FOREWORD

This supplementary service manual for SR500E has been published to supplement the TT500C/TT500D, XT500C/XT500D service manual (1T1-28197-10) and XT500E supplementary service manual (2H0-28197-10). For complete information on service procedures, it is necessary to use this supplementary service manual together with the TT500C/TT500D, XT500C/XT500D service manual and XT500E supplementary service manual.

NOTE:

The Research and Engineering Departments of Yamaha are continually striving to further perfect all models. Improvements and modifications are therefore inevitable.
In light of this fact, all specifications within this manual are subject to change without notice. Information regarding changes is forwarded to all Authorized Yamaha Dealers as soon as available.

SERVICE DEPT.
INTERNATIONAL DIVISION
YAMAHA MOTOR CO., LTD.

Particularly important information is distinguished in this manual by the following notations:

NOTE:
A NOTE provides key information to make procedure easier or clearer.

CAUTION:
A CAUTION indicates special procedures that must be followed to avoid damage to the machine.

WARNING:
A WARNING indicates special procedures that must be followed to avoid injury to a machine operator or person inspecting or repairing the machine.

YAMAHA
SR500E
SUPPLEMENTARY SERVICE MANUAL
1st Edition, November 1977
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Page numbers shown in brackets correspond to page numbers of the TT500C/ TT500D, XT500C/XT500D Service Manual.

(PAGE 2)

Starting serial number

SR500E	2J2-000101

(PAGE 6~8)

MAINTENANCE AND LUBRICATION CHART

PERIODIC MAINTENANCE

Unit: km (mi)

Item	Remarks	Initial				Thereafter every		
		400 (250)	800 (500)	1,600 (1,000)	3,200 (2,000)	1,600 (1,000)	3,200 (2,000)	6,400 (4,000)
Cylinder	Check compression				○			○
Valves	Check/Adjust valve clearance	○			○		○	
Cam chain	Check/Adjust chain tension	check			4,800 (3,000)	check		4,800 (3,000)
Spark plug	Inspect/Clean or replace as required	○			○		○	
Air filter	Dry type—Clean/Replace as required			○	○	○		
Carburetor	Check operation/Adjust as required		○	○	○		○	
Brake system (complete)	Check/Adjust as required—Repair as required	○	○	○	○	○		
Wheels and tires	Check pressure/Wear/Balance/Damage	○	○	○	○	○		
Fuel petcock	Clean/Flush tank as required	○			○	○		
Battery	Top-up/Check specific gravity and breather pipe	○	○	○	○	○		
Ignition timing	Adjust as required				check			check
Clutch	Check/Adjust as required	○	○	○	○	○		
Drive chain	Check tension/Alignment/Replace as required			Every 400 (250)				
Lights/Signals	Check operation/Replace as required	○	○	○	○	○		
Fittings/Fasteners	Tighten before each trip and/or	○	○	○	○	○		

LUBRICATION INTERVALS

Unit: km (mi)

Item	Remarks	Type (Recommended lubricants)	Initial				Thereafter every		
			400 (250)	800 (500)	1,600 (1,000)	3,200 (2,000)	1,600 (1,000)	3,200 (2,000)	6,400 (4,000)
Engine oil	Replace/Warm engine before draining	See page 13	○			○	check	○	
Oil filter/Oil strainer	Replace filter element and clean oil strainer/ After installing start engine check oil leaks	—	○			○			○
Control/Meter cables	Apply thoroughly	Yamaha chain and cable lube or SAE 10W/30 motor oil			○	○		○	
Throttle grip/ Housing	Apply lightly	Lithium base grease				○		○	
Front forks	Crain completely— Check specifications	Yamaha fork oil 10Wt.							○
Steering bearings	Inspect thoroughly/ Pack moderately	Medium-weight wheel bearing grease							12,800 (8,000)
Speedometer gear housing	Inspect thoroughly/ Pack moderately	Lithium base grease							12,800 (8,000)
Rear arm pivot shaft	Apply lightly	Lithium base grease							12,800 (8,000)
Wheel bearings	Do not over-pack	Medium-weight wheel							12,800

(PAGE 9) ENGINE

Carburetor

1. Idle speed adjustment

a. Start the engine and warm it up for a few minutes.

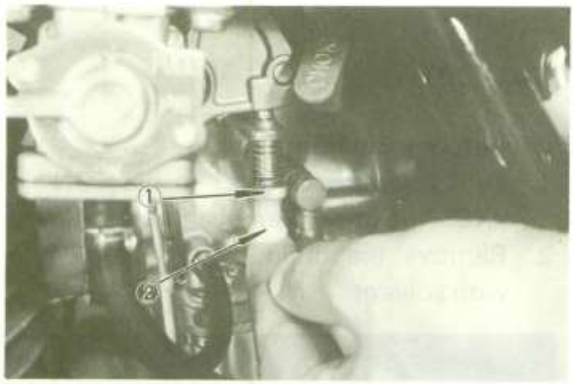
b. Set the engine idle speed to specified engine speed by turning the throttle stop screw in to increase the engine speed or back out the screw to decrease the engine speed.

Idle engine speed:
1,100 r/min

Use a tachometer for checking and adjusting the engine speed.

CAUTION:

When setting the engine idle speed, warm engine starter must be set "OFF" position.



1. Idle speed adjusting screw
2. Warm engine starter

2. Throttle cable adjustment

NOTE:

Idle speed should be set before making this adjustment.

The throttle grip should have a play of 2 ~ 5 mm (0.08 ~ 0.20 in) in the turning direction at the grip flange. If the play is not in this range, take the following steps for adjustment:

a. Loosen the adjuster (B and C) lock nuts, and fully turn the adjusters (B and C) in. in.

b. Adjust the throttle grip free play as specified (2 ~ 5 mm at grip flange) by turning the adjuster (A) in or out.

NOTE:

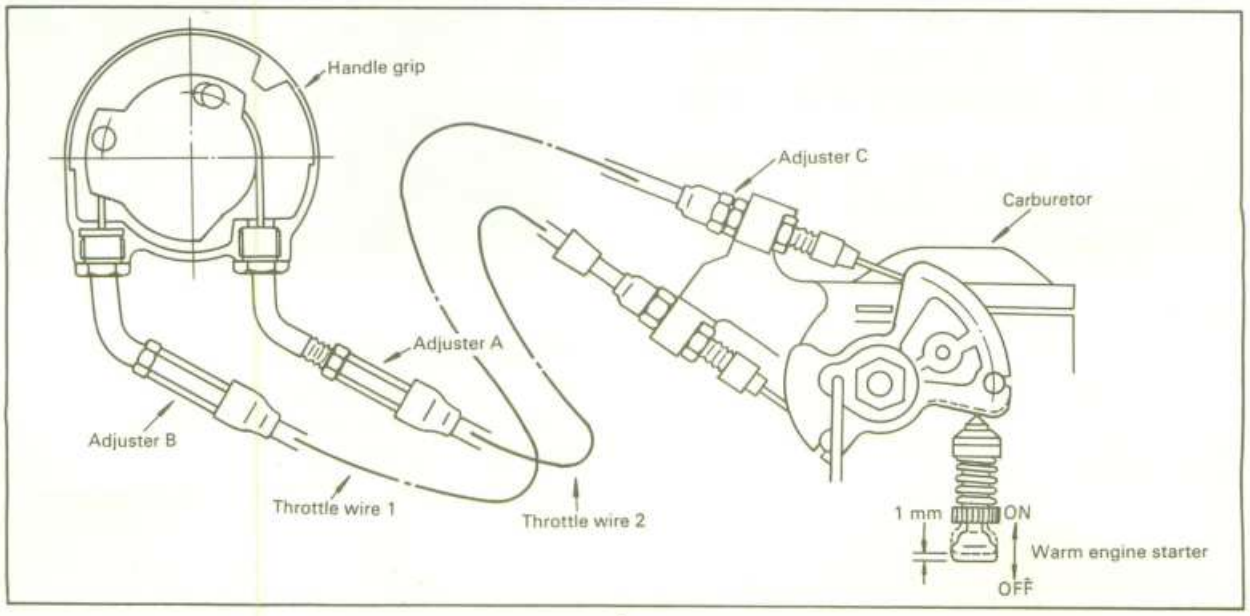
Warm engine starter knob must be set "OFF" position.

NOTE:

Throttle cable free play must be adjusted after the cable is correctly routed.
(Refer to wire and pipe routing diagram)

CAUTION:

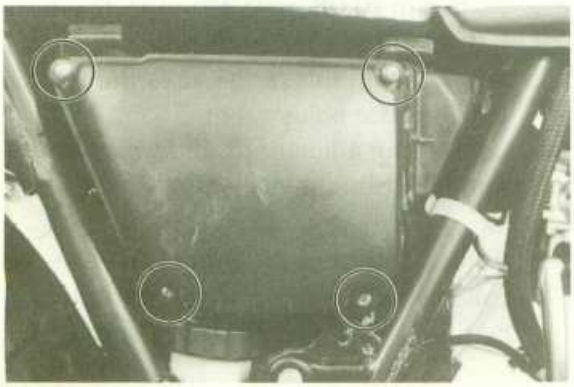
Set warm engine starter to the "ON" position, and close the throttle grip.
And, be sure to return the warm engine starter to "OFF" position from "ON" position.
Above inspection should be repeated two or three times.



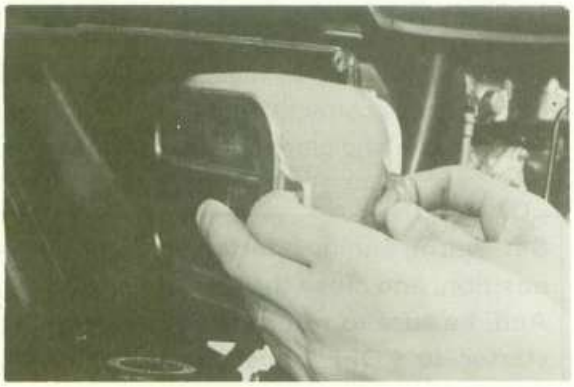
(PAGE 10)

Air filter

1. Removal
   a. Remove the right side cover.
   b. Remove the screws from the filter case cover and remove the cover.

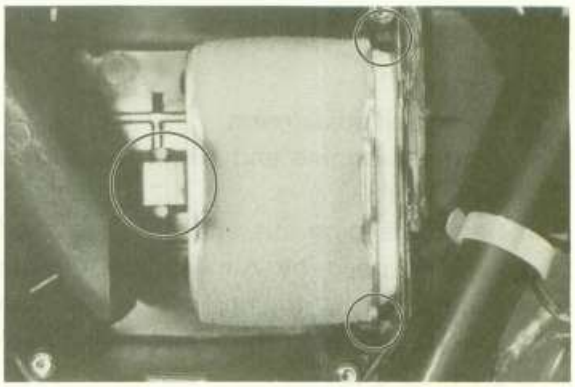


   c. Remove the filter element from the filter case.



2. Cleaning method
   Tap the element lightly to remove most of the dust and dirt; then blow out the remaining dirt with compressed air through the inner surface of the element outward. If element is damaged, replace.

3. Reassemble by reversing the removal procedure. Check whether the element is seated completely against the case.



(PAGE 15)

Valve clearance adjustment

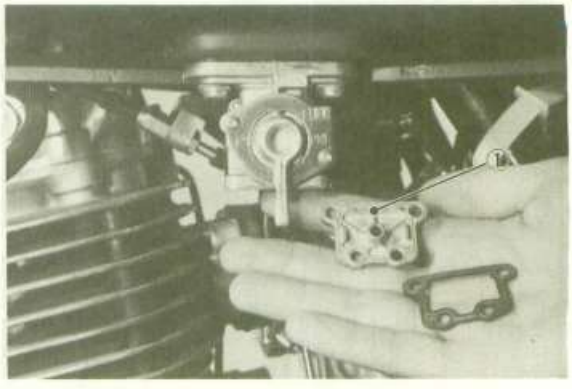
Specifications should be changed as follows:

Intake valve (cold) 0.10 mm (0.0039 in) Exhaust valve (cold) 0.15 mm (0.0059 in)

(PAGE 16)

Fuel petcock cleaning

1. Turn the petcock lever to the "ON" or "RES" position. Remove the fuel pipe.
2. Remove the drain cover and clean it with solvent.



1. Drain cover

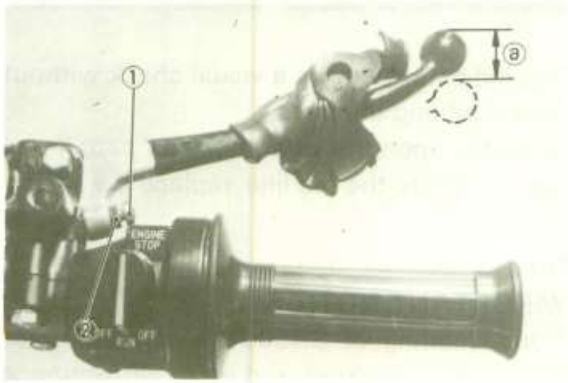
Front brake adjustment

The front brake lever should be so adjusted that it has a free play of 5 ~ 8 mm (0.2 ~ 0.3 in) at the lever end.

1. Loosen the lock nut on the brake lever.

2. Turn the adjuster so that the brake lever movement at the lever end is 5 ~ 8 mm (0.2 ~ 0.3 in) before the adjuster contacts the master cylinder piston.
3. After adjusting, tighten the lock nut.

NOTE:
Check for correct play and make sure it is working properly.

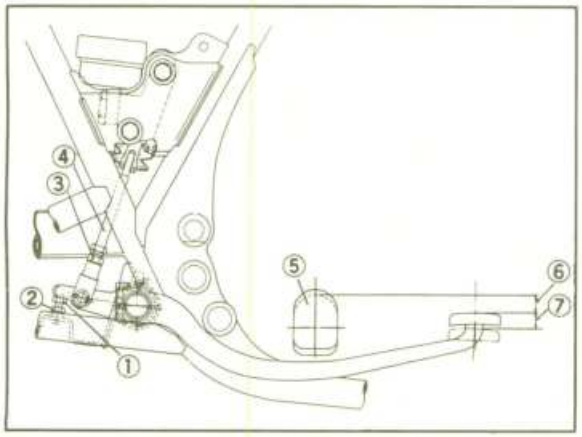


1. Adjuster 2. Lock nut a. 5 ~ 8 mm (0.2 ~ 0.3 in)

Rear brake

CAUTION:
For the brake pedal position adjustment, be sure to proceed as follows; (It is ad-

The rear brake pedal should be so adjusted that it has a free play of 13 ~ 15 mm (0.51 ~ 0.59 in) from when the brake pedal is trod to when the brake begins to be effected.



1. Adjuster bolt (for pedal height)
2. Lock nut
3. Lock nut
4. Brake rod
5. Footrest
6. Pedal height 12 ~ 18 mm (0.47 ~ 0.71 in)
7. Free play 13 ~ 15 mm (0.51 ~ 0.59 in)

1. Loosen the adjuster lock nut (for pedal height).
2. By turning the adjuster bolt clockwise or counterclockwise, adjust the brake pedal position so that its top end is approx. 12 ~ 18 mm (0.47 ~ 0.71 in) below the footrest top end.
3. Secure the adjuster lock nut.
4. Loosen the brake rod adjuster lock nut and screw brake rod downward until there is noticeable free play between rod and master cylinder.
5. Turn in the brake rod until it lightly touches the master cylinder then turn it out by approx. 1 turns (for proper free play).
6. Tighten the brake rod adjuster lock nut.

CAUTION:
See that the punched mark on the brake rod is not above the top surface of the adjuster lock nut in securing the brake rod adjuster lock nut.

