Figure 14** is a view through the peephole in the base plate with the timing marks visible. Rotate the crankshaft with a wrench on the 23mm retaining bolt of the center shaft until the "1-4 F" mark is even with the index, or matching, mark on the outer ring. At this instant the points should begin to open and the timing light should go on. If it doesn't, the timing is off.

5. To adjust, refer to **Figure 15** and loosen the three base plate locking screws (designated by No. 6 in the Figure) and rotate the plate to retard or advance the timing until the light flickers. Then tighten the three screws, being careful not to throw off the adjustment. Check the point gap before proceeding to the next step to make sure it is not altered.

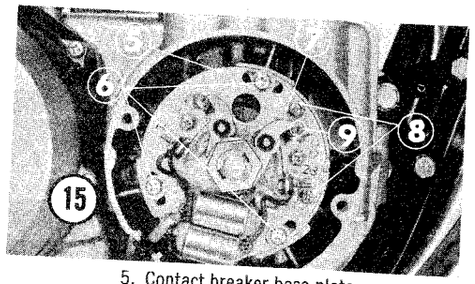
6. Now, connect the timing light to the other set of breaker points which control cylinders No. 2 and No. 3).



1. 12V lamp 2. Blue wire



1. Mark "F" 1-4
2. Matching mark



5. Contact breaker base plate
6. Base plate locking screws
7. Contact breaker right base plate
8. Right base plate locking screws
9. 2-3 cylinder breaker points

7. Rotate the crankshaft one half revolution until the "2-3 F" mark is aligned with the index mark inscribed on the outer ring.

8. If the light does not flicker at this point, adjust by loosening the two right base plate locking screws (No. 8 in Figure 15). Note that these are different from the screws used to make the earlier adjustment.

9. Disconnect the timing light and turn off the ignition. Replace the point cover unless the advanced timing is to be checked (below).

Stroboscopic Timing

A strobe light enables the timing to be checked under actual running conditions. Such lights are commonly available, but beware of cheap ones because they usually are not durable.

1. Connect the light according to its instructions. The light's spark plug lead should be connected to the plug in either the No. 1 or No. 4 cylinder.

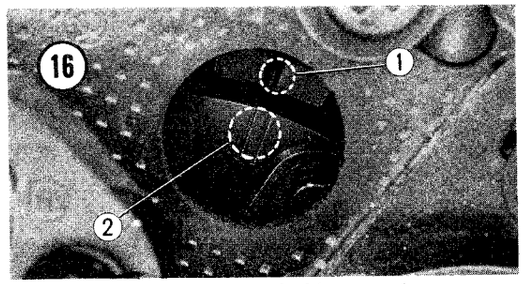
2. Start the engine and set it idling speed—between 1,000 and 1,200 rpm.

3. Aim the flashing light at the peephole in the breaker base plate. The "1-4 F" mark should appear to line up with the outer index mark when illuminated by the light.

4. If the marks do not line up, adjust the timing according to Step 6 under static timing.

5. Increase the engine speed to 2,500 rpm to check the timing advance mechanism.

6. Point the light at the peephole. The advance is correct if the index mark appears between the two lines located 23.5 to 26.5 degrees ahead, or in advance, of the "F" mark. See **Figure 16**.



1. Matching mark 2. Advance marks

7. Shut off the engine and connect the plug lead to the either the No. 2 or No. 3 cylinder spark plug.

8. Repeat the operations for checking the timing at idle and at 2,500 rpm and adjust if necessary.

VALVES

Incorrect clearances between the tappets and the valve stems hamper performance and may damage the valves if the condition is prolonged. To forestall premature wear and a costly regrind, adjust clearances regularly.

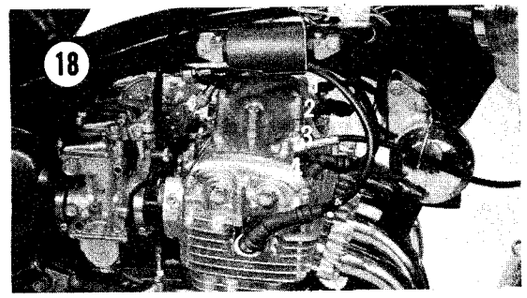
NOTE: *The valves are adjusted with the engine cold.*

1. Turn the fuel valve off and disconnect both fuel lines. Raise seat and remove fuel tank.

2. If the breaker point cover is not already removed, do so now by backing out the two Phillips head screws.

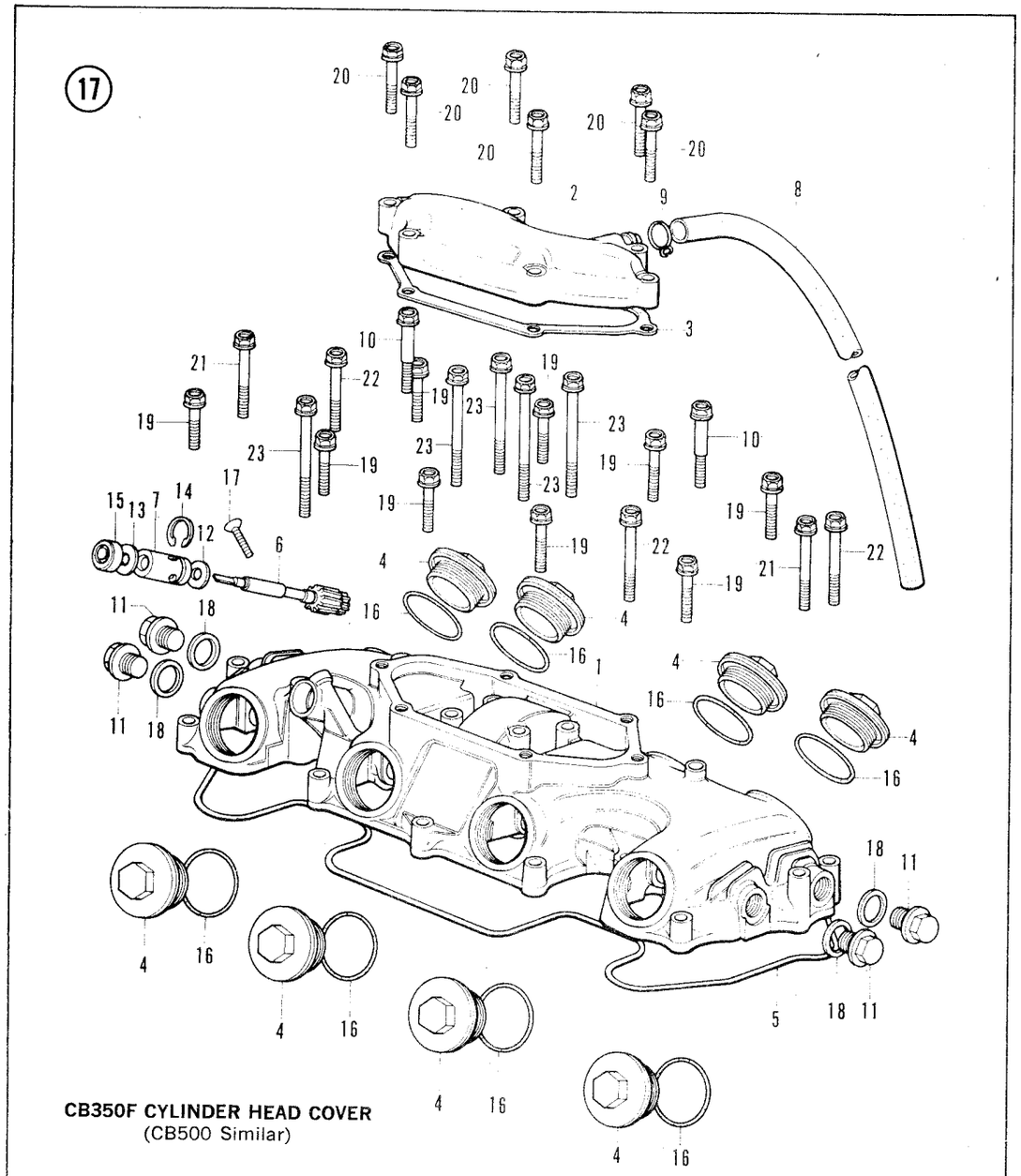
3. Refer to the drawing of the cylinder head cover (CB350F) in **Figure 17**, and remove the eight caps that cover the tappet access holes. There are four holes in back and four in front.

NOTE: *The cylinders are numbered one through four starting from the rider's left,* FIGURE 18. *Exhaust valves are at the front of the engine and inlet valves at the back.*



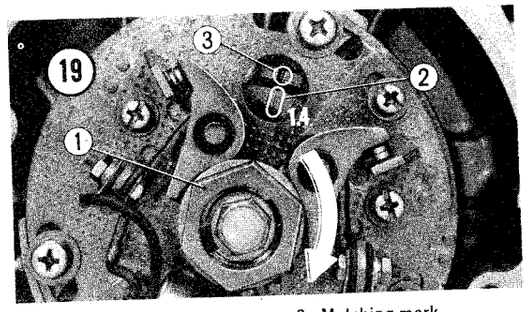
4. Slowly rotate the crankshaft clockwise with the kickstart pedal until the "T 1-4" mark, seen through the peephole in the breaker base plate, is even with the outer index mark shown in (**Figure 19**).

5. At this point, either No. 1 or No. 4 cylinder will be at the top dead center (TDC) of its compression stroke. Find out which one it is by feeling the rocker arms of both cylinders through the adjustment holes. The cylinder at TDC will have both its rocker arms loose, signifying that both intake and exhaust valves are closed.



CB350F CYLINDER HEAD COVER
(CB500 Similar)

1. Cylinder head cover
2. Breather cover
3. Breather cover packing
4. Tappet adjusting hole cap
5. Cylinder head cover packing
6. Tachometer gear
7. Tachometer gear collar
8. Breather tube
9. Breather tube clip
10. U. B. S. bolt
11. Sealing bolt
12. Thrust washer
13. Thrust washer
14. Set ring
15. Oil seal
16. O-ring
17. Oval screw
18. Plug drain washer
19. Flange bolt
20. Flange bolt
21. Flange bolt
22. Flange bolt
23. Flange bolt

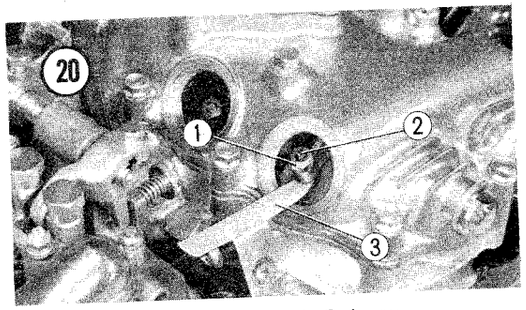


1. Special nut
2. Mark "T" 1-4
3. Matching mark

6. Check the valve clearances as shown in **Figure 20** by sliding the appropriate feeler gauge between the adjusting screw tip and the top of the valve stem. The feeler blade should slide through with a slight amount of drag.

The standard clearances are:

CB500	Intake (rear)	.002 in. (.05mm)
	Exhaust (front)	.003 in. (.08mm)
CB350F	Intake (front)	.002 in. (.05mm)
	Exhaust (rear)	.002 in. (.05mm)



1. Lock nut
2. Adjusting screw
3. Feeler gauge

7. To adjust, refer to Figure 20 again and loosen the lock nut on the tappet adjusting screw.

8. Turn the adjusting screw itself clockwise to reduce the clearance and counterclockwise to increase it.

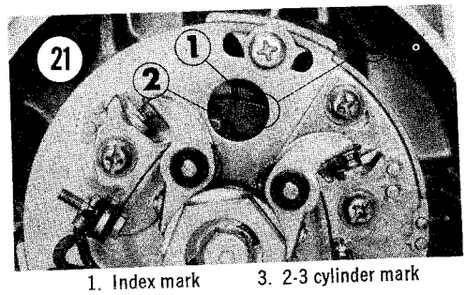
9. When the clearance is correct, tighten the lock nut while holding the adjusting screw in the same position. Check the clearance again to make sure the tightening did not upset the setting.

10. These adjustments should be performed for both intake and exhaust valves of the cylinder that is at TDC.

11. Next, rotate the crankshaft 360 degrees until the "T 1-4" mark once again is lined up with the index mark.

12. The other cylinder, either No. 1 or 4, is now at TDC. Check and adjust if necessary according to Steps 6-10.

13. Set up the valves for No. 2 and No. 3 cylinders by rotating the crankshaft until the "T 2-3" mark on the timing ring is aligned with the index line, **Figure 21**.



1. Index mark
2. "T" mark
3. 2-3 cylinder mark

14. Determine which cylinder is at TDC and then check and adjust the clearances.

15. Rotate the crankshaft another 360 degrees until the "T 2-3" mark once again is lined up properly, and adjust the valves for the final cylinder.

16. Replace the tappet hole caps with their gaskets. Don't overtighten. They should be torqued to between 7.2 ft.-lbs. and 10.1 ft.-lbs. (1 kg-m and 1.4 kg-m).

NOTE: *If the cam chain tensioner is to be adjusted (next procedure), don't replace the caps for No. 1 cylinder or the breaker point cover.*

CAM CHAIN

The spring steel cam chain tensioner is faced with a layer of Teflon cemented to a base of heat resistant rubber which is vulcanized to the metal. The tensioner bears against the chain to absorb the shocks while the chain guide damps vibration.

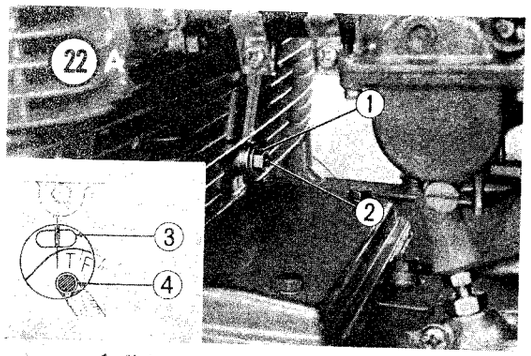
A loose cam chain is noisy and can throw off the valve timing. The tension is easy to set.

Adjustment

1. Using the kickstarter to rotate the crankshaft, set the No. 1 cylinder to the top dead center of

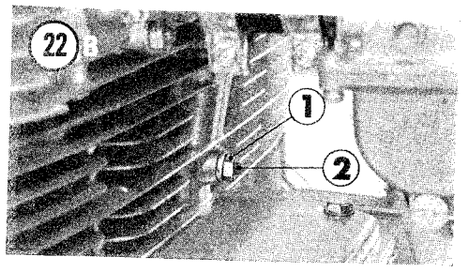
its compresion stroke. Refer to the section on valve adjustment for the procedure.

2. Look through the peephole in the contact breaker base plate, as shown in the **Figure 22A** inset, until the spring peg on the advancer assembly is just to the right of the timing mark. At this point the No. 1 cylinder is 15 degrees after TDC and the chain slack is at the rear of the engine, duplicating the running condition.



1. Nut
2. Adjusting screw
3. Timing mark
4. Spring peg

3. Refer to **Figure 22B** and loosen the lock nut. The tensioner bolt automatically will adjust itself to the correct pressure.



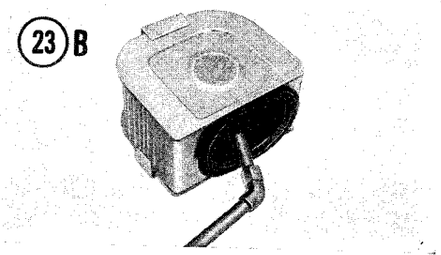
1. Lock nut 2. Tensioner bolt

4. Tighten the lock nut and replace the tappet hole caps and the breaker point cover.

AIR CLEANER

A clogged air cleaner can decrease the efficiency and the life of the engine. It should be checked at each oil change, or more often if the motorcycle is operated under dusty conditions. **Figure 23A** is an exploded view of the system.

1. Raise the seat and remove the tool kit and top air cleaner cover.
2. Refer to Figure 23A and lift up the spring retaining clip and then remove the filter element.
3. Replace the element if it is clogged with dirt or caked with oil or if the bonding material is cracked.
4. Light dust can be shaken off the element by tapping it while using a soft brush on the outside. If compressed air is available, force it through the filter from the inside as shown in **Figure 23B**.



Air cleaner element

5. Assemble the unit in reverse order of disassembly.

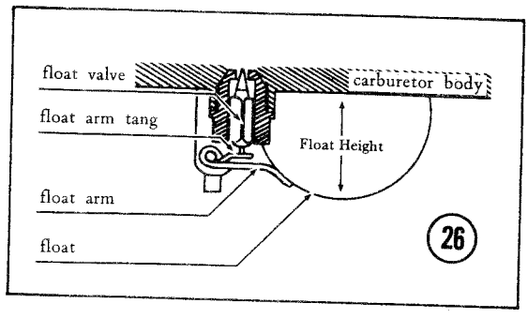
CARBURETORS

Unless the carburetors have been disassembled, they normally should not require adjustment. They should be worked on only as a last resort when all other possible causes of such problems as rough idling or misfiring, have been checked out. **Figures 24** (page 16) **and 25** (page 18) are exploded views of the CB500 and CB350F carburetors.

Float Level

The float valve is a mechanism for maintaining a constant level of fuel in the bowl on the bottom of the carburetor to supply the demands of varying engine speeds and throttle openings.

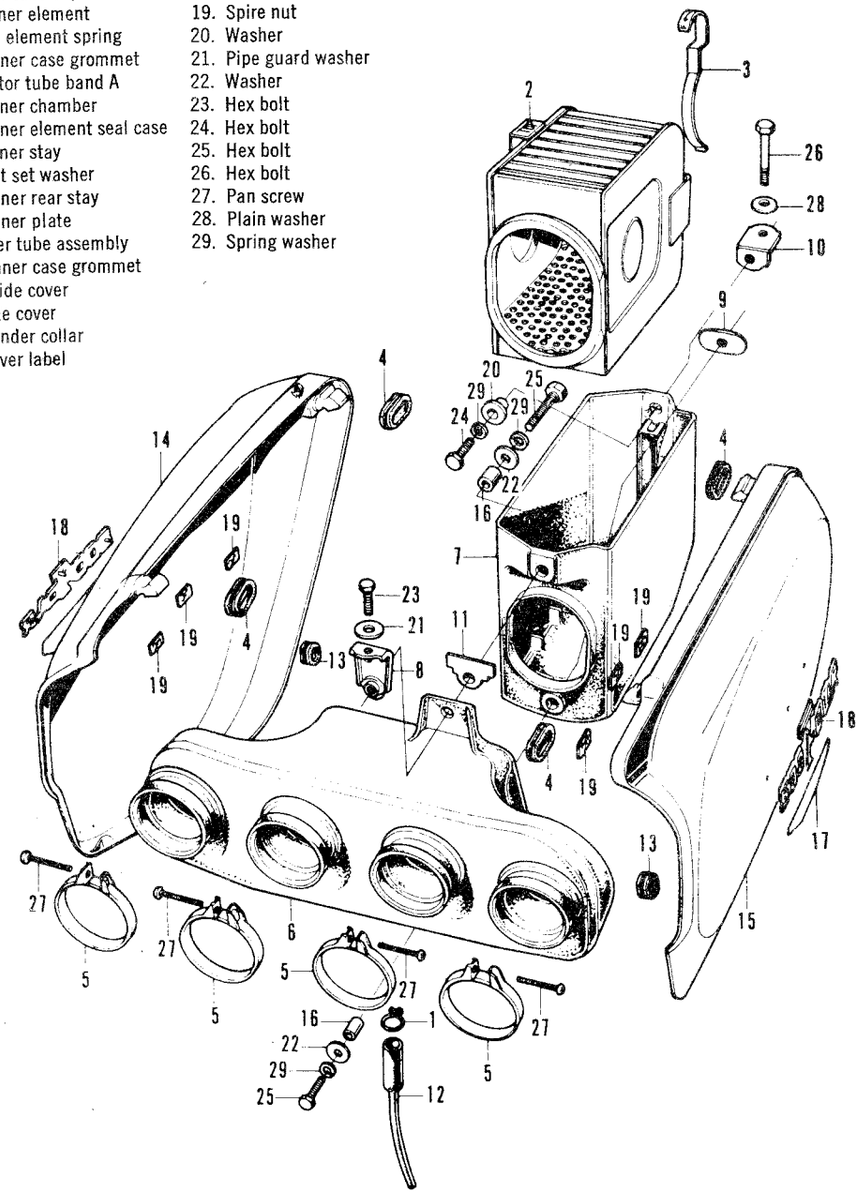
Figure 26 is a drawing of the CB500 float. The CB350F is similar. As the chamber fills with fuel, the float rises and shuts off the incoming fuel by closing the valve. As the fuel level

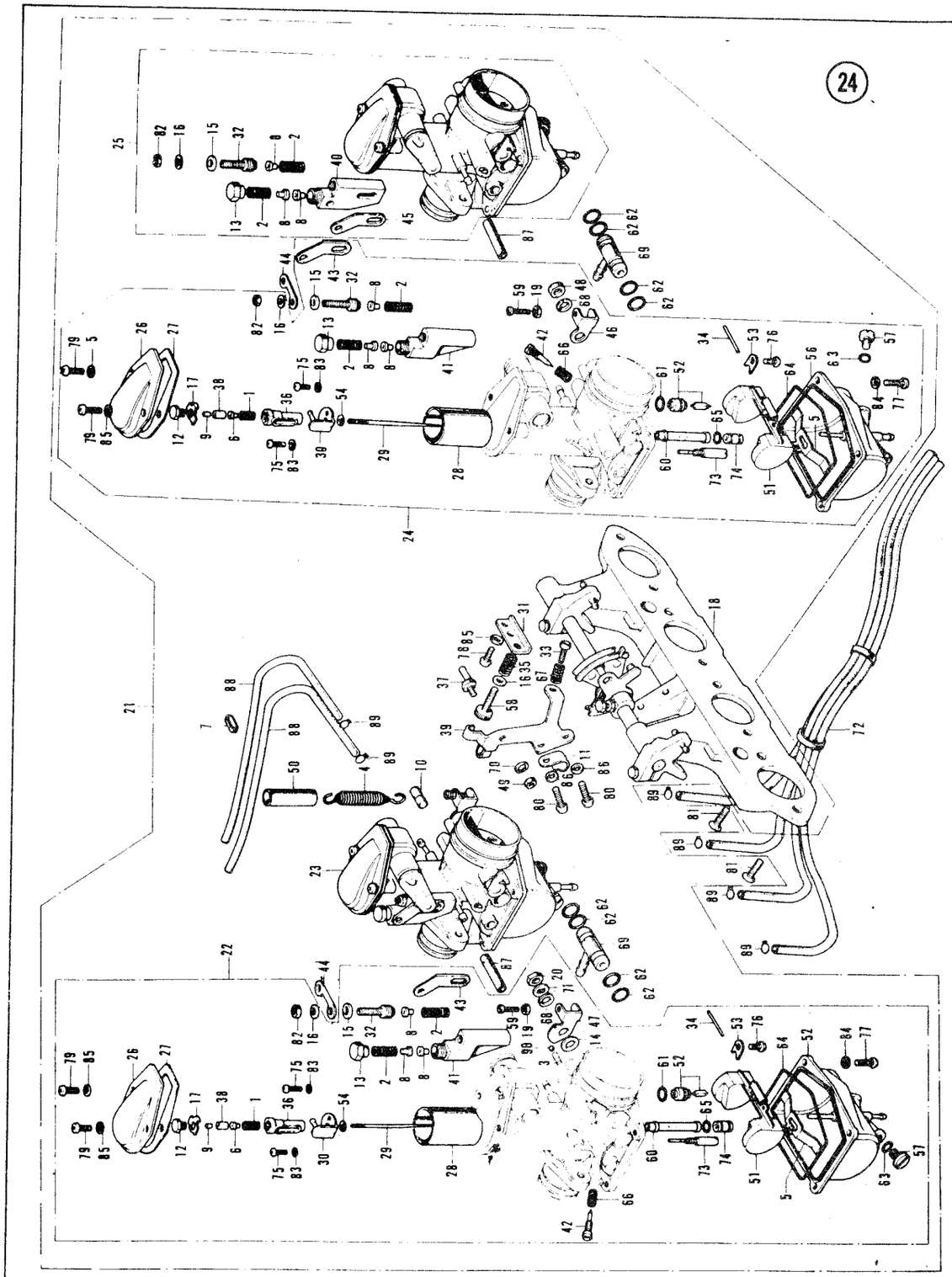


23 A

CB500 AIR CLEANER AND COVER
(CB350 Similar)

1. Breather tube clip
2. Air cleaner element
3. Cleaner element spring
4. Air cleaner case grommet
5. Connector tube band A
6. Air cleaner chamber
7. Air cleaner element seal case
8. Air cleaner stay
9. Element set washer
10. Air cleaner rear stay
11. Air cleaner plate
12. Breather tube assembly
13. Air cleaner case grommet
14. Right side cover
15. Left side cover
16. Rear fender collar
17. Side cover label
18. Side cover emblem
19. Spire nut
20. Washer
21. Pipe guard washer
22. Washer
23. Hex bolt
24. Hex bolt
25. Hex bolt
26. Hex bolt
27. Pan screw
28. Plain washer
29. Spring washer



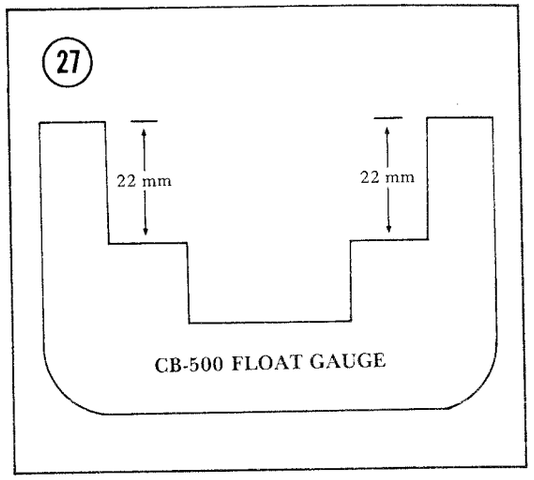


CB500 CARBURETORS

1. Coil spring A
2. Coil spring B
3. Coil spring C
4. Tension coil spring A
5. Leaf spring
6. Spring seat A
7. Carburetor breather pipe band
8. Spring seat B
9. Spring seat C
10. Spring set plate
11. Tube clip
12. Special bolt A
13. Special bolt C
14. Special washer
15. Special washer D
16. Plain washer
17. Tongued washer
18. Stay plate
19. Special nut
20. Hex nut
21. Carburetor assembly
22. Carburetor A
23. Carburetor B
24. Carburetor C
25. Carburetor D
26. Top
27. Top washer
28. Throttle valve
29. Jet needle
30. Valve plate
31. Stop screw plate
32. Stop screw A
33. Throttle stop screw
34. Float arm pin
35. Throttle stop spring
36. Throttle shaft
37. Screw stopper pin
38. Throttle shaft holder
39. Throttle cable stay
40. Adjust holder A
41. Adjust holder B
42. Adjust screw
43. Dust plate A
44. Dust plate B
45. Dust plate C
46. Connector joint A
47. Connector joint B
48. Hex nut
49. Hex nut
50. Protector tube
51. Float
52. Valve seat
53. Clip plate
54. Bar clip
55. Float chamber body A
56. Float chamber body B
57. Drain screw
58. Throttle stop screw
59. Throttle stop screw
60. Needle jet
61. O-ring
62. O-ring
63. O-ring
64. O-ring
65. O-ring
66. Air screw spring
67. Stop screw spring
68. Spring washer
69. T-type fuel tube joint
70. Interior tooth washer
71. Lockwasher
72. Overflow tube assembly
73. Slow jet #40
74. Main jet #100
75. Pan screw
76. Pan screw
77. Pan screw
78. Pan screw
79. Pan screw
80. Pan screw
81. Flat screw
82. Hex nut
83. Lockwasher
84. Lockwasher
85. Lockwasher
86. Lockwasher
87. Fuel tube
88. Fuel tube
89. Clip tube
90. Steel ball

drops, so does the float, and the valve opens to replenish the supply of gas.

Honda sells a special gauge to set the float height. The one for the CB500 is illustrated in **Figure 27**. The one for the CB350F is similar except that the distance is 21mm.



Adjustment

1. Close the fuel tank petcock.
2. Remove the float bowls by slipping the snap ring toward the front of the engine.

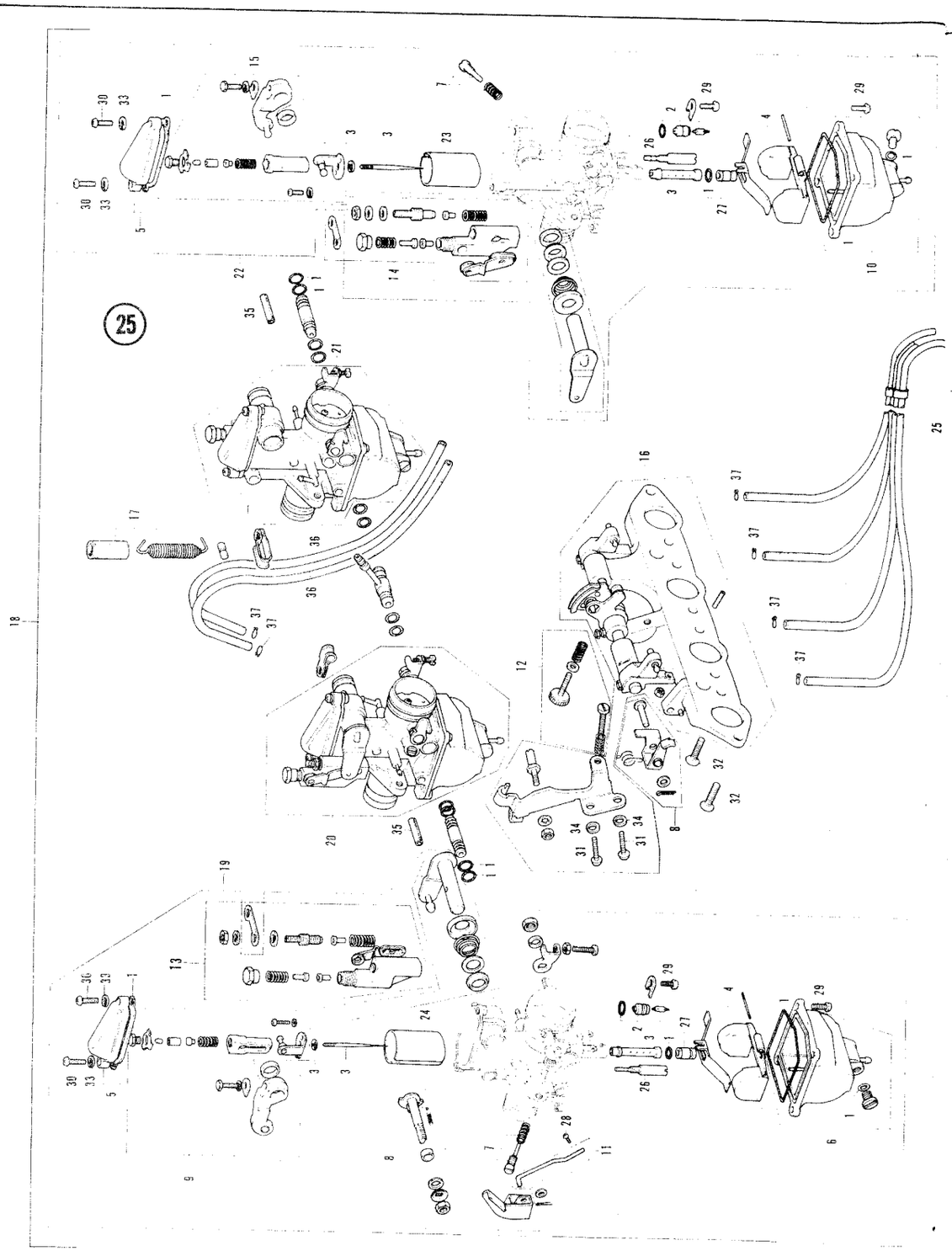
> NOTE: *Remove the bowls carefully so as not to damage the floats or the valves. There may be gasoline in the bowls.*

3. Flush any sediment from the bowls with solvent and dry.
4. Use the special Honda gauge to check the float height. The measurements should be taken when the float arm is just barely touching the valve, but not compressing the valve spring.

The standard heights are:

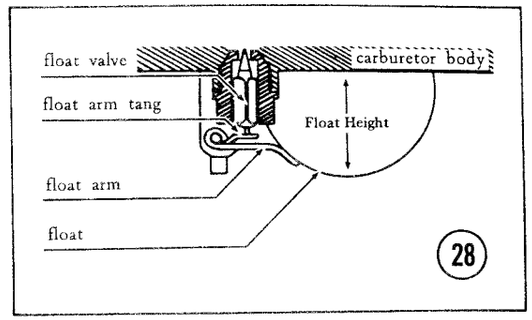
CB500	22mm
CB350F	21mm

5. To adjust, carefully bend the float arm tang, **Figure 28**, toward or away from the valve. Correct any misalignment between the two floats by carefully twisting the float arm.
6. Replace the bowls and gaskets, making sure the bowl lips are seated properly and the clips are secure.



CB350F CARBURETORS

1. Packing-set
2. Float valve-set
3. Jet needle-set
4. Float-set
5. Top-set
6. Float chamber-set A
7. Screw-set A
8. Link-set
9. Link arm-set A
10. Float chamber-set B
11. Choke rod-set
12. Screw-set B
13. Adjust holder-set A
14. Adjust holder-set B
15. Link arm-set B
16. Stay plate-set
17. Protector tube-set
18. Carburetor assembly
19. Carburetor A
20. Carburetor B
21. Carburetor C
22. Carburetor D
23. Throttle valve A
24. Throttle valve B
25. Carburetor overflow tube
26. Slow jet
27. Main jet-set
28. Pan screw
29. Pan screw
30. Pan screw
31. Pan screw
32. Flat screw
33. Lockwasher
34. Lockwasher
35. Fuel tube
36. Fuel tube
37. Clip tube



Adjustment and Synchronization

This section covers adjustments of idle mixture and idle speed, and balancing of the four carburetors. The operations should be performed in this order.

A special set of gauges is required to synchronize the four carburetors. Honda sells one, complete with tubes and adapters to connect them. The set is expensive—about $75—but it makes a difficult job easier and probably more accurate as well.

Less costly devices that measure air flow, such as the "Uni-Syn," must be used carefully and switched back and forth between the four carbs to compare readings.

Idle Mixture

1. Warm up engine to operating temperature.
2. Brace the fuel tank to allow access to the carburetors.
3. Turn in the air screw on each carburetor, **Figure 29**, until they seat gently. Then back them out about 1½ turns.

Idle Speed

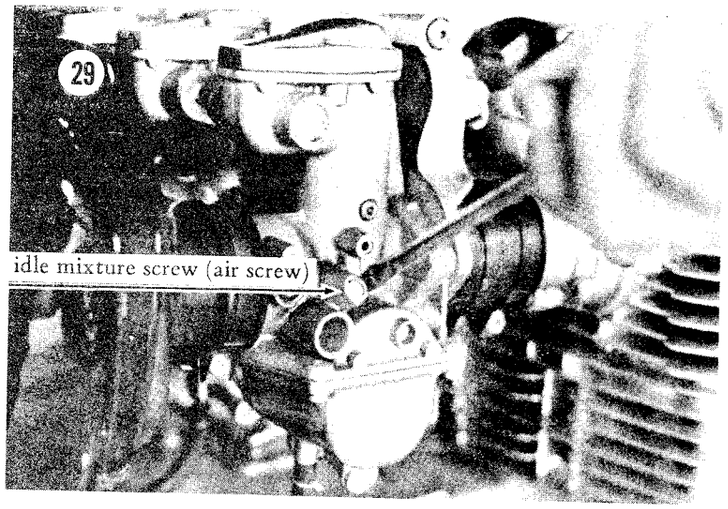
1. Adjust the engine idle speed with the throttle stop screw, **Figure 30**. Turn the screw clockwise, in the direction of "A," to increase the speed and vice versa to decrease.

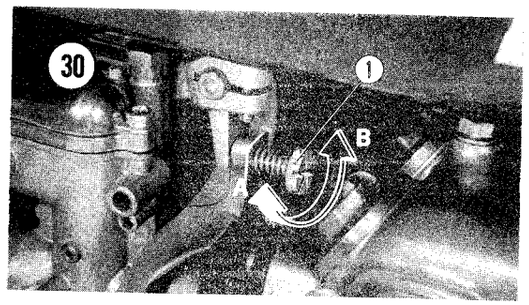
Standard idle speeds:

CB500	1,000 rpm
CB350F	1,200 rpm

Carburetor Synchronization

1. Remove the fuel tank and reconnect it with a longer tube, keeping the tank higher than the petcock.

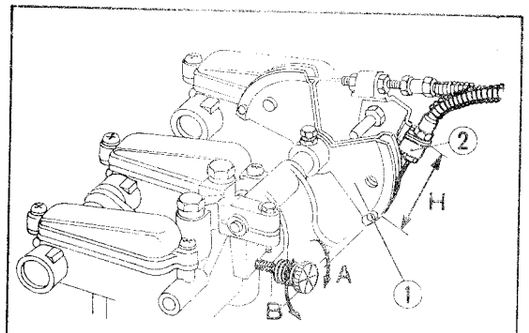




1. Throttle stop screw

2. Refer to **Figure 31** and adjust the throttle stop screw to position the lever the proper distance (H in Figure 31) from the stay. The standard distances are:

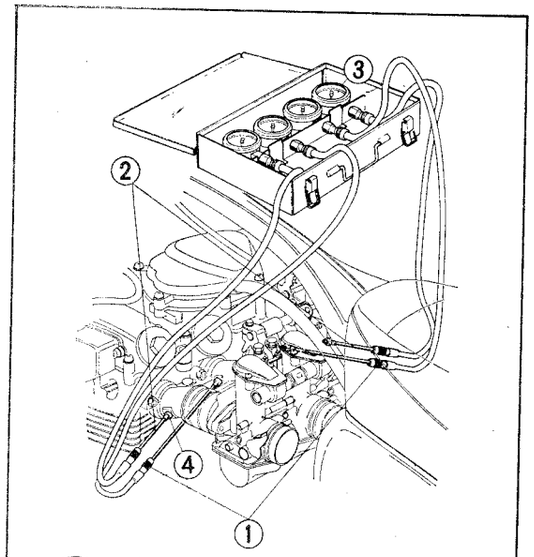
CB500	1.938 in. (49mm)
CB350F	2.205 in. (56mm)



1. Throttle lever 2. Stay

31

3. Remove the plugs from the inlet manifolds, **Figure 32**, and screw in the adapters for the vacuum gauges. The longer adapters are used for the two inside carburetors.

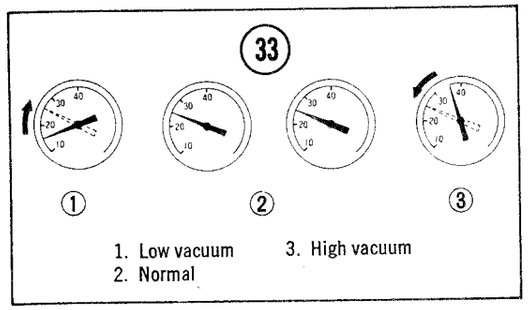


32 1. A adaptor 2. B adaptor 3. Vacuum gauge 4. Plug hole

4. Close the damping valves on the vacuum gauge tubes and start the engine. Double-check to make sure it is idling at the correct rpm.

5. Slowly open the damping valves until the needles in each gauge flutter slightly but do not swing beyond one graduation.

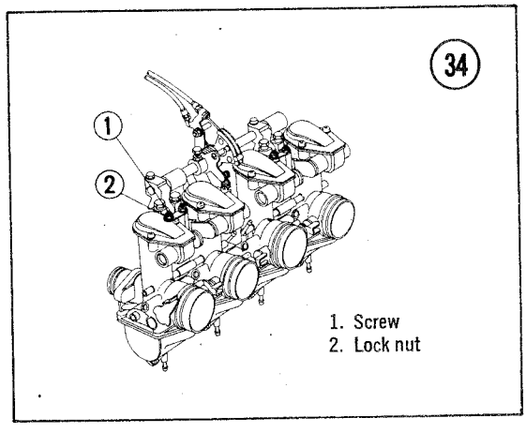
6. The vacuum readings should be between 16 cm-hg and 24 cm-hg, with the difference between carburetors not exceeding 3 cm-hg. **Figure 33** shows low, normal, and high gauge readings.



1. Low vacuum 2. Normal 3. High vacuum

7. To adjust, refer to **Figure 34** and loosen the lock nuts on the carburetor. Turn the adjusting screws clockwise to increase vacuum; counterclockwise to decrease it.

NOTE: *The four carburetors should be adjusted to register the same vacuum, regardless of the particular numbers on the gauges.*



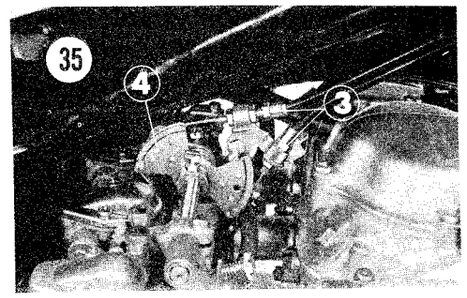
1. Screw 2. Lock nut

8. When the carburetors are balanced, tighten down the lock nuts and rev the engine a couple of times. Recheck the vacuum readings and readjust if necessary.

9. Remove the vacuum adapters and reinstall the plugs in the intake manifolds.

THROTTLE LINKAGE

The throttle cable is looped around a "walking beam," **Figure 35**, mounted on the linkage



3. Adjuster 4. Walking beam

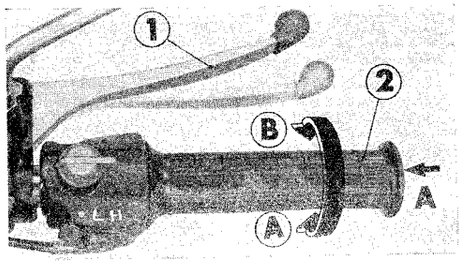
shaft so that the throttles open and close in a positive, push-pull action. The twist grip should rotate smoothly to the full open or full closed position when the steering is on right or left lock.

If the carburetors were just balanced, or if the cable seems to be binding, the throttle linkage must be adjusted.

This section covers adjustment of the cable, overtravel stop, and full open stop.

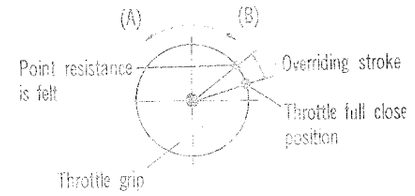
Throttle Cable Adjustment

1. Refer to the detail of the handlebar throttle grip in **Figure 36**. The amount of free play is a matter of personal preference, although the



1. Front brake lever 2. Throttle grip

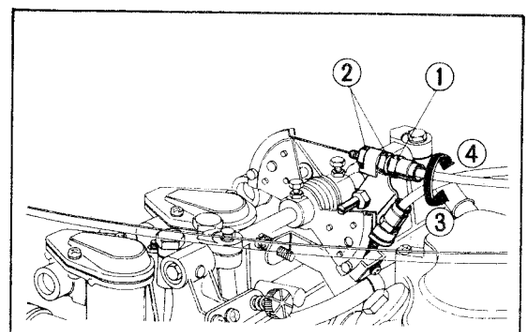
36



Detail Viewed from A

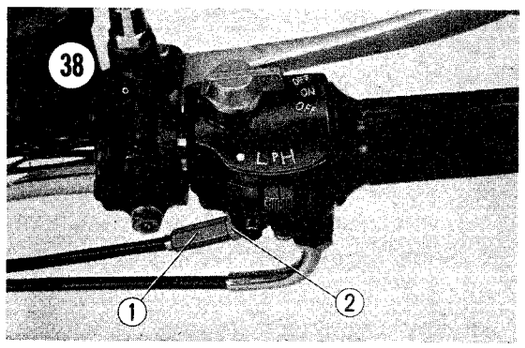
factory recommends between 10 and 15 degrees of the full rotation, or in linear terms between .13 in. and .16 in. (3mm and 4mm) as measured around the circumference of the grip.

2. Major adjustments should be made at the carburetor end of the cable, **Figure 37**. Both the opening and closing sides of the adjusters should be changed by equal amounts. Leave about .12 in. (3mm) at the grip adjuster **Figure 38**, for final micro-adjustment.



1. Adjuster
2. Lock nut
3. Decrease
4. Increase

37



1. Adjuster
2. Lock nut

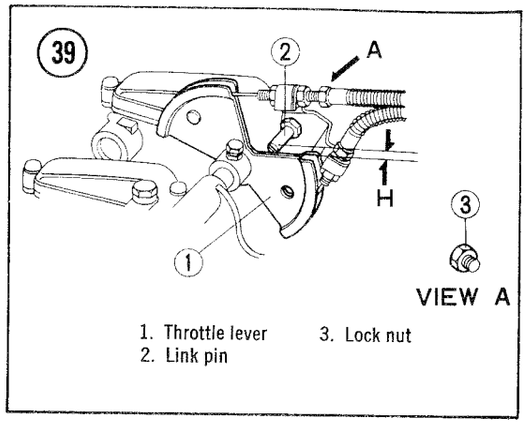
38

Overtravel Stopper Adjustment

1. The eccentric link pin, **Figure 39**, limits overtravel of the cable crank when the throttle grip is forced past its normal closed position.

2. The clearance between the pin and throttle lever, Figure 39 "H," should be:

CB500	.08 in.-.12 in. (2mm-3mm)
CB350F	.08 in.-.083 in. (2mm-2.1mm)



1. Throttle lever
2. Link pin
3. Lock nut

39

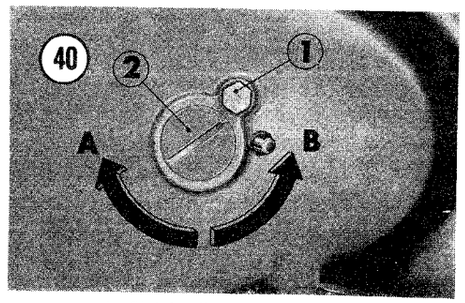
3. Adjust by loosing the lock nut behind the eccentric pin, rotating the pin until the correct clearance is obtained, then tightening down the lock nut.

CLUTCH

If the clutch slips when it is engaged, or if the motorcycle creeps forward with the clutch disengaged, the free play probably is out of adjustment.

CB500

1. Refer to **Figure 40** and loosen the lock bolt on the cable adjuster.



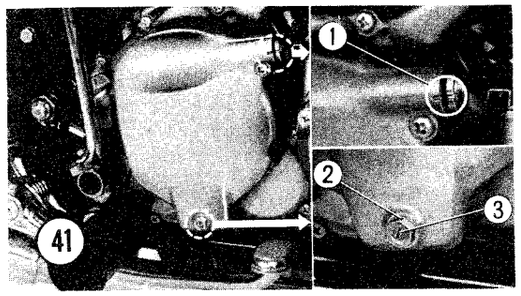
1. Clutch adjuster locking bolt
2. Clutch adjuster

40

2. Turn the adjuster clockwise until a slight resistence is felt, then turn the adjuster back about .12 in. (3mm) and retighten the lock bolt.

CB350F

1. Refer to **Figure 41** and align the index mark on the clutch lever with the one on the right crankcase cover.



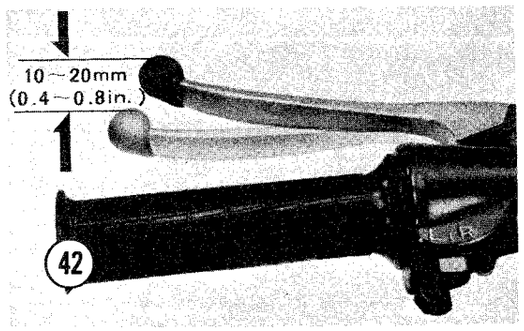
1. Matching mark
2. Lock nut
3. Clutch adjuster

41

2. Loosen the lock nut and turn the adjuster counterclockwise until it feels tight. Then back it off about ¼ turn and tighten the lock nut.

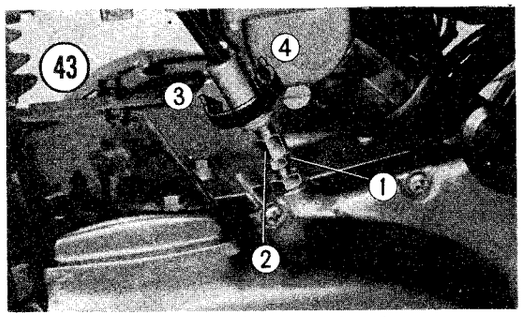
CB500 and CB350F

3. Measure the free play at the tip of the lever grip, as shown in **Figure 42**. It should be between .4 in. and .8 in. (10mm and 20mm).



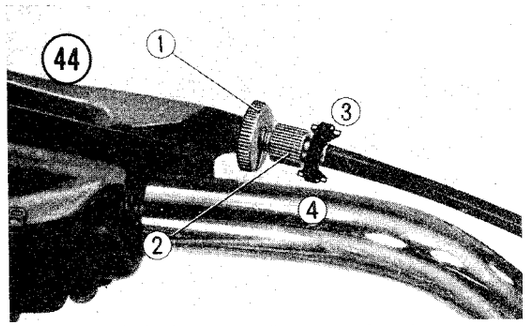
42

4. Major adjustment, if needed, should be made at the lower end of the clutch cable, **Figure 43**, and fine adjustment at the grip end. Turning the adjusters in direction "A" increases play; vice versa for direction "B." Make the fine adjustment at the grip, **Figure 44**.



1. Lock nut
2. Adjuster
3. Increase free play
4. Decrease free play

43



1. Lock nut
2. Adjuster
3. Increase free play
4. Decrease free play

44

BATTERY

The battery is the heart of the electrical system. Its condition should be checked regularly.

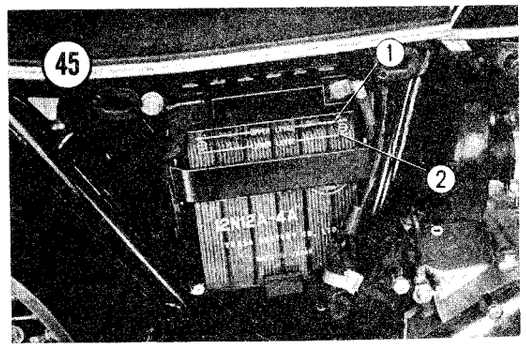
CAUTION

Painted surfaces will be damaged if corrosive battery electrolyte is spilled on them. Flush away all spills with water, and neutralize with baking soda if necessary.

Battery charging procedures are covered in the electrical system chapter.

1. Remove the right side cover by pulling it free of its rubber mounts.

2. Check the electrolyte level. **Figure 45** shows the maximum and minimum marks. If necessary, top up with distilled water only. Be careful not to overfill.



1. Upper limit
2. Lower limit

45

3. Inspect the terminals for corrosion. Flush off any oxidation with a solution of baking soda and water. Coat the terminals lightly with Vaseline or a silicon grease to retard new corrosion.

CHAPTER TWO

ENGINE

Servicing Engine in Frame

The following parts can be serviced while the engine is mounted in the frame:

Cylinder head
Camshaft and chain tensioner
Cylinders and pistons
Electrical systems
Oil pump and filter
Gear shift mechanism
Clutch
Carburetors

Engine Removal (CB350F)

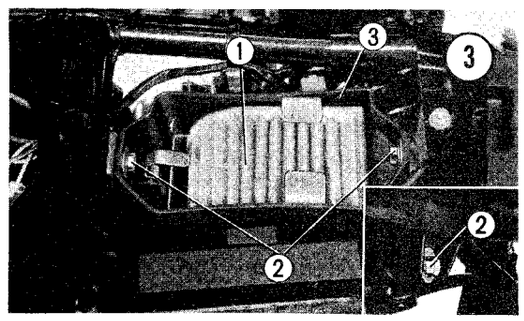
The **Figure 1** chart illustrates various operations to remove the engine. They should be performed in numerical order. The drawings are self explanatory, but additional details can be found in the CB500 section as follows.

Engine Removal (CB500)

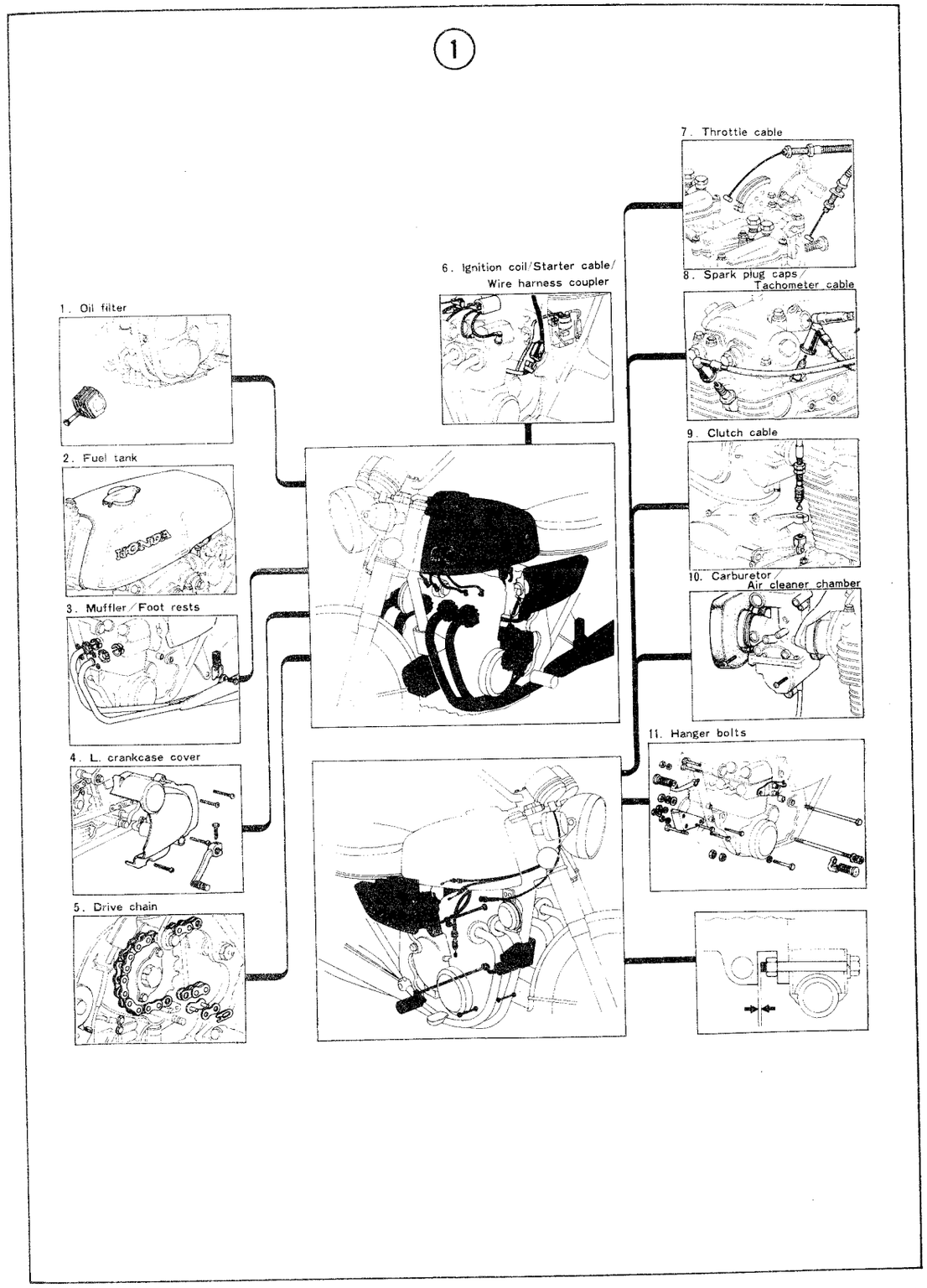
1. Turn off the fuel valve and disconnect the lines to the fuel tank. Raise the seat and remove the tank.
2. Drain the oil from the crankcase and remove the filter.
3. Remove the mufflers.
4. Disconnect the high tension electric leads from the spark plugs.
5. Disconnect the ground strap from the battery terminal.
6. **Figure 2**: disconnect the tachometer cable.

1. Tachometer cable 2. 5mm screw

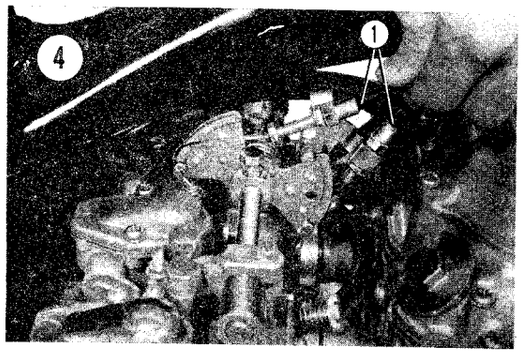
7. **Figure 3**: remove the air cleaner element and then its case by loosening the 6mm bolts.



1. Air cleaner element 3. Air cleaner case
2. 6mm bolts

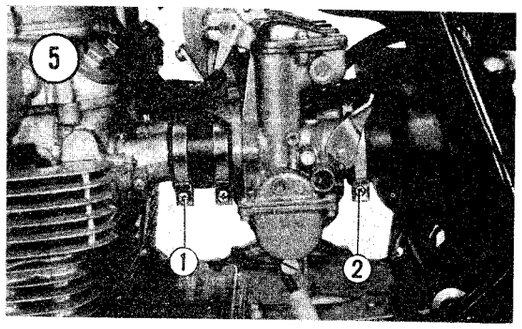


8. **Figure 4**: disconnect the throttle cable at the carburetors.



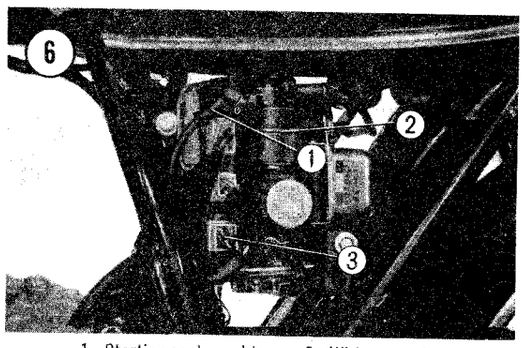
1. Throttle cable

9. **Figure 5**: remove the carburetors by loosening the screws at the insulator and air cleaner chamber.



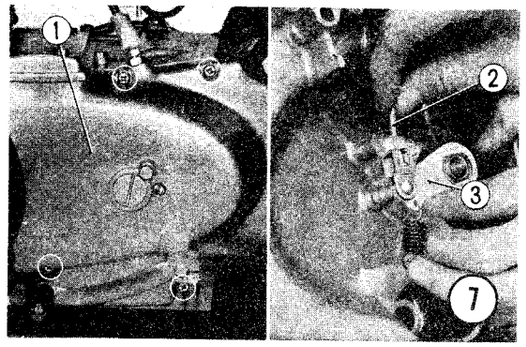
1. 5mm screw 2. 4mm screw

10. **Figure 6**: disconnect the starting motor cable at the solenoid and the generator wiring at the junction.



1. Starting motor cable
2. Magnetic switch
3. Wiring coupler

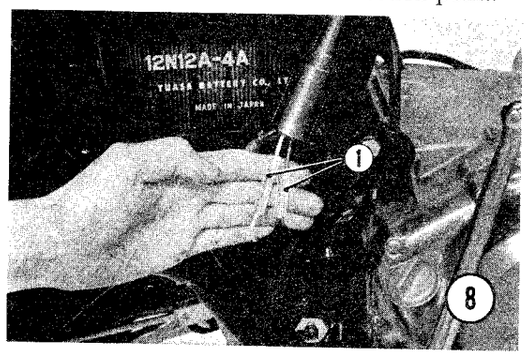
11. **Figure 7**: remove the gearshift pedal, starting motor cover, left crankcase cover. Disconnect the clutch cable at the lifter.



1. Left crankcase cover
2. Clutch cable
3. Clutch lifter

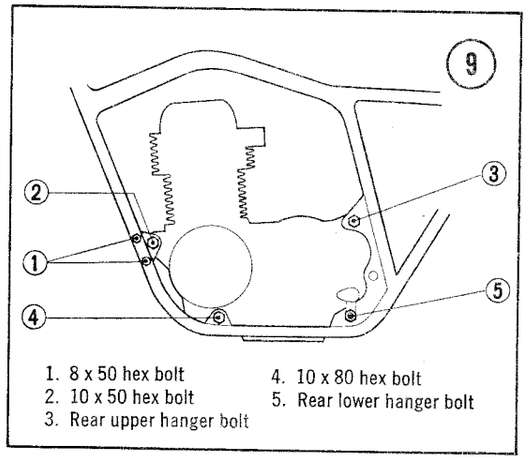
12. Remove the drive chain and the final driven sprocket.

13. **Figure 8**: disconnect the yellow and blue contact breaker leads at the connection point.

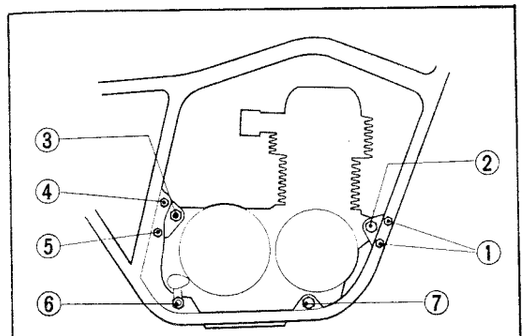


1. Contact breaker point leads

14. Remove the nuts from the engine hanger bolts shown in **Figures 9 and 10**. Remove the engine from the right side of the frame by raising the rear slightly and lifting out.



1. 8 x 50 hex bolt
2. 10 x 50 hex bolt
3. Rear upper hanger bolt
4. 10 x 80 hex bolt
5. Rear lower hanger bolt

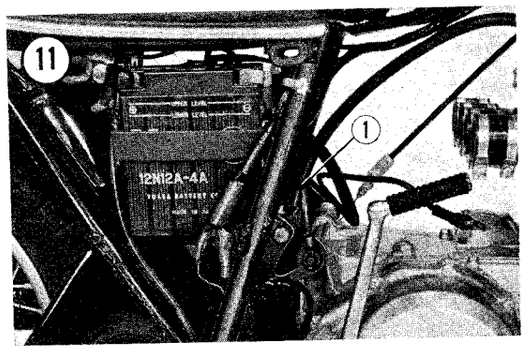


1. 8 x 50 hex bolt
2. 10 x 50 hex bolt
3. Rear upper hanger bolt
4. 8 x 100 hex bolt
5. 8 x 40 hex bolt
6. Rear lower hanger bolt
7. 10 x 80 hex bolt

Engine Installation (CB500 and CB350F)

Replace the engine in the reverse order of removal, giving particular attention to the following.

—battery ground cable terminal is installed along with rear hanger bolt, **Figure 11**.



1. Battery ground cable

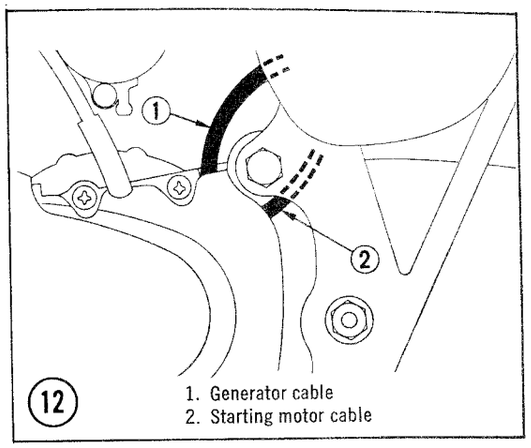
—do not pinch the generator or starter motor wiring when left crankcase cover is reinstalled, **Figure 12**.

—connect each pair of mufflers with the proper band, **Figure 13**.

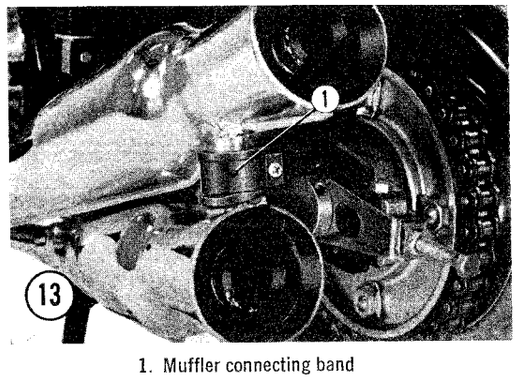
—adjust the clutch, drive chain, and carburetors after the engine is installed.

CYLINDER HEAD GROUP

This section covers servicing of the cylinder head, valves, cylinders, pistons, and camshaft.



1. Generator cable
2. Starting motor cable

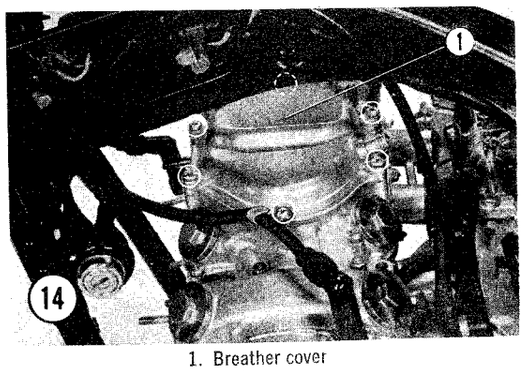


1. Muffler connecting band

It is not necessary to remove the engine from the frame to perform these operations. Exploded drawings of the major assemblies will be found at the end of this chapter.

Disassembly

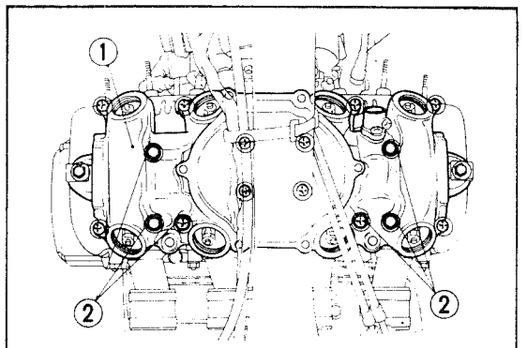
1. Remove fuel tank, mufflers, spark plugs, and breather cover (**Figure 14**). Disconnect tachometer cable.



1. Breather cover

2. Remove the caps from the eight valve tappet access holes and loosen the rocker arm adjusting screws.

3. Remove the cylinder head cover, **Figure 15**, taking care to loosen the screws and bolts uniformly to relieve the stress gradually.

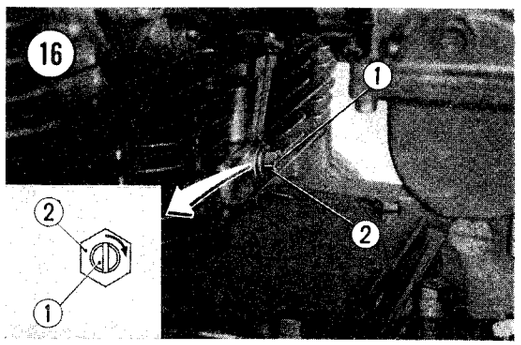


1. Cylinder head cover
2. 6mm copper washers

15

4. Relieve cam chain tension.

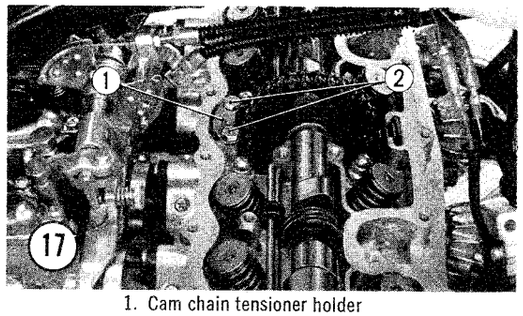
CB500 (**Figure 16**): Loosen the lock nut, turn the adjusting screw clockwise as far as it will go (about 90 degrees) and tighten lock nut.



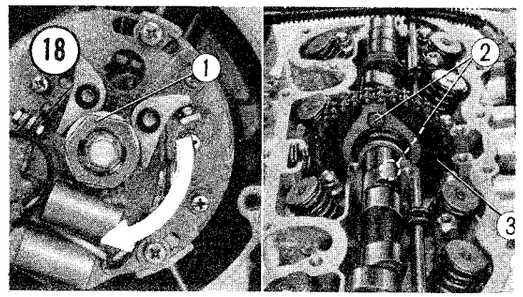
1. Cam chain tension adjuster
2. Lock nut

CB350F (**Figure 17**): Remove the chain tensioner holder by unscrewing the bolts and then removing the tension "slipper."

5. Remove the point cover and rotate the crankshaft (use a 23mm socket on the special nut, **Figure 18**) until one of the knock bolts on the cam sprocket comes into view. Remove the bolt.



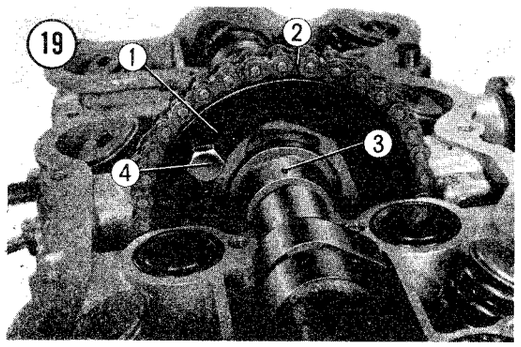
1. Cam chain tensioner holder
2. 6 x 20 bolts



1. Special nut
2. Knock bolts
3. Cam sprocket

Then rotate the crankshaft a full turn and remove the other bolt.

6. Remove the cam sprocket from the camshaft, **Figure 19**, and remove the cam chain from the sprocket. Use wire to hold the cam chain so it does not slip down into the crankcase. Remove the cam.

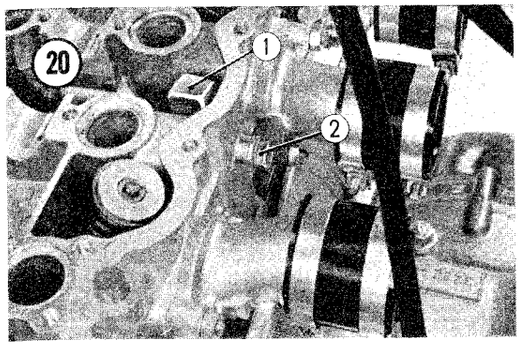


1. Cam sprocket
2. Cam chain
3. Camshaft
4. 7mm bolt

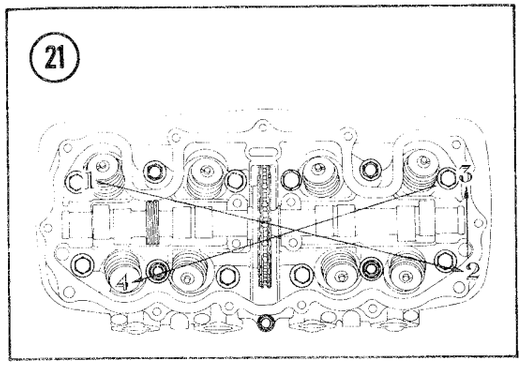
7. Remove the carburetors.

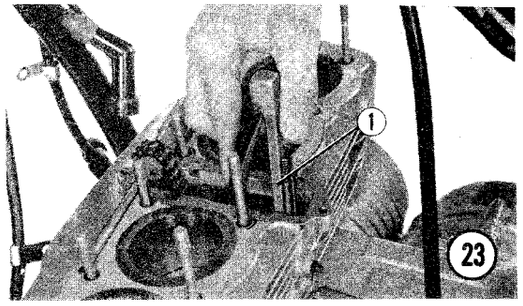
8. CB500 (**Figure 20**): loosen the cam chain tensioner mounting bolt.

9. Loosen the 12 cylinder head nuts in a criss-cross pattern as shown in **Figure 21** to relieve the stresses equally.

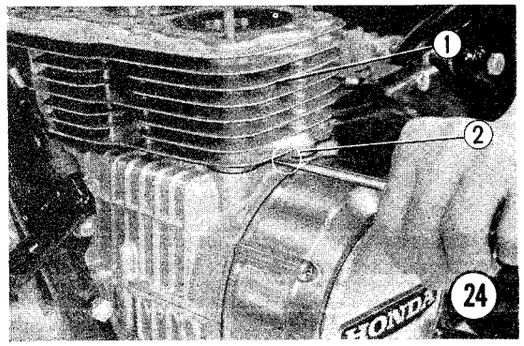


1. Cam chain tensioner
2. Cam chain tensioner mounting bolt



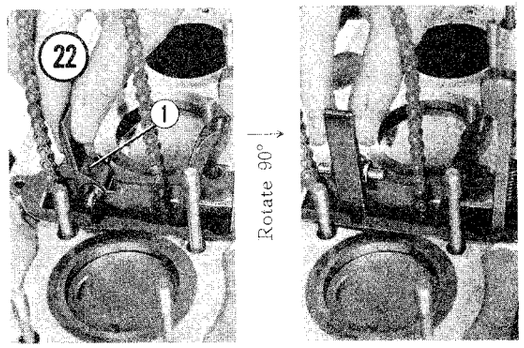


1. Cam chain tensioner



1. Cylinder
2. Cylinder groove

10. Remove the cam chain guide. CB500 (**Figure 22**): raise the guide slightly and rotate it 90 degrees while lifting it up and out.