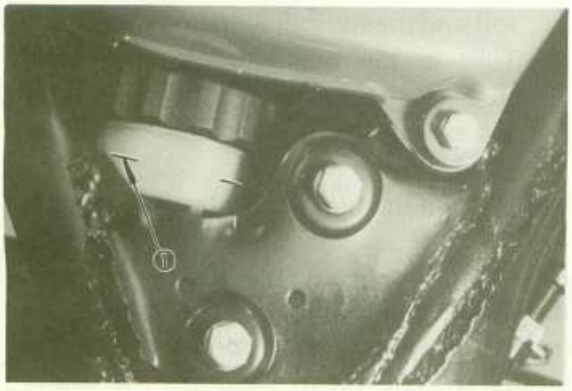
Inspecting the brake fluid level
Insufficient brake fluid may allow air to enter the brake system, possibly causing the brakes to become ineffective.
Before riding, check the brake fluid level and replenish when necessary, and observe these precautions:

1. Use only the designated quality brake fluid; otherwise, the rubber seals may deteriorate, causing leakage and poor brake performance.

Recommended brake fluids:
DOT #3

2. Refill with the same type of brake fluid; mixing fluids may result in a harmful chemical reaction and lead to poor performance.



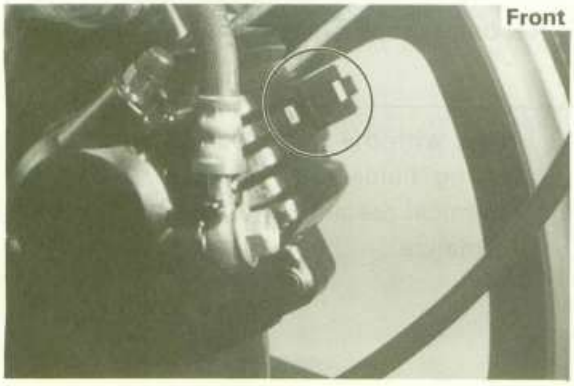


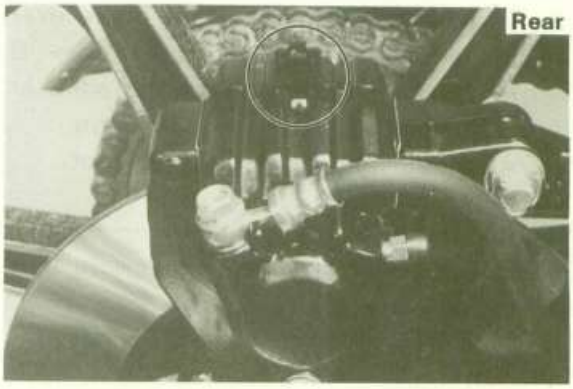
1. Lower lever

3. Be careful that water does not enter the master cylinder when refilling. Water will significantly lower the boiling point and may result in vapor lock.
4. Brake fluid may erode painted surfaces or plastic parts. Always clean up spilled fluid immediately.

Checking the front and rear brake pads

For easy checking of wear on the disc brake pads, a wear indicator is attached to each brake pad.





This indicator permits a visual check without disassembling the pads.

To check, open the wear indicator cap. If any pad is worn to the red line, replace the pads.

Tires

IMPORTANT NOTICE

Proper loading of SR500E is important for the handling, braking, and other performance and safety characteristics.

NEVER OVERLOAD.

WARNING:

Never overload the motorcycle beyond specified tire limits. Operation of an overloaded tire could cause tire damage, an accident and injury.

	FRONT	REAR
SR500E BASIC WEIGHT with oil and full fuel tank	79 kg (174 lb)	95 kg (209 lb)
Standard tire	Bridgeston 3.50S-19-4PR	Bridgestone 4.00S-18-4PR
Maximum load limit	133 kg (290 lb)	248 kg (545 lb)
Cold tire pressure:		
Up to 270 kg (595 lb) load	1.8 kg/cm² (26 psi)	2.0 kg/cm² (28 psi)
270 kg (595 lb) load ~ 315 kg (695 lb) load	1.8 kg/cm² (26 psi)	2.0 kg/cm² (28 psi)
315 kg (695 lb) load ~ 365 kg (805 lb) load (Maximum load)	2.0 kg/cm² (28 psi)	2.3 kg/cm² (32 psi)
High speed riding	2.0 kg/cm² (28 psi)	2.3 kg/cm² (32 psi)
Minimum tire tread depth	0.8 mm (0.03 in)	0.8 mm (0.3 in)

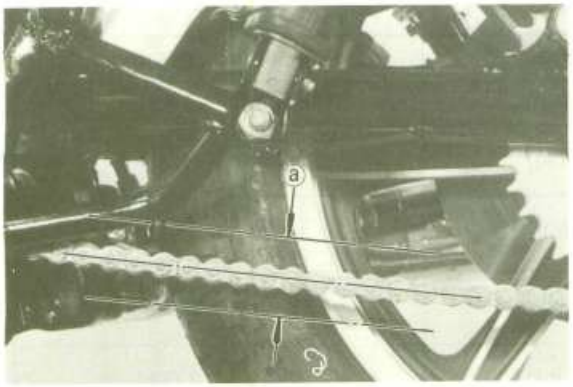
Make sure the total weight of the motorcycle with accessories, rider(s), etc., does not exceed the tire limits.

(PAGE 17)

Drive chain tension check

NOTE:
Before checking and/or adjusting, rotate rear wheel through several revolutions and check tension several times to find the tightest point. Check and/or adjust chain tension with rear wheel in this "tight chain" position.

Inspect the drive chain with the center stand put up. Check the tension at the position shown in the illustration. The normal vertical deflection is approximately 20 mm (0.8 in). If the deflection exceeds 20 mm (0.8 in) adjust the chain tension.



a. 20 mm (0.8 in)

(PAGE 18)

Drive chain tension adjustment
Specifications should be changed as follows:

Drive chain slack: 20 mm (0.8 in)

Front fork oil change
Specifications should be changed as follows:

Recommended oil: Yamaha fork oil 10 wt. or equivalent
Quantity per leg: 182 cc (6.15 oz)

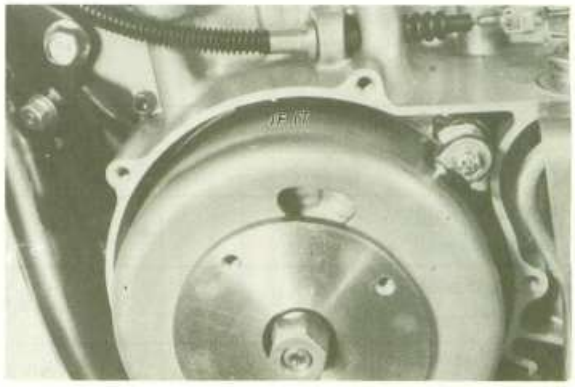
(PAGE 20)

Contact breaker points
Delete the whole paragraph.

(PAGE 21)

Ignition timing
Check and adjust ignition timing as follows:

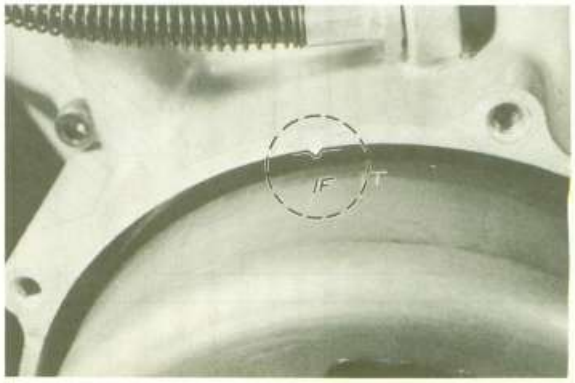
a. Ignition timing is checked with a timing light by observing the position of the stationary pointer on the crankcase and the timing marks on the flywheel.
"F" : Retarded firing point.
"T" : Top Dead Center.

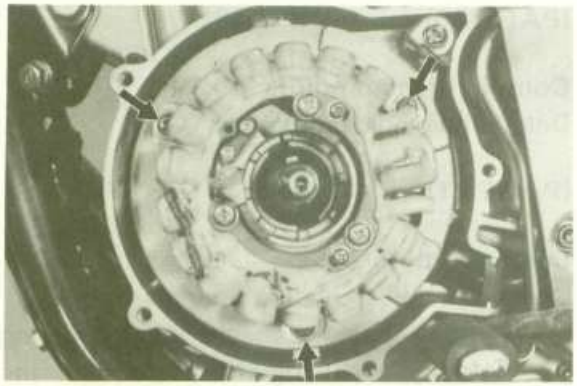


b. Connect timing light to the spark plug lead wire.
c. Start the engine and keep the engine speed as specified.

Specified engine speed: 1,100 r/min

d. The stationary pointer should line up with the "F" timing mark on the flywheel. If it does not align, remove the flywheel and loosen the pulser coil base plate screws. Move the complete base plate until "F" and the pointer marks align.





(PAGE 22)

Battery

Specifications should be changed as follows:

Recharging current: 0.7 amp for 10 hours or until Specific gravity reaches: 1.28 at 20°C (68°F)

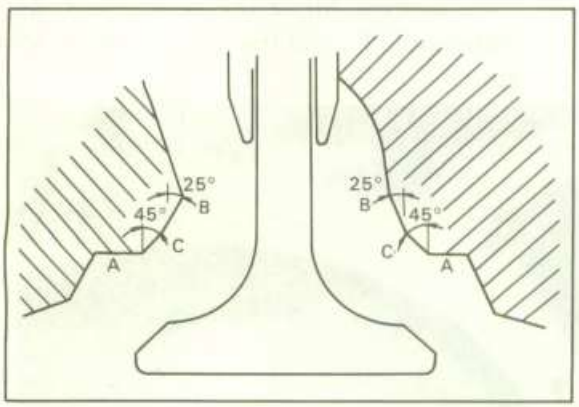
(PAGE 38)

2. Checking the valve springs
   Specifications should be changed as follows:

SR500E	Outer (IN and EX)	Inner (IN and EX)
Free length	44.6 mm (1.756 in)	45.3 mm (1.783 in)
Installed length (valve closed)	40.0 mm (1.575 in)	38.0 mm (1.496 in)
Installed pressure (valve closed)	16.4 kg (36.2 lb)	12.2 kg (26.9 lb)
Compressed length (valve open)	30 mm (1.181 in)	28 mm (1.102 in)
Compressed pressure (valve open)	62.7 kg (138.2 lb)	33.4 kg (73.6 lb)

(PAGE 40)

6. Grinding the valve seat
   Specifications and illustrations should be changed as follows:
   Whole valve seat 30° cutter specifications should be changed to the 25° cutter.



(PAGE 64)

Float level

Specifications should be changed as follows:

Float level	
SR500E	23.5 ± 1 mm (0.925 ± 0.039 in)

(PAGE 69 ~ 71)

CHAPTER 5. CHASSIS

FRONT WHEEL

Removal

1. Remove cotter pin from front axle nut.
2. Remove the front axle nut.

3. Loosen the two axle nut holder nuts at the bottom of the fork leg.
4. Raise the front wheel of the machine by placing a suitable stand under the engine.
5. Remove the front wheel axle by simultaneously twising and pulling out on the axle. Then remove the wheel assembly. In this case, the speedometer gear unit housing must be removed.

Front axle

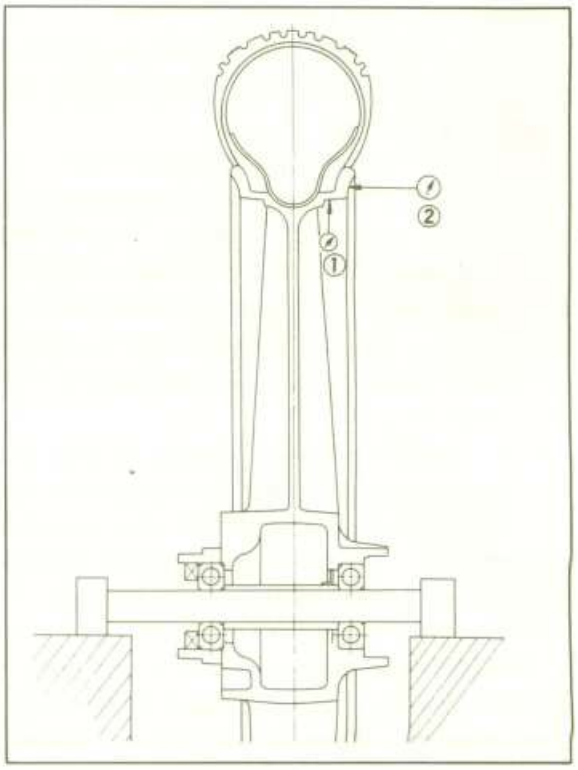
Remove any corrosion from axle with emery cloth. Place the axle on a surface plate and check for bends. If bent, replace.

Front wheel inspection

1. Check for cracks, bends or warpage of wheels. If a wheel is deformed or cracked, it must be replaced.
2. Check wheel run-out
   If deflection exceeds tolerance, check wheel bearing or replace wheel as required.

Rim run-out limits:
Vertical: 2 mm (0.08 in)
Lateral: 2 mm (0.08 in)

3. Check wheel balance
   Rotate wheel lightly several times and observe resting position.

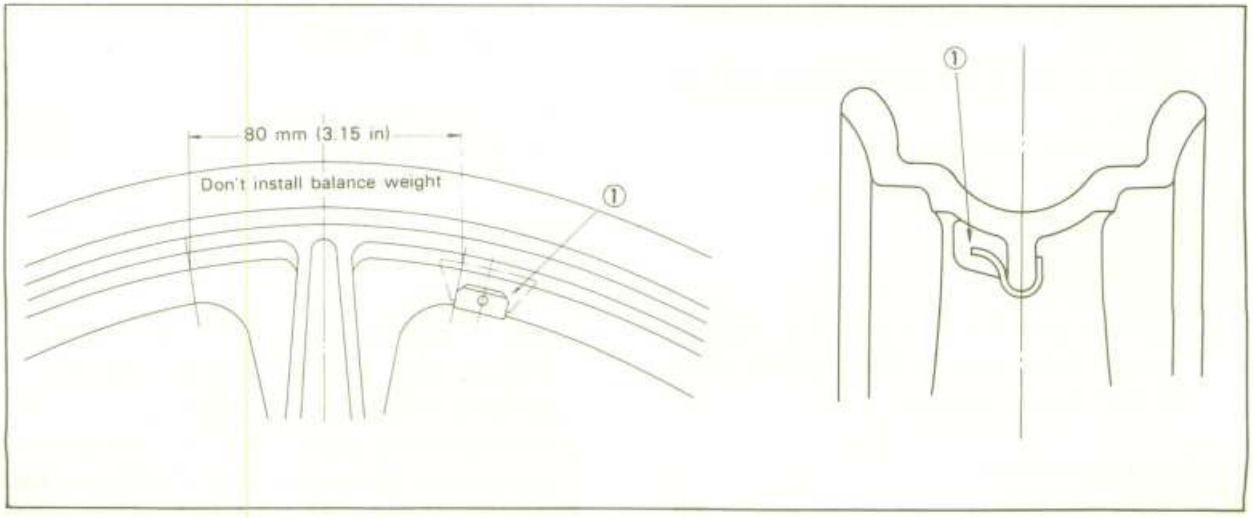


1. Vertical 2. Lateral

If wheel is not statically balanced, wheel will come to rest at the same position. Install balance weight at lighter position (at top) as illustrated.

NOTE:

The wheel should be balanced with brake disc installed.



1. Balance weight

Replacing wheel bearings

If the bearings allow play in the wheel hub or if wheel does not turn smoothly, replace the bearings as follows:

1. Clean the outside of the wheel hub.
2. Drive the bearing out by pushing the spacer aside and tapping around the perimeter of the bearing inner race with a soft metal drift pin and hammer. The spacer "floats" between the bearings. Both bearings can be removed in this manner.
3. To install the wheel bearing, reverse the above sequence. Be sure to grease the bearing before installation. Use a socket that matches the outside race of the bearing as a tool to drive in the bearing.

CAUTION:

Do not strike the center race or balls of the bearing. Contact should be made only with the outer race.

Installing front wheel

When installing front wheel, reverse the removal procedure. Note the following points:

1. Lightly grease lips of front wheel oil seals and gear teeth of speedometer drive and driven gears. Use lightweight lithium soap base grease.
2. Make sure there is enough gap between disc pads.
3. Check for proper engagement of the boss on the outer fork tube with the locating slot on speedometer gear unit housing.
4. Always secure the front wheel axle as follows:

a. Tighten the front axle nut.

Axle nut torque:
11 m-kg (80 ft-lb)

b. Tighten axle holder nuts. First tighten nut on front end of axle holder, then tighten nut on rear end.

Holder nut torque:
1.0 m-kg (7 ft-lb)

c. Install a new cotter pin.

REAR WHEEL

Removal

1. Place machine on center stand.
2. Disconnect the drive chain.
3. Remove cotter pin from rear axle.
4. Remove the rear axle nut.
5. Remove the rear axle by simultaneously twisting and pulling out.
6. Remove the rear wheel assembly.

Rear axle

See front wheel section, paragraph "Front axle".

Replacing wheel bearings

See front wheel section, paragraph "Replacing wheel bearings".

Rear wheel inspection

See front wheel section, paragraph "Front wheel inspection".

Installing rear wheel

When installing rear wheel, reverse removal procedure taking care of following points:

1. Lightly grease lips of rear wheel oil seals.
2. Make sure the brake pads are installed properly and that there is enough gap to install the rear disc.
3. Install wheel assembly and axle.

NOTE:

Always use a new cotter pin on the axle nut.

Rear axle nut torque:
15 m-kg (108 ft-lb)

4. Connect drive chain.
5. Adjust drive chain.

BRAKES

CAUTION:

Disc brake components rarely require disassembly. Do not disassemble components unless absolutely necessary. If any hydraulic connection in the system is opened, the entire system should be disassembled, drained, cleaned and then properly filled and bled upon reassembly.

CAUTION:

Do not use solvents on brake internal components. Solvents will cause seals to swell and distort. Use only clean brake fluid for cleaning. Use care with brake fluid. Brake fluid is injurious to eyes and will damage painted surfaces.

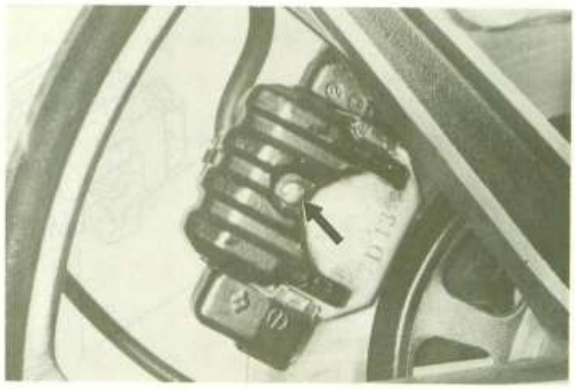
Caliper pad replacement

1. It is not necessary to disassemble the brake fluid hoses to replace the brake pads.
2. Remove the caliper support bolt.

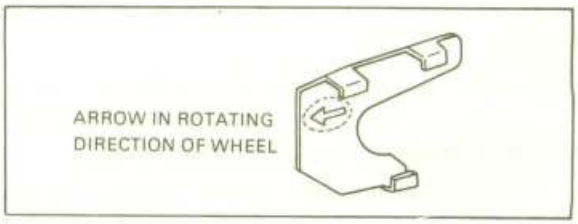


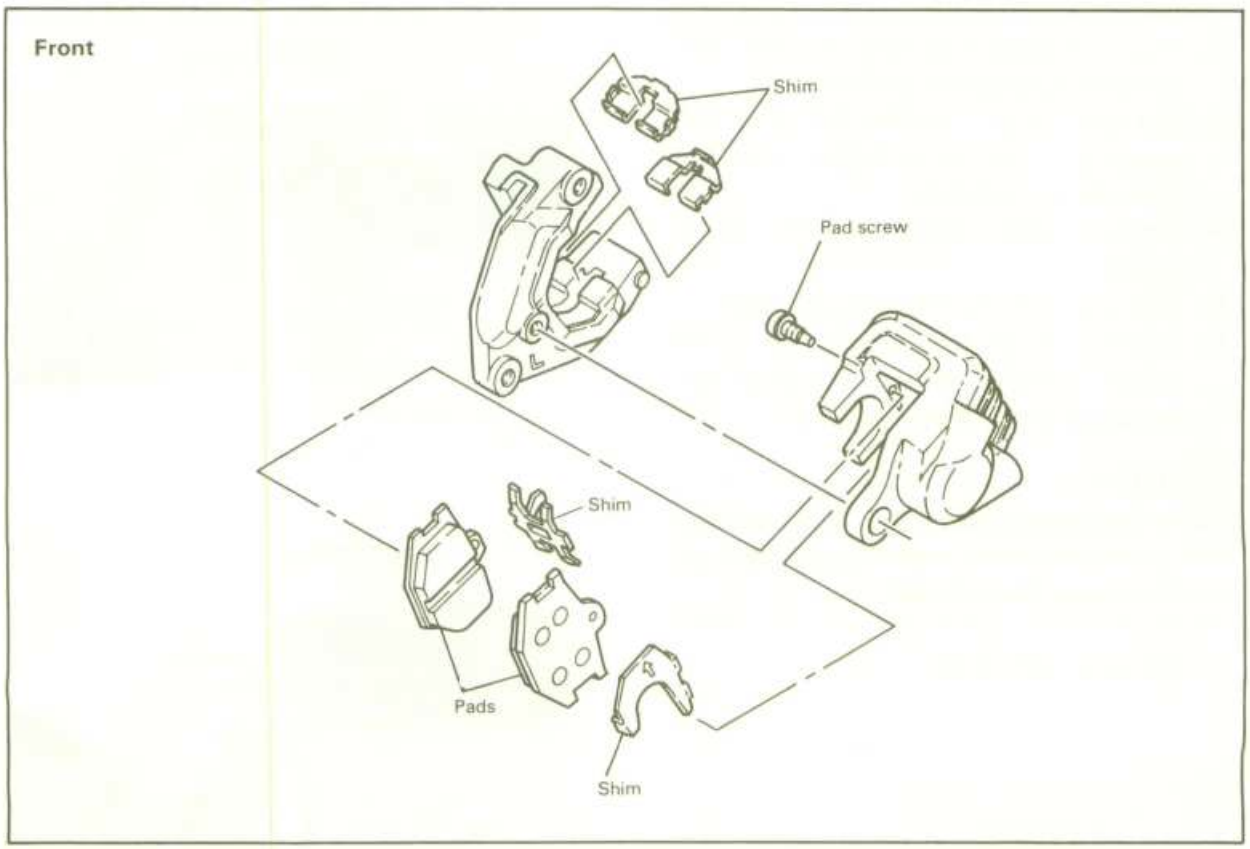
1. Support bolt

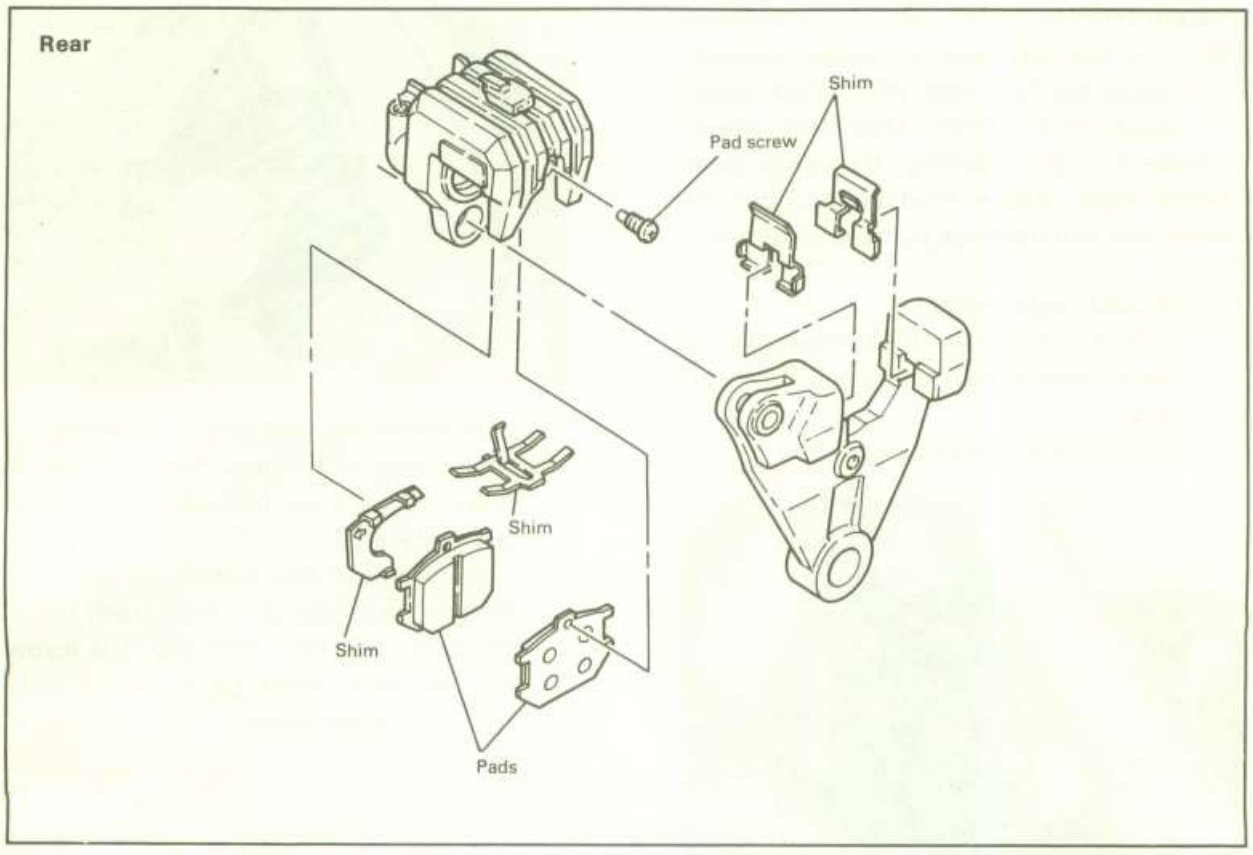
3. Remove the phillips screw that holds the brake pads.



4. Pull caliper cylinder off caliper frame.
5. Install new brake pads. Replace pads as a set. Replace the following when pads are replaced:
6. Lightly grease the surface of the shim that contacts the pad. Bend each tab of the shim over the brake pad. The arrow on the shim must be in the turning direction of the wheel.







Caliper disassembly (Front and rear)

1. Remove caliper brake hose. Allow caliper assembly to drain into a container.
2. Place the open hose end into the container and pump the old fluid out.
3. Remove caliper support bolt and pad securing screw as in Caliper Pad Replacement procedure.
4. Remove caliper assembly from caliper frame.
5. Remove retaining ring and dust seal.
6. Carefully force the piston out of the caliper cylinder with compressed air. Never try to pry out the piston.

CAUTION:

Cover the piston with a rag. Use care so that piston does not cause injury as it is expelled from the cylinder.

7. Remove piston seal.

Master cylinder disassembly

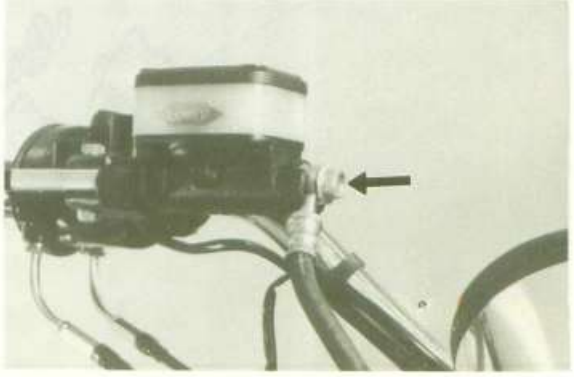
1. Front

a. Disconnect brake light wire.



b. Remove brake lever and spring.

c. Remove brake hose.



d. Remove master cylinder from handlebars. Remove cap and drain remaining fluid.

2. Rear

a. Remove brake hose.

b. Remove two (2) bolts holding master cylinder to frame. Remove reservoir cap and drain brake fluid.

NOTE:

The following steps 3 and 5 apply to both front and rear systems.

3. Remove master cylinder dust boot.
4. Remove snap ring.
5. Remove master cylinder cup assembly. Note that the cylinder cups are installed with the larger diameter (lips) inserted first.

Brake inspection and repair

Recommended Brake Component Replacement Schedule:

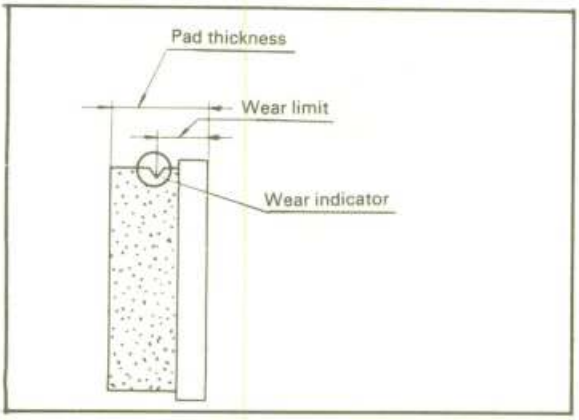
Brake pads:
As required

Piston seal, dust seal:
Every two years

Brake hoses:
Every four years

Brake fluid:
Replace only when brakes are disassembled

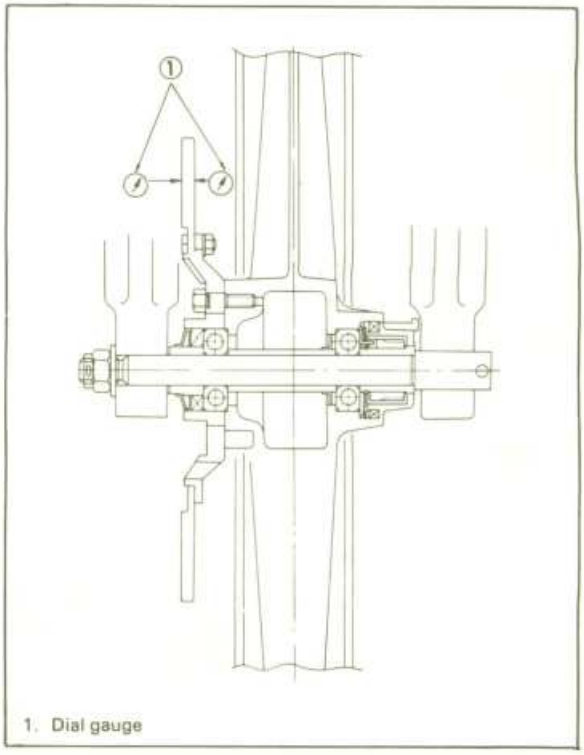
1. Replace caliper piston if it is scratched.
2. Replace any brake pad worn beyond limits. Replace brake pads as a set.



Wear limit: front and rear
6 mm (0.24 in)

See Caliper Pad Replacement procedure for parts to be replaced when pads are replaced.

3. Replace piston and dust seals if damaged. Replace seals every two years.
4. Inspect master cylinder body. Replace if scratched. Clean all passages with new brake fluid.
5. Inspect brake hoses. Replace every four years or if cracked, frayed or damaged.
6. Check for wear and deflection of disc (front and rear).