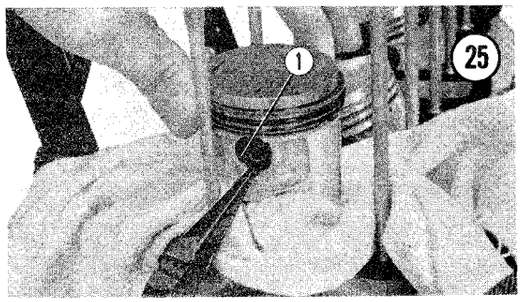


1. Cam chain guide

11. CB500 (**Figure 23**): remove the lock nut from the cam chain tensioner adjuster, referring back to Figure 16, and then remove the tensioner itself from the head.

12. Remove the cylinder head. If the head is stuck to the block, try prying with an old screwdriver as shown in **Figure 24**.

13. Refer to **Figure 25** and remove the wrist pin clip, the pin itself, and then the piston. Drape a rag under the piston so the clips do not fall into the crankcase. Remove piston rings.

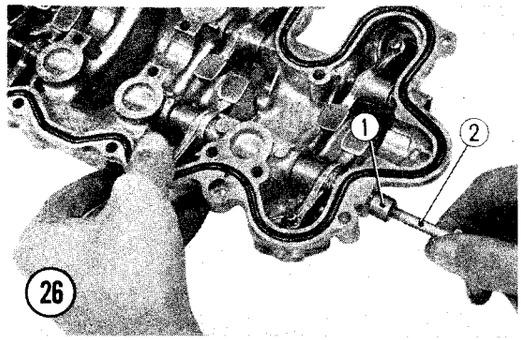


1. Piston pin clip

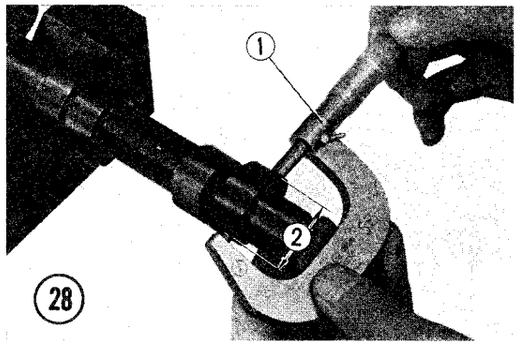
14. Remove the rocker arm shaft from the cylinder head cover, **Figure 26**, by screwing the appropriate size bolt into the end of the shaft. CB500 takes a 6mm bolt. CB350F takes a 10mm bolt.

Inspection

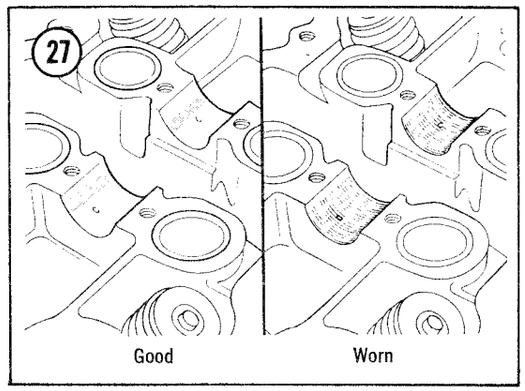
1. The surfaces of the camshaft bearings should be smooth and shiny. See **Figure 27**. If the

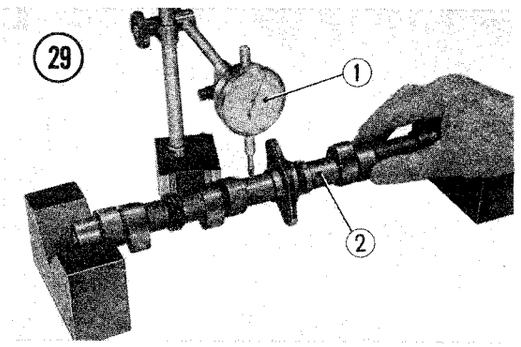


1. Rocker arm shaft 2. 6mm bolt



1. Micrometer 2. Cam height





1. Dial gauge 2. Camshaft

surfaces are scratched or worn, the bearings must be replaced.

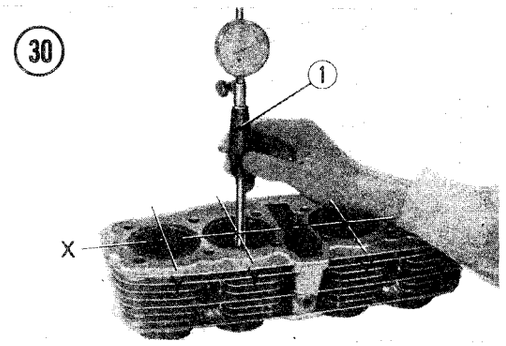
2. Measure the height of each cam lobe with a micrometer as shown in **Figure 28**. Replace the shaft if worn beyond the serviceable limit, e.g. if the measurements are less than the following values:

CB500	inlet cam	1.4075 in. (35.85mm)
	exhaust cam	1.3563 in. (34.45mm)
CB350F	inlet cam	1.1024 in. (28.00mm)
	exhaust cam	1.1024 in. (28.00mm)

3. Refer to **Figure 29** for the setup to measure runout of the camshaft. Support the shaft between two blocks and measure the bend at the center journal with a dial gauge. Replace the shaft if the runout is greater than .004 in. (.1mm).

4. Inspect the camshaft for cracks and replace if necessary.

5. Measure the inside diameter of each cylinder along both the x and y axes (**Figure 30**) with a cylinder gauge at the top, center, and bottom.



1. Cylinder gauge

A rebore will be necessary if the cylinders are worn beyond the following dimensions:

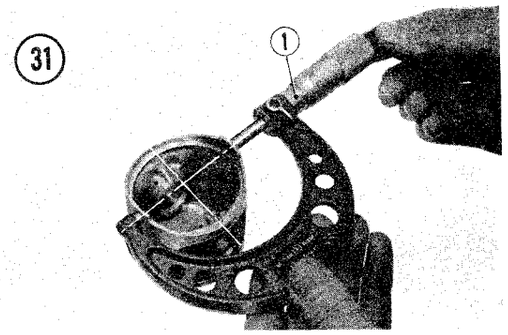
CB500	2.208 in. (56.1mm)
CB350F	1.854 in. (47.1mm)

The four standard oversized pistons available are .009 in. (.25mm), .019 in. (.50mm), .029 in. (.75mm) and .04 in. (1mm).

6. Measure the outside diameter of the piston at its skirt, 90 degrees to the wrist pin, as shown

in **Figure 31**. Replace if worn beyond the following limits:

CB500	2.198 in. (55.85mm)
CB350F	1.845 in. (46.85mm)



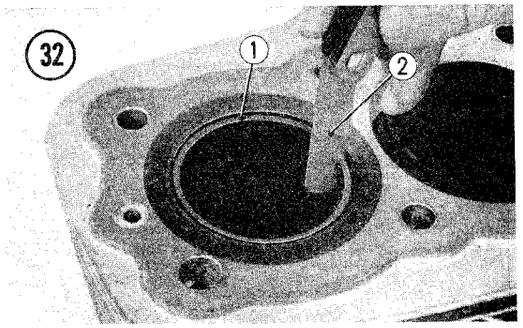
1. Micrometer

7. Measure the inside diameter of the wrist pin hole. Replace if worn beyond the following limits:

CB500	.593 in. (15.08mm)
CB350F	.514 in. (13.05mm)

8. Measure the end gap of the piston ring by inserting it into the cylinder as shown in **Figure 32** and using the appropriate feeler gauge blade. Replace if worn beyond the following limits:

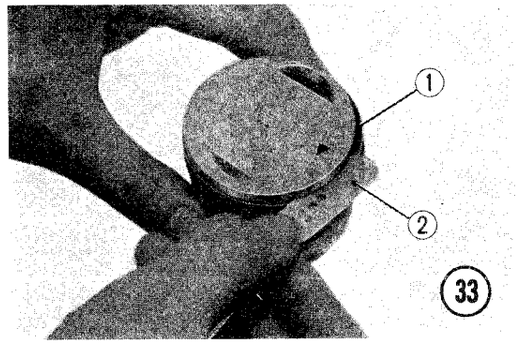
CB500	
top ring	.007 in. (.18mm)
second ring	.005 in. (.15mm)
oil ring	.005 in. (.15mm)
CB350F	
top ring	.028 in. (.7mm)
second ring	.028 in. (.7mm)
oil ring	.028 in. (.7mm)



1. Piston ring 2. Feeler gauge

9. Measure the side clearance of the piston ring (while installed on the piston) as shown in **Figure 33**. Replace if worn beyond the following limits:

CB500	
top ring	.007 in. (.18mm)
second ring	.005 in. (.15mm)
oil ring	.005 in. (.15mm)
CB350F	
top ring	.005 in. (.15mm)
second ring	.005 in. (.15mm)
oil ring	.005 in. (.15mm)



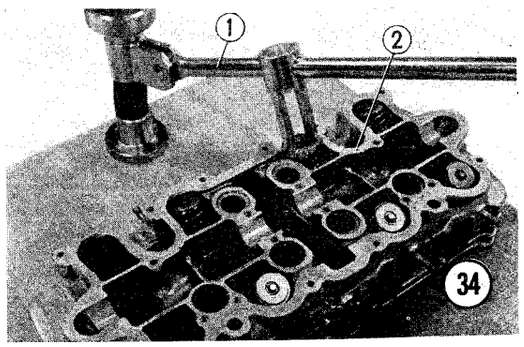
1. Piston ring 2. Feeler gauge

10. Check the piston for damage. If the ring grooves are worn the pistons should be replaced. Scrape the carbon from the piston crowns.

Valves

1. Remove the valve cotters using the Honda special tool to compress the valve springs, **Figure 34**.

CB500	Special Tool No. 07031-30011
CB350F	Special Tool No. 07031-32901



1. Valve spring compressor 2. Cylinder head

2. Remove the valves.

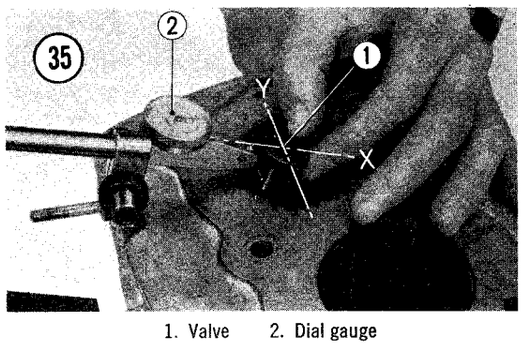
3. Remove the valve guides with the Honda special tool:

CB500 Special Tool No. 07046-32301
CB350F Special Tool No. 07046-32901

Inspection

1. Measure the clearance between the valve stem and its guide with a dial gauge as shown in **Figure 35**. Replace the valve and guide as a set if worn beyond the following limits:

CB500 and CB350F
inlet .003 in. (.08mm)
exhaust .004 in. (.10mm)



1. Valve 2. Dial gauge

Use a valve guide driver to insert the guide into the cylinder head. Then ream out the guide to the proper inside diameter:

CB500
inlet-exhaust .215 in. - .216 in.
(5.513mm - 5.538mm)

CB350F
inlet-exhaust .216 in. - .217 in.
(5.538mm - 5.564mm)

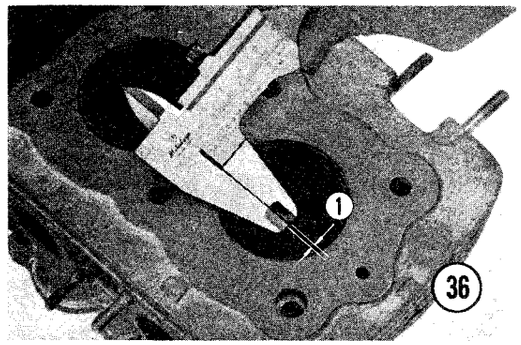
Be sure to maintain the following valve stem-to-valve guide clearances:

CB500 and CB350F
inlet .0004 in. - .0014 in.
(.010mm - .035mm)
exhaust .001 in. - .002 in.
(.030mm - .050mm)

2. Measure contact of the valve with its seat. Coat the valve face with a thin application of bluing, red lead, or similar preparation. Press the valve against its seat and rotate it one turn only. The coating should show a band of uniform width around the seat and the valve.

Measure the band with a caliper as shown in **Figure 36**. The valve seat width should be as follows:

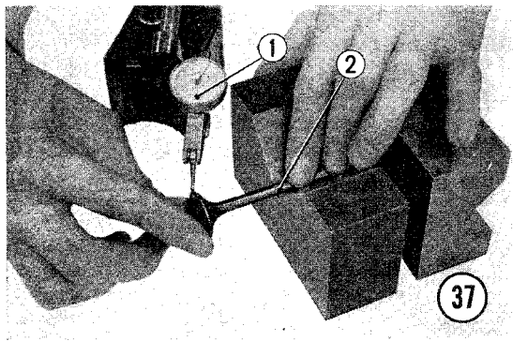
CB500 .039 in. - .059 in. (1mm - 1.5mm)
CB350F .030 in. - .059 in. (.7mm - 1.5mm)



1. Valve seat width

If the band is irregular, lap the valve with suitable compound and take the measurement a second time. If results still are not satisfactory the valve seat must be refaced. This is a job for a machine shop.

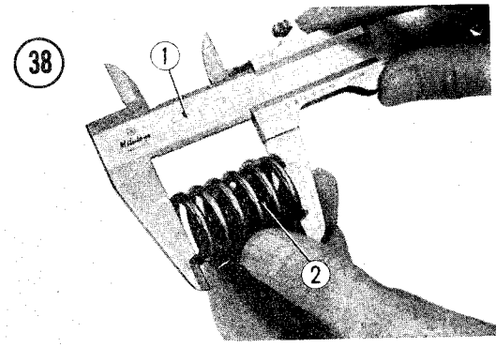
3. Measure the runout of the valve with a dial gauge as shown in **Figure 37**, with the valve wedged in a V block. If runout is greater than .002 in. (.05mm) the valve must be replaced.



1. Dial gauge 2. Valve

4. Inspect the edge of the valve for burned spots and replace if necessary.

5. Measure the free length of the valve spring with a vernier caliper as shown in **Figure 38**. Replace the springs if the length is less than the following limits:

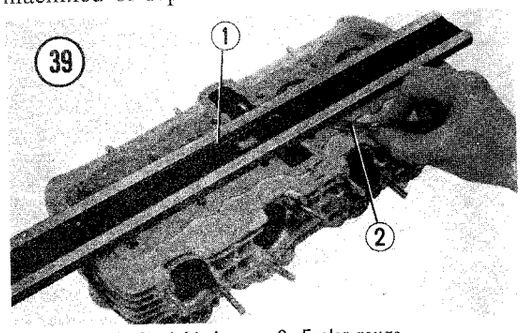


1. Vernier caliper 2. Valve spring

CB500
inner 1.35 in. (34.5mm)
outer 1.53 in. (39.0mm)

CB350F
inner 1.06 in. (27.0mm)
outer 1.28 in. (32.5mm)

6. Check the flatness of the cylinder head by placing a straightedge across the surface, as in **Figure 39**, and checking the clearance with a feeler blade. If the clearance is greater than .012 in. (3mm) the head should either be machined or replaced.



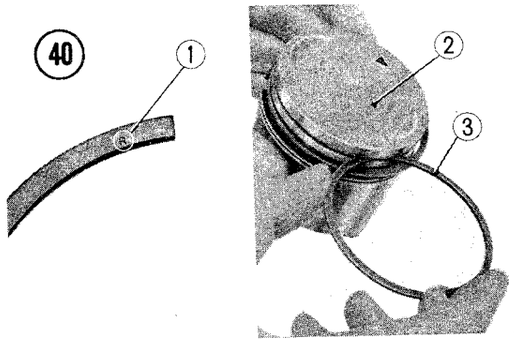
1. Straightedge 2. Feeler gauge

Cylinder Head Group Assembly

Assemble in reverse order of disassembly, referring to the exploded drawings at the end of the chapter and paying particular attention to the following steps:

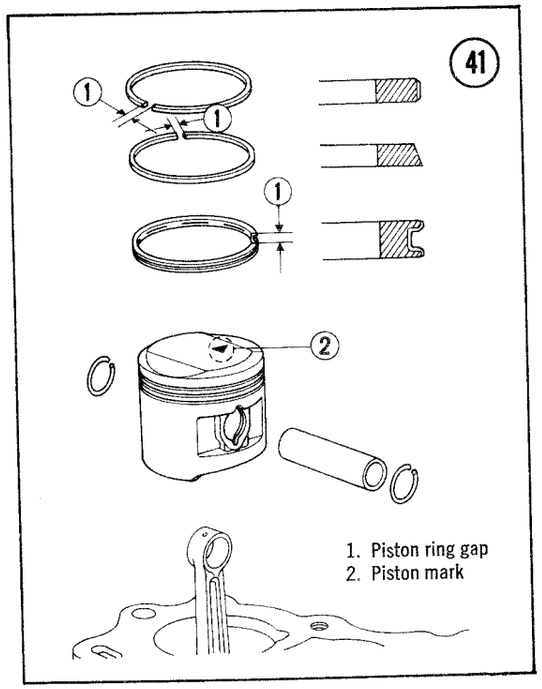
1. Install the rocker arm and its shaft in the cylinder head cover.

2. Piston rings should be installed as a set with the manufacturer's mark facing the top, **Figure 40**. Roll the rings in the grooves beforehand to ensure that clearance is correct.



1. Marks 2. Piston 3. Piston ring

3. Install the pistons so that the triangular arrow mark is pointed toward the front, or exhaust side, of the engine as shown in **Figure 41**.

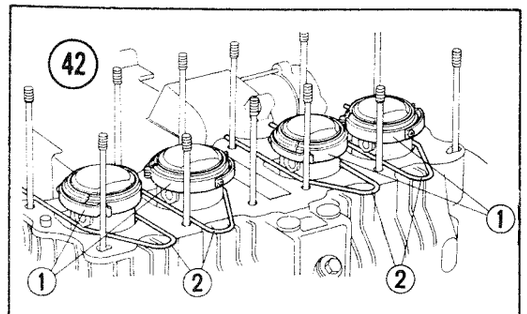


4. Use new wrist pin clips.

5. The gaps in the rings, Figure 41, should be staggered 120 degrees with none being either exactly in line or 90 degrees opposed from the wrist pin.

6. Install a new head gasket.

7. Use the Honda special piston base and ring compressor tools, **Figure 42**, to lower all four pistons into the cylinders at the same time.



1. Piston ring compressors
2. Piston bases

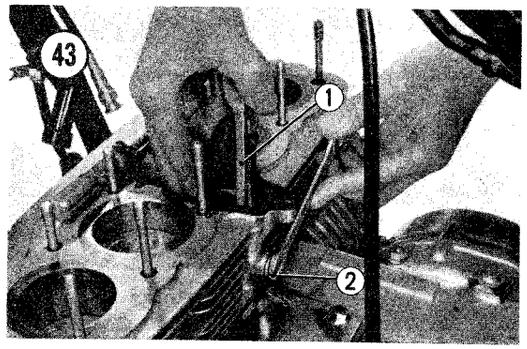
CB500

piston base	Special Tool No. 07033-55102
ring compressor	Special Tool No. 07032-30001

CB350F

piston base	Special Tool No. 07033-33301
ring compressor	Special Tool No. 07032-33301

8. CB500: Install the cam chain tensioner in the cylinder, **Figure 43**. Hold it down by hand, install the O-ring and washer, and tighten the lock nut.



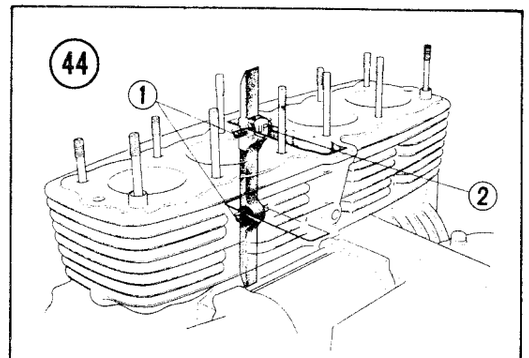
1. Cam chain tensioner 2. Lock nut

9. CB500: Install the cam chain guide as shown in **Figure 44**.

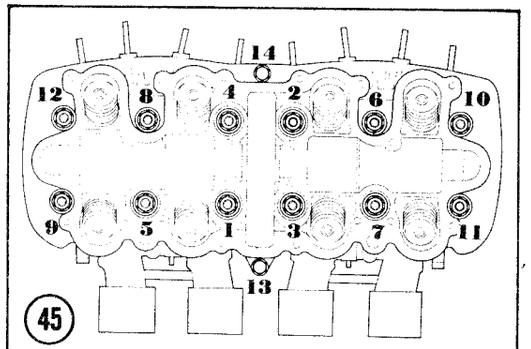
10. Place the cylinder head on the block, being careful not to drop the cam chain into the crankcase.

11. Tighten the cylinder head nuts in the sequence shown in **Figure 45**, ultimately torquing them down to 14.5 ft.-lbs. to 16.6 ft.-lbs. (2 kg-m to 2.2 kg-m).

12. Slide the camshaft together with the cam chain sprocket into place from the right side and



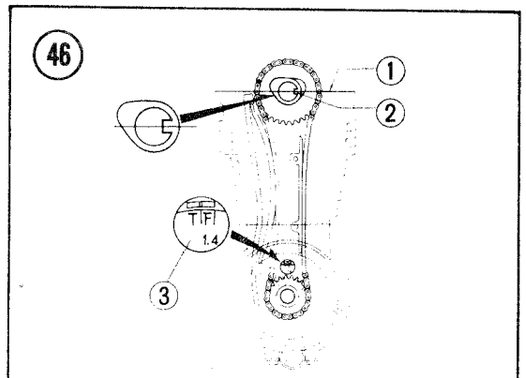
1. Pins 2. "UP" mark



install the chain. Leave the sprocket free to turn on the shaft.

13. Remove the point cover and rotate the crankshaft until the "T 1-4" timing mark is aligned with the index mark when viewed through the peephole in the base plate.

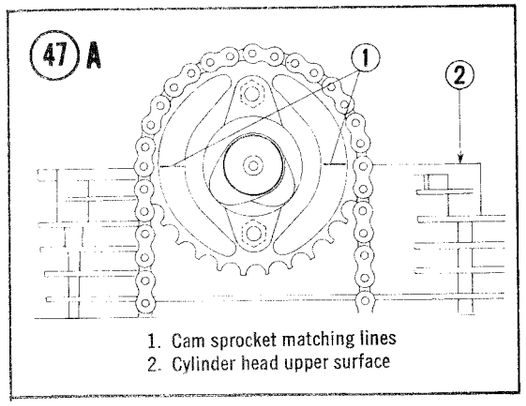
14. CB500 (**Figure 46**): Set the camshaft so that the center of the notch on the right end is lined



1. Cylinder head flange surface
2. Cutout notch 3. Spark advancer

up with the surface of the cylinder head. Then secure the sprocket to the shaft with the two bolts.

CB350F (**Figure 47A**): Align the sprocket so that the two matching lines are even with the surface of the cylinder head. Then secure the sprocket to the shaft with the two bolts.

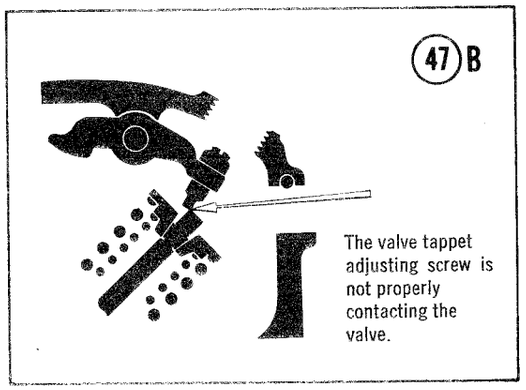


1. Cam sprocket matching lines
2. Cylinder head upper surface

15. Install the cylinder head cover and torque to 5.1 ft.-lbs. to 8.7 ft.-lbs. (.7 kg-m to 1.2 kg-m) with the difference between each bolt not greater than 1.5 ft.-lbs. (.2 kg-m).

16. Adjust the cam chain tension (see Chapter One).

17. Adjust the valves, and check to ensure that the tappet screw is contacting the valve stem end correctly, **Figure 47B**.



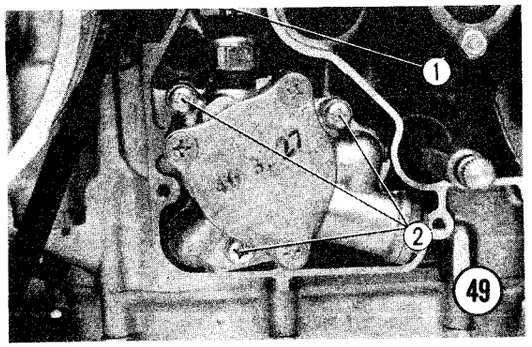
OIL PUMP AND FILTER

The oil pump is driven by the primary shaft. **Figure 48** (next page) shows the major parts of the engine lubrication system for the CB500. The CB350F is similar.

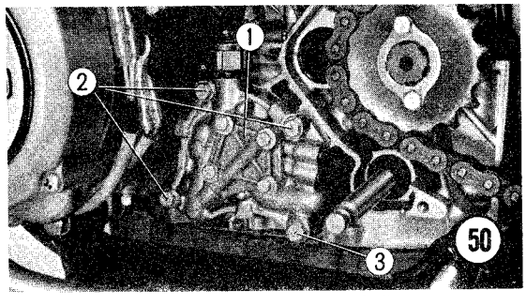
Oil Pump Disassembly

1. Drain the engine oil.
2. CB500: Remove the starter motor cover.
   CB350F: Remove the gearshift pedal and the left foot rest.
3. Remove the left crankcase cover.
4. Disconnect the oil pressure switch lead.
5. Remove the oil pump.

   CB500: Refer to **Figure 49**.
   CB350F: Refer to **Figure 50**.



1. 4mm bolt 2. 6mm screws



1. Oil pump 3. 8mm bolt
2. 6mm bolts

Oil Filter

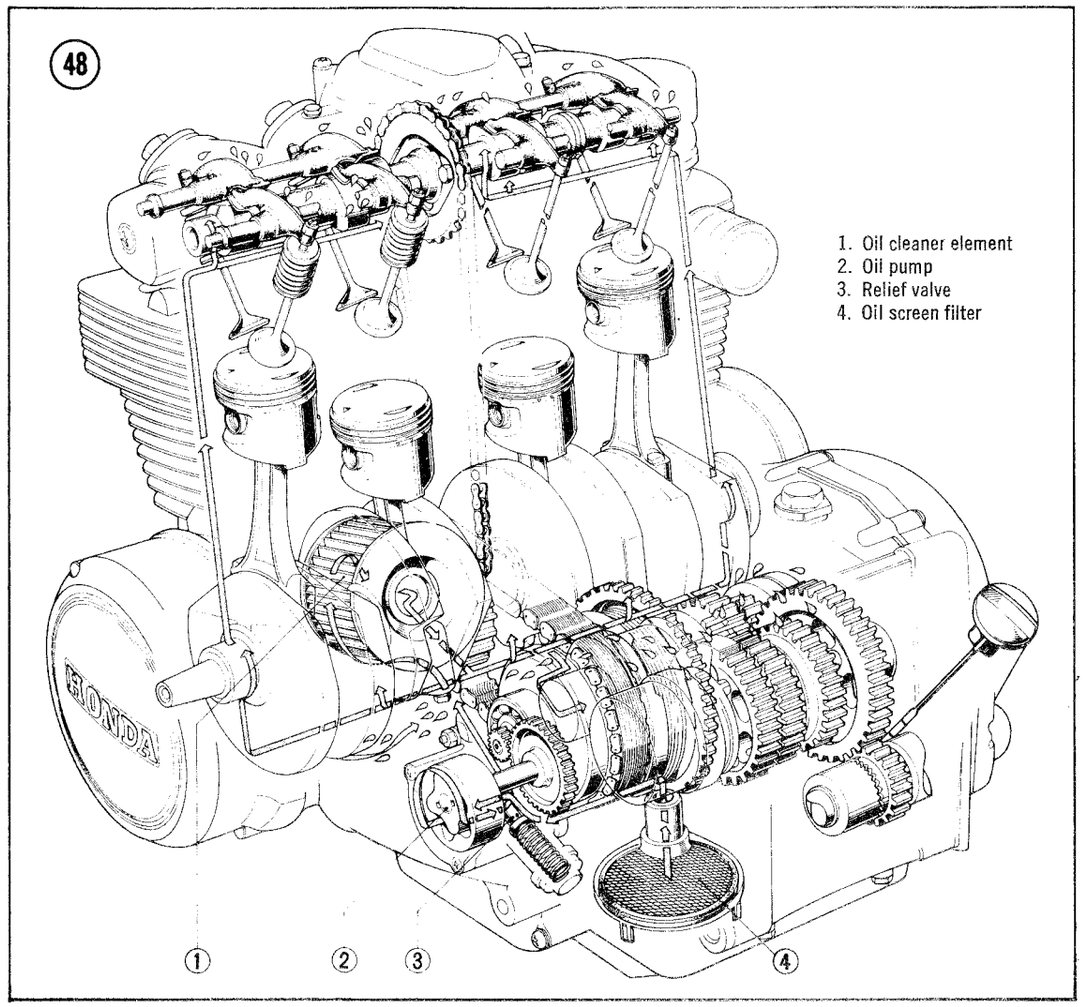
1. Refer to **Figure 51** and unscrew the center bolt to disassemble.

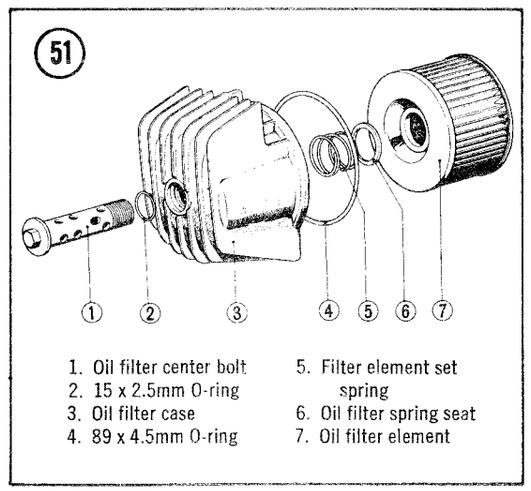
Oil Screen Filter

1. Remove the oil pan to expose the screen filter, **Figure 52**.

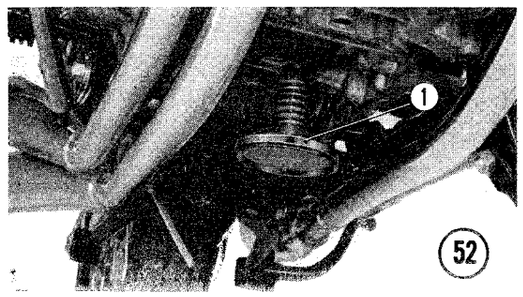
Inspection

1. Measure the clearance between the inner and outer rotors with a feeler gauge blade as shown in **Figure 53**. Replace if worn beyond the following specifications:





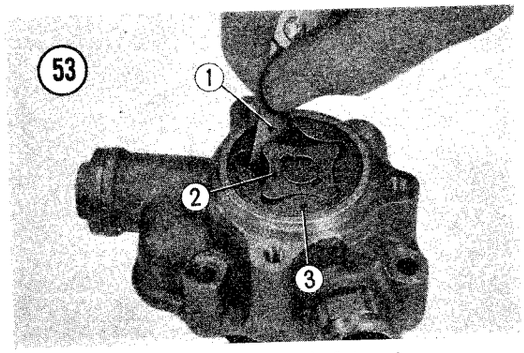
1. Oil filter center bolt
2. 15 x 2.5mm O-ring
3. Oil filter case
4. 89 x 4.5mm O-ring
5. Filter element set spring
6. Oil filter spring seat
7. Oil filter element



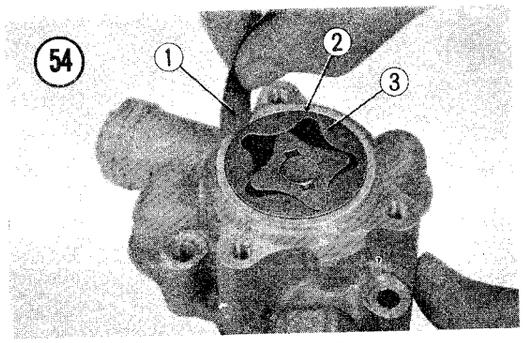
1. Oil screen filter

CB500	.013 in. (.35mm)
CB350F	.012 in. (.30mm)

2. Measure the clearance between the outer rotor and the pump body as shown in **Figure 54**.



1. Feeler gauge
2. Inner rotor
3. Outer rotor

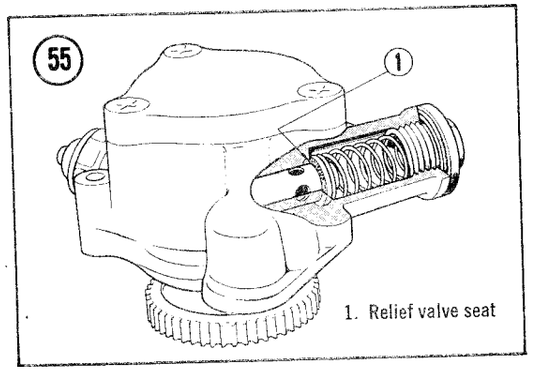


1. Feeler gauge
2. Pump body
3. Outer rotor

Replace the pump if worn beyond .013 in. (.35mm).

3. Check the operation of the relief valve (**Figure 55**, CB500), which should move freely, and examine the seat for foreign objects.

4. Clean and inspect the screen filter and replace if damaged.

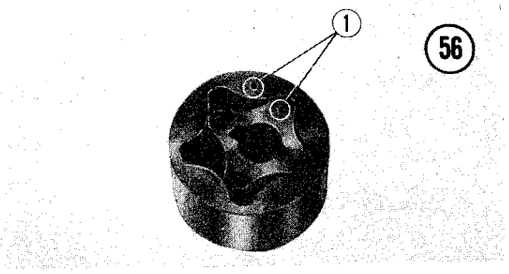


1. Relief valve seat

Assembly

Assemble in reverse order of disassembly, with particular attention to the following steps:

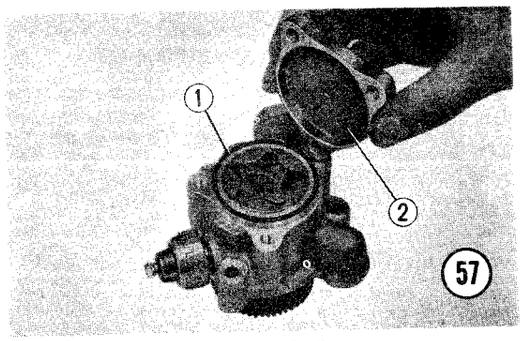
1. CB500 (**Figure 56**): Align the punch marks on the inner and outer rotors.



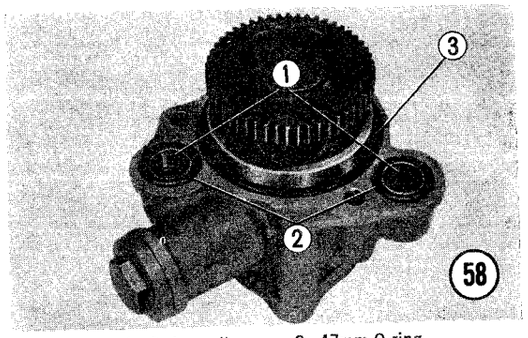
1. Punch marks

2. Install the O-rings in the proper locations.

CB500: **Figures 57 and 58.**
CB350F: **Figure 59.**



1. 47mm O-ring
2. Oil pump cover



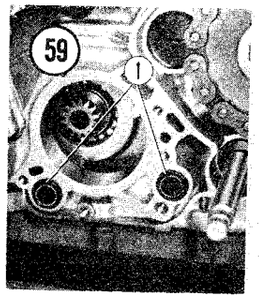
1. O-ring collar
2. 14mm O-ring
3. 47mm O-ring

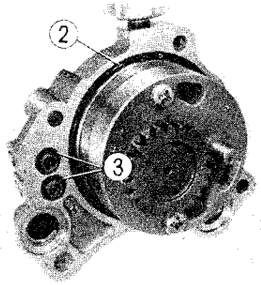
CRANKSHAFT AND CONNECTING RODS

Disassembly procedures for the CB500 and the CB350 are set forth separately below.

CB500 Crankcase Disassembly

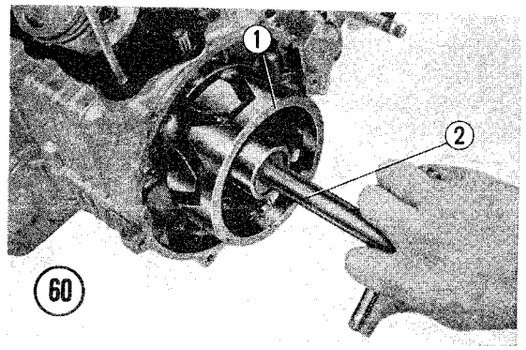
1. Remove the engine. Drain the oil. Remove cylinder head, cylinders, and pistons.





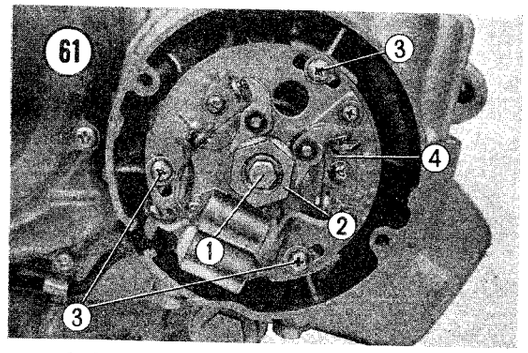
1. 15 x 2.5mm O-ring
2. 9.9 x 1.5mm O-ring
3. 63 x 2.5mm O-ring

2. Remove the generator rotor with a puller, Honda special tool No. 07011-21601, as shown in **Figure 60**.



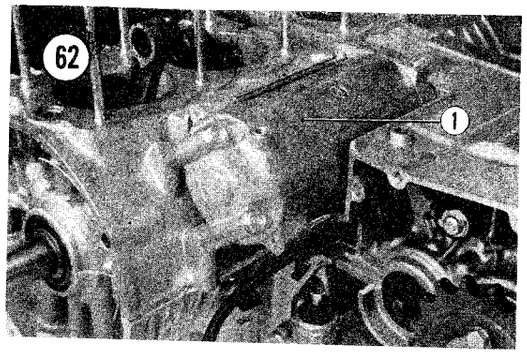
1. Generator rotor
2. Generator rotor puller

3. Refer to **Figure 61** and remove the 6mm bolt and the 5mm screws and remove the breaker assembly and spark advancer.



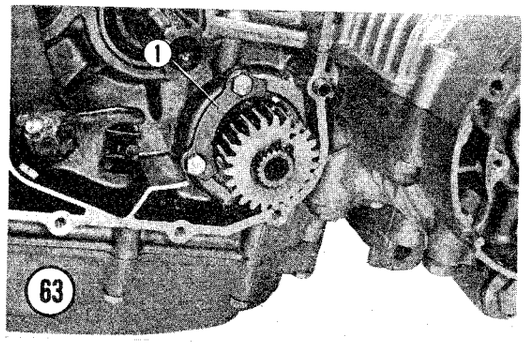
1. 6mm bolt
2. Special washer
3. 5mm screws
4. Contact breaker assembly

4. Remove the clutch and gearshift arm according to the instructions in Chapter Three.
5. Dismount the starting motor, **Figure 62**.
6. Remove the oil pan.



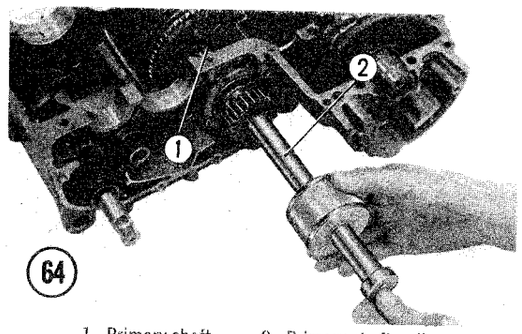
1. Starting motor

7. Remove the lower crankcase by unscrewing the ten 8mm bolts and the twelve 6mm bolts. Loosen the 8mm bolts in a criss-cross pattern so that the stresses are relieved equally.
8. Refer to **Figure 63** and remove the plate by unscrewing the two 6mm bolts.



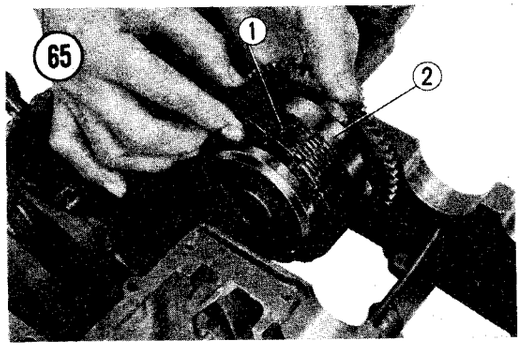
1. Bearing set plate

9. Refer to **Figure 64** and remove the primary shaft with a puller, Honda special tool No. 07009-32301.



1. Primary shaft
2. Primary shaft puller

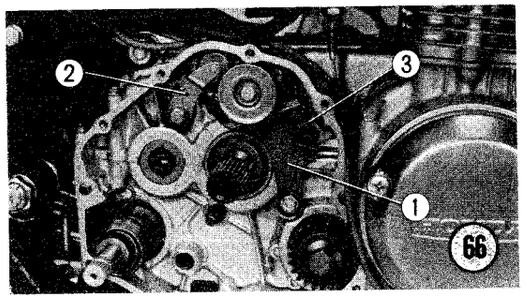
10. Remove the starting clutch from the primary chain, **Figure 65**. Then remove the chain and the cam chain from the crankshaft.



1. Primary chain
2. Starting clutch

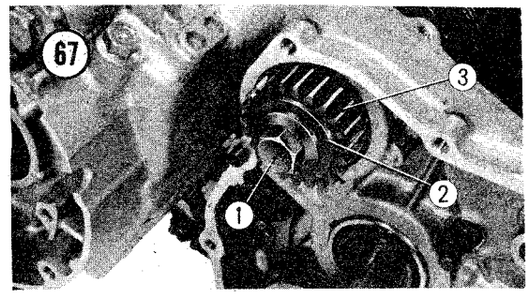
CB350F Crankcase Disassembly

1. Remove engine from frame. Drain oil from crankcase. Remove cylinder head, cylinders, and pistons.
2. Remove the generator rotor with a puller, Honda special tool No. 07011-33301.
3. In order, remove right foot rest, kickstart pedal, gearshift pedal, right crankcase cover, gearshift spindle.
4. Refer to **Figure 66** and disassemble the positive stopper, gearshift drum stopper, and neutral stopper arm.

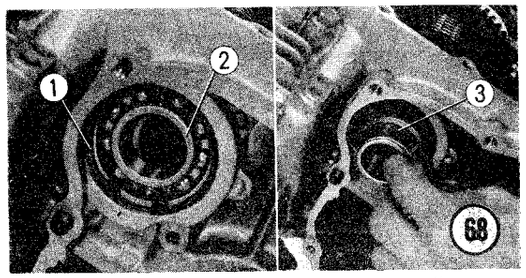


1. Positive stopper
2. Gearshift drum stopper
3. Neutral stopper arm

5. Remove the contact breaker and spark advancer.
6. Remove the oil pump.
7. Refer to **Figure 67** and remove the 12mm bolt so that the secondary drive gear can be slid off the primary shaft.
8. Pull out the primary shaft to the right side.
9. Refer to **Figure 68** and remove the internal circlip, the 6205 ball bearing and the 25mm collar.



1. 12mm bolt
2. Primary shaft lockwasher
3. Secondary drive gear

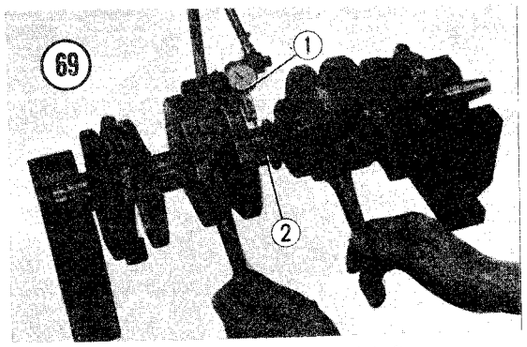


1. 52mm internal circlip
2. 6205 ball bearing
3. 25mm collar

10. Loosen the bolts from the lower crankcase in a criss-cross pattern from the inside outward to relieve stresses equally.

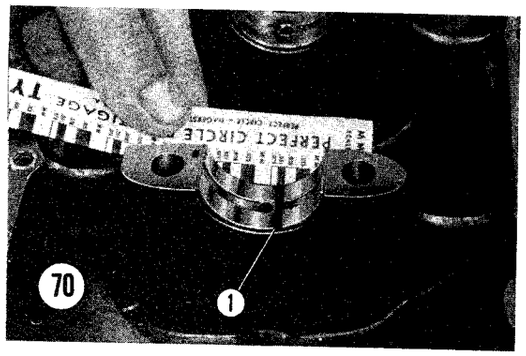
Inspection

1. Measure the crankshaft runout at the center journal with a dial gauge as shown in **Figure 69**. Support the crank on V blocks and then rotate it against the gauge to read the amount of bend. Replace the crankshaft if the runout is greater than .002 in. (.05mm).



1. Dial gauge
2. Crankshaft

2. Measure the crankshaft journal wear with "Plastigauge" or the equivalent. Place a piece of gauge on the bearing as shown in **Figure 70** and



1. Plastigauge

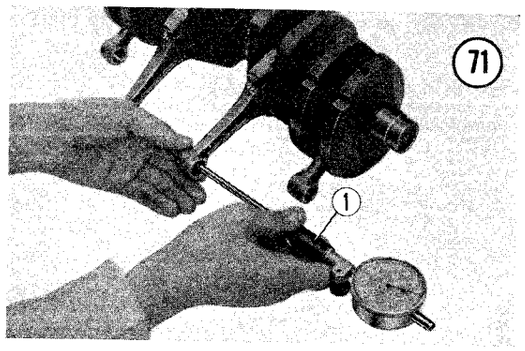
install the crankshaft. Then assemble the upper and lower crankcase and torque the bolts to the regular 16.6 ft.-lbs. to 18.1 ft.-lbs. (2.3 kg-m to 2.5 kg-m). Disassemble the crankcase and measure the Plastigauge.

If the clearance is greater than .003 in. (.08mm) the bearing should be replaced. The procedure for selecting bearings is covered below.

3. Inspect the crankshaft journals for any scratches or uneven wear. If any journal is worn out-of-round, or if the end taper exceeds .002 in. (.005mm), the crank should be replaced.

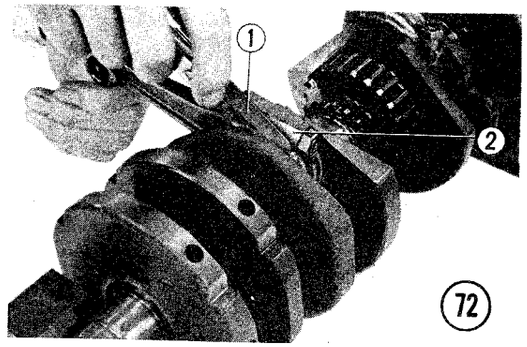
4. Measure the inside diameter of the small ends of the connecting rods with an inside dial gauge as shown in **Figure 71**. Replace if worn beyond the following limits:

CB500	.593 in. (15.07mm)
CB350F	.516 in. (13.10mm)



1. Inside dial gauge

5. Measure the side clearances of the connecting rods, with a feeler gauge. The rods should be mounted on the crankshaft as in **Figure 72**.



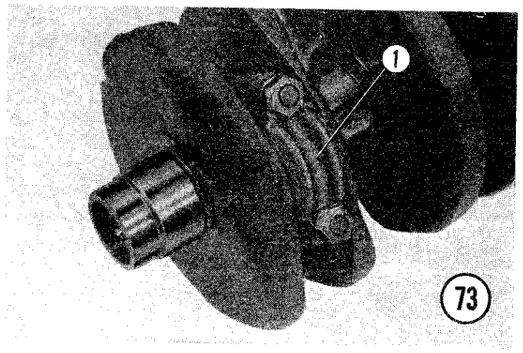
1. Feeler gauge 2. Connecting rod

Replace the rods if they are worn beyond the following limits:

CB500	.014 in. (.35mm)
CB350F	.006 in. (.15mm)

6. Measure the wear of the large ends of the connecting rods as follows:

—Remove the bearing cap, **Figure 73**, and place a piece of Plastigauge on the surface of the bearing.



1. Connecting rod cap

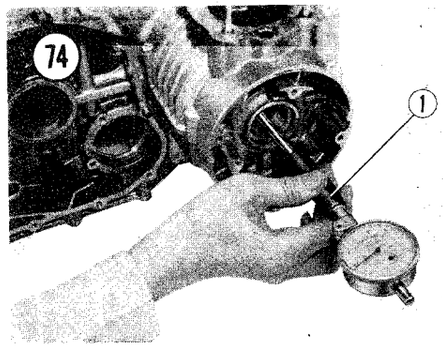
—Install the cap and torque to 14.5 ft.-lbs. to 15.9 ft.-lbs. (2kg-m to 2.2kg-m).

—Disassemble and measure the clearance on the gauge. Replace the bearing if it is worn beyond .003 in. (.08mm). Bearing selection is covered below.

Bearing Selection

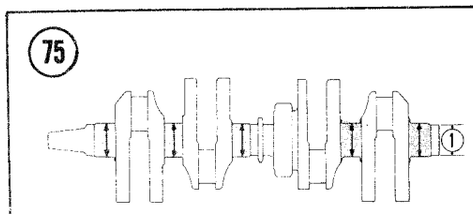
1. Remove the bearings; then assemble the upper and lower crankcases.

2. Measure the inside diameter of the bearing seats with a cylinder gauge as shown in **Figure 74**.



1. Cylinder gauge

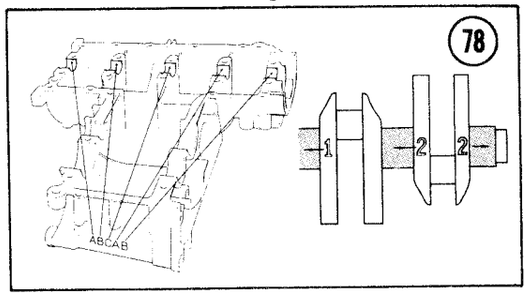
3. Measure the diameter of the crankshaft journals with a micrometer, **Figure 75**.



1. Crankshaft journal outside diameter

4. New bearings are sized according to either a letter or color code. Determine the correct replacement bearing by referring to the chart in **Figure 76** for CB500 bearings or **Figure 77** for CB350F bearings.

The letter and figure codes stamped on the lower crankcase and crankshaft, **Figure 78**, are factory production references and should not be confused with the bearing codes.



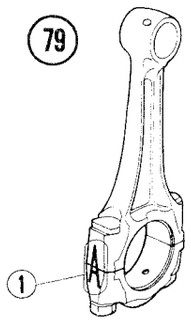
5. **Figure 79** shows the weight codes for connecting rods for the CB500 (the range is similar for the CB350F). When replacing rods, make sure the new one is the same weight as the old.

CRANKSHAFT JOURNAL DIAMETER

Crankcase Bearing Diameter (76)	1.2987 in. - 1.2992 in. (32.99mm - 33.00mm)	1.2983 in. - 1.2987 in. (32.98mm - 32.99mm)
1.4179 in. - 1.4182 in. (36.016mm - 36.024mm)	B (Brown)	A (Black)
1.4176 in. - 1.4179 in. (36.008mm - 36.016mm)	C (Green)	B (Brown)
1.4173 in. - 1.4176 in. (36.000mm - 36.008mm)	D (Yellow)	C (Green)

(77)

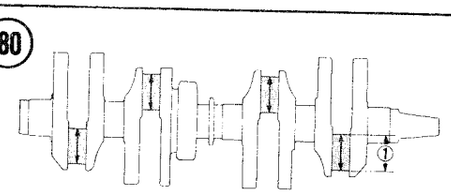
Crankcase Bearing Inside Diameter	Crankshaft Journal Outside Diameter		
	1.2594 in.-1.2598 in. (31.99mm-32.00mm)	1.2590 in.-1.2594 in. (31.98mm-31.99mm)	1.2586 in.-1.2590 in. (31.97mm-31.98mm)
1.3780 in.-1.3783 in. (35.000mm-35.008mm)	E (Red)	D (Yellow)	C (Green)
1.3783 in.-1.3786 in. (35.008mm-35.016mm)	D (Yellow)	C (Green)	B (Brown)
1.3786 in.-1.3789 in. (35.016mm-35.024mm)	C (Green)	B (Brown)	A (Black)



Code	Weight (gr.)
A	281—285
B	286—290
C	291—295
D	296—300
E	301—305
F	306—310
G	311—315

1. Weight code number

6. Replace connecting rod bearings by measureing the outside diameter of the crankshaft pin, **Figure 80**, and noting the code number on the big end of the rod.



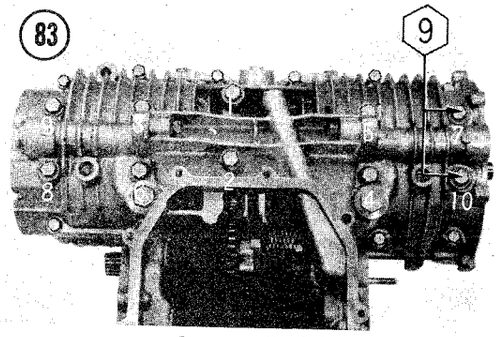
1. Crankshaft pin outside diameter

Select the proper bearing by referring to the CB500 chart in **Figure 81** or the CB350F chart in **Figure 82**.

Crankcase Assembly

Assemble the crankcase in reverse order of disassembly, noting the following:

1. Apply a thin coat of gasket paste to the mating surface of the lower crankcase and a coat of engine oil on bearing surfaces.
2. Torque the mounting bolts in the sequence shown in **Figure 83** to 16.63 ft.-lbs. to 18.08 ft.-lbs. (2.3 kg-m to 2.5 kg-m).



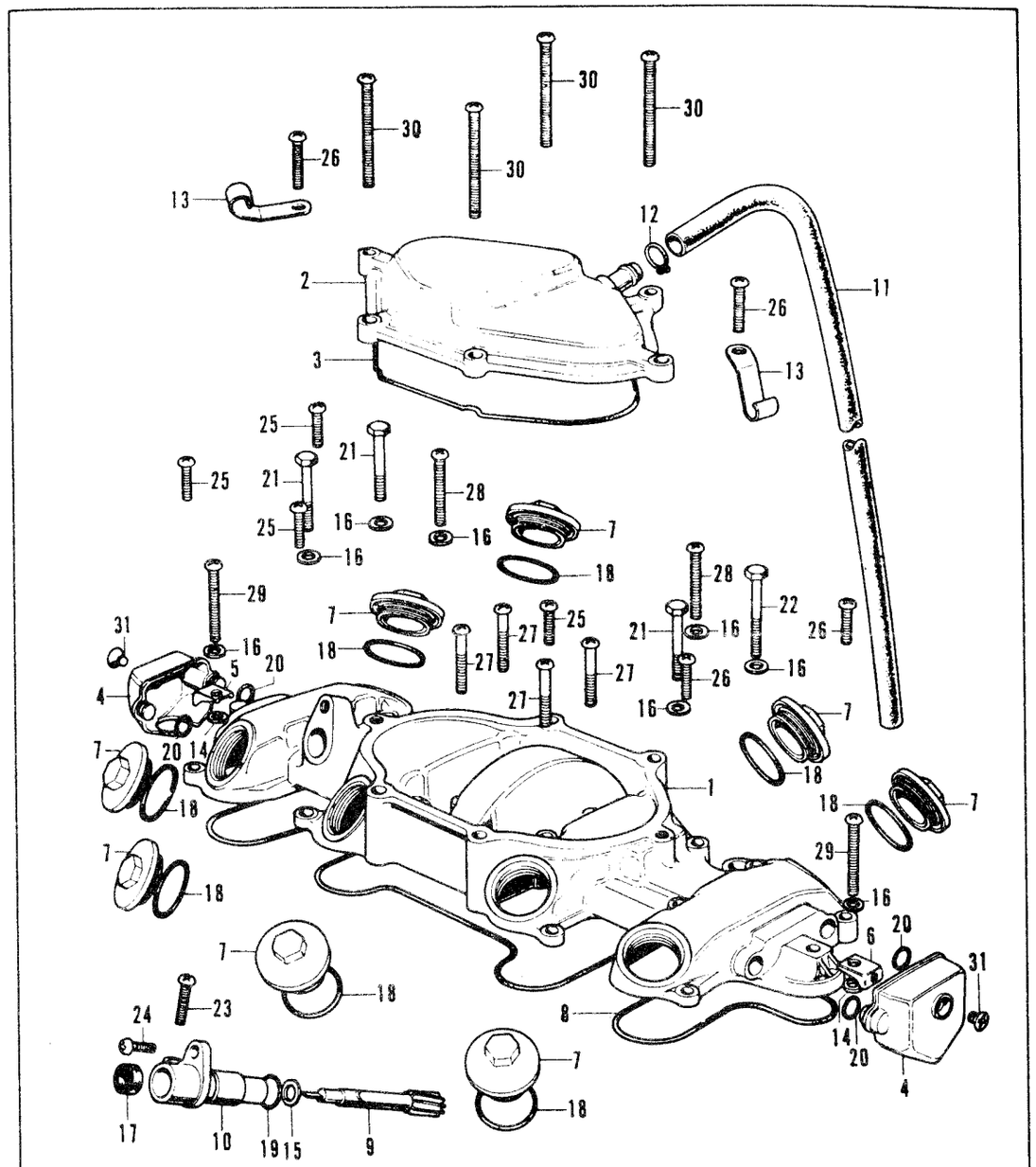
8mm mounting bolts

81

Connecting Rod Code Number	Crankshaft Pin Diameter	
	1.3775 in.-1.3780 in. (34.99mm-35.00mm)	1.3771 in.-1.3775 in. (34.98mm-34.99mm)
3	B (Brown)	A (Black)
2	C (Green)	B (Brown)
1	D (Yellow)	C (Green)

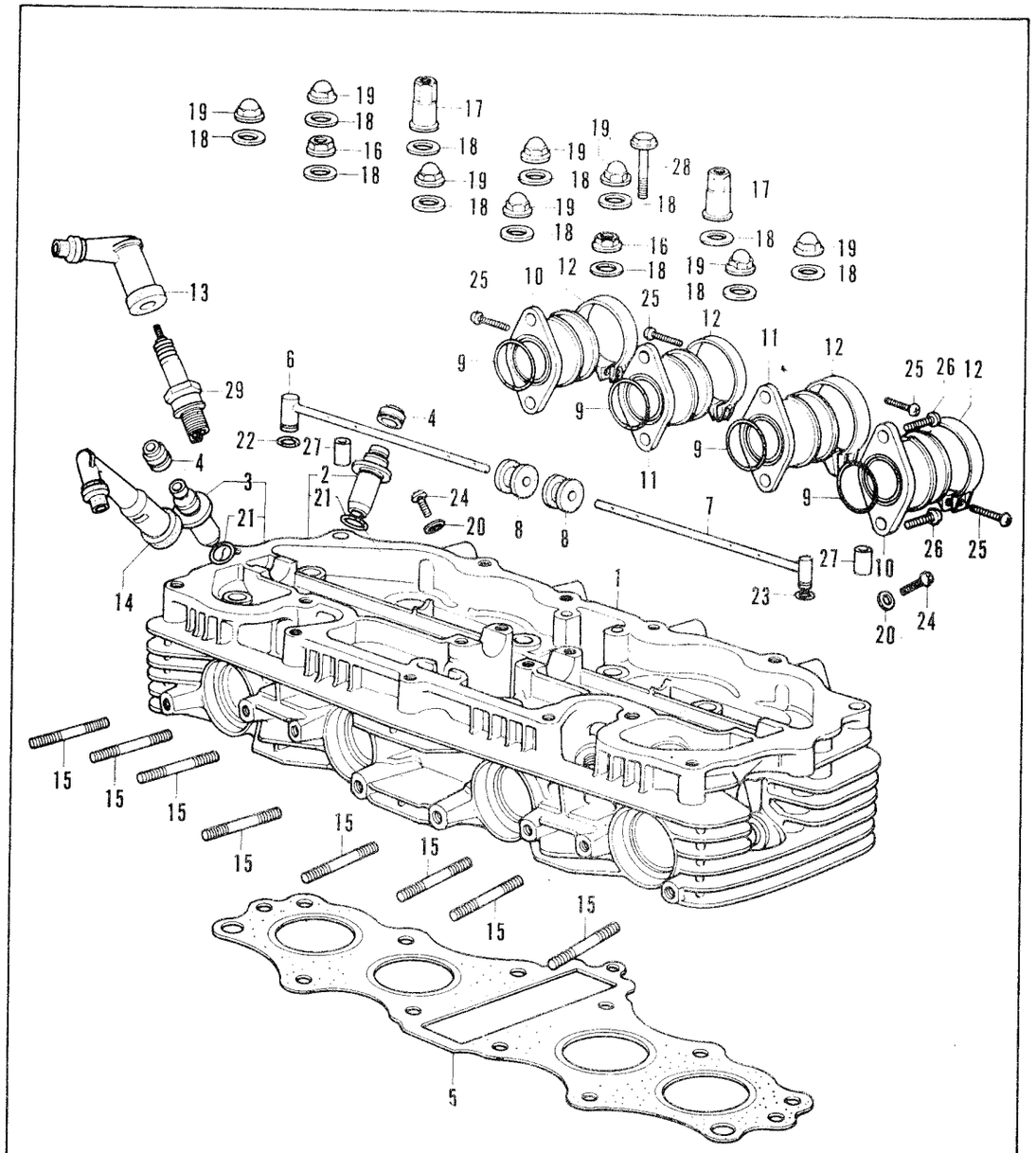
82

Connecting Rod Code Number	Crankshaft Pin O.D.		
	1.594 in.-1.2598 in. (31.99mm-32.00mm)	1.2590 in.-1.2594 in. (31.98mm-31.99mm)	1.2586 in.-1.2590 in. (31.97mm-31.98mm)
1	E (Red)	D (Yellow)	C (Green)
2	D (Yellow)	C (Green)	B (Brown)
3	C (Green)	B (Brown)	A (Black)



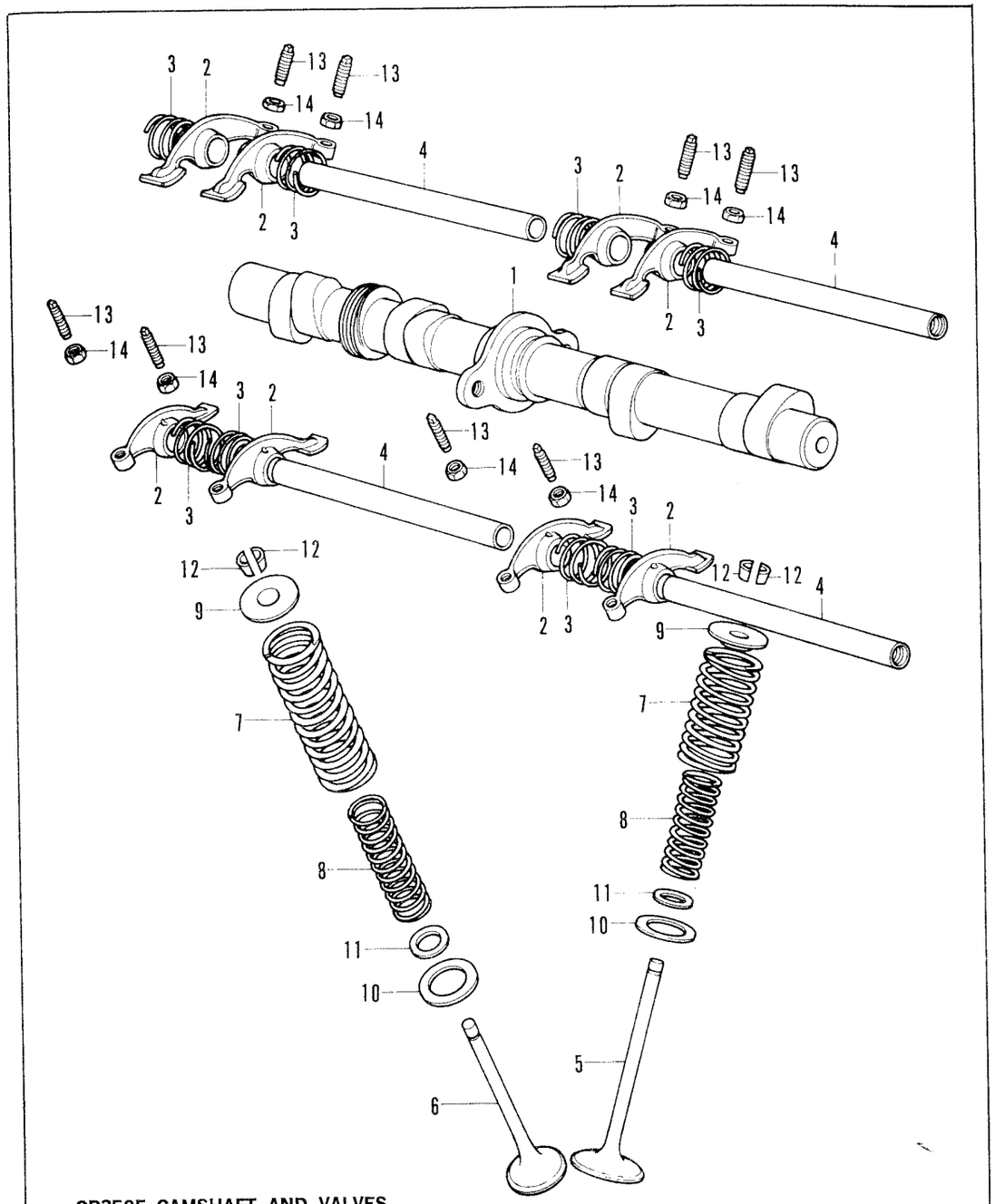
CB500 CYLINDER HEAD COVER

1. Cylinder head cover
2. Breather cover
3. Breather packing
4. Side cover
5. Side cover set plate A
6. Side cover set plate B
7. Tappet adjusting hole cap
8. Cover packing
9. Tachometer gear
10. Tachometer cap
11. Breather tube C
12. Breather tube clip
13. High tension cable clip
14. Sealing washer
15. Thrust washer
16. Washer
17. Oil seal
18. O-ring
19. O-ring
20. O-ring
21. Hex bolt
22. Hex bolt
23. Pan screw
24. Pan screw
25. Pan screw
26. Pan screw
27. Pan screw
28. Pan screw
29. Pan screw
30. Pan screw
31. Oval screw



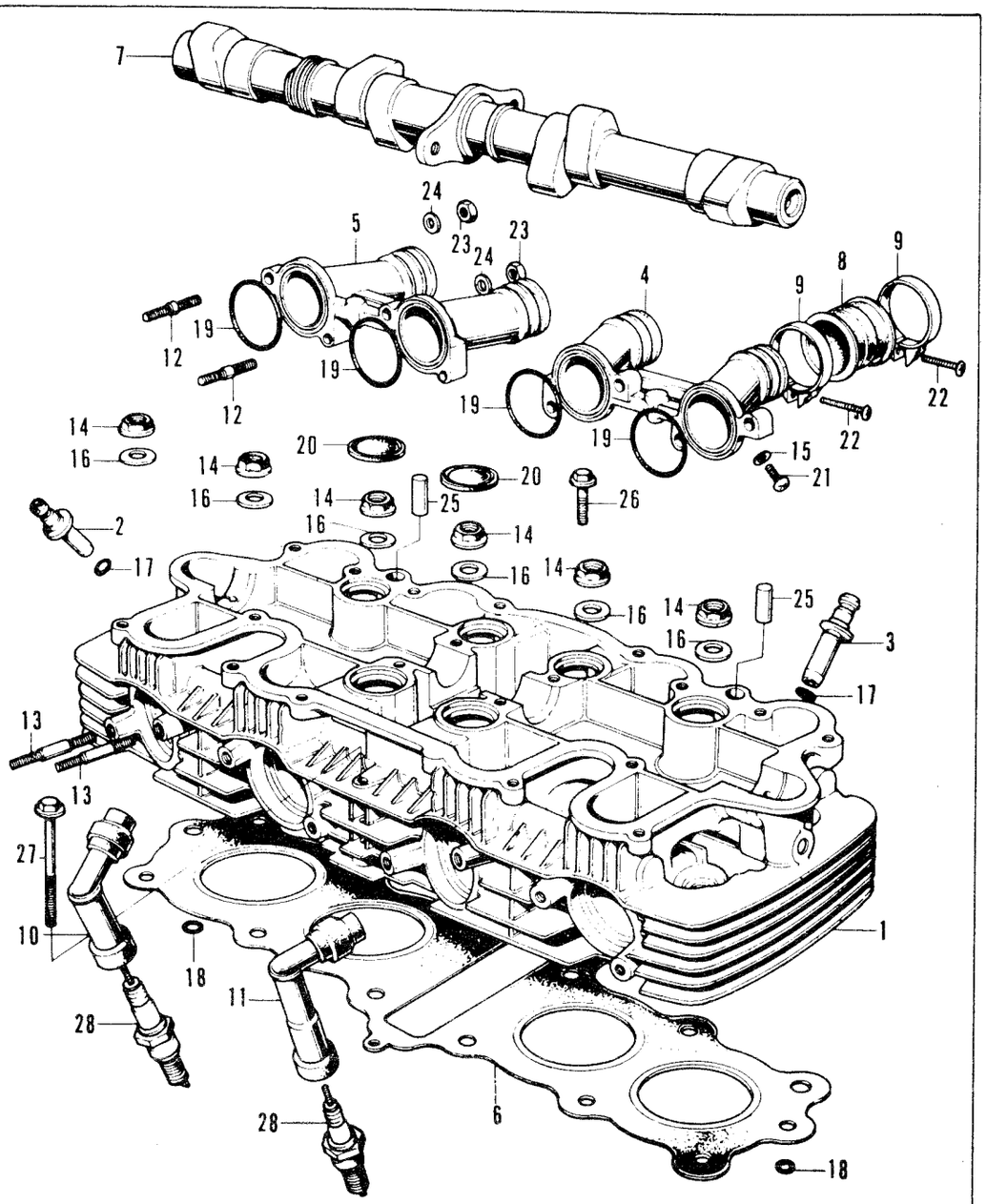
CB350F CYLINDER HEAD

1. Cylinder head
2. Inlet valve guide
4. Valve stem seal
5. Cylinder gasket
6. Right oil line
7. Left oil line
8. Oil line holder
9. O-ring
10. Carburetor insulator A
11. Carburetor insulator B
12. Air cleaner band
13. Noise suppressor cap A
14. Noise suppressor cap C
15. Bolt
16. Nut
17. Nut
18. Washer
19. Nut
20. Washer
21. O-ring
22. O-ring
23. O-ring
24. Pan screw
25. Pan screw
26. Pan screw
27. Dowel pin
28. Flange bolt
29. Spark plug



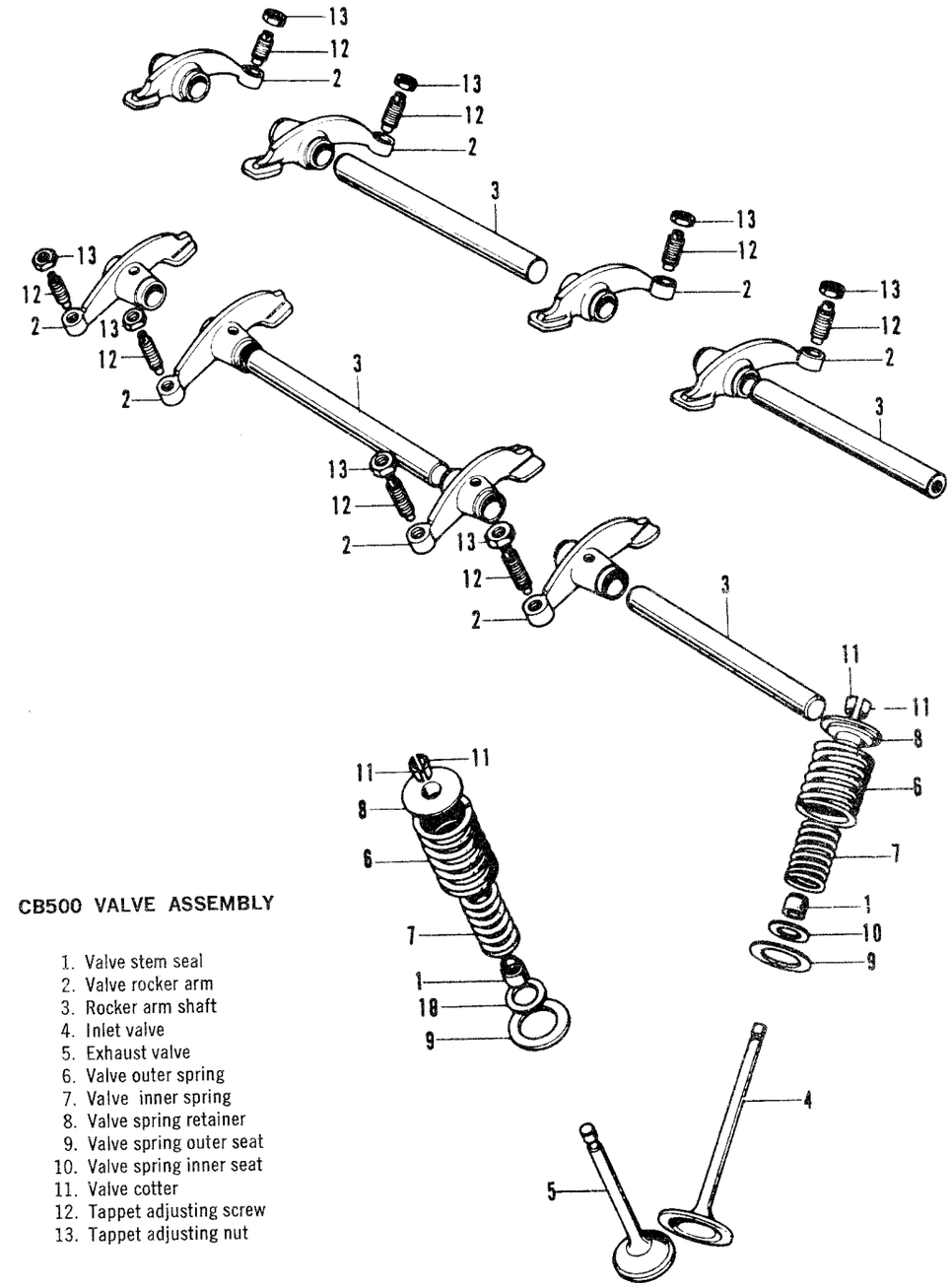
CB350F CAMSHAFT AND VALVES

1. Camshaft
2. Valve rocker arm
3. Rocker arm spring
4. Rocker arm shaft
5. Inlet valve
6. Exhaust valve
7. Outer valve spring
8. Inner valve spring
9. Valve spring retainer
10. Valve spring outer seat
11. Valve spring inner seat
12. Valve cotter
13. Tappet adjusting screw
14. Tappet adjusting nut