1. Dial gauge

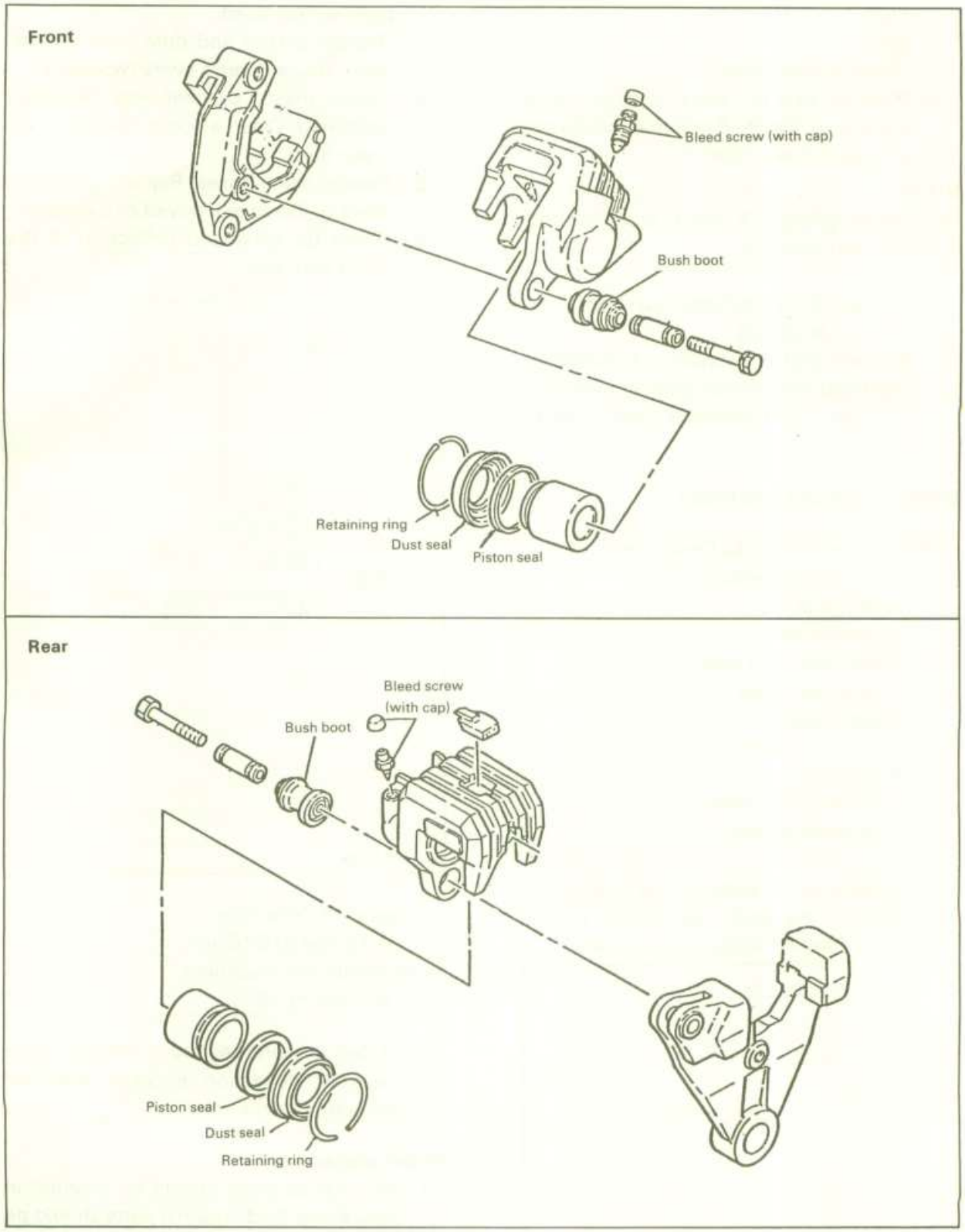
Maximum deflection:
0.15 mm (0.006 in)
Minimum disc thickness:
4.5 mm (0.18 in)

If disc is worn beyond minimum thickness or deflection exceeds specified amount, replace disc.

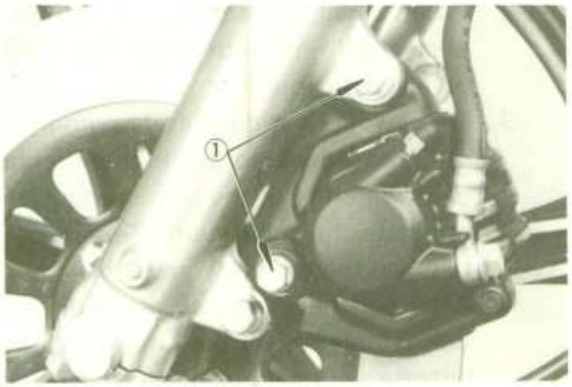
Brake reassembly

1. All internal parts should be cleaned in new brake fluid. Internal parts should be lubricated with brake fluid when installed.
2. Caliper reassembly
Replace the following parts whenever a caliper is disassembled: bleed screw

and cap, boot bushing, piston seal, dust seal, retaining ring.



a. *Install* piston seal and piston. Place caliper cylinder into caliper frame.
b. Install pad spring, shim (with arrow) and retainer. The shim arrow is in the direction of wheel rotation. Install dust seal and clip.
c. Install pad spring and pads.
d. Install support bolt and remount caliper on brackets.



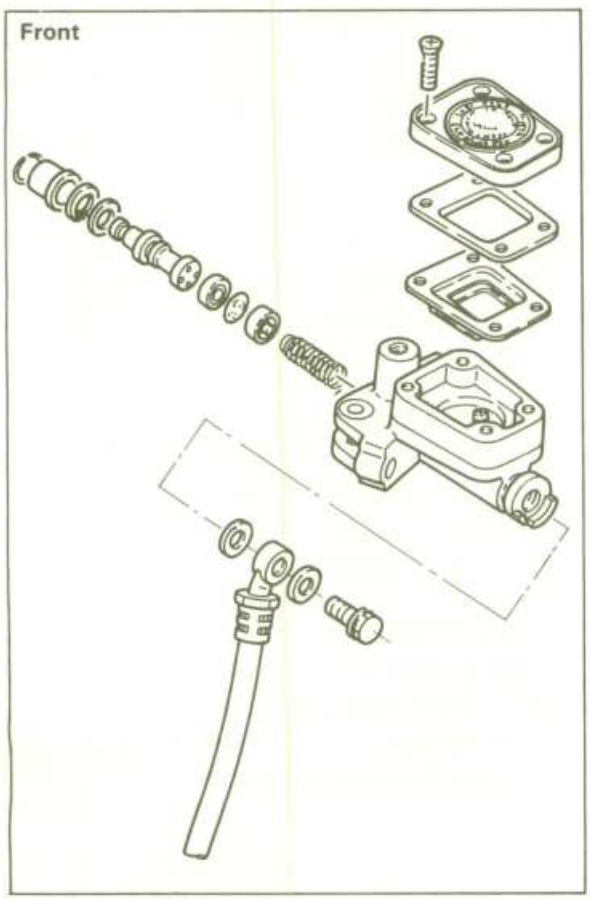
1. Mounting bolt

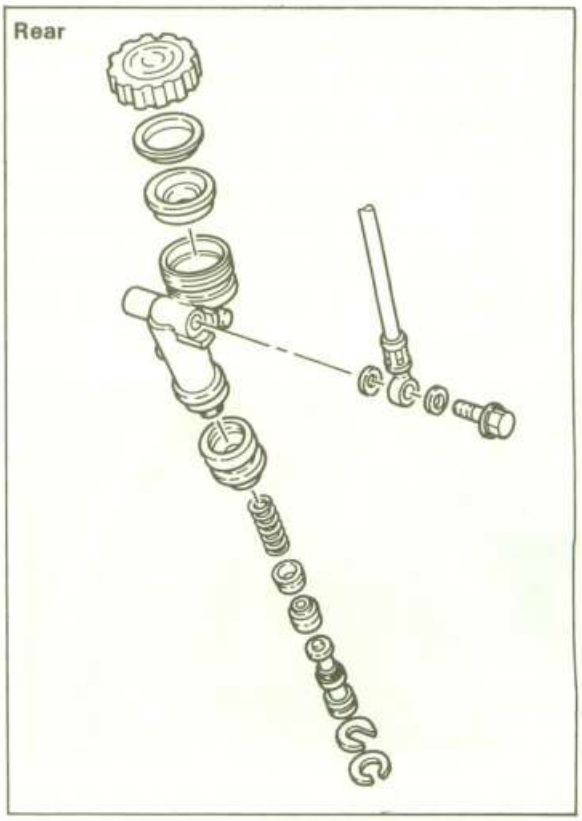
Support bolt torque: 1.8 m-kg (13 ft-lb) Mounting bolt torque: Front: 3.5 m-kg (25.5 ft-lb) Rear: 5.0 m-kg (36 ft-lb)

3. Attach brake hoses (front and rear).

Brake hose torque: 2.5 m-kg (18 ft-lb)

4. Master cylinder reassembly
   Reassemble master cylinder as shown in illustration.





Brake hose torque: (all brake union bolts) 2.5 m-kg (18 ft-lb)

5. Brake disc assembly
   If brake disc has been removed from hub or is loose, tighten bolts. Use new locking washers and bend over locking tabs after bolts are tightened.

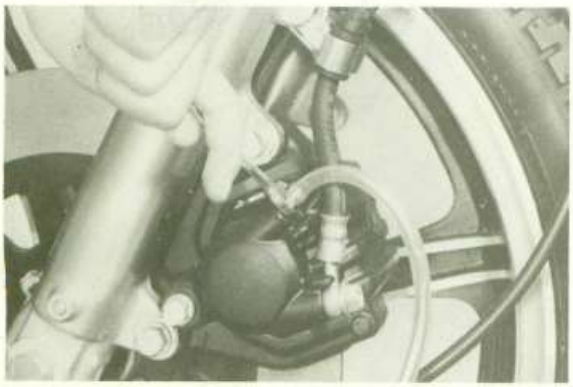
Disc bolt torque: 2.0 m-kg (14.5 ft-lb)

6. Air bleeding

CAUTION:
If the brake system is disassembled or if any brake hose has been loosened or removed, the brake system must be bled to remove air from the brake fluid. If the brake fluid level is very low or brake operation is incorrect, bleed the brake system.

1. Add proper brake fluid to the reservoir. Install the diaphragm, being careful not to spill or overflow the reservoir.

2. Connect the clear plastic tube tightly to the caliper bleed screw. Put the end of the tube into a container.
3. Slowly apply the brake lever or pedal several times. Pull in lever (push down pedal). Hold lever or pedal in "on" position. Loosen bleed screw. Allow the pedal or lever to travel slowly toward its limit. When the limit is reached, tighten bleed screw.



4. Continue step 3 until all air bubbles are removed from system.

NOTE:

If bleeding is difficult, it may be necessary to let the brake system stabilize for a few hours. Repeat bleeding procedure.

(PAGE 71)

WHEELS, TIRES, TUBES

Wheel inspection

Wheels should be inspected frequently. Wheel run-out and balancing is discussed in Front wheel inspection. In addition, wheels must be carefully inspected for small cracks, bends or warpage. Any wheel damaged or beyond specified limits should be replaced. Do not attempt to straighten a bent wheel.

WARNING:

SR500E aluminum wheels are not designed for use with tubeless tires.

Tire, tube removal

1. Remove valve cap, valve core and valve stem lock nut.
2. When all air is out of tube, separate tire bead from rim (both sides) by stepping on tire with your foot.
3. Use two (2) wide, flat tire irons with rounded edges to work the tire bead over the edge of the rim, starting 180° opposite the tube stem. Be careful not to pinch the tube as you do this.
4. After you have worked one side of the tire completely off the rim, slip the tube out. Be very careful not to damage the stem while pushing it back out of the rim hole.

NOTE:

If you are changing the tire itself, then finish the removal by working the second bead off the rim.

Installation

Reinstall the tire and tube by reversing the disassembly procedure. After the tube has been installed, but before the tire has been completely slipped onto the rim, put a small amount of air into the tube. This removes any creases that might exist. Release the air and continue with reassembly. After the tire has been completely slipped ontos the rim, make sure the stem comes out of the hole in the rim at a right angle to the rim. Finally, inflate the tire.

NOTE:

Make sure the wheel is balanced every time the tire is replaced. (Refer to Front Wheel Inspection.)

IMPORT NOTICE

Proper loading of SR500E is important for the handling, braking, and other performance and safety characteristics.

NEVER OVERLOAD.

WARNING:

Never overload the motorcycle beyond specified tire limits. Operation of an overloaded tire could cause tire damage, an accident and injury.

	FRONT	REAR
SR500E BASIC WEIGHT with oil and full fuel tank	79 kg (174 lb)	95 kg (209 lb)
Standard tire	Bridgeston 3.50S-19-4PR	Bridgestone 4.00S-18-4PR
Maximum load limit	133 kg (290 lb)	248 kg (545 lb)
Cold tire pressure:		
Up to 270 kg (595 lb) load	1.8 kg/cm² (26 psi)	2.0 kg/cm² (28 psi)
270 kg (595 lb) load ~ 315 kg (695 lb) load	1.8 kg/cm² (26 psi)	2.0 kg/cm² (28 psi)
315 kg (695 lb) load ~ 365 kg (805 lb) load (Maximum load)	2.0 kg/cm² (28 psi)	2.3 kg/cm² (32 psi)
High speed riding	2.0 kg/cm² (28 psi)	2.3 kg/cm² (32 psi)
Minimum tire tread depth	0.8 mm (0.03 in)	0.8 mm (0.3 in)

Make sure the total weight of the motorcycle with accessories, rider(s), etc., does not exceed the tire limits.

(PAGE 74, 75)

FRONT FORKS

Assembly

Specifications should be changed as follows:

Recommended oil:
Yamaha fork oil 10 wt. or equivalent

Oil quantity per leg:
182 cc (6.15 oz)

Fork cap bolt torque:
2.5 m-kg (18 ft-lb)

Tightening torque:
Inner tube to handle crown (upper bracket):
1.5 m-kg (11 ft-lb)
Inner tube to under bracket:
1.5 m-kg (11 ft-lb)

(PAGE 77)

STEERING HEAD

Installation

Specifications should be changed as follows:

Front fork position		
Length "A"	SR500E	None

Fork tube pinch bolt torque	
Upper	1.5 m-kg (11 ft-lb)
Under	1.5 m-kg (11 ft-lb)

(PAGE 78)

SWING ARM

Removal

Specifications should be changed as follows:

Pivot shaft torque:
8.0 m-kg (58 ft-lb)

REAR SHOCK ABSORBER

Removal

1. Remove one (1) rear shock absorber at a time, inspect and reinstall before removing the other.

Inspection

1. Check the rod. If it is bent or damaged, replace the shock absorber.
2. Check for oil leakage. If oil leakage is evident, replace the shock absorber.
3. Operate shock absorber rod to check damping. There should be no noticeable damping as shock extends.
4. Install the shock absorber on the machine.

rear shock absorber tightening torque:
3.0 m-kg (21.5 ft-lb)

(PAGE 82 ~ 89)

CHAPTER 6. ELECTRICAL SYSTEM

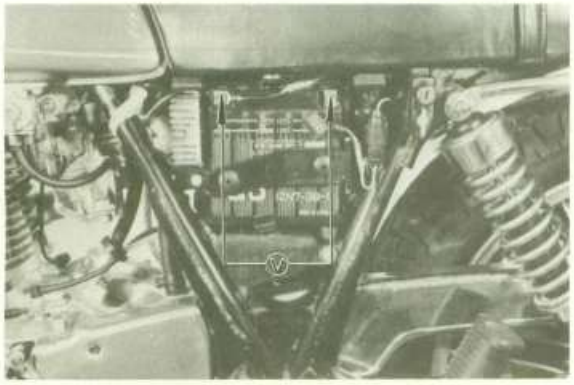
Whole paragraph should be changed as follows:

6-1. CHARGING SYSTEM

A. A.C. magneto

1. Checking method

a. Connect D.C. voltmeter to the battery terminals.



b. Start engine.

c. Accelerate engine to approximately 2,000 r/min. or more and check generated voltalge.

Generated voltage: 14.5 ± 0.5V

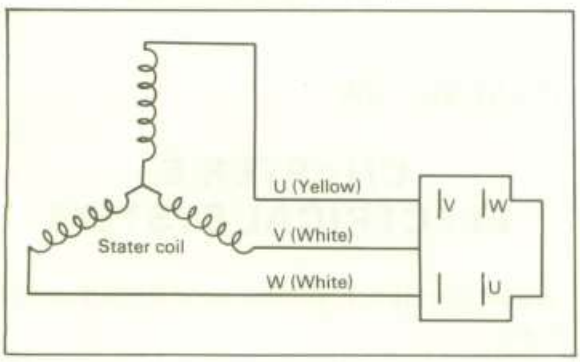
d. If the indicated voltage cannot be reached, then perform the tests in step 2.

NOTE:

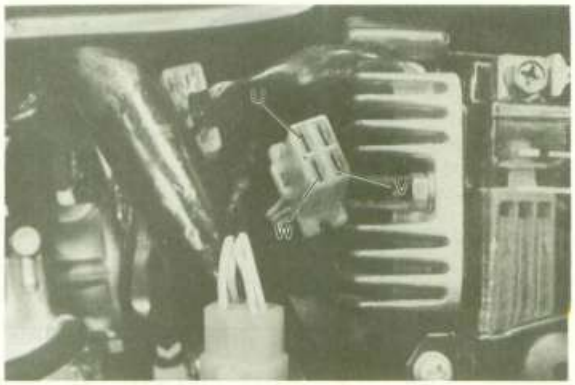
Never disconnect wires from the battery while the generator is in operation. If the battery is disconnected, the voltage across the generator terminals will increase, demaging the semiconductors.

2. Resistance test of stater coil.

Check the resistance between terminals U-V, V-W and W-U. If resistance is out of specification, coil is broken. Check the coil connections. If the coil connections are good, then the coil is broken inside and it should be replaced.



Stater coil resistance: U-V, U-W (Yellow-White) 0.73Ω ± 30% at 20°C (68°F) V-W (White-White) 0.80Ω ± 30% at 20°C (68°F)



B. I.C. voltage regulator

1. Inspection

Since IC regulator is sealed with a resin, it is impossible to check or replace any of inner parts. If the regulator is found to be defective, it must be replace with a new one.

2. Checking method.

a. Connect D.C. voltmeter to the battery terminals.



b. Start engine.

c. Accelerate engine to approximately 2,000 r/min or more and check regulated voltage.

Regulated voltage: 14.5 ± 0.5V

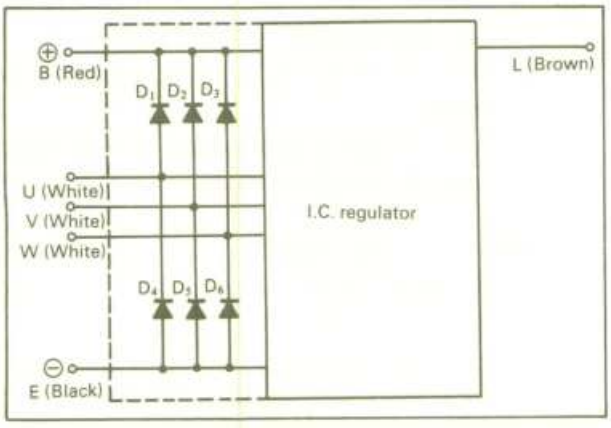
d. If voltage is off, check battery, generator and rectifier. If generator, rectifier and battery are good, then IC regulator is broken and it should be replaced.

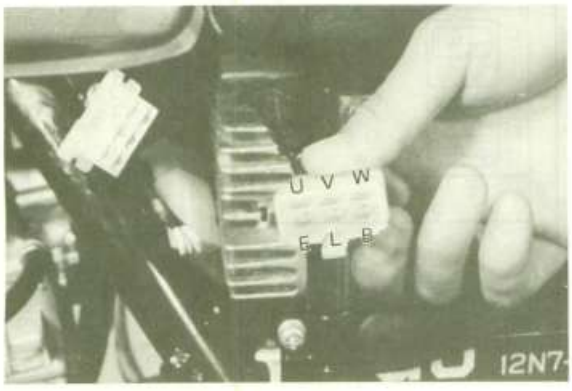
NOTE:

1) Never disconnect wires from the battery while the generator is in operation. If the battery is disconnected, the voltage across the generator terminals will increase, damaging the semiconductors.
2) When checking the regulator being installed on a machine, the battery should not be removed, and it should be fully charged.
3) Never use a high voltage insulation ohmmeter such as a megaohmmeter for such a test. If high voltage is applied to the regulator terminals, the regulator will be damaged.

C. Checking silicon rectifier

Check silicon rectifier as specified using ohmmeter.





Checking element	Pocket test connecting point (+) (red)	Pocket test connecting point (~) (black)	Good	Replace (element shorted)	Replace (element opened)
D_1	B	U	○	○	x
	U	B	x	○	x
D_2	B	V	○	○	x
	V	B	x	○	x
D_3	B	W	○	○	x
	W	B	x	○	x
D_4	U	E	○	○	x
	E	U	x	○	x
D_5	V	E	○	○	x
	E	V	x	○	x
D_6	W	E	○	○	x
	E	W	x	○	x

○ ..... Continuty
x ..... Discontinuty

Even if one of elements is broken, replace assembly.

CAUTION:

The silicon rectifier can be damaged if subject to overcharging. Special care should be taken to avoid a short circuit and/or incorrect connection of the positive and negative leads at the battery. Never connect the rectifier directly to the battery to make a continuity check.

D. Battery

1. Checking
   a. If battery sulfation (white accumulation) occurs on plates due to lack of battery electrolyte, the battery should be replaced.
   b. If the bottoms of the cells are filled with corrosive material falling off the plates, the battery should be replaced.
   c. If the battery shows the following defects, it should be replaced:
   1) The voltage will not rise to a specific value even after many hours of charging.
   2) No gassing occurs in any cell.
   3) The battery requires a charging voltage of more than regulating voltage in order to supply a current of 0.7A for 10 hours.
2. The service life of a battery is usually 2 to 3 years, but lack of care as described below will shorten the life of the battery.

a. Negligence in keeping battery topped off with distilled water.
b. Battery being left discharged.
c. Over-charging with heavy charge.
d. Freezing.
e. Filling with water or sulfuric acid containing impurities.
f. Improper charging voltage or current on new battery.

Battery	12V 7AH
Electrolyte	Specific gravity: 1.28 Quantity: 550 cc
Initial charging current	0.7 amp for 10 hours (new battery)
Recharging current	10 hours (or until specific gravity reaches 1.28)
Refill fluid	Distilled water (to maximum level line)
Refill period	Check once per month (or more often, as required)

3. If the motorcycle is not to be used for a long time, remove the battery and have it stored. The following instructions should be observed:
a. Recharge the battery periodically.
b. Store the battery in a cool, dry place.
c. Recharge the battery before reinstallation.

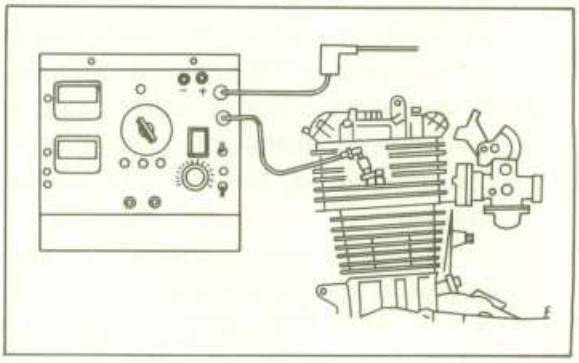
6-2. IGNITION SYSTEM

A. Spark gap test

The entire ignition system can be checked for misfire and weak spark using the "Electro Tester".
If the ignition system will fire across a sufficient gap, the entire ignition system can be considered good.
If not, proceed with individual component tests until the problem is found.

1. Warm-up engine thoroughly so that all electrical components are at operating temperature.
2. Stop engine and connect tester as shown.
3. Start engine and increase spark gap until misfire occurs. (Test at various rpm's between idle and red line.)

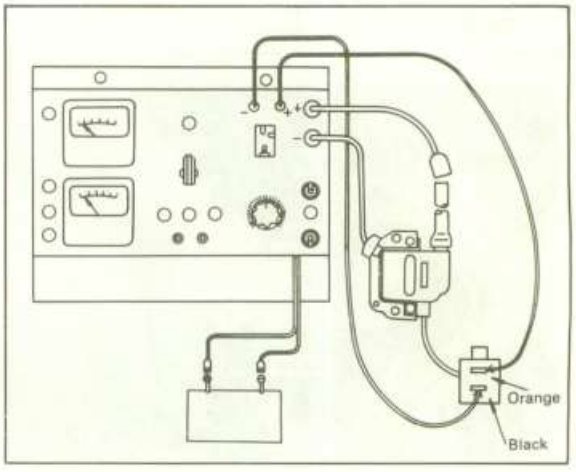
Minimum spark gap:
5 mm (0.20 in)



B. Ignition coil test

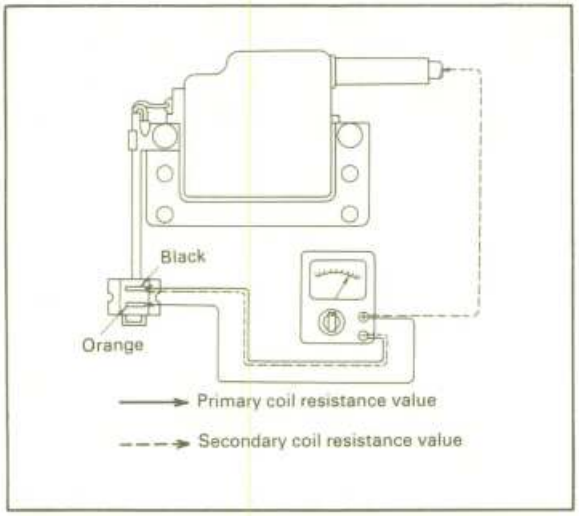
1. Coil spark gap test
a. Remove fuel tank and disconnect ignition coil from wire harness and spark plug.
b. Connect Electro Tester as shown.
c. Connect fully charged 12V battery to tester.
d. Turn on spark gap switch and increase gap until misfire occurs.

Minimum spark gap:
6 mm (0.24 in)



2. Coil winding resistance tests
Use a pocket tester or equivalent ohmmeter to determine resistance and continuity of primary and secondary coil windings.

Primary coil resistance
0.98Ω ± 20% at 20°C (68°F)
Secondary coil resistance
12kΩ ± 20% at 20°C (68°F)



6-3. SPARK PLUG

The life of a spark plug and its discoloring vary according to the habits of the rider. At each periodic inspection, replace burned or fouled plugs with suitable ones determined by the color and condition of the bad plugs. One machine may be ridden only in urban areas at low speeds; another may be ridden for hours at high speed. Confirm what the present plugs indicate by asking the rider how long and how fast he rides. Recommend a hot, standard, or cold plug type accordingly. It is actually economical to install new plugs often since it will tend to keep the engine in good condition and prevent excessive fuel consumption.

A. How to "Read" a spark plug (Condition)

1. Best condition: When the porcelain around the center electrode is a light tan color.
2. If the electrodes and porcelain are black and somewhat oily, replace the plug with a hotter type for low speed riding.
3. If the porcelain is burned or glazed white and/or the electrodes are partially burned away, replace the plug with a colder type for high speed riding.

B. Inspection

Instruct the rider to:

1. Inspect and clean the spark plug every 3,200 km (2,000 mi).
2. Clean the electrodes of carbon and adjust the electrode gap.
3. Be sure to use the proper reach plug as a replacement to avoid overheating, fouling or piston damage.

Spark plug type: N-7Y (Champion) or BP-7ES (NGK)
Spark plug gap: 0.7 ~ 0.8 mm (0.028 ~ 0.031 in)

6-4. LIGHTING AND SIGNAL SYSTEMS

A. Lighting tests and checks

The battery provides power for operation of the horn, tail light, stop light, neutral light, and flasher light. If none of the above operates, always check battery voltage before proceeding further. Low battery voltage indicates either a faulty battery, low battery water, or a defective charging system. See section 6-1. Charging System, for checks of battery and charging system. Also check fuse condition. Replace "open" fuse.

1. Horn does not work:
   a. Check for 12V on brown wire to horn.
   b. Check for good grounding of horn (pink wire) when horn button is pressed.
2. Brake light does not work:
   a. Check bulb.
   b. Check for 12V on yellow wire to brake light.
   c. Check for 12V on brown wire to each brake light switch (front brake and rear brake switches).
3. Tail light does not work:
   a. Check bulb.
   b. Check for 12V on blue wire.
   c. Check for ground on black wire to tail/brake light assembly.

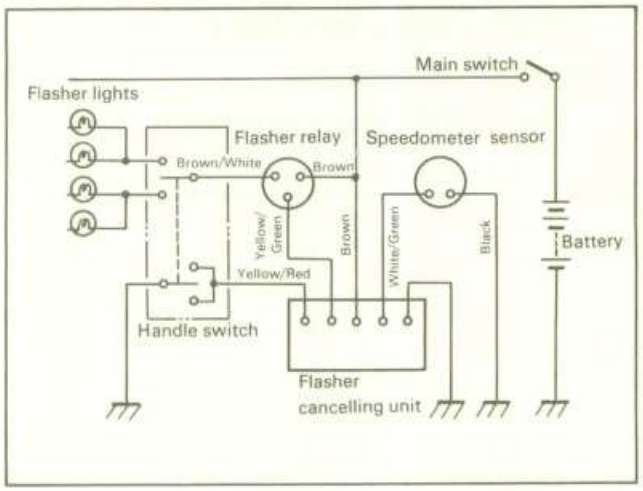
4. Flasher light(s) do not work:
a. Check bulb.
b. Right circuit:
1) Check for 12V on dark green wire to light.
2) Check for ground on black wire to light assembly.
c. Left circuit:
1) Check for 12V on dark brown wire to light.
2) Check for ground on black wire to light assembly.
d. Right and left circuits do not work:
1) Check for 12V on brown/white wire to flasher switch on left handlebar.
2) Check for 12V on brown wire to flasher relay.
3) Replace flasher relay.
4) Replace flasher switch.
e. Check flasher self-canceling system. (Refer to flasher self-canceling system.)

5. Neutral light does not work:
a. Check bulb.
b. Check for 12V on sky blue wire to neutral switch.
c. Replace neutral switch.

B. Self-canceling flasher system

1. Description:
The self-canceling flasher system turns off the turn signal after a period of time or distance involved in turning or changing lanes. Generally, the signal will cancel after either 10 seconds, or 150 meters (490 feet), whichever is greater. At very low speed, the function is determined by distance; at high speed, it is determined by time. At low speed, especially when changing speeds, the canceling determination is a combination of both time and distance.
2. Operation:
The handle switch has three positions: L (left), OFF, and R (right). The switch lever will return to the "OFF" position after being pushed to L or R, but the signal will function. By pushing the lever in, the signal may be cancelled manually.

3. Circuit diagram.



4. Inspection:
If the flasher self-canceling system should become inoperative, proceed as follows:
a. Pull off the 6-pin connector from the flasher canceling unit, and operate the handle switch.

If the signal operates normally in L, R, and OFF, the following are in good condition:
1) Flasher unit.
2) Bulb.
3) Lighting circuit.
4) Handle switch light circuit.

If (1) through (4) are in good condition, the following may be faulty:
1) Flasher canceling unit.
2) Handle switch reset circuit.
3) Speedometer sensor circuit.
b. Pull off the 6-pin connector from the flasher canceling unit, and connect a tester (ohms × 100 range) across the white/green and the black lead wires on the wire harness side. Turn the speedometer shaft. if the tester needle swing back and forth, four times between 0 and ∞, the speedometer sensor circuit is in good condition. If not, the sender or wire harness may be inoperative.
c. Pull off the 6-pin connector from the flasher canceling unit. Check if there is continuity between the yellow/red lead wire on the wire harness side and the chassis.