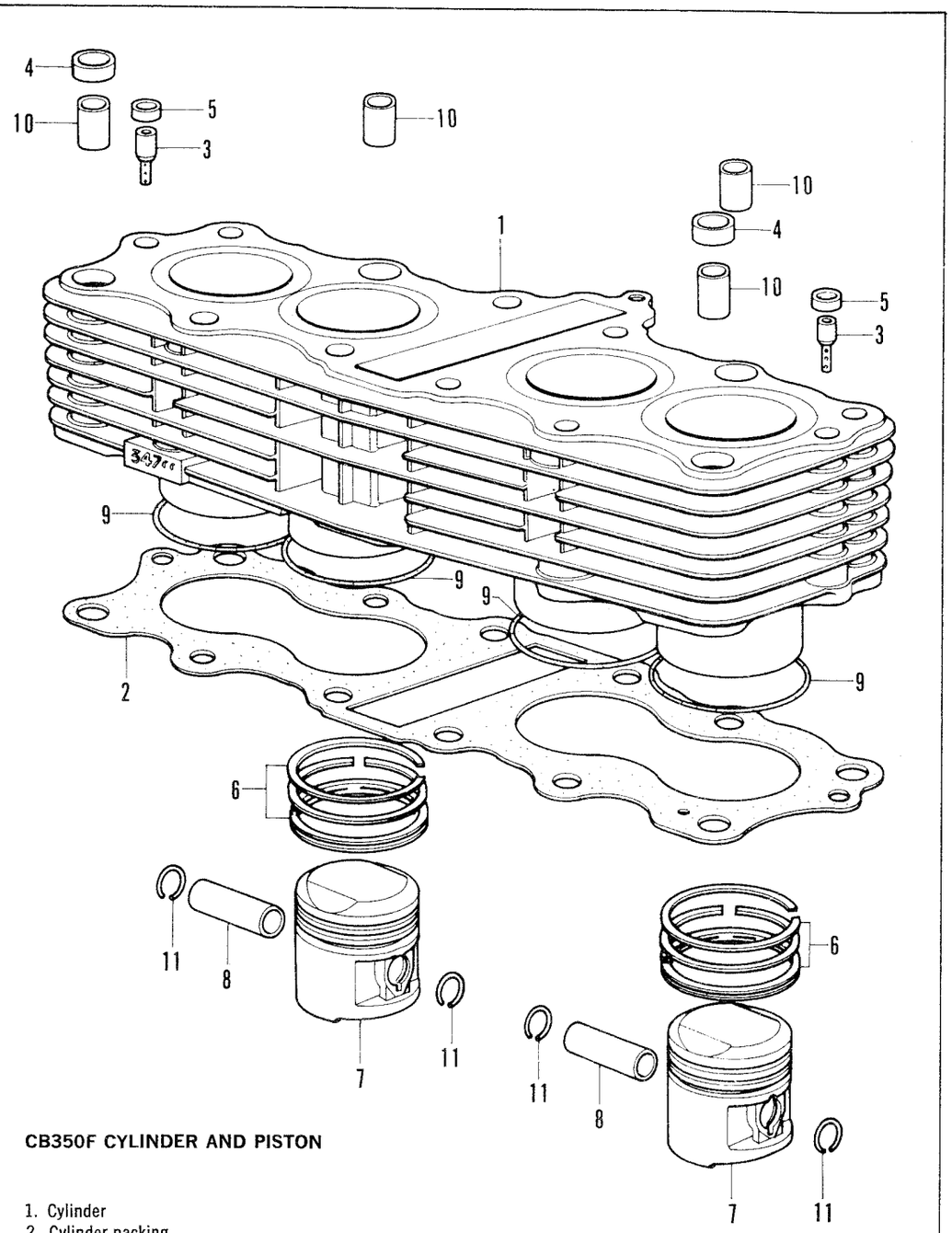
CB500 CYLINDER HEAD AND CAMSHAFT

1. Cylinder head
2. Exhaust valve guide
3. Inlet valve guide
4. Inlet manifold A
5. Inlet manifold B
6. Cylinder head gasket
7. Camshaft
8. Carburetor insulator
9. Air cleaner connecting band
10. Noise suppressor cap A
11. Noise suppressor cap B
12. Stud bolt
13. Stud bolt
14. Nut
15. Washer
16. Washer
17. O-ring
18. O-ring
19. O-ring
20. Sealing rubber
21. Pan screw
22. Pan screw
23. Hex bolt
24. Plain washer
25. Dowel pin
26. Flange bolt
27. Flange bolt
28. Spark plug



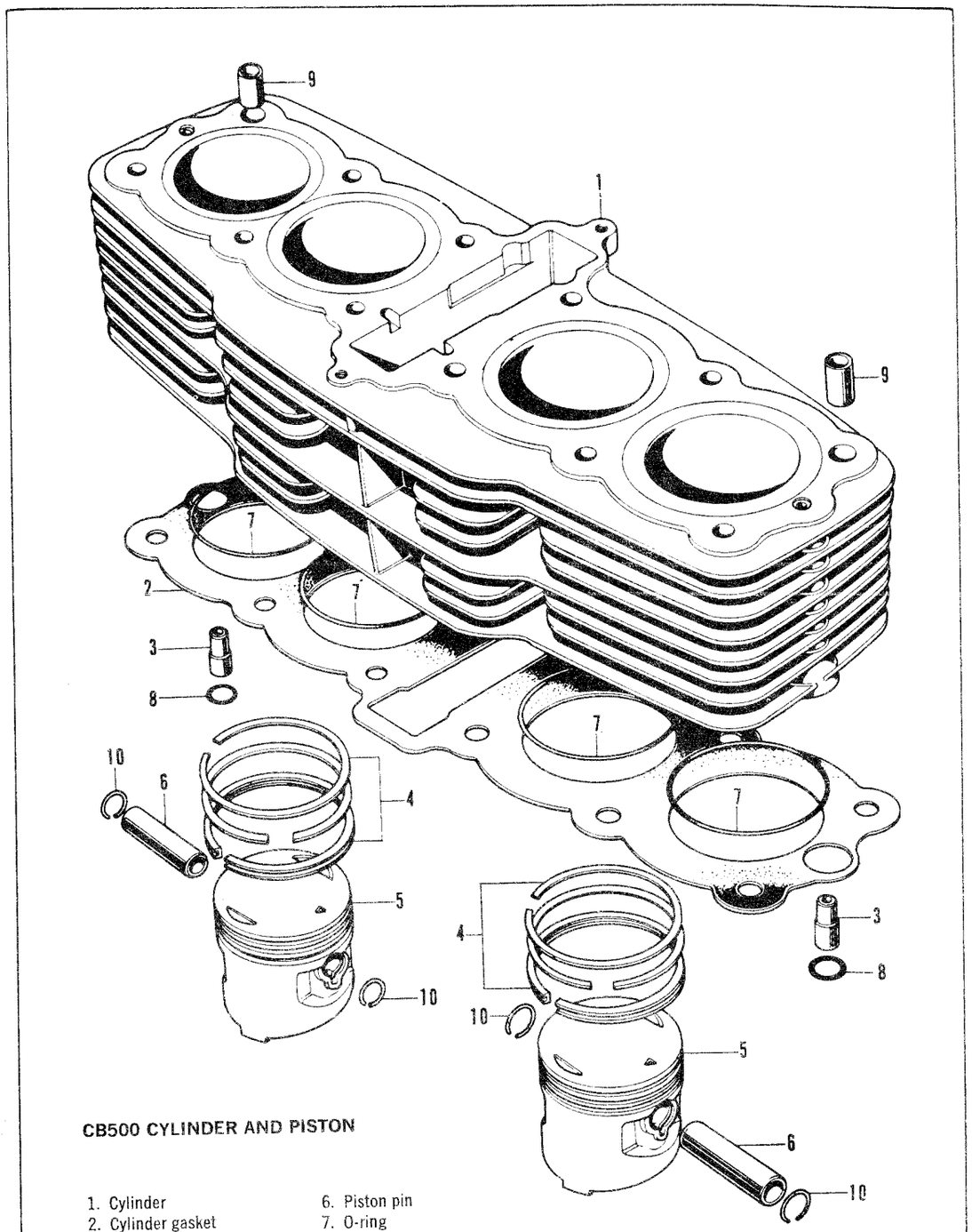
CB500 VALVE ASSEMBLY

1. Valve stem seal
2. Valve rocker arm
3. Rocker arm shaft
4. Inlet valve
5. Exhaust valve
6. Valve outer spring
7. Valve inner spring
8. Valve spring retainer
9. Valve spring outer seat
10. Valve spring inner seat
11. Valve cotter
12. Tappet adjusting screw
13. Tappet adjusting nut



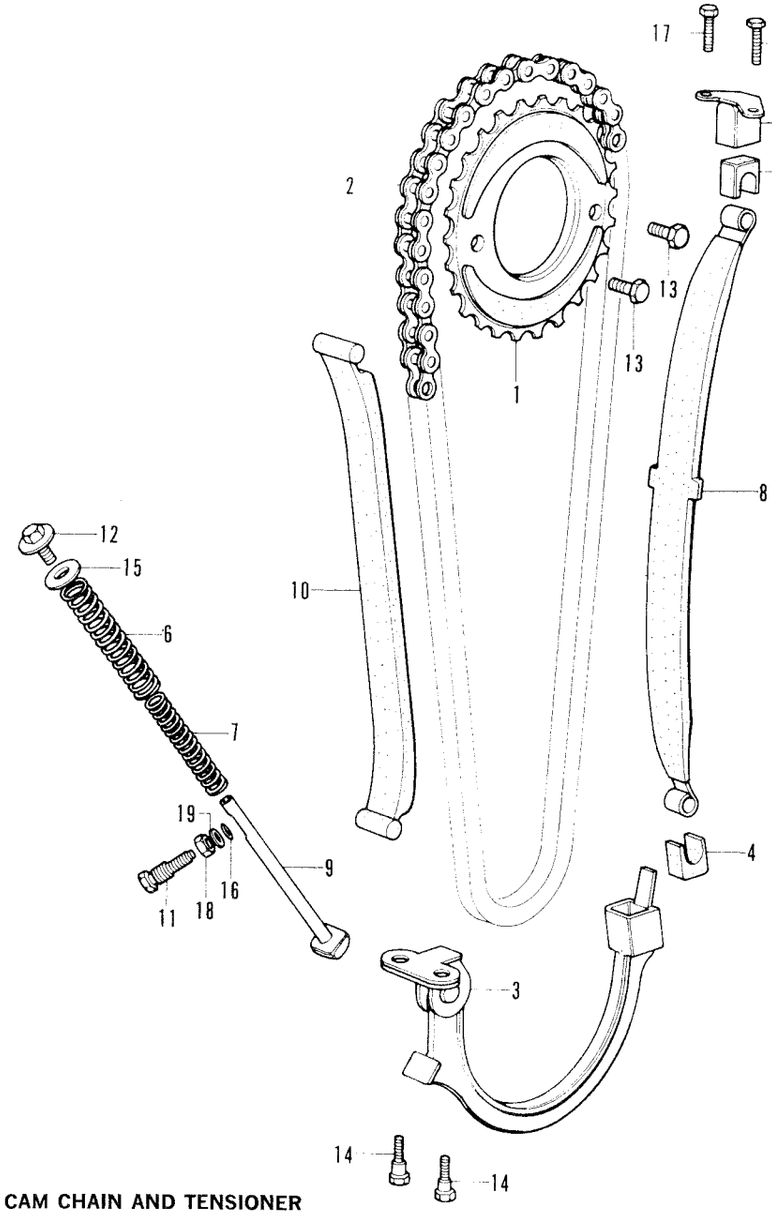
CB350F CYLINDER AND PISTON

1. Cylinder
2. Cylinder packing
3. Oil control orifice valve
4. Cylinder stud gasket
5. Orifice valve gasket
6. Piston ring set
7. Piston
8. Piston pin
9. O-ring
10. Dowel pin
11. Piston pin clip



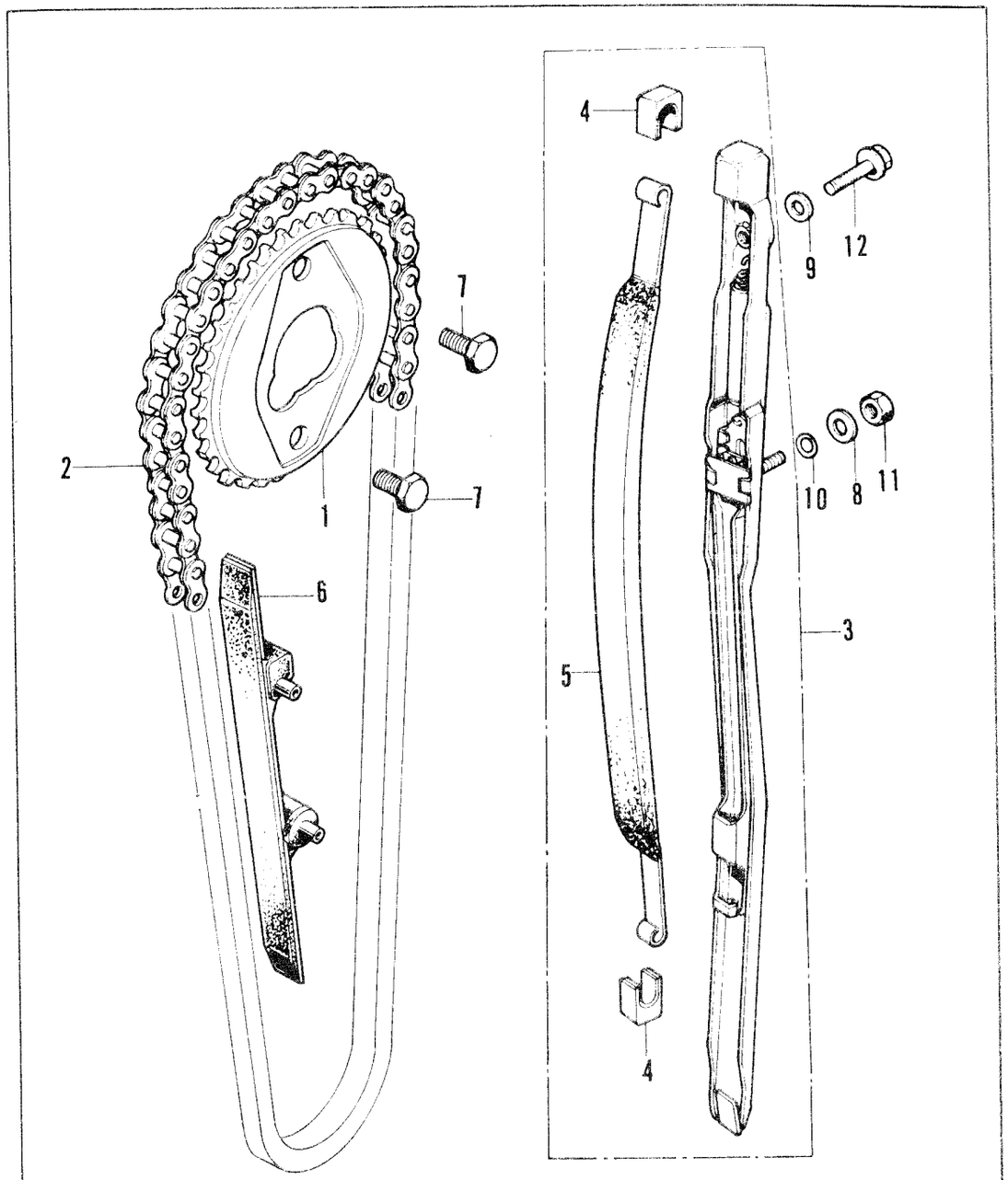
CB500 CYLINDER AND PISTON

1. Cylinder
2. Cylinder gasket
3. Oil control orifice valve
4. Piston ring set
5. Piston
6. Piston pin
7. O-ring
8. O-ring
9. Knock pin
10. Piston pin clip



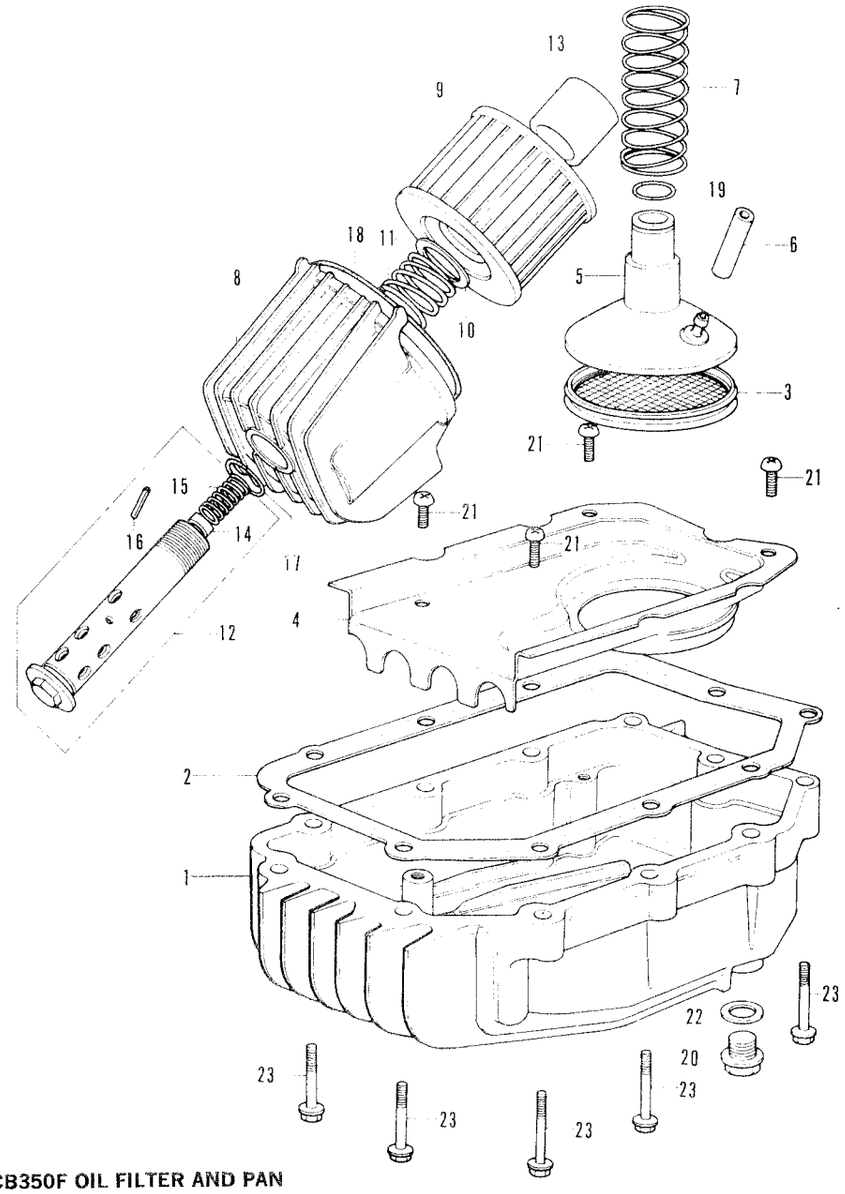
CB350F CAM CHAIN AND TENSIONER

1. Cam sprocket
2. Cam chain
3. Cam chain tensioner arm
4. Tensioner damper
5. Tensioner holder
6. Tensioner outer spring
7. Tensioner inner spring
8. Tensioner slipper
9. Tensioner push bar
10. Cam chain guide
11. Tensioner setting bolt
12. Oil check bolt
13. Knock bolt
14. Knock bolt
15. Washer
16. O-ring
17. Hex bolt
18. Hex nut
19. Plain washer



CB500 CAM CHAIN AND TENSIONER

1. Cam sprocket
2. Cam chain
3. Cam chain tensioner
4. Tensioner damper
5. Tensioner slipper
6. Cam chain guide
7. Knock bolt
8. Sealing washer
9. Washer
10. O-ring
11. Hex nut
12. Flange bolt

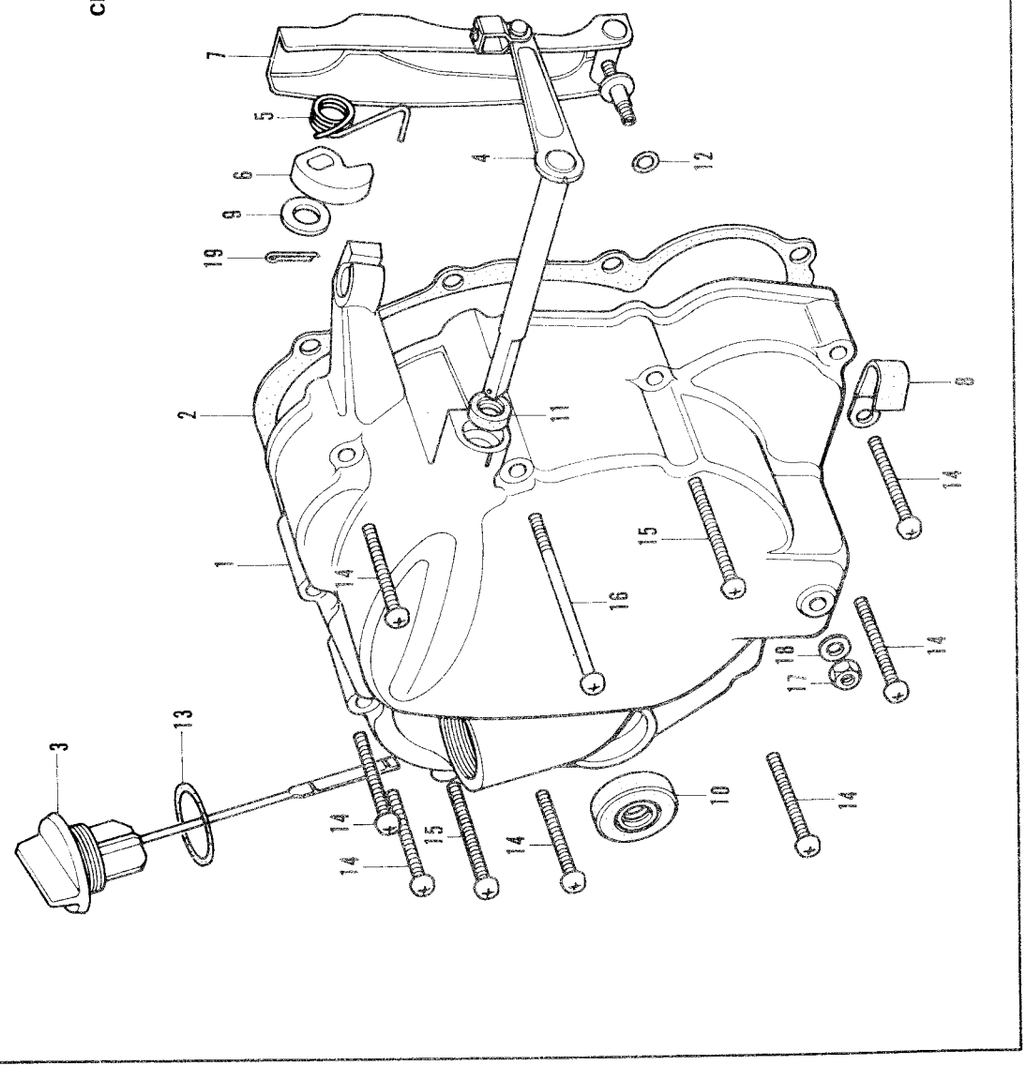


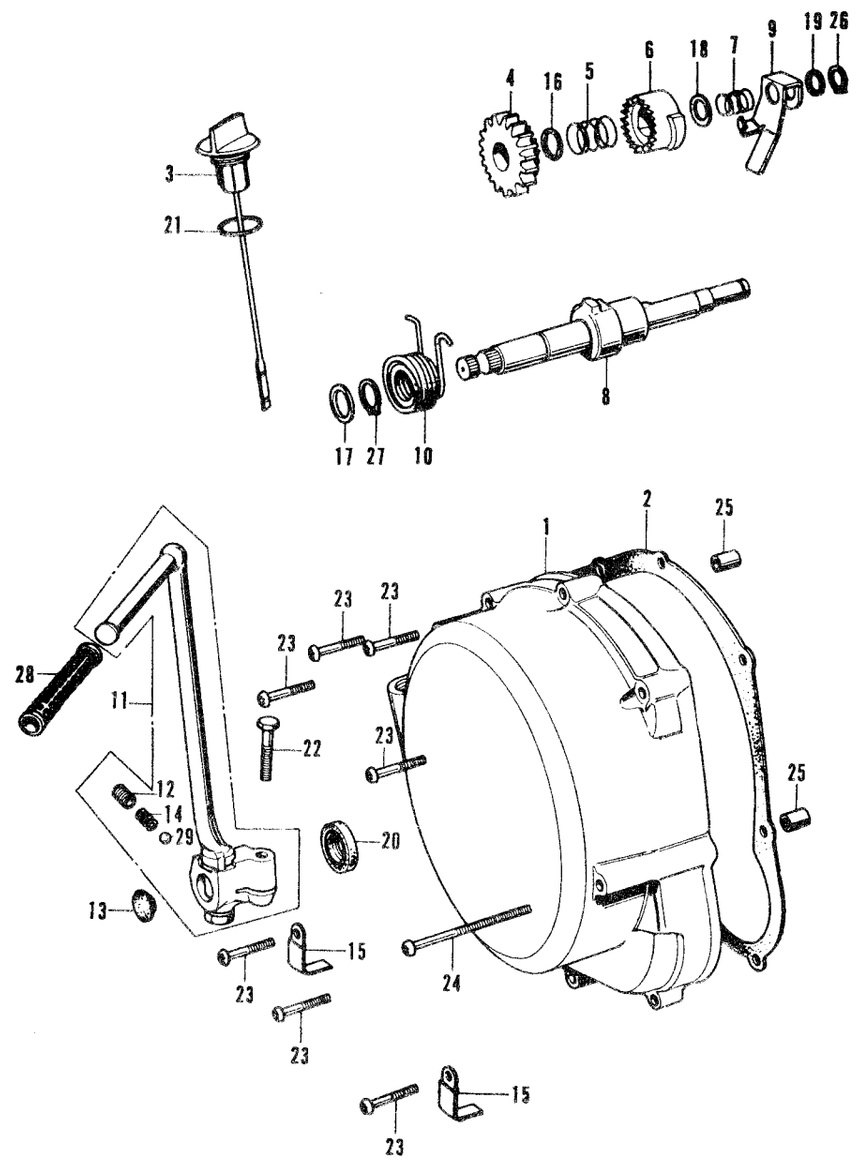
CB350F OIL FILTER AND PAN

1. Oil pan
2. Oil pan packing
3. Oil strainer screen
4. Oil separator plate
5. Oil screen body
6. Oil tube
7. Oil screen set spring
8. Oil filter case
9. Oil filter element
10. Oil filter spring seat
11. Oil filter element set spring
12. Oil filter center bolt
13. Oil filter bolt collar
14. Check valve
15. Check valve spring
16. Spring set pin
17. O-ring
18. O-ring
19. O-ring
20. Drain plug bolt
21. Pan screw
22. Drain plug washer
23. Flange bolt

CB350F RIGHT CRANKCASE COVER AND CLUTCH LEVER

1. Right crankcase cover
2. Right crankcase cover packing
3. Oil level gauge
4. Clutch lever
5. Clutch lever return spring
6. Clutch lifter cam
7. Clutch adjusting lever
8. Cable clip
9. Washer
10. Oil seal
11. Oil seal
12. O-ring
13. O-ring
14. Pan screw
15. Pan screw
16. Hex nut
17. Plain washer
18. Split pin



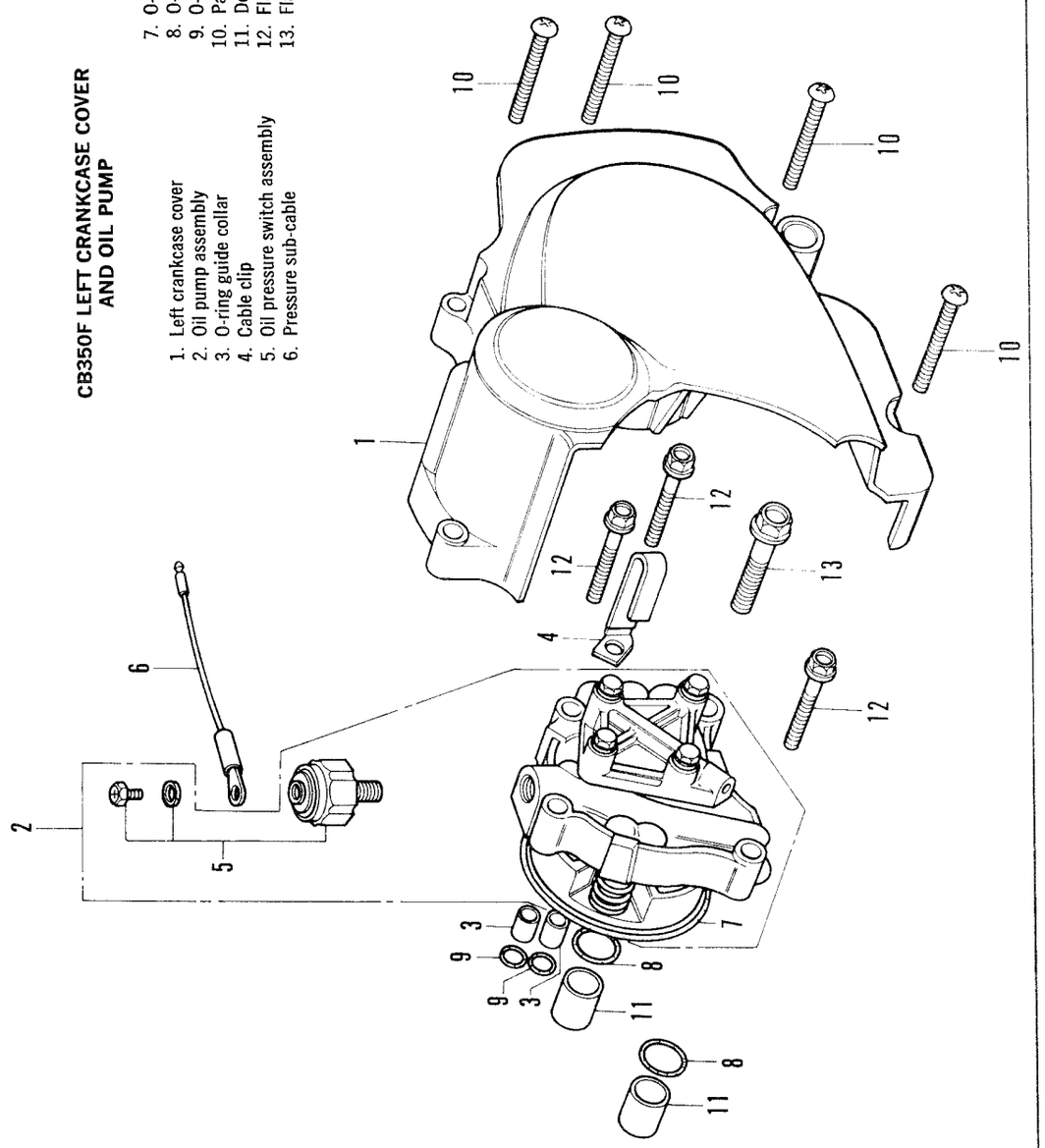


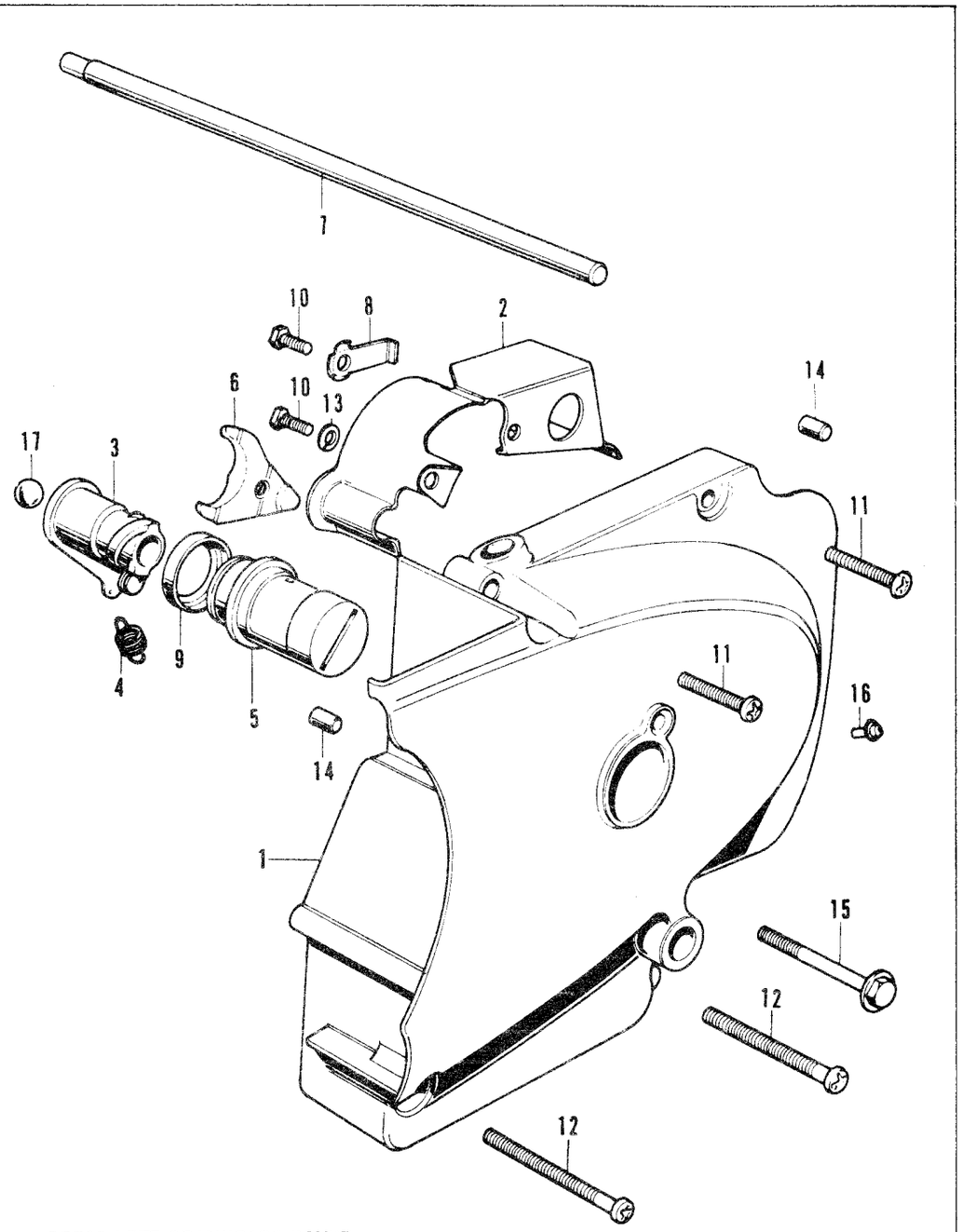
CB500 RIGHT CRANKCASE COVER

1. Right crankcase cover
2. Right crankcase packing
3. Oil level gauge
4. Kickstarter pinion
5. Starter pinion set spring
6. Kickstarter ratchet
7. Kickstarter ratchet spring
8. Kickstarter spindle
9. Ratchet guide plate
10. Kickstarter spring
11. Kickstarter arm compressor
12. Kick arm bolt
13. Kick arm cap
14. Kick starter stopper spring
15. Cable clip
16. Thrust washer
17. Washer
18. Thrust washer
19. Chain guide thrust washer
20. Oil seal
21. O-ring
22. Hex bolt
23. Pan screw
24. Pan screw
25. Dowel pin
26. External circlip
27. External circlip
28. Kickstarter rubber
29. Steel ball

CB350F LEFT CRANKCASE COVER AND OIL PUMP

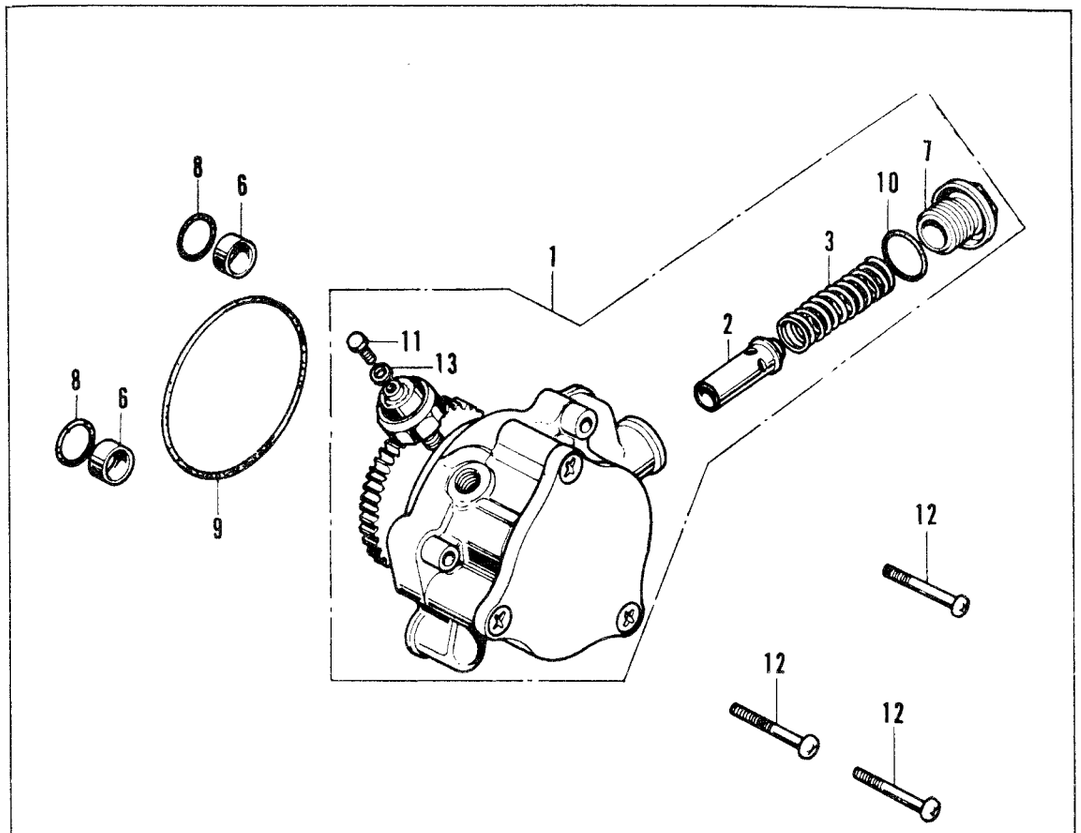
1. Left crankcase cover
2. Oil pump assembly
3. O-ring guide collar
4. Cable clip
5. Oil pressure switch assembly
6. Pressure sub-cable
7. O-ring
8. O-ring
9. O-ring
10. Pan screw
11. Dowel pin
12. Flange bolt
13. Flange bolt

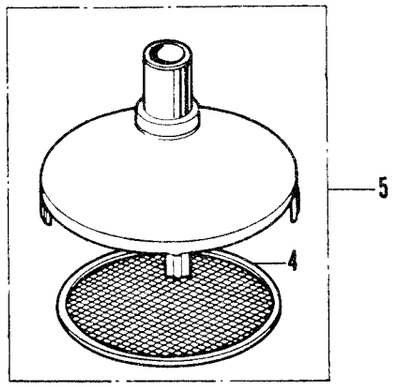




CB500 LEFT CRANKCASE COVER

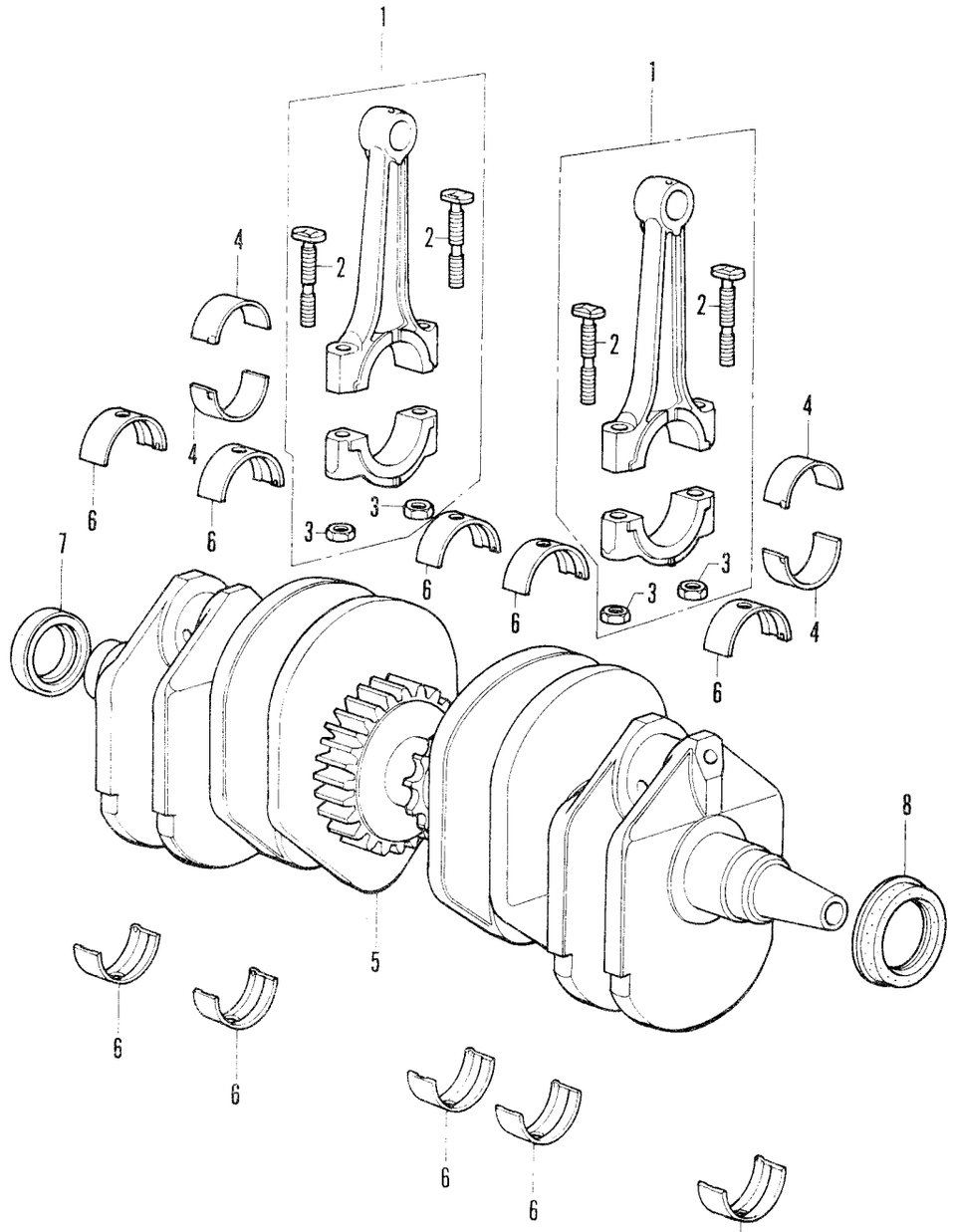
1. Left crankcase cover
2. Case protector
3. Clutch lifter thread
4. Clutch lever spring
5. Clutch adjuster
6. Fixing piece adjuster
7. Clutch lifter rod
8. Tongued washer
9. Oil seal
10. Hex bolt
11. Pan screw
12. Pan screw
13. Lockwasher
14. Dowel pin
15. Flange bolt
16. Grease nipple
17. Steel ball





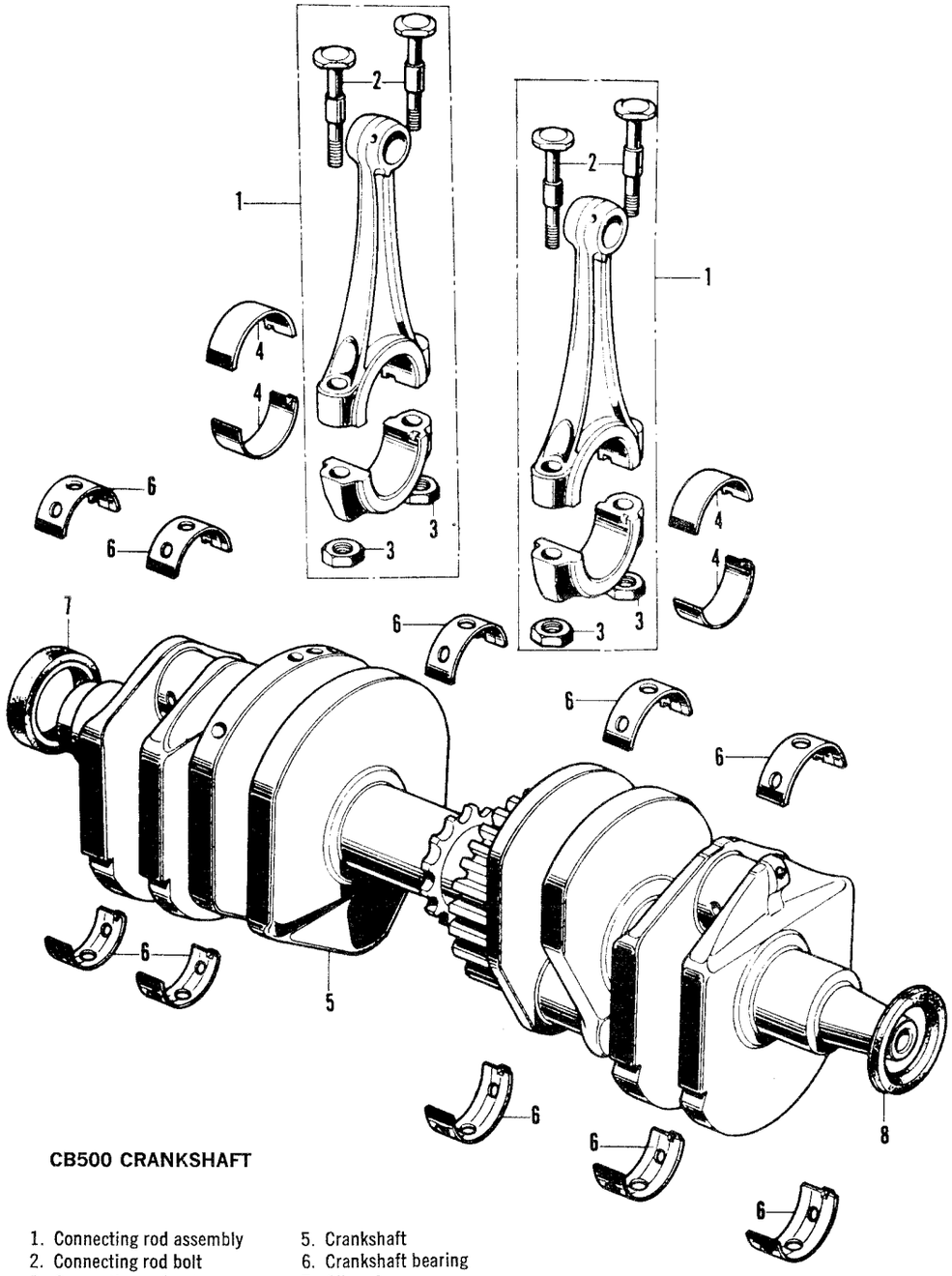
CB500 OIL PUMP

1. Oil pump assembly
2. Relief valve
3. Relief valve spring
4. Oil strainer screen
5. Oil strainer assembly
6. O-ring collar
7. Oil pass cap
8. O-ring
9. O-ring
10. O-ring
11. Hex bolt
12. Pan screw
13. Plain washer



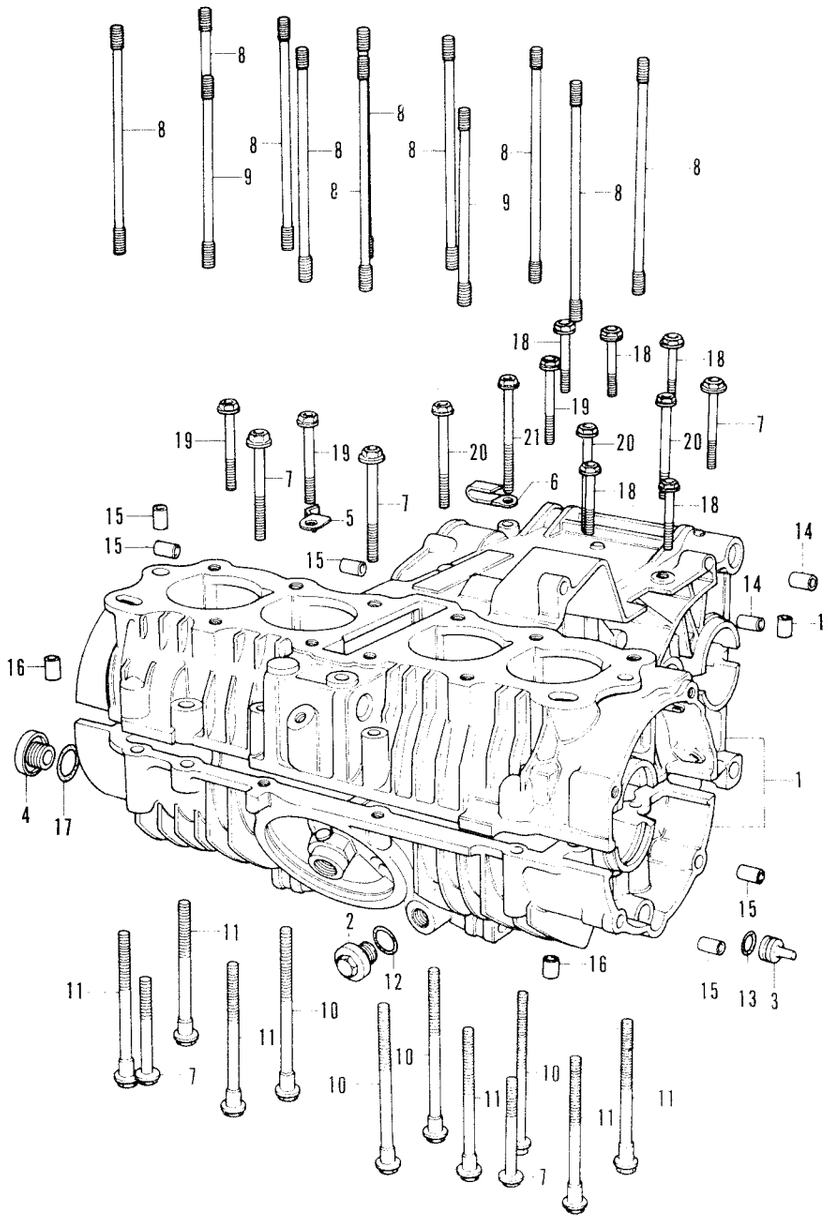
CB350F CRANKSHAFT

1. Connecting rod assembly
2. Connecting rod bolt
3. Connecting rod nut
4. Connecting rod bearing
5. Crankshaft
6. Crankshaft bearing
7. Oil seal
8. Oil seal



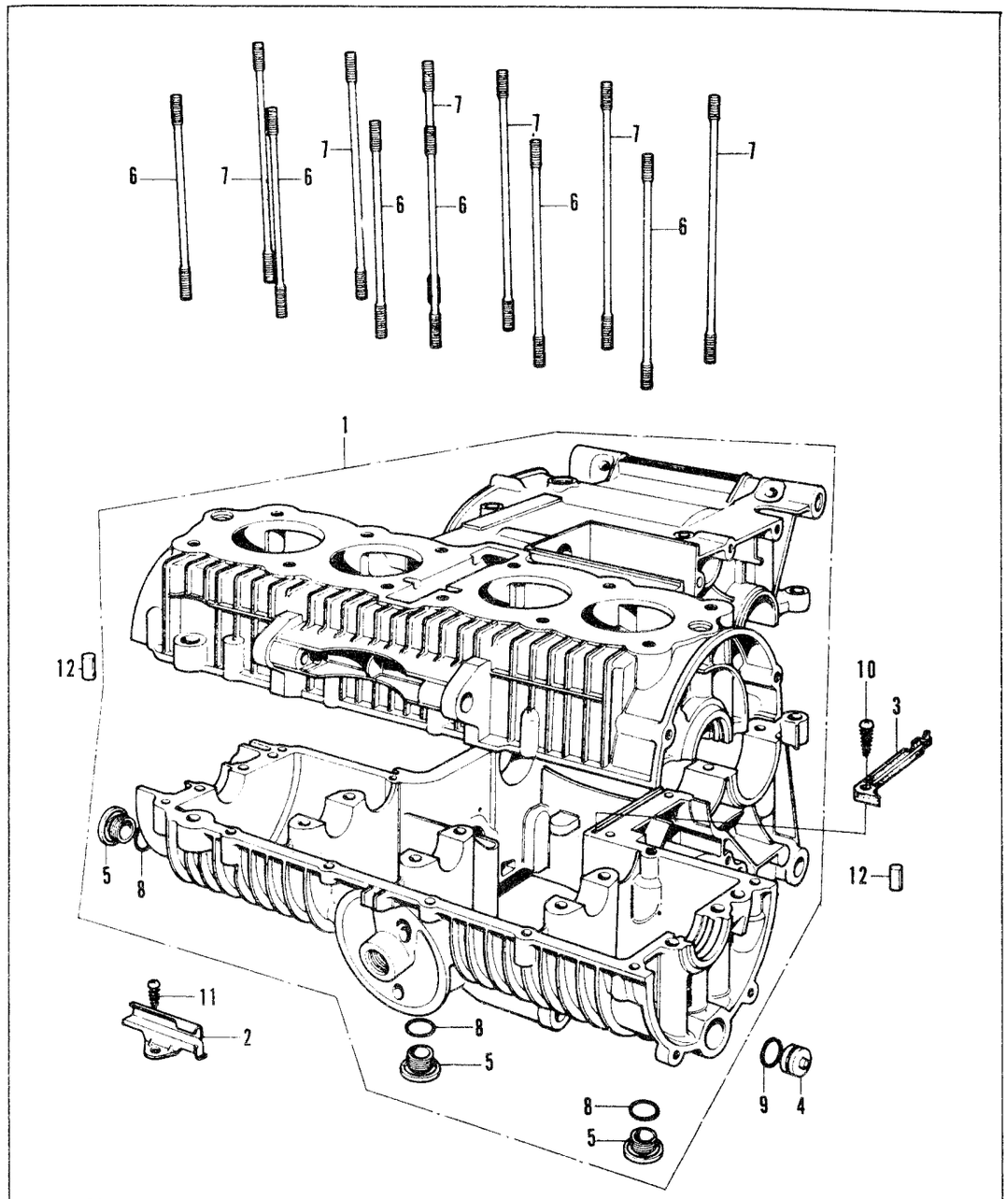
CB500 CRANKSHAFT

1. Connecting rod assembly
2. Connecting rod bolt
3. Connecting rod nut
4. Connecting rod bearing
5. Crankshaft
6. Crankshaft bearing
7. Oil seal
8. Oil seal



CB350F CRANKCASE

1. Crankcase assembly
2. Oil cap
3. Oil plug
4. Oil cap
5. Cable clip
6. Cable clip
7. Flange bolt
8. Cylinder stud A
9. Cylinder stud B
10. U.B. S. bolt
11. U. B. S. bolt
12. O-ring
13. O-ring
14. Dowel pin
15. Dowel pin
16. Dowel pin
17. O-ring
18. Flange bolt
19. Flange bolt
20. Flange bolt
21. Flange bolt



CB500 CRANKCASE

1. Crankcase assembly
2. Oil guide
3. Oil guide
4. Oil plug
5. Oil cap
6. Cylinder stud bolt A
7. Cylinder stud bolt B
8. O-ring
9. O-ring
10. Tapping screw
11. Tapping screw
12. Dowel pin

CHAPTER THREE

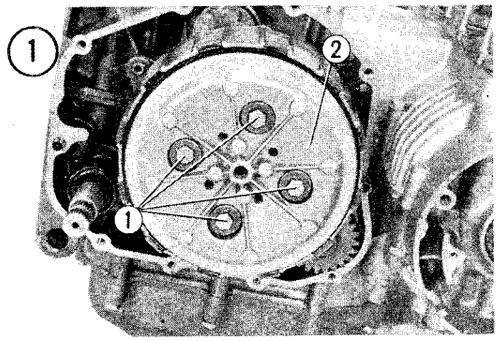
CLUTCH AND TRANSMISSION

This chapter covers servicing of the clutch, gearshift mechanism, transmission, and kickstarter.

CLUTCH

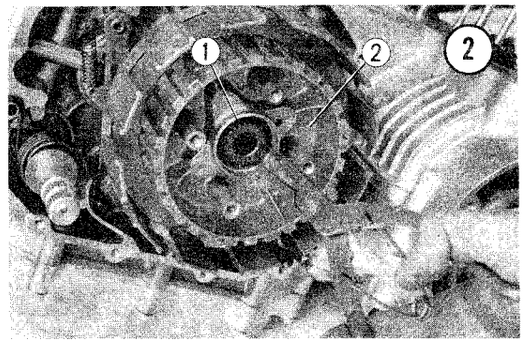
Clutch Disassembly

1. Drain oil from the crankcase.
2. Remove the right foot rest, kickstarter pedal, and clutch cover.
3. Refer to **Figure 1** and remove the clutch pressure plate and clutch springs.



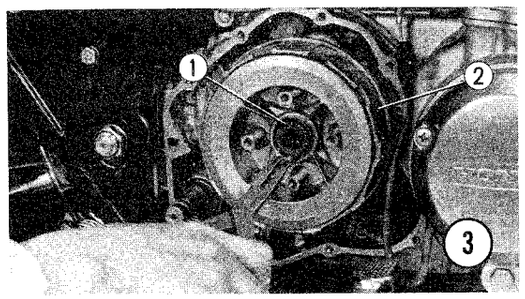
1. Bolts 2. Clutch pressure plate

4. Remove the 25mm snap ring, **Figure 2**, and shims (if any). Then pull the clutch assembly from the shaft.
5. CB500: Disassemble the disc, plate, and center from the outer clutch.



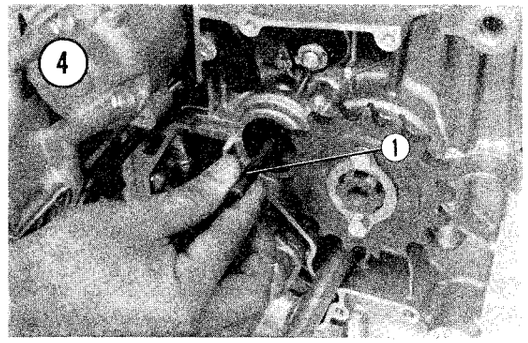
1. 25mm snap ring
2. Clutch assembly

CB350F (**Figure 3**): Remove the set ring from the clutch center. Disassemble clutch plate B (see exploded drawing), the disc spring, and the disc spring seat.

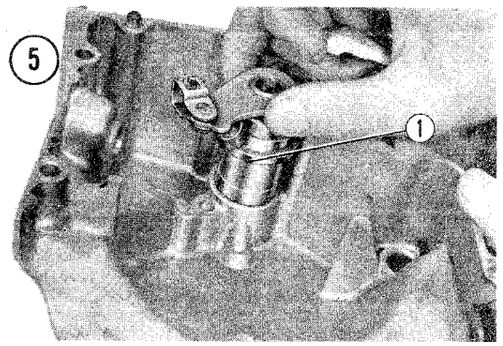


1. 25mm snap ring
2. Clutch assembly

6. CB500: Remove the left crankcase cover.
   CB350F: Remove the clutch lever and adjuster lever from the right crankcase cover.
7. CB500: Disconnect the clutch cable from the lifter. Unscrew the adjuster lock bolt, **Figure 4**, and remove the adjuster from the left crankcase cover. Then pull out the clutch lifter rod, **Figure 5**.



1. Clutch adjuster



1. Clutch lifter rod

Inspection

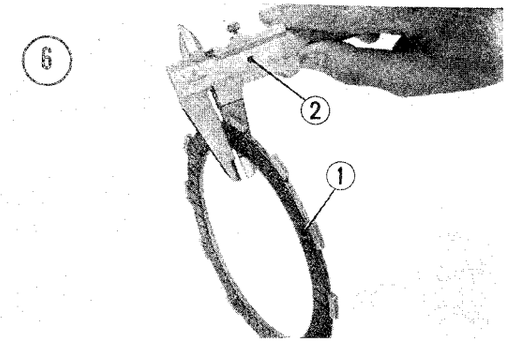
1. Measure the thickness of the friction disc with a vernier caliper, **Figure 6**. Replace if worn beyond the following limits:

CB500	.11 in. (3mm)
CB350F	.091 in. (2.3mm)

2. Check the clutch plate for warping with a feeler gauge, **Figure 7**, and replace if distorted beyond the following limits:

CB500	.011 in. (.3mm)
CB350F	.0079 in. (.2mm)

3. Measure the uncompressed length of the clutch spring with a vernier caliper and replace if less than the following limits:

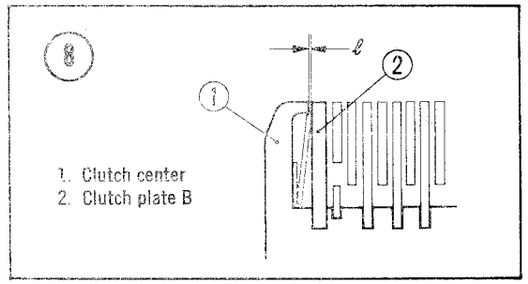


1. Friction disc 2. Vernier caliper

1. Clutch plate 2. Feeler gauge

CB500	1.20 in. (30.5mm)
CB350F	1.339 in. (34.0mm)

4. CB350F. Refer to **Figure 8** and measure the clearance between the center and clutch plate and replace plate B if it is not between .004 in. to .02 in. (.1mm to .5mm).

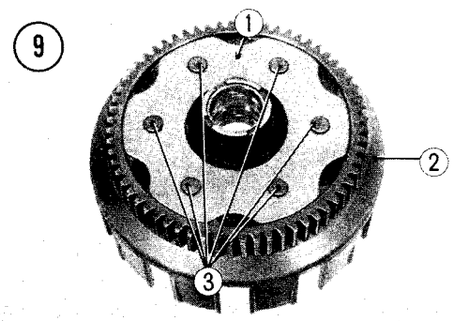


1. Clutch center
2. Clutch plate B

CB500 (**Figure 9**): Replace the outer clutch if any of the mounting rivets are loose.

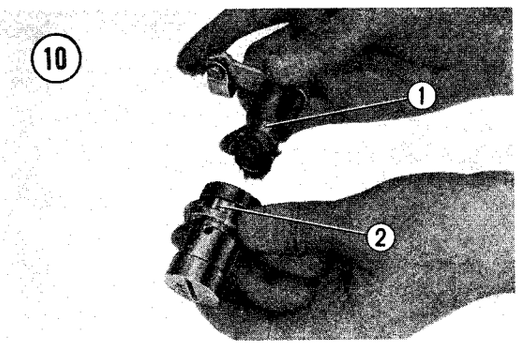
Clutch Assembly (CB500)

Assemble the clutch in the reverse order of disassembly, referring to the exploded drawing and noting the following:



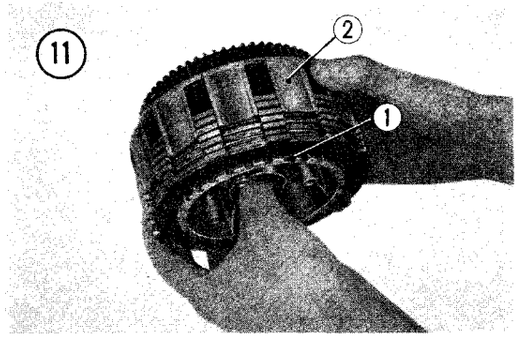
1. Driven gear
2. Clutch outer
3. Rivets

1. Refer to **Figure 10** and insert the lifter rod into the mainshaft with the spherical end toward the right side.

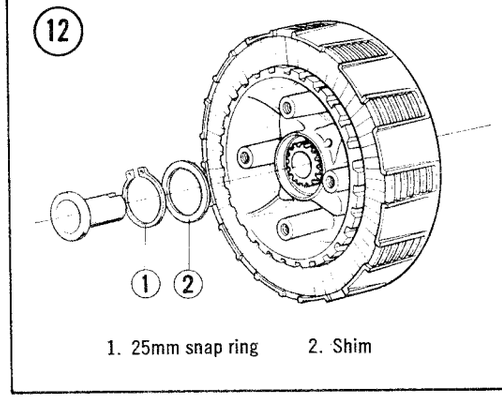


1. Clutch lifter
2. Adjuster

2. Grease the clutch lifter and, together with the adjuster, mount on the left crankcase cover. Tighten the lock bolt and reconnect the clutch cable to the lifter.
3. Place the steel ball in the lifter and mount the left crankcase cover with the four 6mm screws.
4. Lubricate the friction discs with motor oil and place them in the clutch center, alternating with the clutch plates. Then place the assembly in the outer clutch, **Figure 11**.
5. Mount the clutch on the mainshaft and install the 25mm snap ring.
6. Mount a dial gauge so that it bears against the end of the clutch assembly and measure for looseness along the shaft. If the assembly can move back and forth more than .004 in. (.1mm), install a shim between the snap ring and the clutch assembly, **Figure 12**. Shims are made in .1mm, .3mm, and .5mm thicknesses.

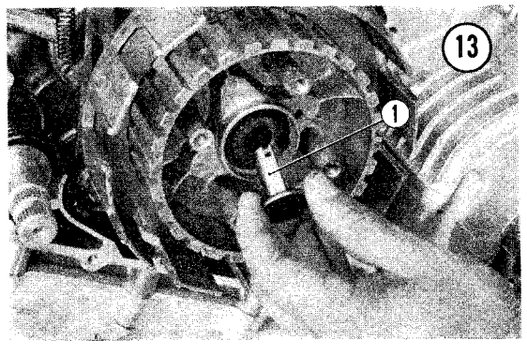


1. Clutch center
2. Clutch outer



1. 25mm snap ring
2. Shim

7. Refer to **Figure 13** and insert the joint piece into the mainshaft. Then mount the clutch plate with the four springs, washers, and bolts.
8. Install the clutch cover.

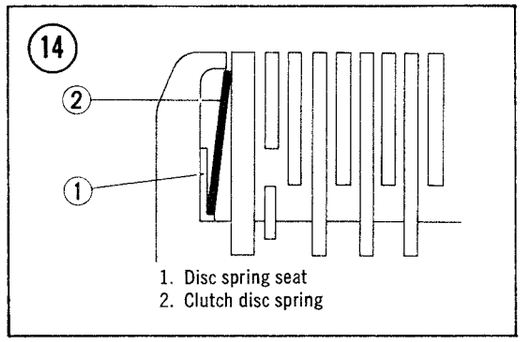


1. Joint piece

Clutch Assembly (CB350F)

Assemble in reverse order of disassembly, referring to the exploded drawing and noting the following steps:

1. Refer to **Figure 14** for the proper direction in which to install the disc spring seat and clutch disc spring.



1. Disc spring seat
2. Clutch disc spring

2. Do not forget to install the 25mm thrust-washer.
3. Alternate the friction discs and the clutch plates when placing them in the outer clutch with the 8mm friction disc going on last.

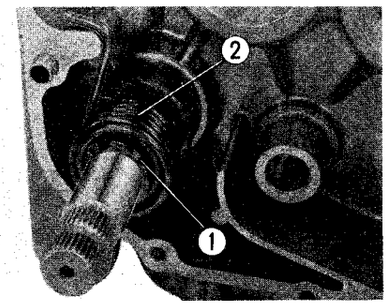
TRANSMISSION

This section covers servicing of the transmission, kickstarter, and primary shaft.

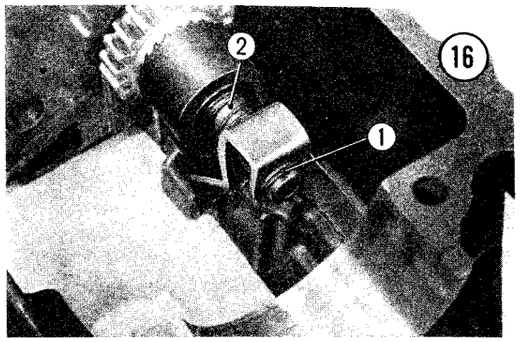
Disassembly

Refer to the exploded views in this section when performing the disassembly operations.

1. Dismount the engine from the frame (Chapter Two), remove the clutch (Chapter Three), and disassemble the lower crankcase (Chapter Two).
2. Remove the transmission countershaft and mainshaft from the upper crankcase and remove the gears.
3. Refer to **Figures 15 and 16** for details of the kickstarter. Remove the two springs and remove the assembly from the lower crankcase.

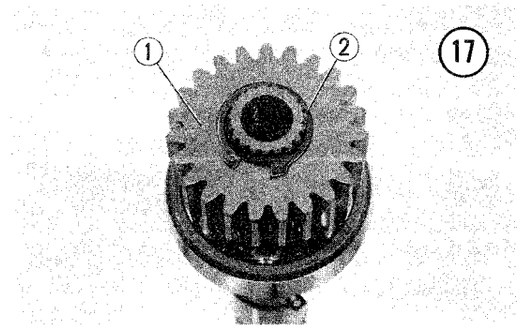


1. 18mm snap ring
2. Return spring



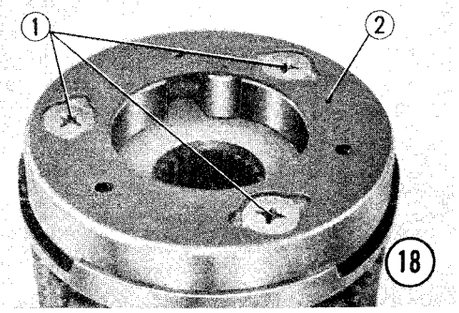
1. 12mm snap ring
2. Kickstarter shaft

4. Remove the primary shaft.
5. Remove the 20mm snap ring and primary drive gear, **Figure 17**.



1. Primary drive gear
2. 20mm snap ring

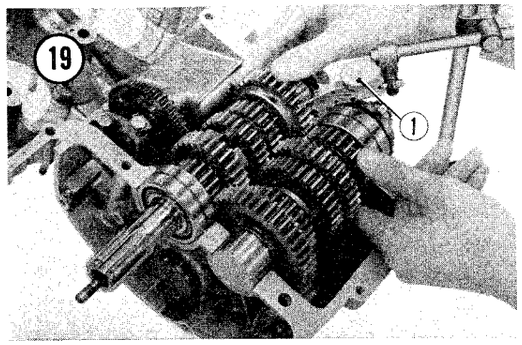
6. Remove the side collar and the No. 6205 ball bearing.
7. Remove the 30mm snap ring, the primary driven sprocket, starting clutch, and rubber dampers.
8. Refer to **Figure 18** and remove the outer starting clutch by unscrewing the flathead screws.



1. 6mm flat head screws
2. Starting clutch outer

Inspection

1. Measure backlash of the transmission gears by setting the pointer of a dial gauge against the gear tooth as shown in **Figure 19**. Replace if the backlash exceeds .008 in. (.2mm).



1. Dial gauge

2. Replace gears that are obviously worn or whose lugs are damaged.

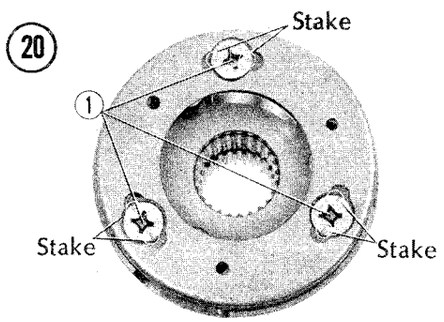
3. Ensure that the gears slide smoothly along the splines.

4. Check the kickstarter ratchet for smooth functioning.

Reassembly

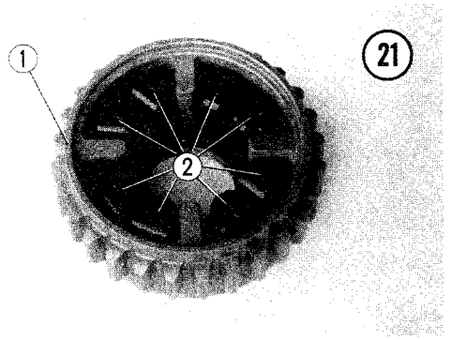
Reassemble in reverse order of disassembly, referring to the exploded drawings and noting the following points:

1. Assemble the outer clutch, coating the flat-head screws with a thread-locking compound. Then stake the screw heads with a punch as shown in **Figure 20**.



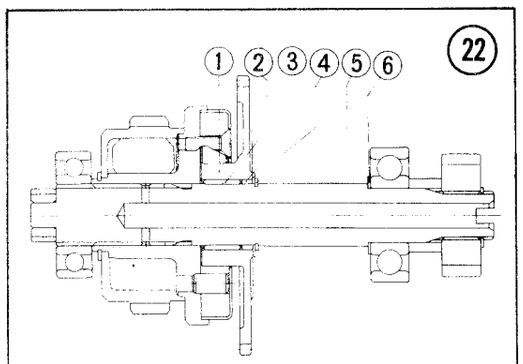
1. 6mm flat head screw

2. Install the rubber dampers as shown in **Figure 21**.



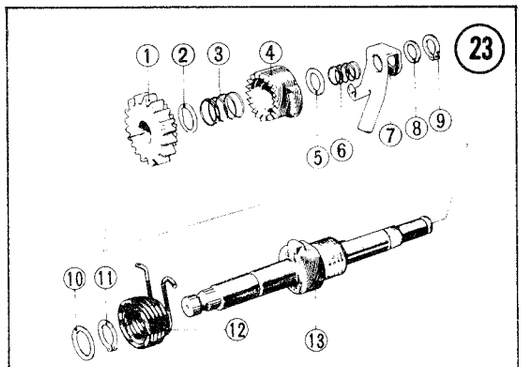
1. Primary driven sprocket 2. Damper rubbers

3. Refer to **Figure 22** for the sequence of installing parts on the shaft. When it is fully assembled, install the shaft in the crankcase.



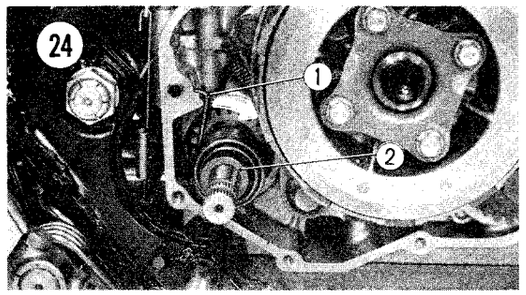
1. Starting clutch gear
2. Needle bearing (25 x 29 x 17)
3. 25mm spacer
4. 25mm thrust washer
5. 25mm snap ring
6. 22mm thrust washer

4. CB500. Refer to **Figure 23** for details of the kickstarter.

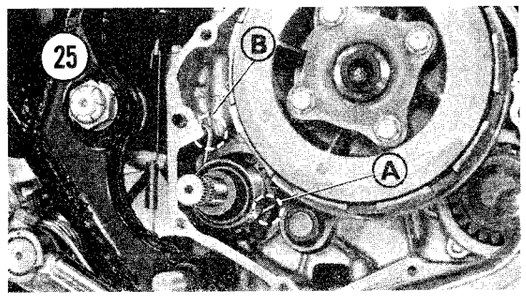


1. Kickstarter pinion
2. 20mm thrust washer
3. Starter pinion set spring
4. Kickstarter ratchet

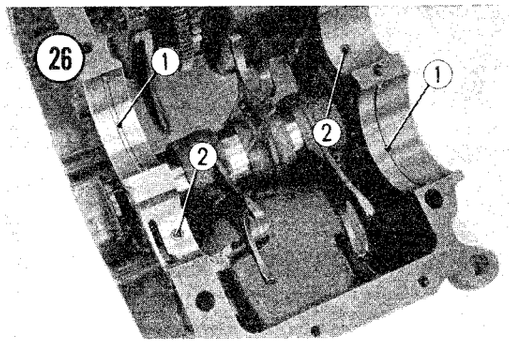
CB350F. Refer to **Figures 24 and 25** for proper posititioning of the kickstarter spring.



1. Kickstarter spring 2. Kickstarter spindle



5. CB500. Install the bearing set rings and the dowel pins in the upper crankcase, **Figure 26**, before installing the transmission.



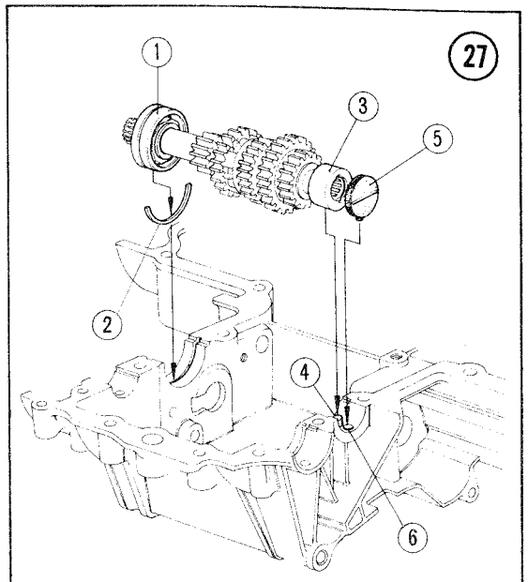
1. Bearing set rings 2. Dowel pins

6. CB350F. Refer to **Figure 27** for details of the mainshaft and **Figure 28** for details of the countershaft.

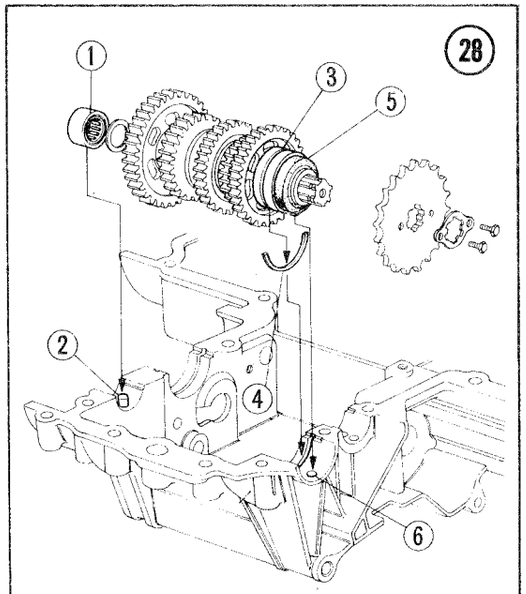
GEARSHIFT MECHANISM

Disassembly

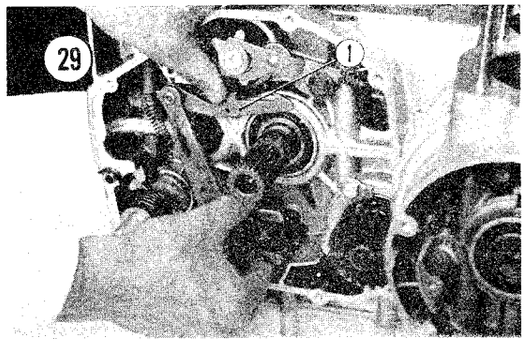
1. Remove the clutch.
2. Remove the gearshift pedal.
3. Remove the gearshift arm, holding it down as shown in **Figure 29**.



1. 5205 HS ball bearing
2. 52mm bearing set ring
3. 20mm needle bearing
4. 6mm guide pin
5. Oil seal
6. Pin hole

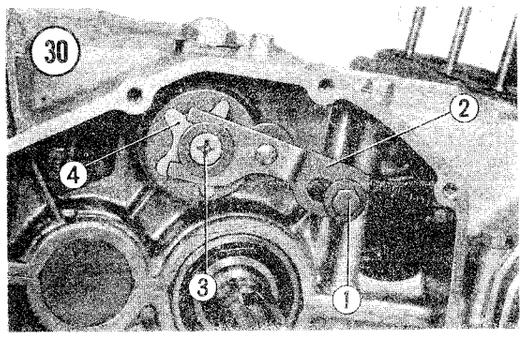


1. 20mm needle bearing
2. 6mm guide pin
3. 5205 ball bearing
4. 50mm bearing set ring
5. Oil seal
6. Pin hole



1. Gearshift arm

4. Refer to **Figure 30** (CB500) and remove the stopper bolt, shift drum stopper, 6mm screw, and stopper cam plate.

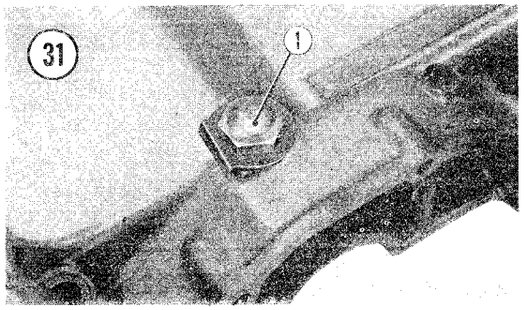


1. Shift drum stopper bolt
2. Shift drum stopper
3. 6mm flat head screw
4. Stopper cam plate

5. Disassemble the transmission.

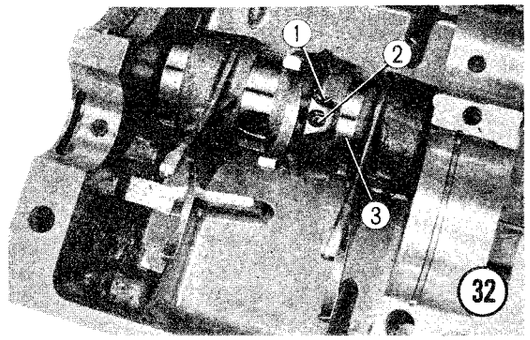
6. Remove the neutral stopper switch from the gearshift drum.

7. Remove the guide screw from the upper crankcase as shown in **Figure 31** and remove the spring cap and ball.



1. Shift drum guide screw

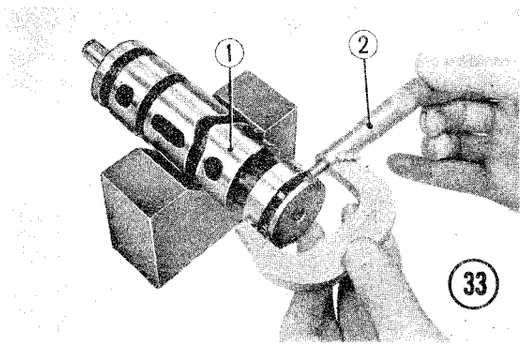
8. Remove the guide pin clips and guide pins, **Figure 32**, and then remove the gearshift drum from the crankcase.



1. Guide pin clip
2. Guide pin
3. Gearshift drum

Inspection

1. CB500. Measure the outer diameter of the gearshift drum with a micrometer as shown in **Figure 33.** Replace if worn beyond 1.5709 in. (39.9mm).



1. Gearshift drum
2. Micrometer

2. Measure the inner diameter of the gearshift forks with an inside micrometer. Replace the ones that are worn beyond the following limits:

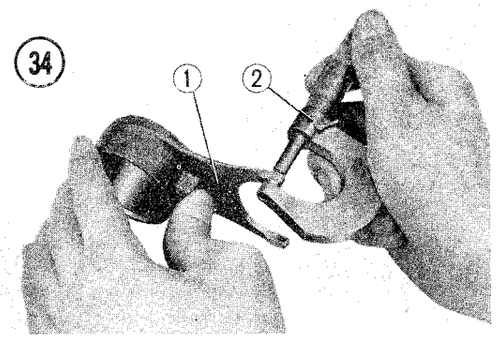
CB500	1.56 in. (40.08mm)
CB350F	.51 in. (12.95mm)

3. Measure the width of the gearshift fork fingers, **Figure 34**, with a micrometer. Replace those that are worn beyond the following limits:

CB500	(center)	.22 in. (5.6mm)
CB500	(right/left)	.181 in. (4.60mm)
CB350F		.22 in. (5.5mm)

Assembly

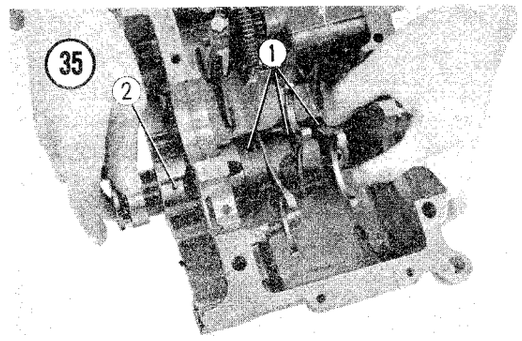
Assemble in reverse order of disassembly, referring to the exploded drawings and noting the following steps:



1. Gearshift fork
2. Micrometer

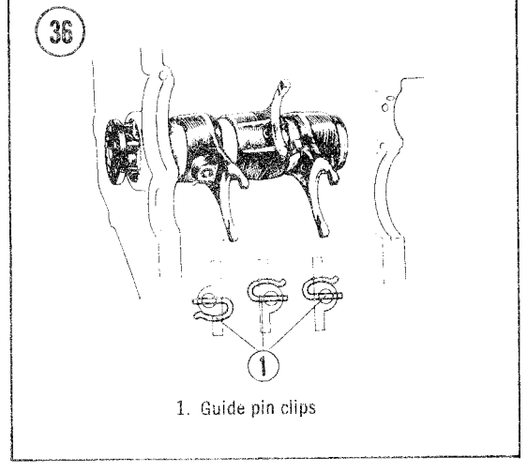
CB500

1. Set shift forks into crankcase, **Figure 35**, and then install the gearshift drum.



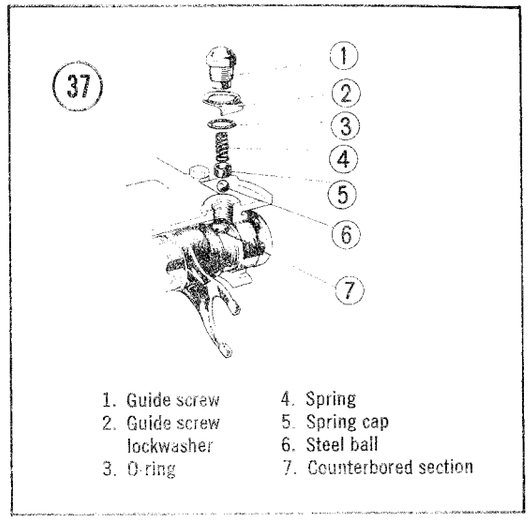
1. Gearshift forks
2. Gearshift drum

2. Insert the guide pin into the shift fork as shown in **Figure 36** and secure it with the guide pin clip. Make sure the clip is installed in the proper direction.



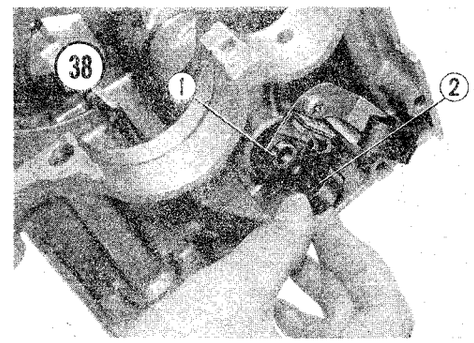
1. Guide pin clips

3. Refer to **Figure 37** for the sequence of installing these parts. Lock the guide screw by bending up the tab on the lockwasher.



1. Guide screw
2. Guide screw lockwasher
3. O-ring
4. Spring
5. Spring cap
6. Steel ball
7. Counterbored section

4. Align the neutral switch with the gearshift drum groove, as shown in **Figure 38**, and lock with the 6mm screw.

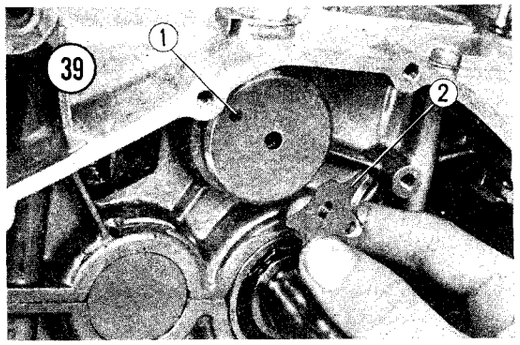


1. Gearshift drum
2. Neutral switch

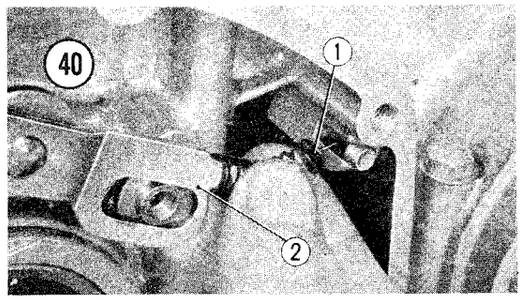
5. Assemble the transmission and the upper and lower crankcase.

6. Refer to **Figure 39** and align the pinhole in the cam plate with the pin on the gearshift drum. Then secure with the 6mm screw, coating it with a thread-locking compound.

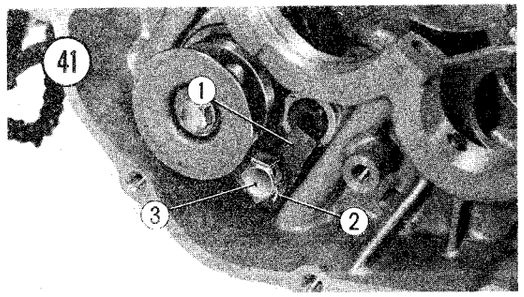
7. Place the spring on the shift drum stopper and insert the other end into the groove in the crankcase, as shown in **Figure 40**. Tighten the bolt and then ensure that the stopper operates smoothly. Replace the part if it is excessively loose.



1. Pin 2. Cam plate



1. Spring 2. Shift drum stopper



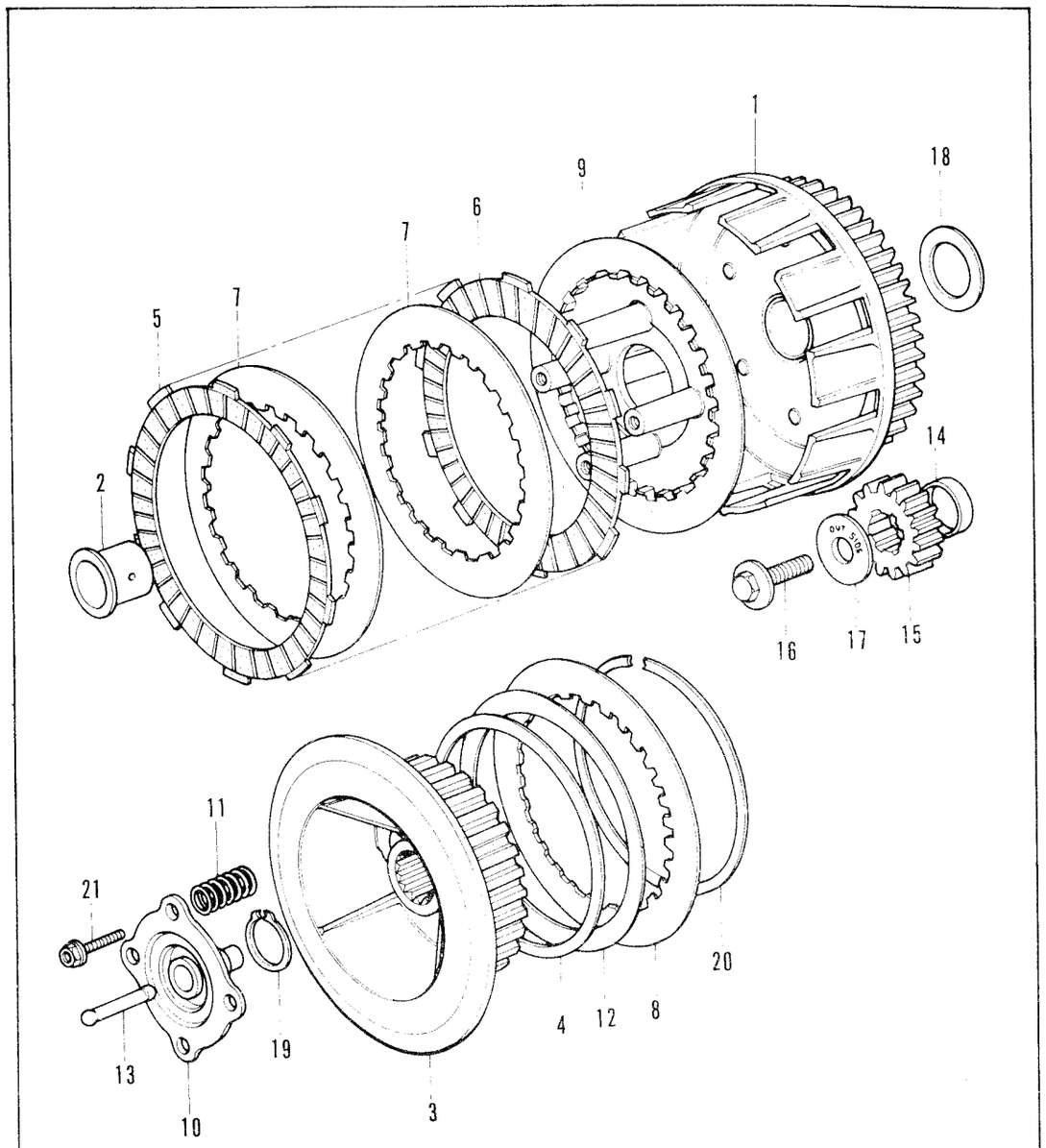
1. Guide set plate 3. 8mm bolt
2. Lockwasher

CB350F

1. Install the gearshift drum and transmission gears in the neutral position.

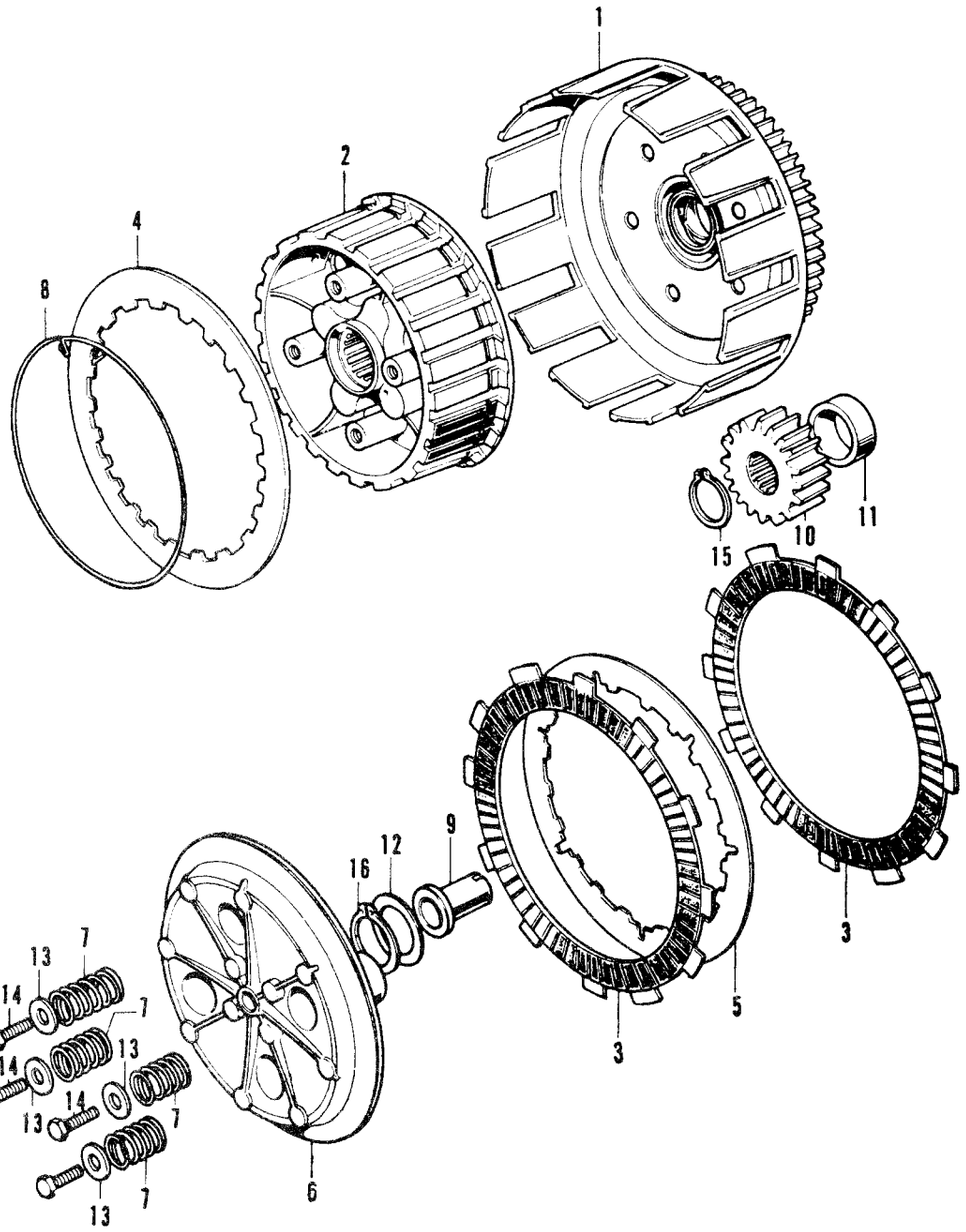
2. After installing the guide set plate, bend the lug of the lockwasher against the 8mm bolt as shown in **Figure 41**.

3. The gearshift forks are marked with "R" (right), "C" (center), and "L" (left) so that their positions will not be confused.



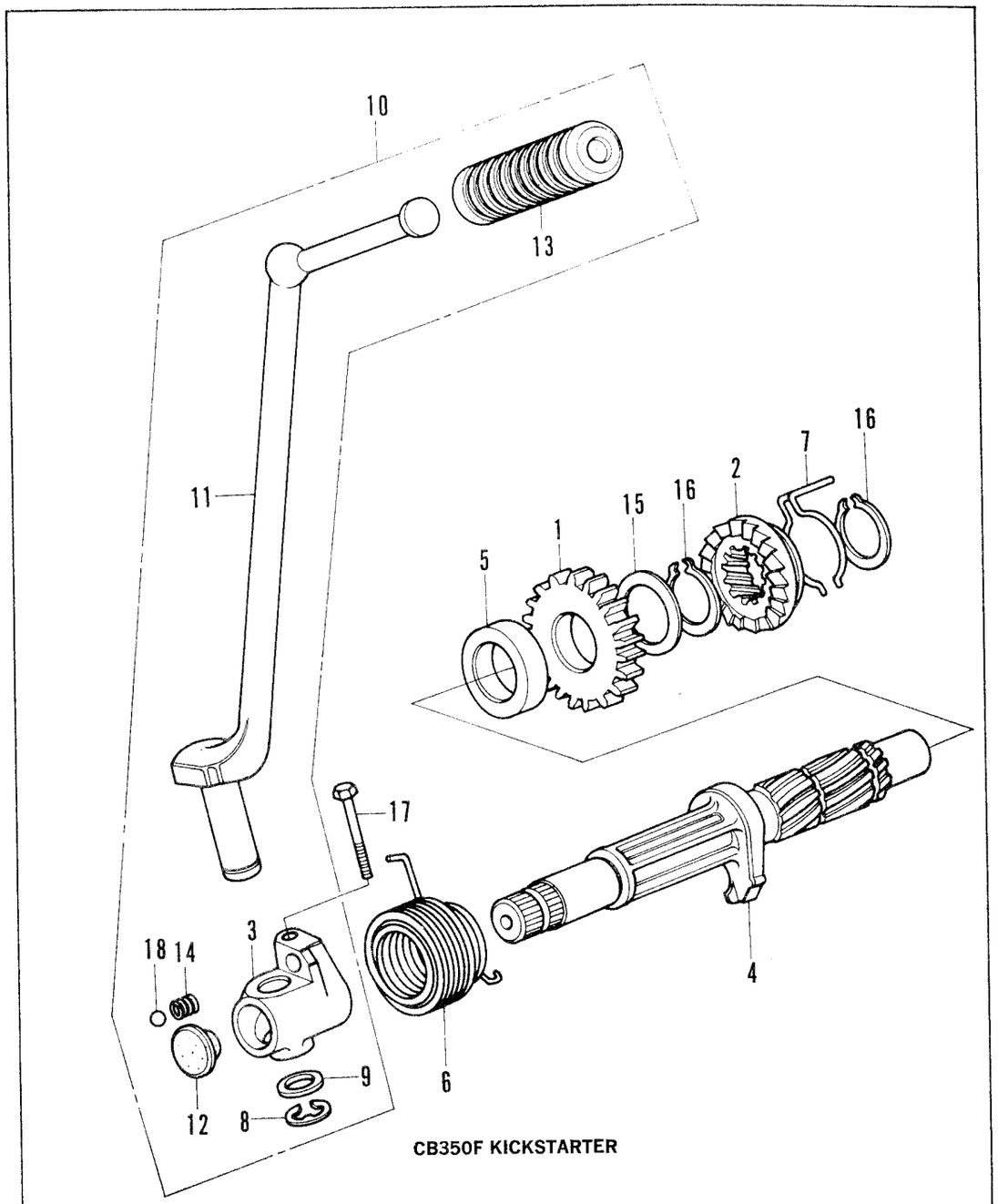
CB350F CLUTCH

1. Clutch outer
2. Collar
3. Clutch center
4. Disc spring seat
5. Clutch friction disc
6. Clutch friction disc
7. Clutch plate
8. Clutch plate B
9. Clutch pressure plate
10. Clutch lifter plate
11. Clutch spring
12. Clutch disc spring
13. Clutch lifter rod
14. Collar
15. Secondary drive gear
16. U. B. S. bolt
17. Primary shaft washer
18. Thrust washer
19. Circlip
20. Special set ring
21. Flange bolt



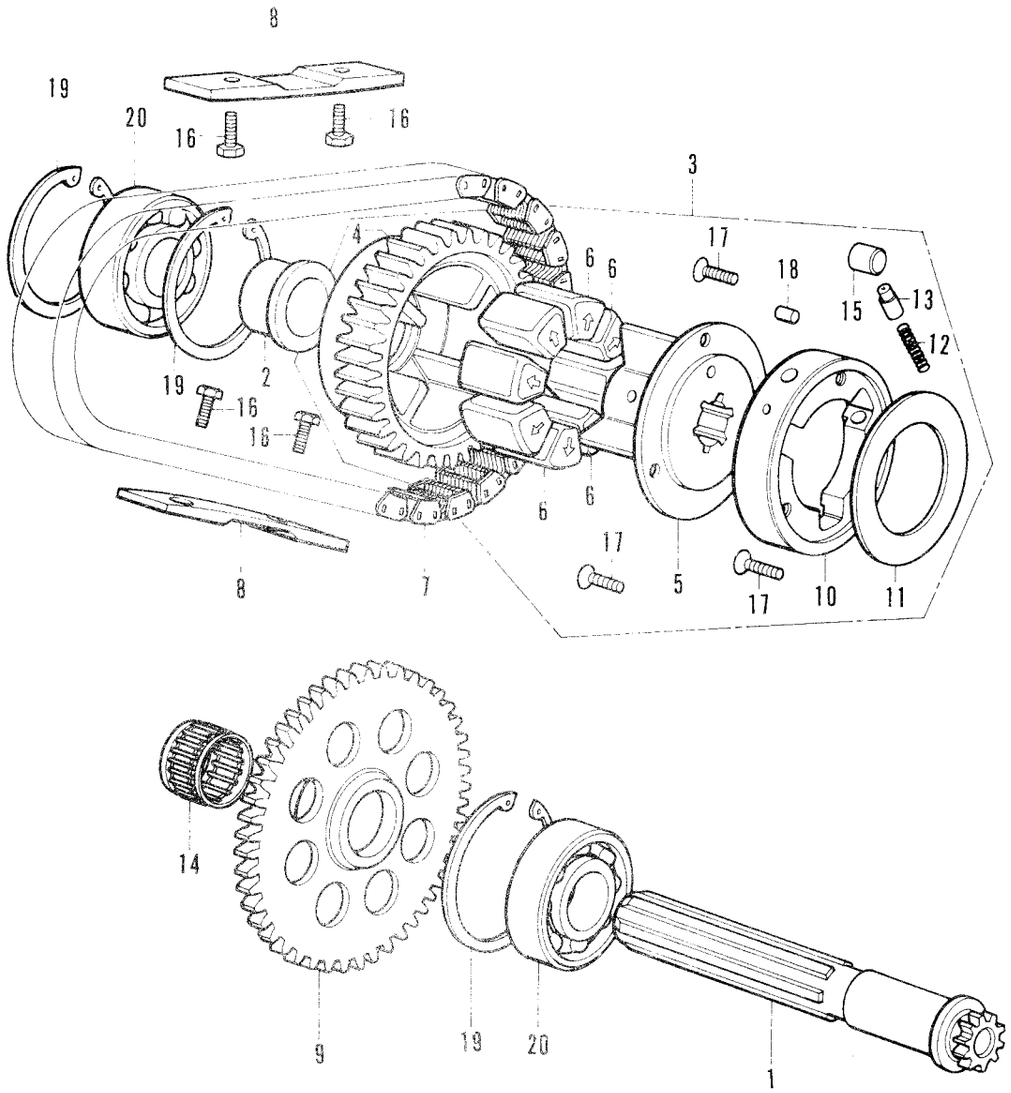
CB500 CLUTCH

1. Clutch outer
2. Clutch center
3. Clutch friction disc
4. Clutch plate C
5. Clutch plate B
6. Clutch pressure plate
7. Clutch spring
8. Clutch plate stopper ring
9. Clutch lifter joint piece
10. Primary drive gear
11. Collar
12. Spacer
13. Washer
14. Bolt
15. External circlip
16. External circlip



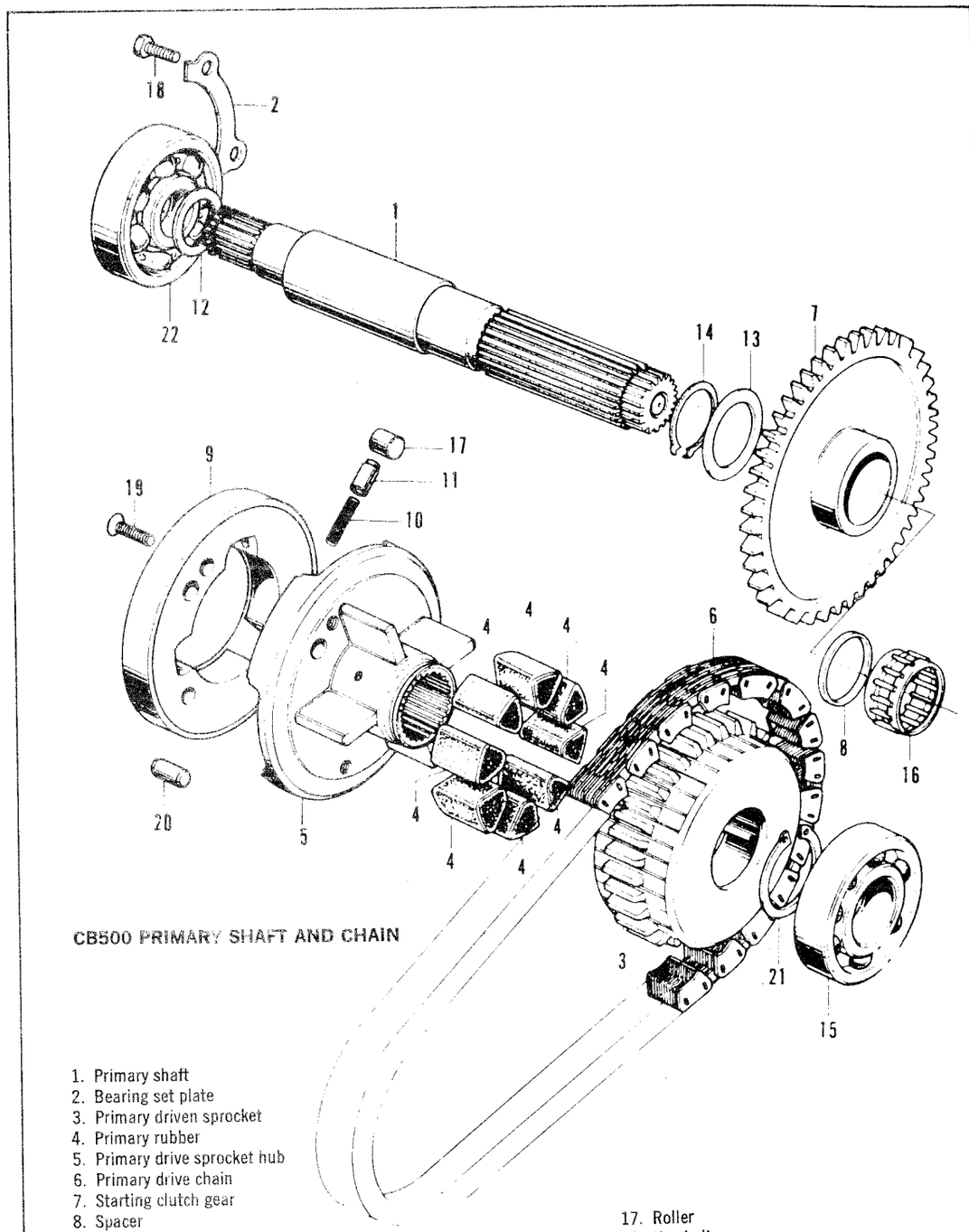
CB350F KICKSTARTER

1. Kickstarter pinion
2. Starter drive ratchet
3. Kick arm joint
4. Kickstarter spindle
5. Kick spindle collar
6. Kickstarter spring
7. Starter pinion friction spring
8. Kickstarter arm clip
9. Kick arm washer
10. Kickstarter arm assembly
11. Kickstarter arm
12. Kick arm cap
13. Kickstarter rubber
14. Kickstarter stopper spring
15. Thrust washer
16. Set ring
17. Hex bolt
18. Steel ball



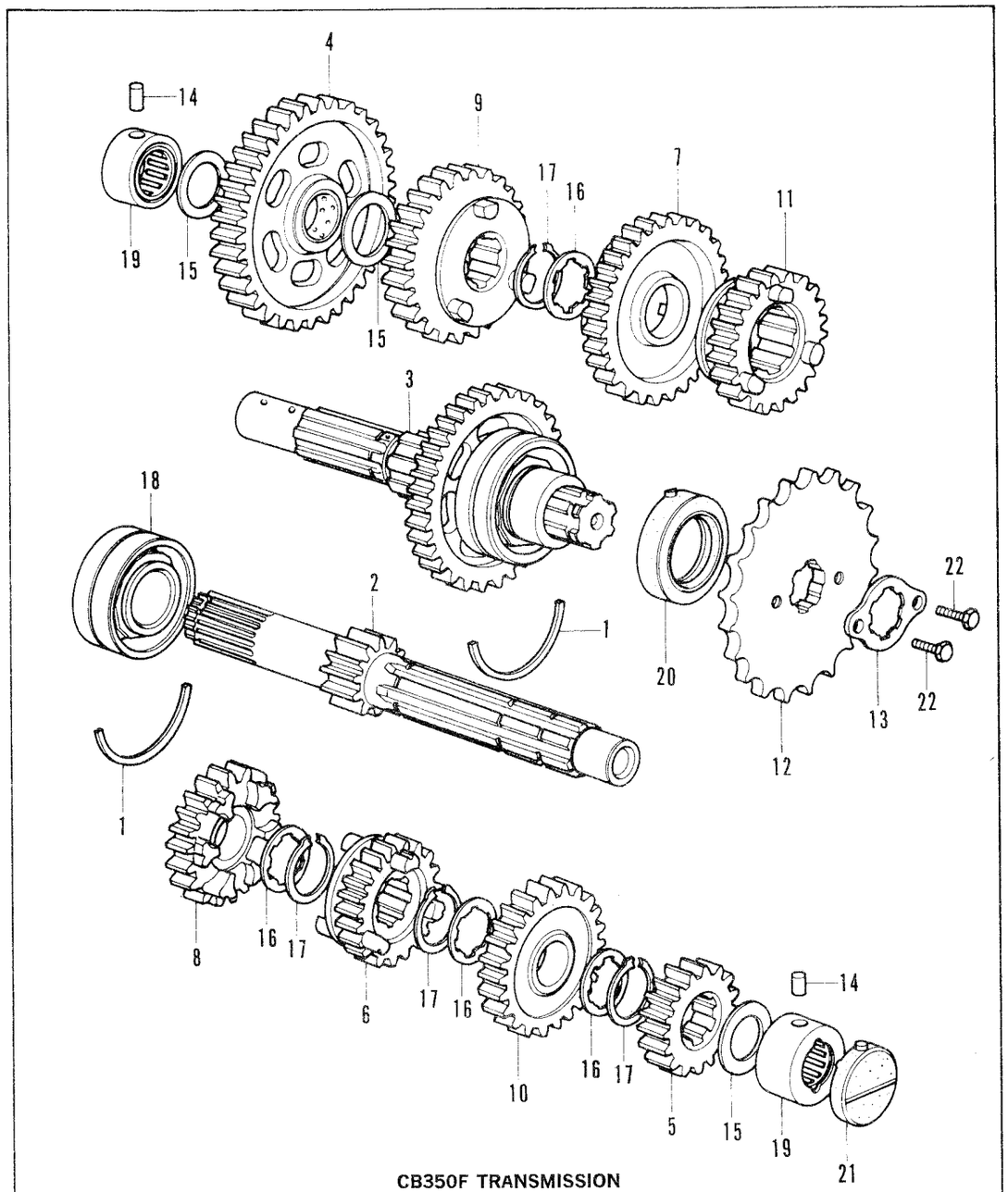
CB350F PRIMARY SHAFT AND CHAIN

1. Primary shaft
2. Collar
3. Primary driven sprocket assembly
4. Primary driven sprocket
5. Driven sprocket hub
6. Damper rubber
7. Primary drive chain
8. Primary chain guide
9. Starter driven gear
10. Clutch outer body
11. Outer side plate
12. Starting clutch roller spring
13. Starting clutch roller spring cap
14. Needle bearing
15. Roller
16. Hex bolt
17. Flat screw
18. Dowel pin
19. Internal circlip
20. Radial ball bearing



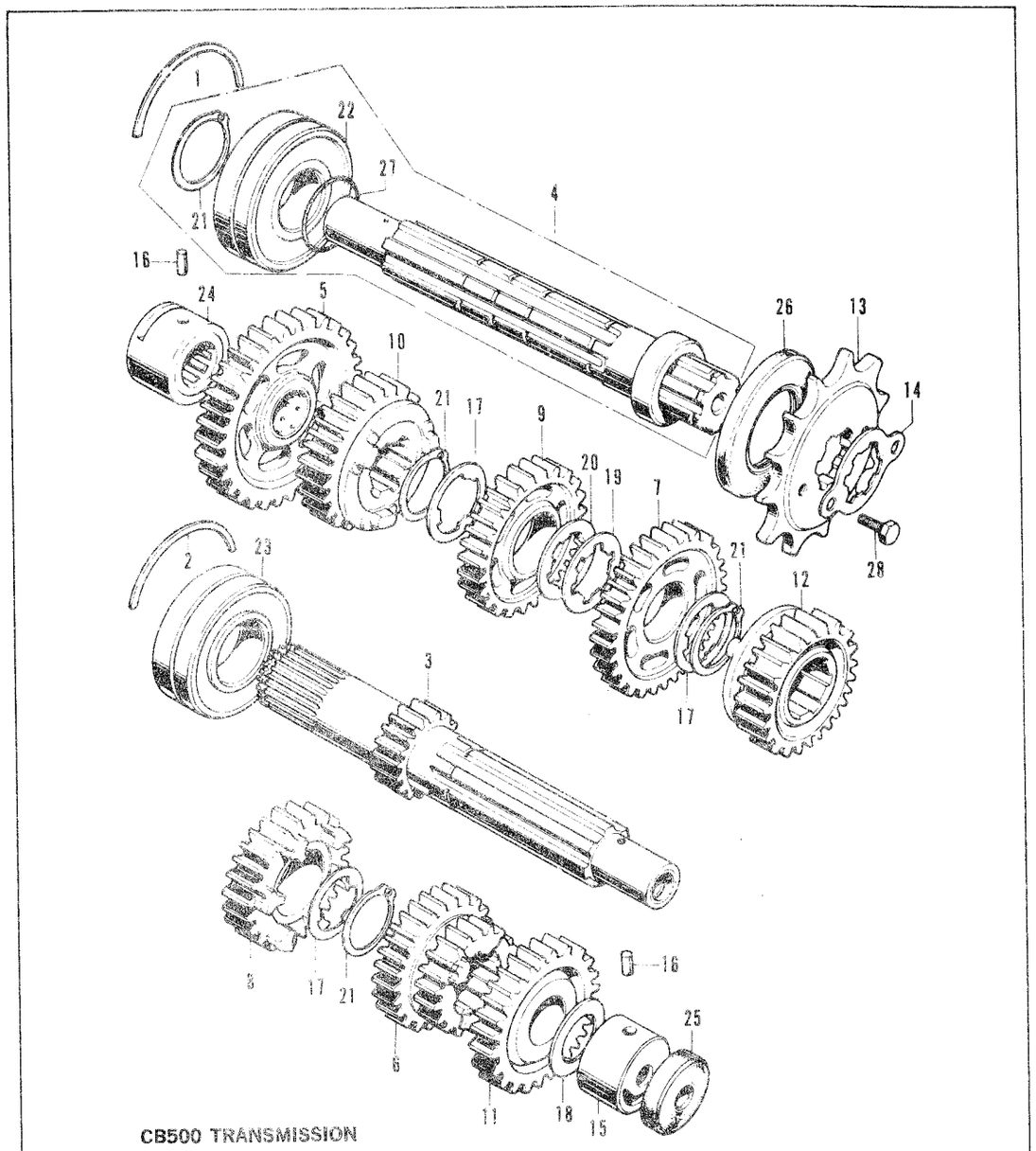
CB500 PRIMARY SHAFT AND CHAIN

1. Primary shaft
2. Bearing set plate
3. Primary driven sprocket
4. Primary rubber
5. Primary drive sprocket hub
6. Primary drive chain
7. Starting clutch gear
8. Spacer
9. Starting clutch outer
10. Starting clutch roller spring
11. Roller spring cap
12. Thrust washer
13. Thrust washer
14. Circlip
15. Ball bearing
16. Bearing
17. Roller
18. Hex bolt
19. Flat screw
20. Dowel pin
21. External circlip
22. Radial ball bearing



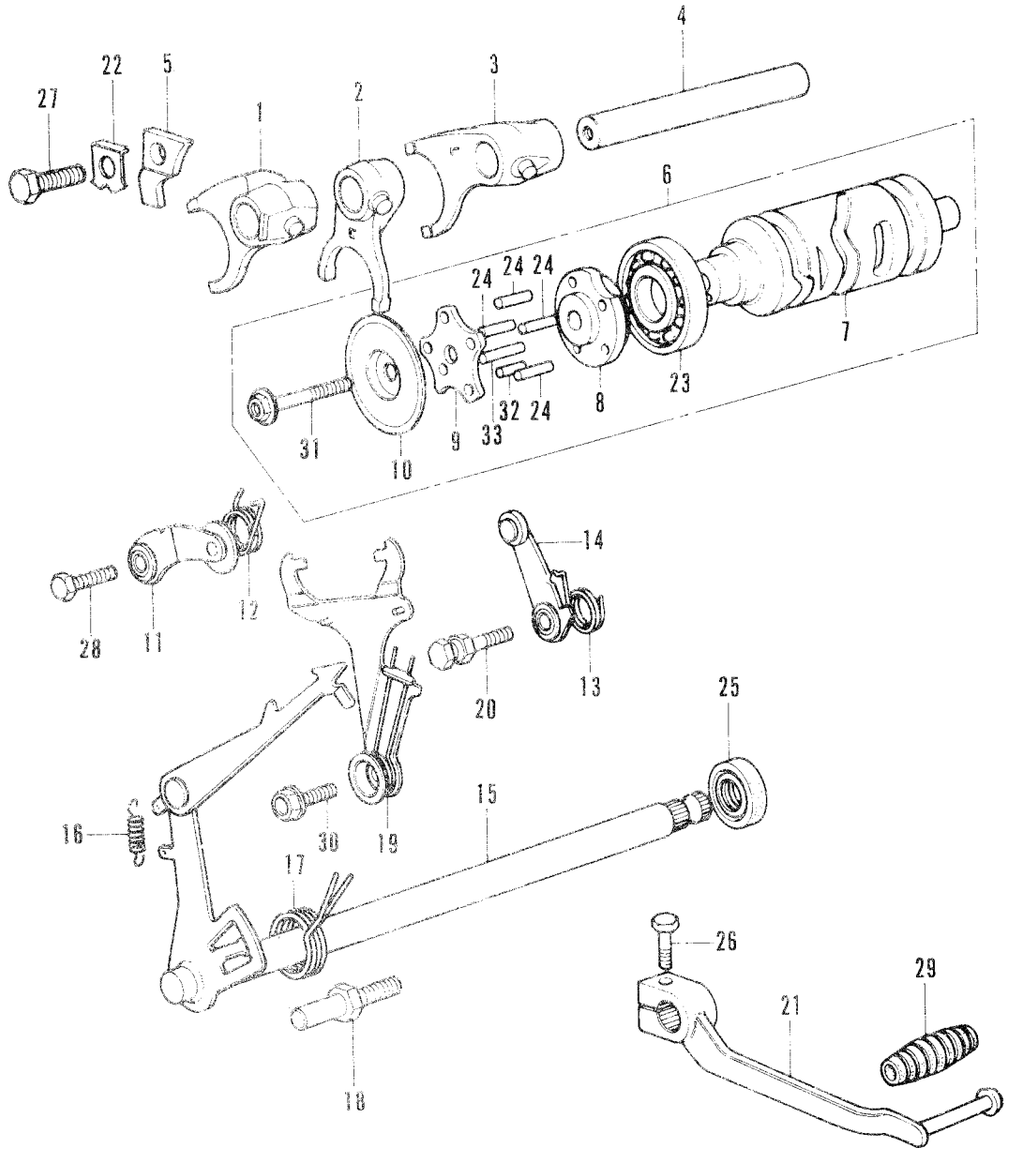
CB350F TRANSMISSION

1. Bearing set ring
2. Transmission mainshaft
3. Countershaft
4. Countershaft 1st gear
5. Mainshaft 2nd gear
6. Mainshaft 3rd gear
7. Countershaft 3rd gear
8. Mainshaft 4th gear
9. Countershaft 4th gear
10. Mainshaft 5th gear
11. Countershaft 5th gear
12. Drive sprocket
13. Drive sprocket fixing plate
14. Fork guide pin
15. Thrust washer
16. Thrust washer
17. Circlip
18. Ball bearing
19. Needle bearing
20. Oil seal
21. Oil seal
22. Hex bolt



CB500 TRANSMISSION

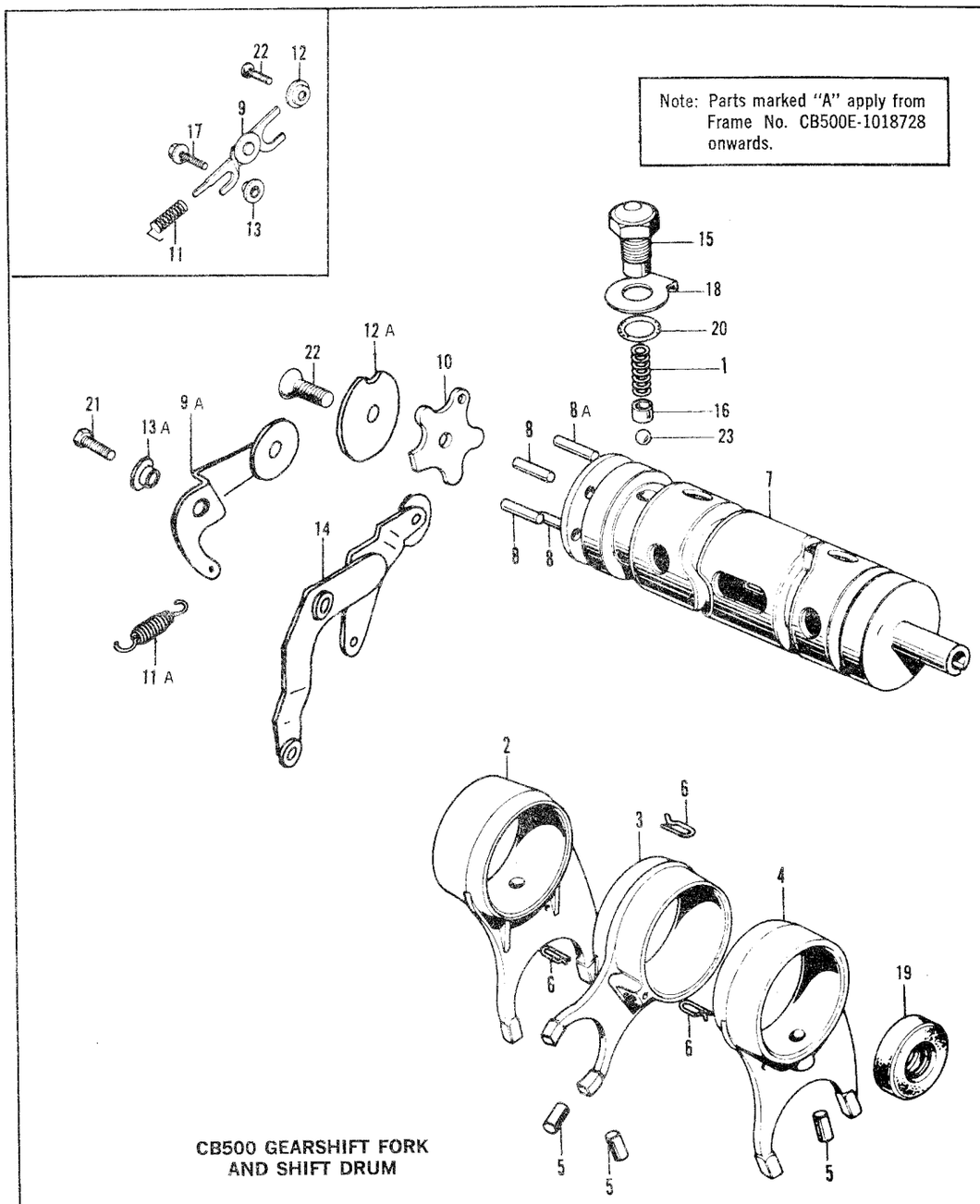
1. Bearing set ring
2. Bearing set ring
3. Mainshaft
4. Countershaft
5. Countershaft 1st gear
6. Mainshaft 2nd and 3rd gears
7. Countershaft 2nd gear
8. Mainshaft 4th gear
9. Countershaft 3rd gear
10. Countershaft 4th gear
11. Mainshaft 5th gear
12. Countershaft 5th gear
13. Drive sprocket
14. Drive sprocket fixing plate
15. Needle bearing
16. Fork guide pin
17. Thrust washer A
18. Thrust washer
19. Thrust washer B
20. Lockwasher
21. Circlip
22. Special ball bearing
23. Ball bearing
24. Needle bearing
25. Oil seal
26. Oil seal
27. O-ring
28. Hex bolt



CB350F GEARSHIFT DRUM AND CHANGE PEDAL

1. Right gearshift fork
2. Center gearshift fork
3. Left gearshift fork
4. Shift fork guide shaft
5. Guide shaft set plate
6. Gearshift drum assembly
7. Gearshift drum
8. Gearshift drum center
9. Drum stopper plate
10. Gearshift side plate
11. Gearshift drum stopper
12. Shift drum stopper spring
13. Neutral stopper spring
14. Neutral stopper arm
15. Gearshift spindle
16. Gearshift arm spring
17. Gearshift return spring
18. Shift return spring pin
19. Positive stopper
20. Return spring pin
21. Gear change pedal
22. Tongued washer
23. Ball bearing
24. Roller
25. Oil seal
26. Hex bolt
27. Hex bolt
28. Hex bolt
29. Change pedal rubber
30. Flange bolt
31. Flange bolt
32. Roller
33. Roller

Note: Parts marked "A" apply from Frame No. CB500E-1018728 onwards.



CB500 GEARSHIFT FORK AND SHIFT DRUM

1. Clutch damper spring
2. Right gearshift fork
3. Gearshift fork B
4. Left gearshift fork
5. Gearshift fork guide pin
6. Guide pin clip
7. Gearshift drum
8. Gearshift drum pin
8A. Gearshift drum pin
9. Shift drum stopper
9A. Shift drum stopper
10. Drum stopper cam plate
11. Shift drum stopper spring
11A. Shift drum stopper spring
12. Shift drum stopper collar
12A. Shift drum stopper collar
13. Collar stopper
13A. Collar stopper
14. Stopper drum
15. Shift drum guide screw
16. Guide screw collar
17. Special bolt
18. Lockwasher
19. Oil seal
20. O-ring
21. Hex bolt
22. Flat screw
23. Steel ball

CHAPTER FOUR

CARBURETORS

Disassembly

1. Remove the carburetors from the engine (Chapter Two).

2. Refer to **Figure 1** and unhook the throttle return spring from the link lever. Be careful not to damage the hook.

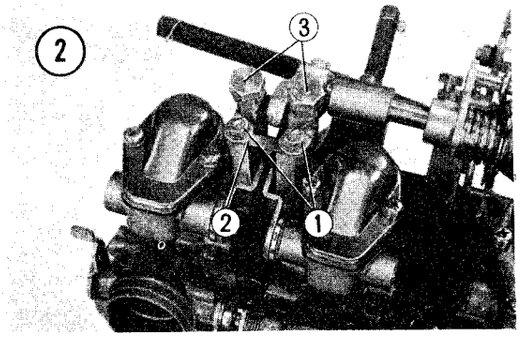
1. Throttle return spring 2. Link lever

3. Refer to **Figure 2** and loosen the hex nuts so that dust plate B can be removed. Then remove the cap nuts.

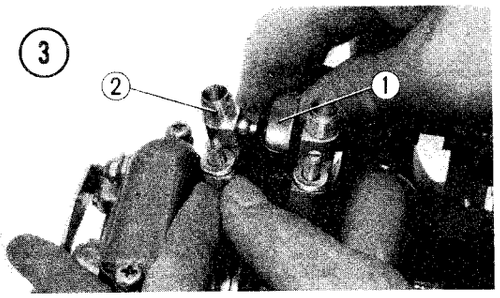
4. Seperate the adjuster holders from the link arm as shown in **Figure 3**.

5. Remove the four carburetors from the stay plate by loosening the eight 6mm flathead screws.

6. Remove the tops from each carbuertor, **Figure 4**, by unscrewing the two mounting screws.



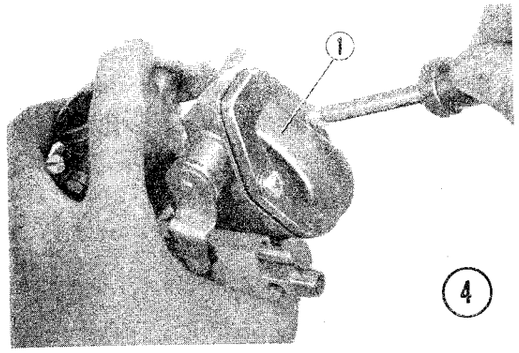
1. Hex nuts 3. Cap nuts
2. Dust plate B



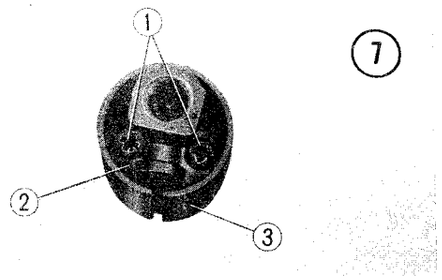
1. Link arm 2. Adjuster holder

7. Straighten the tabs of the two lockwashers and remove the 4mm and 6mm bolts, **Figure 5**.

8. Refer to **Figure 6** and pry link arm free of throttle shaft with screwdriver in direction "A."

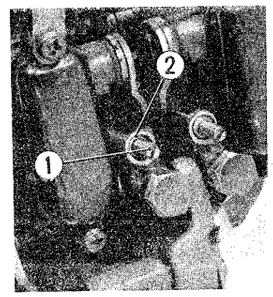


1. Carburetor top

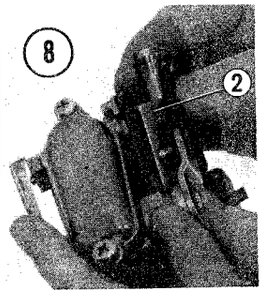


1. 3mm screws 3. Throttle valve
2. Valve plate

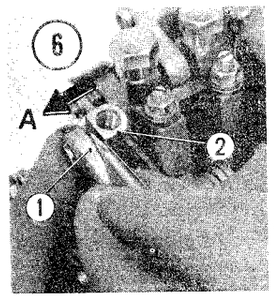
1. Lockwashers 3. 6mm bolt
2. 4mm bolt



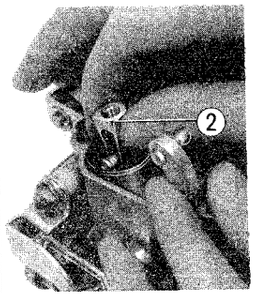
1. Adjusting screw



2. Adjuster holder



1. Link arm



2. Throttle shaft

9. Remove the valve plate, **Figure 7**, by loosening the two 3mm screws, then turn the plate 90 degrees in either direction so that the tap is aligned with the groove in the shaft.

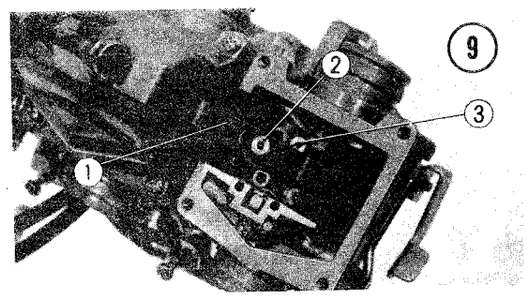
10. Remove the needle from the throttle valve.

11. Remove the adjusting screw from the holder, **Figure 8**.

12. Remove the adjuster holder by setting the throttle valve in the halfway open position.

13. Remove the float chamber.

14. Refer to **Figure 9** and remove the leaf spring, main jet, and slow jet.



1. Leaf spring 3. Slow jet
2. Main jet

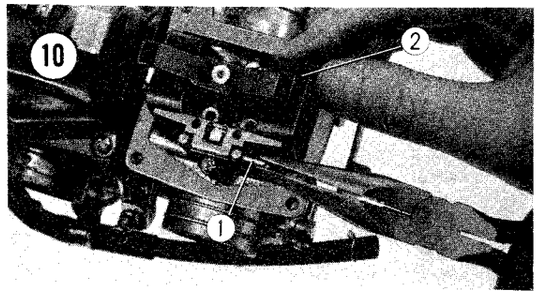
15. Extract the float arm pin, **Figure 10**, and remove the float.

16. Remove the clip plate, **Figure 11**, and then remove the valve seat.

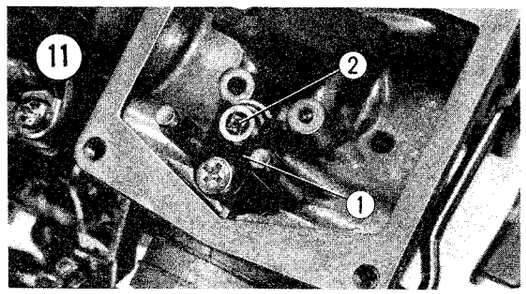
Inspection

1. Blow out the jets with compressed air to remove any foreign matter.

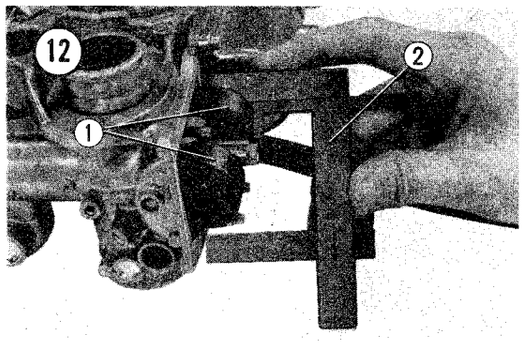
2. Adjust the float level with a gauge made for the purpose, **Figure 12**. The float arm should just touch the tip of the float valve when the measurement is taken. Adjust by bending the float arm if the level does not agree with the following specification:



1. Float arm pin 2. Float



1. Clip plate 2. Valve seat



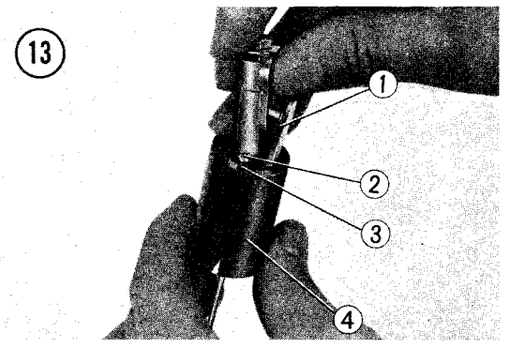
1. Floats 2. Float level gauge

CB500	.89 in. (22mm)
CB350F	.82 in. (21mm)

Assembly

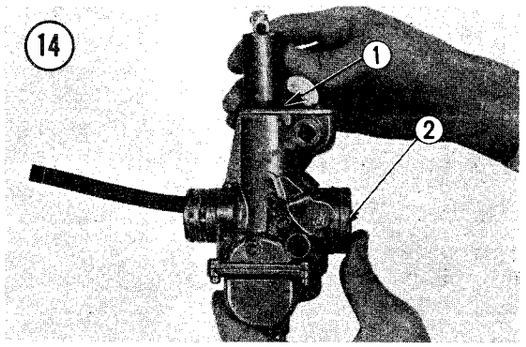
Assemble in reverse order of disassembly, referring to the exploded drawings and noting the following procedures:

1. Assemble the valve plate with its two 3mm screws and spring washers; then align the key protruding from the plate with the slot in the throttle valve, **Figure 13**. Turn the plate 90 degrees toward the link arm side and then tighten with the 3mm screws.



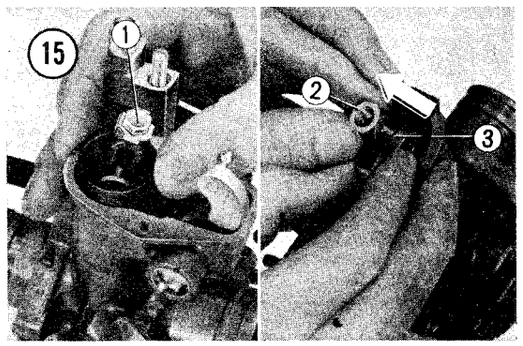
1. Valve plate 3. Lockwasher
2. 3mm screw 4. Throttle valve

2. Refer to **Figure 14,** and align the throttle valve slot with the key protruding from the carburetor body. The cutaway part of the throttle valve should face the side of the choke valve.



1. Cutaway section 2. Choke valve

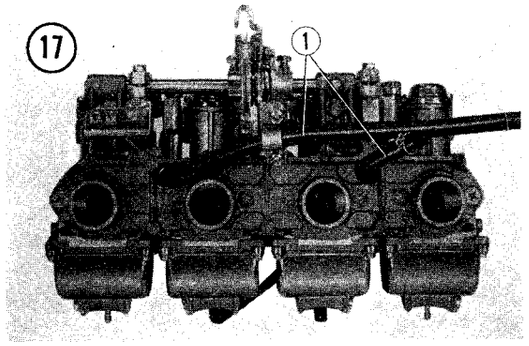
3. Unscrew the 6mm bolt in the throttle shaft, **Figure 15**; then pull up on the shaft while simultaneously pushing the spherical end of the link arm into the opening.

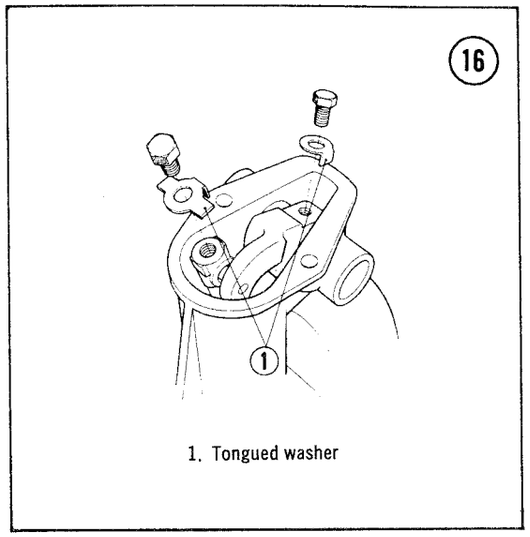


1. 6mm bolt 3. Link arm
2. Throttle shaft

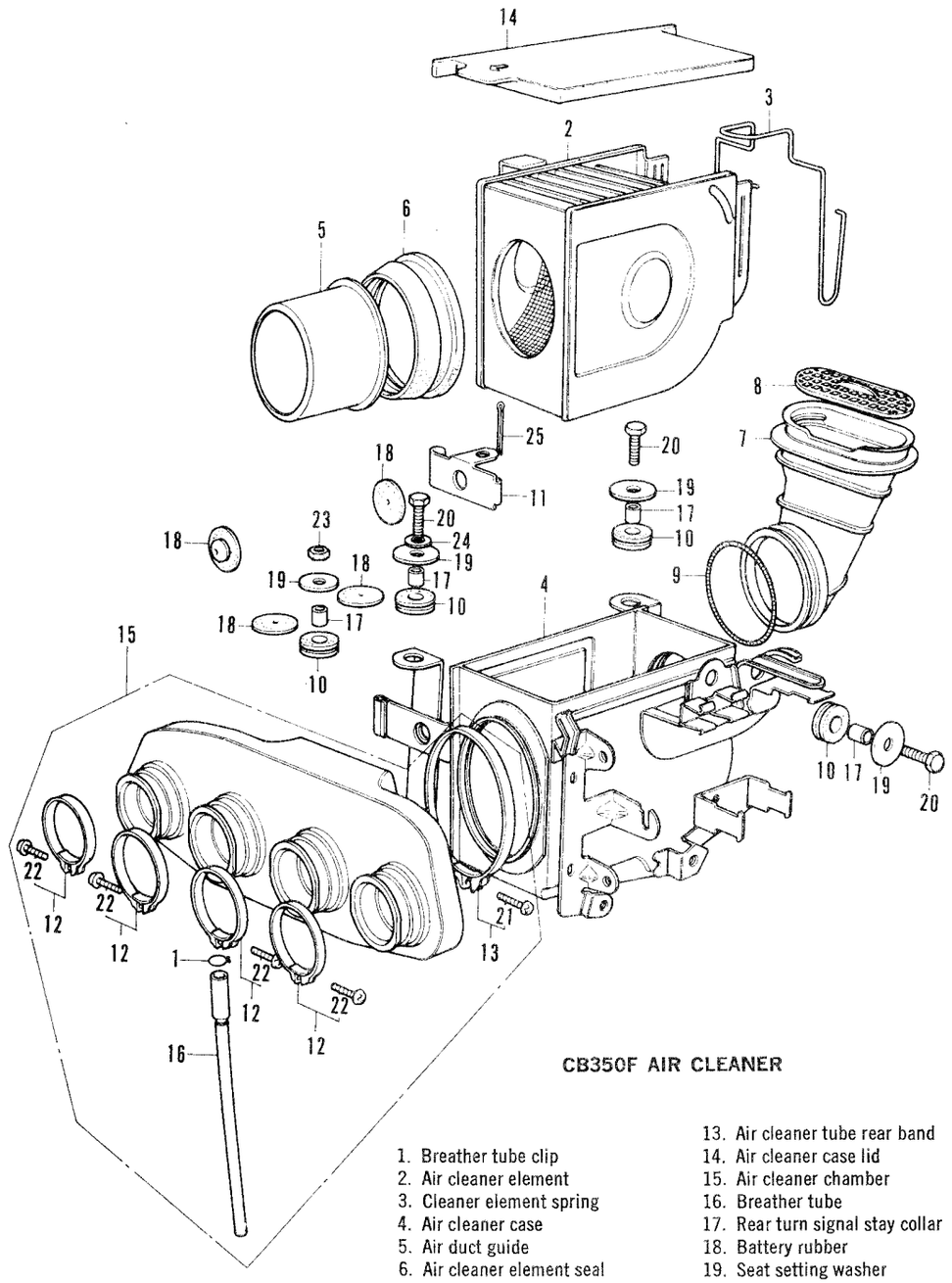
4. Install the tongued lockwasher as shown in **Figure 16**. Tighten the bolts and then bend the tongues against the bolt head to lock them in place.