Flasher switch OFF: ∞ Flasher switch L or R: 0 ohms

If the tester needle does not swing as indicated above, check the handle switch circuit and wire harness.

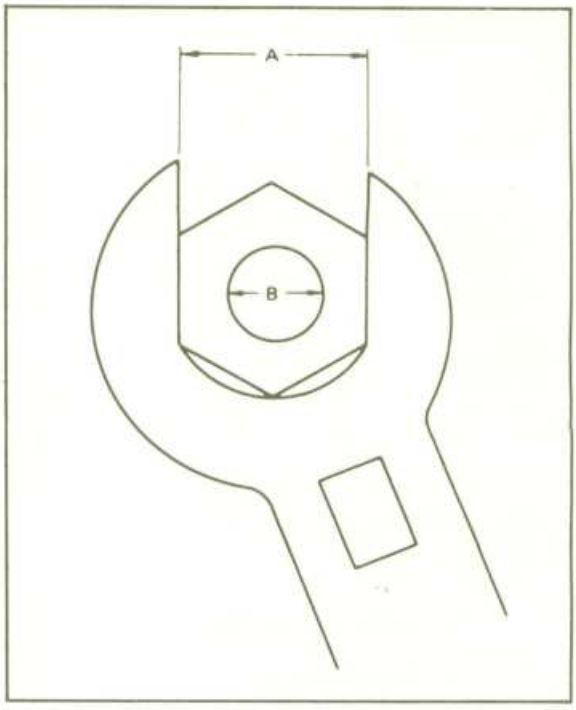
d. If no defect is found with the above three check-ups and the flasher canceling system is still inoperative, replace the flasher canceling unit.
e. If the signal flashes only when the handle switch lever is turned to L or R and it turns off immediately when the handle switch lever returns to center, replace the flasher canceling unit.

(PAGE 92 ~ 95)

TORQUE SPECIFICATION

The following torque specifications must be adhered to on every machine. When applying torque to multi-secured fastener components, the several studs should be tightened in gradual stages and in a pattern that will avoid warpage to the item being secured. Torque settings are for dry, clean threads. Torquing should always be done tos the nut, never the bolt head.

NOTE:
Certain item with other than standard thread pitches may require differing torque.



Torque specifications

A (Nut)	B (Bolt)	Standard tightening torque	
		m-kg	ft-lb
10 mm	6 mm	1.0	7
12 mm	8 mm	2.0	14.5
14 mm	10 mm	4.0	29
17 mm	12 mm	4.5	33
19 mm	14 mm	5.0	36
22 mm	16 mm	6.5	47
24 mm	18 mm	7.0	50
27 mm	20 mm	8.0	58

Part to be tightened	Thread dia. and part name	Tightening torque
Engine:		
Cylinder head and cylinder head cover	10 mm stud bolt 10 mm nut 8 mm stud bolt 8 mm nut	2.0 m-kg (14.5 ft-lb) 3.8 m-kg (27.5 ft-lb) 1.3 m-kg (9.5 ft-lb) 2.0 m-kg (14.5 ft-lb)
Cylinder head	10 mm stud bolt 10 mm nut 6 mm bolt	2.0 m-kg (14.5 ft-lb) 3.8 m-kg (27.5 ft-lb) 1.0 m-kg (7.0 ft-lb)
Cylinder head cover	6 mm bolt	1.0 m-kg (7.0 ft-lb)
Cylinder head side cover	6 mm bolt	1.0 m-kg (7.0 ft-lb)
Spark plug	14 mm	2.0 m-kg (14.5 ft-lb)
Cylinder	10 mm stud bolt 10 mm nut 6 mm bolt	2.0 m-kg (14.5 ft-lb) 3.8 m-kg (27.5 ft-lb) 1.0 m-kg (7.0 ft-lb)
Flywheel	12 mm nut	8.0 m-kg (58.0 ft-lb)
Stator coil	6 mm pan head screw	0.9 m-kg (6.5 ft-lb)
Valve clearance adjusting nut	8 mm nut	2.7 m-kg (19.5 ft-lb)
Cam sprocket	10 mm bolt	5.0 m-kg (36.0 ft-lb)
Cam chain tensioner adjustment	18 mm nut	4.0 m-kg (29.0 ft-lb)
Cam chain tensioner cover	30 mm cap	2.0 m-kg (14.5 ft-lb)
Pump cover	6 mm pan head screw	0.7 m-kg (5.0 ft-lb)
Strainer cover	6 mm bolt	1.0 m-kg (7.0 ft-lb)
Drain plug	14 mm bolt	3.0 m-kg (21.5 ft-lb)
Filter cover	6 mm bolt 5 mm bleeder screw	1.0 m-kg (7.0 ft-lb) 0.5 m-kg (3.5 ft-lb)
Delivery pipe	8 mm union bolt	1.8 m-kg (13.0 ft-lb)
Oil hose	14 mm union nut	4.0 m-kg (29.0 ft-lb)
Exhaust pipe	8 mm stud bolt 8 mm nut	1.3 m-kg (9.5 ft-lb) 1.8 m-kg (13.0 ft-lb)
Crankcase 1 and 2	6 mm bolt	1.0 m-kg (7.0 ft-lb)
Kick crank boss	8 mm bolt	2.0 m-kg (14.5 ft-lb)
Clutch spring	6 mm screw	0.8 m-kg (6.0 ft-lb)
Primary drive gear	16 mm nut	6.0 m-kg (43.5 ft-lb)
Clutch boss	18 mm nut	6.0 m-kg (43.5 ft-lb)
Drive sprocket	18 mm nut	7.0 m-kg (50.5 ft-lb)
Change pedal	6 mm bolt	0.8 m-kg (6.0 ft-lb)
Chassis:		
Engine mounting bolt	10 mm nut 8 mm nut	5.0 m-kg (36.0 ft-lb) 2.5 m-kg (18.0 ft-lb)

Part to be tightened	Thread dia. and part name	Tightening torque
Handle crown and steering shaft	14 mm nut	5.5 m-kg (40.0 ft-lb)
Handle crown and handle holder	8 mm bolt	2.0 m-kg (14.5 ft-lb)
Handle crown and inner tube	8 mm nut	1.5 m-kg (11.0 ft-lb)
Front fork		
Cap bolt	30 mm bolt	2.5 m-kg (18.0 ft-lb)
Under bracket and inner tube	8 mm bolt	1.5 m-kg (11.0 ft-lb)
Rear cushion and frame	10 mm nut	3.0 m-kg (21.5 ft-lb)
Rear cushion and swing arm	10 mm nut	3.0 m-kg (21.5 ft-lb)
Pivot shaft	16 mm nut	8.0 m-kg (58.0 ft-lb)
Front wheel shaft	14 mm nut	11 m-kg (80.0 ft-lb)
Front fork and axle holder	8 mm nut	1.0 m-kg (7.0 ft-lb)
Engine mount stay	8 mm bolt	2.0 m-kg (14.5 ft-lb)
Rear wheel shaft	16 mm nut	15 m-kg (108 ft-lb)
Sprocket wheel	8 mm nut	3.0 m-kg (21.5 ft-lb)
Compression bar and brake plate	10 mm nut	5.0 m-kg (36.0 ft-lb)
Compression bar and rear arm	12 mm nut	6.0 m-kg (43.5 ft-lb)
Footrest	8 mm nut	0.9 m-kg (6.5 ft-lb)
Net filter	22 mm bolt	9.0 m-kg (65.0 ft-lb)
Disc brake:		
Brake disc and hub (Front)	8 mm bolt	2.0 m-kg (14.5 ft-lb)
Caliper bracket and front fork (Front)	10 mm bolt	3.5 m-kg (25.5 ft-lb)
Caliper and brake hose (Front)	10 mm bolt	2.5 m-kg (18.0 ft-lb)
Caliper and bleed screw (Front)	8 mm bolt	0.6 m-kg (4.5 ft-lb)
Master cylinder and brake hose (Front)	10 mm bolt	2.5 m-kg (18.0 ft-lb)
Brake hose 1 and joint (Front)	10 mm bolt	2.5 m-kg (18.0 ft-lb)
Brake disc and hub (Rear)	8 mm bolt	2.0 m-kg (14.5 ft-lb)
Caliper and caliper bracket (Rear)	8 mm bolt	1.8 m-kg (13.0 ft-lb)
Caliper and brake hose (Rear)	10 mm bolt	2.5 m-kg (18.0 ft-lb)
Caliper and bleed screw (Rear)	8 mm bolt	0.6 m-kg (4.5 ft-lb)
Master cylinder and brake hose (Rear)	10 mm bolt	2.5 m-kg (18.0 ft-lb)
Master cylinder and frame (Rear)	8 mm bolt	2.0 m-kg (14.5 ft-lb)
Brake hose 2 and joint	10 mm bolt	2.5 m-kg (18.0 ft-lb)

(PAGE 96 ~ 111)

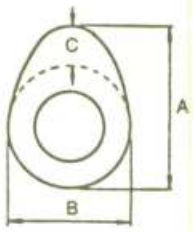
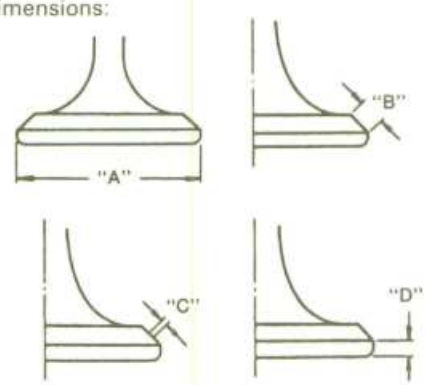
SPECIFICATIONS

General specifications

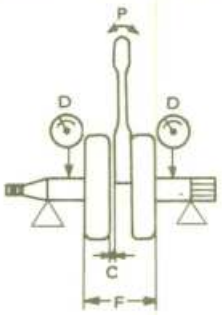
Item	Required ≪Allowance≫
Model:	
I.B.M. No.	2J2
Frame I.D. and starting number	2J2-000101
Engine I.D. and starting number	2J2-000101
Dimension:	
Overall length	2,105 mm (82.9 in)
Overall width (standard)	835 mm (32.9 in)
Overall height (standard)	1,150 mm (45.3 in)
Wheel base	1,410 mm (55.5 in)
Minimum ground clearance	165 mm (6.5 in)
Weight:	
Net weight	163 kg (359 lb)
Performance:	
Climbing ability	30°
Minimum turning radius	2,400 mm (94.5 in)
Brake distance	14 m (45.9 ft) at 50 km/h (31 mph)

Engine specifications

Items	Required ≪Allowance≫
Description:	
Engine type	Air cooled 4-stroke, forward incline, single, S.O.H.C.
Engine model	2J2
Displacement	499 cc (30.45 cu.in)
Bore x stroke	87 x 84 mm (3.425 x 3.307 in)
Compression ratio	9.0 : 1
Starting system	Primary kick starter
Ignition system	C.D.I.
Lubrication system	Dry sump system
Cylinder head:	
Combustion chamber type	Dome
Combustion chamber volume (with BP7ES or N-7Y)	62.4 cc (3.81 cu.in)
Head gasket thickness	1.0 mm (0.039 in)
Camshaft:	
Cam drive type	Drive chain (right side drive)
Camshaft bearing type (left)	6005C3
Camshaft bearing type (right)	6005C3 (with groove)
Cam chain type and No. of links	BF05M, 106L
Cam dimensions:	
A (Cam height) IN.	39.23 ± 0.05 mm ≪39.08 mm≫ (1.5445 ± 0.0020 in ≪1.5386 in≫)
A (Cam height) EX.	39.25 ± 0.05 mm ≪39.10 mm≫ (1.5453 ± 0.0020 in ≪1.5394 in≫)
B (Base circle) IN.	32.23 ± 0.05 mm ≪32.08 mm≫ (1.2689 ± 0.0020 in ≪1.2630 in≫

Items	Required ≪Allowable≫
	
B (Base circle) EX.	32.28 ± 0.05 mm ≪32.08 mm≫ (1.2709 ± 0.0020 in ≪1.2630 in≫)
C (Cam lift) IN.	7.225 mm (0.2844 in)
EX.	7.253 mm (0.2856 in)
Camshaft runout limit	≪0.1 mm (0.0039 in)≫
Valve timing:	
Intake Open	BTDC 44°
Intake Close	ABDC 68°
Duration	292°
Exhaust Open	BBDC 76°
Exhaust Close	ATDC 36°
Exhaust Duration	292°
Valve over lap	80°
Rocker arm and rocker shaft:	
Rocker arm bearing dia. (I.D.)	12.00 ~ 12.02 mm ≪12.05 mm≫ (0.4724 ~ 0.4732 in ≪0.4744 in≫)
Rocker arm shaft dia. (O.D.)	11.98 ~ 11.99 mm ≪11.96 mm≫ (0.4714 ~ 0.4720 in ≪0.4709 in≫)
Clearance	0.01 ~ 0.04 mm ≪0.11 mm≫ (0.0004 ~ 0.0016 in ≪0.0043 in≫)
Valve, valve seat and valve guide:	
Valve clearance (cold): IN	0.10 mm (0.0039 in)
EX.	0.15 mm (0.0059 in)
No. of valves per cylinder	2 pcs
Dimensions:	
	
Valve head dia. (A): IN.	47 mm (1.85 in)
EX.	39 mm (1.54 in)
Valve face width (B): IN.	2.12 mm (0.0835 in)
EX.	2.12 mm (0.0835 in)
Valve seat width (C): IN.	1.3 mm (0.051 in)
EX.	1.3 mm (0.051 in)
Valve margin thickness (D): IN.	1.3 mm (0.051 in)
EX.	1.3 mm (0.051 in)
Valve stem outside dia.: IN.	7.97 ~ 7.99 mm (0.3138 ~ 0.3146 in)
EX.	7.96 ~ 7.97 mm (0.3134 ~ 0.3138 in)
Valve guide inside dia.: IN.	8.01 ~ 8.02 mm (0.3154 ~ 0.3157 in)
EX.	8.01 ~ 8.02 mm (0.3154 ~ 0.3157 in)
Valve stem to guide clearance: IN.	0.02 ~ 0.04 mm ≪0.08 mm≫ (0.0008 ~ 0.0016 in ≪0.0031 in≫)
Valve stem to guide clearance: EX.	0.04 ~ 0.06 mm ≪0.1 mm≫ (0.0016 ~ 0.0024 in ≪0.0039 in≫