5. Route the fuel tubes as shown in **Figure 17**.





1. Tongued washer



CB350F AIR CLEANER

1. Breather tube clip
2. Air cleaner element
3. Cleaner element spring
4. Air cleaner case
5. Air duct guide
6. Air cleaner element seal
7. Air cleaner inlet duct
8. Air inlet screen
9. Air cleaner inlet band
10. Air cleaner case mount rubber
11. Battery hinge plate
12. Connecting tube band
13. Air cleaner tube rear band
14. Air cleaner case lid
15. Air cleaner chamber
16. Breather tube
17. Rear turn signal stay collar
18. Battery rubber
19. Seat setting washer
20. Hex bolt
21. Pan screw
22. Pan screw
23. Hex nut
24. Plain washer
25. Split pin

CHAPTER FIVE

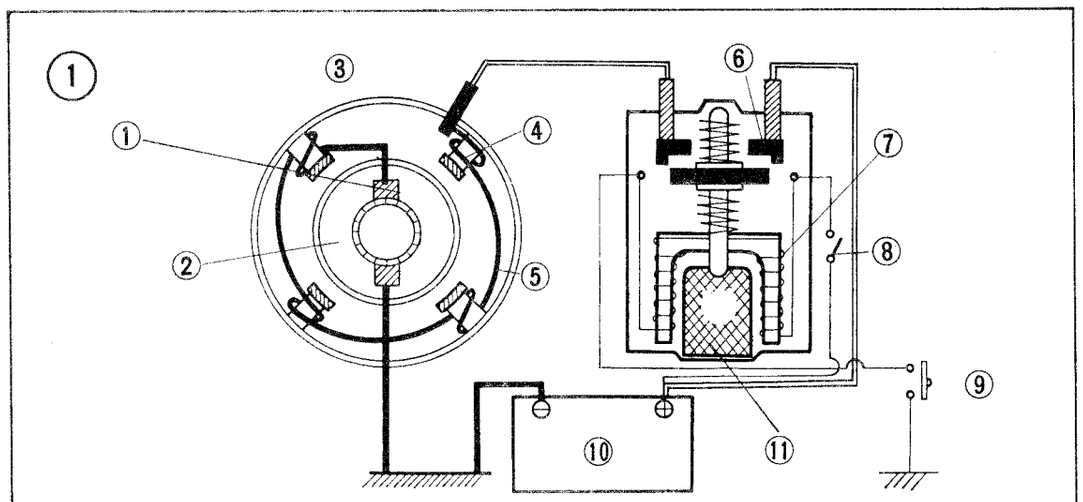
ELECTRICAL SYSTEM

This chapter covers the systems governing starting, ignition, and charging. Routine adjustment of the ignition system was covered in the maintenance and tune-up chapter.

Figure 1 (p. 86) shows the location of the major electrical components of the CB500. **Figure 2** (p. 87) shows the CB350F layout.

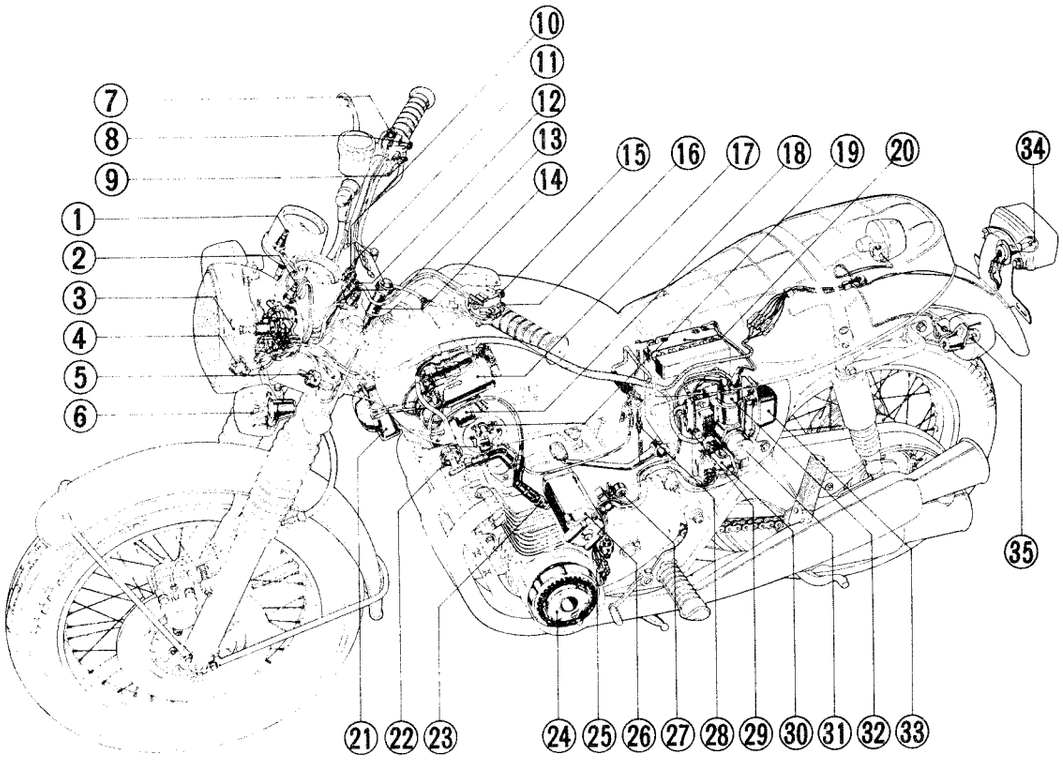
STARTING SYSTEM

Figure 3 is a schematic diagram of the starter motor circuit. When the push button starter switch on the handlebar is pressed, it energizes the magnetic switch which closes the starting circuit. About 120 amperes flow from the battery to operate the starting motor.



1. Brush
2. Armature
3. Starting motor
4. Pole
5. Field coil
6. Starter magnetic switch
7. Electromagnet
8. Ignition switch
9. Starter button
10. Battery
11. Plunger

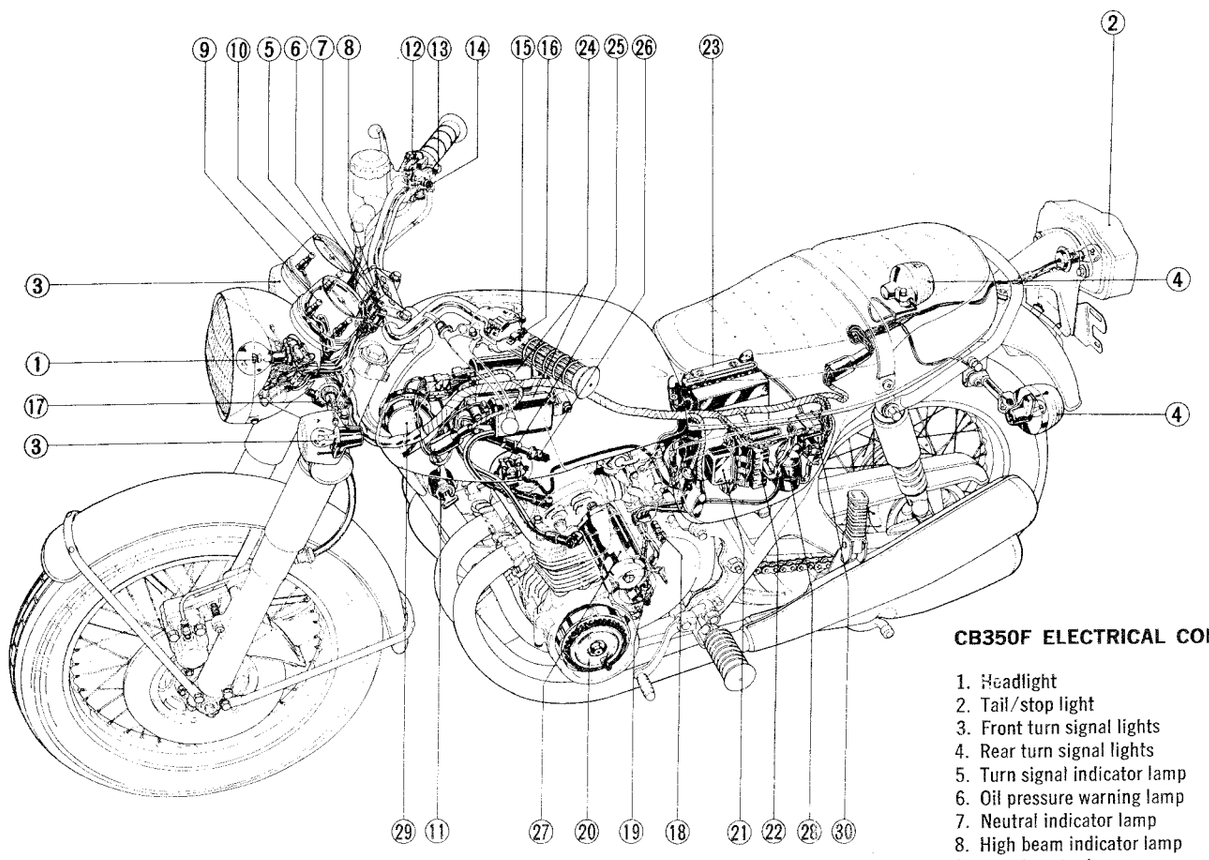
(1)



CB500 ELECTRICAL COMPONENTS

1. Tachometer pilot lamp
2. Speedometer pilot lamp
3. Headlight
4. Position lamp (except USA type)
5. Front brake stop switch
6. Front turn signal
7. Emergency switch
8. Headlight switch
9. Starter switch
10. High beam pilot lamp
11. Neutral lamp
12. Oil warning lamp
13. Turn signal pilot lamp
14. Speed warning lamp (except USA type)
15. Turn signal switch
16. Horn button
17. Ignition coil
18. Speed warning system (except USA type)
19. Contact breaker
20. Battery
21. Horn
22. Main switch
23. Spark plug
24. Alternator
25. Oil pressure switch
26. Starting motor
27. Neutral switch
28. Rear brake stop switch
29. Fuse holder
30. Silicon rectifier
31. Turn signal relay
32. Magnetic switch
33. Voltage regulator
34. Tail/stop lamp
35. Rear turn signal lamp

(2)



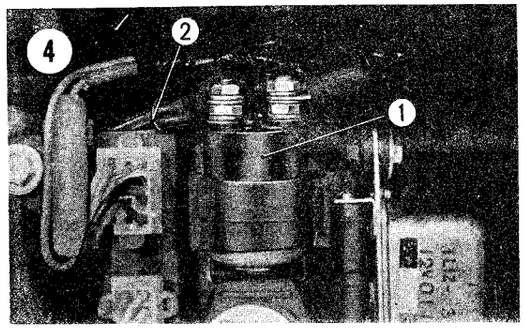
CB350F ELECTRICAL COMPONENTS

1. Headlight
2. Tail/stop light
3. Front turn signal lights
4. Rear turn signal lights
5. Turn signal indicator lamp
6. Oil pressure warning lamp
7. Neutral indicator lamp
8. High beam indicator lamp
9. Speedometer lamp
10. Tachometer lamp
11. Main switch
12. Emergency switch
13. Headlight switch
14. Starter switch
15. Turn signal switch
16. Horn button
17. Stop switch
18. Neutral switch
19. Oil pressure switch
20. Alternator
21. Regulator
22. Silicon rectifier
23. Battery
24. Ignition coils
25. Contact breaker
26. Spark plugs
27. Starting motor
28. Magnetic switch
29. Horn
30. Turn signal

This section covers servicing of the starting motor, and the solenoid or magnetic switch. The kickstarter is covered in Chapter Three.

Disassembly

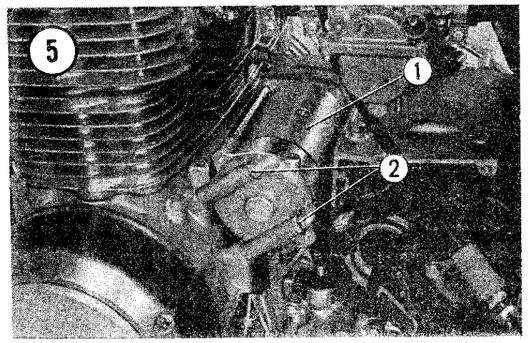
1. Disconnect the starting motor cable at the solenoid switch, shown in **Figure 4** (CB 500).



1. Magnetic switch 2. Starting motor cable

2. Remove the motor cover and the left crankcase cover.

3. Refer to **Figure 5** and dismount the motor by unscrewing the two 6mm bolts.



1. Starting motor 2. 6mm bolts

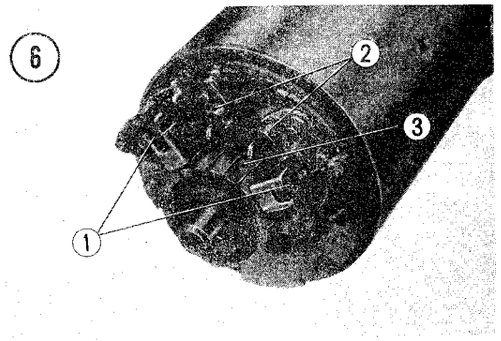
Inspection and Adjustment

Overhaul of the starting motor is best left to an expert. This sections shows how to determine if the unit is out of spec.

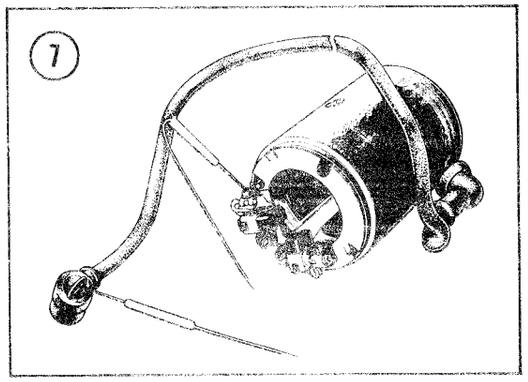
1. Inspect the carbon brushes (**Figure 6**). They should be replaced if they are worn or pitted.

2. Measure the length of the brushes with a vernier caliper. The length should be not less than .22 in. (5.5mm).

3. Check the electrical continuity between the armature, **Figure 7**, and the core. If there is a short, replace the armature.

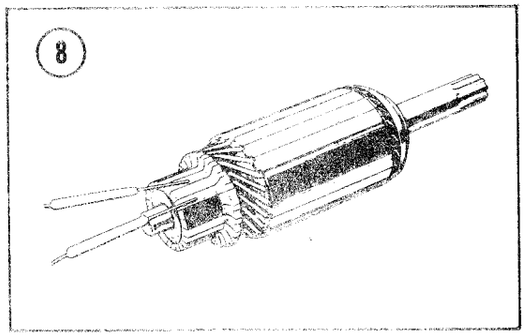


1. Carbon brushes 3. Commutator
2. Springs



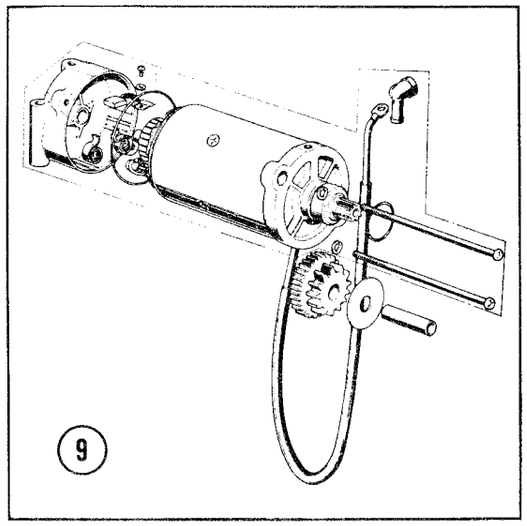
4. Measure the amount of mica undercut (the depth of the grooves) and if not less than .012 in. (.3mm) replace the commutator.

5. Refer to **Figure 8** and check continuity between the brush wired to the stator coil and the starting motor cable. If there is no continuity the coil is open and it should be replaced.



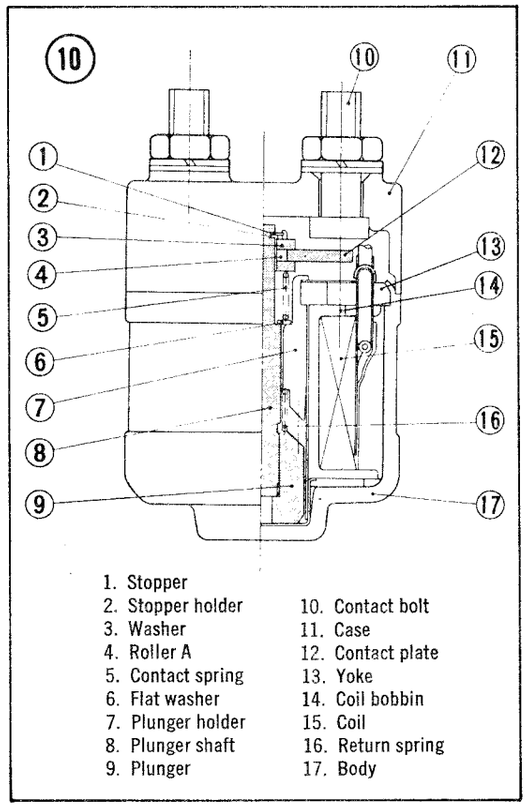
Reassembly

Refer to the exploded view of the starter, **Figure 9**, and assemble in reverse order of disassembly.



STARTER SOLENOID

A magnetically-actuated switch is used to supply the strong electrical current needed to operate the starting motor. The parts of the solenoid are shown in the line drawing, **Figure 10**.



1. Stopper
2. Stopper holder
3. Washer
4. Roller A
5. Contact spring
6. Flat washer
7. Plunger holder
8. Plunger shaft
9. Plunger
10. Contact bolt
11. Case
12. Contact plate
13. Yoke
14. Coil bobbin
15. Coil
16. Return spring
17. Body

When the push button starting switch is depressed, the solenoid coil is energized and becomes an electromagnet which draws the iron core to it. When the contacts meet, the circuit is completed. When the push switch is released a return spring pulls the iron, now no longer magnetized, away from the contact to break the circuit.

Inspection

1. While the switch is still wired to the cycle, push in the handlebar switch and listen for the click of the iron core striking the coil, signifying the device is operating.

2. Check the condition of the contact points and dress them with a point file if they are pitted or burned.

IGNITION

The ignition system consists of the battery, two coils, two sets of contact breaker points, and four spark plugs.

The schematic, **Figure 11**, traces the flow of current from the battery through the primary ignition windings to the points and then to the plugs. One set of points supplies current to the No. 1 and No. 4 cylinders and the other to the No. 2 and No. 3 cylinders. There is no distributor.

This section gives instructions for removing and testing the coils, point assemblies, and spark advance mechanism.

COIL

The primary windings consist of 420 turns of copper wire around a core of laminated steel sheets, **Figure 12**. A secondary coil of 13,000 turns is wound on top of the primary.

Disassembly

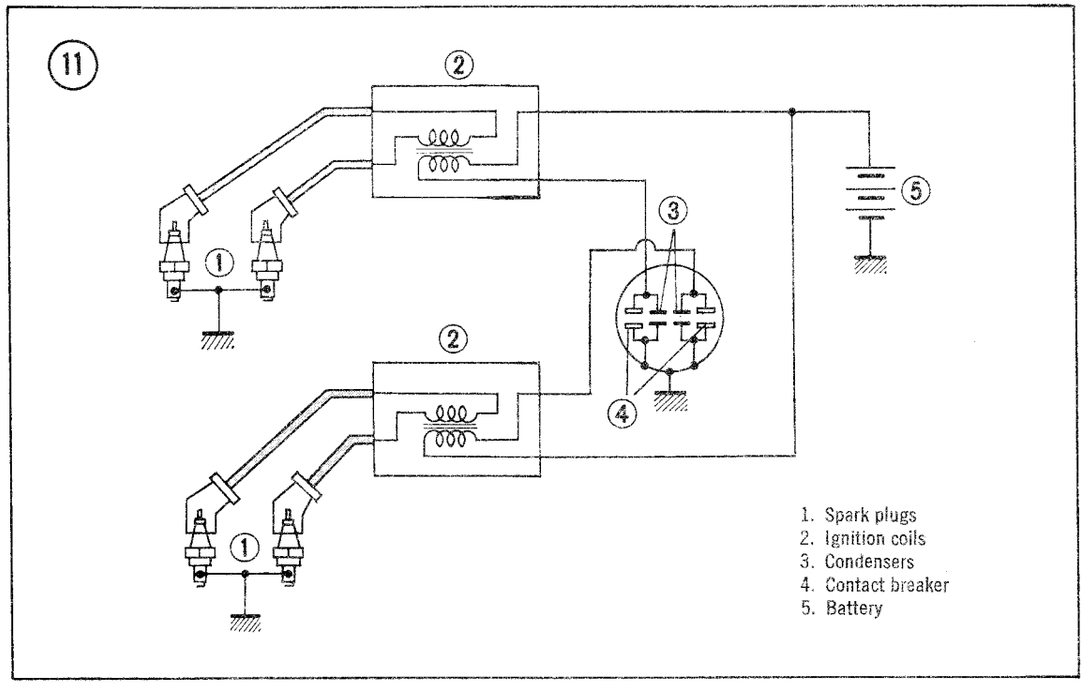
1. Raise the seat and remove the fuel tank.

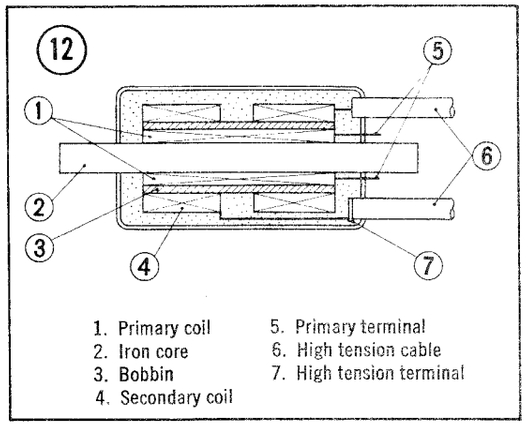
2. Disconnect the three ignition coil leads which are color-coded yellow, blue, and black/white.

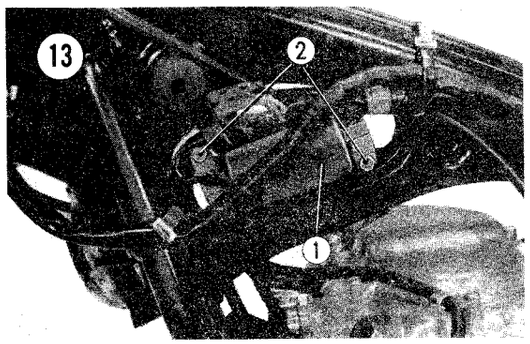
3. Unscrew the two mounting bolts, **Figure 13**, and remove the coils from the frame.

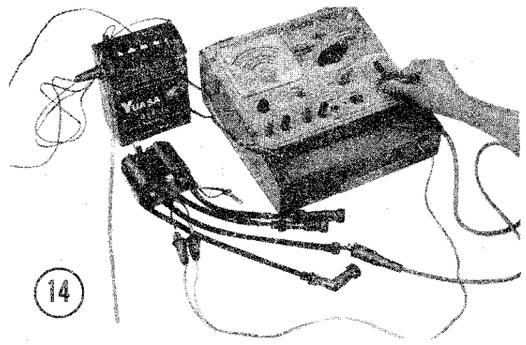
Testing

The coils must be checked out on a bench testing device like the one shown in **Figure 14**.





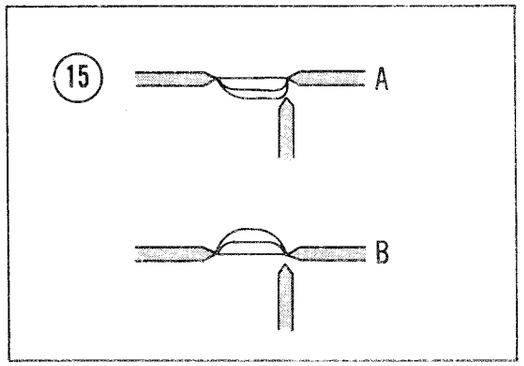




Most testers are similar to this one, on which the following instructions are based:

1. Connect the power cord to the 12-volt battery and ground the black lead to complete the circuit.
2. Plug the primary cord into the tester, and connect the other end to the primary terminal of the coil to be checked.
3. Connect the red test lead to the black terminal.
4. Connect the white lead to the yellow or blue terminal, depending on which coil is being tested.
5. Connect the red high tension cable to the secondary terminal.

6. Set the selector knob on the tester to the "coil test," or the equivalent.
7. Refer to A, **Figure 15** and adjust the three-point spark tester to the greatest distance which will maintain a spark. If the gap is more than .28 in. (7mm) the coil is serviceable.



NOTE: B, Figure 15 *shows the appearance of the spark when the test leads are attached to the coil in reverse.*

Testing Coil on the Engine

1. Don't use the external battery. Connect the tester ground lead to the frame.
2. Remove the cap from either No. 1 or No. 4 cylinder and install the special attachment to the terminal. Then connect the high voltage test lead to the attachment and reinstall the plug cap.
3. Turn on the ignition switch and turn the engine over with the kickstarter or starting motor. Note the maximum sparking distance of the coil. It should be more than .28 in. (7mm).
4. Repeat the operation using the plug from the No. 2 or No. 3 cylinders.

Reassembly

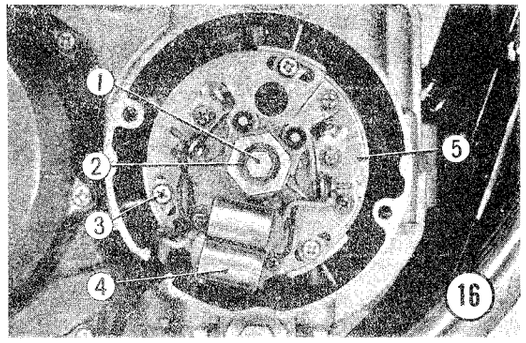
1. Mount the coils with the two bolts.
2. Connect the yellow, blue, and black/white leads to the wiring harness.
3. Install the fuel tank, being careful not to crimp the electrical leads.

BREAKER POINTS

Servicing of the points and condensers was covered in Chapter One. Removal and disassembly are outlined here.

Disassembly

1. Remove point cover.
2. Disconnect the yellow and blue leads at the junction point at the center of the frame.
3. Refer to **Figure 16** and unscrew the 6mm bolt, remove the special washer, loosen the base plate mounting screws, and lift out the unit.

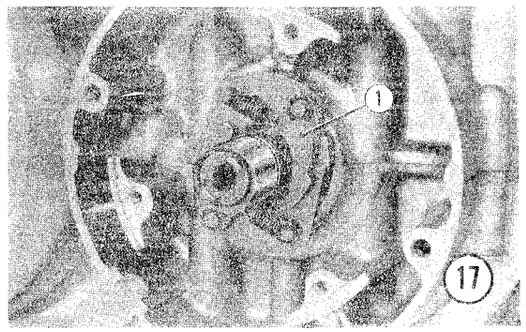


1. 6mm bolt
2. Special washer
3. Screws
4. Condensers
5. Contact breaker plate

NOTE: *Do not reassemble the breaker point unit if the spark advance mechanism is to be serviced.*

SPARK ADVANCE

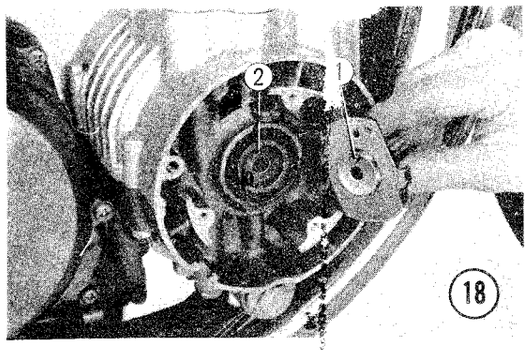
This mechanism is mounted on the crankshaft inboard of the breaker point assembly. As the engine speed increases, the device advances the point opening to cause earlier ignition. The weights, Figure 17, move outward against spring tension as the rpm increases.



1. Spark advancer

Disassembly

1. Remove the breaker point assembly as instructed in the previous section.



1. Spark advancer 2. Crankshaft

Inspection

1. Clean the advancer with solvent and make sure the weights pivot smoothly.
2. Check the tension of the springs and the wear of the shaft.

Reassembly

1. Install the advance mechanism, making sure that the dowel pin is properly aligned with the hole in the shaft.
2. Install the breaker assembly.

CHARGING SYSTEM

The generator, rectifier, voltage regulator, and a fuse comprise the charging system. The dark lines in **Figure 19** trace the two operating modes of the system, depending on the charge condition of the battery.

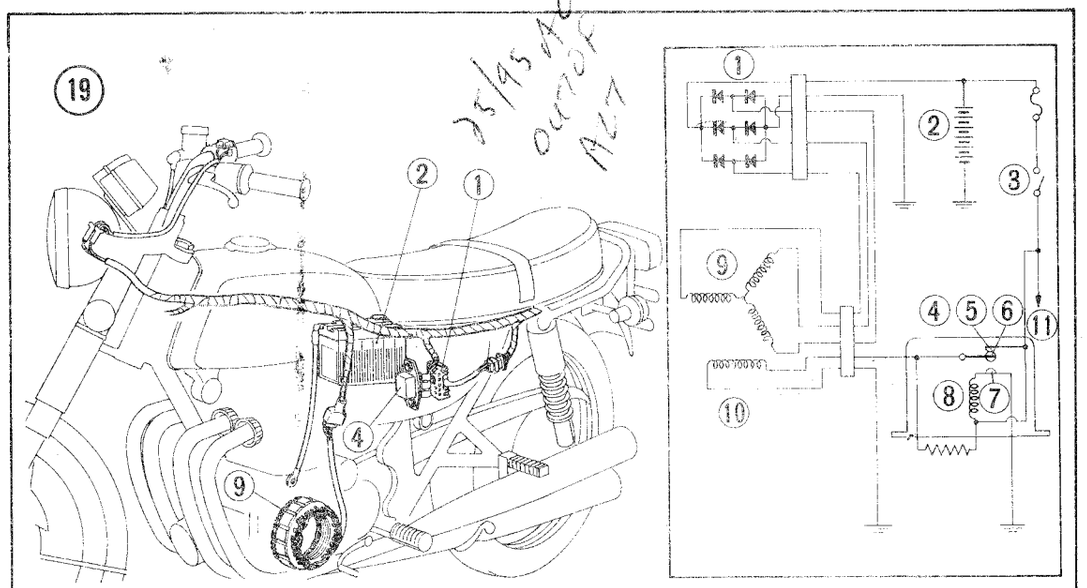
Low battery voltage: Current flows from the battery through the voltage regulator's upper contact (5) to the field coil. The high field current produces high generator output.

High battery voltage: When battery voltage exceeds 14.5 volts, a coil in the regulator pulls the armature away from the upper contact, breaking that circuit, and closes the lower contact (7). A 10 ohm resistance is incorporated in the new circuit which limits current reaching the field coil. This produces a lower generator output than in the first operating mode.

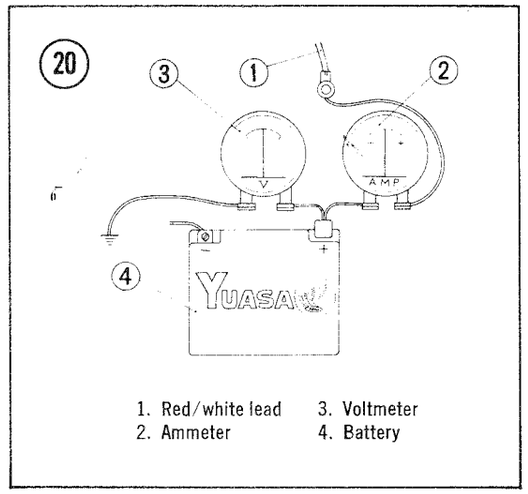
Testing Charging System

An ammeter and voltmeter are required to perform this test. Refer to the **Figure 20** schematic.

1. Battery voltage must be normal for the test. Measurement of the voltage is described in the battery section of the chapter.



1. Silicon rectifier
2. Battery
3. Main switch
4. Regulator
5. Upper contact
6. Moving contact
7. Lower contact
8. Relay coil
9. Stator coil
10. Field coil
11. Load



1. Red/white lead
2. Ammeter
3. Voltmeter
4. Battery

2. Refer to Figure 20 and disconnect the battery cable from the positive (+) terminal and connect the cable to the positive side of the ammeter.
3. Connect the minus (—) side of the ammeter to the positive battery terminal.
4. Connect the positive side of the voltmeter to the positive terminal of the battery.
5. Ground the minus side of the voltmeter.
6. Start the engine.
7. Referring to the **Figure 21** chart for the CB500 or the **Figure 22** chart for the CB350F, operate the engine at the various speeds and check the amperage and voltage against the standards for day and night riding.

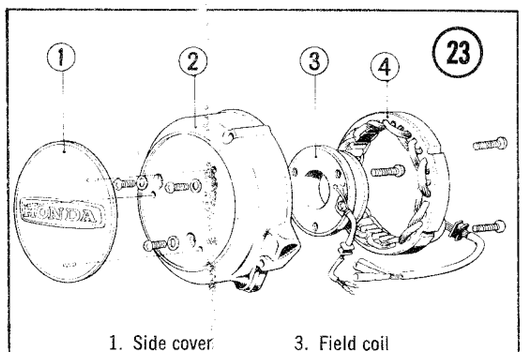
Night Riding	high headlight beam on
Day Riding	all lights off, including turn signals and stop light

8. If the measurements are below the standards on the chart—and the battery voltage is normal—the voltage regular probably requires adjusting. This is covered later in the chapter.

GENERATOR

Disassembly

1. Refer to the exploded drawing in **Figure 23** and remove the generator cover.



1. Side cover
2. Generator cover
3. Field coil
4. Stator coil

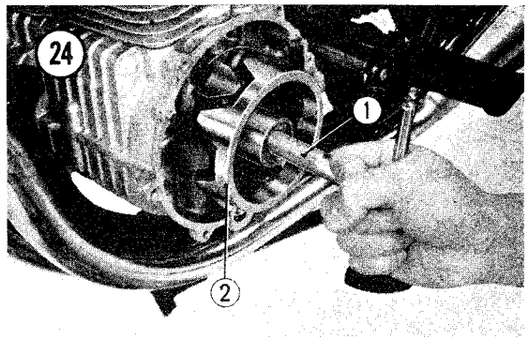
21

Charging current (A)	Engine RPM: 1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000
Day riding	6.5	0	2.4	1.3	1.0	1.0	0.8	0.6
Night riding	2.3	1	1	1	1	1	1	1
Battery terminal voltage (v)	12	12.4	13.2	14.5	14.5	14.5	14.5	14.5

22

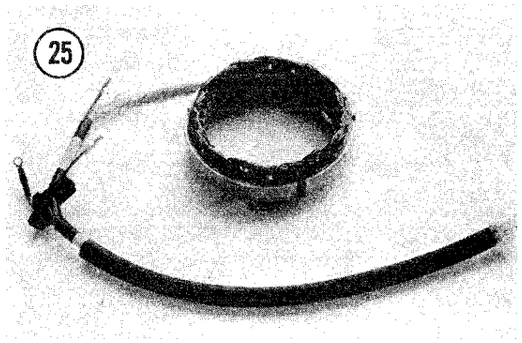
Charging current (amperes)	Engine RPM: 1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000
Nighttime riding	1.6	1.9	2.0	1.8	1.6	1.5	1.4	1.4
Daytime riding	—	—	4	2.6	2.0	1.6	1.4	1.4
Battery terminal voltage (volts)	12.5	14.2	15	15	15	15	15	15

2. Remove the rotor, **Figure 24**. A special puller tool is used in this operation.

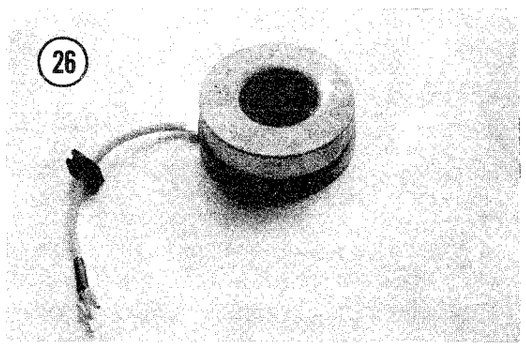


1. Rotor puller 2. Rotor

3. Remove the stator coil, **Figure 25**, from inside the generator cover by removing the three 6mm screws.



4. Remove the field coil, **Figure 26**, from the outside of the generator cover by removing the three 6mm screws.



Generator Testing

A test meter is required for the following checks of the continunity of the coils.

1. Hook up the tester to the field coil and check the continuity between the white and green leads. The standard resistance is:

CB500	4.9 ohms (plus or minus 10 per cent)
CB350F	4.6 ohms to 5.0 ohms

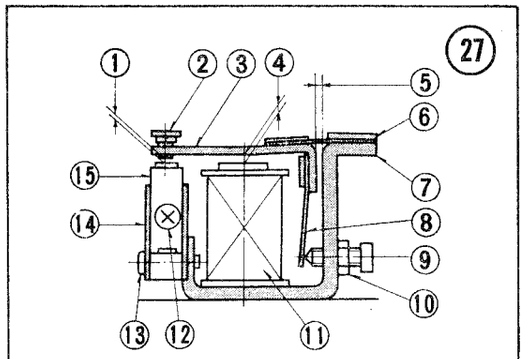
2. Check the continuity of the stator coil between the three leads. The standard resistance is:

CB500	.35 ohms (plus or minus 10 per cent)
CB350F	.61 ohms to .69 ohms

VOLTAGE REGULATOR

The voltage regulator should be adjusted if the charging system does not check out according to the chart values given in this chapter.

Figure 27 shows the major parts of the CB500 regulator.



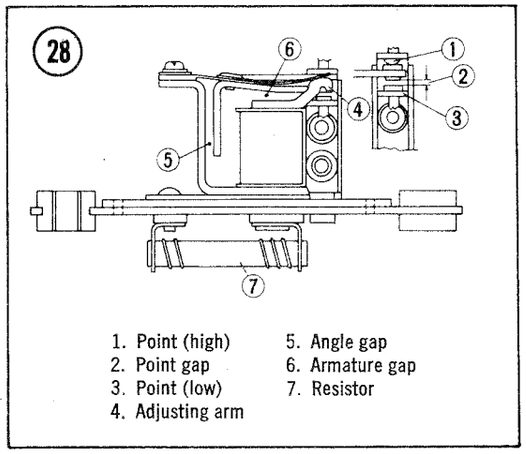
1. Point gap
2. Upper contact
3. Armature
4. Core gap
5. Yoke gap
6. Spring
7. Yoke
8. Adjusting spring
9. Voltage adjusting screw
10. Lock nut
11. Coil
12. Point gap adjusting screw
13. Core gap adjusting screw
14. Contact set
15. Lower contact

Figure 28 shows the major parts of the CB350F regulator.

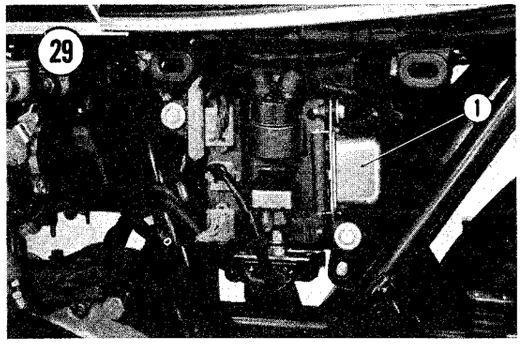
Disassembly

1. CB500. **Figure 29** shows the location of the regulator. Disconnect the leads at the junction and detach the unit by unscrewing the two 6mm mounting bolts.

2. Remove the regulator cover by loosening the two screws.



1. Point (high)
2. Point gap
3. Point (low)
4. Adjusting arm
5. Angle gap
6. Armature gap
7. Resistor



1. Regulator

Inspection and Adjustment

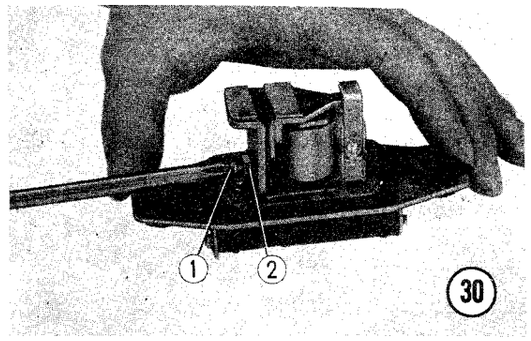
A correctly adjusted regulator should have an output of from 14 to 15 volts at 5,000 rpm with no load.

CB500

1. When the low speed contact is broken as the engine speed is increased there should be a .5 volt rise in the output.

2. Measure the output with a voltmeter:
   —If the output is too low or too high, the voltage must be adjusted (Step 1 below).
   —If the voltage increase is more than .5 volts when the circuit shifts from low to high, or if there is a drop, the core gap must be adjusted (Step 2 below).

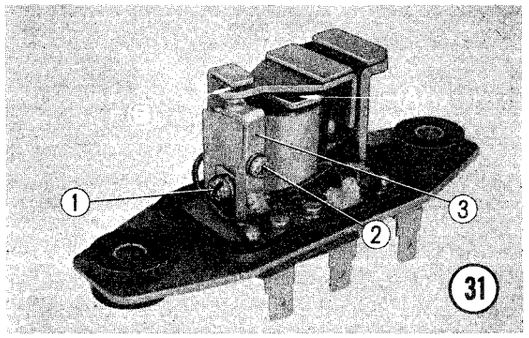
3. Refer to **Figure 30** for details of the voltage adjusting screw. Loosen the lock nut to free the screw.



1. Voltage adjusting screw 2. Lock nut

   —Turn adjusting screw clockwise to increase low charging current or low battery voltage.
   —Turn screw counterclockwise to decrease high charging current or excessively high battery voltage.

4. The core gap, **Figure 31**, should be between .02 in. and .4 in. (.6mm and 1mm). Check the gap, with a feeler gauge. To adjust, loosen the adjusting screw and move the point body up or down. Clean the contacts with a point file.



A. Core gap
B. Point gap
1. Core gap adjusting screw
2. Point gap adjusting screw
3. Lower point

5. The point gap, Figure 31, should be .008 in. (.2mm). Adjust by loosening the adjusting screw and moving the lower point up or down.

CB350F

1. Connect an ammeter to the field circuit of the charging system.

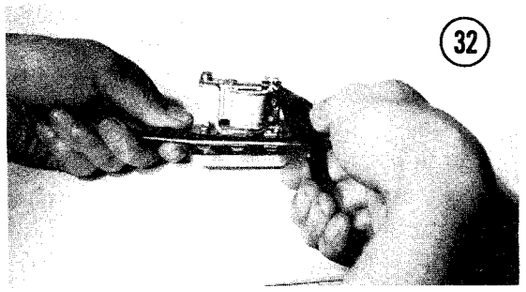
2. Gradually increase engine rpm until the maximum reading is obtained.

3. Continue to increase engine rpm until the field current drops to one-half of the maximum

current measured in Step 2. Measure the battery voltage.

4. Increase engine speed further to 4,000 rpm and measure the battery voltage again.

5. If the battery voltage readings are not in agreement with the Figure 22 chart, adjust the regulator by bending the adjusting arm, **Figure 32**. The main switch should be turned off.



6. If the adjusting arm correction is insufficient, adjust the gaps by bending the holder if the distances vary from the following minimum specifications:

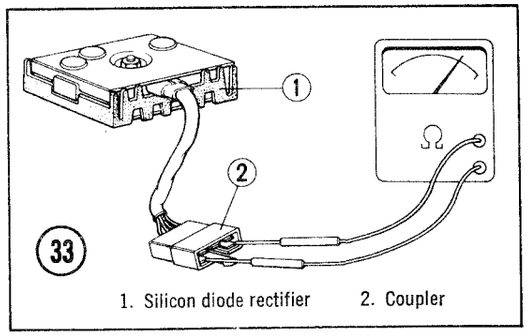
Armature Gap	.012 in. (.3mm)
Point Gap	.017 in. (.45mm)
Angle Gap	.008 in. (.2mm)

SILICON RECTIFIER

Testing

The rectifier can be damaged by surges of high voltage.

1. Test the continuity of the rectifier in both normal and reverse directions as shown in **Figure 33**. Use an ohmmeter or other continuity tester with no more than 12 volts.



—The rectifier is in good condition if the test shows continuity in the normal direction only.

—The rectifier is defective if the test shows continuity in both directions.

BATTERY

The 12-volt, 12-amp hour battery is the heart of the electrical system. The electrolyte level should be checked regularly, especially in hot weather.

Disassembly

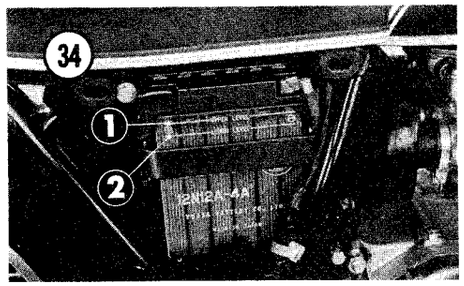
1. Remove the retaining strap. Disconnect the ground, or negative (—) cable first, then the positive (+) cable.

2. Lift the battery from the mounting, noting the location of the terminal covers, mounting pads, and vent tube for reinstallation later.

Inspection and Testing

1. Corrosion on the battery terminals causes leakage of current. Clean them with a wire brush or a solution of baking soda and water.

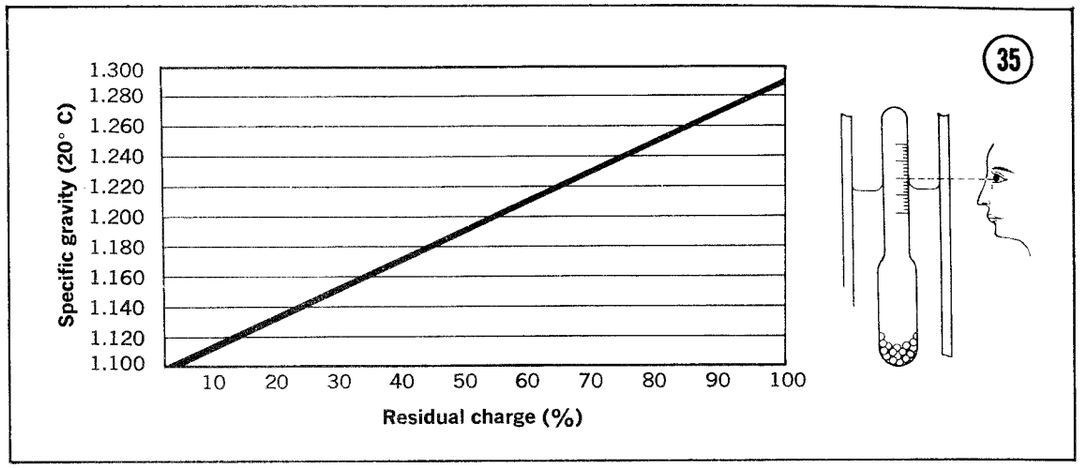
2. The electrolyte level should be between the upper and lower marks, **Figure 34**. Top up the low cells with distilled water only.



3. Measure the specific gravity of the electrolyte with a bulb hydrometer, reading it as shown in **Figure 35**. Generally, the S.G. should be between 1.26 and 1.28. If the value is less than 1.189 at 20 degrees centigrade (68° F), the battery is in poor condition and should be charged. Figure 35 shows the relationship between specific gravity and residual battery capacity.

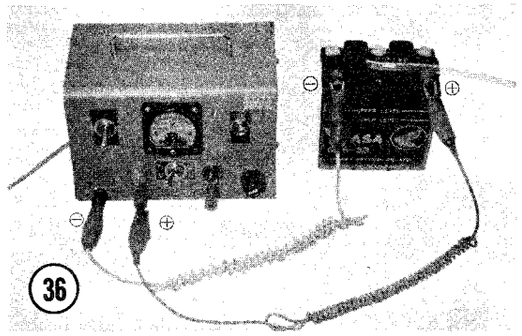
Charging

A "trickle" charger is recommended for restoring a low voltage battery to normal. Most such inexpensive chargers have outputs ranging from 2 to 6 amps.



The so-called "quick" chargers found at gas stations drastically shorten battery life by overheating.

1. **Figure 36** shows the connection of a charger. Note that the positive lead is clipped to the positive terminal and the negative lead to the corresponding terminal. Remember, "positive to positive and negative to negative" or damage will result.



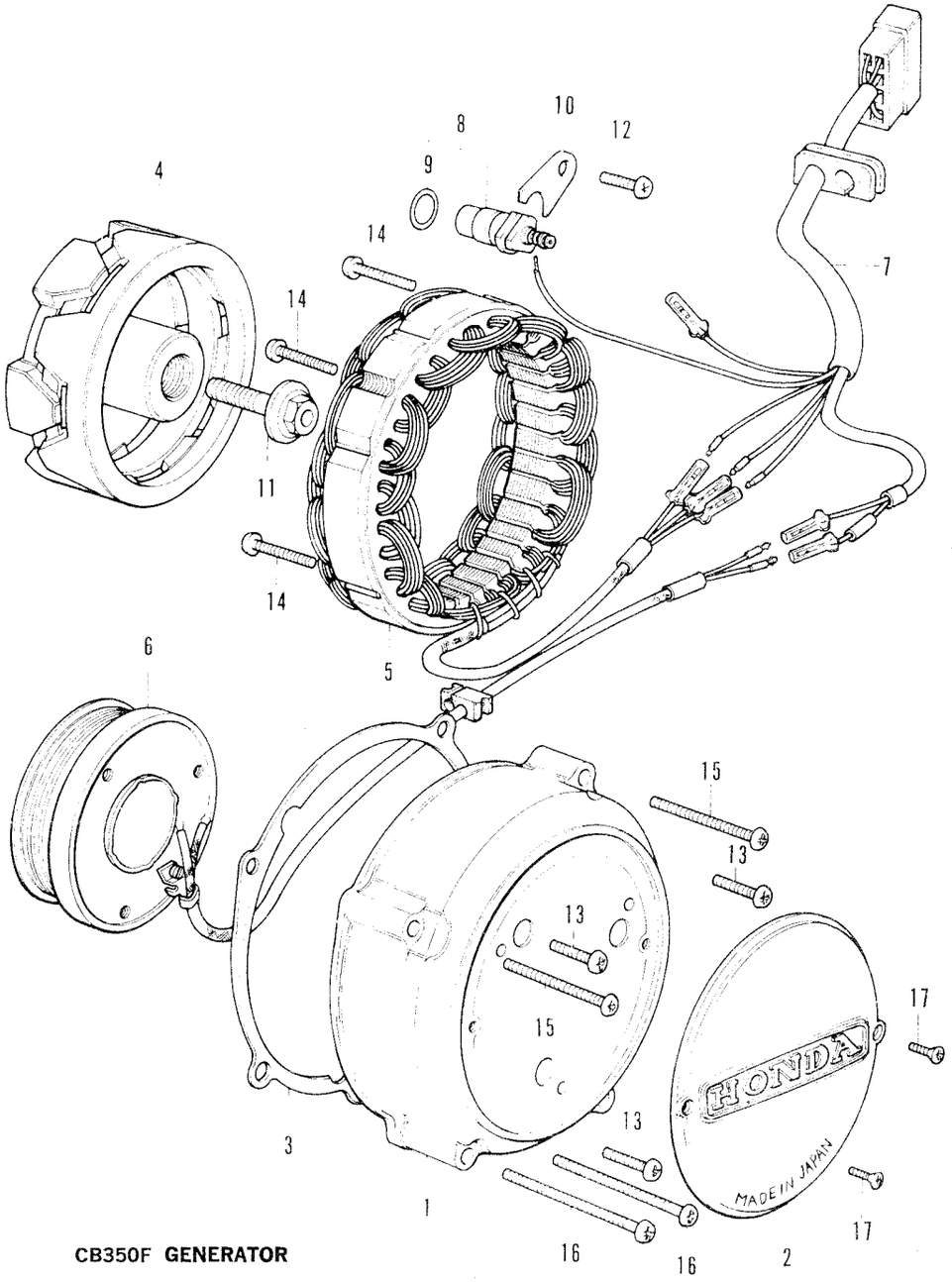
2. The electrolyte will begin bubbling, signifying that explosive hydrogen gas is being released. Make sure the area is adequately ventilated and there are no open flames.

3. It will take several hours to bring the battery to a full charge. Test the electrolyte periodically with a hydrometer to see if the specific gravity is within the standard range of 1.26 to 1.28. If the reading remains constant for over an hour's time, the battery is charged.

Reassembly

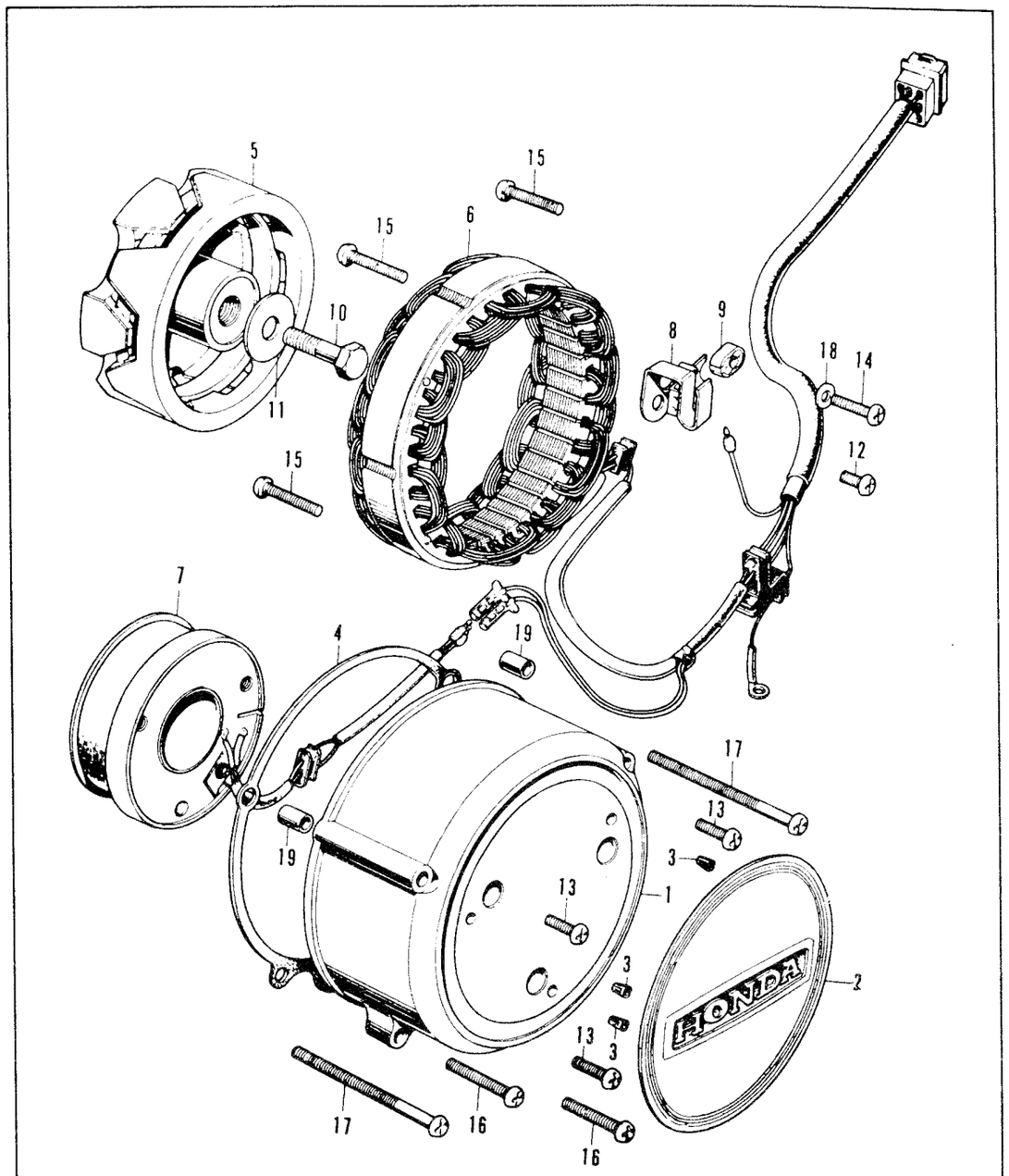
1. Make sure the battery terminals, cable clamps, and case are free of corrosion. Silicon spray can be applied to the terminals to retard the process.

2. When replacing the battery, be careful to route the vent tube so that it is not crimped. Connect the positive terminal first, then the negative one. Don't overtighten the clamps.



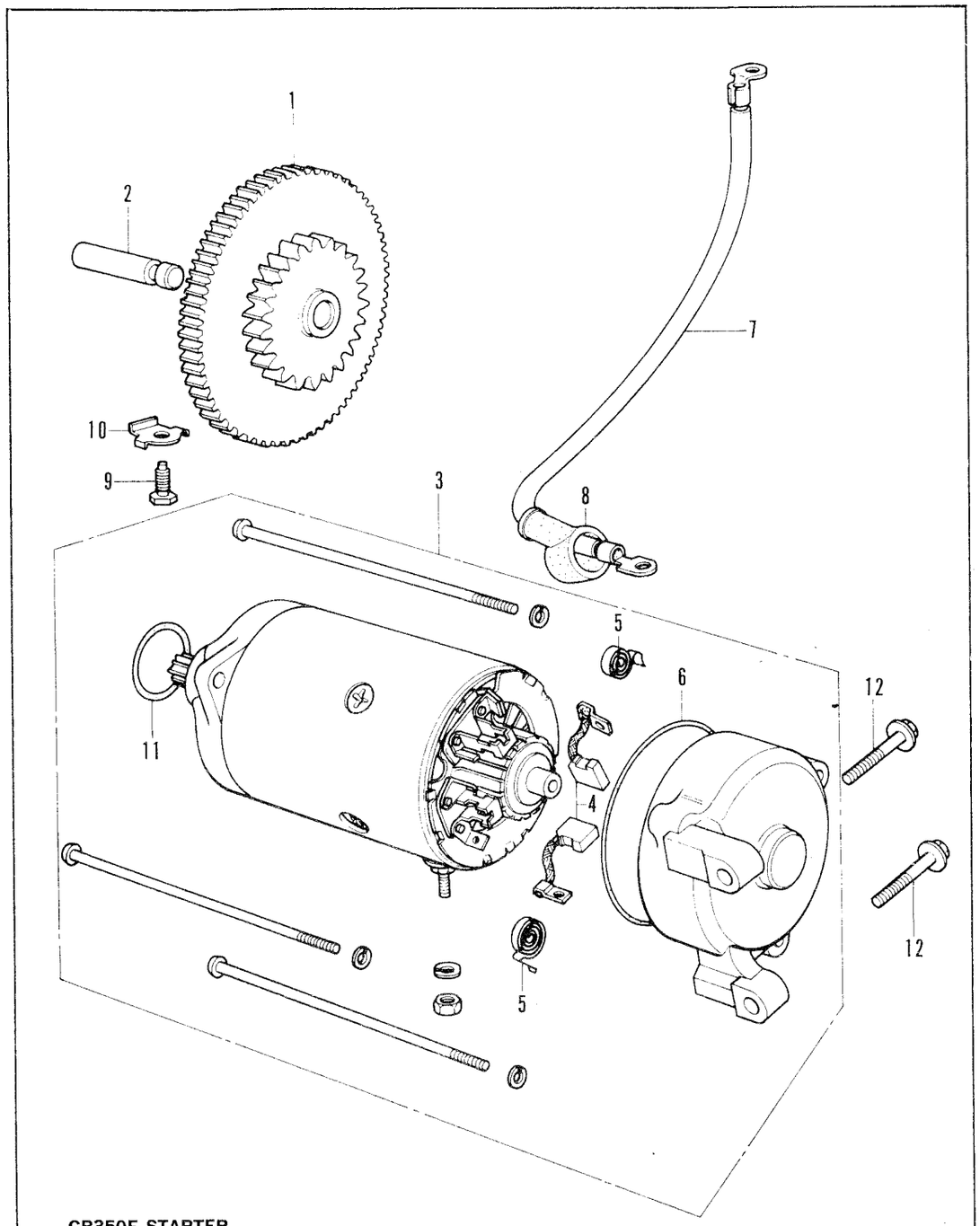
CB350F GENERATOR

1. Cover A
2. Cover B
3. Cover packing
4. Rotor
5. Stator
6. Field coil
7. Wire harness
8. Neutral switch
9. O-ring
10. Neutral switch fixing plate
11. Hex bolt
12. Pan screw
13. Pan screw
14. Pan screw
15. Pan screw
16. Pan screw
17. Oval screw



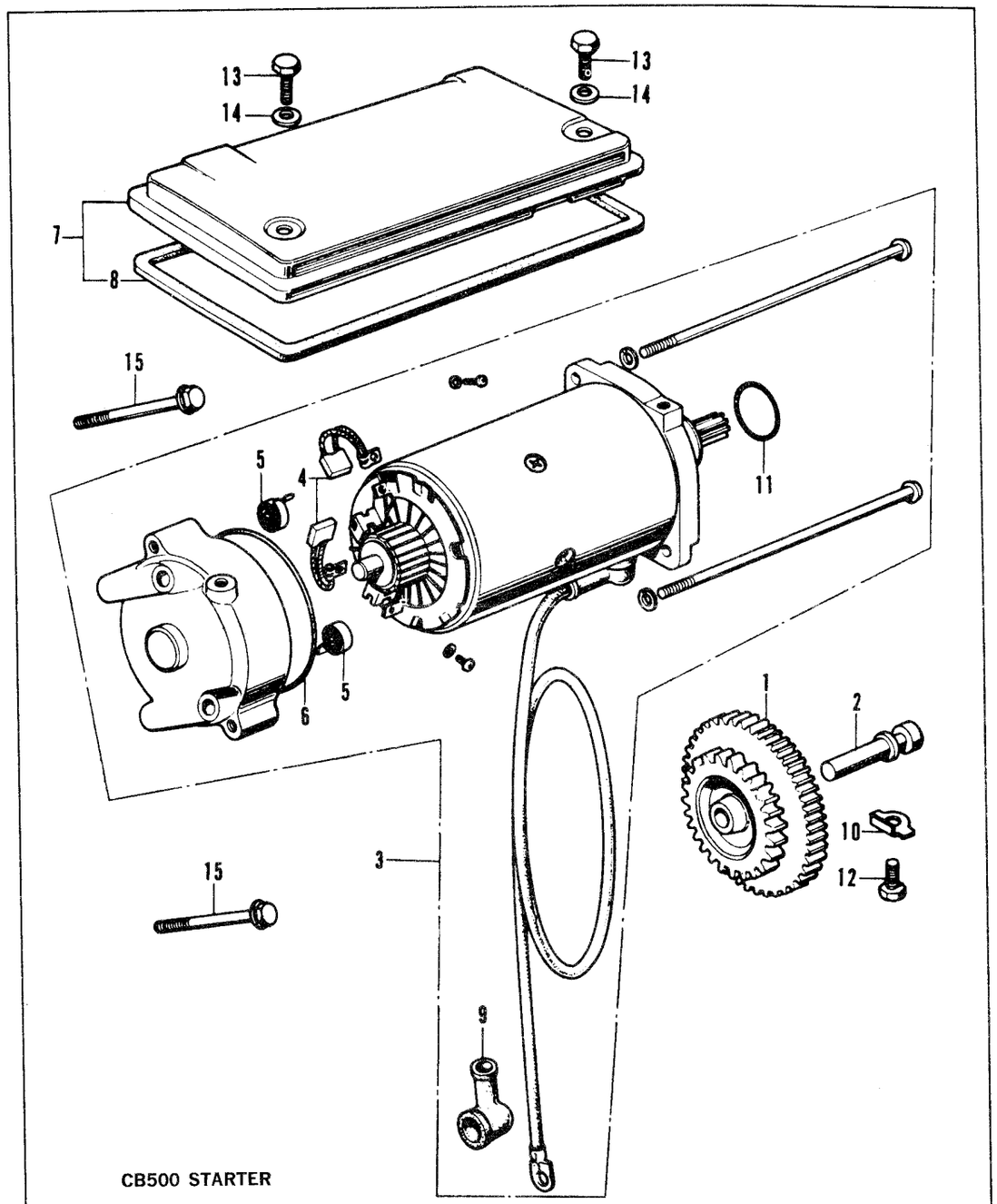
CB500 ALTERNATOR

1. Cover A
2. Cover B
3. Push on clip
4. Packing
5. Rotor
6. Stator
7. Field coil
8. Neutral switch stator
9. Neutral switch rotor
10. Hex nut
11. Washer
12. Pan screw
13. Pan screw
14. Pan screw
15. Pan screw
16. Pan screw
17. Pan screw
18. Plain washer
19. Dowel pin



CB350F STARTER

1. Starter reduction gear
2. Reduction gear shaft
3. Starting motor
4. Carbon brush set
5. Carbon brush spring
6. O-ring
7. Starter cable
8. Starter terminal cover
9. Stopper bolt
10. Lockwasher
11. O-ring
12. Flange bolt



CB500 STARTER

1. Starter reduction gear
2. Starter reduction gear shaft
3. Starter
4. Brush spring
5. Carbon brush
6. O-ring
7. Starter cover
8. Starter packing
9. Starter terminal cover
10. Lockwasher
11. O-ring
12. Hex bolt
13. Hex bolt
14. Plain washer
15. Flange bolt

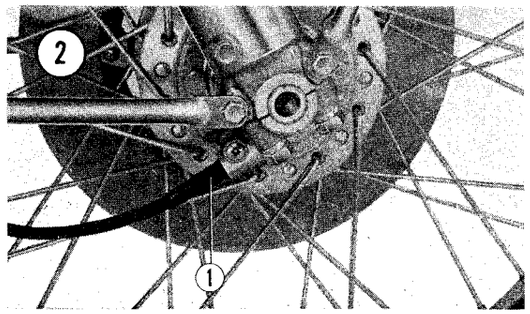
CHAPTER SIX

FRONT WHEEL AND BRAKE

Refer to **Figure 1** (next page) for details of the front wheel assembly.

Front Wheel Removal

1. Raise the front wheel clear of the ground by placing a block under the engine.
2. Refer to **Figure 2** and disconnect the speedometer cable at the hub.

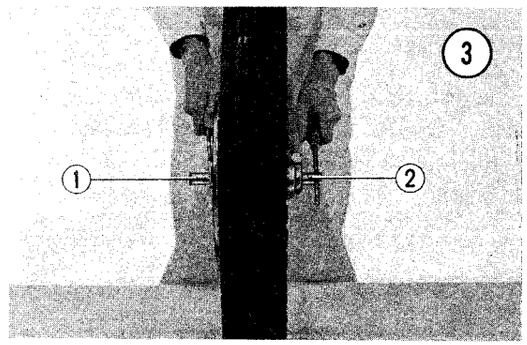


1. Speedometer cable

3. Loosen the axle holding nuts and remove the wheel from the fork.

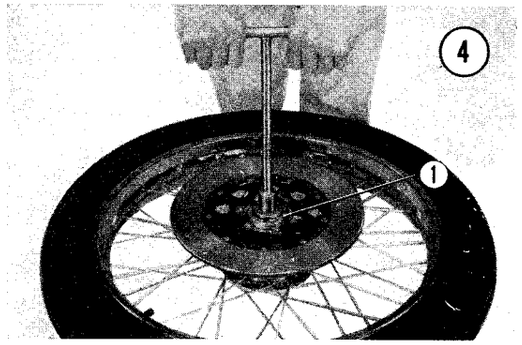
> NOTE: *Do not work the brake lever when the wheel is off the frame. The caliper piston will pop out of the cylinder.*

4. Unscrew the axle nut, **Figure 3**, and remove the axle.

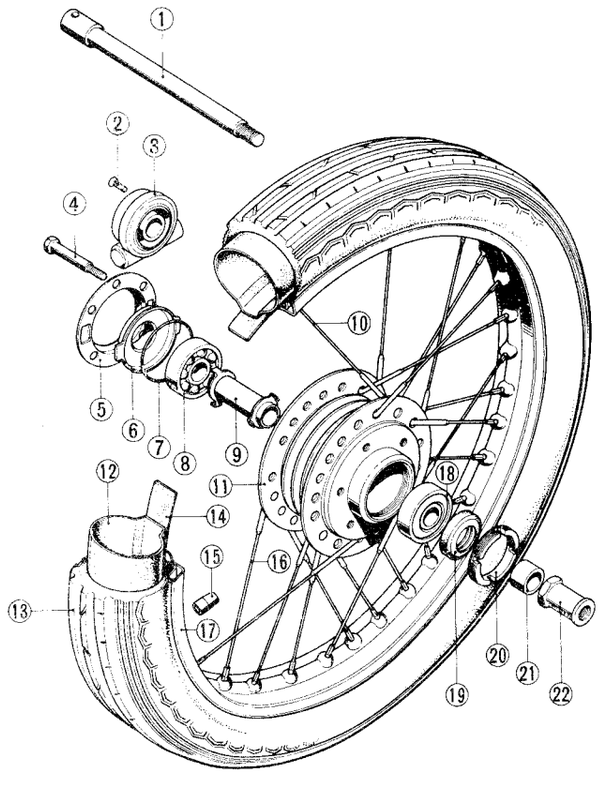


1. Front axle nut 2. Front axle

5. Refer to **Figure 4**, and remove the bearing retainer from the hub. Extract the dust seal from the retainer.

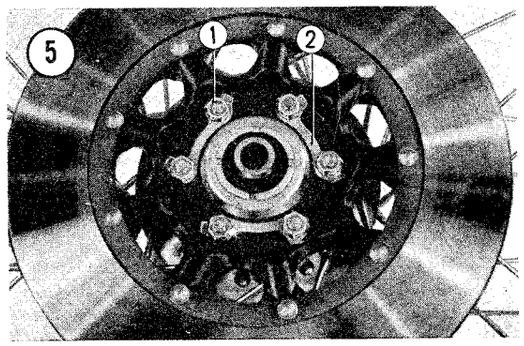


1. Front wheel bearing retainer



1. Axle shaft
2. 5 x 15mm oval screw
3. Speedometer gear box
4. 8 x 102mm bolt
5. Gear box retainer cover
6. Gear box retainer
7. O-ring
8. 6302 R ball bearing
9. Front axle distance collar
10. Front spoke B
11. Front wheel hub
12. Front wheel tube
13. Front wheel tire
14. Front tire flap
15. Wheel balancer
16. Front spoke A
17. Front wheel rim
18. 6302 R ball bearing
19. 22368 dust seal
20. Front wheel bearing retainer
21. Front wheel collar
22. Front wheel axle nut

6. Refer to **Figure 5** and straighten the tongues on the washers; then unscrew the mounting bolts. Remove the brake disc.

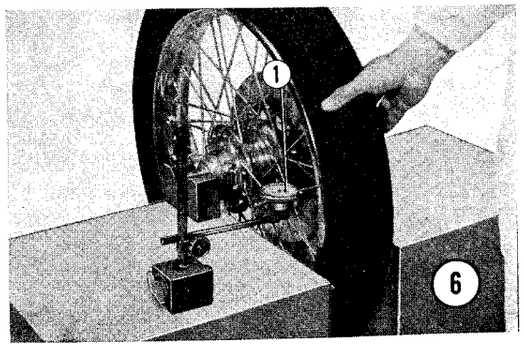


1. Disc mounting nuts 2. Tongued washers

7. Remove the speedometer gearbox and the retainer cover from the other side of the hub.
8. Remove the wheel bearing.

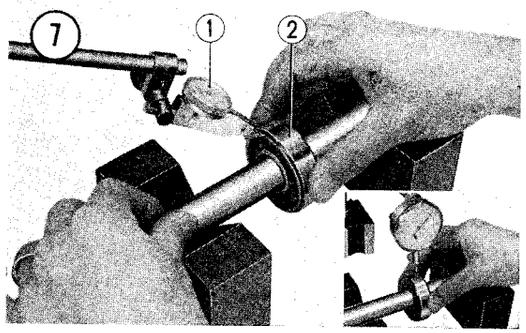
Front Wheel Inspection

1. Measure the wobble and runout of the wheel rim with a dial gauge as shown in **Figure 6**. The standard value for both wobble and runout is .02 in. (.5mm). The maximum permissible limit is .08 in. (2mm).



1. Dial gauge

2. Refer to **Figure 7** and measure the axial and radial runout of the wheel bearing with the dial gauge. Replace the bearing if the axial value is more than .004 in. (.1mm) or the radial value is more than .002 in. (.05mm).



1. Dial gauge 2. Ball bearing

3. Straighten or replace any bent or loose spokes. Adjustment of spoke tension is best left to an expert.

Front Brake

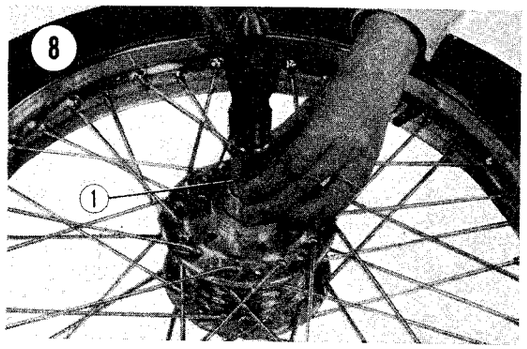
Do not remount the wheel if the front brake is to be serviced. The operation is covered later in the chapter.

Front Tire

Removal and replacement of the front tire is covered later in the chapter. The wheel must be off the motorcycle for this operation.

Front Wheel Installation

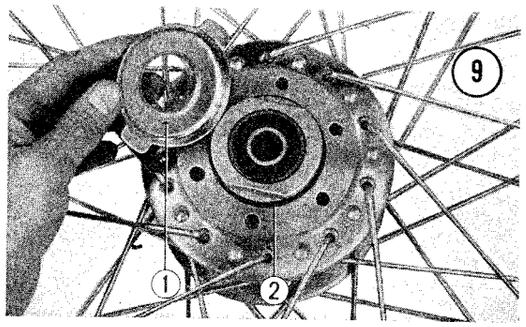
1. Refer to **Figure 8** and use a driver to install the wheel bearing.



1. Bearing driver

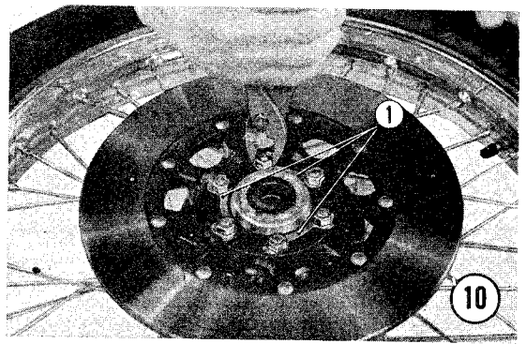
2. Mount the dust seal on the bearing retainer and then install the unit into the hub with the O-ring.

3. Align the gearbox retainer with the corresponding flat cutouts on the bearing retainer and install as shown in **Figure 9**.



1. Gear box retainer 2. O-ring

4. Install the brake disc with the mounting bolts and nuts, using new tongued washers. Torque to 13 ft.-lbs. to 16.6 ft.-lbs. (1.8kg-m to 2.3kg-m). Then bend the washer tabs, as in **Figure 10**, so they will lock the nuts in place.



1. Tongued washers

5. The gearbox should be installed on the opposite side of the disc. Then insert the axle through the gearbox into the hub.

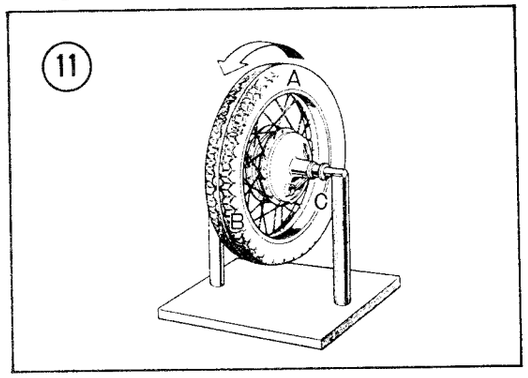
6. Install the axle holders and tighten the nuts, first on the brake disc side and then on the other.

7. Before mounting the wheel on the fork, it should be balanced according to the instructions in the following section.

Wheel Balancing

These instructions cover static balancing. A special machine is required for dynamic balancing.

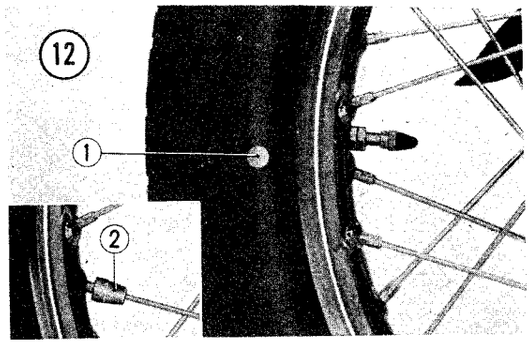
1. Mount the wheel on a fixture such as the one in **Figure 11** so it can rotate freely.



2. Give the wheel a spin and let it coast to a stop. Mark the tire at the lowest point.

3. Spin the wheel several more times. If the wheel keeps coming to a rest at the same point it is out of balance.

4. Attach a weight to the upper—or light—side of the wheel at the spoke, **Figure 12**. Weights



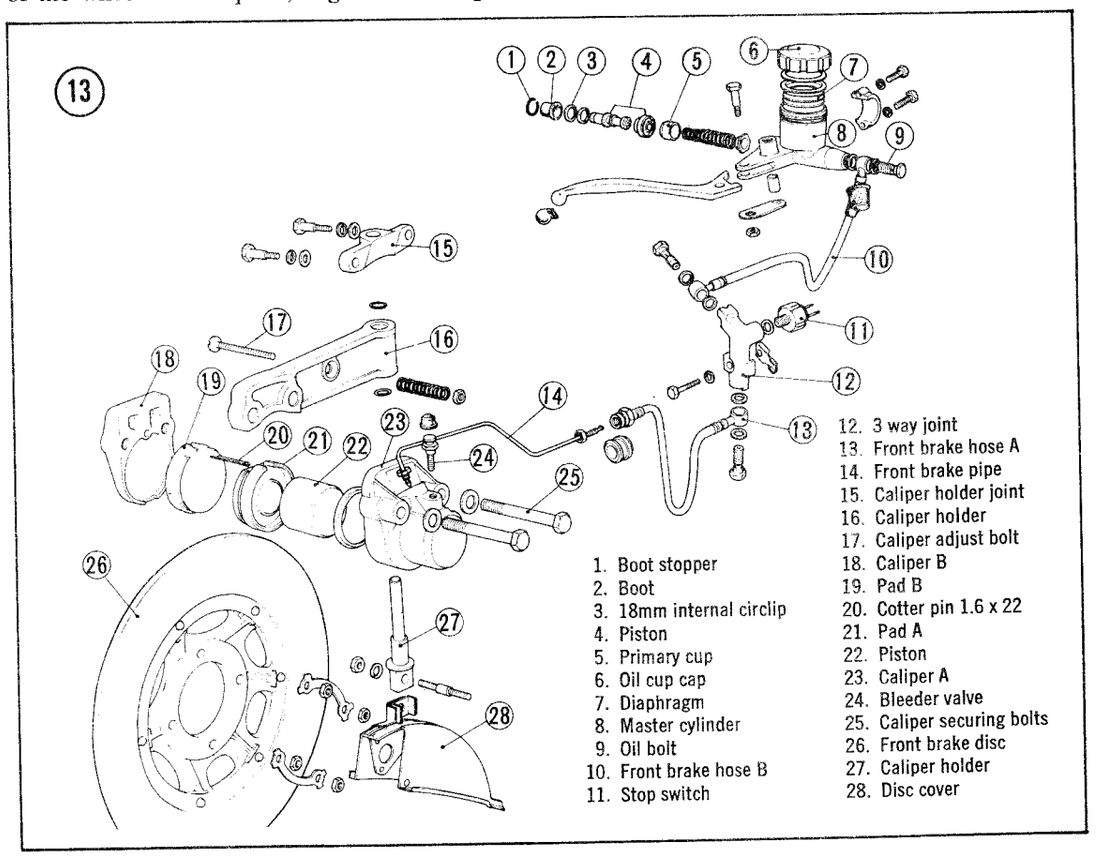
1. Balance marking 2. Balance weight

are available in four sizes: 5, 10, 15, and 20 grams.

5. Experiment with different weights until the wheel, when spun, comes to rest at a different position each time.

Front Disc Brake

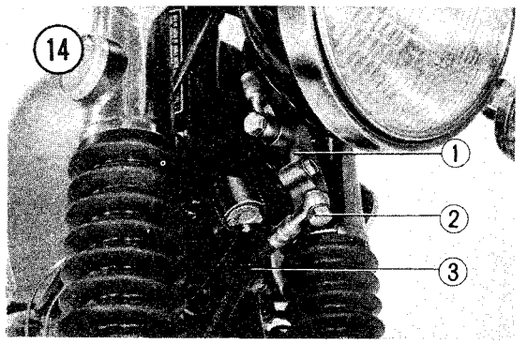
Figure 13 shows the elements of the front brake system.



Disassembly

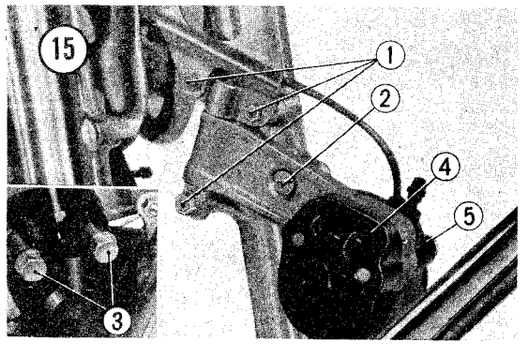
1. Remove the front wheel according to the instructions in the first part of this chapter. Drain the brake fluid from the sytem.

2. Disconnect the brake hose, **Figure 14**, by unscrewing the oil joint bolt.



1. Oil joint 2. Oil joint bolt 3. Brake hose

3. Refer to **Figure 15** for details of the caliper assembly. Remove the three mounting bolts, the adjusting bolt, and the two set bolts. Then separate the two calipers.

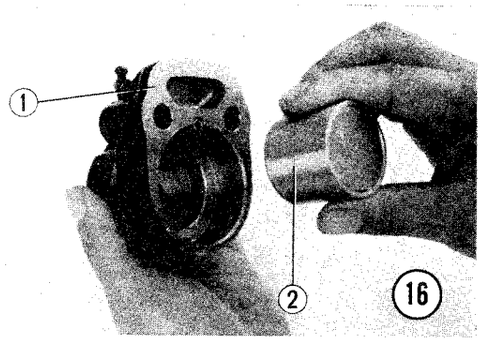


1. Caliper mounting bolts
2. Caliper adjusting bolt
3. Caliper set bolts
4. Caliper B
5. Caliper A

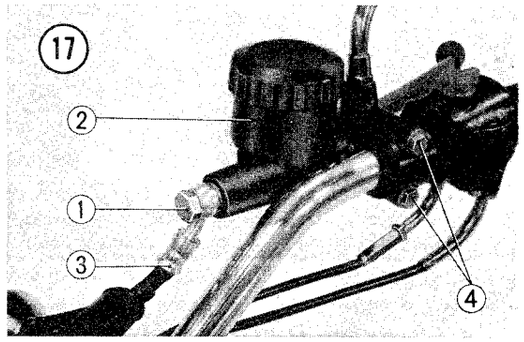
4. Remove the pistons from the two calipers, **Figure 16**.

5. Refer to the views of the master cylinder in **Figures 17 and 18**. In order, remove the joint bolt, brake hose, mounting bolts, and master cylinder unit.

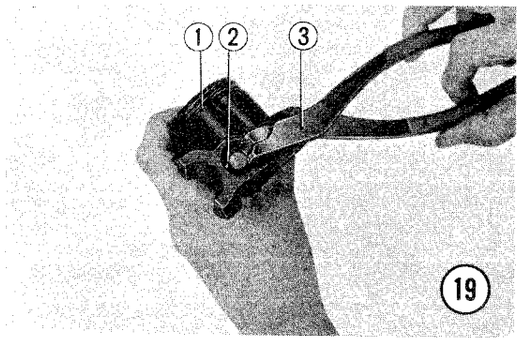
6. To disassemble the master cylinder, refer to **Figure 19** and also the exploded view and remove the snap rings, the 10.5mm washer, piston, secondary cup, spring, and check valve.



1. Caliper A 2. Piston



1. Joint bolt
2. Master cylinder unit
3. Brake hose
4. Master cylinder mounting bolts

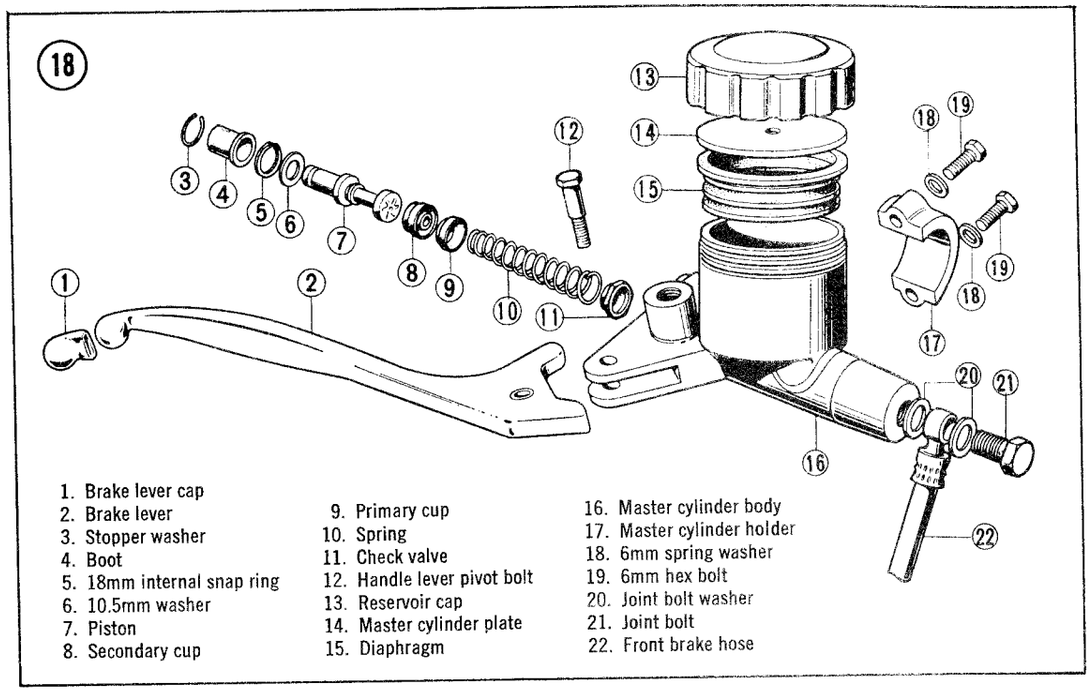


1. Master cylinder body
2. Snap ring
3. Special pliers

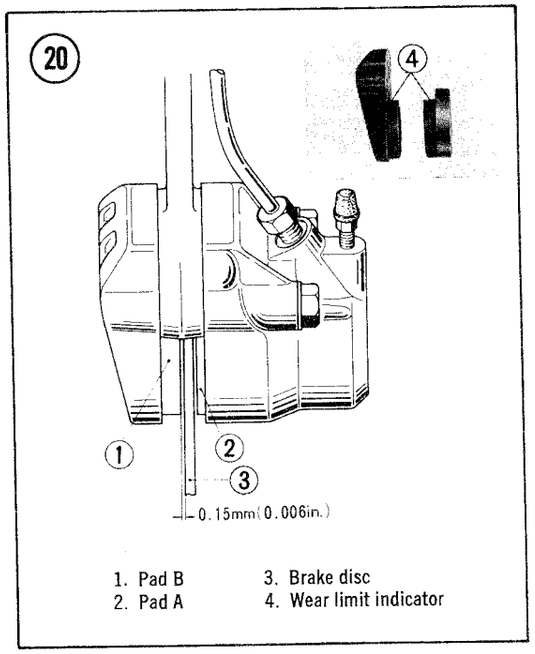
Inspection

1. Red grooves in both pads, **Figure 20** inset, mark the wear limit. When the pad is worn down to the red groove it should be replaced.

2. Measure the inner diameter of the caliper cylinder with a dial gauge, **Figure 21**, and the outer diameter of the piston with a micrometer. Compute the clearance by subtraction. If the difference is greater than .004 in. (.1mm), the parts should be replaced.



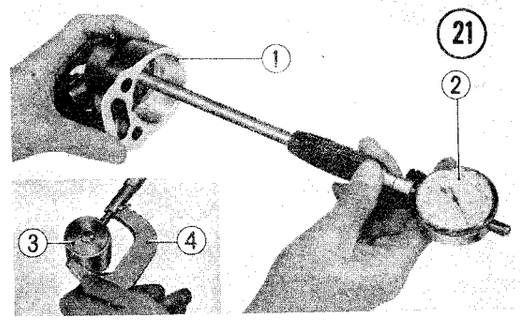
1. Brake lever cap
2. Brake lever
3. Stopper washer
4. Boot
5. 18mm internal snap ring
6. 10.5mm washer
7. Piston
8. Secondary cup
9. Primary cup
10. Spring
11. Check valve
12. Handle lever pivot bolt
13. Reservoir cap
14. Master cylinder plate
15. Diaphragm
16. Master cylinder body
17. Master cylinder holder
18. 6mm spring washer
19. 6mm hex bolt
20. Joint bolt washer
21. Joint bolt
22. Front brake hose



1. Pad B
2. Pad A
3. Brake disc
4. Wear limit indicator

3. Take the same measurements of the master cylinder and its piston, **Figure 22**. Replace if the clearance is more than .004 in. (.1mm).

4. Check the caliper piston seal and the brake hose for damage and replace if required.



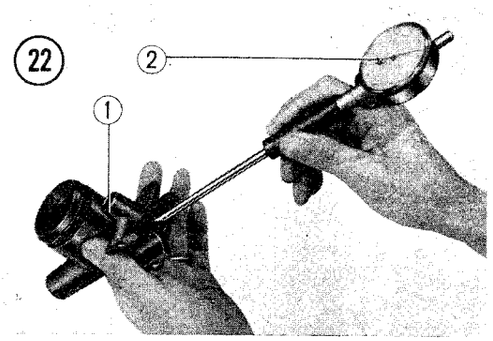
1. Caliper cylinder
2. Cylinder gauge
3. Piston
4. Micrometer

5. Check the flatness of the brake disc with a dial gauge as shown in **Figure 23** with the disc lying on a perfectly flat surface. If the disc is distorted by more than .012 in. (.3mm) the disc should be replaced.

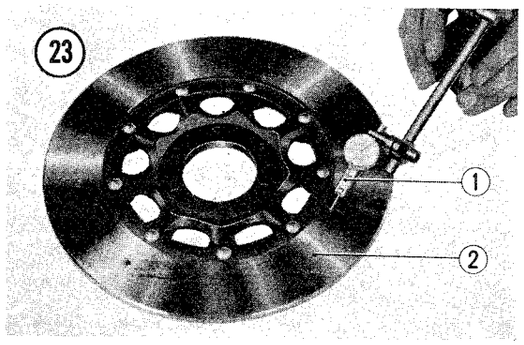
Front Brake Assembly

Parts should be absolutely clean. Assemble in reverse order of disassembly, noting the following:

1. Before mounting the pads, apply a small amount of silicon sealing grease—not molybdenum brake grease—to the sliding surfaces of the calipers. Do not get any on the pad surfaces.



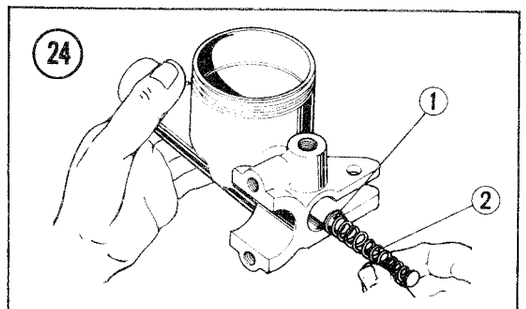
1. Master cylinder 2. Cylinder gauge



1. Dial gauge 2. Front brake disc

2. Coat the inside of the master cylinder with brake fluid.

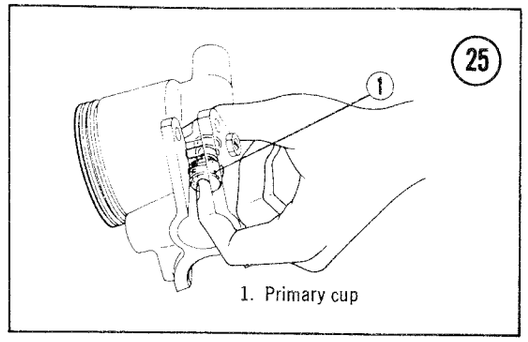
3. Refer to **Figure 24** and install the check valve with its return spring.



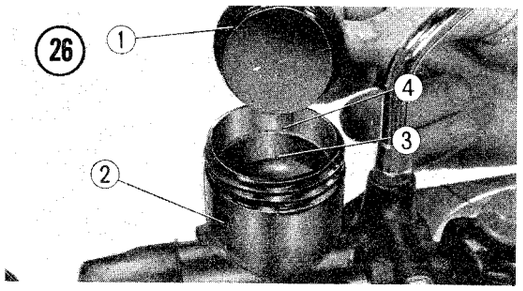
1. Check valve 2. Return spring

4. Coat the primary cup with brake fluid and install as shown in **Figure 25**.

5. Replenish brake fluid, **Figure 26**, using only fresh, heavy duty fluid. Painted surfaces will be permanently etched if the corrosive brake fluid is spilled on them.



1. Primary cup



1. Diaphragm 3. Brake fluid
2. Master cylinder 4. Level line

Bleeding Front Brake System

Air should be bled off from the brake system after it has been serviced or whenever the travel of the brake lever increases markedly or if the action is spongy.

The bleeding operation itself is best performed by two persons, one pumping the brake lever and the other monitoring the bleed valve.

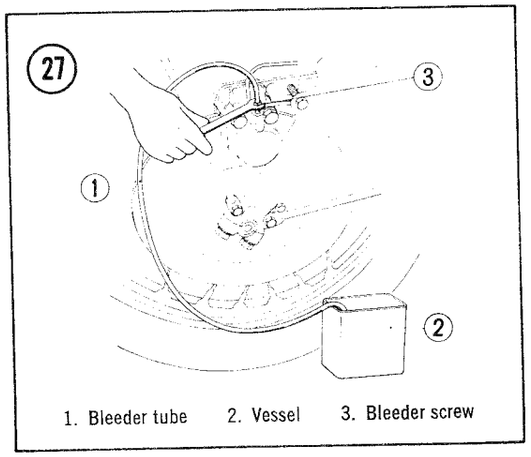
1. Remove the cap and diaphram from the master cylinder reservoir and fill with brake fluid.

2. Attach a tube to the bleeder valve, **Figure 27**, and immerse the other end in a cup of brake fluid. This is to prevent suction of air back into the system.

3. Open the bleeder valve one-half turn, squeeze the brake lever until it bottoms, close the bleeder valve, then release the brake lever. Then top up the reservoir with brake fluid if necessary. No air should enter the system from either end.

4. Repeat the bleeding steps until no air bubbles issue from the tip of the hose.

5. Replace the master cylinder reservoir cap and diaphram and squeeze the brake lever several times. Check for seepage.

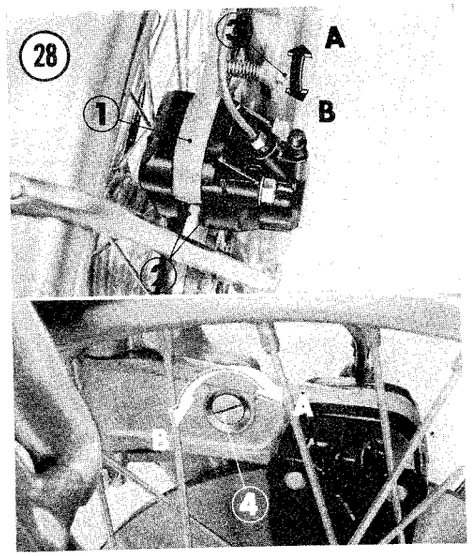


1. Bleeder tube 2. Vessel 3. Bleeder screw

Front Brake Adjustment

1. Prop the bike so the front wheel is clear of the ground.

2. Refer to **Figure 28** and loosen the stopper bolt lock nut.



1. Brake caliper 2. Brake pads
3. Stopper bolt lock nut 4. Stopper bolt

3. With a screwdriver, turn the stopper bolt clockwise until the brake pad touches the disc. The wheel should drag slightly when it is turned.

4. Rotate the wheel and slowly back off the stopper bolt counterclockwise until the wheel turns freely without drag.

5. Backen off the bolt one-half turn more and tighten down the lock nut.

Tire Removal (Front and Rear Wheels)

1. Place the wheel on a soft surface to prevent damage to the hub.

2. If a puncture is suspected, inspect the tread for sharp objects.

3. Remove the valve core and the valve stem retaining nut.

4. Break the bead free of the rim by stepping on it from both sides.

5. Insert two small tire irons four to six inches apart between the rim and the tire bead at the valve location.

6. Pry in and down with the irons, moving only one iron at a time until the bead is free of the rim all the way around.

7. Pull the inner tube out of the tire casing.

Inspection

Instructions for checking the brake disc, wheel rim, and wheel bearing will be found in the chapter on front wheel and brakes.

Tire Installation

1. Inflate the new inner tube slightly, leaving the valve core in place.

2. Make sure the inner strip that protects the tube is in good condition and is centered over the spoke nipples.

3. Insert the tube into the tire casing with the valve stem aligned with the tire balance mark and with the hole in the rim.

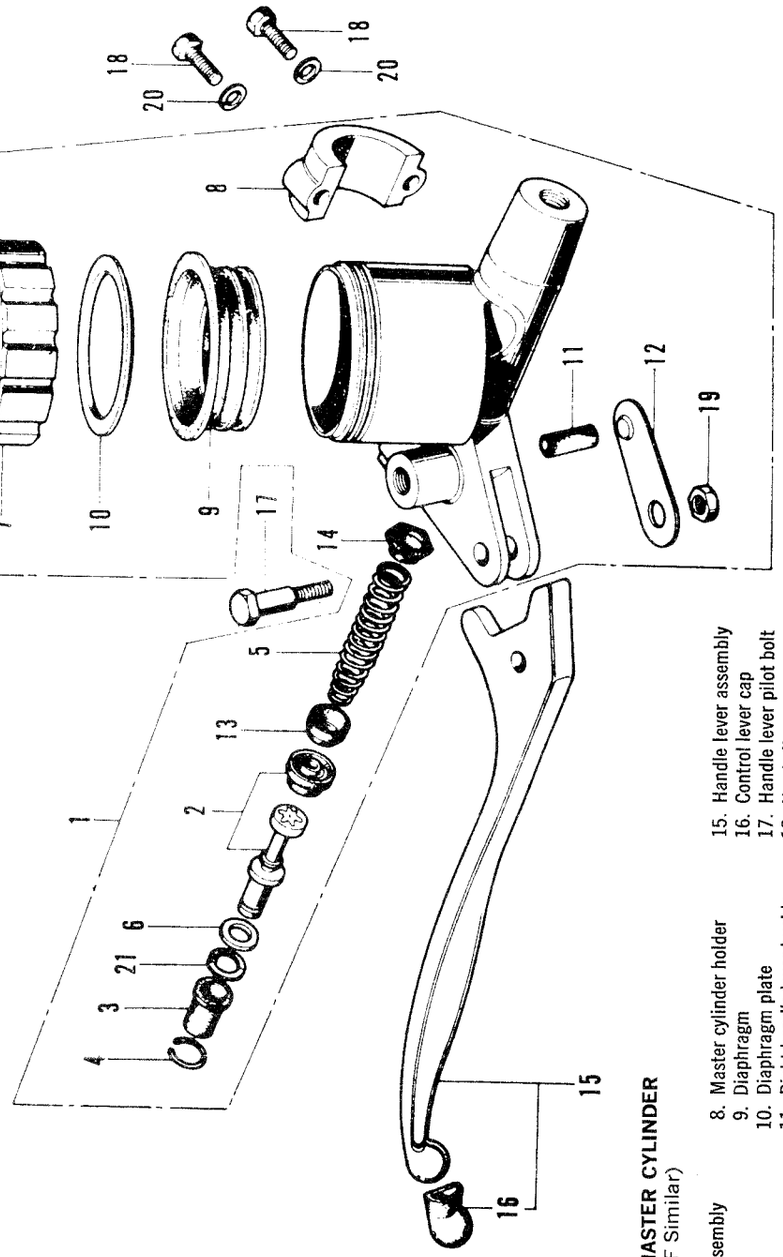
4. Insert the valve stem through the hole in the rim and partially tighten the retaining nut. Then remove the valve core.

5. Coat the bead surfaces and the edge of the rim with mounting solution. Liquid detergent is OK.

6. Push the tire into place with your feet. Start on the far side of the rim from the valve and work in opposite directions around the wheel with your heels.

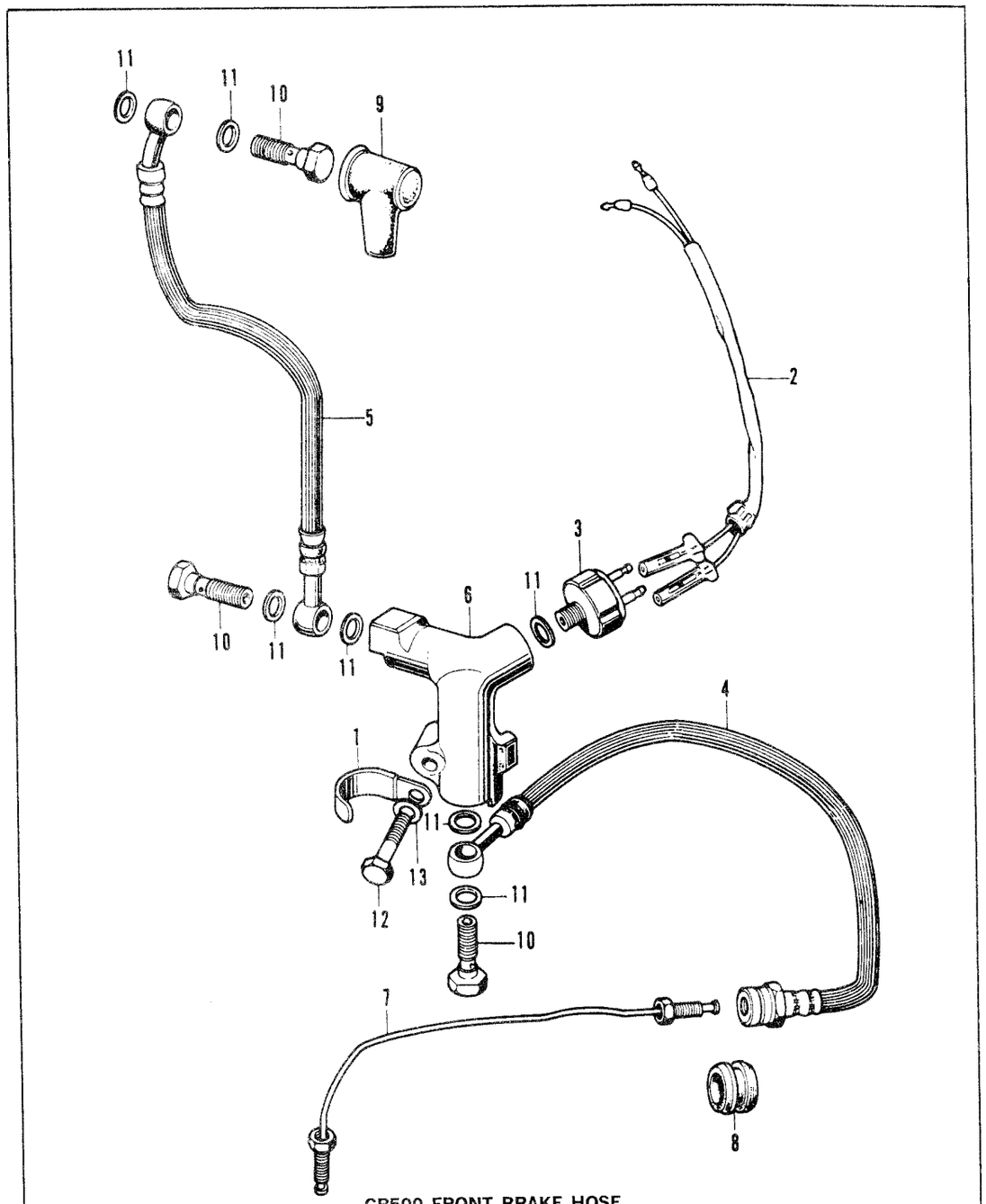
7. Force the last bit of bead into place with a soft-headed mallet. Do not use tire irons or screwdrivers which could damage the tube.

8. Insert the valve core. Then inflate the tire to 10 psi over the recommended pressure to seat the bead against the rim. Deflate to the standard pressure and check for leaks.



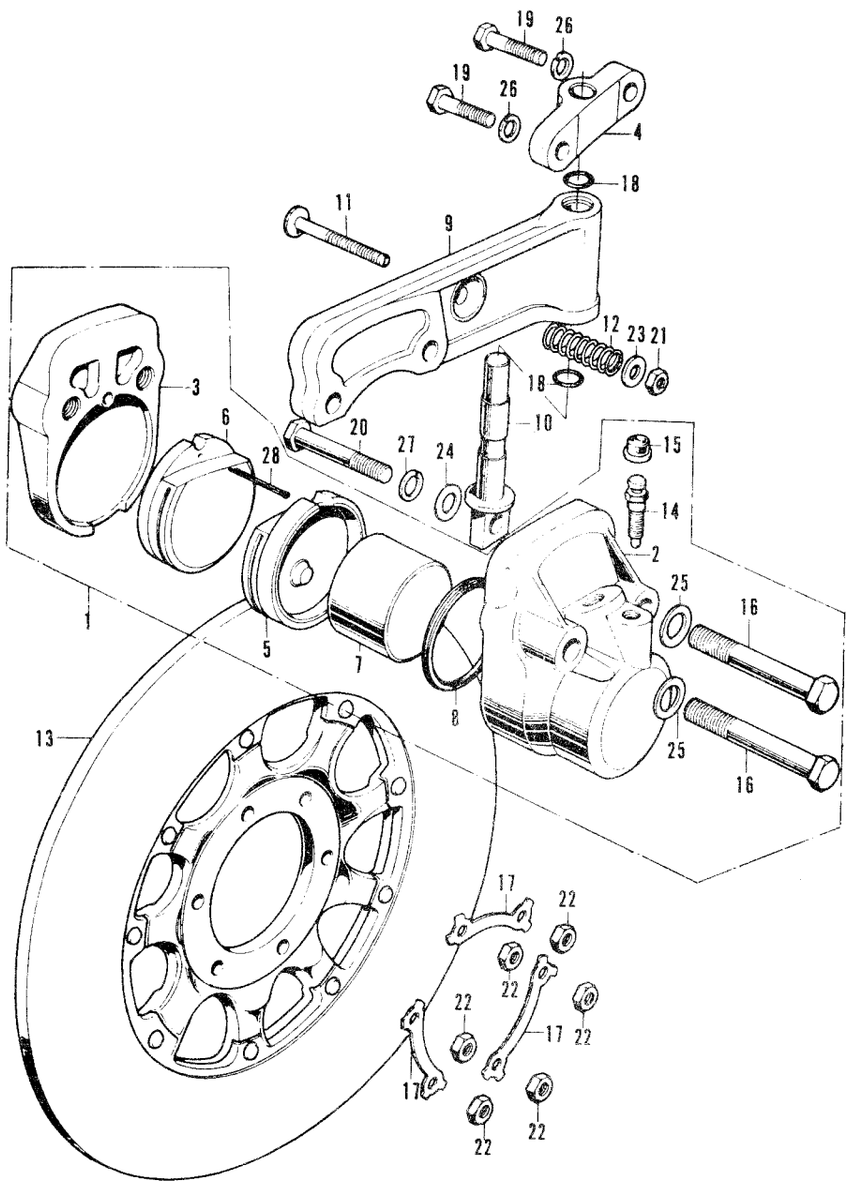
CB500 BRAKE MASTER CYLINDER
(CB350F Similar)

1. Master cylinder assembly
2. Piston set
3. Boots
4. Stopper washer
5. Spring
6. Washer
7. Oil cup cap
8. Master cylinder holder
9. Diaphragm
10. Diaphragm plate
11. Right handle lever bushing
12. Lever bushing setting plate
13. Primary cup
14. Check valve
15. Handle lever assembly
16. Control lever cap
17. Handle lever pilot bolt
18. Hex bolt
19. Hex nut
20. Spring washer
21. Internal circlip



CB500 FRONT BRAKE HOSE
(CB350F Similar)

1. Clip
2. Front stop switch wires
3. Stop switch
4. Front brake hose A
5. Front brake hose B
6. Three-way fitting
7. Front brake line
8. Brake hose grommet
9. Master cylinder boot
10. Oil bolt
11. Oil bolt washer
12. Hex bolt
13. Plain washer

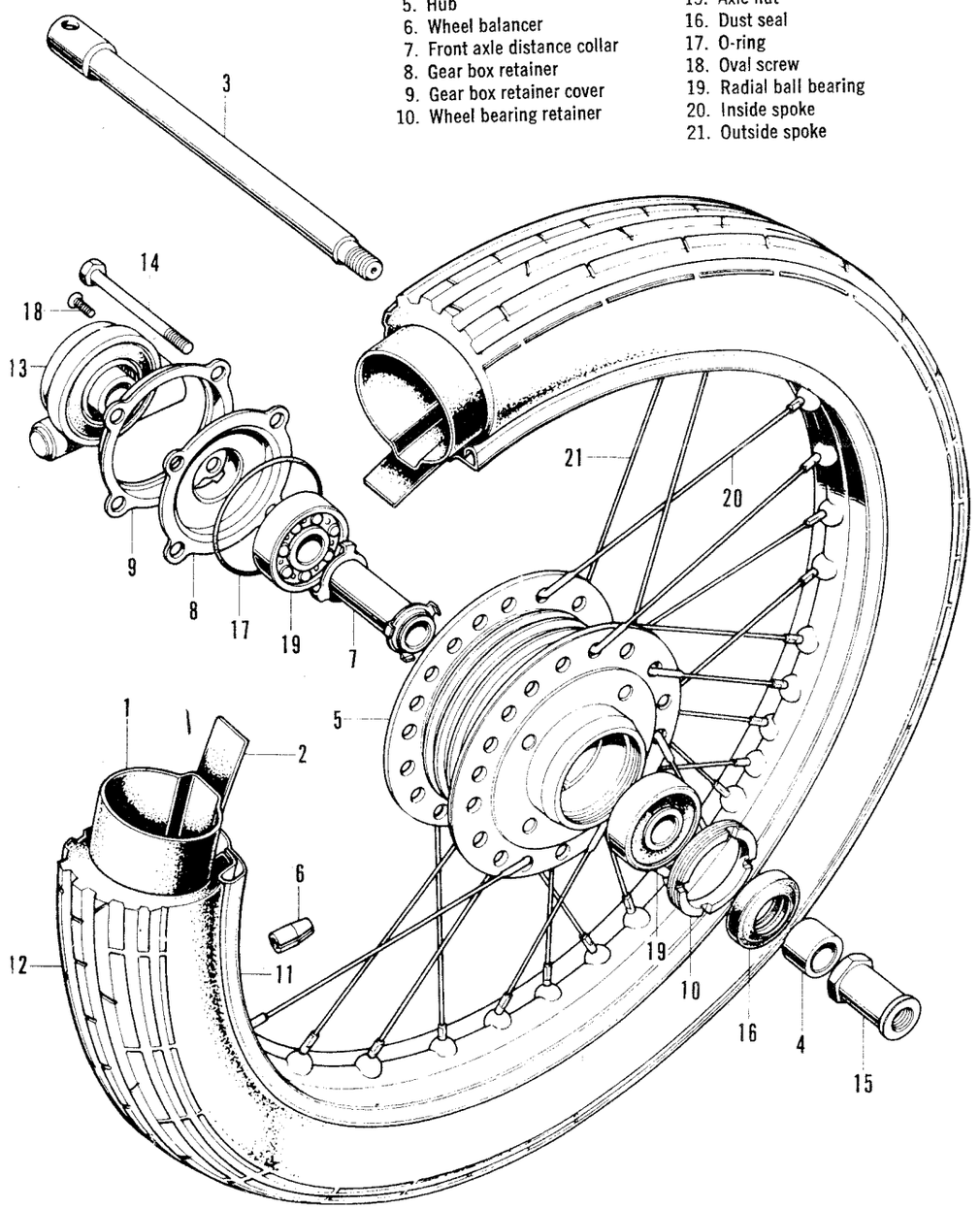


CB500 FRONT BRAKE CALIPER
(CB350F Similar)

1. Caliper Assembly
2. Caliper A
3. Caliper B
4. Caliper holder joint
5. Pad A
6. Pad B
7. Piston
8. Piston seal
9. Caliper holder
10. Caliper holder pin
11. Caliper adjust bolt
12. Caliper adjust spring
13. Front brake disc
14. Breather valve
15. Breather valve cap
16. Caliper setting bolt
17. Tongued washer
18. O-ring
19. Hex bolt
20. Hex bolt
21. Hex nut
22. Hex nut
23. Plain washer
24. Plain washer
25. Plain washer
26. Lockwasher
27. Lockwasher
28. Cotter pin

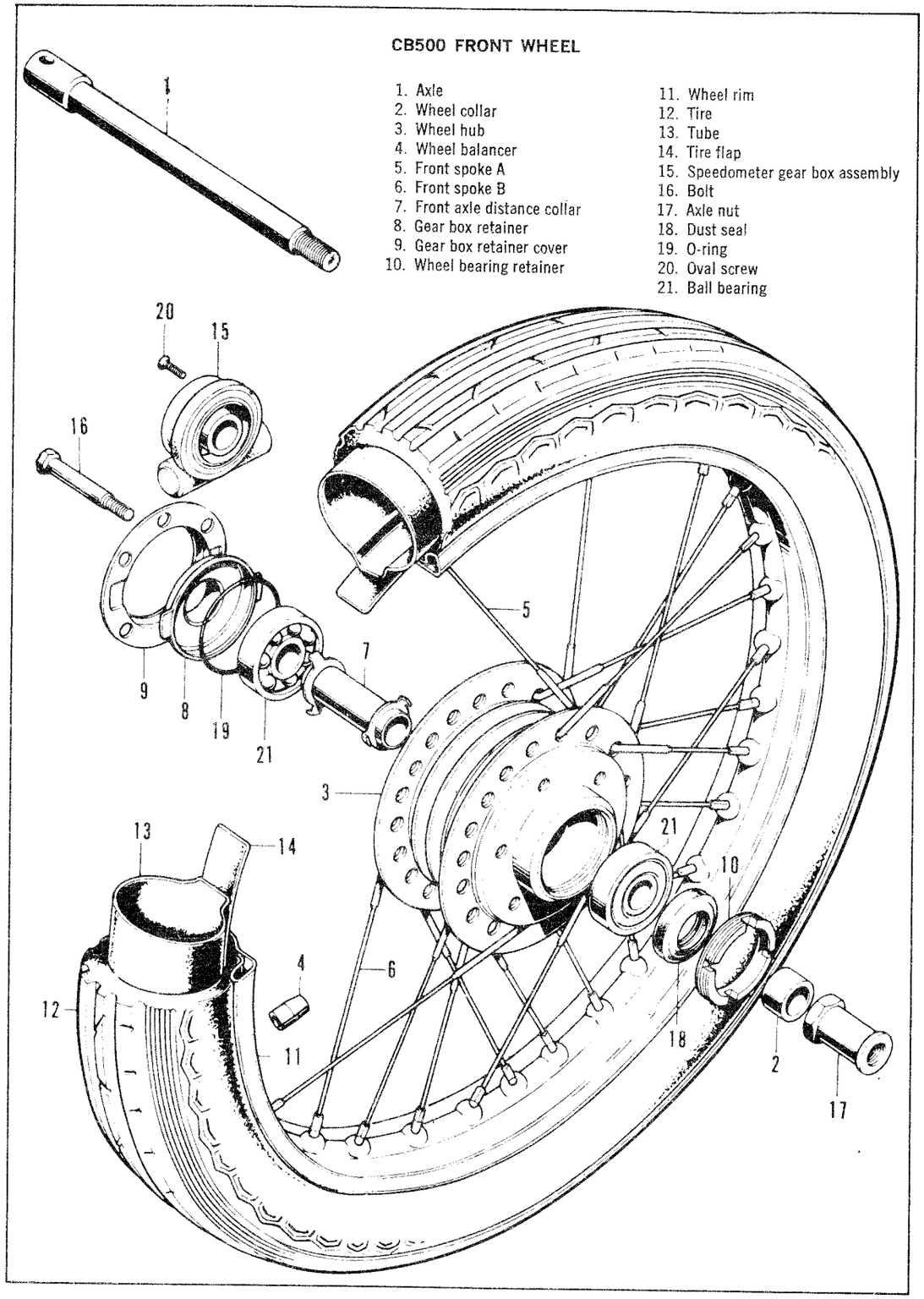
CB350 FRONT WHEEL

1. Tube
2. Flap
3. Axle
4. Wheel side collar
5. Hub
6. Wheel balancer
7. Front axle distance collar
8. Gear box retainer
9. Gear box retainer cover
10. Wheel bearing retainer
11. Wheel rim
12. Tire
13. Speedometer gear box
14. Bolt
15. Axle nut
16. Dust seal
17. O-ring
18. Oval screw
19. Radial ball bearing
20. Inside spoke
21. Outside spoke



CB500 FRONT WHEEL

1. Axle
2. Wheel collar
3. Wheel hub
4. Wheel balancer
5. Front spoke A
6. Front spoke B
7. Front axle distance collar
8. Gear box retainer
9. Gear box retainer cover
10. Wheel bearing retainer
11. Wheel rim
12. Tire
13. Tube
14. Tire flap
15. Speedometer gear box assembly
16. Bolt
17. Axle nut
18. Dust seal
19. O-ring
20. Oval screw
21. Ball bearing



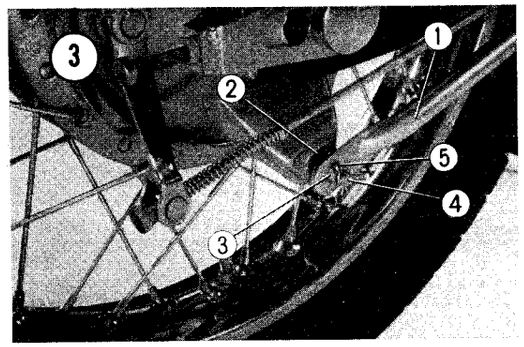
CHAPTER SEVEN

REAR WHEEL, BRAKE, AND DRIVE CHAIN

Refer to **Figures 1 and 2** (pages 116 and 117) for details of the rear wheel, brake, and sprocket.

Wheel Disassembly

1. Remove the brake rod and panel stopper bolt, then disconnect the stopper arm, **Figure 3**.

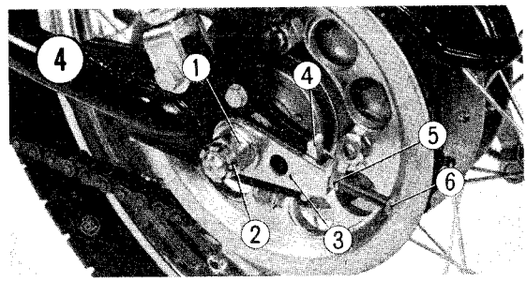


1. Brake stopper arm
2. Stopper arm cushion rubber
3. 8mm nut
4. Panel stopper bolt
5. Lock pin

2. Remove the four mufflers.

3. Refer to **Figure 4**. Loosen the chain adjusting bolt on both sides, pull out the cotter pin and loosen the axle nut.

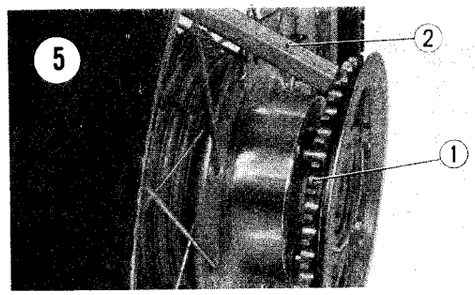
4. Push the wheel forward so that the drive chain can be lifted free of the sprocket. Referring again to Figure 4, remove the lock bolts and adjusting stoppers.

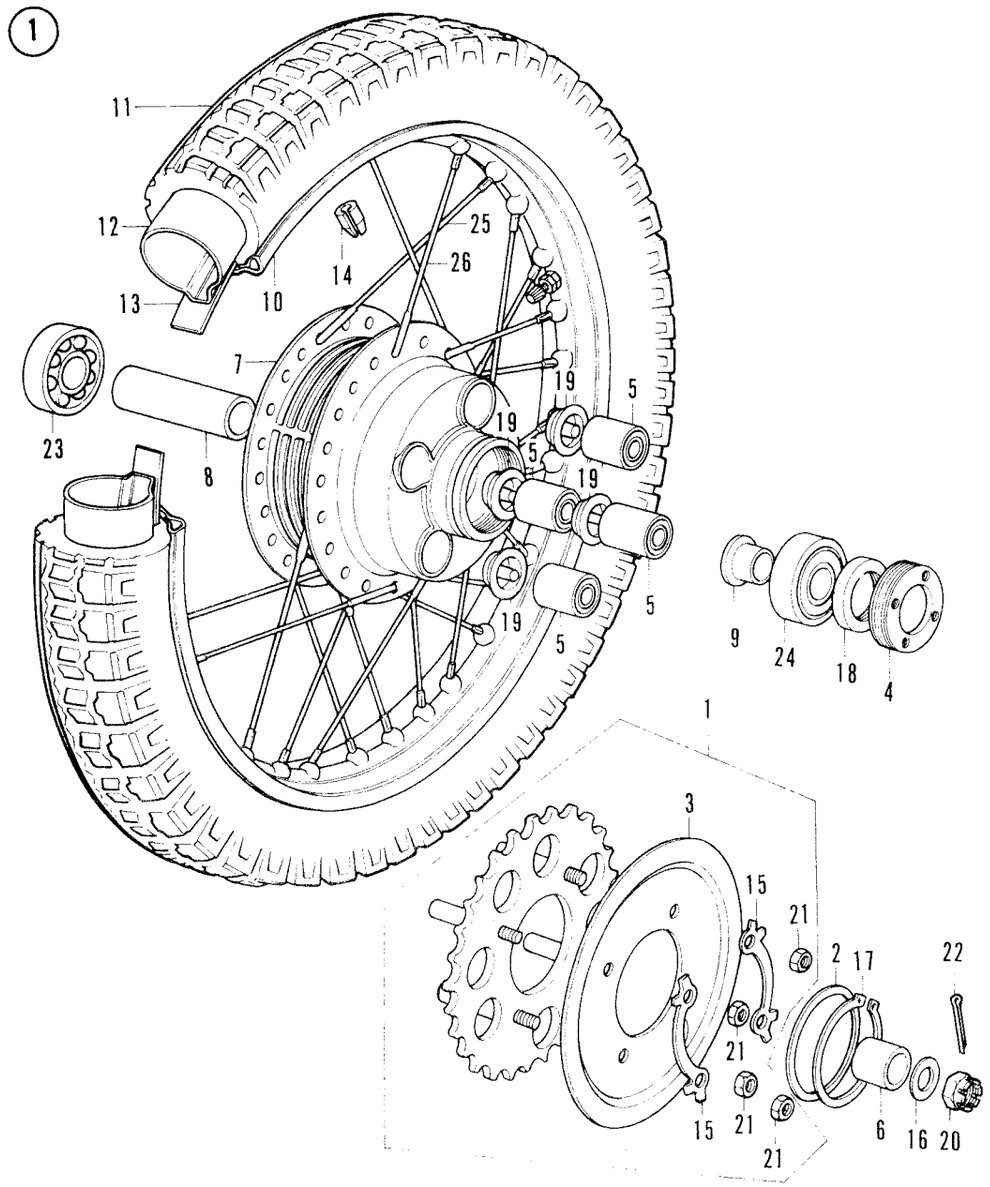


1. Axle nut
2. Cotter pin
3. Drive chain adjuster
4. Chain adjuster stopper
5. Lock nut
6. Chain adjusting bolt

5. Remove the wheel and its axle by pulling the assembly to the rear of the cycle.

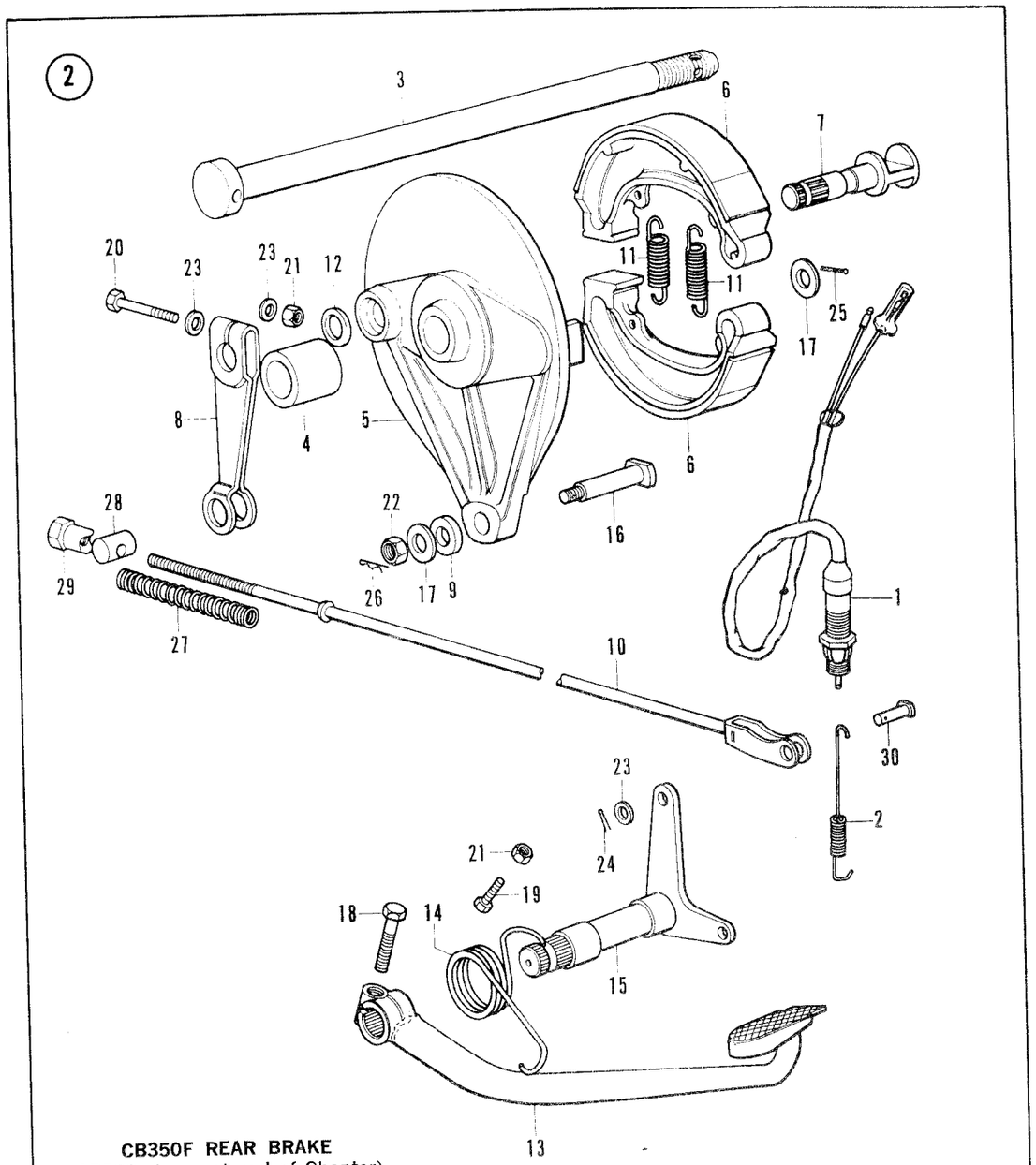
6. Remove the sprocket by straightening the tongues on the washers, unscrewing the four mounting bolts, and tapping the sprocket free with a wood block, **Figures 5 and 6**.





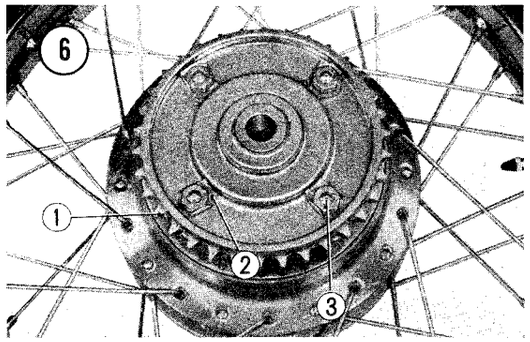
CB350F REAR WHEEL
(CB500 shown at end of Chapter)

1. Final driven sprocket assembly
2. Washer
3. Sprocket side plate
4. Wheel bearing retainer
5. Wheel damper bushing
6. Wheel side collar
7. Wheel hub
8. Axle distance collar A
9. Axle distance collar B
10. Wheel rim
11. Tire
12. Tube
13. Tire flap
14. Wheel balancer
15. Tongued washer
16. Washer
17. External circlip
18. Dust seal
19. Wheel hub plug
20. Castle nut
21. Hex nut
22. Cotter pin
23. Radial ball bearing
24. Radial ball bearing
25. Inside spoke
26. Outside spoke



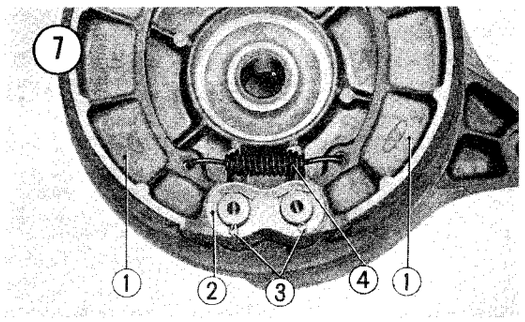
CB350F REAR BRAKE
(CB500 shown at end of Chapter)

1. Stop lamp switch assembly
2. Stop switch spring
3. Rear axle
4. Brake panel side collar
5. Rear brake panel
6. Rear brake shoe
7. Rear brake cam
8. Rear brake arm
9. Stopper arm cushion rubber
10. Rear brake rod
11. Front brake shoe spring
12. Brake cam dust-seal
13. Brake pedal
14. Brake pedal spring
15. Brake pivot shaft
16. Brake stopper arm bolt
17. Handle holder setting washer A
18. Hex bolt
19. Hex bolt
20. Hex bolt
21. Hex nut
22. Hex nut
23. Plain washer
24. Cotter pin
25. Cotter pin
26. Lock pin
27. Brake rod spring C
28. Brake arm joint B
29. Adjust nut B
30. Joint pin A



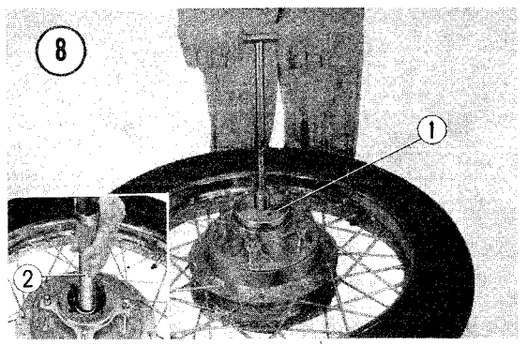
1. Driven sprocket
2. Tongued washer
3. Lock nut

7. Remove the bearing retainer, **Figure 7**, and drive the bearing out of the hub. The retainer has a left-hand thread.



1. Bearing retainer remover
2. Bearing driver

8. Remove the cotter pins and washer, **Figure 8**, and remove the brake shoes.

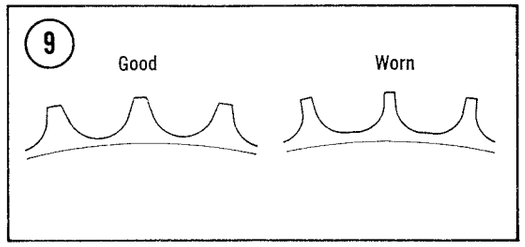


1. Brake shoes
2. Pin washer
3. Cotter pins
4. Brake shoe spring

Inspection

1. Check runout and wobble of the wheel rim and the condition of the bearing according to the instructions in Chapter Six.

2. Check the final driven sprocket for excessive wear. Compare with **Figure 9**.



3. Check the final drive chain for wear and stretch.

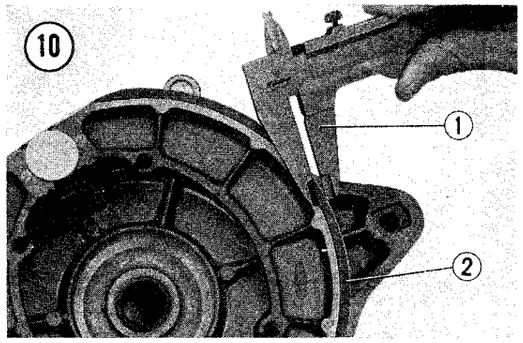
Rear Tire

The procedures for removal, inspection and mounting of the rear tire are identical with those for the front tire in Chapter Six.

Rear Brake Inspection

1. Measure the thickness of the brake shoes with a vernier caliper as shown in **Figure 10**. Replace if worn beyond the following limits:

CB500	.08 in (2mm)
CB350F	.1 in. (2.5mm)



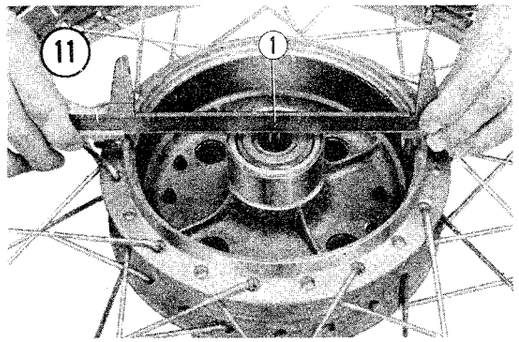
1. Vernier caliper
2. Brake shoe

2. Measure the inside diameter of the drum with a vernier caliper as shown in **Figure 11**. Replace if the distance is greater than the following limits:

CB500	7.125 in. (181mm)
CB350F	6.339 in. (161mm)

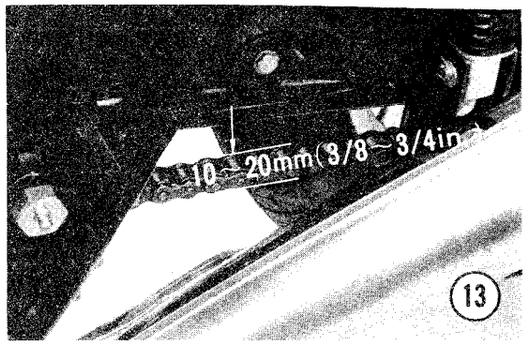
Assembly

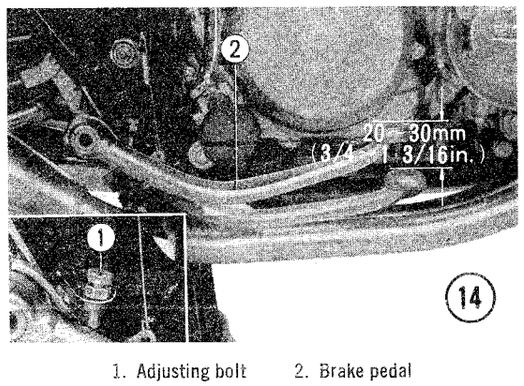
Assemble in reverse order of disassembly, noting the following:



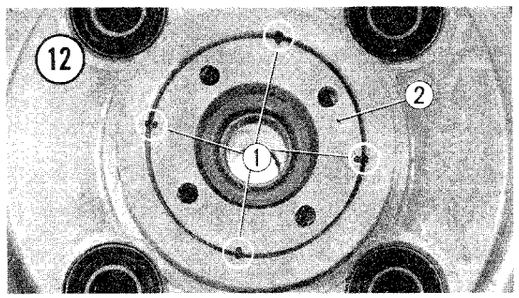
1. Vernier caliper

1. Use Locktite or a similar thread lock compound on the bearing retainer.
2. CB350F. Stake the retainer with a punch as shown in **Figure 12**.
3. Do not get grease or oil on the brake linings.
4. Refer to **Figure 13** and adjust the drive chain slack to .395 in.-.75 in. (10mm-20mm). The adjusting marks should be in the same position on both sides.
5. Refer to **Figure 14** and adjust the height of the brake pedal. Then adjust the free play, **Figure 15**, to .78 in.-1.17 in. (20mm-30mm).

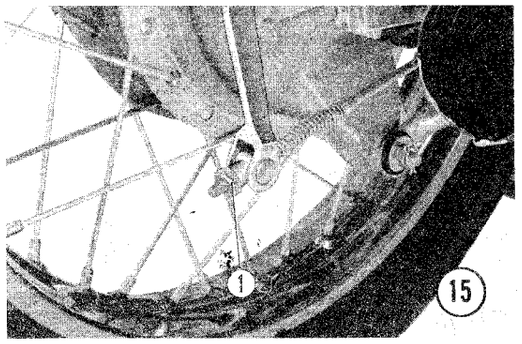




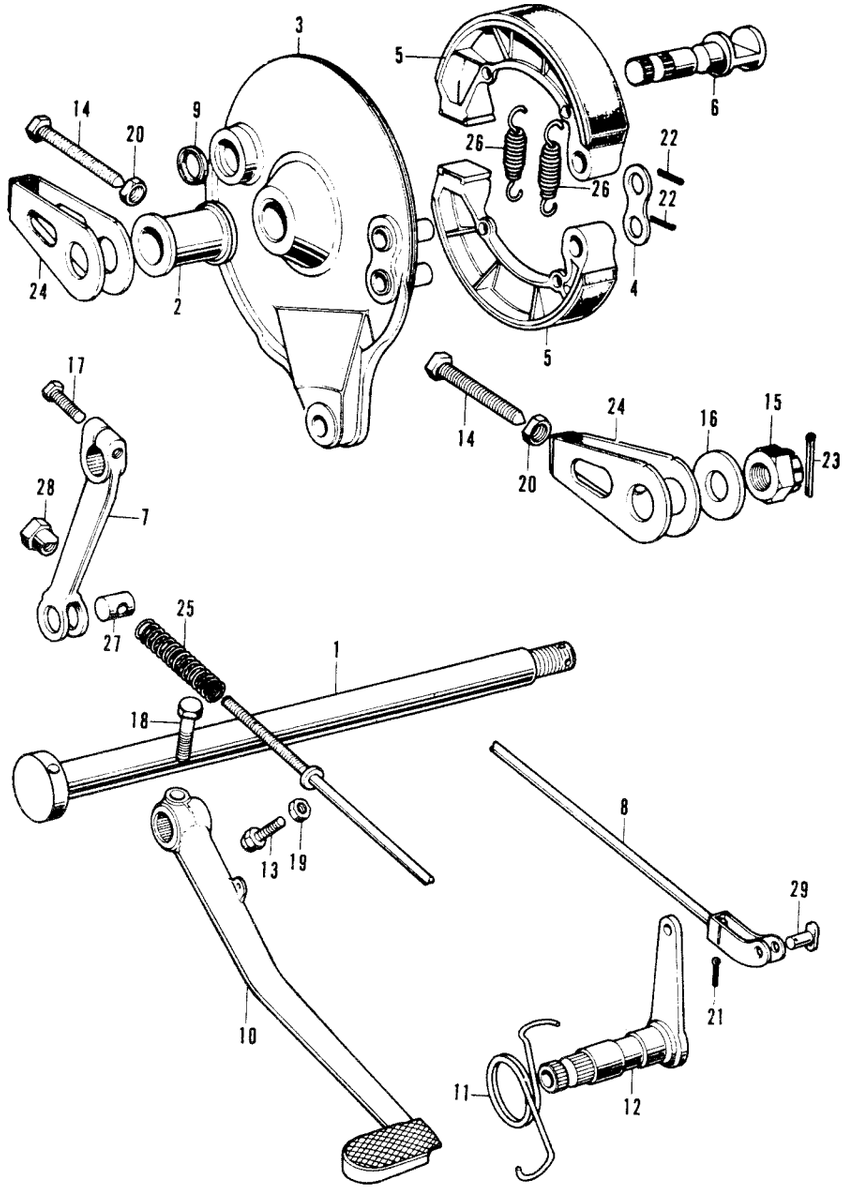
1. Adjusting bolt
2. Brake pedal



1. Stake
2. Bearing retainer

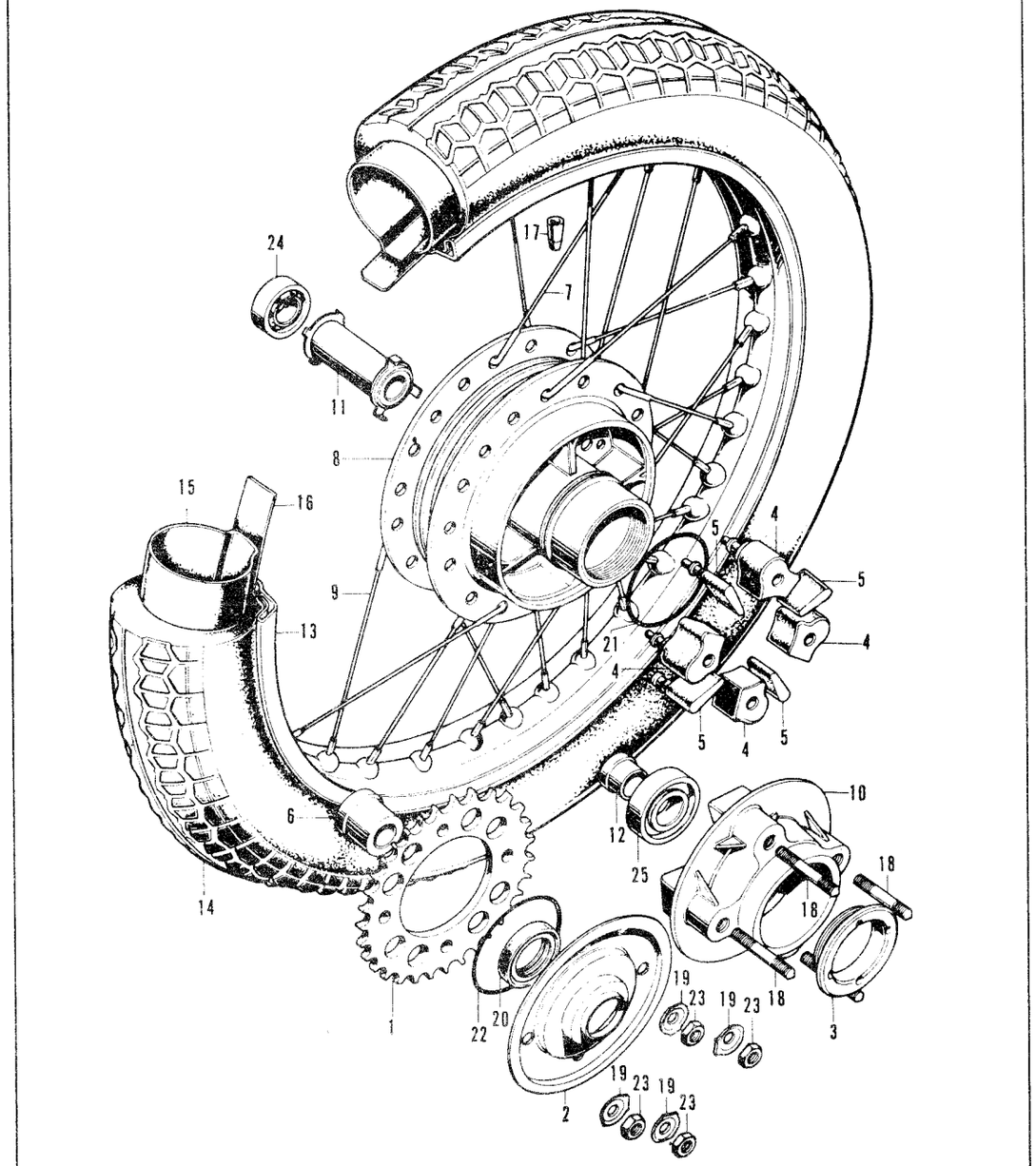


1. Adjusting nut



CB500 REAR BRAKE

1. Axle
2. Brake panel collar
3. Brake panel
4. Anchor pin washer
5. Brake shoe
6. Brake cam
7. Brake arm
8. Brake rod
9. Brake cam dust seal
10. Brake pedal
11. Brake pedal spring
12. Brake pivot shaft
13. Brake pedal adjust bolt
14. Chain adjust bolt
15. Axle nut
16. Washer
17. Hex bolt
18. Hex bolt
19. Hex nut
20. Hex nut
21. Cotter pin
22. Cotter pin
23. Cotter pin
24. Chain adjuster K
25. Brake rod spring C
26. Brake shoe spring C2
27. Brake arm joint
28. Adjust nut B
29. Joint pin B



CB500 REAR WHEEL

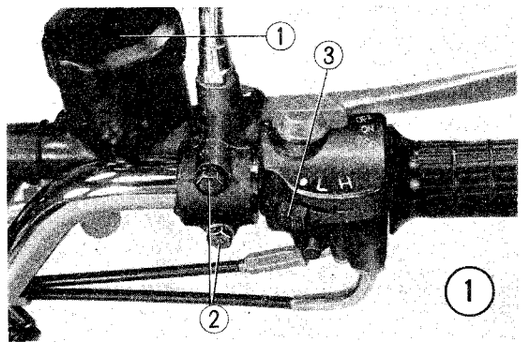
1. Final driven sprocket
2. Sprocket side plate
3. Bearing retainer
4. Wheel damper A
5. Wheel damper B
6. Wheel side collar
7. Spoke A
8. Wheel hub
9. Spoke B
10. Final driven flange
11. Axle distance collar
12. Axle distance collar B
13. Wheel rim
14. Tire
15. Tube
16. Tire flap
17. Wheel balancer
18. Stud bolt
19. Tongued washer
20. Oil seal
21. O-ring
22. O-ring
23. Hex nut
24. Ball bearing
25. Ball bearing

CHAPTER EIGHT

STEERING, SUSPENSION, AND FRAME

Steering Disassembly

1. Remove the master brake cylinder, **Figure 1**, by unscrewing the two 6mm bolts.



1. Master cylinder unit
2. 6mm bolts
3. Lighting switch

2. Disconnect the clutch and throttle cables. Remove the light switch.

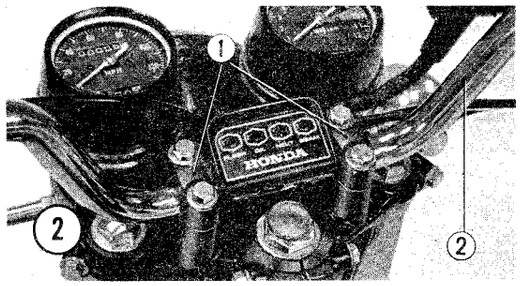
3. Remove the head light from its case and disconnect the electrical leads.