Items	Required ≪Allowable≫
Valve springs:	
Free length: Inner	45.3 mm ≪43.9 mm≫ (1.783 in ≪1.728 in≫)
Outer	44.6 mm ≪43.3 mm≫ (1.756 in ≪1.703 in≫)
Spring rate: Inner	K1 = 1.67, K2 = 2.12 [kg/mm]
	(K1 = 93.5, K2 = 119 [lb/in])
Spring rate: Outer	K1 = 3.60, K2 = 4.63 [kg/mm]
	(K1 = 202, K2 = 259 [lb/in])
Installed length (valve closed): Inner	38.0 mm (1.496 in)
Outer	40.0 mm (1.575 in)
Installed pressure (valve closed): Inner	12.2 kg (26.9 lb)
Outer	16.4 kg (36.2 lb)
Compressed length (valve open): Inner	28.0 mm (1.102 in)
Outer	30.0 mm (1.181 in)
Compressed pressure (valve open): Inner	33.4 kg (73.6 lb)
Outer	62.7 kg (138.2 lb)
Wire diameter: Inner	3.1 mm (0.122 in)
Outer	4.4 mm (0.173 in)
Winding outside diameter: Inner	23.4 mm (0.921 in)
Outer	32.9 mm (1.295 in)
Tilt limit from vertical: Inner	1.97 mm (0.0776 in)
Outer	1.97 mm (0.0776 in)
Cylinder:	
Material	Aluminum alloy with special cast iron sleeve
Bore size	87.00 ~ 87.02 mm ≪87.1 mm≫
	(3.4252 ~ 3.4260 in ≪3.429 in≫)
Taper limit	≪0.05 mm≫ (≪0.0020 in≫)
Out of round limit	≪0.01 mm≫ (≪0.0004 in≫)
Piston:	
Piston clearance	0.050 ~ 0.055 mm (0.0020 ~ 0.0022 in)
Piston clearance measuring position (from piston skirt bottom)	7.2 mm (0.283 in)
Piston pin bore size	20.00 ~ 20.02 mm ≪20.08 mm≫
	(0.7874 ~ 0.7882 in ≪0.7905 in≫)
Piston pin outside diameter	19.99 ~ 20.00 ≪19.96 mm≫
	(0.7870 ~ 0.7874 in ≪0.7858 in≫)
Piston pin length	75 mm (2.95 in)
Over size piston diameter: 1st	87.25 mm (3.4350 in)
Over size piston diameter: 2nd	87.50 mm (3.4449 in)
Over size piston diameter: 3rd	87.75 mm (3.4547 in)
Over size piston diameter: 4th	88.00 mm (3.4646 in)
Piston ring:	
Piston ring design: Top ring	Plain ring
Piston ring design: 2nd ring	Plain ring
Piston ring design: Oil ring	Oil ring with expander
Ring end gap (installed): Top ring	0.3 ~ 0.5 mm ≪0.8 mm≫
	(0.012 ~ 0.020 in ≪0.030 in≫)
2nd ring	0.3 ~ 0.5 mm ≪0.8 mm≫
	(0.012 ~ 0.020 in ≪0.031 in≫)
Oil ring	0.2 ~ 0.9 mm ≪1.0 mm≫)
Ring groove side clearance: Top ring	0.04 ~ 0.08 mm ≪0.15 mm≫
	(0.0016 ~ 0.0031 in ≪0.0059 in≫)
2nd ring	0.03 ~ 0.07 mm ≪0.15 mm≫
	(0.0012 ~ 0.0028 in ≪0.0059 in≫)

Items	Required ≪Allowable≫
Ring groove side clearance: Oil ring	N.A.
Over size piston ring: 1st	87.25 mm (3.4350 in)
Over size piston ring: 2nd	87.50 mm (3.4449 in)
Over size piston ring: 3rd	87.75 mm (3.4547 in)
Over size piston ring: 4th	88.00 mm (3.4646 in)
Big end bearing:	
Type	Needle bearing
Inside dia. x outside dia. x width	34 x 42 x 24 mm (1.34 x 1.65 x 0.94 in)
Needle dia. x quality	IKO 4 mm (0.16 in) x 18 pcs KOYO 4 mm (0.16 in) x 17 pcs.
Crankshaft:	
Crankshaft assembly width (F)	74.95 ~ 75.00 mm (2.9508 ~ 2.9528 in)
Crankshaft deflection (D)	≪0.03 mm (0.0012 in) or less≫
Connecting rod large end side clearance (C)	0.35 ~ 0.65 mm (0.0138 ~ 0.0256 in)
Connecting rod small end deflection (P)	0.8 ~ 1.0 mm ≪2.0 mm≫ (0.0315 ~ 0.0394 in ≪0.079 in≫)
	
Crank pin outside dia. x length	34 x 74 mm (1.34 x 2.91 in)
Crank bearing type: Left	6306 SH2-9-C4
Right	6307 SH2-9-C4 with special heat treatment
Crank oil seal type: Left	SD-30-60-6
Right	S-14-25-5.5 special
Clutch:	
Clutch type	Wet, multiple disc type
Clutch push mechanism	Inner push, cam axle type
Primary reduction ratio and method	77/30 (2.566), spur gear
Primary reduction gear back lash number	148 ~ 150
Primary drive gear back lash number	$21.79\ ^{0}_{-0.04}$ mm (4 Teeth)
Primary driven gear back lash number	$52.71\ ^{0}_{-0.04}$ mm (9 Teeth)
Friction plate: Thickness/quantity	2.8 mm ≪2.5 mm≫/8 pcs. (0.110 in ≪0.098 in≫/8 pcs.)
Clutch plate: Thickness/quantity	1.2 mm/7 pcs. (0.047 in/7 pcs.)
Warp limit	≪0.05 mm (0.0020 in)≫
Clutch spring: Free length/quantity	41.2 mm ≪40.0 mm≫/6 pcs. (1.622 in ≪1.575 in≫/6 pcs.)
Clutch spring: Spring set weight	19.8 x 6 kg/25 mm (43.7 6 lb/0.984 in)
Spring constant	1.22 kg/mm (68.3 lb/in)
Clutch housing thrust clearance	0.10 ~ 0.21 mm (0.004 ~ 0.008 in)
Push rod bending limit	≪0.2 mm (0.0079 in) or less≫
Push lever axle: Bearing type and size	Needle bearing (17-21.5-15) x 2 pcs.
Oil seal type and size	SD-17-28-6
Transmission:	
Type	Constant mesh, 5 speed
Gear ratio: 1st	33/14 (2.357)
2nd	28/18 (1.555)

Items	Required ≪Allowable≫
Gear ratio: 3rd	25/21 (1.190)
4th	22/24 (0.916)
5th	21/27 (0.777)
Bearing type: Main axle (Left)	Needle bearing (20-32-12)
Bearing type: Main axle (Right)	4205
Drive axle (Left)	6305 special
Drive axle (Right)	Needle bearing (20-36-12)
Drive axle (Left)	SD-35-62-10
Secondary reduction ratio and method	44/16 (2.750), chain
Shifting mechanism:	
Operation system	Return type, left foot operation
Shifting type	Guide bar type, cam drum system
Oil seal type: Change lever	SDO-14-24-6
Kick starter:	
Type	Ratchet type
Oil seal type: Kick axle	SD-25-35-7
Compression releaser:	
Type	Manual, wire linked cam axle type
Lever free play	2 mm (0.079 in)
Oil seal type	SD-12-17-2.5-2NR
Air cleaner:	
Type/quantity	Dry, form rubber/1 pc.
Carburetor:	
Type and manufacture/quantity	VM34SS MIKUNI/1 pc.
I.D. mark	2J200
Main jet (M.J.)	#300
Air jet (A.J.)	#80
Jet needle: Clip position (J.N.)	6FL25-2
Needle jet (N.J.)	P-8
Cutaway (C.A.)	3.5
Pilot jet (P.J.)	#25
Mixture screw turns out	Preset
Starter jet (G.S.)	#50
Float hight	23.5 ± 1 mm (0.0125 ± 0.029 in)
Idling engine speed	1100 r/min
Lubrication:	
Transmission gear and engine sump oil	
Quantity	Total amount: 2.4 lit (2.5 US.qt) Periodic oil charge: 2.0 lit (2.1 US.qt) Exchange with oil filter: 2.1 lit (2.2 US.qt)
Type	Yamalube 20W/40 motor oil or equivalent
Oil pump: Type	Trochoid pump
Housing inside diameter	40.65 ~ 40.68 mm ≪40.85≫ (1.6004 ~ 1.6016 ≪1.6083 mm≫)
Housing depth (delivery)	4.03 ~ 4.06 mm ≪4.09 mm≫ (0.1587 ~ 0.1598 in ≪0.1610 mm≫)
Housing depth (scavenger)	18.03 ~ 18.06 mm ≪18.09 mm≫ (0.7098 ~ 0.7118 in ≪0.7122 in≫)
Rotor diameter	40.53 ~ 40.56 mm ≪40.50 mm≫ (1.5957 ~ 1.5968 in ≪1.5945 in≫)
Rotor thickness (delivery)	3.98 ~ 4.00 mm ≪3.95 mm≫ (0.1567 ~ 0.1575 in ≪0.1555 in≫)

Items	Required ≪Allowable≫
Rotor thickness (scravenger)	17.98 ~ 18.00 mm ≪17.95 mm≫)
Outer rotor and housing clearance	0.09 ~ 0.15 mm ≪0.35 mm≫ (0.0035 ~ 0.0059 in ≪0.0138 in≫)
Side clearance	0.03 ~ 0.08 mm ≪0.14 mm≫ (0.0012 ~ 0.0031 in ≪0.0055 in≫)
Tip clearance	0.07 ~ 0.12 mm ≪0.35 mm≫ (0.0028 ~ 0.0047 in ≪0.00138 in≫)
Check valve opening pressure	0.18 kg/cm² (2.56 lb/in²)
By-pass valve opening pressure	1.0 kg/cm² (14.2 lb/in²)
Oil cleaner type	Paper type

Chassis specification

Items	Required ≪Allowance≫
Frame:	
Frame design	Tubular steel semi-double-cradle
Steering system:	
Caster	27.5° (62.5°)
Trail	117 mm (4.6 in)
Number and size of balls in steering head:	
Upper race	22 pcs., 3/16 in
Lower race	19 pcs., 1/4 in
Lock to lock angle	L.R. 41.5°
Front suspension:	
Type	Telescopic fork
Front fork cushion travel	150 mm (5.9 in)
Front fork spring:	
Free length	150 mm (5.91 in)
Set length	417 mm (16.42 in)
Wire dia. x winding dia.	3.6 x 24.3 mm (0.14 x 0.96 in)
Spring constant	K1 = 0.4 kg/mm (0 ~ 100 mm) (22.4 lb/in (0 ~ 3.94 in)) K2 = 0.504 kg/mm (100 ~ 150 mm) (28.2 lb/in (3.94 ~ 5.91 in)
Inner tube outside diameter	35 mm (1.38 in)
Oil seal type	SD-35-48-10.5
Front fork oil: Quantity	182 cc (6.15 oz)
Front fork oil: Type	Yamaha fork oil 10 Wt. or equivalent
Rear suspension:	
Type	Swing arm
Damper type	Coil spring, oil damper
Rear shock absorber travel	80 mm (3.15 in)
Rear wheel travel	110 mm (4.33 in)
Rear shock absorber spring:	
Free length	216.5 mm (8.52 in)
Set length (soft position)	198 mm (7.80 in)
Wire dia. x winding dia.	7.5 x 61 mm (0.30 x 2.40 in)
Spring constant	K1 = 1.8 kg/mm (0 ~ 50 mm) (100.8 lb/in (0 ~ 1.97 in)) K2 = 2.1 kg/mm (50 ~ 80 mm) (117.6 lb/in (1.97 ~ 3.15 in))
Swing arm free play (limit)	≪1 mm (0.039 in)≫
Pivot shaft:	
Outside dia.	16 mm (0.63 in)

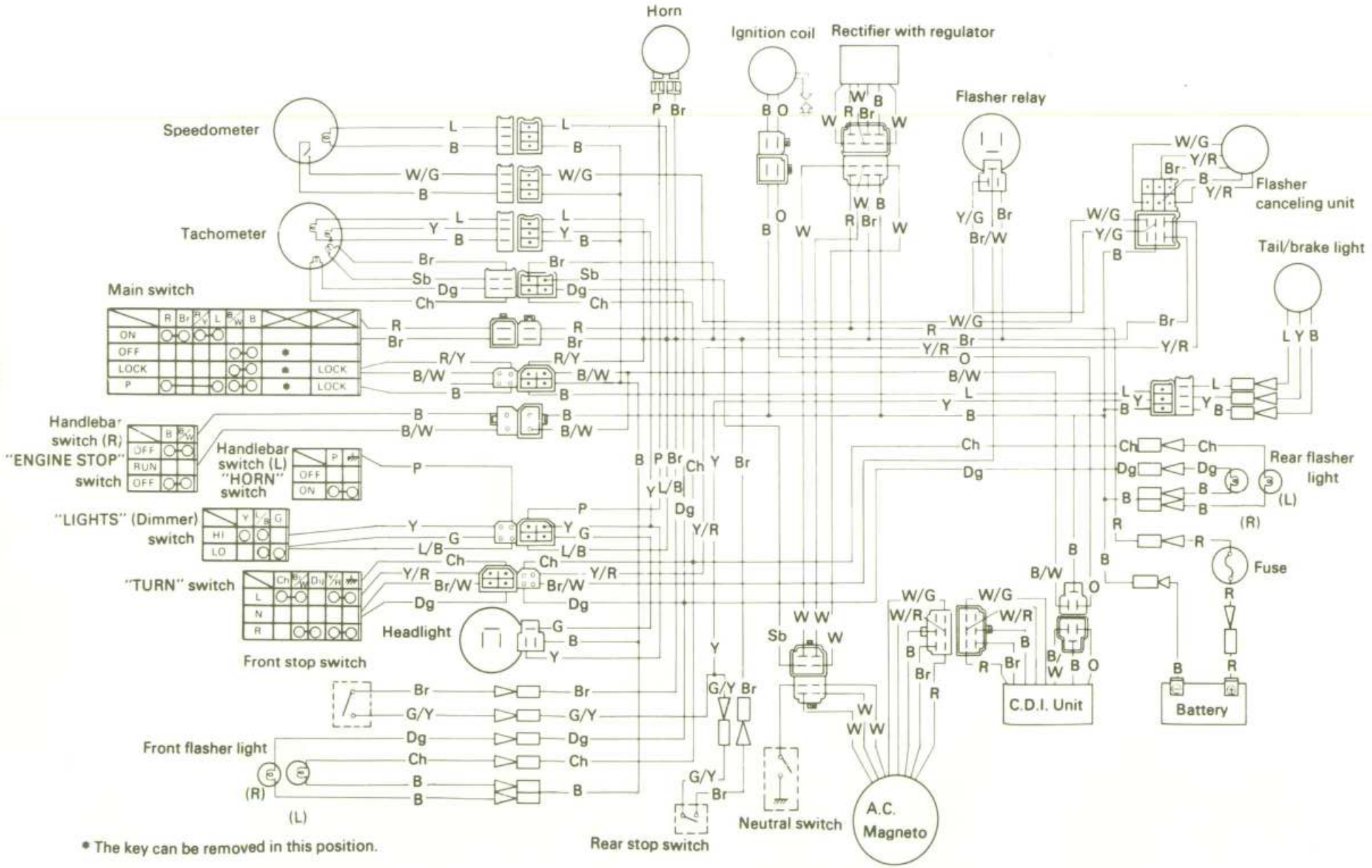
Items	Required ≪Allowable≫
Bearing type and size	L.R. Needle bearing (22-29-20) L.R. Thrust needle bearing (22-40.15-6)
Dust seal type	L.R. OSO-35-41.5-8
Fuel tank:	
Capacity	12 lit (3.2 US.gal)
Fuel grade	Regular gasoline
Wheel	
Type	Casting wheel
Tire size and pattern: Front	3.50-S19-4PR, lug type
Tire size and pattern: Rear	4.00-S18-4PR, lug type
Rim type: Front	1.85-19/Aluminum
Rim type: Rear	2.15-18/Aluminum
Rim runout (limit): Front/Rear	≪2 mm≫ (≪0.08 in≫)
Rim hopping (limit): Front/Rear	≪2 mm≫ (≪0.08 in≫)
Bearing type:	
Front wheel (Left)	6303ZZ
(Right)	6303Z
Rear wheel (Left)	6203RS
(Right)	6303ZZ
Oil seal type:	
Front wheel (Left)	.....
(Right)	SD-28-47-7-1
Meter gear	SDD-45-56-6
Rear wheel (Left)	SD-25-40-8
(Right)	SD-28-47-7-1
Secondary drive chain:	
Type	DID 50 HDSS
Number of links	103L + Joint
Chain pitch	15.875 mm (0.6250 in)
Chain free play	20 mm (0.79 in)
Brake (Front and rear):	
Type	Hydraulic disc type
Disc size (Outside dia. thickness)	
Front	298 x 5 mm (11.73 x 0.02 in)
Rear	267 x 5 mm (10.51 x 0.02 in)
Disc wear/limit	≪4.5 mm≫ (≪0.18 in≫)
Disc pad thickness	11 mm (0.43 in)
Pad wear limit (Minimum thickness)	≪6 mm≫ (≪0.24 in≫)
Master cylinder inside dia.	14.0 mm (0.55 in)
Caliper cylinder inside dia.	38.18 mm (1.50 in)
Brake fluid type	DOT #3 brake fluid