4. Refer to **Figure 2** and remove the upper handlebar holder by unscrewing the four bolts. Disconnect the wire harness.

5. Remove the speedometer and tachometer by unscrewing the mounting bolts.

6. Remove the front wheel (Chapter Six).

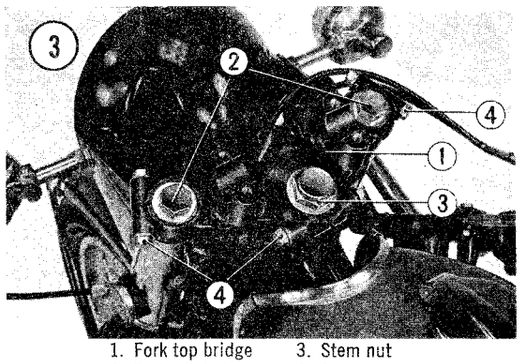
7. Disconnect the brake hose at the three-way joint at the stem.



1. Upper handelbar holders
2. Handlebar

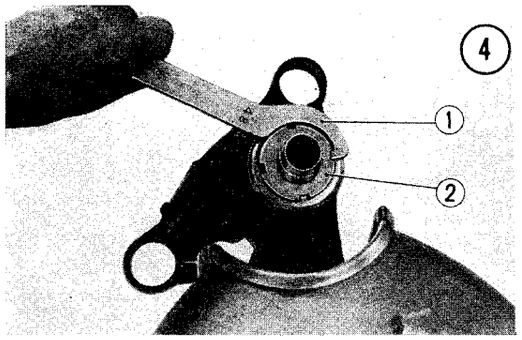
8. Remove the front fork (see front suspension disassembly section of the chapter).

9. Refer to **Figure 3** and unscrew the stem nut and the 8mm bolts. Then remove the top fork bridge.



1. Fork top bridge
2. Fork top bolts
3. Stem nut
4. 8mm bolts

10. Use a special wrench, **Figure 4**, to unscrew the stem head nut.



1. Steering stem wrench
2. Steering stem head nut

11. Pull the stem head out from the bottom.

NOTE: *A total of 39 steel balls form the two stem bearings. Some will drop out freely when the stem is removed. Be careful not to lose them.*

Inspection

1. Inspect the handlebar and stem for bending, twisting, cracking, or damage.

2. Check the wiring and cables for damage.

3. Check the steel balls for wear. Clean them in solvent.

4. Check the bearing races on the stem for wear.

5. Check the steering head dust seal for wear.

Steering Assembly

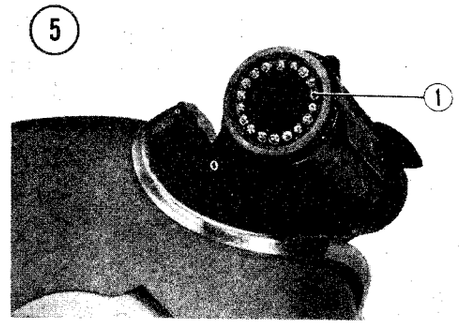
Refer to the exploded drawings and note the following when reassembling:

1. Clean the cone races, ball races, and steel balls; and then coat with grease.

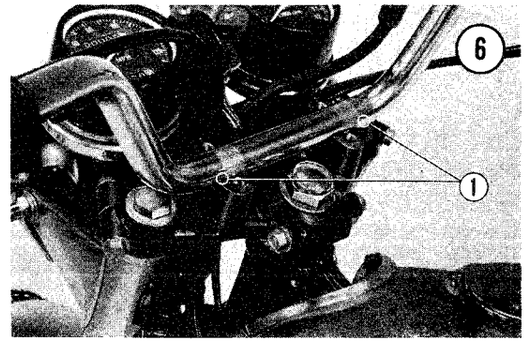
2. Install the correct number of steel balls, **Figure 5**:

CB500	18 balls upper race
	19 balls lower race
CB350F	19 balls upper race
	18 balls lower race

3. When installing the handlebar, ensure that punch marks, **Figure 6**, are aligned with the mating edges of the holders and top bridge. Tighten the bolts at the front first, then those at the rear.



1. Steel balls



1. Punch marks

4. When the wiring and cables are hooked up, turn the steering fully from side to side and check for binding.

Front Suspension Disassembly

Details of the front fork are shown in **Figure 7** (CB500) **and 8** (CB350F).

CB500

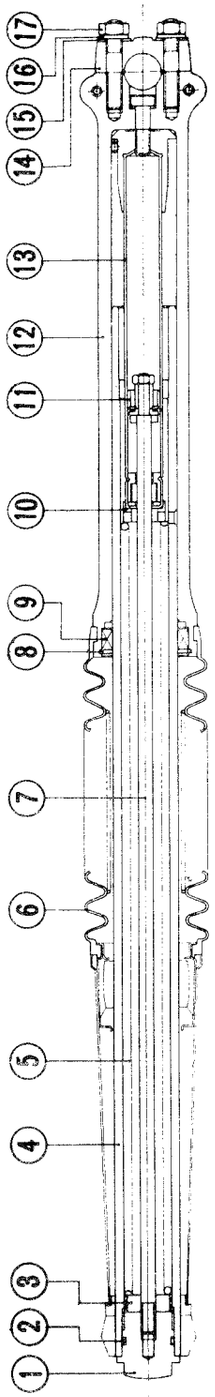
1. Loosen the fork bolt and drain the damper oil by removing the plug.

2. Remove the front wheel (Chapter Six).

3. Refer to **Figure 9** and remove the brake caliper from the left fork by unscrewing the three mounting bolts.

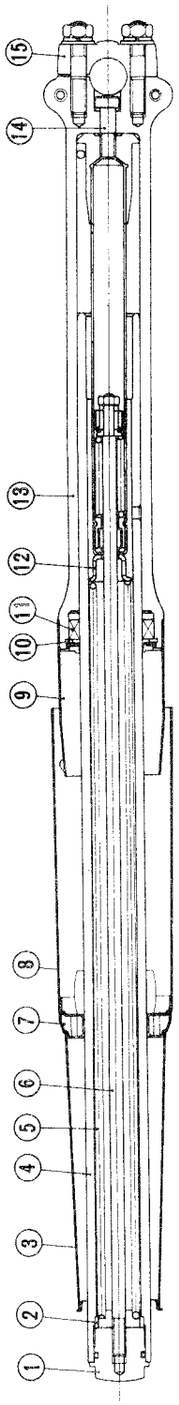
4. Remove the 8-by-56mm and the 10-by-35mm bolts and pull the forks off from the bottom.

5. Refer to **Figure 10** and disassemble the fork by unscrewing the front fork bolt, loosening the lock nut, and removing the spring and the spring seat. A special tool is needed to remove the 8mm bottom case bolt so the damper can be removed.



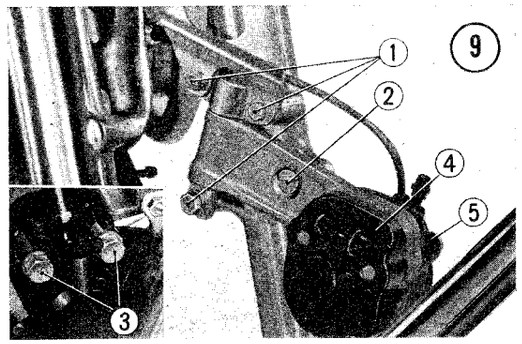
7

1. Front fork bolt
2. O-ring
3. Lock nut
4. Front fork pipe
5. Front suspension spring
6. Front fork boot
7. Damper rod
8. Snap ring
9. Oil seal
10. Holder
11. Collar
12. Front fork bottom case
13. Damper case
14. Axle holder
15. Plain washer
16. Spring washer
17. Nut



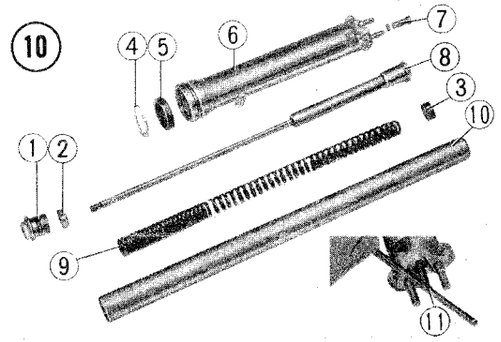
8

1. Front fork bolt
2. Lock nut
3. Front fork cover
4. Front fork pipe
5. Front cushion spring
6. Damper
7. Front fork rib
8. Front fork under cover
9. Bottom case cover
10. 47mm internal circlip
11. Oil seal
12. Cushion spring seat
13. Front fork bottom case
14. Socket bolt 8mm
15. Axle holder



9

1. Caliper mounting bolts
2. Adjusting screw
3. Caliper set bolts
4. Caliper B
5. Caliper A



10

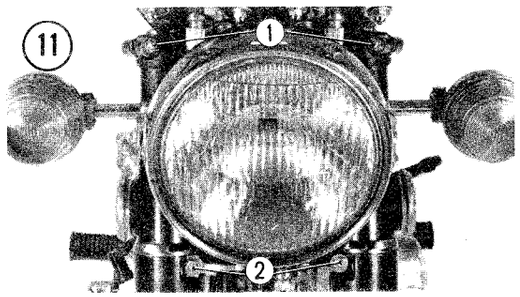
1. Front fork bolt
2. Lock nut
3. Cushion spring seat
4. Snap ring
5. Oil seal
6. Bottom case
7. 8mm bolt
8. Damper unit
9. Fork spring
10. Fork pipe
11. Special tool

CB350F

1. Remove the front wheel (Chapter Six).

2. Remove the brake caliper assembly and the front fender.

3. Refer to **Figure 11** and loosen the bolts at the fork top bridge and stem bottom bridge, freeing the front fork assembly which can then be removed from below.

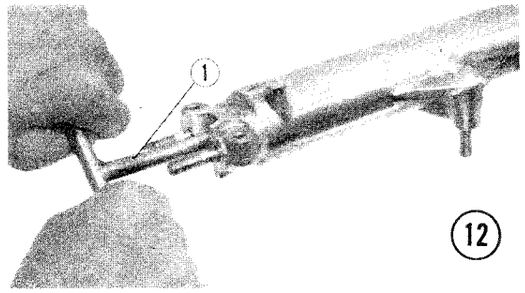


11

1. 8mm bolt at fork top bridge
2. 8mm bolt at steering stem bottom bridge

4. Drain the oil from the forks.

5. Loosen the 8mm bolt using a special hollow wrench, **Figure 12**, and then remove the fork pipe and damper unit.

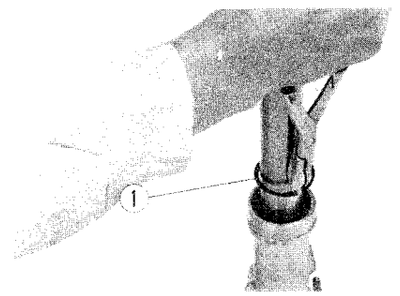


12

1. Hollow wrench

6. Remove the front fork bolt from the top of the fork pipe so the cushion spring and seat can be removed.

7. Remove the circlip, **Figure 13**, to remove the oil seal.

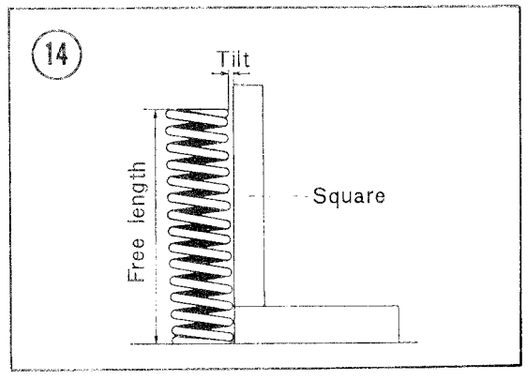


13

1. Circlip

Inspection

1. Measure the uncompressed length of the front spring with a square as shown in **Figure 14**.



14

Replace if shorter than the following limit:

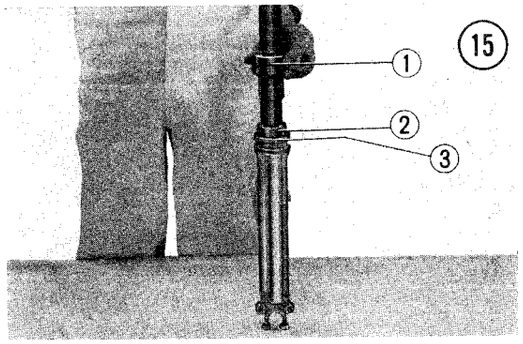
CB500	16.73 in. (425mm)
CB350F	16.38 in. (416mm)

2. Inspect the fork pipe and bottom case for damage or wear.
3. Inspect the oil seal for damage or scratches.
4. Check for wear in the shock absorber piston and cylinder.

Front Suspension Assembly

Assemble in reverse order of disassembly, referring to the exploded drawings and noting the following:

1. Coat the piston rod thread with Locktite or a similar thread-locking compound before installing the lock nut.
2. Use a new oil seal, press-fitting it with a special tool, **Figure 15**.



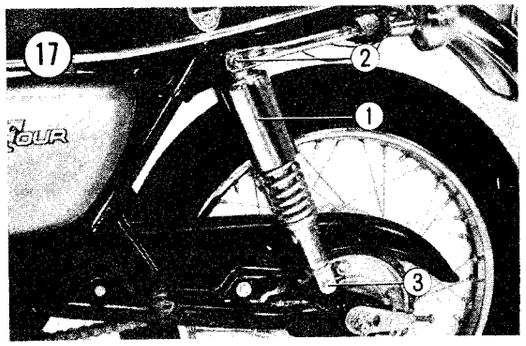
1. Oil seal drive weight
2. Oil seal drive guide
3. Oil seal

3. Adjust the front disc brake according to the instructions in Chapter Six.
4. Fill the forks with fluid:

CB500	5.4 oz. (160cc) SAE 10W-30 oil
CB350F	4.2 oz. (125cc) automatic tranmission fluid (ATF)

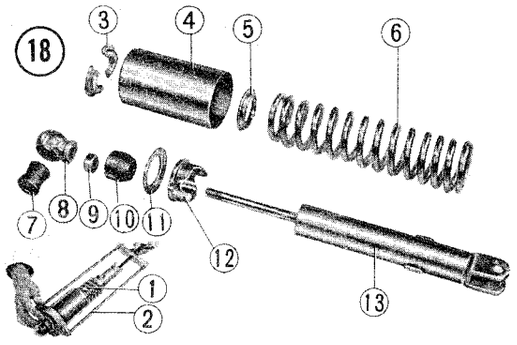
Rear Suspension Disassembly
CB500 (Figure 16)

1. Remove the mufflers and the rear wheel (Chapter Seven).
2. Refer to **Figure 17**, and remove the mounting nut and bolt and disengage the suspension from the frame and rear fork.



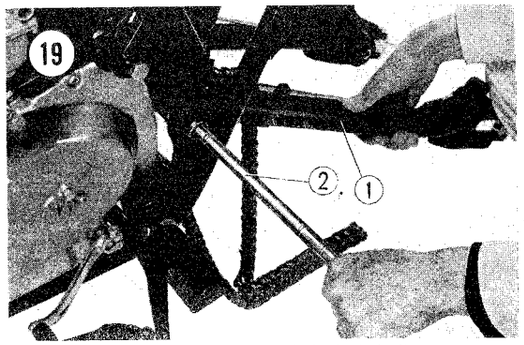
1. Rear suspension
2. Nut
3. Bolt

3. Refer to **Figure 18** and compress the suspension unit with the special tool and disassemble.

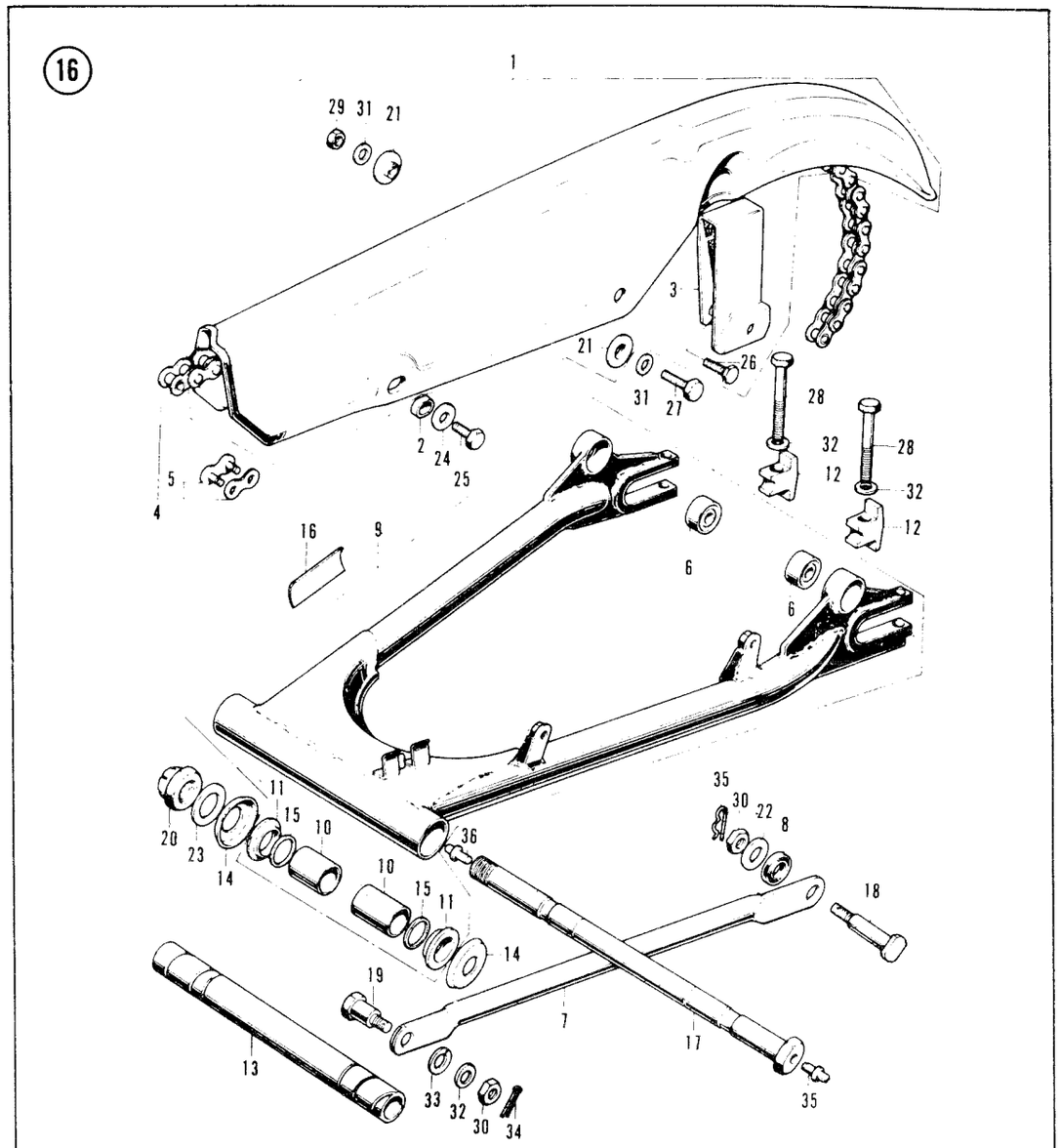


1. Rear suspension assembly
2. Suspension compressor tool
3. Spring seat stopper
4. Rear suspension upper cover
5. Spring seat
6. Rear suspension spring
7. Joint rubber
8. Joint
9. Nut
10. Rubber
11. Spring seat
12. Spring adjuster
13. Rear damper

4. Remove the rear fork pivot nut, **Figure 19**, and remove the fork from the frame.



1. Rear fork
2. Rear fork pivot shaft

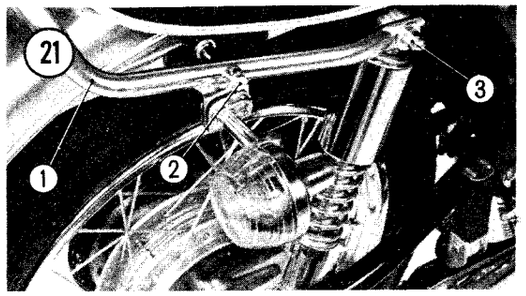


CB500 SWING ARM AND CHAIN CASE

1. Drive chain case
2. Chain case collar
3. Drive chain plate
4. Drive chain
5. Drive chain joint clip
6. Swing arm bushing
7. Rear brake stopper arm
8. Stopper arm cushion rubber
9. Swing arm
10. Swing arm pivot bushing
11. Swing arm pivot thrust bushing
12. Chain adjuster stop
13. Swing arm center collar
14. Swing arm dust seal cap
15. Swing arm felt ring
16. Muffler caution mark
17. Pivot bolt
18. Rear brake stopper arm
19. Stopper arm bolt
20. Self-locking nut
21. Washer
22. Setting washer
23. Swing arm pivot bolt washer
24. Washer
25. Hex bolt
26. Hex bolt
27. Hex bolt
28. Hex bolt
29. Hex nut
30. Hex nut
31. Plain washer
32. Plain washer
33. Lockwasher
34. Cotter pin
35. Lock pin
36. Grease nipple

CB350F (Figure 20)

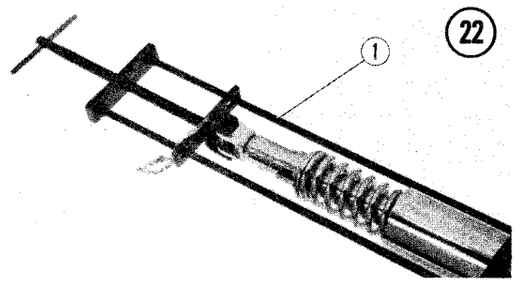
1. Remove the rear bumper by loosening the 8mm bolts and upper nuts, as shown in **Figure 21**.



1. Rear bumper
2. 8mm bolt
3. Rear cushion upper nut

2. Remove the suspension by unscrewing the 10mm bolts.

3. Compress the suspension units with the special tool No. 07035-32901, **Figure 22**. Remove the spring seat stoppers and the rear spring.



1. Rear suspension service tool

Inspection

1. Measure the uncompressed length of the spring. Replace if less than the following limit:

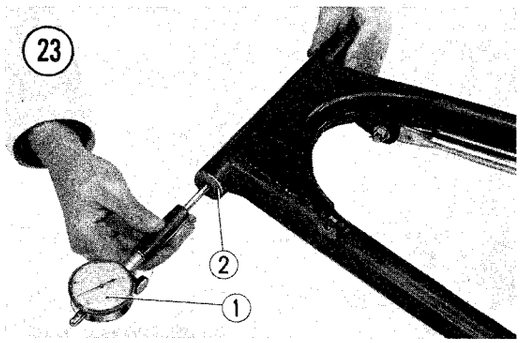
CB500	8.07 in. (205mm)
CB350F	7.48 in. (190mm)

2. Measure the inner diameter of the rear fork bushing with an inside dial gauge as shown in **Figure 23**. The serviceable limit of wear is:

CB500	.859 in. (21.8mm)
CB350F	.855 in. (21.7mm)

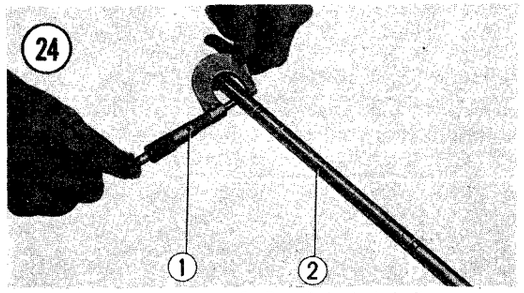
3. Measure the outer diameter of the center collar. The serviceable limit of wear is:

CB500	.843 in. (21.4mm)
CB350F	.844 in. (21.35mm)



1. Inside dial gauge 2. Rear fork bushing

4. Measure the rear fork pivot bushing and its shaft, **Figure 24**. The clearance, calculated by subtraction, should not exceed .02 in. (.5mm).



1. Micrometer 2. Rear fork pivot shaft

5. Check the various suspension members for bending or damage.

6. Inspect the damper for oil leaks.

Rear Suspension Assembly

Assemble in reverse order of disassembly, referring to the exploded drawings and noting the following:

1. Grease the center collar and pivot bushing before assembling.

2. Adjust the rear brake and drive chain slack (Chapter Seven) when the suspension assembly is completed.

Frame and Fuel Tank Disassembly

1. Remove the fuel tank, seat, and battery. Be sure to disconnect ground cable at the negative (—) terminal first.

2. Remove the mufflers and dismount the engine.

3. Remove the front wheel, steering, and suspension.

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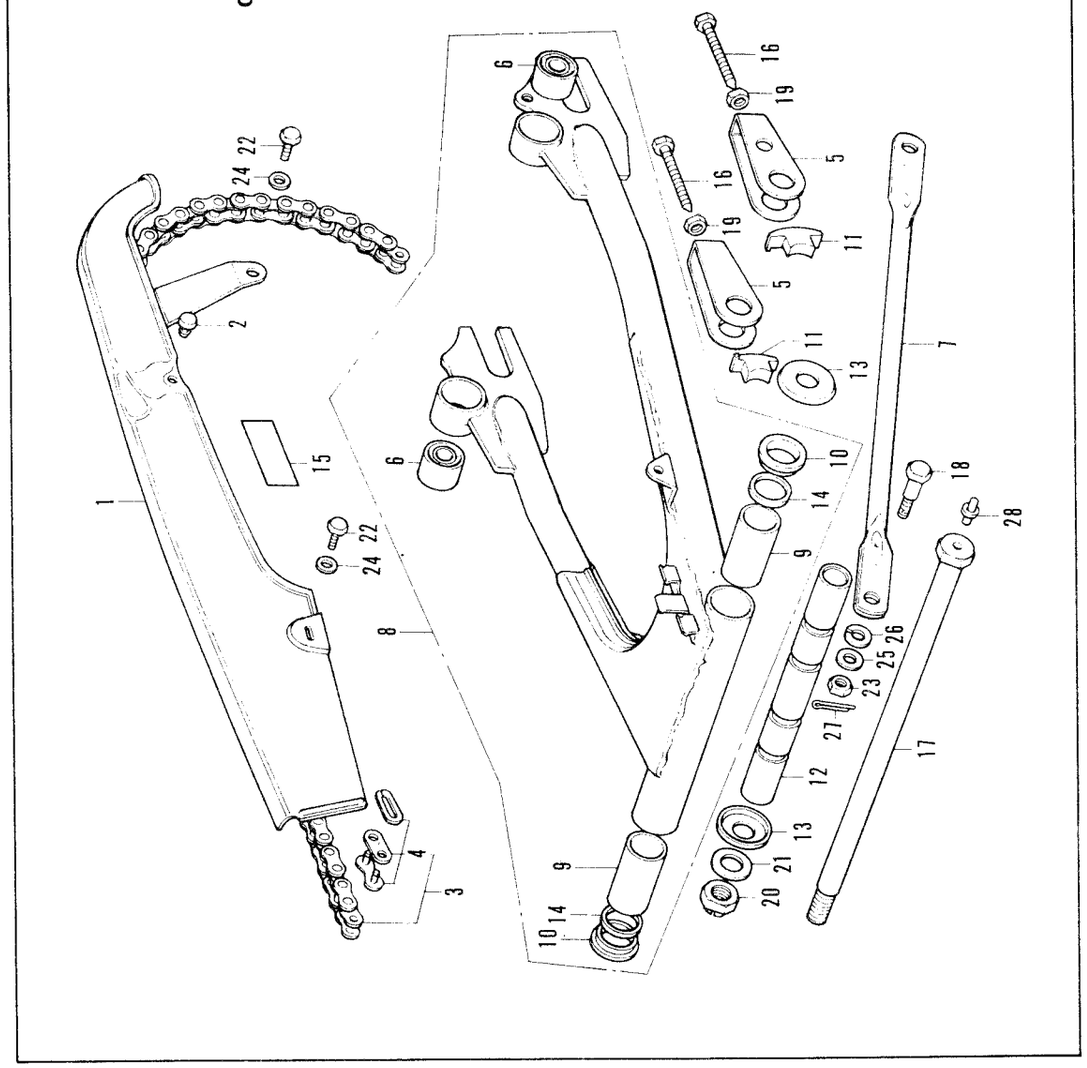
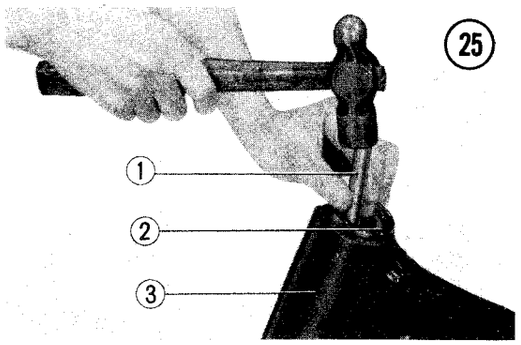
CB350F SWING ARM AND CHAIN CASE

1. Drive chain case
2. Chain case plug
3. Drive chain
4. Drive chain joint clip
5. Drive chain adjuster
6. Swing arm rubber bushing
7. Brake stopper arm
8. Swing arm
9. Swing arm pivot bushing
10. Pivot thrust bushing
11. Chain adjuster stop
12. Swing arm center collar
13. Dust seal cap
14. Felt ring
15. Muffler caution mark
16. Chain adjuster bolt
17. Pivot bolt
18. Brake stopper bolt
19. Chain adjuster nut
20. Self-locking nut
21. Washer
22. Hex bolt
23. Hex nut
24. Plain washer
25. Plain washer
26. Lockwasher
27. Cotter pin
28. Grease nipple



4. Remove the rear wheel and suspension.
5. Remove electrical equipment, disconnecting the wiring at the couplings.
6. Remove the main and side stands.
7. Remove the bearing races from the steering head pipe with a wooden drift as shown in **Figure 25**.



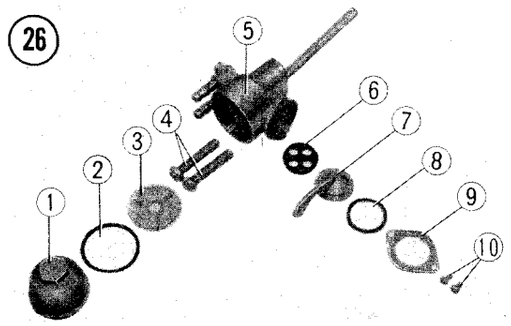
1. Wooden drift
2. Ball race
3. Head pipe

Frame Inspection

1. Check the frame for bending, cracks, distortion, or other damage, especially around welded joints.

Fuel Tank Inspection

1. Disassemble the fuel valve, referring to **Figure 26**, and check parts for wear, clogging, or damage.

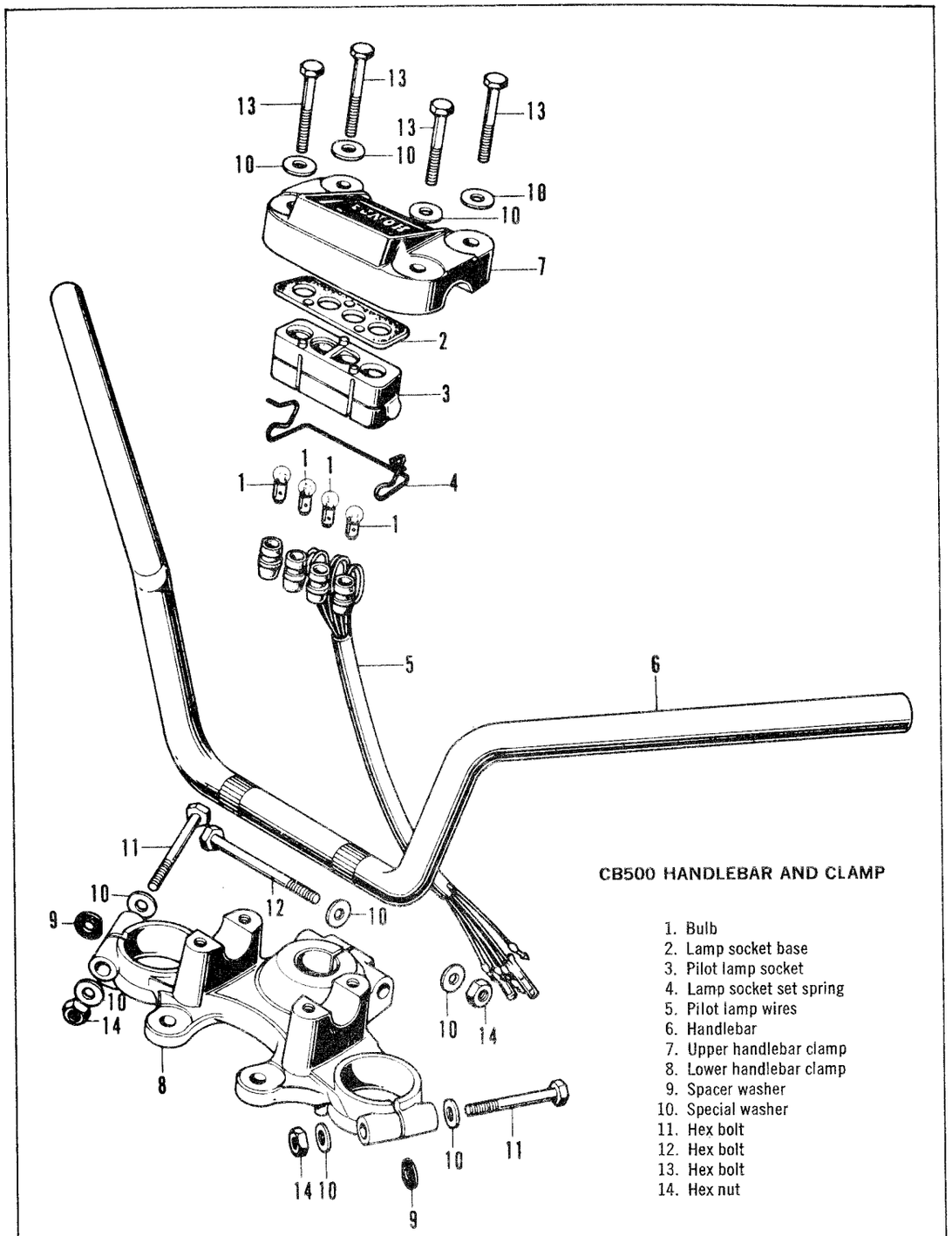


1. Fuel strainer cup
2. O-ring
3. Fuel strainer screen
4. 6mm cross screws
5. Fuel cock body
6. Fuel cock gasket
7. Fuel cock lever
8. Cock lever spring
9. Setting plate
10. 6mm screw

2. Check the tank for leaks and the fuel tubes for age cracks or other damage.

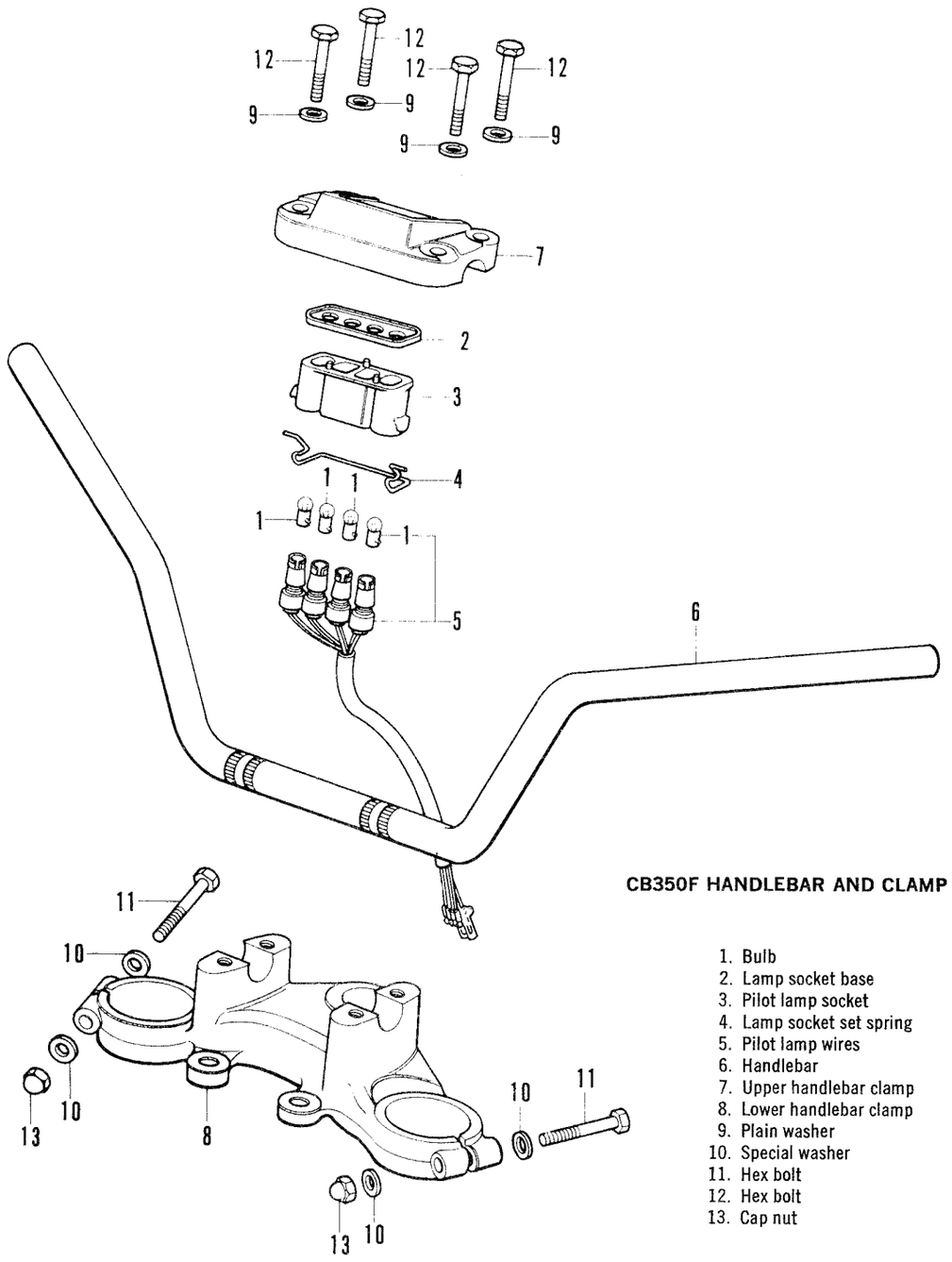
Frame and Fuel Tank Assembly

Assemble in the reverse order of disassembly.



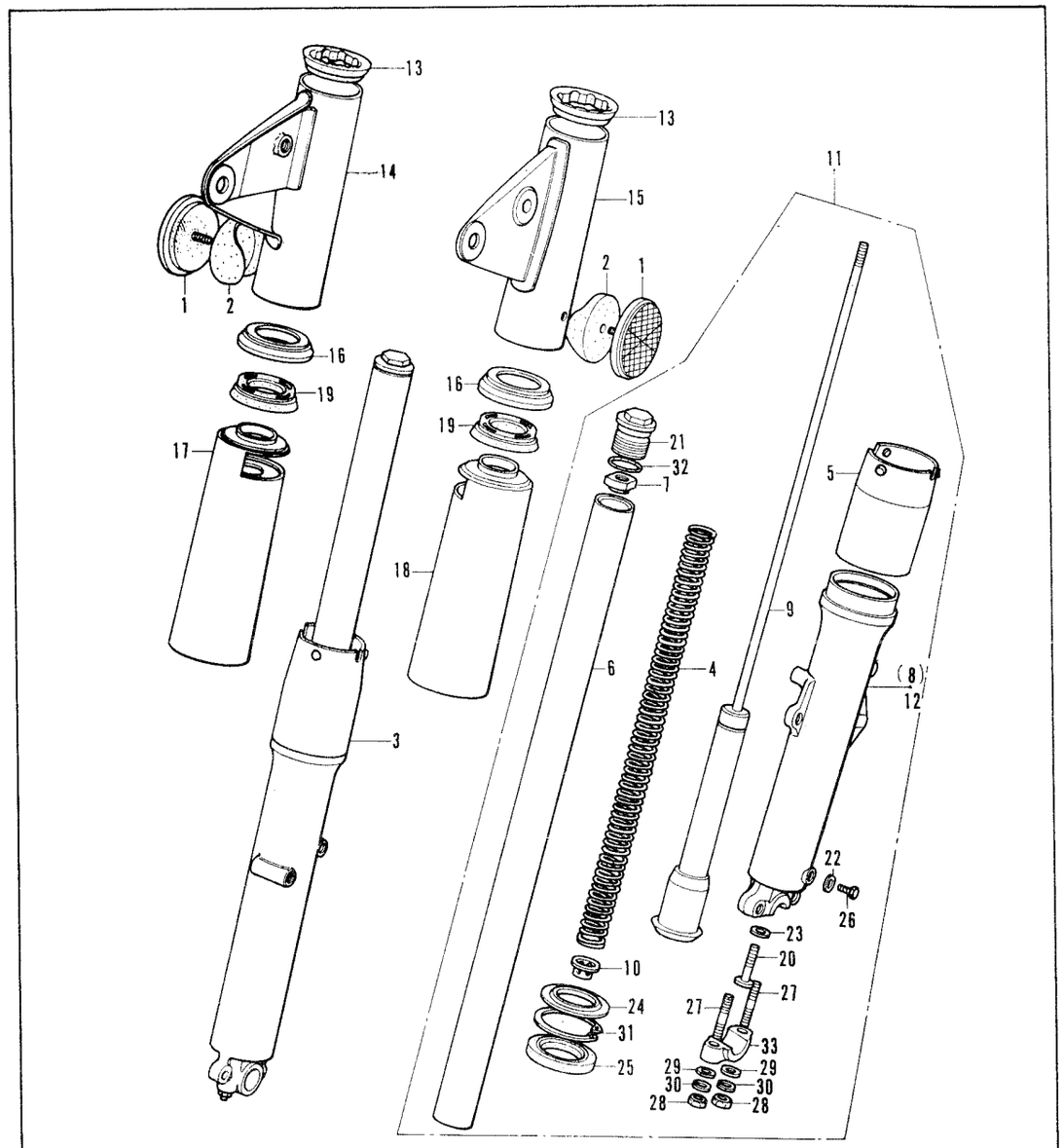
CB500 HANDLEBAR AND CLAMP

1. Bulb
2. Lamp socket base
3. Pilot lamp socket
4. Lamp socket set spring
5. Pilot lamp wires
6. Handlebar
7. Upper handlebar clamp
8. Lower handlebar clamp
9. Spacer washer
10. Special washer
11. Hex bolt
12. Hex bolt
13. Hex bolt
14. Hex nut



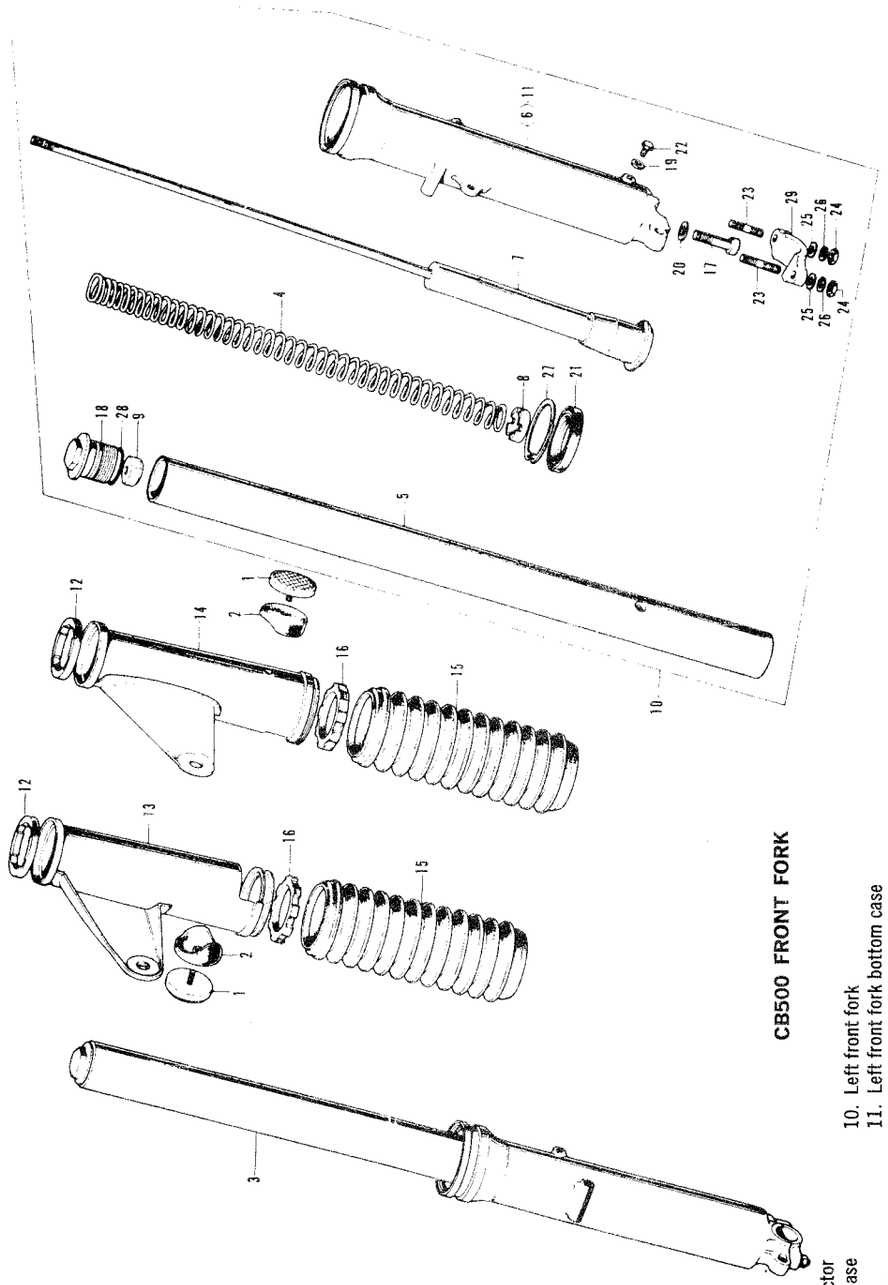
CB350F HANDLEBAR AND CLAMP

1. Bulb
2. Lamp socket base
3. Pilot lamp socket
4. Lamp socket set spring
5. Pilot lamp wires
6. Handlebar
7. Upper handlebar clamp
8. Lower handlebar clamp
9. Plain washer
10. Special washer
11. Hex bolt
12. Hex bolt
13. Cap nut



CB350F FRONT FORK

1. Front reflex reflector
2. Reflector base
3. Right front fork
4. Front cushion spring
5. Bottom case cover
6. Front fork
7. Lock nut
8. Right front fork bottom case
9. Damper
10. Cushion spring seat
11. Left front fork
12. Left front fork bottom case
13. Fork cover cushion A
14. Right front fork cover
15. Left front fork cover
16. Front fork rib
17. Front fork lower cover
18. Left front fork lower cover
19. Front fork cover cushion B
20. Socket bolt
21. Front fork bolt
22. Drain cock packing
23. Special washer
24. Dust seal
25. Oil seal
26. Hex bolt
27. Stud bolt
28. Hex nut
29. Plain washer
30. Lockwasher
31. Internal circlip
32. O-ring
33. Axle holder

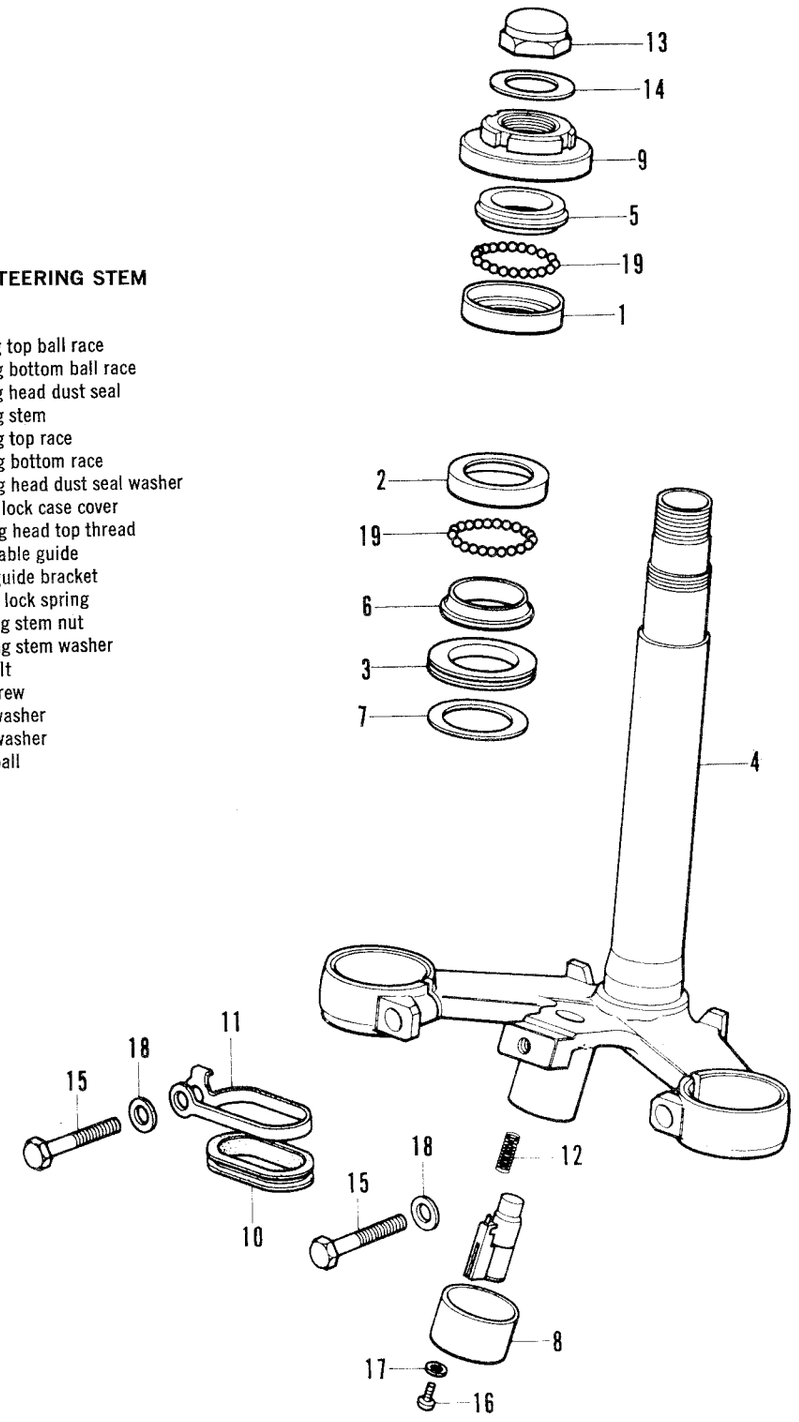


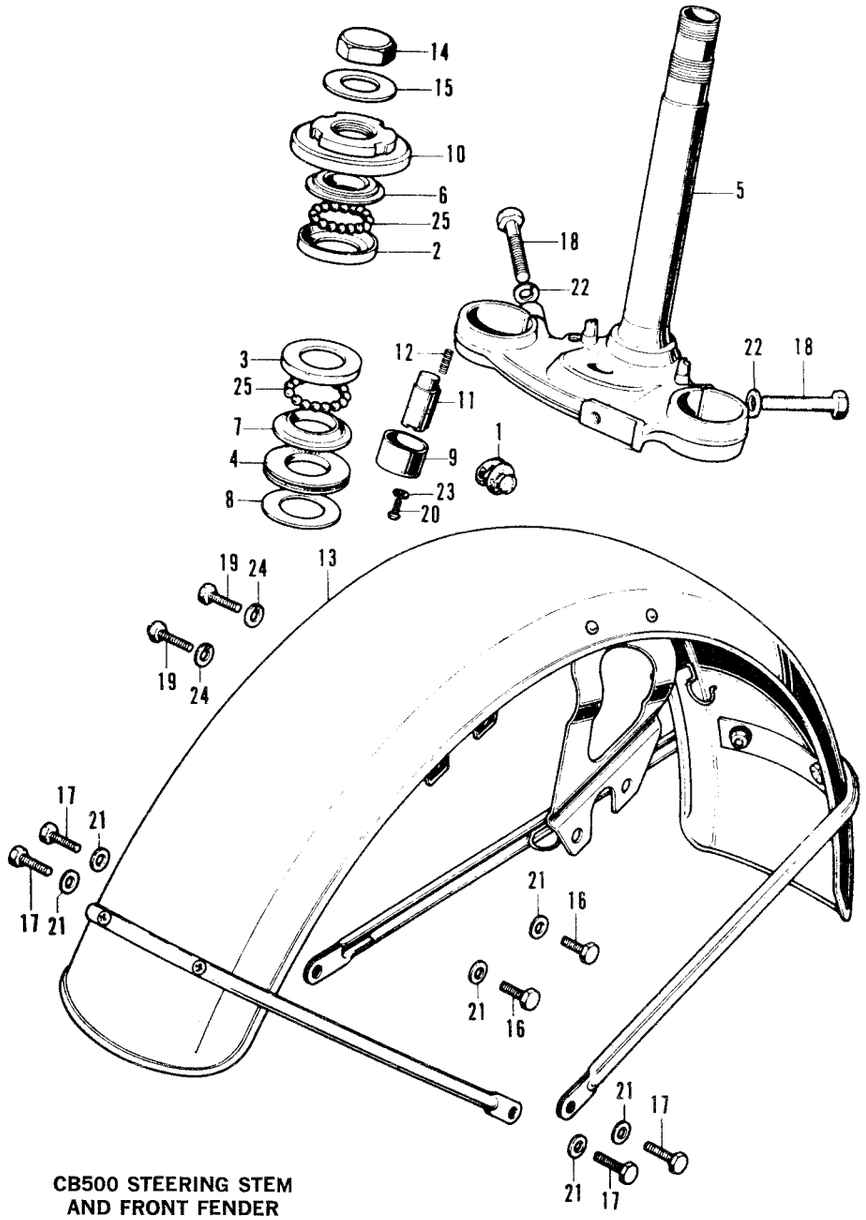
CB500 FRONT FORK

1. Front reflex reflector
2. Reflex reflector base
3. Right front fork
4. Front cushion spring
5. Front fork tube
6. Right front fork bottom case
7. Damper
8. Cushion spring seat
9. Lock nut
10. Left front fork
11. Left front fork bottom case
12. Fork cover cushion A
13. Right front fork cover
14. Left front fork cover
15. Front fork boot
16. Front cover cushion B
17. Hollow set bolt
18. Front fork bolt
19. Drain cock packing
20. Washer
21. Oil seal
22. Hex bolt
23. Stud bolt
24. Hex nut
25. Plain washer
26. Lockwasher
27. Internal circlip
28. O-ring
29. Axle holder

CB350F STEERING STEM

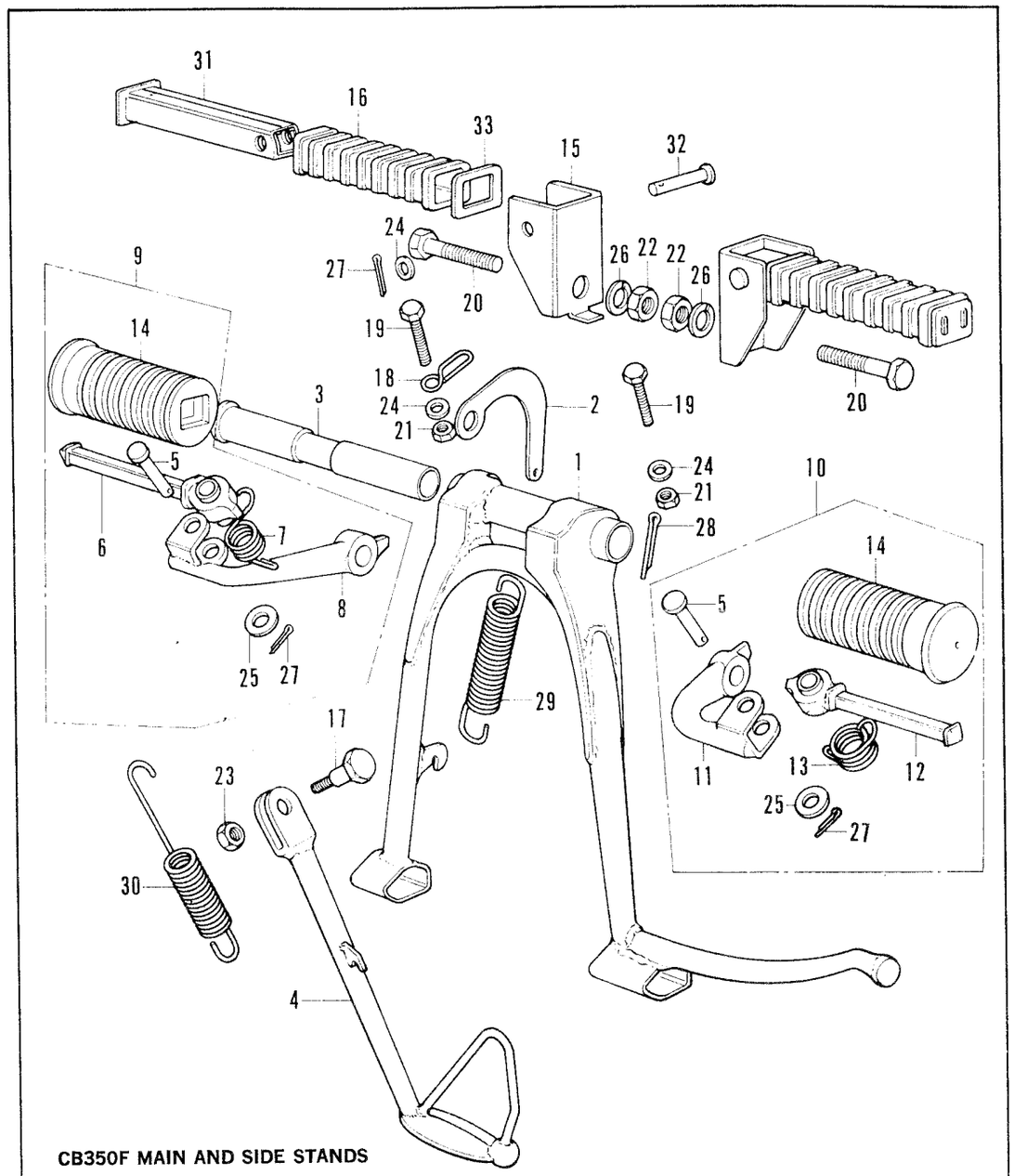
1. Steering top ball race
2. Steering bottom ball race
3. Steering head dust seal
4. Steering stem
5. Steering top race
6. Steering bottom race
7. Steering head dust seal washer
8. Handle lock case cover
9. Steering head top thread
10. Inner cable guide
11. Cable guide bracket
12. Handle lock spring
13. Steering stem nut
14. Steering stem washer
15. Hex bolt
16. Pan screw
17. Plain washer
18. Plain washer
19. Steel ball





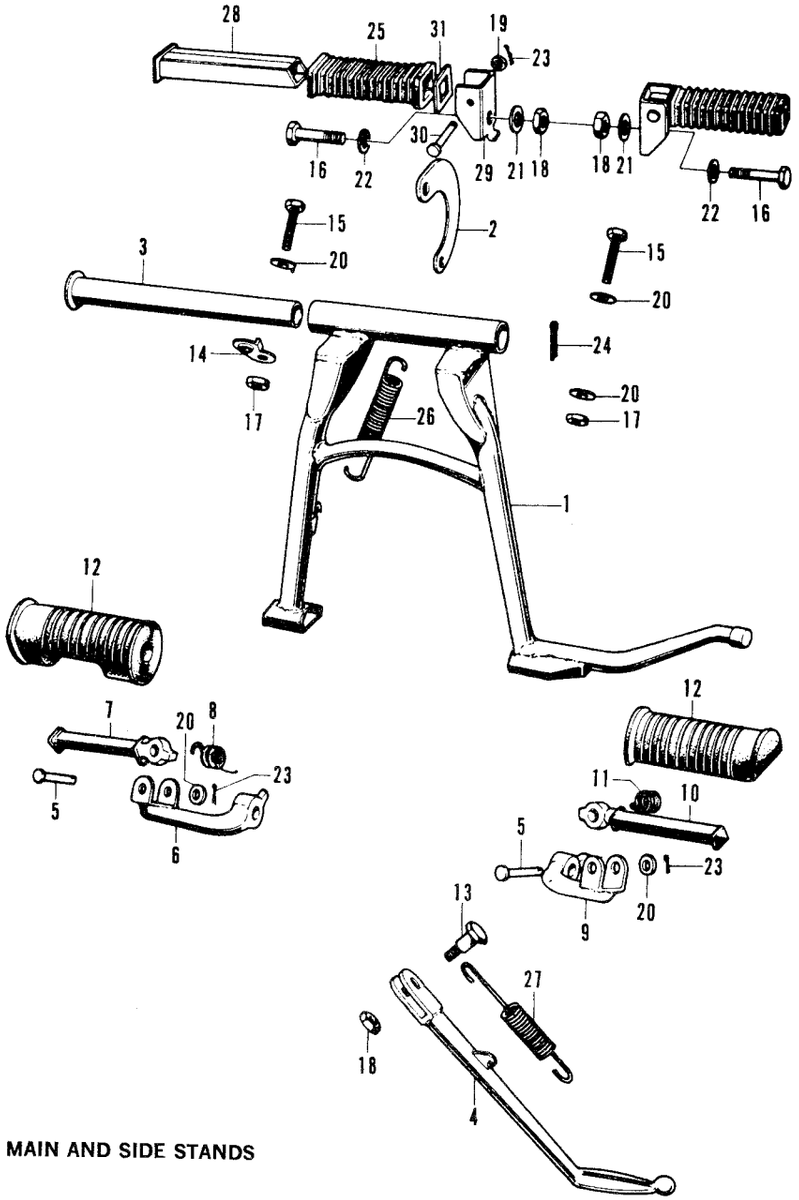
CB500 STEERING STEM AND FRONT FENDER

1. Wire grommet
2. Steering top ball race
3. Steering bottom ball race
4. Steering head dust seal
5. Steering stem
6. Steering top cone race
7. Steering bottom cone race
8. Steering head dust seal washer
9. Handle lock case cover
10. Steering head top thread
11. Handle lock
12. Handle lock spring
13. Front fender
14. Steering stem nut
15. Steering stem washer
16. Hex bolt
17. Hex bolt
18. Hex bolt
19. Hex bolt
20. Pan screw
21. Plain washer
22. Plain washer
23. Lockwasher
24. Lockwasher
25. Steel ball



CB350F MAIN AND SIDE STANDS

1. Main stand
2. Main stand spring hook
3. Main stand pivot
4. Side stand bar
5. Footrest join pin
6. Right footrest arm
7. Right footrest return spring
8. Right footrest bar
9. Right footrest assembly
10. Left footrest assembly
11. Left footrest bar
12. Left footrest arm
13. Left footrest return spring
14. Footrest rubber
15. Rear footrest bracket
16. Rear footrest rubber
17. Side stand pivot screw
18. Battery breather pipe guide
19. Hex bolt
20. Hex bolt
21. Hex nut
22. Hex nut
23. Hex nut
24. Plain washer
25. Plain washer
26. Lockwasher
27. Cotter pin
28. Cotter pin
29. Main stand spring
30. Side stand D spring
31. Rear footrest bar
32. Rear footrest pin
33. Rear footrest washer



CB500 MAIN AND SIDE STANDS

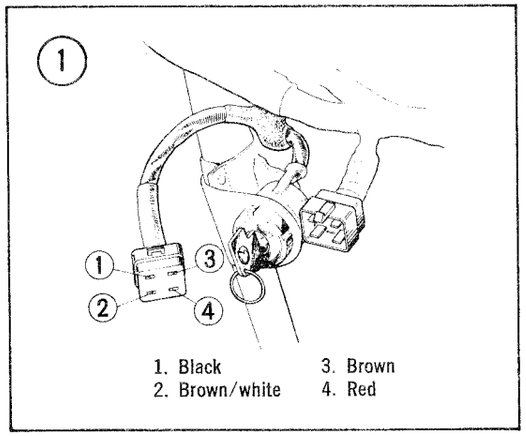
1. Main stand
2. Main stand spring plate
3. Main stand pivot
4. Side stand bar
5. Footrest joint pin
6. Right footrest bar
7. Right footrest arm
8. Right footrest return spring
9. Left footrest bar
10. Left footrest arm
11. Left footrest return spring
12. Footrest rubber
13. Side stand stopper screw
14. Battery breather guide washer
15. Hex bolt
16. Hex bolt
17. Hex nut
18. Hex nut
19. Plain washer
20. Plain washer
21. Plain washer
22. Plain washer
23. Cotter pin
24. Cotter pin
25. Rear footrest rubber
26. Main stand spring
27. Side stand spring
28. Rear footrest bar
29. Rear footrest bracket
30. Rear footrest pin
31. Rear footrest washer

CHAPTER NINE

WIRING AND ELECTRICAL ACCESSORIES

Main Switch

1. Disconnect the switch lead at the junction, **Figure 1**, and test the circuits for continuity.



1. Black
2. Brown/white
3. Brown
4. Red

2. Refer to the chart in **Figure 2**. There should be continuity in each circuit (designated by 0-0). If there is not continuity where there should be, or if there is continuity where there should not be, the switch is defective and should be replaced.

Front Stop Switch

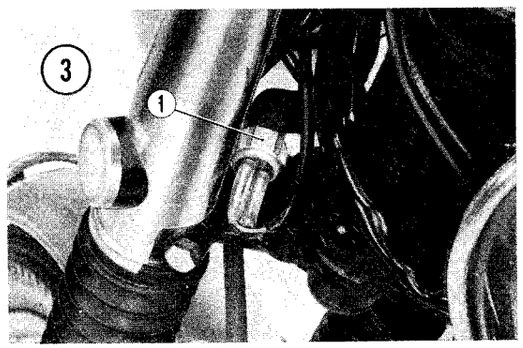
1. Place the continuity tester probes on the black and green/yellow terminals of the switch,

(2)

		BAT	IG	TL_1	TL_2
Color of wires		Red	Black	Brown white	Brown
Key position	OFF				
	1	○—○		○—○	
	2	○—			○

Figure 3, and then operate the front brake lever to check the circuit.

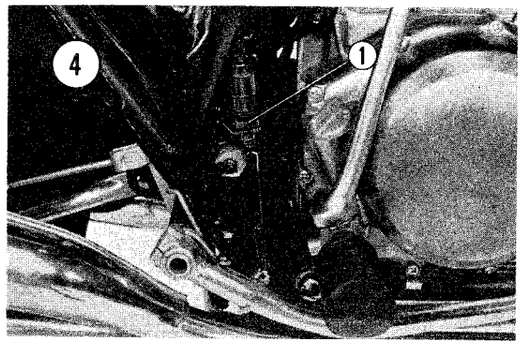
Remember that there should be .08 in.-.2 in. (2mm-5mm) free play in the lever, measured at the tip, before the switch is triggered.



1. Front stop switch

Rear Stop Switch

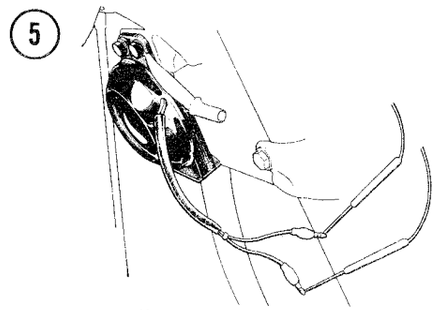
1. Place the probes of the continuity tester on the black and green/yellow terminals of the switch, **Figure 4**, to check the circuit. When the rear brake pedal is depressed .8 in. (20mm) measured at the tip, the rear stop light should go on. Correct the setting by means of the adjusting nut, if required.



1. Rear stop switch adjuster nut

Horn

1. Check for continuity across the horn terminals, **Figure 5**.



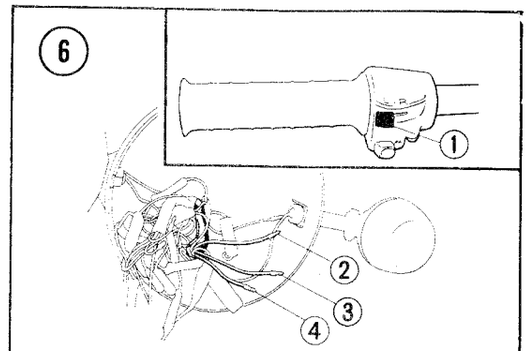
Horn continuity test

2. An alternate method is to connect the horn directly to a fully charged 12-volt battery to see if it sounds.

Turn Signal Control Switch

1. Disconnect the turn signal switch wiring at the headlight case as shown in **Figure 6**.

2. Check continuity between the terminals of the gray and orange leads (left turn) and the gray and light blue leads (right turn). The chart in **Figure 7** shows the circuits (0-0) in which continuity should exist.



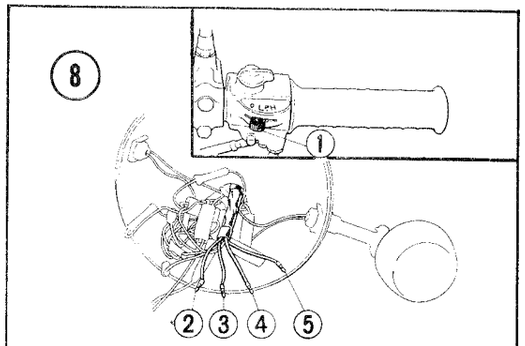
1. Turn signal switch
2. Light blue wire
3. Gray wire
4. Orange wire

7

Knob	Blue wire	Gray wire	Orange wire
R	○	○	
OFF (center)			
L		○	○

Headlight Switch

1. Referring to **Figure 8** and the chart in **Figure 9**, check continuity between the different leads. Circuits which should have continuity are designated by 0-0.



1. Lighting switch
2. Black wire
3. Blue wire
4. Brown/white wire
5. White wire

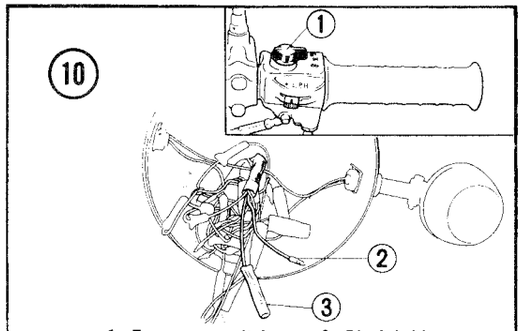
2. If continuity does not exist between terminals indicated on the chart, or if it exists where none should occur, the switch is defective.

9

Wire color		IG Black	HB Blue	TL Brown/white	LB White
ON	H	○	○	○	
	P	○		○	
	L	○		○	○
OFF					

Emergency Flasher and Starter Switch

1. Carry out continuity tests on the two switches. **Figures 10 and 11** cover the emergency flasher, and **Figures 12 and 13** cover the starter switch.

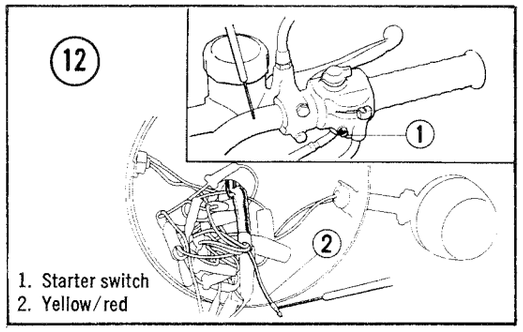


1. Emergency switch
2. Black
3. Black/white

11

EMERGENCY SWITCH

Wire color	Black	Black/white
ON	○	○
OFF		



1. Starter switch
2. Yellow/red

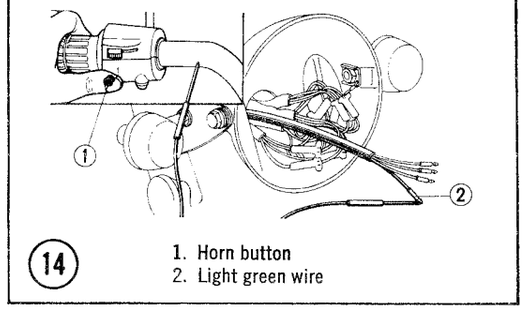
13

STARTER SWITCH

Wire color		Yellow/red
ON	○	○
OFF		

Horn Button

1. Check for continuity between the light green lead in the headlight case and the handlebar as shown in **Figure 14**. The button is satisfactory if continuity exists.

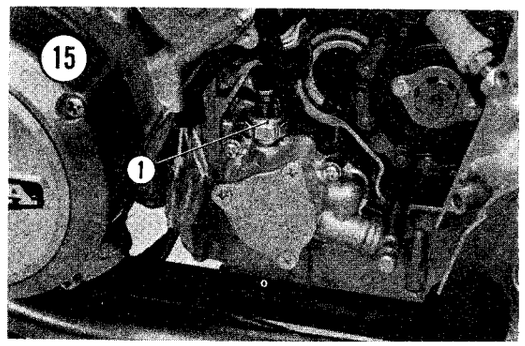


1. Horn button
2. Light green wire

Oil Pressure Switch

1. The switch, **Figure 15**, activates a warning lamp when oil pressure falls below the following limit:

CB500	7 in.-lbs. (.5 kg-cm)
CB350F	4.3 in.-lbs. (.3 kg-cm)



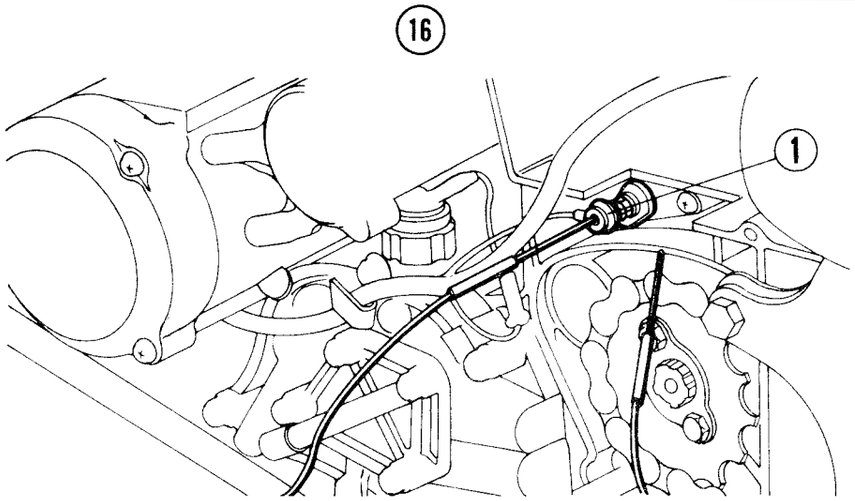
1. Oil pressure switch

2. Check the switch for continuity with the main switch on but with the engine not running. The switch is satisfactory if there is continuity.

If the warning lamp does not go out after the engine is started and the pressure switch checks out, the trouble probably is in the lubrication system itself.

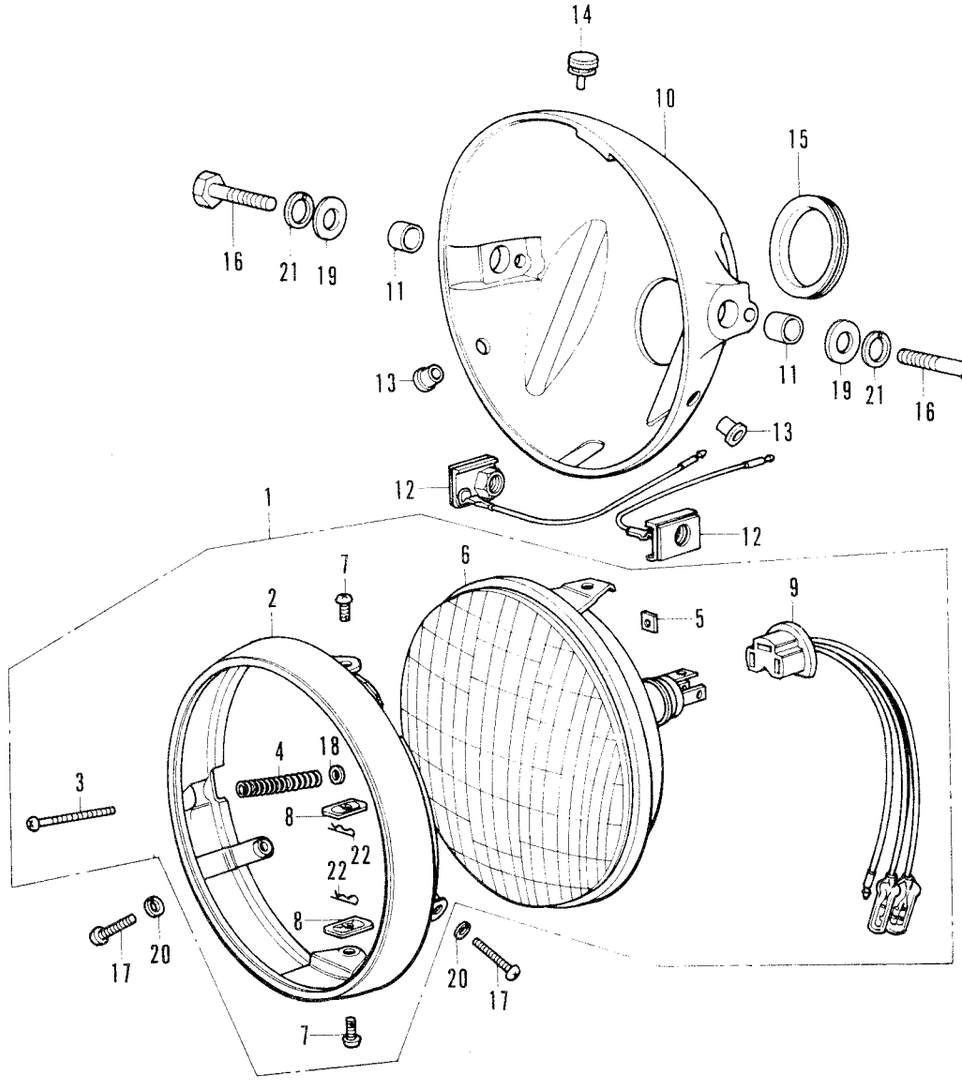
Neutral Switch

1. The neutral switch is located on the left side of the crankcase, **Figure 16**. When the transmission is shifted into neutral, the switch is grounded, the circuit is completed, and the indicator lamp goes on.
2. Remove the left crankcase cover and check the continuity of the switch when the transmission is in neutral.



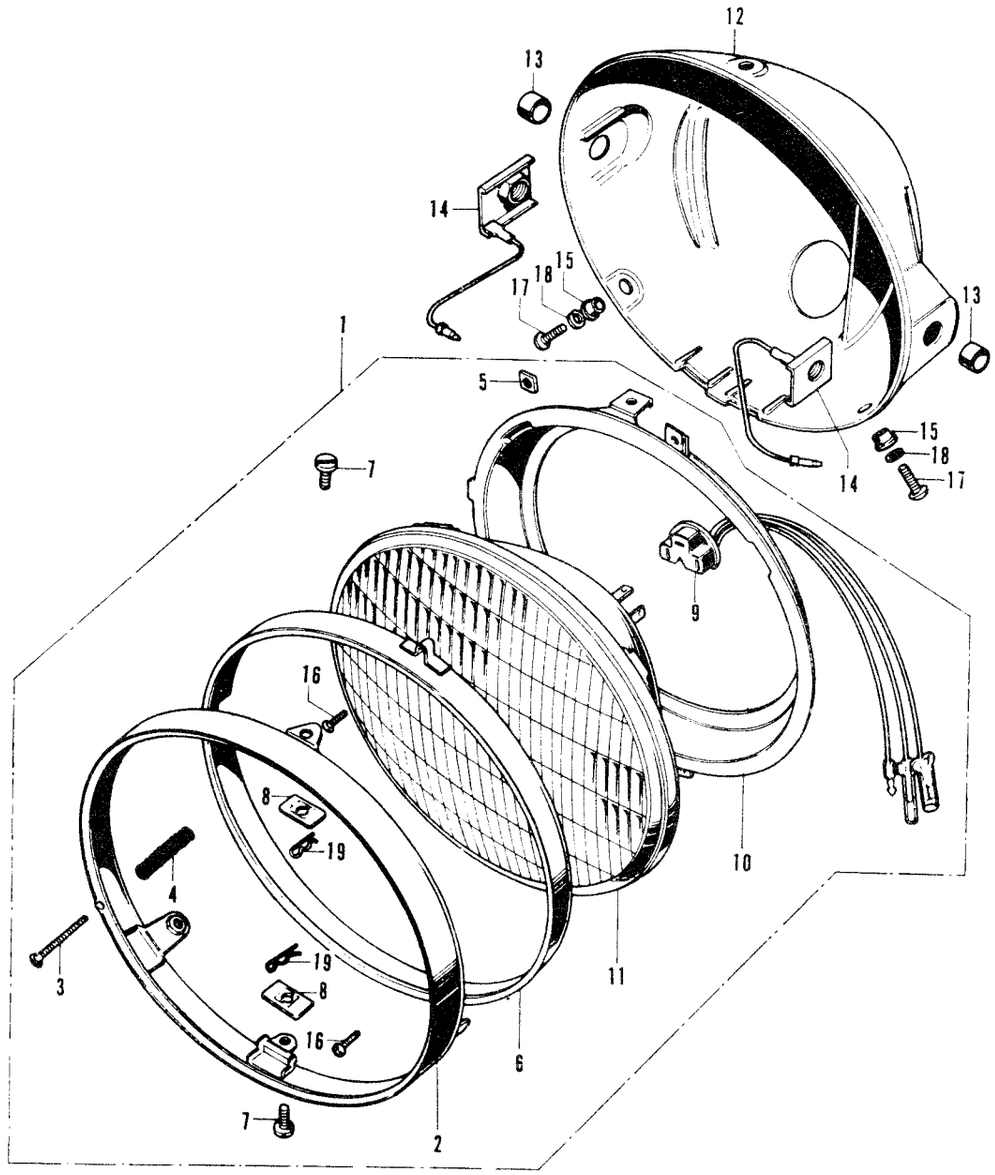
1. Neutral switch

Wiring diagrams on pages 154-157.



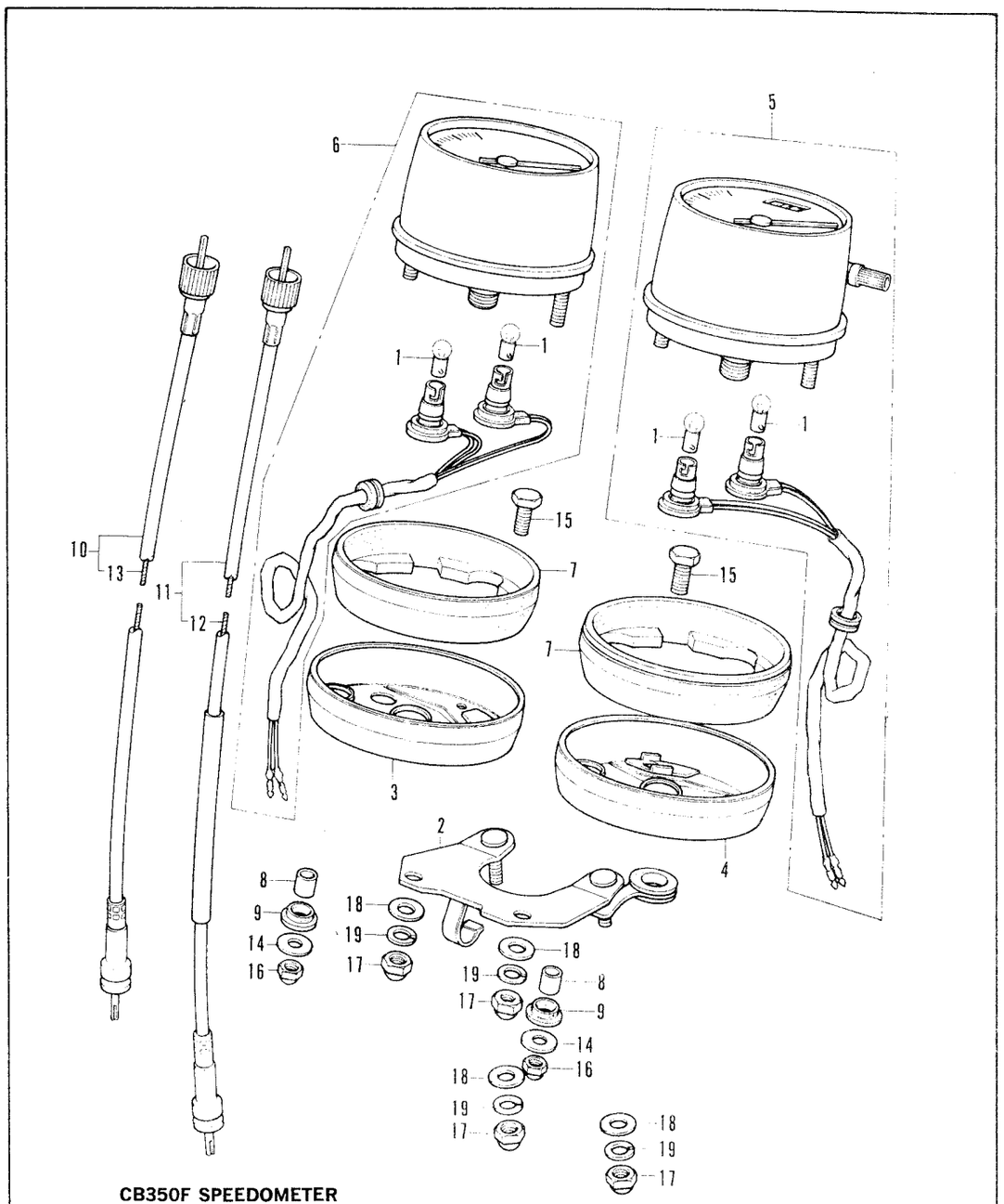
CB350F HEADLIGHT

1. Headlight assembly
2. Headlight rim
3. Beam adjust screw
4. Beam adjust spring
5. Beam adjust nut
6. Headlight unit
7. Unit holder screw
8. Unit holder nut
9. Headlight socket
10. Headlight case
11. Light case collar
12. Headlight case washer
13. Headlight collar
14. Headlight case grommet
15. Headlight case grommet
16. Hex bolt
17. Pan screw
18. Plain washer
19. Plain washer
20. Lockwasher
21. Lockwasher
22. Lock pin



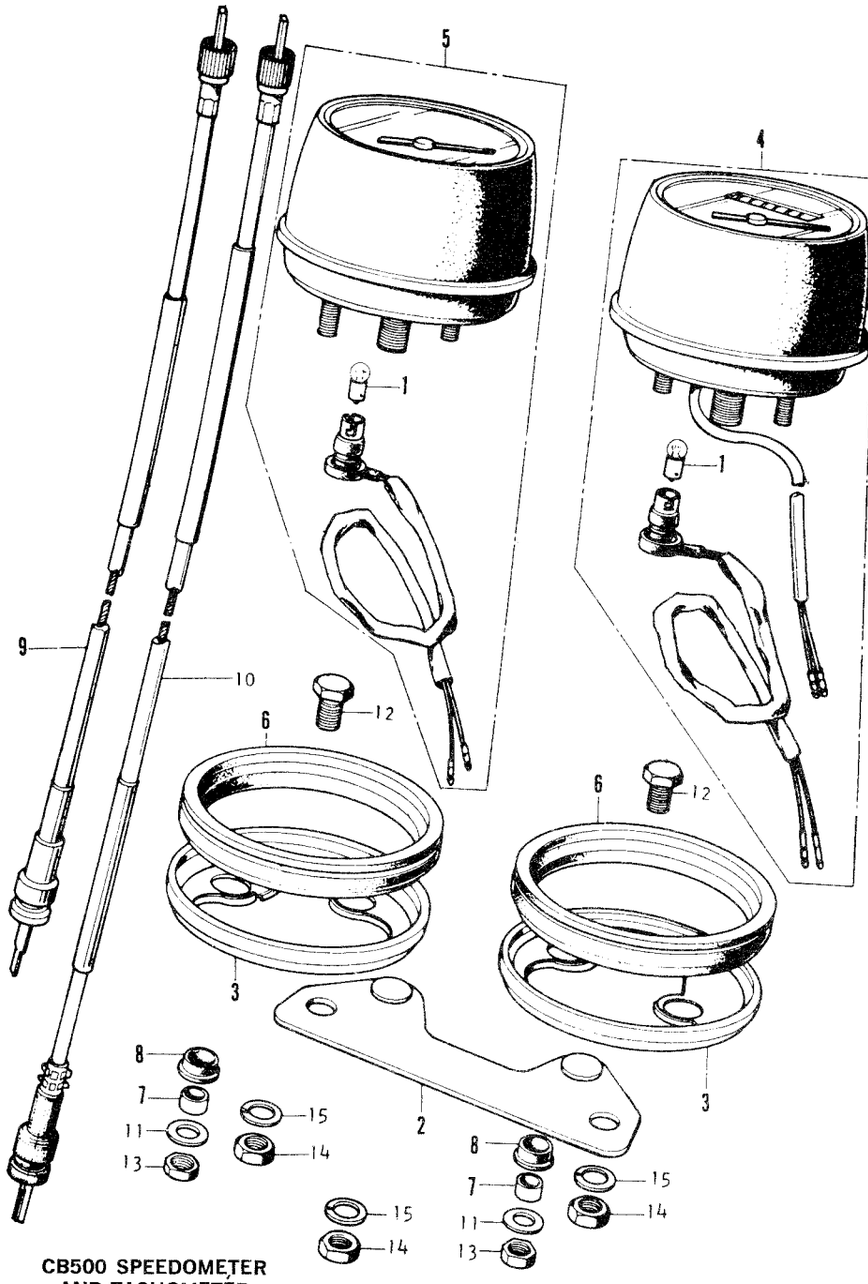
CB500 HEADLIGHT

1. Headlight assembly
2. Headlight rim
3. Beam adjusting screw
4. Beam adjusting spring
5. Beam adjusting nut
6. Retaining ring
7. Unit holder screw
8. Unit holder nut
9. Headlight socket
10. Mounting ring
11. Sealed beam unit
12. Headlight case
13. Headlight case collar
14. Headlight setting washer
15. Headlight setting collar
16. Pan screw
17. Pan screw
18. Lockwasher
19. Lock pin



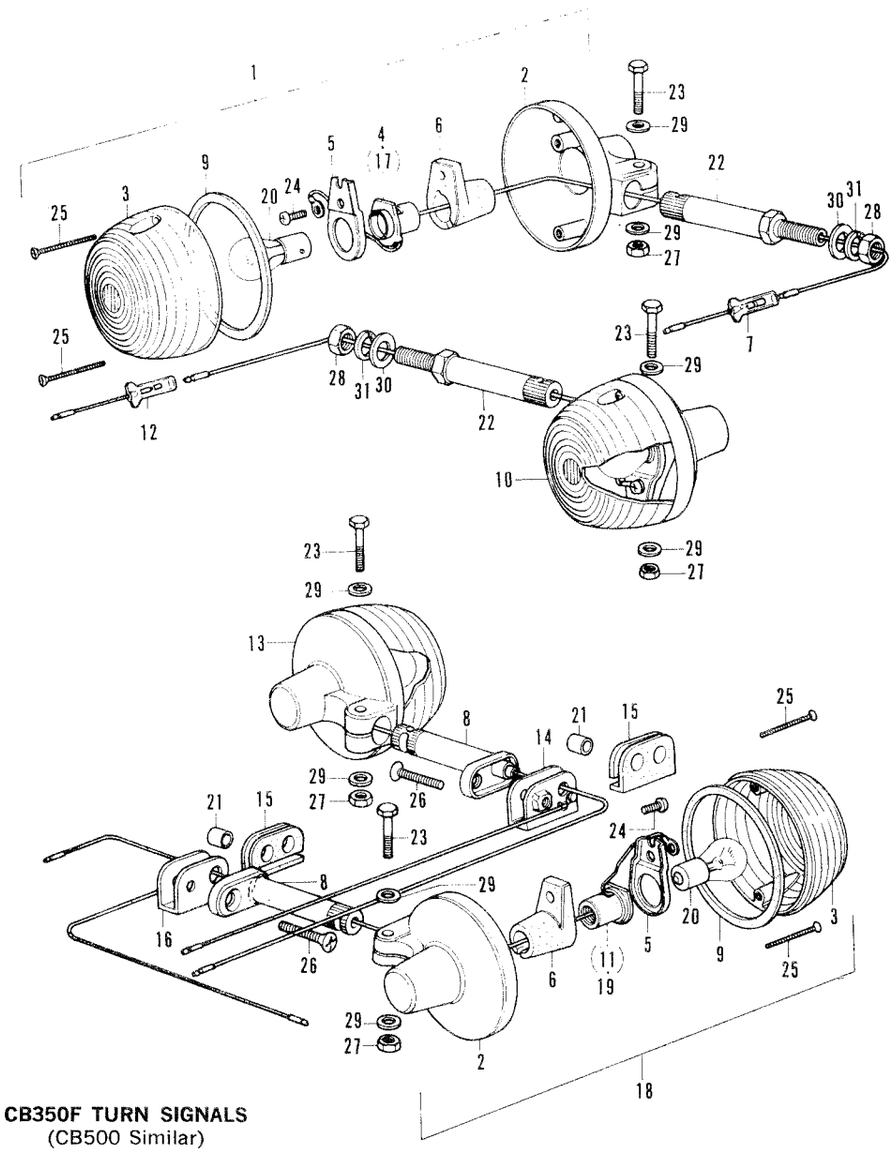
CB350F SPEEDOMETER AND TACHOMETER

1. Bulb
2. Meter bracket
3. Right meter set ring
4. Left meter set ring
5. Speedometer
6. Tachometer
7. Meter cushion
8. Meter set collar
9. Meter set rubber
10. Tachometer cable
11. Speedometer cable
12. Inner speedometer cable
13. Inner speedometer cable
14. Handlebar holder setting washer
15. Hex bolt
16. Cap nut
17. Cap nut
18. Plain washer
19. Lockwasher



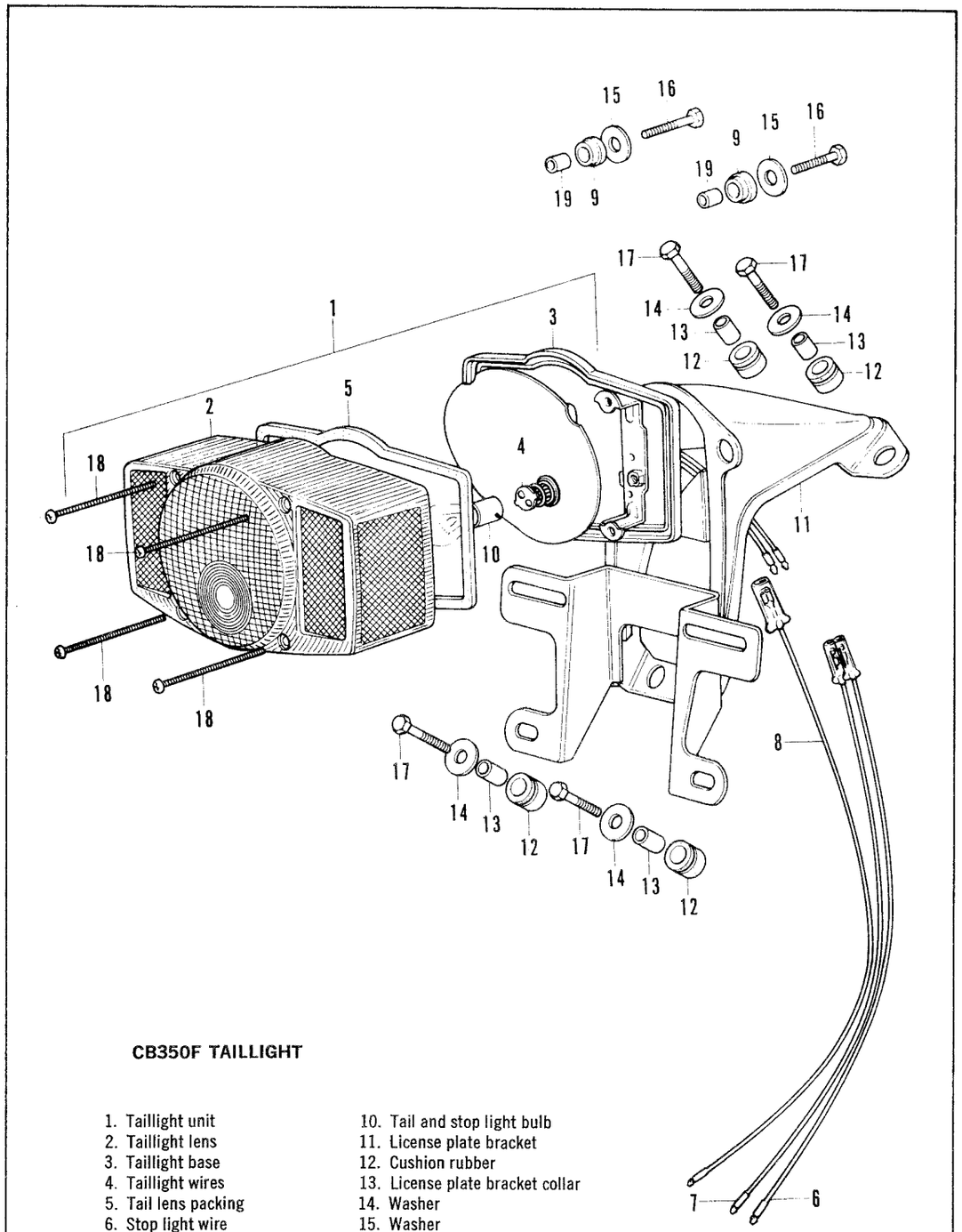
CB500 SPEEDOMETER AND TACHOMETER

1. Bulb
2. Meter set plate
3. Right meter set ring
4. Speedometer assembly
5. Tachometer assembly
6. Meter cushion
7. Meter set collar
8. Meter set rubber
9. Tachometer cable assembly
10. Speedometer cable assembly
11. Washer
12. Hex bolt
13. Hex nut
14. Hex nut
15. Lockwasher



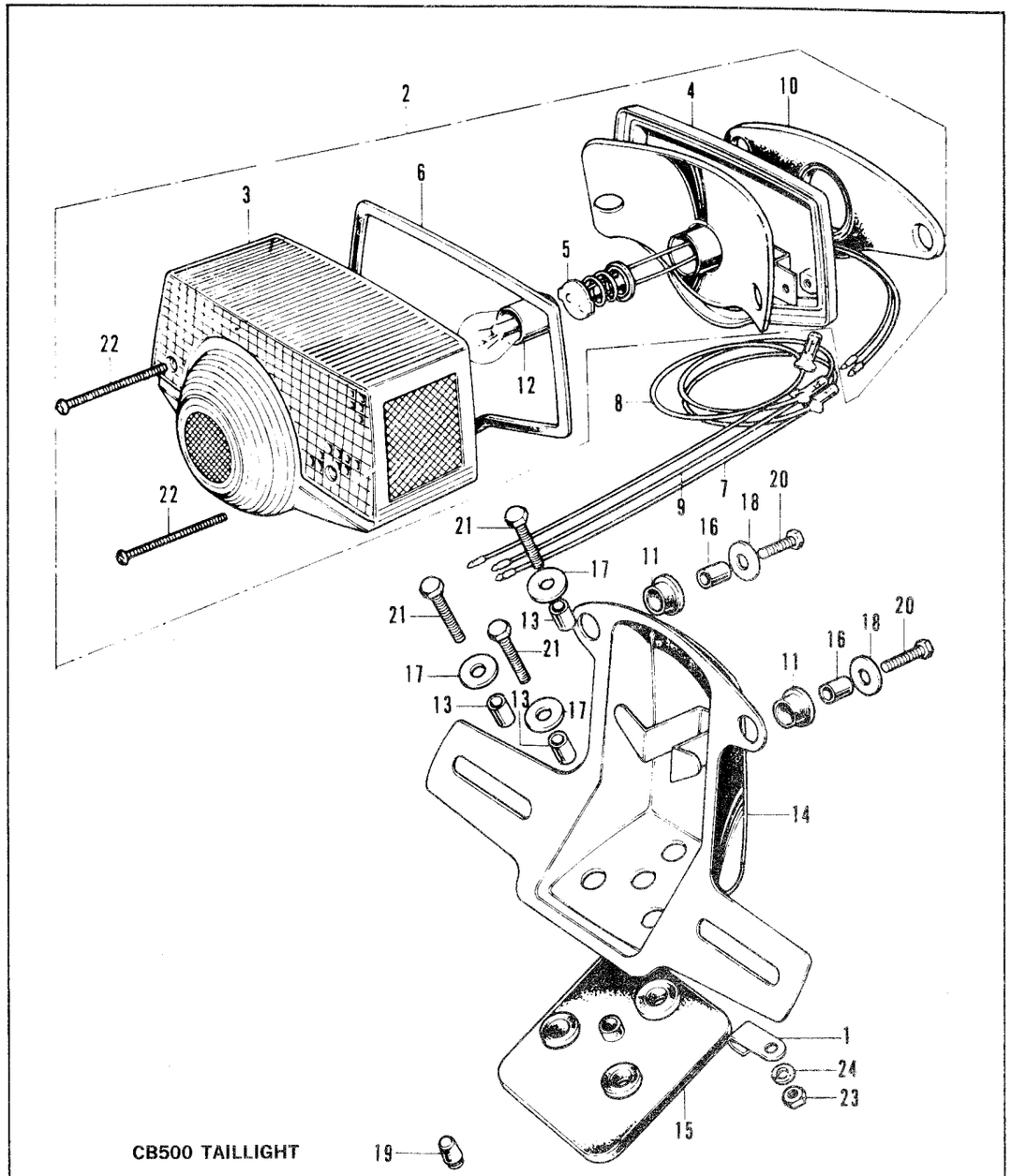
CB350F TURN SIGNALS
(CB500 Similar)

1. Right turn signal assembly
2. Turn signal base
3. Turn signal lens
4. Right turn signal socket
5. Socket holder
6. Cushion rubber
7. Right turn signal wire
8. Rear turn signal bracket
9. Lens packing
10. Left turn signal assembly
11. Left turn signal socket
12. Left front turn signal wire
13. Right rear turn signal assembly
14. Right turn signal stopper
15. Rear turn signal mount rubber
16. Left turn signal stopper
17. Right turn signal socket
18. Left rear turn signal assembly
19. Left rear turn signal socket
20. Bulb
21. Rear fender collar
22. Light case set bolt
23. Hex bolt
24. Pan screw
25. Oval screw
26. Oval screw
27. Hex nut
28. Hex nut
29. Plain washer
30. Plain washer
31. Lockwasher



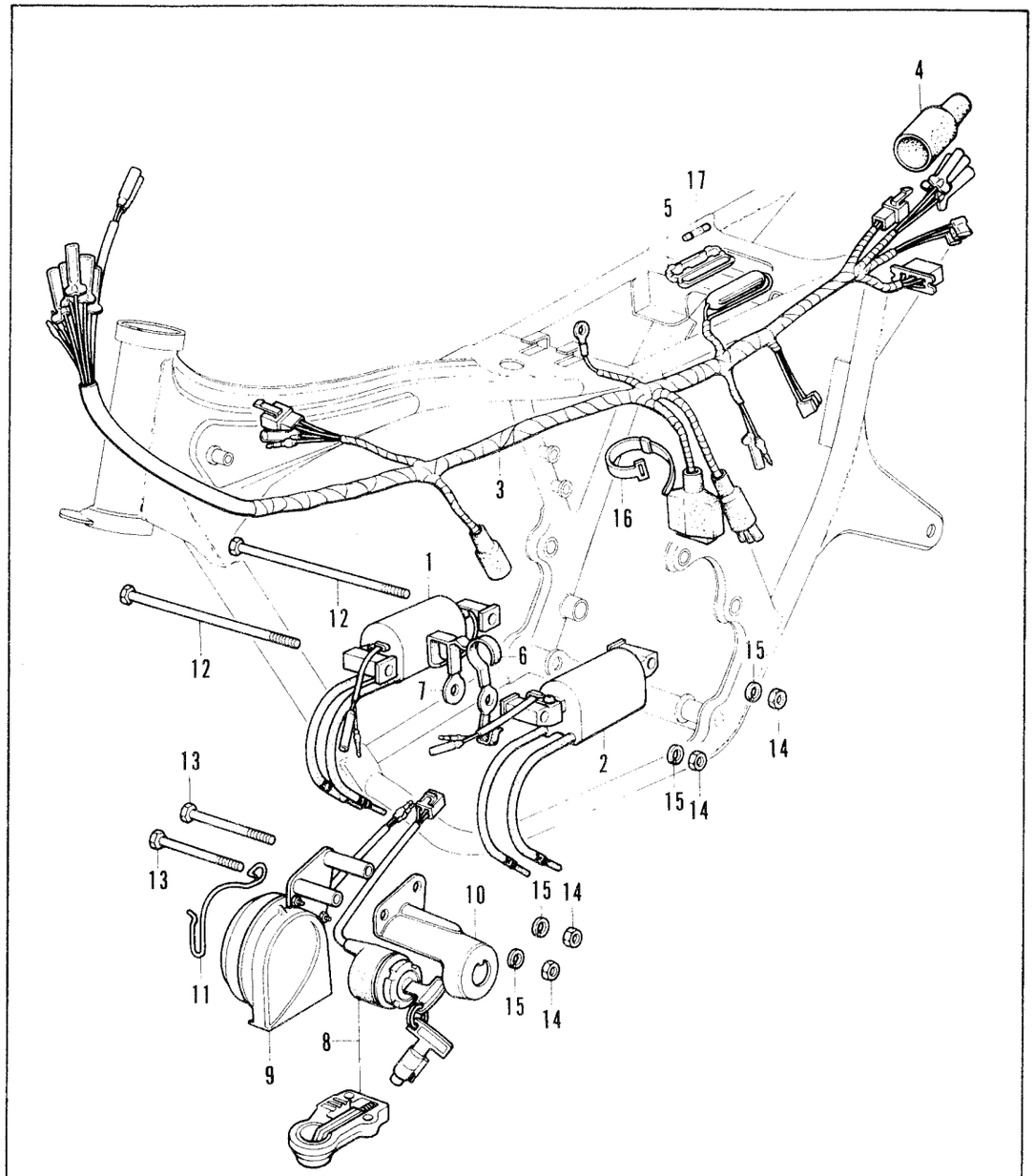
CB350F TAILLIGHT

1. Taillight unit
2. Taillight lens
3. Taillight base
4. Taillight wires
5. Tail lens packing
6. Stop light wire
7. Taillight wire
8. Taillight ground wire
9. Taillight base packing
10. Tail and stop light bulb
11. License plate bracket
12. Cushion rubber
13. License plate bracket collar
14. Washer
15. Washer
16. Hex bolt
17. Hex bolt
18. Pan screw
19. Taillight unit set collar



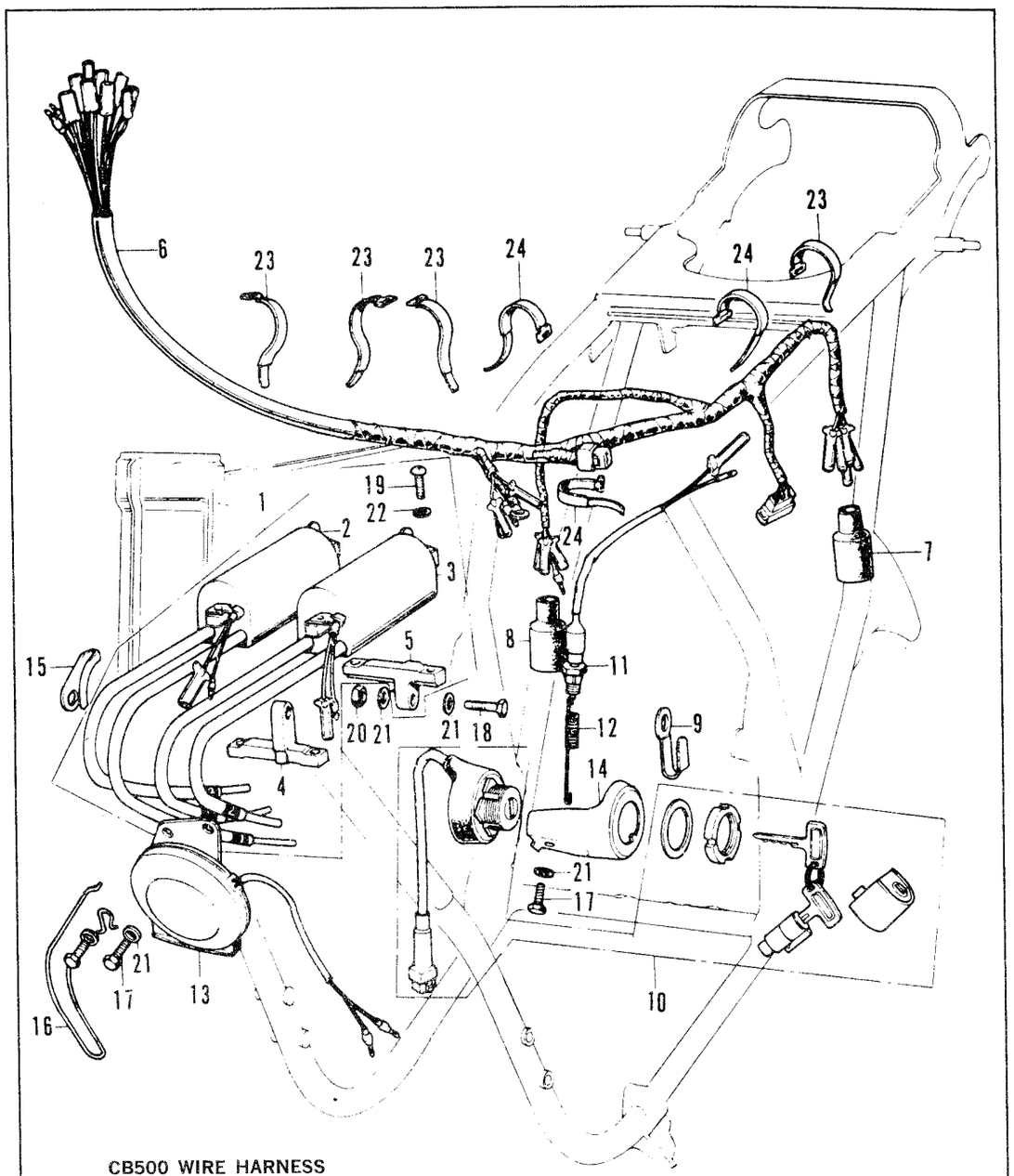
CB500 TAILLIGHT

1. Wire clip
2. Taillight unit
3. Taillight lens
4. Taillight base
5. Taillight wires
6. Taillight lens packing
7. Taillight wire
8. Taillight ground wire
9. Stop light wire
10. Taillight base packing
11. Taillight packing
12. Tail and stop light bulb
13. Rear fender collar
14. License plate bracket
15. License bracket seat
16. License bracket collar
17. Washer
18. Washer
19. Cone plug
20. Hex bolt
21. Hex bolt
22. Pan screw
23. Hex nut
24. Lockwasher



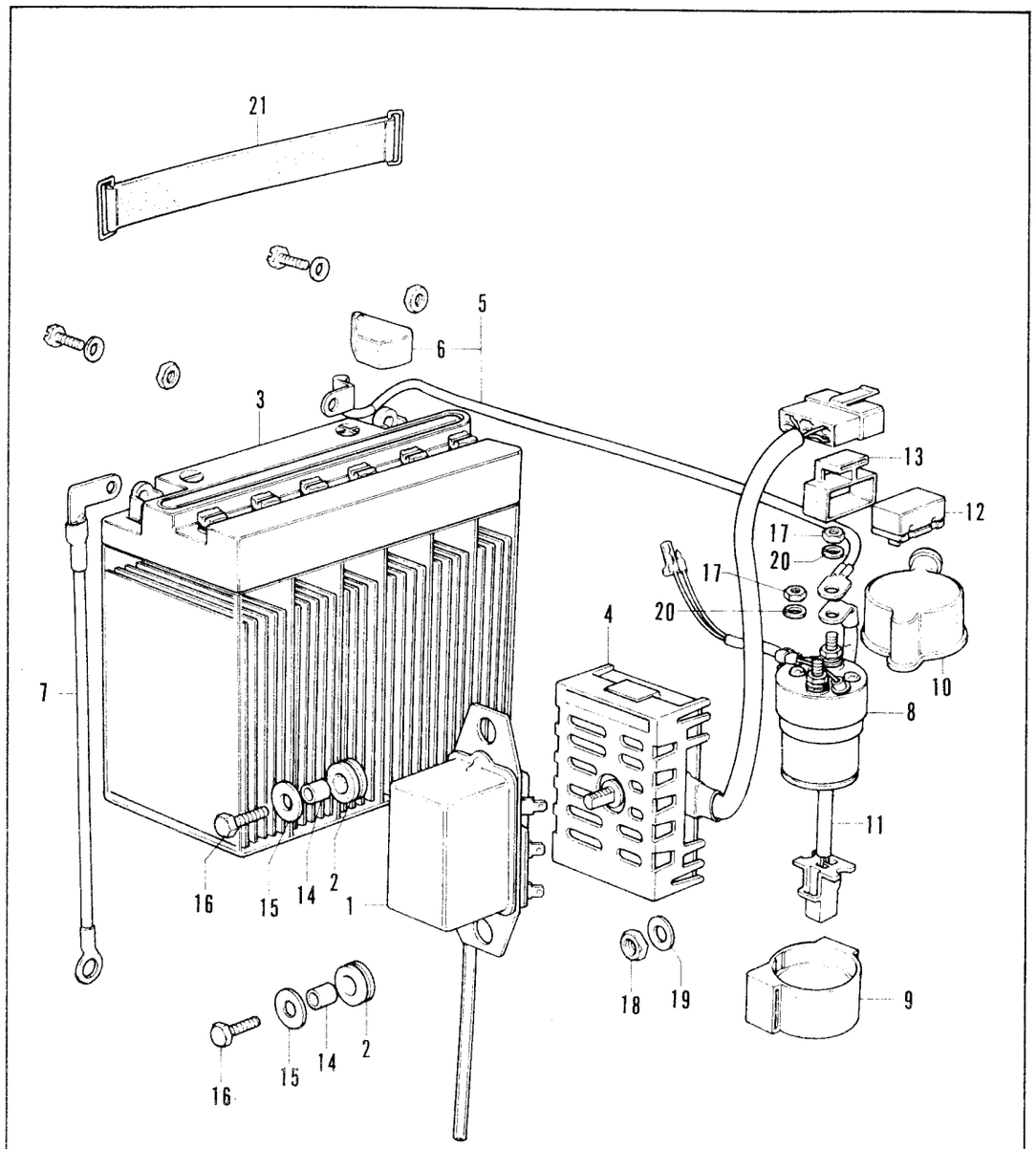
CB350F WIRE HARNESS

1. Right ignition coil assembly
2. Left ignition coil assembly
3. Wire harness
4. Wire harness connector cover
5. Fuse case
6. Wire harness clip
7. Coupler clip
8. Key-set
9. Horn assembly
10. Main switch bracket
11. Tachometer cable clamp
12. Hex bolt
13. Hex bolt
14. Hex nut
15. Lockwasher
16. Wire band
17. Fuse



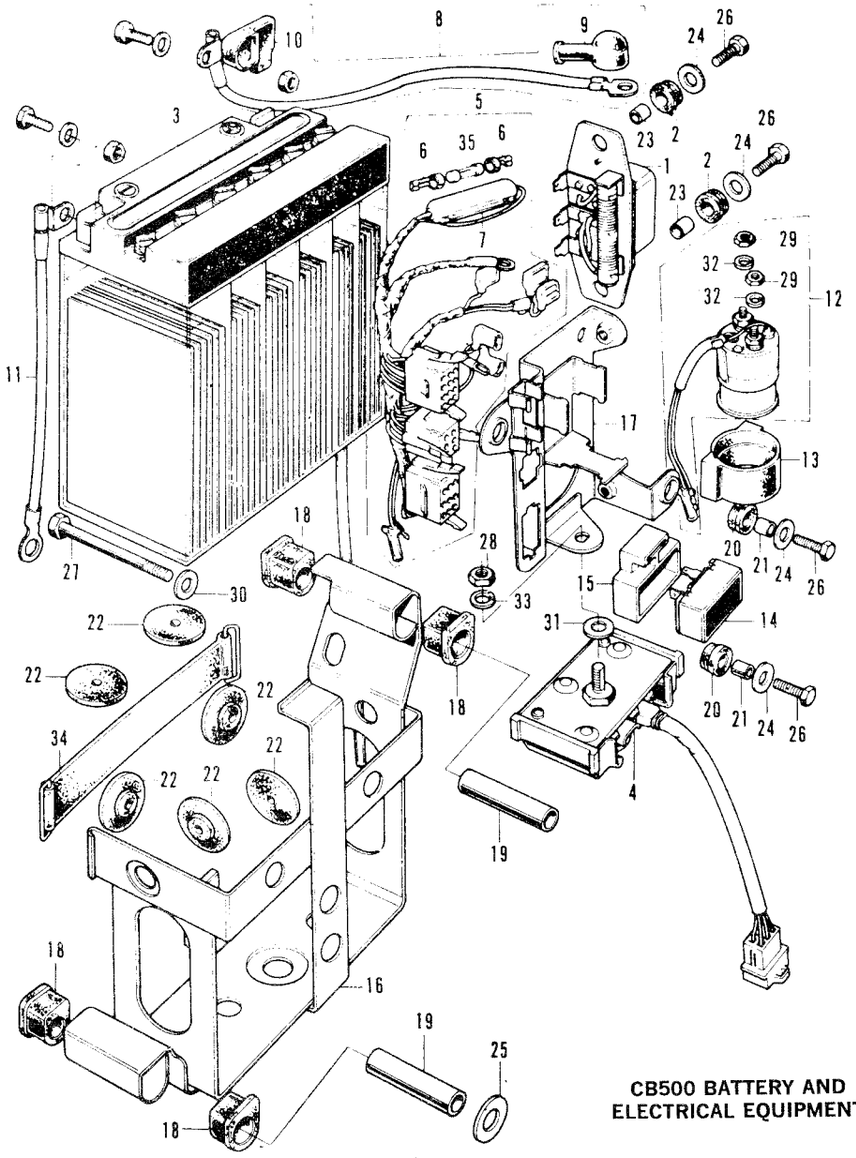
CB500 WIRE HARNESS

1. Ignition coil assembly
2. Right ignition coil
3. Left ignition coil
4. Ignition coil bracket
5. Ignition coil bracket
6. Wire harness
7. Wire harness connector cover
8. Connector cover
9. Wire harness clip
10. Combination switch kit
11. Stop switch
12. Stop switch spring
13. Horn
14. Main switch bracket
15. Ignition coil wire protector
16. Tachometer cable clamp
17. Hex bolt
18. Hex bolt
19. Pan screw
20. Hex nut
21. Plain washer
22. Lockwasher
23. Wire band
24. Wire band



CB350F BATTERY AND ELECTRICAL COMPONENTS

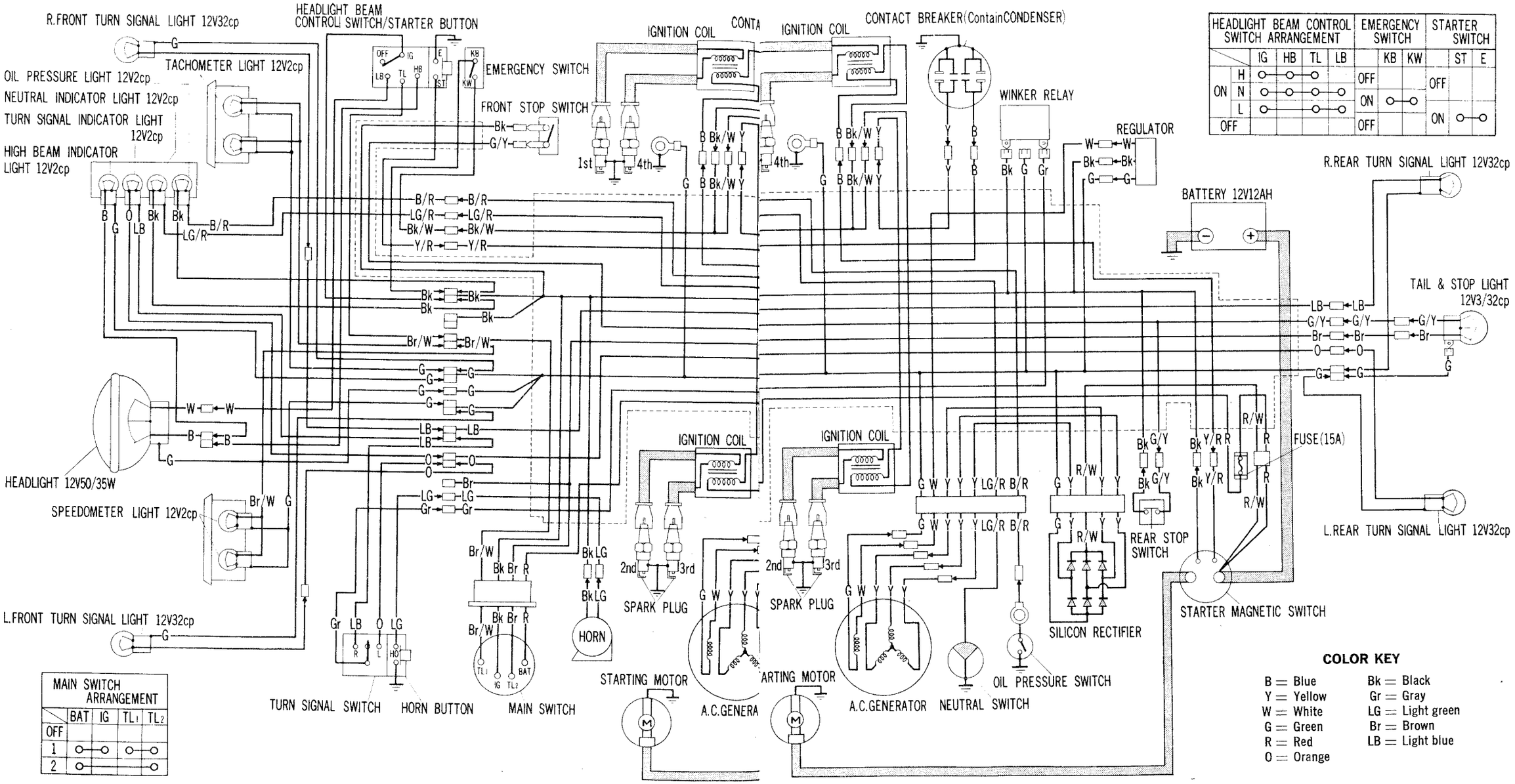
1. Regulator
2. Regulator cushion
3. Battery
4. Silicon rectifier
5. Starter battery cable
6. Battery terminal cover
7. Battery ground cable
8. Starter magnetic switch
9. Magnetic switch suspension
10. Magnetic switch cover
11. Magnetic sub-wiring
12. Flasher relay
13. Flasher relay suspension
14. Number bracket collar
15. Handle holder setting washer
16. Hex bolt
17. Hex nut
18. Hex nut
19. Plain washer
20. Lockwasher
21. Battery band



CB500 BATTERY AND ELECTRICAL EQUIPMENT

1. Regulator assembly
2. Regulator cushion
3. Battery
4. Silicon rectifier
5. Sub-wire harness
6. Fuse connector
7. Fuse case
8. Battery starter cable
9. Starting motor terminal cover
10. Battery terminal cover
11. Battery ground cable
12. Starter magnetic switch assembly
13. Magnetic switch suspension
14. Flasher relay assembly
15. Flasher relay suspension
16. Battery box
17. Electric plate
18. Battery box cushion
19. Battery box collar
20. Rear fender cushion
21. Rear fender collar
22. Battery box rubber
23. Number bracket collar
24. Washer
25. Washer
26. Hex bolt
27. Hex bolt
28. Hex nut
29. Hex nut
30. Plain washer
31. Plain washer
32. Spring washer
33. Spring washer
34. Battery band
35. Fuse

WIRING DIAGRAM — CB350F



HEADLIGHT BEAM CONTROL SWITCH ARRANGEMENT		IG	HB	TL	LB
ON	H	○	○	○	
	N	○	○	○	○
	L	○		○	○
OFF					

EMERGENCY SWITCH	KB	KW
OFF		
ON	○	○
OFF		

STARTER SWITCH	ST	E
OFF		
ON	○	○

MAIN SWITCH ARRANGEMENT	BAT	IG	TL_1	TL_2
OFF				
1	○	○	○	○
2	○			○

COLOR KEY

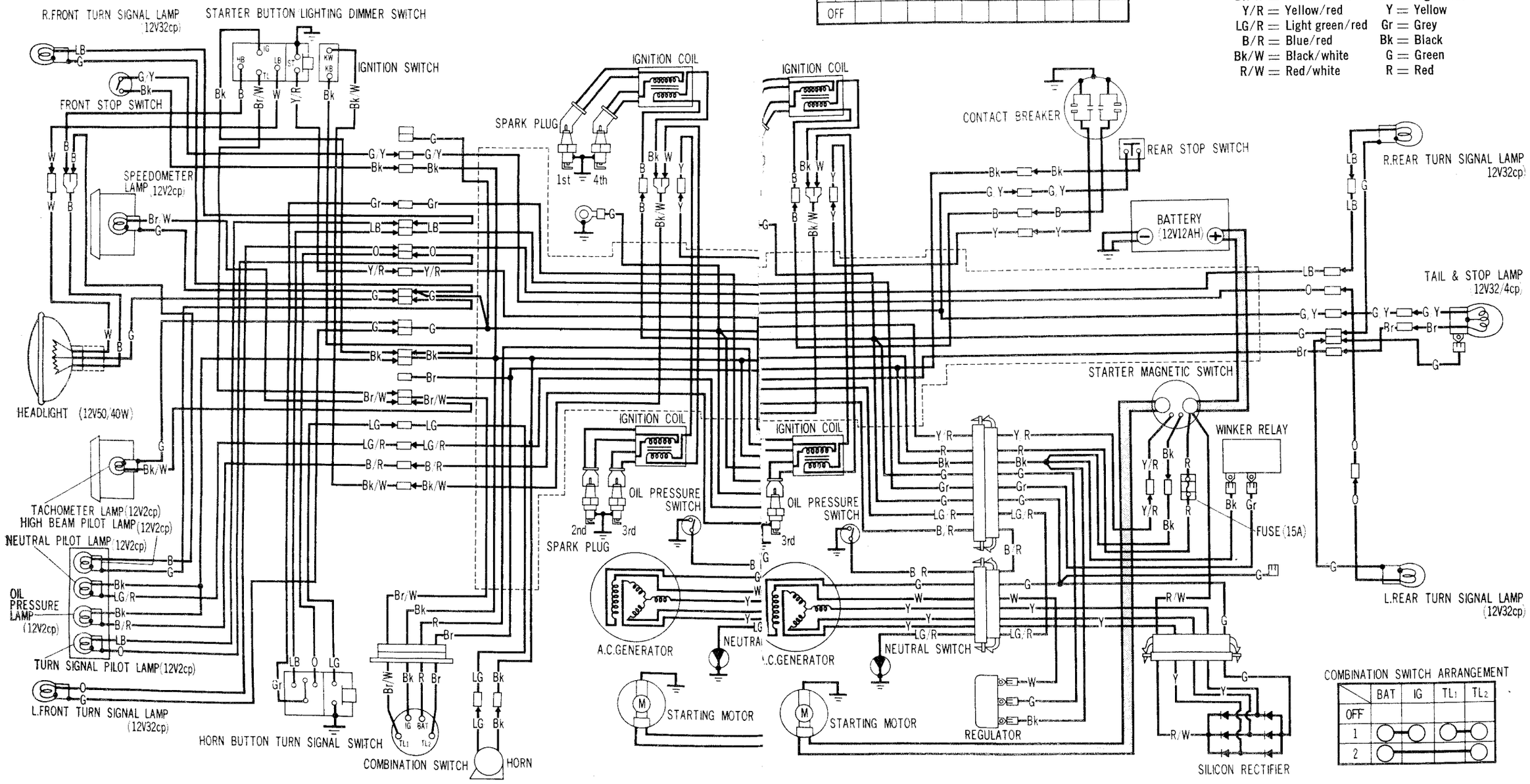
B = Blue	Bk = Black
Y = Yellow	Gr = Gray
W = White	LG = Light green
G = Green	Br = Brown
R = Red	LB = Light blue
O = Orange	

WIRING DIAGRAM — CB500

LIGHTING DIMMER SWITCH ARRANGEMENT						IGNITION SWITCH			STARTER SWITCH		
		IG	HB	TL	LB		KB	KW		ST	E
ON	H	●	●	●		OFF			OFF		
	N	●	●	●	●	ON	●	●			
	L	●		●	●	OFF			ON	●	●
OFF											

COLOR KEY

Br = Brown	W = White
LG = Light green	B = Blue
G/Y = Green/yellow	O = Orange
Br/W = Brown/white	LB = Light blue
Y/R = Yellow/red	Y = Yellow
LG/R = Light green/red	Gr = Grey
B/R = Blue/red	Bk = Black
Bk/W = Black/white	G = Green
R/W = Red/white	R = Red



COMBINATION SWITCH ARRANGEMENT				
	BAT	IG	TL_1	TL_2
OFF				
1	●		●	●
2	●	●		●

CHAPTER TEN

TROUBLESHOOTING

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

Never assume anything. Don't 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 gas petcock in the "on" or "reserve" position? Has a spark plug wire fallen off? Check the 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 exhausts, and so on. Remember that the more complicated a machine is, the easier it is to troubleshoot because symptoms point to specific problems.

You don't 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 don't 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.

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. 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 ctart, check the battery for a charged condition first, and then look to the gasoline delivery system. This includes the tank, fuel petcocks, 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.

Compression or the lack of it, usually enters the picture only in the case of older machines. Worn or broken pistons, rings and cylinder bores could prevent starting. Generally a gradual power loss and harder and harder starting will be readily apparent in this case.

STARTING DIFFICULTIES

Check gas flow first. Remove the gas cap and look into the tank. If gas is present, pull off a fuel line at the carburetor and see if gas flows freely. If none comes out, the fuel tap may be shut off, blocked by rust or foreign matter, or the fuel line may be stopped up or kinked. If the carburetor is getting usable fuel, turn to the electrical system next.

Check that the battery is charged by turning on the lights or by beeping the horn. Refer to your owner's manual for starting procedures with a dead battery. Have the battery recharged if necessary.

Pull off a spark plug cap, remove the spark plug, and reconnect the cap. Lay the plug against the cylinder head so its base makes a good connection, and turn the engine over with the kickstarter. A fat, blue spark sho ıld jump across the electrodes. If there is no spark, or only a weak one, there is electrical system trouble. Check for a defective plug by replacing it with a known good one. Don't assume a plug is good just because it's new.

Once the plug has been cleared of guilt, but there's still no spark, start backtracking through the system. If the contact at the end of the spark plug wire can be exposed, it can be held about ⅛ inch from the head while the engine is turned over to check for a spark. Remember to hold the wire only by its insulation to avoid a nasty shock. If the plug wires are dirty, greasy, or wet, wrap a rag around them so you don't get shocked. If you do feel a shock or see sparks along the wire, clean or replace the wire and/or its connections.

If there's no spark at the plug wire, look for loose connections at the coil and battery. If all seems in order there, check next for oily or dirty contact points. Clean points with electrical contact cleaner, or a strip of paper. On battery ignition models, with the ignition switch turned on, open and close the points manually with a screwdriver.

No spark at the points with this test indicates a failure in the ignition system. Refer to Chapter One (Periodic Maintenance and Tune-up) for checkout procedures for the entire system and individual components. Refer to the same chapter for checking and setting ignition timing.

Note that spark plugs of the incorrect heat range (too cold) may cause hard starting. Set gaps to specifications. If you have just ridden through a puddle or washed the bike and it won't start, dry off plugs and plug wires. Water may have entered the carburetor and fouled the fuel under these conditions, but wet plugs and wires are the more likely problem.

If a healthy spark occurs at the right time, and there is adequate gas flow to the carburetor, check the carburetor itself at this time. Make sure all jets and air passages are clean, check float level, and adjust if necessary. Shake the float to check for gasoline inside it, and replace or repair as indicated. Check that the carburetors are mounted snugly, and no air is leaking past the manifold. Check for a clogged air filter.

Compression may be checked in the field by turning the kickstarter by hand and noting that an adequate resistance is felt, or by removing a spark plug and placing a finger over the plug hole and feeling for pressure.

An accurate compression check gives a good idea of the condition of the basic working parts of the engine. To perform this test, you need a compression gauge. The motor should be warm.

1. Remove the plug on the cylinder to be tested and clean out any dirt or grease.
2. Insert the tip of the gauge into the hole, making sure it is seated correctly.
3. Open the throttle all the way and make sure the chokes on the carburetors are open.
4. Crank the engine several times and record the highest pressure reading on the gauge. Run the test on each of the cylinders.
5. The normal compression for both the CB500 and CB350 is 155 psi to 170 psi. If the readings are significantly lower than 155 psi as a group,

or if they vary more than 15 psi between any two cylinders, proceed to the next step.

6. Pour a tablespoon of motor oil into the suspect cylinder and record the compression.

If oil raises the compression significantly — 10 psi in an old engine — the rings are worn and should be replaced.

If the compression remains the same, the valves are probably leaking and should be reground.

Valve adjustments should be checked next. Sticking, burned, or broken valves may hamper starting. As a last resort, check valve timing as described in Chapter Two, pages 34-35.

POOR IDLING

Poor idling may be caused by incorrect carburetor adjustment, incorrect timing, or ignition system defects. Check the gas cap vent for an obstruction.

MISFIRING

Misfiring can be caused by a weak spark or dirty plugs. Check for fuel contamination. Run the machine at night or in a darkened garage to check for spark leaks along the plug wires and under the spark plug cap. If misfiring occurs only at certain throttle settings, refer to the carburetor chapter for the specific carburetor circuits involved. Misfiring under heavy load, as when climbing hills or accelerating, is usually caused by bad spark plugs.

FLAT SPOTS

If the engine seems to die momentarily when the throttle is opened and then recovers, check for a dirty main jet in the carburetor, water in the fuel, or an excessively lean mixture.

POWER LOSS

Poor condition of rings, pistons, or cylinders will cause a lack of power and speed. Ignition timing should be checked.

OVERHEATING

If the engine seems to run too hot all the time, be sure you are not idling it for long periods. Air-cooled engines are not designed to operate at a standstill for any length of time. Heavy stop and go traffic is hard on a motorcycle engine. Spark plugs of the wrong heat range can burn pistons. An excessively lean gas mixture may cause overheating. Check ignition timing. Don't ride in too high a gear. Broken or worn rings may permit compression gases to leak past them, heating heads and cylinders excessively. Check oil level and use the proper grade lubricants.

BACKFIRING

Check that the timing is not advanced too far. Check fuel for contamination.

ENGINE NOISES

Experience is needed to diagnose accurately in this area. Noises are hard to differentiate and harder yet to describe. Deep knocking noises uually mean main bearing failure. A slapping noise generally comes from loose pistons. A light knocking noise during acceleration may be a bad connecting rod bearing. Pinging, which sounds like marbles being shaken in a tin can, is caused by ignition advanced too far or gasoline with too low an octane rating. Pinging should be corrected immediately or damage to pistons will result. Compression leaks at the head-cylinder joint will sound like a rapid on and off squeal.

PISTON SEIZURE

Piston seizure is caused by incorrect piston clearances when fitted, fitting rings with improper end gap, too thin an oil being used, incorrect spark plug heat range, or incorrect ignition timing. Overheating from any cause may result in seizure.

EXCESSIVE VIBRATION

Excessive vibration may be caused by loose motor mounts, worn engine or transmission bearings, loose wheels, worn swinging arm bushings, a generally poor running engine, broken or cracked frame, or one that has been damaged in a collision. See also Poor Handling.

CLUTCH SLIP OR DRAG

Clutch slip may be due to worn plates, improper adjustment, or glazed plates. A dragging clutch could result from damaged or bent plates, improper adjustment, or even clutch spring pressure.

POOR HANDLING

Poor handling may be caused by improper tire pressures, a damaged frame or swinging arm, worn shocks or front forks, weak fork springs, a bent or broken steering stem, misaligned wheels, loose or missing spokes, worn tires, bent handlebars, worn wheel bearing, or dragging brakes.

BRAKE PROBLEMS

Sticking brakes may be caused by broken or weak return springs, improper cable or rod adjustment, or dry pivot and cam bushings. Grabbing brakes may be caused by greasy linings which must be replaced. Brake grab may also be due to out-of-round drums or linings which have broken loose from the brake shoes. Glazed linings or glazed brake pads will cause loss of stopping power.

LIGHTING PROBLEMS

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 dead battery or one which discharges quickly may be caused by a faulty generator or rectifier. Check for loose or corroded terminals. Shorted battery cells or broken terminals will keep a battery from charging. Low water level will decrease a battery's capacity. A battery left uncharged after installation will sulphate, rendering it useless.

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.

TROUBLESHOOTING GUIDE

The following "quick reference" guide summarizes the troubleshooting process. Use it to outline possible problem areas, then refer to the specific chapter or section involved.

GEARSHIFTING DIFFICULTIES

Cause	Things to check
Clutch	Adjustment Springs Friction plates Steel plates
Transmission	Oil quantity Oil grade

Cause	Things to check
Transmission (contd.)	Return spring Return pin Change lever Change spring Drum position plate Change drum Change forks

BRAKE TROUBLES

Problem	Things to check
Poor brakes	Brake adjustment Oil or water on brake linings Loose linkage or cables
Noisy brakes	Worn or scratched lining Scratched brake drums Dirt in brakes

Problem	Things to check
Unadjustable brakes	Worn linings Worn drums Worn brake cams

GENERAL SPECIFICATIONS AND DATA

GENERAL SPECIFICATIONS, CB350F

Dimensions	Overall length	81.1 in. (2,060mm)
	Overall width	30.7 in. (780mm)
	Overall height	42.9 in. (1,090mm)
	Wheelbase	53.3 in. (1,355mm)
	Seat height	30.7 in. (780mm)
	Foot peg height	11.8 in. (300mm)
	Ground clearance	6.1 in. (155mm)
	Dry weight	373 lbs. (170 kg)
Frame	Type	Semi-double cradle
	Front suspension, travel	Telescopic fork, travel 4.5 in. (114.6mm)
	Rear suspension, travel	Swing arm, travel 3.6 in. (91.0mm)
	Front tire size, pressure	3.00-18 (4PR), Air pressure 26 psi (1.8 kg/cm²)
	Rear tire size, pressure	3.50-18 (4PR), Air pressure 28 psi (2.0 kg/cm²)
	Front brake, lining area	Disc brake, lining swept areas 44.8 sq. in. (288 cm²)
	Rear brake, lining area	Internal expanding shoes, lining swept areas 23 sq. in. (150 cm²)
	Fuel capacity	3.2 U.S. gal., 2.6 Imp. gal. (12 lit.)
	Fuel reserve capacity	0.5 U.S. gal., 0.4 Imp. gal. (2 lit.)
	Caster angle	63° 40′
	Trail length	3.3 in. (85mm)
	Front fork oil capacity	4.2 ozs. (125cc)
Engine	Type	Air cooled, 4-stroke OHC engine
	Cylinder arrangement	Vertical four, parallel
	Bore and stroke	1.850×1.969 in. (47.0×50.0mm)
	Displacement	21.1 cu. in. (347cc)
	Compression ratio	9.3:1
	Valve train	Chain driven overhead camshaft
	Maximum horsepower	32 HP/9,500 rpm (SAE J245 at transmission shaft output)
	Maximum torque	19.5 ft.-lb./8,000 rpm (2.7 kg-m/8,000 rpm)
	Oil capacity	3.7 U.S. qt., 3.1 Imp. qt. (3.5 lit.)
	Lubrication system	Forced-feed and wet sump
	Cylinder head compression pressure	170.7 psi (12 kg-cm²)
	Intake valve Opens	At 5° (before top dead center)
	Intake valve Closes	At 35° (after bottom dead center)
	Exhaust valve Opens	At 35° (before bottom dead center)
	Exhaust valve Closes	At 5° (after top dead center)
	Valve tappet clearance	Intake & exhaust 0.002 in. (0.05mm)
	Idle speed	1,200 rpm
Carburetor	Type	Piston valve
	Setting mark	656 c
	Main jet	#75
	Slow jet	#35
	Air screw opening	7/8 ± 3/8
	Float height	0.827 in. (21mm)

(continued)

GENERAL SPECIFICATIONS, CB350F (continued)

Drive train	Clutch	Wet, multi-plate type
	Transmission	5-speed, constant mesh
	Primary reduction	3.423
	Gear ratio, 1st	2.733
	Gear ratio, 2nd	1.850
	Gear ratio, 3rd	1.416
	Gear ratio, 4th	1.148
	Gear ratio, 5th	0.965
	Final reduction	2.235
	Gearshift pattern	Left foot operated return system
Electrical	Ignition	Battery and ignition coil
	Starting system	Starting motor and kickstarter
	Alternator	A.C. generator 5,000 rpm/0.156 kW
	Battery capacity	12V-12AH
	Spark plug	NGK D8ESL ND X24ES
	Headlight	Low/high beam 12V-35W/50W
	Tail/stoplight	Tail/stop 12V-3/32 cp
	Turn signal light	12V-32 cp
	Speedometer light	12V-2 cp
	Tachometer light	12V-2 cp
	Neutral indicator light	12V-2 cp
	Turn signal indicator light	12V-2 cp
	High beam indicator light	12V-2 cp

GENERAL SPECIFICATIONS, CB500

Dimensions	Overall length	83.0 in. (2,105mm)
	Overall width	32.5 in. (825mm)
	Overall height	44.0 in. (1,115mm)
	Wheelbase	55.5 in. (1,405mm)
	Seat height	31.7 in. (805mm)
	Foot peg height	12.4 in. (315mm)
	Ground clearance	6.5 in. (165mm)
	Dry weight	403.5 lb. (183 kg)
Frame	Type	Double cradle tubular steel
	Front suspension, travel	Telescopic fork, travel 4.8 in. (121mm)
	Rear suspension, travel	Swing arm, travel 3.1 in. (78.5mm)
	Front tire size, type	3.15-19 (4 PR)
		Air pressure 25.6 psi (1.8 kg-cm^2)
	Rear tire size, type	3.50-18 (4 PR)
		Air pressure 28.5 psi (2.0 kg-cm^2)
	Front brake, lining area	Disc brake, lining area
		32.36 in.^{2}×2 (288.8 cm^2×2)
	Rear brake, lining area	Internal expanding shoe, lining area
		26.28 in.^{2}×2 (169.6 cm^2×2)
	Fuel capacity	3.7 U.S. gal., 3.1 Imp. gal. (14.0 lit.)
	Fuel reserve capacity	1.6 U.S. gal., 0.9 Imp. gal. (4.0 lit.)
	Caster angle	64°
	Trail length	4.1 in. (105mm)
	Front fork oil capacity	5.4 ozs. (160cc)
Engine	Type	Air-cooled, 4-stroke, OHC engine
	Cylinder arrangement	4-cylinders in line
	Bore and stroke	2.205×1.992 in. (56.0×50.6mm)
	Displacement	30.38 cu. in. (498cc)
	Compression ratio	9.0:1
	Carburetor, venturi dia.	Four, piston valve; 22mm dia.
	Valve train	Chain drive overhead camshaft
	Maximum horsepower	50 BHP (SAE)/9,000 rpm
	Maximum torque	30.4 ft.-lb./7,500 rpm
		(4.2 kg-m/7,500 rpm)
	Oil capacity	3.2 U.S. qt., 2.6 Imp. qt. (3.0 lit.)
	Lubrication system	Forced pressure and wet sump
	Air filtration	Paper element
	Valve tappet clearance	Intake: 0.002 in., Exhaust: 0.003 in.
		(Intake: 0.5mm, Exhaust: 0.08mm)
	Engine weight	152 lb. (69 kg)
	Air screw opening	1$\pm$⅛ turns
	Idle speed	1,000 rpm
Drive train	Clutch	Wet, multi-plate
	Transmission	5-speed, constant mesh
	Primary reduction	2.000
	Gear ratio, 1st	2.353
	Gear ratio, 2nd	1.636
	Gear ratio, 3rd	1.269
	Gear ratio, 4th	1.036
	Gear ratio, 5th	0.900
	Final reduction	2.000, drive sprocket 17 teeth,
		driven sprocket 34 teeth
	Gearshift pattern	Left foot return type

(continued)

GENERAL SPECIFICATIONS, CB500 (continued)

Electrical	Ignition	Battery and ignition coil
	Starting system	Starting motor and kickstarter
	Alternator	Three phase A.C. 12V-0.2 KW/5,000 rpm
	Battery capacity	12V-12AH
	Spark plug	NGK D-7 ES, DENSO X-22 ES
	Headlight	Low/high, 12V-40W/50W
	Tail/stoplight	Tail/stop, 12V-7W/23W
	Turn signal light	Front/rear, 12V-25W/25W
	Speedometer light	12V-3W
	Tachometer light	12V-3W
	Neutral indicator light	12V-3W
	Turn signal indicator light	12V-3W
	High beam indicator light	12V-3W

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