Electrical specifications

Items	Required ≪Allowable≫
Voltage	12V
Ignition system:	
C.D.I.:	
Model/Manufacturer	032000-045/NIPPON DENSO
Pulser coil resistance	
High speed (White/Red-Black)	16Ω ± 30% at 20°C (68°F)
Low speed (White/Green-Blacck)	87Ω ± 30% at 20°C (68°F)
Charge coil resistance	
High speed (Red-Brown)	334Ω ± 30% at 20°C (68°F)
Low speed (Brown-Black)	329Ω ± 30% at 20°C (68°F)
Ignition timing:	BTDC 7°/1100 r/min
Ignition advancer:	
Advance type	Electrical
Advance angle	26.5°
Advance starting engine speed	1,950 r/min
Full advance engine speed	6,000 r/min
Ignition coil:	
Model/manufacturer	029700-468/NIPPON DENSO
Spark gap	≪6 mm (0.24 in)/500 r/min≫
Primary winding resistance	0.98Ω ± 20% at 20°C (68°F)
Secondary winding resistance	12kΩ ± 20% at 20°C (68°F)
Spark plug:	
Type	BP-7ES (N.G.K.) or N-7Y (CHAMPION)
Spark plug gap	0.7 ~ 0.8 mm (0.028 ~ 0.031 in)
C.D.I. unit:	
Model/Manufacturer	070000-035/NIPPON DENSO
Charging system:	
A.C. magneto:	
Model/Manufacturer	032000-045/NIPPON DENSO
Rotor puller thread size	M27 x P1.0
Output	14.5V-11A/5000 r/min
Stater coil resistance	
White-Yellow	0.73Ω ± 30% at 20°C (68°F)
White-White	0.80Ω ± 30% at 20°C (68°F)
Rectifier with regulator:	
Model/Manufacturer	SH235/SHINDENGEN
(Rectifier)	
Type	I.C. type, three phase full wave
Capacity	15A
Withstand voltage	200V
(Regulator)	
Type	I.C. type
Regulating voltage	14.5 ± 0.5V
Allowable amperage	15A
Battery:	
Model/Manufacturer	12N7-3B/G.S.
Capacity	12V, 7AH
Charging rate	0.7A x 10 hours
Specific gravity	1.280
Lighting system:	
Headlight type:	Sealed beam
Bulb wattage/Quantity:	
Headlight	12V, 50W/40W x 1

Items	Required ≪Allowable≫
Taillight	12V 8W (3CP) x 1
Brake light	12V 27W (32CP) x 1
Flasher light	12V 27W (32CP) x 4
Turn indicator light	12V 3.4W x 1
Meter light	12V 3.4W x 4
High beam indicator light	12V 3.4W x 1
Neutral indicator light	12V 3.4W x 1
Horn:	
Model/Manufacturer	CF-12/NIKKO HORN
Winding resistance	1.24Ω ± 10% at 20°C (68°F)
Amperage	2.5A
Flasher relay:	
Type	Condenser type
Model/Manufacturer	FN257C/NIPPON DENSO
Flasher frequency	85 ± 10 cycle/min.
Capacity	12V 27W x 2 + 3W
Fuse:	
Rating	20A

SR500E WIRING DIAGRAM



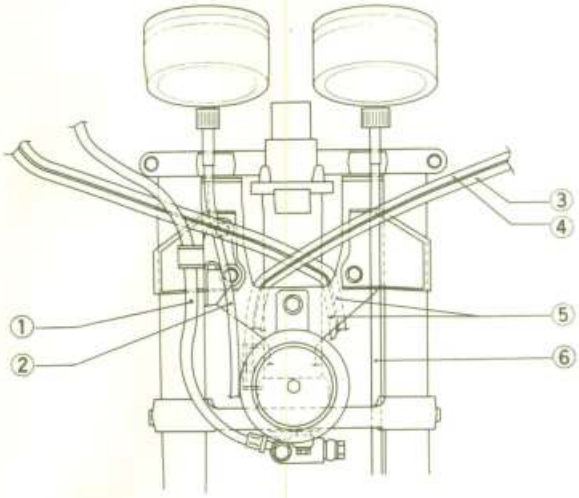
COLOR CODE

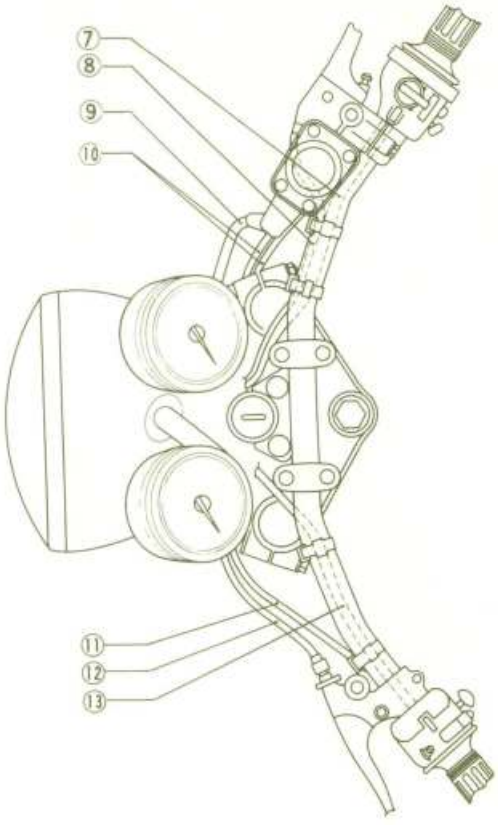
R	Red
B	Black
Sb	Sky blue
Br	Brown
Ch	Chocolate
Dg	Dark green
L	Blue
Y	Yellow
G	Green
W	White
P	Pink
Gy	Gray
O	Orange
Lg	Light green

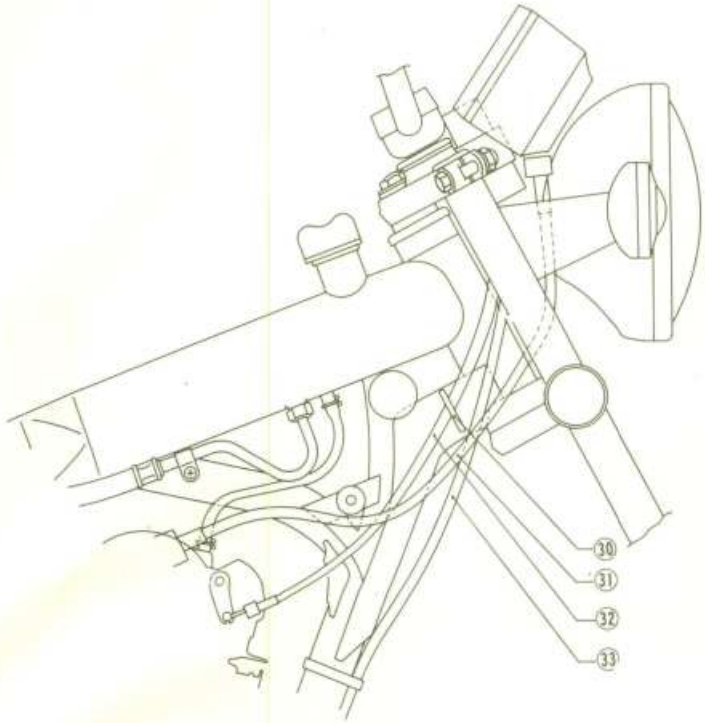
B/W	Black/White
G/Y	Green/Yellow
Y/W	Yellow/White
L/W	Blue/White
Br/W	Brown/White
R/W	Red/White
L/B	Blue/Black
L/Y	Blue/Yellow
L/G	Blue/Green
Y/B	Yellow/Black
Y/R	Yellow/Red
L/R	Blue/Red
W/G	White/Green

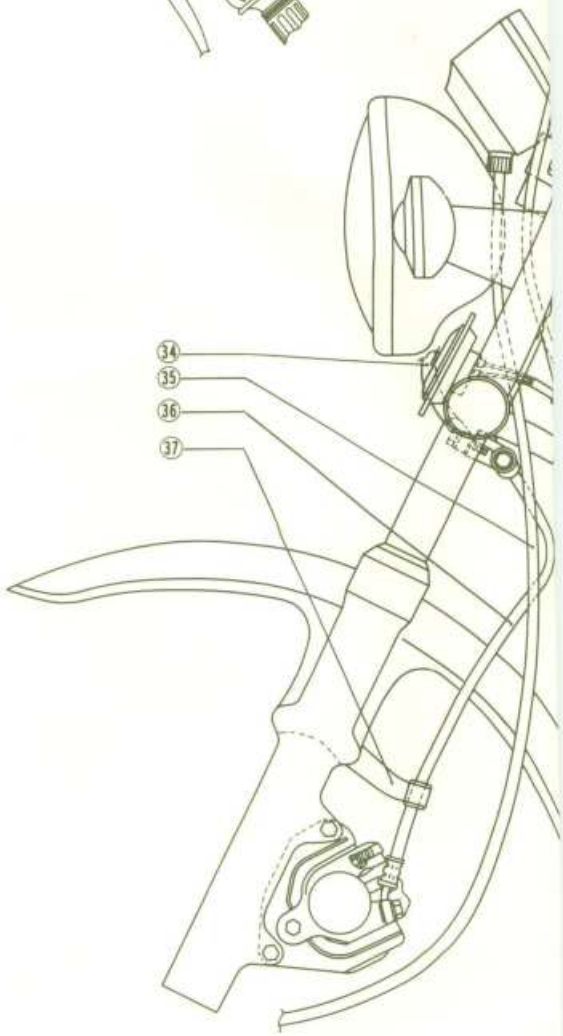
(PAGE 114)

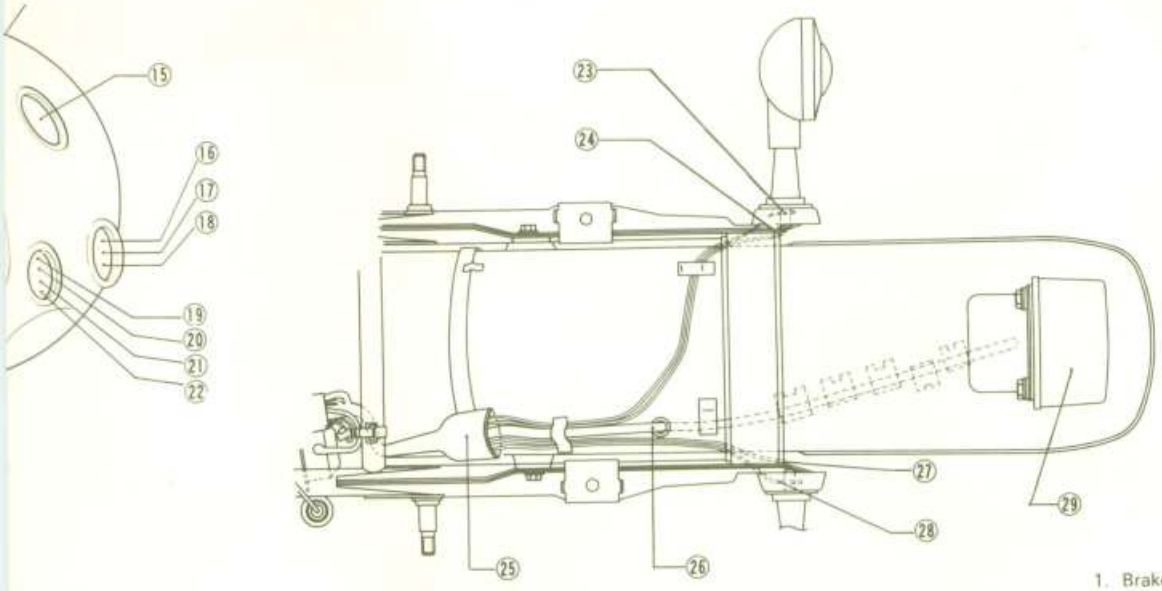
CABLE ROUTING DIAGRAM

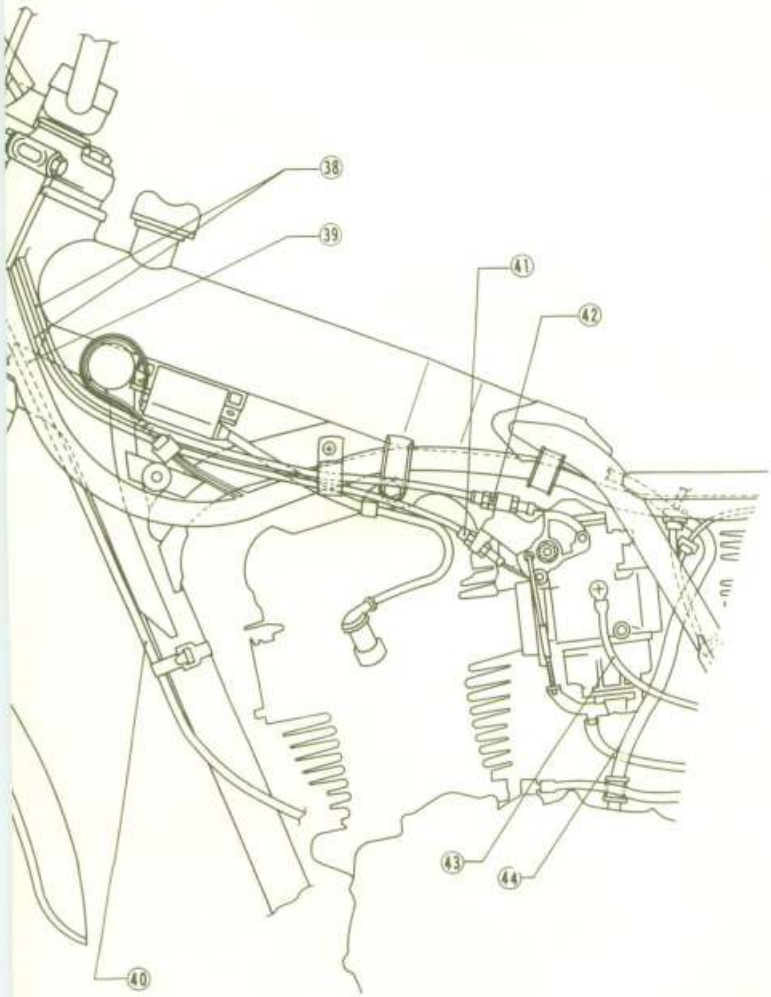












1. Brake hose 1
2. Tachometer cable
3. Clutch cable
4. De-comp. cable
5. Throttle cable
6. Speedometer cable

7. Handle switch lead
8. Front stop lead
9. Brake hose
10. Throttle cable
11. De-comp. cable
12. Clutch cable
13. Handle switch (L.H.) lead

14. Headlight shell
15. Wire harness
16. Front stop switch lead
17. Handle switch (R.H.) lead
18. Tachometer lead
19. Handle switch (L.H.) lead
20. Speedometer pilot light lead
21. Speedometer lead
22. Main switch lead

23. Rear flasher light ground lead
24. Flasher light lead
25. Connector boot
26. Taillight lead
27. rear flasher light lead
28. Flasher light ground lead
29. Taillight lead

30. Wire guide (de-compression cable only)
31. Tachometer cable
32. De-comp. cable
33. Clutch cable

34. Brake hose 1
35. Speedometer cable
36. Brake hose 2
37. Brake hose holder
38. Throttle cable
39. Wire harness
40. Clutch cable
41. Throttle cable 1
42. Throttle cable 2
43. Carburetor air vent hose
44. Carburetor overflow pipe